RESOLUTION NO. 2016-11014G

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DUNCANVILLE, TEXAS, APPROVING THE TERMS AND CONDITIONS OF A PROFESSIONAL ENGINEERING SERVICES AGREEMENT FOR THE 2017 PARTIAL SANITARY SEWER EVALUATION SURVEY-BASIN EA WITH BURGESS & NIPLE, INC., IN THE AMOUNT NOT TO EXCEED SIXTY THOUSAND THIRTY TWO DOLLARS ($60,032.00), AUTHORIZING THE CITY MANAGER TO EXECUTE SUCH AGREEMENT WHICH IS ATTACHED AS EXHIBIT "A"; AND, PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Duncanville desires to continue its commitment to make infrastructure improvements; and

WHEREAS, the City of Duncanville desires to enter into an agreement to perform a partial evaluation survey of the EA Basin of the sanitary sewer system; and

WHEREAS, the City of Duncanville has funds allocated in the Water/Wastewater Utility Fund to fund the partial sanitary sewer evaluation survey; and

WHEREAS, the City of Duncanville City Council desires to use these funds to develop a partial sanitary sewer evaluation survey of the sanitary sewer system to benefit the citizens of Duncanville.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DUNCANVILLE, TEXAS, THAT:

SECTION 1: The City Council hereby authorizes, approves, and accepts the terms and conditions of the professional engineering services agreement to develop a partial sanitary sewer evaluation survey of the EA Basin serving the City of Duncanville with Burgess & Niple, Inc.; which is attached hereto as Exhibit “A” and, authorizes the City Manager to execute said Agreement.

SECTION 2: That this Resolution shall take effect immediately from and after its passage.
DULY RESOLVED AND ADOPTED by the City Council of the City of Duncanville, Texas, on the 1st day of November, 2016.

CITY OF DUNCANVILLE, TEXAS

APPROVED:

David L. Green, Mayor

ATTEST:

Mary E. Jones, City Secretary

APPROVED AS TO FORM:

Robert E. Hager, City Attorney
BURGESS & NIPLE

4029 Capital of Texas Highway | Suite 220 | Austin, TX 78704 | 512.306.9266

DATE: October 7, 2016

TO: City of Duncanville
    P.O. Box 380280
    Duncanville, TX 75138-0280

FROM: Burgess & Niple, Inc.
      Civil/Environmental Engineers
      4029 Capital of Texas Highway, Suite 220
      Austin, Texas 78704

PROJECT: Partial Sanitary Sewer System Evaluation Survey – Basin EA
      City of Duncanville, Texas

Burgess & Niple, Inc. (ENGINEER) proposes to furnish Engineering Services to the City of Duncanville in accordance with the following proposal. The purpose of the project is to conduct a partial Sanitary Sewer Evaluation Survey for the portion of the wastewater collection system designated as Basin EA. The focus of the work will be smaller diameter (8" diameter and smaller) pipelines in the basin.

1. ANALYSIS AREA

The study area the portion of the wastewater collection system designated as portions of Drainage Area EA in the City of Duncanville, Texas. There are approximately 68,000 L.F. of sewer mains and 240 manholes and mainline cleanouts designated for inspection in the study area.

2. SCOPE OF WORK

This project will consist of the completion of a partial Sanitary Sewer Evaluation Survey (SSES) for the portion of the wastewater collection system designated as Drainage Area EA. The boundaries of the project may change based on quantities found in the field. The focus of the work will be smaller diameter (8" diameter and smaller) pipelines in the basin.

   The investigation objectives and goals will be achieved through the performance of the following tasks.

   Task 1 - Preparatory Work, Project Organization & Mobilization

   a. Printing of all field forms and preparation of maps to be used for the field investigation portion of the project.

   b. Preparation of data transfer facilities for transfer of data collected during the survey to City personnel.
c. Hold a project initiation meeting with City personnel prior to commencement of any work to ensure that the following items are addressed:

- Development of a work plan to optimize field investigations.
- Proper communication channels between City personnel, including fire and police departments and the Engineer.
- All applicable city, county, state, and federal safety procedures and regulations.
- Vehicular and pedestrian traffic control.
- Public safety and convenience issues.
- Development of progress reporting procedures

The compensation for this task shall be on a lump sum basis.

**Task 2 - Smoke Testing**

Smoke testing is performed under dry weather conditions to maximize the detection of inflow and rainfall responsive infiltration sources. A non-toxic and odorless smoke is introduced into the center manhole connecting two sections of sewer main with an air blower with a minimum capacity of 4,000 cubic feet per minute (cfm). Smoke flyers will be distributed to customers within the study area prior to commencement of smoke testing in an area.

This task, as described above, will be employed to the extent that surcharging or blockage of the sewer lines will permit on the 68,000 linear feet of designated sewer lines in the study area. Above ground reconnaissance of the study area to determine proximity of storm sewers, creek crossings, drainage paths and ponding areas to the sanitary sewer system will be accomplished concurrently with smoke testing and the visual line inspection. This visual inspection is performed to identify potential sources of inflow to the system. Digital photographs of each smoke leak located during the smoke testing phase of this project will be taken and provided with the field forms in both hardcopy and electronic formats.

Smoke testing data collected as a portion of the field investigations will include:

- Upstream/downstream manhole number
- Length of sewer line in linear feet
- Predominant ground cover over line segment
- Leak location using GPS coordinates
- Degree of smoke observed
- Number and size of pick holes in the upstream manhole
- Location of the leak regarding drainage path and ponding areas
- Predominant ground cover over the leak
- Physical address of the leak
- Classification of leaks as to:
  - Main Line
  - Manhole
  - Public service line
  - Private service line

Compensation for this task shall be per linear foot.
**Task 3 - Visual Inspection**

This task consists of opening all designated manholes in the study area (except those which could not be located or could not be opened), examining the interior of the manhole for inflow and infiltration sources and inspecting each sewer line entering and leaving the structure. The visual inspection of the manhole is carried out by employing a pole-mounted video camera, designed for sewer main inspections. Information gathered during this work is recorded on field forms.

The following data will be recorded for each manhole/mainline cleanout inspected:

- **Manhole/Mainline Cleanout Data**
  - Manhole identification number
  - Construction materials and conditions of cover, ring, risers, walls, steps, benches and inverts
  - Manhole depth in feet
  - Number and size of holes in manhole cover
  - Identify infiltration sources
  - Evidence of leaks and location
  - Evidence of surcharging
  - Type and depth of debris
  - Special problems and conditions, such as sources of inflow, overflows, bypasses, manholes located in natural ponding areas, etc.
  - Structural defects

- **Line Segment Data**
  - Diameter and material of pipe
  - Root growth
  - Depth of flow in inches
  - Type and depth of deposition in pipe
  - Visible inflow/infiltration sources
  - Structural conditions of pipe and joints
  - Special problems and conditions of pipe

A reasonable attempt (generally 20 minutes per crew per manhole) will be made to locate and open manholes assumed to be buried or hidden. If manholes either do not exist or are buried to the extent that they cannot be located by conventional methods, the manholes will be passed over and noted as "Unable to Locate" on the field forms. Manholes, which cannot be opened after a reasonable attempt, will be noted as "Unable to Open" on the field forms. Compensation for Unable to Locate and Unable to Open manholes will not be requested. Approximately 240 manholes and mainline cleanouts in the basin are designated for inspected.

Compensation for this task shall be per each.

**Task 4 - Dye Flooding and Quantification of Leaks**

This task consists of pinpointing inflow sources and quantifying selected collection line or manhole leaks, identified from the results of previous tasks including above ground reconnaissance, above ground dye flooding, storm and sanitary sewer flooding or evaluation during actual rainfall periods.

It is estimated that approximately four (4) collection line or manhole leaks will require quantification.

Compensation for this task shall be per each.
Task 5 - Physical Inspection

This task consists of conducting wet weather observations during rainfall events to verify actual hydraulic flow characteristics of the system, above ground flooding patterns and identify manholes/sewer lines subjected to wet weather infiltration. Live action video of the sewer manholes/sewer lines subjected to wet weather infiltration will be recorded.

Compensation for this task will be based on hourly billing rates for crew hours and shall not exceed the total amount indicated for this task in Table I - Compensation for Services.

Task 6 - Supervision, Engineering Evaluation, Data Analysis, and Report.

This task consists of engineering supervision of all field data collection operations, analysis of the collected data and presentation of the field data and analysis results as a Final Report, which shall include the following information. The City may, at its discretion, request that an Interim Report be presented for the purpose of review and comment. Comments from the Interim Report shall be incorporated into the Final Report.

a. Description of the type and nature of the problems found in the system. This information shall include the type of leak located, estimated leak rate, and estimated construction cost to repair the leak.

b. Database printout of recommended rehabilitation cost ranked by unit cost.

c. Database listing of all problems located, along with the digital photograph and video tape documentation of the defect. Database inventory of all inspected manholes and collection lines.

d. Recommendations for rehabilitation work grouped by major system component (main lines, service lines, and manholes). The recommendations will provide the information necessary for the rehabilitation work to be performed either by the City or by a Contractor.

e. ArcGIS project outlining the location of all located leaks, all inspected system components, collection lines that were internally inspected, and location of all recommended system rehabilitation.

One original copy of the collected field data with photographs of smoke leaks and visual inspections of manholes, video tape recordings of internal the television inspection of sewer lines, and project database will be provided as a portion of the final report. This data will be provided to the City in both electronic and hardcopy formats, as appropriate.

Compensation for this task shall be on a lump sum basis.

3. INFORMATION AND SERVICES TO BE PROVIDED BY THE CITY

The CITY shall provide the following information and services:

a. One reproducible print of the existing sewer system showing the location and size of existing sewer lines, manholes, lift stations, and other pertinent topographic information such as right-of-way lines, street names, etc. This information shall also be provided in an electronic format useful for the preparation of geographic Information system maps and datasets.
b. Liaison with City officials to provide effective coordination and cooperation between the fire, police, engineering and sewer departments and ENGINEER, as necessary during execution of field work.

c. Access to manholes and/or lift stations.

d. Assistance by City personnel, knowledgeable of manhole and cleanout locations, in locating buried or hidden manholes and cleanouts.

e. Expose for entry, manholes that require excavation, cutting of pavement, and/or have lids fastened or frozen in place.

f. Video recordings of sewer lines televised by city’s staff in the study area.

4. TIME SCHEDULE

The work will be initiated within two weeks of receipt of Authorization to Proceed and is projected to be completed in six months.

5. COMPENSATION FOR SERVICES AND TERMS OF PAYMENT

The total estimated compensation to provide all services described under the Scope of Work including the necessary equipment and supplies is SIXTY THOUSAND THIRTY-TWO DOLLARS ($60,032.00). The compensation amount is based on the estimated work unit quantities delineated under the Scope of Work and the quantities outlined herein. It should be noted that the quantities outlined in this contract are estimated based on the best available information and may vary from the actual quantities found during field investigations. In no case will the total contract amount be exceeded without prior written authorization from the City of Duncanville.

Invoices will be rendered monthly and due within thirty (30) days. Invoices will be computed based on the quantities of work completed to date, multiplied by the unit price for that work and/or percentage of task completion.

Table I - Compensation for Services, on the following page, delineates the price for each task.

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
<th>Unit</th>
<th>Estimated Quantities</th>
<th>Unit Price</th>
<th>Total Price</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Preparatory Work and Mobilization</td>
<td>Lump Sum</td>
<td>1</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
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<tr>
<td>2</td>
<td>Smoke Testing</td>
<td>L.F.</td>
<td>68,000</td>
<td>$0.45</td>
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<td>3A</td>
<td>Manhole Visual Inspection</td>
<td>EA.</td>
<td>180</td>
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<tr>
<td>3B</td>
<td>Mainline Cleanout Visual Inspection</td>
<td>EA.</td>
<td>60</td>
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<td>4</td>
<td>Dye Flooding and Quantification of Leaks</td>
<td>EA.</td>
<td>4</td>
<td>$225.00</td>
<td>$900.00</td>
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<td>5</td>
<td>Physical Inspection</td>
<td>Crew Hours</td>
<td>8</td>
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<td>6</td>
<td>Supervision, Engineering Evaluation, Data Analysis</td>
<td>Lump Sum</td>
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<td>$6,432.00</td>
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<td></td>
<td>and Report</td>
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<td>TOTAL</td>
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<td>$60,032.00</td>
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6. TERMINATION

a. Conditions of Termination: This agreement may be terminated without cause at any time prior to completion of the ENGINEER's services by the CITY upon seven days written notice to the address of record.

b. Compensation Payable on Termination: On termination, by either the CITY or the ENGINEER, the CITY shall pay the ENGINEER the full amount based on percentage complete of each task outlined in Table I - Compensation for Services to the date of termination.

7. NOTICE TO PROCEED

The performance of the proposed work for each task shall be contingent upon receipt of an Authorization to Proceed by the City of Duncanville.

BURGESS & NIPLE, INC.

David E. Koberlein, P.E.
Vice President/Project Manager

October 7, 2016

APPROVED

Signature

City Manager

Title

Date

11-2-2016