



BOARD OF SUPERVISORS AGENDA ITEM REPORT
CONTRACTS / AWARDS / GRANTS

☐ Award ☒ Contract ☐ Grant

Requested Board Meeting Date: 07/06/21

* = Mandatory, information must be provided

or Procurement Director Award ☐

***Contractor/Vendor Name/Grantor (DBA):**

Kimley-Horn and Associates, Inc.

***Project Title/Description:**

Engineering Design Services: Sunset Road: I-10 to River (4SRRIV)

***Purpose:**

Amendment: Contract No. CT-PW-21-331, Amendment No. One (1). This amendment modifies the scope of work to include all elements defined in the Design Concept Report (DCR) not included in the ADOT funded portion of the Santa Cruz to I-10 Interchange, adds Owner Contingency for Value Engineering and increases the contract amount by \$586,717.34 for a cumulative amount of \$3,126,380.49. Administering Department: Public Works.

***Procurement Method:**

Pursuant to the Emergency Procurement authority of A.R.S. § 34-606 and Pima County Procurement Code 11.12.060 as per the approval of the County Administrator on January 13, 2021, award for Requisition No. 21-071 on 03/16/21 in the amount of \$2,539,663.15 for a contract term of 03/16/21 to 03/15/24,

Attachments: Amendment No. One (1)

***Program Goals/Predicted Outcomes:**

The Project consists of roadway and bridge improvements to connect Sunset Road from the I-10 Westbound Frontage Road to River Road, a new Sunset Road overpass structure spanning the UPRR right-of-way, new bridge spanning Rillito Creek, signalized intersections at Sunset and River Roads, modifications to the soil cement bank protection of Rillito Creek, and improvements to Tres Nogales and River Roads.

***Public Benefit:**

This project will provide access to over 18,000 vehicles per day by 2045. It will provide access to the proposed Sunset Innovation Campus and alleviate congestion on adjacent interchanges providing the public with a more direct route of travel.

***Metrics Available to Measure Performance:**

The performance will be measured using the consultant evaluation process as outlined in BOS Policy D29.1(E).

***Retroactive:**

No.

TO: BOS 6-30-21 (2)
Vers.: 6
pgs.: 57

JUN 30 21 PM 02:43 PC CLK/GF-BD
me

Contract / Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____
 Commencement Date: _____ Termination Date: _____ Prior Contract Number (Synergen/CMS): _____
☐ Expense Amount: \$* _____ ☐ Revenue Amount: \$ _____

***Funding Source(s) required:**

Funding from General Fund? ☐ Yes ☒ No If Yes \$ _____ % _____

Contract is fully or partially funded with Federal Funds? ☐ Yes ☐ No

If Yes, is the Contract to a vendor or subrecipient?

Were insurance or indemnity clauses modified? ☐ Yes ☐ No

If Yes, attach Risk's approval.

Vendor is using a Social Security Number? ☐ Yes ☐ No

If Yes, attach the required form per Administrative Procedure 22-10.

Amendment / Revised Award Information

Document Type: CT Department Code: PW Contract Number (i.e., 15-123): 21-331
 Amendment No.: One (1) AMS Version No.: 6
 Commencement Date: 07/06/21 New Termination Date: _____
 Prior Contract No. (Synergen/CMS): _____
☒ Expense or ☐ Revenue ☒ Increase ☐ Decrease Amount This Amendment: \$ 586,717.34

Is there revenue included? ☐ Yes ☒ No If Yes \$ 0.00

***Funding Source(s) required:** Regional Transportation Authority (RTA) - (11%), Development Impact Fees - (42%) & County Highway User Revenue Fund (HURF) - (47%)

Funding from General Fund? ☐ Yes ☒ No If Yes \$ 0.00 % 0.00

Grant/Amendment Information (for grants acceptance and awards)

☐ Award ☐ Amendment

Document Type: _____ Department Code: _____ Grant Number (i.e., 15-123): _____
 Commencement Date: _____ Termination Date: _____ Amendment Number: _____
☐ Match Amount: \$ _____ ☐ Revenue Amount: \$ _____

***All Funding Source(s) required:**

*Match funding from General Fund? ☐ Yes ☐ No If Yes \$ _____ % _____

*Match funding from other sources? ☐ Yes ☐ No If Yes \$ _____ % _____

***Funding Source:**

***If Federal funds are received, is funding coming directly from the Federal government or passed through other organization(s)?**

Contact: Dawn Dargan Dawn Dargan

Digitally signed by Dawn Dargan
DN: cn=Dawn Dargan, o=Pima County, ou=Procurement,
email=dawn.dargan@pima.gov, c=US
Date: 2021.06.25 07:42:45 -0700

Scott Loomis

Digitally signed by Scott Loomis
Date: 2021.06.24 17:24:32 -0700

Department: Procurement Terri Spencer

Digitally signed by Terri Spencer
Date: 2021.06.25 10:12:33 -0700

Telephone: 724-9071

Department Director Signature/Date: _____

Nancy Cole, 6/25/21

Deputy County Administrator Signature/Date: _____

County Administrator Signature/Date: _____

(Required for Board Agenda/Addendum Items)

PIMA COUNTY PUBLIC WORKS DEPARTMENT

PROJECT: Sunset Road: I-10 to River Engineering Design Services (4SRRIV)

CONSULTANT: Kimley-Horn and Associates, Inc.
333 East Wetmore Road, Suite 280
Tucson, Arizona, 85705

CONTRACT NO.: CT-PW-21-331

AMENDMENT NO.: One (1)

FUNDING: Regional Transportation Authority (RTA) - (11%), Development Impact Fees - (42%) &
County Highway User Revenue Fund (HURF) - (47%)

CONTRACT TERM: 03/16/21 to 03/15/24	ORIGINAL CONTRACT AMOUNT:	\$	2,539,663.15
TERMINATION PRIOR AMENDMENT: 03/15/24	PRIOR AMENDMENT(S):	\$	-
TERMINATION THIS AMENDMENT: 03/15/24	AMOUNT THIS AMENDMENT:	\$	586,717.34
	REVISED CONTRACT AMOUNT:	\$	3,126,380.49

CONTRACT AMENDMENT

WHEREAS, COUNTY and CONSULTANT have entered into the Contract referenced above; and

WHEREAS, COUNTY has requested to add scope to include all elements defined in the Design Concept Report (DCR) not included in the ADOT funded portion of the Santa Cruz to I-10 Interchange; and

WHEREAS, COUNTY and CONSULTANT have agreed to increase the Contract amount to provide for these services; and

WHEREAS, CONSULTANT has agreed to provide these services at a cost acceptable to COUNTY; and

WHEREAS, COUNTY and CONSULTANT have agreed to amend the Contract to reflect these modifications.

NOW, THEREFORE, it is agreed as follows:

REMOVE: EXHIBIT "A" – SCOPE OF SERVICES, TASK C

CHANGE: ARTICLE 2 – SCOPE OF SERVICES, first paragraph as follows:

FROM: "CONSULTANT agrees to provide Architectural and Engineering Design Services for the COUNTY as described in EXHIBIT "A" - SCOPE OF SERVICES (24 pages), an attachment to this contract, and to complete such services within the term and value of this contract as it may be modified in accordance with Article 5. Amendments and changes to the Scope must be approved by the Board of Supervisors or the Procurement Director, as required by the Pima County Procurement Code, before the work under the amendment commences."

TO: "CONSULTANT agrees to provide Architectural and Engineering Design Services for the COUNTY as described in EXHIBIT "A" - SCOPE OF SERVICES (24 pages) and **EXHIBIT "A" – ATTACHMENT 1 (12 pages)**, an attachment to this contract, and to complete such services within the term and value of this contract as it may be modified in accordance with Article 5. Amendments and changes to the Scope must be approved by the Board of Supervisors or the Procurement Director, as required by the Pima County Procurement Code, before the work under the amendment commences."

CHANGE: **ARTICLE 4 – COMPENSATION AND PAYMENT** second paragraph, first sentence as follows:

FROM: “The total of all payments to CONSULTANT for services provided under this Contract will not exceed Two Million Five Hundred Thirty-Nine Thousand Six Hundred Sixty-Three Dollars and Fifteen Cents (\$2,539,663.15).”

TO: The total of all payments to CONSULTANT for services provided under this Contract will not exceed **Three Million One Hundred Twenty-Six Thousand Three Hundred Eighty Dollars and Forty-Nine Cents (\$3,126,380.49).**”

CHANGE: **ARTICLE 4 – COMPENSATION AND PAYMENT** third paragraph as follows:

FROM: “CONSULTANT’s total CPFF will be allocated among the major tasks contemplated by this Contract in such manner that each major deliverable will have associated with it a not-to-exceed cost, plus a fixed fee amount, incorporated herein as EXHIBIT “B” – COMPENSATION SCHEDULE (58 pages). CONSULTANT may invoice monthly for the actual costs incurred plus a pro-rata portion of the fee amount for each task. CONSULTANT will calculate actual costs based on actual hours spent, to which the agreed overhead rate may be applied, plus Other Direct Costs. Actual Costs may then be represented as percentage of the “not to exceed” cost amount associated with that task on the CONSULTANT’s invoice for billing purposes. Calculations and supporting data will be made available to COUNTY at any time, upon request. The cumulative payment for the actual costs of any task may not be more than the “not to exceed” cost amount associated with that task. Upon completion of the Scope of Work, (including acceptance by COUNTY of all associated deliverables), COUNTY will pay the balance of the fixed fee to CONSULTANT.”

TO: “CONSULTANT’s total CPFF will be allocated among the major tasks contemplated by this Contract in such manner that each major deliverable will have associated with it a not-to-exceed cost, plus a fixed fee amount, incorporated herein as EXHIBIT “B” – COMPENSATION SCHEDULE (58 pages) and **EXHIBIT “B” – ATTACHMENT 1 (30 pages)**. CONSULTANT may invoice monthly for the actual costs incurred plus a pro-rata portion of the fee amount for each task. CONSULTANT will calculate actual costs based on actual hours spent, to which the agreed overhead rate may be applied, plus Other Direct Costs. Actual Costs may then be represented as percentage of the “not to exceed” cost amount associated with that task on the CONSULTANT’s invoice for billing purposes. Calculations and supporting data will be made available to COUNTY at any time, upon request. The cumulative payment for the actual costs of any task may not be more than the “not to exceed” cost amount associated with that task. Upon completion of the Scope of Work, (including acceptance by COUNTY of all associated deliverables), COUNTY will pay the balance of the fixed fee to CONSULTANT.”

ATTACH: **EXHIBIT “A” – ATTACHMENT 1 (12 pages)**

EXHIBIT “B” – ATTACHMENT 1 (30 pages) to Contract.

(the remainder of this page intentionally left blank)

All other provisions of the Contract, not specifically changed by this Amendment, shall remain in effect and be binding upon the Parties.

IN WITNESS WHEREOF, the Parties have affixed their signatures to this Amendment on the dates written below.

APPROVED:

Chair, Board of Supervisors

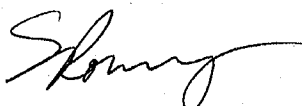
Date

ATTEST:

Clerk of the Board

Date

APPROVED AS TO FORM:



Deputy County Attorney

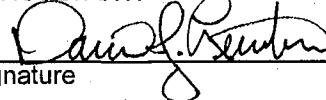
Stacey Roseberry

Name (Please Print)

6/25/2021

Date

CONSULTANT:



Signature

David J Leistiko / SR VP

Name and Title (Please Print)

2021-0625

Date

EXHIBIT "A" - ATTACHMENT 1 (12 pages)

During the term of this Agreement, the engineering consultant ***Kimley-Horn and Associates, Inc.***, (CONSULTANT) shall perform professional services for Pima County (County) in connection with the Sunset Road: I-10 to River Road (4SRRIV) project. This scoping document shall be used to plan, conduct, and complete the CONSULTANT's work on the project.

I. BACKGROUND

The Regional Transportation Authority's (RTA) 20-year multimodal plan that was approved by voters in 2006 included roadway improvements for Sunset Road from Silverbell Road to River Road. The improvements have been divided into two phases: Sunset Road; Silverbell Road to I-10 (Phase 1) and Sunset Road: I-10 to River Road (Phase 2). Construction of the Sunset Road; Silverbell Road to I-10 (Phase 1) project was completed in 2017.

ADOT completed a DCR and EA (FONSI) in 2013 for improvements on I-10 from Ina Road to Ruthrauff Road which included future plans for modifying the I-10 Sunset Road Traffic Interchange to have Sunset Road go over I-10. The DCR and EA (FONSI) did not include improvements on Sunset Road for the westerly approach to the Sunset Traffic Interchange nor for the connection from the I-10 Westbound Frontage Road to River Road.

From mid-2019 through the end of 2020, PCDOT completed a DCR and EA for the improvements on Sunset Road (outside of ADOT R/W) that was called the Sunset Road: I-10 to River Road project. The project included improvements on Sunset Road for the westerly approach to the proposed I-10 Sunset Traffic Interchange and the connection from the I-10 Westbound Frontage Road to River Road.

ADOT's current 5-year Construction Program (FY 2021-2025) shows a widening project on I-10 from Ina Road to Ruthrauff Road (TRACS No. H7583). ADOT has executed a design services contract for the I-10 Widening project from Ina Road to Ruthrauff Road with the design firm of ***Kimley-Horn and Associates, Inc.***

Kimley-Horn and Associates, Inc. is also responsible for designing the Sunset Road: I-10 to River Road project concurrently with designing ADOT's I-10 Widening project from Ina Road to Ruthrauff Road for purposes of efficiency, accuracy, and cost.

Kimley-Horn and Associates, Inc. will also be responsible for designing the Sunset Road: Santa Cruz River Bridge (west of I-10) to I-10 project concurrently with designing ADOT's I-10 Widening project from Ina Road to Ruthrauff Road for purposes of efficiency, accuracy, and cost.

It is anticipated that the I-10 Widening project from Ina Road to Ruthrauff Road and the Sunset Road I-10 to River Road project, as well as the Sunset Road: Santa Cruz River to I-10 project will all three be combined and bid and constructed at the same time for reasons of simplicity and efficiency of scale. Each project will have a separate contract. ADOT anticipates using a Design-Bid-Build delivery method for delivery in late fiscal year 2022.

An Intergovernmental Agreement (IGA) between ADOT and Pima County will be required for the construction phase of the project.

II. PROJECT DESCRIPTION

The overall project consists of roadway and bridge improvements to connect Sunset Road from the Santa Cruz River Bridge to I-10 EB Frontage Road hereinafter called the Sunset Rd: Santa Cruz River to I-10 project.

In general, the proposed improvements consist of the following:

- Connection to the future I-10 Sunset Road Traffic Interchange (per PCDOT Sunset Road: I-10 to River Road DCR).

- Sunset Road approach roadway south of the future I-10 Sunset Road Traffic Interchange including modifications to The Chuck Huckleberry Loop (The Loop).
- Accommodations for a traffic signal at the entrance to the Sunset Innovation Campus development south of I-10 and east of Sunset Road
- Street lighting.

III. DESIGN CRITERIA

The final design of this project shall proceed in general conformance with the current edition of the Pima County Roadway Design Manual (RDM), and other applicable design criteria as listed herein.

A Policy on Geometric Design of Highways and Streets (AASHTO), dated 2018, shall be used for roadway design elements that are not included in the RDM within PCDOT's jurisdiction.

Roadway located within ADOT's jurisdiction shall be designed per the current edition of the ADOT Roadway Design Guidelines (RDG).

Street lighting shall be designed per the Pima County Department of Transportation Street Lighting and ITS Conduit Manual, current edition, using the average maintained horizontal illumination shown in PAG Standard Detail T 324 for Lighting Design Criteria for an Urban Intermediate Collector with an appropriate Uniformity Ratio.

V. PROJECT SCHEDULE

The final design effort is estimated to take 9 months which includes support during the bidding phase prior to construction of the project. Post design services are estimated to occur over the final 21 months of the construction contract. The total duration of this agreement is estimated to be 30 months.

VI. ITEMS AND SERVICES TO BE FURNISHED BY THE COUNTY

The County will provide the CONSULTANT with documents and data files from the DCR and EA Phase of the project. The follow documents and files will be provided:

1. Final DCR - Sunset Road: I-10 to River Road (September 2020)
2. Preliminary Bridge Selection Report – Sunset Road over Rillito Creek (August 2020)
3. Preliminary Bridge Selection Report – Sunset Road over UPRR (September 2020)
4. Drainage Design Overview (August 2020)
5. Initial Geotechnical Report (September 2020)
6. Initial Pavement Design Report (August 2020)
7. Initial Arterial Street Lighting Report (August 2020)
8. Final Traffic Report (August 2020)
9. Initial Utility Report (September 2020)
10. Environmental Assessment (December 2020)
11. Biological Evaluation (October 2020)
12. Preliminary Initial Site Assessment (May 2020)
13. Noise Analysis Technical Report (December 2020)
14. CADD files in MicroStation format
15. Riverine models for Rillito Creek
16. Flow-2D model between the UPRR and Rillito Creek
17. Utility base files

The County will provide the follow services:

1. Right-of-way acquisition and supporting services including developing R/W plans, appraisals, and relocations.

VII. ABBREVIATIONS

The following abbreviations may be referred to throughout this scope of work:

AASHTO	American Association of State Highway and Transportation Officials
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
Corps	U.S. Army Corps of Engineers
County	Pima County
DCR	Design Concept Report
EAMR	Environmental Assessment and Mitigation Report
EA	Environmental Assessment
EPG	Environmental Planning Group
ESR	Environmentally Sensitive Roadway
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	Geographic Information System
LOS	Level of service
Manual	2013 Pima County Department of Transportation Roadway Design Manual
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PAG	Pima Association of Governments
PCDOT	Pima County Department of Transportation
PCOCRHP	Pima County Office of Cultural Resources and Historic Preservation
PCRFC	Pima County Regional Flood Control District
PCRWRD	Pima County Regional Wastewater Reclamation Department
PLSS	Public Land Survey System
PS&E	Plans, specifications, and estimates
RDM	Roadway Design Manual
ROE	Right of Entry
SOQ	Pima County Solicitation
R/W	Right-of-way
TDM	Transportation Demand Management
USFWS	U.S. Fish and Wildlife Service

VIII. PROJECT DOCUMENTATION

The documents listed as "**Deliverables**" in the Work Tasks, Section IX of this scope of work, and other exhibits or presentations for the work covered by this AGREEMENT and associated supplements, if necessary, will be furnished by the CONSULTANT to the County upon completion of the various tasks of work. Whether the documents are submitted in electronic media or in tangible format, any use of the materials on another project or on extensions of this project beyond the use for which they were intended, or any modification of the materials or conversion of the materials to an alternate system or format will be without liability or legal exposure to the CONSULTANT. The County will assume all risks associated with such use, modifications, or conversions. If the County uses materials other than how they were intended, then the CONSULTANT may remove from the electronic materials delivered to the County, all references to the CONSULTANT's involvement and will retain a tangible copy of the materials delivered to the County, which will govern the interpretation of the materials and the information recorded. Electronic files are considered working files only; the CONSULTANT is not required to maintain electronic files beyond 90 days after the project final billing and makes no warranty as to the viability of electronic files beyond 90 days from date of transmittal.

IX. WORK TASKS

TASK C – DESIGN SERVICES

General Requirements:

1. The CONSULTANT is responsible for meeting deadlines established in the project schedule for their and their subconsultants' tasks.
2. Design plans shall be developed using MicroStation, current version acceptable to ADOT.
3. The plans shall be drafted in accordance with ADOT drafting practices and standards as identified on the ADOT website (<https://azdot.gov/business/engineering-and-construction/cadd>) for the Sunset Road: I-10 to River Road project.
4. The Design Criteria used for the project shall be per Section III of the Scope of Services.
5. It is anticipated that the design work for the Sunset Road: I-10 to River Road project will progress concurrently with the ADOT I-10 Widening Project from Ina Road to Ruthrauff Road. The CONSULTANT shall coordinate the design of both projects to the satisfaction of PCDOT and ADOT in an efficient, accurate and concise manner.
6. Design submittals (Stages III through IV and the Final submittal) shall be coordinated to coincide with ADOT's delivery schedule. It is anticipated that all three projects will be combined for ADOT to advertise at the same time.
7. All submittals to the County and ADOT shall include be in electronic pdf format. In addition, two 11"x17" hard copies will be submitted to the County.
8. The level of effort for each phase and work task is limited to the amount of labor and expenses identified in a Project Budget spreadsheet (Fee Calculation). Costs are itemized to aid in project tracking purposes only. The budget may be transferred between tasks, provided the total contracted amount is not exceeded. Additional services beyond these limits will be considered Extra Work.

TASK C.1 PROJECT MANAGEMENT AND QUALITY CONTROL

Task C.1.1. Project Management. The anticipated management activities are as follows:

- a. Coordinate with all stakeholders..
- b. Ensure that project team members are communicating and cooperating on project tasks.

Deliverables:

- Responses to all review comments.

Task C.1.2. Quality Control Plan. KH will use the previously developed quality control plan that identifies responsible personnel, technical review, checking procedures, and monitoring process which was submitted with the Sunset Road: I-10 to River Road project. Each major submittal shall include verification of the quality control completed on said submittal.

Deliverables:

- Responses to all review comments.

Task C.1.3. Meetings and Communication. CONSULTANT will be responsible for coordinating meeting times, inviting meeting participants, creating an agenda, preparing graphics and handouts, facilitating meetings, and providing meeting summaries. The design team meetings and activities will be included with the Sunset Road: I-10 to River Road project:

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Responses to all review comments.

Task C.1.4. Coordinate Between Participating Agencies. The CONSULTANT will coordinate with involved agencies to include but not be limited to; ADOT, City of Tucson and US Army Corps of Engineers.

Task C.1.5. Schedule. The schedule for Task C will be incorporated into the current Task A project.

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Responses to all review comments.

Task C.1.6. Cost Estimating. CONSULTANT shall develop a Base Estimate that identifies the major components of project scope and their cost, defines all components of scope, and describes all scope and cost assumptions within 15 days of notice to proceed. CONSULTANT will update the Cost by reviewing, updating, and documenting assumptions and costs for each item, and including contingency information in the report during major plan submittals.

Deliverables:

- Base Estimate - Incorporate risk analysis and contingency information into the estimate, identifying all assumptions.
- Estimates for 60%, 95% and Final PS&E submittals. Incorporate risk analysis and contingency information into the estimate. Identify all assumptions.
- Estimates shall identify any items of work that are located within ADOT R/W. The CONSULTANT shall provide a listing of all items of work and an estimate of their associated costs to ADOT.

TASK C.2 TASK NOT USED

TASK C.3 PUBLIC PARTICIPATION (COVERED IN TASK A SCOPE)

TASK C.4 PUBLIC ART (COVERED IN TASK A SCOPE)

TASK C.5 UTILITY COORDINATION

Task C.5.1. Data Gathering, Utility Designation, Letter of Acceptance. The Consultant shall review the Initial Utility Report and utility base files that were prepared for the Sunset Rd: I-10 to River Rd DCR. The CONSULTANT shall verify that utility base maps and prior rights documentation are complete for each utility. For consistency, a utility coordinator will be designated to be the main point of contact for all utility coordination work.

The CONSULTANT and County will establish a Utility Relocation Date whereby utilities will be required to clear the project of utility impacts identified in *Task C.5.2 Design Coordination, Utility Impact Identification*. All formal utility correspondence is to be reviewed and approved by the County and ADOT prior to distribution. The CONSULTANT will initiate and conduct meetings as needed with any utilities present in the corridor. Prior to the completion of *Task C.7.8 Existing Conditions Surveys*, the CONSULTANT will request each utility to mark its facilities, providing the approximate horizontal position on the ground surface, being accurate to within six inches, and provide electronic files of certified horizontal survey data associated with these ground surface markings and also their above grade facilities, including service connections, all of which being tied to an accepted County control and datum. CONSULTANT shall draft onto an Existing Utilities Mapping Package (50 scale) the certified horizontal survey data surveyed by CONSULTANT and as horizontally designated by CONSULTANT (if necessary) and provide the COUNTY and ADOT with a Letter of Acceptance from each utility indicating that the representation of the utility's facilities on the Existing Utilities Mapping Package is accurate. All utilities will be designated, located, and mapped according to ASCE Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02). The CONSULTANT will conduct a field review of utility information shown on the Existing Utilities Mapping Package for consistency with utility base maps and utility field survey data.

Task C.5.2. Design Coordination, Utility Impact Identification. The CONSULTANT will monitor the project's design for utility impacts, distribute progress design drawings to utilities for review and identification of utility impacts; and maintain a List of Utility Impacts, said list being available to the County and ADOT upon request. The CONSULTANT will update the County and ADOT as necessary on the status of utility activities and notify the County and ADOT (as appropriate) immediately of any utility unable to meet the Utility Relocation Date. Initial and Final Design Phase Plans will be provided to all utilities for their review and comments.

Task C.5.3. Utility Impact Mitigation. The CONSULTANT will initiate, coordinate and facilitate utility

impact meetings with County, ADOT (as appropriate), utility and appropriate team members to develop mitigation measures acceptable to the County and ADOT (as required) that will clear the project of utility impacts by the Utility Relocation Date. Potholing may be necessary for conflict identification and relocation design. The CONSULTANT shall prepare a utility conflict map and identify where potholing is needed. If relocation is to be done by as part of the project, the CONSULTANT shall prepare plans, specifications and estimates for the relocation work. Utility agreements will be prepared by the CONSULTANT, as needed. The CONSULTANT will update utilities as to the status of all utility impacts by the Utility Relocation Date. The CONSULTANT will compile a List of Utility Impacts and Approved Mitigation Measures.

Task C.5.4. Quality Control Review. The CONSULTANT will provide quality control reviews of the deliverables listed below.

Deliverables:

- Utility Relocation Date
- Plans for distribution to utilities
- Letters of Acceptance
- Design plans showing updated mapping of utility information, including potholing information.
- List of utility impacts and mitigation measures.
- Pothole Location Map
- Utility relocation plans, specification and estimates and agreements (as needed).
- Responses to all review comments.
- Utility Clearance Letter for the Sunset Rd I-10 to River Rd project.

Assumptions:

- Tucson Water and Pima County Regional Wastewater Reclamation District (PCRWRD) facilities are not anticipated to be impacted; therefore, no utility relocation plans for Tucson Water and PCRWRD are included in this Scope of Work.
- Psomas will rely on the utility designation mapping provided by others in a MicroStation base file for the completion of the utility existing conditions and adjustment plans.
- Psomas will provide Utility Existing Condition Plans, Adjustment Plans, Details, Quantities and Special Provisions.
 - Utility Details are limited to utility modifications related to adjustment of surface features and protection of existing facilities (utility protection slabs, etc.).
 - Utility plans will indicate utilities to remain in place, to be removed by the contractor, to be adjusted to grade, to be removed by others, to be relocated by others and abandoned in place as applicable. The relocation information will be provided based upon the utilities input during the design phase.

TASK C.6 TASK NOT USED

TASK C.7 SURVEY AND MAPPING

Task C.7.1. Existing Survey and Mapping. The COUNTY will provide existing surveys and aerial mapping including horizontal and vertical controls previously obtained for the project. The CONSULTANT shall review existing surveys and aerial mapping as described in Task C.7.6.

Task C.7.2 and C.7.3. Horizontal and Vertical Control. The CONSULTANT will use the existing horizontal and vertical control established for the project for any additional surveys that are required.

Task C.7.4. Results of Survey Drawing. The CONSULTANT will incorporate a final Results of Survey Drawing showing existing section lines, right-of-way, ownership, and existing features into the plans for the project. Property lines will be included on the Results of Survey provided by the COUNTY. If necessary, for temporary construction easements or slope easements, the CONSULTANT will perform survey(s) and prepare legal descriptions limited to the budget included in the Fee Calculation. The CONSULTANT will review up to seven (7) title reports. Title reports will be provided by the County.

Task C.7.5. Survey Report. A Survey Report is not required for this project.

Task C.7.6. Aerial Mapping. The COUNTY will provide photogrammetric mapping in MicroStation format, including a digital terrain model for the Sunset Rd: I-10 to River Road project. Aerial ground control used to develop said photogrammetric mapping will be provided by the COUNTY and will be checked by the CONSULTANT for compatibility with ADOT supplied topography for the I-10 Widening project from Ina Road to Ruthrauff Road. The CONSULTANT will perform cross sections at 100-ft intervals along the existing roadway centerline and edges of pavement, and at critical drainage elements (v-ditches, culvert depressions, drainage break-lines, and all other drainage features) to enhance the aerial ground DTM so that it meets or exceeds 0.1 foot accuracy or as noted in Section 3-10 of the Roadway Design Manual. The County will request the aerial mapping from ADOT collected as part of the I-10 Widening project from Ina Road to Ruthrauff Road. The CONSULTANT will provide cross-sectioning and field verification of this area. Discrepancies, if found, will be revised by the COUNTY.

Task C.7.7. Utility Surveys. The CONSULTANT will locate surface utilities and underground utilities as identified and marked by others for the length of the project. Blue Staking and other utility features will be located during the culture survey. Coordination for underground utilities markings will be by the CONSULTANT. Notify County of any utility non-responsive to a marking request.

Task C.7.8. Culture Surveys. The CONSULTANT will locate fences, mailboxes, culverts and manhole inverts, drainage features, match-in locations and any other feature that was not included in the survey and mapping files provided by the COUNTY. The work will also include the CONSULTANT converting field results into MicroStation format.

Task C.7.9. Right-of-way of Surveys. The COUNTY will provide previous right-of-way surveys for the project. The CONSULTANT will include the final right-of-way lines in the plans. The CONSULTANT shall verify monumentation of property corners (performed by others in a separate contract) and centerlines after construction of the project.

Task C.7.10. Roadway Design Manual Survey Efforts. The CONSULTANT will complete other survey related tasks as generally identified and provided within the Design Manual.

Task C.7.11 Legal Descriptions & Reference Maps. To be provided by others by separate contract.

Task C.7.12. Quality Control Review. County Survey and the CONSULTANT will provide quality control reviews of the Survey and Mapping deliverables listed below.

Task C.7.13 Boring Locations. The CONSULTANT will stake up to two (2) boring hole locations within one (1) individual site trip as provided by geotechnical investigation and provide existing ground elevations at said locations.

Deliverables:

- CONSULTANT has provided sixteen (16) crew hours and sixteen (16) office hours of miscellaneous survey time for additional survey requests as required by the project.
- Verification of Survey Centerline and Property Corner Monumentation
- Responses to all review comments.

TASK C.8 DRAINAGE

Task C.8.1. Review Existing Plans and Reports. The CONSULTANT will review Sunset DCR, ADOT, and previous west Sunset available plans and reports.

Task C.8.2. Hydrologic and Hydraulic Modeling. The CONSULTANT will utilize information from the plan and reports outlined in Task C.8.1 to define locally generated offsite runoff impacting the project. The CONSULTANT will complete hydraulic analysis/design to modify the existing drainage infrastructure necessary to accommodate the roadway improvements. Hydrologic and hydraulic analysis and design will follow PCDOT and PCRFC standards.

The CONSULTANT will complete onsite pavement drainage calculations per PCDOT requirements to evaluate spread and determine pavement drainage improvements necessary for the project.

Task C.8.3. Drainage Reports. The CONSULTANT will summarize the results of the onsite and offsite drainage analysis/design and combine the information in the Drainage Report submittals for east Sunset Road (I-10 to River).

Task C.8.4. Quality Control Review. The CONSULTANT will provide quality control reviews of the drainage report for each submittal.

Deliverables specific to west Sunset: (combined with Sunset Road: I-10 to River Road project)

- Final Design Phase Drainage Report.
- Final PS&E Phase Drainage Report.
- Responses to all review comments.

TASK C.9 GEOTECHNICAL

Task C.9.1. Geotechnical Testing and Analysis and Report. The CONSULTANT will review the Initial Geotechnical Report prepared during the DCR phase. The CONSULTANT will provide geotechnical testing, analysis, and report per Section 3.12 of the Design Manual and the Preliminary Engineering & Design (PE&D) manual of the ADOT Material Group. The geotechnical effort will correspond to 100% of the final design effort and will include investigations not included in the Initial Geotechnical Report needed for final designs.

See attached scope from Golder Associates, Inc. for detailed description of proposed work.

The CONSULTANT will provide appropriate laboratory testing for representative soil samples. Recommendations will be developed based on applicable PCDOT, Maricopa (MCDOT), and ADOT standards. The results of all investigations, as well as recommendations will be provided in one consolidated geotechnical report.

Note: Prior to performing any fieldwork, Consultant will obtain applicable permits for the area being tested, contact Arizona Bluestake for underground utility location(s), and provide traffic control according to the permit while working. Environmental clearance is required prior to any ground disturbing activity

Task C.9.2. Quality Control Review. The CONSULTANT will provide a quality control review on the Geotechnical Report.

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Final Geotechnical Report
- Responses to all review comments.

TASK C.10 PAVEMENT DESIGN

Task C.10.1. Pavement Design Report. The CONSULTANT will review the Initial Pavement Design Report prepared during the DCR phase and prepare a Final Pavement Design Report and incorporate the appropriate structural section recommendations from the report into the project documents. The Final Pavement Design Report will be prepared by Golder Associates, Inc..

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Final Pavement Design
- Responses to all review comments

TASK C.11 TASK NOT USED

TASK C.12 TRAFFIC ENGINEERING

Task C.12.1. Final Traffic Engineering Report. The CONSULTANT will review the Final Traffic Report prepared during the DCR phase of the project. The CONSULTANT will verify proper lane configurations and storage lengths are provided in the final plans.

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Incorporate lane configurations and storage lengths into the final design documents
- Responses to all review comments.

TASK C.13 ARTERIAL STREET LIGHTING

Task C.13.1 Final Arterial Lighting Design Report. The CONSULTANT will review the Initial Aerial Lighting Report prepared during the DCR phase of the project.

Street lighting shall be designed per the Pima County Department of Transportation Street Lighting and ITS Conduit Manual, current edition, using the average maintained horizontal illumination shown in PAG Standard Detail T 324 for Lighting Design Criteria for an Urban Intermediate Collector with an appropriate Uniformity Ratio.

Deliverables: (combined with Sunset Road: I-10 to River Road project)

- Final Lighting Design Report
- Responses to all review comments

TASK C.14 DESIGN MEMORANDUM (NOT INCLUDED)

TASK C.15 ENVIRONMENTAL REPORTS

Task C.15.1. Environmental Assessment. The CONSULTANT will review the Environmental Assessment prepared during the DCR & EA phase of the project.

Task C.15.2. Cultural Resources Inventory and Report. The CONSULTANT will review the Cultural Resources Inventory Report prepared during the DCR & EA phase of the project.

Task C.15.3. Biological Evaluation. The CONSULTANT will review the Biological Evaluation prepared during the DCR & EA phase of the project.

Task C.15.4. Vegetation Sampling/Measurement. The CONSULTANT will review the ESR Protected Native Plant Inventory plans and documents provided in the DCR & EA phase of the project. This scope includes updating the inventory as needed to reflect current site conditions as well as providing additional revegetation sampling to determine an appropriate seed mix for the project.

Task C.15.6. Hazardous Materials Survey. The CONSULTANT shall review the Preliminary Initial Site Assessment (PISA) prepared during the DCR & EA phase of the project. The CONSULTANT shall prepare a PISA Update to the PISA dated May 2020. The PISA Update shall comply with ASTM E-1528-06 (Standard Practice for Limited Environmental Due Diligence).

Task C.15.7. Air Quality. The CONSULTANT will review correspondence from ADOT Air and Noise Program Manager. An Air Quality Report is not anticipated for the project.

Task C.15.8. Noise Analysis. The CONSULTANT will review the Noise Report prepared during the DCR & EA phase of the project.

Task C.15.9. Visual Assessment. The CONSULTANT will review the Visual Assessment Report prepared during the DCR & EA phase of the project.

Task C.15.10. Quality Control Review of Reports. The CONSULTANT will provide a quality control review of the PISA Update.

Deliverables:

- PISA Update
- Updated ESR Protected Native Plant Inventory plan sheets and documentation
- Responses to all review comments

TASK C.16 RIGHT-OF-WAY ACQUISITION SUPPORT (NOT INCLUDED)

TASK C.17 PREPARATION OF CONSTRUCTION DOCUMENTS

Construction Documents, including plans, specifications, and estimates, will be prepared following ADOT submittal requirements. The intent is to have the documents match the ADOT I-10 Ina Road to Ruthrauff Rd (the "Gap") project. Note that all estimates are included in Task C.16.

Task C.17.1. Stage II 30% P&E. A Stage II/30% design and submittal are not included in the scope of work.

Task C.17.2. Stage III 60% PS&E. The CONSULTANT will develop 60% level PS&E per the ADOT Stage Submittal checklist (<https://azdot.gov/sites/default/files/media/2020/01/Stage-III-Submittal-Checklist.docx>), including revisions from 15% level plans from the DCR phase, including SWPPP, landscape/mitigation plans and irrigation plans.

Task C.17.3. Stage IV 95% PS&E. The CONSULTANT will develop 95% level PS&E per the ADOT Stage Submittal checklist (<https://azdot.gov/sites/default/files/media/2020/01/Stage-IV-Submittal-Checklist.docx>), including revisions from 60% PS&E.

Task C.17.4. Stage IV_R1 95% PS&E. The CONSULTANT will update the 95% PS&E following review comments and will resubmit a Stage IV_R1 package to the project team members that commented on the Stage IV submittal for confirmation that the items were adequately addressed.

Task C.17.5. Final PS&E. The CONSULTANT will develop Final PS&E per the ADOT Stage Submittal checklist (<https://azdot.gov/sites/default/files/media/2020/01/Stage-V-Submittal-Checklist.docx>), including revisions from 100% PS&E.

Task C.17.6. Quality Control Review of Plans. The CONSULTANT will provide a quality control review of each submittal.

Deliverables:

- Stage III 60% PS&E per the ADOT Stage Submittal checklist, including cost estimate and quantity takeoff calculations
- Stage IV 95% PS&E per the ADOT Stage Submittal checklist, including cost estimate and quantity take-off calculations
- Stage IV_R1 95% PS&E per the ADOT Stage Submittal checklist, including cost estimates, special provisions, and quantity take-off calculations
- Final PS&E per the ADOT Stage Submittal checklist, including cost estimates, special provisions, and quantity take-off calculations
- Responses to all review comments

Assumptions:

- Up to one (1) sign structure elevation sheet is included in this scope of services
- Project area is over 1 acre, requiring a Stormwater Pollution Prevention Plan (SWPPP).
- Formal earthwork report will be prepared with the Stage III, Stage IV and Final PS&E submittals.
- Reproduction services include two (2) copies of the Stage III PS&E Plans, two (2) copies of the Stage IV PS&E Plans, two (2) copies of the Stage IV_R1 PS&E Plans, two (2) copies of the Final PS&E Plans.

TASK D – POST DESIGN SERVICES

Task D is as-needed services for which the cost and fee shall be determined at the time work is defined. No work shall commence under Task D without prior written authorization from the County.

PER CONVERSATION WITH COUNTY DETAILED FOR THE SCOPE AND FEE WILL BE PREPARED AFTER FINAL DESIGN AND PRIOR TO CONSTRUCTION

TASK D.1 PRE-BID SERVICES

Task D.1.1 Pre-Bid Services. PCDOT will coordinate all Pre-Bid Services and will act as the principal initial contact for pre-bid questions. However, the following additional efforts may be required by the CONSULTANT.

- Attending pre-bid meetings
- Assisting in the preparation of amendments
- Addressing questions on the plans and specifications
- Bid evaluations

TASK D.2 CONSTRUCTION SERVICES

Task D.2.1. Construction Services. PCDOT will coordinate all Construction Services and will act as the principal initial contact for construction questions. However, the following additional efforts may be required by the CONSULTANT.

- Attending the pre-construction meeting and partnering meetings if any
- Attending weekly construction meetings at the project site
- Making site observations of the work under construction
- Evaluating and/or recommending changes in the construction documents
- Providing design details and revised drawings as needed to support construction
- Reviewing shop drawings, erection procedure plans, form work details, and proposals for substitutions or "approved alternates"
- Evaluating value engineering proposals
- Preparing the "record drawing" documents
- Performing drone flights during construction to video document construction progress (pre-construction, approximately quarterly during construction, and at completion)

TASK D.3 POST CONSTRUCTION SERVICES

Task D.3.1 Post Construction Electronic Record Drawings. The CONSULTANT will provide the County drafting services to incorporate the Contractors redlined record documents into an electronic record drawing in accordance with the requirements of PCDOT Network Management Systems Division.

(Remainder of page intentionally left blank)

TASK E – OWNER CONTINGENCY (AS NEEDED SERVICES)

Task E is an owner contingency for as-needed services for which the cost and fee shall be determined at the time work is defined. No work shall commence under Task E without prior written authorization from the County.

(Remainder of page intentionally left blank)

End of Exhibit "A" - ATTACHMENT 1

EXHIBIT "B" - ATTACHMENT 1 (30 pages)

Sunset Road: Santa Cruz River to I-10 WBFR (4SRRIV)

Fee Calculation - Task C: WEST TIE IN DESIGN SERVICES

Kimley-Horn and Associates, Inc.

June 24, 2021

Direct Labor

<u>Classification</u>	<u>Total Hours</u>	<u>Hourly Rate</u>	<u>Labor Cost</u>
Sr. Professional	61	\$80.46	\$ 4,908.30
Project Manager	218	\$79.60	\$ 17,352.80
QC Manager	148	\$69.01	\$ 10,213.48
Sr. Environmental Professional/ Registered Landscape Architect	95	\$64.27	\$ 6,105.18
Engineer / Professional	518	\$58.14	\$ 30,116.52
Analyst/Sr. Designer	669	\$45.51	\$ 30,448.87
CADD / Designer	476	\$35.76	\$ 17,019.38
Admin Support I	19	\$47.24	\$ 897.56
Admin Support II	15	\$25.37	\$ 380.55
	2,219	Total Labor Cost:	\$ 117,442.64

Overhead

Overhead (Audited Overhead Rate)	194.64%	\$ 228,590.34
FCCM	0.61%	\$ 716.40
	Subtotal	\$ 346,749.38

Direct Expenses

<u>Type</u>	<u>Amount</u>	<u>Unit Costs</u>	<u>Cost</u>
Construction Plans and Cross Sections (11"x17")	8	\$9.91	\$ 79.28
Roll Plots	1	\$39.13	\$ 39.13
Total Estimated Direct Expenses:			\$ 118.41

Outside Services, Allowances, and Consultants

	<u>Subconsultant</u>	<u>Service</u>	<u>Cost</u>
Task C	Golder	Geotechnical	\$ 18,981.00
Task C	Psomas	Project Survey	\$ 36,265.25
Total of Subconsultants			\$ 55,246.25

10% - Fixed Fee (Direct labor + Overhead x Multiplier) \$ 34,603.30

Total Task C Fee: \$ 436,717.34

Task E (Owner Contingency) Fee: \$ 150,000.00

Total Fee: \$ 586,717.34

Sunset Road: Santa Cruz River to I-10 WBFR (4SRRIV)

Derivation of Hours

Task No.	Description	# Sheets	KH Budget	KH Hours	Project Manager	Sr. Professional	QC Manager	Sr. Environmental Professional/Registered Landscape Architect	Engineer / Professional	Analyst/Sr. Designer	CADD / Designer	Admin Support I	Admin Support II	Direct / Sub Costs	Goldier	T2 Utility Engineers	Psomas	Total Cost (with KH Directs)
	TASK C - DESIGN SERVICES																	
	TASK C.1 - PROJECT MANAGEMENT AND QUALITY CONTROL		\$ 33,596.48	177	33	9	12	0	49	52	0	18	4	\$ -	\$ -	\$ -	\$ -	\$ 33,596.48
C.1.1	Project Management (Coord with stakeholders/team comm/prof contact list/record keeping)		\$ -														\$ -	\$ -
	a. Coordinate with project stakeholders		\$ 2,118.56	12	4	0	0	0	4	0	0	0	4					\$ 2,118.56
	b. Project team communication/coordination		\$ 1,789.04	8	4	0	0	0	4	0	0	0	0					\$ 1,789.04
C.1.2	Quality Control Plan (QC Plan/Submittal QC verification/response to comments)		\$ 2,689.02	12	0	0	12	0	0	0	0	0	0					\$ 2,689.02
C.1.3	Meetings and Communication (COVERED IN TASK A FEE)		\$ -	0	0	0	0	0	0	0	0	0	0				\$ -	\$ -
C.1.4	Coordination Between Participating Agencies (COVERED IN TASK A FEE)		\$ -	0	0	0	0	0	0	0	0	0	0					\$ -
C.1.5	Schedule (initial/monthly updates/response to comments) (COVERED IN TASK A FEE)		\$ -	0	0	0	0	0	0	0	0	0	0					\$ -
	Monthly invoicing		\$ 5,087.36	27	9	0	0	0	0	0	0	18	0					\$ 5,087.36
C.1.6	Cost Estimating (base estimate)		\$ 5,101.52	27	4	3	0	0	8	12	0	0	0					\$ 5,101.52
	Stage III 60% Cost Estimate		\$ 6,859.71	38	4	2	0	0	14	18	0	0	0					\$ 6,859.71
	Stage IV 95% Cost Estimate		\$ 5,029.03	27	4	2	0	0	9	12	0	0	0					\$ 5,029.03
	Stage IV R1 95% Cost Estimate		\$ 2,461.12	13	2	1	0	0	5	5	0	0	0					\$ 2,461.12
	Final Cost Estimate		\$ 2,461.12	13	2	1	0	0	5	5	0	0	0					\$ 2,461.12
	TASK C.2 - (NOT USED)		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
	TASK C.3 - PUBLIC PARTICIPATION (COVERED IN TASK A FEE)		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
	TASK C.4 - PUBLIC ART (COVERED IN TASK A FEE)		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
	TASK C.5 - UTILITY COORDINATION		\$ 15,003.93	81	12	0	4	0	34	30	0	1	0	\$ -	\$ -	\$ -	\$ -	\$ 15,003.93
C.5.1	Data Gathering, Utility Designation, Letter of Acceptance		\$ 3,053.36	16	4	0	0	0	6	6	0	0	0			\$ -		\$ 3,053.36
	Conduct utility traffic signal power drop meetings (Up to 2 total @ 1-hr additional) / Meeting Summaries		\$ 1,190.10	6	2	0	0	0	2	2	0	0	0					\$ 1,190.10
C.5.2	Design Coordination, Utility Impact Identification		\$ 2,832.00	16	2	0	0	0	6	8	0	0	0					\$ 2,832.00
C.5.3	Utility Impact Mitigation		\$ 2,832.00	16	2	0	0	0	6	8	0	0	0				\$ -	\$ 2,832.00
	Coordinate settlement analysis		\$ 755.15	4	0	0	0	0	4	0	0	0	0				\$ -	\$ 755.15
	Coordinate TCE		\$ 755.15	4	0	0	0	0	4	0	0	0	0				\$ -	\$ 755.15
	Review C&M agreement		\$ 530.97	3	0	0	0	0	2	0	0	1	0				\$ -	\$ 530.97
C.5.4	Utility Clearance/Quality Control Review		\$ 3,055.18	16	2	0	4	0	4	6	0	0	0					\$ 3,055.18
	TASK C.6 - (NOT USED)		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
	TASK C.7 - SURVEY AND MAPPING		\$ 7,048.29	31	13	4	0	0	14	0	0	0	0	\$ 36,265.25	\$ -	\$ -	\$ 36,265.25	\$ 43,313.54
C.7.1	Existing Survey and Mapping		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ -	\$ -		\$ -	\$ 447.26
C.7.2	Horizontal Control		\$ 258.47	1	1	0	0	0	0	0	0	0	0	\$ -	\$ -			\$ 258.47
C.7.3	Vertical Control Traverse		\$ 258.47	1	1	0	0	0	0	0	0	0	0	\$ -	\$ -			\$ 258.47
C.7.4	Results of Survey Drawing		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ 10,843.08			\$ 10,843.08	\$ 11,290.34
C.7.5	Survey Report NOT REQUIRED		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -				\$ -
C.7.6	Aerial Mapping (Update DTM)		\$ 636.05	3	1	0	0	0	2	0	0	0	0	\$ 3,389.14			\$ 3,389.14	\$ 4,025.19
	Additional Survey Requests		\$ 636.05	3	1	0	0	0	2	0	0	0	0	\$ 4,454.10			\$ 4,454.10	\$ 5,090.15
C.7.7	Utility Surveys		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ 3,806.99			\$ 3,806.99	\$ 4,254.25
C.7.8	Culture Survey-Update Topo, Drainage Structures and Inverts		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ 8,631.57			\$ 8,631.57	\$ 9,078.83
C.7.9	Right-of-Way Surveys		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ 4,318.88			\$ 4,318.88	\$ 4,766.14
C.7.10	Roadway Design Manual Survey Efforts		\$ 258.47	1	1	0	0	0	0	0	0	0	0	\$ -				\$ 258.47
C.7.11	Legal Descriptions & Reference Maps		\$ 258.47	1	1	0	0	0	0	0	0	0	0	\$ -				\$ 258.47

Sunset Road: Santa Cruz River to I-10 WBFR (4SRRIV)

Derivation of Hours

Task No.	Description	# Sheets	KH Budget	KH Hours	Project Manager	Sr. Professional	QC Manager	Sr. Environmental Professional/ Registered Landscape Architect	Engineer / Professional	Analyst/Sr. Designer	CADD / Designer	Admin Support I	Admin Support II	Direct / Sub Costs	Goldier	T2 Utility Engineers	Psomas	Total Cost (with KH Directs)
C.7.12	Quality Control Review		\$ 2,058.74	9	1	4	0	0	4	0	0	0	0	\$ 303.82			\$ 303.82	\$ 2,362.56
C.7.13	Boring Locations		\$ 447.26	2	1	0	0	0	1	0	0	0	0	\$ 517.67			\$ 517.67	\$ 964.93
TASK C.8 - DRAINAGE																		
			\$ 15,979.97	83	0	21	4	0	25	33	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ 15,979.97
C.8.1	Review Existing Plans and Reports		\$ 1,655.29	8	0	2	0	0	6	0	0	0	0					\$ 1,655.29
C.8.2	Hydrologic and Hydraulic Modeling		\$ 3,696.75	20	0	4	0	0	7	9	0	0	0					\$ 3,696.75
C.8.3	Drainage Reports		\$ 0	0	0	0	0	0	0	0	0	0	0					\$ -
	Final Design Phase Submittal		\$ 5,442.62	30	0	6	0	0	8	16	0	0	0					\$ 5,442.62
	Final PS&E Phase Submittal		\$ 2,721.31	15	0	3	0	0	4	8	0	0	0					\$ 2,721.31
C.8.4	Quality Control Review		\$ 2,464.01	10	0	6	4	0	0	0	0	0	0					\$ 2,464.01
TASK C.9 - GEOTECHNICAL (COORD COVERED IN TASK A)																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ 18,275.00	\$ 18,275.00	\$ -	\$ -	\$ 18,275.00
C.9.1	Geotechnical Testing and Analysis and Report		\$ -	0	0	0	0	0	0	0	0	0	0	\$ 17,547.00	\$ 17,547.00			\$ 17,547.00
C.9.2	Quality Control Review		\$ -	0	0	0	0	0	0	0	0	0	0	\$ 728.00	\$ 728.00			\$ 728.00
TASK C.10 - PAVEMENT DESIGN (COORD COVERED IN TASK A)																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ 706.00	\$ 706.00	\$ -	\$ -	\$ 706.00
C.10.1	Pavement Design Report		\$ -	0	0	0	0	0	0	0	0	0	0	\$ 706.00	\$ 706.00			\$ 706.00
C.10.2	Quality Control Review		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -			\$ -
TASK C.11 - (NOT USED)																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
TASK C.12 - TRAFFIC ENGINEERING																		
			\$ 5,021.33	25	0	9	4	0	0	12	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ 5,021.33
C.12.1	Final Traffic Engineering Report (review and incorporate recommended lane configurations)		\$ 5,021.33	25	0	9	4	0	0	12	0	0	0					\$ 5,021.33
TASK C.13 - ARTERIAL STREET LIGHTING																		
			\$ 7,993.46	51	2	0	5	8	0	16	20	0	0	\$ -	\$ -	\$ -	\$ -	\$ 7,993.46
C.13.1	Final Arterial Lighting Design Report		\$ 7,993.46	51	2	0	5	8	0	16	20	0	0					\$ 7,993.46
TASK C.14 - DESIGN MEMORANDUM (NOT INCLUDED)																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
TASK C.15 - ENVIRONMENTAL REPORTS																		
			\$ 8,224.97	51	0	2	2	20	0	10	6	0	11	\$ -	\$ -	\$ -	\$ -	\$ 8,224.97
C.15.1	Environmental Assessment		\$ 834.71	4	0	0	0	4	0	0	0	0	0					\$ 834.71
C.15.2	Cultural Resources Inventory and Report		\$ 417.36	2	0	0	0	2	0	0	0	0	0					\$ 417.36
C.15.3	Biological Evaluation		\$ 417.36	2	0	0	0	2	0	0	0	0	0					\$ 417.36
C.15.4	Vegetation Sampling/Measurement		\$ 1,322.64	9	0	0	0	3	0	0	6	0	0					\$ 1,322.64
C.15.6	Hazardous Materials Survey		\$ 2,137.87	15	0	0	0	3	0	8	0	0	4					\$ 2,137.87
C.15.8	Noise Analysis		\$ 417.36	2	0	0	0	2	0	0	0	0	0					\$ 417.36
C.15.9	Visual Assessment		\$ 417.36	2	0	0	0	2	0	0	0	0	0					\$ 417.36
C.15.10	Quality Control Review of Reports		\$ 1,408.25	9	0	0	2	2	0	2	0	0	3					\$ 1,408.25
	NOT USED		\$ -	0														\$ -
TASK C.16 - RIGHT-OF-WAY ACQUISITION SUPPORT (NOT INCLUDED)																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
TASK C.17 PREPARATION OF CONSTRUCTION DOCUMENTS																		
			\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
C.17.1	STAGE II, 30% Update, Roll Plot Submittal & Estimate (NOT USED)		\$ -	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -
TASK C.17.2 STAGE III, 60% Plans, Specifications, & Estimate																		
			\$ 165,079.09	996	84	8	62	42	222	303	275	0	0	\$ -	\$ -	\$ -	\$ -	\$ 165,079.09
C.17.2	Design Data Sheets	4	\$ 3,116.64	20	1	0	1	0	4	8	6	0	0					\$ 3,116.64

Sunset Road: Santa Cruz River to I-10 WBFR (4SRRIV)

Derivation of Hours

Task No.	Description	# Sheets	KH Budget	KH Hours	Project Manager	Sr. Professional	QC Manager	Sr. Environmental Professional/Registered Landscape Architect	Engineer / Professional	Analyst/Sr. Designer	CADD / Designer	Admin Support I	Admin Support II	Direct / Sub Costs	Goldier	TZ Utility Engineers	Psomas	Total Cost (with KH Directs)
	Typical Section Sheets	3	\$ 6,949.86	45	2	0	2	0	9	18	14	0	0					\$ 6,949.86
	Summary Sheets	3	\$ 5,018.20	30	2	0	2	0	9	12	5	0	0					\$ 5,018.20
	Detail Sheets	5	\$ 6,481.23	39	3	0	3	0	10	15	8	0	0					\$ 6,481.23
	Geometric Control Sheet	1	\$ 1,872.29	11	1	0	1	0	3	4	2	0	0					\$ 1,872.29
	Geometry Data Sheets	2	\$ 3,034.65	20	1	0	1	0	2	10	6	0	0					\$ 3,034.65
	Geometric Layout Sheets	3	\$ 4,800.14	30	2	0	2	0	6	12	8	0	0					\$ 4,800.14
	Removal Sheets	2	\$ 5,536.68	34	2	0	2	0	8	16	6	0	0					\$ 5,536.68
	Staking Sheets	1	\$ 2,768.34	17	1	0	1	0	4	8	3	0	0					\$ 2,768.34
	PCCP Jointing Sheets	2	\$ 3,662.58	22	2	0	2	0	4	10	4	0	0					\$ 3,662.58
	Roadway Plan and Profile Sheets	4	\$ 9,012.88	56	4	0	4	0	9	27	12	0	0					\$ 9,012.88
	Shared Use Path Plan and Profile Sheets	2	\$ 5,388.89	33	2	0	2	0	8	15	6	0	0					\$ 5,388.89
	Offsite Collector Channel	2	\$ 4,968.97	32	2	0	2	0	6	10	12	0	0					\$ 4,968.97
	Culvert Plan and Profile Sheets	1	\$ 3,053.27	20	1	0	1	0	4	6	8	0	0					\$ 3,053.27
	Channel Typical Sections and Details	3	\$ 6,017.89	37	3	0	3	0	9	10	12	0	0					\$ 6,017.89
	Storm Drain Plan and Profile Sheets	4	\$ 7,662.81	48	4	0	4	0	8	16	16	0	0					\$ 7,662.81
	Traffic Signal Plans	4	\$ 10,268.61	62	4	0	4	0	18	24	12	0	0					\$ 10,268.61
	Lighting Plans	4	\$ 8,757.41	52	1	8	1	0	18	0	24	0	0					\$ 8,757.41
	Pavement Marking Plan Sheets	2	\$ 5,114.34	32	2	0	2	0	8	10	10	0	0					\$ 5,114.34
	Signing Plan Sheets	8	\$ 9,483.75	60	3	0	6	0	12	18	21	0	0					\$ 9,483.75
	Landscape/Irrigation Plan Sheets	4	\$ 5,638.87	39	0	0	0	12	0	0	27	0	0					
	Traffic Control Sheets	4	\$ 1,387.92	8	1	0	1	0	2	2	2	0	0					\$ 1,387.92
	Cross Sections	9	\$ 13,147.04	80	7	0	5	0	18	32	18	0	0					\$ 13,147.04
	Earthwork Report		\$ 8,505.44	46	6	0	5	0	20	10	5	0	0					\$ 8,505.44
	Quantity Justification		\$ 8,100.61	50	5	0	5	0	10	10	20	0	0					\$ 8,100.61
	SWPPP		\$ 7,189.14	38	0	0	0	30	0	0	8	0	0					\$ 7,189.14
	Specs		\$ 6,351.60	27	18	0	0	0	9	0	0	0	0					\$ 6,351.60
	Certification Letters		\$ 1,789.04	8	4	0	0	0	4	0	0	0	0					\$ 1,789.04
C.17.3	STAGE IV 95% Plans, Specifications, & Estimate		\$ 83,837.55	499	49	4	37	17	113	144	135	0	0	\$ -	\$ -	\$ -	\$ -	\$ 83,837.55
	Design Data Sheets	4	\$ 1,683.50	30	1	0	1	0	2	4	2	0	0					\$ 1,683.50
	Typical Section Sheets	3	\$ 2,579.55	16	1	0	1	0	3	8	3	0	0					\$ 2,579.55
	Summary Sheets	3	\$ 2,283.97	14	1	0	1	0	3	6	3	0	0					\$ 2,283.97
	Detail Sheets	5	\$ 482.56	2	1	0	1	0	0	0	0	0	0					\$ 482.56
	Geometric Control Sheet	1	\$ 676.77	4	0	0	1	0	1	1	1	0	0					\$ 676.77
	Geometry Data Sheets	2	\$ 935.24	5	1	0	1	0	1	1	1	0	0					\$ 935.24
	Geometric Layout Sheets	3	\$ 2,727.34	17	1	0	1	0	3	9	3	0	0					\$ 2,727.34
	Removal Sheets	2	\$ 1,979.08	12	1	0	1	0	2	6	2	0	0					\$ 1,979.08
	Staking Sheets	1	\$ 1,277.24	8	0	0	1	0	2	3	2	0	0					\$ 1,277.24
	PCCP Jointing Sheets	2	\$ 1,494.71	9	1	0	1	0	1	4	2	0	0					\$ 1,494.71
	Roadway Plan and Profile Sheets	4	\$ 4,945.52	30	2	0	2	0	8	12	6	0	0					\$ 4,945.52
	Shared Use Path Plan and Profile Sheets	2	\$ 2,167.87	13	1	0	1	0	3	6	2	0	0					\$ 2,167.87
	Offsite Collector Channel	2	\$ 2,588.86	16	1	0	1	0	4	6	4	0	0					\$ 2,588.86
	Culvert Plan and Profile Sheets	1	\$ 1,509.44	10	0	0	1	0	2	3	4	0	0					\$ 1,509.44
	Channel Typical Sections and Details	3	\$ 4,472.87	28	2	0	2	0	6	9	9	0	0					\$ 4,472.87
	Storm Drain Plan and Profile Sheets	4	\$ 5,457.23	34	3	0	2	0	8	9	12	0	0					\$ 5,457.23
	Traffic Signal Plans	4	\$ 4,124.57	25	2	0	2	0	6	9	6	0	0					\$ 4,124.57
	Lighting Plans	4	\$ 5,084.39	31	1	4	1	0	9	0	16	0	0					\$ 5,084.39

Sunset Road: Santa Cruz River to I-10 WBFR (4SRRIV)

Derivation of Hours

Task No.	Description	# Sheets	KH Budget	KH Hours	Project Manager	Sr. Professional	QC Manager	Sr. Environmental Professional/ Registered Landscape Architect	Engineer / Professional	Analyst/Sr. Designer	CADD / Designer	Admin Support I	Admin Support II	Direct / Sub Costs	Golder	T2 Utility Engineers	Psomas	Total Cost (with KH Directs)
	Pavement Marking Plan Sheets	2	\$ 2,179.59	14	1	0	1	0	2	5	5	0	0					\$ 2,179.59
	Signing Plan Sheets	8	\$ 6,258.94	37	4	0	4	0	8	12	9	0	0					\$ 6,258.94
	Landscape/Irrigation Plan Sheets	4	\$ 3,735.72	25	0	0	0	9	0	0	16	0	0					\$ 3,735.72
	Traffic Control Sheets	4	\$ 1,155.72	6	1	0	1	0	2	2	0	0	0					\$ 1,155.72
	Cross Sections	9	\$ 5,925.98	37	2	0	2	0	9	15	9	0	0					\$ 5,925.98
	Earthwork Report		\$ 4,074.51	21	3	0	3	0	10	5	0	0	0					\$ 4,074.51
	Quantity Justification		\$ 6,352.66	38	4	0	4	0	9	9	12	0	0					\$ 6,352.66
	SWPPP		\$ 2,366.03	14	0	0	0	8	0	0	6	0	0					\$ 2,366.03
	Specs		\$ 4,423.19	19	12	0	0	0	7	0	0	0	0					\$ 4,423.19
	Certification Letters		\$ 894.52	4	2	0	0	0	2	0	0	0	0					\$ 894.52
C.17.4	STAGE IV-R1 95% Plans, Specifications, & Estimate		\$ 9,568.25	58	7	0	0	0	17	19	15	0	0	\$ -	\$ -	\$ -	\$ -	\$ 9,568.25
	Roadway Plans - Address Comments & Coordinate with C&S	1	\$ 1,311.62	8	1	0	0	0	2	3	2	0	0				\$ -	\$ 1,311.62
	Drainage Plans - Address Comments & Coordinate with C&S	4	\$ 1,311.62	8	1	0	0	0	2	3	2	0	0					\$ 1,311.62
	Lighting Plans - Address Comments & Coordinate with C&S	4	\$ 1,311.62	8	1	0	0	0	2	3	2	0	0					\$ 1,311.62
	Landscape/Aesthetic Plans - Address Comments & Coordinate with C&S	6	\$ 1,311.62	8	1	0	0	0	2	3	2	0	0					\$ 1,311.62
	Traffic Plans - Address Comments & Coordinate with C&S	3	\$ 1,311.62	8	1	0	0	0	2	3	2	0	0					\$ 1,311.62
	Specifications - Address Comments & Coordinate with C&S		\$ 1,498.00	8	1	0	0	0	5	2	0	0	0					\$ 1,498.00
	Quantity Tabulation - Address Comments & Coordinate with C&S		\$ 1,512.14	10	1	0	0	0	2	2	5	0	0					\$ 1,512.14
C.17.5	FINAL Plans, Specifications, & Estimate		\$ 7,734.08	44	7	0	0	0	15	17	5	0	0	\$ -	\$ -	\$ -	\$ -	\$ 7,734.08
	Roadway Plans - Finalize Submittal Package, Sign & Seal	1	\$ 1,195.52	7	1	0	0	0	2	3	1	0	0				\$ -	\$ 1,195.52
	Drainage Plans - Finalize Submittal Package, Sign & Seal	4	\$ 1,195.52	7	1	0	0	0	2	3	1	0	0					\$ 1,195.52
	Lighting Plans - Finalize Submittal Package, Sign & Seal	4	\$ 1,195.52	7	1	0	0	0	2	3	1	0	0					\$ 1,195.52
	Landscape/Aesthetic Plans - Finalize Submittal Package, Sign & Seal	6	\$ 1,195.52	7	1	0	0	0	2	3	1	0	0					\$ 1,195.52
	Traffic Plans - Finalize Submittal Package, Sign & Seal	3	\$ 1,195.52	7	1	0	0	0	2	3	1	0	0					\$ 1,195.52
	Specifications - Finalize Submittal Package, Sign & Seal	25	\$ 1,756.47	9	2	0	0	0	5	2	0	0	0					\$ 1,756.47
C.17.6	Quality Control Review of Plans		\$ 22,265.24	123	11	4	18	8	29	33	20	0	0	\$ -	\$ -	\$ -	\$ -	\$ 22,265.24
	STAGE III 60% Plans, Specifications, & Estimate		\$ 5,653.07	33	2	0	6	0	7	12	6	0	0					\$ 5,653.07
	STAGE IV 95% Plans, Specifications, & Estimate		\$ 4,761.53	28	2	0	4	0	7	9	6	0	0					\$ 4,761.53
	STAGE IV-R1 95% Plans, Specifications, & Estimate		\$ 3,063.30	17	2	0	3	0	4	6	2	0	0					\$ 3,063.30
	FINAL Plans, Specifications, & Estimate		\$ 2,767.72	15	2	0	3	0	4	4	2	0	0					\$ 2,767.72
	Response to all review comments		\$ 6,019.63	30	3	4	2	8	7	2	4	0	0					\$ 6,019.63
Total Labor Cost / Hours (TASK C):			\$ 381,352.64	2,219	218	61	148	95	518	669	476	19	15	\$ 55,246.25	\$ 18,981.00	\$ -	\$ 36,265.25	\$ 436,598.89

June 9, 2021

Project No. 21455756

Mr. David J. Leistiko, PE
Kimley-Horn & Associates, Inc.
7740 N. 16th St.
Suite 300
Phoenix, AZ

**REQUEST FOR CONTRACT MODIFICATION 1 FOR SUNSET ROAD: I-10 TO RIVER ROAD:
GEOTECHNICAL SERVICES FOR SUNSET ROAD: WEST OF I-10**

Dear Dave:

Golder Associate Inc. (Golder), a member of WSP, is requesting Contract Modification No. 1 to our contract dated March 23, 2021, with Kimley-Horn and Associates, Inc. (KH) for Pima County's Sunset Road: I-10 to River Road project. We understand Pima County intends to modify KH's scope for the project to include design concept report (DCR) to final design for Sunset Road from the Santa Cruz River Bridge to I-10. Golder is preparing this scope and fee proposal based on our email exchanges on June 3 and 4, 2021.

1.0 JUSTIFICATION

Golder's original scope of work only included final geotechnical and pavement design effort for Sunset Road from I-10 to River Road. The inclusion of the western segment of Sunset necessitates this contract modification request.

2.0 ADDITIONAL SCOPE OF WORK

Golder's additional scope of work falls under two major tasks from the overall project scope: Task C.9 Geotechnical, and Task C.10 Pavement Design. Subtask letters in the section headers correspond to the Cost Derivation Table described in Section 5.0.

2.1 CM1 Geotechnical Testing and Analysis and Report (Task C.9.1)

The primary geotechnical features associated with the west segment of Sunset are the new Sunset Road embankment, and the utility protection / underpass structure to protect the sanitary sewer interceptor from excessive settlement while also allowing the multiuse path to pass beneath the proposed embankment. The underpass structure also has wingwalls associated with it.

2.1.1 West Sunset Geotechnical Investigation (Subtask a)

There is existing borehole data collected by NCS Consultants, LLC (NCS), which is now known as Schlessinger Consulting Engineers (SCE), for both the original Sunset Road reconstruction project and for the I-10 widening

project. Although these boreholes are useful and were used by Golder for preliminary design of the utility protection structures, two additional boreholes are needed to comply with AASHTO and ADOT requirements for a bridge structure, and for the design of the wingwalls. Both boreholes will be drilled to depths of 75 feet below ground surface. They will be located off the pavement of Sunset Road. The field work will not require a lane closure, although traffic control devices will be used to indicate a shoulder closure and to control potential congestion encroachment into the multiuse path on the north side of Sunset.

Work under this task will include preparatory work for the additional boreholes, which entails:

- Preparation of a traffic control plan (by Border Traffic Safety)
- Obtaining a Pima County right-of-way (ROW) use permit (including a \$285 permit fee)
- Coordination with ADOT on our pending ROW permit since we will need to put traffic control devices within their ROW
- Field locating boreholes and/or checking surveyed boreholes in preparation for utility locate activities
- Coordination with Arizona 811 for utility locates prior to excavating
- Other miscellaneous logistical preparations for the field investigation program

This task will include field time for Golder to log the boreholes, as well as office time to prepare final borehole logs and to assign laboratory testing. The boreholes will be advanced to the planned depths outlined in the approved exploration plan unless refusal is encountered prior to full borehole advancement. The drilled depths may be adjusted in the field depending upon the subsurface conditions encountered (e.g., soft conditions at the planned termination depth may require additional penetration to locate a firm base).

During the drilling operations, a Golder field engineer or geologist will log the boreholes, record the results of penetration tests, and collect representative samples for further laboratory evaluation. Soil sampling methods will include split spoon sampler, 3-inch OD modified California sampler, or bulk cutting samples. Groundwater measurements will be recorded should any borehole encounter perched water or groundwater during drilling.

The drilling services will be performed by our drilling subconsultant, Southlands Engineering, LLC (Southlands). Southlands' cost estimate is provided as Attachment 1. The total estimated field time to conduct the additional boreholes is approximately 2 working days.

Representative soil samples that are collected during the field investigation will be properly labeled and submitted to ATEK Engineering, Inc. (ATEK) for laboratory testing. A cost estimate for lab testing and ATEK's rate sheet are included as Attachment 2. These rates are part of Golder's Pima County Geotechnical and Materials Testing Qualified Consultants List (QCL) contract dated November of 2020.

Traffic control services will be provided by Border Traffic Safety (Border). We assume that shoulder closure plan or similar will be required, including pre-warning signage on the eastbound (EB) I-10 Frontage Road, and on Sunset Road. The costs are estimated based on Golder's experience and Border's previous invoice (Attachment 3) for the previous work.

In addition to the permit fee for the planned work west of the freeway, we are including the \$285 ROW permit fee already incurred for the borehole drilled on Tres Nogales Road (see Attachment 4), which was excluded from our original scope and fee proposal. Accordingly, the total direct expenses for permit fees is \$570.

2.1.2 Additional Geotechnical Analysis (Subtask b)

Additional geotechnical evaluation and development of recommendations will be provided for the following roadway project elements:

- Development of interpreted subsurface conditions, including soil stratigraphy, and the general soil properties recommendations for design
- Re-evaluation of anticipated settlement profile of the sewer interceptor pipe without mitigation
- Development of axial and lateral capacities for drilled shaft foundations for the underpass structure
- Development of lateral earth pressure recommendations for the wingwalls and the underpass structure
- Coordination with the structural engineer on details for the utility protection / underpass structure
- Recommendations for wingwall foundations
- Evaluation of soil shrinkage/swell characteristics (earthwork factors) and ground compaction factors for the new embankment
- Embankment settlement analyses and recommendations for final embankment slopes
- Recommendations for contractor-designed temporary shoring and temporary slopes

The geotechnical analysis will be conducted in accordance with ADOT Materials Preliminary Engineering and Design Manual, the latest AASHTO LFRD Bridge Design Specifications with interims, and internal ADOT procedures.

We assume that the additional geotechnical items that Golder will be providing will be incorporated into the Geotechnical and Bridge Foundation Report which we are already scoped for as opposed to having separate deliverables. We propose to issue a second draft report to incorporate these additional scope items in advance of issuing the final geotechnical report. The report will be provided in draft PDF format. After receiving comments from the project team, Golder will finalize the report and issue a final PDF report sealed by an Arizona registered civil engineer.

2.1.3 Foundation Data Sheets (Subtask c)

This task will consist of preparing foundation data sheets for the underpass bridge structure. The set will have a plan sheet showing borehole locations as well as relevant notes, and sufficient sheets to include all bridge borehole logs.

2.1.4 Project Management (Subtask d)

This task includes additional labor hours for typical project management activities associated with the additional scope of work.

2.2 CM1 Quality Control Review of Geotechnical Report (Task C.9.2)

This task includes additional labor hours to perform QA/QC of our additional draft submittal of the Geotechnical and Bridge Foundation Report in accordance with our original scope of work.

2.3 CM1 Pavement Design Report (Task C.10.1)

No additional subgrade sampling or testing is anticipated as a part of this project. We assume that the County will match the existing Sunset Road asphaltic concrete (AC) section for flexible pavement portions of the new Sunset Road west of I-10. We assume the minimum thickness rigid pavement section will be adequate but will evaluate that assumption as part of this task using traffic loading data provided by others. We will document this analysis in the Pavement Design Summary Report.

3.0 ASSUMPTIONS

Golder has made the following assumptions when preparing this scope and fee proposal:

- KH and the project team members will provide the necessary environmental clearance and right-of-entry documents.
- Archaeological monitoring, if required, will be provided by others.

4.0 SCHEDULE

Golder will continue to coordinate closely with KH and the project team to ensure that the project schedule is met.

5.0 ADDITIONAL ESTIMATED COST

Golder's additional cost plus fixed fee for this contract modification is \$18,981. A summary of cost and labor hours by major task is included in Table 1. Specific hours per labor classification and direct expenses for each of the tasks discussed above are included in Attachment 5.

Table 1: Cost Estimate Summary

Task	Labor Cost	Disbursements Cost	Total Cost	Labor Hours
CM1 Additional Geotechnical Testing and Analysis and Report (C.9.1)	\$10,817	\$6,730	\$17,547	103
CM1 Quality Control Review (C.9.2)	\$728	\$0	\$728	4
CM1 Pavement Design Report (C.10.1)	\$706	\$0	\$706	5
Total	\$12,251	\$6,730	\$18,981	112

If, during the execution of the work, the scope of work must be modified to fit the project needs and cost accruals are expected to change, we will notify KH for approval before the work is executed and costs are accrued. Project charges will be based on productive time worked and actual direct expenses.

6.0 CLOSING

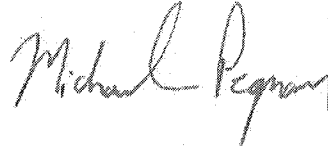
We appreciate the opportunity to continue to work with KH, Pima County, and the entire project team on this important project. If you have any questions, please contact Randy by phone at (520) 332-1414 or email at rpost@golder.com.

Respectfully submitted,

Golder Associates Inc.



Randy Post, PE
Senior Geotechnical Engineer



Michael L. Pegnam PE
Associate & Geotechnical Practice Leader

RMP/MLP/jes

Attachments: Attachment 1 – Cost Estimate: Southlands Engineering, LLC
Attachment 2 – Cost Estimate: Laboratory Testing
Attachment 3 – Cost Estimate: Traffic Control
Attachment 4 – Backup for Permit Costs
Attachment 5 – Golder Derivation of Cost Table

[https://golderassociates.sharepoint.com/sites/142491/project files/2 contractual/change orders/cm1/21455756-002-co-0-cm1_sunset_west_09jun21.docx](https://golderassociates.sharepoint.com/sites/142491/project%20files/2%20contractual/change%20orders/cm1/21455756-002-co-0-cm1_sunset_west_09jun21.docx)

ATTACHMENT 1

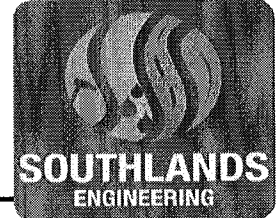
Cost Estimate: Southlands
Engineering, LLC

Southlands Engineering

P.O. Box 65017 Tucson, Arizona 85728

Phone: (520) 940-0472 . Fax: (520) 329-8998

ROC No.: A-4 294073 | ADWR No.: 845 | AzBTR: 18921



Mr. Randy Post, PE
Senior Geotechnical Engineer
Golder Associates Inc.

7458 N. La Cholla Boulevard
Tucson, Arizona 85741

Date: 6/4/2021

Proposal No.: P2102-045

Cost Estimate for Geotechnical Engineering Services Sunset Road Expansion Project Geotechnical Investigation Equipment Pass Subsurface Investigation Pima County, Arizona

SCOPE OF WORK

Scope 1: AUGER DRILLING, EQUIPMENT PASS BOREHOLES

Drilling Investigation:

A Total of 2 Boreholes will be drilled for the program, each to 75-feet below ground surface (bgs).

1. One borehole will be located on the Northwest corner of Sunset Road and the Frontage Road.
2. The second borehole will be located on the Southwest corner of Sunset Road and the Frontage Road.
3. Both boreholes will be drilled in the should area of the Sunset Road alignment, and may require some traffic control signage during the drilling investigations.

Total Footage = 150 feet

Backfill:

All boreholes will be backfilled with auger cuttings.

Bentonite Cement Grout has not been requested for this project.

Drilling Methods: Hollow-Stem-Auger (3.25 or 4.25-inch I.D)

Sampling: Assume Standard Penetrating Testing (SPT) at 2.5-to 5-feet intervals.

Equipment: Utilizing a CME 75 HT Truck-Mounted Drill Rig

Duration: 1.5 days with Mob/Demob to site

ESTIMATED COSTS

SCOPE 1: HOLLOW STEM AUGERING (EQUIPMENT PASS STRUCTURE)

Item	Quantity	Unit	Cost	Price
HOLLOW-STEM-AUGER & INFILTRATIONS				
CME 75 HT Truck Mounted-Drill Rig: Hollow-Stem Auger				
Work Plan / Health & Safety/Project Mgmt.	4.0	HOUR	\$ 105.00	\$ 420.00
Job Preparation (Materials & Equipment)	4.0	HOUR	\$ 150.00	\$ 600.00
Mobilization/Demobilization ²	1.0	LUMP	\$ 400.00	\$ 400.00
Safety Sign-Up/Tail Gate Meeting	1.0	HOUR	\$ 150.00	\$ 150.00
DRILLING RELATED COSTS				
Local Travel (From Site to Yard, Daily Travel)	1.5	HOUR	\$ 150.00	\$ 225.00
Safety Meetings/Borehole Access/Site Set-Up	0.5	HOUR	\$ 150.00	\$ 75.00
Drilling; Hollow Stem Auger ³	12.0	HOUR	\$ 150.00	\$ 1,800.00
Borehole Abandonment	0.0	HOUR	\$ 150.00	\$ -
ASSOCIATED COSTS				
Light Support Truck	2.0	DAILY	\$ 150.00	\$ 300.00
Bentonite-Cement Grout/Grout Plant	0.0	FEET	\$ 10.00	\$ -
Cutter Head Replacement (Deep Boreholes)	2.0	EACH	\$ 200.00	\$ 400.00
ADWR Permit and Fees	0.0	EACH	\$ 250.00	\$ -
Cleint Directed Stand-By	0.0	HOUR	\$ 150.00	\$ -
Estimated Drilling Costs			\$ 4,370.00	

NOTES:

- Job Preparation:** includes time to inspect and prepare the equipment and materials that will be required to complete the investigation. For this particular project, it would consist of preparing multiple cutter heads and auger to complete the drilling investigation. The time also includes time spent to perform daily ADOT vehicle inspection prior to driving the drill rig to the project site.
Time to prepare a health and safety plan has also been included as part of this preparation task.
- Mobilization/Demobilization:** includes time spent by the crew to travel from Yard to the project site, including the mobilization of all materials and equipment.
- Drilling Time:** includes time spent to drill the assigned locations and SPT sampling including backfilling and restoring locations (including patching if necessary) to acceptable standards.

4. **Safety Meetings / Borehole Access / Move Drill Rig:** Includes time to move the drill rig between the borehole locations. It also accounts for the time that will be spent on a daily basis to conduct daily tail gate meetings and any safety audits that maybe conducted. This estimated time also includes time for site-specific safety training that may be conducted prior to commencing.
5. **Local Travel:** This is an estimated time for the crew to travel to and from the site on a daily basis once the project has commenced utilizing the support truck.
6. **Standby** time due to unreadiness of the borehole locations or 'Client' delays will be billed at the provided hourly rate, and has not been included in this cost estimate.

TERMS & CONDITIONS

1. **GOLDER** will coordinate all Blue Stake permits and verify that all utilities are marked and all conflicts resolved prior to completing the subsurface investigations. Southlands will be included on the Blue Stake request as a sub-contractor as required by State regulations. Southlands will not be liable for any damaged underground or overhead utilities.
2. **GOLDER** will coordinate and acquire all necessary permits that may be required to complete the proposed subsurface investigations.
3. Based on the information provided, **GOLDER** will coordinate and provide all traffic control or safety related accessories that will be required to complete the investigations.
4. This cost estimate assumes that access to the drill locations will require minimal efforts and will not require the use of additional materials or equipment. Any damage that may result to the Southlands' drilling equipment will be billed at cost plus 15 percent to replace or repair all damages.
5. Southlands will not dictate the location of drilled borehole, this is the responsibility of the 'Client', hence Southlands will not be held responsible for any damaged overhead and underground utilities that may occur as a result of drilling at a location as directed by the 'Client'. Once the work is scheduled, this proposal will be considered a legal binding document for conditions of the project.
6. If the project encounters difficulties beyond our control or if the scope of work is altered, Southlands reserves the right to renegotiate the price.

Southlands thanks you for the opportunity to provide you this cost estimate proposal. If you have any questions or need any clarifications regarding this cost estimate, or if we may be of any further assistance please do not hesitate to contact us at (520) 940-0472. We look forward to hearing from you soon.

Sincerely,

SOUTHLANDS ENGINEERING, LLC



David C. Mwewa, P.E.
President/Principal Engineer
chushidm@southlandsengr.com



ATTACHMENT 2

Cost Estimate: Laboratory Testing

Table 2: Derivation of Laboratory Costs

Test Name	Test Standard	Unit Cost	Quantity	Sub-Total
Water Content	ASTM D2216	\$20	6	\$120
Atterberg Limits	ASTM D4318	\$68	6	\$408
Sieve (3" - #200)	ASTM C136	\$80	6	\$480
Unit Weight	ASTM D2937	\$25	2	\$50
Swell/Collapse	ASTM D4546	\$125	2	\$250
R-Value	ASTM D2844	\$325	0	\$0
pH	ASTM 2976	\$20	0	\$0
Conductivity	ASTM D1125	\$20	0	\$0
Chlorides	ARIZ 736a	\$40	0	\$0
Sulfates	ARIZ 733a	\$35	0	\$0

Geotechnical Sub-Total	\$1,308
Electrochemical Sub-Total	\$0
Total	\$1,308



LABORATORY TESTING RATES
2020 Pima County Geotechnical & Materials Testing Services

Laboratory Tests - Soils & Rock

Moisture-Density Relations (Proctors)	
Standard (ASTM D698 A, B)	\$123.00
Standard (ASTM D698 C)	\$133.00
Modified (ASTM D1557 A, B)	\$133.00
Modified (ASTM D1557 C)	\$143.00
One-Point (Method A - AZ232a)	\$75.00
Sieve Analysis (ASTM C136), each	
Fine Sieve Analysis, including Elutriation	\$55.00
Full Sieve Analysis, Coarse & Fine (ASTM C136 & C117)	\$80.00
-#200 Fraction Only (ASTM D1140)	\$40.00
Coarse Only (No Wash)	\$30.00
Hydrometer (ASTM D422)	\$205.00
Hydrometer, Double (ASTM D4221)	\$410.00
Plasticity Index (Atterberg limits) (ASTM D4318), each	
Dry Preparation	\$68.00
Wet Preparation	\$125.00
Consolidation (ASTM D2435)	
Up to 16 tsf (no time rate of consolidation)	\$180.00
Including time rate of consolidation for assigned loads	TBD
1-D Swell or Collapse of Cohesive Soils (ASTM D4546)	
Undisturbed (Swell, Constant Surcharge)	\$100.00
Remolded (Swell, Constant Surcharge)	\$125.00
Remolded (Swell, Constant Surcharge w/ Swelling Pressure)	\$250.00
Collapse Potential of Soils (ASTM 5333)	\$140.00
Moisture Content Only (ASTM D2216)	\$20.00
Undisturbed Moisture/Density (ASTM D2937)	\$25.00
Conductivity (ASTM D1125)	\$20.00
Expansion Index (ASTM D4829)	\$158.00
Permeability (ASTM D5084)	
In Situ	\$315.00
Remolded	\$350.00
Specific Gravity (ASTM C127/C128)	\$82.00
pH (ASTM 2976)	\$20.00
Resistivity (AZ 236)	\$95.00
Sand Equivalent (ASTM D2419)	\$80.00
% Organics (ASTM D2974, Method "C")	\$80.00
R Values (ASTM D2844)	\$325.00
Sulfate Contents (ARIZ 733a)	\$35.00
Chloride Contents (ARIZ 736a)	\$40.00
Sulfides Contents (EPA.376.1376.1)	\$50.00

Laboratory Tests - Concrete

Compression Tests (Curing & Capping) (ASTM C39)	
Concrete Cylinder, Mortar Cylinders (includes mold), each	\$15.00
Grout Prisms, Mortar Cubes (includes mold), each	\$18.00
Hold Cylinders, Not Tested	\$15.00
Flexural Beams (includes mold clean-up), each	\$70.00
Concrete & Rock Cores (without trimming), each	\$25.00
Concrete & Rock Cores (with trimming), each	\$35.00



LABORATORY TESTING RATES
2020 Pima County Geotechnical & Materials Testing Services

Laboratory Tests - Asphaltic Concrete

Ignition & Gradation of Bituminous Mixtures (ASTM D2171)	\$140.00
Without Gradation (asphalt content)	\$96.00
Marshall Bulk Density (Specific Gravity) (ASTM D2726)	
Field Sample (lab compacted)	\$140.00
Maximum Theoretical Specific Gravity, Rice (ASTM D2041), each	\$145.00
Uncompacted Void Content (ASTM C1252)	\$75.00
Gyratory Compaction (ASTM D6925)	\$155.00
AC Core Unit Weight & Thickness, each	\$50.00
AC Core Thickness Only, each	\$25.00

ATTACHMENT 3

Cost Estimate: Traffic Control

Table 3: Traffic Control Costs (Estimated by Golder using Past Border Traffic Safety Rates, See Attached)

Item	Units	Quantity	Unit Rate	No. of Days	Total Costs
Filled Sand Bags	EA	20	\$1.50	1	\$30.00
Safety Flags With Staff	EA	20	\$3.00	1	\$60.00
Small Signs	DY	4	\$0.35	2	\$2.80
Large Signs	DY	4	\$0.95	2	\$7.60
Sign Stands W/ Flasher	DY	4	\$0.35	2	\$2.80
Spring Stands W/ Flasher	DY	4	\$1.25	2	\$10.00
Vertical Panel W/ Steady Burn	DY	12	\$0.55	2	\$13.20
Arrow Board with Trailer	DY	0	\$25.00	2	\$0.00
Variable Message Board	DY	0	\$75.00	2	\$0.00
Subtotal (Equipment Rental and Sale Items):					\$126.40
1 man, 1 truck - travel, setup	HRS	6	\$50.00	1	\$300.00
1 man, 1 truck - attenuator standby	HRS	0	\$50.00	1	\$0.00
Traffic Control Plans	EA	1	\$45.00	1	\$45.00
Subtotal (Labor):					\$345.00
Tax (8.7%, Excludes Labor):					\$11.00
TOTAL:					\$482.40





Remit to address:
P.O. BOX 27904
Tucson, Arizona 85726
Phone: (520) 664-2244
Fax: (520) 623-9187

INVOICE	DATE
202009007	9/22/2020

PAGE: 1/1

BILL TO: GOLDER & ASSOCIATES INC.
ATTN: ACCOUNTS PAYABLES
4730 N. ORACLE RD STE#210
TUCSON, AZ 85705

JOB SITE: FRONTAGE RD & RUTHRAUFF RD

JOB #:
P.O. #: Golder # 19128078.01.06
TERMS: NET 30

START DATE:		ORDERED BY: RANDY		CUSTOMER #:				
DATE	TRANS ACTION	AMOUNT OF UNITS	ON HAND	DESCRIPTION	# UNITS	#DAYS	UNIT PRICE	AMOUNT
8/7/2020	DELIVER	1		SMALL SIGNS	1	2	\$ 0.35	\$ 0.70
8/8/2020	PICK UP	1		SMALL SIGNS				
8/7/2020	DELIVER	10		LARGE SIGNS	10	2	\$ 0.95	\$ 19.00
8/8/2020	PICK UP	10		LARGE SIGNS				
8/7/2020	DELIVER	1		SIGN STANDS W/ FLASHER	1	2	\$ 0.35	\$ 0.70
8/8/2020	PICK UP	1		SIGN STANDS W/ FLASHER				
8/7/2020	DELIVER	10		SPRING STANDS W/ FLASHER	10	2	\$ 1.25	\$ 25.00
8/8/2020	PICK UP	10		SPRING STANDS W/ FLASHER				
8/5/2020	DELIVER	6		VERTICAL PANEL W/ STEADY BURN	6	2	\$ 0.55	\$ 6.60
8/7/2020	ADD ON	20		VERTICAL PANEL W/ STEADY BURN	26	2	\$ 0.55	\$ 28.60
8/8/2020	PICK UP	26		VERTICAL PANEL W/ STEADY BURN				
8/7/2020	DELIVER	1		ARROW BOARD W/ TRAILER	1	2	\$ 25.00	\$ 50.00
8/8/2020	PICK UP	1		ARROW BOARD W/ TRAILER				
8/5/2020	DELIVER	1		VARIABLE MESSAGE BOARD	1	4	\$ 75.00	\$ 300.00
8/8/2020	PICK UP	1		VARIABLE MESSAGE BOARD				
				***INCREASE TO RENTAL MINIMUM OF \$50				
				EQUIPMENT RENTAL SUBTOTAL: \$ 430.60				
				<u>SALE ITEMS (CONSUMABLES)</u>				
				FILLED SAND BAGS	55	1	\$ 1.50	\$ 82.50
				SAFETY FLAGS W/ STAFF	20	1	\$ 3.00	\$ 60.00
				SALE ITEM SUBTOTAL: \$ 142.50				
				<u>LABOR CHARGES (INCLUDE PORT to PORT)</u>				
				TRAFFIC CONTROL PLANS	2	1	\$ 45.00	\$ 90.00
				C.O. TUCSON 30 DAY BARRICADE PERMIT		1	\$ 155.00	\$ -
8/5/2020				DELIVER/SETUP MSG BRD 1 MAN 1 TRUCK	1.50	1	\$ 50.00	\$ 75.00
8/7/2020				DELIVER/SETUP CLOSURE 1 MAN 1 TRUCK	2.50	1	\$ 50.00	\$ 125.00
8/8/2020				TAKEDOWN/PICKUP UNITS 1 MAN 1 TRUCK	3.00	1	\$ 50.00	\$ 150.00
				LABOR SUBTOTAL: \$ 440.00				
				RENTAL & SALES COST: \$ 573.10				
				LABOR: \$ 440.00				
				8.7% TAX \$ 49.86				
				TOTAL: \$ 1,062.96				

ATTACHMENT 4

Backup for Permit Costs



Receipt

Department of Transportation
Public Works Building
201 N Stone Ave, 4th Floor
Tucson, AZ 85701
(520) 724-6410
DOTPermit.Submittal@pima.gov

Receipt Date: 04/29/2021
Receipt Time: 8:32 AM
Receipt #: 719563

	Invoice #	Amount
Record # / Type: P21RW00714, Right of Way Permit		
Location: 3598 W Tres Nogales Road, 85705	652054	\$285.00
Total Due:		\$285.00
Payment by Credit Card:		\$285.00

Print Date: 4/29/2021

Cashier: Online Accela Citizen Access

ATTACHMENT 5

Golder Derivation of Cost Table

June 2021

21455756

Table 5: Derivation of Costs

Kimley-Horn for Pima County DOT Sunset Road: I-10 to River Road Final Design Contract Modification (CM) 1 - Sunset West 21455756						Labor Hours											Disbursements at Cost					
						C7	C6	C5	C4	C3	C2	C1	D3	A3	A1							
						Geotechnical Practice Leader	Senior Consultant	Senior Engineer	Senior Project Engineer	Project Engineer	Staff Engineer	Engineer	Senior Drafting Support	Senior Admin Support	Admin Support	Total Labor Hours	Total Labor Cost	Driller	Lab Testing	Traffic Control	Permit Fees	Total Disbursements
Rate / Hr →						\$199.10	\$172.81	\$165.14	\$124.26	\$106.32	\$88.15	\$75.94	\$100.63	\$71.09	\$58.54							
Phase #	Task #	Description	Labor Total	Disbursements	Total																	
400	****	CM1 Geotechnical Testing and Analysis and Report (C.9.1)	\$0.00	\$0.00	\$0.00											0	\$0.00				\$0.00	
400	410	a. West Sunset Geotechnical Investigation	\$2,624.82	\$6,730.40	\$9,355.22			4			20		2			26	\$2,624.82	\$4,370.00	\$1,308.00	\$482.40	\$570.00	\$6,730.40
400	420	b. Geotechnical Analysis	\$3,226.30	\$0.00	\$3,226.30			8			20			2		30	\$3,226.30					\$0.00
400	430	c. Foundation Data Sheets	\$4,304.98	\$0.00	\$4,304.98	1		2			20		20			43	\$4,304.98					\$0.00
400	440	d. Project Management	\$660.56	\$0.00	\$660.56			4								4	\$660.56					\$0.00
500	****	CM1 Quality Control Review (C.9.2)	\$728.48	\$0.00	\$728.48	2		2								4	\$728.48					\$0.00
600	****	CM1 Pavement Design Report (C.10.1)	\$705.68	\$0.00	\$705.68	1		2			2					5	\$705.68					\$0.00
TOTAL			\$12,250.82	\$6,730.40	\$18,981.22	4	0	22	0	0	62	0	22	2	0	112	\$12,250.82	\$4,370.00	\$1,308.00	\$482.40	\$570.00	\$6,730.40

PSOMAS

Balancing the Natural and Built Environment.

June 22, 2021

Tim Rhine, PE
333 East Wetmore Road, Suite 280
Tucson, AZ 85705

Re: Sunset Road, I-10 to River Road
Project Number 4SRRIV
Psomas Project Number 7KHA210101

Dear Tim:

Please find attached Scope of Work and Cost Proposal for survey along Sunset Road from the Santa Cruz River to I-10.

We appreciate to opportunity to continue working with KHA. If you have any questions concerning the attached, please let me know.

Sincerely,

PSOMAS



Kevin T. Thornton, PE
Vice President

333 E. Wetmore Road
Suite 450
Tucson, AZ 85705-5256

Tel 520.292.2300
Fax 520.292.1290
www.Psomas.com

Psomas Scope of Work
Sunset Road, Santa Cruz River to I-10
Survey
Pima County Project 4SRRIV

The tasks below cover survey for Sunset Road from the Santa Cruz River to I-10 and is assumed to be ~1600 LF and ~250 feet in width.

Task C.7 - Survey and Mapping

Task C.7.1. Existing Survey and Mapping. The COUNTY will provide existing surveys and aerial mapping including horizontal and vertical controls previously obtained for the project. The CONSULTANT shall review existing surveys and aerial mapping as described in Task C.7.6.

Task C.7.2 and A.7.3. Horizontal and Vertical Control. The CONSULTANT will use the existing horizontal and vertical control established for the project for any additional surveys that are required.

Task C.7.4. Results of Survey Drawing. The CONSULTANT will incorporate a final Results of Survey Drawing showing existing section lines, right-of-way, ownership, and existing features into the plans for the project. Property lines will be included on the Results of Survey provided by the COUNTY. If necessary, for temporary construction easements or slope easements, the CONSULTANT will perform survey(s) and prepare legal descriptions limited to the budget included in the Fee Calculation. The CONSULTANT will review up to seven (7) title reports. Title reports will be provided by the County.

Task C.7.5. Survey Report. A Survey Report is not required for this project.

Task C.7.6. Aerial Mapping. The COUNTY will provide photogrammetric mapping in MicroStation format, including a digital terrain model for the Sunset Rd: Santa Cruz River to I-10 project. Aerial ground control used to develop said photogrammetric mapping will be provided by the COUNTY and will be checked by the CONSULTANT for compatibility with ADOT supplied topography for the I-10 Widening project from Ina Road to Ruthrauff Road. The CONSULTANT will perform cross sections at 100-ft intervals along the existing roadway centerline and edges of pavement, and at critical drainage elements (v-ditches, culvert depressions, drainage break-lines, and all other drainage features) to enhance the aerial ground DTM so that it meets or exceeds 0.1 foot accuracy or as noted in Section 3-10 of the Roadway Design Manual. The County will request the aerial mapping from ADOT collected as part of the I-10 Widening project from Ina Road to Ruthrauff Road. The CONSULTANT will provide cross-sectioning and field verification of this area. Discrepancies, if found, will be revised by the COUNTY.

Task C.7.7. Utility Surveys. The CONSULTANT will locate surface utilities and underground utilities as identified and marked by others for the length of the project. Blue Staking and other utility features will be located during the culture survey. Coordination for underground utilities markings will be by the CONSULTANT. Notify County of any utility non-responsive to a marking request.

Task C.7.8. Culture Surveys. The CONSULTANT will locate fences, mailboxes, culverts and manhole inverts, drainage features, match-in locations and any other feature that was not included in the survey and mapping files provided by the COUNTY. The work will also include the CONSULTANT converting field results into MicroStation format.

Task C.7.9. Right-of-way of Surveys. The COUNTY will provide previous right-of-way surveys for the project. The CONSULTANT will include the final right-of-way lines in the plans. The CONSULTANT shall verify monumentation of property corners (performed by others in a separate contract) and centerlines after construction of the project.

Task C.7.10. Roadway Design Manual Survey Efforts. The CONSULTANT will complete other survey related tasks as generally identified and provided within the Design Manual.

Task C.7.11 Legal Descriptions & Reference Maps. To be provided by others by separate contract.

Task C.7.12. Quality Control Review. County Survey and the CONSULTANT will provide quality control reviews of the Survey and Mapping deliverables listed below.

Task C.7.13 Boring Locations. The CONSULTANT will stake up to two (2) boring hole locations within one (1) individual site trip as provided by geotechnical investigation and provide existing ground elevations at said locations.

Deliverables:

- CONSULTANT has provided sixteen (16) crew hours and sixteen (16) office hours of miscellaneous survey time for additional survey requests as required by the project.
- Verification of Survey Centerline and Property Corner Monumentation
- Responses to all review comments.

**Sunset Road, I-10 to River Road
Derivation of Cost Proposal**

PSOMAS

ESTIMATED DIRECT LABOR (Psomas)

<u>Classification</u>	<u>Estimated Man-hours</u>	<u>Loaded Hourly Rate</u>	<u>Direct Hourly Rate</u>	<u>Loaded Labor Costs</u>
Project Principal	0	\$ 272.04	\$ 89.61	\$ -
Sr. Project Manager	0	\$ 199.33	\$ 65.66	\$ -
Sr. Project Engineer	0	\$ 160.08	\$ 52.73	\$ -
Project Engineer	0	\$ 125.75	\$ 41.42	\$ -
Designer	0	\$ 85.93	\$ 28.31	\$ -
Survey Manager	12	\$ 151.91	\$ 50.04	\$ 1,822.93
Project Surveyor	89	\$ 126.11	\$ 41.54	\$ 11,223.46
Party Chief	8	\$ 87.01	\$ 28.66	\$ 696.04
2-Person Crew	82	\$ 152.27	\$ 50.16	\$ 12,486.53
Survey Tech	116	\$ 86.52	\$ 28.50	\$ 10,036.29
Administration	0	\$ 105.52	\$ 34.76	\$ -
Total	307			\$ 36,265.25

CONTRACT TOTAL

\$ 36,265.25



Kevin T. Thornton, PE - Vice President

6/22/2021

Date

Psomas
Project Fee Estimate / Authorized Task List

Project Number: 7KHA210101
Project Name: Sunset, SCR to I-10 Survey - Rev
Project Manager: Kevin Thomson
Date: 6/22/2021

DERIVATION OF HOURS

BLI No.	Design Description	Project Principal \$ 272.04 / Hr. Hrs. Amount	Sr. Project Manager \$ 199.33 / Hr. Hrs. Amount	Sr. Project Engineer \$ 180.08 / Hr. Hrs. Amount	Project Engineer \$ 125.75 / Hr. Hrs. Amount	Designer \$ 85.93 / Hr. Hrs. Amount	Survey Manager \$ 151.91 / Hr. Hrs. Amount	Project Surveyor \$ 126.11 / Hr. Hrs. Amount	Party Chief \$ 87.01 / Hr. Hrs. Amount	2-Person Crew \$ 152.27 / Hr. Hrs. Amount	Survey Tech \$ 86.52 / Hr. Hrs. Amount	Administration \$ 105.52 / Hr. Hrs. Amount	Psomas Task Total
Task C.7	Sunset, SCR to I-10 Survey												
C.7.4	Results of Survey Drawing (SL, PL, R/W, Topo Features)						4 \$ 608	40 \$ 5,044			60 \$ 5,191		104 \$10,843.08
C.7.6	Update DTM						2 \$ 304	8 \$ 1,009			24 \$ 2,078		34 \$3,399.14
C.7.7	BlueStake Utility Locations						4 \$ 504	4 \$ 504	2 \$ 174	16 \$ 2,436	8 \$ 692		30 \$3,806.98
C.7.8	Update Topo, Drainage Structures, Inverts						2 \$ 304	4 \$ 504	4 \$ 345	40 \$ 6,091	16 \$ 1,384		99 \$9,531.57
C.7.9	Verify R/W Survey & Monuments						2 \$ 304	16 \$ 2,018	1 \$ 87	8 \$ 1,218	6 \$ 662		33 \$4,318.98
C.7.11	Legal Descriptions with Exhibits (Provided by Others)												
C.7.12	QA/QC Review with Pima County Survey						2 \$ 304						2 \$303.82
C.7.13	Stake Borehole Locations (2)							1 \$ 126	1 \$ 87	2 \$ 305			4 \$517.88
	Additional Misc. Survey Requests							16 \$ 2,018					32 \$4,454.10
	Total Sunset, SCR to I-10 Survey						12 \$ 1,823	89 \$ 11,223	8 \$ 696	82 \$ 12,487	116 \$ 10,036		307 \$36,265.25
Proposal Total							12 \$ 1,823	89 \$ 11,223	8 \$ 696	82 \$ 12,487	116 \$ 10,036		307 \$36,265.25

End of Exhibit "B" - ATTACHMENT 1