

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Martin P. Cleveland, Construction Engineer

SUBJECT: Keystone Trail Stabilization Project

DATE: March 30, 2010

Attached are some plan sheets and location map for the referenced project. The work consists of installing rock riprap, two curb inlets, two storm sewer outlets and concrete surface with a curb at two locations on the Keystone Trail (48th and Cornhusker Road, 60th and Harrison Street). Both trial locations are experiencing erosion (e.g. headcut) near the trail edge under the Cornhusker Road and Harrison Street bridges over Big Papio Creek. The proposed construction is to stabilize the eroding area along the trail edge and safely convey water runoff to the Big Papio Creek.

A bid summary is attached for your consideration. There were two bids submitted; the bids ranged in total cost from \$65,938.00 to \$120,673.24. The apparent lowest and best bidder is:

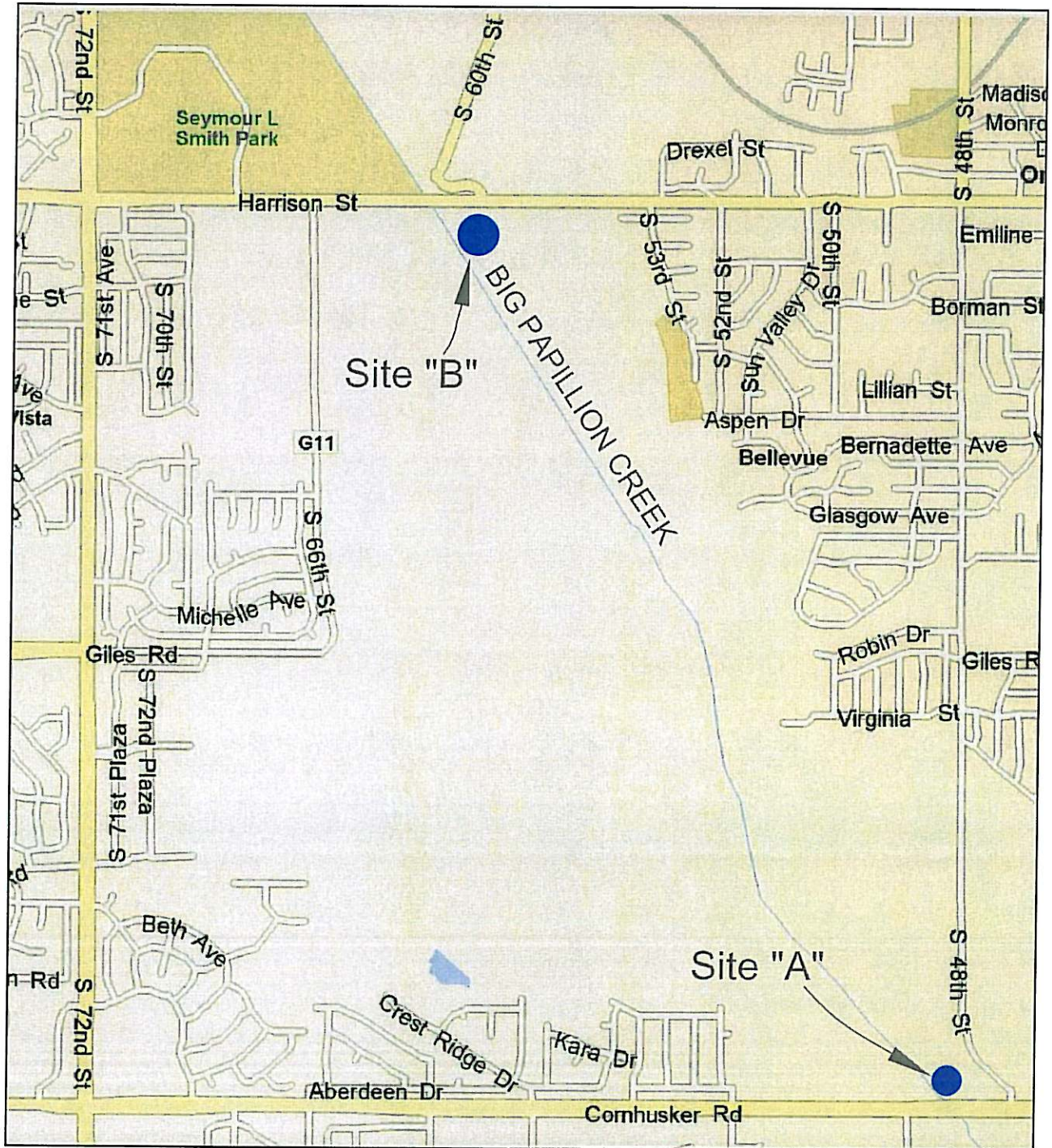
Lawn Smith and Co. with a total base bid for Sites A and B of \$65,938.00.

The engineer's opinion of probable construction cost was \$50,100. A letter of recommendation from the engineer, KMA, is attached.

This work will be funded via funds included in Project Maintenance General Contract Work (Account 010312 4479). As of March 5, 2010 remaining funds in this account is \$1,627,916.83. It is anticipated that this project will be completed in Fiscal Year 2010, as the contract period is 45 calendar days.

- **It is management's recommendation that the Subcommittee recommend to the Board of Directors that the General Manager be authorized to execute a contract for construction of the Keystone Trail Stabilization Project, with Lawn Smith and Co., for their total base bid (Sites A and B) of \$65,938.00.**

KEYSTONE TRAIL STABILIZATION PROJECT LOCATION MAP



SUMMARY OF BIDS (Revised 4-7-10)

NRD PROJECT NO. 529K

OPENING TIME: 10:00 A.M.

PROJECT: Keystone Trail Stabilization Project

OPENING DATE: March 25, 2010

Site A – 48th Street and Cornhusker Road:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	Engineer's Opinion of Probable Cost		Lawn Smith & Co.		Luxa Construction Co	
			UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	Mobilization	1 LS	2000	1999	\$4500.00	\$4500.00	\$8050.00	\$8050.00
2	General – Clearing and Grubbing	1 LS	1500	1500	\$4000.00	\$4000.00	\$2257.00	\$2257.00
3	6" PCC Concrete w/Vertical Curb (Type "C" Curb)	110 SY	40	4399	\$52.50	\$5775.00	\$98.16	\$10,797.60
4	Curb Inlet – Type IV	1 EA	2500	2499	\$1450.00	\$1450.00	\$1911.00	\$1911.00
5	Storm Sewer Pipe – 18" Aluminized CMP	34 LF	60	2039	\$50.00	\$1700.00	\$291.74	\$9919.16
6	Timber Pile Bent	1 EA	1500	1500	\$5400.00	\$5400.00	\$5855.00	\$5855.00
7	Rock Riprap – Type "A"	48 TN	30	1440	\$57.00	\$2736.00	\$116.00	\$5568.00
8	Rock Riprap – Type "B"	75 TN	45	3374	\$57.00	\$4275.00	\$143.00	\$10,725.00
9	Seeding	0.5 AC	2200	1100	\$1250.00	\$1250.00	\$5028.00	\$2514.00
10	Traffic Control	1 LS	1000	1000	\$500.00	\$500.00	\$626.00	\$626.00
11	Silt Fence	300 LF	4	1200	\$3.00	\$900.00	\$5.94	\$1782.00
12	Construction Contingency			2251		0		0
Total Base Bid for Site A (Items 1 thru 12, inclusive)				24,300		\$32,486.00		\$60,004.76

Notes: LS-Lump Sum, SY-Square Yard, EA-Each, TN-Ton, LF-Linear Feet

Site B – 60th Street and Harrison Street:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	Engineer's Opinion of Probable Cost			Lawn Smith & Co.			Luxa Construction Co.		
			UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	
1	Mobilization	1 LS	2000	1999	\$4500.00	\$4500.00	\$4030.00	\$4030.00			
2	General – Clearing and Grubbing	1 LS	1500	1500	\$3500.00	\$3500.00	\$1270.00	\$1270.00			
3	6" PCC Concrete w/Vertical Curb (Type "C" Curb)	92 SY	40	3679	\$52.50	\$4830.00	\$113.89	\$10,477.88			
4	Curb Inlet – Type IV	1 EA	2500	2499	\$1450.00	\$1450.00	\$1911.00	\$1911.00			
5	Storm Sewer Pipe – 18" Aluminized CMP	45 LF	60	2699	\$50.00	\$2250.00	\$250.28	\$11262.80			
6	Timber Pile Bent	1 EA	1500	1500	\$5400.00	\$5400.00	\$6868.00	\$6868.00			
7	Rock Riprap – Type "A"	47 TN	30	1410	\$57.00	\$2679.00	\$139.00	\$6533.00			
8	Rock Riprap – Type "B"	99 TN	45	4455	\$57.00	\$5643.00	\$116.00	\$11484.00			
9	Seeding	1.0 AC	2200	1410	\$1800.00	\$1800.00	\$4014.00	\$4014.00			
10	Traffic Control	1 LS	1000	1100	\$500.00	\$500.00	\$1132.00	\$1132.00			
11	Silt Fence	300 LF	4	1200	\$3.00	\$900.00	\$5.62	\$1686.00			
12	Construction Contingency			2,349		0		0			
Total Base Bid for Site B (Items 1 thru 12, inclusive)				25,800		\$33,452.00		\$60,668.48			
Grand Total (Total Base Bid for Site A plus Total Base Bid for Site B):				<u>\$50,100</u>		\$65,938.00*		\$120,673.24			
BID BOND						YES		YES		YES	

***Management Recommendation**

Notes: LS-Lump Sum, SY-Square Yard, EA-Each, TN-Ton, LF-Linear Feet

March 30, 2010

RE: Bid Results and Recommendation
Keystone Trail Stabilization ProjectMartin P. Cleveland, P.E.
Papio-Missouri River Natural Resources District
8901 South 154th Street
Omaha, NE 68138-3621

Dear Martin:

Two bids were provided to us that were received on March 25, 2010 for the Keystone Trail Stabilization project. The objective of the proposed construction is to stabilize the eroding area along the Keystone Trail and convey stormwater runoff into the Big Papillion Creek at two separate locations (48th Street and Cornhusker Road – Site A & 60th and Harrison Streets – Site B). The project was bid as a unit cost contract with a base bid for both sites. The specifications indicated that the contractor with the lowest total base bid for both Site A and Site B was considered to be the lowest bidder.

The bid tab we were provided is attached (Attachment No. 1) and summarized as follows:

Name of the Bidder	Base Bid
Lawn Smith & Co., Inc. – Omaha, NE	\$ 65,938.00
Luxa Construction – Blair, NE	\$ 120,673.24
Engineer's Opinion of Probable Cost	\$ 50,100.00

We offer the following observations.

1. The low bid is approximately 31 percent above the engineer's opinion of probable cost. Given the fact there were only two bidders, the second bid was substantially higher. The engineer's opinion of probable cost is attached (Attachment No. 2).
2. Lawn Smith & Co., Inc.'s mobilization cost was \$9,000, which is approximately 14 percent of the total bid. The number is difficult to compare because of the methodology used in preparing the bid. The industry norm is typically 5-8 percent.
3. The high cost areas of the project in descending order are as follows:
 - o Riprap: \$ 15,333.00
 - o Timber Pile Bent: \$ 10,800.00
 - o 6" PCC Concrete: \$ 10,605.00
 - o **Total: \$ 36,738.00**

These three items represent approximately 56 percent of the project cost and are critical design components. Changes in these three areas could impede the effectiveness of the design from achieving the overall project objective.

In summary, we do not see any opportunities for immediate cost reduction by redesign or rebidding.



Martin P. Cleveland, P.E.
March 30, 2010
Page 2

Based on our review of the bids we received and evaluation of the specific areas of concern, we recommend that the Papio-Missouri River Natural Resources District award the project to Lawn Smith and Co., Inc. (Total - \$ 65,938.00).

We are available to discuss this recommendation at your convenience.

Sincerely,

KIRKHAM MICHAEL

A handwritten signature in cursive script that reads "Rich Robinson". The signature is written in black ink and is positioned below the typed name "KIRKHAM MICHAEL".

Rich Robinson, P.E.
Project Principal

RLR/sjt

Enclosures: Attachment 1 – Bid Tabulation, as provided by PMRNRD
Attachment 2 – Engineers Opinion of Probable Cost

Copy to: B. Birkel - Kirkham Michael Omaha (w/encl.)

S:\1003223\correspondence\letters\1003223_KM Bid Recommendation Letter.doc

SUMMARY OF BIDS

Attachment No. 1

NRD PROJECT NO. 529k

OPENING TIME: 10:00 A.M.

PROJECT: Keystone Trail Stabilization Project

OPENING DATE: March 25, 2010

Site A – 48th Street and Cornhusker Road:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	Engineer's Opinion of Probable Cost		Lawn Smith & Co.		Luxa Construction Co	
			UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	Mobilization	1 LS	2000	1999	\$4500.00	\$4500.00	\$8050.00	\$3000.00
2	General – Clearing and Grubbing	1 LS	1500	1500	\$4000.00	\$4000.00	\$2257.00	\$4500.00
3	6" PCC Concrete w/Vertical Curb (Type "C" Curb)	110 SY	40	4399	\$52.50	\$5775.00	\$10,797.60	\$45.00
4	Curb Inlet – Type IV	1 EA	2500	2499	\$1450.00	\$1450.00	\$1911.00	\$3200.00
5	Storm Sewer Pipe – 18" Aluminized CMP	34 LF	60	2039	\$50.00	\$1700.00	\$9919.16	\$70.00
6	Timber Pile Bent	1 EA	1500	1500	\$5400.00	\$5400.00	\$5855.00	\$2000.00
7	Rock Riprap – Type "A"	48 TN	30	1440	\$57.00	\$2736.00	\$5568.00	\$35.00
8	Rock Riprap – Type "B"	75 TN	45	3374	\$57.00	\$4275.00	\$10,725.00	\$35.00
9	Seeding	0.5 AC	2200	1100	\$1250.00	\$1250.00	\$2514.00	\$2000.00
10	Traffic Control	1 LS	1000	1000	\$500.00	\$500.00	\$626.00	\$3000.00
11	Silt Fence	300 LF	4	1200	\$3.00	\$900.00	\$1782.00	\$2.75
12	Construction Contingency			2251		0		0
Total Base Bid for Site A (Items 1 thru 12, inclusive)				24,300		\$32,486.00		\$60,004.76

Notes: LS-Lump Sum, SY-Square Yard, EA-Each, TN-Ton, LF-Linear Feet

Site B – 60th Street and Harrison Street:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	Engineer's Opinion of Probable Cost			Lawn Smith & Co.			Luxa Construction Co.		
			UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	
1	Mobilization	1 LS	2000	1999	\$4500.00	\$4500.00	\$4030.00	\$4030.00			
2	General – Clearing and Grubbing	1 LS	1500	1500	\$3500.00	\$3500.00	\$1270.00	\$1270.00			
3	6" PCC Concrete w/Vertical Curb (Type "C" Curb)	92 SY	40	3679	\$52.50	\$4830.00	\$113.89	\$10,477.88			
4	Curb Inlet – Type IV	1 EA	2500	2499	\$1450.00	\$1450.00	\$1911.00	\$1911.00			
5	Storm Sewer Pipe – 18" Aluminized CMP	45 LF	60	2699	\$50.00	\$2250.00	\$250.28	\$11267.80			
6	Timber Pile Bent	1 EA	1500	1500	\$5400.00	\$5400.00	\$6868.00	\$6868.00			
7	Rock Riprap – Type "A"	47 TN	30	1410	\$57.00	\$2679.00	\$139.00	\$6533.00			
8	Rock Riprap – Type "B"	99 TN	45	4455	\$57.00	\$5643.00	\$116.00	\$11484.00			
9	Seeding	1.0 AC	2200	1410	\$1800.00	\$1800.00	\$4014.00	\$4014.00			
10	Traffic Control	1 LS	1000	1100	\$500.00	\$500.00	\$1132.00	\$1132.00			
11	Silt Fence	300 LF	4	1200	\$3.00	\$900.00	\$5.62	\$1686.00			
12	Construction Contingency			2,349		0		0			
Total Base Bid for Site B (Items 1 thru 12, inclusive)				25,800		\$33,452.00		\$60,668.48			
Grand Total (Total Base Bid for Site A plus Total Base Bid for Site B):				\$50,100		\$65,938.00*		\$120,673.24			
BID BOND					YES		YES		YES		

***Management Recommendation**

Notes: LS-Lump Sum, SY-Square Yard, EA-Each, TN-Ton, LF-Linear Feet

Opinion of Probable Construction Cost

Client Name:	PMNRD
Project Name:	Keystone Trail Stabilization
Project Number:	0903245

ENR Construction Cost Index		
	Date	Index
Initial	7/17/2009	8566.14
Current	8/17/2009	8563.8

Cornhusker Road and 48th Street

Item	Quantity	Units	Unit Cost \$	Cost \$
1 Mobilization	1	LS	\$2,000	\$1,999
2 General - Clearing and Grubbing	1	LS	\$1,500	\$1,500
3 6" PCC Concrete w/ Vertical Curb (Type C)	110	SY	\$40	\$4,399
4 Curb Inlet - Type IV	1	EA	\$2,500	\$2,499
5 Storm Sewer Pipe w/ Fittings and Bands	34	LF	\$60	\$2,039
6 Timber Pile Bent	1	EA	\$1,500	\$1,500
7 Riprap - Type "A"	48	TN	\$30	\$1,440
8 Riprap - Type "B"	75	TN	\$45	\$3,374
9 Seeding	0.5	AC	\$2,200	\$1,100
10 Traffic Control	1	LS	\$1,000	\$1,000
11 Silt Fence	300	LF	\$4	\$1,200
12				\$0
13				\$0
14				\$0
15				\$0
16				\$0
17				\$0
18				\$0
19				\$0
20				\$0

Subtotal \$22,049

Construction Contingency 10% \$2,251

Opinion of Probable Cost \$24,300

Design Status (Check One)

- Conceptual Design
- Preliminary Design
- Final Design

KIRKHAM MICHAEL

Project Manager: John Krager, P.E.

Date: 8/17/2009

The Engineer, using his or her professional judgement, has developed this stated Opinion of Probable Construction Cost based upon the design status identified above. Development of this Opinion has included consideration of design input level; however, the circumstances under which the work is expected to be undertaken, the cost and availability of materials, labor and services, probable bidder response and the economic conditions at the time of bid solicitation are beyond the control of the Engineer and will impact actual bid costs. Should bidding be delayed, these costs should be reviewed and, if necessary, adjusted to a more applicable Engineering News Record Construction Cost Index.

Opinion of Probable Construction Cost

Client Name: PMNRD
 Project Name: Keystone Trail Stabilization
 Project Number: 0903245

ENR Construction Cost Index		
	Date	Index
Initial	7/17/2009	8566.14
Current	8/17/2009	8563.8

Harrison Street and 60th Street

Item	Quantity	Units	Unit Cost \$	Cost \$
1 Mobilization	1	LS	\$2,000	\$1,999
2 General - Clearing and Grubbing	1	LS	\$1,500	\$1,500
3 6" PCC Concrete w/ Vertical Curb (Type C)	92	SY	\$40	\$3,679
4 Curb Inlet - Type IV	1	EA	\$2,500	\$2,499
5 Storm Sewer Pipe w/ Fittings and Bands	45	LF	\$60	\$2,699
6 Timber Pile Bent	1	EA	\$1,500	\$1,500
7 Riprap - Type "A"	47	TN	\$30	\$1,410
8 Riprap - Type "B"	99	TN	\$45	\$4,455
9 Seeding	1	AC	\$2,200	\$1,410
10 Traffic Control	1	LS	\$1,000	\$1,100
11 Silt Fence	300	LF	\$4	\$1,200
12				\$0
13				\$0
14				\$0
15				\$0
16				\$0
17				\$0
18				\$0
19				\$0
20				\$0

Subtotal	\$23,451
Construction Contingency <u>10%</u>	\$2,349
Opinion of Probable Cost	<u>\$25,800</u>

Design Status (Check One)

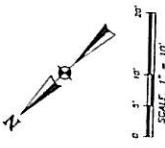
- Conceptual Design
- Preliminary Design
- Final Design

KIRKHAM MICHAEL

Project Manager: John Krager, P.E.

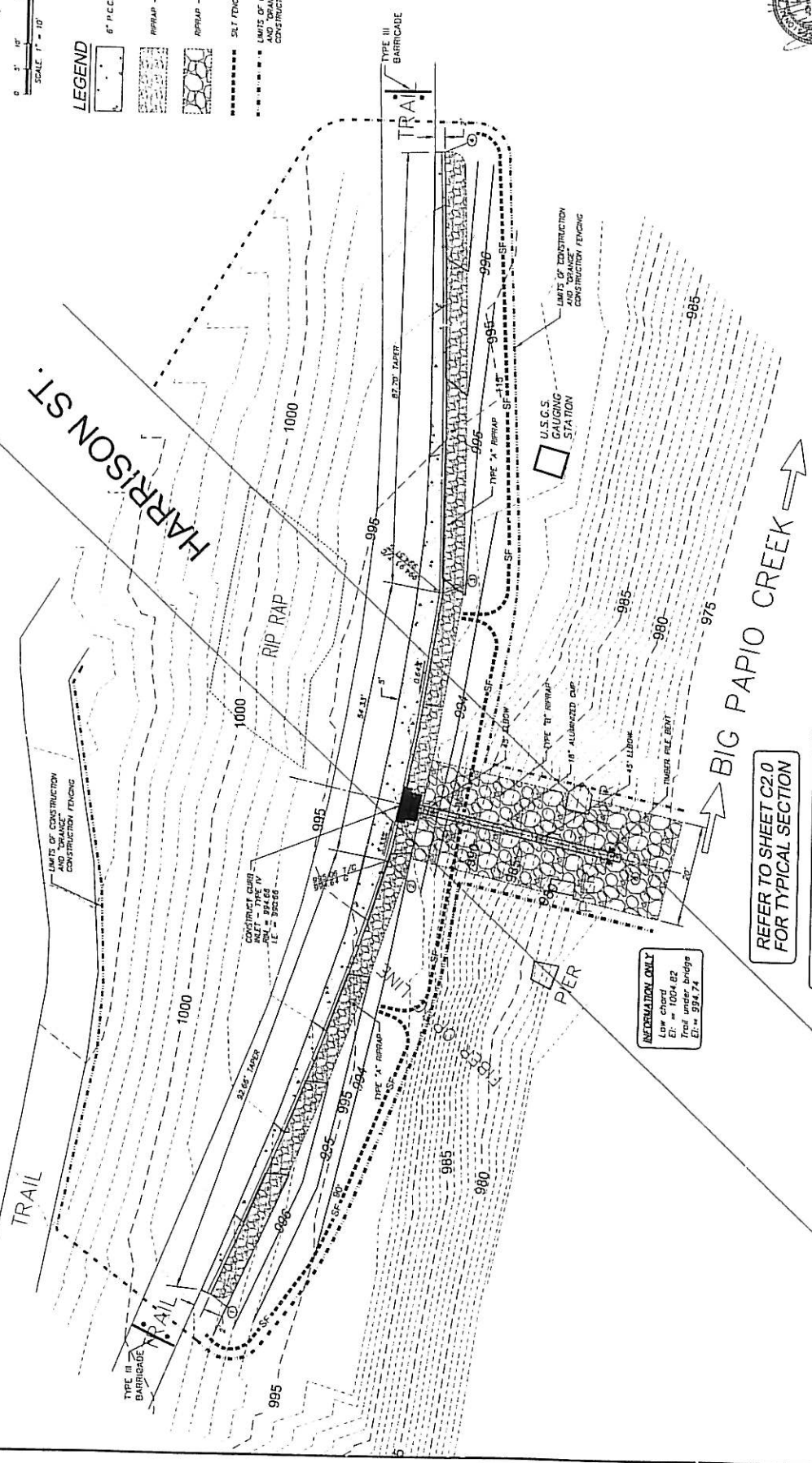
Date: 8/17/2009

The Engineer, using his or her professional judgement, has developed this stated Opinion of Probable Construction Cost based upon the design status identified above. Development of this Opinion has included consideration of design input level; however, the circumstances under which the work is expected to be undertaken, the cost and availability of materials, labor and services, probable bidder response and the economic conditions at the time of bid solicitation are beyond the control of the Engineer and will impact actual bid costs. Should bidding be delayed, these costs should be reviewed and, if necessary, adjusted to a more applicable Engineering News Record Construction Cost Index.



- LEGEND**
- 6" PCC PAVEMENT
 - RIPRAP - TYPE "A"
 - RIPRAP - TYPE "B"
 - SALT FENCE
 - LIMITS OF CONSTRUCTION AND "DRAINAGE" CONSTRUCTION FENCING

- LAYOUT COORDINATES**
- BVC POINTS**
- ① N 519872.27
 - ② N 519772.11
 - ③ N 519725.65
 - ④ E 2738161.71
 - ⑤ E 2738161.71
 - ⑥ E 2738161.71
 - ⑦ N 519872.27
 - ⑧ N 519872.27
- SEVERAL SEWER POINTS**
- ① N 519772.11
 - ② E 2738161.72
 - ③ N 519725.65
 - ④ E 2738161.71
 - ⑤ N 519872.27
 - ⑥ E 2738161.71



REFER TO SHEET C2.0 FOR TYPICAL SECTION

REFER TO SHEET C5.0 FOR STORM SEWER PROFILE

INFORMATION ONLY

Low chord
 E.I. = 1004.82
 Tral under bridge
 E.I. = 994.74

GENERAL NOTES

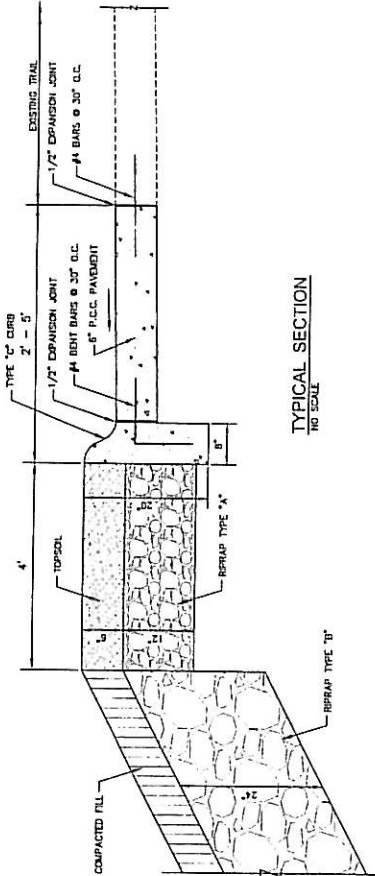
- ALL PROJECT PROCEDURES, MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE CITY OF OMAHA STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2003 EDITION AND REVISIONS, HERINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS, WITH THE EXCEPTIONS AMENDED HEREIN.
- THE TERM "CITY" AS DEFINED IN SAID CITY OF OMAHA STANDARD SPECIFICATIONS SHALL BE BROADENED TO INCLUDE OWNER OF PROPERTY.
- UTILITIES ARE SHOWN AS A CONVENIENCE FOR THE CONTRACTOR. THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITY COMPANIES AT THE CONTRACTOR'S REQUEST. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES BEFORE WORK IS STARTED TO VERIFY LOCATIONS (ONE CALL 344-3565). NO EXCAVATION WILL BE PERMITTED IN THE AREA OF THE UNDERGROUND UTILITIES UNTIL ALL FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGES TO THE FACILITIES. IF SUCH UTILITY OR STRUCTURE IS DAMAGED, IT SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE. IF ANY UTILITY IS DAMAGED DURING OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER OF SAID DAMAGED UTILITY AT ONCE.
- BARRICADES SHALL CONFORM TO CITY OF OMAHA AND/OR THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
- WATER REDUCING ADMIXTURE SHALL BE ADDED TO ALL HAND PLACED AND FINISHED CONCRETE.
- THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE MATERIALS ENCOUNTERED IN THE REMOVAL AND GRADING OPERATIONS OFF THE PROJECT SITE, INCLUDING CONCRETE, ASPHALT, OIL MAT, BRICK, ROCK, ETC. NO UNSUITABLE MATERIAL, AS DETERMINED BY THE ENGINEER, SHALL BE USED FOR BACKFILLING OR EMBANKMENT CONSTRUCTION. ALL MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER AT THE OWNER'S EXPENSE.
- THE CONTRACTOR IS REFERRED TO THE FOLLOWING CITY OF OMAHA STANDARD PLATES:
 - CONCRETE PAVEMENT JOINT DETAILS - STD. PLATE 1-50
 - CONCRETE CURB DETAIL - STD. PLATE 1-52 (TYPE "C") (VERTICAL CURB)
 - MISCELLANEOUS CONCRETE PAVEMENT DETAILS - STD. PLATE 1-60
 - SEWER BEDDING DETAILS - STD. PLATE 3-01
 - CURB INLET (TYPE IV) - STD. PLATE 721
 - TIMBER PILE BENT SUPPORT - STD. PLATE 3-72
 - SILT FENCE - STD. PLATE 9-01
- CONCRETE FOR PAVEMENTS SHALL BE LB MIX FLY-ASH SHALL NOT BE ALLOWED.
- CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL AND ASSOCIATED SAFETY MEASURES, BOTH ALONG THE TRAIL AND ROADWAYS. THE CONTRACTOR SHALL PLACE AND MAINTAIN "ORANGE" CONSTRUCTION FENCING AND "ROAD CLOSED" SIGNAGE MOUNTED TO A TYPE III BARRICADE AT THE LOCATIONS INDICATED ON THE PLAN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF CONCRETE PAVEMENT JOINTING SPACING OF JOINTS, LOCATION OF EXPANSION, CONTROL AND CONTRACTION JOINTS. MAXIMUM PANEL SIZE SHALL BE AS REQUIRED PER STANDARD PLATES PER CITY OF OMAHA PROJECT SPECIFICATIONS. CONTRACTOR SHALL SUPPLY SHOP DRAWING OF JOINTING PLAN FOR APPROVAL.
- ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL AND EROSION CONTROL. ANY DAMAGE FROM BLOWING DUST, EROSION, AND RUNOFF FROM THE SITE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING.

**SUMMARY OF QUANTITIES
CORNHUSKER ROAD TRAIL**

ITEM	DESCRIPTION	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	GENERAL - CLEARING AND GRUBBING	1	LS
3	6" P.C.C. CONCRETE VERTICAL CURB (TYPE "C" CURB)	110	SY
4	CURB INLET - TYPE IV	1	EA
5	STORM SEWER PIPE - 18" ALUMINIZED CUP	34	LF
6	TIMBER PILE BENT	1	EA
7	RIPRAP - TYPE "A"	48	TN
8	RIPRAP - TYPE "B"	75	TN
9	SEEDING	0.5	AC
10	TRAFFIC CONTROL	1	LS
11	SILT FENCE	300	LF

**SUMMARY OF QUANTITIES
HARRISON STREET TRAIL**

ITEM	DESCRIPTION	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	GENERAL - CLEARING AND GRUBBING	1	LS
3	6" P.C.C. CONCRETE VERTICAL CURB (TYPE "C" CURB)	92	SY
4	CURB INLET - TYPE IV	1	EA
5	STORM SEWER PIPE - 18" ALUMINIZED CUP	45	LF
6	TIMBER PILE BENT	1	EA
7	RIPRAP - TYPE "A"	47	TN
8	RIPRAP - TYPE "B"	99	TN
9	SEEDING	0.5	AC
10	TRAFFIC CONTROL	1	LS
11	SILT FENCE	300	LF



TYPICAL SECTION
NO SCALE

