

Agenda Item: 9.

## Memorandum

**To:** Programs, Projects, and Operations Subcommittee  
**From:** Lori Ann Laster, Stormwater Management Engineer  
**Date:** July 30, 2012  
**Re:** Papio Dam Site 15A Phase 2 Professional Services Contract

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In October 2009, the Board approved a contract with HDR Engineering, Inc. to provide professional services for the planning, permitting, design and construction of Papio Dam Site 15A. The work was planned to be completed in three phases. Phase 1 provided the feasibility and preliminary design of Papio Dam Site 15A. Scope and fees for Phase 2, Final Design and Bidding are presented for consideration. Phase 3, Construction Administration, will be presented at a later date.

A summary of the tasks for Phase 2 is as follows:

- Project Management tasks include progress reports, coordination meetings, a newsletter update and a presentation to the Board.
- Permitting services to include follow up for the U.S. Army Corps of Engineers 404 Permit, Nebraska Department of Natural Resources permitting, and other permits related to construction.
- Community Based Watershed Plan Development.
- Main Dam Design
- Water Quality Basin Design
- Sanitary Sewer Design
- Ida Street Bridge and Roadway Design
- Boat Access and Fisheries Enhancements
- Recreational Features
- Pre-Final Design Independent Technical Review and Submittal
- Survey and Right Of Way Services
- Bidding Services

The Sanitary Sewer Design task is an optional task. The City of Omaha has identified the need for sanitary sewer service in this area in the future. The preferable option would be to install sewer components that would go through the dam structure at the time the dam is constructed. The total amount of this task is \$80,734. If the City chooses to move forward with these elements, that amount would be paid by the City.

Since it is anticipated the City of Omaha will assume operation and maintenance of the recreation area, the Recreational Features task also contains an option to include recreational features design for the City of Omaha. The amount of \$25,154 will be paid by the City or removed from the scope of work.

Phase 1 of the contract totaled \$728,970. The Phase 2 contract amount for the tasks described above is \$1,274,762. The contract scope of work and fee estimate for Phase 2 is attached.

**Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the enclosed Professional Services Contract Amendment between the District and HDR Engineering, Inc. for Phase 2 services for Papio Dam Site 15A Project increasing the maximum contract fee to \$1,997,641, subject to changes deemed necessary by the General Manager and approval as to form by District legal counsel.**

## AMENDMENT TO OWNER-ENGINEER AGREEMENT

Amendment No. 2

### 1. *Background Data:*

- a. Effective Date of Owner-Engineer Agreement: \_\_\_\_\_
- b. Owner: Papio-Missouri River Natural Resources District (P-MRNRD)
- c. Engineer: HDR Engineering, Inc. (HDR)
- d. Project: Damsite 15A and Associated Improvements

### 2. *Description of Modifications:*

- a. The Scope of Services currently authorized to be performed by Engineer in accordance with the Agreement and previous amendments, if any, is modified as follows:
  - 1) Per Exhibit A, Part 1.A1.02 of the original agreement, the scope of services for Phase II, including final design and bidding assistance services is included as Attachment 1 to this amendment.
- b. For the Phase II services set forth above, Owner shall pay Engineer the following additional compensation:
  - 1) An amount equal to Engineer's Direct Labor Costs times a factor of 3.15 for the services of Engineer's employees engaged on the Project, plus Reimbursable Expenses, provided however, and notwithstanding anything to the contrary contained in this Agreement, the total amount of money due to ENGINEER for such services and for Reimbursable Expenses and Engineer's Consultant's charges shall not exceed the amount of \$1,274,762 unless an additional payment for the services, expenses, or charges resulting in such excess is authorized in writing by Owner in advance of such services, expenses or charges being furnished, expended, or incurred, the amount of \$1,274,762 being intended by the parties as the maximum amount of money to be due to the Engineer under this Amendment for Phase II services.
- c. The scheduled milestones for rendering services is as follows:
  - 1) Notice to Proceed – September 1, 2012
  - 2) Basis of Design Report Completion – October 31, 2012
  - 3) Preliminary 60% Design – April 1, 2013
  - 4) Final Design – September 1, 2013

Attachment 1 Damsite 15A Phase II Scope of Services  
Attachment 2 Damsite 15A Phase II Fee

3. *Agreement Summary (Reference only)*

a. Original Agreement amount:	\$ 620,300
b. Net change for prior amendments:	\$ 102,579
c. This amendment amount:	\$ <u>1,274,762</u>
d. Adjusted Agreement amount:	\$ <u>1,997,641</u>

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

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

OWNER:

ENGINEER:

By: John Winkler

By: Matthew Tondl, P.E.

Title: General Manager

Title: Senior Vice President

Date

Date Signed:

Signed: \_\_\_\_\_

\_\_\_\_\_

## Attachment 1 – Scope of Services

**Damsite 15A  
for Papio-Missouri River Natural Resources District  
Douglas County, NE**



### ENGINEERING PROPOSAL – PHASE II FINAL DESIGN & ROW SERVICES



### BACKGROUND AND BASIS OF PROPOSAL

HDR Engineering, Inc. was selected by the P-MRNRD to provide planning, permitting, preliminary and final design and construction contract administration services for Damsite 15A. Damsite 15A is a proposed regional detention basin to be located on North Branch West Papillion Creek located in Douglas County and is located near 168<sup>th</sup> and Fort Streets in Omaha, Nebraska. The contributing drainage area at the proposed retention basin is approximately 11 square miles. The drainage area of Damsite 15A is primarily agricultural land with minimal development.

To more concisely respond to project requirements, a phased approach has been utilized. In Phase I, a feasibility study and preliminary design has been conducted to define the details of the project. Phase II generally includes preparing final design documents and providing bidding assistance, while Phase III will consist of construction contract administration services.

This Scope of Services is to document Phase II professional services to the Papio-Missouri River NRD (P-MRNRD) for the final design of Damsite 15A (Project). This scope of services includes the final design and ROW services scope and fee are for final design of the current approved concepts for the Damsite 15A project as documented in the May 2012 Preliminary Design Report. The scope assumes preparation of a single bid package and a list of drawings anticipated in this effort for the approved facilities is included in Attachment 1-A to this scope. Subconsultants and roles in executing this scope include:

- Vireo – Recreational feature design
- Elliot & Associates – ROW and survey services
- Thiele Geotechnical, Inc – Subsurface investigation and testing
- Rick Donovan – Geotechnical design review

### SCOPE OF SERVICES – PHASE II – FINAL DESIGN AND ROW SERVICES

HDR will perform preliminary and final design services. The Phase II scope of work is segmented into eighteen (18) task series:

- Task Series 100 – Project Management
- Task Series 200 – Permitting
- Task Series 300 – Community Based Watershed Plan Development
- Task Series 400 – Basis of Design Report
- Task Series 500 – General and Site Civil Design
- Task Series 600 – Geotechnical Design
- Task Series 700 – Structural Design
- Task Series 800 – Main Dam Design
- Task Series 900 – Water Quality Basin Design
- Task Series 1000 – Sanitary Sewer Design
- Task Series 1100 – Ida Street Bridge and Roadway Design
- Task Series 1200 – Boat Access and Fisheries Enhancements
- Task Series 1300 – Recreational Features
- Task Series 1400 – Non-Technical Specifications (Front End Documents)
- Task Series 1500 – 60% Design ITR and Submittal
- Task Series 1600 – Pre-Final Design ITR and Submittal
- Task Series 1700 – Survey and Right of Way
- Task Series 1800 – Bidding Services

The HDR Team proposes to provide the following professional services for Phase II over an anticipated twelve (12) - month project period from the time of contract authorization. The final design and ROW services scope and fee are for final design of the current approved concepts for the Damsite 15A project as documented in the May 2012 Preliminary Design Report. The scope assumes preparation of a single bid package.

#### **TASK SERIES 100 PROJECT MANAGEMENT**

**Task Objective:** Confirm that Project elements are being completed, manage internal staff, process invoices and progress reports, address contractual items, client coordination, and preparation of newsletter updates.

**HDR Activities:** **Task 110 Project Management.** Includes Project scheduling, administration and coordination activities on the Project. Internal HDR Project Team meetings will be conducted to discuss tasks, provide Project updates and review deliverables. Prepare monthly invoices and progress reports.

**Task 120 Coordination Meetings.** Monthly coordination meetings will be conducted with P-MRNRD during the Project. An agenda will be prepared prior to the meeting and meeting minutes prepared after the meeting.

210.1 **P-MRNRD Coordination Meetings.** Meet with P-MRNRD personnel to review and discuss Project progress. Assume a total of 12 meetings.

210.2 **Board/Subcommittee Presentation.** Conduct 1 presentation to the P-MRNRD Board/Subcommittee to provide the results of the final design. A PowerPoint presentation will be prepared. One preparation meeting for the presentation is assumed.

**Task 130 Newsletter Update.** The HDR Team will create an electronic 2-page update on the Project to be posted on the P-MRNRD's website. Two (2) newsletters will be prepared.

**Task Deliverables:**

- Monthly invoices and progress report
- Meeting agenda and minutes
- PowerPoint presentation for P-MRNRD Board/Subcommittee Presentation
- Two (2) newsletter update

**Key Understandings:**

- The duration of the project is 12 months.
- Meetings will be held at the offices of the P-MRNRD and attended by 2 HDR professionals.
- Twelve (12) coordination meetings are 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. Also included in this task are the design, plans, and specifications for channel and forested wetland mitigation.

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

210.1 **Agency Coordination.** Coordinate with USACE relative to project timeframes, and wetland and channel mitigation during final design phase. Coordination with USFWS, EPA, NRCS, and Nebraska Game and Parks Commission relative to in-lake, riparian, wetland, and terrestrial habitat design features on the Project Site as well as natural stream design mitigation.

210.2 **Stream Mitigation Development.** Develop mitigation plan drawings, specifications, and cost estimates for stream channel impacted by the Project. This includes coordination with P-MRNRD relative to the potential mitigation

site. It is anticipated that stream mitigation will be approximately 2,000 feet. The following drawings will be prepared:

- Plan and Profile (2 sheets)
- Typical Details (1 sheet)
- Cross Sections (1 sheet)

210.3 Wetland Mitigation Development. Develop mitigation plan drawings, specifications, and cost estimates for forested wetlands impacted by the Project. This includes coordination with P-MRNRD relative to the potential mitigation site. It is anticipated that forested wetland mitigation will be approximately 1.0 acres. The following drawings will be prepared:

- Grading plan (1 sheets)
- Planting plan/details (1 sheet)

210.4 Permit Conditions Summary. Summarize permit conditions for inclusion in bid documents for P-MRNRD and Contractor.

**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 main dam and water quality basin.

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

- Permit Drawings
- Technical specifications
- Design analysis report
- Completed permit application

220.2 Impound Water. Preparation and submittal of permit to impound water.

220.3 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.

220.4 Emergency Action Plan. HDR will develop a draft emergency action plan based on the current NDNR template. Comments from NDNR will be solicited and a final emergency action plan submitted.

**Task 230 NPDES Construction Activity Permit.** NPDES construction activity permit and Papillion Creek Watershed Partnership grading permit.

230.1 Agency Coordination. Coordinate with city of Omaha on preparation of Papillion Creek Watershed Partnership (Partnership) Grading permit.

230.2 Permit Preparation. Prepare drawings, narrative plan, application, and NDEQ NPDES Notice of Intent (NOI) to comply with NPDES stormwater associated with construction activity.

**Task 240 Floodplain Permit Technical Assistance.** Provide technical data to P-MRNRD in FEMA’s map revision process.

#### **Task Deliverables:**

- Section 404 mitigation plan
- NDNR permit applications
- Papillion Creek Watershed Partnership Grading Permit
- Stream Mitigation plans
- Forested wetland mitigation plans
- Floodplain permit technical data
- Emergency Action Plan (Draft and Final)

**Key Understandings:**

- Mitigation design for channel assumes mitigation at one (1) location.
- Mitigation design for forested wetland assumes mitigation at one (1) location.
- Based on recent USACE and EPA permit requirements and recognition of reservoir fringe wetlands created, no wetland mitigation design (other than forested wetland) is included in this scope and fee.
- Design of mitigation measures will be incorporated into the final bid documents and bid with Project.
- Additional topographic survey or ROW easement work for stream mitigation is included in Task Series 1700. No additional acquisition for mitigation areas is included in this task scope of work.
- Any required tree mitigation will be monitored and developed by P-MRNRD.
- P-MRNRD is responsible for site access and negotiations.
- Assumes no major changes in design that would create the need for a permit amendment or re-evaluation of the previously submitted 404 permit application.
- P-MRNRD is responsible for permit submittal and payment of permit application fees.
- Assumed mitigation will occur on project lands at single location.
- Permitting scope and fee based on current (2012) permitting requirements, standards and criteria.
- Emergency Action Plan to follow NDNR plan template.
- Main dam is classified as a “high” hazard structure; water quality basin as a “significant” hazard structure.

**TASK SERIES 300 COMMUNITY BASED WATERSHED PLAN DEVELOPMENT**

**Task Objective:** The objective of this task is to complete the development of a community-based watershed plan for the Dam Site 15A drainage area. This effort was initiated during the preliminary design phase and then postponed. The community-based watershed planning effort will be reinitiated upon completion of acquisition for project lands.

**HDR Activities:**

**Task 310 Coordination Meetings.** Coordinate with NRD, NDEQ and City of Omaha on the development of the community-based plan. Meetings will be held to address project issues during the development of the plan. Three (3) meetings are included in this scope of services. The initial meeting will review the June 2010 Vision Workshop and create a vision statement for the watershed.

**Task 320 Watershed Committees.** In 2010, a Technical Advisory Committee and a Citizen Watershed Committee were created and a joint meeting conducted to provide an overview of the watershed plan development. The Technical Advisory Committee consists of subject matter experts, while the Citizen Watershed Committee consists of representatives from various stakeholder groups and are concerned with environmental issues, water quality and watershed management strategies. P-MRNRD will contact committee members for participation.

320.1 **Committee Membership.** Review the committee membership with P-MRNRD and Omaha and revise the committee membership list. P-MRNRD to contact participants.

320.2 **Citizen Watershed Committee Communication and Meetings.** Continuous communication with the Committee will be maintained and total of two (2) meetings are planned through the duration of the project.

320.3 **Technical Advisory Team and Meetings.** Conduct (2) meetings with Technical Advisory Team to discuss methodology to evaluate resource concerns and provide technical input on resource concerns and watershed strategies.



**Task 330 Alternative Strategies Development.** In June 2010, a Visioning Workshop was conducted. After a general presentation, interested individuals provided input on their vision for the watershed. Alternative strategies will be developed to address nonpoint source pollution controls to achieve the goals and objectives formulated with the Technical Advisory and Citizen Watershed Committees. Alternatives include best management practices, low impact development standards, and other features to be incorporated into the community-based watershed plan.

Task 330.1 Alternative Strategies Workshop will focus on presenting alternative watershed strategies. Activities include:

- *Workshop Materials.* Create agenda, PowerPoint presentation, and associated materials for the workshop.
- *Workshop Facilitation.* Facilitate and attend workshop and document public input.
- *Workshop Summary.* Results of the workshop will be compiled and summarized.

**Task 340 Watershed Evaluation.** Evaluate the watershed resources and assess the watershed strategies.

340.1 **Resource Inventory.** Compile information on natural and human resources within the Drainage Basin to provide a quantitative explanation of the Drainage Basin.

340.2 **Water Quality Evaluation.** The purpose of the water quality evaluation is to assess the watershed plans ability to develop a sustainable resource that meets the priorities and goals identified in the planning process.

340.2.1 **Reservoir Hydrologic Budget.** Determine watershed yield based on average annual values for rainfall, evaporation, groundwater/seepage, and inflow. Inflow will be based on analyzing inflow records from other Papillion Creek reservoirs and from sampled data.

340.2.2 **Sediment Loading.** Determine at-reservoir sediment yield from upland erosion and channel bank sources using RUSLE, or other appropriate estimating technique.

340.2.3 **Nutrient Loading.** Use literature values for nutrient runoff coefficients loading based on existing and future land use conditions. Develop nutrient budget for drainage area using Iowa DNR's technique of using the three load estimates (Loading Function Method, EPA Export Coefficient Method, and WILMS Export Coefficient Method)

340.2.4 **Reservoir Response Modeling.** Determine reservoir's eutrophication response to nutrient loading in terms of Carlson's Trophic State Index through the use of Eleven Lake Equations in IDNR's Lake Phosphorus Spreadsheet.

340.2.5 **Reservoir Water Quality Evaluation.** Evaluate the model to determine if the reservoir will meet the Title 117 water quality standards with respect to the anticipated designated use of the water body as well as the community's water quality goals.

340.3 **Alternative BMP Evaluation.** Identify appropriate BMPs provided in the Douglas County Comprehensive Plan as recommended stormwater management strategies Evaluate proposed BMPs based on literature values for removal effectiveness. Alternatives will be integrated into a watershed plan and the plan's effectiveness to meet the goals assessed. The results of the alternative evaluation will be presented and discussed with the Technical Advisory Committee and Citizen Watershed Committee.

**Task 350 Watershed Management Plan.**

350.1 **Draft Community-Based Watershed Management Plan.** Prepare a draft watershed plan.

350.2 **Final Community-Based Watershed Management Plan.** Prepare a final community-based watershed plan.

**Task Deliverables:**

- Meeting materials and minutes for coordination and committee meetings

- Draft and Final Community-Based Watershed Plan for Dam Site 15A

**Key Understandings:**

- \* P-MRNRD to arrange location for public workshop.
- \* P-MRNRD will be responsible for providing addresses, preparing invitations, and mailings for public workshop.
- \* P-MRNRD to provide copies of any handout materials. HDR to prepare (6) boards for workshop.
- \* P-MRNRD will coordinate a water quality sampling program to define baseline water quality conditions.
- \* Opinions of the likelihood of meeting water quality goals will be formed on the evaluation of available input data and the results from the models and methodology employed.
- \* Water quality modeling is limited to nutrients (phosphorus). No bacteria, no toxics or metals, or mercury evaluation is proposed.

**TASK SERIES 400 BASIS OF DESIGN REPORT**

**Task Objective:** Prepare Basis of Design Report at initiation of final design efforts to summarize project features, technical basis of design, and assumptions for each element for review and concurrence by P-MRNRD, City of Omaha, NGPC, and Douglas County.

**HDR Activities:** Task 400 Basis of Design Report

- 410 Prepare Basis of Design Report. Summarize the technical basis and assumption for each element of the project as identified in the May 2012 Preliminary Design Report. Submit copies of the Basis of Design Report for review and comment.
- 420 Basis of Design Report Review. Prepare and conduct one (1) Basis of Design Report meeting to discuss report with P-MRNRD, Douglas County, City of Omaha, and NGP, respond to questions, and receive review comments.

**Task Deliverables:**

- Draft and Final Basis of Design Report

**Key Understandings:**

- One review meeting for Basis of Design Report

**TASK SERIES 500 GENERAL AND SITE CIVIL DESIGN**

**Task Objective:** The objective of this task is to complete the general and site civil design for the project. Specific elements include storm drainage in the vicinity of the dam, general plan sheets and notes, Right-of-Way plans, site plan sheets, demolitions and removals, miscellaneous grading, access to the Volkmer property, and the seeding and fencing plan sheets.

**HDR Activities:** Task 510 Task Coordination. Coordinate site civil design tasks.  
 510.1 Coordinate with Other Tasks. Coordinate with design tasks related to the design of the Damsite 15A project. This includes coordination with sanitary sewer, main dam, and water quality basin design tasks.

Task 520 Data Collection. NOT USED

Task 530 Basis of Design Memorandum. See Task 400

Task 540 Preliminary (60%) Final Design

- 540.1 Preliminary Design. Preliminary design of site civil elements.
- 540.2 Preliminary Technical Specifications. Prepare preliminary (60%) technical specification sections for construction of the site civil for inclusion into the Damsite 15A bid documents.

- 540.3 Drawings. Prepare preliminary (60%) drawings for construction of the site civil for inclusion into the Damsite 15A bid documents.
- 540.4 Preliminary (60%) Opinion of Probable Construction Cost. Estimate quantities and prepare a preliminary (60%) Opinion of Probable Construction Costs for the site civil elements based on the Preliminary (60%) Design.

**Task 550 Final Design**

- 550.1 Final Design. Perform final design required to complete Preliminary Design and incorporate into the Final Design.
- 550.2 Final Technical Specifications. Revise Preliminary civil technical specification sections for inclusion into the Final Specifications and inclusion into the Damsite 15A bid documents.
- 550.3 Final Drawings. Prepare final drawings for inclusion into the Damsite 15A bid documents.
- 550.4 Opinion of Probable Construction Cost. Estimate quantities and prepare a final Opinion of Probable Construction Costs for the site civil elements based on the Final Design.

**Task 560 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Preliminary Design Specifications, Drawings, and Opinion of Probable Construction Costs
  - Final Design Specifications, Drawings, and Opinion of Probable Construction Costs
- Task Deliverables:**
- Preliminary (60%) Structural Drawings, Technical Specifications, and Opinion of Probable Construction Costs
  - Final Structural Drawings, Technical Specifications, and Opinion of Probable Construction Costs

**Key Understandings:**

- Project improvements are limited to approved facilities as described in May 2012 Preliminary Design report.
- City of Omaha standards and specifications will be used.

**TASK SERIES 600      GEOTECHNICAL DESIGN**

**Task Objective:**

The objective of this task is the complete the geotechnical design for the construction of the water quality basin and Ida Street bridge. In addition, final details of main dam design (90% design of main dam completed and documented in May 2012 Preliminary Design report) will be completed.

**HDR Activities:**

**Task 610 Task Coordination.** Coordinate with other design tasks.

- 610.1 Coordinate with Other Tasks. Coordinate with design tasks related to the design of the Damsite 15A project. This includes:
- Coordination of sanitary sewer, main dam, water quality basin and Ida Street roadway and bridge design.
  - Coordinate phased construction of the project.

**Task 620 Data Collection.** Supplement the Preliminary Design geotechnical investigation to evaluate the subsurface conditions along the water quality basin, sanitary sewer and Ida Street bridge.

- 620.1 Subsurface Investigation Plan. HDR to conduct a geotechnical investigation to supplement the subsurface conditions for the main dam, and to define site specific subsurface conditions for the water quality basin, Ida Street bridge and sanitary sewer siphon structure. HDR to prepare a boring plan showing the location of the borings and a laboratory testing program assigning tests to specific samples. Testing requirements include:

- Unit Weight Tests. A total of 80 tests are assumed.
  - Atterberg Limits (silts and clays, per D 4318). A total of 30 tests are assumed.
  - Grain size analyses with hydrometer (sands, silts and sands per D 422). A total of 30 tests are assumed.
  - Unconfined Compressive Strength tests (tube samples, per D 2166). A total of 8 tests are assumed.
  - Triaxial compression tests (UU) (tube samples, per D 2850). A total of 12 UU tests are assumed.
  - Consolidation tests (tube samples, per D 2435). A total of 15 tests are assumed.
- 620.2 Subsurface Investigation 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. E&A will survey top of boring hole elevations.
- Exploratory Drilling (hollow stem augers) – estimated 880 lf
  - Rock Coring (5' minimum) – estimated 30 lf
  - Cone Penetrometer Testing – estimated 120 lf

**Task 630 Geotechnical Basis of Design Memorandum. See Task 400**

**Task 640 Geotechnical Design and Analysis.** Supplement the Preliminary Design geotechnical investigation to finalize main dam design, evaluate the subsurface conditions along the water quality basin, and Ida Street bridge.

- 640.1 Preliminary Geotechnical Design and Analysis. Preliminary geotechnical design will be performed. The design includes:
- Review field and lab data.
  - Prepare geologic cross-sections for water quality basin and Ida Street bridge.
  - Evaluate settlement and consolidation of foundation materials
- 640.2 Final Geotechnical Design and Analysis. Final geotechnical design will be performed. The design includes:
- Refine size, and location of chimney drain, horizontal blanket drain and drain outlets, if needed
  - Refine upstream slope geometry of main dam, if needed
  - Refine principal spillway alignment, stability and settlement
  - Refine auxiliary spillway stability
  - Evaluate slope stability of embankment closure section
  - Determine spillway joint extensibility requirements
  - Determine construction phasing for main dam and Ida Street approaches
  - Engineering analysis of Ida St bridge foundation and approach fill stability/settlement
  - Engineering analysis of water quality basin foundation, bearing capacity, and settlement
- 640.3 Instrumentation and Upstream Face Slope Protection. Prepare temporary and permanent instrumentation for main dam and water quality basin. Design upstream face slope protection.
- 640.4 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.
- 640.5 Quality Control. Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Basis of Design Memorandum.
- Preliminary Design Specifications, Drawings, and Estimate.
- Final Design Specifications, Drawings, and Estimate.

**Task Deliverables:**

- \* Draft and Final Geotechnical Investigation and Design Reports
- \* Geologic profile sheets for Ida Street and Water Quality basin.
- \* 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 680 feet of borings drilled to non-yielding material (glacial till or bedrock) and 120 feet of cone penetrometer tests. Ten (10) borings anticipated (6 for Ida Street Bridge and 4 for water quality basin).
- \* E&A, as a subconsultant to HDR, will survey top of boring hole elevations.
- \* The final geotechnical report for the water quality basin and main dam will be included in the NDNR dam safety permit application.

**TASK SERIES 700      STRUCTURAL DESIGN**

**Task Objective:**

The objective of this task is to complete the structural design for the construction of the main dam riser and energy dissipater and water quality basin.

**HDR Activities:**

**Task 710 Task Coordination.** Coordinate with other design tasks.

**710.1 Coordinate with Other Tasks.** Coordinate with other design tasks related to the design of the Damsite 15A project. This includes coordination of sanitary sewer, main dam, and water quality basin design tasks.

**Task 720 Data Collection.** NOT USED

**Task 730 Basis of Design Memorandum.** See task 400

**Task 740 Preliminary (60%) Final Design**

**740.1 Main Dam Riser.** Perform preliminary (60%) design, drawings, specifications, and opinion of probable construction costs.

**740.2 Main Dam Energy Dissipator.** Perform preliminary (60%) design, drawings, specifications, and opinion of probable construction costs.

**740.3 Water Quality Basin Weir Structure.** Perform preliminary (60%) design, drawings, specifications, and opinion of probable construction costs.

**Task 750 Final Design**

**750.1 Main Dam Riser.** Perform final design, drawings, specifications, and opinion of probable construction costs.

**750.2 Main Dam Energy Dissipator.** Perform final design, drawings, specifications, and opinion of probable construction costs.

**750.3 Water Quality Basin Weir Structure.** Perform final design, drawings, specifications, and opinion of probable construction costs.

**Task 760 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Preliminary Design Specifications, Drawings, and Opinion of Probable Construction Costs
- Final Design Specifications, Drawings, and Opinion of Probable Construction Costs

**Task Deliverables:**

- Preliminary (60%) Structural Drawings, Technical Specifications, and Opinion of Probable Construction Costs

- Final Structural Drawings, Technical Specifications, and Opinion of Probable Construction Costs

**Key Understandings:**

- Main Dam Spillway Riser (5 sheets)
- Main Dam Stilling Basin (3 sheets)
- Water Quality Basin Weir (4 sheets)
- HDR Standard specifications will be used
- Water Quality Basin will be supported on shallow footings and base slabs. Pile-type foundations are not anticipated for this structure.
- Drawings will be produced in AutoCad (current version)

**TASK SERIES 800      MAIN DAM DESIGN**

**Task Objective:** Finalize the design of the main dam facilities, including final hydrologic and hydraulic investigations and modeling.

**HDR Activities:** **Task 810 Task Coordination.** Coordinate with NDNR and others on the main dam design.

810.1 **Coordination with NDNR.** Attend two (2) meetings with NDNR relevant to the main dam design. The preliminary scope/subject of these meetings is:

- **Preliminary Design Review Meeting.** Conduct meeting to review and discuss the Preliminary Design.
- **Final Design Review Meeting.** Conduct meeting to review and discuss the comments on the Pre-Bidding design.

810.2 **Coordinate with Other Tasks.** Coordinate with design tasks related to the design of the Damsite 15A project. This includes:

- Coordination of sanitary sewer, geotechnical, and structural design tasks.
- Coordinate phased construction of the project.

**Task 820 Data Collection.** NOT USED.

**Task 830 Basis of Design Memorandum.** See task 400

**Task 840 Refine Dam and Reservoir Design.** Refine the HEC-HMS model to finalize the principal spillway, auxiliary spillway and top of dam elevations. Incorporate grading plans into updated stage-storage curves. Complete final reservoir routing. Complete hydraulic analysis of principal spillway hydraulics using XP-SWMM to assess hydraulic characteristics within spillway conduit. Evaluate reservoir drawdown requirements. Perform wave runup analysis of dam embankment using NRCS criteria.

**Task 850 Preliminary (60%) Final Design**

850.1 **Preliminary Design.** Perform preliminary design of project elements required to incorporate data and understandings into the design documents for type, size, location, constructability; and other factors as identified. Elements include spillway plan and profile, wave erosion protection, drawdown and principal spillway conduits, slide and sluice gates, conduit bedding and strength design.

850.2 **Preliminary Technical Specifications.** Prepare preliminary (60%) technical specification sections as required for construction for inclusion into the Damsite 15A bid documents.

850.3 **Drawings.** Prepare preliminary (60%) drawings for inclusion into the Damsite 15A bid documents.

850.4 **Preliminary (60%) Opinion of Probable Construction Cost.** Estimate quantities and prepare a preliminary (60%) opinion of probable construction costs for the main dam elements based on the Preliminary (60%) Design.

**Task 860 Final Design**

- 860.1 Final Design. Perform final design required to complete Preliminary Design and incorporate into the Final Design.
- 860.2 Final Technical Specifications. Revise Preliminary specification sections as required for inclusion into the Final Specifications and inclusion into the Damsite 15A bid documents.
- 860.3 Final Drawings. Prepare final drawings for construction of the main dam elements for inclusion into the Damsite 15A bid documents.
- 860.4 Opinion of Probable Construction Cost. Estimate quantities and prepare a final opinion of probable construction costs for the main dam elements based on the Final Design.

**Task 870 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Preliminary Design Specifications, Drawings, and Opinion of Probable Construction Costs
- Final Design Specifications, Drawings, and Opinion of Probable Construction Costs

**Task Deliverables:**

- Preliminary (60%) Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Drawings, Technical Specifications, and Opinion of Probable Construction Costs

**Key Understandings:**

- Drawdown and Principal spillway conduits are reinforced concrete cylinder pipe
- Drawdown requirements based on NDNR standard criteria
- NDNR and NRCS design standards (TR-60) in reservoir routing analysis
- NRCS design standards used in conduit design
- NRCS design standards for wave runup analysis

**TASK SERIES 900 WATER QUALITY BASIN DESIGN**

**Task Objective:** Design of the water quality basin facility located along the future alignment of 180<sup>th</sup> St south of State St.

**HDR Activities:** **Task 910 Task Coordination.** Coordinate with NDNR and others on the water quality basin design.

- 910.1 Coordination with NDNR. Attend up to two (2) meetings with NDNR relevant to the water quality basin design (**assumed to be coincident with Main Dam meetings – no additional labor included under this task**). The preliminary scope/subject of these meetings is anticipated to be:
  - Preliminary Design Review Meeting. Conduct meeting to review and discuss the Preliminary Design.
  - Final Design Review Meeting. Conduct meeting to review and discuss the comments on the Pre-Bidding design.
- 910.2 Coordinate with Other Tasks. Coordinate with other design tasks related to the design of the Damsite 15A project. This includes:
  - Coordination geotechnical, structural, and 180<sup>th</sup> Street future embankment.
  - The phased construction of the project.

**Task 920 Data Collection.** NOT USED.

**Task 930 Basis of Design Memorandum.** See Task 400

**Task 940 Refine Hydraulic Design.** Refine the hydraulic design of the labyrinth weir structure. This will include dynamic modeling of water quality basin and coincident main dam pool analysis, required drawdown requirements, and evaluation of pool impacts on hydraulics at 180<sup>th</sup> St. and State St. existing structures.

#### **Task 950 Preliminary (60%) Final Design**

- 950.1 **Preliminary Design.** Perform preliminary design required to incorporate data and understandings into the design documents for type, size, location, constructability; and other factors as identified. Elements include grading of embankment, drawdown and gate, hydraulic transition, scour countermeasures.
- 950.2 **Preliminary Technical Specifications.** Prepare preliminary (60%) technical specification sections as required for construction of the water quality basin for inclusion into the Damsite 15A bid documents.
- 950.3 **Drawings.** Prepare preliminary (60%) drawings for construction of the water quality basin for inclusion into the Damsite 15A bid documents.
- 950.4 **Preliminary (60%) Opinion of Probable Construction Cost.** Estimate quantities and prepare a preliminary (60%) opinion of probable construction costs for the water quality basin based on the Preliminary (60%) Design.

#### **Task 960 Final Design**

- 960.1 **Final Design.** Perform final design required to complete Preliminary Design and incorporate into the Final Design.
- 960.2 **Final Technical Specifications.** Revise Preliminary water quality basin technical specification sections as required for inclusion into the Final Specifications and inclusion into the Damsite 15A bid documents.
- 960.3 **Final Drawings.** Prepare final drawings for construction of the water quality basin for inclusion into the Damsite 15A bid documents.
- 960.4 **Opinion of Probable Construction Cost.** Estimate quantities and prepare a final opinion of probable construction costs for the water quality basin based on the Final Design.

**Task 970 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Preliminary Design Specifications, Drawings, and Opinion of Probable Construction Costs
- Final Design Specifications, Drawings, and Opinion of Probable Construction Costs
- Preliminary (60%) Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Drawings, Technical Specifications, and Opinion of Probable Construction Costs

#### **Task Deliverables:**

#### **Key Understandings:**

- Water quality basin located adjacent to future 180<sup>th</sup> Street alignment
- City of Omaha hydraulic criteria used in assessing 186<sup>th</sup> St and State St impacts.

### **TASK SERIES 1000      SANITARY SEWER DESIGN**

#### **Task Objective:**

Complete the Final Design of the sewer improvements in the vicinity of the main dam as identified in the May 2012 Preliminary Design Report; prepare the required technical specifications and drawings for the sewer construction that will be included in a larger bid package for construction of the dam. This task contains all elements (survey, geotechnical, structural, sewer design) necessary for the sanitary sewer design. Execution of this task is contingent on the City's decision to include and fund this effort, and City and P-MRNRD approval for inclusion as part of the overall Damsite 15A final design effort.

#### **HDR Activities:**

**Task 1010 Project Coordination.** Project coordination will be provided with the City of Omaha Public Works Department and others as described above.



- 1010.1 Coordination with City of Omaha Public Works Department. Attend up to two (2) meetings with representatives from the City of Omaha Public Works Department relevant to the sanitary sewer design.

Preliminary Design Review Meeting. The scope of the meeting will be to:

- Review selected sanitary sewer alignments
- Review assumptions for depth of bury
- Review design method for calculating flows
- Review development assumptions for flows
- Review acceptable pipe materials
- Review design parameters of the siphon

Final Design Review Meeting. The scope of the meeting will be to:

- Review the plans and specifications for the sanitary sewer

- 1010.2 Coordinate with Other Tasks. Coordinate with other design tasks related to the design of the Dam Site 15A project. This includes:

- Coordination of sewer location with anticipated future pool limits.
- Potential settlement issues.
- The phased construction of the project.

**Task 1020 Data Collection.** Acquire data from City of Omaha Public Works Department as required for design of the sanitary sewer. This information shall include information on the existing sewer.

**Task 1030 Basis of Design Report.** See Task 400

**Task 1040 Preliminary (60%) Final Design**

- 1040.1 Preliminary Design. Perform preliminary design required to incorporate data and understandings into the design documents for alignment; profile; future flow projections and anticipated dates; hydraulic design of sewer and siphon; structural design of sewers, siphon, and structures; siphon design; materials; pipe embedment systems; constructability; and other factors as identified.
- 1040.2 Preliminary Technical Specifications. Prepare preliminary (60%) technical specification sections as required for construction of the sanitary sewer for inclusion into the Dam Site 15A bid documents.
- 1040.3 Drawings. Prepare preliminary (60%) drawings for construction of the sanitary sewer for inclusion into the Dam Site 15A bid documents. The following drawings will be prepared:
- Sewer plan and profile sheets (scale: 1"=50') (5 sheets)
  - Siphon structures & detail sheets (3 sheets)
  - Sewer and manhole detail sheets (2 sheets)
- 1040.4 Preliminary (60%) Opinion of Probable Construction Cost. Estimate quantities and prepare a preliminary (60%) Opinion of Probable Construction Costs for the sanitary sewer based on the Preliminary (60%) Design.

**Task 1050 Final Design**

- 1050.1 Final Design. Perform final design required to complete Preliminary Design and incorporate into the Final Design.
- 1050.2 Final Technical Specifications. Revise Preliminary sanitary sewer technical specification sections as required for inclusion into the Final Specifications and inclusion into the Dam Site 15A bid documents.
- 1050.3 Final Drawings. Prepare final drawings for construction of the sanitary sewer for inclusion into the Dam Site 15A bid documents.
- 1050.4 Opinion of Probable Construction Cost. Estimate quantities and prepare a final Opinion of Probable Construction Costs for the sanitary sewer based on the Final Design.

**Task 1060 Sanitary Geotechnical Design**

Geotechnical engineering analysis and design of sanitary sewer bedding and sanitary sewer siphon foundation design. Subsurface investigation includes 3 borings and associated laboratory testing for sanitary siphon structure.

**Task 1070 Sanitary Siphon Structural Design**

Prepare preliminary and final design of sanitary siphon structure.

**Task 1080 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- 1080.1 Preliminary Design Specifications, Drawings, and Opinion of Probable Construction Costs.
- 1080.2 Final Design Specifications, Drawings, and Opinion of Probable Construction Costs.

**Task 1090 Agency Review.** Submit the plans, technical specifications, and Basis of Design Report to the Nebraska Department of Environmental Quality (NDEQ) for the construction permit.

**Task Deliverables:**

- Preliminary (60%) Sanitary Sewer Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Sanitary Sewer Drawings, Technical Specifications, and Opinion of Probable Construction Costs, Legal
- Sanitary sewer easement/legal documentation

**Key Understandings:**

- City of Omaha Public Works Department will review and concur in the limits of the basin prior to the start of the design.
- City of Omaha Public Works Department will review and concur in the method of calculating the design flows prior to the start of design.
- Design will be based on City of Omaha Standard Specifications for Construction
- Sewer improvements extents include those in the immediate vicinity of the Damsite 15A embankment and Are as described in the May 2012 Preliminary Design Report.
- 3 borings estimated at approximately 200 lf total to be performed for siphon structure, with associated laboratory testing.
- Sanitary siphon structure assumed to be underground vault structure with manhole access (3 sheets)
- Slab foundation assumed for sanitary sewer siphon structure.
- This task contains all elements (survey, geotechnical, structural, sewer design) necessary for the sanitary sewer design. Execution of this task is contingent on the City's decision to include and fund this effort, and City and P-MRNRD approval for inclusion as part of the overall Damsite 15A final design effort.

**TASK SERIES 1100 IDA STREET BRIDGE AND ROADWAY DESIGN**

**Task Objective:** Perform preliminary design and final design calculations and plans for the proposed Ida Street Bridge and Roadway Improvements.

**HDR Activities:** **Task 1110 Project Coordination.** Project coordination will be provided with the City of Omaha and Douglas County.

**1110.1 Coordination with Agencies.** Meetings are included with P-MRNRD, MAPA, City of Omaha and Douglas County staff. Prior to beginning preliminary 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. Two meeting assumed with two HDR staff each, including agenda preparation and meeting notes.

- 1110.2 Coordinate with Utilities. Determine impacts and coordinate with appropriate utility companies for relocations. Two meeting assumed with two HDR staff each, including agenda preparation and meeting notes.
- 1110.3 Coordinate with Other Tasks. Coordinate with geotechnical design, horizontal and vertical alignments and recreational features for coordination of trail undercrossing grades. Coordination of geotechnical and potential settlement issues for Ida Street improvements and phased construction of the project.

**Task 1120 Data Collection.**

- 1120.1 Survey Coordination. Coordinate and prepare survey collected in Task 1720 for use in roadway and bridge design activities.
- 1120.2 Site Visit. Two site visits with two HDR staff for field observation to support the roadway and bridge design efforts.

**Task 1130 Basis of Design Memorandum. See Task 400**

**Task 1140 Preliminary (60%) Design**

- 1140.1 Preliminary Design. Perform preliminary design required to incorporate data and understandings into the design documents for type, size, and location; materials; constructability; and other factors as identified.
  - Ida Street Bridge Approaches. Design horizontal alignment consistent with proposed bridge design and develop the vertical alignment including the plan and profile.
  - Typical Grading Section. Coordinate with P-MRNRD, Douglas County and the City of Omaha to determine appropriate grading cross section to accommodate future roadway expansion. Two earthwork models will be required to determine project funding shares.
  - Roadway Modeling. Perform preliminary roadway modeling using AutoCAD Civil 3D design software.
  - Cross Section and Quantities. Develop preliminary cross sections, limits of construction and earthwork calculations.
- 1140.2 Preliminary Technical Specifications. Prepare preliminary (60%) technical specification sections as required for construction of the Ida Street bridge for inclusion into the Damsite 15A bid documents. Specifications for the bridge construction will be based on NDOR standards.
- 1140.3 Drawings. Prepare preliminary (60%) drawings for construction of the Ida Street bridge for inclusion into the Damsite 15A bid documents. Roadway drawings to include
  - o Typical Sections (1 sheet)
  - o Grading Plans (4 sheets)
  - o Cross-Sections (8 sheets @ 50' Intervals)
  - o Plan and Profile Sheets (scale 1"= 40') (3 sheets)
- 1140.4 Preliminary (60%) Opinion of Probable Construction Cost. Estimate quantities and prepare a preliminary (60%) Opinion of Probable Construction Costs for the Ida Street bridge based on the Preliminary (60%) Design.

**Task 1150 Final Design**

- 1150.1 Final Design. Perform final design required to complete Preliminary Design and incorporate into the Final Design.
  - Develop final design details, including:
    - o Horizontal Alignment and Survey Control Data
    - o Erosion Control Plan
    - o Construction, Removal and Drainage Build Notes
    - o Guardrail Plan and Details
  - Final Roadway Modeling Finalize the roadway modeling performed during preliminary design.

- 1150.2 Final Technical Specifications. Revise Preliminary Ida Street bridge technical specification sections as required for inclusion into the Final Specifications and inclusion into the Damsite 15A bid documents.
- 1150.3 Final Drawings. Prepare final drawings for construction of the Ida Street bridge for inclusion into the Damsite 15A bid documents.
- 1150.4 Opinion of Probable Construction Cost. Estimate quantities and prepare a final Opinion of Probable Construction Costs for the Ida Street bridge based on the Final Design.

**Task 1160 Quality Control.** Conduct independent review of design elements using appropriate Engineer senior staff. Reviews shall be conducted for:

- Preliminary Design Specifications, Drawings, and Estimate.
- Final Design Specifications, Drawings, and Estimate.

**Task Deliverables:**

- Preliminary (60%) Bridge and Roadway Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Bridge and Roadway Drawings, Technical Specifications, and Opinion of Probable Construction Costs

**Key Understandings:**

- Bridge will be an integral abutment prestressed concrete NU girder bridge. Alternate design will not be provided.
- Bents will consist of single row encased piles.
- Plans for the future bridge are not included.
- Aesthetic treatments are limited to tinting and form liners.
- Final construction drawings will be on "D" size sheets (22" x 34")
- NDOR standards and technical specifications for bridge constructions will be used.
- Bridge deck drainage will be collected at the approach slab at each end and discharged so as not to impact trail
- The proposed roadway improvement limits are as shown within the May 2012 DS-15A Preliminary Construction Plans, which consist of approximately 2,200 feet of existing pavement removal, grading to the ultimate Ida Street roadway section and construction of a two-lane, rural section asphalt roadway.
- No additional alternatives will be analyzed.
- Design criteria will follow Board of Classification standards for the State of Nebraska.
- This scope assumes that the P-MRNRD will own the properties on either side of the existing Ida Street right-of-way, or will have easements prepared as described in Task Series 1700.
- No sidewalk or trails will be designed or constructed along Ida Street with these improvements, and no access to the DS-15A recreational trail will be provided.
- No phasing of roadway construction – road will be closed to traffic for duration of construction
- No storm drainage systems for roadway runoff will be designed based on rural roadway section
- Utility relocation by Others.

**TASK SERIES 1200      BOAT ACCESS AND FISHERIES ENHANCEMENTS**

**Task Objective:** Complete the Final Design of the fishery enhancements to be included in the main reservoir and boat access as identified in the May 2012 Preliminary Design documents, prepare the required technical specifications and drawings for the enhancements to be included in a larger bid package for construction of the dam.

**HDR Activities:** **Task 1210 Project Coordination.** Project coordination will be provided with the Nebraska Game and Parks Commission on project elements partially funded by NGPC grant funding.

1210.1 **Coordination with NGPC.** Attend up to three (3) meetings with representatives from NGPC relevant to fishery enhancements. The preliminary scope/subject of these meetings is anticipated to be:

1210.1.1 **Review of Basis of Design.** Site visit with NGPC staff to review, discuss, and confirm the recommendations of the Preliminary Design.

1210.1.2 **Review of 60% plans.** Conduct a meeting to review 60% design elements.

1210.1.3 **Final Design Review meeting.** Review of final design plans prior to bid-letting.

**Task 1220 Basis of Design Memorandum.** See task 400

**Task 1230 60% Design.**

1230.1 Prepare 60% design of in-lake features, including boat ramp and dock for main reservoir pool.

**Task 1240 Final Design Documentation.**

1240.1 Prepare final design of in-lake features, including boat ramp and dock for main reservoir pool.

**Task Deliverables:**

- Preliminary (60%) Fishery Enhancement Design Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Fishery Enhancement Design Drawings, Technical Specifications, and Opinion of Probable Construction Costs

**Key Understandings:**

- Fishery enhancements are as described in May 2012 Preliminary Design Report, including boat access elements such as boat ramp facility, access roads serving boat ramp area, and parking adjacent to boat ramp.
- South (boat) access area will have asphalt access road off of Fort St. and concrete parking lot and boat ramp.

#### **TASK SERIES 1300 RECREATIONAL FEATURES**

**Task Objective:** Design of the recreational features for the North Access Area, South Access Area, and the pedestrian trail. Task 1310 includes 35% level of design for Community Park #26 located adjacent to the North Access Area. Execution of Task 1310 is contingent on the City's decision to include and fund this effort, and City and P-MRNRD approval for inclusion as part of the overall Damsite 15A final design effort.

**HDR Activities:** **Task 1300 Trail System and Basic Access Area Features.**

1300.1 **Basis of Design.** See Task 1100

1300.2 **Trail Design**

- Trail Modeling, Geometrics and Details – Prepared by subconsultant Vireo.
- Trail Drainage. Sizing and type of required trail drainage structures completed by HDR.

1300.3 **Access Area Features.**

Layout and design of proposed basic recreation features per PCWP agreement.

Subconsultant Vireo will lead design effort of:

- Picnic shelters and tables (1 facility at each access area)
- Vault restrooms (1 facility at each area)
- Trail benches, signage, markings

Layout and design of proposed basic recreation features per PCWP agreement.

HDR will lead design effort of:

- Roadway access to Northern Access Area from Ida Street
- Parking lot at Northern Access Area
- Lighting at North and South Access Areas parking lots
- Water service (one well at each Access Area)
- Pavement markings and signage
- Seeding Plan for access areas

1300.4 Technical Specifications. Technical specifications for access area recreational features.

**Task 1310 35% Design of Community Park Area #26**

1310.1 Preliminary Design (35%) of Community Park #26:

- Layout and grading of park features
- Rough mass grading plan of sports fields
- Preliminary design of sustainable opportunities (rain gardens, stormwater infiltration, etc.)
- Preliminary design of irrigation for sports field studying use of lake water as source

**Task Deliverables:**

- Preliminary (60%) Recreation Feature Design Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- Final Recreation Feature Design Drawings, Technical Specifications, and Opinion of Probable Construction Costs
- General Park #26 layout (35% level of design)
- Park # 26 structures and restrooms layout (35% level of design)
- Park #26 irrigation analysis and needs (35% level of design)
- Park #26 Opinion of Probable Construction Cost (35% level of design)

**Key Understandings:**

- Access area recreation features as described in May 2012 Preliminary Design Report.
- North access area will have asphalt road and concrete parking lot.
- Trail will be 10-ft concrete
- Execution of Task 1310 is contingent on the City's decision to include and fund this effort, and City and P-MRNRD approval for inclusion as part of the overall Damsite 15A final design effort.

**TASK SERIES 1400 NON-TECHNICAL SPECIFICATIONS (FRONT END DOCUMENTS)**

**Task Objective:** Prepare front-end specification for contract documents.

**HDR Activities:** Task 1410 Front-End Specifications. Prepare Division 00 – Bidding Requirements, Contract Forms and Conditions of the Contract and Division 01- General Requirements of the specifications.

1410.1 Front-End Specifications. Prepare draft and final Divisions 00 and 01 of the contract documents. EJCDC General Conditions will be used along with CSI 3-part format specifications. Bidding and General requirements related to NGPC funding will be incorporated into contract documents.

**Task Deliverables:**

- EJCDC contract documents will be used for the General Conditions

**Key Understandings:**

- Technical specifications preparation accounted for under each design element task.

**TASK SERIES 1500      60% DESIGN INDEPENDENT TECHNICAL REVIEW AND SUBMITTAL**

**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 Omaha, and Douglas County, a review meeting will be held.

**HDR Activities:**

**Task 1510 Independent Technical Review (ITR).** Independent Quality Control review to verify design complies with applicable standards, criteria and acceptable practices.

**Task 1520 Compile Submittal.** Compile construction drawing, specifications, and design documentation into a single deliverable.

**Task 1530 60% Design Review Meeting.** Conduct a design review meeting with P-MRNRD staff of 60% design drawings, documentation, and cost estimates.

**Task Deliverables:**

- 60% Design drawings, documentation, and cost estimates.

**Key Understandings:**

- Review meeting attended by 4 HDR professionals

**TASK SERIES 1600      PRE-FINAL DESIGN INDEPENDENT TECHNICAL REVIEW AND SUBMITTAL**

**Task Objective:**

Compile the various elements of the Project into a single deliverable and conduct final independent technical review. Following review by P-MRNRD, City of Omaha, and Douglas County, a review meeting will be held.

**HDR Activities:**

**Task 1610 Independent Technical Review (ITR).** Independent Quality Control review to verify design complies with applicable standards, criteria and acceptable practices.

**Task 1620 Compile Submittal.** Compile construction drawing, specifications, and design documentation into a single deliverable.

**Task 1630 Pre-Final Design Review Meeting.** Conduct a design review meeting with P-MRNRD staff of pre-final design drawings, documentation, and cost estimates

**Task Deliverables:**

- Pre-Final Design drawings, documentation, and cost estimates
- Final Drawings and Specifications.

**Key Understandings:**

- Review meeting attended by 4 HDR professionals

**TASK SERIES 1700      SURVEY AND RIGHT OF WAY**

**Task Objectives:**

Provide survey and right of way services in support of final design activities.

**HDR Activities:**

**Task 1710 Additional Field Survey** Topographic surveys for water quality basin, stream mitigation sites, and at boat ramp site.

**Task 1720 Ida Street Road Survey.** Conduct a detailed topographic survey of the proposed roadway/bridge corridor. Survey will extend 3000 ft eastward from approximately 180<sup>th</sup> Street to approximately 174<sup>th</sup> St and include a 300-ft wide corridor

along the proposed centerline of the road. Topographic survey of channel configuration at crossing will also be collected. North access area from Ida will also be surveyed.

**Task 1730 Boring Location Surveys** Survey bore hole locations for 6 borings for Ida Street bridge structure and 4 borings for the water quality basin.

**Task 1740 Boundary Survey of Project Lands.** Boundary map of total project lands, including easements, and metes and bounds description of NRD project lands as a single parcel.

**Task 1750 Legal Descriptions and Documentation.** Prepare legal descriptions and documentation (exhibit drawings and legal descriptions) for the following:

- Parcel acquisitions (23 Total)
- Stream Mitigation easement from P-MRNRD to USACE
- ROW dedication legal descriptions to include:
  1. 180<sup>th</sup> St – Ida Street to ROW acquisition limits
  2. HWS Cleveland – Fort to Ida Street
  3. Ida St (north and south side) – within ROW acquisition limits
  4. 186<sup>th</sup> St (east side) – within ROW acquisition limits
  5. State St (south side) – within ROW acquisition limits
  6. Volkmer access road – Ida street to ROW acquisition limits
  7. Fort St (north side) – within ROW acquisition limits

**Task 1760 Mark Proposed Acquisition Areas.** Stake proposed acquisition lines in field for review and set new property corners.

**Task Deliverables:**

- Topographic survey data for Water Quality basin site, channel and wetland mitigation areas, boat ramp.
- Topographic survey data for Ida Street
- Boring location survey data for Ida Street and Water Quality basin
- Boundary Survey of Project Lands
- Legal exhibits and documents as outlined

**Key Understandings:**

- Title commitments to be provided by NRD.
- P-MRNRD to submit and pay for documentation and recordation fees.

**TASK SERIES 1800 BIDDING SERVICES**

**Task Objectives:** To provide bidding assistance. For purposes of this scope development, it is assumed that one (1) bid package will be prepared.

**HDR Activities:** **Task 1810 Prepare Documents for Distribution.** Provide electronic copy of plans and specifications to reprographic firm for reproduction as the Issuing Agency. Coordinate distribution of contract documents to Plan Houses.

**Task 1820 Bid Phase Assistance.** Respond to technical questions from bidders.

**Task 1830 Addendum Preparation/Distribution.** Issue addenda as appropriate to interpret, clarify or expand Contract Documents and to respond to Contractor's questions.

**Task 1840 Pre-bid/Site Showing.** Attend pre-bid/site showing hosted by P-MRNRD. HDR to prepare agenda and record meeting notes. P-MRNRD to distribute record meeting notes.

**Task 1850 Bid Opening.** Attend bid opening, tabulate bidder's project costs and make a recommendation of award.



**Task Deliverables:**

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

**Key Understandings:**

- No mylars will be produced.
- P-MRNRD will coordinate and pay any fees with reprographic firm as issuing agent for contract documents and issuing addenda.
- P-MRNRD will be responsible for cost of reproduction of contract documents for plan house distribution, HDR and P-MRNRD.
- P-MRNRD will be responsible for advertising.
- P-MRNRD will be responsible for arranging pre-bid meeting room.
- Bid Phase assistance will be limited to responding to technical questions from bidders. An allowance of 60 hours has been provided for this effort. Formal responses will be communicated and coordinated by P-MRNRD.

WORKING  
COPY

## ATTACHMENT 1-A PRELIMINARY SHEET LIST

SHEET COUNT	SHEET NUMBER	TITLE 1	TITLE 2	TITLE 3
1	00-00	COVER, INDEX AND LOCATION MAP	FINAL COVER	
2	00-01	INDEX OF SHEETS AND	ABBREVIATIONS	
3	00-02	OVERALL	SITE PLAN	
4	00-03	GENERAL NOTES		
5	00-04	RESERVOIR	PLAN & DATA	
6	00-05	MAIN DAM	HYDROLOGIC AND HYDRAULICS DATA	
7	00-06	REMOVAL AND	ADJUSTMENTS PLAN	SHEET 01 OF 02
8	00-07	REMOVAL AND	ADJUSTMENTS PLAN	SHEET 02 OF 02
9	00-08	RIGHT-OF-WAY PLANS		SHEET 01 OF 04
10	00-09	RIGHT-OF-WAY PLANS		SHEET 02 OF 04
11	00-10	RIGHT-OF-WAY PLANS		SHEET 03 OF 04
12	00-11	RIGHT-OF-WAY PLANS		SHEET 04 OF 04
13	01-00	SWPPP	OVERALL SITE PLAN	
14	01-01	SWPPP	GENERAL NOTES & DETAILS	SHEET 01 OF 03
15	01-02	SWPPP	GENERAL NOTES & DETAILS	SHEET 02 OF 03
16	01-03	SWPPP	GENERAL NOTES & DETAILS	SHEET 03 OF 03
17	01-04	SWPPP	SANITARY SEWER	SHEET 01 OF 02
18	01-05	SWPPP	SANITARY SEWER	SHEET 02 OF 02
19	01-06	SWPPP	DAM & SPILLWAY	
20	01-07	SWPPP	WATER QUALITY BASIN	
21	01-08	SWPPP	IDA STREET	
22	01-09	SWPPP	RECREATIONAL TRAIL	SHEET 01 OF 04
23	01-10	SWPPP	RECREATIONAL TRAIL	SHEET 02 OF 04
24	01-11	SWPPP	RECREATIONAL TRAIL	SHEET 03 OF 04
25	01-12	SWPPP	RECREATIONAL TRAIL	SHEET 04 OF 04
26	01-13	SWPPP	STREAM & WETLAND MITIGATION SITES	
27	02-01	SANITARY SEWER	PLAN AND PROFILE	SHEET 01 OF 05
28	02-02	SANITARY SEWER	PLAN AND PROFILE	SHEET 02 OF 05
29	02-03	SANITARY SEWER	PLAN AND PROFILE	SHEET 03 OF 05
30	02-04	SANITARY SEWER	PLAN AND PROFILE	SHEET 04 OF 05
31	02-05	SANITARY SEWER	PLAN AND PROFILES	SHEET 05 OF 05
32	02-06	SANITARY SEWER	GENERAL DETAILS	SHEET 01 OF 02
33	02-07	SANITARY SEWER	GENERAL DETAILS	SHEET 02 OF 02
34	02-08	SANITARY SEWER	SIPHON STRUCTURAL DETAILS	SHEET 01 OF 03
35	02-09	SANITARY SEWER	SIPHON STRUCTURAL DETAILS	SHEET 02 OF 03
36	02-10	SANITARY SEWER	SIPHON STRUCTURAL DETAILS	SHEET 03 OF 03
37	03-01	SEQUENCING PLAN	SHEET 01 OF 02	
38	03-02	SEQUENCING PLAN	SHEET 02 OF 02	
39	03-03	MAIN DAM	GEOMETRICS PLAN	
40	03-04	MAIN DAM	SECTION ALONG PRINCIPAL SPILLWAY	
41	03-05	MAIN DAM	PROFILES AND TYPICAL SECTIONS	
42	03-06	MAIN DAM	GRADING PLAN	SHEET 01 OF 02
43	03-07	MAIN DAM	GRADING PLAN	SHEET 02 OF 02
44	03-08	MAIN DAM	SITE PLAN	
45	03-09	MAIN DAM	CIVIL DETAILS	SHEET 01 OF 02
46	03-10	MAIN DAM	CIVIL DETAILS	SHEET 02 OF 02
47	03-11	PRINCIPAL SPILLWAY RISER STRUCTURE	STRUCTURAL DETAILS	SHEET 01 OF 05
48	03-12	PRINCIPAL SPILLWAY RISER STRUCTURE	STRUCTURAL DETAILS	SHEET 02 OF 05
49	03-13	PRINCIPAL SPILLWAY RISER STRUCTURE	STRUCTURAL DETAILS	SHEET 03 OF 05
50	03-14	PRINCIPAL SPILLWAY RISER STRUCTURE	STRUCTURAL DETAILS	SHEET 04 OF 05
51	03-15	PRINCIPAL SPILLWAY RISER STRUCTURE	STRUCTURAL DETAILS	SHEET 05 OF 05
52	03-16	IMPACT STILLING BASIN	STRUCTURAL DETAILS	SHEET 01 OF 03
53	03-17	IMPACT STILLING BASIN	STRUCTURAL DETAILS	SHEET 02 OF 03
54	03-18	IMPACT STILLING BASIN	STRUCTURAL DETAILS	SHEET 03 OF 03
55	03-19	SITE BORINGS, GEOLOGIC PROFILE	AND INSTRUMENTATION PLAN	SHEET 01 OF 02
56	03-20	SITE BORINGS, GEOLOGICAL PROFILE	AND INSTRUMENTATION PLAN	SHEET 02 OF 02
57	04-01	WATER QUALITY BASIN	180TH STREET EMBANKMENT GRADING PLAN	
58	04-02	WATER QUALITY BASIN	HYDROLOGIC AND HYDRAULICS DATA	
59	04-03	WATER QUALITY BASIN	SITE PLAN AND GEOMETRICS	
60	04-04	WATER QUALITY BASIN	GRADING PLAN, BORING PLAN & GEOLOGIC PRF	
61	04-05	WATER QUALITY BASIN	TYPICAL SECTION & DRAWDOWN PROFILE	
62	04-08	WATER QUALITY BASIN	WEIR STRUCTURE DETAILS	SHEET 01 OF 04
63	04-09	WATER QUALITY BASIN	WEIR STRUCTURE DETAILS	SHEET 02 OF 04
64	04-10	WATER QUALITY BASIN	WEIR STRUCTURE DETAILS	SHEET 03 OF 04
65	04-11	WATER QUALITY BASIN	WEIR STRUCTURE DETAILS	SHEET 04 OF 04
66	05-01	FISHERIES ENHANCEMENTS	GRADING PLAN	SHEET 01 OF 03
67	05-02	FISHERIES ENHANCEMENTS	GRADING PLAN	SHEET 02 OF 03

68	05-03	FISHERIES ENHANCEMENTS	GRADING PLAN	SHEET 03 OF 03
69	05-04	FISHERIES ENHANCEMENT	DETAILS	SHEET 01 OF 02
70	05-05	FISHERIES ENHANCEMENT	DETAILS	SHEET 02 OF 02
71	06-01	IDA STREET	TYPICAL SECTIONS	
72	06-02	IDA STREET	CENTERLINE CONTROL	
73	06-03	IDA STREET	DEMOLITION & CONSTRUCTION PLAN	SHEET 01 OF 03
74	06-04	IDA STREET	DEMOLITION & CONSTRUCTION PLAN	SHEET 02 OF 03
75	06-05	IDA STREET	DEMOLITION & CONSTRUCTION PLAN	SHEET 03 OF 03
76	06-06	IDA STREET	PLAN & PROFILE	SHEET 01 OF 03
77	06-07	IDA STREET	PLAN & PROFILE	SHEET 02 OF 03
78	06-08	IDA STREET	PLAN & PROFILE	SHEET 03 OF 03
79-87	06-09 THRU 06-17	IDA STREET	CROSS SECTIONS	9 SHEETS
88	06-18	IDA STREET	GRADING PLAN @ TRAIL CROSSINGS	SHEET 01 OF 02
89	06-19	IDA STREET	GRADING PLAN @ TRAIL CROSSINGS	SHEET 02 OF 02
90	06-20	IDA STREET	DRAINAGE PLAN & DETAILS	
91	06-21	IDA STREET	ROADWAY DETAILS	
92	06-22	IDA STREET	NORTH ACCESS AREA GRADING, DRAINAGE & UTILITIES PLAN	
93	06-23	IDA STREET	NORTH ACCESS SITE PLAN	
94	06-24	IDA STREET	NORTH ACCESS ENTRANCE PLAN & PROFILE	
95	06-25	IDA STREET	NORTH ACCESS ENTRANCE TYPICAL SECTIONS	
96	06-26	IDA STREET	NORTH ACCESS ENTRANCE DETAILS	
97	07-01	IDA STREET BRIDGE	GENERAL NOTES, QUANTITIES & INDEX	
98	07-02	IDA STREET BRIDGE	GENERAL PLAN & ELEVATION	
99	07-03	IDA STREET BRIDGE	GEOLOGICAL PROFILE & PILE LAYOUT	
100	07-04	IDA STREET BRIDGE	ABUTMENT DETAILS	
101	07-05	IDA STREET BRIDGE	ABUTMENT DETAILS	
102	07-06	IDA STREET BRIDGE	ABUTMENT DETAILS & BILL OF BARS	
103	07-07	IDA STREET BRIDGE	BENT DETAILS	
104	07-08	IDA STREET BRIDGE	BENT DETAILS & BILL OF BARS	
105	07-09	IDA STREET BRIDGE	GIRDER LAYOUT & BEARING DETAILS	
106	07-10	IDA STREET BRIDGE	GIRDER DETAILS	
107	07-11	IDA STREET BRIDGE	SLAB REINFORCING PLAN	
108	07-12	IDA STREET BRIDGE	TYPICAL SECTION & SLAB DETAILS	
109	07-13	IDA STREET BRIDGE	SLAB DETAILS	
110	07-14	IDA STREET BRIDGE	CONCRETE PARAPET DETAILS	
111	07-15	IDA STREET BRIDGE	PIPE HANDRAIL DETAILS	
112	07-16	IDA STREET BRIDGE	SLOPE PROTECTION DETAILS	
113	07-17	IDA STREET BRIDGE	APPROACH SLAB DETAILS	
114	07-18	IDA STREET BRIDGE	BILL OF BARS	
115	08-01	SOUTH ACCESS AREA	HWS CLEVELAND ENTRANCE TYPICAL SECTIONS	
116	08-02	SOUTH ACCESS AREA	HWS CLEVELAND ENTRANCE PLAN & PROFILE	SHEET 01 OF 02
117	08-03	SOUTH ACCESS AREA	HWS CLEVELAND ENTRANCE PLAN & PROFILE	SHEET 02 OF 02
118-126	08-04 THRU 08-12	SOUTH ACCESS AREA	HWS CLEVELAND ENTRANCE CROSS SECTIONS	9 SHEETS
127	08-05	SOUTH ACCESS AREA	GRADING, DRAINAGE & UTILITIES PLAN	
128	08-06	SOUTH ACCESS AREA	SITE PLAN	
129	08-07	SOUTH ACCESS AREA	TYPICAL SECTION	
130	08-08	SOUTH ACCESS AREA	JOINTING PLAN	
131	08-09	SOUTH ACCESS AREA	DETAILS	
132	08-10	SOUTH ACCESS AREA	BOAT RAMP DETAILS	
133	08-11	SOUTH ACCESS AREA	BOAT ACCESS DOCK DETAILS	
134	08-12	SOUTH ACCESS AREA	BOAT ACCESS DOCK DETAILS	
135	08-13	SOUTH ACCESS AREA	BOAT ACCESS DOCK DETAILS	
136 - 155	09-01 THRU 09-20	RECREATIONAL TRAIL	PLAN & PROFILE W/ DRAINAGE & GEOMETRICS	19 SHEETS
156	09-18	RECREATIONAL TRAIL	DETAILS	
157	10-01	VOLKMER PROPERTY ACCESS ROAD	PLAN & PROFILE	
158	10-02	VOLKMER PROPERTY ACCESS ROAD	TYPICAL SECTION	
159	11-01	STREAM MITIGATION PLAN	ALIGNMENT	
160	11-02	STREAM MITIGATION PLAN	GRADING PLAN	
161	11-03	STREAM MITIGATION PLAN	DETAILS & TYP. SECTIONS	
162	11-04	STREAM MITIGATION PLAN	SEEDING PLAN	
163	11-05	WETLAND MITIGATION PLAN	GRADING PLAN	
164	11-06	WETLAND MITIGATION PLAN	SEEDING PLAN & DETAILS	
165	12-01	SEEDING AND FENCING	SEEDING PLAN	SHEET 01 OF 03
166	12-02	SEEDING AND FENCING	SEEDING PLAN	SHEET 01 OF 03
167	12-03	SEEDING AND FENCING	SEEDING PLAN	SHEET 03 OF 03
168	12-04	SEEDING AND FENCING	FENCING PLAN	SHEET 01 OF 03
169	12-05	SEEDING AND FENCING	FENCING PLAN	SHEET 01 OF 03
170	12-06	SEEDING AND FENCING	FENCING PLAN	SHEET 03 OF 03
171	12-07	SEEDING AND FENCING	FENCING & GATING DETAILS	

**ATTACHMENT 2**  
**PAPO-MISSOURI RIVER NATURAL RESOURCES DISTRICT**  
**FINAL DESIGN OF DAMSITE 15A**  
**FEE ESTIMATE - AUGUST 1, 2012**

TASKS	HDR Engineering, Inc. Estimated Hours/Costs										Expenditures					HQR		Est. Total Cost
	Project Manager	Specialist	Team Staff	Mid-Level	Junior	Task Support	Critical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Time Expenses (1)	Totals	Sub-Consultant Estimated Costs		
																E&A	Video	
TASK SERIES 100 PROJECT MANAGEMENT																		
Task 110	Project Management	10						200	\$24,000	\$1,400	\$500	\$200		\$1,000	\$2,400	\$0	\$7,700	
Task 111	Coordination Meetings	30						30	\$4,500	\$200					\$4,700	\$0	\$5,100	
Task 112	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 113	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 114	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 115	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 116	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 117	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 118	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 119	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 120	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 121	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 122	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 123	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 124	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 125	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 126	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
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Task 180	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 181	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
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Task 207	Final Design Review	6						6	\$900	\$175					\$1,075	\$0	\$1,075	
Task 208	Final Design Review	6						6	\$90									

ATTACHMENT 2  
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT  
FINAL DESIGN OF DAMSITE 15A  
FEE ESTIMATE - AUGUST 1, 2012

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**ATTACHMENT 2**  
**PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT**  
**FINAL DESIGN OF DAMSITE 15A**  
**FEE ESTIMATE - AUGUST 1, 2012**

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(1) Includes administrative fee for expenses (except techn. fee) ☐