

Agenda Item: 7.

MEMORANDUM

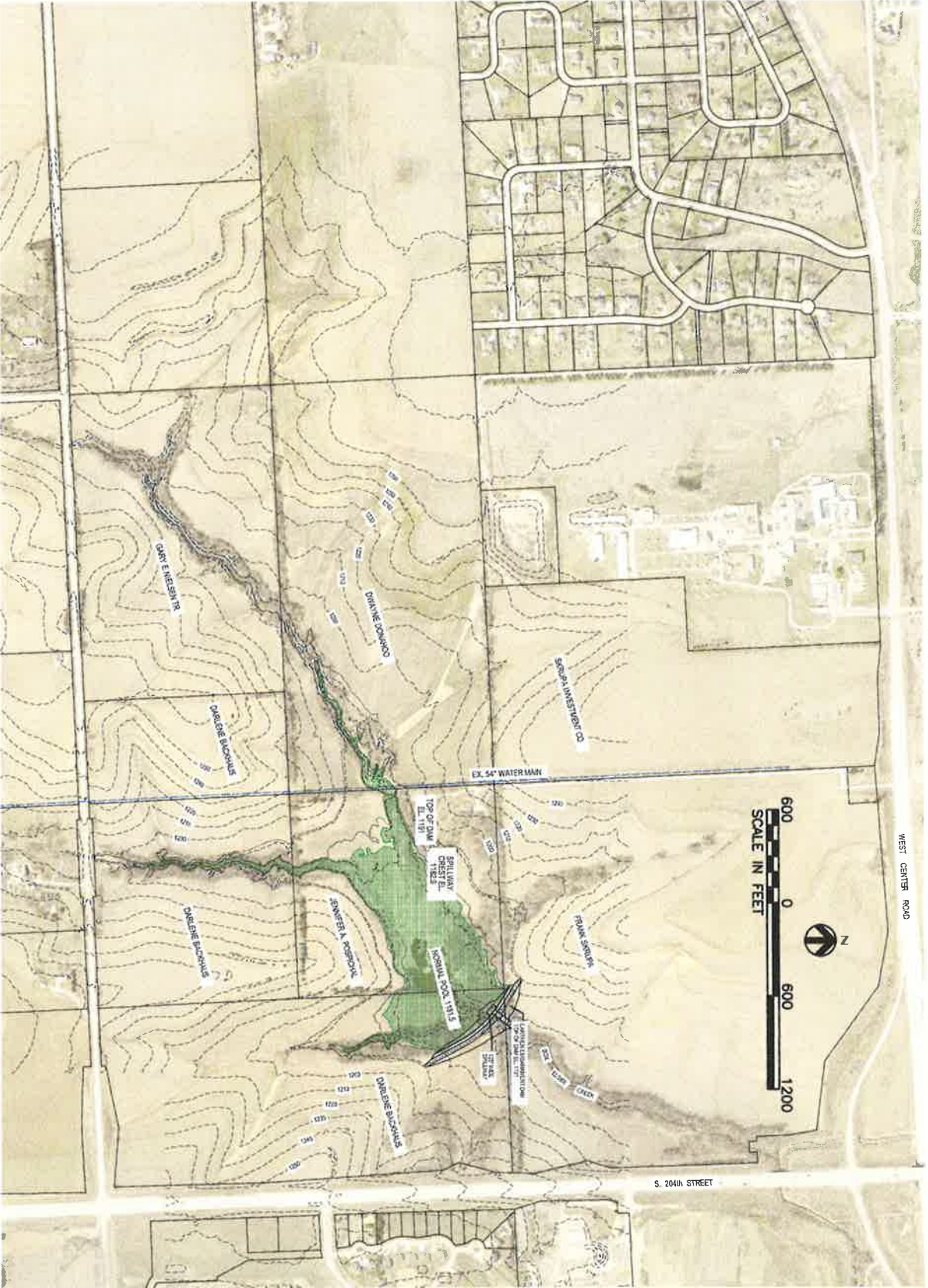
To: PPO Subcommittee
From: Amanda Grint, Water Resources Engineer
Date: November 2, 2017
Re: Amendment No. 2 to Professional Services Contract with HDR Engineering for Zorinsky Basin 2

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. 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. 1 was approved for Phases 2 and 3, Final Design and Construction Administration, in April 2017 bringing the total contract not to exceed amount to \$1,279,660. Out of scope work has created the need to request an additional amendment, Amendment No. 2 to address the following items:

- Additional Geotechnical Work and Groundwater Monitoring wells to determine suitability of pool borrow areas
- Additional 404 scope of work items
- Refined analysis of the weir for Nebraska Department of Natural Resources
- Addition of access road design
- Additional project management items to address a project extension of approximately 5 months

A proposed detailed scope of work and cost estimate for this amendment are attached for review. HDR would provide these additional out of scope items on an hourly basis not to exceed the amount of \$56,200.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute Amendment No. 2 to the Professional Services Agreement with HDR Engineering, Inc. for the Zorinsky Water Quality Basin Number 2 project in an amount not to exceed \$56,200 bringing the total contract not to exceed amount to \$1,335,860, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.





November 1, 2017

John Winkler
General Manager
Papio-Missouri River Natural Resources District
8901 S. 154th Street
Omaha, NE 68138-3621

RE: Zorinsky Water Quality Basin No 2
Phase II Final Design and Phase III Construction Administration Services Amendment No. 2

Dear John:

HDR Engineering, Inc. is pleased to submit the attached Amendment No. 2 to our Agreement for Additional Services to Phase II Final Design on the Zorinsky Water Quality Basin #2 project. The adjusted agreement is not to exceed \$1,335,860.

Please print two copies of the Agreement, sign both copies, retain one copy for your records and return the other signed copy for our files. Our receipt of your signed acceptance will constitute our Notice to Proceed.

We look forward to continue working with you on this very important project and continuing our working relationship with the P-MRNRD. If you have any questions, please contact me at 402.926.7110 at your convenience.

Very truly yours,
HDR ENGINEERING, INC.

A handwritten signature in black ink, appearing to read 'John Engel'.

John Engel, P.E.
Project Manager

Enclosures

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This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated April 22, 2016.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. 2

The Effective Date of this Amendment is: _____.

Background Data

Effective Date of Owner-Engineer Agreement: April 22, 2016

Owner: Papio-Missouri River Natural Resources District (P-MRNRD)

Engineer: HDR Engineering, Inc. (HDR)

Project: Zorinsky Water Quality Basin No. 2

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

- Additional Services to be performed by Engineer
- Modifications to services of Engineer
- Modifications to responsibilities of Owner
- Modifications of payment to Engineer
- Modifications to time(s) for rendering services
- Modifications to other terms and conditions of the Agreement

Description of Modifications:

- a. The Scope of Services currently authorized to be performed by Engineer in accordance with the Agreement and previous amendments, if any, is modified as follows:
 - 1) Exhibit A, "Engineer's Services", shall be amended to include Exhibit A1, "Engineer's Services for Amendment No. 2".
 - 2) Exhibit C, "Payments to Engineer for Services and Reimbursable Expenses"
 - i). As modified by Amendment No. 1, change C2.01 as follows:
 1. C2.01.A.1. delete "\$29,319" and replace with "\$31,213" and delete "\$113,270" and replace with "\$109,270".
 2. C2.01.A.3 delete "\$1,279,660" and replace with "\$1,335,860".
 - ii). Amend Appendix 1 to include Attachment 2, "Engineer's Fee"

Exhibit K – Amendment to Owner-Engineer Agreement.

EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services.

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Estimate" and Attachment 3 "Engineer's Schedule".

- b. As modified by Amendment No. 1, Modify Article 7 – Definitions, 7.01.A.24 Maximum Amount. Remove "one million two hundred seventy nine thousand six hundred sixty dollars (\$1,279,660)" and replace with "one million three hundred thirty five thousand eight hundred sixty dollars (\$1,335,860)".

Agreement Summary:

Original agreement amount:	\$ 470,200.00
Net change for prior amendments (Amendment No. 1):	\$ 858,930.00
Reduction in Phase I Scope and Fees:	\$ (49,470.00)
This Amendment No. 2 amount:	\$ <u>56,200.00</u>
Adjusted Agreement amount:	<u>\$ 1,335,860.00</u>

Change in time for services (days or date, as applicable): April 15, 2017 to May 31, 2019.

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:

ENGINEER:

Papio-Missouri River Natural Resources District

HDR Engineering, Inc.

By: _____
Print name: John Winkler

By: *Matthew Tondl*
Print name: Matthew Tondl, P.E

Title: General Manager

Title: Senior Vice President

Date Signed: _____

Date Signed: 11/1/17

This is **EXHIBIT A1**, consisting of 4 pages and Attachments 2 and 3 (2 pages), referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated April 22, 2016.

AMENDMENT NO. 2

Engineer's Services

PART 1 – BASIC SERVICES

A1.02 Final Design Phase, Bidding Phase and Construction Phase

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



ENGINEERING PROPOSAL – PHASE II FINAL DESIGN AND PHASE III CONSTRUCTION CONTRACT ADMINISTRATION SERVICES



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. The contributing drainage area at the proposed retention basin is approximately 1.44 square miles. The drainage area of ZB-2 is primarily agricultural land, but urbanization is actively surrounding the area.

SCOPE OF SERVICES – PHASE II - FINAL DESIGN ADDITIONAL SERVICES

During the final design phase, Additional Services were requested to prepare final contract documents. The scope of the work has increased to address P-MNRND's needs and site conditions. Amendment No. 2 addresses the additional effort. The initial schedule anticipated bidding the project in August 2017. Due to land rights acquisition and environmental permitting, the schedule has been delayed. It is anticipated that bidding the project will begin December 2017 and construction will begin in February 2018 and project completion will be 15 month later or in May 2019.

TASK SERIES 100 PROJECT MANAGEMENT

Modify Task **Task 110 Project Management.** Project schedule is extended 5 months resulting in additional scheduling, administration and coordination activities on the Project.

Modify Task 120.1 P-MRNRD Coordination Meetings. Scope of work assumed 1 progress meeting and a 60% design meeting with P-MRNRD personnel. A total of four (4) meetings are to be conducted. Fee includes cost for 2 additional meetings.

Key Understandings:

- The duration of the project is 25-1/2 months (begin April 14, 2017 to May 31, 2019).

TASK SERIES 200 PERMITTING

Task Objectives: To coordinate with permitting agencies, and prepare and submit appropriate permits necessary for project construction.

Modify Task 210.1 USACE Coordination. Additional coordination and meetings with USACE to respond to questions on mitigation plan and other permit application elements.

Modify Task 230.2 NPDES Permit Preparation. SWPPP drawings were added to address the phased construction of the water quality basin and to address specific SWPPP BMPs associated with construction activity.

TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN

Modify Task Task 320 Refine Hydrology and Hydraulics. A tight right-of-way required a non-typical design for a labyrinth weir and baffled chute spillway. To satisfy NDNR plan review, a 3-D model was prepared to describe the flow regime between the labyrinth weir and baffled chute spillway.

Modify Task Task 330 Earthwork Modeling. Additional geotechnical stability evaluations required the earthwork model to be modified. As requested by P-MRNRD for O&M, the finger drain outlet system was changed from a surface flow condition to an enclosed system. Due to the close proximity of homes near the dam embankment, potential vibration from earthwork moving equipment was reviewed.

Modify Task 370.1 Drawing Production. Profiles, sections and details were made to reflect changes to earthwork modeling.

Add Task Task 395 Access Roads. Accessibility to both sides of the dam is limited due to adjacent development. Access roads for O&M will be designed.

TASK SERIES 400 GEOTECHNICAL DESIGN

Modify Task 420.2 Subsurface Investigation Exploration. Phase II scope assumed that additional borings and laboratory testing in borrow area would be required. Borrow in the pool area was investigated for suitability. It was decided that a designated borrow from off-site would not be defined,

rather the Contractor would be responsible for finding an acceptable source. Data collection shifted from additional borings to installation of monitoring wells. The level of effort conducted by Thiele Geotech was less than scoped.

Modify Task 430.1 Final Geotechnical Design and Analyzes. The homes and detention basin pond located downstream of the right abutment resulted in several iterations of slope stability in designing the surcharge so that the diversion channel could be squeezed in a confined area. This also affected the settlement profile across the dam as well as the design layout of the instrumentation.

The finger drain outlet system was redesigned based on the P-MRNRD's request that the system be buried, rather than with the outlets at the ground surface.

Development of foundation recommendations for the future trail bridge over the combined spillway.

Add Task Task 470 Suitability of Pool Soils for Borrow. Defining on-site suitable material to construct the dam embankment was investigated. Four (4) monitoring wells were installed to determine the pool stratigraphy and the suitability. High groundwater levels necessitated the need to breach the existing earthen dam to lower the groundwater table and drain the soils. HDR coordinated and observed the dam breaching and installation of the monitoring wells. Based on the borings, water levels and site conditions, the suitability of the pool soils were evaluated.

TASK SERIES 600 CONTRACT DOCUMENT COORDINATION

Modify Task 620.2 Final Bid Drawings. The following table summarizes the drawings scoped and the final drawings . A total of 7 additional drawings were added during the design phase.

Sheet	Scoped Drawing	Final Drawing
Section 01- General		
G-1	Cover Sheet, Location Map, and Index of Drawings	Index of Drawings, Abbreviations & Notes
G-2	Reservoir Area Plan and Capacity Table	Reservoir Area Plan and Capacity Table
G-3	Hydrologic and Hydraulic Data	Hydrologic and Hydraulic Data
G-4	Project Boundary and Easement Map	Project Boundary and Easement Map
G-5	Removals	Removals (1 of 2)
G-6		Removals (2 of 2)
G-7		Survey Control and Geometrics
Section 02-SWPPP		
ES-1	SWPPP Overall Site Plan	SWPPP Overall Site Plan
ES-2 to ES-3	SWPPP General Notes and Details	SWPPP General Notes
ES-4	SWPPP WQ Basin	SWPPP Details

Sheet	Scoped Drawing	Final Drawing
ES-5	SWPPP Stream Mitigation	Phase I & II SWPPP Water Quality Basin
ES-6		Phase III SWPPP Water Quality Basin
ES-7		SWPPP Stream Mitigation
Section 03- Water Quality Basin Dam		
D-1/ WQ-1	Site Plan, Geometrics, and Sequencing Plan	Water Quality Basin Site Plan
D-2/ WQ-2	Grading and Drainage Plan	Phase I Surcharge Grading and Diversion Plan
D-3/ WQ-3	Embankment Typical Section and Profile Along Dam Centerline	Phase III Grading and Drainage Plans
D-4/ WQ-4	Details	Phased Embankment Details
D-5/WQ-5	Site Boring Plan	Phased Embankment Details
D-6/WQ-6	Geologic Profiles Along Dam and Spillway	Typical Section and Finger Drains
D-7/WQ-7	Instrumentation Plan and Profile	Drawdown Profile and Drain Details
WQ-8		Miscellaneous Details
WQ-9		Site Boring Plan
WQ-10		Geologic Profiles Along Dam and Spillway
WQ-11		Instrumentation Plan and Profile
Section 04 – Labyrinth Weir and Baffled Chute Spillway		
S-1	Spillway Plan	Spillway Plan
S-2	Spillway Profile	Spillway Profile
S-3 to S-7	Spillway Sections and Details	Spillway, Chute Spillway, and Weir Details
S-8 to S-9	Spillway Sections and Details	
Section 05- Mitigation, Seeding, and Fencing		
C-1	Site Plan and Geometrics	North Finger Stream Mitigation Plan & Profile
C-2	Channel Grading Plan and Profile	North Finger Stream Mitigation Sections
C-3	Channel Grading Plan and Profile	South Finger Stream Mitigation Plan & Profile
C-4	Channel Typical Sections and Details	South Finger Stream Mitigation Sections
C-5	Forested Wetland Mitigation Plan	Main Channel Stream Mitigation Plan & Profile
C-6	Forested Wetland Mitigation Plan	Forested Wetland Mitigation Site Plan at Flanagan Lake
C-7	Forested Wetland Mitigation Plan	Forested Wetland Mitigation Area 1 at Flanagan Lake
C-8	Seeding and Fencing Plan	Forested Wetland Mitigation Areas 2 & 3 at Flanagan Lake
C-9	Seeding and Fencing Plan	Forested Wetland Mitigation Area 4 at Flanagan Lake
C-10	Seeding and Fencing Plan	Seeding and Fencing Site Plan
C-11	Fencing Details	Seeding and Fencing Site Plan
C-12		Seeding and Fencing Details
C-13		North Access Road Plan and Profile
C-14		South Access Road Plan and Profile

TASK SERIES 700 SURVEY AND RIGHT OF WAY

Modify Task

Task 740 Legal Descriptions and Documentation. Contractor access and O&M access is limited due to adjacent development and topography. Several site visits made to review permanent access routes. Easement were identified that were later modified due to site restrictions.

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. 2, FEE ESTIMATE - NOVEMBER 2017

TASKS	HDR Engineering, Inc. Estimated Hours/Costs											Expenses					HDR				Sub-Consultant Estimated Costs			Est. Total Cost
	Project Manager	Specialists	Principal Staff	Senior Staff	Technical Staff	Tech Support	Admin/ Clerical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Total Expense	Totals	NE Historical Society	EAA	Thiele Geotech	R. Donovan					
TASK SERIES 100 PROJECT MANAGEMENT																								
Task 110 Project Management	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Subtask 120.1 PH/PRD Coordination Meeting	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$2,750	\$0	\$2,640	\$0	\$0	\$0	\$7,000	\$6,500	\$74	\$0	\$0	\$0	\$200	\$274	\$2,974	\$0	\$0	\$0	\$0	\$3,974				
TASK SERIES 200 PERMITTING																								
Task 220 USACE Coordination	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Subtask 210.1 USACE Permits/Plan Preparation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Subtask 220.2 NEPDES Permits/Plan Preparation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN																								
Task 330 Refine Hydrology and Hydraulics	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Task 330 Earthwork Modeling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Task 330 Draining Production	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Task 395 Access Roads	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$1,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
TASK SERIES 400 GEOTECHNICAL DESIGN																								
Subtask 420.2 Soils Investigation Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Subtask 430.1 Final Geotechnical Design and Analysis	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Task 470 Suitability of Flood Soils for Borrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
TASK SERIES 600 CONTRACT DOCUMENT COORDINATION																								
Subtask 620.2 Final Bid Drawings	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$400	\$0	\$2,640	\$0	\$0	\$1,500	\$0	\$4,610	\$111	\$25	\$0	\$0	\$0	\$25	\$4,746	\$0	\$0	\$0	\$0	\$4,746				
TASK SERIES 700 SURVEY AND BRIGHT OF WAY																								
Task 740 Legal Descriptions and Documentation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Hours Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Estimated Task Cost Subtotal	\$0	\$0	\$440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
TOTAL HOURS	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
TOTAL COST (ROUNDED)	\$ 4,990	\$ 0,000	\$ 5,720	\$ 12,500	\$ 24,500	\$ 4,370	\$ 7,600	\$ 6,340	\$ 1,485	\$ 100	\$ 100	\$ 200	\$ 1,685	\$ 60,235	\$ -	\$ -	\$ (4,000)	\$ -	\$ -	\$ 66,200				

