

AGREEMENT FOR ENGINEERING SERVICES
for
Arkansas Community and Economic Development Program
Water or Wastewater Infrastructure Improvement Projects

This Agreement is entered into on the _____ day of _____, 20____ by
_____, (OWNER), and
_____, (ENGINEER).

The OWNER intends the construction of a _____ in
_____, Arkansas. The referenced construction project may be funded in part or whole by the State of Arkansas, acting through the Arkansas Natural Resources Commission (ANRC), with Arkansas Community and Economic Development Program Water or Wastewater Infrastructure Improvement Grant Number 790-_____ - _____.

Section A: Engineer's Responsibilities

The ENGINEER will provide the following Engineering Services:

- (1) The ENGINEER will prepare and submit to the OWNER _____ copies of a Preliminary Engineering Report, to consist of preliminary drawings, layout maps, an itemized list of probable construction materials and an estimate of probable costs effective as of the date of the preliminary report.
- (2) The ENGINEER will attend conferences with interested parties as may be reasonably necessary.
- (3) Upon receipt of a written Notice to Proceed from the OWNER, the ENGINEER will perform all necessary design surveys and prepare the detailed design of the referenced project. The detailed design will consist of detailed construction drawings, design specifications, contract documents and a final estimate of probable cost based on the final design for the entire system.
- (4) The ENGINEER will, upon written authorization from the OWNER, coordinate any necessary subsurface explorations (such as borings, soil tests, rock soundings) without additional charge. The costs of all authorized subsurface explorations other than coordination by the ENGINEER will be the responsibility of the OWNER.
- (5) Contract documents furnished by the ENGINEER will include General Conditions and Supplemental General Conditions supplied by ANRC, Contract Change Orders, and partial payment estimates. All of these documents will be subject to approval by ANRC as well as the OWNER.

- (6) The ENGINEER will provide, at no additional charge, _____ copies of the detailed project design for each construction contract for use by the OWNER and State and local regulatory agencies as appropriate.
- (7) The ENGINEER will provide, at a reasonable additional charge, _____ additional copies of the drawings, specifications, and contract documents as required by prospective bidders, material suppliers, and other interested parties.
- (8) Upon award of each contract the ENGINEER will provide, at no additional charge, five (5) sets of drawings, specifications and contract documents for execution. Original documents, survey notes, tracings and the like remain the property of the ENGINEER, except for those furnished to the ENGINEER by the OWNER.
- (9) All drawings prepared by the ENGINEER under the provisions of this Agreement must be at a scale approved by ANRC as well as the OWNER and in accordance with the minimal design standards attached to and made part of this Agreement.
- (10) The ENGINEER will provide, at no additional charge, three (3) copies of maps showing the general location of required construction easements, permanent easements and any parcels to be acquired.
- (11) Property surveys, property plats, property descriptions, abstracting and the negotiation for land rights are the responsibility of the OWNER. These services may be assigned to the ENGINEER, if the ENGINEER agrees, for additional compensation.
- (12) The ENGINEER will attend the bid opening, tabulate the bid proposals, make an analysis of the bids, and make recommendations consistent with ACEDP Grant Program requirements to the OWNER for awarding construction contracts.
- (13) The ENGINEER will review all working drawings furnished by contractors and approve those that conform to the design concept of the project.
- (14) The ENGINEER will interpret drawings and specifications to protect the OWNER against defects and deficiencies in construction on the part of contractors; however, approval of drawings and specifications by the ENGINEER will not be construed as a guarantee of the performance of any contractor.
- (15) The ENGINEER will establish baselines for locating the work, together with a suitable number of bench marks adjacent to the work as shown in the contract documents.
- (16) The ENGINEER will review the progress of construction to ensure contractor's conformance to the design concept of the project.
- (17) The ENGINEER will provide for adequate resident inspection of all construction, subject to approval by ANRC. Any resident inspector will be considered to be the ENGINEER'S agent while on the construction site until the ENGINEER notifies the contractor in writing of the inspector's termination.

- (18) No inspection by the ENGINEER, or provision of any resident inspector(s) by the ENGINEER, will relieve a contractor of any lawful obligation, make the ENGINEER an insurer of a contractor's performance, or obligate the ENGINEER to see that the work is performed by a contractor in a safe manner.
- (19) The ENGINEER will cooperate with State and Federal agency representatives.
- (20) The ENGINEER will review the contractor's requests for partial and final payments and, when approved, will submit the pay requests to the OWNER for payment.
- (21) The ENGINEER will prepare any necessary contract change orders, including reconciliation change orders, for approval of the OWNER and others on a timely basis.
- (22) The ENGINEER will make a final review and submit a written report to the OWNER and to ANRC before issuing a statement of substantial completion of all construction.
- (23) The ENGINEER will notify both ANRC and the OWNER in writing that the project is complete and obtain written acceptance of the facility or improvements from both ANRC and the OWNER before submitting the final payment estimate to the OWNER.
- (24) The ENGINEER will provide one set of as-built drawings to the OWNER and to ANRC at no additional charge. The as-built drawings will be based upon construction records provided by the contractor during construction and must be reviewed by the resident inspector and compared with the resident inspector's construction diary.
- (25) The ENGINEER will be available to furnish, free of charge except for travel and subsistence costs, consultations and additional Engineering services as necessary to correct unforeseen project operational difficulties for a period of one year after the date of statement of substantial completion of the facility. These services may include instruction of the OWNER in initial operation and maintenance activities, but will not include supervision of normal operation of the system. The ENGINEER will assist the OWNER in performing a review of the project no less than ten (10) months but no more than eleven (11) months after the date of statement of substantial completion of the facility.
- (26) The ENGINEER agrees to obtain and maintain, at no cost to the OWNER, all insurance necessary to protect the ENGINEER from claims under the Worker's Compensation Act, as well as all comprehensive general liability insurance necessary to protect both the ENGINEER and the OWNER from any claim for bodily injury, death, or property damage arising from any performance by the ENGINEER or by agents of the ENGINEER for services required under this Agreement.
- (27) All reports and actions required of the ENGINEER by this Agreement must be delivered in a timely manner. The ENGINEER must complete the final plans, specifications and contract documents referenced in Section A-3 and submit them to the OWNER and State regulatory agencies within _____ calendar days from the date of written Notice to Proceed from the OWNER unless otherwise agreed to by ANRC, the OWNER and the ENGINEER. Failure of the ENGINEER to meet this deadline will be considered a substantial breach of this Agreement and may result in termination of the Agreement by the OWNER.

- (28) It is understood and agreed that the OWNER will reasonably extend the referenced deadline if completion is delayed due to unforeseeable causes beyond the control of and without fault or negligence of the ENGINEER.

Section B: Compensation for Engineering Services

- (1.) The OWNER shall compensate the ENGINEER for preliminary Engineering services, design and contract administration services (excluding resident inspection) in the amount of _____ dollars (\$ _____). Attachment I should be used as a guide for determining this lump sum payment.
- (2.) Compensation for Engineering services, design and contract administration services (excluding resident inspection) shall be payable as follows:
- A. A sum which equals no more than twenty-five percent (25%) of the total compensation payable under Section B-1, after completion and submission of the construction drawings, specifications, cost estimates, and contract documents, and the approval of the same by the OWNER, the ANRC, and the Arkansas Department of Health.
 - B. A sum which, together with the compensation provided in Section B-2A above, equals eighty percent (80%) of the total compensation payable, after the construction contracts are awarded.
 - C. A sum which, together with the compensation provided in Sections B-2A and B-2B above, equals ninety-five percent (95%) of the total compensation payable, shall be paid on a monthly basis for general Engineering review of the contractor's work during the construction period in percentage ratios identical to those approved by the ENGINEER as a basis upon which to make partial payments to the contractor(s).
 - D. A sum which, together with the compensation provided in Sections B-2A through B-2C above, equals 100 percent (100%) of the total compensation payable, shall be made when it is determined that all services required by this Agreement have been completed.

Section C: Resident Inspectors

- (1) The OWNER agrees to compensate the ENGINEER in the amount of _____ dollars (\$ _____), for resident inspection services as described in Section C-5 below.
- (2) The ENGINEER must submit a resume to ANRC for every resident inspector proposed as an agent for this project at or before the pre-construction conference. The resume must include a cell phone number where the resident inspector can be reached at all times.
- (3) The selection of any individual as a resident inspector is subject to the approval of ANRC and the OWNER.

- (4) Within fifteen (15) days of receipt and approval of a monthly itemized bill, the OWNER will compensate the ENGINEER for resident inspection services performed during the previous thirty (30) days. All payments to the resident inspector, while approved by the OWNER and ANRC, will be transactions between the resident inspector and the ENGINEER.
- (5) As an agent of the ENGINEER, the resident inspector will:
 - a) Provide full-time, resident inspection of the construction to observe the progress and quality of the work executed by the contractor(s) to determine if the work is in accordance with the contract documents.
 - b) Endeavor to guard the OWNER against defects and deficiencies in work provided by the contractor(s).
 - c) Maintain a hard-bound daily diary available for inspection by the OWNER and ANRC. The diary must be written in indelible ink and must include:
 - i. A description of the work performed
 - ii. A record of the number of men performing the work and a detailed description of all equipment used in the described work
 - iii. A detailed description of any uncorrected defects or deficiencies observed in the work
 - iv. A daily record of the weather conditions
 - d) Submit a copy of the daily records for each week to the OWNER no later than Monday of the following week.
 - e) Submit a summary of the daily records for each two-week period to ANRC no later than the first Monday of the following two-week period.
 - f) Verify that:
 - i. The contractor is using construction methods and materials in accordance with the ENGINEER'S specifications
 - ii. All construction activities are conducted within the easements or parcels provided for the project
 - iii. All lines and mains are placed in compliance with depth of cover, acceptable bedding and backfill material specifications before initial backfilling is performed.
 - g) Notify the contractor when the work performed appears not to comply with ENGINEER or regulatory specifications.

Section D: Additional Engineering Services

- (1) The ENGINEER may provide the following additional services for a fee, if written approval is obtained from both ANRC and the OWNER before the additional services are initiated:
 - A. Preparation of environment impact assessments or environmental impact statements.

- B. Special site surveys.
 - C. Laboratory tests, well tests, borings, specialized geological, soils, hydraulic, or other studies the ENGINEER recommends.
 - D. Property surveys, detailed description of sites, maps, drawings, acquisition estimates or assistance in negotiating for land and easement rights.
 - E. Any redesign ordered by both ANRC and the OWNER, with the exception of any redesigns necessary to reduce the project cost to within available limits.
 - F. Appearance before courts or boards on matters of litigation or hearings related to the project.
 - G. Detailed staking beyond the control staking commonly expected as necessary to establish baselines for locating the project work and establish bench marks adjacent to the work.
 - H. Compensation for Inspection Services beyond the contract period will be provided through the Contract's Liquidated Damages clause.
- (2) The ENGINEER agrees to provide the Operation and Maintenance Manual for facilities if requested to do so by both ANRC and the OWNER for additional compensation in the amount of \$_____. A draft copy of the manual will be submitted for approval at 50% completion of the project. A final copy of the manual will be submitted for approval at 80% completion of the project.
- (3) Payment for any additional engineering services specified in this Section must be approved in writing by ANRC and agreed upon in a secondary written contract between the OWNER and the ENGINEER before any additional work begins. Barring unforeseen circumstances, compensation for additional engineering services will not exceed \$_____. The ENGINEER will bill the OWNER for these additional services as they are performed once per month in an itemized bill that is separate from any other billing. The OWNER will pay the ENGINEER on or before the 15th day following receipt of each bill for additional engineering services.

Section E: Other Costs

- (1) The OWNER will be responsible for payment of all permitting and review fees charged by regulatory agencies, such as the Arkansas Department of Health and the Arkansas Department of Environmental Quality.
- (2) The OWNER will pay all costs for public notices and advertisements for bids.

Section F: Minimal Design Standards

The following standards are adopted as minimal design criteria:

- (1) "Recommended Standards for Wastewater Facilities," commonly referred to as "Ten States Standards," prepared by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

Any deviations must be approved by ANRC and the Arkansas Department of Health must approve deviations.

- (2) "Recommended Standards for Water Works," commonly referred to as "Ten States Standards," prepared by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers.

Any deviations must be approved by ANRC and the Arkansas Department of Health must approve deviations.

- (3) All detailed drawings will clearly indicate water or wastewater easement locations and widths. Drawings will also indicate the distance from the roadway centerline to the easement. Detailed drawings should have a minimum scale of 1 inch = 100 feet.

- (4) Deviations from the preferred minimum scale may be approved by ANRC and the Arkansas Department of Health; however, any deviation resulting in a scale smaller than 1 inch = 100 feet will require preparation of separate easement maps and staking of the water or sewer lines in the field.

- (5) "As Built" drawings will include water main valve "Tie Down" distances.

- (6) The following specifications and definitions will be included in the technical specifications:

- a) Depth of cover:

Pipes must be buried to a minimum depth of thirty (30) inches over the top of the pipe. Local conditions may require deeper cover.

- b) Bedding material:

On water projects, bedding material will be selected and placed carefully, avoiding stones over 1-1/2 inches in size, frozen lumps and debris. Sharp stones and crushed rock larger than 3/4 inch, which could cause significant scratching or abrasion of the pipe, will be excluded from the bedding material in accordance with AWWA Manual M23, Section 7-1.

On Wastewater projects, bedding for sewer pipe will be as specified in the "Recommended Standards for Sewage Works", commonly referred to as "Ten States Standards," and as required by the rules and regulations of the Arkansas Department of Health.

- c) Backfill material:

Initial backfill six (6) inches above the top of pipe and material around the sides of the pipe) will be selected and placed carefully, avoiding stones over 1-1/2 inches in size, frozen lumps and debris. Sharp stones and crushed rock larger than 3/4 inch, which could cause significant scratching or abrasion of the pipe, will be excluded from the initial backfill in accordance with AWWA Manual M23, Section 7-1. Remaining backfill will contain no large stones or rocks, frozen material or debris, all in accordance with AWWA Manual M23, Section 7-1.

d) Rock excavation:

If rock is encountered which requires blasting or other removal techniques beyond conventional backhoe or trencher usage, the trench will be excavated to **six** (6) inches below pipe grade. Before laying pipe, the resulting trench will be filled back to pipe grade with bedding material.

e) Clean up:

All disturbed areas on the work site will be graded or brought as near as possible to their original elevations, slopes and contours. The area will be trimmed and dressed by hand if necessary to secure effective drainage and a finished surface consistent with the surrounding surface and satisfactory to the ENGINEER.

f) Tracer wire or tape to accompany non-metallic pipe:

All PVC and asbestos-cement pipe that is installed must have an approved metallic wire or tape attached to it to allow the pipe to be located with a small detection instrument.

Section G: Approval and Notarization

OWNER

ENGINEER

Official Title _____

Printed Name _____

Signature _____

Date _____

ACKNOWLEDGMENT

(SEAL)

STATE OF ARKANSAS

COUNTY OF _____

On this day personally appeared before me, a Notary Public, within and for the county aforesaid, duly commissioned and acting; _____ and _____, who executed this document in my presence for the purposes and considerations therein mentioned and set forth.

Notary Public

My Commission Expires: _____

Attachment I: Engineering Services Agreement

**SUGGESTED FEE SCHEDULE TO BE USED WHEN CALCULATING
BASIC ENGINEERING SERVICES**

<u>Total Estimated Constructed Cost</u>		<u>Table I % Fee</u>	<u>Table II % Fee</u>
Less than	\$ 200,000	*	*
\$ 200,000	\$ 300,000	10.00	9.00
\$ 300,000	\$ 500,000	9.25	8.25
\$ 500,000	\$ 1,000,000	8.50	7.50
\$1,000,000	\$ 2,000,000	8.00	7.00
Over	\$ 2,000,000	7.75	6.75

Method of Computing Fees at Break Points: The fee as computed from the schedule shall not be less than the maximum fee obtained from calculating the next lower construction cost bracket.

Table I ordinarily will apply to the portion of a project involving above average engineering cost such as complicated water treatment plants, sewer collection, sewer treatment (not Lagoons) and the rehabilitation of existing facilities.

Table II will apply to all other work including buildings, water distribution, package treatment plants, storage tanks, wells, etc.

RESIDENT INSPECTION (OBSERVATION)

Resident inspection is required by the Arkansas Natural Resources Commission unless exception is made in writing by the Executive Director. Compensation will be based on percentage of estimated construction cost, payable as construction progresses, for supervision during the term of the construction contracts as outlined in the following table:

<u>Total Estimated Construction Cost</u>		<u>Maximum % Fee</u>
Up to	\$ 200,000	*
\$200,000	\$ 300,000	4.50
\$300,000	\$ 500,000	4.25
\$500,000	\$ 2,000,000	4.00
Over	\$ 2,000,000	3.75

If a project is divided, such a portion is eligible for Table I compensation and the remainder for Table II compensation, the fee percentage (both basic and resident inspection) will be determined based on the estimated total construction cost of all schedules of work with each corresponding figure applied to the appropriate portion of construction.

*Negotiated Amount Based on Scope of Work.

*The scope of work should be defined and made a part of the Engineering Agreement.