



Real People. Real Solutions.

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PO Box 68
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Bolton-Menk.com

January 18, 2023

Worth County Board of Supervisors
Worth County Courthouse
1000 Central Ave.
Northwood, IA 50459

RE: Amendment 1 to Engineer's Report
Drainage District No. 2 Improvements
Project No.: 0A1.124364

Dear Board Members:

The Engineer's Report for the repairs and improvement of Drainage District No. 2 was filed on September 30, 2022. That report included plans and profiles as well as an engineer's cost estimate. A public hearing held on December 19, 2022 showed interest in splitting the project into phases. Tree clearing and Earthmoving would be completed first with a contractor returning 10 years in the future to complete pipe replacement.

Accordingly, we have provided an additional Engineer's Opinion of Probable Cost for landowners and the Board of Supervisors to consider which estimated costs associated with breaking the project into two phases. Additionally, estimates for excavation have been slightly altered to reflect areas where no major earth work would be done and subsequently no spoil leveling would be required. The separate estimates for pipe work are made assuming the work would be completed in ten years' time and accounting for either 2% or 6% average annual inflation over that time. Delaying the pipework for 10 years at 2% inflation resulted in the total cost of the project to be 10% more than doing all the work now, at 6% inflation the increase in total cost is estimated at 25% more. The cost estimates are enclosed with this letter.

Sincerely,

Bolton & Menk, Inc.

Jonathan P. Rosengren, P.E.
Project Manager

Encl: All Together EOPC
Excavation Only EOPC
Pipe Only- 2% inflation EOPC
Pipe Only- 6% inflation EOPC

2023 Open Ditch Excavation and Pipe Replacement

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 1 - MAIN & BRANCH 1 OPEN DITCH REPAIR

101	EXCAVATION		130,000	CY	\$3.00	\$390,000.00
102	CLEARING & GRUBBING		1	LS	\$60,000.00	\$60,000.00
103	SPOIL LEVELING (BOTH SIDES)		400	STA	\$200.00	\$80,000.00
104	SEED & FERTILIZE BANKS		400	STA	\$100.00	\$40,000.00
105	TILE EXTENSION, 12" CMP		1,440	LF	\$35.00	\$50,400.00
106	TILE EXTENSION, 15" CMP		200	LF	\$40.00	\$8,000.00
107	TILE EXTENSION, 18" CMP		180	LF	\$45.00	\$8,100.00
108	TILE EXTENSION, 24" CMP		60	LF	\$55.00	\$3,300.00
109	SURFACE DRAIN, 18" CMP		1,000	LF	\$45.00	\$45,000.00
110	SURFACE DRAIN, 24" CMP		400	LF	\$60.00	\$24,000.00
111	SURFACE DRAIN, 30" CMP		120	LF	\$75.00	\$9,000.00
112	RIPRAP, CLASS D		1,000	TN	\$50.00	\$50,000.00
113	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
114	MOBILIZATION		1	LS	\$42,000.00	\$42,000.00
SUBTOTAL						\$810,300.00

SECTION 2 - LATERAL A OPEN DITCH REPAIR

201	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
202	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
203	SPOIL LEVELING (BOTH SIDES)		25	STA	\$200.00	\$5,000.00
204	SEED & FERTILIZE BANKS		25	STA	\$100.00	\$2,500.00
205	TILE EXTENSION, 12" CMP		100	LF	\$35.00	\$3,500.00
206	TILE EXTENSION, 15" CMP		20	LF	\$40.00	\$800.00
207	TILE EXTENSION, 18" CMP		20	LF	\$45.00	\$900.00
208	SURFACE DRAIN, 18" CMP		80	LF	\$45.00	\$3,600.00
209	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
210	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
211	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
212	MOBILIZATION		1	LS	\$1,500.00	\$1,500.00
SUBTOTAL						\$29,700.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 3 - LATERAL D OPEN DITCH IMPROVEMENT

301	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
302	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
303	SPOIL LEVELING (BOTH SIDES)		8	STA	\$200.00	\$1,600.00
304	SEED & FERTILIZE BANKS		8	STA	\$100.00	\$800.00
305	TILE EXTENSION, 12" CMP		40	LF	\$30.00	\$1,200.00
306	SURFACE DRAIN, 18" CMP		40	LF	\$45.00	\$1,800.00
307	ROCK RIFFLE		1	EA	\$1,000.00	\$1,000.00
308	RIPRAP DROP STRUCTURE		1	EA	\$1,000.00	\$1,000.00
309	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
310	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
311	MOBILIZATION		1	LS	\$900.00	\$900.00
SUBTOTAL						\$17,800.00

SECTION 4 - LATERAL H OPEN DITCH REPAIR

401	EXCAVATION		12,000	CY	\$3.00	\$36,000.00
402	CLEARING & GRUBBING		1	LS	\$20,000.00	\$20,000.00
403	SPOIL LEVELING (BOTH SIDES)		168	STA	\$200.00	\$33,600.00
404	SEED & FERTILIZE BANKS		168	STA	\$100.00	\$16,800.00
405	TILE EXTENSION, 12" CMP		680	LF	\$30.00	\$20,400.00
406	TILE EXTENSION, 15" CMP		140	LF	\$35.00	\$4,900.00
407	TILE EXTENSION, 18" CMP		120	LF	\$45.00	\$5,400.00
408	SURFACE DRAIN, 18" CMP		680	LF	\$45.00	\$30,600.00
409	SURFACE DRAIN, 24" CMP		280	LF	\$60.00	\$16,800.00
410	SURFACE DRAIN, 30" CMP		80	LF	\$75.00	\$6,000.00
411	RIPRAP, CLASS D		300	TN	\$50.00	\$15,000.00
412	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
413	MOBILIZATION		1	LS	\$11,000.00	\$11,000.00
SUBTOTAL						\$217,000.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



**BOLTON
& MENK**

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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 5 - LATERAL M OPEN DITCH REPAIR

501	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
502	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
503	SPOIL LEVELING (BOTH SIDES)		28	STA	\$200.00	\$5,600.00
504	SEED & FERTILIZE BANKS		28	STA	\$100.00	\$2,800.00
505	TILE EXTENSION, 12" CMP		120	LF	\$30.00	\$3,600.00
506	TILE EXTENSION, 15" CMP		20	LF	\$35.00	\$700.00
507	TILE EXTENSION, 18" CMP		20		\$45.00	\$900.00
508	SURFACE DRAIN, 18" CMP		120	LF	\$45.00	\$5,400.00
509	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
510	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
511	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
512	MOBILIZATION		1	LS	\$1,500.00	\$1,500.00
					SUBTOTAL	\$32,400.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST \$1,107,200.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 6 - WORTH COUNTY SECONDARY ROADS

601	REMOVE AND RELAY 10' X 10' BOX CULVERT		1	LS	\$50,000.00	\$50,000.00
602	REMOVE AND RELAY 2-54" CMP CULVERTS		1	LS	\$5,000.00	\$5,000.00
603	PCC PATCH- 6" DEPTH		100	SY	\$150.00	\$15,000.00
604	CLASS 1 ROAD STONE		250	TN	\$30.00	\$7,500.00
605	SEED & FERTILIZE DITCH		2	EA	\$500.00	\$1,000.00
606	MOBILIZATION		1	LS	\$1,000.00	\$1,000.00
607	TRAFFIC CONTROL		2	EA	\$1,000.00	\$2,000.00

TOTAL ESTIMATED COUNTY ROADS CONSTRUCTION COST \$81,500.00

CONSTRUCTION RELATED DAMAGES \$45,000.00

BASIC ENGINEERING SERVICES

SURVEY, STUDY & REPORT. MEETINGS & HEARING	\$90,000.00
CONSTRUCTION PLANS, SPECIFICATIONS, & BID LETTING	\$10,000.00
CONSTRUCTION ENGINEERING SERVICES	\$50,000.00
LEGAL SERVICES, PUBLICATIONS, MAILINGS, ETC.	\$3,500.00
FINANCE & INTEREST	\$221,000.00

ESTIMATED ASSOCIATED PROJECT COSTS TOTAL: \$419,500.00

TOTAL ESTIMATED PROJECT COST : \$1,608,200.00

TOTAL ESTIMATED COST ASSESSED TO LANDOWNERS : \$1,527,000.00

Estimated Average Cost Per Currently Assessed Acre (10,980 ac) \$139

Estimated Average Cost Per Acre Per Year (10 years) \$18

Estimated Average Cost Per Acre Per Year (20 years) \$11

2023 Open Ditch Excavation Only

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



BOLTON & MENK

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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 1 - MAIN & BRANCH 1 OPEN DITCH REPAIR

101	EXCAVATION		130,000	CY	\$3.00	\$390,000.00
102	CLEARING & GRUBBING		1	LS	\$60,000.00	\$60,000.00
103	SPOIL LEVELING (BOTH SIDES)		400	STA	\$200.00	\$80,000.00
104	SEED & FERTILIZE BANKS		400	STA	\$100.00	\$40,000.00
105	RIPRAP, CLASS D		1,000	TN	\$50.00	\$50,000.00
106	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
107	MOBILIZATION		1	LS	\$32,500.00	\$32,500.00
SUBTOTAL						\$653,000.00

SECTION 2 - LATERAL A OPEN DITCH REPAIR

201	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
202	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
203	SPOIL LEVELING (BOTH SIDES)		25	STA	\$200.00	\$5,000.00
204	SEED & FERTILIZE BANKS		25	STA	\$100.00	\$2,500.00
205	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
206	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
207	MOBILIZATION		1	LS	\$900.00	\$900.00
SUBTOTAL						\$17,900.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 3 - LATERAL D OPEN DITCH IMPROVEMENT

301	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
302	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
303	SPOIL LEVELING (BOTH SIDES)		8	STA	\$200.00	\$1,600.00
304	SEED & FERTILIZE BANKS		8	STA	\$100.00	\$800.00
305	ROCK RIFFLE		1	EA	\$1,000.00	\$1,000.00
306	RIPRAP DROP STRUCTURE		1	EA	\$1,000.00	\$1,000.00
307	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
308	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
309	MOBILIZATION		1	LS	\$800.00	\$800.00
SUBTOTAL						\$14,700.00

SECTION 4 - LATERAL H OPEN DITCH REPAIR

401	EXCAVATION		12,000	CY	\$3.00	\$36,000.00
402	CLEARING & GRUBBING		1	LS	\$20,000.00	\$20,000.00
403	SPOIL LEVELING (BOTH SIDES)		168	STA	\$200.00	\$33,600.00
404	SEED & FERTILIZE BANKS		168	STA	\$100.00	\$16,800.00
405	RIPRAP, CLASS D		300	TN	\$50.00	\$15,000.00
406	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
407	MOBILIZATION		1	LS	\$7,000.00	\$7,000.00
SUBTOTAL						\$128,900.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



BOLTON & MENK

Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 5 - LATERAL M OPEN DITCH REPAIR

501	EXCAVATION		2,000	CY	\$3.00	\$6,000.00
502	CLEARING & GRUBBING		1	LS	\$500.00	\$500.00
503	SPOIL LEVELING (BOTH SIDES)		28	STA	\$200.00	\$5,600.00
504	SEED & FERTILIZE BANKS		28	STA	\$100.00	\$2,800.00
505	RIPRAP, CLASS D		50	TN	\$50.00	\$2,500.00
506	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
507	MOBILIZATION		1	LS	\$1,000.00	\$1,000.00
SUBTOTAL						\$18,900.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST \$833,400.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 6 - WORTH COUNTY SECONDARY ROADS

601	REMOVE AND RELAY 10' X 10' BOX CULVERT		1	LS	\$50,000.00	\$50,000.00
602	REMOVE AND RELAY 2-54" CMP CULVERTS		1	LS	\$5,000.00	\$5,000.00
603	PCC PATCH- 6" DEPTH		100	SY	\$150.00	\$15,000.00
604	CLASS 1 ROAD STONE		250	TN	\$30.00	\$7,500.00
605	SEED & FERTILIZE DITCH		2	EA	\$500.00	\$1,000.00
606	MOBILIZATION		1	LS	\$1,000.00	\$1,000.00
607	TRAFFIC CONTROL		2	EA	\$1,000.00	\$2,000.00

TOTAL ESTIMATED COUNTY ROADS CONSTRUCTION COST \$81,500.00

CONSTRUCTION RELATED DAMAGES \$45,000.00

BASIC ENGINEERING SERVICES

SURVEY, STUDY & REPORT. MEETINGS & HEARING	\$45,000.00
CONSTRUCTION PLANS, SPECIFICATIONS, & BID LETTING	\$10,000.00
CONSTRUCTION ENGINEERING SERVICES	\$30,000.00
LEGAL SERVICES, PUBLICATIONS, MAILINGS, ETC.	\$3,500.00
FINANCE & INTEREST	\$167,800.00

ESTIMATED ASSOCIATED PROJECT COSTS TOTAL: \$301,300.00

TOTAL ESTIMATED PROJECT COST : \$1,216,200.00

TOTAL ESTIMATED COST ASSESSED TO LANDOWNERS : \$1,135,000.00

Estimated Average Cost Per Currently Assessed Acre (10,980 ac) \$103

Estimated Average Cost Per Acre Per Year (10 years) \$14

Estimated Average Cost Per Acre Per Year (20 years) \$8

2033 Pipe Replacement- 2% Inflation

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 1 - MAIN & BRANCH 1 OPEN DITCH REPAIR

101	TILE EXTENSION, 12" CMP		1,440	LF	\$35.00	\$50,400.00
102	TILE EXTENSION, 15" CMP		200	LF	\$40.00	\$8,000.00
103	TILE EXTENSION, 18" CMP		180	LF	\$45.00	\$8,100.00
104	TILE EXTENSION, 24" CMP		60	LF	\$55.00	\$3,300.00
105	SURFACE DRAIN, 18" CMP		1,000	LF	\$45.00	\$45,000.00
106	SURFACE DRAIN, 24" CMP		400	LF	\$60.00	\$24,000.00
107	SURFACE DRAIN, 30" CMP		120	LF	\$75.00	\$9,000.00
108	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
109	MOBILIZATION		1	LS	\$8,000.00	\$8,000.00
SUBTOTAL						\$156,300.00

SECTION 2 - LATERAL A OPEN DITCH REPAIR

201	TILE EXTENSION, 12" CMP		100	LF	\$35.00	\$3,500.00
202	TILE EXTENSION, 15" CMP		20	LF	\$40.00	\$800.00
203	TILE EXTENSION, 18" CMP		20	LF	\$45.00	\$900.00
204	SURFACE DRAIN, 18" CMP		80	LF	\$45.00	\$3,600.00
205	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
206	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
207	MOBILIZATION		1	LS	\$700.00	\$700.00
SUBTOTAL						\$12,400.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 3 - LATERAL D OPEN DITCH IMPROVEMENT

301	TILE EXTENSION, 12" CMP		40	LF	\$30.00	\$1,200.00
302	SURFACE DRAIN, 18" CMP		40	LF	\$45.00	\$1,800.00
303	ROCK RIFFLE			EA	\$1,000.00	
304	RIPRAP DROP STRUCTURE			EA	\$1,000.00	
305	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
306	MOBILIZATION		1	LS	\$200.00	\$200.00
SUBTOTAL						\$3,700.00

SECTION 4 - LATERAL H OPEN DITCH REPAIR

401	TILE EXTENSION, 12" CMP		680	LF	\$30.00	\$20,400.00
402	TILE EXTENSION, 15" CMP		140	LF	\$35.00	\$4,900.00
403	TILE EXTENSION, 18" CMP		120	LF	\$45.00	\$5,400.00
404	SURFACE DRAIN, 18" CMP		680	LF	\$45.00	\$30,600.00
405	SURFACE DRAIN, 24" CMP		280	LF	\$60.00	\$16,800.00
406	SURFACE DRAIN, 30" CMP		80	LF	\$75.00	\$6,000.00
407	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
408	MOBILIZATION		1	LS	\$5,000.00	\$5,000.00
SUBTOTAL						\$89,600.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
 DRAINAGE DISTRICT NO. 2
 WORTH COUNTY, IOWA
 BMI PROJECT NO. 0A.1124364



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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 5 - LATERAL M OPEN DITCH REPAIR

501	TILE EXTENSION, 12" CMP		120	LF	\$30.00	\$3,600.00
502	TILE EXTENSION, 15" CMP		20	LF	\$35.00	\$700.00
503	TILE EXTENSION, 18" CMP		20		\$45.00	\$900.00
504	SURFACE DRAIN, 18" CMP		120	LF	\$45.00	\$5,400.00
505	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
506	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
507	MOBILIZATION		1	LS	\$800.00	\$800.00
SUBTOTAL						\$14,300.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST \$276,300.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST (10 YR INFLATION @ 2%) \$336,808.16

CONSTRUCTION RELATED DAMAGES	\$45,000.00
BASIC ENGINEERING SERVICES	
SURVEY, STUDY & REPORT. MEETINGS & HEARING	\$45,000.00
CONSTRUCTION PLANS, SPECIFICATIONS, & BID LETTING	\$10,000.00
CONSTRUCTION ENGINEERING SERVICES	\$30,000.00
LEGAL SERVICES, PUBLICATIONS, MAILINGS, ETC.	\$3,500.00
FINANCE & INTEREST	<u>\$78,000.00</u>

ESTIMATED ASSOCIATED PROJECT COSTS TOTAL: \$211,500.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST (10 YR INFLATION @ 2%) \$257,817.32

TOTAL ESTIMATED PROJECT COST : \$594,625.48

TOTAL ESTIMATED COST ASSESSED TO LANDOWNERS : \$595,000.00

Estimated Average Cost Per Currently Assessed Acre (10,980 ac)	\$54
Estimated Average Cost Per Acre Per Year (10 years)	\$14
Estimated Average Cost Per Acre Per Year (20 years)	\$8

2033 Pipe Replacement- 6% Inflation

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



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Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 1 - MAIN & BRANCH 1 OPEN DITCH REPAIR

101	TILE EXTENSION, 12" CMP		1,440	LF	\$35.00	\$50,400.00
102	TILE EXTENSION, 15" CMP		200	LF	\$40.00	\$8,000.00
103	TILE EXTENSION, 18" CMP		180	LF	\$45.00	\$8,100.00
104	TILE EXTENSION, 24" CMP		60	LF	\$55.00	\$3,300.00
105	SURFACE DRAIN, 18" CMP		1,000	LF	\$45.00	\$45,000.00
106	SURFACE DRAIN, 24" CMP		400	LF	\$60.00	\$24,000.00
107	SURFACE DRAIN, 30" CMP		120	LF	\$75.00	\$9,000.00
108	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
109	MOBILIZATION		1	LS	\$8,000.00	\$8,000.00
SUBTOTAL						\$156,300.00

SECTION 2 - LATERAL A OPEN DITCH REPAIR

201	TILE EXTENSION, 12" CMP		100	LF	\$35.00	\$3,500.00
202	TILE EXTENSION, 15" CMP		20	LF	\$40.00	\$800.00
203	TILE EXTENSION, 18" CMP		20	LF	\$45.00	\$900.00
204	SURFACE DRAIN, 18" CMP		80	LF	\$45.00	\$3,600.00
205	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
206	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
207	MOBILIZATION		1	LS	\$700.00	\$700.00
SUBTOTAL						\$12,400.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
DRAINAGE DISTRICT NO. 2
WORTH COUNTY, IOWA
BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 3 - LATERAL D OPEN DITCH IMPROVEMENT

301	TILE EXTENSION, 12" CMP		40	LF	\$30.00	\$1,200.00
302	SURFACE DRAIN, 18" CMP		40	LF	\$45.00	\$1,800.00
303	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
304	MOBILIZATION		1	LS	\$200.00	\$200.00
SUBTOTAL						\$3,700.00

SECTION 4 - LATERAL H OPEN DITCH REPAIR

401	TILE EXTENSION, 12" CMP		680	LF	\$30.00	\$20,400.00
402	TILE EXTENSION, 15" CMP		140	LF	\$35.00	\$4,900.00
403	TILE EXTENSION, 18" CMP		120	LF	\$45.00	\$5,400.00
404	SURFACE DRAIN, 18" CMP		680	LF	\$45.00	\$30,600.00
405	SURFACE DRAIN, 24" CMP		280	LF	\$60.00	\$16,800.00
406	SURFACE DRAIN, 30" CMP		80	LF	\$75.00	\$6,000.00
407	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
408	MOBILIZATION		1	LS	\$5,000.00	\$5,000.00
SUBTOTAL						\$89,600.00

ENGINEER'S ESTIMATE

DRAINAGE REPAIRS- OPEN DITCH
 DRAINAGE DISTRICT NO. 2
 WORTH COUNTY, IOWA
 BMI PROJECT NO. 0A.1124364



Real People. Real Solutions.

Date: 1/20/2023

Item No.	Item	Notes	Estimated Quantity	Unit	Unit Price	Total Amount
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SECTION 5 - LATERAL M OPEN DITCH REPAIR

501	TILE EXTENSION, 12" CMP		120	LF	\$30.00	\$3,600.00
502	TILE EXTENSION, 15" CMP		20	LF	\$35.00	\$700.00
503	TILE EXTENSION, 18" CMP		20		\$45.00	\$900.00
504	SURFACE DRAIN, 18" CMP		120	LF	\$45.00	\$5,400.00
505	SURFACE DRAIN, 24" CMP		40	LF	\$60.00	\$2,400.00
506	EROSION MANAGEMENT PLAN		1	LS	\$500.00	\$500.00
507	MOBILIZATION		1	LS	\$800.00	\$800.00
SUBTOTAL						\$14,300.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST \$276,300.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST (10 YR INFALTION @ 6%) \$494,811.22

CONSTRUCTION RELATED DAMAGES	\$45,000.00
BASIC ENGINEERING SERVICES	
SURVEY, STUDY & REPORT. MEETINGS & HEARING	\$45,000.00
CONSTRUCTION PLANS, SPECIFICATIONS, & BID LETTING	\$10,000.00
CONSTRUCTION ENGINEERING SERVICES	\$30,000.00
LEGAL SEVICES, PUBLICATIONS, MAILINGS, ETC.	\$3,500.00
FINANCE & INTEREST	<u>\$87,400.00</u>

ESTIMATED ASSOCIATED PROJECT COSTS TOTAL: \$220,900.00

TOTAL ESTIMATED DISTRICT CONSTRUCTION COST (10 YR INFLATION @ 2%) \$269,275.87

TOTAL ESTIMATED PROJECT COST : \$764,087.09

TOTAL ESTIMATED COST ASSESSED TO LANDOWNERS : \$765,000.00

Estimated Average Cost Per Currently Assessed Acre (10,980 ac)	\$70
Estimated Average Cost Per Acre Per Year (10 years)	\$14
Estimated Average Cost Per Acre Per Year (20 years)	\$8