



**BOLTON
& MENK**

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January 24, 2017

Board of Supervisors
Palo Alto County Courthouse
Emmetsburg, IA 50536

Re: Engineer's Report
2014 Flood Damages Repairs
Drainage District No. 80 Upper Main

To the Board Members and Landowners in the Drainage District:

Background. The very heavy rains of June 2014 damaged several drainage district open ditches in Palo Alto County. It resulted in a presidential disaster declaration for a broad area which included Palo Alto County. Drainage Districts in the county had three or four times before secured funding from this source for the repair of damages incurred during disasters. In order to position drainage districts with eligible damages to be able to apply for disaster recovery cost share funding from the Federal Emergency Management Agency and from the State Department of Homeland Security the board directed Bolton & Menk, Inc. to assess open ditches selected by the county engineer for possible damages and to assist the board in applying for funding as may be needed.

The Drainage District No. 80 Upper Main open ditch was one of approximately 24 ditches reviewed. Ultimately, applications for disaster recovery funding assistance was filed for nine drainage districts. Eligible projects would receive cost share of 75% federal and 10% state for the costs of the repairs to the public drainage facilities plus partial funding for engineering and administration. Drainage District No. 80 Upper Main reported \$144,120 in damages.

The board was surprised by an initial FEMA decision that the repairs were not eligible, as identical repairs were eligible in prior disaster recoveries. The denial decision had been based upon an interpretation of the FEMA rules which required regular maintenance of the ditches and regular review. Regular was strictly interpreted to mean annually. The repairs were delayed awaiting the results of the appeals. Unfortunately the appeal is still ongoing although a final appeal decision is anticipated soon.

The board has determined to proceed with a public hearing that would be required if funding assistance is not secured so that the district can be put in a good position to receive bids for the work. Doing the work before funding assistance is secured will not affect the district's eligibility for funding assistance from either agency.

Damages. The open ditch of Drainage District No. 80 Upper Main suffered extensive damage during and immediately following the June 2014 storms. These damages are described and tabulated in the first attachment to this letter report.

Proposed Work. Attached to this report is a summary of the identified disaster recovery repairs that were submitted to federal and state officials for cost share assistance. The locations of these repair sites are shown on the accompanying map. An estimate of the cost of accomplishing these repairs is presented in the same attachment. We recommend that these repairs be accomplished. We further recommend that the district also make similar bank and pipe repairs that will likely be discovered during the work.

Estimated Cost. This cost estimate is based upon bids received for similar projects of which we are familiar and we believe it to be conservative. However, no guarantee is made or implied.

Drainage District No. 80 Upper Main

Disaster-recovery repairs (2014)	\$144,120
Inflation Adjustment	<u>14,412</u>
Construction Subtotal	\$158,532
Construction-related Damages	2,500
FEMA Assessment and Administration	6,800
Engineering Services thru Public Hearing	3,000
Bid Letting Services	2,500
Construction Staking, Observation & Admin.	15,000
Legal, Publications and Admin.	3,000
Contingency	<u>8,000</u>
Total Estimated Project Cost	\$190,332
Potential Funding Assistance	<u>\$130,000</u>
Potential Net Cost	\$ 69,332

Respectfully submitted

Bolton & Menk, Inc.

Donald D. Etlar, P.E.

Senior Project Manager



Attachments (2)

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.	UNIT PRICE	TOTAL
DIVISION 1 - GENERAL PROVISIONS AND COVENANTS							
1	11020-108-0	MOBILIZATION	LS	1		\$5,000.00	\$5,000.00
DIVISION 2 - EARTHWORK							
2	2010-108-X-0	CHANNEL EXCAVATION	LF	2,350		\$2.50	\$5,875.00
3	2010-108-X-1	BANK SHAPING	LF	8,750		\$2.50	\$21,875.00
4	2010-108-X-2	BANK FILL	LF	250		\$2.50	\$625.00
DIVISION 4 - SEWERS AND DRAINS							
5	4010-108-A-1	PIPE CULVERT SD, TRENCHED, CMP, 18"	LF	192		\$28.00	\$5,376.00
6	4010-108-A-1	PIPE CULVERT SD, TRENCHED, CMP, 24"	LF	144		\$34.00	\$4,896.00
7	4010-108-A-1	PIPE CULVERT SD, TRENCHED, CMP, 30"	LF	168		\$40.00	\$6,720.00
9	4010-108-A-1	PIPE CULVERT TE, TRENCHED, CMP, 12"	LF	60		\$28.00	\$1,680.00
10	4010-108-A-1	PIPE CULVERT TE, TRENCHED, CMP, 15"	LF	20		\$30.00	\$600.00
DIVISION 9 - SITE WORK AND LANDSCAPING							
11	9010-108-A-0	SEEDING AND FERTILIZING, ONE SIDE	LF	11,350.0		\$1.40	\$15,890.00
12	9040-108-J-0	RIP RAP, TYPE E	TON	1,930.0		\$38.00	\$73,340.00
13	9060-108-E-0	FENCE REMOVAL	LF	670.0		\$1.00	\$670.00

APPROXIMATE ESTIMATE COST OPINION \$142,547.00*

*Corrected Cost Estimate, original estimate was found to have an error.

DD	Township	Section	Site No	Channel Excavation	Bank Shape	Bank Fill	Riprap	Tile Ext	SD Size	SD Length
80	FER	20	1	180	190	40	190	15	20	
80	FRE	21	1	130	50	30	50			
80	FER	21	2	80	50	30	50			
80	FRE	21	3	60					24	48
80	FRE	21	4	180			20			
80	FRE	21	5	180						
80	FRE	21	6	220						
80	FRE	21	7	280	260		260			
80	FRE	20	1	90						
80	FRE	20	2	60			100			
80	FRE	20	3	60					18	48
80	FRE	20	4	40						
80	FRE	20	5		160				18	48
80	FRE	20	6	60	200	100				
80	FRE	27	1		1300				24	48
80	FRE	27	2		430					
80	FRE	22	1		940					
80	FRE	22	2				100			
80	FRE	22	3		360					
80	FRE	22	4				120			
80	FRE	22	5		310				30	60
80	FRE	26	1		230					
80	FRE	26	2		260					
80	FRE	26	3		140					
80	FRE	26	4		60					

DD	Township	Section	Site No	Channel Excavation (LF)	Bank Shape (LF)	Bank Fill (LF)	Riprap (Ton)	Tile Ext Size (in)	Tile Ext (ft)	SD Size (in)	SD Length (ft)
80	FRE	26	5		380						
80	FRE	26	6		440					30	48
80	FRE	26	7		120					30	60
80	FRE	26	8		90					18	96
80	FRE	26	9		20	20					
80	FRE	26	10		110						
80	FRE	26	11	100	60	30	50				
80	FRE	26	12		60			12	20		
80	FRE	26	13		60						
80	FRE	26	14		60						
80	FRE	35	1		80						
80	FRE	35	2		110						
80	FRE	35	3		90						
80	FRE	35	4		120		110				
80	FRE	35	5		140						
80	FRE	35	6	140	230						
80	FRE	35	7		80					24	48
80	FRE	35	8		210		210				
80	FRE	35	9	60	130						
80	FRE	36	1		210		110	12	20		
80	FRE	36	2		180						
80	FRE	36	3	150	190						
80	FRE	36	4	280	130			110			
80	NEV	1	1		230			170			
80	NEV	1	2		280			280			

