Draft Environmental Assessment

Bicentennial Boulevard Extension Project, Pharr District

Project Limits from on Bicentennial Blvd., from State Highway (SH) 107 to Trenton Rd.

CSJ Number: 0921-02-352

Hidalgo County, Texas

February 2018

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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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LIST OF ACRONYMS

AOI	Area of Influence
APE	Area of Potential Effects
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
dB(A)	A-weighted Decibel
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMST	Ecological Mapping Systems of Texas
EO	Executive Order
EPIC	Environmental Permits, Issues and Commitments
EJ	Environmental Justice
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
GIS	Geographic Information System
HRS	Historic Resources Survey
IBWC	International Boundary and Water Commission
ISA	Initial Site Assessment
LWCF Act	Land and Water Conservation Fund
LEP	Limited English Proficiency
Leq	Average or Equivalent Human Sound Level [used in connection with dB(A)]
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan

NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PA-TU	Programmatic Agreement among the Federal Highway Administration, the Texas Department of Transportation, the Texas State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings
PM	Particulate Matter
ROW	Right-of-Way
PS&E	Plans, Specifications and Estimates
SH	State Highway
STIP	Statewide Transportation Improvement Program
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
THC MOU	Memorandum of Understanding with the Texas Historical Commission regarding Environmental Review of Transportation Projects
TPDES	Texas Pollutant Discharge Elimination System
TPWC	Texas Parks and Wildlife Code
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
SHPO	State Historic Preservation Officer
USC	United States Code
USDOT	United States Department of Transportation
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
VPD	Vehicles per Day

1.0 INTRODUCTION

In cooperation with county and municipal authorities, the City of McAllen and the Texas Department of Transportation (TxDOT) propose the construction of Bicentennial Boulevard from Trenton Road to State Highway (SH) 107 in the City of McAllen, Hidalgo County, Texas (see Project Vicinity Map, **Appendix A-1**). The total length of the proposed project is approximately 2.86 miles within a proposed right-of-way (ROW) width that varies between 80 to 230 feet. An outline of the proposed project area is shown on an aerial photograph base map (see **Appendix A-2**) and on an U.S. Geological Survey (USGS) topographic map (see **Appendix A-3**).

The purpose of this Environmental Assessment (EA) is to study the potential environmental consequences of the proposed project in accordance with the procedural requirements of the National Environmental Policy Act (NEPA), as implemented through regulations promulgated by the Council on Environmental Quality (CEQ).[1] The principal objective in preparing this EA is to determine whether the expected environmental impacts of the proposed project would warrant the preparation of an Environmental Impact Statement (EIS).[2] As the proposed project would be funded in part by the Federal Highway Administration (FHWA), this EA complies with FHWA's NEPA regulations as well as relevant TxDOT rules for environmental review of projects and guidance for conducting NEPA studies on behalf of FHWA.[3] 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 United States Code (USC) Section 327 and a Memorandum of Understanding (MOU) dated December 16, 2014, and executed by FHWA and TxDOT.[4]

After this EA has been determined by TxDOT to be complete, it will be made available for public review and comment. Following the comment period (i.e., approximately 30 days), during which a public hearing will be held, TxDOT will consider any comments submitted before making a decision. If TxDOT determines that the proposed project would not result in significant adverse effects, it will prepare and sign a Finding of No Significant Impact (FONSI), which will be made available to the public.

1 The NEPA statute is codified in 42 USC Sections 4331-4375. CEQ's NEPA regulations are in 40 CFR Parts 1500-1508.

2 An Environmental Impact Statement is required if, upon completing an EA, a federal agency (or a delegated state agency, such as TxDOT) determines that a proposed major federal action would result in impacts that "significantly [affect] the quality of the human environment" (42 USC Section 4332), as that phrase has been interpreted by federal courts.

3 FHWA's NEPA regulations are in 23 CFR Part 771. TxDOT regulations relevant to preparing an EA and associated public involvement activities are found in Title 43 Texas Administrative Code (TAC), Part 1, Chapter 2. TxDOT also maintains specialized instructional guidance for NEPA studies on the following website sponsored by the TxDOT Environmental Affairs Division: http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits.html. Accessed August 15, 2017.

4 The FHWA-TxDOT MOU may be found here: *http://www.fhwa.dot.gov/txdiv/finalnepa-mou.pdf.* Accessed August 15, 2017.

2.0 PROJECT DESCRIPTION

2.1 Existing Facility

The existing Bicentennial Boulevard roadway consists of four 12-foot wide travel lanes (two in each direction) that currently terminate at Trenton Road, the proposed project's southern terminus. The proposed project would extend Bicentennial Boulevard on new location from Trenton Road northward to SH 107.

The proposed project area for the new location roadway is predominantly comprised of urban landscapes (e.g., roadways and mowed and maintained grasses within transportation corridors), earthen and concrete drainage channels, and previously-cultivated agricultural areas that are no longer under cultivation. Near SH 107, the proposed project area includes residential and commercial properties.

Several acres of ROW within the proposed project area were previously acquired by the City of McAllen, with the earliest ROW dedication dating back to 1913. The city also acquired ROW by exercising its eminent domain authority. **Section 5.1.1** below contains a detailed discussion regarding the proposed project's early ROW acquisition history.

The proposed project area would be constructed within a larger setting that has been undergoing urbanization in recent years. Properties adjacent to the proposed project area are primarily comprised of residential developments, commercial and industrial properties, and abandoned agricultural areas (see **Section 5.2** for a more detailed description regarding land use within and adjacent to the proposed project area). Several paved roadways and the Edinburg East Main Canal cross the project area, and various earthen or concrete drainage channels either cross the project area or run parallel to it. The site photographs in **Appendix B** provide representative views of the existing Bicentennial Boulevard facility (located south of the proposed project), as well as representative areas within and surrounding the proposed project area.

2.2 Proposed Facility

The proposed project would extend Bicentennial Boulevard from Trenton Road to SH 107 as a new location, four-lane facility. The proposed 2.86-mile roadway extension would consist of a 12-foot wide inside travel lane (one in each direction), a 14-foot wide outside shared use lane for vehicles and bicycles (one in each direction), and five-foot wide sidewalks for pedestrians. Other improvements include 13-foot wide left turn lanes at cross streets, curb and gutter, and drainage improvements. The proposed Bicentennial Boulevard Extension Project would require approximately 1.9 acres of additional ROW, and approximately 0.6 acre of temporary construction easements and 0.2 acre of permanent easements needed for anticipated construction of proposed noise barriers.

Federal regulations require that federally funded transportation projects have logical termini.[5] Simply stated, this means that a project must have rational beginning and end points. Those end points may not be created simply to avoid proper analysis of environmental impacts. The logical termini for the Bicentennial Boulevard Extension Project are Trenton Road and SH 107. These were chosen because Trenton Road is the arterial street where the existing Bicentennial Boulevard currently terminates and SH 107 is the next major traffic-generating intersection.

Federal regulations require that a project have independent utility and be a reasonable expenditure even if no other transportation improvements are made in the area.[6] This means a project must be able to provide benefit by itself, and that the project not compel further expenditures to make the project useful. Stated another way, a project must be able to satisfy its purpose and need with no other projects being built. The proposed project would improve connectivity between an arterial street (where the existing Bicentennial Boulevard currently terminates) and a major intersection (SH 107). Construction of the proposed project would satisfy the need and purpose independent of additional improvements to adjacent roadways, and would therefore be a standalone project that does not irretrievably commit federal funds.

Federal law prohibits a project from restricting consideration of alternatives for other reasonably foreseeable transportation improvements.[7] This means that a project must not dictate or restrict any future roadway alternatives. The proposed project would not dictate or restrict any future roadway alternatives.

The planned improvements for the Bicentennial Boulevard Extension Project are shown in the Project Plan View Map in **Appendix C**, and representative typical cross sections of the proposed project are shown in **Appendix D**.

The proposed project is consistent with the Hidalgo County Metropolitan Planning Organization's (MPO) currently effective Metropolitan Transportation Plan (MTP), which is the *2015 – 2040 MTP* (see **Appendix E-1**).[8] The proposed project is shown as a construction of a new, four lane urban roadway. The proposed project is also consistent with the description of it in the *FY 2017–2020 Statewide Transportation Improvement Program* (STIP) for the Hidalgo County MPO. The proposed project is anticipated to cost approximately $18.7 million, and is expected to be financed with federal and local funds (see **Appendix E-2**).

[5] 23 CFR 771.111(f)(1).
[6] 23 CFR 771.111(f)(2).
[7] 23 CFR 771.111(f)(3).
[8] See Hidalgo County MPO website regarding the *2015 – 2040 MTP*: *http://www.hcmpo.org/docs/2015_2040_mtp.htm*. Accessed August 16, 2017.

3.0 PURPOSE AND NEED

3.1 Need

The proposed project is needed because there is a lack of north-south connectivity on Bicentennial Boulevard between Trenton Road and SH 107, as well as a lack of connectivity between the communities located in the proposed project's vicinity.

3.2 Supporting Facts and/or Data

As a result of continued growth in the City of McAllen, citizens voted in favor of a 2013 bond election that included the proposed project as one of the many needed street improvements in the city. Currently, drivers travelling north on the existing section of Bicentennial Boulevard must turn at Trenton Road and travel approximately 0.5 mile east or west to 23rd Street or 10th Street, both of which continue north to intersect SH 107. It is anticipated that the proposed Bicentennial Boulevard extension would help relieve traffic on parallel streets. In addition, existing neighborhoods and community facilities adjacent to the proposed project area are currently separated by irrigation canals, drainage ditches, and/or tracts of vacant land. The proposed project would improve connectivity between these communities and the existing east-west local streets within the project area.

3.3 Purpose

The purpose of the proposed project is to provide new north-south connectivity between Trenton Road and SH 107, as well as improve connectivity to intersecting local streets and surrounding areas in the City of McAllen.

4.0 ALTERNATIVES

4.1 Build Alternative

The proposed project involves the construction of a new location roadway, as described in **Section 2.2**, which would extend the existing Bicentennial Boulevard roadway from Trenton Road to SH 107. The build alternative would meet the purpose and need for the project by providing new north-south connectivity between Trenton Road and SH 107, as well as between the communities located in the proposed project's vicinity. The proposed project would include the construction of four travel lanes (two in each direction) and 13-foot wide left turn lanes at existing cross streets. Other improvements include curb and gutter as well as drainage improvements. Pedestrian and bicycle improvements would be constructed along the proposed Bicentennial Boulevard within the project area. The sidewalks along the roadway would be 5 feet wide, and bicycle accommodations would consist of a 14-foot wide outside shared use lane (one in each direction).

4.2 No-Build Alternative

Under the no-build alternative, the proposed Bicentennial Boulevard Extension Project would not be constructed north of Trenton Road and the existing conditions described in **Section 2.1** would continue. The no-build alternative would avoid the negative impacts associated with new roadway construction and ROW acquisition in the project area. However, the no-build alternative would not address mobility concerns or improve access or connectivity within the project area. This alternative does not meet the need for and purpose of the proposed project and would be inconsistent with regional transportation plans (i.e., MTP and STIP). The no- build alternative will be carried forward to be considered for comparative purposes.

4.3 Preliminary Alternatives Considered but Eliminated from Further Consideration

No other alternatives were identified.

The early acquisition of parcels did not limit the evaluation of alternatives for the proposed project. Selection of alternatives for the Bicentennial Boulevard Extension Project is restricted to the area that lies between two main arterials, 10th Street and 23rd Street that are located to the east and west of the existing Bicentennial Boulevard roadway. Alternatives are further restricted due to existing environmental constraints and the developed nature of the properties adjacent to the project area. Currently, the proposed project extends from the southern project terminus at Trenton Road from the existing Bicentennial Boulevard roadway in a linear fashion. From Trenton Road, alternatives are constrained between existing residential neighborhoods and drainage facilities to the east and west. Abandoned agricultural areas exist between Frontera Road and the Edinburg East Main Canal, providing relatively greater opportunity where alternative alignments could be considered, subject to the design objective of avoiding residences adjacent to these areas. Immediately south and to the north of the Edinburg East Main Canal, alternatives are again constrained by existing

residential neighborhoods in addition to drainage canals to the east and west. At this location the proposed project continues in nearly a straight-line northward, following Hoehn Drive (a city-owned dirt roadway) until it reaches the northern project terminus at SH 107. Throughout the planning and development process of the proposed project a primary goal was to avoid and minimize the need for additional ROW and displacements. Minor alignment shifts and modifications to the proposed design have resulted in avoidance and minimization of impacts to residential areas, and a preferred alternative for the proposed extension of Bicentennial Boulevard, currently the build alternative, was identified.

5.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In support of this EA, the following technical reports were prepared and are available for review at the TxDOT Pharr District office, upon request:

- Community Impacts Assessment Technical Report Form (TxDOT, 2017a);
- Archeological Background Study (TxDOT, 2017b);
- Project Coordination Request for Historical Studies Project (TxDOT, 2016c);
- Report for Historical Studies Survey (TxDOT, 2017d);
- Water Resources Technical Report (TxDOT, 2017e);
- Biological Evaluation Form (TxDOT, 2017f);
- Tier I Site Assessment (TxDOT, 2017g);
- Air Quality Technical Report (TxDOT, 2016h);
- Hazardous Materials Initial Site Assessment (ISA) Report (TxDOT, 2017i);
- Traffic Noise Technical Report (TxDOT, 2017j);
- Indirect and Cumulative Impact Analysis Technical Report (TxDOT, 2017k); and
- Public Meeting Documentation (TxDOT, 2017l).

These technical reports and the detailed data and maps included within them are incorporated by reference, but are nWot included in this EA. Selected graphical information and summaries of data from these technical reports are included in this EA to assist in describing anticipated project-related environmental impacts.

This section examines the direct impacts that result from constructing the facility within the project construction footprint, which includes all areas that would be subject to ground disturbing activities from heavy construction equipment. In this EA, the construction footprint for the proposed project includes all areas in existing and proposed ROW and proposed easements within the project area (approximately 42.8 acres). This section also addresses the indirect effects caused by the proposed project that extend beyond the construction footprint either during or after construction of the facility (i.e., encroachment-alteration indirect effects). Examples of such indirect impacts include the potential sedimentation of streams by soil eroded from construction sites, increases in traffic noise experienced on properties near the project after completion, or the contribution to ambient air quality in local areas near the completed project or throughout the region. Thus, environmental impacts caused by the project have been assessed for both the construction footprint as well as beyond it to the point where indirect impacts attenuate to an insubstantial level. Also addressed in this section are steps taken to ensure compliance with relevant laws and Executive Orders (EO), in addition to mitigation measures where such are warranted.

The information presented in this section and throughout this EA was obtained from a variety of state and federal natural resource agencies, local governments, and from several field reconnaissance visits. The primary tool for assessing environmental aspects of the study area was a geographic information system (GIS) database for which digital shapefiles were acquired regarding basic geographic features (i.e., roads and local government boundaries),

geology and soils, elevation contours, water and floodplain features, vegetation and wildlife habitat, land use, and socio-economic characteristics.

5.1 Right-of-Way/Displacements

Throughout the environmental review process, the description of the proposed project's ROW and easement acreages changed based on evolving information received from the City of McAllen regarding the status of previously acquired ROW within the proposed project area. Although technical reports were submitted with different descriptions of proposed ROW and easement acreages, the full ROW footprint (42.0 acres) for the proposed project was accounted for in each analysis and has remained unchanged between technical reports. The description of easement acreages, however, varied between technical reports as the project design advanced and updated information became available regarding easement needs for the project. In addition, certain areas changed in description from proposed ROW to easements and vice versa. Therefore, a memorandum was drafted that discloses the differences in the description of the proposed ROW and easements between the technical reports and identifies any resource areas that necessitated additional documentation to assess the easement acreages not previously accounted for in approved technical reports. This memorandum is available for review at the TxDOT Pharr District office, upon request.

The proposed project would require additional ROW and would result in displacements. Of the 42.8 acres required for ROW and easements, 40.1 acres were either dedicated per the subdivision development process or acquired by the City of McAllen through the eminent domain process and are considered existing ROW. An additional 1.9 acres of proposed ROW would be required from six parcels, as well as 0.2 acre of permanent easements and 0.6 acre of temporary construction easements needed for anticipated construction of proposed noise barriers. The location of proposed ROW and easements are shown in the Project Plan View Map in **Appendix C**. Where drainage and irrigation syphon improvements at the Edinburg East Main Canal are proposed, a license agreement between the City of McAllen and Hidalgo County Irrigation Districts (HCIDs) No. 1, 2, and 3 would be required.

The proposed project would result in the following structure displacements at the northern project terminus near SH 107: one residential home, one mobile home, one abandoned mechanical shop, one car port, four storage sheds, and horse stables. Acquisition and relocation assistance for owners of displaced properties would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended.

The no-build alternative would not require the acquisition of ROW and no structures would be displaced.

5.1.1 Early ROW Acquisition

Of the 42 acres of ROW footprint for the proposed project, approximately 40.1 acres have been previously acquired by the City of McAllen. The earliest existing road ROW (40-foot width) within the project corridor is located between Freddy Gonzalez and SH 107, which was

dedicated with the Texas Mexican Railway Company Subdivision (Vol. 24, Pages 168-171 D.R.H.C. - 1913). Additional existing ROW along the corridor was dedicated through the subdivision process between 1993 and 2016. The city also acquired ROW from both private and public entities (e.g., HCIDs No. 1 and No. 3) by exercising its eminent domain authority. ROW from a total of 20 parcels was acquired between 2007 and 2012 after the city recognized the need to secure ROW along the corridor for public improvements (e.g., Bicentennial Sanitary Sewer Interceptor Project and the Bicentennial Boulevard Extension Project). These parcels were acquired when the Bicentennial Boulevard Extension Project was intended to be a city project, prior to obtaining federal funding. A total of 10.3 acres of ROW has been dedicated per the subdivision development process, and a total of 29.8 acres of ROW have been acquired through the eminent domain process. The City of McAllen acquired ROW in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended (see Appendix H).

5.2 Land Use

The overall setting for the proposed project is an urbanized area with vestiges of abandoned agricultural areas from its history of agricultural land use. Historic aerial photographs from 1939, 1950, 1955, 1961, and 1968 illustrate that the proposed project area and adjacent areas were largely occupied by rangeland, citrus orchards, and a small number of rural residences and farms. Within the past 50 years, several residential and commercial developments have been constructed adjacent to the proposed project area.

The following descriptions of current land use within and adjacent to the proposed project area are broken into three segments. The southern segment from Trenton Road to Frontera Road is a cleared, narrow corridor containing a two-track dirt road adjacent to residential neighborhoods and a concrete channel. The middle portion of the project area north of Frontera Road to the Edinburg East Main Canal is former agricultural land that appears to have been previously cleared and heavily disturbed. The areas adjacent to the middle portion consist of residential developments and large tract residences. The northern segment from Edinburg East Main Canal to SH 107 is a cleared corridor containing Hoehn Drive, an earthen channel, and a concrete channel. There are several commercial properties near the southern and northern project termini, which include churches, automotive repair shops, a wastewater treatment plant, oil and gas equipment, and pipe supplier companies.

The no-build alternative would not affect existing land uses within the project area.

5.3 Farmlands

The Federal Farmland Protection Policy Act of 1981 is inapplicable to both the build and no-build alternative because the project area is entirely located within an 'urbanized area' mapped by the U.S. Census Bureau, and the project would not convert any protected farmland to ROW (TxDOT, 2017f).

5.4 Utilities/Emergency Services

The proposed project would require the relocation of underground or overhead utilities in some areas. At this stage of project development, the project schematic identifies the locations of existing utilities (i.e., telephone, electricity, fiber optic cable, water, wastewater, and natural gas), but specific plans regarding utility adjustments or relocations have not been completed. Plans would be finalized at the detailed design phase of project development and coordination with utility owners on possible relocation options would take place at that time. Utility relocations would be carried out with the minimum practicable disruption in service to customers.

Construction of the build alternative would enhance the ability of emergency services to move throughout the proposed project area. Access throughout the project area would be maintained and emergency services would be minimally affected during the construction phase of the proposed project.

The no-build alternative would not affect local utilities, nor would it result in impacts to current operations of emergency services; however, emergency services would not benefit from new connectivity to the communities in the project's vicinity. Traffic patterns would remain unchanged.

5.5 Bicycle and Pedestrian Facilities

Currently, no sidewalks or designated shared use bicycle lanes exist within the proposed project area. The build alternative's design elements described in **Section 2.2** would comply with relevant federal policies that require accommodation for bicycle and pedestrian traffic.[9] The design plans include construction of a continuous sidewalk network and 14-foot outside shared use lanes to accommodate bicyclists within the project area. Additionally, any existing bicycle and pedestrian facilities along existing cross streets will be maintained.

There would be no change in pedestrian or bicycle access under the no-build alternative. Pedestrians and cyclists would continue to use the existing transportation network as it is currently provided.

5.6 Community Impacts

The build alternative would provide new connectivity to adjacent neighborhoods, schools, and other community facilities by means of a new location roadway with bicycle and pedestrian improvements where no transportation facilities currently exist. Proposed displacements are not anticipated to impact the local or regional economy.

[9] See: U.S. Department of Transportation (USDOT) Policy Statement on Bicycle and Pedestrian Accommodation (3/11/2010). *http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/policy_accom.cfm*. Accessed August 15, 2017.

Existing neighborhoods and community facilities adjacent to the proposed project area are currently separated by irrigation canals, drainage ditches, and/or tracts of vacant land. Construction of the proposed project would improve north-south connectivity for the people within the community, and would provide an additional route for surrounding neighborhoods to access community facilities (schools, parks, and worship centers). The proposed project would not adversely affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups within or adjacent to the proposed project area (TxDOT, 2017a).

The no-build alternative would not improve mobility or connectivity within the proposed project area, and would not address the purpose and need for the project.

5.6.1 Environmental Justice (EJ)

An EJ analysis was completed in accordance with EO 12898.[10] In the area surrounding the proposed project, there are 71 Census blocks, of which only 62 blocks reported a population. According to the 2010 Census, 59 blocks and all four block groups reported minority populations above 50 percent (TxDOT, 2017a). These findings are consistent with 2010 Census data for Hidalgo County that report a minority population above 50 percent, of which the predominant race is Hispanic or Latino (approximately 91 percent). Therefore, the proposed project would not result in disproportionately high and adverse impacts on minority populations within the project area.

None of the Census block groups are considered low-income, based on a comparison of the median household income of block groups within the project area compared to the Department of Health and Human Services 2018 guideline for the poverty level annual income for a family of four (i.e., $25,100).

Although the project area contains predominantly minority populations, the project would not have adverse community impacts to EJ populations. As discussed above, the proposed project would result in the displacement of one residential home, one mobile home, an abandoned mechanical shop, one car port, four storage sheds and several horse stables. However, several replacement housing options are available within the cities of McAllen and Edinburg, with similar amenities and costs, for the residential displacements. Additionally, the expected commercial and other displacements are not unique to the community, nor do they serve a specific population, and several of the structures could be relocated.

Therefore, the build alternative would not cause disproportionately high and adverse effects on minority or low-income populations, and is consistent with EO 12898. Similarly, the build alternative would not adversely affect other vulnerable members of the community, including children, the elderly, or persons with disabilities. The build alternative would beneficially impact community cohesion and availability of bicycle and pedestrian facilities.

The no-build alternative is not expected to cause disproportionately high and adverse effects to low-income populations or minority populations. However, the no-build alternative would

[10] EO 12898 (2/11/1994): Federal Actions to Address EJ in Minority Populations and Low-Income Populations; *http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf*. Accessed August 15, 2017.

make no beneficial changes to community cohesion, access and travel patterns, or bicycle and pedestrian accommodations.

5.6.2 Limited English Proficiency (LEP)

Based on the data from the 2010-2014 American Community Survey for block groups in the vicinity of the project area, the percentage of persons with LEP in the project area ranges from approximately 10 to 20 percent (TxDOT, 2017a). Overall, 2,587 people in the block groups within the project area are identified as LEP, representing approximately 19 percent of the project limit's total block group population of age five years and older. Of the LEP population identified, over 99% were identified as Spanish speakers, with five LEP individuals identified as speaking Indo-European languages. Within the proposed project area, warning signs for gas pipelines and text on a church billboard were observed in Spanish.

Accommodations will be afforded to all LEP individuals, if requested. To comply with EO 13166[11] and to ensure full and fair public participation for the proposed project, meeting notifications and display advertisements for the public meeting held on April 4, 2017, were published in both English and Spanish in *The Monitor* and *El Periodico USA*. The notices included TxDOT contact information in the event that any communication needs or special accommodations were requested. Project team members were available at the public meeting to accommodate the communication needs of individuals speaking Spanish, as necessary. Any future public involvement efforts would continue to accommodate LEP individuals in like fashion, and the City of McAllen would endeavor to accommodate any requests for language assistance, if made in a timely manner. Therefore, these steps comply with the requirements of EO 13166 as applied to the proposed project.

5.7 Visual/Aesthetics Impacts

Although the proposed project consists of the construction of a new location roadway, a network of several local streets currently traverse the surrounding area. Therefore, the addition of a new roadway is not anticipated to adversely affect the visual environment. Furthermore, the proposed project would construct a new facility with pedestrian/bicyclist friendly features. Lighting is also being proposed at all intersections within the project area and is intended to enhance visibility throughout the corridor, benefiting both motorists and pedestrians.

The no-build alternative would not alter the existing visual qualities of the project area.

5.8 Cultural Resources

This section summarizes efforts to evaluate impacts to cultural resources in accordance with the programmatic agreement regarding transportation undertakings (PA-TU) among FHWA,

[11] EO 13166 (8/11/2000): Improving Access to Services for Persons with LEP; *https://www.gpo.gov/fdsys/pkg/FR-2000-08-16/pdf/00-20938.pdf.* Accessed August 15, 2017.

TxDOT, the Texas State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation,[12] and the MOU between TxDOT and the Texas Historical Commission (THC) relating to environmental review of transportation projects (THC MOU).[13] The evaluations of archeological resources and historic-age cultural resources discussed in the two subsections below were carried out in compliance with the National Historic Preservation Act (NHPA) of 1966, as amended.[14]

5.8.1 Archeology

In January 2017, an archeological background study was prepared and reviewed by TxDOT archeologists in accordance with the PA-TU and THC MOU (TxDOT, 2017b). After reviewing the build alternative's design features, the results of previous archeological field studies, and the history of urban development in the project area, TxDOT archeologists concluded on February 8, 2017 that the proposed project would have no effect on archeological historic properties (see **Appendix G-1**). In accordance with the PA-TU and THC MOU, no further coordination regarding archeological resources is required.

The no-build alternative would not impact archeological resources in the project area.

5.8.2 Historic Properties

The evaluation of potential impacts to historic-age cultural resources was initiated for the build alternative with the preparation of a project coordination request in June 2016 (TxDOT, 2016c). From this, TxDOT determined that a historical studies reconnaissance survey would be required, leading to the preparation of a historical studies research design in October 2016. Subsequently, a historic resources survey (HRS) was conducted of the Area of Potential Effects (APE), which was set at 150 feet beyond the existing ROW and 300 feet beyond the proposed ROW and easements (see **Appendix F-1**). The HRS, completed in May 2017 (TxDOT, 2017d), examined 17 historic-age resources (built prior to 1973) that consist mainly of residential, agricultural and industrial resources and one historic district, the Louisiana-Rio Grande Canal Company Irrigation System.

The HRS report found that none of the historic-age resources within the APE considered in the 2017 HRS were found to meet the criteria for potential eligibility to be individually listed on the National Register of Historic Places (NRHP). The 2017 HRS report also examined whether the build alternative would adversely affect the Louisiana-Rio Grande Canal Company Irrigation System, which was listed on the NRHP as a historic district in 1995. The southern half of the proposed project would be constructed within the boundaries of the Louisiana-Rio Grande Canal Company Irrigation System, also known as HCID No. 2. The sub-surface stormwater drainage system of the proposed project would cross a lateral canal of HCID No. 2 in two locations and an underground irrigation pipeline of HCID No. 2 in a third location. At

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12 *PA among the FHWA, TxDOT, the Texas SHPO, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings* (2015); http://www.achp.gov/docs/TX.fhwa.implementation%20of%20fed-aid%20highway%20program%20in%20TX.%20pa.15may15.pdf. Accessed August 15, 2017.

13 *MOU with the THC regarding Environmental Review of Transportation Projects* (effective 5/16/2013), 43 TAC Rule Sections 2.259 – 2.278.

14 54 USC Sections 300101 – 307108.

the first two locations, the existing canals would be cut and excavated, a stormwater drainage pipe would be installed, and the existing concrete-lined canal would be reconstructed. At the third location, a proposed 36-inch stormwater drainage pipeline would be placed below a 16-inch HCID No. 2 pipeline. Although the proposed project would be built within the historic district, the function of the irrigation system would not be impaired, nor would it cease to exist. Therefore, the proposed project would cause no adverse effect to the NRHP-listed resource. The historic property would still convey its historic significance after the proposed project is complete TxDOT concurred with the findings and recommendations within the HRS report for the build alternative and issued a no adverse effect finding to the NRHP-listed HCID No. 2 resource. TxDOT requested concurrence from the SHPO, in accordance with NHPA Section 106 and the PA-TU. The SHPO concurred with TxDOT's determination on July 10, 2017. Maps of the HCID No. 2 historic district and documentation of coordination with the SHPO is included in **Appendix G-1**.

The no-build alternative would not affect historic resources and no coordination with the THC would be required. However, the no-build alternative is inconsistent with the purpose and need for the project in that the proposed Bicentennial Boulevard extension would not be built, and therefore would not improve connectivity between Trenton Road and SH 107.

5.9 USDOT Act Section 4(f), Land and Water Conservation Fund (LWCF) Act Section 6(f), and Texas Parks and Wildlife Code (TPWC) Chapter 26

There are no Section 6(f) properties present within the proposed project area.

The build alternative would not use any public park, recreation area, or wildlife or waterfowl refuge that is protected by Section 4(f) of the USDOT Act of 1966, as amended (hereinafter Section 4(f))[15]

However, Section 4(f) also protects public or private land of a historic site of national, state, or local significance unless it has been determined that there is no feasible and prudent alternative available,[16]and all possible planning[17] to minimize harm from such use has occurred. The construction of the proposed project within the HCID No. 2 historic district would result in impacts to a historical site of state and local significance, and would require compliance with Section 4(f). As with the approach to NHPA Section 106 compliance discussed above, TxDOT pursued compliance with Section 4(f) for impacts to the HCID No. 2 historic district. TxDOT prepared a Checklist for Section 4(f) De Minimis for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties with supporting documentation. The process for finalizing Section 4(f) documentation was completed in July 2017. TxDOT and the SHPO concurred that as a result of construction of the proposed project, the irrigation features of HCID No. 2 would continue to be served in the same capacity, and that there would not be a change to the use or function of the overall structure. Furthermore,

[15] 49 USC Section 303 and 23 USC Section 138. Section 4(f) is implemented by FHWA through regulations at 23 CFR Part 774.

[16] As defined in 23 CFR Section 774.17(h).

[17] As defined in 23 CFR Section 774.17(b).

the proposed project would not adversely affect the system's integrity of location, setting, feeling, association, design, workmanship, or materials. Therefore, the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 Code of Federal Regulations (CFR) 774. Completed Section 4(f) compliance documentation is included in **Appendix I**.

Because the proposed project area is located within the HCID No. 2 historic district and would result in a "use" of a historical site of state and local significance, Chapter 26 of the TPWC applies to the current project. The public hearing requirement of Chapter 26 of the TPWC will be conducted with the planned public hearing in spring 2018. Regarding the affected portions of the HCID No. 2 historic district, TxDOT has determined that there is no feasible and prudent alternative to the use or taking of this Chapter 26 protected land, and that the current project includes all reasonable planning to minimize harm to the land as a historic site, resulting from the use.

The no-build alternative would not have an impact on Section 4(f), Section 6(f) or Chapter 26 resources.

5.10 Water Resources

5.10.1 Clean Water Act (CWA) Section 404

An analysis of USGS topographic maps, Federal Emergency Management Agency (FEMA) maps, and field reconnaissance revealed four distinct water features within the proposed project area, predominantly within the northern part of the proposed project area (TxDOT, 2017e). These water features consist of two earthen channels (Earthen Drainage Channels 1 and 2), a concrete irrigation channel (Concrete Irrigation Channel 1), and the Edinburg East Main Canal. Descriptions of each water feature are included in the paragraphs below.

Earthen Drainage Channel 1: This large earthen channel extends in a north-south alignment parallel to the proposed roadway, to the west. During the time of the site visit, the channel contained standing water. This water feature functions as a drainage channel for surface runoff, and water appears to be conveyed into a culvert at a location just south of SH 107. This feature is managed by the City of McAllen and is also known as the "North Central Drainage Ditch."

Concrete Irrigation Channel 1/Unnamed Concrete Irrigation Canal 1: This concrete irrigation channel also extends in a north-south alignment parallel to the proposed roadway, to the east. This feature is smaller than the Earthen Drainage Channel 1, is concrete-lined, has gates in several locations along its length, and was dry at the time of the site visit. This feature is managed by HCID No. 1.

Edinburg East Main Canal: The Edinburg East Main Canal extends in an east-west alignment perpendicular to the proposed roadway. This large canal is concrete-lined, has gates in several locations along its length, and is managed by HCID No. 1 as an irrigation canal.

Earthen Drainage Channel 2: This small earthen ditch extends parallel to and along the north side of the Edinburg East Main Canal. This water feature appears to function to collect drainage for detention, and does not appear to connect to any other water features.

An Approved Jurisdictional Determination (AJD) Request was submitted to the United States Army Corps of Engineers (USACE) Galveston District to clarify the jurisdictional status of the water features. The USACE provided a response on June 9, 2017 that stated that the four water features identified are not WOUS because they were excavated wholly from uplands for the purposes of agriculture irrigation, water supply, wastewater discharge and/or stormwater detention, and as such, a Department of the Army permit is not required. Maps of the water features and documentation of coordination with the USACE is included in **Appendix G-2**.

The USACE's determination would also apply to the concrete irrigation channel network belonging to HCID No. 2, where impacts were previously discussed in **Section 5.8.2**. Because the HCID No. 2 network was excavated wholly from uplands for the purposes of wastewater discharge and/or storm water detention, the channel network is not subject to Section 404 jurisdiction and a USACE permit would not be required for improvements proposed within these channels.

Neither the build nor the no-build alternative would result in impacts to WOUS and no permitting would be required by the USACE.

5.10.2 Clean Water Act Section 401

The proposed project does not involve discharge into a WOUS. Therefore Section 401 of the CWA, certification of compliance with water quality standards issued by the state water quality agency, does not apply to either the build or the no-build alternative.

5.10.3 Executive Order 11990 Wetlands

In addition to the regulation of wetlands that meet the criteria of Section 404 as WOUS, Executive policy issued as EO 11990[18] seeks to protect a broader range of wetland environments. Under EO 11990, wetlands are defined as "those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Unlike Section 404, the definition of wetlands in EO 11990 does not consider the relationship of wetlands to any WOUS or tributaries to them, but applies to areas with vegetation adapted to wetland conditions wherever such areas may be found. However, as the intent of EO 11990 is clearly to preserve the contributions of "natural systems" for uses by wildlife, public recreation, scientific study, public health and safety, water supply, and other uses, the existence of minor wetland areas within highway bar ditches do not meet the letter or spirit of EO 11990.

During field investigations for the proposed project, the project construction footprint was examined for areas that would meet the definition of wetlands under EO 11990. No area was observed that supports wetland vegetation. Accordingly, the requirements of EO 11990 have

[18] EO 11990 – Protection of Wetlands (42 Federal Register 26961, May 24, 1977).

been met, and neither the build nor the no-build alternative would have an impact on wetlands.

5.10.4 Rivers and Harbors Act

The proposed project does not involve the construction or modification, including changes to lighting, of a bridge or causeway across a navigable WOUS, nor does it involve work in a navigable WOUS. Therefore, Sections 9 and 10 of the Rivers and Harbors Act would not apply to the build or no-build alternative.

5.10.5 Clean Water Act Section 303(d)

Runoff from this project would not discharge directly into a Section 303 (d) listed threatened or impaired water, or into a stream within 5 miles upstream of a Section 303 (d) listed threatened or impaired water. The 2014 303 (d) list was utilized in this assessment. Therefore, neither the build nor the no-build alternative would have an impact on Section 303 (d) listed threatened or impaired waters.

5.10.6 Clean Water Act Section 402

Pursuant to Section 402 of the CWA, TxDOT would comply with the TCEQ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) during construction of the build alternative. This would be considered a large construction activity under the CGP because it is expected to disturb more than 5 acres of land. To comply with the CGP, TxDOT would require the construction contractor to prepare and implement Storm Water Pollution Prevention Plan, post a construction site notice, and submit a notice of intent and associated fee to TCEQ (TxDOT, 2017e). As the proposed project is located within the boundaries of the regulated Municipal Separate Storm Sewer System (MS4) for the City of McAllen, a NOI would be submitted intent to the MS4 operator and the contractor would be required to comply with applicable MS4 requirements.

Under the no-build alternative, there would be no earth disturbance and compliance with the TPDES CGP would not be required.

5.10.7 Floodplains

The proposed project is not located within a FEMA designated 100-year-floodplain. Therefore, the requirements of EO 11988[19] regarding floodplain management would not apply (TxDOT, 2017e), and coordination with the local Floodplain Administrator would not be required. Therefore, neither the build nor the no-build alternative would have an impact on floodplains.

5.10.8 Wild and Scenic Rivers

The proposed project would not impact the segment of the Rio Grande that lies within the U.S., the one river segment in Texas that is designated as wild or scenic under the Wild and Scenic Rivers Act. Therefore, neither the build nor the no-build alternative would impact wild or scenic rivers.

[19] EO 11988 – *Floodplain Management* (42 Federal Register 26951, 5/24/1977).

5.10.9 Coastal Barrier Resources

The proposed project is not located within a Coastal Barrier Resources System boundary. Therefore, neither the build nor the no-build alternative would impact coastal barrier resources.

5.10.10 Coastal Zone Management

The proposed project is not located within the Texas Coastal Management Plan boundary. Therefore, neither the build nor the no-build alternative would require a consistency determination.

5.10.11 Edwards Aquifer

Because the proposed project would not be constructed over the recharge or contributing zones of the Edwards Aquifer, neither the build nor the no-build alternative would be subject to regulation under TCEQ's Edwards Aquifer rules.

5.10.12 International Boundary and Water Commission

The proposed project does not cross or encroach upon the floodway of the International Boundary and Water Commission (IBWC) ROW or an IBWC flood control project. Therefore, neither the build nor the no-build alternative would require coordination with the IBWC.

5.10.13 Drinking Water Systems

According to the Texas Water Department Board's Groundwater Viewer, no water wells are located within the project footprint. Therefore, neither the build nor the no-build alternative would impact wells or source water protection areas.

5.11 Biological Resources

5.11.1 Texas Parks and Wildlife Coordination

The inventory and evaluation of vegetation and potential impacts on wildlife for TxDOT projects is governed by a MOU with the Texas Parks and Wildlife Department (TPWD), [20]and implementing programmatic agreements (PAs).[21] In accordance with the MOU, a Biological Evaluation Form and a Tier I Site Assessment was prepared to determine whether early coordination of the proposed project with TPWD would be required (TxDOT, 2017f and 2017g).

The field biological survey of the proposed project corridor indicated that it is predominantly comprised of urban landscapes (e.g., roadways and mowed and maintained grasses within transportation corridors), earthen and concrete drainage channels, and previously-cultivated agricultural areas that are no longer under cultivation. Unmaintained herbaceous vegetation dominated by grasses is also present within the project area, mostly to the south of the Edinburg East Main Canal, a concrete lined drainage channel. Riparian vegetation was

[20] The TxDOT-TPWD MOU was effective as of 9/1/2013, and is in 43 TAC Sections 2.201 – 2.214.
[21] These PAs between TxDOT and TPWD under the 2013 MOU include the Threshold Table PA (2017) and the Best Management Practices (BMPs) PA (2017). See: *http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/ecological-resources.html.* Accessed August 15, 2017.

identified in one of the earthen drainage channels north of the Edinburg East Main Canal. Several brush-dominated areas were identified in the field survey of the project area reflect regrowth after agriculture practices were discontinued, and generally include species such as: mesquite, acacia, hackberry, parkinsonian, palm and palmetto species, and prickly pear cactus.

In general, unpaved areas within the project area are typically grass-dominated and maintained by periodic mowing, and unmaintained vegetated areas occur in former agricultural fields and are fragmented by roads and irrigation canals. Areas adjacent to the project area consist of abandoned agricultural areas, residential neighborhoods, and commercial and industrial businesses.

Based on the MOU and observations made during the site investigation, it was determined that vegetation impacts to the Tallgrass Prairie, Grassland, and Riparian TPWD Ecological Mapping Systems of Texas (EMST) land cover vegetation types would exceed the threshold for coordination with the TPWD. Additionally, coordination with TPWD was triggered because several insect and plant Species of Greatest Conservation Need (SGCN) do not have best management practices (BMPs) prescribed in the TxDOT-TPWD PA for BMPs designed to avoid or minimize impacts to rare species.[22] Early coordination of the Biological Evaluation Form and Tier I Site Assessment Form with the TPWD was conducted and completed on June 9, 2017. Documentation of coordination with the TPWD is included in **Appendix G-3**.

Under the no-build alternative, existing vegetation would not be impacted and coordination with TPWD would not be required.

5.11.2 Impacts on Vegetation

The proposed project occurs atop an ancient river delta, and is characterized by nearly flat terrain with sandy soils. There is very little of the pre-historic era scrub-grass habitat that remains in the area, due to widespread agricultural use of the land for over a century followed by extensive urbanization. Field surveys of vegetation within the proposed project area were conducted to identify terrestrial or aquatic communities that could support wildlife or rare plant species.

An area of approximately 50 acres was assessed for impacts to vegetation, which encompassed the 42.8-acre existing and proposed ROW/easement footprint. According to TPWD's EMST GIS land cover data and field visits, the proposed project would impact approximately 12.9 acres of Disturbed Prairie; 6.9 acres of Tallgrass Prairie, Grassland; 3.3 acres of Agriculture; and 1.3 acres of Riparian vegetation. The remaining 25.5 acres are classified as Urban.

Under the no-build alternative, no impacts to vegetation would occur.

[22] TxDOT-TPWD Best Management Practices (BMPs) PA (2017). See: *http://www.txdot.gov/inside-txdot/division/environmental/compliance-toolkits/ecological-resources.html.* Accessed August 15, 2017.

5.11.3 Executive Order on Invasive Species

The proposed project is subject to and would comply with federal EO 13112[23] on Invasive Species. TxDOT implements this EO on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

Under the no-build alternative, existing vegetation would not be impacted.

5.11.4 Executive Memorandum on Environmentally and Economically Beneficial Landscaping

This project is subject to and will comply with the federal Executive Memorandum on Environmentally and Economically Beneficial Landscaping,[24] effective April 26, 1994. TxDOT implements this Executive Memorandum on a programmatic basis through its Roadside Vegetation Management Manual and Landscape and Aesthetics Design Manual.

Under the no-build alternative, existing vegetation would not be impacted.

5.11.5 Impacts to Commonly-occurring Wildlife

The earthen and concrete irrigation channels located within the proposed project area may contain suitable habitat for commonly-occurring species that are adapted to survival in wet environments. Similarly, currently unmaintained areas dominated by woody plants or herbaceous species may provide suitable habitat for birds and terrestrial wildlife that are particularly adapted to survival in or near fragmented habitat found in generally urbanized areas such as the project area (e.g., squirrels, rabbits, frogs, and toads; and bird species such as pigeons and grackles).

Based on field observations of existing habitat in the project area, it is expected that the proposed project would not result in substantial adverse effects to commonly-occurring wildlife species. This is because most of the habitat within the project footprint is in close proximity to regular human activity, in addition to being subject to mowing or other land maintenance work. These circumstances, combined with widespread habitat fragmentation by roads, drainage channels, and developed residential and commercial areas, are indications that the species currently inhabiting the project area would be capable of migrating away from the construction area to avoid harm. Potential impacts to rare species protected by federal or state laws, TPWD-designated SGCNs, and other unprotected species of concern are discussed **Section 5.11.11**.

Under the no-build alternative, commonly-occurring wildlife species and their habitats would not be impacted.

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[23] EO 13112 – Invasive Species (64 Federal Register 6183-6186, February 8, 1999). *http://www.gpo.gov/fdsys/pkg/FR-1999-02-08/pdf/99-3184.pdf.* Accessed August 16, 2017

[24] Executive Memorandum on Environmentally Beneficial Landscaping (42 Federal Register 26961, 5/24/1977). *http://environment.fhwa.dot.gov/guidebook/documents/042694em.asp.* Accessed August 16, 2017.

5.11.6 Migratory Bird Treaty Act

Construction-related activities of the proposed project are subject to the provisions of the Migratory Bird Treaty Act (MBTA) (TxDOT, 2017f). The field assessments did not find evidence of active nests, but migratory bird species such as northern mockingbird (*Mimus polyglottos*), green heron (*Butorides virescens*), and dove (*Streptopelia* spp.*)* and grackle (*Quiscalus* spp.*)* were observed within the proposed project area. In the event that migratory birds arrive in the project area to breed during construction of the proposed project, appropriate measures would be taken to avoid adverse impacts. Phasing of work and preventative measures would be employed to avoid the take of migratory birds, their occupied nests, eggs, or young, in accordance with the MBTA. Bird BMPs would be followed to minimize impacts on avian species. Bird BMPs include not disturbing, destroying, or removing active nests, including those of ground-nesting birds, during the nesting season; avoiding the removal of unoccupied, inactive nests, as practicable; preventing the establishment of active nests during the nesting season on facilities and structures proposed for replacement or repair; and not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit.

The no-build alternative would not affect migratory birds protected under the MBTA.

5.11.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1958 requires that federal agencies obtain comments from U.S. Fish and Wildlife Service (USFWS) and TPWD whenever a project involves impounding, diverting, or deepening a stream channel or other body of water. The proposed project would not impact WOUS or wetlands and a Section 404 permit would not be required. Therefore, neither the build nor the no-build alternative would be subject to regulation under the FWCA.

5.11.8 Bald and Golden Eagle Protection Act of 2007

The proposed project area is comprised of predominantly urban landscapes and does not contain suitable foraging or nesting habitat for bald or golden eagles (refer to **Sections 5.2**, **5.10.1**, and **5.11.1** for descriptions of land use, vegetation, and habitat). The proposed project does not cross any major streams or large water bodies. Furthermore, the Marte R. Gomez Reservoir is the largest water body proximal to the project area and is located more than 40 miles west of it. The available water habitat within the project corridor (the earthen channels and concrete irrigation channels) is not of sufficient quality or size to attract bald or golden eagles, and no evidence of bald or golden eagles (e.g., sightings, nests, or remnant nests) was observed by the biologist during the field biological assessment.

Therefore, neither the build nor the no-build alternative would impact bald or golden eagles.

5.11.9 Magnuson-Stevens Fishery Conservation Management Act

Essential fish habitat is defined by the Magnuson-Stevens Fishery Conservation and Management Act as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Tidally influenced waters do not occur within the project area.

Therefore, neither the build nor the no-build alternative would require coordination with National Marine Fisheries Service.

5.11.10 Marine Mammal Protection Act

Marine mammals are protected under the Marine Mammal Protection Act. Because the proposed project is not located along the Texas coast, neither the build nor the no-build alternative would impact marine mammals.

5.11.11 Threatened, Endangered, and Candidate Species, and Other Rare Species

Relatively rare wildlife that may potentially utilize land cover types within the project area for foraging or nesting habitat include federal or state-listed threatened or endangered species, along with other TPWD-designated rare species. Field observations and aerial photography analysis of available habitat indicate that there is no suitable habitat for federally-listed threatened, endangered, or candidate species within the project area (TxDOT, 2017g). The observations and rationale for reaching this and other conclusions regarding potential impacts to rare species are included in a Species Impact Table that is part of the Biological Evaluation Form and Tier I Site Assessment. The Species Impact Table includes effect and impact determinations for all federal- and state-listed species, respectively, in addition to SGCNs and other TPWD-designated species of concern that could be present within the proposed project area. The Species Impact Table was updated in January 2018, due to the amount of time that has elapsed since the initial site visits were conducted and this EA was prepared, to include all species listed on the latest USFWS and TPWD threatened and endangered species lists. However, species effect and impact determinations remained consistent with the original assessment made in 2017. Therefore, no additional coordination with TPWD is required. The updated Species Impact Table is included in an unpublished *Addendum to the February 2017 Biological Evaluation Form and Tier I Site Assessment* that is on file with the TxDOT Pharr District.

Based on the biological assessment described above, 16 state-listed species, SGCNs, or other unprotected but rare species have potential habitat within the proposed project area. Accordingly, the potential exists that the proposed project may impact any of these species. **Table 1** lists the species and the appropriate BMPs that would be included in construction plans in an effort to avoid and minimize impacts to these species. Although the proposed project may result in impacts to potentially suitable habitat for the species listed in the table, the project is not anticipated to result in substantial harm to any of these species. As discussed in **Section 5.11.5**, habitat within the proposed project area is highly fragmented and is disrupted by frequent human activity. It is expected that any adverse impacts that may occur would be to individual animals or small groups, and would be incidental in nature. Neither the build nor the no-build alternative would be expected to adversely impact any protected species or rare species identified by TPWD as species of concern.

Table 1. Rare Species and BMPs to Avoid/Minimize Impacts

Species	State Status	BMPs*
Black-spotted newt *(Notophthalmus meridionalis)*	Threatened	Water Quality BMPs, Amphibian BMPs
Sheep frog *(Hypopachus variolosus)*	Threatened	Species-specific BMPs, Water Quality BMPs, Amphibian BMPs
South Texas siren (large form) (*Siren sp 1*)	Threatened	Species-specific BMPs, Water Quality BMPs, Amphibian BMPs
White-lipped frog *(Leptodactylus fragilis)*	Threatened	Water Quality BMPs, Amphibian BMPs
Audubon's oriole *(Icterus graduacauda audubonii)*	SGCN	Bird BMPs
Western burrowing owl *(Athene cunicularia hypugaea)*	SGCN	Bird BMPs
Wood stork *(Mycteria americana)*	Threatened	Bird BMPs
Plains spotted skunk *(Spilogale putorius interrupta)*	SGCN	Species-specific BMPs
Southern yellow bat *(Lasiurus ega)*	Threatened	Bat BMPs
Spot-tailed earless lizard *(Holbrookia lacerata)*	SGCN	Terrestrial Reptile BMPs
Texas indigo snake *(Drymarchon melanurus erebennus)*	Threatened	Terrestrial Reptile BMPs
Neojuvenile tiger beetle *(Cicindela obsoleta neojuvenillis)*	SGCN	No PA BMP; use recommended species BMP*
Subtropical blue-black tiger beetle *(Cicindela nigrocoerulea subtropica)*	SGCN	No PA BMP; use recommended species BMP*
Tiger beetle *(Tetracha affinis angustata)*	Species of Concern	No PA BMP; use recommended species BMP*
Large selenia *(Selenia grandis)*	SGCN	No PA BMP; use recommended species BMP*
Siler's huaco *(Manfreda sileri)*	SGCN	No PA BMP; use recommended species BMP*

Note:
*Unless otherwise indicated, all BMPs are prescribed in the TxDOT-TPWD BMPs PA. The following recommended BMP would apply to the five species in the table which are not included in the BMP PA: "Inform contractor that this species may occur in the project area and to avoid harm to this species to the extent practicable."

5.12 Air Quality

This section reviews the proposed project in relation to various environmental policies affecting air quality, and summarizes the detailed information contained in the Air Quality Technical Report (TxDOT, 2016h). Because the FHWA released Interim Mobile Source Air Toxics (MSAT) Guidance on October 18, 2016 after the submittal of the Air Quality Technical Report, the following MSAT discussion in **Section 5.12.3** includes the revised qualitative MSAT language not initially included in the technical report.

Under the no-build alternative, there would be no change in air quality impacts (adverse or beneficial) relative to the existing condition.

5.12.1 Transportation Conformity, Hot Spot Analysis and Congestion Management Process

The proposed project is located in Hidalgo County, which is in an area in attainment or unclassifiable for all national ambient air quality standards; therefore, the transportation conformity rules do not apply. As a result, neither a hot spot analysis nor a project level congestion management process is required.

5.12.2 Carbon Monoxide (CO) Traffic Air Quality Analysis (TAQA)

AADT data for 2017 and 2037 (20-year period) is 7,800 vpd and 10,900 vpd, respectively. A prior TxDOT modeling study and previous analyses of similar projects demonstrated that it is unlikely that a CO standard would ever be exceeded as a result of any project with an AADT below 140,000 vpd. Therefore, a TAQA was not required.

5.12.3 Mobile Source Air Toxics Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS)[25]. In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA)[26]. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSAT, the list is subject to change and may be adjusted in consideration of future EPA rules.

Motor Vehicle Emissions Simulator (MOVES)

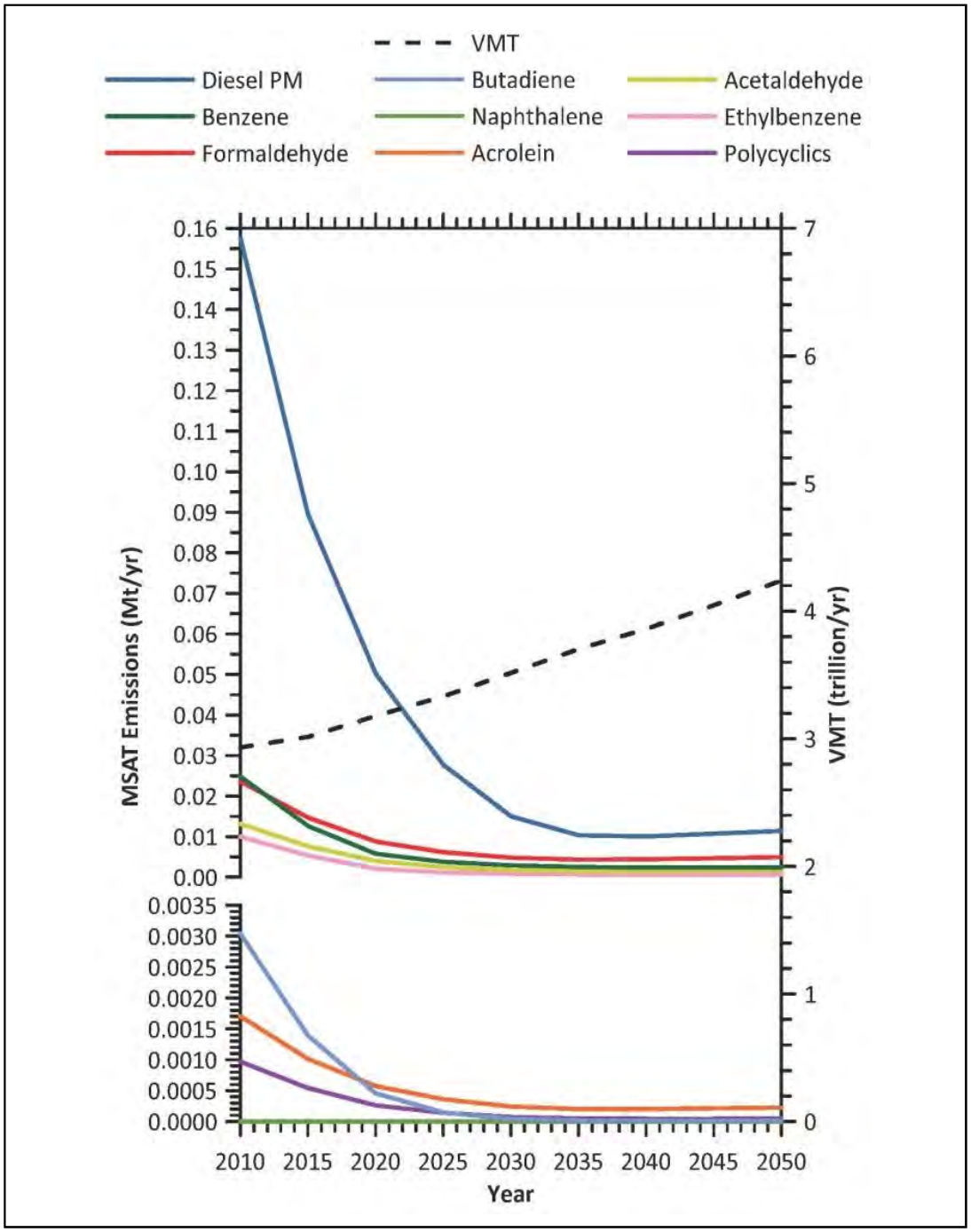
According to EPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010. These new emissions data are for light- and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles travelled (VMT) data. MOVES2014 incorporates the effects of three new Federal emissions standard rules not included in MOVES2010. These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014–2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017–2025 (79 FR 60344).

[25] See: *http://www.epa.gov/iris/*.

[26] See: *https://www.epa.gov/national-air-toxics-assessment*.

Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 *MOVES2014a Questions and Answers Guide*, EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014. Using EPA's MOVES2014a model, as shown in **Figure 1**, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 1. Projected National MSAT Emissions Trends for Vehicles Operating on Roadways (2010 – 2050)



Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.
Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorological, and other factors.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project level decision-making within the context of the NEPA. The FHWA, EPA, Health Effects Institute (HEI), and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

Project-Specific MSAT Information

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*[27].

For the build alternative, the amount of MSAT emitted would be proportional to the VMT assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the build alternative is slightly higher than that for the no-build alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the roadway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050[28]. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates,

[27] See: *http://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.pdf*

[28] Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016.

and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the build alternative would have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under the build alternative than the no-build alternative. The localized increases in MSAT concentrations would likely be most pronounced along the new location roadway sections that would be built between Trenton Road and Frontera Avenue. However, the magnitude and the duration of these potential increases compared to the no-build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the build alternative could be higher relative to the no-build alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT would be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. The EPA is the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain IRIS[29], which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects".[29] Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including HEI. Two HEI studies are summarized in Appendix D of FHWA's *Interim*

Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in

[29] See: *http://www.epa.gov/iris/*.

occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations[30] in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI.[31] As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (EPA IRIS database, Diesel Engine Exhaust, Section II.C.[32]

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some

[30] See: HEI, *https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects*.
[31] See: *https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects*
[32] See: *https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0642.htm#quainhal*.

cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.[33]

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

5.12.4 Construction Air Emissions

During the construction phase of the build alternative, temporary increases in PM and MSAT emissions may occur from construction activities. The primary construction-related emissions of PM are fugitive dust from site preparation, and the primary construction-related emissions of MSAT are diesel PM from diesel-powered construction equipment and vehicles. The potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures contained in standard specifications, as appropriate. However, considering the temporary and transient nature of construction-related emissions, the use of fugitive dust control measures, and compliance with applicable regulatory requirements; it is not anticipated that emissions from construction of this project will have any substantial impact on air quality in the area.

The no-build alternative would not result in construction activities; therefore, there would be no temporary increases in PM and MSAT emissions.

5.13 Hazardous Materials

Construction of the proposed project would include installation of a new storm sewer system, removal or modification of existing irrigation canals, and other earth-moving activities. The proposed project would also result in the displacement of one residential home and an abandoned mechanical shop. Project planning includes an assessment of the risk that such activities pose from hazardous materials and substances from past human activities within or near the proposed project. Therefore, the project team conducted a hazardous materials site visit. The site visit was limited to areas publicly accessible from the existing ROW. A hazardous materials ISA was then completed in January 2017 to document possible sources of hazardous materials and assess the level of potential risk for each identified site (TxDOT, 2017i). The ISA was prepared in accordance with TxDOT protocols for assessing risks from hazardous materials.

[33] See: *https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf*

The site visit and investigation of potential hazardous materials sites did not disclose any observable hazardous materials issues. The ISA regulatory database search identified a total of 18 hazardous materials database records for six sites. An evaluation of database search results and TCEQ Online records, in addition to observations taken during the hazardous materials site visit, found that all of the site-specific hazardous materials issues represent no or low risk potential for impacts.

Because the proposed project would result in the demolition of structures (e.g., the residential home and abandoned mechanical shop near SH 107) located within the proposed ROW, the structures would be assessed and mitigated for asbestos as needed, following the ROW acquisition process in accordance with the *TxDOT ROW Manual ROW Vol. 6 Miscellaneous – Chapter 1, Section 5*[34].

The no-build alternative would not cause any ground-disturbing activity; therefore, there would be no project-related hazardous material impacts.

5.14 Traffic Noise

A traffic noise analysis was performed for the build alternative in accordance with TxDOT's (FHWA-approved) guidelines.[35] Sound from highway traffic is generated primarily from a vehicle's tires, engine, and exhaust, and is commonly measured in decibels (dB). Sound occurs over a wide range of frequencies, but the human ear can detect sounds only within a certain range of high and low frequencies. Therefore, traffic noise modelling for roadway projects is adjusted to approximate the way an average person hears traffic sounds, and this adjustment is called A-weighting (expressed as 'dB(A)'). In addition, because traffic sound levels are never constant due to the changing number, type, and speed of vehicles, a single value is used to represent the average or equivalent sound level, and is expressed as 'Leq.' These terms are used to report the results of the noise analysis presented in the Traffic Noise Technical Report (TxDOT, 2017j). The remainder of this discussion of traffic noise impacts summarizes the information contained in the Traffic Noise Technical Report. The Traffic Noise Technical Report is available for review at the TxDOT Pharr District office, upon request, and includes additional detailed data and maps not included in this EA.

The traffic noise modelling analysis first identified land use activity areas adjacent to the existing and proposed ROW for which the FHWA has established Noise Abatement Criteria (NAC) that are summarized in **Table 2**.

[34] TxDOT ROW Manual ROW Vol. 6 Miscellaneous – Chapter 1, Section 5 (2010); http://onlinemanuals.txdot.gov/txdotmanuals/mis/mis.pdf. Accessed December 11, 2017.

[35] TxDOT ROW Manual ROW Vol. 6 Miscellaneous – Chapter 1, Section 5 (2010); *http://onlinemanuals.txdot.gov/txdotmanuals/mis/mis.pdf*. Accessed December 11, 2017.

Table 2. FHWA Noise Abatement Criteria

Activity Category	FHWA dB(A) Leq	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

Source:
TxDOT's FHWA-approved 2011 *Guidelines for Analysis and Abatement of Roadway Traffic Noise*.

For the build alternative, ambient noise level measurements were collected at 110 locations along the proposed project area. After the 110 modeled noise receivers were analyzed, that number was pared down to 45 representative noise receivers which were placed on residential properties in areas of frequent outside activity, such as backyards. The resulting 45 representative noise receivers are those with similar noise levels, NAC activity categories, and geographic locations. Representative noise receiver locations are shown in **Appendix F-2**. The existing and future traffic volumes, distances from receivers to roadways, and elevations were also entered into the Traffic Noise Model that was then used to predict existing and future noise levels. The Traffic Noise Model results indicated that the proposed project would result in traffic noise impacts at 21 of the 45 receivers.

As the proposed project would result in traffic noise impacts, noise abatement options were considered and a barrier analysis was conducted. Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at greater than 50 percent of impacted, first row receivers by at least 5 dB(A); and to be "reasonable," it must not exceed the cost-effectiveness criterion of $25,000 for each receiver that would benefit by a reduction of at least 5 dB(A) and the abatement measure must be able to reduce the noise level for at least one impacted, first row receiver by at least 7 dB(A).

The traffic noise analysis found that four noise barriers 7-10 feet in height appear to be reasonable and feasible for 18 receivers representing single-family residences (i.e., noise receivers R1-R5, R10-R15, R33-R36, and R41-R43). **Table 3** below includes details about each of the proposed traffic noise barriers, and the 18 benefited receivers are shown in green in **Appendix F-2**.

Table 3. Traffic Noise Barriers Proposed for Project Design

Barrier	Location[1]	Representative Receivers	Total # Single-Family Residences Benefited	Length (feet)	Height (feet)	Total Cost[2]	$/Benefited Receiver
1	Between Trenton Road and Auburn Avenue (Approx. Station 7+50 to 27+25)	R1 through R5	24	1,980	8	$285,120	$11,880
2	Between Auburn Avenue and Frontera Road (Approx. Station 27+75 to Station 49+25)	R10 through R15	31	2,145	8	$308,880	$9,964
3	La Floresta Subdivision south of the Edinburg East Main Canal (Approx. Station 78+40 to Station 91+50)	R33 through R36	10	1,330	7	$167,580	$16,758
4	Triple B Mobile Park south of Sprague Road (Approx. Station 117+90 to Station 127+75)	R41 through R43	9	995	10	$179,100	$19,900
	Total	**18**	**74**	**6,450**	**—**	**$940,680**	**—**

Notes:
1) Barriers 1 through 3 would be located to the west and adjacent to the proposed project area. Barrier 4 would be located to the east and adjacent to the proposed project area.
2) The total cost was estimated using $18 per square foot in accordance with TxDOT's FHWA-approved 2011 *Guidelines for Analysis and Abatement of Roadway Traffic Noise*.

The evaluation of noise barriers for the remaining three receivers with noise impacts determined that a barrier would either not achieve the minimum "feasible" reduction of 5 dB(A) or the design goal noise reduction of 7 dB(A), or would restrict access to existing properties and obstruct maintenance activities. Accordingly, noise abatement measures for these noise receivers are not recommended.

Any subsequent project design changes may require a re-evaluation of this preliminary noise barrier proposal. Because noise barriers are proposed, a traffic noise workshop would be held in late spring/early summer 2018. The final decision to construct the proposed noise barriers would not be made until completion of the project design, utility evaluation, and polling of adjacent property owners.

A copy of the traffic noise analysis will be made available to public officials. On the date of approval of the final version of this document (Date of Public Knowledge), FHWA and TxDOT

are no longer responsible for providing noise abatement for new development adjacent to the project.

To avoid noise impacts that may result from future development of properties adjacent to the proposed project, local officials responsible for land use control programs must ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the following predicted (2037) noise impact contours shown in **Table 4**.

Table 4. Traffic Noise Contours dB(A) Leq

Location[1]	Land Use (NAC Category)	Impact Contour [dB(A) Leq]	Distance from ROW (feet)
East of Proposed Bicentennial Boulevard: 400 feet south of Auburn Avenue	B and C	66	10
	E	71	ROW
East of Proposed Bicentennial Boulevard: 200 feet north of Auburn Avenue	B and C	66	20
	E	71	ROW
East of Proposed Bicentennial Boulevard: 400 feet south of Northgate Lane	B and C	66	20
	E	71	ROW
East of Proposed Bicentennial Boulevard: 300 feet north of Northgate Lane	B and C	66	20
	E	71	ROW
East of Proposed Bicentennial Boulevard: 850 feet north of Northgate Dr.	B and C	66	ROW
	E	71	ROW
East of Proposed Bicentennial Boulevard: 600 feet north of Freddy Gonzales Drive	B and C	66	ROW
	E	71	ROW
East of Proposed Bicentennial Boulevard: 1,000 feet north of Sprague Road	B and C	66	ROW
	E	71	ROW

Note:
The undeveloped areas identified above were based on building permit research and field verification conducted in February 2017. Permit research was conducted using online data from the city of McAllen and Hidalgo County. Research was based on available online address information from appraisal district data.

The no-build alternative would not affect noise levels within the project area. Traffic noise levels may increase on adjacent roadways due to future increases in traffic, but traffic noise levels would not increase as a result of the proposed, new location roadway if it is not constructed.

5.15 Induced Growth

In accordance with TxDOT guidance,[36] an analysis was completed to assess whether the build alternative would likely result in induced growth impacts (TxDOT, 2017k). The planning judgment methodology was used as the framework for the analysis. Accordingly, City of McAllen and City of Edinburg professional planners were consulted to obtain input relevant to defining the build alternative's Area of Influence (AOI), as well as current planning documents, and other data relevant to the analysis of the proposed project's indirect impacts and induced growth impacts. This approach was augmented by the use of cartographic techniques that applied various GIS thematic mapping layers to assist in evaluating the AOI, which comprises a total of 1,025 acres. Such thematic overlays included current and historic aerial photography, environmental constraints data such as land use and ownership, cultural resources, natural resources, and socio-economic data. Additionally, knowledge of the project area's planning context, municipal goals, and urban trends in the area facilitated the induced growth indirect impacts analysis.

The City of Edinburg planners did not identify any areas within the AOI that would likely be developed or redeveloped due to the proposed project. Input from the City of McAllen and results of the induced growth analysis indicate that the build alternative would be reasonably likely to lead to induced growth affecting 27 areas ranging in size from 0.6 acre to 54 acres, for a total of 198.5 acres (see **Appendix F-3**). The following types of development would result from the areas of potential induced growth: 174 acres of residential development and 25 acres of commercial development.

The areas of expected induced growth are comprised of the following land uses: farmland, brushland, pastureland, vacant, residential, commercial, and mixed-use. Any resource/issue assessed for direct impacts were screened for potential impacts resulting from the project-induced land use conversion. Based on review of aerial photography, USGS topographic maps, database searches, and direct impact analyses, it was concluded that there are no water resources, 100-year floodplains, protected species habitat, cultural resources, or section 4(f) and 6(f) properties within the areas of project-induced growth impacts. In addition, such project-induced growth impacts are considered a positive benefit for the communities surrounding the proposed project. However, the results of this analysis indicate that vegetation and wildlife habitat would be adversely affected by project-induced growth.

Impacts to vegetation and wildlife habitat total 169 acres and are comprised of the following TPWD EMST land cover types: 85.9 acres of Disturbed Prairie; 46.6 acres of Tallgrass Prairie, Grassland; 28.5 acres of Agriculture; and 8.0 acres of Scrub, Thornscrub, Shrubland. These impacts total approximately 29.2 percent of the resource in the AOI.

Wildlife that may utilize the previously discussed land cover types for food and habitat include federal or state-listed threatened or endangered species, such as the sheep frog (*Hypopachus variolosus*), South Texas siren (large form) (*Siren sp 1*), white-lipped frog (*Leptodactylus fragilis*) wood stork (*Mycteria americana*), southern yellow bat (*Lasiurus ega*) and Texas indigo snake (*Drymarchon melanurus erebennus*). SGCNs that may inhabit the project area include the neojuvenile tiger beetle (*Cicindela obsoleta neojuvenillis*), subtropical blue-black tiger

beetle (*Cicindela nigrocoerulea subtropica*), and Siler's huaco (*Manfreda sileri*). Many other species, such as the Audubon's oriole (*Icterus graduacauda audubonii*), western burrowing owl (*Athene cunicularia hypugaea*), tiger beetle (*Tetracha affinis angustata*), plains spotted skunk (*Spilogale putorius interrupta*), and spot-tailed earless lizard (*Holbrookia lacerata*) may also utilize the previously discussed land cover types identified within the AOI.

The majority of the land subject to induced development is located in an urbanized or otherwise previously disturbed environment, bordered by major roadways and existing development. Current and historic land use make it unlikely that high quality vegetation and wildlife habitat is present within the AOI. As a result, impacts to vegetation and wildlife habitat by induced growth are not considered substantial.

The extent to which mitigation would be warranted for project-induced growth was considered in the indirect impacts analysis. Land development activities that may be induced by the proposed project are most likely to be private ventures regulated by the City of McAllen's and City of Edinburg's land development ordinances. Such regulation addresses environmental and social impacts by requiring mitigation as part of site design and construction such that development is in accordance with overall city objectives. Any mitigation for project-induced land development impacts, which may arise after construction of the proposed project, would be overseen by the Cities of McAllen and Edinburg and would be the responsibility of the site developer (TxDOT, 2017k).

Under the no-build alternative, induced growth impacts would not occur and existing vegetation and wildlife habitat would not be impacted.

5.16 Cumulative Impacts

An assessment of potential cumulative impacts of the build alternative was made in accordance with TxDOT guidance documents.[37] The purpose of a cumulative impacts analysis is to view the direct and indirect impacts of the proposed project within the larger context of past, present, and future activities that are independent of the proposed project, but which are likely to affect the same resources in the future. Environmental and social resources are evaluated from the standpoint of relative abundance among similar resources within a larger geographic area. Broadening the view of resource impacts in this way allows the decision maker an insight into the magnitude of project-related impacts in light of the overall health and abundance of selected resources.

In essence, a cumulative impacts evaluation first paints a conceptual picture of the existing or 'baseline' condition of each resource which is based on historical information and an assessment of the current condition of the resource. However, if a project does not cause direct or indirect adverse impacts to a resource or social issue, it cannot contribute to a cumulative impact on that resource. Application of the initial step in the cumulative impacts analysis focused on those resources that are substantially affected by the proposed project as a result of direct and/or indirect impacts, resources that are in poor or declining health, or

resources that are particularly scarce. Whether a resource is substantially affected by the proposed project is a function of the existing abundance and condition of the resource and includes resources that are at risk, potentially from other actions, even if the proposed project impacts are relatively small. The foregoing criteria were applied individually to all of the topics considered throughout the analysis of direct impacts and indirect impacts for the proposed project.

The results of the initial screening step of the cumulative impacts analysis led to the conclusion that vegetation and wildlife habitat is a candidate for a cumulative impacts analysis. The analysis indicated that the cumulative impacts on vegetation and wildlife habitat resulting from 24.4 acres of direct impacts, 169.0 acres from indirect impacts, and 114.6 acres of impacts to vegetation (non-urban land cover) from other reasonably foreseeable actions would total 308.8 acres and would affect approximately seven percent of the resources within the RSA.

While cumulative impacts would affect approximately 308.8 acres of vegetation and potential wildlife habitat, it is likely that most of the wildlife that reside in the RSA, which is 49 percent urban, are accustomed to urban landscape or would migrate to other areas of available habitat. The City of McAllen's Code of Ordinances includes construction standards which dictate that users within public ROW shall use reasonable efforts to avoid or minimize the disturbance of trees, shrubs, and ground cover. The Code of Ordinances also includes a chapter on vegetation, which outlines procedures that must be followed in regards to tree removal, planting criteria and maintenance requirements. Impacts to vegetation would be avoided and minimized in compliance with BMPs required by the TxDOT/TPWD MOU and it's implementing Programmatic Agreements. The impacts of reasonably foreseeable private development to vegetation and habitat would be avoided, minimized, and mitigated through enforcement of applicable municipal zoning and land use regulations. Additionally, USFS and TPWD regulations would apply for those actions that are subject to state and federal jurisdiction.

Based on the continued availability of other habitat areas, and assuming that appropriate implementation of regulated avoidance, minimization, and mitigation strategies for vegetation and habitat impacts is maintained, the proposed project would not contribute to substantial cumulative impacts to the area's vegetation and habitat (TxDOT, 2017k).

Under the no-build alternative, existing vegetation and wildlife habitat would not be impacted.

5.17 Construction Phase Impacts

This section highlights several areas of impacts that are temporary in nature as they would be limited to the period of construction, which is estimated to be approximately two to three years.

Under the no-build alternative, there would be no construction phase impacts.

5.17.1 Noise Impacts

Heavy machinery is the primary source of noise in during construction, and is difficult to quantify because of constantly varying activities. However, construction normally occurs during daylight hours when occasional loud noise is tolerable. None of the noise receivers identified in the traffic noise analysis are expected to be exposed to an excessive amount of construction noise for a long duration. TxDOT will include requirements in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of equipment muffler systems.

5.17.2 Air Quality Impacts

As discussed in **Section 5.12.5**, construction of the build alternative temporary increases in PM (e.g., fugitive dust and diesel PM) and MSAT emissions may occur. The potential impacts of PM emissions would be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. Considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project would have a substantial impact on air quality in the area.

5.17.3 Access and Detours

The construction of a new location roadway would create new access and provide an additional route from Trenton Road to SH 107, therefore improving connectivity and increasing operational efficiency within the proposed project area. Construction of the proposed project would not result in substantial changes to existing traffic patterns, and no substantial changes in access to adjacent properties would occur. TxDOT would make every effort to limit the potential for major traffic disruptions during construction. Trenton Road and SH 107, as well as intersecting streets such as Auburn Avenue, Frontera Road, Northgate Lane, Freddy Gonzales Drive, and Sprague Road would remain open during construction, although traffic control measures would be required during the construction phase. Lane closures could result in increased travel times, although this condition would be temporary. Access to adjacent properties would be maintained during construction. Inconvenience to the motorists using the roadway during the construction phase would be minimized.

6.0 AGENCY COORDINATION

This section identifies all coordination with agencies outside TxDOT that are required to be conducted for the build alternative. The list below identifies the agencies requiring coordination and the status of efforts to coordinate the proposed project.

- SHPO (see **Section 5.8.2**): Coordination under NHPA Section 106 with the SHPO regarding impacts to HCID No. 2, a NRHP-listed historic district; the SHPO concurred with TxDOT's determination of no adverse effects on July 10, 2017 (see **Appendix G-1**).
- USACE (see **Section 5.10.1**): Coordination regarding the AJD Request that was submitted to the USACE Galveston District to clarify the jurisdictional status of the water features was completed on June 9, 201. The USACE determined that the four water features identified in the Water Resources Technical Report are not WOUS, and as such, a Department of the Army permit would not be required (see **Appendix G-2**).
- TPWD (see **Section 5.11**): Early coordination with TPWD regarding biological resources was completed on June 9, 2017. No further coordination with TPWD or with the USFWS would be required (see **Appendix G-3**).

7.0 PUBLIC INVOLVEMENT

A public meeting for the proposed project was held on April 4, 2017, at the Morris Middle School Library, located at 1400 Trenton Road, McAllen, TX 78504. A total of 32 people attended the meeting, including 31 members of the general public and one elected official. All meeting materials were available in English and Spanish, and staff were available to provide translation services, as necessary. Notices for the public meeting were published in English and Spanish in *The Monitor* and *El Periodico USA* on March 15, 2017.

Overall, the response to the proposed project at the public meeting and during the comment period (April 4 to April 19, 2017) was positive. None of the comments received expressed an objection to the project as a whole. The most commonly cited concerns were safety, access issues, bicycle/pedestrian facilities, property values, and noise. No comments were made that warranted modifications to the proposed project design. All comments and associated TxDOT responses are available in the Public Meeting Summary (TxDOT, 2017l), which can be reviewed at the TxDOT Pharr District Office located at 600 West US Expressway 83, Pharr, Texas 78577-6110.

A public hearing is planned for the proposed project in spring 2018. A notice announcing the public hearing will be published in both English and Spanish in local newspapers. Asummary of the public hearing will be included in the Final EA.

Because the project involves construction of a highway on new location, a notice of impending construction would be provided to owners of adjoining property and affected local governments and public officials. The notice may be provided via a sign or signs posted in the ROW, mailed notice, printed notice distributed by hand, or notice via a website when the recipient has previously been informed of the relevant website address. This notice would be provided after the environmental decision (i.e., FONSI or recommendation to prepare an EIS), but before earthmoving or other activities requiring the use of heavy equipment begin.

8.0 ENVIRONMENTAL PERMITS, ISSUES, AND COMMITMENTS

The commitments TxDOT has made to avoid, minimize, or otherwise mitigate adverse impacts of the proposed project are included in the Environmental Permits, Issues and Commitments (EPIC) sheet, which communicates permit issues and environmental commitments that must be incorporated into the Plans, Specifications, and Estimates (PS&E) design (i.e., final detailed design plans). This ensures that any construction contractor bidding on the construction contract for the proposed project is aware of the permits, impacts, and commitments relevant to the proposed project. Moreover, including these commitments in the EPIC sheet ensures that each prospective contractor is contractually obligated to carry out those commitments. A draft EPIC sheet is included in **Appendix F-4**, and will be further completed when additional information regarding asbestos testing is available. After review and approval of the draft EPIC sheet, it would become part of the PS&E design plans.

The draft EPIC sheet includes mitigation measures as described above in **Section 5.10.6** to comply with Section 402 of the CWA, and **Sections 5.17.1** and **5.17.2** regarding noise and air quality impacts during construction. The EPIC also requires compliance with the MBTA in planning and carrying out project construction activities. Additionally, BMPs would be implemented as appropriate during design, construction, and maintenance activities to avoid or minimize harming wildlife species protected by federal or state laws, SGCNs, and other rare species designated by TPWD for which habitat exists within the project area. Unless otherwise indicated, all BMPs are prescribed in the TxDOT-TPWD BMPs PA. The following recommended BMP would apply to the five species listed in **Table 1** which are not included in the BMP PA: "Inform contractor that this species may occur in the project area and to avoid harm to this species to the extent practicable." Therefore, the following BMPs would be implemented for the proposed project and are included in the EPIC sheet:

- Amphibian;
- Bird;
- Bat;
- Species-specific BMPs for: sheep frog, Texas siren (large form), plains spotted skunk;
- Terrestrial Reptile;
- Water Quality; and
- Recommended BMP for three tiger beetle species and two plant species that do not yet have a TPWD-prescribed BMP, which would make the construction contractor aware that these species may occur in the project area and to avoid harm to the species to the extent practicable.

9.0 CONCLUSION

The engineering, social, and environmental investigations conducted thus far indicate that the proposed project would have no significant impact on the quality of the human environment. A FONSI is recommended for this proposed project.

10.0 REFERENCE

In addition to references placed in footnotes throughout this EA, the project-related TxDOT references listed below were also cited in the EA. These unpublished documents are on file with the TxDOT Pharr District.

- TxDOT, 2017a. Community Impacts Assessment Technical Report Form (May 2017).
- TxDOT, 2017b. Archeological Background Study (February 2017).
- TxDOT, 2016c. Project Coordination Request for Historical Studies Project (June 2016).
- TxDOT, 2017d. Report for Historical Studies Survey (July 2017).
- TxDOT, 2017e. Water Resources Technical Report (June 2017).
- TxDOT, 2017f. Biological Evaluation Form (June 2017).
- TxDOT, 2017g. Tier I Site Assessment (June 2017).
- TxDOT, 2016h. Air Quality Technical Report (December 2016).
- TxDOT, 2017i. Hazardous Materials ISA Report (January 2017).
- TxDOT, 2017j. Traffic Noise Technical Report (July 2017).
- TxDOT, 2017k. Indirect and Cumulative Impact Analysis Technical Report (September 2017).
- TxDOT, 2017l. Public Meeting Documentation (August 2017).

11.0 APPENDICES

Appendix A – Project Location Maps
- Appendix A-1. Project Vicinity Map
- Appendix A-2. Proposed Project on Aerial Photograph Map
- Appendix A-3. Proposed Project on USGS Topographic Map

Appendix B – Project Area Photographs

Appendix C –Project Plan View Map

Appendix D – Project Typical Sections

Appendix E – Plan and Program Excerpts
- Appendix E-1. 2015 – 2040 MTP Amendment Excerpt
- Appendix E-2. FY 2017-2020 STIP Excerpt

Appendix F – Resource-specific Maps
- Appendix F-1. Historic-Age Resources Map
- Appendix F-2. Noise Receiver Location Map
- Appendix F-3. Induced Development Area within Project AOI Map
- Appendix F-4. EPIC Sheet

Appendix G – Resource Agency Coordination
- Appendix G-1. SHPO Coordination (7/2017)
- Appendix G-2. USACE Coordination (6/2017)
- Appendix G-3. TPWD Coordination (7/2017)

Appendix H – Letter Documenting Compliance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970

Appendix I – Section 4(f) Documentation

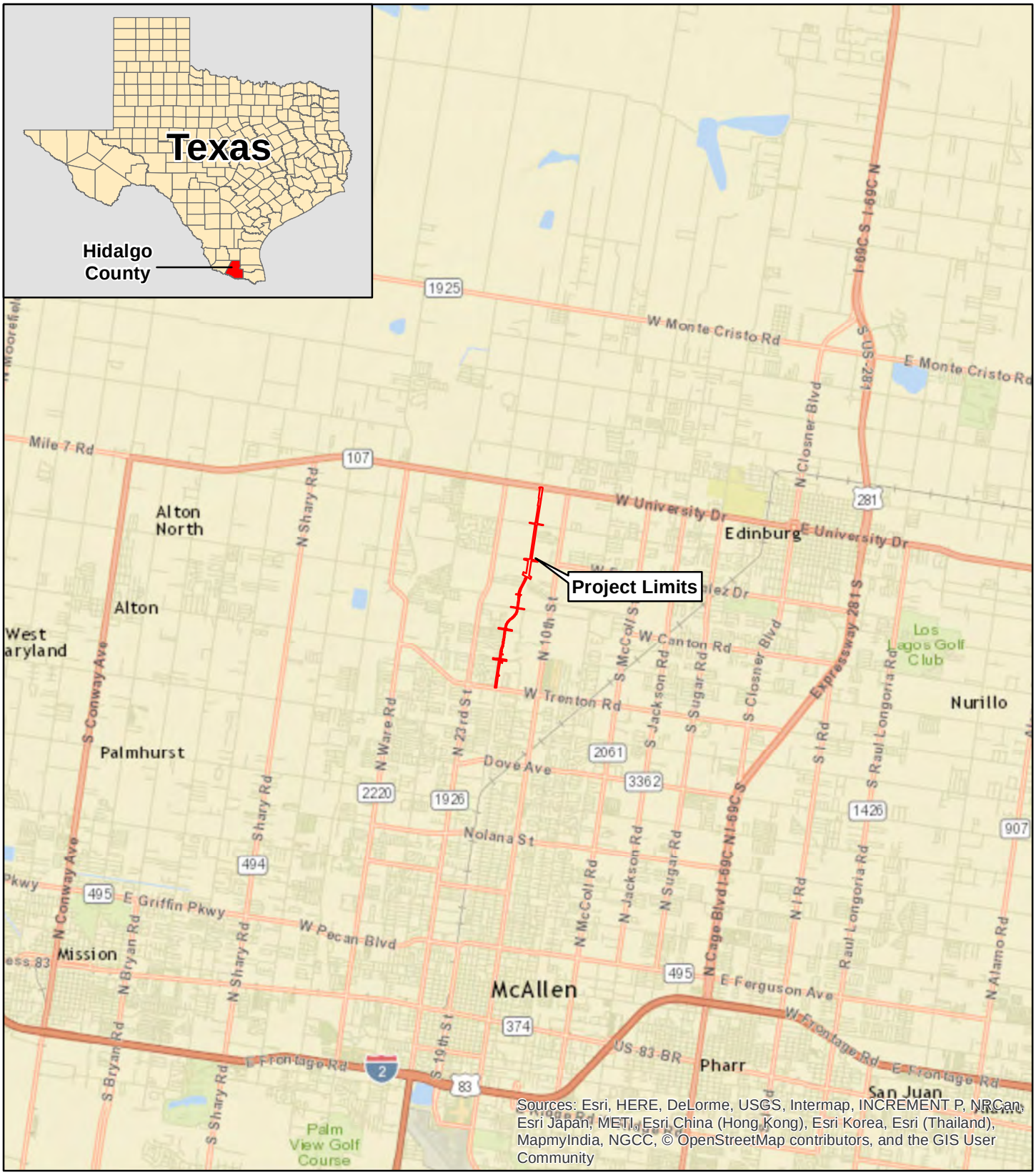
Appendix A

Project Location Maps

Appendix A-1. Project Vicinity Map

Appendix A-2. Proposed Project on Aerial Photograph Map

Appendix A-3. Proposed Project on USGS Topographic Map



Legend

Project Limits

Project Vicinity Map

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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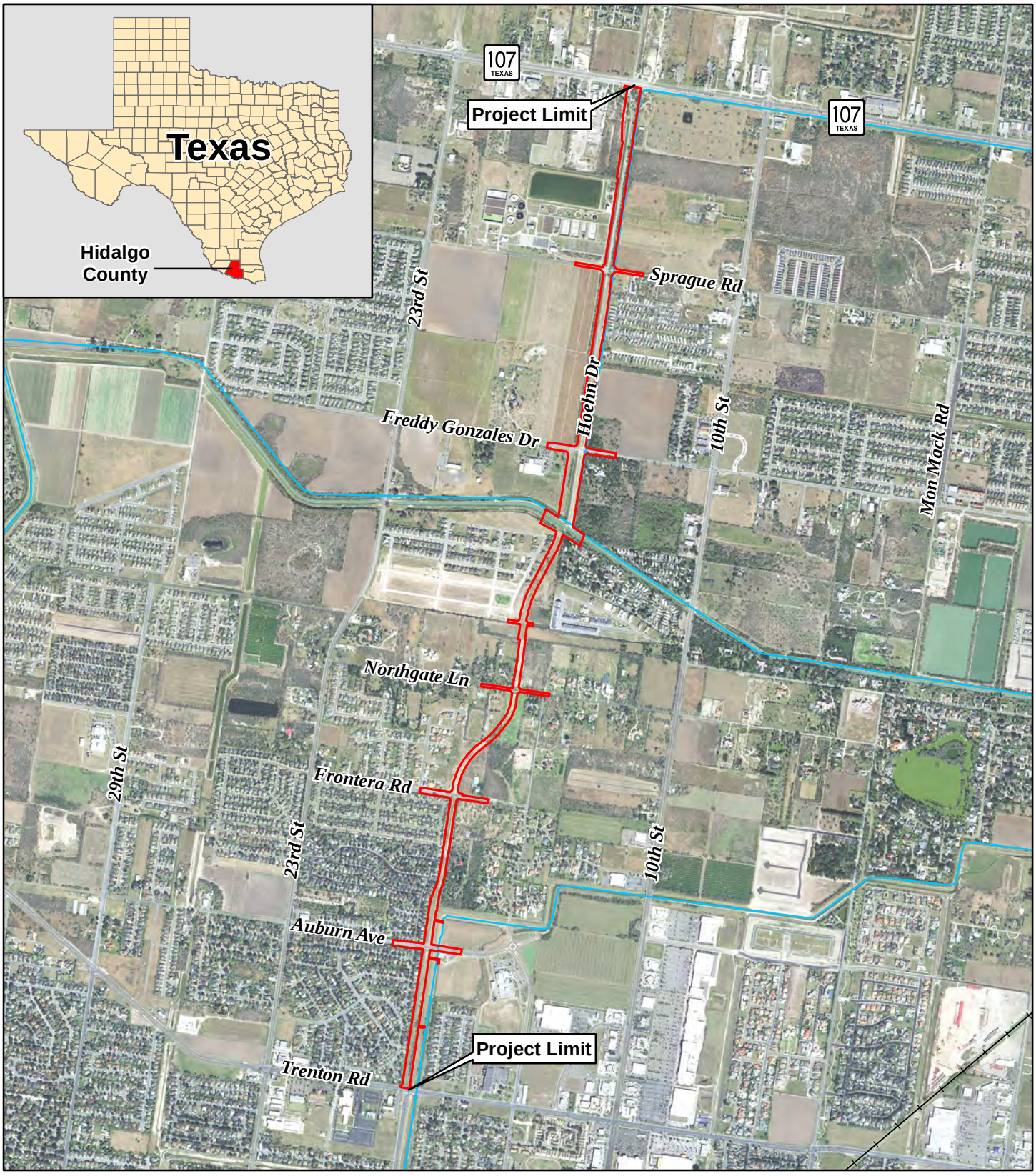
SCALE IN MILES



Legend

- Railroad
- Waterway
- Project Limits

Proposed Project on Aerial Photograph Map

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
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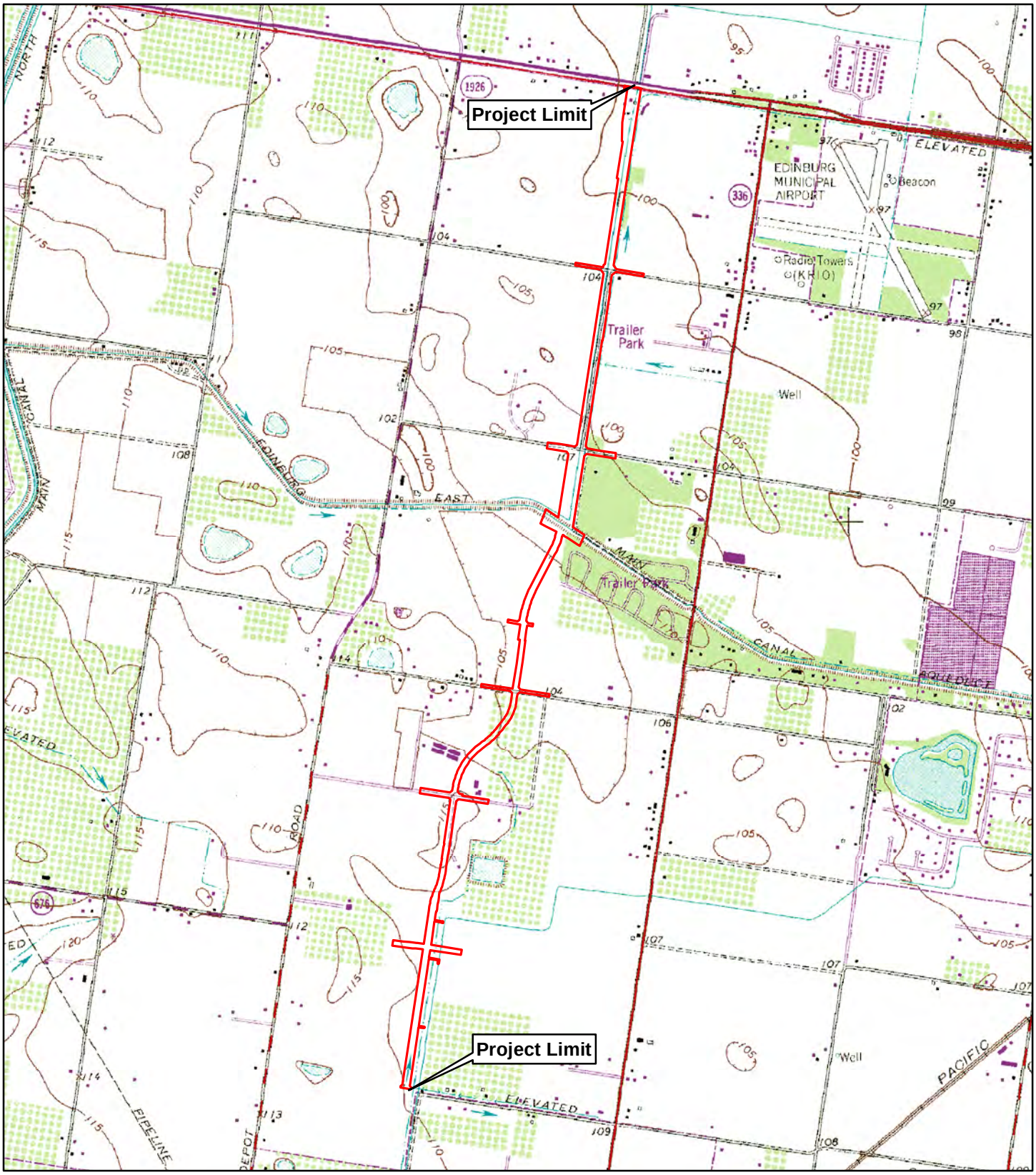
SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015



Legend

Project Limits

Proposed Project on USGS Topographic Map

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
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SCALE IN FEET

Source: USGS Topographic Map, Edinburg Quandrangle, made in 1963, photorevised in 1983.

Appendix B

Project Area Photographs

Photograph 1: View of the southern project limits at Trenton Road. View is to the north**.**

Photograph 2: View of the proposed project corridor and existing ROW south of Auburn Avenue. View is to the south.

Project Area Photographs

*Site photographs were taken on the following dates: September 1, September 2, October 6, and October 7, 2015

Bicentennial Boulevard Project

From on Bicentennial Blvd., from SH 107 to Trenton Rd.

City of McAllen, Hidalgo County, Texas

CSJ: 0921-02-352

Photograph 3: View of the proposed project corridor and existing ROW between Frontera Road and Auburn Avenue. View is to the north.

Photograph 4: View of Frontera Road where the future Bicentennial Boulevard intersection is proposed. View is to the west.

Photograph 5: View of Northgate Lane where the future Bicentennial Boulevard intersection is proposed. View is to the west.

Photograph 6: View of the Edinburg East Main Canal. The proposed project includes a siphon structure that would be placed in the canal, in addition to an at-grade crossing that would be constructed over the canal. View is to the southwest.

Photograph 7: View of the Concrete Irrigation Channel 1/Unnamed Concrete Irrigation Canal 1 located between Sprague Road and Freddy Gonzalez Drive. Sections of the channel would be removed for construction of the proposed project. View is to the north.

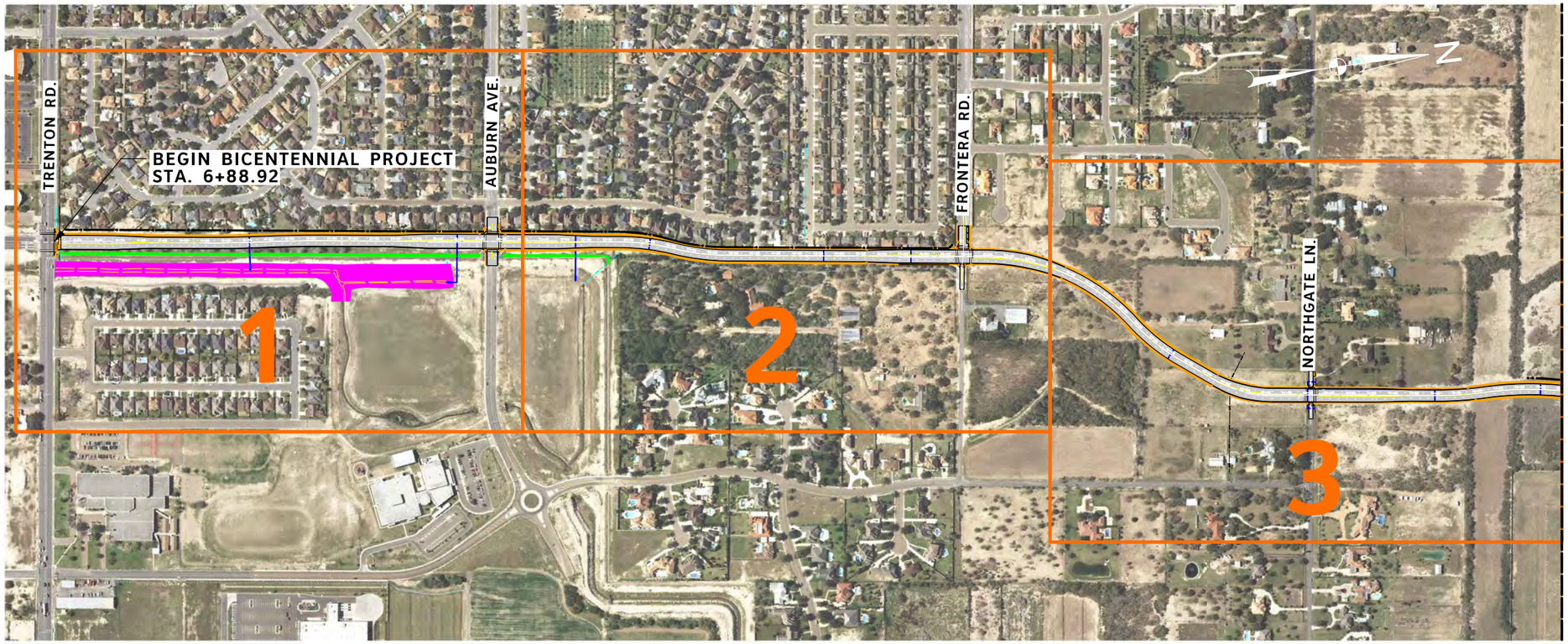
Photograph 8: View of the Earthen Drainage Channel 1, south of Freddy Gonzales Drive, that would be impacted by construction of the proposed project. View is to the south.

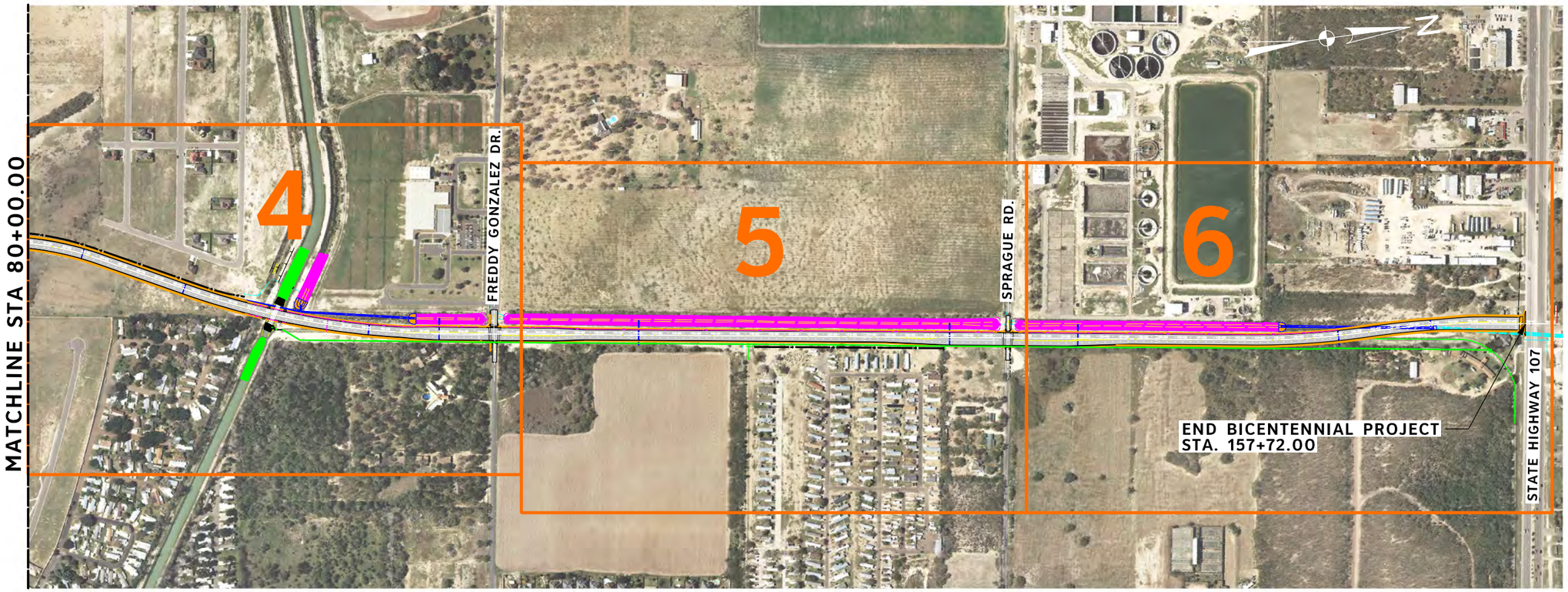
Photograph 9: View of the proposed project corridor, just south of SH 107. View is to the north.

Photograph 10: View of the northern project limits where the future Bicentennial Boulevard would tie into SH 107. View to the north.

Appendix C

Project Plan View Map





PROJECT PLAN VIEW KEY MAP

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

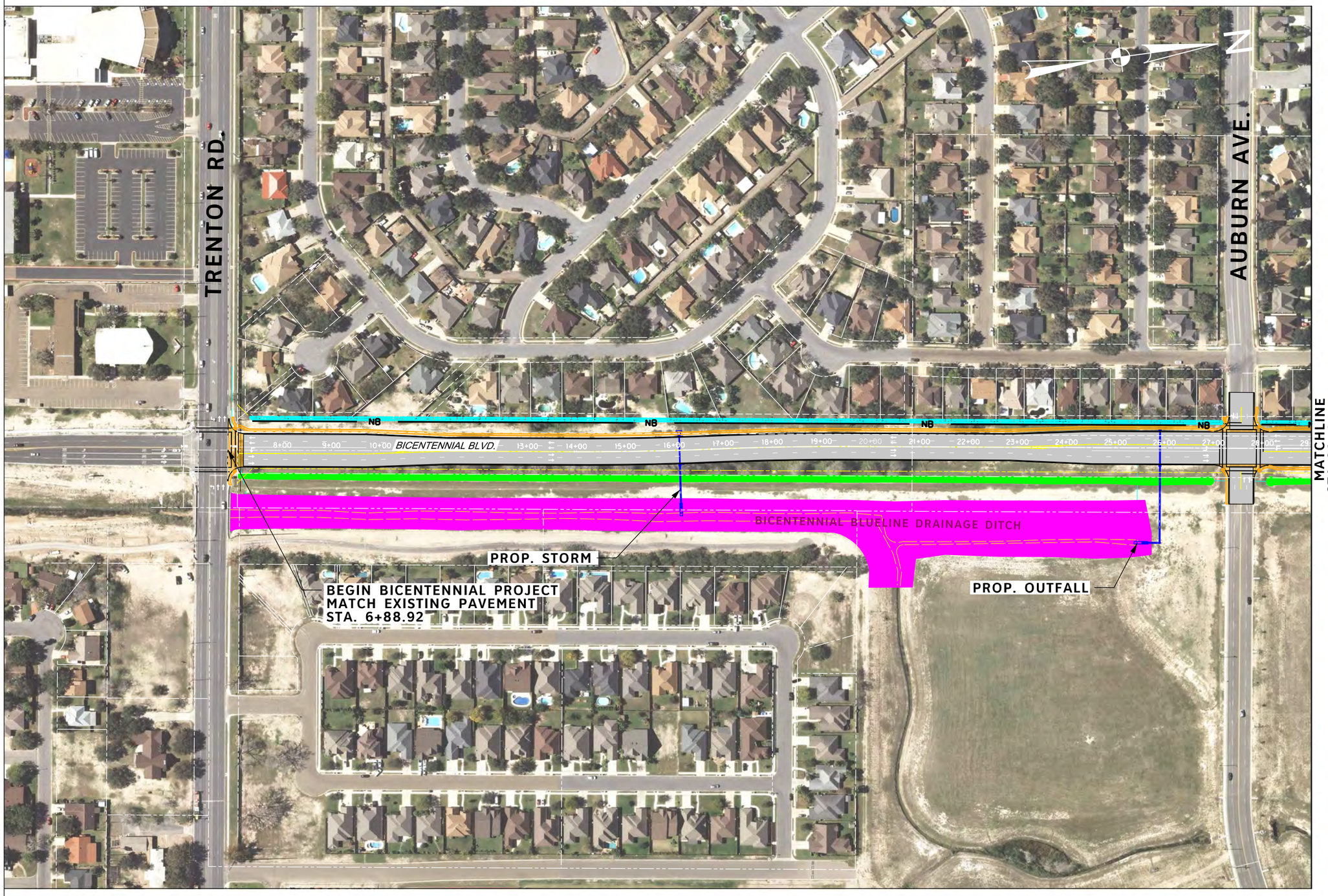
PROPOSED	EXISTING	
■	□	INLET
●	○	MANHOLE
	⊕	GATE VALVE & BOX
		FIRE HYDRANT
	---SS---	SAN. SEWER
	---W---	WATER
		STORM SEWER
	--IRR---	IRRIGATION PIPE
—MBGF—		METAL BEAM GUARD FENCE
—NB—		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 600 Feet

Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



PROJECT PLAN VIEW MAP

Page 1 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

PROPOSED	EXISTING	
■	□	INLET
●	○	MANHOLE
	⊕	GATE VALVE & BOX
		FIRE HYDRANT
	---SS---	SAN. SEWER
	---W---	WATER
		STORM SEWER
	--IRR---	IRRIGATION PIPE
—MBGF—		METAL BEAM GUARD FENCE
—NB—		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

Source/Date of Aerial Basemap:
06-12-2013

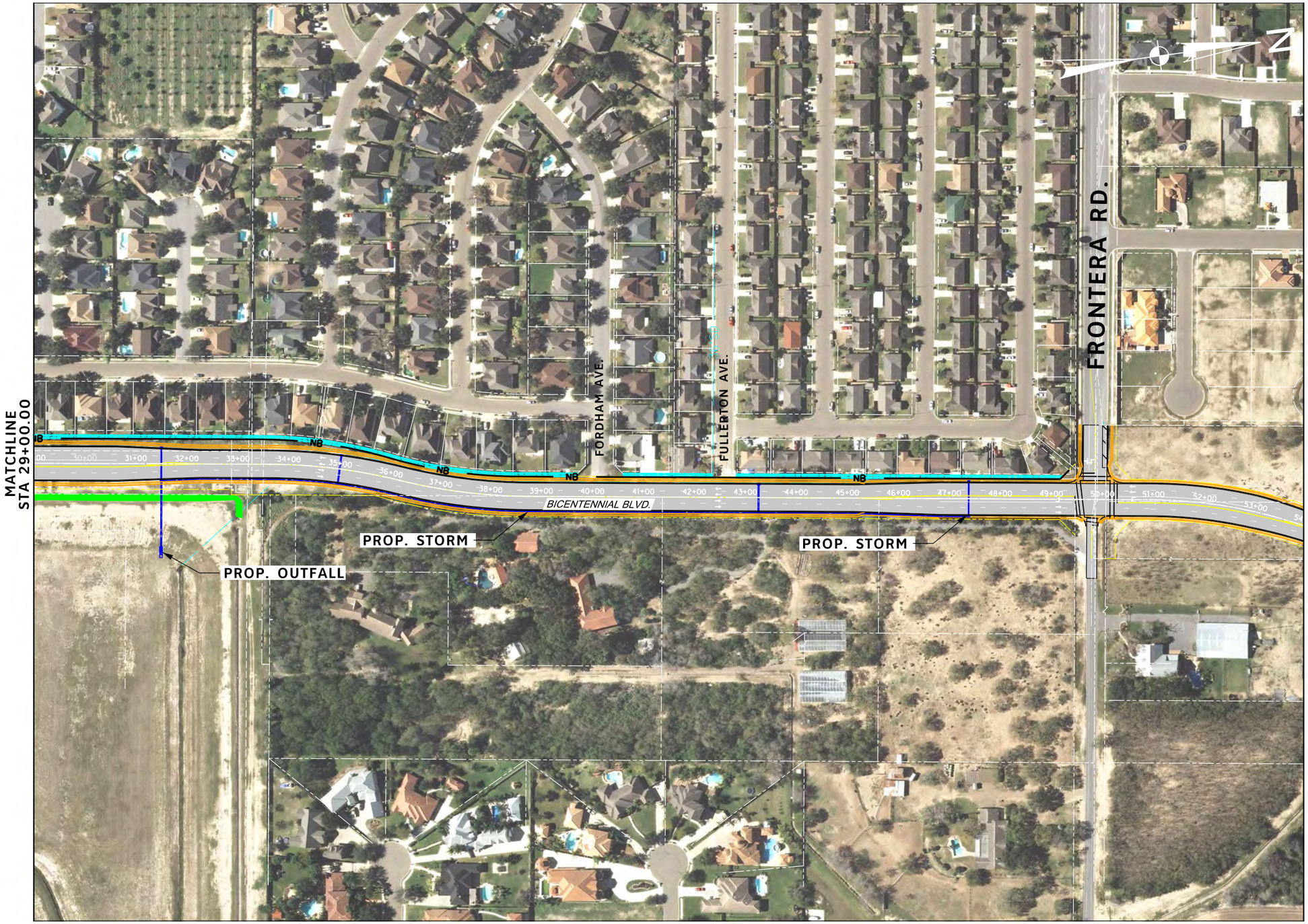
BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--



LEGEND

PROPOSED	EXISTING	
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	⊕	GATE VALVE & BOX
		FIRE HYDRANT
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	—W—	WATER
		STORM SEWER
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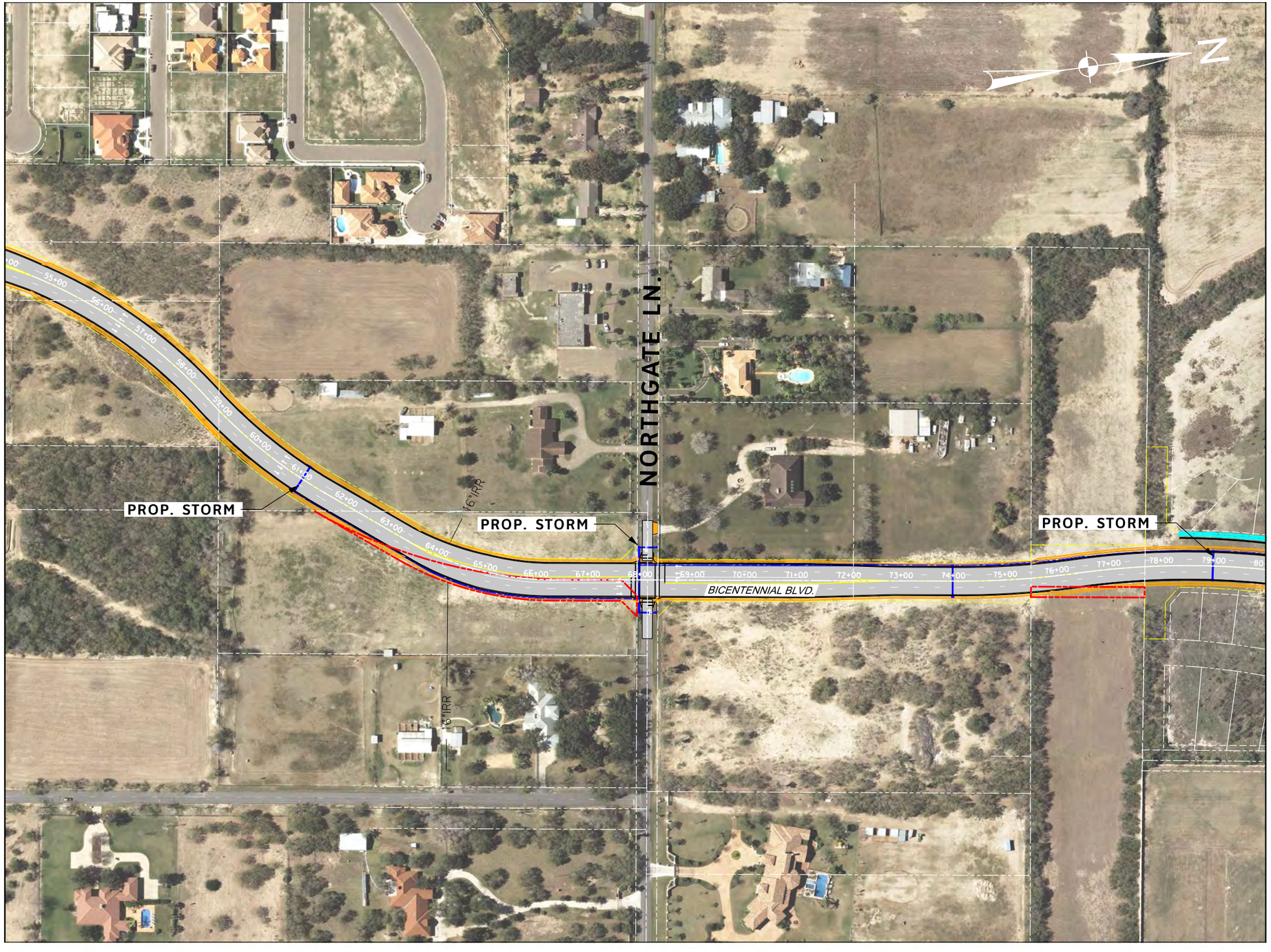
—MBGF—		METAL BEAM GUARD FENCE
—NB—		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



PROJECT PLAN VIEW MAP

Page 3 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

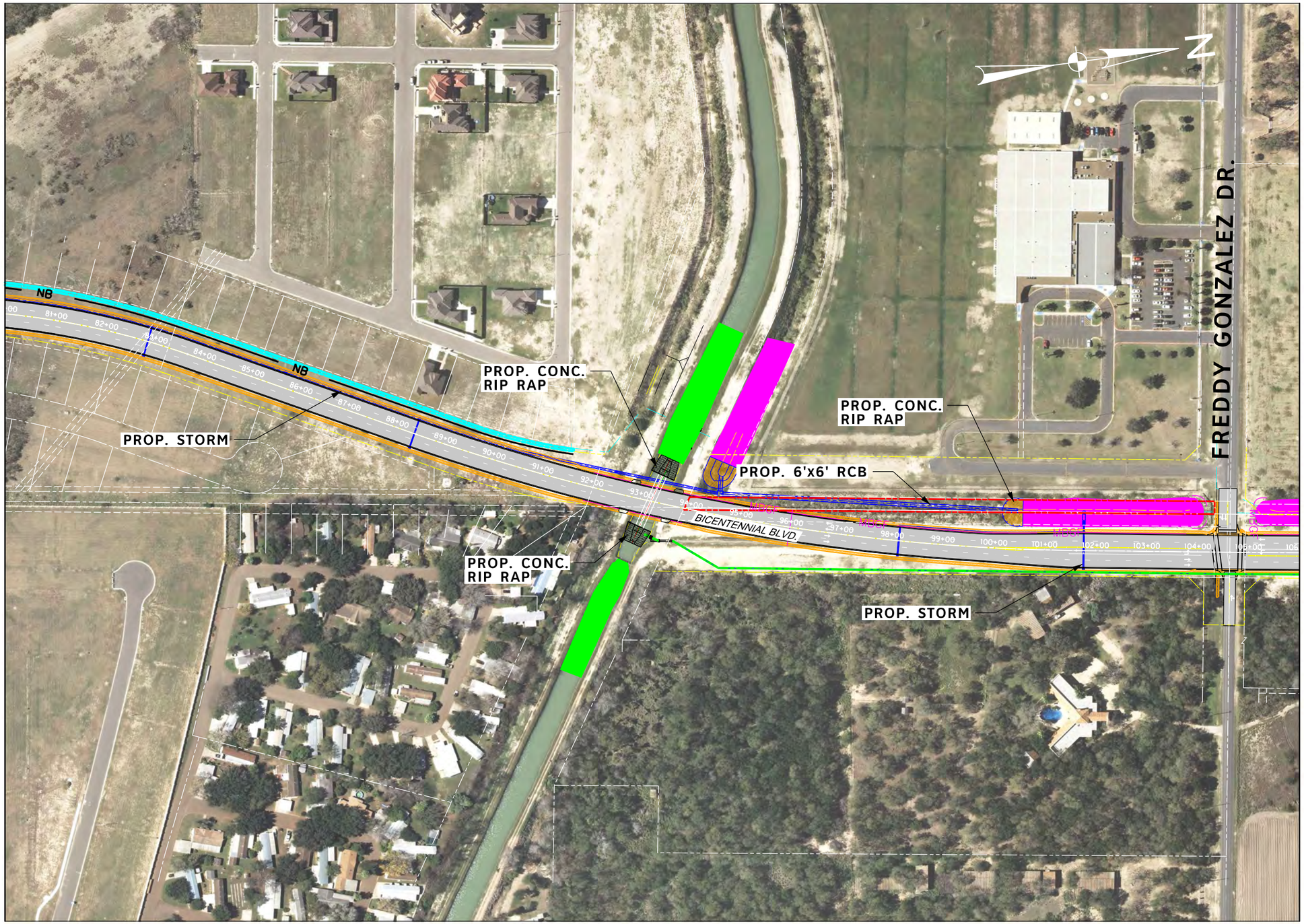
PROPOSED	EXISTING	
■	□	INLET
●	○	MANHOLE
	⊕	GATE VALVE & BOX
		FIRE HYDRANT
	——SS——	SAN. SEWER
	——W——	WATER
———	———	STORM SEWER
———	——IRR———	IRRIGATION PIPE
—MBGF—		METAL BEAM GUARD FENCE
—NB—		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



PROJECT PLAN VIEW MAP

Page 4 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

PROPOSED	EXISTING	
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	⊕	GATE VALVE & BOX
		FIRE HYDRANT
	--SS--	SAN. SEWER
	---W---	WATER
		STORM SEWER
	--IRR---	IRRIGATION PIPE
—MBGF—		METAL BEAM GUARD FENCE
— NB —		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

Page 5 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

PROPOSED	EXISTING	
■	▭	INLET
●	○	MANHOLE
	⊕	GATE VALVE & BOX
		FIRE HYDRANT
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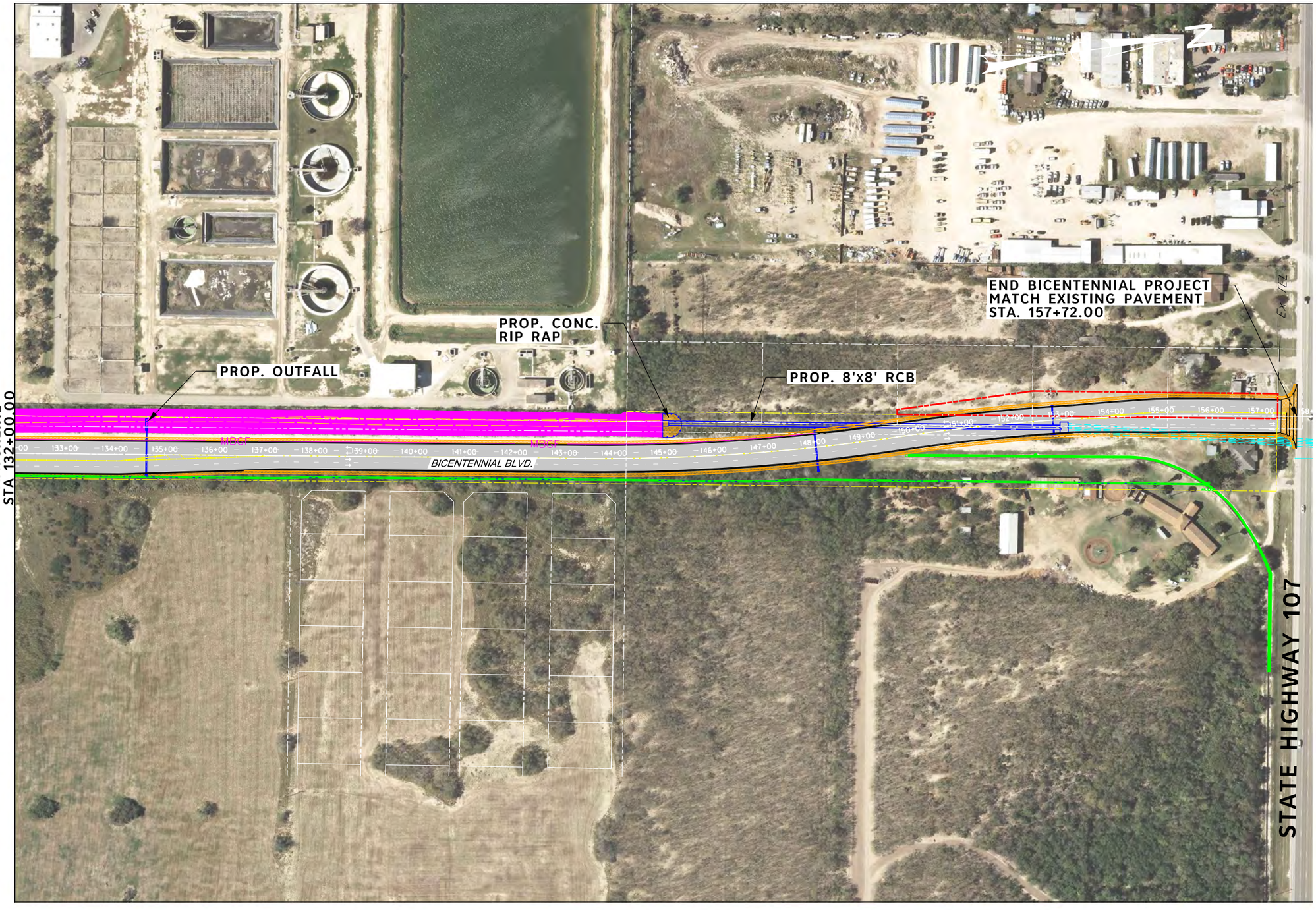
	---W---	WATER
		STORM SEWER
	--IRR---	IRRIGATION PIPE
— MBGF —		METAL BEAM GUARD FENCE
— NB —		NOISE BARRIER WALL
		IRRIG. CANAL
		DRAINAGE DITCH
		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

Source/Date of Aerial Basemap: 06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



PROJECT PLAN VIEW MAP

Page 6 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

LEGEND

PROPOSED	EXISTING	
■	□	INLET
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	⊕	GATE VALVE & BOX
		FIRE HYDRANT
	--SS--	SAN. SEWER
	--W--	WATER
		STORM SEWER
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—MBGF—		METAL BEAM GUARD FENCE
—NB—		NOISE BARRIER WALL
		IRRIG. CANAL
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		R.O.W.
		DRAINAGE FLOW
		ASPHALT PAVEMENT
		CONCRETE PAVEMENT
		TREE
		CONSTRUCTION EASEMENT
		WALL EASEMENT

Map Scale: 1 Inch = 200 Feet

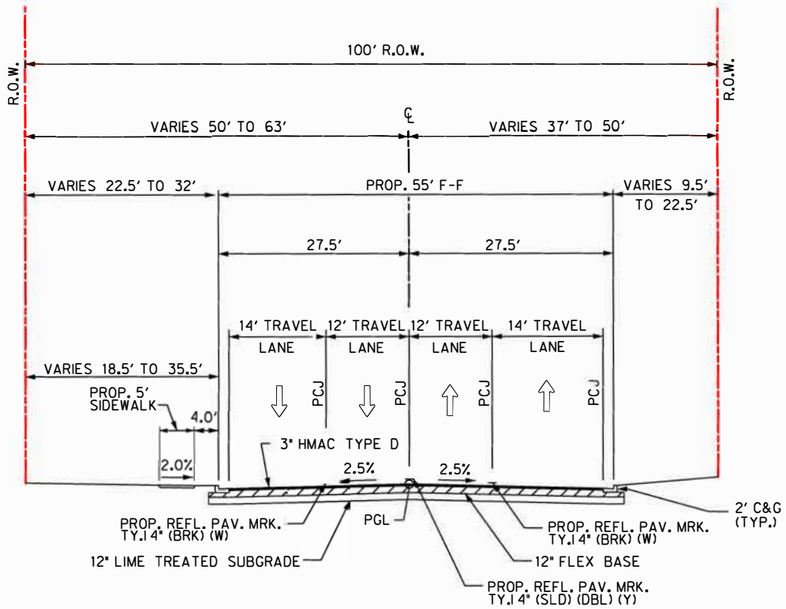
Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

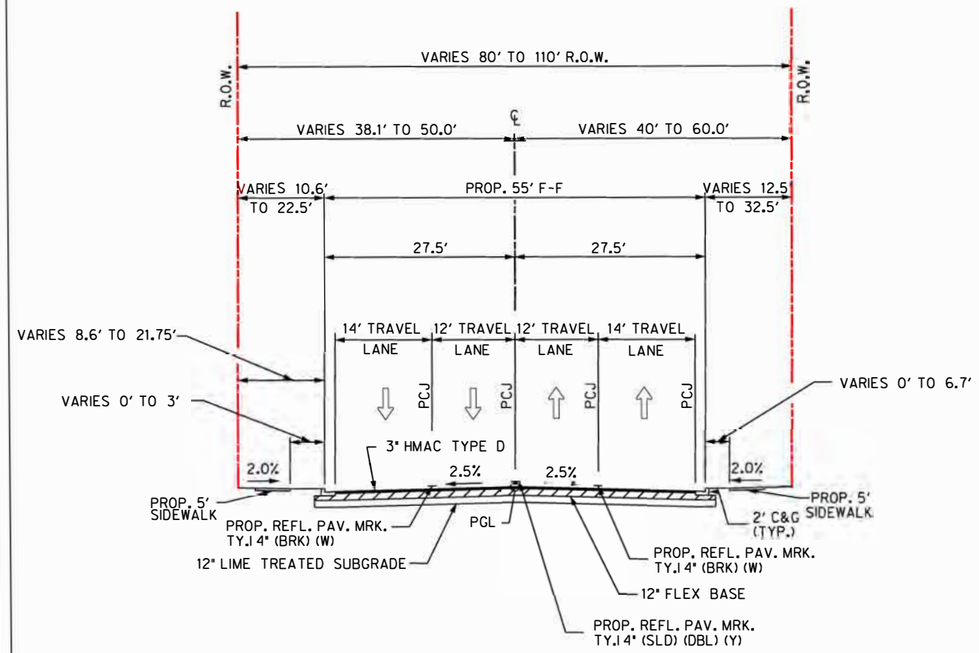
From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

Appendix D

Project Typical Sections



PROPOSED TYPICAL SECTION (55' F-F) FROM STA 11+36.03 TO STA 22+86.65



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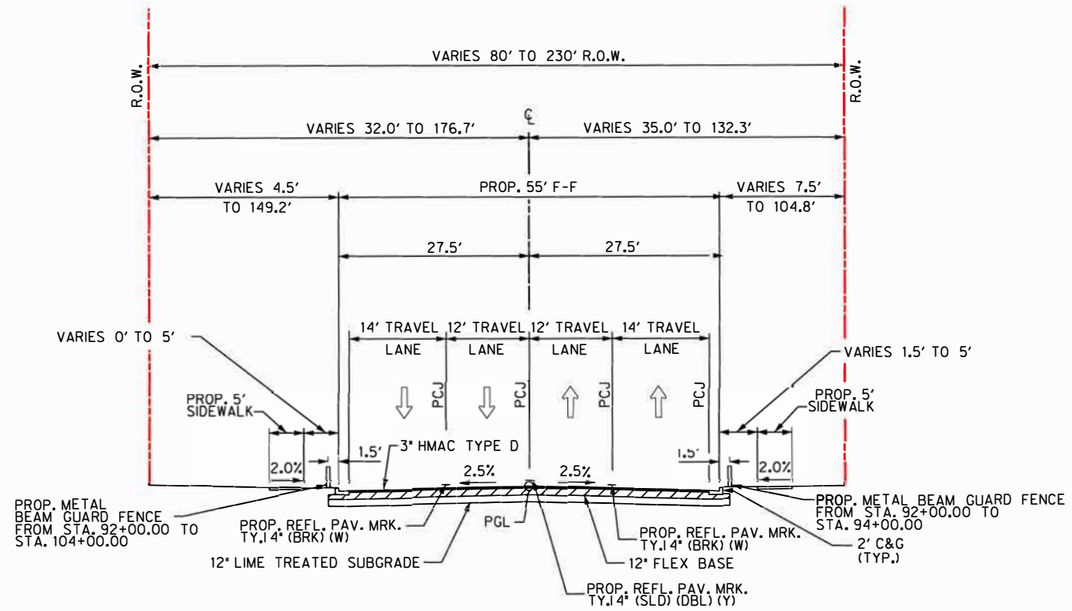


PROPOSED TYPICAL SECTION (55' F-F) FROM STA 72+71.00 TO STA 99+67.95

PROJECT TYPICAL SECTIONS

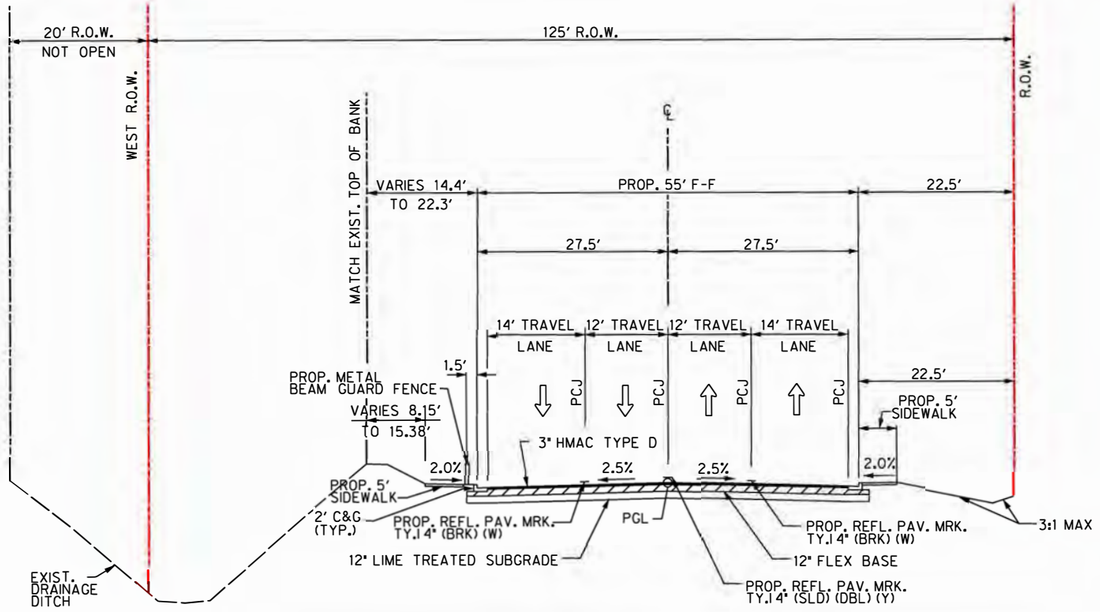
--PRELIMINARY--

FOR ENVIRONMENTAL DOCUMENT REVIEW ONLY

Map Scale: NTS
Map Date: 01/06/2017

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



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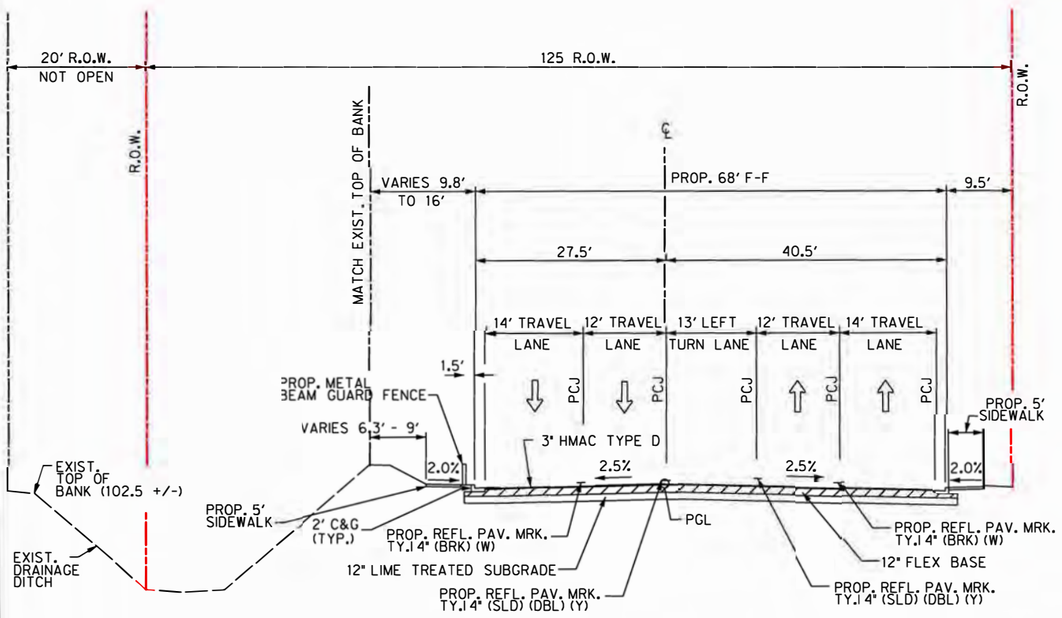

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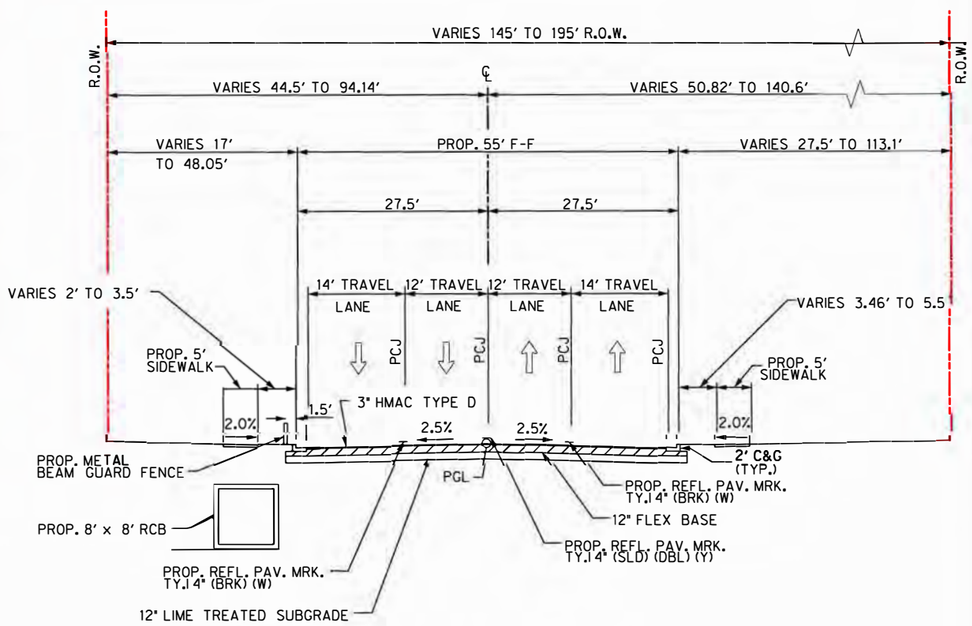


PROPOSED TYPICAL SECTION (55' F-F) FROM STA 145+25.03 TO STA 153+10.14

PROJECT TYPICAL SECTIONS

--PRELIMINARY--

FOR ENVIRONMENTAL DOCUMENT REVIEW ONLY

Map Scale: NTS
Map Date: 01/06/2017

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

Appendix E

Plan and Program Excerpts

Appendix E-1. 2015 – 2040 MTP Amendment Excerpt

Appendix E-2. FY 2017-2020 STIP Excerpt

HIDALGO COUNTY METROPOLITAN PLANNING ORGANIZATION METROPOLITAN TRANSPORTATION PLAN PROJECT DATA

Line Numbers	System Sort	Roadway	From	To	MTP#	CSJ #	Project Length (mi)	Proposed Project Data: Type of Improvement	Proposed Project Data: Jurisdiction	Total Project Cost: Current Construction Cost Estimate	Total Project Cost: Letting Year Construction dollars	Total Project Cost: ROW cost (12% 2011 const cost)	Total Project Cost: Preliminary Engineering (4.8% 2011 const cost)	Total Project Cost: CE Cost (<$2 M 7.5%, $2-$10 M 5%, >$10 M 4.5%, of 2011 const cost)	Total Project Cost: Contingencies (<$2M 7%, $2-$25 M 6.5%, $25-$50 M 9%, >$50M 7% of 2011 const cost)	Total Project Cost: Total Project Cost	Year of Expenditure Dollars (YOE)	Funding Categories: Cat 1 Funding	Cat 3 - TMF	Cat 7 Funding (Cat 6 & Contingencies)	Cat 9 Funding	Cat 11 Funding	Cat 12 Funding	CBI - Eligible	Earmark Funding	Proposition 1	Proposition 7	Other Funds (Local, Bond, etc)	TRENDS - Innovative Financing	TOTAL
250	On	FM 1926 (23rd st)	FM 1926 (23rd st) & Ebony Ave		HC-313	1804-01-071	2	Addition of east, north and south bound center turn lanes	McAllen	$ 132,600	$ 132,600	$ 21,000	$ 6,497	$ 6,630	$ 8,619	$ 183,567	$ 141,219			$ 0.14										$ 0.14
251	On	FM 1926 (23rd st)	FM 1926 (23rd st) & Jackson Ave		HC-314	1804-01-072	1	Addition of North and South bound center turn lanes	McAllen	$ 109,500	$ 109,500	$ 31,000	$ 5,366	$ 5,475	$ 7,118	$ 165,248	$ 116,618			$ 0.12										$ 0.12
252	Off	Dove Ave	41st Street	Bentsen Rd	HC-315	0921-02-341	0.25	4 lane divided	McAllen	$ 1,404,225	$ 1,404,225	$ -	$ 68,807	$ 70,211	$ 91,275	$ 1,721,580	$ 1,495,500			$ 1.50										$ 1.50
269	On	Hidalgo County Illumination Project	Along I-2/US 83 and I-69C/US 281		HC-332	0921-02-903		Upgrading illumination equipment along I-2/US 83 and I-69C/US 281	TxDOT	$ 2,600,000	$ 2,600,000	$ -	$ -	$ -	$ -	$ 2,600,000	$ 2,600,000								$ 2.60				$ 2.60
																	$ 30,353,692			**$ 5,216,685**									
		FY 2017	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	**FY 2017**	
47	On	FM 2220 (Ware Rd)	FM 1924 (Mile 3 N)	Mile 5 N (Auburn Ave)	HC-19b	2094-01-038	2	Widen to 6 Lane Divided	McAllen	$ 9,750,000	$ 9,750,000	$ 1,145,000	$ 477,750	$ 487,500	$ 633,750	$ 13,118,023	$ 11,528,750	$ 2.40		$ 3.05			$ 0.41	$ 3.53				$ 2.15		$ 11.53
241	Off	City of Pharr Biecycle Accessible	Owassa Road	Military Highway	HC-307	0921-02-324	22	Bicycle Accessible Improvements	Pharr	$ 700,150	$ 700,150	$ -	$ -	$ 105,023	$ -	$ 805,173	$ 805,173				$ 0.64							$ 0.16		$ 0.81
203a	Off	365 Tollway	US 281 Military Highway	FM 396 (Anzalduas Highway)	RMA-1aa	0921-02-368	12.5	A toll improvement being a 4 lane controlled access facility	HCRMA	$ 174,178,506	$ 174,178,506	$ 36,242,588	$ 16,757,371	$ 8,925,296	$ -	$ 245,073,954	$ 192,073,995						$ 126.44					$ 65.63		$ 192.07
220	Off	N Alamo Road Extension	FM 1925	0.5m North	HC-289	0921-02-311	0.5	New location 2-lane rural roadway	County 4	$ 703,040	$ 703,040	$ 200,000	$ 34,449	$ 52,728	$ 49,213	$ 1,083,018	$ 804,981			$ 0.80										$ 0.80
270	Off	McIntyre Railroad Pedestrian Crossing	6th Ave	5th Ave	HC-333	0921-02-354	0.2	McIntyre Railroad Pedestrian Crossing Improvements	Edinburg	$ 500,000	$ 500,000	$ -	$ 24,500	$ 37,500	$ 35,000	$ 618,000	$ 500,000			$ 0.50										$ 0.50
207	Off	Anzalduas Int'l Port of Entry	Anzalduas Int'l Port of Entry		HC-277	0921-02-303		Construction of Southbound Inspection Station	Anzalduas Int'l Bridge Board	$ 7,241,012	$ 7,241,012	$ -	$ -	$ -	$ -	$ 7,241,012	$ 7,241,012							$ 0.10				$ 7.14		$ 7.24
288	Off	Anzalduas Int'l Port of Entry (NB)	Anzalduas Int'l Port of Entry		HC-351	0921-02-369		Construction of two additional northbound passenger lanes	Anzalduas Int'l Bridge Board	$ 2,700,000	$ 2,700,000	$ -	$ 162,500	$ 79,193	$ -	$ 3,020,886	$ 2,700,000							$ 2.70						$ 2.70
289	Off	Anzalduas Int'l Port of Entry NB Empties	Anzalduas Land Port of Entry NB Empties		HC-352	0921-02-927		Inbound commercial inspection pre-primary inspection pre-cleared cargo	Anzalduas Int'l Bridge Board	$ 4,668,185	$ 4,668,185	$ -	$ 217,070	$ 163,386	$ 163,386	$ 5,375,413	$ 4,668,185							$ 4.20				$ 0.47		$ 4.67
266	Off	Regional Hike & Bike Trail Project (Precinct 2) - **TAP**	S San Antonio Ave (San Juan)	S 2nd St (McAllen)	HC-329	0921-02-346	7.74	Proposed location of Hike & Bike Trail Connectivity	County 2 / San Juan / Pharr / McAllen	$ 5,600,000	$ 5,600,000	$ -	$ -	$ 840,000	$ -	$ 6,440,000	$ 6,440,000			$ 0.80	$ 4.52							$ 1.12		$ 6.44
235	On	FM 676 (Mile 5 N) - **ROW**	SH 107 (Conway)	Taylor Rd	HC-117r	1064-01-027	3	ROW Acquisition services	Alton / County 3	$ 7,656,456	$ 10,075,374	$ 918,775	$ 493,693	$ 453,392	$ 654,899	$ 13,220,806	$ 500,738								$ 0.50					$ 0.50
219	Off	Pharr/Reynosa Int'l Bridge (NB Phase II)	At Pharr/Reynosa Int'l Bridge - Northbound Lanes Improvements Phase II		HC-288	0921-02-289		Addition of 2 commercial northbound entrance lanes, booths	Pharr	$ 2,645,473	$ 2,645,473	$ -	$ -	$ 118,770	$ 154,400	$ 2,918,643	$ 2,918,643							$ 2.92						$ 2.92
231	On	Business 83 Outfall (Mercedes)	N of Business 83, near FM 2556 south to Floodway		HC-297	0039-06-041		Improve drainage structures	TXDOT	$ 1,551,108	$ 1,551,108	$ -	$ 76,004	$ 116,333	$ 100,822	$ 1,940,436	$ 1,651,930	$ 0.35				$ 1.30								$ 1.65
21	On	Pharr Intl Bridge	At Pharr/Reynosa Intl bridge		HC-231b	0921-02-253		Improvements (ITS) at Pharr/Reynosa Intl bridge	Pharr	$ 1,372,462	$ 1,372,462	$ -	$ 67,251	$ 102,935	$ 96,072	$ 1,723,813	$ 1,372,462							$ 1.03				$ 0.34		$ 1.37
192	Off	10th st	SH 107	FM 1925 (Monte Cristo)	HC-79	0921-02-300	2.5	Construct new 4 Lane	Edinburg / County 4	$ 10,075,000	$ 10,075,000	$ 2,000,000	$ 493,675	$ 453,375	$ 654,875	$ 14,301,575	$ 13,183,250			$ 12.78			$ 0.40							$ 13.18
236	Off	Pharr Bridge	Pharr-Reynosa Int'l Bridge	US 281	HC-302	0921-02-193		Improvements (Expansion) at Int'l Bridge	Pharr	$ 18,256,024	$ 18,256,024	$ -	$ 894,545	$ 821,521	$ 1,186,642	$ 22,290,605	$ 19,442,666							1.57				17.87		$19.44
158	On	Veterans Blvd (Future SH 495) - **ROW**	IH-2/US 83	SH 364 (La Homa Rd)	HC-50	0865-01-108	2.3	4 lanes divided urban from Abram Rd to SH 364 and overlay Abram Rd from IH-2 to Veterans Blvd	Palmview / County 3	$ 11,360,000	$ 11,360,000	$ 2,699,360	$ 556,640	$ 511,200	$ 738,400	$ 16,569,920	$ 2,699,360			$ 2.70										$ 2.70
244	Off	Donna Int'l Bridge	@ Donna Int'l Bridge		HC-309	0921-02-333		Federal commercial vehicles inspection facilities at Donna Int'l	Donna / Pharr	$ 9,000,000	$ 9,000,000	$ -	$ 441,000	$ 450,000	$ 630,000	$ 11,079,000	$ 9,000,000							9.00						$ 9.00
[illegible]	On	FM 907 (Alamo Rd)	Nolana	US 83	HC-119	1586-01-069	2.34	Widen to 4 Lane Divided	Alamo / [illegible]	$ 11,538,000	$ 11,538,000	$ 327,300	$ 560,740	$ 567,606	$ 655,722	$ 13,649,368	$ 11,538,000	$ 0.48				$ 4.70				$ 6.36				$ 11.54
180	Off	Bicentennial Blvd - **PE & ROW**	Trenton Rd	SH 107	HC-91	0921-02-352	2.3	Construct New 4 Lane Urban Rdwy	McAllen	$ 14,679,967	$ 14,679,967	$ 200,000	$ 1,444,700	$ 660,599	$ 1,415,033	$ 18,767,298	$ 1,644,700											$ 1.64		$ 1.64
27	Off	Owassa	Jackson Rd	US 281	HC-106	0921-02-140	1.21	Widen to 4 Lane Divided	Pharr	$ 6,136,119	$ 6,136,119	$ 377,936	$ 300,670	$ 306,806	$ 398,848	$ 7,900,818	$ 6,841,773			$ 6.44			$ 0.40							$ 6.84
																	$ 297,555,617			**$ 28,286,666**									
		FY 2018	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	**FY 2018**	
271	Off	Cesar Chavez - **ROW**	Nolana Rd	Owassa Rd	HC-334	0921-02-373	1	Construct a 4 lane urban roadway	County 2			$ 800,000				$ 800,000	$ 800,000			$ 0.80										$ 0.80
272	Off	Owassa Rd - **ROW**	I Rd	Cesar Chavez Rd	HC-335	0921-02-374	2	Construct a 4 lane urban roadway	County 2 - 4			$ 800,000				$ 800,000	$ 800,000			$ 0.80										$ 0.80
123	Off	Taylor Rd	Bus 83	Mile 2 N	HC-257	0921-02-328	2	4 Lane Divided Urban Section with 1 Bridge Widening and 1 Bridge	Mission / McAllen	$ 5,795,764	$ 5,795,764	$ 2,011,852	$ 283,992	$ 1,093,056	$ -	$ 9,544,001	$ 6,888,820			$ 6.89										$ 6.89
49	Off	Nolana Loop (S 2-4) - **ROW**	0.25m E FM 907	FM 88	HC-152r	0921-02-169	7.65	Widen to 4 Lane Divided	County 1-2	$ 9,752,330	$ 13,346,737	$ 3,500,000	$ 690,825	$ 667,337	$ 867,538	$ 19,899,935	$ 3,500,000			$ 3.50										$ 3.50
229	On	SH 68	US 83	FM 1925	HC-295c	3629-01-001	10	Construct new 4 lane divided rural highway facility	TxDOT	$ 55,000,000	$ 55,000,000	$ 23,500,000	$ 6,500,000	$ 2,475,000	$ 3,850,000	$ 94,735,000	$ 55,000,000						$ 55.00							$ 55.00
[illegible]	On	FM 494	FM 676 (Mile 5)	SH 107	HC-292a	0864-01-068	2	Widen to 4 lane	County 3	$ 8,000,000	$ 8,000,000	$ 2,957,145	$ 392,000	$ -	$ -	$ 657,966	$ 12,503,111	$ 11,615,111			$ 2.05					$ 1.00	$8.57			$ 11.62
180	Off	Bicentennial Blvd (Hoehn Rd)	Trenton Rd	SH 107	HC-91	0921-02-352	2.3	Construct New 4 Lane Urban Rdwy	McAllen	$ 14,679,967	$ 14,679,967	$ 200,000	$ 1,444,700	$ 660,599	$ 1,415,033	$ 18,767,298	$ 14,679,967			$ 7.25				$ 0.60				$ 6.83		$ 14.68
46	On	SH 107	US 281	FM 493 (La Blanca)	HC-227	0342-01-074		Overpass @ Schunior Rd	Edinburg / County 4	$ 5,600,000	$ 5,600,000	$ -	$ 168,000	$ 200,000	$ 260,000	$ 6,476,000	$ 5,600,000			$ 1.60							$4.00			$ 5.60
40	On	FM 676 (Mile 5 N)	SH 364 (La Homa Rd)	SH 107 (Conway)	HC-117b	1064-01-032	2.39	Widen to 4 Lane Divided	Alton / County 3	$ 15,000,000	$ 15,000,000	$ 1,200,000	$ 423,987	$ 450,000	$ 650,000	$ 18,343,987	$ 15,000,000				$ 5.00						$10.00			$ 15.00
204	On	High Water Bridge - **ROW**	@ floodway & FM 493		HC-275r	0863-01-066	3.02	High water bridge for the Donna-Rio Bravo Int'l Bridge	County 1	$ 51,821,636	$ 51,821,636	$ 3,300,000	$ -	$ -	$ -	$ 55,121,636	$ 3,300,000											$ 3.30		$ 3.30
																	$ 117,183,898			**$ 20,835,265**									
		FY 2019	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	**FY 2019**	
291	Off	Pharr Int'l Bridge Northbound lanes	@ Pharr Int'l Bridge		HC-354	0921-02-931		Construction additional northbound lane and related canopies and booths into the Pharr POE inspection area	Pharr	$ 2,564,250	$ 2,564,250	$ -	$ 165,000	$ 128,212	$ 256,425	$ 3,272,871	$ 2,692,462							$ 2.69						$ 2.69
292	Off	Pharr Int'l Bridge 2nd BSIF Exit	@ Pharr Int'l Bridge		HC-355	0921-02-928		Construction of additional exit lane and related canopies and booths out of Pharr POE BSIF	Pharr	$ 2,500,370	$ 2,500,370	$ -	$ 255,000	$ 215,000	$ 164,000	$ 3,289,393	$ 2,715,370							$ 2.72						$ 2.72
214	Off	Liberty Blvd (Phase I)	US 83	Mile 3 Rd	HC-284a	0921-02-194	2.4	Widen to 4 lanes with dedicated left turn lane	Penitas	$ 8,400,000	$ 9,448,858	$ 484,210	$ 1,200,000	$ 1,086,619	$ -	$ 12,805,516	$ 11,019,687			$ 10.47			$ 0.40					$ 0.15		$ 11.02

Statewide Transportation Improvement Program

Hidalgo County MPO

Highway Projects

STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM

HIDALGO COUNTY MPO - HIGHWAY PROJECTS

FY 2017

DISTRICT	MPO	COUNTY	CSJ	HWY	PHASE	CITY	YOE COST
PHARR	HIDALGO COUNTY	HIDALGO	0921-02-352	BICENTENNIAL	E,R,ACQ,UTL	MCALLEN	$ 1,644,700

LIMITS FROM TRENTON RD
LIMITS TO SH 107
PROJECT DESCR CONSTRUCT NEW 4 LANE URBAN ROADWAY
PROJECT SPONSOR MCALLEN
REVISION DATE 07/2016
MPO PROJ NUM HC-91
FUNDING CAT(S)

REMARKS P7
PROJECT HISTORY

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 1,444,700
ROW PURCH	$ 200,000
CONSTR	$ 14,679,967
CONST ENG	$ 660,599
CONTING	$ 1,415,033
INDIRECT	$ 366,999
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 18,767,298

COST OF APPROVED PHASES $ 1,644,700

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
3LC	$ 0	$ 0	$ 0	$ 0	$ 1,644,700	$ 1,644,700
TOTAL	$ 0	$ 0	$ 0	$ 0	$ 1,644,700	$ 1,644,700

PHASE: C = CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM

HIDALGO COUNTY MPO - HIGHWAY PROJECTS

FY 2018

DISTRICT	MPO	COUNTY	CSJ	HWY	PHASE	CITY	YOE COST
PHARR	HIDALGO COUNTY	HIDALGO	0921-02-352	BICENTENNIAL B	C	MCALLEN	$ 14,679,967

LIMITS FROM SH 107
LIMITS TO TRENTON RD
PROJECT DESCR CONSTRUCT NEW 4 LANE URBAN ROADWAY
REMARKS INCREASED $1,499,055 IN CAT 7 AND REDUCED LOCAL FUN
P7 DING BY THE SAME AMOUNT

PROJECT SPONSOR MCALLEN
REVISION DATE 02/2017
MPO PROJ NUM HC-91
FUNDING CAT(S)
PROJECT HISTORY

TOTAL PROJECT COST INFORMATION

PREL ENG	$ 1,444,700
ROW PURCH	$ 200,000
CONSTR	$ 14,679,967
CONST ENG	$ 660,599
CONTING	$ 1,415,033
INDIRECT	$ 366,999
BOND FIN	$ 0
PT CHG ORD	$ 0
TOTAL CST	$ 18,767,298

COST OF APPROVED PHASES $ 14,679,967

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
7	$ 6,996,400	$ 0	$ 0	$ 1,749,100	$ 0	$ 8,745,500
10	$ 540,000	$ 0	$ 0	$ 60,000	$ 0	$ 600,000
3LC	$ 0	$ 0	$ 0	$ 0	$ 5,334,467	$ 5,334,467
TOTAL	$ 7,536,400	$ 0	$ 0	$ 1,809,100	$ 5,334,467	$ 14,679,967

Appendix F

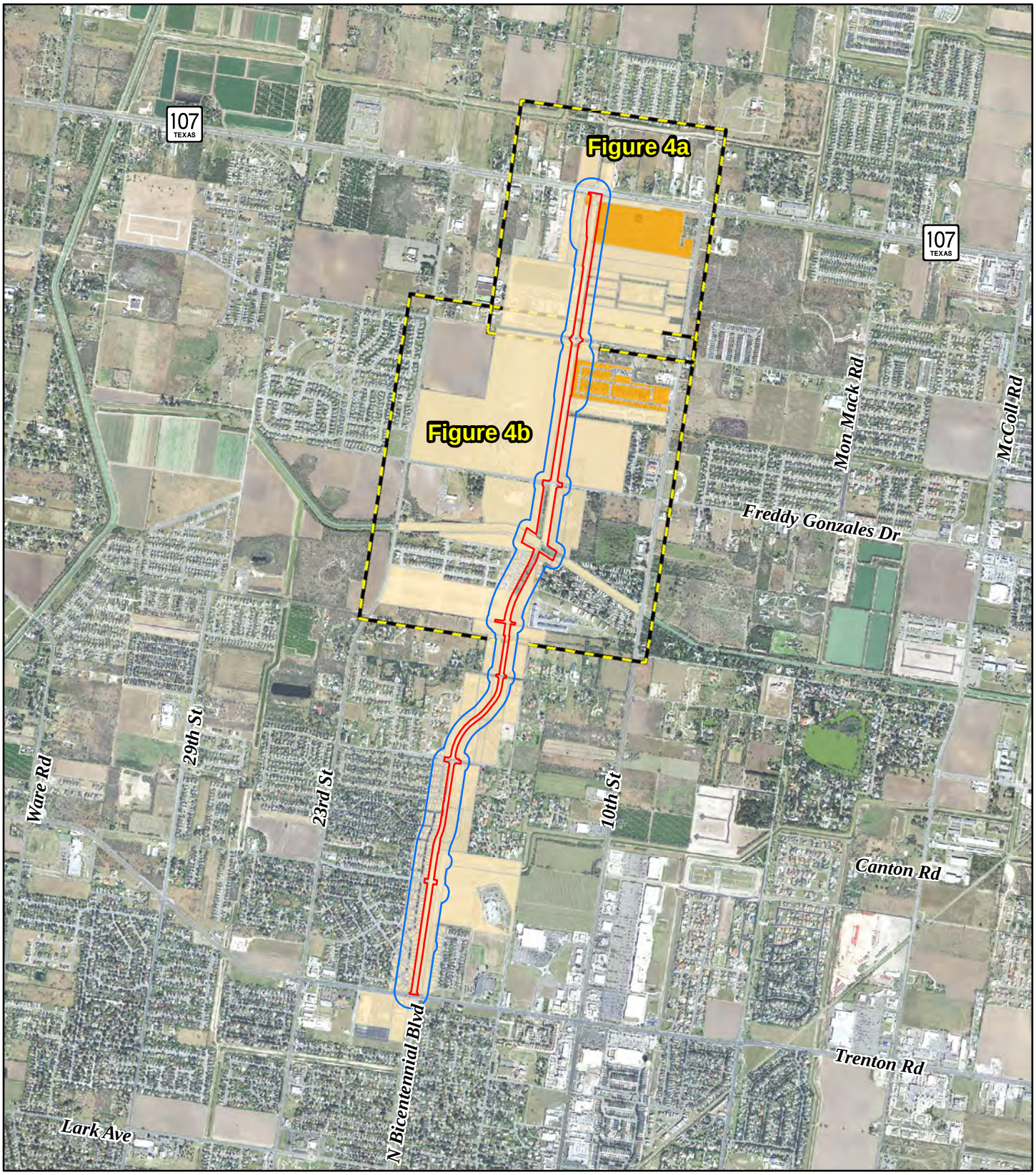
Resource-specific Maps

Appendix F-1. Historic-Age Resources Map

Appendix F-2. Noise Receiver Location Map

Appendix F-3. Induced Development Area within Project AOI Map

Appendix F-4. EPIC Sheet



Legend

- Project Limits
- Project APE
- Map Grid

Historic-Age Resources Map Index

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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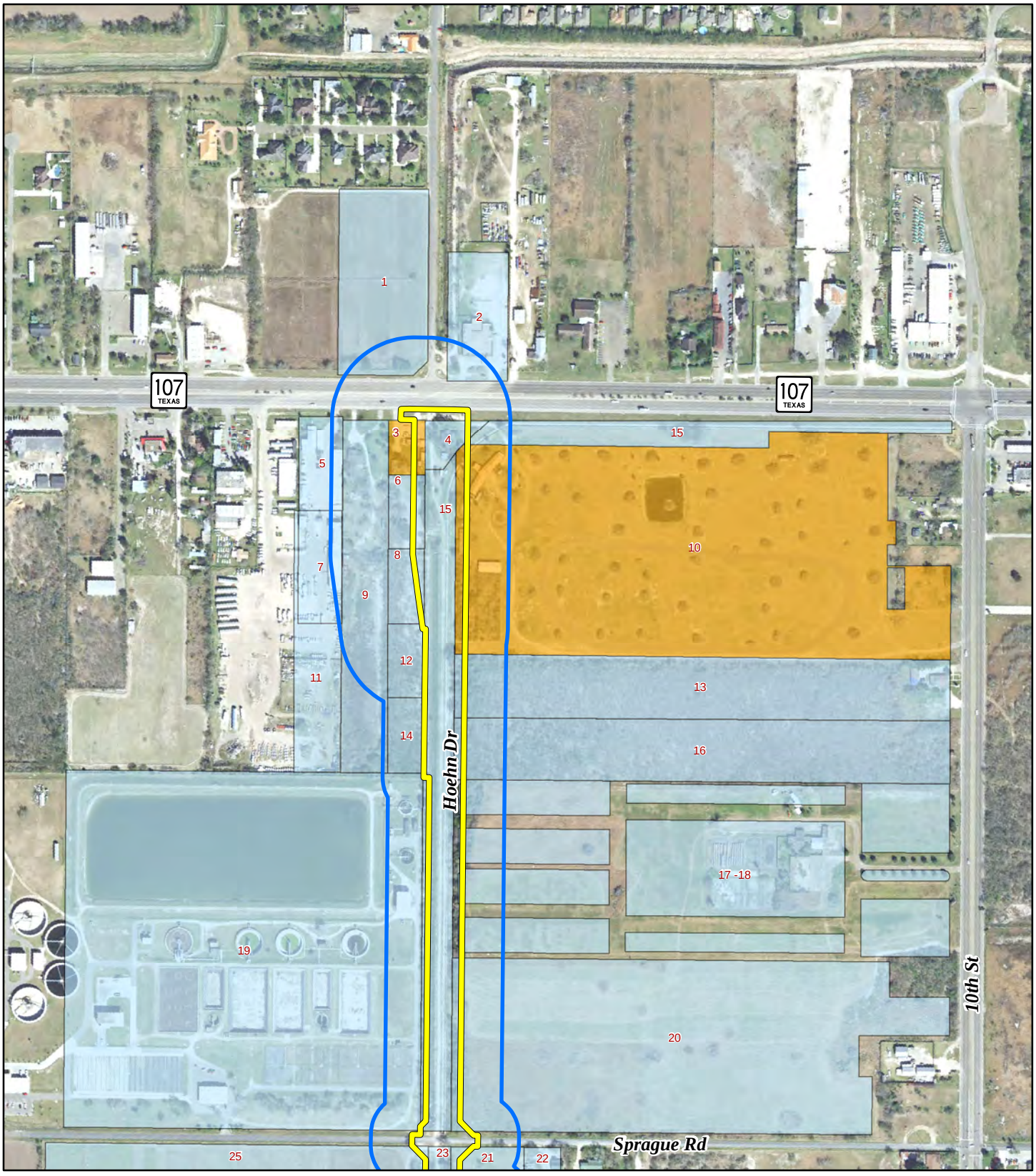
SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015



Legend

- Project Limits
- Project APE
- Property with Historic-Age Resources
- Property without Historic-Age Resources

Historic-Age Resources Map

(Page 1 of 2)

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107 to Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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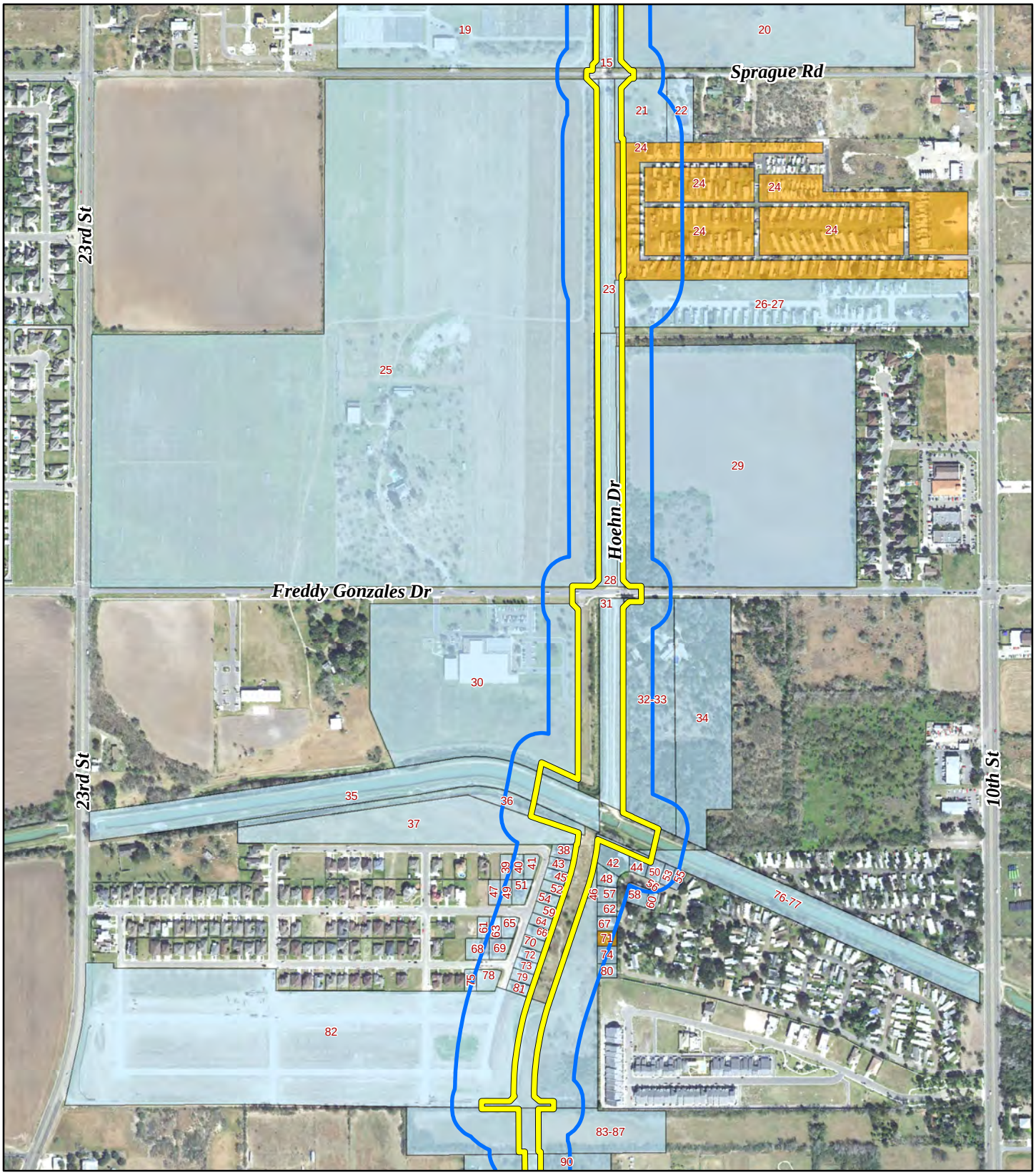
SCALE IN FEET

Data Source: Hidalgo County Appraisal District
Source / Year of Aerial Photograph: TOP / 2015



Legend

- Project Limits
- Project APE
- Property with Historic-Age Resources
- Property without Historic-Age Resources

Historic-Age Resources Map

(Page 2 of 2)

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107 to Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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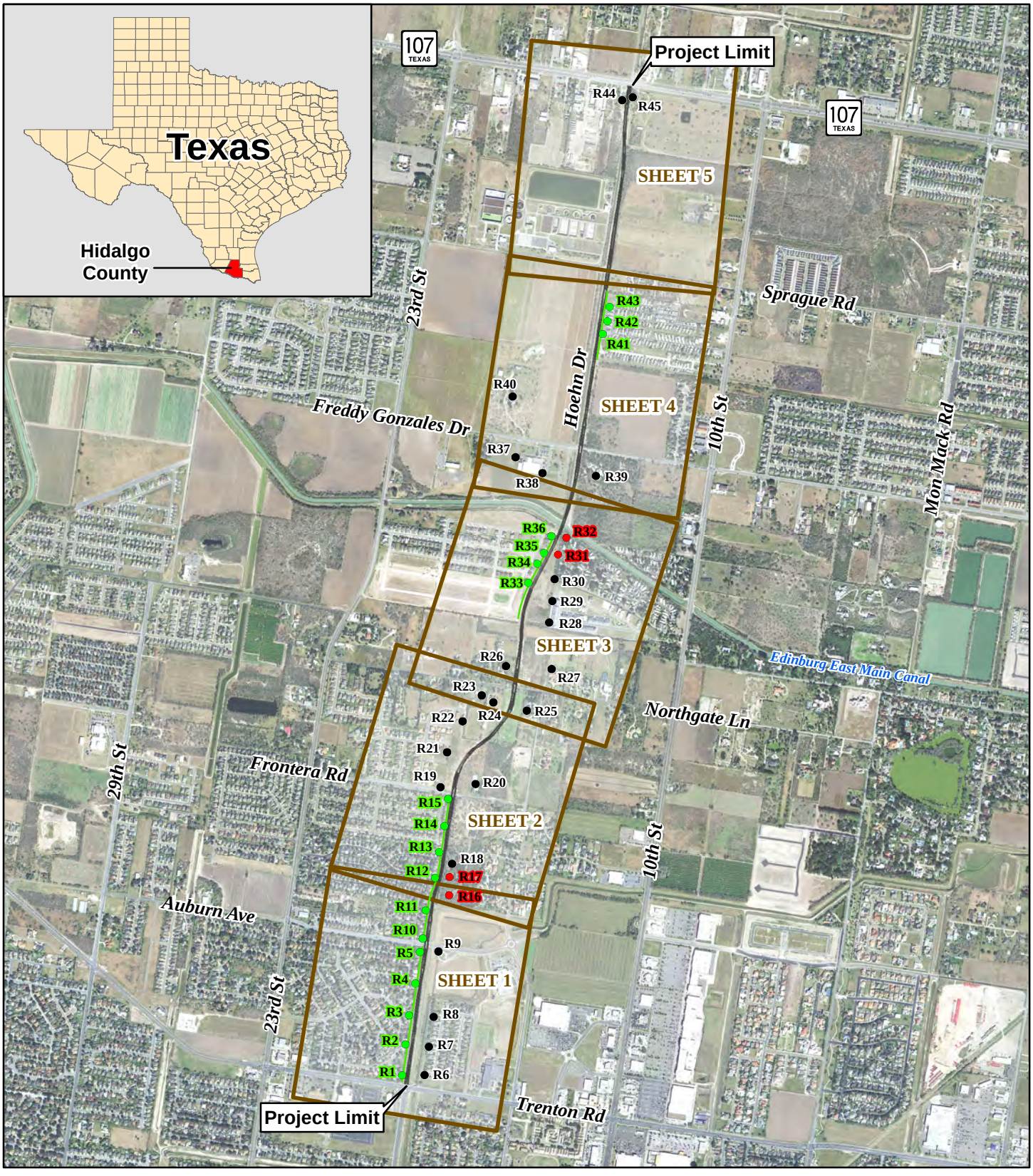
SCALE IN FEET

Data Source: Hidalgo County Appraisal District
Source / Year of Aerial Photograph: TOP / 2015



Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier

Noise Receiver Location Map Overview

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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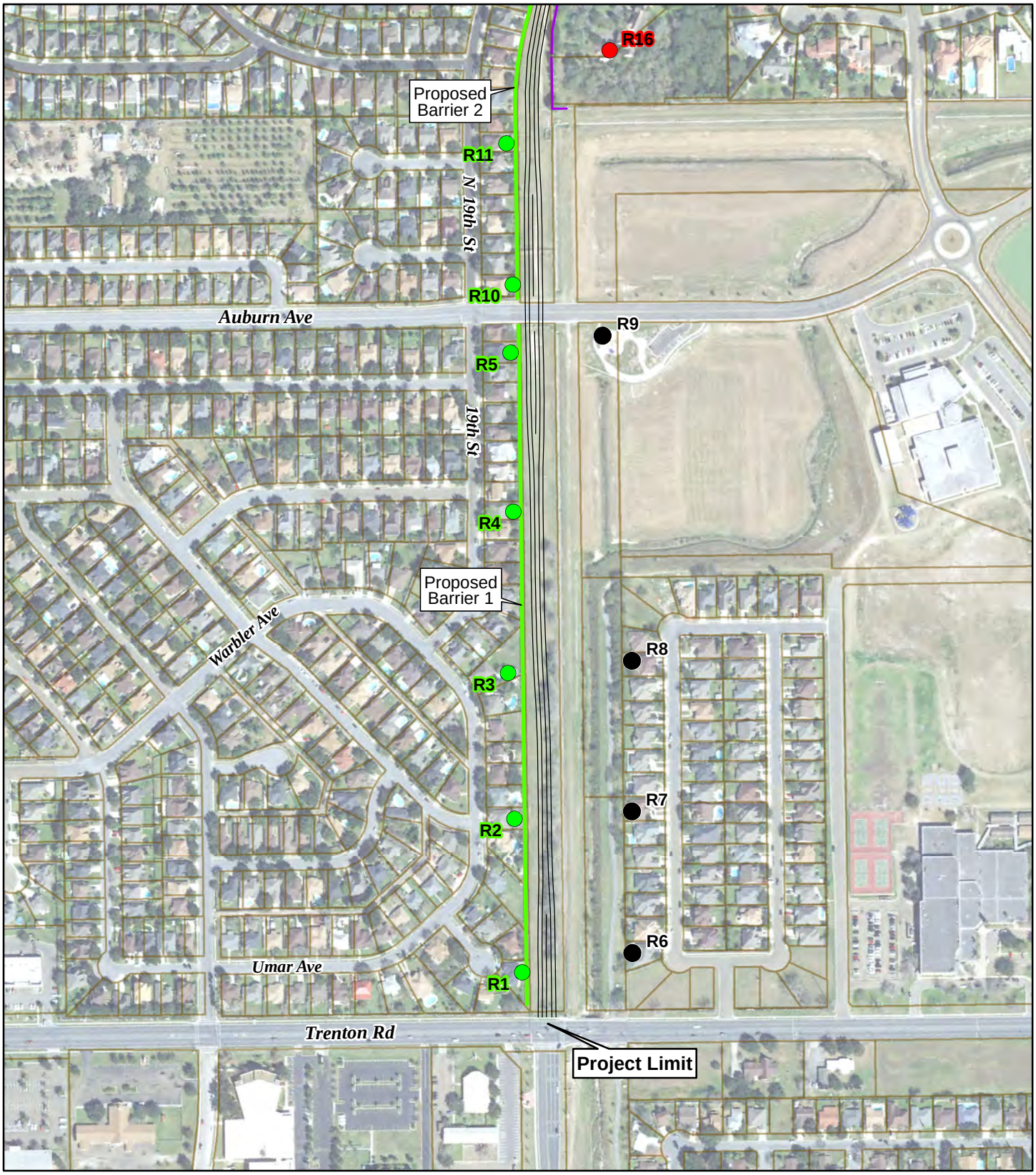
SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015



Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier
- Existing Residential Wall
- Future Roadway

Noise Receiver Location Map
Sheet 1 of 5

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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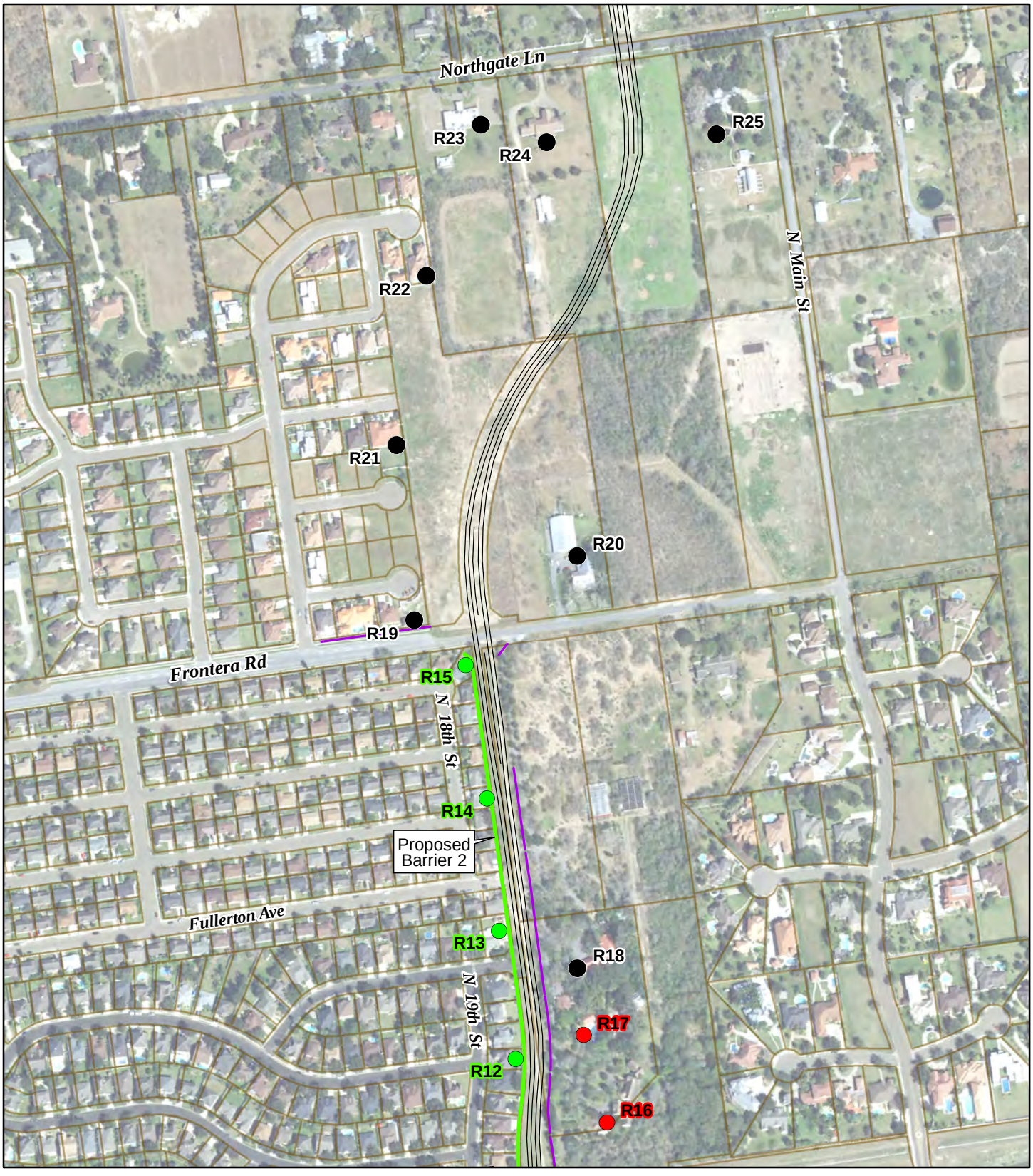
Source / Year of Aerial Photograph: TOP / 2015



Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier
- Existing Residential Wall
- Future Roadway

Noise Receiver Location Map
Sheet 2 of 5

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015

Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier
- Existing Residential Wall
- Future Roadway

Noise Receiver Location Map
Sheet 3 of 5

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015

Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier
- Existing Residential Wall
- Future Roadway

Noise Receiver Location Map
Sheet 4 of 5

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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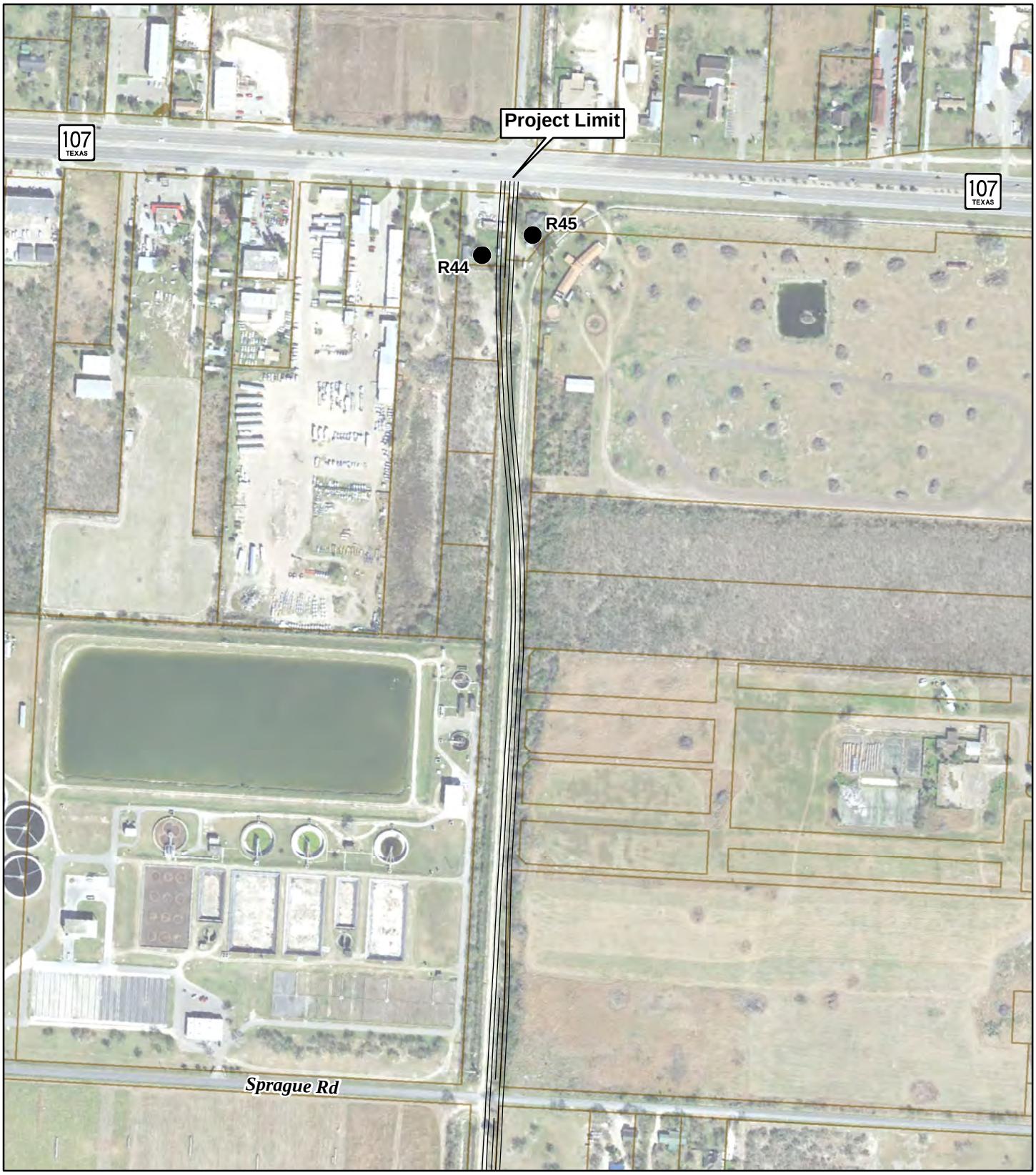
SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015



Legend

- Impacted Noise Receiver
- Non-Impacted Noise Receiver
- Receiver Benefiting from Proposed Noise Barrier
- Proposed Noise Barrier
- Existing Residential Wall
- Future Roadway

Noise Receiver Location Map
Sheet 5 of 5

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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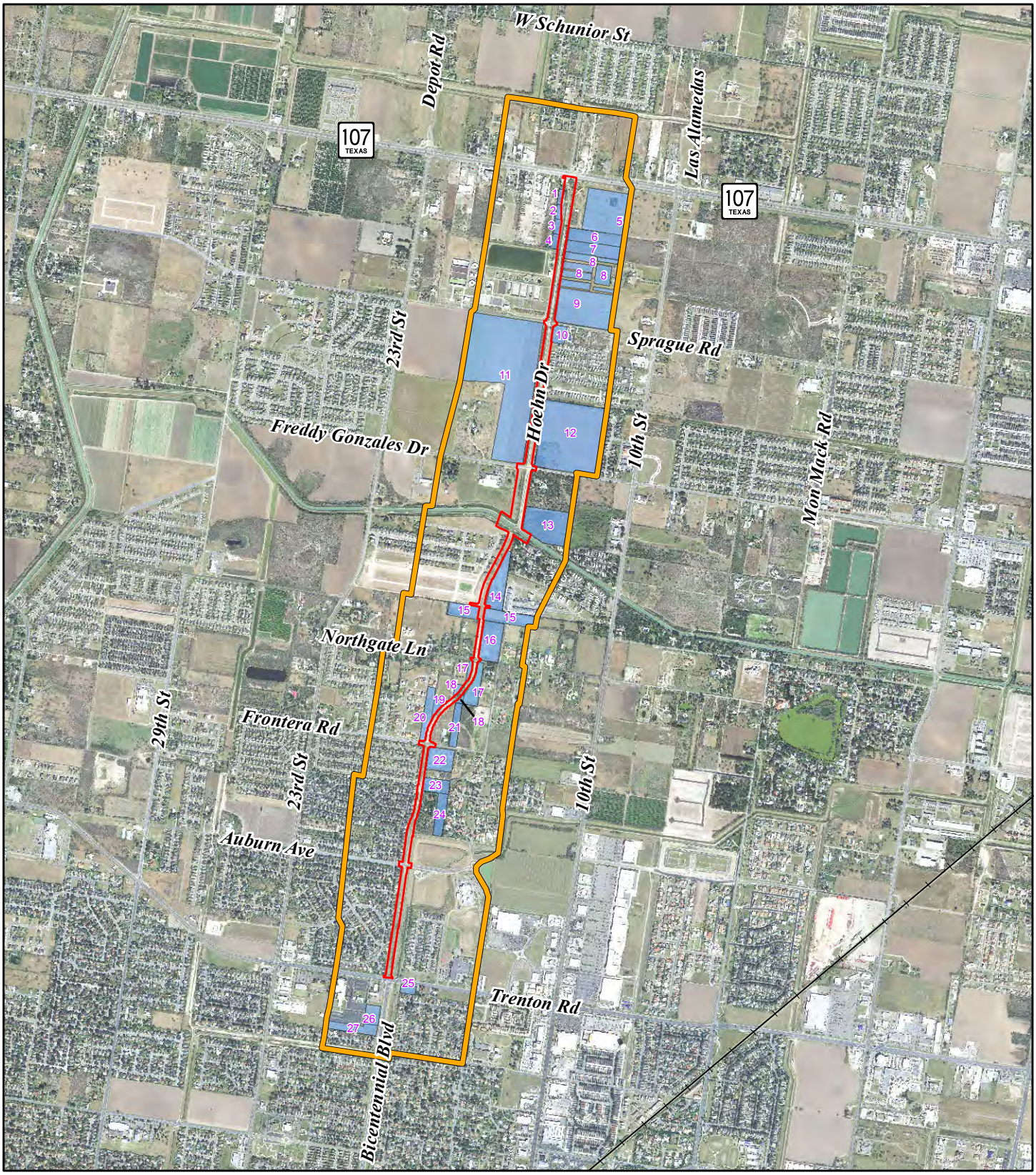
SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015



Legend

- Railroad
- Project Limits
- Project Area of Influence (AOI)
- Induced Development Area

Induced Development Area within Project AOI Map

Bicentennial Boulevard Project
From on Bicentennial Blvd., from SH 107
To Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

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SCALE IN FEET

Source / Year of Aerial Photograph: TOP / 2015

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

I. Clean Water Act, Section 402; Stormwater Pollution Prevention

Action Items Required : ☐ No Action Required

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

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

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

II. Clean Water Act, Sections 401 and 404 Compliance

Action Items Rquired : ☐ No Action Required

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

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

General Condition 12 - Categories I and II BMPs required

Category I (Erosion Control)

☐ Temporary Vegetation	☐ Interceptor Swale	☐ Mulch Filter Berms and/or Socks
☐ Blankets, Matting	☐ Diversion Dike	☐ Compost Filter Berms and/or Socks
☒ Mulch	☒ Erosion Control Compost	☐ Compost Blankets
☒ Sodding		

Category II (Sedimentation Control)

☒ Silt Fence	☒ Hay (Straw) Bale Dike	☐ Mulch Filter Berms and/or Socks
☐ Rock Berm	☐ Brush Berms	☐ Compost Filter Berms and/or Socks
☐ Triangular Filter Dike	☐ Sediment Basins	☐ Stone Outlet Sediment Traps
☐ Sand Bag Berm	☒ Erosion Control Compost	

General Condition 21 - Category III BMPs required

Category III (Post-Construction TSS Control)

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

II. Clean Water Act, Sections 401 and 404 Compliance - Continued:

4. ☒ The Contractor's designated and qualified Contractor Responsible Person Environmental (CRPe) will monitor the project site daily to ensue compliance with SW3P and TPDES General Permit TXR 150000. Daily Monitoring Reports shall be provided to TxDOT within 48 hours, in accordance with Item 506.3.1.
5. ☐ Other Project Specific Actions:
   1. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz
   2. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz

III. Cultural Resources

Action Items Required : ☐ No Action Required

1. ☒ Refer to the 2014 TxDOT Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges, Item 7.7.1., in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.
2. ☐ Other Project Specific Actions:
   1. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz
   2. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz

IV. Vegetation Resources

Action Items Required : ☐ No Action Required

1. ☒ In accordance with the 2014 TxDOT Standard Specifications; Item 164 - Seeding For Erosion Control; provide and install temporary or permanent seeding for erosion control as shown on the plans or as directed by the Engineer for all seeding and replanting of right of way where possible. (Required for Urban Settings)
2. ☐ In accordance with Executive Order 13112 on invasive species and the Executive Memorandum on Beneficial Landscaping, native species of plants shall be used for all seeding and replanting of right of way where possible for rural roadways. (Required for Rural Settings)
3. ☒ Preserve vegetation where possible throughout the project and minimize clearing, grubbing and excavation within stream banks, bed and approach sections.
4. ☐ Other Project Specific Actions:
   1. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz
   2. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzz

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Pharr District Contact No. 956-702-6100

Revised 01/30/2017

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Texas Department of Transportation
PHARR DISTRICT

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

SHEET 1 OF 2

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
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V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds

Action Items Required : ☐ No Action Required

1. ☒ Under the Migratory Bird Treaty Act (MBTA) of 1918, codified at 16 U.S.C. §703-712 and as enforced by the USFWS, the proposed construction work will not remove active nests from bridges, trees, ground and other structures during migratory bird nesting season, (February 1st. through October 1st.). If the Contractor needs to perform work within the right of way during nesting season, a qualified Biologist shall conduct a survey to determine if active nests are present. If present, the Contractor shall maintain a buffer zone around the nest(s) as directed by the Biologist. The buffer zone will be protected from clearing and disturbance until such time as the Biologist has determined that the nest(s) is no longer active. Prior to the nesting season, existing bridges and culverts should be treated against migratory bird nesting by utilizing Bird Exclusion Methods. Bird Exclusion Methods should be monitored and maintained throughout the nesting season. Refer to Standard Bird Exclusion Details.

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

3. ☒ Other Project Specific Actions:

   1. BMPs, as prescribed in the TxDOT-TPWD BMPs PA, for the following state-listed species and SGCNs are included in the TPWD BMPs (Sheets 1-3): Black-Spotted Newt, Sheep Frog, South Texas Siren, White-Lipped Frog, Audubon's Oriole, Western Burrowing Owl, WOod STork, Plains Spotted Skunk, Southern Yellow Bat, Spot-Tailed Earless Lizard, and Texas Indigo Snake.

   2. The following recommended BMP would apply to the Neojuvenile Tiger Beetle, Subtropical Blue-Black Tiger Beetle, A Tiger Beetle, Large Selenia, and Siler's Huaco which are not included in the BMP PA: "Inform contractor that this species may occur in the project area and to avoid harm to this species to the extent practicable."

   3. Xxxxxxxxxx Yyyyyyyyyy Zzzzzzzzzzz

VI. Hazardous Materials on Contamination Issues

Action Items Required : ☐ No Action Required

General (applies to all projects):

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

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

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

Contact the Engineer if any of the following are detected:

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

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

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

VI. Hazardous Materials on Contamination Issues - Continued:

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

   ☐ Yes ☒ No

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

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

   ☐ Yes ☐ No

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

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

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

   Note: The proposed project would result in the demolition of a residential home and an abandoned mechanical shop located near SH 107. The structures would be assessed and mitigated for asbestos as needed, following the ROW acquisition process. If the asbestos inspection is positive, see "If 'Yes'" commitments listed in Question 3 above. Commitments listed in Question 4 would also be applicable.

VII. Other Environmental Issues

Action Items Required : ☐ No Action Required

1. ☒ Noise

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

2. ☒ Air

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

   Contractor should minimize MSAT by utilizing measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increase use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.

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Pharr District Contact No. 956-702-6100 Revised 01/30/2017

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ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

SHEET 2 OF 2

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
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TPWD BMPs

The Programmatic Agreement defines Best Management Practices (BMPs) to be implemented by Texas Department of Transportation (TxDOT) per §2.213 (Programmatic Agreements) of the 2017 Memorandum of Understanding (MOU) between TxDOT and Texas Parks and Wildlife Department (TPWD). These BMPs are measures that TxDOT and TPWD agree will result in avoidance and minimization of potential impacts to natural resources and in some cases apply to particular types of TxDOT projects.

The purpose of this section is to provide BMPs to minimize impacts to species or groups of species. Implementation of these BMPs by TxDOT eliminates the need for coordination under § 2.206(1) of the MOU, except as noted.

Due diligence should be used to avoid killing or harming any wildlife species in the implementation of TxDOT projects.

☒ Bird BMPs (Required)

In addition to complying with the Migratory Bird Treaty Act (MBTA) perform the following BMPs:

- ☒ Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed.
- ☒ Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season.
- ☒ Avoid the removal of unoccupied, inactive nests, as practicable.
- ☒ Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair.
- ☒ Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

☐ Bald Eagle *(Haliaeetus leucocephalus)*

- ☐ Bird BMPs and Bald and Golden Eagle Protection Act compliance

☐ Reddish Egret *(Egretta rufescens)* or
☐ White-faced Ibis *(Plegadis chihi)*

- ☐ Bird BMPs unless project is within 300 meters (984 feet) of a known colonial water bird rookery then coordinate with TPWD.

☐ Rookeries (Recommendations)

In general, nesting dates for herons and egrets range from early February to late August in Texas, depending on the species. Great Blue Herons (GBHE) are usually the first to nest. When GBHE get disrupted from the nest and abandon nesting, then the other species of herons and egrets may not attempt to nest at the colony that year. Breeding dates for rookery species are approximately as follows:

Species	Dates
Cattle Egret	Early April to late October
Little Blue Heron	Late March to late July
Snowy Egret	Late March to early August
Great Egret	Early March to early August
Black-crowned Night Heron	Early February to late July
Great Blue Heron	February to late August

☐ Rookeries (Recommendations) (Continued)

- ☐ Vegetation clearing in a primary buffer area of 300 meters (984 feet) from a heronry periphery should be avoided. Utilizing areas that have already been cleared within this buffer area may be acceptable depending on site-specific characteristics. Additionally, human foot-traffic or machinery use should not occur within this buffer area during the nesting season.
- ☐ Clearing activities or construction using heavy machinery in a secondary buffer area of 1,000 meters (3,281 feet) from the heronry periphery should be avoided during the breeding season (courting and nesting).

☒ Bat BMPs (Required)

To determine the appropriate BMP to avoid or minimize impacts to bats, review the habitat description for the species of interest on the TPWD Rare, Threatened, and Endangered Species of Texas by County List or other trusted resources. All bat surveys and other activities that include direct contact with bats shall comply with TPWD' recommended white-nose syndrome protocols located on the TPWD Wildlife Habitat Assessment Program website under "Project Design and Construction".

The following survey and exclusion protocols should be followed prior to commencement of construction activities. For the purposes of this document, structures are defined as bridges, culverts (concrete or metal), wells, and buildings.

- ☒ For activities that have the potential to impact structures, cliffs or caves, or trees; a qualified biologist will perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before project letting.
- ☒ For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.
- ☒ If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction.
- ☒ Exclusion devices can be installed by a qualified individual between September 1 and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F and minimum daytime temperatures are above 70°F. Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, installation of alternate roosts is recommended to replace the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area. See Additional Bat BMPs (Recommendations) for recommended acceptable methods for excluding bats from structures.
- ☒ If feature(s) used by bats are removed as a result of construction, replacement structures should incorporate bat-friendly design or artificial roosts should be constructed to replace these features, as practicable.
- ☐ Conversion of property containing cave or cliff features to transportation purposes should be avoided where feasible.

☒ Bat BMPs (Required)(Continued)

- ☒ Avoid unnecessary removal of dead fronds on native and ornamental palm trees in south Texas (Cameron, Hidalgo, Willacy, Kenedy, Brooks, Kleberg, Nueces, and San Patricio counties) from April 1st through October 31st. If removal of dead fronds is necessary at other times of the year, limit frond removal to extended warm periods (nighttime temperatures: 55°F for at least two consecutive nights), so bats can move away from the disturbance and find new roosts.
- ☒ Large hollow trees, snags (dead standing trees), and trees with shaggy bark should be surveyed for colonies and, if found, should not be disturbed until the bats are no longer occupying these features. Post-occupancy surveys should be conducted by a qualified biologist prior to tree removal from the landscape.
- ☒ Retain mature, large diameter hardwood forest species and native/ornamental palm trees where feasible.
- ☒ In all instances, avoid harm or death to bats. Bats should only be handled as a last resort and after communication with TPWD.

☐ Mexican Long-tongues Bat *(Choeronycteris mexicana)*

- ☐ Avoid unnecessary impacts to cacti and agave species.
- ☐ Bat BMPs.

☒ Additional Bat BMPs (Recommendations)

- ☒ Bat surveys of structures should include visual inspections of structural fissures (cracked or spalled concrete, damaged or split beams, split or damaged timber railings), crevices (expansion joints, space between parallel beams, spaces above supports piers), and alternative structures (drainage pipes, bolt cavities, open sections between support beams, swallow nests) for the presence of bats.
- ☒ Before excluding bats from any occupied structure, bat species, weather, temperature, season, and geographic location must be incorporated into any exclusion plans to avoid unnecessary harm or death to bats. Winter exclusion must entail a survey to confirm either, 1) bats are absent or 2) present but active (i.e. continuously active - not intermittently active due to arousals from hibernation).
- ☒ Avoid using materials that degrade quickly, like paper, steel wool or rags, to close holes.
- ☒ Avoid using products or making structural modifications that may block natural ventilation, like hanging plastic sheeting over an active roost entrance, thereby altering roost microclimate.
- ☒ Avoid using chemical and ultrasonic repellents.
- ☒ Avoid use of silicone, polyurethane or similar non-water-based caulk products.
- ☒ Avoid use of expandable foam products at occupied sites.
- ☒ Avoid the use of flexible netting attached with duct tape.

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EPIC SHEET SUPPLEMENTALS

TPWD BMPs

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☒ Additional Bat BMPs (Recommendations) (Continued)

☒ In order to avoid entombing bats, exclusion activities should be only implemented by a qualified individual. A qualified individual or company should possess at least the following minimum qualifications:

- Experience in bat exclusion (the individual, not just the company).
- Proof of rabies pre-exposure vaccinations.
- Demonstrated knowledge of the relevant bat species, including maternity season date range and habitat requirements.
- Demonstrated knowledge of rabies and histoplasmosis in relation to bat roosts.

☒ Contact TPWD for additional resources and information to assist in executing successful bat exclusions that will avoid unnecessary harm or death in bats.

☐ Fossorial Mammal BMPs (Required)

☐ If black-tailed prairie dog (BTPD) burrows or pocket gopher mounds are to be excavated/directly impacted coordinate with TPWD WHAB.
☐ When a construction zone is adjacent to active BTPD burrows or pocket gopher mounds, erect barriers to discourage individuals moving through or into the construction area.
☐ When seeding or revegetation is planned in an area adjacent to BTPD burrows or pocket gopher mounds, a vegetative barrier should be considered in the planting to discourage dispersal into the ROW.

☐ Coues' Rice Rat *(Oryzomys couesi)*

☐ Minimize impacts to wetland, Resaca, oxbow lakes, and marsh habitats.
☐ Contractors will be advised of potential occurrence in the project area and to avoid harming the species if encountered.
☐ Water Quality BMPs.

☒ Plains Spotted Skunk *(Spilogale putorius interrupta)* or
☐ Swift Fox *(Vulpes velox)*

☒ Contractor will be advised of potential occurrence in the project area and to avoid harming the species if encountered and to avoid unnecessary impacts to dens.

☐ White nosed Coati *(Nasua narica)*
☐ Yellow nosed Cotton Rat *(Sigmodon ochrognathus)*

☐ Contractors will be advised of potential occurrence in the project area and to avoid harming the species if encountered.

☒ Terrestrial Reptile BMPs (Required)

☒ Apply hydro mulching and/or hydro seeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydro mulching and/or hydro seeding are not feasible due to site conditions, utilize erosion control blankets or mats that contain no netting or contain loosely woven,natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable.
☒ For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1 :1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling.
☒ Inform contractors that if reptiles are found on project site allow species to safely leave the project area.
☒ Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible.
☒ Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

☐ Texas Tortoise *(Gopherus berlandieri)*

☐ Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
☐ Utility trenches should be covered overnight or visually inspected before filling to avoid burial of the species.
☐ Terrestrial Reptile BMPs.

☐ Texas Horned Lizard *(Phrynosoma cornutum)*

☐ Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible.
☐ Terrestrial Reptile BMPs.

☒ Additional Reptile BMPs (Recommendations)

☒ Due to increased activity (mating) of reptiles during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (April-May) season. Also, timing ground disturbing activities before October when reptiles become less active and may be using burrows in the project area is also encouraged.
☒ When designing roadways with curbs, consider using Type I or Type III curbs to provide a gentle slope to enable turtles and small animals to get out of roadways.
☐ If Texas Tortoises are present in a project area, they should be removed from the area. After removal of the tortoises, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude tortoises and other reptiles. The exclusion fence should be constructed and maintained as follows:

a. The exclusion fence should be constructed with metal flashing or drift fence material.
b. Rolled erosion control mesh material should not be used.
c. The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
d. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.

☒ Amphibian and Aquatic Reptile BMPs (Required)

Unless absence of the species can be demonstrated, assume presence in suitable habitat and implement the following BMPs. Absence can only be demonstrated using TPWD-approved survey efforts (contact TPWD for minimum survey protocols for species and project site conditions).

☐ For projects within one mile of a known occupied location or observation of the species recorded from 1980 until the current year and suitable habitat is present, coordinate with TPWD.
☒ For new location roadway projects, coordinate with TPWD.
☒ For projects within existing right-of-way (ROW) when work is in water or will permanently impact a water feature and potential habitat exists for the target species complete the following:

a) Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.
b) Minimize impacts to wetland, temporary and permanent open water features, including depressions, and riverine habitats.
c) Maintain hydrologic regime and connections between wetlands and other aquatic features.

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☒ Amphibian and Aquatic Reptile BMPs (Continued)

d) Use barrier fencing to direct animal movements away from construction activities and areas of potential wildlife-vehicle collisions in construction areas directly adjacent, or that may directly impact, potential habitat for the target species.
e) Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydromulching and/or hydroseeding are not feasible due to site conditions, using erosion control blankets or mats that contain no netting, or only contain loosely woven natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable.
f) Project specific locations (PSLs) proposed within state-owned ROW should be located in uplands away from aquatic features.
g) When work is directly adjacent to the water, minimize impacts to shoreline basking sites (e.g., downed trees, sand bars, exposed bedrock) and overwinter sites (e.g., brush and debris piles, crayfish burrows) where feasible.
h) Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter, which may be refugia for terrestrial amphibians, where feasible.
i) If gutters and curbs are part of the roadway design, where feasible install gutters that do not include the side box inlet and include sloped (i.e. mountable) curbs to allow small animals to leave roadway. If this modification to the entire curb system is not possible, install sections of sloped curb on either side of the storm water drain for several feet to allow small animals to leave the roadway. Priority areas for these design recommendations are those with nearby wetlands or other aquatic features.

☐ For projects that require acquisition of additional ROW and work within that new ROW is in water or will permanently impact a water feature, implement a) - i) above plus j) -l) below, where applicable:

j) For sections of roadway adjacent to wetlands or other aquatic features, install wildlife barriers that prevent climbing. Barriers should terminate at culvert openings in order to funnel animals under the road. The barriers should be of the same length as the adjacent feature or 80 feet long in each direction, or whichever is the lesser of the two.
k) For culvert extensions and culvert replacement/installation, incorporate measures to funnel animals toward culverts such as concrete wingwalls and barrier walls with overhangs.
l) When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of terrestrial or aquatic wildlife through the water feature. Where feasible, biotechnical streambank stabilization methods using live native vegetation or a combination of vegetative and structural materials should be used.

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TPDES: Texas Pollutant Discharge Elimination System
TPWD: Texas Parks and Wildlife Department
TxDOT: Texas Department of Transportation
T&E: Threatened and Endangered Species
USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service

Texas Department of Transportation
PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS

TPWD BMPs

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
6			CS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	HIDALGO	SHEET NO.
CONTROL	SECTION	JOB	
0921	02	352	171

Date Printed: X-X-XX

☒ Sheep Frog *(Hypopachus variolosus)*

- ☒ Minimize disturbance to burrows or downed woody debris.
- ☒ Water Quality BMPs.
- ☒ Amphibian BMPs.

☒ South Texas Siren (Large Form) *(Siren sp 1)*

- ☒ Minimize impacts to warm, shallow waters with vegetative cover such as ponds and ditches.
- ☒ Water Quality BMPs.
- ☒ Amphibian BMPs.

☐ Freshwater Mussel BMPs (Required)

- ☐ When work is in the water; survey project footprints for state listed species where appropriate habitat exists.
- ☐ When work is in the water and mussels are discovered during surveys; relocate state listed and SGCN mussels under TPWD authorization and implement Water Quality BMPs.
- ☐ When work is adjacent to the water; Water Quality BMPs implemented as part of the SWPPP for a construction general permit or any conditions of the Section 401 water quality certification for the project will be implemented.

☐ Fish BMPs (Required)

- ☐ For projects within the range of a SGCN or State-Listed fish and work is adjacent to water: Use Water Quality BMPs. No TPWD Coordination required.
- ☐ For projects within the range of a SGCN or State-Listed fish, and work is in the water: TPWD coordination is required.

☒ Water Quality BMPs (Required)

In addition to BMPs required for a TCEQ Storm Water Pollution Prevention Plan and/or Section 401 water quality permit:

- ☒ Minimize the use of equipment in streams and riparian areas during construction. When possible, equipment access should be from banks, bridge decks, or barges.
- ☒ When temporary stream crossings are unavoidable, remove stream crossings once they are no longer needed and stabilize banks and soils around the crossing.

☐ Additional Water Quality BMPs (Recommendations)

- ☐ Wet-Bottomed detention ponds are recommended to benefit wildlife and downstream water quality. Consider potential wildlife-vehicle interactions when siting detention ponds.
- ☐ Rubbish found near bridges on TxDOT ROW should be removed and disposed of properly to minimize the risk of pollution. Rubbish does not include brush piles or snags.

☐ Aquatic Mitigation (Recommendations)

- ☐ In-kind compensatory mitigation should be considered for all unavoidable impacts to aquatic resources including, but not limited to streams, wetlands, oysters, seagrass and mudflats, regardless of their jurisdictional status.
- ☐ Compensatory mitigation plans should be developed in consultation with TPWD Transportation Conservation Coordinator.

☐ Stream Crossings (Recommendations)

- ☐ Use spanning bridges rather than culverts when feasible.
- ☐ If using a culvert, staggered culverts that concentrate low flows but provide conveyance of higher flows through staggered culverts placed at higher elevations is recommended.
- ☐ Bottomless culverts are recommended to allow for fish and other aquatic wildlife passage in the low flow channel. If bottomless culverts are not feasible, making a low flow channel for fish passage is recommended.
- ☐ Avoid placing riprap across stream channels and instead use alternative stabilization such as biotechnical stream bank stabilization methods including live native vegetation or a combination of vegetative and structural materials. When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of aquatic and terrestrial wildlife underneath the bridge. In some instances, riprap may be buried, back-filled with topsoil and planted with native vegetation.
- ☐ Incorporate bat-friendly design into bridges and culverts.
- ☐ Design bridges for adequate vertical and horizontal clearances under the roadway to allow for terrestrial wildlife to safely pass under the road.
- ☐ A span wide enough to cross the stream and allow for dry ground and a natural surface path under the roadway is encouraged. For culverts, incorporation of an artificial ledge inside the culvert on one or both sides for use by terrestrial wildlife is recommended.
- ☐ Riparian buffer zones should remain undisturbed where possible.

☐ Vegetation BMPs (Recommendations)

- ☐ Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided to the greatest extent practicable. Wherever practicable, impacted vegetation should be replaced with in-kind on-site replacement/restoration of native vegetation.
- ☐ To minimize adverse effects, activities should be planned to preserve mature trees, particularly acorn, nut or berry producing varieties. These types of vegetation have high value to wildlife as food and cover.
- ☐ It is strongly recommended that trees greater than 12 inches in diameter at breast height (dbh) that are removed be replaced. TPWD's experience indicates that for ecologically effective replacement, a ratio of three trees for every one (3:1) lost should be provided to the extent practicable either on-site or off-site. Trees less than 12 inches dbh should be replaced at a 1:1 ratio.
- ☐ Replacement trees should be of equal or better wildlife quality than those removed and be regionally adapted native species.
- ☐ When trees are planted, a maintenance plan that ensures at least an 85 percent survival rate after three (3) years should be developed for the replacement trees.
- ☐ The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.
- ☐ The use of seed mix that contains seeds from only locally adapted native species is recommended.
- ☐ Avoid vegetation clearing activities during the general bird nesting season, March through August, to minimize adverse impacts to birds.

☐ Invasive Species BMPs (Recommendations)

- ☐ For all work in waters listed in the distribution of Zebra mussels on http://texasinvasives .org/ as well as those waters specified in 31 TAC § 57.972 and any TPWD emergency orders regarding prevention of the spread of Zebra mussels all machinery, equipment, or vehicles coming in contact with such waters should follow clean/drain/dry protocols to prevent the potential spread of invasive Zebra mussels.
- ☐ Care should be taken to avoid the spread of aquatic invasive plants (such as Giant Salvinia, Hydrilla, Hyacinth, Watermilfoil, Water Lettuce, and Alligatorweed) from infested water bodies into areas not currently infested. All machinery/equipment/vehicles coming in contact with waters containing aquatic invasive plant species should follow clean/drain/dry protocols to prevent the potential spread of invasive plants.
- ☐ Colonization by invasive plants should be actively prevented on disturbed sites in terrestrial habitats. Vegetation management should include removing invasive species as soon as practical while allowing the existing native plants to revegetate the disturbed areas. If using hay bales for sediment control, use locally grown weed-free hay to prevent the spread of invasive species. Leave the hay bales in place and allow them to break down, as this acts as mulch assisting in revegetation.

☐ Wildlife Crossings (Recommendations)

- ☐ Design roadways on new location to incorporate wildlife crossings, particularly in areas that bisect wildlife travel corridors or seasonal movement routes.
- ☐ Consider using cable median barrier instead of concrete traffic barrier when feasible to increase permeability for animals encountering barriers.

Pharr District Contact No. 956-702-6100

DRAFT

Revised 07/12/2017

List of Abbreviations

BMP: Best Management Practice
CGP: Construction General Permit
CRPe: Contractor Responsible Person Environmental
DSHS: Texas Department of State Health Services
FEMA: Federal Emergency Management Agency
FHWA: Federal Highway Administration
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
MS4: Municipal Separate Stormwater Sewer System

MSAT: Mobile Source Air Toxic
MBTA: Migratory Bird Treaty Act
NOI: Notice of Intent
NOT: Notice of Termination
NWP: Nationwide Permit
PCN: Pre-Construction Notification
PSL: Project Specific Location
SPCC: Spill Prevention Control and Countermeasure
SW3P: Storm Water Pollution Prevention Plan

TCEQ: Texas Commission on Environmental Quality
THC: Texas Historical Commission
TPDES: Texas Pollutant Discharge Elimination System
TPWD: Texas Parks and Wildlife Department
TxDOT: Texas Department of Transportation
T&E: Threatened and Endangered Species
USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service

Texas Department of Transportation
PHARR DISTRICT

EPIC SHEET SUPPLEMENTALS

TPWD BMPs

SHEET 3 OF 3

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
6			CS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	HIDALGO	SHEET NO.
CONTROL	SECTION	JOB	
0921	02	352	172

Date Printed: X-X-XX

Appendix G

Resource Agency Coordination

Appendix G-1. SHPO Coordination (7/2017)

Appendix G-2. USACE Coordination (6/2017)

Appendix G-3. TPWD Coordination (7/2017)

Appendix G-1

SHPO Coordination (7/2017)

MEMO

February 8, 2017

To: 850 File, Various Road Projects, Various CSJs, Various Districts

From: Scott Pletka, Ph.D.

Subject: Internal review under the First Amended Programmatic Agreement Among the Federal Highway Administration, the Texas Department of Transportation, the Texas State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings (PA-TU), and internal review under the Memorandum of Understanding (MOU) Between the Texas Historical Commission and the Texas Department of Transportation

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Listed below are the projects reviewed internally by qualified TxDOT archeologists from 2/2/17 to 2/8/17. The projects will have no effect on archeological historic properties. As provided under the PA-TU, consultation with the Texas State Historic Preservation Officer is not necessary for these undertakings. As provided under the MOU, the proposed projects do not require individual coordination with the Texas Historical Commission.

CSJ	DISTRICT	COUNTY	ROADWAY	DESCRIPTION	WORK PERFORMED
0902-38-124	Fort Worth	Parker	FM 5, FM 1178	Construct Sidewalk	Background Study
0921-02-352	Pharr	Hidalgo	Bicentennial Blvd. Roadway	Roadway Improvement Project	Background Study
1411-02-011	Yoakum	Austin	FM 1457	Highway Widening	Background Study

Signature _____ Date: 02 / 08 / 2017

For TxDOT

cc: ECOS Data Entry; PD; ENV_ARC: PA File *Table Template for Weekly List Memo.doc*

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.

Back To List

Properties ★ Details

Archeology Background Study Details

Documentation of Project Setting

1. Does the project conform to a type agreed (per Appendix 3 of PA-TU) to pose no potential to affect historic properties? No

2. Geologic Atlas of Texas map or PALM or soils maps examined. Yes

3. Texas Archeological Sites Atlas map examined for sites within one kilometer of the project area. Yes

4. Historical information examined. Check all that apply. Yes

Resources Used During the Initial Assessment

☑ Topographic map(s) ☑ Soil map(s) ☑ Road map(s) ☐ As-built plans ☐ Other

If other selected, please identify:

See Background study ECOS documents

5. Aerial images or project area images (e.g., Google Maps with Street View) examined. Yes

Analysis of Project Setting

6. Have archeological sites been identified within the area of potential effects (APE) or within 150 feet of the APE? No

Comments:

See Background study ECOS documents

7. Do cemeteries occur within the APE or within 25 feet of the APE? No

Comments:

See Background study ECOS documents

8. Do Holocene-age deposits mapped on Geologic Atlas of Texas or PALM or soils maps occur within the APE? No

Comments:

See Background study ECOS documents

9. Does the APE cross a waterway with the potential for shipwrecks? No

Comments:

See Background study ECOS documents

10. Is the APE within 500 feet of a historically reliable water source? No

Comments:

See Background study ECOS documents

11. Does the APE include a wetland or frequently flooded area? No

Comments:

See Background study ECOS documents

12. Does the Atlas map or other information (enter comment) show that occupation typically occurs on particular landform or landforms that the APE does not contain? Unknown

Comments:

See Background study ECOS documents

13. Have all settings that may have been favorable for occupation been subject to previous disturbances? Check all that apply. Yes

Previous Disturbances Identified During the Initial Assessment

☑ Previous road construction and maintenance ☑ Installation of utilities
☑ Modern land use practices like plowing and brush clearing ☑ Urban and/or suburban development
☑ Erosion and scouring by natural processes ☐ Other

If other selected, please identify:

In other words, the APE is highly modified.

14. Have the majority of the settings with high potential for archeological sites within the APE been previously surveyed? No

Comments:

See Background study ECOS documents

Conclusions

15. Have previous investigations covered a sufficient proportion of the APE to conclude that the APE is unlikely to contain archeological sites or cemeteries? No

Comments:

See Background study ECOS documents

16. Has the APE been sufficiently disturbed that any prehistoric archeological sites would lack the integrity to address important questions? Any such sites would lack integrity of (check all that apply): Yes

Integrity Issues Identified During the Initial Assessment

☑ Location ☐ Design ☑ Materials ☑ Association ☐ Other

If other selected, please identify:

See Background study ECOS documents

17. Has the APE been sufficiently disturbed that any historic-era archeological deposits would lack sufficient integrity to address important questions? Any such sites would lack integrity of (check all that apply): Yes

Integrity Issues Identified During the Initial Assessment

☑ Location ☑ Design ☑ Materials ☑ Association ☐ Other

If other selected, please identify:

See Background study ECOS documents

18. Does historic research show that historic-era archeological deposits, cemeteries, and shipwrecks are not likely to occur within the APE? Yes

Comments:

See Background study ECOS documents

19. Does the project area occur in a setting that was not conducive to human occupation and activity? Unknown

Comments:

See Background study ECOS documents

20. Will the project adversely affect archeological sites or cemeteries? No

Comments:

See Background study ECOS documents

Last Updated By: Chris W Ringstaff **Last Updated Date:** 02/08/2017 09:02:16

rcvd 6/22/17

Texas Department of Transportation

125 EAST 11TH STREET, AUSTIN, TEXAS 78701-2483 | 512.463.8588 | WWW.TXDOT.GOV

June 22, 2017

SECTION 106 REVIEW: DETERMINATION OF NO ADVERSE EFFECT
SECTION 4(f) REVIEW: NOTIFICATION OF INTENT TO RENDER *DE MINIMIS* SECTION 4(f) FINDING
District: Pharr
County: Hidalgo
CSJ#:0921-02-352
Highway: Bicentennial Blvd extension
Project Limits: SH 107 to Trenton Rd (2.86 miles)
Section 4(f) Property: Hidalgo County Irrigation District #2 (HCID #2), NRHP-listed

Ms. Linda Henderson

History Programs

Texas Historical Commission

Austin, Texas 78711

Dear Ms. Henderson:

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. As a consequence of these agreements, TxDOT's regulatory role for this project is that of the Federal action agency. In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), this letter initiates Section 106 consultation on the effect the proposed undertaking poses for the National Register of Historic Places (NRHP) listed HCID #2.

Project Description

TxDOT proposes extending Bicentennial Boulevard from State Highway (SH) 107 to Trenton Road in the City of McAllen, Hidalgo County, Texas. The proposed 2.86-mile roadway extension would consist of constructing a mostly new location, four-lane facility. The proposed roadway would consist of a 12-foot wide inside travel lane (one in each direction), a 14-foot wide outside shared use lane (one in each direction), 13-foot wide turn lanes, a 5-foot wide sidewalk, curb and gutter, and drainage improvements. The proposed project requires a total of approximately 42 acres of right-of-way (ROW) and 0.84 acre of temporary construction and permanent easements.

Historic Resources Survey Efforts
TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found one historically significant property previously documented within the area of potential effects (APE) (NRHP-listed HCID #2). The TxDOT Section 106 Programmatic Agreement defines the APE for this project as variable. Where there is an existing city street, the APE is 150' from the current or proposed ROW. Where the project is on new location, the APE is 300' from the proposed ROW.

Aside from HCID #2, the historic resources reconnaissance survey identified three other historic-age properties in the Area of Potential Effects (APE), including commercial/industrial, agricultural/ranching, and domestic properties. TxDOT historians determined that the properties are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons, and are therefore **not eligible** for NRHP listing under Criterion A, B, or C.

NRHP listed property

HCID #2 is an irrigation system listed in the NRHP. A 2004 agreement between THC and TxDOT tasked TxDOT with providing a historic context and methodology for evaluation of irrigation resources in the South Texas region. The agencies agreed that the "extensive irrigation canal systems established historic development patterns in the region." In addition, effects for transportation projects involving irrigation system resources should be "based on the impact to the system as a whole." The agencies also agreed that typical roadway projects such as road widening, bridge widening and/or replacement and culvert improvements do not generally: alter the overall function of the system's historic integrity or cause indirect visual impacts.

HCID #2's lateral canals lie within the project APE.

Determination of No Adverse Effect

- Direct Effect: The sub-surface stormwater drainage system of the proposed project would cross the lateral canals within HCID No. 2 in two locations (refer to Photos 4 and 5 in the HRSR) and an underground irrigation pipeline in one location (refer to Appendix A of the HRSR for the Project Plan View Map). Two of the crossings would be constructed by cutting the canals and excavating to some depth below the canal flow line, installing the stormwater drainage pipe, then reconstructing the concrete lined canal with concrete. In the third location, TxDOT would construct a 36-inch stormwater pipeline below a 16-inch pipeline of HCID No. 2. The stormwater drainage pipelines would be placed below the irrigation canal or pipeline in all three locations.

  The irrigation features will continue to serve in the same capacity, and there will not be a change to the use or function of the overall structure. The purpose of the canal to divert water would be unaffected. This proposed project would not create a noticeable visible change to the overall system's character-defining features, and would not adversely affect the system's integrity of location, setting, feeling, association, design,

workmanship, or materials. The function of HCID #2 will not be impaired, nor will it cease. Therefore, these minor changes pose **no adverse effect** as the property would still possess its significance following completion of the project.

- Indirect Effects: Project activities pose no indirect effects on the HCID #2. The work to tunnel under lateral canals and repair in kind would not affect or diminish the qualities and characteristics that contribute to the historic significance of the property.

- Cumulative Effects: Additionally, project activities pose no foreseeable cumulative adverse effects to the HCID #2 because the project would not impair the function of the historic irrigation system.

Determination of *De Minimis* Finding

As part of this coordination, TxDOT determined that the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 CFR 774. TxDOT based its determination on the fact that the use for the HCID #2 amounts to less than 1% of the system's overall acreage and the project will have **no adverse effect** on the NRHP-listed property. The function of the HCID #2 will not be impaired, nor will it cease.

Conclusion

In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), I hereby request your signed concurrence with TxDOT's finding of **no adverse effect** to the NRHP-listed HCID #2. We additionally notify you that SHPO is the designated official with jurisdiction over Section 4(f) resources protected under the provisions of 23 CFR 774 and that your comments on our Section 106 findings will be integrated into decision-making regarding prudent and feasible alternatives for purposes of Section 4(f) evaluations. Final determinations for the Section 4(f) process will be rendered by TxDOT pursuant to 23 U.S.C. 327 and the afore-mentioned MOU dated December 16, 2014.

We look forward to further consultation with your staff and hope to maintain a partnership that will foster effective and responsible solutions for improving transportation, safety and mobility in the state of Texas. Thank you for your cooperation in this federal review process. If you have any questions or comments concerning these evaluations, please contact me at (512) 416-2611 or Renee.Benn@txdot.gov.

Sincerely,

Renee Benn, MS

Cc: Bruce Jensen, Cultural Resource Management Section Director: BRJ

Rebekah Dobrasko, Historian Team Lead: RLD

CONCURRENCE WITH NON-ARCHEOLOGICAL SECTION 106 FINDINGS:
HISTORIC PROPERTY PRESENT: NRHP-LISTED HCID #2
NO ADVERSE EFFECT: NRHP-LISTED HCID #2

NAME: _____ DATE: 7/10/17
for Mark Wolfe, State Historic Preservation Officer

NO COMMENTS ON DETERMINATION OF DE MINIMIS IMPACT UNDER SECTION 4(F) REGULATIONS

NAME: _____ DATE: 7/10/17
for Mark Wolfe, State Historic Preservation Officer

Appendix G-2

USACE Coordination (6/2017)

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
CORPUS CHRISTI REGULATORY FIELD OFFICE
5151 FLYNN PARKWAY, SUITE 306
CORPUS CHRISTI, TEXAS 78411-4318

June 9, 2017

REPLY TO
ATTENTION OF:

Corpus Christi Regulatory Field Office

SUBJECT: **SWG-2017-00282;** Approved Jurisdictional Determination, City of McAllen, Bicentennial Boulevard, Hidalgo County, Texas

Mr. Brian Boe
Halff Associates
9500 Amberglen Boulevard, Suite 125
Austin, Texas 78729

Dear Mr. Boe:

This is in regard to your request, dated April 19, 2017, in which you requested an approved jurisdictional determination (AJD) for the proposed Bicentennial Boulevard project. The project site is located between State Highway 107 and Trenton Road in McAllen, Hidalgo County, Texas. The project locations reviewed are attached in 6 sheets.

The Corps of Engineers regulates the placement of structures and/or work performed in/or affecting navigable waters of the United States (US) under the provisions of Section 10 of the Rivers and Harbors Act of 1899 (Section 10). The Corps also regulates the discharge of dredged and/or fill material into waters of the United States, including navigable waters, under the provisions of Section 404 of the Clean Water Act (Section 404). After the review of site specific information of the proposed project area, we have determined that your proposed project is not subject to our jurisdiction under Section 10 and/or Section 404. The four features identified in your report are not waters of the US because they were excavated wholly from uplands for the purposes of agriculture irrigation, water supply, wastewater discharge and/or storm water detention. As such, a Department of the Army permit is not required.

Corps determinations are conducted to identify the limits of the Corps Clean Water Act jurisdiction for particular sites. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

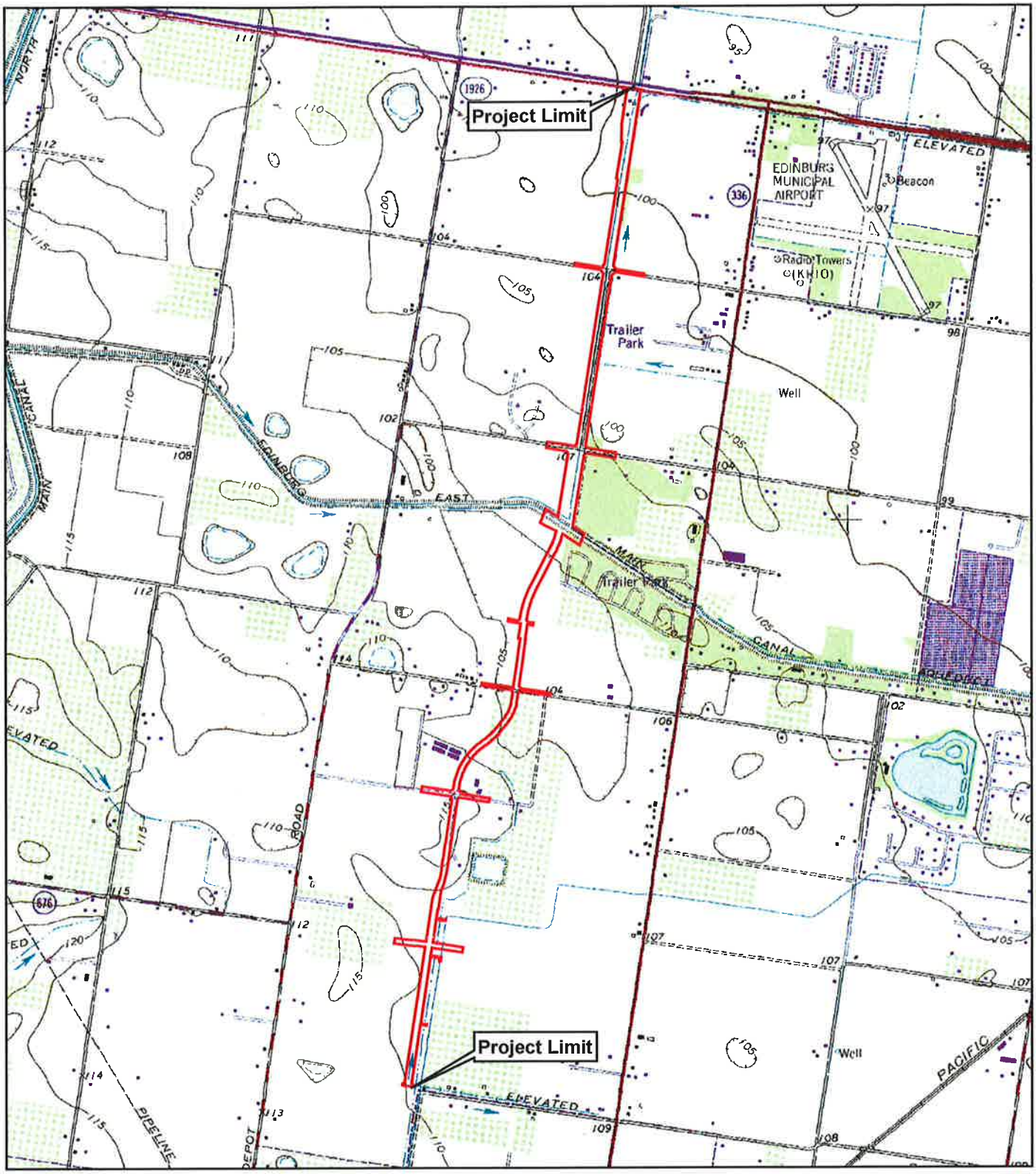
Please reference file number **SWG-2017-00282** in future correspondence pertaining to this subject. If you have any questions, please contact Mr. Robert Jones, Regulatory Project Manager, at the letterhead address or by telephone at 361-814-5847, ext. 1010. To assist us in improving our service to you, please complete the survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Sincerely,

Matthew Kimmel
Supervisor
Corpus Christi Regulatory Field Office

Enclosures

Legend	**Figure 1 - Project Vicinity Map**	N / W E / S
Project Limits	Bicentennial Boulevard Project From Trenton Road To State Highway (SH) 107 City of McAllen, Hidalgo County, Texas CSJ: 0921-02-352	0 2 4 SCALE IN MILES



Legend

Project Limits

Figure 2 - Proposed Project on USGS Topographic Map

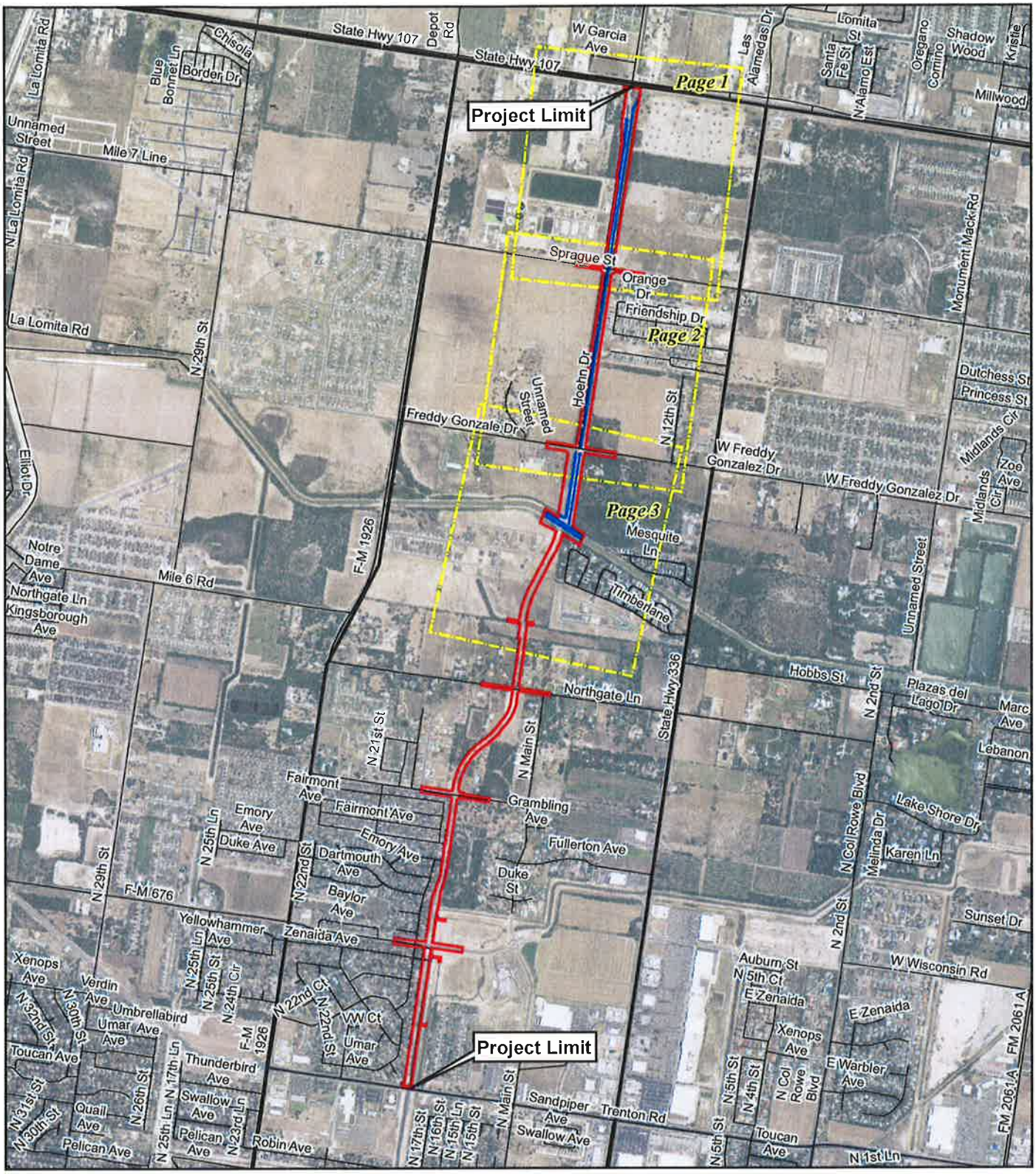
Bicentennial Boulevard Project -
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 2,000 4,000

SCALE IN FEET

Source: USGS Topographic Map, Edinburg Quandrangle, made in 1963, photorevised in 1983.



Legend

- Project Limits
- Aquatic Features

Figure 4 - Aquatic Features Index Map

Bicentennial Boulevard Project -
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 2,000 4,000

SCALE IN FEET

Source: 2014 NAIP

Legend

- Project Limits
- Aquatic Features
- Proposed Project Schematic

Figure 5 - Aquatic Features Map Detail
(Page 1 of 3)

Bicentennial Boulevard Project
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 200 400 600 800

SCALE IN FEET

Source: 2015 TOP

Legend

- Project Limits
- Aquatic Features
- Proposed Project Schematic

Figure 6 - Aquatic Features Map Detail
(Page 2 of 3)

Bicentennial Boulevard Project
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 200 400 600 800

SCALE IN FEET

Source: 2015 TOP

Legend

- Project Limits
- Aquatic Features
- Proposed Project Schematic

Figure 7 - Aquatic Features Map Detail
(Page 3 of 3)

Bicentennial Boulevard Project
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 200 400 600 800

SCALE IN FEET

Source: 2015 TOP

Appendix G-3

TPWD Coordination (7/2017)

Kannenberg, Samantha

From: Eugene Palacios <epalacios@mcallen.net>
Sent: Wednesday, June 14, 2017 9:21 AM
To: Diaz, Marcos; Diamond, Jason; Kannenberg, Samantha
Subject: FW: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

Eugene Palacios, PE, CFM
Transportation Engineer

City of McAllen
Engineering Department
311 N. 15th Street
McAllen, Texas 78501
O 956.681.1151 C 956.648.9535

From: Mike Miranda [mailto:Mike.Miranda@txdot.gov]
Sent: Wednesday, June 14, 2017 9:16 AM
To: Eugene Palacios <epalacios@mcallen.net>
Cc: Nolan Nicolas <Nolan.Nicolas@txdot.gov>
Subject: FW: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

Good morning, Eugene:

The email below from the Texas Parks & Wildlife Department is FYI.

Respectfully,
Mike

--

Texas Department of Transportation

Mike Miranda, P.E., PTOE
Project Manager
Advanced Project Development
Pharr District Office
(956) 702-6116

From: Nolan Nicolas
Sent: Monday, June 12, 2017 1:29 PM
To: Sue Reilly
Cc: Robin Gelston; Mike Miranda; Mike Chavez
Subject: RE: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

Sue,

Thank you for your assistance.

Nolan D. Nicolas
Environmental Specialist
Texas Department of Transportation-Pharr District
600 West Interstate 2
Pharr,Texas 78577
Tel. 956-702-6182
Nolan.Nicolas@txdot.gov

From: Sue Reilly [mailto:Sue.Reilly@tpwd.texas.gov]
Sent: Friday, June 09, 2017 4:46 PM
To: Nolan Nicolas
Subject: RE: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

Nolan,

I do not have any comments on this project.

Thank you for submitting the following project for early coordination: Bicentennial Boulevard extension in McAllen (CSJ 0921-02-352). TPWD appreciates TxDOT's commitment to implement the practices listed in the Biological Evaluation Form submitted on May 11, 2017. Based on a review of the documentation, the avoidance and mitigation efforts described, and provided that project plans do not change, TPWD considers coordination to be complete. However, please note it is the responsibility of the project proponent to comply with all federal, state, and local laws that protect plants, fish, and wildlife.
According to §2.204(g) of the 2013 TxDOT-TPWD MOU, TxDOT agreed to provide TXNDD reporting forms for observations of tracked SGCN (which includes federal- and state-listed species) occurrences within TxDOT project areas. Please keep this mind when completing project due diligence tasks. For TXNDD submission guidelines, please visit the following link: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/submit.phtml

Thank you,

Sue Reilly
Transportation Assessment Liaison
TPWD Wildlife Division
512-389-8021

From: WHAB_TxDOT
Sent: Thursday, May 11, 2017 3:24 PM
To: Nolan Nicolas <Nolan.Nicolas@txdot.gov>
Cc: Sue Reilly <Sue.Reilly@tpwd.texas.gov>
Subject: RE: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

The TPWD Wildlife Habitat Assessment Program has received your request and has assigned it project ID # 37967. The Habitat Assessment Biologist who will complete your project review is copied on this email.

Thank you,

John Ney
Administrative Assistant
Texas Parks & Wildlife Department
Wildlife Diversity Program – Habitat Assessment Program
4200 Smith School Road
Austin, TX 78744
Office: (512) 389-4571

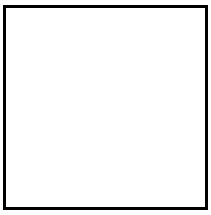
From: Nolan Nicolas [mailto:Nolan.Nicolas@txdot.gov]
Sent: Thursday, May 11, 2017 2:07 PM
To: WHAB <WHAB@tpwd.texas.gov>
Subject: TPWD Early Coordination - Bicentennial Blvd Extension- CSJ 0921-02-352

To whom it may concern.

Please find attached a copy for your review of the Biological Evaluation Form for the proposed Bicentennial Blvd Extension (CSJ No. 0921-02-352) located at McAllen, Hidalgo County, TX.
Coordination with TPWD would be required because the proposed project would impact vegetation that exceed the disturbance threshold as indicated in the MOU.
Let me know if need anything else or have any questions.

Thanks in advance e for your help.

Nolan D. Nicolas
Environmental Specialist
Texas Department of Transportation-Pharr District
600 West Interstate 2
Pharr,Texas 78577
Tel. 956-702-6182
Nolan.Nicolas@txdot.gov



Appendix H

Letter Documenting Compliance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970

December 14, 2017

Texas Department of Transportation Pharr District
600 W. Interstate 2
Pharr, Texas 78577-1231
Attn: Robin Gelston

Re: Bicentennial Boulevard Extension Project
From on Bicentennial Blvd., from State Highway (SH) 107 to Trenton Rd.
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

Dear Ms. Gelston:

The City of McAllen has early acquired approximately 40.1 acres of right-of-way (ROW) for the proposed Bicentennial Boulevard Extension Project. The earliest ROW (40-foot width) within the project corridor is located between Freddy Gonzalez and SH 107, which was dedicated with the Texas Mexican Railway Company Subdivision (Vol. 24, Pg. 168-171 D.R.H.C. - 1913). Additional ROW along the corridor was dedicated through the subdivision process between 1993 and 2016. The city also acquired ROW by exercising its eminent domain authority between 2007 and 2012 after recognizing the need to secure ROW along the corridor for public improvements (e.g., Bicentennial Sanitary Sewer Interceptor Project and the Bicentennial Boulevard Extension Project). A total of 10.3 acres of ROW have been dedicated per subdivision, and a total of 29.8 acres of ROW have been acquired through the eminent domain process.

Both the United States and Texas Constitutions provide that no private land may be taken for public purposes without adequate compensation. To be eligible for Federal funding, land acquired by local municipalities and the Texas Department of Transportation (TxDOT) must be acquired in accordance with Title II and Title III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended ('Uniform Act'). The City of McAllen compensated each landowner for the purchase of their property in accordance with the Uniform Act, as described in TxDOT's Real Estate Acquisition Guide for Local Public Agencies.

The area encompassing the early acquisitions, as well as the overall project area, is broadly composed of Environmental Justice (EJ) populations reporting minority populations above 50 percent. In relation to low-income populations, no Census block groups in the project area reported an income in the past 12 months below the United States Department of Health and Human Services 2017 poverty guideline of $24,600. Any potential adverse impacts on EJ populations would be offset in part by project-

related benefits of the proposed project, such as improved community cohesion and availability of bicycle and pedestrian facilities. Disproportionately high and adverse impacts to EJ populations are not anticipated.

The early acquisition of parcels will not limit the evaluation of alternatives (no-build or build) for the proposed Bicentennial Boulevard Extension Project as required under the National Environmental Policy Act (NEPA) process. Project development using Federal funding subsequent to the early acquisition would be subject to the NEPA process and would require environmental clearance from TxDOT. It is understood by the City of McAllen that the early acquisitions are considered "at risk" such that the early acquired parcels might not be incorporated into the Federally funded project in the event the no-build alternative is selected from the environmental process.

In conclusion, all of the early acquisitions were acquired by the City of McAllen in accordance with the Uniform Act. The City of McAllen worked closely with landowners to ensure that the negotiation and acquisition process was conducted in a satisfactory and timely manner, and in accordance with the Uniform Act. All required records and complete documentation regarding the acquired parcels are located at the City of McAllen and available for inspection by TxDOT. If you have any questions please feel free to contact Eugene Palacios, P.E., at (956) 681-1151 or by email at epalacios@mcallen.net.

Sincerely,

Gary L. Henrichson
Deputy City Attorney
City of McAllen

Appendix I

Section 4(f) Documentation

Checklist for Section 4(f) *De Minimis* for Public Parks, Recreation Lands, Wildlife & Waterfowl Refuges, and Historic Properties

Main CSJ: 0921-02-352
District(s): Pharr
County(ies): Hidalgo
Property ID: Hidalgo County Irrigation District #2
Property Name: HCID #2

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.

The following checklist was developed as a tool to assist in streamlining the Section 4(f) *De Minimis* process and to ensure that all necessary information is documented in the File of Record (ECOS).

What Type of Property is Being Evaluated?

- ☐ A park, recreation land, or wildlife/waterfowl refuge
- ☒ A historic property

Section 4(f) Defining Criteria for Historic Properties

1. Yes — Is the property listed or eligible for the NRHP or NHL?

Establishing Section 4(f) Use of the Property

1. Yes — Does the project require a use (i.e., new right of way, new easement(s), etc.)?

Establishing Section 4(f) *De Minimis* Eligibility

1. Yes — Was it determined that the project will not adversely affect the activities features, or attributes that make the property eligible for Section 4(f) protection?

2. Yes — Did the Official with Jurisdiction concur that the project will not adversely affect the features or attributes that make the property eligible for Section 4(f) protection?

Documentation

The following **MUST** be attached to this checklist to ensure proper documentation of the Section 4(f) *De Minimis*:

1. Brief project description
2. Explanation of how the property will be used.
3. A detailed map of the Section 4(f) property including:
   a. Current and proposed ROW
   b. Property boundaries
   c. Existing and planned facilities
4. Concurrence letter with the Official with Jurisdiction

TxDOT Approval Signatures

ENV Technical Expert Reviewer Certification

I reviewed this checklist and all attached documentation and confirm that the above property and proposed project meet the requirements of 23 CFR 774 for a Section 4(f) *De Minimis* finding.

ENV Personnel Name — Date: 7-12-17

TxDOT-ENV Section 4(f) *De Minimis* Final Approval

Based upon the above considerations, this Section 4(f) *De Minimis* satisfies the requirements of 23 CFR 774.

TxDOT-ENV, PD Director or designee — Date: 7/13/17

Project description- Bicentennial Extension, Hidalgo Co

TxDOT proposes extending Bicentennial Boulevard from State Highway (SH) 107 to Trenton Road in the City of McAllen, Hidalgo County, Texas. The proposed 2.86-mile roadway extension would consist of constructing a mostly new location, four-lane facility. The proposed roadway would consist of a 12-foot wide inside travel lane (one in each direction), a 14-foot wide outside shared use lane (one in each direction), 13-foot wide turn lanes, a 5-foot wide sidewalk, curb and gutter, and drainage improvements. The proposed project requires a total of approximately 42 acres of right-of-way (ROW) and 0.84 acre of temporary construction and permanent easements.

NRHP eligible property

The NRHP-listed Louisiana-Rio Grande Canal Company Irrigation System Historic District is located in the APE. This district is currently known as Hidalgo County Irrigation District #2 (HCID #2).

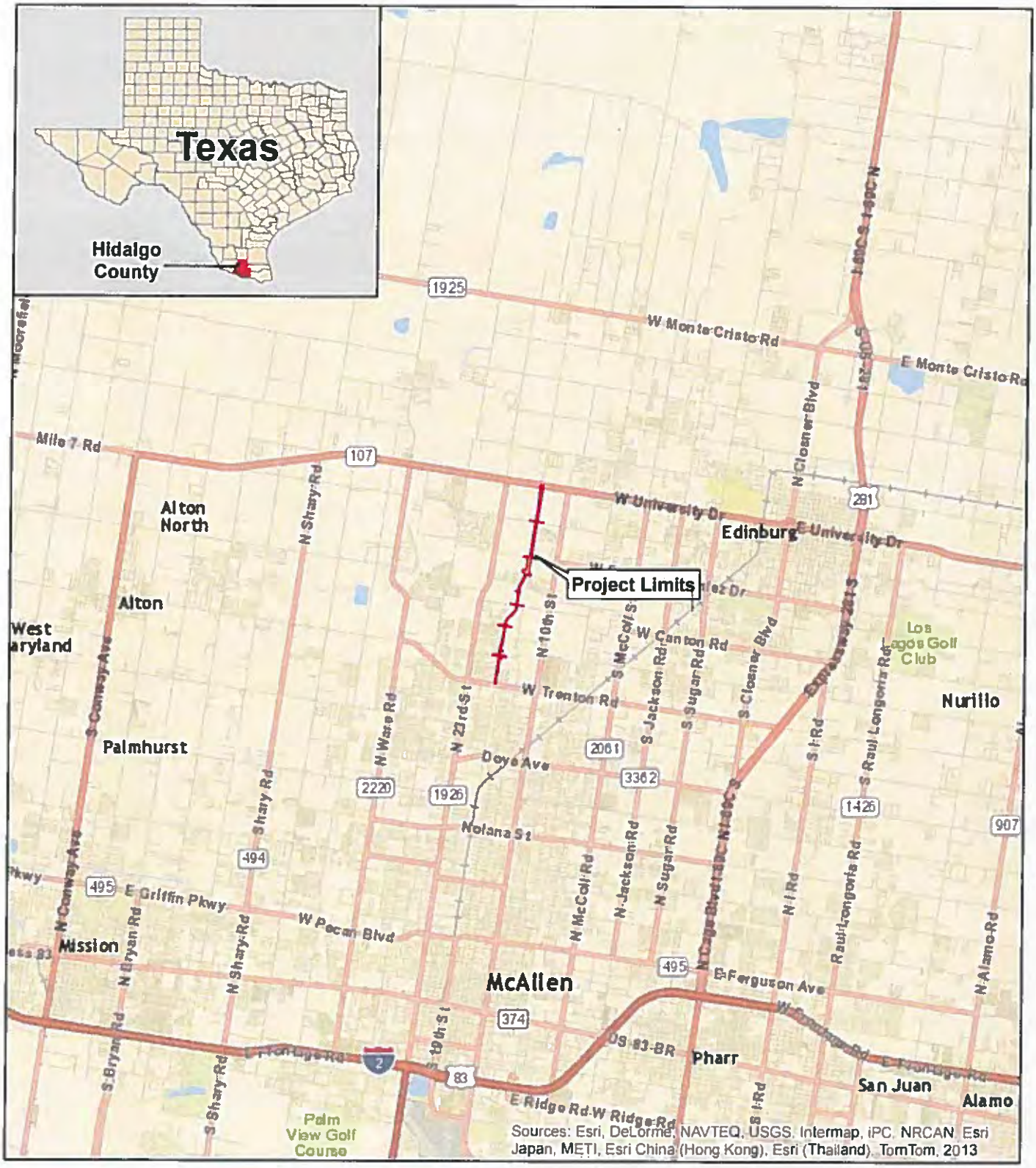
***De Minimis* Impact Finding**

The sub-surface stormwater drainage system of the proposed project would cross the lateral canals within HCID No. 2 in two locations (refer to Photos 4 and 5 attached) and an underground irrigation pipeline in one location (refer to Appendix A of the HRSR for the Project Plan View Map). Two of the crossings would be constructed by cutting the canals and excavating to some depth below the canal flow line, installing the stormwater drainage pipe, then reconstructing the concrete lined canal with concrete. In the third location, TxDOT would construct a 36-inch stormwater pipeline below a 16-inch pipeline of HCID No. 2. The stormwater drainage pipelines would be placed below the irrigation canal or pipeline in all three locations.

The function of the irrigation system will not be impaired, nor would it cease to exist. Therefore, these actions would cause no adverse effect to the NRHP-listed resources. The historic property would still convey its historic significance after the project is complete. These criteria comport with the "no adverse effect" determination process outlined in the July 15, 2004 consensus agreement with SHPO.

Furthermore, it was determined that the proposed action would not significantly diminish the system's location, design, setting, materials, workmanship, feeling or association. For these reasons, the proposed project complies with de minimis guidelines because the project activities would not affect or diminish the qualities and characteristics that contribute to the significance of the historic property.

TxDOT determined that the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 CFR 774. TxDOT is basing its determination on the fact that the use for the HCID #2 amounts to less than 1% of the property's overall acreage and the project will have **no adverse effect** on the NRHP-eligible property. The Texas SHPO concurred with this determination and TxDOT notified SHPO of their OWJ role accordingly (see attached correspondence). This de minimis finding does not require the traditional second step of including all possible planning to minimize harm because avoidance, minimization, mitigation, or enhancement measures are included as part of this determination.



Legend

Project Limits

Figure 1 - Project Vicinity Map

Bicentennial Boulevard Project
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 2 4

SCALE IN MILES

Legend

- Project Limits
- Historic District

Figure 5 -
Historic Features Map

Bicentennial Boulevard Project
From Trenton Road
To State Highway (SH) 107
City of McAllen, Hidalgo County, Texas
CSJ: 0921-02-352

N
W E
S

0 2,000 4,000

SCALE IN FEET

Source / Year of Aerial Photograph: NAIP / 2014

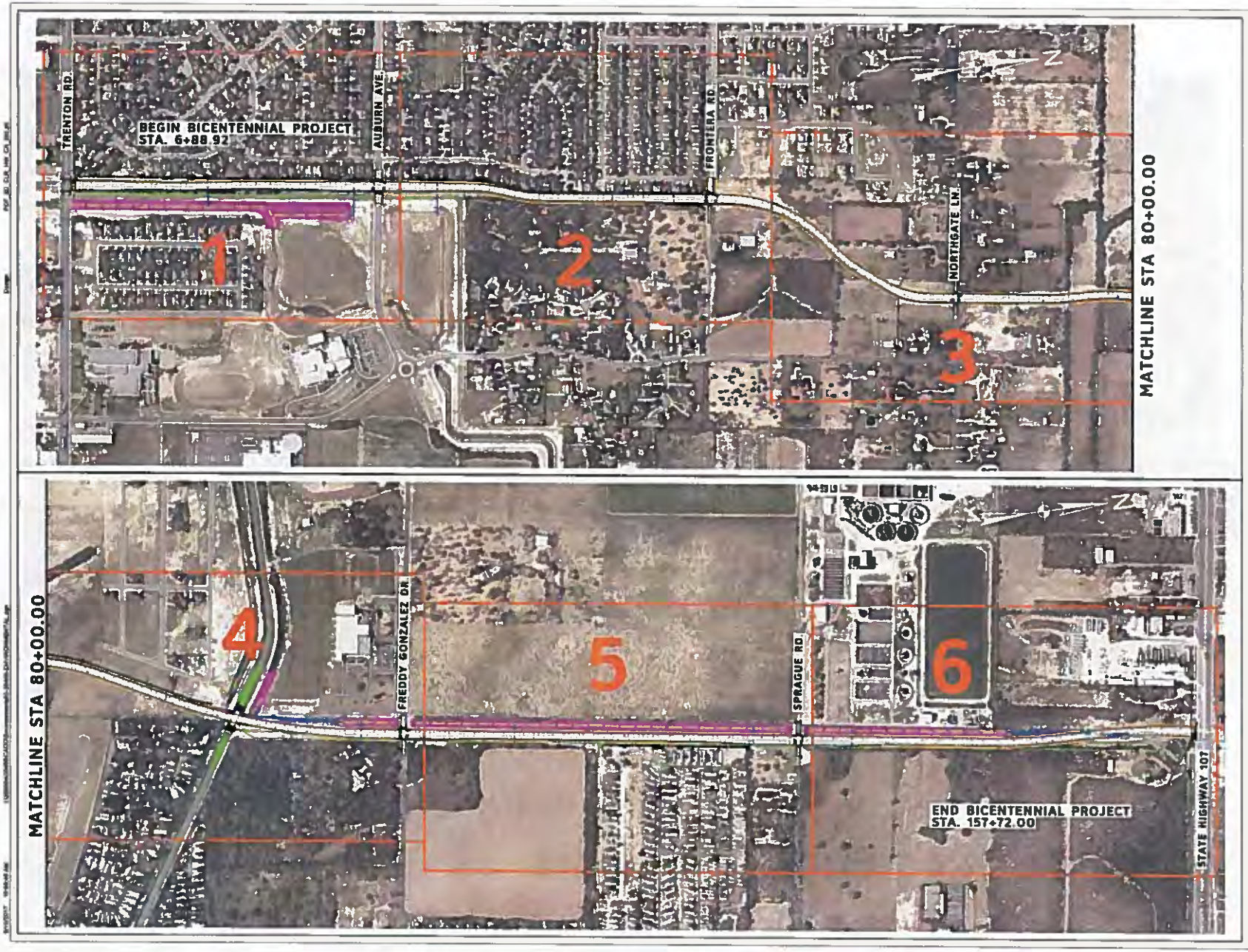
Photo 4: Concrete-lined lateral canal at approximately Station 25.91 where a crossing of the proposed underground stormwater drainage system for the Bicentennial Avenue extension south of Auburn Avenue would occur. Refer to **Appendix A** for the Project Plan View Map and location of impacts.

The history of the construction of the canals of the Louisiana-Rio Grande Canal Company Irrigation System was a massive undertaking that entailed clearing approximately 45,000 acres of land and digging a network of ditches stretching hundreds of miles. Workers guided mule drawn *fresnos* along the miles of lateral and sublateral canals. As they dug their ditches, they piled the dirt up on the sides to create embankments for the canals. The canals were designed with gradients to control water flow at a maximum of 2.1 feet per second and a minimum of 1.6 feet per second. This velocity was engineered to keep the canals clean and free from silt deposits. The main canal at the intake was built with a capacity of 433 cubic feet per second. The engineers thought it would be sufficient to cover 859 acres of land to a depth of one foot every 24 hours. The system was designed to operate at an 85 percent delivery rate (or 730 acres to a depth of one foot each day or 3,300 acres per day), with a loss of 15 percent to evaporation and seepage (Myers, Terri and Karen Weitze 1995).

Photo 5: Concrete-lined lateral canal at approximately Station 31.50, a proposed crossing location of the underground stormwater drainage system to a drainage outfall owned by the City of McAllen would occur. Refer to **Appendix A** for the Project Plan View Map and location of impacts.

The Louisiana-Rio Grande Canal Company Irrigation System, as originally incorporated, was associated with 45,000 acres of farmland. Irrigated land specific to the first-lift and second-lift pumphouses peaked at 70,000 acres, around 1954. The main canal, north of the first-lift and second-lift pumphouses in the city of McAllen, is approximately 7 miles in length. All canals were originally open earthwork in type, with only the main canal and the eastern ridge canal of sizable dimensions. Canals were typically less than 5 feet in width and functioned as laterals. During the 1930's, in an effort to prevent water seepage, many of the canals were lined with concrete. Subsequently, many were placed in underground pipes to control water evaporation. Drainage canals, and later drainage pipes, were also appended to the system to facilitate adequate soil drainage (Myers, Terri and Karen Weitze 1995).

Effects: The sub-surface stormwater drainage system of the proposed project would cross the lateral canals within HCID No. 2 in two locations (refer to Photos 3 and 4) and an underground irrigation pipeline in one location (refer to **Appendix A** for the Project Plan View Map, approximately Station 64.39). Two of the crossings would be constructed by cutting the canals and excavating to some depth below the canal flow line, installing the stormwater drainage pipe then reconstructing the concrete line canal. The third location would construct a 36-inch stormwater pipeline below the 16-inch pipeline of HCID No. 2. No interruption of



PROJECT PLAN VIEW KEY MAP

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

FOR ENVIRONMENTAL DOCUMENT REVIEW ONLY

Map Scale: 1 Inch = 600 Feet
Map Date: 05/10/2017

Source/Date of Aerial Basemap: 06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

Page 1 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

FOR ENVIRONMENTAL DOCUMENT REVIEW ONLY

Map Scale: 1 Inch = 200 Feet
Map Date: 05/10/2017

Source/Date of Aerial Basemap:
06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

Page 2 of 6

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Map Date: 05/10/2017

Source/Date of Aerial Basemap: 06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
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City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

Page 3 of 6

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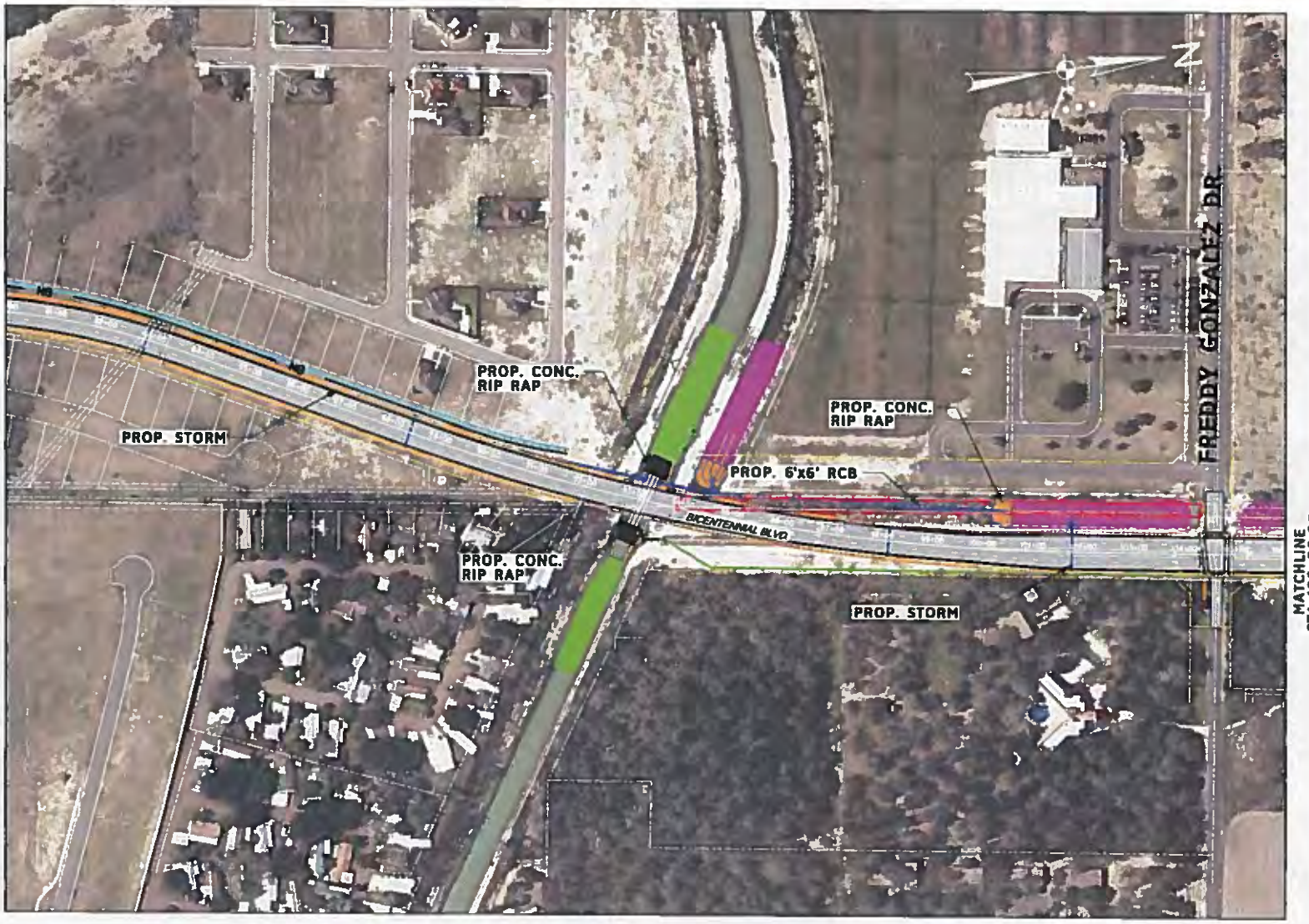
Source/Date of Aerial Basemap: 06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX



PROJECT PLAN VIEW MAP

Page 4 of 6

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06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

PROJECT PLAN VIEW MAP

Page 5 of 6

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BICENTENNIAL BLVD.

From: Trenton Road
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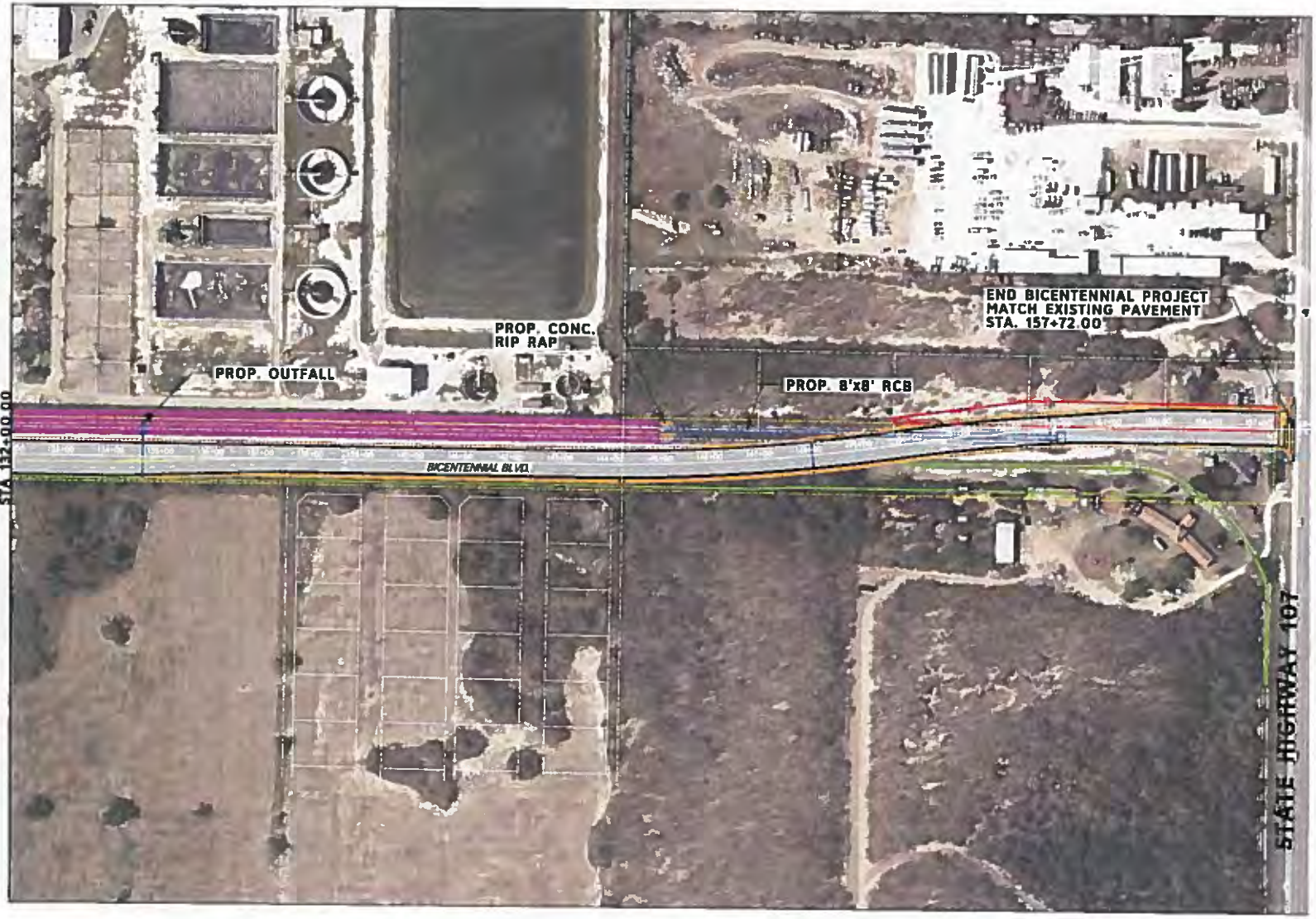

PROJECT PLAN VIEW MAP

Page 6 of 6

THIS EXHIBIT IS A SIMPLIFIED REPRESENTATION OF THE DESIGN SCHEMATIC

--PRELIMINARY--

FOR ENVIRONMENTAL DOCUMENT REVIEW ONLY

Map Scale: 1 Inch = 200 Feet
Map Date: 05/10/2017

Source/Date of Aerial Basemap: 06-12-2013

BICENTENNIAL BLVD.

From: Trenton Road
To: State Highway 107
CSJ: 0921-02-352
City of McAllen, Hidalgo County, TX

rcvd 6/22/17

Texas Department of Transportation

125 EAST 11TH STREET, AUSTIN, TEXAS 78701-2483 | 512.463.8588 | WWW.TXDOT.GOV

June 22, 2017

SECTION 106 REVIEW: DETERMINATION OF NO ADVERSE EFFECT
SECTION 4(f) REVIEW: NOTIFICATION OF INTENT TO RENDER *DE MINIMIS* SECTION 4(f) FINDING
District: Pharr
County: Hidalgo
CSJ#:0921-02-352
Highway: Bicentennial Blvd extension
Project Limits: SH 107 to Trenton Rd (2.86 miles)
Section 4(f) Property: Hidalgo County Irrigation District #2 (HCID #2), NRHP-listed

Ms. Linda Henderson

History Programs

Texas Historical Commission

Austin, Texas 78711

Dear Ms. Henderson:

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. As a consequence of these agreements, TxDOT's regulatory role for this project is that of the Federal action agency. In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), this letter initiates Section 106 consultation on the effect the proposed undertaking poses for the National Register of Historic Places (NRHP) listed HCID #2.

Project Description

TxDOT proposes extending Bicentennial Boulevard from State Highway (SH) 107 to Trenton Road in the City of McAllen, Hidalgo County, Texas. The proposed 2.86-mile roadway extension would consist of constructing a mostly new location, four-lane facility. The proposed roadway would consist of a 12-foot wide inside travel lane (one in each direction), a 14-foot wide outside shared use lane (one in each direction), 13-foot wide turn lanes, a 5-foot wide sidewalk, curb and gutter, and drainage improvements. The proposed project requires a total of approximately 42 acres of right-of-way (ROW) and 0.84 acre of temporary construction and permanent easements.

Historic Resources Survey Efforts
TxDOT historians reviewed the National Register of Historic Places (NRHP), the list of State Antiquities Landmarks (SAL), the list of Recorded Texas Historic Landmarks (RTHL), and TxDOT files and found one historically significant property previously documented within the area of potential effects (APE) (NRHP-listed HCID #2). The TxDOT Section 106 Programmatic Agreement defines the APE for this project as variable. Where there is an existing city street, the APE is 150' from the current or proposed ROW. Where the project is on new location, the APE is 300' from the proposed ROW.

Aside from HCID #2, the historic resources reconnaissance survey identified three other historic-age properties in the Area of Potential Effects (APE), including commercial/industrial, agricultural/ranching, and domestic properties. TxDOT historians determined that the properties are common designs that lack architectural merit, are not works of a master, and have no known historic associations with important events or persons, and are therefore **not eligible** for NRHP listing under Criterion A, B, or C.

NRHP listed property

HCID #2 is an irrigation system listed in the NRHP. A 2004 agreement between THC and TxDOT tasked TxDOT with providing a historic context and methodology for evaluation of irrigation resources in the South Texas region. The agencies agreed that the "extensive irrigation canal systems established historic development patterns in the region." In addition, effects for transportation projects involving irrigation system resources should be "based on the impact to the system as a whole." The agencies also agreed that typical roadway projects such as road widening, bridge widening and/or replacement and culvert improvements do not generally: alter the overall function of the system's historic integrity or cause indirect visual impacts.

HCID #2's lateral canals lie within the project APE.

Determination of No Adverse Effect

- Direct Effect: The sub-surface stormwater drainage system of the proposed project would cross the lateral canals within HCID No. 2 in two locations (refer to Photos 4 and 5 in the HRSR) and an underground irrigation pipeline in one location (refer to Appendix A of the HRSR for the Project Plan View Map). Two of the crossings would be constructed by cutting the canals and excavating to some depth below the canal flow line, installing the stormwater drainage pipe, then reconstructing the concrete lined canal with concrete. In the third location, TxDOT would construct a 36-inch stormwater pipeline below a 16-inch pipeline of HCID No. 2. The stormwater drainage pipelines would be placed below the irrigation canal or pipeline in all three locations.

  The irrigation features will continue to serve in the same capacity, and there will not be a change to the use or function of the overall structure. The purpose of the canal to divert water would be unaffected. This proposed project would not create a noticeable visible change to the overall system's character-defining features, and would not adversely affect the system's integrity of location, setting, feeling, association, design,

workmanship, or materials. The function of HCID #2 will not be impaired, nor will it cease. Therefore, these minor changes pose **no adverse effect** as the property would still possess its significance following completion of the project.

- Indirect Effects: Project activities pose no indirect effects on the HCID #2. The work to tunnel under lateral canals and repair in kind would not affect or diminish the qualities and characteristics that contribute to the historic significance of the property.

- Cumulative Effects: Additionally, project activities pose no foreseeable cumulative adverse effects to the HCID #2 because the project would not impair the function of the historic irrigation system.

Determination of *De Minimis* Finding

As part of this coordination, TxDOT determined that the proposed project meets the requirements for a Section 4(f) *de minimis* impact finding under 23 CFR 774. TxDOT based its determination on the fact that the use for the HCID #2 amounts to less than 1% of the system's overall acreage and the project will have **no adverse effect** on the NRHP-listed property. The function of the HCID #2 will not be impaired, nor will it cease.

Conclusion

In accordance with 36 CFR 800 and our Section 106 Programmatic Agreement for Transportation Undertakings (December 2015), I hereby request your signed concurrence with TxDOT's finding of **no adverse effect** to the NRHP-listed HCID #2. We additionally notify you that SHPO is the designated official with jurisdiction over Section 4(f) resources protected under the provisions of 23 CFR 774 and that your comments on our Section 106 findings will be integrated into decision-making regarding prudent and feasible alternatives for purposes of Section 4(f) evaluations. Final determinations for the Section 4(f) process will be rendered by TxDOT pursuant to 23 U.S.C. 327 and the afore-mentioned MOU dated December 16, 2014.

We look forward to further consultation with your staff and hope to maintain a partnership that will foster effective and responsible solutions for improving transportation, safety and mobility in the state of Texas. Thank you for your cooperation in this federal review process. If you have any questions or comments concerning these evaluations, please contact me at (512) 416-2611 or Renee.Benn@txdot.gov.

Sincerely,

Renee Benn, MS

Cc: Bruce Jensen, Cultural Resource Management Section Director: BRJ

Rebekah Dobrasko, Historian Team Lead: RLD

CONCURRENCE WITH NON-ARCHEOLOGICAL SECTION 106 FINDINGS:
HISTORIC PROPERTY PRESENT: NRHP-LISTED HCID #2
NO ADVERSE EFFECT: NRHP-LISTED HCID #2

NAME: _____ DATE: 7/10/17
for Mark Wolfe, State Historic Preservation Officer

NO COMMENTS ON DETERMINATION OF DE MINIMIS IMPACT UNDER SECTION 4(F) REGULATIONS

NAME: _____ DATE: 7/10/17
for Mark Wolfe, State Historic Preservation Officer