

Agenda Item: 12.

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Martin P. Cleveland

SUBJECT: Big Papio Creek Levee (Q Street to Harrison Street) – Ralston Creek Outlet Drainage Structure Professional Services

DATE: June 7, 2012

The Big Papio Creek right bank levee (west side of creek) between Q Street and Harrison Street in Omaha, NE includes the Ralston Creek outlet drainage structure. This twin 84 inch diameter corrugated metal pipe structure conveys Ralston Creek thru the right bank Big Papio Creek Levee. The corrugated metal pipe (CMP) was installed as part of the levee project over 35 years ago. Ralston Creek drains much of Ralston, NE area east of 84th Street. See enclosed location map.

District staff noticed during a routine post rainfall event inspection of drainage structures that the Ralston Creek Outlet culvert appears to be in failure mode, in that it has deflected considerably in vertical direction, started to buckle at the pipe invert and pipe top and is now egg shaped versus the original round shape. The 84 inch (7 ft.) diameter round pipe now measures about 5.6 ft. vertical and 7.9 ft. horizontal and has deflected (compressed) 20% vs. the metal pipe industry allowable deflection standard of 4%. Enclosed are some photos of the pipes that show this deflection.

As a result of the extreme deflection in the referenced drainage structures and potential of total collapse in near future, it is recommended that the replacement of these pipes be fast-tracked and completed before December 2012. District staff planned to replace the structure with metal pipe, but consulted with Corps of Engineers levee safety staff about the current design requirements for the pipe replacement, as this levee is in the Corps Public Law 84-99 flood damage cost share program. The Corps staff indicated that this pipe must be replaced with concrete pipe or concrete box due to the urban location, in order to keep the levee in the Corps PL 84-99 program. As a result of this information, it is recommended that an engineering consultant be hired as soon as feasible to start the multiple months of design, approvals, bidding of construction and installation. The District typically hires consultants to design concrete pipe/box drainage structure projects due to more complexity than corrugated metal pipe design and construction that the District has performed with District staff.

Staff has evaluated local engineering consultants for qualifications to complete the design/permitting/construction administration process has concluded that E & A Consulting Group is best qualified to handle the project in timely fashion. Enclosed is a proposed professional services contract for your consideration. The maximum not to exceed amount of \$43,500 is beyond Management \$20,000 approval limit and would normally trigger a Request for Proposals process including proposal preparation, interviews, etc. by the Board and typically takes 4 months to complete. In the interest of completing this project before December 2012, it is Management recommendation that the RFP process be bypassed and that a professional services contract be awarded to E & A Consulting Group.

Management recommends that the Programs, Projects and Operation Subcommittee recommend to the Board of Directors that the General Manager be authorized to execute the proposed Professional Services Contract with E & A Consulting Group for the Ralston Creek Outlet Drainage Structure Project with the maximum not to exceed amount of \$43,500, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.



Google earth

Eye alt 4066 ft

Imagery Date: 3/7/2012 1993
© 2012 Google
BNSF Railroad
Big Papio Trail
41°12'06.80"N 96°01'07.47"W elev 997 ft

Big Papio Creek Levee - Ralston Creek Outlet Drainage Structure
Looking north at twin 84 inch diameter pipe inlets

May 2012

Big Papio Creek Levee



Big Papio Creek Levee - Ralston Creek Outlet Drainage Structure
Looking east towards pipe inlets
May 2012

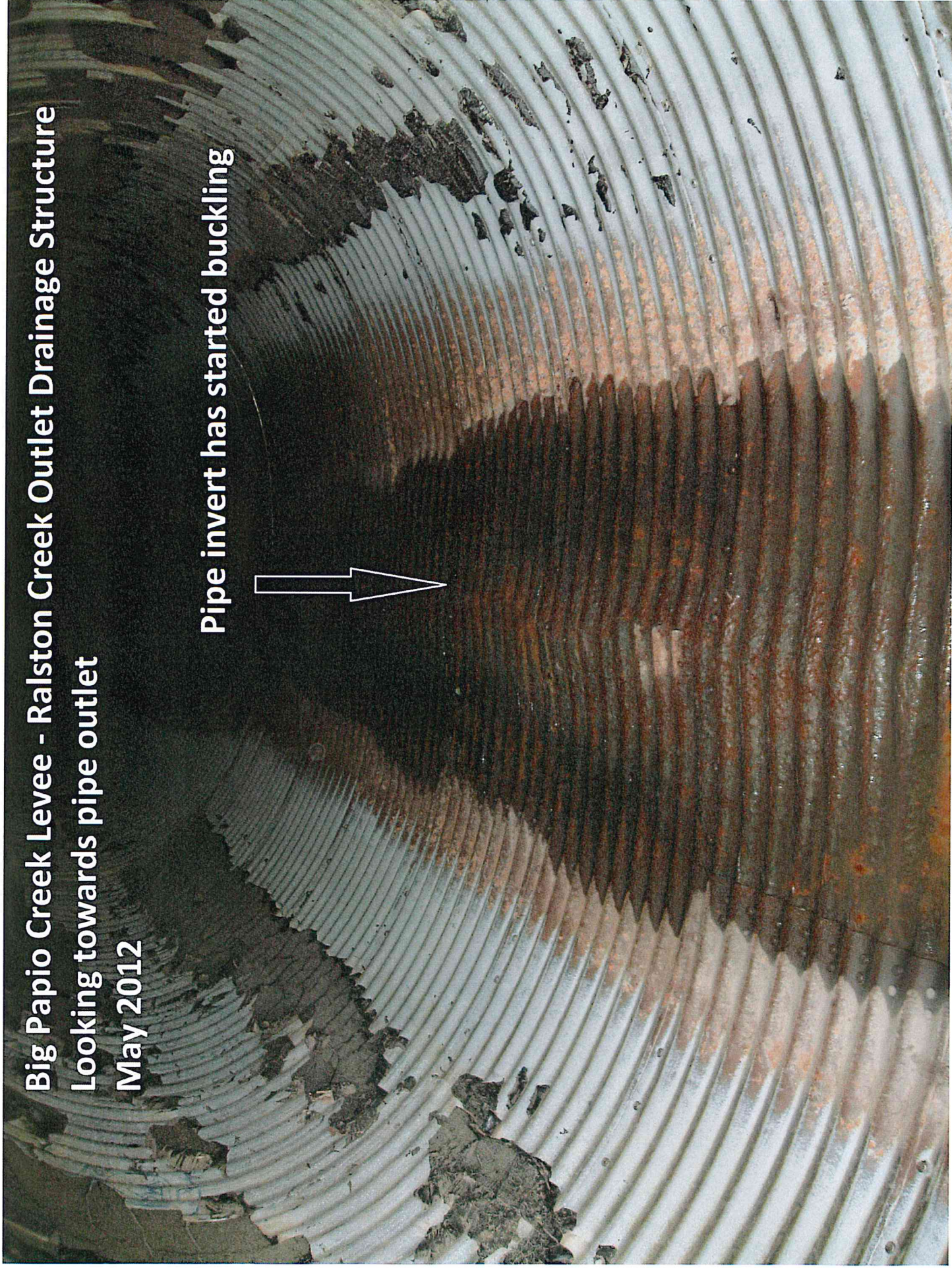


Big Papio Creek Levee - Ralston Creek Outlet Drainage Structure

Looking towards pipe outlet

May 2012

Pipe invert has started buckling



Big Papio Creek Levee - Ralston Creek Outlet Drainage Structure

Looking towards pipe outlet/floodgate

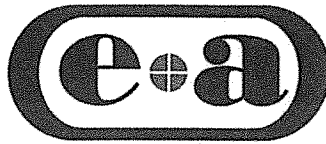
May 2012



Top of pipe is starting to buckle

Pipe was 84 inch (7 ft.) tall before deflection





Engineering Answers

E & A CONSULTING GROUP, INC.

ENGINEERING • PLANNING • ENVIRONMENTAL & FIELD SERVICES

330 NORTH 117TH STREET
OMAHA, NE 68154-2509

www.eacg.com

PHONE: 402.895.4700
FAX: 402-895-3599

June 5, 2012

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

RE: Professional Engineering & Surveying Services Proposal/Agreement
Ralston Creek Outlet Drainage Structure Replacement
Ralston, NE
E & A Project No. M2012.285.001

Dear Mr. Cleveland:

E&A is pleased to present you with this proposal to provide professional engineering and surveying services on the referenced replacement project. As we discussed, the existing structure is a twin 84 inch diameter corrugated metal pipe structure, approximately 150 feet long, with floodgates under the right bank of the Big Papillion Levee between "Q" Street and BNSF's railroad line east of 72nd Street. The existing pipes have deflected and, by your account, currently measure approximately 5.6 feet vertically and 7.9 feet horizontally, show evidence of buckling at both top and bottom portions of the pipe, and exhibit substantial amounts of rust and loss of section. In short, the existing structure appears to be close to the end of its service life, after providing satisfactory service for the better part of forty years. It is your desire to expedite its replacement, hopefully prior to the end of this year, and it is our charge to assist you in that effort. With a clear focus on this project directive, it is imperative that project design commence as soon as possible, that efforts be expended to abbreviate the time normally required to secure agency clearance or permits, and yet ample time is budgeted to advertise, bid and construct the project to standards.

E&A has assembled a qualified team that will respond to demands of this project. I will serve as project manager and lead structural engineer. Mr. Paul Gonzales of our office will provide our project team with hydrologic analysis and hydraulic design, based on information supplied by your office. Mr. Bob Lapke, of Thiele Geotechnical, will provide our team with geotechnical engineering services – soil borings and geotechnical recommendations relative to the replacement structure's design and construction requirements. Mr. Joe Beveridge, of Solid Ground Environmental L.L.C., will provide environmental services for the project enroute to obtaining agency clearance and the necessary permits. E&A's construction administration department, managed by Mr. Randy Pierce, will provide timely construction observation services and will review and advise the PMR NRD relative to construction pay requests. Mr. Eric Schaben of our office, will provide survey support services on the project both at the preliminary stage (supplemental topographic surveying) and during the construction phase (construction staking). In short, our project team will provide your office with all the services required on this project from design commencement through project close-out.

The professional services that E&A's project team will provide the PMR NRD on the Ralston Creek Outlet Drainage Structure Replacement Project is as follows:

1. Survey topographic work as necessary and as needed to supplement existing survey information that the PMR NRD currently has and will make available to our project team.
2. Soil borings, sufficient in number and depth, will be obtained at carefully selected project site locations. Materials from these borings will be evaluated and recommendations for both the structural design of the replacement structure and its actual construction will be provided in a geotechnical report issued specifically for this project.
3. After obtaining the current hydrology model (HEC-HMS) and hydraulic model (HEC-RAS) from your office, we will schedule a preliminary meeting with the USACE to determine project design and permitting requirements. We will then evaluate current land use and runoff patterns within the Ralston Creek watershed and modify hydrologic drainage characteristics accordingly. E&A will prepare a preliminary drainage report summarizing land use, drainage patterns, times of concentration, significant stormwater detention areas and the resulting peak runoff rates and volumes generated for 2-year, 10-year, 50-year and 100-year storm events at Ralston Creek's confluence with the Big Papillion Creek. E&A will modify the existing hydraulic model to evaluate flow depths and velocities of the Ralston Creek's channel at its confluence with the Big Papillion Creek, both for existing and proposed design conditions. Once a design has been selected by the PMR NRD, E&A will then summarize its findings in a final drainage report that will highlight the same issues as the preliminary drainage report but tailored to fit your office's final design preference.
4. E&A will provide environmental services through its subconsultant, Solid Ground Environmental L.L.C.. For purposes of this proposal, it has been assumed that the USACE will require a Nationwide Permit, that no wetland mitigation will be required, and that there will be no impact on either endangered species or their habitat. Accordingly, our services will include the preparation of a Jurisdictional Determination Report (describing the purpose, scope and results of the tributary characterization and the wetland delineation), the preparation of a Nationwide 404 Permit, and will include the submittal of both to the USACE for their review and approval. Throughout this process, our team will coordinate with the USACE to insure that the permitting process moves forward with minimal delays. Our team will also apply for any floodplain development permits that may be required by the municipality and will draft Section 7 correspondence letters regarding threatened or endangered species and their habitat for the PMR NRD's review and concurrence prior to forwarding it to the USFWS and the NGPC. It is also assumed, for purposes of this proposal, that the project will not negatively impact any listed species or listed species' associated habitat.
5. E&A will develop preliminary replacement plans, including approximate costs, and will present those plans (including a possible alternate if one is attractive for a cost/benefit standpoint) to the PMR NRD for review and approval. Once the preliminary plans have been review by and a selection has been made by the PMR NRD, E&A will initiate final design of the replacement structure based on use of the system selected by your office. Final design documents, including plans and special provisions and an engineer's cost estimate, will be provided by E&A to your office. The PMR NRD will prepare bid documents, advertise the project, open bids and award the project. During the bid phase, E&A will answer Contractor's questions and will issue addendums if warranted. E&A, at the direction of the PMR NRD, will assist in reviewing bids, compiling bid tabulations and providing the PMR NRD with recommendations relative to selection.

June 5, 2012
Mr. Martin Cleveland
Page 3

6. E&A will provide construction staking for the Contractor and will provide construction observation during critical project phases – excavation and sub-base preparation, reinforcement placement and concrete pours. E&A will also review Contractor pay applications and make payment recommendations. Our staff will be available to answer any field questions and will respond quickly to requests for information. Our staff will also conduct a final walk-through, develop a final punch-list of unacceptable items and we'll follow-up to warrant the satisfactory complete of all items included on the punch-list.

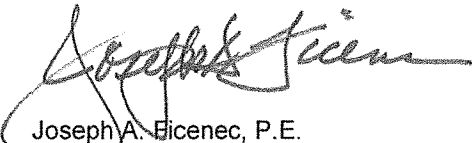
Based on the aforementioned scope of services, E&A proposes to provide all project services to the Papio-Missouri River Natural Resources District on a per hourly basis, using our standard rates for personnel engaged in the project, and will maintain an aggregate ceiling not to exceed \$43,500.00. Should the scope of services changes from what has been proposed, we would expect to negotiate an adjustment.

E&A maintains general and professional liability insurance and will, upon request, furnish your office with a copy of that insurance.

This proposal, along with the attached Appendices "A" & "B" & "C", serves as the project's proposal to provide professional services and will, once it's been properly signed by your office, serve as our agreement on this project, binding our firm with your organization as obligated and defined herein. Our receipt of the signed original will also serves as your authorization for us to proceed with services as agreed upon.

We look forward to working with the PMR NRD on this project and are prepared to being work immediately after receiving your authorization. If you have any questions or comments, please contact me.

Sincerely,
E & A CONSULTING GROUP, INC.



Joseph A. Eicene, P.E.
Project Manager and Manager of Structural Engineering

Accepted (Signature): _____ Date: _____

(Printed): _____

CC: File

Appendix "A"

Terms and Conditions

1.01 Basic Agreement

Engineer shall provide, or cause to be provided, the services set forth in this Agreement, and Client shall pay Engineer for such Services as set forth in the proposal for services.

2.01 Invoicing

Engineer will prepare a monthly invoice in accordance with Engineer's standard invoicing practices and submit the invoice to Client. Invoices are due and payable within 30 days of receipt. If Client fails to make any payment due Engineer for services and expenses within 30 days after receipt of Engineer's invoice, the amounts due Engineer will be increased at the rate of 1.5% per month from said thirtieth day. In addition, Engineer may, without liability, after giving seven days written notice to Client, suspend services under this Agreement until Engineer has been paid in full all amounts due for services, expenses, and other related charges. Payments will be credited first to interest and then to principal.

3.01 Additional Services

If authorized by Client, or if required because of changes in the Project, Engineer shall furnish services in addition to those set forth above. Client shall pay Engineer for such additional services as follows: For additional services of Engineer's employees engaged directly on the Project an amount equal to the cumulative hours charged to the Project by each class of Engineer's employees times standard hourly rates for each applicable billing class; plus reimbursable expenses and Engineer's consultants' charges, if any.

4.01 Termination

- A. The obligation to provide further services under this Agreement may be terminated:
 - 1. For cause:
 - (a) By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the Agreement's terms through no fault of the terminating party.
 - (b) By Engineer:
 - (i) Upon seven days written notice if Engineer believes that Engineer is being requested by Client to furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or
 - (ii) Upon seven days written notice if the Engineer's services for the Project are delayed or suspended for more than 90 days for reasons beyond Engineer's control.
 - (iii) Engineer shall have no liability to Client on account of such termination.
 - (c) Notwithstanding the foregoing, this Agreement will not terminate as a result of a substantial failure under paragraph 4.01.A.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure and proceeds diligently to cure such failure within no more than 30 days of receipt of notice; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.
 - 2. For convenience by Client effective upon the receipt of notice by Engineer.
 - 3. The terminating party under paragraphs 4.01.A.1 or 4.01.A.2 may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Project site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

5.01 Controlling Law

This Agreement is to be governed by the law of the state in which the Project is located.

6.01 Successors, Assigns, and Beneficiaries

A. Client and Engineer each is hereby bound and the partners, successors, executors, administrators, and legal representatives of Client and Engineer (and to the extent permitted by paragraph 6.01.B the assigns of Client and Engineer) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators, and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Client nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

7.01 General Considerations

A. The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with Engineer's services. Engineer and its consultants may use or rely upon the design services of others, including, but not limited to, contractors, manufacturers, and suppliers.

B. Engineer shall not at any time supervise, direct, or have control over any contractor's work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, for safety precautions and programs incident to a contractor's work progress, nor for any failure of any contractor to comply with laws and regulations applicable to contractor's work.

C. Engineer neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work in accordance with the contract between Client and such contractor.

D. Engineer shall not be responsible for the acts or omissions of any contractor, subcontractor, or supplier, or of any contractor's agents or employees or any other persons (except Engineer's own employees) at the Project site or otherwise furnishing or performing any of construction work; or for any decision made on interpretations or clarifications of the construction contract given by Client without consultation and advice of Engineer.

E. All design documents prepared or furnished by Engineer are instruments of service, and Engineer retains an ownership and property interest (including the copyright and the right of reuse) in such documents, whether or not the Project is completed.

F. To the fullest extent permitted by law, Client and Engineer:

1. Waive against each other, and the other's employees, officers, directors, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to the Project, and
2. Agree that Client shall indemnify, defend, and save Engineer harmless from and against any liability, claim, judgment, demand, or cause of action arising out of or relating to:
 - (a) Client's breach of this Agreement;
 - (b) The negligent acts or omissions of Client or its employees, contractors or agents;
 - (c) Any allegation that Engineer is the owner or operator of a site or arranged for the treatment, transportation or disposal of hazardous materials including the adverse health effects thereof, and
 - (d) Site access or damage to any subterranean structures or any damage required for site access.

G. Where the services included the preparation of plans and specifications and/or construction oversight activities for Client, agree that Client will have its construction contractors agree in writing to indemnify and save harmless Engineer from and against loss, damage, injury or liability attributable to personal injury or property damage arising out of or resulting from such contractor's performance or non-performance of their work.

H. Agree that Engineer's total liability to Client under this Agreement shall be limited to \$50,000 or the total amount of compensation received by Engineer, whichever is less. All claims by Client shall be deemed relinquished unless filed within one (1) year after substantial completion of the Services.

I. The parties acknowledge that Engineer's scope of services does not include any services related to a Hazardous Environmental Condition (the presence of asbestos, PCBs, petroleum, hazardous substances or waste, and radioactive materials). If Engineer or any other party encounters a Hazardous Environmental Condition, Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until Client:

J. Retains appropriate specialist consultants or contractors to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and

K. Warrants that the Site is in full compliance with applicable Laws and Regulations.

L. Unless specifically identified otherwise in the scope of services of this agreement, it is the responsibility of the Client to obtain all permits and approvals required by law. The Engineer may assist the Client in applying for those permits and approvals for an additional fee; however such services are not included in the basic services of this Agreement.

8.01 Total Agreement

This Agreement constitutes the entire agreement between Client and Engineer and supersedes all prior written or oral understandings.

Appendix "B"

Project Schedule

Task/Month	June-12	July-12	August-12	September-12	October-12	November-12
Topo Survey						
Geotechnical Services						
Hydrology & Hydraulics						
Preliminary Structural Design						
PMR NRD Design Review						
Final Structural Design						
Environmental Services						
USACE Reg. Review & Permitting						
USACE Readiness Review						
PMR NRD Bid Document Preparation						
Advertise Project (Bid 9/12)						
Award Project & Mobilize						
Construct Project						

Legend: ——— Task Activity
 - - - - - Update per review

Appendix "C"

Project Phasing Costs & Personnel Rates

Project Phasing Costs:

Survey:		
	Topographic (pick-up):	\$1,200.00
	Construction Staking:	1,200.00
Geotechnical:		
	Exploration & Report:	\$3,737.50
Environmental:		
	Field Services, Report/s, Permitting:	\$4,600.00
H&H Services:		
	Design & Reports:	\$10,000.00
Structural Design & Drafting Services:		
	Design:	\$7,560.00
	Drafting:	\$1,400.00
Construction Field Services:		
	Observation/Oversight:	\$8,256.00
	Pay Requests & Misc.:	1,300.00
Miscellaneous Services:		
	Meetings:	\$3,166.50
	Administration & QA/QC:	\$1,080.00
	Total:	\$43,500.00

E&A Personnel Hourly Rates (See Note Below):

Joe Ficenec, Proj. Mgr. & Structural Engr.:	\$135.00
Paul Gonzales, H&H Proj. Engr.:	\$125.00
Randy Pierce, Construction Engr. Mgr.:	\$130.00
Alex Kotrotsios, Const. Oversight Engr.:	\$64.00
Terry Lempka, CAD Tech.:	\$50.00

Note: The personnel rates listed above include an overhead factor of 1.70 and a profit factor of 1.12 applied to base salaries