

MEMORANDUM

TO: Programs, Projects, and Operations Subcommittee

FROM: Lori Ann Laster, Stormwater Management Engineer

SUBJECT: Review and Recommendation on Contract Amendment for Phase 2 of Professional Services Contract with HDR for WP4 Project

DATE: May 2, 2021

In May 2017, the Board selected HDR Engineering, Inc. (HDR) for the preliminary design of West Papillion Regional Basin Number 4 (WP4), Dam Site 19 (DS19), and Dam Site 12 (DS12) Projects. Preliminary design was completed in 2018. In 2019, the Papillion Creek Watershed Partnership adopted a new implementation plan that called for construction of three new flood control reservoirs, including WP4. District staff has worked with HDR to prepare a scope to complete the final design, bidding services, and construction administration for WP4.

A summary of the proposed tasks included in the contract is as follows:

- Project management through final completion of the project.
- Environmental permitting.
- Geotechnical investigation and design.
- Final site design.
- Preparation of bidding and construction contract documents.
- Construction observation.
- Development of a maintenance and operation plan and an emergency action plan.
- Preparation of a Water Sustainability Fund application.

Two extra tasks are included for design elements requested by the City of Gretna to accommodate future sanitary sewer lines and for Sarpy County to construct a portion of Schram Road to the ultimate profile so that the reservoir is not disturbed when Schram Road is constructed in the future. These items are subject to approval of interlocal agreements between the District and the City and the County and the District will be reimbursed for those tasks.

The proposed scope of work, cost estimate and schedule are attached. HDR will provide the professional services on an hourly basis not to exceed the amount of \$1,434,813 bringing the total contract amount to \$3,478,636.

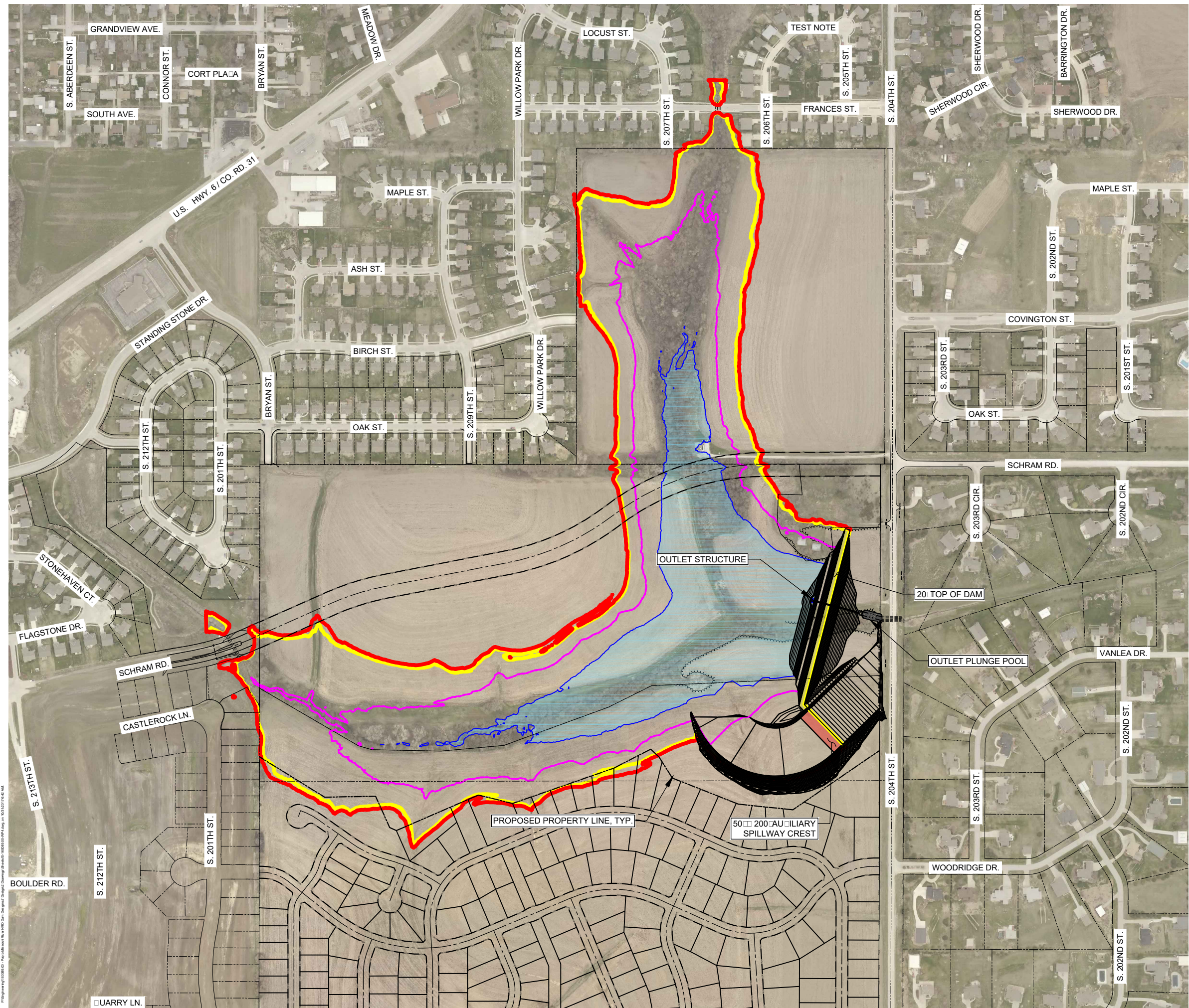
Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute Amendment #1 with HDR Engineering, Inc. for Professional Engineering Services for the Final Design and Construction of the WP4 Project in an amount not to exceed \$1,434,813, bringing the total contract amount to \$3,478,636 subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.

OVERALL VICINITY MAP

RELIMINARY PRELIMINARY
NOT FOR
CONSTRUCTION
5%
DATE:
10/30/2017
PRELIMINARY PRELIMINARY

PROJECT NO.	160089.00
DATE	10/30/2017
DRAWN BY	E.J.O.
FILE NAME	S-160089.00-WP4.dwg
FIELD BOOK	Sarp Co. 06
FIELD CREW	DF / NF
SURVEY FILE NO.	160089
PLAN IN HAND	
INITIALS	
DATE	
0 PERCENT REVIEW	
INITIALS	
DATE	
5 PERCENT REVIEW	
INITIALS	
DATE	
REVISIONS	

0.4a



0 100 200 400

UNIT OF MEASURE IS FEET



Know what's **below**.
Call before you dig.

Sent electronically on May 5, 2021

May 5, 2021

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

RE: P-MRNRD, Dam Site 12, Dam Site 19, and Regional Detention Basin WP-4 Preliminary Design
Amendment No. 1 for Final Design and Construction Administration for WP-4

Dear John:

HDR Engineering, Inc. is pleased to submit the attached Amendment No. 1 to our Agreement to provide professional services to conduct final design, bidding or negotiating, and construction administration for Basin WP-4. The net contract change for Amendment No. 1 is not to exceed \$1,434,813.

Please sign both copies of the amendment, 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 continuing 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.



John Engel, P.E.
Project Manager

Enclosures

This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated May 22, 2017.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. 1

The Effective Date of this Amendment is: _____, 2021.

Background Data

Effective Date of Owner-Engineer Agreement: May 22, 2017

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

Engineer: HDR Engineering, Inc. (HDR)

Project: Preliminary Design of Dam Site 12, Dam Site 19, and Regional Detention Basin WP-4.

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

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

Description of Modifications:

- a. Modify Article 7 – Definitions, 7.01.A.24 Maximum Amount. Remove “two million forty-three thousand eight hundred twenty-three dollars (\$2,043,823.00)”, and replace with “three million four hundred seventy-eight thousand six hundred thirty-six dollars (\$ 3,478,636).”
- b. Amend Article 8 – Exhibits and Special Provisions as follows:
 - 1) 8.01 D, add “D. Exhibit D, Duties, Responsibilities and Limitations of Authority of Resident Project Representative.”
 - 2) 8.01 J, remove and replace Exhibit K, Amendment to Owner-Engineer Agreement to include, “HDR Engineering, Inc. Terms and Conditions for Floodplain, Dams and Levee Professional Services.”

- c. 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 A-1, Engineer's Services for Amendment No. 1 and Attachments 1 and 2 to Exhibit A-1.
 - 2) Exhibit C, "Payments to Engineer for Services and Reimbursable Expenses" shall be amended to include Exhibit C-1 and Appendices 1 and 2 to Exhibit C-1.

Agreement Summary:

Original agreement amount: \$ 2,043,823
Dam Site 12 \$707,140
Dam Site 19 \$717,403
Basin WP-4 \$619,280

Net contract change for Amendment No. 1: \$ 1,434,813
WP-4 Phases II and III Services: \$ 1,498,745
WP-4 Credit for Remaining Phase I Services -\$ 63,932

Adjusted Agreement amount: \$ 3,478,636

Change in time for services (days or date, as applicable): May 15, 2021 to March 31, 2024.

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibits C and C-1.

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:

Papio-Missouri River Natural Resources District

By: _____
Print
Name: John Winkler

Title: General Manager

Date Signed: _____

ENGINEER:

HDR Engineering, Inc.

By: _____
Print
Name: Matthew Tondl, P.E.

Title: Senior Vice President

Date Signed: _____

Engineer's Services

Engineer shall provide the Basic Services identified in Attachment 1 to Exhibit A-1 (Proposed Scope of Services), and Attachment 2 to Exhibit A-1 (Time Schedule Chart) pursuant to the terms set forth in Part 1 of Exhibit A-1 below. Engineer shall provide Additional Services, if necessary, pursuant to the terms set forth in Part 2 of Exhibit A. In the event that there is a conflict regarding the Scope of Services to be performed, Attachment 1 of Exhibit A-1 shall prevail.

PART 1 – BASIC SERVICES

A1.03 Final Design Phase

- A. After acceptance by Owner of the Preliminary Design Phase documents, revised opinion of probable Construction Cost as determined in the Preliminary Design Phase, and any other Preliminary Design Phase deliverables, subject to any Owner-directed modifications or changes in the scope, extent, character, or design requirements of or for the Project, and upon written authorization from Owner, Engineer shall:
 - 1. Prepare final Drawings and Specifications indicating the scope, extent, and character of the Work to be performed and furnished by Contractor.
 - 2. Visit the Site as needed to assist in preparing the final Drawings and Specifications.
 - 3. Provide technical criteria, written descriptions, and design data for Owner's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design; assist Owner in consultations with such authorities; and revise the Drawings and Specifications in response to directives from such authorities, as appropriate.
 - 4. Advise Owner of any recommended adjustments to the opinion of probable Construction Cost.
 - 5. After consultation with Owner, include in the Construction Contract Documents any specific protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website. Any such protocols shall be applicable to transmittals between and among Owner, Engineer, and Contractor during the Construction Phase and Post-Construction Phase, and unless agreed otherwise shall supersede any conflicting protocols previously established for transmittals between Owner and Engineer.
 - 6. Assist Owner in assembling known reports and drawings of Site conditions, and in identifying the technical data contained in such reports and drawings upon which bidders or other prospective contractors may rely.

7. In addition to preparing the final Drawings and Specifications, assemble drafts of other Construction Contract Documents based on specific instructions and contract forms, text, or content received from Owner.
 8. If requested by Owner, prepare or assemble draft bidding-related documents (or requests for proposals or other construction procurement documents), based on the specific bidding or procurement-related instructions and forms, text, or content received from Owner.
 9. Perform or provide the following other Final Design Phase tasks or deliverables: As defined in Attachment 1 to Exhibit A-1.
 10. Furnish for review by Owner, its legal counsel, and other advisors, 2 copies of the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, within 7 calendar days of authorization to proceed with the Final Design Phase, and review them with Owner. Owner shall submit to Engineer any comments regarding the furnished items, and any instructions for revisions.
 11. Revise the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables in accordance with comments and instructions from the Owner, as appropriate, and submit 2 final copies of such documents to Owner within 7 calendar days after receipt of Owner's comments and instructions.
- B. Engineer's services under the Final Design Phase will be considered complete on the date when Engineer has delivered to Owner the final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, and Owner has provided Engineer with written confirmation that Owner has no additional comments to any of the foregoing items.
- C. In the event that the Work designed or specified by Engineer is to be performed or furnished under more than one prime contract, or if Engineer's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), Owner and Engineer shall, prior to commencement of the Final Design Phase, develop a schedule for performance of Engineer's services during the Final Design, Bidding or Negotiating, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A-1 whether or not the work under such contracts is to proceed concurrently.
- D. The number of prime contracts for Work designed or specified by Engineer upon which the Engineer's compensation has been established under this Agreement is 1. If more prime contracts are awarded, Engineer shall be entitled to an equitable increase in its compensation under this Agreement.

A1.04 Bidding or Negotiating Phase

- E. After acceptance by Owner of the final Drawings and Specifications, other Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by Owner to proceed, Engineer shall:
1. Assist Owner in advertising for and obtaining bids or proposals for the Work, assist Owner in issuing assembled design, contract, and bidding-related documents (or requests for proposals or other construction procurement documents) to prospective contractors, and, where applicable, maintain a record of prospective contractors to which documents have been issued, attend pre-bid conferences, if any, and receive and process contractor deposits or charges for the issued documents.
 2. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.
 3. Provide information or assistance needed by Owner in the course of any review of proposals or negotiations with prospective contractors.
 4. Consult with Owner as to the qualifications of prospective contractors.
 5. Consult with Owner as to the qualifications of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors, for those portions of the Work as to which review of qualifications is required by the issued documents.
 6. If the issued documents require, the Engineer shall evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors, provided that such proposals are allowed by the bidding-related documents (or requests for proposals or other construction procurement documents) prior to award of contracts for the Work. Services under this paragraph are subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A-1.
 7. Attend the bid opening, prepare bid tabulation sheets to meet Owner's schedule, and assist Owner in evaluating bids or proposals, assembling final contracts for the Work for execution by Owner and Contractor, and in issuing notices of award of such contracts.
 8. If Owner engages in negotiations with bidders or proposers, assist Owner with respect to technical and engineering issues that arise during the negotiations.
 9. Perform or provide the following other Bidding or Negotiating Phase tasks or deliverables: As defined in Attachment 1 to Exhibit A-1.
- F. The Bidding or Negotiating Phase will be considered complete upon commencement of the Construction Phase or upon cessation of negotiations with prospective contractors (except as may be required if Exhibit F is a part of this Agreement).

A1.05 Construction Phase

- A. Upon successful completion of the Bidding and Negotiating Phase, and upon written authorization from Owner, Engineer shall:
1. *General Administration of Construction Contract:* Consult with Owner and act as Owner's representative as provided in the Construction Contract. The extent and limitations of the duties, responsibilities, and authority of Engineer shall be as assigned in the Standard General Conditions or other construction general conditions specified in this Agreement. The duties, responsibilities, and authority of Engineer in the Construction Contract may be modified only with the Engineer's consent. Engineer shall not be required to furnish or perform services contrary to Engineer's responsibilities as a licensed professional. All of Owner's instructions to Contractor will be issued through Engineer, which shall have authority to act on behalf of Owner in dealings with Contractor to the extent provided in this Agreement and the Construction Contract except as otherwise provided in writing.
 2. *Resident Project Representative (RPR):* Provide the services of an RPR at the Site to assist the Engineer and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in Exhibit D. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth in Exhibit D.
 3. *Selection of Independent Testing Laboratory:* Assist Owner in the selection of an independent testing laboratory to perform the services identified in Exhibit B, Paragraph B2.01.
 4. *Pre-Construction Conference:* Participate in a pre-construction conference prior to commencement of Work at the Site.
 5. *Electronic Transmittal Protocols:* If the Construction Contract Documents do not specify protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, then together with Owner and Contractor jointly develop such protocols for transmittals between and among Owner, Contractor, and Engineer during the Construction Phase and Post-Construction Phase.
 6. *Original Documents:* If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, upon request, make such original printed record version of the Construction Contract Documents available to Contractor and Owner for review.
 7. *Schedules:* Receive, review, and determine the acceptability of any and all schedules that Contractor is required to submit to Engineer, including the Progress Schedule, Schedule of Submittals, and Schedule of Values.

8. *Baselines and Benchmarks:* As appropriate, establish baselines and benchmarks for locating the Work which in Engineer's judgment are necessary to enable Contractor to proceed.
9. *Visits to Site and Observation of Construction:* In connection with observations of Contractor's Work while it is in progress:
 - a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary and/or as reasonably requested by Owner, to observe as an experienced and qualified design professional the progress of Contractor's executed Work. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment, as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.
 - b. The purpose of Engineer's visits to the Site, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner confidence that the completed Work will conform in general to the Construction Contract Documents and that Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. Engineer shall not on its own behalf with respect to third parties, during such visits or as a result of such observations of the Work, be deemed to supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents unless such failure is caused in whole or in part by Engineer, its Consultants, agents or other representatives.
10. *Defective Work:* Reject Work if Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents, that such Work will not produce a completed Project that conforms generally to the Construction Contract Documents and/or that it will threaten the integrity of the design concept of the

completed Project as a functioning whole as indicated in the Construction Contract Documents. Provide recommendations to Owner regarding whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.

11. *Compatibility with Design Concept:* If Engineer believes that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.
12. *Clarifications and Interpretations:* Accept from Contractor and Owner submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. Promptly to ensure the orderly completion of Contractor's work, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents. Such clarifications, interpretations and/or decisions must be consistent with the intent and reasonably inferable from the Construction Contract Documents.
13. *Intentionally Deleted.*
14. *Field Orders:* Subject to any limitations in the Construction Contract Documents, Engineer may prepare and issue Field Orders requiring minor changes in the Work. Engineer shall promptly notify Owner of any issued Field Order
15. *Change Orders and Work Change Directives:* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.
16. *Differing Site Conditions:* Respond to any notice from Contractor of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. Promptly conduct reviews and prepare findings, conclusions, and recommendations for Owner's use.
17. *Shop Drawings, Samples, and Other Submittals:* Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted.

18. *Substitutes and "Or-equal"*: Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A-1.
19. *Inspections and Tests*:
- a. Require such special inspections and/or tests of Contractor's work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Construction Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Construction Contract Documents. Engineer shall be entitled to rely on the results of such inspections and tests.
 - b. As deemed reasonably necessary, request that Contractor uncover Work that is to be inspected, tested, or approved.
 - c. Pursuant to the terms of the Construction Contract, require special inspections or testing of the Work, whether or not the Work is fabricated, installed, or completed.
20. *Change Proposals and Claims*: (a) Review and respond to Change Proposals. Review each duly submitted Change Proposal from Contractor and, within 30 calendar days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided promptly to Owner and Contractor. (b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.
21. *Applications for Payment*: Based on Engineer's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:
- a. Determine the amounts that Engineer recommends Contractor be paid. Recommend reductions in payment (set-offs) based on the provisions for set-offs stated in the Construction Contract. Such recommendations of payment and reductions in payment will be in writing and will constitute Engineer's representation to Owner, that, to the best of Engineer's knowledge, information and belief, taking into account its observations and review and such other information available to Engineer, Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Construction Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Construction Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price Work, Engineer's recommendations of payment will include final

determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Construction Contract Documents).

- b. By recommending payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity of Contractor's Work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control the Work, or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the money paid to Contractor by Owner; to determine that title to any portion of the Work, including materials or equipment, has passed to Owner free and clear of any liens, claims, security interests, or encumbrances; or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.
22. *Contractor's Completion Documents:* Receive from Contractor, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings, Samples, and other data approved as provided under Paragraph A1.05.A.17. Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the Construction Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be as provided in Paragraph A1.05.A.17 and to check that Contractor has submitted all pages.
23. *Substantial Completion:* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, visit the Site to conduct review and conduct an inspection of the Work to determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.
24. *Other Tasks:* Perform or provide the following other Construction Phase tasks or deliverables: As defined in Attachment 1 to Exhibit A-1.
25. *Final Notice of Acceptability of the Work:* Conduct a final inspection to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor in the form attached hereto as Exhibit

E (“Notice of Acceptability of Work”) that the Work is acceptable (subject to the provisions of the Notice and Paragraph A1.05.A.21.b) to the best of Engineer’s knowledge, information, and belief, and based on the extent of the services provided by Engineer under this Agreement.

26. *Standards for Certain Construction-Phase Decisions:* Engineer will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments to the extent conducted or rendered in good faith.
- B. *Duration of Construction Phase:* The Construction Phase will commence with the execution of the first Construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer for final payment to Contractors. If the Project involves more than one prime contract as indicated in Paragraph A1.03.D, then Construction Phase services may be rendered at different times in respect to the separate contracts. Subject to the provisions of Article 3, Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

This is **Attachment 1** to **EXHIBIT A-1**, consisting of 29 pages and **Attachment 2** (2 pages), referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated May 22, 2017.

AMENDMENT NO. 1

Engineer's Services for Amendment No. 1

PART 1 – BASIC SERVICES

A1.03 Final Design Phase

**Papio-Missouri River Natural Resources District
Final Design and Construction Services for WP-4
Papillion Creek Watershed, Sarpy County, NE**



ENGINEERING PROPOSAL

BACKGROUND AND BASIS OF PROPOSAL

The HDR Engineering, Inc. and JEO Consulting Group, Inc. (Team) was selected by the P-MRNRD to provide engineering services for Dam Site 12, 19 and regional detention basin WP-4. Phase 1 generally consisted of preliminary design of each site and was completed in May of 2018. The Papio-Missouri River Natural Resources District (P-MRNRD) is prepared to move forward with the final design and construction phases for the WP-4 project. WP-4 is a proposed regional detention basin to be located on an unnamed tributary of South Papillion Creek near 204th Street and Schram Road in Sarpy County with a drainage area of 1.05 square miles.

The project includes the design and construction of a Main Dam, two water quality basins, recreational features with a pedestrian trail and recreation access area, sanitary sewer and lift station removal and relocation, in-lake fisheries, and the extension of Schram Road roadway to ultimate section.

A1.01 Final Design and Construction Phases

This Scope of Services is to document professional services to the P-MRNRD for a final design and construction of regional detention basin WP-4 (Project). The scope is divided into Phase II – Final Design and Phase III – Construction Management Services.

The Phase II scope of work is segmented into 11 task series:

- Task Series 100 – Project Management
- Task Series 200 – Permitting
- Task Series 300 – Geotechnical Investigation and Design
- Task Series 400 – Main Dam Design
- Task Series 500 – General and Site Civil Design
- Task Series 600 – City of Gretna Design Elements
- Task Series 700 – Water Sustainability Fund Application
- Task Series 800 – Non-Technical Specifications (Front End Documents)
- Task Series 900 – Contract Document Submittals
- Task Series 1000 – Survey and ROW
- Task Series 1100 – Bidding Services

MODIFIED VERSION of

May 2021

Attachment 1 to Exhibit A-1 – Proposed Scope of Services for Amendment No. 1

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The Phase III scope of work is segmented into 3 task series:

- Task Series 1200 – Construction Meetings and Conferences
- Task Series 1300 – Construction Contract Administration Services
- Task Series 1400 – Operation and Maintenance Manual and Emergency Action Plan

The Team proposes to provide the following professional services over an anticipated 35 – month project period from the time of contract authorization. The design phase is estimated at 11 months, bidding phase at two (2) months, and a construction phase at 22 months for a total of 35 months.

TASK SERIES 100 – DESIGN/BIDDING PROJECT MANAGEMENT

Task Objective: Develop effective project communication; confirm that Project elements are being completed. Discover and disseminate project information to improve quality and efficiency.

Activities: **Task 110 Project Management.** Conduct general project management tasks. Includes development of project initiation forms including the development of a project management plan, monthly invoicing, monthly progress report, project close out activities and other project administrative activities.

Task 120 Coordination Meetings. Coordination kickoff and progress meetings will be conducted with P-MRNRD, City of Gretna, and Sarpy County officials during the Project. At the kickoff meeting, project details and project scope will be reviewed.

Task 130 Stakeholder Coordination Meeting. Conduct a stakeholder coordination meeting with local landowners or interested stakeholders early in the final design phase to discuss project elements.

Task 140 P-MRNRD Board Presentation. Conduct a presentation to the P-MRNRD Board/Subcommittee to provide the results of the final design efforts. A PowerPoint presentation will be prepared.

Task Deliverables:

- Monthly invoices and progress reports
- Meeting agenda and notes
- PowerPoint presentation for P-MRNRD Board/Subcommittee Presentation

Key Understandings:

- Project duration for design and bidding is assumed to be 13 months. Design period from June 2021 to March 2022 and bidding period is estimated to be April 2022 to May 2022.
- Project management for construction phase activities are Task Series 1200.
- Meetings will be held at the offices of the P-MRNRD and attended by up to 3 HDR/JEO professionals.
- Five (5) coordination meetings (kickoff + 4 other meetings) during design are assumed.
- One (1) stakeholder coordination meeting is assumed.
- One (1) P-MRNRD Board/Subcommittee meeting presentation is assumed.

TASK SERIES 200 – PERMITTING

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

HDR Activities: **Task 210 Section 404 Permit.** A Section 404 permit was submitted to USACE in May 2020 and went to public notice in February 2021. The comment period ended in March 2021.

210.1 USACE Coordination. Prepare a comment and response matrix to address comments on the joint USACE/NDEE public notice. Respond to USACE questions and/or requests for information during their development of the decision document for an anticipated permit authorization. Coordinate with USACE relative to project timeframes for receipt of Section 404 Authorization.

210.2 Permit Conditions Summary. Summarize Section 404 permit conditions for inclusion in bid documents.

210.3 Permit Modifications. Coordinate with USACE and develop permit modifications to reflect changes in design, as needed.

Task 220 NDNR Permit Preparation. Prepare documentation to complete a NDNR Application for a “Permit to Impound Water” and “Application for Approval of Plans for Dams” for the dam. The water quality basins are exempt from dam design regulations.

220.1 Coordination with NDNR. Attend up to two (2) meetings with NDNR relevant to the dam design. The scope/subject of these meetings is anticipated to be:

- Preliminary Design Review Meeting. Conduct meeting to review and discuss the 60% Design.
- Pre-Final/Permitting Review Meeting. Conduct meeting to review and discuss the comments on the pre-final design.

220.2 Plan Approval Application. Preparation of approval of dam plan permit application, including:

- Permit Drawings
- Technical Specifications
- Geotechnical Investigation and Evaluation Report
- Basis of Design Report
- Completed permit application

220.3 Impound Water Permit. Preparation and submittal of permit to store water.

220.4 Dam Breach Analysis. A dam breach analysis will be conducted to define potential inundation areas should the structure fail. The breach routing will extend from the structure downstream to a point where the flood wave water surface has been attenuated below the regulatory 100-yr water surface elevation. The current HEC-RAS model used in the preliminary design effort will be the basis for the dam breach analysis. Two dam breach scenarios will be evaluated. Inundation maps will be prepared as part of the dam breach analysis for inclusion in the Emergency Action Plan.

220.5 Draft Emergency Action Plan. Develop a draft emergency action plan based on the current NDNR template. Comments from NDNR will be solicited and a draft emergency action plan submitted.

Task 230 NDEE Sanitary Sewer and Lift Station. Prepare NDEE permits for sanitary sewers and lift stations.

230.1 Agency Coordination. Coordinate with NDEE on design standards of the wastewater improvements.

230.2 Engineering Documents and Permit Preparation. Prepare NDEE “Construction Permit Application Form Wastewater Works”. Prepare and submit proposed

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wastewater works engineering report, construction plans and specifications and other information specified by NDEE for review and approval. Respond to NDEE comments.

Task 240 Sarpy County Right to Occupy ROW. Prepare Sarpy County Public Works Department permit to occupy or use county road right-of-way.

Task 250 NPDES Construction Activity Permits. This task is to complete the NPDES construction activity permit and Papillion Creek Watershed Partnership grading permit.

250.1 **Agency Coordination.** Coordinate with city of Gretna on the preparation of Papillion Creek Watershed Partnership (Partnership) Grading permit.

250.2 **Permit/Plan Preparation.** Prepare narrative plan, application, and NDEE NPDES Notice of Intent (NOI) to comply with NPDES stormwater associated with construction activity. Upload appropriate documentation to Permex Portal and NDEE on-line website. Erosion and sediment control drawings for various design elements are included in the respective design tasks.

Task 260 Permit and Approval Tracking. Develop and update a permit and approval tracking matrix that provides information on owner responsible permits, submittal deadlines, and status of submittals.

Task Deliverables:

- Public Notice Comment/Response Matrix
- Permit Condition Summary
- Draft Emergency Action Plan
- NDEE construction permit for wastewater works and supporting documentation
- Sarpy County ROW Permit
- SWPPP Documentation for Partnership Permit and NDEE
- Permit and Approval Tracking Matrix

Key Understandings:

- P-MRNRD is responsible for payment of all permit fees.
- No more than five (5) unique public comments from the public notice are anticipated.
- Response to comments from USACE on the permit application does not include development and analysis of new alternatives or development of a new mitigation plan.
- Two Section 404 permit application modifications are anticipated. Section 404 permit modifications do not include changes to the mitigation plan.

TASK SERIES 300 – GEOTECHNICAL INVESTIGATION AND DESIGN

Task Objectives: Supplement the Preliminary Design geotechnical investigation to evaluate the subsurface conditions at the Main Dam, the water quality basins, Schram Road embankment, recreation access area, and sanitary sewer lift station.

HDR Activities: **Task 310 Task Coordination.** Coordinate geotechnical design with other tasks.

Task 320 Data Collection. Supplement the Preliminary Design geotechnical investigation to supplement the subsurface conditions for the main dam, and to define site specific subsurface conditions for the water quality basins, Schram Road and sanitary sewer lift station.

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- 320.1 HDR Activities for Subsurface Investigation. Thiele Geotech will be performing field exploration and lab testing. HDR activities include:
- Coordinate field investigation.
 - Site visits to observe drilling at selected boring locations.
 - Review field boring logs
 - Revise geologic profile for Main Dam and principal spillway.
 - Develop geologic profile for North Water Quality Basin.
 - Assign lab testing.
- 320.2 Subsurface Investigation Field Exploration. Thiele Geotech to conduct field drilling and sampling, conduct laboratory tests and prepare geotechnical material data report. Geotechnical data report includes boring logs and laboratory test data. JEO will survey top of boring hole elevations.
- Exploratory Drilling (hollow stem or flight augers) – estimated 730 LF
- 320.3 Subsurface Investigation Testing Plan. Thiele Geotech to conduct laboratory testing. Testing requirements include:
- Moisture Content and Unit Weight Tests (moisture content and dry density, per ASTM D2216). A total of 45 moisture content tests and 60 dry density tests with moisture content are assumed.
 - Standard Proctor (per ASTM D698). A total of 3 are assumed.
 - Atterberg Limits (silts and clays, per ASTM D4318). A total of 40 tests are assumed.
 - Grain size analyses with hydrometer (sands, silts and sands per ASTM D6913 & D7928. A total of 32 tests are assumed.
 - Unconfined Compressive Strength tests (per ASTM D2166). A total of 24 tests are assumed.
 - Triaxial compression tests (UU) (per ASTM D2850). A total of 12 UU tests are assumed.
 - Consolidation tests (per ASTM D2435). A total of 13 tests are assumed.

Task 330 Geotechnical Design and Analysis. Supplement the Preliminary Design geotechnical design and analysis to finalize main dam design, evaluate the subsurface conditions along the water quality basins, Schram Road embankment, recreation area access, and sanitary sewer lift station.

- 330.1 Final Main Dam Geotechnical Engineering Design and Analysis. Final geotechnical engineering design and analysis will be performed for the Main Dam. The design and analysis includes:
- Review of slope stability analysis.
 - Perform slope stability analysis of auxiliary spillway sideslope (1 section).
 - Review of underseepage analysis.
 - Perform embankment settlement analysis.
 - Define camber diagram for principal spillway.
 - Evaluate embankment overbuild.
 - Analysis of principal spillway joint extensibility requirements.
 - Set finger drain elevations for settlement.
 - Develop temporary and permanent instrumentation program.
 - Evaluate subgrade preparation.
 - Review of internal drainage system including refining size, and location of chimney drain, horizontal blanket drain and drain outlets.
 -
- 330.2 North Water Quality Basin Geotechnical Engineering Analysis. Geotechnical engineering analysis will be performed the North Water Quality Basin. The following analyses are planned:

- Perform slope stability analysis (1 section).
 - Perform embankment settlement analysis (1 section).
 - Provide geotechnical design and construction recommendations for reinforced box culvert.
 - Evaluate embankment overbuild.
 - Develop temporary instrumentation program.
 - Evaluate subgrade preparation.
- 330.3 West Water Quality Basin Geotechnical Engineering Analysis. Geotechnical engineering analysis will be performed for the West Water Quality Basin which becomes the embankment for the ultimate Schram Road section. The following analyses are planned:
- Perform embankment settlement analysis and evaluate embankment overbuild (1 section).
 - Evaluate subgrade preparation.
 - Provide geotechnical design and construction recommendations for reinforced box culvert.
- 330.4 Site Civil Geotechnical Analysis. Geotechnical analysis will be performed on the following site civil elements.
- Sanitary sewer lift station and adjacent utility lines. The analyses include:
 - Bearing capacity analysis.
 - Slope stability analysis for temporary construction slope (1 section).
 - Review of groundwater levels and assessment of need for dewatering.
 - Parking lot and boat ramp paving
 - Evaluation of subgrade preparation.
- 330.5 Geotechnical Investigation and Evaluation Documentation. Prepare geotechnical evaluation report documenting the results of the geotechnical investigation and design.
- Draft Geotechnical Investigation and Design Report. Document geotechnical evaluation.
 - Final Geotechnical Investigation and Design Report. Incorporate review comments and revise geotechnical report.

Task 340 Technical Specifications. Prepare draft and final technical specifications for Main Dam embankment and internal drainage system.

Task 350 Review Geotechnical Aspects of the Plans. Review drawings for geotechnical elements.

Task 360 Quality Control Review. Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for geotechnical investigation and evaluation report, drawings and specifications.

Task Deliverables:

- Draft and Final Geotechnical Investigation and Design Reports
- Geologic profile sheets for West Water Quality Basin (Schram Road).
- Plan sheets for Main Dam drainage, drain layout, instrumentation plan and details.

Key Understandings:

- Thiele Geotech, as a subconsultant to HDR, will conduct field investigation tasks.
- Fee estimate is based on a total of 730 feet of borings. Twenty (20) borings anticipated (3 for Main Dam principal spillway, 2 for Main Dam auxiliary spillway, 1

- for pool area borrow, 4 for water quality basins, 2 for Schram Road access, 3 for Recreation Access Area, 3 for recreation trail, and 2 for sanitary lift station).
- JEO, as a subconsultant to HDR, will survey top of boring hole elevations.
- Geotechnical design of the earthen dam features will be designed in accordance with current Nebraska Dam Safety criteria and NRCS standards.
- The final geotechnical report for the Main Dam will be included in the NDNR dam safety permit application.
- Only embankment for Schram Road to be evaluated. Scope does not include asphalt or concrete pavement design.

TASK SERIES 400 – MAIN DAM DESIGN

Task Objective: This task includes the process of using the existing 60% design to finalize hydrology and hydraulic calculations and routings and for the creation of final design plans stamped by a qualified engineer. Prepare detailed drawings and technical specifications for the proposed construction work.

Task 410 Hydrology and Hydraulic Modeling. Finalize HEC-HMS and SITES modeling. Utilize geotechnical analysis to finalize integrity analysis of the auxiliary spillway.

Task 420 Embankment and Spillways Design. Finalize dam embankment, principal, and auxiliary spillway alignments, plan and profile designs. Finalize dam and auxiliary spillway grading, shoreline protection, principal spillway camber and outlet channel.

Task 430 Structural Design. Structural design for the drawdown inlet, principal spillway riser and impact basin.

Task 440 Basis of Design Report. Summarize the technical basis and assumption for each element of the project. Submit copies of the Basis of Design Report for review and comment.

Task 450 Progress Contract Document Preparation.

- 450.1 Drawing Preparation. Revise 60% drawings based on final design requirements and refinements.
- 450.2 Technical Specifications. Prepare technical specification for Main Dam. This includes earthwork, trenching and backfilling for utilities, filter drains, pipe, concrete, and rock riprap.
- 450.3 Opinion of Probable Construction Cost. Prepare estimated construction cost for Main Dam.

Task 460 Quality Control. Conduct independent review of design elements using appropriate Engineer senior staff.

Task Deliverables:

- Draft and Final Geotechnical Data Report
- Draft and Final Basis of Design Report
- Pre-Final and Final Drawings, Technical Specifications, and Opinion of Probable Construction Costs

Key Understandings:

- No significant design modifications from 60% design layout.
- Design of the dam and its components will utilize current Nebraska Dam Safety and NRCS standards for hydrology and hydraulics.

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TASK SERIES 500 – GENERAL AND SITE CIVIL DESIGN

Task Objective: Design of non-dam related items, including roadways, utilities, sanitary sewer, recreation features, fishery enhancements, and water quality basins.

Activities: **Task 510 Task Coordination.** Coordinate with geotechnical designers on trail undercrossing grades and Schram Road.

Task 520 Schram Road. Design roadway elements for Schram Road. Schram Road to serve as the access road to the Recreation Access Area and also forms the embankment for the North Water Quality Basin. Schram Road is to be graded to the ultimate section (2-lane road with a turning lane) from 204th Street to the right abutment of the North Water Quality Basin. Roadway surfacing (gravel) will be placed for a 2-lane road section from 204th Street to the Recreation Access Area only.

520.1 **Roadway Design.** Design roadway and drainage elements for Schram Road.

- Finalize roadway typical section sheet(s).
- Finalize drainage design, including culvert sizing and outlet dissipation measures, for facilities serving interim gravel Schram Road extension. Build notes to be included on plan and profile sheets.
- Prepare traffic signage layout. Build notes to be included on plan and profile sheets.
- Prepare roadway cross section sheets from 204th Street to Recreation Access Area (100 ft station intervals).
- Update Schram Road design memo with drawings.

520.2 **Schram Road Ultimate Section.** Determine incremental quantities and costs to grade to the ultimate section of Schram Road. This is the difference between constructing an earthen embankment for a water quality basin and a 3-lane roadway section on the same alignment. This information will be used for an agreement between Sarpy County and P-MRNRD. This include additional earthfill and extension of the North Water Quality Basin drainage structure.

Task 530 Utilities and Sanitary Sewer Improvements. Coordinate with City of Gretna for improvements to the sanitary sewer system. Design sanitary sewer elements that are required to be removed and relocated as a result of the project.

530.1 **Coordinate with Utilities.** Determine impacts and coordinate with City of Gretna for relocations. Two meeting assumed with two staff each, including agenda preparation and meeting notes. Prior to beginning final design, a meeting will be held to discuss scope and design criteria of the proposed improvements, and after Final design, a plan review meeting will be held.

530.2 **New Schram Lift Station.** Remove existing lift station located along Schram Road extended and construct new lift station.

- Design for the abandonment of the existing Schram Lift Station, access road and parking area and the abandonment and plugging of the existing sanitary sewer from MHs 1100 to 1104, as well as the adjacent existing 10" Schram Lift Station force main.
- Finalize design of a submersible wet well lift station.
- Design sanitary sewer connection the proposed lift station to existing MH 1100 (approximately 100 feet), along with a sanitary stub to the east for the future connection of the undeveloped property between 204th Street and 206th Street.
- Design force main to connect the proposed lift station to the existing 10" force main directly adjacent to the lift station site.

- Design the extension of small diameter water service from 206th Street to the proposed lift station site.
- Design the extension of a granular access drive from 206th Street to the proposed lift station site.

530.3 Covington Lift Station Upgrades & Force Main Modifications

- Design the abandonment and plugging of the existing sanitary sewer from MHs 1104 to 1109.
- Design rerouted Covington Lift Station force main.
- Design of the replacement pump upgrades at the Covington Lift Station to meet the new hydraulic requirements of being tied into the existing 16" Buffalo Creek force main.

Task 540 Water Quality Basins. Two Water Quality basins were proposed in the 60% design. The water quality basins will be designed to reduce sediment and nutrient loads to the main reservoir. Calculations during the 60% project phase indicate that sediment load to the main dam is predicted to be minimal, however water quality basins are still proposed to help treat nutrient loads prior to entering the main reservoir. It is assumed that the basin embankments will be constructed of earthen material and a metal or concrete culvert to the main reservoir.

540.1 North Water Quality Basin. The embankment and culvert under the future Schram Road will also serve as a water quality basin feature. The upstream edge of the concrete box culvert will be designed to include a weir that will act as the water quality basin spillway.

540.2 West Water Quality Basin. The West WQ Basin is proposed as an earthen berm with rock ramp spillway.

Task 550 Wetland and Stream Mitigation. Wetland and stream mitigation is achieved through grading and seeding for wetland creation and channel enhancements for stream loss mitigation. Revise mitigation based on USACE comments.

Task 560 In-Lake Fisheries. Final design of the fishery enhancements will be based upon the 60% design recommendations. The fishery enhancements will include breakwater jetties, groin structures, and other in-lake enhancements.

560.1 Coordination with NG&PC. Hold up to (2) coordination meetings with NG&PC to review proposed in-lake fisheries and boat ramp and recreation access area.

560.2 In-Lake Design. Refine preliminary fishery enhancements design in- and along the shoreline to promote fisheries and provide access to anglers.

Task 570 Recreation and Amenities Design. Design recreational amenities including a recreational trail, recreation access area and boat ramp, picnic shelter, water service, and vault restroom.

570.1 Recreational Trail. Progress current preliminary trail plan and profile design to final design.

- Finalize trail typical section sheet(s).
- Finalize trail drainage design needs, includes final sizing of culverts and outlet dissipation measures. Build notes to be included on plan and profile sheets.
- Prepare trail signage layout. Build notes to be included on plan and profile sheets.
- Prepare trail cross section sheets (50 ft station intervals).
- Provide retaining wall type, size, and location plans.

570.2 Recreation Access Area. Layout and design of proposed basic recreation features including boat ramp, parking area, picnic facility, water service, vault restroom and solar lighting.

Task 575 Seeding and ROW Fencing. Determine seeding limits and ROW fencing location.

575.1 Seeding. Identify seeding locations for various seed mixtures.

575.2 ROW Fence. Identify location for ROW fence along the NRD property lines. Provide maintenance access road and gates.

Task 580 Erosion & Sediment Control. Prepare sediment and erosion control plans for all site civil work elements for inclusion as SWPPP with NPDES permit.

Task 585 Technical Specifications. Prepare technical specification for general and site civil work.

Task 590 Opinion of Probable Construction Cost. Prepare estimated construction cost for general and site civil work.

Task 595 Quality Control. Conduct independent review of design elements using appropriate Engineer senior staff.

Task Deliverables:

- Design Documentation
- Compilation and submittal of Pre-Final and final drawings, specifications and opinion of probable construction costs are included in Task Series 920.

Key Understandings:

- It is assumed design will be based on the 60% preliminary design with only minimal changes.
- The scope of Schram Road extension from 204th Street to Recreation Access Area will be gravel surfaced.
- City of Gretna shall provide as-builts of the sanitary sewers associated with the existing Schram Lift Station.
- Proposed sanitary lift to be a 765-GPM or similar submersible wet well lift station with exterior control panel and standby generator.
- Sanitary sewer connection to the proposed lift station to existing MH 1100 is 10".
- Sanitary sewer connection to connect proposed lift station to the existing 10" force main directly adjacent to the lift station site is 10".
- Sanitary sewer connection to connect proposed lift station to sanitary stub to the east for the future connection of the undeveloped property between 204th Street and 206th Street is 10".
- City shall provide updated historical flow records for the existing Schram and Covington Lift Stations.
- City of Gretna shall provide as-builts of the Covington Lift Station and force main.
- City of Gretna shall perform a hydraulic impact analysis on the effect of the connection of the Covington Lift Station pumps to the existing 16" Buffalo Creek force main to other lift stations directly connected to the force main.
- Existing 8" Covington Lift Station force main to be re-routed from the existing gravity sewer discharge point at MH 1109 to the existing 16" Buffalo Creek force main on the east side of 204th Street.

- The City of Gretna shall make the determination as to the hydraulic adequacy of all connected existing lift stations' performance following the connection (and potential pump upgrade) of the Covington Lift Station to the existing 16" Buffalo Creek force.
- The City of Gretna shall provide the required pump operating point (GPM and feet TDH) for the proposed pump upgrades at the Covington Lift Station.
- Additional upgrades to the existing wet well, discharge piping, valve vault, and force main shall not be required as part of the pump upgrades at the Covington Lift Station.
- Major disruption of traffic flows on 204th Street are not anticipated due to the re-routing of the Covington Lift Station force main.
- Retaining walls required for trail grading will conform to City of Omaha Standard Plates for segmental wall. In accordance with typical local practice, design documents will provide information for the Contractor to design and develop specific construction documents. It is assumed that the Contractor, as part of their contract, will be required to provide a signed and sealed wall shop drawing submittal.
- Water service to be connected to public water system.

TASK SERIES 600 – CITY OF GRETNA DESIGN ELEMENTS

Task Objective: To design City of Gretna improvements.

Activities: **Task 610 City Coordination.** Coordinate with City of Gretna on new sanitary sewer stubout to the north side of the dam.

Task 620 Stub from Lakeview Development to North Side of Dam.

- 620.1 **Capacity Requirements.** Determine the capacity requirements for a new sanitary sewer stub from the existing Lakeview Subdivision to a future residential subdivision on the north side of the dam impoundment area.
- 620.2 **Sanitary Sewer Design.** Design a new sanitary sewer stub from conceptual to final design.

Task Deliverables:

- Pre-Final Drawings, Specifications, and Opinion of Probable Construction Costs
- Final Drawings, Specifications, and Opinion of Probable Construction Costs

Key Understandings:

- City to provide as-builts on the existing Lakeview Lift Station and subdivision sanitary sewer network to provide connection point location and depths.
- Sanitary sewer stub is assumed to not require an aerial crossing but is able to be designed and constructed using conventional construction techniques through the earthen water quality berm already being provided as part of the dam design.
- Sanitary stub shall only provide a reasonable discharge point for future development on the north side of the dam impoundment area. Layout and design of the future subdivision sanitary network north of the dam impoundment area is not included.
- Sanitary sewer stub (approximately 400-LF) will be 10".
- Analysis of the hydraulic adequacy of existing Lakeview Lift Station or subdivision sanitary sewer network to receive the additional from the areas north of the dam impoundment area is not included.

- Study and design of other utilities from the Lakeview subdivision to the new subdivision not included.

TASK SERIES 700 – WATER SUSTAINABILITY FUND APPLICATION

Task Objective: Prepare Nebraska Water Sustainability Fund (WSF) application.

Activities: **Task 710 Coordination Meetings.** Coordination meeting on the development of the WSF application. Two (2) meetings are anticipated. The first meeting with P-MRNRD will be to define and strategize on the elements of the project that may be eligible under the Water Sustainability Fund guidelines with the goal of maximizing eligibility. The HDR team will develop the application and provide a draft application to the P-MRNRD for review prior to June 30th to allow adequate time for review and comments by P-MRNRD. The HDR team will then meet with the P-MRNRD in advance of the July 16th application period.

Task 720 Administrative Information. Complete Section A, Administrative of the WSF application. This section includes:

- General information regarding the project
- Level of funding requested and the basis for that level of funding
- Permitting requirements

Task 730 Engineering & Technical Feasibility Information. Complete Section B, DNR Director's Findings (Prove Engineering & Technical Feasibility) of the WSF application.

730.1 **Engineering Feasibility.** Compile information from the 60% design to demonstrate compliance with Title 261, CH 2-004. This section includes:

- Description of plan of development
- Description of field investigations utilized to substantiate the feasibility report
- Provide maps, drawings, charts, tables, etc. used as a basis for the feasibility report
- Description of the water and/or land rights required for the project
- Discussion of each component of the final plan
- Summarize and include geologic investigation
- Summarize and include the hydrologic data investigation
- Summarize and include the criteria for final design, including soil mechanics, hydraulic, hydrologic, structural, embankments and foundation criteria.

730.2 **Economic Feasibility.** Prepare economic feasibility requirements. This section includes:

- Documentation all sources and report all costs and benefit data.
- Description of any relevant cost information, but not limited to engineering and inspection costs, capital construction costs, annual O&M, and replacement costs.
- For multi-purpose project, estimate benefits for each purpose. Description of intangible or secondary benefits.
- Develop annual cash flow table presenting all cost and benefit data.

730.3 **Financial Feasibility.** Work with P-MRNRD staff to complete financial feasibility requirements. This section includes:

- Evidence that sufficient funds are available to complete the project.
- Evidence that sufficient annual revenue is available to repay reimbursable costs and to cover OM&R.

- Description of how plan of development minimizes impacts on the natural environment.
- Explanation that NRD is qualified, responsible and legally capable of carrying out the project for which you are seeking funds.
- Explanation on how project considers plans and programs of the state and resources development plans of the political subdivisions of the state.
- Document land rights to be obtained including list of all lands involved, proof of existing land held, and provide assurance that you can acquire title to land not currently held.
- Identification of how NRD possess all necessary authority to undertake or participate in the project.
- Identification of probable consequences (environmental and ecological) that may result if the project is or is not completed.

Task 740 Natural Resources Commission Scoring. Complete Section C, NRC Scoring of the WSF application. Review the 16 possible criteria (15 general criteria plus 1 federal mandate bonus) and provide information to support criteria requirements. The following criteria will be reviewed and evaluated if applicable:

1. Remediates or mitigates threats to drinking water
2. Meets the goals and objectives of an approved integrated management plan or ground water management plan
3. Contributes to water sustainability goals by increasing aquifer recharge, reducing aquifer depletion, or increasing streamflow
4. Contributes to multiple water supply goals, including, but not limited to, flood control, agricultural use, municipal and industrial uses, recreational benefits, wildlife habitat, conservation of water resources, and preservation of water resources
5. Maximizes the beneficial use of Nebraska's water resources for the benefit of the state's residents
6. Is cost-effective
7. Helps the state meet its obligations under interstate compacts, decrees, or other state contracts or agreements or federal law
8. Reduces threats to property damage or protects critical infrastructure that consists of the physical assets, systems, and networks vital to the state or the United States such that their incapacitation would have a debilitating effect on public security or public health and safety
9. Improves water quality
10. Has utilized all available funding resources of the local jurisdiction to support the program, project, or activity
11. Has a local jurisdiction with plans in place that support sustainable water use
12. Addresses a statewide problem or issue
13. Contributes to the state's ability to leverage state dollars with local or federal government partners or other partners to maximize the use of its resources
14. Contributes to watershed health and function
15. Uses objectives described in the Annual Report and Plan of Work for the State Water Planning and Review Process (Annual Report) issued by the department
16. Federal Mandate Bonus.

Task 750 Final Application. Incorporate all comments from the draft review meeting and the application package will be finalized for electronic submittal to the NDNR prior to the July 31st deadline.

Task Deliverables:

- Draft application
- Final application

Key Understandings:

- Two (2) meeting with P-MRNRD.
- The application is due July 31st, so draft will be provided to P-MRNRD prior to June 30th to allow adequate time for review and comments by P-MRNRD.
- Application will utilize past P-MRNRD WSF applications and BRIC funding application for WP-4.
- Utilize existing information prepared for other P-MRNRD WSF dam applications and WP-4's 60% design document prepared and Benefit Cost Analysis (BCA).
- P-MRNRD will provide necessary supporting information for application.

TASK SERIES 800 – NON-TECHNICAL SPECIFICATIONS

Task Objective: Prepare non-technical front-end specifications contract documents.

HDR Activities: **Task 810 Division 00 - Procurement.** Revise P-MRNRD Division 00 specifications for the WP-4 project. Including general conditions and bidding requirements for NG&PC funding.

Task 820 Division 01- General Requirements. Prepare general requirements of the specifications. Conditions will be used along with CSI 3-part format specifications.

Task Deliverables:

- P-MRNRD's modified EJCDC contract documents will be used for Division 01 documents.

Key Understandings:

- Utilize the most recent P-MRNRD Division 00 specifications. The most recent version is the 2013 EJCDC documents with P-MRNRD supplementary changes to the General Conditions.
- Preparation of technical specifications accounted for under each design element task.

TASK 900 – CONTRACT DOCUMENT SUBMITTALS

Task Objective: Compile the various elements of the Project into a single deliverable and conduct independent technical review. Following review by P-MRNRD, City of Gretna, and Sarpy County, a review meeting will be held. Planned submittals are at the Pre-Final, and Final-Issue for Bid stages.

Activities: **Task 910 Pre-Final Submittal.**

- 910.1 **Compile Submittal.** Compile construction drawing, specifications, and design documentation into a single deliverable.
- 910.2 **Pre-Final Design Review Meeting.** Conduct a design review meeting with P-MRNRD staff of pre-final design drawings, documentation, and cost estimates

Task 920 Final Submittal – Issue for Bid. Compile construction drawing, specifications, and design documentation into a single deliverable.

Task Deliverables:

- Pre-Final Drawings, Specifications, and Opinion of Probable Construction Costs
- Final Drawings, Specifications, and Opinion of Probable Construction Costs

Key Understandings:

- One bid package and contract for construction of the project.
- Review meetings attended by 3 professionals.

TASK SERIES 1000 – SURVEY AND RIGHT-OF-WAY

Task Objective: To obtain supplemental topographic survey to representative changes to the project area from recent development activities. Prepare legal descriptions for easement and right-of-way (ROW).

Activities: **Task 1010 Update Base Map Elements.** Collect updated base mapping elements including existing GIS mapping including aerials, topographic data, and parcels.

Task 1020 Supplemental Topographic Survey. Conduct supplemental topographic survey of the project area, specifically along the southern property boundary, and create a topographic map. Survey final locations of subsurface investigation borings.

Task 1030 Acquisition and ROW. Continue to assist the P-MRNRD in obtaining the necessary ROW and easements. Provide legal descriptions for remaining properties (2 parcels) to be acquired and for dedication of Schram Road ROW.

Task 1040 Section 404 Baseline Surveys. Survey before and after construction downstream channel cross section (3 locations) downstream of the dam and along the stream mitigation reaches (3 locations) to evaluate potential erosion impacts in the channel.

Task Deliverables:

- Updated Acquisition/Boundary Plans documents for public ROW hearings and subsequent appraisal and fee title searches activities (if necessary).

Key Understandings:

- P-MRNRD will provide title documentation for the properties affected by this project.
- P-MRNRD is responsible for securing appraisals along with acquisition and easement negotiations.
- No permanent monuments will be set.
- It is assumed that legal descriptions will be required for 1 parcel and a maximum of 2 easements.
- No Phase I Environmental Site Assessment to be conducted.

A1.04 Bidding or Negotiating Phase

TASK SERIES 1100 – BIDDING SERVICES

Task Objective: To obtain construction bids and award one construction contract for all Work.

Activities: **Task 1110 Prepare Bid Documents.** Provide electronic copy of plans and specifications to Issuing Agency. Coordinate distribution of contract documents to Plan Houses and others.

Task 1120 Pre-Bid/Site Showing. Facilitate and attend a pre-bid site showing to inform contractors of the project and answer questions. An agenda, minutes, and written responses to questions will be prepared.

Task 1130 Bidding Assistance. Answer design/construction questions during the bidding phase outside of those raised during the Site Showing. Prepare addenda to the bid package, if required, and coordinate with P-MRNRD staff for distribution.

Task 1140 Bid Opening and Award Recommendation. Attend the bid opening and tabulate bidder's project costs. Bids will be reviewed and a recommendation on award will be made to the P-MRNRD.

Task Deliverables:

- Project description for advertising
- Addendums
- Pre-bid/Site Showing agenda, record meeting notes.
- Bid tabulation and letter of award recommendation

Key Understandings:

- One construction contract for all Work.
- P-MRNRD will be responsible for all reproduction, advertising, and other distribution fees
- P-MRNRD will be responsible for cost of reproduction of contract documents for plan house distribution, HDR and P-MRNRD.
- Up to two staff to attend Pre-bid/Site Showing.
- Up to 40 hours of staff time for responding to questions from bidders and providing addenda.
- P-MRNRD will be responsible for arranging pre-bid meeting room

A1.05 Construction Phase

TASK SERIES 1200 – CONSTRUCTION MANAGEMENT

Task Objective: Attend and conduct periodic meetings to monitor construction progress.

Activities: **Task 1210 Construction Project Management.** Conduct general construction phase services tasks. Includes monthly invoicing, monthly progress report, project close out activities and other project administrative activities.

Task 1220 Pre-Construction Conference. The project team will facilitate and attend a pre-construction conference with the contractor, P-MRNRD, and other project stakeholders as appropriate.

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Task 1230 Substantial Completion Inspection. Conduct a substantial completion inspection and submit punch-list of items requiring completion or correction. It is assumed three (3) substantial completion milestones will be set: the main dam, the recreation facilities, and the sanitary lift station relocation.

Task 1240 Final Inspection and Letter of Certification. Conduct a final inspection and submit punch-list of items requiring completion or correction. Final payment and retainage release to be based on completion of final inspection punch-list. Prepare and submit Letter of Certification to Nebraska DNR Dam Safety Division stating work was completed in accordance with plans and specifications.

Task Deliverables:

- Pre-construction conference agenda and minutes
- Monthly coordination meeting agendas and minutes
- Substantial Completion and Final Completion reports / punch-list
- NDNR Dam Safety Letter of Certification

Key Understandings:

- Bi-monthly on-site progress meetings
- Up to two project team staff at each meeting
- Construction timeframe from June 2022 to October 2023 or a 17 months construction period. Duration for construction services is 22 months.

TASK SERIES 1300 – CONSTRUCTION ADMINISTRATION SERVICES

Task Objective: To provide day-to-day construction contract administration services.

Activities:

Task 1310 Records and Reports. Document construction activities.

1310.1 **Records and Report Documentation.** Document construction activities including the following:

- Field Observations: Maintain RPR documentation to record daily activities, weather, observations, decisions, etc. Includes photo documentation.
- Weekly Summary Reports: Prepare a weekly report summarizing the daily activities
- Quantities: Maintain running tabulation of quantities and work performed, including stored materials.
- Pay Applications: Review pay applications provided by the contractor and provide recommendation of payment. Assumed up to monthly progress payments.
- Test Results: Maintain documentation of all materials and construction testing, including but not limited to: earthfill, concrete, and drainfill.
- Other Project Files: Maintain documentation of all other correspondence, shop drawings, materials submittals, change orders, work change directives and other project related documents.

1310.2 **As-Built Drawings.** Prepare electronic as-built drawings to reflect field conditions, design changes, and final constructed project. Contractor to be responsible for marking up continuous documentation of as-built conditions. The project team will verify Contractor's drawings and incorporating them into the final As-Built Drawing submittal.

Task 1320 Construction Contract Support.

- 1320.1 Contract Document Clarification. Provide clarifications and interpretations of Contract Documents as requested by the Contractor.
- 1320.2 Survey Control and Verification Checks. Provide survey control and verification checks for the project. Coordinate with the Contractor for staking needs and information.
- 1320.3 Materials QA Testing. Thiele Geotech, Inc. as a subconsultant, will provide and conduct Quality Assurance (QA) material testing for earthwork, drainfill, and concrete. HDR will conduct QA field moisture and density testing.
- 1320.4 Submittal Review and PTCS Tracking. Review and recommend approval of required submittals meeting contract document requirement including but not limited to Water Control and Diversion Plan, Materials Certifications, concrete, principal spillway pipe, shop drawings, culverts, seed and erosion control measures. Track submittals using HDR's Project Tracker Collaboration System (PTCS).
- 1320.5 Construction Meetings. Facilitate periodic construction conferences with the Contractor to discuss schedule, work progress and other related work. Agendas and notes will be prepared.
- 1320.6 Technical Field Observation. Engineer and other technical personnel will make periodic visits to observe construction progress (outside of normal RPR).
- 1320.7 Instrumentation Data Interpretation. Read and review dam instrumentation and coordinate with contractor, as necessary.
- 1320.8 Design Modifications and Change Orders. Prepare drawings, details, cost opinions, and specifications for necessary construction changes. Changes to be prepared only upon direction of P-MRNRD.

Task 1330 Permit Compliance Support.

- 1330.1 SWPPP Compliance Monitoring. Conduct minimum weekly site visits and prepare report on BMP performance. Use PWCP for submittal.
- 1330.2 USACE Section 404 Compliance. The following Section 404 Permit compliance activities are anticipated:
- Prepare and submit notifications to USACE for commencement of filling activities, notification of mitigation completion, notification of buffer seeding completion, and for completion of work.
 - Perform field survey and post-process three channel cross-sections in the downstream channel prior to and post-construction. Cross section locations are anticipated to be; Point 1 - 100 feet below the energy dissipator; Point 2 - 100 feet downstream from the transition from graded to undisturbed channel; and Point 3 - 500 feet downstream from point 2.
 - Perform field survey and post-process three channel cross-sections within the stream mitigation reach immediately after stream mitigation construction activities are completed. The cross-sections shall be taken at the upstream, middle, and downstream end of the stream mitigation reach.
- 1330.3 NDNR Approval to Store Water. HDR to provide documentation to NDNR for administration of State Permit to Store Water.

Task Deliverables:

- Field reports with quantities, photos
- Materials testing reports
- Contractor test results
- Progress pay applications (up to monthly)

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- Shop drawing reviews
- Change order and work change directives
- SWPPP reports
- Four notifications to USACE
- Six channel cross-section post-processed data (three pre-construction and three post-construction) in the downstream channel
- Three channel cross-section post-processed data in the stream mitigation reach post-construction of the stream mitigation reach.
- Meeting agendas and minutes
- As-built drawings

Key Understandings:

- Anticipated duration of construction is 17 months from approximately June 1, 2022 to October 31, 2023 with 3 months for winter shutdown. Substantial completion by July 1, 2023.
- Contractor will provide their own construction staking.
- Contractor will provide bird surveys for tree removal within the nesting bird season (April 1 to July 15).
- Project team will provide survey control and periodic elevation checks.
- Project team will provide testing of earthwork, concrete, and drainfill.
- Construction meetings will occur every two weeks during major construction activities, otherwise monthly.
- Project team will perform final survey for As-Built drawings.
- Full-time resident project representative (RPR) will provide construction quality assurance for the Project. An RPR will be on site at all times while construction activities are occurring. The level of construction observation effort included in this scope equates to 2,310 hours for the RPR commencing with start of Contractor's field activities and during the period when the Contractor is performing work requiring observation, as determined by HDR. An average of 50-hour week for 43 weeks (56 weeks -13 weeks shutdown) until substantial completion then 40 hours per month for 4 months until critical Work elements are completed. Reasonable variations in work days and schedules are anticipated, but no protracted overtime, work stoppages or extended work schedules are assumed. At critical times, the Engineer and other technical personnel will be provided.
- RPR will not authorize any changes from the contract documents.
- Contractor is responsible for their own health and safety.
- Contractor is responsible for quality control testing of materials.
- All materials inspections will occur at the project site. No visits to outside quarries, plants, or facilities are included.
- Annual Section 404 mitigation monitoring is not included but can be performed as additional services.

TASK SERIES 1400 – OPERATIONS AND MAINTENANCE MANUAL AND EMERGENCY ACTION PLAN

Task Objective: To prepare an Operations and Maintenance (O&M) manual for the WP4 facility. Develop and Emergency Action Plan (EAP) to meet NDNR Dam Safety approval to operate.

Activities: **Task 1410 Operation and Maintenance Manual.** Prepare an O&M Manual documenting the materials and equipment installed, agreements, permitting, and other general O&M activities.

Task 1420 Emergency Action Plan. Update the draft Emergency Action Plan (EAP)

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prepared during Task Series 200. Edits will include as-built drawings, current contact information, construction information, and other NDNR updates.

Task Deliverables:

- Operations & Maintenance Manual
- Emergency Action Plan

Key Understandings:

- One hard copy and one electronic copy of the O&M will be provided.
- EAP will be provided electronically.
- No meetings with NDNR will be necessary to review the EAP.
- P-MRNRD will obtain signatures of coordinating emergency agencies.

JEO CONSULTING GROUP INC - ESTIMATED HOURS/COSTS PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 3, 2021									
JEO Consulting Group Inc. Estimated Hours/Costs									Est. Total Cost
TASKS	Project Manager	Sr. PE and QC	PE	EIT	CAD/GIS	Surveyor	Admin/ Clerical	Total Hours	Totals
TASK SERIES 100 DESIGN/BIDDING PROJECT MANAGEMENT									
Task 110	Project Management (12 months)	25						25	\$5,000
Task 120	Coordination Meetings (5)	18	18					36	\$7,380
Task 130	Stakeholder Coordination Meeting (1)	6	6					12	\$2,460
Task 140	P-MRNRD Board Presentation (1)	4	4					8	\$1,640
Estimated Task Hours Subtotal		53	28	0	0	0	0	81	
Estimated Task Cost Subtotal		\$10,600	\$5,880	\$0	\$0	\$0	\$0	\$16,480	\$16,480
TASK SERIES 200 PERMITTING									
Task 210	Section 404 Permit								
Subtask 210.1	USACE Coordination							0	\$0
Subtask 210.2	Permit Conditions Summary							0	\$0
Task 220	NDNR Permit Preparation								
Subtask 220.1	Coordinate with NDNR	6						6	\$1,200
Subtask 220.2	Plan Approval Application	1						1	\$200
Subtask 220.3	Impound Water Permit	1	2					3	\$620
Subtask 220.4	Dam Breach Analysis	1	2		20			23	\$3,020
Subtask 220.5	Draft Emergency Action Plan							0	\$0
Task 230	NDEE Sanitary Sewer and Lift Station								
Subtask 230.1	Agency Coordination		2					2	\$420
Subtask 230.2	Engineering Documents and Permit Preparation		2		8			10	\$1,380
Task 240	Sarpy County Right to Occupy ROW		2					2	\$420
Task 250	NPDES Construction Activity Permit								
Subtask 250.1	Agency Coordination		2		4			6	\$900
Subtask 250.2	Permit/Plan Preparation		6		48		2	56	\$7,180
Estimated Task Hours Subtotal		9	18	0	80	0	2	109	
Estimated Task Cost Subtotal		\$1,800	\$3,780	\$0	\$9,600	\$0	\$160	\$15,340	\$15,340
TASK SERIES 300 GEOTECHNICAL INVESTIGATION AND DESIGN									
Task 310	Task Coordination							0	\$0
Task 320	Data Collection								
Subtask 320.1	Subsurface Investigation Plan							0	\$0
Subtask 320.2	Subsurface Investigation Exploration							0	\$0
Task 330	Geotechnical Design and Analysis								
Subtask 330.1	Preliminary Geotechnical Design and Analysis							0	\$0
Subtask 330.2	Final Main Dam Geotechnical Design and Analysis							0	\$0
Subtask 330.3	Final Water Quality Geotechnical Design and Analysis								
Subtask 330.4	Final Water Site Civil Geotechnical Design and Analysis							0	\$0
Subtask 330.5	Geotechnical Investigation and Evaluation Documentation							0	\$0
Task 340	Technical Specifications							0	\$0
Task 350	Drawing Review							0	\$0
Task 360	Quality Control							0	\$0
Estimated Task Hours Subtotal		0	0	0	0	0	0	0	
Estimated Task Cost Subtotal		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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JEO CONSULTING GROUP INC - ESTIMATED HOURS/COSTS PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 3, 2021									
JEO Consulting Group Inc. Estimated Hours/Costs									Est. Total Cost
TASKS	Project Manager	Sr. PE and QC	PE	EIT	CAD/GIS	Surveyor	Admin/ Clerical	Total Hours	Totals
TASK SERIES 400 MAIN DAM DESIGN									
Task 410	Hydrology and Hydraulic Modeling	12	2	4	20			38	\$5,840
Task 420	Embankment and Spillways Design	8	12	8	24			52	\$8,240
Task 430	Structural Design		40		40			80	\$13,200
Task 440	Basis of Design Report	2	8					10	\$2,080
Task 450	Progress Contract Document Preparation								
Subtask 450.1	Drawing Preparation				160			160	\$21,600
Subtask 450.2	Technical Specifications		12		32		8	52	\$7,000
Subtask 450.3	Opinion of Probable Construction Cost		2		8			10	\$1,380
Task 460	Quality Control	8	24					32	\$6,640
Estimated Task Hours Subtotal		30	100	12	124	160	0	434	
Estimated Task Cost Subtotal		\$6,000	\$21,000	\$1,860	\$14,880	\$21,600	\$0	\$640	\$65,980
TASK SERIES 500 GENERAL AND SITE CIVIL DESIGN									
Task 510	Task Coordination	50	0					50	\$10,000
Task 520	Schram Road								
Subtask 520.1	Roadway Design		12		32	44		88	\$12,300
Subtask 520.2	Schram Road Ultimate Section		6		8	8		22	\$3,300
Task 530	Utilities and Sanitary Sewer Improvements								
Subtask 530.1	Coordinate with Utilities	4	4		3			11	\$2,000
Subtask 530.2	New Schram Lift Station		40	24	80	100		244	\$35,220
Subtask 530.3	Covington Lift Station Upgrades & Force Main Modifications		20	24	48	60		152	\$21,780
Task 540	Water Quality Basins								
Subtask 540.1	North Water Quality Basin	10	8		16	16	1	51	\$7,860
Subtask 540.2	West Water Quality Basin	2	2	8	24	24		60	\$8,180
Task 550	Wetland and Stream Mitigation		2			16		18	\$2,580
Task 560	In-Lake Fisheries								
Subtask 560.1	Coordination with NG&PC	4		4				8	\$1,420
Subtask 560.2	In-Lake Design		8	40		80		128	\$18,680
Task 570	Recreation and Amenities Design								
Subtask 570.1	Recreational Trail	1	50	16	80	100		247	\$36,280
Subtask 570.2	Recreation Access Area	2	10	8	12	56		88	\$12,740
Task 575	Seeding and ROW Fencing								
Subtask 575.1	Seeding		2			10		12	\$1,770
Subtask 575.2	ROW Fence		2			12	4	18	\$2,440
Task 580	Erosion & Sediment Control	4	8		10	40		62	\$9,080
Task 585	Technical Specifications	9	32		40		8	89	\$13,960
Task 590	Opinion of Probable Construction Cost		4		16			20	\$2,760
Task 595	Quality Control	4	24					28	\$5,840
Estimated Task Hours Subtotal		90	234	124	369	566	5	1396	
Estimated Task Cost Subtotal		\$18,000	\$49,140	\$19,220	\$44,280	\$76,410	\$500	\$640	\$208,190

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JEO CONSULTING GROUP INC - ESTIMATED HOURS/COSTS PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 3, 2021									
JEO Consulting Group Inc. Estimated Hours/Costs									Est. Total Cost
TASKS	Project Manager	Sr. PE and QC	PE	EIT	CAD/GIS	Surveyor	Admin/ Clerical	Total Hours	Totals
TASK SERIES 600 CITY OF GRETNA DESIGN ELEMENTS									
Task 610	City Coordination	1	2					3	\$620
Task 620	Stub from Lakeview Development to the North								
Subtask 620.1	Capacity Requirements		2					2	\$420
Subtask 620.2	Sanitary Sewer Design		8	24	32			64	\$8,880
Estimated Task Hours Subtotal		1	12	0	24	32	0	69	
Estimated Task Cost Subtotal		\$200	\$2,520	\$0	\$2,880	\$4,320	\$0	\$9,920	\$9,920
TASK SERIES 700 WATER SUSTAINABILITY FUND APPLICATION									
Task 710	Coordination Meetings	4	4					8	\$1,640
Task 720	Administrative Information		4						\$840
Task 730	Engineering & Technical Feasibility Information								
Subtask 730.1	Engineering Feasibility		10	16				26	\$4,020
Subtask 730.2	Economic Feasibility		10	6				16	\$2,820
Subtask 730.3	Financial Feasibility		2	8				10	\$1,380
Task 740	NRC Scoring		4	12				16	\$2,280
Task 750	Final Application	1	10	24			20	55	\$6,780
Estimated Task Hours Subtotal		5	44	0	66	0	20	135	
Estimated Task Cost Subtotal		\$1,000	\$9,240	\$0	\$7,920	\$0	\$1,600	\$19,760	\$19,760
TASK SERIES 800 NON-TECHNICAL SPECIFICATIONS									
Task 810	Division 00 - Procurement		8				10	18	\$2,480
Task 820	Division 01 - General Requirements		8				10	18	\$2,480
Estimated Task Hours Subtotal		0	16	0	0	0	20	36	
Estimated Task Cost Subtotal		\$0	\$3,360	\$0	\$0	\$0	\$1,600	\$4,960	\$4,960
TASK SERIES 900 CONTRACT DOCUMENT SUBMITTALS									
Task 910	Draft Final Submittal								
Subtask 910.1	Compile Submittal	1	4	8				13	\$2,000
Subtask 910.2	Pre-Final Design Review Meeting	4	4					8	\$1,640
Task 920	Final Submittal - Issue for Bid							0	\$0
Estimated Task Hours Subtotal		5	8	0	8	0	0	21	
Estimated Task Cost Subtotal		\$1,000	\$1,680	\$0	\$960	\$0	\$0	\$3,640	\$3,640
TASK SERIES 1000 SURVEY AND RIGHT-OF-WAY									
Task 1010	Update Base Map Elements				4	4		8	\$940
Task 1020	Supplemental Topographic Survey		2		32	84		118	\$13,140
Task 1030	Acquisition and ROW		4		4	40		48	\$5,380
Task 1040	Section 404 Baseline Surveys					16		16	\$1,600
Estimated Task Hours Subtotal		0	6	0	40	144	0	190	
Estimated Task Cost Subtotal		\$0	\$1,260	\$0	\$0	\$5,400	\$14,400	\$21,060	\$21,060

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JEO CONSULTING GROUP INC - ESTIMATED HOURS/COSTS PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 3, 2021										
JEO Consulting Group Inc. Estimated Hours/Costs										Est. Total Cost
TASKS		Project Manager	Sr. PE and QC	PE	EIT	CAD/GIS	Surveyor	Admin/ Clerical	Total Hours	Totals
TASK SERIES 1100 BIDDING SERVICES										
Task 1110	Prepare Documents for Distribution	2	12					8	22	\$3,740
Task 1120	Pre-Bid/Site Showing	6	8					0	14	\$3,020
Task 1130	Bidding Assistance	8	32					2	42	\$8,890
Task 1140	Bid Opening and Award Recommendation	8	12					2	22	\$4,490
Estimated Task Hours Subtotal		24	64	0	0	0	0	12	100	
Estimated Task Cost Subtotal		\$5,040	\$14,080	\$0	\$0	\$0	\$0	\$1,020	\$20,140	\$20,140
TASK SERIES 1200 CONSTRUCTION MANAGEMENT										
Task 1210	Project Management	50	50					4	104	\$21,840
Task 1220	Pre-Construction Conference	4	6						10	\$2,160
Task 1230	Substantial Completion Inspection.	12	20					2	34	\$7,090
Task 1240	Final Inspection and Letter of Certification	2	6					2	10	\$1,910
Estimated Task Hours Subtotal		68	82	0	0	0	0	8	158	
Estimated Task Cost Subtotal		\$14,280	\$18,040	\$0	\$0	\$0	\$0	\$680	\$33,000	\$33,000
TASK 1300 CONSTRUCTION CONTRACT ADMINISTRATIVE SERVICES										
Task 1310	Records and Reports									
Subtask 1310.1	Records and Report Documentation	4	8						12	\$2,600
Subtask 1310.2	As-Built Drawings	4	10			80			94	\$14,640
Task 1320	Construction Contract Support									
Subtask 1320.1	Contract Documentation Clarification		8						8	\$1,760
Subtask 1320.2	Survey Control and Verification Checks						200		200	\$22,000
Subtask 1320.3	Material QA Testing								0	\$0
Subtask 1320.4	Submittal Reviews		32						32	\$7,040
Subtask 1320.5	Construction Meetings		60						60	\$13,200
Subtask 1320.6	Project Tracking Collaboration System								0	\$0
Subtask 1320.7	Technical Field Observations		100		130				230	\$38,900
Subtask 1320.8	Instrumentation Data Interpretation								0	\$0
Subtask 1320.9	Design Modifications	25	40			40			105	\$19,850
Task 1330	Permit Compliance Support									
Subtask 1330.1	SWPPP Compliance Monitoring								0	\$0
Subtask 1330.2	USACE Section 404 Baseline Monitoring and Notification								0	\$0
Subtask 1330.3	NDNR Approval to Store Water	4							4	\$840
Estimated Task Hours Subtotal		37	258	0	130	120	200	0	745	
Estimated Task Cost Subtotal		\$7,770	\$56,760	\$0	\$16,900	\$17,400	\$22,000	\$0	\$120,830	\$120,830
TASK 1400 OPERATION AND MAINTENANCE MANUAL AND EMERGENCY ACTION PLAN										
Task 1410	Operation and Maintenance Manual	2	16		32				50	\$8,100
Task 1420	Emergency Action Plan	1							1	\$210
Estimated Task Hours Subtotal		3	16	0	32	0	0	0	51	
Estimated Task Cost Subtotal		\$630	\$3,520	\$0	\$4,160	\$0	\$0	\$0	\$8,310	\$8,310
TOTAL HOURS		325	814	136	743	886	349	38	3,285	
TOTAL COST (ROUNDED)		\$ 66,320	\$ 190,260	\$ 21,080	\$ 101,580	\$ 125,130	\$ 36,900	\$ 6,340	\$ 547,610	\$ 547,610
Total Phases II and II Services										\$547,610

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**Geotechnical Exploration Proposal
West Papio Basin No. 4
Sarpy County, Nebraska
April 28, 2021**

Thiele Geotech, Inc. is pleased to submit our proposal for geotechnical exploration related to the referenced project. The following sections detail our understanding of the project, our proposed scope of services, and the cost of the study. A cost estimate for the project is attached in Exhibit A. This proposal will be held open for a period of 45 days from the above date.

PROJECT DESCRIPTION

Our understanding of the project is based upon information provided by HDR, Inc.

The project consists of evaluating the subsurface conditions west of the intersection of 204th Street and Schram Road in Sarpy County, NE. A new regional detention basin will be constructed, including an earthen main dam and two smaller water quality dams which will be constructed upstream of the main dam. An access road extending off of the existing Schram Road, a new sanitary sewer lift station, a parking area, a boat ramp, and a recreational trail are also planned for the area.

Based on previous experience in the area, the soils on the site are expected to consist of loess deposits over glacial till, with alluvium along drainageways.

SCOPE OF SERVICES

Our proposed geotechnical exploration will consist of 20 test borings to obtain geologic information and samples of the site soils, laboratory tests to determine the relevant engineering properties of the various soil strata, and a data report of the boring logs and laboratory test data. A total drilling footage of 660 feet is proposed. However, 10% drilling contingency has also been included in our estimate as requested, bringing the total footage to 730 feet.

Prior to drill rig mobilization, we will contact 811 Call Before You Dig to have all public utilities within the dig areas marked or cleared. We do not expect that a private utility locate will be required.

HDR will select the boring locations, which will be west of the intersection of 204th Street and Schram Road. The borings will be laid out in the field by others and ground surface elevations at the marked locations will be provided. These elevations will be included on the boring logs. Property access will be coordinated with the Papio-Missouri River NRD. The property or any part or component thereof damaged by the drilling operations will be repaired and restored to its condition prior to the inspections, within reason. We have included a cost for crop damage and tree removal if either are necessary.

The borings will be sampled at intervals of 2.5 feet in the top 10 feet and 5 feet at depths greater than 10 feet. The drilling operation will be overseen by an experienced geotechnical engineer or geologist. Shelby tubes will be obtained in cohesive soils. All Shelby tube samples will be left in new tubes, sealed in the field, and properly transported to the lab. Samples will be extruded just prior to laboratory testing. Pocket penetrometer readings will be taken on each cohesive sample in the field. Split-spoon samples shall be obtained in rubble fills, where tube samples encounter sands, materials too stiff to push tubes, and where tube sample recovery is less than 6 inches. Split-spoon samples will be placed in sealed containers to prevent loss or gain in moisture content. The automatic hammer will have been calibrated within the last 12 months. Bulk samples will be obtained at select locations. We understand that no rock coring will be

T h i e l e G e o t e c h I n c

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required for this work. All borings will be backfilled with cement bentonite grout slurry per USACE standards after obtaining delayed ground water readings.

Observation wells will be installed in three borings. Two of the wells will be along the main dam principal spillway with the third at the lift station.

The thickness of topsoil will be estimated at each boring location. Ground water depth will be measured during drilling, at completion of drilling, and at least one day after drilling in borings where ground water is encountered. A return trip may be necessary to top off the borehole backfill that may have settled.

Based on the results of the test boring, a laboratory testing program will be established by HDR to evaluate the engineering properties of the various soil strata. We understand that the geotechnical laboratory testing may include the following tests and quantities.

- 60 dry densities
- 40 Atterberg limits
- 24 unconfined compression tests
- 45 moisture content tests
- 32 sieve analysis with hydrometer
- 13 one-dimensional consolidation tests
- 12 UU triaxial compression tests
- 3 standard proctor tests

Thiele Geotech will prepare the boring logs. The typed logs and laboratory test data will be provided and presented in the form of a geotechnical exploration data report upon completion of the lab testing. No engineering analysis is included in our scope of work.

The proposed scope of services does not include an evaluation of potential contamination on or near the site. If the environmental condition of the property is a concern, an environmental site assessment can be provided as an additional service.

ESTIMATED COST & SCHEDULE

Professional services will be billed at the unit rates listed in Exhibit A. Based on the indicated work scope, the total cost for the project is estimated at \$55,143.50. This maximum amount will not be exceeded for the geotechnical work unless additional work is authorized.

Approximately 4 to 5 weeks from notice to proceed will be required to complete the study. The schedule is somewhat dependent on weather, site access conditions, and other factors including the actual subsurface conditions identified in the test borings. If this proposed schedule does not meet your project requirements, we would be happy to discuss alternate schedules.

ADDITIONAL SERVICES

Subsequent to completion of the geotechnical exploration report, additional services are often required that are not included in the above estimate. These include consultation with the design team and review of the final plans and specifications. In addition, construction phase quality control testing is an additional service not included in the above estimate. An environmental assessment, if required, can also be performed as an additional service. If we are requested to provide additional services including, but not limited to the above, you will be billed in accordance with Exhibit A. We would be happy to provide cost estimates for any additional services at your request.

T h i e l e G e o t e c h I n c

Drilling Cost Estimate Worksheet

Exhibit A

West Papio Basin 4
Sarpy County, NE

4/28/2021

Description		Estimated Quantity	Unit Rate	Estimated Cost
Pre-Exploration Services				
Project Geologist (/hr.)	<i>project coordination/utilities</i>	16.0	134.00	2,144.00
Project Geologist (/hr.)	<i>Health and Safety/property owners</i>	16.0	134.00	2,144.00
Exploratory Borings				
Mobilization (Zone 1)		6.0	170.00	1,020.00
Exploratory Drilling (hollow stem augers) (/ft.)		420.0	19.00	7,980.00
Exploratory Drilling (hollow stem aug	<i>contingency</i>	70.0	19.00	1,330.00
Exploratory Drilling (flight augers) (/ft.)		240.0	14.00	3,360.00
Trip Charge - Zone 1 Metro Area (/tri	<i>support truck</i>	6.0	68.00	408.00
Project Geologist (/hr.)	<i>extruding/logging soil/rock</i>	24.0	134.00	3,216.00
Grout boreholes (/ft)		595.0	10.50	6,247.50
Grout boreholes (/ft)	<i>contingency</i>	70.0	10.50	735.00
Crop Damage	<i>to be billed at cost +15%</i>	1.0	3,000.00	3,000.00
Site Clearing	<i>tree removal, to be billed at cost +15%</i>	1.0	1,000.00	1,000.00
Laboratory Analysis				
Atterberg Limits (/set)		40.0	92.00	3,680.00
Unit Weight Test (ea.)		60.0	24.00	1,440.00
Sieve Analysis with Hydrometer (ea.)		32.0	125.00	4,000.00
Unconfined Compression Test (ea.)		24.0	36.00	864.00
UU Triaxial Compression Test (ea.)		12.0	140.00	1,680.00
Moisture Content (ea.)		45.0	9.00	405.00
Standard Proctor (ea.)		3.0	185.00	555.00
One-Dimensional Consolidation Test (ea.)		13.0	350.00	4,550.00
Monitoring Wells				
1" PVC Well Screen (/5' stick)		3.0	31.00	93.00
1" PVC Well Riser (/5' stick)		5.0	23.00	115.00
1" PVC Well Riser (/10' stick)		4.0	34.00	136.00
Well Pack (/bag)		9.0	23.00	207.00
Bentonite Grout (/bag)		12.0	37.00	444.00
Surface Completions (/hr.)		3.0	170.00	510.00
Stick-up Cover (ea.)		3.0	155.00	465.00
1" Locking Cap (ea.)		3.0	27.00	81.00
1" PVC End Cap (ea.)		3.0	14.00	42.00
Bentonite Chips (/bag)		6.0	28.00	168.00
Well Registration Fees [State] (/well)		3.0	100.00	300.00
Geotechnical Report				
Project Geologist (/hr.)	<i>Geotechnical Exploration Data Report</i>	16.0	134.00	2,144.00
Senior Project Engineer (/hr.)	<i>Data Report Review</i>	4.0	170.00	680.00
Total				55,143.50

T h i e l e G e o t e c h I n c

MODIFIED VERSION of**May 2021**

Attachment 1 to Exhibit A-1 – Proposed Scope of Services for Amendment No. 1

**Proposal for Material Testing & Instrumentation Services
Basin WP-4 Construction Phase QA
Omaha, Nebraska
May 3, 2021**

Thiele Geotech, Inc. is pleased to submit our proposal for material testing services for the referenced project. The following sections detail services that may be provided. A listing of applicable unit rates is attached in Exhibit A and the contract terms are attached in Exhibit B.

SCOPE OF SERVICES – MATERIALS TESTING

Material testing on this project may consist of the following services:

1. Compaction tests on structural fill and backfill
2. Compaction tests on pavement subgrades
3. Test concrete materials and make cylinders
4. Appurtenant laboratory tests on soil and concrete
5. Installation of piezometers, settlement gauges, and monitoring wells
6. Engineering consultation and reports

Test procedures, requirements, frequency, and locations will be as set forth in the plans and specifications or as directed by the Architect/Engineer or field representative. Testing will be conducted on an "on-call" basis.

ESTIMATED COST & BILLING

Material testing services will be billed at the unit rates listed in Exhibit A. Any tests not listed will be billed at our normal fee schedule rates in effect at the time of the test. Based on the number of tests in Exhibit A, the total cost for testing services is estimated at \$53,657.50. This cost estimate is not intended as a not-to-exceed or lump-sum cost. The number of tests performed is highly dependent upon numerous factors beyond our control, including weather conditions, the contractor's schedule and performance, and the amount of discretionary testing requested. Consequently, the actual cost may be higher or lower than the estimated cost. We will bill only for the tests actually performed, and not on any lump sum or minimum cost basis.

EXHIBITS

Exhibit A - Unit Rate Schedule
Exhibit B - General Conditions

THIELE GEOTECH, INC.

By:  _____

Joshua J. Kankovsky, P.E.

13478 Chandler Road

Omaha, Nebraska 68138-3716

402/556-2171 Fax 402/556-7831

CLIENT: _____

By: _____ Date: _____

Name: _____

Address: _____

City, State: _____

Phone: _____ Fax: _____

T h i e l e G e o t e c h I n c

MODIFIED VERSION of

May 2021

Attachment 1 to Exhibit A-1 – Proposed Scope of Services for Amendment No. 1

COST ESTIMATE

Basin WP-4 Construction Phase QA Testing & Instrumentation

Description	Estimated Quantity	Unit Rate	Estimated Cost
Earthwork			
Standard Proctor (ea.)	8.0	185.00	1,480.00
Atterberg Limits (/set)	8.0	92.00	736.00
Hydrometer Analysis (ea.)	8.0	125.00	1,000.00
Compaction Test (ea.)	60.0	42.00	2,520.00
Trip Charge - Zone 1 Metro Area (/trip)	30.0	68.00	2,040.00
Drain Fill			
Standard Proctor (ea.)	2.0	185.00	370.00
Sieve Analysis (ea.)	2.0	85.00	170.00
Concrete			
Concrete Test Set (slump/air/temp/cast 4-4"x8" OR 3-6"x12" cyl)	10.0	90.00	900.00
Compressive Strength of Cylinder (ea.)	30.0	20.00	600.00
Hold Cylinder (strip & cure) (ea.)	10.0	14.00	140.00
Trip Charge - Zone 1 Metro Area (/trip)	15.0	68.00	1,020.00
Piezometers			
Mobilization	2.0	500.00	1,000.00
1" Piezometer Installation (ea.)	3.0	1,200.00	3,600.00
Surface Completion (ea.)	3.0	650.00	1,950.00
Piezometer Extension Supplies	1.0	700.00	700.00
Well Registration Fees [Nebraska] (/well)	3.0	80.50	241.50
Settlement Gauges			
Mobilization	2.0	500.00	1,000.00
Settlement Surface Monitoring Point	2.0	400.00	800.00
Drill Settlement Gauge (ea.)	3.0	4,250.00	12,750.00
Settlement Extension Supplies	1.0	700.00	700.00
Monitoring Wells			
Mobilization	2.0	500.00	1,000.00
2" well Installation (ea.)	2.0	1,200.00	2,400.00
Surface Completion (ea.)	2.0	650.00	1,300.00
Monitoring Extension Supplies	1.0	700.00	700.00
Well Registration Fees [Nebraska] (/well)	2.0	80.50	161.00
Well Decommissioning (/day)	1.0	2,325.00	2,325.00
Project Management			
Documentation Preparation (/hr)	8.0	110.00	880.00
Project Geologist (/hr.)	32.0	134.00	4,288.00
Senior Geologist (/hr.)	4.0	204.00	816.00
Senior Project Engineer (/hr.)	7.0	170.00	1,190.00
		Subtotal	48,777.50
Contingency			
discretionary tests, retests, and other tests not listed		10%	4,880.00
		Total	53,657.50

T h i s i s i s a G e o t e c h n i c

MODIFIED VERSION of

May 2021

Attachment 1 to Exhibit A-1 – Proposed Scope of Services for Amendment No. 1

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Time Schedule Chart

ATTACHMENT 2																																			
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT																																			
PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4																																			
PRELIMINARY SCHEDULE - MAY 2021																																			
	2021								2022												2023												2024		
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
DESIGN/BIDDING MANAGEMENT																																			
Notice to Proceed																																			
Project Management (Design Phase)																																			
Coordination Meetings																																			
WSF Application																																			
Board Presentation																																			
PERMITTING																																			
USACE 404																																			
NDNR																																			
NDEE																																			
County																																			
NPDES/Grading																																			
GEOTECHNICAL																																			
Data Collection																																			
Lab Analysis and Review																																			
Design																																			
DESIGN (Dam, Rec, and Utility)																																			
H&H Finalization																																			
Topo Survey																																			
Draft Final Design																																			
Final Design Plans and Specifications																																			
BIDDING																																			
Advertisement and Showing																																			
Opening																																			
Award and Contracting																																			
CONSTRUCTION PHASE																																			
Construction PM																																			
Pre-Con Meeting																																			
Substantial Completion Inspection																																			
Final Completion Inspection																																			
CONSTRUCTION ADMIN SERVICES																																			
RPR, Records, Reports																																			
As-Built Drawings																																			
Contract Support																																			
Permit Compliance																																			
NDNR Permit to Operate																																			
POST CONSTRUCTION																																			
Operation and Maintenance Manual																																			
EAP Update																																			

This is **EXHIBIT C-1**, consisting of 3 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated May 22, 2017.

Payments to Engineer for Services and Reimbursable Expenses

COMPENSATION PACKET BC-4: Basic Services – Direct Labor Costs Times a Factor

For the avoidance of doubt, this Exhibit C-1 in its entirety is expressly subject to the last sentence of Paragraph 4.01.A in the Agreement. Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER’S RESPONSIBILITIES

C2.01 Compensation for Basic Services– Direct Labor Costs Times a Factor Method of Payment

A. Owner shall pay Engineer for Basic Services set forth in Exhibit A-1, as follows:

1. For the Original Agreement, an amount equal to Engineer’s Direct Labor Costs times a factor of 3.20 for the services of Engineer’s personnel engaged on the Project, plus Reimbursable Expenses, estimated to be \$1,329,601, and Engineer’s Consultant’s charges, if any, estimated to be \$714,222 for Preliminary Design Phase.
2. For Amendment No. 1, an amount equal to Engineer’s Direct Labor Costs times a factor of 3.20 for the services of Engineer’s personnel engaged on the Project, plus Reimbursable Expenses, estimated to be \$842,334, and Engineer’s Consultant’s charges, if any, estimated to be \$656,411 for Final Design, Bidding or Negotiating, and Construction Phases.
3. Engineer’s Reimbursable Expenses Schedule is attached to this Exhibit C-1 as Appendix 1.
4. The total compensation for services under Paragraph C2.01 including Amendment No. 1 is estimated to be \$3,478,636, which includes a \$63,932 credit from Preliminary Design on WP-4. Engineer’s Fee Estimate is attached to this Exhibit C-1 as Appendix 2 for Final Design, Bidding or Negotiating, and Construction Phases.
5. Study and Report Phase \$0
6. Preliminary Design Phase (Original Agreement) \$2,043,823
7. WP-4 Preliminary Design Credit -\$ 63,932
8. Final Design Phase (Amend. No. 1, WP-4) \$ 644,355
9. Bidding or Negotiating Phase (Amend. No. 1, WP-4) \$ 26,586
10. Construction Phase (Amend. No. 1, WP-4) \$ 827,804

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11. Post-Construction Phase \$0
12. Following notice to Owner, Engineer may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered. For the avoidance of doubt, in no event shall such amount, in combination with any other compensation, reimbursement and/or any other amount to be paid by Owner with respect to and/or pursuant to this Agreement exceed the Maximum Amount unless Owner agrees otherwise in a signed written agreement entered into pursuant to this Agreement.
13. The total estimated compensation for Engineer's services included in the breakdown by phases as noted in Paragraph C2.01.A.3, incorporates all labor, overhead, profit, Reimbursable Expenses, and Engineer's Consultant's charges.
14. The portion of the amounts billed for Engineer's services which are related to services rendered on a Direct Labor Costs times a Factor basis will be billed based on the applicable Direct Labor Costs for the cumulative hours charged to the Project by Engineer's principals and employees multiplied by the above-designated factor, plus Reimbursable Expenses and Engineer's Consultant's charges reasonably and actually incurred during the billing period.
15. Direct Labor Costs means salaries and wages paid to Engineer's employees but does not include payroll-related costs or benefits.
16. The parties may, by mutual written agreement, adjust annually the Direct Labor Costs and the factor applied to Direct Labor Costs to reflect equitable changes to the compensation payable to Engineer.

C2.02 Compensation for Reimbursable Expenses

- A. Owner shall pay Engineer for all Reimbursable Expenses at the rates set forth in Appendix 1 to this Exhibit C-1 to the extent they are actually and reasonably incurred in furtherance of the Project.
- B. Reimbursable Expenses include the expenses identified in Appendix 1 and the following: transportation (including mileage), lodging, and subsistence incidental thereto to the extent necessary for completion of the Project and specifically approved in advance by Owner in writing; providing and maintaining field office facilities including furnishings and utilities; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
- C. The amounts payable to Engineer for Reimbursable Expenses will be the Project-related internal expenses actually and reasonably incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a factor of 1.0. For the avoidance of doubt, in no event will the Reimbursable Expenses, in combination

MODIFIED VERSION of

with any other reimbursements, compensation and/or any other amounts to be paid by Owner with respect to and/or pursuant to this Agreement exceed the Maximum Amount unless otherwise agreed by Owner in a signed written agreement entered into pursuant to this Agreement.

C2.03 *Other Provisions Concerning Payment*

- A. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of 1.0. For the avoidance of doubt, in no event will such compensation, together with any other compensation, reimbursements and/or any other amounts to be paid by Owner with respect to and/or pursuant to this Agreement exceed the Maximum Amount unless otherwise agreed by Owner in a signed written agreement entered into pursuant to this Agreement.
- B. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

This is **Appendix 1 to EXHIBIT C-1**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated May 22, 2017.

Reimbursable Expenses Schedule for Amendment No. 1

Reimbursable Expenses are subject to review and adjustment to the extent permitted by Exhibit C. Rates and charges for Reimbursable Expenses as of the date of the Agreement are:

8"x11" B/W Copies/Impressions	\$ 0.045/page
8"x11" Color Copies/Impressions	\$ 0.45/page
11"x17" B/W Copies/Impressions	\$ 0.09/page
11"x17" Color Copies/Impressions	\$ 0.90/page
Copies of Drawings	\$ 0.90/sq. ft.
Mileage (auto)	\$ 0.55/mile
Mileage (truck)	\$ 0.75/mile
Air Transportation	at cost
Laboratory Testing	at cost
Nuclear gage	\$ 500/month
GPS Instrument	\$ 85/day
Meals and Lodging	at cost

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Appendix 1 to Exhibit C-1-: Reimbursable Expenses Schedule

Fee Schedule

APPENDIX 2 PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 2021																			
HDR Engineering, Inc. Estimated Hours/Costs																Subconsultants			Est. Total Cost
TASKS	Project Manager	Specialist	Principal Staff	Senior Staff	Technical Staff	Tech Support	Admin/ Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.	Total Expenses	Totals	JEO	Thiele Geotech	Total Sub-Consult.		
TASK SERIES 100 DESIGN/BIDDING PROJECT MANAGEMENT																			
Task 110	Project Management (13 months)	85	16		24		30	155	\$34,505			\$500	\$500	\$35,005	\$5,000		\$5,000	\$40,005	
Task 120	Coordination Meetings (5)	10		30			10	50	\$11,190		\$83		\$83	\$11,273	\$7,380		\$7,380	\$18,653	
Task 130	Stakeholder Coordination Meeting (1)				4			4	\$860		\$22		\$22	\$882	\$2,460		\$2,460	\$3,342	
Task 140	P-MRNRD Board Presentation (1)	2		2				4	\$1,028		\$17		\$17	\$1,045	\$1,640		\$1,640	\$2,685	
Estimated Task Hours Subtotal		97	16	32	28	0	0	40	213										
Estimated Task Cost Subtotal		\$25,123	\$4,480	\$8,160	\$6,020	\$0	\$0	\$3,800	\$47,583	\$47,583	\$0	\$121	\$500	\$621	\$48,204	\$16,480	\$0	\$16,480	\$64,684
TASK SERIES 200 PERMITTING																			
Task 210	Section 404 Permit																		
Subtask 210.1	USACE Coordination			2	8	16	2	28	\$4,554				\$0	\$4,554	\$0		\$0	\$4,554	
Subtask 210.2	Permit Conditions Summary					4		4	\$528				\$0	\$528	\$0		\$0	\$528	
Subtask 210.3	Permit Modifications				8	16	4	28	\$4,256				\$0	\$4,256	\$0		\$0	\$4,256	
Task 220	NDNR Permit Preparation																		
Subtask 220.1	Coordinate with NDNR			2	4			6	\$1,370				\$0	\$1,370	\$1,200		\$1,200	\$2,570	
Subtask 220.2	Plan Approval Application			2	2		2	6	\$1,130				\$0	\$1,130	\$200		\$200	\$1,330	
Subtask 220.3	Impound Water Permit			2	2		2	6	\$1,130				\$0	\$1,130	\$620		\$620	\$1,750	
Subtask 220.4	Dam Breach Analysis							0	\$0				\$0	\$0	\$3,020		\$3,020	\$3,020	
Subtask 220.5	Draft Emergency Action Plan			2	10	16	8	46	\$6,570	\$10			\$10	\$6,580	\$0		\$0	\$6,580	
Task 230	NDEE Sanitary Sewer and Lift Station																		
Subtask 230.1	Agency Coordination							0	\$0				\$0	\$0	\$420		\$420	\$420	
Subtask 230.2	Engineering Documents and Permit Preparation							0	\$0				\$0	\$0	\$1,380		\$1,380	\$1,380	
Task 240	Sarpy County Right to Occupy ROW							0	\$0				\$0	\$0	\$420		\$420	\$420	
Task 250	NPDES Construction Activity Permit																		
Subtask 250.1	Agency Coordination							0	\$0				\$0	\$0	\$900		\$900	\$900	
Subtask 250.2	Permit/Plan Preparation							0	\$0				\$0	\$0	\$7,180		\$7,180	\$7,180	
Task 260	Permit and Approval Tracking				4	12		16	\$2,444				\$0	\$2,444	\$0		\$0	\$2,444	
Estimated Task Hours Subtotal		0	0	10	38	64	14	140											
Estimated Task Cost Subtotal		\$0	\$0	\$2,550	\$8,170	\$8,448	\$1,484	\$1,330	\$21,982	\$21,982	\$10	\$0	\$0	\$10	\$21,992	\$15,340	\$0	\$15,340	\$37,332
TASK SERIES 300 GEOTECHNICAL INVESTIGATION AND DESIGN																			
Task 310	Task Coordination		8		32	8		48	\$10,176				\$0	\$10,176			\$0	\$10,176	
Task 320	Data Collection																		
Subtask 320.1	HDR Activities for Subsurface Investigation	2	8			10		20	\$4,078				\$0	\$4,078			\$0	\$4,078	
Subtask 320.2	Subsurface Investigation Field Exploration	2	18			46	24	90	\$14,174		\$110		\$110	\$14,284	\$55,144	\$55,144	\$69,428		
Subtask 320.3	Subsurface Investigation Testing Plan	2	4			12		18	\$3,222				\$0	\$3,222			\$0	\$3,222	
Task 330	Geotechnical Design and Analysis																		
Subtask 330.1	Final Main Dam Geotechnical Design and Analysis		42	2		106	4	154	\$26,686				\$0	\$26,686			\$0	\$26,686	
Subtask 330.2	North Water Quality Basin Geotechnical Engineering Analysis		13	2		38	2	55	\$9,378				\$0	\$9,378			\$0	\$9,378	
Subtask 330.3	West Water Quality Basin Geotechnical Engineering Analysis		4	2		10		16	\$2,950				\$0	\$2,950			\$0	\$2,950	
Subtask 330.4	Site Civil Geotechnical Analysis		7	2		20		29	\$5,110				\$0	\$5,110			\$0	\$5,110	
Subtask 330.5	Geotechnical Investigation and Evaluation Documentation		16	2		40	10	68	\$11,330	\$20			\$20	\$11,350			\$0	\$11,350	
Task 340	Technical Specifications		16	8	8	16		56	\$11,112	\$10			\$10	\$11,122			\$0	\$11,122	
Task 350	Review Geotechnical Aspects of the Plans		16			16		32	\$6,592	\$10			\$10	\$6,602			\$0	\$6,602	
Task 360	Quality Control Review		12			8		20	\$4,416				\$0	\$4,416			\$0	\$4,416	
Estimated Task Hours Subtotal		6	164	18	40	330	40	606											
Estimated Task Cost Subtotal		\$1,554	\$45,920	\$4,590	\$8,600	\$43,560	\$4,240	\$760	\$109,224	\$109,224	\$40	\$110	\$0	\$150	\$109,374	\$0	\$55,144	\$55,144	\$164,518
TASK SERIES 400 MAIN DAM DESIGN																			
Task 410	Hydrology and Hydraulic Modeling							0	\$0				\$0	\$0	\$5,840		\$5,840	\$5,840	
Task 420	Embankment and Spillways Design							0	\$0				\$0	\$0	\$8,240		\$8,240	\$8,240	
Task 430	Structural Design							0	\$0				\$0	\$0	\$13,200		\$13,200	\$13,200	
Task 440	Basis of Design Report							0	\$0				\$0	\$0	\$2,080		\$2,080	\$2,080	
Task 450	Progress Contract Document Preparation																		
Subtask 450.1	Drawing Preparation							0	\$0				\$0	\$0	\$21,600		\$21,600	\$21,600	
Subtask 450.2	Technical Specifications							0	\$0				\$0	\$0	\$7,000		\$7,000	\$7,000	
Subtask 450.3	Opinion of Probable Construction Cost				8			8	\$1,720				\$0	\$1,720	\$1,380		\$1,380	\$3,100	
Task 460	Quality Control							0	\$0				\$0	\$0	\$6,640		\$6,640	\$6,640	
Estimated Task Hours Subtotal		0	0	0	8	0	0	8											
Estimated Task Cost Subtotal		\$0	\$0	\$0	\$1,720	\$0	\$0	\$0	\$1,720	\$1,720	\$0	\$0	\$0	\$0	\$1,720	\$65,980	\$0	\$65,980	\$67,700

MODIFIED VERSION of

Appendix 2 to Exhibit C-1 – Engineer’s Fee Estimate for Amendment No. 1

APPENDIX 2 PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 2021																			
HDR Engineering, Inc. Estimated Hours/Costs																Subconsultants			Est. Total Cost
TASKS	Project Manager	Specialist	Principal Staff	Senior Staff	Technical Staff	Tech Support	Admin/ Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.	Total Expenses	Totals	JEO	Thiele Geotech	Total Sub-Consult.		
TASK SERIES 500 GENERAL AND SITE CIVIL DESIGN																			
Task 510	Task Coordination			24				24	\$5,160				\$0	\$5,160	\$10,000		\$10,000	\$15,160	
Task 520	Schram Road																		
Subtask 520.1	Roadway Design							0	\$0				\$0	\$0	\$12,300		\$12,300	\$12,300	
Subtask 520.2	Schram Road Ultimate Section							0	\$0				\$0	\$0	\$3,300		\$3,300	\$3,300	
Task 530	Utilities and Sanitary Sewer Improvements																		
Subtask 530.1	Coordinate with Utilities							0	\$0				\$0	\$0	\$2,000		\$2,000	\$2,000	
Subtask 530.2	New Schram Lift Station							0	\$0				\$0	\$0	\$35,220		\$35,220	\$35,220	
Subtask 530.3	Covington Lift Station Upgrades & Force Main Modifications							0	\$0				\$0	\$0	\$21,780		\$21,780	\$21,780	
Task 540	Water Quality Basins																		
Subtask 540.1	North Water Quality Basin							0	\$0				\$0	\$0	\$7,860		\$7,860	\$7,860	
Subtask 540.2	West Water Quality Basin							0	\$0				\$0	\$0	\$8,180		\$8,180	\$8,180	
Task 550	Wetland and Stream Mitigation							0	\$0				\$0	\$0	\$2,580		\$2,580	\$2,580	
Task 560	In-Lake Fisheries																		
Subtask 560.1	Coordination with NG&PC							0	\$0				\$0	\$0	\$1,420		\$1,420	\$1,420	
Subtask 560.2	In-Lake Design							0	\$0				\$0	\$0	\$18,680		\$18,680	\$18,680	
Task 570	Recreation and Amenities Design																		
Subtask 570.1	Recreational Trail							0	\$0				\$0	\$0	\$36,280		\$36,280	\$36,280	
Subtask 570.2	Recreation Access Area							0	\$0				\$0	\$0	\$12,740		\$12,740	\$12,740	
Task 575	Seeding and ROW Fencing																		
Subtask 575.1	Seeding							0	\$0				\$0	\$0	\$1,770		\$1,770	\$1,770	
Subtask 575.2	ROW Fence							0	\$0				\$0	\$0	\$2,440		\$2,440	\$2,440	
Task 580	Erosion & Sediment Control							0	\$0				\$0	\$0	\$9,080		\$9,080	\$9,080	
Task 585	Technical Specifications							0	\$0				\$0	\$0	\$13,960		\$13,960	\$13,960	
Task 590	Opinion of Probable Construction Cost				4			4	\$860				\$0	\$860	\$2,760		\$2,760	\$3,620	
Task 595	Quality Control							0	\$0				\$0	\$0	\$5,840		\$5,840	\$5,840	
Estimated Task Hours Subtotal		0	0	0	28	0	0	28					\$0	\$0					
Estimated Task Cost Subtotal		\$0	\$0	\$0	\$6,020	\$0	\$0	\$6,020	\$6,020	\$0	\$0	\$0	\$0	\$6,020	\$208,190	\$0	\$208,190	\$214,210	
TASK SERIES 600 CITY OF GRETNA DESIGN ELEMENTS																			
Task 610	City Coordination							0	\$0				\$0	\$0	\$620		\$620	\$620	
Task 620	Stub from Lakeview Development to North Side of Dam																		
Subtask 620.1	Capacity Requirements							0	\$0				\$0	\$0	\$420		\$420	\$420	
Subtask 620.2	Sanitary Sewer Design							0	\$0				\$0	\$0	\$8,880		\$8,880	\$8,880	
Estimated Task Hours Subtotal		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	\$9,920	\$0	\$9,920	\$9,920	
TASK SERIES 700 WATER SUSTAINABILITY FUND APPLICATION																			
Task 710	Coordination Meetings			4				4	\$1,020				\$0	\$1,020	\$1,640		\$1,640	\$2,660	
Task 720	Administrative Information			2				2	\$510				\$0	\$510	\$840		\$840	\$1,350	
Task 730	Engineering & Technical Feasibility Information																		
Subtask 730.1	Engineering Feasibility							0	\$0				\$0	\$0	\$4,020		\$4,020	\$4,020	
Subtask 730.2	Economic Feasibility			2	24		24	50	\$8,214				\$0	\$8,214	\$2,820		\$2,820	\$11,034	
Subtask 730.3	Financial Feasibility							0	\$0				\$0	\$0	\$1,380		\$1,380	\$1,380	
Task 740	Natural Resources Commission Scoring				4			4	\$860				\$0	\$860	\$2,280		\$2,280	\$3,140	
Task 750	Final Application			2	2			4	\$940				\$0	\$940	\$6,780		\$6,780	\$7,720	
Estimated Task Hours Subtotal		0	0	10	30	0	24	64					\$0	\$0					
Estimated Task Cost Subtotal		\$0	\$0	\$2,550	\$6,450	\$0	\$2,544	\$0	\$11,544	\$11,544	\$0	\$0	\$0	\$0	\$11,544	\$19,760	\$0	\$19,760	
TASK SERIES 800 NON-TECHNICAL SPECIFICATIONS																			
Task 810	Division 00 -Procurement	2		8	16		8	34	\$7,136	\$10			\$10	\$7,146	\$2,480		\$2,480	\$9,626	
Task 820	Division 01 – General Requirements	2		12	24		10	48	\$10,232	\$10			\$10	\$10,242	\$2,480		\$2,480	\$12,722	
Estimated Task Hours Subtotal		4	0	20	40	0	0	82											
Estimated Task Cost Subtotal		\$1,088	\$0	\$5,360	\$9,120	\$0	\$0	\$1,800	\$17,368	\$17,368	\$20	\$0	\$0	\$20	\$17,388	\$4,960	\$0	\$22,348	

APPENDIX 2 PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF WP-4 FEE ESTIMATE - MAY 2021																			
HDR Engineering, Inc. Estimated Hours/Costs															Subconsultants			Est. Total Cost	
TASKS	Project Manager	Specialist	Principal Staff	Senior Staff	Technical Staff	Tech Support	Admin/ Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.	Total Expenses	Totals	JEO	Thiele Geotech	Total Sub-Consult.		
TASK SERIES 900 CONTRACT DOCUMENT SUBMITTALS																			
Task 910	Draft Final Submittal																		
Subtask 910.1	Compile Submittal			8			4	12	\$2,224	\$50			\$50	\$2,274	\$2,000		\$2,000	\$4,274	
Subtask 910.2	Pre-Final Design Review Meeting		4	4				8	\$1,984	\$50	\$17		\$67	\$2,051	\$1,640		\$1,640	\$3,691	
Task 920	Final Submittal - Issue for Bid		2	8			4	14	\$2,760	\$100			\$100	\$2,860	\$0		\$0	\$2,860	
Estimated Task Hours Subtotal		0	0	6	20	0	0	8	34										
Estimated Task Cost Subtotal		\$0	\$0	\$1,608	\$4,560	\$0	\$0	\$800	\$6,968	\$6,968	\$200	\$17	\$0	\$217	\$7,185	\$3,640	\$0	\$3,640	\$10,825
TASK SERIES 1000 SURVEY AND RIGHT-OF-WAY																			
Task 1010	Update Base Map Elements							0	\$0				\$0	\$0	\$940		\$940	\$940	
Task 1020	Supplemental Topographic Survey							0	\$0				\$0	\$0	\$14,740		\$14,740	\$14,740	
Task 1030	Acquisition and ROW							0	\$0				\$0	\$0	\$5,380		\$5,380	\$5,380	
Task 1040	Section 404 Baseline Surveys			2				2	\$456				\$0	\$456	\$0		\$0	\$456	
Estimated Task Hours Subtotal		0	0	0	2	0	0	0	2										
Estimated Task Cost Subtotal		\$0	\$0	\$0	\$456	\$0	\$0	\$0	\$456	\$456	\$0	\$0	\$0	\$0	\$456	\$21,060	\$0	\$21,060	\$21,516
TASK SERIES 1100 BIDDING SERVICES																			
Task 1110	Prepare Documents for Distribution			4				4	\$912	\$200	\$33		\$233	\$1,145	\$3,740		\$3,740	\$4,885	
Task 1120	Pre-Bid/Site Showing			4				6	\$1,448		\$44		\$44	\$1,492	\$3,020		\$3,020	\$4,512	
Task 1130	Bidding Assistance		2	8		4		14	\$2,800				\$0	\$2,800	\$8,890		\$8,890	\$11,690	
Task 1140	Bid Opening and Award Recommendation		2	2				4	\$992		\$17		\$17	\$1,009	\$4,490		\$4,490	\$5,499	
Estimated Task Hours Subtotal		0	0	6	18	0	4	0	28										
Estimated Task Cost Subtotal		\$0	\$0	\$1,608	\$4,104	\$0	\$440	\$0	\$6,152	\$6,152	\$200	\$94	\$0	\$294	\$6,446	\$20,140	\$0	\$20,140	\$26,586
TASK SERIES 1200 CONSTRUCTION MANAGEMENT																			
Task 1210	Project Management (22 months)	64		16			54	134	\$26,456	\$100		\$500	\$600	\$27,056	\$21,840		\$21,840	\$48,896	
Task 1220	Pre-Construction Conference			4	16	4	2	26	\$5,480		\$22		\$22	\$5,502	\$2,160		\$2,160	\$7,662	
Task 1230	Substantial Completion Inspection			4	8	8	1	21	\$4,116		\$44		\$44	\$4,160	\$7,090		\$7,090	\$11,250	
Task 1240	Final Inspection and Letter of Certification			4	8	4		17	\$3,556		\$44		\$44	\$3,600	\$1,910		\$1,910	\$5,510	
Estimated Task Hours Subtotal		64	0	12	48	16	0	58	198										
Estimated Task Cost Subtotal		\$17,408	\$0	\$3,216	\$10,944	\$2,240	\$0	\$5,800	\$39,608	\$39,608	\$100	\$110	\$500	\$710	\$40,318	\$33,000	\$0	\$33,000	\$73,318
TASK 1300 CONSTRUCTION CONTRACT ADMINISTRATIVE SERVICES																			
Task 1310	Records and Reports																		
Subtask 1310.1	Records and Report Documentation	4		4	252	2310		2570	\$383,016	\$100	\$ 21,300		\$21,400	\$404,416	\$2,600		\$2,600	\$407,016	
Subtask 1310.2	As-Built Drawings				16			16	\$3,648	\$50			\$50	\$3,698	\$14,640		\$14,640	\$18,338	
Task 1320	Construction Contract Support																		
Subtask 1320.1	Contract Documentation Clarification			4	24			28	\$6,544				\$0	\$6,544	\$1,760		\$1,760	\$8,304	
Subtask 1320.2	Survey Control and Verification Checks				8			8	\$1,824				\$0	\$1,824	\$22,000		\$22,000	\$23,824	
Subtask 1320.3	Material QA Testing	12		8	24		16	60	\$12,480			\$3,000	\$3,000	\$15,480	\$0	\$53,658	\$53,658	\$69,138	
Subtask 1320.4	Submittal Reviews and PTCS Tracking		4	5	20		50	79	\$12,076				\$0	\$12,076	\$7,040		\$7,040	\$19,116	
Subtask 1320.5	Construction Meetings				120		30	150	\$30,360		\$550		\$550	\$30,910	\$13,200		\$13,200	\$44,110	
Subtask 1320.6	Technical Field Observations		8			40		48	\$7,952				\$0	\$7,952	\$38,900		\$38,900	\$46,852	
Subtask 1320.7	Instrumentation Data Interpretation		4			40		44	\$6,776				\$0	\$6,776	\$0		\$0	\$6,776	
Subtask 1320.8	Design Modifications			8	16		8	40	\$7,472				\$0	\$7,472	\$19,850		\$19,850	\$27,322	
Task 1330	Permit Compliance Support																		
Subtask 1330.1	SWPPP Compliance Monitoring				22		352	374	\$43,736		\$1,980		\$1,980	\$45,716	\$0		\$0	\$45,716	
Subtask 1330.2	USACE Section 404 Baseline Monitoring and Notification				2	4		6	\$1,016				\$0	\$1,016	\$0		\$0	\$1,016	
Subtask 1330.3	NDNR Approval to Store Water	2		2	12		12	28	\$5,136				\$0	\$5,136	\$840		\$840	\$5,976	
Estimated Task Hours Subtotal		18	16	31	516	2394	372	3451											
Estimated Task Cost Subtotal		\$4,896	\$4,704	\$8,308	\$117,648	\$335,160	\$40,920	\$10,400	\$522,036	\$522,036	\$150	\$23,830	\$3,000	\$26,980	\$549,016	\$120,830	\$53,658	\$174,488	\$723,504
TASK 1400 OPERATION AND MAINTENANCE MANUAL AND EMERGENCY ACTION PLAN																			
Task 1410	Operation and Maintenance Manual	4		40	16	20	20	8	108	\$21,256	\$100		\$100	\$21,356	\$8,100		\$8,100	\$29,456	
Task 1420	Emergency Action Plan			2		4		2	8	\$1,296	\$20		\$20	\$1,316	\$210		\$210	\$1,526	
Estimated Task Hours Subtotal		4	0	42	16	24	20	10	116										
Estimated Task Cost Subtotal		\$1,088	\$0	\$11,256	\$3,648	\$3,360	\$2,200	\$1,000	\$22,552	\$22,552	\$120	\$0	\$0	\$120	\$22,672	\$8,310	\$0	\$8,310	\$30,982
TOTAL HOURS		193	196	187	832	2,828	474	260	4,970										
TOTAL COST (ROUNDED)		\$ 51,157	\$ 55,104	\$ 49,206	\$ 187,460	\$ 392,768	\$ 51,828	\$ 25,690	\$ 813,213	\$ 813,213	\$ 840	\$ 24,281	\$ 4,000	\$ 29,121	\$ 842,334	\$ 547,610	\$ 108,801	\$ 656,411	\$ 1,498,745

Subtotal Phase II - Final Design and Bidding (Tasks 100 to 1100 Less Task 700)	\$	639,638
Subtotal Phase II - Water Sustainability Fund (Task 700)	\$	31,304
Total Phase II - Final Design and Bidding	\$	670,942
Total Phase III Services (Tasks 1200 to 1400)	\$	827,804
Total Phase II and Phase III Services	\$	1,498,745
Phase I Fee Remaining for WP-4 (As of April 24, 2021)	\$	63,932

MODIFIED VERSION of

Appendix 2 to Exhibit C-1 – Engineer’s Fee Estimate for Amendment No. 1

This is **EXHIBIT D**, consisting of 5 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated May 22, 2017.

Duties, Responsibilities, and Limitations of Authority of Resident Project Representative

Article 1 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 1 - SERVICES OF ENGINEER

D1.01 Resident Project Representative

- A. Engineer shall furnish a Resident Project Representative ("RPR") to assist Engineer in observing progress and quality of the Work. The RPR may provide full time representation or may provide representation to a lesser degree. RPR is Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
- B. Through RPR's observations of the Work, including field checks of materials and installed equipment, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work. However, Engineer shall not, as a result of such RPR observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer (including the RPR) have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to the Work or any Constructor's work in progress, for the coordination of the Constructors' work or schedules, or for any failure of any Constructor to comply with Laws and Regulations applicable to the performing and furnishing of its work. The Engineer (including RPR) neither guarantees the performances of any Constructor nor assumes responsibility for any Constructor's failure to furnish and perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents. In addition, the specific terms set forth in Exhibit A, Paragraph A1.05, of this Agreement are applicable.
- C. The duties and responsibilities of the RPR are as follows:
 - 1. *General:* RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 - 2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, schedule of values, and other schedules prepared by Contractor and consult with Engineer concerning acceptability of such schedules.

3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of notes thereof.
4. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
5. *Liaison:*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Construction Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
6. *Clarifications and Interpretations:* Receive from Contractor submittal of any matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. Report to Engineer regarding such RFIs. Report to Engineer when clarifications and interpretations of the Construction Contract Documents are needed, whether as the result of a Contractor RFI or otherwise. Transmit Engineer's clarifications, interpretations, and decisions to Contractor. ,
7. *Shop Drawings and Samples:*
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples that are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal, if RPR believes that the submittal has not been received from Contractor, or has not been approved by Contractor or Engineer.
8. *Proposed Modifications:* Consider and evaluate Contractor's suggestions for modifications to the Drawings or Specifications, and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit Engineer's response (if any) to such suggestions to Contractor.
9. *Review of Work; Defective Work:*

- a. Report to Engineer whenever RPR believes that any part of the Work is defective under the terms and standards set forth in the Construction Contract Documents, and provide recommendations as to whether such Work should be corrected, removed and replaced, or accepted as provided in the Construction Contract Documents.
- b. Inform Engineer of any Work that RPR believes is not defective under the terms and standards set forth in the Construction Contract Documents, but is nonetheless not compatible with the design concept of the completed Project as a functioning whole, and provide recommendations to Engineer for addressing such Work. ; and
- c. Advise Engineer of that part of the Work that RPR believes should be uncovered for observation, or requires special testing, inspection, or approval.

10. *Inspections, Tests, and System Start-ups:*

- a. Consult with Engineer in advance of scheduled inspections, tests, and systems start-ups.
- b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- c. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
- d. Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public or other agencies having jurisdiction over the Work.
- e. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work, record the results of these inspections, and report to Engineer.

11. *Records:*

- a. Maintain at the Site orderly files for correspondence, reports of job conferences, copies of Construction Contract Documents including all Change Proposals, Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Construction Contract, RFIs, Engineer's clarifications and interpretations of the Construction Contract Documents, progress reports, approved Shop Drawing and Sample submittals, and other Project-related documents.
- b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Proposals, Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials,

daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

- c. Upon request from Owner to Engineer, photograph or video Work in progress or Site conditions.
- d. Record and maintain accurate, up-to-date lists of the names, addresses, fax numbers, e-mail addresses, websites, and telephone numbers (including mobile numbers) of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- e. Maintain records for use in preparing Project documentation.
- f. Upon completion of the Work, furnish original set of all RPR Project documentation to Engineer.

12. *Reports:*

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and/or recommend to Engineer Change Proposals, Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Furnish to Engineer and Owner copies of all inspection, test, and system start-up reports.
- d. Immediately inform Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, possible force majeure or delay events, damage to property by fire or other causes, or the discovery of any potential differing site condition or Constituent of Concern.

13. *Payment Requests:* Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

14. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

15. *Completion:*

- a. Participate in Engineer's visits to the Site regarding Substantial Completion, assist in the determination of Substantial Completion, and prior to the issuance of a

Certificate of Substantial Completion submit a punch list of observed items requiring completion or correction.

- b. Participate in Engineer's visit to the Site in the company of Owner and Contractor, to determine completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
- c. Observe whether all items on the final punch list have been completed or corrected, and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work (Exhibit E).

D. Resident Project Representative shall not:

- 1. Authorize any deviation from the Construction Contract Documents or substitution of materials or equipment (including "or-equal" items).
- 2. Exceed limitations of Engineer's authority as set forth in this Agreement.
- 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers, or any Constructor.
- 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Work, by Contractor or any other Constructor.
- 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
- 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
- 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
- 8. Authorize Owner to occupy the Project in whole or in part.

**HDR Engineering, Inc. Terms and Conditions
for Floodplain, Dams and Levee Professional Services**

1. ALLOCATION OF RISK

OWNER AND ENGINEER HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING ENGINEER'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE RISKS, SO, TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF ENGINEER (AND ITS RELATED CORPORATIONS, SUBCONSULTANTS AND EMPLOYEES) TO OWNER AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE LESSER OF \$1,000,000 OR ITS FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF ENGINEER'S SERVICES OR THIS AGREEMENT REGARDLESS OF CAUSE(S) OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY.

2 MAINTENANCE OF STRUCTURES AND SYSTEMS

OWNER agrees that structures and systems studied, reviewed, analyzed or designed by the ENGINEER are dependent upon OWNER's continued operation and maintenance of the project structures and systems in accordance with all permits, laws and regulations that permit the construction and operation of the structures and systems, including any Engineer prepared operations and maintenance plans. Should OWNER fail to maintain the structures to be in full compliance with permits, approvals, and operations and maintenance plans, ENGINEER shall have no liability to OWNER, and OWNER shall indemnify, release and hold ENGINEER and its employees harmless from any liability resulting from any direct or consequential damage resulting from such non-compliance, including but not limited to claims made by third-parties against ENGINEER.

3. VISUAL INSPECTIONS

For visual inspections, OWNER hereby releases, holds harmless, indemnifies and agrees to defend ENGINEER against any claims, damages, losses, liabilities, expenses or costs arising out of any failure to detect hidden, covered, inaccessible, or internal structural or material defects, corrosion, or damages in components, embedment, reinforcing, anchorages and parts of equipment, structures, or mechanisms being inspected, that are not readily discernible by external visual inspection through reasonable efforts.

4. DESIGN CRITERIA DISCLAIMER

Prevailing science and understanding of natural forces including, but not limited to, flood, rain, temperature, earthquakes and wind indicates a dynamic and non-stationary system of potential loads. OWNER acknowledges and accepts all liability for the selection of appropriate return intervals and selection of extreme natural events for the use in the design of the dam, levee or flood control system. OWNER acknowledges they have taken into account the impacts of the various natural events when selecting the design criteria for the project.

5. FORCE MAJEURE

ENGINEER shall not be responsible for delays caused by factors beyond ENGINEER's reasonable control, including but not limited to delays because of strikes, lockouts, work slowdowns or stoppages, government ordered industry shutdowns, power or server outages, acts of nature, widespread infectious disease outbreaks (including, but not limited to epidemics and pandemics), failure of any governmental or other regulatory authority to act in a timely manner, failure of the OWNER to furnish timely information or approve or disapprove of ENGINEER's services or work product, or delays caused by faulty performance by the OWNER's or by contractors of any level or any other events or circumstances not within the reasonable control of the party affected, whether similar or dissimilar to any of the foregoing. When such delays beyond ENGINEER's reasonable control occur, the OWNER agrees that ENGINEER shall not be responsible for damages, nor shall ENGINEER be deemed in default of this Agreement, and the parties will negotiate an equitable adjustment to ENGINEER's schedule and/or compensation if impacted by the force majeure event or condition.