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GILA COUNTY
www.gilacountyaz.gov

CONTRACT NO. SS71803D
NEW BRIDGE OVER TONTO CREEK

AMENDMENT #1

Effective November 3, 2009, Gila County and Kimley-Horn and Associates, Inc. entered into a contract whereby Kimley-Horn agreed to provide Professional Engineering Services for the Tonto Creek Bridge Project. The project consisted of two Phases: Phase I-Design Concept Report and Environmental Studies, Phase II-Final Design (Plans, Specifications and Estimates). Phase I of the project is nearing completion and the County has authorized the Engineer to move forward with Phase II.

Per Article IX of the Contract, prior to Phase II services, the Engineer and County will review and refine the scope of services for that Phase, as may be required as a result of design, scope, and management decisions made during Phase I. The Phase II scope and fee may be renegotiated and additional or deleted work, as agreed upon and authorized by the County, will be performed on a time and materials basis per a mutually agreed upon scope and fee between the County and Engineer.

The Engineer will proceed only as individual tasks are authorized by the County Public Works Director. Federal funds, which are the primary source of funding for this project, will allow geotechnical investigations to proceed prior to issuance of the Environmental Analysis (EA) but will not allow the other tasks to move forward until the EA is approved. The Engineer understands this stipulation and has agreed to it in the attached proposed Phase II scope and

fee. The attached Scope of Work and Cost Proposal Summary by reference are made a part of this amendment as to the same extent as set forth herein in full.

The original cost of Phase II had an authorized budget of \$747,309. After completion of Phase I it was necessary to modify the design and scope of work resulting in a cost increase to complete Phase II of the project. Per the existing Intergovernmental Agreement with the Arizona Department of Transportation (ADOT) the Federal Highway Administration (FHWA) will fund 94.3% (\$895,842) and the County will fund 5.7% (\$54,150). There is sufficient FHWA funding available in the existing agreement for Phase II and the County also has sufficient funds available for its share.

Amendment #1 to Contract SS71803D will allow for an increase of \$202,683 with a Phase II completed authorized budget of \$949,992.

All other terms, conditions and provisions of the original Contract shall remain the same and apply during the renewal period.

IN WITNESS WHEREOF, three (3) identical counterparts of this contract, each which shall include original signatures and for all purposes be deemed an original thereof, have been duly executed by the parties hereinabove named, on this 4th day of January, ~~2010~~ 2011.

**CONTRACT NO. SS71803D NEW BRIDGE OVER TONTO CREEK
AMENDMENT #1**

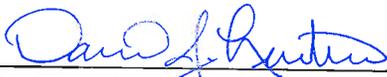
GILA COUNTY:

KIMLEY-HORN AND ASSOCIATES, INC.

GILA COUNTY BOARD OF SUPERVISORS



Michael A. Pastor, Chairman, Board of Supervisors

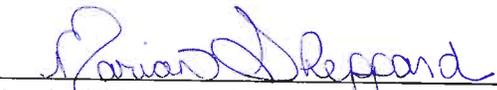


Engineer Signature

DAVID J. LEISTIKO

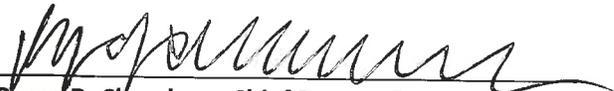
Print Name

ATTEST



Marian Sheppard, Chief Deputy Clerk of the Board

APPROVED AS TO FORM:



Bryan B. Chambers, Chief Deputy County Attorney
for Daisy Flores, County Attorney

GILA COUNTY
PUBLIC WORKS DIVISION

SCOPE OF WORK

Bridge over Tonto Creek
FHWA Project No: HPP-GG1-0(204)A
ADOT TRACS No: SS 71803D

Phase II - Final Design

Kimley-Horn and Associates, Inc.

November 2010

Section 100 GENERAL INFORMATION

110 Project Description

The Bridge over Tonto Creek project will require improvements at two key locations in order to provide residents and visitors of Tonto Basin with an all-weather crossing of Tonto Creek. New Bridges over Tonto Creek and Oak Creek will be included in the Phase II Final Design as well as reconstruction of Old Hwy 188 from the intersection of SR 188 to the Tonto Basin Elementary School. The Scope of Work includes Phase II Final Design items for the preparation of plans, specifications and estimates along with necessary environmental permits (404 permits) for these improvements.

120 Length of Services

Phase II Final Design is expected to take approximately 7 to 10 months. Bid ready construction documents for advertisement are tentatively set for August 2011.

130 Schedule

Kimley-Horn and Associates, Inc. (Kimley-Horn) will develop a schedule and work plan addressing the design activities necessary for delivering the project in a timely manner, consistent with the length of service described in Section 120. The schedule will include a list of activities, estimated completion date, and other information as appropriate. An initial schedule for review and approval by Gila County (County) will be submitted. The schedule submitted will be customized to reflect the needs of the project. Work elements for which Gila County and other parties have responsibility will be included in the schedule. Updates to the schedule will be made at the regularly scheduled progress meetings.

Section 200 DESIGN REFERENCES

Design references developed and published by Gila County and the Arizona Department of Transportation (ADOT) will be used in the design of this project. The following design documents include:

- Gila County Roadway Design Standards Manual
- ADOT Bridge Practice Guidelines
- ADOT Roadway Design Guidelines
- AASHTO LRFD Bridge Design Specifications
- AASHTO Policy on Geometric Design of Highways and Streets
- ADOT Guidelines for Highways on U.S. Forest Service Lands
- ADOT Standard Specifications for Road and Bridge Construction, 2008
- Tonto National Forest documents, guidelines, and specifications as appropriate.

210 Miscellaneous Reports and Studies for this Project

- Preliminary Engineering Study for Tonto Creek Crossing, FHWA 1993

- Reconnaissance Evaluation and Project Management Plan with an Environmental Evaluation - Special Study, USACE 2004
- Hydrological Analyses, Tonto Creek and selected tributaries, Punkin Center to Theodore Roosevelt Lake, FEMA Technical Memorandum prepared by HDR 2004
- Bridge over Tonto Creek Final Location/Design Concept Report & Environmental Assessment, prepared by Kimley-Horn and Associates, Inc. 2010
- Other reports and studies prepared as part of Phase I of the Bridge over Tonto Creek project.

220 AASHTO Publications

Gila County and ADOT references and publications will control the work, and any necessary supplementation should be provided by appropriate AASHTO and/or FHWA references. The County's Project Manager will provide guidance and direction.

230 Environmental Publications

The following environmental documents are to be applied to various aspects of the project as is appropriate. Others may be included if necessary.

Federal

Endangered Species Act
 Migratory Bird Act
 Clean Water Act
 National Historic Preservation Act
 Clean Air Act
 Civil Rights Act of 1964 and Executive Order 12989
 Resources Conservation and Recovery Act
 Comprehensive Environmental Response, Compensation and Liability Act
 Superfund Amendments and Reauthorization Act
 US Department of Transportation Act
 National Environmental Policy Act

State

Arizona Native Plant Law
 Arizona State Historic Preservation Act
 State Water Quality Law
 ADOT Highways Division Policy and Implementation Memorandum 89-05, "Preservation of Arizona's Wetlands," August 1, 1989
 Noise Abatement Policy for State-Funded Projects
 State of Arizona Water Control Policy
 Arizona Environmental Quality Act (EQA)
 Hazardous Waste Management Act (HWMA)
 Underground Storage Tank Act of 1986

Local

Local codes and ordinances relating to air quality, noise, dust abatement, light, etc.

Section 300 DESIGN CRITERIA

The project will be designed in accordance with the references listed in Section 200 and the information presented in this section.

301 Supplemental Design Criteria

The design criteria may be supplemented by Project Design Memorandums provided by Gila County and/or ADOT during the course of the project.

310 General

- Design Year - **2030**
- Design Speed - **35 mph - minimum**
- Pavement Design Life - **20 years**

320 Geometry

In accordance with Gila County Roadway Design Standards Manual the following are specific criteria to be used.

- Roadway Typical Section: **Rural Local**
- Right-of-way Width: **100 ft minimum (50-ft to either side of roadway centerline)**
- Normal Cross Slope: **2.0%**
- Slope Guidelines: **ADOT Standard C-02.30**
- Maximum Gradient: **10.0%**
- Maximum superelevation: **0.06 ft/ft**

Widths

- Number of Traffic Lanes: **2-lanes**
- Traffic Lane: **12 ft**
- Pedestrian Accommodation: **6 ft sidewalk**
- Bike Lanes: **Access on bridge deck**
- Shoulder: **May vary due to right of way; 4 ft minimum**

Drainage

Design Frequency:

- Pavement: 10-year
- Bridges: 100-year FEMA for Tonto Creek; 50-year with 1 foot of overtopping of the 100-year for Oak Creek
- Bridge Freeboard: 4-ft for Tonto Creek (100-year)

- Storm Drain: 10 year
- Channels: 50 year
- Curb and Gutter Type - Std. C-05 Series (if appropriate)
- Maximum Velocity - Evaluate erodibility of native soil
- Minimum Velocity - Evaluate deposition of soil
- FEMA Considerations - Evaluate per ADOT Roadway Design Guidelines, Section 602
- Erosion Control - To be determined per HEC-14 and HEC-15
- Pavement Drainage - Evaluate per HEC-12

Traffic

- Signing Permanent: Rural Local Road
- Signing Temporary: Traffic Control during Construction

Other Features

- Guardrail/Barrier Type – ADOT Std C-10 Series
- Fencing Type – ADOT Std C-12 Series
- Cattle Guards – ADOT Std C-11 Series (if appropriate)
- Retaining Walls – ADOT Std B-18 Series or alternate proprietary retaining wall systems (if appropriate)

Section 400 Phase II – Final Design Work Performed by Kimley-Horn and Associates, Inc.

410 Meetings & Coordination (Monthly Progress Meetings)

Kimley-Horn will hold and attend regularly scheduled progress meetings throughout final design. Meetings will typically be held on the first Thursday of each month. The location of these meetings will be at Kimley-Horn's offices in Phoenix, Arizona. Kimley-Horn will prepare for the meeting, prepare a meeting agenda, and record notes of the meetings. The meeting notes will be distributed to the team within five working days of the meeting. Kimley-Horn anticipates at least five staff/team members attending each meeting.

Meetings outside of the monthly progress meeting are anticipated during final design. These meetings will include meetings with the Gila County BOS, FHWA, Tonto National Forest, ADOT Local Government, and Tonto Basin General Public and/or stakeholders. The Gila County project manager will be kept abreast of the project status and coordinated with outside of monthly progress meetings through weekly or bi-weekly meetings or telephone conferences.

420 Surveys & Right-of-Way

Kimley-Horn, through sub-consultant Alpha Engineering, will provide right-of-way survey and legal descriptions for use in obtaining necessary right-of-way for the project.

430 Utility Coordination & Relocation Plans

Kimley-Horn will obtain prior rights documentation and coordinate the relocation of APS, TDS Telecom, Alltel/Verizon, and Tonto National Forest water facilities. Kimley-Horn will identify and perform potholing as needed and incorporate their results into the design and plans. Kimley-Horn will work with the utility companies to obtain a project Utility Clearance and will assist in the preparation of Utility Agreements.

440 Geotechnical Investigations & Coordination

Kimley-Horn, through sub-consultant AMEC, will provide the geotechnical services for Phase II of the project as described in Attachment #1.

450 Environmental Permitting/Section 404

Prepare Nationwide 404 Permit Application

It is assumed that impacts to waters of the U.S. will require authorization under a Nationwide Permit. The application preparation will require at least 30% design plans. Following the receipt of the Corps' concurrence on the preliminary jurisdictional delineation (submitted during Phase I of the project), Kimley-Horn will determine impacts to waters of the U.S. for the project. As part of this task, Kimley-Horn will identify possible opportunities to avoid and minimize impacts to waters of the U.S. .

Following the determination of unavoidable impacts to waters of the U.S., Kimley-Horn will work with the County to develop compensatory mitigation for the project impacts. Since on-site mitigation is often not practicable for roadway projects with limited right-of-way, off-site mitigation or in-lieu-fee mitigation may be pursued. If off-site mitigation is the selected mitigation proposal, Kimley-Horn will work with the County to determine project areas that may be suitable for mitigation. If in-lieu-fee mitigation is the selected alternative, Kimley-Horn will coordinate with land trusts and agencies that offer opportunities for in-lieu-fee mitigation. The preliminary mitigation proposal will be included in the application.

The cultural resources report, any documents resulting from agency coordination, and the mitigation proposal will be included in the permit application. The application will be submitted to the Corps.

Kimley-Horn will attend up to four (4) meetings with the Corps, U.S. Fish and Wildlife Service (USFWS), State Historic Preservation Office (SHPO), EPA and the County.

460 Roadway Design

Kimley-Horn will provide roadway design and plans for the improvements outlined in Section 110. Roadway design will be performed in accordance with the guidelines outlined in Section 200. Roadway design criteria will be in accordance with Section 300. Pavement design recommendations by AMEC will be incorporated into the construction documents and Kimley-Horn will coordinate with ADOT Materials to ensure their requirements are included in the construction documents. Plans, specifications, and estimates will be developed for the two key locations as described below:

Old Hwy 188 – SR 188 to Greenback Valley Road

Roadway Design for Old Hwy 188 – SR 188 to Greenback Valley Road will consist of two (2) twelve (12) foot travel lanes with four (4) foot shoulders. The shoulder width will vary to provide adequate width for a path and to accommodate sections with guardrail. Approximately 1,700-ft of roadway will be designed from SR 188 along Old Hwy 188 alignment to the beginning of the west bridge approach. Approximately 1,200-ft of roadway will be designed along Old Hwy 188 from the roadway's intersection with the west bridge approach to the school parking lot. A 600-ft forest service road to the Tonto National Forest fire yard will be included and a 1,100-ft graded dirt road at the base of the west terminus bridge abutment will also be required to maintain access to properties south of the bridge alignment. Approximately 600-ft of roadway will be designed along Greenback Valley Road east of the east bridge approach. Side-road/turnout design will be designed for Desert Rose Drive and Pecan Lane at Greenback Valley Road.

Cline Boulevard/FR 423 @ Oak Creek

Roadway Design for Cline Boulevard/FR 423 @ Oak Creek will consist of two (2) twelve (12) foot travel lanes with four (4) foot shoulders. The design will consist of approximately 300-ft of roadway west of the Oak Creek bridge and approximately 1,000-ft of roadway east of the Oak Creek bridge. The tie in with the intersection of Cline Boulevard/FR 423 and FR 424 will be a part of the improvements.

470 Structural Design

Kimley-Horn will provide structural design and plans for the improvements outlined in Section 110. Two (2) bridges will be designed as well as retaining walls along Old Hwy 188. Bridge designs will be done in accordance with the current AASHTO LRFD Bridge Design Specifications (LRFD) and ADOT Bridge Design Guidelines. Foundations will be designed following recommendations of the geotechnical engineer (AMEC) after field investigations and laboratory testing have been completed. The description of each structure is as follows:

Tonto Creek Bridge

The Tonto Creek Bridge will be comprised of fifteen (15) spans using precast AASHTO Type VI Super Modified girders. Span lengths will be approximately 132'-0" for a total bridge length of 1,981'-8". The typical section will include two (2) twelve (12) foot travel lanes with four (4) foot shoulders. A 6-ft raised sidewalk will also be included along the north side of the structure with ADOT SD 1.06 two (2) tube bridge barrier rails on the south for a total bridge deck width of 40'-8". The substructure will consist of two (2) column piers on drilled shaft foundations and stub abutments on drilled shafts.

Oak Creek Bridge

The Oak Creek Bridge will be a two (2) span precast AASHTO Type III girder structure. Each span will be approximately 72-ft long for a total bridge length of 147'-10". The typical section will include two (2) twelve (12) foot travel lanes with four (4) foot shoulders. The rail type for the bridge barrier will be an ADOT SD 1.06 two (2) tube rail. The abutments and piers will be supported on drilled shaft or driven pile foundations.

Retaining Walls

Retaining walls will be required along Old Hwy 188 near the Tonto Basin Elementary School and the Tonto National Forest Reno Administrative Site due to cut and fill slope limitations. These walls will vary in height from 3-ft up to 8-ft.

480 Drainage Design

Kimley-Horn will provide drainage design and plans for the improvements outlined in Section 110. Bank protection for two (2) bridges will be designed as well as approach roadway drainage ditches and cross culverts. Drainage designs will be in accordance with the current Gila County *Roadway Design Standards Manual* and ADOT *Bridge Hydraulic Guidelines*. Bank protection design will incorporate recommendations from the *Long-Term Sedimentation Analysis Report* and *Geomorphic Analysis Report* prepared during Phase I.

Old Hwy 188 – SR 188 to Greenback Valley Road @ Tonto Creek

Drainage design for Old Hwy 188 – SR 188 to Greenback Valley Road will consist of bank protection measures for both the east and west bridge abutments as well as pavement drainage design for the bridge deck. It is anticipated that bank protection measures will consist of gabion baskets. Bridge deck drainage will consist of scuppers or weep holes that drain directly into Tonto Creek. Additional drainage design will include approach roadway ditches and cross culverts for the east and west approaches. If necessary, cross culverts will be designed with scour-counter measures. Kimley-Horn will update the hydraulic and scour analyses and narrative included in the Final Drainage Report prepared during Phase I to include the final design from Phase II.

It is estimated that the drainage design for the Tonto Creek Bridge will consist of the following sheets:

- (4) Abutment/bank protection plan sheets
- (2) Abutment/bank protection detail sheets
- (4) Ditch/cross culvert sheets for the approach roads
- (3) Deck drainage sheets
- (1) Pipe summary sheet
- (1) Miscellaneous detail sheet

Cline Boulevard/FR 423 @ Oak Creek

Drainage design for Cline Boulevard/FR 423 at Oak Creek will consist of bank protection measures for both bridge abutments as well as pavement drainage design for the bridge deck. It is anticipated that bank protection measures will consist of gabion baskets. Kimley-Horn will update the hydraulic and scour analyses and narrative included in the Final Drainage Report prepared during Phase I to include the final design from Phase II.

It is estimated that the drainage design for the Oak Creek Bridge will consist of the following sheets:

- (1) Abutment/bank protection plan sheet
- (1) Abutment/bank protection detail sheet

Conditional Letter of Map Revision

Kimley-Horn will prepare and submit an application for a Conditional Letter of Map Revision (CLOMR) to FEMA for Tonto Creek (It is assumed that a CLOMR will not be required for Oak Creek as it does not currently have a FEMA-mapped floodplain.) This application will include a Technical Data Notebook (TDN) per FEMA requirements and will be submitted at approximately the 60% design stage. All reviews associated with the CLOMR application will be paid by Gila County.

Drainage design includes the following assumptions:

- Kimley-Horn will update and reissue the Final Drainage Report for each crossing rather than prepare separate, stand-alone drainage reports.
- For each bridge structure, it is assumed that deck stormwater runoff can be drained directly to the creek. It is assumed that the drainage design will not require a storm drain system or Best Management Practices (BMPs) such as a retention basin for stormwater treatment.
- A CLOMR application for Tonto Creek will be prepared

490 Traffic Design

Kimley-Horn will provide traffic design services in the form of traffic control plans, marking and signing plans, and associated specifications and cost estimates.

Traffic Control Plans

Construction phasing and traffic control plans necessary for the construction of the project improvements will be prepared. Kimley-Horn will prepare an appropriate phasing plan for the project. The plan will be consistent with good constructability, taking into account the contractor's probable approach to the work and the cost and inconvenience to local businesses and residents. Closures and limitations on construction activities will be coordinated with Gila County.

Once project phasing has been determined and approved by Gila County, Kimley-Horn will prepare traffic control plans showing exact configurations of traffic control devices for the project in accordance with part VI of the Manual on Uniform Traffic Control Devices (MUTCD). A summary of quantities will be included on the traffic control plans.

Marking and Signing Plans

Marking and signing plans will be prepared for roadways within and approaching the project limits. Plans will be prepared in accordance with the most current policies and procedures. A signing summary will be provided in the project plans. Any new signs not shown in the ADOT Manual of Approved Signs will be detailed in the plans.

500 Visual/Landscape Architecture

Kimley-Horn will coordinate with Gila County and Tonto National Forest to determine the visual, landscape architecture, erosion control, and staging area requirements for the project.

Visual

Kimley-Horn will be responsible for the planning, coordination, and completion of plans, specifications and estimates required to preserve and protect key visual elements on or adjacent to the work site that do not unreasonably interfere with work requirements. Slope rounding plans and rustication/bridge treatment details will be developed.

Landscape Architecture

Kimley-Horn will be responsible for the planning, coordination, and completion of plans, specifications and estimates required for salvage and replanting of existing plant material as required. Kimley-Horn anticipates one site visit to determine the location and quantity of existing plant salvage material. The visit will also include a site analysis and a photo inventory. Kimley-Horn will work with ADOT Roadside

Development and the Tonto National Forest on the creation of Class I and Class II seed mix specifications that are suitable for the project elevation range and native plant community.

Erosion Control

Kimley-Horn will prepare a Storm Water Pollution Prevention Plan (SWPPP) to meet the requirements of Section 402 of the Clean Water Act NPDES. This will include the preparation of the SWPPP Standard Sheet and the preparation of erosion control plans for the project in accordance with recommendations from Gila County. The ADOT *Erosion and Pollution Control Manual for Highway Design and Construction* will be used as a reference. The erosion control plan will show the location of temporary erosion and sediment control features necessary to prevent storm water pollution during construction. If required, permanent erosion control features will be shown on the roadway or drainage plans as appropriate.

Staging Area

Kimley-Horn will aid in identifying potential contractor staging areas, including equipment yards and material processing plants. Additionally, a plan may be required for temporary onsite storage of material stockpiles to include various earth, waste and demolition components.

510 Submittals & Reviews

Submittals will consist of 60%, 95% and 100% PS&E signed and sealed construction documents. Special provisions, quantities, and cross sections with an earthwork report will be provided at each submittal.

Preparation of the 60% and 95% submittals will incorporate any changes, corrections, and/or additions within the limits of this scope as a result of the preceding submittal review process. Preparation of the 100% PS&E will incorporate any adjustments or corrections made during the review of the 95% submittal. To maintain the schedule, an over-the-shoulder review process will be used to minimize surprises and shorten the review process.

Three full-size and up to 20 half-size plan sets will be provided for the 60%, 95% and 100% submittals. A standard plan sheet size of 22"x 34" (ANSI "D" Size) will be used for full size plan sets with 11"x 17" used for half-size. The final signed and sealed PS&E will be on vellum; all review submittals will include three sets of full-size plans and up to 20 sets of 11x17 on standard bond paper. Electronic versions of all submittals will also be made in pdf format.

The following matrix includes the type of sheets anticipated – P = Preliminary, F = Final, S = Sealed

Sheet Type	60%	95%	100% PS&E
Face Sheet	P	F	F
Design Sheets & Index (Typical Sections, Pavement Structural Sections, General Notes, Earthwork table)	P	F	S
Summary Sheets (Culvert, Barrier)	P	F	S
Special Detail (if required)	P	P	S
Drainage Plan & Profile and Drainage Details	P	F	S
Geometric Sheets (scale - 1"=100', full size)	F	F	S
Plan & Profile Sheets (scale - 1"=50', full size)	P	F	S
Staking Plans (scale - 1"=20')	P	F	S
Intersection Plans & Details (scale - 1"=20', full size)	P	F	S

Side Road/Turnout Plan & Profile Sheets (scale – 1"=20')	P	F	S
Traffic Control Plans, Details	P	P	S
Construction Phasing	P	F	S
Signing & Pavement Marking Plans (scale – 1"=40')	P	F	S
Utility Relocation Plans, Details	P	P	S
Stormwater Pollution Prevention Control Plan	--	P	S
Cross Sections (100 foot intervals)	P	F	S
Bridge Plans	P	F	S
Scour & Berm/Dike Plans for bridge/creek	P	F	S
Right-of-Way Plans	P	P	S

Non-Plan Sheet Items			
Summary of Earthwork Quantities	P	F	S
Quantities & Cost Estimate	P	P	F
Special Provisions	P	P	S

Final design plans for the Tonto Creek and Oak Creek bridges will include the following:

- Location Plan and Typical Section
- General Plan and Elevation (4 sheets)
- General Notes and Quantities
- Structure Excavation and Backfill Pay Limits
- Foundation Plan (4 sheets)
- Drilled Shaft/Column Details
- Abutment 1 Plan and Elevation
- Abutment 2 Plan and Elevation
- Abutment 1 Details
- Abutment 2 Details
- Wingwall Details
- Pinned Pier Plan and Elevation
- Expansion Pier Plan and Elevation
- Pier Details (2 sheets)
- Girder Layout/Framing Plan (2 sheets)
- Girder Elevation
- Girder Details (1)
- Girder Details (2)
- Deck Plan (1)
- Deck Plan (2)
- Typical Deck Section
- Intermediate Diaphragm and Restrainer Details
- Abutment Diaphragm Details
- Pier Diaphragm Details
- Bearing Pad Details
- Joint Layout Details
- Approach Slab Elevations
- Misc. Details
- Screed Elevations (6 sheets)

- Rustication & other architectural detail sheets

Estimates of Probable Cost

Kimley-Horn will prepare combined and detailed estimates of probable cost (cost estimates) in the format recommended by ADOT Contracts and Specifications Section. The cost estimate will include a recapitulation sheet concurrent with each review submittal. At the Stage II review, Kimley-Horn will prepare a bidding schedule concurrently with each review submittal thereafter.

Kimley-Horn will immediately advise the County if there is any reason to believe the project cannot be constructed within the allocated budget. If needed, Kimley-Horn will identify options to maintain the project within budget, including shortening the project, revising criteria, or phasing changes.

Specifications

Kimley-Horn will be responsible for identifying critical elements of construction, including, but not limited to, construction limits, access requirements, potential night construction, coordination with affected local agencies (police, fire, USFS, etc.), traffic restrictions, scheduling of work time (bar chart format illustrating estimated construction time), utility trench close ups, incentives and liquidated damages, State-furnished materials, critical materials requiring pre-bid purchase, and limitations specifically addressed in the environmental, right-of-way, and utility clearances.

Special Provisions

Kimley-Horn will prepare Special Provisions for items, details, and procedures not adequately covered by ADOT's Standard Specifications and Stored Specifications. Unusual requirements necessary for obtaining permits for hauling materials will also be included. Special Provisions will be submitted at the Stage III and Stage IV project reviews. Final Special Provisions will be sealed by the engineer in responsible charge. Kimley-Horn will be responsible for incorporating any specifications provided by the County and ADOT technical sections into the draft and final Special Provisions. The County will review all submittals of Special Provisions and Kimley-Horn will prepare the final Special Provisions.

Review and coordination of Kimley-Horn's work by the Gila County, ADOT, FHWA, Forest Service and other listed agencies will continue through the project development process. Kimley-Horn may continue the design work while design submittals are being reviewed. Doing so however in no way relieves Kimley-Horn of the responsibility to incorporate review comments into the design, nor does it entitle Kimley-Horn to any additional design fees as a result of making changes due to plan errors or review comments. If design changes are required due to change in scope, such work will be performed pending approved contract modification.

Submittals for review will be made when the studies and/or plans have been developed to levels of completion so that reviews are timely and productive.

Copies of review submittals and finalized documents will be distributed by Kimley-Horn. All deliveries will be electronically and by hand or overnight courier. All plans and cross sections will be prepared as described in section 510 above.

600 Contract Administration

Kimley-Horn will provide project administration which will involve the coordination with Gila County, the design team, sub-consultants to Kimley-Horn, the general public, and other outside agencies. Internal project administration will include weekly progress meetings, project accounting, internal QA/QC, design documentation, plan production coordination, and value engineering.

Project administration will run throughout the duration of the project.

Contracts and Specifications Process

Kimley-Horn will, under the direction of the County, support the ADOT Contracts and Specifications process after completion of the Final Submittal stage leading to the complete bid documents as follows:

- A. Promptly answer questions relative to the plans, quantities, and Special Provisions.
- B. Make any necessary corrections to the plans, typical sections, Special Provisions, quantities, notes, etc. as required.
- C. Prepare any addenda required to clarify the work included in the contract documents as requested by the Contracts & Specifications section. The addenda will be prepared immediately upon request.

640 Additional Services

Kimley-Horn will provide additional services not covered in this scope of services at the request of the County by means of contract modifications.

- A. Kimley-Horn will be prepared to attend the pre-bid conference, if one is scheduled, and present an appropriately-sized display showing the project layout, proposed traffic control and construction phasing, and will be prepared to discuss other constraints so that the potential bidders will be better able to relate to the intent of the construction of the project. Kimley-Horn will respond to questions related to the plans, details and Special Provisions.
- B. Kimley-Horn will be prepared to assist in the analysis of bids, including: determination of reasonableness and justification of cost variances, analysis of original cost estimate compared to contractor bid costs.

650 Post Design

Post Design services will be provided via contract modification pending final funding availability and construction schedule.

DERIVATION OF COST PROPOSAL SUMMARY

(Figures Rounded To The Nearest \$1)

ESTIMATED DIRECT LABOR

CLASSIFICATION	PERSON HOURS	BILLING RATE/HOUR	TOTAL
Project Principal	-	\$ 220.00	\$ -
Project Manager	213	\$ 190.00	\$ 40,375
Senior Project Engineer	412	\$ 188.00	\$ 77,456
Project Engineer	1,129	\$ 148.00	\$ 167,018
Engineer	1,019	\$ 130.00	\$ 132,405
Analyst	571	\$ 98.00	\$ 55,958
Senior NEPA Planner	109	\$ 165.00	\$ 17,903
NEPA Planner	89	\$ 115.00	\$ 10,178
Designer	1,143	\$ 125.00	\$ 142,875
Administrative	27	\$ 95.00	\$ 2,565
Clerical	86	\$ 65.00	\$ 5,590
Estimated Labor Cost		4,796 Hours	\$ 652,323

**ESTIMATED DIRECT EXPENSES
(NO MARKUP)**

Total Estimated Expenses \$ 5,619

ESTIMATED OUTSIDE SERVICES AND CONSULTANTS

Firm	Cost	Compensation Method
	\$ -	LSUM
	\$ -	LSUM
Utility Pot-holing (AZTEC)	\$ 5,000	LSUM
AMEC	\$ 227,262	LSUM
AZTEC	\$ 25,000	LSUM
Appraiser - Dennis Lopez	\$ 10,000	LSUM
Total Estimated Outside Services		<u>\$ 267,262</u>

TOTAL ESTIMATED COST TO CONSULTANT \$ 925,204

Allocation Expense @ 3.8% of Labor \$ 24,788

TOTAL ESTIMATED LSUM FEE \$ 949,992

CONTRACT TIME 300 Calendar Days

Consultant Firm Signature

Date



Final Design - Bridge over Tonto Creek
Tonto Basin, AZ

County Contract No: SS71803D
FHWA Project: HPP-GG1-0(204) A

ESTIMATED STAFF HOUR SUMMARY

SCOPE SECTION / TASK	Proj Prin	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Pin	Nepa Pin	Design.	Admin	Clerical	Total Hrs	Cost
	\$ 220.00	\$ 190.00	\$ 188.00	\$ 148.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00	\$ 65.00		
410 - Project Team Meetings	-	78	9	20	5	9	62	5	-	-	-	191	\$31,760.00
420 - Survey & Right-of-Way	-	4	5	-	-	16	-	-	-	-	-	25	\$3,268.00
430 - Utility Coord & Relocation	-	19	16	-	62	-	-	-	20	-	5	122	\$17,503.00
440 - Geotechnical Coordination	-	6	8	10	-	-	-	-	2	-	-	26	\$4,374.00
450 - Environmental/404 Permit	-	2	-	-	10	77	47	84	28	-	17	265	\$31,246.00
460 - Roadway Design	-	27	73	163	281	36	-	-	226	-	-	806	\$111,286.00
470 - Structural Design	-	-	134	641	330	-	-	-	597	-	-	1,702	\$237,585.00
480 - Drainage Design	-	-	38	162	-	314	-	-	65	-	32	611	\$72,097.00
490 - Traffic Design	-	-	30	16	74	77	-	-	73	-	-	270	\$34,299.00
500 - Visual/Landscape Architecture	-	-	69	79	191	12	-	-	122	-	-	473	\$65,920.00
510 - Submittal & Reviews	-	23	30	38	66	30	-	-	10	-	27	224	\$30,159.00
600 - Contract Administration	-	54	-	-	-	-	-	-	-	27	-	81	\$12,825.00
Totals	-	213	412	1,129	1,019	571	109	89	1,143	27	86	4,796	\$652,322.00
Percentages	0.00%	4.43%	8.59%	23.53%	21.24%	11.91%	2.26%	1.85%	23.83%	0.56%	1.79%	100%	



Final Design - Bridge over Tonto Creek
 Tonto Basin, AZ

ESTIMATED STAFF HOURS

TASK	Scale	No Shts	Proj Prtn	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Pln	Nepa Pln	Design.	Admin	Clerical	Total
			\$ 220.00	\$ 190.00	\$ 188.00	\$ 148.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00		
410 - Project Team Meetings														
Monthly Project Team Meetings														
Prepare for Meeting (1 hour per meeting)				9				9						27
Attend Meeting (1 hour per meeting)				9	9	9	5		9					45
Meeting minutes and distribution (1/2 hour per meeting)				5		5			5					19
Special Meetings (Agency/Stakeholder specific)													5	
Gila County PM Meetings														
Gila County BOS				40					30					70
FHWA				3										3
Tonto Forest - Forest Ranger & Headquarters				3			3		3					9
ADOT Local Government				3			3		3					9
Tonto Basin - General Public and/or Stakeholders				3				3						6
				3										3
Subtotal 410 - Project Team Meetings				78	9	20	5	9	62	5	-	-	5	191
420 - Survey & Right-of-Way														
Right-of-Way & Legal Descriptions														
Coordinate with surveyor				4		5		16						25
Subtotal 420 - Survey & Right-of-Way				4	5	-	-	16	-	-	-	-	-	25
430 - Utility Coord & Relocation														
Prior Rights Documentation														
Obtain/Review Prior Rights Documentation				2			4						1	7
Relocation Plans - AFS, TDS Telecom, Alltel/Verizon				3			12							15
Development of Relocation Concept, Field Meeting				2	4	9								16
Review/Approve Relocation Plans				1	2	4					8			16
Incorporate Utility Relocation Plans into KHA Plan Sheets														
Subsurface Exploration				1			2							3
Identify Pothole Locations				2			4							6
Incorporate Potholes into design/plans				3			8							11
Utility Clearance				1			2							3
Obtain Clearance from Impacted Utilities				1	2	4							2	11
Draft/Process Utility Clearance				3	6									9
Incorporate Utility Special Provisions				3	6									9
Assist in preparation of Utility Agreements				19	16		62				20			122
Subtotal 430 - Utility Coord & Relocation				19	16	-	62	-	-	-	20	-	5	122

ESTIMATED STAFF HOURS

TASK	Scale	No Shts	Proj Prin	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Pin	Nepa Pin	Design.	Admin	Clerical	Total
			\$ 220.00	\$ 190.00	\$ 185.00	\$ 145.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00		
Cline Blvd/FR 423 @ Oak Creek														
Plans														
Typical Sections		1			1	2	4							
Pavement Structural Sections					1	1								15
Earthwork table														3
Detail Sheets		1												4
Sidewalk/Turnout Plan & Profile Sheets (FR 424)	20	1			2	2	8							19
Geometric Layout Sheets (Include Geometric Summary Data)	100	1			2	2	8							19
Plan & Profile Sheets	50	2			2	2	8							19
Earthwork					1	1	6	12						32
Review/Refine modeling														
Cross Sections	10				2	2	8	9						19
Summary of Earthwork Quantities / Earthwork Report					2	2	4	6			10			22
Cost Estimates & Specifications					2	2	4	8						14
Quantities and Cost Estimate					2	2	4	8						26
Special Provisions					2	2	6							10
Subtotal 460 - Roadway Design		36		27	73	163	281	36			226			806
470 - Structural Design														
Tonto Creek Bridge														
Design														
Bridge Geometry					10	15	14							39
Deck Design					9									9
Interior Span						4	9							13
Overhang						6	9							15
Girder Design					10									24
Negative Moment Reinf						12	12							10
Positive Moment Connection						9	9							18
Bearing Pad Design					2	6	9							17
Deck Joint Design					2	2	6							10
Abutment Design					9									9
Abutment Stem Design						6	9							15
Abutment 1 Spread Footing Design						6	9							15
Abutment 2 Drilled Shaft Design						9	14							23
Wing Wall Design						9	14							12
Pier Design					12									23
Pier Cap Design						9	14							12
Frame Model and Analysis					9	14								23
Pier Column Design					18	21								39
Pier Drilled Shaft Design					9	18								27
Screed Elevations					14	21								35
Quantities					6	14								20
					4	21	21							46
Plan Sheets														
Location Plan and Typical Section		1												
General Plan and Elevation (1)	20	1				4					9			13
General Plan and Elevation (2)	20	1				4					9			13
General Plan and Elevation (3)	20	1				4					9			13
General Plan and Elevation (4)	20	1				4					9			13
General Notes and Quantities		1				4					9			13
Structure Excavation and Backfill Pay Limits		1				4					6			10
						4					12			16

ESTIMATED STAFF HOURS

TASK	No Shts	Scale	Proj Prln	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Prln	Nepa Prln	Design.	Admin	Clerical	Total
			\$ 220.00	\$ 190.00	\$ 188.00	\$ 148.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00	\$ 65.00	
Plan Sheets														
Location Plan and Typical Section	1					4					6			10
General Plan and Elevation	1					4					6			10
General Notes and Quantities	1					4					6			10
Structure Excavation and Backfill Pay Limits	1					2					6			8
Foundation Plan	1					4					9			13
Drilled Shaft Details	1					4					9			13
Abutment 1 Plan and Elevation	1					6					10			16
Abutment 2 Plan and Elevation	1					6					10			16
Abutment Details	1					8					10			18
Wingwall Details	1					8					10			18
Pier Plan and Elevation	1					4					9			13
Pier Details	1					8					10			18
Deck Plan and Typical Section	1					6					9			15
Framing Plan and Details	1					6					9			15
Girder Details	1					8					9			17
Prestrressing Details	1					8					9			15
Superstructure Details	1					8					10			18
Barrier Details	1					6					10			16
Misc. Details	1					6					10			16
Approach Slab Elevations	1					4					12			22
Yellow Set	1					4					6			10
QC						14					12			26
Cost Estimates & Specifications						12					9			21
Quantities and Cost Estimate						6					9			15
Special Provisions						12					12			27
Subtotal 470 - Structural Design	64					134					597			1,702
480 - Drainage Design														
Tonto Creek Bridge														
Design														
Abutment/Bank protection plans	4					2		32			8			57
Abutment/Bank protection details	2					2		27			8			49
Ditch/cross culvert design for west approach roads	4					2		21			9			42
Deck drainage	3					2		14			8			32
Pipe Summary sheet	1					2		10			4			20
Miscellaneous detail sheet (downdrains, riprap, etc.)	1					2		10			4			20
Drainage Report Updates														
Updates to analysis and report to reflect bridge design (60%)						4		32			4			61
Updates to analysis and report to reflect bridge design (95%)						2		18			4			36
Final submittal (100%)								4			4			8
Oak Creek Bridge														
Design														
Abutment/Bank protection plans	1					2		18			8			37
Abutment/Bank protection details	1					2		18			8			37
Drainage Report Updates														

ESTIMATED STAFF HOURS

TASK	No Shits	Scale	Proj Prln	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Pln	Nepa Pln	Design.	Admin	Clerical	Total
			\$ 220.00	\$ 190.00	\$ 188.00	\$ 148.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00		
Updates to analysis and report to reflect bridge design (60%)					2	9		18					4	33
Updates to analysis and report to reflect bridge design (95%)					2	4		10					4	20
Final submittal (100%)								4					4	8
Cost Estimates & Special Provisions														
Quantities and Cost Estimate					4	12		18			8			42
Special Provisions					4	12		18						34
Tonto Creek Floodplain Update														
Tonto Creek CLOMR														
Initial CLOMR and TDN submittal					2	12		24					4	42
Response to FEMA comments					2	9		18					4	33
Subtotal 480 - Drainage Design	17				36	162		314			65		32	611
490 - Traffic Design														
Traffic Control Plans														
Construction Phasing														
Coordination with Gila County					4			6						10
Develop Construction Phasing Concept					2			4						15
Construction Phasing Sheets		100			2	2		4			9			26
Traffic Control Plans														
Traffic Control General Notes					1			4						9
Traffic Control Quantities Table					1			4						9
Maintenance of Traffic					2			4						14
Advance Warning Sign Detail & Specialty Sign Formats					1			2						11
Traffic Control Details					4			4						31
Contract Time Duration Calculations								5						10
Marking and Signing Plans														
Pavement Marking and Signing General Notes					1			4						9
Pavement Marking and Signing Quantities Tables					1			4						9
Sign Summary Sheets					2			8						23
Sign Format Sheets					2			4						21
Pavement Marking and Signing Plans		40			4	8		12						42
Cost Estimates & Specifications														
Quantities and Cost Estimate					4			8						24
Special Provisions					1	2		4						7
Subtotal 490 - Traffic Design	25				30	16		74			73			270
500 - Visual/Landscape Architecture														
Visual														
Conduct Site Visit					8			12						20
Coordinate with Gila County					4			8						12
Coordination and meetings with TNF					20			20						40
Visual Detail Sheets - Rounding & Rustication					9	18		16			14			57

ESTIMATED STAFF HOURS

TASK	Scale	No Shts	Proj Prin	Proj Mgr	Sr Proj Eng	Proj Eng	Engr.	Analyst	Sr Nepa Pin	Nepa Pin	Design.	Admin	Clerical	Total
			\$ 220.00	\$ 190.00	\$ 189.00	\$ 148.00	\$ 130.00	\$ 98.00	\$ 165.00	\$ 115.00	\$ 125.00	\$ 95.00		
Landscape Architecture														
Proposed Seeding Plans	100	10				4	12				14			30
Existing and proposed layout plans	50	10			4	8	21				21			54
Existing and proposed planting details		3			2	6	12				14			34
Erosion Control														
SWPPP Standard Sheet		1			1	4	8				8			21
General Notes		1			1	2	4				4			11
Erosion Control Summary		1			1	4	12				8			25
Erosion Control Details		4			1	4	12				18			35
Erosion Control Plans	50	10			4	16	21				21			62
Staging Area														
Identify Staging Area					4	8	8							12
Incorporate Staging Area into PS&E					4	8	12							24
Cost Estimates & Specifications														
Quantities and Cost Estimate					4	5	8	12						24
Special Provisions					2	5	5							12
Subtotal 500 - Visual/Landscape Architecture		42			69	79	191	12			122			473
510 - Submittal & Reviews		200												
60% Submittal														
Compile & Address 30% Comments					4	8	10	12						34
Comment Resolution Meeting					4	4	8							16
Prepare Combined Estimate & Special Provisions					2	2	8							12
Prepare, Reproduce & Distribute 60% Submittal					1	1	2							6
95% Submittal														
Compile & Address 60% Comments					4	8	10	12						34
Comment Resolution Meeting					4	4	8							16
Prepare Combined Estimate & Special Provisions					1	1	4							6
Prepare, Reproduce & Distribute 95% Submittal					1	1	2							6
100% Submittal														
Compile & Address 95% Comments					2	4	6	6						13
Respond to Comments					4	4	8							18
Prepare Combined Estimate & Special Provisions					1	1	4							6
Prepare, Reproduce & Distribute 100% Submittal					1	1	4							6
Final Signed & Sealed PS&E														
Plot Final Plans on Vellum					2	2	4				10			18
Provide Final Special Provisions to ADOT C&S					1	1	4							5
Provide Final Cost Estimate to ADOT C&S					1	1	4							5
Subtotal 510 - Submittal & Reviews				23	30	38	66	30			10			224

