Agenda Item: 7.

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee
FROM: Martin P. Cleveland, Construction Engineer
SUBJECT: Big Papio Channel Re-stabilization Project
(105th Street to Pacific Street)
Construction Bids
DATE: January 3, 2012

Attached is a location map and plan sheets that show the proposed project features. The original stabilization project (gabion basket wall) was built in 1999 as part of the Big Papio Channel Project to stabilize the outside (right bank) of the Big Papio Creek low flow channel. After the 2010 high water season it was noticed that a portion (196 feet of 400 feet) of the gabion basket structure had rotated towards the creek, likely due to undercutting of the creek bank during the 2010 high water events.

HDR Engineering was hired by the District in May 2011 and has evaluated the gabion basket rotation and developed a Re-stabilization Project consisting of replacing the rotated gabions and installing a steel sheet pile wall along the creek side edge of the new and existing (non-rotated) gabions to protect the creek bank and gabion wall from future undercutting by creek erosion. The steel pile wall includes driving steel sheets down to bedrock (about 25 feet deep).

The District opened construction bids for the referenced project on December 27, 2011 that includes installing 196 linear feet of gabion wall and 414 linear feet of sheet pile wall. Enclosed are bid summary sheets. The District received 5 bids for the project. The apparent low bidder is Chas. Vrana and Son Construction Co. with a total base bid of $387,301.00 and alternate bid of $12,600.00. The Engineer’s opinion of cost was $439,900.00 for the base bid and $ 6,000.00 for the alternate bid.

The alternate bid was for the removal of estimated 2000 cubic yards of sediment on the right bank of the creek, working downstream from 105th Street to Pacific Street and between the Big Papio Trail and low flow channel edge. Since 1999, high water events have deposited over 2 feet of sediment above the trail elevation and in effect made the trail the low spot on the berm and the trail is frequently covered with ponded water after rain events. The contractor will load City of Omaha dump trucks that will haul the soil to
a park soil stock pile site. City of Omaha agreed to provide dump trucks to haul the sediment material, as this will greatly enhance City's trail drainage and use.

This work will be funded via funds included in Project Maintenance General Contract Work (Account 0103591 4479). As of November 30, 2011 remaining funds in this account was $1,626,626.49. It is anticipated that this project will be completed in Fiscal Year 2012.

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 Big Papio Channel Re-stabilization Project with Chas. Vrana and Son Contraction Co., for their total base bid of $387,301 and alternate bid of $12,600.00 for a grand total cost of $399,901.

212 MC:pb file 531 Reach 6-4A
## Summary of Bid Proposals

**Project:** Big Papio Creek Bank Re-stabilization Project  
**Opening Date:** December 27, 2011  
**NRD Project No.** 531A  
**Opening Time:** 10:00 a.m.

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<th>Bid Bond (5%)</th>
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**Note:** LF: Linear Feet  
LS: Lump Sum  
AC: Acre

*Apparent Low Bidder is Chas. Vrana and Son Construction Co.*
December 5, 2012

Mr. Martin Cleveland, Construction Engineer
Papio-Missouri River Natural Resources District
8901 South 154th Street
Omaha, NE  68138-3621

RE:   Big Papillion Creek at 105th & Pacific Streets Low Flow Channel Re-Stabilization
       Recommendation of Contractor Award

Dear Mr. Cleveland:

Bids were received for the re-stabilization of the low flow channel along the Big Papillion Reek between 105th and Pacific Streets on December 27, 2011. Per the attached bid tabulation, five bidders submitted bids. The apparent low bid was submitted by Vrana Construction in the amount of $387,301 for the base bid. Vrana Construction also submitted the lowest bid for the base bid and the alternate sediment removal in the amount of $399,901. The apparent low bid was below the Engineer’s opinion of probable construction cost of $445,900.

We recommended a contract be awarded to Vrana Construction in the total of amount of $399,901.

If you have any questions do not hesitate to contact me at (402) 399-1078.

Very truly yours,

HDR ENGINEERING, INC.

[Signature]

Laurie Carrette Zook, P.E.
Project Manager

Enclosure
LOW-FLOW CHANNEL RESTABILIZATION
BIG PAPILLION CREEK-BETWEEN PACIFIC AND 105TH STREETS
PAPILLION CREEK WATERSHED

DOUGLAS COUNTY, NEBRASKA

SPONSORED BY: THE PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

DESIGNED BY: HDR ENGINEERING, INC.
OMAHA, NEBRASKA

Final Drawings December 2011

SHEET INDEX

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<td>TYPICAL SECTIONS AND DETAILS</td>
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<td>CROSS SECTIONS (1 of 2)</td>
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<td>GEOLOGICAL INFORMATION</td>
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THese CONFORMED DRAWINGS WERE ORIGINALLY APPROVED AND SEALED ON DECEMBER 2, 2011 BY LAURIE CARRETTE, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEBRASKA (E-5814).
LEGEND AND SYMBOLS

BOUNDARIES
PARCEL BOUNDARY
SEEDING AREA
LIMITS OF CONSTRUCTION

SEQUENCING NOTES
1. INSTALL SHEET FILES BEGINNING ON UPSTREAM END OF EXISTING GABIONS.
2. CONTINUE INSTALLATION OF SHEET FILES UNTIL REACHING THE FAILED GABIONS APPROX. STA 95+00.
3. REMOVE FAILED GABIONS.
4. INSTALL REMAINDER OF SHEET FILES TO END OF PROJECT.
5. INSTALL NEW GABIONS TO END OF PROJECT.
6. BACKFILL WALL AND Regrade SLOPE.
7. SEED DISTURBED AREAS.

TABLE OF QUANTITIES

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<td>SEGMENT REMOVAL (ALTERNATE)</td>
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CONSTRUCTION NOTES
1. THE PROJECT INVOLVES THE RESTORATION OF THE LOW FLOW CHANNEL ALONG THE BIG PAPPON CREEK BETWEEN 105TH AND PACIFIC STREETS WITH A SHEET PILE Erosion Control System. The system consists of sheet piles driven to bedrock and the placement of gabions behind the sheet piles.
2. THE CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION SCHEDULE TO THE ENGINEER WITHIN 15 DAYS OF NOTICE TO PROCEED. THE SCHEDULE SHALL BE UPDATED MONTHLY TO SHOW WORK COMPLETED AND TO REVISE THE PROJECT COMPLETION DATE.
3. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION WORK PLAN TO THE ENGINEER WITHIN 15 DAYS PRIOR TO COMMENCING WORK. THE WORK PLAN SHALL INCLUDE THE PROPOSED METHODS AND EQUIPMENT TO INSTALL THE SHEET PILE WALL FROM THE NORTH SIDE OF THE CREEK AND THE PROPOSED METHODS AND EQUIPMENT TO INSTALL THE GABION WALL. CONTRACTOR SHALL VERIFY THAT PROPOSED CONSTRUCTION METHODS, EQUIPMENT AND OPERATORS WILL NOT DESTABILIZE THE EMBANKMENT SLOPE ON THE NORTH SIDE.
4. THE CONTRACTOR WILL INSPECT THE CONSTRUCTION AREA FOR THE PRESENCE OF UTILITY FACILITIES BOTH SURFACE AND SUBSURFACE, AND WILL NOTIFY THE NEBRASKA ONE CALL SYSTEM. PHONE: 1-800-531-5566
5. THE CONTRACTOR'S ACCESS POINTS TO THE SITE ARE SHOWN ON THE COVER SHEET DRAWING.
6. THE CONTRACTOR'S EQUIPMENT IS TO BE RELOCATED TO THE STAGING AREA DURING PERIODS OF NO CONSTRUCTION ACTIVITY. LARGE EQUIPMENT THAT IS DIFFICULT TO RELOCATE MAY BE ALLOWED ON THE CONSTRUCTION AREA PROVIDING IT IS PARKED IN A LOCATION THAT CREATE NO HAZARD.
7. THE USE OF HEAVY EQUIPMENT (NOTTING 20 TONS OR A 2000 LBF SHEET LOADER) AND STOCKPILING OF MATERIALS ON THE SOUTH SLOPE ABOVE THE PROPOSED GABIONS AND SHEET PILES IS PROHIBITED.
8. AREAS HAVE BEEN MADE AVAILABLE FOR CONTRACTORS STAGING AND STORAGE. THESE ARE SHOWN ON THE COVER SHEET DRAWING. THESE AREAS SHALL BE RESTORED TO ORIGINAL CONDITION UPON COMPLETION OF USE.
9. MATERIALS TO BE SAVED FOR REUSE (GABION STONE FILL) SHALL BE CLEANED AND STORED IN APPROVED AREAS. DISPOSAL OF WASTE MATERIALS SHALL BE OFF-SITE AND DISPOSED OF PROPERLY.
10. CONTRACTOR SHALL ERECT TRAFFIC CONTROL DEVICES ALONG THE BIG PAPPON CREEK RECLAMATION TRAIL RESTRICTING PUBLIC ACCESS WHEN THE CONTRACTOR IS PRESENT.
11. CONTRACTOR SHALL USE CARE WHEN OPERATING EQUIPMENT ALONG THE BIG PAPPON CREEK RECLAMATION TRAIL ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
12. EXISTING TOPOGRAPHIC INFORMATION FOR THE PROJECTS IS FROM FIELD SURVEYS CONDUCTED BY PARKS ON NOVEMBER 2010 AND APRIL 2011. SURVEY BASED ON NATIONAL GEODETIC SURVEY DATUM.
13. THE HORIZONTAL CONTROL IS BASED ON MODIFIED STATE PLANE COORDINATES.
15. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING ROCK RIPRAP AS NECESSARY TO INSTALL SHEET PILES.
16. THE CONTRACTOR SHALL NOT DISTURB ANY AREAS BEYOND THE LIMITS OF CONSTRUCTION. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER. SEEDING AND COVERED WITH EROSION CONTROL BLANKET. A TURF REINFORCING MAT SHALL BE INSTALLED BEHIND THE NEW GABION WALL SECTION.
17. NO TRIES SHALL BE CUT OR REMOVED FROM THE SITE UNLESS APPROVED BY THE ENGINEER.
18. NO EXCAVATION FOR THE GABIONS AND BACKFILL SHALL REMAIN OPEN OVERNIGHT.

GENERAL SHEET
**TYPICAL SECTION A**

**REPLACED GABIONS WITH SHEET PILE TOE PROTECTION**

- **EXISTING GROUND SURFACE**
- **NON-WOVEN GEOTEXTILE FILTER FABRIC**
- **NEW GABION WALL (TIE INTO EXISTING)**
- **COMPACTED FILL FROM SEDIMENT REMOVAL ALONG TRAIL (TIE INTO EXISTING GRADE) 6" MINIMUM COVER OVER TOP ROW OF GABIONS**
- **GRANULAR FILL (10'-40')**
- **WEEP HOLES (SEE DETAIL 3 SHEET 6)**
- **EXISTING PAVEMENT**
- **DEPOTED SEDIMENT TO BE REMOVED**
- **EXISTING SLOPE**
- **TRAIL**
- **COMPACT UPPER 1 FT**

**NOTES:**
1. REMOVE SOIL DEPOSITS (APPROXIMATELY 2 FT, DEEP) FROM THE CREEK'S SIDE BANK ADJACENT TO THE BIG PAPILLON TRAIL TO THE LOW FLOW CROSS TOP OF SLOPE FROM PACIFIC STREET TO 109TH STREET (APPROXIMATELY 700 FT, LONG) TO PROVIDE ROGERS DRAINAGE. SEAL AND INSTALL BROKEN CONTROL BANK. OWNER WILL PROVIDE COMPACTORS TO HAIL-OFF AND PROPERLY Dispose OF THE REMOVED MATERIAL. THE SEDIMENT REMOVAL QUANTITY IS APPROXIMATELY 1,500 CUBE YARDS. CONTRACTOR IS RESPONSIBLE FOR TRANSPORTING REMOVED MATERIAL AS BACKFILL FOR THE GABION WALL CONSTRUCTION AS NEEDED.
2. COMPACT UPPER 1 FT OF SOIL TO BE REDIGGED ALONG THE SOUTH SIDE OF TRAIL TO 10% MAX DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT NECESSARY TO FACILITATE COMPACTION.

**DETAIL 1**

**REMOVE TRAIL SEDIMENT (LOOKING UPSTREAM)**

- **SHEET PILE WALL**
  - (MIN 6" = 48 LINEAR FT)
- **WEATHERED SHALE**
- **SAPPA FORMATION**
- **RIGOROUS ALLOW**
- **LIMESTONE**

**DETAIL 2**

**SHEET PILE END CONDITION**

- **EXISTING STRAGN BANK**
- **GABIONS**

**TYPICAL SECTIONS AND DETAILS**
NOTES:
1. FILL ANNULUS SPACE BETWEEN GABIONS AND SHEETS WITH SAME STONE FILL USED TO FILL GABIONS.