

# JOINT PUBLIC NOTICE

August 5, 2019

United States Army  
Corps of Engineers  
New Orleans District  
Regulatory Branch  
7400 Leake Avenue  
New Orleans, La. 70118

State of Louisiana  
Department of Environmental Quality  
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WQC Application Number  
WQC # 190729-02

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [ ] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [ X ] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L.95-17).

## **PARADIS MITIGATION BANK IN ST. CHARLES PARISH**

**NAME OF APPLICANT:** Chevron U.S.A. Inc., c/o GHD Services, Inc.; Attn: Kevin Janni; 5551 Corporate Blvd., Suite 200; Baton Rouge, Louisiana 70808.

**LOCATION OF WORK:** The approximate 4,431.2 acre site is located off of Highway 90, east of Des Allemands and south of Paradis, Louisiana, in St. Charles Parish, as shown on attached drawings (Latitude: 29.8306532° N, Longitude: -90.424572° W). The project is located within the Barataria Basin, Hydrologic Unit 08090301.

**CHARACTER OF WORK:** Clear existing vegetation with the implementation of some disking and ripping along with the planting of bottomland hardwood and cypress swamp species. This work is located inside a leveed and pumped system containing a tertiary system of canals comprised of a primary canal, multiple secondary canals and drainage features such as shallow drainage ditches and natural remnant drainage channels. All work proposed is for the purpose of constructing a mitigation bank.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **30 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, **ATTENTION: REGULATORY BRANCH**. Similar letters concerning the

Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

### **Corps of Engineers Permit Criteria**

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources. After receipt of comments from this public notice the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the national Historic Preservation Act, as appropriate.

Our initial finding is that the proposed work would neither affect any species listed as endangered, nor affect any habitat designated as critical to the survival and recovery of any endangered species listed by the U.S. Department of Commerce.

Utilizing Standard Local Operating Procedure for Endangered Species in Louisiana (SLOPES), dated October 22, 2014, between the U.S. Army Corps of Engineers, New Orleans and U.S. Fish and Wildlife Service, Ecological Services Office, the Corps has determined that the proposed activity would have no effect on any species listed as endangered by the U.S. Department of Interior

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of N/A acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

The applicant has certified that the proposed activity described in the application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. The Department of the Army permit will not be issued unless the applicant received approval or waiver of the Coastal Use Permit by the Department of Natural Resources.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

Martin S. Mayer  
Chief, Regulatory Branch

Enclosure

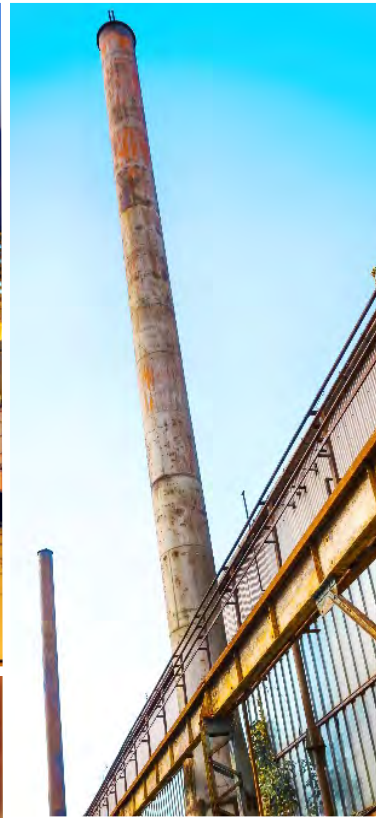


# Revised Prospectus for the Paradis Mitigation Bank

St. Charles Parish, Louisiana

Chevron U.S.A. Inc.

July 3, 2019





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# 1. Introduction

GHD Services Inc. (GHD) has prepared this Revised Prospectus on behalf of Chevron U.S.A. Inc. (Chevron or Sponsor) to summarize the existing conditions of the Paradis Mitigation Bank and to propose a modification to the restoration plan approved in the June 9, 2005 Mitigation Banking Instrument (2005 MBI) for the Paradis Mitigation Bank (MVN 2004-02143 MR). Per the 2005 MBI, the site is organized into multiple Phases I, II, III, IV, and V (Site). Phase II has been divided into Phase IIA (planted) and Phase IIB (unplanted). For purposes of this report, use of the term “the Bank” will refer to Phases I, IIA, IIB, and III and similarly this report assesses the mitigation potential for Phases I, IIA, IIB, and III. Phases IV and V (potential future phases) may be considered for inclusion in the Bank at a later date (Figure 1). Wetland acreages cited in this report are based on USACE-approved jurisdictional determinations (Appendix A).

The Bank was previously approved and recognized by the United States Army Corps of Engineers (USACE) and the Mitigation Bank Review Team (MBRT), via the execution of the 2005 MBI, as a functioning wetland mitigation bank from 2005 to 2014, when credit sales were suspended. This Revised Prospectus is submitted for approval as part of the process to reinstate the Bank. The proposed Bank will provide compensatory mitigation for unavoidable impacts to Waters of the United States (WOTUS) associated with permits issued by the USACE under Section 404 of the Clean Water Act of 1972.

The 2005 MBI stated that flow-through devices were to be installed one to three feet above the maintenance level of the major north-south canal systems to improve hydrology in the Bank. However, neither Chevron nor St. Charles Parish currently support the installation of these devices due to anticipated maintenance and integrity concerns. Wetland hydrology has been maintained and improved without these devices in previously constructed portions of the Bank. Thus, due to this success, and several other factors, the Sponsor proposes to not prescriptively install flow-through devices moving forward and instead to focus on an adaptive approach to manage hydrology within the Bank.

Phases I and IIA were constructed between 2009 and 2013 under the 2005 MBI (Figure 2), while the other phases consist of existing forests and cattle pasture (Figures 3A through 3C). Phases I and IIA restoration acreages and habitats are detailed in Table 1 below and shown on Figures 4A and 4B. Appendix C provides a detailed breakdown of existing acreages and restoration acreages.

Table 1 Phase I and Phase IIA Previously Constructed Habitat Restoration

Habitat Type	Phase I Acreage	Phase IIA Acreage
Bottomland Hardwood Enhancement	335.3	0.0
Bottomland Hardwood Re-Establishment	259.3	214.9
Bottomland Hardwood Rehabilitation	216.3	6.0
Cypress Swamp Re-Establishment	283.0	591.9
Cypress Swamp Rehabilitation	334.7	62.7
Upland Buffer	1.6	0.0
Upland Restoration	7.4	0.0
<b>Total</b>	<b>1437.6</b>	<b>875.5</b>



## 1.1 Site Location

The Site is located at 29.830653°, -90.424572° south and east of Paradis, St. Charles Parish, Louisiana in all or portions of Sections 15, 21, 22, 23, 26, 27, 29, 31, 32, 33, 34, 38, 39, 43, 45, and 46 in Township 14S, Range 20E, and Sections 4, 5, 6, and 9, Township 15S, Range 20E, in the Barataria Watershed, Hydrologic Unit Code (HUC) 08090301 (Figure 1 and Figure 5). The Site lies within the Mississippi River Levee System (Figure 6) and is classified as fastlands. The Site is bound to the north and west by commercial and residential development (Figure 7). Petit Lac Des Allemands is located directly south of the Site, separated by a levee. East of the Site, beyond the levee, is primarily undeveloped Cypress Tupelo Swamp.

## 2. Project Goals and Objectives

The Bank aims to enhance 376.2 acres, rehabilitate 935.9 acres, and reestablish 1,612.5 acres of Bottomland Hardwood Forest (BLH), and reestablish 875.0 acres and rehabilitate 397.5 acres of Cypress Swamp (CYP). It also aims to restore 7.4 acres and preserve 227.0 acres of forested upland buffer.

As defined by The Louisiana Wildlife Action Plan published in 2015 by the Louisiana Department of Wildlife and Fisheries (LDWF), BLH forests are alluvial wetlands occupying broad floodplain areas that flank large river systems. BLH forests may be called fluctuating water level ecosystems characterized and maintained by a natural hydrologic regime of alternating wet and dry periods. These forests support distinct assemblages of plants and animals associated with particular landforms, soils, and hydrologic regimes. They are important natural communities for maintenance of water quality, provide a very productive habitat for a variety of fish and wildlife, and are important in the regulation of flooding and stream recharge. CYP swamps are forested, alluvial swamps growing on intermittently exposed soils. The soils are inundated or saturated by surface water or groundwater on a nearly permanent basis throughout the growing season except during periods of extreme drought. Bayous intersect these wetlands. Floristic diversity is low. Bald cypress (*Taxodium distichum*) is the dominant overstory species. Many aquatic food webs depend on the input of allochthonous material in the form of leaf litter or other organic debris that the wetland forest provides. Net primary productivity of swamp forests seems to be increased by periodic flooding or increased water flow and decreased by slow water movement or stagnation.

Additionally, wetland forest, like the ones proposed for this Bank, provide necessary habitat for both fish and wildlife species. Many birds of prey species will nest and hunt in or near wetland forests. Wetland forests also serve as nesting and feeding habitat for numerous resident land and wading bird species. Migratory waterfowl also utilize wetland forest habitat in the Barataria Watershed during spring and fall migrations.

The Sponsor aims to restore wetland functions and services to the Bank, and create a highly functional, sustainable forested wetland habitat by focusing on the revegetation of existing wetlands, implementation of hydrological improvements, and restoration of forested upland buffers. This project proposes to restore approximately 4,431.3 acres of sustainable BLH, upland hardwood





forest, and CYP (Figures 4A through 4C and Appendix C). Specific project objectives to improve and protect the physical, chemical, and biological functions of a forested wetland ecosystem are as follows:

- Rehabilitation of native BLH forest vegetation, totaling 935.9 acres.
- Enhancement of 376.2 acres of existing BLH forest through the control of undesirable and invasive and nuisance vegetation, including Chinese tallow (*Triadica sebifera*), and interplanting of hardmast species.
- Reestablishment of 1,612.5 acres of BLH forest by planting native species and restoring wetland hydrology.
- Reestablishment of 875.0 acres of CYP swamp by planting native species and restoring wetland hydrology.
- Rehabilitation of native CYP swamp vegetation, totaling 397.5 acres.
- Restoration of 7.4 acres of upland forested habitat, in conjunction with the preservation of 227.0 acres of upland, which will serve as a buffer for restored wetland areas.
- Improvement of water quality through removal of livestock, resulting in a reduction of non-point source runoff through hydrologic restoration.
- Restoration of critical stop-over habitat for neotropical migratory birds.
- Restoration of nesting habitat for Bald Eagles (*Haliaeetus leucocephalus*).
- Providing for long-term viability and sustainability of the Bank through invasive species control, monitoring, and maintenance for the life of the Bank.
- Providing long-term protection through a conservation servitude.

### 3. Ecological Suitability of the Site/Baseline Conditions

#### 3.1 Land Use

##### 3.1.1 Historical Land Use

Prior to the 20th century, the area was a mix of BLH and CYP swamp. Sometime before 1932, modifications, including clearing and drainage improvements, were made to the land to benefit cattle production. For over six decades, between 1930 and 1992, the Site was used for exploration and production related to the oil and gas industry, as well as for cattle pasture. Well abandonment and decommissioning activities took place in a phased approach within the Site from approximately 2000 to 2008.



### 3.1.2 Surrounding Land Use

Figure 7 shows the surrounding land use for the Site. Property immediately adjacent to the Bank includes residential / commercial properties along the eastern boundary of Phase II, the southern boundary of Phase I, and the northwestern boundary of Phase III. Some agricultural property is also located along the eastern boundary of Phase II. Potential future phases consist of cattle pasture, existing forest, and some areas which are subject to third-party surface use. Other properties surrounding the Site are primarily undeveloped marshlands, levees, and Bayou Des Allemands.

### 3.1.3 Existing/Current Land Use

The Paradis Mitigation Bank served as a USACE-approved wetland mitigation bank from 2005 to 2014. Out of a total of 5,104.1 gross acres in Phases I, II, and III, exceptions consist of 672.8 acres while the net (i.e., bankable) acreage is 4,431.3 (Figure 2 and Appendix C). Total restoration for Phases I and IIA is approximately 2,304.5 acres of BLH and CYP. The remaining, unplanted Bank acreage currently consists of approximately 521.3 acres of existing BLH and approximately 1,605.5 acres of cattle pasture.

Within the Bank are a variety of exceptions totaling 672.8 acres (Appendix C). An overview of exceptions is depicted in Figure 8 and on other figures throughout as appropriate. These exceptions consist of canals (Appendix B), canal rights-of-way (canal ROW) (Appendix B), powerline ROWs (Figure 18), pipeline ROWs (Figure 19), internal private access roads (Figures 20 and 21), public roads, third-party surface use/easements, and levees.

## 3.2 Soils

The U.S. Department of Agriculture's Natural Resources Conservation Service (USDA NRCS) categorizes the Bank as a farmed wetland pasture due to the inherent soil characteristics, and has mapped four soil series in the proposed mitigation area as a portion of the St. Charles Parish Soil Survey (U.S. Department of Agriculture, 1987). The soil series include Commerce, Sharkey, Harahan, and Fausse, with the Sharkey series further subdivided into the phases of Sharkey silty clay loam (Se) and Sharkey clay (Sa) (Figures 9A through 9C).

Commerce and Sharkey soils formed in intermediate and fine textured parent material behind natural levees. They are used mostly for cropland, with soybeans and rice as the principal crops. Corn, wheat, grain sorghum, and other small grains are also grown. Minor areas are in pecan orchards, woodland, and pasture. Frequently flooded and ponded areas are mainly in BLH. Commerce soils have a silt loam texture, while the Sharkey soils possesses a finer textured, clayey material.

Fausse and Harahan soils were formed in backswamps beyond the natural levee. The Fausse series formed in thick deposits of clayey alluvium and makeup the lower portions of the solum. The artificially drained Harahan series occupies a slightly lower position than the Fausse series, and through time, formed a moderately thick, firm clayey alluvium overlying fluid clayey sediments. Fausse soils are mainly used for growing timber and for wildlife habitat, and the vegetation is dominantly bald cypress, water tupelo, and red maple, while Harahan soils' native vegetation includes various BLH species.



The soil survey was completed prior to the inclusion of aquic soil conventions adopted in 1992 (Soil Survey Staff, 1998), and the adoption of hydric soil criteria by the international committee on aquic moisture regime. Soils found upon the property formed from the fluvial dynamics of the Mississippi River with incursions and regressions of marine influences from the Gulf of Mexico. As overbank discharges carrying sediment flows over the landscape, partial sorting of the alluvium results from slower water velocities depositing various sediment sizes. The initial deposits were high in sand; however, as velocity decreased or became absent, subsequent particle sorting deposited the silt fractions and finally clayey material. Consequently, natural levees are highest and possess greater sand content near the Mississippi River and its major distributaries, while clayey back swamp sediments were deposited from still or slow-moving water in lower areas behind the natural levees.

### 3.3 Hydrology

#### 3.3.1 Contributing Watershed

The Site is located in the East Central Louisiana Coastal Hydrologic Unit Code (HUC 08090301), identified as the Barataria Basin in the USACE watershed approach, approximately 50 miles from the coastline of the Gulf of Mexico, making it a critical habitat for neotropical migrants. Restoration of BLH and CYP habitat will also result in improved water quality within the watershed increasing filtration of water running off the Site, thereby reducing pollutants in the watershed.

The Barataria Basin Watershed has experienced increased residential, commercial, and industrial development in recent years. The Sponsor envisions that this Bank will provide additional mitigation credits to an area that is experiencing rapid industrial and population growth.

#### 3.3.2 Historical Hydrology and Drainage Patterns

Historically, the Site was typically inundated due to its elevation below sea level. Following completion of the lower Mississippi River containment levees, an epiaquic moisture regime from incipient rainfall replaced the previous overbank discharges. To maintain groundwater levels, increase flood control capacity, and facilitate agricultural land use, man-made ditches running parallel and perpendicular throughout the Site were constructed prior to 1932, leading to the drainage regimen currently in existence.

#### 3.3.3 Existing/Current Hydrology and Drainage Patterns

Elevations on the Site range from ~-9.5 to 0 feet below the National Geodetic Vertical Datum (NGVD) for mean sea level (MSL) (Figures 10A through 10C). Existing hydrologic features are shown in Figures 11A through 11C.

The Site forms part of a larger ~11,300-acre basin consisting of the Site, the towns of Des Allemands, Bayou Gauche and Paradis, and forested, grazing, and agricultural areas, and is bound on all sides by topographic highs such as levees and roads (the Basin):

- To the east and north by the Sunset Levee;
- To the west and northwest, by Louisiana State Highway 631, Ridge Road, Up the Bayou Road, and Down the Bayou Road; and



- To the south and southwest by the Bayou Des Allemands Levee.

Exterior to these topographic highs and surrounding the Basin are marsh, swamp, and open water which are approximately 0-2 feet MSL. Any planned improvements to the bounding levees and roads (Figure 6) will not affect the drainage characteristics of the Bank (Figures 14A through 14H).

### **3.3.3.1 Hydrologic Outputs**

Hydrologic outputs from the Basin include evapotranspiration and surface water pumping. Groundwater outflow is effectively zero due to the positive, incurrent hydraulic head. In order to protect the communities within the Basin from flooding, surface water pumping is managed by St. Charles Parish (the Parish) via a system of Parish-owned canals and pumping stations.

The canal system within the Basin (Appendix B, Figure 1) is interconnected and comprised of:

1. A primary canal being the Crawford Canal, which runs north-south and generally bisects the Site;
2. Multiple secondary canals, being a north-south canal (Canal #2, also known as the Flux Canal) and several east-west lateral canals (#3 through #15), and a canal running along the base of the Bayou des Allemands Levee;
  - With the exception of Phase III, these canals (primary and secondary) generally form the boundaries between management cells (Figure 2 and Appendix B, Figure 1) within the phases of the Bank;
3. Tertiary drainage features being shallow drainage ditches and natural, remnant drainage channels within management cells.

Parish field crews perform regular maintenance activities, which primarily consist of vegetation control, within the canals and on the canal banks to maintain waterflow and connectivity between the primary and secondary canals and the two pump stations (Tibby Station and Sunset Station). The areas adjacent to the canal banks, which the Parish mows and maintains in order to provide access to the canals (Canal ROWs), are generally slightly elevated relative to the surface elevation of the Bank management cells. The tertiary drainage features within the management cells serve to move water from the interior of the cells to the canals via microtopographic-driven sheet flow. Due to this movement of water across the landscape, there are discharge points between the tertiary drainage features and the canals. These discharge points along the canal banks generally have elevations that are higher than that of the water in the canals (Appendix B). Since the Parish owns the canals, while Chevron owns the adjoining lands, Chevron and the Parish are currently in negotiations to execute an agreement that calls for an adaptive management approach to this drainage situation. The end goal of this approach is maintaining optimum hydrological conditions within Bank management cells, while also allowing the Parish continued access to the canals for ongoing maintenance activities. Chevron and the Parish recognize that water movement can be highly unpredictable on a Site of this magnitude and intend to work together in a mutually beneficial fashion. The Canal ROWs will not be included in the Bank or placed under Conservation Servitude.

The Parish-operated pumping stations consistently maintain the water elevation within the canals at an elevation of -9 to -9.5 feet MSL, which is below the elevation of the land surface in the vast



majority of the Bank. With a combined pumping capacity of 414,000 gal/min, the two pump stations are:

1. The Tibby Station, located at the southern end of Down the Bayou Road, serves approximately 30% of the Basin. Water is discharged into Bayou Des Allemands by three 48-inch pumps each with a capacity of 38,000 gal/min for a total capacity of 114,000 gal/min. The pumps are on an automatic cycle and maintain the water level at -9 to -9.5 feet MSL.
2. The Sunset Station, located at the southern end of the Crawford Canal, serves approximately 70% of the Basin. Water is discharged into Bayou Gauche by three 60-inch pumps each with a capacity of 100,000 gal/min for a total capacity of 300,000 gal/min. The pumps are manually operated and unless pumping is increased prior to a large precipitation event to increase storage capacity in the canals, the water level is maintained at -9 to -9.5 feet MSL.

In a communication to Chevron, the Superintendent of Drainage for St. Charles Parish confirmed the above information as standard operating procedure and also stated that the Parish is in the process of drafting formal operating and maintenance procedures to reflect the same.

### **3.3.3.2 Hydrologic Inputs**

Hydrologic inputs to the Basin include precipitation, groundwater inflow, and surface water inflow. The area receives an average of 5.5 inches of precipitation per month. A positive hydraulic head exists between the surrounding marshes and swamp exterior to the Basin, which lie at approximately 0 feet MSL, and the interior of the Basin, which ranges in elevation from 0 to -9.5 feet MSL. Thus, in addition to significant precipitation within the Bank, groundwater inflow from areas external to the Basin constitutes a substantial input volume as seepage occurs through and under levees and road bases around the entire perimeter of the Basin.

Surface water inflow from the exterior of the Basin into the Site is minimal due to the bounding highs but may occur during extreme weather events if those highs are overtopped. During periods of heavy precipitation, the Bank becomes inundated by surface water inflow via backflow from the interior canal system. The ability of the Bank to absorb precipitation, as well as to receive backflow, provides an important storm water management mechanism for the Basin and its communities. Importantly for Bank health purposes, the backflow also serves the function of delivering significant volumes of water to the Bank's management cells, which in turn facilitates appropriate hydroperiods for the Bank's bottomland hardwood and cypress-tupelo habitat (Figures 14A through 14H).

### **3.3.3.3 The Hydrologic Restoration Plan in the 2005 MBI**

The hydrologic restoration plan detailed in the original 2005 MBI has not been implemented in the planted areas or elsewhere. This plan called for plugging of ditches and culverts (i.e. all drainage points connecting tertiary drainage features to primary or secondary canals would be eliminated) and the installation of flow through structures along the north-south canals. The flow through structures were intended to move water from the canals into the Bank management cells during periods of high-water levels, but when water levels decreased, these structures would prevent water from returning to the canals via the one-way flap gates. The intent of this plan was to introduce water to the management cells and effectively trap it there in order to facilitate an increase in wetland hydrology and acreage. However, upon further technical analysis of the 2005 hydrologic plan,



combined with on the ground experience with such a vast and dynamic Site, the Sponsor asserts that the implementation of this plan would not have resulted in desirable or sustainable hydrologic conditions for the desired habitat within management cells for two primary reasons:

1. Extended hydroperiods caused by the inability of water to leave the management cells would result in prolonged periods of inundation that would not be supportive of BLH habitat; and
2. Microtopography-driven sheet flow towards natural and anthropogenic discharge points into the canals creates frequent, unintended washouts at locations on the Canal ROWs of both the primary and secondary canals. However, topographic grain is predominantly north – south within management cells, which leads to more frequent washouts on the east-west lateral canals. These unintended washouts allow water to rapidly and forcefully flow out of the cells and into the canals. Installation of flap gates only on the north-south canals would have exacerbated this reality, standing in direct contrast to their intended purpose, i.e. trapping water within the management cells. Furthermore, these washouts also prevent access by the Parish for canal maintenance purposes, and to Chevron for Bank management / operation purposes.

Supportive of this assertion, even without the implementation of the hydrologic improvements called for in the 2005 MBI, the 2018 Monitoring Report documents that the Site is thriving in the current hydrologic regime in planted areas, as evidenced by robust tree survival and overall vigorous health. Furthermore, as documented in the jurisdictional wetland delineations approved in 2018, a marked increase in wetland acreage has been observed (~560-acre increase in wetland acreage in planted areas between 2005 and 2018 delineations). This increase in wetland acreage in planted management cells is a direct result of enhanced water retention and hydric soil pedogenesis because of the presence of trees, unmaintained underbrush, and the absence of livestock causing soil compaction.

#### **3.3.3.4 Stability of Current Hydrologic Regime**

In conclusion, the current hydrologic regime within the Bank is stable and will remain so in the long-term due to the following:

1. The pumping capacity of the Tibby and Sunset pump stations is sufficient to balance hydrologic inputs to the Bank. Parish maintenance of the canal water levels at -9 to -9.5 ft MSL simultaneously and consistently maintains the Bank's water table within approximately 0 to 4 feet of the ground surface under typical weather conditions;
2. The Bank is levee protected, which makes the area much less vulnerable than non-levee protected areas in Louisiana's coastal zone to the long-term effects of land loss, sea level rise, climate change and severe weather events; and
3. The canal system within the Bank facilitates avenues for both drainage and water delivery, which is ideal for providing the appropriate hydroperiod supportive of BLH and CYP habitat.

Thus, the hydrologic regime in the Basin, and therefore the Bank, provides stability in the larger, rapidly changing and vulnerable Barataria Basin. The successful restoration and preservation of such a vast and critical BLH habitat buttressed by this stability will offer the creation of wide-ranging eco-system services from a sustainable, biodiverse, forested wetland habitat.



### 3.3.3.5 Jurisdictional Wetlands

Jurisdictional Determinations received from the USACE are included as Appendix A.

## 3.4 Vegetation

### 3.4.1 Historical Plant Community

Historical topographic maps dating into the 1920s indicate the Site and surrounding area consisted of swampland. Available soils data indicates the historical habitat was likely a mix of CYP and BLH. Prior to 1932, the majority of the Site was clear cut, and appears to have been put into grassland used for cattle grazing, as portions of it still are today.

### 3.4.2 Existing Plant Community

Within the agricultural, non-forested areas, early successional plants such as coastal bermuda grass, dallis grass, and bahia grass represent the aspect dominants upon higher elevations. Where more intense grazing has occurred, marsh elder, wooly croton, and ragweed may become subdominants. In the more open depressions, beakrush, smartweeds, and spikerush grade into alligator weed, and water hyacinth. In the higher elevations, the most ubiquitous and dominant tree species is sugarberry in association with live oak. Sugarberry also circumscribes many of the depressional areas where green ash and red maple may be found as associates. Water, willow, laurel, and cherrybark oaks grade into green ash and cypress in the northern forested area where the largest block of forest presently occupies the landscape. Circumscribing the lower elevations in the eastern portion of the property, black willow was found to be the dominant species with subdominants of red maple and sugarberry.

Pursuant to the previously approved 2005 MBI, the planting of Phases I and IIA was completed from 2009 to 2013. Phases I and IIA restoration efforts were accomplished by planting approximately 1,900 acres with one-year-old, bare root, indigenous hardwood and cypress seedlings on an approximate 12 foot by 12 foot spacing, initially yielding approximately 302 free to grow seedlings per acre. The planted seedling species are listed in Table 2 below:

Table 2 Planted Seedlings in Phase I and Phase IIA

Common Name	Scientific Name	Wetland Indicator*	Mast
Water oak	<i>Quercus nigra</i>	FAC	Hard
Willow oak	<i>Quercus phellos</i>	FACW	Hard
Cherrybark	<i>Quercus pagoda</i>	FAC	Hard
Shumard oak	<i>Quercus shumardii</i>	FACW	Hard
Nuttall oak	<i>Quercus texana</i>	OBL	Hard
Bald cypress	<i>Taxodium distichum</i>	OBL	Hard

Notes: \*FAC = facultative FACW = facultative wet OBL = obligate

According to the 2018 Monitoring Report, the management units planted in 2012 and 2013 are already showing signs of increased wetland habitat and wildlife usage since their conversion from pasture. The area is being utilized by a large amount of wildlife species, particularly wetland birds.



### 3.5 General Need for the Project in this Area

The Bank will provide 4,431.3 acres of BLH and CYP habitat restoration and preservation as compensatory mitigation for authorized projects within the Barataria Watershed (HUC 08090301). This watershed contains portions of St. James, Assumption, Lafourche, St. Charles, Jefferson, and Plaquemines Parishes. Oil and gas development, industrial and residential expansion, and proposed infrastructure projects within this watershed have created a demand for BLH and CYP credits.

Table 3 below shows the historical sales rates compared to the existing inventory of credits available from mitigation banks within the Barataria Watershed that provide these credit types. Currently, there is a lack of available BLH and CYP credits to meet historical sales rates. Reinstatement of the Bank will assist in meeting the demand for additional mitigation credits in the Barataria Watershed.

Table 3 Historical Credit Sales Rate and Current Credit Inventories in HUC 08090301

Credit Type	Total Credits Sold to Date***	Number of Years Analyzed*	Average Credits Sold Per Year	Credits Currently Available In HUC 08090301**
BLH	2,555.91	23.66	108.03	39.2
BLH-LDNR	303.70	5.3	57.52	89.3
CYP	215.44	22.9	9.41	0
CYP-LDNR	153.90	4.9	31.3	9.2

Notes:  
 \*Includes the year of the first credit sale for that credit type through May 20, 2019.  
 \*\*As of May 20, 2019.  
 \*\*\* Credits sold by the four approved banks (Lucky Hit, Enterprise Woodlands, Laurel Valley Coastal, Laurel Valley Amendment One) in this HUC, and Paradis through 2014.

## 4. Establishment of the Mitigation Bank

### 4.1 Bank Restoration Plan

The Sponsor, via Nationwide Permit (NWP-27), aims to restore 2,924.6 acres of BLH and 1,272.5 acres of CYP through further reestablishment, rehabilitation, and enhancement (Figures 4A through 4C and Appendix C). Approximately 7.4 acres of upland restoration and 227.0 acres of upland preservation will occupy the Bank. Exceptions totaling 672.8 acres are intermingled throughout the Site (Figure 8), which include canals (Appendix B), canal rights-of-way (canal ROW) (Appendix B), powerline ROWs (Figure 18), pipeline ROWs (Figure 19), internal private access roads (Figures 20 and 21), public roads, third-party surface use/easements, and levees. While these exceptions will not be planted as part of the Bank, hydrology across them will be maintained to the greatest extent possible.

Table 4 provides a breakdown of Mitigation and Habitat types by Bank Phase of already planted acreage and acreage proposed to be planted. A detailed breakdown by management cell is provided as Appendix C.





Table 4 Restoration Type

Baseline Condition	Mitigation and Habitat Types	Completed		Proposed		Total Acres
		Phase I	Phase IIA	Phase IIB	Phase III	
Existing BLH Forest	Bottomland Hardwood Enhancement	335.3	0.0	2.8	38.1	376.2
Non-Wetland Pasture	Bottomland Hardwood Re-Establishment	259.3	214.9	856.8	281.4	1,612.5
Wetland Pasture	Bottomland Hardwood Rehabilitation	216.3	6.0	489.9	223.7	935.9
<b>Total BLH Restored</b>		<b>810.9</b>	<b>220.9</b>	<b>1,349.5</b>	<b>543.2</b>	<b>2,924.6</b>
Non-Wetland Pasture	Cypress Swamp Re-Establishment	283.0	591.9	0.0	0.0	874.9
Wetland Pasture	Cypress Swamp Rehabilitation	334.7	62.7	0.0	0.0	397.4
<b>Total CYP Restored</b>		<b>617.7</b>	<b>654.6</b>	<b>0.0</b>	<b>0.0</b>	<b>1,272.4</b>
<b>Total Wetland Acreage</b>		<b>1,428.7</b>	<b>875.5</b>	<b>1,349.5</b>	<b>543.2</b>	<b>4,197.0</b>
Existing BLH Forest	Upland Buffer	1.6	0.0	0.0	225.4	227.0
Non-Wetland Pasture	Upland Restoration	7.4	0.0	0.0	0.0	7.4
<b>Total Buffer Acreage</b>		<b>9.0</b>	<b>0.0</b>	<b>0.0</b>	<b>225.4</b>	<b>234.4</b>
<b>Net/Bankable Acreage</b>		<b>1,437.6</b>	<b>875.5</b>	<b>1,349.5</b>	<b>768.7</b>	<b>4,431.3</b>
<b>Exceptions Acreage*</b>		<b>122.0</b>	<b>147.7</b>	<b>292.8</b>	<b>110.3</b>	<b>672.8</b>
<b>Gross Acreage</b>		<b>1,559.6</b>	<b>1,023.3</b>	<b>1,642.2</b>	<b>879.0</b>	<b>5,104.1</b>

\* Includes canals, canal ROWs, powerline ROWs, pipeline ROWs, internal private access roads, public roads, third-party surface use/easements, and levees.

#### 4.1.1 Soils/Hydrologic Work

Disking and ripping of pasture areas, and fertilization as necessary, will be performed to prepare soils for planting and to remedy soil compaction caused by decades of use as cattle pasture. In regard to hydrologic work, as discussed in Section 3.3.3, current hydrologic conditions on the Site are supportive of both existing BLH and CYP habitats, and future BLH habitat, and overall wetland conditions, since hydrologic connectivity in the Basin facilitates Site-wide water transfer, bringing water in to the management cells during heavy rain events while also allowing outflow. The hydrologic restoration plan in the 2005 MBI, which included the grading and/or filling of all internal drainage features and the installation of water control structures on the north/south canals only, would have prevented the transfer of water across the Site by trapping water within the management cells, and thus will not be implemented.

In the absence of active hydrologic management since 2005, the increase in wetland acres and hydric soils, as well as the overall survival and health of new plantings within the Bank, suggests that



the current hydrologic regime is highly beneficial when considering the overall goals of the project. The Sponsor therefore intends to preserve the current hydrologic conditions of the Bank by implementing adaptive management where necessary as the project progresses. In areas that are or appear to be at risk of hydrologic disruption (i.e. washouts or otherwise), adaptive management may be implemented to stabilize conditions, which may include the installation, adjustment, plugging and/or removal of velocity dissipators (Figure 16), culverts (Figure 17), reinforced swales, or any combination thereof. In certain instances, this may also include the filling and grading of internal drainage features. These cost-effective and repeatable methods of adaptive management support the long-term viability and success of the Bank because they foster a self-sustaining condition which does not require active management, ultimately serving to reinforce existing patterns of water movement which, as demonstrated, are supportive of the intended goals of the project.

Further detail regarding planned soil and hydrologic work will be provided in the Mitigation Work Plan and the Adaptive Management Plan.

#### 4.1.2 Vegetative Work

Phases I and IIA were planted in BLH and CYP composition between 2009 and 2013 (Figure 2). Considering the Site soil types, and the stable hydrologic regime, the Sponsor plans to limit future phases (IIB and III) to the BLH habitat type. Phases IIB and III are currently existing forests and/or unplanted cattle pasture; the Sponsor plans to initiate these Phases following Bank reinstatement by planting a mixture of at least 60 percent hard mast and a maximum of 40 percent soft mast producing species. If seedling availability renders a discrepancy of more than five percent from the desired mixture of hard-mast to soft-mast species, USACE New Orleans District approval to modify the plan will be sought. The proposed selection of species composition for future plantings in Phases IIB and III is listed in Table 5 below:

Table 5 Proposed Species Composition for Future Planting

Common Name	Scientific Name	Wetland Indicator*	Mast	Percentage
Nuttall oak	<i>Quercus texana</i>	OBL	Hard	20
Willow oak	<i>Quercus phellos</i>	FACW	Hard	15
Water oak	<i>Quercus nigra</i>	FAC	Hard	15
Overcup oak	<i>Quercus lyrata</i>	OBL	Hard	20
Bitter pecan	<i>Carya aquatica</i>	OBL	Hard	15
American elm	<i>Ulmus americana</i>	FAC	Soft	5
Sugarberry	<i>Celtis laevigata</i>	FACW	Soft	5
Persimmon	<i>Diospyros virginiana</i>	FAC	Soft	5

The Sponsor proposes that enhancement of existing, remnant BLH forest on the Site will be accomplished through the selective thinning of Chinese tallow and other undesirable species, and interplanting with desirable species typical of a BLH forest. Phase IIB will consist of 1,349.5 acres of BLH. Phase III is 768.7 in total acres, and will consist of 543.2 acres of BLH and 225.4 acres of upland buffer (Figures 4A through 4C). If survival is less than 50 percent at any given monitoring event, additional plantings will be implemented in an effort to meet success criteria. Future planting efforts will be further detailed in the Mitigation Work Plan.



## 4.2 Technical Feasibility

The Sponsor plans to continue to establish appropriate vegetative plantings, and rehabilitate those areas of existing forests, to restore the Site to a forested wetland habitat, a process which is already underway in Phases I and IIA. Soil types mapped on the Site are supportive of the species proposed for restoration. Phase I and the portions of Phase II that have been previously constructed with the currently proposed methodologies have developed the desired conditions, i.e. a thriving, young, forested, wetland habitat.

The construction work required to complete the remaining restoration in Phases IIB and III is routine in nature, consisting primarily of strategic clearing of undesirable species and remnant structures, and tilling of soils. In order to promote and ultimately restore hydrologic conditions typical of a wetland on a site of this size, the Sponsor intends to use adaptive management to implement selective construction, reinforcement, removal, location adjustment, and / or plugging of culverts and other drainage features throughout the Site. This passive management approach, being fairly simple and routine in nature, allows for a high probability of success, while also minimizing potential harm to the habitat that may result from a restoration method demanding active management on such a dynamic Site of this magnitude.

## 4.3 Current Site Risks

The Bank is divided into fourteen management cells averaging 315 acres in size and range from -9.5 to 0 feet MSL in elevation (Figure 2). With the exception of Phase III, the overwhelming majority of cells are separated by canals, which are owned and maintained by St. Charles Parish. As discussed in Section 3.3.3.1, the canals are pumped to maintain a water elevation of -9 to -9.5 feet MSL in the canals. Pumped water is discharged into the adjacent Bayou Des Allemands. Given that the primary purpose of the canal system and pumping stations is to prevent flooding in the neighboring communities, these pumping parameters are unlikely to be significantly altered. To ensure that this primary purpose is served, the Parish must keep the canals free and clear of debris and encroaching vegetation in order to preserve Site-wide canal connectivity. These maintenance efforts require Parish access to the canals via cleared ROWs adjacent to the canals. Drainage points along the cleared and maintained ROWs occur in locations where microtopographically driven sheet flow intersects the canals, allowing water transfer between canals and management cells. This serves the essential, mutually beneficial function of 1) providing excess flood storage in the management cells during heavy rain events, which further reduces the risk of flooding to the surrounding communities and 2) facilitates hydrology appropriate for a forested wetland habitat.

To facilitate success for both Chevron's Bank project goals and the Parish obligation to protect the surrounding communities from flooding, the two parties intend to execute an agreement to establish standard operating procedures in regard to access rights, ROW maintenance, improvements (i.e. culverts), and canal and canal bottom maintenance (including the disposition of materials removed). As discussed in Section 3.3.3.1, the ultimate goal of the agreement is to provide the flexibility necessary to implement adaptive management as appropriate to facilitate suitable hydrology for the goals of this project, while also guaranteeing the Parish access to the canals for maintenance purposes.



The Sponsor does not anticipate any appreciable widening of the canals due to 1) the extremely low velocity at which water moves in the canals under typical conditions, 2) the banks of the canals are covered with vegetation, 3) adaptive management will aim to prevent washouts in the ROWs, 4) cows will no longer be present in unplanted areas once Phases IIB and III are constructed, and 5) water levels in the canals are not subject to tides and are actively maintained at a consistent elevation of approximately -9.5 ft MSL by the Parish, as discussed in Section 3.3.3.1.

Multiple third-party rights affect land within interior portions of the Site, including, but not limited to, pipeline and transmission line ROWs and surface easements. Areas within the Site affected by these third-party rights will be excluded from habitat restoration areas and will not be subject to the conservation servitude, as may be amended, though the Sponsor aims to maintain hydrology across them to the greatest extent possible. In the event that a third-party right is terminated, the Sponsor may consider the land for inclusion in the conservation servitude.

The Site is in the immediate vicinity of the towns of Paradis and Des Allemands, Louisiana and is adjacent to multiple residential areas. The Sponsor has posted signage throughout the restored areas and will do so in the undeveloped phases of the Bank as well. The Sponsor is maintaining, and plans to continue to maintain, an active presence on the property and is working with the local Sheriff's department and the Louisiana Department of Wildlife and Fisheries to dissuade trespassing.

Planned infrastructure improvements to the bounding levees and roads (Figure 6) will not impact hydrologic inputs and outputs to the Basin or Site (Figures 14A through 14H). It is unlikely that infrastructure improvements will impact the interior of the Site; nonetheless, the Sponsor intends to prohibit such improvements where possible, and to enact long term Site protections as available and necessary.

#### 4.4 Long Term Sustainability

As discussed in Section 3.3.3.4, a combination of factors will contribute to the long-term sustainability of the restored and rehabilitated wetland habitat, including:

1. A steady and dependable pumping regime in the Basin, that will provide consistent ground water elevations supportive of wetland habitat in the Bank;
2. Maintaining hydrologic connectivity between the interior of the management cells and the canals to facilitate the appropriate hydro-period; and
3. Reduced vulnerability of the Site to climate change and severe weather-related risk due to levee protection.

The overall hydrologic stability, and therefore habitat stability, provided by the Basin will be further complimented by the Sponsor's proposal to not include any structural management improvements requiring active management and continued maintenance. Additionally, as will be further detailed in the Long-Term Management Plan to be included in the Revised MBI, the Sponsor or Long-Term Steward of the Site, leveraging the Long-Term Management Fund, will use passive and/or adaptive management to ensure the long-term sustainability and viability of the Bank. In sum, the Sponsor proposes to incorporate the Parish's consistent and dependable pumping regimen in the Basin into



its passive and adaptive management of the Site to produce a highly stable and self-sustaining forested wetland habitat

## 5. Proposed Service Area

The Bank is located within the United States Geological Survey (USGS) HUC 08090301, which includes parts of Ascension, St. James, Assumption, St. John the Baptist, St. Charles, Jefferson, Lafourche, and Plaquemines Parishes. The service area will consist of the Barataria Watershed (Figure 5).

## 6. Operation of the Mitigation Bank

The Sponsor intends to establish and operate the Bank, as will be further described in the Revised MBI, in accordance with all rules and regulations of 33 Code of Federal Regulations (CFR) § 332.8. The existing Conservation Servitude and Easement dated August 2, 2005, which the Sponsor intends to amend to accurately define the boundaries of Phases I and II and to include Phase III (Servitude), will serve to protect the Bank and prohibit harmful activities that may impact its long-term survival.

### 6.1 Project Representatives

**Sponsor/Landowner:** Chevron U.S.A. Inc.  
Danielle L. Brocato  
Point of Contact, Land Representative  
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Danielle.Brocato@Chevron.com

**Agent:** GHD Services Inc.  
Kevin Janni  
Point of Contact, Natural Resources Project Manager  
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(225) 292-9007  
Kevin.Janni@GHD.com

### 6.2 Qualifications of the Sponsor

Chevron has an extensive history with the Site, having owned the property since 1951, well established relationships with the surrounding property owners and the Parish, experience associated with the initial creation and development of the Bank, and the organizational and financial capability to accomplish the goals of the project. Chevron Environmental Management Company and the Environmental Unit of Chevron Energy Technology Company are internal partners with broad resources and highly skilled expertise in addressing environmental issues, and are primary resources for internal assistance in Bank management.



With the understanding that mitigation banking is not a primary business activity for Chevron, our intent is to supplement our internal talent with external subject matter experts to partner with us in the management, marketing and further development of the Bank. The ongoing, competitive selection process for this partner is being led by Chevron Supply Chain Management (SCM) and initially began with a Request for Information from eight candidates specific to their technical capability as it relates to wetland mitigation banking in the USACE New Orleans District, experience in establishment and management of wetland mitigation banks, and overall stability. Responses provided by the eight candidates were used to narrow the list to three, to whom a more detailed Request for Proposal has been sent. The evaluation criteria were chosen to select a long-term business partner who will offer expertise in a consistent manner for the duration necessary to achieve success at the Bank.

While the intent is for a partner to be chosen for the duration of the project, certain scopes of work, depending on their size and complexity, may be further subcontracted with the appropriate oversight of both Chevron and its partner. The contracting strategy for the subcontracted work would be dependent on the size and complexity of the project; large, complex scopes would involve a competitive award process similar to that laid out above, while small, non-complex scopes may utilize suppliers from a pre-approved vendor list compiled pursuant to established and documented safety performance, environmental protection procedures, and general technical capability and overall stability. The contracting expertise of Chevron SCM will be leveraged to ensure that contracting is performance based and allows Chevron to act unilaterally if necessary to resolve contractor issues that have the potential to affect Bank success.

### 6.3 Proposed Long Term Ownership and Management Representatives

The Sponsor and the Holder of the Servitude, or their approved successors, transferees, and assigns, if any, will be responsible for maintaining and protecting the lands within the Bank in perpetuity.

### 6.4 Site Protection

A conservation servitude protecting the Bank in perpetuity shall be placed on the Bank with a USACE-approved Holder, which will prohibit any activities that have the potential to adversely impact the long-term survival and quality of the restored wetlands. As permitted by the Servitude and consented to by the Sponsor, recreational uses such as hunting, fishing, and wildlife observation may be allowed.

### 6.5 Long Term Strategy

In accordance with the Revised MBI, long term management will consist of vegetation management, invasive species control, monitoring, and Site protection. The Sponsor intends to manage the Bank to preserve the increased ecological functions of the restored wetland habitat by conducting periodic inspections of the Site for the encroachment of invasive species or any unauthorized modifications to hydrology, among other activities. Structural management required for hydrologic or vegetative restoration and the maintenance thereof will include regular monitoring of Site drainage features (e.g., ditches, culverts, etc.) resulting in modifications and repairs, as needed.



Monitoring and maintenance activities, annual cost estimates, funding mechanisms as required by 33 CFR § 332.7 (d), and other details regarding long term management of the Site will be included within the Revised MBI's Long-Term Management Plan.



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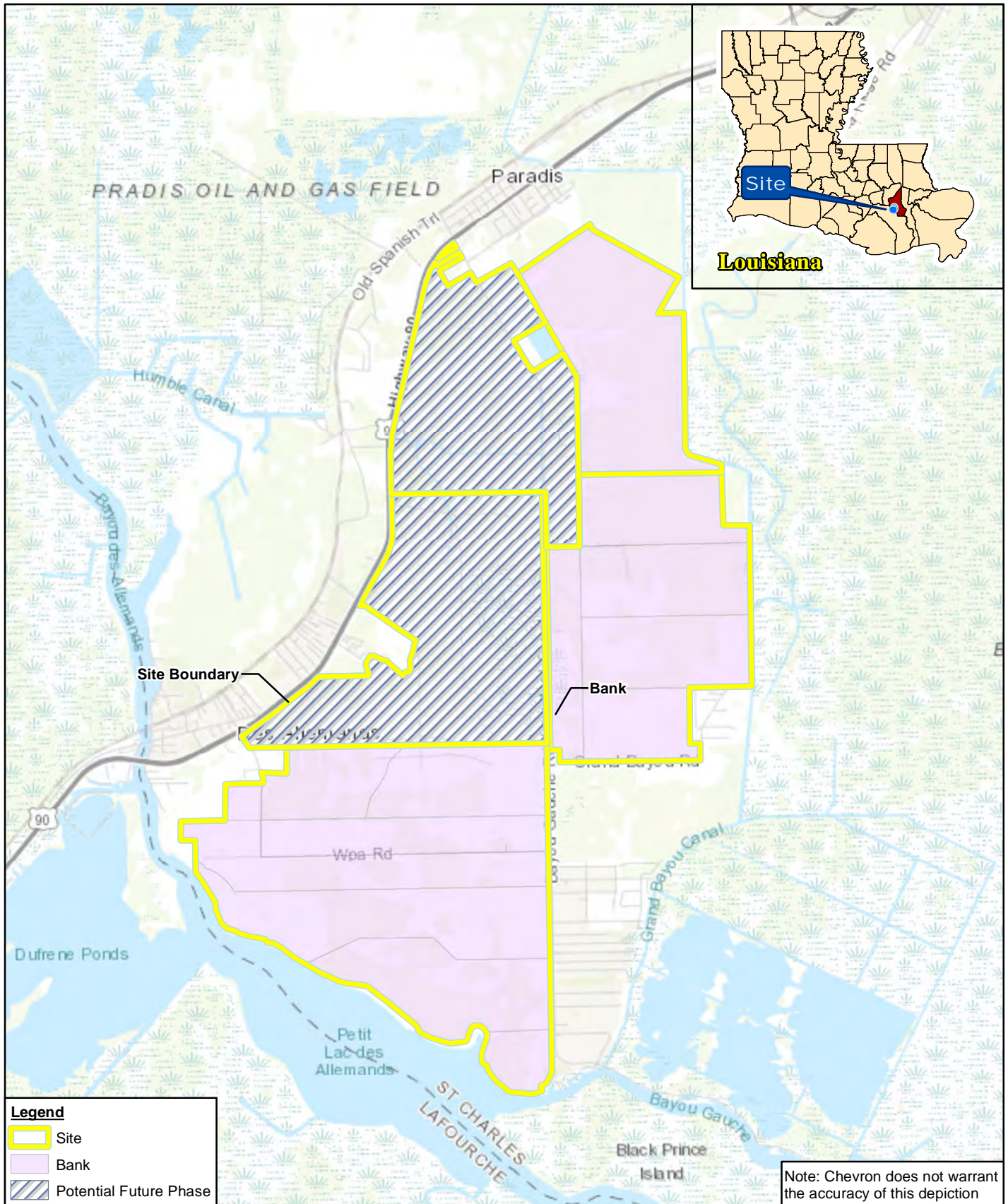
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Source: ESRI Topographic Basemap Services.



Coordinate System:  
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South FIPS 1702 Feet

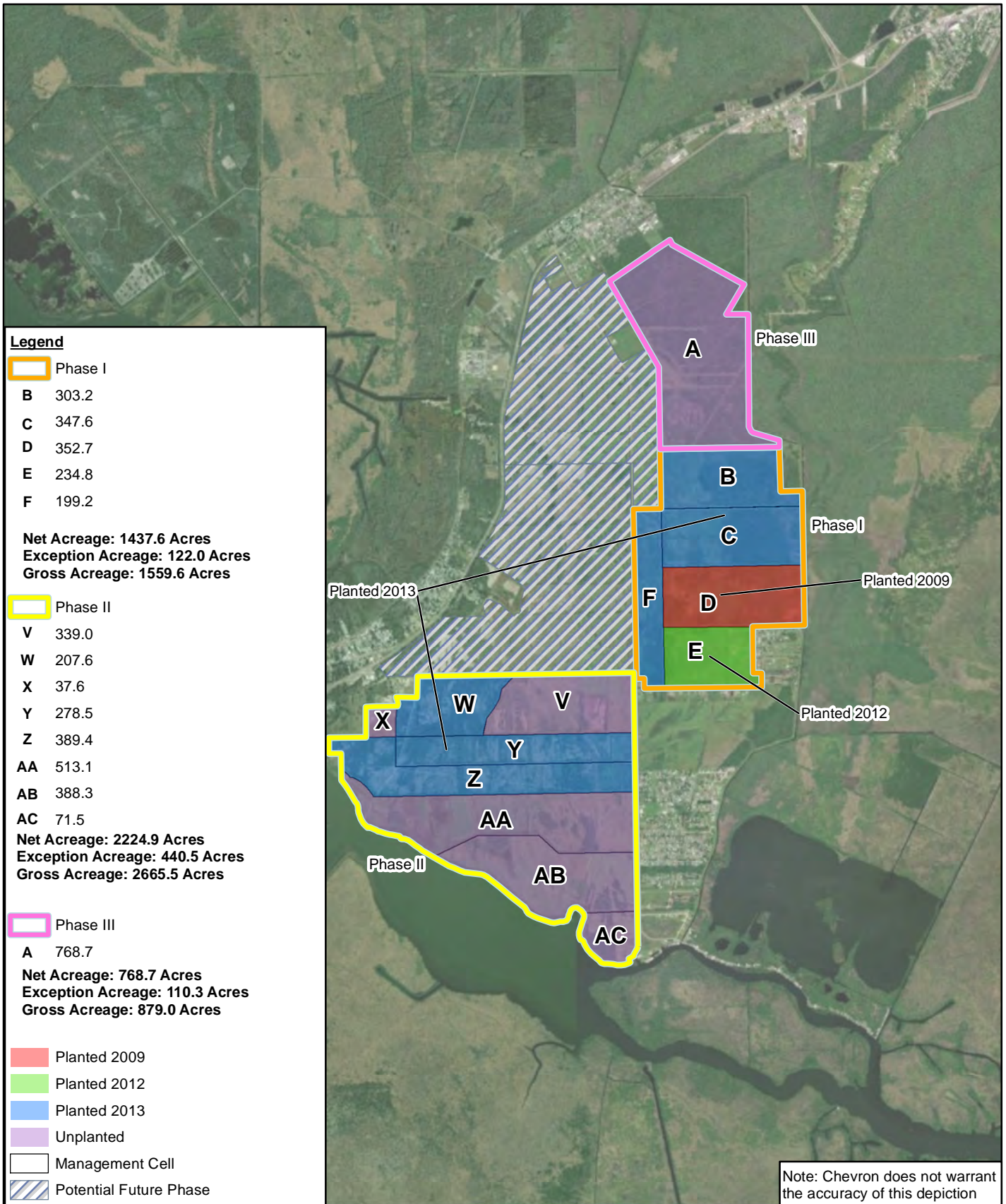


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PARADIS MITIGATION BANK

089027  
Jul 3, 2019

VICINITY MAP

FIGURE 1



Source: ESRI World Imagery Service, 5/15/2014.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

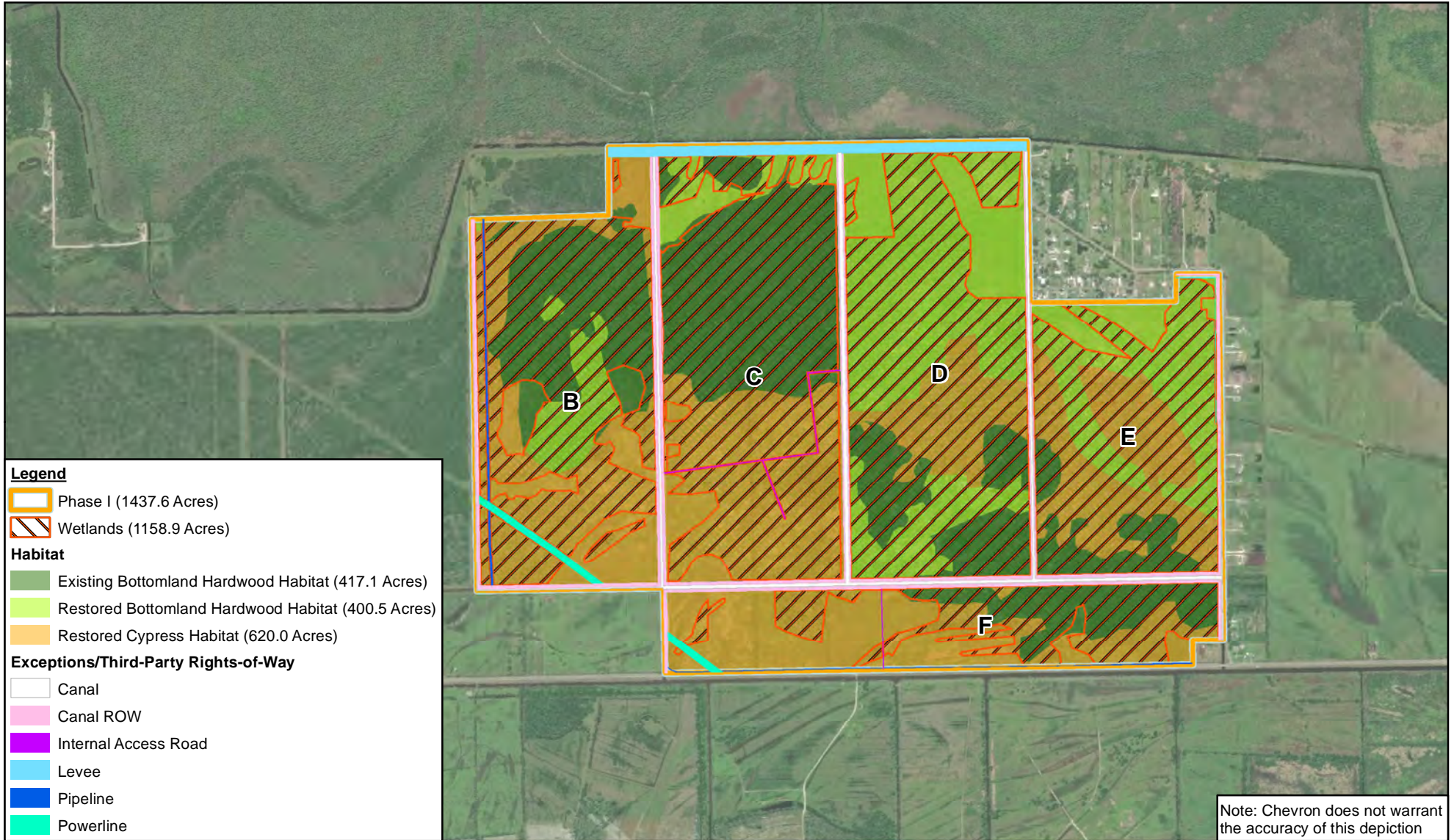


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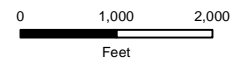
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SITE AND BANK LAYOUT

FIGURE 2



Source: ESRI World Imagery Basemap Services. 4/1/2017



Coordinate System:  
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South FIPS 1702 Feet

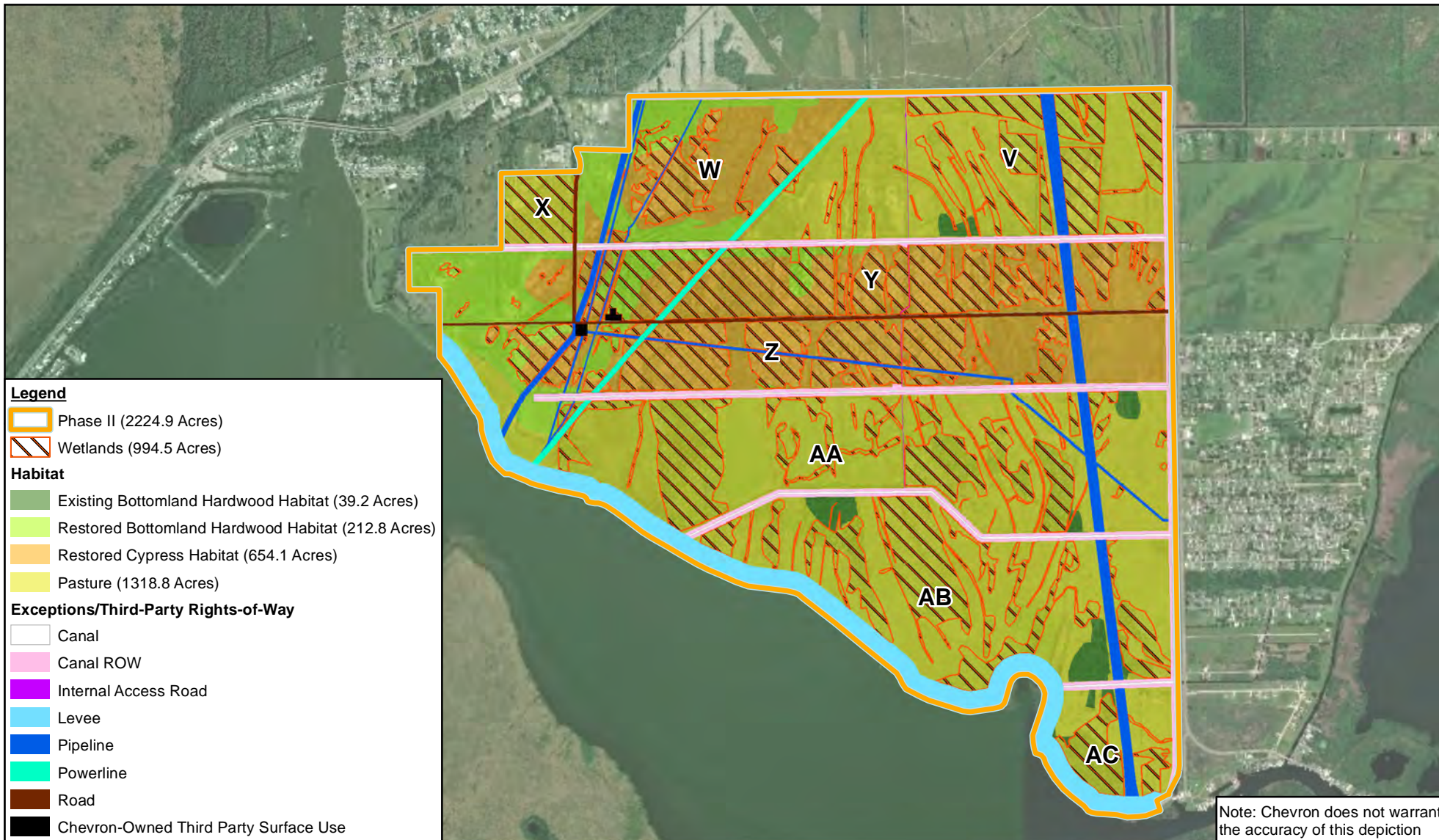


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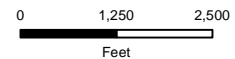
EXISTING CONDITIONS - PHASE I

089027  
Jul 3, 2019

FIGURE 3A



Source: ESRI World Imagery Basemap Services. 4/1/2017



Coordinate System:  
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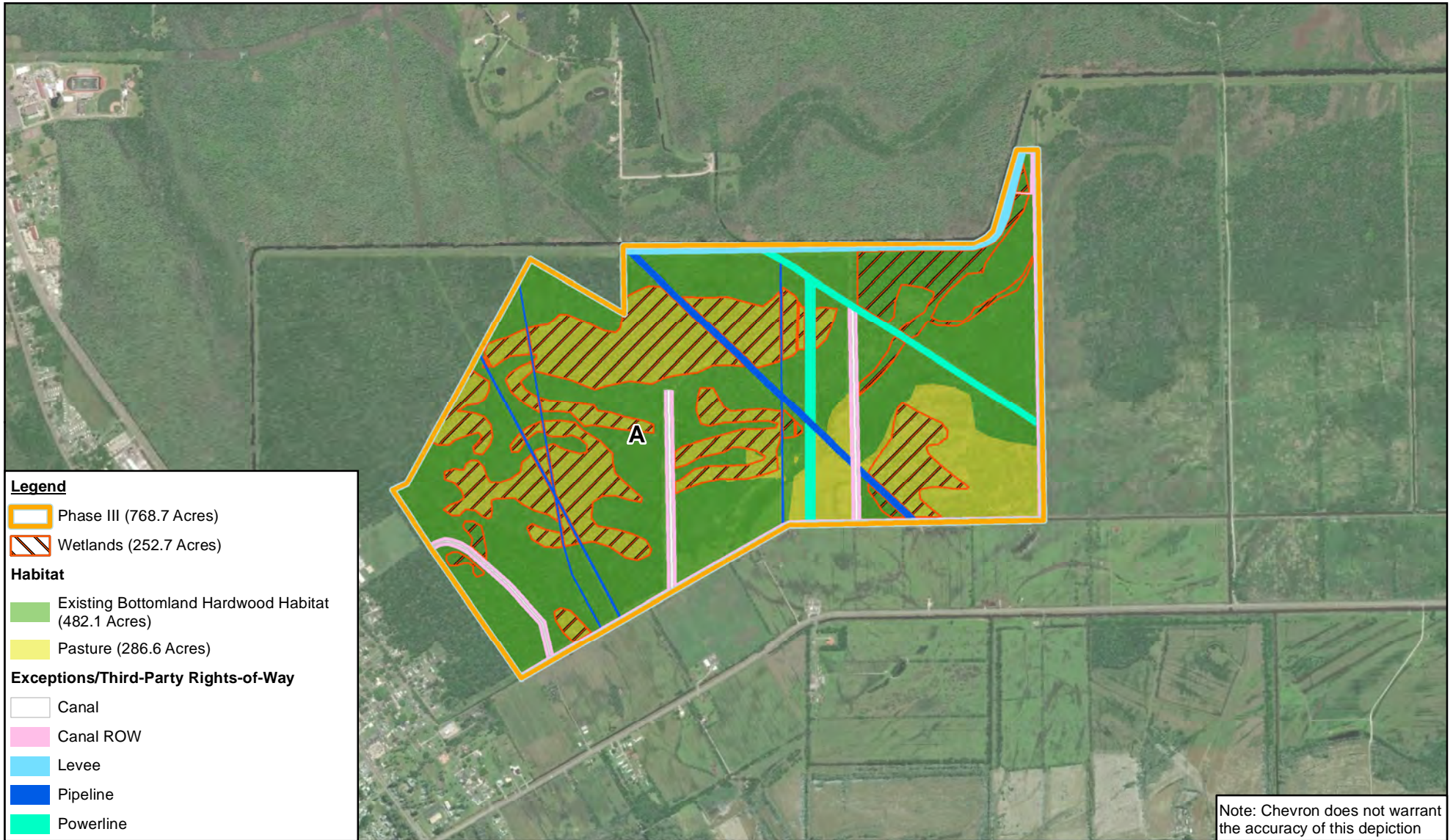


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EXISTING CONDITONS - PHASE II

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FIGURE 3B



**Legend**

- Phase III (768.7 Acres)
- Wetlands (252.7 Acres)

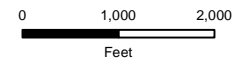
**Habitat**

- Existing Bottomland Hardwood Habitat (482.1 Acres)
- Pasture (286.6 Acres)

**Exceptions/Third-Party Rights-of-Way**

- Canal
- Canal ROW
- Levee
- Pipeline
- Powerline

Source: ESRI World Imagery Basemap Services. 4/1/2017



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

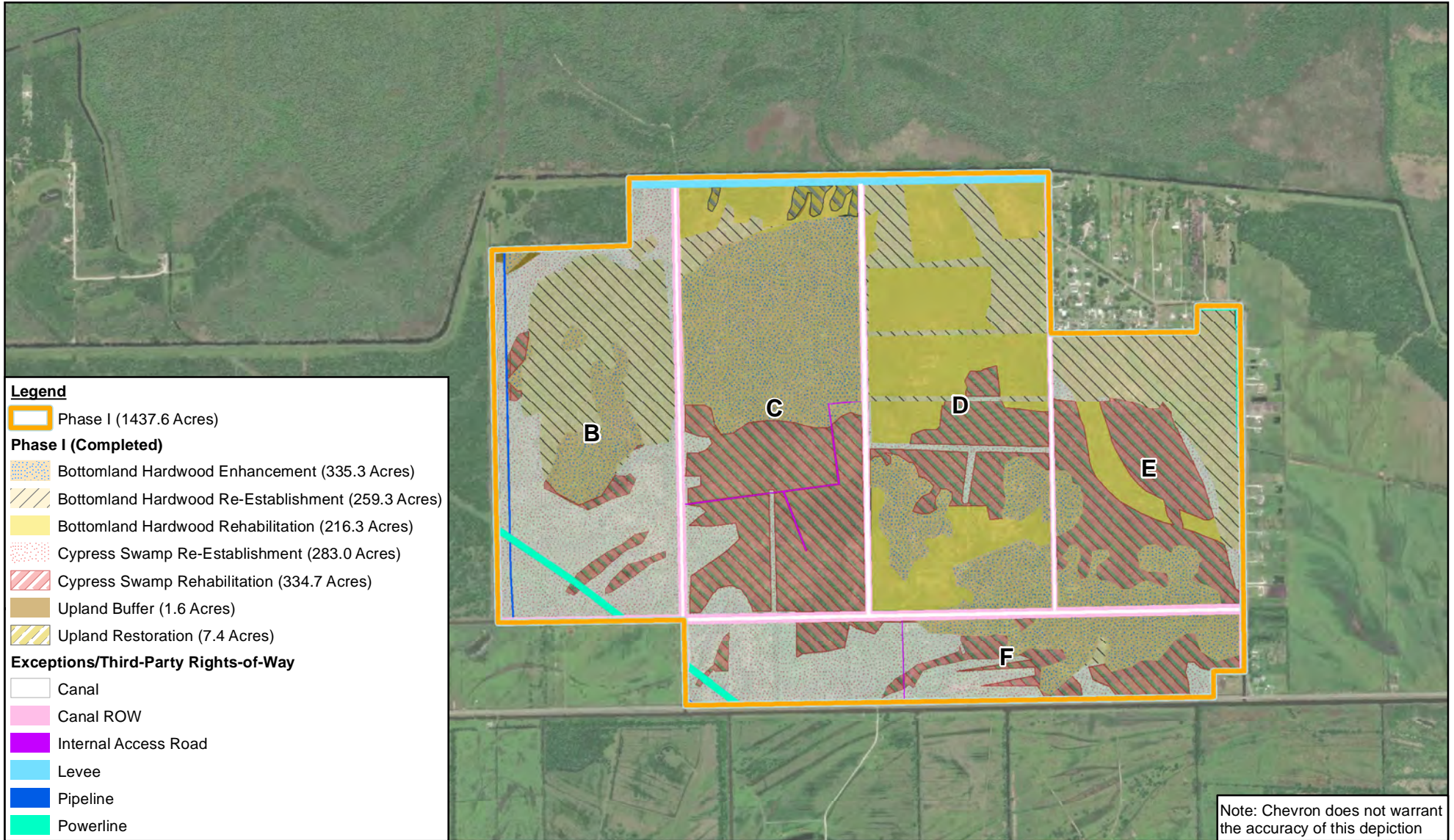


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

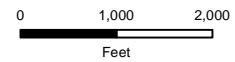
EXISTING CONDITONS - PHASE III

089027  
Jul 3, 2019

FIGURE 3C



Source: ESRI World Imagery Basemap Services. 4/1/2017



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

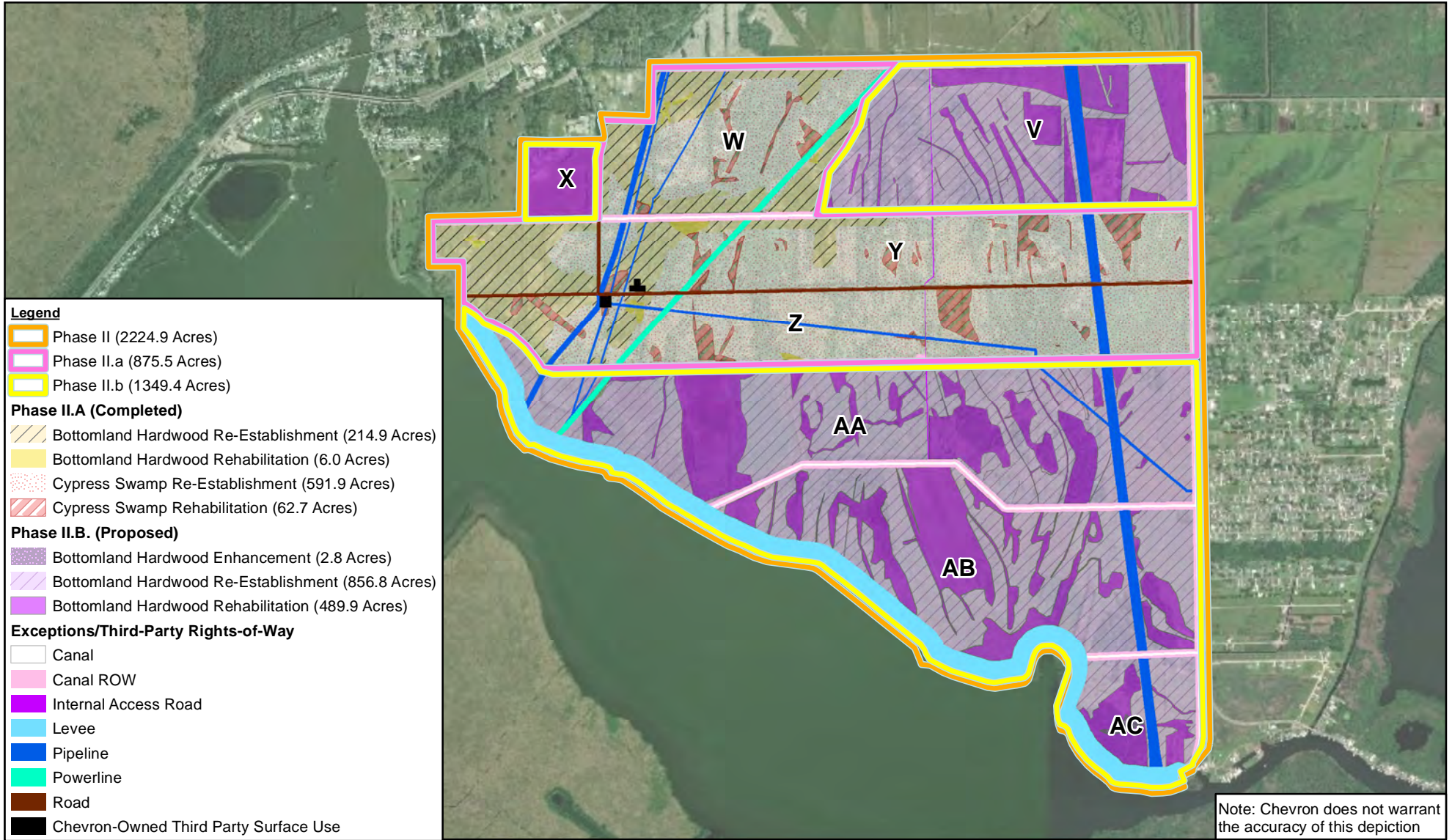


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

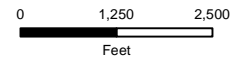
HABITAT RESTORATION PLAN - PHASE I

089027  
Jul 3, 2019

FIGURE 4A



Source: ESRI World Imagery Basemap Service. 04/01/2017



1 inch = 2,500 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet

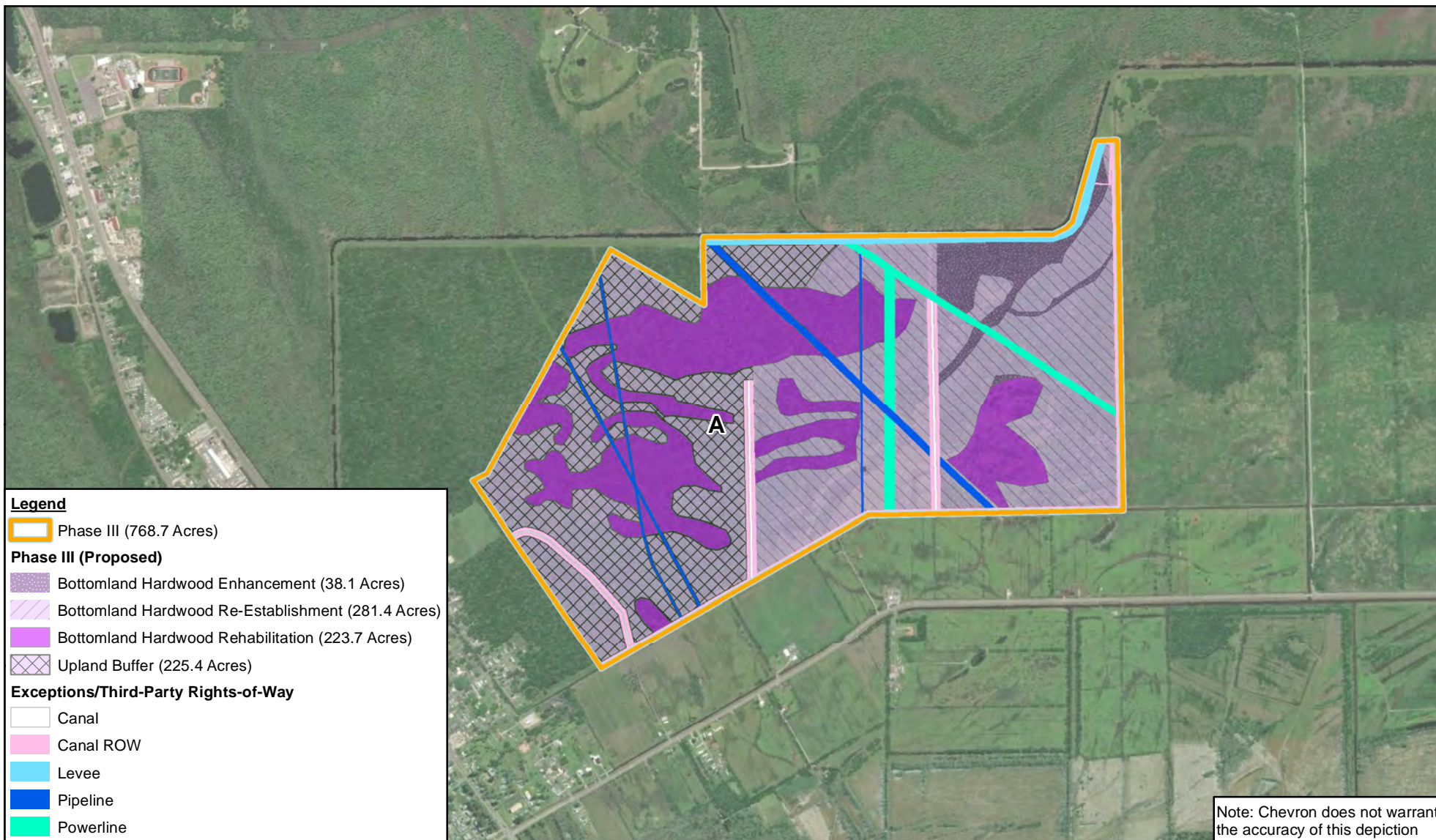


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

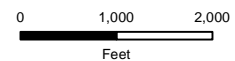
HABITAT RESTORATION PLAN - PHASE II

089027-00  
 Jul 3, 2019

FIGURE 4B



Source: ESRI World Imagery Basemap Services. 4/1/2017



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet



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HABITAT RESTORATION PLAN - PHASE III

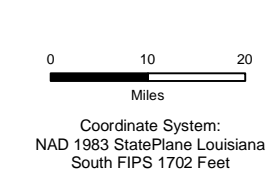
089027  
Jul 3, 2019

FIGURE 4C





Source: ESRI World Imagery Basemap Service.

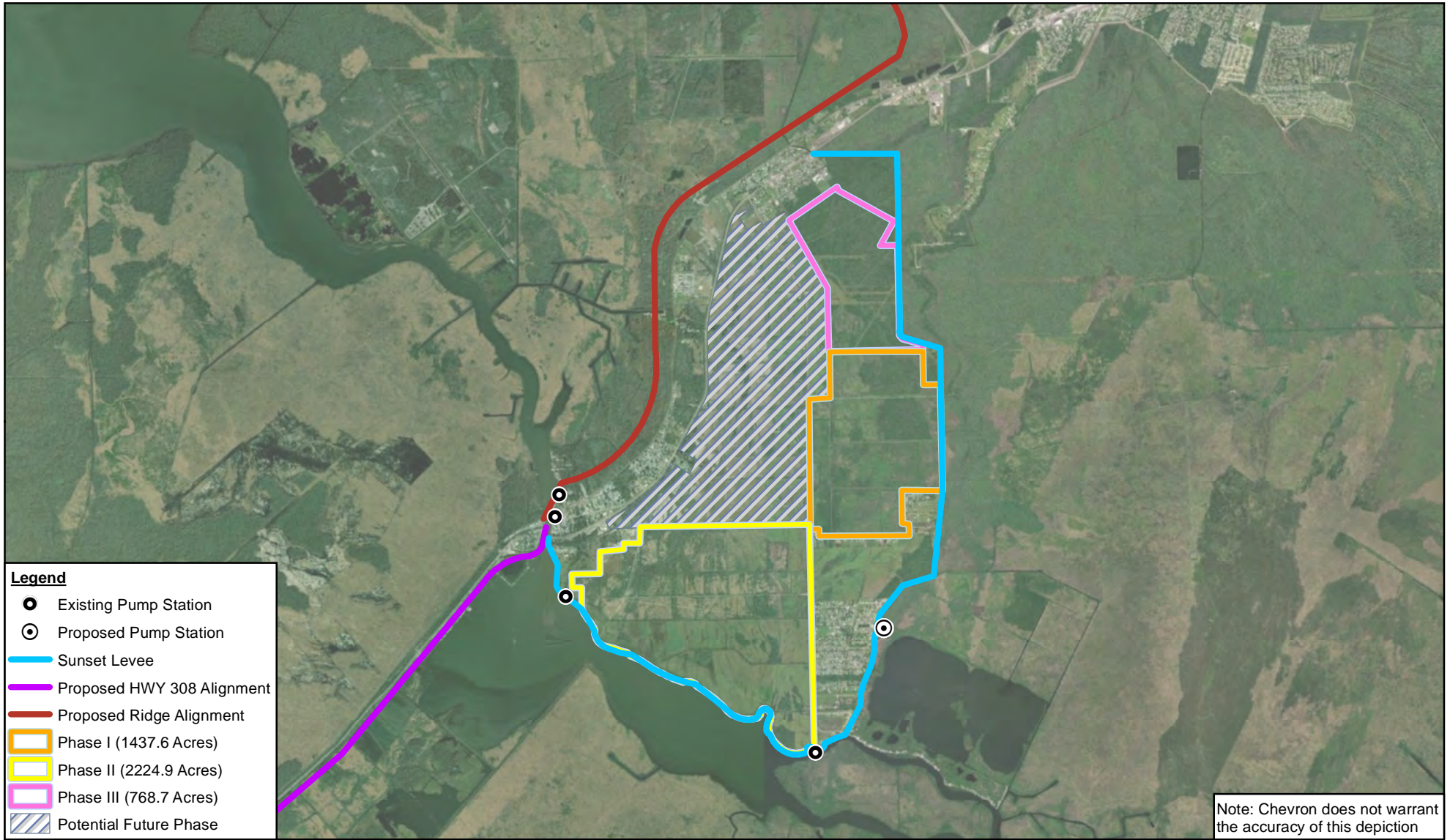


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

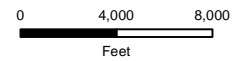
WATERSHED MAP

089027-00  
Jul 3, 2019

FIGURE 5



Source: ESRI World Imagery Basemap Service.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

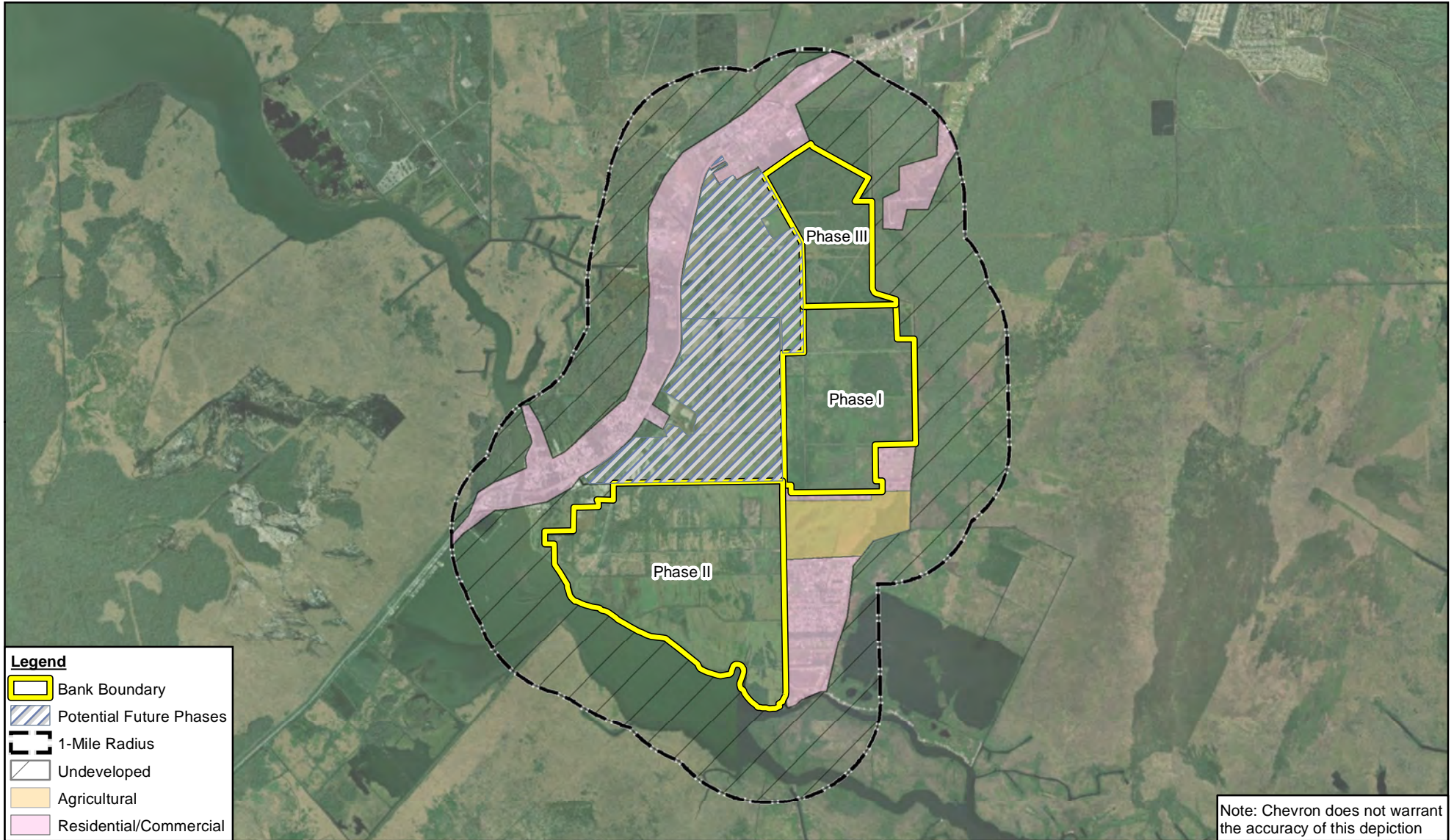


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

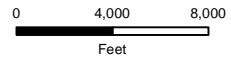
HURRICANE PROTECTION LEVEE SYSTEM  
AND PUMP STATIONS

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Jul 3, 2019

FIGURE 6



Source: ESRI World Imagery Basemap Service.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

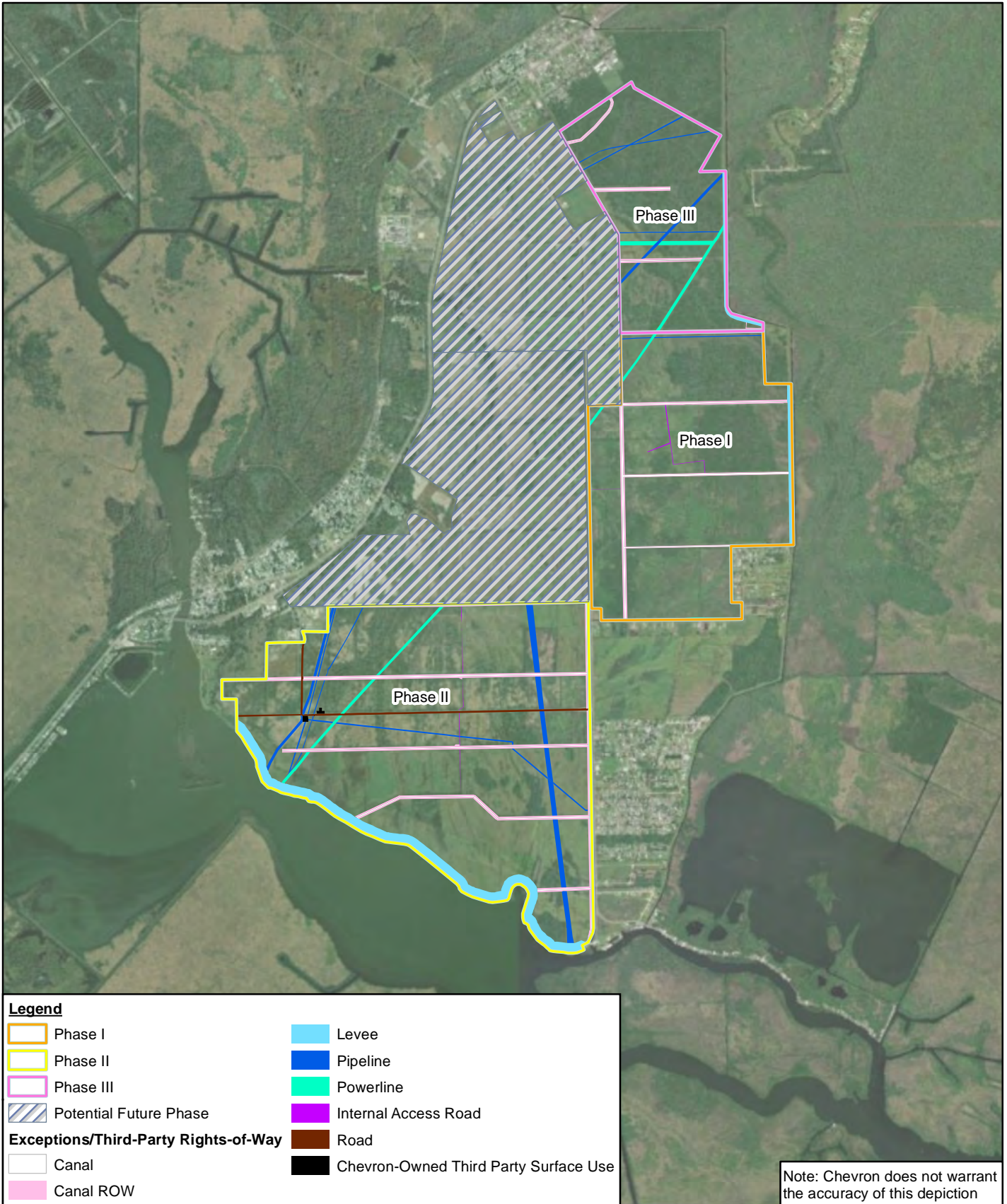


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

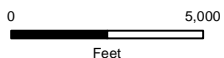
SURROUNDING LAND USE

089027-00  
Jul 3, 2019

FIGURE 7



Source: ESRI World Imagery Basemap Services. 12/09/2017.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet



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PARADIS MITIGATION BANK

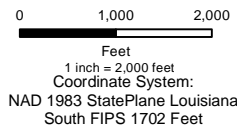
089027  
Jul 3, 2019

EXCEPTIONS

FIGURE 8



Source: ESRI World Imagery Basemap Service. Soils data via USDA Natural Resources Conservation Service (NRCS).

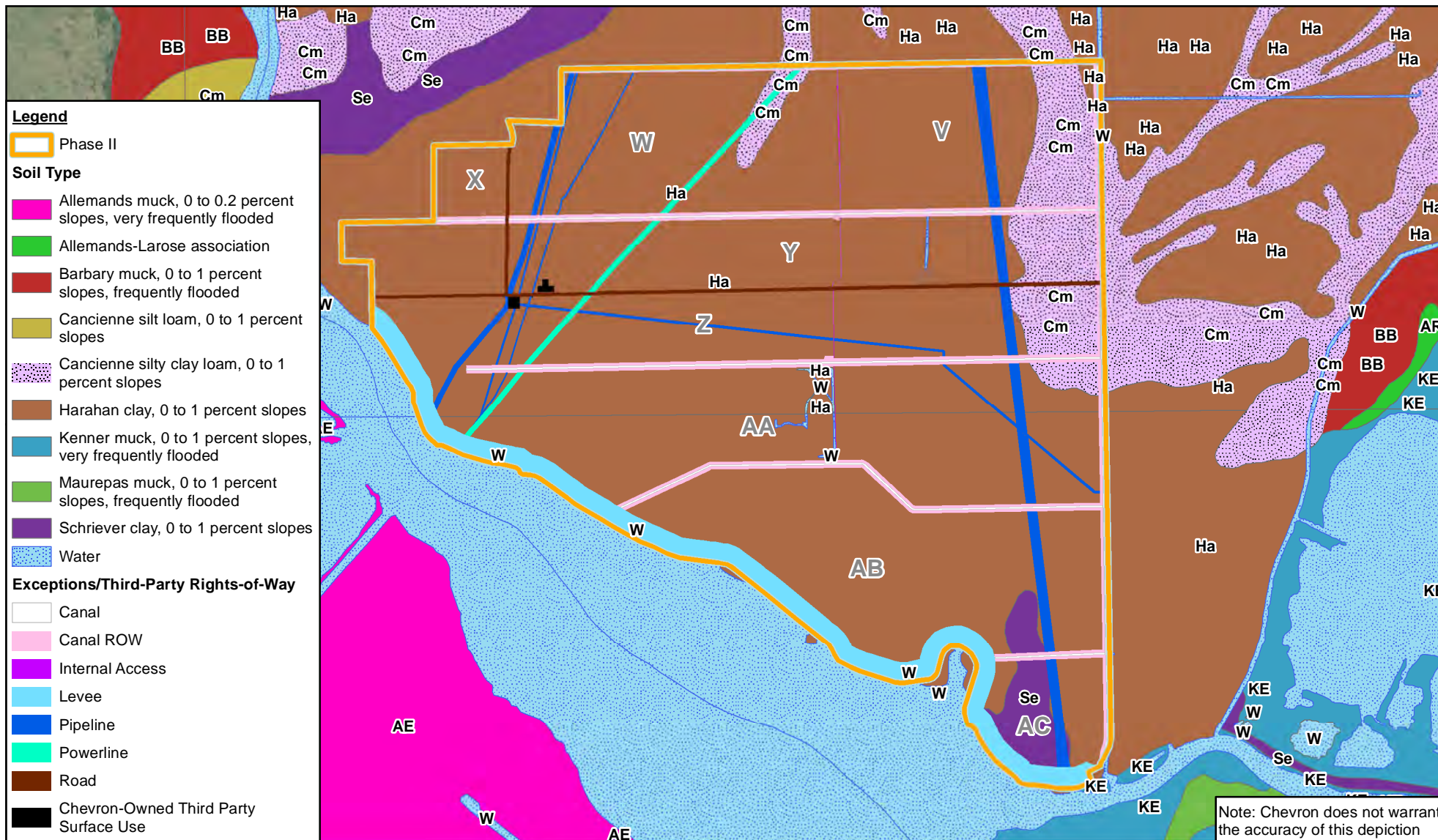


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

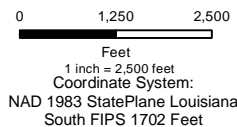
NRCS SOILS MAP - PHASE I

089027-00  
Jul 3, 2019

FIGURE 9A



Source: ESRI World Imagery Basemap Service. Soils data via USDA Natural Resources Conservation Service (NRCS).

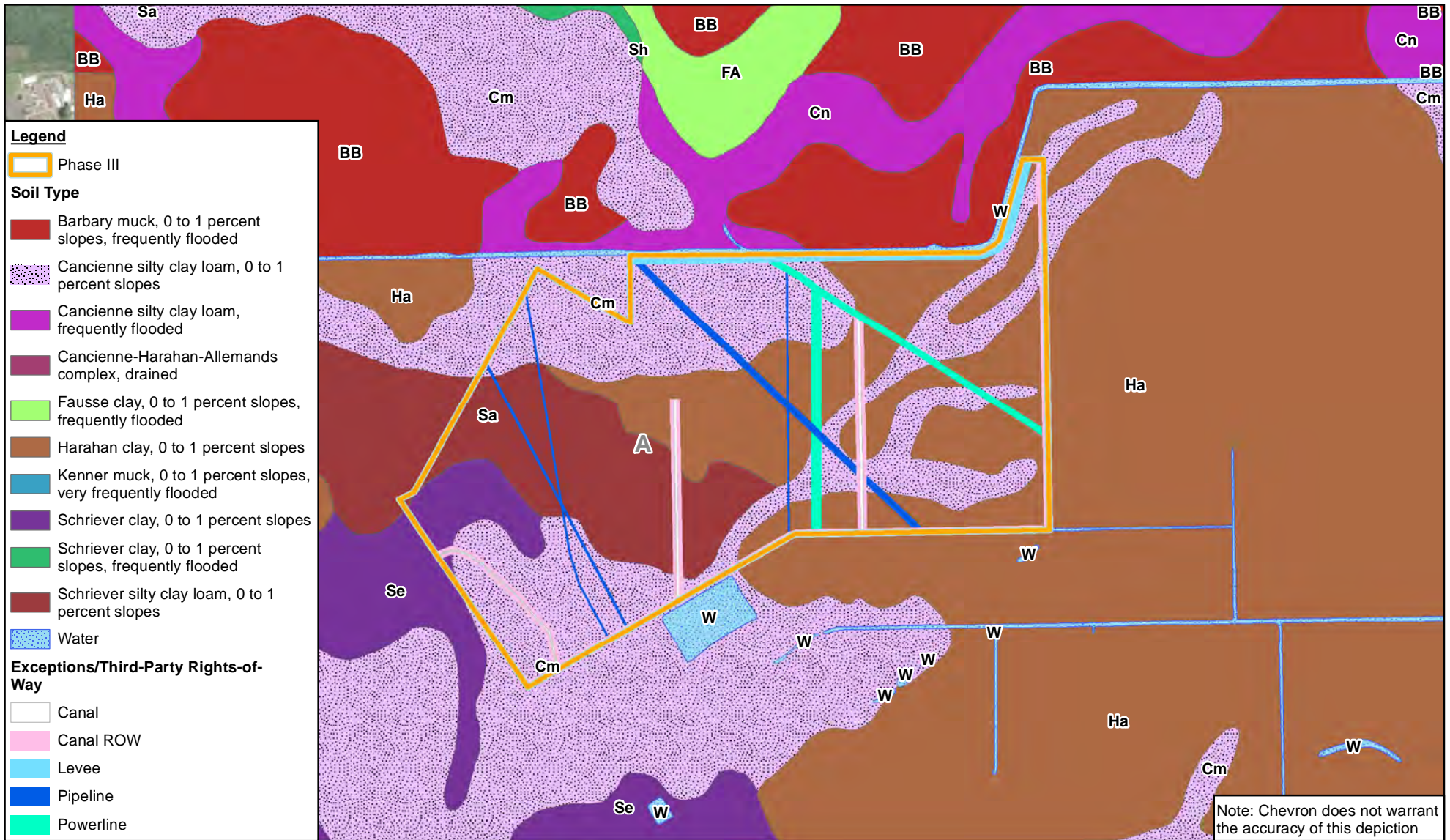


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

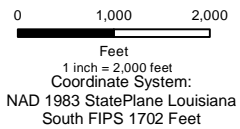
NRCS SOILS MAP - PHASE II

089027-00  
Jul 3, 2019

FIGURE 9B



Source: ESRI World Imagery Basemap Service. Soils data via USDA Natural Resources Conservation Service (NRCS).

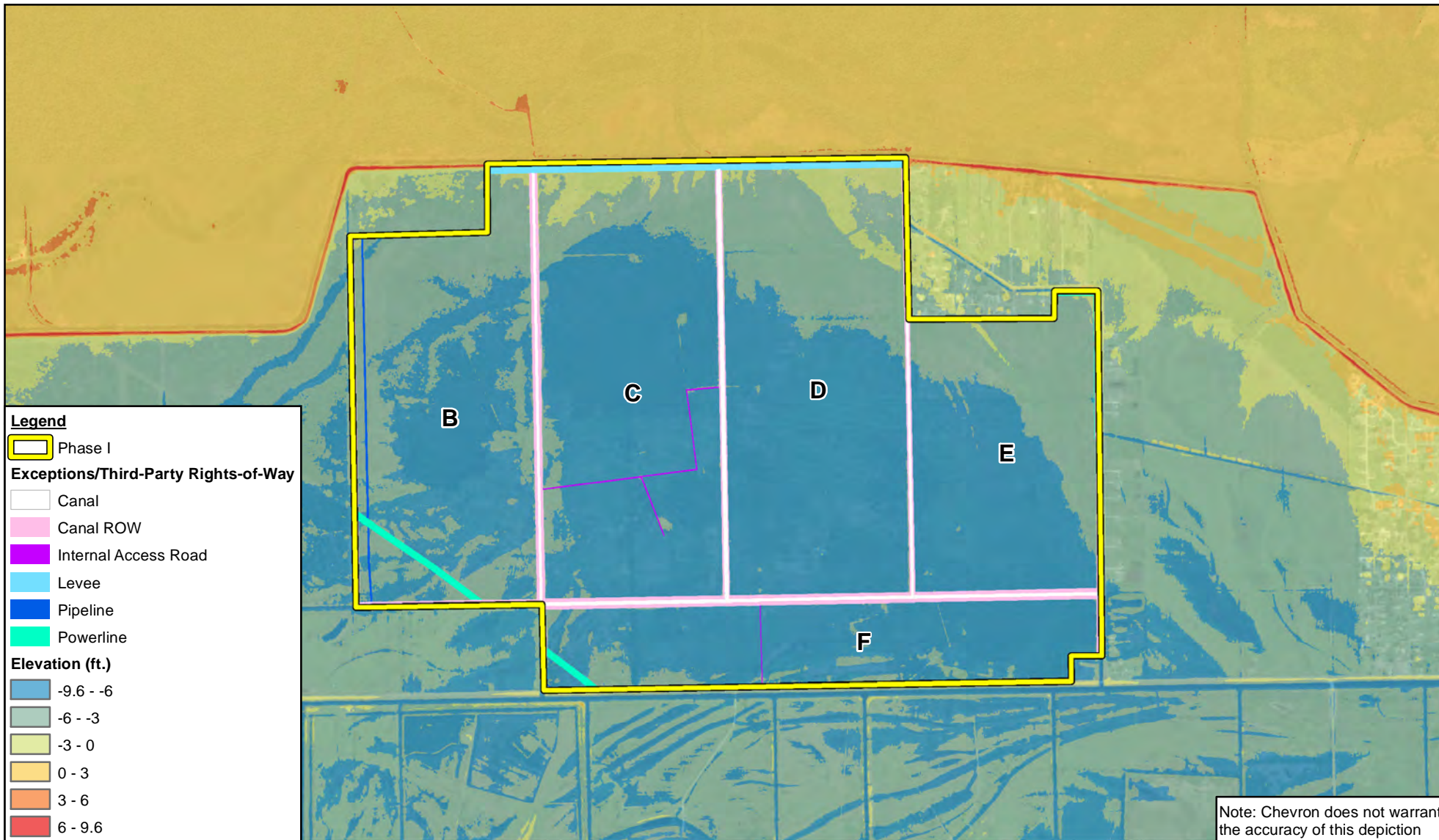


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

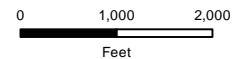
NRCS SOILS MAP - PHASE III

089027-00  
Jul 3, 2019

FIGURE 9C



Source: ESRI World Imagery Basemap Service.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet



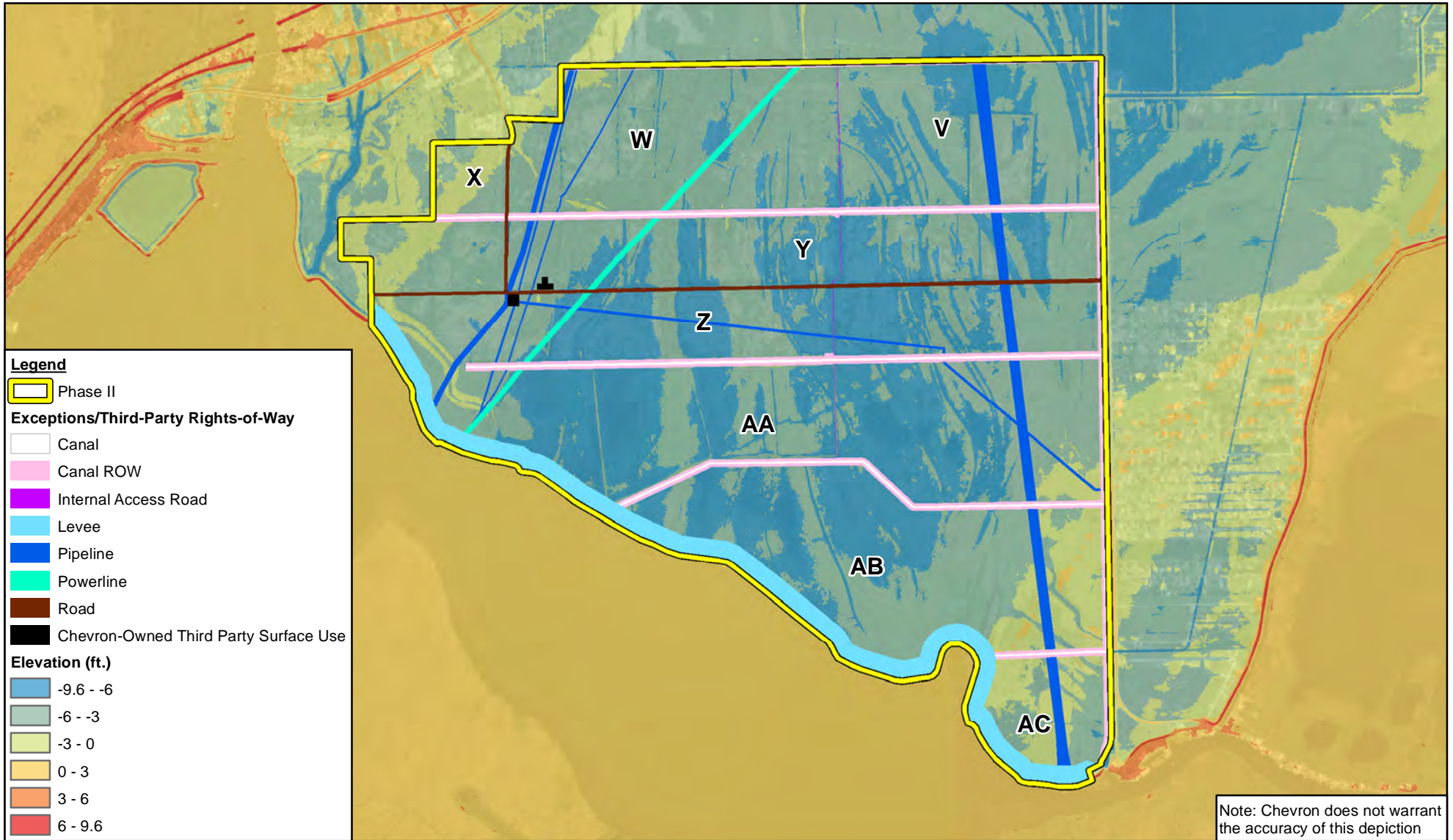
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

LIDAR MAP - PHASE I

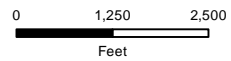
089027-00  
Jul 3, 2019

FIGURE 10A





Source: ESRI World Imagery Basemap Service.



Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

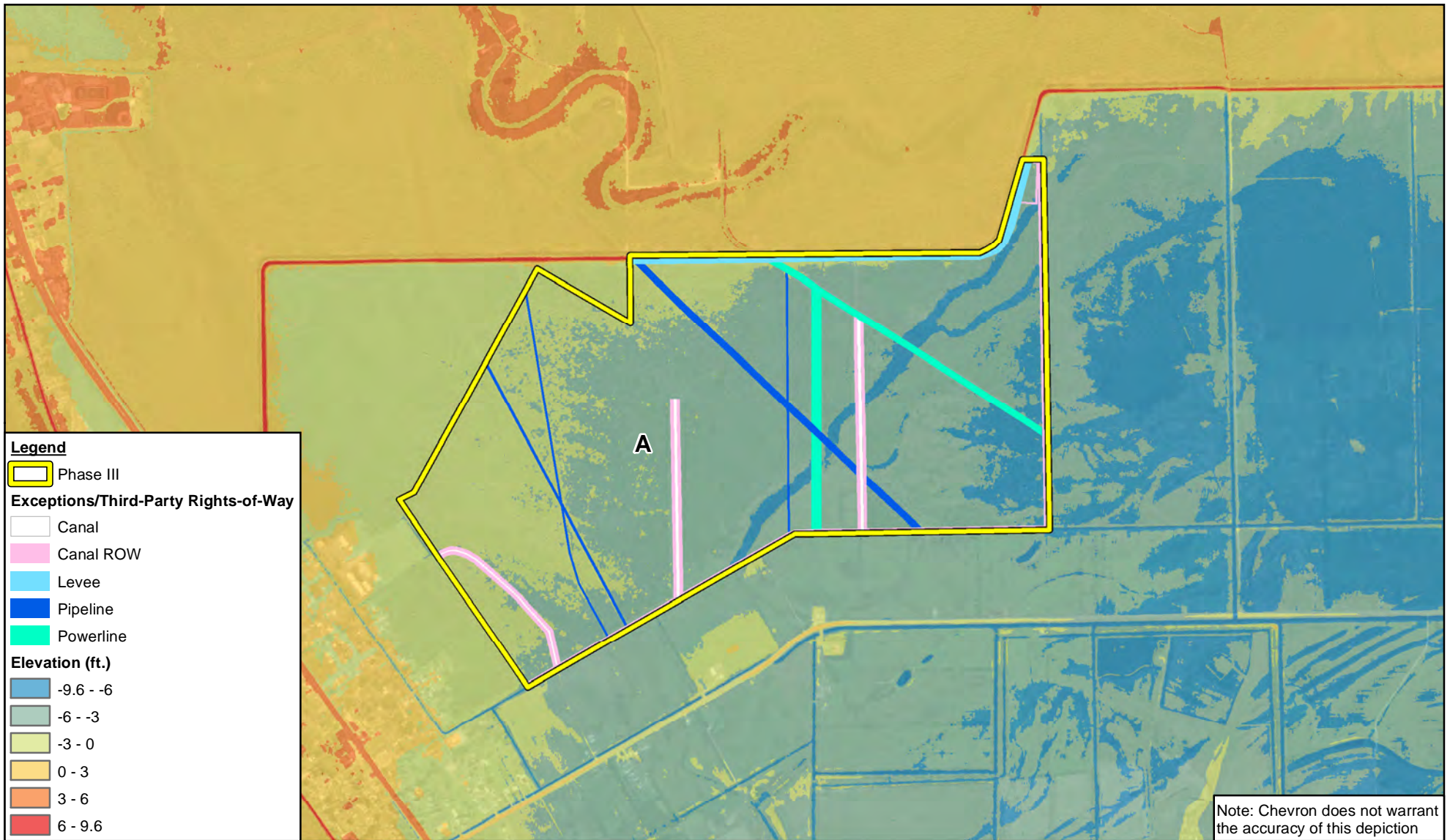


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

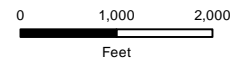
LIDAR MAP - PHASE II

089027-00  
Jul 3, 2019

FIGURE 10B



Source: ESRI World Imagery Basemap Service.



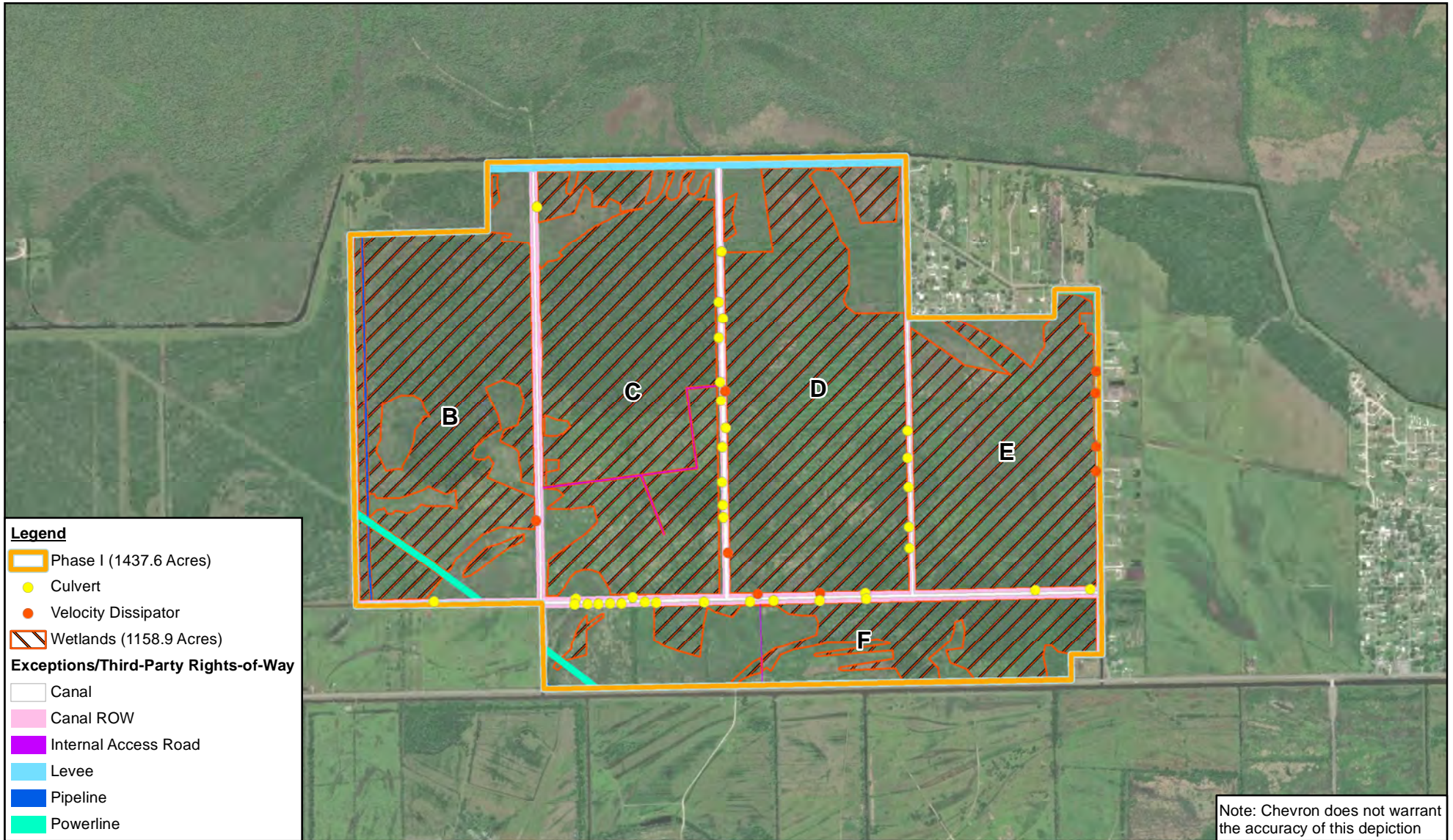
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

089027-00  
Jul 3, 2019

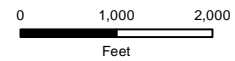
Coordinate System:  
NAD 1983 StatePlane Louisiana  
South FIPS 1702 Feet

LIDAR MAP - PHASE III

FIGURE 10C



Source: ESRI World Imagery Basemap Services. 4/1/2017



1 inch = 2,000 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet

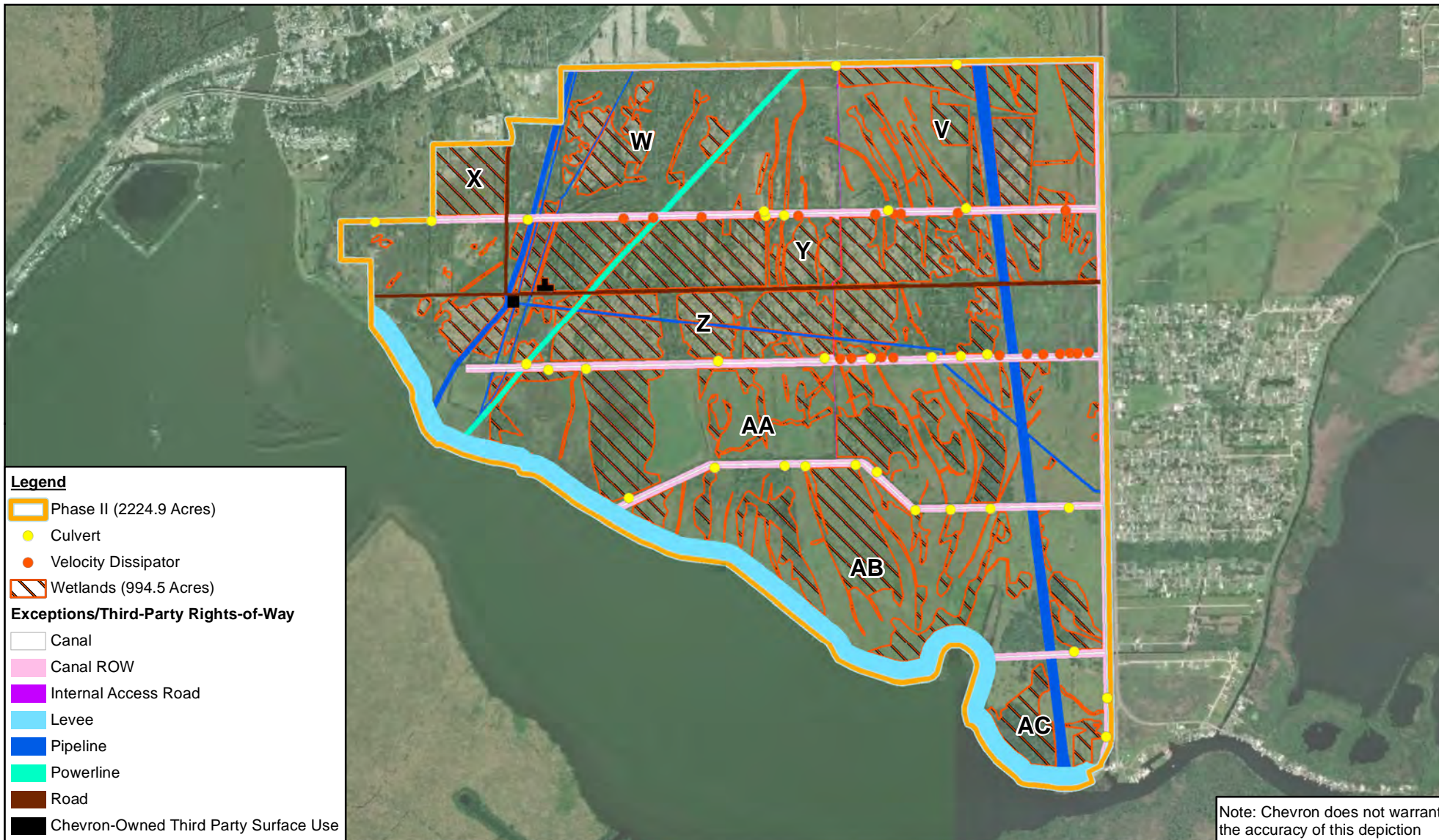


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

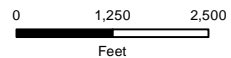
089027-00  
 Jul 3, 2019

EXISTING HYDROLOGIC FEATURES MAP - PHASE I

FIGURE 11A



Source: ESRI World Imagery Basemap Services. 4/1/2017



1 inch = 2,500 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet

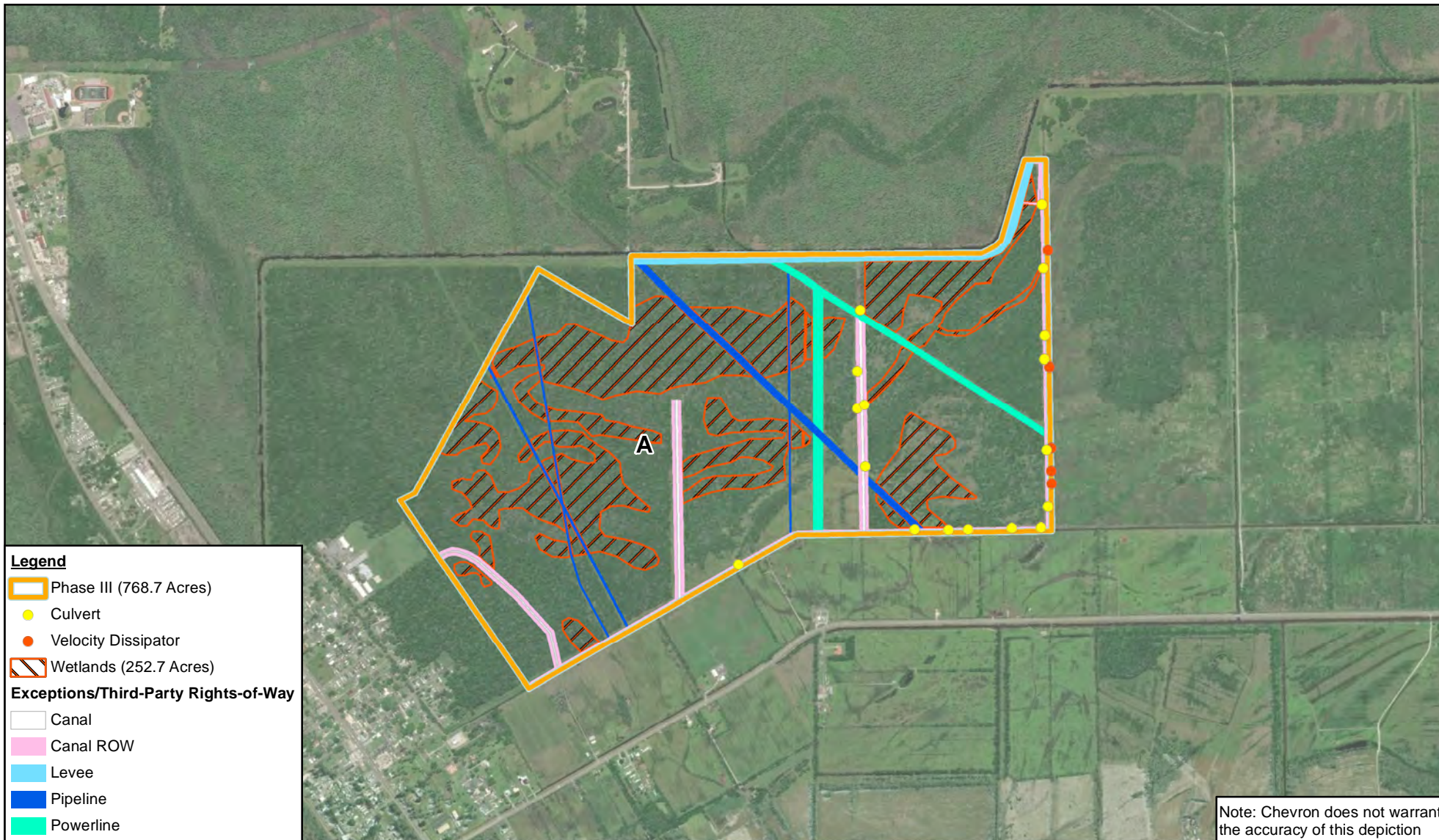


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

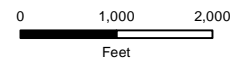
EXISTING HYDROLOGIC FEATURES MAP - PHASE II

089027-00  
 Jul 3, 2019

FIGURE 11B



Source: ESRI World Imagery Basemap Services. 4/1/2017



1 inch = 2,000 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet

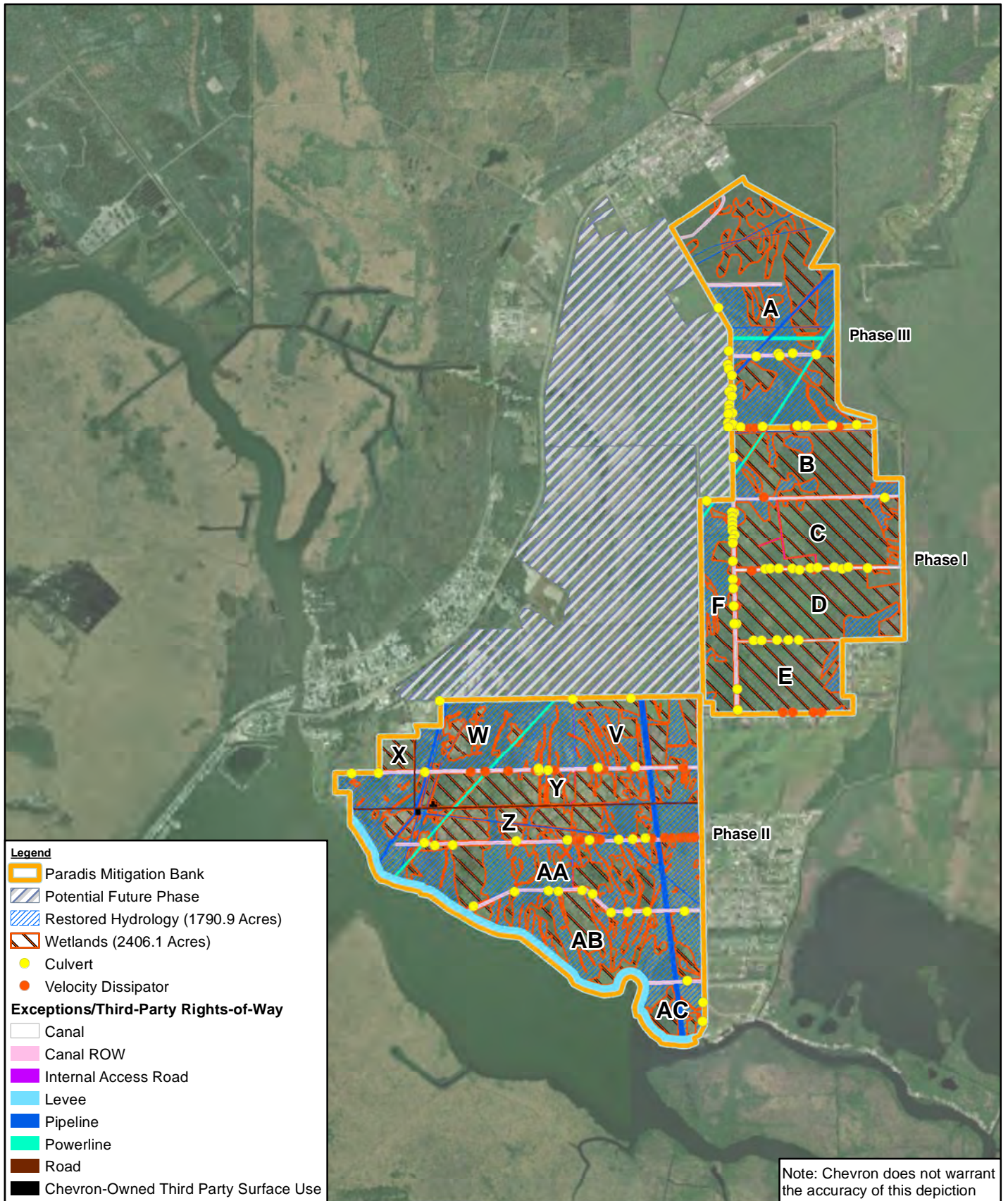


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

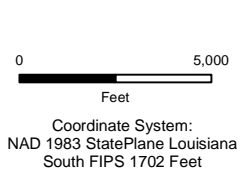
EXISTING HYDROLOGIC FEATURES MAP - PHASE III

089027-00  
 Jul 3, 2019

FIGURE 11C



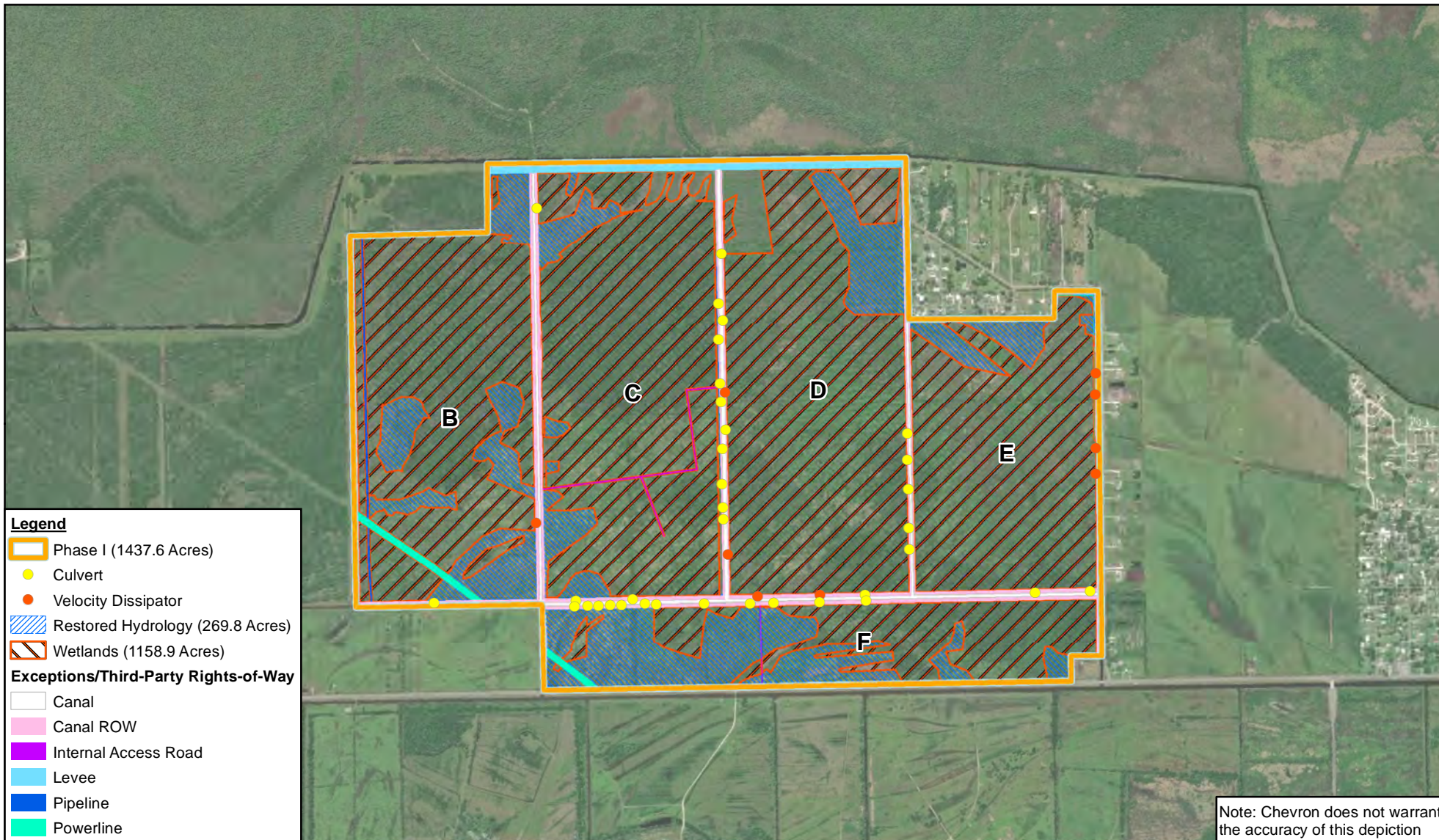
Source: ESRI World Imagery Basemap Services. 12/09/2017.



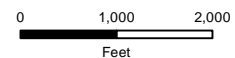
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK

089027-00  
Jul 3, 2019

HYDROLOGY RESTORATION PLAN **FIGURE 12**



Source: ESRI World Imagery Basemap Service. 4/1/2017



1 inch = 2,000 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet

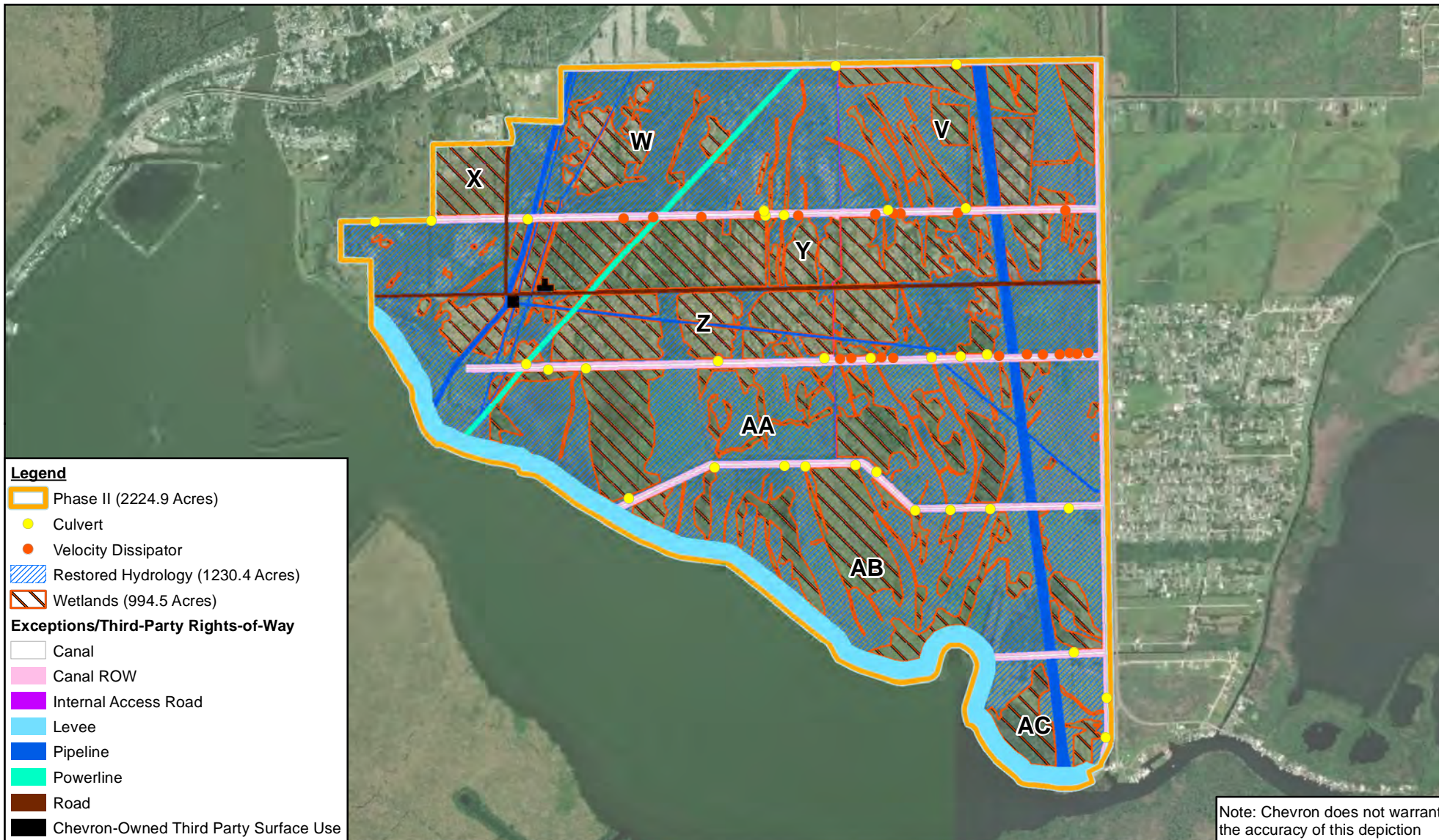


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

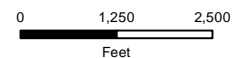
HYDROLOGY RESTORATION PLAN - PHASE I

089027-00  
 Jul 3, 2019

FIGURE 13A



Source: ESRI World Imagery Basemap Service. 4/1/2017



1 inch = 2,500 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



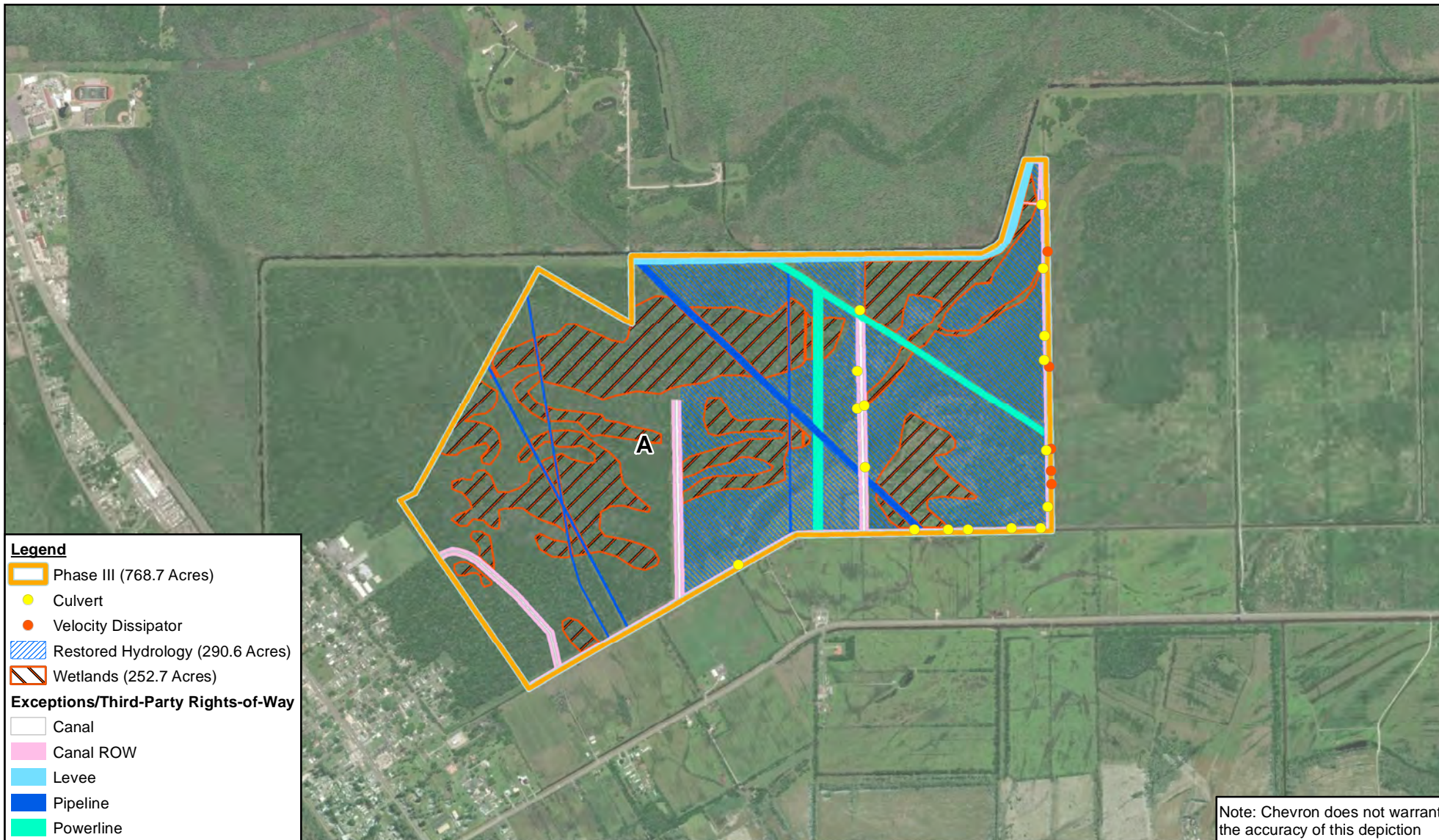
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGY RESTORATION PLAN - PHASE II

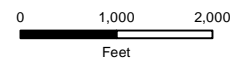
089027-00  
 Jul 3, 2019

FIGURE 13B





Source: ESRI World Imagery Basemap Service. 4/1/2017



1 inch = 2,000 feet  
 Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



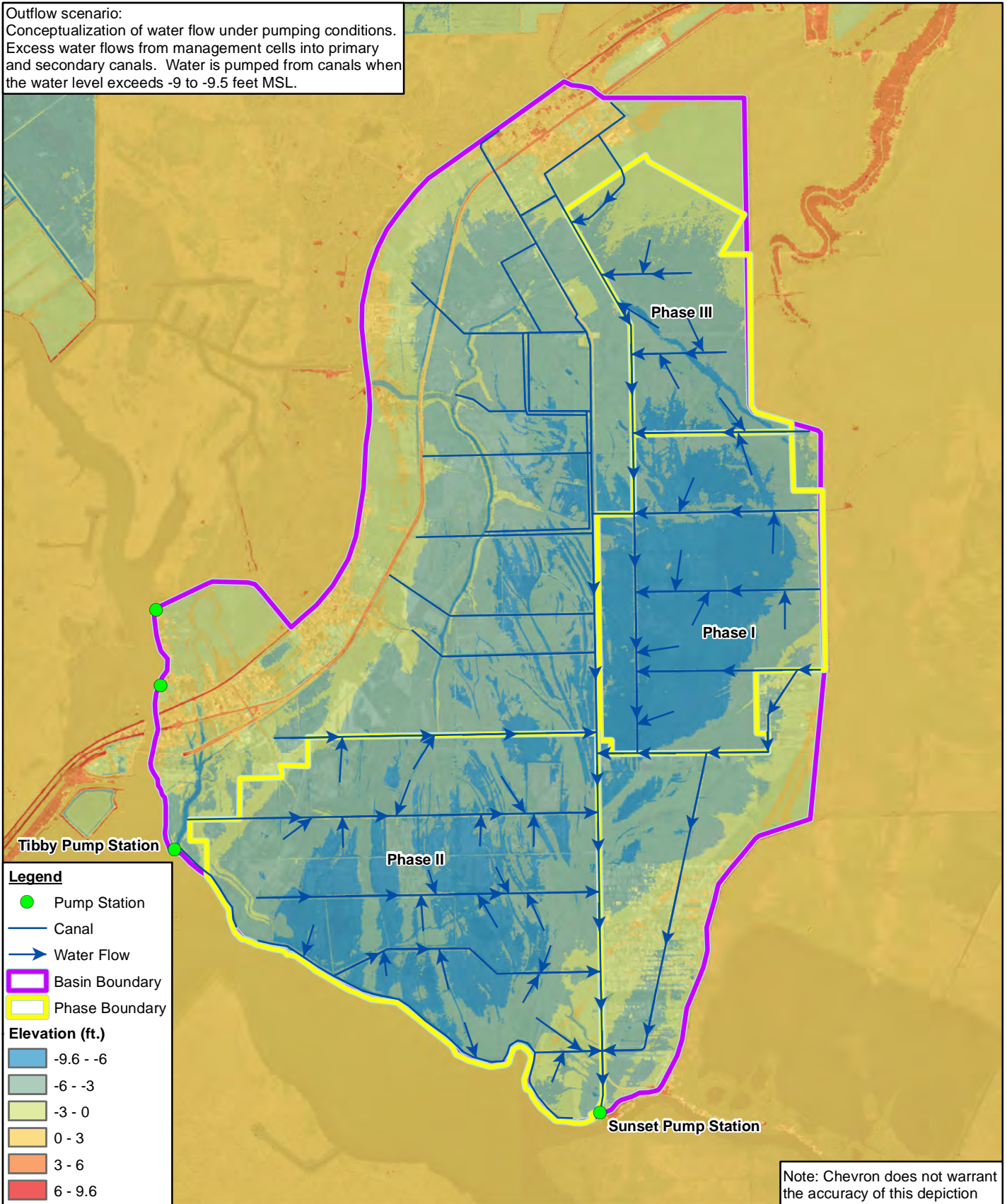
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGY RESTORATION PLAN - PHASE III

089027-00  
 Jul 3, 2019

FIGURE 13C

Outflow scenario:  
 Conceptualization of water flow under pumping conditions.  
 Excess water flows from management cells into primary  
 and secondary canals. Water is pumped from canals when  
 the water level exceeds -9 to -9.5 feet MSL.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



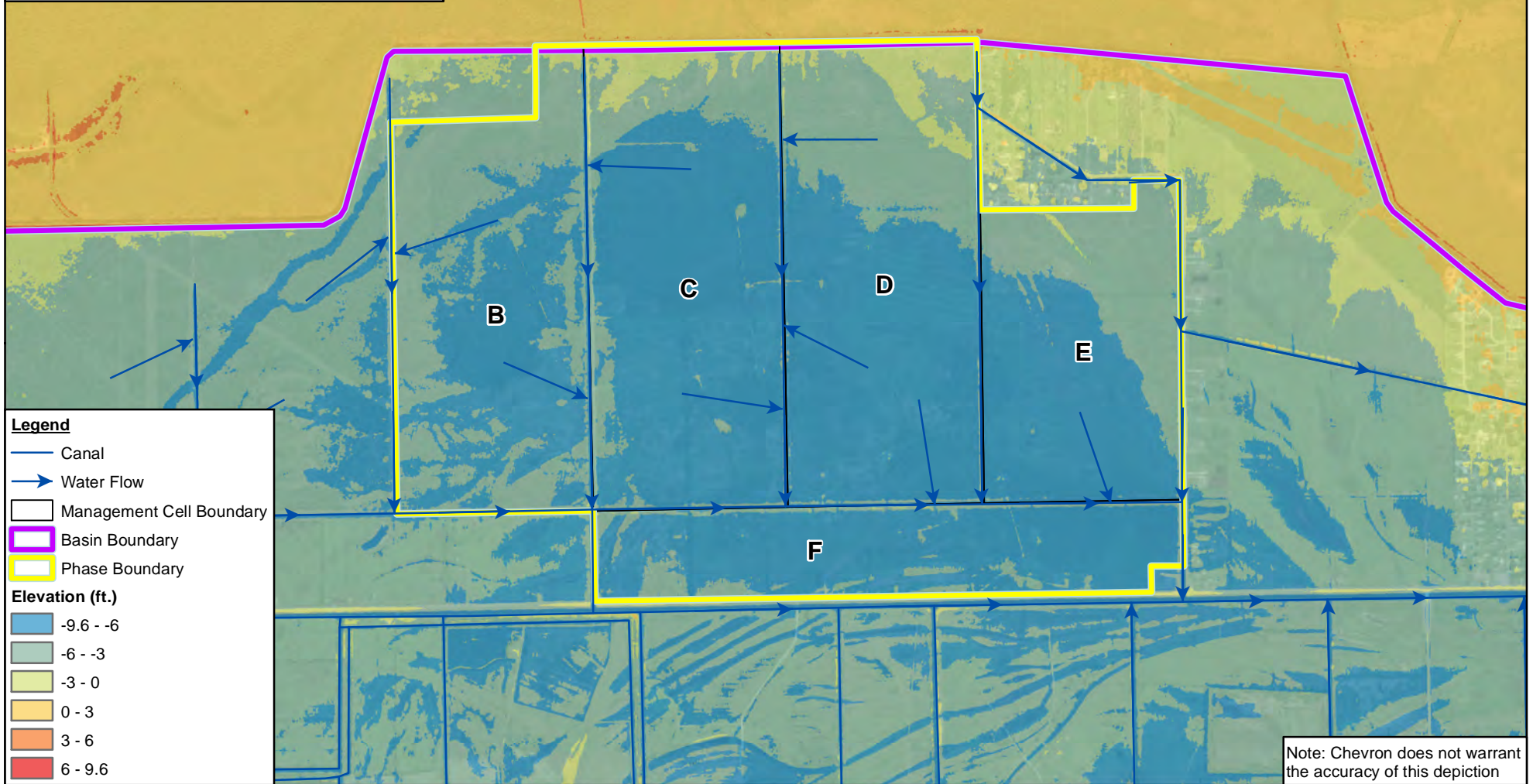
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

089027  
 Jul 3, 2019

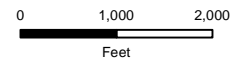
HYDROLOGIC OUTFLOW  
 OVERVIEW

FIGURE 14A

Outflow scenario:  
 Conceptualization of water flow under pumping conditions.  
 Excess water flows from management cells into primary  
 and secondary canals. Water is pumped from canals when  
 the water level exceeds -9 to -9.5 feet MSL.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



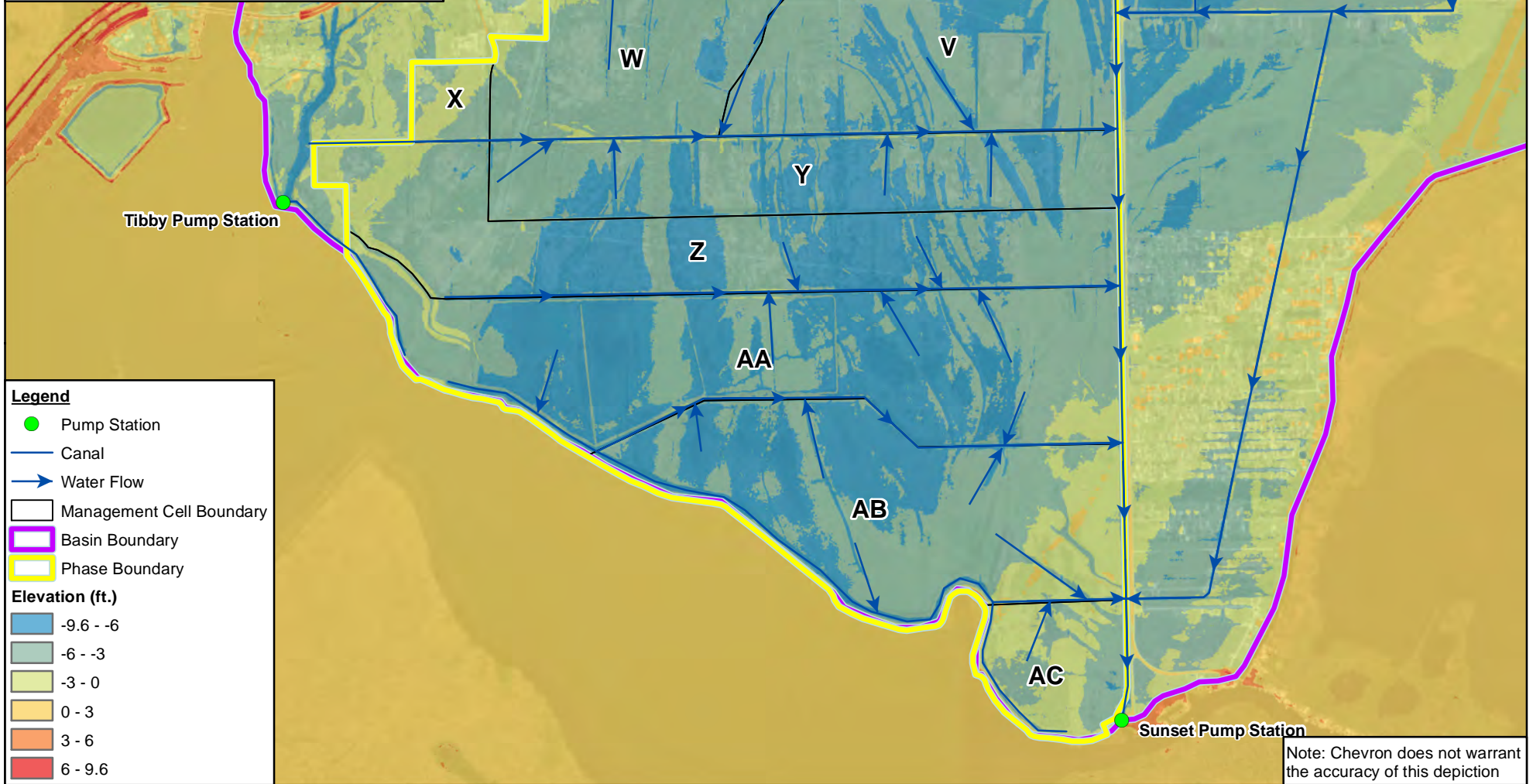
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGIC OUTFLOW - PHASE I

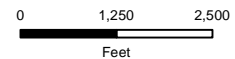
089027  
 Jul 3, 2019

FIGURE 14B

Outflow scenario:  
 Conceptualization of water flow under pumping conditions.  
 Excess water flows from management cells into primary  
 and secondary canals. Water is pumped from canals when  
 the water level exceeds -9 to -9.5 feet MSL.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



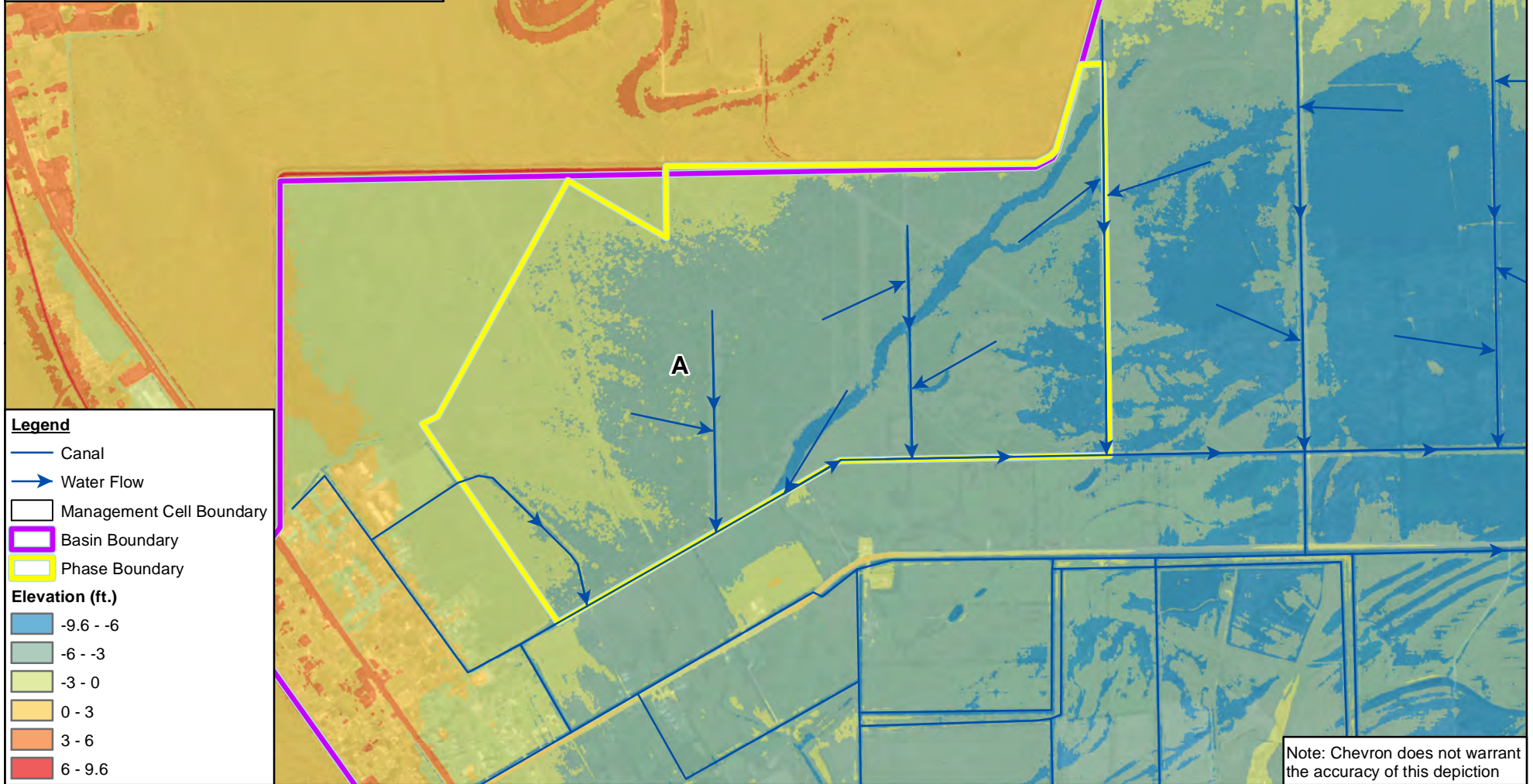
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGIC OUTFLOW - PHASE II

089027  
 Jul 3, 2019

FIGURE 14C

Outflow scenario:  
 Conceptualization of water flow under pumping conditions.  
 Excess water flows from management cells into primary  
 and secondary canals. Water is pumped from canals when  
 the water level exceeds -9 to -9.5 feet MSL.



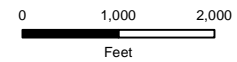
**Legend**

- Canal
- Water Flow
- Management Cell Boundary
- Basin Boundary
- Phase Boundary

**Elevation (ft.)**

- 9.6 - -6
- 6 - -3
- 3 - 0
- 0 - 3
- 3 - 6
- 6 - 9.6

Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



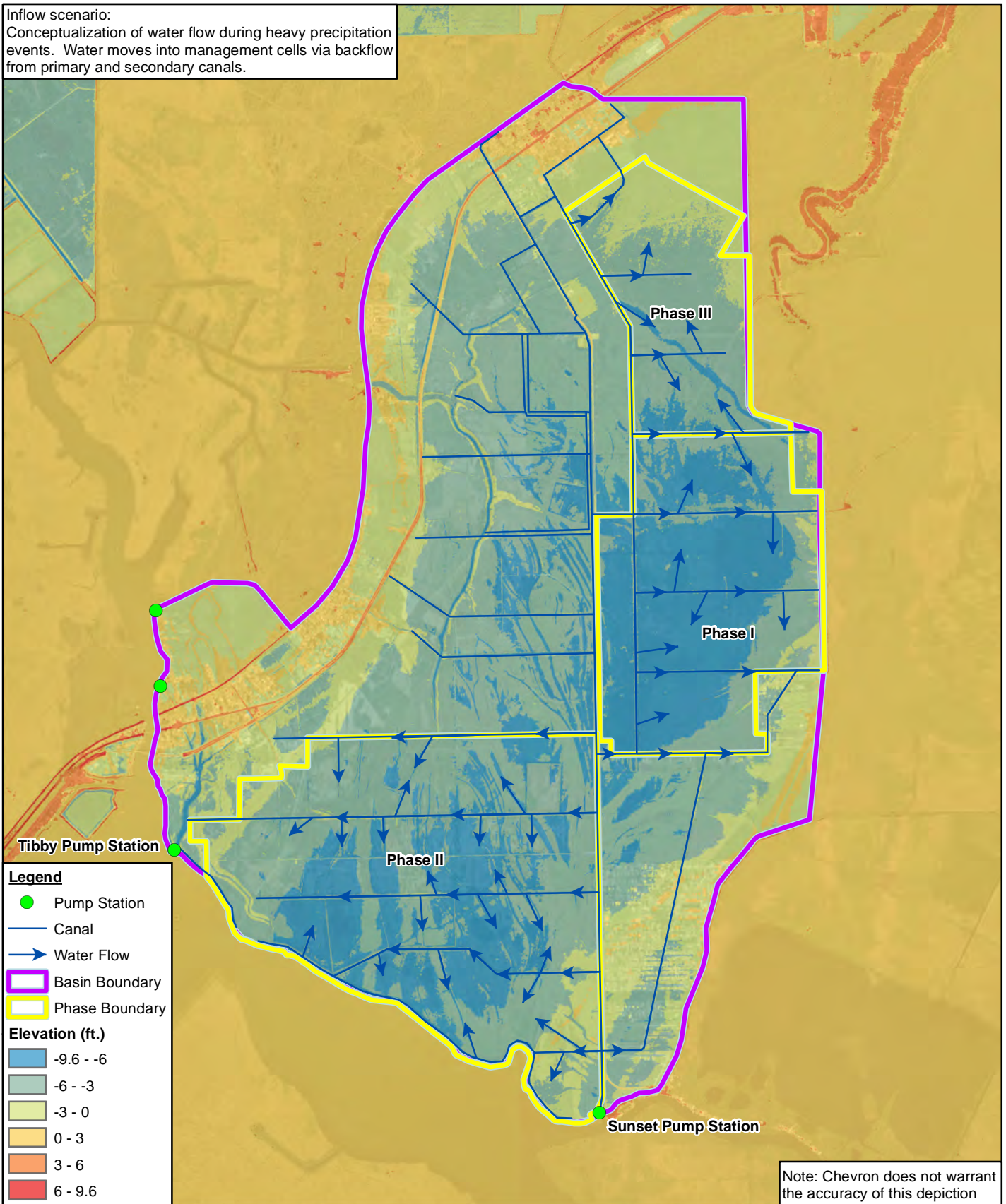
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGIC OUTFLOW - PHASE III

089027  
 Jul 3, 2019

FIGURE 14D

Inflow scenario:  
 Conceptualization of water flow during heavy precipitation events. Water moves into management cells via backflow from primary and secondary canals.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



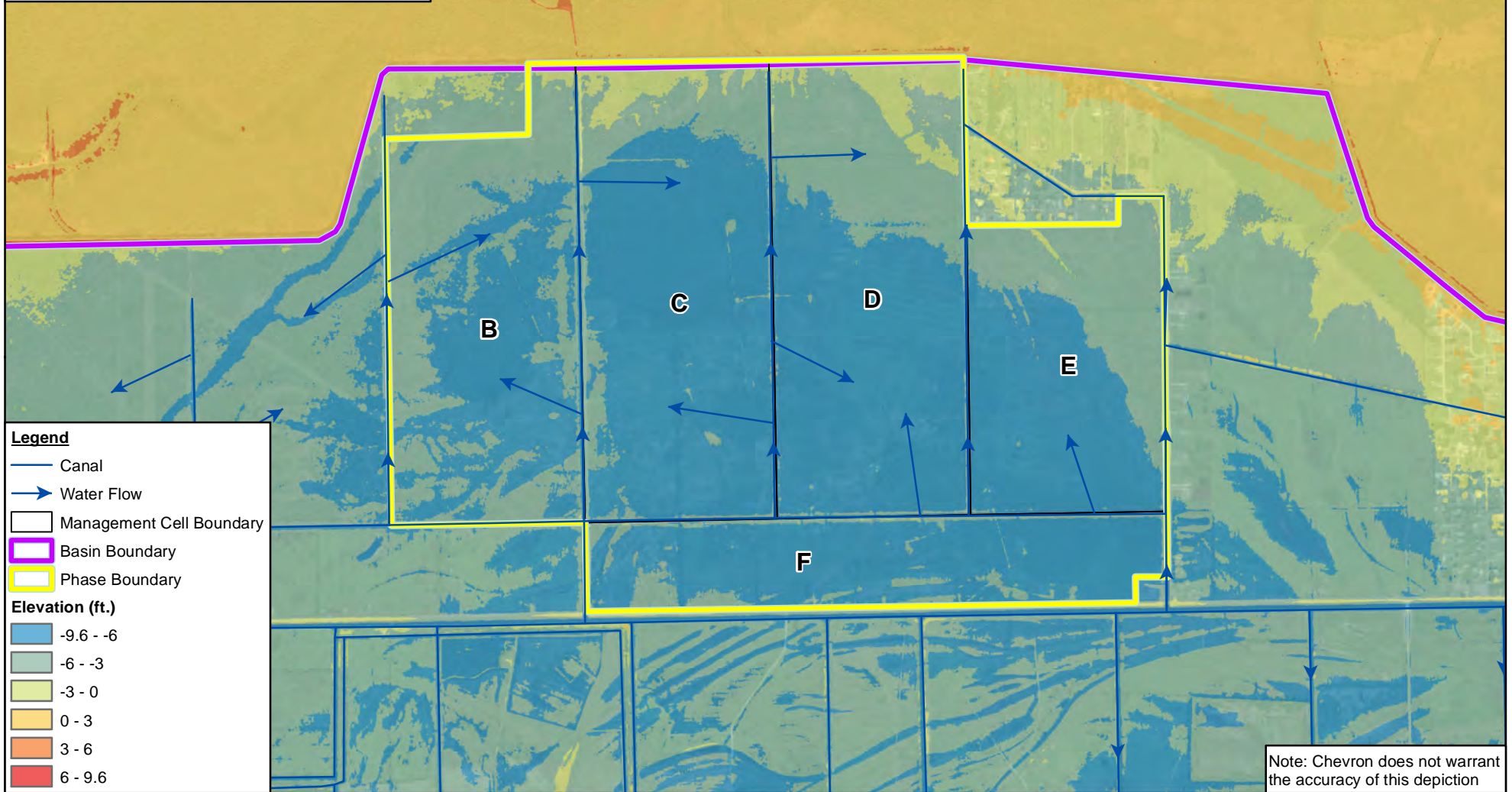
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGIC INFLOW  
 OVERVIEW

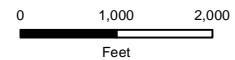
089027  
 Jul 3, 2019

FIGURE 14E

Inflow scenario:  
 Conceptualization of water flow during heavy precipitation events. Water moves into management cells via backflow from primary and secondary canals.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



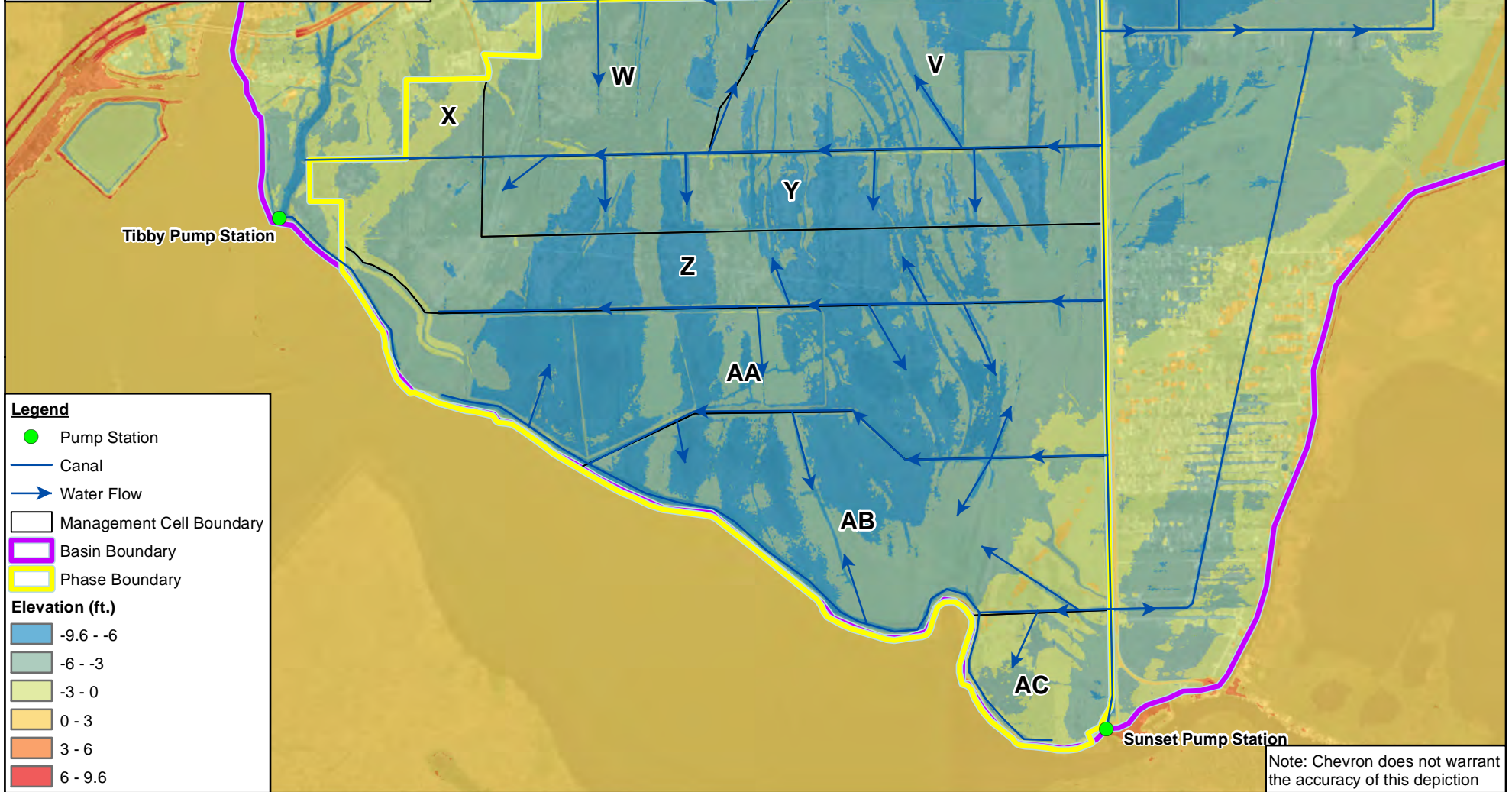
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

HYDROLOGIC INFLOW - PHASE I

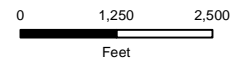
089027  
 Jul 3, 2019

FIGURE 14F

Inflow scenario:  
 Conceptualization of water flow during heavy precipitation events. Water moves into management cells via backflow from primary and secondary canals.



Source: ESRI World Imagery Service, 4/1/2017



Coordinate System:  
 NAD 1983 StatePlane Louisiana  
 South FIPS 1702 Feet



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

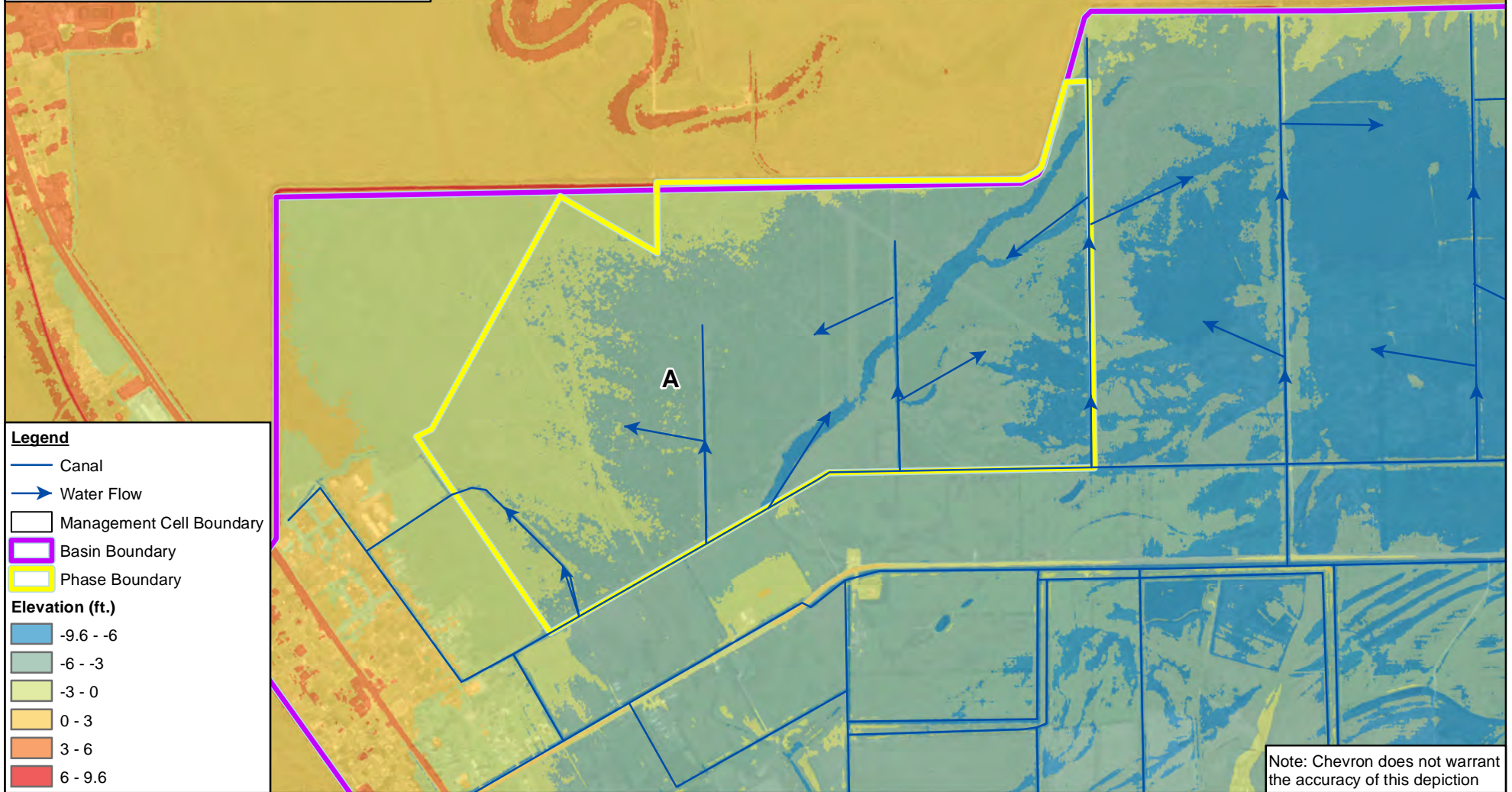
HYDROLOGIC INFLOW - PHASE II

089027  
 Jul 3, 2019

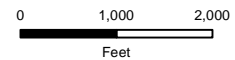
FIGURE 14G



Inflow scenario:  
 Conceptualization of water flow during heavy precipitation events. Water moves into management cells via backflow from primary and secondary canals.



Source: ESRI World Imagery Service, 4/1/2017



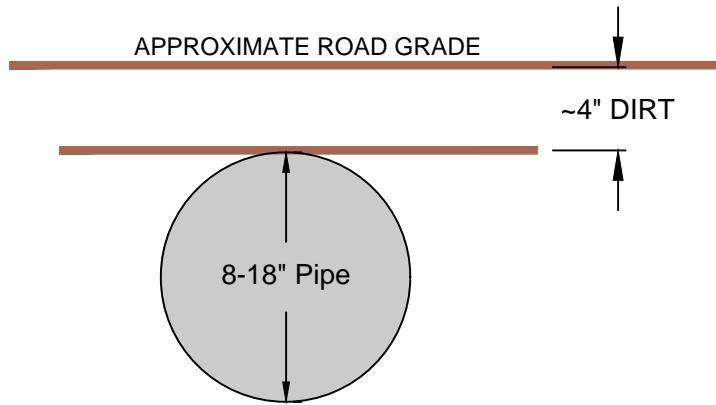
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK

089027  
 Jul 3, 2019

HYDROLOGIC INFLOW - PHASE III

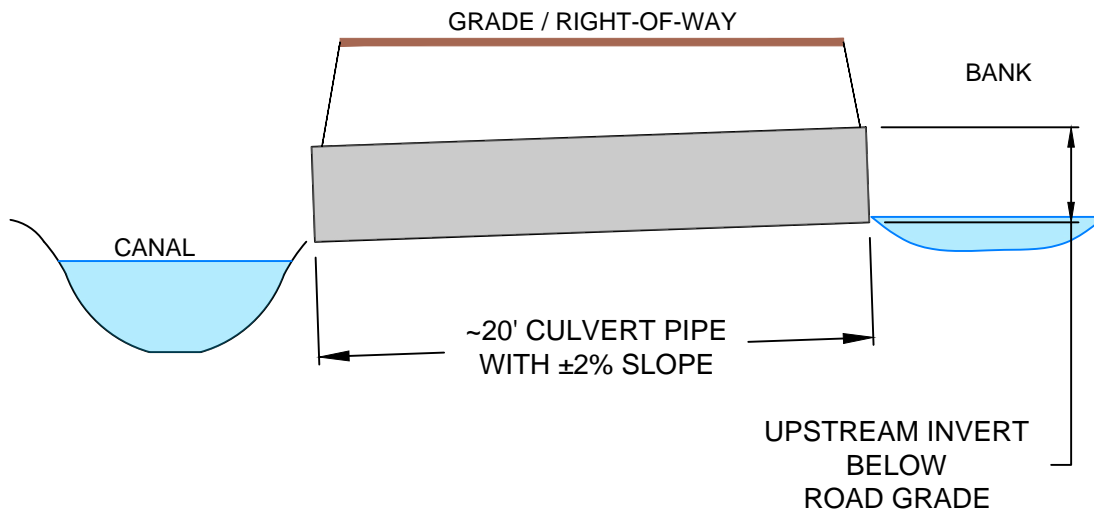
FIGURE 14H

## PROFILE CROSS-SECTION



## LONGITUDINAL CROSS-SECTION

8-18" CULVERT  
CROSS-SECTION



## CULVERT VIEWS

NOT TO SCALE

**NOTE:**

MAINTAIN A SUFFICIENT AMOUNT OF COVER DIRT  
OVER CULVERTS, TO PROVIDE SMOOTH TRANSITION.

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

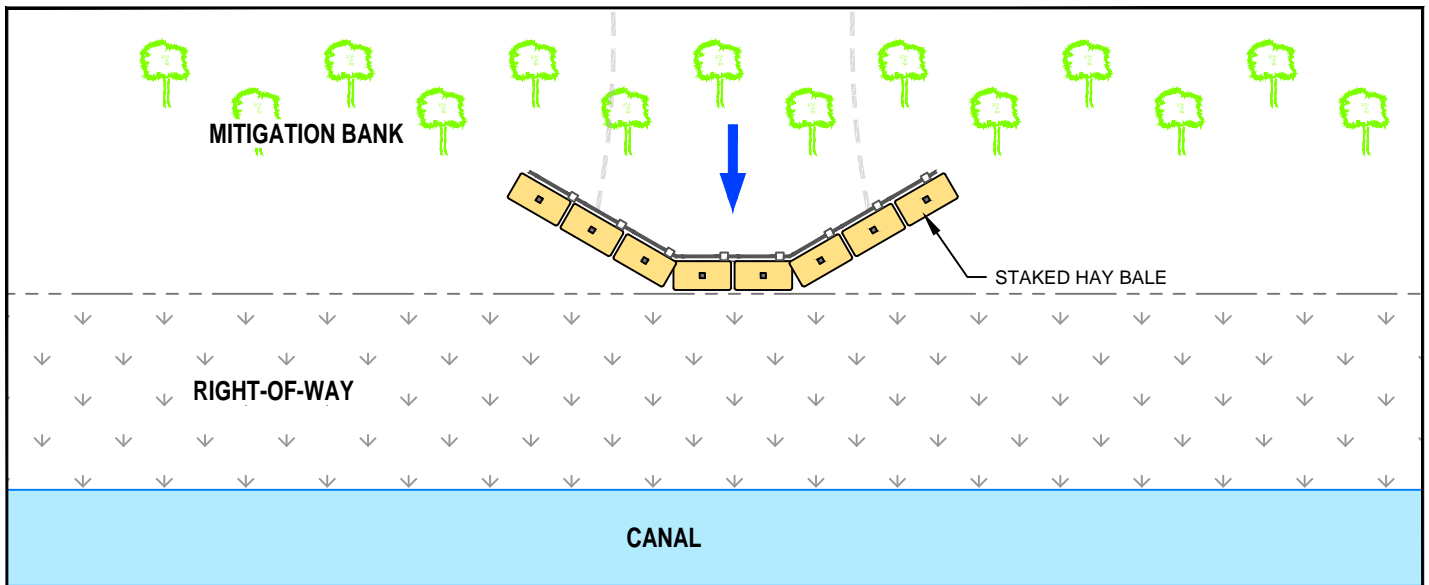


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
TYPICAL INSTALLED NEW  
CULVERT CROSS-SECTION

089027-03

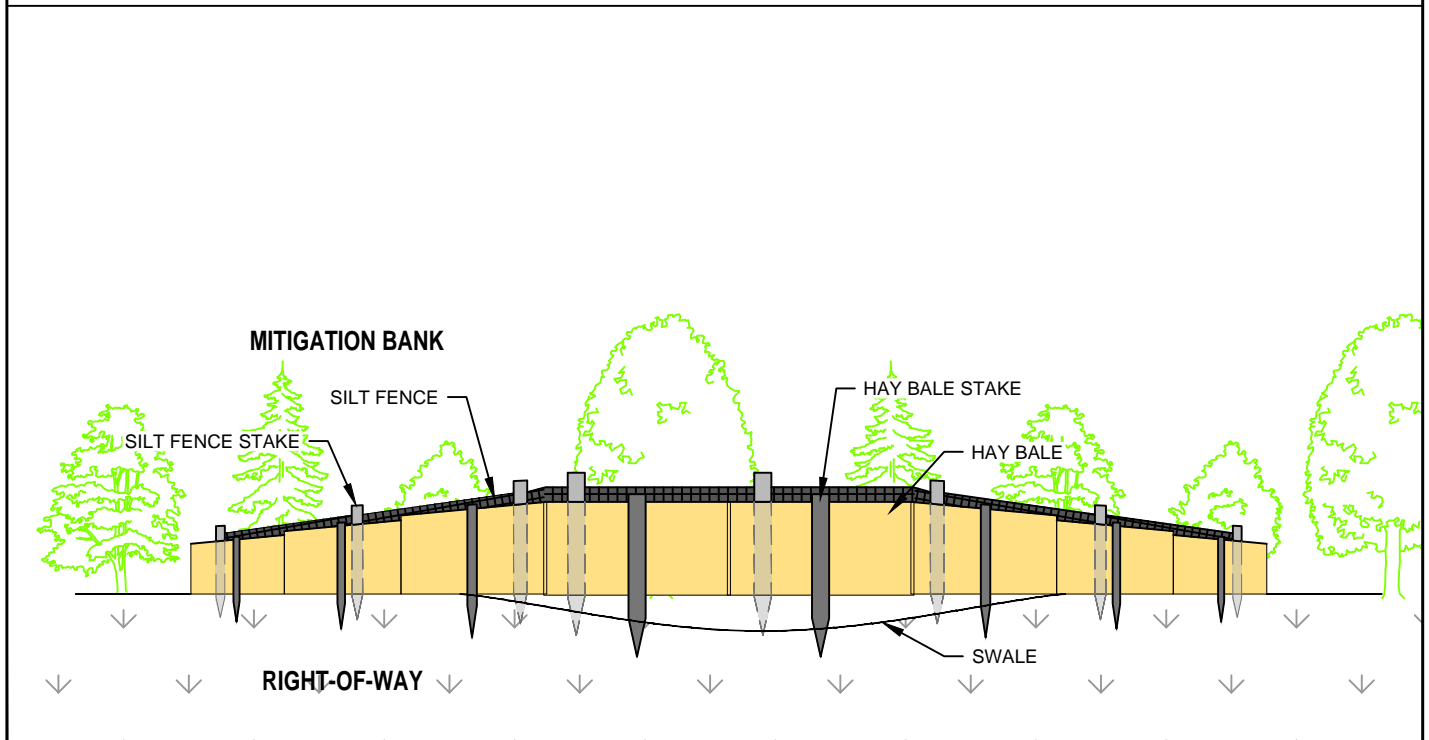
Jul 3, 2019

FIGURE 15



## TYPICAL VELOCITY DISSIPATOR PLAN VIEW

NOT TO SCALE



## TYPICAL VELOCITY DISSIPATOR PROFILE VIEW

NOT TO SCALE

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



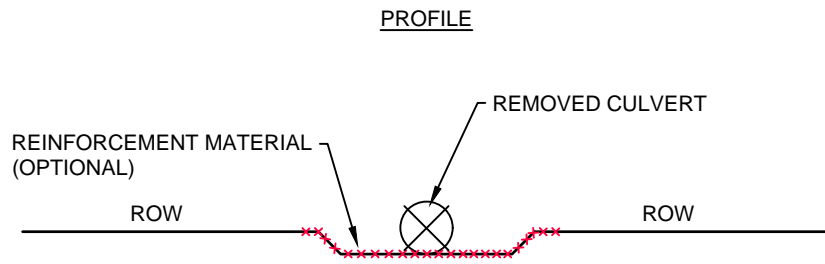
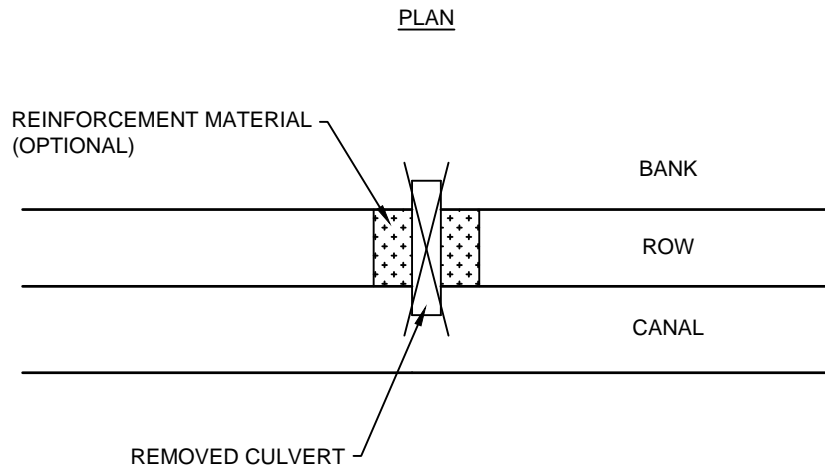
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 VELOCITY DISSIPATOR  
 TYPICAL INSTALLATION

089027-03

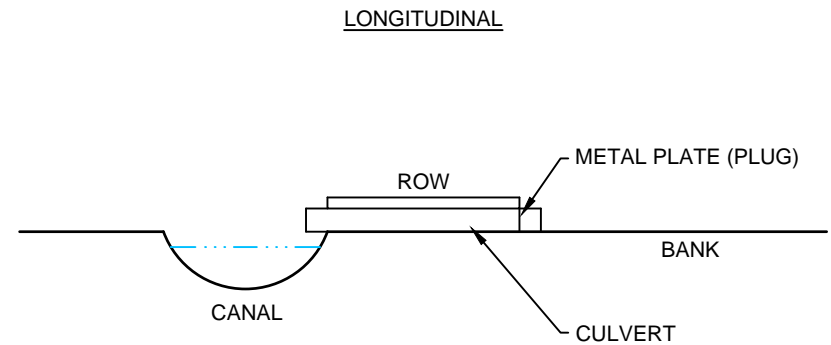
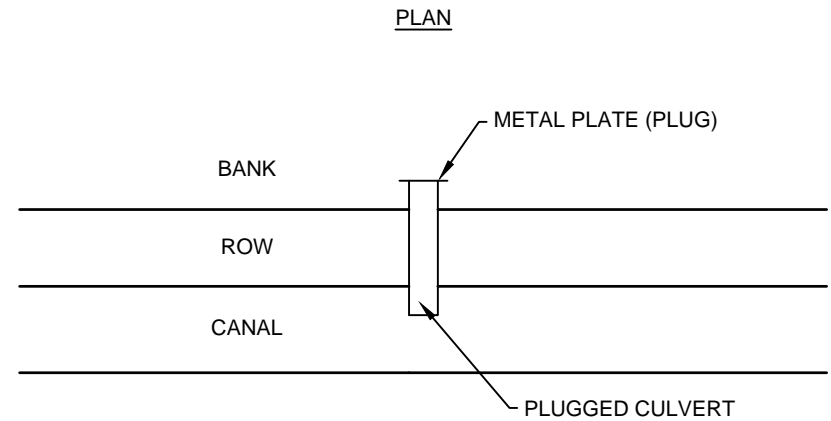
Jul 3, 2019

FIGURE 16

## REMOVED CULVERT



## PLUGGED CULVERT



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



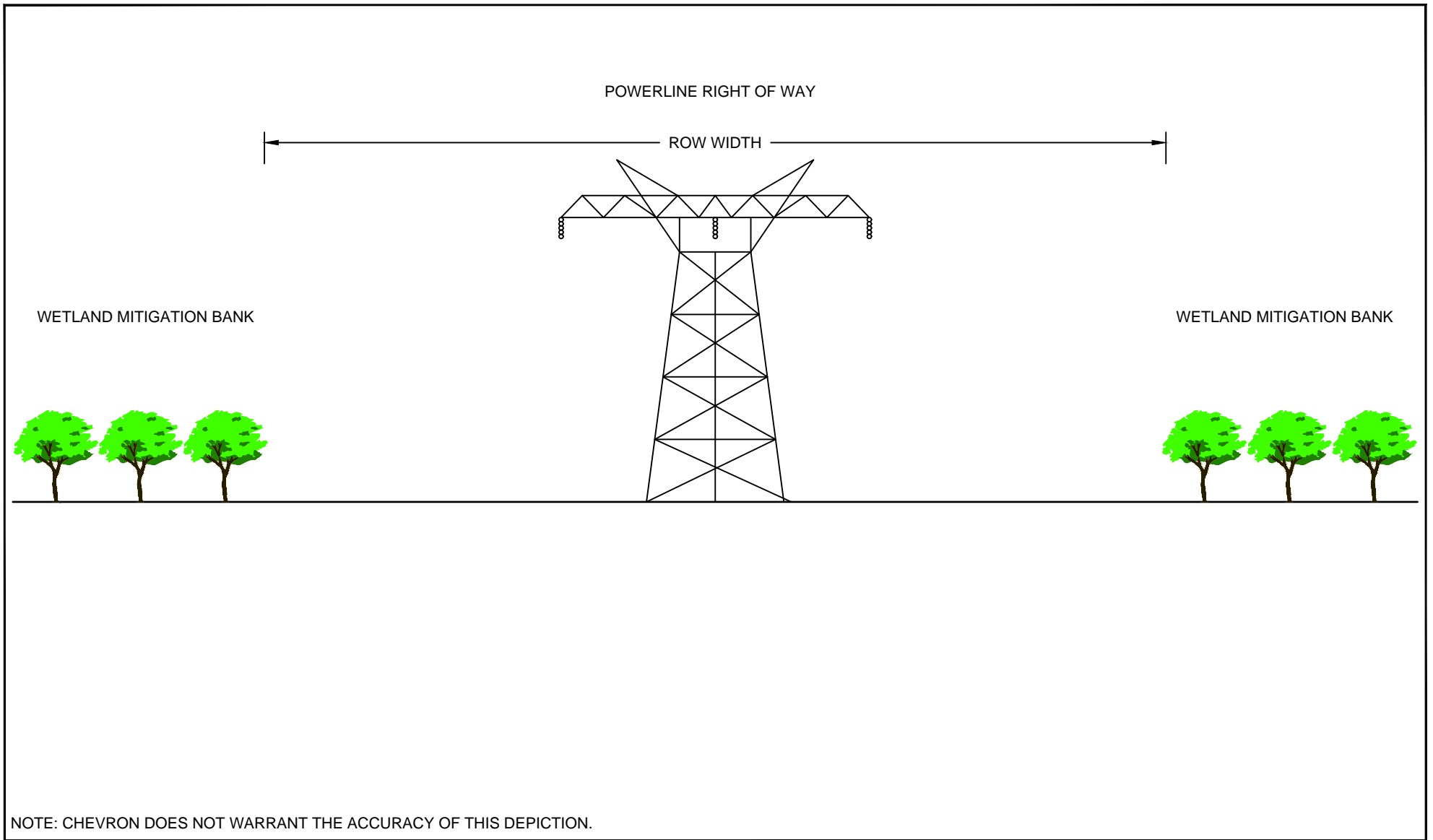
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS

POTENTIAL CULVERT MODIFICATIONS

089027-03

Jul 3, 2019

FIGURE 17

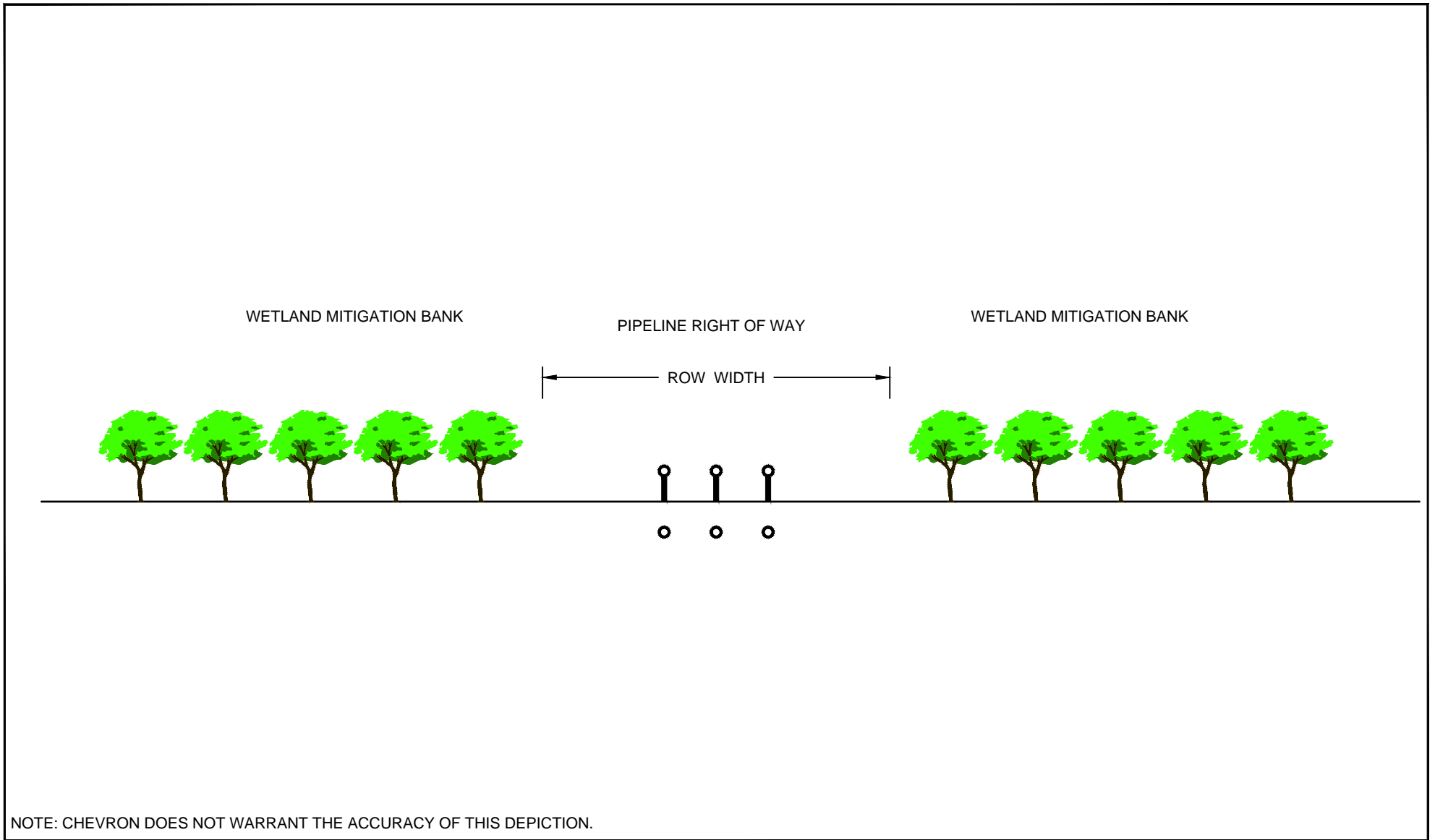


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS

89027-03  
 Jul 3, 2019

TYPICAL POWERLINE ROW CROSS SECTION

FIGURE 18

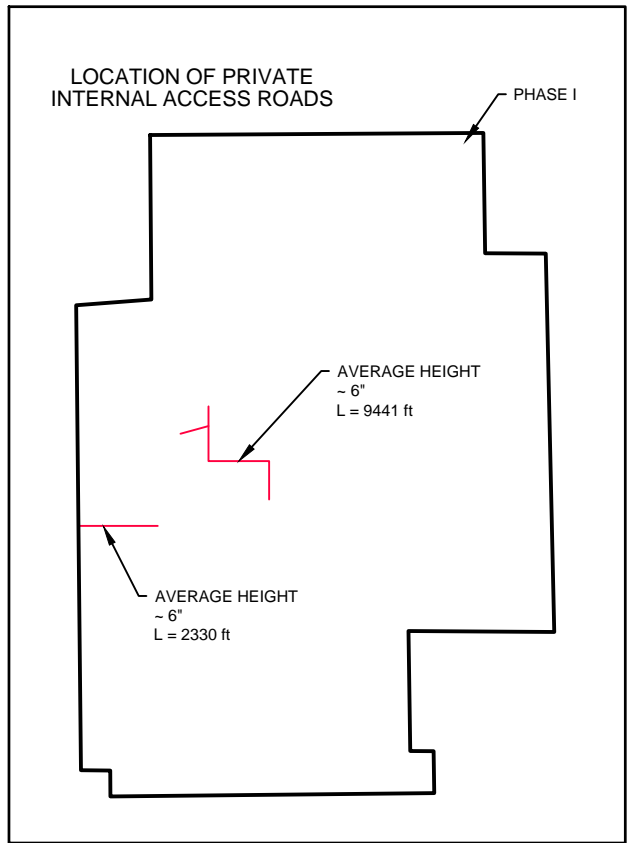


CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS

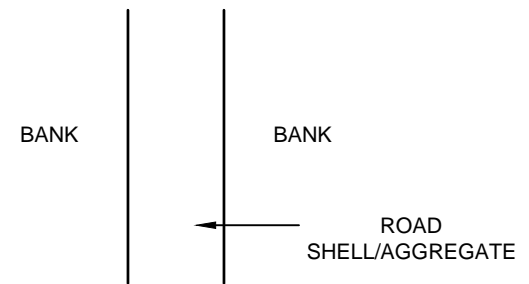
89027-03  
 Jul 3, 2019

TYPICAL PIPELINE ROW CROSS SECTION

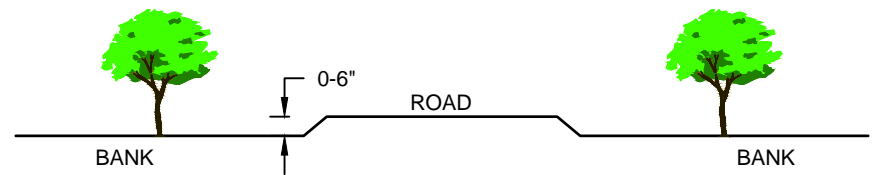
FIGURE 19



PLAN (TYPICAL)



PROFILE (TYPICAL)



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

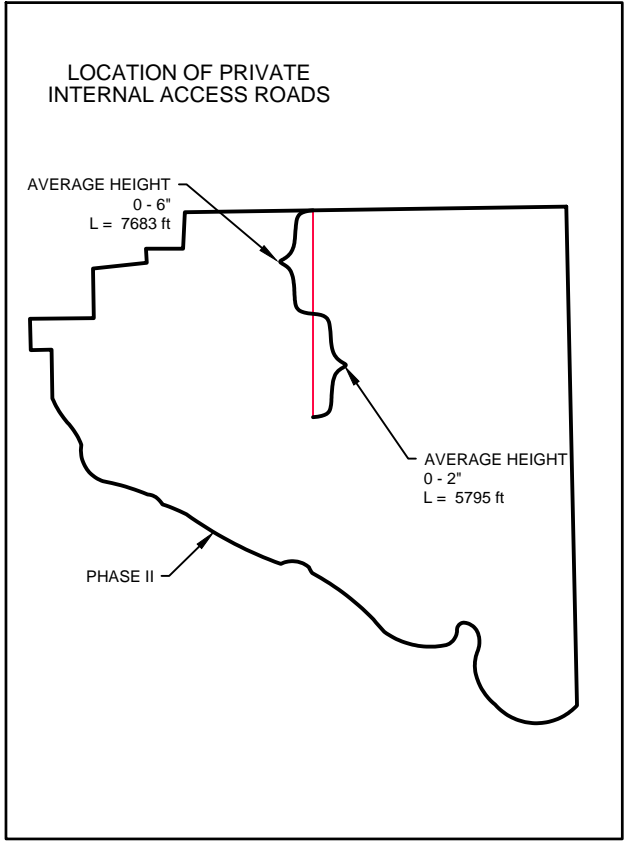


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS

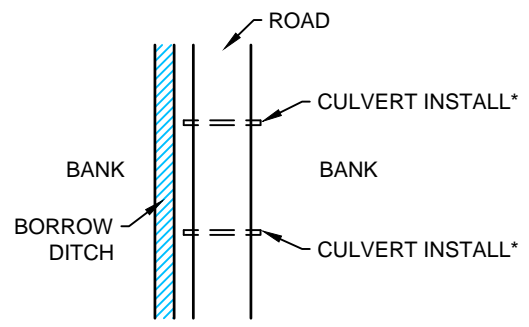
89027-03  
Jul 3, 2019

TYPICAL PRIVATE INTERNAL ACCESS ROAD - PHASE I

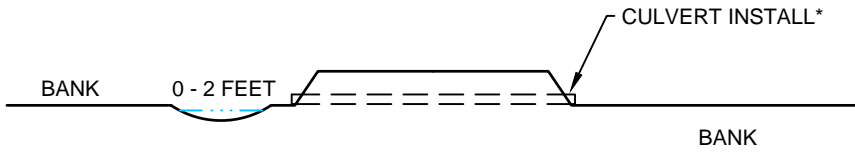
FIGURE 20



PLAN (TYPICAL)



PROFILE (TYPICAL)



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

\* ADAPTIVE MANAGEMENT (i.e. CULVERT INSTALL) WILL BE IMPLEMENTED ON AN AS NEEDED BASIS TO MAINTAIN HYDROLOGY. THIS WILL BE FURTHER DETAILED IN THE MITIGATION WORK PLAN.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS

89027-03  
Jul 3, 2019

TYPICAL PRIVATE INTERNAL ACCESS ROAD - PHASE II

FIGURE 21



# Appendices

# Appendix A

## Jurisdictional Determinations

**U.S. ARMY CORPS OF ENGINEERS**  
**PRELIMINARY**  
**JURISDICTIONAL DETERMINATION**



**USACE**  
 ESV 10/12/17  
 MICHAEL WINDHAM  
**FOR ODENWELLER, CLAIRE**  
**ACCOUNT # MVN-2005-00157-2-SK**

= DELINEATION BOUNDARY  
 = WETLAND (1,158.93 ACRES)

0 750 1,500  
 Feet

Coordinate System:  
 NAD 1983 UTM Zone 15N

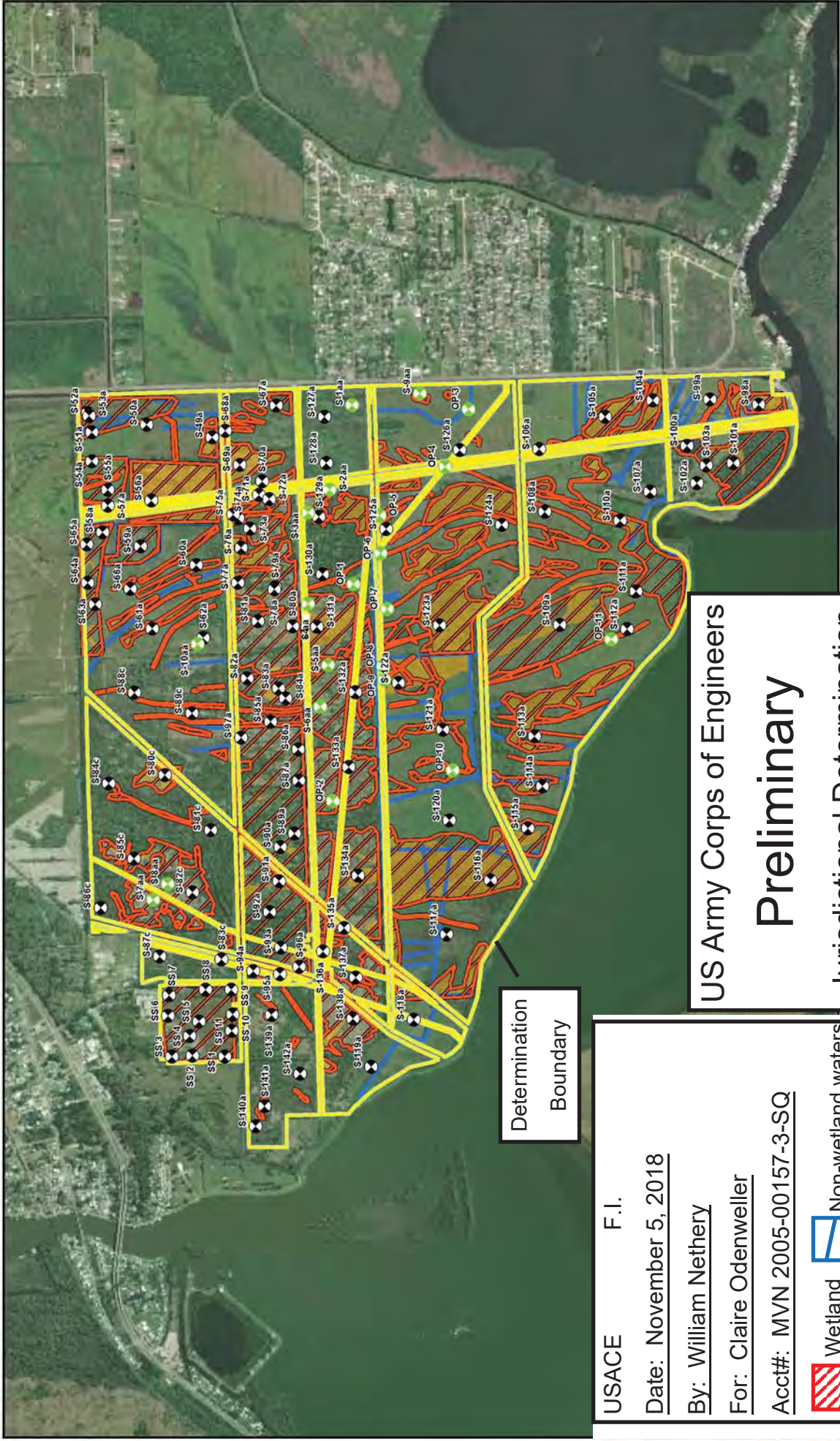
PARADIS MITIGATION BANK, PHASE I  
 PARADIS, LOUISIANA

SITE PLAN

089027-00  
 Oct 17, 2017

**FIGURE 2**

GIS File: I:\GIS\GIS\Projects\890006\89027-00\0003\PRR\89027-00\0003\PR-BR001 Phase I Site Plan.mxd



Determination Boundary

US Army Corps of Engineers  
**Preliminary**  
 Jurisdictional Determination

PARADIS MITIGATION BANK  
 PARADIS, LOUISIANA  
 PHASE II  
 SITE PLAN

USACE F.I.  
 Date: November 5, 2018  
 By: William Nethery  
 For: Claire Odenweller  
 Acct#: MVN 2005-00157-3-SQ

Wetland Non-wetland waters



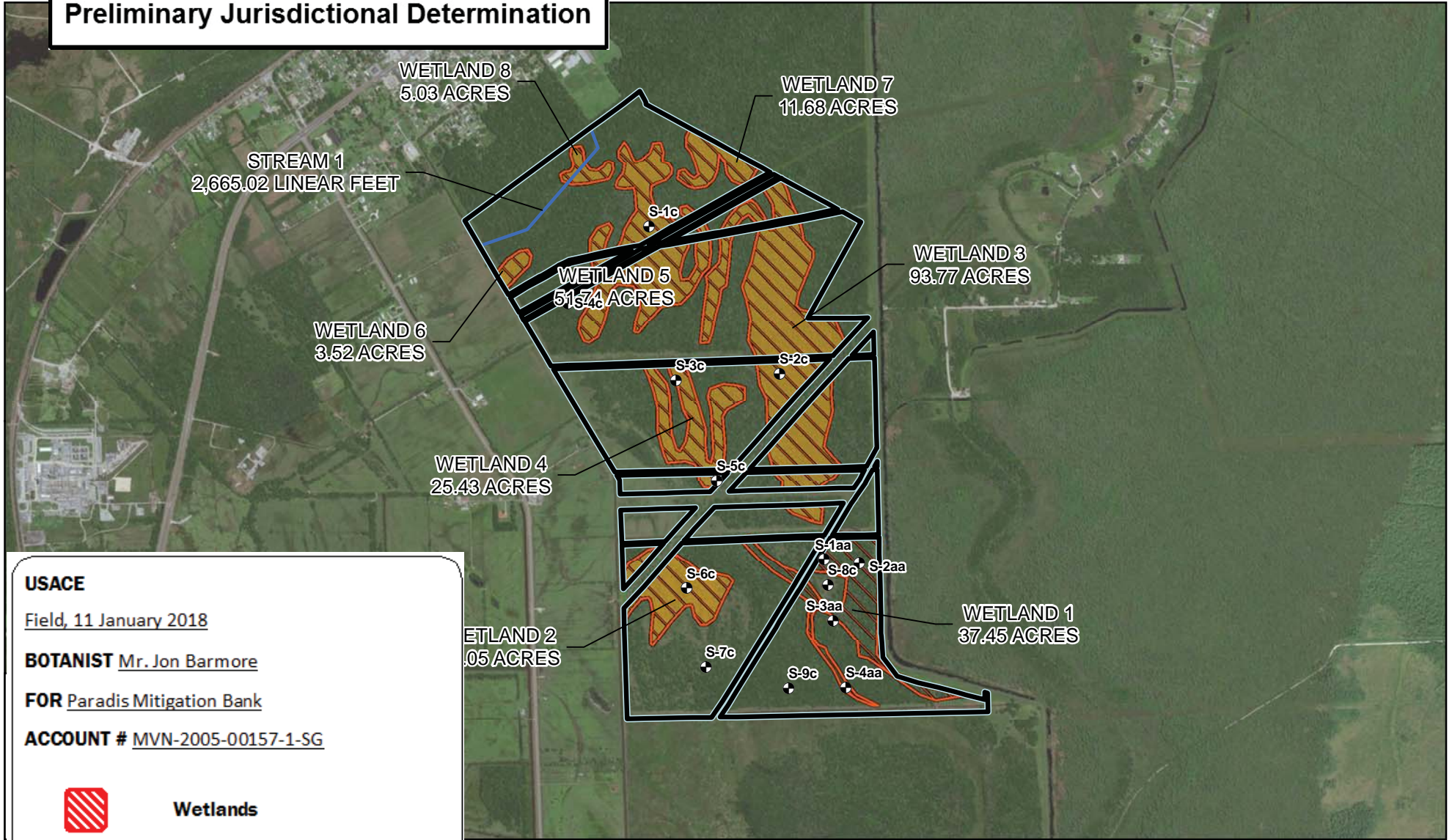
0 1,250 2,500  
 Feet

Coordinate System:  
 NAD 1983 UTM Zone 15N

089027-00  
 Sep 21, 2018

FIGURE 2

**US Army Corps of Engineers  
Preliminary Jurisdictional Determination**



**USACE**

Field, 11 January 2018

**BOTANIST** Mr. Jon Barmore

**FOR** Paradis Mitigation Bank

**ACCOUNT #** MVN-2005-00157-1-SG



**Wetlands**



**Non-wetland waters**



**JD Review Area**

PARADIS MITIGATION BANK  
PARADIS, LOUISIANA  
PHASE III

089027-00  
May 3, 2018

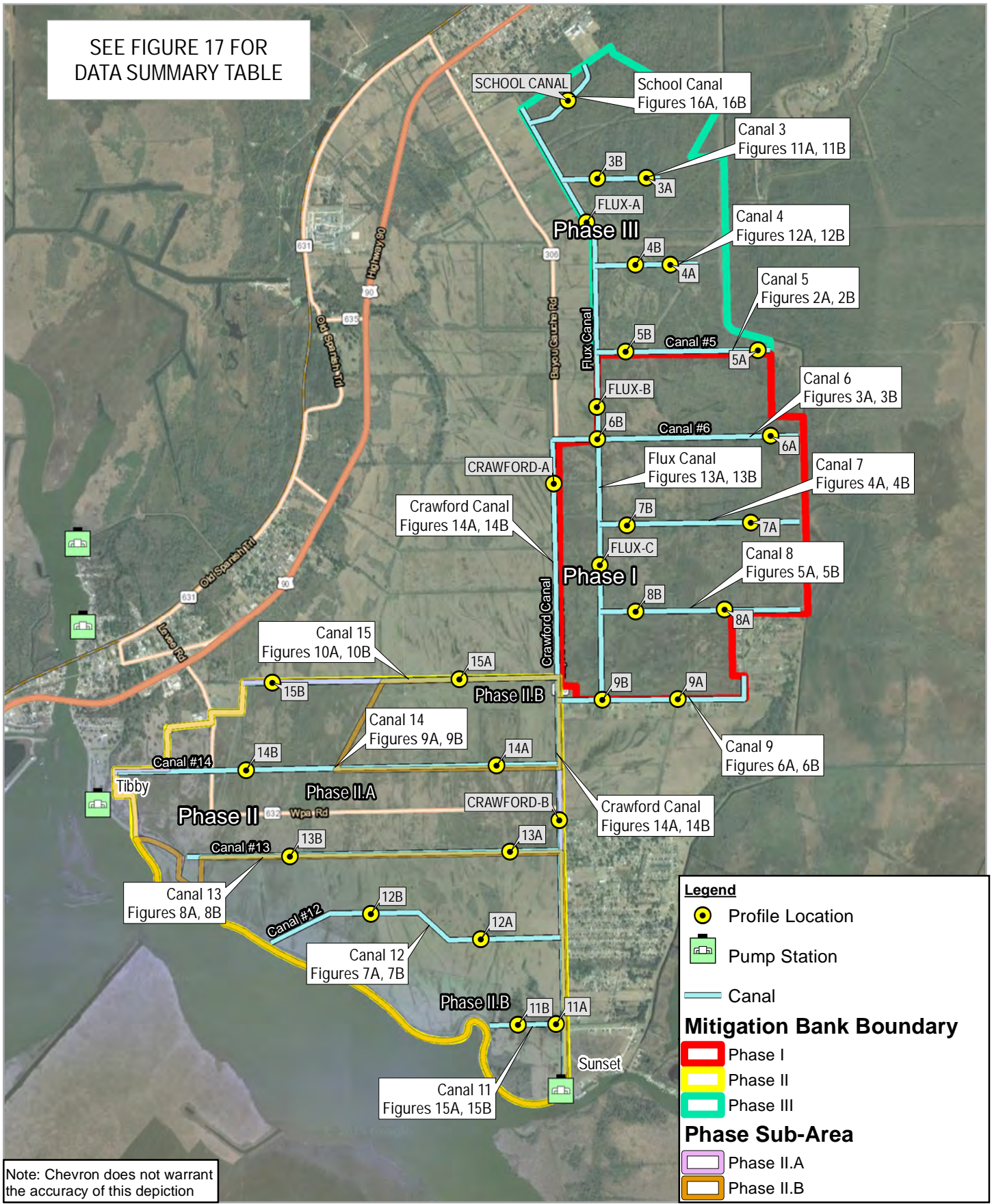
**SITE PLAN**

**FIGURE 2**

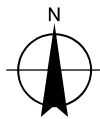
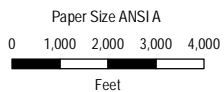
# Appendix B

## Canal Plan and Profile Drawings and Data Summary Table

SEE FIGURE 17 FOR  
DATA SUMMARY TABLE



Note: Chevron does not warrant  
the accuracy of this depiction



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS

Project No. 089027-03  
Revision No. -  
Date 07/03/2019

Map Projection: Lambert Conformal Conic  
Horizontal Datum: NAD 1983 2011  
Grid: NAD 1983 2011 StatePlane Louisiana South FIPS 1702 Ft US

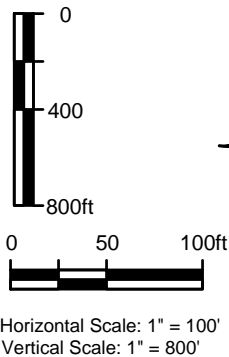
CANAL OVERVIEW MAP

APPENDIX B  
FIGURE 1

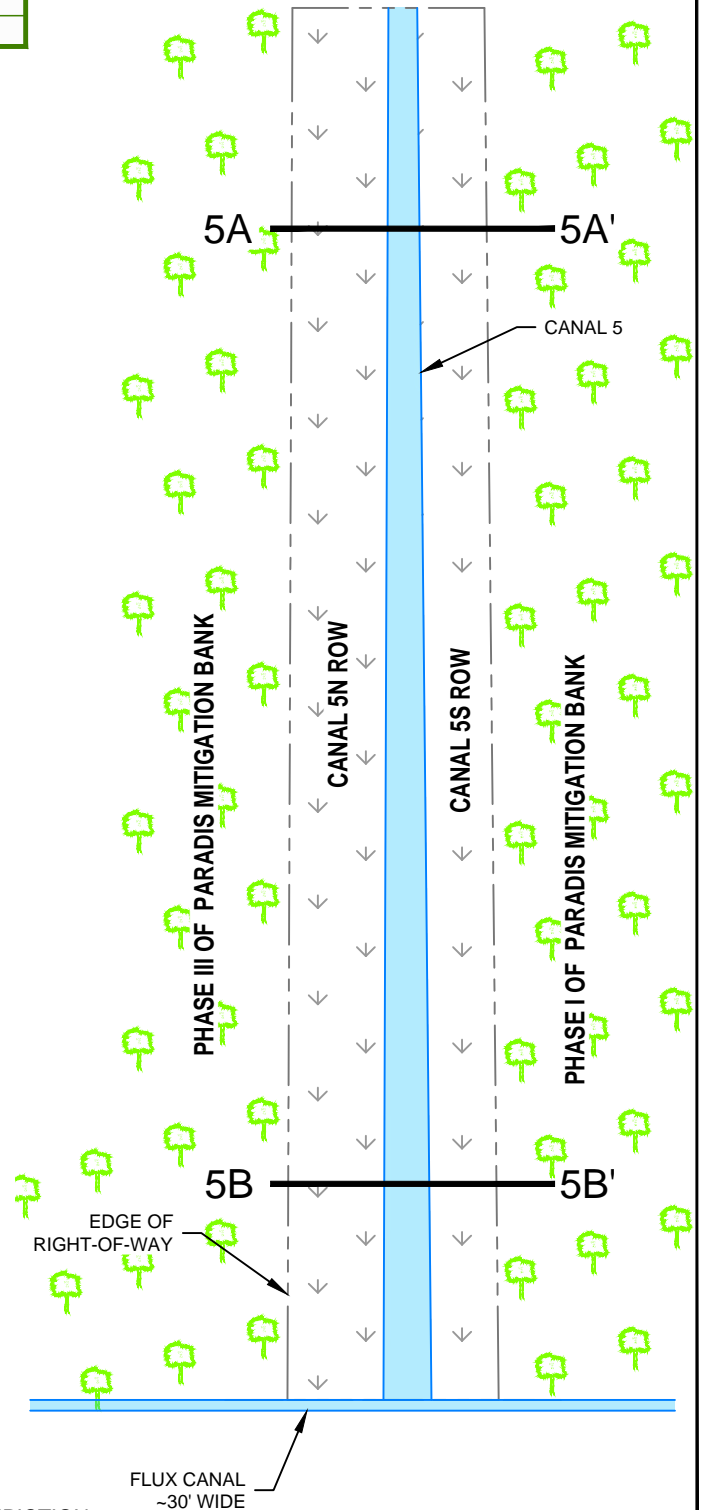
STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~5280'	20'	3.5'	2.4
CANAL 5N ROW	~5280'	50'	NA	6.1
CANAL 5S ROW	~5280'	35'	NA	4.2

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASES I AND III - CANAL 5

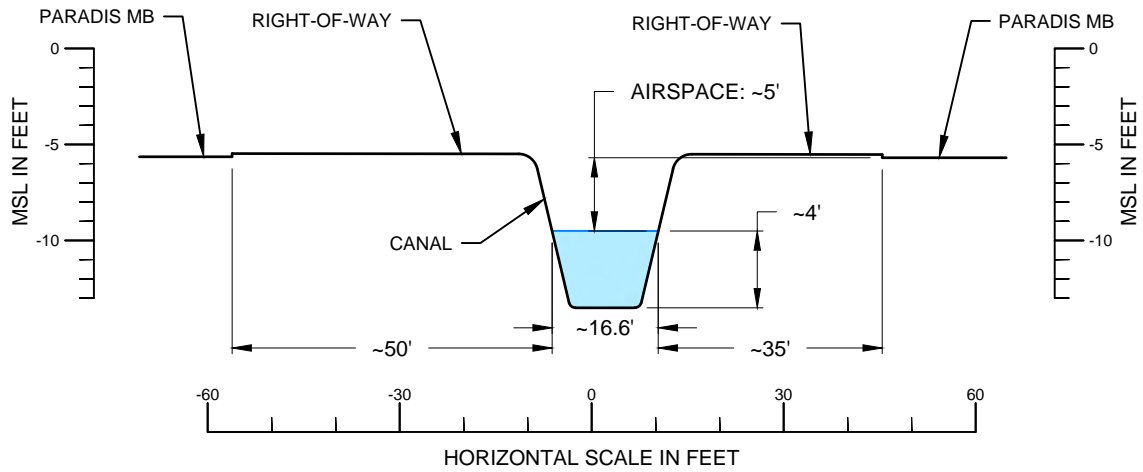
089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 2A



5A  
(North)

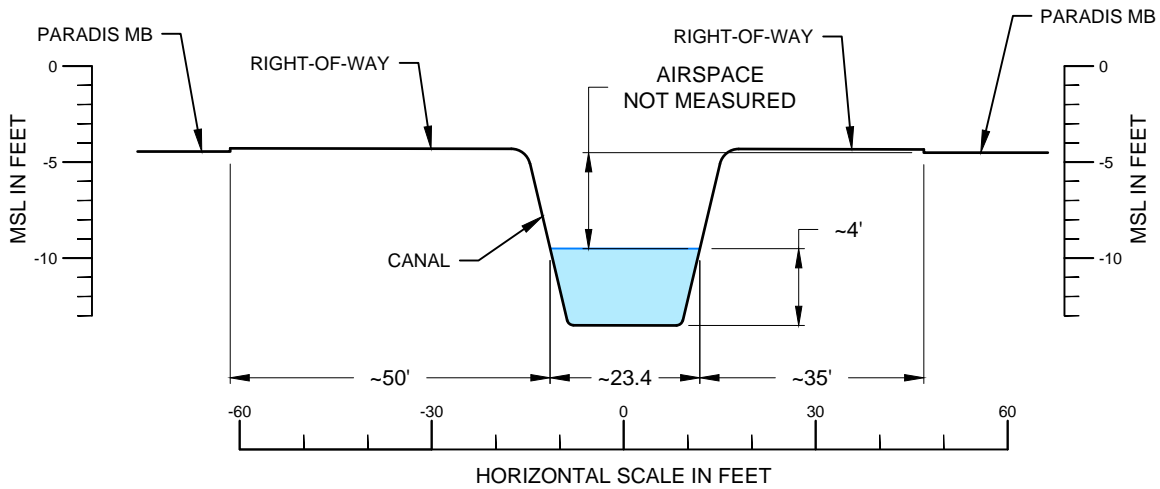
5A'  
(South)



5A-5A'

5B  
(North)

5B'  
(South)



5B-5B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASES I AND III - CANAL 5

089027-03

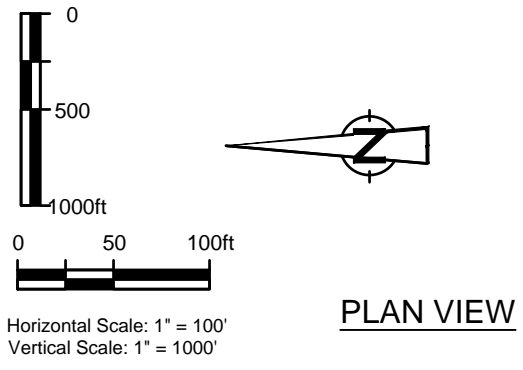
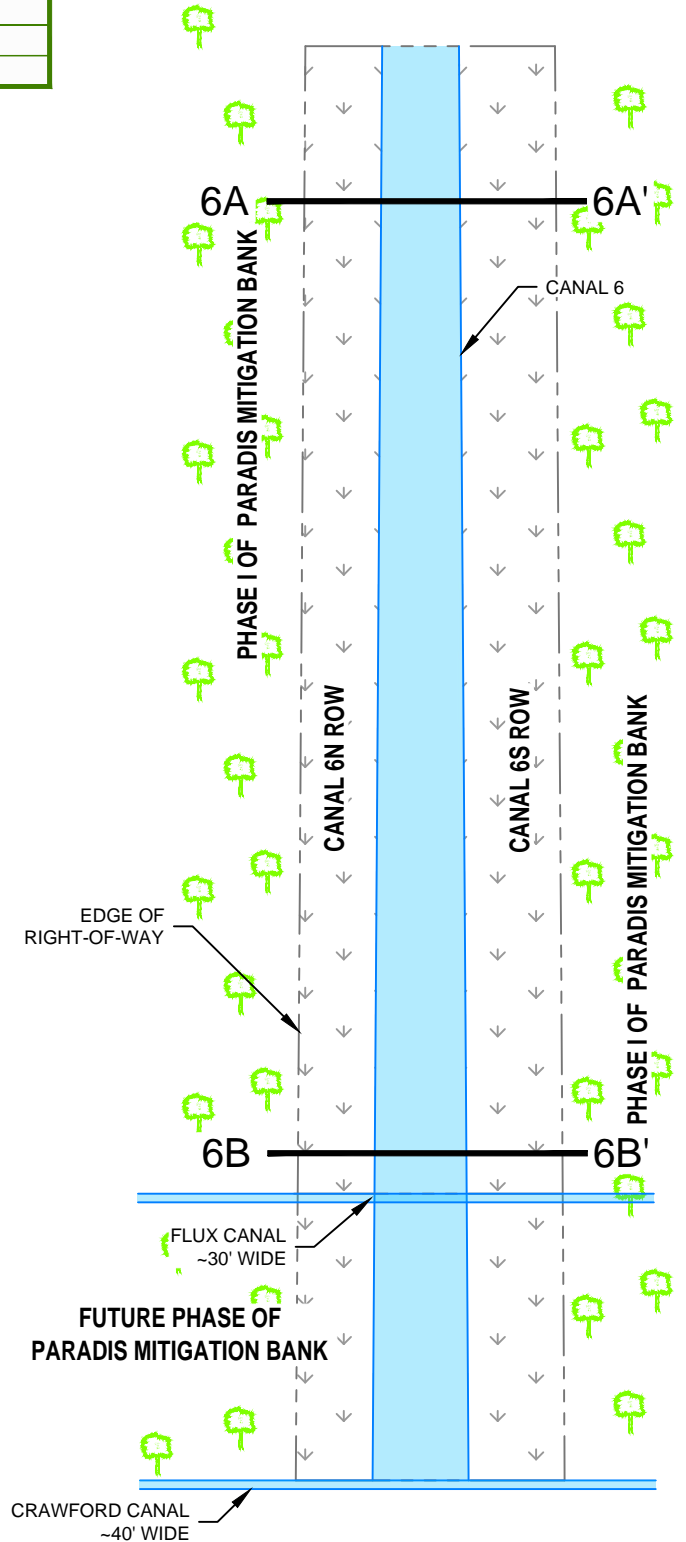
Jul 3, 2019

APPENDIX B  
FIGURE 2B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~7485'	45'	3.5'	7.7
CANAL 6N ROW	~6090'	40'	NA	5.6
CANAL 6S ROW	7485'	50'	NA	8.6

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



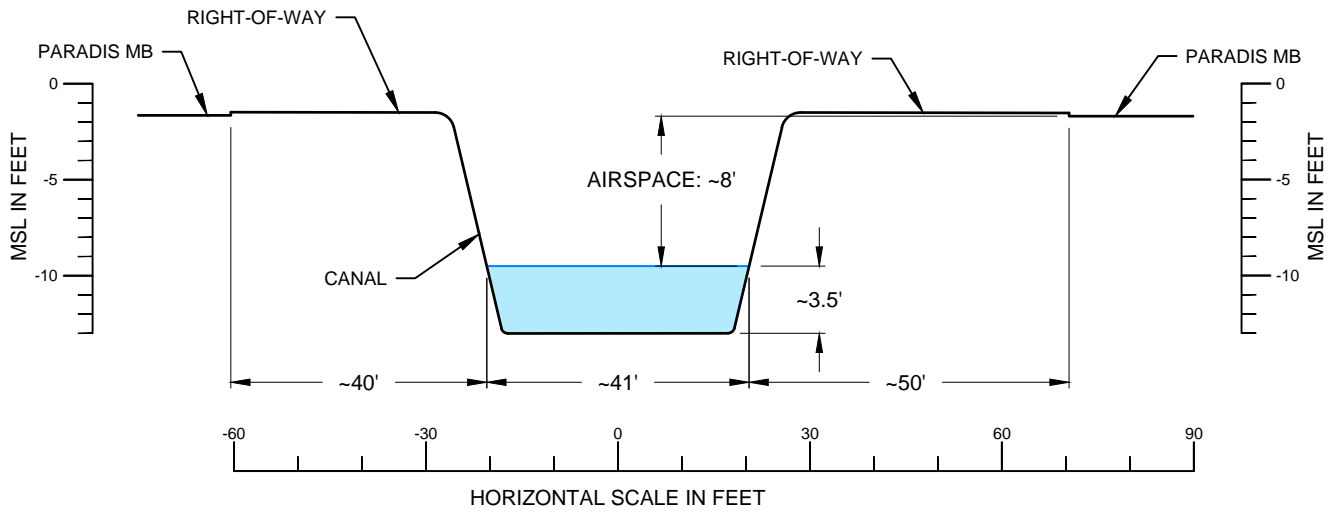
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE I - CANAL 6

089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 3A

6A  
(North)

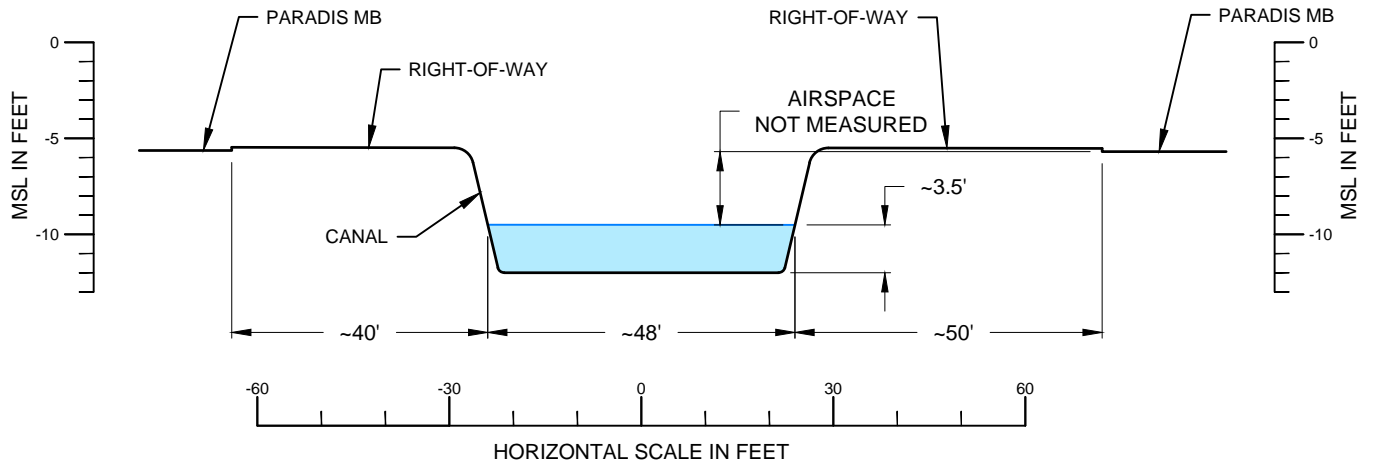
6A'  
(South)



6A-6A'

6B  
(North)

6B'  
(South)



6B-6B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE I - CANAL 6

089027-03

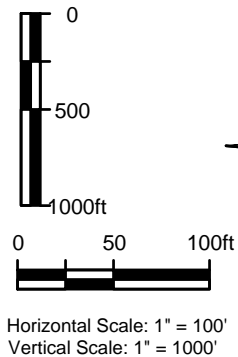
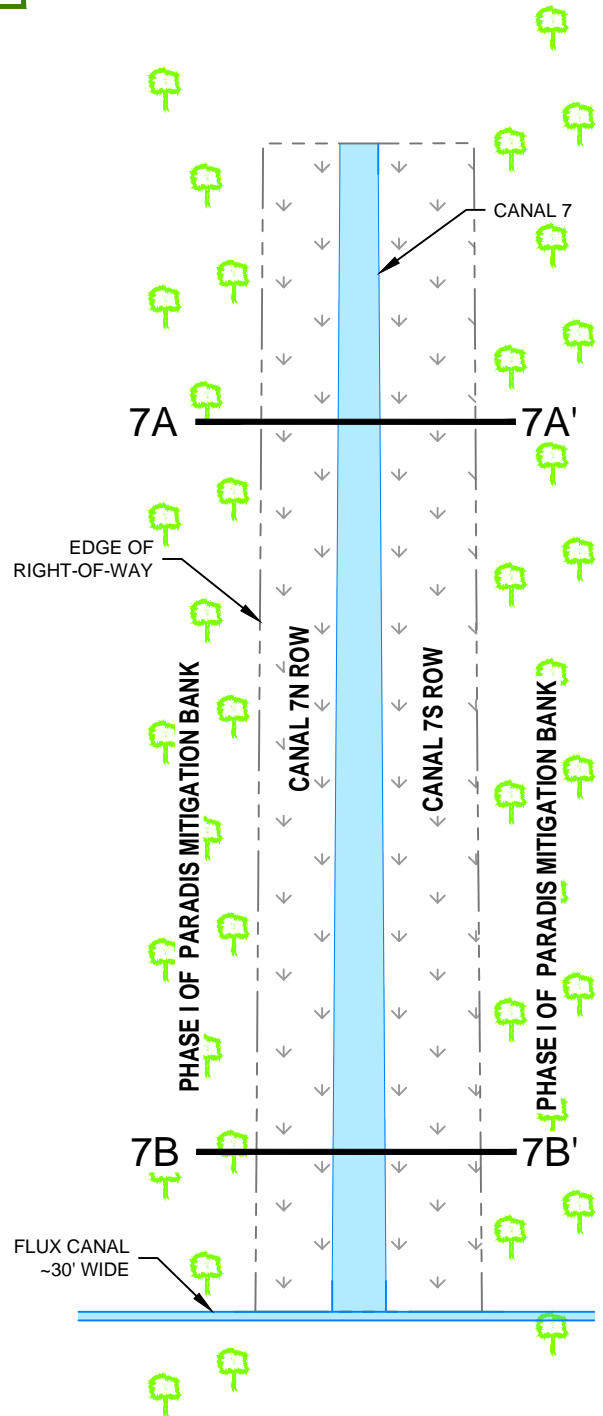
Jul 3, 2019

APPENDIX B  
FIGURE 3B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~6085'	24'	3.25'	3.4
CANAL 7N ROW	~6085'	40'	NA	5.6
CANAL 7S ROW	~6085'	~37.5'	NA	5.2

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

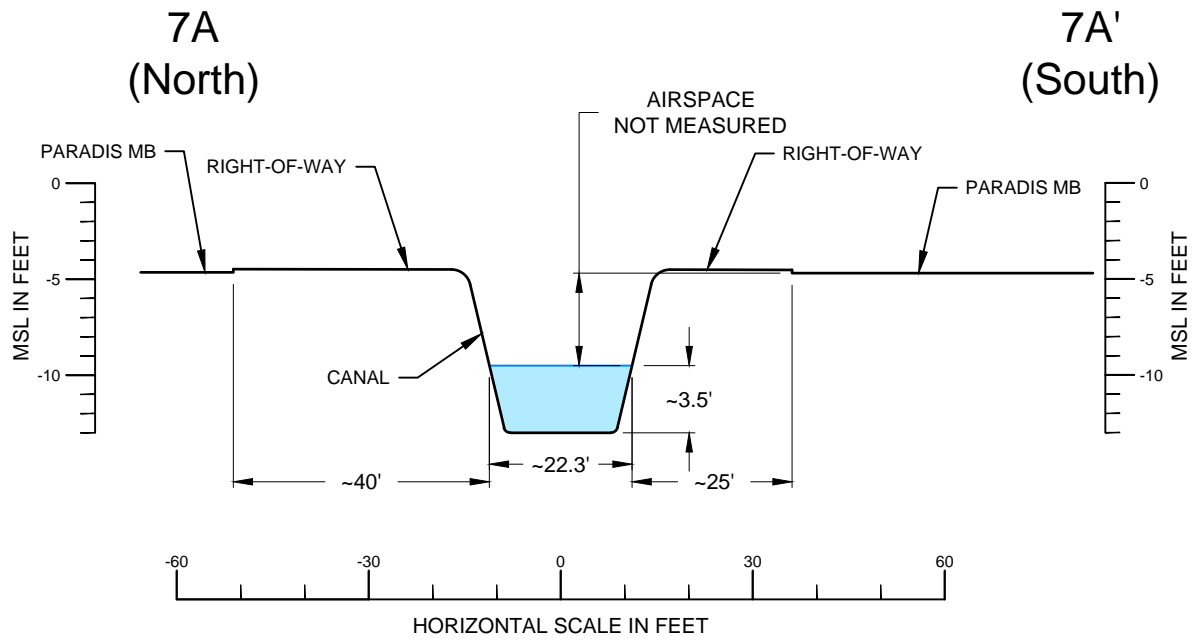


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE I - CANAL 7

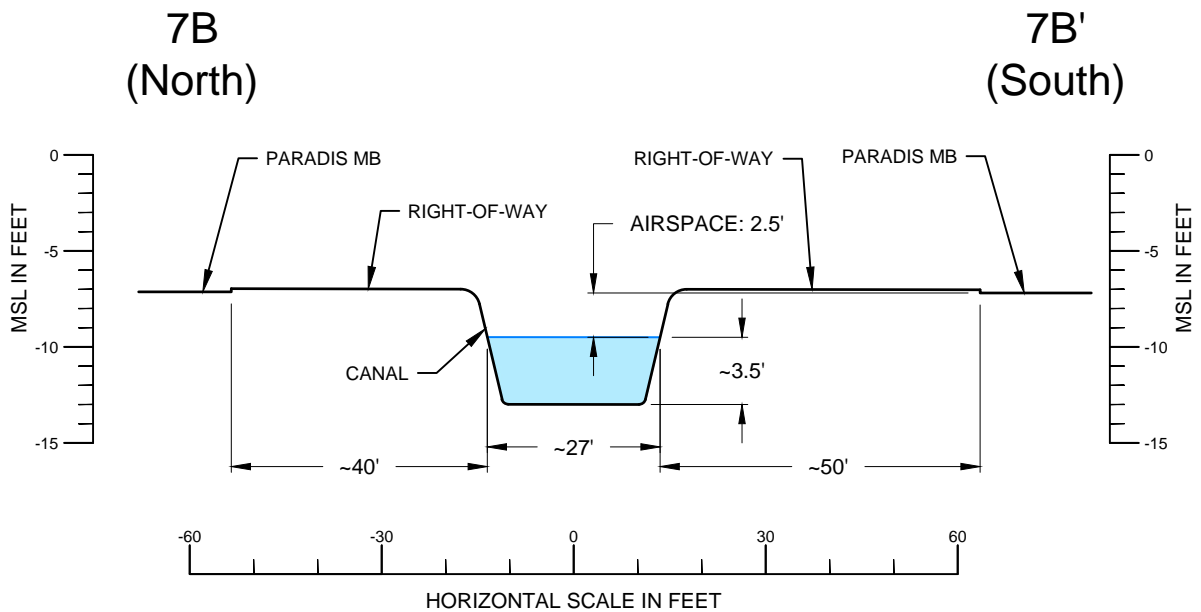
089027-03

Jul 3, 2019

APPENDIX B  
FIGURE 4A



7A-7A'



7B-7B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PROFILES  
 PHASE I - CANAL 7

089027-03

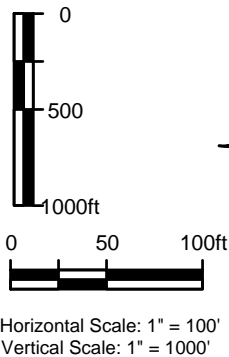
Jul 3, 2019

APPENDIX B  
 FIGURE 4B

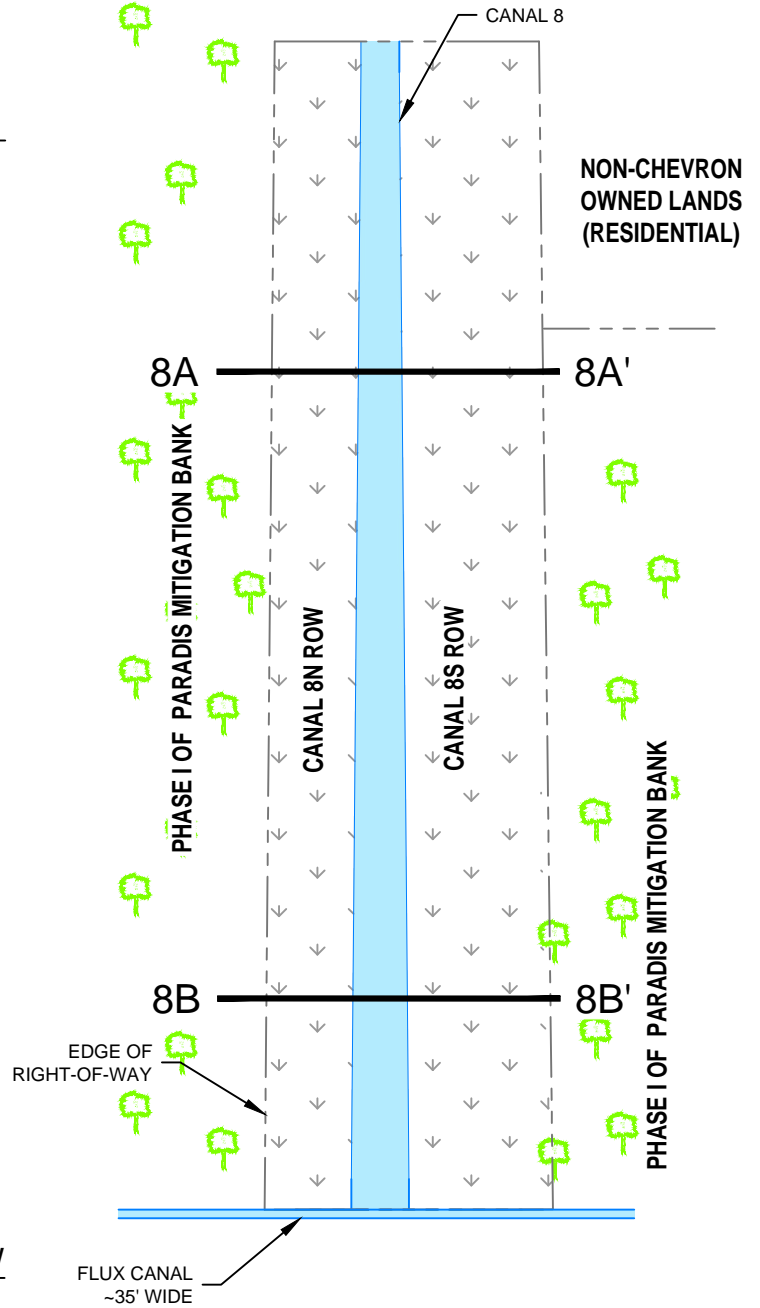
STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~6085'	25'	3.1'	3.5
CANAL 8N ROW	~6085'	45'	NA	6.3
CANAL 8S ROW	~3950'	50'	NA	4.5

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**



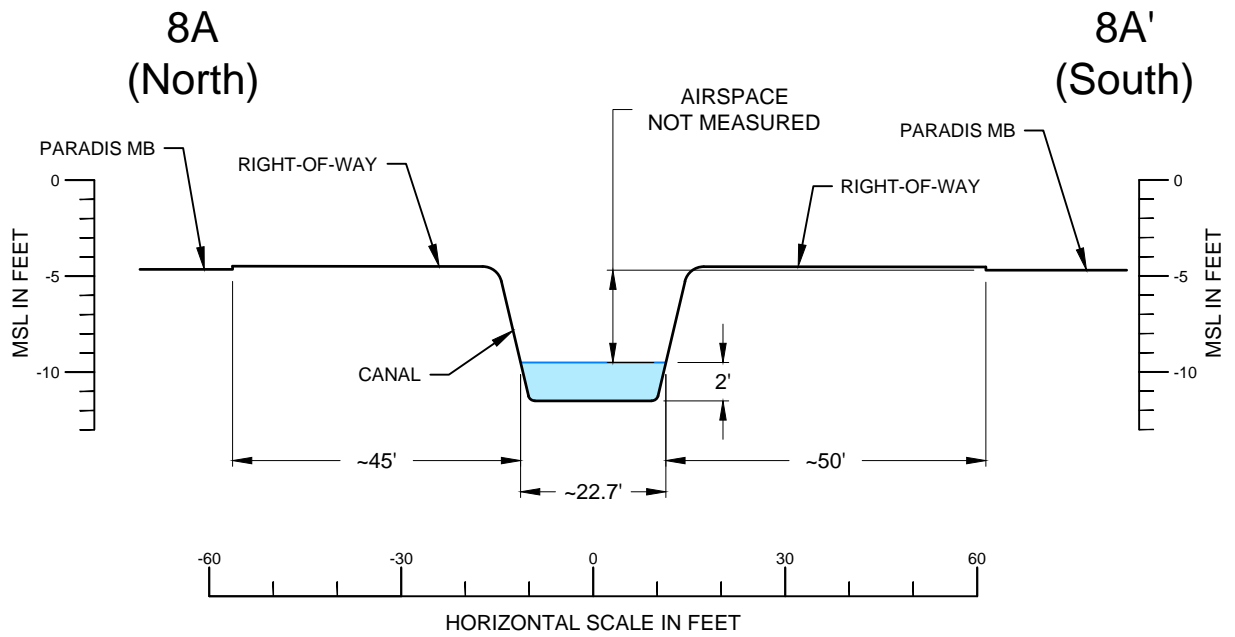
NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



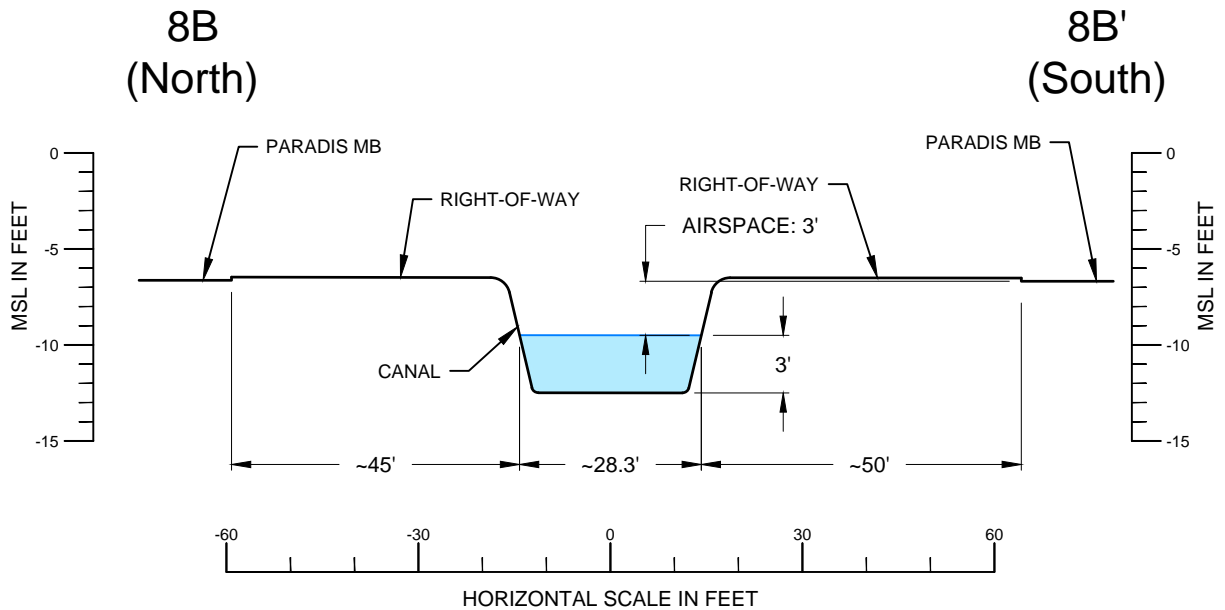
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE I - CANAL 8

089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 5A



8A-8A'



8B-8B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PROFILES  
 PHASE I - CANAL 8

089027-03

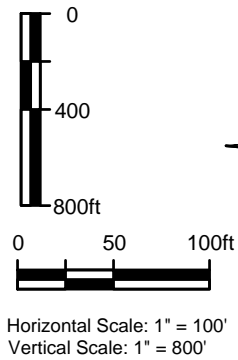
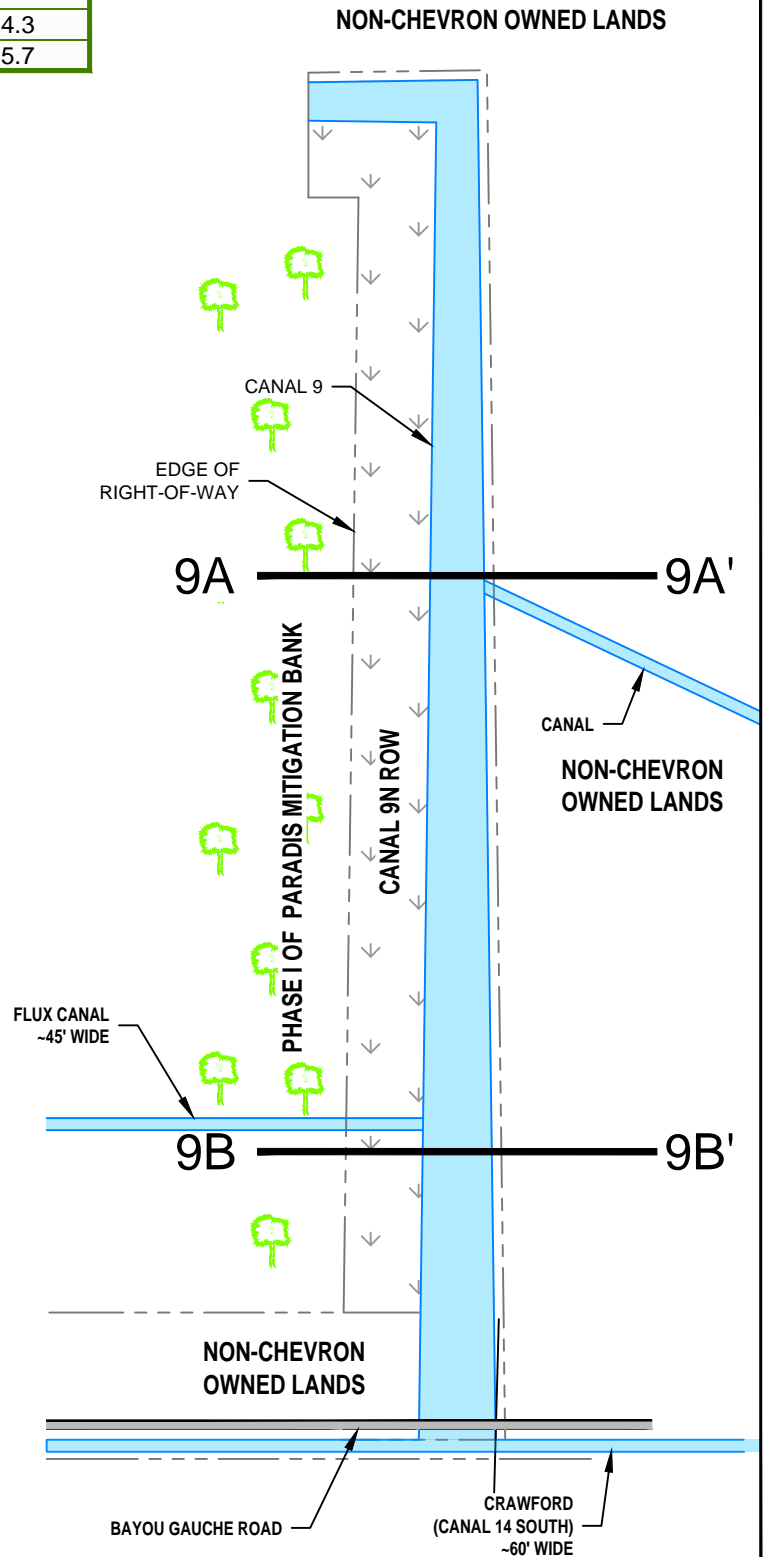
Jul 3, 2019

APPENDIX B  
 FIGURE 5B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~6260'	30'	3.87'	4.3
CANAL 9N/W ROW	~6260'	40'	NA	5.7

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

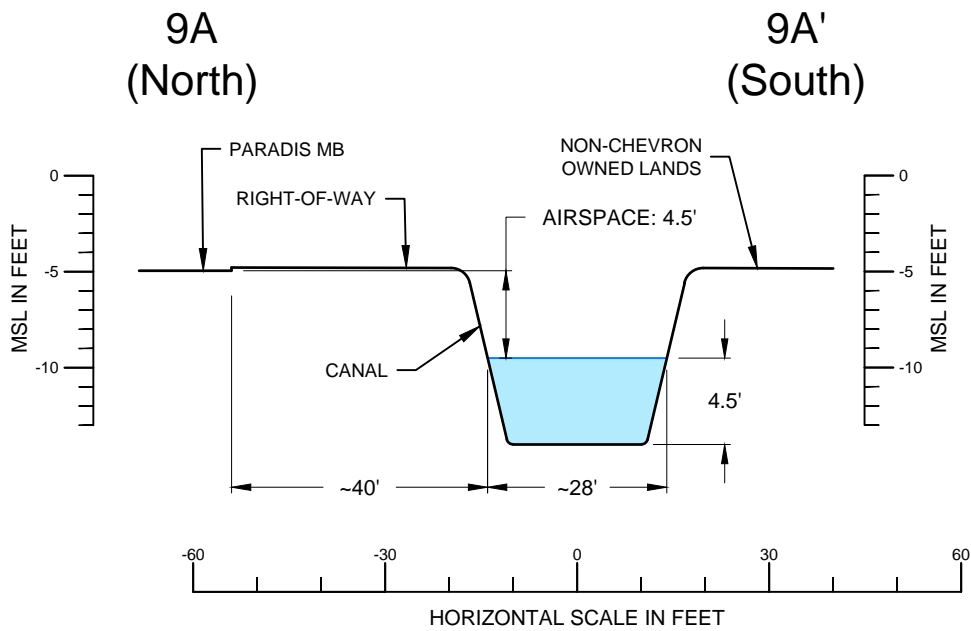


CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE I - CANAL 9

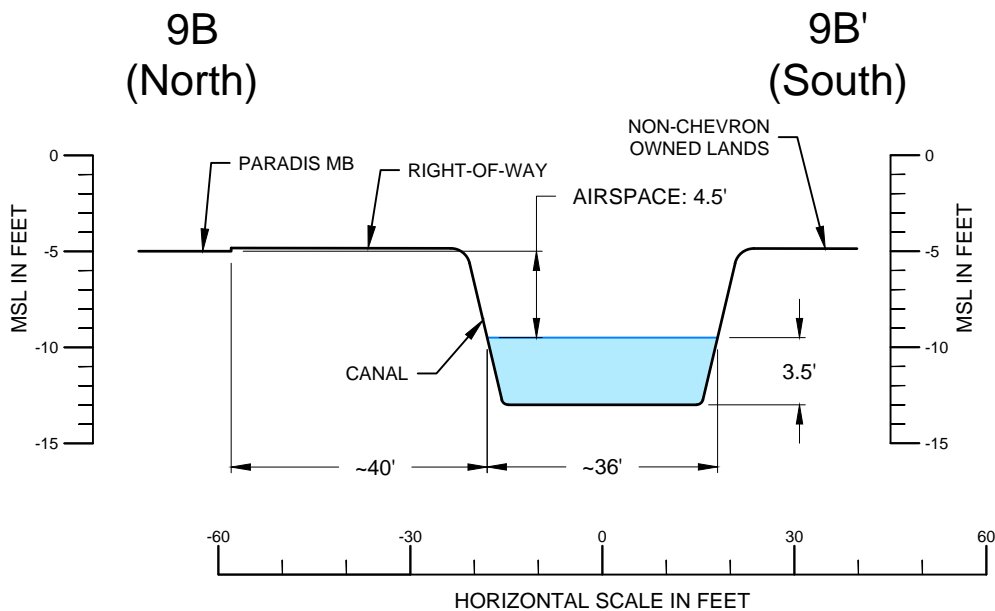
089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 6A





9A-9A'



9B-9B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PROFILES  
 PHASE I - CANAL 9

089027-03

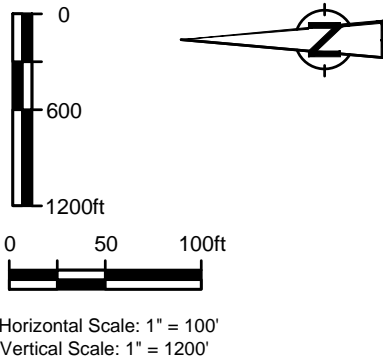
Jul 3, 2019

APPENDIX B  
 FIGURE 6B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~9390'	35'	3.8'	7.5
CANAL 12N ROW	~9390'	50'	NA	10.8
CANAL 12S ROW	~9390'	50'	NA	10.8

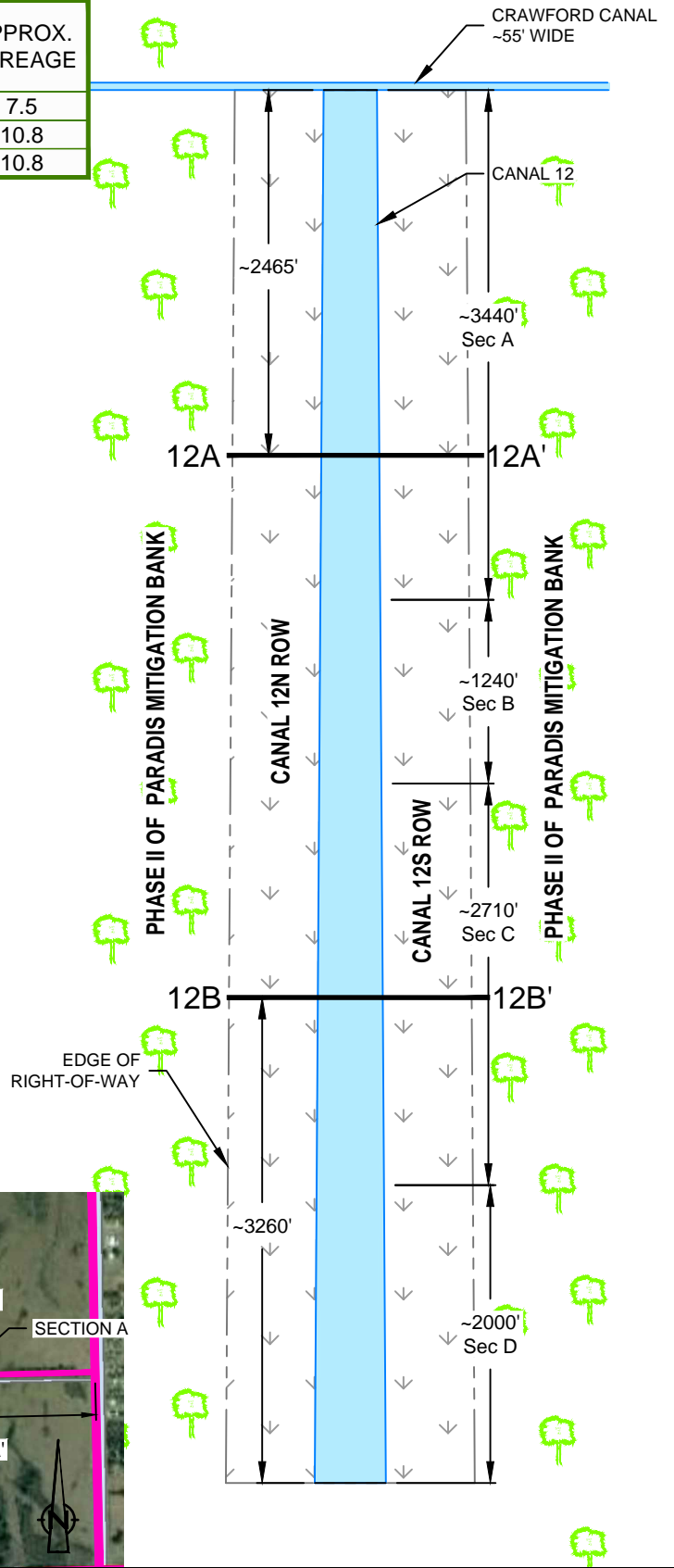
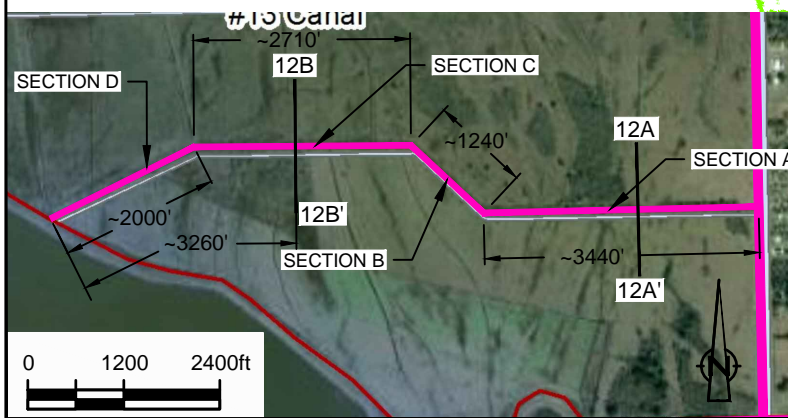
**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

**PLAN VIEW**



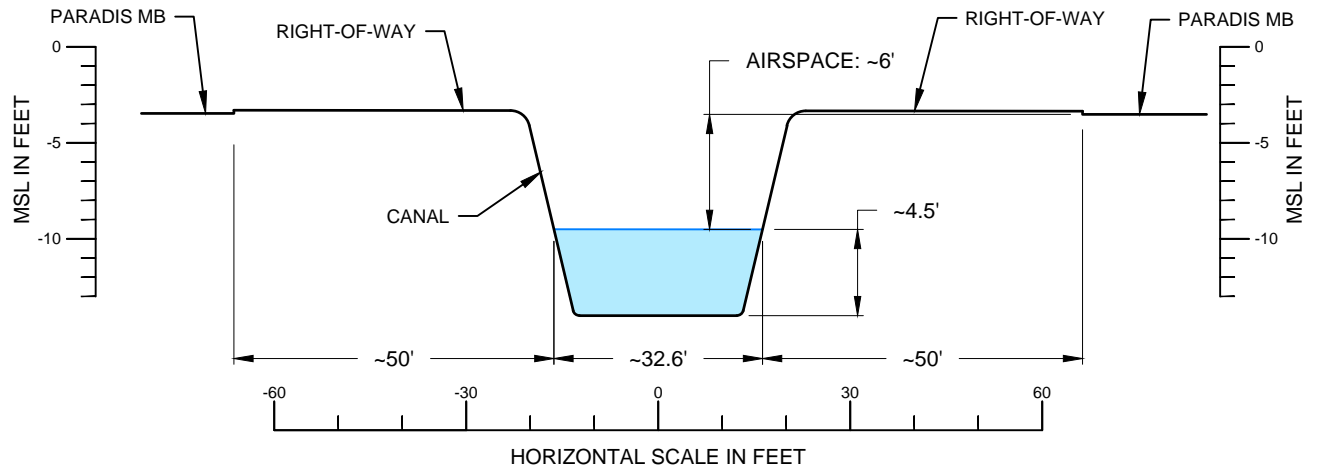
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE II - CANAL 12

089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 7A

12A  
(North)

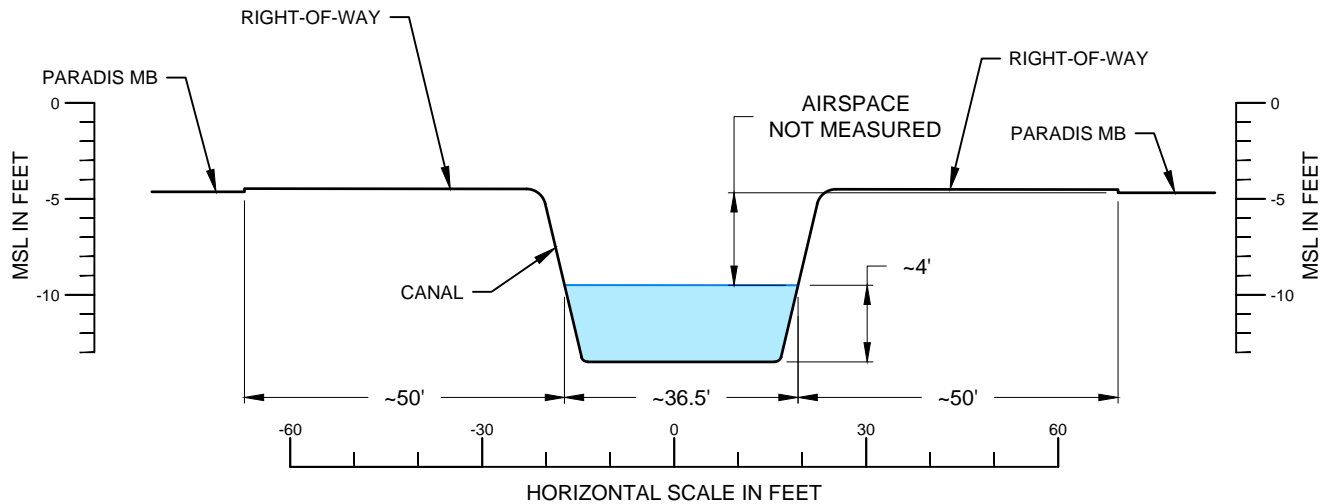
12A'  
(South)



12A-12A'

12B  
(North)

12B'  
(South)



12B-12B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE II - CANAL 12

089027-03

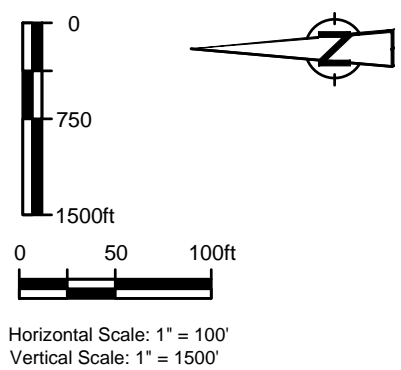
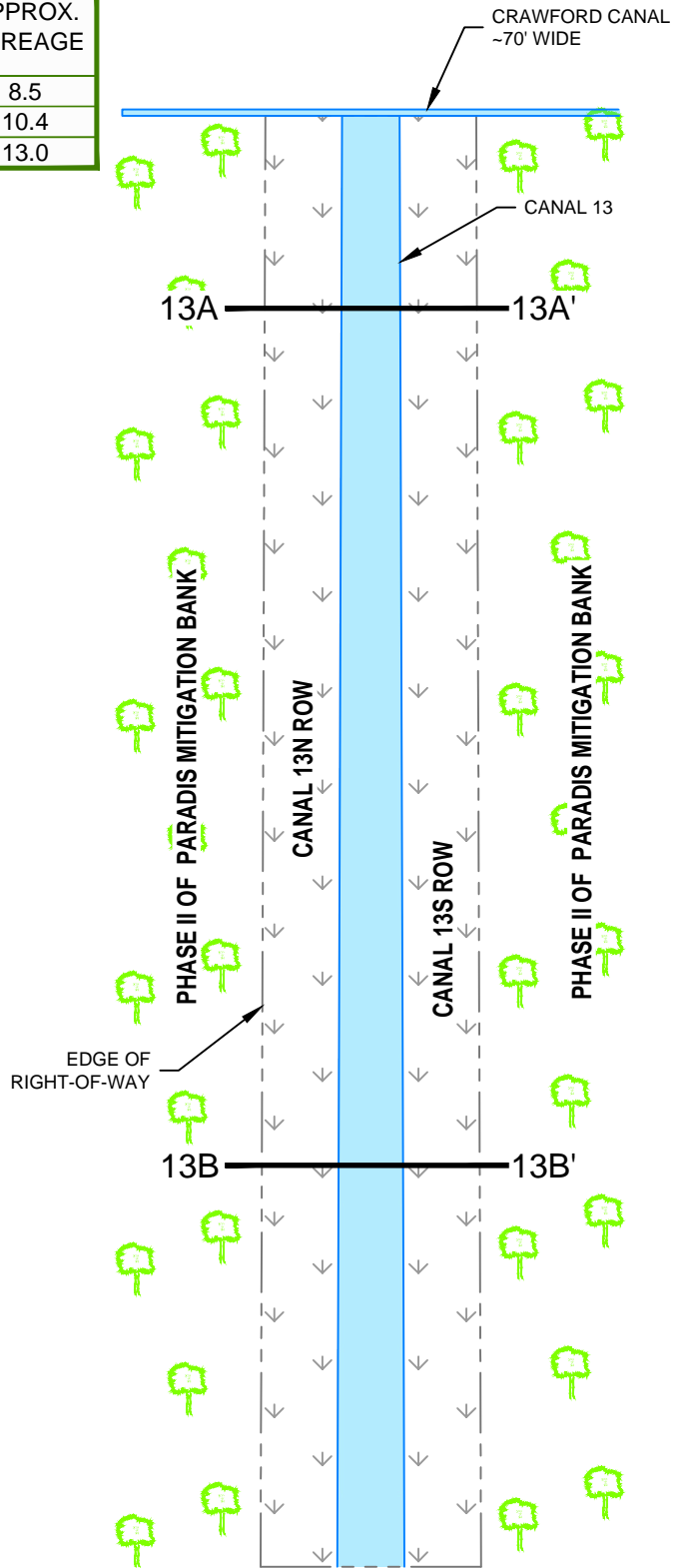
Jul 3, 2019

APPENDIX B  
FIGURE 7B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~11350'	32.5'	3.8'	8.5
CANAL 13N ROW	~11350'	40'	NA	10.4
CANAL 13S ROW	~11350'	50'	NA	13.0

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



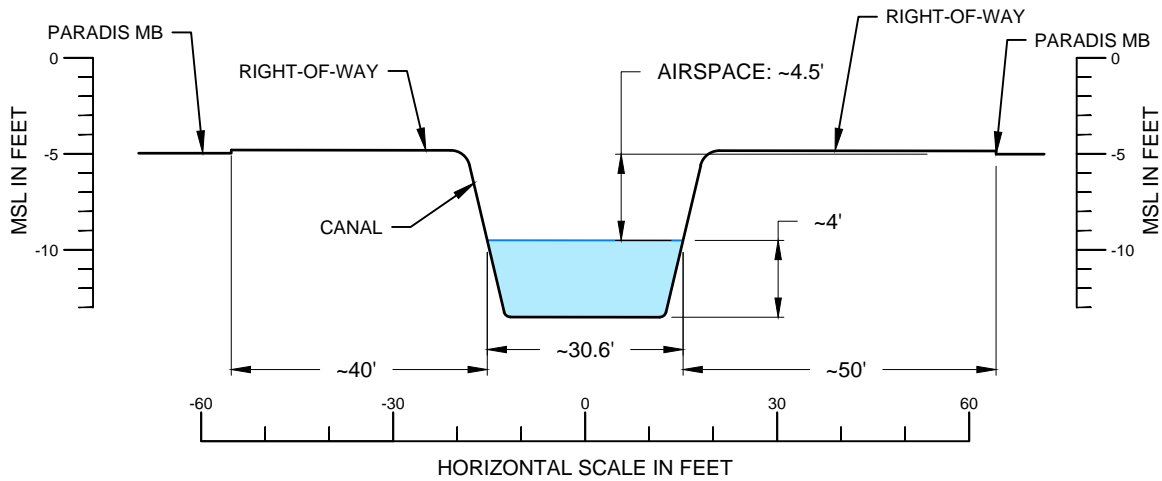
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PLAN VIEW  
 PHASE II - CANAL 13

089027-03  
 Jul 3, 2019

APPENDIX B  
 FIGURE 8A

### 13A (North)

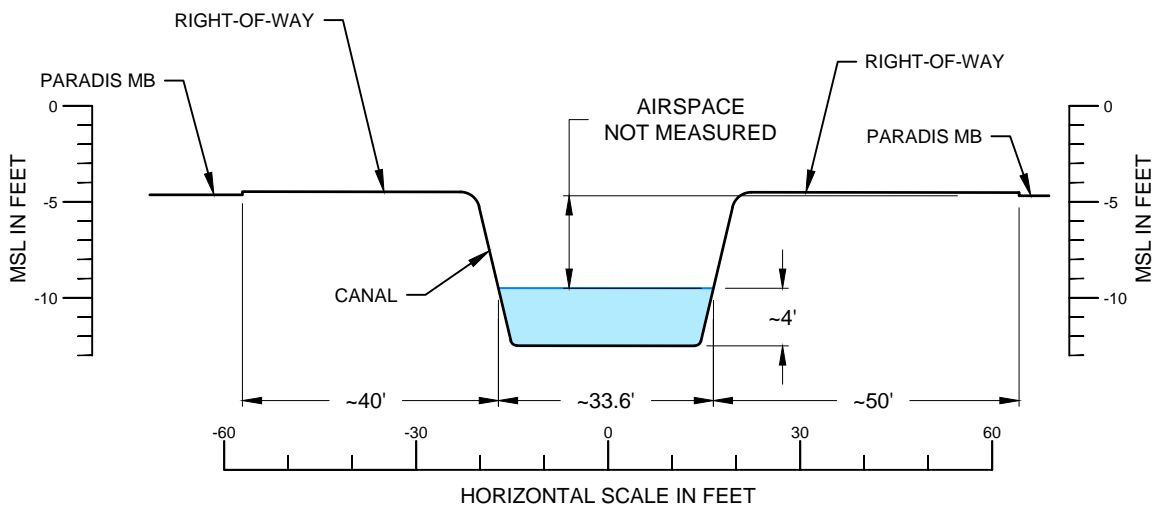
### 13A' (South)



13A-13A'

### 13B (North)

### 13B' (South)



13B-13B'

#### PROFILE VIEWS

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE II - CANAL 13

089027-03

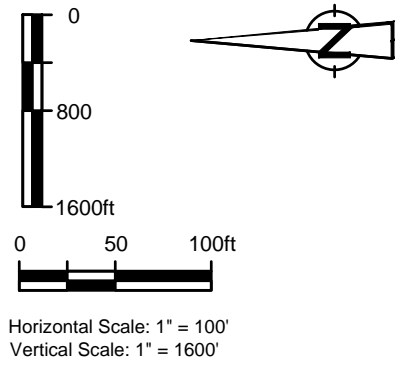
Jul 3, 2019

APPENDIX B  
FIGURE 8B

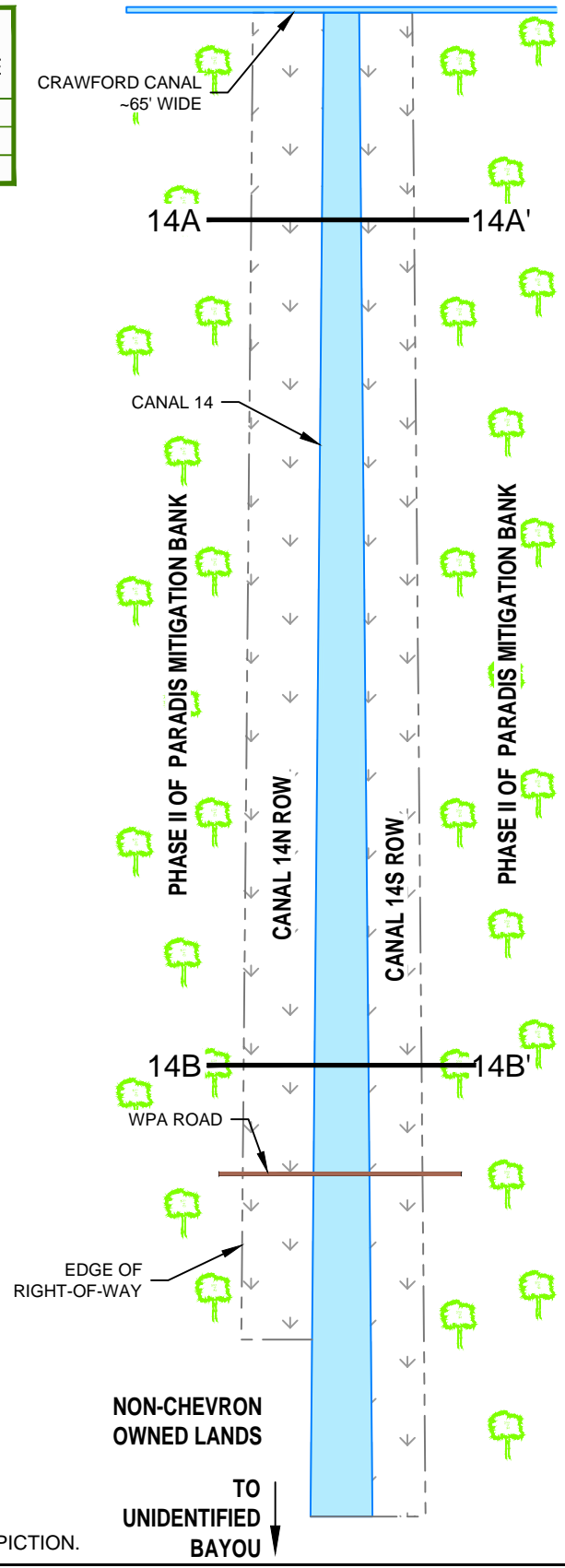
STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~13596'	27.5'	2.6'	8.5
CANAL 14N ROW	~11750'	40'	NA	10.8
CANAL 14S ROW	~13596'	30'	NA	9.4

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



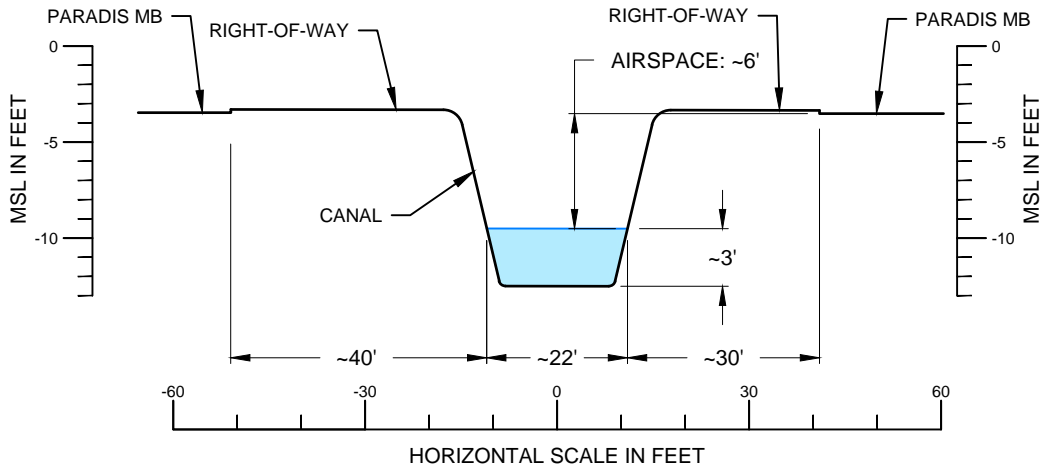
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE II - CANAL 14

089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 9A

14A  
(North)

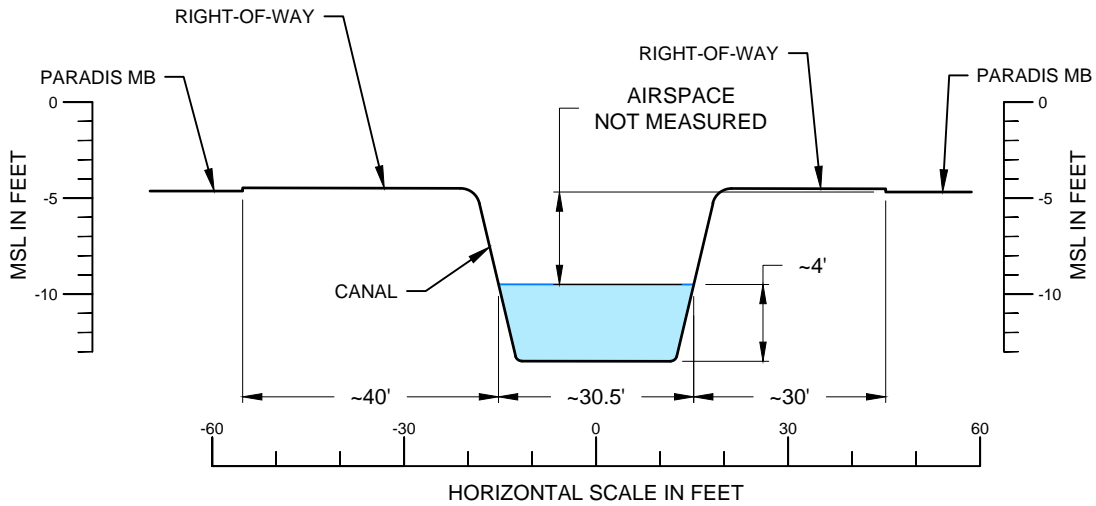
14A'  
(South)



14A-14A'

14B  
(North)

14B'  
(South)



14B-14B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE IIA - CANAL 14

089027-03

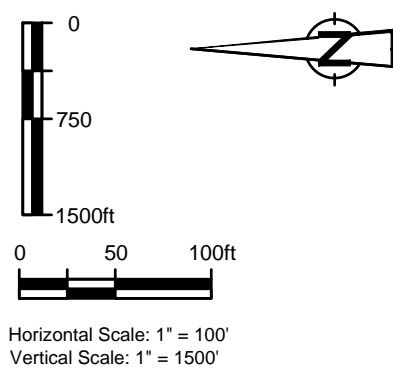
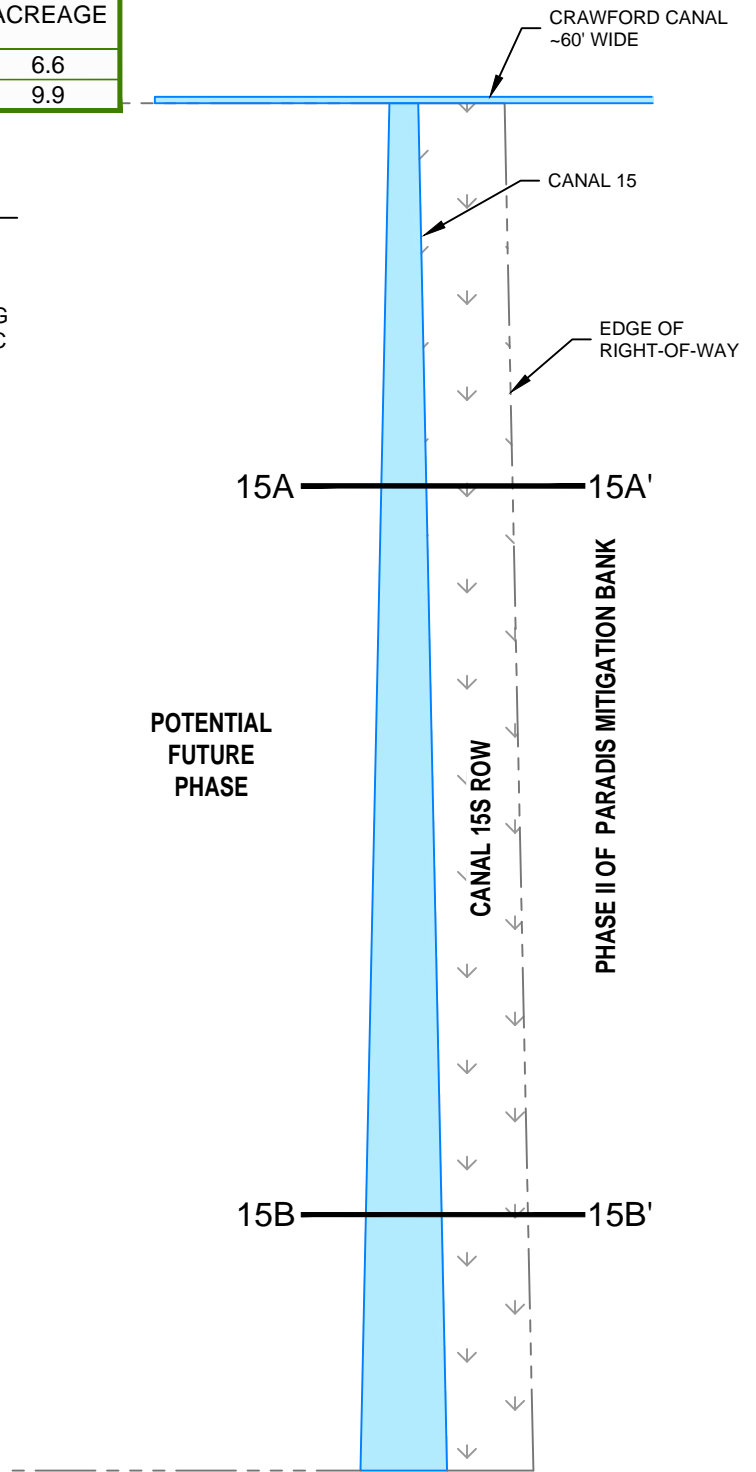
Jul 3, 2019

APPENDIX B  
FIGURE 9B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~9580'	30'	4.25'	6.6
CANAL 15S ROW	~9580	45'	NA	9.9

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
**RIGHT-OF-WAY PLAN VIEW  
PHASE II - CANAL 15**

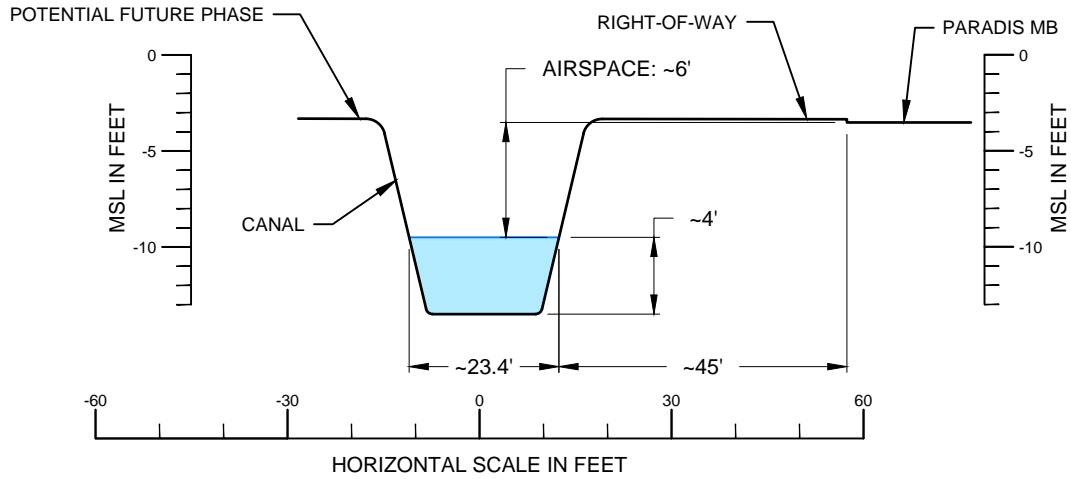
089027-03  
Jul 3, 2019

**APPENDIX B  
FIGURE 10A**



15A  
(North)

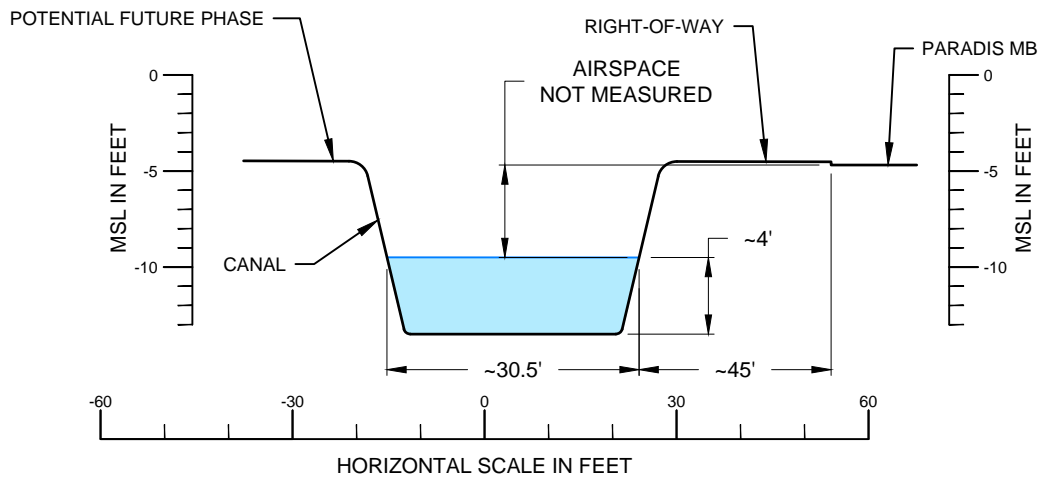
15A'  
(South)



15A-15A'

15B  
(North)

15B'  
(South)



15B-15B'

PROFILE VIEWS

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE II - CANAL 15

089027-03

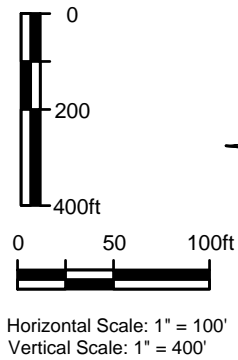
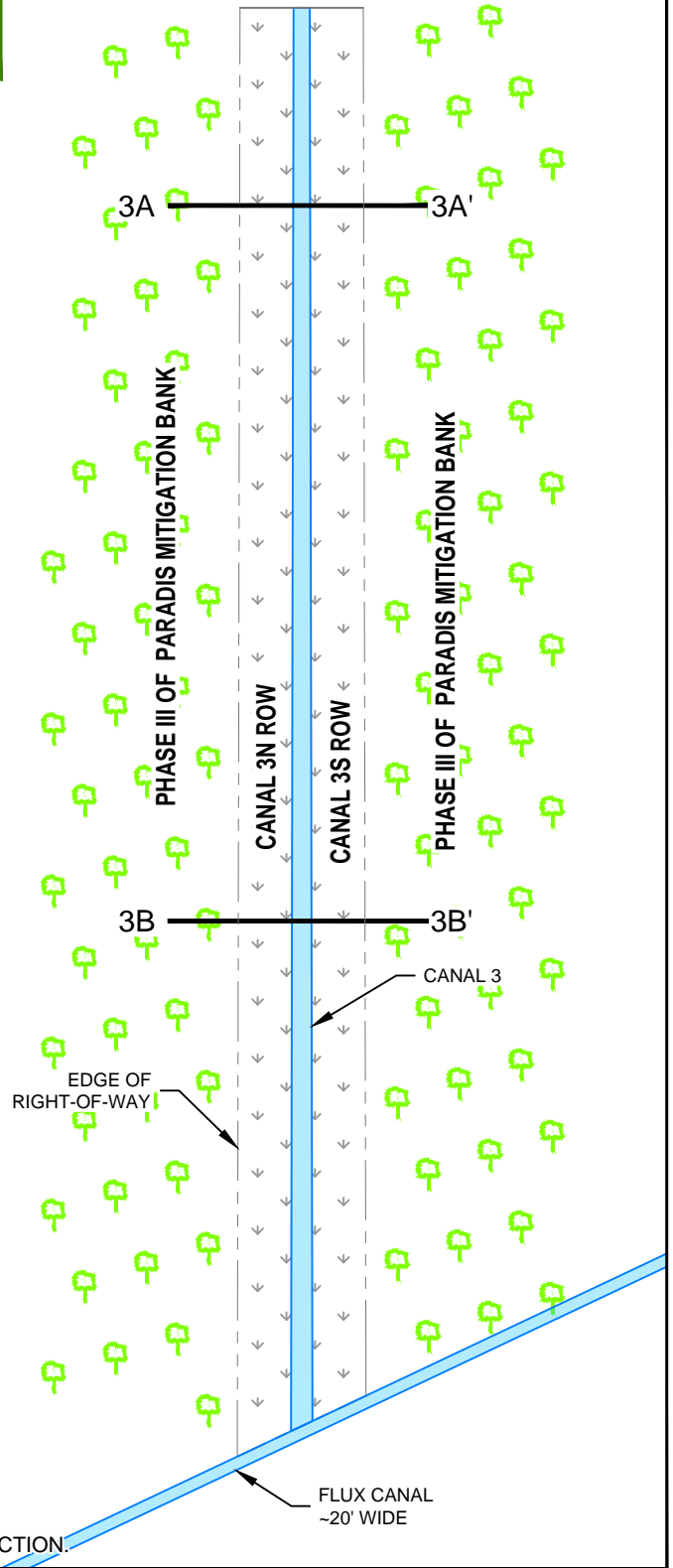
Jul 3, 2019

APPENDIX B  
FIGURE 10B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~2850'	18'	2.5'	1.2
CANAL 3S ROW	~2850'	50'	NA	3.3
CANAL 3S ROW	~2850'	50'	NA	3.3

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



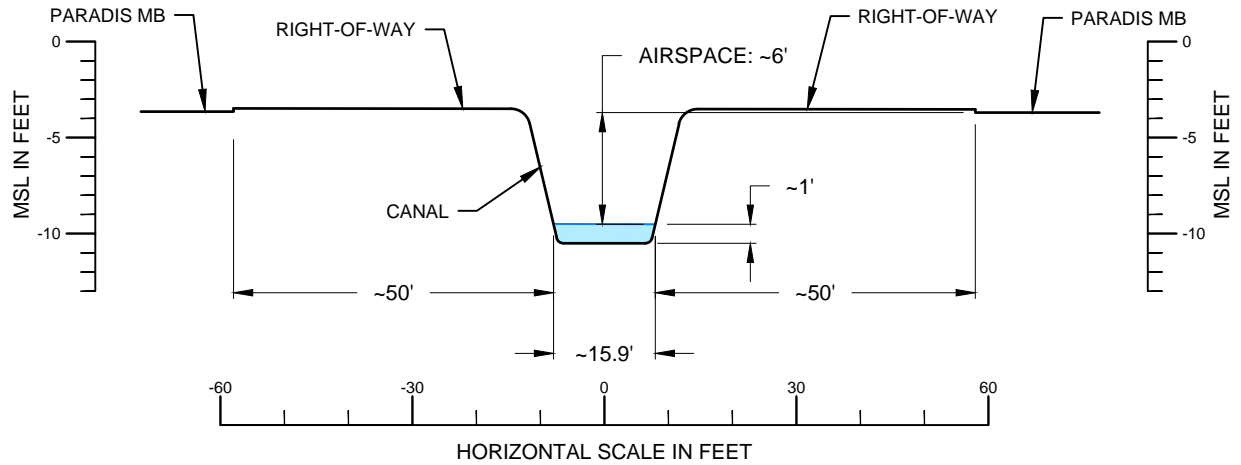
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
**RIGHT-OF-WAY PLAN VIEW  
PHASE III - CANAL 3**

089027-03  
Jul 3, 2019

**APPENDIX B  
FIGURE 11A**

3A  
(North)

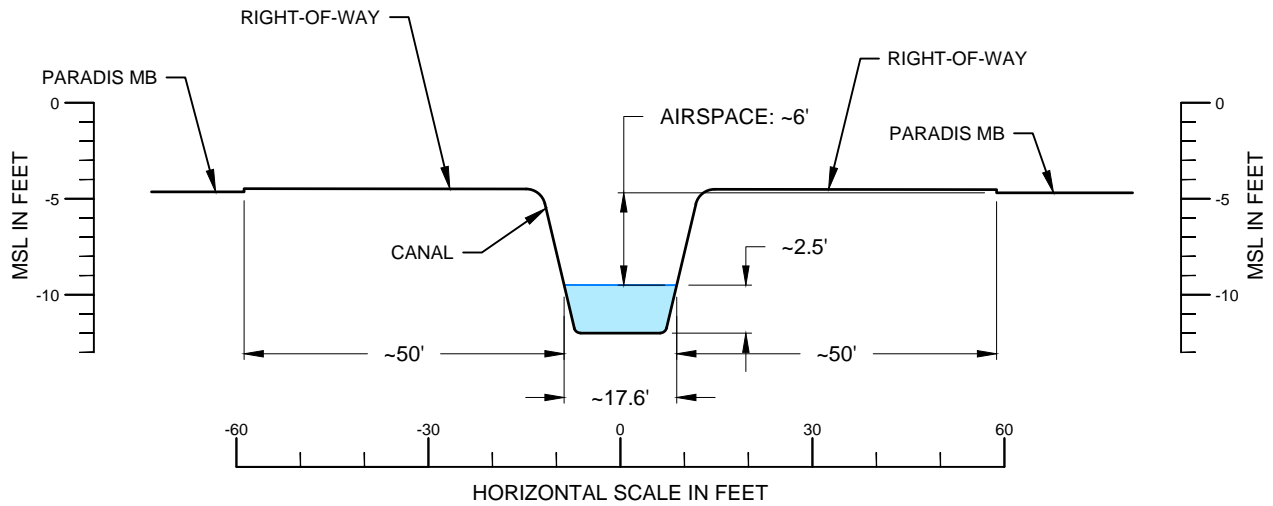
3A'  
(South)



3A-3A'

3B  
(North)

3B'  
(South)



3B-3B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PROFILES  
 PHASE III - CANAL 3

089027-03

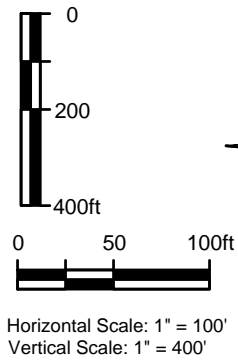
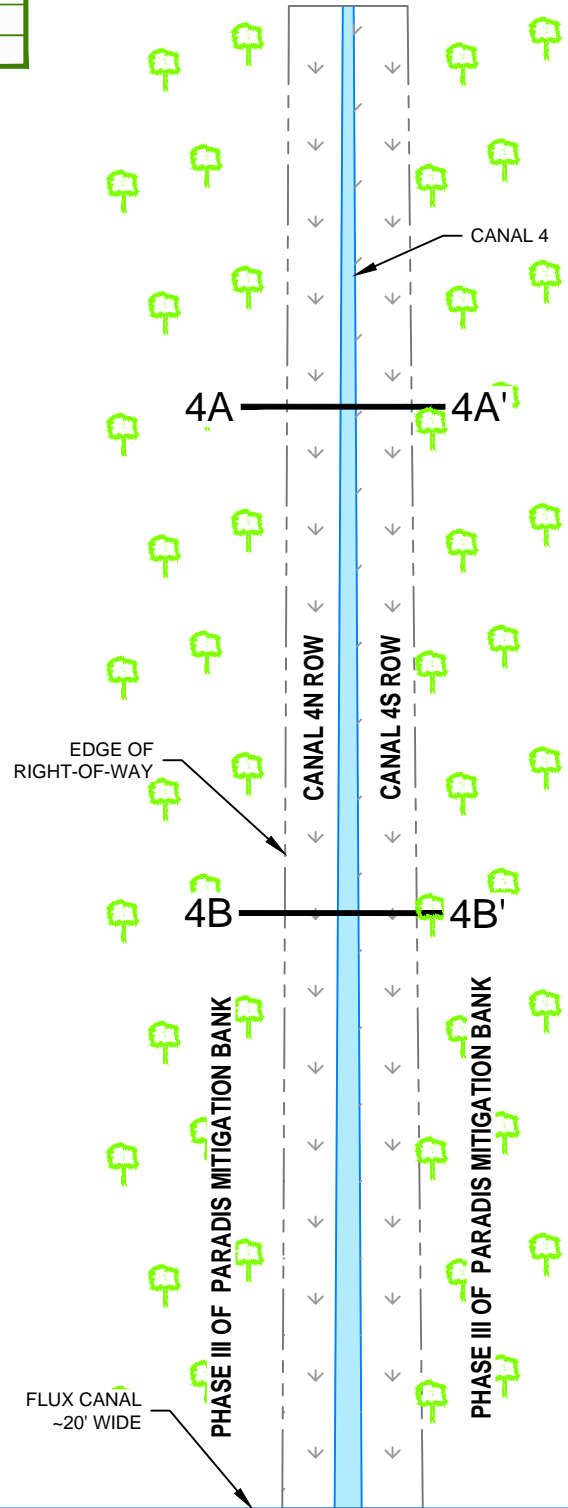
Jul 3, 2019

APPENDIX B  
 FIGURE 11B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~3050'	18'	2.5'	1.3
CANAL 4N ROW	~3050'	50'	NA	3.5
CANAL 4S ROW	~3050'	50'	NA	3.5

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
**RIGHT-OF-WAY PLAN VIEW  
PHASE III - CANAL 4**

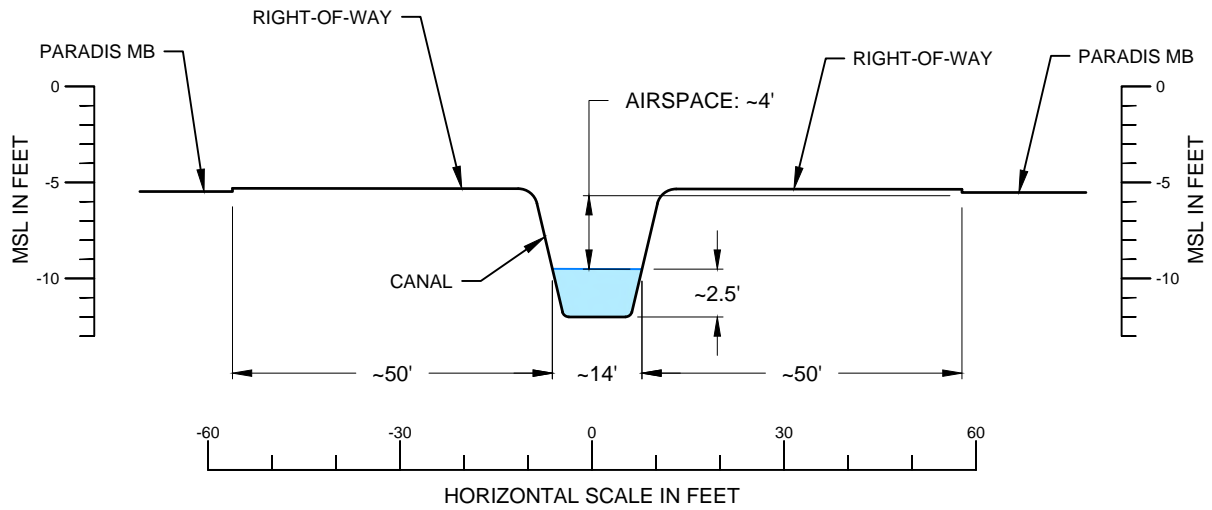
089027-03

Jul 3, 2019

**APPENDIX B  
FIGURE 12A**

4A  
(North)

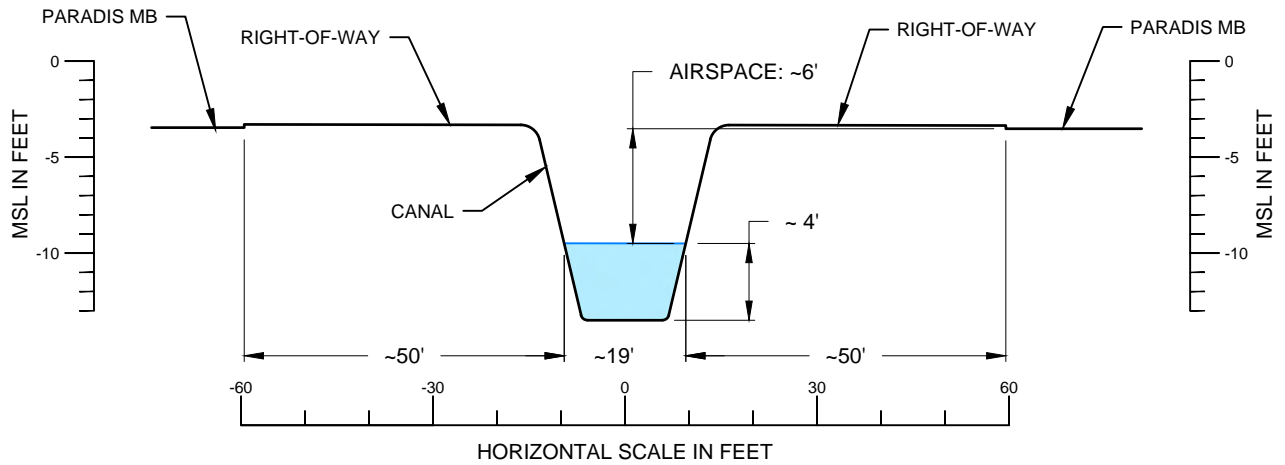
4A'  
(South)



4A-4A'

4B  
(North)

4B'  
(South)



4B-4B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE III - CANAL 4

089027-03

Jul 3, 2019

APPENDIX B  
FIGURE 12B

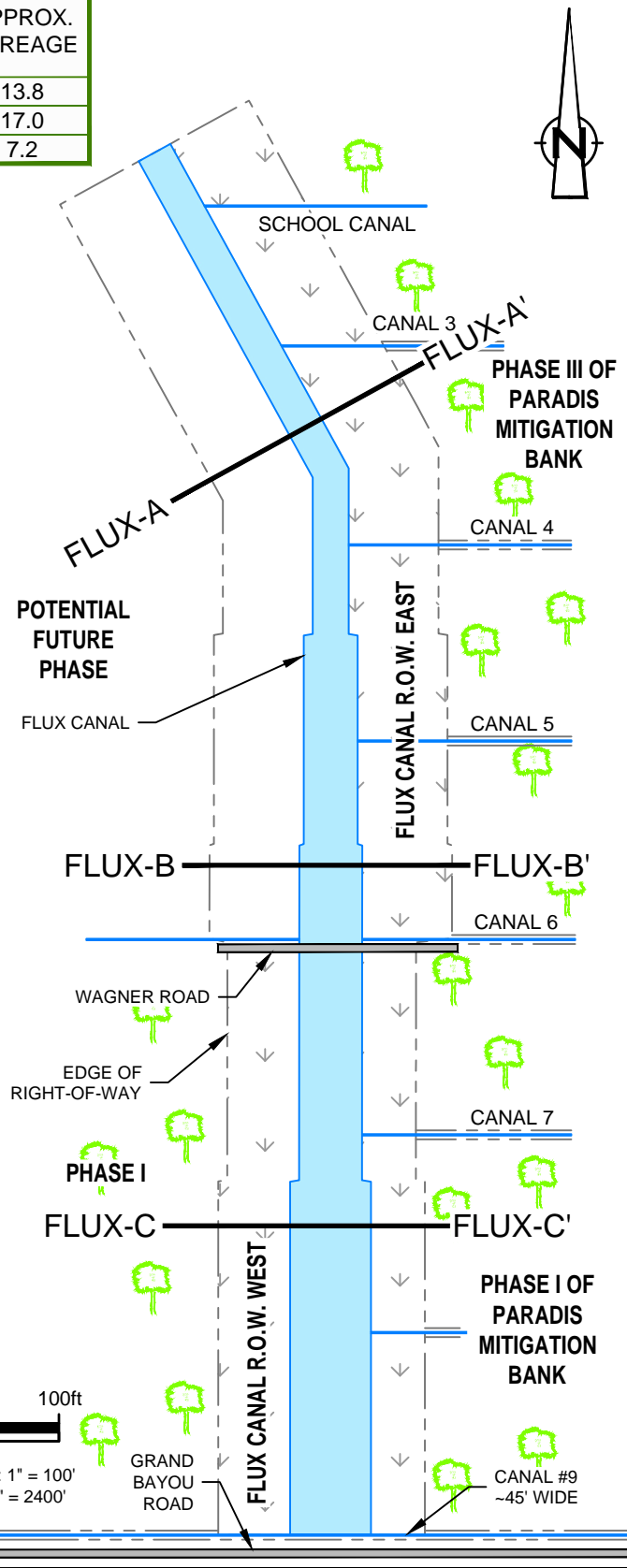
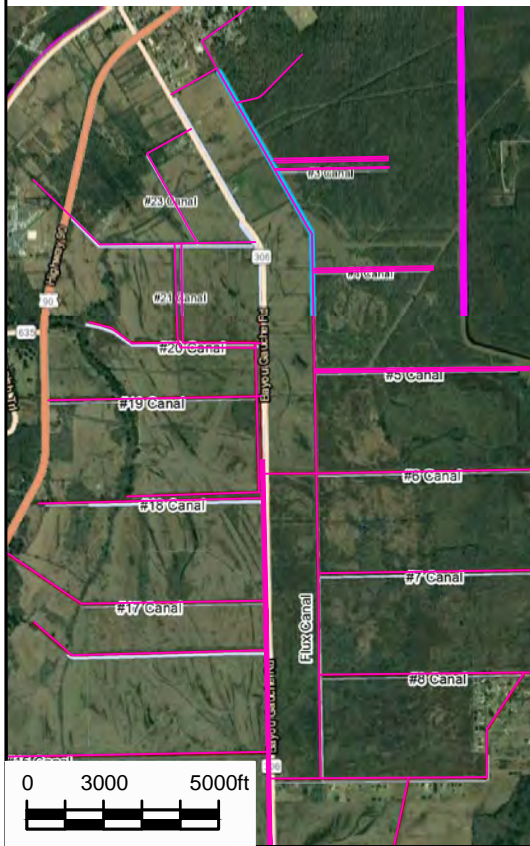
STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~18550'	32.5'	4.7'	13.8
FLUX CANAL ROW EAST	~18550'	40'	NA	17.0
FLUX CANAL ROW WEST	~7890'	40'	NA </tr	

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

**PLAN VIEW**



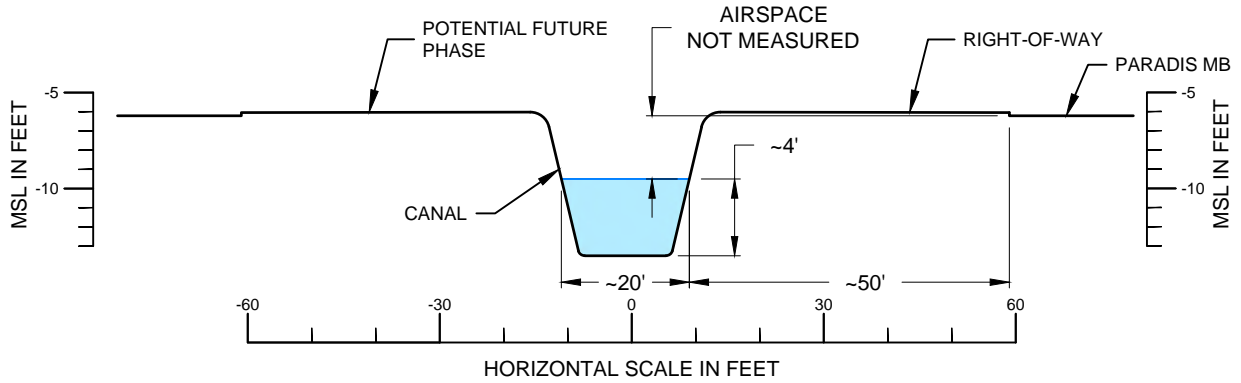
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PLAN VIEW  
 PHASES I AND III - FLUX CANAL

089027-03  
 Jul 3, 2019

APPENDIX B  
 FIGURE 13A

**FLUX CANAL-A  
(West)**

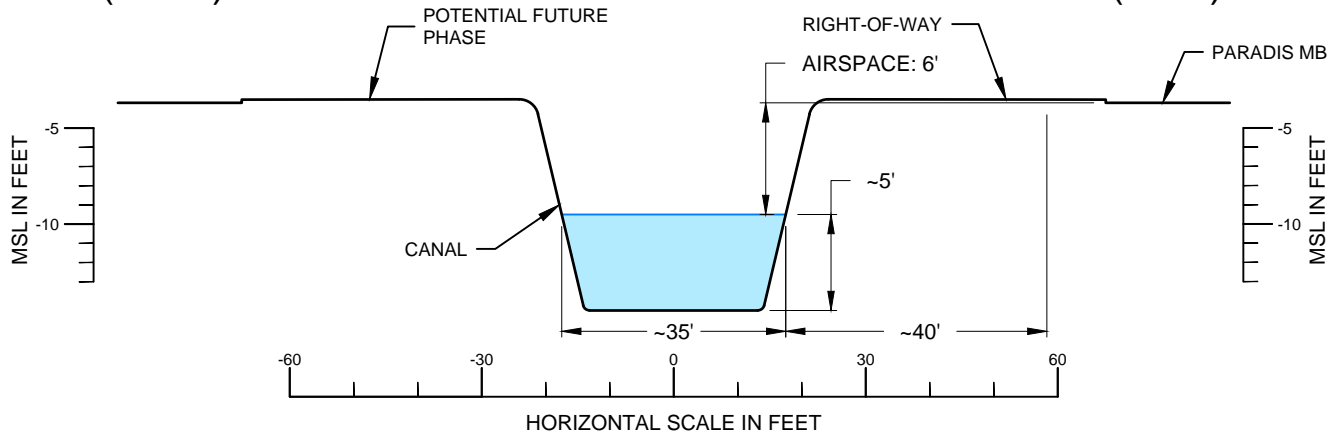
**FLUX CANAL-A'  
(East)**



FLUX CANAL-A - FLUX CANAL-A'

**FLUX CANAL-B  
(West)**

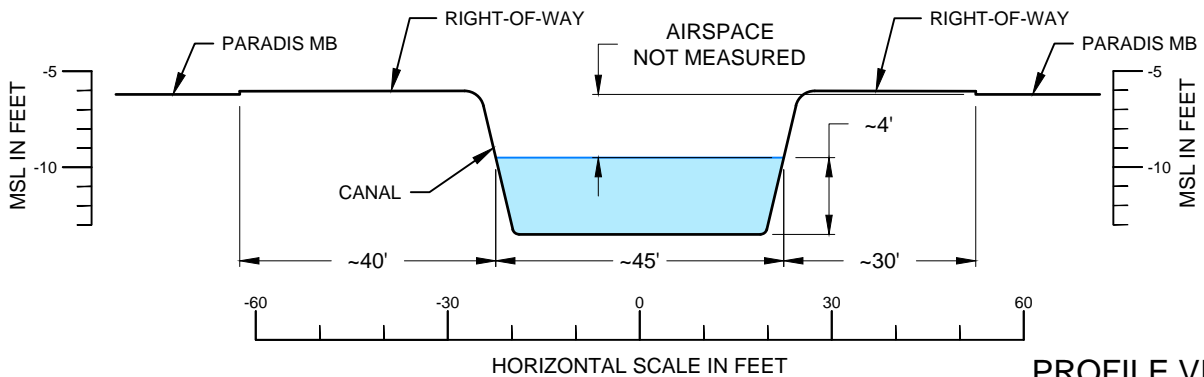
**FLUX CANAL-B'  
(East)**



FLUX CANAL-B - FLUX CANAL-B'

**FLUX CANAL-C  
(West)**

**FLUX CANAL-C'  
(East)**



FLUX CANAL-C - FLUX CANAL-C'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASES I AND III- FLUX CANAL

089027-03

Jul 3, 2019

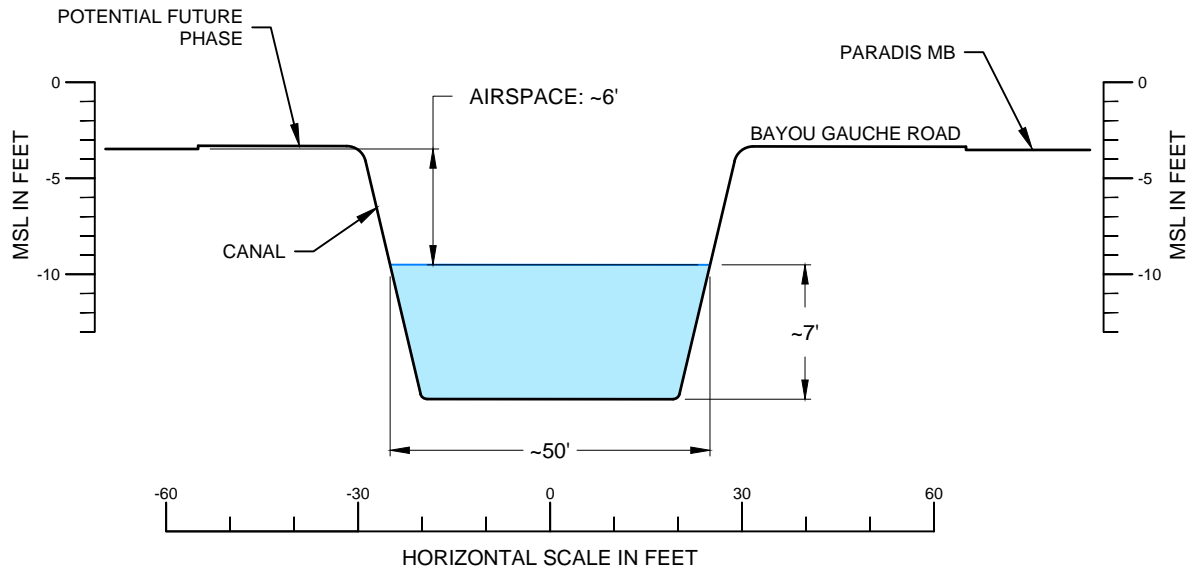
APPENDIX B  
FIGURE 13B





### CRAWFORD-A (West)

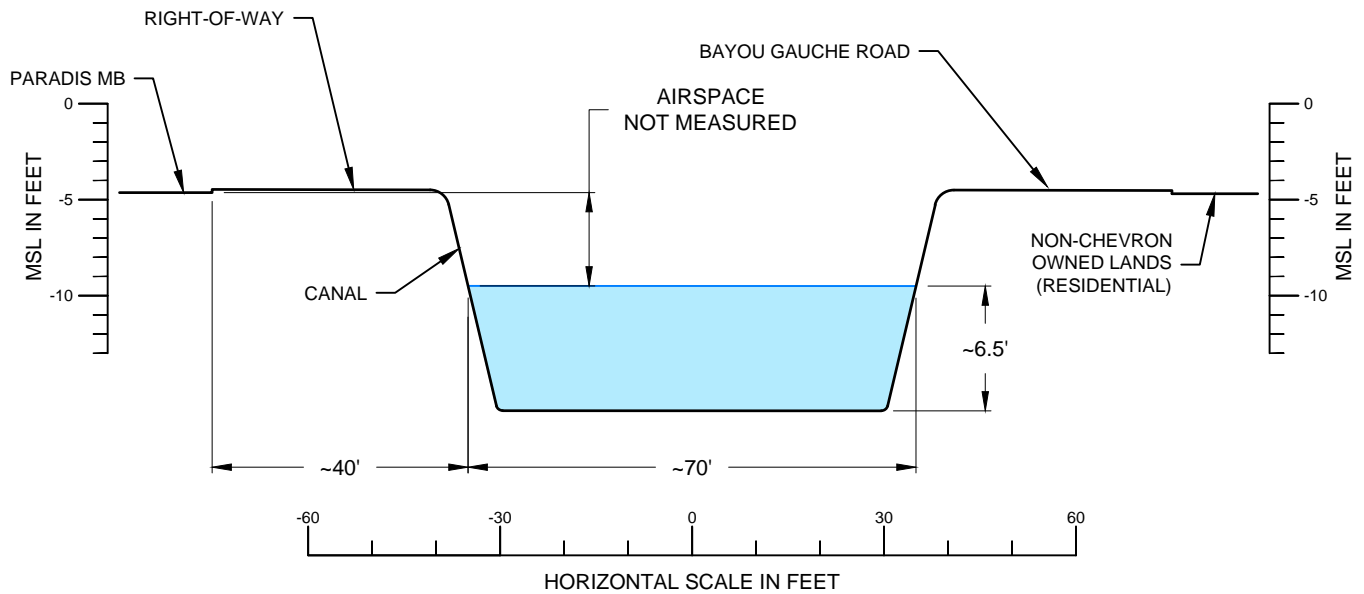
### CRAWFORD-A' (East)



### CRAWFORD-A - CRAWFORD-A'

### CRAWFORD-B (West)

### CRAWFORD-B' (East)



### CRAWFORD-B - CRAWFORD-B'

### PROFILE VIEWS

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PROFILES  
 PHASES I AND II - CRAWFORD CANAL

089027-03

Jul 3, 2019

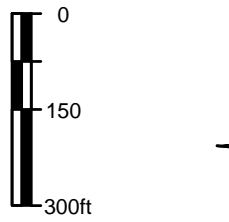
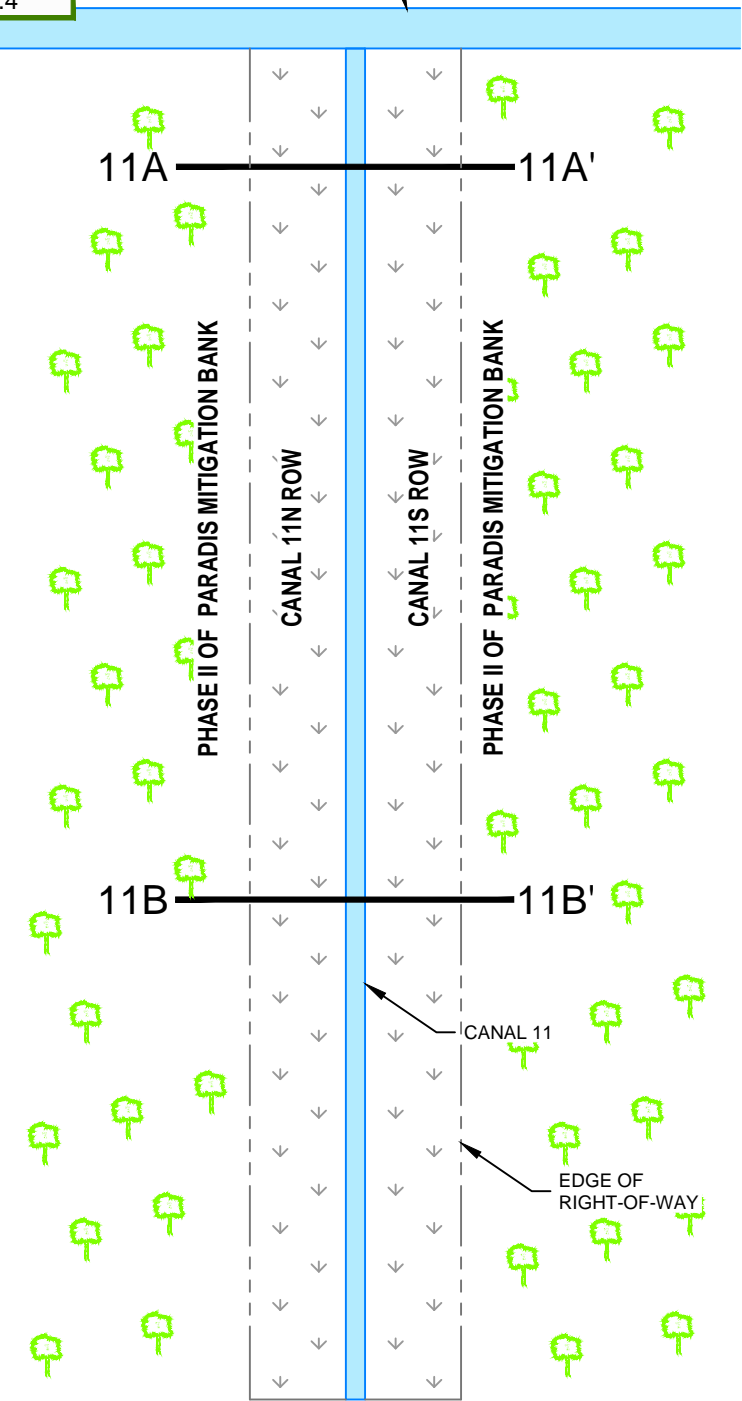
APPENDIX B  
 FIGURE 14B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	2110'	10'	0.75'	0.48
CANAL 11N ROW	2110'	50'	NA	2.4
CANAL 11S ROW	2110'	50'	NA	2.4

CRAWFORD CANAL  
-65' WIDE

**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



Horizontal Scale: 1" = 100'  
Vertical Scale: 1" = 300'

**PLAN VIEW**

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



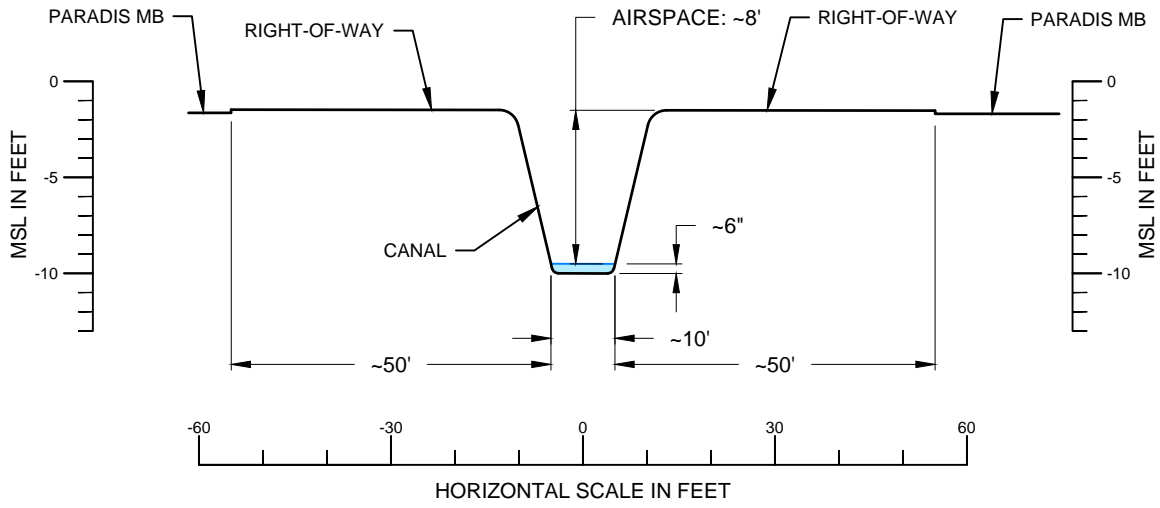
CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PLAN VIEW  
PHASE II - CANAL 11

089027-03  
Jul 3, 2019

APPENDIX B  
FIGURE 15A

11A  
(North)

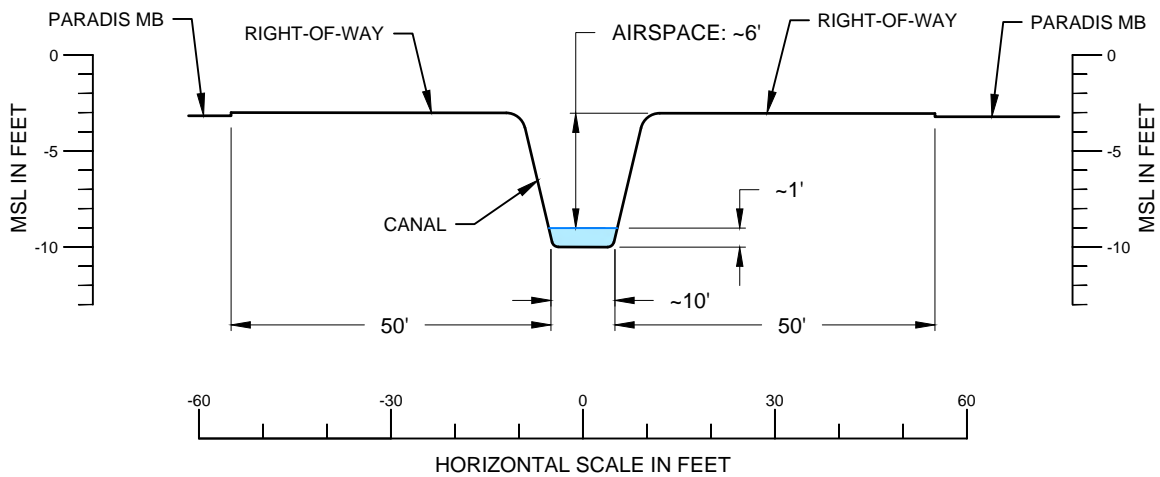
11A'  
(South)



11A-11A'

11B  
(North)

11B'  
(South)



11B-11B'

**PROFILE VIEWS**

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE II - CANAL 11

089027-03

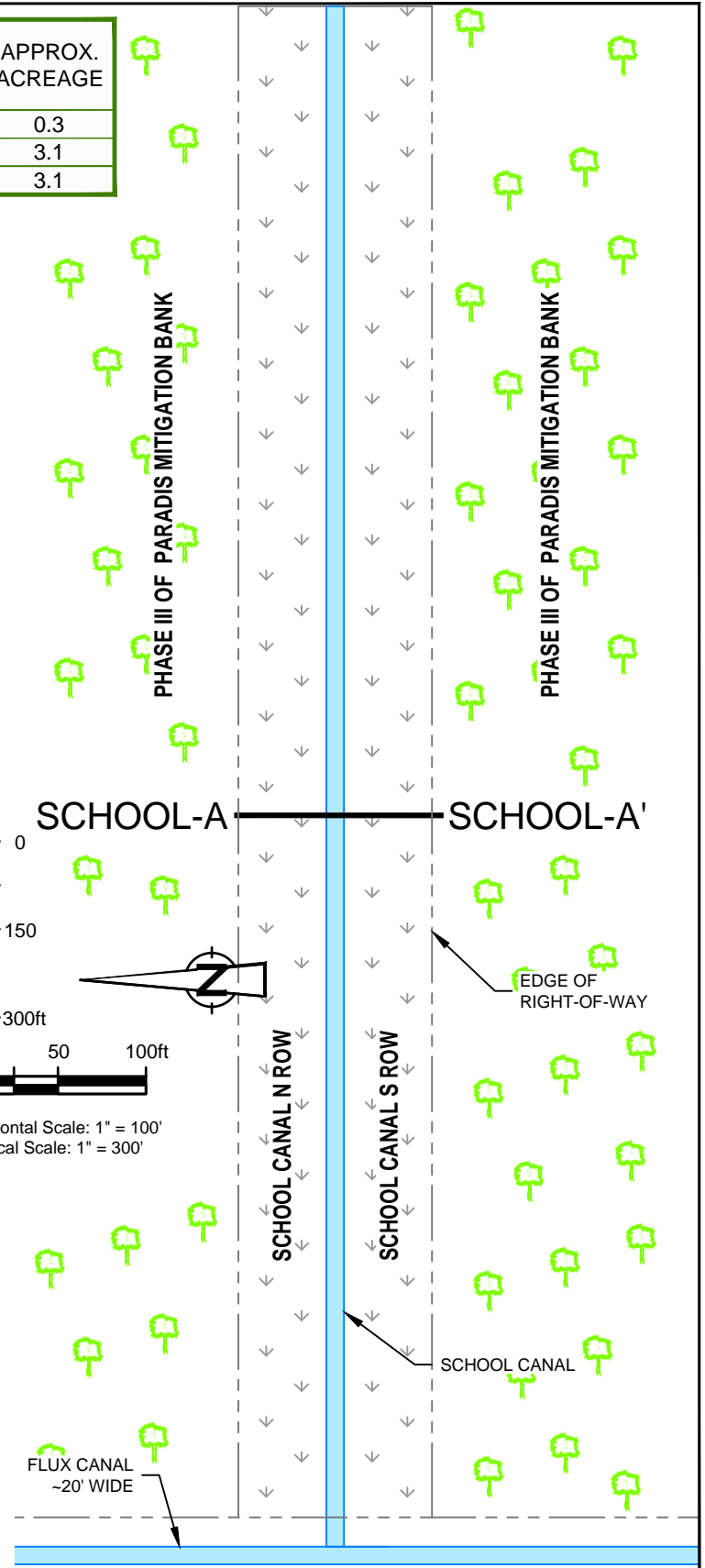
Jul 3, 2019

APPENDIX B  
FIGURE 15B

STRUCTURE	LENGTH	AVG. WIDTH	AVG. DEPTH	APPROX. ACREAGE
CANAL	~2700'	5'	.5'	0.3
CANAL ROW NORTH	~2700'	50'	NA	3.1
CANAL ROW SOUTH	~2700'	50'	NA	3.1

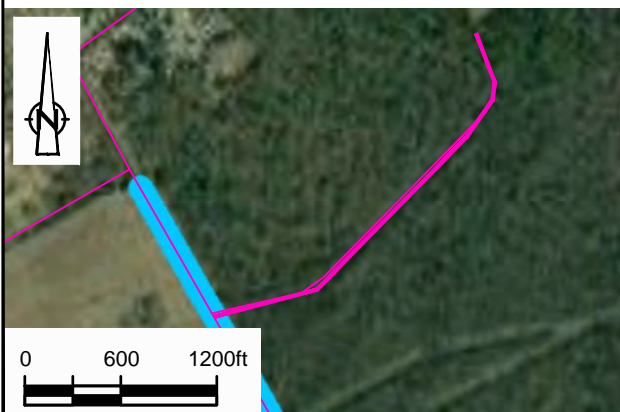
**NOTES:**

1. CANAL DEPTHS, WIDTHS AND RIGHT-OF-WAY WIDTHS MEASURED FROM STAKED EXTERIOR OF ROAD TO THE TOP OF WATER LINE IN THE CANAL AND WERE DETERMINED UNDER TYPICAL PUMPING PARAMETERS (~-9.5 FT MSL) USING MARKED 1" PVC PIPE.
2. CANAL WIDTH MEASURED FROM START OF WATER LINE FROM ONE BANK TO THE NEXT.
3. ALL CANAL RIGHTS-OF-WAY IN AREAS TO BE CONSTRUCTED WILL BE 50 FEET (TO THE EXTENT POSSIBLE).



NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.

**PLAN VIEW**



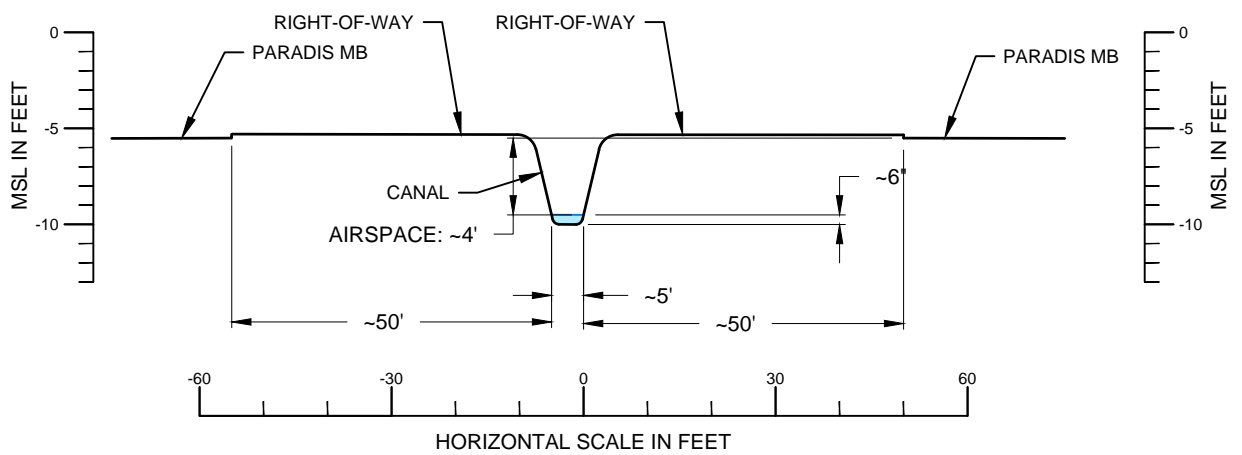
CHEVRON U.S.A. INC.  
 PARADIS MITIGATION BANK  
 REVISED PROSPECTUS  
 RIGHT-OF-WAY PLAN VIEW  
 PHASE III - SCHOOL CANAL

089027-03  
 Jul 3, 2019

APPENDIX B  
 FIGURE 16A

SCHOOL CANAL-A  
(North)

SCHOOL CANAL-A'  
(South)



SCHOOL CANAL-A - SCHOOL CANAL-A'

PROFILE VIEW

Horizontal Scale: 1" = 30'

Vertical Scale: 1" = 10'

NOTE: CHEVRON DOES NOT WARRANT THE ACCURACY OF THIS DEPICTION.



CHEVRON U.S.A. INC.  
PARADIS MITIGATION BANK  
REVISED PROSPECTUS  
RIGHT-OF-WAY PROFILES  
PHASE III - SCHOOL CANAL

089027-03

Jul 3, 2019

APPENDIX B  
FIGURE 16B

Appendix B Figure Reference	Structure	Length (ft)	Avg. Width (ft)	Avg. Depth (ft)	Approx. Acreage
2A-B	Canal 5	5,280	20	3.5	2.4
	Canal 5N ROW	5,280	50	NA	6.1
	Canal 5S ROW	5,280	35	NA	4.2
3A-B	Canal 6 <sup>(1)</sup>	7,485	45	3.5	7.7
	Canal 6N ROW	6,090	40	NA	5.6
	Canal 6S ROW	7,485	50	NA	8.6
4A-B	Canal 7	6,085	24	3.25	3.3
	Canal 7N ROW	6,085	40	NA	5.6
	Canal 7S ROW	6,085	37.5	NA	5.2
5A-B	Canal 8 <sup>(1)</sup>	6,085	25	3.1	3.5
	Canal 8N ROW	6,085	45	NA	6.3
	Canal 8S ROW	3,950	50	NA	4.5
6A-B	Canal 9 <sup>(1)</sup>	6,260	30	3.87	4.3
	Canal 9N/W ROW	6,260	40	NA	5.7
7A-B	Canal 12	9,390	35	3.8	7.5
	Canal 12N ROW	9,390	50	NA	10.76
	Canal 12S ROW	9,390	50	NA	10.8
8A-B	Canal 13	11,350	32.5	3.8	8.5
	Canal 13N ROW	11,350	40	NA	10.4
	Canal 13S ROW	11,350	50	NA	13.0
9A-B	Canal 14 <sup>(1)</sup>	13,596	27.5	2.6	8.5
	Canal 14N ROW	11,750	40	NA	10.8
	Canal 14S ROW	13,596	30	NA	9.36
10A-B	Canal 15	9,580	30	4.25	6.6
	Canal 15S ROW	9,580	45	NA	9.9
11A-B	Canal 3	2,850	18	2.5	1.2
	Canal 3N ROW	2,850	50	NA	3.3
	Canal 3S ROW	2,850	50	NA	3.3
12A-B	Canal 4	3,050	18	2.5	1.3
	Canal 4N ROW	3,050	50	NA	3.5
	Canal 4S ROW	3,050	50	NA	3.5
13A-B	Flux Canal <sup>(1)</sup>	18,550	32.5	4.7	13.8
	Flux Canal ROW East	18,550	40	NA	17.0
	Flux Canal ROW West	7,890	40	NA	7.2
14A-B	Crawford Canal <sup>(1)</sup>	12,490	62	6.75	17.8
	Crawford Canal ROW West	12,490	40	NA	11.5
15A-B	Canal 11	2,110	10	0.75	0.48
	Canal 11N ROW	2,110	50	NA	2.4
	Canal 11S ROW	2,110	50	NA	2.4
16A-B	School Canal	2,700	5	0.5	0.3
	School Canal ROW North	2,700	50	NA	3.1
	School Canal ROW South	2,700	50	NA	3.1
				<b>TOTAL</b>	<b>274.3</b>

Note: Chevron does not warrant the accuracy of this depiction

NOTES: All approximated Canal ROW acreages shown above are included in the exception acreage.  
(1) A small portion of the canal acreage cited above is not included in exception acreage, because portions of the canals as shown in Appendix B extend outside of the phase boundary.



CHEVRON U.S.A INC.  
PARADIS MITIGATION BANK

089027-00  
Jul 3, 2019

CANAL AND CANAL ROW  
SUMMARY TABLE

APPENDIX B  
FIGURE 17

# Appendix C

## Habitat and Hydrology Acreages by Management Cell

**APPENDIX C  
Habitat and Hydrology Acreages by Management Cell**

**Paradis Mitigation Bank  
Chevron U.S.A. Inc.**

		HABITAT														HYDROLOGY		
		EXISTING HABITAT							HABITAT RESTORATION							EXISTING HYDROLOGY	HYDROLOGY RESTORATION	
		<i>Figures 3A-3C</i>							<i>Figures 4A-4C</i>							<i>Figures 11A-11C</i>	<i>Figures 12, 13A-13C</i>	
Phase	Cell ID	Gross Acreage	Exceptions Acreage	Net Acreage	Existing BLH	Restored BLH	Restored CYP	Pasture	BLH Enhancement	BLH Re-Establishment	BLH Rehabilitation	CYP Re-Establishment	CYP Rehabilitation	Upland Buffer	Upland Restoration	Wetland Existing	Restored Hydrology	Wetland Total
I	B	333.5	30.2	303.2	105.5	34.6	163.1	0.0	36.8	104.6	0.0	145.4	15.2	1.1	0.0	235.7	66.4	302.1
I	C	377.7	30.1	347.6	163.3	29.1	155.2	0.0	152.0	10.6	22.4	21.8	133.6	0.3	7.0	304.7	35.6	340.3
I	D	380.7	27.9	352.7	62.9	231.6	58.3	0.0	62.8	57.3	174.1	9.1	49.2	0.1	0.1	305.7	46.8	352.5
I	E	247.8	13.0	234.8	34.2	105.2	95.3	0.0	34.2	85.2	19.7	7.1	88.2	0.0	0.3	211.7	22.8	234.5
I	F	219.9	20.7	199.2	51.2	0.0	148.1	0.0	49.6	1.6	0.0	99.7	48.5	0.0	0.0	101.1	98.2	199.3
IIA	W	248.5	40.9	207.6	0.0	62.6	125.7	19.3	0.0	82.0	0.6	115.7	9.3	0.0	0.0	58.2	149.4	207.6
IIA	Y	324.7	46.1	278.5	0.0	39.8	238.3	0.4	0.0	37.2	2.8	208.7	29.8	0.0	0.0	219.8	58.7	278.5
IIA	Z	450.1	60.7	389.4	0.0	99.3	290.0	0.1	0.0	95.7	2.6	267.5	23.6	0.0	0.0	179.9	209.5	389.4
IIB	V	372.6	33.6	339.0	9.1	0.0	0.0	329.8	0.0	217.4	121.6	0.0	0.0	0.0	0.0	127.8	211.2	339.0
IIB	X	40.8	3.2	37.6	0.0	0.0	0.0	37.6	0.0	0.0	37.6	0.0	0.0	0.0	0.0	37.6	0.0	37.6
IIB	AA	622.0	108.9	513.1	6.7	11.1	0.1	495.2	1.6	356.6	155.0	0.0	0.0	0.0	0.0	166.0	347.2	513.1
IIB	AB	489.5	101.2	388.3	22.4	0.0	0.0	365.9	0.0	244.7	143.5	0.0	0.0	0.0	0.0	152.3	235.9	388.3
IIB	AC	117.4	45.9	71.5	0.9	0.0	0.0	70.6	1.2	38.1	32.2	0.0	0.0	0.0	0.0	43.0	28.5	71.5
III	A	879.0	110.3	768.7	482.1	0.0	0.0	286.6	38.1	281.4	223.7	0.0	0.0	225.4	0.0	252.7	290.6	543.3
<b>Phase I Total</b>		<b>1,559.6</b>	<b>122.0</b>	<b>1,437.6</b>	<b>417.1</b>	<b>400.5</b>	<b>620.0</b>	<b>0.0</b>	<b>335.3</b>	<b>259.3</b>	<b>216.3</b>	<b>283.0</b>	<b>334.7</b>	<b>1.6</b>	<b>7.4</b>	<b>1,158.9</b>	<b>269.8</b>	<b>1,428.7</b>
<b>Phase IIA Total</b>		<b>1,023.3</b>	<b>147.7</b>	<b>875.5</b>	<b>0.0</b>	<b>201.7</b>	<b>654.0</b>	<b>19.8</b>	<b>0.0</b>	<b>214.9</b>	<b>6.0</b>	<b>591.9</b>	<b>62.7</b>	<b>0.0</b>	<b>0.0</b>	<b>458.0</b>	<b>417.5</b>	<b>875.5</b>
<b>Phase IIB Total</b>		<b>1,642.2</b>	<b>292.8</b>	<b>1,349.4</b>	<b>39.2</b>	<b>11.1</b>	<b>0.1</b>	<b>1,299.1</b>	<b>2.8</b>	<b>856.8</b>	<b>489.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>536.5</b>	<b>812.9</b>	<b>1,349.4</b>
<b>Phase II Total</b>		<b>2,665.5</b>	<b>440.5</b>	<b>2,224.9</b>	<b>39.2</b>	<b>212.8</b>	<b>654.1</b>	<b>1,318.8</b>	<b>2.8</b>	<b>1,071.8</b>	<b>495.9</b>	<b>591.9</b>	<b>62.7</b>	<b>0.0</b>	<b>0.0</b>	<b>994.5</b>	<b>1,230.4</b>	<b>2,224.9</b>
<b>Phase III Total</b>		<b>879.0</b>	<b>110.3</b>	<b>768.7</b>	<b>482.1</b>	<b>0.0</b>	<b>0.0</b>	<b>286.6</b>	<b>38.1</b>	<b>281.4</b>	<b>223.7</b>	<b>0.0</b>	<b>0.0</b>	<b>225.4</b>	<b>0.0</b>	<b>252.7</b>	<b>290.6</b>	<b>543.3</b>
<b>BANK TOTAL</b>		<b>5,104.1</b>	<b>672.8</b>	<b>4,431.3</b>	<b>938.4</b>	<b>613.3</b>	<b>1,274.1</b>	<b>1,605.5</b>	<b>376.2</b>	<b>1,612.5</b>	<b>935.9</b>	<b>875.0</b>	<b>397.5</b>	<b>227.0</b>	<b>7.4</b>	<b>2,406.1</b>	<b>1,790.9</b>	<b>4,197.0</b>





# about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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