

FINAL PROJECT CONCEPT STATEMENT

County: Poweshiek
PIN: 21-79-146-010
Project Number: STPN-146-2(41)--2J-79
Location: 0.7 mi N of NCL Grinnell
Type of Work: Pipe Culverts
Project Directory: 7914601021

February 15, 2021



I. STUDY AREA

A. Project Description

This project is to address a failed 3x3 RCB on IA146 north of Grinnell.

B. Need for Project

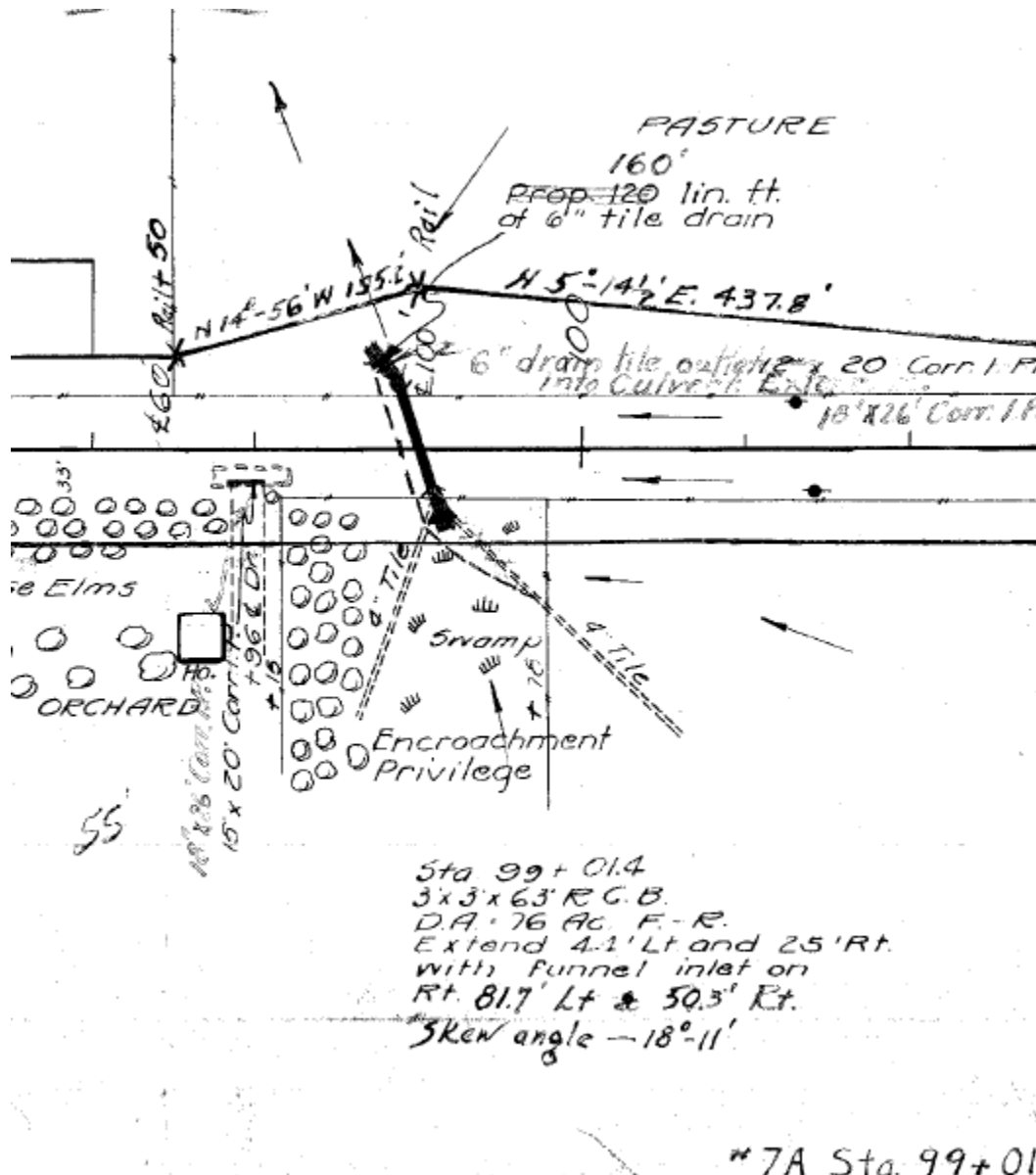
The RCB has separated and the failure is resulting in loss of foreslope. Degradation of the west ditch is occurring. Bridge and Structures Bureau Preliminary Design Section has reviewed the location and found the existing culvert is undersized.

C. Present Facility

IA 146 was constructed in 1963, is classified as a minor arterial route and is a maintenance service level "C" road.
The present drainage structure is a 3x3 RCB.
The pavement was restored in 2020 with 3-inch Cold-in-Place Recycling and 3-inch resurfacing, including partially paved shoulders.
The speed limit in the project area is 55 mph.

D. Traffic Estimate

The 2038 estimated ADT is 2200 vehicles with 11% trucks.





CULVERT INLET



CULVERT OUTLET



SLOPE FAILURE

II. PROJECT CONCEPT

A. Recommended Alternative

It is recommended to install a 48-inch RCP by jacking. Remove the headwalls of the existing RCB and fill with flowable mortar. The foreslopes will be flattened and the ditches graded to meet the new flowlines Class "E" revetment placed at the inlet and outlet/

Cost Estimate:

Estimate Items Report

Version D00-Concept

Project STPN-146-2(41)--2J-79

Item	Item Description	Units	Quantity	Cost Used	Line Total
2101-0850001	CLEAR+GRUBB	ACRE	0.500	\$1,500.00	\$750.00
2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISH	CY	1,500.000	\$10.00	\$15,000.00
2401-6745650	RMVL OF EXIST STRUCT	LS	1.000	\$2,000.00	\$2,000.00
2416-0100048	APRON, CONC, 48"	EA	2.000	\$2,600.00	\$5,200.00
2416-1180048	CULV, CONC RDWY PIPE, 48"	LF	34.000	\$225.00	\$7,650.00
2416-1262048	CULV, CONC PIPE, 2000D, TRENCHLESS, 48"	LF	110.000	\$950.00	\$104,500.00
2506-4984000	FLOWABLE MORTAR	CY	45.000	\$185.00	\$8,325.00
2507-6800061	REVTMENT, CLASS E	TON	20.000	\$45.00	\$900.00
2528-8445110	TRAFFIC CONTROL	LS	1.000	\$5,000.00	\$5,000.00
2533-4980005	MOBILIZATION	LS	1.000	\$10,000.00	\$10,000.00
PCT-040	EROSION CONTROL (040)	% of Project	183,526.200	3.00%	\$5,505.79
PCT-120	UNCLASSIFIED (120)	% of Project	183,526.200	5.00%	\$9,176.31
				Total:	\$174,007.10

B. Traffic Control Analysis

Traffic will be maintained by use of single lane closures for material and equipment deliveries.

C. Special Considerations

Permanent ROW may be required for this project. Temporary easement for jacking pit and access to jacking pit will be required.

Topographical survey has been completed.

Tiles/subdrains need extended.

The water line near the west ROW line may need relocated.

D. Project Schedule

Event Description	Finish Date
H00 - Cultural Resources Assessment	2/26/2021
D00 - Pre-Design Concept	2/15/2021
D01 - Survey Plan and Photogrammetry (DTM)	3/5/2021
TE0 - Desktop Review	3/19/2021
U00 - Preliminary Utility Review	3/19/2021
W00 - Preliminary Wetland Review	3/19/2021
T01 - Existing ROW, Property and Sections Lines in CADD	4/2/2021
D02 - Design Field Exam	4/16/2021
D03 - Plans for Preliminary Bridge	4/23/2021
B02 - Drainage Design and Miscellaneous Layout to Office of Design	5/28/2021
D05 - Plans to Right Of Way	6/4/2021
A01 - Approval of DOT Commission - Inclusion in 5-Year Program	6/8/2021
F03 - Final Regulated Materials Review	7/2/2021
R01 - Right Of Way Layout	7/2/2021
R00 - Plot Plans and Summary Sheets to District	7/2/2021
P10 - Public Involvement Activities by District	7/30/2021
T02 - Acquisition Plats and Legal Descriptions	7/30/2021
R02 - Right Of Way Appraisal	8/27/2021
R03 - Right Of Way Negotiation	11/19/2021
R04 - Right Of Way Acquisition	5/20/2022
D09 - Final Miscellaneous Plans	2/1/2022
L04 - Letting-Miscellaneous	4/19/2022
C02 - Construction Period (Field Work)	10/31/2022