

FINAL PROJECT CONCEPT STATEMENT

0.45 mi E of Young Avenue (Reference Location 163.01)

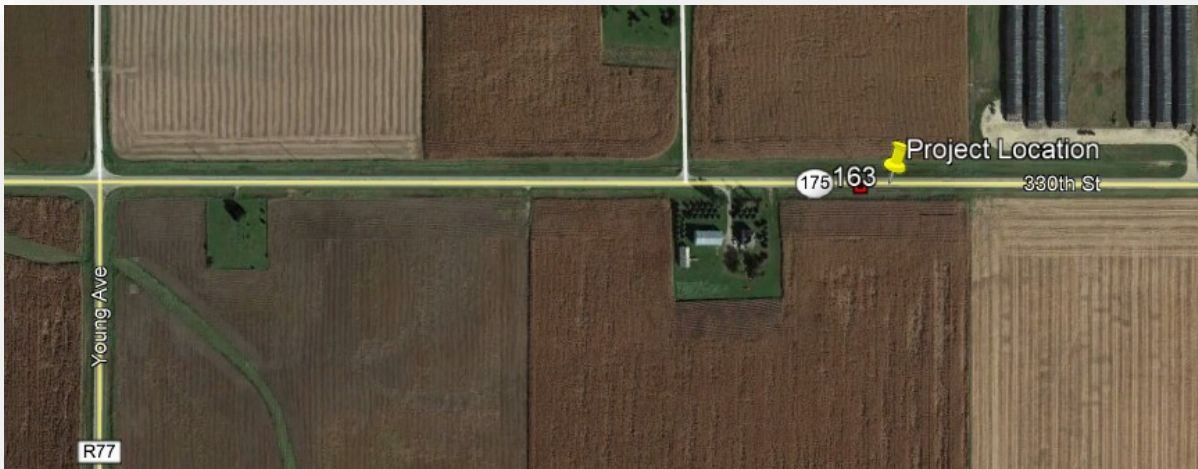
Hamilton County
STPN-175-7(22)--2J-40
PIN: 20-40-175-010

Highway Division
District 1 Office

Allison Smyth, P.E.
515-239-1039

November 13, 2019

I. STUDY AREA



A. Project Description

This project involves a separated pipe culvert on IA 175 at Station 404+31.4, approximately reference location 163.05. The 30" x 54' concrete pipe was built in 1938 and is now sucking dirt through the connections, which has resulted in a dip in the roadway above it. This project was brought to the district by maintenance personnel. It is proposed that the existing pipe be replaced with a new 30" pipe culvert.

B. Need for Project

The pipe has separated and is compromising the pavement above it. Maintenance patched the pavement, but needs a permanent solution to avoid a recurrence of the dip in pavement in the future.



Dirt pile caused by pipe separation



Damaged pavement about the pipe

C. Present Facility

The 30" x 54' concrete pipe was built in 1938 and has a drainage area of 44 acres.

D. Traffic Estimates

The 2017 estimated ADT is 1,880 with 13% trucks.

E. Sufficiency Ratings

IA 175 is classified as an access route and is a maintenance service level "C" road. IA 175 is not on the National Highway System (NHS).

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

Crash data was not studied for this project.

II. PROJECT CONCEPT

A. Feasible Alternative: Replace with a culvert

The proposed alternative is to replace the existing structure with a new 30” pipe approximately. Trenchless construction will be utilized to install the culvert in order to avoid impacting traffic.

Temporary easement may be required for the trenchless construction.

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

Remove existing aprons, then plug and abandon existing culvert.

The estimated cost for this project is \$114,000.

Cost Estimate:

Item	Quantity	Unit Price	Unit	Cost
30” Trenchless RCP	54	\$500	LF	\$27,000
Aprons	2	\$1,500	EA	\$3,000
Flowable mortar	40	\$250	CY	\$10,000
Traffic Control	1	\$25,000	EA	\$25,000
Mobilization	1	\$30,000	EA	\$30,000
Contingency			20%	\$19,000
Total				\$114,000

B. Detour Analysis

Traffic will be maintained by trenchless construction of the culvert.

C. Recommendations

It is recommended that the present structure be replaced, as described.

D. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The District 1 office will coordinate the plan preparation with assistance from the Preliminary Bridge Bureau.

E. Special Considerations

There are no bike paths or sidewalks adjacent to this project; therefore, no ADA accommodations are planned in conjunction with this project.

Temporary easement may be required for this project.

Standard survey coverage will be required and will be completed by District 1 Survey.

F. Project Schedule

D00 Predesign Concept	11/13/2019
D01 Survey Plan and Photogrammetry	02/15/2020
D02 Design Field Exam	03/15/2020
D05 Plans to ROW	04/01/2020
D09 Final Miscellaneous Plans	05/05/2020
L04 Letting Miscellaneous	07/21/2020

G. Program Status

This project will be funded with FY2021 NR funding.

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