Binkley & Barfield
consulting engineers

January 9, 2012

Mr. Jeff Durham, RPLS
Special Project Manager
Collin County
825 N. McDonald, Suite 145
McKinney, Texas 75069

RE: CR 132 Culvert Replacement

Dear Mr. Durham:

Attached is the Scope of Services, schedule, payment schedule and a list of County responsibilities for the Culvert Replacement Project located on CR 132 at Long Branch Creek, generally located northeast of Celina, Texas. The project includes the preparation of bid documents to replace an eight foot diameter CMP with a 24'x10' concrete box culvert. We propose to provide engineering and surveying services for the fee amount of $49,200.

If you have any questions, please contact me.

Sincerely,

Binkley & Barfield, Inc.
Consulting Engineers

Fred Balster, P.E.
Corporate Vice President

FRB/lg

**EXHIBIT "A"**

**CR 132 @ Long Branch**

SCOPE OF ENGINEERING SERVICES

I. Preliminary Alignment and Design

A. Survey

1. Topographical survey should include all information necessary to establish the road alignment, culvert location, drainage needs and right-of-way limits.

2. Locate and identify existing facilities (both overhead and underground). A plan sheet locating these utilities in relationship to the proposed right-of-way shall be provided to the county for review. When necesssary for design, the depth of major utilities such as gas or water lines must be determined by the consultant. The county's intent is to avoid or minimize the relocation of major utilities. Existing easements, driveways, culverts, gates, fences, signs, significant trees or other improvements within the project limits should also be located.

3. Locate property lines with tracks identified by parcel number. A metes and bounds description with exhibit (8½ x 11 sheet size) will be required for each parcel. Exhibits will show the existing roadway and location of fences in relationship to the new right-of-way line. Indicate gross acreage to be acquired, less approximate acreage in prescriptive right-of-way, and reflect net acreage to be acquired.

4. Provide a minimum of two (2) permanent benchmarks (vertical). Benchmarks should not be set in telephone poles or trees located within the project limits.

5. Monument the new right-of-way line with iron rods and metal t-posts. Establish at minimum two (2) permanent control points (horizontal) for construction staking. A coordinate list describing monuments set for control or along the new right-of-way line should be incorporated into the plan set.

6. Prior to construction, verify and/or re-establish right-of-way monuments, control points and benchmarks.

B. Culvert Analysis

1. Provide analysis of drainage discharges based upon Texas Department of Transportation (TxDOT) Regression Equations Hydraulics Manual.

C. Permits

1. Obtain or prepare any permits necessary for construction of the project.

D. Preliminary Plans

1. Prepare schematic culvert layout plan, roadway plan, and profile drawings for review by the County. Drawings should include stationing, horizontal and vertical geometric alignment data, the location of existing easements, improvements and the proposed right-of-way limits.

E. Cost Estimate

1. Provide preliminary cost estimate.

F. Preliminary Submittal

1. Submit two (2) sets of preliminary plans (11 X 17) and outline specifications for review and comments.

II. Final Plans, Specifications, and Estimates

A. Final Plans

1. Submit three (3) sets of final plans (11 X 17) and specifications for review. Plans should include, but are not limited to, the following:

a. Roadway Plan and Profile Drawing

b. Traffic Control Plan

c. Storm Water Pollution Prevention Plan

d. Road Cross Sections

e. Culvert Layout Plan and Detail Drawings

B. Cost Estimate

1. Prepare final estimate of cost.

III. Bid Phase

A. Bidding

1. Provide bid documents, specifications and plans to the contractors for bidding.

2. Attend pre-bid conference.

3. Evaluate bids and prepare bid tabulation summary.

4. Check contractor references

IV. Construction Phase

A. Construction

1. Respond to RFI's.

2. Review material test reports.

3. Review shop drawings.

4. Perform specific inspections at major stages of construction and periodic inspections for general observations to insure that construction conforms to the project specifications and plans.

5. Provide status reports as necessary.

6. Prepare change orders.

7. Conduct final walk-thru with County representative.

8. Submit "as built" drawings to TxDOT.

TxDOT
P.O. Box 133067
Dallas, Texas 75313
Attn: Ibrahim Mousa
(214) 320-4423

**EXHIBIT "B"**

PROJECT SCHEDULE

Services shall be completed per the following project development schedule.

| | |
|---|---|
| Culvert Plans | 120 Days |
| County Review | 20 Days |
| Bid and Award | 60 Days |
| Days Construction | 120 Days |

| *Phase* | *Month 1* | *Month 2* | *Month 3* | *Month 4* | *Month 5, 6, 7, 8* |
|---|---|---|---|---|---|
| Design Survey | | | | | |
| Bid Documents | | | | | |
| County Review | | | | | |
| ROW Documents | | | | | |
| Construction | | | | | |

## EXHIBIT "C"

## CR 132 @ Long Branch

PAYMENT SCHEDULE

Invoices will be transmitted to the County on a monthy basis based on a percentage of completion up to that time. A derivation of the total contract fee amount is as follows:

| BASIC SERVICES | FEE | SUBTOTAL |
|---|---|---|
| **Design Phase** | | |
| **Preliminary Design** | | |
| Roadway | $5,000 | |
| Culvert | $14,000 | |
| **Final Design** | | |
| Roadway | $2,000 | |
| Culvert | $5,000 | |
| Bid Phase | $3,000 | |
| Construction Phase | $5,000 | |
| **Basic Services Total** | | **$34,000** |
| **SPECIAL SERVICES** | | |
| **Survey Services** | | |
| Design Survey | $5,400 | |
| ROW Exhibits 3@900 | $2,700 | |
| Recover Control | $600 | by authorization only |
| **SWPPP** | $2,000 | |
| **Traffic Control** | $2,000 | |
| **Expenses** | $2,500 | |
| **Special Services Total** | | **$15,200** |
| **Grand Total** | | **$49,200** |

**ITEMS CONSIDERED AS ADDITIONAL SERVICES**

1. Flood Plain LOMR Report
2. Wetland 404 Permit Application
3. Conversion of Plans from AutoCAD to Microstation
4. Alignment Modification of CR 132

## EXHIBIT "D"

INFORMATION TO BE PROVIDED BY THE COUNTY

The County will make available to Engineer any and all information, data, etc., as it may have in its possession relating to the project described herein.

1. County contour maps in electronic file format
2. Construction daily inspection
3. Construction contract administration
4. Access to private property for the purpose of design surveys.

# Collin County Road 132 Task Breakdown

| Prelim Roadway Design | # of Hrs | # of Hrs | | |
|---|---|---|---|---|
| Cover sheet | 2 | 0 | | |
| General notes sheet | 2 | 0 | | |
| Survey control plan sheet | 2 | 0 | | |
| Typical section sheet | 2 | 0 | | |
| Plan and profile sheet | 12 | 0 | | |
| Cross sections | 8 | 0 | | |
| Drainage area map | 2 | 2 | | |
| Field visit | 3 | 0 | | |
| Project administration | 0 | 4 | | |
| **Total Hrs=** | **33** | **6** | | |
| Rate = | $115/hr | $195/hr | | |
| Total Cost= | **$3,800** | **$1,200** | = | **$5,000** |

| Prelim Culvert Design | # of Hrs | # of Hrs | | |
|---|---|---|---|---|
| Horizontal box culvert design | 20 | 4 | | |
| Vertical box culvert design | 20 | 4 | | |
| Hydraulic Calculations | 8 | 0 | | |
| Culvert profile sheet | 8 | 0 | | |
| 100 yr water surface elevation | 2 | 0 | | |
| Wingwall design | 8 | 0 | | |
| Wingwall modifcation | 0 | 6 | | |
| Riprap | 3 | 0 | | |
| Guardrail | 8 | 0 | | |
| Culvert details sheet | 8 | 0 | | |
| Prelim cost estimate | 6 | 0 | | |
| QA/QC | 0 | 4 | | |
| **Total Hrs=** | **91** | **18** | | |
| Rate = | $115/hr | $195/hr | | |
| Total Cost= | **$10,500** | **$3,500** | = | **$14,000** |

| Final Roadway Design | # of Hrs | # of Hrs | | |
|---|---|---|---|---|
| Complete review comments | 1 | 0 | | |
| Fence | 1 | 0 | | |
| Project sign | 1 | 0 | | |
| Grading plan | 3 | 2 | | |
| ROW exhibits | 2 | 0 | | |
| Finalize quantities | 2 | 0 | | |
| Cost Estimate | 2 | 0 | | |
| Contract Documents & Specifications | 2 | 0 | | |
| **Total Hrs=** | **14** | **2** | | |
| Rate = | $115/hr | $195/hr | | |
| Total Cost= | **$1,600** | **$400** | = | **$2,000** |

| Final Culvert Design | # of Hrs | # of Hrs | | |
|---|---|---|---|---|
| Complete review comments | 6 | 0 | | |
| Ditch/drop inlet design | 8 | 0 | | |
| Finalize culvert details | 3 | 3 | | |
| Finalize quantities | 6 | 0 | | |
| Utility Coordination | 6 | 0 | | |
| Assemble remaining standard details | 2 | 0 | | |
| QA/QC | 0 | 4 | | |
| **Total Hrs=** | **31** | **7** | | |
| Rate = | $115/hr | $195/hr | | |
| Total Cost= | **$3,600** | **$1,400** | = | **$5,000** |

# Collin County Road 132 Task Breakdown

| Bid Phase | | # of Hrs | # of Hrs | | |
|---|---|---|---|---|---|
| Print bid sets | | 6 | 0 | | |
| Send bid documents to Collin County | | 2 | 0 | | |
| Answer contractor questions | | 2 | 0 | | |
| Attend pre-bid meeting | | 1 | 3 | | |
| Attend bid-opening | | 0 | 2 | | |
| Bid tabulations | | 4 | 0 | | |
| Contact references | | 2 | 0 | | |
| Letter of recommendation | | 1 | 0 | | |
| | **Total Hrs=** | **18** | **5** | | |
| | Rate = | $115/hr | $195/hr | | |
| | Total Cost= | **$2,000** | **$1,000** | = | **$3,000** |

| Construction Phase | | # of Hrs | # of Hrs | | |
|---|---|---|---|---|---|
| Send plans/dwgs to contractor | | 2 | 0 | | |
| Attend pre-construction meeting | | 2 | 0 | | |
| Review shop drawings | | 3 | 0 | | |
| Construction inspection visits | | 16 | 8 | | |
| Constuction status reports | | 3 | 0 | | |
| As-builts | | 4 | 0 | | |
| | **Total Hrs=** | **30** | **8** | | |
| | Rate = | $115/hr | $195/hr | | |
| | Total Cost= | **$3,400** | **$1,600** | = | **$5,000** |

| SWPPP | | # of Hrs | # of Hrs | | |
|---|---|---|---|---|---|
| SWPPP sheet | | 3 | 0 | | |
| Create erosion control plan sheet | | 2 | 0 | | |
| Erosion control design | | 2 | 2 | | |
| Assemble applicable erosion details | | 4 | 0 | | |
| Erosion control notes | | 3 | 0 | | |
| | **Total Hrs=** | **14** | **2** | | |
| | Rate = | $115/hr | $195/hr | | |
| | Total Cost= | **$1,600** | **$400** | = | **$2,000** |

| Traffic Control | | # of Hrs | # of Hrs | | |
|---|---|---|---|---|---|
| Create traffic control sheet | | 3 | 0 | | |
| Create map of county roads | | 2 | 0 | | |
| Plan detour route | | 5 | 1 | | |
| Create applicable signs | | 4 | 0 | | |
| Traffic control notes | | 2 | 0 | | |
| | **Total Hrs=** | **16** | **1** | | |
| | Rate = | $115/hr | $195/hr | | |
| | Total Cost= | **$1,800** | **$200** | = | **$2,000** |

| Expenses | | | | | |
|---|---|---|---|---|---|
| Reimburseable expenses | | | | | |
| | Total Cost= | **$2,500** | **$0** | = | **$2,500** |

| Surveying | | | | | |
|---|---|---|---|---|---|
| Design Survey | | $5,400 | | | |
| ROW Exhibits (3@$900/ea) | | $2,700 | | | |
| Recover Control | | $600 | | | |
| | Total Cost= | **$8,700** | **$0** | = | **$8,700** |

| | | |
|---|---|---|
| ***Totals=*** | ***$39,500*** | ***$9,700*** |

| | |
|---|---|
| ***Grand Total=*** | ***$49,200*** |