

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.12											
Geotechnical Issue Investigation											
3.12.1 Geotechnical Testing and Analysis and Report									0		
3.12.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.13											
Pavement Design											
3.13.1 Pavement Design Report									0		
3.13.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.14											
Bridge Structure Selection Report											
3.14.1 Bridge Structure Selection Report											
Draft Report UPRR									0		
Final Report UPRR									0		
Draft Report Rillito									0		
Final Report Rillito									0		
3.14.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.15											
Traffic Engineering											
3.15.1 Initial Traffic Engineering Report									0		
3.15.2 Final Engineering Report									0		
3.15.3 Meetings									0		
3.15.4 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.16</b>											
<b>Arterial Lighting Design</b>											
3.16.1 Lighting Design Report									0		
3.16.2 QC Review									0		
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.17</b>											
<b>Design Concept Report (DCR)</b>											
3.17.1 Executive Summary/Project Overview and Description									0		
3.17.2 Project Area Characteristics									0		
3.17.3 Design Standards, Criteria and Features/Alternatives		2	4						6		
3.17.4 Social, Econ., and Env. / Public Involvement and Agency Coord.									0		
3.17.5 Design Concept Report with Conclusions and Recommendations									0		
Drainage		4	8						12		
									0		
3.17.6 Cost Estimates (15%)									0		
Drainage									0		
Onsite Drainage, Assume Spacing & Piping based on # CBs		2	8	12					22		
Offsite Drainage		2	8	16					26		
Riverine		2	4	8					14		
3.17.7 QC Review (15%)									0		
Drainage									0		
Onsite Drainage		2	2	4					8		
Offsite Drainage		2	2	4					8		
Riverine		2	2	4					8		
<b>Subtotal</b>	<b>0</b>	<b>18</b>	<b>38</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>		

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.18</b>											
<b>Environmental Assessment/Mitigation</b>											
3.18.1 Cultural Resources Assessment and Report									0		
3.18.2 Section 4(f) Resources									0		
3.18.3 Biological Evaluation / Wildlife Habitat									0		
3.18.4 Vegetation Sampling / Measurement									0		
3.18.5 Clean Water Act Permitting									0		
3.18.6 Hazardous Materials Survey									0		
3.18.7 Air Quality									0		
3.18.8 Environmental Documentation									0		
3.18.9 Noise Analysis									0		
3.18.10 Visual Analysis									0		
3.18.11 Riparian Habitat Impact Assessment									0		
3.18.12 QC Review									0		
3.18.13 Environmental Assessment									0		
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.19</b>											
<b>ROW Acquisition Support</b>											
3.19.1 Existing Right-of-Way and Easements									0		
3.19.2 Right-of-Way Plans									0		
3.19.3 QC Review									0		
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Senior Project Designer	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.20											
Preparation of Plans and Cross Sections											
3.20.1 15% Plans											
Offsite Drainage Plans (Est 4- P&Ps)		4	8	16			24		52	4	13
Riverine Improvement Plans (Est 5-River Details)		8	24				40		72	5	14
3.20.2 IGA Exhibit											
3.20.3 QC Review (15%)											
Offsite Drainage Plans		4	8						12		
Riverine Improvement Plans		4	8						12		
Subtotal	0	20	48	16	0	0	64	0	148		
Task 3.30											
Additional Services											
3.30.1 Utility Coordination and Survey (Additional Services)									0		
3.30.2 Other Services									0		
3.30.3 ADOT Design-Build Procurement Phase Services									0		
Subtotal	0	0	0	0	0	0	0	0	0		
TOTAL WORKHOURS	0	308	416	320	0	32	160	48	1,284		

# EXHIBIT A: ESTIMATED DIRECT EXPENSES

## TRAVEL:

		avg. mi.		
Mileage:	# of Trips	per trip	Cost/mi.	Cost
	0	20	\$0.45	\$0.00
	2	200	\$0.45	\$178.00
Car:	# of Trips		Cost/trip	Cost
				\$0.00
Air:	# of Trips		Cost/trip	Cost
				\$0.00
Lodging:	Nights	People	Cost/night	Cost
				\$0.00
Per Diem:	Meal	# of Meals	Cost/Meal	Cost
	Breakfast			\$0.00
	Lunch	2	\$20.00	\$40.00
	Dinner			\$0.00

TOTAL TRAVEL = \$218.00

## PLOTING

say 0 total

	No. of Copies	Cost per Copy	Cost
Vellum Plots (24x36)		\$4.00	\$0.00
Photo Mylars		\$16.36	\$0.00

TOTAL PLOTS = \$0.00

## REPRODUCTIONS:

Reports (See EXHIBIT B)

\$397.00

Copies other than reports

	No. of Copies	Cost per Copy	Cost
Color Copies			
8 1/2"x11"		\$0.75	\$0.00
11"x17"		\$1.50	\$0.00
Color (36x48)	20	\$15.00	\$300.00
Black & White Copies			
8 1/2"x11"		\$0.06	\$0.00
11"x17"		\$0.08	\$0.00
Blacklines (22x34)		\$1.00	\$0.00

TOTAL REPRODUCTIONS = \$300.00

## EXHIBITS

	No. of Copies	Cost per Copy	Cost
Aerial Photo, 40 scale			
(Mounting on Foam Board for public meetings)		\$30.63	\$0.00
Presentation Blacklines		\$120.00	\$0.00
Color Photo Reductions		\$4.00	\$0.00
		\$8.00	\$0.00

TOTAL EXHIBITS = \$0.00

## SPECIALIZED VENDORS

Vendor Name	Cost
Vendor Name	\$0.00
Vendor Name	\$0.00
Vendor Name	\$0.00

TOTAL SPECIALIZED VENDORS = \$0.00

## EXHIBIT B:

## COST OF REPORTS

Type of Report	Covers & Binding	Black & White				Color Copies				COST PER REPORT	No. of Copies	TOTAL
		8 1/2"x11"		11"x17"		8 1/2"x11"		11"x17"				
		Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy			
DCR's	\$5.00	0	\$0.06	0	\$0.08	0	\$0.75	0	\$1.50	\$5.00	5	\$0.00
Drainage Reports (1 Sub)	\$5.00	200	\$0.06	30	\$0.08	0	\$0.75	40	\$1.50	\$79.40		\$397.00
Bridge Selection Reports	\$5.00	0	\$0.06	0	\$0.08	0	\$0.75	0	\$1.50	\$5.00		\$0.00
EAMR	\$5.00	0	\$0.06	0	\$0.08	0	\$0.75	0	\$1.50	\$5.00		\$0.00
GeoTech / Pavement	\$5.00	0	\$0.06	0	\$0.00	0	\$0.00	0	\$0.00	\$5.00		\$0.00
REPORTS TOTAL =												\$397.00

## VAN/BUS EXPENSE

<u>Trip Length</u>				<u>Rental Cost</u>		
Round Trip	=	Mi.		Daily Rate	=	\$0.00
inc. misc. dropoff/pickup				Additional Mileage Charge	=	\$0.00
				<u>Subtotal</u>	=	\$0.00
				Sales Tax ( 6.7% )	=	\$0.00
				VLT Surcharge (5%)	=	\$0.00
				Applicable Surcharge	=	\$0.00
				Fuel ( ____ mi./ ____ mi. per gal.) X 3.50 per gal.	=	\$0.00
<u>TOTAL MILES</u>	=	<u>0</u> Mi.		<u>TOTAL VAN COST</u>	=	\$0.00

# EXHIBIT A: ESTIMATED DIRECT EXPENSES

## TRAVEL:

Mileage:	# of Trips	avg. mi. per trip	Cost/mi.	Cost
			\$0.55	\$0.00
Car:	# of Trips		Cost/trip	Cost
				\$0.00
Air:	# of Trips		Cost/trip	Cost
				\$0.00
Lodging:	Nights	People	Cost/night	Cost
				\$0.00
Per Diem:	Meal	# of Meals	Cost/Meal	Cost
	Breakfast			\$0.00
	Lunch			\$0.00
	Dinner			\$0.00

TOTAL TRAVEL = \$0.00

## PLOTTING

say 0 total

	No. of Copies	Cost per Copy	Cost
Vellum Plots (24x36)		\$4.00	\$0.00
Photo Mylars		\$16.36	\$0.00

TOTAL PLOTS = \$0.00

## REPRODUCTIONS:

Reports (See EXHIBIT B)

\$397.00

Copies other than reports

	No. of Copies	Cost per Copy	Cost
Color Copies			
8 1/2"x11"		\$0.75	\$0.00
11"x17"		\$1.50	\$0.00
Black & White Copies			
8 1/2"x11"		\$0.06	\$0.00
11"x17"		\$0.08	\$0.00
Blacklines (22x34)		\$1.00	\$0.00

TOTAL REPRODUCTIONS = \$0.00

## EXHIBITS

	No. of Copies	Cost per Copy	Cost
Aerial Photo, 40 scale		\$30.63	\$0.00
(Mounting on Foam Board for public meetings)		\$120.00	\$0.00
Presentation Blacklines		\$4.00	\$0.00
Color Photo Reductions		\$8.00	\$0.00

TOTAL EXHIBITS = \$0.00

## SPECIALIZED VENDORS

Vendor Name	Cost
Vendor Name	\$0.00
Vendor Name	\$0.00
Vendor Name	\$0.00

TOTAL SPECIALIZED VENDORS = \$0.00

## EXHIBIT B:

## COST OF REPORTS

Type of Report	Covers & Binding	Black & White				Color Copies				COST PER REPORT	No. of Copies	TOTAL
		8 1/2"x11"		11"x17"		8 1/2"x11"		11"x17"				
		Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy			
DCR's	\$10.00	50	\$0.06	5	\$0.08	5	\$0.75	5	\$1.50	\$24.65	0	\$0.00
Drainage Reports	\$10.00	40	\$0.06	5	\$0.08	5	\$0.75	5	\$1.50	\$24.05	0	\$0.00
Bridge Selection Reports	\$10.00	20	\$0.06	5	\$0.08	5	\$0.75	5	\$1.50	\$22.85	0	\$0.00
EAMR	\$10.00	40	\$0.06	5	\$0.08	5	\$0.75	5	\$1.50	\$24.05	0	\$0.00
Other Env Rpts	\$5.00	15	\$0.06	3	\$0.08	3	\$0.75	3	\$1.50	\$12.89	0	\$0.00
GeoTech / Pavement	\$10.00	20	\$0.06	0	\$0.00	0	\$0.00	0	\$0.00	\$11.20	0	\$0.00
REPORTS TOTAL =											\$0.00	

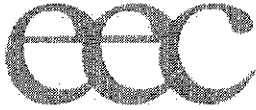
## VAN/BUS EXPENSE

<u>Trip Length</u>				<u>Rental Cost</u>			
Round Trip	=		Mi.	Daily Rate	=		\$0.00
inc. misc. dropoff/pickup				Additional Mileage Charge	=		\$0.00
				<u>Subtotal</u>	=		\$0.00
				Sales Tax ( 6.7% )	=		\$0.00
				VLT Surcharge (5%)	=		\$0.00
				Applicable Surcharge	=		\$0.00
				Fuel ( ____mi./ ____ mi. per gal.) X 3.50 per gal.	=		\$0.00
<u>TOTAL MILES</u>	=		0 Mi.	<u>TOTAL VAN COST</u>	=		\$0.00



# **APPENDIX C**

## **EEC**



Engineering and Environmental Consultants, Inc.

555 E. River Road, Suite 301 | Tucson, Arizona 85704 | P: 520.321.4625

September 24, 2019

Jim Glock, PE  
Tucson Office Manager  
Structural Grace  
1430 East Fort Lowell Road, Suite 200  
Tucson, Arizona 85719  
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RE: SFQ-PO-2000002 Proposal for Survey, Mapping, Environmental Assessment, Right-of-Way Acquisition Support and Utility Coordination assistance

Dear Mr. Glock:

Engineering and Environmental Consultants, Inc. (EEC) appreciates this opportunity to provide Survey, Mapping, Environmental Assessment, Right-of-Way Acquisition Support and Utility Coordination assistance for SFQ-PO-2000002 Sunset Road, I-10 to River Road project.

### **TASK 3.2 – QUALITY CONTROL PLAN AND PROJECT MANAGEMENT**

#### **Assumptions:**

1. Attendance by EEC at meetings will be limited to the Project Manager and an average of one Task Manager. Other team members will attend as required.

**Task 3.2.1. Quality Control Plan.** Develop a project-specific quality control plan that identifies responsible personnel, technical review, checking procedures, and monitoring process. Submit within 15 days of notice to proceed. The process shall follow the tenets of the PCDOT Interactive Project Development Process. Each major submittal shall include verification of the quality control completed on said submittal.

#### **Deliverables:**

- Project-Specific Quality Control Plan.
- Verification of quality control shall be provided with each major submittal.
- Responses to all review comments.

**Task 3.2.3. Meetings and Communication.** This task involves coordinating meeting times, inviting meeting participants, preparing for meetings, creating an agenda, facilitating meetings, and providing a meeting summary for all meetings. The anticipated design team meetings and activities are as follows:

- a. Conduct monthly meeting with the project team (6 total).
- b. Conduct sub-consultant and in-house team meetings (as needed/required).
- c. Conduct other meetings including but not limited to, design, review, update, internal, external, etc. (as needed/required)

### **TASK 3.10 SURVEY AND MAPPING**

#### **Assumptions:**

1. EEC will review survey and mapping available for the project that was obtained during the Sunset Road: Silverbell Road to I-10 Eastbound Frontage Road project to determine the extent of additional survey and mapping needed for the project. EEC will update the existing surveying and mapping as necessary to comply with Task 3.10.6.
2. EEC shall meet or exceed Aerial Mapping accuracy standards based on the ASPRS (American Society of Photogrammetry and Remote Sensing) for large scale maps. These standards include the following, Horizontal 1/100 of map scale, Vertical 1/3 of contour interval, spot elevation 1/6 of contour interval. EEC will perform additional cross sections on the roadway to enhance vertical accuracy and to aid the design in determining pay quantities in accordance with the Standard Specifications for earthwork, e.g. - roadway excavation, drainage excavation, embankment demand and borrow. This task will require EEC to check assumptions 3 and 4 below.
3. EEC shall perform a Design Survey as necessary for the project to verify mapping accuracies such that the topographic mapping and differential digital terrain model (DTM) are sufficiently accurate
4. EEC will coordinate its survey activities with PIMA COUNTY SURVEY. Field surveys will be conducted in conformance with established Arizona Boundary Survey Minimum Standards and Pima County RDM.
5. EEC will perform a Geodetic Control Survey based upon the Arizona State Plane Coordinate System of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88) by using N.G.S. control points and tying into PCDOT approved G.I.S. control.
6. The PIMA COUNTY SURVEY will provide Vertical and Horizontal control to be utilized by EEC.
7. EEC will provide right-of-way, utility base mapping, and supplemental surveys along with the appropriate document research to support these surveys.
8. EEC will coordinate utility location activities with utilities. CONSULTANT shall coordinate with County appointed representative coordinating blue stake locating activity.
9. Additional survey research will be conducted at the County to identify any benchmarks from previous improvement projects with descriptions and elevations, copies of any section corner recovery records along the right-of-way that tie the project to the Public Land and Survey System (PLSS) corners.
10. The Right of Way plans will depict the existing and proposed Right of Way Lines for the length of the project.
11. Existing right-of-way will be documented in the form of a CAD reference file. This information will be used for the DCR phase of the project.

**Task 3.10.1. Initial Planning and Reconnaissance.** EEC will hold a formal coordination meeting with PIMA COUNTY SURVEY prior to the start of any survey efforts to identify/discuss survey mapping project requirements and procedures and how the survey efforts will be coordinated with EEC design team. Estimated cost=

**Task 3.10.2. Horizontal Control.** EEC will run a Geodetic Control Survey based on NAD 83 and NAVD 88 datums by using PCDOT provided N.G.S. control points and tying to PC/COT approved GIS control points. EEC will run a closed field traverse through, or incorporate into, the primary project controls provided by County Survey. EEC will also field reference control points, and other found monuments, within the existing right-of-way, outside of the construction area. County Survey will review the closed field traverse run by EEC and the field references.

**Task 3.10.3. Vertical Control Traverse.** EEC will establish a bench circuit originating from PCDOT provided GIS vertical control points to prescribed field accuracy. The work will include mathematically adjusting the remaining error. The work also includes setting construction benchmarks at 500' intervals outside of the proposed construction areas and on alternating sides of the roadway. County Survey will field verify all vertical control points set from the PCDOT approved GIS points.

**Task 3.10.4. Results of Survey Drawing.** EEC will prepare a Results of Survey Drawing showing existing section lines, right-of-way, ownership, and existing features for the length of the project. Approximate property lines will be included on the Results of Survey by EEC. If necessary, for easement or R/W acquisitions, EEC will perform parcel survey(s) limited to the budget included in the Fee Calculation.

**Task 3.10.5. Topographic Mapping.** EEC will provide photogrammetric mapping in Microstation V8 and AutoCAD 2016 or newer version, including a digital terrain model, ortho-photos, and digital files in County .tif format. Aerial ground control will be provided by EEC and will be field checked by the County Survey prior to the results being transmitted to the aerial company. EEC 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.

**Task 3.10.6. Utility Surveys.** EEC will locate 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 will be by EEC.

**Task 3.10.7. Culture Surveys.** EEC will locate fences, mail boxes, culverts and manhole inverts, drainage features and flows, and match-in locations along the project length. The work will also include EEC converting field results into Microstation V8 CAD and AutoCAD 2016 or newer version format.

**Task 3.10.8. Right-of-way of Surveys.** After analyzing the initial field survey, EEC will field locate all relevant survey monuments including right-of-way centerline monuments, property corners and existing occupation, to determine the existing right-of-way lines. EEC will coordinate with County Survey in defining the existing right-of-way for the project. EEC will analyze the results and prepare Right-of-Way plans as part of this task.

**Task 3.10.9. Roadway Design Manual Survey Efforts.** EEC will complete other survey related tasks as identified and provided within the Design Manual.

**Task 3.10.10. Legal Descriptions & Reference Maps.** EEC will prepare legal descriptions and maps for new right-of-way, drainage easements, temporary construction easements, and other land acquisition needs as requested by the County. Legal description reference maps will be 8.5"x11". EEC shall include effort for the preparation of legal descriptions and associated reference maps and the probable need for determining parcel property lines.

**Task 3.10.11. Boring Locations.** EEC will stake boring hole locations as provided by geotechnical investigation and provide existing ground elevations at said locations.

**Task 3.10.12. Quality Control Review.** County Survey and EEC will provide quality control reviews of the Survey and Mapping deliverables listed below.

**Deliverables:**

- Digital black & white files (uncolored digital photo) to the County in .tif format and digital ASCII points files in comma delimited format.
- Results of survey drawings by PIMA COUNTY of existing right of way conditions.
- Results of right of way survey will be provided in accordance with the Pima County RDM in strip map format showing right-of-way data (including existing and proposed right-of-way lines, parcel lot lines, parcel numbers, locations of buildings close to or within right-of-way takes, etc.) with the preliminary Right-of-Way Plan submittal. Potential acquisition and easements will be identified on the drawing.
- Responses to all review comments.

## **TASK 3.18 ENVIRONMENTAL ASSESSMENT (EA)**

**Task 3.18.6. Hazardous Materials Survey.** EEC will complete a Preliminary Initial Site Assessment (PISA) for hazardous materials within the current right-of-way, potential right-of-way, and easements associated with the project and provide a Draft and Final PISA Report (CONSULTANT shall use appropriate ADOT form). The PISA shall comply with ASTM E-1528-06 (Standard Practice for Limited Environmental Due Diligence). This will include:

1. Conduct Site Reconnaissance (Section 9 of Standard)
2. Regulatory Database Review (Section 10.1 of Standard)
3. Historical Source Review (Section 10.2 of Standard)

## **TASK 3.19 RIGHT-OF-WAY ACQUISITION SUPPORT**

### **Assumptions:**

1. EEC will identify parcels from which right-of-way or easements will be required, with title research for said parcels being the responsibility of the County.
2. PCDOT will obtain any Rights-of-Entry required for this project.
3. The preparation of legal descriptions and reference maps by CONSULTANT are covered under Task 3.10.10.

**Task 3.19.1. Existing Right-of-Way and Easements.** EEC will provide PCDOT with a list of parcels from which right-of-way or easements will be required. PCDOT will furnish any title reports required for this project based on EEC's list. EEC will review title reports and other recorded information to verify current right-of-way and easements. EEC will perform any research, calculations, and additional survey needed to establish existing property and right-of-way lines to be affected by this project and integrate into mapping.

**Task 3.19.2. Right-of-Way Plans.** EEC will prepare 1"=40' right-of-way plans for the project, as per Pima County RDM 3.19 and Appendix 3-O-1. In addition to existing information, all proposed right-of-way and/or easements required shall be shown with complete dimensions. Ownership data and areas required shall be shown. EEC will coordinate with and incorporate feedback from Pima County in preparing documents and in identifying properties for potential acquisition and easements.

**Task 3.19.3. Quality Control Review of Right-of-Way Documents.** PIMA COUNTY SURVEY will provide a quality control review of the Right-of-Way documents prior to acceptance.

### **Deliverables:**

- Initial and Final Right-of-Way Report Assistance
- List of parcels from which right-of-way or easements will be required.
- Right-of-way plans.
- Responses to all review comments.

## **Proposed Budget**

EEC proposes to do the above tasks for a fixed fee of **\$105,036.75**. Tasks and work required in addition to the tasks above will be done under Additional Services below.

## TASK 3.30 ADDITIONAL SERVICES

### Assumptions:

1. *Additional services are speculative in nature as the need for them, and the ultimate level of effort to be required is unknown. Therefore, relative budgets for each of these potential tasks have been identified, but may be further defined, and or modified, should the need for them or other efforts arise as part of the overall scope of work.*
2. EEC will stake approximately 40 pothole locations as for utilities and provide existing pipe/conduit elevations at said locations. This work is described under Task 3.30.1 Additional Services.

**Task 3.30.1. Utility Coordination and Survey (Additional Services).** In the event a utility is unable to provide the ground marking and certified survey data requested in Task 3.3.1, EEC shall provide Utility Quality Level B information for the utility in accordance with ASCE Standard Guidelines for the collection and Depiction of Existing Subsurface Data (CI/ASCE 38-02), page 3.

- 40 potholes per the attached sub-consultant scope of services
- Updated mapping of utility information, including potholing information
- This task also accounts for additional drafting and records research to achieve Quality Level C utility line work (valves, manholes, utility lines) and then provide approximate location points to potholing service to then achieve Quality B.
- Quality Level B information for the project waterlines

**Task 3.30.2. Other Services.** EEC may be called upon to perform services unknown of or identified subsequent to the original scoping of the project. These efforts may be caused by unforeseen issues that arise after the development of this scope of work. Potential services could include the need to attend additional meetings, provide displays or summaries, perform additional analysis, provide additional design.

### **Proposed Budget for Additional Services**

EEC proposes to do the above tasks for Additional Services at a fixed fee of **\$9,165.75**. Tasks and work required in addition to the tasks above will be bill at the unit prices outline in the proposal.

We are look forward to working with you on this project.

Sincerely,

**ENGINEERING AND ENVIRONMENTAL CONSULTANTS, INC.**



Bruce Brown, RLS AZ, AK  
Survey Director  
Tel 520-321-4625 | Ext 7303  
Mobile 520-310-0140, [bbrown@eecorp.com](mailto:bbrown@eecorp.com)

**PIMA COUNTY  
FEE ESTIMATE SUMMARY**

PROJECT: **Sunset Road: I-10 to River Road**  
TASK(s):

CONSULTANT: EEC

CONTRACT NO.:  
CONTRACT TYPE: CPFF

**Direct Labor Cost**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Contracted Avg DL Rate</u>	<u>Labor Cost</u>
Project Principal	-	\$70.00	\$0.00
Project Manager	137	\$55.00	\$7,535.00
Senior Project Surveyor	129	\$50.00	\$6,450.00
Project Surveyor	166	\$40.00	\$6,640.00
Project 2 Man Field Crew	146	\$35.00	\$5,110.00
Project Designer	127	\$32.00	\$4,064.00
Drafting / CADD / Graphics	242	\$29.00	\$7,018.00
Clerical	-	\$0.00	\$0.00

(A) Direct Labor 947 Hrs **\$36,817.00**

**OVERHEAD**

(B) OH Rate x (A) 150.00% x \$36,817.00 = **\$55,225.50**

**PROFIT**

(C) % Profit Rate x (A+B) 10.0% x \$92,042.50 = **\$9,204.25**

**Estimated Direct Expenses**

Travel	\$0.00
Plotting	\$0.00
Reproductions	\$0.00
Exhibits	\$0.00
Specialized Vendors	\$0.00
Reports	\$0.00
Van/Bus Rental	\$0.00

(D) Total Estimated Direct Expenses **\$0.00**

**Estimated Outside Services & Subconsultants**

Aerotech Mapping \$3,790.00

(F) Total Estimated Outside Services & Subconsultants = **\$3,790.00**

**Estimated Fees**

(H) TOTAL CONSULTANT FEE = **\$105,036.75**

**PIMA COUNTY  
FEE ESTIMATE SUMMARY  
ADDITIONAL SERVICES**

PROJECT: **Sunset Road: I-10 to River Road**  
TASK(s):

CONSULTANT: **EEC**

CONTRACT NO.:  
CONTRACT TYPE: **CPFF**

**Estimated Additional Services**

**Direct Labor Cost**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Contracted Avg DL Rate</u>	<u>Labor Cost</u>
Project Principal	-	\$70.00	\$0.00
Project Manager	20	\$55.00	\$1,100.00
Senior Project Surveyor	8	\$50.00	\$400.00
Project Surveyor	16	\$40.00	\$640.00
Project 2 Man Field Crew	16	\$35.00	\$560.00
Project Designer	8	\$32.00	\$256.00
Drafting / CADD / Graphics	13	\$29.00	\$377.00
Clerical	-	\$0.00	\$0.00
(A) Direct Labor	81 Hrs		<u><b>\$3,333.00</b></u>
OVERHEAD			
(B) OH Rate x (A)		150.00% x	\$3,333 = <u><b>\$4,999.50</b></u>
PROFIT			
(C) % Profit Rate x (A+B)		10.0% x	\$8,333 = <u><b>\$833.25</b></u>

**Estimated Direct Expenses**

Travel	\$0.00
Plotting	\$0.00
Reproductions	\$0.00
Exhibits	\$0.00
Specialized Vendors	\$0.00
Reports	\$0.00
Van/Bus Rental	<u>\$0.00</u>

(D) Total Estimated Direct Expenses

**Estimated Outside Services & Subconsultants**

(F) Total Estimated Outside Services & Subconsultants	=	<u><b>\$0.00</b></u>
<b>Estimated Fees</b>		
(H) <b>TOTAL CONSULTANT FEE</b>	=	<u><b>\$9,165.75</b></u>



## Workhour Estimate by Task

MAIN TASK #	Main Task Description	Project Principal	Project Manager	Senior Project Surveyor	Project Surveyor	Project 2 Man Field Crew	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL
Task 3.2	Quality Control Plan and Project Management	0	34	0	0	0	0	0	0	34
Task 3.3	Utility Coordination	0	0	0	0	0	0	0	0	0
Task 3.4	Public Participation	0	0	0	0	0	0	0	0	0
Task 3.5	Coordination with Government Agencies	0	0	0	0	0	0	0	0	0
Task 3.6	Integration of Public Art As Applicable	0	0	0	0	0	0	0	0	0
Task 3.7	Gathering of Relevant Data	0	0	0	0	0	0	0	0	0
Task 3.8	Environmental Impact Screening	0	0	0	0	0	0	0	0	0
Task 3.10	Surveying and Mapping	0	71	97	138	146	104	152	0	708
Task 3.11	Drainage Report	0	0	0	0	0	0	0	0	0
Task 3.12	Geotechnical Issue Investigation	0	0	0	0	0	0	0	0	0
Task 3.13	Pavement Design	0	0	0	0	0	0	0	0	0
Task 3.14	Bridge Structure Selection Report	0	0	0	0	0	0	0	0	0
Task 3.15	Traffic Engineering	0	0	0	0	0	0	0	0	0
Task 3.16	Arterial Lighting Design	0	0	0	0	0	0	0	0	0
Task 3.17	Design Concept Report (DCR)	0	0	0	0	0	0	0	0	0
Task 3.18	Environmental Assessment/Mitigation	0	12	0	0	0	23	0	0	35
Task 3.19	ROW Acquisition Support	0	20	32	28	0	0	90	0	170
Task 3.20	Preparation of Plans and Cross Sections	0	0	0	0	0	0	0	0	0
		0	137	129	166	146	127	242	0	947
Task 3.30	Additional Services	0	20	8	16	16	8	13	0	81

### Workhour Estimate by Task

Project Length in weeks

12

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.2</b>											
<b>Quality Control Plan and Project Management</b>											
3.2.1 Quality Control Plan		8							8	8	
3.2.2 Project Management									0		
a) Coordination with team members		14							14		
b) Website establishment and maintenance									0		
3.2.3 Meetings and Communication											
a) Monthly team progress meetings (12)		12							12		
b) In house team meetings (as needed)									0		
c) Other meetings with agencies									0		
3.2.4 Schedule									0		
3.2.5 Cost Estimating									0		
<b>Subtotal</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>		

Description	Project Principal	Project Manager	Senior Project Surveyor	Project Surveyor	Project 2 Man Field Crew	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.10</b>											
<b>Surveying and Mapping</b>											
3.10.1 Initial Planning and Reconnaissance		5	12	8	0	0	0		25		
3.10.2 Horizontal Control		3	4	8	20	0	0		35		
3.10.3 Vertical Control Traverse		3	4	8	30	0	0		45		
3.10.4 Results of Survey Drawing		5	8	8	0	0	30		51		
3.10.5 Topographic Mapping		3	5	10	12	15	14		59		
3.10.6 Utility Surveys		3	8	10	32	16	16		85		
3.10.7 Culture Surveys		3	4	10	16	15	14		62		
3.10.8 Right-of-Way Surveys		5	12	16	20	10	30		93		
3.10.9 Roadway Design manual Survey Efforts		3	8	4	0	0	0		15		
3.10.10 Legal Descriptions & Reference Maps		9	16	32	0	40	40		137		
3.10.11 Boring Locations		9	8	16	16	8	8		65		
3.10.12 QC Review		20	8	8	0	0	0		36		
<b>Subtotal</b>	<b>0</b>	<b>71</b>	<b>97</b>	<b>138</b>	<b>146</b>	<b>104</b>	<b>152</b>	<b>0</b>	<b>708</b>		

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.18											
Environmental Assessment/Mitigation											
3.18.1 Cultural Resources Assessment and Report									0		
3.18.2 Section 4(f) Resources									0		
3.18.3 Biological Evaluation / Wildlife Habitat									0		
3.18.4 Vegetation Sampling / Measurement									0		
3.18.5 Clean Water Act Permitting									0		
3.18.6 Hazardous Materials Survey		12				23			35		
3.18.7 Air Quality									0		
3.18.8 Environmental Documentation									0		
3.18.9 Noise Analysis									0		
3.18.10 Visual Analysis									0		
3.18.11 Riparian Habitat Impact Assessment									0		
3.18.12 QC Review									0		
3.18.13 Environmental Assessment									0		
Subtotal	0	12	0	0	0	23	0	0	35		

Description	Project Principal	Project Manager	Senior Project Surveyor	Project Surveyor	Project 2 Man Field Crew	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.19											
ROW Acquisition Support											
3.19.1 Existing Right-of-Way and Easements		4	8	8	0	0	30		50		
3.19.2 Right-of-Way Plans		6	8	16	0	0	60		90		18
3.19.3 QC Review		10	16	4	0	0	0		30		
Subtotal	0	20	32	28	0	0	90	0	170		

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Surveyor	Project Surveyor	Project 2 Man Field Crew	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.30											
Additional Services											
3.30.1 Utility Coordination and Survey (Additional Services)		10	4	8	8	4	8		42		
3.30.2 Other Services		10	4	8	8	4	5		39		
3.30.3 ADOT Design-Build Procurement Phase Services									0		
Subtotal		20	8	16	16	8	13	0	81		
TOTAL WORKHOURS W/O ADDITIONAL SERVICES	0	19	24	20	16	8	8	0	947		
TOTAL WORKHOURS WITH ADDITIONAL SERVICES	0	157	137	182	162	135	255	0	1,028		



333 North Wilmot Road  
Suite 340  
Tucson, Arizona 85711  
(520) 561-6537

September 17, 2019

Mr. Bruce Brown, RLS  
**Engineering and Environmental Consultants, Inc. (EEC)**  
555 East River Road, Suite 301  
Tucson, Arizona 85704

## **Proposal Name: Sunset Road**

AeroTech Mapping (ATM) is pleased to present the following proposal for aerial photography and photogrammetric services for the above-mentioned project.

### **Photogrammetric Scope of Work**

Our services will consist of the production of 1" = 40', 1' topographical information, planimetric detail and digital orthophoto covering the approximate 27 acres located in Tucson, Arizona. The aerial mapping limits are indicated in green on the attached layout.

The photography will consist of 1 flight line and 6 exposures utilizing 4cm digital imagery. Accuracies of plus or minus 0.262' can be expected as it relates to the topographical information generated from the Digital Terrain Modeling (DTM) information. Accuracies of plus or minus 0.164' can be expected as it relates to the DTM information itself.

Project accuracy to conform to generally accepted photogrammetric standards established by the American Society of Photogrammetry and Remote Sensing (ASPRS).

### **Aerial Ground Control**

We understand that EEC will be responsible for the establishment of aerial ground control for the aerial survey. A total of 8 aerial targets are needed for this project and a layout showing their locations is attached. The aerial target sizes should be in the order of 6" wide and measure 6' in total length.

### **Deliverables**

Deliverables will consist of a hard-copy plot and flash drive containing the DTM information used for the generation of topographical information, the contour information, planimetric detail, the .tfw image limit file, orthophoto TIFF image and .dwg image limits file which will allow for bringing the image into its proper coordinate position.

Final delivery of the digital information will be supplied in AutoCAD and Microstation formatted to ADOT specification.



Sunset Road

### Estimated Project Schedule

ATM anticipates completing this project 17 consecutive working days after date of photography or receipt of control, whichever is later. Please note certain delays may exist, i.e. weather and/or air flight restrictions that are beyond our control.

### Summary & Terms

Summary for Photogrammetric Services		
Service	Description	Schedule
Aerial Photography	4cm Digital Imagery	13 Working Days
Overlap	60%	
Aerial Ground Control	8 Aerial Targets (6" x 6')	
Contour Interval	1 Foot (DTM & Breaklines)	
Mapping Scale	1" = 40'	
Stereo Model Count	4	
Planimetric	Full Detail	
Plot	One Overall Plot	
Format	AutoCAD / Microstation V*	
Layers	ADOT	
Digital Orthophoto	Color, TIFF, 0.15' Pixel Resolution	
Total Fee		\$3,790.00

### Payment Schedule Net 30 Days

This proposal will remain effective for 60 days after the date of this letter. If you have any questions, please do not hesitate to contact us at any time. ATM appreciates the opportunity of submitting this proposal and we look forward to working with EEC.

Your signature in the space provided below indicates your acceptance of the scope of work and terms of the proposal and serves as our Notice to Proceed.

Sincerely,

Tim Burrows, CP  
Account Manager

Accepted by:

EEC

Bruce Brown, RLS

Client Project Number

Date



Sunset Rd

4cm Digital Imagery, 1 Flight Line, 6 Exposures

1"=40' 1FT Topography / Planimetry / Orthophoto

AZSPC NAD 83 Central Zone (GRID) 8 Control Points

27 Acres +/-



**APPENDIX D**

**WILDER**

**LANDSCAPE**

**ARCHITECTS**





WILDER  
Landscape Architects

2736 E. ADAMS ST (520) 320-3936  
TUCSON, AZ 85716 WILDERLA.COM

September 19, 2019

Jim Glock  
Structural Grace, Inc.  
1430 E. Fort Lowell Road, Suite 200  
Tucson, Arizona 85719

Re: Landscape Architectural Services for Sunset Road: I-10 to River Road (4SRRIV) – rev 1

Dear Jim,

I appreciate the opportunity to provide this scope and fee proposal for landscape architectural services for the Pima County Sunset Road: I-10 to River Road (4SRRIV) project. The following scope is based on the Exhibit "A" Scope of Services, provided by the County. Wilder Landscape Architecture (Wilder) tasks are organized below per the outline in the project scope.

## **SCOPE OF WORK**

### **3.2 QUALITY CONTROL PLAN AND PROJECT MANAGEMENT**

#### **Assumptions**

1. Landscape Architectural Services are provided for a 12-month period.
2. Meeting attendance will typically be by the Wilder Project Manager. Other team members will attend as required.
3. Meetings (inclusive of preparation, travel, and summaries):
  - o Monthly progress meetings: 12 meetings, 2 hours each.
  - o Other meetings as necessary: 2 meetings, 2 hours each.
4. Hours for performing quality control shall be billed toward the specific tasks.

#### **Task 3.2.3. Meetings and Communication**

Anticipated design team meetings:

- a. Monthly meeting with the project team (12 total).
- b. In-house team meetings (3 meetings included).
- c. Plan Review Meetings with project design and consultant team (assume 2 meetings). These meetings will occur at PCDOT.
- d. Coordination with ADOT (Native Plant Inventory & Landscape). Assume two meetings.
- e. Coordination with PCRCD (Riparian). Assume two meetings.

#### **Task 3.2.5. Cost Estimating**

- Cost estimates for Initial DCR Phase and Final DCR submittals.
- The cost estimates will be broken down by jurisdiction for funding purposes (ADOT: southerly approach to Sunset Rd Traffic Interchange & UPRR bridge) (PCDOT: Sunset Rd from UPRR bridge to River Rd & improvements associated with the Sunset Campus intersections).

#### **Task 3.2 Deliverables**

- Meeting materials as necessary.
- Meeting Notes from ADOT/PCRCD to be shared with design team.
- Cost estimates at Initial and Final DCR submittals.

**TASK 3.4 PUBLIC PARTICIPATION****Assumptions**

1. Pima County will lead all public participation activities, and will take the lead in organizing, staffing and preparing for all public meetings.
2. One Wilder team member will attend public open houses / hearing.
3. No CAC involvement is anticipated.

**Task 3.4.2. Public Meetings**

- Wilder will attend two public open houses and one public hearing.

**Task 3.4 Deliverables**

- Displays (two boards per public open house). Displays may include images, plans, and sections.

**TASK 3.8 ENVIRONMENTAL IMPACT SCREENING****Assumptions**

1. Pima County's Environmentally Sensitive Roadway Design guidelines apply to this project.
2. EcoPlan will lead this Task. Wilder will provide input as noted below.

**Task 3.8.1. Environmental Coordination Meeting**

- Wilder will participate in one on-site coordination meeting with the design team and members of PCRFC.

**Task 3.8.2. Questionnaire for Establishing Potential Areas of Impact**

- Wilder will provide written input for vegetation, visual assessment and riparian habitat impacts portions of the Questionnaire. Questionnaire shall be developed and formatted by EcoPlan.

**Task 3.8.3. Summary Impact Matrix**

- Wilder will provide written input for vegetation, visual assessment and riparian habitat impacts portions of the Matrix. Matrix shall be developed and formatted by EcoPlan.

**Task 3.8.4. Environmental Results Memorandum**

- Wilder will provide written input for vegetation, visual assessment and riparian habitat impacts portions of the Memorandum. Memorandum shall be developed and formatted by EcoPlan.

**Task 3.8.5. Team Review**

- Wilder will attend and participate in the project team meeting to review and discuss environmental concerns.

**Task 3.8 Deliverables**

- Written input provided to EcoPlan for Questionnaire.
- Written input provided to EcoPlan for Summary Impact Matrix.
- Written input provided to EcoPlan for Environmental Results Memorandum.

**TASK 3.17 DESIGN CONCEPT REPORT (DCR)****Assumptions**

1. This project is identified as an ESR and is subject to the additional requirements found in Section 4.0 of the RDM.
2. Structural Grace will lead this Task. Wilder will provide input as noted below.

**Task 3.17.2. Project Area Characteristics (Existing Conditions)**

Wilder will provide written narratives for Existing Vegetation, Impacts to Riparian Areas, Irrigation (future connectivity) and Visual Resources to be included in the DCR.

**Task 3.17.4. Social, Economic, and Environmental Considerations/Public Involvement Efforts & Agency Coordination**

Wilder will provide written input for the visual/aesthetic resources section.

**Task 3.17.5. Design Concept Report with Conclusions and Recommendations**

Wilder will provide written input for the recommendations relative to vegetation (existing and proposed), irrigation, visual assessment and riparian impacts.

**Task 3.17.6. Cost Estimate**

Wilder will provide a preliminary cost estimate for landscape-related items.

**Task 3.17 Deliverables**

- Written narratives and recommendations relating to vegetation (existing and proposed), irrigation, visual assessment and riparian habitat impacts. These will be incorporated into the DCR by Structural Grace.
- Preliminary itemized cost estimate for landscape-related items (landscape, irrigation and erosion control).
- Written response to review comments.

**TASK 3.18 ENVIRONMENTAL ASSESSMENT (EA)****Assumptions**

1. Pima County's Environmentally Sensitive Roadway Design guidelines apply to this project.

**Task 3.18.4. Vegetation Sampling/Measurement**

Vegetation measurement will be per Appendix 4-D of the Pima County Roadway Design Manual.

- Step 1: Inventory of all saguaros and all protected native trees (Section 18.72.040 Protected Native Plants List). All saguaros and all trees greater than or equal to 3 inches in caliper shall be inventoried.
- Step 2: Seed Mix development and determination of re-planting densities of Pima County protected cactus and shrub species. The releve method shall be used, and per the guidelines, releves will be conducted in the fall and spring. Due to the disturbance on the site, Wilder will conduct releves outside of the project limits that will capture species / densities numbers reflective of less-disturbed conditions. Wilder will select releve locations that will be approved by Pima County prior to fieldwork. Seed mix composition will reflect the releve results as well as plants historically in the area with similar water conditions and will take into account seed availability.

Wilder will prepare a Vegetation Inventory and Releve Analysis Report that details the methodologies used, mitigation requirements, and proposed seed mixes and re-planting densities. A summary shall be included in the EA.

**Task 3.18.10. Visual Analysis**

Wilder will provide a Visual Assessment Report, per Appendix 4-G of the Pima County Roadway Design Manual. The report will document existing site elements that contribute to the character of the site; assess potential impacts of the proposed project; and suggest strategies to ensure that the built project is visually compatible with the surrounding environment. A Draft and Final Visual Assessment Report will be developed.

- The Visual Assessment Report will provide a similar level of graphic detail as the Sunset Road, Silverbell Road to I-10 Segment 1 report.
- Approximately 12 viewpoints will be included. The selected viewpoints will reflect views from the following user groups: adjacent residents, Silverbell Road motorists, I-10 motorists (current interstate alignment), the Loop recreation users and future Sunset road users.
- Simulation of new interstate alignment is not included with this proposal.

**Task 3.18.11. Riparian Habitat Impact Assessment**

- Wilder will identify riparian areas located within the project limits and determine mitigation requirements for regulated riparian habitat under the Pima County Regional Flood Control District riparian ordinance.
- As impact will occur within the City limits, coordination will be required with City staff. This scope assumes documentation per ESR guidelines and does NOT include preparation of any City-required plans.

**Task 3.18 Deliverables**

- Vegetation Inventory and Releve Analysis Report, Draft and Final
- Visual Assessment Report, Draft and Final
- Exhibit depicting extent of mapped riparian areas and required mitigation
- Written summaries of the Vegetation, Visual and Riparian assessments for inclusion in the EA.
- Written responses to all review comments

**TASK 3.20 PREPARATION OF PLANS AND CROSS-SECTIONS**

No landscape construction documents are included in this scope.

**TASK 3.30 ADDITIONAL SERVICES**

Assumptions:

1. Additional services are speculative in nature as the need for them, and the ultimate level of effort to be required is unknown. Therefore, no budget for these tasks has been identified, but may be added when the need for them arises.

**Fees**

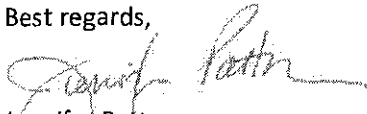
Work will be provided on a lump sum basis. The work will be based on the hourly rates provided and the hours and tasks listed in the attached Workhour Estimate worksheet. Work beyond this scope will be considered additional services and will not proceed without approval from the Client.

**Reimbursable Expenses**

Copies and prints are additional and will be billed as depicted in the Reimbursable Expenses Worksheet. Billings for services will be submitted at the end of each month based on a percentage of work completed.

We look forward to working with you and the team on this project.

Best regards,

A handwritten signature in dark ink, appearing to read "Jennifer Patton", written over a horizontal line.

Jennifer Patton

Principal, Wilder Landscape Architect

**PIMA COUNTY  
WILDER LANDSCAPE ARCHITECTS FEE ESTIMATE SUMMARY**

PROJECT: **Sunset Road: I-10 to River Road**  
DATE: **9/16/2019**

CONSULTANT: **Wilder Landscape Architects**

CONTRACT NO.: **Sol# 2000002**  
CONTRACT TYPE: **CPFF**

---

**Direct Labor Cost**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Contracted Avg DL Rate</u>	<u>Labor Cost</u>
Project Principal	42	\$45.00	\$1,890.00
Project Manager	165	\$35.00	\$5,775.00
Project Architect	-		\$0.00
Project Designer	222	\$25.00	\$5,550.00
Drafting / CADD / Graphics	-		\$0.00
Clerical	-		\$0.00
(A) Direct Labor	429 Hrs		<u><b>13,215.00</b></u>

**OVERHEAD**

(B) OH Rate x (A) 150.00% x \$13,215 = **19,822.50**

**PROFIT**

(C) % Profit Rate x (A+B) 10.0% x \$33,038 = **3,303.75**

**Estimated Direct Expenses**

Travel	\$0.00
Plotting	\$0.00
Reproductions	\$56.20
Exhibits	\$600.00
Specialized Vendors	\$0.00
Reports	\$393.20
Van/Bus Rental	\$0.00
(D) Total Estimated Direct Expenses	<u><b>1,049.40</b></u>

**Estimated Outside Services & Subconsultants**

---

(F) Total Estimated Outside Services & Subconsultants = **0.00**

**Estimated Fees**

(H) **TOTAL CONSULTANT FEE** = **37,390.65**

## Workhour Estimate by Task

MAIN TASK #	Main Task Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL
Task 3.2	Quality Control Plan and Project Management	0	60	0	0	0	0	0	0	60
Task 3.3	Utility Coordination	0	0	0	0	0	0	0	0	0
Task 3.4	Public Participation	4	12	0	0	0	64	0	0	80
Task 3.5	Coordination with Government Agencies	0	0	0	0	0	0	0	0	0
Task 3.6	Integration of Public Art As Applicable	0	0	0	0	0	0	0	0	0
Task 3.7	Gathering of Relevant Data	0	0	0	0	0	0	0	0	0
Task 3.8	Environmental Impact Screening	2	13	0	0	0	0	0	0	15
Task 3.10	Surveying and Mapping	0	0	0	0	0	0	0	0	0
Task 3.11	Drainage Report	0	0	0	0	0	0	0	0	0
Task 3.12	Geotechnical Issue Investigation	0	0	0	0	0	0	0	0	0
Task 3.13	Pavement Design	0	0	0	0	0	0	0	0	0
Task 3.14	Bridge Structure Selection Report	0	0	0	0	0	0	0	0	0
Task 3.15	Traffic Engineering	0	0	0	0	0	0	0	0	0
Task 3.16	Arterial Lighting Design	0	0	0	0	0	0	0	0	0
Task 3.17	Design Concept Report (DCR)	12	20	0	0	0	14	0	0	46
Task 3.18	Environmental Assessment/Mitigation	24	60	0	0	0	144	0	0	228
Task 3.19	ROW Acquisition Support	0	0	0	0	0	0	0	0	0
Task 3.20	Preparation of Plans and Cross Sections	0	0	0	0	0	0	0	0	0
		42	165	0	0	0	222	0	0	429
Task 3.30	Additional Services	0	0	0	0	0	0	0	0	0

# Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.2											
Quality Control Plan and Project Management											
3.2.1 Quality Control Plan									0		
3.2.2 Project Management									0		
a) Coordination with team members											
b) Website establishment and maintenance											
3.2.3 Meetings and Communication											
a) Monthly team progress meetings (12)		24							24		
b) In-house team meetings (as needed)		6							6		
c) Other meetings with agencies		18							18		
3.2.4 Schedule									0		
3.2.5 Cost Estimating		12							12		
Subtotal	0	60	0	0	0	0	0	0	60		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.3											
Utility Coordination											
3.3.1 Data Gathering Utility Designation Letter of Acceptance											
a) Individual utility meetings (5)									0		
b) Utility Company Acceptance Letters									0		
3.3.2 Design Coordination, Utility Impact Identification											
a) Website info Prep and Posting									0		
3.3.3 Utility Impact Mitigation											
a) Impact mitigation Meetings w/County									0		
b) Comment Review Responses									0		
3.3.4 QA									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.4											
Public Participation											
3.4.1 Public Participation Plan Support									0		
3.4.3 Public Meetings (3 w/ travel time)	4	12				64			80		
3.4.5 QC Review									0		
Subtotal	4	12	0	0	0	64	0	0	80		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.5											
Coordination with Government Agencies											
3.5.1 Agency coordination log, agenda, minutes, response, etc.									0		
Subtotal	0	0	0	0	0	0	0	0	0		



**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.6											
Integration of Public Art As Applicable											
3.6.1 Coordination of Art Concepts with Plma County									0		
3.6.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.7											
Gathering of Relevant Data											
3.7.1 Gather Existing Information									0		
3.7.2 Site Visits									0		
3.7.3 QC Review											
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.8											
Environmental Impact Screening											
3.8.1 Environmental Coordination Meeting		3							3		
3.8.2 Questionnaire for Establishing potential Areas of Impact		2							2		
3.8.3 Summary Impact Matrix		2							2		
3.8.4 Environmental Results Memorandum		2							2		
3.8.5 Team Review		4							4		
3.8.6 Project Modifications/Alternatives									0		
3.8.7 QC Review	2								2		
Subtotal	2	13	0	0	0	0	0	0	15		

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.9											
N/A Alternative Locations Study	No Alternative Locations Study is anticipated as part of the project										
									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.10											
Surveying and Mapping											
3.10.1 Initial Planning and Reconnaissance									0		
3.10.2 Horizontal Control									0		
3.10.3 Vertical Control Traverse									0		
3.10.4 Results of Survey Drawing									0		
3.10.5 Topographic Mapping									0		
3.10.6 Utility Surveys									0		
3.10.7 Culture Surveys									0		
3.10.8 Right-of-Way Surveys									0		
3.10.9 Roadway Design manual Survey Efforts									0		
3.10.10 Legal Descriptions & Reference Maps									0		
3.10.11 Boring Locations									0		
3.10.12 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.11											
Drainage Report											
3.11.1 Review Existing Plans and Reports									0		
3.11.2 Hydrologic and Hydraulic Modelling									0		
3.11.3 Drainage Maps and Exhibits									0		
3.11.4 Drainage Reports									0		
3.11.5 FEMA Requirements									0		
3.11.6 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.12											
Geotechnical Issue Investigation											
3.12.1 Geotechnical Testing and Analysis and Report									0		
3.12.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.13											
Pavement Design											
3.13.1 Pavement Design Report									0		
3.13.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.14											
Bridge Structure Selection Report											
3.14.1 Bridge Structure Selection Report											
Draft Report UPRR									0		
Final Report UPRR									0		
Draft Report Rillito									0		
Final Report Rillito									0		
3.14.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.15											
Traffic Engineering											
3.15.1 Initial Traffic Engineering Report									0		
3.15.2 Final Engineering Report									0		
3.15.3 Meetings									0		
3.15.4 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.16											
Arterial Lighting Design											
3.16.1 Lighting Design Report									0		
3.16.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.17</b>											
<b>Design Concept Report (DCR)</b>											
3.17.1 Executive Summary/Project Overview and Description									0		
3.17.2 Project Area Characteristics		4				4			8		
3.17.3 Design Standards, Criteria and Features/Alternatives									0		
3.17.4 Social, Econ., and Env. / Public Involvement and Agency Coord.		4				4			8		
3.17.5 Design Concept Report with Conclusions and Recommendations		6				6			12		
3.17.6 Cost Estimates	6	6							12		
3.17.7 QC Review	6								6		
<b>Subtotal</b>	<b>12</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>46</b>		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.18</b>											
<b>Environmental Assessment/Mitigation</b>											
3.18.1 Cultural Resources Assessment and Report									0		
3.18.2 Section 4(f) Resources									0		
3.18.3 Biological Evaluation / Wildlife Habitat									0		
3.18.4 Vegetation Sampling / Measurement	4	24				54			62		
3.18.5 Clean Water Act Permitting									0		
3.18.6 Hazardous Materials Survey									0		
3.18.7 Air Quality									0		
3.18.8 Environmental Documentation									0		
3.18.9 Noise Analysis									0		
3.18.10 Visual Analysis	4	16				72			94		
3.18.11 Riparian Habitat Impact Assessment	4	16				18			40		
3.18.12 QC Review	12								12		
3.18.13 Environmental Assessment									0		
<b>Subtotal</b>	<b>24</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>144</b>	<b>0</b>	<b>0</b>	<b>228</b>		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
<b>Task 3.19</b>											
<b>ROW Acquisition Support</b>											
3.19.1 Existing Right-of-Way and Easements									0		
3.19.2 Right-of-Way Plans									0		
3.19.3 QC Review									0		
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

# EXHIBIT A: ESTIMATED DIRECT EXPENSES

## TRAVEL:

Mileage:	<u># of Trips</u>	<u>avg. mi. per trip</u>	<u>Cost/mi.</u>	<u>Cost</u>
			\$0.445	\$0.00
Car:	<u># of Trips</u>		<u>Cost/trip</u>	<u>Cost</u>
				\$0.00
Air:	<u># of Trips</u>		<u>Cost/trip</u>	<u>Cost</u>
				\$0.00
Lodging:	<u>Nights</u>	<u>People</u>	<u>Cost/night</u>	<u>Cost</u>
				\$0.00
Per Diem:	<u>Meal</u>	<u># of Meals</u>	<u>Cost/Meal</u>	<u>Cost</u>
	Breakfast			\$0.00
	Lunch			\$0.00
	Dinner			\$0.00

TOTAL TRAVEL = \$0.00

## PLOTTING

say 0 total

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Vellum Plots (24x36)		\$4.00	\$0.00
Photo Mylars		\$16.36	\$0.00
TOTAL PLOTS =			\$0.00

## REPRODUCTIONS:

Reports (See EXHIBIT B)

\$393.20

Copies other than reports

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Color Copies			
8 1/2"x11"	60	\$0.75	\$45.00
11"x17"		\$1.50	\$0.00
Black & White Copies			
8 1/2"x11"	80	\$0.06	\$4.80
11"x17"	80	\$0.08	\$6.40
Blacklines (22x34)		\$1.00	\$0.00

TOTAL REPRODUCTIONS = \$56.20

## EXHIBITS

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Exhibits (24 x 36)	4	\$30.00	\$120.00
(Mounting on Foam Board for public meetings)	4	\$120.00	\$480.00
Presentation Blacklines		\$4.00	\$0.00
Color Photo Reductions		\$8.00	\$0.00

TOTAL EXHIBITS = \$600.00

## SPECIALIZED VENDORS

	<u>Cost</u>
Vendor Name	\$0.00
Vendor Name	\$0.00
Vendor Name	\$0.00

TOTAL SPECIALIZED VENDORS = \$0.00

## EXHIBIT B:

## COST OF REPORTS

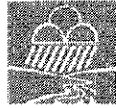
Type of Report	Covers & Binding	Black & White				Color Copies				COST PER REPORT	No. of Copies	TOTAL
		8 1/2"x11"		11"x17"		8 1/2"x11"		11"x17"				
		Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy	Pages	Cost per Copy			
Visual Assessment Report	\$5.00	0	\$0.06	5	\$0.08	30	\$0.75	0	\$1.50	\$27.90	8	\$223.20
Vegetation Inventory and Rel	\$5.00	0	\$0.06	0	\$0.08	15	\$0.75	0	\$1.50	\$16.25	8	\$130.00
Riparian Exhibit	\$5.00	0	\$0.06	0	\$0.08	0	\$0.75	0	\$1.50	\$5.00	8	\$40.00
REPORTS TOTAL =												\$393.20

## VAN/BUS EXPENSE

<u>Trip Length</u>				<u>Rental Cost</u>		
Round Trip	=	Mi.		Daily Rate	=	\$0.00
inc. misc. dropoff/pickup				Additional Mileage Charge	=	\$0.00
				<u>Subtotal</u>	=	\$0.00
				Sales Tax ( 6.7% )	=	\$0.00
				VLT Surcharge (5%)	=	\$0.00
				Applicable Surcharge	=	\$0.00
				Fuel ( ____ mi./ ____ mi. per gal. ) X 3.50 per gal.	=	\$0.00
<u>TOTAL MILES</u>	=	0	Mi.	<u>TOTAL VAN COST</u>	=	\$0.00

# **APPENDIX E**

## **ECOPLAN**



**EcoPlan Associates, Inc.**  
*Environmental Science & Resource Economics*

September 5, 2019  
*Revised September 12, 2019*  
*Revised September 17, 2019*

Jim Glock, PE,  
Structural Grace Inc.  
1430 E. Fort Lowell Road, Suite 200  
Tucson, AZ 85719

RE: Sunset Road: I-10 to River Road  
EcoPlan Proposal No.: 19-01088

Dear Mr. Glock:

EcoPlan Associates, Inc. (EcoPlan) is pleased to submit this revised proposal for environmental services for the above-referenced project.

We have included a revised scope of work, assumptions, and cost estimate in this proposal for your review and approval. We estimate the cost of our services will be \$145,334.15. The cost estimate reflects the Scope of Work provided by Pima County Department of Transportation and clarification provided at the August 28, 2019, Scope Review Meeting. Invoices will be submitted monthly for work completed to date.

Please contact me at 480-733-6666, extension 126 or at [rvanommeren@ecoplanaz.com](mailto:rvanommeren@ecoplanaz.com) if you have any questions. Thank you for your time and consideration.

Sincerely,

Ron van Ommeren  
Senior Vice President

Enclosures: As noted



**Sunset Road: I-10 to River Road**  
EA and Related Technical Reports

Task #	KEY SUBMITTAL(S)	TASK ELEMENTS	ASSUMPTIONS / DISCUSSION ITEMS
3.2 Quality Control Plan and Project Management	Sub consultant Quality Control Plan	Task 3.2.2 Project Management 3.2.3 Monthly Project Progress Meetings, consultant team meetings with SGI.	<ul style="list-style-type: none"> <li>No more than 12 team progress meetings and four in-house consultant meetings will be required.</li> </ul>
3.4 Public Participation	PowerPoint slides and /or Display board for 2 Open House Meetings, 1 hearing	Task 3.4.2 Public Meetings.	<ul style="list-style-type: none"> <li>Cost estimate assumes two public open house meetings, one formal public hearing, and one planning session prior to each meeting. Two display boards will be generated for each public meeting.</li> </ul>
3.5 Federal State and Local Coordination	Assist Pima County in determining environmental clearance needs of key agencies: USFWS, Corps, ASLD, ADEQ, ADOT, EPA, PCNRFRD, PDRFCD, COT, and others, as needed. Task to include Agency and Public Scoping Letters. 1 meeting with Corps.	Task 3.5.1 EcoPlan will draft a project introduction/scoping letter to key agency and public stakeholders.  Meet with the Corps to discuss Section 404/401 permitting needs.	<ul style="list-style-type: none"> <li>Only one meeting will be required with the Corps, which will take place in Tucson</li> <li>Pima County will mail agency and public scoping letters.</li> </ul>
3.7 Data Gathering	No deliverable	Task 3.7.1 General data collection of previous reports, land use plans, Map Guide data, etc. Also includes research and compilation of data related to Title VI/Environmental Justice and socioeconomic characteristics of study area.  Task 3.7.2 Field review of project area.	<ul style="list-style-type: none"> <li>Field visit by EcoPlan environmental planner only to discuss design considerations. Field reviews by biologist and Clean Water Act (CWA) 404 specialist included in Biology and CWA tasks.</li> </ul>

**Sunset Road: I-10 to River Road**  
EA and Related Technical Reports

<p>3.8 Environmental Impact Screening</p>	<ol style="list-style-type: none"> <li>1. Summary of Environmental Coordination Meeting</li> <li>2. Complete Questionnaire for Establishing Potential Areas of Impact (Appendix 3-Fa)</li> <li>3. Complete Summary Impact Matrix</li> <li>4. Results Memorandum (Appendix 3-Fc)</li> </ol>	<p>Task 3.8.1 EcoPlan will organize an Environmental Coordination Meeting with key regulatory and resource agencies; prepare agenda, handouts and meeting summary.</p> <p>Task 3.8.2 EcoPlan will complete the Questionnaire based on preliminary data and information. Report will follow RDM Appendix 3-Fa format.</p> <p>Task 3.8.3 EcoPlan will prepare the Summary Impact Matrix. This document will summarize the various technical studies noted in tasks under Task 3.18.</p> <p>Task 3.8.4 EcoPlan will prepare an Environmental Results Memorandum to summarize the early screening process and recommend actions that may be required.</p> <p>Task 3.8.5 Team Review prior to submittal.</p> <p>Task 3.8.6 Project Modifications/Alternatives will be compared in Matrix (also includes QA/QC).</p>	<ul style="list-style-type: none"> <li>• Representatives of appropriate Pima County departments, AGFD, USFWS, SHPO, and the Corps will be invited to attend.</li> </ul>
<p>3.12 Geotechnical Investigation</p>	<p>ADOT Geotech Environmental Compliance Form.</p>	<p>Task 3.12 An ADOT Geotech Compliance Form will be prepared in support of environmental clearance for the geotechnical investigation. This task also includes coordination with ADOT Environmental Planning. The Biological Evaluation (BE) and Preliminary Initial Site Assessment (PISA), to be prepared under Task 3.18, will be used to support the conclusions on the Geotech Compliance Form. The County's Section 106 consultation for the project would also support completion of this form.</p>	<ul style="list-style-type: none"> <li>• Geotechnical needs will be identified early in the project and boring plans provided to EcoPlan. All effort will be made to coordinate the timing of geotech clearance with normal submittal of environmental technical reports. This estimate assumes that one BE and one PISA would be prepared to address both the geotechnical investigation and the project construction.</li> </ul>

**Sunset Road: I-10 to River Road**  
EA and Related Technical Reports

			<ul style="list-style-type: none"> <li>Pima County will decide whether to complete Section 106 consultation for geotech separate from project construction or to combine these actions in one round of consultation. Assistance with Section 106 consultation(s) is not included in EcoPlan's scope.</li> </ul>
3.17 Design Concept Report (DCR)	Environmental sections of DCR	<p>Tasks 3.17.2 EcoPlan will prepare the existing conditions related to social, economic, and environmental resources for incorporation in the DCR.</p> <p>Task 3.17.4 EcoPlan will prepare a summary of environmental considerations, summarize public involvement efforts, and describe agency coordination for inclusion in DCR to support the evaluation of design alternatives. Areas to be addressed are air quality, biological resources, community resource impact, hazardous materials, historic/cultural resources, and noise and visual/aesthetic resources.</p>	
3.18 Environmental Assessment (EA)	<ol style="list-style-type: none"> <li>Cultural Resources Report and summary chapter in EA. Report to be prepared by Pima County.</li> <li>Section 4(f) analysis and coordination with PCNRPRD/PCRFCD, and summary in EA.</li> <li>BE and summary in EA.</li> </ol>	<p>Task 3.18.1 County will be responsible for cultural work. EcoPlan will summarize results in EA.</p> <p>Task 3.18.2 EcoPlan will prepare Section 4(f) Analysis Report to document potential impacts to the "Loop," Rillito River Park, Dan Felix Memorial Park, and Prickly Park. A letter will be drafted for ADOT/PCDOT submittal to PRNRPRD/PCRFCD seeking concurrence with findings/impacts/mitigation.</p> <p>Task 3.18.3 EcoPlan will prepare an ADOT-format BE which will evaluate the effects of the project on federally listed species and critical habitats. EcoPlan will conduct a Pima pineapple cactus survey within the</p>	<ul style="list-style-type: none"> <li>Cultural resources Class I and Class III survey will be conducted by Pima County Cultural Resources. Pima County will draft the Section 106 consultation letters for submittal to ADOT.</li> <li>Early coordination with PCRFCD will occur to establish status of the "Loop" with respect to Section 4(f) eligibility. De minimis or temporary impacts on Section 4(f) properties (if any) and concurrence is assumed.</li> </ul>

**Sunset Road: I-10 to River Road**  
EA and Related Technical Reports

	<p>4. Native plant inventory reports (provided by Wilder) and results summary in EA.</p> <p>5. Prepare Preliminary Jurisdictional Delineation (PJD).</p> <p>6. PISA to be prepared by others and results summarized in EA.</p> <p>7. Summarize air quality conformity report in EA.</p> <p>8. Prepare Draft and Final EA and Appendices (technical reports)</p> <p>9. Quantitative noise analysis report (to be prepared by NEC), and summary of results for EA.</p> <p>10. Visual analysis (to be prepared by Wilder), and summarized in EA.</p>	<p>project limits in support of the BE and EA. Additional focus will include migratory bird species and Pima County Vulnerable species and will be addressed in the BE. Coordination with USFWS (IPAC), AGFD (On-Line Tool), and ADOT biologists including follow-up contacts, as needed, for all federally listed threatened or endangered species.</p> <p>Task 3.18.4 EcoPlan will coordinate with Wilder to incorporate vegetation inventory data into the BE.</p> <p>3.18.5 EcoPlan will prepare a PJD for the project Waters to include the Rillito River crossing and document whether the project qualifies for non-notifying NWP. (See Task 3.30.2 Other Services for potential Pre-Construction Notification).</p> <p>Task 3.18.6 EcoPlan will coordinate with sub consultant preparing the PISA to determine potential for hazardous materials and summarize the results in the EA.</p> <p>Task 3.18.7 EcoPlan will coordinate with air quality sub consultant (NEC) on results from CO and PM<sub>10</sub> status analysis. NEC will coordinate with ADOT Air Quality Specialist and prepare appropriate report.</p> <p>Task 3.18.8 EcoPlan will prepare an EA consistent with the RDM and ESR requirements and meet ADOT NEPA Assignment requirements as prescribed in the ADOT Environmental Planning April 2019 guidance. The EA will summarize the environmental technical reports and identify any permitting or mitigation requirements.</p>	<ul style="list-style-type: none"> <li>• BE to be prepared as an early task to include the geotech clearance prior to geotech investigations and utility potholing. The BE will also cover the construction portion of the project.</li> <li>• EcoPlan assumes that the BE will be used to initiate Section 7 consultation with the USFWS, and that a maximum of 4 species will be evaluated in detail in the BE.</li> <li>• EcoPlan will prepare the PJD up to 500 feet up and downstream of the ROW. The need for a PCN is unknown at this time pending completion of Drainage Study and recommendations. Fee estimate assumes project can be authorized with a non-notifying NWP #14. Preparation of a PCN, if needed is addressed under Task 3.30 – Additional Services</li> <li>• No Phase I Environmental Site Assessments will be required.</li> <li>• No quantitative air quality modeling is required. Project does not meet criteria for a PM<sub>10</sub> Hot-Spot analysis. Mobile Source Air Toxics analysis as Tier 1 project will be completed.</li> </ul>
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**Sunset Road: I-10 to River Road**  
EA and Related Technical Reports

	<p>11. Riparian Habitat Impact Assessment to be prepared by others (Wilder) and results summarized in BE and EA.</p> <p>12. Quality Control Review of all environmental task documents.</p> <p>13. Environmental Commitments Memorandum/mitigation measures to be included in EA.</p>	<p>Task 3.18.9 EcoPlan will coordinate with NEC to develop the noise report and consider mitigation as appropriate for the EA. Noise report will follow Federal TNM requirements.</p> <p>Task 3.18.10 EcoPlan will coordinate with Wilder to determine any mitigation measures that will be included in the EA. A summary will be prepared for EA.</p> <p>Task 3.18.11 Riparian Habitat areas will be identified for impacts and determination if a PCRFCF Floodplain Use Permit will be required. Coordination with PCRFCF and COT will be included in this task.</p> <p>Task 3.18.12 EcoPlan will conduct peer, technical editor, and principal reviews of each EcoPlan deliverable, including EA.</p> <p>Task 3.18.13 EcoPlan will develop a list of project mitigation measures and coordinate their approval by PCDOT and ADOT prior to incorporation in EA.</p>	<ul style="list-style-type: none"> <li>EA will be reviewed by PCDOT prior to review and approval by ADOT. The BOS will waive the need for an EAMR and accept an ADOT EA. EcoPlan will provide a comparison outline showing consistency between an EAMR and EA for PCDOT use in obtaining the BOS waiver.</li> <li>A Floodplain Use Permit will be required.</li> </ul>
3.30 Additional Services		<p>Task 3.30.2 In the event the drainage solutions expand permanent impacts to 0.10 acres or more, EcoPlan will prepare a Corps NWP #14 Pre-Construction Notification. PCN to include: Corps Engineering Form 4345, Permanent and Temporary Impacts figure, Statement of Compliance with NWP General Conditions, BE, Cultural Resources Report and consultation results.</p>	

# Cost Estimate Worksheet

Prepared for: Structural Grace											
Project Name: Sunset Road: I-10 to River Road											
EcoPlan # 19-01088											
Task Description	Project Manager	Senior Environmental Planner III	Environmental Planner	Senior Biologist	Cultural Principal Investigator	Cultural Crew Chief	Senior Quality Control Specialist/Editor	Senior GIS Specialist	Total Hours	Total Costs	
Contract Rate	\$59.50	\$51.00	\$24.00	\$49.00	\$43.00	\$29.13	\$40.00	\$33.50			
Overhead 123.75%	\$73.63	\$63.11	\$29.70	\$59.93	\$53.21	\$36.08	\$49.50	\$41.46		123.75%	
Subtotal of Labor and Overhead	\$133.13	\$114.11	\$53.70	\$109.93	\$96.21	\$65.18	\$89.50	\$74.96			
Fee 10%	\$13.31	\$11.41	\$5.37	\$10.99	\$9.62	\$6.52	\$8.95	\$7.50		10.00%	
Billing Rate	\$146.44	\$125.52	\$59.07	\$120.92	\$105.83	\$71.70	\$98.45	\$82.46			
<b>Task 3.2 Quality Control Plan and Project Management</b>											
Task 3.2.2: Project Management	40	0	0	0	0	0	0	0	40	\$ 5,057.60	
Task 3.2.3: Meetings and Communication	64	0	0	0	0	0	0	0	64	\$ 9,372.16	
Subtotal:	104	0	0	0	0	0	0	0	104	\$ 15,229.76	
<b>Task 3.4 Public Participation</b>											
Task 3.4.2: Public Meetings	16	16	6	0	0	0	4	12	64	\$ 6,089.10	
Subtotal:	16	16	6	0	0	0	4	12	64	\$ 6,089.10	
<b>Task 3.5 Federal, State, and Local Coordination</b>											
Task 3.5.1: Coordinate Between Participating Agencies	24	0	16	2	0	0	8	8	58	\$ 4,133.40	
Subtotal:	24	0	16	2	0	0	8	8	58	\$ 4,133.40	
<b>Task 3.7 Data Gathering</b>											
Task 3.7.1: Gather Existing Information	38	38	0	0	0	0	0	0	76	\$ 10,334.48	
Task 3.7.2: Site Visits During Project Design	0	0	8	0	0	0	0	0	8	\$ 472.66	
Subtotal:	38	38	8	0	0	0	0	0	84	\$ 10,807.14	
<b>Task 3.8 Environmental Impact Screening</b>											
Task 3.8.1: Environmental Coordination Meeting	8	0	8	0	0	0	0	0	16	\$ 1,844.08	
Task 3.8.2: Questionnaire for Establishing Potential Areas of Impact	0	8	16	2	2	0	0	0	28	\$ 2,387.38	
Task 3.8.3: Summary Impact Matrix	0	4	12	0	0	0	0	0	16	\$ 1,210.92	
Task 3.8.4: Environmental Results Memorandum	0	2	16	2	2	2	0	0	24	\$ 1,777.68	
Task 3.8.5: Team Review	0	2	4	0	0	0	0	0	6	\$ 487.32	
Task 3.8.6: Project Modifications/Alternatives	0	2	8	0	0	0	0	0	8	\$ 805.48	
Task 3.8.7: Quality Control Review	14	4	0	0	0	0	16	0	34	\$ 4,127.44	
Subtotal:	22	22	62	4	4	2	16	0	132	\$ 12,446.28	
<b>Task 3.12 Geotechnical Investigation</b>											
Task 3.12: Geotechnical Investigation	8	0	4	0	0	0	2	0	14	\$ 1,804.70	
Subtotal:	8	0	4	0	0	0	2	0	14	\$ 1,804.70	
<b>Task 3.17 Design Concept Report (DCR)</b>											
Task 3.17.2: Project Area Characteristics (Existing Conditions)	6	2	12	0	0	0	0	0	20	\$ 1,838.92	
Task 3.17.4: Social, Economic, and Environmental Considerations/Public Involvement Efforts and Agency Coordination	4	2	12	2	0	2	4	4	30	\$ 2,639.12	
Subtotal:	10	4	24	2	0	2	4	4	50	\$ 4,478.04	
<b>Task 3.18 Environmental Assessment (EA)</b>											
Task 3.18.1: Cultural Resources Assessment & Report	0	0	0	0	4	6	0	0	10	\$ 693.62	
Task 3.18.2: Section 4(f) Resources	48	0	0	0	0	0	4	8	60	\$ 6,082.60	
Task 3.18.3: Biological Evaluation/Wildlife Habitat	2	0	84	12	0	0	12	0	110	\$ 7,704.80	
Task 3.18.5: Clean Water Act Permitting	0	6	24	0	0	0	0	4	34	\$ 2,600.64	
Task 3.18.6: Hazardous Materials Survey	4	0	0	0	0	0	0	0	4	\$ 385.76	
Task 3.18.7: Air Quality	4	0	0	0	0	0	0	0	4	\$ 385.76	
Task 3.18.8: Environmental Documentation	70	40	120	0	0	0	9	32	262	\$ 24,969.72	
Task 3.18.9: Noise Analysis	4	0	8	0	0	0	0	0	12	\$ 1,056.32	
Task 3.18.10: Visual Analysis	4	0	6	0	0	0	0	0	10	\$ 840.18	
Task 3.18.11: Riparian Habitat Impact Assessment	0	0	4	0	0	0	0	0	4	\$ 236.28	
Task 3.18.12: Quality Control Review	48	8	12	8	0	0	50	0	124	\$ 14,271.40	
Task 3.18.13: Environmental Commitments Memorandum/Mitigation Measures	4	2	8	0	0	0	0	0	14	\$ 1,309.38	
Subtotal:	166	66	266	20	4	6	66	44	648	\$ 63,223.44	
<b>Task 3.30 Additional Services</b>											
Task 3.30.2: Other Services	0	6	40	0	0	0	0	2	48	\$ 3,280.84	
Subtotal:	0	6	40	0	0	0	0	2	48	\$ 3,280.84	
Total Hours:	408	142	428	28	8	10	100	70	1192		
Labor Subtotal:	\$59,747.52	\$17,823.84	\$26,163.82	\$3,170.16	\$848.64	\$717.00	\$9,845.00	\$5,772.20		\$129,086.18	
<b>Direct Expenses</b>											
Other Direct Costs at Actual Reasonable Cost:											
Reproduction - (Display Board Materials)										\$ 300.00	
Outside Services and Consultants											
Newton Environmental Consulting, LLC (Air Quality and Noise Analysis - Task 3.18.7 and Task 3.18.9)										\$ 21,947.97	
Total Direct Expenses:										\$ 22,247.97	
Total Cost:										\$145,834.15	

# newton

Environmental Consulting, LLC

September 17, 2019

Mr. Mike Dawson  
EcoPlan Associates, Inc.  
3610 N. Prince Village Place, Suite 140  
Tucson, AZ 85

Project: Sunset Road, I-10 to River Road  
Environmental Assessment

Re: Scope-of-Services and Cost-Estimate for Traffic Noise Analysis and Air Quality Assessment

Dear Mr. Dawson:

Newton Environmental Consulting, LLC (NEC) is pleased to submit for your consideration our Scope-of-Services and Cost-Estimate for the Traffic Noise and Air Quality Evaluations in support of the Environmental Assessment (EA) for the Sunset Road, I-10 to River Road project for the Arizona Department of Transportation (ADOT) and the Pima County Transportation Department (PCTD) within Tucson, Arizona.

NEC will provide the services for traffic noise and air quality assessments as described in the Scope of Service for an amount of \$21,947.97.

We hope that you will find this Scope-of-Services and Cost-Estimate complete. Please call me directly at 602.332.9642, should you have any questions or require additional information.

Sincerely,



Angela Newton Principal

Attachments: Cost Derivation Sheets

## **NEC SCOPE-OF-SERVICES**

### **Sunset Road, I-10 to River Road**

#### **PROJECT UNDERSTANDING**

The Sunset Road project consists of roadway and bridge improvements on Sunset Road for the south approach to the Sunset Traffic Interchange and the connection from the I-10 Westbound Frontage Road to River Road hereinafter referred to as the Sunset Road, I-10 to River Road project. Sunset Road is anticipated to be a divided roadway with 6' wide shoulders and curb and sidewalks on both sides. Left-turn and right-turn lanes will be included at intersections. Traffic signals are anticipated at intersections along Sunset Road at three locations; Eastbound Frontage Road, Westbound Frontage Road, and River Road. The project is located within Pima County in Tucson, Arizona.

#### **NOISE STUDY & AIR QUALITY ANALYSIS ASSUMPTIONS**

NEC assumes one (1) design configuration and one (1) proposed alignment for Sunset Road. The I-10 alignment will be included in the model since it is the main noise source contributor. The railroad will not be modeled and will be assumed as an existing and future noise contributor. Noise level measurements will be conducted with a 2-person team at no more than two (2) locations. Traffic will be counted during the noise measurements for input into the TNM 2.5 noise model for validation purposes.

The proposed project is located in a part of Pima County that is currently in attainment for all National Ambient Air Quality Standards (NAAQS). This project is within the CO maintenance area. In support of the NEPA process for the project, there will be a qualitative assessment to determine the level of analysis needed for CO hot-spot. The conformity analysis for this project will require interagency consultation with ADOT, PCTD and the Pima County Department of Environmental Quality, EPA Region 9, and the Arizona Department of Environmental Quality (ADEQ) to determine if a quantitative analysis is necessary. NEC assumes CO hot-spot modeling will not be needed for this project and therefore is not included in this scope and cost estimate. No quantitative Mobile Source Air Toxins (MSAT) analysis is required as the project meets MSAT Tier 1 – No meaningful potential for MSAT effect.

Additional tasks, analysis of additional design alternatives and/or analysis due to design modifications, per your authorization, are considered out of scope and are subject to a cost-modification.

#### **LIST OF REQUIRED ITEMS**

The items listed in the table on the following page are required to complete the Traffic Noise Study and Air Quality Assessment. NEC anticipates the first draft noise and will be available for internal project team review within eight (8) weeks after receiving all of the requested items.



REQUIRED ITEMS ADOT/ PCTD Sunset Road, I-10 to River Road		
Items	Description	Notes
1. CAD Files	Roadway design files, land use data/Base Files, Aerial files	Microstation compatible, SID, HMR, TIFF formats or GIS to be provided by EcoPlan.
2. Roadway Geometry Files	Horizontal and vertical roadway alignment files	Microstation compatible or GIS to be provided by EcoPlan.
3. Terrain Data	Survey and topographical data, Digital Terrain Model (DTM)	Microstation compatible or GIS to be provided by EcoPlan.
4. Traffic Volume Data	LOS C & AM/PM peak hour volumes, VMT's, Vehicle mix, Turning Movements, & LOS at the Intersection of I-10 & Sunset Road.	To be provided by EcoPlan.

### **TASKS DESCRIPTIONS**

#### **1. Project Management**

- Scoping, scheduling, budgeting, and billing services.

#### **2. Meetings**

- Attend a total of two (2) project progress meetings in Tucson, one (1) public meeting in Tucson, and one (1) meeting at ADOT to discuss Air/Noise methodology.

#### **3. Field Assessment**

- Conduct site-assessment evaluate land use adjacent to the project limits and identify noise sensitive receptors.
- Conduct noise level measurements with concurrent traffic counts using 2-person team at no more than two (2) locations.

#### **4. Data Assessment**

- Review as-built plans, traffic data, and electronic design files.
- Prepare/extract data from plans and design files for noise model use from traffic studies and design plans for use in the Federal Highway Administration (FHWA) approved Traffic Noise Model version 2.5 (TNM 2.5).

#### **5. Noise Analysis & Air Quality Assessment**

- Prepare noise model using TNM 2.5.
- Prepare noise mitigation to comply with the *ADOT Noise Abatement Requirements, May 2017*.
- A portion of the project lies within the Tucson "maintenance" for carbon monoxide (CO). Therefore, the CO Questionnaire will be prepared to commence interagency consultation to determine if modeling is necessary.

#### **6. Reports**

- Prepare and submit a draft noise analysis technical report and draft CO air quality questionnaire for the internal team to review in electronic PDF format.
- Address comments per internal team review and revise the noise analysis technical report and CO air quality questionnaire for final submittal in electronic PDF format.

Sunset Road, I-10 to River Road

September 17, 2019

PCDT Project ID.: 4SRRIV

**DERIVATION OF COST PROPOSAL SUMMARY**

**ESTIMATED DIRECT LABOR**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Average Hourly Rate</u>	<u>Labor Cost</u>
Project Manager	6	\$154.66	\$927.97
Noise Specialist	114	\$116.00	\$13,224.00
Air Quality Specialist	14	\$118.00	\$1,652.00
Technician	60	\$85.00	\$5,100.00
Administrative	18	\$58.00	\$1,044.00
<b>Total Hours:</b>	<b>212</b>	<b>Total Estimated Labor Cost:</b>	<b>\$21,947.97</b>

**OTHER DIRECT COSTS**

(Listed by item at estimated actual cost - NO MARKUP)

Travel	\$0.00
Reprographics	\$0
Other	\$0
<b>Total Estimated Other Direct Costs:</b>	<b>\$0.00</b>

**TOTAL ESTIMATED COST: \$21,947.97**



\_\_\_\_\_  
Angela Newton  
Principal

9/17/2019

\_\_\_\_\_  
Date

Sunset Road, I-10 to River Road

September 17, 2019

PCDT Project ID.:

4SRRIV

TASK NO.	TASK DESCRIPTION	Project Manager \$154.66	Noise Specialist \$116.00	Air Quality Specialist \$118.00	Technician \$85.00	Administrative \$58.00	Task Hour
1	<b>100- PROJECT MANAGEMENT</b> Scoping, scheduling, budgeting, and billing services.	2	6			8	16
2	<b>200- MEETINGS</b> Attend a total of two (2) project progress meetings in Tucson; one (1) public meeting in Tucson, and one (1) meeting at ADOT to discuss Air/Noise methodology.		24				24
3	<b>300- FIELD ASSESSMENT</b> Site Assessment- prepare mapping, evaluate land use adjacent to the project limits and identify noise sensitive receptors (2-person team) Noise Level Measurements (2-person team, 2 locations). Count traffic from noise measurements and compile results in noise measurement data spreadsheet.		4				4
			8		12		20
4	<b>400- DATA ASSESSMENT</b> Review as-builts, design files and traffic data for air and noise.		6		4		10
	Extract data from as-builts and design files for noise model.		12		16		28
5N	<b>500N- NOISE ANALYSIS</b> Build and run TNM 2.5 noise model.		20		12		32
	Identify noise impacts and evaluate noise mitigation as needed per ADOT Noise Abatement Requirements, May 2017. Prepare figures for report.		16		4		20
5A	<b>500A- AIR QUALITY ANALYSIS</b> No quantitative Mobile Source Air Toxins (MSAT) analysis is required as the project meets MSAT Tier 1 – No meaningful potential for MSAT effect						0
6N	<b>600N - NOISE REPORT</b> Prepare and submit a draft noise analysis technical report (electronic PDF format) for internal team review.	2	16		8	4	30
	Address comments per internal team review; revise the noise analysis technical report for final submittal (electronic PDF format).		2		2	2	6
6A	<b>600A - AIR QUALITY REPORT</b> Prepare and submit draft CO Air Quality Questionnaire (electronic PDF format) for internal team review.	2		12		2	16
	Address comments per internal team review; revise the CO Air Quality Questionnaire for final submittal (electronic PDF format).			2	2	2	6
<b>Total Hours</b>		<b>6</b>	<b>114</b>	<b>14</b>	<b>60</b>	<b>18</b>	<b>212</b>

Newton Environmental Consulting Billing Rates						
Job Title	Project Manager	Noise Specialist	Air Quality Specialist	Technician	Admin	
Direct Hourly Rate	\$55.00	\$41.25	\$41.96	\$30.23	\$21.00	
Overhead (155.64%)	\$85.60	\$64.20	\$65.31	\$47.05	\$32.68	
Profit (10%)	\$14.06	\$10.55	\$10.73	\$7.72	\$5.37	
<b>TOTAL HOURLY RATE</b>	<b>\$154.66</b>	<b>\$116.00</b>	<b>\$118.00</b>	<b>\$85.00</b>	<b>\$58.00</b>	

# **APPENDIX F**

## **GOLDER**



September 18, 2019

Proposal No. P19121742 Rev. 1

**Mr. Jim Glock, PE**  
Structural Grace LLC  
1430 E. Fort Lowell Road, Suite 200  
Tucson, AZ 85719

## **REVISED COST PROPOSAL FOR GEOTECHNICAL AND PAVEMENT DESIGN SERVICES FOR SUNSET ROAD: I-10 TO RIVER ROAD (4SRRIV)**

Dear Jim:

Golder Associate Inc. (Golder) is pleased to submit this revised scope of work and cost estimate to Structural Grace LLC (SG) to provide geotechnical and pavement design consulting services for Pima County's Sunset Road: I-10 to River Road project. The overall project involves developing scoping and environmental documents for roadway and bridge improvements on Sunset Road for the south approach to the Sunset Traffic Interchange and the connection from the I-10 Westbound Frontage Road to River Road hereinafter referred to as the Sunset Road: I-10 to River Road project.

Golder's scope of work includes geotechnical and pavement design for the proposed improvements. A detailed discussion of our scope work is provided in the following section. Our understanding of this scope is based on the project scope document, discussions during the project scoping meeting held on August 28, 2019, and on feedback provided on our original cost proposal submitted on September 4, 2019.

### **1.0 SCOPE OF WORK**

Our scope of work consists of two major tasks from the overall project scope: Task 3.12 Geotechnical Investigation, and Task 3.13 Pavement Design Report. Subtask letters in the section headers correspond to the Work Hour Estimate by Task Table described in Section 5.0.

#### **1.1 Geotechnical Testing and Analysis and Report (Task 3.12.1)**

##### **1.1.1 Permits, Bluestake and Logistics (Subtask a)**

We anticipate needing a Union Pacific Railroad (UPRR) right-of-way (ROW) permit, an ADOT ROW permit since we will be accessing several boreholes in the UPRR ROW via the WB I-10 frontage road, and a City of Tucson ROW permit for work on River Road. This task includes labor associated with preparation of permit applications, coordination with permitting agencies, and direct expenses consisting of permit fees. We have estimated permit fees as a total of \$1,000 for the UPRR and City of Tucson ROW permits.

This task also includes time to coordinate with SG and other team members on the location of key project components and to prepare a geotechnical investigation plan that meets the relevant requirements. Other work that will be performed under this task includes:

- Coordination with the surveyors on the team for marking and/or surveying boreholes
- Coordination with project team members on the required environmental clearance document
- Field marking of boreholes for utility clearances
- Coordination with Arizona 811 for utility locates prior to excavating
- Other miscellaneous logistical preparations for the field investigation program

### **1.1.2 Geotechnical Investigation (Subtask b)**

Golder prepared a preliminary geotechnical investigation plan based on the requirements of the Pima County Roadway Design Manual (RDM) and the ADOT Materials Group Preliminary Engineering and Design Manual using the available linework from the Sunset Road Phase 1 project. The proposed plan is provided as Attachment 1. These proposed borehole locations will meet final design requirements based on the information currently available, however only a portion of those boreholes are included in this scope which will meet the requirements for a preliminary geotechnical investigation. Note that these hole locations are for cost estimating purposes. The final locations will be determined once updated mapping and preliminary design is available.

There were several boreholes drilled previously by NCS Consultants, LLC as part of the Sunset Road Phase 1 Project, including a hole to characterize the subgrade at the highest part of the embankment (PE-07, 70.5 feet deep), and two pier boreholes at the Rillito Creek Bridge (B-12 and B-13, both 151.5 feet deep). The embankment hole satisfies ADOT requirements for sampling beneath embankments and no additional embankment holes are needed. All three of these holes have been incorporated into the plan and will be utilized as part of this design effort.

Golder's geotechnical field investigation is comprised of the following elements:

- Bridge abutment boreholes at the UPRR bridge (BB-01 and BB-04). Four boreholes are required because the proposed bridge is wider than 100 feet, but only two will be drilled under this scope of work.
- Bridge abutment boreholes at the Rillito Creek Bridge (BB-05 and BB-06). Only two boreholes are required here because the bridge width is assumed to be less than 100 feet.
- Offset bridge hole at the east abutment of the UPRR bridge (BB-07). Depending on the final abutment location, soft dig techniques may be required to a depth of 10 feet because of utilities in the UPRR ROW. This will preclude collecting any geotechnical data, particularly blowcounts, in the top 10 feet, which is critical for settlement analysis for the abutment retaining walls. This hole would be drilled only to 10 feet to collect shallow geotechnical information near the abutment holes. This will likely be an issue at the west abutment as well, but we do not see a location to safely perform an offset hole.
- One retaining wall hole will be performed for the preliminary level investigation (WB-01) to characterize the subsurface for the approach wall foundations. The bridge abutment boreholes will double as wall boreholes that meet the requirements for preliminary geotechnical investigation.

- Pavement subgrade boreholes (paired with pavement cores for existing asphalt thickness) along River Road (PC-01 to PC-03). Borehole PC-02 is 20 feet deep to characterize the existing River Road embankment.
- We will collect samples for electrochemical testing at the location of proposed drainage structures either from existing boreholes, from trenches dug as part of the archaeological investigation, or by hand. We have assumed a total of four locations for the purposes of estimating lab testing costs.

A summary of the proposed investigations is presented in Table 1.

**Table 1: Geotechnical Investigation Summary**

Hole ID	Depth (ft)	Hole Purpose
BB-01	130	Bridge Abutment
BB-04	130	
BB-05	130	
BB-06	130	
BB-07	10	
WB-01	80	Retaining Walls
PC-01	5	Pavement Subgrade (and River Road Embankment)
PC-02	20	
PC-03	5	
<b>Total Linear Footage:</b>	<b>640</b>	

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. 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 2. Southlands will also file the necessary ADWR permits for the bridge boreholes. The total estimated time to conduct borehole, VWP, and infiltration test activities described above is 20 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 3.

Traffic control services will be provided by Border Traffic Safety. We anticipate that ADOT will require warning signs on the EB I-10 frontage road as part of our work for the abutment boreholes. Additionally, a lane closure will be required on River road to perform the pavement boreholes. Estimated traffic control costs using rates from previous projects are included in Attachment 4.

### **1.1.3 Analysis and Preliminary Geotechnical and Bridge Foundation Report (Subtask c)**

This task will include the geotechnical evaluation and the development of recommendations for the following roadway project elements:

- Development of interpreted subsurface conditions, including soil stratigraphy, the location and depth of the topsoil, the general soil properties recommendations for design, the depth to groundwater at the project site, and seismic considerations
- Development of axial and lateral capacities for drilled shaft foundations at the project site
- Recommendations for abutment wingwall foundations
- Evaluation of soil shrinkage/swell characteristics (earthwork factors) and ground compaction factors
- Evaluation of water for compaction
- 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.

The geotechnical analysis and recommendations will be provided in a Preliminary Geotechnical and Bridge Foundation Report. This report will also provide recommendations on the need for a demonstration shaft and/or a load test program.

### **1.1.4 Meetings (Subtask d)**

Golder will attend project meetings when our presence is beneficial to the team. We assume a total of twelve project meetings at two hours each.

### **1.1.5 Project Management (Subtask e)**

This task includes typical project management activities, including preparing and reviewing invoices, preparation of quality control plans, preparation and review of project specific health and safety plans, etc.

## **1.2 Quality Control Review of Geotechnical Report (Task 3.12.2)**

Project oversight and Quality Assurance/Quality Control (QA/QC) control will be organized in accordance with our internal project management protocols, Golder Associates Integrated Management System, which defines our



requirements for ensuring quality, including the requirement that projects undergo technical and administrative review. Michael Pegnam will serve as our senior technical reviewer assigned to the team, he will be charged with technical and quality review of project processes and deliverables. Golder will provide documentation that our QA/QC process was followed for each deliverable.

### **1.3 Pavement Design Report (Task 3.13.1)**

#### **1.3.1 Analysis and Preliminary Pavement Design Report (Subtask a)**

This task will include all pavement design tasks for River Road and Sunset Road, including summarizing the general characteristics of the subgrade within the project limits, performing pavement design in accordance with Section 3.13 of the RDM, and preparing the pavement design summary report. The report will contain the following information:

- Interpreted subsurface conditions, including soil stratigraphy and soil properties recommended for design
- Report pavement subgrade strength parameters based on April 29, 2016 updates to the pavement design section (Section 3.13)
- Summary of traffic data (including 18-kip equivalent single axle loadings, ESALS) provided by others
- Recommended flexible pavement section and alternative pavement sections compared by initial construction cost
- Assessment of potential for swelling soil or hydro-collapsible soil
- Recommendations for subgrade improvement, if necessary

Golder will present our comments, findings, and conclusions in a Preliminary Pavement Design Summary Report.

### **1.4 Quality Control Review of Pavement Design Report (Task 3.13.1)**

Golder will follow our internal quality control procedures for the pavement design report as noted in Section 1.2.

## **2.0 ASSUMPTIONS**

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

- Golder will be applying for an ADOT ROW use permit, UPRR ROW use permit, and a Pima County ROW use permit.
- Total permit fees (UPRR ROW and City of Tucson ROW) will be less than \$1,000.
- SG and the project team members will provide the necessary environmental clearance and right-of-entry documents.
- The project site is outside of the nearby WQARF site and no special treatment of soil cuttings will be required.
- Boreholes adjacent to River Road will require a single lane closure.
- Cones and pre-warning signs will be sufficient when working adjacent to the multiuse path.

- Archaeological monitoring, if required, will be provided by others.

### **3.0 SCHEDULE**

Golder will continue to coordinate closely with SG and the project team to ensure that the project schedule is met. We can prepare a borehole location plan with access routes for the environmental clearance process and ROW permit applications within one week of receiving preliminary design information and/or updated mapping. We anticipate that the timeline for performing boreholes within UPRR ROW may be different from the remaining investigation and have assumed separate mobilizations.

### **4.0 STAFFING**

The Golder team involved in this project will be:

- Michael Pegnam, PE – Project Director and Senior Reviewer
- Randy Post, PE – Project Manager
- Various staff and project engineers from our Tucson office and support staff

### **5.0 ESTIMATED COST**

Golder's total cost plus fixed-fee price for this project is \$104,498.43. Specific hours per labor classification for each of the tasks discussed above are included in Attachment 5. The overall Fee Estimate Summary is provided in Attachment 5 as well. 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 SG for approval before the work is executed and costs are accrued. Project charges will be based on productive time worked and actual direct expenses.

#### **5.1 Confidential Labor Rates**

The rates used in Attachment 5 are averaged by labor classification from certified payroll rates of Golder's Tucson employees that are anticipated to work on the project. The overhead rate is Golder's latest audited overhead rate according to a cognizant review by Georgia DOT of Golder's independent audit in accordance with Federal Acquisition Regulations, Subpart 31.2. We request that labor rates and overhead rates be treated as confidential in the event of a public records request. Upon request, Golder will provide (under separate cover) a copy of the confidential, certified rate letter and our cognizant review.

## 6.0 CLOSING

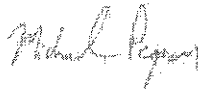
Thank you for providing a copy of the prime contract terms and conditions and a draft copy of the SG terms and conditions. Our contract review personnel are currently reviewing the documents and we will contact you if we have any items to discuss.

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

Respectfully submitted,  
**Golder Associates Inc.**



Randy Post, PE  
*Senior Geotechnical Engineer*



Mike Pegnam, PE  
*Associate/Senior Geotechnical Consultant*

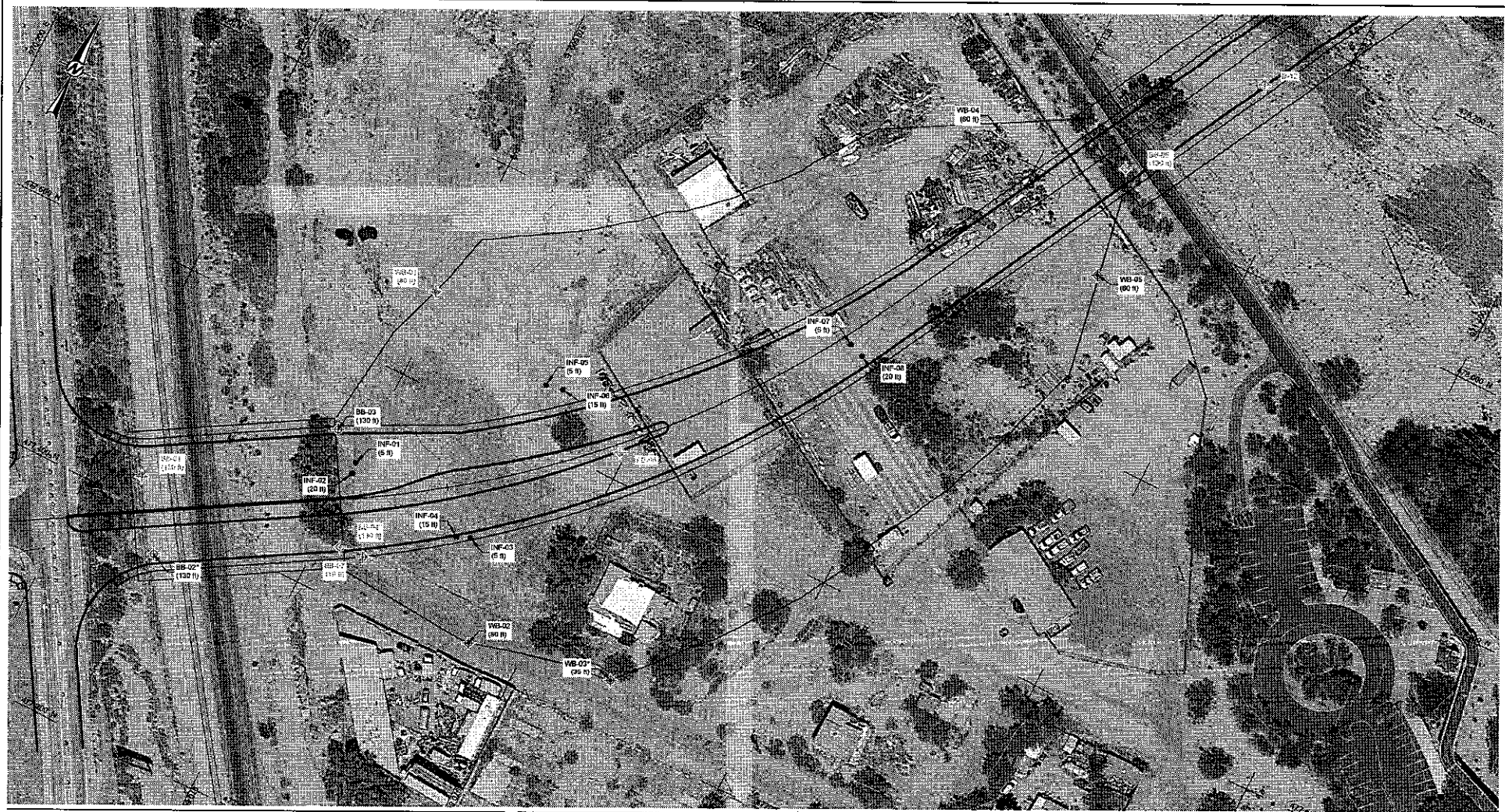
RMP/MLP/rm

Attachments: Attachment 1 – Preliminary Geotechnical Investigation Plan  
Attachment 2 – Cost Estimate: Southlands Engineering, LLC  
Attachment 3 – Cost Estimate: Laboratory Testing  
Attachment 4 – Cost Estimate: Traffic Control  
Attachment 5 – Golder Cost Tables

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**ATTACHMENT 1**

**Preliminary Geotechnical  
Investigation Plan**



**LEGEND**

WB-01 (60 ft)	RETAINING WALL BOREHOLE (DEPTH)
WB-01 (60 ft)	RETAINING WALL BOREHOLE (FOR FINAL INVESTIGATION) (DEPTH)
INF-01 (5 ft)	BRIDGE BOREHOLE (DEPTH)
INF-01 (5 ft)	BRIDGE BOREHOLE (FOR FINAL INVESTIGATION) (DEPTH)
INF-01 (5 ft)	INFILTRATION TEST (FOR FINAL INVESTIGATION) (DEPTH)



BOREHOLE BY NCS CONSULTANTS

NOTE(S)

BOREHOLE NOT REQUIRED FOR PRELIMINARY INVESTIGATION

FOR DISCUSSION PURPOSES ONLY

**DRAFT**



CLIENT  
STRUCTURAL GRACE INC.

CONSULTANT



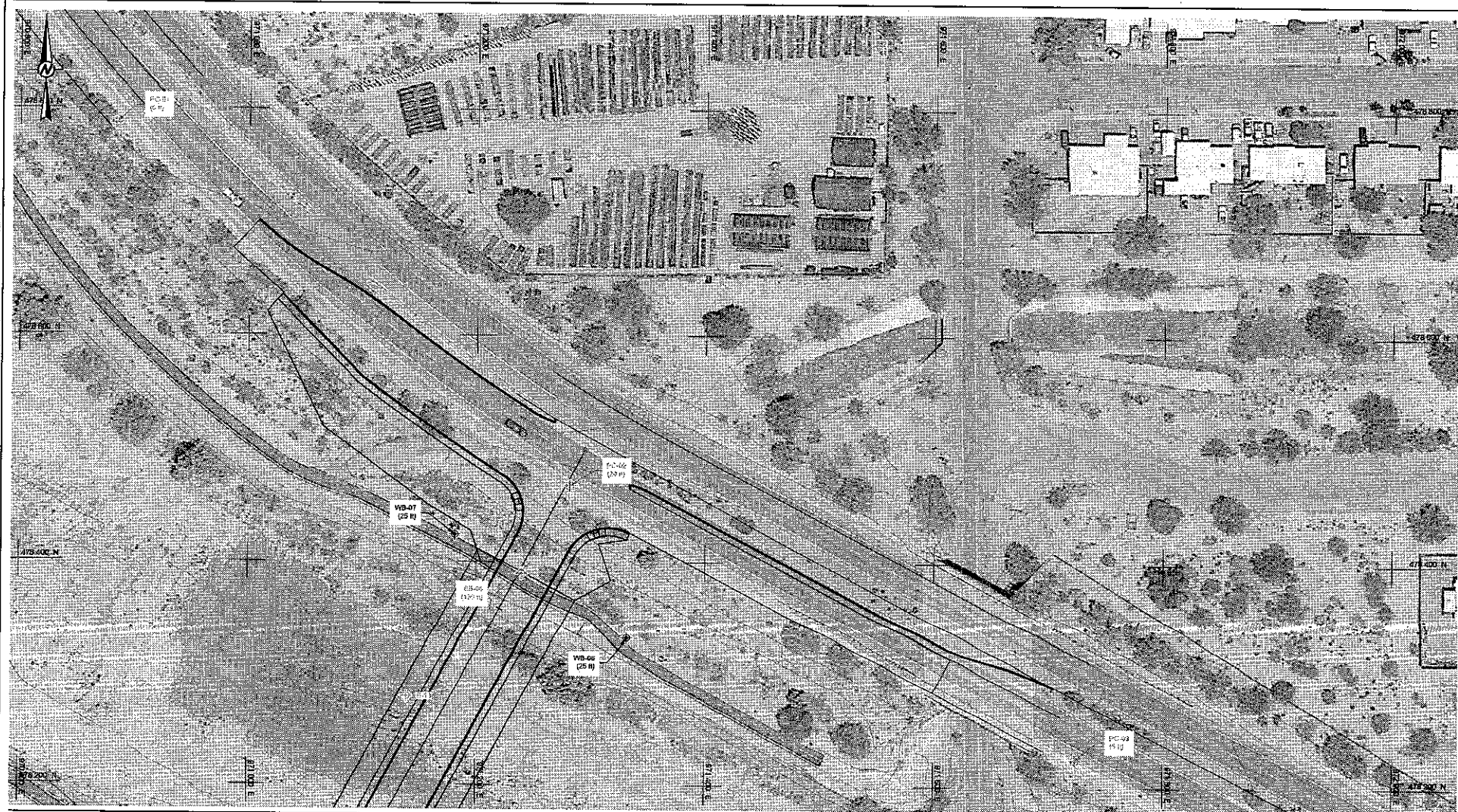
APPROVED	MLP
REVIEWED	RP
DESIGNED	KR
PROJECT MANAGER	AND

PROJECT  
SUNSET ROAD  
GEOTECHNICAL INVESTIGATION

TITLE  
**PRELIMINARY GEOTECHNICAL INVESTIGATION PLAN (1 OF 2)**

PROJECT NO.	CONTROL	REV.	SHEET
P19121742	0001	B	001





- LEGEND**
- WB-01 (80 ft) RETAINING WALL BOREHOLE (FOR FINAL INVESTIGATION)
  - BB-01 (10 ft) BRIDGE BOREHOLE (DEPTH)
  - PB-01 (10 ft) PAVEMENT BOREHOLES (DEPTH)
  - BOREHOLE BY NCS CONSULTANTS

FOR DISCUSSION PURPOSES ONLY

DRAFT



CLIENT  
STRUCTURAL GRACE INC.

CONSULTANT



Y.Y.Y.Y-M-M-DD	2019-09-05
DRAWN BY	KR
PREPARED BY	JAD
REVIEWED BY	RP
APPROVED BY	MLP

PROJECT  
SUNSET ROAD  
GEOTECHNICAL INVESTIGATION

TITLE  
PRELIMINARY GEOTECHNICAL INVESTIGATION PLAN (2 OF 2)

PROJECT NO	CONTROL	REV.	FIGURE
P19121742	0001	B	002

**ATTACHMENT 2**

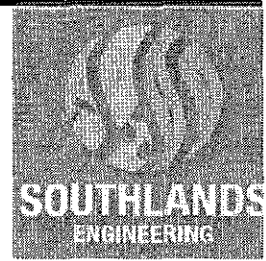
**Cost Estimate:  
Southlands Engineering, LLC**

# 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, P.E.

Senior Engineer

Golder Associates Inc.

4730 N. Oracle Road, Suite 210

Tucson, Arizona

**Date:** 9/18/2019

**Proposal No.:** P1902-059

## **Cost Estimate for Geotechnical Engineering Services Sunset Road Expansion Project Geotechnical Investigation West Sunset Road Pima County, Arizona**

### **SCOPE OF WORK**

#### **Scope 1: AUGER DRILLING, RETAINING WALL & ABUTMENT BOREHOLES**

##### **Drilling Investigation:**

A Total of 9 Boreholes will be drilled for the program

Retaining Wall and Abutment Boreholes

Estimated total footage= 640 ft

**Backfill:** Assume UPRR Boreholes (2 x 130 = 260 feet) will be grouted completely.

All other boreholes exceeding 100 feet will be grouted in the upper 20-feet

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

**Sampling:** Assume Standard Penetrating Testing (SPT) at 5-to 10-feet intervals from 2.5 feet.

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

**Duration:** 10 days with Mob/Demob to site

#### **Scope 2: BACKHOE SERVICES**

1. Vegetation Clearance for Access to drill locations.

Include time and landfill costs to haul brush to Ina Road Landfill

Southlands has assumed that the two tasks will be performed on two different days.

**Training:** Equipment Inspection

**Equipment:** CAT 420D IT Rubber Tyred Backhoe, utilizing 18-inch bucket.

**Duration:** The Estimated time on site is 1 day.



### Scope 3: WET DIAMOND CONCRETE CORING

Assume one day of coring at various locations to estimate the asphalt thickness.

A 4-inch core barrel will be used for the investigation.

This cost estimate assumes the asphalt thickness will range from 4-6 inches in thickness.

Also includes 3 Hollow Stem Boreholes (2 x 5-feet, 1 x 20 feet = 30-feet)

### Scope 4: UTILITY POTHOLING

Pothole for Utility Location (2 x locations)

2 x 15 feet at each location

Work will be completed utilizing a Ditch Witch FX30 Vacuum Excavator

Assume a minimum of 2-3 hours per location.

## ESTIMATED COSTS

### SCOPE 1: HOLLOW STEM AUGERING (ABUTMENT & RETAINING WALLS)

Item	Quantity	Unit	Cost	Price
<b>HOLLOW STEM AUGER &amp; INFILTRATIONS</b>				
<b>CME 75 HT Truck Mounted-Drill Rig: Hollow-Stem Auger</b>				
Work Plan / Health & Safety/Project Mgmt.	8.0	HOUR	\$ 105.00	\$ 840.00
Job Preparation (Materials & Equipment) Attach. 1	8.0	HOUR	\$ 150.00	\$ 1,200.00
Mobilization/Demobilization <sup>2</sup>	1.0	LUMP	\$ 400.00	\$ 400.00
Safety Sign-Up/Equipment Inspection	1.0	HOUR	\$ 150.00	\$ 150.00
<b>DRILLING RELATED COSTS</b>				
Local Travel (From Site to Yard, Daily Travel)	7.0	HOUR	\$ 150.00	\$ 1,050.00
Safety Meetings/Borehole Access/Site Set-Up	3.0	HOUR	\$ 150.00	\$ 450.00
Drilling; Hollow Stem Auger <sup>3</sup>	60.0	HOUR	\$ 150.00	\$ 9,000.00
Grout Boreholes/Site Clean-Up	5.0	HOUR	\$ 150.00	\$ 750.00
<b>ASSOCIATED COSTS</b>				
Light Support Truck	8.0	DAILY	\$ 150.00	\$ 1,200.00
Heavy Support Truck/Trailer (Equipment & Materials)	3.0	DAILY	\$ 250.00	\$ 750.00
Additional Crew (2nd Helper for Deep Holes/Grout)	3.0	DAILY	\$ 500.00	\$ 1,500.00
Water Truck & Support	2.0	DAILY	\$ 475.00	\$ 950.00
Bentonite-Cement Grout/Grout Plant	260.0	FEET	\$ 10.00	\$ 2,600.00
Cutter Head Replacement (Deep Boreholes)	6.0	EACH	\$ 200.00	\$ 1,200.00
ADWR Permit and Fees	1.0	EACH	\$ 250.00	\$ 250.00
Cleint Directed Stand-By	0.0	HOUR	\$ 150.00	\$ -
<b>Estimated Drilling Total</b>			<b>\$ 22,290.00</b>	

**SCOPE 2: BACK-HOE SERVICES**

Item	Quantity	Unit	Cost	Price
<b>BACKHOE TRENCHING &amp; ACCESS CLEARING COSTS</b>				
<b>CAT 420D IT: 4 WHEEL RUBBER TIRED BACKHOE</b>				
Equipment/Job Prep	3.0	HOUR	\$ 90.00	\$ 270.00
Mobilization/Demobilization <sup>1</sup>	2.0	HOUR	\$ 90.00	\$ 180.00
On-Site Clearing and Access	8.0	HOUR	\$ 90.00	\$ 720.00
Light Support Truck (Daily Commute)	1.0	DAILY	\$ 150.00	\$ 150.00
Brush/Debris Desposal (Landfill & Transport)	1.0	LUMP	\$ 425.00	\$ 425.00
On-Site Prep/Load/Unload	1.0	HOUR	\$ 90.00	\$ 90.00
<b>Estimated Testing &amp; Excavation Costs</b>				<b>\$ 1,835.00</b>

**SCOPE 3: ASPHALT CORING & DRILLING**

Item	Quantity	Unit	Cost	Price
<b>CONCRETE CORING &amp; DRILLING COSTS</b>				
<b>HILTI DD250 Wet Diamond Coring &amp; CME-55/75 DRILL RIG</b>				
Job Preparation (Materials & Equipment)	3.0	HOUR	\$ 150.00	\$ 450.00
Mobilization/Demobilization <sup>2</sup> (Rig & Coring)	2.0	HOUR	\$ 150.00	\$ 300.00
<b>AUGER DRILLING &amp; CORING RELATED COSTS</b>				
Local Travel /Traffic Control / Access	1.0	HOUR	\$ 150.00	\$ 150.00
Drilling; Hollow Stem Auger	3.0	HOUR	\$ 150.00	\$ 450.00
Concrete Coring	1.5	HOUR	\$ 150.00	\$ 225.00
Site Restoration (Patching and Clean-Up)	1.5	HOUR	\$ 150.00	\$ 225.00
Heavy Support Truck	1.0	DAILY	\$ 250.00	\$ 250.00
Coring Support Equipment	1.0	DAILY	\$ 350.00	\$ 350.00
QuickSet Concrete Patch	3.0	EACH	\$ 25.00	\$ 75.00
<b>Estimated Coring Costs</b>				<b>\$ 2,475.00</b>

**SCOPE 4: VACUUM EXCAVATION**

Item	Quantity	Unit	Cost	Price
<b>UTILITY POTHOLING COSTS</b>				
<b>DITCH WITCH FX30 VACUUM EXCAVATOR</b>				
Equipment Coordination / Job Preparation	1.0	HOUR	\$ 150.00	\$ 150.00
Mobilization/Demobilization <sup>1</sup>	2.0	HOUR	\$ 150.00	\$ 300.00
On-Site Vacuum Excavation	6.0	HOUR	\$ 150.00	\$ 900.00
Heavy Duty Support Truck	1.0	DAILY	\$ 250.00	\$ 250.00
Ditch Witch Equipment Rental	1.0	DAILY	\$ 600.00	\$ 600.00
Bentonite-Cement Grout	30.0	FEET	\$ 10.00	\$ 300.00

**Estimated Testing & Excavation Costs****\$ 2,500.00****NOTES:**

- 1. 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.
- 2. Mobilization/Demobilization:** includes time spent by the crew to travel from Tucson to the project site, including the mobilization of all materials and equipment.
- 3. 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.

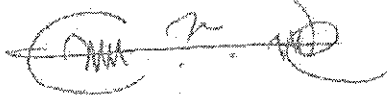
## TERMS & CONDITIONS

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](mailto:chushidm@southlandsengr.com)



**ATTACHMENT 3**

**Cost Estimate: Laboratory Testing**

**Summary of Laboratory Testing**

Item	Test	Standard	Quantity	Unit Price	Unit	Cost
1	Moisture Content	D4643	20	\$20.00	EA	\$400.00
2	Grain Size	C117/C136/D422	20	\$75.00	EA	\$1,500.00
3	Atterberg Limits	D4318	20	\$65.00	EA	\$1,300.00
4	Standard Proctor	D698	0	\$120.00	EA	\$0.00
5	Modified Proctor		0	\$135.00	EA	\$0.00
6	pH & Resistivity		4	\$115.00	EA	\$460.00
7	Soluble Chlorides	D1411	4	\$40.00	EA	\$160.00
8	Soluble Sulfates	C1580	4	\$50.00	EA	\$200.00
9	1-D Swell of Soil (undisturbed)	D4546	0	\$100.00	EA	\$0.00
10	1-D Swell of Soil (remolded)		0	\$125.00	EA	\$0.00
11	1-D Swell of Soil (remolded w/swell pressure)		0	\$250.00	EA	\$0.00
12	Collapse Test	D5333	4	\$140.00	EA	\$560.00
13	Unit Weight	D2937 & D2216	10	\$25.00	EA	\$250.00
14	R-Value	D2844	2	\$325.00	EA	\$650.00
15	Hydrometer (D422)		0	\$205.00	EA	\$0.00
16	Double Hydrometer (D4221)	D4221	0	\$410.00	EA	\$0.00
17	Consolidation (no time-rate)	D2435	0	\$180.00	EA	\$0.00
18	Consolidation (with time-rate)		0		EA	\$0.00
<b>TOTAL LAB TESTING COST</b>						<b>\$5,480.00</b>



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**GOLDER ASSOCIATES**  
**2019 LAB UNIT RATES**

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**Laboratory Tests - Soils & Rock**

Moisture-Density Relations (Proctors)	
Standard (ASTM D698, AASHTO T99, AZ225)	\$120.00
Modified (ASTM D1557, AASHTO T180)	\$135.00
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)	\$75.00
#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	\$65.00
Wet Preparation	\$125.00
Consolidation (ASTM D2435)	
Up to 16 ksf (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 D5333)	\$140.00
Moisture Content Only (ASTM D2216)	\$20.00
Undisturbed Moisture/Density (ASTM D2937)	\$25.00
Conductivity (ASTM D1125)	\$20.00
pH (ASTM D2976)	\$20.00
Resistivity (ASTM G57)	\$95.00
Sulfate Contents (ASTM D512)	\$35.00
Chloride Contents (ASTM D516)	\$40.00
Sulfides Contents (EPA.376.1376.1)	\$50.00
R-Value	\$325.00

**ATTACHMENT 4**

**Cost Estimate: Traffic Control**



**Estimated Traffic Control Costs**

Item	Units	Quantity	Unit Rate	No. of Days	Total Costs	Notes
Flags	EA	40	\$2.50	1	\$100.00	
Sandbags	EA	80	\$1.50	1	\$120.00	
Small Signs	DY	8	\$0.35	1	\$2.80	Lane Closure on River Road
Sign Stands No Light	DY	8	\$0.35	1	\$2.80	
Large Signs	DY	4	\$0.45	4	\$7.20	
Sign Stand - Spring Type	DY	4	\$2.00	4	\$32.00	For frontage road when working under ADOT permit
Vertical Panel	DY	25	\$0.50	2	\$25.00	Lane Closure on River Road
Arrow Board	DY	1	\$50.00	2	\$100.00	
Traffic Cones 28"	DY	25	\$0.25	10	\$62.50	For delineating work zone, including near MU path.
<b>Subtotal (Equipment Rental and Sale Items):</b>					<b>\$452.30</b>	
2 Man, 1 Truck - Flagging, Delivery, Etc.	HRS	4	\$110.00	2	\$880.00	
1 Man, 1 Truck - Delivery, Pickup, Etc.	HRS	3	\$90.00	4	\$1,080.00	
Traffic Control Plans	EA	2	\$60.00	1	\$120.00	One plan for I-10 frontage road, one plan for River Road.
<b>Subtotal (Labor):</b>					<b>\$2,080.00</b>	
<b>Tax (8.7% on Equipment Rental and Sale Items):</b>					<b>\$38.90</b>	
<b>TOTAL:</b>					<b>\$2,571.20</b>	



**ATTACHMENT 5**

**Golder Cost Tables**

### Workhour Estimate by Task

Description	Senior Consultant	Senior Engineer / PM	Senior Project Engineer	Project Engineer	Staff Engineer	Engineer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.12											
<b>Geotechnical Issue Investigation</b>											
3.12.1 Geotechnical Testing and Analysis and Report											
a. Permits, Bluestake and Logistics	2	16			40		10	2	70		
b. Geotechnical Investigation	2	8		24		100			134		
c. Analysis and Preliminary Geotechnical Report	8	30	16	40		40	16	8	158		
d. Meetings	4	24		12					40		
e. Project Management	8	24	40						72		
3.12.2 QC Review	8	4						4	16		
<b>Subtotal</b>	<b>32</b>	<b>106</b>	<b>56</b>	<b>76</b>	<b>40</b>	<b>140</b>	<b>26</b>	<b>14</b>	<b>490</b>		

Description	Senior Consultant	Senior Engineer / PM	Senior Project Engineer	Project Engineer	Staff Engineer	Engineer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.13											
<b>Pavement Design</b>											
3.13.1 Pavement Design Report											
a. Analysis and Preliminary Pavement Design Report	8	16		30			8	4	66		
3.13.2 QC Review	4	2							6		
<b>Subtotal</b>	<b>12</b>	<b>18</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>72</b>		

<b>TOTAL WORKHOURS</b>	<b>44</b>	<b>124</b>	<b>56</b>	<b>106</b>	<b>40</b>	<b>140</b>	<b>34</b>	<b>18</b>	<b>582</b>		
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**PIMA COUNTY  
FEE ESTIMATE SUMMARY**

PROJECT: **Sunset Road: I-10 to River Road**  
TASK(s): 3.12 Geotechnical Investigation, 3.13 Pavement Design

CONSULTANT: Golder Associates Inc.

CONTRACT NO.:  
CONTRACT TYPE: CPFF

**Direct Labor Cost**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Contracted Avg DL Rate</u>	<u>Labor Cost</u>
Senior Consultant	44	\$66.96	\$2,946.24
Senior Engineer / PM	124	\$58.08	\$7,201.92
Senior Project Engineer	56	\$42.88	\$2,401.28
Project Engineer	106	\$41.25	\$4,372.50
Staff Engineer	40	\$31.59	\$1,263.60
Engineer	140	\$30.27	\$4,237.80
Drafting / CADD / Graphics	34	\$25.00	\$850.00
Clerical	18	\$29.15	\$524.70
(A) Direct Labor	562 Hrs		<b><u>\$23,798.04</u></b>

**OVERHEAD**

(B) OH Rate x (A) 152.493% x \$23,798.04 = **\$36,290.35**

**PROFIT**

(C) % Profit Rate x (A+B) 10.0% x \$60,088.39 = **\$6,008.84**

**Estimated Direct Expenses**

Travel	\$0.00
Plotting	\$0.00
Reproductions	\$0.00
Field Supplies	\$250.00
ROW Permit Fees	\$1,000.00

(D) Total Estimated Direct Expenses **\$1,250.00**

**Estimated Outside Services & Subconsultants**

Southlands Engineering, LLC (DBE, Drilling)	\$29,100.00
ATEK Engineering (DBE, Lab Testing)	\$5,480.00
Border Traffic Safety (Traffic Control)	\$2,571.20

(F) Total Estimated Outside Services & Subconsultants = **\$37,151.20**

**Estimated Fees**

(H) TOTAL CONSULTANT FEE = **\$104,498.43**

# **APPENDIX G**

## **KITTELSON**



21 E CONGRESS STREET, SUITE 705  
TUCSON, AZ 85701  
P 520.544.4067 F 520.544.9616

September 11, 2019

Project #: 24312.P

Mr. Jim Glock, PE  
Structural Grace, LLC  
1430 E Fort Lowell Road, Ste 200  
Tucson, AZ 85719

***RE: Sunset Rd: I10 to River Rd – Traffic Engineering Report Scope and Fee***

Dear Jim:

We are pleased to submit the scope of work and fee proposal to prepare the Traffic Engineering Report for Sunset Road: I-10 to River Road. The attached scope of work has been prepared based on the information provided by Pima County Department of Transportation and Structural Grace.

The Not to Exceed Cost to prepare the Traffic Engineering Report with the deliverables indicated in the scope of work is \$37,750. The detailed hours and fee estimate are also attached.

Please let us know if you have any questions or need additional information. We look forward to getting started.

Sincerely,  
KITTELSON & ASSOCIATES, INC.

A handwritten signature in dark ink, appearing to read 'F. Guevara', is written over a horizontal line.

Felipe Ladron de Guevara, PE  
Associate Engineer

## EXHIBIT "A" - SCOPE OF SERVICES

### TASK 3.15 TRAFFIC ENGINEERING REPORT

#### Assumptions:

1. The CONSULTANT will review the Initial Traffic Report that was prepared for the Sunset Road: Silverbell Road to I-10 Eastbound Frontage Road project. The limits for the Initial Traffic Report are from Silverbell Road to River Road. The Consultant will use this information as the basis for developing the Initial and Final Traffic Engineering Report for the project.
  - a. The review of the Initial Traffic Report will include a review of the assumptions on land use and proposed developments in the area adjacent to Sunset Road.
  - b. A review of the I-10 DCR prepared for ADOT for the I-10/Sunset Rd Traffic Interchange will be also conducted and documented in the report.
2. The CONSULTANT will obtain current design year traffic volumes from the current PAG 2045 regional model and use the future traffic volumes to model traffic for the project.
  - a. Kittelson will work with PAG to review the current land use assumptions in the area of the project which are included in the PAG travel demand model and incorporate if necessary, the proposed Sunset Campus Development. A trip generation, distribution and assignment will be prepared for the intersections on Sunset Road at I-10 and Sunset Road at River Road.
  - b. A 24-hour count will be collected on River Road to adjust the PAG travel demand model if necessary.
3. CONSULTANT will participate in monthly progress meetings, over-the-shoulder review meetings, comment review meetings, public open houses and other coordination Meetings as necessary.
4. The CONSULTANT will include in the analysis a new full access intersection and a right-in/right-out intersection on Sunset Road on the southerly approach to the Sunset Road Traffic Interchange for the proposed Sunset Campus development.
  - a. A signal warrant analysis will be conducted for the proposed access at Sunset Campus Development. The analysis will include the operations of the new full access in conjunction with the proposed signals at the I-10/Sunset Road Traffic Interchange.
5. The CONSULTANT will prepare exhibits and visual simulations for public open house meetings.
  - a. The visual simulations will be prepared in SimTraffic for the design year of the project
6. CONSULTANT to provide three copies of the Traffic Engineering Report at each submittal.

**Task 3.15.1. Initial Traffic Engineering Report.** The CONSULTANT will complete an Initial Traffic Engineering Report for the project in accordance with the RDM. The report will document the traffic recommendations for the proposed Sunset Road/River Road intersection, I-10/Sunset Road Traffic Interchange, Sunset Road from I-10 to River Road and access to Sunset Campus Development.

**Task 3.15.2. Final Traffic Engineering Report.** The CONSULTANT will complete a Final Traffic Engineering Report for the project in accordance with the RDM. Review comments from the draft report will be addressed in writing. Based on final comment resolution, the final traffic engineering report will be prepared.

**Task 3.15.3. Meetings.** *CONSULTANT's Traffic Engineering Report Task Leader will attend project meetings, PCDOT Traffic meetings, and public meetings as needed.* Five meetings are anticipated including a project kick-off, two monthly progress meetings, a comment resolution meeting, and a public meeting.

**Task 3.15.4. Quality Control Review.** The CONSULTANT will provide quality control review of the Traffic Engineering Report. All traffic engineering study deliverables will be reviewed and documented following Kittelson's internal quality control process.

#### **Deliverables:**

- Initial Traffic Report
- Final Traffic Report
- Display materials and Visual Simulations as needed.
- Meeting minutes, distributed to project team, and revised as needed.
- Responses to all review comments.

**PIMA COUNTY  
FEE ESTIMATE SUMMARY**

PROJECT: **Sunset Road: I-10 to River Road**  
TASK(s):

CONSULTANT: Kittelson & Associates, Inc.

CONTRACT NO.:  
CONTRACT TYPE: CPFF

**Direct Labor Cost**

<u>Classification</u>	<u>Estimated Hours</u>	<u>Contracted Avg DL Rate</u>	<u>Labor Cost</u>
Project Principal	8	\$75.20	\$601.60
Project Manager	62	\$55.13	\$3,418.06
Senior Project Engineer	-		\$0.00
Project Engineer	164	\$37.82	\$6,202.48
Project Architect	-		\$0.00
Project Designer	-		\$0.00
Drafting / CADD / Graphics	24	\$28.67	\$688.08
Clerical	2	\$17.76	\$35.52
(A) Direct Labor	260 Hrs		<b><u>\$10,946</u></b>

**OVERHEAD**

(B) OH Rate x (A) 211.28% x \$10,946 = **\$23,126**

**PROFIT**

(C) % Profit Rate x (A+B) 10.0% x \$34,072 = **\$3,407**

**Estimated Direct Expenses**

Travel	\$0.00
Plotting	\$0.00
Reproductions	\$0.00
Exhibits	\$0.00
Specialized Vendors	\$271.00
Reports	\$0.00
Van/Bus Rental	\$0.00
(D) Total Estimated Direct Expenses	<b><u>\$271</u></b>

**Estimated Outside Services & Subconsultants**

(F) Total Estimated Outside Services & Subconsultants = **\$0**

**Estimated Fees**

(H) TOTAL CONSULTANT FEE = **\$37,750**



## Workhour Estimate by Task

MAIN TASK #	Main Task Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL
Task 3.2	Quality Control Plan and Project Management	0	0	0	0	0	0	0	0	0
Task 3.3	Utility Coordination	0	0	0	0	0	0	0	0	0
Task 3.4	Public Participation	0	0	0	0	0	0	0	0	0
Task 3.5	Coordination with Government Agencies	0	0	0	0	0	0	0	0	0
Task 3.6	Integration of Public Art As Applicable	0	0	0	0	0	0	0	0	0
Task 3.7	Gathering of Relevant Data	0	0	0	0	0	0	0	0	0
Task 3.8	Environmental Impact Screening	0	0	0	0	0	0	0	0	0
Task 3.10	Surveying and Mapping	0	0	0	0	0	0	0	0	0
Task 3.11	Drainage Report	0	0	0	0	0	0	0	0	0
Task 3.12	Geotechnical Issue Investigation	0	0	0	0	0	0	0	0	0
Task 3.13	Pavement Design	0	0	0	0	0	0	0	0	0
Task 3.14	Bridge Structure Selection Report	0	0	0	0	0	0	0	0	0
Task 3.15	Traffic Engineering	8	62	0	164	0	0	24	2	260
Task 3.16	Arterial Lighting Design	0	0	0	0	0	0	0	0	0
Task 3.17	Design Concept Report (DCR)	0	0	0	0	0	0	0	0	0
Task 3.18	Environmental Assessment/Mitigation	0	0	0	0	0	0	0	0	0
Task 3.19	ROW Acquisition Support	0	0	0	0	0	0	0	0	0
Task 3.20	Preparation of Plans and Cross Sections	0	0	0	0	0	0	0	0	0
		8	62	0	164	0	0	24	2	260
Task 3.30	Additional Services	0	0	0	0	0	0	0	0	0

### Workhour Estimate by Task

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.13											
Pavement Design											
3.13.1 Pavement Design Report									0		
3.13.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.14											
Bridge Structure Selection Report											
3.14.1 Bridge Structure Selection Report											
Draft Report UPRR									0		
Final Report UPRR									0		
Draft Report Rillito									0		
Final Report Rillito									0		
3.14.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.15											
Traffic Engineering											
3.15.1 Initial Traffic Engineering Report	2	32		96			20	1	151		
3.15.2 Final Engineering Report	2	16		32			4	1	55		
3.15.3 Meetings		10		20					30		
3.15.4 QC Review	4	4		16					24		
Subtotal	8	62	0	164	0	0	24	2	260		

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.16											
Arterial Lighting Design											
3.16.1 Lighting Design Report									0		
3.16.2 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.30											
<b>Additional Services</b>											
3.30.1 Utility Coordination and Survey (Additional Services)									0		
3.30.2 Other Services									0		
3.30.3 ADOT Design-Build Procurement Phase Services									0		
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>TOTAL WORKHOURS</b>	<b>8</b>	<b>62</b>	<b>0</b>	<b>164</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>2</b>	<b>260</b>		

**APPENDIX H**

**CARDNO**

September 17, 2019



**Jim Glock, PE**  
**Bridge Design Manager**  
**Structural Grace**  
1430 E. Ft. Lowell Road, Suite 200  
Tucson, Arizona 85719

Cardno, Inc.

4855 N. Shamrock Place  
Suite 109  
Tucson, AZ 85705  
USA  
Phone 520.770.0021  
Fax 520.408.3002  
Email Dan.Padilla@Cardno.com

**Re: Sunset I-10 to River Rd.**  
**Proposal for Subsurface Utility Engineering Services- Revision 1**

Dear Mr. Glock:

[www.Cardno.com](http://www.Cardno.com)

Cardno, Inc. is pleased to submit this proposal to provide professional Subsurface Utility Engineering (SUE) services for the above referenced project to Structural Grace (Client). The scope of work and fee structure are as follows:

## **SCOPE OF WORK**

### **Project Limits**

The project limits for Subsurface Utility Engineering services include Sunset Road for the south approach to the I-10 / Sunset Traffic Interchange and the connection from the I-10 Westbound Frontage Road to River Road. Right of ways included are expected to be Arizona DOT (ADOT), Union Pacific Railroad (UPRR), City of Tucson, and Pima County.

### **Subsurface Utility Engineering**

Cardno will provide up to forty (40) vacuum excavation potholes (testholes) with survey on existing subsurface utilities at locations yet to be identified within the project area. This proposal excludes any potholes within the paved section of Interstate 10 and the I-10 frontage road. The utility data obtained through our standard potholing procedure includes the depth, horizontal and vertical location tied to project datum via survey, size and material composition of the utility exposed, and backfill of excavated potholes using compacted native material. Please note, charges for asphalt hot patch and or pavement coring are not included in this estimate and should they be required, they will be considered a reimbursable item, submitted to client for pre-authorization, subcontracted, and billed separately.

Prior to beginning work, Cardno requests the following be provided by Client:

- A pothole request list in spreadsheet format identifying the pothole number (numbered without alpha characters), horizontal location in coordinate format, and the anticipated size and type of utility to be potholed.
- One set of 11" x 17" plan sheets displaying background topography, existing utilities, and pothole locations clearly marked and annotated with the corresponding pothole number.
- Horizontal and vertical survey control data in spreadsheet format for a minimum of three non-linear control points signed and sealed by an Arizona RLS adequate to stake the pothole locations utilizing RTK GPS technology along with a location map displaying the control points. The list shall identify point number, horizontal location in coordinate format, and a physical description of each monument. Please note, electronic CAD files from which the survey monument data must be extracted is not considered acceptable survey control.

## **DELIVERABLES**

Pertinent utility data will be presented in electronic format on our standard "Testhole Data Summary" form sealed by an Arizona Registered Land Surveyor or Arizona Registered Professional Engineer that includes the depth, horizontal coordinates, vertical elevation, size, and material composition of the utility line exposed at each pothole. Data will be submitted in both sealed hard copy format and electronic Excel format.

## **SCHEDULE**

Cardno will work closely with the project team to provide deliverables in a timeframe consistent with the overall project schedule. For scheduling purposes, please allow 5 weeks from receipt of applicable permits and cultural clearance for receipt of deliverables.

Australia • Belgium • Canada • Colombia • Ecuador • Germany • Indonesia • Italy • Kenya • New Zealand • Papua New Guinea • Peru • Philippines • Tanzania • United Arab Emirates • United Kingdom • United States • Operations in 85 countries

**ESTIMATED FEE**

**PIMA COUNTY  
FEE ESTIMATE SUMMARY**

PROJECT: Sunset Road: I-10 to River Road  
TASK(s): Additional Services - 40 Air/Vacuum Utility Testholes (Potholes)

CONSULTANT: Cardno, Inc.

CONTRACT NO.:  
CONTRACT TYPE: CPFF

**Estimated Additional Services**

**Direct Labor Cost**

Classification	Estimated Hours	Contracted Avg DL Rate	Labor Cost
Project Principal	✓ -	\$84.14	\$0.00
Project Manager	✓ 6	\$54.20	\$325.20
Senior Project Engineer	✓ 2	\$60.10	\$120.20
Project Engineer	✓ 12	\$43.91	\$526.92
Vacuum Excavation Crew	✓ 80	\$43.49	\$3,479.20
Survey Crew	✓ 18	\$52.48	\$939.68
Drafting / CADD / Graphics	✓ 40	\$33.60	\$1,344.00
Clerical	✓ 2	\$23.00	\$46.00

(A) Direct Labor 158 Hrs \$6,681.20

**OVERHEAD**

(B) OH Rate x (A) x \$6,681.20 = \$11,992.09

**PROFIT**

(C) % Profit Rate x (A+B) 10.0% x \$18,673.29 = \$1,867.33

**Estimated Direct Expenses**

Vac Truck & Survey Truck Hourly Cost	\$6,912.00
Plotting	\$0.00
Reproductions	\$0.00
Exhibits	\$0.00
Specialized Vendors	\$0.00
Reports	\$0.00
Van/Bus Rental	\$0.00

(D) Total Estimated Direct Expenses \$6,912.00

**Estimated Outside Services & Subconsultants**

Trafficade - Traffic Control	\$6,000
City of Tucson & Pima County Permits	\$1,200
UPRR Right of Entry Application and Permit Fees	\$5,500
UPRR Flagman Charges (Estimated 3 days)	\$4,200
UPRR Protective Liability Insurance	\$1,500

(F) Total Estimated Outside Services & Subconsultants = \$18,450.00

**Estimated Fees**

(H) TOTAL CONSULTANT FEE = \$45,902.61

**Workhour Estimate by Task**

Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.20											
Preparation of Plans and Cross Sections											
3.20.1 15% Plans									0		
3.20.1 30% Plans									0		
3.20.2 IGA Exhibit									0		
3.20.3 QC Review									0		
Subtotal	0	0	0	0	0	0	0	0	0		

# Workhour Estimate by Task

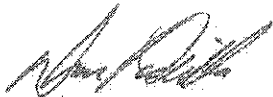
Description	Project Principal	Project Manager	Senior Project Engineer	Project Engineer	Project Architect	Project Designer	Drafting / CADD / Graphics	Clerical	TOTAL		Per Sht
Task 3.30											
Additional Services											
3.30.1 Utility Coordination and Survey (Additional Services)									0		
3.30.2 Other Services									0		
3.30.3 ADOT Design-Build Procurement Phase Services									0		
Subtotal	0	0	0	0	0	0	0	0	0		
TOTAL WORKHOURS	42	165	0	0	0	222	0	0	429		



The fees identified include survey to establish horizontal and vertical position of potholes tied to project datum, project management, AZ 811 coordination, air-vacuum extraction excavation with two person crew, our standard backfill with compacted native material, our standard 12" x 12" pavement restoration with permanent asphalt cold patch, 12" x 12" concrete sidewalk restoration using bagged pre-mixed concrete, and project deliverable submitted on our "Testhole Data Summary" in scanned electronic format. Prior to excavation Cardno will utilize our geophysical utility detection equipment to designate the horizontal location of traceable utilities (metallic utilities or non-metallic utilities with trace wire) to keep the possible number of "Dry Holes" at a minimum. The UPRR Right of Entry Permit and Railroad Protective Liability Insurance fees identified above are estimates based on prior experience, actual fees may be more. The expense identified for the UPRR flagman is a UPRR requirement when working within 25 ft. of the centerline of any of their railroad tracks and 3 days have been included in this estimate. **Please note that above fee schedule does not include such reimbursable expenses as uniformed police officers (if required), special backfill requirements, compaction testing, traffic control flag-men, replacement of full sections of concrete sidewalk, cultural permitting & monitoring, and or asphalt hot patch; if any of these items should be required, they will be considered a reimbursable item, submitted to client for pre-authorization, subcontracted, and billed separately.** Reimbursable expenses for permits, traffic control and traffic control plans will be invoiced at our cost plus ten percent.

Cardno will not exceed the estimated fee without prior authorization from Client. **An invoice will be prepared upon completion for the actual work completed up to the estimated budget amount.** We appreciate this opportunity to provide subsurface utility engineering services for this project. Should you have any questions or require additional information, please do not hesitate to call.

Sincerely,



Dan Padilla  
Senior Project Manager

# **SECTION 2**

## **PROJECT SCHEDULE**

## Sunset Road: I-10 to River Road

ID	Task Name	Duratio	Start	Finish	22 6 20 3 17 1 15 29 12 26 9 23 8 22 5 19 3 17 31 14 28 12 26 9 23 6 20 4 18 1 1																														
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	No																	
1	NOTICE TO PROCEED	0 days	10/15/19	10/15/19	◆	10/15																													
2	TASK 3.2 QUALITY CONTROL PLAN	15 days	10/15/19	10/30/19	■	■																													
4	TASK 3.4.2.1 PUBLIC MEETING #1	0 days	1/11/20	1/11/20				◆	1/11																										
5	TASK 3.4.2.2 PUBLIC MEETING #2 (IF NEEDED)	0 days	5/3/20	5/3/20								◆	5/3																						
6	TASK 3.4.2.3 PUBLIC HEARING (EA)	0 days	8/11/20	8/11/20													◆	8/11																	
7	TASK 3.5 FEDERAL, STATE, AND LOCAL COORDINATION	112 days	10/15/19	2/4/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
12	TASK 3.6 PUBLIC ART	1 day	11/12/19	11/13/19		■	■																												
14	TASK 3.7 DATA GATHERING	21 days	10/15/19	11/5/19	■	■	■																												
17	TASK 3.8 ENVIRONMENTAL IMPACT SCREENING	163 days	10/25/19	4/5/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
24	TASK 3.10 SURVEYING AND MAPPING	42 days	10/15/19	11/26/19	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
36	TASK 3.11 DRAINAGE REPORT	277 days	10/15/19	7/18/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
45	TASK 3.12 GEOTECHNICAL INVESTIGATION	112 days	10/15/19	2/4/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
51	TASK 3.13 PAVEMENT DESIGN	112 days	10/15/19	2/4/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
53	3.14 BRIDGE STRUCTURE SELECTION REPORT	42 days	1/7/20	2/18/20				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
57	TASK 3.15 TRAFFIC ENGINEERING	84 days	10/15/19	1/7/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
60	TASK 3.16 ARTERIAL STREET LIGHTING REPORT	49 days	10/15/19	12/3/19	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
64	TASK 3.17 DESIGN CONCEPT REPORT	201 days	10/15/19	5/3/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
75	TASK 3.18 ENVIRONMENTAL ASSESSMENT / MITIGATION	347 days	10/29/19	10/10/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
98	TASK 3.19 ROW ACQUISITION SUPPORT	147 days	10/15/19	3/10/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
101	TASK 3.20 PREPARATION OF PLANS AND CROSS-SECTIONS	359 days	10/15/19	10/8/20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
105	PROJECT COMPLETE	0 days	10/8/20	10/8/20																											◆	10/8			

Date: 9/19/19

**END OF EXHIBIT "B" - COMPENSATION SCHEDULE**



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

12/31/2019

9/27/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Lockton Companies Three City Place Drive, Suite 900 St. Louis MO 63141-7081 (314) 432-0500	<b>CONTACT NAME:</b>	
	<b>PHONE (A/C, No, Ext):</b> <b>FAX (A/C, No):</b>	
<b>INSURED</b> 1407115 Structural Grace, LLC 1430 E. Fort Lowell Road, Suite 200 Tucson AZ 85719	<b>E-MAIL ADDRESS:</b>	
	<b>INSURER(S) AFFORDING COVERAGE</b>	
	<b>INSURER A:</b> Lexington Insurance Company <b>NAIC #</b> 19437	
	<b>INSURER B:</b> United States Fire Insurance Company <b>21113</b>	
	<b>INSURER C:</b> XL Specialty Insurance Company <b>37885</b>	
	<b>INSURER D:</b> Manufacturers Alliance Insurance Company <b>36897</b>	
	<b>INSURER E:</b> Pennsylvania Manufacturers' Assoc Ins Co <b>12262</b>	
<b>INSURER F:</b> AXIS Surplus Insurance Company <b>26620</b>		

**COVERAGES****CERTIFICATE NUMBER:** 16331004**REVISION NUMBER:** XXXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	035417916	12/31/2018	12/31/2019	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ XXXXXXXX PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	<input checked="" type="checkbox"/> <b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	133-744979-7	12/31/2018	12/31/2019	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX \$ XXXXXXXX
C	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> <b>OCCUR</b> <input type="checkbox"/> <b>EXCESS LIAB</b> <input type="checkbox"/> <b>CLAIMS-MADE</b>  DED RETENTION \$	N	N	US00088591LI18A	12/31/2018	12/31/2019	EACH OCCURRENCE \$ 20,000,000 AGGREGATE \$ 20,000,000 \$ XXXXXXXX
D E	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N	N/A	0468405Y (AOS) 0468405B (MA & HI)	1/1/2019 1/1/2019	12/31/2019 12/31/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
F	<b>Professional Liability</b>	N	N	EBZ634816/01/2019	12/31/2018	12/31/2019	\$10,000,000 per Claim \$10,000,000 Aggregate Deductible: \$100,000

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES** (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
THIS CERTIFICATE SUPERSEDES ALL PREVIOUSLY ISSUED CERTIFICATES FOR THIS HOLDER, APPLICABLE TO THE CARRIERS LISTED AND THE POLICY TERM(S) REFERENCED.  
General Liability - Overall policy general aggregate is \$5,000,000. RE: SPECIAL PROJECT: Sunset Road: I-10 to River Road (4SRIV). \*SEE BELOW\*

**CERTIFICATE HOLDER**

16331004  
Pima County  
130 W. Congress Street  
Tucson AZ 85701-1317

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

County, RTA, their departments, districts, boards, commissions, officers, officials, agents, and employees are included as additional insureds if required by written contract with respect to General Liability and Automobile Liability per the terms and conditions of the policy. A waiver of subrogation applies in favor of County, RTA, their departments, districts, boards, commissions, officers, officials, agents, and employees if required by written contract with respect to General Liability, Automobile Liability, and Workers' Compensation per the terms and conditions of the policy where permitted by state law.

This endorsement, effective 12:01 AM 12/31/2018

Forms a part of policy no.: 035417916

Issued to: CONSOR HOLDINGS, LLC

By: LEXINGTON INSURANCE COMPANY

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED REQUIRED BY WRITTEN CONTRACT**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY POLICY, COVERAGE APPLICABLE TO COVERAGE A. BODILY INJURY AND PROPERTY DAMAGE (SECTION I - COVERAGES) ONLY

- A. Section II - Who Is An Insured** is amended to include any person or organization you are required to include as an additional insured on this policy by a written contract or written agreement in effect during this policy period and executed prior to the "occurrence" of the "bodily injury" or "property damage."
- B.** The insurance provided to the above described A additional insured under this endorsement is limited as follows:
1. **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE** (Section I - Coverages) only.
  2. The person or organization is only an additional insured with respect to liability arising out of "your work" or "your product".
  3. In the event that the Limits of Insurance provided by this policy exceed the Limits of Insurance required by the written contract or written agreement, the insurance provided by this endorsement shall be limited to the Limits of Insurance required by the written contract or written agreement. This endorsement shall not increase the Limits of Insurance shown in the Declarations pertaining to the coverage provided herein.
  4. The insurance provided to such an additional insured does not apply to "bodily injury" or "property damage" arising out of an architect's, engineer's, or surveyor's rendering of or failure to render any professional services, including, but not limited to:
    - i. The preparing, approving, or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders, or drawings and specifications; and
    - ii. Supervisory, inspection, architectural, or engineering activities.
- 5.** This insurance does not apply to "bodily injury" or "property damage" arising out of "your work" or "your product" included in the "product-completed operations hazard" unless you are required to provide such coverage by written contract or written agreement and then only for the period of time required by the written contract or written agreement and in no event beyond the expiration date of the policy.
- 6.** Any coverage provided by this endorsement to an additional insured shall be excess over any other valid and collectible insurance available to the additional insured whether primary, excess, contingent or on any other basis.
- C.** In accordance with the terms and conditions of the policy and as more fully explained in the policy, as soon as practicable, each additional insured must give us prompt notice of any "occurrence" which may result in a claim, forward all legal papers to us, cooperate in the defense of any actions, and otherwise comply with all of the policy's terms and conditions. Failure to comply with this provision may, at our option, result in the claim or "suit" being denied.



Authorized Representative OR  
Countersignature (In states where applicable)

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**ENDORSEMENT # 010**

**This endorsement, effective 12:01 AM 12/31/2018**

**Forms a part of policy no.: 035417916**

**Issued to: CONSOR HOLDINGS, LLC**

**By: LEXINGTON INSURANCE COMPANY**

**PRIMARY AND NON CONTRIBUTORY ENDORSEMENT**

This endorsement modifies insurance provided by the policy:

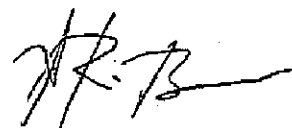
**SCHEDULE**

**Name of Person or Organization**

**IF REQUIRED BY CONTRACT**

Notwithstanding any other provision of the policy to the contrary, the insurance afforded by this policy for the benefit of the Additional Insured shown in the Schedule above shall be primary insurance, but only with respect to any claim, loss or liability arising out of the Named Insured's operations; and any insurance maintained by the Additional Insured shall be non-contributing.

All other terms and conditions of the policy remain the same.



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**Authorized Representative**

**ENDORSEMENT # 017**

**This endorsement, effective 12:01 AM 12/31/2018**

**Forms a part of policy no.: 035417916**

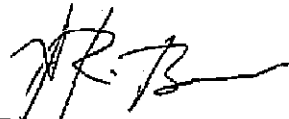
**Issued to: CONSOR HOLDINGS, LLC**

**By: LEXINGTON INSURANCE COMPANY**

**WAIVER OF SUBROGATION  
(BLANKET)**

It is agreed that we, in the event of a payment under this policy, waive our right of subrogation against any person or organization where the insured has waived liability of such person or organization as part of a written contractual agreement between the insured and such person or organization entered into prior to the "occurrence" or offense.

All other terms and conditions remain unchanged.



**Authorized Representative OR  
Countersignature (In states where applicable)**



## 1. Broadened Insured Status

SECTION II - LIABILITY COVERAGE, Paragraph **A**. Coverage, Subparagraph 1. Who Is An Insured is amended to include as an insured:

- A. Any subsidiary which is a legally incorporated entity of which you own a financial interest of more than 50% of the voting stock on the effective date of this Coverage Form, while using with your permission a covered "auto."

However, the insurance afforded by this provision **1.A.** does not apply to any subsidiary that is an insured under any other automobile liability policy, or would be an insured under such policy but for the termination of such policy or the exhaustion of such policy's limits of insurance.

- B. Any organization you newly acquire or form, and over which you maintain majority interest, while using with your permission a covered "auto".

The insurance afforded by this provision **1.B.**:

1. Is effective on the acquisition or formation date, and is afforded only until the end of the policy period of this Coverage Form, or the next anniversary of its inception date, whichever is earlier.
2. Does not apply to "bodily injury" or "property damage" resulting from an "accident" that occurred before you acquired or formed the organization.
3. Does not include any newly acquired or formed organization that is:
  - a. A joint venture or partnership; or
  - b. An insured under any other automobile liability policy, or would be an insured under such policy but for the termination of such policy or the exhaustion of such policy's limits of insurance.

## 2. Blanket Additional Insured When Required Under Written Contract

Paragraph **A1**. Who Is An Insured under SECTION II - LIABILITY COVERAGE is amended to add:

- d. Any person, organization or governmental entity with respect to the operation, maintenance, or use of a covered "auto" if you are required to add such person, organization or governmental entity to this policy as an additional "insured" in order to comply with the terms of a written contract or written agreement. This Additional Insured status is not conferred when such written contract or written agreement:

- (1) Involves the owner or anyone else from whom you hire or borrow a covered "auto" unless it is a "trailer" connected to a covered "auto" you own; or
- (2) Is executed after the date of "accident" or "loss";

Paragraph d.(2) above does not apply if:

- (a) the terms and conditions of the written contract or written agreement had been agreed upon prior to the "accident" or "loss"; and
- (b) you can definitively establish that the terms and conditions of the written contract or written agreement ultimately executed are the same as those which had been agreed upon prior to the "accident" or "loss".

Paragraph **a.** of Condition **5**. Other Insurance of Part **B**. General Conditions under Section **IV** - Business Auto Conditions is amended by the addition of the following: Regardless of whether other insurance is maintained by an additional insured on a primary basis, the coverage provided by Provision **2.** of the Commercial Auto Broad Form Endorsement will be primary to and noncontributing with other insurance maintained by the additional insured if the written contract or written agreement between you and the additional insured specifically requires that this insurance be primary.

## **19. Non-Owned Auto Waiver Of Subrogation**

The following is added to Subparagraph 5. Transfer Of Rights Of Recovery Against Others To Us, under Paragraph A. Loss Conditions in SECTION IV – BUSINESS AUTO CONDITIONS:

We hereby waive any right of subrogation against any of your officers, directors, or "employees" which might arise by reason of any payment under the insurance afforded by this policy for the operation, maintenance, use, loading, or unloading of non-owned "autos".

This waiver extends only to payments in excess of other valid and collectible insurance available to the officer, director, or "employee".

## **20. Blanket Waiver Of Subrogation When Required Under Written Contract**

The following is added to Subparagraph 5. Transfer Of Rights Of Recovery Against Others To Us, under Paragraph A. Loss Conditions in SECTION IV - BUSINESS AUTO CONDITIONS:

However, we waive any right of recovery we may have against a person, organization or governmental entity when you have waived such right of recovery under a written contract or written agreement provided such written contract or agreement is:

1. currently in effect or becoming effective during the term of this policy; and
2. executed prior to the "accident" or "loss"; or
3. executed after the "accident" or "loss" if:
  - a. the terms and conditions of the written contract or written agreement had been agreed upon prior to the "accident" or "loss"; and
  - b. you can definitively establish that the terms and conditions of the written contract or written agreement ultimately executed are the same as those which had been agreed upon prior to the "accident" or "loss".

## **21. Coverage Territory - Short Term Hired Commercial "Autos"**

Paragraph 7. Policy Period, Coverage Territory under Paragraph B. General Conditions in SECTION IV – BUSINESS AUTO CONDITIONS is amended by the addition of the following:

The coverage territory is extended to anywhere in the world if:

1. A covered "auto" of the commercial van, pick-up, or truck type is leased, hired, rented or borrowed for a period of 30 days or less; and
2. The "insured's" responsibility to pay damages is determined in a "suit" on the merits, in the United States of America, the territories and possessions of the United States of America, Puerto Rico, or Canada or in a settlement we agree to.

We will also cover "loss" to, or "accidents" involving, a covered "auto" while being transported between any of these places.

**WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT**

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against any person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

**Schedule**1. ☐ Specific Waiver

Name of person or organization

**ANY PERSONS OR ORGANIZATIONS WITH WHOM THE NAMED  
INSURED HAS AGREED BY WRITTEN CONTRACT TO FURNISH  
THIS WAIVER**

☒ Blanket Waiver

Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

## 2. Premium:

The premium charge for this endorsement shall be \_\_\_\_\_ percent of the premium developed on payroll in connection with work performed for the above person(s) or organization(s) arising out of the operations described, subject to a minimum premium of \$50.00 per Specific Waiver and \$500.00 for a Blanket Waiver.