

**TO OFFICE:** District 2

**DATE:** October 17, 2018

**ATTENTION:** Dave Little

**REF. NO.:**

**FROM:** Nick Humpal

County: Bremer

Proj. No.: NHSN-218-8(132)--2R-09

**OFFICE:** District 2

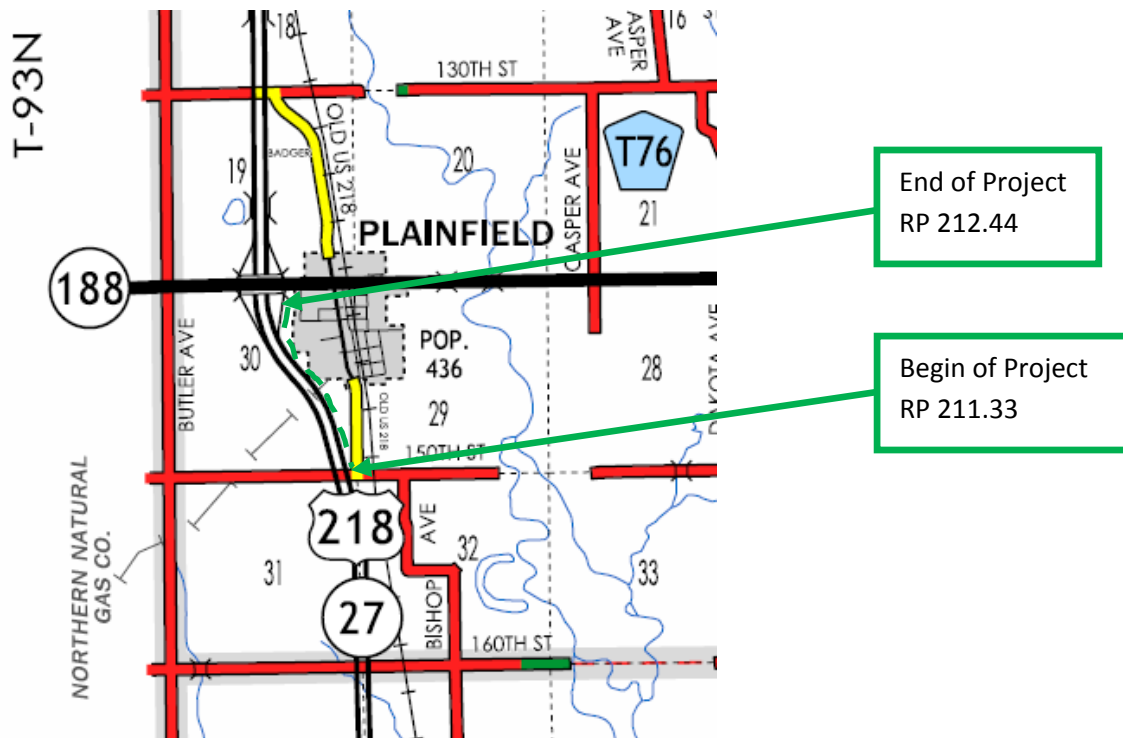
ROW No.: NHSN-218-8(133)--2R-09

PIN: 19-09-218-010

**SUBJECT:** Ditching improvements along US 218 near Plainfield

### **INTRODUCTION:**

District has been working with the city of Plainfield and a number of other public agencies to determine a range of options for addressing on-going storm water management/flooding concerns in/near the city of Plainfield. A major partner in the effort has been the Iowa Flood Center who has developed a final report, [Assessment of Flooding Issues and Possible Mitigation Strategies for the City of Plainfield, Iowa](#) documenting the history of the concerns and potential solutions.



**PROJECT DATA:**

ROUTE: US 218  
 LOCATION: 150<sup>th</sup> Street to IA 188 Interchange  
 BEGIN OF PROJECT: RP 211.33  
 END OF PROJECT: RP 212.44  
 LENGTH: ~1.11 miles  
 TRAFFIC: 2016 AADT of 9,200 with 20% trucks

**EXISTING CONDITIONS:**

Based on historic events in 2008 and 2016, now more recently 2018, many residents of Plainfield believe the community has experienced an increased frequency of flooding. The flooding appears to be due to the close proximity to the Cedar River to the east, heavy rainfall events, high groundwater table, and drainage issues believe to be caused by US 218. From the concerns the city has contacted the DOT asking for assistance to mitigate flooding believed to be associated with the US 218 highway and DOT ROW.

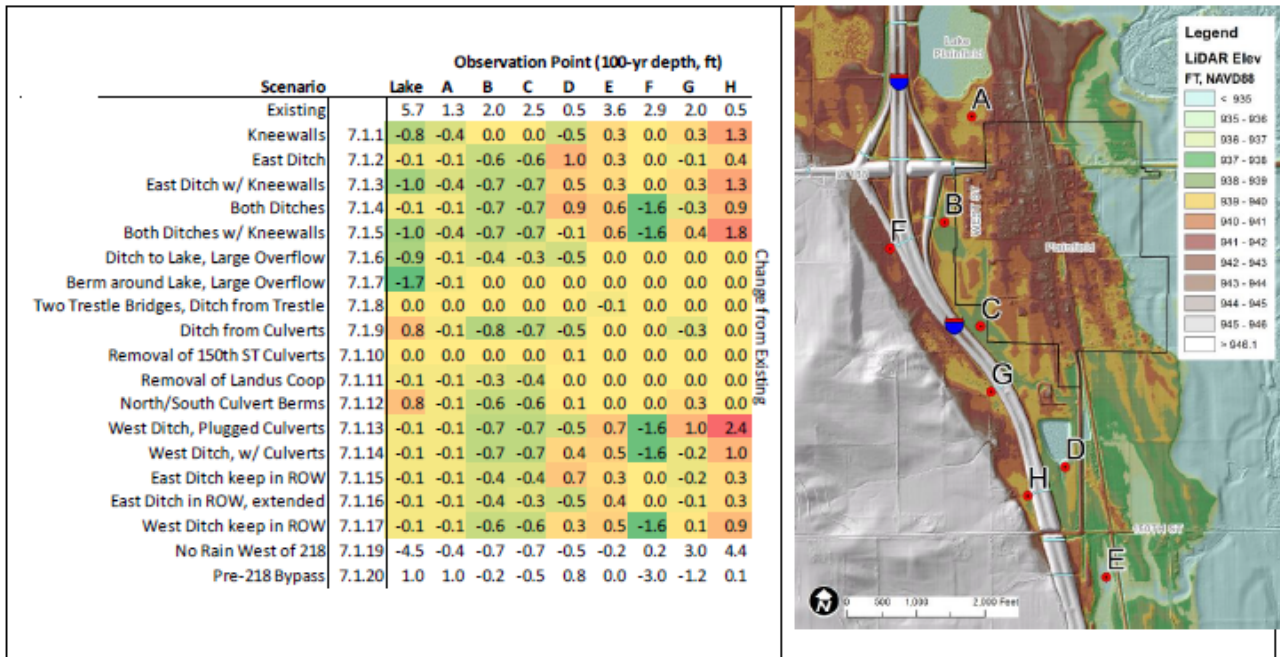
Following the extensive coordinated effort among agencies and the final report as noted previously developed by the Iowa Flood Center, District 2 has offered to assist with ditching improvements along the east side of US 218 from IA 188 south to 150<sup>th</sup> Street. By completing this work, it essentially eliminates the possible additional flooding caused by the construction of the by-pass of Plainfield. This is also noted in the final report.

**ADDITIONAL CONSIDERATIONS:**

Northern Natural Gas has a 2" gas main that passes underneath US 218 and will be impacted by the east ditch improvements on US 218. District is currently coordinating the efforts to pothole and relocate the gas line as part of the project.

**FEASIBLE ALTERNATIVES:**

The Iowa Flood Center report identified a number of feasible alternatives, for more specific information on each alternative please refer to the [report](#). Below is a table from the report identifying the alternatives and the modeled improvement for flood mitigation for each point identified on the plan view.



**RECOMMENDATIONS:**

It is recommended that the following be completed by the DOT to improve drainage conditions between US 218 and west Plainfield.

- East Ditch in ROW, extended
  - A new ditch grade will be established from the culvert structure under WB Off Ramp at IA 188 south to 150<sup>th</sup> Street. Ditch will be cut a nominal 3' depth, 6' wide with 3:1 sideslopes and the material excavated will be placed on the backslope to provide an additional 5' berm to increase ditch capacity.
- Remove the portions of old US 218 in the wetland mitigation area to allow flow to be directed towards the railroad trestle bridge. This may be accomplished by District maintenance crew.
- Relocate NNG 2" Gas Main @ estimated cost of \$400,000. (Preliminary estimate from NNG)

ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
Class 10 Excavation	CY	5,422	\$10	\$54,220
Topsoil Strip, Salvage, and Spread	CY	5,618	\$10	\$56,180
Seeding & Fertilizing	ACRE	5	\$2,000	\$10,000
Erosion Control	LS	1	\$10,000	\$10,000
Traffic Control	LS	1	\$10,000	\$10,000
Class E Revetment	TON	35	\$60	\$2,100
Remove & Reinstall Field Fence	LF	5,400	\$12	\$64,800
Mobilization	LS	1	\$20,730	\$20,730
<b>SUBTOTAL</b>				<b>\$228,030</b>
20% Unquantified				\$45,606
<b>TOTAL</b>				<b>\$273,636</b>

<b>3R Project Schedule System</b>	<b>Yes</b>	<b>No</b>
<b>TRIGGERS:</b>		
Metric Project		X
Consultant Involved		X
Lighting		X
Traffic Signals		X
Traffic Signs		X
Railroad		X
Access Control		X
<b>NEEDS:</b>		
Survey (Prelim. By District)	X	
Geotechnical/Borrow Site/Slope Stabilization		X
Structures		X
Utility Relocations	X	
City/County Agreement	X	
Right of Way Needed (Utility Relocation, TE)	X	
Detour Agreement		X

**ESTIMATED COST:**

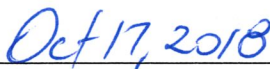
The project is estimated at \$273,636 with an additional \$400,000 to be programmed for ROW.

**FUNDS PROGRAMMED:**

Requested to be programmed for construction summer 2019.



APPROVED  
Dave Little  
Assistant District 2 Engineer

  
DATE

Cc.

- |                |              |                |               |
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