



**Jordan
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INCORPORATED

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April 8, 1997

Mr. Troy Ledbetter
Big Canoe Property Owners Association
Wolf Scratch Village
Big Canoe, GA 30413

RE: Proposal for Civil and Geotechnical Engineering Services
Petit Lake Dam Evaluation
Big Canoe, Georgia

Dear Mr. Ledbetter:

Jordan, Jones & Goulding, Inc. (JJ&G) and Piedmont Geotechnical Services are pleased to present this proposal for engineering services in connection with the above referenced project. Our Proposal is based on our brief reconnaissance visit of July 23, 1996, and discussions with yourself. The primary purpose of this visit was to observe potential deficiencies with this structure cited in the Georgia Department of Natural Resources, Safe Dams Program letter dated April 15, 1996. This proposal briefly describes our observations, and outlines a sequenced approach to addressing concerns related to this project.

The April 15, 1996, letter from Safe Dams noted several potential deficiencies. Those related to engineering primarily involved seepage concerns, and possible deficiencies with the principal spillway system. Our brief observations on July 23, 1996 generally confirm the unexplained existence of fairly broad areas of apparent seepage on the downstream slope between the first and second berms, counting from the bottom up. The dam has numerous outlets of corrugated metal pipe at and beyond the headwall for the low level discharge drain that are likely associated with the original construction of the dam. In addition, several plastic pipe outlets were observed draining into the concrete ditch on the first berm from the bottom. There is no specific information provided to us at this time that indicates the purpose of these plastic drains. We suspect they may have been added after the original dam construction. The principal spillway concerns related to possible problems associated with cracks and erosion of the surface protection near the control section of the spillway, and potential seepage beneath the spillway weir wall. Other associated concerns observed during our brief reconnaissance include the potential age of the corrugated metal internal drainage system and possible leakage into the joints of the concrete low level drain pipe.

SCOPE OF WORK

As an initial step in our involvement in this project, we recommend that a visual inspection report issued based on the observations of July 23, 1996, to specifically address those items contained in the Safe Dams letter based strictly on this visual evaluation. In essence, this would be a summary of the observations and discussions which have taken place to date.

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The next step in the evaluation of this dam that we would recommend would be a through review of any available design and historic information concerning this project. This would include, but not necessarily be limited to, the original design drawings for the dam, which we understand were engineered approximately 25 years ago, the completed files of the Georgia Safe Dams Program, and possible information contained in the files of the Big Canoe office in charge of maintaining the dam. Any supplementary evaluations from the original design that are known to have occurred should also provide information that may be reviewed. We have also included another visit to the site to perform a more through reconnaissance of the specific areas of concern. During this phase of effort, we would also suggest that Safe Dams be requested to perform an internal examination of the interior of the low level drain pipe. Big Canoe maintenance personnel will also be requested to attempt to flush the outlet pipes from the various drains to determine if improved flow conditions result. Previously installed observation wells which may exist on this dam should also be located and repaired, as necessary, to provide additional information concerning the phreatic surface through the dam.

ADDITIONAL SERVICES

After these two initial stages have been completed, it may become necessary to perform a more diligent evaluation of the apparent seepage problem. While no specific scope is appropriate at this time, since the review of available information and flushing of the toe drains may resolve the concerns, those additional studies may include installation of additional monitoring wells and possible construction of supplemental filtered internal drainage systems. Modifications to the original drains may necessitate a reassessment of slope stability if changes in the originally intended phreatic surface result. Again, these follow-up evaluations can only be determined after the review of available information has been completed.

INFORMATION TO BE FURNISHED BIG CANOE PROPERTY OWNERS ASSOCIATION

- As-built drawings of original dam construction and any subsequent toe drains installed.

SCHEDULE

It is our understanding that this project will commence in May, 1997 with the completion date with 4-5 weeks dependent upon scheduling an Safe Dams Program inspection and Big Canoes maintenance activities. Our workload is such that our key staff will be available in May and June to successfully complete this project. If there are protracted delays for reasons beyond our control, we would expect to negotiate with you an equitable adjustment of our compensation and completion date.

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FEES TO BE PAID TO JJ&G

JJ&G will accomplish the above Scope of Work on an hourly basis with a maximum upper limit of \$ 6,200.00. Because the exact scope of work is somewhat uncertain at this time, we will review our scope of work with you prior to any Additional Services being accomplished.

Direct expenses such as printing, reproduction, postage, deliveries, travel, CAD expenses, and word processing will be reimbursed at cost. We will bill you monthly for services rendered and reimbursable expenses. Big Canoe Property Owners Association will pay our invoices within 30 days of receipt.

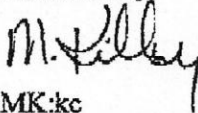
This proposal and the attached agreement for Engineering Services, consisting of one page, represents the entire understanding between our firms in respect to this project and may only be modified in writing signed by both parties.

If you find this scope and fee acceptable, please indicate acceptance of this agreement by signing and returning one copy for our files. Thank you for this opportunity, and we anticipate, with pleasure, working with you on this project.

Very truly yours,

JORDAN, JONES & GOULDING, INC.

J. Mark Kilby



JMK:kc

Enclosure

cc: Ms. Kathy Webb
Karl Myers

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