

Rollins Road Millennium Trail Underpass

LOCATION:

Lake County, Illinois

CLIENT:

Lake County Forest Preserves

CONSTRUCTION COST:

\$3.5 Million

COMPLETION DATE:

November, 2014

SCOPE OF SERVICES:

- Concept Studies
- Preliminary Engineering
- Final Design

AWARDS:

2015 Engineering Excellence Honor Award, Small Projects, American Council of Engineering Companies of Illinois



PROJECT DESCRIPTION

Ciorba Group provided concept studies, preliminary, and final design engineering services to prepare for the underpass structure and a multi-use path at Rollins Road. Construction was funded through the federal ITEP program; therefore the plans and specifications were approved by the Illinois Department of Transportation and the Federal Highway Administration.

The new underpass and multi-use path connects two existing segments of the Lake County Forest Preserve District's Millennium Trail located perpendicular and adjacent to Rollins Road. The underpass is a cast in place reinforced concrete tunnel that is 18 feet wide and 10 feet high with a total length of 120 feet. The new tunnel included aesthetic treatments at each end created by the use of form liners at the wingwalls. Our services also included designing a new timber deck and railing for the existing trail bridge over Mill Creek located just north of Rollins Road to satisfy ADA requirements.

The proposed 12 foot wide trail consisted of an aggregate base and hot mix asphalt surface with a length of approximately 1200 feet. The trail alignment utilized horizontal curves that met AASHTO requirements to avoid the removal of preferred trees as well as other impacts. The profile of the trail was designed to meet ADA standards. The profile is significantly lower than the surrounding ground in order to meet the bottom elevation of the underpass. This grade difference required the use of extensive wingwall lengths to safely confine the side slopes. A grading plan was developed that allows all excavated material to remain on site as landscaped berms and mounds. A separate plan was developed that indicates trees to be removed, trees to be protected and tree root pruning.

Rollins Road is a five-lane highway under the jurisdiction of the Lake County Division of Transportation. Approximately 0.56 miles of the pavement was resurfaced as part of the project. The underpass was constructed in open excavation using stage construction to minimize impacts to roadway users. Traffic was reduced from two lanes to one lane in each direction during construction. Maintaining two way, two lane traffic required installing temporary pavement and ditching as well as temporary guardrail and concrete barriers to protect the motoring public.

Ciorba Group designed a lighting system for the underpass that consisted of wall mounted fixtures and steel conduit. A new lighting controller was designed and installed in a cabinet on a concrete foundation near the south end of the tunnel. Ciorba's lighting engineer also coordinated with Commonwealth Edison to provide a new electric service at a nearby utility pole.