

# **Preliminary Engineering Report**

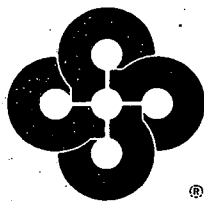
**For**

**City of Altus**

**Wastewater System Improvements**

CTS Job No. 097011-01  
January 13, 2010

Prepared by:



**Crafton Tull Sparks & Associates, Inc.**  
**Architects, Engineers & Surveyors**

P.O. Box 10189  
Russellville, Arkansas 72812-0189  
479.968.1885 / FAX 479.968.2981  
Internet: <http://www.craftontullsparks.com>

**Application for Federal Assistance SF-424**

Version 02

**\*1. Type of Submission:**

- ☐ Preapplication  
☒ Application  
☐ Changed/Corrected Application

**\*2. Type of Application**

- ☒ New  
☐ Continuation  
☐ Revision

\* If Revision, select appropriate letter(s)

\*Other (Specify)  
\_\_\_\_\_

3. Date Received:

4. Applicant Identifier:

5a. Federal Entity Identifier:

\*5b. Federal Award Identifier:

**State Use Only:**

6. Date Received by State:

7. State Application Identifier:

**8. APPLICANT INFORMATION:**

\*a. Legal Name: City of Altus, Franklin County, Arkansas

\*b. Employer/Taxpayer Identification Number (EIN/TIN):  
EIN 71-0486918\*c. Organizational DUNS:  
557345873**d. Address:**

\*Street 1: P.O. Box 140  
Street 2: 125 W. Main Street  
\*City: Altus  
County: Franklin  
\*State: AR  
Province: \_\_\_\_\_  
\*Country: USA  
\*Zip / Postal Code 72821

**e. Organizational Unit:**Department Name:  
N/ADivision Name:  
N/A**f. Name and contact information of person to be contacted on matters involving this application:**

Prefix: Mr. \*First Name: John  
Middle Name: Todd  
\*Last Name: Krentz  
Suffix: P.E.

Title: Project EngineerOrganizational Affiliation:  
Crafton Tull Sparks

\*Telephone Number: 479-968-1885

Fax Number: 479-968-2981

\*Email: john.krentz@craftontullsparks.com

**Application for Federal Assistance SF-424**

Version 02

**\*9. Type of Applicant 1: Select Applicant Type:**

C. City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\*Other (Specify)

**\*10 Name of Federal Agency:**

USDA Rural Development

**11. Catalog of Federal Domestic Assistance Number:**

10.760

CFDA Title:

Water and Waste Disposal Systems for Rural Communities

**\*12 Funding Opportunity Number:**

\*Title:

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

City of Altus, Franklin County, Arkansas

**\*15. Descriptive Title of Applicant's Project:**

The project being proposed will extend the existing sewer collection system to 130 additional customers by adding 89 manholes, 32,650 linear feet of two (2) to eight (8) inch sewer lines (including gravity and force main), six (6) lift stations, and ten (10) grinder pump stations.

## Application for Federal Assistance SF-424

Version 02

## 16. Congressional Districts Of:

\*a. Applicant: 3rd

\*b. Program/Project: 3rd

## 17. Proposed Project:

\*a. Start Date: When Funded

\*b. End Date: 18 months after funding

## 18. Estimated Funding (\$):

*a. Federal	\$1,697,427
*b. Applicant	
*c. State	\$1,024,471
*d. Local	
*e. Other	
*f. Program Income	
*g. TOTAL	\$2,721,898

## \*19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- ☒ a. This application was made available to the State under the Executive Order 12372 Process for review on January 11, 2010
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☐ c. Program is not covered by E. O. 12372

## \*20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

☐ Yes ☒ No

21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U. S. Code, Title 218, Section 1001)

☒ \*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions

## Authorized Representative:

Prefix: Ms.

\*First Name: Veronica

Middle Name: J.

\*Last Name: Post

Suffix:

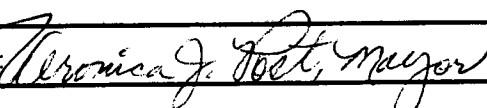
\*Title: Mayor

\*Telephone Number: 479-468-4192

Fax Number: 479-468-4684

\* Email: altusmayor@hotmail.com

\*Signature of Authorized Representative:



\*Date Signed:

1/12/2010

**Application for Federal Assistance SF-424**

Version 02

**\*Applicant Federal Debt Delinquency Explanation**

The following should contain an explanation if the Applicant organization is delinquent of any Federal Debt.

N/A

# INSTRUCTIONS FOR THE SF-424

Public reporting burden for this collection of information is estimated to average 60 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0043), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

This is a standard form (including the continuation sheet) required for use as a cover sheet for submission of preapplications and applications and related information under discretionary programs. Some of the items are required and some are optional at the discretion of the applicant or the Federal agency (agency). Required items are identified with an asterisk on the form and are specified in the instructions below. In addition to the instructions provided below, applicants must consult agency instructions to determine specific requirements.

Item	Entry:	Item	Entry:
1.	<b>Type of Submission:</b> (Required) Select one type of submission in accordance with agency instructions. <ul style="list-style-type: none"> <li>• Preapplication</li> <li>• Application</li> <li>• Changed/Corrected Application - If requested by the agency, check if this submission is to change or correct a previously submitted application. Unless requested by the agency, applicants may not use this to submit changes after the closing date.</li> </ul>	10.	<b>Name Of Federal Agency:</b> (Required) Enter the name of the Federal agency from which assistance is being requested with this application.
2.	<b>Type of Application:</b> (Required) Select one type of application in accordance with agency instructions. <ul style="list-style-type: none"> <li>• New - An application that is being submitted to an agency for the first time.</li> <li>• Continuation - An extension for an additional funding/budget period for a project with a projected completion date. This can include renewals.</li> <li>• Revision - Any change in the Federal Government's financial obligation or contingent liability from an existing obligation. If a revision, enter the appropriate letter(s). More than one may be selected. If "Other" is selected, please specify in text box provided. <ul style="list-style-type: none"> <li>A. Increase Award    B. Decrease Award</li> <li>C. Increase Duration    D. Decrease Duration</li> <li>E. Other (specify)</li> </ul> </li> </ul>	11.	<b>Catalog Of Federal Domestic Assistance Number/Title:</b> Enter the Catalog of Federal Domestic Assistance number and title of the program under which assistance is requested, as found in the program announcement, if applicable.
3.	<b>Date Received:</b> Leave this field blank. This date will be assigned by the Federal agency.	12.	<b>Funding Opportunity Number/Title:</b> (Required) Enter the Funding Opportunity Number and title of the opportunity under which assistance is requested, as found in the program announcement.
4.	<b>Applicant Identifier:</b> Enter the entity identifier assigned by the Federal agency, if any, or applicant's control number, if applicable.	13.	<b>Competition Identification Number/Title:</b> Enter the Competition Identification Number and title of the competition under which assistance is requested, if applicable.
5a.	<b>Federal Entity Identifier:</b> Enter the number assigned to your organization by the Federal Agency, if any.	14.	<b>Areas Affected By Project:</b> List the areas or entities using the categories (e.g., cities, counties, states, etc.) specified in agency instructions. Use the continuation sheet to enter additional areas, if needed.
5b.	<b>Federal Award Identifier:</b> For new applications leave blank. For a continuation or revision to an existing award, enter the previously assigned Federal award identifier number. If a changed/corrected application, enter the Federal identifier in accordance with agency instructions.	15.	<b>Descriptive Title of Applicant's Project:</b> (Required) Enter a brief descriptive title of the project. (If appropriate, attach a map showing project location (e.g., construction or real property projects). For preapplications, attach a summary description of the project.
6.	<b>Date Received by State:</b> Leave this field blank. This date will be assigned by the State, if applicable.	16.	<b>Congressional Districts Of:</b> (Required) 16a. Enter the applicant's Congressional District; and 16b. Enter all District(s) affected by the program or project. Enter in the format: 2 characters State Abbreviation - 3 characters District Number, e.g., CA-005 for California 5 <sup>th</sup> district, CA-012 for California 12 <sup>th</sup> district, NC-103 for North Carolina's 103 <sup>rd</sup> district. <ul style="list-style-type: none"> <li>• If all congressional districts in a state are affected, enter "all" for the district number, e.g., MD-all for all congressional districts in Maryland.</li> <li>• If nationwide, i.e., all districts within all states are affected, enter US-all.</li> <li>• If the program/project is outside the US, enter 00-000.</li> </ul>
7.	<b>State Application Identifier:</b> Leave this field blank. This identifier will be assigned by the State, if applicable.	17.	<b>Proposed Project Start and End Dates:</b> (Required) Enter the proposed start date and end date of the project.
8.	<b>Applicant Information:</b> Enter the following in accordance with agency instructions: <ul style="list-style-type: none"> <li>a. <b>Legal Name:</b> (Required) Enter the legal name of applicant that will undertake the assistance activity. This is the name that the organization has registered with the Central Contractor Registry. Information on registering with CCR may be obtained by visiting the Grants.gov website.</li> <li>b. <b>Employer/Taxpayer Number (EIN/TIN):</b> (Required) Enter the Employer or Taxpayer identification Number (EIN or TIN) as assigned by the Internal Revenue Service. If your organization is not in the US, enter 44-4444444.</li> <li>c. <b>Organizational DUNS:</b> (Required) Enter the organization's DUNS or DUNS+4 number received from Dun and Bradstreet. Information on obtaining a DUNS number may be obtained by visiting the Grants.gov website.</li> <li>d. <b>Address:</b> Enter the complete address as follows: Street address (Line 1 required), City (Required), County, State (Required, if country is US), Province, Country (Required), Zip/Postal Code (Required, if country is US).</li> <li>e. <b>Organizational Unit:</b> Enter the name of the primary organizational unit (and department or division, if applicable) that will undertake the</li> </ul>	18.	<b>Estimated Funding:</b> (Required) Enter the amount requested or to be contributed during the first funding/budget period by each contributor. Value of in-kind contributions should be included on appropriate lines, as applicable. If the action will result in a dollar change to an existing award, indicate only the amount of the change. For decreases, enclose the amounts in parentheses.
		19.	<b>Is Application Subject to Review by State Under Executive Order 12372 Process?</b> Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the

	assistance activity, if applicable. <b>f. Name and contact information of person to be contacted on matters involving this application:</b> Enter the name (First and last name required), organizational affiliation (if affiliated with an organization other than the applicant organization), telephone number (Required), fax number, and email address (Required) of the person to contact on matters related to this application.		State intergovernmental review process. Select the appropriate box. If "a." is selected, enter the date the application was submitted to the State.		
			20. <b>Is the Applicant Delinquent on any Federal Debt?</b> (Required) Select the appropriate box. This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit disallowances, loans and taxes.  If yes, include an explanation on the continuation sheet.		
9.	<b>Type of Applicant: (Required)</b> Select up to three applicant type(s) in accordance with agency instructions. <table border="0" data-bbox="183 448 877 1021"> <tr> <td data-bbox="183 448 530 1021">           A. State Government            B. County Government            C. City or Township Government            D. Special District Government            E. Regional Organization            F. U.S. Territory or Possession            G. Independent School District            H. Public/State Controlled Institution of Higher Education            I. Indian/Native American Tribal Government (Federally Recognized)            J. Indian/Native American Tribal Government (Other than Federally Recognized)            K. Indian/Native American Tribally Designated Organization            L. Public/Indian Housing Authority         </td> <td data-bbox="530 448 877 1021">           M. Nonprofit with 501(c)(3) IRS Status (Other than Institution of Higher Education)            N. Nonprofit without 501(c)(3) IRS Status (Other than Institution of Higher Education)            O. Private Institution of Higher Education            P. Individual            Q. For-Profit Organization (Other than Small Business)            R. Small Business            S. Hispanic-serving Institution            T. Historically Black Colleges and Universities (HBCUs)            U. Tribally Controlled Colleges and Universities (TCCUs)            V. Alaska Native and Native Hawaiian Serving Institutions            W. Non-domestic (non-US) Entity            X. Other (specify)         </td> </tr> </table>		A. State Government B. County Government C. City or Township Government D. Special District Government E. Regional Organization F. U.S. Territory or Possession G. Independent School District H. Public/State Controlled Institution of Higher Education I. Indian/Native American Tribal Government (Federally Recognized) J. Indian/Native American Tribal Government (Other than Federally Recognized) K. Indian/Native American Tribally Designated Organization L. Public/Indian Housing Authority	M. Nonprofit with 501(c)(3) IRS Status (Other than Institution of Higher Education) N. Nonprofit without 501(c)(3) IRS Status (Other than Institution of Higher Education) O. Private Institution of Higher Education P. Individual Q. For-Profit Organization (Other than Small Business) R. Small Business S. Hispanic-serving Institution T. Historically Black Colleges and Universities (HBCUs) U. Tribally Controlled Colleges and Universities (TCCUs) V. Alaska Native and Native Hawaiian Serving Institutions W. Non-domestic (non-US) Entity X. Other (specify)	21. <b>Authorized Representative: (Required)</b> To be signed and dated by the authorized representative of the applicant organization. Enter the name (First and last name required) title (Required), telephone number (Required), fax number, and email address (Required) of the person authorized to sign for the applicant. A copy of the governing body's authorization for you to sign this application as the official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.)
A. State Government B. County Government C. City or Township Government D. Special District Government E. Regional Organization F. U.S. Territory or Possession G. Independent School District H. Public/State Controlled Institution of Higher Education I. Indian/Native American Tribal Government (Federally Recognized) J. Indian/Native American Tribal Government (Other than Federally Recognized) K. Indian/Native American Tribally Designated Organization L. Public/Indian Housing Authority	M. Nonprofit with 501(c)(3) IRS Status (Other than Institution of Higher Education) N. Nonprofit without 501(c)(3) IRS Status (Other than Institution of Higher Education) O. Private Institution of Higher Education P. Individual Q. For-Profit Organization (Other than Small Business) R. Small Business S. Hispanic-serving Institution T. Historically Black Colleges and Universities (HBCUs) U. Tribally Controlled Colleges and Universities (TCCUs) V. Alaska Native and Native Hawaiian Serving Institutions W. Non-domestic (non-US) Entity X. Other (specify)				

WASTEWATER PRE-APPLICATION  
COVER PAGE

WWAC ID #: 3392

1. Applicant / Owner:	City of Altus	2. ACEDP Grantee:	City of Altus		
Representative & Title:	Veronica J. Post, Mayor	Representative & Title:	Veronica J. Post, Mayor		
Address:	P.O. Box 140	Address:	P.O. Box 140		
City & Zip Code:	Altus, 72821	City & Zip Code:	Altus, 72821		
County:	Franklin	County:	Franklin		
Phone:	479-468-4192	Phone:	479-468-4192		
FAX:	479-468-4684	FAX:	479-468-4684		
E-Mail Address:	altusmayor@hotmail.com	E-Mail Address:	altusmayor@hotmail.com		
3. Engineering Firm:	Crafton Tull Sparks	4. Application Type: (Mark all that apply) <input checked="" type="checkbox"/> LMI Service Hookups <input checked="" type="checkbox"/> New Collection System or Extension <input type="checkbox"/> Rehab Existing Collection System <input type="checkbox"/> New Treatment Plant <input type="checkbox"/> Rehab Existing Treatment Plant <input type="checkbox"/> Other _____			
Project Engineer:	John T. Krentz				
Address:	P.O. Box 10189				
City & Zip Code:	Russellville, AR				
Phone:	479-968-1885				
FAX:	479-968-2981				
E-Mail Address:	john.krentz@craftontullsparks.com				
5. Number of Existing Customers:	263	Number of New Customers:	130	Projected Number of Customers:	458
6. Arkansas Senate District	3rd	Arkansas House District	3rd	U. S. House District	3rd
7. Provide a brief description of the project:					
The project being proposed will extend the existing sewer collection system to 130 additional customers by adding 89 manholes, 32,650 linear feet of two (2) to eight (8) inch sewer lines (including gravity and force main), six (6) lift stations, and ten (10) grinder pump stations.					
8. Indicate the Agencies and Dollar Amounts you plan to use for this project:					
\$1,024,471		Community Development Block Grant Program			
\$		Arkansas Natural Resources Commission			
\$		Community Resource Group			
\$1,697,427		USDA, Rural Development			
\$		Other Funding Source: _____			
\$2,721,898		Total Funds Requested			
9. I, the undersigned representative of the applicant or grant recipient, certify that the information contained herein and the attached statements, exhibits and reports are true, correct and complete to the best of my knowledge and belief.					
Applicant's Signature: <i>Veronica J. Post, Mayor</i>		Date: <i>1/12/2010</i>			
Application Preparer's Signature: <i>John T. Krentz</i>		Date: <i>1/13/2010</i>			



WATER  
SUBCOMMITTEE  
101 E. Capitol, Suite 350  
Little Rock, AR 72201  
Phone: (501) 682-3974  
FAX: (501) 682-3991



WASTEWATER  
SUBCOMMITTEE  
101 E. Capitol, Suite 350  
Little Rock, AR 72201  
Phone: (501) 682-3971  
FAX: (501) 682-3991

# State of Arkansas

## WATER/WASTEWATER ADVISORY COMMITTEE

March 7, 2002

The Honorable Veronica Post  
Mayor, City of Altus  
Post Office Box 214  
Altus, Arkansas 72821

Re: Altus' Pre-application for Recommendation on Funding

Dear Mayor Post:

On March 6<sup>th</sup>, the Water/Wastewater Advisory Committee reviewed your pre-application for funding of the wastewater collection system extension. The Committee recommends funding be provided by the following agencies:

1. Arkansas Department of Economic Development (ADED)
2. Arkansas Soil and Water Conservation Commission (ASWCC)
3. U.S. Dept. of Agriculture, Rural Development (RD)

The actual funding amounts cannot be determined at this time. The use of ASWCC or RD loan funds would be up to you. The Arkansas Department of Economic Development will not fund a project unless the project uses a maximum amount of loan funds.

Funding consideration from the Arkansas Department of Economic Development is contingent upon the need and eligibility criteria being met and the required documentation being submitted to ADED prior to the April 30, 2002 deadline established by ADED. For information pertaining to these requirements, contact Ms. Markey Ford at (501) 682-2433.

While this is not a comment, the NPDES Branch of ADEQ's Water Division has asked that we mention the need for a Storm Water Permit for construction. Any construction projects disturbing five or more acres must have a storm water construction permit issued by ADEQ. Included as a permit requirement is the development of a Storm Water Pollution Prevention Plan. For construction projects less than five acres, best management practices during construction would include erosion and sediment control measures.

We appreciate your cooperation with this pre-application process. If you have any questions or comments, please give me a call at the above telephone number.

Sincerely,

A handwritten signature in cursive script that reads "David Fenter".

David Fenter, Chairman  
Water & Wastewater Subcommittee

DF/sf

cc: Crafton, Tull & Associates  
Kathy Bannister; WAPDD  
WWAC Committee Members

KJ KA  
LC RB  
TB TB  
ale 09-157

# **Preliminary Engineering Report**

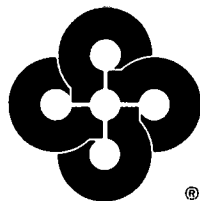
**For**

**City of Altus**

**Wastewater System Improvements**

CTS Job No. 097011-01  
January 13, 2010

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**PRELIMINARY ENGINEERING REPORT  
WASTEWATER SYSTEM IMPROVEMENTS  
CITY OF ALTUS  
JANUARY 13, 2010**

**1. GENERAL**

The purpose of this Preliminary Engineering Report is to identify the present problem, analyze alternatives, and propose a specific course of action from an engineering perspective to address the problem. As a part of this engineering planning process, the environmental issues related to the project have also been considered. It is anticipated that the owner will file an application for assistance with the USDA Rural Development, Arkansas Natural Resources Commission-ACEDP-CDBG; therefore, this report has been formatted in accordance with RUS Bulletin 1780-3.

The City of Altus currently handles it's wastewater with a combination of sewage collection systems with a treatment facility, and individual septic systems for other areas. The focus of this report is on the need to extend the sewer collection system to the Northwest of Altus along US Highway 64. This area is currently served by septic systems that have a high failure rate. The details of the proposed improvements for this area are contained in this report.

**2. PROJECT PLANNING AREA**

- a. Location: The City of Altus is located in Franklin County on US Highway 64. It lies 2 miles east of the Arkansas River, and approximately 4 miles south of Interstate 40. The elevations in the area range from 480 to 580 feet above sea level. See attachment A for Vicinity Map
- b. Environmental Resources Present: The land use categories found in the project area include Residential, Farmland, Pasture, and Woodland. The land use categories will not change, or be affected by the proposed improvements. There are no formally classified lands in the project area. There are no areas lying within the 100/500 floodplain. The U.S. Fish and Wildlife Service determined that the proposed project would not adversely impact any endangered species. The Arkansas State Historic Preservation Office indentified one archeological site located within the proposed project area. An Archeological survey was done, and the results showed that the proposed project would have no effect on historic properties in question. The documentation for the above mentioned items can be found in the associated Environmental Report.

The Department of the Army, Little Rock District, Corps of Engineers has been contacted, and the proposed work will require a Section 404 Department of the Army Permit.

A Storm Water Pollution Prevention Plan will be required.

There are no environmental mitigation requirements at this time.

- c. Growth Areas and Population Trends: The 1990 census shows that the City of Altus had a population of 433. The 2000 census shows that the population increased to 817, and the most current 2008 estimate by the U.S. Census Bureau shows the population to be 838. This data indicates a spike in the growth rate of 88% occurred from 1990 to 2000. This sharp increase in population was due to areas that were annexed into the city during that time. According to this estimate, since 2000 the growth rate has leveled off at a more modest rate of 2.6%.

### 3. EXISTING FACILITIES

- a. Location Map: See schematic layout of existing sewer system in attachment B.
- b. History: The Wastewater Treatment Plant was constructed in 1991, with a small service area expansion in 1992, and a larger (Phase II) expansion in 1996.
- c. Condition of Facilities:

Wastewater treatment plant and collection system: The plant was designed for an average daily flow of 71,000 GPD. There have been no upgrades or modifications since the plant was put into service. The plant is currently meeting the requirements set forth in the ADEQ discharge permit. The average daily flow to the plant based on sewer usage for 2009 was 45,148 gpd. This flow is 64% of the plant capacity. The average daily flow at the plant from 5-1-08 to 4-30-09 was 70,958 gpd. This difference indicates that the plant is receiving significant flows from infiltration and inflow in the collection system. In order to allow the plant to operate at the design treatment capacity, the City of Altus must take the necessary action to correct the current I&I problem.

Existing Lift Station: The existing lift station that would serve the proposed extended area was constructed in 1991 along with the treatment plant. The lift station was designed to handle the entire plant flow of 71,000 gpd, with a peak design flow of 269,800 gpd based on a 3.8 peak factor. Currently the City has 263 customers that produce the aforementioned sewer flows of 45,148 gpd. The sewer flows from the

approximately 96 customers added with the Phase II extension are not routed through this lift station. Based on this, it is estimated that the current sewer flow that the lift station is receiving is 63% of the average daily sewer flows, or 28,443 gpd. This flow is 40% of the design capacity. The lift station has sufficient remaining capacity to serve the proposed extended service area. See paragraph 5.2-b for design criteria.

- d. Financial Status of Existing Facilities: See paragraph 7a-d

#### 4. NEED FOR THE PROJECT

- a. Health, Sanitation and Security: The dwellings within the proposed project area are currently served by septic tanks. A high percentage of the dwellings have failing septic systems. The high septic system failure rate is verified by a review of soil conditions in the area. The proposed service area consists of Leadvale, Mountainburg, and Linker soils. The Leadvale soils are rated very severe for use in septic tank filter fields due to slow percolation rates and a high water table. The Mountainburg soils are also rated as very severe for use in septic tank filter fields due to the shallow depth over bedrock while the Linker soils are rated as moderate for use in septic tank filter fields.

The base project area has been established at 53.5% low to moderate income, with 21 at low income and 17 at moderate income for a total of 38 low to moderate income families. The income survey shows that 36 people are 64 years of age or older, 13 people are living with a disability, and there are 19 Female Head of Households.

- b. System Operation and Maintenance: The current staff for the City of Altus will provide Operation and Maintenance for the sewer collection expansion. The proposed expansion will incorporate the use of an existing pump station, and the existing treatment plant. The design of these systems are adequate for the increased capacity given that the problem of infiltration and inflow is addressed before the flows from the additional service area are added.
- c. Growth: As outlined in paragraph 2c, the estimated current population growth rate is 2.6%. The proposed service area would serve an additional 130 customers. This area has several subdivisions that will not be expanded further. There is some potential for growth in other areas such as on the east side of Hwy 64, and further north along Hwy 64. The sewer collection system will be designed to provide capacity for a 50% growth factor. The total number of future connections that will be designed for will be:  $130 + 130(0.5) = 195$

## 5. ALTERNATIVES CONSIDERED

Three alternatives were considered for this project, and are listed as follows:

### 5.1 Alternative No. 1

- a. Description: The first alternative consists of replacing the existing septic systems with a small diameter variable grade sewer collection system. This system would route the service flow from the area to the existing treatment plant.
- b. Design Criteria: The sewer collection system will be based on a 100 gallon per capita per day basis assuming 3.2 persons per household. Lines will be sized based on the maximum development of the potential contributing area. Pump stations will be based on anticipated flows with a peaking factor of four (4). Force mains shall have a minimum 2 fps scouring velocity.
- c. Map: See attachment C for the proposed system layout
- d. Environmental Impacts: There would be no long term environmental impacts. There would be a short term impact due to ground disturbance caused by the construction of the new systems.
- e. Land Requirements: No additional land would be required.
- f. Construction Problems: There are no known construction problems associated with this alternative.



g. Cost Estimate:

<u>Item No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Total</u>
1	1.25" Force Main	15287	LF	3.00	45,861.00
2	1.5" Force Main	6772	LF	3.25	22,009.00
3	2" Force Main	6814	LF	3.50	23,849.00
4	3" Force Main	6234	LF	4.75	29,611.50
5	4" Force Main	4378	LF	5.50	24,079.00
6	Progressive Cavity Pump Station	130	EA	9,000.00	1,170,000.00
7	Air Release Valves	30	EA	1,300.00	39,000.00
8	Flushing Station	35	EA	1,000.00	35,000.00
9	House Connection	130	EA	500.00	65,000.00
10	Abandon Existing Septic System	130	EA	1,500.00	195,000.00
11	Road Bore	6	EA	6,000.00	36,000.00
12	Gravel Backfill	75	CY	40.00	3,000.00
13	Rock Excavation	750	CY	50.00	37,500.00
14	Asphalt Replacement	315	S.Y.	50.00	15,750.00
15	Concrete Replacement	125	S.Y.	75.00	9,375.00
16	Erosion Control	1	LS	2,500.00	2,500.00
17	Excavation & Trench Safety System	1	LS	5,000.00	<u>5,000.00</u>
	CONSTRUCTION SUBTOTAL				1,758,534.50
	CONTINGENCIES (10%)				<u>175,853.45</u>
	TOTAL CONSTRUCTION COSTS				1,934,387.95
	Preliminary Engineering Report & Environmental (1%)				17,585.35
	Engineering Design (8.0%)				140,682.76
	Construction Administration (4.0%)				70,341.38
	Prepare Storm Water Pollution Prevention Plan				5,000.00
	LEGAL				17,000.00
	EASEMENTS (130 @ \$125)				16,250.00
	INTEREST DURING CONSTRUCTION				<u>35,500.00</u>
	<b>Grand Total</b>				<b>2,236,747.44</b>

- h. Advantages/Disadvantages: The advantages of this collection system are that it would eliminate the leach fields associated the current conventional septic systems, and that the initial cost of installation would be less than that of a typical gravity system. The disadvantage is that the Life Cycle Cost is significantly higher.

## 5.2 Alternative No. 2

- a. Description: Construct a conventional gravity collection system for the proposed extended area, and pump the effluent to an existing lift station, then to the existing Wastewater Treatment Plant.
- b. Design Criteria: The sewer collection system will be based on a 100 gallon per capita per day basis assuming 3.2 persons per household. Sewer lines will be sized based on the maximum development of the potential contributing area. Pump stations will be based on anticipated flows with a peaking factor of four (4). Force mains shall have a minimum 2 fps scouring velocity.
- c. Map: See attachment D for the proposed system layout.
- d. Environmental Impacts: There would be no long term environmental impacts. There would be a short term impact due to ground disturbance caused by the construction of the new systems.
- e. Land Requirements: It would require the acquisition of land for 3 lift station sites.
- f. Construction Problems: At various locations the depth of the gravity sewer would be well into bedrock requiring construction methods other than conventional digging.

Cost Estimates:**BASE AREA ITEMIZATION**

<u>Item No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Total</u>
1	8" Sanitary Sewer - 0'-6' Deep	4620	LF	18.00	83,160.00
2	8" Sanitary Sewer - 6'-8' Deep	10200	LF	22.00	224,400.00
3	8" Sanitary Sewer - 8'-10' Deep	2465	LF	26.00	64,090.00
4	8" Sanitary Sewer - 10'-12' Deep	2690	LF	30.00	80,700.00
5	8" Sanitary Sewer - 12'-14' Deep	620	LF	32.00	19,840.00
6	4" Service Line	1220	LF	10.50	12,810.00
7	Manholes	67	EA	2,500.00	167,500.00
8	Manhole Extra Depth	87	VF	150.00	13,050.00
9	Typical 4" PVC Sewer Service Line Connection	49	EA	175.00	8,575.00
10	Typical 4" PVC Sewer Service Manhole Connection	23	EA	200.00	4,600.00
11	Grinder package to Manhole Connection	3	EA	400.00	1,200.00
12	Grinder package to Pressure Main Line Connection	4	EA	800.00	3,200.00
13	Grinder package to Gravity Sewer Line Connection	3	EA	800.00	2,400.00
14	1- 1/4" Grinder Force Main	2185	LF	5.00	10,925.00
15	6" Force Main	2180	LF	9.00	19,620.00
16	4" Force Main	1966	LF	5.50	10,813.00
17	2" Force Main	901	LF	3.50	3,153.50
18	16" Highway Bore & Casing	150	LF	200.00	30,000.00
19	6" Highway Bore & Casing	150	LF	130.00	19,500.00
20	3" Highway Bore & Casing	75	LF	75.00	5,625.00
21	16" Casing for Stream Crossing	200	LF	75.00	15,000.00
22	Concrete Anchors	4	EA	1,200.00	4,800.00
23	Gravel Backfill	700	CY	40.00	28,000.00
24	Rock Excavation	6000	CY	50.00	300,000.00
25	Asphalt Replacement	50	S.Y.	50.00	2,500.00
26	Concrete Replacement	100	S.Y.	75.00	7,500.00
27	Grinder Pump Station (Simplex)	10	EA	12,000.00	120,000.00
28	Lift Station No. 1 with Generator	1	LS	65,000.00	65,000.00
29	Lift Station No. 2 with Generator	1	LS	95,000.00	95,000.00
30	Lift Station No. 3 with Generator	1	LS	65,000.00	65,000.00
31	Power to Lift Station Sites	3	EA	5,000.00	15,000.00
32	Erosion Control	1	LS	10,000.00	10,000.00
33	Excavation & Trench Safety System	1	LS	5,000.00	5,000.00
<b>CONSTRUCTION SUBTOTAL</b>					<b>1,517,961.50</b>
Contingencies					151,796.15
Total Construction Cost					<b>1,669,757.65</b>
Preliminary Engineering Report & Environmental (1%)					15,179.62
Engineering Design (8.0%)					121,436.92
Construction Administration (4.0%)					60,718.46
Prepare Storm Water Pollution Prevention Plan					5,000.00
Legal					16,100.00
Land Acquisition (3 sites @ \$5000)					15,000.00
Surveys (3 @ \$2500)					7,500.00
Easements (90 @ \$125)					11,250.00
Interest During Construction					70,000.00
LMI Connections (38 @ \$1500)					<u>57,000.00</u>
<b>Total</b>					<b>2,048,942.65</b>

## LIESURE ESTATES & HATTIE LANE ITEMIZATION

<u>Item No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Total</u>
1	8" Sanitary Sewer - 0'-6' Deep	4849	LF	18.00	87,282.00
2	8" Sanitary Sewer - 6'-8' Deep	498	LF	22.00	10,956.00
3	4" Service Line	990	LF	10.50	10,395.00
4	Manholes	22	EA	2,500.00	55,000.00
5	Manhole Extra Depth	2	VF	150.00	300.00
6	Typical 4" PVC Sewer Service Line Connection	24	EA	175.00	4,200.00
	Typical 4" PVC Sewer Service Manhole				
7	Connection	23	EA	200.00	4,600.00
8	4" Force Main	1092	LF	5.50	6,006.00
9	2" Force Main	561	LF	3.50	1,963.50
10	16" Casing for Stream Crossing	40	LF	75.00	3,000.00
11	Concrete Anchors	4	EA	1,200.00	4,800.00
12	Gravel Backfill	222	CY	40.00	8,880.00
13	Rock Excavation	1450	CY	50.00	72,500.00
14	Asphalt Replacement	166	S.Y.	50.00	8,300.00
15	Concrete Replacement	125	S.Y.	75.00	9,375.00
16	Lift Station No. 1 with Generator	1	LS	65,000.00	65,000.00
17	Lift Station No. 2 with Generator	1	LS	65,000.00	65,000.00
18	Lift Station No. 3 with Generator	1	LS	65,000.00	65,000.00
19	Power to Lift Station Sites	3	EA	5,000.00	15,000.00
20	Erosion Control	1	LS	2,500.00	2,500.00
21	Excavation & Trench Safety System	1	LS	5,000.00	5,000.00
	CONSTRUCTION SUBTOTAL				505,057.50
	Contingencies (10%)				50,505.75
	Total Construction Costs				555,563.25
	Preliminary Engineering Report & Environmental (1%)				5,050.58
	Engineering Design (8.0%)				40,404.60
	Construction Administration (4.0%)				20,202.30
	Prepare Storm Water Pollution Prevention Plan				5,000.00
	Legal				10,360.00
	Land Acquisition (3 sites @ \$5000)				15,000.00
	Surveys (3 @ \$2500)				7,500.00
	Easements (23 @ \$125)				2,875.00
	Interest During Construction				11,000.00
	<b>Total</b>				<b>672,955.73</b>

### **COST ESTIMATE SUMMARY:**

<b>BASE AREA TOTAL</b>	<b>\$2,048,942.65</b>
<b>LIESURE ESTATES &amp; HATTIE LANE TOTAL</b>	<b><u>\$672,955.73</u></b>
<b>GRAND TOTAL</b>	<b>\$2,721,898.37</b>

- h. Advantages/Disadvantages: The advantage of this type of collection system is the relatively low Operation and Maintenance cost once the system is in place. The disadvantage is the increased construction cost with this type of system driven in part by the required depth of sewer lines, especially in rocky areas.

### 5.3 Alternative #3

- a. Description: Do Nothing. This alternative was not considered viable. The residences and businesses in the proposed service area would continue to use their existing septic tank to leach field systems. As a result of septic tank failures in the proposed service area, this alternative does not address the need to provide a safe environment and dependable sewerage system for those residents.

## 6. SELECTION OF AN ALTERNATIVE

### Life Cycle Cost Analysis

#### Alternate 1 vs. Alternate 2

#### Small Diameter Variable Grade Collection System vs. Gravity Collection System

Altus Wastewater Extension

CTS Job # 097011-01

#### Project Information

#### Small Dia. Variable Grade (Alt. 1)

#### Gravity Collection System (Alt. 2)

Project Design Life, n (yrs)	40	Item Service Life, nm (yrs)	20	Item Service Life, nm (yrs)	10
Inflation Rate, I (%)	1.84%	Const. and Non-Const. Cost, C	\$2,721,898	Const. and Non-Const. Cost, C	\$2,236,747
Interest (Discount) Rate, i (%)	2.70%	Rehab Cost, Cr	\$144,000	Rehab Cost, Cr	\$1,820,000
Inflation/Interest Factor, (1+(I/100))/(1+(i/100)), F	0.9916	Operation & Maintenance per year, Cm	\$13,478	Operation & Maintenance per year, Cm	\$21,472

Small Dia. Variable Grade System	Description and Calculations	Gravity Collection System
\$2,236,747	Construction and Non-Construction Cost	\$2,721,898
\$726,276	Operation & Maintenance = $(1-(F)^n)/((1/F)-1)*Cm$	\$455,886
\$1,673,212	Rehabilitation Cost = $(F^n)*Cr$	\$121,709
\$4,793,537	Residual Value = $-C*(F^n)*((nm-n)/nm)$	\$1,944,419
\$9,429,772	Total Cost	\$5,243,912
	Cost Advantage	YES \$4,185,860

#### Note:

- The real discount interest rate was obtained at:  
[http://www.whitehouse.gov/omb/circulars/a094/a94\\_appx-c.html](http://www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html) (Revised December 2009)
- The inflation rate is based on the average for the year 2009 and was obtained at:  
[http://inflationdata.com/inflation/Inflation\\_Rate/CurrentInflation.asp](http://inflationdata.com/inflation/Inflation_Rate/CurrentInflation.asp) (Revised November 2009)

Alternate No. 2 has the lowest total cost based on the Life Cycle Analysis. Alternate No. 2 is the recommended alternate.

## 7. EXISTING SYSTEM

The City of Altus Water Department, an enterprise fund of the City of Altus Arkansas, manages the Water, Sewer, and Trash pickup. We have, with the help of the Mayor and her staff, prorated the operating revenues and expenses as presented in the Independent Auditors Report and Financial Statements, June 30, 2007 and 2006. This is the latest Audit available. The current annual operating budget presented below is for sewer only.

### a. Current Annual Operating Budget

REVENUES	SEWER
Sewer Charges	50,954.40
Connect Fees	300.00
Interest Income	<u>937.40</u>
Total Revenues	<b>52,182.05</b>
EXPENSES	
<u>Costs of Goods Sold:</u>	
Health Department Fees	439.00
Insurance	1,233.20
Parts & Supplies	3,794.25
Salaries	12,286.35
Sewer & Fees & Testing	2,300.00
Payroll Taxes	569.20
Truck Expense	1,750.60
Utilities	<u>6,660.60</u>
	29,033.20
<u>Operating Expense:</u>	
Legal and Accounting	2,178.56
Bad Debts	2,982.64
Depreciation	870.50
Dues	201.50
Insurance	102.80
Miscellaneous Expense	108.85
Office Supplies	240.95
Payments to City for Salaries & Overhead	7,773.48
Pension Expense	313.20
Postage	1,054.32
Payroll Taxes	170.82
Utilities	<u>1,998.18</u>
	17,995.80
<u>Non-Operating Expenses:</u>	
Interest Expense	3,913.40
Total Expenses	<b>50,942.40</b>
Net Revenue	<b>1,239.65</b>

b. Operation and Maintenance

The annual Operation and Maintenance (O&M) cost is \$50,942.40. Based on the current 263 customers, the monthly O&M cost is \$16.14

$$\text{Current O\&M } (50,942.40/263/12) = \$16.14$$

c. Restricted Assets (Based on Latest Financial Statements Available for a time period of 12 months ending June 30, 2007. See attached)

Debt Service Reserve fund:

Bond Reserve funds:

Debt Service Revenue	
Open account	\$20,558
Certificate of Deposits	<u>\$14,640</u>
<b>Total</b>	<b>\$35,198</b>

d. Reserves-Short Lived Assets

Equipment Reserve Fund	
Open account	\$22,419
Depreciation Fund	
Open account	<u>\$80,809</u>
<b>Total</b>	<b>103,228</b>

The Equipment Reserve Fund is set aside for pump and lift station equipment repair and replacement. The Depreciation Fund is held on reserve for items such as the current I&I study needed.

e. Existing Rate Structure

<b>Sewer Rates</b>	<b>Cost</b>
Rates per 1000 gallons of water use	
Min. plus 2000 gal water use	\$10.00 min.
Per 1000 for 3,000-5,000 gal	\$2.15/1000
Per 1000 for 6,000-15000 gal	\$1.50/1000
For every 1000 gal over 15000 gal	\$1.25/1000



f. Debt Service Calculations

Existing Debts

5% Bond to RD dated 5-21-81	\$6,228.00
5% Bond to RD dated 6-26-91	\$14,592.00
4.5% Bond to RD dated 5-08-96	<u>\$8,640.00</u>
Total Debt	\$29,460.00

Based on the average water use of 5,000 gallons per month.

Monthly Bill	O & M Costs	Debt Service Available per customer
\$ 16.45	- \$ 16.14	= \$ 0.31

$(263 * 0.31 * 12) = \$978.36$  debt service available per year  
Current Annual debt is \$29,460  
 $\$978.36 - \$29,460 = -28,481.64$

The current sewer debt service is subsidized by revenue from the Water Department.

8. PROPOSED PROJECT

- a. Project Design Extend the existing sewer collection system to 130 additional customers by adding 89 manholes, 32,650 linear feet of two (2) to eight (8) inch sewer lines (including gravity and force main), six (6) lift stations, and ten (10) grinder pump stations.
- b. Proposed Annual Operating Budget

Based on a 2009 estimated Revenues, and Expenses, the following projected budget is proposed. This budget includes the addition of the new 130 proposed customers for a total of 393 customers.

## REVENUES

Sewer Charges	90,178.60
Connect Fees	307.67
Interest Income	<u>993.64</u>
Total Revenues	<b>91,479.91</b>

## EXPENSES

### Costs of Goods Sold:

Health Department Fees	465.34
Insurance	1,307.19
Parts & Supplies	4,021.91
Salaries	13,023.53
Sewer & Fees & Testing	2,438.00
Payroll Taxes	603.35
Truck Expense	2,319.55
Utilities	<u>11,325.25</u>
	<b>35,504.12</b>

### Operating Expense:

Legal and Accounting	2,309.27
Bad Debts	3,161.60
Depreciation	922.73
Dues	213.59
Insurance	108.97
Miscellaneous Expense	115.38
Office Supplies	255.41
Payments to City for Salaries & Overhead	8,239.89
Pension Expense	331.99
Postage	1,117.58
Payroll Taxes	181.07
Utilities	<u>2,118.07</u>
	<b>19,075.55</b>

### Non-Operating Expenses:

Interest Expense	4,148.00
------------------	----------

Total Expenses **58,727.87**

Net Assets **32,752.04**

### c. Operation and Maintenance

The estimated annual Operation and Maintenance (O&M) cost is \$58,727.87. Based on a total of 393 customers, the monthly O&M cost would be  $(58,727.87/393/12) = \$12.45$

d. Debt Service Calculations

The following annual debt service is proposed to service the total loans of \$933,585 using a 40-year loan at 3.375 percent with a 10 percent coverage.

Annual debt \$48,360

Required new debt service is  $(48,360/130/12) = \$31.00$

Based on the average water use of 5,000 gallons per month.

Debt Service	O & M Costs	Monthly Bill
\$ 31.00	+ \$ 12.45	= \$ 43.45

e. Proposed Rate Structure

Sewer Rates	Cost
Rates per 1000 gallons of water use	
0 water use	\$31.00 min.
Per 1000 for 0-5,000 gal	\$2.50/1000
Per 1000 for 6,000-15,000 gal	\$1.50
For every 1000 gal over 15,000	\$1.25

Funding is therefore proposed as follows:

CDBG	\$1,024,471
Rural Development Loan	\$933,585
Rural Development Grant	<u>\$763,842</u>
<b>Project Total</b>	<b>\$2,721,898</b>

e. Project Time Table

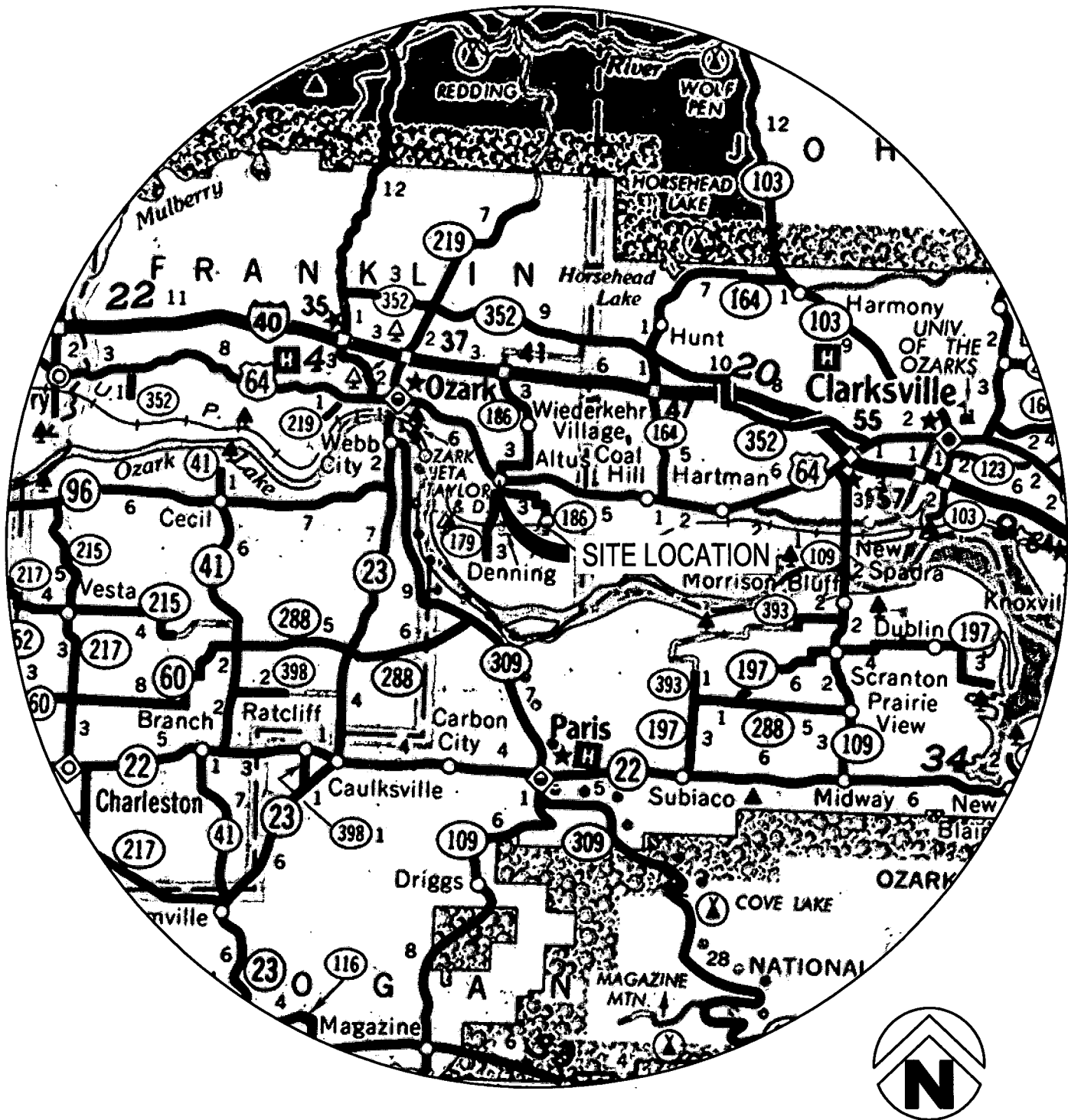
The following timetable for each phase is after funding is received:

Altus Sewer Expansion

Project Design	6 months
Project Review	2 months
Acquisitions	2 months
Project Letting	1 month
Construction	<u>7 months</u>
Total Project Time	18 months

**9. CONCLUSIONS AND RECOMMENDATIONS**

Alternate No. 2 has the lowest total cost based on the Life Cycle Analysis, and is the recommended alternate. It is also recommended that the City of Altus proceed to apply for funding from Rural Development and ANRC through the CDBG.



CITY OF ALTUS  
SEWER FUNDING APPLICATION  
FOR PROPOSED EXPANSION

Project No: 097011-00

Issue Date: 12-23-09

Contact: J KRENTZ

Checked by:

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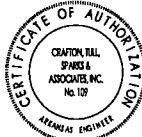
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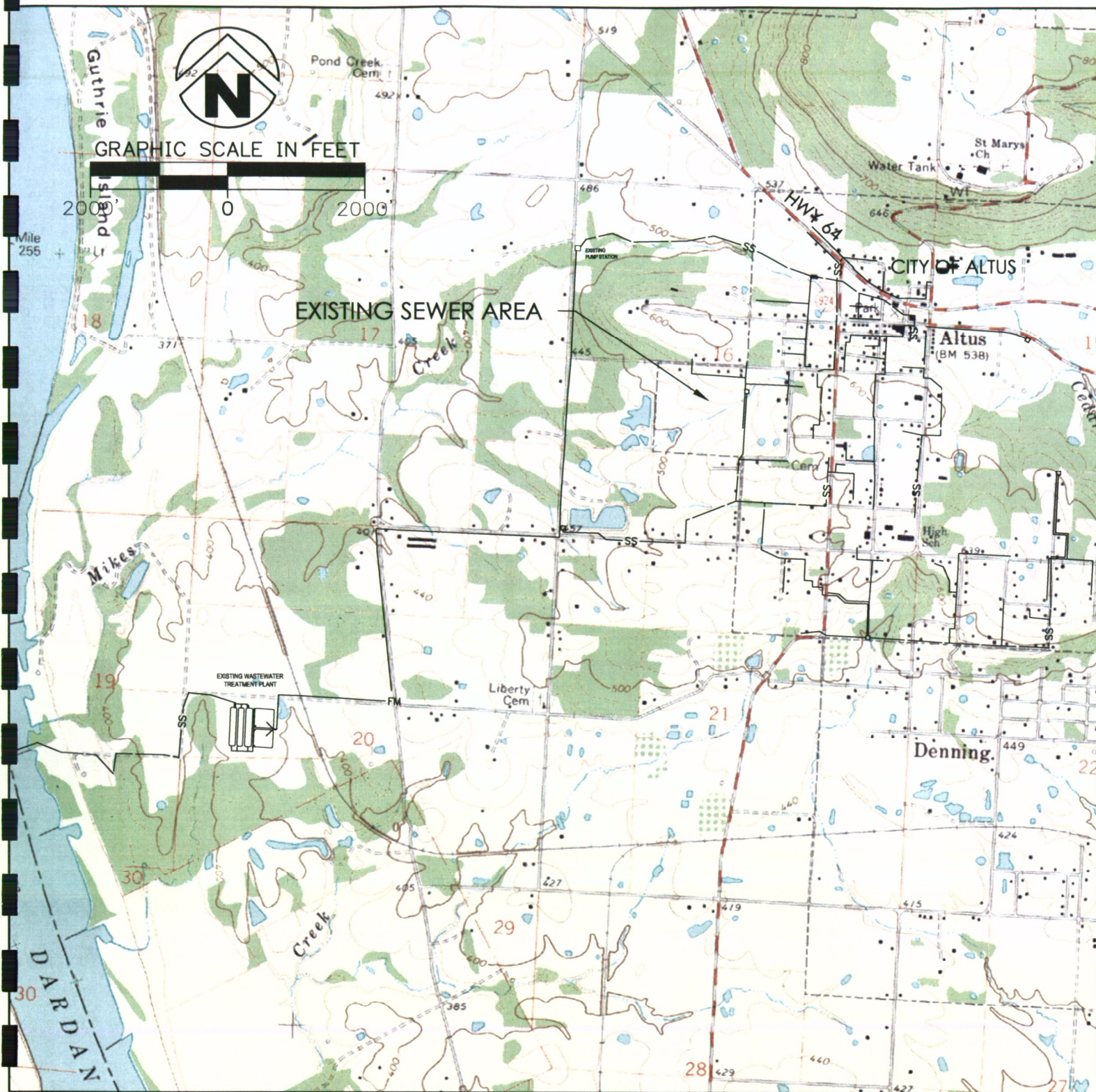
CERTIFICATE OF AUTHORIZATION



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ATTACHMENT A  
VICINITY MAP





CITY OF ALTUS  
SEWER FUNDING APPLICATION  
FOR PROPOSED EXPANSION

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Project No: 097011-00

Issue Date: 12-23-09

Contact: J KRENTZ

Checked by:

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**ATTACHMENT B  
EXISTING SEWER  
SYSTEM**

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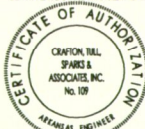


CITY OF ALTUS  
SEWER FUNDING APPLICATION  
FOR PROPOSED EXPANSION

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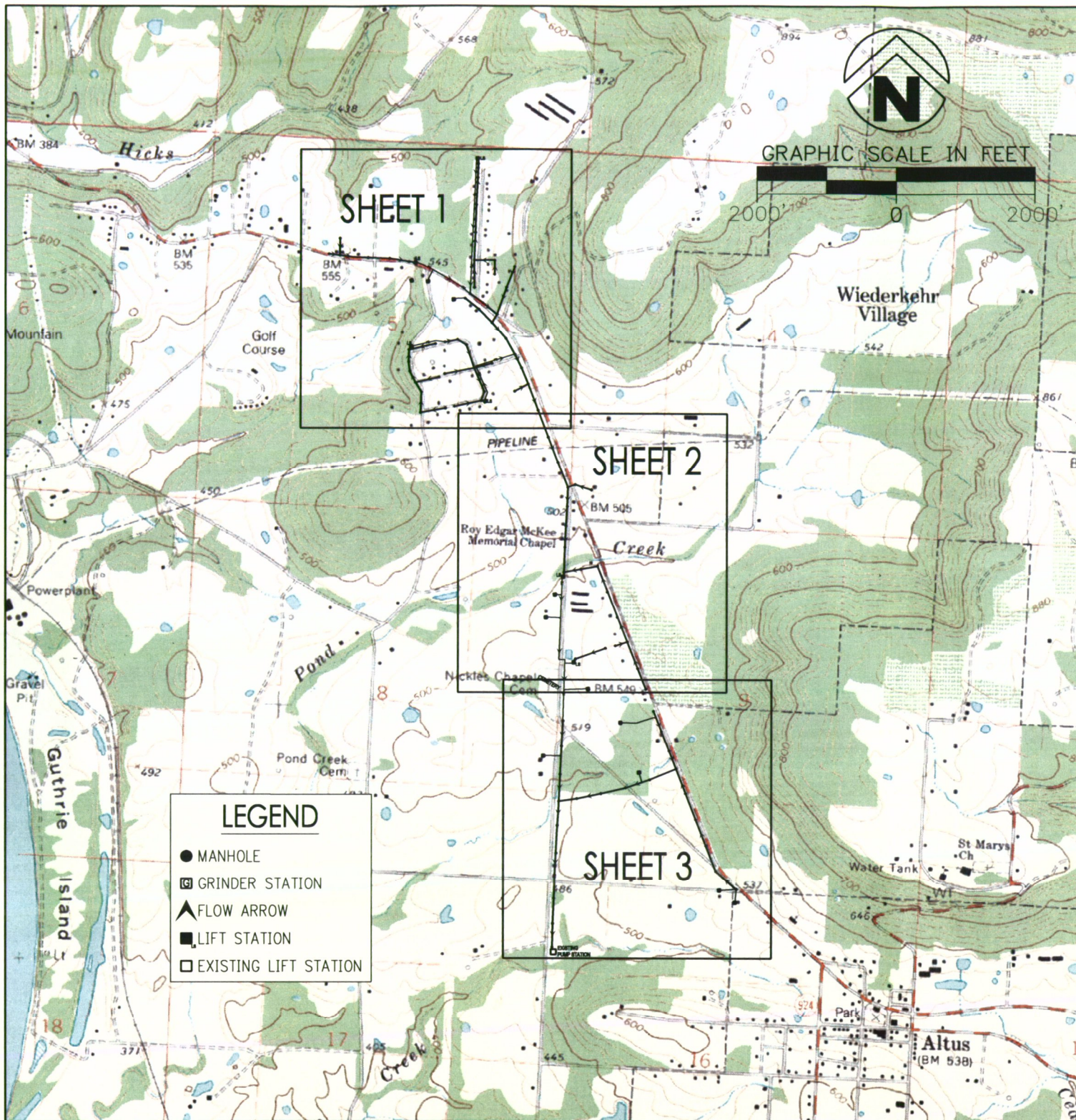
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## ATTACHMENT C

SMALL DIAMETER VARIABLE  
GRADE SEWER SYSTEM

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CITY OF ALTUS  
SEWER FUNDING APPLICATION  
FOR PROPOSED EXPANSION

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Russellville, Arkansas 72812

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Project No: 097011-00

Issue Date: 12-23-09

Contact: J KRENTZ

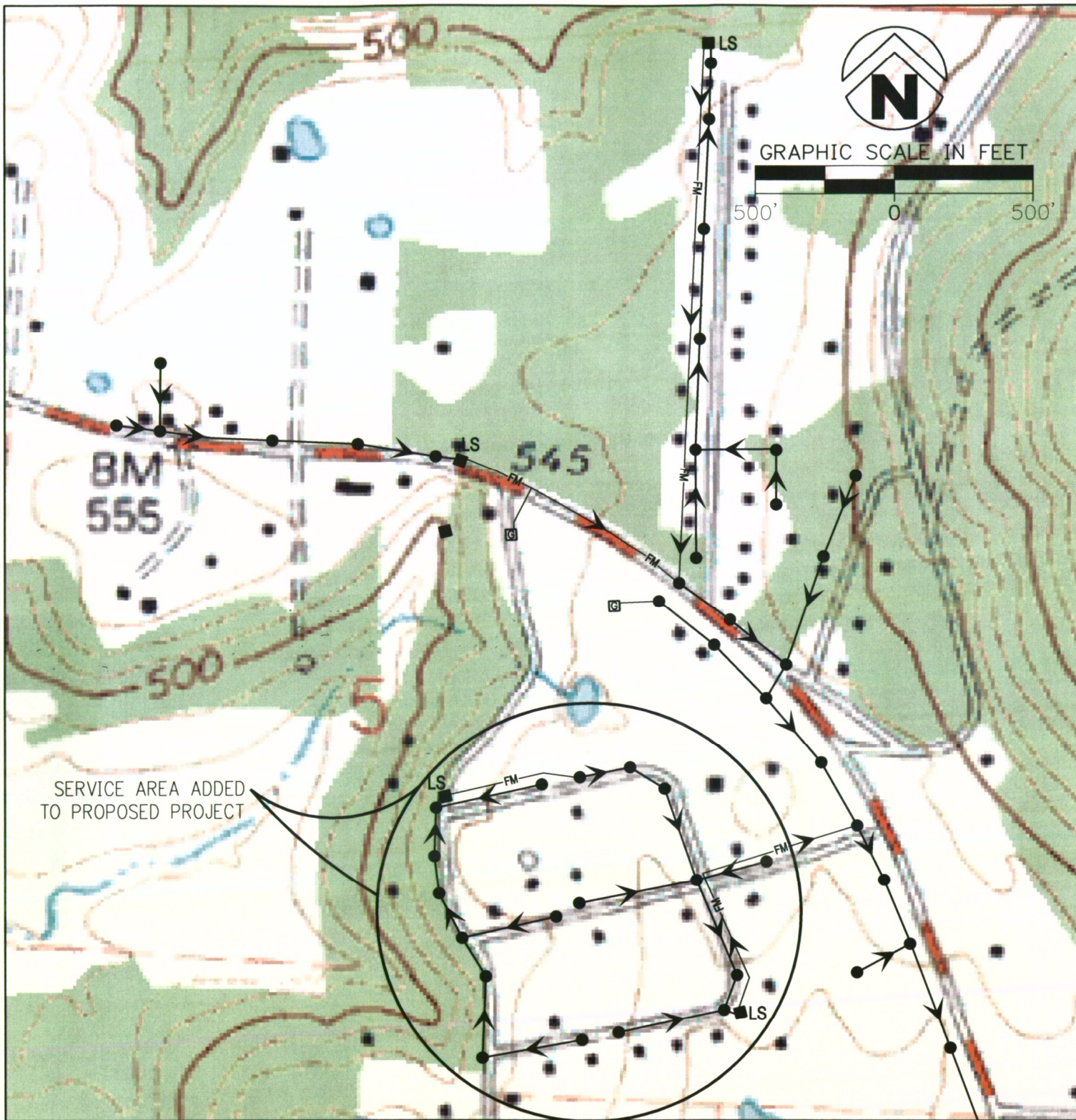
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**ATTACHMENT D**  
**CONVENTIONAL GRAVITY**  
**SEWER SYSTEM - INDEX**

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CITY OF ALTUS  
SEWER FUNDING APPLICATION  
FOR PROPOSED EXPANSION

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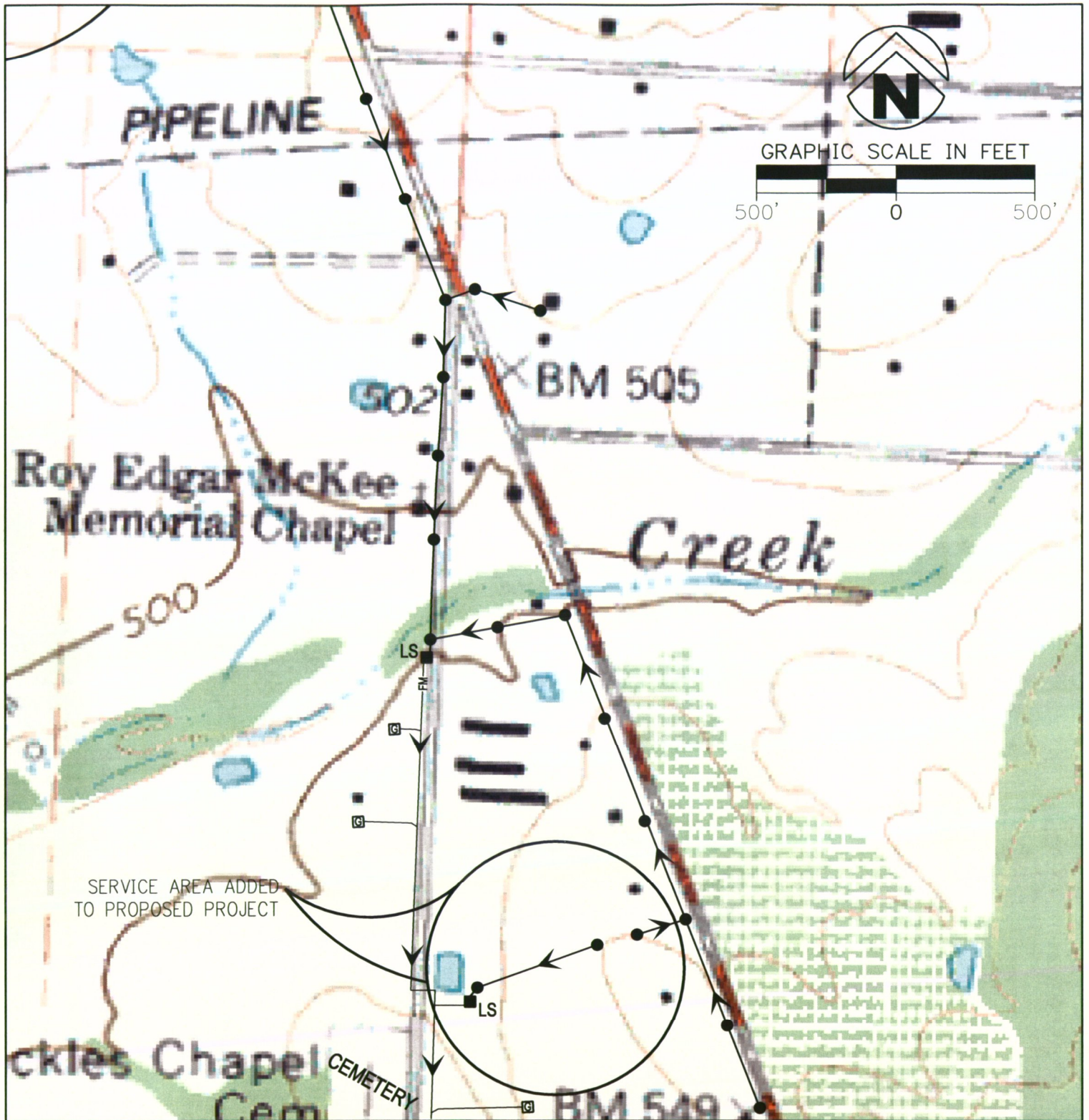
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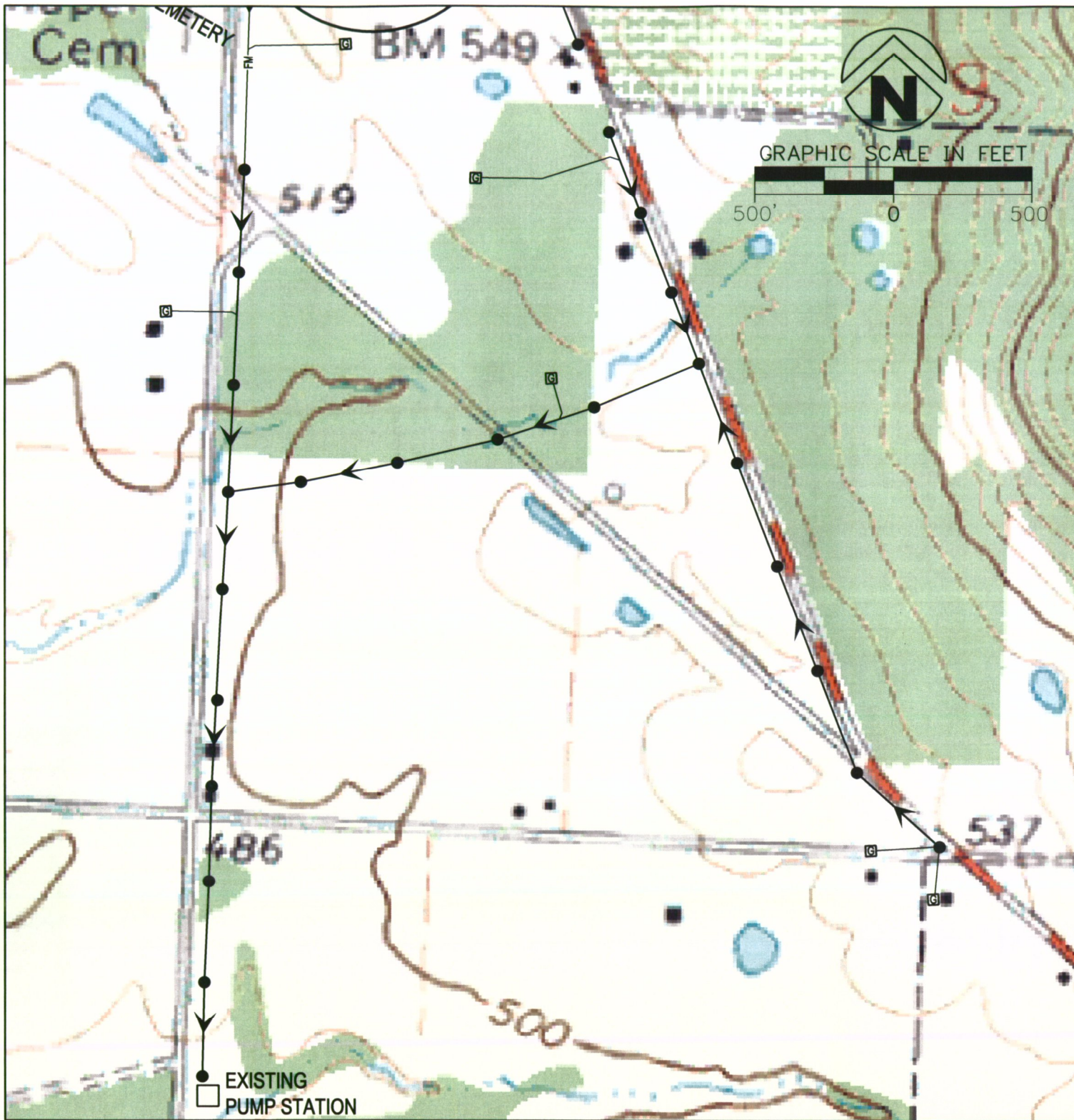
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