#### IOWA DEPARTMENT OF TRANSPORTATION

**TO OFFICE:** District 5

**DATE:** December 18<sup>th</sup>, 2018

ATTENTION: James V. Armstrong

**PROJECT:** Henry County NHSN-218-2(152)--2R-44 PIN: 19-44-218-020

**FROM:** Anthony J. Klein

**OFFICE:** District 5 Design

**SUBJECT:** FY 2021 – Slide Repair Project Concept

# **PROJECT LOCATION MAP**: Page 3 or <u>Click Here</u>

## Henry County, US 218 NB (East Backslope), MM 36.8 - Sta. 282+95

#### Observations/Notes:

The overall area of the backslope instability has a longitudinal length of about 75 feet, starting near Station 282+95 and extending to about Station 283+70. It appears that the backslope has a maximum height of about 20 feet and a 3:1 slope. A wood utility pole is located within the backslope generally within the middle of the instability near the scarp. The actual limits of the instability were difficult to determine due to the amount of vegetation present and the apparent time laps since instability movement. Slough material has moved downslope and partially fills the ditch at the toe of slope. Standing water was observed in the roadside ditch. Land use beyond the ROW limits at the top of slope appears to be pasture. This field generally slopes downward to the north and west toward the backslope. The scarp at its highest point is located about 15 feet away from the top of slope. Based on the 2002 as-built roadway plans, it appears that the Right of Way (ROW) limits are located at a minimum of about 200 feet from roadway centerline.

Link to pictures: DSCN2096.JPG

Link to relevant as-built 1962 roadway plan sheets: <u>US 218, roadway 1962 as-builts, Station</u> 282+95.pdf

Link to relevant as-built 2002 roadway plan sheets: <u>US 218, roadway 2002 as-builts, Station</u> <u>282+95.pdf</u>

## Recommendations:

Bench and rebuild the backslope to pre-existing conditions starting near Station 282+75 and then extending north to about Station 283+90. It is recommended that the backfill fill material consist of suitable embankment and that a subdrain system be installed to more efficiently move water away from the rebuilt backslope. The repair shall start at the toe of the existing backslope and then extend up to the top of slope. Investigate and repair, if necessary, the plastic ditch letdown, as shown on the 2002 as-built plans, located to the north of the backslope instability. This letdown structure was not observed at the time of our field visit.

Remove and replace the existing wood utility pole during the repair of the backslope.

Additional ROW will not be needed to complete this repair. However, a temporary easement may be necessary due to the proximity of the instability to the ROW limits.

Recommend obtaining field survey for the preparation of plans.

The following quantities and associated costs are estimated for the backslope repair. This estimate does not include any costs associated with obtaining a temporary easement or removing and replacing the existing wood utility pole.

Estimated Quantities and Costs:

# US 218 - MM 36.8

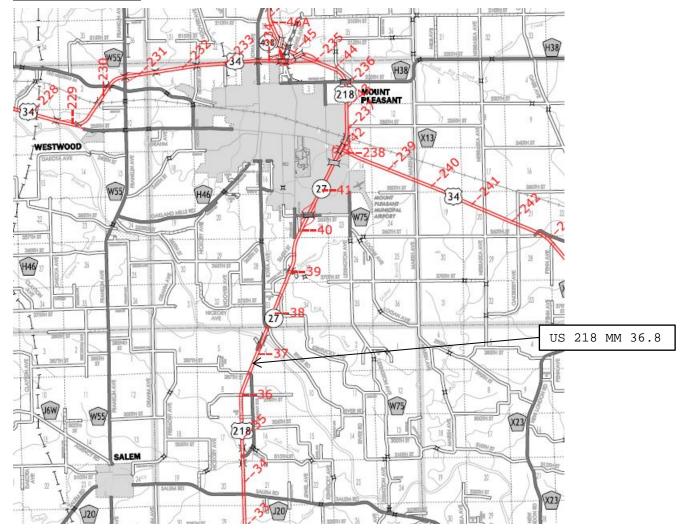
ltem	<u>Quantities</u>	<u>Cost</u>
		\$
Excavation, Class 10, Waste	447 CY	3,500.00
		\$
Embankment-in-Place, Contractor Furnished	328 CY	16,500.00
		\$
Topsoil, Furnish and Spread	119 CY	4,500.00
		\$
Granular Material for Blanket and Subdrain	58 CY	1,500.00
		\$
Subdrain, Standard, Perforated, 4 inch	190 LF	2,000.00
		\$
Subdrain Outlet (DR-303)	2 UNITS	1,000.00
		\$
Contingency, Mobilization & Traffic Control (40%)		11,600.00
		\$
Total Cost		40,600.00

# **FUNDS PROGRAMMED**:

It has been identified by the District 5 office for construction in FY 2021. A schedule of events for plan development will be determined following approval of the Project Concept.

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#### LOCATION MAP:



cc:

C. Purcell D. L. Maifield F. W. Todey C. C. Poole M. A. Swenson D. R. Tebben D. L. Newell T. D. Hanson T. D. Crouch D. E. Sprengeler J. R. Webb B. M. Clancy M. E. Ross J. Garton M. J. Kennerly C. B. Brakke A. A. Welch S. Anderson M. J. Sankey B. D. Hofer B. E. Azeltine S. J. Gent J.W. Laaser-Webb E. C. Wright A.J. Klein T. Quam J. Selmer J. Woodcock K. D. Nicholson S. J. Megivern N. M. Miller G. A. Novey R. A. Younie K. Brink D.R. Claman W.A. Sorenson M. Van Dyke H. Torres-Cacho J. R. Phillips FHWA P.C. Keen B. Walls