



APPENDIX C

**OPINION OF PROBABLE PROJECT
COSTS FOR REPLACEMENT SEWER**

BLACK & VEATCH

Lincoln, Nebraska
 Lincoln Wastewater System
 Beal Slough Relief Trunk Sewer Phases I & II
 Opinion of Probable Project Cost
 October 30, 2003

Alignment No. 2a - Phases I & II - Remove and Replace Existing Sewer

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u> \$	<u>Total Cost</u> \$
GENERAL REQUIREMENTS				
Mobilization		Lump Sum	\$106,200	\$106,200
Supervision		Lump Sum	\$331,800	\$331,800
Temporary facilities		Lump Sum	\$79,600	\$79,600
Temporary utilities		Lump Sum	\$53,100	\$53,100
Equipment rental & misc.		Lump Sum	\$26,500	\$26,500
Total - General Requirements				\$597,000

<u>DESCRIPTION</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Sewer Pipe in Place Excluding Manholes and Dewatering				
48" High Strength Gravity Sewer Pipe	3,471	LF	\$264	\$916,000
42" High Strength Gravity Sewer Pipe	6,652	LF	\$231	\$1,537,000
36" High Strength Gravity Sewer Pipe	10,982	LF	\$198	\$2,174,000
Subtotal				\$4,627,000
Tunnel Installation				
BNSF Railroad Line				
61" Tunnel	110	LF	\$976	\$107,000
BNSF Railroad Line				
61" Tunnel	105	LF	\$976	\$102,000
14th Street				
61" Tunnel	110	LF	\$915	\$101,000
115 KVA LES Transmission Main				
70" Tunnel	50	LF	\$1,050	\$53,000
Southwood Street				
70" Tunnel	60	LF	\$1,050	\$63,000
Beal Slough/BNSFRR/27th Street				
70" Tunnel	380	LF	\$1,050	\$399,000
Highway 2/40th Street				
49" Tunnel	205	LF	\$735	\$151,000
48th Street				
49" Tunnel	85	LF	\$735	\$62,000
Subtotal				\$1,038,000
Grade Check				
Structure	1	LS	\$100,000	\$100,000
Rock Grade Check	2	EA	\$50,000	\$100,000
Subtotal				\$200,000

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Alignment No. 2a - Phases I & II - Remove and Replace Existing Sewer

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u> \$	<u>Total Cost</u> \$
Manholes				
Standard Manhole 4' Dia., 8' Deep or Less	42	EA	\$2,000	\$84,000
Standard and Drop Manhole Additional Depth	462	LF	\$250	\$116,000
Subtotal				\$200,000
Dewatering				
6 Foot Average Dewatering Depth	10,982	LF	\$25	\$275,000
Subtotal				\$275,000
By-Pass Pumping				
Replacement of Existing Main	1	LS	\$200,000	\$200,000
Subtotal				\$200,000
Street Repairs				
Replace Asphalt Pavement	1,100	SY	\$45	\$50,000
Saw Cut, Remove, and Replace 8" Concrete	560	SY	\$65	\$36,000
Subtotal				\$86,000
Utility Relocation				
Miscellaneous Repairs and Relocations	1	LS	\$40,000	\$40,000
Subtotal				\$40,000
Miscellaneous				
Railroad Insurance and Flagging	70	Days	\$500	\$35,000
Seeding	48,809	SY	\$0.40	\$20,000
Subtotal				\$55,000
Construction Cost Subtotal				\$7,318,000
Contingencies			25%	\$1,830,000
TOTAL CONSTRUCTION COST				\$9,148,000
ADDITIONAL PROJECT COSTS				
Right-of-Way Costs				
Permanent Easement	0	SF	\$1.00	\$0
Temporary Construction Easement	491,400	SF	\$0.10	\$49,000
Subtotal				\$49,000
Engineering, Legal, and Administrative Costs			20%	\$1,839,000
TOTAL PROJECT COST				\$11,036,000

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Alignment No. 2b - Phases I & II - Insituform Lining

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u> \$	<u>Total Cost</u> \$
DESCRIPTION				
Insituform Existing Sewer (17th St and Pioneers to 56th St and Hwy 2)				
30 Inch Sewer	3,560	LF	\$141	\$502,000
27 Inch Sewer	3,620	LF	\$127	\$459,000
24 Inch Sewer	6,520	LF	\$113	\$735,000
21 Inch Sewer	1,780	LF	\$99	\$176,000
Subtotal				\$1,872,000
Construction Cost Subtotal				\$1,872,000
Contingencies			10%	\$187,000
TOTAL CONSTRUCTION COST				\$2,059,000
ADDITIONAL PROJECT COSTS				
Right-of-Way Costs				
Permanent Easement	0	SF	\$1.00	\$0
Temporary Construction Easement	232,200	SF	\$0.10	\$23,000
Subtotal				\$23,000
Engineering, Legal, and Administrative Costs			10%	\$208,000
TOTAL PROJECT COST				\$2,290,000
Alignment No. 2 Project Cost				\$9,929,000
Present Worth of Insituform (10 years, 4% interest)				\$1,547,000
Total Project Cost				\$11,476,000

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Alignment No. 2c - Phases I & II - Abandon Existing Sewer In-Place

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u> \$	<u>Total Cost</u> \$
GENERAL REQUIREMENTS				
Mobilization		Lump Sum	\$106,800	\$106,800
Supervision		Lump Sum	\$333,900	\$333,900
Temporary facilities		Lump Sum	\$80,100	\$80,100
Temporary utilities		Lump Sum	\$53,400	\$53,400
Equipment rental & misc.		Lump Sum	\$26,700	\$26,700
Total - General Requirements				\$601,000

<u>DESCRIPTION</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Abandon Existing Sewer				
30 Inch Sewer - Flowable Fill	647	cu yd	\$100	\$65,000
27 Inch Sewer - Flowable Fill	534	cu yd	\$100	\$53,000
24 Inch Sewer - Flowable Fill	758	cu yd	\$100	\$76,000
21 Inch Sewer - Flowable Fill	159	cu yd	\$100	\$16,000
Cut off Manholes Top 5 ft, Fill with Flow Fill, and Backfill	39	EA	\$850	\$33,000
Subtotal				\$243,000
Sewer Pipe in Place Excluding Manholes and Dewatering				
48" High Strength Gravity Sewer Pipe	3,471	LF	\$264	\$916,000
42" High Strength Gravity Sewer Pipe	6,652	LF	\$231	\$1,537,000
36" High Strength Gravity Sewer Pipe	10,982	LF	\$198	\$2,174,000
Subtotal				\$4,627,000
Tunnel Installation				
BNSF Railroad Line				
61" Tunnel	110	LF	\$976	\$107,000
BNSF Railroad Line				
61" Tunnel	105	LF	\$976	\$102,000
14th Street				
61" Tunnel	110	LF	\$915	\$101,000
115 KVA LES Transmission Main				
70" Tunnel	50	LF	\$1,050	\$53,000
Southwood Street				
70" Tunnel	60	LF	\$1,050	\$63,000
Beal Slough/BNSFR/27th Street				
70" Tunnel	380	LF	\$1,050	\$399,000
Highway 2/40th Street				
49" Tunnel	205	LF	\$735	\$151,000
48th Street				
49" Tunnel	85	LF	\$735	\$62,000
Subtotal				\$1,038,000
Grade Check				
Structure	1	LS	\$100,000	\$100,000
Rock Grade Check	2	EA	\$50,000	\$100,000
Subtotal				\$200,000

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Alignment No. 2c - Phases I & II - Abandon Existing Sewer In-Place

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u> \$	<u>Total Cost</u> \$
Manholes				
Standard Manhole 4' Dia., 8' Deep or Less	42	EA	\$2,000	\$84,000
Standard and Drop Manhole Additional Depth	462	LF	\$250	\$116,000
Subtotal				\$200,000
Dewatering				
6 Foot Average Dewatering Depth	10,982	LF	\$25	\$275,000
Subtotal				\$275,000
Street Repairs				
Replace Asphalt Pavement	1,100	SY	\$45	\$50,000
Saw Cut, Remove, and Replace 8" Concrete	560	SY	\$65	\$36,000
Subtotal				\$86,000
Utility Relocation				
Miscellaneous Repairs and Relocations	1	LS	\$40,000	\$40,000
Subtotal				\$40,000
Miscellaneous				
Railroad Insurance and Flagging	70	Days	\$500	\$35,000
Seeding	48,809	SY	\$0.40	\$20,000
Subtotal				\$55,000
Construction Cost Subtotal				\$7,365,000
Contingencies			25%	\$1,841,000
TOTAL CONSTRUCTION COST				\$9,206,000
ADDITIONAL PROJECT COSTS				
Right-of-Way Costs				
Permanent Easement	156,000	SF	\$1.00	\$156,000
Temporary Construction Easement	491,400	SF	\$0.10	\$49,000
Subtotal				\$205,000
Engineering, Legal, and Administrative Costs			20%	\$1,882,000
TOTAL PROJECT COST				\$11,293,000



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