ATTACHMENT "A"

Primrose Canal Cleaning and Improvements Project No. P210202

Project Scope:

The Consultant will provide a topographic and cross section survey along the Primrose Canal from the Cousin Canal to the Blouin Canal. The limits of the survey will extend from the southern edge of road of Primrose Drive, across the drainage canal to approximately 10 feet past the southerly top of bank. The segment of the canal survey between Acadian Oaks Drive and the Blouin Canal will be submitted as a separate deliverable for the Parish only (Phase 5). The survey limits are outlined on the attached maps.

Control Point Surveys: Control points will be established for the project to provide horizontal and vertical reference points for the project. Two main control points will be established using GPS technology with NGS OPUS Solutions. Temporary work points will also be established, as needed, along the route to facilitate the survey work. The horizontal control will be referenced to the North American Datum of 1983 (NAD83), with northings and easting coordinates shown as State Plane Coordinates. The vertical control network will be referenced to the North American Vertical Datum of 1988 (NAVD88).

Topographic Surveys: Topographic features that are visible and accessible will be surveyed within the survey limits to identify the northing, easting, and elevation value for each data point. Topographic features include items such as culverts, drains, inlets, pavements, trees (over 12" in diameter at breast height), perimeter outlines of heavily wooded areas, utility poles, overhead electric, fences, bulkheads, etc. Consultant will collect data at each concrete headwall along the route to best show the geometry of the structures.

The top banks will be located to include the erosion area around the concrete headwalls. Additional elevation shots will be collected to show the severity of the erosion. The rock bank erosion control area between Wade St. and the Judge's property will be identified on the survey.

At the Maryland Drive/Primrose Drive intersection the survey limits will include collecting all topographic features from right-of-way to right-of-way.

Cross Sections: Cross sections will be collected at 100-foot intervals. The cross-section elevation shots will extend from the southern edge of Primrose Drive to approximately 10 feet past the southern top bank of the canal. Cross sections will be collected by all concrete headwalls/crossings and at any significant grade changes inside the canal. In Phase 1a, Consultant will collect cross section data 100 feet north and south along the Cousin Canal, adjacent to Texaco Road. Those elevation shots will include the area between the westerly toe of the canal to 10 feet past the top of bank (west side).

Along the ditch adjacent to Acadian Oaks Drive (Phase 4), Consultant will collect elevation shots approximately 50 feet down the ditch.

Daily water surface elevations will be recorded while surveying cross sections in the canals.

Culverts/Utility Survey: All drainage culverts entering the Primrose Canal will be identified with a size, type, and invert measurement. Consultant will also collect all drainage structures located on the north side of Primrose Drive that drain directly into the Primrose Canal. The additional structures collected on the north side of Primrose Drive will include the ineffective catch basin just east of River Oaks. Consultant will collect data for the high catch basin on the southern side of Primrose Canal and the Maryland Drive intersection.

Any visible and accessible utility features crossing the Primrose Canal will be surveyed and mapped. These features include items such as valves, hydrants, meters, utility poles, utility boxes, overhead electric lines, pipelines, communication systems, etc. For underground utilities, Consultant will contact Louisiana One Call to prompt the marking of underground utility lines by the respective utility owner. All resulting paint marks will be surveyed and mapped to show the apparent line routes.

Inverts for any drainage and sewerage lines entering or crossing the Primrose Canal will be obtained in the field. Data for surcharged manholes or other inaccessible (bolted shut) structures will be noted. Any as-built information provided can be shown on the drawing for manholes that are inaccessible.

Consultant will request as-built information from Owner for drainage, sewage, and water line connections underground. Consultant will not be responsible for any errors or omissions from the information provided by Louisiana One Call or any as built drawings.

Deliverables: A plan and profile drawing will be developed at a horizontal scale of 1"=20' to show the features surveyed in the field. The plan view will sow the survey corridor and topographic features of the area. Profiles will include the top bank elevation on the southern side (resident's side) and the centerline of the canal. The profile scale will be 1"-2'. Electronic drawing files will be produced using AutoCAD software. Hard copies of the survey will be produced on 24x36 inch PDF sheets. The PDF sheets will be sealed and stamped by a Professional Land Surveyor.

ATTACHMENT "B"

Primrose Canal Cleaning and Improvements Project No. P210202

Project Schedule:

Consultant will complete field activities within four weeks of notice to proceed. Consultant will complete the associated mapping and QA/QC efforts within four weeks of completion of field activities.

ATTACHMENT "C"

Primrose Canal Cleaning and Improvements Project No. P210202

Project Cost:

For performance of the topographic surveying services the Owner shall authorize and pay the Consultant a lump sum of \$39,810.