February 11, 2014
AMEC Proposal # 11PROPTRAN.0045

Mr. Duane Eitel
Traffic Engineer
City of Casa Grande
3181 N Lear Avenue
Casa Grande, AZ 85122

RE: Jimmie Kerr Blvd & Sunland Gin Rd Intersection
Scope of Work and Fee Proposal
Scoping, Preliminary Plan & Final PS&E
City Purchase Order No.: ____________

Dear Mr. Eitel,

In response to the City’s request, attached please find our scope of work, fee and schedule for the scoping, preliminary plan and final PS&E to provide a span wire type signalized intersection at the Jimmie Kerr Blvd and Sunland Gin Road intersection. This project is unique for several reasons. First the intersection lies north of the Union Pacific Railroad (UPRR). Therefore signal pre-emption will require UPRR coordination, permits, survey flagging, right-of-way documentation and plans to complete this project. The second is the geometry (intersection skew, desire to accommodate existing and future widened roadways adjacent to the UPRR right-of-way). To create a span wire layout with a 20-year or longer life, a scoping and preliminary plan phase to explore two or more alternatives is included. The combination of the proximity of the UPRR and complex geometry has the effect of higher design cost as compared to a typical intersection.

The total estimated cost for the scoping, preliminary plan and PS&E is $58,848. This cost includes $14,182 for AMEC to coordinate and provide pre-emption plans to the UPRR plus $2,160 for other UPRR related fees (right of entry permit, survey team training, flagging, etc.). and $6,825 for subconsultant to provide a Senior and Quality Control Review for the UPRR pre-emption and traffic signal system plans.

AMEC welcomes the opportunity to support the City of Casa Grande on this challenging project.

Please contact us with any questions you have regarding our submittal.

Respectfully submitted,

AMEC Environment & Infrastructure, Inc.

Clark C. Clatanoff, PE, PTOE
Project Manager

Ed Latimer, PE
Infrastructure Operations Manager

Attachments

Cc: AMEC Files

AMEC Environment & Infrastructure, Inc.
4600 E Washington St., Suite 600
Phoenix, AZ 85034
Tel: (602) 733-6000
Fax: (602) 733-6100
SCOPE OF WORK AND FEE PROPOSAL

Intersection Improvements For The City of Casa Grande
Jimmie Kerr Blvd (Old SR 84) and Sunland Gin Rd Intersection
Scoping, Preliminary Plan & PS&E
City of Casa Grande Purchase Order No. ______________

AMEC Environment and Infrastructure, Inc. (AMEC) proposes the following scope for scoping, preliminary plans and final plans, specification & estimate (PS&E) services to the City of Casa Grande (City) for the Jimmie Kerr Blvd (JKB) and Sunland Gin Rd (SGR) intersection.

Scoping & Preliminary Plan
The purpose of the scoping & preliminary plans (Scoping) is twofold. First it will conceptualize and draft the footprint for intersection roadway geometric improvements to include a second thru lane on JKB and ensure the recently added EB right turn lane and NB thru/right turn lane provide for 12" in width when reconstructed/lengthened in the future. Secondly AMEC will look at alternative span wire traffic signal configurations that consider alternative roadway widening scenarios such that the poles will not require relocation as the roadway geometry is improved, but does allow for the relocation of existing and the addition of more traffic signal heads.

Survey: The City will provide AMEC the as-built roadway and right-of-way information for JKB and SGR. As needed, AMEC will research ADOT Engineering Records for as-builts, as JKB was recently Old SR 84. The topographic survey will extend 300’ from centerline on each leg of the intersection. The right-of-way locations will be verified based on markers located in the field and collation of existing plans with the survey. The requirements and cost to work within the Union Pacific Railroad (UPRR) right-of-way (ROW) are outlined later in this proposal.

City Coordination and Project Management: During Scoping two meetings in Casa Grande and phone/e-mail coordination as needed to complete this task are included. Project management includes the contract setup and invoicing functions at AMEC.

UPRR Coordination, Data Collection & Preliminary Pre-Emption Calculations: In addition to the coordination effort with the UPRR needed to complete the survey, AMEC will coordinate with them to connect the intersection traffic signal system to the UPRR signal system for pre-emption. AMEC will provide the preliminary calculations needed to coordinate the pre-emption signal phasing for the JKB/SGR intersection and the UPRR rail traffic. We will also coordinate the needs and locations of conduits and conductors to link the UPRR and City signal controller systems. These facilities will be shown on the traffic signal design plans. AMEC will also evaluate appropriate signage and striping designs specific to the at-grade rail crossing.

Utility Coordination: AMEC will assist with utility coordination including coordination for a point of service for the traffic signal. AMEC will provide general coordination by requesting existing facility plans from the utility companies and coordinating utility conflict reviews with each owner. AMEC will incorporate existing utility information into the topo files and prepare the design with due consideration given to existing utilities and infrastructure. AMEC will identify if utility designation and potholes will be needed for the design of the traffic signal foundations, and provide the City with a red-lined plan set depicting this information at the 30% design stage.

AMEC Environment & Infrastructure, Inc.
4600 E Washington St., Suite 600
Phoenix, Arizona 85034

Tel: (602) 733-6000
Fax: (602) 733-6100
www.amec.com
Scoping Assumptions: The following assumptions were made:

- The City will provide available as-built plans before AMEC looks through ADOT as-buils
- No Highway Capacity Manual (HCM) capacity or level of service analysis is included
- No evaluation for the length of turn lanes is included
- Sidewalks will not be included along either JKB or SGR
- No cost estimates will be provided

Scoping Deliverables: A draft plan will be created showing up to 3 alternative span wire layouts. The final plan will show the preferred span wire layout. The plans will only show signal head locations on the span wire. Schedules for the poles, pull boxes and conduits will not be included. The plans will be shown on the topographic mapping created from the survey.

Pre-design Scoping Fees: The following are the fees for the deliverables defined above:

- Draft & Final Roadway Geometry and Span Wire Layouts ........................................... $2,571
- Survey (includes time for updating UPRR safety training) ......................................... $5,665
- City Coordination & Project Management ........................................................................ $5,433
- UPRR Coordination, Data Collection & Preliminary Pre-Eemption Calculations ........ $5,508
- Utility Coordination .......................................................................................................... $1,089

Total AMEC Scoping & Preliminary Plan .............. $20,268

Plans, Specifications & Estimate (PS&E)

The plans will provide for traffic signal heads and video detection located for the current roadway geometry. Pole type, intersection lighting, photometric analysis and video detection mounting addressed in the scoping phase will be designed and implemented as required. The design will also provide for integration with the UPRR to include advanced notification along JKB. The design plans are anticipated to include the following plan sheets:

- Cover Sheet & Sheet Index ................................................................................................. 1
- General Construction Notes & Legend ............................................................................... 1
- Traffic Signal Plans (1"=20' @ full size, with pull box schedule) ..................................... 1
- Pole and Conduit Schedules .............................................................................................. 1
- Span Wire Detail (ADOT, modified as needed, no structural analysis) ......................... 1
- Signing and Pavement Marking Plan (1" = 40') ............................................................... 1
- UPRR Plans (not known at this time) ................................................................................ NA

Total Estimated No. of Sheets ................................................. 6

Design Guidelines & Standards: Plans shall be prepared in accordance with the most current version of the ADOT Standard Specifications and Details as amended by the City of Casa Grande, the Arizona Utility Coordinating Committee Public Improvement Project Guide, and other standards such as AASHTO, MUTCD, and ASTM as applicable. All plans shall be prepared using AutoCAD 2012 and shall be 24" x 36" in size and shall be prepared on the City Standard Plan sheets.

Cost Estimates and Specifications: AMEC shall prepare detailed construction cost estimates and special provisions for each submittal in City bid tab format (provided by City).

City Coordination and Project Management: During PS&E two meetings in Casa Grande and phone/e-mail coordination as needed to complete this task are included. Project management includes the invoicing function at AMEC.
UPRR Coordination & Pre-Emption Design: During the PS&E AMEC will coordinate the plan reviews for the interconnection needed for pre-emption signal phasing for the JKB/SGR intersection and the UPRR rail traffic. AMEC will also do the pre-emption design per the requirements of the UPRR.

Utility Coordination and Service Request Letter: Included is the submittal of the Initial and Draft Final plans to the utility companies with facilities within the intersection, as determined during Scoping. Coordination with the electrical service provider (APS or ED2) will include the identification of the point of service and service request letter.

PS&E Assumptions: The following assumptions were made:
- Does not include geometric improvements to the intersection
- No utility designation or potholing
- No geotechnical investigation
- No structural analysis of the ADOT signal span wire detail
- No signing plans (we will show signs on span wire(s), poles and free standing within signal plan area on Signal Plan Sheet)
- Does not include advertising the project, answering questions during the advertising process, attending the preconstruction meeting or any other task after the submittal of the sealed PS&E documents.

PS&E Deliverables: This task would involve preparation of 60%, 90% and Final submittals. AMEC will transmit the submittals to the City for review. Subsequent submittals will incorporate the City’s review comments into the next submittal. AMEC shall prepare a tabulation of the review comments and the proposed resolution for each comment. AMEC must provide a brief explanation for each comment that it proposes to not incorporate.

The Initial and Draft Final submittals will be electronic. The Final submittal will include one (1) reproducible set of full-sized sealed drawings on vellum, along with the special provisions and cost estimate for reproduction and archiving. Final drawings shall also be submitted in electronic format on CD in AutoCAD format. The plans and estimate will be in City of Casa Grande standard format.

PS&E Fees: The following are the AMEC fees for the deliverables defined above:

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS&amp;E Submittals</td>
<td>$9,439</td>
</tr>
<tr>
<td>Cost Estimates and Spec's</td>
<td>$4,154</td>
</tr>
<tr>
<td>City Coordination &amp; Project Management</td>
<td>$5,060</td>
</tr>
<tr>
<td>UPRR Coordination &amp; Pre-Emption Design</td>
<td>$8,674</td>
</tr>
<tr>
<td>Utility Coordination</td>
<td>$1,924</td>
</tr>
</tbody>
</table>

**Total AMEC PS&E** ........................................... **$29,251**

UPRR, Expense and Subconsultant Expenses
The following UPRR expenses are included: survey right of entry permit - $585, training for survey team - $75, and UPRR flagging for survey - $1,500. Any additional costs necessary to work within UPRR right-of-way not covered herein will be paid by the City .......... Total - $2,160

Direct expense money is included for mileage, meals, copies & misc. items .......... Total - $346

AMEC has included Lee Engineering to provide a Senior and Quality Reviews for the UPRR pre-emption system and traffic signal system. There proposal is attached .......... Total - $6,825
City Provided Information

The City will provide the following as available:

- Utility plans
- As-built roadway and right-of-way plans
- Sample plans, special provisions, construction notes, guidelines, etc.
- Assist with the utility coordination efforts

Total Fee Estimate

The total estimated fee for the project is:

<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predesign Scoping</td>
<td>$20,266</td>
</tr>
<tr>
<td>Plans, Specification and Estimates</td>
<td>$29,251</td>
</tr>
<tr>
<td>UPRR Expenses</td>
<td>$2,160</td>
</tr>
<tr>
<td>Direct Expenses</td>
<td>$346</td>
</tr>
<tr>
<td><strong>AMEC Lump Sum Fee Total</strong></td>
<td><strong>$52,023</strong></td>
</tr>
<tr>
<td>Lee Engineering – Sr. Review/QC (RR Pre-emption &amp; Signal System)</td>
<td>$6,825</td>
</tr>
<tr>
<td><strong>City Total</strong></td>
<td><strong>$58,848</strong></td>
</tr>
</tbody>
</table>

Schedule

The estimated project duration is 45 weeks. After each submittal a 3-week review period by the City is included in the overall duration of the project. The duration of each task is shown in the table below.

<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice to Proceed</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Predesign</strong></td>
<td><strong>16 weeks</strong></td>
</tr>
<tr>
<td>Data collection &amp; Survey (UPRR permit takes 6 wks)</td>
<td>8 weeks</td>
</tr>
<tr>
<td>Draft roadway and signal layouts (City review of 3 wks included)</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Final roadway and signal layout (City review of 3 wks included)</td>
<td>4 weeks</td>
</tr>
<tr>
<td><strong>PS&amp;E</strong></td>
<td><strong>29 weeks</strong></td>
</tr>
<tr>
<td>60% Submittal (UPRR 8 wks &amp; City review of 3 wks included)</td>
<td>11 weeks</td>
</tr>
<tr>
<td>90% Submittal (UPRR 6 wks &amp; City review of 3 wks included)</td>
<td>9 weeks</td>
</tr>
<tr>
<td>Final PS&amp;E (UPRR 6 wks &amp; City approval of 3 wks included)</td>
<td>9 weeks</td>
</tr>
<tr>
<td><strong>Total Estimated Duration</strong></td>
<td><strong>45 weeks</strong></td>
</tr>
</tbody>
</table>

Ed Latimer, Infrastructure Operations Mngr.

Clark C. Clatanoff, Project Manager

2-11-2014

2-11-14

JKB/SGR Intersection

Scope of Work & Fee Proposal