Appendix B

Technical Memoranda and Reports

Technical memoranda and reports were prepared as independent documents to support the preparation of the Final Environmental Impact Statement (FEIS) for the Cotton Belt Corridor Regional Rail Project. Information from these documents was incorporated into the FEIS to provide information on existing conditions, and in some cases assess potential impacts to the resources. Information contained in the FEIS is the most current and supersedes information in the technical memoranda and reports.
B-7

Visual Assessment Existing Conditions Technical Memorandum
MEMO

Date: Monday, July 31, 2017
Project: Cotton Belt Corridor Regional Rail; Visual Assessment Existing Conditions Technical Memorandum
To: John Hoppie
From: Tom Shelton
Subject: Cotton Belt Corridor Regional Rail Project, HDR PN 10024656

Introduction: The following is a review of the existing visual environment along an approximate 26-mile section of freight rail track north of Dallas, Texas, known as the Cotton Belt Corridor. As part of the Cotton Belt Regional Rail Corridor Project (Cotton Belt Project), this section is proposed for the introduction of transit rail service, which would operate in conjunction with continued freight rail service (except for north Dallas where freight has been abandoned). The alignment would deviate from the existing track near CityLine/Bush and Cypress Waters, with minor adjustments in downtown Carrollton and north of Dallas/Fort Worth International Airport (DFW Airport). The Cotton Belt Corridor stretches from the DFW Airport eastward to the Plano/Richardson area of Texas. The corridor passes through or abuts the communities of Grapevine, Coppell, Dallas, Carrollton, Addison, Dallas, Richardson, and Plano. Facilities are to include station sites with rail passenger platforms, bus and auto transfer areas, passenger shelters, parking, associated site amenities, hard-surface pedestrian paths, and landscaping. In addition, modifications would be made to the existing rail alignment within the Cotton Belt Corridor and some track sections added as noted above. A maintenance facility and associated buildings is also proposed as part of the project which is proposed off of Luna Road and Belt Line in Carrollton at 1650 W. Belt Line Road, although additional sites are under evaluation. In addition, Mercer Yard will be decommissioned and its functions will be relocated to two locations; operational functions will be at the new location for Mercer Yard at Columbian Club Drive in Carrollton.

Regulatory Context: The National Environmental Policy Act (NEPA) states the need to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.”

Methodology: Visual resources were inventoried during site visits and field observations of the Cotton Belt Corridor, project study area photographs, and online aerial imagery. Visual resources are considered to be components of the natural and built environment that are capable of being seen. Viewers are considered to be neighbors who can see the proposed project and travelers who would use the proposed transit facility. Neighbors are defined as civic neighbors and adjacent land uses including: residential, retail, commercial, industrial, agricultural, and recreational. Travelers are defined as transit system users, commuters, haulers, tourists, pedestrians, and the recreating public.
For the purpose of visual analyses, the width of the project study area extends approximately 300 feet (the nominal length of a common city block) on either side of the Cotton Belt Corridor. To accommodate freight and transit rail operations in both directions, it is proposed that one track would primarily be dedicated to passenger operations, while the other track would share both passenger and freight services. It also has been proposed, however, that some sections employ only a single shared track to minimize construction costs and impacts. For this analysis, a double-track configuration is assumed along the entire corridor.

For the purpose of describing the visual resources of the existing rail alignment, the project study area has been divided into three main sections (Sections 1, 2, and 3) and then further subdivided and identified as “A” and “B” within each section. The limits of each section are shown in Figure 1 and are described in this technical memorandum. Also, the visual environment of each of the eleven proposed station areas is discussed and supplemental photographs are included.

Figure 1
Corridor Section Limits

Affected Environment

Overview: The experience of any visual landscape relies on inborn responses to form, pattern, and spatial relationships. But a broad-based visual aesthetic also places emphasis on personal experience, practice, and behavior. It is within this dual framework, ultimately, that a visual quality and aesthetic assessment should be based. The intent of this technical memorandum is to lay the foundation for such assessment by describing the existing conditions that could be affected by the proposed project.

The most striking visual characteristics of places derive from the landforms; the presence or absence of water (and its forms); the type of vegetation and its extent; climatic conditions; and, in the case of the Cotton Belt Project, man-made structures associated with a transit rail line.

The Cotton Belt Corridor is not so much an aerial feature as a linear feature in the larger landscape. As such, visual prospects along the rail alignment are primarily long and narrow. The Cotton Belt Corridor freight rail track bed is generally elevated somewhat (with both at-grade and grade-separated vehicular crossings and bridge crossings at major waterways), in those few spots with little development and few structures, the track rises above the levels of its surroundings to expose panoramic views of the area, which, considering the generally flat terrain, can extend for a mile or more. Though the composition of the scenes along the Cotton Belt Corridor may change in terms of vista and panorama, most views, framed by existing developments on both sides of the Cotton Belt Corridor, are up and down the railroad tracks. Furthermore, it is important to emphasize that the Cotton Belt Corridor predates much of the surrounding development and freight operations have been in existence for decades, such that the introduction of transit service as envisioned for the Cotton Belt project would be a similar and compatible transportation use.

Natural Environment: Within a regional context, the Cotton Belt Corridor is located in the extreme southeast corner of a historically vast prairie extending through Middle America into Canada and westward to the high plains of the Rocky Mountains. Since Anglo-European settlement, the few prairie remnants that have not been cultivated or built upon are semi-arid open grasslands, mostly flat with gently rolling undulating hills, cut intermittently by snaking high cut-banked streams along which the relatively few large overstory trees found in the region are located.

The streams located in the corridor, and often passing under the freight rail tracks, may be permanently flowing or seasonal, with dry beds much of the year. The largest is the Elm Fork of the Trinity River, which, as the Trinity River, makes its way south to the Gulf of Mexico. It passes under the tracks about a mile west of Interstate Highway (IH) 35E (Stemmons Freeway), between Coppell and Carrollton. Smaller permanent and intermittent streams include Cottonwood Branch, immediately south of the proposed DFW North Station (located on DFW property, north of the terminal); Grapevine Creek near the North Lake Station area (included in the proposed Cypress Waters Master Plan); Hutton Branch Creek, north of downtown Carrollton and the Downtown Carrollton Station area; White Rock Creek, east of the Knoll Trail Station area; McKamy Branch, East Fork, adjacent to the Preston Road Station area and the Fairhill School, as well as the Coit Road Station area; Canyon Creek, one-half mile east of the University of Texas at Dallas (UTD) Station area; and Spring Creek and Caruth Branch near the CityLine/Bush Station area. For
residential areas, views with natural environmental features, including streams and trees are visually important.

There is only one lake of consequence in the corridor: North Lake, immediately south of the tracks and the proposed Cypress Waters Station area. The much larger Grapevine Lake is located several miles north of the western end of the corridor and the proposed DFW North Station area.

**Built Environment:** Today’s landscape along the corridor is largely manmade. The foremost visual element is the existing freight rail corridor itself with many of the features associated with freight rail operations, such as railroad crossings and signals (almost all major road crossing within the corridor are at-grade crossings, with exceptions noted elsewhere in the text). The Southern Pacific Railroad owned the Cotton Belt Corridor well before DART purchased it in 1990 for future transit use. Conspicuous also are the electrical power stations (notably the proposed station at North Lake) and the electrical utility towers that parallel and pass over the tracks intermittently along the corridor; as well as the various freeways, with their elevated ramps, overpasses, and interchanges; and the DART Light Rail Transit (LRT) Red Line and Green Line elevated guideways and station platforms. Views of new and older developments along the corridor range from parks and recreational facilities, such as golf courses, to low-density, single-family residences and small commercial/retail malls to high-density, multi-storied, housing, commercial, and institutional buildings, many in urban park-like settings, to airports. Pockets of light and heavy industry, as well as vacant and underutilized parcels can be seen.

**Cotton Belt Corridor Sections and Station Areas**

The following is a description of the general visual character of the corridor, starting with its westernmost section, as well as each of the proposed station locations within each section. Each section was assessed as to the existing nature of the visual quality and visual sensitivity to the dominant or highly sensitive type of land uses within the section. An inventory of the sensitive receptors and visual assets, if any, was also collected. **Table 1** provides a general rating of each Cotton Belt Corridor section and **Table 2** provides the evaluation definitions.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>General Rating of Corridor Visual Assessment Sections</th>
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</thead>
<tbody>
<tr>
<td>Section</td>
<td>Name</td>
</tr>
<tr>
<td>1A</td>
<td>DFW Airport to South Belt Line Road</td>
</tr>
<tr>
<td>1B</td>
<td>South Belt Line Road to Coppell/Carrolton city limits</td>
</tr>
<tr>
<td>2A</td>
<td>Coppell/Carrolton city limits to Kelly Boulevard</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2B</td>
<td>Kelly Road to Dallas North Tollway</td>
</tr>
<tr>
<td>3A</td>
<td>Dallas North Tollway to Dallas/Richardson city limits</td>
</tr>
<tr>
<td>3B</td>
<td>Dallas/Richardson city limits to Shiloh Road</td>
</tr>
</tbody>
</table>

*Source: HDR, 2017.*

*See Table 2*
Table 2
Evaluation Rating Definitions

<table>
<thead>
<tr>
<th>Primary Viewers</th>
<th>Visual Quality</th>
<th>Visual Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A= Motorist</td>
<td>High = section or portions thereof is of significant visual quality to the primary viewers</td>
<td>High = Introduction of new elements could significantly impact the aesthetic quality of the section as observed by the primary viewers</td>
</tr>
<tr>
<td>B= Single-Family Resident</td>
<td>Moderate = section is of average visual quality to the primary viewers</td>
<td>Moderate = Introduction of new elements may impact the aesthetic quality of the section or a portion thereof as observed by the primary viewers</td>
</tr>
<tr>
<td>C= Multi-Family Resident</td>
<td>Low = section is of low visual quality to the primary viewers</td>
<td>Low = Introduction of new elements is not likely to have an impact on the aesthetic quality of the section as observed by the primary viewers</td>
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<tr>
<td>D= Recreational Users</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E= Commercial/Office Tenants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F= Industrial Tenants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G= Pedestrians</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H= Others</td>
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Section 1
Section 1 extends from the proposed DFW North Station area to the Elm Fork Branch of the Trinity River (Coppell and Carrollton city limits).

Section 1A, extending from the DFW Airport to South Denton Tap Road in the City of Coppell, begins as primarily agricultural in character with large tracts of grazing land for cattle and dense thickets of scrub oak and understory succession vegetation. Aside from several dirt roads, such as the eastern extension of East Dallas Road, and several gas wells, there are no structures to be seen nearby, with the exception of the State Highway (SH) 114 and SH 121, which dominate the view, and mostly single-story light industrial developments approximately one-quarter mile to the west of the proposed station. As the track alignment continues east under SH 121 and then IH 635, development intensifies with views of both small and large-scale industrial developments on both sides giving way to light industry to the south and single-family, residential developments to the north.

DFW North Station: The DFW North Station center platform would be located north of the existing airport, within existing DFW Airport property limits. The station area is loosely bounded by Texan Trail Road to the west, and can be seen from SH 114 to the south, SH 121/International Parkway to the east, and the existing freight rail line to the north.

Section 1B, extending from South Denton Tap Road to the Coppell and Carrollton city limits, may be characterized as primarily low to medium-density residential, with large single-family residential developments, then multi-story, multi-family developments seen along the north side of the track alignment. The proposed Cypress Waters Station (included in the proposed Cypress Waters Master Plan,
as mentioned) would be located on the north side, near North Lake with highly visible utility towers, and high-voltage lines (refer to Figure 2). One line extends eastward, toward downtown Carrollton, where it intersects another line running northwest to southeast, about one-quarter-mile west from, and roughly paralleling IH 35E. Development transitions from residential, to light industrial on both sides of the track alignment, with pockets of vacant land and green space (including the Riverchase Golf Course).

**Figure 2**

**Electrical Power Station near North Lake**

![East Belt Line Road, looking south](image)

**Cypress Waters Station:** The Cypress Waters Station side platforms would be located along newly constructed track between the northwest shore of North Lake and East Belt Line Road at the Beltline Trade Center, within the City of Dallas (refer to Figure 3). The environs of Grapevine Creek and East Belt Line Road, primarily north of the track alignment, are heavily wooded and the trees block from view the single-family residences to the north (refer to Figure 4). This area is comparatively flat, with little natural spatial and visual variation. Here, the prominent features are utility lines and power poles.

**Figure 3**

**Mockingbird Lane/Belt Line Road Looking South**

![Mockingbird Lane and Belt Line Road, looking south](image)

**Figure 4**

**Cotton Belt Alignment West of Mockingbird Lane**

![Mockingbird Lane Crossing, looking west](image)
Section 2
Section 2 extends from the Elm Fork Branch of the Trinity River, through downtown Carrollton and downtown Addison, to immediately east of the Dallas North Tollway southbound frontage road at the Addison and Dallas city limits.

Section 2A, extending from the Coppell and Carrollton city limits to Kelly Boulevard in the City of Carrollton, features light industrial development on both sides of the track alignment as it passes under the elevated President George Bush Turnpike (PGBT) and then IH 35E and the DART Green Line guideway to the proposed Downtown Carrollton Station. East of the station can be seen primarily single-family residential developments, including the Carrollton Heights Historic District, which abuts the south side of the track alignment, immediately east of the proposed station. To the north are Thomas Park and the Hutton Branch Creek. The residential developments extend to Josey Lane where they transition to medium-scale industrial developments south of the alignment. North of the Cotton Belt Corridor are several light industrial developments, a large green space, and a high school abutting the west side of Kelly Boulevard. The City of Carrollton has a “small town” atmosphere. There is a discernable downtown district (if only briefly glimpsed from the track alignment); the residential neighborhoods are equally well-defined and relatively homogeneous in character (Carrollton Heights Historic District, for example); and the commercial and office buildings are smaller, in keeping with a “local-community” context (refer to Figure 5).

Figure 5
The Gravely Center in Carrollton

Intersection of Main Street and Belt Line Road, looking south

Downtown Carrollton Station: The Downtown Carrollton Station center platform would be located along the existing freight rail track alignment immediately north of the Downtown Carrollton LRT Station and east of the aerial DART Green Line LRT Station and west of Denton Drive (refer to Figures 6 and 7).
Section 2B, extending from Kelly Boulevard to the Dallas North Tollway, features primarily large-scale industry along the south side of the track alignment to the Carrollton and Addison city limits (these developments extend southward to beyond Belt Line Road). Smaller sized industrial parcels extend to the freight track interchange south of the Addison Airport. Along the north side of the track alignment, east of Kelly Boulevard, are the Honors Golf Club and single-family, as well as multi-family, residential developments. The area between Surveyor Boulevard and the Addison Airport is medium-scale industrial development. The landscape changes abruptly and dramatically east of the airport and Addison Road. Here, the track alignment and proposed Addison Station are located in the midst of a densely populated urban center comprised of upscale, high-rise, residential, commercial, and office buildings, as well as numerous hotels, eateries, entertainment venues and parks (refer to Figure 8). A unique arch bridge on Arapaho Road over Midway Road (Wheeler Bridge) is a local landmark that is viewed immediately to the south of the track alignment (refer to Figure 9). The Cotton Belt Corridor passes over the depressed Dallas North Tollway, as the area transitions visually to almost exclusively multi-story office buildings.
Addison Station: The Addison Station side platforms would be located along the Cotton Belt Corridor rail alignment adjacent to the existing Addison Transit Center, between Addison Road and Quorum Drive. The station area is surrounded by mixed-use developments—notably Addison Circle and Addison Circle Park, immediately north of the track alignment, with its extensive plaza, walking trails, interactive water features (refer to Figure 10), streetscaping, and the WaterTown Theatre—and high-rise, red brick residential buildings, office buildings, and hotels, such as the Hyatt Summerfield Suites (refer to Figure 11) and the InterContinental Hotel. With an abundance of tall buildings nearby, there will be opportunities to look down into the station area. As mentioned, the station would be located adjacent to the Addison Transit Center, constructed in 1999, and includes landscaped drop-off and park-and-ride areas, an enclosed waiting area, and bus bays that accommodate several bus connections (refer to Figures 12, 13 and 14).
Section 3

Section 3 extends from the Dallas North Tollway southbound frontage road to the corridor’s eastern terminus, east of U.S. 75 (North Central Expressway), at Shiloh Road in the City of Plano.

Section 3A, extending from the Dallas North Tollway to the Dallas and Richardson city limits, contains three proposed stations: Knoll Trail Station, Preston Road Station, and Coit Road Station. The alignment transitions at the Dallas North Tollway and the Knoll Trail Station area approximately 800 feet to the east from multi-story office and commercial buildings exclusively to multi-family residential developments seen north of the track alignment. The south side features medium-density, multi-family residences. This stretch of the Cotton Belt Corridor is confined by a framework of dense vegetation until the Cotton Belt Corridor reaches Keller Springs Park and the Prestonwood Country Club (and crosses White Rock Creek) where vistas open to broad panoramas on both sides. Also of note, an electrical power station is located in the northwest quadrant of the at-grade intersection of the Cotton Belt Corridor and Knoll Trail Drive. High-voltage lines are highly visible along the east side of the Dallas North Tollway and as they cross over the Cotton Belt Corridor and enter the power station on the north side. They then immediately return to the south side at Knoll Trail Drive and parallel Cotton Belt Corridor, passing over the elevated Preston Road/Keller Springs Road interchange, until they reach Davenport Road. There they again cross the Cotton Belt Corridor to the north, cross Davenport Road, and immediately re-cross again to proceed eastward along the north side of Brentfield Drive.

Beyond Keller Springs Park and Prestonwood Country Club, the south side of the Cotton Belt Corridor is bordered by single-family residences. The alignment passes under Preston Road, with Keller Springs Road to the north and Fairhill School buildings and grounds to the south (refer to Figure 15). With single-family residences and the meandering McKamy Branch East Fork along both sides, the visual prospect along is constrained by dense vegetation until Dickerson Street and the proposed Renner Station area (refer to Figure 16). Between Dickerson Street and the Coit Road crossing approximately one-half mile to the east, the Cotton Belt Corridor is bordered by medium to high-density multi-family residential developments, several vacant parcels, and a commercial recreational venue, Adventure Landing, at Coit Road (refer to
**Figures 17 and 18.** The large multi-family residential development, Mandalay, can be seen directly to the north, across the track. East of Coit Road, to Waterview Parkway and the Dallas and Richardson city limits, the area adjacent to the Cotton Belt Corridor opens up with panoramic views of agricultural parcels to the south and a large office park under development to the north (refer to **Figure 19**). Many of these parcels are beginning to develop with multi-family, single family, and mixed uses.

**Figure 15**  
*Preston Road Over Cotton Belt Alignment*

**Figure 16**  
*Cotton Belt Alignment East of Preston Road*

**Figure 17**  
*Cotton Belt Alignment West of Coit Road*

**Figure 18**  
*Mandalay Residential Development at Coit Road*
Knoll Trail Station: The Knoll Trail Station side platforms would be located east of the at-grade crossing at Knoll Trail Drive. The view would be partially obstructed by the electrical power station to the north of the alignment and the recently constructed multi-family residential complex abutting the rail alignment to the south (refer to Figures 20 and 21).

Preston Road Station: The Preston Road Station platform would be located just east of Preston Road. The station would be most visible east of the Preston Road interchange (along Keller Springs Road) and, most importantly, nearby residences and Fairhill School (refer to Figure 22).
Coit Road Station: The Coit Road Station would be located west of Coit Road. Immediately adjacent to the station platform area is Adventure Landing, a small amusement park with sports fields and open space. Multi-family residences are seen to the north and west (refer to Figure 23) and a new residential development is being constructed to the east. A large assisted care living center is viewed to the northeast of the proposed station.

Section 3B, east of Waterview Parkway, the surroundings may be described as exurban with office and expansive industrial park developments alternating with equally large tracts of vacant open space to Alma Drive (UTD, as noted earlier, has proposed a master expansion plan for the vacant lands between Waterview Parkway and West Renner Road). The Cotton Belt Corridor passes under the Kansas City Southern (KCS) Railway and over Synergy Park Boulevard and West Renner Road. It crosses Custer Parkway and Alma Road at-grade. From West Renner Road to Alma Road, the Cotton Belt Corridor is between a cluster of multi-family residential units, including The Marquis at Waterview development to the south and the PGBT to the north (refer to Figure 24). East of Custer Parkway are several large-scale
industrial facilities and a large electrical power station. The attendant high-voltage lines are readily visible along the south side until they pass over the PGBT and US 75 interchange. Approximately one-quarter mile west of the US 75, the CityLine/Bush Alignment deviation veers southeastward to pass over US 75 (south of the PGBT interchange) and returns north to the existing, at-grade CityLine/Bush Turnpike LRT Station. To the south of the Cotton Belt Corridor and west of the US 75, a large multi-family residential development can be seen. The alternative roughly follows the Spring Creek 100-year floodplain through vacant open space and riparian overstory vegetation along the creek. The area adjacent to the east side of the LRT station is under development.

**Figure 24**

*Cotton Belt Alignment East of West Renner Road*

![Track crossing at West Renner Road, looking northeast](image)

The corridor proceeds north from the LRT station, under the PGBT (amidst the station’s park-and ride lots) to parallel the DART Red Line guideway to the east until it curves east and north and passes under the guideway to meet the existing freight rail track alignment at the proposed 12th Street Station (refer to **Figure 25**).

**Figure 25**

*PGBT Over Red Line LRT*

![Red Line LRT track crossing at elevated PGBT, looking north](image)

Development changes to higher density mixed uses with smaller office parks, multi-family residences, and finally large industrial buildings, immediately west of the 12th Street Station area in Plano. Primarily
medium-scale industrial developments are visible along both sides from the proposed 12th Street Station area to Shiloh Road. The section’s dominant visual features are the freeways—and particularly the PGBT and US 75 interchange—the elevated DART Red Line LRT guideway, the power lines, multi-story office and industrial buildings, and the KCS Railway.

**UT Dallas Station:** The UT Dallas Station center platform would be located east of Waterview Parkway between the existing Points of Waterview office development and the existing KCS Railway. The station area is north of the UTD campus, in the City of Richardson. Because of the open, flat terrain surrounding the proposed station, until redevelopment occurs, it may be readily visible from as far away as Synergy Park Boulevard to the south and the PGBT to the north (refer to **Figure 26**).

![Figure 26](image)

**Figure 26**

*Cotton Belt Alignment West of West Renner Road*

**CityLine/Bush Station:** The CityLine/Bush Station (at-grade) side platforms would be located along an alternate proposed south track alignment adjacent to the existing, at-grade CityLine/Bush Turnpike LRT Station, in an existing and visually complex transit station environment (refer to **Figures 27 and 28**).

![Figure 27](image)

**Figure 27**

*Red Line LRT South of PGBT*

![Figure 28](image)

**Figure 28**

*Red Line LRT Station Platforms*

**12th Street Station:** The 12th Street Station side platforms would be located along the existing freight rail track within the Cotton Belt Corridor, adjacent to 12th Street, between the aerial DART Red Line LRT Station...
and southbound Municipal Avenue. The station area is in the City of Plano. This area is mixed use including small single-family residences, light industry, and local businesses, such as Plano Marine on the southern edge of downtown Plano (which is now being redeveloped as residential use). The dominant visual feature near the station area is the DART Red Line elevated LRT guideway (refer to Figures 29 and 30). A future infill Red Line LRT station at 12th street is also proposed within this area.

**Figure 29**
Proposed 12th Street Station Location

**Figure 30**
Red Line LRT Over Cotton Belt Alignment

Shiloh Road Station: The Shiloh Station would be located south of the existing freight rail track and, immediately adjacent to the at-grade crossing of Shiloh Road. The current view is light industrial/commercial with open space and a large City of Dallas electrical substation adjacent to the existing track (refer to Figure 31). To the north of the proposed Shiloh Road Station is a mosque and various commercial buildings. The proposed Shiloh Station would include parking to the south of the existing electrical substation with access to the Cotton Belt Corridor by-passing to the north of the substation.

**Figure 31**
Proposed Shiloh Road Station

Location of proposed Shiloh road platforms, looking west