DEIS Alternatives Analysis Technical Report

SH 68 from I-2/US 83 to I-69C/US 281

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Hidalgo County, Texas

Texas Department of Transportation – Pharr District

March 2018

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

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1.0 INTRODUCTION

The Pharr District of the Texas Department of Transportation (TxDOT) proposes to construct State Highway (SH) 68, a new highway facility from Interstate (I)-2/U.S. Highway (US) 83 to I-69C/US 281, located in eastern Hidalgo County. The proposed project corridor would begin at I-2/US 83 and travel north then west to connect to I-69C/US 281. The total length of the proposed project is approximately 22 miles.

The purpose of this technical report is to document the identification, development, and analysis of the full range of alternatives that were eliminated from further study in the Draft Environmental Impact Statement (DEIS). This technical report provides the alternatives analysis methodology, the items used in the alternatives screening process (purpose and need, critical issues, and project goal-based criteria), and describes the full range of alternatives analyzed. This report concludes with the identification of the SH 68 reasonable alternatives carried forward for analysis in the DEIS.

Section 2.0 of this report provides a summary of the project history, Section 3.0 describes the study area, and Section 4.0 provides an overview of the alternatives analysis methodology, including the criteria established for the determination of the reasonable alternatives. Sections 5.0 through 8.0 describes the alternative analysis process used in determining the reasonable alternatives. Section 9.0 provides descriptions of the reasonable alternatives.

2.0 PROJECT HISTORY

The SH 68 project was originally conceived as a portion of a county-wide transportation improvement project known as the Hidalgo County Loop. In 2000, the Hidalgo County Metropolitan Planning Organization (HCMPO) added the Hidalgo County Loop to its Metropolitan Transportation Plan (MTP). Initial route and corridor studies to develop a loop around the perimeter of the major cities within Hidalgo County were initiated starting in 2002 by the Hidalgo County Commissioners Court. A route analysis study within a six-mile-wide corridor identified a preferred route for the Hidalgo County Loop, as documented in a Hidalgo County Loop Alternatives Route Analysis Report, adopted by the Commissioners Court on May 13, 2003 (Hidalgo County 2005).

In 2005, the Hidalgo County Regional Mobility Authority (HCRMA) was established to develop and finance various projects within Hidalgo County. A key project for establishment of the HCRMA was planning and development of the Hidalgo County Loop, a proposed toll-road network that, according to the Texas Transportation Commission (TTC) Minute Order 110315, “will provide an important reliever route for some of the noncommercial traffic, and will provide for improved traffic circulation within the county” (TTC 2005). The proposed

Hidalgo County Loop was described in a 2009 public meeting summary report as "a system of projects that is approximately 122 miles long and is composed of six interconnected but independent projects." (HCRMA 2009). The six independent sections were developed and described as Sections A through F, with the section in the vicinity of the current SH 68 project area described as Section D.

The original Section D project area was developed as the northeastern portion of the envisioned Hidalgo County Loop. Subsequently, with the designation of SH 68, it was determined that the project could increase travel capacity for local and regional traffic thereby improving traffic circulation in the eastern portion of Hidalgo County on its own. Additionally, Hidalgo County had a population increase of approximately 36 percent between 2000 and 2010 and is projected to have an increase in population of approximately 22 percent between 2010 and 2020 (U.S. Census Bureau 1990 Table CP-1-45, 2000 Table DP-1, 2010 Table P9, and Texas Demographic Center 2017). The increased population is reflected by traffic on existing roadways within the study area and at the intersection of I-69C/US 281 and I-2/US 83 (TxDOT 2015).

Because of available State funding, the project was pursued as a non-toll facility and it was determined that TxDOT would oversee and manage the development of the proposed SH 68 project (formerly known as Section D) instead of the HCRMA. In February 2013, the Texas Transportation Commission formally designated SH 68 as a new state highway facility by Minute Order 113515 and project development began. An Environmental Assessment (EA) was initiated by TxDOT and in September of 2014 a Meeting with Affected Property Owners (MAPO) and a Public Meeting were conducted. The public meeting was heavily attended and feedback from the public suggested disapproval with the project over the initial potential toll aspect of the project and the general alignment as it related to potential displacements. Based on the controversy from initial public outreach and because the project would consist of a new location facility with up to 1,100 acres of new right-of-way (ROW) and displacements, it was decided in February 2015 that the project would proceed as an Environmental Impact Statement (EIS). The EIS process for SH 68 officially began on August 28, 2015, with the publication of a Notice of Intent (NOI) in both the Federal Register and the Texas Register.

Additional details regarding the project history can be found in the technical report titled *Final SH 68 Project History and EA Alternatives Report* which is on file at TxDOT (2016c).

3.0 STUDY AREA

As part of the transition from an EA to an EIS, the project team recommended the expansion of the study area in order to ensure all reasonable alternatives for the proposed action were examined, as required by the EIS process. In addition, previous public involvement

conducted prior to the initiation of the EIS process suggested that TxDOT should look at other existing north-south roadways both east and west of the study area developed during the EA process. Based on this information, the study area was expanded and presented to local and state technical experts representing various modes of transportation at a modal alternatives workshop held on January 22, 2016. These local experts were asked to provide input regarding the study area boundaries for the project. In addition, the study area was presented at the public scoping meeting and the agency scoping meeting. Based on input received at these meetings, TxDOT determined that the study area was appropriate for the development of the full range of alternatives for SH 68. **Exhibit 1** in **Attachment A** provides a comparison of the EA study area in relation to the and EIS study area.

The EIS study area is a rectangular area in eastern Hidalgo County, oriented generally parallel to I-69C/US 281 and I-2/US 83. The study area runs from south of I-2/US 83 to north of FM 490 (approximately 18.8 miles in length) and from east of FM 493 to west of I-69C/US 281 (approximately 9.5 miles in width). It includes portions of the Cities of Edinburg, Pharr, San Juan, Alamo, and Donna. The area also includes unincorporated portions of Hidalgo County and the communities (census-designated places) of Faysville, Hargill, Doolittle, Cesar Chavez, San Carlos, La Blanca, Nurillo, Muniz, Lopezville, and North Alamo. The study area includes approximately 179 square miles or 114,627 acres.

The southern (I-2/US 83) and western (I-69C/US 281) boundaries of the study area were determined based on the previous work associated with Section D of the Hidalgo County Loop. The eastern extent of the study area was chosen since the HCRMA has a long-term plan to investigate the need for an additional roadway identified as Section F, which is east of the SH 68 EIS study area in the vicinity of Mercedes, Texas (HCRMA 2012). The northern boundary was identified in the vicinity of FM 490 based on input from the City of Edinburg requesting that TxDOT consider SH 68 connect near the South Texas International Airport at Edinburg.

4.0 ALTERNATIVES EVALUATION METHODOLOGY

The alternatives evaluation process for the DEIS began with the reconsidering of a full range of alternatives that could possibly meet the project's Purpose and Need. This full range of alternatives included the development of roadway study corridors to identify preliminary roadway alternatives and other modal alternatives besides roadways. Section 5.0 provides a detailed discussion on the full range of alternatives. The full range of alternatives included the evaluation of modal alternatives, roadway study corridors preliminary roadway alternatives and reasonable alternatives. Each study corridor and/or alternative considered was screened against a) the purpose and need for the project, b) identified critical issues, and c) project goal-based criteria in order to determine the reasonable alternatives for analysis in the DEIS. Sections 4.1 – 4.3 define and describe the purpose and need for the

project, critical issues used in the analysis and project goals and criteria established for the project.

4.1 Purpose and Need

SH 68 is needed because there are limited current north-south roadways in the area and population is projected to increase substantially in the future, which will substantially increase traffic volume on current north-south roadways in the area. SH 68 is also needed to improve the emergency evacuation capacity of the state highway system in the south Texas region. The study area contains several discontinuous roadways that provide partial north-south connectivity. These roadways have not been able to handle the current and projected increases in population and traffic in the area. Additionally, an additional evacuation route is needed in the study area to accommodate a faster ramp-up of evacuation traffic to access I-69C/US 281. Refer to the DEIS for a more detailed discussion on the supporting facts and data that support the need for the project. The purpose of the project is to accommodate population growth and higher traffic volumes, while relieving the burden on the limited number of existing north-south roadways, and provide an alternate north-south evacuation route during emergency events. A discussion on the purpose and need as well as supporting facts and/or data is available in the DEIS.

The draft purpose and need for the project was available for comment at the March 2016 public and agency scoping meetings. The only comment from an agency regarding the Draft Purpose and Need Statement was received from the Environmental Protection Agency (EPA) who recommended that the purpose and need in the DEIS should provide a clear objective statement of the rationale for the proposed project. No public comments were received from the scoping meeting that required modification of the Purpose and Need Statement. The *Public Scoping Meeting Summary Report* and *Documentation of Agency Scoping Meeting* are on file with TxDOT (2016e and 2016a).

4.2 Critical Issues

Critical issues within each 600-foot study corridor were identified by reviewing maps and information from existing databases including federal, county, state and local government websites, county tax appraisal district information, 2015 aerial imagery, and google street view (where available). The critical issues used to screen the initial 600-foot wide study corridors consisted of the following: airports; public parks; National Register of Historic Places (NRHP) properties; cemeteries; places of worship; hazardous materials, including landfills; jail complexes; federal wildlife refuges; public facilities, including schools; state antiquities landmarks (SALs); and engineering design criteria. The items were considered critical based on potential regulatory requirement, community, or project constraints that would prevent the further development of a reasonable alternative.

Regulatory requirement constraints included: Section 4(f) of the USDOT Act of 1966 (public parks, state antiquities landmarks (SALs), National Register of Historic Places (NRHP) properties), federal wildlife refuges; Section 711 of the Texas Health and Safety Code of 1989 (cemeteries). Community constraints included locations that have the potential to "…significantly affect the quality of the human environment (NEPA 1969)". The critical issues that are in this category included places of worship, jail complexes, and public facilities. Project related constraints consisted of Hazardous material sites and engineering design criteria. Hazardous material sites were included to avoid: potential high clean-up costs; significant increases on project costs; and health risks for workers, the general public, or the ecological environment if the hazardous materials were not identified and managed properly. Engineering design criteria included the ability for the alignment to accommodate a 70-mile-hour design speed and the ability to support heavy truck (WB-67) design vehicles.

4.3 Project Goals and Criteria

The project goals established for the SH 68 project include improvements in the areas of safety, mobility, community/environment, feasibility/design, cost effectiveness, and economic factors. Evaluation criteria were established under each of the project goals that could be measured, counted, calculated, or qualified for each preliminary alternative. These criteria were not intended to be compared against each other with equal weighting. The criteria were solely established to provide a basis for comparing the preliminary alternatives and determining if any alternatives could be eliminated from further study in the DEIS. The goals and criteria used to evaluate the alternatives for the project are described below.

4.3.1 Safety

The first goal for SH 68 is to provide a safe roadway and to improve roadway safety in the study area. Criteria to evaluate this goal include:

- Provides alternative route for larger/heavier vehicles,
- Provides bicycle and pedestrian accommodations,
- Minimizes safety impacts along I-2/US 83 – based on distance to existing ramps,
- Enhances safety/reduces crashes within the study area – based on the number of grade separations along major intersecting roadways.

4.3.2 Mobility

The second goal for SH 68 is to improve mobility in eastern Hidalgo County. Criteria to evaluate alternatives for this goal include:

- Provides additional capacity and improves mobility within the study area,

- Enhances system connectivity – based on ability to connect to existing and proposed regional facilities,
- Enhances modal connectivity - based on ability to connect to existing other modal facilities,
- Improves transportation system reliability within the study area – based on ability to provide an alternate route other than I-69C/US 281.

4.3.3 Community/Environment

The third goal for development of the SH 68 project is to consider impacts to the community and to environmental factors. Criteria to evaluate this goal include:

- Avoid and/or minimize impacts to the human environment including, but not limited to: residential properties; schools; cemeteries; faith-based organizations such as churches; public facilities or public services; commercial properties; civic centers; croplands/orchards; parks and recreational facilities; oil/gas wells and pipelines; utility infrastructure; canals; colonias; minority and low-income areas; noise-sensitive receivers; landfills; and hazardous materials sites.
- Avoid and/or minimize impacts to cultural resources that included: State Antiquities Landmarks (SALs); historical canal crossings; National Register of Historic Places (NRHP) listed properties; recorded archeological sites; and historic-age resources.
- Avoid and/or minimize impacts to the natural environment including: critical habitat for threatened and endangered species; National Wildlife Refuge properties; brushland habitat; floodplains; potential waters of the US; National Wetland Inventory (NWI) features; and prime farmland soils.

4.3.4 Feasibility/Design

The fourth goal is to ensure that the proposed roadway is feasible given physical constraints within the study area and that the project would meet current design standards. Criteria to evaluate this goal include:

- Maximizes driver expectancy – based on familiarity of a roadway design to a driver,
- Avoids potential air space clearance conflicts,
- Optimizes overall design – based on ability to minimize design constraints,
- Optimizes constructability – based on ability to minimize construction constraints,
- Expedite Phase 1 implementation – based on duration of post environmental activities such as ROW acquisition, utility adjustments, and construction time.

4.3.5 Cost Effectiveness

The fifth goal for the SH 68 project is that the proposed alternative is cost effective. Criteria to evaluate this goal include:

- Minimize construction cost – based on construction and mitigation estimates,
- Minimize ROW cost - based on Hidalgo County Appraisal District Market Values,
- Minimize relocation cost - based on 150% of ROW costs,
- Minimize utility displacement cost – based on 7% of construction costs plus an additional escalation of 5% for areas of complex utility impacts,
- Minimize maintenance and operational cost – based on 6% of construction costs,
- Minimize total cost – based on cumulative cost of above categories.

4.3.6 Economic Factors

The final goal for the project is to consider economic factors. Criteria for this goal include:

- Maximize opportunity for economic development through adjacent access – based on length of road adjacent to developable property,
- Minimize amount of lost tax revenue – based on existing land use taxable revenue converted to transportation.

5.0 ALTERNATIVES DEVELOPMENT

When the project was transitioned from an EA to an EIS, a full range of alternatives was revisited within the expanded study area. This section describes the development and consideration of modal alternatives (Section 5.1) and the development and description of the roadway study corridors (Section 5.2 and 5.3).

5.1 Modal Alternatives

The development of modal alternatives was the initial task in the determining the full range of alternatives. The modal alternatives developed included: transit, rail, truck only, highway expansion, new highway, and bicycle/pedestrian modal alternatives. In addition, Transportation System Management (TSM)/Transportation Demand Management (TDM), Intelligent Transportation Systems (ITS), and modal connectivity were analyzed. The following information provides brief definitions of modal alternatives developed as well as system management strategies.

- Transit services are transportation services provided to the public, examples include express bus, park and ride, bus rapid transit, and other forms of public mass transportation.
- Rail could include light rail, commuter rail, and freight rail.
- Truck only lanes are dedicated lanes for trucks traveling long distances.
- Highway expansion would include the expansion of existing highways
- A new highway would include the construction of a new facility where one does not exist.

- Bicycle and pedestrian accommodation would provide sidewalks or bicycle lanes

TSM/TDM, and ITS are defined as follows:

- TSM improves efficiency and reliability using incident management such as using changeable message signs, signal synchronization, ramp metering.
- TDM refers to a set of transportation policies or strategies aimed at reducing traffic congestion and improving roadway mobility without major capital expenditures to increase physical roadway traffic capacity. Examples include ride sharing programs, park and ride operations, staggered work hours, and transit improvements.
- ITS are advanced technologies such as real-time travel data and incident detection.

In order to evaluate different modes of transportation, a modal alternatives conference was held for the project on January 22, 2016. Local and state technical experts representing the various modes of transportation were invited and a total of 45 professionals participated with 21 participants representing stakeholders from entities such as the HCMPO, the HCRMA, municipalities, state agencies, representation from two international bridges, as well as the Pharr Economic Development Corporation. The remaining participants were TxDOT personnel and project associated consultants. The stakeholder participants were asked to comment on the project and complete a survey during the conference to provide feedback on the identification of the appropriate transportation mode to be carried forward for study in the alternatives analysis as well as to provide input on potential system management strategies. The comments and survey results received from the stakeholders indicated that a roadway facility would best address the Draft Purpose and Need Statement. A copy of the *Final Modal Alternatives Conference Report* is on file at TxDOT (2016b).

The recommendation from the stakeholders at the modal alternatives conference was in agreement with the TxDOT determination that the appropriate mode of transportation for SH 68 should be an expressway facility with frontage roads. The other modal alternatives did not meet the projects purpose and need. The justification for this determination is expanded on in Section 6.0.

5.2 Development of Study Corridors

This section is an overview of the initial study corridor development and contains descriptions and justification of the study corridors. Previous work conducted by the HCRMA, TxDOT, input from the public, known environmental considerations, and engineering design considerations were considered during the development of study corridors. The EIS process began with the development of six study corridors and expanded to 12 study corridors during the public involvement and alternatives analysis process. All study corridors were developed at a 600-foot width in order to accommodate design standards, and allow

adequate room to avoid and/or minimize impacts to potential environmental constraints. Standards used to develop all 600-foot corridors included the accommodation of a 70-mile-hour design speed, ability to support heavy truck (WB-67) design vehicles, consideration of baseline environmental constraints, and minimizing impacts to natural and human environments.

Since the EA public meeting held in September 2014, the SH 68 project team continued to engage the public though the project information office and small stakeholder meetings in the community. As part of this public involvement, the team recorded 17 instances in which members of the public and other entities suggested other routes or options for the SH 68 project corridor. These suggestions included: modifications to the EA Recommended Alternative (six instances); improvements to existing US 281 (one instance); using FM 493 (seven instances); and using other north-south corridors (three instances). Based on comments received, the project team developed six study corridors that were presented to agencies and the public at the scoping meetings in March 2016 and have a "PSM" designation in the name that represents "Public Scoping Meeting" (**Exhibit 2** in **Attachment A**). From west to east, these study corridors are:

- I-69C/US 281 PSM
- FM 907 PSM
- 2014 Modified PSM
- 2014 PSM
- FM 1423 PSM
- FM 493 PSM

Based on public and agency comments and project team considerations received during the comment period following the scoping meetings, four additional study corridors were developed (**Exhibit 3** in **Attachment A**). From west to east, these additional study corridors are:

- Tower Road
- 2014 Modified 2
- FM 1423 Modified (Golie Road)
- FM 493 Modified

Tower Road was added as an additional study corridor after comments from the public suggested that existing roads be considered as alternatives. 2014 Modified 2 was added to the study based on a comment received by the public by drawing a modified route on the display exhibit provided at the public scoping meeting. FM 1423 Modified (Golie Road) was added after a comment was received from the public indicated that an alternative west of

FM 493 should be added to the study parallel to Golie Road. FM 493 Modified was added to the study based on a public comment to parallel FM 493 to the east.

The analysis of critical issues resulted in the modification of two of the PSM study corridors:

- FM 907 Modified
- FM 493 Modified 2

FM 907 Modified was added during the process because it was found that the FM 907 PSM corridor would bisect the United States Fish & Wildlife Service Lower Rio Grande Valley National Wildlife Refuge (LRGV-NWR) Goodfields Tract. FM 493 Modified 2 was added during the process because it was found that FM 493 PSM would impact a church and a school.

Throughout the alternatives analysis and the EIS process, the No-Build Alternative will be carried forward as a baseline by which to measure the full range of alternatives. A copy of the *Public Scoping Meeting Summary Report* and *Full Range of Alternatives Tech Memorandum* are on file at TxDOT (2016e and 2016d).

5.3 Description of Study Corridors

The following twelve study corridors, plus the No-Build Alternative, represent the full range of preliminary alternatives considered for the SH 68 alternatives analysis study. The study corridors are described below and are shown in more detail on **Exhibits 2.0** and **3.0** in **Attachment A**.

5.3.1 I-69C/US 281 PSM Study Corridor

This alternative route would follow the existing I-69C/US 281 corridor from the interchange at I-2/US 83 in the south to the intersection with FM 490 in the north near the South Texas International Airport at Edinburg. The study corridor has a length of approximately 17 miles, is 600 feet in width, and includes an area of approximately 1,320 acres. The existing I-69C/US 281 roadway has an existing ROW approximately 400 feet in width. The roadway generally consists of two-lane or three-lane frontage roads in each direction and two-lane, three-lane, or four-lane main lanes in each direction, with ramps, overpasses, and direct connect ramps at the I-2/US 83 interchange. This study corridor would pass through the Cities of Pharr and Edinburg, as well as the communities of Lopezville and Faysville.

5.3.2 FM 907 PSM Study Corridor

The FM 907 PSM Study Corridor is approximately 23 miles in length, is 600 feet in width, and includes approximately 1,980 acres in area. The FM 907 PSM Study Corridor would begin at I-2/US 83, approximately four miles east of I-69C/US 281.

This route would generally follow FM 907, an existing on-system roadway also known as Alamo Road, approximately ten miles from the existing I-2/US 83 intersection in the south, northward to FM 1925/Monte Cristo Road. North of FM 1925, the corridor would curve to the northeast for approximately four miles before joining with the new location 2014 PSM Study Corridor route at FM 2812 for the remaining approximately nine miles to FM 490 near the South Texas International Airport at Edinburg. This study corridor would pass through the City of Alamo and the communities of North Alamo, Nurillo, Cesar Chavez, and Doolittle.

5.3.3 FM 907 Modified Study Corridor

The FM 907 Modified Study Corridor is approximately 19.8 miles in length, is 600 feet in width, and includes approximately 1,763 acres in area. The FM 907 Modified Study Corridor follows the same route as FM 907 PSM to FM 1925/Monte Cristo Road.

North of FM 1925, the corridor would continue on new location northward for approximately seven miles before curving westward for 1.8 miles, running along the north side of the existing FM 490 for one mile and connecting to I-69C/US 281 near the South Texas International Airport at Edinburg. This study corridor would pass through the City of Alamo and the communities of North Alamo, Nurillo, Cesar Chavez, and Doolittle.

5.3.4 Tower Road Study Corridor

The Tower Road Study Corridor is approximately 20 miles in length, is 600 feet in width, and includes approximately 1,779 acres in area. The Tower Road Study Corridor would begin at I-2/US 83, approximately 4.5 miles east of I-69C/US 281.

This route would generally follow Tower Road, an existing off-system roadway, approximately 6.5 miles from the existing I-2/US 83 intersection in the south, northward to Curve Road. North of Curve Road, the corridor would curve to the northwest for approximately two miles, crossing SH 107 and joining with the FM 907 Modified Study Corridor route near Mile 17 Road. The Tower Road Study Corridor would follow the FM 907 Modified route north then west for approximately 11.5 miles before connecting to I-69C/US 281 near the South Texas International Airport at Edinburg. This study corridor would pass through the City of Alamo and the communities of North Alamo, Muniz, Cesar Chavez, and Doolittle.

5.3.5 2014 PSM Study Corridor

This corridor was developed as a corridor that combined sections of several alternative study routes previously developed by the HCRMA then further refined to become the 2014 PSM Study Corridor.

The 2014 PSM Study Corridor is approximately 22 miles in length, is 600 feet in width, includes an area of approximately 1,946 acres, and is almost entirely on new location. It connects to I-2/US 83 approximately seven miles east of I-69C/US 281, between the FM 1423/Val Verde Road overpass and the North Hutto Road overpass, near the existing intersection of the I-2/US 83 westbound frontage road and Valley View Road.

From I-2/US 83, the 2014 PSM Study Corridor would travel northwest on new location for approximately three miles to near Minnesota Road before turning generally northward for approximately seven miles through the communities of Muniz and San Carlos, crossing both SH 107 to FM 1925/Monte Cristo Road.

North of FM 1925, the 2014 PSM corridor would curve to the east for approximately one mile, approaching Mile 19 Road, where it would then run parallel to the west side of FM 1423/Val Verde Road for approximately four miles. The corridor would then curve to the northwest for approximately four miles before running along the north side of the existing FM 490 for three miles and connecting to I-69C/US 281 near the South Texas International Airport at Edinburg.

5.3.6 2014 Modified PSM Study Corridor

The 2014 Modified PSM Study Corridor is approximately 22 miles in length, is 600 feet in width, and includes an area of approximately 1,953 acres. The 2014 Modified PSM Study Corridor follows the same route as the 2014 Study Corridor except for a section between Curve Road to the south and a point approximately 0.5 mile north of FM 1925/Monte Cristo Road, just east of Sharp Road. Between those two points, the corridor would curve west of the 2014 Study Corridor to a maximum distance of approximately 0.3 mile near Mile 17 ½ Road.

5.3.7 2014 Modified 2 Study Corridor

The 2014 Modified 2 Study Corridor is approximately 21 miles in length, is 600 feet in width, and includes approximately 1,895 acres in area. The 2014 Modified 2 Study Corridor follows the same new location route as the 2014 PSM Study corridor from its intersection with I-2/US 83 to SH 107, a distance of approximately eight miles. Approximately one mile north of SH 107, near Mile 17½ Road, the 2014 Modified 2 Study Corridor would curve to the west for approximately two miles, crossing FM 1925/Monte Cristo Road and Davis Road.

North of Davis Road, the 2014 Modified 2 route would run parallel to the west side of Brushline Road for approximately five miles. The corridor would then curve to the northwest for approximately two miles before running along the north side of the existing FM 490 for three miles and connecting to I-69C/US 281 near the South Texas International Airport at Edinburg. This study corridor would pass through the communities of Muniz and San Carlos.

5.3.8 FM 1423 PSM Study Corridor

The FM 1423 PSM Study Corridor is approximately 22 miles in length, is 600 feet in width and includes an area of approximately 1,912 acres. The FM 1423/Val Verde Road Study Corridor would begin at I-2/US 83, approximately six miles east of I-69C/US 281.

This corridor would generally follow the existing on-system roadway FM 1423/Val Verde Road northward for approximately 7.5 miles from the intersection with I-2/US 83 to SH 107 in the community of San Carlos. From SH 107, the study corridor would continue northward along Val Verde Road approximately two miles to FM 1925/Monte Cristo Road. Approximately 1.5 miles north of FM 1925/Monte Cristo Road, between Mile 19 Road and Davis Road, the route would then follow the 2014 PSM Study Corridor route for approximately 11 miles north and west to I-69C/US 281 near the South Texas International Airport at Edinburg. This study corridor would pass through the City of Donna and the community of San Carlos.

5.3.9 FM 1423 Modified (Golie Road) Study Corridor

The FM 1423 Modified (Golie Road) Study Corridor is approximately 22 miles in length, is 600 feet in width and includes an area of approximately 1,935 acres. The FM 1423 Modified Study Corridor would begin at I-2/US 83 in the City of Donna, approximately eight miles east of I-69C/US 281.

This corridor would start by following Golie Road for approximately three miles to near Minnesota Road. The FM 1423 Modified Study Corridor would continue northward for approximately 11 miles, crossing SH 107, FM 1925/Monte Cristo Road, and FM 2812. The corridor in this area would be on new location between and parallel to FM 1423/Val Verde Road and FM 493, passing through the community of San Carlos. North of Mile 22 ½ Road, the FM 1423 Modified Study Corridor would then curve to the northwest for approximately two miles before following the same route as 2014 PSM Study Corridor for the remaining six miles to I-69C/US 281 near the South Texas International Airport at Edinburg.

5.3.10 FM 493 PSM Study Corridor

The FM 493 Study Corridor is approximately 24 miles in length, is 600 feet in width, and includes an area of approximately 2,123 acres. The FM 493 PSM Study Corridor would begin at I-2/US 83, approximately nine miles east of I-69C/US 281.

This corridor would generally follow the on-system roadway FM 493, also known as Salinas Boulevard and La Blanca Road, northward for approximately 17 miles from the intersection with I-2/US 83 to a point approximately 1.5 miles south of the community of Hargill. At this point, the FM 493 PSM Study Corridor would curve to the west for approximately 3.5 miles

before running along the north side of FM 490 for approximately 4.5 miles to the intersection with I-69C/US 281 near the South Texas International Airport at Edinburg. This study corridor would pass through the City of Donna and the community of La Blanca.

5.3.11 FM 493 Modified 2 Study Corridor

The FM 493 Modified 2 Study Corridor is approximately 24 miles in length, is 600 feet in width, and includes approximately 2,125 acres in area. The FM 493 Modified 2 Study Corridor follows the same route as the FM 493 PSM Study Corridor except for an approximately 3.5-mile-long section between Mile 9 Road and Mile 13 Road, where the corridor parallels the existing FM 493 to the east.

5.3.12 FM 493 Modified Study Corridor

The FM 493 Modified Study Corridor is approximately 25 miles in length, is 600 feet in width, and includes approximately 2,118 acres in area. The FM 493 Modified Study Corridor follows the same route as the FM 493 PSM Study Corridor except for an eight-mile-long section between Mile 11 ½ Road and Mile 19 Road, where the corridor swings out approximately one mile east of FM 493, adjacent to an existing irrigation canal and drainage ditch.

5.3.13 No-Build Alternative

The No-Build Alternative means that the construction of SH 68 would not occur. Under this option, existing roadways in the study area would operate as they currently do. Normal maintenance activities and rehabilitation of existing roadways and associated ROW would continue. There would be no displacements or conversion of land to transportation uses, and no substantial adverse environmental impacts associated with this option. However, the No-Build Alternative would not improve north-south mobility, increase travel capacity for local and regional traffic or provide an alternative north-south evacuation route during emergency events; therefore, it would not meet the purpose and need for the proposed project. Regardless, the No-Build Alternative is carried through the analysis to provide a comparison of baseline information.

6.0 PURPOSE AND NEED SCREENING

The initial screening step for the alternatives analysis was to evaluate the modal alternatives and the subsequent 600-foot study corridors against the Purpose and Need Statement. Based on the evaluation and input from the modal conference, TxDOT determined that the appropriate mode of transportation for SH 68 should be an expressway facility with frontage roads. The expressway facility would address the Draft Purpose and Need Statement by providing an alternate north-south evacuation route during emergency events in addition to

accommodating population growth and higher traffic volumes, while relieving the burden on the limited number of existing north-south roadways and increasing travel capacity for local and regional traffic. Transit, rail, truck only, and bicycle/pedestrian modal alternatives were determined to not meet the project need to accommodate population growth and higher traffic volumes, while relieving the burden on the limited number of existing north-south roadways and increased travel capacity for local and regional traffic. The TSM/TDM and ITS strategies would not increase travel capacity for local and regional traffic or provide an alternate north-south evacuation route during emergency events. In addition, the expansion of an existing highway facility would not provide an alternate north-south evacuation route.

All study corridors except for the No-Build Alternative would accommodate population growth and higher traffic volumes, while relieving the burden on the limited number of existing north-south roadways and increase capacity for local and regional traffic in the study area. All study corridors except the No-Build Alternative and the I-69C/US 281 Study Corridor would provide alternate north-south evacuation routes during emergency events. The I-69C/US 281 Study Corridor is currently designated as a Major Evacuation Routes with provisions for contraflow lane reversal. Based on this information, the I-69C/US 281 Study Corridor was eliminated from further evaluation because it would not provide an alternate north-south evacuation route during emergency events. **Table 1** summarizes the results of purpose and need screening. **Figure 1** provides a visual summary of the purpose and need screening. All the study corridors besides the No-Build Alternative and the I-69C/US 281 Study Corridor met the purpose and need of the project and were evaluated against the identified critical issues in the next screening process. As previously stated, the No-Build Alternative was carried forward throughout the process to provide a comparison of baseline information.

Table 1: Purpose and Need Screening Evaluation

Meets Purpose and Need ?	Full Range of Corridors												
	NO BUILD	I-69C/ US 281	FM 907 PSM	FM 907 MOD	Tower Rd	2014 PSM	2014 MOD PSM	2014 MOD 2	FM 1423 PSM	FM 1423 MOD (Golie Rd)	FM 493 PSM	FM 493 MOD 2	FM 493 MOD
Improve north-south mobility	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Increase capacity for local and regional traffic	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Provide an alternate north-south evacuation route during emergency events	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

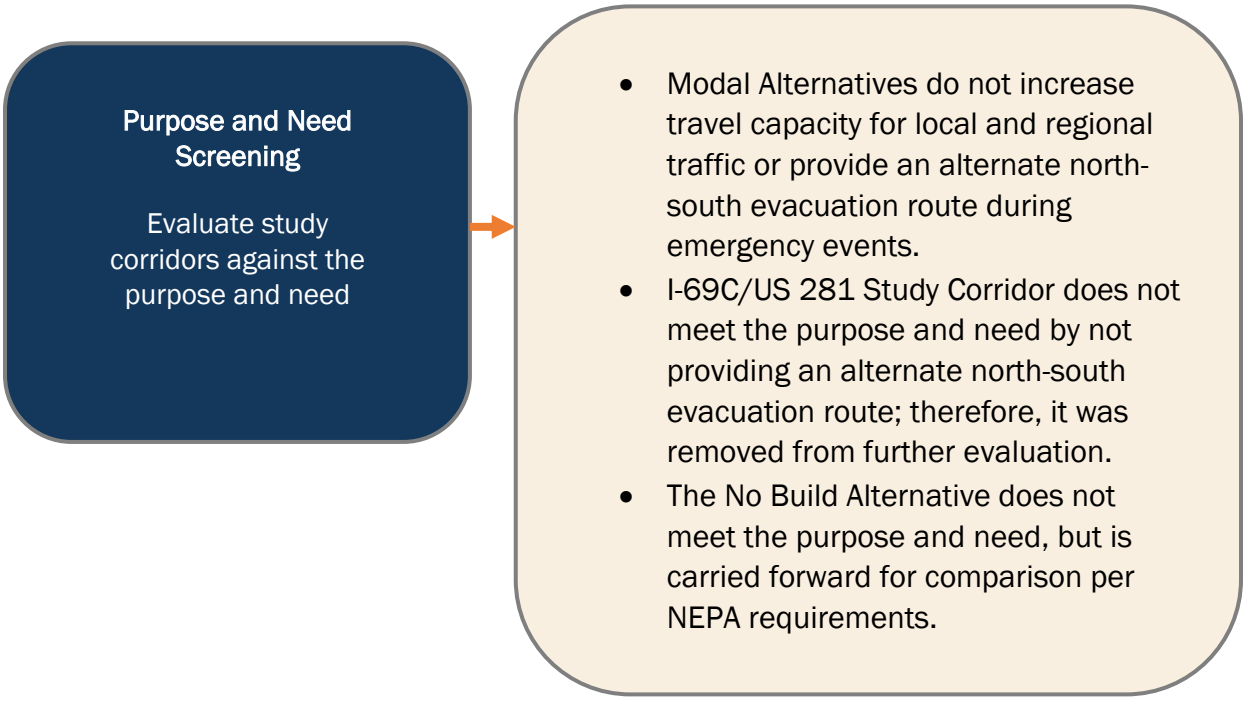

Figure 1. SH 68 Purpose and Need Screening Summary

7.0 CRITICAL ISSUE SCREENING

The critical issues were screened against the remaining study corridors. As previously stated, the critical issues were identified as: airports; public parks; National Register of Historic Places (NRHP) properties; cemeteries; places of worship; hazardous materials, including landfills; jail complexes; federal wildlife refuges; public facilities, including schools; state antiquities landmarks (SALs); and engineering design criteria. Critical issues within the SH 68 study area are shown on **Exhibits 4.1** through **4.3** in **Attachment A**. **Table 2** summarizes the results of the critical issue screening. **Figure 2** shows the detailed process for the critical issue screening.

Table 2: Study Corridor (600-foot) Screening for Critical Issues

Critical Issues Avoided?	Remaining Corridors											
	NO BUILD	FM 907 PSM	FM 907 MOD	Tower Rd	2014 PSM	2014 MOD PSM	2014 MOD 2	FM 1423 PSM	FM 1423 MOD (Golie Rd)	FM 493 PSM	FM 493 MOD 2	FM 493 MOD
Airport	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Parks/NRHP Historic Properties	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cemetery	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Church	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Partial	No	Yes	Yes
HazMat, including Landfills	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Jail Complex	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
National Wildlife Refuge	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public facilities, including Schools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
State Antiquities Landmarks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Design Criteria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

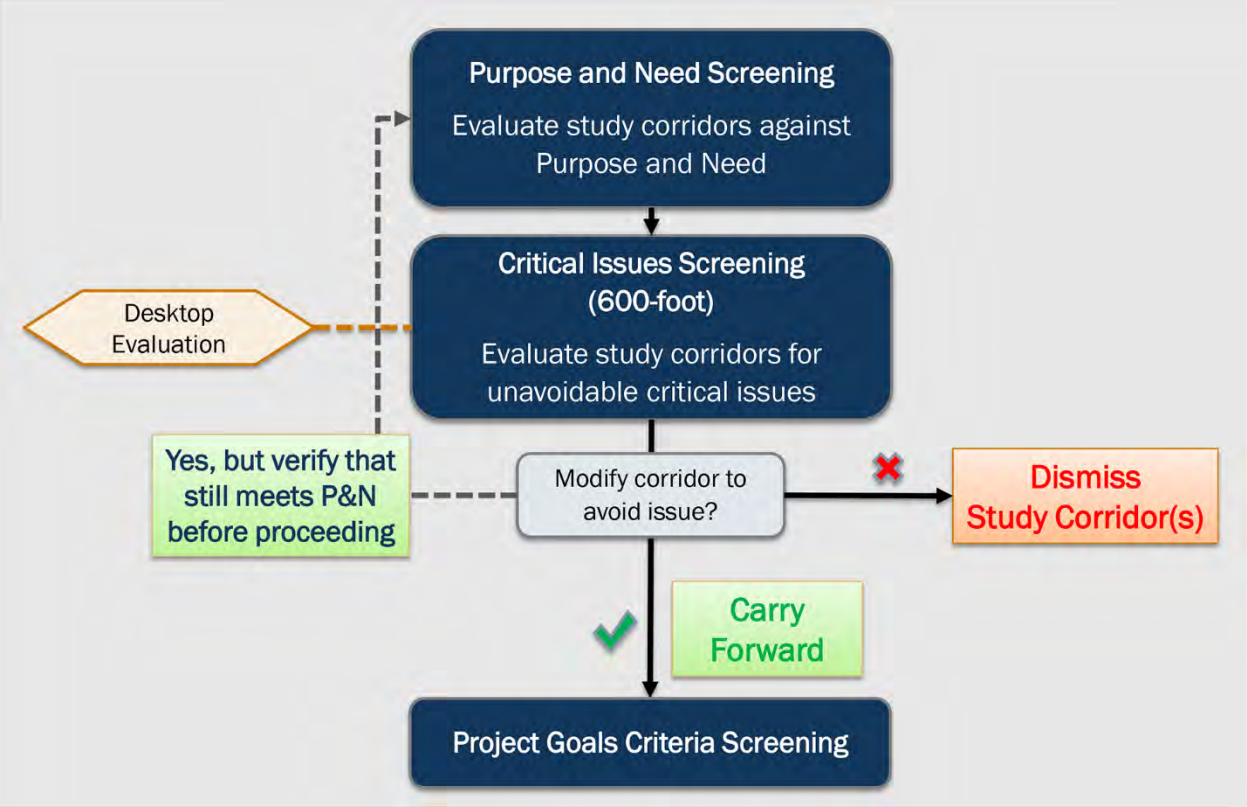

Figure 2. SH 68 Critical Issues Screening Summary

Based on the critical issue, two study corridors were eliminated. The FM 907 PSM Study Corridor was removed from consideration because it bisected the United States Fish & Wildlife Service Lower Rio Grande Valley National Wildlife Refuge (LRGV-NWR) Goodfields Tract. A modified version of the FM 907 PSM Study Corridor, called the FM 907 Modified Study Corridor was developed that avoids the wildlife refuge and was carried forward in the alternatives analysis process.

The FM 493 PSM Study Corridor was also removed from consideration because it would impact an existing place of worship, the Salón del Reino de los Testigos de Jehová. An additional version of the FM 493 PSM Study Corridor, called the FM 493 Modified 2 Study Corridor, was developed to avoid the critical issue represented by the church (Salón del Reino de los Testigos de Jehová). Another modified version of the FM 493 PSM study corridor, called the FM 493 Modified Study Corridor, was developed in response to a public comment to parallel FM 493 to the east. The hand drawn alignment paralleled an existing canal; however, as drawn, the study corridor impacted the BFI landfill. Therefore, the study corridor was adjusted to avoid impacts to the landfill.

As a result of the critical issue screening, nine study corridors plus the No-Build Alternative were carried forward for further evaluation.

8.0 PROJECT GOALS CRITERIA SCREENING

After the alternatives were screened against critical issues, the remaining nine 600-foot study corridors were reanalyzed to develop 350 foot to 400 foot wide corridors using updated environmental constraints obtained between March 2016 and January 2017 from information gathered through research and limited windshield surveys from public ROW. These 350 foot to 400 foot wide corridors were identified as preliminary alternatives. The environmental constraints used in the reduction of the corridors included the critical issues (shown in **Exhibits 4.1** through **4.3** in **Attachment A**); land use and land cover; hydrology; colonias; prime farmland soils; hazardous materials; cultural resources; utilities; and oil/gas wells and pipelines, while maintaining a 70-mph design speed. These preliminary alternatives were then screened against the project goal-based criteria. **Figure 3** shows the detailed process for the project goals criteria screening.

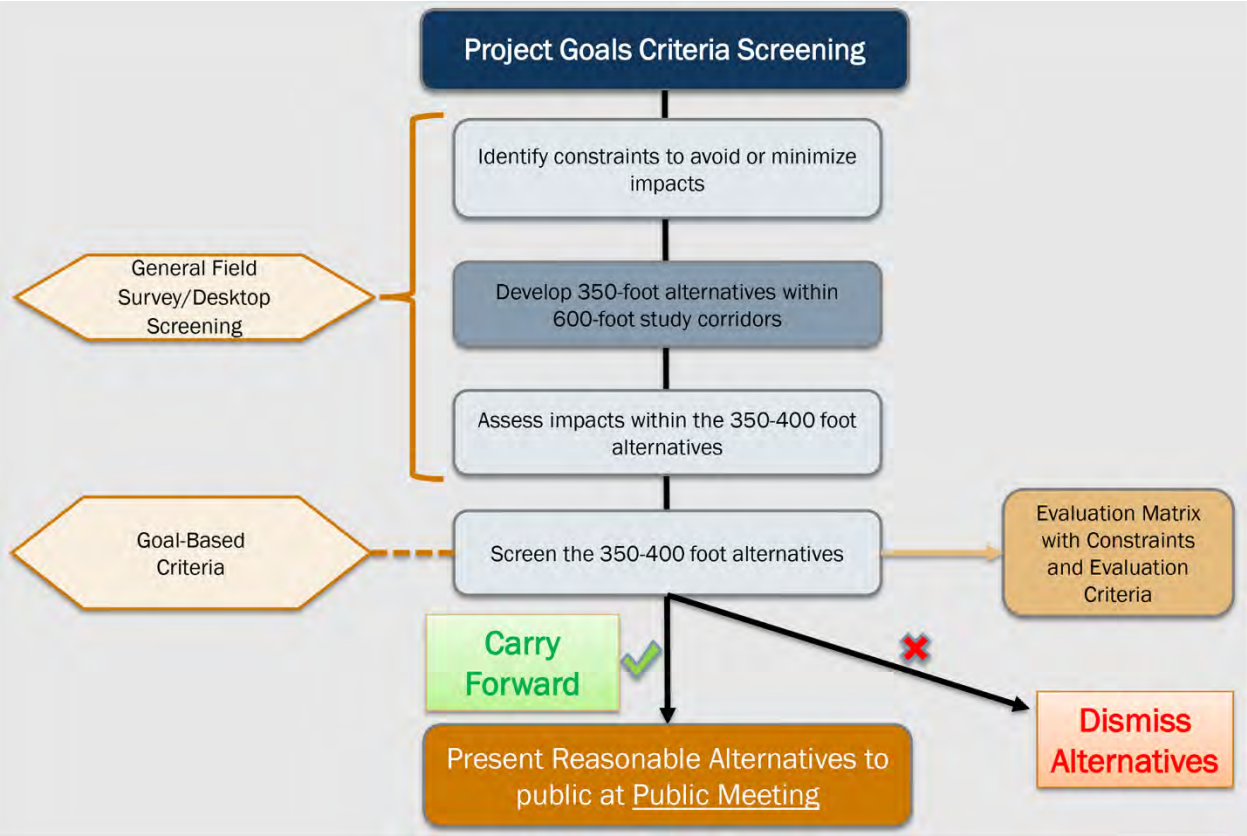

Figure 3. SH 68 Project Goals Criteria Screening Summary

Because the mode of transportation identified for SH 68 was an expressway facility with frontage roads, all preliminary alternatives developed for the project would include the same typical section (i.e. expressway facility with frontage roads) with the exception of the No-Build Alternative. The ultimate typical section of the proposed SH 68 facility is shown in **Figure 4**.

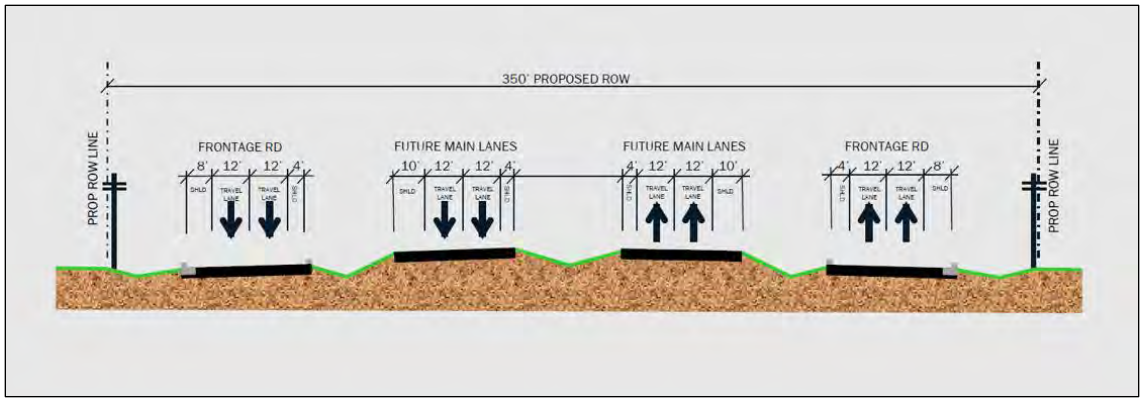

Figure 4. SH 68 Ultimate Typical Section

The preliminary alternatives were laid out for a 350-foot-wide typical ROW, with additional width up to 400 feet to accommodate interchanges where existing facilities connect to a proposed alternative corridor. In some cases, a 350-foot alternative was adjusted to avoid or minimize constraints, or to meet engineering design criteria.

The preliminary Alternatives have the same name as the study corridors from which they were developed and are shown in **Exhibit 5** in **Attachment A**. Detailed views and environmental constraints for the 350-foot to 400-foot-wide preliminary alternatives are shown on aerial imagery in a series of map exhibits in **Attachment A**:

- The FM 907 Modified and Tower Road Alternatives are shown on the **Exhibit 6a** Index Map and **Exhibits 6a.1** through **6a.12**.
- The 2014 PSM, 2014 Modified PSM, and 2014 Modified 2 Alternatives are shown on the **Exhibit 6b** Index Map and **Exhibits 6b.1** through **6b.13**.
- The FM 1423 PSM and FM 1423 Modified (Golie Road) Alternatives are shown on the **Exhibit 6c** Index Map and **Exhibits 6c.1** through **6c.13**.
- The FM 493 Modified and FM 493 Modified 2 Alternatives are shown on the **Exhibit 6d** Index Map and **Exhibits 6d.1** through **6d.14**.

In addition, **Exhibits 7.1** through **7.3** show water resource-related constraints for the 350 to 400-foot wide preliminary alternatives on topographic maps.

8.1 Evaluation Matrix and Goal-based Criteria Screening

An evaluation matrix was created and used as a visual tool to compare the preliminary alternatives within individual criterion. The criteria were measured in qualitative and quantitative values. Qualitative assessment criteria were associated with the safety, mobility, and feasibility/design goals while quantitative assessment criteria were associated with the community/environment, cost effectiveness, and economic factors goals. The

evaluation matrix was then color coded using a red/yellow/green system with red considered less desirable, yellow as neutral, and green as more desirable.

The evaluation matrix was not created to compare the preliminary alternatives against each other with regards to the sum desirability of all the criteria, which would give each criterion equal weighting. Instead, the evaluation matrix was simply intended to identify individual criterion that had significant variability between preliminary alternatives to aid in the determination of the most reasonable alternatives to carry forward for analysis in the DEIS. The evaluation matrix is available in **Attachment B** and shows each preliminary alternative, the project goal-based criteria, and the data collected for each alternative.

Several criteria were redundant with the previously evaluated critical issues. These criteria included impacts to schools, cemeteries, faith-based organizations (churches), public facilities, civic centers, parks and recreational facilities, SALs, NRHP properties, wildlife refuges, and airports. Since the critical issue screening eliminated any 600-foot corridors that impacted these issues, the majority of these criteria were consistent with having no impacts across all the preliminary alternatives; however, updated information for some of the criteria identified previously unidentified issues lending to variability between preliminary alternatives. These criteria included impacts to faith-based organizations (churches), civic centers, and NRHP-Listed Irrigation District crossings.

In addition to the critical issue criteria identified above, several of the findings were similar across all of the preliminary alternatives. All preliminary alternatives would:

- Provide alternate route for larger/heavier vehicles
- Provide bicycle and pedestrian accommodations
- Provide additional capacity and improves mobility within the study area
- Improve transportation system reliability within the study area
- Minimize impacts to utility infrastructure
- Avoid and /or minimize impacts to hazardous materials sites
- Avoid and/or minimize impacts to: critical habitat for threatened and endangered species; potential waters of the US crossings; and prime farmland soils.

Since the above criteria had no variability between alternatives, they were not used in determining the reasonable alternatives. Additionally, although the economic goal criteria were collected and analyzed, the economic goal criteria were not used in the determination of the reasonable alternatives.

The remaining criteria were analyzed to determine which preliminary alternatives would better meet the goals of the project. The following sections identify the reasonable alternatives and the criteria used in that determination (Section 8.2), and the preliminary

alternatives eliminated from further consideration and criteria used in that determination (Section 8.3).

8.2 Reasonable Alternatives

Based on the overall goal-based analysis, the proposed reasonable alternatives (**Exhibit 8** in **Attachment A**) for the SH 68 project to be analyzed in the DEIS were identified as the:

- 2014 Modified 2 Alternative,
- 2014 PSM Alternative,
- FM 1423 PSM Alternative.

The No-Build Alternative will also be carried through for analysis in the DEIS for comparative purposes. The following information supports the identification of the reasonable alternatives. The ordinal comparison used in the determination of impacts is in comparison to the other preliminary alternatives.

8.2.1 2014 Modified 2 Alternative

The 2014 Modified 2 Alternative was identified as a reasonable alternative because it would result in a lower number of residential structure impacts (estimated at 145), lower number of impacts to commercial structures (estimated at 16), lower number of impacts to commercial parcels/properties (estimated at 13), fewer impacts to potential historic age resources (18), would not impact existing oil/gas well facilities, would not impact any faith-based facilities, and would not impact colonias. The alternative also had the least amount of potential impacts to floodplains (estimated at 140 acres) and equaled the lowest amount of impacts to NWI features (0.3 acre) while meeting the safety goals. Furthermore, this alternative would have the lowest estimated total project cost of all preliminary alternatives (estimated at $723 million).

8.2.2 2014 PSM Alternative

The 2014 PSM Alternative is very similar to the 2014 Modified 2 Alternative as the southern portions of these alternatives are the same. The 2014 PSM Alternative was identified as a reasonable alternative because if would result in a lower number of residential structure impacts (estimated at 143), lower number of impacts to commercial structures (estimated at 16), lower number of impacts to commercial parcels/properties (estimated at 13), the lowest number of potential historic age resource impacts (estimated at 14), and would not impact any faith-based facilities or colonias. The alternative also equaled the lowest amount of impacts to NWI features (0.3 acre) and met the safety goals. Furthermore, this alternative had a total project cost estimated at $753 million, which was the third lowest estimated total project cost for all preliminary alternatives. Regarding the mobility goals, the 2014 PSM

Alternative would provide more desirable connectivity to existing and planned infrastructure improvements.

8.2.3 FM 1423 PSM Alternative

Based on input received during public involvement efforts, an existing roadway alternative was requested to be included as an alternative for the project. Based on this request and the lower impacts identified of all the preliminary alternatives that follow existing roadways, the 1423 PSM Alternative was identified as a reasonable alternative. In analyzing the goal-based criteria, the alternative had relatively lower impacts to brushland (estimated at 83 acres), lowest impacts to croplands/orchards (estimated at 342 acres), lower impacts to pipeline crossings (estimated at 18), no impacts to oil/gas wells, equaled the lowest amount of impacts to NWI features (0.3 acre), and met the safety goals. Additionally, this alternative has the lowest number of impacts to residential parcels/properties of all the alternatives that follow existing roadways (estimated at 173). Furthermore, this alternative had a total project cost estimated at $795 million, which was the second lowest estimated total project cost for all preliminary alternatives that follow existing roadways.

8.3 Alternatives Eliminated from Further Consideration

The following section provides the justification for the elimination of the remaining six of the nine preliminary alternatives. As discussed in the reasonable alternatives section above, the comparisons used in the determination of impacts is in comparison to the other preliminary alternatives.

8.3.1 FM 907 Modified

FM 907 Modified Alternative was eliminated because of the high number of residential parcels/properties impacts (343 estimated), high number of residential structure impacts (390 estimated), impacts to two places of worship, high impacts to commercial parcels/properties (63 estimated), high impacts to commercial structures (69 estimated), the highest number of impacts to potential historic age resources (40), one oil/gas well impact, impacts to three colonias, high number of potential noise impacts (312 estimated), and high impacts to NWI features (estimated 0.9 acre). Additionally, the estimated high ROW acquisition and relocation cost would give the FM 907 Modified Alternative a relatively high total project cost in comparison to the reasonable alternatives (estimated at $812 million). The FM 907 Alternative is also expected to have one of the longest durations to initiate construction based on the significantly larger number of parcels needed and anticipated utility adjustments.

8.3.2 Tower Road

The Tower Road Alternative was eliminated because of having the highest number of residential parcels/properties impacts (413 estimated), highest number of residential structure impacts (450 estimated), impacts to two places of worship, high impacts to commercial properties (50 estimated), high impacts to commercial structures (57 estimated), impacts to one civic center (Palazzio Event Center), high number of impacts to potential historic age resources (33), one oil/gas well impact, highest number of potential noise impacts (353 estimated), impacts to eight colonias, and high impacts to NWI features (estimated at 0.9 acre). Similar to the FM 907 Alternative, the estimated high ROW acquisition and relocation cost would give the Tower Road Alternative a relatively high total project cost in comparison to the other reasonable alternatives (estimated at $808 million). Additionally, the Tower Road Alternative provided less than 1 mile to an adjacent state route interchange along I-2/US 83, which was the least desirable of the safety goal criteria to minimize safety impacts along I-2/US 83. The Tower Road Alternative is also expected to have one of the longest durations to initiate construction based on the significantly larger number of parcels needed and anticipated utility adjustments.

8.3.3 2014 Modified PSM

2014 Modified PSM Alternative was eliminated based on its similarity to the 2014 PSM Alternative. Because of the similarity, certain criteria were evaluated to determine the more reasonable of the two alternatives. Of the two alternatives, the 2014 Modified PSM Alternative would potentially impact a church and has a higher impact to croplands/orchards. Additionally, the 2014 Modified PSM Alternative has the highest number of oil and gas pipeline crossings (estimated at 34) of all the preliminary alternatives and is very close to a major electrical substation, with as little as 8 feet of clearance to avoid this constraint. The 2014 Modified PSM Alternative would also impact a gas gathering station.

8.3.4 FM 1423 Modified (Golie Road)

The FM 1423 Modified (Golie Road) Alternative was eliminated based on its similarity to the FM 1423 PSM Alternative. Because of the similarity, certain criteria were evaluated to determine the more reasonable of the two alternatives. Of the two preliminary alternatives, the FM 1423 Modified (Golie Road) Alternative would potentially impact two churches, had a higher number of impacts to residential parcel/properties and structures, and had a higher impact to croplands/orchards. Additionally, the FM 1423 Modified (Golie Road) Alternative had the highest amount of impacts to NWI features (1.1 acres). Feasibility and design criteria with regards to constructability was also an issue since the preliminary alternative is adjacent to a major transmission line and in the vicinity of the North Alamo Water Supply

Corporation wastewater treatment plant, which is under construction near Golie Road and Minnesota Road.

8.3.5 FM 493 Modified 2

The FM 493 Modified 2 Alternative was eliminated because of high residential structure impacts (317 estimated), impacts to one oil/gas well, 22 irrigation canal crossings, impacts to 11 colonias, high number of impacts to potential historic age resources (33), and the highest number of crossings of a historical canal (19). Additionally, the preliminary alternative had the second highest cost at an estimated $914 million. The FM 493 Modified 2 Alternative is also expected to have one of the longest durations to initiate construction based on the significantly larger number of parcels needed and anticipated utility adjustments.

8.3.6 FM 493 Modified

The FM 493 Modified Alternative was eliminated because of impacts to croplands/orchards (estimated at 505 acres), 15 irrigation canal crossings, impacts to three colonias, the highest impact to mapped floodplains (350 acres), the highest impact to prime farmland soils (1,185 acres), increased construction complexity because of adjacent irrigation canals, and the highest total project cost of all preliminary alternatives (estimated at $918 million).

9.0 REASONABLE ALTERNATIVES DESCRIPTIONS AND SUMMARY

The following section describes in detail the 350 foot to 400 foot wide corridors that will be evaluated in the DEIS. Additionally, a summary of the alternatives analysis and next steps are provided.

9.1 2014 Modified 2 Alternative

The 2014 Modified 2 Alternative (light purple route, see **Exhibit 8**) is approximately 21.7 miles in length and would require an estimated 1,057 acres of ROW. The 2014 Modified 2 Alternative is almost entirely on new location.

This reasonable alternative connects to I-2/US 83 approximately seven miles east of I-69C/US 281, between the FM 1423/Val Verde Road overpass and the North Hutto Road overpass, near the existing intersection of the I-2/US 83 westbound frontage road and Valley View Road. From I-2/US 83, the 2014 Modified 2 Alternative would travel northwest on new location for approximately three miles to near Minnesota Road before turning generally northward for approximately seven miles through the communities of Muniz and San Carlos to north of SH 107.

Approximately one mile north of SH 107, near Mile 17 ½ Road, the 2014 Modified 2 Alternative would curve to the west for approximately two miles, crossing FM 1925 (Monte Cristo Road) and Davis Road. North of Davis Road, the 2014 Modified 2 route would run parallel to the west side of Brushline Road for approximately five miles. The proposed roadway would then curve to the northwest for approximately two miles before running along the north side of the existing FM 490 for approximately three miles and connect to I-69C/US 281 near the South Texas International Airport at Edinburg.

Future mainlane overpasses are assumed to be at Ferguson Road, Sioux Road, East Nolana Loop/Earling Road, Owassa Road, Alberta Road, Trenton Road, Wisconsin Road, Canton Road, SH 107, FM 1925/Monte Cristo Road, FM 2812, CR 2050/Brushline Road and Air Cargo Drive.

9.2 2014 PSM Alternative

Like the 2014 Modified 2 Alternative, the 2014 PSM Alternative (orange route, see **Exhibit 8**) is almost entirely on new location. The 2014 PSM Alternative is approximately 22.4 miles in length and would require an estimated 1,076 acres of ROW. The 2014 PSM Alternative follows the same new location route as the 2014 Modified 2 Alternative from its intersection with I-2/US 83 to SH 107, a distance of approximately eight miles, and continues generally northward for another two miles to cross FM 1925/Monte Cristo Road.

North of FM 1925/Monte Cristo Road, the 2014 PSM corridor would curve to the east for approximately one mile, approaching Mile 19 N Road, where it would then run parallel to the west side of FM 1423/Val Verde Road for approximately four miles. The corridor would then curve to the northwest for approximately four miles before running along the north side of the existing FM 490 for approximately three miles and connect to I-69C/US 281 near the South Texas International Airport at Edinburg.

This reasonable alternative would also pass through the communities of Muniz and San Carlos. Future mainlane overpasses are assumed to be at Ferguson Road, Sioux Road, East Nolana Loop/Earling Road, Owassa Road, Alberta Road, Trenton Road, Wisconsin Road, Canton Road, SH 107, FM 1925/Monte Cristo Road, FM 2812, CR 2050/Brushline Road, and Air Cargo Drive.

9.3 FM 1423 PSM Alternative

The FM 1423 PSM Alternative (dark pink route, see **Exhibit 8**) is approximately 21.6 miles in length and includes an area of approximately 1,061 acres. This reasonable alternative would connect to I-2/US 83 approximately six miles east of I-69C/US 281.

This reasonable alternative would generally follow FM 1423/Val Verde Road northward for approximately 7.5 miles from the intersection with I-2/US 83 to SH 107 in the community of San Carlos. From SH 107, the alternative would continue northward along Val Verde Road approximately two miles to FM 1925/Monte Cristo Road. Approximately 1.5 miles north of FM 1925/Monte Cristo Road, between Mile 19 Road and Davis Road, the route would then follow the 2014 PSM Alternative route for approximately 11 miles north and west to I-69C/US 281 near the South Texas International Airport at Edinburg.

This reasonable alternative would pass through the City of Donna and the community of San Carlos. Future mainlane overpasses are assumed to be at FM 495/Kansas Road, Sioux Road, East Nolana Loop/Earling Road, Roosevelt Road, Alberta Road, Trenton Road, Wisconsin Road, Canton Road, SH 107, FM 1925/Monte Cristo Road, FM 2812, CR 2050/Brushline Road, and Air Cargo Drive.

9.4 Summary of Next Steps

Table 3 shows the full range of alternatives developed for the SH 68 project and the status of each study corridor, preliminary alternative, reasonable alternative, and the No-Build Alternative through the alternatives analysis. As part of the NEPA and alternatives analysis process, a public meeting was held on January 3, 2017, to provide public with the opportunity to review the reasonable alternatives.

The recommended preferred alternative will be identified in the DEIS based on technical studies containing more refined information on the affected environment for the reasonable alternatives. The recommended preferred alternative will be presented to the public at a public hearing and the DEIS would be made available for review and comment. The Final Environmental Impact Statement (FEIS) will discuss in more detail the impacts and mitigation measures of the preferred alternative as well as supplement any updated information on the affected environment and address any issues raised following the DEIS. In accordance with FHWA guidance, the FEIS will also identify any new impacts resulting from project modifications, substantive new circumstances, or information regarding the recommended preferred alternative following the circulation of the DEIS.

Table 3. Alternatives Analysis Summary

Alternatives	Purpose and Need	Critical Issue Screening	Reasonable Alternatives
I-69C/US 281 PSM	Eliminated	--	--
FM 907 PSM	Continue	Eliminated	--
FM 907 Modified	Continue	Continue	Eliminated
Tower Road	Continue	Continue	Eliminated
2014 PSM	Continue	Continue	Continue
2014 Modified PSM	Continue	Continue	Eliminated
2014 Modified 2	Continue	Continue	Continue
FM 1423 PSM	Continue	Continue	Continue
FM 1423 Modified (Golie Rd)	Continue	Continue	Eliminated
FM 493 PSM	Continue	Eliminated	--
FM 493 Modified 2	Continue	Continue	Eliminated
FM 493 Modified	Continue	Continue	Eliminated
No-Build Alternative	Continue	Continue	Continue

10.0 REFERENCES

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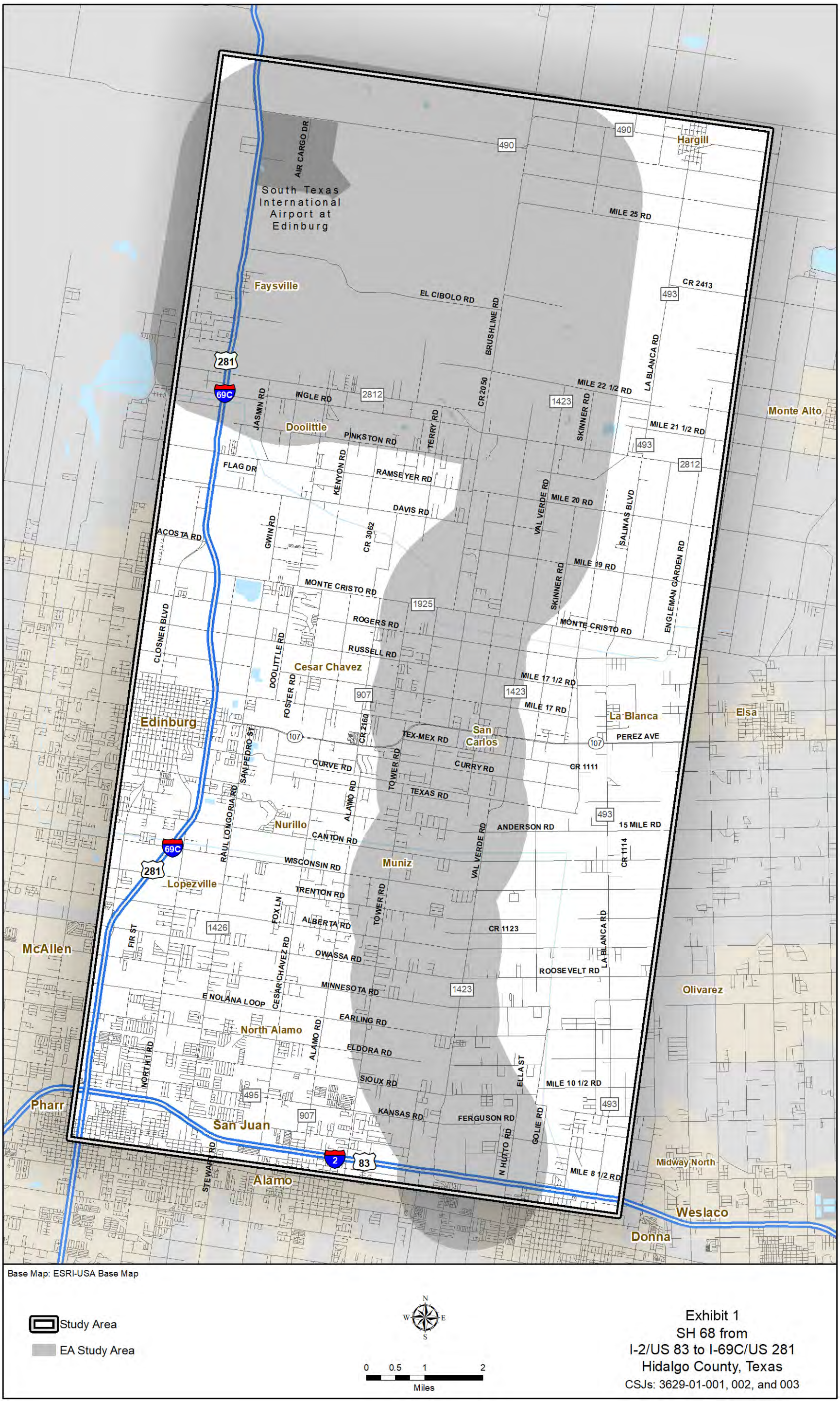
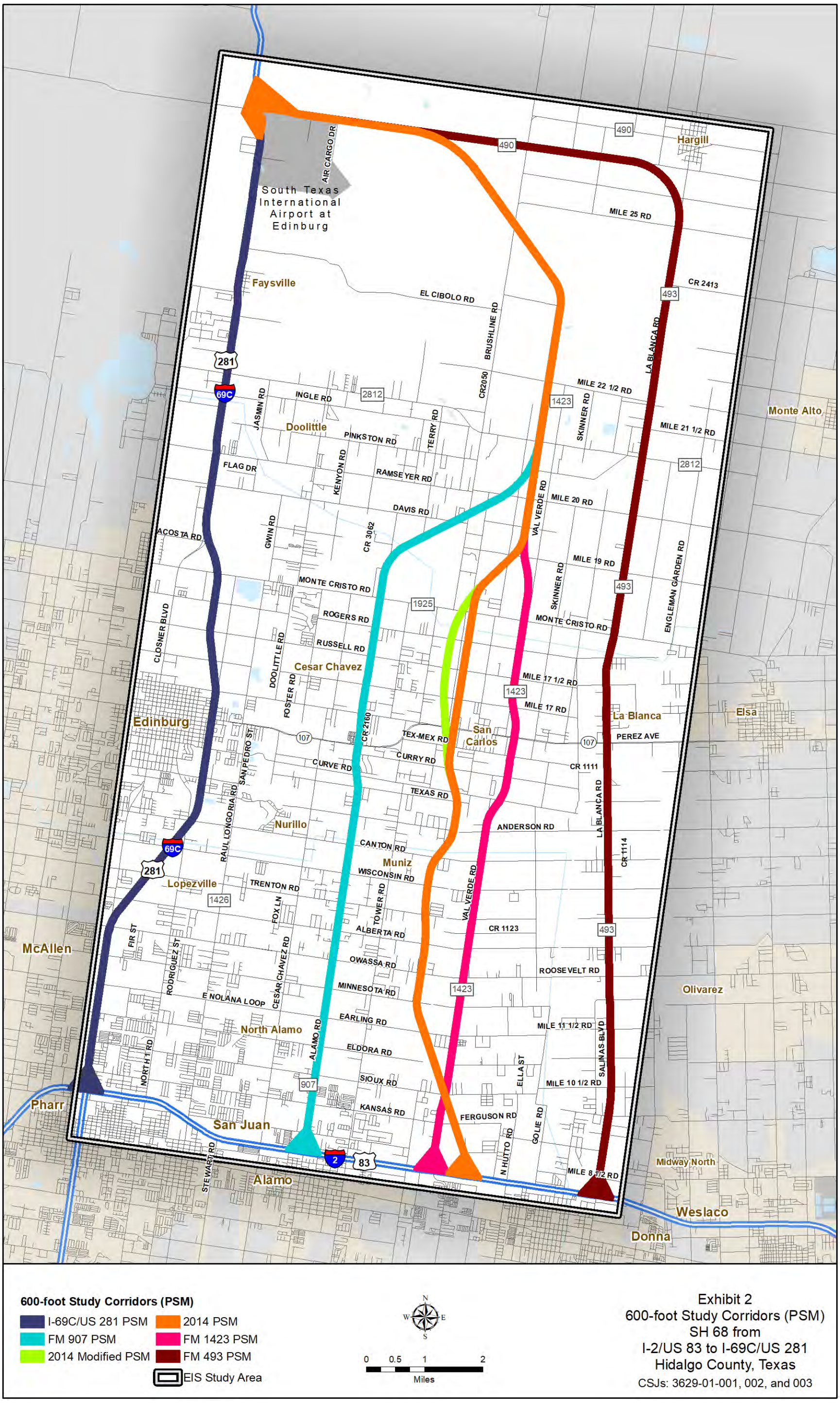
Attachment A

Exhibits


South Texas International Airport at Edinburg
AIR CARGO DR
Hargill
MILE 25 RD
Faysville
EL CIBOLO RD
BRUSHLINE RD
CR 2413
Monte Alto
INGLE RD
Doolittle
PINKSTON RD
JASMIN RD
TERRY RD
CR 2050
MILE 22 1/2 RD
SKINNER RD
LA BLANCA RD
MILE 21 1/2 RD
FLAG DR
KENYON RD
RAMSEYER RD
DAVIS RD
MILE 20 RD
VAL VERDE RD
SALINAS BLVD
ACOSTA RD
GWIN RD
CR 3062
MILE 19 RD
ENGLEMAN GARDEN RD
MONTE CRISTO RD
ROGERS RD
CLOSNER BLVD
RUSSELL RD
DOOLITTLE RD
Cesar Chavez
FOSTER RD
MILE 17 1/2 RD
MILE 17 RD
Edinburg
CR 2160
TEX-MEX RD
San Carlos
La Blanca
Elsa
PEREZ AVE
SAN PEDRO ST
CURVE RD
CURRY RD
CR 1111
TOWER RD
TEXAS RD
ALAMO RD
RAUL LONGORIA RD
Nurillo
ANDERSON RD
15 MILE RD
CANTON RD
WISCONSIN RD
Muniz
CR 1114
Lopezville
TRENTON RD
FOX LN
ALBERTA RD
CR 1123
McAllen
FIR ST
OWASSA RD
ROOSEVELT RD
Olivarez
CESAR CHAVEZ RD
MINNESOTA RD
E NOLANA LOOP
EARLING RD
North Alamo
ELDORA RD
NORTH I ST
SIOUX RD
MILE 10 1/2 RD
Pharr
KANSAS RD
FERGUSON RD
San Juan
GOLIE RD
N HUTTO RD
Midway North
STEWART RD
Alamo
MILE 8 1/2 RD
Weslaco
Donna
281
69C
490
2812
1423
493
1925
907
107
1426
495
2
83
1
Base Map: ESRI-USA Base Map
Study Area
EA Study Area
N
W
E
S
0 0.5 1 2
Miles
Exhibit 1
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003


South Texas International Airport at Edinburg
AIR CARGO DR
Hargill
490
MILE 25 RD
Faysville
EL CIBOLO RD
BRUSHLINE RD
CR 2413
493
LA BLANCA RD
281
69C
INGLE RD
2812
JASMIN RD
Doolittle
PINKSTON RD
TERRY RD
CR2050
MILE 22 1/2 RD
1423
SKINNER RD
MILE 21 1/2 RD
Monte Alto
FLAG DR
KENYON RD
RAMSEYER RD
DAVIS RD
MILE 20 RD
VAL VERDE RD
ACOSTA RD
GWIN RD
CR 3062
MILE 19 RD
ENGLEMAN GARDEN RD
MONTE CRISTO RD
1925
ROGERS RD
RUSSELL RD
CLOSNER BLVD
DOOLITTLE RD
FOSTER RD
Cesar Chavez
MILE 17 1/2 RD
MILE 17 RD
La Blanca
Elsa
Edinburg
CR 2160
TEX-MEX RD
San Carlos
PEREZ AVE
107
CURRY RD
CURVE RD
CR 1111
SAN PEDRO ST
RAUL LONGORIA RD
TEXAS RD
Nurillo
ANDERSON RD
CANTON RD
Muniz
CR 1114
WISCONSIN RD
Lopezville
TRENTON RD
1426
TOWER RD
FOX LN
CR 1123
ALBERTA RD
McAllen
FIR ST
RODRIGUEZ ST
OWASSA RD
ROOSEVELT RD
CESAR CHAVEZ RD
MINNESOTA RD
Olivarez
E NOLANA LOOP
EARLING RD
North Alamo
MILE 11 1/2 RD
ELDORA RD
ALAMO RD
NORTH H 1 RD
SALINAS BLVD
ELLA ST
907
SIOUX RD
MILE 10 1/2 RD
Pharr
KANSAS RD
FERGUSON RD
N HUTTO RD
GOLIE RD
San Juan
Midway North
STEWART RD
2
83
MILE 8 1/2 RD
Alamo
Weslaco
Donna
600-foot Study Corridors (PSM)
I-69C/US 281 PSM
2014 PSM
FM 907 PSM
FM 1423 PSM
2014 Modified PSM
FM 493 PSM
EIS Study Area
N
W
E
S
0 0.5 1 2
Miles
Exhibit 2
600-foot Study Corridors (PSM)
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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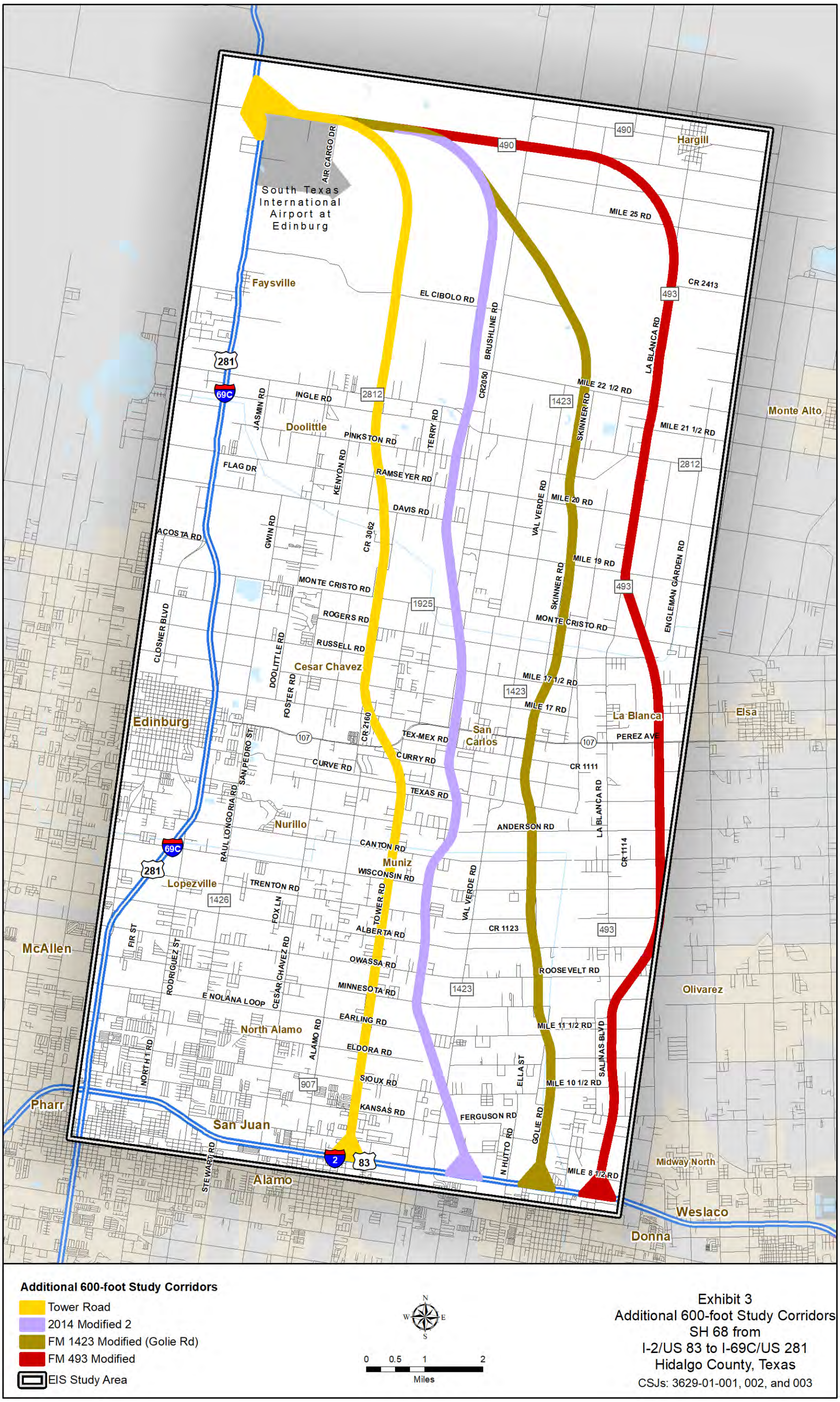
South Texas International Airport at Edinburg
AIR CARGO DR
Hargill
490
MILE 25 RD
CR 2413
493
Faysville
EL CIBOLO RD
BRUSHLINE RD
CR2050
LA BLANCA RD
281
69C
INGLE RD
2812
JASMIN RD
Doolittle
PINKSTON RD
TERRY RD
1423
SKINNER RD
MILE 22 1/2 RD
MILE 21 1/2 RD
Monte Alto
FLAG DR
KENYON RD
RAMSEYER RD
DAVIS RD
MILE 20 RD
VAL VERDE RD
ACOSTA RD
GWIN RD
CR 3062
MILE 19 RD
ENGLEMAN GARDEN RD
MONTE CRISTO RD
1925
ROGERS RD
RUSSELL RD
CLOSNER BLVD
DOOLITTLE RD
FOSTER RD
Cesar Chavez
MILE 17 1/2 RD
MILE 17 RD
La Blanca
Elsa
Edinburg
CR 2160
TEX-MEX RD
San Carlos
PEREZ AVE
107
CURRY RD
CURVE RD
CR 1111
SAN PEDRO ST
TEXAS RD
RAUL LONGORIA RD
Nurillo
ANDERSON RD
CANTON RD
Muniz
WISCONSIN RD
CR 1114
Lopezville
TRENTON RD
1426
FOX LN
TOWER RD
VAL VERDE RD
CR 1123
ALBERTA RD
McAllen
FIR ST
RODRIGUEZ ST
CESAR CHAVEZ RD
OWASSA RD
ROOSEVELT RD
MINNESOTA RD
E NOLANA LOOP
Olivarez
EARLING RD
North Alamo
ALAMO RD
NORTH H 1 RD
MILE 11 1/2 RD
SALINAS BLVD
ELDORA RD
ELLA ST
907
SIOUX RD
MILE 10 1/2 RD
Pharr
KANSAS RD
FERGUSON RD
GOLIE RD
San Juan
N HUTTO RD
Midway North
MILE 8 1/2 RD
STEWART RD
2
83
Alamo
Weslaco
Donna
Additional 600-foot Study Corridors
Tower Road
2014 Modified 2
FM 1423 Modified (Golie Rd)
FM 493 Modified
EIS Study Area
N
W
E
S
0 0.5 1 2
Miles
Exhibit 3
Additional 600-foot Study Corridors
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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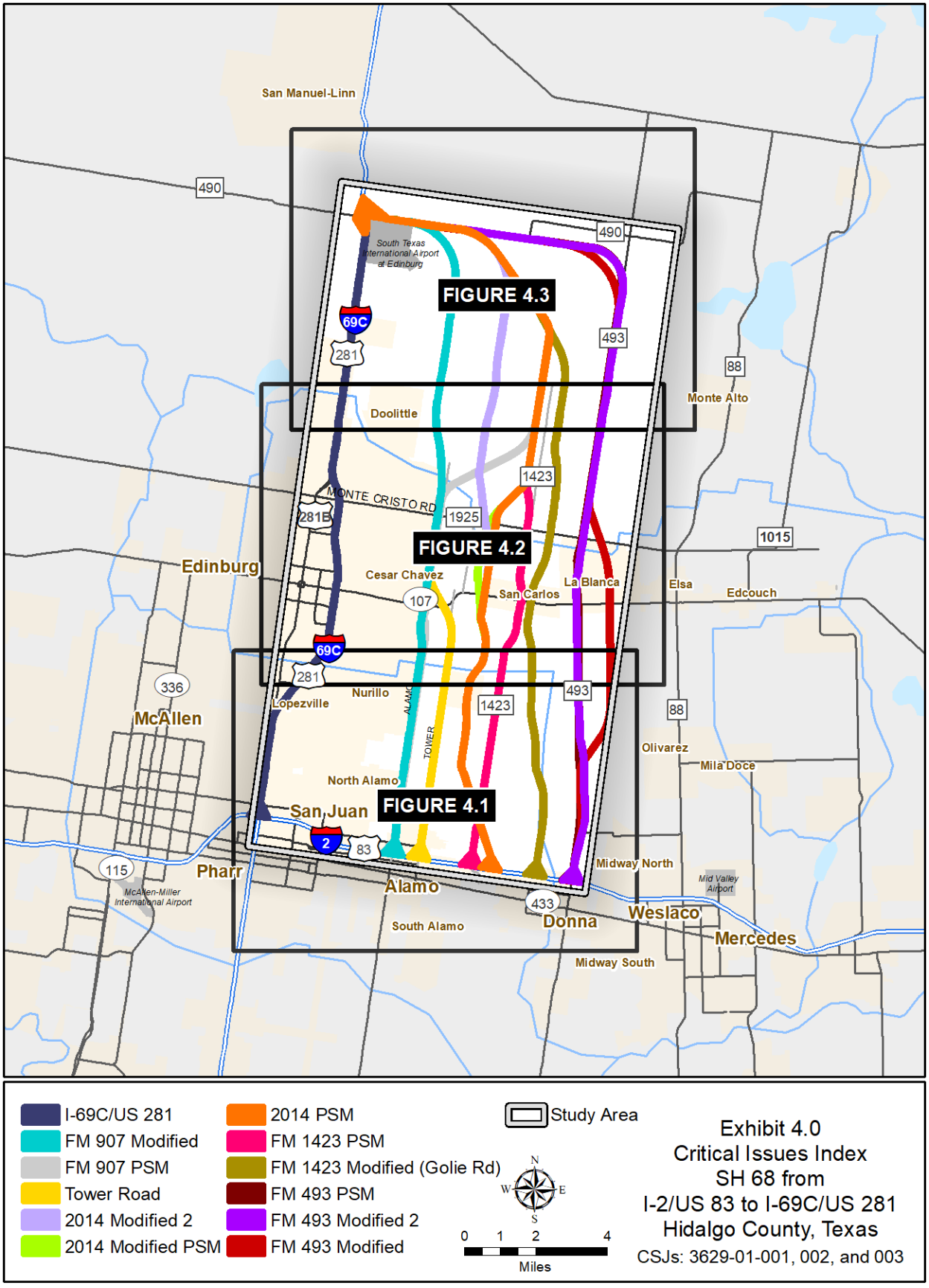

San Manuel-Linn
490
South Texas International Airport at Edinburg
FIGURE 4.3
69C
281
493
88
Monte Alto
Doolittle
1423
MONTE CRISTO RD
281B
1925
FIGURE 4.2
1015
Edinburg
Cesar Chavez
La Blanca
San Carlos
Elsa
Edcouch
107
69C
281
336
McAllen
Nurillo
Lopezville
ALAMO
TOWER
1423
493
88
Olivarez
Mila Doce
North Alamo
San Juan
FIGURE 4.1
2
83
115
Pharr
McAllen-Miller International Airport
Alamo
South Alamo
Midway North
Mid Valley Airport
433
Donna
Weslaco
Mercedes
Midway South
I-69C/US 281
FM 907 Modified
FM 907 PSM
Tower Road
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 PSM
FM 1423 Modified (Golie Rd)
FM 493 PSM
FM 493 Modified 2
FM 493 Modified
Study Area
N
W
E
S
0 1 2 4
Miles
Exhibit 4.0
Critical Issues Index
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

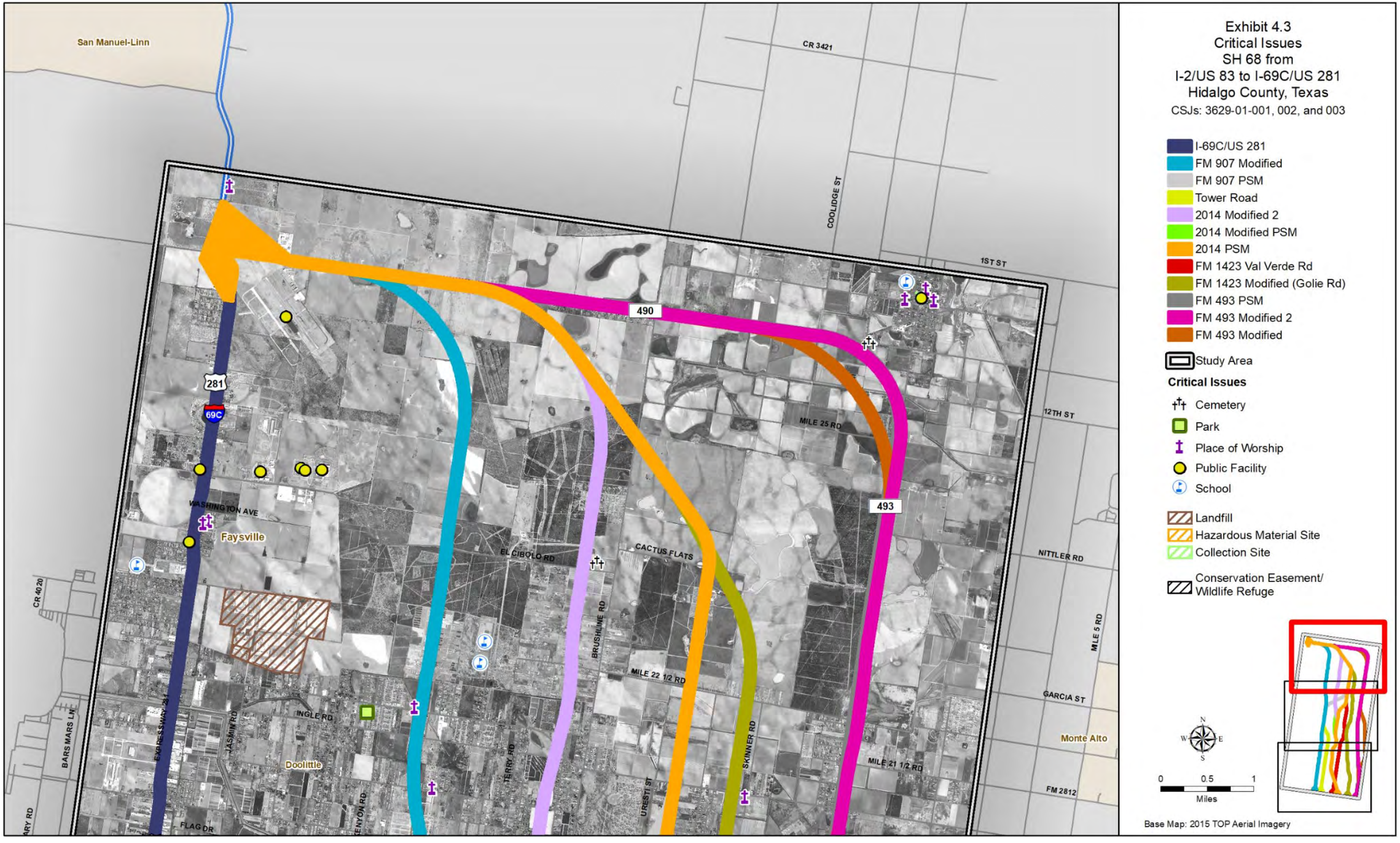
1


Exhibit 4.1
Critical Issues
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
I-69C/US 281
FM 907 Modified
FM 907 PSM
Tower Road
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 Val Verde Rd
FM 1423 Modified (Golie Rd)
FM 493 PSM
FM 493 Modified 2
FM 493 Modified
Study Area
Critical Issues
Cemetery
Park
Place of Worship
Public Facility
School
Landfill
Hazardous Material Site
Collection Site
Conservation Easement/
Wildlife Refuge
N
W
E
S
0
0.5
1
Miles
Base Map: 2015 TOP Aerial Imagery
Edinburg
McAllen
Pharr
San Juan
Alamo
North Alamo
South Alamo
Lopezville
Nurillo
Muniz
Olivarez
Midway North
Midway South
Weslaco
Donna
69C
281
2
83
1423
493
DAVID DR
OWASSA RD
NOLANA LOOP
RENE ST
E NOLANA LOOP
PINTO DR
DOVE ST
CR 1063
ELDORA RD
EARLING RD
MINNESOTA RD
EL JAY DR
ALBERTA RD
CR 1123
JESSICA LN
CANTON RD
ANDERSON RD
ROOSEVELT RD
CR 1136
CR 1142
VAL VERDE RD
HELEN RD
FOX LN
RAUL LONGORIA RD
FIR ST
RODRIGUEZ ST
JESENA ST
RON DR
SHORT RD
PAR 3
ELLA ST
GOLIE RD
MILE 10 1/2 RD
EL SOL DR
PINE AVE
TULSA TRL
LA BLANCA RD
CR 1114
MILE 6 RD
KUMQUAT ST
STANDARD AVE
15TH ST
MOORE RD
CESAR CHAVEZ RD
8TH ST
BOWIE AVE
RIDGE RD
CARROLL RD
WHALEN RD
TERI ST
3RD ST
HUDD RD
MILLER AVE
STITES
EL GATO RD
CR 1297
EAST AVE
RD 1822

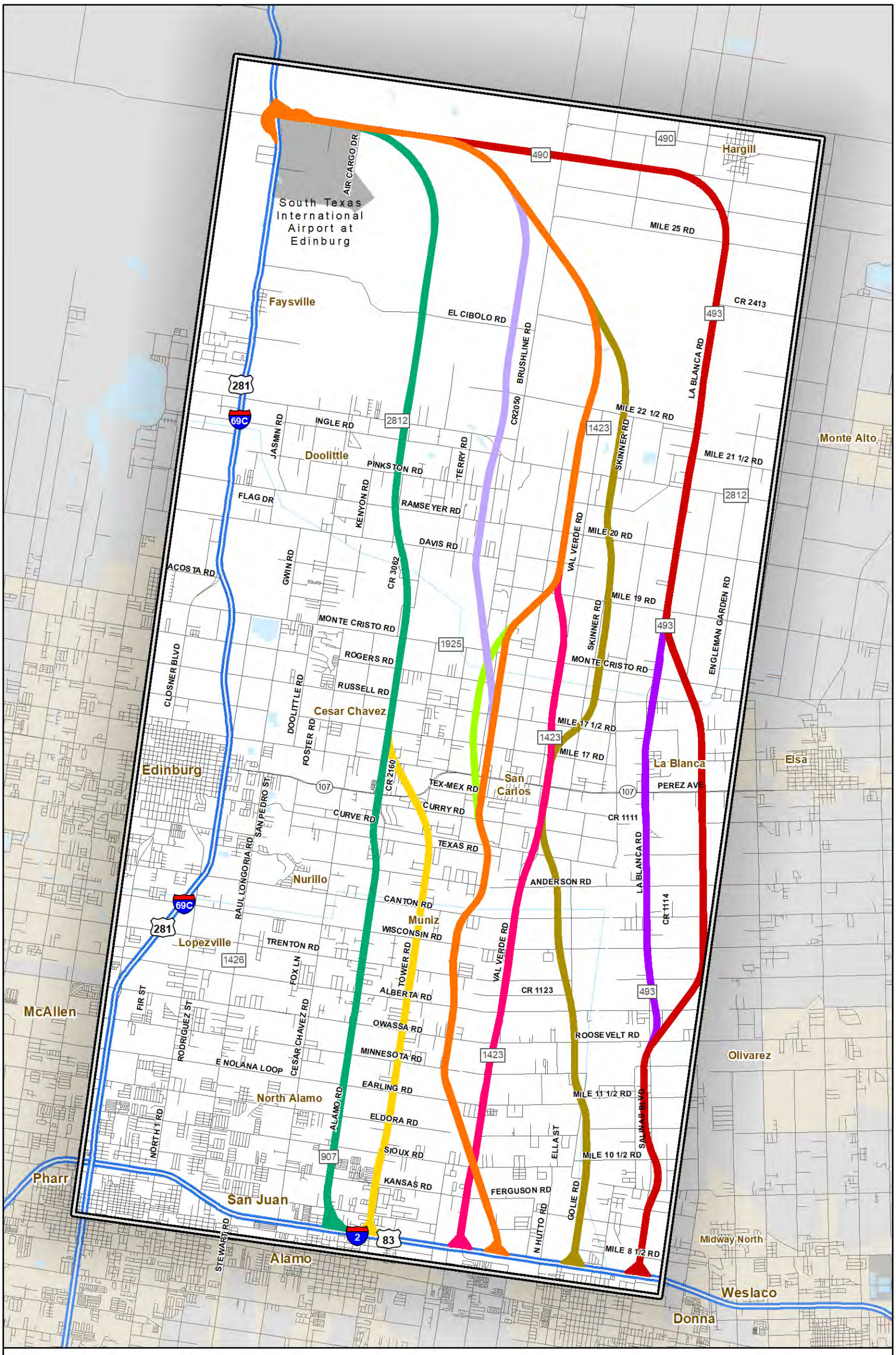
1


Exhibit 4.2
Critical Issues
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
I-69C/US 281
FM 907 Modified
FM 907 PSM
Tower Road
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 Val Verde Rd
FM 1423 Modified (Golie Rd)
FM 493 PSM
FM 493 Modified 2
FM 493 Modified
Study Area
Critical Issues
Cemetery
Park
Place of Worship
Public Facility
School
Landfill
Hazardous Material Site
Collection Site
Conservation Easement/
Wildlife Refuge
0 0.5 1
Miles
Base Map: 2015 TOP Aerial Imagery
Edinburg
Doolittle
Cesar Chavez
Nurillo
Muniz
Lopezville
San Carlos
La Blanca
Elsa
281
69C
1925
1423
493
107
INGLE RD
FLAG DR
DAVIS RD
RAMSEY RD
MONTE CRISTO RD
TEX-MEX RD
CURRY RD
TEXAS RD
CANTON RD
ANDERSON RD
PEREZ AVE
MILE 22 1/2 RD
MILE 21 1/2 RD
MILE 20 RD
MILE 19 1/2 RD
MILE 19 RD
MILE 17 RD
SEMINARY RD
BARS MARS LN
JASMIN RD
TERRY RD
KENYON RD
URESTI ST
SKINNER RD
LA BLANCA RD
ENGLEMAN GARDEN RD
NORENE DR
ACOSTA RD
GWIN RD
CR 3062
DOOLITTLE RD
SHARP RD
VAL VERDE RD
TREY ST
CHAPIN ST
CLOSNER BLVD
4TH AVE
FOSTER RD
CR 3060
34TH ST
IVY LN
VANCE ST
IOWA RD
CURVE RD
RAUL LONGORIA RD
DAVID DR
HOLMES RD
EAST ST
MAX DR
CR 1111
CR 1114
TULSA TRL

1


San Manuel-Linn
CR 3421
COOLIDGE ST
1ST ST
490
281
69C
WASHINGTON AVE
Faysville
EL CIBOLO RD
CACTUS FLATS
BRUSHLINE RD
MILE 22 1/2 RD
INGLE RD
Doolittle
TERRY RD
SKINNER RD
URESTI ST
MILE 21 1/2 RD
493
MILE 25 RD
12TH ST
NITTLER RD
MILE 5 RD
GARCIA ST
Monte Alto
FM 2812
CR 4020
BARS MARS LN
EXPRESSWAY 281
JASMIN RD
FLAG DR
Exhibit 4.3
Critical Issues
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
I-69C/US 281
FM 907 Modified
FM 907 PSM
Tower Road
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 Val Verde Rd
FM 1423 Modified (Golie Rd)
FM 493 PSM
FM 493 Modified 2
FM 493 Modified
Study Area
Critical Issues
Cemetery
Park
Place of Worship
Public Facility
School
Landfill
Hazardous Material Site
Collection Site
Conservation Easement/
Wildlife Refuge
N
W
E
S
0
0.5
1
Miles
Base Map: 2015 TOP Aerial Imagery

1


South Texas International Airport at Edinburg
AIR CARGO DR
Hargill
490
MILE 25 RD
Faysville
EL CIBOLO RD
BRUSHLINE RD
CR 2413
493
LA BLANCA RD
281
69C
INGLE RD
2812
JASMIN RD
Doolittle
PINKSTON RD
TERRY RD
CR2050
1423
SKINNER RD
MILE 22 1/2 RD
MILE 21 1/2 RD
Monte Alto
FLAG DR
KENYON RD
RAMSEYER RD
DAVIS RD
MILE 20 RD
VAL VERDE RD
ACOSTA RD
GWIN RD
CR 3062
MILE 19 RD
ENGLEMAN GARDEN RD
MONTE CRISTO RD
1925
ROGERS RD
RUSSELL RD
CLOSNER BLVD
DOOLITTLE RD
FOSTER RD
Cesar Chavez
MILE 17 1/2 RD
MILE 17 RD
Edinburg
CR 2160
TEX-MEX RD
San Carlos
La Blanca
PEREZ AVE
107
CURVE RD
CURRY RD
CR 1111
SAN PEDRO ST
RAUL LONGORIA RD
TEXAS RD
Nurillo
ANDERSON RD
CANTON RD
Muniz
WISCONSIN RD
CR 1114
Lopezville
TRENTON RD
1426
FOX LN
TOWER RD
VAL VERDE RD
CR 1123
ALBERTA RD
McAllen
FIR ST
RODRIGUEZ ST
OWASSA RD
ROOSEVELT RD
MINNESOTA RD
Olivarez
E NOLANA LOOP
CESAR CHAVEZ RD
EARLING RD
North Alamo
MILE 11 1/2 RD
ALAMO RD
ELDORA RD
NORTH H 1 RD
SALINAS BLVD
907
SIOUX RD
ELLA ST
MILE 10 1/2 RD
Pharr
KANSAS RD
FERGUSON RD
GOLIE RD
San Juan
N HUTTO RD
Midway North
STEWART RD
MILE 8 1/2 RD
Alamo
Weslaco
Donna
350 to 400-foot Preliminary Alternatives
FM 907 Modified
Tower Road
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
FM 493 Modified 2
FM 493 Modified
EIS Study Area
N
W
E
S
0 0.5 1 2
Miles
Exhibit 5
350 to 400-foot Preliminary Alternatives
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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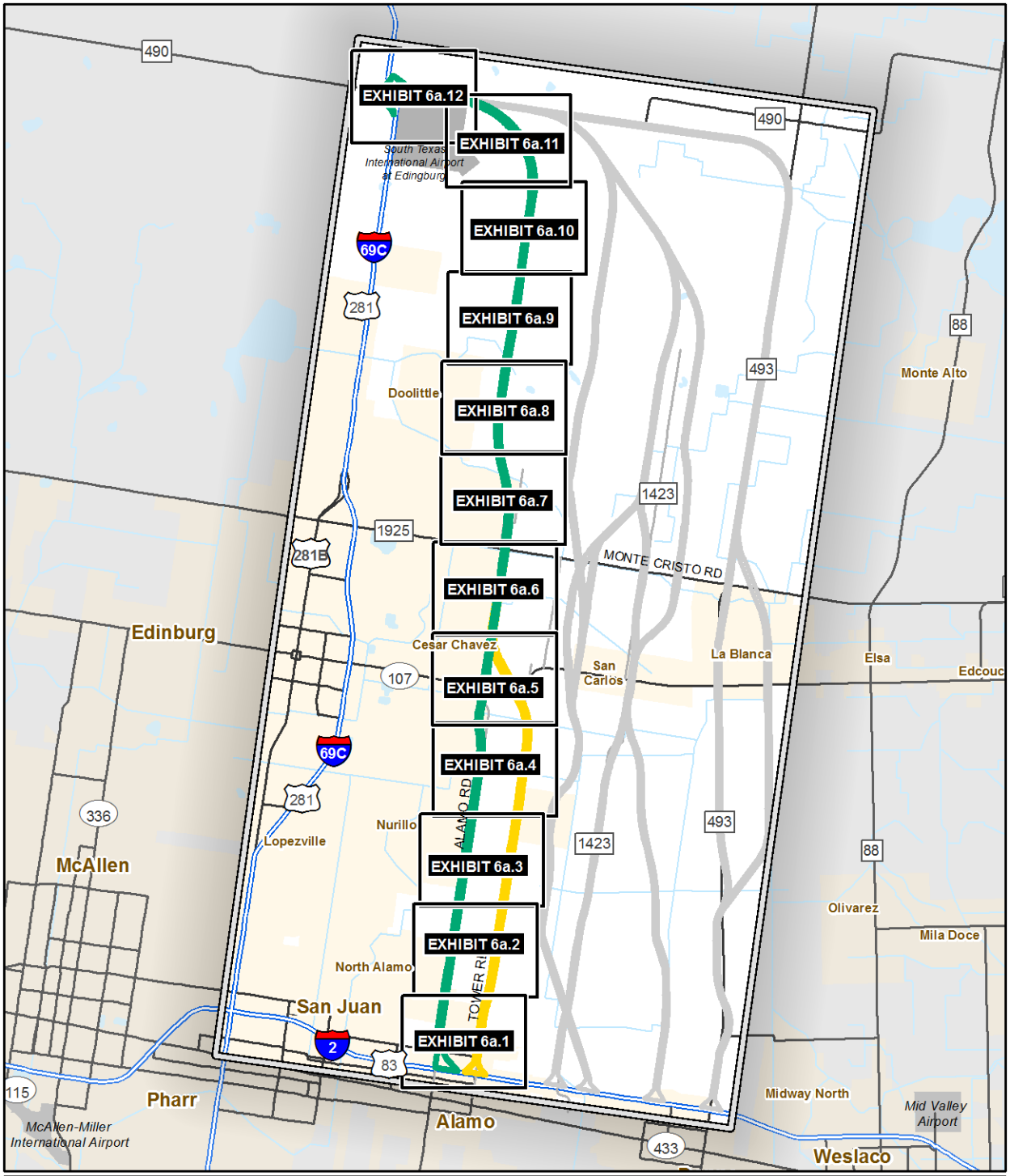
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EXHIBIT 6a.11
EXHIBIT 6a.10
EXHIBIT 6a.9
EXHIBIT 6a.8
EXHIBIT 6a.7
EXHIBIT 6a.6
EXHIBIT 6a.5
EXHIBIT 6a.4
EXHIBIT 6a.3
EXHIBIT 6a.2
EXHIBIT 6a.1
490
69C
281
1925
281B
107
336
115
83
2
433
493
1423
88
MONTE CRISTO RD
ALAMO RD
TOWER RD
Edinburg
McAllen
Pharr
Alamo
San Juan
North Alamo
Nurillo
Lopezville
Doolittle
Cesar Chavez
San Carlos
La Blanca
Monte Alto
Elsa
Edcouch
Olivarez
Mila Doce
Midway North
Weslaco
South Texas International Airport at Edinburg
McAllen-Miller International Airport
Mid Valley Airport
FM 907 Modified
Tower Rd.
Study Area
N
W
E
S
0 1 2
Miles
Exhibit 6a
Environmental Constraints Index
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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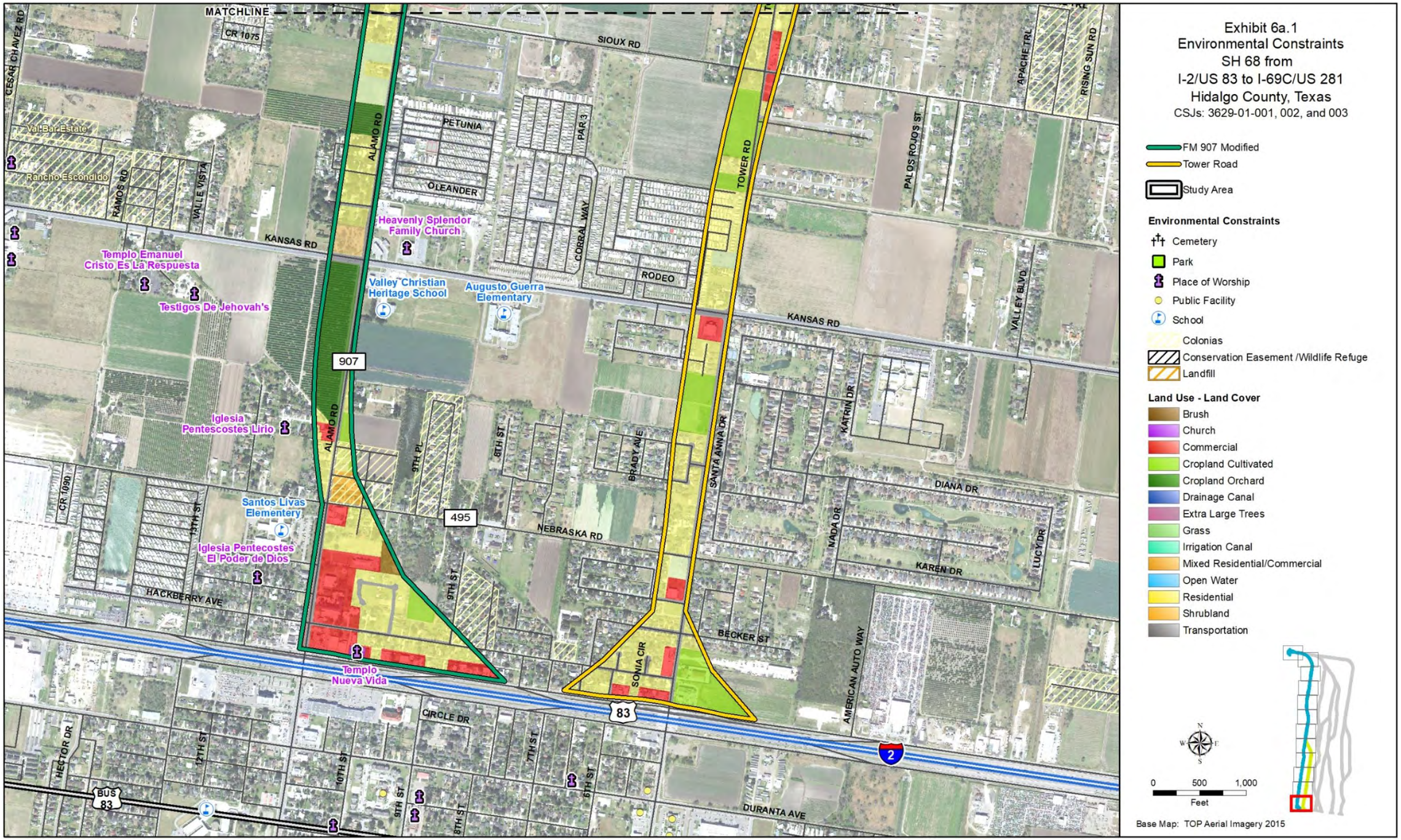
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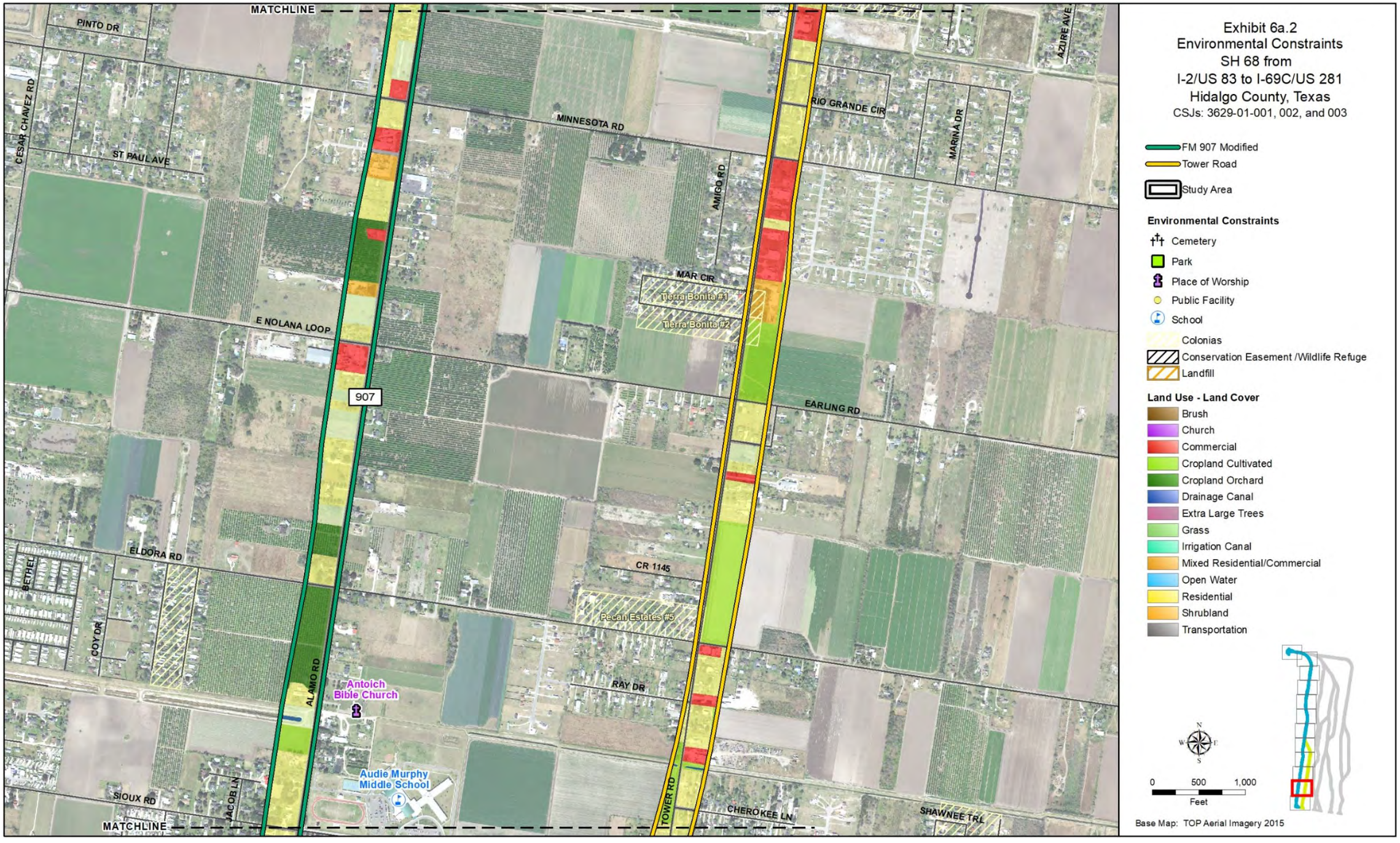
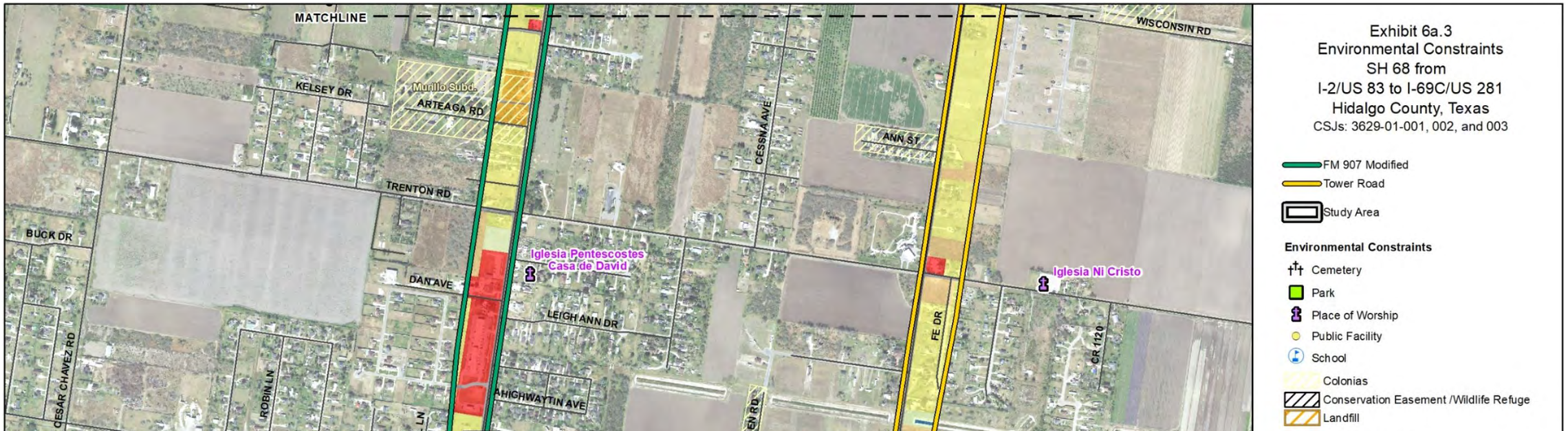
CR 1075
SIOUX RD
CESAR CHAVEZ RD
Val Bar Estate
Rancho Escondido
RAMOS RD
VALLE VISTA
ALAMO RD
PETUNIA
OLEANDER
PAR 3
CORRAL WAY
TOWER RD
PALOS ROJOS ST
APACHE TRL
RISING SUN RD
KANSAS RD
Heavenly Splendor Family Church
Templo Emanuel Cristo Es La Respuesta
Testigos De Jehovah's
Valley Christian Heritage School
Augusto Guerra Elementary
RODEO
VALLEY BLVD
907
Iglesia Pentescostes Lirio
9TH PL
8TH ST
BRADY AVE
SANTA ANNA DR
KATRIN DR
DIANA DR
NADA DR
KAREN DR
LUCY DR
CR 1090
Santos Livas Elementery
13TH ST
495
NEBRASKA RD
Iglesia Pentecostes El Poder de Dios
9TH ST
HACKBERRY AVE
BECKER ST
SONIA CIR
AMERICAN AUTO WAY
Templo Nueva Vida
83
CIRCLE DR
HECTOR DR
12TH ST
10TH ST
7TH ST
6TH ST
BUS 83
8TH ST
DURANTA AVE
2
Exhibit 6a.1
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

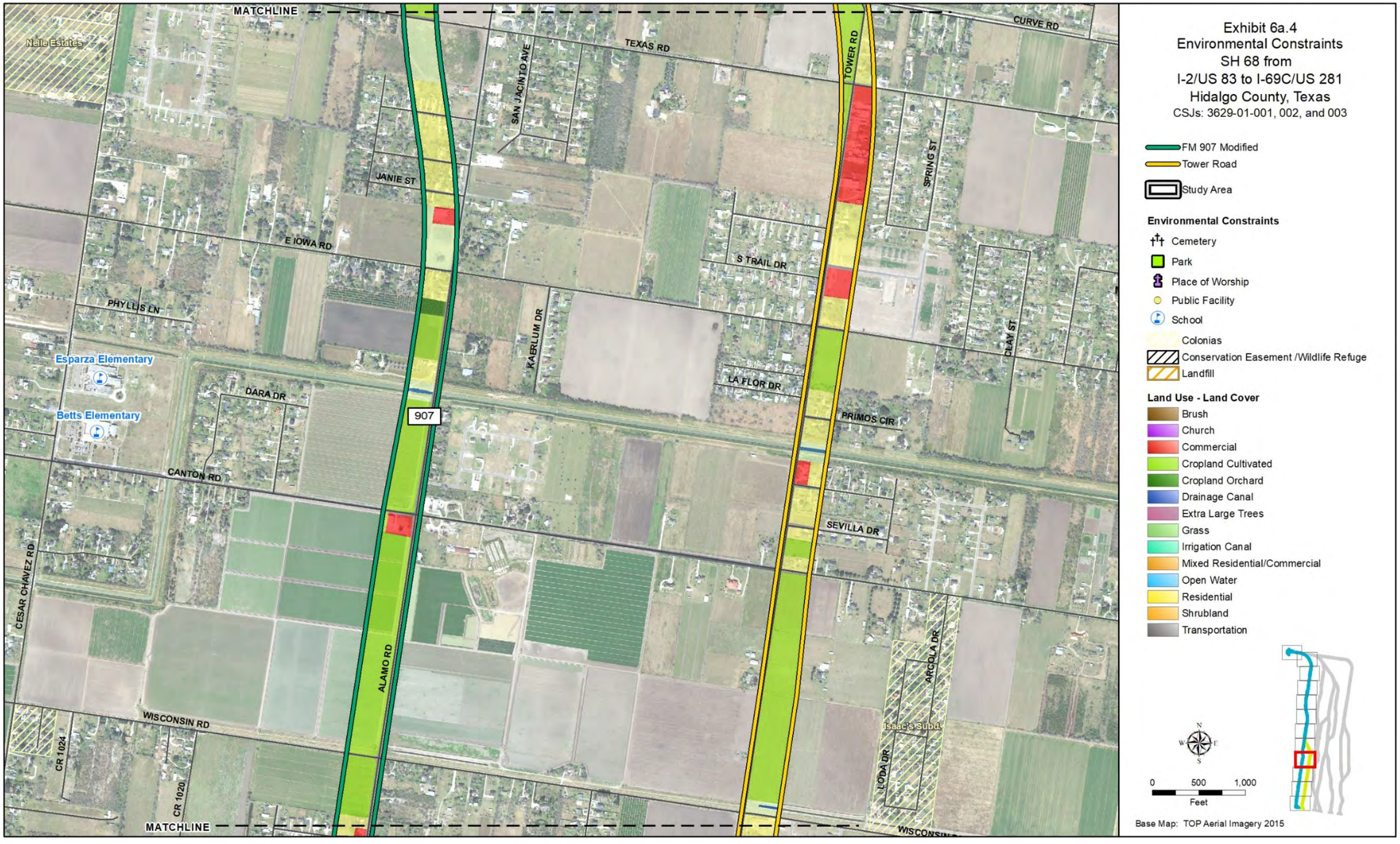
1


MATCHLINE
PINTO DR
CESAR CHAVEZ RD
ST PAUL AVE
MINNESOTA RD
AMIGO RD
RIO GRANDE CIR
MARINA DR
AZURE AVE
MAR CIR
Tierra Bonita #1
Tierra Bonita #2
E NOLANA LOOP
907
EARLING RD
ELDORA RD
BETHEL
COY DR
ALAMO RD
CR 1145
Pecan Estates #5
RAY DR
Antoich Bible Church
Audie Murphy Middle School
SIOUX RD
JACOB LN
TOWER RD
CHEROKEE LN
SHAWNEE TRL
MATCHLINE
Exhibit 6a.2
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

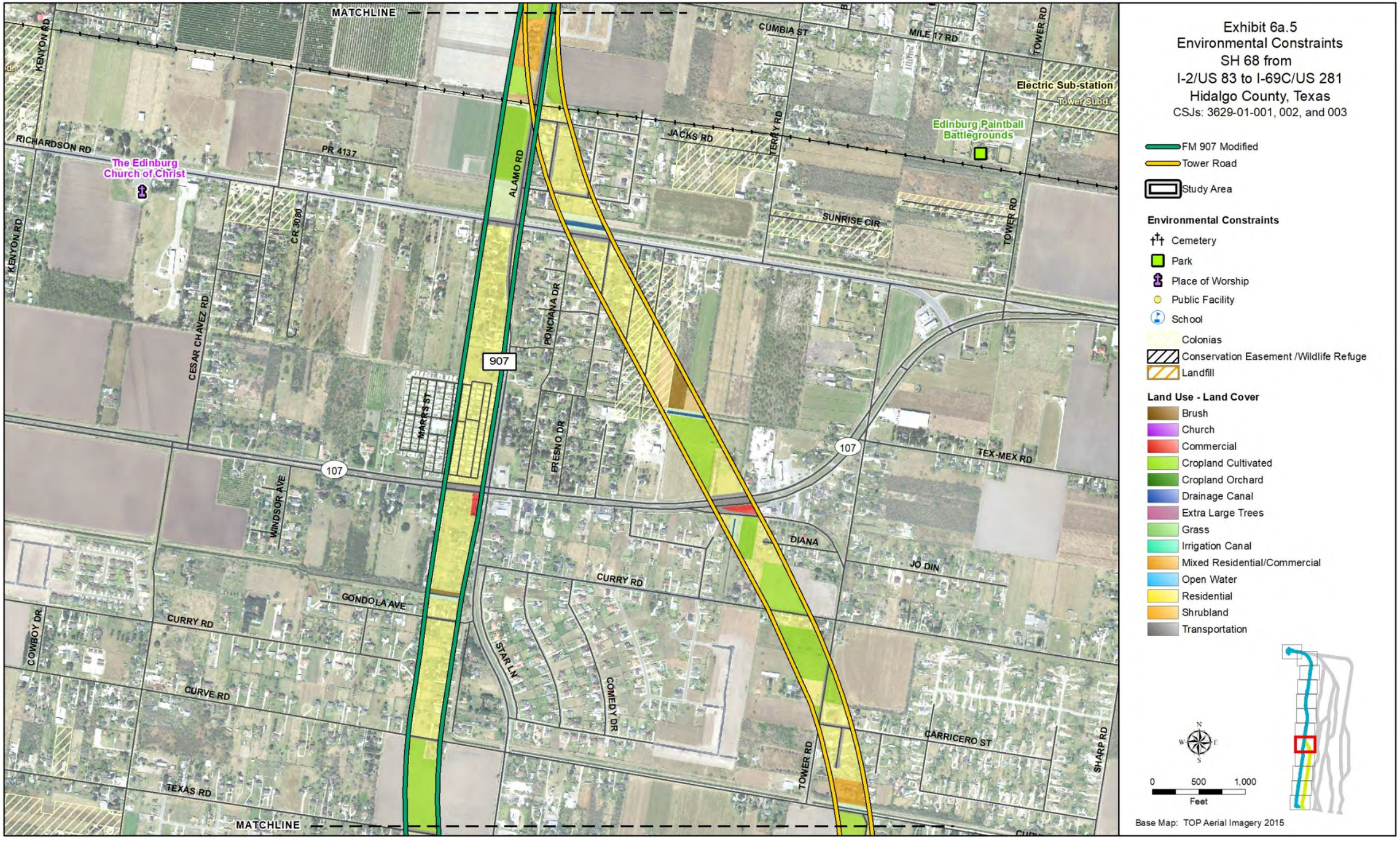
1


MATCHLINE
WISCONSIN RD
KELSEY DR
Murillo Subd.
ARTEAGA RD
TRENTON RD
BUCK DR
DAN AVE
LEIGH ANN DR
CESSNA AVE
ANN ST
FE DR
CR 1120
Iglesia Pentescostes Casa de David
Iglesia Ni Cristo
CESAR CHAVEZ RD
ROBIN LN
CARDINAL LN
907
HIGHWAY 77 IN AVE
HELEN RD
ALBERTA RD
SAN JOSE AVE
NICOLE DR
OSCAR LP
EL BOSQUE DR
PALMERAS CIR
VOLETA DR
GONZALEZ ST
ALAMO RD
ARGENTINE RD
El Charro #2
Iglesia El Poder de Dios
OWASSA RD
CENIZO
BEDUINO AVE
TEJANO DR
EL AHUJADO RD
ROMAN CIR
GUEVAS RD
Cole Subd.
Iglesia Viva
AVE AZURE AVE
EL JAY DR
REMUDA DR
MATCHLINE
Exhibit 6a.3
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
Nelle Estates
TEXAS RD
SAN JACINTO AVE
TOWER RD
CURVE RD
SPRING ST
JANIE ST
E IOWA RD
S TRAIL DR
PHYLLIS LN
KABRLUM DR
CLAY ST
Esparza Elementary
DARA DR
LA FLOR DR
Betts Elementary
907
PRIMOS CIR
CANTON RD
SEVILLA DR
CESAR CHAVEZ RD
ALAMO RD
ARGOLA DR
WISCONSIN RD
Isaac's Subd.
CR 1024
CR 1020
LODA DR
MATCHLINE
WISCONSIN
Exhibit 6a.4
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
KENYON RD
RICHARDSON RD
The Edinburg Church of Christ
PR 4137
CR 3080
KENYON RD
CESAR CHAVEZ RD
ALAMO RD
907
MARKS ST
FRESNO DR
PONCIANA DR
CUMBIA ST
MILE 17 RD
TOWER RD
Electric Sub-station
Tower Subd.
JACKS RD
TERRY RD
Edinburg Paintball Battlegrounds
SUNRISE CIR
TOWER RD
107
WINDSOR AVE
GONDOLA AVE
CURRY RD
COWBOY DR
CURVE RD
TEXAS RD
STAR LN
COMEDY DR
DIANA
JO DIN
TEX-MEX RD
CARRICERO ST
SHARP RD
TOWER RD
MATCHLINE
Exhibit 6a.5
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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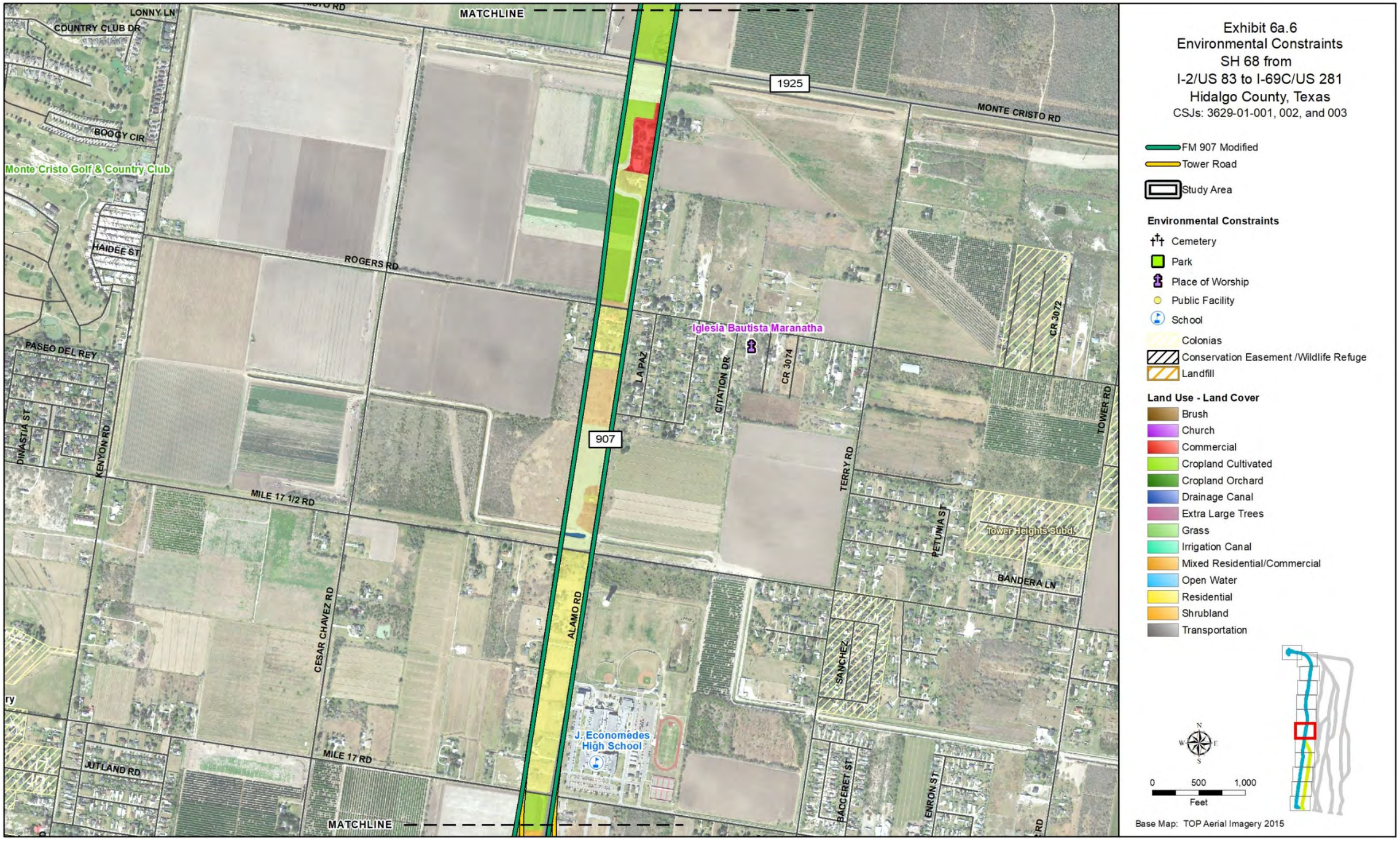
MATCHLINE
LONNY LN
COUNTRY CLUB DR
BOOGY CIR
Monte Cristo Golf & Country Club
HAIDEE ST
ROGERS RD
PASEO DEL REY
DINASTIA ST
KENYON RD
MILE 17 1/2 RD
CESAR CHAVEZ RD
MILE 17 RD
JUTLAND RD
MATCHLINE
1925
MONTE CRISTO RD
907
ALAMO RD
LA PAZ
CITATION DR
CR 3074
Iglesia Bautista Maranatha
CR 3072
TOWER RD
TERRY RD
PETUNIA ST
Tower Heights Subd.
BANDERA LN
SANCHEZ
BACCERET ST
ENRON ST
J. Economedes High School
Exhibit 6a.6
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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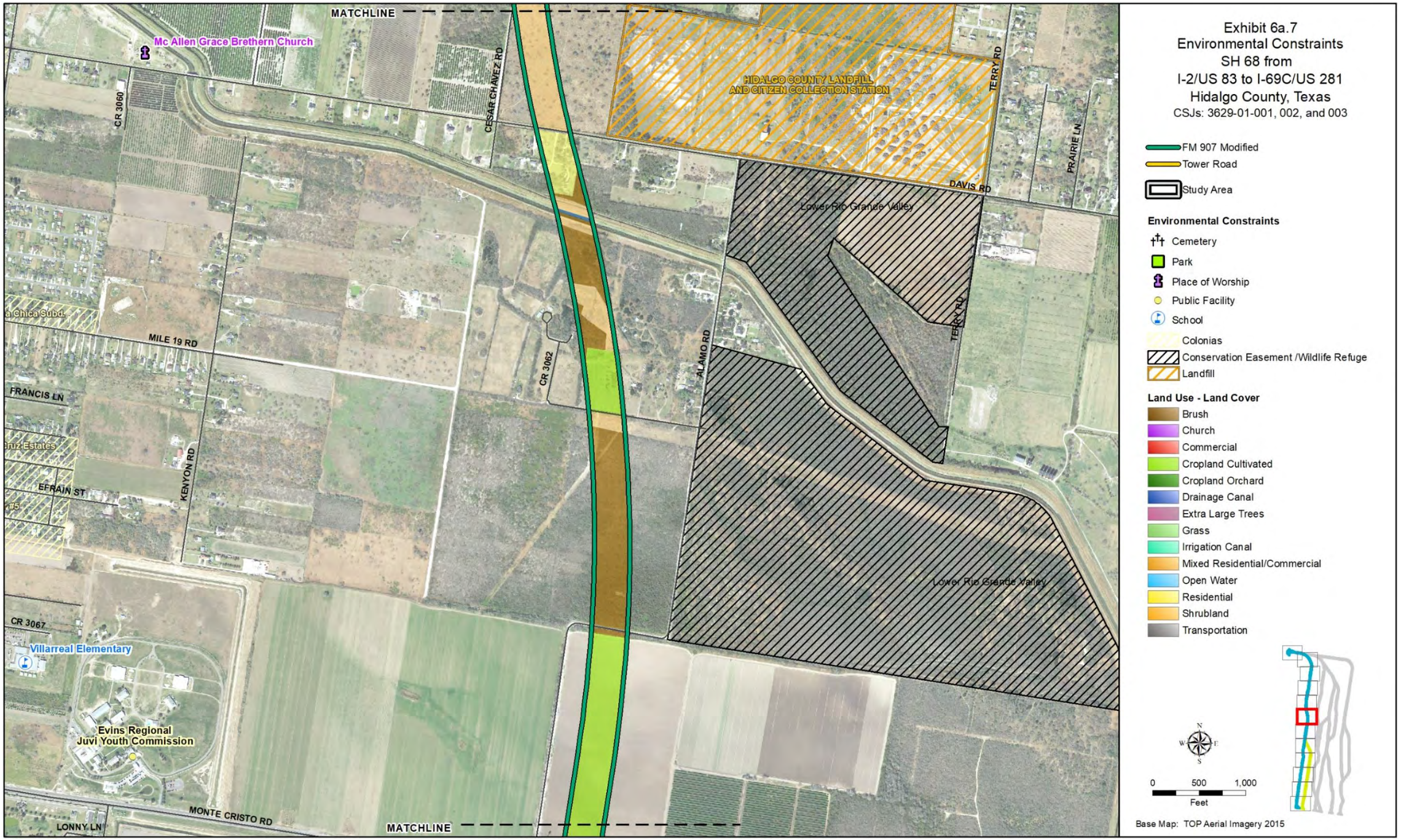
MATCHLINE
Mc Allen Grace Brethern Church
CR 3060
CESAR CHAVEZ RD
HIDALGO COUNTY LANDFILL AND CITIZEN COLLECTION STATION
TERRY RD
PRAIRIE LN
DAVIS RD
Lower Rio Grande Valley
a Chica Subd.
MILE 19 RD
CR 3062
ALAMO RD
FRANCIS LN
nuz Estates
EFRAIN ST
KENYON RD
CR 3067
Villarreal Elementary
Evins Regional Juvi Youth Commission
MONTE CRISTO RD
LONNY LN
MATCHLINE
Exhibit 6a.7
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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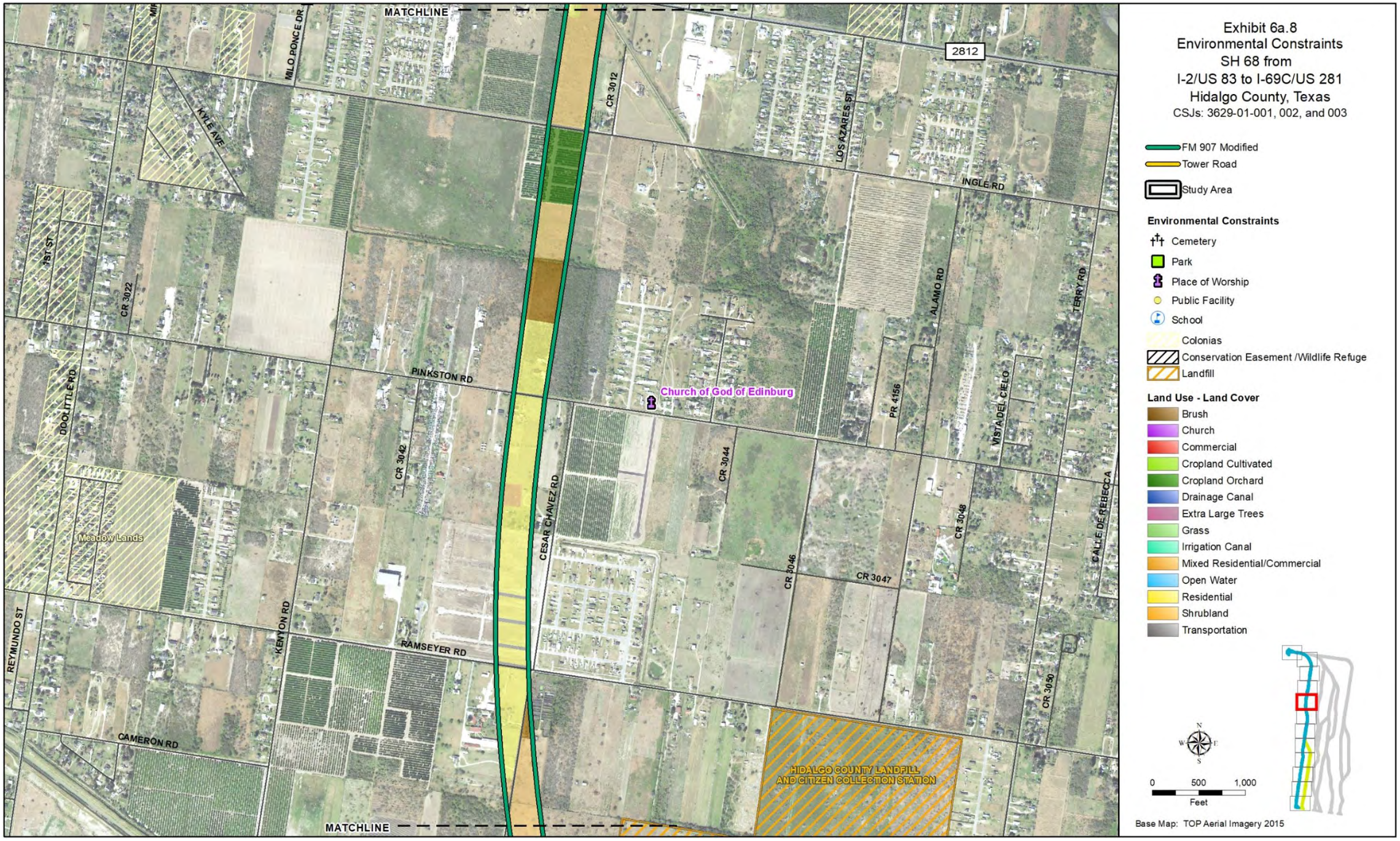
MATCHLINE
MLO PONCE DR
KYLE AVE
1ST ST
CR 3022
DOOLITTLE RD
Meadow Lands
REYMUNDO ST
KENYON RD
CAMERON RD
RAMSEYER RD
PINKSTON RD
CR 3042
CR 3012
CESAR CHAVEZ RD
Church of God of Edinburg
CR 3044
CR 3046
CR 3047
CR 3048
CR 3050
LOS AZARES ST
2812
INGLE RD
ALAMO RD
PR 4156
VISTA DEL CIELO
TERRY RD
CALLE DE REBECCA
HIDALGO COUNTY LANDFILL AND CITIZEN COLLECTION STATION
MATCHLINE
Exhibit 6a.8
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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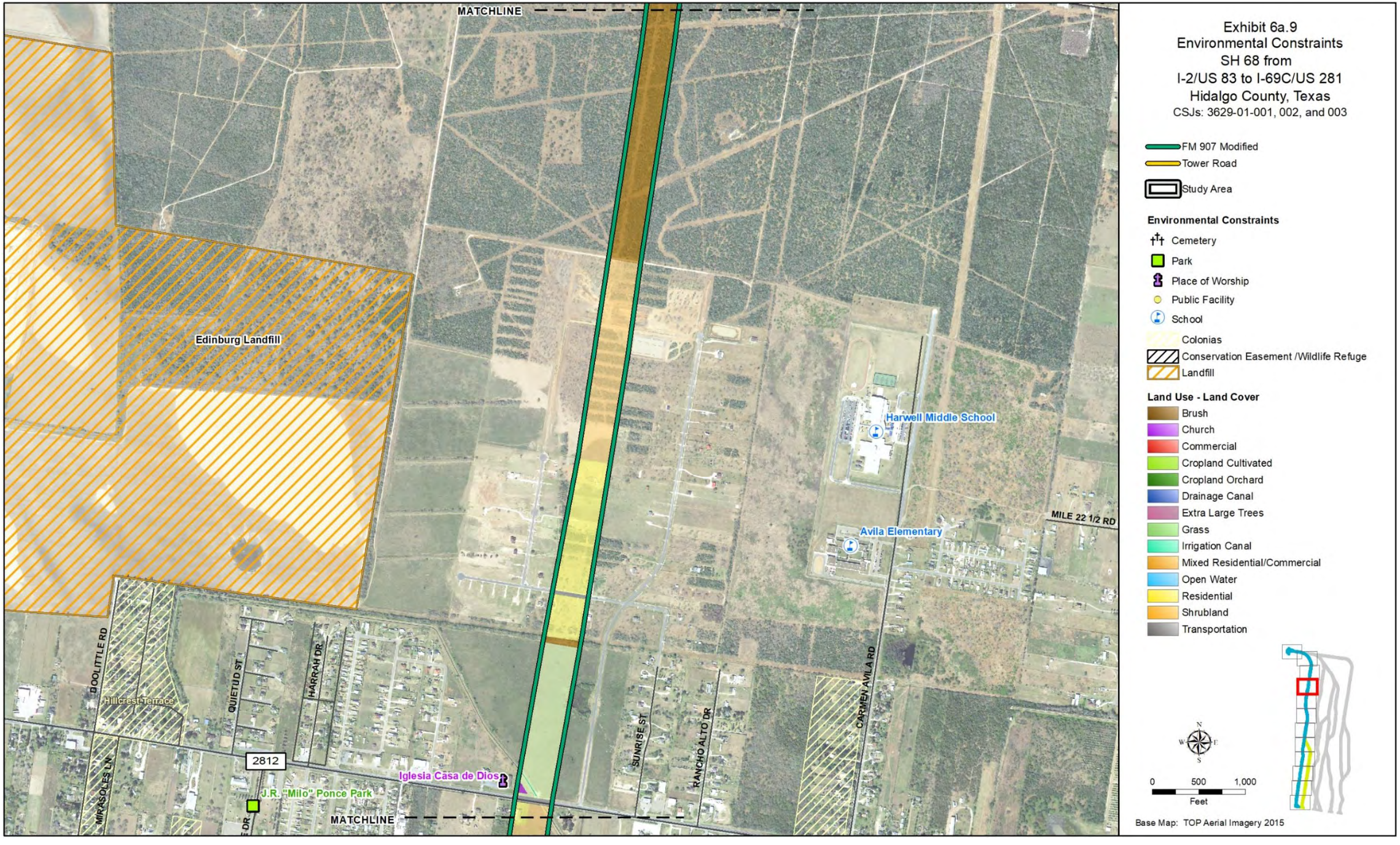
MATCHLINE
Edinburg Landfill
Harwell Middle School
Avila Elementary
MILE 22 1/2 RD
DOOLITTLE RD
Hillcrest Terrace
QUIETUD ST
HARRAH DR
MIRASOLES LN
2812
Iglesia Casa de Dios
J.R. "Milo" Ponce Park
MATCHLINE
SUNRISE ST
RANCHO ALTO DR
CARMEN AVILA RD
Exhibit 6a.9
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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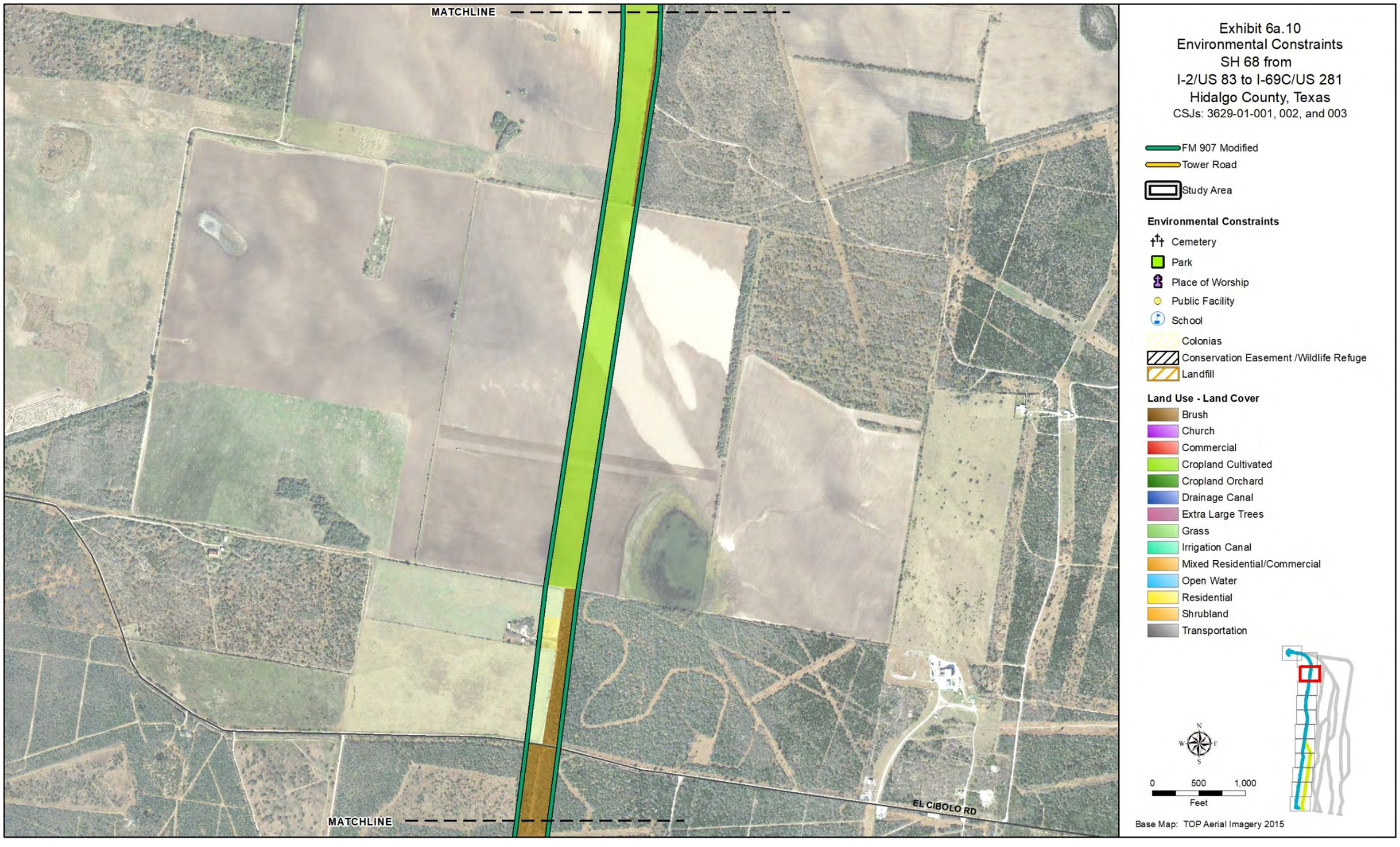
MATCHLINE
MATCHLINE
EL CIBOLO RD
Exhibit 6a.10
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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490
MATCHLINE
MATCHLINE
Exhibit 6a.11
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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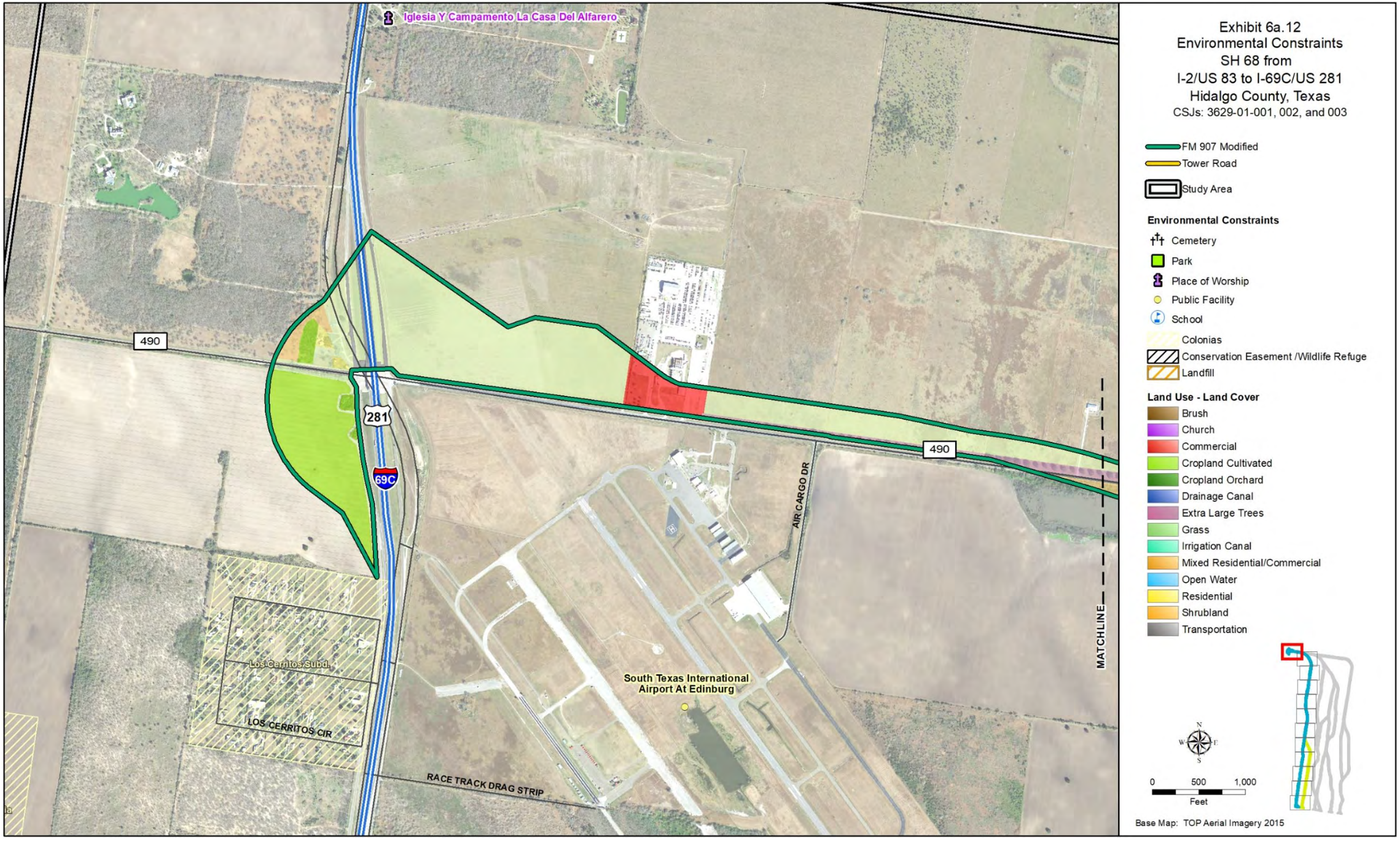
Feet
Base Map: TOP Aerial Imagery 2015

1


Iglesia Y Campamento La Casa Del Alfarero
490
281
69C
490
AIR CARGO DR
MATCHLINE
Los Cerritos Subd.
LOS CERRITOS CIR
South Texas International Airport At Edinburg
RACE TRACK DRAG STRIP
Exhibit 6a.12
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Road
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Conservation Easement /Wildlife Refuge
Landfill
Land Use - Land Cover
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

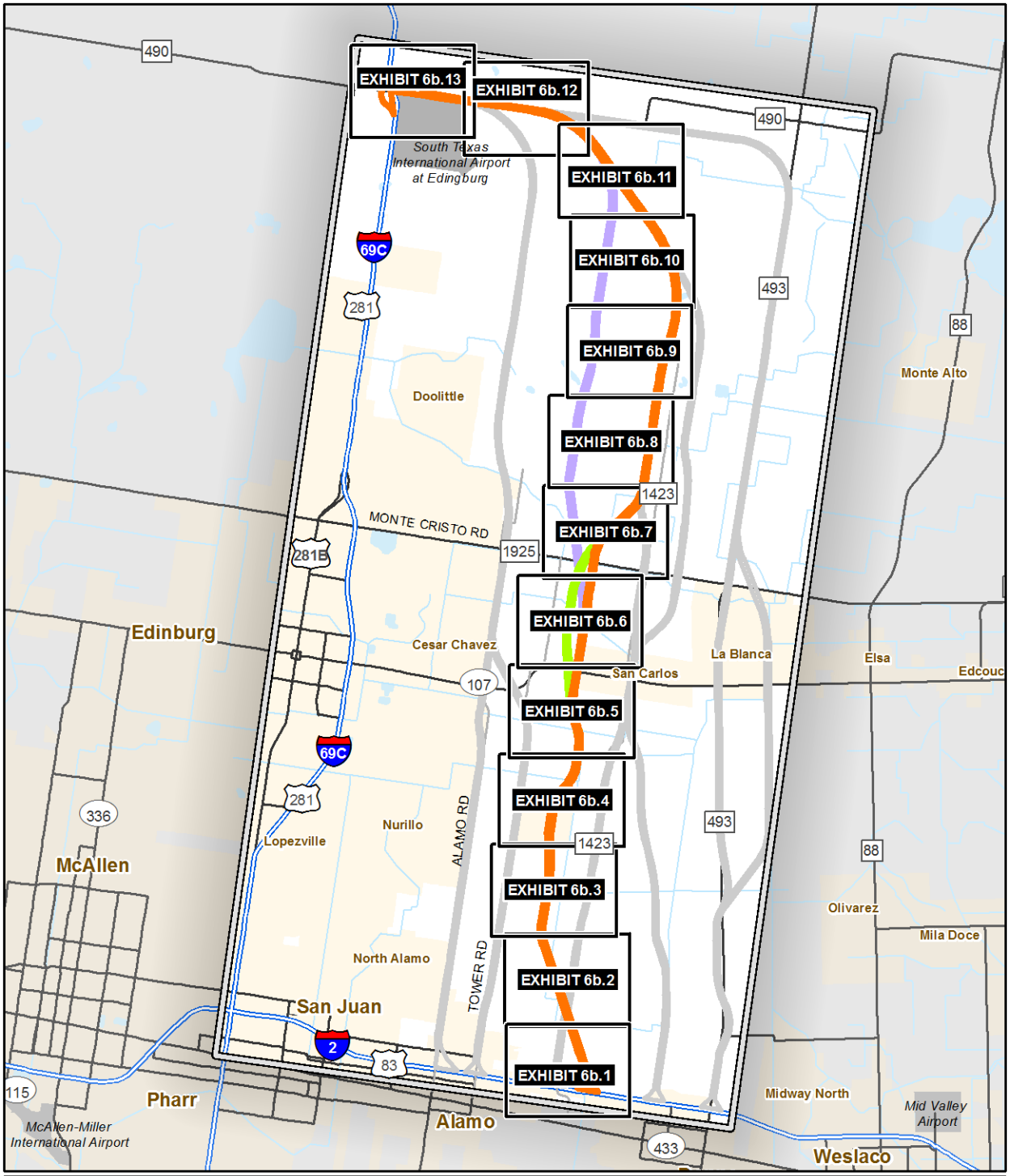
EXHIBIT 6b.13
EXHIBIT 6b.12
EXHIBIT 6b.11
EXHIBIT 6b.10
EXHIBIT 6b.9
EXHIBIT 6b.8
EXHIBIT 6b.7
EXHIBIT 6b.6
EXHIBIT 6b.5
EXHIBIT 6b.4
EXHIBIT 6b.3
EXHIBIT 6b.2
EXHIBIT 6b.1
490
69C
281
493
88
1423
1925
281B
107
336
2
83
115
433
South Texas International Airport at Edinburg
Doolittle
Monte Alto
MONTE CRISTO RD
Edinburg
Cesar Chavez
La Blanca
San Carlos
Elsa
Edcouch
Lopezville
Nurillo
ALAMO RD
McAllen
North Alamo
TOWER RD
Olivarez
Mila Doce
San Juan
Pharr
Alamo
Midway North
Mid Valley Airport
McAllen-Miller International Airport
Weslaco
2014 Modified PSM
2014 PSM
2014 Modified 2
Study Area
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Miles
Exhibit 6b
Environmental Constraints Index
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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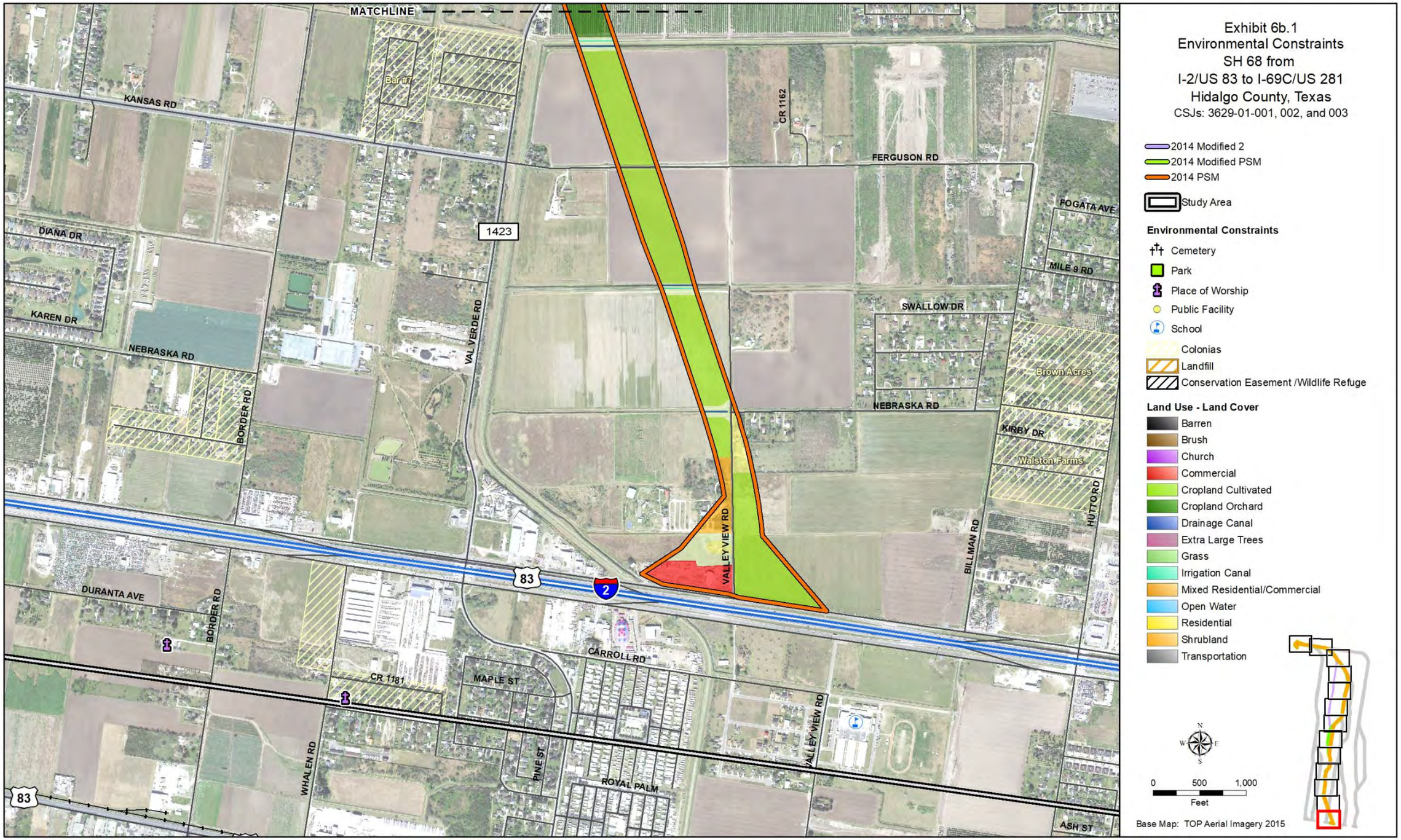
MATCHLINE
KANSAS RD
Bar #7
CR 1162
FERGUSON RD
FOGATA AVE
MILE 9 RD
1423
DIANA DR
KAREN DR
NEBRASKA RD
VAL VERDE RD
SWALLOW DR
Brown Acres
NEBRASKA RD
KIRBY DR
Walston Farms
HUTTO RD
BILLMAN RD
VALLEY VIEW RD
BORDER RD
83
2
DURANTA AVE
BORDER RD
CARROLL RD
CR 1181
MAPLE ST
WHALEN RD
PINE ST
ROYAL PALM
VALLEY VIEW RD
ASH ST
83
Exhibit 6b.1
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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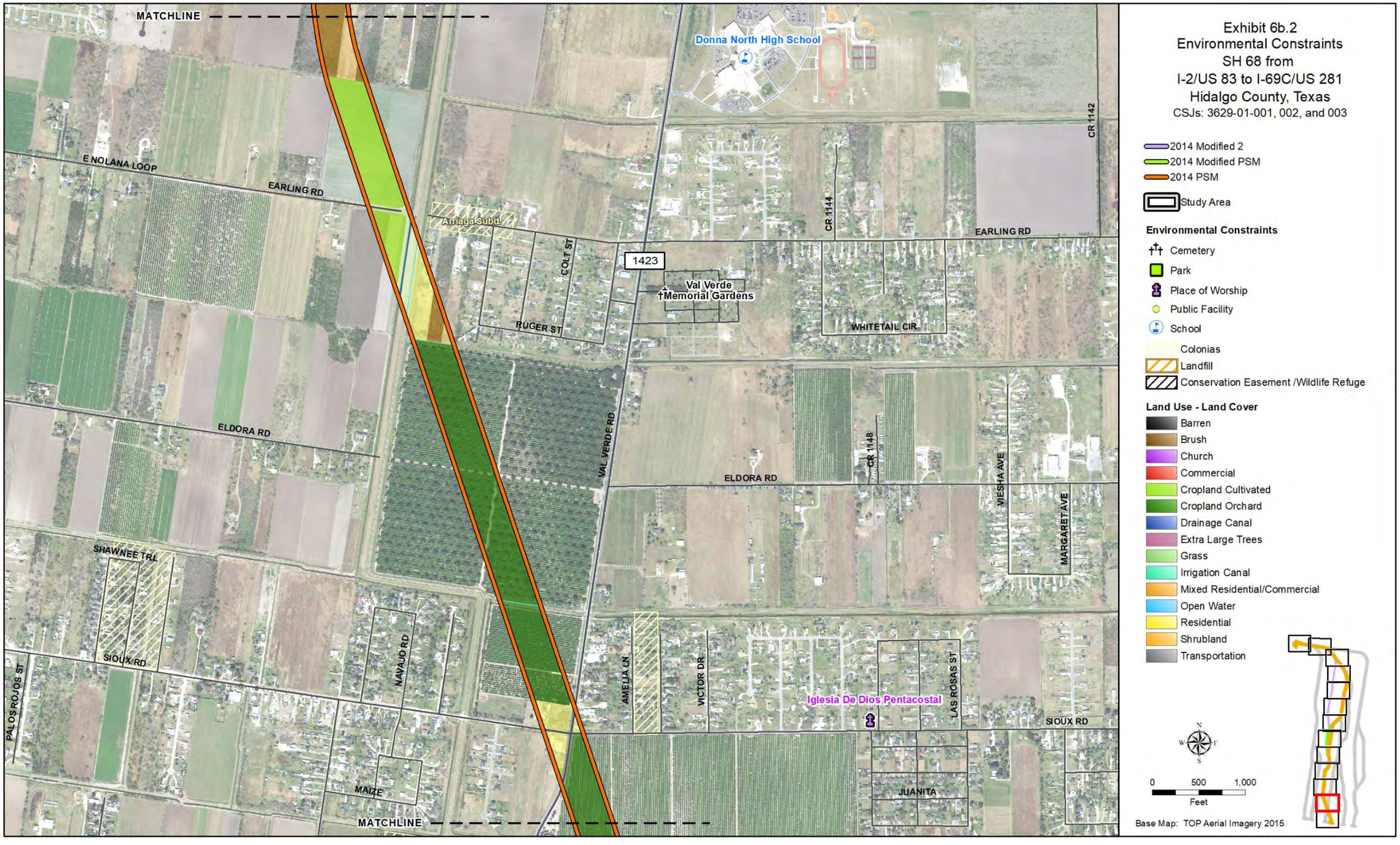
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
Donna North High School
E NOLANA LOOP
EARLING RD
Arriaga Subd.
COLT ST
1423
Val Verde
†Memorial Gardens
RUGER ST
CR 1142
CR 1144
EARLING RD
WHITETAIL CIR
ELDORA RD
VAL VERDE RD
CR 1148
ELDORA RD
VIESHA AVE
MARGARET AVE
SHAWNEE TRL
SIOUX RD
PALOS ROJOS ST
NAVAJO RD
AMELIA LN
VICTOR DR
Iglesia De Dios Pentacostal
LAS ROSAS ST
SIOUX RD
MAIZE
JUANITA
MATCHLINE
Exhibit 6b.2
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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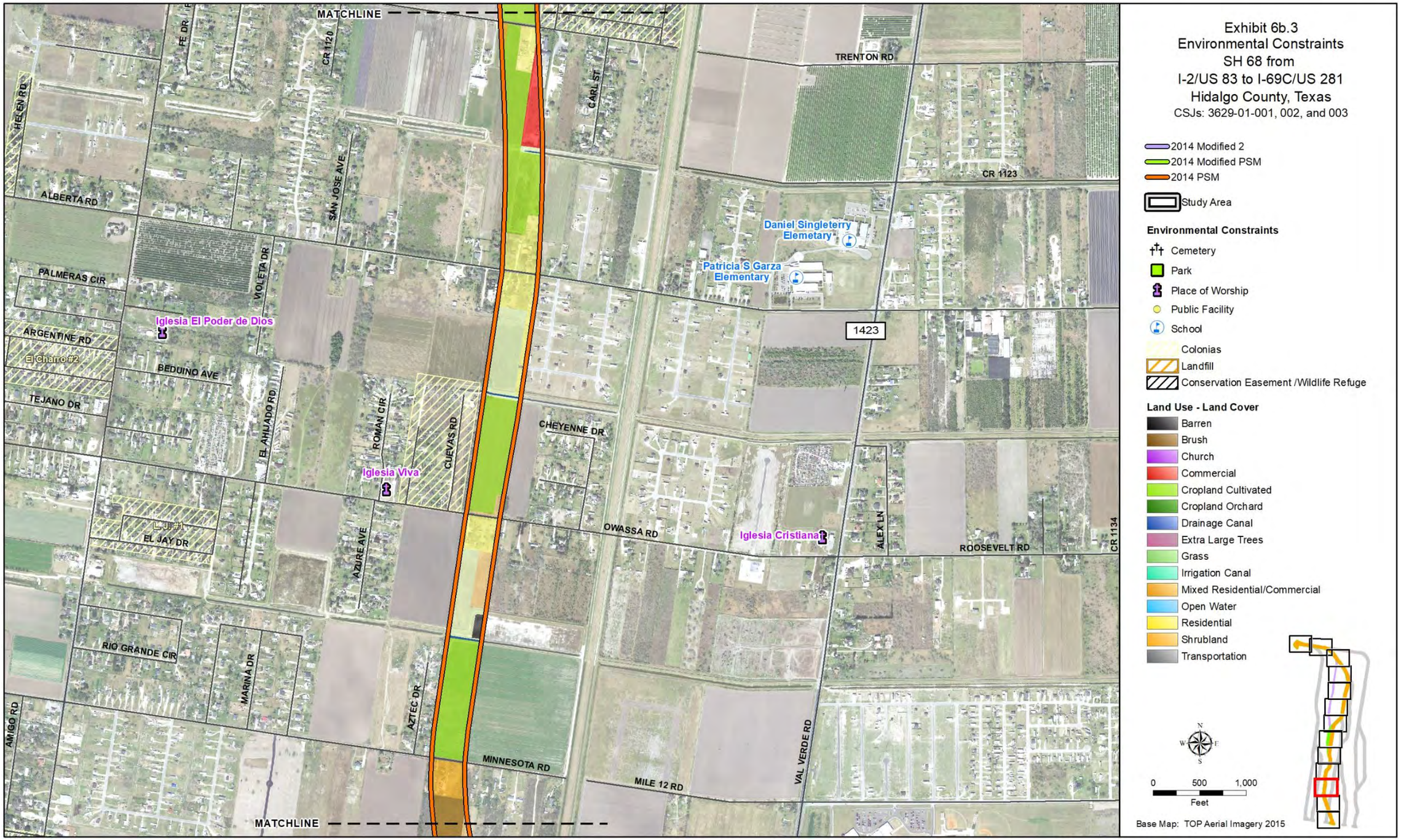
MATCHLINE
TRENTON RD
CR 1123
CR 1120
CARL ST
HELEN RD
ALBERTA RD
SAN JOSE AVE
PALMERAS CIR
VOLETA DR
Iglesia El Poder de Dios
ARGENTINE RD
El Charro #2
BEDUINO AVE
TEJANO DR
EL AHIJADO RD
ROMAN CIR
CUEVAS RD
CHEYENNE DR
Iglesia Viva
EL JAY DR
AZURE AVE
OWASSA RD
Iglesia Cristiana
ALEX LN
ROOSEVELT RD
CR 1134
RIO GRANDE CIR
MARINA DR
AZTEC DR
AMIGO RD
MINNESOTA RD
MILE 12 RD
VAL VERDE RD
MATCHLINE
Daniel Singleterry Elemetary
Patricia S Garza Elementary
1423
Exhibit 6b.3
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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MATCHLINE
LA FLOR DR
PRIMOS CIR
SEVILLA DR
CLAY ST
ORCHID ST
E VERBINA ST
JASMINE ST
MILE 15 RD
VAL VERDE RD
1423
CANTON RD
Templo Biblico El Rey Ya Viene Inc
LUXURY LN
ARCOLA DR
Isaac's Subd.
WISCONSIN RD
ANN ST
BONANZA DR
SKYHAWK DR
JAM SQ
Muniz Subd.
Iglesia Ni Cristo
TRENTON RD
MATCHLINE
Exhibit 6b.4
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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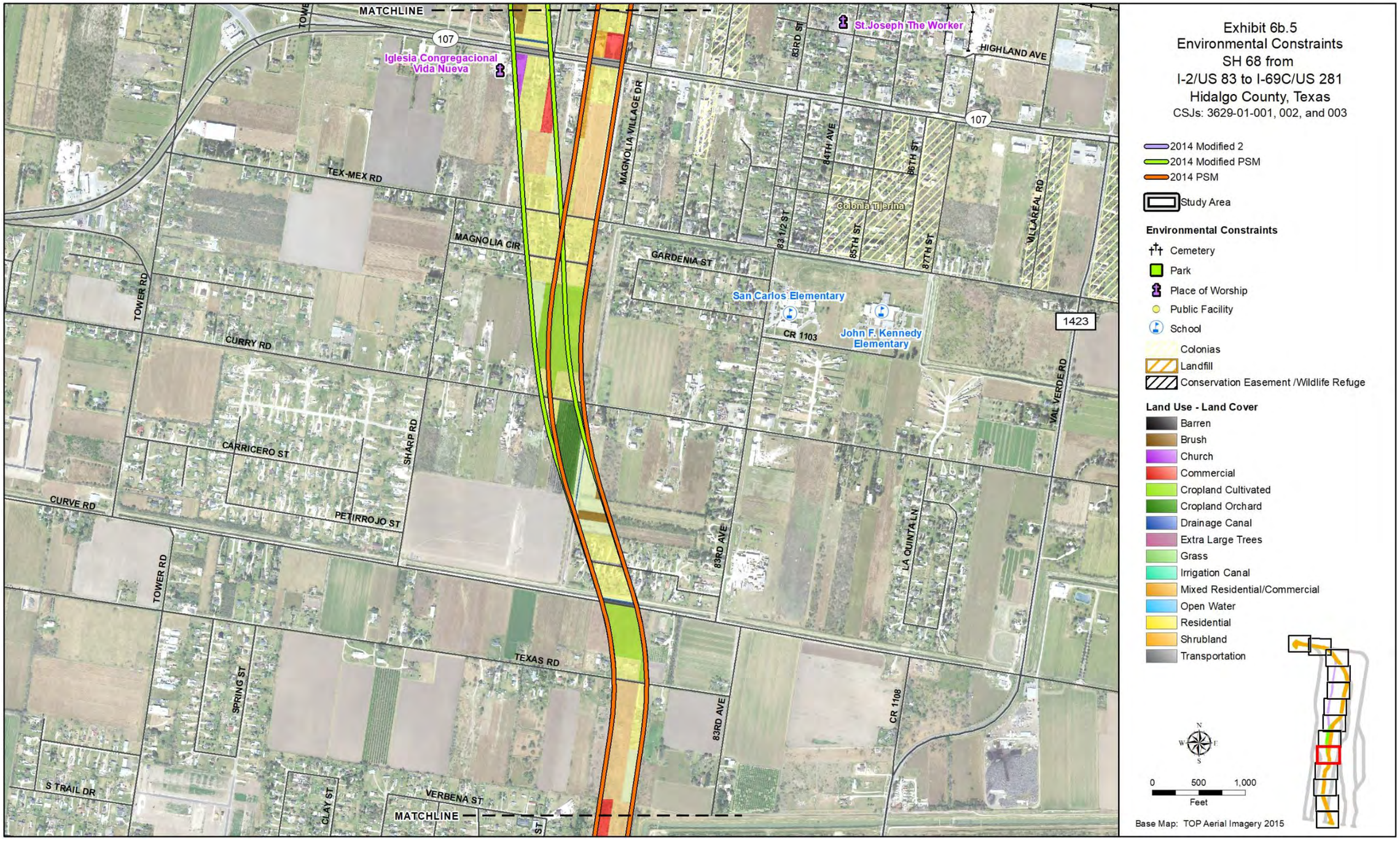
MATCHLINE
107
Iglesia Congregacional Vida Nueva
St.Joseph The Worker
HIGHLAND AVE
TEX-MEX RD
MAGNOLIA CIR
MAGNOLIA VILLAGE DR
GARDENIA ST
Colonia Tijerina
San Carlos Elementary
John F. Kennedy Elementary
CR 1103
1423
TOWER RD
CURRY RD
CARRICERO ST
SHARP RD
CURVE RD
PETIRROJO ST
83RD AVE
LA QUINTA LN
VAL VERDE RD
TEXAS RD
SPRING ST
CR 1108
S TRAIL DR
CLAY ST
VERBENA ST
MATCHLINE
Exhibit 6b.5
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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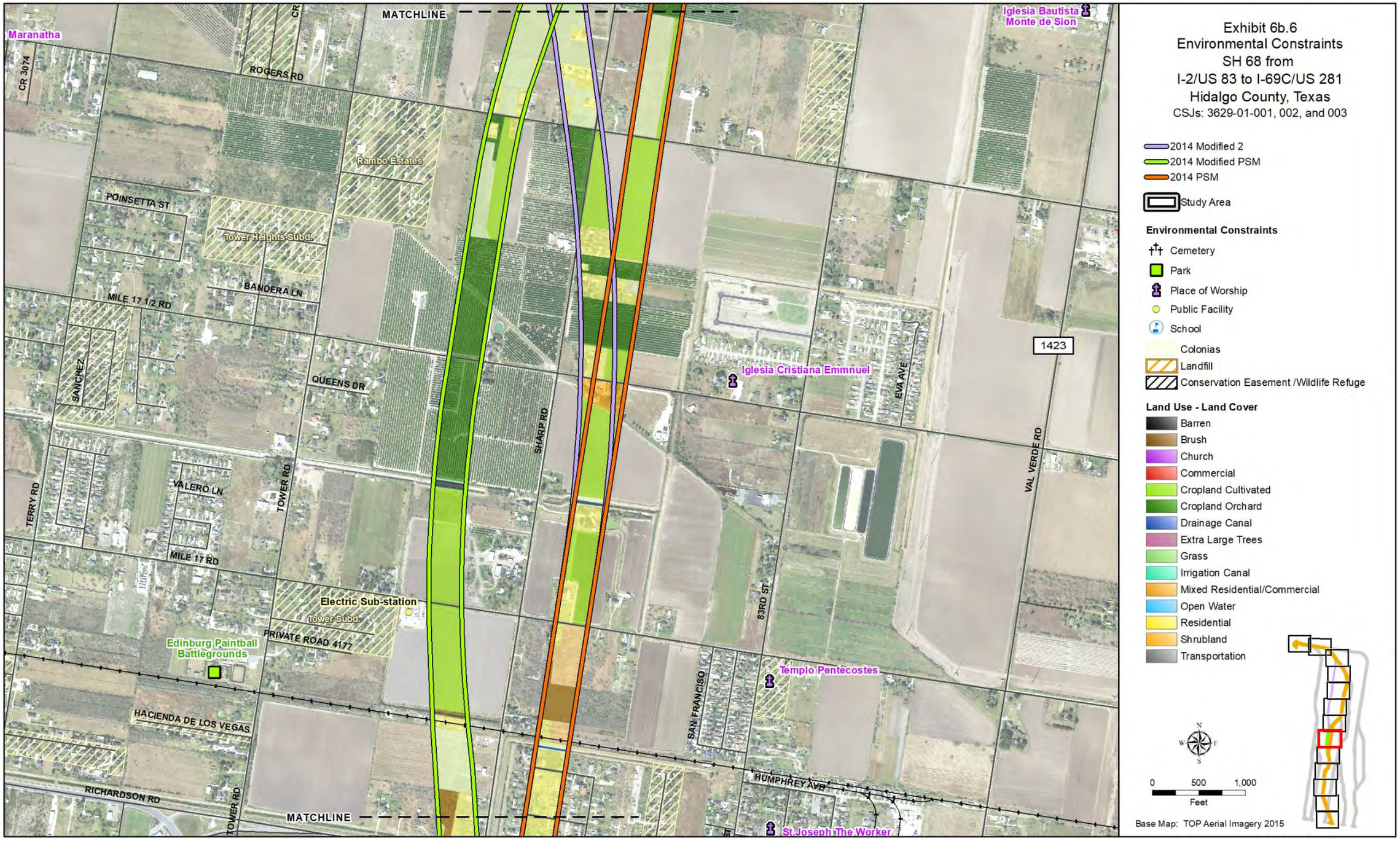
MATCHLINE
Maranatha
CR 3074
ROGERS RD
Rambo Estates
POINSETTA ST
Tower Heights Subd.
BANDERA LN
MILE 17 1/2 RD
SANCHEZ
QUEENS DR
Iglesia Bautista Monte de Sion
Iglesia Cristiana Emmnuel
EVA AVE
1423
SHARP RD
VAL VERDE RD
TERRY RD
VALERO LN
TOWER RD
MILE 17 RD
Electric Sub-station
Tower Subd.
PRIVATE ROAD 4177
Edinburg Paintball Battlegrounds
HACIENDA DE LOS VEGAS
RICHARDSON RD
83RD ST
SAN FRANCISO
Templo Pentecostes
HUMPHREY AVE
St.Joseph The Worker
MATCHLINE
Exhibit 6b.6
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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Feet
Base Map: TOP Aerial Imagery 2015

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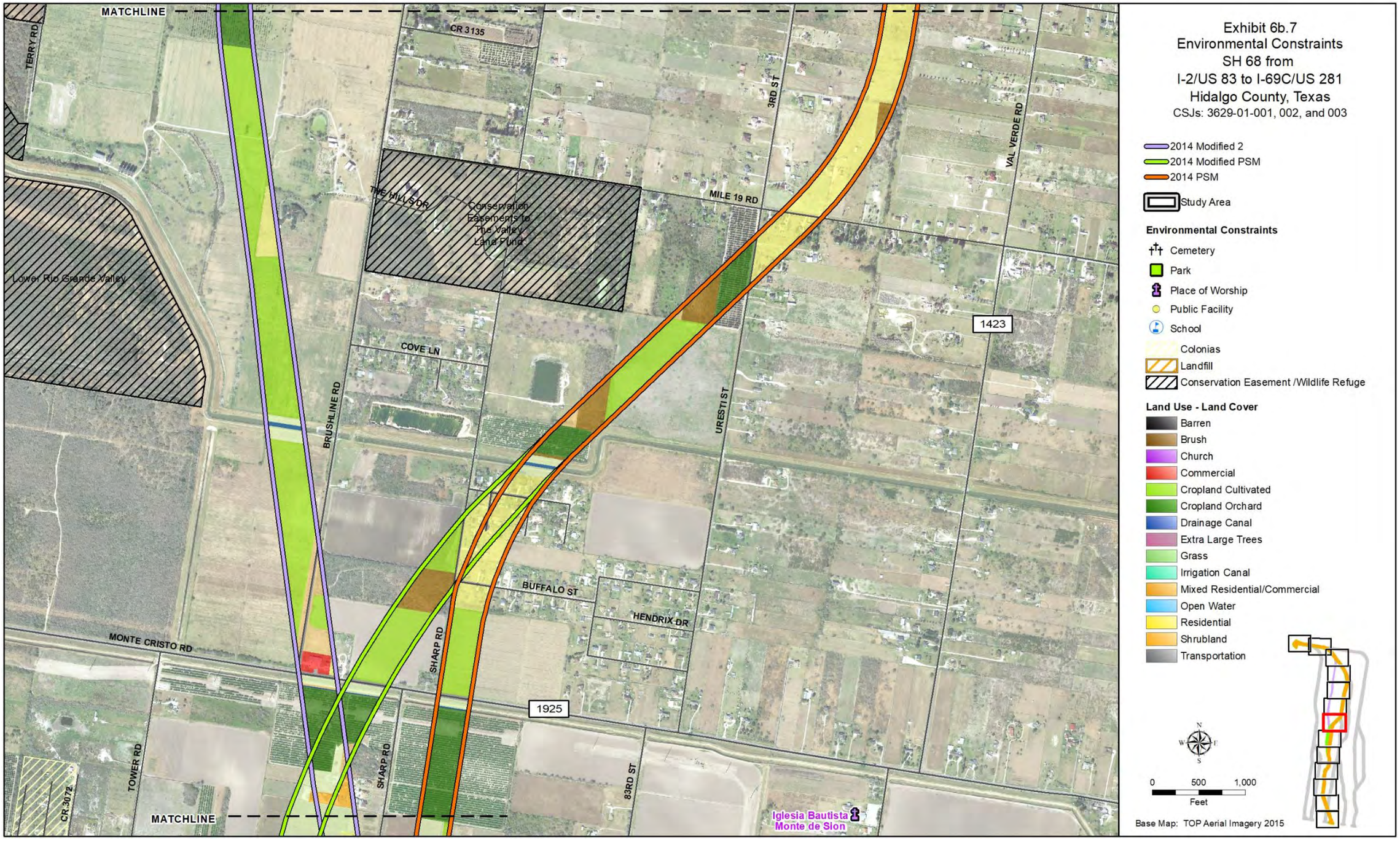
MATCHLINE
TERRY RD
CR 3135
3RD ST
VAL VERDE RD
THE HILLSIDE
Conservation Easements to The Valley Land Fund
MILE 19 RD
Lower Rio Grande Valley
1423
COVE LN
BRUSHLINE RD
URESTI ST
BUFFALO ST
HENDRIX DR
MONTE CRISTO RD
SHARP RD
1925
TOWER RD
CR 3072
83RD ST
MATCHLINE
Iglesia Bautista Monte de Sion
Exhibit 6b.7
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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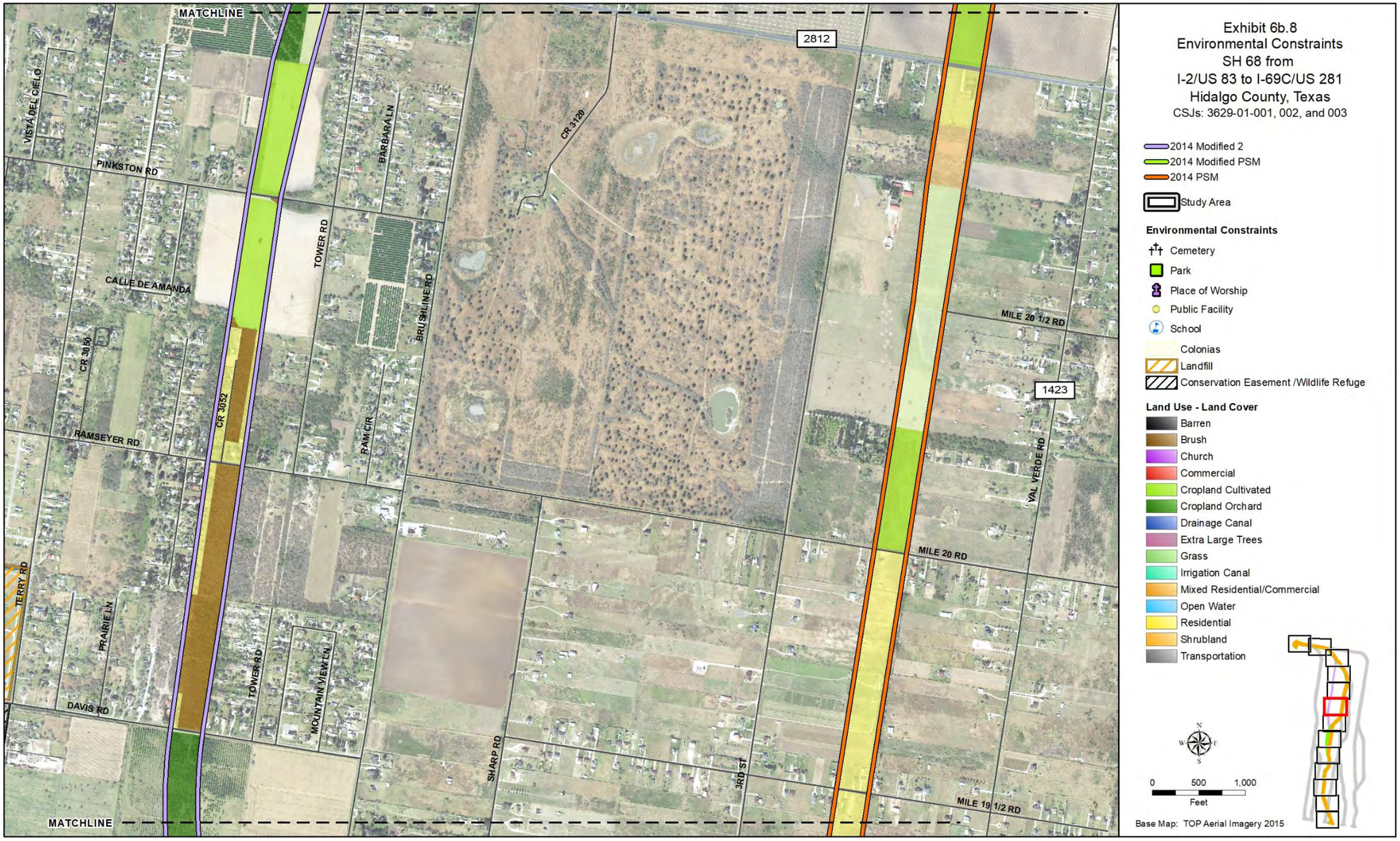
MATCHLINE
2812
CR 3120
VISTA DEL CIELO
PINKSTON RD
BARBARA LN
TOWER RD
BRUSHLINE RD
CALLE DE AMANDA
CR 3050
CR 3052
RAM CIR
MILE 20 1/2 RD
1423
RAMSEYER RD
VAL VERDE RD
MILE 20 RD
TERRY RD
PRAIRIE LN
TOWER RD
MOUNTAIN VIEW LN
DAVIS RD
SHARP RD
3RD ST
MILE 19 1/2 RD
MATCHLINE
Exhibit 6b.8
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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MATCHLINE
MILE 22 1/2 RD
1423
VAL VERDE RD
BRUSHLINE RD
2812
INGLE RD
TOWER RD
TOUCAN DR
3RD ST
MATCHLINE
Exhibit 6b.9
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015


MATCHLINE
BRUSHLINE RD
CACTUS FLATS
Our Lady of Guadalupe Cemetery
EL CIBOLO RD
MATCHLINE
Exhibit 6b.10
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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MATCHLINE
La Coma Heights
490
12TH ST
13TH ST
BRUSHLINE RD
MATCHLINE
Exhibit 6b.11
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Base Map: TOP Aerial Imagery 2015

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MATCHLINE
490
MATCHLINE
Exhibit 6b.12
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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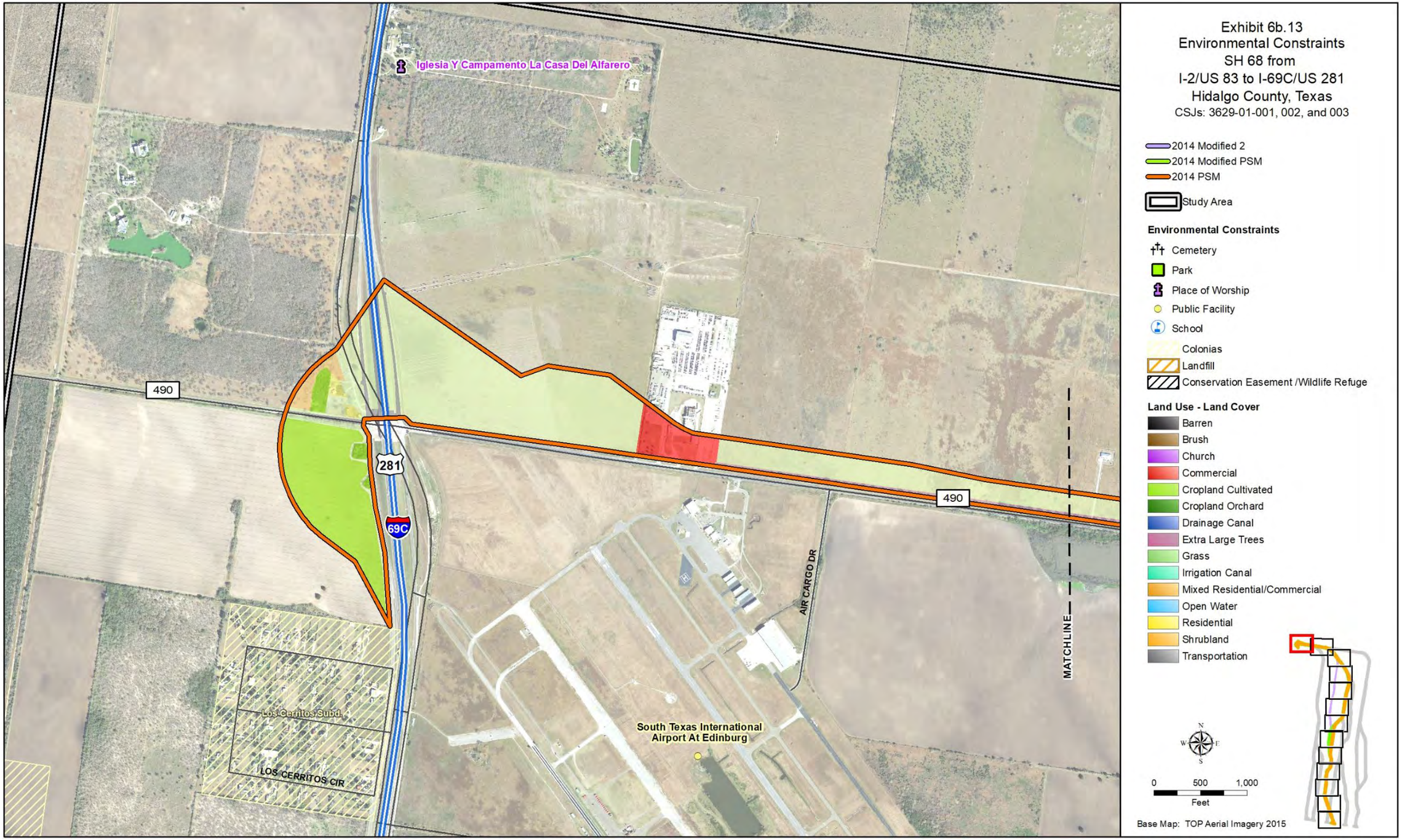
Iglesia Y Campamento La Casa Del Alfarero
490
281
69C
490
AIR CARGO DR
MATCHLINE
Los Cerritos Subd.
LOS CERRITOS CIR
South Texas International Airport At Edinburg
Exhibit 6b.13
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
2014 Modified 2
2014 Modified PSM
2014 PSM
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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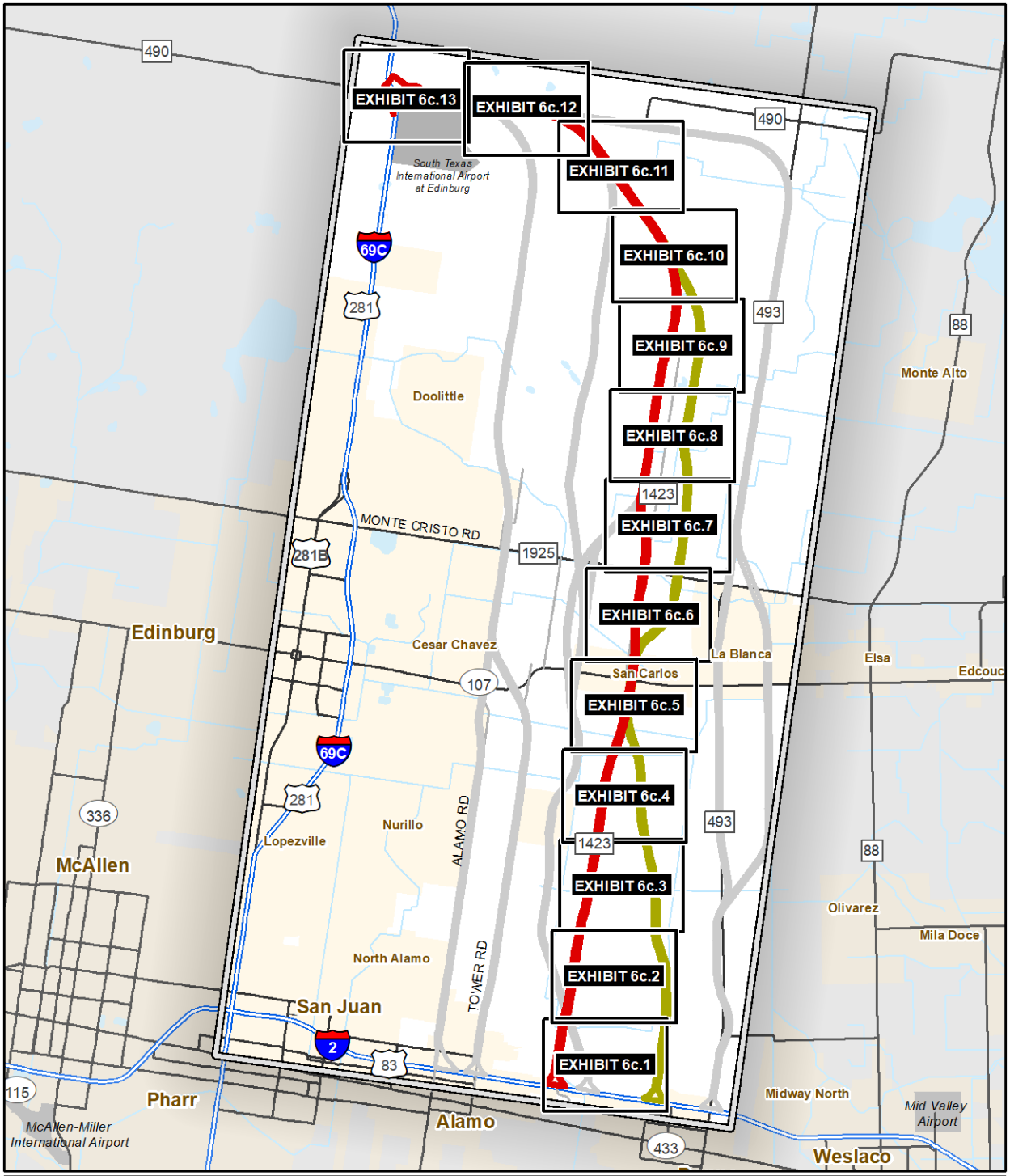
EXHIBIT 6c.13
EXHIBIT 6c.12
EXHIBIT 6c.11
EXHIBIT 6c.10
EXHIBIT 6c.9
EXHIBIT 6c.8
EXHIBIT 6c.7
EXHIBIT 6c.6
EXHIBIT 6c.5
EXHIBIT 6c.4
EXHIBIT 6c.3
EXHIBIT 6c.2
EXHIBIT 6c.1
490
69C
281
493
88
1423
1925
281B
107
336
2
83
115
433
MONTE CRISTO RD
ALAMO RD
TOWER RD
South Texas International Airport at Edinburg
McAllen-Miller International Airport
Edinburg
McAllen
Pharr
San Juan
Alamo
Doolittle
Cesar Chavez
Nurillo
Lopezville
North Alamo
La Blanca
San Carlos
Monte Alto
Elsa
Edcouch
Olivarez
Mila Doce
Midway North
Mid Valley Airport
Weslaco
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Study Area
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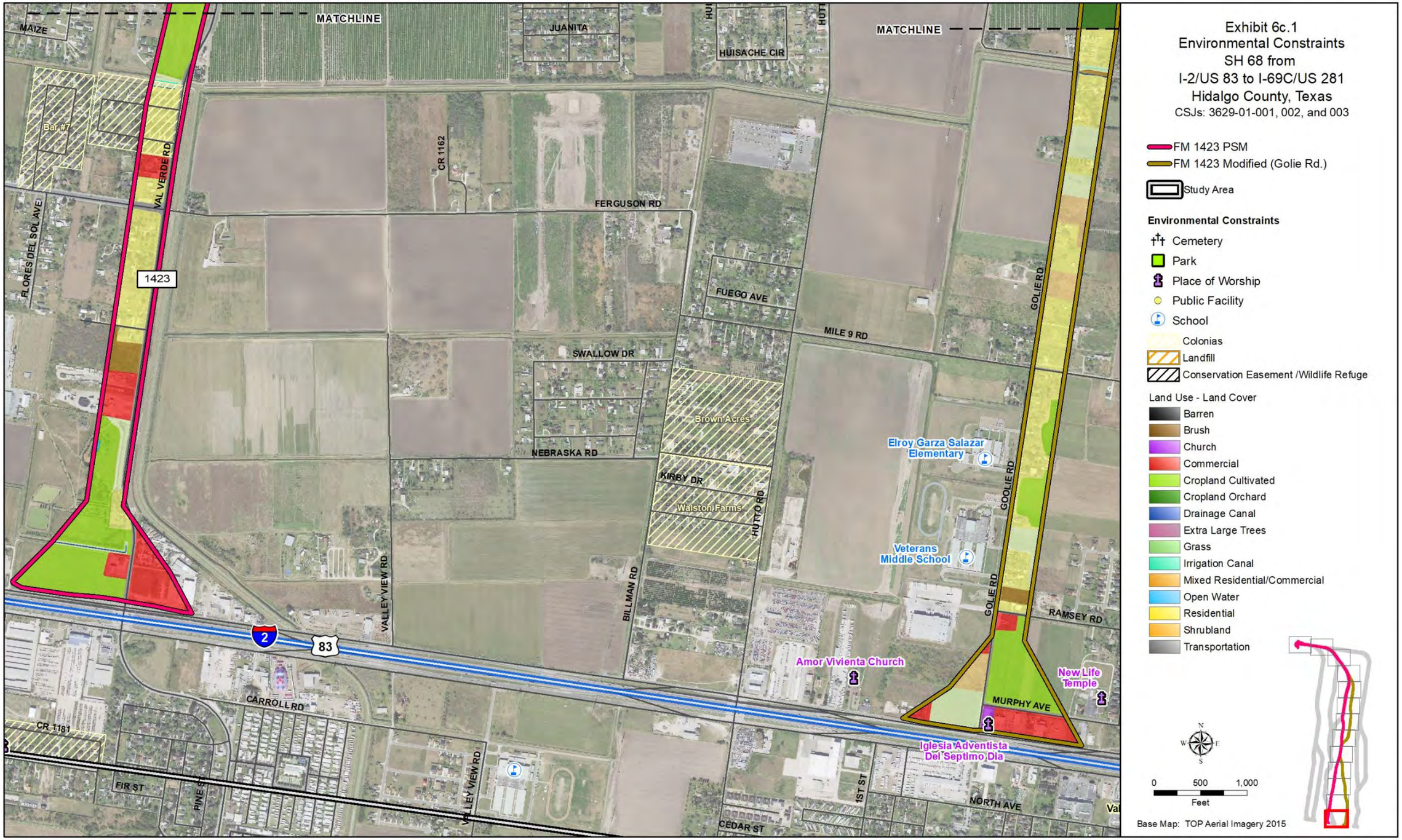
Miles
Exhibit 6c
Environmental Constraints Index
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

1


MATCHLINE
MAIZE
JUANITA
HUISACHE CIR
MATCHLINE
Bar #7
VAL VERDE RD
CR 1162
FERGUSON RD
FLORES DEL SOL AVE
1423
FUEGO AVE
GOLIE RD
MILE 9 RD
SWALLOW DR
Brown Acres
Elroy Garza Salazar Elementary
NEBRASKA RD
KIRBY DR
Walston Farms
HUTTO RD
GOOLIE RD
Veterans Middle School
BILLMAN RD
VALLEY VIEW RD
2
83
RAMSEY RD
Amor Vivienta Church
New Life Temple
MURPHY AVE
CARROLL RD
CR 1181
Iglesia Adventista Del Septimo Dia
FIR ST
PINE ST
VALLEY VIEW RD
1ST ST
NORTH AVE
CEDAR ST
Exhibit 6c.1
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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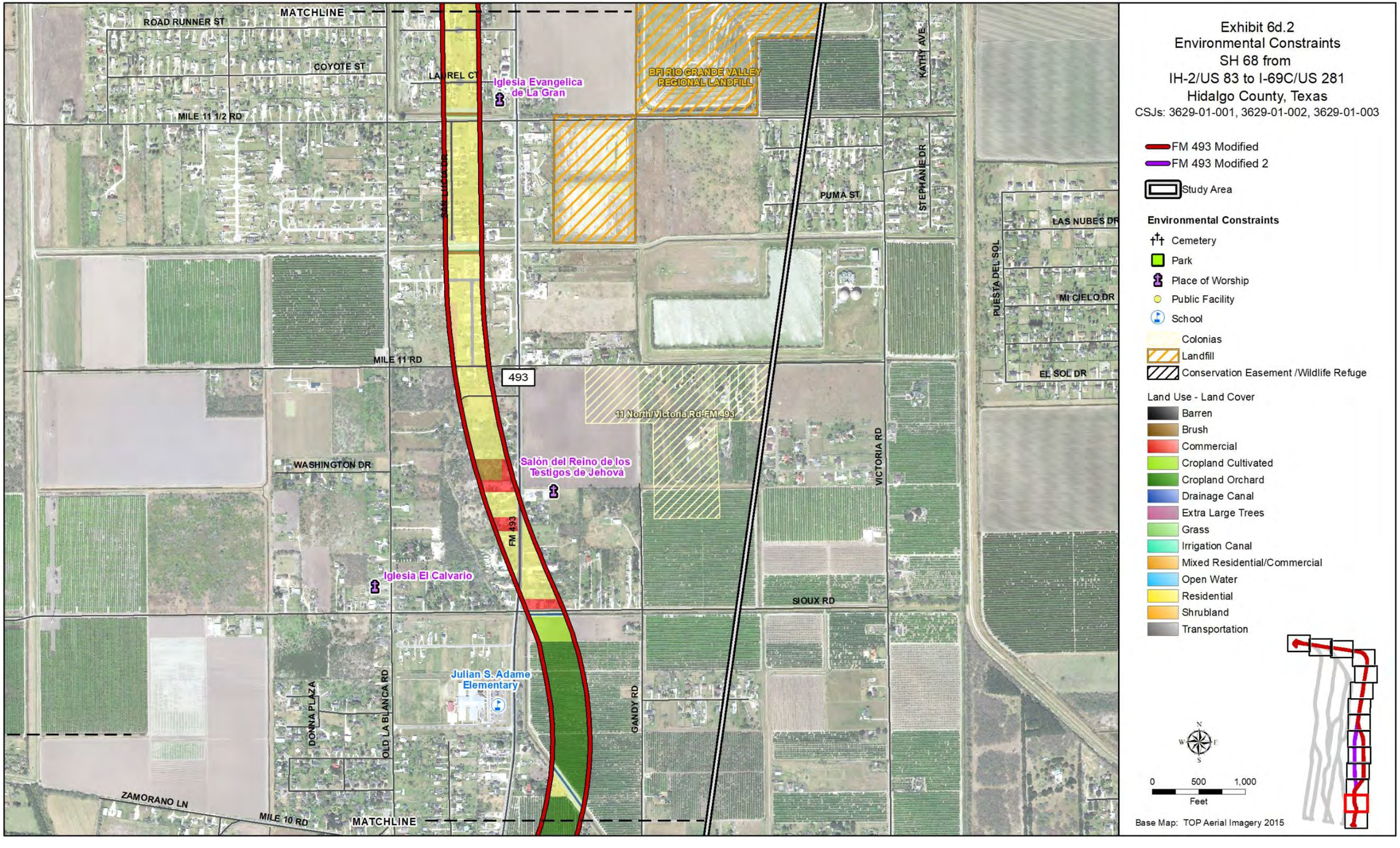
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
ROAD RUNNER ST
COYOTE ST
LAUREL CT
MILE 11 1/2 RD
Iglesia Evangelica de La Gran
BFI RIO GRANDE VALLEY REGIONAL LANDFILL
KATHY AVE
STEPHANIE DR
PUMA ST
LAS NUBES DR
PUESTA DEL SOL
MI CIELO DR
EL SOL DR
MILE 11 RD
493
11 North/Victoria Rd-FM 493
VICTORIA RD
WASHINGTON DR
Salón del Reino de los Testigos de Jehová
FM 493
Iglesia El Calvario
SIOUX RD
Julian S. Adame Elementary
DONNA PLAZA
OLD LA BLANCA RD
GANDY RD
ZAMORANO LN
MILE 10 RD
MATCHLINE
Exhibit 6d.2
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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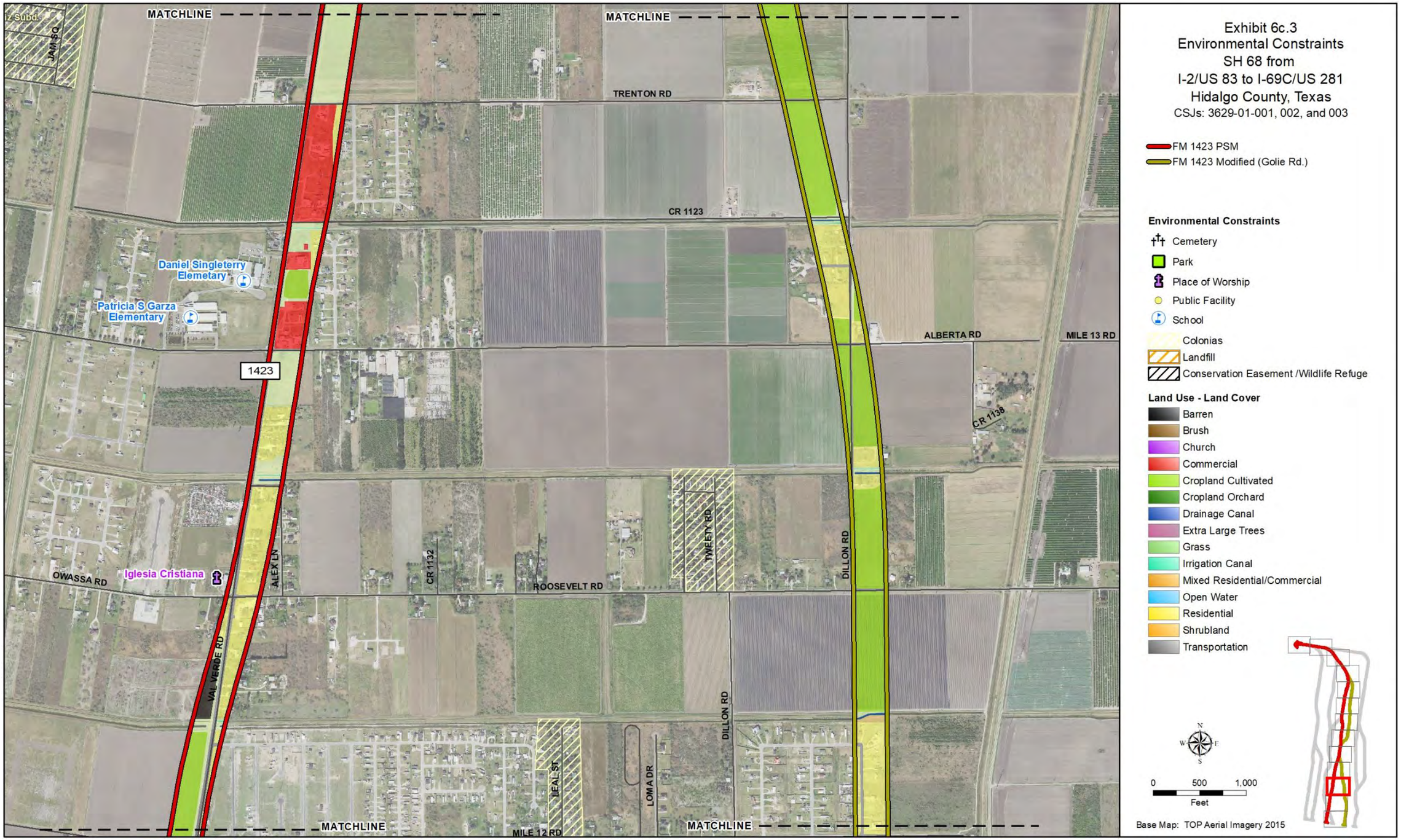
MATCHLINE
MATCHLINE
TRENTON RD
CR 1123
Daniel Singleterry Elemetary
Patricia S Garza Elementary
1423
ALBERTA RD
MILE 13 RD
CR 1138
OWASSA RD
Iglesia Cristiana
ALEX LN
CR 1132
ROOSEVELT RD
TWEETY RD
DILLON RD
VAL VERDE RD
LEAL ST
LOMA DR
DILLON RD
MATCHLINE
MILE 12 RD
MATCHLINE
Exhibit 6c.3
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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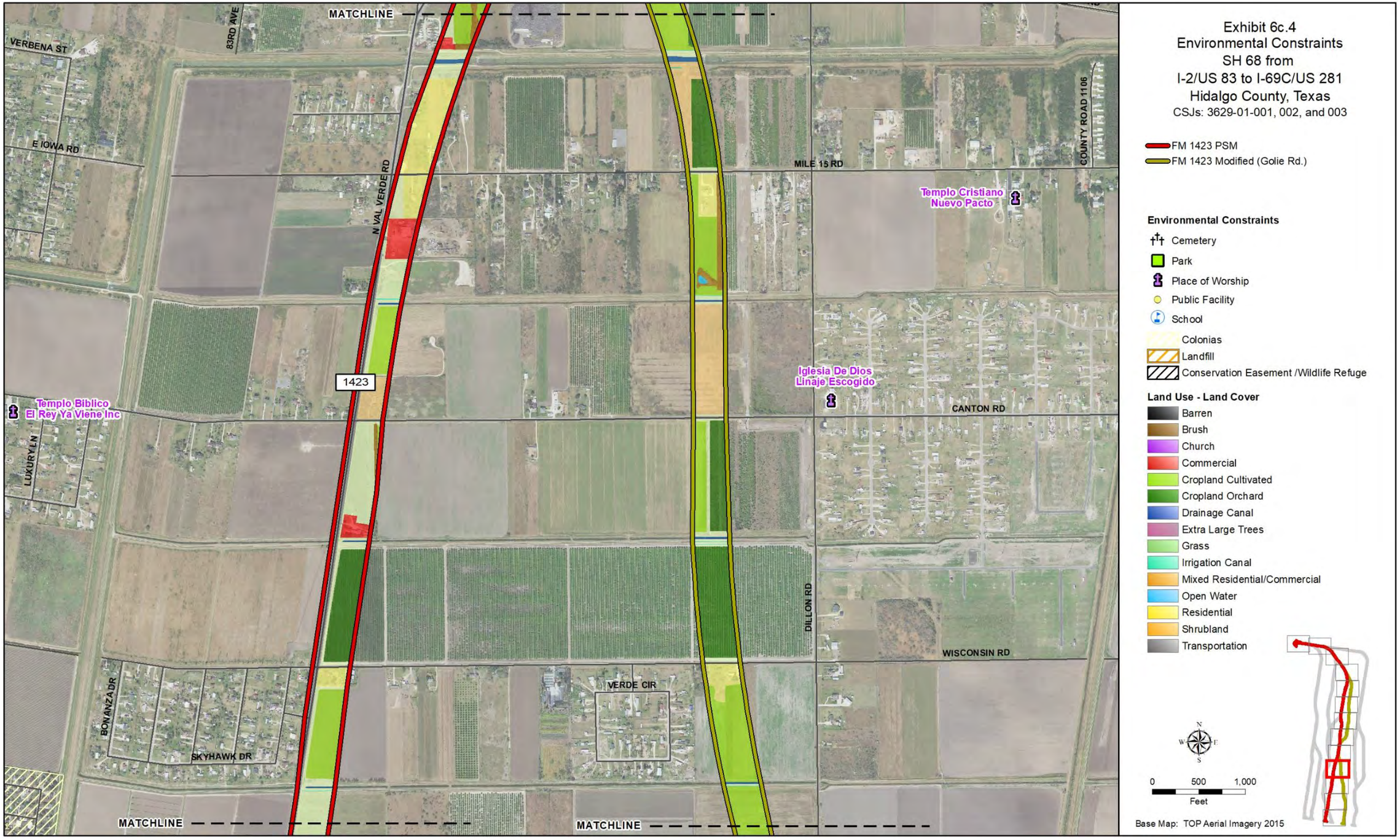
MATCHLINE
VERBENA ST
83RD AVE
E IOWA RD
N VAL VERDE RD
MILE 15 RD
COUNTY ROAD 1106
Templo Cristiano Nuevo Pacto
1423
Templo Biblico El Rey Ya Viene Inc
Iglesia De Dios Linaje Escogido
CANTON RD
LUXURY LN
DILLON RD
WISCONSIN RD
VERDE CIR
BONANZA DR
SKYHAWK DR
MATCHLINE
MATCHLINE
Exhibit 6c.4
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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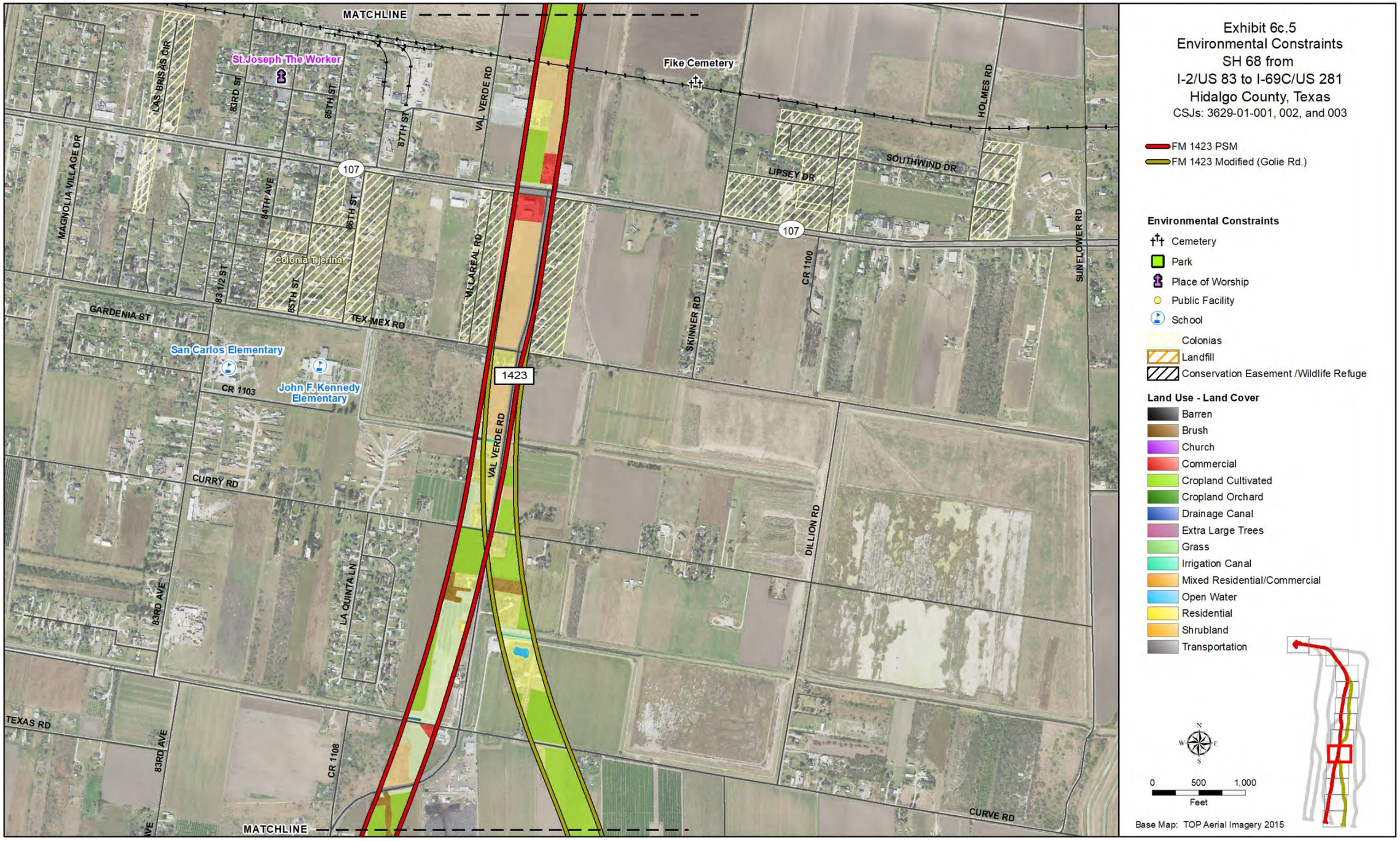
MATCHLINE
St Joseph The Worker
Fike Cemetery
LAS BRISAS CIR
83RD ST
85TH ST
87TH ST
VAL VERDE RD
HOLMES RD
MAGNOLIA VILLAGE DR
84TH AVE
86TH ST
107
LIPSEY DR
SOUTHWIND DR
SUNFLOWER RD
Colonia Tijerina
83 1/2 ST
VILLAREAL RD
CR 1100
SKINNER RD
GARDENIA ST
TEX-MEX RD
San Carlos Elementary
John F. Kennedy Elementary
CR 1103
1423
CURRY RD
DILLION RD
LA QUINTA LN
83RD AVE
TEXAS RD
CR 1108
CURVE RD
MATCHLINE
Exhibit 6c.5
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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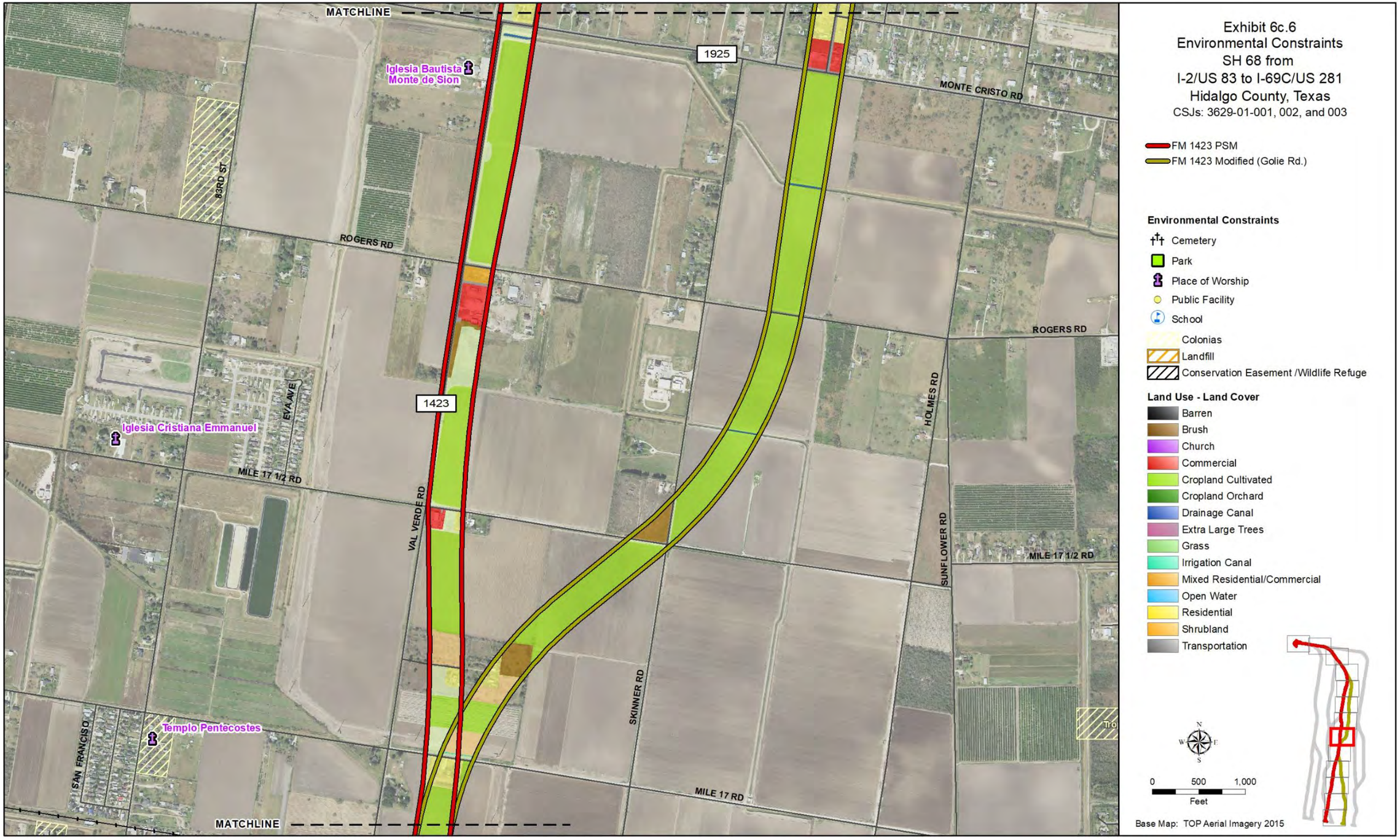
Feet
Base Map: TOP Aerial Imagery 2015


MATCHLINE
1925
Iglesia Bautista Monte de Sion
MONTE CRISTO RD
83RD ST
ROGERS RD
ROGERS RD
1423
EVA AVE
Iglesia Cristiana Emmanuel
MILE 17 1/2 RD
VAL VERDE RD
HOLMES RD
SUNFLOWER RD
MILE 17 1/2 RD
SKINNER RD
SAN FRANCISO
Templo Pentecostes
MILE 17 RD
MATCHLINE
Exhibit 6c.6
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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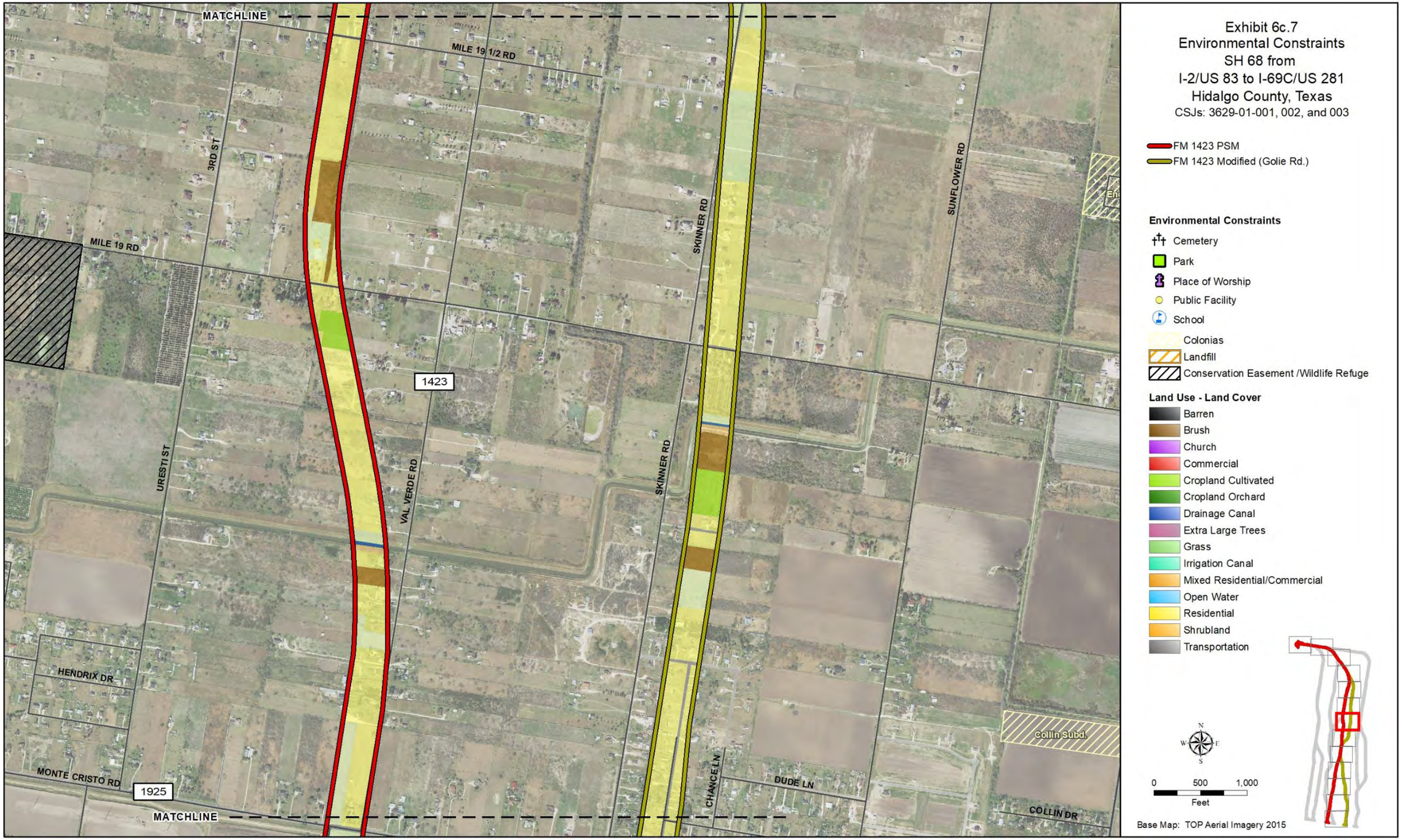
MATCHLINE
MILE 19 1/2 RD
MILE 19 RD
3RD ST
URESTI ST
VAL VERDE RD
SKINNER RD
SUNFLOWER RD
1423
HENDRIX DR
MONTE CRISTO RD
1925
MATCHLINE
CHANCE LN
DUDE LN
COLLIN DR
Collin Subd.
Exhibit 6c.7
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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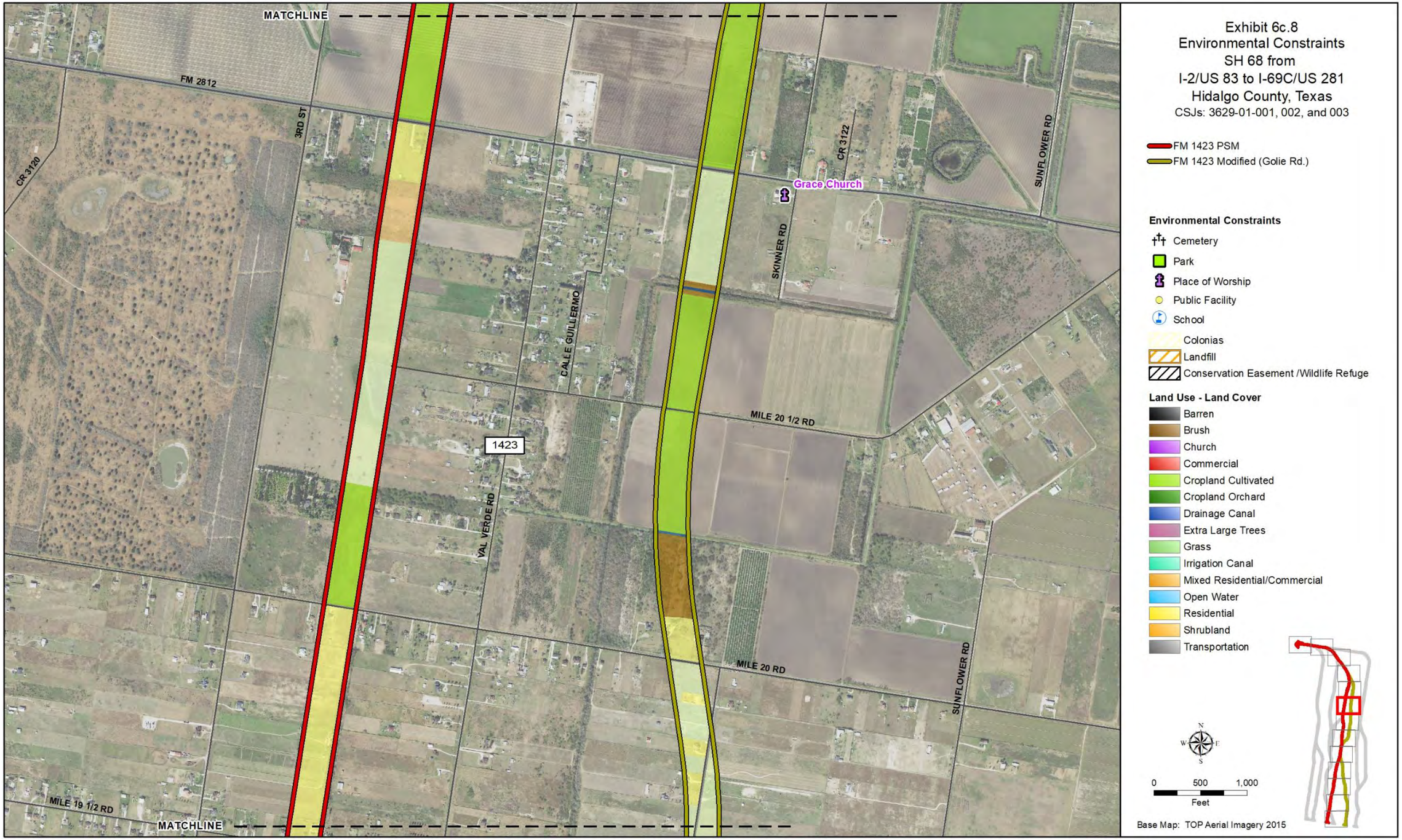
MATCHLINE
FM 2812
3RD ST
CR 3120
CR 3122
SUNFLOWER RD
Grace Church
SKINNER RD
CALLE GUILLERMO
MILE 20 1/2 RD
1423
VAL VERDE RD
MILE 20 RD
SUNFLOWER RD
MILE 19 1/2 RD
MATCHLINE
Exhibit 6c.8
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
MILE 22 1/2 RD
1423
VAL VERDE RD
SKINNER RD
SUNFLOWER RD
MOISES FLORES RD
3RD ST
MATCHLINE
Exhibit 6c.9
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
BRUSHLINE RD
CACTUS FLATS
EL CIBOLO RD
MATCHLINE
Exhibit 6c.10
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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Feet
Base Map: TOP Aerial Imagery 2015

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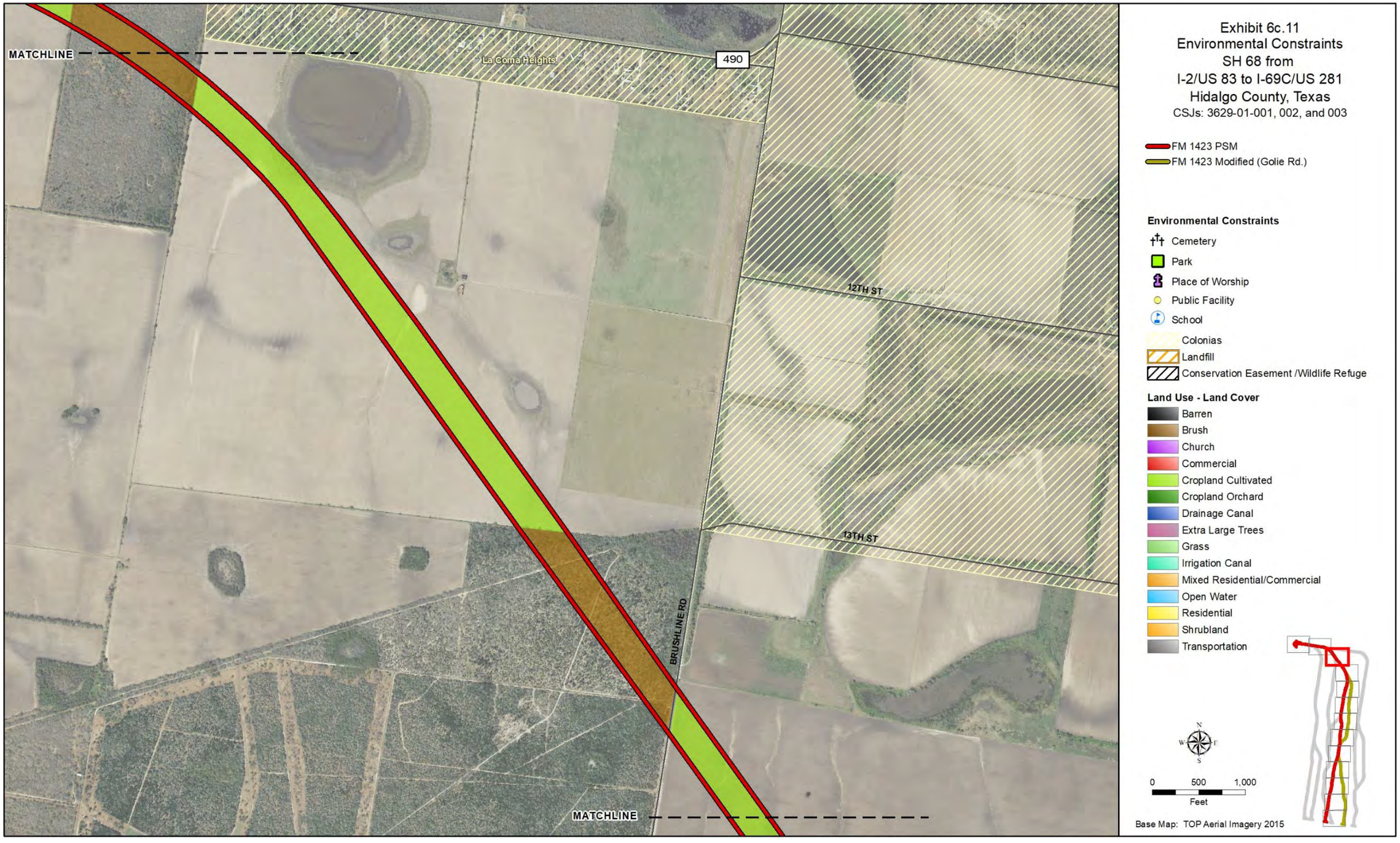
MATCHLINE
La Coma Heights
490
12TH ST
13TH ST
BRUSHLINE RD
MATCHLINE
Exhibit 6c.11
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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1,000
Feet
Base Map: TOP Aerial Imagery 2015

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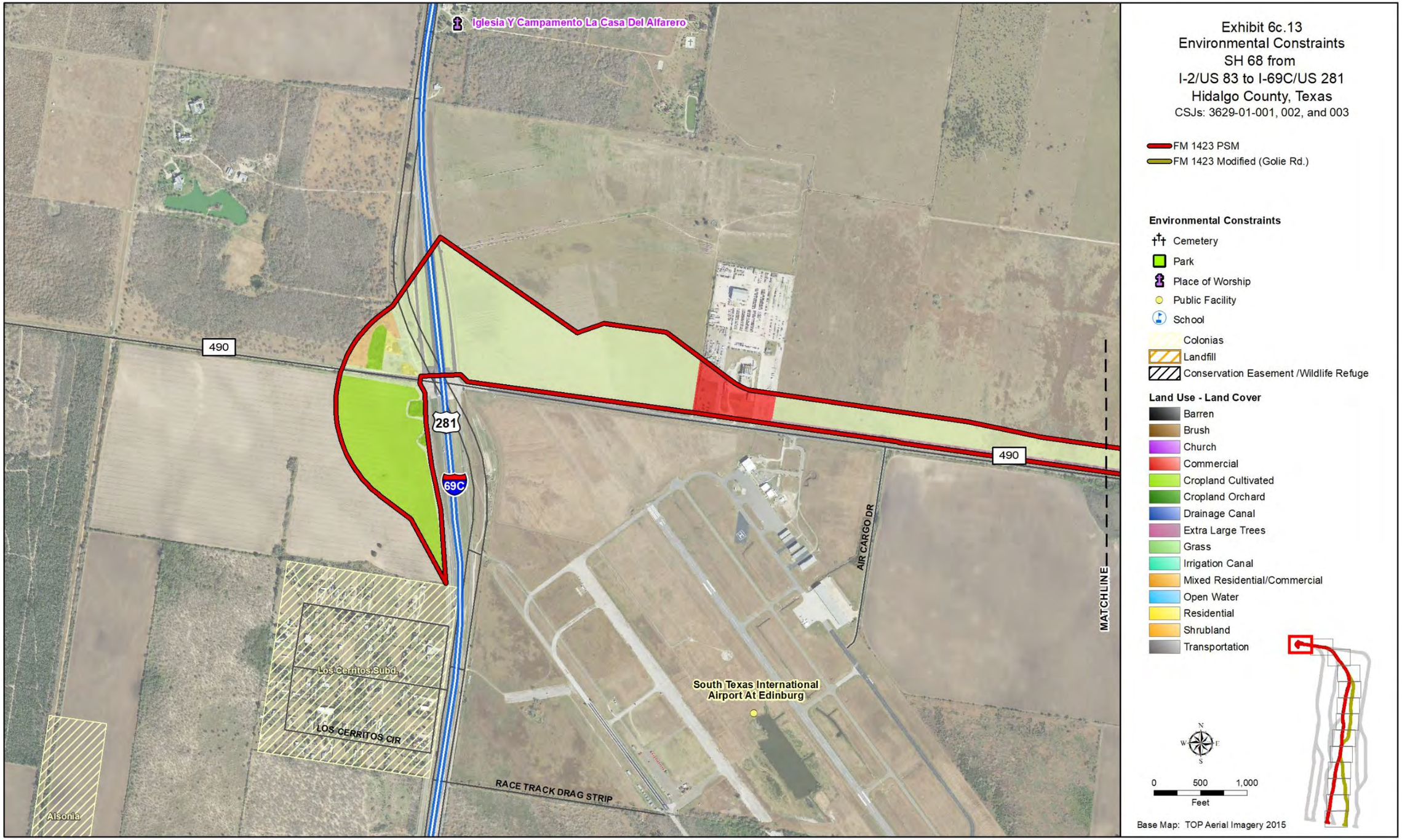
Exhibit 6c.12
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
490
MATCHLINE
MATCHLINE
N
W
E
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


Iglesia Y Campamento La Casa Del Alfarero
490
281
69C
490
AIR CARGO DR
MATCHLINE
Los Cerritos Subd.
LOS CERRITOS CIR
South Texas International Airport At Edinburg
RACE TRACK DRAG STRIP
Alsonia
Exhibit 6c.13
Environmental Constraints
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Church
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1

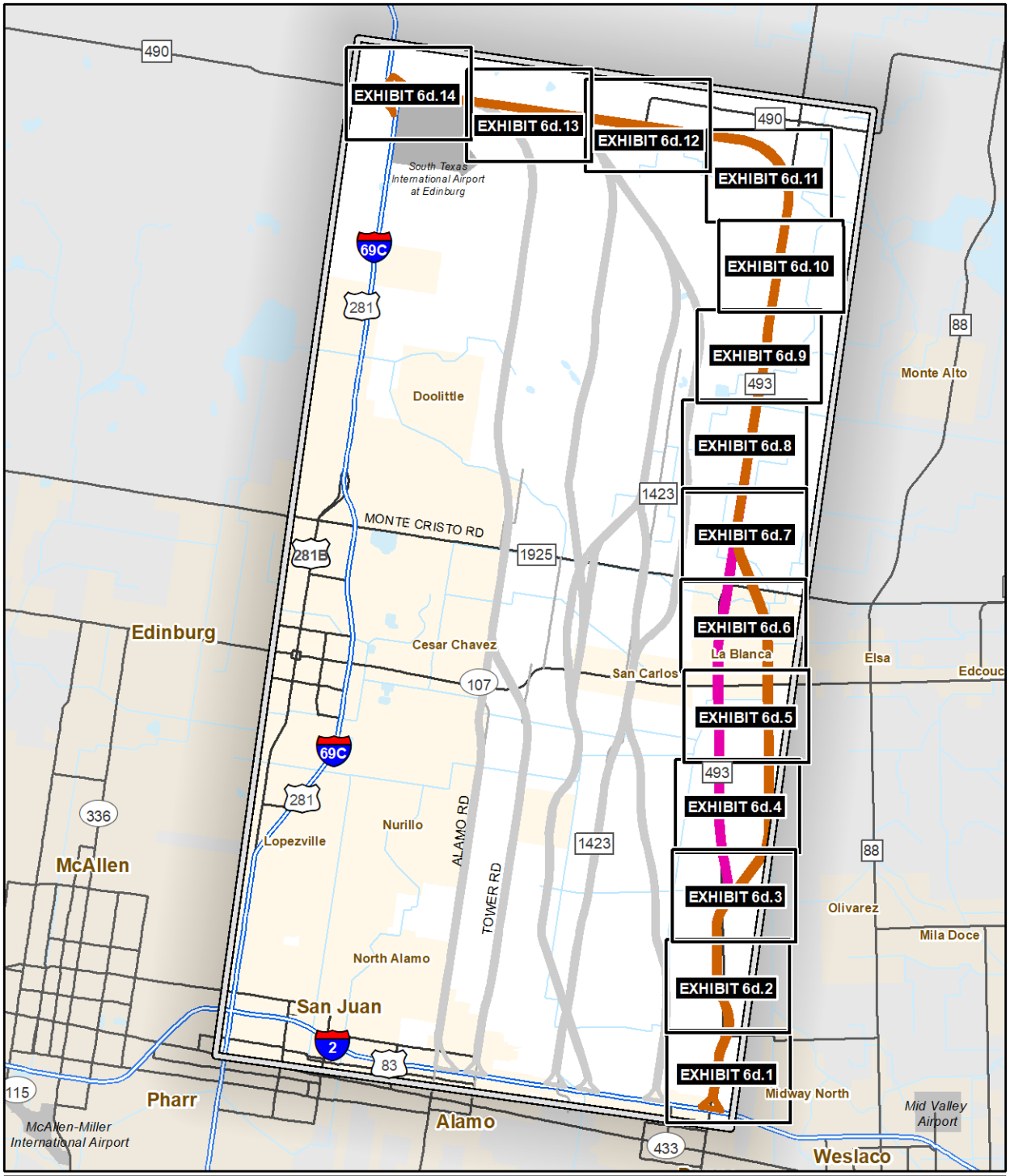
EXHIBIT 6d.14
EXHIBIT 6d.13
EXHIBIT 6d.12
EXHIBIT 6d.11
EXHIBIT 6d.10
EXHIBIT 6d.9
EXHIBIT 6d.8
EXHIBIT 6d.7
EXHIBIT 6d.6
EXHIBIT 6d.5
EXHIBIT 6d.4
EXHIBIT 6d.3
EXHIBIT 6d.2
EXHIBIT 6d.1
490
69C
281
281B
336
107
493
1423
1925
88
83
2
115
433
South Texas International Airport at Edinburg
Doolittle
MONTE CRISTO RD
Edinburg
Cesar Chavez
San Carlos
La Blanca
Monte Alto
Elsa
Edcouch
Lopezville
Nurillo
ALAMO RD
TOWER RD
McAllen
North Alamo
San Juan
Olivarez
Mila Doce
Pharr
Alamo
Midway North
Mid Valley Airport
McAllen-Miller International Airport
Weslaco
Study Area
FM 493 Modified
FM 493 Modified 2
N
W
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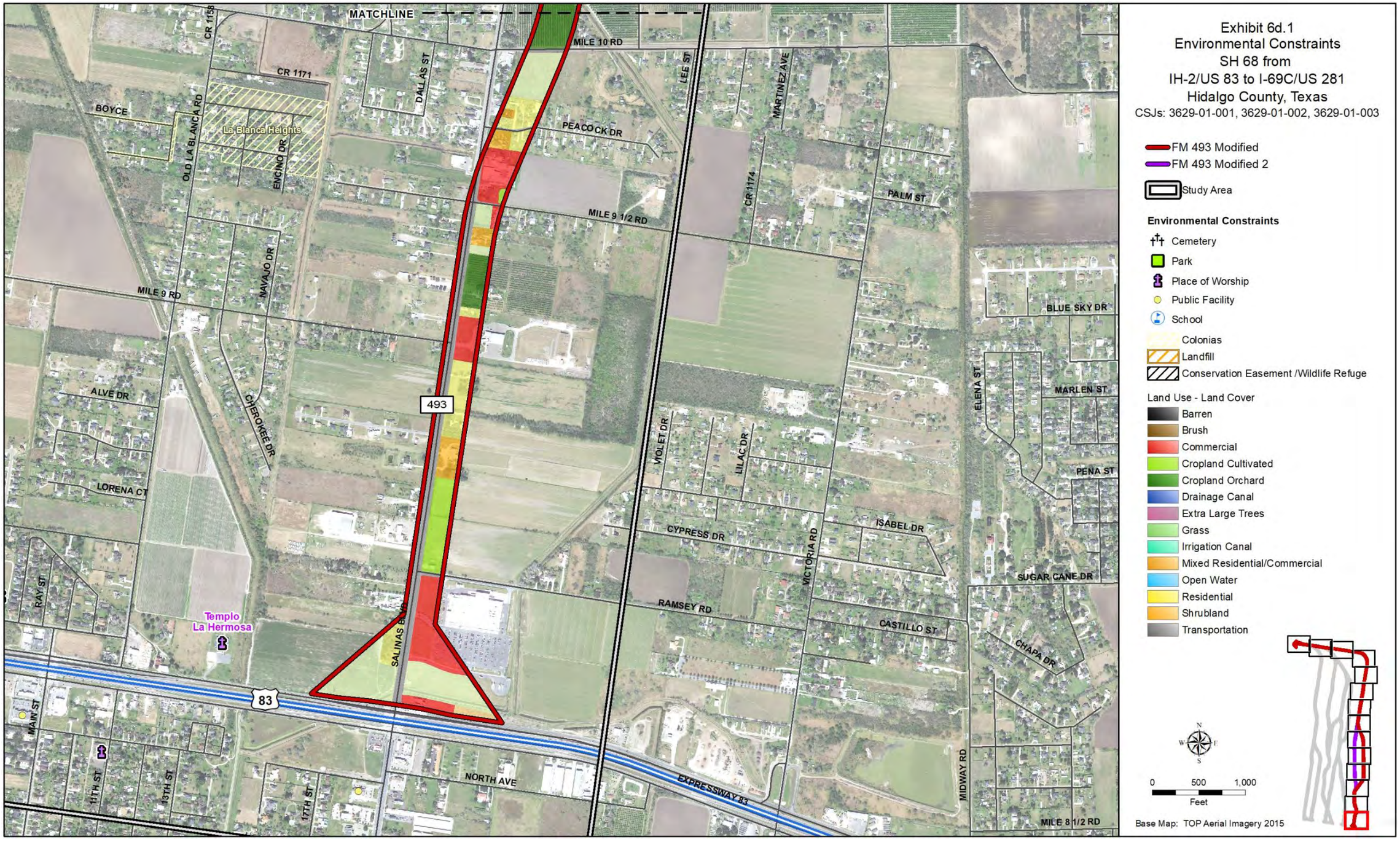
0 1 2
Miles
Exhibit 6d
Environmental Constraints Index
SH 68 from
IH-2/US 83 to IH-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

1


MATCHLINE
MILE 10 RD
CR 1158
CR 1171
DALLAS ST
LEE ST
MARTINEZ AVE
BOYCE
OLD LA BLANCA RD
La Blanca Heights
ENCINO DR
PEACOCK DR
CR 1174
PALM ST
MILE 9 1/2 RD
NAVAJO DR
MILE 9 RD
BLUE SKY DR
ELENA ST
MARLEN ST
ALVE DR
CHEROKEE DR
493
VIOLET DR
LILAC DR
PENA ST
LORENA CT
CYPRESS DR
ISABEL DR
VICTORIA RD
SUGAR CANE DR
RAY ST
RAMSEY RD
CASTILLO ST
Templo
La Hermosa
SALINAS BLVD
CHAPA DR
83
MAIN ST
11TH ST
13TH ST
17TH ST
NORTH AVE
EXPRESSWAY 83
MIDWAY RD
MILE 8 1/2 RD
Exhibit 6d.1
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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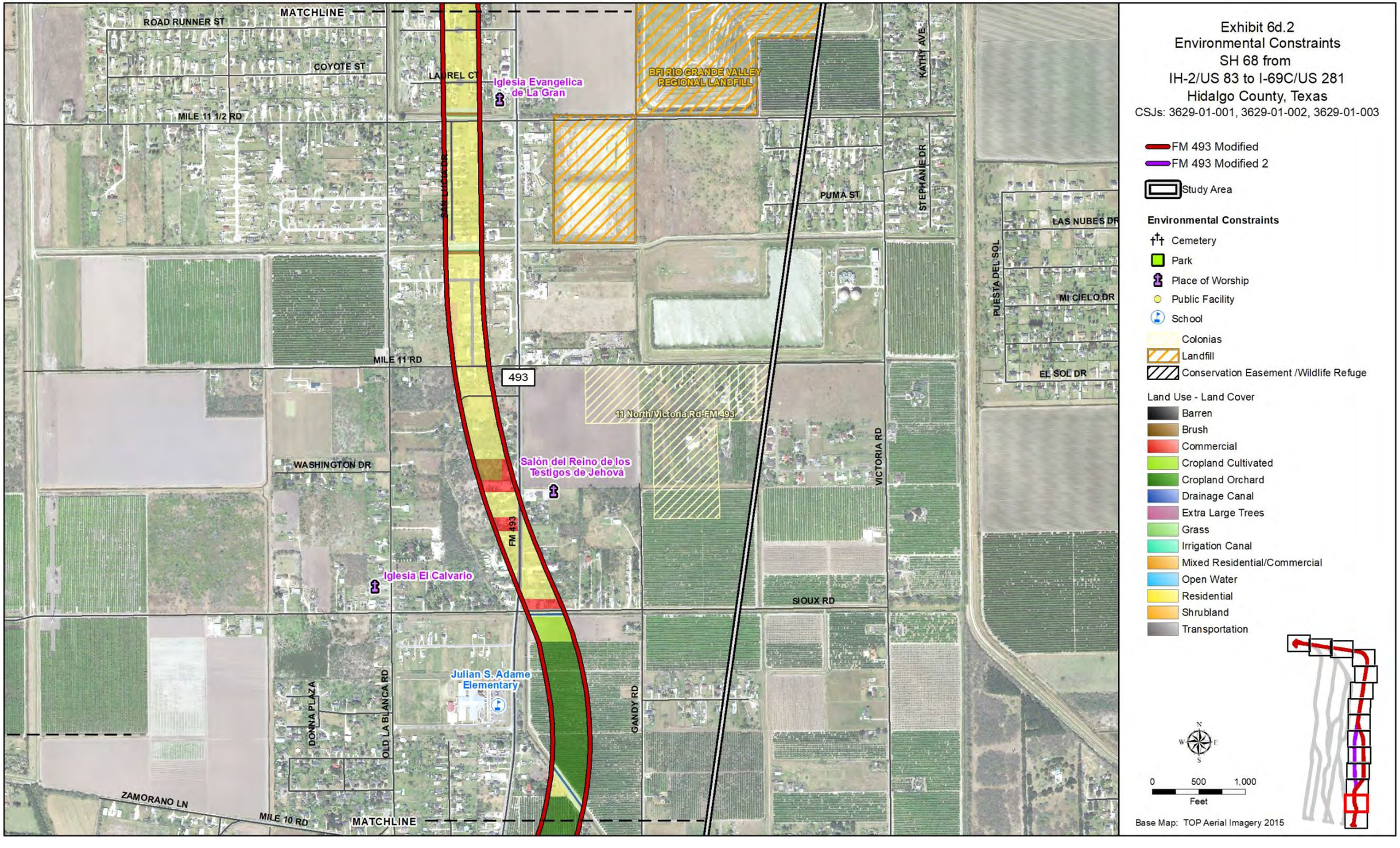
S
0
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015


MATCHLINE
ROAD RUNNER ST
COYOTE ST
LAUREL CT
MILE 11 1/2 RD
Iglesia Evangelica de La Gran
BFI RIO GRANDE VALLEY REGIONAL LANDFILL
KATHY AVE
STEPHANIE DR
PUMA ST
LAS NUBES DR
PUESTA DEL SOL
MI CIELO DR
EL SOL DR
MILE 11 RD
493
11 North/Victoria Rd-FM 493
VICTORIA RD
WASHINGTON DR
Salón del Reino de los Testigos de Jehová
FM 493
Iglesia El Calvario
SIOUX RD
Julian S. Adame Elementary
DONNA PLAZA
OLD LA BLANCA RD
GANDY RD
ZAMORANO LN
MILE 10 RD
MATCHLINE
Exhibit 6d.2
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
S
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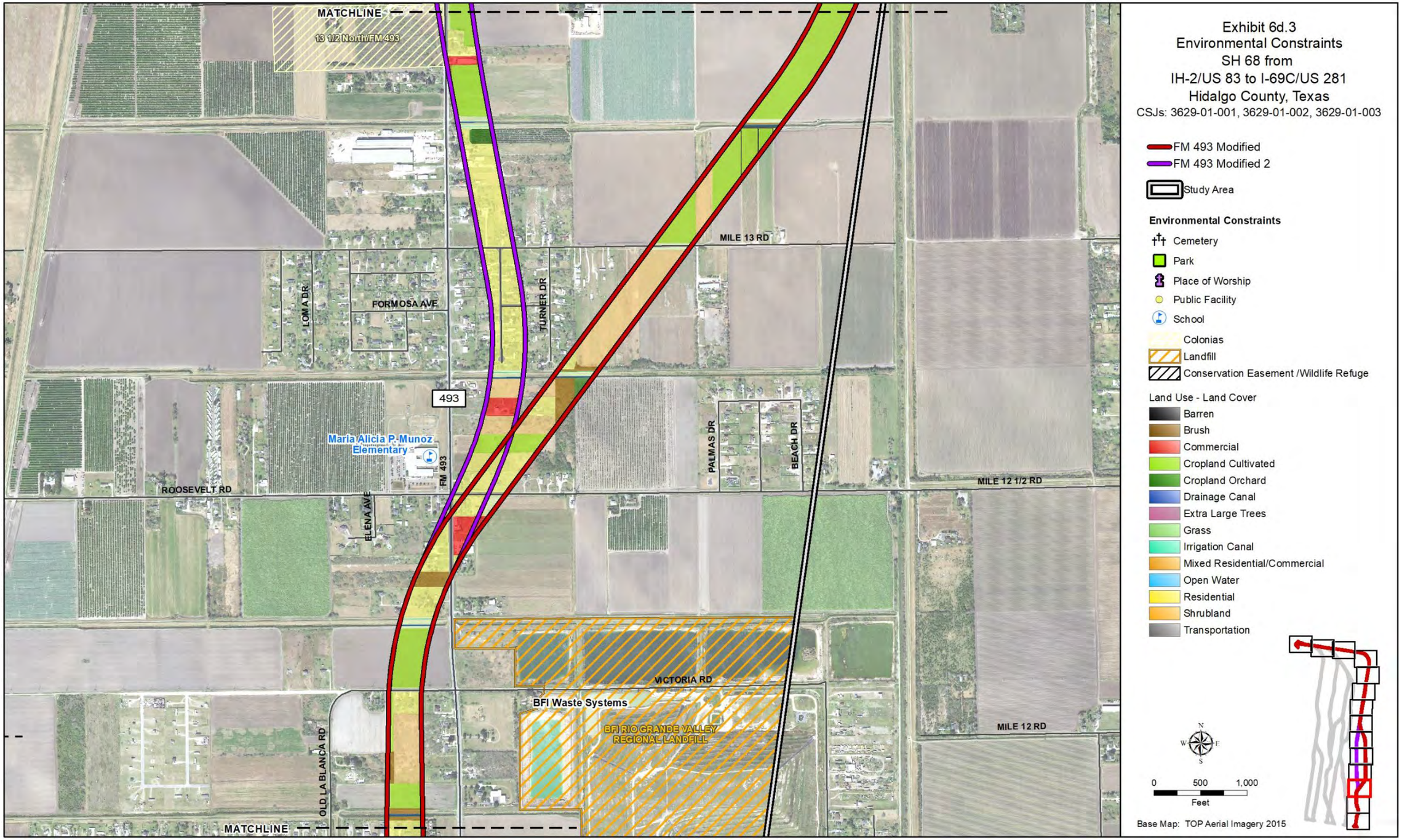
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
13 1/2 North/FM 493
MILE 13 RD
FORMOSA AVE
LOMA DR
TURNER DR
493
Maria Alicia P. Munoz Elementary
FM 493
PALMAS DR
BEACH DR
MILE 12 1/2 RD
ROOSEVELT RD
ELENA AVE
VICTORIA RD
BFI Waste Systems
BFI RIO GRANDE VALLEY REGIONAL LANDFILL
MILE 12 RD
OLD LA BLANCA RD
MATCHLINE
Exhibit 6d.3
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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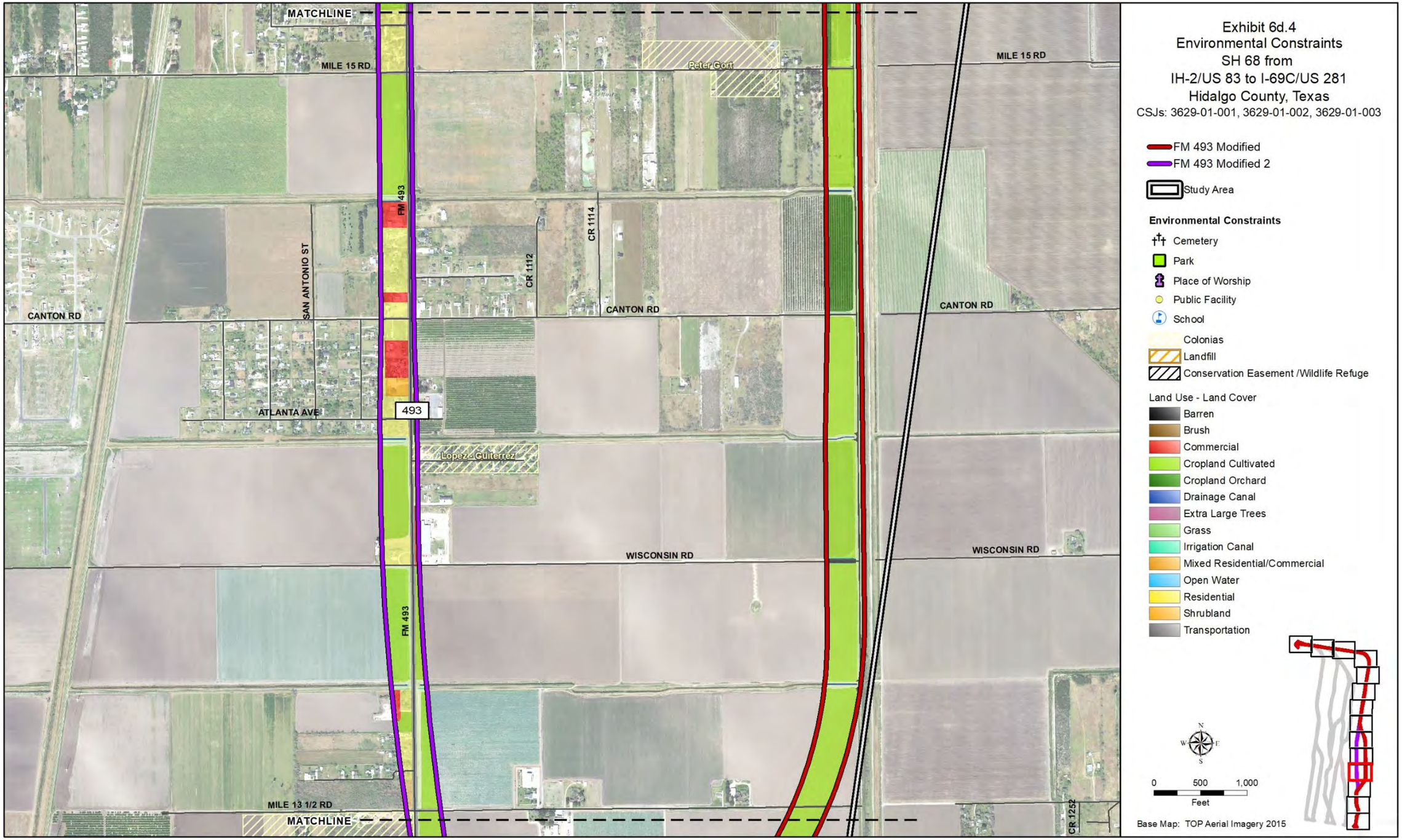
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
MILE 15 RD
Peter Gort
MILE 15 RD
FM 493
SAN ANTONIO ST
CR 1112
CR 1114
CANTON RD
CANTON RD
CANTON RD
ATLANTA AVE
493
Lopez-Gutierrez
WISCONSIN RD
WISCONSIN RD
FM 493
MILE 13 1/2 RD
MATCHLINE
CR 1252
Exhibit 6d.4
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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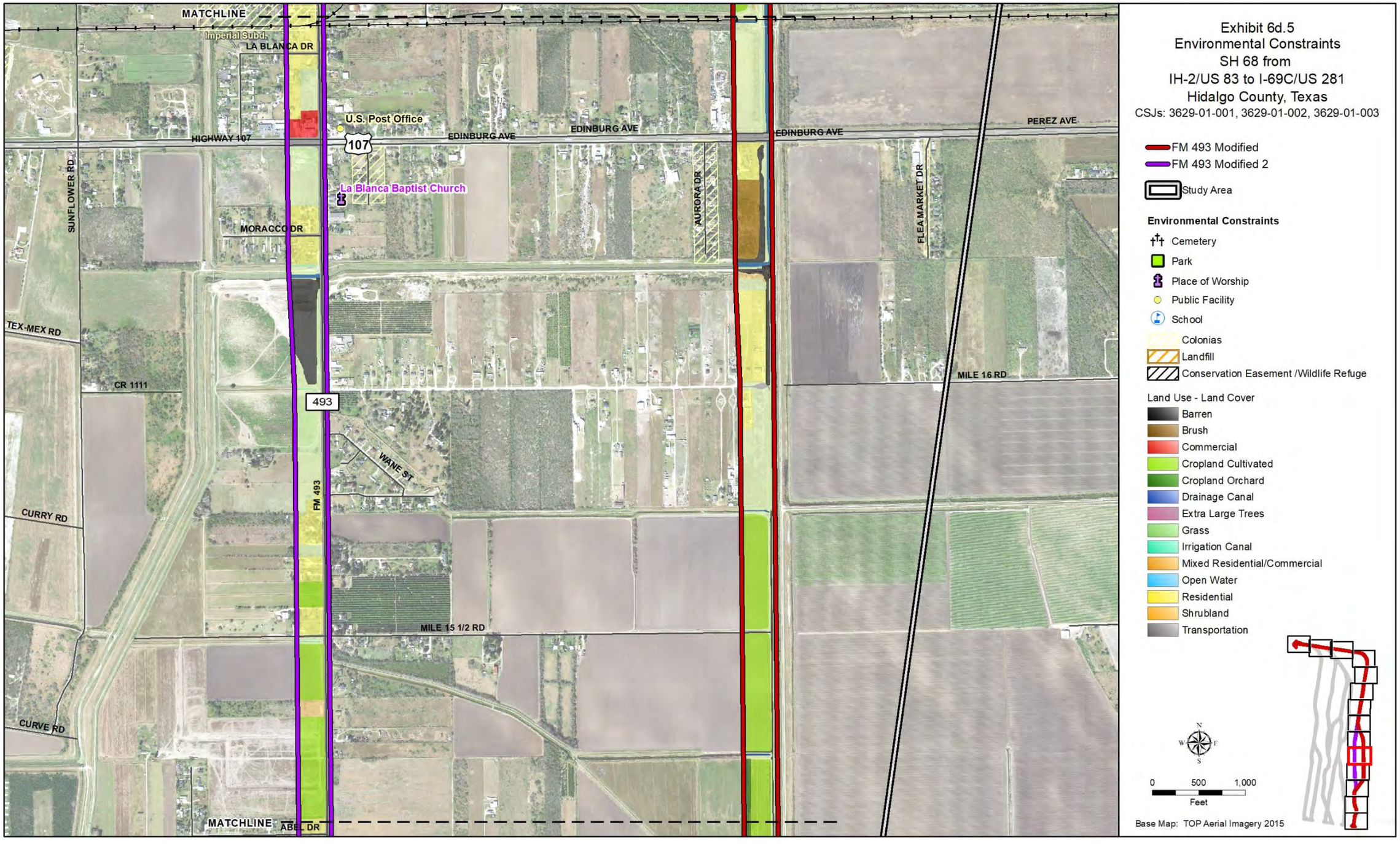
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015


MATCHLINE
Imperial Subd.
LA BLANCA DR
HIGHWAY 107
U.S. Post Office
107
EDINBURG AVE
EDINBURG AVE
EDINBURG AVE
PEREZ AVE
La Blanca Baptist Church
SUNFLOWER RD
MORACCO DR
AURORA DR
FLEA MARKET DR
TEX-MEX RD
CR 1111
493
MILE 16 RD
WANE ST
FM 493
CURRY RD
MILE 15 1/2 RD
CURVE RD
MATCHLINE
ABEL DR
Exhibit 6d.5
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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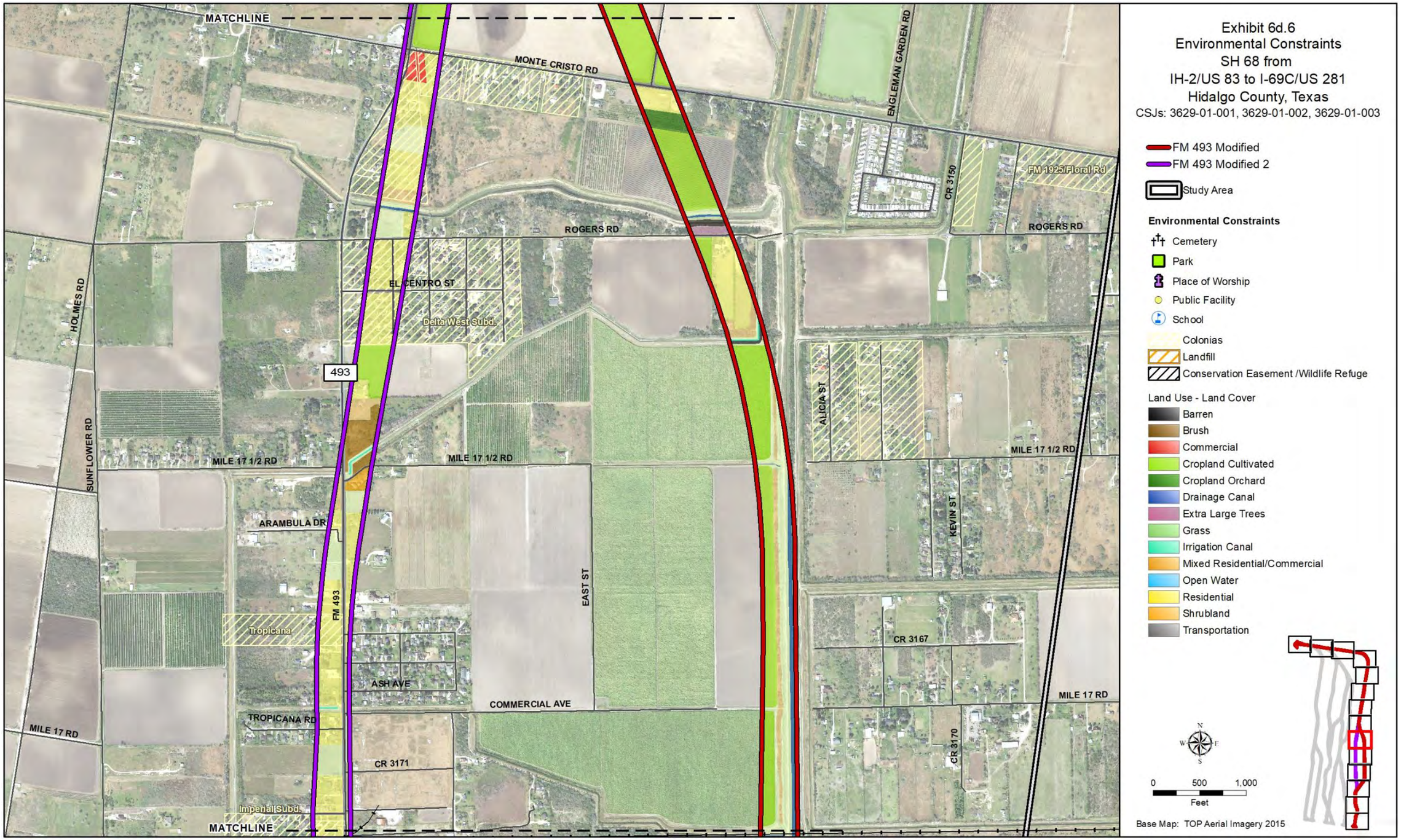
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
MONTE CRISTO RD
ENGLEMAN GARDEN RD
CR 3150
FM 1925/Floral Rd
ROGERS RD
ROGERS RD
HOLMES RD
EL CENTRO ST
Delta West Subd.
493
SUNFLOWER RD
MILE 17 1/2 RD
MILE 17 1/2 RD
ALICIA ST
MILE 17 1/2 RD
KEVIN ST
ARAMBULA DR
FM 493
EAST ST
Tropicana
CR 3167
ASH AVE
COMMERCIAL AVE
MILE 17 RD
TROPICANA RD
MILE 17 RD
CR 3170
CR 3171
Imperial Subd.
MATCHLINE
Exhibit 6d.6
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
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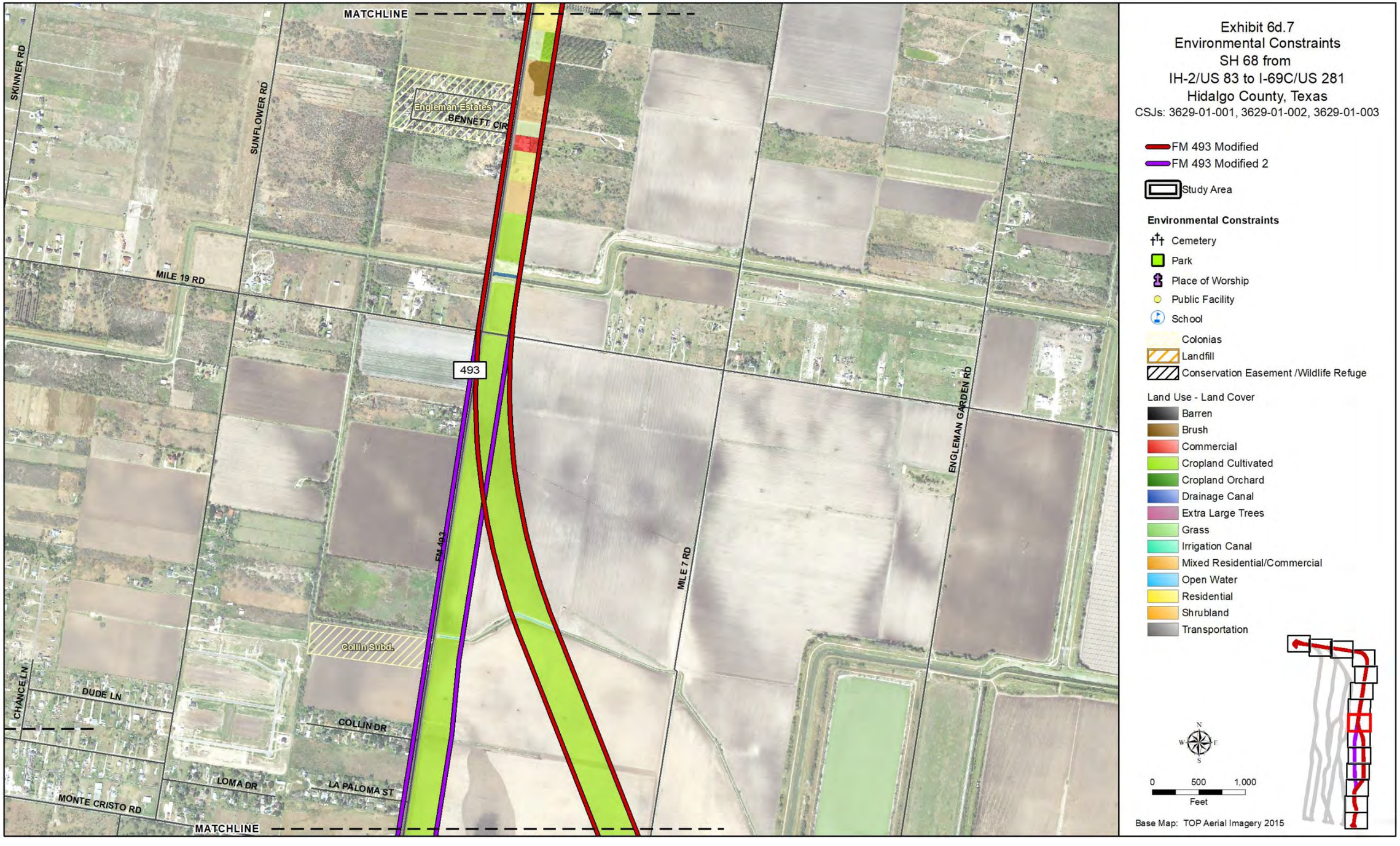
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
SKINNER RD
SUNFLOWER RD
Engleman Estates
BENNETT CIR
MILE 19 RD
493
FM 493
MILE 7 RD
ENGLEMAN GARDEN RD
Collin Subd.
CHANCE LN
DUDE LN
COLLIN DR
LOMA DR
LA PALOMA ST
MONTE CRISTO RD
MATCHLINE
Exhibit 6d.7
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
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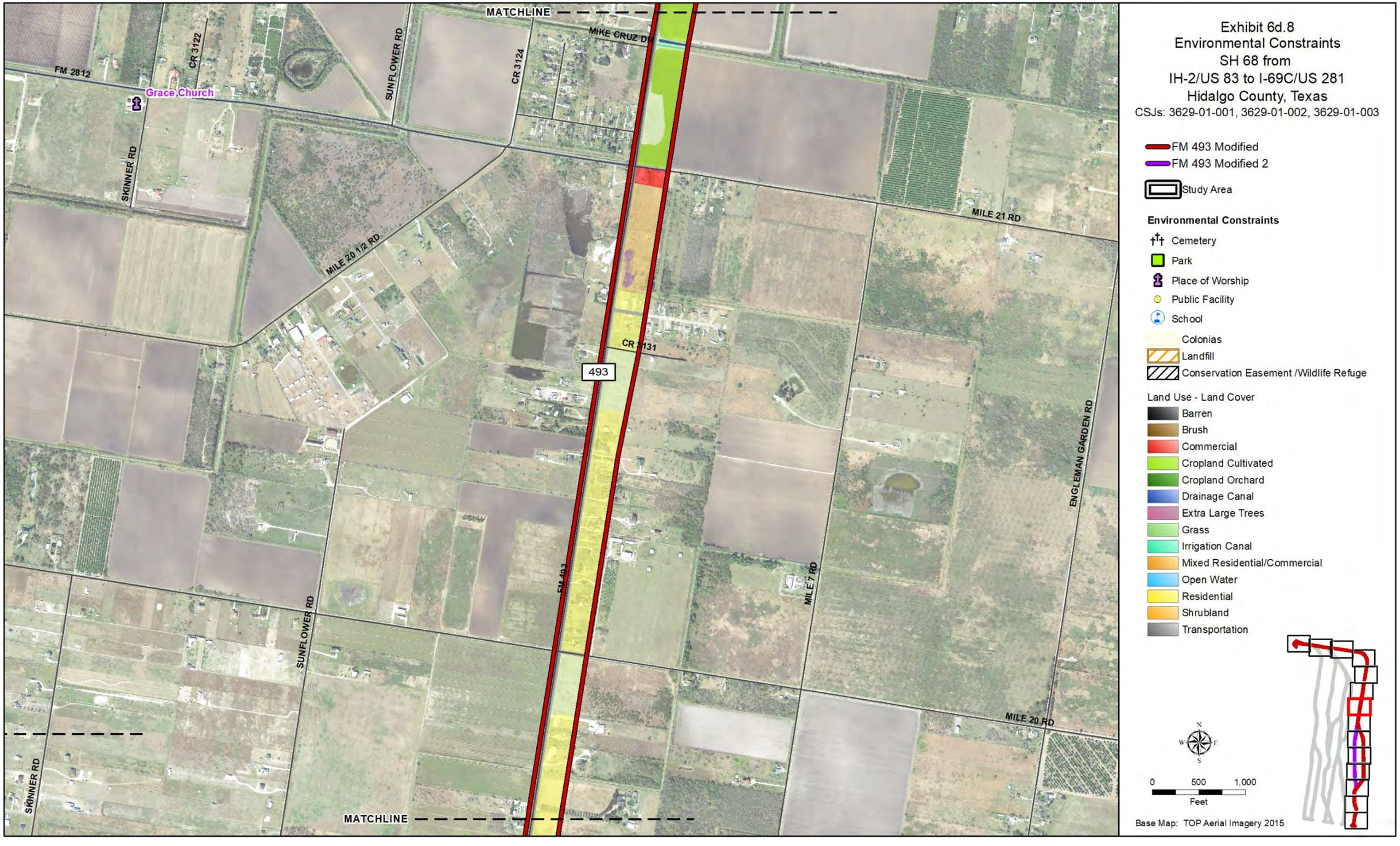
500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
MIKE CRUZ DR
FM 2812
CR 3122
SUNFLOWER RD
CR 3124
Grace Church
SKINNER RD
MILE 20 1/2 RD
MILE 21 RD
CR 3131
493
ENGLEMAN GARDEN RD
SUNFLOWER RD
FM 493
MILE 7 RD
MILE 20 RD
SKINNER RD
MATCHLINE
Exhibit 6d.8
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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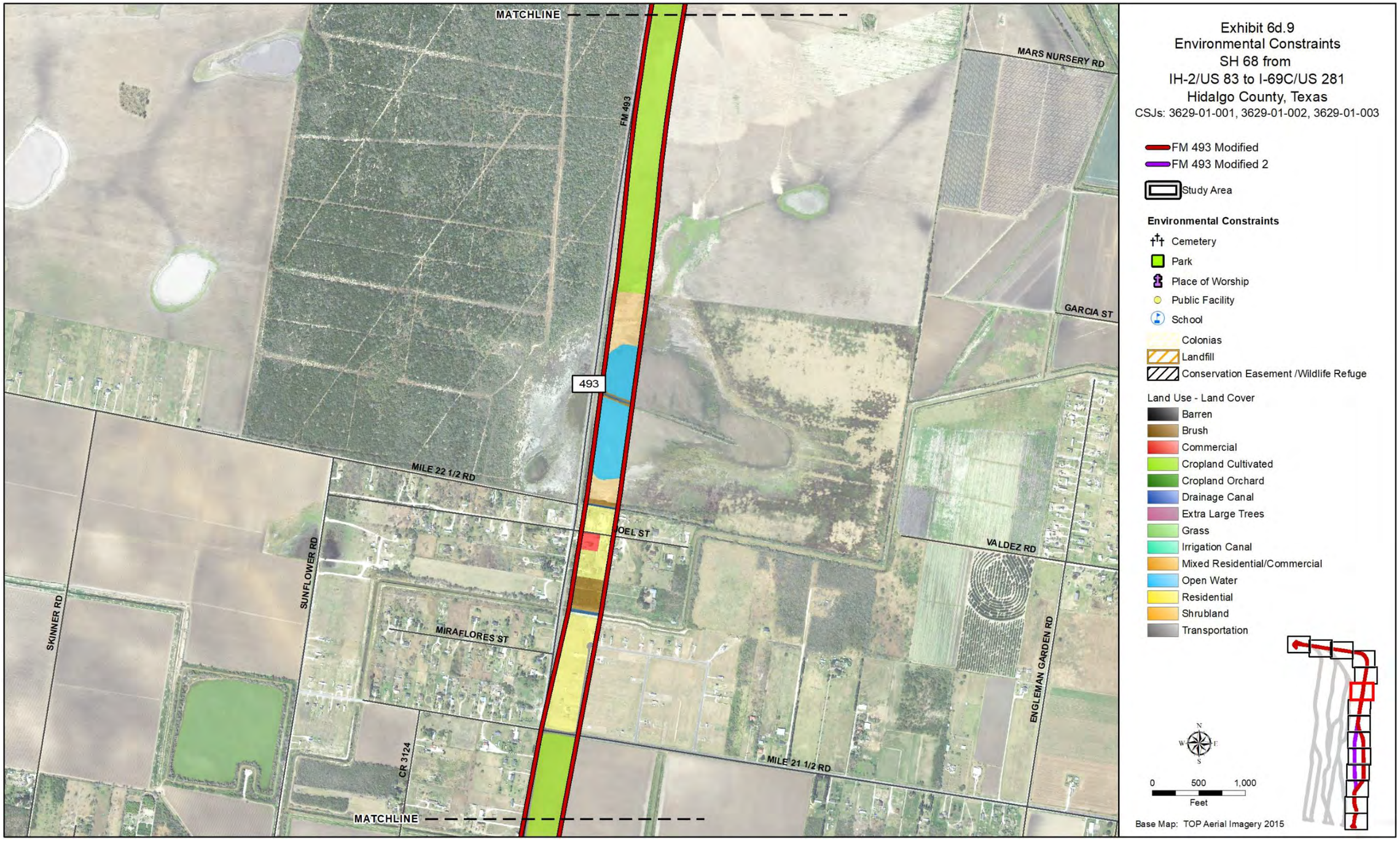
Feet
Base Map: TOP Aerial Imagery 2015


MATCHLINE
MARS NURSERY RD
FM 493
493
GARCIA ST
MILE 22 1/2 RD
JOEL ST
VALDEZ RD
SUNFLOWER RD
SKINNER RD
MIRAFLORES ST
CR 3124
MILE 21 1/2 RD
ENGLEMAN GARDEN RD
MATCHLINE
Exhibit 6d.9
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
FM 493
493
NITTLER RD
MATCHLINE
Exhibit 6d.10
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
E
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1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
CR 344
BUCY RD
Hargill Cemetery
8TH ST
10TH ST
11TH ST
493
12TH ST
FM 493
13TH ST
MATCHLINE
Exhibit 6d.11
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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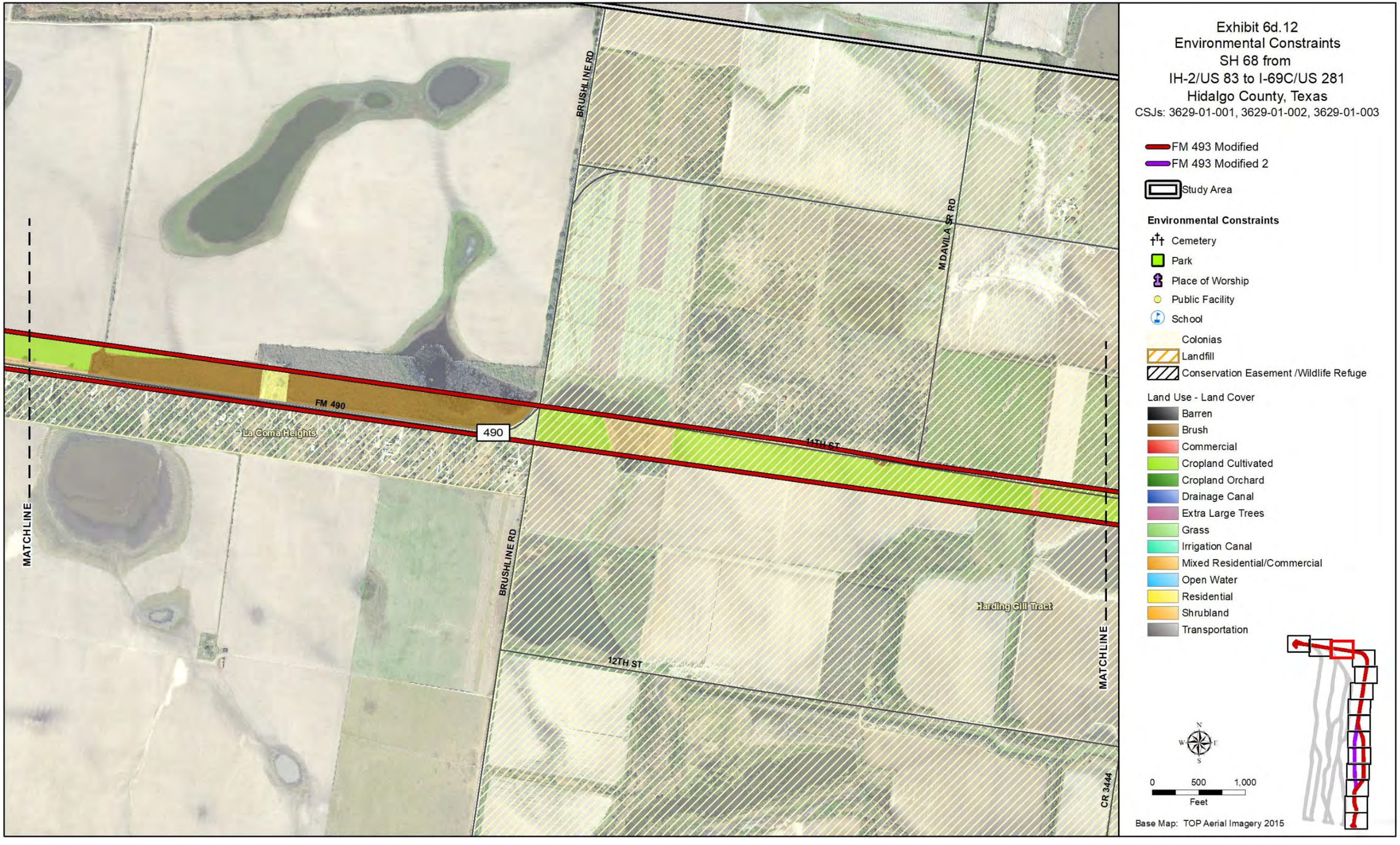
1,000
Feet
Base Map: TOP Aerial Imagery 2015


BRUSHLINE RD
M DAVILA SR RD
FM 490
490
La Coma Heights
14TH ST
MATCHLINE
BRUSHLINE RD
Harding Gill Tract
12TH ST
MATCHLINE
CR 3444
Exhibit 6d.12
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
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1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


MATCHLINE
490
FM 490
MATCHLINE
Exhibit 6d.13
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
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S
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500
1,000
Feet
Base Map: TOP Aerial Imagery 2015

1


Iglesia Y Campamento La Casa Del Alfarero
HIGHWAY 281
490
281
69C
FM 493
490
HIGHWAY 281
Los Cerritos Subd.
LOS CERRITOS CIR
South Texas International Airport At Edinburg
RACE TRACK DRAG STRIP
MATCHLINE
Exhibit 6d.14
Environmental Constraints
SH 68 from
IH-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 3629-01-002, 3629-01-003
FM 493 Modified
FM 493 Modified 2
Study Area
Environmental Constraints
Cemetery
Park
Place of Worship
Public Facility
School
Colonias
Landfill
Conservation Easement /Wildlife Refuge
Land Use - Land Cover
Barren
Brush
Commercial
Cropland Cultivated
Cropland Orchard
Drainage Canal
Extra Large Trees
Grass
Irrigation Canal
Mixed Residential/Commercial
Open Water
Residential
Shrubland
Transportation
N
W
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Feet
Base Map: TOP Aerial Imagery 2015

1

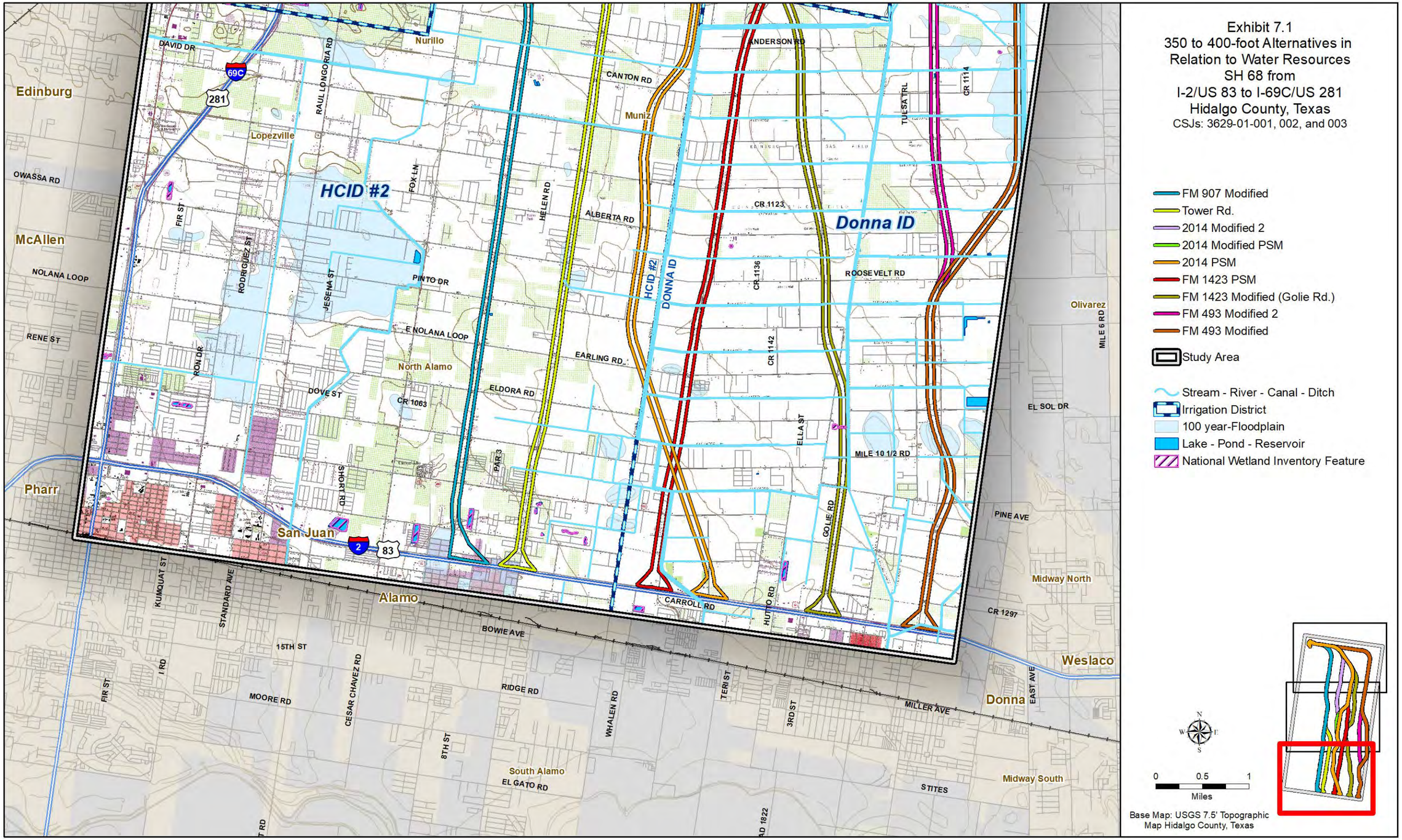
Exhibit 7.1
350 to 400-foot Alternatives in Relation to Water Resources
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Rd.
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
FM 493 Modified 2
FM 493 Modified
Study Area
Stream - River - Canal - Ditch
Irrigation District
100 year-Floodplain
Lake - Pond - Reservoir
National Wetland Inventory Feature
0 0.5 1
Miles
Base Map: USGS 7.5' Topographic Map Hidalgo County, Texas
Edinburg
McAllen
Pharr
San Juan
Alamo
North Alamo
South Alamo
Lopezville
Nurillo
Muniz
Olivarez
Donna
Weslaco
Midway North
Midway South
HCID #2
Donna ID
DAVID DR
RAUL LONGORIA RD
CANTON RD
ANDERSON RD
TULSA TRL
CR 1114
OWASSA RD
FOX LN
HELEN RD
ALBERTA RD
CR 1123
FIR ST
RODRIGUEZ ST
JESENA ST
PINTO DR
NOLANA LOOP
E NOLANA LOOP
RENE ST
RON DR
DOVE ST
CR 1063
EARLING RD
ELDORA RD
CR 1136
ROOSEVELT RD
CR 1142
MILE 6 RD
EL SOL DR
ELLA ST
MILE 10 1/2 RD
PAR 3
SHORT RD
GOLIE RD
PINE AVE
HUTTO RD
CARROLL RD
KUMQUAT ST
STANDARD AVE
15TH ST
BOWIE AVE
CR 1297
I RD
CESAR CHAVEZ RD
MOORE RD
RIDGE RD
WHALEN RD
TERI ST
3RD ST
EAST AVE
MILLER AVE
8TH ST
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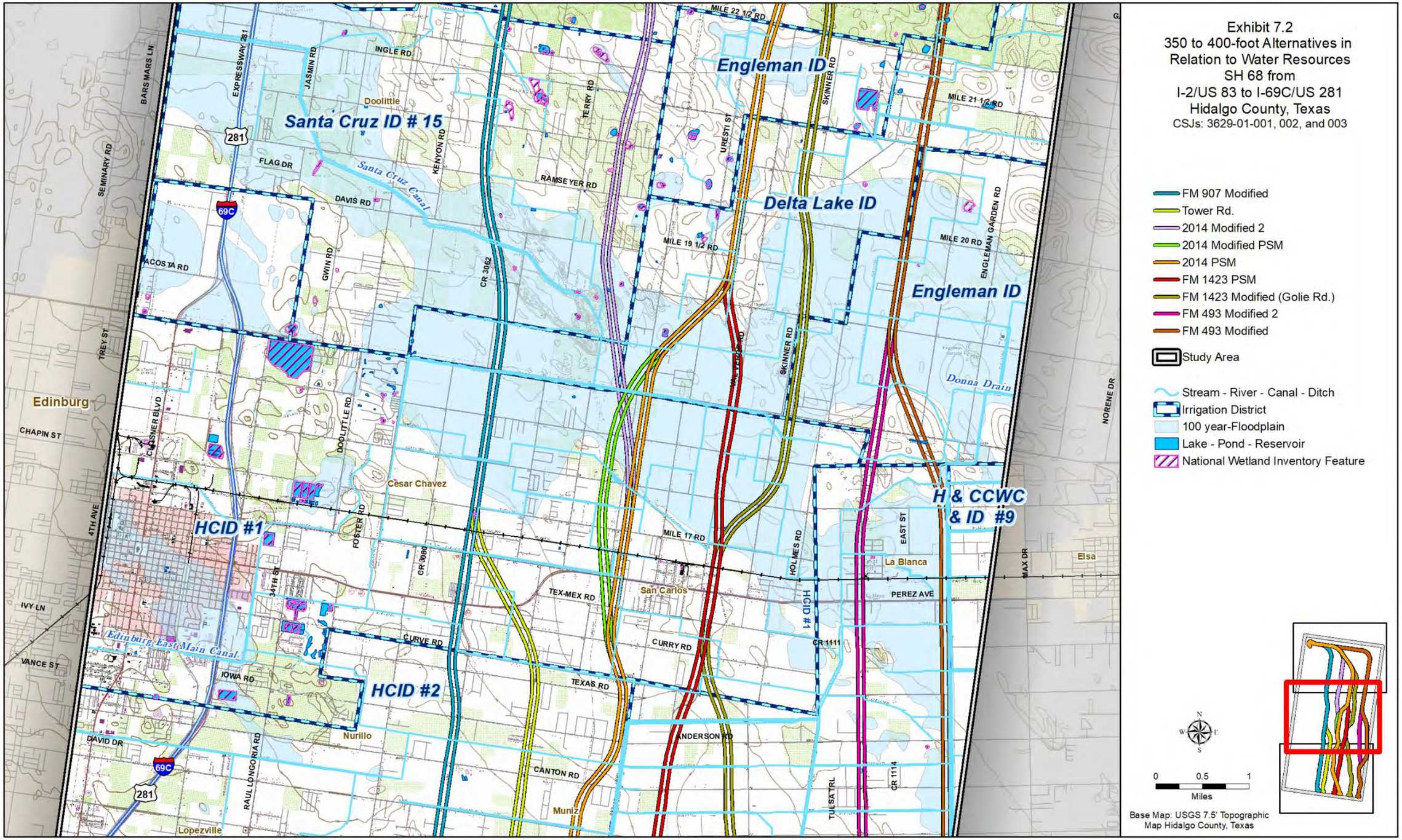
Exhibit 7.2
350 to 400-foot Alternatives in
Relation to Water Resources
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003
FM 907 Modified
Tower Rd.
2014 Modified 2
2014 Modified PSM
2014 PSM
FM 1423 PSM
FM 1423 Modified (Golie Rd.)
FM 493 Modified 2
FM 493 Modified
Study Area
Stream - River - Canal - Ditch
Irrigation District
100 year-Floodplain
Lake - Pond - Reservoir
National Wetland Inventory Feature
0 0.5 1
Miles
Base Map: USGS 7.5' Topographic
Map Hidalgo County, Texas
Engleman ID
Delta Lake ID
Engleman ID
Santa Cruz ID # 15
H & CCWC
& ID #9
HCID #1
HCID #2
Edinburg
Doolittle
Cesar Chavez
San Carlos
La Blanca
Elsa
Nurillo
Muniz
Lopezville
Santa Cruz Canal
Edinburg East Main Canal
Donna Drain
INGLE RD
JASMIN RD
EXPRESSWAY 281
BARS MARS LN
SEMINARY RD
FLAG DR
DAVIS RD
ACOSTA RD
TREY ST
CHAPIN ST
IVY LN
VANCE ST
DAVID DR
IOWA RD
CURVE RD
TEX-MEX RD
TEXAS RD
CANTON RD
ANDERSON RD
CURRY RD
PEREZ AVE
RAMSEY RD
MILE 22 1/2 RD
MILE 21 1/2 RD
MILE 20 RD
MILE 19 1/2 RD
MILE 17 RD
KENYON RD
TERRY RD
URESTI ST
SKINNER RD
ENGLEMAN GARDEN RD
CR 3062
CR 3060
CR 1111
CR 1114
TUESA TRL
HOLMES RD
EAST ST
MAX DR
NORENE DR
CASNER BLVD
DOOLITTLE RD
FOSTER RD
34TH ST
4TH AVE
RAUL LONGORIA RD
281
69C

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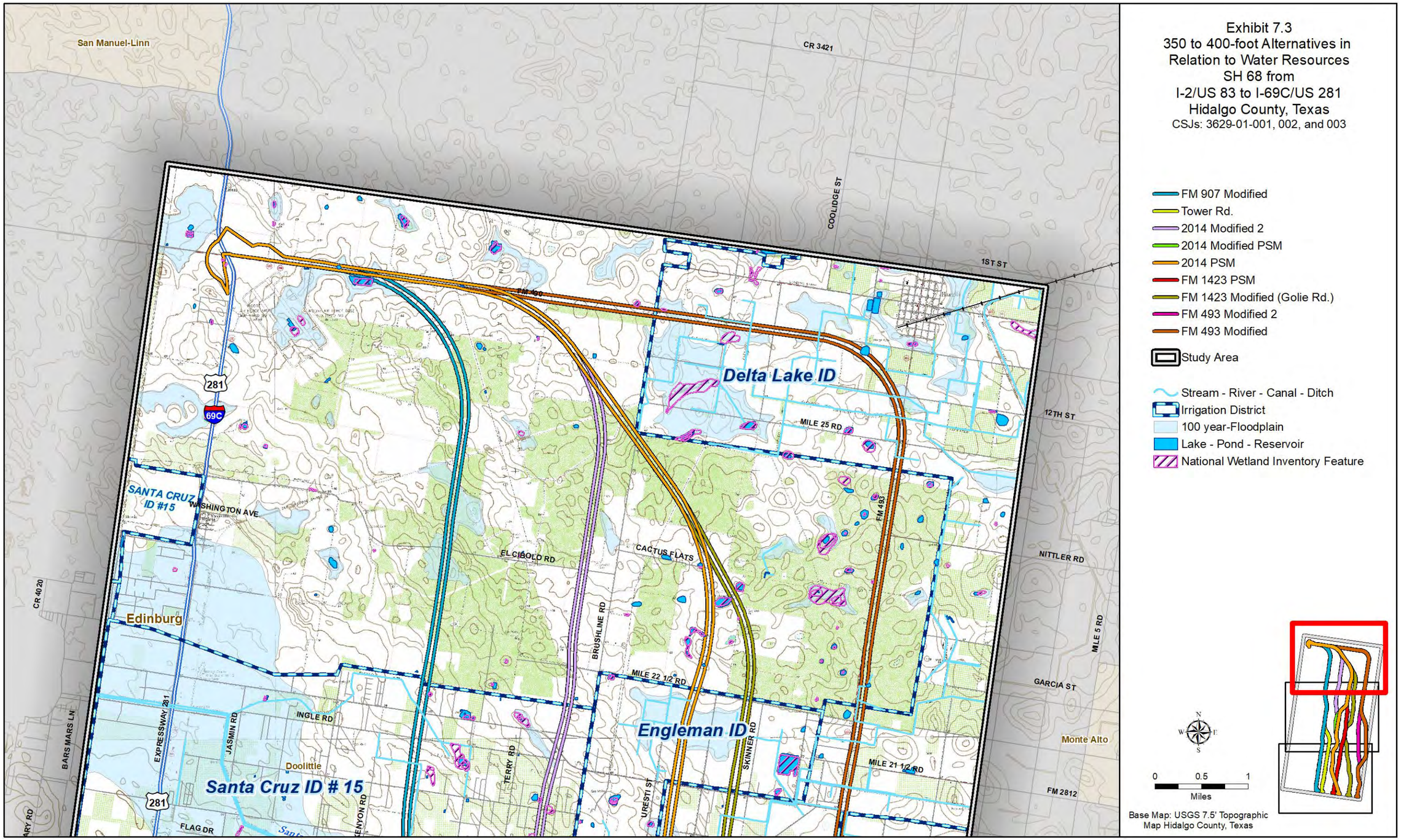
San Manuel-Linn
CR 3421
COOLIDGE ST
1ST ST
FM 907
Delta Lake ID
MILE 25 RD
12TH ST
281
69C
SANTA CRUZ ID #15
WASHINGTON AVE
FM 493
EL CIBOLO RD
CACTUS FLATS
NITTLER RD
CR 40 20
Edinburg
BRUSHLINE RD
MILE 5 RD
MILE 22 1/2 RD
GARCIA ST
BARS MARS LN
EXPRESSWAY 281
JASMIN RD
INGLE RD
Engleman ID
SKINNER RD
Monte Alto
Doolittle
TERRY RD
MILE 21 1/2 RD
Santa Cruz ID # 15
URESTI ST
FM 2812
281
FLAG DR
KENYON RD
Exhibit 7.3
350 to 400-foot Alternatives in
Relation to Water Resources
SH 68 from
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Hidalgo County, Texas
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Tower Rd.
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FM 1423 PSM
FM 1423 Modified (Golie Rd.)
FM 493 Modified 2
FM 493 Modified
Study Area
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Lake - Pond - Reservoir
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Miles
Base Map: USGS 7.5' Topographic
Map Hidalgo County, Texas

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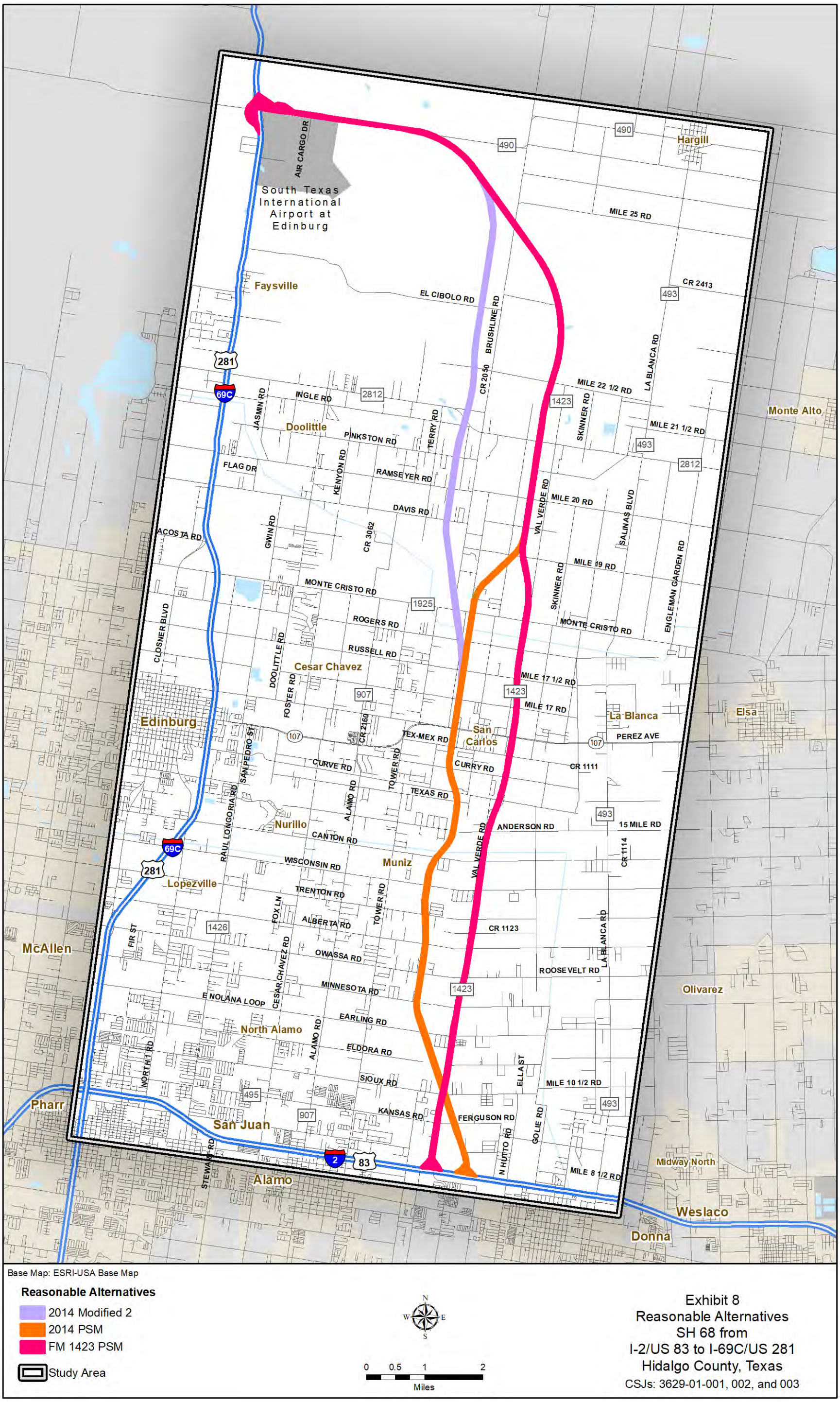
South Texas International Airport at Edinburg
AIR CARGO DR
Hargill
Faysville
Doolittle
Monte Alto
Edinburg
Cesar Chavez
La Blanca
San Carlos
Elsa
Nurillo
Muniz
Lopezville
McAllen
North Alamo
Olivarez
Pharr
San Juan
Alamo
Midway North
Weslaco
Donna
MILE 25 RD
EL CIBOLO RD
BRUSHLINE RD
CR 2413
INGLE RD
PINKSTON RD
RAMSEYER RD
DAVIS RD
MILE 22 1/2 RD
MILE 21 1/2 RD
MILE 20 RD
MILE 19 RD
MONTE CRISTO RD
ROGERS RD
RUSSELL RD
MILE 17 1/2 RD
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TEX-MEX RD
PEREZ AVE
CURVE RD
CURRY RD
CR 1111
TEXAS RD
ANDERSON RD
15 MILE RD
CANTON RD
WISCONSIN RD
TRENTON RD
ALBERTA RD
CR 1123
OWASSA RD
ROOSEVELT RD
MINNESOTA RD
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EARLING RD
ELDORA RD
SIOUX RD
KANSAS RD
FERGUSON RD
MILE 10 1/2 RD
MILE 8 1/2 RD
ACOSTA RD
FLAG DR
JASMIN RD
KENYON RD
TERRY RD
GWIN RD
CR 3062
CR 2050
VAL VERDE RD
SALINAS BLVD
SKINNER RD
ENGLEMAN GARDEN RD
CLOSNER BLVD
DOOLITTLE RD
FOSTER RD
SAN PEDRO ST
CR 2160
TOWER RD
RAUL LONGORIA RD
ALAMO RD
FOX LN
CESAR CHAVEZ RD
FIR ST
NORTH I I RD
N HUTTO RD
ELLA ST
GOLIE RD
LA BLANCA RD
CR 1114
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Base Map: ESRI-USA Base Map
Reasonable Alternatives
2014 Modified 2
2014 PSM
FM 1423 PSM
Study Area
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Miles
Exhibit 8
Reasonable Alternatives
SH 68 from
I-2/US 83 to I-69C/US 281
Hidalgo County, Texas
CSJs: 3629-01-001, 002, and 003

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Attachment B

Evaluation Matrix for 350-foot to 400-foot Alternatives

SH 68, 350 to 400-foot-wide Alternatives
Evaluation Matrix

SH 68 Alternatives Evaluation Matrix

Criteria: Green=More Desirable, Yellow=Neutral, Red=Less Desirable

Criteria By Goal	Measure	Notes / Description of Data Collected	No-Build Option	FM 907 Modified	Tower Rd	2014 PSM	2014 Modified PSM	2014 Modified 2	FM 1423 PSM	FM 1423 Modified (Golie Rd)	FM 493 Modified 2	FM 493 Modified
Length of Alternative	Miles		0	19.8	20	22.4	22.5	21.7	21.6	22.4	24.9	25.2
Area of Alternative	Acres		0	1,011	1,001	1,076	1,091	1,057	1,061	1,071	1,188	1,207
Safety Goal												
Provides alternate corridor for larger/heavier vehicles	Yes/No	Qualitative assessment of the alternatives to provide larger/heavier vehicles an alternate corridor for travel. Corridors in proximity to adjacent collectors/arterials would attract heavy/large truck traffic from existing facilities onto SH 68. Build corridors will be designed to current TxDOT / AASHTO 70 mph and specifications to better accommodate larger/heavier vehicles.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Provides bicycle and pedestrian accommodations	Yes/No	Qualitative assessment of Bike/Ped accommodation effectiveness. Build corridors will be designed to accommodate bicycles and pedestrians.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Minimizes safety impacts along IH-2	Proposed SH 68 system interchange location at IH-2	Qualitative assessment of potential safety impacts to IH-2 resulting from integration of proposed SH 68 direct connector ramps and existing IH-2 ramps. AASHTO's A Policy on Design Standards Interstate System and FHWA's Interstate System Access Informational Guide were used as references. System interchange spacing of 2 or more miles between existing state route interchanges and proposed SH 68 locations was considered more desirable. One mile spacing was considered absolute minimum.	2	3	1	3	3	3	3	2	3	3
Enhances safety/reduces crashes within the study area	Provides grade separations at major crossings	Qualitative assessment based on the potential number of grade separations/interchanges that could be provided at major collectors or larger functionally classified roads. Functional classification of roads based on HCMPO Functional Classification Map approved October 2014.	1	3	3	3	3	3	3	2	2	2
Mobility Goal												
Provides additional capacity and improves mobility within the study area	Yes/No	Qualitative assessment of effectiveness to attract vehicular traffic from existing on-system N/S collectors/arterials to SH 68.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhances system connectivity	Connectivity to existing and proposed regional facilities	Qualitative assessment of the proposed corridors to provide effective connectivity to other major regional existing and planned transportation improvements within the study area.	1	3	2	3	2	2	1	3	3	2
Enhances modal connectivity	Connectivity to existing and proposed regional facilities	Qualitative assessment of the proposed corridors to provide connectivity between airport, ports of entry, transit and bicycle/pedestrian facilities for existing and planned facilities.	1	2	2	2	2	2	2	2	3	3
Improves transportation system reliability within the study area	Yes/No	Qualitative assessment of the proposed corridor to provide alternative route other than IH-69C/US 281 in case of an incident on IH-69C/US 281.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1 For quantitative criteria, the highest value for each criterion was divided into thirds and each range of thirds was assigned to the red/yellow/green categories based on desirability. The exception to this methodology was the cost effectiveness goal. In order to provide a wider degree of separation between the alternatives, the difference between the highest and lowest costs for each criterion was determined. Within that high to low range, values were ranked by upper, middle, and lower thirds to determine the respective red, yellow, and green categories.

SH 68 Alternatives Evaluation Matrix

Evaluation Matrix		Criteria: Green=More Desirable, Yellow=Neutral, Red=Less Desirable										
Criteria By Goal	**Measure**	**Notes / Description of Data Collected**	**No-Build Option**	**FM 907 Modified**	**Tower Rd**	**2014 PSM**	**2014 Modified PSM**	**2014 Modified 2**	**FM 1423 PSM**	**FM 1423 Modified (Golie Rd)**	**FM 493 Modified 2**	**FM 493 Modified**
Community and Environmental Goal												
Human Environment												
Minimize impacts to residential parcels/property	# parcels	A residential property would be counted as "impacted" if the property is within the potentially proposed ROW. Residential property as identified via Hidalgo County Central Appraisal District (CAD) data, windshield surveys and aerial imagery.	0	343	418	177	167	192	173	204	329	197
Minimize impacts to residential structures	# structures	Residential structures as identified via aerial imagery on residential parcels. A residential structure would be counted as "impacted" if the structure is within the potentially proposed ROW.	0	380	450	143	141	145	217	175	317	170
Minimize impacts to schools	# schools	Based on mapped information and windshield surveys	0	0	0	0	0	0	0	0	0	0
Avoid impacts to cemeteries	# cemeteries	Public and private cemeteries, as identified by maps and research	0	0	0	0	0	0	0	0	0	0
Minimize impacts to faith-based organizations	# churches	Based on mapped information and windshield surveys	0	2	2	0	1	0	0	2	0	0
Minimize impacts to Public Facilities/Public Services	# facilities/services	Based on mapped information and windshield surveys	0	0	0	0	0	0	0	0	0	0
Minimize impacts to commercial properties	# properties	A commercial property would be counted as "impacted" if the property is within the potentially proposed ROW. Commercial properties identified based on CAD data (parcels) and windshield survey.	0	68	50	13	14	13	30	22	32	20
Minimize impacts to commercial structures	# structures	A commercial structure would be identified as "impacted" if the structure is within the potentially proposed ROW. Commercial structures identified based on windshield survey and aerial imagery.	0	69	57	16	12	16	45	17	32	23
Minimize impacts to civic centers	# civic centers	Based on mapped information and windshield surveys	0	0	1	0	0	0	0	0	0	0
Minimize impacts to croplands/orchards	acres of croplands/orchards	Based on Landuse/Landcover data.	0	270	277	460	491	451	342	473	409	505
Avoid impacts to parks and recreational facilities	# parks	Based on mapped information and windshield surveys	0	0	0	0	0	0	0	0	0	0
Minimize impacts to oil/gas wells	# wells	Wells identified based on Railroad Commission data and USGS maps	0	1	1	1	1	0	0	0	1	0
Minimize Oil and Gas Pipeline Crossings	# pipeline crossings	Oil and Gas Pipelines identified based on Railroad Commission data and USGS maps.	0	21	21	27	34	22	18	13	16	16
Minimize impacts to existing utility infrastructure	# sites or crossings	Includes minor utility stations and major transmission power lines, as identified through maps and windshield surveys	0	6	6	6	7	6	6	6	5	6
Minimize irrigation canal crossings	# of irrigation canal crossings	Based on mapped information and windshield surveys	0	6	9	9	10	10	13	11	12	15
Minimize impacts to colonias	# colonias	Count of colonias crossed by the potentially proposed ROW. Mapped Colonia locations obtained from the Secretary of State's Office.	0	3	8	0	0	0	2	1	11	3
Minimize impacts to minority areas.	Percentage of census blocks with minority population greater or equal to 50% out of the total blocks impacted by alternative.	Based on 2010 census data.	0	79	77	67	69	76	78	69	73	67
Minimize impacts to low-income areas.	Percentage of census block groups with low income populations greater or equal to 50% out of the total blocks impacted by alternative.	Based on 2010-2014 American Community Survey 5 year estimates.	0	12	6	13	13	13	12	15	13	21
Minimize traffic noise impacts	# potential receivers	Potential noise impacts identified based on proximity of sensitive noise receivers to residential, church, school, and park properties	0	312	353	179	157	191	232	156	266	225
Minimize impacts to landfills	# sites	Based on hazardous materials database search results	0	0	0	0	0	0	0	0	0	0
Minimize Impacts to Superfund Sites	# sites	Based on hazardous materials database search results	0	0	0	0	0	0	0	0	0	0

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SH 68 Alternatives Evaluation Matrix

Evaluation Matrix		Criteria: Green=More Desirable, Yellow=Neutral, Red=Less Desirable										
Criteria By Goal	**Measure**	**Notes / Description of Data Collected**	**No-Build Option**	**FM 907 Modified**	**Tower Rd**	**2014 PSM**	**2014 Modified PSM**	**2014 Modified 2**	**FM 1423 PSM**	**FM 1423 Modified (Golie Rd)**	**FM 493 Modified 2**	**FM 493 Modified**
Cultural Resources												
State Antiquities Landmarks (SAL)	# sites	Based on review of THC online historic sites atlas.	0	0	0	0	0	0	0	0	0	0
Minimize Historical canal crossings	# crossings	# of historical canal crossings	0	3	6	8	9	8	18	10	19	12
Minimize crossing of NRHP-Listed Irrigation District	# crossings	Based on review of THC online historic sites atlas irrigation district	0	1	1	1	1	1	0	0	0	0
Minimize impacts to NRHP-Listed sites (Non-Irrigation Districts)	# sites	Based on review of THC online historic sites atlas non-irrigation district	0	0	0	0	0	0	0	0	0	0
Minimize impacts to recorded archeological sites	# sites	Measure based on background research and review of the Texas Historical Commission's (THC) online historic sites atlas and the restricted-access online Texas Archeological Sites Atlas, as well as records from the Texas Archeological Research Laboratory	0	2	2	0	0	1	0	0	0	0
Minimize impacts to potential historic age resources	# of parcels with a historic-age structure	Measure based on review of CAD data, pre 1975	0	40	33	14	21	18	20	23	33	22
Natural Environment												
Critical Habitat for Threatened and Endangered Species	Yes/No	Based on USFWS Critical Habitat Mapper	0	0	0	0	0	0	0	0	0	0
Avoid impacts to National Wildlife Refuge	Yes/No	Based on USFWS LRGV-NWR property map	0	0	0	0	0	0	0	0	0	0
Minimize impacts to brushland habitat	Acres	Based on Landuse/Landcover data.	0	80	80	89	93	120	83	87	73	77
Minimize impacts to floodplains	acres of floodplain	Based on most recent FEMA flood maps	0	148	145	149	144	140	161	195	231	350
Minimize impacts to potential waters of the US	# crossings	Based on interpretation of USGS topographic maps.	0	0	0	0	0	0	0	0	0	0
Minimize impacts to National Wetland Inventory Features	Acres	Based on USFWS NWI data	0	0.9	0.9	0.3	0.3	0.3	0.3	1.1	0.3	0.3
Minimize impacts to prime farmland soils	acres of prime farmland soils	Based on information from NRCS	0	922	922	1054	1068	1033	1038	1066	1165	1185

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Feasibility / Design Goal												
Maximizes Driver Expectancy	Qualitative Index	Qualitative assessment of how common and consistent to accepted standards the operational design is to a driver	N/A	3	2	3	3	3	3	3	3	3
Avoids potential air space clearance conflicts	Qualitative Index	Qualitative assessment of potential air space clearance conflits within the study area	N/A	3	3	3	3	3	3	3	3	3
Optimizes overall design	Qualitative Index	Provides optimal design criteria for mainlanes	N/A	3	3	3	3	3	3	3	3	3
		Provides optimal alignment for interchange configuration	N/A	3	2	3	2	2	3	3	3	2
		Provides optimal design criteria for frontage roads	N/A	3	3	3	2	3	2	2	3	2
		Provides optimal design criteria adjacent and across irrigation canals	N/A	3	3	2	2	2	2	2	2	1
		Provides optimal design criteria to accommodate major utilities	N/A	3	3	3	2	3	3	2	3	3
Optimizes constructability	Qualitative Index	Construction complexity for mainlanes	N/A	3	3	3	3	3	2	2	2	2
		Construction complexity for interchanges	N/A	3	2	3	2	2	2	3	3	2
		Construction complexity for frontage roads	N/A	2	2	3	2	2	2	2	2	2
		Construction complexity for major utility corridors	N/A	3	3	3	2	2	2	2	3	3
		Construction complexity adjacent and across irrigation canals	N/A	3	3	2	2	2	2	1	2	1
		Construction complexity for cross roads/T intersections	N/A	3	3	3	3	3	2	2	2	2
Expedite Phase 1 implementation	Duration	ROW acquisition/# of parcels/utility adjustments/construction time	N/A	1	1	3	3	3	2	3	1	2
Cost Effectiveness												
Minimize construction cost	Cost estimate in millions	Construction and mitigation cost estimates for the alternatives were developed at a level consistent with conceptual level of analysis and includes "rule-of-thumb" cost contingency factors. Cost estimate included significant construction elements such as: structures, retaining wall, pavement structure and cut and fill quantities.	N/A	506	506	539	537	514	556	527	618	655
Minimize right of way cost	Cost estimate in millions	Based on Hidalgo County Appraisal District Market Values as of September 2016	N/A	99	96	62	62	61	69	76	86	74
Minimize relocation cost	Cost estimate in millions	Based on 150% of right-of-way costs	N/A	148	144	93	93	92	104	114	128	110
Minimize utility displacement cost	Cost estimate in millions	Based on 7% of construction costs plus an additional escalation of 5% for areas of complex utility impacts	N/A	33	35	30	30	29	36	29	49	44
Minimize maintenance and operational costs	Annualized life cycle cost estimate in millions	6% of Construction Costs	N/A	27	27	28	28	27	29	28	33	35
Minimize total cost	Cost estimate in millions	Cumulative of Identified Costs	N/A	812	808	753	751	723	795	773	914	918
Economic Factors												
Maximize opportunity for economic development through adjacent access	Miles	Length of frontage road adjacent to developable property		23	21	31	30	33	29	32	27	24
Minimize amount of lost tax revenue	Cost estimate in millions	Quantitative assessment of the value of existing landuse taxable revenue converted to transportation use. Lost tax revenue based on the 2016 HCAD estimated tax.		1.8	2.9	1.0	0.9	1.0	1.6	1.2	1.9	1.2

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1 This report was written on behalf of the Texas Department of Transportation by

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