

October 6, 2020

# CSAH 13 Potential Improvements Lake Shetek Area

*Murray County Board*

Third Dike Rescuing Campers.

# ABOUT HOUSTON ENGINEERING



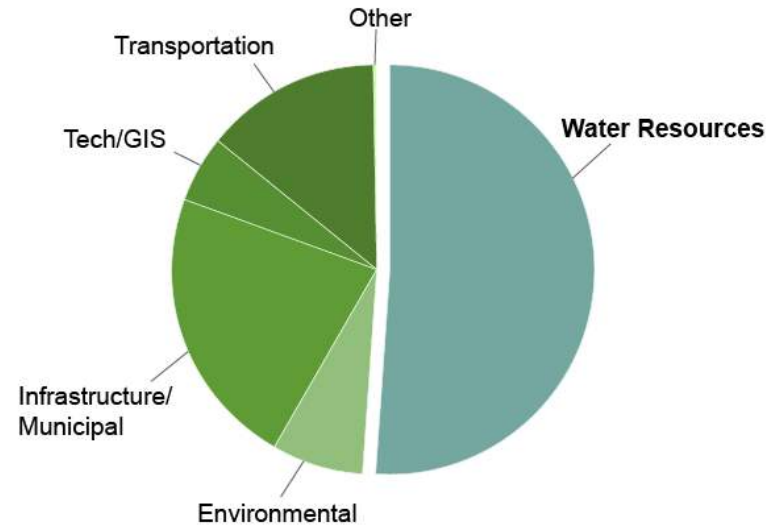
**Jerry Bents**

*Water Resource Lead*



**Adam Ruud**

*Design Lead*



## Water Resources Services

- Aquatic ecosystems
- Dam and drainage outlets
- Drainage systems
- Drought management
- Flood control
- Flood insurance studies and floodplain management
- Groundwater
- Stormwater management
- Water quality
- Water supply

# PROJECT DESCRIPTION

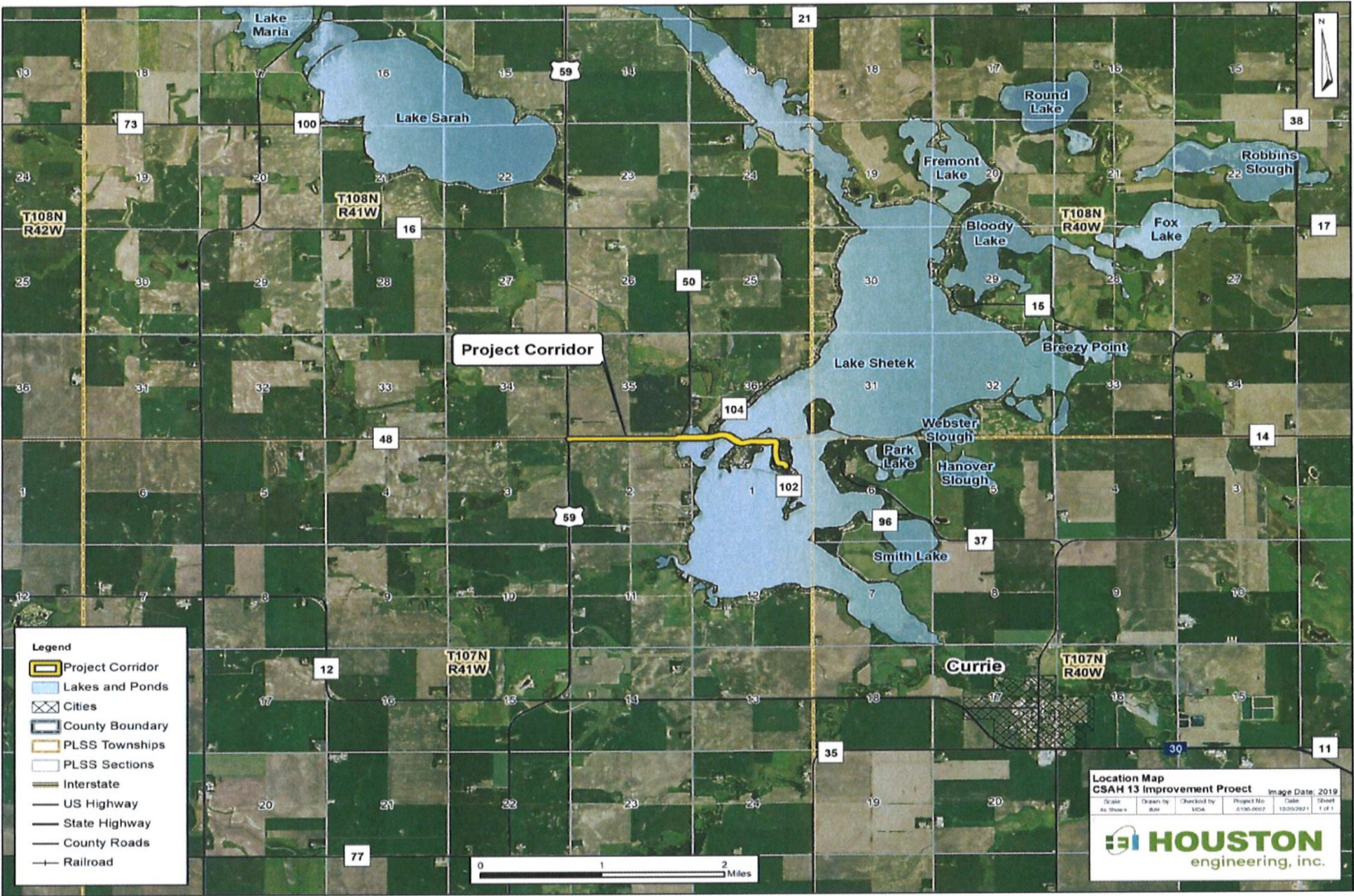
## **Project Description:**

The Murray County Highway Department is proposing the reconstruction and raising of CSAH 13 along Dikes 1, 2, and 3 and the installation of a shared-use path. The project is located along CSAH 13 from TH 59, across Dikes 1, 2, and 3, and to Keeley Island at Lake Shetek. Lake Shetek's water levels fluctuate seasonally and during times of highwater, floods portions of each dike causing transportation issues and potential hazards to the public. The road raise would allow the Dikes to remain accessible during similar events to what was experienced in 2018. The road will include two twelve-foot-wide lanes with four-foot shoulders meeting current State Aid Standards. The project also includes the installation of a shared-use path from the intersection of TH 59 to Keeley Island that will provide the public with safe access to recreational activities such as biking, walking, hiking, and shoreland fishing. The shared-use path will be constructed along the south-side of the road from TH 59 to Dike 1 and along the north and south sides of CSAH 13 from across Dikes 1, 2 and 3. Across the islands, 8' wide walkable shoulders will be incorporated on the north and south sides of CSAH 13. The walkable shoulder will also be extended east of Valhalla Island through the existing bridge where it will be transitioned to a separated shared use path to accommodate recreational uses.



# PROJECT CORRIDOR

Figure A







# FEASIBILITY STUDY

## CSAH 13 (VALHALLA ROAD) IMPROVEMENTS

### Lake Shetek Drive to East Side of Dike 3

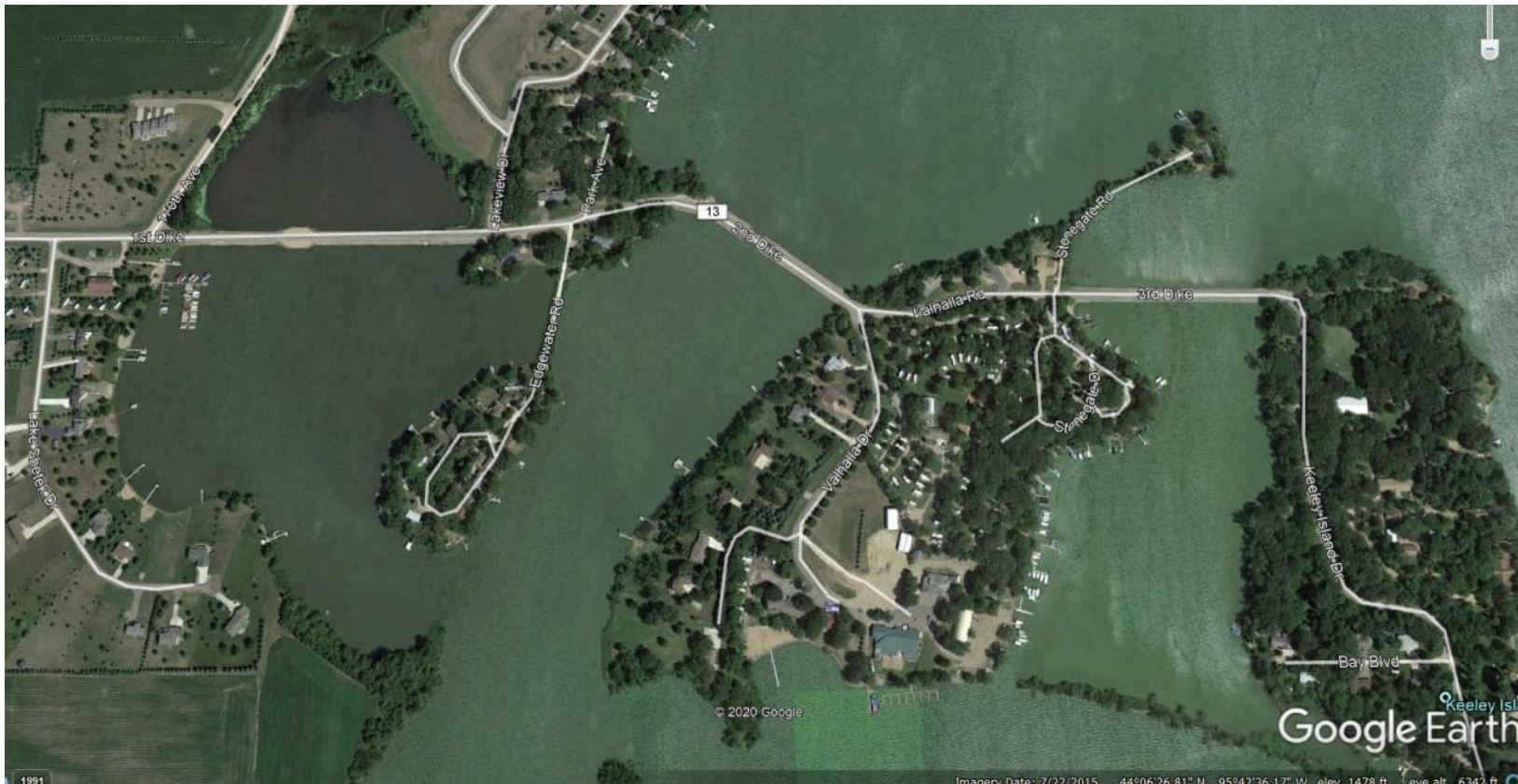
# Lake Shetek Dikes





# BACKGROUND OF PROBLEMS

- Flooding/Evacuation
- Safety (Pedestrian, Golf Cart, ATV, Biking, etc.)
- Fishing Safety



# 1 INTRODUCTION

Murray County State Aid Highway (CSAH) 13 runs east/west from Minnesota Trunk Highway (TH) 59 to Keeley Island. The roadway crosses Lake Shetek three times via what are known as Dike 1, Dike 2, and Dike 3 (listed from west to east) as shown in Figure 1. The lake has experienced several highwater events over the last 10 years, as shown in Figure 2. The highest event on recent record occurred in the summer of 2018. In the summer of 2018, local runoff and storm events caused Lake Shetek to rise, fully inundating Dike 1 and Dike 3. The westbound driving lane was also inundated on Dike 2. See Figure 3 through Figure 5 for photographs showing the extent of flooding across the dikes. Due to the flooding, many residences required emergency evacuation, including campers who were at the Shetek Lutheran Bible Camp.

Figure 1: Project Location







Looking east at the first dike.





Looking east at the first dike.





First dike by box culverts 51J38.





Second dike looking west at bridge 51520.





Third dike looking to the east.

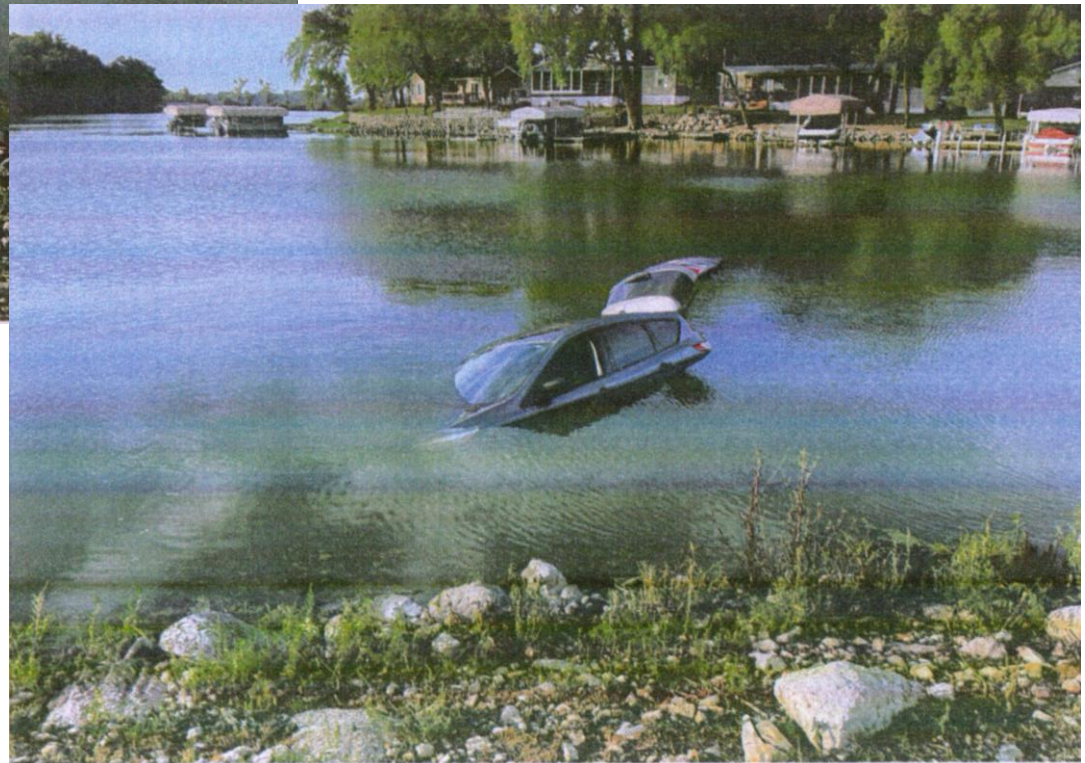


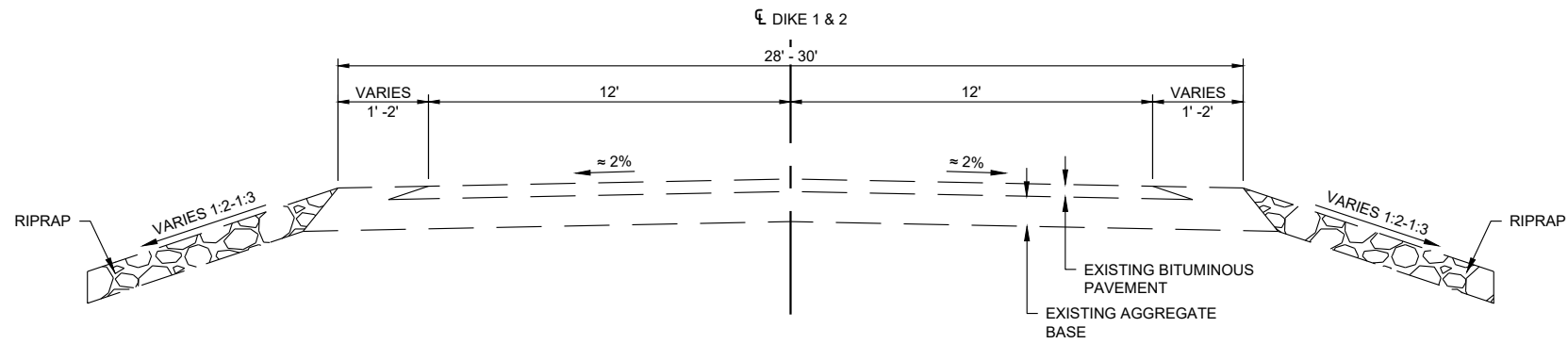


Third Dike Rescuing Campers.

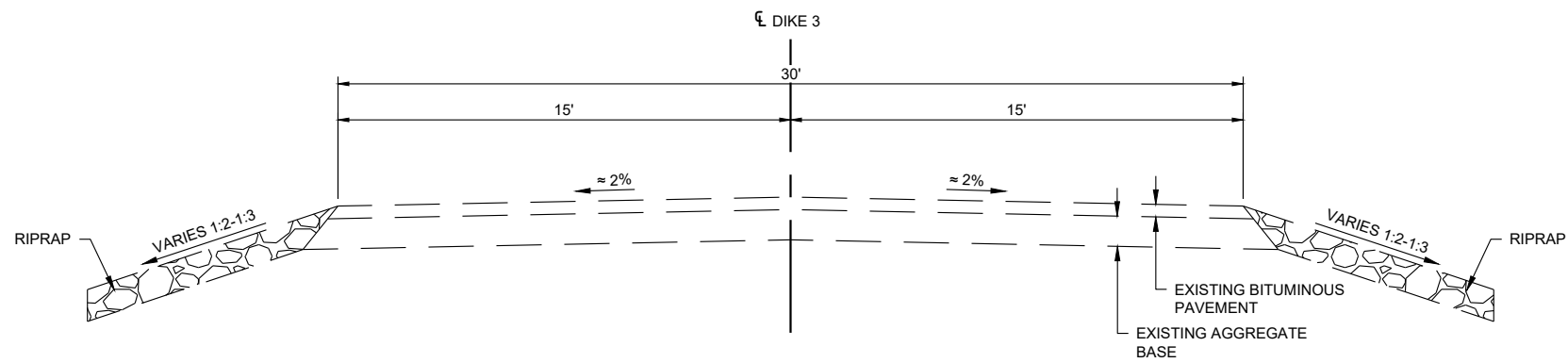


# VEHICLE IN LAKE





EXISTING TYPICAL SECTION  
DIKE 1 & 2



EXISTING TYPICAL SECTION  
DIKE 3

H:\JBN\6150\6150\_0002\CAD\Plans\Appendix C\030 - Typical Sections.dwg-Ex. Typ. Section (1:9/15/2020 6:59 AM-[aroud])

No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



Fargo

P: 701.237.5065  
F: 701.237.5101

Drawn by  
JER

Checked by  
AMR

Date  
9/11/20

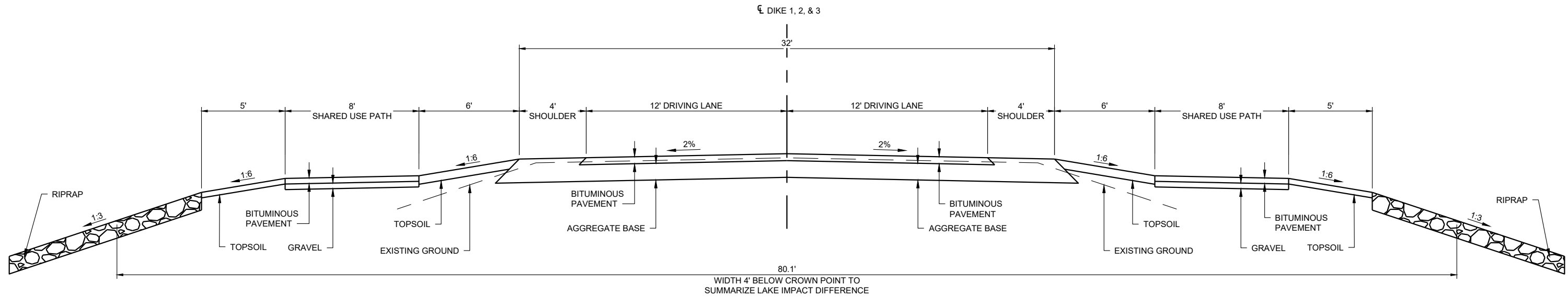
Scale  
AS SHOWN

S.A.P. \_\_\_\_\_  
S.P. \_\_\_\_\_

EXISTING TYPICAL SECTIONS  
HEI 6150-0002

SHEET  
2 of 18





PROPOSED TYPICAL SECTION  
 STA 71+20 TO STA 74+90  
 STA 82+40 TO STA 91+80

H:\JBN\6150\6150\_0002\CAD\Plans\Appendix D\030 - Typical Sections.dwg-P. Typ. Section (3)-9/15/2020 7:02 AM-(aruid)

No.	Revision	Date	By

**PRELIMINARY**  
 Not for Construction

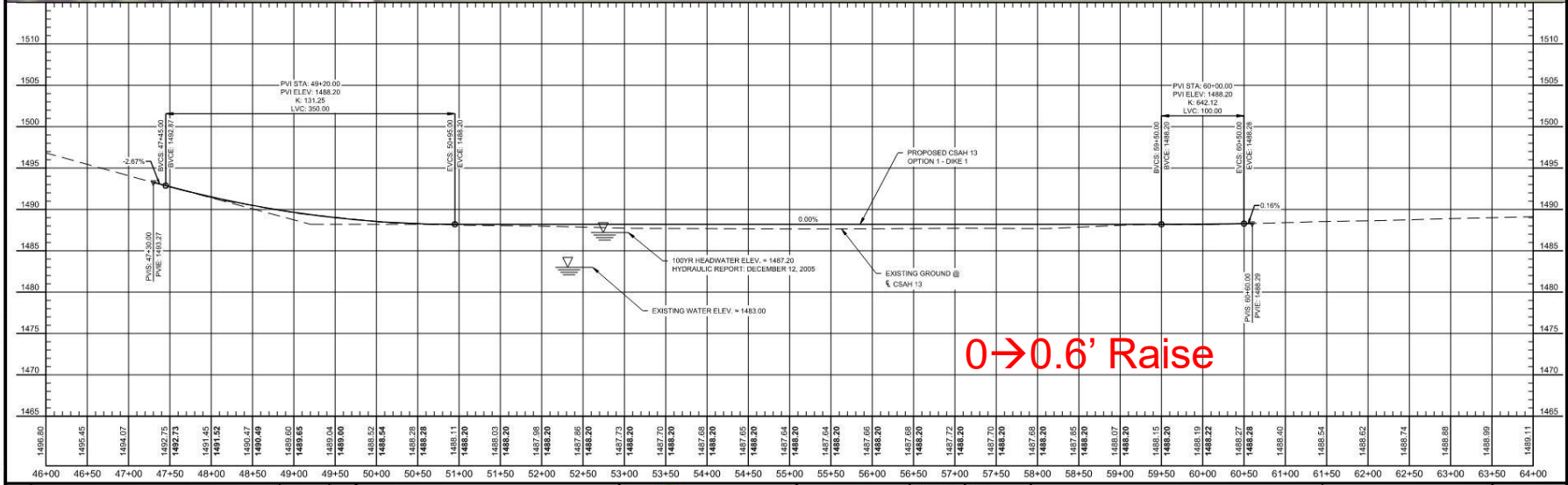


Fargo	Drawn by JER	Date 9/11/20
P: 701.237.5065 F: 701.237.5101	Checked by AMR	Scale AS SHOWN

S.A.P. _____
S.P. _____

PROPOSED TYPICAL  
 SECTIONS  
 HEI 6150-0002

SHEET  
 4 of 19



No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



Fargo  
 Drawn by JER Date 6/11/20  
 Checked by AMR Scale AS SHOWN

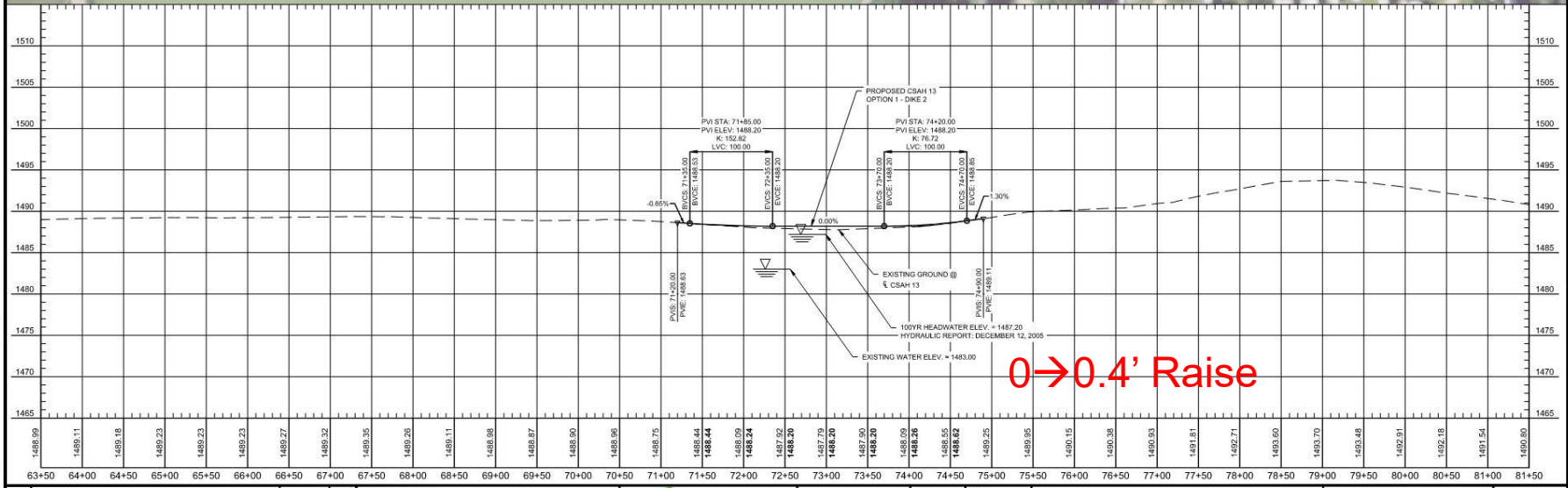
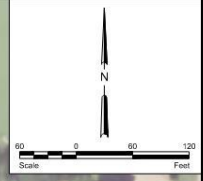
S.A.P. XXX-XXX-XXX  
 S.P. \_\_\_\_\_

PLAN & PROFILE  
 OPTION 1  
 HEI 6150-0002

SHEET  
 5 of 13

H:\UR\6150\6150\6150\_0002\CAD\Plan\000 - Plan & Profile\Dwg\1.dwg P & P (11/21/2020 9:41 AM) (jrmw)





0.4' Raise

I:\WORK\615016150\_002\CAD\Plan\060 - Plan & Profile\01.dwg P:R [3]-[1] (2010) 9:41 AM (rmmw)

No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



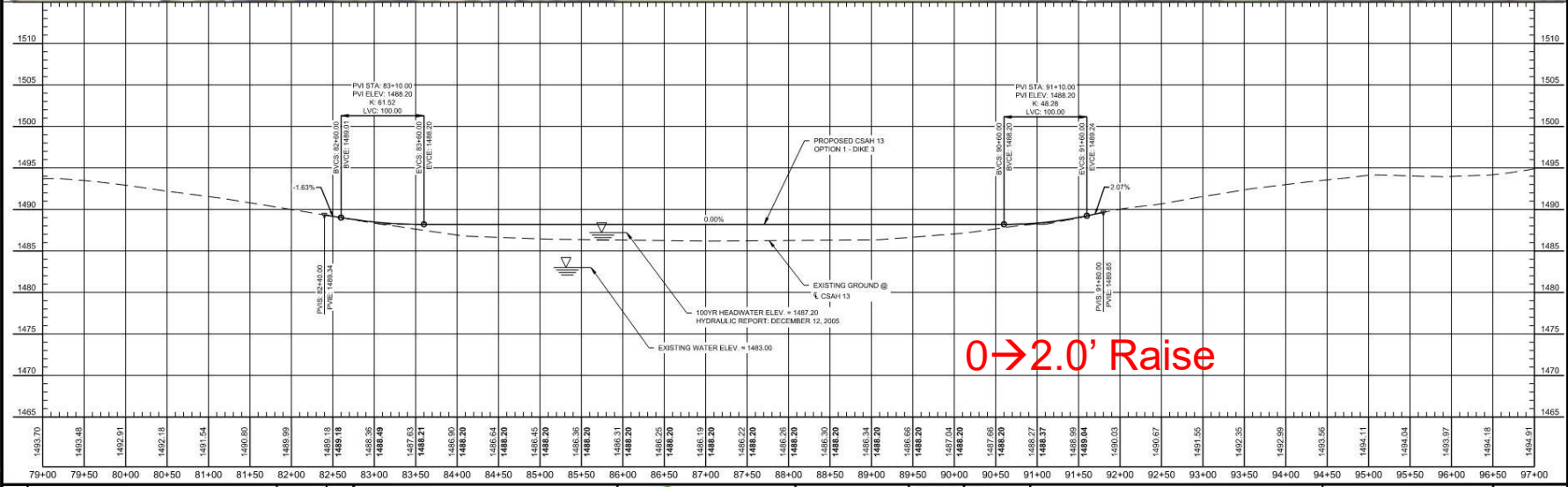
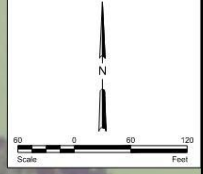
Fargo  
 Drawn by JER Date 6/11/20  
 Checked by AMR Scale AS SHOWN  
 P: 701.237.5065  
 F: 701.237.5101

S.A.P. XXX-XXX-XXX  
 S.P. \_\_\_\_\_

PLAN & PROFILE  
 OPTION 1  
 HEI 6150-0002

SHEET  
 6 of 13

LAKE SHETEK



0 -> 2.0' Raise

I:\WORK\61506150\_002\CAD\Plans\6150 - Plan & Profile\Dwg\_P&P\_01-11-2020\_P&P.dwg (rmmw)

No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



Fargo  
 Drawn by JER  
 Date 6/11/20  
 Checked by AMR  
 Scale AS SHOWN

S.A.P. XXX-XXX-XXX  
 S.P. \_\_\_\_\_

PLAN & PROFILE  
 OPTION 1  
 HEI 6150-0002

SHEET  
 7 of 13



# LOCALLY PREFERRED ALTERNATIVE IMPACTS

## Anticipated Impacts at Ordinary High-Water Mark

- Locally Preferred Alternative 1: **1.67 Acres**
- Locally Preferred Alternative 2: **1.45 Acres**

Locally Preferred Alternative 1: Path Both Sides of Road Dike 1, Dike 2, and Dike 3		
Location	Area (Acre)	Fill Volume (CY)
Dike 1	0.65	2,322
Dike 2	0.42	2,149
Dike 3	0.60	2,789
<b>Total</b>	<b>1.67</b>	<b>7,260</b>

Locally Preferred Alternative 2: Path Single Side of Road Dike 1, Path Both Sides of Road Dike 2 and Dike 3		
Location	Area (Acre)	Fill Volume (CY)
Dike 1	0.43	1,385
Dike 2	0.42	2,149
Dike 3	0.60	2,789
<b>Total</b>	<b>1.45</b>	<b>6,323</b>

# OTHER QUESTIONS/COMMENTS

Any questions may be directed to  
Randy Groves,  
Murray County Engineer  
507-836-1133  
rgroves@co.murray.mn.us  
Thank You!

