

**CONTRACT DOCUMENTS AND SPECIFICATIONS**  
**FOR THE**  
**LAKE LEMON - LAKE ENHANCEMENT PROJECT**  
**AREAS: 1A, 1C, AND 3B**

**Biotechnical Shoreline Stabilization**

**BY THE**  
**LAKE LEMON CONSERVANCY DISTRICT**

**January, 1998**

**CONSERVANCY DISTRICT OFFICIALS**

<b>Larry Ritter</b>	<b>Chairman</b>
<b>Alan McNabb</b>	<b>Vice-Chairman</b>
<b>Larry Polley</b>	<b>Director</b>
<b>Gene McClarney</b>	<b>Director</b>
<b>Tom Sparks</b>	<b>Director</b>
<b>Dave Ison</b>	<b>Director</b>
<b>Bud Howard</b>	<b>Treasurer</b>

**Commonwealth**  
**Biomonitoring, Inc.**

CERTIFIED BY: 

James R. Schwomeyer  
Indiana P.E. No. 600009080

DATE: 1-30-98

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**PART 1**

**ADVERTISEMENT FOR BIDS**

**ADVERTISEMENT FOR BIDS**  
**LAKE LEMON CONSERVANCY DISTRICT**

**LAKE LEMON SHORELINE STABILIZATION LAKE ENHANCEMENT PROJECT**

**AREAS: 1A, 1C, AND 3B**

**Division A: Rip Rap Revetment with Geotextile and Tree Planting Areas 1A and 3B**  
**Division B: Coir Log and Blanket Soft Armoring with Tree Planting Area 1C**

**NOTICE IS HEREBY GIVEN** that the Lake Lemon Conservancy District of Monroe and Brown Counties, Indiana, by and through its Board of Directors, hereinafter referred to as the OWNER, will receive sealed proposals for the construction of the LAKE LEMON SHORELINE STABILIZATION LAKE ENHANCEMENT PROJECT, AREAS 1A, AND 3B: DIVISION A: RIP RAP REVETMENT WITH TREE PLANTING CONTRACT AND DIVISION B: AREA 1C COIR LOG AND BLANKET SOFT ARMORING WITH TREE PLANTING CONTRACT, in Monroe County, Indiana.

Sealed proposals are invited and may be forwarded by registered mail, addressed to the Lake Lemon Conservancy District in care of Robert Madden, Lake Manager, or delivered in person to the bid opening, and will be considered by the Owner at a public meeting called to receive and open such proposals not later than 5:00 P.M. (local time) on Thursday, April 16, 1998, at 1900 S. Henderson Street, Bloomington, Indiana 47401. Proposals received after said time will be returned unopened.

A prebid meeting will be held at 2:00 P.M. (local time) on Thursday, April 9, 1998, at the Lake Lemon Shelter House, at Riddle Point, located at the end of North Tunnel Road, near the LLCDC Headquarters on Lake Lemon. All prime contractors, subcontractors, small, minority or women business enterprises and other interested parties are invited to attend.

The Lake Shafer Lake Enhancement Project, Areas 1A and 3B: Division A: Rip Rap revetment with tree planting and Division B: Coir Log and Blanket Soft Armoring with Tree Planting Contract, will be constructed under two (2) separate contracts defined and outlined as follows:

- A. Division A: Areas 1A and 3B, Rip Rap Revetment with Tree Planting Contract:

The dressing of the shoreline to a 2:1 slope, and placement of rip-rap over a geotextile with trees planted to reforest the shoreline;

- B. Division B: Area 1C, Coir log and coir blanket soft armoring installation with tree planting.

The installation of two courses of coir logs to serve as a wave break and slope toe protection, the installation of coir blanket to serve as slope protection, and the planting of hydrophytic trees and shrubs to re-establish vegetation on Area 1C.

Bidders may elect to bid on one or both Divisions (combination bid) in order to provide the Owner with the most cost effective bid price. Bidders that elect to bid on both Divisions shall submit a separate letter with the bid indicating the amount of deduct that will be made if the bidder is awarded both Divisions "A" and "B" contracts.

Plans and Specifications for the Project are on file and may be examined at the following locations:

- ▶ Commonwealth Biomonitoring, Inc. Indianapolis, Indiana
- ▶ Lake Lemon Conservancy District Unionville, Indiana
- ▶ City of Bloomington Utilities Bloomington, Indiana

Copies of the Specifications may be obtained from Commonwealth Biomonitoring, Inc., at 7256 Company Drive, Indianapolis, Indiana, 46237 upon payment of a non-refundable fee of One Hundred Dollars (\$100.00) in the form of a check or money order made payable to Commonwealth Biomonitoring, Inc. Requests for Specifications must also include a return street address; post office box numbers are not acceptable. Partial sets of Specifications are not available. Copies of any and all addenda which may be issued for this Project will be included with the purchased documents and will be forwarded to all Plan and Specification holders.

The work to be performed and the proposal to be submitted shall include sufficient and proper sums for all General Construction, Mechanical Installation, Labor, Materials, Tools, Equipment, Taxes (both Federal and State), Permits, Licenses, Insurance, Service Costs, and so forth incidental to and required for the construction of the improvements.

Each proposal must be enclosed in a sealed envelope bearing the title of the Project and the name and address of the Bidder. All proposals must be submitted on the proposal forms as identified in the Contract Documents and Specifications.

Each proposal shall be accompanied by a certified check or acceptable bidder's bond made payable to the OWNER, in a sum of not less than five percent (5%) of the total amount of the highest aggregate proposal, which check or bond will be held by the OWNER as evidence that the bidder will, if awarded the Contract, enter into the same with the OWNER upon notification from him to do so within ten (10) days of said notification.

Approved performance bond guaranteeing faithful and proper performance of the work and materials, to be executed by an acceptable surety company, will be required of the Contractor at the time he executes his contract. The bonds will be in the amount of 100% of the Contract Price and must be in full force and effect throughout the term of the Construction Contract plus a period of 12 months from the date of substantial completion.

The OWNER reserves the right to reject any proposal as may be deemed necessary or in the best interest of the OWNER, and to waive any and all informalities in bidding. Any proposal may be withdrawn prior to the above scheduled time for the opening of proposals or authorized postponement thereof. Any proposal received after the time and date specified will not be considered. NO proposal may be withdrawn after the scheduled closing time for receipt of bids for at least ninety (90) days.

In addition, the Lake Lemon Conservancy District reserves the right to reduce or eliminate portions of the projects to stay within the funds allocated for this work.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Project throughout.

Proposals shall be properly and completely executed on Indiana Form 96, included in the Specifications. Proposals shall include all information requested by Indiana Form 96 (Revised, 1987). Under Section III of Form 96 the Bidder shall submit a financial statement. A copy of the proposed Financial Statement to be submitted with the Bid is included in the Bid Proposal Documents Section of these Specifications. The OWNER may make such investigations as deemed necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any Bid if the evidence submitted by, or investigation of such Bidder fails to satisfy the OWNER that such Bidder is properly qualified to carry out the obligations of the Agreement and to complete the work contemplated therein.

Each Bidder is responsible for inspecting the Project site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to its Bid.

This Project has no established wage scales.

Any Contract awarded under this Advertisement for Bids is expected to be funded locally by the OWNER, in conjunction with the Indiana Department of Natural Resources, and the City of Bloomington Utilities.

#### LAKE LEMON CONSERVANCY DISTRICT

\_\_\_\_\_  
/S/ Larry Ritter, Chairman

ATTEST: \_\_\_\_\_  
/S/ Alan McNabb, Vice Chairman

DATED: \_\_\_\_\_

**PART 2**

**INFORMATION FOR BIDDERS**

**PART 2**  
**INFORMATION FOR BIDDERS**

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## PART 2

### INFORMATION FOR BIDDERS

#### **1. Definitions**

**Owner:** The Owner shall mean the Lake Lemon Conservancy District (LLCD). The Owner will be represented by and through its duly elected or appointed governing board or authorized agent.

**Engineer/Agent:** The Engineer/Agent; Commonwealth Biomonitoring, Inc. or their authorized Agent.

**Contractor:** The person, firm, partnership or corporation to whom the contracts are awarded by the Owner, and who is subject to the terms thereof.

**Contract Documents:** The Contract Documents shall consist of the Specifications, Agreement, Performance Bond, Payment Bond, Notice of Award, Notice to Proceed, Contract Change Orders, the Plans and all Addenda issued thereto by Commonwealth Biomonitoring, Inc.

#### **2. Scope of Work**

Bids are to cover the furnishing of labor and materials for constructing and making ready for use, the structures, equipment, piping, appurtenances, vegetation, and other works described in these Specifications and Plans, attached hereto and as further incidental or necessary for the entire satisfactory and enduring completion of each division bid upon, including the protection of all property traversed or approached.

There are two (2) divisions included in these plans and specifications. Division A is for the Areas 1A and 3B Rip Rap shoreline revetment, and Division B is for the Area 1C coir bioengineered soft armoring Contract. The bidder has the right to bid both divisions or just one of the two, however.

#### **3. Bidder's Responsibilities**

Bidders shall carefully examine the entire site of the work, the adjacent premises and the various means of approach to the site, and shall make all necessary investigations to acquaint themselves thoroughly with the facilities for delivering, placing and operating the necessary construction plant, for delivering and installing the equipment specified, for handling materials at the site, and as to all difficulties that may be encountered in the complete execution of all work under the attached contracts, in accordance with the Plans and Specifications. Bidders shall examine the Specifications and Plans and any other data which may be purchased from the Engineer for examination by bidders.

No plea of ignorance of conditions that exist, or of conditions or difficulties that may be encountered in the execution of the work under this contract, as a result of failure to make the necessary examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail the requirements of

said contract, specifications, plans or will be accepted as a basis for any claim for extra compensation.

Upon application, all available information in the possession of the Engineer will be shown to the bidders. No information obtained from any officer, agent, or employee of the Owner shall in any way affect the risk or obligation assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

When evaluating the Division A, Rip Rap Revetment Contract, the Bidder shall account for excavating utilizing long reach equipment. The factors to be used in this evaluation shall include, but not be limited to:

- a. Access to the sites
- b. Proposed bank slope
- c. Placement of rip-rap
- d. Planting of trees and shrubs
- e. Finish grading for revegetation above the rip-rap
- f. Trenching in geotextiles and erosion control blanket

#### 4. **Bid Requirements**

Bidders are requested to carefully study and conform to the provisions of the Information for Bidders in order that their bid as submitted be regular, complete and acceptable. All proposals must be executed on the separate copies of the Proposal Forms provided with these Contract Documents and Specifications purchased from the Engineer. The proposals must be legibly written in ink or typed with all prices given in words and figures.

In case of discrepancy between the written words and the figures, the written words shall govern. In case of unit price proposals, the bidder shall fill in the unit price bid for each item and in addition thereto make an extension based on the estimated quantities. In case of incorrect totaling of amounts or where the unit bid price and the extension do not agree, the unit price shall in all cases govern in arriving at the correct extension and/or total for the purpose of comparing bids.

The Owner may consider as informal any proposal on which there is an alteration of or departure from the prescribed form. A conditional or qualified Bid or Proposal may not be accepted.

Each proposal shall be enclosed in a sealed envelope, clearly marked with the name of the project, and contract division, if applicable, in order to guard against opening prior to the time set therefor, and addressed in the manner indicated in the proposal form. The bidder shall also place his firm name and address on the outside of the envelope.

Each proposal must be signed in ink by the bidder with his full name and with his business address or place of residence. The legal status of the bidder, that is, as a corporation, partnership or an individual, must be stated in the proposal. In the case of a partnership, the name and residence of each member must be inserted, and in the case the proposal is submitted by, or on behalf of, a corporation, it must be signed in the name of such corporation by an official who is authorized to bind the bidder, and who shall also affix the

corporate seal of such corporation. Such officer or agent must present legal evidence that he has lawful authority to sign such proposal, that the signature is binding upon the corporation and that the corporation has legal existence. In the event any corporation, organized and doing business under the laws of any State other than Indiana, is the successful bidder, such corporation, before a contract for said work is executed, shall present evidence that it is authorized to do business in the State of Indiana.

Any person signing a proposal as the agent of another, or of others, shall have attached thereto a power of attorney evidencing authority to sign in the name of the person for whom it is signed.

The title of the person executing the proposal or contract shall be clearly indicated beneath his signature.

Erasures or other changes with bids must be explained or noted over the signature of the bidder.

Proposals may be withdrawn at any time previous to the time for receiving and opening bids. No proposals may be withdrawn for a period of time as specified in these specifications without the consent of the Owner and/or forfeiture of the bid security to the Owner.

## **5. Bid Security**

Unless otherwise set forth in the "Advertisement for Bids", the bid must be accompanied by a bid guaranty which shall not be less than 5 percent of the amount of the bid, and at the option of the bidder may be a certified check, bank draft, or a bid bond. No bid will be considered unless it is so guaranteed. The certified check or bank draft must be made payable to the order of the Owner. Cash deposits will not be accepted. The bid guaranty shall insure the execution of the contract and the furnishing of both performance and payment bonds by the successful bidder as specified in the Contract Documents. In the case the bid guaranty is in the form of a certified check or bank draft, the Owner will return same to the unsuccessful bidder as soon as practicable after the opening of bids and the determination of the low bidder.

In the event that the party to whom the contract is awarded shall fail or neglect to execute the contract and furnish a satisfactory bond within twenty (20) days after the Owner has notified him that the contract is ready for execution, the Owner may determine that the bidder abandoned the contract and thereupon the proposal and acceptance shall be null and void, and the security accompanying the proposal shall be forfeited to and retained by the Owner as liquidated damages for such failure and neglect, and to indemnify the Owner for any loss which may be sustained by failure of the bidder to execute the contract and furnish bond as aforesaid. After the execution of the contract and the acceptance of the bond by the Owner, the bid securities which have been retained by the Owner shall be returned to the respective bidders.

The Contractor shall include in his bid price or prices the cost of all insurance set forth in these Specifications.

**6. Bidder's Proposal**

The bid shall be completely executed on Form 96 (Revised 1987) as contained in the Bid Proposal Documents Section of the Specifications. In addition, as a part of complying with Section III of Form 96, the Bidder shall completely execute and submit with this bid the Financial Statement, included with these Specifications.

The Owner shall have the right to take such steps as it deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The right is reserved to reject any bid where an investigation of the evidence or information submitted by such bidder does not satisfy the Owner that the bidder is qualified to carry out properly the terms of the Contract Documents.

**7. Exemption from Indiana Sales Tax**

Attention of the bidders is called to the fact that the Owner is exempt from the Indiana Gross Retail Tax Act (sales tax). All materials incorporated as a material or integral part of construction work for the State, County, Township, Municipality, its agencies and instrumentalities are exempt from this tax. The authorized person will furnish upon request to the successful bidder any needed information for purposes of filling-out the Exemption Certificate form.

It is not a blanket exception but it provides that only the purchase of tangible personal property used by the Owner may be purchased exempt from sales tax. The Contractor shall apply for an "Exemption Certificate for Construction Contractors", Form ST-134, Indiana Department of Revenue.

The bidder shall include in all prices offered the cost of all Federal, State and Local income taxes and all taxes imposed on materials and equipment, whether it be sales tax, processing tax or any other form of tax whatsoever with the exception of the above referenced Indiana Sales Tax.

**8. Laws**

Each bidder must familiarize himself with all laws, ordinances and regulations, whether Federal, State or Local, which by reason of being neglected or violated may affect the work contemplated and must secure and pay the fees required for any permits which may be necessary.

Each and every provision by law and clause required by law to be inserted in this contract, shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein. If through a mistake or otherwise any such provision that is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

**9. Award of Contract and Rejection of Bids**

An award of contract will be made to the low, responsive, responsible bidder.

In determining the low, responsive, responsible bidder, the Owner reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the Owner. Unbalanced bids will be regarded with disfavor. The Owner may elect to make a tentative award of contract to the low, responsive, responsible bidder(s) pending the sale of bonds or the completion of other financing arrangements. In such event and upon successful completion of the necessary arrangements to fund the total cost of the project, the Owner and the successful bidder to whom the tentative award has been made shall enter into a written contract at the price stated in the proposal and as specified; provided that the elapsed time from the date of the receipt of bids, as required by these specifications, has not expired. The time for execution of the written contract may be extended beyond the period set forth in these Specifications, if such time extension is mutually agreeable to the Owner and the successful bidder. This mutually agreeable extension must be done at no additional cost to the Owner.

In the determination of the low, responsive, responsible bidder, the Owner reserves the right to take into account and give reasonable weight to the following factors:

- 1.) The extent of the bidder's experience on work of the nature involved.
- 2.) The bidder's record as to dependability in the carrying out of other contracts.
- 3.) The probability of the contract being carried to successful completion within the time specified by the methods and with the equipment the bidder proposes to use.
- 4.) Does he have a suitable financial status to meet his obligations.

**10. Performance Bond, Payment Bond and Execution of Contracts**

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when the Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Contract and Bond forms.

The successful bidder shall furnish both a Performance Bond and Payment Bond, each in the amount of <sup>100%</sup> 10 percent of the Contract Price, with a Surety approvable by the Owner. Copies of the form of bonds are included in the Contract Documents. Attorneys-in-fact who sign the Performance and Payment Bonds must file with each bond a certified and effective dated copy of their power of attorney. 

In the case of failure of the bidder to execute the Contract and furnish said Performance Bond and Payment Bond within said time, the Owner may at his option consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.

The Owner within ten (10) days of receipt of acceptable Performance Bond, Payment Bond and Contract signed by the party to whom the Contract was awarded shall sign the

Contract and return to such party an executed duplicate of the Contract. Should the Owner not execute the Contract within such period, the bidder may by written notice withdraw his signed Contract. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed may be issued to the Contractor within ten (10) days after the signing of the Construction contract. Should there be reasons why the Notice to Proceed cannot be issued within such period, then the time may be extended by mutual agreement between the Owner and the Contractor.

The Contractor must also furnish to the Owner, with the execution of a contract, a Certificate of Insurance issued by the insurer qualified to do business in the State of Indiana, certifying that he is covered by Workmen's Compensation in accordance with statutory requirements and by insurance against public liability and property damage sufficient to cover any claims which may arise out of performance of the work under the proposed contract.

**11. Time for Completion and Liquidated Damages**

The Contractor shall commence work on or before the date specified in the written "Notice to Proceed" from the Owner and shall fully complete the project within the time specified in the Specifications.

For every calendar day that full completion is delayed beyond the time specified, a specified sum shall be paid by the Contractor to the Owner and it is hereby agreed by both parties that such costs and expenses represent liquidated damages caused by the delay of completion.

The time limit in number of calendar days from the date of the Notice to Proceed and the amount to be charged as liquidated damages shall be as set out in these Specifications.

In estimating the time necessary for completing the job, allowance has been made, so far as possible, for all the ordinary delays and hindrances incidental to such work, i.e. weather, delays in securing materials, workmen or otherwise.

**12. Completion of Plans and Specifications**

Upon issuance to prospective bidders, the physical make-up and content of the plans, specifications and contract documents is intended to be complete for preparing and submitting of a proposal. However, each bidder shall verify to his own satisfaction that all material issued to him is indeed complete. Should he discover that a page, sheet, etc. is missing he shall notify the Engineer in writing and it will be forwarded to him. After bids have been submitted, no claims of ignorance of these requirements of bidding or of construction due to such missing or overlooked material will be recognized.

**13. Interpretations**

In general, no answer will be given in reply to an oral question if the question involves an interpretation of the intent or meaning of the drawings or contract documents, or the equality or use of products or methods other than those definitely designated or described

on the plans or in the specifications. Any information given to the bidders other than by means of the plans and contract documents or by addenda as described below is given informally and shall not be used as the basis of a claim against the Owner or the Engineer.

To receive consideration, such questions shall be submitted in writing to the Owner at least seven days before the advertised date for receipt of bids. If the question involves equality or use of products or methods, it must be accompanied by drawings, specifications, or other data, in sufficient detail to enable the Owner to determine the equality of suitability of the product or method. In general the Owner will neither approve nor disapprove particular products prior to the opening of bids; such products will be considered when offered by the Contractor for incorporation into the work.

The Owner will arrange as addenda, which shall become a part of the contract, all questions received as above provided with his decision regarding each. At least five days prior to the receipt of bids, he will send a copy of those addenda to each of those who have taken out the plans and contract documents.

Unless such action shall have been taken by the Contractor and approval obtained, he agrees to use the product or method designated or described in the specifications as amended by these addenda.

Each bidder shall acknowledge receipt of all addenda issued, by number, on his proposal form.

#### **14. Local Features and Underground Information**

The attention of the bidders is directed to the information given on the plans or shown in the Specifications relating to soundings and borings, materials encountered, ground water, subsurface conditions and existing pipes, conduits and other structures. This information is from the best available sources presently available to the Owner. All such information and the plans of the existing construction are furnished only for the information and convenience of the bidder.

It is agreed and understood that the Owner does not warrant or guarantee that the materials, conditions, and pipes or other structures encountered during construction will be the same as those indicated by the boring samples or by the information given on the drawings or in the Contract Documents. The bidder must satisfy himself regarding the character, quantities, and conditions of the various materials and the work to be done. It further is agreed and understood that the bidder or the Contractor will not use any of the information made available to him or obtained in any examination made by him in any manner as a basis or ground of claim or demand of any variance which may exist between the information offered and the actual materials or structures encountered during the construction work, except as may otherwise be provided for in the Contract Documents.

It is further understood and agreed that the bidder or the Contractor will not use any information made available to him or obtained by any examination made by him in any manner as a basis or ground of claim or demand of any nature against the Owner or Engineers, arising from or by reason of any variance which may exist between the information offered and the actual materials and structures encountered during the construction work.

15. **Modification Prior to Bid Opening**

The right is reserved, as the interest of the Owner may require, to revise or amend the specifications and/or drawings prior to the date set for opening bids. Such revisions and amendments, if any, will be announced by an addendum or addenda to the Contract Documents.

Copies of such addenda as may be issued will be furnished to all prospective bidders. If the revisions and amendments are of a nature which requires material changes in quantities or prices bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of the Owner's Engineer will enable bidders to revise their bids. In such case, the addendum will include an announcement of the new date for opening bids.

16. **Wage Scales**                      **NOT APPLICABLE**

17. **Safety and Health Regulations for Construction**

The successful bidder shall be responsible for all obligations prescribed as employer obligations under Chapter XVII of Title 29, Code of Federal Regulations for Construction, OSHA (PL 91-596) and the Contract Work Hours and Safety Standards Act (PL 91-54).

All questions regarding compliance and enforcement, as well as requests for the regulations, should be directed to the Department of Labor.

18. **Responsibility of the Contractor**

Attention here is particularly directed to the provisions of the Contract whereby the Contractor shall be responsible for any loss or damage which may occur during process of the work or any part thereof, and also whereby the Contractor shall make good any faulty work or material which becomes evident within twelve months after its substantial completion, unless otherwise specified elsewhere herein.

19. **Items to be Submitted with Bid**

The bidder shall submit as a part of his bid the following:

- A. Contractors Bid and Bid Schedule (A and/or B) - completely executed and signed. (Executed) Indiana State Bid Form No. 96 (Revised, 1987), completely signed and executed.
- B. Non-Collusion Affidavit - Completely executed, signed and notarized (Standard Form 96 Revised, 1987)
- C. Bid Bond - acceptable bidder's bond or certified check in the amount of not less than five (5%) percent of the total bid price.
- D. Financial Statement for Bidders - completely signed and executed.

**PART 3**

**GENERAL CONDITIONS**

GENERAL CONDITIONS

- |                                                 |                                               |
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1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:

1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications, or corrections.

1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER - Any person, firm, or corporation submitting a BID for the WORK.

1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments of surety, furnished by the CONTRACTOR and the CONTRACTOR'S surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS - The contract, including Advertisement For Bids, Information For BIDDERS, BID, BID BOND, Agreement, Payment BOND, Performance BOND, NOTICE OF Award, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

(Rev. 12-15-88)

- 1.9 CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- 1.10 CONTRACTOR - The person, firm, or corporation with whom the OWNER has executed the Agreement.
- 1.11 DRAWINGS - The parts of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.
- 1.12 ENGINEER - The person, firm, or corporation named as such in the CONTRACT DOCUMENTS.
- 1.13 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.14 NOTICE OF AWARD - The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.
- 1.15 NOTICE TO PROCEED - Written communication issued by the OWNER to the CONTRACTOR authorizing him/her to proceed with the WORK and establishing the date for commencement of the WORK.
- 1.16 OWNER - A public or quasi-public body or authority, corporation, association, partnership, or an individual for whom the WORK is to be performed.
- 1.17 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.18 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.
- 1.19 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUB-CONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.
- 1.20 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.21 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.22 SUBSTANTIAL COMPLETION - That date certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.
- 1.23 SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

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1.24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated in the PROJECT.

1.26 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the WORK.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instructions thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress scheduled showing the order in which the CONTRACTOR proposes to carry on the WORK, including dates at which the various parts of the WORK will be started, estimated date of completion of each part and, as applicable:

3.2.1 The dates at which special detail drawings will be required; and

3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that the CONTRACTOR anticipates will be earned during the course of the WORK.

4. DRAWINGS AND SPECIFICATIONS

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

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4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the CONTRACTOR after discovery or such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidence by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring the SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement

7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at the CONTRACTOR'S expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests, or approvals by the engineer or others shall not relieve the CONTRACTOR from the obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and the ENGINEER'S representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records or personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for the ENGINEER'S observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the

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performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees, and shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified, however, if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, the CONTRACTOR shall be responsible for such loss unless the CONTRACTOR promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, shall be charged with the resulting expense and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, the CONTRACTOR shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY, AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR will take all necessary precautions for the safety of, will provide the necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The CONTRACTOR will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. The CONTRACTOR will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone of whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER, of the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instructions or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. The CONTRACTOR will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

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13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles the CONTRACTOR to a change in CONTRACT PRICE or TIME, or both, in which event the CONTRACTOR shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

- a. Unit prices previously approved.
- b. An agreed lump sum.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

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16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and reexecute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if it is found that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless the required WRITTEN NOTICE has been given; provided that the OWNER may, if the OWNER determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION, AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of its property, or if CONTRACTOR files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or disregards the authority of the ENGINEER,

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or otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and its surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method the OWNER may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the CONTRACT. In such case the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until paid all amounts then due, in which event and upon resumption of the WORK CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

## 19. PAYMENT TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of

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materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER'S title to the material and equipment and protect the OWNER'S interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing approval of payment, and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing the reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage. The retainage shall be an amount equal to 10% of said estimate until 50% of the work has been completed. At 50% completion, further partial payments shall be made in full to the CONTRACTOR and no additional amounts may be retained unless the ENGINEER certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the CONTRACTOR. At 50% completion or any time thereafter when the progress of the WORK is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the CONTRACTOR. When the WORK has been substantially completed except for WORK which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the OWNER are valid reasons for noncompletion, the OWNER may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the WORK still to be completed.

19.2 The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demand of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and

parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, the CONTRACTOR'S Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

## 20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under the CONTRACT DOCUMENTS or the Performance and Payment BONDS.

## 21. INSURANCE

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of, or result from, the CONTRACTOR'S execution of the WORK, whether such execution be by the CONTRACTOR, any SUBCONTRACTOR, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

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21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, Liability insurance as hereinafter specified:

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting the CONTRACTOR from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by the CONTRACTOR or by any SUBCONTRACTOR employed by the CONTRACTOR or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR employed by the CONTRACTOR. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of the CONTRACTOR'S employees at the site of the PROJECT and in case any WORK is sublet; the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of its employees not otherwise protected.

General Conditions  
(Rev. 12-15-88)

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, and the OWNER.

22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance BOND and a Payment BOND in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal Bonds, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of any right, title or interest therein, or any obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

General Conditions

(Rev. 12-15-88)

Guide II - Indiana Contract Documents

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, its agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTOR'S reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate the WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT or the OWNER may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTOR'S who are parties to such CONTRACTS (or the OWNER, if the OWNER is performing the additional WORK) reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate the WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTOR'S or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves it in additional expense or entitles it to an extension of the CONTRACT TIME, the CONTRACTOR may make a claim thereof as provided in Sections 14 and 15.

26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTS on those parts of the WORK which, under normal contracting practices, are performed by speciality SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of its SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by it.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and give the CONTRACTOR the same power as regards terminating any Subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

General Conditions  
(Rev. 12-15-88)

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed, and shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship, and execution of the WORK. Inspections may be at the factory or fabrication plant of the source of material supply.

27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at its own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTEE

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of the damage of other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. ARBITRATION BY MUTUAL AGREEMENT

30.1 All claims, disputes, and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making an acceptance of final payment as provided by

Section 20, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgement may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the request for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and a copy shall be filed with the ENGINEER. Request for arbitration shall in no event be made on any claim, dispute, or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

### 31. TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use, and other similar taxes required by the laws of the place where the WORK is performed.

### 32. ENVIRONMENTAL REQUIREMENTS (Added 09-16-92, PN 191.)

The CONTRACTOR, when constructing a project involving trenching and/or other related earth excavation, shall comply with the following environmental constraints.

32.1 WETLANDS - The CONTRACTOR, when disposing of excess, spoil, or other construction materials on public or private property, WILL NOT FILL IN or otherwise CONVERT WETLANDS.

32.2 FLOODPLAINS - The CONTRACTOR, when disposing of excess, spoil, or other construction materials on public or private property, WILL NOT FILL IN or otherwise CONVERT 100 YEAR FLOODPLAIN areas delineated on the latest FEMA Floodplain Maps.

32.3 HISTORIC PRESERVATION - Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the PROJECT ENGINEER and a representative of the OWNER. Construction shall be temporarily halted pending the notification process and further directions issued by the OWNER after consultation with the State Historic Preservation Officer (SHPO).

32.4 ENDANGERED SPECIES - The CONTRACTOR shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. **Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the CONTRACTOR, the CONTRACTOR will immediately report this evidence to the PROJECT ENGINEER and a representative of the OWNER.** Construction shall be temporarily halted pending the notification process and further directions issued by the OWNER after consultation with the U.S. Fish and Wildlife Service.

**PART 4**

**SUPPLEMENTAL GENERAL  
CONDITIONS**

***(NOT APPLICABLE)***

**PART 5**

**GENERAL CONSTRUCTION  
SPECIFICATIONS**

**PART 5**

**GENERAL CONSTRUCTION SPECIFICATIONS**

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## PART 5

### GENERAL CONSTRUCTION SPECIFICATIONS

1. Foreword

The work specified to be done by the Contractor in the following sections under the "General Construction Specifications" is to be done at the expense of the Contractor and will not be measured in determining quantities for payment unless otherwise specified.

The unit and lump sum prices stated in the Contract hereto attached to be paid for work under the respective items shall be full compensation for all work set forth herein under these "General Construction Specifications".

2. Temporary Toilet Accommodations

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen; toilets shall be placed at the time work starts. These temporary toilet facilities shall be placed and maintained as required by the local health ordinances. He shall provide the necessary temporary enclosures to accommodate the toilets. The toilets shall be maintained in a sanitary condition and contents removed from premises as often as required.

3. Noise Prevention

The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers and the exhausts of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special precautions shall be taken to avoid noise and other nuisance, and the Contractor shall require strict observance of all pertinent ordinances and regulations. Blasting, in such locations, shall be done with reduced charges.

4. Dust Prevention

The Contractor shall apply an approved dust preventative as necessary to avoid and eliminate dust complaints from nearby residents, the cost of which shall be included in the prices bid for the various parts of the work.

5. Smoke Prevention

A strict compliance with all ordinances regulating the production and emission of smoke will be required and the Contractor shall accept full responsibility for all damage that may occur to property as a result of negligence in providing required control.

The Contractor will be held responsible for damage to any structures near the site due to emission of smoke and steam from his plant.

No burning of any kind will be permitted.

6. Temporary Heat

The Contractor shall provide such temporary heat as may be required to carry out all portions of the work, and to prevent damage due to cold weather.

The Contractor shall, at his own expense, furnish, install, connect, operate and maintain all required temporary heating equipment, of an approved type, either gas or oil fired, with automatic safety devices and controls; properly vented to the outside of the building. He shall furnish and pay for all fuel, labor and material in connection with this temporary service.

The Contractor shall be responsible for all damage due to his failure to maintain required temperatures for any phase of construction, or improper use of equipment, and shall make good any damages which may result both direct and contingent.

7. Temporary Light and Electrical Power

The Contractor shall arrange and pay for separate temporary service necessary to provide temporary electric power used during construction and temporary electric lighting for all portions of the work. This cost includes any deposit(s) required on meters.

The Contractor shall make all necessary temporary electrical power installations, arrange for its distribution, continue its service throughout and remove same at the completion of the project. The Contractor shall pay for all costs incidental to installation and distribution, providing all necessary labor and materials.

The Contractor shall also provide continuous and adequate lighting meeting OSHA Standards for all phases of the Project.

The temporary power service shall consist of a minimum size of one (1) 100 ampere fused NEMA 4 rain tight switch rated for 115/230 volt, one phase, three wire. From the fused switch a 100 ampere three wire feeder is to run to a fused temporary distribution panel located either on a temporary pole or inside the control building and all power and lighting circuits taken from this panel. Temporary power lines shall provide 120 volt, twenty (20) ampere receptacles within fifty (50) feet of any portion of construction. All elements of the temporary electrical power shall conform to the NEC, Lift Safety Code 101 and OSHA regulations.

8. Field Office (NOT APPLICABLE)

The Contractor shall provide prior to the beginning of construction and remove at the completion of construction, a field office with storage room for the exclusive use of the Engineer and/or his Field Representatives. The field office shall be a minimum of 200 ft<sup>2</sup> and contain a storage area of approximately 10 ft<sup>2</sup>. The field office shall be within 100 feet of the Contractor's offices and storage facilities.

The field office shall be furnished with a desk, chair, and sloped plan table for the Inspector and one (1) four (4) drawer steel filing cabinet. Ceiling lights and electrical plug-in duplex receptacles shall also be provided with the office.

During occupancy, the office shall be supplied with one (1) telephone, answering machine, plain paper FAX unit, plain paper copier, electric and janitorial services. The telephone

shall be of the cordless type. The telephone service shall be for the exclusive use of the Engineer and/or his Field Representative. The Contractor shall not be responsible for long distance calls made on this field office telephone.

The office shall have adequate, safe, dependable heat and air-conditioning. The office shall have rest room facilities with potable water and sewage services. In the event that sewage and/or water services are not available, the Contractor shall submit for the Engineer's approval, an alternate method for providing these services.

The Contractor shall be responsible to insure that the field office complies with all safety standards as set forth by OSHA. In the event that the Engineer or the Contractor is notified of any such deficiency, the Contractor shall correct it immediately.

At completion of the contract, this temporary structure and all other temporary structures erected by the Contractor shall become the property of the Contractor, and he shall remove them from the site at no expense to the Owner. The Contractor shall restore the site to a condition equal to that which existed before placement of the office.

The Contractor shall provide temporary parking and access for a minimum of two (2) vehicles at the Engineer's field office. The access and parking area shall be maintained with adequate aggregate base to permit safe and smooth entry and egress of vehicles and personnel.

9. Temporary Water

It shall be the Contractor's responsibility to obtain and pay for all water used in the construction progress. The Contractor may arrange for his water supply through the local water company or through any other means at his disposal.

10. Cutting, Fitting and Patching

The Contractor shall make all connections to existing facilities and shall do all cutting, fitting and/or patching of the existing pipes in order to make the several parts fit together as shown or reasonably implied by the Plans and Specifications.

Any damages caused by negligent or ill timed work shall be at the expense of the Contractor.

The Contractor shall not endanger any work by cutting, digging or otherwise, and shall not cut or alter the work of any other Contractor without the consent of the Engineer or the Owner's authorized representative.

11. Cleaning Up

The Contractor shall at all times keep the premises free from accumulations of waste material, debris, rubbish, scrap, etc. caused by his employees or construction operations. Upon completion of the work, he shall systematically clean and make any needed repairs of the structures; remove all equipment, tools and surplus materials; leave the structures "broom clean", or its equivalent, and the premises in a neat and clean condition.

12. Safety and Health Requirements

The successful bidder shall be responsible for all obligations prescribed as employer obligations under Chapter XVII of Title 29, Code of Federal Regulations for Construction, OSHA (PL 91-596) and the Contract Work Hours and Safety Standards (PL 91-54).

13. Engineer's Responsibility with Respect to OSHA

The Engineer in the performance of his duties under either General Supervision or Resident Inspection shall not be responsible for the initiation or compliance of the safety of construction methods or procedures unless in his opinion it concerns permanent installations or permanent equipment. The Engineer shall not be held responsible for the initiation or enforcement of any OSHA Standards. The Engineer's responsibility, herein, lies solely in the design and inspection of permanent structures and permanently installed equipment.

14. Relation to Sewers

**Horizontal Separation**

Water mains shall be laid at least 10 feet horizontally from any existing or proposed storm or sanitary sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten foot separation, the appropriate reviewing agency may allow deviation on a case-by-case basis, if supported by data from the Engineer. Such deviation may allow installation of the water main closer to a sewer, provided that the water main is in a separate trench and located at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer.

**Crossings**

Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the water main joints will be equidistant and as far as possible from the sewer joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.

**Special Conditions**

When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be encased in concrete for a length of 3 feet on each side of the water main crossing. Minimum thickness of encasement shall provide 6" concrete beyond O.D. of sewer at all points.

Payment for Necessary Changes

Whenever the Contractor observes the above conditions, he shall immediately notify the Engineer. If the water main cannot be relocated to avoid such conflicts, a Change Order will be initiated in accordance with the applicable Sections of the General Conditions, unless the conflict is covered by the Detailed Specifications.

15. Relation to Water Works Structures

15.1 Relation to Water Main and Services

Horizontal Separation:

Water mains shall be laid at least ten (10) feet horizontally from any existing sewer line. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten (10) foot separation, the appropriate reviewing agency may allow deviation on a case by case basis, if supported by data from the Engineer. Such deviation may allow installation of the water main closer to a sewer line, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the sewer and at an elevation so the bottom of the water main is at least eighteen (18) inches above the top of the sewer.

Crossings:

Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.

Special Conditions:

When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water pipe, capped two (2) feet both sides of the interference with concrete and pressure tested to assure watertightness prior to backfilling all in accordance with the Detailed Specifications and Plan Sheet Details.

15.2 Payment for Necessary Changes

Whenever the Contractor observes the above conditions, he shall immediately notify the Engineer. If the sewer cannot be relocated to avoid such conflicts a Change Order will be initiated in accordance with the applicable sections of the General Conditions, unless the conflict is covered by the Detailed Specifications.

16. Buoyant Forces and Dewatering

Due to the possibility of a high groundwater table within the limits of the project, all utility pipes and structures may be subjected to a buoyant force during construction. The Contractor shall be responsible for any and all damages due to flotation prior to final acceptance of the work.

If groundwater is encountered during construction, the Contractor shall provide and maintain sufficient equipment to drain the soil, to dispose of all water encountered, and to prevent saturated soil from flowing into excavations; and shall render such excavations firm and dry, until the sewers and structures to be built thereon are completed.

Once the construction of the sewer has been completed, the groundwater shall not be allowed to rise more than two (2) inches per hour. The Contractor shall be responsible for preventing flotation of all structures and pipes during construction.

The Contractor shall assume all responsibility for claims resulting from damage to any land, wells, structures or improvements due to his dewatering operations.

17. As-Built Drawings

The Contractor shall keep one (1) copy of all project specifications, plans, addenda, modifications, supplemental drawings, shop drawings and change orders at the project site in good order and annotated to show all changes made during the construction process. In addition, the Contractor shall keep one (1) set of "As-Built Drawings" for the project. These As-Built drawings will show all final elevations, all final dimensions and sizes for pipes and structures, and all other information as necessary to constitute As-Built records. In addition, these As-Built Drawings shall show pertinent information on all existing structures and utilities encountered during construction. These documents shall be kept daily by the Contractor and routinely checked by the Inspector for completeness and accuracy based on the Inspector's daily records and notes. It will be the Contractor's responsibility to furnish any and all information lost due to the Contractor's loss of these record drawings. In addition to other Contract requirements, retainage will be partially based on the Contractor's ability to maintain good As-Built records, as determined by the Engineer. Upon completion of the project or beneficial occupancy, whichever occurs first, these record "As-Built" drawings together with any other annotated supplemental plans, drawings, sketches, etc. shall be delivered to the Inspector for his final review and approval. If approved, the documents will be delivered to the Engineer for the Owner's record. If disapproved, they will be returned to the Contractor for corrections, as necessary.

18. Shop Drawings

Unless otherwise directed, the number of Shop Drawings to be submitted by the Contractor for the Engineer's review shall be six (6), which upon review will be distributed as follows: three (3) to be returned to the Contractor and one (1) each for Engineer's office, field representative and Owner.

19. Notification by Contractor Prior to Construction

Sufficient notice shall be given by the Contractor to all utilities and property owners whose pipes, poles, tracks, wires, conduits or other structure may be affected by the work in order that they may protect, remove, adjust or rebuild them, or take such measures as they may desire to minimize inconvenience. He shall notify the local fire and law agencies twenty-four (24) hours in advance of the temporary blocking of any street. He shall also notify any effected water works utility and receive its authorized representative's approval before cutting into existing mains or shutting off mainline services, except in case of emergency.

20. Traffic Control

The Contractor may close streets or roads to through traffic for minimum periods of time with proper notice to local occupants of all premises, police and fire protection authorities and other public authorities as applicable. The Contractor shall so schedule this work that this time is minimum and shall, whenever possible, make suitable provisions for access by

local residents, school buses, police and fire emergency vehicles and mail delivery vehicles. The Contractor shall keep fire hydrants and other public utility valves accessible at all times.

At street or road crossings where the Contractor is permitted to open cut the trench, the crossing shall be completed, cleaned up, temporary pavement in place, and open to traffic within twenty-four (24) hours from the time the street or road is closed to through traffic, unless specific approval is received from the authority having jurisdiction, for a longer period.

When it is required that a street or road be closed to traffic, the Contractor shall furnish, erect and maintain barricades, suitable and sufficient red lights and other lights or reflecting material at the limits of the project, where side streets intersect and at other points of public access to the project. The Contractor shall furnish, erect and maintain advance warning signs and barricades to direct traffic from closed sections.

The Contractor shall furnish, erect and maintain detour marking signs on temporary routes, except where same may be furnished by the State or County Highway Departments.

Throughout the construction, the Contractor shall furnish, erect and maintain such lights, signs and barricades as may be required for the protection of any local traffic permitted on the roadway.

Where the improvement is to be accomplished with traffic maintained, the Contractor shall furnish, erect and maintain lights, signs, barricades, temporary guardrails and other traffic control devices, watchmen and flagmen as may be necessary to maintain safe traffic conditions.

Whenever it is necessary to divert traffic from its normal channel into another channel, such diversion shall be clearly marked by cones, drums, barricades or temporary guardrail. If the markers are left in place at night, pot flares or other suitable lights shall be maintained.

All lights, signs, barricades, flagmen, etc. used for proper traffic control shall be in accordance with the latest requirements of the State of Indiana Department of Transportation and OSHA.

21. Plan Notes

Where notes on the plans indicate that certain work, material and equipment is to be furnished as part of the work under a specified item number, and the work, material and equipment is not included in the specifications; this work, material and equipment shall be included under the price specified for the contract item as though it were actually written in the specifications.

22. Easements

Rights in Easements

The Contractor has the right, during construction to use the property shown as Easement and Temporary Construction Easement and the right of ingress and egress to and from these easements for construction of the work. However, the Contractor, prior to exercising this right, shall obtain permission of the landowner to travel over a mutually agreeable route.

Furthermore, the Contractor shall assume full responsibility for claims resulting from damage to any land or improvements used for ingress and egress to such easements.

It shall also be his responsibility to obtain, in writing, any additional rights he may require over the remaining property for his construction of the work.

Work in Easements

All work in easements shall be performed in accordance with the Specifications and the following special requirements:

The Contractor shall notify each property owner of his schedule to work in the easement on their property before he enters upon their property.

In the event the Contractor damages or destroys any septic tanks and/or laterals, sand filters, and dry wells as the result of his operations on private property, he shall handle the flow immediately, and thereafter until they are restored, and restore them to there original condition or as directed by the Engineer.

As a part of the Project Land Acquisition Phase, the Owner is responsible for securing all necessary permanent and temporary (construction) easements. For permanent easements only, the Owner has included in the easement purchase price, the cost for all trees and/or shrubs that will be damaged or destroyed by the proposed construction. For temporary (construction) easements, the Owner has not included the cost for damage in the price of the easement. Therefore, in temporary easements, the Contractor is responsible for replacing trees and/or shrubs damaged by him during construction at his own expense.

23. Permits

The Contractor shall provide and display any and all Building Permits required by county, township, and/or City prior to the start of construction.

**PART 6**

**WORKMANSHIP AND  
MATERIALS**

**PART 6**

**WORKMANSHIP AND MATERIALS SPECIFICATIONS**

**LAKE LEMON - LAKE ENHANCEMENT PROJECT**

**AREAS: 1A, 1C, AND 3B**

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## **WORKMANSHIP AND MATERIALS SPECIFICATIONS**

### **(SECTION WM 1)**

#### **GENERAL**

The following specifications for Workmanship and Materials are of general application, and are to be used with the Detailed Specifications and drawings as far as applicable.

The Sections of the Workmanship and Materials Specifications shall accompany or be attached to each set of the Detailed Specifications. Additional Sections of Workmanship and Materials Specifications, other than those listed, may be included as a part of the contract documents attached to the listed Sections.

Materials for which no detailed specifications are given herein or under the Detailed Specifications shall in general conform to the physical characteristics and methods of treatment as set forth in the latest specifications of the American Society for Testing Materials insofar as they may apply, and shall be of the quality and character best adapted to the purpose for which they are to be used. No material shall be used for any purpose unless the material has previously been in use for a like purpose for a sufficient length of time to demonstrate the materials' satisfactory use.

All materials and equipment to be provided by the Contractor under this contract shall be new, unless otherwise specified. Any equipment offered shall be new and of a make and type which can be shown to have operated satisfactorily and continually in actual service for a sufficient length of time to demonstrate the equipment's success for the purpose for which the equipment is to be used.

## (SECTION WM 2)

### EXCAVATION

#### Description

The Contractor shall make all earth excavations required, to the widths and depths necessary for proper construction (and only to such widths and depths), for constructing according to the plans, all structures included in this contract. Earth shall mean all kinds of materials, wet and/or dry, excavated, or which are to be excavated, including rock, shale, hardpan, muck, quicksand, etc., unless provisions are made elsewhere in the contract documents for specified soil types.

Excavation shall include clearing the site for the work; the loosening, loading, removing, transporting, and disposing of all materials, wet or dry, necessary to be removed for purposes of construction; all sheeting and bracing; all draining, dewatering and pumping; backfilling of trenches, excavations and pits; earth borrow; the supporting of the excavations and structures (new and existing) above and below ground; the handling of water; and all incidental work.

#### General

Prior to commencing construction operations, the Contractor shall make all the provisions necessary to assure the protection of all existing improvements, both public and private. He shall protect trees, shrubs, plantings and grassed areas and shall make provisions for maintaining public travel in an acceptable manner.

#### Clearing

Preparatory to excavation, the site of all open cut excavations, embankments and fills shall be first cleared of obstructions and existing facilities (except those which must remain temporarily or permanently in service). On all public or private property where grants or easements have been obtained, and on the property of the Owner, the Contractor shall remove and keep separate the topsoil, and shall carefully replace it after the backfilling is completed.

#### Pavement Cutting

Prior to excavating paved areas all excavation edges falling within the pavement shall be saw cut in a neat straight manner. Cutting shall be performed with a saw designed specifically for this purpose. The cut shall penetrate the entire pavement thickness where possible. If the existing pavement is more than 6 inches thick then a cut of not less than 6 inch depth shall be made. Sawing equipment shall be submitted to the Engineer for approval before initial use. When the approved cutting equipment makes a cut more than 1" wide the cutting shall precede the excavation no more than one block or 400 feet which ever is less. If pavement cuts (those less than 1 inch wide) are made in streets which are reopened to traffic prior to excavation then the cuts shall be thoroughly filled with sand and maintained full until the excavation is performed.

### **Protection of Existing Improvements**

Before any excavation is started, adequate protection shall be provided for all lawns, trees, shrubs, landscape work, fences, sidewalks, hydrants, utility poles, street, alley and driveway paving, curbs, storm sewers, ditches, headwalls, catch basins, surface inlets and all other improvements that are to remain in place. Such protection shall be provided as long as necessary to prevent damage from the Contractor's operations. Shrubs, bushes, small trees and flowers, which have to be removed to permit excavation for the project, shall be protected and replanted or replaced when the backfill is complete unless otherwise directed by the Engineer.

The Contractor shall exercise every precaution to prevent damage to property within and outside the immediate vicinity of the work. He shall remove all debris and rock from the site and restore the ground surfaces, replace or repair all driveways, buildings, fences, retaining walls, culverts, drains, paving, sidewalks, etc., which are removed or damaged during construction.

Repair, restoration or replacement of any improvements damaged or removed outside of the work to be performed shall be the obligation of the Contractor at no additional cost to the Owner.

### **Protection of Trees and Shrubs**

No existing trees or shrubs in street Rights-of-Way and easements shall be damaged or destroyed. Where branches of trees or shrubs interfere with the Contractor's operations, they shall be protected by tying back wherever possible. No limbs or branches shall be cut. If his operations will not permit saving certain trees, the Contractor shall be wholly responsible for satisfying all claims for restoration or restitution resulting from their damage or removal.

If small trees and shrubs are moved or pruned to permit more working space pruning shall be done in accordance with Home and Garden Bulletin No. 83, U.S. Department of Agriculture, "Pruning Shade Trees and Repairing Their Injuries." However, the Contractor shall obtain, in writing, the property owner's permission to move or prune trees or shrubs on his property.

Trees and shrubs damaged by the Contractor's operation shall be repaired in accordance with said Bulletin No. 83.

Payment for protecting trees and shrubs shall be the obligation of the Contractor at no additional cost to the Owner.

### **Maintenance of Public Travel**

The CONTRACTOR shall carry on the WORK in a manner which will cause a minimum of interruption to traffic, and may close to through travel not more than two (2) consecutive blocks, including the cross street intersected. Where traffic must cross open trenches, the CONTRACTOR shall provide suitable bridges to street intersections and driveways. The CONTRACTOR shall post suitable signs indicating that a street is closed and necessary detour signs for the proper maintenance of traffic. Prior to closing of any streets the CONTRACTOR shall notify responsible municipal authorities.

### **Utility Interruption**

The CONTRACTOR shall proceed with caution in the excavation and preparation of the trench or pit so that the exact location of underground structures may be determined. Prior to proceeding with trench excavation the CONTRACTOR shall contact all utility companies in the area to aid in locating their underground services.

The CONTRACTOR shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, he shall immediately notify the responsible official of the organization operating the utility interrupted. The CONTRACTOR shall lend all possible assistance in restoring services and shall assume all costs, charges, or claims connected with the interruption and repair of such services.

### **Construction in Easements**

In easements across private property, the CONTRACTOR shall confine all operations in the easement area and shall be responsible and liable for all damage outside of the easement area. Trees, fences, shrubbery or other types of surface improvements located in easements will require protection during construction. Precautions shall be taken by adequate sheeting or other approved method to prevent any cave-in or subsidence beyond the easement limits or damage to improvements within the easement. In general, the easement area is intended to provide reasonable access and working area for efficient operation by the CONTRACTOR. Where easement space for efficient operation is not provided, the CONTRACTOR shall be responsible for organizing his operations to perform within the restrictions shown on the plans. When requested, the OWNER shall furnish the CONTRACTOR a copy of the construction easements. Anytime the CONTRACTOR has to work outside of the easement area, he must obtain written permission from the property owner and furnish the ENGINEER with a copy.

### **Drainage**

The Contractor shall make provisions for handling all flows in existing creeks, ditches, sewers and trenches by pipes, flumes or other approved methods at all times when his operations would, in any way, interfere with the natural functioning of said creeks, ditches, sewers and drains. The Contractor shall at all times during construction provide and maintain sufficient equipment for the disposal of all water which enters the excavation, both in open cut trenches and in tunnels, to render such excavation firm and dry, until the structures to be built thereon are completed.

Pipe underdrains, well point systems, deep well pumps or other suitable equipment and methods shall be used to keep all excavations firm and dry, at no additional cost to the Owner unless otherwise provided in the Proposal.

### **Disposal of Unsuitable Materials**

Excavated materials which are either surplus and not required or are unsuitable for backfilling shall be removed from the site of operations as soon as excavated. All excavated materials so removed shall be disposed of, at no additional cost to the Owner, on privately owned property for which the Contractor has made prior arrangements. The Contractor is responsible for the restoration of areas within Public Right-of-Ways bordering properties for which the Contractor has a dump permit or release.

The Contractor is to provide the Engineer with a copy of the said permit, stating the condition in which the Property Owner will accept the spoil materials.

### **Storage of Suitable Materials**

Excavated materials suitable and required for immediate backfill, shall be stored in neat piles adjacent to the excavation in a manner so as to interfere as little as possible with traffic, but shall not be placed at such heights above or closeness to the sidewalls of the excavation to endanger such operations due to slides or cave-ins. Fire hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, or other utility controls within Right-of-Ways shall be left unobstructed and accessible until the WORK is completed.

Excavated materials suitable for use as backfill, fill and embankments but not needed immediately shall be transported to a location approved by the Engineer and stored at the contractors expense. Storage shall be on the owners property provided the site offers sufficient room without hindering the Work or the normal operation of the Owner's facilities. All weather access must be maintained to all operating facilities on the site at no additional expense to the Owner. Gutters and catch basins shall be kept clear or other satisfactory provisions made for drainage. Natural watercourses shall not be obstructed.

### **Open Cut Excavation**

Open cut excavation, either in earth or rock, shall be safely supported and of sufficient width and depth (and only to such width and depth) to provide adequate room for the construction or installation of the work to the lines, grades and dimensions shown on the Plans.

### **Trench Dimensions**

The bottom width of the trench at and below the top of the pipe and inside the sheeting and bracing, if used, shall not exceed the recommendations as contained in the applicable ASTM Standard for the pipe being used.

Trench sheeting and bracing or a trench shield or box shall be used as required by the rules and regulations of OSHA. The bottom of the trench shall still meet the above standards.

If the trench widths are exceeded without the written permission of the Engineer, the pipe shall be installed with a concrete cradle or with concrete encasement or other ASTM approved methods as approved by the Engineer and at no additional cost to the Owner.

### **Excavations With Sloping Sides, Limited**

The Contractor may, at his option, where working conditions and right of way permit (as determined by the Engineer), excavate pipe line trenches and pits for structures with sloping sides, but with the following limitations:

- (1) In general, only braces and vertical trenches will be permitted in traveled streets, alleys, narrow easements and for pit excavations more than 10 feet deep.

- (2) Where pipe line trenches with sloping sides are permitted, the slopes shall not extend below the top of the pipe, and trench excavations below this point shall be made with near-vertical sides with widths not exceeding those specified herein before.
- (3) Slopes shall conform to all OSHA regulations.
- (4) When pit excavations with sloping sides are permitted, the Contractor shall assume full responsibility for all costs incurred to backfill the larger excavation in accordance with the Contract Documents including furnishing materials if adequate quantities of suitable materials are not available from those excavated on the site.

### **Sheeting and Bracing**

The Contractor shall furnish, place and maintain adequate sheeting and bracing as may be required to support the sides of the excavation and prevent any movements of earth which could, in any way; diminish the width of the excavation to less than that necessary for proper construction; cause damage to the pipe or structure being constructed or to adjacent structures, utilities, pavements or walks; cause injury to workmen or others through movement of the adjacent earth banks; or to otherwise damage or delay the work.

- A. **Materials:** Sheeting may be of wood or steel and shall be of adequate strength for the excavation, subject to the approval of the Engineer, who shall have the right to order the Contractor to furnish heavier sheeting than that being used or proposed to be used by the Contractor, at no additional cost to the Owner.
- B. **Additional Supports:** If the Engineer is of the opinion that sufficient or proper supports have not been provided at any location, he may order additional supports installed at the expense of the Contractor, and the compliance with such orders shall not relieve or release the Contractor from his responsibility for adequately supporting the sides of the excavation.
- C. **Methods:** Wherever possible, the sheeting and bracing shall be driven ahead of the excavation to avoid loss of material from behind the sheeting. If it is necessary to excavate below the sheeting, care shall be taken to avoid trimming behind the face along which the sheeting will be driven. Care shall be taken to prevent voids outside the sheeting; but, if voids develop, they shall be immediately filled with selected sandy materials and compacted by flushing and jetting with water or as directed by the Engineer. Where drop inlets or stacks are constructed, the excavation shall be offset, as required, without additional compensation.
- D. **Left in Place:** The engineer may order sheeting and bracing to be left in place at locations other than shown by the Plans. Sheeting left in place may be ordered to be cut off at any specified elevation, but in no case shall it be left in the ground above an elevation eighteen (18) inches below the existing or proposed surface of the ground. All voids created by the cutting off of the sheeting to be left in place shall be immediately filled with selected sandy materials and compacted by flushing and jetting with water or as directed by the Engineer.

Sheeting and bracing left in place in open cut trenches as shown on the Plans or as ordered by the Engineer shall be paid for only in accordance with applicable provisions of the Contract Documents.

If the Contractor elects not to remove certain sheeting and bracing, he will not be paid additionally for such sheeting and bracing left in place.

- E. Not Left In Place: All sheeting and bracing not to be left in place shall be carefully removed (after the backfill is complete) so as not to endanger the pipes and other structures. All voids created by withdrawal of the sheeting shall be immediately filled with selected sandy materials and compacted by flushing and jetting with water or as approved by the Engineer.
- F. All sheeting and shoring is to be done in accordance with the Occupational Safety and Health Standards 40 CFR Part 1926 Subpart P, Excavation.

### **Earth Excavation**

Earth materials shall be excavated so that the open cuts conform with the lines, grades and dimensions shown on the drawings.

- A. Unsuitable Foundation: When the bottom of the excavation is unsuitable as a foundation, it shall be excavated below grade and then refilled with concrete or crushed stone to the grade as the Engineer may direct. The crushed stone refill shall be mechanically compacted in six (6) inch layers or as directed by the Engineer. Such authorized work shall be paid for as set forth under the appropriate Item of the Proposal or the Change Order. This provision shall not relieve the Contractor of his obligation to dewater the excavation at no additional expense to the Owner.
- B. Unauthorized Excavation: Unauthorized excavation below grade shall be filled with crushed stone or concrete and compacted as ordered and directed by the Engineer at no additional cost to the Owner.
- C. Excavated Earth For Backfill: Excavated earth materials may be used for backfill subject to the approval of the Engineer, and the Contract Documents. Such material may be used only where its class is allowed. For example: Excavated material conforming to "Class II" description may be used where "Class II" material is required. When the Contract provides a unit price payment for classified backfill or fill material, excavated materials may qualify for such payment only if it is transported to another location for installation or temporary storage. The Contractor shall not transport the material solely to qualify it for such payments.

### **Rock Excavation**

Rock shall be defined as follows: Boulders measuring one-half (½) cubic yard or more in volume; rock material in ledges, bedded deposits, unstratified masses and conglomerate deposits so firmly cemented that they possess the characteristics of solid rock that cannot be removed without systematic drilling and blasting; and concrete and masonry structures, except sidewalks and paving. Pockets or seams of earth or clay less than four (4) inches in thickness, occurring below or between solid ledges of rock, shall be considered rock.

When rock is encountered in open cut excavation, it shall be removed by drilling, blasting, digging or other approved methods so that open cut trenches conform with the lines, grades and dimensions shown on the Plans.

- A. Explosives: The Contractor shall comply with all Federal, State and Local laws, rules, regulations, insurance and ordinances governing the transportation, storage, use and permits for explosives.
- B. Description: Solid rock excavation shall consist of the necessary excavation and satisfactory disposal of all rock in place which can not be removed from its original position without the use of explosives, or with a modern power shovel of not less than three-quarter (3/4) cubic yard capacity, properly used, having adequate power and in good running condition, or other equivalent powered equipment. The excavation shall also include all loose stone or boulders necessary to be removed which have a volume of one-half (1/2) cubic yard or more. Boulders of less than one-half (1/2) cubic yard in volume shall not be classed as rock excavation.
- C. Safety Precautions: When blasting is required for the removal of rock, every precaution shall be used for the protection of persons and private and public property. Each blast shall be well covered with mats or other suitable means to confine the rock fragments within the excavation. At the discretion of the Engineer, he may order an evaluation survey of properties within the blasting zone. Only the minimum amounts of explosives shall be used; no excessive charges will be permitted. Except with written permission and approval of the Engineer, no blasting of rock will be permitted at nights or on Sundays.
- D. Blasting Methods: The method of blasting will be as determined by the Contractor, subject to the approval of the Engineer prior to construction. Blasting shall be performed at a safe distance ahead of the installation of the pipe and structures to prevent damage to them as the work progresses. Blasting of rock for property service connections, T-branches, Y-branches, and stubs shall be performed at the same time as the pipe trench blasting. The rock at the ends of all pipes, branches, stubs and property service connections, shall be shattered by continuing the drilling and blasting operations six (6) feet beyond the end of the pipe, branch, stub or property service connection.

Sufficient dynamite shall be used to shatter the rock for future excavation, as may be determined and ordered by the Engineer.

The blasting of rock under existing paving prior to uncovering the rock will be permitted, provided, the Contractor assumes full responsibility for all damage to the existing paving; however, the Owner reserves the right to require the uncovering of rock prior to blasting if blasting without uncovering proves unsatisfactory.

If the Contractor chooses to blast rock under paving without uncovering the rock, he shall immediately repair humps in the paving which create a traffic hazard, as determined by the Engineer; and, all distortions outside the limits of the trench caused by this method of blasting shall later be removed and replaced as part of the paving restoration, as directed by the Engineer. The Contractor is fully responsible for all damages that occur.

- E. Repairs of Damage: In case injury occurs to any portion of the work, or to the material surrounding or supporting the same, through blasting the Contractor at his own expense shall remove such injured work and shall rebuild said work and shall replace the material surrounding or supporting the same, or shall furnish such material and perform such work of repairs or replacements as are necessary for satisfactory restoration. Any damage

whatever to any existing structure due to blasting shall be promptly, completely and satisfactorily repaired by the Contractor at his own expense.

### **Boring and Jacking**

Construction of the pipeline by boring and jacking methods will be permitted unless otherwise specified on the plans.

**Backstop:** The backstop shall be of sufficient strength and positioned to support the thrust of the boring equipment without incurring any vertical or horizontal displacement during such boring operations.

**Guide Rails:** The guide rails for the boring equipment may be of either timber or steel. They shall be laid accurately to line and grade and maintained in this position until completion of the boring operations.

**Casing Pipe:** Steel casing pipe shall be new, conform to ASTM A 139 and shall be of the size (diameter) shown on the plans. The lengths of pipe shall be welded as they are installed. Where lengths of casing pipe are joined during the boring operations, care shall be taken to insure that the proper line and grade is maintained.

The minimum wall thickness for casing pipes under highways, railroads and streams shall be 0.375 inches. Steel shall be Grade B under railroads and Grade A at all other locations.

### **Removal of Water**

The Contractor shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavations or other parts of the work and shall keep said excavations dry until the structures to be built therein are completed. No masonry shall be laid in water nor shall water be allowed to rise over masonry, until the concrete and mortar have attained a sufficient and satisfactory set. In no event shall concrete be placed in water, nor shall water be allowed in the excavation, which may set up unequal pressures in the concrete, until the concrete has set at least twenty-four (24) hours and any danger of flotation has been removed.

In order to provide a dry foundation, the Contractor, if required by the Engineers, shall pre-drain all wet material (except hardpan or rock) by lowering the ground water to a depth of at least one (1) foot below the deepest point of subgrade. The work of pre-draining shall be done by the use of a well point system, or by any other method approved by the Engineer that will permit the construction work to be carried on under dry foundation conditions. All discharge water shall be piped to the nearest point of disposal in order to prevent such water from again entering the excavation. Any method or system that may be used to lower the ground water shall be kept in operation continuously unless otherwise permitted. The Engineer's approval of the proposed system shall not relieve the Contractor from the responsibility of providing and maintaining dry excavations as required.

The Contractor shall dispose of water from the work in a suitable manner without damage to adjacent property or piping. No water shall be drained into work built or under construction unless the consent of the Engineers is first obtained.

All removal and handling of water required to maintain dry trenches or other excavations for the construction of sewers, water mains, or other structures in the dry, shall be at the expense of the Contractor.

## (SECTION WM 3)

### **BACKFILL FILLS AND EMBANKMENTS**

#### **Description**

All trenches or excavations shall be backfilled to the original surface of the ground or such other grades as shown or directed. In general the backfilling shall be carried along as speedily as possible and as soon as the concrete, mortar, and/or other masonry work and pipe joints have sufficient strength to resist the imposed load without damage.

#### **Backfill Materials**

The following materials shall be used for backfill in accordance with and in the manner indicated by the requirements specified herein.

- Class I - Angular, 6 to 40 mm (1/4 to 1 1/2 inch), graded stone such as crushed stone.
- Class II - Coarse sands and gravel with maximum particle size of 40 mm (1 1/2 inch), including various grades of sands and gravel containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
- Class III - Fine sand and clayey gravel including fine sands, sand-clay mixtures and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.
- Class IV - Silt, silty clays and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH and CL are included in this class. These materials are not recommended for bedding. This class shall also include any excavated material free from rock (3 inches and larger), concrete, roots, stumps, rubbish, frozen material and other similar articles whose presence in the backfill would cause excessive settlement.

#### **Backfill of Trench Excavations for Pipes and Conduits**

Bedding and Backfill materials samples shall be submitted to the Engineer prior to start of construction. Approved samples shall be kept at the Engineer's field office. Materials differing significantly from these samples shall not be used without written authorization from the Engineer.

#### **Bedding**

##### **Rigid Pipe and Conduit Bedding**

For purposes of this specification, rigid pipe and conduits shall include those made of steel, ductile iron, cast iron, concrete, VCP, PVC/ABS Truss and other materials as determined by the Engineer.

All rigid conduit and pipe shall be laid to the lines and grades shown on the plans, unless otherwise directed by the Engineer. All rigid conduit and pipe shall be bedded in compacted Class I or II material, placed on a flat trench bottom. The bedding shall have a minimum thickness of 4" or one-fourth (1/4) the outside pipe diameter below the pipe and shall extend halfway up the pipe

barrel at the sides. All material shall be placed in the trench in approximately six (6) inch layers. Each layer, shall be leveled and evenly distributed on both sides of the pipe so as not to disturb, displace or damage the pipe and shall be thoroughly compacted. When Class I or II materials is used compaction may be accomplished by hand or mechanical tamping or by "walking" the material in. Bedding from the halfway point on the pipe to a point twelve (12) inches above the top of the pipe shall be a Class I, II, III, or IV material placed in six (6) inch layers and thoroughly compacted to prevent settlement. Class III and IV material shall not be used when the trench is located in an area subject to vehicular traffic.

### **Flexible and Semirigid Conduit Bedding**

For purposes of this specification, flexible and semirigid conduits and pipes shall include those made of PVC, PE, FRP, and other materials as determined by the Engineer.

All flexible and semirigid pipe shall be laid to the lines and grades shown on the plans, unless otherwise directed by the Engineer. All flexible and semirigid conduit shall be bedded in compacted Class I or Class II material, placed on a flat trench bottom. The bedding shall have a minimum 4" thickness or one-fourth (1/4) the outside pipe diameter below the pipe and shall extend to twelve (12) inches above the top of the pipe level the full width of the trench. All material shall be placed in the trench in a maximum of six (6) inch layers (before compaction). Each layer, shall be leveled and evenly distributed on both sides of the pipe so as not to disturb, displace or damage the pipe and shall be adequately compacted. When Class I materials are used compaction may be accomplished by hand or mechanical tamping or by "walking" the material in. When Class II materials are used compaction shall be accomplished only by hand or mechanical tamping to a minimum eighty-five percent (85%) Standard Proctor Density.

When flexible conduit installation represents more than 10% of the total base bid, the Pipe or conduit manufacturer shall examine the proposed bedding materials samples and certify the suitability of same for use with his product in accordance with these specifications. In the event the manufacturer recommends an alternate bedding procedure the Contractor shall include with his pipe submittal a complete cost evaluation for installing the bedding as recommended and as required by these specifications. All cost savings shall be given the Owner by adjusting the Contract amount accordingly by Change Order. More expensive procedures shall not be acceptable unless the Contractor agrees to bear all additional costs.

### **Backfill Above Pipe**

#### **Method A - Backfill in Areas Not Subject to Vehicular Traffic**

For purposes of this specification, trenches shall be considered subject to vehicular traffic if all or any portion of the excavation is located within four (4) feet of a roadway or alley which is routinely traveled by powered vehicles. In the event of any question regarding the susceptibility of an area to traffic, the Engineer's decision shall govern.

The trench between a level twelve (12) inches above the top of the pipe and the ground surface shall be backfilled with Class I, II, III or IV materials, as described above, deposited with mechanical equipment in such a manner that it will "flow" onto the bedding and not free fall. The Contractor shall consolidate the backfill by the back and forth travel of a suitable roller, wheeled device or other similar heavy equipment until no further settlement is obtained. Heavy equipment shall not be used until there is a cover of not less than three (3) feet over the pipes. To assist in promoting maximum settlement, the surface of the trench shall be left in a slightly rounded condition.

Periodical dressing of the backfill in the trench to promote the drainage and safety conditions shall be made during the course of the contract as required or ordered by the Engineer.

**Method B - Backfill in Areas Subject to Vehicular Traffic (Mechanical Compaction)**

The trench between a level of twelve (12) inches above the top of the pipe and the surface, which are located in areas subject to or possibly subject to vehicular traffic, shall be backfilled with Class I or II materials, deposited in uniform horizontal layers of two (2) feet +/- six (6) inches. Each layer shall be thoroughly compacted by mechanical tamping utilizing a crane mounted hydraulic vibratory compactors. Each layer shall be thoroughly compacted before the next succeeding layer is placed. This procedure shall be followed where trench walls remain stable during compaction. If in the opinion of the Engineer and/or his representative (inspector), the trench walls become unstable during compaction, then the Engineer and/or his representative (inspector) may authorize the Contractor to push from the back of the trench the Class I or II material into the trench the full depth, not to exceed twenty (20) lineal feet horizontally along the trench bottom and compact using the vibratory compactor in two (2) foot diagonal lifts.

The crane mounted vibratory compactors shall be capable of producing 1900 cycles per minute and have a compaction plate with the minimum dimensions of twenty-three by thirty-one (23 x 31) inches. The compactor shall be similar to those as manufactured by Allied, Ho-Pac, or equal.

When Class I or II materials do not contain sufficient moisture to obtain proper compaction, in the opinion of the Engineer and/or his representative, it shall be moistened or wetted as directed by the Engineer and/or his representative.

Granular backfill materials shall terminate at a point below finished grade sufficient to allow placement of the permanent surface materials. For portions of the surface subject to vehicular traffic, the remaining trench shall be filled with compacted aggregate base material, shaped, graded and compacted with a ten (10) ton roller. Where the permanent surface is asphalt or concrete the aggregate base thickness shall be the specified thickness of the pavement material plus six (6) inches. Where temporary cold mixed asphalt pavement is specified the compacted aggregate materials shall be stopped at required grade to accommodate the temporary pavement. Where the permanent surface is compacted aggregate the layer shall be eight (8) inches thick. In either case, the Contractor shall maintain the surface daily until the permanent pavement is placed.

For portions of the trench surface not subject to traffic the backfill material shall end eight (8) inches below the finished grade. This eight (8) inch depth shall be filled with good top soil and seeded in accordance with these Specifications. Existing top soil and sod may be used if properly separated and preserved.

The compacted aggregate base materials shall conform with the Indiana State Highway Department Standard Specifications, latest edition, for compacted Aggregate Base. In the event that suitable aggregate material, which conforms to the above specification is obtainable from the trench excavations and can be satisfactorily segregated, the Contractor may elect to use the material in lieu of purchased materials.

Density testing of the above backfilled trenches shall be the responsibility of the Contractor and shall be performed at no additional cost to the Owner. Testing shall be performed by an approved commercial testing laboratory. All backfill placed under this Method B shall be tested in accordance with AASHTO-T-99. Density testing shall be performed immediately prior to permanent pavement replacement and after the upper level of the compacted aggregate base or temporary pavement is removed to allow paving. When backfill has been placed using vibratory compaction, testing shall

be made at the exposed surface one (1) time per location and not less than one (1) test per four hundred (400) feet. All test locations shall be determined by the Engineer. Should the results of the density test show a compaction of less than ninety-five percent (95%) Standard Proctor Density, the area(s) represented by such test shall be immediately recompacted using METHOD C as specified, and at no additional cost to the Owner.

### **Method C - Backfill in Areas Subject to Vehicular Traffic (Jetting and Watersoaking)**

In lieu of the Mechanical Compaction described in Method B above, the Contractor may compact the Class I or II materials by jetting and watersoaking in the manner described below. Except for compaction procedures of the Class I or II materials, all provisions of Method B described above shall apply to this Method C. The trench compaction shall be started at the point of lowest elevation of the trench and work up along the trench. Jetting and watersoaking shall not begin until the trench has been backfilled to within eight (8) inches of the finished surface. Jetting and water soaking is not allowed when the groundwater table is above the spring line of the pipe.

The holes through which water is injected into the backfill shall be centered over the trench backfill and at longitudinal intervals of not more than six (6) feet. Additional holes shall be provided if deemed necessary by the Engineer to secure adequate settlement. All holes shall be jetted and shall be carried to a point one (1) foot above the top of the pipe. Drilling the holes by means of augers or other mechanical means will not be permitted. Care shall be taken in jetting so as to prevent contact with, or any disturbance of the pipe.

The water shall be injected at a pressure and rate just sufficient to sink the holes at a moderate rate. After a hole has been jetted to the required depth, the water shall continue to be injected until it begins to overflow the surface. The Contractor shall, at his own expense, bore test holes at such locations as the Engineer may designate in order to determine the effectiveness of the water soaking. An approved soil auger shall be used for boring test holes. As soon as the jetting and watersoaking has been completed, all holes shall be filled with soil and compacted. Surface depressions resulting from backfill subsidence caused by jetting and watersoaking shall be filled and recompacted by tamping or rolling to the satisfaction of the Engineer.

The Contractor shall provide all piping, fittings, etc., necessary to deliver the water along the site of the work and shall arrange with the Water Company for making the necessary taps and metering. All expenses incurred for installing the pipe and hose together with the cost of the water used shall be borne by the Contractor.

### **Temporary Surfaces Subject to Traffic**

The Contractor shall open streets to traffic immediately after completing the backfill operation. He shall accomplish this by installing the compacted aggregate base immediately after granular backfill. When temporary asphalt pavement is required this shall also be installed immediately. The use of class II backfill as a temporary surface is specifically prohibited. When using Method C backfilling, the Contractor may elect to delay the jetting operation until just prior to installing the permanent pavement. This shall not relieve the Contractor from the responsibility of maintaining the temporary surface in accordance with these specifications.

### **Maintaining Trench Surfaces**

All surface settlement of the backfill along trenches located beneath streets, roads, alleys, driveways and parking lots which are subject to traffic shall be kept filled level with or slightly above the original paved surface at all times with compacted aggregate base material until the permanent

pavement is satisfactorily restored. When temporary asphalt pavement is used, depressions and "pot holes" shall be promptly filled with the temporary asphalt material. Special attention shall be given by the Contractor to the timely and proper maintenance, leveling and grading of the surface of all backfilled trenches, especially those subject to traffic and especially following rains. The surface of streets, roads and alleys shall be maintained smooth and free of ruts and water trapping depressions by periodic power blading, scarifying; and/or filling settled areas, ruts, pockets, or holes with compacted aggregate base material or temporary asphalt where used.

As a dust preventive, the Contractor shall apply, at his expense, calcium chloride over the surface of the compacted aggregate base in such amounts and at such times as are necessary to avoid or eliminate dust complaints from nearby residents. In event of any question regarding the existence or nonexistence of a dust nuisance, the Engineer's decision on the matter will govern. The material used shall be Regular Flake Calcium Chloride having a minimum chemical content of Calcium Chloride of seventy-seven percent (77%). Unless otherwise specified or ordered by the Engineer, the rate of application shall be one and one half (1 ½) pounds per square yard of surface covered.

Wherever surface settlement is not important, unless otherwise specified or directed, the backfill shall be neatly rounded over the trench to a sufficient height to allow for settlement to grade after consolidation. Just prior to the completion of all work under the contract, any surface settlement below original ground surface shall be refilled in a satisfactory manner, and reseeded as specified if required.

### **Backfill Around Structures**

For purposes of this specification, structures shall include but not be limited to footings, foundations, basements, grade beams, vaults, capsules, manholes, ducts, tanks, bridges, inlets, headwalls, anchors, and etc. Items specifically excluded from this definition of "structures" are pipe, conduits and their appurtenances except those listed herein.

The material for backfill around structures shall meet the requirements of Class I, II or III backfill materials, as defined on page WM 3 (1 of 8) under the paragraph entitled "Backfill Materials". Material removed from the project site may be used as long as it meets this criteria. Materials classified as Class IV, clay balls, debris, topsoil, frozen or excessively wet or dry materials, weak soils or muck and other similar detrimental materials will not be put in place as backfill around structures.

All excavations shall be backfilled to the original surface of the ground or such other grade as shown on the plans or directed by the ENGINEER. The backfilling shall be carried along as speedily as possible and as soon as the concrete, mortar and/or other masonry work and pipe joints have sufficient strength to resist the imposed load without damage. All appurtenances and attachments to structure walls shall be made and any wall coatings shall be in place and cured prior to backfilling at that elevation.

Prior to backfilling, all formwork and construction debris will be removed. Any frozen or wet subsoil will be thawed or dried and compacted or removed prior to receiving backfill. During cold seasons, grades receiving backfill will be protected from frost during the work progress.

Begin backfill at the lowest elevation in the excavation. Place backfill in even, level layers. The thickness of the layer shall not exceed 75% of the compaction equipment manufacturer's rating for the equipment used when compacting the type of soil being placed for backfill, i.e. Class I, II and/or III.

Density tests will be made by the contractor, as directed by the Engineer, at no additional cost to the Owner. The tests are to be performed as described below and will be required as necessary to determine that uniform compaction throughout the depth of the lift has been achieved. Where backfill is required on both sides of structure or around the entire structure, backfill and compaction shall be done simultaneously on both sides or around the structure.

The compaction equipment used for compacting backfill around structures shall be submitted for approval of the Engineer. In general, the equipment will be approved for use upon demonstration that it is capable of compacting the soil to the required density without damaging adjacent structures and appurtenances. Tread mounted equipment shall not be considered effective compacting equipment.

The Contractor shall provide, when necessary, equipment and materials to moisten or aerate excessively wet or dry backfill to maintain optimum moisture content (+/- 2%) for the soil type being placed.

Rainfall and/or groundwater trapped in the excavation during backfill operations shall be pumped out by the Contractor. Excessively wet soil or soil which has eroded into the excavation shall be removed or excavated and recompacted prior to placing additional backfill material.

The in-place density obtained by the backfill operations will be measured by an Engineer approved independent testing laboratory obtained and paid for by the Contractor at no additional cost to the Owner. The percent compaction will be determined by dividing the density measurement by the maximum density for the soil type being tested. The maximum density will be determined by the standard proctor test, ASTM D698. Test reports shall indicate the location and elevation of the test. Density testing shall be made at frequent intervals along the backfill layer, at the surface and at mid-depth as determined by the Engineer. All backfill shall be compacted to at least 95% of maximum density and the top two feet of backfill under areas subject to vehicular traffic shall be compacted to 98% of maximum density.

Openings in structures to receive pipe shall be temporarily plugged or bulkheaded during backfill operations. Backfill shall proceed to an elevation level with the invert of the pipe. The pipe shall then be bedded and backfilled in accordance with the applicable Detailed Specification and Workmanship and Materials Specifications. Backfill of pipe not in areas subject to vehicular traffic shall be with Class I, II or III materials and in areas subject to vehicular traffic with Class I or II materials only.

### **General Fill Areas**

In areas where general site fill material is required and is not addressed in other parts of this section, Class IV material shall be acceptable. For general fill areas, fill materials shall be spread in layers not to exceed 8 inches when in a loose condition and be compacted to the satisfaction of the engineer by grading equipment.

(SECTION WM 4)

**RESTORATION OF SURFACES**

**General**

Restoration of surfaces shall include the removal of the existing surface, the disposal of the surplus material and the construction of new surfaces and adjusting all new and existing structures for proper grade prior to paving as indicated on the plans and/or as specified in these Specifications.

**Restoration of Paved Surfaces**

**Restoration**

After all excavations within the limits of paved surfaces have been properly backfilled and compacted in accordance with Sections WM 2 and WM 3 of these Specifications, the paved surfaces shall be restored to a condition as good as or better than existed prior to the beginning of the work, in accordance with the following specifications.

**State Paved Surfaces:** Highways, streets and roads constructed and/or maintained by the Indiana State Highway Department, which are wholly or partially removed, damaged or disturbed by the Contractor's operations shall be restored to a condition as good as or better than existed prior to the beginning of the work. Such restoration shall be performed in accordance with the pertinent specifications and standards of the Indiana State Highway Department, as applicable.

**Other Paved Surfaces:** Streets, alleys, sidewalks, driveways, curbs and gutters, not constructed or maintained by the State Highway Department, but paved with asphalt, concrete, cinders, crushed stone, waterbound macadam, oil-bound macadam, or heterogenous paving materials, which are wholly or partially removed, damaged, or disturbed by the Contractor's operations, shall be restored with like or better materials, acceptable to the Engineer, to a condition as good as or better than existed prior to the beginning of the work, so that movement of traffic, both vehicular and pedestrian, through the restored way shall be as free, safe and unimpeded as before.

**Temporary Surface**

Temporary trench surfaces shall be installed and maintained in accordance with section WM 3 Backfill, Fills and Embankments of this specification. This temporary surface shall be maintained by the Contractor until the permanent pavement is placed. Before placing permanent pavement, all or parts of the temporary surface shall be removed, as necessary, and hauled from the site of the work.

**Temporary Pavement Replacement**

Trench surfaces of highly traveled streets and roads may be designated to receive a temporary pavement replacement of cold mixed bituminous pavement. This temporary pavement shall be of the thickness specified or shown on the plans and shall be surface mixture Class A or B prepared and placed in accordance with Section 406 - Cold Mixed Bituminous Pavement of the latest edition of the Indiana State Highway Department Specifications. Prime and tack coats shall not be required. All temporary pavement shall be maintained by the Contractor to proper grade so as not to impede the safe flow of traffic until the permanent pavement replacement is made.

### Permanent Paving

Permanent paved surfaces shall be restored in accordance with the following requirements, unless otherwise set forth in the plans, the Special Provisions or Detailed Specifications; however, in all cases, the methods and materials of restoration shall meet the requirements of the Indiana State Highway Department, as applicable.

#### Class "B" Concrete Pavement

Existing local streets, roads, alleys, driveways and parking areas consisting of concrete pavement shall be restored according to the following requirements.

Areas subjected to excavation or damage by the Contractor are to be replaced as a whole. Sidewalks to be replaced in complete sections, streets and driveways as complete sections or replaced with sections that coincide with the original pattern, and to the Owner's and/or Engineer's satisfaction.

Prior to placing concrete, the existing edges are to be saw-cut in a neat straight manner, sub-base compacted, wetted down and edges swept clean. The use of flexible joint material is required as needed. All chunks of existing material larger than three by three (3 x 3) inches are to be removed.

Class "B" concrete pavement shall consist of a cast in place, layer of Class A concrete as described in Section WM 5 - Concrete of these specifications with one (1) layer of woven wire fabric (6 x 6 - W1.4 x W1.4) meeting ASTM Designation 497. Except where specified differently in the Detailed Specifications or shown differently on the Plans the concrete layer shall be six (6) inches thick. All rigid concrete pavement work and materials shall meet the latest specifications of the Indiana State Highway Department.

#### Class "C" Asphalt Pavement

Existing local streets and roads consisting of asphalt paving shall be restored with binder and surface of the thickness specified and as follows:

Areas subject to Class C asphalt pavement replacement shall have the existing edges (those created by cutting prior to excavation) re-cut in a neat straight manner as to remove irregularities and damaged areas. Manholes, service line trenches and existing valve areas are to be boxed out in a neat manner. All cuts shall be parallel or perpendicular to the trench. Curved or diagonal cuts shall not be allowed. All chunks of existing material larger than three by three (3 x 3) inches are to be removed.

The aggregate base course, including the previously placed temporary surface or pavement, shall have the upper portions removed to allow placement of the binder and surface. After the base is cutback, it shall be re-compacted with a ten (10) ton roller or other suitable equipment if approved by the Engineer. Care shall be taken to assure that not less than six (6) inches of compacted aggregate base remains below the permanent pavement.

The binder course(s) shall consist of compacted Hot Asphaltic Concrete, Type A, Size No. 9 as defined by the latest edition of the Indiana State Highway Specifications. Compaction shall be accomplished with suitable smooth wheel rollers. Where multiple binder courses are specified or shown on the plans each course shall be thoroughly compacted before placing the next layer.

Generally, conventional self-propelled rollers of not less than 10 tons gross weight shall be used. The Engineer may allow other specialized rollers for narrow trenches or lighter rollers with vibratory action. The Engineer shall consider alternate equipment only if Contractor requests same in writing and includes technical data on the specific equipment to be considered.

The quantity and thickness of binder courses required shall be as specified or shown in the Detailed Specifications or Plans. In absence of such direction one (1) course shall be required, two (2) inches in thickness.

The surface course shall consist of compacted Hot Asphaltic Concrete Surface Type A, (Size No. 11 or 12) as defined by the latest edition of the Indiana State Highway Specifications and placed in the same manner as described above for binder. The surface thickness shall be as specified or shown in the Detailed Specifications or Plans. In absence of such direction the thickness shall be one (1) inch.

#### Class "D" Asphalt Pavement

Existing State highways consisting of asphalt paving shall be restored with base and surface of the thickness specified as follows.

Areas subject to Class D asphalt pavement replacement shall have the existing edges (those created by cutting prior to excavation) re-cut in a neat straight manner to remove irregularities and damaged areas. Manholes, service line trenches and existing valve areas are to be boxed out in a neat manner. All cuts shall be parallel or perpendicular to the trench. Curved or diagonal cuts shall not be allowed. All chunks of existing material larger than three by three (3 x 3) inches are to be removed. Upper portions of the previously installed compacted aggregate base including temporary surface or pavement shall be removed to allow placement of the base and surface. Care shall be taken to assure that not less than six (6) inches of compacted aggregate base remains below the pavement asphalt base.

The base course shall consist of four (4) - three (3) inch separately compacted layers of Bituminous Base (Size No. 4 or 5).

The surface course shall consist of one (1) inch of compacted Hot Asphaltic Concrete Surface (Size No. 11 or 12).

All Hot Asphaltic Concrete Binder and Surfaces Mixtures for Class "D" shall be prepared, placed, compacted, and finished in accordance with latest edition of the Indiana State Highway Department Specifications.

#### Double Chip and Seal

This work shall consist of two applications of bituminous material, each followed by an application of cover aggregate in accordance with these specifications.

Grade and roll the sub-base prior to application.

The first application shall consist of applying a liquid sealing asphalt at the rate of 0.50 gallons per square yard followed by application of aggregate (Size No. 8 or 9) at the rate of forty (40) pounds per square yard and rolled to seat the stone in the asphalt.

The second application shall consist of applying liquid sealing asphalt at the rate of 0.40 gallons per square yard then chipped with aggregate (Size No. 11) at the rate of twenty (20) pounds per square yard.

All work shall be in accordance with Section 407 of the Indiana State Highway Department Specifications.

#### Adjustments of Shoulders Necessitated by Resurfacing

The shoulders of the road shall be adjusted to the elevation of the resurfacing with all materials (i.e., earth, sod, gravel, crushed stone, asphalt, etc.) necessary. The transition may be made within a distance of one (1) foot to one and one-half (1 & ½) feet from the edge of paving except in unusual cases where a greater distance is required. Existing driveways shall be primed and wedged from a featheredge to the final height of the resurfaced street paving.

#### Restoration of Ground Surfaces

All ground surfaces in public Rights of Way, easements and on private property that have been damaged or destroyed by the Contractor's operations shall be restored in accordance with the following specifications. All surplus material, rock, trees, shrubs, concrete pipe, asphalt, crushed stone, etc., not to be used in the Contractor's restoration operations shall be removed from the site and disposed of in an acceptable manner.

#### Restoration of Grassed Areas with Sod

Where shown on the plans or required by the Detailed Specifications established grassed areas shall be restored with sod containing grasses of comparable quality. Sod shall be placed and rolled so that the final elevations of the area being restored are the same as existed prior to the beginning of construction. Sod shall be pegged where necessary, and shall be watered and cared for to assure its survival.

#### Restoration of Grassed Areas with Seed and Mulch

Where shown on the Plans and allowed by the Detailed Specifications the Contractor shall seed and mulch in one of the following manners as designated in the Detailed Specifications:

Bluegrass Seeding: The ground shall be loosened approximately three (3) inches deep with a disc or a harrow and fertilized with twenty-five (25) pounds of 10-10-10, or equivalent, and one hundred (100) pounds of agricultural lime per one thousand (1,000) square feet.

The mixture of seed applied shall be as follows:

- 65% Kentucky Bluegrass
- 25% Perennial Rye Grass (Lolium Perenne)
- 10% Red Top (Arrostis Alba)

The seed shall be applied at a rate of five (5) pounds per one thousand (1,000) square feet and shall be well raked or boarded into the soil and mulched with straw of sufficient thickness to hold the seed until it has germinated.

During those times of the year that seeding may be substituted for sodding, as directed or permitted by the Engineer, the seeding shall be as set forth above.

**Rye or Fescue Seeding:** The ground shall be loosened approximately three (3) inches deep with a disc or harrow; fertilized with twenty-five (25) pounds of 10-10-10, or equivalent, and one hundred (100) pounds of agricultural lime per one thousand (1,000) square feet, sown at a rate of seventy-five (75) pounds per acre with an approved grade of perennial rye or Kentucky No. 31 Fescue grass seed that will provide early growth during the season in which it is planted. The seed shall be well raked or boarded into the soil.

The time for application of the seed and fertilizer shall be at the discretion of the Engineer.

**Mulching Material:** Unless otherwise permitted by the Engineer, vegetable materials for mulching shall be wheat, oats, barley or rye straw only. All materials shall be reasonably free from weed seeds, foreign material, and other grasses and chaff, and shall contain no Johnson Grass. The straw shall be reasonably bright in color and shall not be musty, moldy, caked, or of otherwise low quality. The straw shall be dry on delivery, and spread evenly where necessary.

Unless otherwise specified, the bituminous material to be used for "tying down" straw mulch shall be a slow setting emulsified asphalt. The material shall be nontoxic to plants.

Mulch net may be used to hold mulch in place until turf is established. The net shall be made of a tightly twisted craft paper yarn, leno woven with a wrap count of one (1) pair of yarns per two (2) inches and a filling count of two (2) per inch. Salvage edges and center shall be reinforced with polyethylene filament. The material shall have a minimum width of forty-five (45) inches.

### **Clean Up**

Before final acceptance of the work, the Contractor shall satisfactorily clean all areas within the limits of his operations including the street surfaces, walks, gutters, fences, lawns, private property and structures, leaving them in as neat, clean and usable condition as originally found. He shall remove all machinery, tools, surplus materials, temporary buildings and other structures from the site of work. He shall also remove all organic matter and materials containing organic matter from all areas and places used by him during construction. All pipes, manholes, inlets, etc., shall be cleared of all scaffolding, sedimentation, debris, rubbish and dirt.

Where the Contractor's operations have resulted in filling existing ditches, clogging existing culverts, damaging existing bridges, ground surfaces, sidewalks, driveways, etc., the Contractor shall re-ditch, clean culverts, repair or replace bridges, ground surfaces, sidewalks, driveways, etc. so as to return them to a condition as good as or better than existed prior to the beginning of his operations.

The Contractor's cleanup operations, which include repair, restoration or replacement of ground surfaces and existing improvements and the removal of rock, shall be performed continuously during the construction operations.

(SECTION WM 29)

**ROADWAYS & PARKING AREAS**

**Description**

New roadway construction shall be performed in accordance with this Specification (Section WM 29). Existing roadway repair and/or rehabilitation shall be performed in accordance with Section WM 4 (Restoration of Surfaces).

**Subgrade**

The subgrade of the roadways and parking areas shall be shaped either by cutting or filling as the plans may show or as directed by the Engineer. The area between the lines shown on the plans or necessary for construction shall be cleared of all brush, logs or other perishable material. During the construction of all embankments the subgrade shall be formed and maintained in such a manner that the surface water will readily flow off the embankment. The subgrade shall be brought to the correct grade on cuts and to approximate grade on fills with the proper allowance for settlement and shall then be allowed to settle. The subgrade shall be brought to the true shape and grade before the surfacing is placed.

The work shall include all necessary earth excavation, grading, and making of embankments and fills which shall be performed in accordance with the applicable Workmanship and Materials Specifications.

**Gravel or Crushed Stone Roadway**

The gravel or crushed stone roadway shall consist of a surface course laid on the prepared subgrade. The surface course shall be composed of run of the bank gravel, run of the crusher stone, crushed or uncrushed sand and gravel, or a uniformly blended mixture or combination of any of these materials. The materials shall be reasonably well graded from coarse to fine, generally within the following limits, unless otherwise specified or approved by the Engineer.

<u>Sieve Designation</u> <u>Square Openings</u>	<u>Passing</u>	<u>Percent Retained</u> <u>Retained</u>
1 1/2"	100	0
1"	80-100	0-20
3/4"	70-90	10-30
1/2"	55-80	20-45
No. 4	35-60	40-65
No. 8	25-50	50-75
No. 30	15-30	70-85
No. 200	5-10	90-95

The surface course material shall be deposited and spread uniformly upon the prepared subgrade, in a single layer eight (8) inches in thickness measured before compacting. The material shall be free of lumps of clay and shall be of uniform mixture and density when placed. Portions of the layer in which the aggregates become segregated in spreading shall be removed and replaced with

satisfactory material. Material shall not contain free water or frost, and shall not be placed in snow or on soft or frozen subgrade.

After being uniformly spread, the surfacing material shall be harrowed with a spike tooth harrow and floated with a road drag or grader until the surface is free from waves or irregularities. Harrowing and floating shall be continued until the surface has the required grade, line and cross section as shown on the plans, except that the harrowing shall not be carried on at such time or to such extent that the fine material will be separated from the coarse material. If the surfacing material is not thoroughly compacted by traffic before final acceptance or placement of hot asphaltic concrete pavement, then it shall be accomplished by means of suitable roller and wetting to obtain maximum density.

#### **Use of Roadway During Construction**

The Contractor may prepare the subgrade of the roads at the start of construction and use them throughout the construction period either with or without placing the surfacing material. If the crushed stone or gravel is placed and the road used during construction period, then the Contractor shall perform all necessary patrol maintenance at frequent intervals and add any additional crushed stone or gravel required to maintain the road. Before the final acceptance of the work, the roads and parking area including shoulders shall be brought to the grade and cross section shown on the plans and left in a condition satisfactory to the Engineer.

#### **Roadway Ditches**

All open ditches and channel changes parallel to and adjacent to the road shall be performed as a part of the roadway work. Lines, grades and cross sections of ditches shall be as shown on the plans unless otherwise required by the Engineer to obtain proper drainage.

#### **Hot Asphaltic Concrete Pavement**

Where shown on the plans or specified, the Contractor shall construct hot asphaltic concrete pavement over the compacted gravel or crushed stone surface course.

The hot asphaltic pavement construction shall be performed in accordance with the applicable sections of the latest edition of the Indiana State Highway Commission, referred to herein as "State Specifications".

The surface of the gravel or crushed stone surface course shall be graded to the required elevations and cross sections as shown and/or as established by the Engineer. All soft spots and/or unstable or unsatisfactory base material shall be removed and replaced with suitable granular material to provide a satisfactory base beneath all area to be paved. The newly placed or previously placed base material shall be scarified, brought to optimum moisture condition and thoroughly compacted ahead of the paving operations.

The hot mix asphaltic concrete shall be constructed in two courses. Section 403 of the State Specifications shall govern the materials and construction of the hot asphaltic concrete pavement except that only crushed stone shall be used in the surface course. Each binder course shall be laid to a one and one half (1 ½) inch thickness (one hundred sixty-five (165) pounds per square yard) and the surface course shall be laid one (1) inch thick (one hundred ten (110) pounds per square yard). All of the asphaltic concrete surface shall be Type B of the State Specifications.

(SECTION WM - 31)

**SEEDING AND SODDING**

**General**

The areas to be seeded shall be those areas which are shown on the plans or as specified in the Detailed Specifications.

**Prepared Seedbed**

Prior to start of preparation of seeding the Contractor shall remove all kinds of debris, sheds, tools, equipment and materials from the area to be seeded. The areas to be seeded shall be loosened and reworked by means of discing, harrowing, and rolling; or reworked by means of powered rotary tiller; so that the ground will be left in a satisfactory manner ready for seeding. The surface of the area to be seeded shall be left smooth and uniform which conforms to the finished grades and cross sections as shown on the plans, or as otherwise specified.

**Time of Seeding**

Spring seeding shall be done between March 1 and May 15, and Fall seeding between August 15 and October 15. During these periods, the time of seeding shall be determined by the Engineer whose decisions shall be based on the moisture content of the soil, and weather conditions. The Engineer may, at his option, extend the seeding season. (Mulched seeding may be done between March 1 and October 15 or possibly later in the fall.)

**Lime, Fertilizer and Seed**

Lime: Agricultural hydrated lime shall be uniformly applied at a rate of one (1) ton per acre over the area to be seeded unless otherwise specified. The Contractor may substitute one and one half (1 ½) tons of agricultural ground limestone for one (1) ton of agricultural hydrated lime.

Fertilizer: Fertilizer of the 10-20-10 grade shall be uniformly applied over the area to be seeded at the rate of 0.44 ton for each acre to be seeded unless otherwise specified. The above fertilizer is equivalent to four hundred (400) pounds ammonium sulphate, 20%N; three hundred fifty-five (355) pounds triple super phosphate, forty-five percent (45%) P<sub>2</sub>O<sub>5</sub>; one hundred thirty-three (133) pounds murate of potash, sixty percent (60%).

Spreading Method: The lime and fertilizer shall be spread uniformly over the area to be seeded, and shall be mixed into the top two (2) inches of soil with a disc harrow, rotary tiller, mixer or hand raking.

Seed: Unless otherwise specified, the following Pure Live seeds shall be mixed and applied at the rate of one hundred twenty (120) pounds per acre (2.8 pounds per 1,000 square feet):

Kentucky Bluegrass - Pao Pratensis -----70 lb.  
Kentucky 31 Fescue - Festuca Elatior,  
var. arundiancea -----30 lb.  
Red Fescue - Festurca rubra -----30 lb.

### Seeding Method

The Contractor shall employ the broadcasting method for seeding. The sowing seed mixtures shall be kept thoroughly mixed during the sowing operations to prevent separation of species and the subsequent lack of uniform distribution of species. The sowing shall be stopped when satisfactory results are not likely to be obtained due to excessive moisture, high winds, or other unfavorable conditions.

Seed shall be broadcast by either hand or by approved sowing equipment at a rate which will provide not less than the minimum quantity of pure live seed as specified. The seed shall be uniformly distributed over the designated areas. If sowing is by hand methods, one half ( $\frac{1}{2}$ ) the seed shall be sown when the sower is moving in one (1) direction and the remainder sown with the sower moving in right angles to the first direction. Where seed is sown by means of approved broadcasting equipment, the seed may be sown with a single pass of the equipment. Broadcast sowing shall not be done during windy weather. The seed shall be covered by means of a brush harrow, spike tooth harrow, chain harrow, cultipacker, or other approved device, so that most of the seed will be placed within a satisfactory depth range.

After the seed has been sown, and prior to compacting, the lawn area shall be cleared of all stones or other objects larger than two (2) inches in greatest diameter, and all wire, roots, brush or other objects that may interfere with subsequent mowing operations.

### Mulched Seeding

#### General

When specified in the Detailed Specifications, the required mulch seeding shall consist of seeding as specified hereinbefore under the heading of "Seeding", and then covering the seeded areas with mulch.

#### Mulch

The mulching material may consist of straw, chaff, clover, timothy, alfalfa, peppermint or soy bean hay, shredded fodder or clover chaff. All mulch shall be free from primary noxious weeds as set forth under Section 913.04 of the Indiana Department of Highways Standard Specification.

The mulching material at the time of delivery to the site of the work shall not contain more than fifty percent (50%) moisture. The mulching material shall be applied uniformly in a continuous blanket to a depth of approximately two (2) inches. After being held down, the mulch shall be thoroughly wetted, care being taken not to displace the seed or soil underneath.

#### Holding Mulch in Place

Unless otherwise specified, the mulch shall be held in place in accordance with Section 621.04, Method 1, 1985 IDOH Specifications. Regardless of the method used, the mulching material shall be satisfactorily maintained in place until final completion and acceptance of the work.

## Sodding

### General

The areas to be sodded shall be those areas which are shown on the plans or as specified in the Detailed Specifications. Sod shall be fibrous, well rooted bluegrass, or other approved sod, with the grass cut to a height of not more than three (3) inches. Edges of sod shall be cleanly cut, either by hand or machine, to a uniform thickness of not less than one and one half (1 1/4) inches, to a uniform width of not less than sixteen (16) inches, and in strips of not less than three (3) feet in length.

Sod shall be free from all primary noxious weeds as defined by the Indiana State Seed Law.

### Preparation of Ground before Sodding

The area to be sodded shall be smooth and uniform, and shall conform with the cross section required by the Plans or as directed. Grades prepared for sod shall be of sufficient depth below adjacent unsodded areas so that newly laid sod will conform with the surrounding surface.

After the grade has been prepared, and the topsoil has been spread, three fourths (3/4) lb. of agricultural hydrated lime and one fifth (1/5) lb. of 10-20-10 fertilizer shall be applied to each square yard, and thoroughly mixed into the top two (2) inches of soil. The area shall then be raked, and all clods, stones and debris removed.

### Laying Sod

Sod strips shall be carefully laid by hand in the direction designated by the Engineer. At the edges of sodded areas the sod shall be carefully fitted into the grade, if excavated.

The sod strips shall be butted closely together to avoid any open joints. After laying and the initial watering, the sod shall be firmly tamped or rolled to insure firm contact with the soil underneath and shall conform with the surrounding surface. After compaction, the sod shall present a smooth, even surface, free from lumps and depressions.

Sod placed on slopes shall be pegged if directed by the Engineer. Pegs shall be driven down until not more than one (1) inch protrudes above the sod surface. The number of pegs shall be sufficient to hold the sod in place.

### Watering Sod

The sod shall be thoroughly watered immediately after placing, and the watering continued for at least seven (7) days. If, at the end of thirty (30) days the sod is in good growing condition, the Contractor will not be required to repair or replace any sod which may thereafter be injured or damaged because of drought, unless written agreement for out of season sodding provides otherwise. The Contractor shall furnish the water at his expense.

### Seasonal and Temperature Limitations for Sodding

No sod shall be laid during the months of June, July and August, unless written permission is obtained from the Engineer. When such permission is received the Contractor shall, before laying the sod out of season, agree in writing to the following provisions:

1. Sod shall be in good, live and growing conditions;
2. Sod shall be placed within thirty-six (36) hours after cutting and during that period be protected from damage;
3. Sod shall be watered sufficiently, and otherwise maintained so that it will be in a live, growing condition at the time other items of the contract are accepted, provided the period between placing sod and acceptance is greater than thirty (30) days.

Winter sodding will be permitted when the temperature is above thirty-five degrees Fahrenheit (35° F). No frozen sod shall be laid and no sod shall be laid on frozen soil. Sod shall be properly protected from drying out or freezing and shall be laid within forty-eight (48) hours after cutting.

## **PART 7**

# **SPECIAL PROVISIONS**

**PART 7**

**SPECIAL PROVISIONS**

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## PART 7

### SPECIAL PROVISIONS

#### 1. Application of Special Provisions/Specifications

The purpose of these Special Provisions is to amplify the Information for Bidders, General Conditions, and/or the General Construction Specifications. Whenever conditions as set forth in any of the Specifications conflict with conditions of other Sections of the Specifications, the following order of precedence shall apply:

- a. Part 7 Special Provisions
- b. Part 3 General Conditions
- c. Part 2 Information for Bidders
- d. Part 8 Detailed Specifications
- e. Part 5 General Construction Specifications
- f. Part 6 Workmanship and Material Specifications

#### 2. Additions to the General Conditions

##### 2.1 Article 13 - Changes in the Work

Under Article 13, paragraph 13.1 the sentence reading "If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER" shall be changed to read:

"If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER and no other method."

In addition, the following sentence shall be added directly following the above correction: "The CONTRACTOR specifically agrees that no action for equitable adjustment may be brought unless the CONTRACTOR has secured a CHANGE ORDER signed by the OWNER prior to the commencement of the WORK covered by such CHANGE ORDER."

##### 2.2 Article 19 - Payments to Contractor

Under Article 19, paragraph 19.1 the sentence reading: "The OWNER will, within ten (10) days of presentation of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage", shall be changed to read: "The OWNER will, within thirty (30) days of presentation of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage."

In addition, the following shall be added to paragraph 19.1:

The establishment of an Escrow Account between the Owner and the successful bidder(s) for the retainage will be left to the sole discretion of the successful bidder(s).

2.3 Article 32 - Detailed Breakdown of Contract Amounts

Identified as Article 32, the following shall be included to the General Conditions:

The Contractor shall furnish, the Engineer reasonable facilities for obtaining such information as he may desire respecting the progress and execution of the work and the character of materials. The Contractor shall, upon request, furnish the Engineer with copies of expense bills for transportation charges, materials and equipment. In the event of cost-plus limited work as authorized in writing by the Owner, the Contractor shall submit daily payrolls and equipment ownership/rental charges in addition to the cost of materials.

Except in cases where unit prices form the basis of payment under the Contract, the Contractor shall; within ten (10) days of receipt of the Notice of Award, submit a complete breakdown of the Contract Amount showing the value assigned to each part of the work, including as a minimum labor, material, equipment, sub-contracts, mobilization, overhead and profit. Upon acceptance of the breakdown of the Contract amount by the Engineer, it shall be used as the basis for all Requests for Payment and Change Order negotiations as applicable.

3. Tentative Award of Contract

The Owner may elect to make tentative award of contract, pending the sale of bonds or the completion of other financing arrangements. In such event, and upon successful completion of the necessary arrangements to finance the cost of the project, the Owner and the successful bidder to whom the tentative award has been made shall enter into a written contract at the price stated in the proposal and as specified; provided that the elapsed time from the date of the tentative award shall not exceed the period as set forth in the proposal form. The time for execution is mutually agreeable to the Owner and the successful bidder.

4. Quality Control Plan

The Contractor shall provide and maintain an effective quality control program. This program shall establish a means to perform sufficient inspection and tests of conformance to applicable Specifications and Drawings with respect to the materials, workmanship, construction, finish, functional performance and identification. This control will be established for all construction. Copies of inspections, reports, and testing results shall be mailed to the Engineer's office by the Quality Control Organization through the Contractor. When submitted for the Engineer's records, the reports and/or test results shall bear the Contractor's certification that he has reviewed, checked and approved the reports and/or test results and that they are in conformance with the requirements of the Contract Documents.

The Contractor shall furnish the Engineer within thirty (30) days after receipt of the Notice to Proceed a quality control plan which shall include the procedures, instructions and reports to be used. This document will include as a minimum:

- A. The quality control organization;
- B. Authority and responsibilities of quality control personnel;
- C. Methods of quality control, including that for his Subcontractor's work;

- D. Test methods including, as specified, name of qualified testing laboratory to be used;
- E. Method of documenting quality control operation, inspection and testing.

5. Overtime Payment

All premium overtime expense incurred by the Engineer/Inspector and/or his representatives on account of the Contractor's construction forces working beyond forty (40) hours per week, Saturdays, Sundays and/or Holidays as scheduled by the Owner shall be paid by the Contractor to the Engineer. Payments shall be made monthly based on the Engineer's detailed invoice to the Contractor. If the Contractor fails to make any payments due the Engineer within thirty (30) days from the date of the Engineer's invoice, then the Engineer shall be entitled to interest at the rate of 1-1/2% per month (but not exceeding the maximum rate allowable by Indiana law) from said 30th day.

6. Authority and Duty of Resident Project Representatives (Inspectors)

The Resident Project Representatives employed by the Owner are stationed on the work to:

- A. Keep the Engineer/Owner informed as to the progress of the work and the manner in which it is being done.
- B. Report whenever it appears that the materials furnished and the work performed by the Contractor fail to fulfill the requirements of the Specifications and Contract.
- C. Call to the attention of the Contractor any deviation from or infringement upon the Plans and Specifications.
- D. Check and verify that Contractor is keeping and maintaining Project As-Built Drawings.

Resident Project Representatives shall be authorized to inspect all work done and materials furnished and to exercise such additional authority as may be delegated to them in writing by the Engineer. Such inspection may extend to all or any part of the work done and material furnished. They shall have authority to reject defective material and to suspend any work that is being done improperly, subject to the final decisions of the Engineer.

Such inspection shall not relieve the Contractor from any obligation to furnish acceptable materials or to perform all work strictly in accordance with the requirements of the Plans and Specifications.

Resident Project Representatives shall not be authorized to revoke, alter, enlarge, relax or release any requirements of the Specifications, nor to approve or accept any portion of the work, nor to issue instructions contrary to the Plans and Specifications. They shall, in no case act as foremen or perform other duties for the Contractor nor interfere with the management of the work by the latter. Any advice which inspectors may give the Contractors shall in no way be construed as binding the Engineer or the Owner in any way, or releasing the Contractor from the fulfillment of the terms of the Contract.

The Owner, the Engineer and his authorized representatives will at all times have access to the WORK, to determine if the WORK is proceeding in accordance with the Contract Documents. If in the opinion of the Owner, the Engineer and his authorized representatives, the WORK is not proceeding in accordance with the Contract Documents, or the Contractor is utilizing undesirable construction practices, the Owner, the Engineer and/or through his authorized representatives, may direct the Contractor to cease WORK and correct all defective work and undesirable construction practices. The Contractor will bear all expenses for correcting defective work, and will bear any and all monetary losses and expenses relating to and resulting from ceasing of WORK because of defective work. Such expenses to also include compensation to the Owner for non-productive inspection expenses during the time lost while correcting defective work, the Contractor will not be granted an extension of the project scheduled completion time.

7. Proposals for Equipment and Materials

Proposals for the various equipment and materials to be furnished and installed shall conform with the specifications for all bid items, with respect to general design, performance, materials of construction, workmanship, overall functions, testing and accessories.

Where the names of two (2) manufacturers are specifically mentioned in the Detailed Specifications and followed by "or equal", the bidders may bid on either of the two (2) named manufacturers or on any alternate proposal, equal or superior to the two (2) named manufacturers, provided that the "or equal" conforms with the requirements of these Contract Documents.

Whenever equipment other than that named specifically in the Specifications and shown on the Plans is proposed in the proposal, the Contractor shall include in his bid on such "or equal" equipment:

A. The cost of redesign of any mechanical, electrical and/or structural changes necessary to make the "or equal" equipment to comply with the ratings, loadings, dimensions, etc., prescribed herein;

and

B. Any increase in the cost of structures, piping, electrical and/or mechanical appurtenances involved by the proposed "or equal" equipment.

8. Landmarks and Monuments

The Contractor, nor any of his employees, shall not molest or remove monuments or landmarks without the written consent of the Owner. Any monument or landmark so removed shall be replaced at the expense of the Contractor. The cost thereof shall be retained from the monies due or to become due the Contractor under this Contract.

9. Guaranty

In addition to all materials and workmanship, all sod, seed, trees, shrubs, bushes, flowers, etc., which are placed, sowed, planted or replanted by the Contractor to replace same destroyed or damaged by his operations, shall be guaranteed for a period of one year from the date of the Certificate of Substantial Completion of the work under this Contract.

Should any of the above die or fail to grow, it shall be replaced, resown, or replanted at no cost to the Owner.

10. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in conformance with instructions.

11. Definitions

In the case of this Project, the Owner is the Shafer-Freeman Lakes Environmental Conservation Corporation and the Engineer is Commonwealth Engineers, Inc., of Indianapolis, Indiana.

12. Insurance Coverage

The Contractor shall purchase and maintain such insurance coverage sufficiently broad to insure the Owner, the Engineer, their consultants and each of their officers, agents and employees as additional named insured under the requirements of Paragraph 21 of the General Conditions.

13. New Materials and Equipment

Unless otherwise specifically permitted by the Specifications, all material and equipment used on this Project shall be new and un-used.

14. Differing Site Conditions Notification

The Contractor shall promptly and before such conditions are disturbed, notify the recipient in writing. The recipient in this case shall mean the Owner not the Engineer.

15. Substantial Completion and Liquidated Damages

The time for completion and liquidated damages is defined in Section 15 of the General Conditions. For purposes of clarification, liquidated damages will begin if the work is not fully complete within the Contract time. Issuance of a Certificate of Substantial Completion with items of work still outstanding will not stop liquidated damages.

16. Revisions to Construction Schedule and Time Extension Requests

The Contractor shall submit to the Engineer with each monthly progress payment request an updated construction schedule for the Engineer's review and approval. In addition and when applicable, the Contractor shall also submit with each monthly progress payment request any and all documentation necessary for any time extension that may be justified in the Contractor's opinion and due to conditions encountered during the period for which the claim is being filed. A Change Order will then be prepared for this claim as soon as it is approved by the Owner and Engineer.

Requests for time extensions made after the above specified period and not reflected in the updated construction schedules previously submitted shall not be considered.

17. Withholding of Construction Payments

The Engineer may recommend to the Owner and the Owner may withhold, or on account of subsequently discovered evidence, nullify the whole or part of any estimate to such extent as may be necessary to protect the Owner from loss on account of:

- a. Defective work not remedied;
- b. Claims filed or reasonable evidence indicating probability of the filing of claims;
- c. Failure of the Contractor to make payments properly to sub-contractors or material suppliers for which the Contractor has been paid by the Owner;
- d. A reasonable doubt that the Contract can be completed for the balance then unpaid;
- e. Damage to another Contractor;
- f. Failure of the Contractor to keep his work progressing in accordance with his time schedule;
- g. Performing of work in violation of the terms of the Contract.

18. Night and Sunday Work

No night or Sunday work requiring the presence of the Engineer or the Resident Project Representative will be permitted unless the Engineer has been given seven (7) days written notice. The Contractor will be responsible pursuant to Section 6 of these Special Provisions for all overtime (premium) expense incurred by the Engineer for night or Sunday work.

19. Established Construction Techniques

All construction techniques and specialized equipment used to complete the work under this Contract shall be only those established as suitable and effective by extensive prior use in similar work. Unproven or experimental techniques shall be allowed only with written permission from the Engineer. Upon receipt of written request from the Engineer, the Contractor shall submit detailed documentation to establish the qualifications of any technique or specialized equipment being employed to complete the work. Minimum documentation shall include not less than three (3) references where the procedure has been employed in similar work and under similar circumstances. Each reference shall include the location, date, project owners name and address and the name and telephone number of a person to contact for a technical reference. Techniques and/or equipment adjudged by the Engineer to be unsuitable and/or unproven shall be immediately discontinued. Work performed utilizing these techniques shall be reworked by the Contractor at his expense and as directed by the Engineer.

20. Shop Drawings

In addition to the requirements relative to Shop Drawings as contained in Paragraph 5 of the General Conditions and Paragraph 16 of the General Construction Specifications, the Contractor shall also meet the following requirements:

20.1 Shop Drawing Submission

Within ten (10) days after being notified by the Engineer as to the Shop Drawings required for the Project, the Contractor shall submit to the Engineer a preliminary schedule of Shop Drawing submissions.

The finalized Shop Drawing Schedule shall be submitted to the Engineer within ten (10) days after the Contractor has received the Engineer's comments relative to the preliminary schedule.

## 20.2 Shop Drawings

After checking and verifying all field measurements and after complying with the applicable procedures previously specified, the Contractor shall submit to the Engineer for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see 20.1 above), six (6) copies of all Shop Drawings, which will bear a stamp or specific written indication that the Contractor has satisfied the Contractor's responsibilities under the Contract Documents with respect to review of the submission. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable the Engineer to review the information as required.

20.2.1 Before submission of each Shop Drawing or sample, Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the work and the Contract Documents.

20.2.2 At the time of each submission, Contractor shall give Engineer specific written notice of each variation that the Shop Drawings or samples may have from the requirements of Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

Engineer will review and approve with reasonable promptness Shop Drawings and samples; but Engineer's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of separate items as such will not indicate approval of the assembly in which the item functions. Contractor shall make corrections required by Engineer, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

Engineer's review and approval of Shop Drawings or samples shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has in writing called the Engineer's attention to each such variation at the time of submission as required by paragraph 20.2.2 and Engineer has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by Engineer relieve Contractor from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 20.2.1.

Where a Shop Drawing or sample is required by the Specifications, any related work performed prior to Engineer's review and approval of the pertinent submission will be the sole expense and responsibility of Contractor.

21. Hazard Communication Standard

Pursuant to the Code of Federal Regulations, 29 CFR Part 1926, as may be amended, all Contractors, Subcontractors and materials suppliers on this Project shall provide access to all persons on the job site at all times, the Material Safety Data Sheets (MSDS) for all hazards of all chemicals per the Federal Regulations.

In addition, contractors, sub-contractors and material suppliers shall provide training to their employees on the MSDS pursuant to the Federal Regulations.

22. Excavation Safety Requirements

It shall be the duty and responsibility of the Contractor and all of its Subcontractors to be familiar and comply with all requirements of Public Law 91-596 29 U.S.C., Sections 651 et. seq., the Occupational Safety and Health Act of 1970 (OSHA) and all amendments thereto and to enforce and comply with all of the provisions of the Act. In addition and as required by Indiana State Law, HB 2071, Section 14. of IC 4-13.6-5-12, the Contractor and all of its Subcontractors shall comply with Subpart P of 29 CFR 1926 dated October 31, 1989 as may be amended.

Costs of all Excavation Protection shall be included in the Bid.

23. Products in Contact with Potable Water

Any treatment chemical, any material used in the manufacture of public water system components or appurtenances; any pipe, storage tank, valve, fixture or other materials which come into contact with water intended for use in a public water system shall be certified for conformance to ANSI and/or NSF 60 & 61. Any products not certified for compliance to ANSI/NSF 60 & 61 but appearing on the Advisory List published by the U.S. EPA shall not be used.

24. Project Site Erosion Control

The Contractor shall be responsible to comply with all aspects of 327 IAC 15-5, Rule 5, "Storm Water Run-Off Associated with Construction Activity". The Contractor shall submit all necessary fees and documents to the Indiana Department of Environmental Management (IDEM) prior to any construction activity. The Contractor shall be responsible for compliance with this Law throughout the construction period and shall pay any and all fines resulting from any violation, suit or penalty for non-compliance.

25. Confined Space Access

For projects which include construction activities within "confined spaces" as defined in Title 29 CFR Part 1926.21(b)(6), the Contractor is hereby advised that he must fully comply with all pertinent requirements as delineated in this regulation and as interpreted by OSHA. The Contractor shall have and maintain all necessary safety and testing equipment at all times during the course of the construction activity. In addition, it shall be the Contractor's responsibility to make this equipment available for use by the Owner or the Owner's Representative on the project site. If the Owner or the Owner's Representative requires

the use of this equipment during the course of observing or verifying the construction, it shall be made available in a timely fashion. If the Owner or the Owner's Representative is unable to observe or verify a portion of the construction due to a lack of the necessary safety or testing equipment, any resulting delays and/or expenses shall be the responsibility of the Contractor.

This equipment shall include a gas monitor capable of detecting oxygen, combustibles, and toxics including carbon monoxide and hydrogen sulfide. A metal oxide (broad based) sensor may be used in lieu of the individual carbon monoxide and hydrogen sulfide sensors. Contractor shall provide gas monitor calibration certifications to Engineer to verify proper maintenance.

26. Wage Scale

This Project has no established wage scales.

27. Permits

The following list of Permits (to be provided by Addendum) are to be incorporated into these Special Provisions to insure that all requirements of the Permits are known by the Contractor prior to bidding. Any provision of these Permits which conflicts with the Plans and Specifications must be adhered to.

- ▶ USCOE Section 404

28. Adverse Weather Delays

Unusually severe weather must actually cause a delay to the completion of the project to be considered as such. The delay must be beyond the control and without the fault or negligence of the Contractor. The following schedule of monthly anticipated adverse weather delays is based on the National Weather Service or similar data for the project area and will constitute the baseline for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

Monthly Anticipated Adverse Weather Delay  
Work Days Based On (5) Day Work Week

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(14)	(9)	(7)	(5)	(6)	(4)	(4)	(4)	(4)	(4)	(5)	(9)

Upon acknowledgment of the Notice To Proceed and continuing throughout the contract, the Contractor shall record the occurrence of adverse weather and the resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in the previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated herein, the Owner may convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days.

29. Payment to Contractor

Partial payments will be made to the Contractor as specified in Part 3 "General Conditions", page GC-10, item 19 "Payment to Contractor". In addition to the requirements of the General Conditions for partial payment to the Contractor, the Contractor shall be required to submit a copy of the partial payment request to the Contractor's surety for their review, not less than 10 days prior to the Owner's approval of the pay request, indicating a request for payment for work which may not have been tested in accordance with final acceptance procedures for said work. The Contractor shall include a statement on each monthly partial payment request indicating the pay request has been sent to the Contractor's surety and the Contractor shall attest to this by signing the pay request.

**DEPARTMENT OF THE ARMY**  
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE  
CORPS OF ENGINEERS  
P.O. BOX 59  
LOUISVILLE, KENTUCKY 40201-0059

November 17, 1997

Operations Division  
Regulatory Branch (North)  
ID No. 199701613-bkc

Mr. Robert E. Madden, CLP  
Lake Manager  
Lake Lemon Conservancy District  
P.O. Box 59  
Unionville, Indiana 47468

Dear Mr. Madden:

This is in response to your request for authorization to excavate a trench and place riprap along the shoreline in three areas within Lake Lemon, Sections 27 and 28, Township 10N, Range 1E, in Monroe County, Indiana. These areas are identified as: Site 1A1, northeast of the dam, 185 feet; Site 1C, Cemetery Island, 220 feet; and, Site 3B, northwest area of the lake, 240 feet. The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act (CWA).

Your project is considered a discharge of dredged and/or fill material for bank stabilization activities and minor discharges. The project is authorized under the provisions of Nationwide General Permit 33 CFR 330 (13), Bank Stabilization and (18), Minor Discharges, as published in the Federal Register, December 13, 1996. Under the provisions of this authorization, you must comply with the enclosed Terms for Nationwide Permits Nos. 13 and 18, and the Nationwide Permit Conditions.

You may proceed with the work without further contact or verification from us. The enclosed Compliance Certification should be signed and returned when the project is completed. This decision is valid for 2 years from the date of this letter. If your project is not completed within this 2-year period or if your project is modified, you must contact us for another determination. A copy of this letter will be sent to your agent.

If you have any questions, please contact me by writing to the above address, ATTN: CEORL-OP-FN, or by calling (502) 582-5607. Any correspondence on this matter should refer to our ID No. 199701613-bkc.

Sincerely,

ORIGINAL SIGNED

Brenda Carter  
Regulatory Specialist  
Regulatory Branch

Enclosures

### **TERMS FOR NATIONWIDE PERMIT NO. 13**

*Bank Stabilization.* Bank stabilization activities necessary for erosion prevention provided the activity meets all of the following criteria:

- a. No material is placed in excess of the minimum needed for erosion protection;
- b. The bank stabilization activity is less than 500 feet in length;
- c. The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line;
- d. No material is placed in any special aquatic site, including wetlands;
- e. No material is of the type, or is placed in any location, or in any manner, so as to impair surface water flow into or out of any wetland area;
- f. No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,
- g. The activity is part of a single and complete project.

Bank stabilization activities in excess of 500 feet in length or greater than an average of one cubic yard per running foot may be authorized if the permittee notifies the District Engineer in accordance with the "Notification" general condition and the District Engineer determines the activity complies with the other terms and conditions of the NWP and the adverse environmental effects are minimal both individually and cumulatively. This NWP may not be used for the channelization of a water of the United States. (Sections 10 and 404)

## TERMS FOR NATIONWIDE PERMIT NO. 18

*Minor Discharges.* Minor discharges of dredged or fill material into all waters of the United States provided that the activity meets all of the following criteria:

- a. The quantity of discharged material and the volume of excavated area does not exceed 25 cubic yards below the plane of the ordinary high water mark or the high tide line;
- b. The discharge, including any excavated area, will not cause the loss of more than 1/10 acre of a special aquatic site, including wetlands. For the purposes of this NWP, the acreage limitation includes the filled area and excavated area plus special aquatic sites that are adversely affected by flooding and special aquatic sites that are drained so that they would no longer be a water of the United States as a result of the project;
- c. If the discharge, including any excavated area, exceeds 10 cubic yards below the plane of the ordinary high water mark or the high tide line or if the discharge is in a special aquatic site, including wetlands, the permittee notifies the District Engineer in accordance with the "Notification" general condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected special aquatic sites, including wetlands (Also see 33 CFR 330.1(e)); and
- d. The discharge, including all attendant features, both temporary and permanent, is part of a single and complete project and is not placed for the purpose of a stream diversion.
- e. This NWP can not be used in conjunction with NWP 26 for any single and complete project. (Sections 10 and 404)



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live*

Frank O'Bannon  
Governor

John M. Hamilton  
Commissioner

December 24, 1997

100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
Telephone 317-232-8603  
Environmental Helpline 1-800-451-6027

**VIA CERTIFIED MAIL** P 126 011 393

Mr. Steve Chafin  
Commonwealth Biomonitoring, Inc.  
7256 Company Drive  
Indianapolis, Indiana 46237

Dear Mr. Chafin:

Re: Section 401 Water Quality Certification  
Notice: 199701613-bkc

This letter is in reference to your correspondence dated November 19, 1997, regarding confirmation that your proposed project does not require an individual Section 401 Water Quality Certification. Specifically, you propose to place fill material along several sites at Lake Lemon in Monroe County at Sections 27 and 28, Township 10N, Range 1E for stabilization. In a letter dated November 17, 1997, the U.S. Army Corps of Engineers authorized this activity under Nationwide General Permit Number 13, Bank Stabilization.

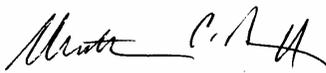
Based on current state and federal regulations, since this activity qualifies for Nationwide Permit 13 you are not required to obtain a site specific Section 401 Water Quality Certification for this project.

On February 8, 1997, the Indiana Department of Environmental Management granted Section 401 Water Quality Certification for a set of Nationwide Permits. This decision is noted in the enclosed reprinted letter. As such IDEM does not require any application for 401 Water Quality review, since any project which qualifies for this Nationwide Permit is considered approved based on the conditions set forth in our letter dated February 8, 1997.

The granting of Section 401 Water Quality Certification does not relieve the applicant from the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency.

We hope this letter satisfies any concerned parties and addresses all relevant issues. If there are any further questions or concerns, please contact Mr. Andrew Peloso, Project Manager, at 317/233-2481.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew C. Rueff". The signature is fluid and cursive, with a large loop at the end.

Matthew C. Rueff  
Assistant Commissioner  
Office of Water Management

Enclosure

# **PART 8**

## **DETAILED SPECIFICATIONS**

**PART 8**

**DETAILED SPECIFICATIONS**

**Areas: 1A, 1C, and 3B**

**DIVISION "A" - FLEXIBLE REVETMENT RIP-RAP SHORELINE STABILIZATION  
CONTRACT**

**DIVISION "B" - COIR SOFT ARMORING SHORELINE STABILIZATION CONTRACT**

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## SECTION 0

### GENERAL

#### DETAILED SPECIFICATIONS

#### 1. GENERAL

- 1.01 **Scope of Detailed Specifications** - The Detailed Specifications part of the Contract describes equipment, material, labor, services, and other provisions of the Contract which must be provided and met by the Contractor and which supersede the General Construction Specifications, Part 5, and the Workmanship and Materials Specifications, Part 6, of the Contract where the provisions of these Parts are in conflict.
- 1.02 **Scope of this Section** - This Section contains provisions which are applicable to all Detailed Specifications or are of a general nature.
- 1.03 **Contractor's Responsibility** - The Contractor shall furnish all materials, labor and equipment for the Work described under this Specification.
- 1.04 **Method of Construction** - Due to the nature of this project a land based reaching excavator or extend-a-hoe type excavator may be used for the excavation of shoreline slopes and the placement of rip-rap on the shoreline. The planting of live stakes and seedlings prior to the installation of the rip-rap may require the hand placement of rip-rap around the plantings and/or the use of protective tree tubes to protect the trees from damage inflicted by dumping rip-rap.
- It must be recognized by the contractor that the lake level may be up over a portion of the areas to be worked. The contractor will be responsible for working under these conditions and for supplying and installing materials by dredge, barge, crane, conveyor etc. or whatever as needed to complete the project. It must be recognized that lowering the lake level has been considered, but deemed not feasible.
- 1.05 **Payment** - The lump sum prices stated in the Contract for the respective Items shall be payment in full for the completion of all work specified and described to be included in the respective Items, complete and ready for use and operation, including testing, as shown on the plans and as specified.

#### 2. CONTINUITY OF PUBLIC SERVICES

- 2.01 The Project may involve the excavation and placement of spoil material close to existing utilities. Certain portions of the work may be accomplished within rights-of-way, and traffic flow must be maintained. Therefore, it is necessary that all work be performed in such a manner so as to provide to the greatest extent reasonably possible, a continuous service of potable water and other utilities, and the flow of traffic on public streets. The Contractor shall be fully responsible for, and shall provide, any and all temporary piping, pumping, controls, electrical, containment and

transportation equipment, and other equipment and work so as to maintain these public transportation and utility services. This may include but not be limited to the installation of temporary culvert structures.

### 3. COMPLETION OF WORK AND LIQUIDATED DAMAGES

3.01 Scope - This Section defines the Time for Completion, also called Contract Time, and the Liquidated Damages under the Contract Documents.

#### 3.02 Time for Completion and Liquidated Damages

- a. Time for Completion of Contract - The Contractor shall substantially complete the work and have the work substantially complete and ready for use in conformance with Part 9, "Bid Proposal Documents".
- b. Time is of the Essence - It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion of the work as specified in the Contract Documents are essential conditions of this Agreement.
- c. Rate of Progress - The Contractor agrees that said work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the contract time.
- d. Liquidated Damages - If the Contractor shall neglect, fail or refuse to complete the work within the Contract Time, or any proper extension thereof granted by the Owner, then the Contractor does agree, as a part consideration for the awarding of the Contract Documents, to pay to the Owner the amount specified in the Agreement, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every day that the Contractor shall be in default after the expiration of the Contract Time. The amount of liquidated damages specified in the Agreement is One Hundred Dollars (\$100.00) for each calendar day that the work remains uncompleted after the time stipulated for completion in these Contract Documents.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages which the Owner would sustain and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

- e. Exceptions to Liquidated Damages Provision - It is further agreed that time is of the essence of each and every portion of this Agreement and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where, under the Contract Documents an additional time is allowed for the completion of any work, the

new time limit fixed by such extensions shall be the essence of this Agreement. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

1. To any preference, priority or allocation order not specified in the Contract Documents and duly issued by any governmental entity;
2. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather, taking into consideration the climatic range of the preceding ten (10) year period; or
3. To any delays of subcontractors or suppliers occasioned solely by any of the causes specified in 1. and 2. of this subsection; and
4. The event directly caused the delay and the delay occurred despite the Contractor's best efforts to reorganize his work effort to avoid the delay.

Provide further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant in writing a further period of time prior to the tenth (10th) day after the beginning of such delay, notify the Owner, in writing, of the causes of the delay. Thereafter, Owner shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

#### **4. USE OF EASEMENTS**

- 4.01 Notwithstanding, anything to the contrary in these Contract Documents, the Contractor shall limit its work in and around easements to comply with those specific rights provided under the easements. Copies of easements are available from the Owner or City of Bloomington Utilities upon request. In the event Owner or the owner of the land on which the easement exists is damaged by Contractor's work in or around the easement, Contractor shall be fully responsible for restitution for the damage.

#### **5. PRODUCT**

- 5.01 General - Temporary fittings, fixtures, products, labor and workmanship necessary under this specification to accomplish testing shall meet all requirements of applicable specifications under this Contract.

**6. PROJECT FIRST AID FACILITIES**

- 6.01 The Contractor shall comply with the requirements for all local, State and Federal agencies having jurisdiction for temporary first aid facilities for construction sites.
- 6.02 The Contractor shall insure the availability of medical personnel for advice and consultation on matters of occupational health.
- 6.03 The Contractor shall make provisions prior to commencement of the work for prompt medical attention in case of serious injury.
- 6.04 An area that, when needed, can be segregated from other activities shall be designated specifically as a first aid station, and equipped as required to fulfill these requirements.
- 6.05 In the absence of an infirmary, clinic, hospital, or physician that is reasonably accessible in terms of time and distance to the work site, which is available for the treatment of injured employees, a person who has a valid certificate in first aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the work site to render first aid.
- 6.06 First aid supplies approved by the consulting physician shall be easily accessible when required.
- 6.07 The first aid kit shall consist of materials approved by the consulting physician in a weatherproof container with individual sealed packages for each type of item. The contents of the first aid kit shall be checked by the Contractor at least weekly and at the time the expended items are to be replaced.
- 6.08 Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, will be provided.
- 6.09 The telephone numbers of the physicians, hospital, or ambulances shall be conspicuously posted.

**7. INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARDS**

- 7.01 Miscellaneous INDOT Standards and Detailed Specifications are to be used in conjunction with the contract plans. The INDOT specifications are intended to be used only for material and installation specifications and not to supersede contract language or methods of measurement or payment described elsewhere in these specifications.

**8. COORDINATION OF WORK WITH OTHER CONTRACTORS**

- 8.01 General. Since the project may consist of more than one contractor working on separate shoreline areas, each contractor shall coordinate their work with each other.

## SECTION 1

### MOBILIZATION, BOND, AND OTHER

#### 1. GENERAL

##### 1.1 Scope

The Contractor shall furnish all labor, equipment and materials necessary for mobilization and demobilization to the project site(s) and for maintaining written progress reports for work completed each day as required by the Owner. This work shall also include the expense related to the purchase of required insurance and bonds and cost for pre-construction audio-video survey. In addition, the cost for all work items not specifically included under the other pay items shall be included in this Section.

##### 1.2 Payment

Payment shall be a lump sum for the work specified in this section as well as for all work items not specifically included under other pay items.

#### 2. PRODUCT

##### 2.1 Progress Reports

The Contractor shall maintain a written daily progress report of work performed. The purpose of the progress report is for tracking the depth and the approximate location of sediment that is dredged and placed each day. Work will be inspected by the Owner or an authorized representative of the Owner, from time to time and compared with work completed as noted in the daily progress report. A sample of this report is included at the end of this section.

##### 2.2 Insurance and Bonds

Required insurance and bonds shall be as set forth in Part 2 - "Information for Bidders", Part 3 - "General Conditions", and Part 7 - "Special Provisions".

##### 2.3 Pre-Construction Audio-Video Survey

###### A. General

1. Prior to construction, the Contractor shall tape all visible construction areas which will be disturbed by the Contractor to document the condition of the area. The purpose is to establish conditions prior to construction.
2. The product shall be high quality audio and video tape. The video portion shall present bright, sharp, clear pictures with accurate colors. The picture shall be free from distortion, tearing, rolls or other

picture imperfection. The audio portion shall be proper volume, clarity and free of distortion. The audio commentary shall be precise and concise explanatory notes.

**B. Camera**

Where the area to be taped is accessible by conventional wheeled vehicles, the video camera shall have a horizontal resolution of 500 lines at center. For areas non-accessible by conventional vehicles, the color video camera shall have a horizontal resolution of at least 300 lines at center. The tapes shall be high quality color VHS.

**3. EXECUTION**

**3.1.1 Audio**

The audio part of the tape shall provide a precise and concise summary. An audio summary shall be provided at the beginning of each tape, at each street, and at intervals of not more than 500 lineal feet. Audio summary shall include tape number, job title, job location, positional location, date and time, weather and any other notable condition.

**3.1.2 Coverage**

The recordings shall include coverage of all surface features located along the main route. The tape coverage shall include all existing cross streets, driveways, sidewalks, curbs, ditches, shrubbery or other structures located along the route.

**3.1.3 Taping Procedures**

- A. The rate of speed of the vehicle used for taping shall not exceed 48 feet per minute. Camera elevation from ground shall be 5 feet or greater.
- B. Recording shall only be done during periods of sufficient sunlight. No recording shall be done during periods of significant precipitation, mist or fog.
- C. The operator shall have had previous experience video documenting pre-construction work.
- D. The recording shall be completed prior to the start of construction and the placement of any construction materials or equipment on the proposed site. However, video work shall not precede commencement of work by more than seven (7) weeks.

**3.1.4 Delivery**

- A. The video tapes shall be delivered to the Owner prior to the start of construction. Any recordings not conforming to the specifications may be rejected with retaping to be done at no additional cost to the Owner.

- B. The video tapes shall be delivered in storage cases. Each tape shall be properly labeled. An index shall describe the contents of each tape.

### **3.2.1 Position Monitoring**

- A. The contractor shall utilize plan verifiable reference points shown on the plans. These shall include points around the proposed excavation areas for shoreline stabilization construction.

## SECTION 2

### SHORELINE DRIFT AND DEBRIS

#### 1. GENERAL

1.01 The Contractor shall furnish all labor, materials, equipment, and tools, barges and other equipment, and shall do all work necessary for all excavations and backfilling, fills and embankments, final grading and other work as required for the dressing of slopes to be stabilized with rip-rap revetment and tree planting, as shown on the plans and as specified, except work specifically included under other Contract Items.

1.02 The excavation and related work under this Section shall be performed as specified herein and in compliance with the following Workmanship and Materials Specifications.

- a. Excavation
- b. Backfill, Fills and Embankments
- c. Laying of Sewers

1.03 Construction operations shall be carried out in such a manner and sequence that erosion and air and water pollution will be minimized and held within acceptable limits. Construction methods that enhance fish and wildlife will be used where practical. Trees, stumps, and brush removed from the construction area may be piled for fish and wildlife habitat when approved by the Owner, landowner, and Engineer. It is important that material excavated from this project be contained.

**Earth or excavation spoil shall not be placed lakeward so as to cause excessive or undue resuspension of sediments into the water column.**

1.04 The completed job shall present a workmanlike appearance and in reasonable conformance to the line, grades, and elevations shown on the drawings.

1.05 All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used. This is particularly critical for this project since many boaters and general public may be in the immediate area of construction activities.

1.06. Disturbance to areas outside the construction limits shall be minimized to the greatest extent possible. Contractor is responsible for reclamation of all areas disturbed during construction.

#### 2. WORK INCLUDED

2.01 The work includes above and below water excavation for shaping and placement of erosion and sediment control materials, grubbing, stripping and clearing only those existing trees less than 6 inches diameter breast high (dbh) on all areas on which the work is to be done or temporary access is required; protection of all existing and new structures, piping, conduits, excavation, trees greater than 6 inches dbh, docks, piers, seawalls, subsoil and topsoil, stockpiling, sheeting, shoring, and

bracing, cofferdams, dikes, draining, pumping, handling and disposal of water from the excavations; backfilling; and other operations as specified and required to complete the dredging.

- 2.02 All pipelines and related dredging equipment located within public waterways shall include safety yellow flotation devices, buoys and flagging, together with automatic on at dusk-off at dawn flashing warning lights and as required by law. All cable systems placed over and /or under water shall also be marked with similar safety devices. Cable systems placed over water shall not be placed any lower than 14 feet above the water surface.
- 2.04 Excavated materials to be later used for fill or filler topsoil shall be stockpiled and used to make the fills and embankments as shown on the plans and in compliance with Section WM-3 of the Workmanship and Materials Specifications. Backfilling shall be done in a manner to avoid any undue structural loading on structures. Stockpiles shall be located so as to avoid interference with access to project areas and to least interfere with other contractors performing work on behalf of the Owner in the same vicinity and as approved by the Engineer.
- 2.05 The work shall be performed in such a manner so as to prevent damage to existing structures, including piping, that are to be retained. Soil boring logs and geotechnical recommendations are available for review in these specifications.

### 3. SUBSURFACE CONDITIONS

- 3.01 Borings and other investigations that have been made are included at the end of this Section. The information given in these logs applies only to conditions encountered at the indicated locations and to the depths shown. The Contractor shall examine the site personally and make such additional investigations as he may deem necessary for estimating costs, planning and execution of the work.

### 4. EXECUTION

- 4.01 The method of removal and disposal and equipment to be utilized shall be outlined in the Contractor's Plan of Operation to be submitted to the Owner prior to initiation of the actual work. The temporary stockpiling of excavation spoil shall be confined at all times so that sediment does not re-enter the water body.
- 4.02 Due to the nature of this project long reach excavation equipment has been assumed for these specifications. The contractor will be responsible for working under these conditions and for supplying and installing materials by dredge, barge, crane, conveyor etc. or whatever will be needed to complete the project. It must be recognized that partially draining the lake has been considered, but due to limitations with the primary outlet structure and the uncertain drying time needed, excavation must be performed from the top of the bank.
- 4.03 Slope Excavation. All areas to be excavated shall create a cut no steeper than 2 horizontal to 1 vertical.

- 4.04 Special attention shall be given to protecting and maintaining key shade, food, den and trees, and visual resources. Trees to be left standing and uninjured within the clearing limits shall be marked by the contractor for verification by the Owner. Removal of any trees and brush shall be done in such a manner as to avoid damage to other trees and property. All loose downed trees, logs, drifts, boulders, debris, and other obstructions lying wholly or partly in the area to be excavated shall be moved lakeward to be utilized for wave breaks and fish habitat.
- 4.05 Vegetation shall be established on all disturbed areas such as channel slopes, berms, spoil, disposal and other areas except when bank materials or land use conditions are such that vegetation is impractical and authorized by the Owner. Disturbed areas are to be final graded and seeded as soon as possible after exposure. Gullied and uneven areas will be smoothed before attempting to prepare seedbed. Upon finish grading of work area, the Contractor shall permanently seed and stabilize all final grade areas above the water line (see Detailed Section 9, Seeding & Sodding).
- 4.06 The Contractor shall consider all material to be encountered in this project. This shall include but not be limited to submerged trees and stumps.

5. **QUALITY CONTROL**

- 5.01 Should waters surrounding dredging operations become turbid or contain objectionable oils, floating turbidity control curtains and oil spill containment booms shall be used. Contractors shall consider use of environmentally safe oils. Turbidity curtains shall consist of the following or better:
- |    |            |                                                     |
|----|------------|-----------------------------------------------------|
| a. | Fabric:    | Polyester reinforced vinyl high visibility yellow   |
| b. | Connector: | Sections to be laced together through grommets      |
| c. | Flotation: | 6 inch expanded polystyrene over 9 lbs/ft. buoyancy |
| d. | Ballast:   | 1/4 inch galvanized chain (0.7 lbs/ft.)             |

6. **PAYMENT**

- 6.01 Payment for this item shall be made on a lump sum basis and shall include all revetment materials, revegetation, erosion control, labor, equipment, quality control and all other associated costs needed to complete the work under this section.
- 6.02 The Division A Rip Rap Revetment Contractor shall be required to take initial and final cross sections of the slopes to be protected in order to demonstrate that minimum excavation required as per plans are met.

## SECTION 3

### ACCESS AND STAGING

#### 1. ACCESS

The Contractor shall be aware of the limited access provided to the existing shoreline areas and shall be responsible for providing his own staging areas and for providing adequate and safe access roads and/or stream crossings.

Construction operations for access road construction shall be carried out in such a manner and sequence that erosion and air and water pollution will be minimized and held within acceptable limits. Construction methods that enhance fish and wildlife will be used where practical. Trees, stumps, and brush removed from the construction area may be piled for wildlife habitat into the waterway when it is clean and free from excessive sediments.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

Special attention shall be given to protecting and maintaining key shade, food, den trees, and visual resources. Removal of any trees and brush shall be done in such a manner as to avoid damage to other trees and property.

All trees, stumps, brush, and similar materials are to be removed from the site or disposed of in such a way as to have the least detrimental effect on the environment, or used to enhance fish habitat.

To the extent needed, all suitable materials removed from the excavation areas of the access road shall be used on the construction of the earthfill areas of the access road. All surplus or unsuitable materials shall be disposed of in a manner that will not interfere with the functioning of the road.

Material placed in the fill areas of access roads shall be free of detrimental amounts of sod, roots, frozen soil, stones over six inches in diameter or other objectionable material. The distribution and gradation of materials shall be such that there will be no lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material.

Topsoil shall be removed and stockpiled on areas where establishment of vegetation is a problem on exposed subsoils (all subsoils except loam, silt loam, and sandy loam, except where dense till is present). Topsoil shall be respread to provide a seedbed.

Where subsoil is exposed or is used in construction, a minimum of 4 inches of topsoil will be placed.

#### 2. STAGING AREA

The Contractor shall locate all equipment, trailers, materials, etc. as near to the excavation sites as possible to minimize traffic conflicts. The Contractor shall also be responsible for providing all temporary power and phone service required.

## SECTION 4

### PAVEMENT CROSSINGS

#### 1. GENERAL

##### 1.01 Scope

The Contractor shall make himself fully aware of the access to the shoreline stabilization sites from each shoreline area to be treated. All construction sites are owned by the City of Bloomington Utilities as well as the easements to the sites. Access to the sites must be coordinated with the City of Bloomington Utilities (CBU) to ensure that the contractor stays on CBU accesses. The CBU contact is Mr. Steve Glasgow, Special Water Quality Projects Coordinator. Mr. Glasgow can be reached at (812) 339-1444.

The Contractor shall be responsible to coordinate with the County Highway Department and private land owners and identify loading limits and safety requirements of the various roadways. All permits and bonds required by the County shall be the responsibility of the Contractor.

The Contractor shall be responsible for any damage to drives, roads, culverts, etc. caused by ingress/egress. Any repairs made due to damage caused by the Contractor shall be at his expense. The Contractor shall also keep all roads clean from all mud and other materials at all times, particularly by the end of each day.

The Contractor shall furnish all materials, labor, equipment and do all work necessary to complete the restoration and replacement of permanent pavement for streets, roads, alleys, driveways, etc. that are disturbed and/or specified.

#### 3. PRODUCT

##### 3.01 Pavement Materials

###### A. Asphalt Pavement Replacement

1. Hot asphalt concrete base materials Class B, or better, shall be in accordance with these specifications and Section 403 of the Indiana Department of Transportation Standard Specifications 1995 (ie. latest edition) INDOTSS. A tack coat per Section 902 shall be applied before placing the surface course.
2. Asphalt surface shall be Class B, or better, Hot Asphaltic Concrete Surface per Section 403, INDOTSS, latest edition.

###### B. Compacted Aggregate Base

Compacted crushed stone shall be compacted aggregate base meeting the requirements of Section 303 of INDOTSS, latest edition. Aggregate shall meet the requirements for No. 53 coarse aggregate in Article 904.02 of INDOTSS, latest edition.

### **3.02 Pipe Materials**

All pipe crossings shall consist of no less than 12 inches in diameter pipe for the following acceptable products in accordance with the INDOTSS:

- a. Aluminized Type 2 Steel, Corrugated Pipe, 0.064 inch thickness
- b. Reinforced Concrete Pipe, Class 3 per ASTM C76
- c. Welded Steel Casing Pipe, 0.25 inch wall thickness

## **3. EXECUTION**

### **3.01 Installation**

The placement of all pavement materials shall be in accordance with these specifications and the Indiana Department of Transportation Standard Specifications 1995 (ie. latest edition) INDOTSS. All road cuts shall be saw cut prior to removal of the pavement.

#### **A. Asphalt Pavement Replacement**

All asphalt road repairs shall consist of no less than a 1 inch Hot Asphaltic Concrete surface mix No. 11 or 12 on 4 inches of HAC base (binder) mix No. 9, in accordance with the INDOTSS, latest edition when existing asphalt pavements are disturbed.

#### **B. Compacted Aggregate Surfaces and Base**

All road repairs shall consist of providing no less than 8 inches of compacted aggregate, #53 compacted crushed stone. During construction, all pavement crossings shall be filled with compacted surfaces and bases and maintained to minimize the development of objectionable pavement depressions.

### **3.02 Pipe Crossings**

All pipe crossings shall be backfilled with granular backfill or compacted aggregate as soon as the pipe is placed so as to minimize disturbance to traffic.

### **3.03 Traffic Control**

The Contractor shall plan construction activities to minimize impact to traffic. Local traffic access must be maintained at all times. To maintain traffic movement, appropriate traffic control devices shall be used. Such traffic control devices shall comply with the latest edition of the Indiana Manual on Uniform Traffic Control Devices. The Contractor shall follow the requirements of the INDOT Traffic Control Plan included herein at the end of this section when no other plan is submitted for review.

**4. PAYMENT**

**4.01 Pavement Materials**

No separate payment will be made for this item, but the cost for this work shall be included in the cost for Shoreline Stabilization.

**4.02 Pipe Materials**

No separate payment will be made for this item, but the cost for this work shall be included in the cost for Shoreline Stabilization.

## SECTION 6

### Flexible Revetment (Rip-Rap), Reforestation and Soft Armoring (Coir Logs/Coir Blankets)

#### 1. GENERAL

##### 1.01 Scope

- A. The Contractor shall furnish and install 8-12 inch rip-rap where specified on the construction plans as needed for shoreline revetment.
- B. The Contractor shall furnish and install geotextile where specified on the construction plans as needed for rip-rap underlayment for shoreline revetment separation layer.
- C. The Contractor shall furnish and install live stakes of buttonbush, and sandbar willow according to construction plans as needed for shoreline revegetation.
- D. The Contractor shall furnish and install 20 inch diameter coir logs and 16 inch diameter coir logs where specified on the construction plans as needed for shoreline revetment.
- E. The Contractor shall furnish and install coir blanket at least .6lb/S.Y. where specified on the construction plans as needed for shoreline revetment.

#### 2. PRODUCT

##### 2.01 Riprap

All riprap provided for this project shall be provided in accordance with Section 616, "Riprap and Slopewall" of the Indiana Department of Transportation Standard Specification, 1995 (i.e., latest edition)(INDOTSS) for 8 - 12 inch rip-rap except for hauling, measurement, and payment methods. This is to establish material size and type, not the method of placement.

##### 2.02 Geotextile

Beneath all areas to receive rip-rap, a geotextile shall be placed in contact with the soil to receive revetment. The geotextile shall extend above the upper elevation limits of the areas to receive rip-rap with a length sufficient to be buried in a trench as depicted in the detail sheet of the plans.

The geotextile shall be an eight (8) ounce nonwoven fabric or woven monofilament geotextile with the following minimum properties:

<u>Property</u>	<u>Test Method</u>	<u>Rating (English Units)</u>
Grab Tensile Strength	ASTM D-4632	200
Grab Elongation	ASTM D-4632	15
Puncture Strength	ASTM D-4833	120
Mullen Burst	ASTM D-3786	400
Trapezoidal Tear	ASTM D-4533	85
Apparent Opening Size	ASTM D-4751	45
Permittivity	ASTM D-4491	1.50
Permeability	ASTM D-4491	0.38

Examples of acceptable products will include Carthage Mills 15% woven monofilament geotextile or Synthetic Industries nonwoven 801 geotextile.

### **2.03 Tree Planting - Live Staking and Seedlings**

All areas to receive rip rap shall be planted with live stakes and seedlings, according to the schedule on the planting plan, after installation of geotextile to the site. The live stakes and seedlings may be planted before or after installation of rip-rap at the discretion of the contractor. Care must be taken in the planting of the trees as there will be a survival rate requirement of 75% of the live stakes and seedlings planted, after one complete growing season. A pilot hole shall be prepared for each live stake and seedling with mycorrhizae treatment applied to each hole or tree, either in tablet or powder form (minimum 2 oz. per hole), or stake ends and seedling roots may be dipped in a mycorrhizae rooting treatment dip (prepared according to label directions), prior to planting each tree. Live stakes shall not be driven with a hammer.

### **2.04 20 Inch (50 cm) Diameter Coir Logs**

Coir logs with 20 inch diameter must be placed in according to the construction plans 18 inches below the normal pool level (630 feet above mean sea level) at 628.5 feet above mean sea level. The logs must be staked down with hardwood stakes according to the details in the construction plans.

The 20 inch coir logs shall have the following properties:

Outer Net:	Coir Twine	Min. Tensile 80 lbs (356 N)
Inner Core:	Mattress Coir	Unwashed Fibers (retain oils)
Unit Weight:	Mattress Coir	Min. Density 19.4lbs/L.F. (28.3kg/m)

### **2.05 16 Inch (40 cm) Diameter Coir Logs**

Coir logs with 16 inch diameter must be placed in according to the construction plans at the toe of the shoreline slope at a minimum elevation of 629.50 feet above mean sea level. The logs must be staked down with hardwood stakes according to the details in the construction plans.

The 16 inch coir logs shall have the following properties:

Outer Net:	Coir Twine	Min. Tensile 80 lbs (356 N)
Inner Core:	Mattress Coir	Unwashed Fibers (retain oils)
Unit Weight:	Mattress Coir	Min. Density 8.9lbs/L.F. (14.1kg/m)

### **2.06 Coir Blanket**

Coir blankets shall be installed so that the lower or lakeward edge is placed so that the 16 inch coir log rests on the lakeward edge of the coir blanket. The blanket

should extend up the slope of the bank so that the upper edge of the blanket is no less than elevation 632.7 or to the top of the bank, whichever is lowest.

The coir blanket shall have the following minimum properties:

Weight per Sq. Yd.	.55lb/S.Y. (300g/s.m.)
Roll Width	7'10" (2.4m)
Thread Type	Polypropylene

### 3. **EXECUTION**

#### 3.01 **Installation**

- A. Riprap shall be installed in accordance with Section 616 of the INDOTSS under the section for "dumped riprap" except that the material is to be placed under a submerged condition, lakeward of the toe of the shoreline slope.
- B. All rip-rap must rest on geotextile, and the top edge of the geotextile must be trenched into the earth above the upper extent of the rip-rap as depicted on the details.
- C. Live staking and seedling planting shall be performed with fresh stock. Live stakes shall be cut for no longer than 3 weeks prior to installation. Live stakes must be kept wet, preferably submerged, until installation. Live stakes shall not be harvested from erosive shorelines from the lake or stream to be treated.
- D. Coir logs shall be installed according to the details in the construction plans. The logs shall be staked to the lake bed or shoreline slope toe with hardwood stakes on either side of the log and coir twine used to tie over the top of the logs between stakes to hold down the logs. The stakes shall be driven one foot from either end of the coir log and again at the center of the coir logs. Hardwood stakes shall be no less than 40" long, and driven straight (vertically) into the lakebed. Ends of the coir logs shall be butted up tight to one another. Coir logs placed at the toe of a slope shall be placed on top of the bottom edge of a coir blanket.
- E. Coir blankets shall be installed so as to be in complete contact with the soil it is placed over. Any seeding or seed bed preparation specified shall be done prior to blanket installation. Any trees planted at the site can be planted through the blanket. Care must be taken when planting trees to not create a hole in the blanket larger than necessary to accommodate the live stake or seedling to be planted. The top edge of the blanket shall be stapled with wire staples no less than 6" in length, with a staggered double course of staples 8" O.C. The remainder of the blanket area shall be stapled with 6" minimum staple length with a minimum of 3.8 staples per square yard, according to the detail in the construction plans. If blankets must be overlapped, the top blanket shall be lapped over the top of the bottom blanket a minimum of 6".

4. **PAYMENT**

4.01 **Geotextile**

Payment for geotextile shall be made on a lump sum basis under this item. Payment under this item shall also include all installation costs including labor and other ancillary costs to complete the installation.

4.02 **Riprap**

Payment for hand laid installed or dumped installed shall be made on a lump sum basis under this item. Payment under this item shall also include all installation costs including labor and other ancillary costs to complete the installation.

4.03 **Live Staking and Tree Seedlings**

Payment for live stakes and tree seedlings installed shall be made on a lump sum basis under this item. Payment under this item shall also include all installation costs including labor and other ancillary costs to complete the installation.

4.04 **Coir Logs**

Payment for coir logs installed shall be made on a lump sum basis under this item. Payment under this item shall also include all installation costs including labor and other ancillary costs to complete the installation.

4.05 **Coir Blanket**

Payment for coir blanket installed shall be made on a lump sum basis under this item. Payment under this item shall also include all installation costs including labor and other ancillary costs to complete the installation.

**SECTION 7**

**SEEDING AND REVEGETATION**

**1. SOIL STABILIZATION AND VEGETATION RE-ESTABLISHMENT OF DISTURBED AREAS (to override the section WM - 31 Seeding and Sodding Specification)**

**1.01 Re-establishment of Permanent Vegetative Cover**

- A. Upon finish grading of work area the CONTRACTOR shall permanently seed and stabilize all final grade areas above the water line.
- B. CONTRACTOR shall attempt to seed during optimal seeding dates. During the growing season optimal dates are March 1 - May 10 and August 10 - September 30. Optimal seeding dates during dormant period (temperatures below 50°) are December 1 through March 28. Seedbed preparation erosion control blankets and mulch can be applied months ahead of actual seeding. Seed can then be applied directly to the prepared seedbeds.
- C. The following combinations of seed will be permissible for their respective applications.

**Permanent Seeding Areas For Finish Grade  
Completed Between March 1 and September 30**

<b>Steep Banks and Low Maintenance Areas Not in Channels or Ditches</b>		
<b>Seed Species and Mixture Options</b>	<b>Rates Per Acre</b>	<b>Optimum Soil pH</b>
Smooth bromegrass + red clover*	30 lbs. 15 lbs.	5.5 - 7.5
Fawn Tall fescue + white or ladino clover*	45 lbs. 2 lbs.	5.5 - 7.5
Fawn Tall fescue + red clover*	45 lbs. 15 lbs.	5.5 - 7.5
<b>Lawns and High Maintenance Areas</b>		
<b>Seed Species and Mixture Options</b>	<b>Rates Per Acre</b>	<b>Optimum Soil pH</b>
Bluegrass	130 lbs.	5.5 - 7.0
Perennial ryegrass (turf type) + bluegrass	55 lbs. 80 lbs.	5.6 - 7.0
Fawn tall fescue (turf type) + bluegrass	150 lbs. 20 lbs.	5.6 - 7.5

<b>Channels and Areas of Concentrated Flow</b>		
<b>Seed Species and Mixture Options</b>	<b>Rates Per Acre</b>	<b>Optimum Soil pH</b>
Perennial ryegrass + white or ladino clover*	125 lbs. 2 lbs.	5.6 - 7.0
Kentucky bluegrass + smooth brome + switchgrass + timothy + perennial ryegrass + white or ladino clover*	20 lbs. 10 lbs. 3 lbs. 4 lbs. 10 lbs. 2 lbs.	5.5 - 7.5
Fawn Tall fescue + white or ladino clover*	125 lbs. 2 lbs.	5.5 - 7.5
Fawn Tall fescue + perennial ryegrass + Kentucky bluegrass	120 lbs. 20 lbs. 20 lbs.	5.5 - 7.5

**Permanent Seeding Areas For Finish Grade  
Completed Between September 30 and February 28**

<b>Steep Banks and Low Maintenance Areas</b>		
<b>Seed Species and Mixture Options</b>	<b>Rate per Acre</b>	<b>Optimum Soil pH</b>
Smooth brome + red clover*	45 lbs. 20 lbs.	5.5 - 7.5
Fawn Tall fescue + white or ladino clover*	60 lbs. 3 lbs.	5.5 - 7.5
Fawn Tall fescue + red clover*	65 lbs. 20 lbs.	5.5 - 7.5
<b>Lawns and High Maintenance Areas</b>		
Bluegrass	185 lbs.	5.5 - 7.0
Perennial ryegrass (turf type) +bluegrass	80 lbs. 120 lbs.	5.6 - 7.0
Fawn Tall fescue (turf type) + bluegrass	225 lbs. 35 lbs.	5.6 - 7.5

<b>Channels and Areas of Concentrated Flow</b>		
Perennial ryegrass + white or ladino clover*	190 lbs. 2 lbs.	5.6 - 7.0
Kentucky bluegrass + smooth brome grass + switchgrass + timothy + perennial ryegrass + white or ladino clover*	30 lbs. 15 lbs. 5 lbs. 6 lbs. 15 lbs. 2 lbs.	5.5 - 7.5
Fawn Tall fescue + white or ladino clover*	190 lbs. 2 lbs.	5.5 - 7.5
Fawn Tall fescue + perennial bluegrass + Kentucky bluegrass	190 lbs. 26 lbs. 26 lbs.	5.5 - 7.5

For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring seeded, although the grass may be fall seeded and the legume frost seeded; (c) and if legumes are fall seeded do so in early fall.

**1.02 Erosion Control Blanket Mulch Over Seeded Areas**

- A. Cover all final graded areas with a straw erosion control blanket consisting of .7lb/square yard of straw between poly netting on either side of the blanket. The blanket used should meet or exceed the performance of Greenfix America WS072 or equivalent.

**2. PAYMENT**

**2.01 Payment**

All costs for work covered under this section shall not be paid for separately but shall be included in Section 2, Shoreline Stabilization.



GEOTECHNICAL EXPLORATION REPORT  
LAKE LEMON SHORELINE STABILIZATION  
PROJECT

UNIONVILLE, INDIANA

COMMONWEALTH BIOMONITORING, INC.  
INDIANAPOLIS, INDIANA

ETS PROJECT NO. I6651  
June 11, 1997

## EXECUTIVE SUMMARY

A summary of the conclusions and recommendations contained in this report is given below. This summary should not be considered apart from the entire text of this report, including all conclusions and qualifications mentioned therein.

ETS performed a geotechnical evaluation for shoreline protection against wave energy at ten sites along the shoreline of Lake Lemon. The erosion sites generally consist of an immediately upland slope of about 4H to 2H : 1V, well covered by vegetation. Shoreline erosion and very steep slopes were generally observed at the toe, as shown in photographs in the Appendix. Slumps or apparent surficial sloughing apparently triggered by erosion at the toe were observed at multiple sites. However, scarps associated with slumps and sloughing generally were within about 3 to 5 feet from the shoreline, except at site 1B where apparent surficial sloughing extended back from the shoreline about 60 feet, and site 3B where there is a large leaning tree with an area of soil about 10 to 15 feet diameter which appears to have rotated toward the lake. The approximate upland and toe slopes, soil type, the approximate maximum height of the eroded slopes, and locations of observed slumps and sloughing are listed in Table 2.1.

Based on the regional geologic mapping, unconsolidated deposits along the shoreline consist of residual soils degraded from the bedrock, or lacustrine deposits consisting of loessial silty clay, silt, silty fine sand with clayey binder of former lake areas. Based on site observations and sampling, the soil conditions encountered on the slopes generally consisted of brown silty clay to clayey silt, and silt with some sand and gravel at the toe of the slope.

Based on the field observation, and the limited sampling and laboratory testing program, we conclude the severe loss of the soil slopes at the toes appears to be caused by wave energy erosion, with weathering by freezing and thawing contributing to the erodibility of the materials.

In general, for the ten subject sites, we anticipate adequate erosion protection for the design wave conditions can be achieved with riprap or gabion revetments, except at sites 1B and 3B. For site 1B, where there is evidence of upland sloughing, additional measures such as drainage may be necessary to reduce the risk of continued slope movement. Additional geotechnical exploration would be necessary to develop detailed recommendations for remedial measures at site 1B. For site 3B, protection of the area of the large leaning tree is not practical without placement of fill in the lake, which we understand is not feasible based on permitting considerations. Therefore, a "do nothing" alternative in the immediate area of the tree may be the most practical alternative. Over time, continued erosion is likely to cause the tree to fall, at which time the area may be graded and slope protection installed.

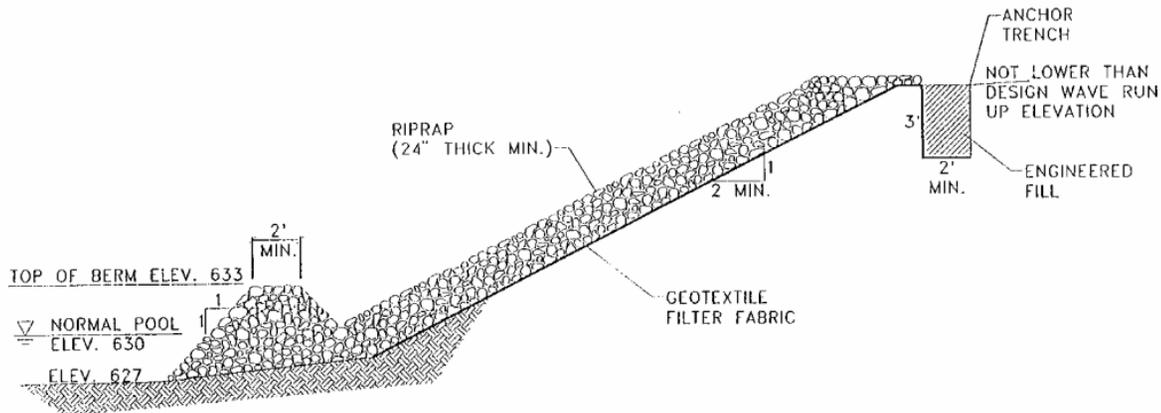
Details of recommendations for riprap and gabion revetments are outlined in the report and illustrated in details in the Appendix. Riprap and gabion revetments provide erosion protection but do not act as retaining structures, and therefore the slope angle is limited by the characteristics of the underlying soil types. For either riprap or gabion revetments, we recommend the slopes be cut to not steeper than 2H:1V. At some sites, particularly site 3A, extensive cut will be necessary to achieve the recommended maximum slope of 2H:1V, and land acquisition may be necessary. However, potentially technically feasible alternatives such as gabion breakwaters or gabion retaining walls would require launching gabions from a barge, and would likely be more costly, based on our discussions with Commonwealth Biomonitoring.

Report Prepared By:

Peter S. Lee, Ph.D., P.E.  
Senior Engineer

Report Reviewed By:

Elizabeth M. Dwyre, P.E.  
Geotechnical Services Manager



NOTE:  
 ELEVATION OF TOP OF RIPRAP KEY MUST BE NO  
 HIGHER THAN BOTTOM OF DESIGN TURBULENCE ZONE.



Project: Lake Lemon Shoreline Stabilization  
 Client: Commonwealth Biomonitoring, Inc.  
 Location: Unionville, Indiana  
 Project No.: 16651  
 Date: 6/97  
 Scale: Not To Scale

riprap with  
 berm design  
 illustration

Figure 6



# GENERAL NOTES

## Drilling & Sampling Symbols

SS — Split Spoon — 1 3/8" I.D., 2" O.D., except where noted	HA — Hand Auger Boring
ST — Shelby Tube — 3" O.D., except where noted	BS — Bag Sample
PA — Power Auger	RC — Rock Core with diamond bit, NX size, except where noted
PS — Piston Sample — 3" diameter	RB — Roller Bit
WB — Wash Boring	N/A — Not applicable or available
WS — Wash Sample	

Standard Penetration Test "N" Value — Blows per foot after an initial 6 inch seating of a 140 pound hammer falling 30 inches on a 2 inch O.D. split spoon, except where noted.

## Water Level Measurement Notation & Symbols

First	— When noted during drilling or sampling process
Completion	— After all drilling tools are removed from borehole
HR	— Number of hours after completion
N/R	— Not recorded
Dry	— No measurable water level found in borehole

## Particle Sizes

Boulders	— Greater than 6" (152.4 mm)
Cobbles	— 3" to 6" (76.2 mm to 152.4 mm)
Gravel	— Coarse — 1/4" to 3" (19.05 mm to 76.2 mm)
Gravel	— Fine — (No. 4) 3/16" to 3/4" (4.75 mm to 19.05 mm)
Sand	— Coarse — No. 10 to No. 4 (2.00 mm to 4.75 mm)
Sand	— Medium — No. 40 to No. 10 (0.425 mm to 2.00 mm)
Sand	— Fine — No. 200 to No. 40 (0.074 mm to 0.425 mm)
Silt	— Minus No. 200 (0.005 mm to 0.074 mm)
Clay	— Less than 0.005 mm

Water levels indicated on the boring logs are the levels measured in the boring at the time indicated. The accurate determination of groundwater levels may not be possible with short term observations, especially in impervious soil: The level shown may fluctuate throughout the year with variations in precipitation, evaporation, runoff, and other hydrogeologic factors.

## CLASSIFICATION

### Cohesionless Soil

Relative Density	"N" Value (Blows/ft)
Very Loose	0 to 4
Loose	5 to 9
Medium Dense	10 to 29
Dense	30 to 49
Very Dense	50 to 79
Extremely Dense	Over 80

### Soil Constituents

"Trace"	Less than 10%
"Trace to Some"	10% to 19%
"Some"	20% to 34%
"And"	35% to 50%

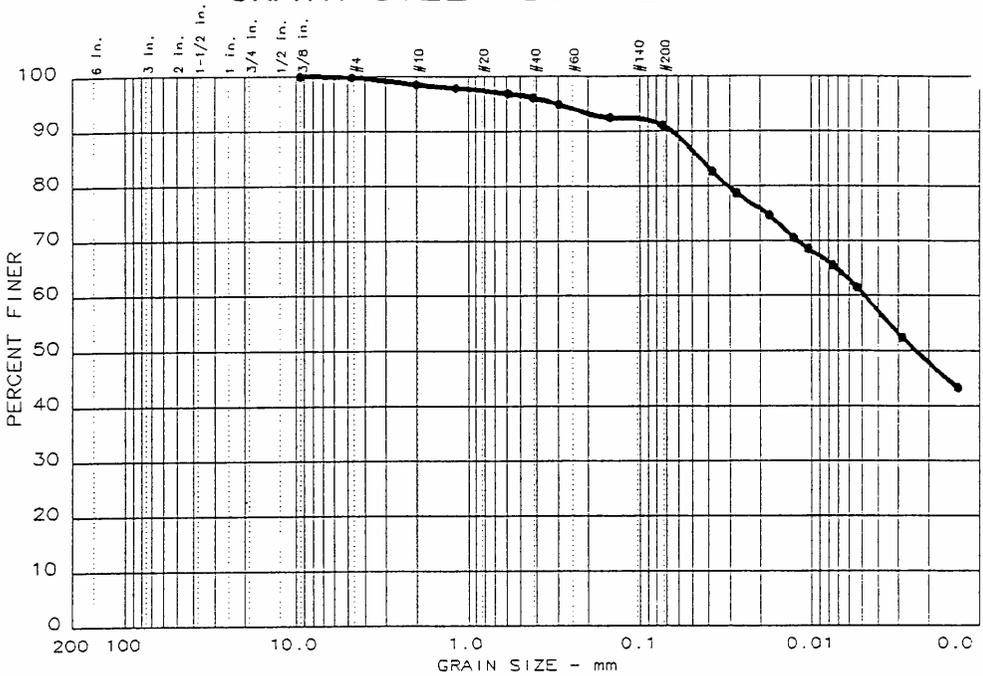
### Cohesive Soil

Consistency	Unconfined Compressive Strength (tons/sq. ft.)
Very Soft	Less than 0.25
Soft	0.25 to 0.49
Medium	0.50 to 0.99
Stiff	1.00 to 1.99
Very Stiff	2.00 to 3.99
Hard	Greater than 4.00

### Soil Description Terminology

If clay content is sufficient so that clay dominates soil properties then clay becomes the primary noun with other major soil constituent as modifier, i.e. silty clay. Other minor soil constituents may be added according to estimates of soil constituents present, i.e. silty clay, trace to some sand, trace gravel.

# GRAIN SIZE TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	8.7	30.6	60.5

LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
50	31			0.00					

MATERIAL DESCRIPTION	USCS	AASHTO
● Silty Clay, trace sand, trace gravel	CH	A-7-5(21)

Project No.: 16651  
 Project: Lake Lemmon Shoreline Erosion Protection  
 ● Location: Sample 1B, S-2, 2.5-3.0'  
  
 Date: 5/1/1997

Remarks:  
 Date Sampled: 4/97  
 Material Source: Sample  
 1B, S-2, 2.5-3.0'

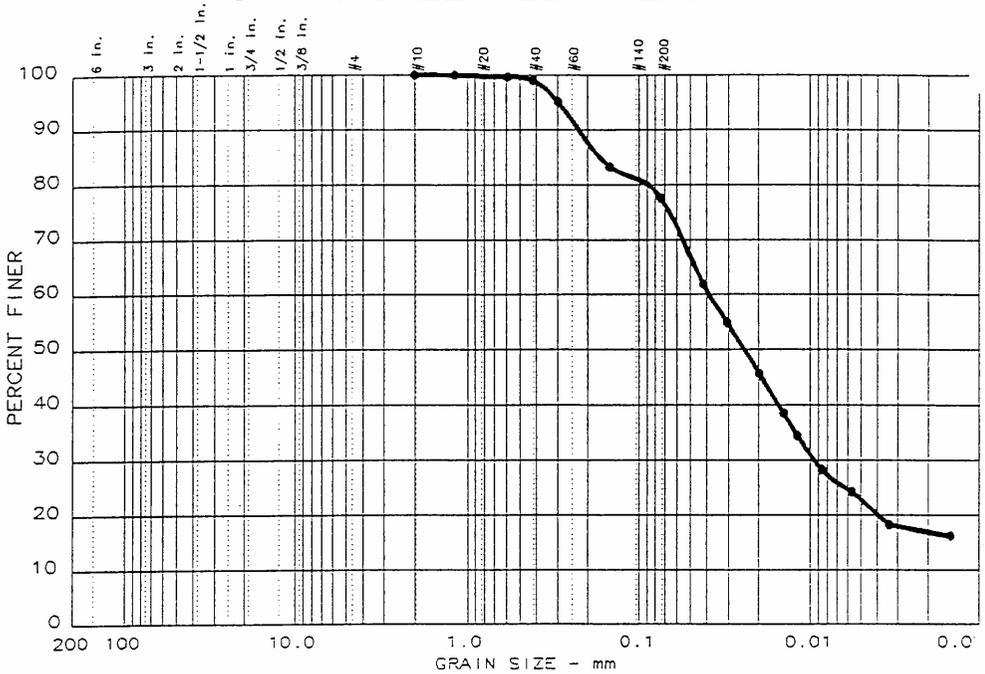


GRAIN SIZE TEST REPORT  
**ENGINEERING & TESTING SERVICES, INC.**

Figure No. 1



# GRAIN SIZE TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	22.4	54.8	22.8

LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
25	7	0.17		0.02	0.009				

MATERIAL DESCRIPTION	USCS	AASHTO
● Clayey Silt, some sand, brown	CL-ML	A-4(4)

Project No.: 16651  
 Project: Lake Lemmon Shoreline Erosion Protection  
 ● Location: Sample 2A, S-3, 0.0-1.5'

Date: 5/1/1997

**ETS** ENGINEERING & TESTING SERVICES, INC.

Remarks:  
 Date Sampled: 4/97  
 Material Source: Sample 2A, S-3, 0.0-1.5'

Figure No. 3

**PART 9**

**PROPOSAL DOCUMENTS**

**PART 9**

**BID PROPOSAL DOCUMENTS**

**DIVISION "A" - Flexible Revetment Rip-Rap Shoreline Stabilization and Tree Planting**

**DIVISION "B" - Coir Bioengineered Shoreline Revetment and Tree Planting**

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b. Time of Completion and Liquidated Damages	
c. Items to be Submitted with Bid	
d. Addenda	
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4. Bid Bond .....	P- 8 - P- 9
5. Financial Statement .....	P- 10 - P-17

Form No. 96 (Revised 1987)

**BID OF**

\_\_\_\_\_  
(Contractor)

\_\_\_\_\_  
(Address)

**FOR  
PUBLIC WORKS PROJECTS  
OF**

Lake Lemon Conservancy District  
Division "A" Rip Rap Revetment Contract  
and/or  
Division "B" Coir Bioengineering Contract

Filed \_\_\_\_\_, 19\_\_\_\_

Action taken \_\_\_\_\_

CONTRACTORS BID FOR PUBLIC WORKS

PART I

(To be completed for all bids)
(Please type or print)

- 1. Governmental Unit: Lake Lemon Conservancy District
2. County: Monroe and Brown
3. Bidder (Firm):
Address:
City/State:
4. Telephone Number:
5. Agent of Bidder (If applicable):

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of LLCD (Governmental Unit) in accordance with plans and specifications of said unit for the sum of \$ The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, submit a proposal for each in accordance with the notice.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract. If the bid is to be awarded on a unit basis, the itemization of units shall be shown on a separate attachment. The Contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States, I.C. 5-16-8-2. I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I affirm under the penalties of perjury that the foregoing facts and information are true and correct to the best of my knowledge and belief.

Dated at this day of 19

(Name of Organization)

By

(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF )
) SS:
COUNTY OF )

being duly sworn, deposes and says that he is of the above (Name of Organization) and that the statements contained in the foregoing bid, certification and affidavit are true and correct.

Subscribed and sworn to before me this day of 19

Notary Public

My Commission Expires:

County of Residence:

ACCEPTANCE

The above bid is accepted this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_ subject to the following conditions: \_\_\_\_\_

Contracting Authority Members:

_____	_____
_____	_____
_____	_____

PART II

(Complete sections I, II, III and IV for all state and local public works projects as required by statutes.)

Governmental Unit:                     Lake Lemon Conservancy District                    

Bidder (Firm): \_\_\_\_\_

Date: \_\_\_\_\_

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed?

Contract Amount	Class of Work	When Completed	Name and Address of Owner

2. What public works projects has your organization now in process of construction?

Contract Amount	Class of Work	When to be Completed	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? \_\_\_\_\_ If so, where and why?

\_\_\_\_\_

\_\_\_\_\_

4. List references from private firms for which you have performed work.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



### **BID PRICE**

The Contractor agrees to perform all the work described in the Contract Documents for a lump sum total price and for the bid prices identified on the attached Itemized Bid Schedules. Payment to the Contractor will be calculated based on these unit and/or lump sum prices for partial payments, not to exceed the lump sum price bid. The total bid price shall be the sum of the total bid price for Divisions "A" and "B" minus any deducts as evidenced by separate letter with the bid.

### **TIME OF COMPLETION AND LIQUIDATED DAMAGES**

If awarded a Contract, the Contractor agrees to begin work within ten (10) calendar days of the effective date of the Notice to Proceed and further agrees to proceed with all possible dispatch to substantially complete and provide all items into operation (service) within 250 consecutive calendar days from the date of the Notice to Proceed and fully complete all work ready for final inspection, acceptance and close-out within 30 additional days from the date of the substantial completion.

If awarded a Contract, and in the case the work is not completed either substantially or fully within the above deadlines to the satisfaction of the Owner, the undersigned agrees to pay to the Owner as liquidated damages the sum of One Hundred Dollars (\$100.00) per day for each and every successive day, Sundays and Holidays included, after the agreed upon time until the work is completed and accepted by the Owner.

The liquidated damages apply to the failure to meet either the substantially complete and/or the fully complete deadlines stated above.

### **ITEMS TO BE SUBMITTED WITH BID**

The Contractor shall be aware that the following documents are required with his Bid:

1. Bid Guaranty (Bid Bond)
2. Indiana State Form No. 96 (Revised, 1987) with Non-Collusion Affidavit
3. Financial Statement for Bidders
4. Bid Schedules

### **ADDENDA**

The Bidder hereby acknowledges receipt of the following addenda: \_\_\_\_\_  
\_\_\_\_\_

**ITEMIZED BID SCHEDULE "A"**  
**LAKE LEMON CONSERVANCY DISTRICT SHORELINE STABILIZATION PROJECT**  
**AREAS 1A and 3B**  
**DIVISION A: RIP-RAP REVETMENT, GEOTEXTILE, WITH TREE PLANTING**

<u>Item No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Units</u>	<u>Unit Price (in words)</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Bond, and Other	1	L.S.	_____	\$ _____	\$ _____
2	Excavation and Minor Clearing	1	L.S.	_____	\$ _____	\$ _____
3	Rip Rap and Geotextile	1	L.S.	_____	\$ _____	\$ _____
4	Tree planting	1	L.S.	_____	\$ _____	\$ _____

TOTAL LUMP SUM BID OF **DIVISION A** ALL ITEMS (1, 2, 3, and 4) \$ \_\_\_\_\_ \*

(in figures)

TOTAL LUMP SUM BID OF **DIVISION A** ALL ITEMS (1, 2, 3, and 4) \_\_\_\_\_ \*

(in words)

\* The total base bid amount shown here must agree with the amount shown on Form 96, page P-2.

**ITEMIZED BID SCHEDULE "B"**  
**LAKE LEMON SHORELINE STABILIZATION PROJECT**  
**AREA 1C CEMETERY ISLAND**  
**DIVISION B: COIR LOG AND BLANKET BIOENGINEERED STABILIZATION PROJECT**

<u>Item No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Units</u>	<u>Unit Price (in words)</u>	<u>Unit Price</u>	<u>Total Price</u>
1	Mobilization, Bond, and Other	1	L.S.	_____	\$ _____	\$ _____
2	Coir Logs/Blankets & Trees	1	L.S.	_____	\$ _____	\$ _____

TOTAL LUMP SUM BID OF **DIVISION B** ALL ITEMS (1, and 2) \$ \_\_\_\_\_ \*  
 (in figures)

TOTAL LUMP SUM BID OF **DIVISION B** ALL ITEMS (1, and 2) \_\_\_\_\_ \*  
 (in words)

\* The total base bid amount shown here must agree with the amount shown on Form 96, page P-2.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, \_\_\_\_\_  
\_\_\_\_\_ as Principal, and \_\_\_\_\_  
as Surety, are hereby held and firmly bound unto the Lake Lemon Conservancy District (LLCD) as  
OWNER in the penal sum of \_\_\_\_\_ for the payment of which, well and truly to be made, we  
hereby jointly and severally bind ourselves, successors and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

The Condition of the above obligation is such that whereas the Principal has submitted to \_\_\_\_\_  
\_\_\_\_\_ a certain BID, attached hereto and hereby made a part hereof to enter into a contract  
in writing, for the \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form  
of Contract attachment hereto (properly completed in accordance with said BID) and shall furnish a BOND  
for faithful performance of said contract, and for the payment of all persons performing labor furnishing  
materials in connection therewith, and shall in all other respects perform the agreement created by the  
acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect;  
it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall,  
in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND  
shall be in no way impaired or affected by any extension of the time within which the OWNER may accept  
such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(L.S.)  
Principal

\_\_\_\_\_  
Surety

By: \_\_\_\_\_

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

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# Contractor's Financial Statement

Submitted by..... {  A Corporation  
 A Co-partnership  
 An Individual

with principal office at.....

To.....

Condition at close of business..... 19.....

ASSETS		Dollars					Cts.
1. Cash: (a) On hand \$....., (b) In bank \$....., (c) Elsewhere \$.....							
2. Notes receivable (a) Due within 90 days.....							
(b) Due after 90 days.....							
(c) Past due.....							
3. Accounts receivable from completed contracts, exclusive of claims not approved for payment.....							
4. Sums earned on uncompleted contracts as shown by engineer's or architect's estimate.....							
(a) Amount receivable after deducting retainage.....							
(b) Retainage to date, due upon completion of contracts.....							
5. Accounts receivable from sources other than construction contracts.....							
6. Deposits for bids or other guarantees: (a) Recoverable within 90 days.....							
(b) Recoverable after 90 days.....							
7. Interest accrued on loans, securities, etc.....							
8. Real estate: (a) Used for business purposes.....							
(b) Not used for business purposes.....							
9. Stocks and bonds: (a) Listed—present market value.....							
(b) Unlisted—present value.....							
10. Materials in stock not included in Item 4 (a) For uncompleted contracts (present value).....							
(b) Other materials (present value).....							
11. Equipment, book value.....							
12. Furniture and fixtures, book value.....							
13. Other assets.....							
<b>Total assets.....</b>							
LIABILITIES							
1. Notes payable: (a) To banks regular.....							
(b) To banks for certified checks.....							
(c) To others for equipment obligations.....							
(d) To others exclusive of equipment obligations.....							
2. Accounts payable: (a) Not past due.....							
(b) Past due.....							
3. Real estate encumbrances.....							
4. Other liabilities.....							
5. Reserves.....							
6. Capital stock paid up: (a) Common.....							
(b) Common.....							
(c) Preferred.....							
(d) Preferred.....							
7. Surplus (net worth).....							
<b>Total liabilities.....</b>							
CONTINGENT LIABILITIES							
1. Liability on notes receivable, discounted or sold.....							
2. Liability on accounts receivable, pledged, assigned or sold.....							
3. Liability as bondsman.....							
4. Liability as guarantor on contracts or on accounts of others.....							
5. Other contingent liabilities.....							
<b>Total contingent liabilities.....</b>							

DETAILS RELATIVE TO ASSETS

1 | Cash (a) on hand..... \$ .....  
 | (b) deposited in banks named below.....  
 | (c) elsewhere—(state where).....

NAME OF BANK	LOCATION	DEPOSIT IN NAME OF	AMOUNT

2\* | Notes receivable (a) due within 90 days..... \$ .....  
 | (b) due after 90 days.....  
 | (c) past due.....

RECEIVABLE FROM: NAME AND ADDRESS	FOR WHAT	DATE OF MATURITY	HOW SECURED	AMOUNT

Have any of the above been discounted or sold?..... If so, state amount, to whom, and reason.....

3\* | Accounts receivable from completed contracts exclusive of claims not approved for payment..... \$ .....

NAME AND ADDRESS OF OWNER	NATURE OF CONTRACT	AMOUNT OF CONTRACT	AMOUNT RECEIVABLE

Have any of the above been assigned, sold, or pledged?..... If so, state amount, to whom, and reason.....

4\* | Sums earned on uncompleted contracts, as shown by engineer's or architect's estimate:  
 (a) Amount receivable after deducting retainage..... \$ .....  
 (b) Retainage to date due upon completion of contract.....

DESIGNATION OF CONTRACT AND NAME AND ADDRESS OF OWNER	AMOUNT OF CONTRACT	AMOUNT EARNED	AMOUNT RECEIVED	RETAINAGE		AMOUNT EXCLUSIVE OF RETAINAGE
				WHEN DUE	AMOUNT	

Have any of the above been sold, assigned, or pledged?..... If so, state amount, to whom, and reason.....

\* List separately each item amounting to 10 per cent or more of the total and combine the remainder.

DETAILS RELATIVE TO ASSETS (Continued)

**5** | Accounts receivable not from construction contracts..... \$.....

RECEIVABLE FROM: NAME AND ADDRESS	FOR WHAT	WHEN DUE	AMOUNT
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

What amount, if any, is past due..... \$.....

**6** | Deposits with bids or otherwise as guarantees..... \$.....

DEPOSITED WITH: NAME AND ADDRESS	FOR WHAT	WHEN RECOVERABLE	AMOUNT
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

**7** | Interest accrued on loans, securities, etc..... \$.....

ON WHAT ACCRUED	TO BE PAID WHEN	AMOUNT
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

**8** | Real estate { (a) Used for business purposes..... \$.....  
 book value { (b) Not used for business purposes.....

DESCRIPTION OF PROPERTY	IMPROVEMENTS		TOTAL BOOK VALUE
	NATURE OF IMPROVEMENTS	BOOK VALUE	
1.....	.....	.....	.....
2.....	.....	.....	.....
3.....	.....	.....	.....
4.....	.....	.....	.....
5.....	.....	.....	.....
6.....	.....	.....	.....
7.....	.....	.....	.....

LOCATION	HELD IN WHOSE NAME	ASSESSED VALUE	AMOUNT OF ENCUMBRANCES
1.....	.....	.....	.....
2.....	.....	.....	.....
3.....	.....	.....	.....
4.....	.....	.....	.....
5.....	.....	.....	.....
6.....	.....	.....	.....
7.....	.....	.....	.....

\* List separately each item amounting to 10 per cent or more of the total and combine the remainder.



DETAILS RELATIVE TO ASSETS (Continued)

12 Furniture and fixtures at book value..... \$

13 Other assets..... \$

DESCRIPTION	AMOUNT

TOTAL ASSETS \$

DETAILS RELATIVE TO LIABILITIES

1 Notes payable { (a) To banks, regular..... \$  
 (b) To banks for certified checks.....  
 (c) To others for equipment obligations.....  
 (d) To others exclusive of equipment obligations.....

TO WHOM: NAME AND ADDRESS	WHAT SECURITY	WHEN DUE	AMOUNT

2 Accounts payable { (a) Not past due..... \$  
 (b) Past due.....

TO WHOM: NAME AND ADDRESS	FOR WHAT	DATE PAYABLE	AMOUNT

3 Real estate encumbrances (See Item 8, Assets)..... \$

4 Other liabilities..... \$

DESCRIPTION	AMOUNT

5 Reserves..... \$

INTEREST	INSURANCE	BLDGS. & FIXT.	PLANT DEPR.	TAXES	BAD DEBTS		
\$	\$	\$	\$	\$	\$	\$	\$

6 Capital stock paid up { (a) Common..... \$  
 (b) Preferred.....

7 Surplus..... \$

TOTAL LIABILITIES \$

**If a corporation answer this:**

Amount for which incorporated.....

Capital paid in cash..... \$.....

When incorporated.....

In what state.....

Names and titles of all persons having authority to execute and receipt estimate vouchers and to conduct other business for the corporation, including its officers, the signatures of whom are legally binding.

.....  
.....  
.....  
.....  
.....

Do you have necessary "certificate of authority" to transact corporate business in this state, under the terms of Chapter 215, Acts of 1929, and acts amendatory thereto?.....

**If a co-partnership answer this:**

Date of organization.....

State whether co-partnership is general, limited or association.....

Give the names, addresses and proportional interests of all parties:

Name	Address	Share
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....
.....	.....	\$.....

The name of the partnership firm under which the above partners are operating is.....

Give names and titles of all persons having authority to execute and receipt estimate vouchers and to conduct other business for the partnership, the signatures of whom are legally binding.

The undersigned hereby declares that the foregoing is a true statement of the financial condition of the individual, co-partnership or corporation herein first named, as of the date herein first given; that this statement is for the express purpose of inducing the party to whom it is submitted to award the submittor a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement.

NOTE: A co-partnership must give firm name and signatures of all partners. A corporation must give full corporate name, signature of official and affix corporate seal.

Affidavit for Individual

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss:

\_\_\_\_\_ being duly sworn, deposes and say that the foregoing financial statement, taken from his books, is a true and accurate statement of his financial condition as of the date thereof and that the answers to the foregoing interrogatories are true.

Subscribed and sworn to before me this

(Applicant must sign here)

\_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

Notary Public

Affidavit for Co-Partnership

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss:

\_\_\_\_\_ being duly sworn, deposes and say that he is a member of the firm of \_\_\_\_\_; that he is familiar with the books of the said firm showing its financial condition; that the foregoing financial statement, taken from the books of the said firm, is a true and accurate statement of the financial condition of the said firm as of the date thereof and that the answers to the foregoing interrogatories are true.

Subscribed and sworn to before me this

(Member of firm must sign here)

\_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

Notary Public

Affidavit for Corporation

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } ss:

\_\_\_\_\_ being duly sworn, deposes and says that he \_\_\_\_\_ of the \_\_\_\_\_, the corporation described in and which executed the foregoing statement; that he is familiar with the books of the said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof and that the answers to the foregoing interrogator are true.

Subscribed and sworn to before me this

(Officer must sign here)

\_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

Notary Public

**PART 10**

**CONTRACT DOCUMENTS**

**PART 10**

**CONTRACT DOCUMENTS**

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**AGREEMENT**

THIS AGREEMENT, made this \_\_\_\_\_ day of May 1998, by and between Lake Lemon Conservancy District (LLCD), hereinafter called "OWNER" and \_\_\_\_\_  
\_\_\_\_ doing business as (an individual), or (a partnership), or (a corporation) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of Areas 1A and 3B, Division "A" - Rip Rap Revetment Contract \_\_\_\_\_.
2. The CONTRACTOR will furnish all materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within -10- calendar days after the date of the NOTICE TO PROCEED and will complete the same within -250- calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all of the work described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ \_\_\_\_\_ or as shown in the BID schedule.
5. The term "CONTRACT DOCUMENTS" means and includes the following:
  - (A) Advertisement for BIDS
  - (B) Information for BIDDERS
  - (C) BID
  - (D) BID BOND
  - (E) Non-Collusion Affidavit
  - (F) Compliance Statement (Not Applicable)

- (G) NOTICE OF AWARD
- (H) Agreement
- (I) Performance BOND
- (J) Payment BOND
- (K) Non-Discrimination Clause (Not Applicable)
- (L) NOTICE TO PROCEED
- (M) CHANGE ORDER
- (N) Certificate of Substantial Completion
- (O) General Conditions
- (P) SUPPLEMENTAL GENERAL CONDITIONS (Not Applicable)
- (Q) DRAWINGS prepared by COMMONWEALTH BIOMONITORING, INC.  
 Numbered 1 through 6, and dated January 30, 1998,  
 Numbered \_\_\_\_\_ through \_\_\_\_\_, and dated \_\_\_\_\_,  
 Numbered \_\_\_\_\_ through \_\_\_\_\_, and dated \_\_\_\_\_.
- (R) SPECIFICATIONS prepared or issued by COMMONWEALTH BIOMONITORING, INC.  
 Dated January 3, 1998, Dated \_\_\_\_\_, 19\_\_\_\_
- (S) ADDENDA:  
 No. \_\_\_\_\_, dated \_\_\_\_\_, 1998  
 \_\_\_\_\_, dated \_\_\_\_\_, 1998  
 \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_\_\_  
 \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_\_\_  
 \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_\_\_  
 \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_\_\_  
 \_\_\_\_\_, dated \_\_\_\_\_, 19\_\_\_\_

- 6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.
- 7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in four (4) (Number of Copies) each of which shall be deemed an original on the date first above written.

OWNER: LLCD

\_\_\_\_\_

By: \_\_\_\_\_

Name: Larry Ritter  
(Please Type)

Title: Chairperson

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_  
(Please Type)

Title: Director

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(Please Type)

Title: \_\_\_\_\_

(SEAL)

ATTEST:

\_\_\_\_\_

Name: \_\_\_\_\_  
(Please Type)

Title: \_\_\_\_\_

**CERTIFICATE OF OWNER'S ATTORNEY**

I, the undersigned, \_\_\_\_\_, the duly authorized and acting legal representative of \_\_\_\_\_, do hereby certify as follows:

I have examined the attached contract(s) and performance and payment bond(s) and contractor's Certificate of Insurance and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements are adequate, and have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

\_\_\_\_\_

Date: \_\_\_\_\_

NOTE: Delete phrase "performance and payment bonds" when not applicable.

# PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_

(Name of Contractor)

\_\_\_\_\_

(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal, and  
(Corporation, Partnership, or Individual)

\_\_\_\_\_

(Name of Surety)

\_\_\_\_\_

(Address of Surety)

hereinafter called SURETY are held and firmly bound unto Lake Lemon Conservancy District  
(LLCD)

\_\_\_\_\_

(Name of Owner)

7599 North Tunnel Road, P.O. Box 59, Unionville, IN 47468

(Address of Owner)

hereinafter called OWNER, in the penal sum of \_\_\_\_\_, (\$ \_\_\_\_\_)  
in lawful money of the United States, for the payment of which sum well and truly to be made, we  
bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally,  
firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that whereas, the Principal entered into a  
certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 1998, a copy of  
which is hereto attached and made a part hereof for the construction of:

\_\_\_\_\_ NOW, THEREFORE, if the  
Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms,  
conditions, and agreements of said contract during the original term thereof, and any extensions  
thereof which may be granted by the OWNER, with or without notice to the Surety and during the

one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which

(Number)

shall be deemed an original, this the \_\_\_\_ day of \_\_\_\_\_ 1998.

ATTEST:

\_\_\_\_\_

(SEAL)

\_\_\_\_\_

(Witness as to Principal)

\_\_\_\_\_

(Address)

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

(Surety) Secretary

(SEAL)

\_\_\_\_\_

(Witness as to Surety)

\_\_\_\_\_

(Address)

\_\_\_\_\_

\_\_\_\_\_

Principal

BY \_\_\_\_\_ (s)

\_\_\_\_\_

(Address)

\_\_\_\_\_

\_\_\_\_\_

Surety

BY \_\_\_\_\_

Attorney-in-Fact

\_\_\_\_\_

(Address)

\_\_\_\_\_

NOTE:

Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

# PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_

(Name of Contractor)

\_\_\_\_\_

(Address of Contractor)

a \_\_\_\_\_, hereinafter called PRINCIPAL, and  
(Corporation, Partnership, or Individual)

\_\_\_\_\_

(Name of Surety)

\_\_\_\_\_

(Address of Surety)

hereinafter called SURETY are held and firmly bound unto Lake Lemon Conservancy District  
(LLCD)

\_\_\_\_\_

(Name of Owner)

7599 N. Tunnel Road, P.O. Box 59, Unionville, IN 47468

(Address of Owner)

hereinafter called OWNER, in the penal sum of \_\_\_\_\_ Dollars, \$

\_\_\_\_\_ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 1998, a copy of which is hereto attached and made a part hereof for the construction of:

\_\_\_\_\_ NOW, THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and

any authorized extensions or modifications thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the SUBCONTRACTORS, and persons, firms and corporations having a direct contract with the PRINCIPAL or its SUBCONTRACTORS.

PROVIDED, FURTHER, that the said SURETY for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct contract with the PRINCIPAL, shall have given written notice to any two of the following: The PRINCIPAL, the OWNER, or the SURETY above named within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the PRINCIPAL,

OWNER or SURETY, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer. (b) After the expiration of one (1) year following the date of which PRINCIPAL ceased work on said CONTRACT, is being understood, however, that if any limitation embodied in the BOND is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_ 1998.

ATTEST:

\_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

ATTEST:

\_\_\_\_\_  
(Surety) Secretary

(SEAL)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
Principal  
BY \_\_\_\_\_ (s)

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
Surety

BY \_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
(Address)

\_\_\_\_\_

NOTE: Date of BOND must not be prior to date of Contract.  
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

**NOTICE OF AWARD**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ The OWNER has considered the BID submitted by you for the above WORK in response to its Advertisement for Bids dated \_\_\_\_\_, 19\_\_\_\_, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$ \_\_\_\_\_

\_\_\_\_\_ You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
LLCD

(OWNER)

By: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged.

By: \_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

Title: \_\_\_\_\_

**NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_  
PROJ: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, 19\_\_, on or before \_\_\_\_\_, 19\_\_, and you are to complete the WORK within \_\_\_\_\_ consecutive calendar days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Lake Lemon Conservancy District \_\_\_\_\_

(OWNER)

By: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED  
is hereby acknowledged by:

\_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

## CONTRACT CHANGE ORDER

Order No.:

Date:

State: Indiana

County: Monroe

Contract For:

Owner: Lake Lemon Conservancy District

To:

(CONTRACTOR)

You are hereby requested to comply with the following changes from the contract plans and specifications:

Description of Changes (Supplemental Plans and Specifications Attached)	DECREASE in Contract Price	INCREASE in Contract Price
TOTALS		
NET CHANGE IN CONTRACT PRICE		

JUSTIFICATION:

The amount of the Contract will be (Decreased) (Increased) By the Sum of:

Dollars (\$ \_\_\_\_\_).

The Contract Total Including this and previous Change Orders Will Be:

Dollars (\$ \_\_\_\_\_).

The Contract Period Provided for Completion Will Be (Increased) (Decreased) (Unchanged):

\_\_\_\_\_ Days.

This document will become a supplement to the contract and all provisions will apply hereto.

Requested \_\_\_\_\_ (Owner) \_\_\_\_\_ (Date)

Recommended \_\_\_\_\_ (Owner's Architect/Engineer) \_\_\_\_\_ (Date)

Accepted \_\_\_\_\_ (Contractor) \_\_\_\_\_ (Date)

## ESCROW AGREEMENT

THIS ESCROW AGREEMENT made and entered into this \_\_\_\_ day of \_\_\_\_\_, 1998 by and between \_\_\_\_\_ hereinafter called the Escrow Agent, Lake Lemon Conservancy District, Monroe County, Indiana hereinafter called the Owner, and \_\_\_\_\_ hereinafter called the Contractor.

WHEREAS, the Owner and the Contractor entered into a contract dated \_\_\_\_\_, providing for the construction by the Contractor of the \_\_\_\_\_ Project, for the Lake Lemon Conservancy District subject to the provisions of IC 36-1-12-14, and

WHEREAS, said construction contract provides that portions of payments by the Owner to the Contractor shall be retained by the Owner (herein called Retainage), and

WHEREAS, all retainage shall be deposited in an Escrow Account.

NOW, THEREFORE, it is agreed as follows:

1. The Owner will hereafter deliver or cause to be delivered to the Escrow Agent that portion of the Retainage to be placed in escrow, to be held in escrow in accordance with the terms of this Agreement.
2. The Escrow Agent will promptly invest this Retainage in such obligations as selected by the Escrow Agent at its discretion. All income earned on such funds shall be added to and become a part of the escrowed principal.
3. The Escrow Agent shall pay over the net sum held by it hereunder as follows:
  - a. In the manner directed by the joint written authorization of the Owner and Contractor.
  - b. In the absence of such a joint written authorization, upon receipt from the Owner of a written notice pursuant to Article 18 of the General Conditions showing that the Owner has terminated the employment of the Contractor, then the Escrow Agent shall pay over to the Owner the net sum held by it hereunder.
  - c. In the absence of such a joint written authorization and in the absence of the termination of the employment of the Contractor as provided in b., above, in the manner directed by a certified copy of a judgment of a court of record establishing the rights of the parties to said funds.

4. This Escrow Agreement shall constitute the direction from the Owner and Contractor to the Escrow Agent of the manner in which the Retainage is to be paid by the Escrow Agent, pursuant to IC 36-1-12-14.
5. The Escrow Agent shall deduct, before any payment from the amounts received hereunder, its fee as Escrow Agent, which fee shall be payable from the income earned by the retainage and which escrow fee shall in no event exceed fifty percent (50%) of said income earned.
6. This Agreement and anything done or performed hereunder by either the Contractor or Owner shall not be constructed to prejudice or limit the claims which either party may have against the other arising out of the aforementioned construction agreement.
7. This instrument constitutes the entire Agreement between the parties regarding duties of the Escrow Agent with respect to the investment and payment of escrow funds; the Escrow Agent is not liable to the Owner and Contractor for any loss or damages other than by its own negligence or willful misconduct.

\_\_\_\_\_  
**OWNER  
LAKE LEMON CONSERVANCY DISTRICT**

By: \_\_\_\_\_  
(Director)

\_\_\_\_\_  
(Contractor)

By: \_\_\_\_\_

\_\_\_\_\_  
(Escrow Agent)

By: \_\_\_\_\_

CERTIFICATE OF SUBSTANTIAL COMPLETION

OWNER's Project No. ....

ENGINEER's Project No. ....

Project .....

CONTRACTOR .....

Contract For .....

Contract Date .....

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To .....  
OWNER

And To .....  
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

.....  
DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within \_\_\_\_\_ days of the above date of Substantial Completion.

EJCDC No. 1910-8-D (1983 Edition)

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as follows:

RESPONSIBILITIES:

OWNER: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The following documents are attached to and made a part of this Certificate:

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on \_\_\_\_\_, 19 \_\_\_\_\_

.....  
ENGINEER

By .....

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_, 19 \_\_\_\_\_

.....  
CONTRACTOR

By .....

OWNER accepts this Certificate of Substantial Completion on \_\_\_\_\_, 19 \_\_\_\_\_

.....  
OWNER

By .....

ATTACHMENT TO CERTIFICATE OF SUBSTANTIAL COMPLETION

PUNCH LIST  
FOR

.....  
(Contract)

.....  
(Date)

Item

Value of  
Uncompleted  
Work