SCHEDULE 1
SCOPE OF SERVICES

The Engineer shall provide professional engineering design services for the installation of raw water transmission lines to the Parsons Avenue Water Plant (PAWP) from each of four (4) well sites in Franklin and Pickaway Counties, Ohio. There will be one (1) or multiple wells at each site. The sites are known as:

- Site 106 (8-acre tract on the east bank of the Scioto River, immediately south of State Road 665, 0.40 miles west of State Road 23).
- Stewart farm (155-acre tract immediately north of the PAWP).
- Smith farm (100-acre tract on the west bank of the Scioto River, 0.75 miles south of State Road 762 and 1 mile east of State Road 104).
- Eastern Star (418-acre tract located 1.25 miles south of State Road 762 on U.S. 23).

The professional engineering services shall be performed in accordance with the descriptions and intent of:

- the City's *Request for Proposal and Scope of Services* transmitted by letter dated December 21, 2000;
- DLZ Ohio, Inc. *Technical Proposal* dated January 22, 2001;
- the City's *Notice of Award* dated May 31, 2001;
- and the City's *Memorandum* dated July 7, 2001

The work shall be performed in tasks as follows:

TASK 1 – SCHEDULES – The Engineer will develop and maintain a computer-generated Critical Path Schedule. The schedule will be designed within the framework of three phases of plan preparation:

Phase 1 Aerial mapping and hydraulic model (line sizing). Design from Stewart Farm site to PAWP.

Phase 2 Design from Site 106 to PAWP, with capacity for delivery from Site 106, Smith Farm and Eastern Star Site.

Phase 3 Design from Smith Farm site and Eastern Star site to connect with Phase 2.

TASK 2 – KICKOFF, COORDINATION, AND PROGRESS MEETINGS – The Engineer shall attend review/progress meetings for each phase of the project. The meetings shall be inclusive of initial kickoff and progress meetings for design, and final pre-construction meetings with the successful construction contractors.

TASK 3 – REVIEW OF EXISTING INFORMATION – The Engineer shall review right-of-way plans, road/bridge construction documents, existing facility documents, digital photography, and such additional available reports, maps, data, and regulatory requirements as can be obtained.

TASK 4 – SITE SURVEY – The Engineer shall utilize aerial photography as the basis for preliminary mapping only. Digitized information shall be field verified. Aerial mapping shall be conducted at the initiation of design, and field survey shall be conducted in phases corresponding to the phase of water line design then in progress. The following detail shall be completed:

1. Topographic features.

2. Location of existing facilities and structures.

3. Survey baseline and centerline of water line alignment. Station markers at 50-foot station locations and labels at 100-foot station locations.

4. Right-of-way lines showing recovered monuments. Plan sheets shall be dimensioned to show distance from the centerline of the water line to the roadway right-of-way and/or to the centerline of road.

5. Three-point reference ties. Reference ties shall be set and visible in the field for review at the time the plans are signed.

6. Benchmarks will be tied to Franklin and Pickaway County Engineer's Monuments. Elevations will be based on NAVD 88 datum and specified on the plan sheets. Two benchmarks will be provided at each project site.

7. Street addresses of buildings shall be shown on the plan sheets.

8. Public and private utility companies shall be contacted to obtain the locations and extent of utility lines. This information shall be shown on the plan sheets.

9. Consultation with the Division of Water, other City Divisions, County and State Engineers and other authorities having jurisdiction over the type, size, location and grade of roads and highways to assure that the water lines are designed to be protected from future construction or land use.

10. All required permits to conduct survey within City of Columbus right-of-way shall be obtained.

TASK 5 – TRENCHLESS CONSTRUCTION – Based on the information obtained from Task 3 and Task 4, the Engineer shall conduct a limited evaluation of the feasibility and cost of installing the raw water lines by trenchless construction techniques at river and railroad crossings.

TASK 6 – LINE, GRADE AND TYPICAL SECTION (LG&T) PRINTS – The Engineer shall, upon completion of the aerial survey, prepare and provide two sets of LG&T plans for each phase of the project. The LG&T plans shall be coordinated to a general routing for the entire project (comprising all three Phases). The general pipeline routing is anticipated to extend from the Smith and Eastern Star sites north and to be located within the Ohio Department of Transportation (ODOT) limits of right-of-way for U.S. Route 23. At State Route 315, the general routing will extend east to Parsons Avenue and north along Parsons Avenue to the PAWP.

The City and the Engineer agree that, should ODOT not authorize the waterline to be located within the ODOT right-of-way, an alternate route shall be determined as a change in the SCOPE OF SERVICES and the terms of compensation shall be modified accordingly.

TASK 7 – PREPARATION OF PELIMINARY REVIEW PRINTS – Upon City's acceptance of the LG&T prints, Engineer shall proceed with and prepare three sets of *Preliminary Review Prints*, in the sequence of project phasing described in Task 1. Details of this submittal shall include:

- Preliminary title sheet, general notes sheet with table of standard details, three-point reference ties, and special details sheet.
- Details of pipefittings, valves, fiber optic cable system, and connections to other facilities.
- Required easements.
- Review comments from Task 6 – LG&T.

TASK 8 – PREPARATION OF DIVISIONAL AND PRIVATE UTILITY REVIEW PRINTS – The Engineer shall receive, evaluate and incorporate as appropriate into the Preliminary Review Prints the comments generated by the City in Task 7. A minimum of 20 sets of prints will be prepared for each Phase of the project.

TASK 9 – FINAL REVIEW OF PRINTS AND CONSTRUCTION BID DOCUMENTS – The Engineer shall receive, evaluate and incorporate as appropriate into Final Review Prints and Construction Bid Documents the comments generated by Task 8. Two sets of documents shall be prepared for each Phase of the project.

TASK 10 – FINAL PLANS – The Engineer shall receive and incorporate into the Final Plans and Construction Bid Documents the comments generated by Task 9. A minimum of 30 sets of documents will be prepared for each Phase of the project. Additionally, the Engineer will prepare a mylar title sheet for each construction contract to be bid, and assist the City in securing signatures.

TASK 11 – CONSTRUCTION PROCUREMENT PHASE SERVICES – The Engineer will prepare the Advertisement, Special Provisions, Supplemental Specifications, and package the Standard Drawings applicable for each phase of the project. The Engineer will prepare all addenda, assist the City at bid openings, tabulate proposals, and make recommendations for the award of construction contracts if requested.