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Archeological Survey of Frontera Road from 109 Linear Feet South of the Union Pacific Railroad Tracks to Alderete Lane, Del Rio, Val Verde County, Texas

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Archeological Survey

Frontera Road Improvements: from 109 Linear Feet South of the Union Pacific Railroad Tracks to Alderete Lane, Del Rio, Val Verde County, Texas

TxDOT, Laredo District
CSJ: 0922-11-032
Texas Antiquities No. 8733

Prepared by: AmaTerra Environmental, Inc.
Joel Butler (Principal Investigator) and Sara Mackenzie Parkin

Date: May 2019

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by

Joel Butler and Sara Mackenzie Parkin

Joel Butler Principal Investigator

Prepared for:
Texas Department of Transportation
Laredo District

Texas Antiquities Permit No. 8733

Technical Report No. 267

Prepared by

AmaTerra ENVIRONMENTAL, INC.

Austin, Texas

May 2019

Management Summary

On March 18-20, 2019, AmaTerra Environmental, Inc. (AmaTerra) carried out an intensive survey, as described in 13 TAC 26.20 and defined in 13 TAC 26.5. Joel B. Butler acted as the principal investigator, Sara Parkin as field director, and Jessica Kenmore as field technician. 48 person-hours were expended during fieldwork, 17 shovel tests, and 10 backhoe trenches were excavated in support of the survey.

Val Verde County, in cooperation with the Texas Department of Transportation (TxDOT) Laredo District proposes to widen and make improvements to Frontera Road from 109 linear feet (LF) south of the Union Pacific Railroad (UPRR) tracks to Aldrete Lane in the City of Del Rio in Val Verde County, Texas. This project is assigned CSJ no. 0922-11-032 and the archeological survey was carried out under Antiquities Permit 8733. The total project length is four kilometers (2.5 miles), with a total Area of Potential Effects (APE) of 27.3 acres including 3.9 acres of proposed temporary maintenance easement within property administered by the U.S. Department of Homeland Security (DHS) along the U.S. Border Fence. The remainder of the APE is entirely within existing road right-of-way (ROW).

The project is subject to Section 106 of the National Historic Preservation Act (Section 106) and the Antiquities Code of Texas (ACT) because it will involve land to be controlled by a political subdivision of the State of Texas, with funding from the Federal Highway Administration (FHWA).

During field investigations, 17 shovel tests and ten backhoe trenches were excavated, none of which contained archeological materials. No archeological sites were documented within the APE. One previously recorded site (412VV1714) was visited but not relocated.

No further archeological work is warranted, and construction is recommended to proceed for the project area.

All land surveyed was located on publicly-owned property. No artifacts were collected during investigations. All notes and forms generated during fieldwork will be curated at the Texas Archeological Research Laboratory (TARL) in Austin.

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Chapter 1

Project Description

AmaTerra Environmental, Inc. (AmaTerra) conducted an archeological survey of proposed improvements along four kilometers (2.5 miles) of Frontera Road in the City of Del Rio, Val Verde County, Texas. The project area extends from 109 linear feet (LF) south of the Union Pacific Railroad (UPRR) tracks to Aldrete Lane (**Figures 1** and **2**). Under the management of Val Verde County, in coordination with the Texas Department of Transportation (TxDOT) Laredo District, improvements to the existing roadway are planned. This project is being constructed under TxDOT CSJ no. 0922-11-032 and the archeological field survey was carried out under Antiquities Permit 8733. Detailed schematics and typical sections are presented in Appendix A. The project area is depicted on USGS *Del Rio SW, Texas* 7.5-minute topographic quadrangle, as seen in Figure 1.

The project is subject to Section 106 of the National Historic Preservation Act (Section 106) and the Antiquities Code of Texas (ACT) because it will involve land to be controlled by a political subdivision of the State of Texas, with funding from the Federal Highway Administration (FHWA). As described in the Programmatic Agreement between FHWA, TxDOT, and the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation, FHWA projects in Texas are administered by TxDOT. Therefore, the field survey and this report adhere to TxDOT guidelines and requirements.

Existing Facility

The existing roadway is a minor arterial. Within the project limits, Frontera Road is a two-lane undivided roadway with no raised medians, no shoulders, and an open ditch drainage system. Each travel lane is 12 feet wide. The existing right-of-way (ROW) is approximately 92 feet wide (typical) and encompasses 23.4 acres.

Proposed Facility

The proposed project would include the widening, rehabilitation, and reconstruction of Frontera Road within the project limits, as well as the inclusion of drainage improvements; signing; and pavement markings. The proposed roadway would include two 12-foot travel lanes (one in each direction) with two-foot outside shoulders for a total proposed pavement width of 28 feet. The existing drainage ditches would be graded to ensure proper drainage water capture. The proposed ditches would be located on the west side of the roadway from the northern project terminus to where Frontera Road curves to run in a southeasterly direction, at which point the ditches would be located on the north side of the roadway. The project would also include the addition of drainage structures (reinforced concrete pipes and box culverts) at nine locations throughout the project APE. A 20-foot wide 3.9-acre temporary easement would be located south of Frontera Road on property administered by the U.S. Department of Homeland Security (DHS) between Alderete Lane and the northeast 90-degree turn south of Jessica Lane.

The Area of Potential Effects (APE) for archeological resources is defined as the footprint of the proposed project within the limits of the existing ROW and proposed maintenance easement, and all project-specific locations to the maximum depth of proposed impacts. Thus, the APE for archeological resources covers a total area of 27.3 acres within the typically 92-foot ROW to a depth of three feet, and down to seven feet at culvert locations.

The purpose of the archeological survey was to identify whether any archeological sites would be affected by the proposed roadway improvements. Fieldwork was carried out on March 18-22, 2019. Joel B. Butler acted as principal investigator, Sara Parkin as field director, and Jessica Kenmore as field technician. Forty-eight person-hours were expended during fieldwork, resulting in 17 shovel tests and 10 backhoe trenches excavated in support of investigations. No difficulties were encountered during the survey. Weather was cool and overcast with dry soil conditions. No archeological sites or artifacts were observed in the APE during investigations.

No artifacts were encountered during field investigations. All notes and records generated during fieldwork will be curated at the Texas Archeological Research Laboratory (TARL) in Austin.

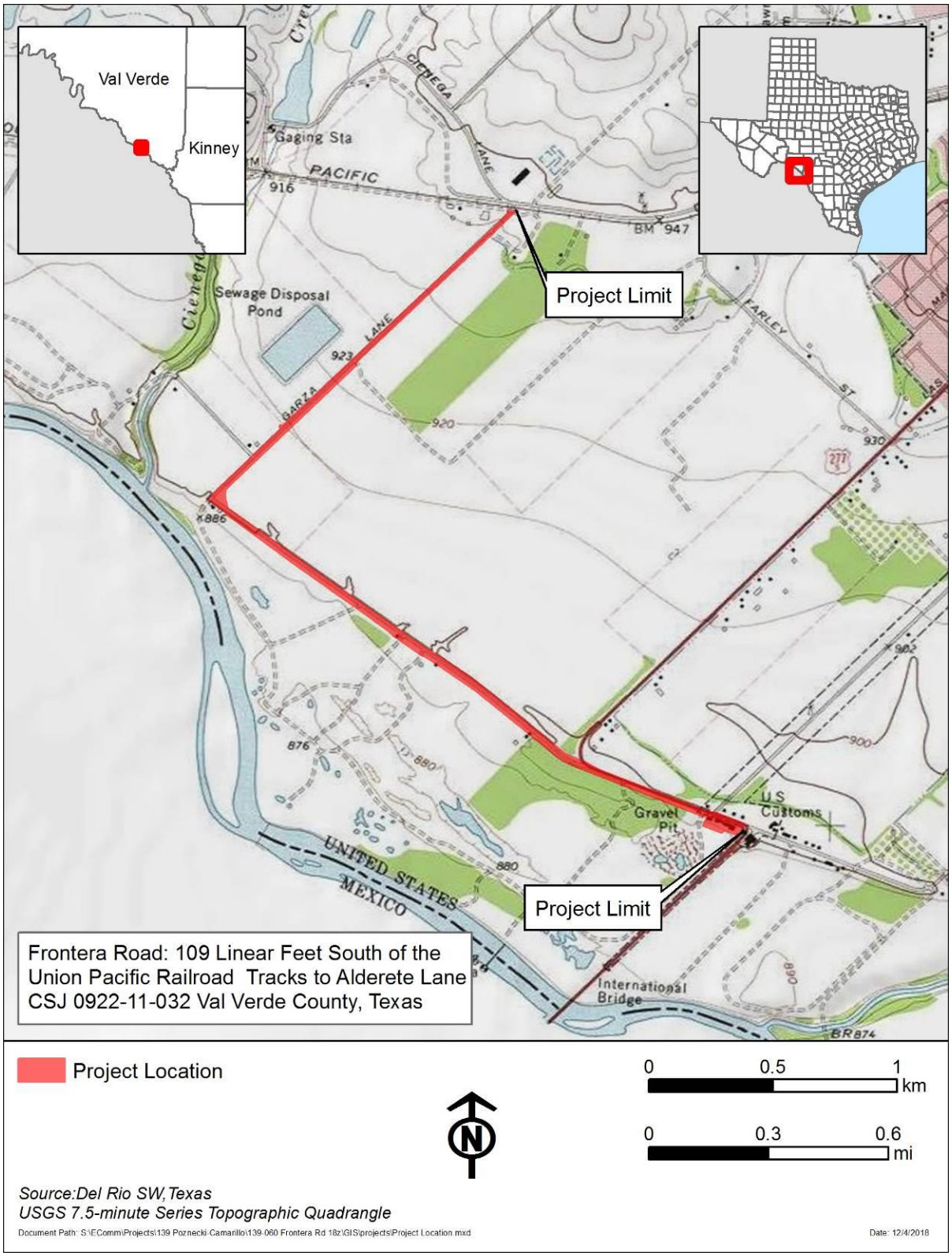

Figure 1. Project location on the Del Rio SW, Texas 7.5-minute topographic quadrangle.

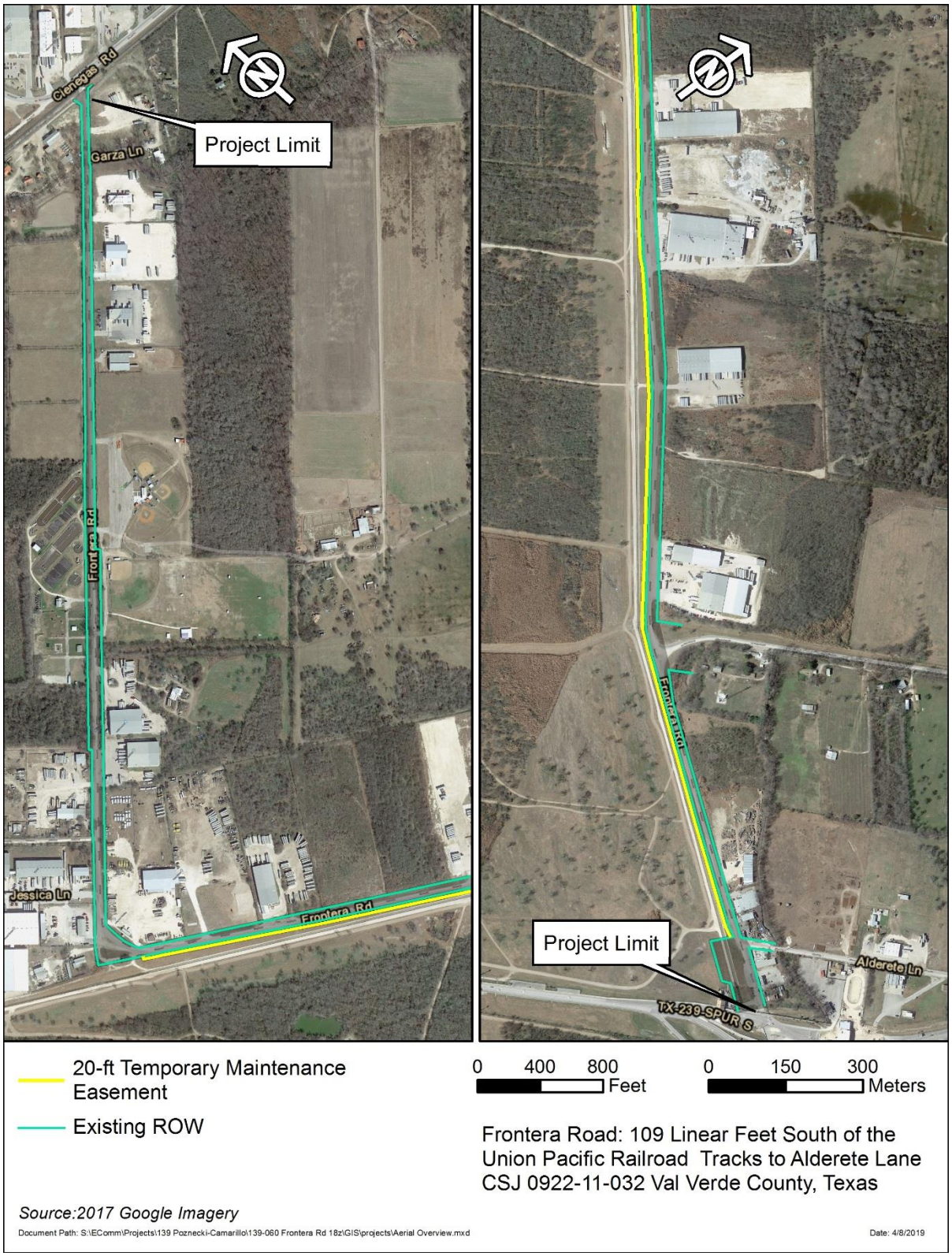

Figure 2. Project location overlaid on recent aerial imagery.

Chapter 2

Environmental Setting and Background

Physical Setting

The project area is located on the southwestern edge of Del Rio in Val Verde County. Frontera Road is currently home to numerous commercial properties and the U.S. Border Fence along the southern portion, and a municipal wastewater treatment facility, sports fields, and additional commercial properties along the northern portion.

Located in the far western South Texas Plains ecoregion, the project is located near the boundary with the Chihuahuan Desert and therefore displays characteristics of both regions (Griffith and Omerik 2009). The South Texas Plains region is a nearly level area covered with mesquite brush and grasses becoming more arid to the northwest. The elevation of the project area ranges from 900 to 945 feet above mean sea level. The Rio Grande River flows just south of the project, coming within 200 meters at its closest location.

Common fauna in this region include swamp rabbit (Sylvilagus *aquaticus*), plains pocket gopher (*Geomys bursarius*), nutria (*Myocaster coypus*), scissor-tailed flycatcher (*Tyrannus forficatus*), killdeer (*Charadrius vociferous*), coyote (*Canis latrans*), hog-nosed skunk (*Conepatus leuconotus*), American alligator (*Alligator mississippiensis*), Texas blind snake (*Leptotyphlops dulcis*), Gulf Coast toad (*bufo valliceps*), and diamondback terrapin (*Malaclemys terrapin* [Ellis et al. 1995]).

Vegetation within the project area is a mixture of unimproved vacant lots, commercial and municipal frontage, and maintained ROW. Surface visibility throughout the area varied from fair (50 percent) to high (up to 75 percent).

Geology and Soils

Holocene alluvium makes up approximately 60 percent of the APE while Holocene terrace deposits make up 10 percent and undivided quaternary sediments make up 30 percent (BEG 1992). Holocene-age alluvium may contain interbedded O-horizons which have potential for intact archeological deposits associated with short-term or single-use campsites. Terrace deposits may contain deeply-buried stratified archeological deposits, often with associated large volumes of fire-cracked rock, identifiable living surfaces, and other indicators of longer-term and/or repeated use.

According to the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS, 2018) Web Soil Survey, soils within the APE consist of Lagloria loam (LaB, 63 percent), Rio Grande series soils (Ro, 13 percent), Laredo silty clay loam (Ls, 22 percent) with small areas of Reynosa silty clay loam (Ra, 1 percent) and Jimenez-Quernado complex soils (JmD, 1 percent). These soil series are mostly deep clay and silty loams associated with Pleistocene terraces.

Previous Archeological Work

According to the online Texas Archeological Sites Atlas, there is one previously recorded site within the limits of the undertaking (41VV1714) and six sites within one kilometer (**Table 1; Figure 3**). None of these sites are documented as National Register of Historic Places (NRHP) or State Archeological Landmark (SAL) eligible and are mostly open campsites containing non-diagnostic chert or quartzite artifacts. Site 41VV1714 was documented by a TxDOT survey in 1994 along the north side of Frontera Road east of the northward bend of the APE. Although the Atlas has no information about this site,

judging by the large size (165 acres), it is likely that it is a lithic surface scatter-type site with possible open campsites scattered within. One site, 41VV198, was documented 915 meters west of the project area in 1962 on the right bank of Cienegas Creek. The site contained possible Paleoindian/Transitional Archaic artifacts in the form of Angustura and Folsom projectile points. Additionally, the site form for site 41VV1601, 450 meters west of the APE, mentions a City employee finding a Pandale point (Early Archaic in age) at the wastewater treatment plant that adjoins the current project area. Site 41VV1992 is located 360 meters southwest of the central bend in the project APE. The site, documented in 2008 by Engineering-Environmental Management, Inc (e2M) during a survey for the border fence, consisted of six stone flakes in a shovel test at 30 centimeters below the surface (cmbs). Site 41VV1993 is located 600 meters south of the eastern project terminus and consisted of 50 pieces of stone debitage from 11 shovel tests. Depth of cultural material on the site was recorded as occurring to depths of 25 cmbs.

Table 1. Previously Recorded Sites Within One Kilometer of the Project Area

Site	Date Recorded	Type	Project Description/Location	NRHP/SAL Recommendation
41VV198	1962	Prehistoric Open Campsite	915 m west of north terminus	Unknown
41VV1601	1993	Prehistoric Open Campsite	450 m west of north terminus	Not Eligible
41VV1992	2008	Prehistoric Open Campsite/Lithic Scatter	360 m west of south terminus	Undetermined
41VV1714	1994	Unknown	Along north side of southern APE	Unknown
41VV1713	1994	Unknown	680 m east of north terminus	Unknown
41VV1993	2008	Prehistoric Open Campsite/Lithic Scatter	360 m south of SE terminus	Not Eligible

Previous Investigations

According to the Texas Historical Commission Atlas, there have been six archeological projects within one kilometer and five that abut or intersect the project area (**Table 2;** see Figure 3). An additional unpermitted survey, not plotted on the Atlas, was carried out prior to construction of the Border Fence along the entire southern portion of the project APE in 2008.

Table 2. Previous Surveys in the Project Area.

Date	Sponsoring Agency	Firm	Project Description/ Location
1993	EPA	Unknown	Adjoins APE at wastewater plant
1991	EPA	Unknown	450 m west of north terminus
2008	DHS	Michael Baker Jr., Inc	Across TX 239 from APE
1982	TDHPT	Unknown	Follows TX 239 to Frontera Road
2008	DHS	e2M	Along Border Fence

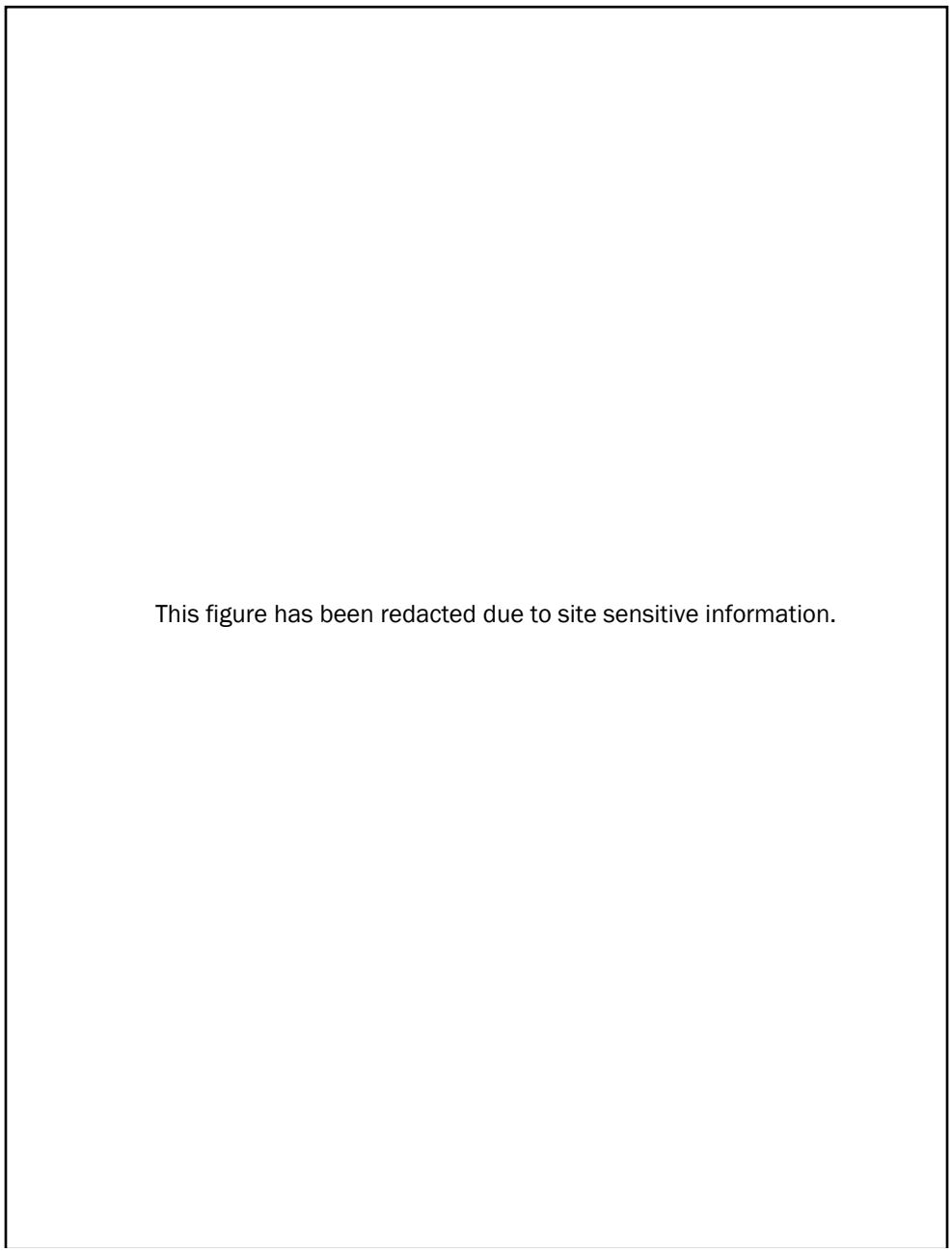

Figure 3. Archeological sites and surveys within one kilometer of the project area.

Historical Land Use

Historically, the project area was heavily used for agriculture. Irrigation canals were constructed in Val Verde County in the early years of the twentieth century and this enabled large scale agriculture to flourish. A U.S. Army Corps of Engineers "U. S. Army Tactical Topographic Map" dated to 1916 and a 1947 aerial photograph indicate that the project area had several buildings but was largely still used for agriculture (**Figure 4**). Today, the project APE mostly consists of vacant and commercially-developed land with a sewage treatment facility and sports fields along the western edge.

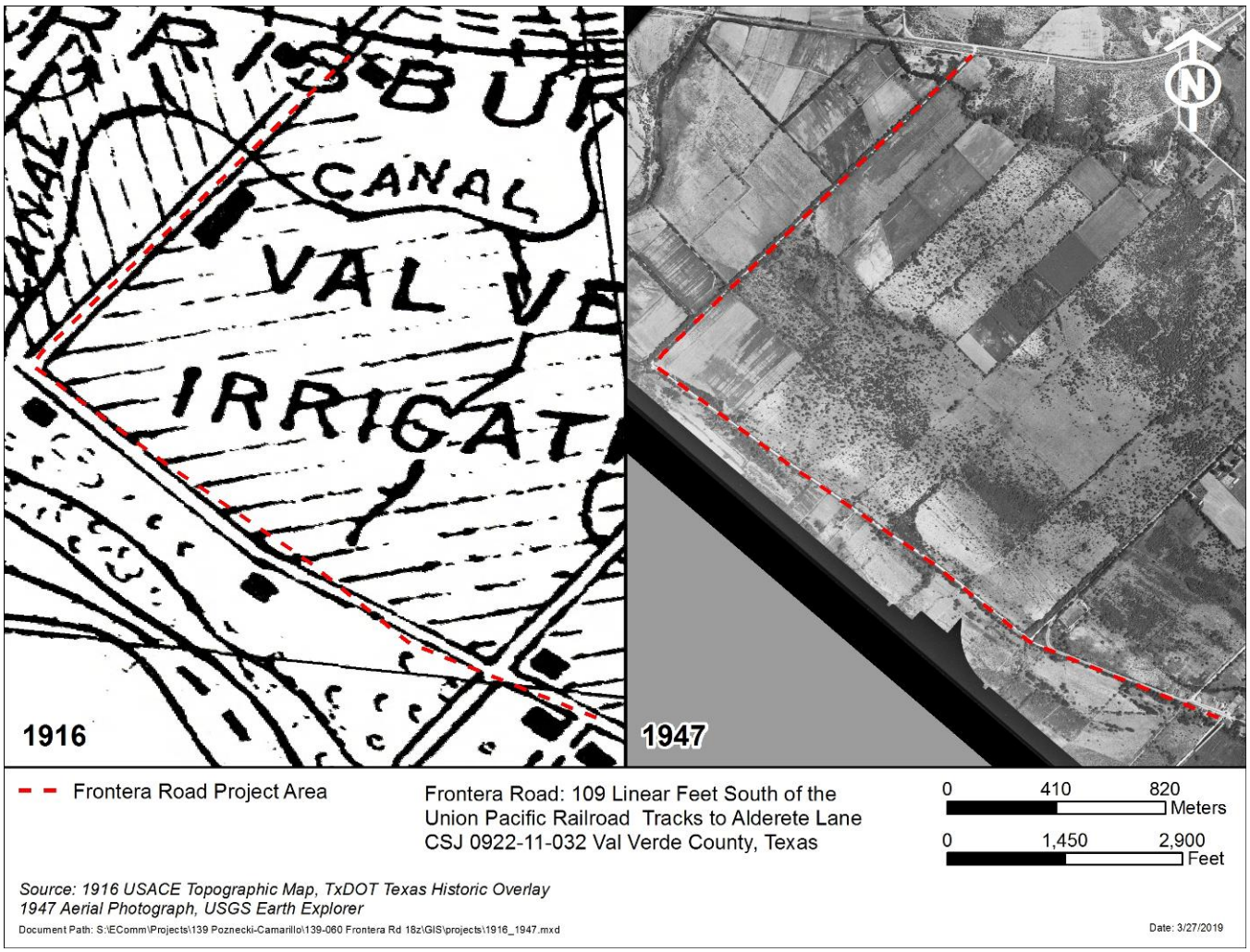

Figure 4. Setting of the project area on a 1916 Topographic map and 1947 aerial photograph.

Regional Cultural Chronology

The APE is situated within the South Texas Archeological Region directly east of the Lower Pecos Region (Perttula 2004:7). Although separate from the Lower Pecos geographically (deeply cut limestone canyonlands in the Lower Pecos and open near-level plains in the South Texas Region), cultural influences from that region were undoubtedly felt in the area where the APE is located. Due to a lack of intensive excavations on a range of prehistoric sites, the chronology of this region remains more incomplete than other regions across Texas. The occupation of South Texas is currently divided into four broad time periods: Paleoindian, Archaic, Late Prehistoric, and Historic.

Paleoindian

The first inhabitants of South Texas, known as Paleoindians, are generally thought to have arrived around 11,200 years Before Present (BP). However, there is some debate about the exact timing and mode of arrival. The Paleoindian period was characterized by cooler and wetter climatic conditions than today. These people practiced unique subsistence patterns that consisted of hunting now extinct megafauna like mammoth, mastodons, bison, camel, and horse (Black 1989; Mauldin et al. 2003). In fact, mammoth remains in South Texas are typically found in secondary deposits along creeks (Hester 2004). However, within this region no mammoth faunal remains have been found in

association with Clovis peoples, the earliest known Paleoindian culture. These small bands of nomadic big game hunters also exploited small game (Collins 1995) and plant resources. Paleoindian lithic technology consisted of lanceolate-shaped and often fluted projectile points, polyhedral blade cores, blade tools, and the use of exotic raw materials. Diagnostic Paleoindian projectile points found in South Texas include Clovis, Folsom, St. Mary's Hall, Golondrina, Scottsbluff, Angostura, and the Wilson type (Hester 2004). Archeologists believe that warmer and drier climatic conditions coupled with the extinction of megafauna caused a shift in Paleoindian subsistence strategies. This shift marked the end of the Paleoindian period and the beginning of the Archaic period, divided into three subperiods: Early, Middle, and Late Archaic.

Early Archaic

The Early Archaic subperiod (ca. 8000 BP to 4500 BP [Black 1989]) is characterized by "very low population density, small band sizes, highly mobile, and extremely large territorial ranges (Black 1989:49)." This behavior may be attributed to the arid environment (Hester 2004), as this climate required inhabitants to be "water-proximate." Thomas Hester (2004:136) divides the Early Archaic into two horizons: early corner-notched and early basal notched. The early corner-notched horizon has corner-notched dart points with recurved or notched bases. These point types include Martindale, Uvalde, Baker, Bandy, and Gower dart points, as well as Guadalupe tools probably used in wood-working. The early basal-notched horizon is characterized by dart points with deep basal notches, large bulbs, and distinctive long stems. Point types include the Bell and Andice dart points. Additional tools associated with this horizon include early triangular bifaces and large unifacial Clear Fork tools, which were also likely used in wood-working.

Middle Archaic

The Middle Archaic subperiod (ca. 4500 BP to 2400 BP [Black 1989]) began with a shift in subsistence to a greater reliance on plant resources (Black 1989; Hester 2004). Tools associated with this subperiod include Abasolo, Bulverde, Lange, Morhiss, Pedernales, and Tortugas projectile points, unifacial distally beveled adze tools like the Nueces tool, and marine shell ornaments and tools. Reliance on plant resources is evident through "an increase in formal hearths, earth ovens, and burned rock accumulations (Hester 2004:139)", as well as the presence of ground stone tools, such as tubular stone pipes, grinding slabs, and manos. Middle Archaic people occupied a much broader range of topographic settings with sites found along stream channels, in the floodplain(s), and on low terraces and natural levees (Black 1989). Nunley and Hester (1975) defined two types of sites based on their topographic position: "gallery," or those found on terraces and arroyo banks; and "bower" sites located in hilly areas overlooking arroyos and their tributaries. The possibility that populations increased and territories became constrained is supported through the presence of large cemeteries associated with this subperiod (Black 1989).

Late Archaic

The beginning of the Late Archaic subperiod dates to around 2400 BP (Hester 2004). During this subperiod people continued to exploit plant resources evidenced in fire-cracked rock (FCR) accumulations, hearths, earth ovens, and grinding implements (e.g., manos and metates). Additional tools indicative of this subperiod include Desmuke, Catan, Ensor, Fairland, Marcos, Matamoros, Montell, and Shumla projectile points, as well as Olmos bifaces. Despite a reliance on plant resources, Late Archaic peoples continued to exploit marine and terrestrial animals such as freshwater mussels, turtles, fish, rabbits, and deer. Sites are often located near present-day streams or sloughs with many lithic procurement sites found "on high terraces and ridges composed of Rio

Grande or Uvalde gravels (Hester 2004:142)." The use of cemeteries increases during the Late Archaic subperiod, becoming more concentrated with human remains (personal communication Thomas Hester 2017).

Late Prehistoric

Some archeologists believe that the shift from Late Archaic lifeways to the Late Prehistoric (A.D. 800 to A.D. 1600 [Black 1989]) was a result of cultural diffusion rather than environmental or climatic change. Diagnostic traits of this period include the use of the bow and arrow, straight-stemmed arrow points, bone-tempered ceramics, and trade goods (e.g., obsidian, jadeite, and Huastecan pottery; Hester 2004). Artifacts associated with the Late Prehistoric period consist of Scallorn, Edwards, Perdiz, Starr, and Zavala arrow points. Sites are often located at or just below the surface of natural levees adjacent to streams. This period can be divided into the Toyah Horizon, dating from ca. A.D. 1300-1700, and the Brownsville Complex. The Toyah Horizon is often associated with bison hunting practices. Assemblages have Perdiz arrow points, end scrapers, flake knives, beveled knives, bone-tempered pottery, perforators, shell ornaments, and bird bone bead artifacts (Hester 2004). On the other hand, the Brownsville Complex is known for its shell and animal bone industries, and its relationships with the Huastecan culture in Mesoamerica (Hester 2004). Located in the Rio Grande delta, this complex focused on the exploitation of marine resources. Brownsville Complex sites and cemeteries are found on clay dunes. These people hunted, gathered, and fished for resources causing some archeologists to refer to them as "logistical collectors" (Kibler 1994 cited in Hester 2004).

Historic Period (ca.1500-1968)

Aside from infrequent visits from early Spanish explorers, the first European presence in the vicinity of Del Rio began in the 1700s with the establishment of a presidio and mission across the Rio Grande River in what is now Ciudad Acuña, Mexico. Development in Del Rio did not begin until the 1860s when spring-fed San Felipe Creek, which flows through the center of Del Rio, was tapped as a permanent source for reliable irrigation water, and a network of canals was established in the areas surrounding the town (Overfelt 2019).

Following the establishment of Val Verde County in 1885, Del Rio became the county seat. The local economy was based largely on ranching and agriculture, spurred by the construction of the Southern Pacific Railroad in the 1880s (Overfelt 2019).

The military presence in Del Rio has been felt since the Mexican-American War, with several forts and camps scattered throughout the region. Laughlin Air Base (formerly Laughlin Field) was established in World War II and has taken the lead in the local economy ever since (Overfelt 2019).

Within the project area, historic maps and aerial imagery indicate that the area was largely used for cultivation irrigated from local canals. In recent decades the project area has become a center for shipping companies, which comprise most of the traffic on Frontera Road. Between 2008 and 2010, the U.S. Department of Homeland Security Border Patrol installed a border fence along the southern edge of the project area and sealed off the eastern end of Frontera Road, which no longer connects to State Loop 239.

Archeological Site Potential

The majority of the project APE was found to be heavily impacted by trenched utilities, road and border fence construction, and mechanical brush-clearing, which would lower the integrity of deposits near the surface. However, some potential exists for buried prehistoric archeological deposits. The two most well-documented sites in the vicinity (41VV1992 and 1993) both denote cultural horizons occurring in the upper 30 centimeters, however deeper exploration was not carried out. Historic period archeological remains associated with one of the older ranches or farms in the vicinity were initially thought possible within the APE, however, upon field survey, the narrow width of the unpaved portions of ROW and the volume of prior disturbances (namely utilities trenching) throughout the project area precluded the potential for historic deposits throughout the majority of the project.

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Chapter 3

Field Methods

The survey took place within existing public ROW and on a temporary easement administered by DHS. The survey effort was an intensive linear survey, as described in 13 TAC 26.20 (2) and defined in 13 TAC 26.5 and included visual inspection of 100% of the APE along with the excavation of 17 shovel tests and 10 exploratory backhoe trenches. Trenches and shovel tests were excavated at regular intervals within the entire existing ROW and DHS easement unless prior disturbance was confirmed to have impacted deposits beyond the standard 80 centimeters. Shovel testing was conducted at a rate of 16 tests per mile per 100 feet of width on each side of the road, except in portions of the APE where previous deep disturbance was apparent, which were documented through photographs and field notes and were not tested.

Because the proposed roadway improvements have potential to impact deeply-buried deposits along the southern east-west portion of the project, backhoe trenching was carried out along that portion of the project. Backhoe trenches were spaced approximately 300 meters apart (tightening to 200 meters when in closer proximity to the Rio Grande River) and were excavated from 1.5 to 2 meters deep. Samples were screened from the trenches during excavation and detailed notes, drawings, and photographs were made to document each trench.

All documents and photographs generated during fieldwork will be permanently curated and housed the TARL in Austin.

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Chapter 4

Survey Results

AmaTerra archeologists carried out an intensive survey on March 18-20, 2019. Field conditions were mild, and no difficulties affected the survey. The project area was observed to be of mixed development, containing mostly industrial and commercial plots, some residential parcels, city utilities and parks, and property owned and maintained by DHS Border Patrol. Deep and extensive previous disturbances were apparent inside the APE, including buried utilities, drainage improvements, landscaped and heavily bladed areas, as well as paved areas and gravel road shoulders. There is evidence of extensive earth-moving disturbances within the surveyed area, particularly in the southern half of the APE, that consists of road backfill, sub-surface asphalt, silty soils, and sub-surface modern trash. All of these disturbances would heavily impact and/or destroy any archeological resources present. During field investigations, no new archeological sites were discovered. A total of 17 shovel tests and 10 mechanical trenches were excavated (**Figure 5–8**, Appendix B). No artifacts were collected during this survey.

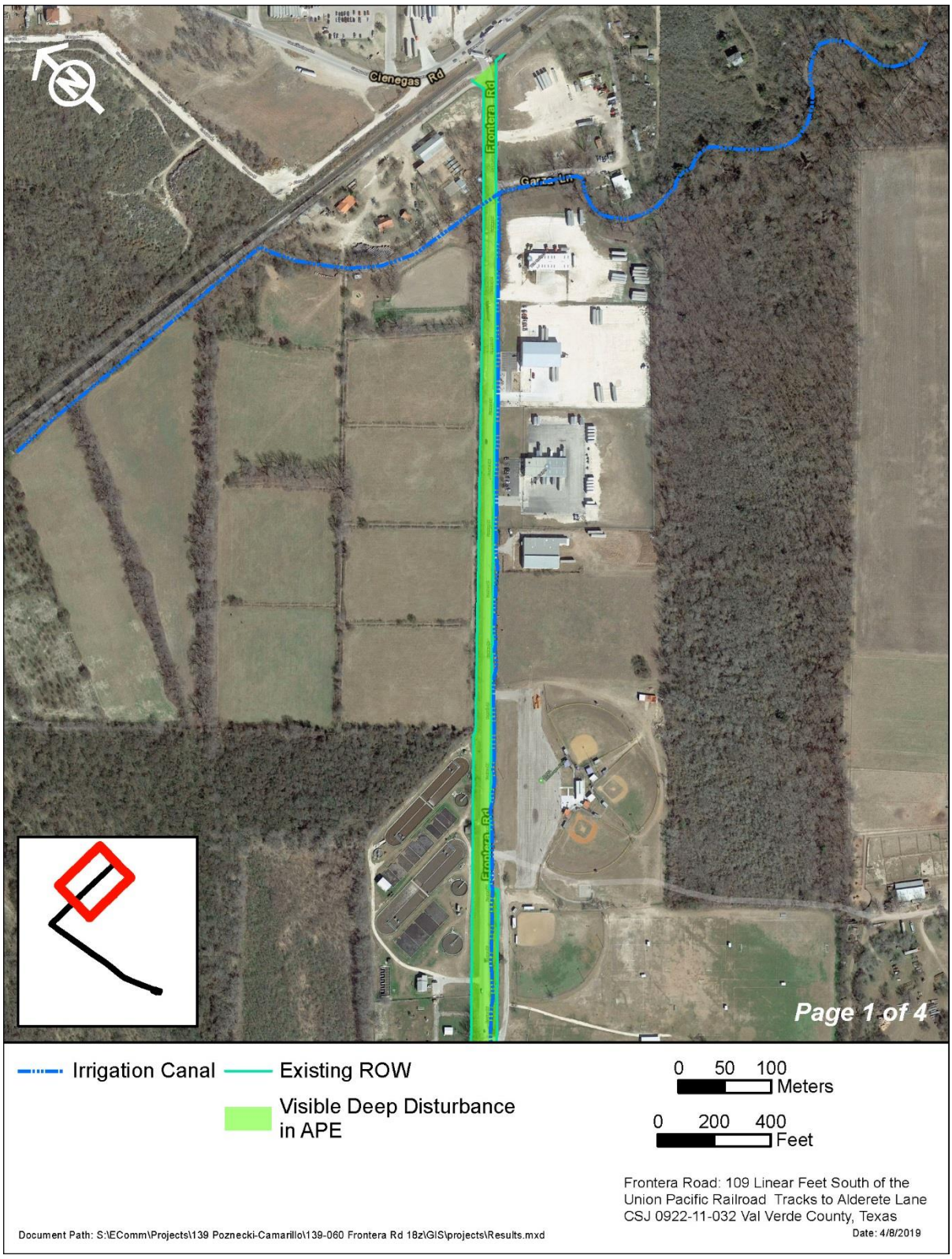

Figure 5. Map of shovel tests and mechanical trenches excavated during fieldwork.

Figure 6. Map of shovel tests and mechanical trenches excavated during fieldwork.

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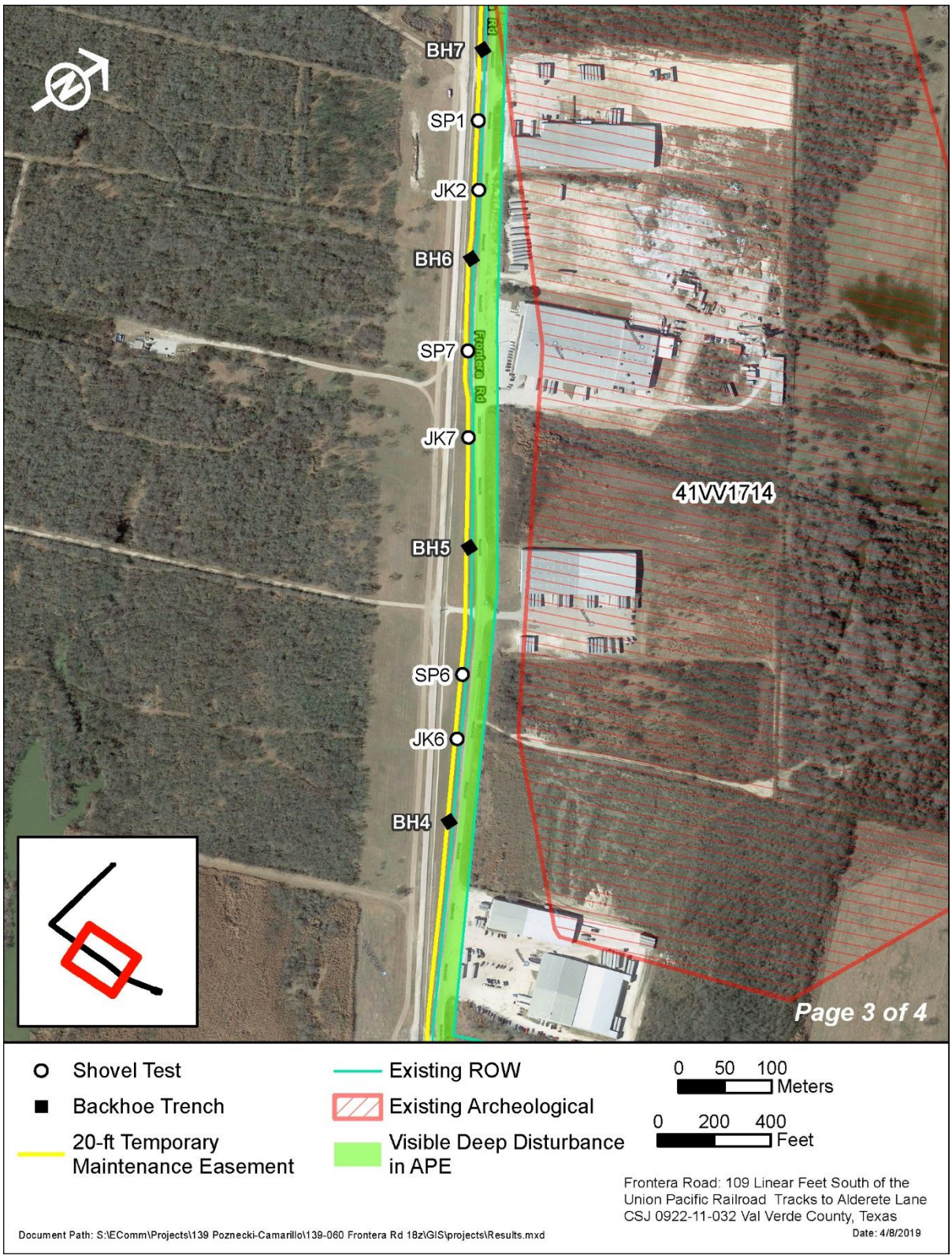

Figure 7. Map of shovel tests and mechanical trenches excavated during fieldwork.

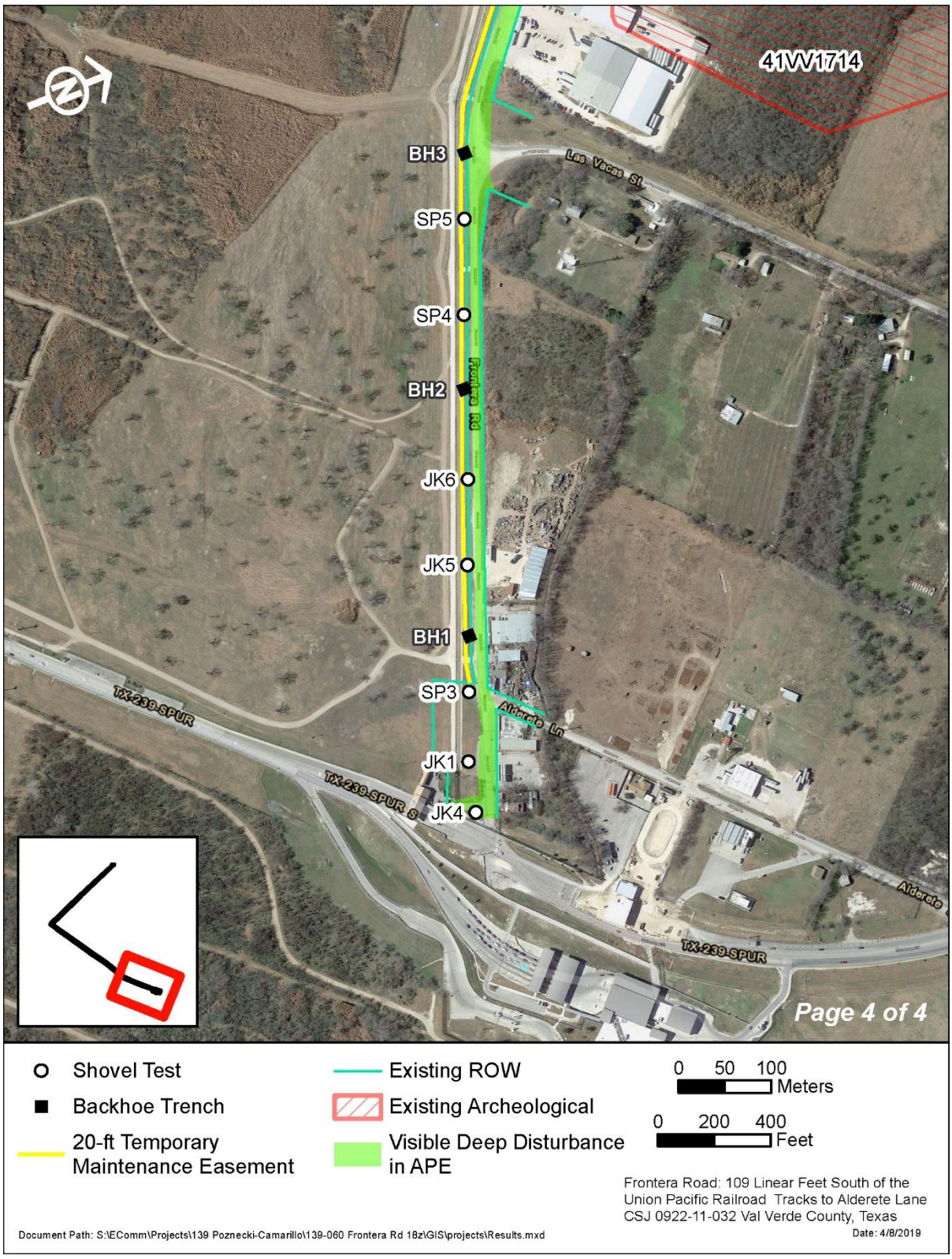

Figure 8. Map of shovel tests and mechanical trenches excavated during fieldwork.

The northern half of the project area referred to in this document extends from the railroad tracks at the intersection of Cienegas Road to the northeast bend in Frontera Road. The southern half of the APE runs from the bend in Frontera Road to where it terminates in the east at the border fence and State Loop 239.

The northern half of Frontera Road is characterized as a mix-use space of residential farming properties, commercial warehouses with large paved lots, a waste water treatment plant, and baseball fields. The APE in the northern half of Frontera Road is a narrow corridor populated with a buried water line, buried phone line, open cut earth drainage and irrigation ditches, and large swaths of paved or graveled ground. No shovel tests were excavated in the northern half of the APE due to the presence of buried utility lines and disturbed ground conditions on both sides of Frontera Road (**Figure 9 and 10**). One historical structure, an irrigation ditch, was described in a Historic Project Coordination Request (PCR) prior to fieldwork (Bell 2019). The irrigation ditch is located adjacent to and, in places within, the APE and consists of an open earth irrigation ditch with a concrete intersection and a series of sluice gates (**Figure 11**). One channel flows south alongside Frontera Road in an open earthen ditch and the other crosses beneath Frontera Road in a concrete culvert. The irrigation ditch is part of the San Felipe Agricultural, Manufacturing, & Irrigation system as described by historic marker #699 located at 608 Griner Street in Del Rio. The irrigation system is recommended as eligible for listing the NRHP.

Figure 9. Typical conditions throughout the northern half of the APE: buried utilities within a narrow ROW corridor, paved business entries, and a gravel shoulder, facing north.

Figure 10. Buried phone line present on the western side of Frontera Road's northern half and buried along the northern side of Frontera Road in the southern half of the APE, facing east.

Figure 11. Historical irrigation structures adjacent to the project APE, facing northeast.

The southern half of the APE is characterized by commercial warehouses, parking lots, and small vacant fields to the north of Frontera Road (**Figure 12**), and a maintained DHS easement and ROW to the south (**Figure 13**). 17 shovel tests and 10 backhoe trenches were excavated in the southern half of the APE along the south side of Frontera Road, all of which contained disturbed soils (**Figure 14**). Sub-surface conditions observed during excavations included road backfill, asphalt, modern trash (glass beer bottles, industrial plastic sheeting, Styrofoam, etc.), and old buried utilities (DHS sensor grid). Soils across the excavated portion of the APE were observed to be sandy loams, which were disturbed to a minimum depth of 60cm. No shovel tests were excavated along the north side of Frontera Road in the southern segment due to the presence of buried phone, gas, and water utilities, which filled the entire unpaved portion of the APE (**Figures 15 and 16**).

Typical shovel tests revealed disturbed and compact soils, comprised of mostly silt, backfill gravel, and trash. Shovel tests were excavated to a maximum of 80cmbs; on average, the 17 shovel tests were excavated to a depth of 38cmbs. Shovel tests were placed approximately every 100 meters within the southern APE in areas that appeared undisturbed. Backhoe trenches were excavated every 300 meters to a depth of 150-200cmbs. Typical trenches included disturbed soils to a minimum depth of 100cmbs, and included modern trash such as Styrofoam, plastic sheeting, glass beer bottles, and aluminum beer cans (**Figure 17**). One atypical trench included a layer of river rocks from a previous drainage culvert (**Figure 18**).

Figure 12. Typical conditions in the southern half of the APE along the northern side of Frontera Road: buried utilities and industrial complexes, facing north.

Figure 13. Typical conditions in the southern half of the APE along the southern side of Frontera Road: buried water line and landscaped slope, punctuated by pull-throughs, revetment cobbles, and a storm drain, facing west.

Figure 14. Buried PVC pipe within backhoe trench #4 (BH4)

Figure 15. Phone line buried along the north side of Frontera Road in the southern half of the APE, facing east.

Figure 16. Buried gas line along the north side of Frontera Road in the southern half of the APE, facing north.

Figure 17. Profile of a typical trench (BH7).

Figure 18. Profile of a typical trench (BH1) with deeply buried road gravels.

.

At the terminus of Frontera Road at State Loop 239 (the easternmost edge of the APE), one potentially historic monument was located (**Figure 19**).

From 1891-1894, 276 official concrete obelisks were established along the US-Mexico border. After the initial 276 concrete obelisks were constructed, smaller concrete markers were erected along the border in order to further delineate the boundary, particularly in high-traffic areas like cities and river-crossings. By 1984, 493 additional markers had been added along the border in urban places like Del Rio (Dear 2005). Based on its appearance, condition, and location, this marker likely belongs to that family of historic border markers. Due its close proximity to the border fence, it is unlikely to be impacted by the roadway improvements to Frontera Road, but we recommend avoiding disturbance during construction.

Figure 19. Concrete marker located during archeological survey, facing east.

Chapter 5

Summary and Recommendations

On March 18-20, 2019, AmaTerra carried out an intensive survey, as described in 13 TAC 26.20 and defined in 13 TAC 26.5. During investigations, 17 shovel tests and 10 backhoe trenches were excavated within the 2.5-mile long project APE, which encompasses 27.3 acres including a 3.9-acre easement managed by DHS. No archeological sites or artifacts were discovered during fieldwork.

The project was conducted under the ACT (Permit 8733) and Section 106 of the NHPA and all work conformed to the guidelines for implementation of these regulations under 13 TAC Chapter 26 as well as 36 CFR 800. No prehistoric or historic-age artifacts or archeological sites were discovered during field investigations. However, it is recommended that the concrete obelisk be avoided during construction.

Construction is recommended to proceed for the Frontera Road improvements with no further archeological work.

All land surveyed was located on publicly-owned property and all portions of the APE were accessible at the time of survey. No artifacts were collected during investigations. All notes and forms generated during fieldwork will be curated at TARL in Austin.

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Appendix A

Schematics

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

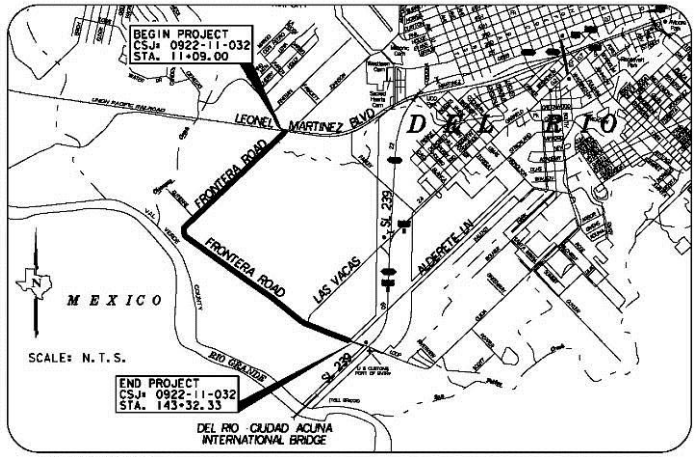
PLANS OF PROPOSED
COUNTY ROAD IMPROVEMENT
FEDERAL AID PROJECT NO. CBI 2008 (418)

FRONTERA ROAD
VAL VERDE COUNTY
CSJ: 0922-11-032

NET LENGTH OF PROJECT: 13,223.33 FT = 2.5000 MI

LIMITS FROM: DEL RIO INTERNATIONAL PORT OF ENTRY
TO: INDUSTRIAL PARK

FOR THE CONSTRUCTION OF REHABILITATION OF EXISTING ROAD CONSISTING OF GRADING, FLEXIBLE BASE, ASPHALT CONCRETE PAVEMENT, STRUCTURES, SURFACING, SIGNING, AND PAVEMENT MARKINGS



EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: NONE

FED. ROAD DIV. NO.	STATE AID PROJECT NO.		SHEET NO.
6	CBI 2008 (418)		TITLE
STATE	STATE DIST. NO.	COUNTY	
TEXAS	22	VAL VERDE	
CONT.	SECT.	JOB	HIGHWAY NO.
0922	11	032	FRONTERA RD

DESIGN DATA:
ADT (2013): 452.92
ADT (2032): 893.76
% TRUCK IN ADT: XX
FUNCTIONAL CLASS: LOCAL RD
DESIGN SPEED: 30
TDLR REQUIRED: YES ____ NO X

FINAL PLANS

LETTING DATE: ____

DATE CONTRACTOR BEGAN WORK: ____

DATE WORK WAS ACCEPTED: ____

CONTRACTOR: ____

TOTAL CONTRACTOR COST: ____

FINAL AS BUILT

THE CONSTRUCTION WAS PERFORMED UNDER MY SUPERVISION IN ACCORDANCE WITH THE PLANS AND CONTRACT.

AREA ENGINEER

DATE

SUBMITTED FOR LETTING: ____

VAL VERDE COUNTY COMMISSIONER PRECINCT No. 4

SUBMITTED FOR LETTING: 1/31/2017

DEC PROJECT MANAGER

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR LETTING: ____

AREA ENGINEER

RECOMMENDED FOR LETTING: ____

DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

APPROVED FOR LETTING: ____

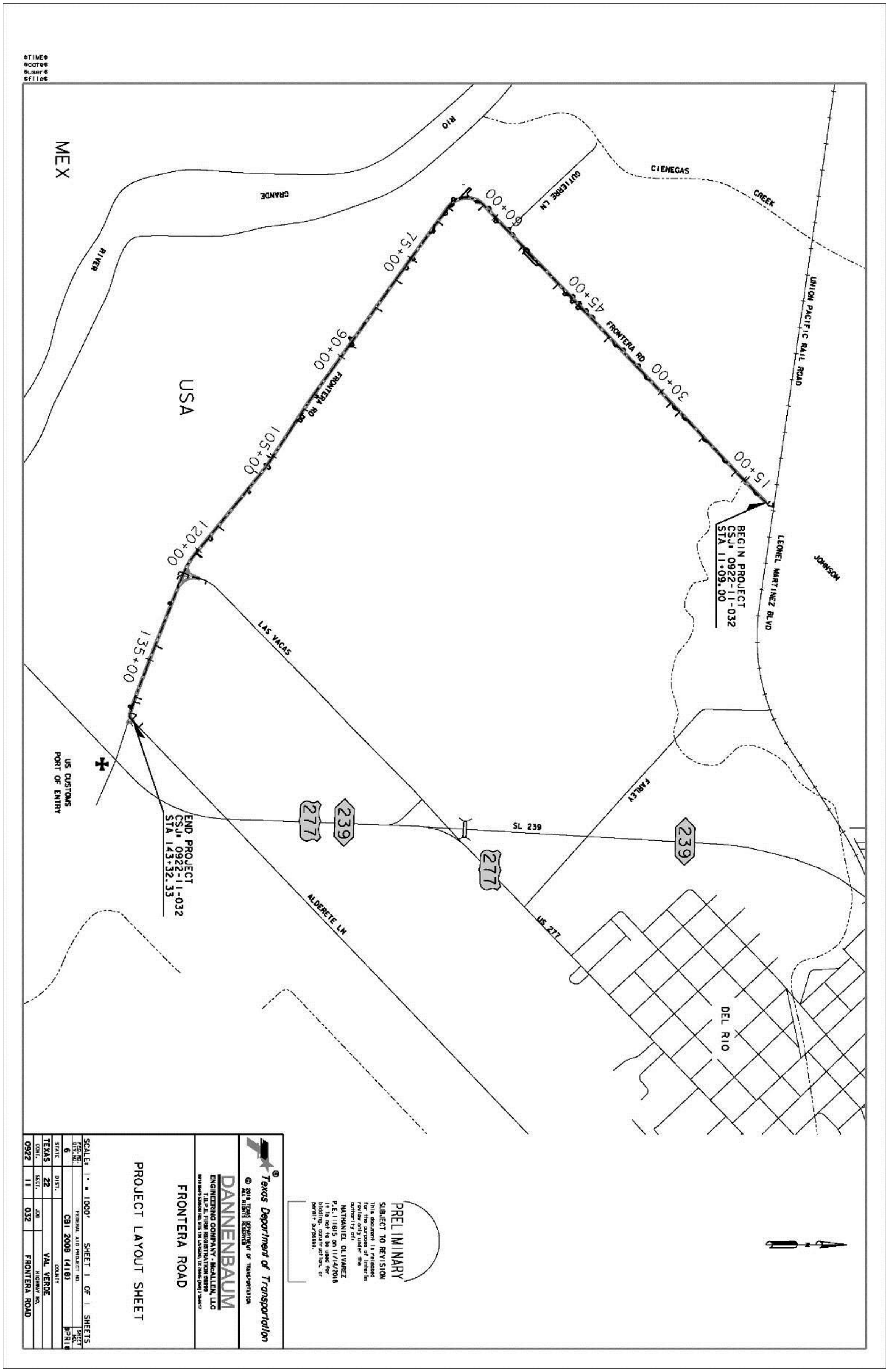
DISTRICT ENGINEER

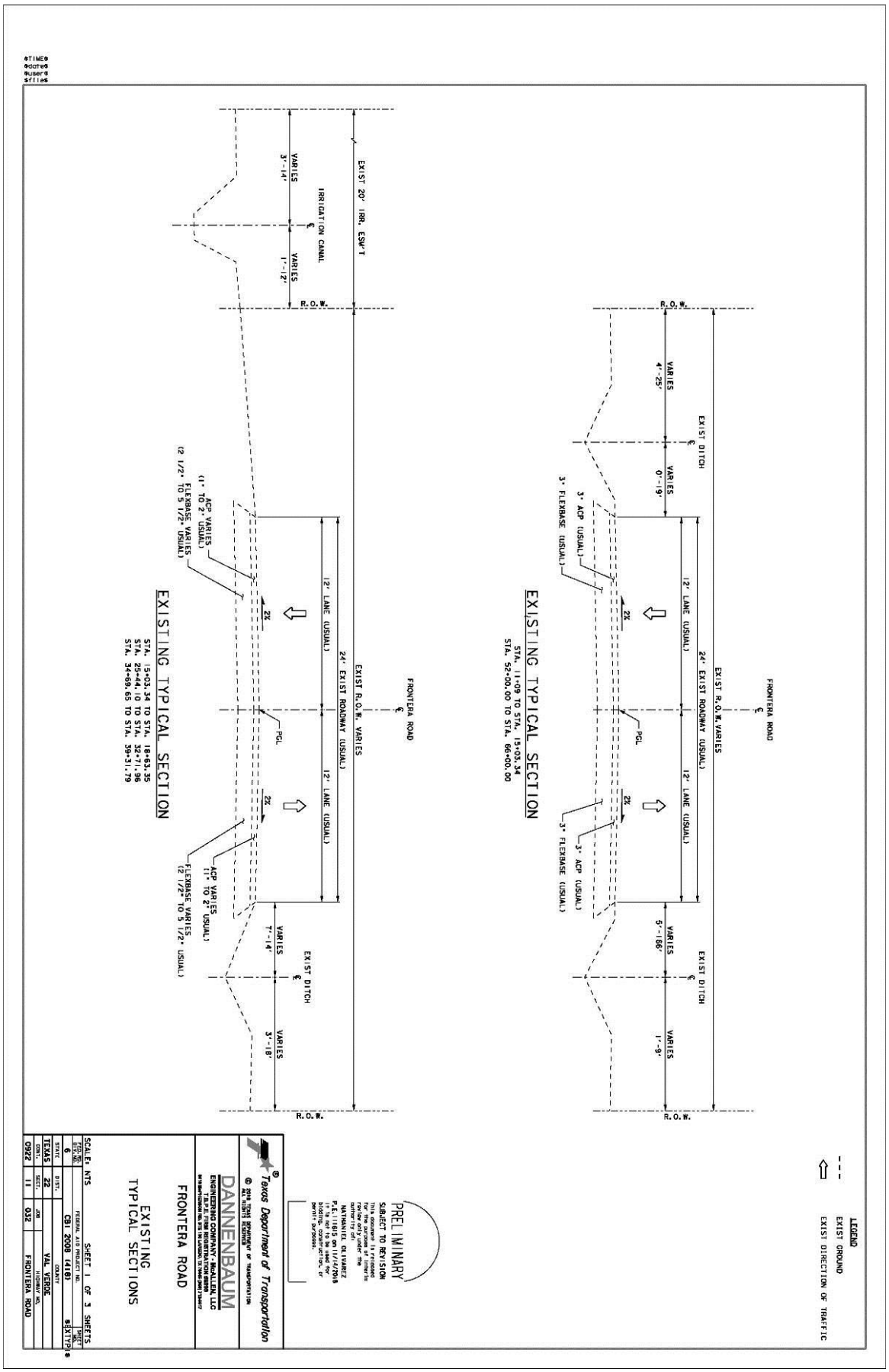
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, JUNE 1, 2004 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012).

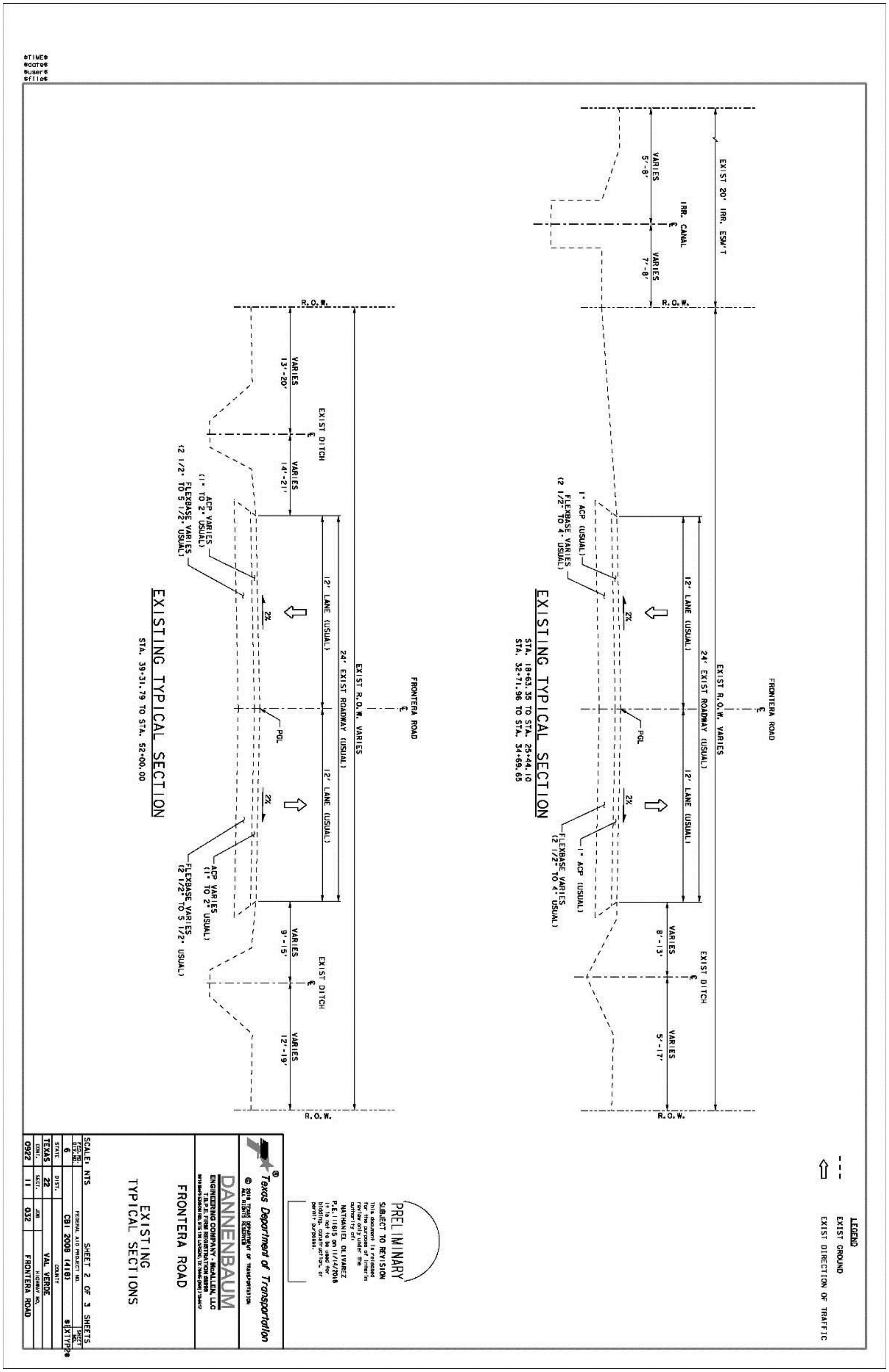
Texas Department of Transportation

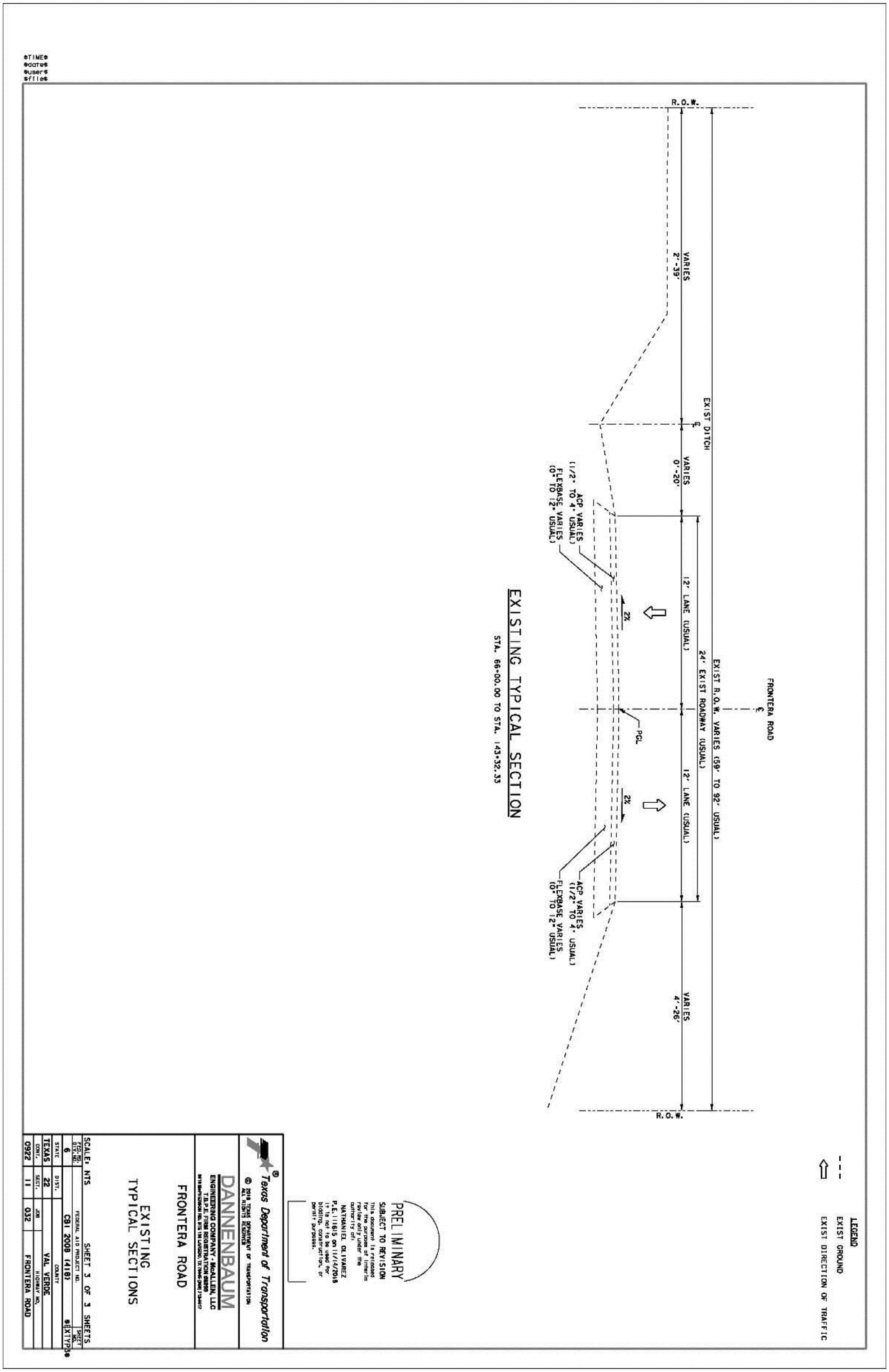
DANNENBAUM
ENGINEERING COMPANY - McALLEN, LLC
T.B.P.E. FIRM REGISTRATION #8909

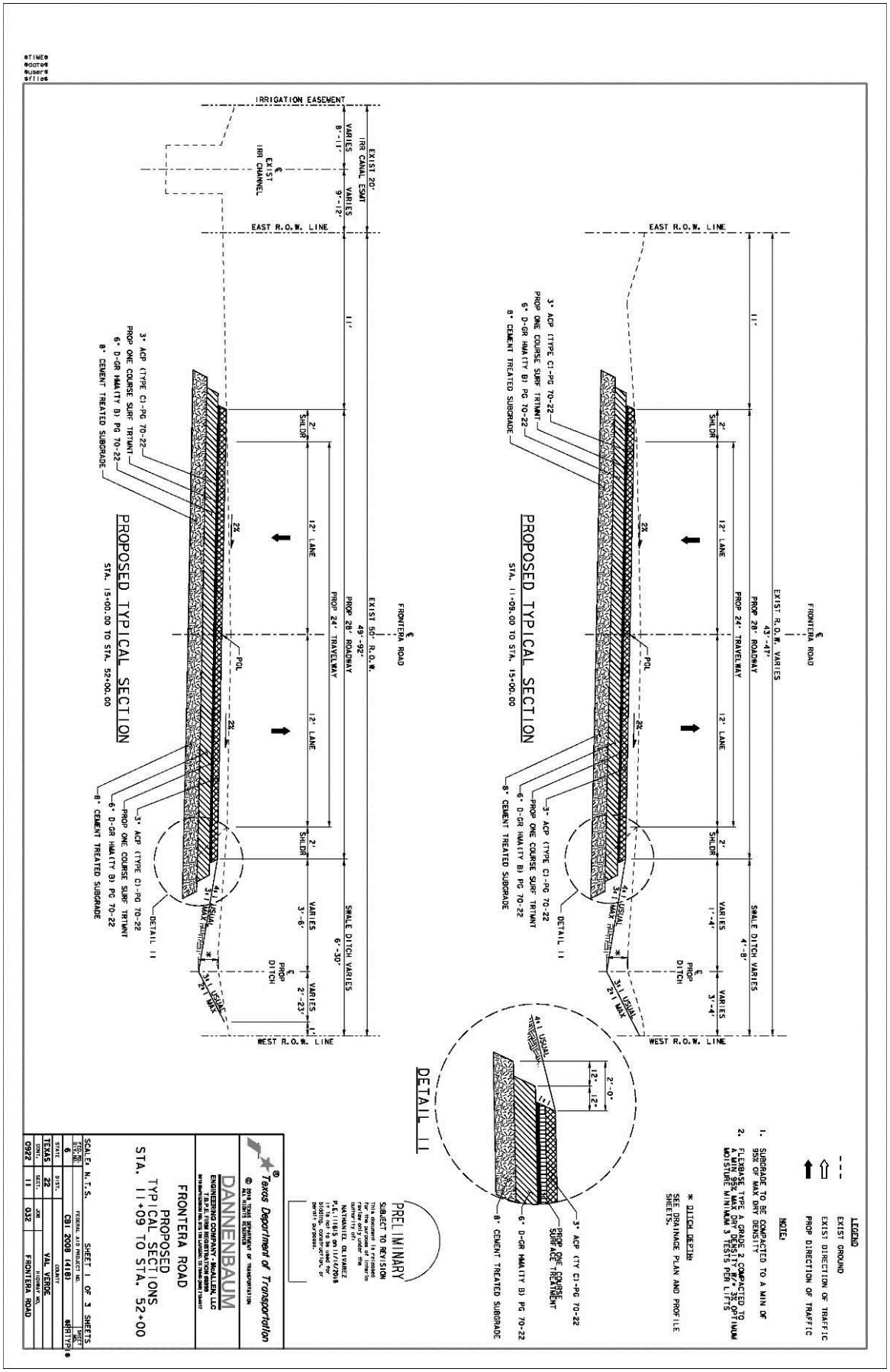
#DATE# VAL VERDE CBI 2008 (418)
#TIME#
#USER#
#FILE#

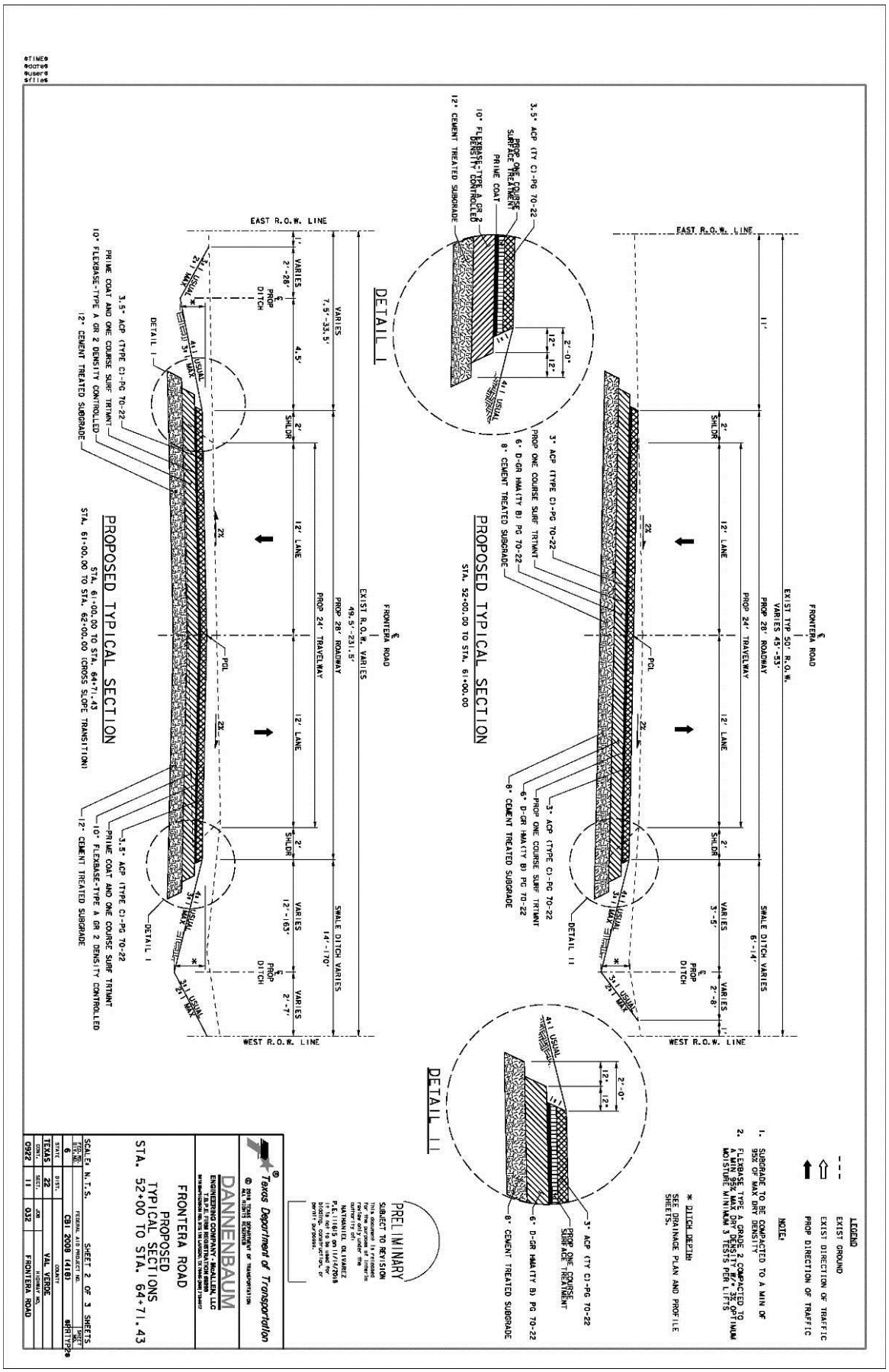

MEX
USA
RIO
GRANDE
RIVER
CIENEGAS
CREEK
GUTIERRE LN
UNION PACIFIC RAIL ROAD
FRONTERA RD
15+00
30+00
45+00
60+00
75+00
90+00
105+00
120+00
135+00
BEGIN PROJECT
CSJ# 0922-11-032
STA 11+09.00
LEONEL MARTINEZ BLVD
JOHNSON
LAS VACAS
FARLEY
SL 239
239
277
US 277
ALDERETE LN
US CUSTOMS
PORT OF ENTRY
END PROJECT
CSJ# 0922-11-032
STA 143+32.33
DEL RIO
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PROJECT LAYOUT SHEET
SCALE: 1" = 1000'
SHEET 1 OF 1 SHEETS
CBI 2008 (418)
TEXAS
22
VAL VERDE
0922
11
032
FRONTERA ROAD

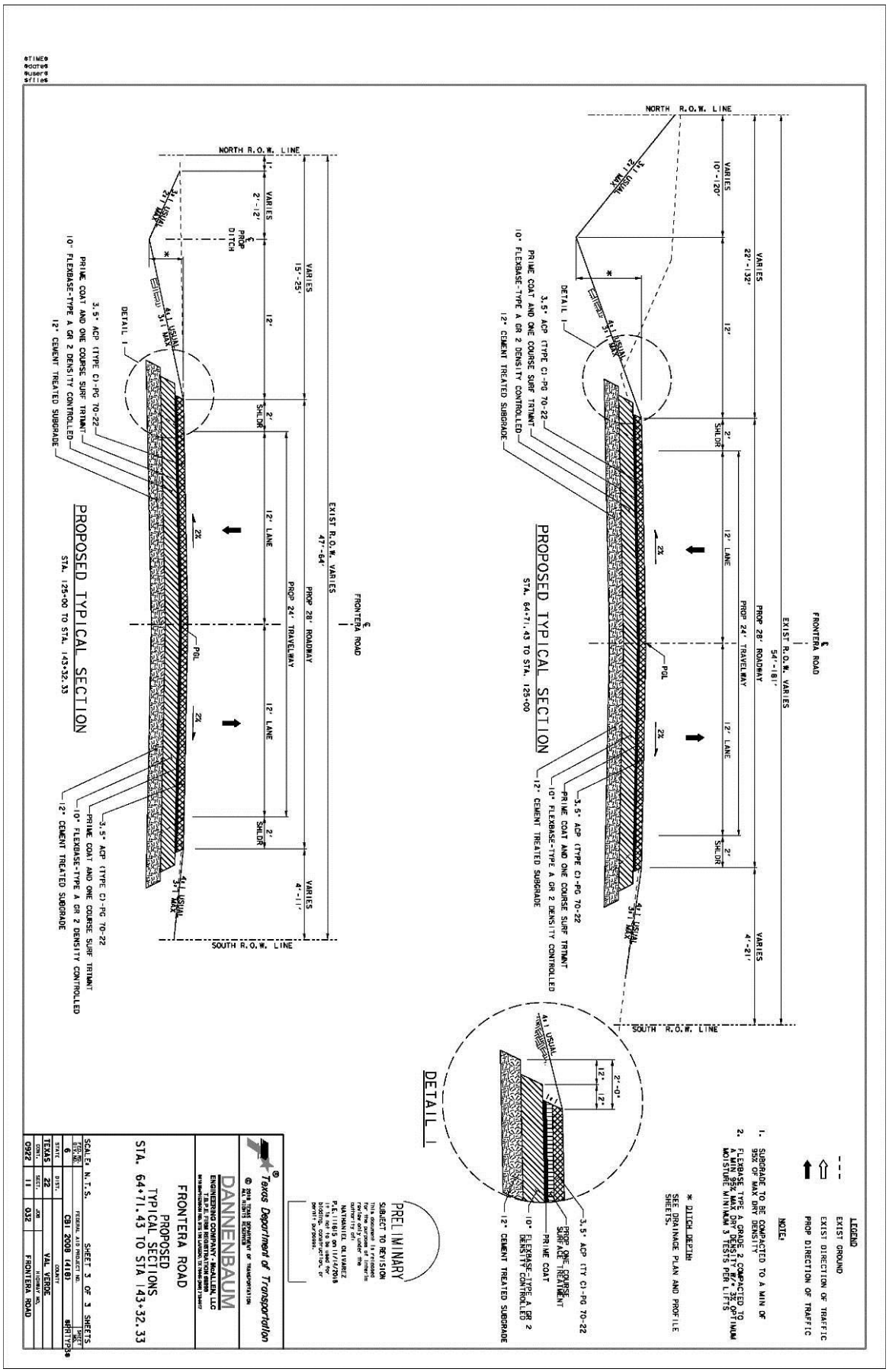

LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
FRONTERA ROAD
EXIST R.O.W. VARIES
24' EXIST ROADWAY (USUAL)
12' LANE (USUAL)
12' LANE (USUAL)
EXIST DITCH
VARIES 4'-25'
VARIES 0'-19'
VARIES 5'-16'
VARIES 1'-9'
3" ACP (USUAL)
3" FLEXBASE (USUAL)
PCL
2%
R.O.W.
EXISTING TYPICAL SECTION
STA. 11+09 TO STA. 15+03.34
STA. 52+00.00 TO STA. 66+00.00
EXIST 20' IRR. ESM'T
IRRIGATION CANAL
VARIES 3'-14'
VARIES 11'-12'
ACP VARIES (1" TO 2" USUAL)
FLEXBASE VARIES (2 1/2" TO 5 1/2" USUAL)
VARIES 7'-14'
VARIES 3'-18'
EXISTING TYPICAL SECTION
STA. 15+03.34 TO STA. 18+83.35
STA. 25+44.10 TO STA. 32+71.96
STA. 34+69.65 TO STA. 39+31.79
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
EXISTING
TYPICAL SECTIONS
SCALE: NTS
SHEET 1 OF 3 SHEETS
CSJ 2009 (418)
VAL VERDE
FRONTERA ROAD
0922
11
032


LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
EXIST 20' IRR. ESM'T
IRR. CANAL
VARIES 5'-8'
VARIES 7'-8'
R.O.W.
FRONTERA ROAD
EXIST R.O.W. VARIES
24' EXIST ROADWAY (USUAL)
12' LANE (USUAL)
12' LANE (USUAL)
PGL
2%
1" ACP (USUAL)
FLEXBASE VARIES (2 1/2" TO 4" USUAL)
EXIST DITCH
VARIES 8'-13'
VARIES 5'-17'
EXISTING TYPICAL SECTION
STA. 18+63.35 TO STA. 25+44.10
STA. 32+71.96 TO STA. 34+69.65
VARIES 13'-20'
VARIES 14'-21'
ACP VARIES (1" TO 2" USUAL)
FLEXBASE VARIES (2 1/2" TO 5 1/2" USUAL)
VARIES 9'-15'
VARIES 12'-19'
EXISTING TYPICAL SECTION
STA. 39+31.79 TO STA. 52+00.00
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
EXISTING TYPICAL SECTIONS
SCALE: NTS
SHEET 2 OF 3 SHEETS
TEXAS
VAL VERDE
FRONTERA ROAD


EXISTING TYPICAL SECTION
STA. 66+00.00 TO STA. 143+32.33
FRONTERA ROAD
EXIST R.O.W. VARIES (59' TO 92' USUAL)
24' EXIST ROADWAY (USUAL)
12' LANE (USUAL)
12' LANE (USUAL)
R.O.W.
R.O.W.
EXIST DITCH
VARIES
2'-39'
VARIES
0'-20'
VARIES
4'-26'
PGL
2%
2%
ACP VARIES
(1/2" TO 4" USUAL)
FLEXBASE VARIES
(0" TO 12" USUAL)
LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
EXISTING
TYPICAL SECTIONS
SCALE: NTS
SHEET 3 OF 3 SHEETS
CBI 2008 (418)
TEXAS
22
VAL VERDE
0922
11
032
FRONTERA ROAD


LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
PROP DIRECTION OF TRAFFIC
NOTES:
1. SUBGRADE TO BE COMPACTED TO A MIN OF 95% OF MAX DRY DENSITY.
2. FLEXBASE TYPE A GRADE 2 COMPACTED TO A MIN 95% MAX. DRY DENSITY W/ -2% OPTIMUM MOISTURE MINIMUM 3 TESTS PER LIFTS
* DITCH DEPTH SEE DRAINAGE PLAN AND PROFILE SHEETS.
PROPOSED TYPICAL SECTION
STA. 11+09.00 TO STA. 15+00.00
PROPOSED TYPICAL SECTION
STA. 15+00.00 TO STA. 52+00.00
DETAIL 11
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PROPOSED
TYPICAL SECTIONS
STA. 11+09 TO STA. 52+00
SHEET 1 OF 3 SHEETS
DISTRICT: 6
COUNTY: VAL VERDE
CONT: 0922
SECT: 11
JOB: 032
HIGHWAY: FRONTERA ROAD


LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
PROP DIRECTION OF TRAFFIC
NOTES:
1. SUBGRADE TO BE COMPACTED TO A MIN OF 95% OF MAX DRY DENSITY.
2. FLEXBASE TYPE A GRADE 2 COMPACTED TO A MIN 95% MAX. DRY DENSITY W/ +2% OPTIMUM MOISTURE MINIMUM 3 TESTS PER LIFTS
* DITCH DEPTH SEE DRAINAGE PLAN AND PROFILE SHEETS.
PROPOSED TYPICAL SECTION
STA. 52+00.00 TO STA. 61+00.00
PROPOSED TYPICAL SECTION
STA. 61+00.00 TO STA. 62+00.00 (CROSS SLOPE TRANSITION)
PROPOSED TYPICAL SECTION
STA. 61+00.00 TO STA. 64+71.43
DETAIL I
DETAIL II
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PROPOSED
TYPICAL SECTIONS
STA. 52+00 TO STA. 64+71.43
SCALE: N.T.S.
SHEET 2 OF 3 SHEETS
TEXAS
6
22
CSJ 2009 (418)
VAL VERDE
0922
11
032
FRONTERA ROAD


LEGEND
EXIST GROUND
EXIST DIRECTION OF TRAFFIC
PROP DIRECTION OF TRAFFIC
NOTE:
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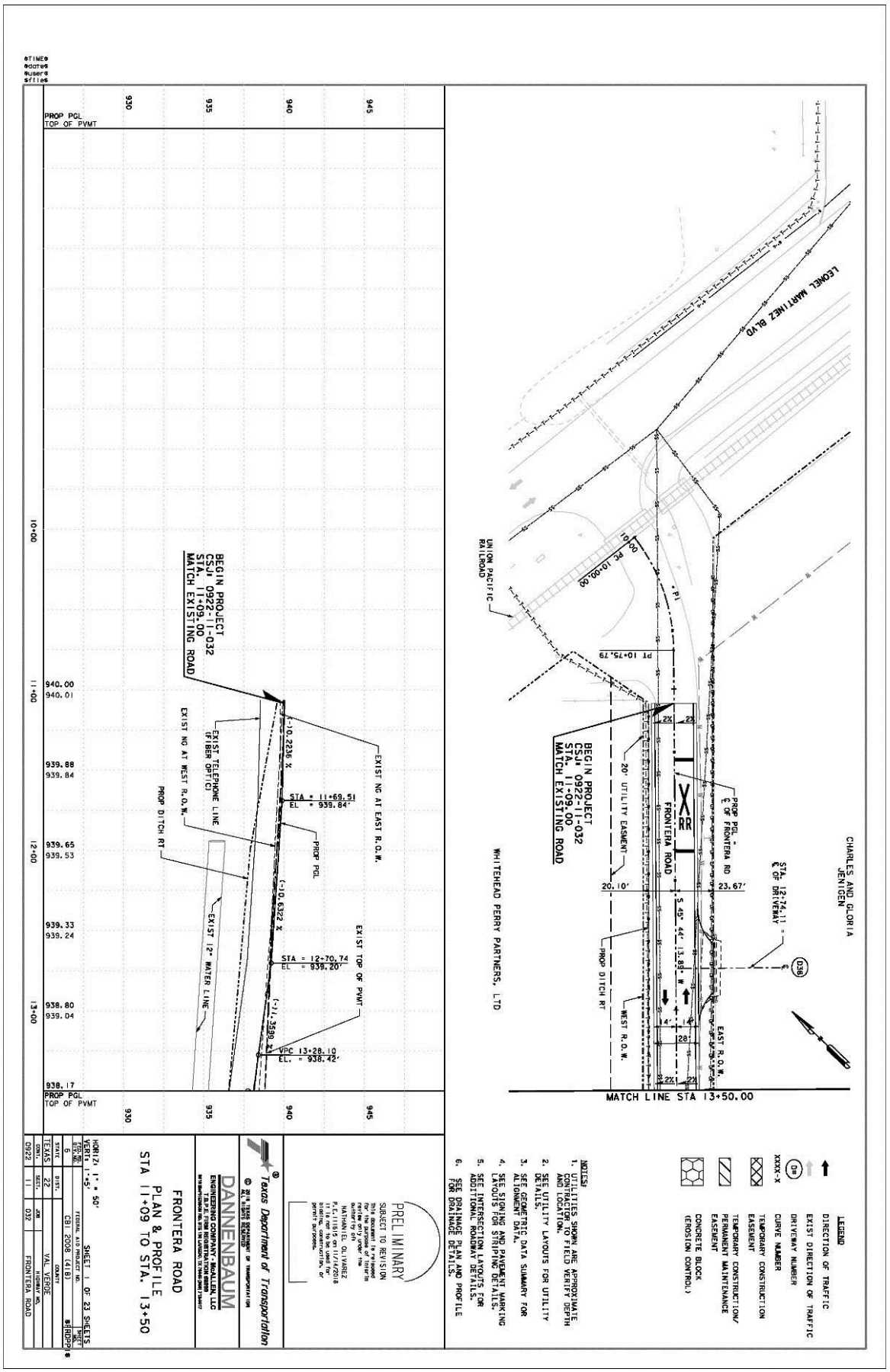
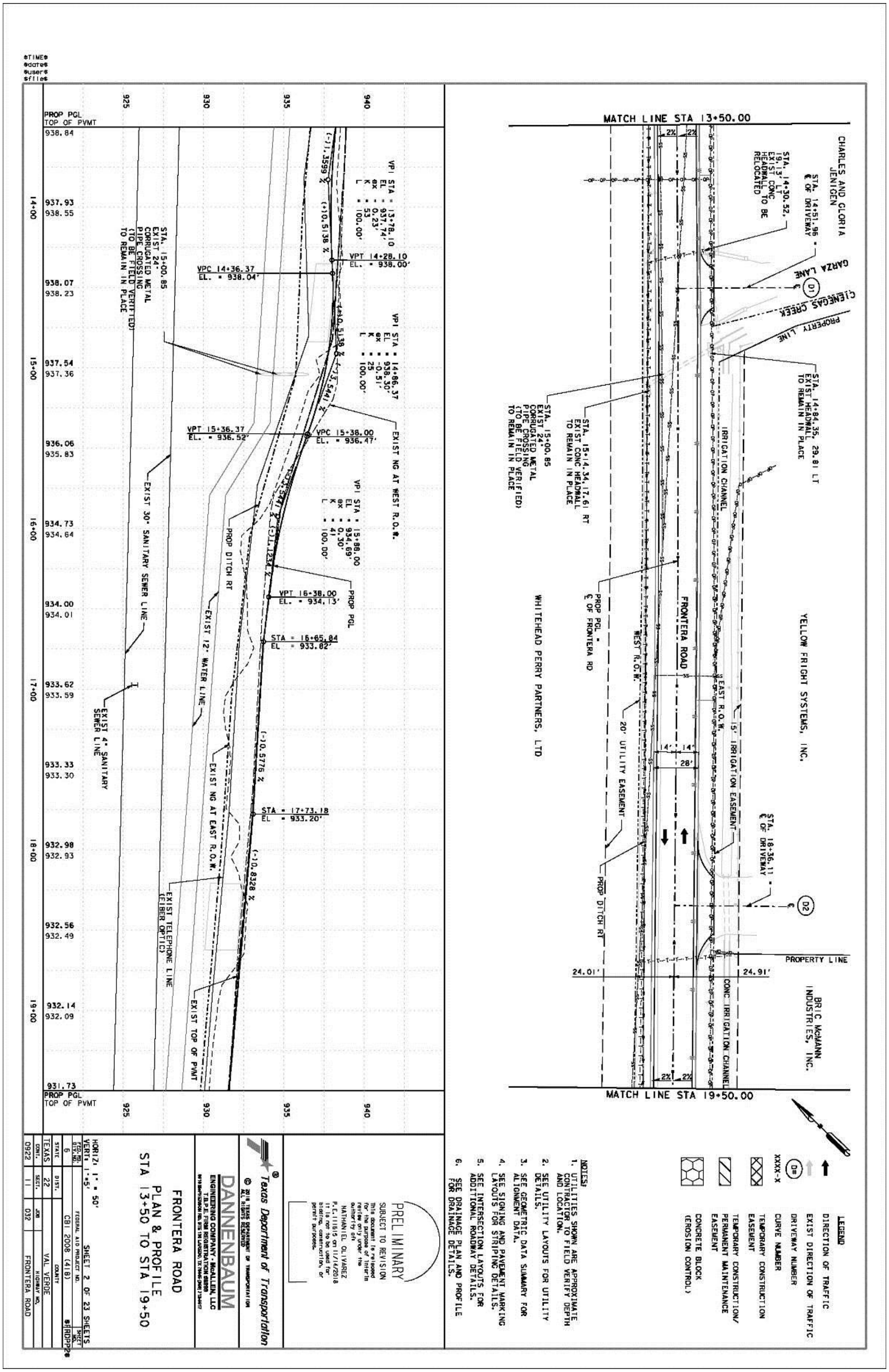
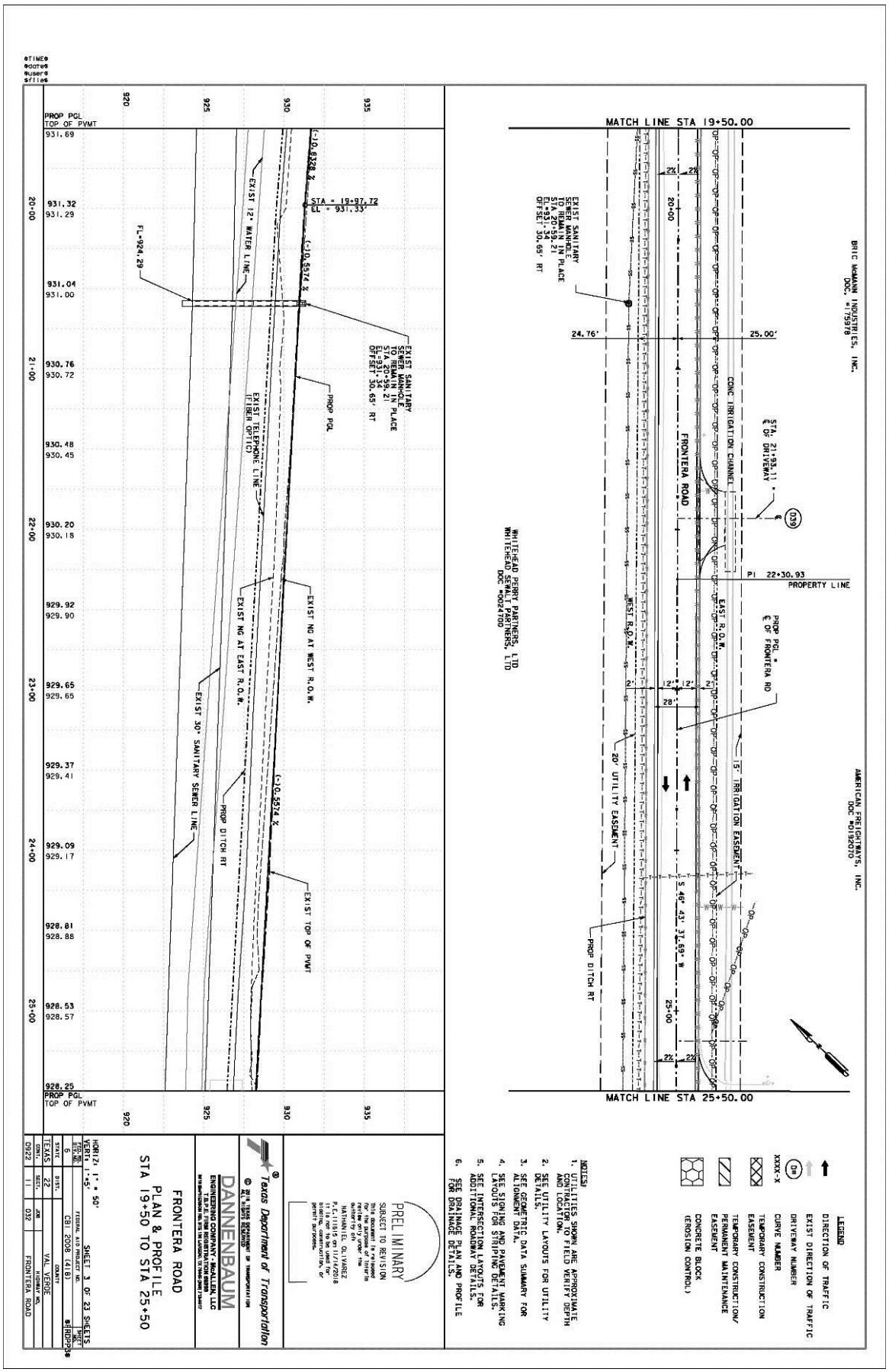
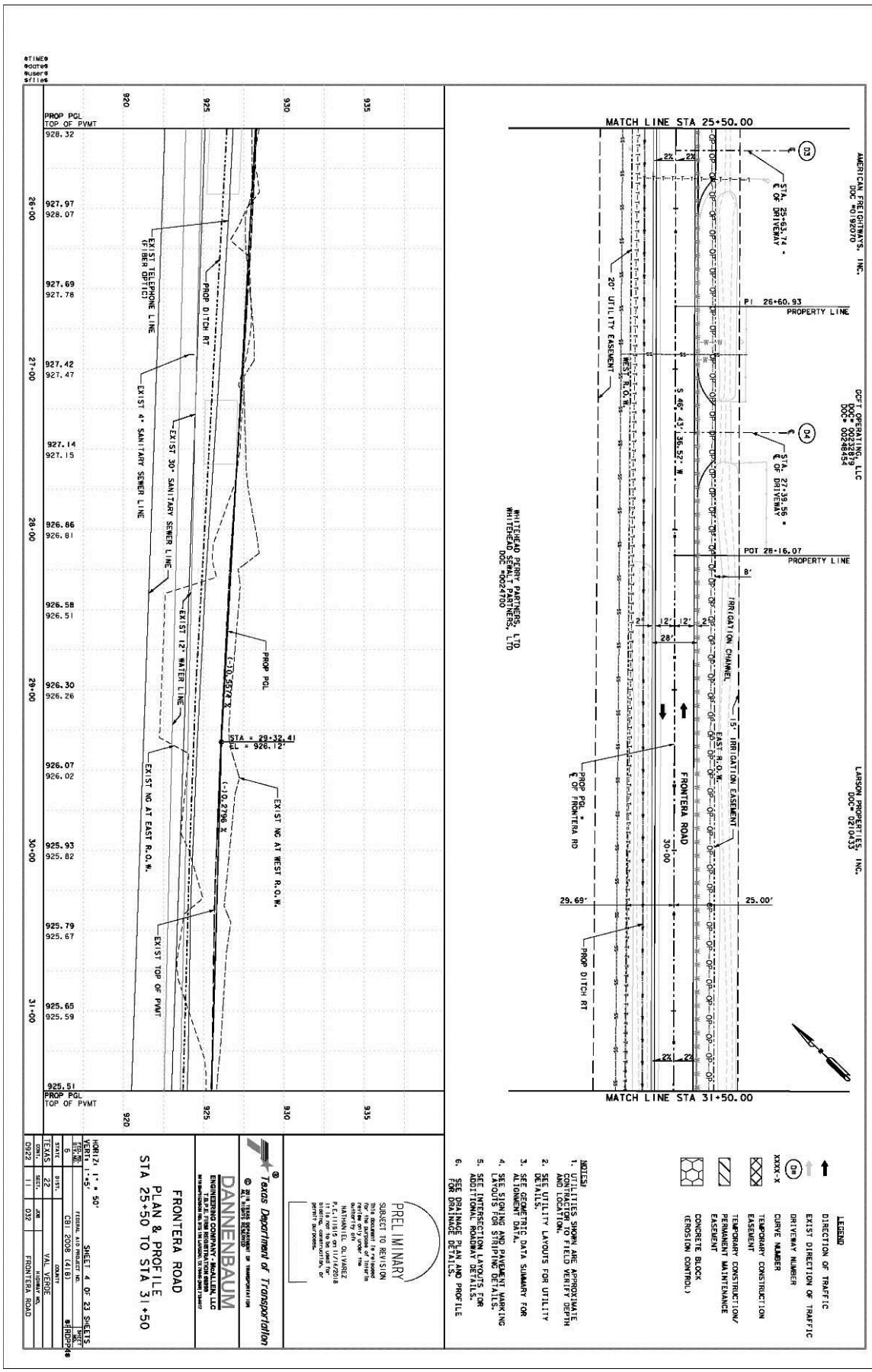
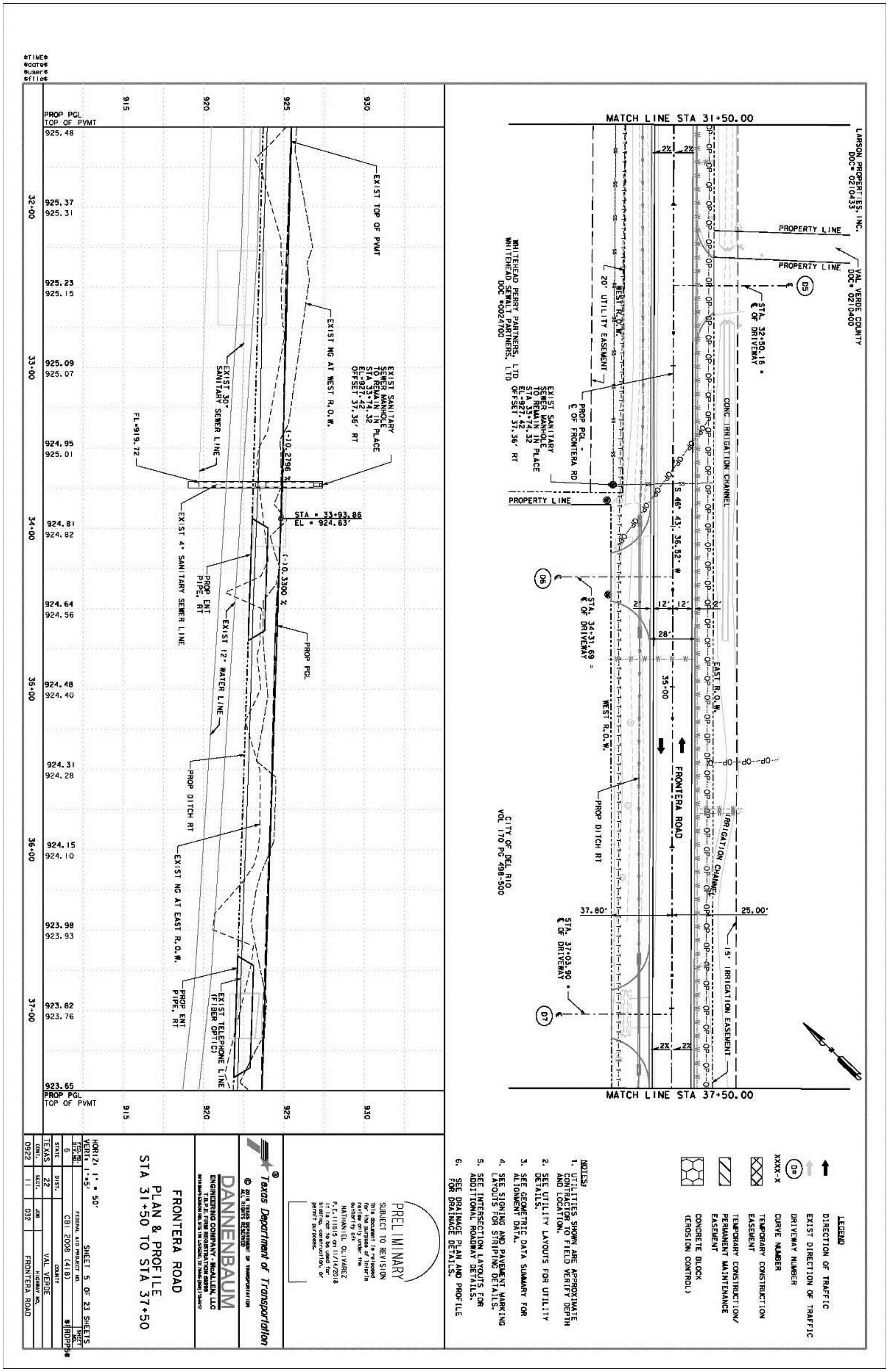
2. FLEXBASE TYPE A GRADE 2 COMPACTED TO A MIN 95% MAX. DRY DENSITY W/ -2% OPTIMUM MOISTURE MINIMUM 3 TESTS PER LIFTS
* DITCH DEPTH SEE DRAINAGE PLAN AND PROFILE SHEETS.
PROPOSED TYPICAL SECTION
STA. 64+71.43 TO STA. 125+00
PROPOSED TYPICAL SECTION
STA. 125+00 TO STA. 143+32.33
DETAIL I
PRELIMINARY
SUBJECT TO REVISION
FRONTERA ROAD
PROPOSED
TYPICAL SECTIONS
STA. 64+71.43 TO STA 143+32.33
DANNENBAUM
SHEET 3 OF 3 SHEETS


LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
CHARLES AND GLORIA JENIGEN
WHITEHEAD PERRY PARTNERS, LTD
UNION PACIFIC RAILROAD
LEONEL MARTINEZ BLVD
FRONTERA ROAD
PROP PGL & OF FRONTERA RD
STA 12+74.11 & OF DRIVEWAY
PI
PT 10+75.79
BEGIN PROJECT CSJ# 0922-11-032 STA. 11+09.00 MATCH EXISTING ROAD
20' UTILITY EASEMENT
20.10'
23.67'
PROP DITCH RT
WEST R.O.W.
EAST R.O.W.
MATCH LINE STA 13+50.00
PROP PGL TOP OF PVMT
EXIST NG AT EAST R.O.W.
EXIST TELEPHONE LINE (FIBER OPTIC)
EXIST NG AT WEST R.O.W.
PROP DITCH RT
EXIST TOP OF PVMT
EXIST 12" WATER LINE
STA = 11+69.51 EL = 939.84'
PROP PGL
STA = 12+70.74 EL = 939.20'
PVC 13+28.10 EL. = 938.42'
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 11+09 TO STA. 13+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 1 OF 23 SHEETS
FEDERAL AID PROJECT NO. CSJ: 2008 (418)
DISTRICT: 6
COUNTY: VAL VERDE
HIGHWAY NO.: FRONTERA ROAD
CONTROL SECT. JOB: 0922 11 032
TEXAS DIST. 23


MATCH LINE STA 13+50.00
MATCH LINE STA 19+50.00
FRONTERA ROAD
YELLOW FRIGHT SYSTEMS, INC.
WHITEHEAD PERRY PARTNERS, LTD
CHARLES AND GLORIA JENIGEN
BRIC McMANN INDUSTRIES, INC.
GARZA LANE
CIENEGAS CREEK
PROPERTY LINE
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 13+50 TO STA 19+50
HORIZ: 1" = 50'
VERT: 1" = 5'
SHEET 2 OF 23 SHEETS
VAL VERDE
PROP PGL
TOP OF PVMT


LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
XXXX-X
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND LOCATION. CONTRACTOR TO FIELD VERIFY DEPTH
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
MATCH LINE STA 19+50.00
MATCH LINE STA 25+50.00
BRIC MCMANN INDUSTRIES, INC. DOC. #175978
AMERICAN FREIGHTWAYS, INC. DOC. #0192070
WHITEHEAD PERRY PARTNERS, LTD WHITEHEAD SEWALT PARTNERS, LTD DOC #0024700
FRONTERA ROAD
CONC IRRIGATION CHANNEL
EXIST SANITARY SEWER MANHOLE TO REMAIN IN PLACE STA 20+59.21 EL=931.33 OFFSET 30.65' RT
STA 21+93.11 ℄ OF DRIVEWAY
PI 22+30.93
PROPERTY LINE
PROP PGL ℄ OF FRONTERA RD
15' IRRIGATION EASEMENT
20' UTILITY EASEMENT
PROP DITCH RT
S 46° 43' 37.69" W
25.00'
24.76'
28'
12'
2%
EAST R.O.W.
WEST R.O.W.
PROP PGL TOP OF PVMT
EXIST 12" WATER LINE
EXIST TELEPHONE LINE (FIBER OPTIC)
EXIST NG AT WEST R.O.W.
EXIST NG AT EAST R.O.W.
EXIST 30" SANITARY SEWER LINE
PROP DITCH RT
EXIST TOP OF PVMT
STA = 19+97.72
EL = 931.33
FL=924.29
(-)0.5574 %
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 19+50 TO STA 25+50
HORIZ 1" = 50'
VERT 1"=5'
SHEET 3 OF 23 SHEETS
CSJ: 2008 (418)
TEXAS
VAL VERDE
FRONTERA ROAD
0922
032


MATCH LINE STA 25+50.00
MATCH LINE STA 31+50.00
AMERICAN FREIGHTWAYS, INC.
DOC #0192070
GCFT OPERATING, LLC
DOC# 00232819
DOC# 00268454
WHITEHEAD PERRY PARTNERS, LTD
WHITEHEAD SEWALT PARTNERS, LTD
DOC #00247100
LARSON PROPERTIES, INC.
DOC# 0210433
STA. 25+63.74 ℄ OF DRIVEWAY
STA. 27+39.56 ℄ OF DRIVEWAY
PI 26+60.93
PROPERTY LINE
POT 28+16.07
PROPERTY LINE
20' UTILITY EASEMENT
WEST R.O.W.
EAST R.O.W.
S 46° 43' 36.52" W
IRRIGATION CHANNEL
15' IRRIGATION EASEMENT
FRONTERA ROAD
30'-00
PROP PGL ℄ OF FRONTERA RD
PROP DITCH RT
29.69'
25.00'
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
XXXX-X
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND LOCATION. CONTRACTOR TO FIELD VERIFY DEPTH
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PROP PGL TOP OF PVMT
928.32
927.97
928.07
927.69
927.78
927.42
927.47
927.14
927.15
926.86
926.81
926.58
926.51
926.30
926.26
926.07
926.02
925.93
925.82
925.79
925.67
925.65
925.59
925.51
26+00
27+00
28+00
29+00
30+00
31+00
920
925
930
935
EXIST TELEPHONE LINE (FIBER OPTIC)
PROP DITCH RT
EXIST 4" SANITARY SEWER LINE
EXIST 30" SANITARY SEWER LINE
EXIST 12" WATER LINE
EXIST NG AT EAST R.O.W.
EXIST TOP OF PVMT
PROP PGL
(-)10.5574 'Y'
STA = 29+32.41
EL = 926.12
(-)10.2796 'X'
EXIST NG AT WEST R.O.W.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 25+50 TO STA 31+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 4 OF 23 SHEETS
TEXAS
DIST.
22
COUNTY
VAL VERDE
CONT.
SECT.
JOB
HIGHWAY NO.
0922
11
032
FRONTERA ROAD


MATCH LINE STA 31+50.00
MATCH LINE STA 37+50.00
LARSON PROPERTIES, INC. DOC# 0210433
VAL VERDE COUNTY DOC# 0210400
PROPERTY LINE
WHITEHEAD PERRY PARTNERS, LTD WHITEHEAD SEWALL PARTNERS, LTD DOC #0224700
20' UTILITY EASEMENT
WEST R.O.W.
EAST R.O.W.
CONC IRRIGATION CHANNEL
IRRIGATION CHANNEL
15' IRRIGATION EASEMENT
FRONTERA ROAD
PROP DITCH RT
CITY OF DEL RIO VOL 170 PG 498-500
EXIST TOP OF PVMT
EXIST NG AT WEST R.O.W.
EXIST NG AT EAST R.O.W.
EXIST 30" SANITARY SEWER LINE
EXIST 4" SANITARY SEWER LINE
EXIST 12" WATER LINE
EXIST TELEPHONE LINE (FIBER OPTIC)
PROP ENT PIPE, RT
PROP PGL
PROP PGL TOP OF PVMT
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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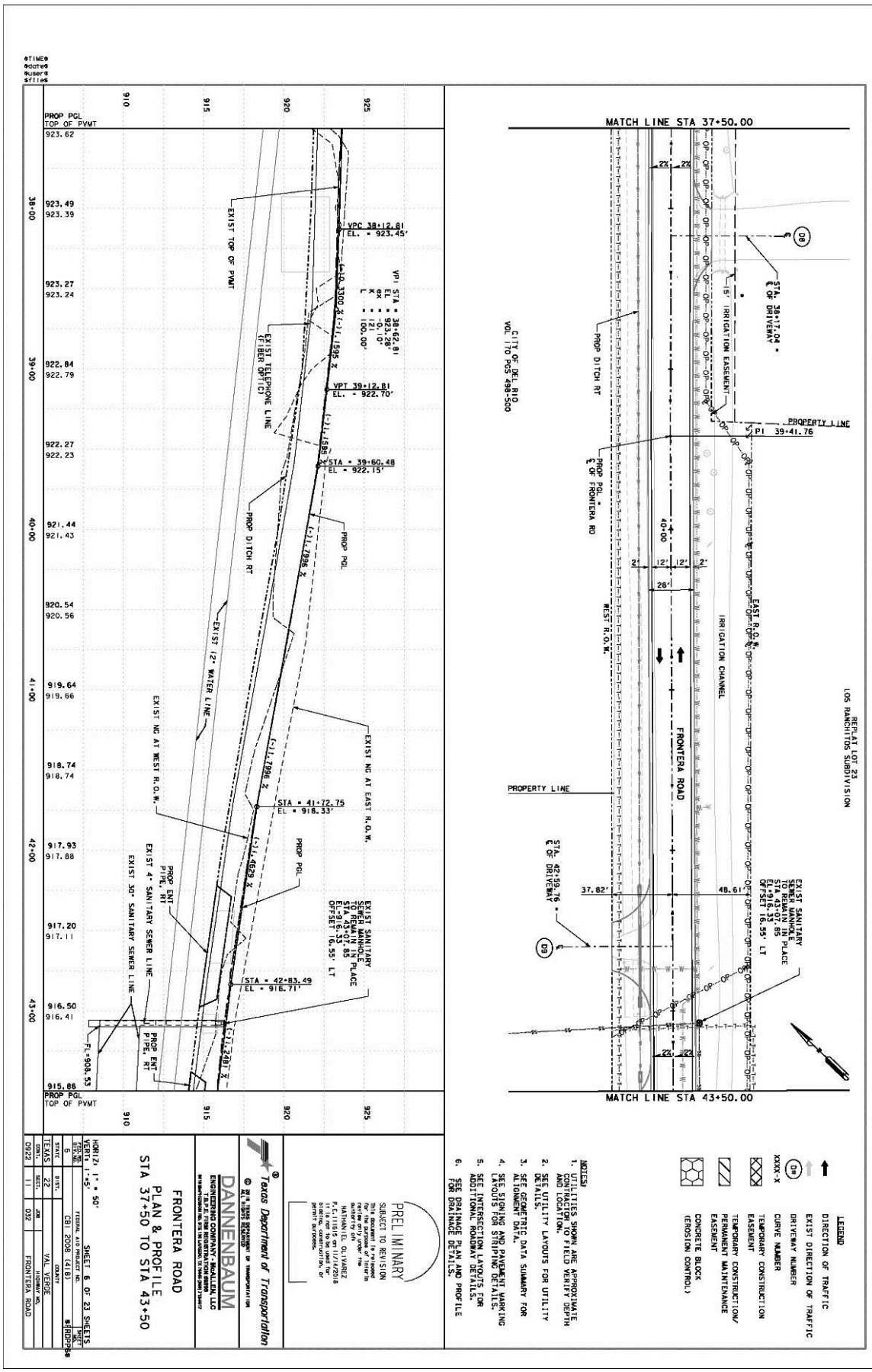
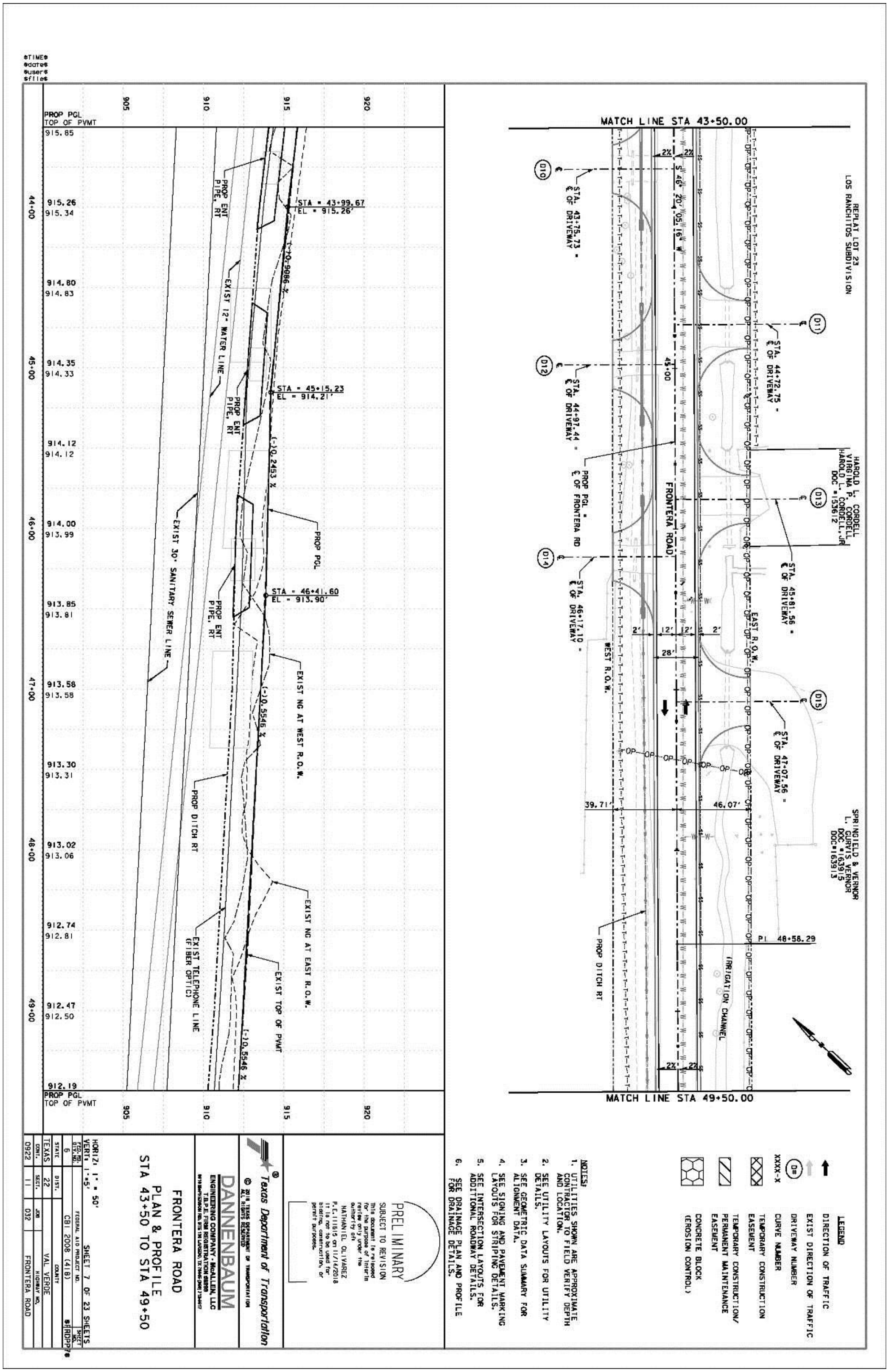
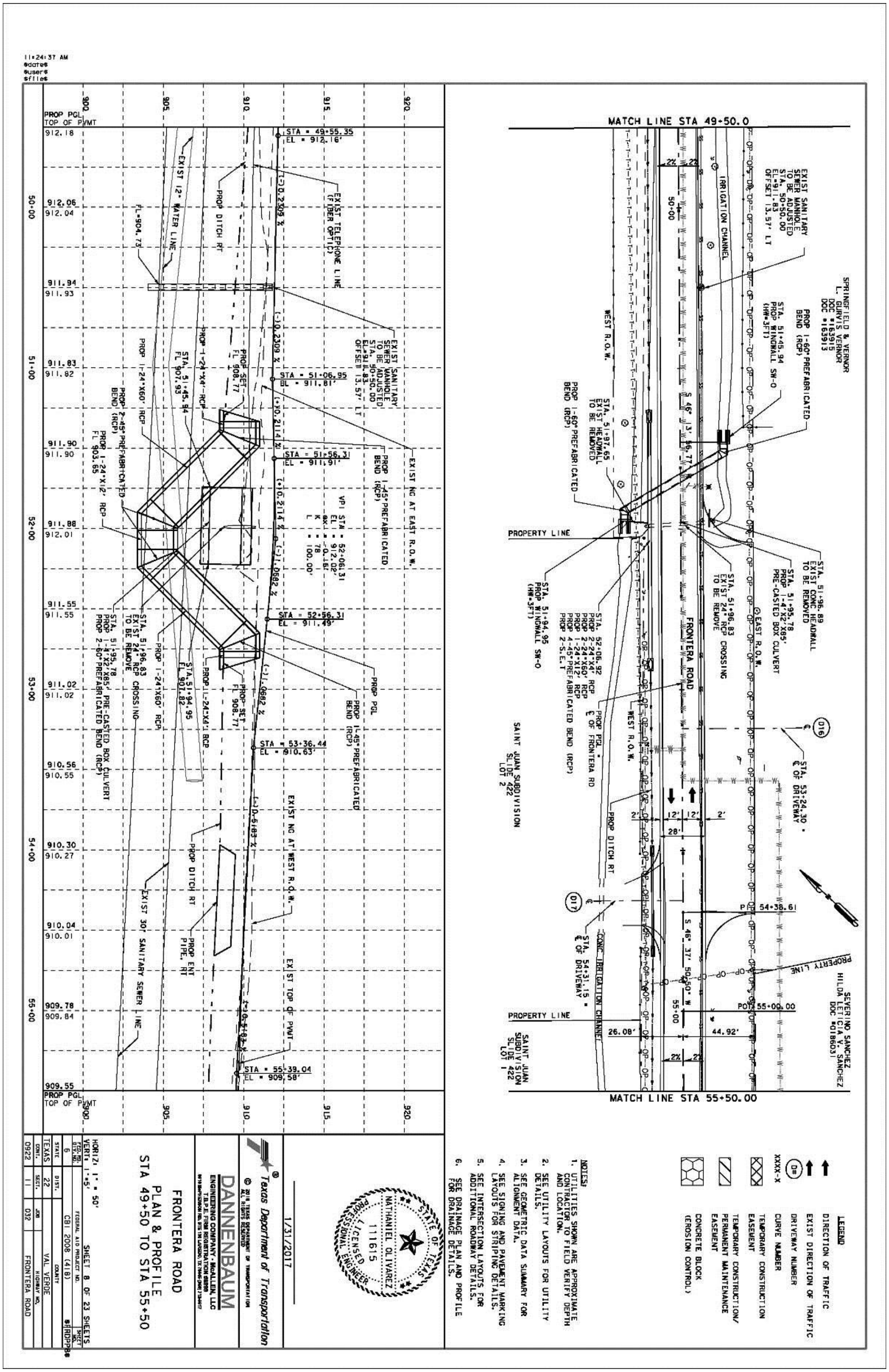
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 31+50 TO STA 37+50
SHEET 5 OF 23 SHEETS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 37+50.00
MATCH LINE STA 43+50.00
FRONTERA ROAD
PROPERTY LINE
REPLAT LOT 23
LOS RANCHITOS SUBDIVISION
CITY OF DEL RIO
VOL 170 PGS 498-500
PROP PGL
TOP OF PVMT
EXIST TOP OF PVMT
PROP DITCH RT
EXIST TELEPHONE LINE (FIBER OPTIC)
EXIST 12" WATER LINE
EXIST NG AT WEST R.O.W.
EXIST NG AT EAST R.O.W.
PROP ENT PIPE, RT
EXIST 4' SANITARY SEWER LINE
EXIST 30" SANITARY SEWER LINE
EXIST SANITARY SEWER MANHOLE TO REMAIN IN PLACE
PRELIMINARY
SUBJECT TO REVISION
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 37+50 TO STA 43+50
SHEET 6 OF 23 SHEETS
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.


MATCH LINE STA 43+50.00
MATCH LINE STA 49+50.00
FRONTERA ROAD
WEST R.O.W.
EAST R.O.W.
IRRIGATION CHANNEL
PROP DITCH RT
EXIST 12" WATER LINE
EXIST 30" SANITARY SEWER LINE
EXIST NG AT WEST R.O.W.
EXIST NG AT EAST R.O.W.
EXIST TOP OF PVMT
EXIST TELEPHONE LINE (FIBER OPTIC)
PROP PGL TOP OF PVMT
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 43+50 TO STA 49+50
SHEET 7 OF 23 SHEETS


MATCH LINE STA 49-50.0
MATCH LINE STA 55+50.00
FRONTERA ROAD
IRRIGATION CHANNEL
PROPERTY LINE
WEST R.O.W.
EAST R.O.W.
PROP DITCH RT
SAINT JUAN SUBDIVISION SLIDE 422 LOT 2
SAINT JUAN SUBDIVISION SLIDE 422 LOT 1
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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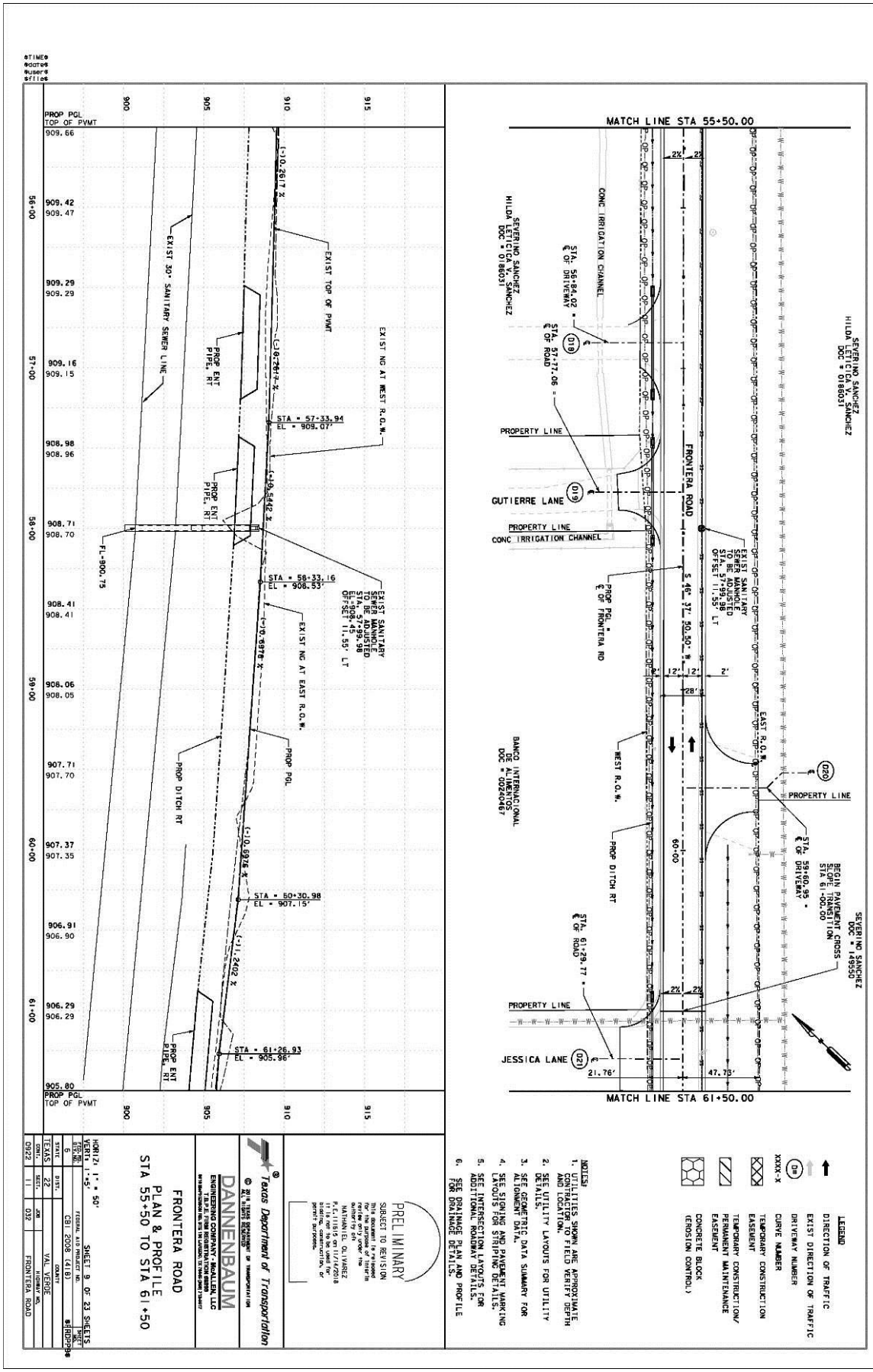
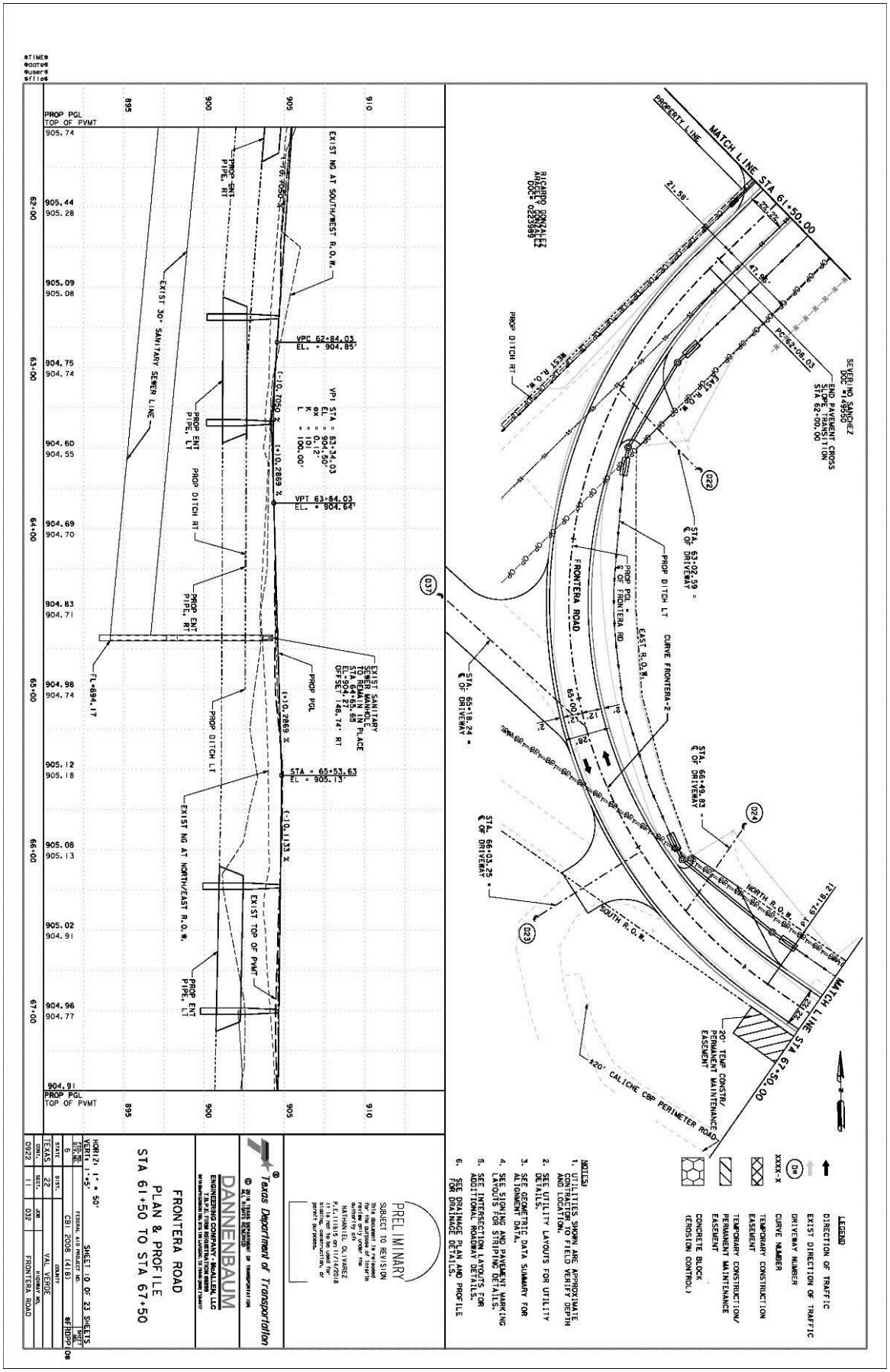
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
STATE OF TEXAS
NATHANIEL OLIVAREZ
111615
LICENSED
PROFESSIONAL ENGINEER
1/31/2017
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 49+50 TO STA 55+50
HORIZ: 1" = 50'
VERT: 1" = 5'
SHEET 8 OF 23 SHEETS
TEXAS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 55+50.00
MATCH LINE STA 61+50.00
FRONTERA ROAD
GUTIERRE LANE
JESSICA LANE
PROPERTY LINE
CONC IRRIGATION CHANNEL
EXIST SANITARY SEWER MANHOLE
EXIST 30" SANITARY SEWER LINE
EXIST TOP OF PVMT
EXIST NO AT WEST R.O.W.
EXIST NO AT EAST R.O.W.
PROP PGL
PROP DITCH RT
PROP ENT PIPE, RT
PROP PGL TOP OF PVMT
PRELIMINARY
SUBJECT TO REVISION
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 55+50 TO STA 61+50
SHEET 9 OF 23 SHEETS
VAL VERDE
FRONTERA ROAD


LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
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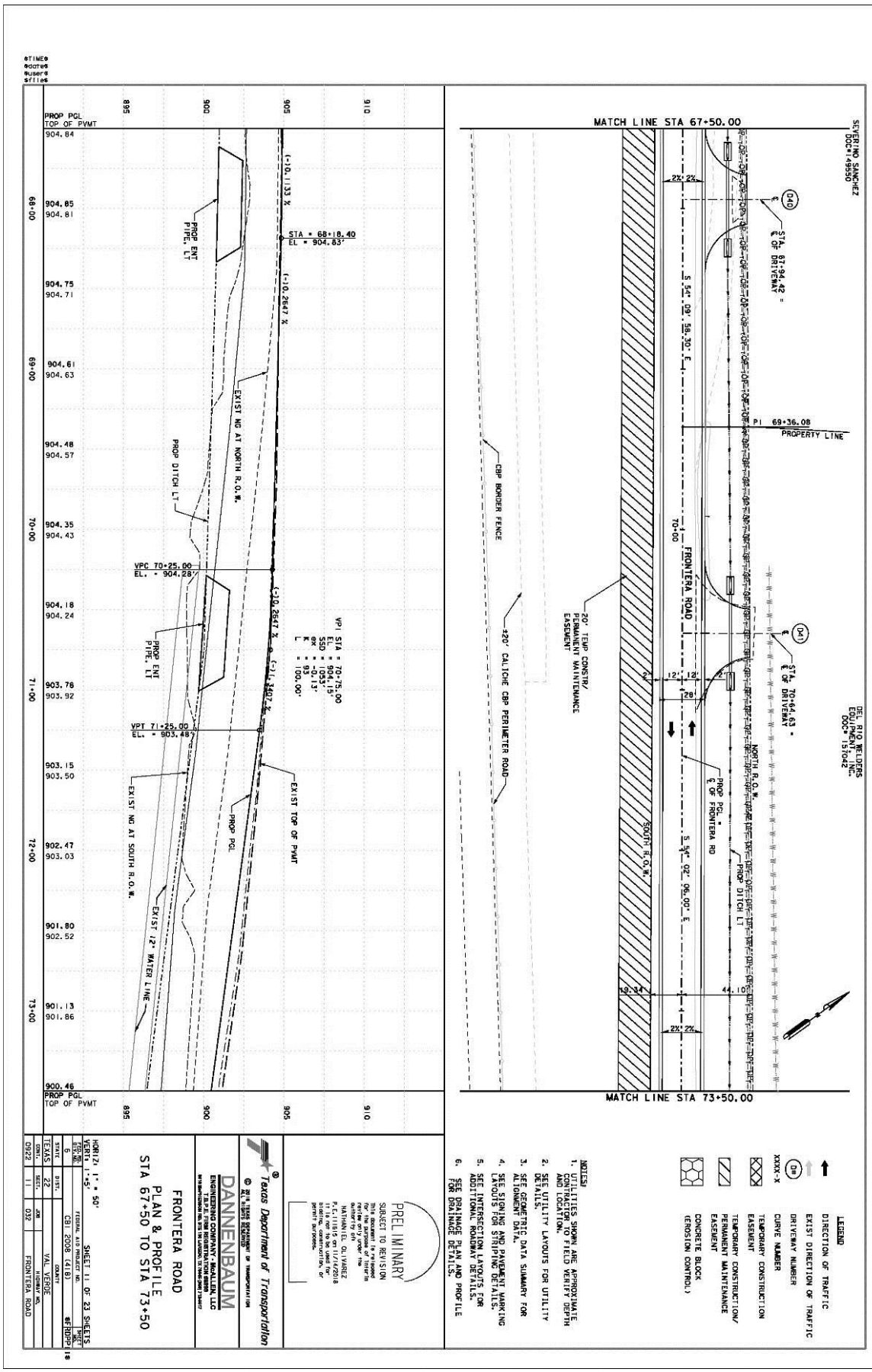
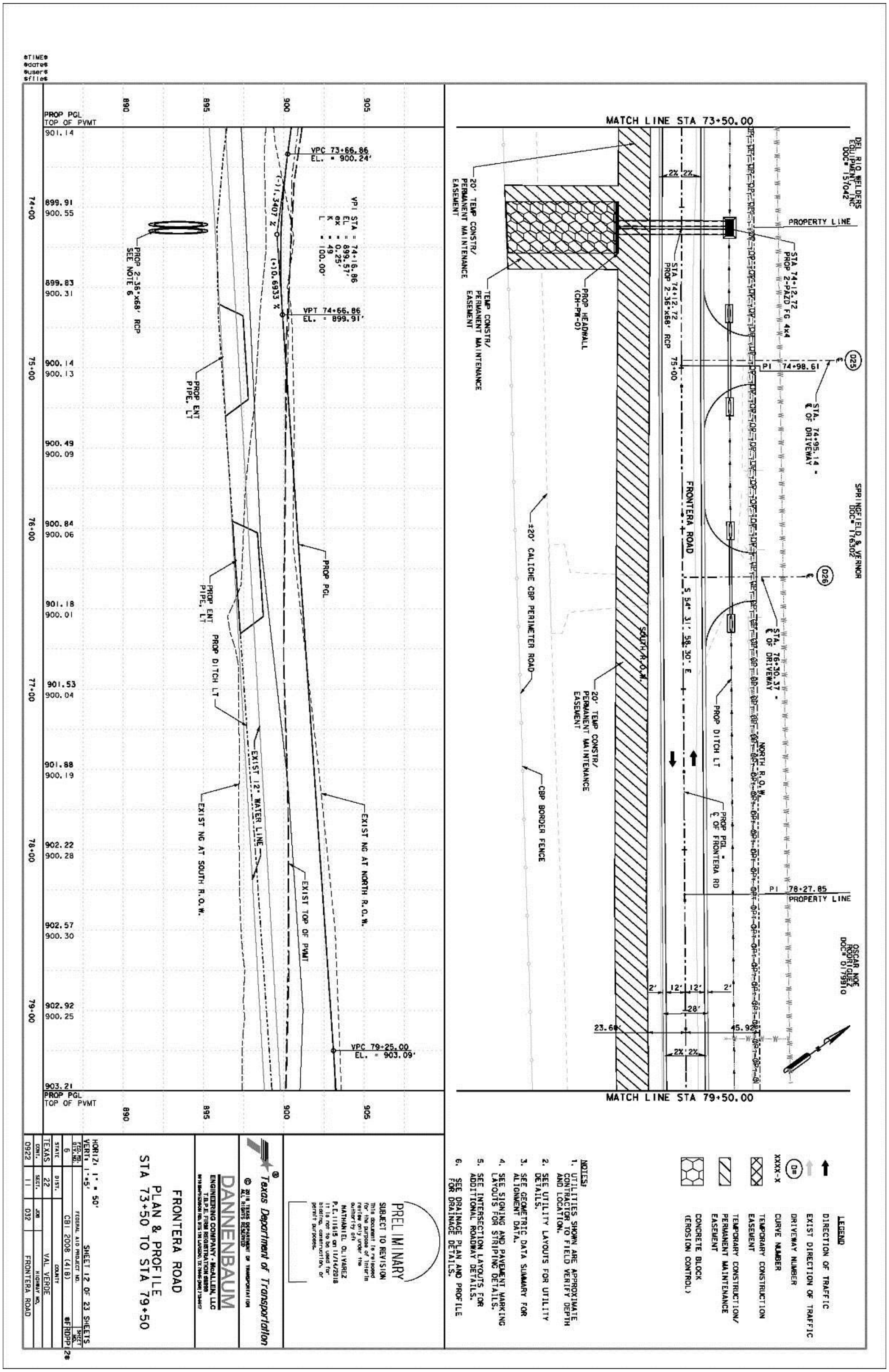
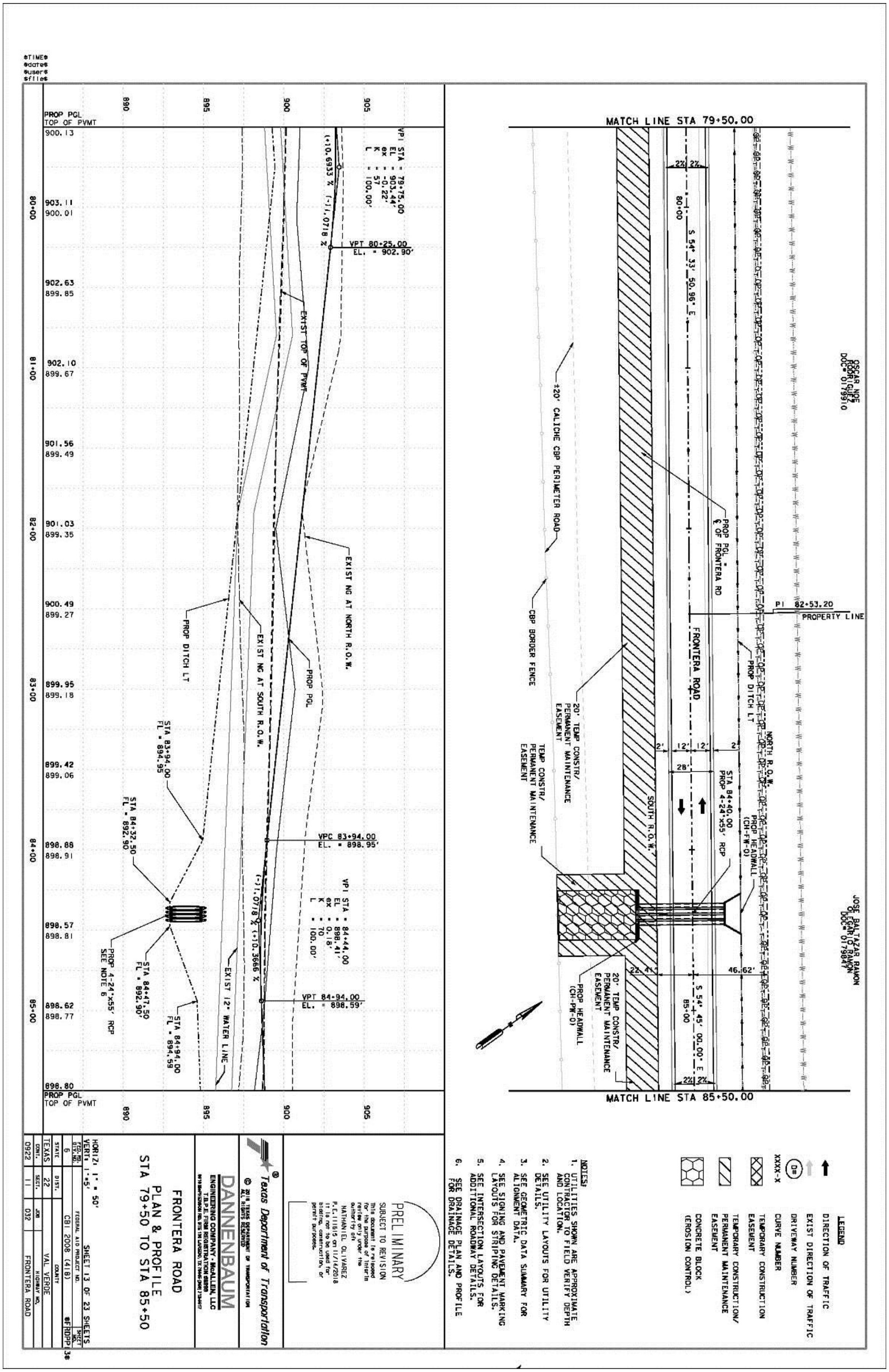
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
MATCH LINE STA 61+50.00
MATCH LINE STA 67+50.00
PROPERTY LINE
RICARDO GONZALEZ
DOC# 0223668
SEVER NO. SANCHEZ
DOC #149550
END PAVEMENT CROSS SLOPE TRANSITION STA 62+01.00
PC=62+08.03
PROP DITCH RT
WEST R.O.W.
FRONTERA ROAD
PROP PGL @ OF FRONTERA RD
EAST R.O.W.
CURVE FRONTERA-2
PROP DITCH LT
STA. 63+02.59 @ OF DRIVEWAY
STA. 65+18.24 @ OF DRIVEWAY
STA. 66+49.83 @ OF DRIVEWAY
STA. 66+03.25 @ OF DRIVEWAY
NORTH R.O.W.
SOUTH R.O.W.
PI 67+18.21
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
20' CALICHE CBP PERIMETER ROAD
PROP PGL TOP OF PVMT
EXIST NG AT SOUTH/WEST R.O.W.
EXIST 30" SANITARY SEWER LINE
PROP ENT PIPE, RT
PROP ENT PIPE, LT
VPC 62+84.03 EL. = 904.85'
VPI STA = 63+34.03 EL = 905.40' K = 101 L = 100.00'
VPT 63+84.03 EL. = 904.64'
(-)0.7050 %
(+)0.2889 %
(-)0.2869 %
(-)0.1133 %
EXIST SANITARY TO REMAIN IN PLACE STA 64+65.65 OFFSET 248.74' RT
STA = 65+63.63 EL = 905.13'
PROP PGL
PROP DITCH LT
EXIST NG AT NORTH/EAST R.O.W.
EXIST TOP OF PVMT
FL=894.17
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 61+50 TO STA 67+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 10 OF 23 SHEETS
FEDERAL AID PROJECT NO. CSJ: 2008 (418)
DISTRICT: 6 DIST.
COUNTY: VAL VERDE
HIGHWAY NO.: FRONTERA ROAD
TEXAS
DIST.
22
SECT.
JOB
0922
11
032


MATCH LINE STA 67+50.00
MATCH LINE STA 73+50.00
PROPERTY LINE
FRONTERA ROAD
PROP PCL
TOP OF PVMT
EXIST TOP OF PVMT
PROP DITCH LT
EXIST NO AT NORTH R.O.W.
EXIST NO AT SOUTH R.O.W.
EXIST 12" WATER LINE
PROP ENT PIPE, LT
VPC 70+25.00
EL. = 904.28'
VPT 71+25.00
EL. = 903.48'
VPI STA = 70+75.00
EL = 904.15'
SSD = 1053'
SK = 93
K = 100.00'
STA = 68+18.40
EL = 904.83'
(-)10.1133 %
(-)10.2647 %
(-)14.1407 %
CBP BORDER FENCE
120' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
PI 69+36.08
STA 67+94.42 ℄ OF DRIVEWAY
STA 70+64.63 ℄ OF DRIVEWAY
PROP ℄ OF FRONTERA RD
S 54° 09' 58.30" E
S 54° 02' 96.00" E
SEVERINO SANCHEZ DOC# 155930
DEL RIO WELDERS EQUIPMENT, INC. DOC# 157042
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND LOCATION. CONTRACTOR TO FIELD VERIFY DEPTH
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 67+50 TO STA 73+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 11 OF 23 SHEETS
TEXAS
DIST. 22
COUNTY VAL VERDE
CONT. 0922
SECT. 11
JOB 032
HIGHWAY NO. FRONTERA ROAD


MATCH LINE STA 73+50.00
MATCH LINE STA 79+50.00
PROP PGL
TOP OF PVMT
FRONTERA ROAD
PLAN & PROFILE
STA 73+50 TO STA 79+50
Texas Department of Transportation
DANNENBAUM
PRELIMINARY
SHEET 12 OF 23 SHEETS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 79+50.00
MATCH LINE STA 85+50.00
FRONTERA ROAD
PROP PGL & ℄ OF FRONTERA RD
±20' CALICHE CBP PERIMETER ROAD
CBP BORDER FENCE
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
PROP DITCH LT
NORTH R.O.W.
SOUTH R.O.W.
PI 82+53.20
PROPERTY LINE
OSCAR NOE RODRIGUEZ DOC# 01799910
JOSE BALTAZAR RAMON DE LEON Q RAMON DOC# 01798847
EXIST TOP OF PVMT
EXIST NG AT NORTH R.O.W.
EXIST NG AT SOUTH R.O.W.
PROP PGL
EXIST 12" WATER LINE
VPT 80+25.00 EL. = 902.90'
VPC 83+94.00 EL. = 898.95'
VPT 84+94.00 EL. = 898.59'
PROP PGL TOP OF PVMT
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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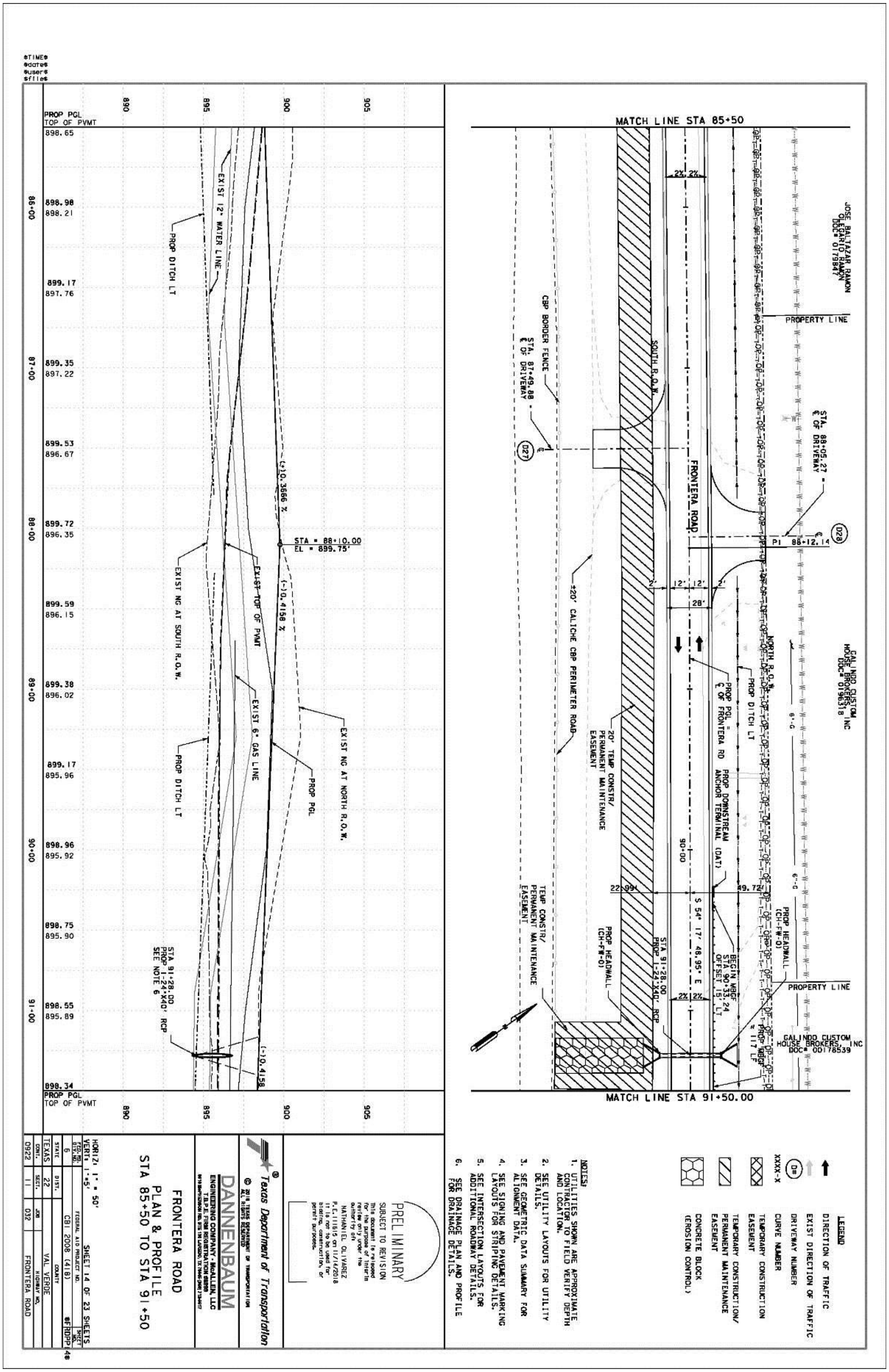
PRELIMINARY
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 79+50 TO STA 85+50
SHEET 13 OF 23 SHEETS
CBI 2008 (418)
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 85+50
MATCH LINE STA 91+50.00
FRONTERA ROAD
SOUTH R.O.W.
NORTH R.O.W.
PROPERTY LINE
CBP BORDER FENCE
±20' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
PROP DITCH LT
PROP HEADWALL (CH-FW-0)
PROP PGL = ℄ OF FRONTERA RD
PROP DOWNSTREAM ANCHOR TERMINAL (DAT)
JOSE BALTAZAR RAMON DEGARIO RAMON DOC# 0179847
GALINDO CUSTOM HOUSE BROKERS, INC DOC# 0196318
GALINDO CUSTOM HOUSE BROKERS, INC DOC# 00178539
EXIST 12" WATER LINE
EXIST 6" GAS LINE
EXIST TOP OF PVMT
EXIST NG AT SOUTH R.O.W.
EXIST NG AT NORTH R.O.W.
PROP PGL
STA = 88+10.00 EL = 899.75'
PROP PGL TOP OF PVMT
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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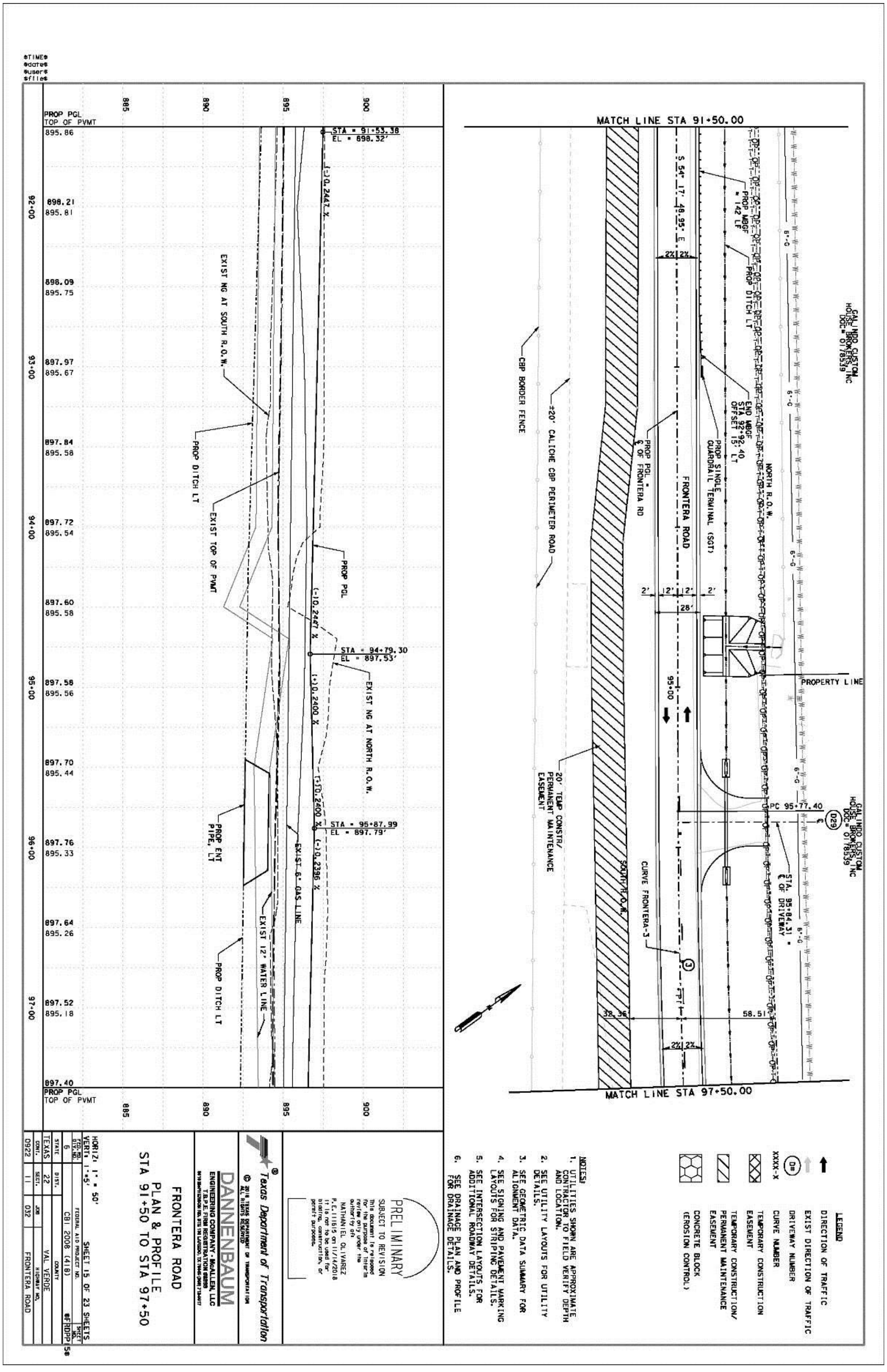
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 85+50 TO STA 91+50
SHEET 14 OF 23 SHEETS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 91+50.00
MATCH LINE STA 97+50.00
FRONTERA ROAD
PROP PGL TOP OF PVMT
EXIST NG AT SOUTH R.O.W.
EXIST NG AT NORTH R.O.W.
PROP DITCH LT
EXIST TOP OF PVMT
PROP PGL
PROP ENT PIPE, LT
EXIST 6" GAS LINE
EXIST 12" WATER LINE
CBP BORDER FENCE
±20' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
NORTH R.O.W.
SOUTH R.O.W.
PROPERTY LINE
CURVE FRONTERA-3
GALINDO CUSTOM HOUSE BROKERS, INC
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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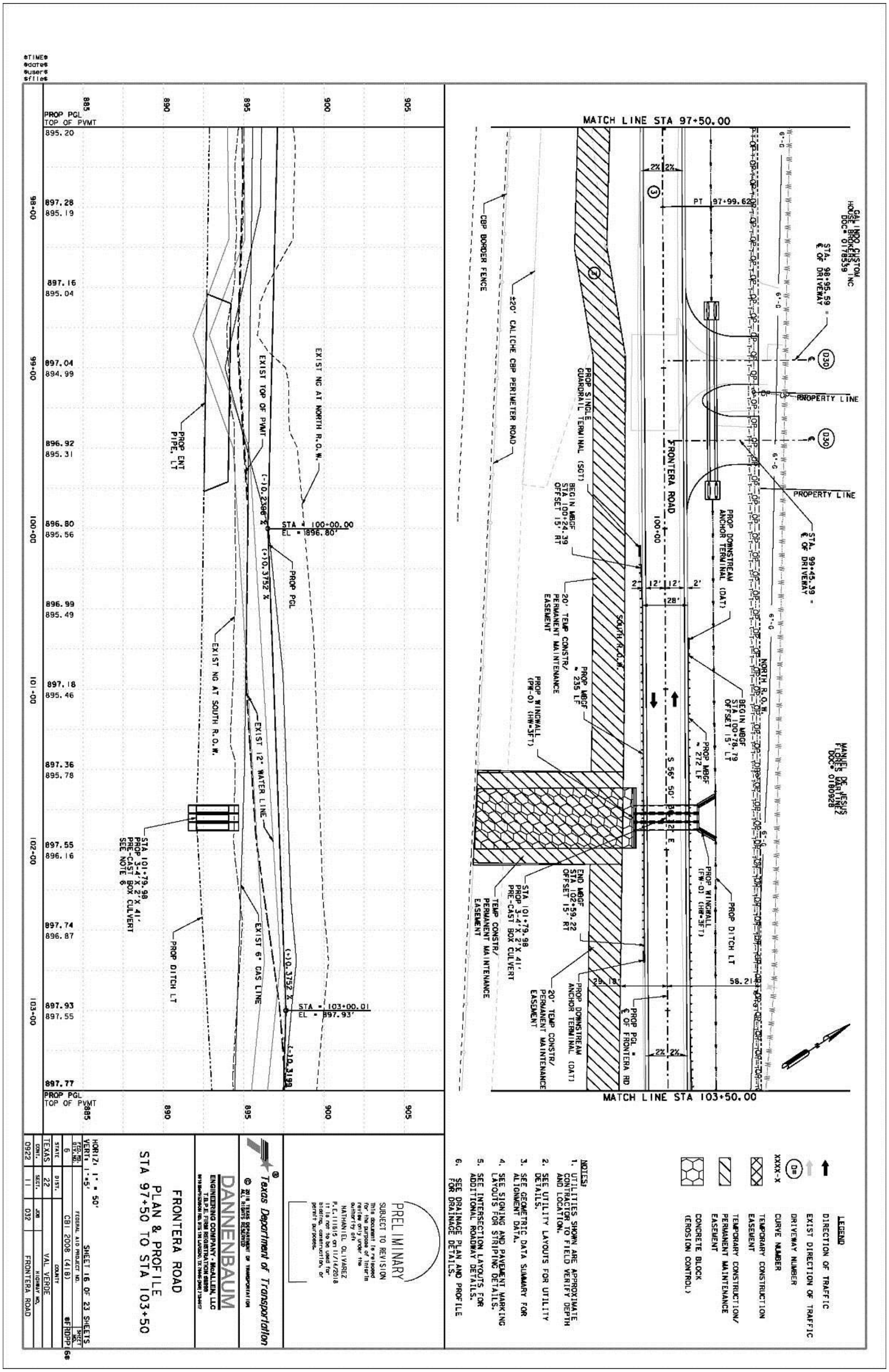
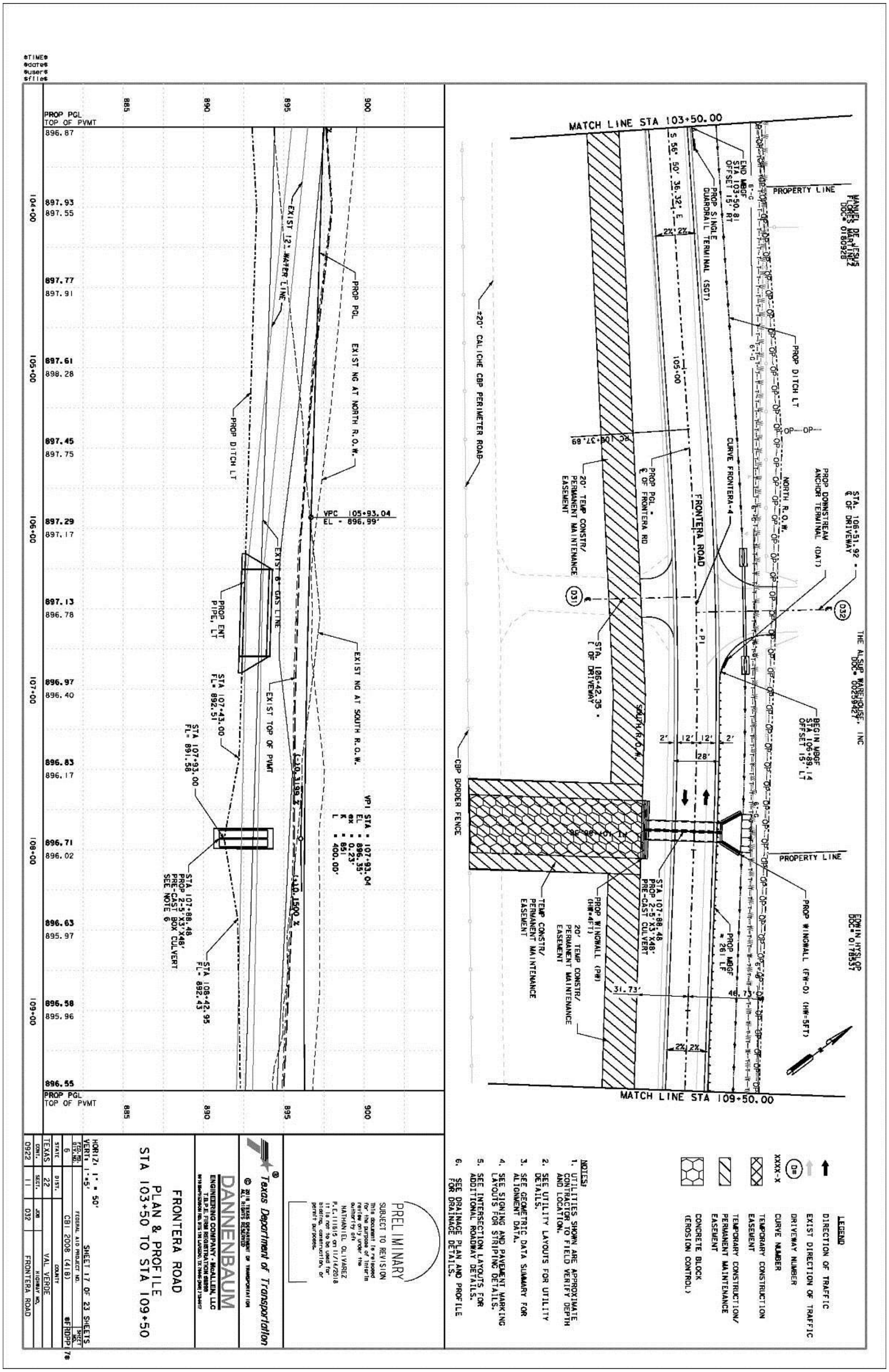
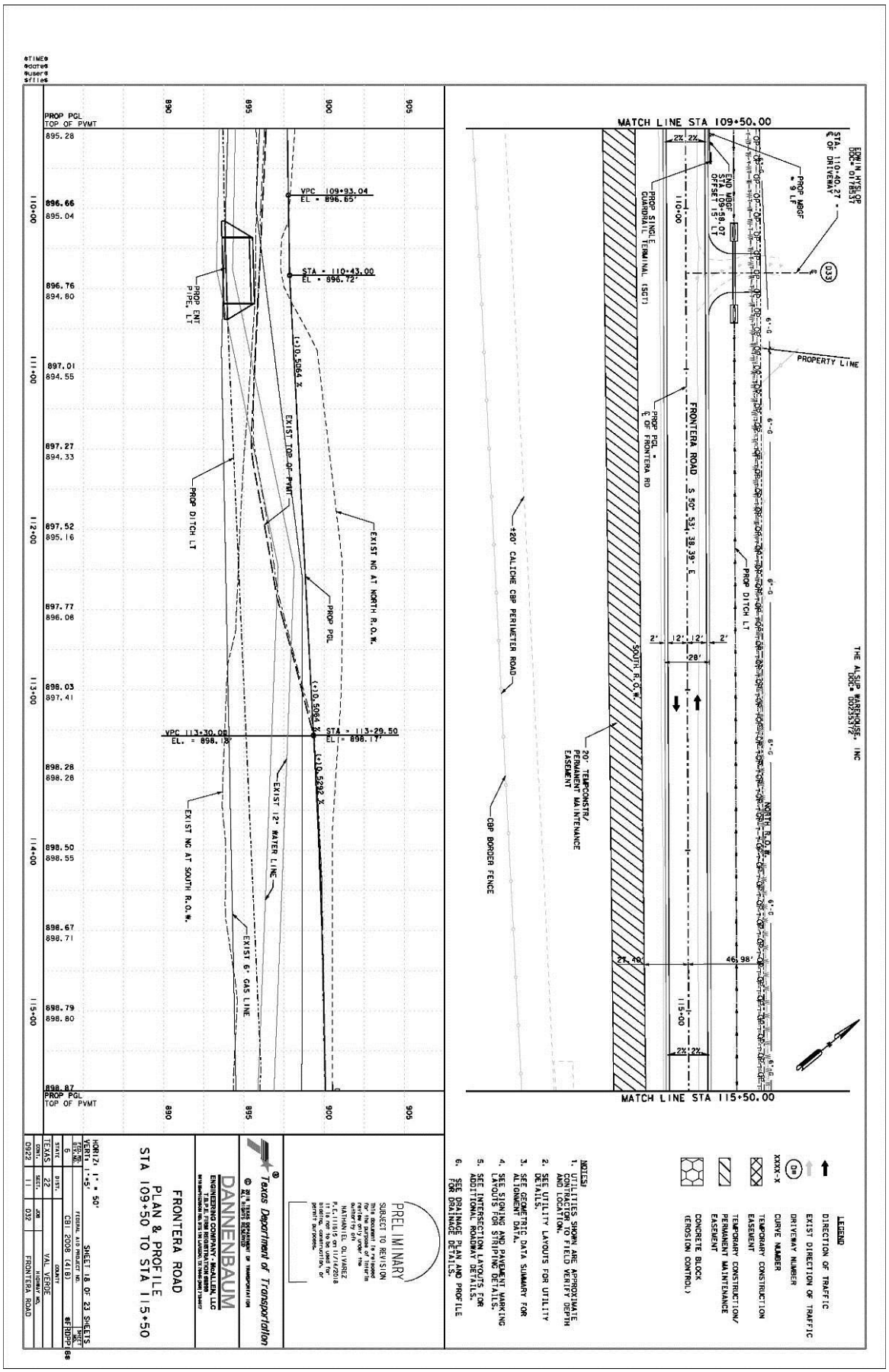
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 91+50 TO STA 97+50
HORIZ: 1" = 50'
VERT: 1" = 5'
SHEET 15 OF 23 SHEETS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 97+50.00
MATCH LINE STA 103+50.00
FRONTERA ROAD
CBP BORDER FENCE
±20' CALICHE CBP PERIMETER ROAD
PROPERTY LINE
NORTH R.O.W.
SOUTH R.O.W.
PROP PGL
TOP OF PVMT
EXIST NG AT NORTH R.O.W.
EXIST NG AT SOUTH R.O.W.
EXIST TOP OF PVMT
EXIST 12" WATER LINE
EXIST 6" GAS LINE
PROP DITCH LT
STA = 100+00.00
EL = 896.80'
STA = 103+00.01
EL = 897.93'
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
FRONTERA ROAD
PLAN & PROFILE
STA 97+50 TO STA 103+50
HORIZ: 1" = 50'
VERT: 1" = 5'
SHEET 16 OF 23 SHEETS
TEXAS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 103+50.00
MATCH LINE STA 109+50.00
FRONTERA ROAD
PLAN & PROFILE
STA 103+50 TO STA 109+50
Texas Department of Transportation
DANNENBAUM
PRELIMINARY
LEGEND
NOTES:
CBP BORDER FENCE
±20' CALICHE CBP PERIMETER ROAD
PROPERTY LINE


MATCH LINE STA 109+50.00
MATCH LINE STA 115+50.00
PROPERTY LINE
FRONTERA ROAD
PROP DITCH LT
PROP SINGLE GUARDRAIL TERMINAL (SGT)
PROP FCL - ℄ OF FRONTERA RD
±20' CALICHE CBP PERIMETER ROAD
20' TEMPCONSTR/ PERMANENT MAINTENANCE EASEMENT
CBP BORDER FENCE
PROP PCL
TOP OF PVMT
EXIST TOP OF PVMT
EXIST NG AT NORTH R.O.W.
EXIST NG AT SOUTH R.O.W.
EXIST 12" WATER LINE
EXIST 6" GAS LINE
PROP ENT PIPE - LT
PROP DITCH LT
VPC 109+93.04 EL = 896.65'
STA = 110+43.00 EL = 896.72'
VPC 113+30.08 EL. = 898.18'
STA = 113+29.50 EL = 898.17'
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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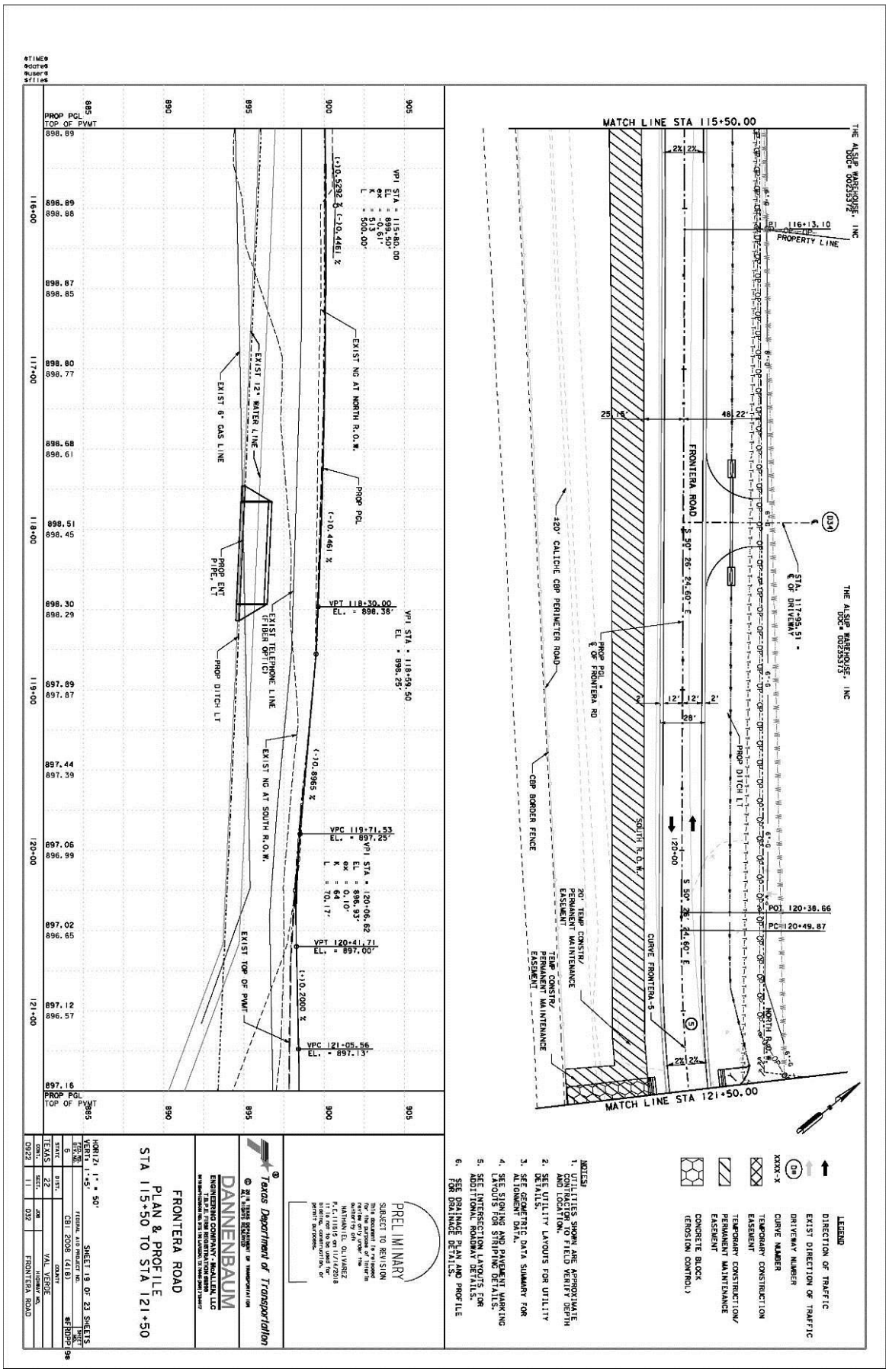
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 109+50 TO STA 115+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 18 OF 23 SHEETS
TEXAS
DIST. 22
COUNTY VAL VERDE
CONT. 0922
SECT. 11
JOB 032
HIGHWAY NO. FRONTERA ROAD


MATCH LINE STA 115+50.00
MATCH LINE STA 121+50.00
FRONTERA ROAD
PROPERTY LINE
PROP ENT PIPE, LT
PROP DITCH LT
EXIST 12" WATER LINE
EXIST 6" GAS LINE
EXIST TELEPHONE LINE (FIBER OPTIC)
EXIST NG AT NORTH R.O.W.
EXIST NG AT SOUTH R.O.W.
EXIST TOP OF PVMT
PROP PGL
PROP PGL TOP OF PVMT
CBP BORDER FENCE
±20' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
CURVE FRONTERA-5
SOUTH R.O.W.
PROP PGL & OF FRONTERA RD
THE ALSUP WAREHOUSE, INC
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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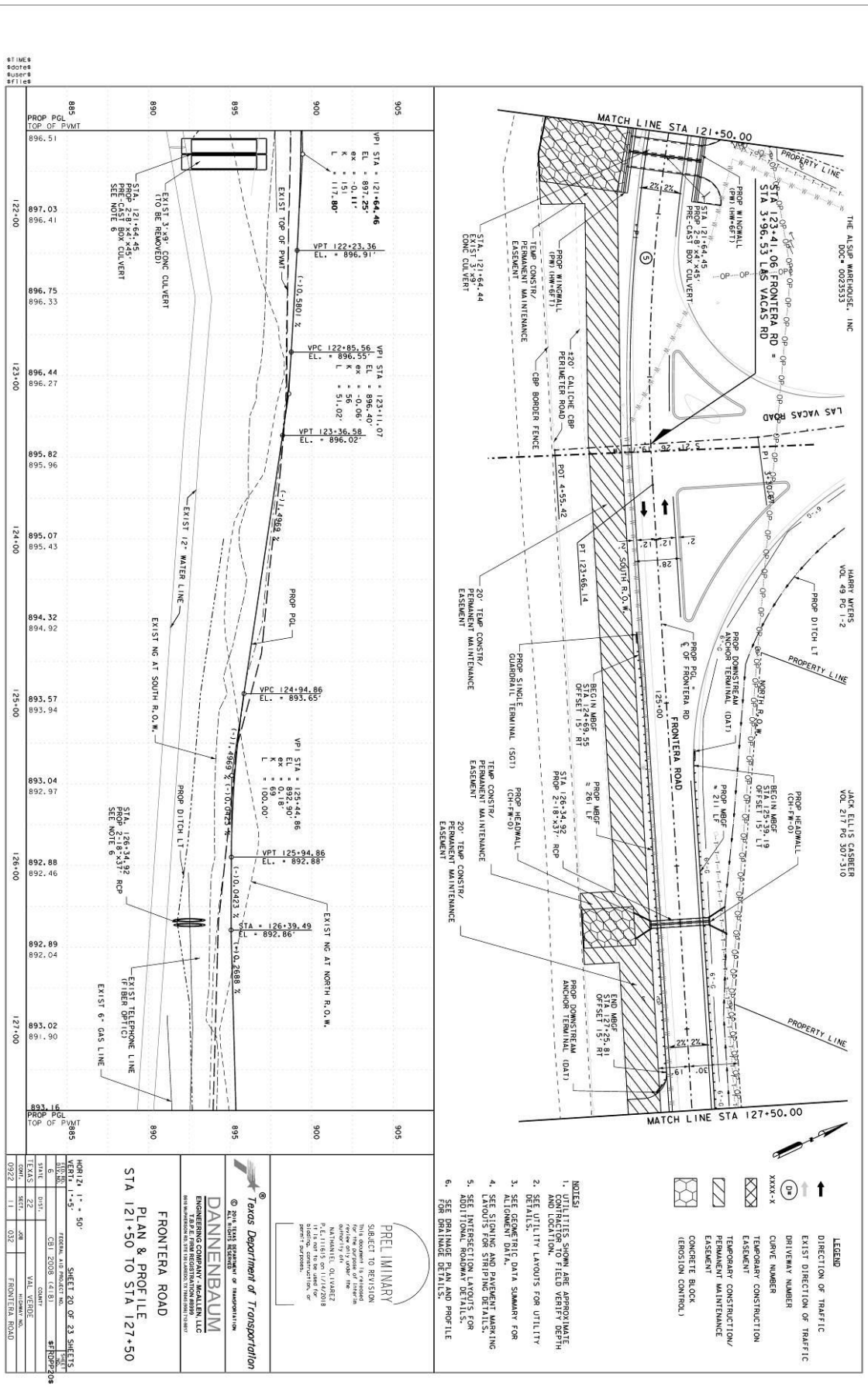
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - BROALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 115+50 TO STA 121+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 19 OF 23 SHEETS
TEXAS
DIST.
22
COUNTY
VAL VERDE
CONT.
0922
SECT.
11
JOB
032
HIGHWAY NO.
FRONTERA ROAD


MATCH LINE STA 121+50.00
MATCH LINE STA 127+50.00
STA 123+41.06 FRONTERA RD = STA 3+96.53 LBS VACAS RD
FRONTERA ROAD
LAS VACAS ROAD
PROPERTY LINE
THE ALSUP WAREHOUSE, INC DOC# 0023533
HARRY MYERS VOL 49 PG 1-2
JACK ELLIS CASBEER VOL 217 PG 307-310
PROP DITCH LT
PROP PGL
EXIST NG AT SOUTH R.O.W.
EXIST NG AT NORTH R.O.W.
EXIST 12" WATER LINE
EXIST 3'x9' CONC CULVERT (TO BE REMOVED)
EXIST 6" GAS LINE
EXIST TELEPHONE LINE (FIBER OPTIC)
PROP 2'x8'x45' PRE-CAST BOX CULVERT
PROP WINGWALL (FW) (4W-6FT)
PROP HEADWALL (CH-FW-0)
PROP DOWNSTREAM ANCHOR TERMINAL (DAT)
PROP SINGLE GUARDRAIL TERMINAL (SGT)
PROP MBGF ≈ 261 LF
PROP MBGF ≈ 21 LF
BEGIN MBGF STA 124+69.55 OFFSET 15' RT
END MBGF STA 127+25.81 OFFSET 15' RT
STA 126+34.92 PROP 2'x8'x37' RCP
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
#20' CALICHE CBP PERIMETER ROAD
CBP BORDER FENCE
STA 121+64.44 CONC CULVERT
STA 121+64.45 PROP 2'x8'x45' PRE-CAST BOX CULVERT SEE NOTE 6
STA 126+34.92 PROP 2'x8'x37' RCP SEE NOTE 6
POT 4+55.42
PT 123+66.14
SOUTH R.O.W.
NORTH R.O.W.
123+00
2%
6%
30'
28'
12'
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PROP PGL TOP OF PVMT
VPI STA = 121+64.46 EL = 897.25' ex = 10.11' K = 15.1 L = 117.80'
VPT 122+23.36 EL. = 896.91'
(-)10.580 %
VPC 122+85.56 EL. = 896.55'
VPI STA = 123+11.07 EL = 896.40' ex = -0.06' K = 56 L = 51.02'
VPT 123+36.58 EL. = 896.02'
(-)1.4962 %
VPC 124+94.86 EL. = 893.65'
VPI STA = 125+44.86 EL = 892.90' K = 69 L = 100.00'
VPT 125+94.86 EL. = 892.88'
(-)10.0423 %
STA = 126+39.49 EL. = 892.86'
(+)0.2688 %
PROP PGL TOP OF PVMT
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
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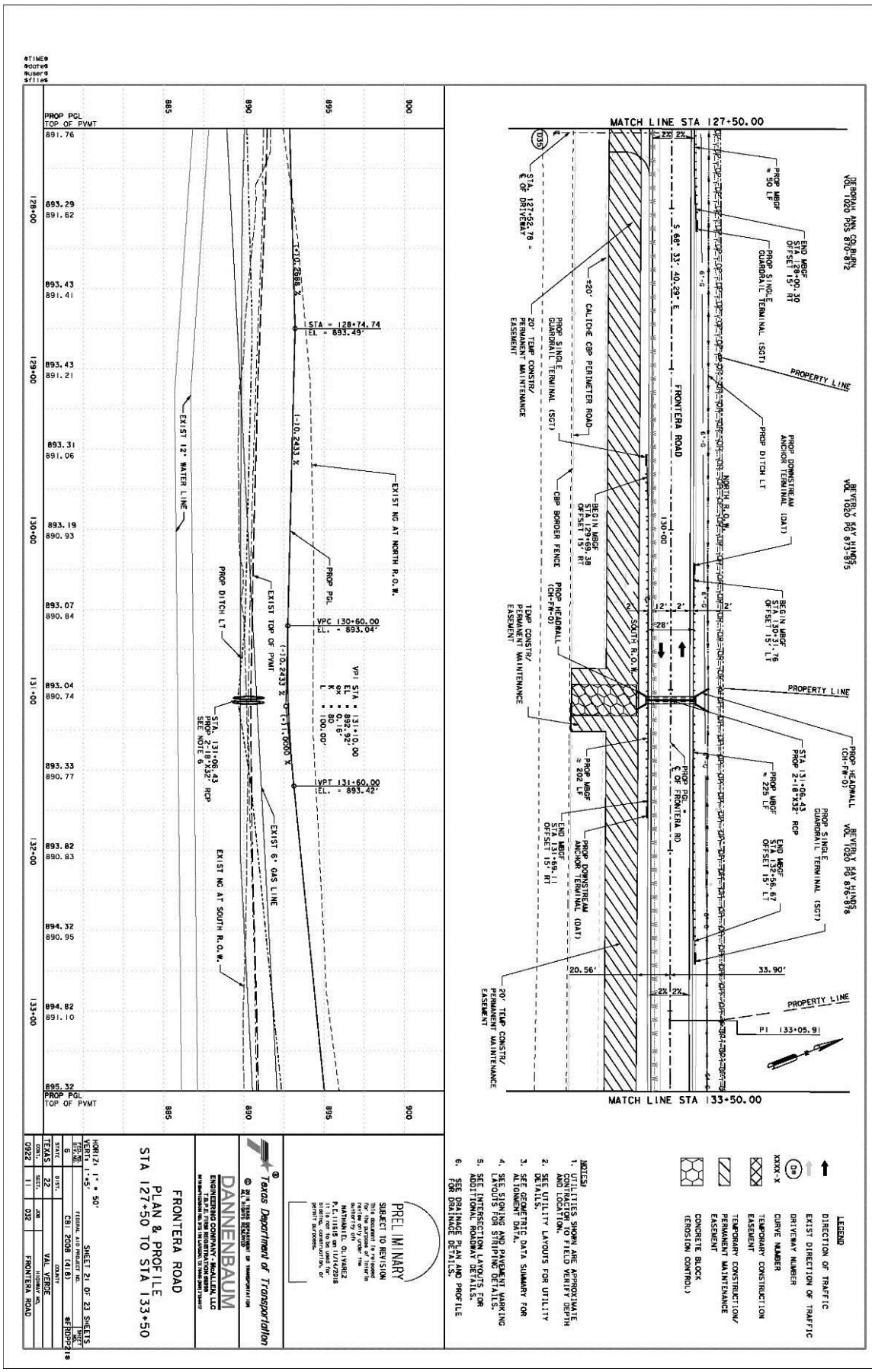
DANNENBAUM
ENGINEERING COMPANY - McALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 121+50 TO STA 127+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 20 OF 23 SHEETS
DISTRICT 25
COUNTY VAL VERDE
HIGHWAY NO. FRONTERA ROAD
CONT. 0922
SECT. 11
JOB 032
FEDERAL AID PROJECT NO. CBI 2008 (411)
STATE PROJECT NO.
$TIME$ $date$ $user$ $file$


MATCH LINE STA 127+50.00
MATCH LINE STA 133+50.00
FRONTERA ROAD
PROPERTY LINE
PROP DITCH LT
PROP SINGLE GUARDRAIL TERMINAL (SGT)
PROP DOWNSTREAM ANCHOR TERMINAL (DAT)
PROP MBGF ≈ 50 LF
PROP MBGF ≈ 202 LF
PROP MBGF ≈ 225 LF
PROP HEADWALL (CH-FW-01)
PROP 2-18"x32" RCP
CBP BORDER FENCE
+20' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
EXIST 12" WATER LINE
EXIST NG AT NORTH R.O.W.
EXIST NG AT SOUTH R.O.W.
EXIST 6" GAS LINE
EXIST TOP OF PVMT
PROP PGL
PI 133+05.91
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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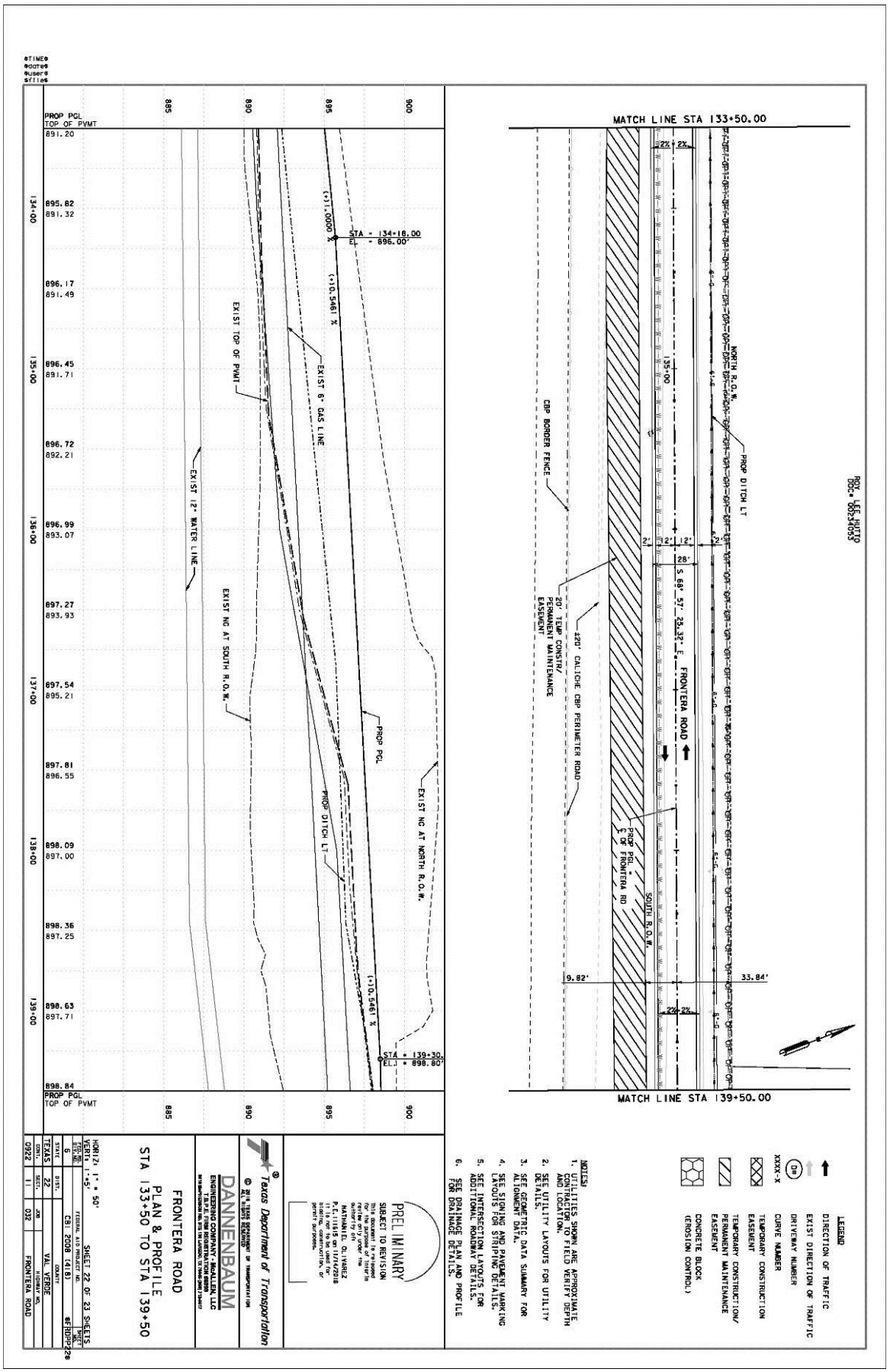
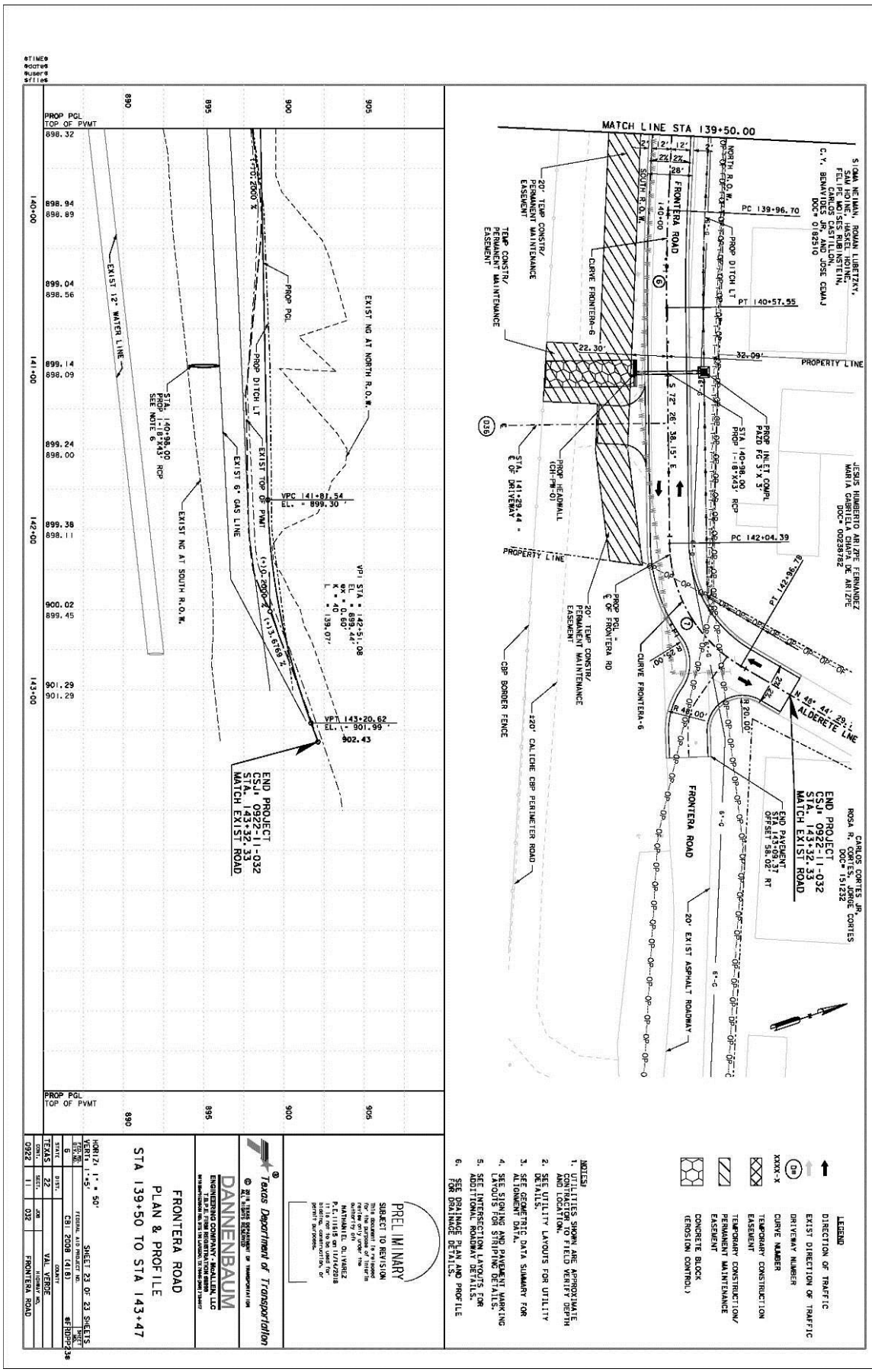
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 127+50 TO STA 133+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 21 OF 23 SHEETS
TEXAS
VAL VERDE
FRONTERA ROAD


MATCH LINE STA 133+50.00
MATCH LINE STA 139+50.00
PROP DITCH LT
NORTH R.O.W.
SOUTH R.O.W.
S 68° 57' 25.32" E FRONTERA ROAD
CBP BORDER FENCE
420' CALICHE CBP PERIMETER ROAD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
PROP PGL OF FRONTERA RD
9.82'
33.84'
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
XXXX-X
CURVE NUMBER
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
1. UTILITIES SHOWN ARE APPROXIMATE AND LOCATION TO FIELD VERIFY DEPTH
2. SEE UTILITY LAYOUTS FOR UTILITY DETAILS.
3. SEE GEOMETRIC DATA SUMMARY FOR ALIGNMENT DATA.
4. SEE SIGNING AND PAVEMENT MARKING LAYOUTS FOR STRIPING DETAILS.
5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PROP PGL TOP OF PVMT
891.20
895.82
891.32
896.17
891.49
896.45
891.71
896.72
892.21
896.99
893.07
897.27
893.93
897.54
895.21
897.81
896.55
898.09
897.00
898.36
897.25
898.63
897.71
898.84
134+00
135+00
136+00
137+00
138+00
139+00
885
890
895
900
STA = 134+18.00
EL = 896.00'
(+)1.0000 %
(+)0.5461 %
EXIST TOP OF PVMT
EXIST 8" GAS LINE
EXIST 12" WATER LINE
EXIST NG AT SOUTH R.O.W.
EXIST NG AT NORTH R.O.W.
PROP PGL
PROP DITCH LT
STA = 139+30.
EL = 898.80'
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 133+50 TO STA 139+50
HORIZ. 1" = 50'
VERT. 1"=5'
SHEET 22 OF 23 SHEETS
TEXAS
DIST. 22
COUNTY VAL VERDE
CONT. 0922
SECT. 11
JOB 032
HIGHWAY NO. FRONTERA ROAD


MATCH LINE STA 139+50.00
SIGMA NEUMAN, ROMAN LUBETZKY, SAMUEL NEUMAN, JESUS FELIPE MOISES RUBINSTEIN, CARLOS CASTILLON, BENAVIDES JR, AND JOSE CEMAJ DOC# 0182510
JESUS HUMBERTO ARIZPE FERNANDEZ MARIA GABRIELA CHAPA DE ARIZPE DOC# 00238782
CARLOS CORTES JR, ROSA R. CORTES, JORGE CORTES DOC# 151232
NORTH R.O.W.
SOUTH R.O.W.
FRONTERA ROAD
140'-00
PC 139+96.70
PROP DITCH LT
PT 140+57.55
CURVE FRONTERA-6
22.30'
32.09'
PROPERTY LINE
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
S 72° 28' 38.15" E
PROP INLET COMPL PAZD FG 3'X 3' STA 140+98.00 PROP 1-18"X43' RCP
PC 142+04.39
PT 142+96.79
PROP HEADWALL (CH-FW-01)
STA. 141+29.44 ℄ OF DRIVEWAY
PROP ℄ OF FRONTERA RD
20' TEMP CONSTR/ PERMANENT MAINTENANCE EASEMENT
CURVE FRONTERA-6
CBP BORDER FENCE
120' CALICHE CBP PERIMETER ROAD
R 45.00'
R 20.00'
N 18° 44' 29" E
ALDERETE LINE
END PAVEMENT STA 143+06.37 OFFSET 58.02' RT
END PROJECT CSJ# 0922-11-032 STA. 143+32.33 MATCH EXIST ROAD
FRONTERA ROAD
20' EXIST ASPHALT ROADWAY
6'-0
LEGEND
DIRECTION OF TRAFFIC
EXIST DIRECTION OF TRAFFIC
DRIVEWAY NUMBER
CURVE NUMBER
XXXX-X
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION/ PERMANENT MAINTENANCE EASEMENT
CONCRETE BLOCK (EROSION CONTROL)
NOTES:
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5. SEE INTERSECTION LAYOUTS FOR ADDITIONAL ROADWAY DETAILS.
6. SEE DRAINAGE PLAN AND PROFILE FOR DRAINAGE DETAILS.
PROP PCL
TOP OF PVMT
EXIST NG AT NORTH R.O.W.
EXIST 12" WATER LINE
EXIST 6" GAS LINE
EXIST NG AT SOUTH R.O.W.
PROP DITCH LT
EXIST TOP OF PVMT
STA. 140+98.00 PROP 1-18"X43" RCP SEE NOTE 6
VPC 141+81.54 EL. = 899.30'
VPI STA = 142+51.08 EL. = 899.44' K = 40.60 L = 139.07'
VPT 143+20.62 EL. = 901.99'
902.43
898.32
898.94
898.89
899.04
898.56
899.14
898.09
899.24
898.00
899.38
898.11
900.02
899.45
901.29
901.29
140+00
141+00
142+00
143+00
905
900
895
890
PRELIMINARY
SUBJECT TO REVISION
Texas Department of Transportation
DANNENBAUM
ENGINEERING COMPANY - MCALLEN, LLC
FRONTERA ROAD
PLAN & PROFILE
STA 139+50 TO STA 143+47
HORIZ. 1" = 50'
VERT. 1" = 5'
SHEET 23 OF 23 SHEETS
TEXAS
DIST. 22
COUNTY VAL VERDE
CONT. 0922
SECT. 11
JOB 032
HIGHWAY NO. FRONTERA ROAD

Appendix B

Shovel Test Log

Test	Northing	Easting	Depth	Color	Texture	Disturbances	Cultural Material	Recorder
JK - 1	313451	3246475	0 - 20	10 YR 6/4	Very Compact Sand	w/ Gravel Inclusions	Road Fill	SP
			20 - 40	"		Some Cultural Material Mixed In:	"	
			40 - 60	"		Like Nails, Glass and Ceramic Mortar	"	
			60 -80	"			"	
JK - 2	3247285	312055	0 - 18	10 YR 6/2	Silt w/	Plastic, Road Fill and Sandy Loam		SP
			18 - 64	10 YR 6/3				
JK - 3	3247404	311882	0 - 17	10 YR 5/4	Compact Silty Loam	Occupational (Modern) Surface	Modern Glass	JK
			17 - 40	10 YR 6/4	Fine Silty Loam			
JK -4			0 -20	10 YR 6/4	Sandy Loam, Large Gravels	Road Fill	Modern Trash: Modern Plastic and Modern Bottle Glass	JK
JK - 5	3246552	313254	0 - 17	10 YR 3/4	Silty Loam	Road Fill	Modern Bottle Glass (5 - 6 Shards)	JK
			17 - 45	10 YR 6/4	Compact Sandy Loam			
JK - 6	3246944	312537	0 - 37	10 YR 6/4	Fine Sandy Loam, Large Gravels (Road Fill)	Large Gravel Layer 37 - cmbs	Modern Plastic, 1 Modern Bottle	JK
					Large Gravels (Road Fill)		Glass Shard	
JK - 7	3247129	312271	0 - 33	10 YR 3/4	Fine Sandy Loam w/ Large Gravel	Road Fill	Modern Bottle Glass, 1 Metal Staple	JK
JK - 8	3247444	311826	0 - 47	10 YR 6/3	Fine Sandy Loam - 15% Gravel	Road Fill	Metal Wire	JK
SP - 1	3247326	311992	0 - 20	10 YR 5/3	Silt, Gravel	Modern Bottle Glass - Styrofoam		SP
			20 - 50	10 YR 3/4	Fine Sandy Loam			
SP - 2	3247765	311405	0 - 18	10 YR 6/4	Silty Loam w/ Large broken (Road Fill)	Terminated Due to Large Rocks		SP
SP - 3	3246503	313382	0 - 8	10 YR 6/2	Road Fill and Small Rocks			SP
			8 - 25	10 YR 6/4	Large Rocks and Compact Soil / Silty	Modern Glass @ 15 cmbs		
JK - 6	3246581	313169	0 - 24	10 YR 5/3	Trash and Rocks		Bottle Glass and Trash	SP
			24 - 47	10 YR 6/4	Asphalt and Silt		Asphalt	
SP - 4	3246651	313004	0 -50	10 YR 6/4	Silty and Compact w/ Gravel Inclusion.			SP
					Aggregate Layer of Rocks @ 15 - 25 cmbs			
SP - 5	3246687	312907	0 -20	10 YR 6/4	Rocks, Asphalt and Road Fill	Terminated @ 20 cmbs for Compact Soil, or Additional Landfill w/ Heavy Asphalt		SP
SP - 6	3246984	312480	0 - 30	10 YR 6/4	Silt	Everything Here is Disturbed	Surface Trash - Plastic	SP
SP - 7	3247186	312195	0 - 15	10 YR 6/4	Roots, Rocks, and Silt	Concrete And Large Stones @ 15cmbs, Possible Drainage or Erosion Prevention for Buisness Across Street		SP
SP - 8	3247535	311699	0 - 30	10 YR 6/4	Silt and Rocks	Road Disturbance		SP

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

AmaTerra ENVIRONMENTAL, INC.

4009 Banister Lane, Suite 300
Austin, Texas 78704
Technical Report No. 267
AmaTerra Project No. 139-060