

WORK ORDER

WORK ORDER NO. 20-208.4

COUNTY Project No.: _____ COUNTY Project Name: _____

In accordance with the terms and conditions of the Professional Services Agreement ("AGREEMENT") between Burnet County ("COUNTY") and K.C. Engineering, Inc. ("ENGINEER"), dated March 10, 2020, ENGINEER is hereby authorized to perform the following services:

Scope of Basic Services

See Attachment A Scope of Services.

This Work Order is issued to provide additional engineering and related services (surveying, environmental, structural, and illumination) resulting from changing the alignment of the roadway for approximately 1/3 of the project length and revising the bridge layout and bridge design to avoid an archaeological site on the north shore of Lake Marble Falls. Detailed work to be performed is in Attachment A and supplemented in Attachment B.

Subconsultants: 1) Cuplin and Associates Land Surveyors and Planners, Inc.; 2) AmaTerra Environmental, Inc.; 3) Texas Transportation Solutions, Inc.; and 4) Alliance Transportation Group, Inc.

Authorization

In signing this Work Order, the COUNTY grants ENGINEER specific authorization to proceed under the AGREEMENT.

Fee

ENGINEER shall be paid the lump sum fee of \$887,957.00 payable incrementally based upon the estimated percentage of work completed at the date of the invoice in general accordance with Attachment B.

AGREED AND EXECUTED this _____ day of _____, 20____.

ATTEST:

K.C. ENGINEERING, INC.
(ENGINEER)

BURNET COUNTY
(COUNTY)

By: 

By: _____

Title: President

Title: _____

ATTACHMENT A SCOPE OF SERVICES

ENGINEER shall provide the following services:

1. Surveying
2. Environmental
3. Structural
4. Traffic Signal
5. Illumination
6. Engineering: Plans, Specification and Estimate (PS&E)

1. Surveying

Provide an on-the-ground topographic survey of the site, including locating property lines that adjoin the proposed route.

Surveying Services included:

1. Establish benchmarks
2. Topographic survey
3. Prepare digital drawings of property lines
4. Coordination with the Engineer
5. Prepare Triangular Irregular Network (TIN)
6. Create Digital Terrain Model (DTM)
7. Stake on the ground reference points
8. Boundary title survey suitable for right of way acquisition
9. Preparation of exhibits for right-of-way acquisition
10. Preparation of metes and bounds (legal) descriptions
11. Preparation of exhibits for Drainage Easements
12. Preparation of metes and bounds (legal) descriptions for Drainage Easements
13. Preparation of exhibits for Utility Easements
14. Preparation of metes and bounds (legal) descriptions for Utility Easements
15. Other services as shown in Attachment B

Surveying Services excluded:

1. Locating back or side property lines
2. Right of way staking
3. Preparation of right of way map
4. Tree survey

5. Construction phase services

2. Environmental

Prepare documentation for compliance with the National Environmental Protection Act (NEPA) for submittal and approval by TxDOT and/or the Federal Highway Administration (FHWA).

Environmental Services included:

1. Biological Resources assessment
2. Water Resources assessment
3. Hazardous Materials Initial Site Assessment
4. Archeological Background research
5. Prepare avoidance plan for historical archeological site
6. Texas Historical Commission permitting (Preliminary, Revised, and Final)
7. Coordination with the Texas Historical Commission for avoiding historical archaeological site
8. Coordination with the Center for Archaeological Studies Curation
9. Coordination with TxDOT
10. Historical Resources assessment
11. Project management
12. Project administrative duties
13. Coordination with the Engineer
14. Other services as shown in Attachment B

Environmental Services excluded:

1. Formal presence/absence surveys for threatened and endangered species
2. Formal consultation with the USFWS under Section 7 of the Endangered Species Act
3. Section 404 of the Clean Water Act permitting or mitigation
4. Texas Rapid Assessment Method (TXRAM) functional assessments
5. Sampling or analysis for potentially hazardous substances in any environmental media
6. An Induced Growth and/or Cumulative Impacts Analysis
7. In-person meetings with regulatory agency personnel for which travel is required
8. Mitigation for adverse effects, development of agreement documents, Section 4(f) evaluations/documentation, or other services establishing Section 106 NRHP effects
9. Construction phase services

3. Structural

Provide structural engineering services for structural bridge design.

Structural Engineering Services included:

1. Bridge sizing
2. Bridge geometry
3. Bridge design
4. Bridge loading
5. Bridge foundation design
6. Bridge foundation layouts
7. Table of foundation quantities
8. Bridge column design
9. Bridge column details
10. Bridge cap design
11. Bridge column and cap summary tables
12. Bridge abutment design
13. Bridge abutment details
14. Bridge framing plan
15. Bridge superstructure design
16. Bridge railing design
17. Bridge illumination mount design
18. Bridge sign mount design
19. Utility conduit design
20. Incidental bridge design (bat houses, etc.)
21. QC / QA
22. Coordination with Geotechnical engineer
23. Coordination with Illumination engineer
24. Coordination with Engineer
25. Prepare plan sheets for structural items
26. Prepare specifications for structural items
27. Prepare estimates for structural items
28. Other services as shown in Attachment B

Structural Engineering Services excluded:

1. Aesthetic treatment or pedestrian design
2. Retaining wall design
3. Construction phase services

4. Illumination

Prepare illumination design and plan sheets, specifications and estimate for illumination of the bridge

based upon current TxDOT criteria and the Institute of Electrical and Electronic Engineers (IEEE) criteria.

Illumination Services included:

1. Lighting level analysis
2. Voltage drop calculations
3. Circuit diagrams
4. Illumination (lighting) design
5. Conduit layout
6. Wiring design
7. Wiring layouts
8. Illumination details
9. Illumination layouts
10. Electrical service layouts
11. Miscellaneous details
12. Illumination summaries
13. Coordination with PEC
14. Project Administration
15. QC / QA
16. Other services as shown in Attachment B

Illumination services excluded:

1. Illumination design outside the limits of the bridge
2. Obtaining electrical services application and connection from the Pedernales Electric Co-Op or other supplier(s)

5. Engineering Design

Engineering Design Services

1. Geometric design
2. Horizontal alignment design
3. Vertical alignment design
4. Superelevation design
5. Roadway earthwork design
6. Roadway hydrologic analyses
7. Roadway hydraulic design
8. Bridge hydraulic analyses
9. Roadway culvert design

10. Intersection hydrologic analyses
11. Intersection hydraulic design
12. Intersection culvert design
13. Driveway hydrologic analyses
14. Driveway hydraulic design
15. Driveway culvert design
16. Channel design
17. Intersection design
18. Driveway design
19. Illumination design
20. Traffic signal design
21. Pavement marking design
22. Roadway signing design
23. Metal Beam Guard Fence Design
24. Mailbox design
25. Sequence of construction
26. Traffic Control Plan (TCP)
27. Environmental Permits, Issues, and Commitments (EPIC)
28. Storm Water Pollution Prevention Plan (SW3P)
29. Erosion control plan
30. Estimate
31. Other services as shown in Attachment B.

6. Engineering: Plans, Specifications, and Estimate (PS&E)

Using the Engineering Design Services above, prepare a complete set of Plans, Specifications, and Estimates in TxDOT format, reviewed and approved by TxDOT, suitable for TxDOT to advertise the project, accept bids, award a contract, construct the bridge and approaches, and maintain the project.

Engineering: Plans, Specifications, and Estimate (PS&E) services included:

1. Plans, Specifications, and Estimate (PS&E) (TxDOT format)
2. Title Sheet
3. Index of Sheets
4. General Notes
5. Survey Data Sheets
6. Benchmark Table
7. Existing Roadway Typical Sections
8. Proposed Roadway Typical Sections

9. Intersection Typical Sections
10. Driveway Typical Sections
11. Roadway Typical Sections Table
12. Alignment Data Sheets
13. Superelevation Data Tables
14. Drainage Area Mapping
15. Hydrologic Data Tables
16. Hydraulic Data Tables (Roadway)
17. Hydraulic Data Tables (Bridge)
18. Culvert Layouts
19. Culvert Summaries
20. Channel Layout
21. Box Culvert Supplement
22. Ditch Tables
23. Project Layout
24. Earthwork Summaries
25. Removal Plan
26. Removal Summaries
27. Plan and Profile
28. Roadway Cross Sections
29. Intersection Layouts
30. Intersection Details
31. Driveway Layouts
32. Driveway Plan and Profile
33. Driveway Details
34. Driveway Summaries
35. Illumination Layouts
36. Traffic Signal Layouts
37. Sign Layouts
38. Pavement Marking Layouts (Roadway)
39. Pavement Marking Layouts (Work Zone)
40. Pavement Marking Summaries (Roadway)
41. Pavement Marking Summaries (Work Zone)
42. Metal Beam Guard Fence Summaries
43. Delineator and Object Marker Summaries
44. Seal Coat Selection Table
45. Storm Water Pollution Prevention Plan (SW3P)

46. Temporary Erosion Control Plan
47. Temporary Erosion Control Summaries
48. Permanent Erosion Control Plan
49. Permanent Erosion Control Summaries
50. Concrete Riprap Layouts
51. Sequence of Construction Narrative
52. Traffic Control Plan (TCP) Phasing
53. Traffic Control Plan (TCP) Typical Sections
54. Traffic Control Plan Summaries
55. Estimate of Quantities Summary
56. Small Sign Summary
57. Miscellaneous Drainage Details
58. Miscellaneous Intersection Details
59. Miscellaneous Roadway Details
60. Miscellaneous Driveway Details
61. Summary of Driveways
62. General Notes
63. Assemble Applicable Standards
64. QC / QA
65. Other services as shown in Attachment B.

Engineering: Plans, Specifications, and Estimate (PS&E) excluded:

1. Off-site analysis and/or design
2. Coordination with the Federal Emergency Management Agency (FEMA)
3. Preparation of Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR) or any other requirements necessary to amend or otherwise redefine a FEMA floodway / floodplain
4. Establishment of FEMA base flood elevations
5. U.S. Army Corps of Engineers Section 404 permitting
6. Rainfall runoff water quality design
7. Rainfall runoff detention analyses and design
8. Landscape designs
9. Bidding services
10. Post design services
11. Construction phase services
12. Other services not specifically described herein

Project Management

Perform Project Management

1. Project Records
2. Project Correspondence
3. Subconsultant Management
4. Coordination with Burnet County
5. Coordination with TxDOT
6. Coordination with LCRA
7. Coordination with PEC
8. Coordination with Frontier Communications
9. Coordination with Cottonwood Shores
10. Coordination with Horseshoe Bay
11. Coordination with Marble Falls
12. Coordination with Subconsultants
13. Coordination with Others
14. Periodic Progress Meetings
15. Other Meetings
16. TxDOT 30% complete submittal
17. TxDOT 60% complete submittal
18. TxDOT 90% complete submittal
19. TxDOT 1000% complete submittal
20. QC / QA
21. Other services as shown in Attachment B

ATTACHMENT B

ATTACHMENT B		
Summary of Activities and Deliverable Items	Summary of Lump Sum Payments	Function Code Description
FC 120 (120)	\$79,674.00	Social, Economic, Env. & Public Involvement
FC 130 (135)	\$18,984.00	Right of Way Survey Data and Utilities
FC 160 (150)	\$18,644.00	Field Surveying and Photogrammetry
FC 160 (160)	\$191,544.00	Roadway Design Controls
FC 160 (161)	\$66,640.00	Drainage
FC 160 (162)	\$43,030.00	Signing, Pavement Markings, Signalization
FC 160 (163)	\$86,740.00	Miscellaneous (Roadway)
FC 145 (145, 164)	\$37,435.00	Management
FC 160 (170)	\$345,266.00	Bridge Design
TOTAL	\$887,957.00	

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Preliminary	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	20.00%	\$15,934.80	\$15,934.80	20.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	20.00%	\$3,796.80	\$3,796.80	20.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	50.00%	\$9,322.00	\$9,322.00	50.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	5.00%	\$3,332.00	\$3,332.00	5.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	10.00%	\$3,743.50	\$3,743.50	10.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	5.00%	\$17,263.30	\$17,263.30	5.00%
		Sub-Total		\$53,392.40	\$53,392.40	6.01%

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Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Progress Submittal	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	20.00%	\$15,934.80	\$31,869.60	40.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	30.00%	\$5,695.20	\$9,492.00	50.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	50.00%	\$9,322.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	1.00%	\$1,915.44	\$1,915.44	1.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	20.00%	\$13,328.00	\$16,660.00	25.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	5.00%	\$1,871.75	\$5,615.25	15.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	5.00%	\$17,263.30	\$34,526.60	10.00%
		Sub-Total		\$65,330.49	\$118,722.89	13.37%

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Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Progress Submittal (Pre 30%)	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	20.00%	\$15,934.80	\$47,804.40	60.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	25.00%	\$4,746.00	\$14,238.00	75.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	1.00%	\$1,915.44	\$3,830.88	2.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	25.00%	\$16,660.00	\$33,320.00	50.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	5.00%	\$1,871.75	\$7,487.00	20.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	5.00%	\$17,263.30	\$51,789.90	15.00%
			Sub-Total	\$58,391.29	\$177,114.18	19.95%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	30% Submittal	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$47,804.40	60.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	5.00%	\$949.20	\$15,187.20	80.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	1.00%	\$1,915.44	\$5,746.32	3.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	15.00%	\$9,996.00	\$43,316.00	65.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	0.00%	\$0.00	\$0.00	0.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	10.00%	\$3,743.50	\$11,230.50	30.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	25.00%	\$86,316.50	\$138,106.40	40.00%
		Sub-Total		\$102,920.64	\$280,034.82	31.54%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Progress Submittal (Pre 60%)	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	40.00%	\$31,869.60	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	10.00%	\$1,898.40	\$17,085.60	90.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	20.00%	\$38,308.80	\$44,055.12	23.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	20.00%	\$13,328.00	\$56,644.00	85.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	10.00%	\$4,303.00	\$4,303.00	10.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	5.00%	\$4,337.00	\$4,337.00	5.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	15.00%	\$5,615.25	\$16,845.75	45.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	10.00%	\$34,526.60	\$172,633.00	50.00%
		Sub-Total		\$134,186.65	\$414,221.47	46.65%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	60% Submittal	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	10.00%	\$1,898.40	\$18,984.00	100.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	30.00%	\$57,463.20	\$101,518.32	53.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	10.00%	\$6,664.00	\$63,308.00	95.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	40.00%	\$17,212.00	\$21,515.00	50.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	20.00%	\$17,348.00	\$21,685.00	25.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	15.00%	\$5,615.25	\$22,461.00	60.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	10.00%	\$34,526.60	\$207,159.60	60.00%
		Sub-Total		\$140,727.45	\$554,948.92	62.50%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Progress Submittal (Pre 90%)	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	0.00%	\$0.00	\$18,984.00	100.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	20.00%	\$38,308.80	\$139,827.12	73.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	2.00%	\$1,332.80	\$64,640.80	97.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	30.00%	\$12,909.00	\$34,424.00	80.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	15.00%	\$13,011.00	\$34,696.00	40.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	15.00%	\$5,615.25	\$28,076.25	75.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	15.00%	\$51,789.90	\$258,949.50	75.00%
		Sub-Total		\$122,966.75	\$677,915.67	76.35%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	90% Submittal	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	0.00%	\$0.00	\$18,984.00	100.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	10.00%	\$19,154.40	\$158,981.52	83.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	1.00%	\$666.40	\$65,307.20	98.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	10.00%	\$4,303.00	\$38,727.00	90.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	40.00%	\$34,696.00	\$69,392.00	80.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	15.00%	\$5,615.25	\$33,691.50	90.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	15.00%	\$51,789.90	\$310,739.40	90.00%
		Sub-Total		\$116,224.95	\$794,140.62	89.43%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Progress Submittal (Pre 100%)	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	0.00%	\$0.00	\$18,984.00	100.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	12.00%	\$22,985.28	\$181,966.80	95.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	1.00%	\$666.40	\$65,973.60	99.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	5.00%	\$2,151.50	\$40,878.50	95.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	15.00%	\$13,011.00	\$82,403.00	95.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	5.00%	\$1,871.75	\$35,563.25	95.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	5.00%	\$17,263.30	\$328,002.70	95.00%
		Sub-Total		\$57,949.23	\$852,089.85	95.96%

ATTACHMENT B

Payments Will Be Made According to the Following Table of Deliverables			Lump Sum Payments are Paid Based Upon the Deliverables as Indicated in this Document			
Function Codes	Deliverable Submittal	Summary of Activities and Deliverable Items	Estimated Percentage of Work by Function Code	Lump Sum Amount Payable for Listed Deliverables	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
FC 120 (120)	Final Submittal (100%)	Informal Meetings, Species Analyses, Surface Water Analyses, Impacts Table, Waters of the US Delineation, Community Impacts Assessment Technical Report, Hazardous Materials Initial Site Assessment, Archaeological Assessment (Historic Research, Pedestrian and Excavation), Historic Properties Assessments, Ecological Mapping System of Texas (EMST) Maps, TPWD Rare, Threatened, and Endangered Species of Texas Analysis, Natural Diversity Database Maps, USFWS Threatened and Endangered Species List, Species of Greatest Conservation Needs List, Photographs, EPICS, Environmental Studies, Environmental Exhibits, Cut & Fill Exhibits, Texas Historical Commission Permitting (Preliminary, Revised, and Final) Center for Archaeological Studies Curation, TxDOT Coordination, Draft Environmental Assessment, Revised Environmental Assessment, Final Environmental Assessment, QC/QA	0.00%	\$0.00	\$79,674.00	100.00%
FC 130 (135)		Establish Benchmarks, Boundary Surveying (Locating Property Corners), Topographic Surveying, Digital Terrain Mapping, Feature Location Surveying, Right of Way Legal Descriptions and Exhibits, Drainage Easement Legal Descriptions and Exhibits, Utility Easement Legal Descriptions and Exhibits, Utility Locations & Layouts, Utility Base Map, Utility Coordination Meetings (LCRA, PEC, Frontier Communications, and Cottonwood Shores), Utility Relocation Plans Reviews, Access Management	0.00%	\$0.00	\$18,984.00	100.00%
FC 160 (150)		Design Topographic Surveys, Horizontal & Vertical Control Sheets, Digital Terrain Mapping (DTM), Survey Notes & Sketches, Survey Data, Utility Data, Bridge and Roadway Bore Hole Locating, QC/QA	0.00%	\$0.00	\$18,644.00	100.00%
FC 160 (160)		Geometric Design, Roadway Design, Horizontal Alignment Data, Vertical Alignment Data, Superelevation Data and Details, Typical Sections, Plan & Profile, Intersection and Driveway Design, Intersection and Driveway Details, Driveway Summary Sheet, Sequence of Construction, Traffic Control Plan, Illumination Design, Cut and Fill Quantities, Cross Sections, Plan Preparation, Pedestrian and Bicycle Facilities, Standards Selection, QC/QA	5.00%	\$9,577.20	\$191,544.00	100.00%
FC 160 (161)		Data Collection, Roadway Drainage Area Maps, Driveway Drainage Area Maps, Hydrologic Analyses, Hydraulic Design, Hydrologic Summary Sheets and Tables, Hydraulic Summary Sheets and Tables, Culvert Layouts and Details, FEMA Floodplain Assessment, Storm Drains, Cross-Drainage Structures, Street and Driveway Structures, Temporary Drainage Design, Scour Analysis, Miscellaneous Drainage Details, Summary of Drainage Quantities, QC/QA	1.00%	\$666.40	\$66,640.00	100.00%
FC 160 (162)		Horizontal Curve Analyses, Signing, Pavement Markings, and Delineation Layouts, Traffic Signal Layouts, Traffic Signal Design, Traffic Signal Plan Sheets, Small Sign Summary, Signing and Pavement Marking Summary, QC/QA	5.00%	\$2,151.50	\$43,030.00	100.00%
FC 160 (163)		Project Layout, Removal Layout, Retaining Walls, Misc. Structures, Traffic Control Plans, Traffic Control Typical Sections, TCP Narrative, Sequence of Construction, Seal Coat Material Selection Table, Illumination Design, Illumination Layout, Mailbox Locations and Details, Storm Water Pollution Prevention Plan (SW3P), Temporary Erosion Control Layout, Permanent Erosion Control Layout, Temporary Erosion Control Summary, Permanent Erosion Control Summary, Estimate Summary Sheet, Roadway Quantity Summary, Bridge Quantity Summary, Traffic Control Quantity Summary, Illumination Summary, Roadway Drainage Summary, Cross-Drainage Summary, General Notes, Basis of Estimate, Special Provisions, Special Specifications, Special Utility Details, Utility Agreements, Supporting Documentation, Standards Selection, Contract Time Determination, QC/QA	5.00%	\$4,337.00	\$86,740.00	100.00%
FC 145 (145; 164)		Project Management, Project Tracking, Project Records, Meetings, Sub-Consultant Contracts, Sub-Consultant Management, Periodic Project Updates, Invoice Preparation, Overall QC/QA	5.00%	\$1,871.75	\$37,435.00	100.00%
FC 160 (170)		Bore Log Layout, Bridge Value Engineering, Bridge Geometry, Bridge Layout, Foundation Analysis, Foundation Design, Foundation Layouts, Table of Foundation Quantities, Abutment Design and Details, Interior Bent Design and Details, Framing Plan, Bridge Column Design and Details, Bridge Standards Modification, Bridge Railing Design and Details, Bridge Drainage Design and Details, Bridge Sign Mounts Design and Details, Utility Conduit Layout, Design, and Details (Eight Conduits), Aesthetic Details, Structural Bridge Design, Bridge Detail Summary & Structural Detail, Bridge Standards Selection, Bridge Item Quantity Summary, Preliminary Estimate, Final Estimate, QC/QA	5.00%	\$17,263.30	\$345,266.00	100.00%
	Final Submittal		Sub-Total	\$35,867.00	\$887,957.00	100.00%