

## MEMORANDUM

**To:** PPO Subcommittee  
**From:** Amanda Grint, Water Resources Engineer  
**Date:** August 2, 2018  
**Re:** Amendment No. 3 to Professional Services Contract with HDR Engineering for Zorinsky Basin 2

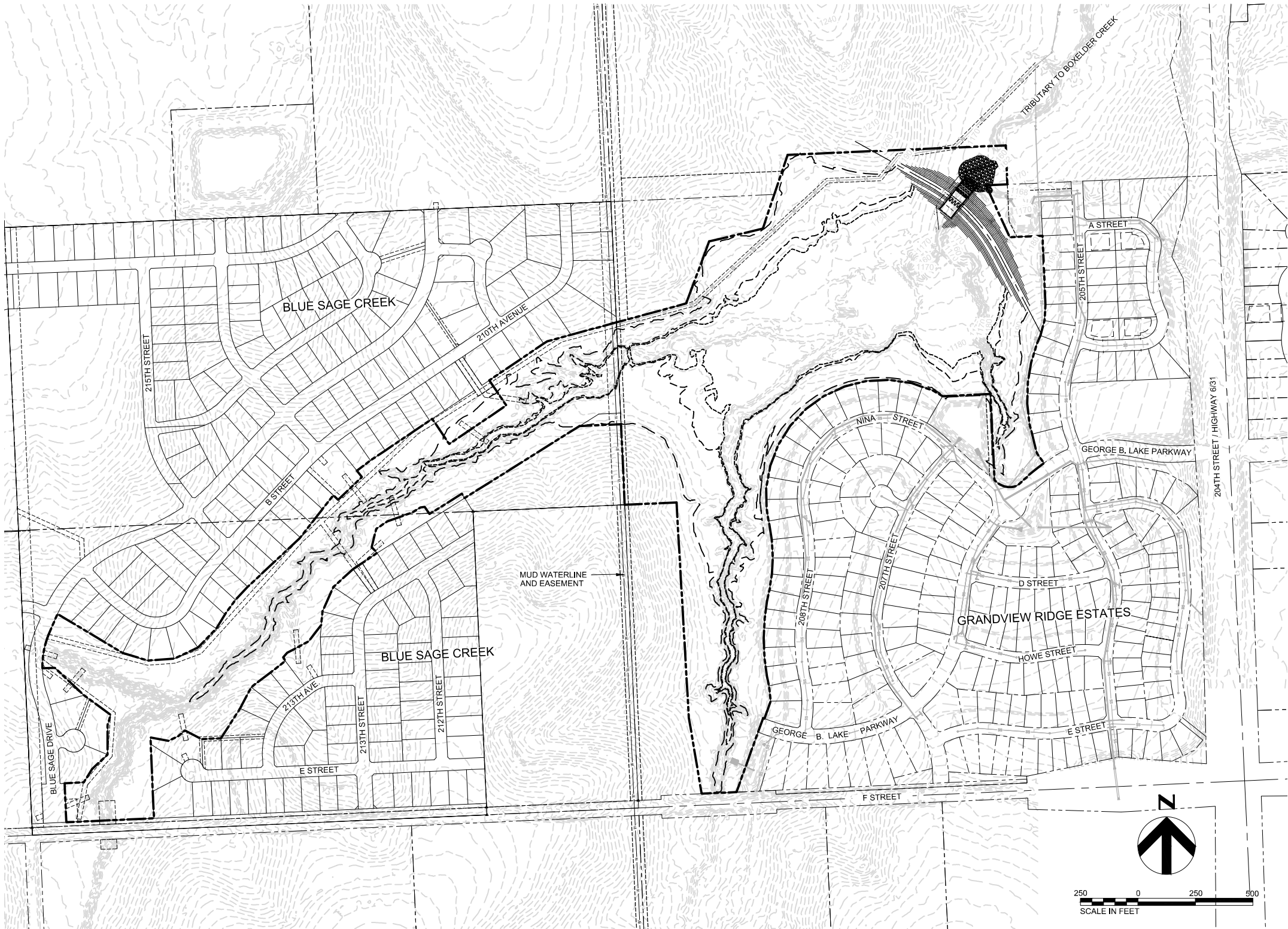
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In 2016, HDR Engineering, Inc. was awarded a professional services contract for the Preliminary Design (Phase 1) of the Zorinsky Basin No. 2 (ZB2) project for a not to exceed amount of \$470,200. Amendment 1 and 2 followed in April and November 2017 for the final design and construction administration as well as additional out of scope items bringing the total contract not to exceed amount to \$1,335,860. ZB2 is the last of four planned water quality basins identified through a community planning session in 1999 to protect the water quality of Zorinsky Lake. See attached map. Amendment No. 3 addresses the following items:

- Revised 404 permitting and mitigation design
- Update of construction documents
- Additional survey
- Additional construction contract administration

The revisions proposed to the mitigation plan for Zorinsky Basin 2 are in response to feedback from the adjacent landowner. The mitigation is planned to be moved from the Zorinsky Basin 2 site to an upstream reach at Dam Site 15A, Flanagan Lake. The original Zorinsky Basin 2 mitigation areas would then be sold back to the adjacent landowner with Board approval in the following months. A proposed detailed scope of work and cost estimate for Amendment 3 are attached for review. HDR would provide these additional out of scope items on an hourly basis not to exceed the amount of \$107,700.

**Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute Amendment No. 3 to the Professional Services Agreement with HDR Engineering, Inc. for the Zorinsky Water Quality Basin Number 2 project in an amount not to exceed \$107,700 bringing the total contract not to exceed amount to \$1,443,560, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.**



LEGEND

	TOP OF DAM ELEV. 1191.0		EASEMENTS
	SPILLWAY ELEV. 1183.0		
	NORMAL POOL ELEV. 1181.5		
	PROPERTY LIMITS		
	PROPERTY PARCELS		

GENERAL NOTES

1. TOP OF DAM AFTER SETTLEMENT SET AT ELEVATION 1191.0.
2. DESIGN SEDIMENT STORAGE AVAILABLE BELOW ELEVATION 1181.5 = 97 ACRE-FT.
3. EXISTING TOPOGRAPHY IS COMBINATION OF JUNE 2016 E&A CONSULTING GROUP, 2010 LIDAR 2-METER DEM FROM NEBRASKA DNR, AND 2016 OLSSON ASSOCIATES PROPOSED GRADING PLAN FOR GRANDVIEW RIDGE SUBDIVISION.
4. COORDINATES ARE MODIFIED STATE PLANE (MODIFIED SCALE FACTOR = 0.99961299)
2. ELEVATIONS ARE NAVD 88, NAD 1983.

STRUCTURE CAPACITY DATA			
ELEVATION (FT)	SURFACE AREA (AC)	INCREMENTAL STORAGE (AC-FT)	CUMULATIVE STORAGE (AC-FT)
DRAWDOWN → 1156	0.0	0	
		0.1	0
1158	0.1	0.3	0
1160	0.2	0.4	0
1162	0.2	0.6	0
1164	0.4	0.9	1
1166	0.5	1.2	2
1168	0.7	1.7	3
1170	1	3	5
1172	2	6	8
1174	4	11	14
1176	7	18	25
1178	11	26.5	43
1180	15.5	26.6	70
NORMAL POOL → 1181.5	20	10.5	97
1182	22	23	108
SPILLWAY CREST → 1183	24	25.5	131
1184	27	58	157
100-YR POOL - 1185.7 →	31	67	215
1186	36	77	282
1188	41	43	359
TOP OF DAM → 1191	45	46.5	402
1192	48	103	449
1194	55	117	552
1196	62		669

NOTE:  
1. STRUCTURE CAPACITY DATA BASED ON PRE-PROJECT CONDITIONS.



Date  
01-18

TRM

Designed

Date  
01-18

TRM

Drawn

Date  
01-18

JUE

Checked

Approved

RESERVOIR AREA PLAN AND CAPACITY TABLE

PAPIO - MISSOURI RIVER  
NATURAL  
RESOURCES  
DISTRICT

CAD file:  
00G-02.dwg

Drawing No.  
G-2

ZORINSKY WATER QUALITY BASIN NO. 2 DAM DOUGLAS COUNTY, NE

This is **EXHIBIT A1**, consisting of xx pages and Attachments 2 and 3 (xx pages), referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated April 22, 2016.

### **AMENDMENT NO. 3**

#### **Engineer's Services**

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##### **PART 1 – BASIC SERVICES**

###### *A1.03 Additional Services for Stream Mitigation and Design*

**Zorinsky Water Quality Basin No. 2  
for Papio-Missouri River Natural Resources District  
Douglas County, NE**



##### **ENGINEERING PROPOSAL – ADDITIONAL SERVICES FOR STREAM MITIGATION AND DESIGN BACKGROUND AND BASIS OF PROPOSAL**



HDR Engineering, Inc. was selected by the P-MRNRD to provide planning, permitting, preliminary and final design and construction contract administration services for Zorinsky Basin No. 2 (ZB-2). ZB-2 is a proposed water quality basin to be located upstream of Zorinsky Lake on Boxelder Creek located in Douglas County and is located near 204th and F Streets in Omaha, Nebraska.

To more concisely respond to project requirements, a phased approach was proposed. Phase I, which included preliminary design, is completed. Phase II generally included preparing final design documents and providing bidding assistance is completed. Phase III is currently underway for construction contract administration services.

The original design incorporated on-site stream mitigation along a north and south tributary (North and South Fingers). During construction, the P-MRNRD desired to eliminate a portion of the on-site stream mitigation and relocate the stream mitigation at Flanagan Lake (formerly known as Dam Site 15A). This scope of services provides additional services for USACE permitting and coordination, stream mitigation, and associated design activities.

##### **SCOPE OF SERVICES – ADDITIONAL SERVICES FOR STREAM MITIGATION AND DESIGN**

HDR will perform additional stream mitigation coordination and design. The scope of work modifies the following tasks:

###### **Phase II Services**

Task Series 200 – Permitting  
Task Series 300 – General and Site Civil Design  
Task Series 700 – Survey and Right of Way

###### **Phase III Services**

Task Series 1000 – Construction Contract Administration Services

The HDR Team proposes to provide the following professional additional services for Phases II and III over an anticipated 5- month project period from the time of authorization.



## TASK SERIES 200 PERMITTING

**Task Objectives:** To coordinate with USACE on revising the approved Mitigation Plan for Zorinsky Basin No. 2 and to develop a stream mitigation plan at Flanagan Lake (formerly known as Dam Site 15A).

**HDR Activities:** **Task 210 Section 404 Permit**

- 210.4 USACE Coordination. Coordinate with USACE on revising approved Mitigation Plan. Address permit modifications to reflect changes in mitigation design. One face-to-face meeting is assumed along with email and/or telephone conversations.
- 210.5 Wetland Delineation. Investigate the study area for the presence of Clean Water Act jurisdictional waters (including wetlands). Delineate and characterize the type, size, and location of waters of U.S. A formal wetland delineation [in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual] shall be provided for areas anticipated for stream mitigation.
- 210.6 Stream Functional Assessment. Perform a stream functional assessment and potential mitigation development. The Nebraska Stream Condition Assessment Procedure (October 2016) will be used to perform the functional assessment. The post-stream condition assessment from Dam Site 15A will be the pre-existing stream condition for ZB-2 mitigation.
- 210.7 Stream Mitigation Plan. HDR will coordinate with USACE and NDEQ to incorporate stream channel mitigation concepts at Flanagan Lake. Mitigation plan to follow the USACE's 12 step process, including the development of a work plan. The concept plans will depict the type, size and location of the mitigation resource and will follow 33 CFR 332.4 (c)(2-14). The development of a conceptual work plan is addressed in Task 350.
- 210.8 Amendment to Section 404 Permit. Prepare documentation for an amendment to the approved Section 404 permit application describing the stream mitigation.
- 210.9 Section 401 Water Quality Certification/NDEQ Coordination. Coordinate with NDEQ on an amended Section 401 Water Quality Certification.

**Task Deliverables:**

- Amendment to Section 404 Permit and 401 Water Quality Certification including a stream mitigation plan.

**Key Understandings:**

- Field work will be completed by two HDR scientists.
- One (1) coordination meeting with USACE and NDEQ is assumed.
- Preparation of an amendment to the Section 404 permit application to address changes in design. It is anticipated any required permit modifications will not necessitate a public notice.
- No separate submittals are anticipated with NDEQ.



## TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN

**Task Objective:** The objective of this task is the prepare drawings and specifications for the stream mitigation reach.

**HDR Activities:** **Task 350 Stream Mitigation Concept Development.** Develop stream mitigation concept plans at Dam Site 15A to offset the loss of stream function (3,073 units) due to the stream impacts of Zorinsky Basin No. 2. Design will incorporate conveyance, habitat, and floodplain interaction elements.

350.2 **Existing Conditions Evaluation.** Evaluate the cross section and channel profile topographic data, historical imagery, existing hydrologic model and geomorphology. Define locations for rock riffles.

350.3 **Constructability Site Visit.** Conduct a site visit to confirm constructability of the stream mitigation strategies along the stream reach to provide conveyance, habitat, and floodplain interaction enhancements.

350.4 **Preliminary Stream Mitigation Conceptual Design.** Conduct a threshold channel design. Determine design flowrates for existing and future land use conditions. Compute the allowable shear stress and identify stream reaches for mitigation. Coordinate with P-MRNRD on the preliminary stream mitigation design concepts.

**Task 370 Final Drawings and Specifications.** Prepare drawings and specifications for a change order.

370.1 **Drawing Preparation.** Define typical section, locate stream features, and develop earthwork model for desired stream functional improvements. Develop plan and profile sheets and planting plan, if required.

370.2 **Technical Specifications.** Provide supplemental specification as required for the design.

370.3 **Opinion of Probable Construction Costs.** Compute earthwork quantities and civil project features. Determine lump sum and unit prices for civil features.

**Task 390 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff.

**Task Deliverables:**

- Stream Mitigation Conceptual Plan (estimated at 3 plan and profile drawings and 1 detail drawing).
- Final drawings (estimated at 6 drawings), specifications, and opinion of probable construction costs.

**Key Understandings:**

- Project improvements are limited to conveyance, habitat, and floodplain interaction.
- It is assumed that the stream can be raised to historical elevations by the use of minimally invasive rock riffles.

- Location of rock riffles will be identified based on a desktop review of the topographic survey. A constructability site visit will confirm the location of the rock riffles and adjust the design to field conditions.
- No hydraulic modeling is included.
- Mitigation design for stream will be at Flanagan Lake between State Street and Rainwood Road on property owned by P-MRNRD.
- USACE comments on the conceptual mitigation plan will require only minor changes to the final drawings. Redesign to a different strategy can be conducted as Additional Services.
- Annual mitigation monitoring is not included in this scope of work.

### **TASK SERIES 700 SURVEY AND RIGHT OF WAY**

**Task Objectives:** Provide survey and right of way services in support of final design activities.

**HDR Activities:** Task 710 Additional Field Survey. Conduct additional survey to describe the stream mitigation reaches along the main channel and set additional control points. Field survey will extend from top of bank to top of bank. A digital surface will be created with the topographic survey and supplemented with LiDAR data.

**Task Deliverables:**

- Field survey.
- Topographic surface for the stream mitigation reach.

**Key Understandings:**

- Coordinate system to be the same as used for the construction of Dam Site 15A.
- Topographic survey is limited to main channel above normal pool and excludes the tributary channel.

### **TASK SERIES 1000 CONSTRUCTION CONTRACT ADMINISTRATIVE SERVICES**

**Task Objectives:** To provide construction contract administration services.

#### **Task 1020 Construction Contract Support.**

1020.9 Design Modifications. HDR will prepare change order to remove the construction of the North and South Fingers at Zorinsky Basin No. 2 and to negotiate the change in contract amount to complete the stream mitigation construction at Flanagan Lake. Removal of the on-site stream mitigation will impact the project boundary, SWPPP, seeding, and fencing. An estimated 10 drawings (3 general, 2 erosion control, and 4 civil) will be revised.

**Task Deliverables:**

- Negotiated change order

**Key Understandings:**

- Valley Corporation will be constructing the stream mitigation work at DS 15A.

ATTACHMENT 2 PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF ZORINSKY WATER QUALITY BASIN NO. 2 AMENDMENT NO. 3 FEE ESTIMATE - AUGUST 2, 2018																				
HDR Engineering, Inc. Estimated Hours/Costs										Expenses					HDR				Est. Total Cost	
TASKS	Project Manager	Specialist	Principal Staff	Senior Staff	Technical Staff	Tech Support	Admin/ Clerical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Total Expenses	Totals	E&A	Thiele Geotech	Total Sub-Consult.		
TASK SERIES 200 PERMITTING																				
Task 210	Section 404 Permit																			
Subtask 210.4	USACECoordination			4	4			8	\$1,248	\$30		\$50		\$80	\$1,328			\$0	\$1,328	
Subtask 210.5	Wetland Delineation		2	4	32	4		42	\$5,758	\$155		\$125	\$136	\$416	\$6,174			\$0	\$6,174	
Subtask 210.6	Stream Functional Assessment		2	4	24	8		38	\$5,158	\$141		\$100		\$241	\$5,399			\$0	\$5,399	
Subtask 210.7	Stream Mitigation Plan			8	16	12	6	42	\$5,426	\$155	\$10			\$165	\$5,591			\$0	\$5,591	
Subtask 210.8	Amendment to Section 404 Permit			2	8	8	2	20	\$3,146	\$74	\$10			\$84	\$3,230			\$0	\$3,230	
Subtask 210.9	Section 401 Water Quality Certification/NDEQ Coordination				4	8		12	\$1,768	\$44				\$44	\$1,812			\$0	\$1,812	
Estimated Task Hours Subtotal		0	4	2	32	92	24	8	162											
Estimated Task Cost Subtotal		\$0	\$860	\$460	\$5,824	\$11,960	\$2,640	\$760	\$22,504	\$22,504	\$599	\$20	\$275	\$136	\$1,030	\$23,534	\$0	\$0	\$0	\$23,534
TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN																				
Task 350	Stream Mitigation Concept Development																			
Subtask 350.2	Existing Conditions Evaluation		8		16	16		40	\$5,560	\$148				\$148	\$5,708			\$0	\$5,708	
Subtask 350.3	Constructability Site Visit		2	8	8	4		22	\$3,750	\$81		\$50	\$100	\$231	\$3,981			\$0	\$3,981	
Subtask 350.4	Preliminary Stream Mitigation Conceptual Design	2	36	8	24	32	40	4	\$23,358	\$540		\$100		\$640	\$23,998			\$0	\$23,998	
Task 370	Final Drawings and Specifications																			
Subtask 370.1	Drawing Preparation	2		12	32		64	110	\$16,094	\$407	\$25			\$432	\$16,526			\$0	\$16,526	
Subtask 370.2	Technical Specifications			4	4		2	10	\$1,838	\$37	\$10			\$47	\$1,885			\$0	\$1,885	
Subtask 370.3	Opinion of Probable Construction Cost	1		2	4		2	9	\$1,643	\$33	\$10			\$43	\$1,686			\$0	\$1,686	
Task 390	Quality Control		4		4	4	2	14	\$2,010	\$52				\$52	\$2,062			\$0	\$2,062	
Estimated Task Hours Subtotal		5	50	34	64	60	130	8	351											
Estimated Task Cost Subtotal		\$1,175	\$10,750	\$7,820	\$11,648	\$7,800	\$14,300	\$760	\$54,253	\$54,253	\$1,299	\$45	\$150	\$100	\$1,594	\$55,847	\$0	\$0	\$0	\$55,847
TASK SERIES 700 SURVEY AND RIGHT OF WAY																				
Task 710	Additional Field Survey	2			6			8	\$1,562	\$30	\$10			\$40	\$1,602	\$15,850		\$15,850	\$17,452	
Estimated Task Hours Subtotal		2	0	0	6	0	0	0	8											
Estimated Task Cost Subtotal		\$470	\$0	\$0	\$1,092	\$0	\$0	\$0	\$1,562	\$1,562	\$30	\$10	\$0	\$0	\$40	\$1,602	\$15,850	\$0	\$15,850	\$17,452
TASK SERIES 1000 CONSTRUCTION CONTRACT ADMINISTRATION SERVICES																				
Task 1020	Construction Management Support																			
Subtask 1020.9	Design Modifications			8	16		16	2	\$6,702	\$155	\$10			\$165	\$6,867			\$0	\$6,867	
Estimated Task Hours Subtotal		0	0	8	16	0	16	2	42											
Estimated Task Cost Subtotal		\$0	\$0	\$1,840	\$2,912	\$0	\$1,760	\$190	\$6,702	\$6,702	\$155	\$10	\$0	\$0	\$165	\$6,867	\$0	\$0	\$0	\$6,867
TOTAL HOURS		7	54	44	118	152	170	18	563											
TOTAL COST (ROUNDED)		\$ 1,645	\$ 11,610	\$ 10,120	\$ 21,476	\$ 19,760	\$ 18,700	\$ 1,710	\$ 85,021		\$ 2,083	\$ 85	\$ 425	\$ 236	\$ 2,829	\$ 87,850	\$ 15,850	\$ -	\$ 15,850	\$ 103,700
										Previously Invoiced Work for Stream Mitigation Coordination (Period End August 4, 2018)										\$ 4,000
										Amendment No. 3 Total										\$ 107,700



ATTACHMENT 3

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF ZORINSKY WATER QUALITY BASIN NO. 2

SCHEDULE FOR STREAM MITIGATION PERMITTING AND DESIGN - AUGUST 2, 2018

Tasks		Aug '18	Sep	Oct	Nov	Dec	Jan '19	Feb	Mar	Apr	May
TASK SERIES 200 PERMITTING											
Task 210	Section 404 Permit										
Subtask 210.4	USACECoordination										
Subtask 210.5	Wetland Delineation										
Subtask 210.6	Stream Functional Assessment										
Subtask 210.7	Stream Mitigation Plan										
Subtask 210.8	Amendment to Section 404 Permit										
Subtask 210.9	Section 401 Water Quality Certification/NDEQ Coordination										
TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN											
Task 350	Stream Mitigation Concept Development										
Subtask 350.2	Existing Conditions Evaluation										
Subtask 350.3	Constructability Site Visit										
Subtask 350.4	Preliminary Stream Mitigation Conceptual Design										
Task 370	Final Drawings and Specifications										
Subtask 370.1	Drawing Preparation										
Subtask 370.2	Technical Specifications										
Subtask 370.3	Opinion of Probable Construction Cost										
Task 390	Quality Control										
TASK SERIES 700 SURVEY AND RIGHT OF WAY											
Task 710	Additional Field Survey										
TASK SERIES 1000 CONSTRUCTION CONTRACT ADMINISTRATION SERVICES											
Task 1020	Construction Management Support										
Subtask 1020.9	Design Modifications										

## Enclosure A Subconsultants Proposals



E & A CONSULTING GROUP, INC.

*Engineering Answers*

10909 Mill Valley Road, Suite 100 • Omaha, NE 68154-3950  
P 402.895.4700 • F 402.895.3599  
www.eacg.com

July 18, 2018

Troy Meyer PE  
HDR Inc.  
8404 Indian Hills Drive

RE: **Proposal for Professional Services**  
**Topographic Survey – North end Dam Site 15A**  
E&A Project Number – P2015.336.001

Dear Troy,

Thank you for providing E & A Consulting Group, Inc. ("E&A") the opportunity to provide you a proposal for land surveying services. We have researched the site and propose to complete a topographic survey per the following scope:

1. Complete topographic survey (3600') of creek from top of bank to top of bank. **See exhibit A** for survey area.

**Cost – \$15,850.00**

If this proposal is acceptable, please sign this proposal as indicated and return one copy to E&A.

Sincerely,  
E & A Consulting Group, Inc.

A handwritten signature in blue ink, appearing to read 'JH', is written over a large, stylized blue 'X' mark.

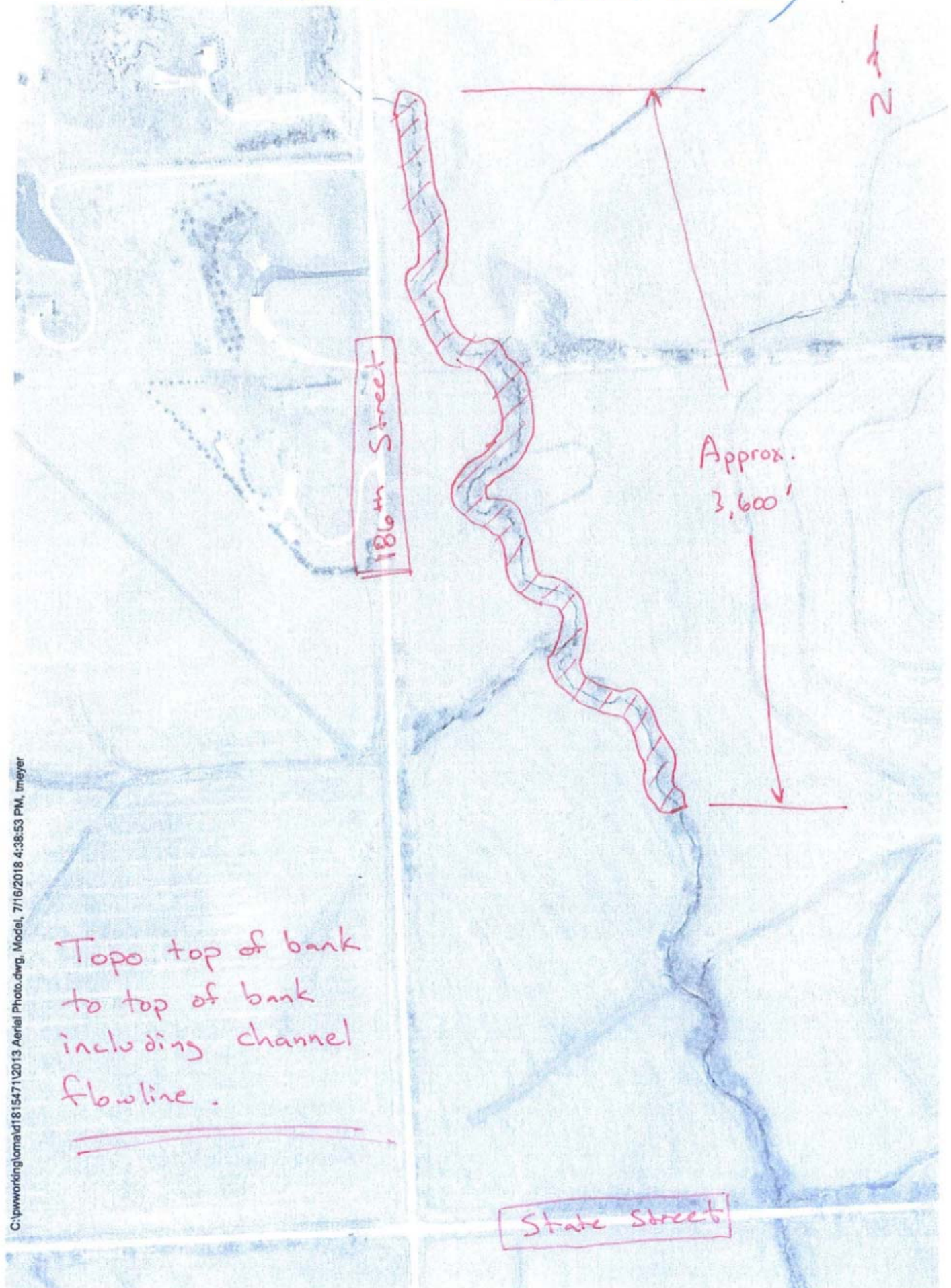
Jason Headley, RLS 604  
Project Manager

Enclosures:  
Exhibit "A – Subject Property

I have received and read and agree to this proposal for professional services. By signing, this proposal for professional services becomes the agreement and is executed.

Date: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, ZIP: \_\_\_\_\_  
Phone: \_\_\_\_\_

# EXHIBIT 'A' - SUBJECT PROPERTY





Preliminary Master Plan  
**DAM SITE 15A**

Omaha, Nebraska December 2014

