111 SW Fifth Avenue, Suite 2500 Portland, OR 97204 503.542.3860 **kpff.com**

August 24, 2016
(Revised September 9, 2016)

Dayna Webb
City of Oregon City
Public Works Department
PO Box 3040
Oregon City, Oregon 97045

Via Email: dwebb@ci.oregon-city.or.us

RE: Proposal for Civil Engineering and Surveying Services
12th and Washington Traffic Signal Project

Dear Dayna:

We are pleased to provide you with this Civil Engineering and Surveying Services proposal for the 12th and Washington Traffic Signal Project in Oregon City.

The proposed project will address the incorporation of a new traffic signal at the intersection of 12th and Washington in Oregon City. This intersection has experienced a recent grouping of crashes, and a recent analysis completed for the City by DKS Associates shows that the intersection currently meets 2 signal warrants with another 2 warrants projected in the near future. Due to these factors, the City has decided to move forward with the installation of signalization at this time.

We thank you for the opportunity to propose on this project. If this proposal is acceptable, we will finalize our agreement through a mutually approved contract. If you have any questions or require additional information, please contact me at (503) 543-5745 or Ryan Milkowski at (503) 542-3867.

Sincerely,
KPFF Consulting Engineers

Curtis C. Vanderzanden
Principal

Attachments: *Scope of Services and Fee*
Exhibit A – Detailed Cost Breakdown

10101600251-pk

SCOPE OF SERVICES AND FEE
12th and Washington Traffic Signal Project
August 24, 2016
Revised September 9, 2016

PROJECT UNDERSTANDING

The existing Washington Street/12th Street intersection is a two-way stop controlled intersection, with stop control on 12th Street. There is also a flashing signal showing yellow on Washington Street and red on 12th Street. There are vertical curves on both Washington Street and 12th Street. Curb extensions were installed on the west side of Washington Street in 2003 in order to move the stop bar on 12th Street closer to the intersection and provide additional sight distance for vehicles on 12th Street. In 2014 the curb extension at the southwest corner was removed to accommodate turning movements.

The Washington Street Improvements work completed in 2003 included the signal underground work, 1 signal pole & base (NE corner) and interconnect conduits between 12th & 15th. If feasible, the intent will be to utilize the existing signal pole, bases & foundation constructed in 2003. Since this has not been confirmed at this point, the following proposal is based on the assumption that the existing base will not be suitable and that 4 new signal pole foundations will be needed, with the hope that this number can be reduced to 3 in the preliminary design phase.

Traffic signal warrants were evaluated at this intersection on several occasions, including in 2010 and 2014. Each time, the traffic signal warrants were closer to being met. In the 2010 analysis, no warrants were met. However, in the 2014 analysis one warrant was met and four warrants were anticipated to be met by 2035 (eight-hour warrant, four-hour warrant, peak-hour warrant and crash experience warrant).

Recently, six collisions occurred at the intersections within a six week period. These events prompted further attention to the intersection. DKS Associates was directed to prepare a field review and safety audit, update the traffic signal warrant analysis, and assess an alternative traffic control treatment. Based on updated traffic counts, the 12th Street/Washington Street intersection meets two traffic signal warrants in 2016 and is expected to meet two more by next year (2017). Given these results, the installation of a traffic signal is warranted.

As a result of the analysis above, the City has requested that KPFF provide the following proposal for engineering and surveying services to prepare construction documents for implementation of a new traffic signal installation at this intersection. The anticipated improvements include:

- Removal of existing flashing yellow signal equipment.
- Removal of an existing curb extension at the NW corner of the intersection and associated curb ramp improvements.
- Installation of a new traffic signal system and associated signage and striping.

Based on preliminary input from GeoDesign, we anticipate that the project site likely has bedrock at shallow depths. If this is indeed the case, then standard details for signal pole foundations will not be

suitable for use in this project. For this reason, we are also including structural engineering effort for site specific design of up to 4 separate signal pole foundations in the following scope of work and fee estimate.

As requested, this proposal covers the scope of work necessary to prepare construction documents to a 90% level of completion. An amendment to this work order will be necessary if the decision is made to carry the project to Final PS&E and construction.

Our proposed team for the effort described below includes the following firms:

- **KPFF** will provide project management, civil and structural engineering, and surveying services identified in the following scope of work.
- **DKS Associates** will provide traffic engineering services.
- **GeoDesign** will provide geotechnical engineering services.

SUMMARY OF CITY RESPONSIBILITIES

The City will be responsible for the following elements of work:

- Review of Consultant invoices for payment authorization.
- Provide as-built documentation of existing facilities in the project area.
- Provide internal City communication and project coordination.
- Designate a Project Manager for this WOC. The City's Project Manager for this project is Dayna Webb, PE.
- Provide review and comments on deliverables.
- Coordinate the work of City staff involved in the project.
- Attend project meetings as indicated in the following SOW.
- Provide a template title block, cover sheet, and details in AutoCAD format for consultant's use in assembling the drawing set.
- Provide City standard special provisions to the 2015 Oregon Standard Specifications for Construction.
- Provide right-of-way acquisition services for potential right-of-way and or temporary construction easements, including appraisals and property owner negotiations if needed.

TASKS, DELIVERABLES and SCHEDULE

TASK 1: PROJECT MANAGEMENT AND ADMINISTRATION: Consultant shall provide the management, coordination, and direction to the Project Team that includes the Consultant team and City staff throughout the duration of the Project.

1.1 **Project Coordination:** Consultant shall coordinate with City Project Manager and City staff as needed throughout the duration of the project. Coordination will occur via telephone communication, written correspondence, e-mail and meetings.

Task 1.1: Deliverables: *Records of coordination activities and decisions made.*

1.2 **Project Schedule:** Consultant shall develop and monitor the project schedule.

Task 1.2: Deliverables: *Project schedule.*

1.3 **Monthly Invoices:** Consultant shall prepare and submit monthly invoices and progress reports to the City, including updated project schedules that reflect any changes in the project and that track progress on work completed. Consultant shall prepare monthly billing invoices in a format approved by the City.

Task 1.3: Deliverables: *Monthly invoices.*

1.4 **Meetings:** Consultant shall schedule, prepare for, attend, and document meetings through the Project duration. The following meetings are included in the scope of services: Project Kick-off Meeting with City Project Manager to familiarize the Consultant Team; up to 3 additional meetings during design this phase of design.

Task 1.4: Deliverables: *Agenda and meeting minutes.*

TASK 2: RESEARCH AND DATA GATHERING: This task will focus on identification of design criteria and acquisition of base mapping from City for design. Specific elements of work under this task include:

2.1 **Site Visit**: Conduct a site visit *(to be completed in conjunction with the kick-off meeting identified in Task 1.4 above)* to identify existing conditions that may affect the design and photograph existing conditions.

2.2 **Review Available Information:** Obtain and review as-built drawings of existing facilities in the project area.

2.3 **Predesign Survey:** This project consists of a control, boundary, and topographic survey for design purposes. We are prepared to begin the field work immediately upon notice to proceed. Our surveying services described below will accomplish this work in two tasks, as follows:

Field Control and Boundary Survey: Field and office efforts necessary to control topographic mapping and resolve public right-of-ways including:

- Establish horizontal and vertical control.
    - Horizontal datum will be based on Oregon Coordinate Reference System (OCRS).
    - Vertical datum will be based on NAVD88.
- Resolve public right-of-ways for the intersection of 12th and Washington.

Topographic Survey: Field and office efforts to complete the topographic mapping for use as a design base map.

- Locate and map existing above ground features within the public right-of-way intersection and extend 75 feet in each direction along 12th and Washington.
- Locate and map all trees within the mapping limits. Graphically represent DBH size and tree canopy drip lines.
- Map a 1-foot contour interval.

- Map underground utilities within the above-defined limits based on above ground evidence; locate paint marks; and available as-built information. Locate paint marks are limited to those areas within public right-of-way.

Task 2.3: Deliverables: *Final signed boundary and topographic survey.*

Task 2.3: Assumptions: *Access to the site is provided to KPFF Survey crews.*

2.4 Geotechnical Investigation: The purpose of our geotechnical engineering evaluation is to provide the project team with signal design specific subsurface properties for the proposed signal installation at 12th and Washington in Oregon City. The specific scope of the geotechnical study to be conducted by GeoDesign is summarized below:

- Review GeoDesign reports and documentation associated with previous investigations in the project vicinity.
- Prepare traffic control plans and obtain right-of-way permits from Oregon City.
- Complete two signal pole borings at opposite ends of the intersection to a depth of up to 25 feet below ground surface.
    - Based on our experience, shallow bed rock may be encountered at this location.
    - Exploration will extend at least 10 feet into bedrock, if encountered.
    - If explorations are on paved surfaces, the surface of the borings will be patched with a polymer modified cold patch material.
- Maintain a detailed log of each exploration, visually classify the soil encountered, obtain soil samples as appropriate for the soil conditions encountered, and observe groundwater conditions in each exploration.
- Conduct the following laboratory tests using soil samples obtained from the explorations. Testing may include one or more of the following:
    - Moisture Content tests in general conformance with American Society for Testing and Materials (ASTM) D 2216.
    - Atterberg limit tests in general conformance with ASTM D 4318.
    - Grain size determinations, combined sieve and hydrometer, in general conformance with ASTM D422.
- Provide geotechnical engineering soil properties for use in signal pole foundation design.
- Provide a geotechnical memorandum summarizing our findings and recommendations.

TASK 3: PRELIMINARY DESIGN (30% Design): KPFF will develop the design to a 30% level of completion for City staff review, including:

- Develop plans to a 30% level of completion. Plans to include;
    - Cover Sheet
    - Existing Conditions Plan
    - Sections and Details
    - Construction Plan
    - Signal Pole Foundation Details

- Develop 30% level engineer's estimate of probable construction costs.
- Develop outline specification identifying special provisions to the 2015 Oregon Standard Specifications for Construction needed for the proposed construction.
- Conduct QC review of deliverables prior to submittal.
- Submit 30% documents to City for review.
- Coordinate with the local franchise utility providers to identify potential conflicts within the project area and document correspondence, including conflict map and matrix.
- Identify potential temporary and/or permanent impacts to private properties adjacent to the proposed work.

Task 3: Deliverables: *30% Plans, Specifications and Estimate (PS&E), Utility conflict tracking map and matrix.*

3.1 **Preliminary (30%) Traffic Signal Design:** DKS shall prepare 30% traffic signal plans and engineer's cost estimate for the intersection of 12th Street/Washington Street, which will include a layout of the traffic signal poles, signal heads, and traffic signal controller cabinet. The design shall meet Clackamas County and MUTCD standards. DKS will locate poles to minimize conflicts with utilities.

DKS shall provide a complete quality control review of all DKS work products using a quality control checklist, prior to submittal to the City.

It is assumed that all required survey and basemaps will be provided by others, and no traffic signal interconnect is included.

Task 3.1 Deliverables: *30% traffic signal plans including: Signal legend and Signal plan; 30% Engineer's cost estimate for traffic signal bid items; Identification of required special provisions sections; One (1) site visit to verify existing signal equipment (combined with kick-off meeting).*

3.2 **Preliminary (30%) Signing & Pavement Marking Design:** DKS shall prepare a signing and pavement marking narrative and engineer's cost estimate for the intersection of 12th Street/Washington Street, including roadway approaches. The narrative will discuss the proposed design concept, and identify anticipated modifications required to the existing signing and pavement markings required to install a new traffic signal.

Task 3.2 Deliverables: *30% signing and pavement marking narrative; 30% Engineer's cost estimate for signing and pavement marking items; Identification of required special provisions section*

TASK 4: FINAL DESIGN: This task will focus on the development of construction drawings, technical specifications and cost estimates to a 90% level of completion. Specific elements of work under this task include:

- Log will include identification of actions taken to resolve comments.
- Develop 60% PS&E for City staff review including:
    - Maintain log of comments received from City staff and address city review comments on 30% PS&E submittal.
    - Plans as identified above under Task 3.2 above.
    - Incorporate additional details to the plans.
    - Special provisions to the 2015 Oregon Standard Specifications for Construction. *(Note: Bid document production to be completed by the City.)*
    - Construction cost estimate and bid schedule.
    - Conduct QC review of deliverables prior to submittal.
    - Submit 60% PS&E for City staff review.
- Develop 90% PS&E for City staff review including:
    - Maintain log of comments received from City staff and address city review comments on 60% PS&E submittal.
    - Incorporate additional details to the plans.
- Coordinate with the local franchise utility providers to identify and resolve potential conflicts within the project area and update conflict maps and matrix.
- Finalize identification of temporary and/or permanent impacts to private properties adjacent to the proposed work.

Task 4: Deliverables: *Plans, Construction Cost Estimate and Special Provisions for review at 60% and 90% levels of completion*; *updated utility conflict tracking matrix and maps; notification of property acquisition requirements if any*

4.1 60% Traffic Signal Design: DKS shall prepare 60% traffic signal plans, special provisions, and Engineer's cost estimate, based on comments received on the 30% design package. The 60% design will also include the design of vehicle detection for the intersection.

DKS shall provide a complete quality control review of all DKS work products using a quality control checklist, prior to submittal to the City.

Task 4.1 Deliverables: *60% traffic signal plans including Signal legend (1 sheet), Signal plan (1 sheet) and Detector plan (1 sheet); 60% Engineer's cost estimate for traffic signal bid items; 60% project special provisions for traffic signals; responses to review comments from the City and County*

4.2 60% Signing & Pavement Marking Design: DKS shall prepare 60% combined signing and pavement marking plans, special provisions, and Engineer's cost estimate, based on comments received on the 30% design package. The design shall meet City and MUTCD standards.

DKS shall provide a complete quality control review of all DKS work products using a quality control checklist, prior to submittal to the City.

It is assumed that all required survey and basemaps will be provided by others.

Task 4.2 Deliverables: *60% signing and pavement marking plans including Signing & Pavement Marking legend & details (1 sheet) and Signing & Pavement Marking plan (1*

sheet); 60% Engineer's cost estimate for signing and pavement marking items; 60% project special provisions for signing and pavement marking; responses to review comments from the City.

4.3 90% Traffic Signal Design: DKS shall prepare 90% traffic signal plans, special provisions, and Engineer's cost estimate, based on comments received on the 60% design package. DKS will coordinate with local power and utility companies to confirm power source locations.

DKS shall provide a complete quality control review of all DKS work products using a quality control checklist, prior to submittal to the City.

Task 4.3 Deliverables: *90% traffic signal plans including Signal legend (1 sheet), Signal plan (1 sheet), Detector plan (1 sheet), Existing utility plan (1 sheet), and Signal details (1 sheet); 90% Engineer's cost estimate for traffic signal bid items; 90% project special provisions for traffic signals; Responses to review comments from the City and County.*

4.4 90% Signing & Pavement Marking Design: DKS shall prepare 90% signing and pavement marking plans, special provisions, and Engineer's cost estimate, based on comments received on the 60% design package.

DKS shall provide a complete quality control review of all DKS work products using a quality control checklist, prior to submittal to the City.

Task 4.4 Deliverables: *90% signing and pavement marking plans including Signing & Pavement Marking legend & details (1 sheet) and Signing & Pavement Marking plan (1 sheet); 90% Engineer's cost estimate for signing and pavement marking items; 90% project special provisions for signing and pavement marking; responses to review comments from the City.*

ASSUMPTIONS

KPFF's estimated fees are based on the above scope of work and the following assumptions:

- No utility work beyond adjustment of existing structures is anticipated.
- Landscaping modifications are not included.
- The civil engineering scope of work is limited to reconstruction of curb, sidewalk and ramps at the northwest corner of the intersection. Reconstruction of these elements at the other three corners is not anticipated and is not included in this proposal.
- Given the likelihood that shallow bedrock will be encountered in the project area, we anticipate that standard details for signal pole foundations will not be suitable for construction. Therefore, we are including structural engineering services for design of up to 4 signal pole foundations as part of this proposal.
- Traffic signal poles will utilize Clackamas County Standard Details and will not require structural engineering or detailing.

PROPOSED FEES

Our estimated fee for this project is shown in Exhibit A.

CITY OF OREGON CITY
12th & WASHINGTON TRAFFIC SIGNAL PROJECT
8/25/2016: Revised 9/9/2016
KPFF Civil Engineering / Master Fee Estimate

Task #	Task Description	Hourly Rates: Principal $178.87	PM $144.88	PE $132.36	Design Eng $100.16	CADD $98.37	Clerical $74.53	Total Hours	KPFF Labor Cost	GeoDesign	DKS	Expenses	Subtotals
1	**PROJECT MANAGEMENT AND ADMINISTRATION**												
1.1	Project Coordination	2	4					6	$ 937		$ 1,645		$ 2,582
1.2	Project Schedule		2					2	$ 290				$ 290
1.3	Monthly invoices		4				2	6	$ 729		$ 810		$ 1,539
1.4	Meetings (Kick-off, (3) others)		8		4		2	14	$ 1,709		$ 1,500		$ 3,209
	KPFF Structural (See attached for Breakdown)							0	$ 758				
	TOTALS	**2**	**18**	**0**	**4**	**0**	**4**	**28**	**$ 4,423**	**$ -**	**$ 3,955**	**$ -**	**$ 7,619**
2	**RESEARCH AND DATA GATHERING**												
2.1	Site Visit (combined w/ kick-off meeting)		1	1				2	$ 277				$ 277
2.2	Review Available Information		2	4		2		8	$ 1,016				$ 1,016
2.3	Predesign Survey (See attached for Breakdown)							0	$ 7,089				$ 7,089
2.4	Geotechnical Engineering (See attached for Breakdown)							0	$ -	$ 9,192			$ 9,192
	TOTALS	**0**	**3**	**5**	**0**	**2**	**0**	**10**	**$ 8,382**	**$ 9,192**	**$ -**	**$ -**	**$ 17,574**
3	**PRELIMINARY DESIGN**												
	30% Design		4					4	$ 580				$ 580
	Plans				12	8		20	$ 1,989				$ 1,989
	Estimate			1	2			3	$ 333				$ 333
	Outline Special Provisions			2			1	3	$ 339				$ 339
	Utility Coordination			2	4			6	$ 665				$ 665
	QC Review	2	1					3	$ 503				$ 503
	Structural Design for Foundations (See attached for Breakdown)							0	$ 3,729				$ 3,729
3.1	30% Traffic Signal Design (DKS) (See attached for Breakdown)							0	$ -		$ 2,125		$ 2,125
3.2	30% Signing & Pavement Marking Design (DKS) (See attached for Breakdown)							0	$ -		$ 1,325		$ 1,325
	TOTALS	**2**	**5**	**5**	**18**	**8**	**1**	**39**	**$ 8,138**	**$ -**	**$ 3,450**	**$ -**	**$ 11,588**

CITY OF OREGON CITY
12th & WASHINGTON TRAFFIC SIGNAL PROJECT
8/25/2016: Revised 9/9/2016
KPFF Civil Engineering / Master Fee Estimate

Task #	Task Description	Hourly Rates: Principal $178.87	PM $144.88	PE $132.36	Design Eng $100.16	CADD $98.37	Clerical $74.53	Total Hours	KPFF Labor Cost	GeoDesign	DKS	Expenses	Subtotals
4	**FINAL DESIGN**												
	60% Plans, Specifications, and Estimate (PS&E)							0	$ -				$ -
	Plans		2		12	8		22	$ 2,279				$ 2,279
	Special Provisions		1	4			1	6	$ 749				$ 749
	Estimate		1	2	4			7	$ 810				$ 810
	QC Review	2	1					3	$ 503				$ 503
	Utility Coordination			2	4			6	$ 665				$ 665
	Structural Design for Foundations (See attached for Breakdown)							0	$ 2,805				$ 2,805
4.1	60% Traffic Signal Design (DKS)							0	$ -		$ 3,410		$ 3,410
4.2	60% Signing & Pavement Marking Design (DKS)							0	$ -		$ 2,300		$ 2,300
								0	$ -				$ -
	90% Plans, Specifications, and Estimate (PS&E)							0	$ -				$ -
	Plans		2		12	8		22	$ 2,279				$ 2,279
	Special Provisions		1	4			2	7	$ 823				$ 823
	Estimate			2	2			4	$ 465				$ 465
	QC Review	2	1					3	$ 503				$ 503
	Utility Coordination			2	4			6	$ 665				$ 665
	Structural Design for Foundations (See attached for Breakdown)							0	$ 2,400				$ 2,400
4.3	90% Traffic Signal Design (DKS)							0	$ -		$ 8,845		$ 8,845
4.4	90% Signing & Pavement Marking Design (DKS)							0	$ -		$ 1,880		$ 1,880
													$ -
	TOTALS	**4**	**9**	**16**	**38**	**16**	**3**	**86**	**$ 14,946**	**$ -**	**$ 16,435**	**$ -**	**$ 31,381**
	PROJECT TOTAL:	**8**	**35**	**26**	**60**	**26**	**8**	**163**	**$ 35,889**	**$ 9,192**	**$ 23,840**	**$ -**	**$ 68,162**

EXHIBIT A

12th and Washington
8/17/2016: Revised 9/9/2016

Task #	Task Description	Hourly Rates: Survey Mgr $171	Surveyor $106	Survey Tech $89	Clerical $80	2-Person Crew $148	Labor Cost	Expenses
A	**Boundary**							
1	Research		1		2		$ 267	
2	Control, Pin Ties & Resolution	2	8			10	$ 2,663	
3	Title Report Review						$ -	
4	Pin Set & Record of Survey						$ -	
	TOTALS	**2**	**9**	**0**	**2**	**10**	**$ 2,929**	**$ -**
B	**Mapping**							
1	Topographic Survey	1	2	24		10	$ 3,983	
2	Utilities Research & Mapping			2			$ 177	
3	ALTA						$ -	
4	Misc.						$ -	
	TOTALS	**1**	**2**	**26**	**0**	**10**	**$ 4,160**	**$ -**
	PROJECT TOTAL:	**3**	**11**	**26**	**2**	**20**	**$ 7,089**	**$ -**

EXHIBIT A

CITY OF OREGON CITY
12th & WASHINGTON TRAFFIC SIGNAL PROJECT

8/25/2016
KPFF Structural Engineering Fee Estimate

Task #	Task Description	Hourly Rates: Principal $191.91	PM $145.33	Senior Design Engineer $122.95	CADD $91.45	Clerical $88.52	Total Hours	Labor Cost	Subtotals
1	**PROJECT MANAGEMENT AND ADMINISTRATION**								
1.1	Project Coordination		2				2	$ 291	$ 291
1.2	Project Schedule						0	$ -	$ -
1.3	Monthly invoices		2			2	4	$ 468	$ 468
1.4	Meetings (Kick-off, (3) others)						0	$ -	$ -
	TOTALS	**0**	**4**	**0**	**0**	**2**	**6**	**$ 758**	**$ 758**
2	**RESEARCH AND DATA GATHERING**								
2.1	Site Visit (combined w/ kick-off meeting)						0	$ -	$ -
2.2	Review Available Information						0	$ -	$ -
2.3	Predesign Survey						0		$ -
2.4	Geotechnical Engineering						0	$ -	$ -
	TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**$ -**	**$ -**
3	**PRELIMINARY DESIGN**								
	30% Design						0	$ -	$ -
	Plans		8	8	8		24	$ 2,878	$ 2,878
	Estimate		1	2			3	$ 391	$ 391
	Outline Special Provisions			1			1	$ 123	$ 123
	Utility Coordination								$ -
	QC Review	1	1				2	$ 337	$ 337
	TOTALS	**1**	**10**	**11**	**8**	**0**	**30**	**$ 3,729**	**$ 3,729**
4	**FINAL DESIGN**								
	60% Plans, Specifications, and Estimate (PS&E)						0	$ -	$ -
	Plans		4	6	6		16	$ 1,868	$ 1,868
	Special Provisions			4		2	6	$ 669	$ 669
	Estimate			1			1	$ 123	$ 123
	QC Review		1					$ 145	$ 145
	Utility Coordination							$ -	$ -
	90% Plans, Specifications, and Estimate (PS&E)						0	$ -	$ -
	Plans		2	4	4		10	$ 1,148	$ 1,148
	Special Provisions			4		2	6	$ 669	$ 669
	Estimate			2			2	$ 246	$ 246
	QC Review	1	1					$ 337	$ 337
	Utility Coordination							$ -	$ -
									$ -
	TOTALS	**1**	**8**	**21**	**10**	**4**	**41**	**$ 5,205**	**$ 5,205**
	PROJECT TOTAL:	**2**	**22**	**32**	**18**	**6**	**77**	**$ 9,693**	**$ 9,693**

EXHIBIT A

Oregon City - 12th & Washington Signal Design
DKS Budget
8/18/2016

	PIC (Grade 33) $215.00	QC (Grade 25) $175.00	PM (Grade 21) $155.00	PE (Grade 11) $105.00	CAD (Grade 9) $95.00	PA (Tech M) $95.00	Expenses	**Total**
Task 1.1 Traffic Engineering Coordination	1	0	8	0	0	2	$0	**$1,645.00**
Task 1.3 Monthly Invoices	0	0	4	0	0	2	$0	**$810.00**
Task 1.4 Project Meetings	0	0	8	2	0	0	$50	**$1,500.00**
Task 3.1 30% Traffic Signal Design	0	1	2	12	4	0	$0	**$2,125.00**
Task 3.2 30% Signing & Pavement Marking Design	0	1	2	8	0	0	$0	**$1,325.00**
Task 4.1 60% Traffic Signal Design	0	2	4	16	8	0	$0	**$3,410.00**
Task 4.2 60% Signing & Pavement Marking Design	0	2	2	12	4	0	$0	**$2,300.00**
Task 4.3 90% Traffic Signal Design	1	6	12	40	16	0	$0	**$8,845.00**
Task 4.4 90% Signing & Pavement Marking Design	0	2	2	8	4	0	$0	**$1,880.00**
Total NTE	**2**	**14**	**44**	**98**	**36**	**4**	**$50**	**$23,840.00**

Legend:
PIC = Principal-in-Charge
QC = Senior QC Reviewer
PM = Project Manager
PE = Project Engineer
CAD = Cad Technician
PA = Project Assistant
Expenses = Mileage and/or Traffic Counts

EXHIBIT A

Task No.	Geo Design									
	Hourly Rate	$203.00	$185.00	$131.00	$92.00	$88.00	$70.00			
	Title	Principal	Senior Associate	Technical Specialist I	CAD	Senior Project Assistant	Support Staff	Labor	Non Labor Costs	Total
2.4	**Geotechnical Investigation**									
	Field Investigation			11.0				$1,441.00	$4,500.00	$5,941.00
	Laboratory							$0.00	$500.00	$500.00
	Analysis, Report, Project Management	2.0	9.0		3.0	3.0	2.0	$2,751.00		$2,751.00
								Total Geotechnical		$9,192.00

Non-Labor Costs		Traffic Control	Utility Locates	Drilling			Equipment, Laboratory Supplies, Reimbursables	**Subtotal**
Geotechnical Investigation		1,200.00		3,300.00			500.00	$5,000