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(DALLAS DISTRICT CSJ 2351-01-017)

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for
CITY OF MCKINNEY
McKinney, Texas

TEXAS ANTIQUITIES PERMIT NUMBER 7074

MISCELLANEOUS REPORTS OF INVESTIGATIONS
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ABSTRACT

This report presents the results of an archeological reconnaissance survey for the proposed expansion and realignment of Farm-to-Market road (FM) 2478 (North Custer Road) in northwestern Collin County, Texas (CSJ 2351-01-017). The project involves the expansion of approximately 2.45 miles of FM 2478 from a two-lane undivided roadway to a six-lane divided roadway, the reconstruction of the existing bridge structures that span Wilson Creek and Rutherford Branch, and the realignment of approximately 0.54 mile of roadway from Rhea Mills Circle to FM 1461. Much of the project area has been subjected to ground-disturbing activities associated with agriculture, recent residential development, buried utilities, and the construction and maintenance of FM 2478 and other local roadways. One newly identified archeological resource, early to mid-twentieth-century domestic site 41COL256, was recorded. The site is recommended not eligible for inclusion in the National Register of Historic Places or for designation as a State Antiquities Landmark. In addition, the locations of two historic period cemeteries (Walnut Grove Cemetery and Hunt Cemetery) adjacent to the proposed project area were reviewed. Unmarked graves are unlikely to occur within the proposed right-of-way; therefore, the proposed project is unlikely to disturb any unmarked graves that may be associated with either cemetery. It is recommended that the proposed FM 2478 expansion and realignment project be allowed to proceed. No artifacts were collected; however, all records generated by this survey will be permanently curated with the Texas Archeological Research Laboratory in Austin.

MANAGEMENT SUMMARY

This report presents the results of an archeological reconnaissance survey for the City of McKinney conducted by Versar, Inc., under subcontract to Civil Associates, Inc., for the expansion and realignment of Farm-to-Market road (FM) 2478 in northwestern Collin County, Texas (CSJ 2351-01-017). The proposed project extends along approximately 3 miles (mi) of FM 2478 from U.S. Highway 380 (US 380) to just north of Farm-to-Market Road (FM) 1461. The project involves the expansion of approximately 2.45 mi of FM 2478 from a two-lane undivided roadway to a six-lane divided roadway, the reconstruction of the existing bridge structures that span Wilson Creek and Rutherford Branch, and the realignment of approximately 0.54 mi of roadway from Rhea Mills Circle to FM 1461. The proposed project will involve funds from the Dallas District of the Texas Department of Transportation and the City of McKinney, political subentities of the State of Texas; thus, these investigations were conducted in accordance with the National Historic Preservation Act and the Antiquities Code of Texas under Texas Antiquities Permit No. 7074.

The purpose of these investigations was to determine the presence/absence of archeological resources (36 CFR 800.4) and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), per Section 106 (36 CFR 800) of the National Historic Preservation Act of 1966, as amended, or for designation as State Antiquities Landmarks (SALs) under the Antiquities Code of Texas (13 TAC 26.12). Fieldwork was conducted on 11 and 13 November 2014 by Co-Principal Investigator Christopher Goodmaster and Staff Archeologist Andrew Parkyn. Archival sources were reviewed by Christopher Goodmaster with the assistance of geographic information system (GIS) Specialist Andrew Parkyn. This report was edited by Sharlene Allday and formatted and produced by Denise Pemberton. Duane Peter served as Co-Principal Investigator and provided project oversight and quality control review of this document. A total of 104 person hours was dedicated to this project.

Much of the project area has been subjected to ground-disturbing activities associated with agriculture, recent residential development, buried utilities, and the construction and maintenance of FM 2478 and other local roadways. One newly identified archeological resource, an early to mid-twentieth-century domestic site 41COL256, was recorded. The site is recommended not eligible for inclusion in the NRHP or for designation as an SAL. In addition, the locations of two historic period cemeteries (Walnut Grove Cemetery and Hunt Cemetery) adjacent to the proposed project area were reviewed. The Walnut Grove Cemetery is well maintained and expanded from an area well outside the project area. The portion of this cemetery adjacent to the proposed FM

2478 right-of-way consists of interments made since the mid-1980s that are separated from the proposed right-of-way (ROW) by a substantial fence and gate. The Hunt Cemetery is located approximately 80 feet from the proposed ROW, and it is unlikely that unmarked graves exist within the proposed ROW. The proposed project is unlikely to disturb any unmarked graves that may be associated with either cemetery. Thus, it is recommended that no historic properties will be adversely affected by the proposed project. Therefore, it is recommended that the proposed FM 2478 expansion and realignment project be allowed to proceed. No artifacts were collected; however, all records generated by this project will be permanently curated with the Texas Archeological Research Laboratory in Austin.

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CHAPTER 1
INTRODUCTION

This report presents results of an archeological reconnaissance survey conducted by Versar, Inc., under subcontract to Civil Associates, Inc., for the City of McKinney. The purpose of this study was to provide data for the management of cultural resources that may be adversely affected by the expansion of Farm-to-Market road (FM) 2478 in northwestern Collin County, Texas (Versar Project No. G30561.0001.011). The proposed project extends along FM 2478 from U.S. Highway 380 (US 380) to just north of Farm-to-Market Road (FM) 1461. The proposed project will involve funding from the Dallas District of the Texas Department of Transportation (TxDOT; CSJ 2351-01-017) and the City of McKinney, political subentities of the state of Texas; thus, these investigations were conducted in accordance with the National Historic Preservation Act and the Antiquities Code of Texas under Texas Antiquities Permit No. 7074.

The project involves the expansion of approximately 2.45 miles (mi; 3.94 kilometers [km]) of the existing FM 2478 from a two-lane undivided roadway to a six-lane divided roadway, the reconstruction of the existing bridge structures that span Wilson Creek and Rutherford Branch, and the realignment of approximately 0.54 mi (0.87 km) of roadway from Rhea Mills Circle to FM 1461 (Figure 1). The proposed project corridor is approximately 3 mi (4.8 km) in length with a current right-of-way (ROW) width of 100 feet (ft; 30.48 meters [m]) and a proposed additional 40 ft (12.2 m) of new ROW. The proposed improvements require approximately 34.97 acres (ac) of additional ROW and approximately 0.63 ac of drainage easements at various locations along the corridor. Depths of impacts are expected to be no deeper than 4 ft (1.2 m), except at the bridge over Wilson Creek where impacts may extend to bedrock. The area of potential effects (APE) consists of approximately 240 ac and encompasses 150 ft (45.7 m) on each side of the existing ROW and 300 ft (91.4 m) on each side of the proposed ROW along portions of the project area with new alignment. This survey occurred partially within state-owned property and partially on private property that will be acquired by the state.

The purpose of these investigations was to determine the presence/absence of archeological resources (as defined by 36 CFR 800.4) and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), as per Section 106 (36 CFR 800) of the National Historic Preservation Act of 1966, as amended, or for designation as a State Archeological Landmark (SAL) under the Antiquities Code of Texas (13 TAC 26.12). Archeological fieldwork for this project conforms to the guidelines set forth in the Archeological Survey Standards for Texas proposed by the Council of Texas Archeologists (CTA) and adopted

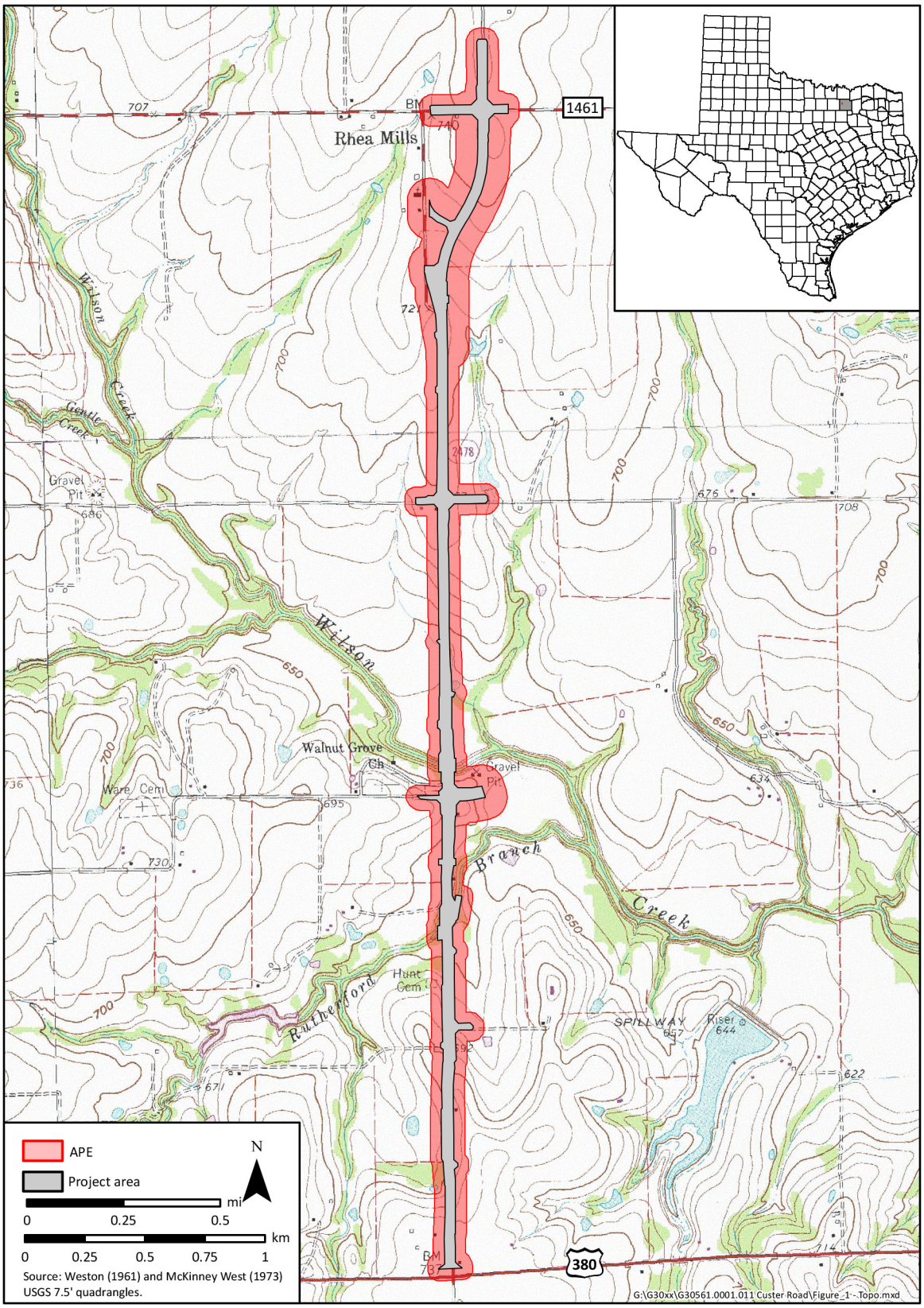

Figure 1. Location of the FM 2478 project area (CSJ 2351-01-017) in northwestern Collin County, Texas.

by the Texas Historical Commission (THC). This cultural resources investigation consisted of a background literature and site records review, an assessment of archival sources, and an archeological reconnaissance survey with judgmental shovel tests. Fieldwork was conducted on 13 November 2014 by Co-Principal Investigator Christopher Goodmaster and Staff Archeologist Andrew Parkyn. A total of 16 person-hours was spent conducting fieldwork. Archival sources were assessed by Christopher Goodmaster with the assistance of geographic information system (GIS) specialist Andrew Parkyn. Duane Peter served as the Co-Principal Investigator and provided project oversight and quality control review of this document. This report was edited by Sharlene Allday and formatted and produced by Denise Pemberton. A total of 104 person hours was dedicated to this project. No artifacts were collected during this investigation; however, all records generated by this project will be permanently curated with the Texas Archeological Research Lab (TARL) in Austin at the conclusion of the project.

The remainder of this report is organized into four chapters. Chapter 2 provides an outline of the environmental setting of the proposed project area and a summary of previous cultural resources surveys and previously recorded archeological sites and other historic resources in the vicinity (i.e., within 0.6 mi [1 km] of the project area). A brief summary of the cultural history of the region is provided in Chapter 3. Chapter 4 presents the specific methods employed during the current investigations. The results of these investigations are discussed in Chapter 5, and Chapter 6 provides recommendations regarding the cultural resources encountered during this survey. Following the main body of the report is a complete list of all references cited. Shovel test data are presented in Appendix A. No easily reproducible layout, profiles, or sectional diagrams of the proposed design were made available; however, large format plans are provided in digital format as Appendix B.

CHAPTER 2
BACKGROUND INFORMATION

The proposed FM 2478 project area is located within the gently rolling uplands of the Blackland Prairie in northwestern Collin County, Texas. The project area is within the East Fork Trinity River drainage basin and is bisected by two tributaries of the East Fork Trinity River. The soils in this region are predominantly clay-rich vertisols derived from the in situ weathering of the underlying Cretaceous-age carbonate geology. This region is located within the Texan biotic province (Blair 1950), which once supported a variety of flora and fauna. Land use consists primarily of agriculture, with increasing planned residential and commercial development. Several professional cultural resources surveys have been conducted in the vicinity of the proposed project area and several previously recorded resources are located nearby.

TOPOGRAPHY

The region encompassing the proposed project area is the Blackland Prairie, characterized by gently rolling to nearly level upland plains environments (Griffith et al. 2004). The underlying geology of the project area is primarily the Upper Cretaceous-age undifferentiated Austin Group (Bureau of Economic Geology 1991). The Austin Group consists primarily of chalk or chalky limestones and marl deposits. The presence of these carbonate deposits influenced the subsequent development of the soils and topography of the area. The FM 2478 project area occupies an elevation range of 193–232 m (635–761 ft) above mean sea level (amsl) with slopes of 0–5 percent (Figure 2). Extending north from US 380, the FM 2478 corridor gradually descends into a shallow valley created by Wilson Creek and its tributary, Rutherford Branch, before gradually ascending out of the valley and continuing across the uplands.

HYDROLOGY

The proposed project area is situated within the East Fork Trinity River drainage basin. Wilson Creek and its tributary, Rutherford Branch, cross the project area (see Figure 2). Several other lower-order ephemeral streams draining the surrounding area are also in the vicinity. All of these streams abandon overland flow during dry periods and there are no natural sources of permanent water in the project area.

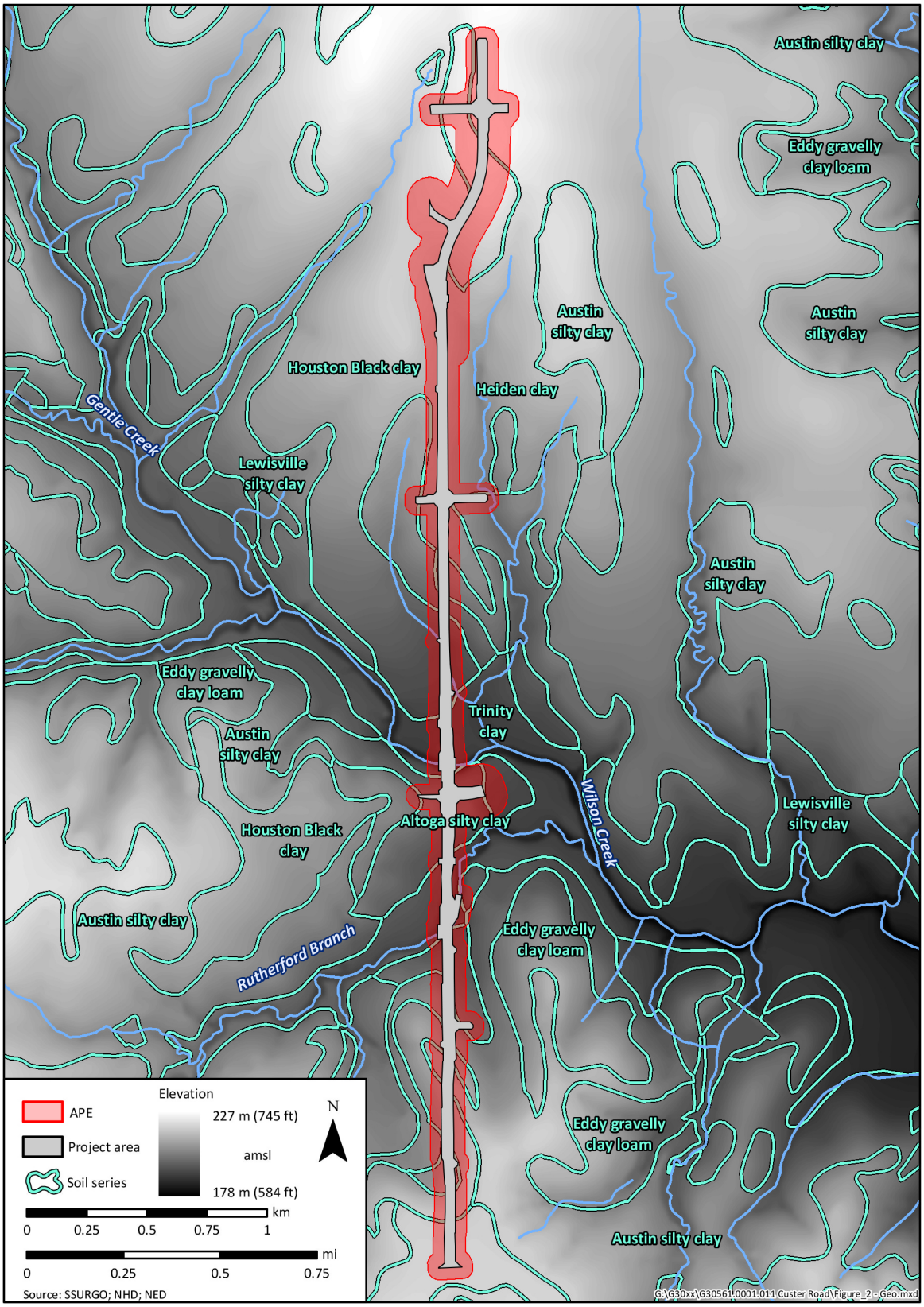

Figure 2. Topography, soils, and hydrology of the project area.

SOILS

The proposed project area is situated across seven soil series (Table 1, see Figure 2). All information regarding the soils of the project area has been synthesized and summarized from information supplied by the Soil Conservation Service (Hanson and Wheeler 1969) and the Natural Resources Conservation Service (2014).

Table 1
Soils within the Proposed Project Area

Soil Unit	Landform	Parent Material	Taxonomic Classification	Typical Profile (Generalized)
Trinity clay	Floodplains	Alluvium	Very fine, smectitic, thermic, Typic Hapluderts	0–15 cm*: Ap—very dark gray (5Y 3/1) clay 15–41 cm: A—very dark gray (5Y 3/1) clay with few very fine $CaCO_3$ concretions 41–191 cm: Bss—very dark gray (5Y 3/1) to dark olive gray (5Y 3/2) clay with common fine and medium $CaCO_3$ concretions
Eddy clay loam	Ridges on plains	Residuum	Loamy-skeletal, carbonatic, thermic, shallow Typic Ustorthents	0–25 cm; A—dark grayish brown (10YR 4/2) very gravelly clay loam 25–152 cm; Cr—white (10YR 8/2) level-bedded, partially cemented, chalky limestone
Lewisville silty clay	Terraces	Alluvium	Fine-silty, mixed, active, thermic Udic Calciustolls	0–15 cm: Ap—very dark grayish brown silty clay with few strongly cemented $CaCO_3$ concretions 15–41 cm: A—very dark grayish brown (10YR 3/2) silty clay with common strongly cemented $CaCO_3$ concretions 41–86 cm:Bk1—dark grayish brown (10YR 4/2) silty clay with common strongly cemented $CaCO_3$ concretions and few threads of soft $CaCO_3$ 86–157 cm: Bk2—brown (10YR 5/3) silty clay with common soft masses of $CaCO_3$ and few strongly cemented $CaCO_3$ concretions
Altoga silty clay	Terraces	Alluvium	Fine-silty, carbonatic, thermic Udic Ustochrepts	0–18 cm; Ap—grayish brown (10YR 5/2) silty clay 18–64 cm; Bk1—brown (10YR 5/3) silty clay 64–168 cm; Bk2-BCk—yellowish brown (10YR 5/4) silty clay
Heiden clay	Uplands	Residuum	Fine, smectitic, thermic Udic Haplusterts	0–15 cm; Ap—very dark grayish brown (10YR 3/2) clay 15–46 cm; A—very dark grayish brown (10YR 3/2) clay 46–147 cm; Bssk1-Bssk2— very dark grayish brown (10YR 3/2) clay and olive gray (5Y 4/2) clay

Table 1 (continued)

Soil Unit	Landform	Parent Material	Taxonomic Classification	Typical Profile (Generalized)
Houston Black clay	Uplands	Residuum	Very-fine, smectitic, thermic Oxyaquic Hapluderts	0–20 cm; A1—black (10YR 2/1) clay 20–61 cm; A2—black (10YR 2/1) clay 61–97 cm; Bss—very dark gray (10YR 4/1) clay 97–200 cm; Bssk1—dark grayish brown (10YR 4/2) clay
Austin silty clay	Upland ridges and summits	Residuum	Fine-silty, carbonatic, thermic Udorthentic Haplustolls	0–15 cm; Ap—very dark grayish brown (10YR 3/2) silty clay 15–38 cm; A—dark brown (10YR 3/3) silty clay 38–76 cm; Bw1-Bw2—dark brown (10YR 4/3) silty clay 76–91 cm; Cr—white (10YR 8/2) and very pale brown (10YR 8/4) platy chalk

* cm=centimeter

FLORA AND FAUNA

The Blackland Prairie is the southernmost extension of the North American Tallgrass prairie and is within the Texan biotic province (Blair 1950). This ecoregion has undergone profound alterations from its native state by historic period farming and ranching and modern urban, suburban, and exurban sprawl (cf. Bezanson 2001). After centuries of disturbance and decades of deliberate replacement of tree and grass species, only isolated examples of prehistoric and early historic vegetation communities remain today (Telfair 1999). Present-day mammal species consist primarily of cougar (*Puma concolor*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), American badger (*Taxidea taxus*), American beaver (*Castor canadensis*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), muskrat (*Ondatra zibethicus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), eastern cottontail rabbit (*Sylvilagus floridanus*), and fox squirrel (*Sciurus niger*). Mammals that once occupied the region include plains bison (*Bison bison bison*), gray (*Canis lupus*) and red (*Canis lupus rufus*) wolf, black (*Ursus americanus*) and grizzly (*Ursus arctos horribilis*) bear, and pronghorn (*Antilocapra americana*). Avian species include bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and a variety of songbirds. Various reptiles and amphibians are also found throughout the area.

Dominant vegetation across the Blackland Prairie includes big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), brownseed paspalum (*Paspalum plicatulum*), and gramagrass (*Bouteloua gracilis*) in the uplands and eastern cottonwood (*Populus deltoides*), bur oak (*Quercus macrocarpa*), Shumard oak (*Quercus shumardii*), sycamore (*Platanus occidentalis*), black willow (S*alix nigra*), hackberry (*Celtis occidentalis*), elm (*Ulmus* sp.), pecan (*Carya* illinoinensis), and green ash (*Fraxinus pennsylvanica*) in bottomland forests and riparian forest corridors. Common forbs include aster (*Aster* sp.), prairie bluet (*Coenagrion angulatum*), prairie clover (*Petalostemum purpureum*), and black-eyed susan (*Rudbeckia hirta*).

CURRENT LAND USE

The FM 2478 corridor between US 380 and FM 1461 has experienced an increase in residential and medium-density residential (primarily planned community) development within the last decade. Several large residential developments are currently being constructed along the corridor, with several more planned for development in the near future. Commercial development is also increasing, primarily near the intersection of FM 2478 and US 380, although some commercial development is also evident along FM 1461. Despite the increase in residential and commercial development, significant portions of the APE remain in agriculture. Agricultural land use within and immediately adjacent to the APE include row crops (corn, wheat, and sorghum) and pasture for horse and cattle grazing. At the time of survey, grazing pastures offered limited ground surface visibility and most of the fields supporting row crops had been recently plowed and offered excellent surface visibility.

PREVIOUS CULTURAL RESOURCES SURVEYS

A review of the THC's Texas Archeological Sites Atlas indicates that there have been eight previous cultural resources surveys within a 0.6-mi (1-kilometer [km]) radius of the survey area (Figure 3). Previous surveys within the vicinity of the project area were conducted primarily for transportation-related improvements, including several surveys along US 380 (Fullerton 2011; Weir 1987) and FM 2478 (Green 2004; Tiné 2009), as well as for water-related infrastructure, including water transmission pipelines for the Danville Water Supply Corporation (Ferring 1994), the City of Irving (Owens and Gibson 1999), and the Town of Prosper (Shelton 2013). One linear survey, conducted in 1983, coincides with the northernmost portion of the current FM 2478 project area; however, no additional information is available regarding the survey. As a result of these previous survey efforts, one archeological site (41COL92) has been documented within the vicinity of the proposed project area (Table 2). In addition to archeological site 41COL92, three historic-period cemeteries and the former location of one Recorded Texas Historic Landmark (RTHL) is in the vicinity of the project area (see Table 2). Of these previously documented resources, a portion of the Walnut Grove Cemetery is within the APE; however, it is not within the currently proposed project ROW. The Hunt Cemetery is located approximately 24 m (80 ft) west of the APE. The Wear (Ware) Cemetery is located approximately 0.56 mi (0.9 km) west of the APE. The former Walnut Grove Presbyterian Church (designated as a Recorded Texas Historic Landmark [RTHL] in 1976), once located approximately 200 m (656 ft) west of the APE, was demolished in 1994.

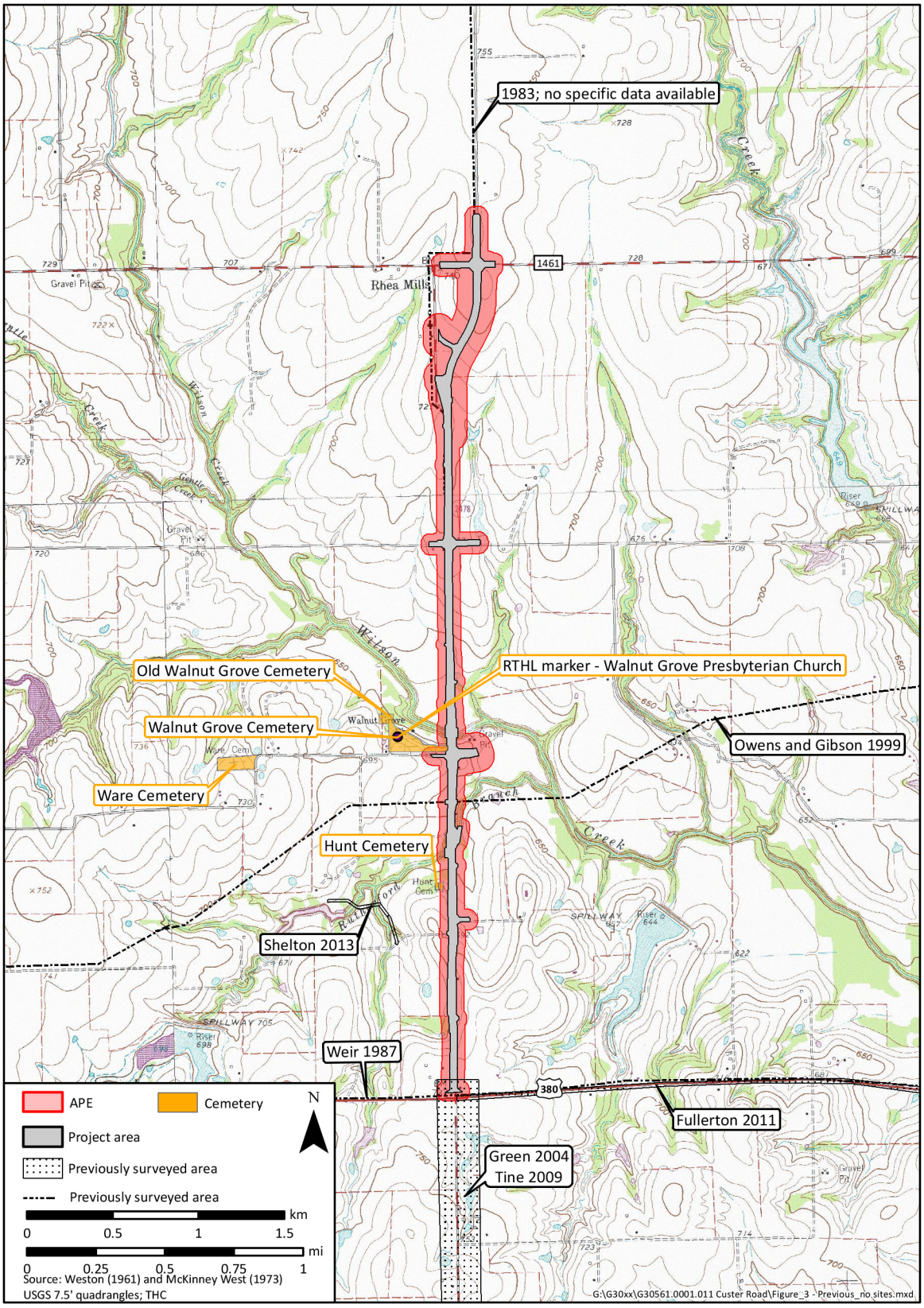

Figure 3. Prior cultural resources surveys and previously recorded resources within 1 mi (1.6 km) of the project area.

Table 2
Previously Recorded Cultural Resources in the Vicinity of the Proposed Project Area

Trinomial	Description	Distance from APE	NRHP Eligibility	SAL/RTHL Designation
41COL92	Prehistoric lithic procurement site; Late-nineteenth-to-early-twentieth century domestic site	32 ft (10 m)	Undetermined	Undetermined
N/A	Hunt Cemetery	80 ft (24 m)	N/A	N/A
N/A	Walnut Grove Cemetery	Partially within APE	N/A	N/A
N/A	Wear (Ware) Cemetery	0.56 mi (0.9 km)	N/A	N/A
N/A	Walnut Grove Presbyterian Church (c. 1886–1994)	656 ft (200 m)	Undetermined	RTHL-designated (1976)

CHAPTER 3
CULTURAL CONTEXT

The proposed FM 2478 expansion and realignment project is located in what is generally referred to as the Northcentral Texas cultural area (Perttula 2004). This area encompasses northern portions of the Blackland Prairie and the adjacent Cross Timbers physiographic regions. The following chapter presents a brief synopsis, based on regional archeology, of the Native American cultural chronology and Euro-American history of the Northcentral Texas cultural area. Given the size of the region and the depth and breadth of cultural complexity that has developed in the area, this chapter must necessarily be limited in scope. References are provided to supplement the information summarized here.

NATIVE AMERICAN CULTURAL CHRONOLOGY

The following brief discussion of the prehistoric archeological record in Northcentral Texas and the upper Trinity River basin is based largely on previous works by Peter and McGregor (1988), Prikryl (1987, 1990), and Yates and Ferring (1986). Although the chronological framework for the upper Trinity River basin is not well developed, the available data allow the delineation of a generalized prehistoric cultural chronology outlined in Table 3.

The Paleoindian occupation of the upper Trinity River Basin is known primarily through diagnostic projectile points from surface collections or stratigraphically mixed contexts. Clovis and Plainview style projectile points, temporally and culturally diagnostic artifacts of Paleoindian period, are commonly found along both Denton and Clear creeks in the Cross Timbers. The Lewisville Lake site (Crook and Harris 1957, 1958) is the best-known Paleoindian site within the region. A date range of 9500–7000 B.C. for Paleoindian occupations is probably a reasonable estimate for the first human occupation of Northcentral Texas. Knowledge of the settlement-subsistence strategies used by these early occupants is extremely limited. However, recent excavation at the Aubrey site, a well-preserved site in Denton County, has indicated that subsistence efforts did not focus on big game animals alone; rather, the entire range of prairie and forest species was used (Ferring 2001). Whether this pattern of a more generalized foraging subsistence system is characteristic of Paleoindian adaptations in the Eastern Woodlands and the focus on now extinct, big game species is more characteristic of a Plains adaptation remains to be documented.

Table 3
Generalized Prehistoric Cultural Sequence for Northcentral Texas

Period	Dates B.C./A.D.
Paleoindian	9500–7000 B.C.
Archaic	7000 B.C.– A.D. 700
Early Archaic	7000–4000 B.C.
Middle Archaic	4000–2000 B.C.
Late Archaic	2000 B.C.–A.D. 700
Late Prehistoric	A.D. 700–1600
Late Prehistoric I	A.D. 700–1200
Late Prehistoric II	A.D. 1200–1600
Protohistoric	A.D. 1600–1800
Historic Native American	A.D. 1800–1860

Adapted from Peter and McGregor (1988), Prikryl (1987, 1990), and Yates and Ferring (1986)

Knowledge of the Archaic period in the upper Trinity River drainage is limited by the lack of data from major excavations. This is particularly true for the Early and Middle Archaic periods. Investigations along the West Fork (Peter and McGregor 1988; Yates and Ferring 1986) indicate that primary contexts for Early and Middle Archaic sites will be found deeply buried within floodplain alluvium. Artifacts from these periods are found on terrace surfaces, but they are frequently mixed with later materials. In fact, the initial treatment of the Archaic period (Crook and Harris 1952, 1954), which defined the Carrollton and Elam foci, was based upon materials from such terrace contexts. Consequently, these time-space constructs are no longer recognized as being acceptable for Northcentral Texas (Peter and McGregor 1988; Prikryl 1987; Yates and Ferring 1986). Investigations at Joe Pool Lake (Peter and McGregor 1988) and at Lake Ray Roberts indicate that the Late Archaic period is characterized by assemblages left by small bands of foraging hunters and gatherers who occupied a locality for a limited time period and then moved to another locality. These sites were apparently reoccupied numerous times on a seasonal basis. Deer and numerous small mammals were the primary food resources. The documentation of large pits associated with Late Archaic period sites in the Richland/Chambers Creek drainage (Bruseth and Martin 1987) suggests that important sociopolitical changes may have been occurring during this time period. Unfortunately, the significance of these pits remains an enigma despite their excellent documentation.

The beginning of the Late Prehistoric period in the upper Trinity River basin is marked by the appearance of arrow points. The date of A.D. 700 for this period is based upon dated contexts to the west in the Brazos River drainage. Lynott (1977) suggests that the Late Prehistoric period may be divided into early and late phases. The early phase is characterized by sand-and-grog-tempered ceramics, Scallorn and Alba arrow points, and a continuation of the foraging subsistence system of the Late Archaic period. The late phase reflects a Southern Plains influence with the appearance of Nocona Plain ceramics of the Henrietta focus, various unstemmed triangular points (e.g., Fresno, Harrell, Washita), and the Perdiz point. Evidence of horticulture and the procurement of bison also appear in sites of this period (Harris and Harris 1970; Morris and Morris 1970). Prikryl's (1987) more recent assessment of the Late Prehistoric period largely follows that of Lynott (1977). Investigations of the Cobb-Pool site at Joe Pool Lake (Peter and McGregor 1988) have resulted in a reformulation of the Late Prehistoric period. The Cobb-Pool site has yielded house structures, roasting pits, Alba points, grog-tempered

ceramics, and charred corn cupules. Radiocarbon dates from several features indicate the site was occupied during the late twelfth or early thirteenth century. Present evidence suggests that the site does not represent an intrusive Caddoan occupation; consequently, a significant adaptive change appears to have occurred during a middle phase of the Late Prehistoric period. It is also likely that ceramics were not introduced to the region before this time. Whether the Cobb-Pool site merely represents a local experiment or reflects a regional adaptive change separate from that emerging to the north remains to be fully documented; however, recent analysis of a Native American burial salvaged along Spring Creek (site 41DL373) in northeastern Dallas County also suggests maize consumption (Peter and Clow 1999). Radiocarbon dating indicates that this individual lived between A.D. 1155 and 1275, while a carbon isotope ratio of -17.7 ‰ suggests that maize was consumed, but it did not form a major part of the diet (Peter and Clow 1999). These indications of maize consumption contrast with a small grouping of disturbed human remains recovered from the Harbor Pointe site (41DL369), also in Dallas County (Cliff et al. 1996). This site, located on Rowlett Creek (a tributary of the East Fork Trinity River) yielded remains of at least four individuals dated by radiocarbon dating of bone collagen to approximately A.D. 1035. No pottery was recovered with these remains, although shell beads and a shell gorget were present; and a carbon isotope ratio of -21.6 ‰ suggests that the group's diet was not high in maize (Cliff et al. 1996). Given the slightly earlier date of the Harbor Pointe burials compared to Cobb-Pool and 41DL373, it is possible that maize agriculture was introduced to the region ca. A.D. 1200; conversely, this same evidence may indicate that Late Prehistoric groups in Northcentral Texas practiced divergent subsistence patterns.

The sporadic nature and uncertain extent of early European contact with indigenous groups in Northcentral Texas, coupled with disparities in knowledge of these groups themselves late in prehistory, make it difficult to precisely determine the temporal boundary between the Late Prehistoric, Protohistoric, and Historic periods. For purposes of this synopsis, the Protohistoric period began in 1542 with the first contact between Native Americans and the Spanish in the region. Although contact between Spanish and Native American groups during at least the early portion of the Protohistoric period was indirect and intermittent, European exploration, trading, and settlement affected various indigenous groups in a variety of ways. Unfortunately, historical documentation and archeological evidence are very sparse for the Protohistoric period in the upper Trinity River basin. The manner in which many Native American populations responded to contact with the Spanish and their cultural trajectory following this contact is not precisely known, and the exact locations of their sites and detailed ethnohistoric data are almost nonexistent. Tonkawa, Wichita, Caddo, and Comanche all are likely to have traversed the area. Although European trade items (Sollberger 1953) appear on a limited number of sites, no Protohistoric site has been thoroughly investigated and characterizations of the Native American adaptations during this time period are conjectural at best.

HISTORIC PERIOD (A.D. 1684–1950)

The Historic period in the Northcentral Texas region is characterized by early Spanish and French influences in the area. The region also experienced a brief period as part of the Texas Republic before becoming a part of the United States of America. This historical sequence resulted in the broad-scale displacement and assimilation of the indigenous groups in the region. The following is a brief discussion of Northcentral Texas during the Historic period, as outlined in Table 4.

Table 4
Historic Chronological Framework for Northcentral Texas

Historic Period	Time Periods
Spanish Exploration	A.D. 1542–1758
French Exploration	A.D. 1700–1763
Texas Republic	A.D. 1836–1845
American	A.D. 1845–present

The first presence of Europeans in Northcentral Texas may have occurred in 1542 when the remnants of the de Soto expedition, led by Luis de Moscoso de Alvarado, entered the area in an effort to find a land route to New Spain. Some researchers believe that the expedition crossed Northcentral Texas (Lebo and Brown 1990:61), although others place the route much farther to the east and south (Bruseth and Kenmotsu 1991; Chipman 1992; Hudson 1986; Schambach 1989; Weber 1992). A consistent European presence in the region did not occur until the early 1700s, when French traders from Louisiana began to move west along the Red River. The Spanish considered this French incursion to be a threat to the security of New Spain, and they responded by redoubling efforts to counterbalance the French influence with the Native Americans in East and Northcentral Texas. These efforts continued until 1763, when France ceded Louisiana to Spain under the Treaty of Paris. This reduced the perceived threat to the security of New Spain and resulted in a reduction in Spanish investment in eastern and northern Texas. More important from the Native American viewpoint was the severe military defeat inflicted on the Spanish by the Wichita and allied tribes at Spanish Fort on the Red River in 1758. It has been argued that this defeat put an end to Spanish military and missionary expansion to the north (Weddle 1964, 1965).

The first European Americans to colonize the region settled along the Trinity River and its tributaries as the frontier grew westward. The area remained largely unsettled until 1841 when people, primarily from the upper southern states, were drawn by a land grant known as the Peters Colony. William S. Peters and the Texas Emigration and Land Company obtained the first land contract in 1841 to populate the newly formed Republic of Texas. Over time, the Texas Emigration and Land Company acquired three additional land contracts, encompassing most of Northcentral Texas, including present-day Collin County—at that time a part of Fannin County. Texas was annexed by the United States in 1846, and the First Legislature of Texas established Collin County by that same year. The county was named for Collin McKinney, an early settler who signed the Texas Declaration of Independence and authored a bill that established counties in the northern part of the state. Buckner was the original county seat, but since it was not in the geographic center of the county, the county government was moved to McKinney, also named after Collin McKinney, in 1848 (Minor 2014; Stambaugh and Stambaugh 1958).

Though the fertile Blackland Prairie soils attracted settlers, poor transportation prior to the 1870s limited markets, and lack of mechanized farm equipment prevented the large-scale plantation agriculture characteristic of many parts of the South, and most settlers at this time were subsistence farmers living near reliable water and timber supplies along major steams. Because of the difference in economies, slavery was not a major institution in Collin County. In turn, the lack of a slave-based economy influenced the county's vote of 948 to 405 against secession from the Union in 1861. Nevertheless, when Texas withdrew from the Union, many men in Collin County volunteered to serve with the Confederate Army (Minor 2014; Stambaugh and

Stambaugh 1958). Although the fighting never reached Northcentral Texas, the Civil War still inflicted hardships on the region. Because most able-bodied men were away fighting for the Confederacy, most small towns and villages were left unprotected, and the region gradually became impoverished when food and other commodities became expensive and difficult to obtain throughout the course of the war (Stambaugh and Stambaugh 1958; Works Projects Administration [WPA] 1992:55–58).

Although the region suffered economically in the aftermath of the Civil War, it was not as badly affected as other areas of the former Confederacy. This greater economic vitality was fueled in part by streams of immigrants from the rest of the country, who were hoping to make a fresh start in the as yet unsettled West. Other elements in the economy included the nearby presence of one of the cattle trails to Kansas as well as the role of Dallas as a center for the buffalo hide market (WPA 1992:60–70). The presence of railroads in Collin County by the 1870s resulted in a shift in the county economy from one of subsistence-based farming to one of large-scale crop production, particularly cotton.

With an outlet for their products, farmers began to cultivate the unplowed fertile land in the eastern and central sections of the county. As was common in areas dependent on cotton after the Civil War, tenant farming became a major social institution. Between 1870 and 1920, the number of farms and crop production increased dramatically. Two settlements, Richland and Rock Hill, developed between 1850 and 1902. The development of these communities was expedited in 1876, following the sale of unclaimed tracts of land by the county court. The introduction of the St. Louis, San Francisco, and Texas Railroad into the area in 1902 resulted in the communities of Rock Hill and Richland nucleating to form the town of Prosper, which served as the primary rail stop between Dallas and Sherman into the 1920s. This period of growth, however, was followed by a 40-year population decline across the region. The Great Depression, in tandem with the mechanization of farming and employment opportunities outside the county following the Depression, contributed to the decrease in population.

CHAPTER 4
METHODS

This cultural resources survey was designed to identify prehistoric and historic archeological remains located within the FM 2478 APE and to provide the City of McKinney with information necessary to address adverse effects on cultural resources within the project area. This investigation consisted of background research and archeological reconnaissance survey.

BACKGROUND RESEARCH METHODS

Information regarding previously recorded archeological sites was gathered through a review of the Texas Archeological Sites Atlas online database maintained by the THC as well as a thorough review of relevant literature pertinent to the resources within the area. Prior to field investigations at the proposed project area, a suite of archival sources including historic aerial photographs and maps, including historic soil, highway, and topographic maps was reviewed to determine the former locations of historic-age structures within the project area.

SURVEY METHODS

Due to the degree of ground-disturbing activities in the proposed project area, a survey strategy consisting of systematic pedestrian reconnaissance augmented by judgmental shovel testing was employed during this survey. Visual surface reconnaissance was conducted throughout the entire project area, with shovel testing in areas where the presence of intact subsurface deposits was possible and in locations where surface artifacts were visible. Shovel tests consisted of hand-excavated units 30–40 centimeters (cm; 11.8–15.7 inches [in]) in diameter excavated in 20-cm (7.9-in) levels, with the excavated soil passed through 0.64-cm (0.25-in) hardware mesh screen to recover artifacts. The location of each shovel test was recorded with a submeter-accurate Trimble® GeoXH™ global positioning system (GPS) unit, and the exposed soil profile documented. Each shovel test was backfilled upon completion of the recording process. Disturbances associated with the existing ROW include artificially contoured drainage ditches paralleling FM 2478 and numerous buried utilities. Because of extensive soil disturbance within the existing FM 2478 APE, shovel testing was confined to areas of proposed new ROW adjacent to the existing ROW. Disturbances within the new proposed ROW include residential landscaping and commercial development. Agricultural land use accounts for approximately half

of the APE. A large portion of the agricultural parcels were recently plowed, yielding excellent surface visibility. Soil exposed in the cutbanks of Wilson Creek and Rutherford Branch was also inspected for evidence of buried sites and stable surfaces adjacent to the stream channels.

ARTIFACT TREATMENT AND ANALYSIS

All artifacts encountered during this survey consisted of mass-produced twentieth century domestic items associated with site 41COL256. These items were thoroughly examined in order to identify and determine, to the extent possible, their function or role and chronological affiliation. No artifacts were collected during this investigation.

ARCHEOLOGICAL SITE DEFINITION

An archeological site is typically considered to be a spatially discrete area containing cultural resources. The recognition of a "site" is therefore contingent on the basis of content and extent. Content may refer to artifacts recovered from surface or subsurface contexts, architectural features, or other manifestations of past human activity. The extent of a site is based on the vertical and horizontal spatial arrangement of these cultural remains. For surficial materials, a site is defined as five or more cultural items of at least two different materials or functional classes located within the same vicinity (typically a 400-m^2 [0.1-acre] area); the extent of the surface artifacts and cultural features are then defined as the site boundary. When artifacts are encountered in buried contexts, a site is defined within the extent of the culturally positive excavations. In cases where a shovel test yields cultural materials, additional delineation shovel tests are placed to define the boundary of the site. Shovel tests used to define and delineate a site are typically placed at intervals of 10–20 m (33–66 ft) in a cruciform pattern (in each of the cardinal directions) around the positive shovel test until two negative shovel tests, or the project area boundaries, are reached. In general, if two or more positive shovel tests are encountered and contain at least two classes of cultural materials, a site is then defined within the extent of positive shovel tests. Sites are also defined within an area of surface artifacts or features and culturally positive excavations, when both are present.

Cultural remains meeting these criteria are designated as a site, recorded on a Texas Archeological Site Data Form, and submitted to TARL to be included in the Texas Atlas database. Conversely, the discovery of cultural materials that do not meet these criteria are considered isolated occurrences of past human activity and are simply documented by location and content; likewise, modern material (i.e., less than 50 years old) representing an obvious single-event trash dump is not considered a site, with only location and content documented.

Depending on depositional integrity and cultural content, archeological sites can be eligible for inclusion in the NRHP or for designation as an SAL. An isolated find is not eligible for inclusion in the NRHP because of its failure to meet site definition and its insignificance in contributing to the archeological record.

ELIGIBILITY CRITERIA

National Register of Historic Places

The assessment of significance of a cultural resources property is based on federal guidelines and regulations. The criteria (36 CFR Part 60.4 [a–d]) for evaluating properties for inclusion in the National Register are codified under the authority of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation has set forth guidelines to use in determining site eligibility. Based Advisory Council guidelines, any resource that is included in or eligible for inclusion in the National Register is a "historic property." "The term 'eligible for inclusion in the National Register' includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria" (36 CFR §800.2 [e]). Subsequent to the identification of relevant historical themes and related research questions, the following four criteria for eligibility are applied:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> (b) that are associated with the lives of persons significant in our past; or
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> (d) that have yielded or may be likely to yield, information important in prehistory or history [36 CFR Part 60.4 (a–d)].

The principal research objective is to determine whether a cultural resources property possesses the potential to contribute to one or more of the above-defined criteria. Therefore, adequate information on site function, context, and chronological placement from both archeological and, if appropriate, historical perspectives is essential for cultural resources investigations. Because research questions vary as a result of geography, temporal period, and project design, determination of site context and chronological placement of cultural properties is a particularly important objective during the inventory process. The objective of this current project was to locate and define both horizontally and vertically any cultural resources, document and describe those resources, and then, when adequate data were present, evaluate each for NRHP eligibility.

State Antiquities Landmark

For purposes of implementing the Antiquities Code of Texas, the THC is the statutorily created body responsible for protecting and preserving State Antiquities Landmarks under the Texas Natural Resources Code, Title 9, Chapter 191. A State Antiquities Landmark is an archeological site, archeological collection, ruin, building, structure, cultural landscape, site, engineering feature, monument or other object, or district that is eligible to be designated as a landmark or is already officially designated as a landmark. The state of Texas considers all publicly owned archeological sites and historic buildings and structures to have some intrinsic historic value, and the Antiquities Code provides some level of protection for those sites, buildings, or structures regardless of their size, character, or ability to currently yield data that will contribute important information on the history or prehistory of Texas. Additionally, these publicly owned

archeological sites and historic buildings and structures are protected from vandalism, or other actions meant to take, alter, or destroy them, and information directly related to the specific location of archeological sites is restricted from open records requests. However, not all cultural resources are equally significant to the history and prehistory of Texas. Some archeological sites may not possess research value sufficient to warrant long-term preservation or investigations beyond survey level recordation, and some historic buildings and structures retain minimal integrity due to damage or deterioration. Therefore, the issue of whether cultural resources are significant and warrant preservation, and/or further research (such as archeological testing and data recovery level investigations), is addressed through official landmark designation, permit issuance, and rules associated with enforcement of the Antiquities Code. Sections 191.091 and 191.092 of the Texas Natural Resources Code provide that archeological sites and historic buildings and structures on lands belonging to state agencies or political subdivisions of the state of Texas are landmarks or may be eligible for designation as landmarks. Also protected under the Texas Natural Resources Code (Section 191.094) are specially designated landmarks on private property [above information compiled from Texas Administrative Code, Title 13, Part 2, Chapter 26, Subchapter A, Section 26.2].

Under the Texas Antiquities Code at the state level, ***archeological sites*** may be considered significant and be recognized or designated as an SAL. The commission uses one or more of the following criteria when assessing the appropriateness of official landmark designation, and/or the need for further investigations under the permit process:

(1) the site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
(2) the site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
(3) the site possesses unique or rare attributes concerning Texas prehistory and/or history;
(4) the study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge;
(5) there is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected [Texas Administrative Code, Title 13, Part 2, Chapter 26, Subchapter C, Section 26.10].

CHAPTER 5
SURVEY RESULTS

This chapter presents the results of the archeological reconnaissance survey and assesses the effects of the proposed expansion and realignment of FM 2514 on cultural resources in the project area. Management considerations and recommendations based on the findings of this survey are presented in the following chapter.

BACKGROUND RESEARCH RESULTS

Based on a review of the Texas Archeological Sites Atlas online database maintained by the THC and a thorough literature review, the project area was determined to have a low probability of preserving prehistoric archeological sites. Few prehistoric archeological sites are known to exist in the uplands of the Blackland Prairie. Those that have been previously recorded tend to be ephemeral, with low artifact densities and diversities, and are often disturbed by modern land use practices. Surveys from previous investigations in the region indicate that unless a permanent water supply, such as a spring or perennial stream is present, the occurrence of prehistoric archeological sites is low. The likelihood of deeply buried prehistoric archeological sites occurring within alluvial deposits of local streams near this location in the upper reaches of Wilson Creek is also low, as the closest buried prehistoric archeological site in the local drainage basin (41COL209) is located approximately 7.5 km (4.7 mi) downstream near the confluence of Wilson Creek with Franklin Branch.

Historically, several domestic structures and associated outbuildings were located within the project area, based on a review of historic period maps and aerial photographs. The probability of encountering historic period archeological sites was therefore considered moderate to high. More recent aerial photographs and low-altitude satellite imagery indicate that the area has undergone a rapid expansion in residential development and, to a lesser extent, light commercial development in the last two decades.

SURVEY RESULTS

The entire project area was systematically inspected to determine the probability for archeological site preservation. Approximately 50 percent of the project area is in agricultural use, generally distributed equally between livestock grazing pastures and plowed or fallow row crop fields.

Several berms and basins for run-off water retention are located within the pasture east of FM 2478 along the slope of the valley south of Wilson Creek (Figure 4). Approximately 45 percent of the project area has been developed for residential purposes. Roughly 5 percent of the project area consists of commercial development, primarily near the intersections of FM 2478 with US 380 and FM 1461. Recent service development is also evident at West Prosper Trail (FM 123). Buried utilities extend along the APE, primarily west of the roadway (Figure 5).

Figure 4. Water retention berms and basins within eastern portion of the APE, view to the east.

Pedestrian reconnaissance was conducted over the entire project area, with systematic surface survey conducted in transects at an interval of 10 m (32.8 ft) in plowed fields where ground surface visibility was greater than 30 percent (Figure 6). Because of extensive previous disturbances within the APE, shovel testing was confined to areas with the potential to preserve archeological sites and where artifacts were observed on the ground surface. In total, eight shovel tests were excavated across the project area (Figure 7). Six shovel tests (Shovel Tests [STs] 1–6) were excavated within and immediately adjacent to a surface scatter of historic period artifacts within the APE south of FM 1461.

The stream bank profiles of Wilson Creek and Rutherford Branch were visually inspected for buried cultural deposits. No artifacts, cultural features, or paleosols were observed within the stream bank profiles of either drainage channel. The channel of Wilson Creek is incised into chalky-limestone bedrock (Figure 8) and the nominal floodplain adjacent to the drainage is extensively disturbed within the project area. A small artificial pond and a paved pedestrian trail associated with the Whitley Place subdivision occupy the northwestern portion of the floodplain (Figure 9). A large-diameter water transfer pipeline that extends along the western side of the APE is exposed across the Wilson Creek channel (Figure 10). The former location of a gravel quarry pit is indicated in the southeastern portion of the floodplain and adjacent terrace on both the 1960 and 1973 U.S. Geological Survey (USGS) McKinney West 7.5-minute (1:24,000-scale) topographic maps. An additional two shovel tests (STs 7 and 8) were excavated within the least

Figure 5. Buried utilities along western margin of the APE, view to the southwest.

Figure 6. Example of ground surface visibility in plowed field north of Wilson Creek, view to the north.

disturbed portion of the Wilson Creek floodplain, located in the northwestern portion of the floodplain. Soils exposed within these shovel tests exhibited dark brown (10YR 3/4) silty clay with granular structure and abundant angular chalky limestone gravel characteristic of recently deposited fluvial sediments. Based on these results, it is unlikely that deeply buried prehistoric archeological deposits are preserved within the floodplain of Wilson Creek, and additional deep prospection methods, such as mechanical trenching, is not recommended.

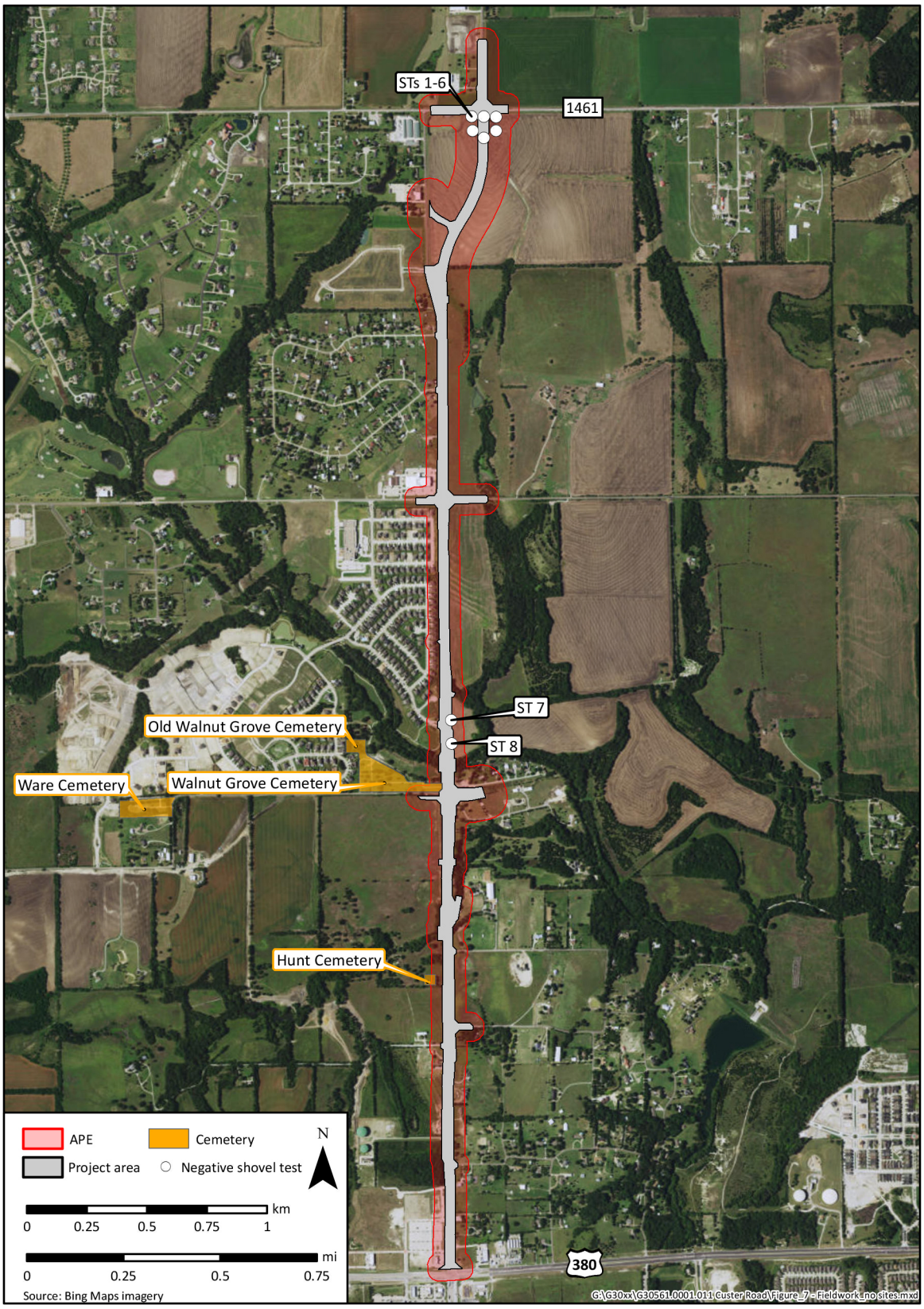

Figure 7. Archeological reconnaissance survey area.

Figure 8. Wilson Creek channel east of APE, view to the east.

Figure 9. Artificial pond and pedestrian trail on floodplain of Wilson Creek, view to the south.

Figure 10. Large-diameter water transfer pipeline exposed within Wilson Creek channel, view to the southwest.

No artifacts were recovered within any of the shovel tests excavated during this reconnaissance survey. As a result of this survey, site 41COL256 was documented within the APE along a portion of the proposed FM 2478 realignment south of FM 1461. The portions of the APE adjacent to Walnut Grove Cemetery and Hunt Cemetery were also inspected to determine the likelihood of unmarked graves existing within the proposed ROW.

SITE 41COL256

Site 41COL256 consists of twentieth-century domestic artifacts observed on the exposed ground surface of a plowed field within the proposed FM 2478 APE south of FM 1461 (Figure 11). The site occupies a level area of approximately 9,000 square meters (m^2; 2.2 ac) measuring roughly 90 m (295 ft) north-to-south by 120 m (394 ft) east-to-west at an elevation of approximately 230 m (755 ft) amsl. The site is within a plowed field with nearly 100 percent surface visibility. Six shovel tests (STs 1–6) were excavated around the extent of the surface artifacts (Figure 12). Soil profiles examined during shovel testing indicate that the site is situated on an area of Houston Black clay, consisting of very dark gray (10YR 3/1) clay. No artifacts were encountered within any of the shovel tests. A saltbox hay barn with horizontal corrugated metal siding and a corrugated metal roof is situated in the approximate center of the surface artifact scatter.

Artifacts (n=96) observed at site 41COL256 consist primarily of domestic (n=81) items. These domestic items consist almost entirely of glass bottle or container fragments (n=52) of colorless (n=36), amber (n=6), milk (n=4), cobalt (n=2), aqua (n=2), and solarized manganese glass (n=2; 1870s–1920s [Lockhart 2006]). Other domestic items consist of ceramic items (n=29) including undecorated pure white refined earthenware (n=16; post-1890 [Moir 1987]), undecorated porcelain (n=6), coarse earthenware with Bristol glazed interior and exterior (n=2; post-1900 [Lebo 1987]), coarse earthenware with Bristol glazed exterior and natural clay-slipped interior

Figure 11. Site 41COL256, view to the east.

(n=2; 1900–1920 [Lebo 1987]), pure white earthenware with a molded edge and blue transfer design (n=1;), pure white refined earthenware with a partial black transfer print manufacturer's mark (n=1; [IRONST]ONE C[HINA]), and light blue-tinted refined earthenware with a blue transfer and light blue hand-painted floral design (n=1; 1880–1930 [Moir 1987]). Three personal items, consisting of two glass marbles and a milk glass cosmetic jar basal fragment, were also observed. The functions of 12 additional ferrous metal fragments and a graphite battery core were indeterminate.

Site 41COL256 is the remnants of a late-nineteenth-to-mid-twentieth-century farmstead. The site is located within a parcel along the northern edge of the original 640-acre Langden C. Searcy Survey. L. C. Searcy originally immigrated to the Peters Colony in 1844. Following the death of his wife in 1847, he sold the property to Jacob Teeters and enlisted as private in the Mounted Regiment of Texian Volunteers for two years. After acquiring a patent for the property in 1854, Searcy transferred title of the land to Teeters (Terrell and Walker 1882:244–246). Early property records are sparse; however, a structure is depicted in the northeastern corner of the parcel on the 1881 Collin County General Land Office (GLO) map. By the early twentieth century, ownership of the property had been transferred to the Furr family (Clint Haggard, personal communication 2014). A structure fronting what is now FM 1461 is depicted on both the 1930 United States Department of Agriculture 15-minute (1:62,000-scale) Collin County soils map and the 1952 Texas State Highway Department Collin County general highway map at the approximate location of site 41COL256. Structures that may be associated with this site are not visible on a 1952 Army Map Service aerial photograph due to the poor resolution of the image. A lot is discernable on the 1952 aerial photograph based on the contrast between the domestic portion of the property and the adjacent agricultural fields. Due to the demolition of the primary structure or structures associated with the site and the dispersal of surface artifacts by subsequent agricultural activities, the boundary of site 41COL256 is defined within the extent of the lot depicted on the 1952 aerial photograph, as opposed to the extent of surface artifacts.

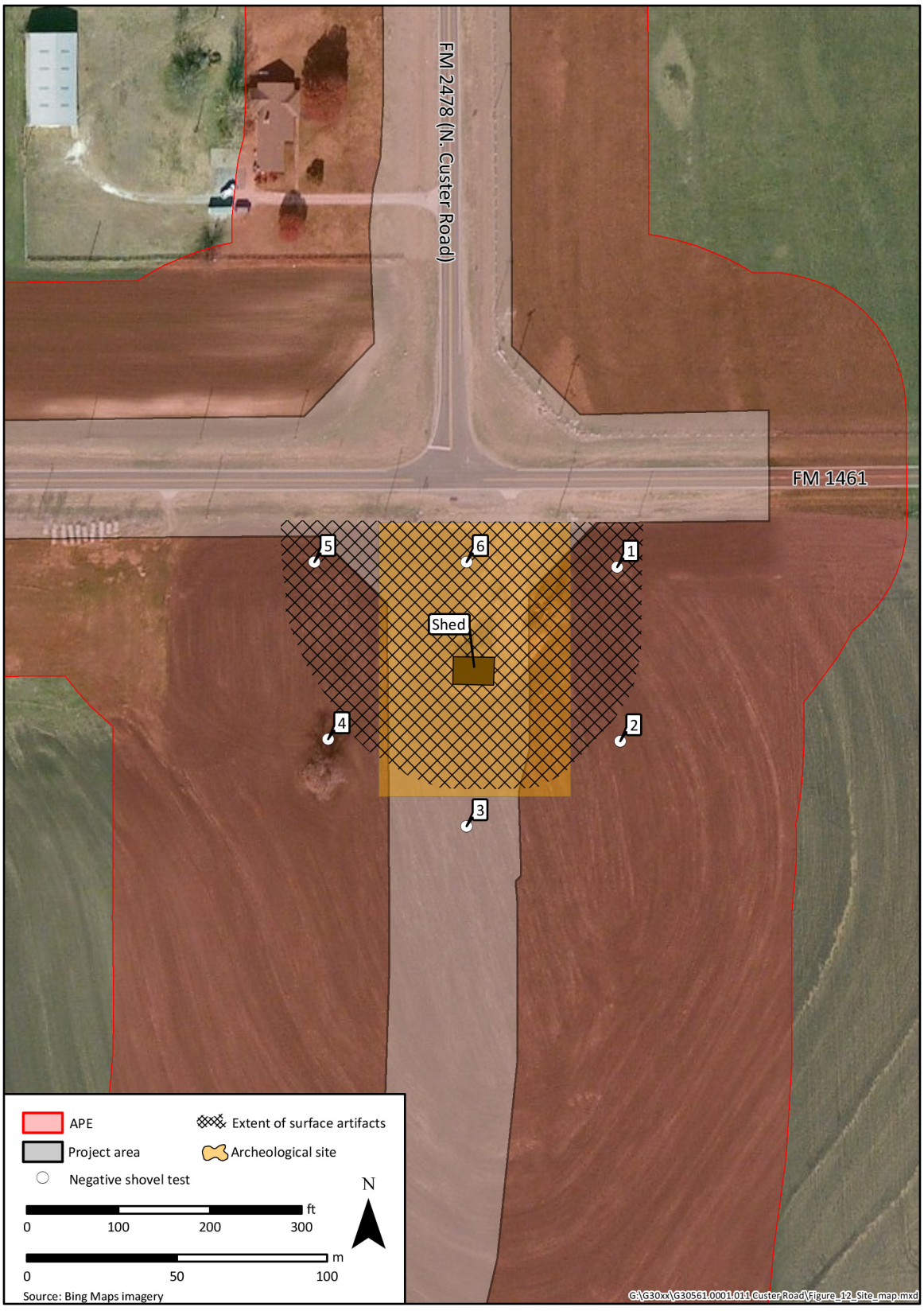

Figure 12. Plan map of site 41COL256.

Given the lack of site integrity, the redundant artifact content, and lack of domestic features preserved at the site, 41COL256 is considered to have little research potential. As such, this site is not likely to preserve information important to understanding community and regional development in Collin County during the late nineteenth and early twentieth centuries. Thus, site 41COL256 is recommended not eligible for inclusion in the NRHP under the criteria enumerated in 36 CFR 60.4 or for designation as an SAL under 13 TAC 26.8. No further investigations are recommended for site 41COL256.

WALNUT GROVE AND HUNT CEMETERIES

Two historic period cemeteries are located adjacent to the proposed FM 2478 ROW. The eastern end of Walnut Grove Cemetery abuts the existing FM 2478 ROW and is partially within the APE (Figure 13). Historically, the cemetery expanded from the original cemetery area (locally designated as Old Walnut Grove Cemetery), located approximately 300 m (984 ft) west of the APE. The two cemetery areas were combined in 1995, when Old Walnut Grove Cemetery was deeded to the Walnut Grove Cemetery Association. All of the graves within the portion of the cemetery adjacent to the existing FM 2478 ROW date between 1985 and the present. A substantial stone and steel fence and gateway separate the cemetery from the existing FM 2478 ROW (Figure 14). The existing ROW adjacent to the cemetery has been extensively modified to include substantial drainage ditches, buried utilities, and landscaping along FM 2478 and First Street. In addition, the proposed expansion of FM 2478 will not require additional ROW along the cemetery property (see Figure 13). Based on the well-defined and historically maintained boundary of Walnut Grove Cemetery, coupled with the relatively recent interment of burials in proximity to the ROW adjacent to the cemetery and the limited expansion of FM 2478 near the cemetery, it is unlikely that the proposed project will disturb unmarked graves associated with the cemetery.

The Hunt Cemetery is located west of the proposed ROW (Figure 15). The monuments associated with the cemetery are surrounded by a fence measuring approximately 110 ft north-to-south by 60 ft east-to-west and are adjacent to a rectangular area of juniper trees extending outside of the fenced area to the east (Figure 16). The cemetery is deeded as encompassing 0.5 ac, which coincides with the area occupied by the fenced monuments and adjacent juniper grove. The fenced portion of the cemetery is approximately 24 m (80 ft) west of the proposed ROW. The juniper grove associated with the fenced portion of the cemetery is approximately 15 m (50 ft) west of the proposed ROW and is partially within the APE. An examination of historic aerial photographs indicates that the juniper grove associated with the cemetery is relatively recent because it is not present in a high-resolution 1968 USGS aerial photograph. The APE adjacent to the Hunt Cemetery was examined during this survey. No evidence of unmarked graves was observed within the juniper grove or within the pasture between the juniper grove and the existing ROW. It is unlikely that unmarked graves exist within the proposed ROW. Therefore, mechanical scraping to locate unmarked grave locations within the APE is not recommended.

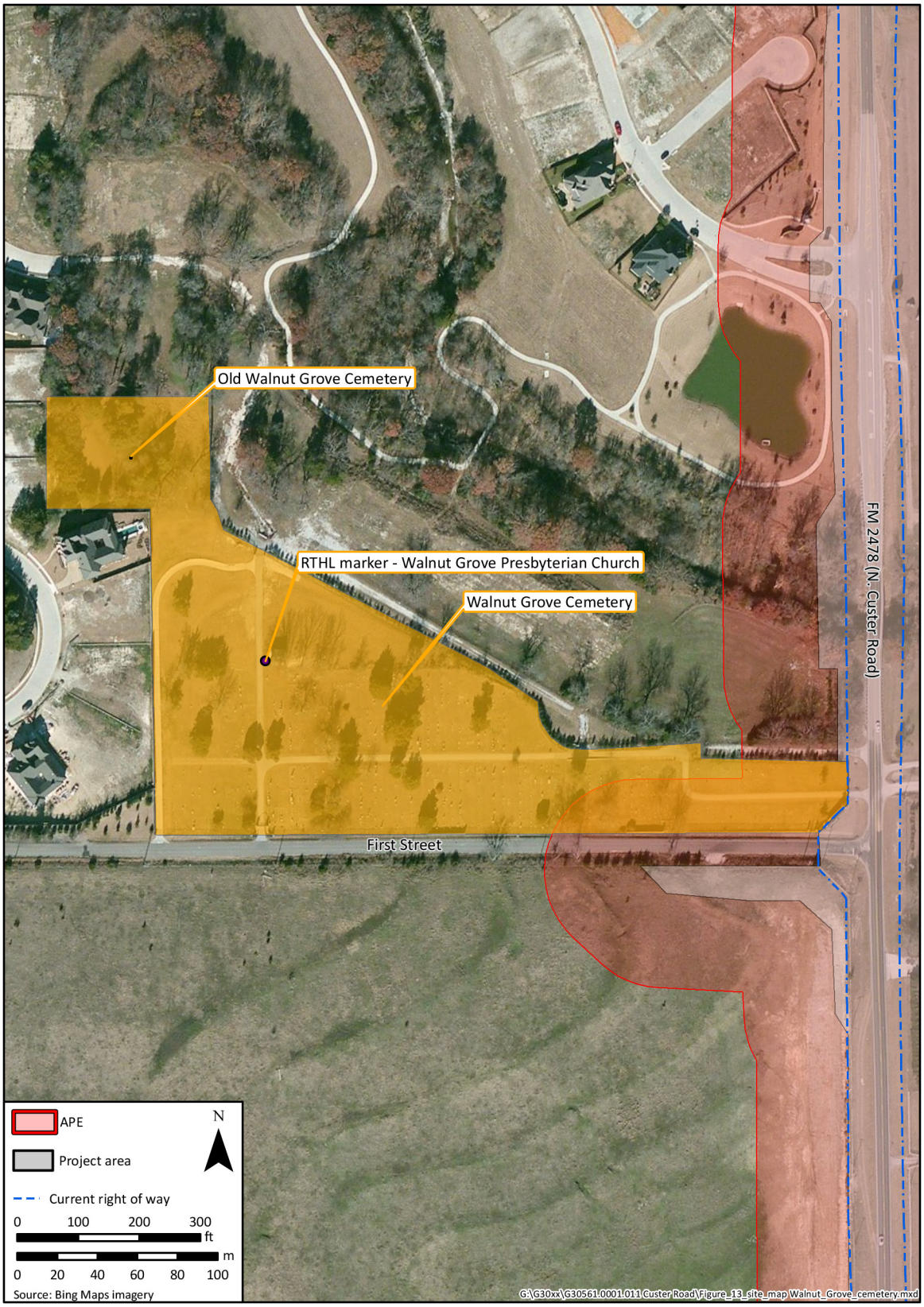

Figure 13. Map of Walnut Grove Cemetery.

Figure 14. Walnut Grove Cemetery adjacent to the existing FM 2478 ROW, view to the west.

Figure 15. Map of Hunt Cemetery.

Figure 16. Hunt Cemetery from existing ROW, view to the southwest.

CHAPTER 6
SUMMARY AND RECOMMENDATIONS

This archeological reconnaissance survey was undertaken to document and assess cultural resources within the area proposed for the expansion and realignment of FM 2478 and to provide adequate and relevant information for use in the management of cultural resources within the APE.

Information regarding previously recorded archeological sites was gathered through a literature review and review of the Texas Archeological Sites Atlas online database maintained by the THC. Prior to field investigations at the proposed project area, a suite of archival sources including historic aerial photographs and maps was examined to determine the former locations of historic-age structures and historic cemeteries within the project area. Due to the degree of ground-disturbing activities in the proposed APE, a survey strategy consisting of systematic pedestrian reconnaissance and judgmental shovel testing was employed during this reconnaissance survey. Pedestrian survey was conducted throughout the entire APE, with shovel testing in areas where the presence of subsurface deposits was possible. Soil exposures in the cutbanks of Wilson Creek and Rutherford Branch were also inspected for evidence of buried sites adjacent to the stream channels.

One new archeological site, 41COL256, was documented during the course of these investigations. This site represents a late-nineteenth-to-mid-twentieth-century farmstead. The integrity of site 41COL256 has been affected by the demolition of structures associated with the historic period occupation of the site and ground-disturbing activities associated with modern agriculture. The artifact assemblage observed at the site consists of highly fragmentary surface artifacts typical of early to mid-twentieth-century domestic refuse. Therefore, the integrity of location, design, and association is severely compromised. Given the limited information potential associated with site 41COL256, it is unlikely that it will provide any additional information relevant to understanding community and regional development in Collin County during the late nineteenth or early twentieth century. Thus, this site is recommended not eligible for inclusion in the NRHP, under criteria enumerated in 36 CFR 60.4, or for designation as an SAL as per 13 TAC 26.8. Portions of Walnut Grove Cemetery and Hunt Cemetery within and adjacent to the proposed APE were carefully examined to determine the likelihood of unmarked graves within the APE and proposed ROW. Based on the well-defined and historically maintained boundary of Walnut Grove Cemetery, coupled with the relatively recent interment of burials in proximity to the ROW adjacent to the cemetery and the limited expansion of FM 2478

near the cemetery, it is unlikely that the proposed project will disturb unmarked graves associated with the cemetery. No evidence of unmarked graves was observed outside of the fence associated with Hunt Cemetery and it is unlikely that unmarked graves exist within the proposed ROW. Therefore, mechanical scraping to locate unmarked grave locations within the APE is not recommended at either of these cemeteries. No further investigations are recommended within the APE at any of these locations. No artifacts were collected during this investigation; however, all records generated by this project will be curated at TARL.

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APPENDIX A

SHOVEL TEST DATA

Appendix A
Summary of Shovel Test (ST) Units

ST #	Soil Description	Artifacts
1	0–30 cm: very dark gray (10YR 3/1) clay	No cultural materials
2	0–30 cm: very dark grayish brown (10YR 3/2) clay loam	No cultural materials
3	0–30 cm: very dark grayish brown (10YR 3/2) clay loam	No cultural materials
4	0–30 cm: very dark grayish brown (10YR 3/2) clay loam	No cultural materials
5	0–20 cm: very dark grayish brown (10YR 3/2) clay loam 20–30 cm: light yellowish brown (10YR 6/4) clay	No cultural materials
6	0–40 cm: compacted very dark grayish brown (10YR 3/2) clay loam and angular limestone gravels	No cultural materials
7	0–80 cm: very dark grayish brown (10YR 3/2) clay loam with common angular chalky limestone gravels	No cultural materials
8	0–80 cm: very dark grayish brown (10YR 3/2) clay loam with common angular chalky limestone gravels	No cultural materials

APPENDIX B

PROJECT SCHEMATICS
(on attached CD)

Texas Department of Transportation

DALLAS DISTRICT

William L. Hale, P.E., District Engineer

COLLIN COUNTY

DESIGN SCHEMATIC

FM 2478

WIDEN TWO LANE RURAL HIGHWAY TO FOUR LANE DIVIDED; REALIGN INTERSECTION AT FM 1461; SIX LANE ULTIMATE

PROJECT LENGTH 3.174 MILES

CSJ No. 2351-01-017
LIMITS: FROM U.S. 380 TO NORTH OF FM 1461
LENGTH: 3.174 MILES

FUNCTIONAL CLASSIFICATION
MINOR ARTERIAL ROAD

DESIGN SPEED:
FM 2478 = 45 MPH
CR 853 = MOIEC
CR 933 = MOIEC
CR 857 = MOIEC
CR 858 = MOIEC
FIRST ST = 40 MPH
WILMETH RD = 45 MPH
WILSON CREEK TR = 30 MPH
PROSPER TR = 45 MPH
BLOOMDALE RD = 45 MPH
RHEA MILLS CIR = 20 MPH
CHRISTIE FARMS BLVD = 35 MPH
FM 1461 = 45 MPH
CONNECTION TO EXISTING = 30 MPH

SCALE: HORIZONTAL 1IN = 100 FT
VERTICAL 1IN = 10 FT

ROLL 1 OF 2

SEPTEMBER 2014

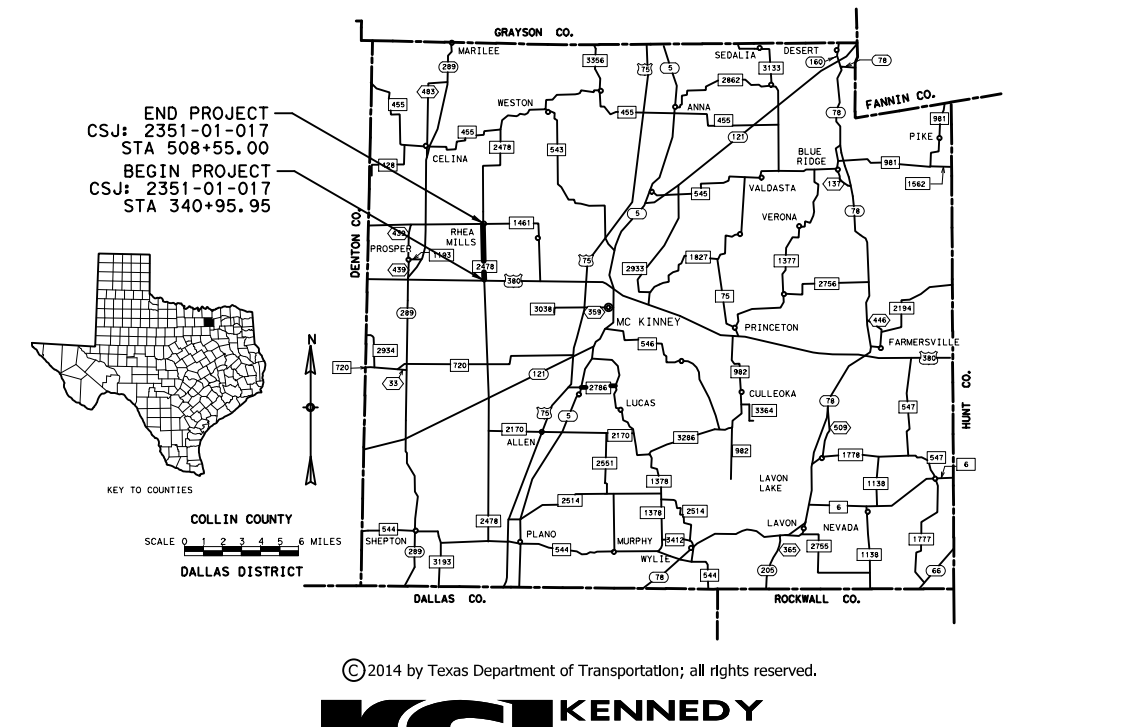
FM 2478 TRAFFIC DATA	
YEAR	ADT
2016	8,500
2036	14,200

DIR DIST: 61-39
% TRUCK ADT: 4.5
% TRUCK DHV: 3.4
K FACTOR: 11.2

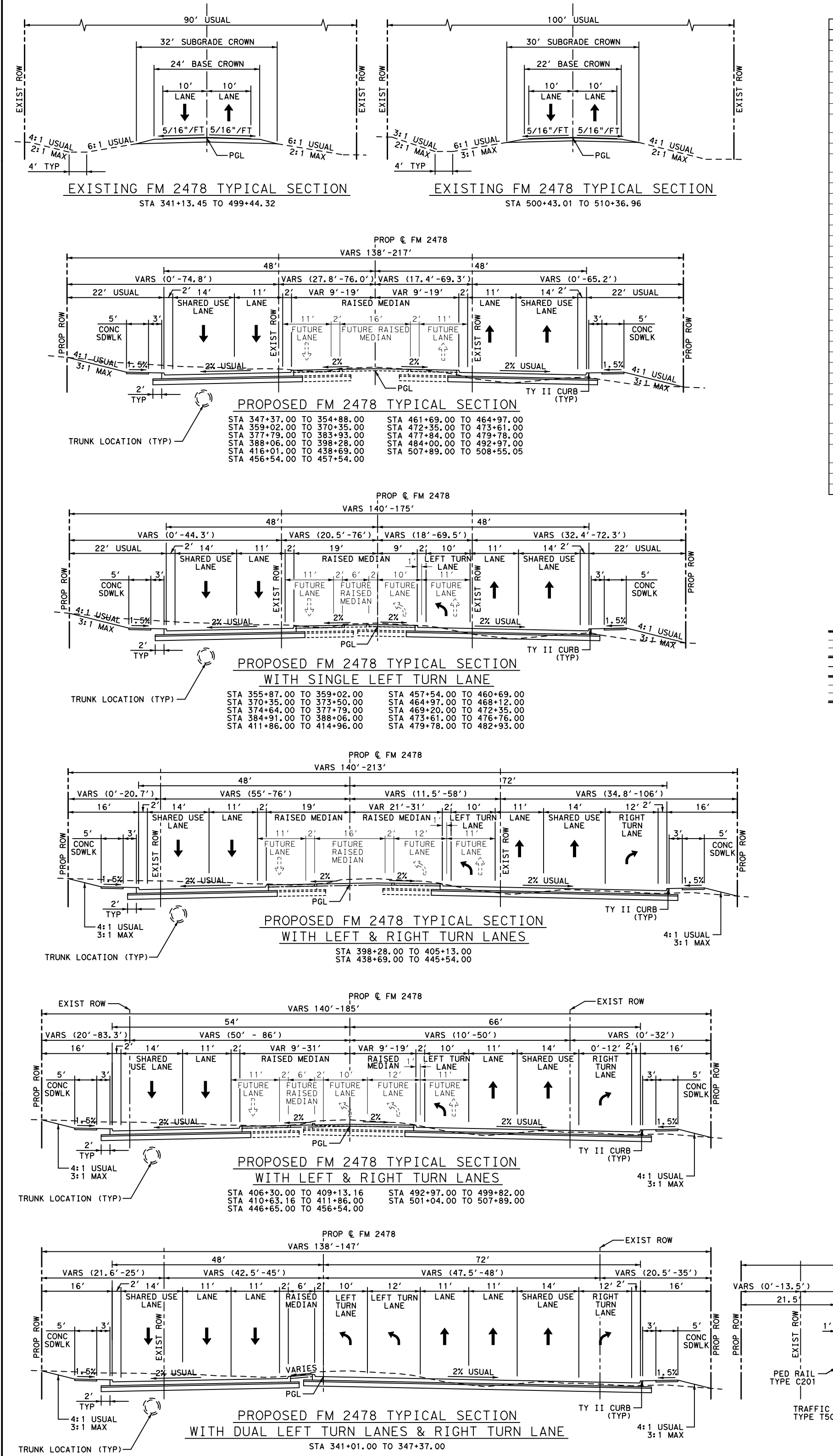
SOURCE: TXDOT: TRANSPORTATION, PLANNING AND PROGRAM DIVISION MEMORANDUM, FEB 25, 2014

PRELIMINARY
FOR REVIEW ONLY
Not for construction, bidding, or permit purposes.
KCI KENNEDY CONSULTING
TBPE REG. # F-926
Engineer KURT W. AUNGST
P.E. No. 90848 Date 9/11/2014

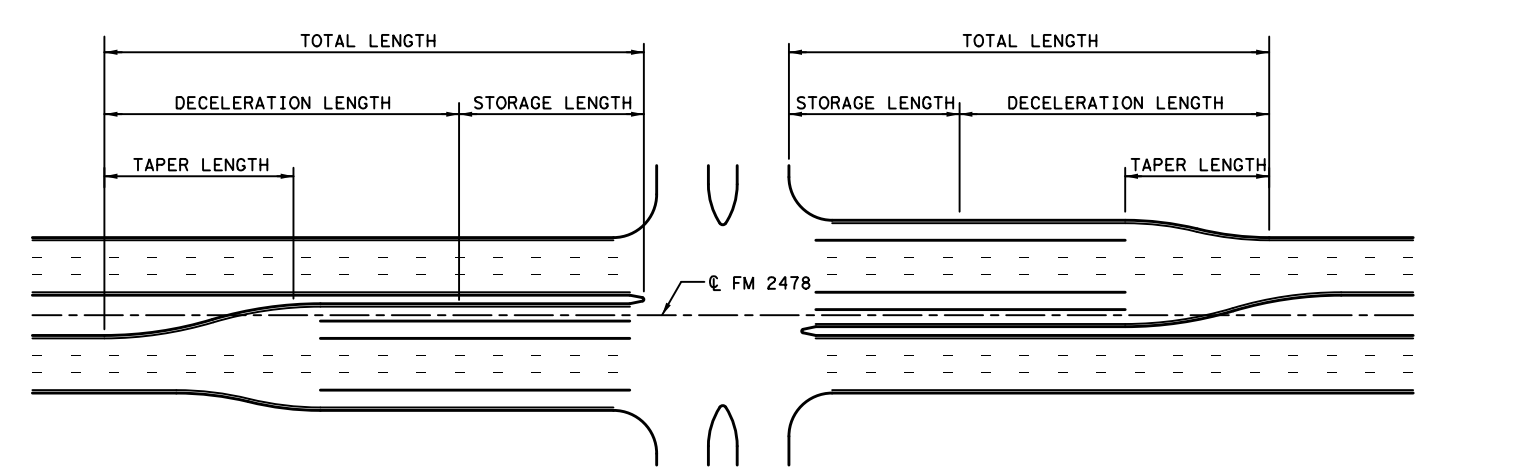
DATE SUBMITTED: ______
DATE REVISED: ______
DATE APPROVED: ______



KCI KENNEDY CONSULTING



PROPERTY OWNERS		
PARCEL #	OWNER	DESCRIPTION
1	ROSEBRIAR PROSPER PLAZA LP	PROSPER PLAZA, BLK A, LOT 1, 0.9196 ACRES
2	ROSEBRIAR PROSPER PLAZA LP	PROSPER PLAZA, BLK A, LOT 6, 3.8267 ACRES
3	KOHL'S ILLINOIS INC	PROSPER PLAZA, BLK A, LOT 5, 7.1999 ACRES
4	FF 14TH FAIRWAY LTD PTNSHP	ABSTRACT A0411 JEREMIAH HORN SURVEY, TRACT 15, 7.5649 ACRES
5	FF 14TH FAIRWAY LTD PTNSHP	ABSTRACT A0411 JEREMIAH HORN SURVEY, TRACT 18, 6.4351 ACRES
6	GESHER VENTURE LTD	CUSTER 380, BLK A, LOT 2, 2.236 ACRES
7	FREMMING M D ESTATES & SHIRLEY GRAVES ESTATE	ABSTRACT A0995 B P WORLEY SURVEY, TRACT 12, 3.991 ACRES
8	LEWIS MICHELE ANN & SHERIDAN ELAINE FREMMING & MICHAEL DOUGLAS FREMMING, JR	ABSTRACT A0995 B P WORLEY SURVEY, TRACT 16, 2.0 ACRES
9	HERBLIN III FAMILY LIMITED PARTNERSHIP THE	ABSTRACT A0995 B P WORLEY SURVEY, TRACT 18, 4.113 ACRES
10	EISENMANN THEODORE J, BUISSON GAYLE E	WALNUT GROVE #1, BLK 2, LOT 3A, 3.0708 ACRES
11	NEWTON KAREN F REVOCABLE TRUST; KAREN F NEWTON TRUSTEE	WALNUT GROVE #1, BLK 2, LOT 2, 5.673 ACRES
12	310 PROSPER LP	ABSTRACT A0411 JEREMIAH HORN SURVEY, TRACT 23, 22.114 ACRES
13	BHARATH EDWARD & PEARL BHARATH	ABSTRACT A0411 JEREMIAH HORN SURVEY, TRACT 13, 3.876 ACRES
14	RICHARDSON WILLIAM P JR	ABSTRACT A0995 B P WORLEY SURVEY, TRACT 7, 1.547 ACRES
15	COOK KENTON C & SUSAN J	WALNUT GROVE #2, BLK 7, LOT 2, 3.9475 ACRES
16	WILES MICHAEL S & CYNTHIA	WALNUT GROVE #2, BLK 7, LOT 3, 3.916 ACRES
17	WILES MICHAEL S ETUX	WALNUT GROVE #2, BLK 7, LOT 4, 3.9015 ACRES
18	BUHOLTZ KENNETH LEO	WALNUT GROVE #2, BLK 7, LOT 5, 3.7905 ACRES
19	METTU VENKATA K & SRILAKSHMI METTU	WALNUT GROVE #2, BLK 5, LOT 18, 2.4841 ACRES
20	MACHAVARAPU RAMESH BABU & ANOOSH MACHAVARAPU	WALNUT GROVE #2, BLK 5, LOT 1, 2.4912 ACRES
21	310 PROSPER LP	ABSTRACT A0411 JEREMIAH HORN SURVEY, TRACT 17, 79.093 ACRES
22	3160 PARTNERS LLC	WALNUT GROVE #2, BLK 4, LOT 9A 10A 10-9 11, 5.82 ACRES
23	3160 PARTNERS LLC	WALNUT GROVE #2, BLK 4, LOT 10D, 1.463 ACRES
24	3160 PARTNERS LLC	WALNUT GROVE #2, BLK 4, LOT 10C, 6.293 ACRES
25	DARLING PRISCILLA L	ABSTRACT A0995 B P WORLEY SURVEY, TRACT 4, 0.8072 ACRES
26	CEMETERY	ABSTRACT A0600 LARKIN MCCARTY SURVEY, TRACT 15, 0.5 ACRES
27	DARLING PRISCILLA L	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 18, 0.663 ACRES
28	DARLING PRISCILLA L	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 25, 25.556 ACRES
29	310 PROSPER LP	ABSTRACT A0600 LARKIN MCCARTY SURVEY, TRACT 14, 59.12 ACRES
30	EVANS JOHN J	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 21, 4.9904 ACRES
31	DAMIANO VINCENT R & BETTY J	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 6, 18.1156 ACRES
32	DAMIANO JAMES VINCENT	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 27, 5.2012 ACRES
33	HUMPHREY SHANE & CHERYL DAMIANO	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 28, 5.2012 ACRES
34	WALNUT GROVE CEMETERY ASSOCIATION ATTN PAUL BAXTER	WALNUT GROVE CEMETERY ADDITION, BLK A, LOT 1, 5.129 ACRES
35	CC JOINT VENTURES LTD	WHITLEY PLACE #2 TRACT B, BLK A, LOT 1, 19.737 ACRES
36	PROSPER TOWN OF	WHITLEY PLACE #1, BLK E, LOT 16X, PARKLAND
37	WCD - WHITLEY PLACE HOMEOWNERS ASSOCIATION INC C/O PREMIER COMMUNITITES MGMT COMPANY	WHITLEY PLACE #1, BLK D, LOT 1X, OPEN SPACE
38	MOWRY RICHARD L	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 16, 1.964 ACRES
39	PET HEAVEN LLC	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 10, 2.497 ACRES
40	CLARK PARTNERS LP	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 4, 66.609 ACRES



TURN LANE DATA

TURN LANE NO.	LOCATION	DIRECTION	LEFT TURN LANE DECEL LENGTH (FT)	LEFT TURN LANE TAPER LENGTH (FT)	LEFT TURN LANE STORAGE LENGTH (FT)	LEFT TURN LANE TOTAL LENGTH (FT)	RIGHT TURN LANE DECEL LENGTH (FT)	RIGHT TURN LANE TAPER LENGTH (FT)	RIGHT TURN LANE STORAGE LENGTH (FT)	RIGHT TURN LANE TOTAL LENGTH (FT)
*1	US 380	SB	215.00	150.00	150.00	365.00	215.00	100.00	100.00	315.00
2	CR 853	SB	215.00	100.00	100.00	315.00				
3	CR 857	NB	215.00	100.00	100.00	315.00				
4	CR 857	SB	215.00	100.00	100.00	315.00				
5	CR 858	SB	215.00	100.00	100.00	315.00				
6	FIRST ST.	NB	215.00	100.00	100.00	315.00	215.00	100.00	100.00	315.00
7	WILMETH RD.	SB	400.00	100.00	100.00	500.00	400.00	100.00	100.00	500.00
8	WILSON CREEK TR	NB	215.00	100.00	100.00	315.00				

*DUAL LEFT-TURN LANES

SUPERELEVATION TRANSITIONS

STATION	SOUTHBOUND SUPERELEVATION	SOUTHBOUND SUPERELEVATION TRANSITION LENGTH	NORTHBOUND SUPERELEVATION	NORTHBOUND SUPERELEVATION TRANSITION LENGTH
341+57.30	-0.35	375'	-0.35	375'
345+32.30	-2.00		-2.00	
351+17.00	-	-	-2.00	375'
354+92.00	-		2.00	
355+90.00	-	-	2.00	375'
359+65.00	-		-2.00	
367+44.00	-2.00	375'	-	-
371+19.00	2.00		-	
372+06.00	2.00	375'	-	-
375+81.00	-2.00		-	
400+75.00	-2.00	375'	-	-
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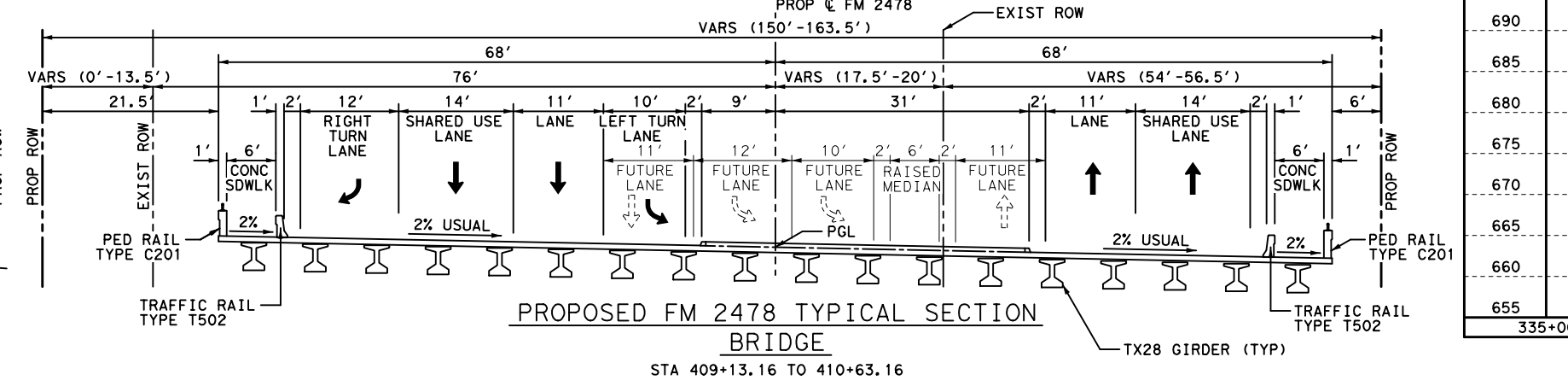
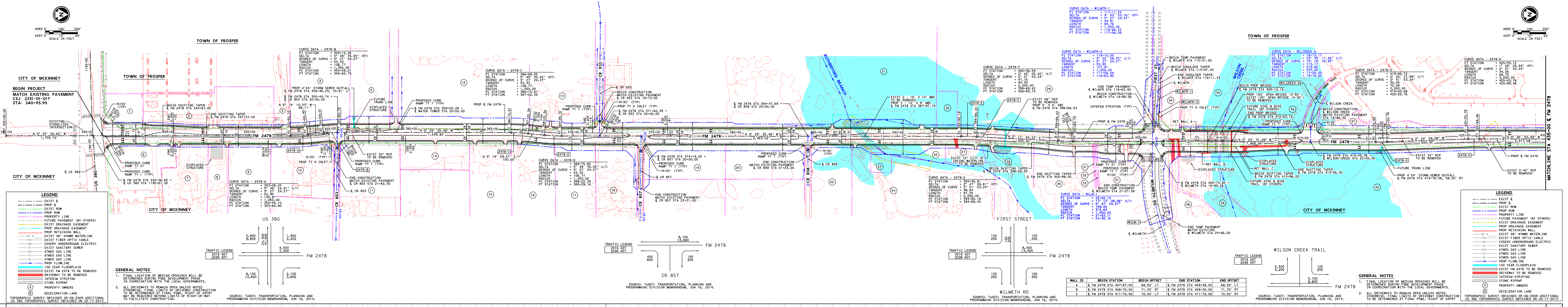
419+96.00	-2.00		-	





Texas Department of Transportation

DALLAS DISTRICT

William L. Hale, P.E., District Engineer

COLLIN COUNTY

DESIGN SCHEMATIC

FM 2478

WIDEN TWO LANE RURAL HIGHWAY TO FOUR LANE DIVIDED; REALIGN INTERSECTION AT FM 1461; SIX LANE ULTIMATE

PROJECT LENGTH 3.174 MILES

CSJ No. 2351-01-017
LIMITS: FROM U.S. 380 TO NORTH OF FM 1461
LENGTH: 3.174 MILES

FUNCTIONAL CLASSIFICATION
MINOR ARTERIAL ROAD

DESIGN SPEED:
FM 2478 = 45 MPH
CR 853 = MOIEC
CR 933 = MOIEC
CR 857 = MOIEC
CR 858 = MOIEC
FIRST ST = 40 MPH
WILMETH RD = 45 MPH
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BLOOMDALE RD = 45 MPH
RHEA MILLS CIR = 20 MPH
CHRISTIE FARMS BLVD = 35 MPH
FM 1461 = 45 MPH
CONNECTION TO EXISTING = 30 MPH

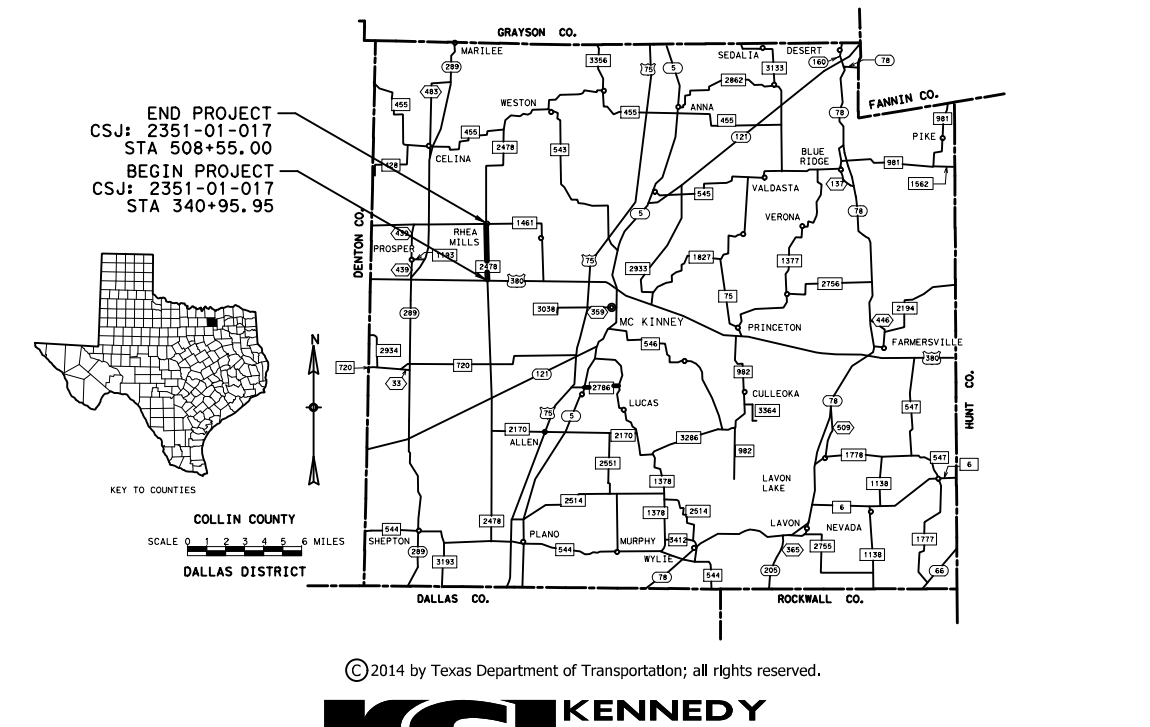
SCALE: HORIZONTAL 1IN = 100 FT
VERTICAL 1IN = 10 FT

ROLL 1 OF 2

SEPTEMBER 2014

DATE SUBMITTED: ______
DATE REVISED: ______
DATE APPROVED: ______

KCI KENNEDY CONSULTING



Texas Department of Transportation

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VERTICAL 1IN = 10 FT

ROLL 2 OF 2

SEPTEMBER 2014

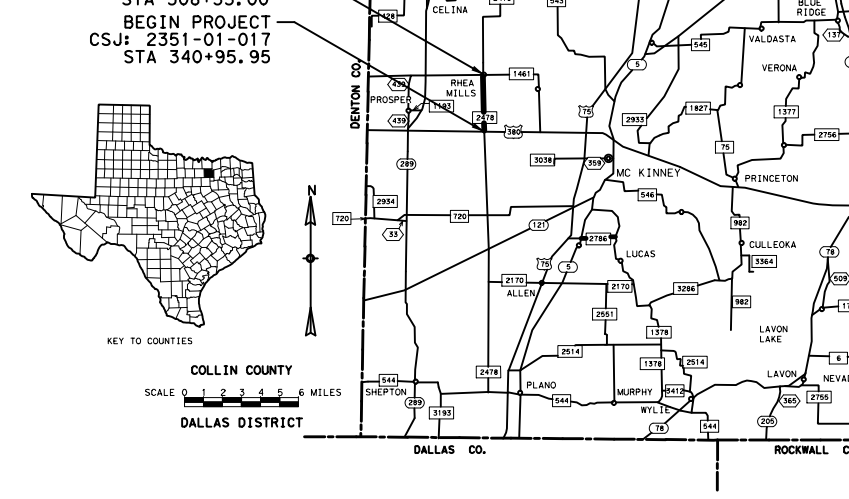
FM 2478 TRAFFIC DATA	
YEAR	ADT
2016	8,500
2036	14,200

DIR DIST: 61-39
% TRUCK ADT: 4.5
% TRUCK DHV: 3.4
K FACTOR: 11.2

SOURCE: TXDOT: TRANSPORTATION, PLANNING AND PROGRAM DIVISION MEMORANDUM, FEB 25, 2014

PRELIMINARY
FOR REVIEW ONLY
Not for construction, bidding, or permit purposes.
KCI KENNEDY CONSULTING TBPE REG. # F-926
Engineer KURT W. AUNGST
P.E. No. 90848 Date 9/11/2014

DATE SUBMITTED: ______
DATE REVISED: ______
DATE APPROVED: ______



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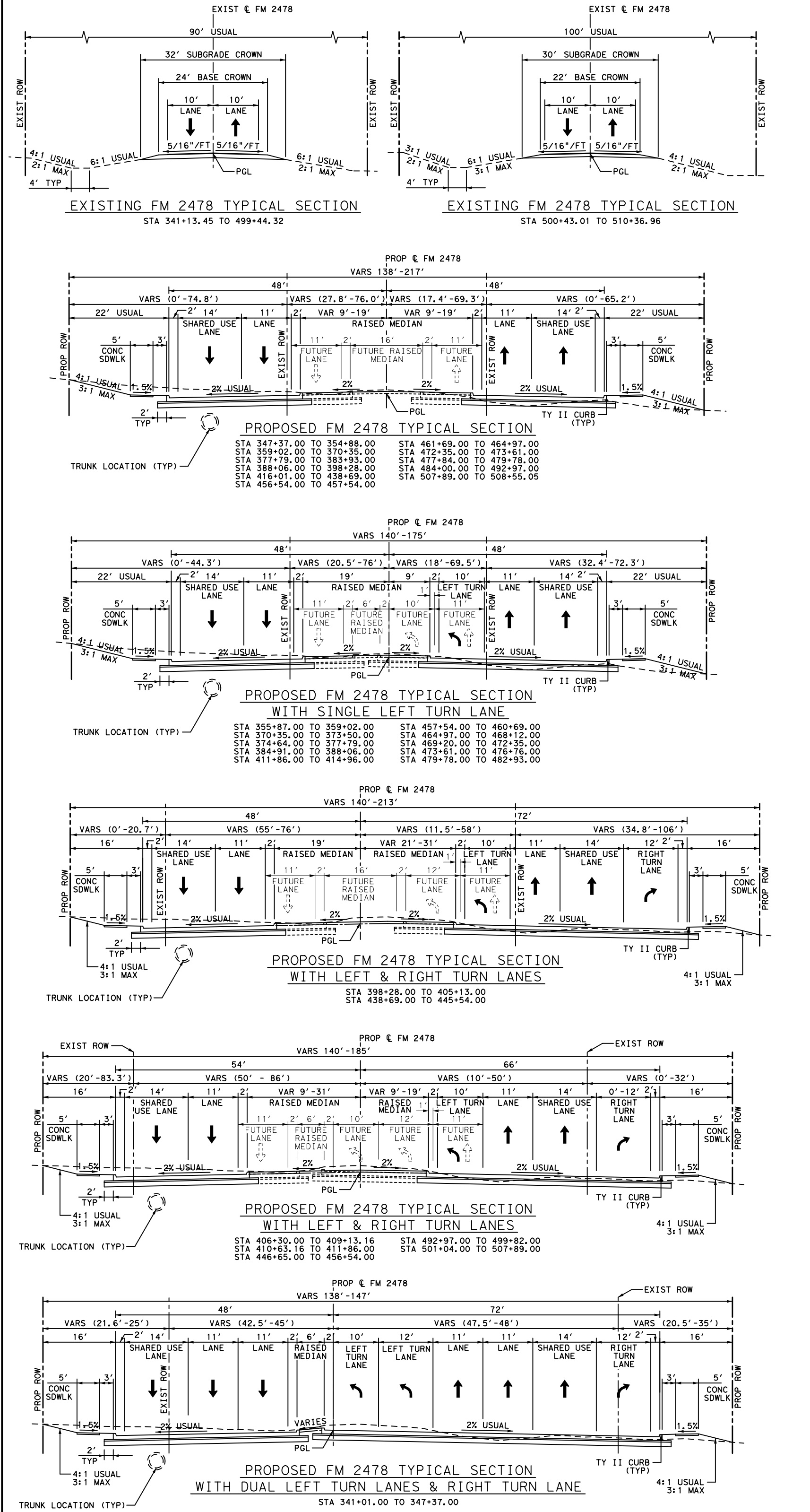
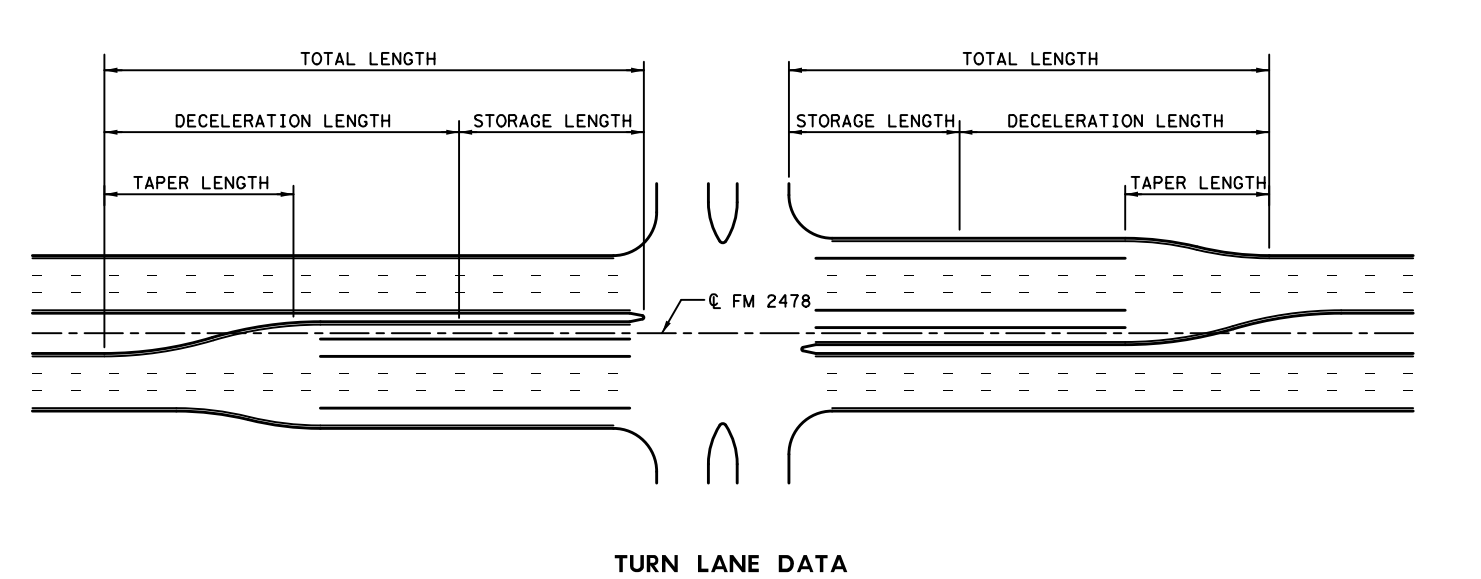
TBPE REGISTRATION NO. F-926



PROPERTY OWNERS		
PARCEL #	OWNER	DESCRIPTION
37	WCD - WHITLEY PLACE HOMEOWNERS ASSOCIATION INC C/O PREMIER COMMUNITITES MGMT COMPANY	WHITLEY PLACE #1, BLK D, LOT 1X, OPEN SPACE
40	CLARK PARTNERS LP	ABSTRACT A0206 JOHN CRUTCHFIELD SURVEY, TRACT 4, 66.609 ACRES
41	WCD - WHITLEY PLACE HOMEOWNERS ASSOCIATION INC C/O PREMIER COMMUNITITES MGMT COMPANY	WHITLEY PLACE #2A, BLK D, LOT 2X, 0.2 ACRES, OPEN SPACE LANDSCAPE BUFFER
42	WHITLEY PLACE #4 HOMEOWNERS ASSOCIATION C/O CC JOINT VENTURES LTD ATTN-DALE CLARK	WHITELY PLACE #4, BLK A, LOT 1X, 2.481 ACRES, OPEN SPACE
43	COLLIN COUNTY LIGHTHOUSE CHRISTIAN FELLOWSHIP INC	LIGHTHOUSE CHURCH, BLK A, LOT 1, 4.037 ACRES
44	ZOLLER JAMES M & GAIL SHIRLEY LEBOVIC	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 19, 5.716 ACRES
45	LEMAY LARRY A	RHEA MILLS ESTATES, BLK A, LOT 1, 1.0083 ACRES
46	ST ANDREWS INTERESTS LLC C/O MARK GRIEGE	ABSTRACT A0816 LANG C SEARCY SURVEY, TRACT 34, 27.752 ACRES
47	MCADAMS FORREST J III	RHEA MILLS ESTATES, BLK B, LOT 30, 1.1053 ACRES
48	WALL CHRISTOPHER & MELANIE	RHEA MILLS ESTATES, BLK B, LOT 1, 1.1002 ACRES
49	SEEING STARS LTD	ABSTRACT A0816 LANG C SEARCY SURVEY, TRACT 1, 345.975 ACRES
50	MCCABE RICHARD JR & VICIE M	RHEA MILLS ESTATES, BLK A, LOT 46, 1.1334 ACRES
51	WELDING SERVICE AND SUPPLY INC	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 7, 1.287 ACRES
52	2009 CHRISTIE FARMS PROPERTIES LLC	CHRISTIE FARMS #1, BLK A, LOT 2, 1.0 ACRES
53	2009 CHRISTIE FARMS PROPERTIES LLC	CHRISTIE FARMS #1, BLK A, LOT 1, 1.0 ACRES
54	F H C ENTERPRISES INC	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 15, 0.1314 ACRES
55	MCKINNEY CITY OF	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 20, 0.5824 ACRES
56	2009 CHRISTIE FARMS PROPERTIES LLC	CHRISTIE FARMS #1, BLK A, LOT 40, 1.0 ACRES
57	2009 CHRISTIE FARMS PROPERTIES LLC	CHRISTIE FARMS #1, BLK A, LOT 39, 1.029 ACRES
58	2009 CHRISTIE FARMS PROPERTIES LLC	CHRISTIE FARMS #1, BLK A, LOT 38, 1.338 ACRES
59	CHESNEY JOE WAYNE	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 4, 5.765 ACRES
60	RHEA'S MILL BAPTIST CHURCH C/O CURTIS W HARRISON	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 5, 0.34 ACRES
61	RHEA'S MILL BAPTIST CHURCH C/O CURTIS W HARRISON	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 29, 1.0 ACRES
62	STANDERFER JERRY	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 2, 2.0 ACRES
63	STANDERFER JERRY	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 12, 0.31 ACRES
64	PROSPER STORAGE LP C/O MIKE GHANI	PROSPER SELF STORAGE, BLK A, LOT 1, 4.156 ACRES
65	HAGGARD RHEA MILLS LLC	ABSTRACT A0412 GEORGE HORN SURVEY, TRACT 1, 14.0 ACRES
66	HAGGARD RHEA MILLS LLC	ABSTRACT A0816 LANG C SEARCY SURVEY, TRACT 32, 53.22 ACRES
67	KIM YOUNG LEI	ABSTRACT A0945 COLEMAN WATSON SURVEY, BLK 4, TRACT 55, 34.62 ACRES
68	NICID LIMITED PARTNERSHIP THE	ABSTRACT A0945 COLEMAN WATSON SURVEY, BLK 4, TRACT 54, 1.752 ACRES
69	BOBCAT CORP	ABSTRACT A0945 COLEMAN WATSON SURVEY, SHEET 4, TRACT 39, 2.5 ACRES
70	BOBCAT CORPORATION	ABSTRACT A0945 COLEMAN WATSON SURVEY, BLK 4, TRACT 40, 2.0 ACRES
71	BOBCAT CORPORATION	ABSTRACT A0945 COLEMAN WATSON SURVEY, BLK 4, TRACT 57, 0.5 ACRES
72	SWANNER JEFFREY A	SWANNER, BLK A, LOT 2, 4.56 ACRES
73	SWANNER JEFFREY A	SWANNER, BLK A, LOT 1,1.39 ACRES
74	BRINKER MGMNT TR THE; H ROSS PEROT & PETE SCHENKEL - CO-TRUSTEES	ABSTRACT A0945 COLEMAN WATSON SURVEY, BLK 5, TRACT 48, 486.898 ACRES

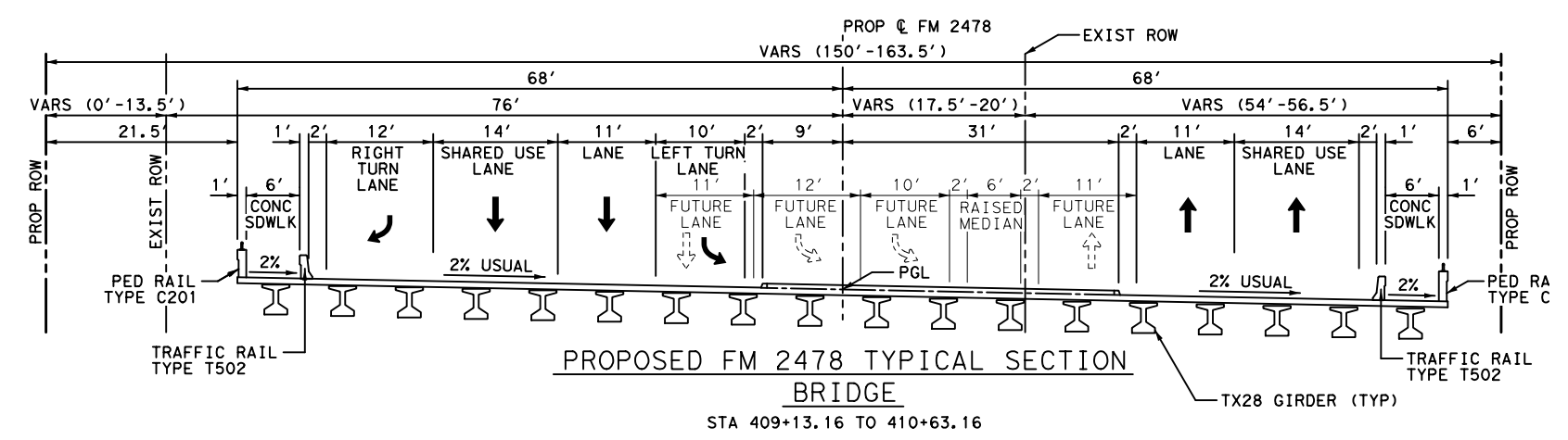


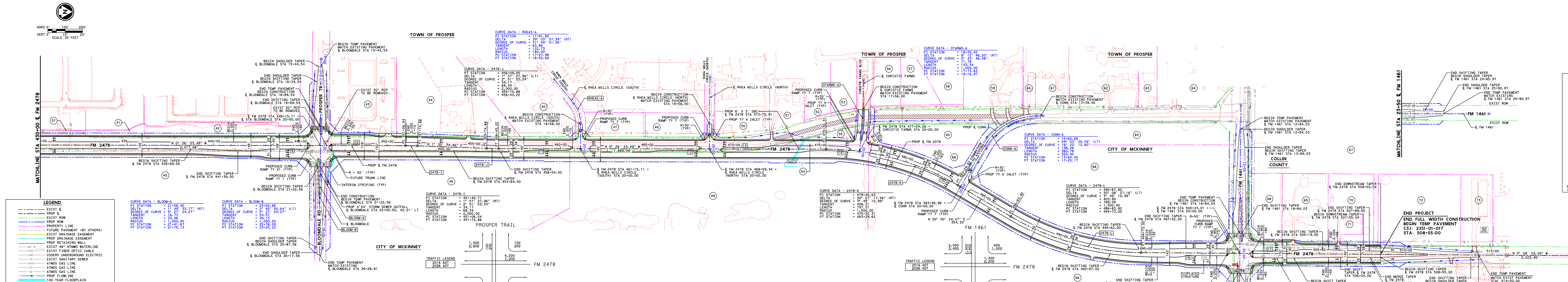
TURN LANE DATA

TURN LANE NO.	LOCATION	DIRECTION	LEFT TURN LANE DECEL LENGTH (FT)	LEFT TURN LANE TAPER LENGTH (FT)	LEFT TURN LANE STORAGE LENGTH (FT)	LEFT TURN LANE TOTAL LENGTH (FT)	RIGHT TURN LANE DECEL LENGTH (FT)	RIGHT TURN LANE TAPER LENGTH (FT)	RIGHT TURN LANE STORAGE LENGTH (FT)	RIGHT TURN LANE TOTAL LENGTH (FT)
9	PROSPER TR.	NB	215.00	100.00	100.00	315.00	215.00	100.00	100.00	315.00
10	BLOOMDALE RD.	SB	215.00	100.00	100.00	315.00	215.00	100.00	100.00	315.00
11	RHEA MILLS CIR S	NB	215.00	100.00	100.00	315.00				
12	RHEA MILLS CIR N	NB	215.00	100.00	100.00	315.00				
13	RHEA MILLS CIR N	SB	215.00	100.00	100.00	315.00				
14	CHRISTIE FARMS BLVD	NB	215.00	100.00	100.00	315.00				
15	SPUR	NB	215.00	100.00	100.00	315.00				
16	FM 1461	NB	215.00	100.00	100.00	315.00	215.00	100.00	100.00	315.00
17	FM 1461	SB	215.00	100.00	100.00	315.00	215.00	100.00	100.00	315.00

SUPERELEVATION TRANSITIONS

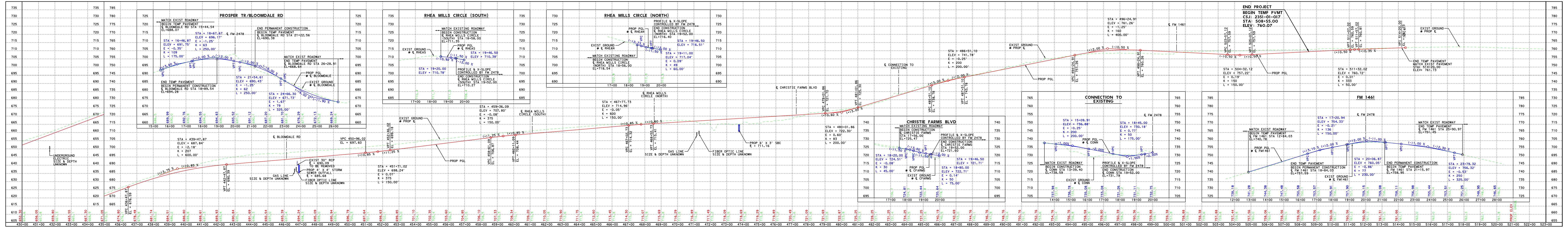
STATION	SOUTHBOUND SUPERELEVATION	SOUTHBOUND SUPERELEVATION TRANSITION LENGTH	NORTHBOUND SUPERELEVATION	NORTHBOUND SUPERELEVATION TRANSITION LENGTH
441+15.00	-2.00	375'	-	-
444+90.00	2.00		-	
447+35.00	2.00	375'	-	-
451+10.00	-2.00		-	
456+95.00	-2.00	375'	-	-
460+70.00	2.00		-	
477+88.00	2.00	375'	-	-
481+63.00	-2.00		-	
495+35.00	-2.00	375'	-2.00	375'
499+10.00	-0.95		0.25	
501+80.00	-0.95	375'	0.25	375'
505+55.00	-2.00		-2.00	





GENERAL NOTES

1. FINAL LOCATION OF MEDIAN OPENINGS WILL BE DETERMINED DURING PS&E DEVELOPMENT PHASE IN COORDINATION WITH THE LOCAL GOVERNMENTS.
2. ALL DRIVEWAYS TO REMAIN OPEN UNLESS NOTED OTHERWISE. FINAL LIMITS OF DRIVEWAY CONSTRUCTION TO BE DETERMINED AT FINAL PS&E. RIGHT OF ENTRY MAY BE REQUIRED BEYOND LIMITS OF RIGHT-OF-WAY TO FACILITATE CONSTRUCTION.



Texas Department of Transportation
DALLAS DISTRICT
William L. Hale, P.E., District Engineer
COLLIN COUNTY
DESIGN SCHEMATIC
FM 2478
WIDEN TWO LANE RURAL HIGHWAY TO FOUR LANE DIVIDED; REALIGN INTERSECTION AT FM 1461; SIX LANE ULTIMATE
PROJECT LENGTH 3.174 MILES
CSJ No. 2351-01-017
LIMITS: FROM U.S. 380 TO NORTH OF FM 1461
LENGTH: 3.174 MILES
FUNCTIONAL CLASSIFICATION
MINOR ARTERIAL ROAD
SCALE: HORIZONTAL 1IN = 100 FT
VERTICAL 1IN = 10 FT
ROLL 2 OF 2
SEPTEMBER 2014