

## Appendix D: Geotechnical Report



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**MEMORANDUM**

**TO:** Keith Damron, P.E.  
Division of Planning

**BY:** Bart Asher, P.E., P.L.S.  
Geotechnical Branch Manager

**DATE:** August 28, 2013

**SUBJECT:** **Jefferson County**  
**Future Improvements to KY 1931 (Manslick Road)**  
**Between US 31W (Dixie Highway) and I-264**  
**Item # 5-480**  
**Mars # 8631201D**  
**Preliminary Geotechnical Assessment**

The Division of Planning is conducting a study for future improvements on the subject project. This project is located in Jefferson County, KY on KY 1931 (Manslick Road) between US 31W (Dixie Highway) and I-264. This abbreviated review will discuss some general geotechnical concerns with the area.

The approximate coordinates for the ends of this site are:  
Intersection of KY 1931 and US 31W - 38.143494 degrees North and -85.839592 degrees West.  
Crossing of KY 1931 and I-264 – 38.186269 degrees North and -85.801103 degrees West.

The site is located in the Louisville West (1202) Geologic Quadrangle which is in the Outer Bluegrass Physiographic Region.

Previous Geotechnical reports completed on or near this alignment are:

R-016-1978 Manslick Road at Bluegrass Avenue  
S-059-1986 I-264 Pedestrian Bridge  
R-001-2003 KY 1931 widening from Greenbelt Highway to Dixie Highway  
These reports can be accessed in the KYTC Geotechnical Branch data base.

Mapping indicates that the site soils are comprised of outwash, loess and eolian sand, terrace deposits, alluvium and some artificial fill. Bedrock in this area is of the Borden Formation. The Borden Formation consists of shale, siltstone and some limestone. The project corridor is characterized primarily by relatively flat terrain, although as the alignment approaches I-264 it changes to rolling terrain. Mapping indicates that bedrock could be near the surface in some of the hillsides. Borings and information in previous reports indicate that the bedrock could be 50-80 feet deep in some locations.

Soils in the area are generally suitable for embankment construction. Generally, embankments built from the native soils can be constructed to a height of 30 feet with 2H:1V slopes if the foundation is suitable and proper compaction methods are used. Soil cuts over approximately 10 feet often require analyses to design proper slopes. In no case should soil cuts be steeper than 2H:1V. Suitable rock for embankment construction and rock roadbed is readily available in this

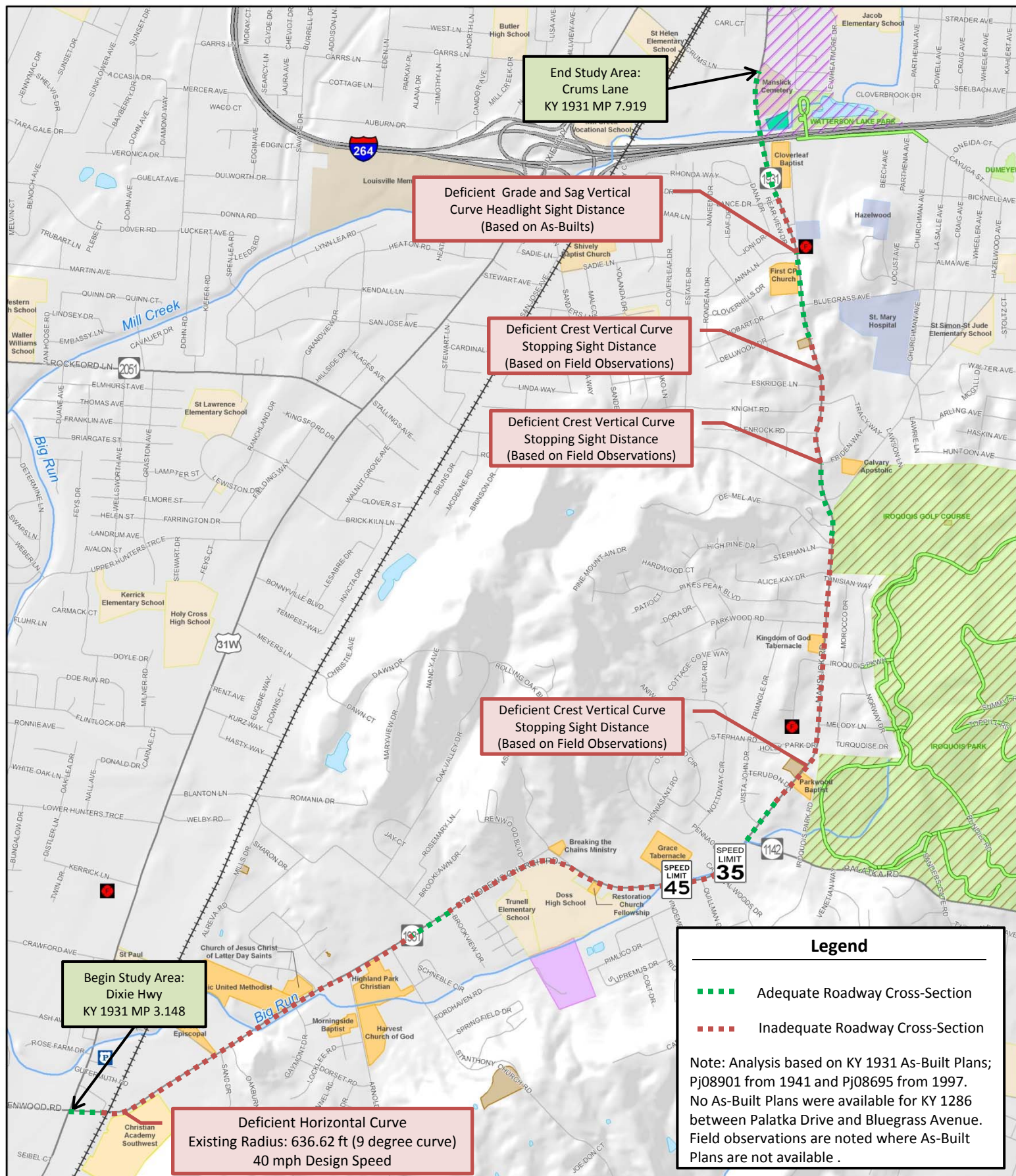
area of the state. It is not anticipated that there will be sufficient quantities of durable rock for construction from the cuts on this project. Some of the soils in the area are considered highly erodible. Drainage of the site soils could be problematic in some areas due to the flat topography.

California Bearing Ratio (CBR) values used in pavement design generally range from 2-5 for soils subgrades in the area. Chemical modification of subgrade or the use of rock roadbed is sometimes used in the area. Wet areas could require undercutting and/or rock stabilization for embankment construction.

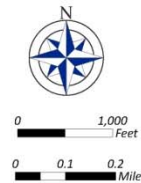
Site specific Geotechnical investigations are critical in this region for design.

Please feel free to contact this office for additional information.

**Attachments:**  
**Proposed corridor map**  
**GQ Site Map**



- Cemetery
- Religious Center
- Educational Institution
- YMCA
- Hospital/Medical
- Local Parks
- Animal Services
- Trails
- National Register District
- Urban Renewal Area
- Fire Department
- Police Department



## Deficient Roadway Geometrics

KY 1931 Planning Study  
Jefferson County, KY  
(KYTC Item No. 5-480)



