Archeological Background Study

Project Name: Safe Routes to School Pedestrian Improvements

Roadway Name: Safe Routes to School Pedestrian Improvements

Limits From: Various

Limits To: C.C. Moss Elementary School and M.L. Phillips Elementary School

District(s): Fort Worth

County(s): Tarrant

CSJ Number(s): 0902-90-084

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Report Completion Date: January 24, 2020

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Introduction

This project may require compliance both with Section 106 of the National Historic Preservation Act and with the Texas Antiquities Code. The purpose of this document is to identify risks for archeological historic properties within the project's area of potential effects (APE). The document also considers whether any cemeteries may extend into the APE, requiring compliance with the state Health and Safety Code.

The following sections list the results of review of readily-available information for the APE's setting and adjacent areas. The report also evaluates adjacent areas (a buffer zone; see Recommendations Section for definition of the buffer zone). The buffer zone is evaluated in case a subsequent design change expands the APE. This report concludes with separate recommendations regarding project effects and the need for additional work within shallow deposits less than three feet in depth and within Holocene-age deposits of three feet or greater depth, if such deep deposits are present.

This background study is (check one):

☒ the initial study for this project

☐ a continuation of previous investigations due to design changes or other reasons

If this box is checked, then answer the questions below only for the area that is affected by the design change.

Area of Potential Effects

The APE is defined to encompass the limits of the existing right of way; proposed, new project right of way; permanent and temporary easements; and any project-specific locations and utility relocations designated by TxDOT. Note: the APE encompasses the entirety of the project area, regardless of the extent of prior archeological investigations, the particular locations subject to proposed field investigations, or the portion of a project added through a design change. If impacts are not known, worst-case impacts are assumed in defining the APE.

See **Figures 1a and 1b** in **Attachment 1** for a map of the APE, which is based on the project information attached as **Attachment 2**.

Information Source Checklist

(check each source of information that was consulted by the professional archeologist in preparing this background study—the number and type of sources are at the professional archeologist's discretion)

☒ Labelled USGS 7.5' topographic quadrangle project location map (or equivalent if a 7.5' quadrangle is unavailable) is attached and includes an inset map that depicts the county within Texas where the project occurs.

☒ Predictive Archeological Liability Map (PALM) is attached if available *(consult TxDOT's Environmental Compliance Toolkit).*

☐ Geologic Atlas of Texas map is attached *(PALM may be substituted for the GAT map, if it's available).*

☐ Soils map is attached *(PALM may be substituted for the soils map, if it's available)*.

☐ FEMA flood hazard map is attached.

☐ National Wetlands Inventory map is attached

☒ Texas Archeological Sites Atlas map is attached, depicting any sites within one kilometer of the APE or additional APE.

☐ Historic topographic map is attached.

☐ Historic soils map is attached.

☐ Historic road map is attached.

☐ As-built plans for roadway are attached.

☐ Other map of historic information is attached.

Specify Map:

☐ Aerial images are attached.

☒ Project area photographs are attached.

Analysis of Project Setting

- **Previously-Identified Archeological Sites**

☒ No archeological sites have been identified within the APE or within 150 feet of the APE

☐ Archeological sites have been identified within the APE or within 150 feet of the APE

- **Previously–Identified Cemeteries**

☒ No known cemetery sites occur within the APE or within 150 feet of the APE.

☐ Cemeteries occur within the APE or within 150 feet of the APE.

- **Holocene-Age Deposits**

☒ No Holocene-age deposits occur within or adjacent to the APE.

☐ Holocene-age deposits occur within or adjacent to the APE.

Geologically, the C.C. Moss Elementary School APE is primarily underlain by Cretaceous-age Grayson Marl and Main Street Limestone, undivided, that consists of mostly Grayson Marl, calcareous clay, and marl with thin limestone beds in the upper one third. The overall thickness of the formation is 20 to 35 feet thick. The M.L. Phillips Elementary School APE is primarily underlain by the Cretaceous-age Duck Creek Formation that consists of mostly limestone with pyrite nodules and Gryphaea and ammonites marine megafossils. The average thickness of the formation is 30 to 100 feet thick (USGS 2020a).

According to Natural Resources Conservation Service data, there are two mapped soils in the C.C. Moss Elementary School APE. These soils are primarily Ponder-Urban Land Complex on 0 to 3 percent slopes, with a smaller section of Crosstel-Urban Land Complex on 1 to 5 percent slopes. Both soil types are deep, moderately well drained, very slowly to moderately permeable soils that formed in clayey residuum or clayey marine sediments. The soils are located on nearly level to gently sloping ancient stream terraces and shoulders and backslopes of hills. Shallow A Horizons (Ap, A) composed of mottled clay loam or fine sandy loam extending 5 to 7 inches overlie B Horizons (Bt, BCk, BCt) with mottled clay and calcium carbonate and slicken slides extending to 7 to 80 inches indicating that these soils have strong shrink-swell potential. Underlying the B Horizon in the Crosstel Series is a C Horizon (Cd) comprised of mottled shaly clay from 46 to 70 inches. Urban land are those soils that exhibit extension anthropogenic alteration so that the original soil is no longer recognizable (Soil Survey Staff 2020).

Similar soils are mapped in the M.L. Phillips Elementary School APE with Purves-Urban Land complex on 0 to 5 percent slopes the dominant soil type. Additional soils include Sanger-Urban Land Complex on 1 to 5 percent slopes, and Aledo-Bolar-Urban Land Complex on 3 to 20 percent slopes. The Purvis soils consist of well drained, moderately slowly permeable soils that formed in interbedded limestone and Marl that are found on gently to steeply sloping upland divides. A shallow A Horizon of mottled clay extends to 8 inches, underlain by an Ak Horizon of mottled clay with calcium carbonate to 12 inches deep. Underlying the A Horizons

is a Bk Horizon from 12 to 14 inches composed of mottled very gravelly clay. The Bolar and Aledo Series are mapped with a R Horizon, limestone bedrock, underlying the B Horizons at 16 inches in the Aledo Series, and 36 inches in the Bolar Series. Urban land are those soils that exhibit extension anthropogenic alteration so that the original soil is no longer recognizable (Soil Survey Staff 2020).

- **Historically-Reliable Water Sources**

☒ No historically-reliable water sources occur within 500 feet of the APE.

☐ Historically-reliable water sources occur within 500 feet of the APE, or this question can't be answered confidently.

- **Wetlands and Frequently-Flooded Areas**

☐ The APE and adjacent areas contain wetlands or frequently-flooded areas.

☒ The APE and adjacent areas do not contain wetlands or frequently-flooded areas, or this question cannot be answered confidently.

- **Preferred Landforms for Occupation**

☐ The Atlas map or other information shows that the APE does not contain landforms on which human settlement or occupation typically occurred.

The Fort Worth HPALM shows C.C. Moss Elementary School and the M.L. Phillips Elementary School landforms as uplands with 100 percent negligible potential for shallow or deep prehistoric archeological deposits. See Figures 3a and 3b in Attachment 4.

☒ The Atlas map or other information shows that the APE does contain landforms on which human settlement or occupation typically occurred, or this issue was not resolved with the available information.

Although the Fort Worth HPALM implies a negligible potential for prehistoric deposits, the area is completely inhabited, and historic-age deposits could exist.

- **Prior Disturbances**

Settings that are favorable for human occupation have been subject to the following previous disturbances *(check all that apply).*

☒ Previous road construction and maintenance.

☒ Installations of utilities.

☒ Modern land use practices like plowing, grade modifications, brush clearing, and tree removal,

☒ Industrial, commercial, urban and/or suburban development

☐ Erosion and scouring by natural causes.

☐ Other (identify)

☐ NO PRIOR DISTURBANCES OR UNKNOWN (do not check any foregoing disturbances)

- **Previous Archeological Surveys**

☐ The majority of the settings with high potential for archeological sites within or adjacent to the APE have been previously surveyed.

☒ The majority of the settings with high potential for archeological sites within or adjacent to the APE have not been previously surveyed.

See **Figures 2a and 2b** in **Attachment 3.** According to Atlas data, no previously recorded surveys or cultural resources are located within the C.C. Moss Elementary School APE and the surrounding 1-kilometer buffer. The Masonic Widows and Orphans Home Historic District is mapped 0.95 kilometers west of the school within the APE. The Masonic Widows and Orphans Home Historic District, encompassing 206 acres, was listed in 1992 based on Criterion A (historic events) and Criterion C (design/architecture) and consists of the Late Gothic Revival architecture style dating from the 1900 to 1924 and 1925 to 1949 timeframes. The complex contained the remains of a primary school, print shop, chapel, administrative building, dairy, superintendent's house, senior girl's dormitory, junior girl's dormitory, dining hall, laundry, maintenance garage, museum, senior boy's dormitory, high school, gymnasium, infirmary, preschool residence and school, and six cottages (THC 2020).

According to the Atlas data, no recorded surveys or cultural resources are within a 1-kilometer buffer of the M.L. Phillips Elementary School APE. There are two historical markers located within 1-kilometer of the APE. The Fairfield Gates Apartments Historical Marker is located 0.59 kilometers east of the school. The apartment complex was created and built in the 1950s by J.T. Luther and Earl Wilson originally as a private residence using the Mediterranean and Spanish Revival architecture. The Curzon Place Historical Marker is located 0.79 kilometers east of the school. The apartment complex was part of the commercial and residential area developed in the 1930s employing the Mediterranean style architecture.

Conclusions

- **Results of Previous Investigations**

☒ Previous surveys have covered a sufficient proportion of the APE or adjacent areas to conclude that the APE and adjacent areas are unlikely to contain archeological sites or cemeteries.

☐ Previous surveys have not covered a sufficient proportion of the APE or adjacent areas to draw inferences regarding the presence of archeological sites and cemeteries, or previous surveys show that archeological sites and/or cemeteries are present within the APE.

- **APE Integrity (Prehistoric Sites)**

The APE contains no deposits with sufficient integrity that prehistoric archeological sites would have the potential to address important questions. Any such sites would lack integrity of *(check all that apply):*

☒ Location

☐ Design

☐ Materials

☒ Association

☒ Other (*identify*)

The study area is significantly disturbed by residential development dating back to the 1950s, railroad and utility corridors, and construction and maintenance of roads. Based upon photographs taken in September of 2019, the area is entirely within a residential setting. As a result, any cultural materials located below the surface of the project area have likely been disturbed and/or destroyed. See photographs in Attachment 5.

☐ THE APE HAS THE POTENTIAL TO PRESERVE SITES WITH SUFFICIENT INTEGRITY TO QUALIFY THOSE SITES FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES *(if true, do not check any of the forgoing aspects of integrity)*

- **APE Integrity (Historic-Age Sites)**

The APE contains no deposits with sufficient integrity that historic-age archeological sites would have the potential to address important questions. Any such sites would lack integrity of *(check all that apply)*:

☒ Location

☐ Design

☐ Materials

☒ Association

☐ Other (*identify*)

The APE is significantly disturbed by the construction of residential housing, streets, railroads and multiple buried utilities dating back as early as the 1950s. As a result, any cultural materials located below the surface of the project area have likely been disturbed and/or destroyed. See Attachments 3, 4 and 5

- **Results of Historic Map Research (Historic Age Sites)**

☐ Historic map research shows that historic-era archeological deposits are not likely to occur within or adjacent to the APE

Historic map research shows that historic-era archeological deposits could occur within or adjacent to the APE; this research was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.

☒ The earliest available aerial imagery for the C.C. Moss Elementary School is from 1952, followed by images from 1956, 1963, 1968, 1970, 1979, 1981, 1990, 1995, 2001, 2004, 2008, 2010, 2014 and 2016. Based on the 1952 aerial, the APE and the surrounding area were starting to be developed at that time. By 1968, the school and MLK Freeway had been built along with continued development in the four cardinal directions. The 1970 to 2016 images show no visible change (Google Earth Pro 2020; NETR 2020). The earliest topographic map dating to 1894 shows no structures. Additional maps from 1954-1955, 1957-1958, 1968-1969, 1972-1974, 1981-1982, 1985, 1995, 2001, 2012 and 2016 show the APE and surrounding area as an extant, well established neighborhood with very minimal, if any changes, from the 1950s to 2016 (NETR 2020; USGS 2020b).

The earliest available aerial imagery for the M.L. Phillips Elementary School APE is from 1952, followed by images from 1956, 1963, 1968, 1970, 1979, 1981, 1990, 1995, 2001, 2004, 2008, 2010, 2012, 2014 and 2016. As with the C.C. Moss Elementary School APE, the 1952 aerial shows the school built with more development to the east. The later aerials show development continuing, especially to the west (NETR 2020; Google Earth Pro 2020). The earliest topographic map dating from 1894 shows no development. Additional maps from 1954-1955, 1957-1958, 1968-1969, 1972-1974, 1981-1982, 1985, 1995 and 2001, 2012 and 2016 show the surrounding area as an extant, well established neighborhood with very minimal change, if any, from 1954 to 2001. Later 2012 and 2016 topographic maps only show streets with no greater detail (NETR 2020; USGS 2020b).

- **Results of Map Research (Cemeteries)**

☒ Map research shows that cemeteries are not likely to occur within or adjacent to the APE.

☐ Map research shows that cemeteries could occur within or adjacent to the APE, or this research was inconclusive.

- **Results of Landform Study**

☐ The APE and adjacent areas occur in a setting that was not conducive to human occupation and activity

☒ The APE and adjacent areas occur in a setting that was conducive to human occupation and activity; research on this issue was inconclusive; or this research was not completed because it was not necessary to reach justifiable conclusions.

Recommendations

- **Shallow Deposits**

Evaluate the potential for shallow deposits (Holocene-age deposits less than three-feet in depth) within the APE to contain archeological historic properties and cemeteries. Make appropriate recommendations regarding the need for further work, including the need for shovel test pits, auger probes, or other methods for evaluating shallow deposits.

Soils within the project area exhibit relatively thin A horizons (e.g., less than 7 inches) over clay-rich B horizons and C horizons with clay and calcium carbonate material at the C.C. Moss Elementary School APE (Soil Survey Staff 2020). The Fort Worth HPALM shows C.C. Moss Elementary School landform as uplands with 100 percent negligible potential for shallow or deep prehistoric archeological deposits. As a result, any cultural resources that might be present within the study area are not likely to be shallowly buried. Review of historic topographic maps and aerial photographs indicate the presence of structures or other historic resources from 1950 onward. As a result, the probability for shallowly-buried, intact historic resources is very low. Most importantly, the entire APE is severely disturbed from the construction of housing, installation and maintenance of roads, and multiple buried utility corridors. All of these disturbances combine to make the likelihood of shallowly buried intact cultural resources very low. As a result, no further archeological study is recommended. The M.L. Phillips Elementary School APE has similar shallow A horizons, extending only to 12 inches over gravelly clay or limestone bedrock. See Attachment 4.

- **Deep Deposits**

Evaluation of deep deposits (Holocene-age deposits of three feet or greater depth) may or may not be necessary, depending on the nature of the sediments within the APE and the depth of

proposed impacts. If Holocene-age deposits extend to three feet or more within the APE and would be impacted by the project, make appropriate recommendations regarding the need for further work. If no deep, Holocene-age deposits occur within the APE note that they are absent and indicate that no additional work in needed. If the deep Holocene deposits are present but the project either would not affect them or they have been too extensively disturbed to hold intact archeological deposits, provide an appropriate justification that no additional work is needed.

As discussed above, soils within the two school APE's exhibit thin A horizons over clay and mottled gravelly clay B and Bk horizons over indurated limestone R horizons in areas. This suggests that with the historic and modern disturbance the likelihood of preserved cultural deposits at depth is very low. The Fort Worth HPALM shows M.L. Phillips Elementary School landform as uplands with 100 percent negligible potential for shallow or deep prehistoric archeological deposits. As a result, no deep testing is recommended. See Attachment 4.

- **Recommendations Summary (select only one check box)**

☒ No further study needed ☐ Survey of entire APE ☐ Variable, see attached figure

- **Results Valid Within**

The purpose of considering adjacent areas is to define, when possible, a buffer zone around the APE to which findings of no effect and recommendations for no further work can be extended. No additional investigation should be necessary if a subsequent design change expands the APE into the buffer zone. In some cases, however, no buffer zone may be reasonably defined for the project or portions of the project as expansion of the APE may warrant survey. In such cases, check the middle box and indicate that the results are valid within zero feet of the APE.

☐ 50 feet of APE ☒ <00> feet of APE ☐ Variable, see attached figure

- **The Definition and Evaluation of this Horizontal Buffer Zone is Based on One or More of the Following Considerations**

☒ The integrity of the areas within and adjacent to the setting is affected by prior development.

☒ Previous investigations show that archeological materials are unlikely to exist in this area.

☐ Adjacent areas have potential to preserve archeological sites with good integrity.

☒ Other (specify)

The two school APE's are surrounded in all directions by a heavily disturbed residential setting that extends for over 1000 feet.

Findings of no effect to archeological historic properties and/or State Antiquities Landmarks and recommendations for no further work apply to all areas within the horizontal buffer zone, as specified in the previous section. Any design change within this study area would not require further action or review beyond those actions recommended in this study. Design changes that either extend beyond

the buffer zone or result in potential impacts deeper than the impacts considered in this report would require additional review. Note that no buffer zone may be defined for some projects, based on local conditions.

References Cited

Google Earth

2020 Historic Aerial Imagery viewed through Google Earth. Available at https://www.google.com/earth/. Accessed January 15, 2020.

Nationwide Environmental Title Research (NETR)

2020 Historic Aerials Database. Nationwide Environmental Title Research. Available at http://historicaerials.com. Accessed January 15, 2020.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture (NRCS)

2020 Soil Survey Geographic (SSURGO) Database for Tarrant County, Texas. Available at http://casoilresource.lawr.ucdavis.edu/soilweb/. Accessed January 15, 2020.

Texas Historical Commission (THC)

2020 *Texas Archeological Sites Atlas Data Sets*. Texas Historical Commission and the Texas Archeological Research Laboratory. Available at http://nueces.thc.state.tx.us. Accessed January 15, 2020.

Tipton, J.

2020 "Polytechnic Cemetery". *FindAGrave*. Available at https://www.findagrave.com/cemetery/2253747/polytechnic-cemetery. Accessed January 16, 2020.

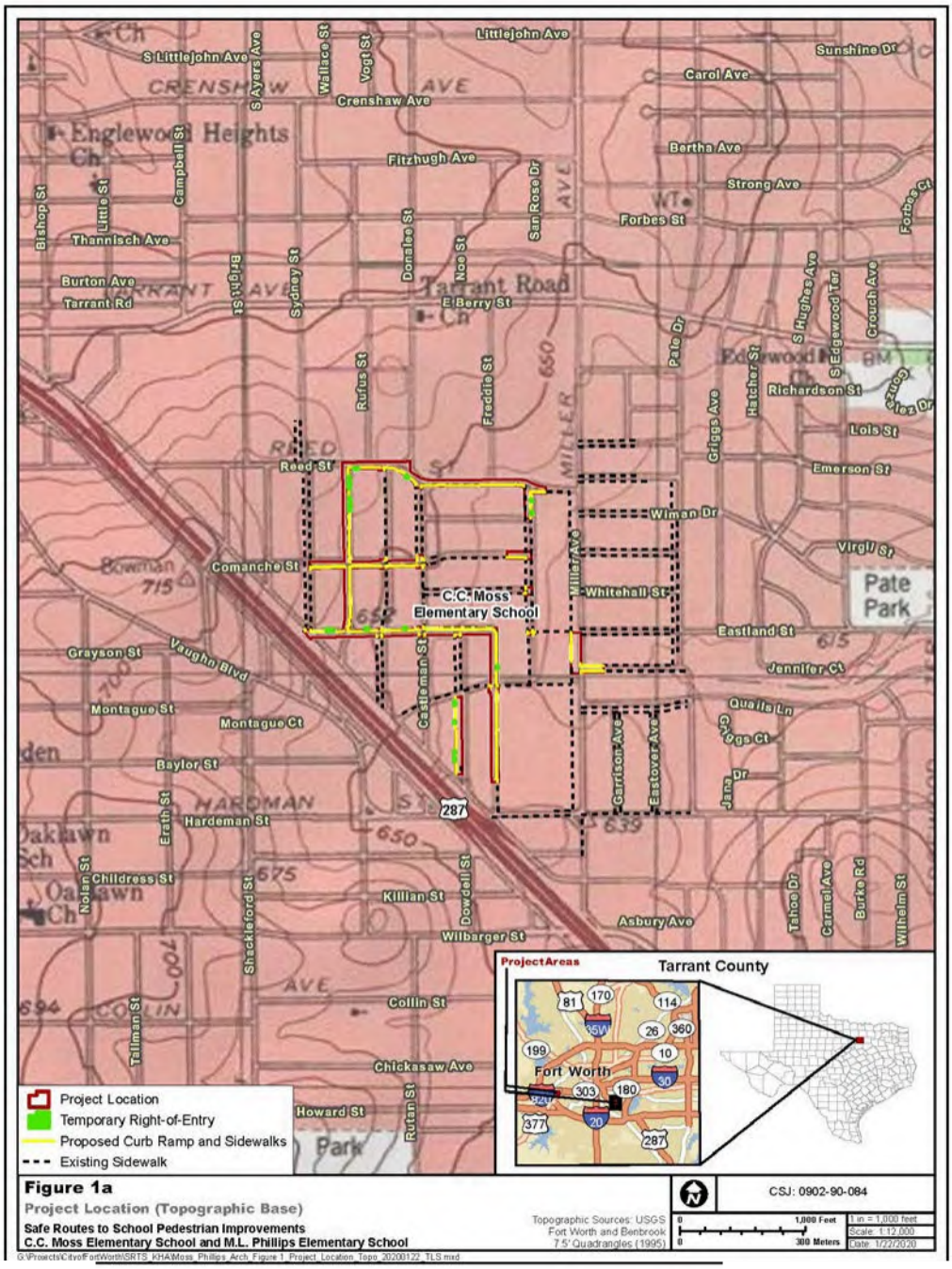
U.S. Geological Survey (USGS)

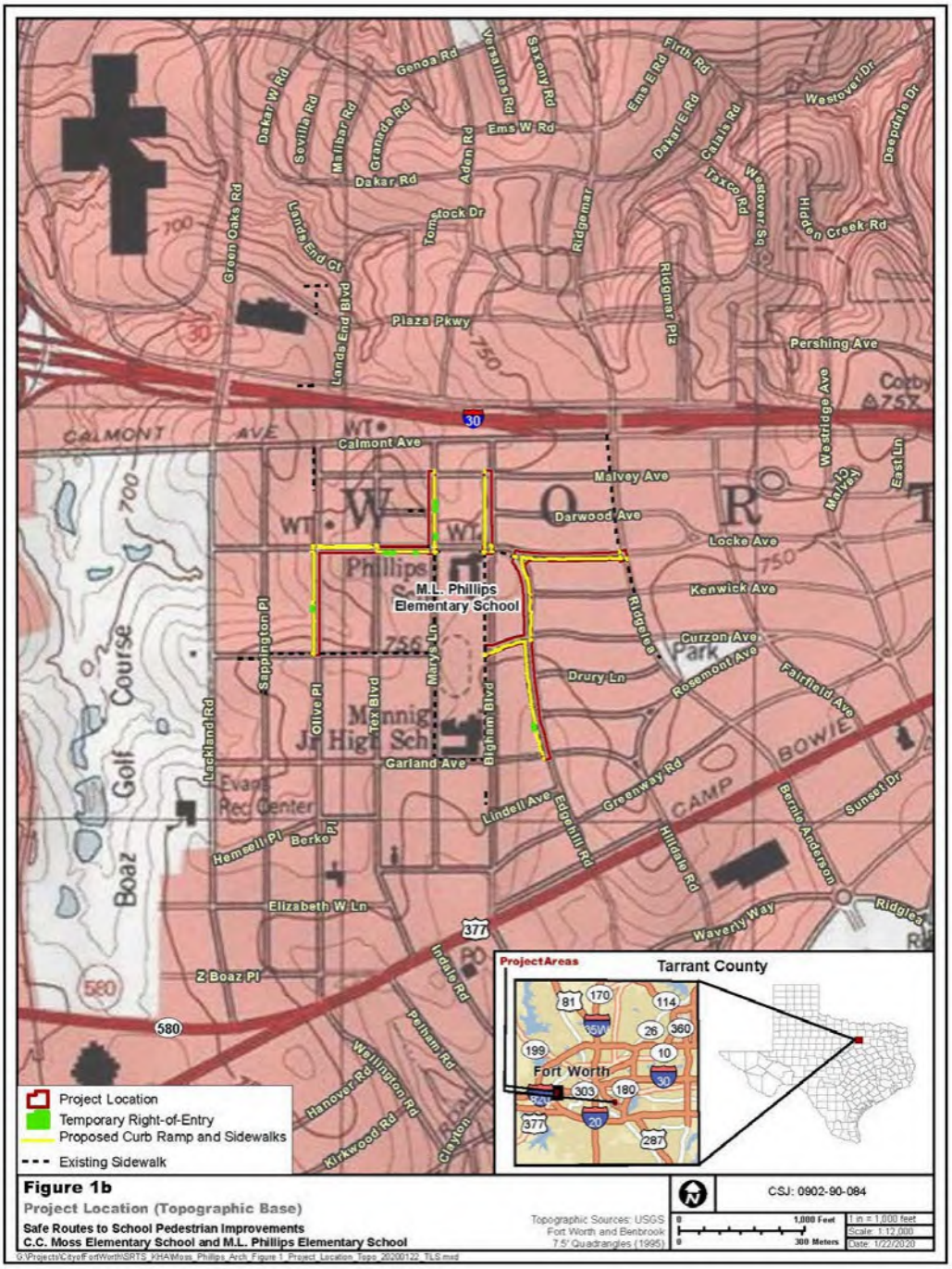
2020a Texas Geology Map Viewer. Available at http://txpub.usgs.gov/dss/texasgeology/. Accessed January 15, 2020.

2020b Historical Map Viewer. Available at http://livingatlas.arcgis.com/topoexplorer/index.html. Accessed January 15, 2020.

Attachments

Attachment 1 – Map showing horizontal extent of APE, including existing ROW and proposed ROW/new easements




Project Location
Temporary Right-of-Entry
Proposed Curb Ramp and Sidewalks
Existing Sidewalk
M.L. Phillips Elementary School
Project Areas
Tarrant County
Fort Worth
CSJ: 0902-90-084
Figure 1b
Project Location (Topographic Base)
Safe Routes to School Pedestrian Improvements
C.C. Moss Elementary School and M.L. Phillips Elementary School
Topographic Sources: USGS Fort Worth and Benbrook 7.5' Quadrangles (1995)

Attachment 2– Project information

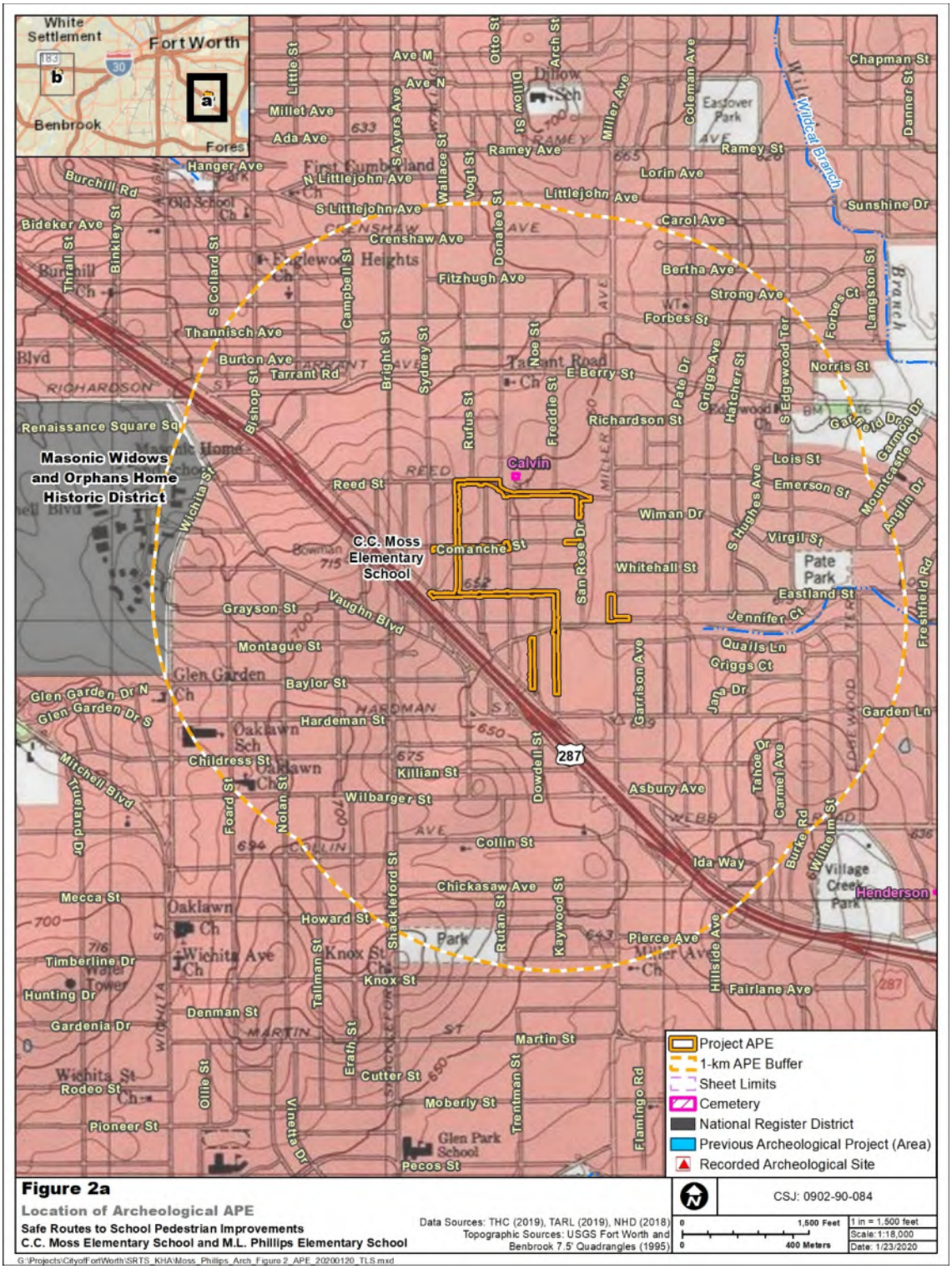
The City of Forth Worth proposes the installation of 2.7 miles of sidewalk along various roadways in proximity to C.C. Moss Elementary School and M.L. Phillips Elementary School, in the City of Fort Worth, Tarrant County, Texas. The proposed sidewalks would vary from 4-foot to 6-foot in width with a 4-inch thick reinforced concrete surface. In addition to sidewalk installation, the project activities would include the installation of ADA compliant curbs, ramps, signage, crosswalk markings, and driveway reconstruction. No additional right-of-way (ROW) is anticipated; however, approximately 26 temporary right-of-entry agreements are proposed to accommodate driveway reconstruction. Additional potential impacts may include removal/replacement or relocation of mailboxes, fire hydrants, trees, and utility power poles.

The project area around Moss Elementary School is located in southeast Fort Worth north of the intersection of United State Highway 287 (U.S. 287) and Miller Avenue. Approximately 1.6 miles of sidewalks are proposed along the following roadways: Dowdell Street, Freddie Street, San Rose Drive, Miller Avenue, Grayson Street, Comanche Street, Reed Street, Rufus Street, Baylor Street, Quails Lane, and Castleman Street. The improvements would include the reconstruction of approximately 17 existing driveways, as well as crosswalk markings and signage at the improved intersections.

The project area around M.L. Phillips Elementary School is located southwest of the intersection of Interstate Highway 30 (I-30) and Ridgelea Avenue in west Forth Worth. Approximately 1.1 miles of sidewalk are proposed along the following roadways: Locke Avenue, Curzon Avenue, Olive Place, Mary's Lane, Bigham Boulevard, Edgehill Road, and Ridgelea Avenue. The improvements would include the reconstruction of approximately 9 existing driveways, as well as crosswalk markings and signage at the improved intersections.

The maximum depth of excavation associated with installation of the proposed sidewalks and private drive reconstruction is expected to be no more than 1.5 feet.

Attachment 3 – THC Atlas Data



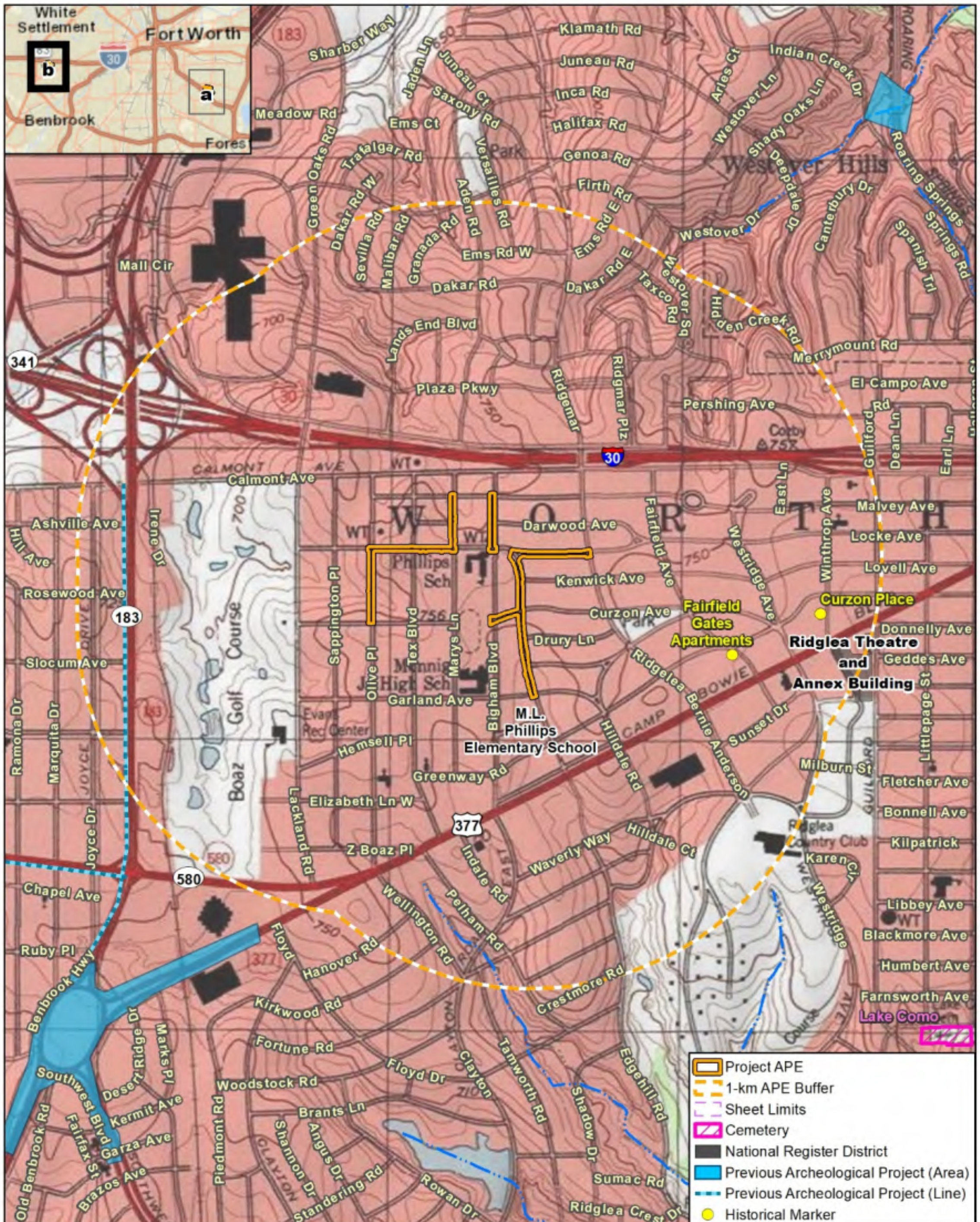


Figure 2b

Location of Archeological APE

Safe Routes to School Pedestrian Improvements
C.C. Moss Elementary School and M.L. Phillips Elementary School

Data Sources: THC (2019), TARL (2019), NHD (2018)
Topographic Sources: USGS Fort Worth and Benbrook 7.5' Quadrangles (1995)

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Attachment 4 – HPALM Data


Aden Rd
Ridgemar
30
Calmont Ave
Malvey Ave
Darwood Ave
M.L. Phillips Elementary School
Locke Ave
Kenwick Ave
Ridgelea
Bigham Blvd
Curzon Ave
Tex Blvd
Marys Ln
Olive Pl
Drury Ln
Rosemont Ave
Hilldale Rd
Garland Ave
Edgehill Rd
Lindell Ave
Greenway Rd
Hemsell Pl
Berk
Existing Right-of-Way
Temporary Right-of-Entry
HPALM Score
0-negligible potential
1-low potential
Figure 3b
HPALM Map
Safe Routes to School Pedestrian Improvements
C.C. Moss Elementary School and M.L. Phillips Elementary School
Data Source: TxDOT (2011)
Aerial Source: DigitalGlobe (2018)
CSJ: 0902-90-083
400 Feet
100 Meters
1 in = 400 feet
Scale: 1:4,800
Date: 1/22/2020

Attachment 5 – Project area photographs

Photographs of the study area taken in September 2019.

Photograph 1. Reed Street at northern end of C.C. Moss study area (facing south)

Photograph 2. View of Baylor Street from Miller Avenue in the C.C. Moss study area (facing east).

Photograph 3. View of True Vine Missionary Baptist Church in the C.C. Moss Study area (facing west).

Photograph 4. View of Dowdell Street at southern end of C.C. Moss study area (facing north).

Photograph 5. View of northern section along Marys Lane in the M.L. Phillips study area (facing south).

Photograph 6. View of Locke Avenue in the M.L. Phillips study area (facing east).

Photograph 7. View of M.L. Phillips Elementary School on Bigham Boulevard (facing north).

Photograph 8. Southern end of the M.L. Phillips study area on Garland Avenue (facing north).

Attachment 6 – Project Plans