



**BOLTON
& MENK**

Real People. Real Solutions.

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January 13, 2017

Board of Supervisors
Palo Alto County Courthouse
Emmetsburg, IA 50536

Re: Engineer's Report
2014 Flood Damages Repairs
Drainage District No. 15 North

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. 15 North 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. 15 North reported \$86,800 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. 15 North is a new ditch the construction of which was completed in 2012. The weather and saturated soil conditions have not been favorable and the ditch has yet to fully stabilize. Especially with diminished grass cover the ditch looks rough. This description is not different from the descriptions of open ditches first dug in Palo Alto County a century or more ago. Rapid sedimentation and sliding banks are an expected part of new deep open ditches. It was then a

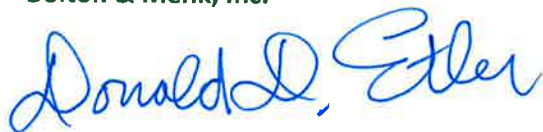
common practice for the open ditches to be cleaned out within a few years after the initial construction was completed.

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, \$118,290. We recommend that these repairs be accomplished. We further recommend that the district take advantage of the presence of a contractor on the open ditch to dip out the accumulated sediment in the ditch bottom. We estimate the volume to be excavated at 4,000 cubic yards.

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.

Disaster-recovery repairs	\$118,290
Open Ditch Excavation	16,000
Spoil Pile Leveling & Shaping	<u>4,000</u>
Construction Subtotal	\$138,290
Construction-related Damages	4,000
FEMA Assessment and Administration	5,000
Engineering Services thru Public Hearing	4,000
Bid Letting Services	4,000
Construction Staking, Observation & Admin.	8,000
Legal, Publications and Admin.	3,000
Contingency	<u>5,000</u>
Total Estimated Project Cost	\$171,290
Potential Funding Assistance	<u>\$100,000</u>
Potential Net Cost	\$ 71,290

Respectfully submitted
Bolton & Menk, Inc.



Donald D. Etler, P.E.
Senior Project Manager

Attachments (2)

**PALO ALTO COUNTY, IOWA
2014 FLOOD DAMAGE - FEMA REPAIRS**

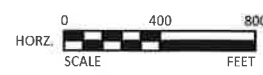
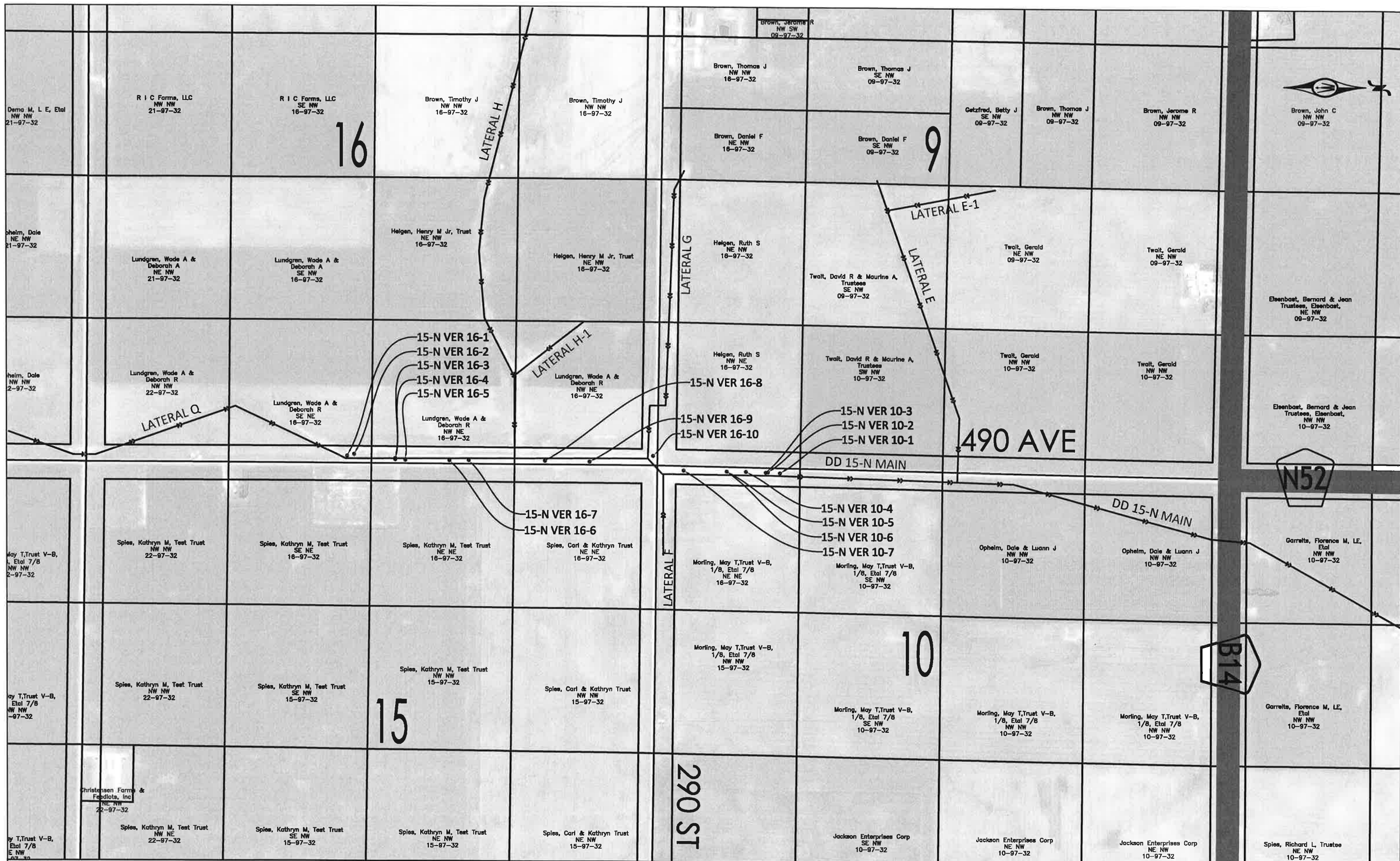
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13-Jan-17

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.	UNIT PRICE	TOTAL
DIVISION 1 - GENERAL PROVISIONS AND COVENANTS							
1	1090-105-D-0	MOBILIZATION	LS	1		\$5,000.00	\$5,000.00
DIVISION 2 - EARTHWORK							
2	2010-108-X-0	CHANNEL EXCAVATION	LF	3,730		\$4.00	\$14,920.00
3	2010-108-X-1	BANK FILL	LF	40		\$14.00	\$560.00
4	2010-108-X-2	BANK SHAPING	LF	1,700		\$4.00	\$6,800.00
DIVISION 4 - SEWERS AND DRAINS							
5	4010-108-A-1	PIPE CULVERT SD, TRENCHED, CMP, 18"	LF	48		\$32.00	\$1,536.00
DIVISION 9 - SITE WORK AND LANDSCAPING							
6	9010-108-A-0	SEEDING AND FERTILIZING, ONE SIDE	LF	5,470.0		\$1.50	\$8,205.00
7	9040-108-J-0	RIP RAP, TYPE E	TON	1,640.0		\$43.00	\$70,520.00
						SUBTOTAL:	\$107,541.00
						CONTINGENCY 10%:	\$10,750.00
						ESTIMATED COST OPINION:	\$118,290.00

DD	TOWNSHIP	Section	Site No	Side	Ditch Depth (FT)	Channel Excavation (LF)	Bank Shape (LF)	Bank Fill (LF)	Riprap (TON)	SD Size (IN)	SD Length (FT)
15-N	VER	16	1	Left	22	180			90		
15-N	VER	16	2	Right	22	190			60		
15-N	VER	16	3	Right	22	230			180		
15-N	VER	16	4	Left	22	160			190		
15-N	VER	16	5	Right	22	190			230		
15-N	VER	16	6	Right	22	180			180		
15-N	VER	16	7	Right	22	480	480				
15-N	VER	16	8	Right	22	380	380				
15-N	VER	16	9	Left	22	330			220		
15-N	VER	16	10	Right	22	360			210		
15-N	VER	10	1	Left	22	10			120		
15-N	VER	10	2	Left	22	80	50			18	48
15-N	VER	10	3	Left	22	60	180				
15-N	VER	10	4	Right	22	190	190		160		
15-N	VER	10	5	Left	22	320					
15-N	VER	10	6	Left	22			40			
15-N	VER	10	7	Left	22	390	420				
TOTAL:						3730	1700	40	1640		



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REV	ISSUED FOR	DATE	DESIGNED
			JGS
			DRAWN
			JGS
			CHECKED
			DDE

2014 FEMA REPAIRS
 PALO ALTO COUNTY, IOWA
 DD 15-N FEMA LOCATIONS

SHEET
D.01

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