1. Introduction

ExxonMobil is planning an expansion at their existing ExxonMobil Beaumont Refinery (Refinery) in Beaumont, Texas. The refinery expansion project is a return-driven project that will increase the Refinery's crude throughput. The refinery expansion project is located on the southeast side of the Refinery in an area where a tank farm was once located (**Exhibit 1-Project Location Map**). Roadway infrastructure improvements are required to support the construction of the new units. The following identifies the purpose and need and outlines the alternatives evaluated for the roadway infrastructure improvements related to the proposed refinery expansion project.

2. Purpose and Need for the Proposed Project

2.1 Purpose:

The purpose of the proposed Olin Road expansion project is to provide safe and efficient access by construction workers and equipment to the refinery expansion construction site without significant adverse effects to surrounding residential neighborhoods, neighboring facilities or existing refinery operations.

2.2 Need:

The proposed Olin Road expansion project is needed because current access to the existing ExxonMobil Beaumont Refinery (Refinery) and the refinery expansion project is limited. Currently the only access to the refinery expansion project area is through the Refinery's south plant and Gulf States Road, plus one-lane access on Olin Road **(Exhibit 2 – Existing Access)**. The Refinery's south plant area and Gulf States Road are highly constrained by existing refinery infrastructure and residential subdivisions to the west of the Refinery and cannot be substantially expanded. Traffic is projected to increase in the area of the Refinery and its expansion project as construction workers commute to and from the surrounding communities; thereby increasing safety concerns for drivers and the existing neighborhoods adjacent to the refinery. In addition, in order to not impact existing operations in the refinery with the activities of the proposed refinery expansion project, improvement of access along Olin Road is needed.

Supporting Data:

Traffic Demand:

Construction workers will be coming from the surrounding towns located near the Refinery. These towns are about 30 to 45 miles from the Refinery. Major highways near the refinery include Interstate Highway (IH) 10 and United States Highway (US) 69/96. Local highways like Highway (Hwy) 90 (College) and Hwy 380 (MLK) are also heavily used. US 69/96 runs north/south connecting towns north of the refinery (Lumberton/Silsbee/Mauriceville/Jasper) and south of the Refinery (Port Arthur/Port Neches/Nederland) and IH-10 runs east/west connecting towns like Orange/Winnie/Fannett/Hamshire (**Exhibit 2- Existing Access Routes**).

In general, people coming from the north will take US 69/96 to downtown Beaumont and then get on either Hwy 380 (MLK) or Washington Boulevard. Hwy 380 (MLK Parkway) is a road that is heavily used by people (EM Employees, contractors, EM vendors) going to the Refinery in addition to students that attend Lamar University, residents of the local area, and people accessing downtown Beaumont from the south.

During the three to four-year project duration, a significant increase in workers and equipment coming into the Refinery will occur, in addition to the refinery expansion project. This will adversely affect the existing traffic congestion in the area.

As Gulf States Road is currently an access point at the refinery expansion project, Olin Road has been identified as an additional access point in order to reduce impacts to existing roads and neighborhoods adjacent to and within the Refinery. Currently, Olin Road is a narrow roadway with insufficient capacity to support the increase in construction traffic and large equipment during the term of the refinery construction project (3 to 4 years) and would need to be widened.

Gulf States Road would be utilized as an access point that would allow for an anticipated 900 vehicles to safely navigate efficiently to and from the refinery project expansion site daily; however, as stated previously, Olin Road would need to be widened, which would allow for an anticipated 1,300 vehicles to safely navigate efficiently to and from the refinery project expansion site daily. The existing Gulf States Road access point and the proposed Olin Road access point can be seen in **Exhibit 3 – Proposed Access Alternatives**.

The existing Gulf States Road and proposed Olin Road access point locations were determined based on their proximity to the refinery expansion project location, the anticipated number of construction workers needed to construct the refinery expansion project (2,200 vehicles per day), and the ability to minimize increased traffic to streets within the neighborhoods adjacent to the refinery and existing refinery infrastructure.

Table 1: Summary of Purpose and Need

REFINERY Expansion Project	
Desired Outcome (Purpose)	**Condition to be Addressed (Need)**
Safely move construction workers in and out of the refinery expansion project site	**Increased traffic into the Refinery and the refinery expansion project**
Reduce travel paths through the existing neighborhoods	Safety concerns to the surrounding neighborhood due to increased traffic
Provide additional access to the Refinery and refinery expansion project	**Limited Access to the Refinery and refinery expansion project**

Source: Jacobs 2018

3. Alternatives Analysis

Alternatives considered in this analysis include the No Action Alternative (which includes use of existing refinery access points from the west and the one-lane Olin Road), and several alternatives for the widening of Olin Road, including the Preferred Alternative. Widening of the existing Gulf States Road and the residential streets and collectors west of the refinery is not possible due to confinement by existing residences, businesses, and refinery infrastructure.

Alternative 1-No Action:

Currently, Olin Road is a two-lane roadway from South MLK Parkway to the Chem Trade facility, which then reduces down to a one-lane roadway to the refinery. The refinery expansion project would increase traffic to 2,200 vehicles during morning and evening commutes for the duration of the three-to-four-year construction project. The current single lane of Olin Road is only intended for ingress of construction materials for the refinery expansion project site preparation and will not support future construction traffic. Therefore, the total increase in construction traffic would have to access via Gulf States Road and the residential subdivisions to the west of the refinery.

In addition, travel times on existing roadways would be substantially increased as determined by the proposed project's traffic analysis. Increased travel times would cause congestion and could lead to vehicles driving through adjacent neighborhoods, creating potential unsafe conditions for citizens living within the neighborhoods. This alternative does not meet the purpose and need of the project.

Alternative 2 - Olin Road Expansion:

In order to handle the increase in traffic volumes safely, Olin Road would need to be widened from a two-lane roadway to a three-lane roadway from South MLK Parkway north to the existing Chem Trade facility and from a one-lane roadway to a two-lane roadway from the existing Chem Trade facility north into the Refinery. The following alternatives were considered for the Olin Road widening.

Alternative 2A- Widen Olin Road to Match the Existing Roadway (Preferred Alternative):

To allow for a substantial portion of the additional construction traffic to travel Olin Road, a traffic analysis was completed and widening the roadway was recommended to safely and efficiently move the construction workers in and out of the refinery expansion project site without driving through the adjacent neighborhoods. Reducing construction traffic through the neighborhoods is a positive impact to the community and keeps the community safe from interacting with heavy traffic daily. Efficiently and safely moving construction workers has a direct effect on a higher worker retention rate for the duration of the three to four-year refinery expansion project and is a positive impact for the community in Beaumont, TX.

Since Olin Road already exists, the most practical and cost-effective approach is to widen the existing roadway from a two-lane roadway to a three-lane roadway from South MLK Parkway north to the Chem Trade facility and widen from a one-lane roadway to a two-lane roadway from the Chem Trade facility north to the refinery expansion project site (**Exhibits 3 and 4**). The widening would match the existing grade of the existing roadway to minimize impacts to adjacent roadway infrastructure already in place along Olin Road (pipelines, transmission lines, etc.). This approach also allows for the most efficient design and construction by utilizing all of the existing roadway that is currently in place. Widening Olin Road by matching the existing elevation and tying into the existing roadway would impact approximately 1.61 acres of wetlands. Although complete avoidance of wetland impacts was not achievable, the impacts to wetlands were minimized by widening the roadway to a two-lane roadway instead of a three-lane roadway through the wetland area (Chem Trade facility north to the refinery expansion project site). While widening Olin Road to a three-lane roadway from South MLK Parkway to the refinery expansion project would be more beneficial in further reducing construction traffic in the neighborhoods, the proposed roadway widening was reduced to two lanes through the wetland area to minimize impacts. The two-lane roadway will support up to 1300 vehicles per day and the additional 900 vehicles per day will continue to utilize Gulf States Road. In addition, striping improvements and the use of police officers to control traffic will be utilized at the intersection of Gulf States Road and Sycamore Street to allow traffic to operate efficiently and safely. This alternative meets the purpose and need of the project.

Alternative 2B- Widen Olin Road by Elevating Additional Single Lane as a Bridge:
Olin Road could also be widened by raising the proposed roadway lane on piers and creating a bridge over the above-mentioned wetlands. By keeping the same route, the traffic can still travel effectively without significantly impacting the adjacent neighborhoods; however, a safety concern is created by merging traffic between elevated and non-elevated roadways, as well as decreasing visibility of the traffic on the lower lane of the roadway (**Exhibits 3 and 4**).

Design and construction of a bridge over the existing wetlands would reduce the wetlands impact by approximately 0.61-acre to approximately 1 acre of impact; however, this alternative would also cause an increase in design and construction duration by approximately 6 months to 1 year and a substantial increase in cost ($3,000,000+/-) and add safety concerns. Additionally, indirect effects of shading below the elevated section would result in reduced wetland quality for the avoided wetlands. Therefore, this alternative is considered non-practicable to achieve the purpose and need.

Alternative 2C- Re-Route Proposed Lane:
The additional lane of Olin Road could be re-routed across the above-mentioned wetlands with the addition of one roadway lane extending west, then turning south to parallel the existing one-lane Olin Road. Traffic could travel effectively without impacting the adjacent neighborhoods; however, a safety concern is created by merging traffic between two separated lanes. In addition, the re-routed lane to the west would be located within an existing pipeline corridor where aboveground and belowground pipelines are present. Designing, constructing, and traveling within a pipeline corridor substantially increases safety concerns. There is a very high risk of hitting an underground pipeline during construction of the roadway and a very high risk

of a vehicle accident with an aboveground pipeline due to the large volumes of traffic predicted in the area (**Exhibits 3 and 4**).

Design and construction of a bridge for the rerouted single lane over the existing wetlands area would reduce the wetlands impact by approximately 0.91-acre to approximately 0.70-acre; however, this alternative would also cause an increase in design and construction duration (by approximately 6 months to 1 year), a substantial increase in cost ($4,000,000), and add safety concerns. Secondary effects of shading below the elevated section would also be likely. Therefore, this alternative is considered non-practicable to achieve the purpose and need.

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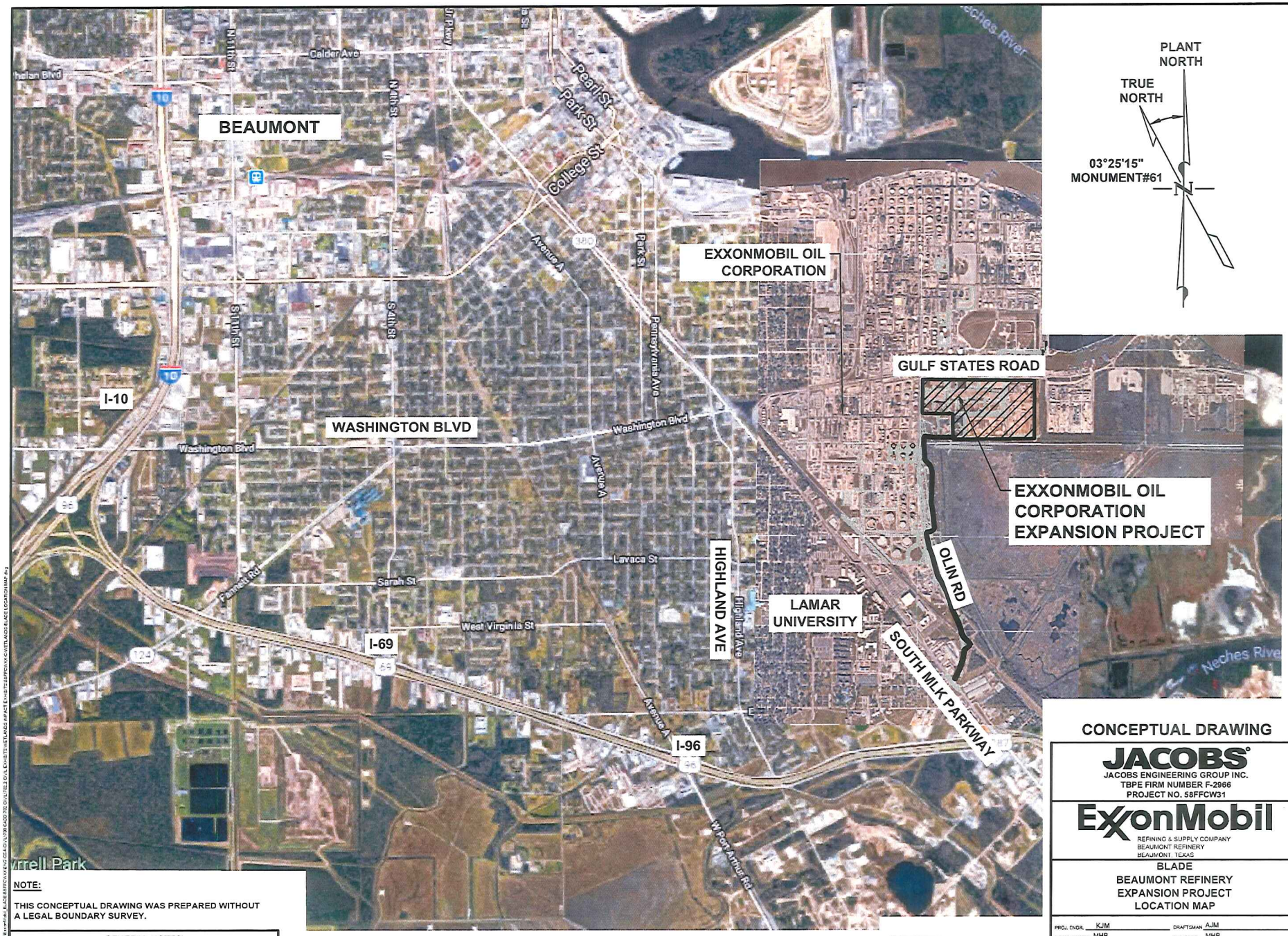

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ExxonMobil
REFINING & SUPPLY COMPANY
BEAUMONT REFINERY
BEAUMONT, TEXAS

BLADE
BEAUMONT REFINERY
EXPANSION PROJECT
LOCATION MAP

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FILE STATUS: EXHIBIT	CHK'D. (APPROVAL) MHB
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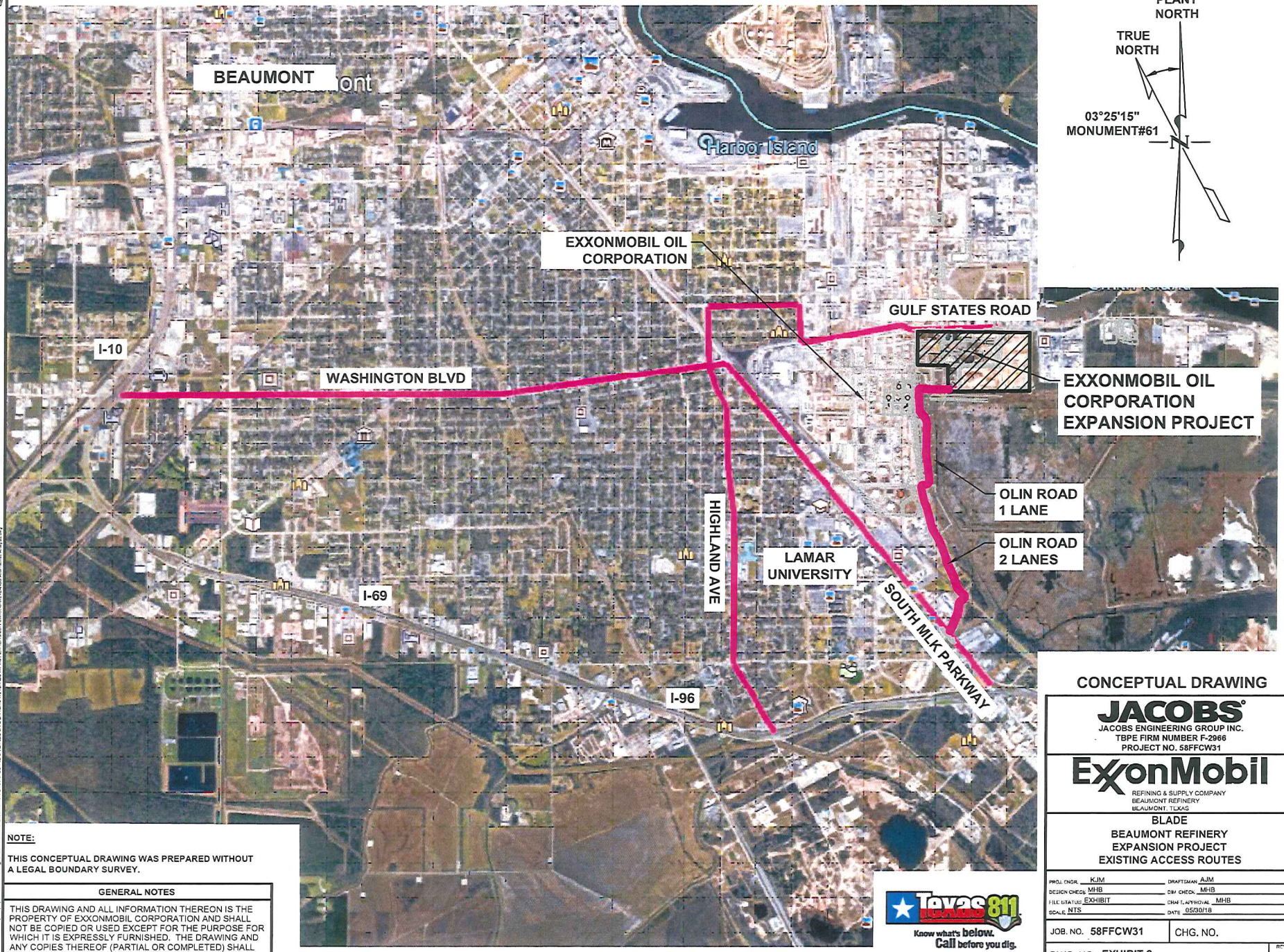

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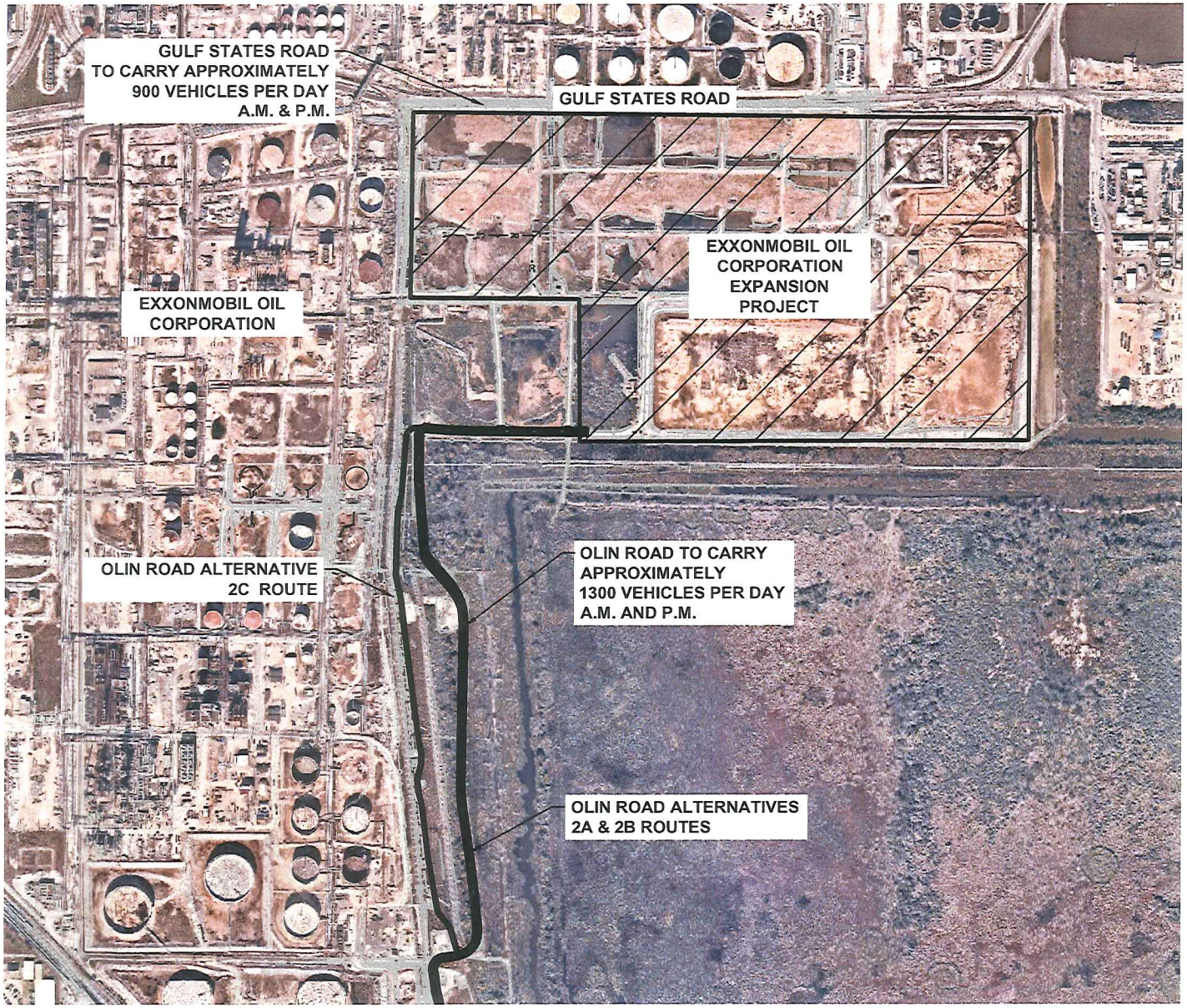

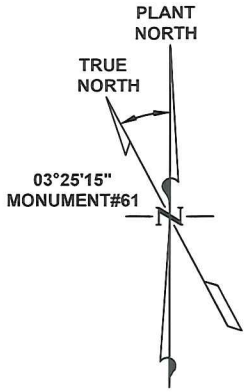

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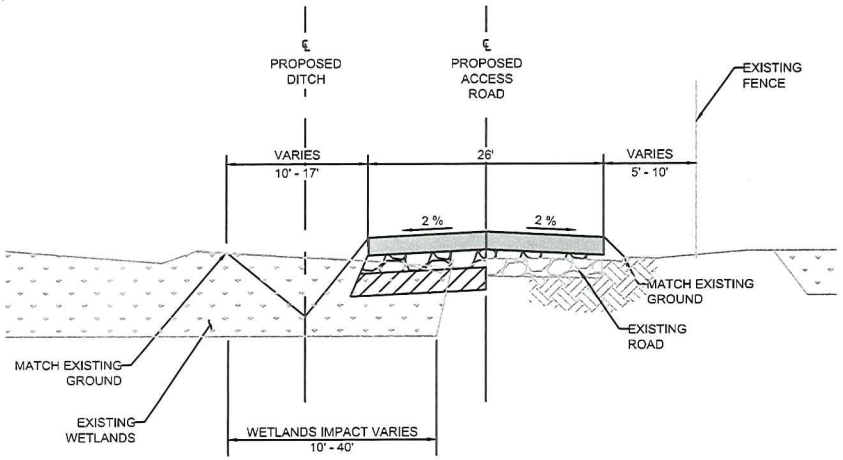

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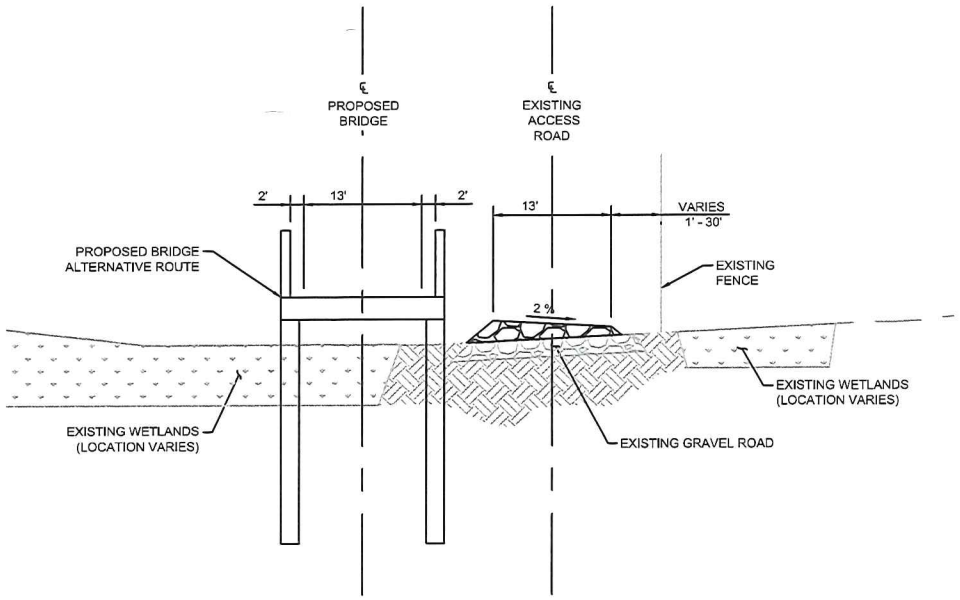

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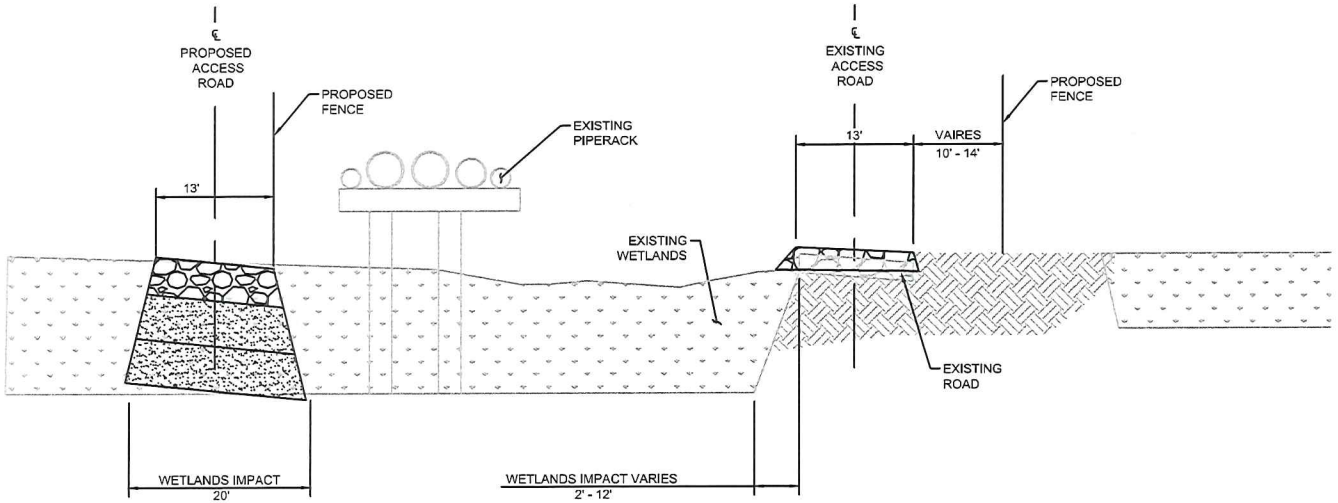

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