EXHIBIT # F-4
28 pages

SQUAW VALLEY
PUBLIC SERVICE DISTRICT

Truckee River Siphon Replacement Project

DATE: April 25, 2017

TO: District Board Members

FROM: Dave Hunt, District Engineer

SUBJECT: Truckee River Siphon Replacement Project

BACKGROUND: Until 1976, the Squaw Valley Public Service District (District) had in operation 3 sewage treatment plants in the Olympic Valley. In 1976, when the Tahoe-Truckee Sanitation Agency (TTSA) was formed, a trunk pipeline, known as the Truckee River Interceptor (TRI), was constructed along the Truckee River to convey sewage from Tahoe City along with Squaw Valley and Alpine Springs, to the regional wastewater treatment facility in Truckee. A leg of the pipeline included the Squaw Valley Interceptor, a pipeline ranging in size from 10-inch to 15-inch, which was extended across the Olympic Valley from the TRI on the east side of the Truckee River to the west end of the Valley.

A part of the Squaw Valley interceptor includes the Truckee River siphon. The siphon includes approximately 340 linear feet of 10-inch mortar lined and coated ductile iron pipe (DIP). The siphon pipeline begins on the west side of Highway 89 and extends across the highway and under the Truckee River, terminating at TRI manhole 43 on the east side of Highway 89 and the Truckee River. The Truckee River siphon conveys the entire sewage flow out of the Valley.

Recent inspections have indicated that this pipe is reaching the end of its useful life. A panoramic CCTV inspection was performed on the siphon by Pro Pipe Services on October 4, 2016. Pro Pipe provided the television inspection and NAASCO analysis which highlighted lining failure in the pipeline segment west of the Truckee River. A copy of the NAASCO inspection report is attached.

DISCUSSION: The Truckee River siphon is arguably the most critical single asset in the District's sewer collection system. The siphon is currently a single pipeline and the final segment of the interceptor that conveys all sewage out of the Valley. Unlike other sewer pipelines in the Valley, maintenance and repair of the Truckee River siphon poses major challenges to the District's operations staff, specifically for sewer bypass operations and access for repair in the event of pipeline failure. Other critical implications include the consequences of failure of the existing pipeline. These consequences present themselves in the form of a sanitary sewer overflow (SSO) into the Truckee River and include impacts to human

health and the environment, damage to public and private property, and civil monetary penalties levied by the Regional Water Quality Control Board.

Based on the condition of the siphon pipeline, and the consequences of its failure, staff continues to recommend replacement of the siphon in the summer of 2018.

The replacement siphon system will include two parallel pipelines which will provide an increased level of service and provide the necessary redundancy for operation and maintenance (O&M) activities. The District's Sanitary Sewer Management Plan (SSMP) identifies the Truckee River siphon as a high priority for more frequent cleaning and television inspection. Increased levels of O&M will ultimately reduce the risk of failure of the system and the potential for a SSO. The system will be sized such that the parallel pipelines can convey existing dry weather and wet weather flows, as well as dry weather and wet weather flows for land uses planned for in the 1983 Squaw Valley General Plan and Land Use Ordinance.

Replacement of the siphon is a highly technical project requiring a high level of environmental analysis and permitting, as well as specialized design and construction related considerations. Based on this, the District has put together a team of consultants to assist in the design and permitting of the project that have extensive experience with this type of project as well as a long track record of successful project completion in this area. The project team includes:

- Andregg Geomatics – Survey and Easements
- Holdrege & Kull – Geotechnical Investigation and Construction Support
- Farr West Engineering – Design and Construction Support
- Stantec – Environmental Permitting and Construction Support

In order to meet the construction schedule for the summer of 2018, the following general schedule would apply:

Task	**Time Frame**
Preliminary Design Tasks	Spring/Early Summer 2017
Permitting	Spring/Early Sumer 2017 – Nov. 2018
Design	July - December 2017
Bid Project	February/March 2018
Construct	July-Nov. 2018

ALTERNATIVES:

1. Approval of the proposal from Farr West Engineering for the preparation of design documents for the Truckee River Siphon Replacement Project.
2. Approval of the proposal from Andregg Geomatics for preparation of topographic and boundary/easement surveys for the Truckee River Siphon Replacement Project.
3. Approval of the proposal from Holdrege & Kull for preparation of a geotechnical investigation for the Truckee River Siphon Replacement Project.
4. Do not approve the proposals for the design and/or survey and/or geotechnical investigation for the Truckee River Siphon Replacement Project.

FISCAL/RESOURCE IMPACTS: The replacement of the Truckee River siphon will be funded through a combination of Sewer Capital and Sewer FARF. The total project cost is estimated to be approximately $2,000,000, which includes design and permitting, staff time, and construction. The FY 17/18 – FY 21/22 Water and Sewer Capital Improvement Plan and Capital Replacement Plan identified this project to be designed and permitted in FY 17/18 and constructed in FY 18/19. The FY 16/17 budget also included $110,000 for the design and permitting of the project.

The overall project budget is provided below. The revenue requirements for the project match up with the available fund balances identified in the Cost of Service and Rate Analysis so that no alternative funding mechanisms would be required to complete this project.

	FY 16/17	FY 17/18	FY 18/19
Activities	• Preliminary Design • Permitting • Survey • Geotechnical Investigation	• Detailed Design • Permitting • Bidding	• Construction (Summer 2018)
Budget	$110,000	$289,000	$1,700,000

The budgets for each of the consulting contracts are provided below. They include a 15% contingency for extra work based on unforeseen circumstances that may come about during the course of the project. It is anticipated that a PSA with Stantec for environmental permitting support will be presented to the Board in the next 2-3 months after staff has a better understanding of the permitting requirements.

Consultant	Tasks	Budget
Andregg Geomatics	• Topographic Survey • Boundary/Easement Surveys	$9,500
Holdrege & Kull	• Geotechnical Investigation	$25,000
Farr West Engineering	• Preliminary Design • Final Design • Permitting Support • Support During Bidding	$124,000

RECOMMENDATIONS: 1. Staff recommends approval of the proposal from Farr West Engineering for the preparation of design documents for the Truckee River Siphon Replacement Project and recommends the General Manager be authorized to execute Professional Service Agreements with Farr West Engineering in an amount not to exceed $124,000.

2. Staff recommends approval of the proposal from Andregg Geomatics for the preparation of topographic and boundary/easement surveys for the Truckee River Siphon Replacement Project and recommends the General Manager be authorized to execute Professional Service Agreements with Andregg Geomatics in an amount not to exceed $9,500.

3. Staff recommends approval of the proposal from Holdrege & Kull for the preparation of a geotechnical investigation for the Truckee River Siphon Replacement Project and recommends the General Manager be authorized to execute Professional Service Agreements with Holdrege & Kull in an amount not to exceed $25,000.

ATTACHMENTS:

- 2016 Truckee River Siphon PACP Report (Pro-Pipe, October 4, 2016)
- Farr West Engineering – Scope of Work Truckee River Siphon Replacement Project – Phase I (April 11, 2017)
- Holdrege & Kull - Squaw Valley Public Service District Truckee River Sewer Siphon Replacement Project Proposal for Geotechnical Engineering Services (December 9, 2016)
- Andregg Geomatics – Design and Boundary/Easement Surveys SVPSD Truckee River Siphon Replacement Project (November 10, 2016)

DATE PREPARED: April 19, 2017

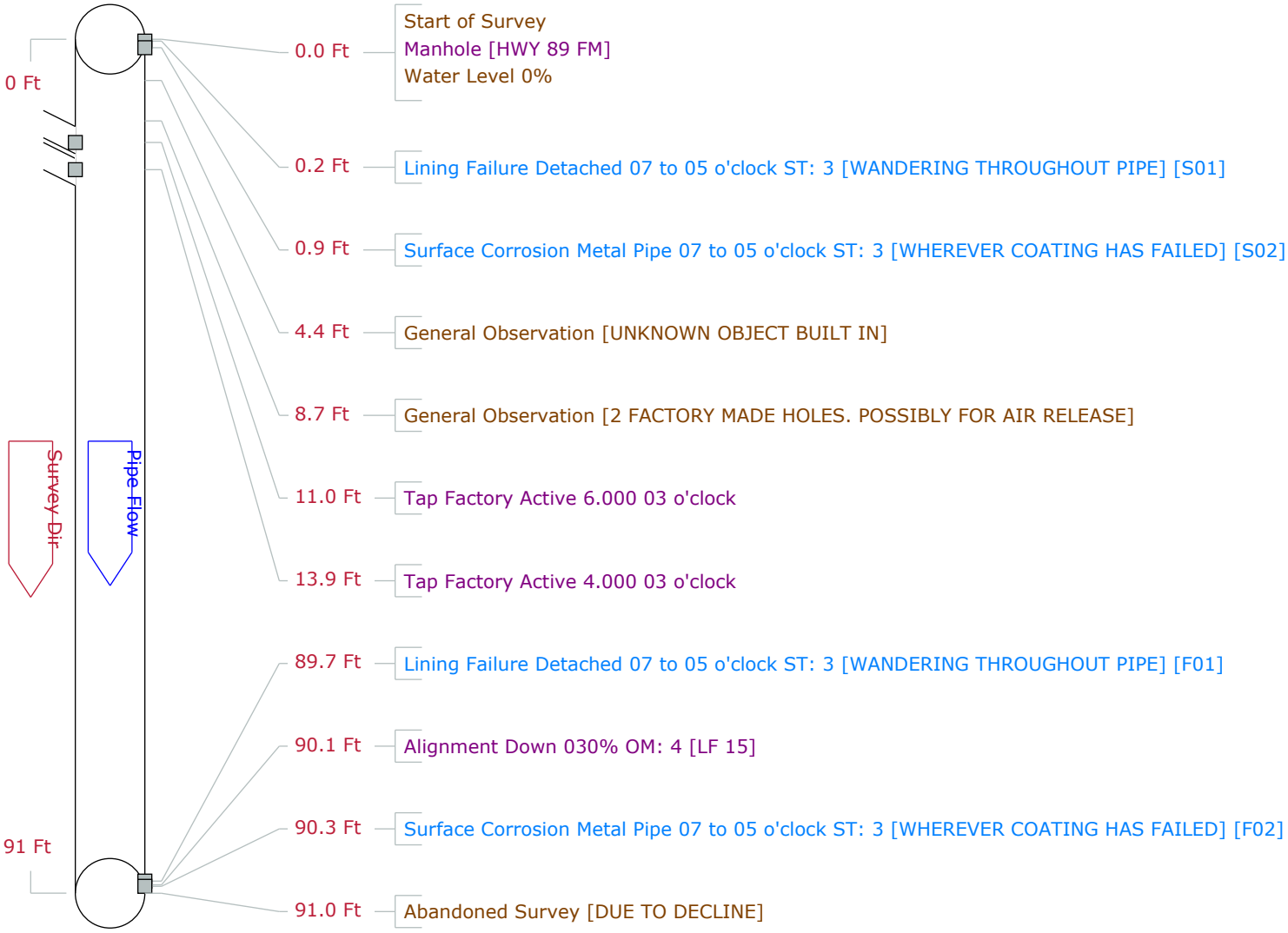
Pipe Graphic Report of PSR HWY_89_FM-ITSA for SVPSD

Setup	2/1	Surveyor	ASA	Certificate #	U-715-07000754	System Owner	SQUAW VALLEY PUBLIC S
Drainage		Survey Customer	SQUAW VALLEY PUBLIC SERVICES				
P/O #		Date	2016/10/04	Time	15:37	Street	HWY 89
City	OLYMPIC VALLEY	Further location details					

Up	HWY_89_FM	Rim to invert		Grade to invert		Rim to grade		Ft
Down	TTSA	Rim to invert		Grade to invert		Rim to grade		Ft

Use		Direction	Downstream	Flow control		Media No			
Shape	Circular	Height	10	Width	ins	Preclean	H	Date Cleaned	
Material	Ductile Iron Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	91.00	Ft	
Lining	Other	Year laid		Year rehabilitated		Weather			
Purpose		Cat							

Additional info	Reverse set up on sheet:1	Structural	O & M
Location		Miscellaneous	Hydraulic
Project	SIPHON CCTV INSPECTIONS	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



Pro-Pipe
Phone:(602) 861-3944

CCTV Picture List of HWY_89_FM-ITSA for SVPSD

Work Order Video	Survey Date	2016/10/04 Setup 2/1
Path to picture files	\Snaps	
Path to video files	\IPF	
Path to media files		

Video Index Count 0.2 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_1.jpg

Video Index Count 0.2 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_2.jpg

Video Index Count 0.2 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_3.jpg

Video Index Count 0.2 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_4.jpg

Video Index Count 0.9 Ft
Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
File Name HWY_89_FM-TTSA_100416_2_5.jpg

Video Index Count 0.9 Ft
Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
File Name HWY_89_FM-TTSA_100416_2_6.jpg

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Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
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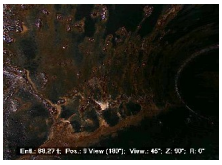
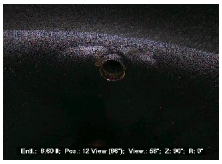


Video Index Count 0.9 Ft
Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
File Name HWY_89_FM-TTSA_100416_2_8.jpg

CCTV Picture List of HWY_89_FM-ITSA for SVPSD

Work Order Video	Survey Date	2016/10/04 Setup 2/1
Path to picture files	\Snaps	
Path to video files	\IPF	
Path to media files		

Video Index Count 4.4 Ft
Code General Observation
Remarks UNKNOWN OBJECT BUILT IN
File Name HWY_89_FM-TTSA_100416_2_9.jpg



Video Index Count 8.7 Ft
Code General Observation
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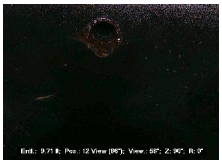
File Name HWY_89_FM-TTSA_100416_2_10.jpg



Video Index Count 8.7 Ft
Code General Observation
Remarks 2 FACTORY MADE HOLES. POSSIBLY FOR AIR RELEASE
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Video Index Count 11.0 Ft
Code Tap Factory Active
Remarks
File Name HWY_89_FM-TTSA_100416_2_12.jpg

Video Index Count 13.9 Ft
Code Tap Factory Active
Remarks
File Name HWY_89_FM-TTSA_100416_2_13.jpg

Video Index Count 89.7 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_14.jpg

Video Index Count 89.7 Ft
Code Lining Failure Detached
Remarks WANDERING THROUGHOUT PIPE
File Name HWY_89_FM-TTSA_100416_2_15.jpg

Video Index Count 90.1 Ft
Code Alignment Down
Remarks LF 15
File Name HWY_89_FM-TTSA_100416_2_16.jpg

Pro-Pipe
Phone:(602) 861-3944

CCTV Picture List of HWY_89_FM-ITSA for SVPSD

Work Order Video	Survey Date	2016/10/04 Setup 2/1
Path to picture files	\Snaps	
Path to video files	\IPF	
Path to media files		

Video Index Count 90.3 Ft
Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
File Name HWY_89_FM-TTSA_100416_2_17.jpg

Video Index Count 90.3 Ft
Code Surface Corrosion Metal Pipe
Remarks WHEREVER COATING HAS FAILED
File Name HWY_89_FM-TTSA_100416_2_18.jpg

Tabular Report of PSR HWY_89_FM-ITSA for SVPSD

Setup	2	Surveyor	ASA	Certificate #	U-715-07000754
System Owner	SQUAW VALLEY PUBLIC S				
Drainage		Survey Customer	SQUAW VALLEY PUBLIC SERVICES		
P/O #		Date	2016/10/04	Time	15:37
Street	HWY 89				
City	OLYMPIC VALLEY	Further location details			

Up	HWY_89_FM	Rim to invert		Grade to invert		Rim to grade	Ft
Down	TTSA	Rim to invert		Grade to invert		Rim to grade	Ft

Use		Direction	Down	Flow control				Media No	
Shape	Circular	Height	10	Width	ins	Preclean	H	Date Cleaned	
Material	Ductile Iron Pipe	Joint length	Ft	Total length	Ft			Length Surveyed	91.0 Ft
Lining	Other	Year laid		Year rehabilitated				Weather	
Purpose		Cat						Pressure	

Additional info	Reverse set up on sheet:1	Structural	O & M
Constructional			
Location		Miscellaneous	
Project	SIPHON CCTV INSPECTIONS	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	

Count	Video	CD	Code		In1	In2	%	Jnt	Fr	To	ImRef	Remarks
0.0			ST	Start of Survey								
0.0			AMH	Manhole								HWY 89 FM
0.0			MWL	Water Level			0					
0.2		S01	LFD	Lining Failure Detached				J	07	05		WANDERING THROUGHOUT PIPE
0.9		S02	SCP	Surface Corrosion Metal Pipe				J	07	05		WHEREVER COATING HAS FAILE
4.4			MGO	General Observation								UNKNOWN OBJECT BUILT IN
8.7			MGO	General Observation								2 FACTORY MADE HOLES. POSSI
11.0			TFA	Tap Factory Active	6.000				03			
13.9			TFA	Tap Factory Active	4.000				03			
89.7		F01	LFD	Lining Failure Detached				J	07	05		WANDERING THROUGHOUT PIPE
90.1			LD	Alignment Down			30					LF 15
90.3		F02	SCP	Surface Corrosion Metal Pipe				J	07	05		WHEREVER COATING HAS FAILE
91.0			MSA	Abandoned Survey								DUE TO DECLINE

91.0 Ft Total Length Surveyed

Scores

Structural:	Pipe Rating	108	Pipe Ratings Index	3	Peak	6	Mean Pipe 1.2
O&M:	Pipe Rating	4	Pipe Ratings Index	4	Peak	4	Mean Pipe 0

Pro-Pipe
Phone:(602) 861-3944

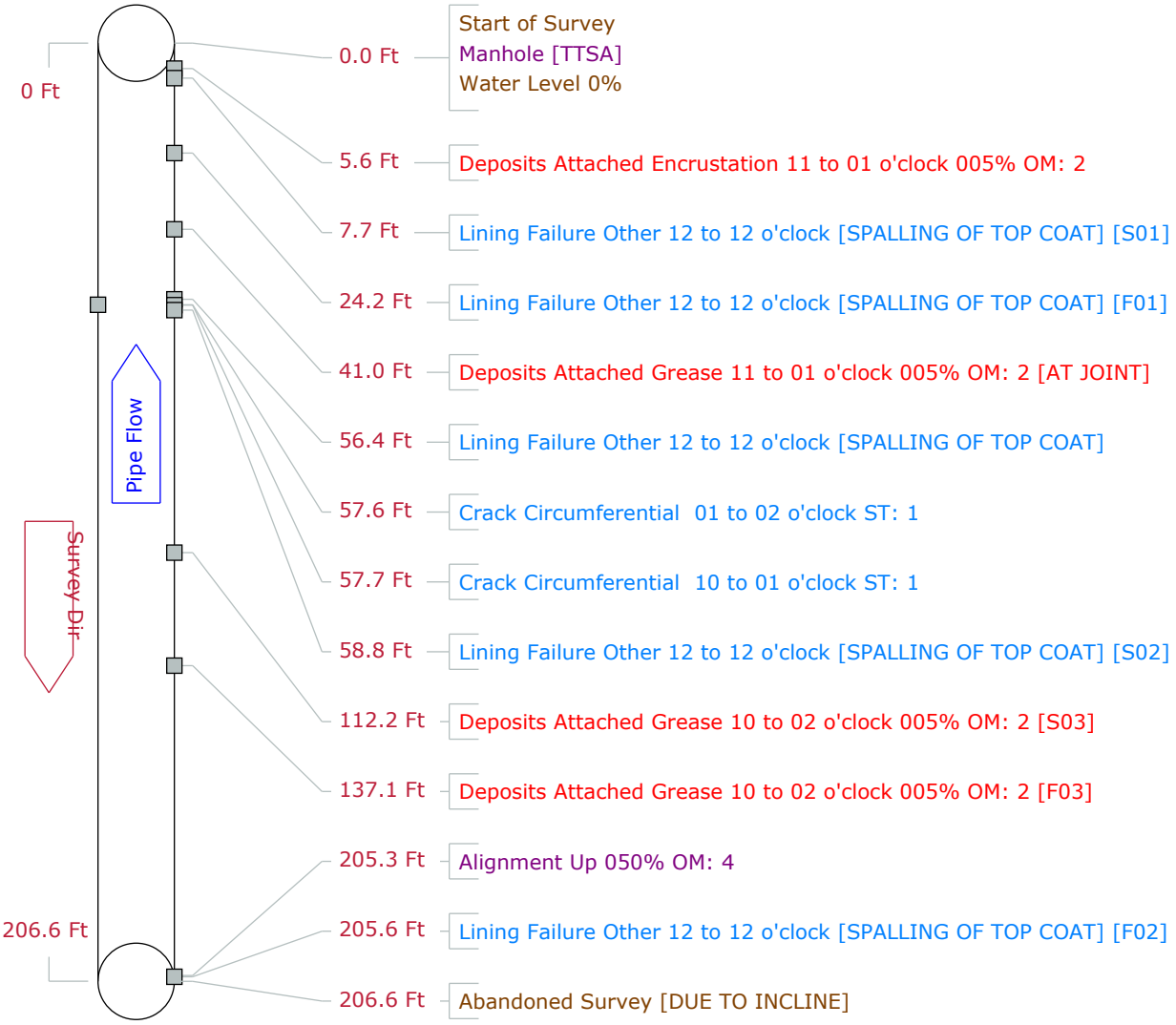
Pipe Graphic Report of PSR HWY_89_FM-ITSA for SVPSD

Setup	1/2	Surveyor	ASA	Certificate #	U-715-07000754	System Owner	SQUAW VALLEY PUBLIC S
Drainage		Survey Customer	SQUAW VALLEY PUBLIC SERVICES				
P/O #		Date	2016/10/04	Time	14:45	Street	HWY 89
City	OLYMPIC VALLEY	Further location details					

Up	HWY_89_FM	Rim to invert		Grade to invert		Rim to grade	Ft
Down	TTSA	Rim to invert		Grade to invert		Rim to grade	Ft

Use		Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	10	Width	ins	Preclean	H	Date Cleaned	
Material	Ductile Iron Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	206.60 Ft		
Lining	Other	Year laid		Year rehabilitated		Weather			
Purpose		Cat							

Additional info		Structural	O & M
Location		Miscellaneous	Hydraulic
Project	SIPHON CCTV INSPECTIONS	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



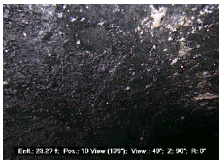
Pro-Pipe
Phone:(602) 861-3944

CCTV Picture List of HWY_89_FM-ITSA for SVPSD

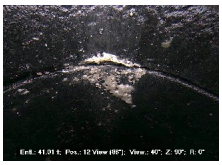
Work Order Video	Survey Date	2016/10/04	Setup 1/2
Path to picture files	\Snaps		
Path to video files	\IPF		
Path to media files			

Video Index Count 5.6 Ft
Code Deposits Attached Encrustation
Remarks
File Name TTSA-HWY_89_FM_100416_1_1.jpg

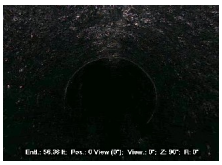
Video Index Count 7.7 Ft
Code Lining Failure Other
Remarks SPALLING OF TOP COAT
File Name TTSA-HWY_89_FM_100416_1_2.jpg



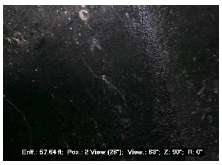
Video Index Count 24.2 Ft
Code Lining Failure Other
Remarks SPALLING OF TOP COAT
File Name TTSA-HWY_89_FM_100416_1_3.jpg



Video Index Count 41.0 Ft
Code Deposits Attached Grease
Remarks AT JOINT
File Name TTSA-HWY_89_FM_100416_1_4.jpg



Video Index Count 56.4 Ft
Code Lining Failure Other
Remarks SPALLING OF TOP COAT
File Name TTSA-HWY_89_FM_100416_1_5.jpg



Video Index Count 57.6 Ft
Code Crack Circumferential
Remarks
File Name TTSA-HWY_89_FM_100416_1_6.jpg

Video Index Count 57.7 Ft
Code Crack Circumferential
Remarks
File Name TTSA-HWY_89_FM_100416_1_7.jpg

Video Index Count 58.8 Ft
Code Lining Failure Other
Remarks SPALLING OF TOP COAT
File Name TTSA-HWY_89_FM_100416_1_8.jpg

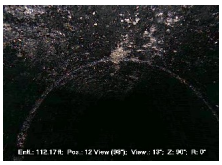
Pro-Pipe
Phone:(602) 861-3944

CCTV Picture List of HWY_89_FM-ITSA for SVPSD

Work Order Video		Survey Date	2016/10/04

Setup 1/2

Path to picture files	\Snaps
Path to video files	\IPF
Path to media files	



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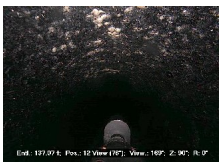
Remarks
File Name TTSA-HWY_89_FM_100416_1_9.jpg



Video Index Count 137.1 Ft
Code Deposits Attached Grease
Remarks
File Name TTSA-HWY_89_FM_100416_1_10.jpg

Video Index Count 205.3 Ft
Code Alignment Up
Remarks
File Name TTSA-HWY_89_FM_100416_1_11.jpg

Video Index Count 205.6 Ft
Code Lining Failure Other
Remarks SPALLING OF TOP COAT
File Name TTSA-HWY_89_FM_100416_1_12.jpg

Tabular Report of PSR HWY_89_FM-ITSA for SVPSD

Setup	1	Surveyor	ASA	Certificate #	U-715-07000754
System Owner	SQUAW VALLEY PUBLIC S				
Drainage		Survey Customer	SQUAW VALLEY PUBLIC SERVICES		
P/O #		Date	2016/10/04	Time	14:45
Street	HWY 89				
City	OLYMPIC VALLEY	Further location details			

Up	HWY_89_FM	Rim to invert		Grade to invert		Rim to grade	Ft
Down	TTSA	Rim to invert		Grade to invert		Rim to grade	Ft

Use		Direction	Up	Flow control			Media No		
Shape	Circular	Height	10	Width	ins	Preclean	H	Date Cleaned	
Material	Ductile Iron Pipe	Joint length	Ft	Total length	Ft		Length Surveyed	206.6	Ft
Lining	Other	Year laid		Year rehabilitated			Weather		
Purpose		Cat					Pressure		

Additional info				Structural	O & M
Location				Miscellaneous	
Project	SIPHON CCTV INSPECTIONS			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Count	Video	CD	Code		In1	In2	%	Jnt	Fr	To	ImRef	Remarks
0.0			ST	Start of Survey								
0.0			AMH	Manhole								TTSA
0.0			MWL	Water Level			0					
5.6			DAE	Deposits Attached Encrustation			5	J	11	01		
7.7		S01	LFZ	Lining Failure Other				J	12	12		SPALLING OF TOP COAT
24.2		F01	LFZ	Lining Failure Other				J	12	12		SPALLING OF TOP COAT
41.0			DAGS	Deposits Attached Grease			5	J	11	01		AT JOINT
56.4			LFZ	Lining Failure Other					12	12		SPALLING OF TOP COAT
57.6			CC	Crack Circumferential					01	02		
57.7			CC	Crack Circumferential					10	01		
58.8		S02	LFZ	Lining Failure Other				J	12	12		SPALLING OF TOP COAT
112.2		S03	DAGS	Deposits Attached Grease			5	J	10	02		
137.1		F03	DAGS	Deposits Attached Grease			5	J	10	02		
205.3			LU	Alignment Up			50					
205.6		F02	LFZ	Lining Failure Other				J	12	12		SPALLING OF TOP COAT
206.6			MSA	Abandoned Survey								DUE TO INCLINE

206.6 Ft Total Length Surveyed

Scores

Structural:	Pipe Rating	2	Pipe Ratings Index	0.1	Peak	1	Mean Pipe 0
O&M:	Pipe Rating	18	Pipe Ratings Index	2.3	Peak	4	Mean Pipe 0.1

Pro-Pipe
Phone:(602) 861-3944

FARR WEST
ENGINEERING

April 11, 2017

Dave Hunt, P.E.
District Engineer
Squaw Valley Public Service District
305 Squaw Valley Road
P.O. Box 2026
Olympic Valley, CA 96146-2026

RE: SCOPE OF WORK: TRUCKEE RIVER SIPHON REPLACEMENT – PHASE I

Dear Dave,

Farr West Engineering (Farr West) appreciates the opportunity to present this scope of work (Scope) to perform the Truckee River Siphon Replacement Project (Project) for the Squaw Valley Public Service District (District). The Project has been identified in the District's Capital Improvement Plan to replace the existing siphon and provide redundancy with the installation of a parallel line. The project will include construction of two parallel, inverted siphon sewer lines to convey flows from the District's collection system to the Tahoe Truckee Sanitation Agency (TTSA) TRI Interceptor located on the east bank of the Truckee River.

Per the direction of the District, the Project has been broken into two phases. Phase I will consist of permitting support, preliminary design, detailed design, and bidding. Construction management and observation will be included under Phase II to be presented at a later time. This phased approach aligns the Project and the District for current and future fiscal planning.

The Project will consist of a core team inclusive of the District, Farr West, and Stantec Engineering (Stantec). Stantec's role, under a separate contract with the District, will include all required environmental permitting and permitting compliance during construction. The project team held a conference call on December 6, 2016 to discuss the Project and the roles and responsibilities of each team member. All Phase I efforts pertaining to Farr West are inclusive within the Scope.

Specifically, the Scope of the overall Project includes the following tasks:

Task 1: Project Management (Phases I and II)
Task 2: Permitting Support (Phase I)
Task 3: Preliminary Design (Phase I)
Task 4: Detailed Design (Phase I)
Task 5: Bidding (Phase I)
Task 6: Construction Management (Phase II)
Task 7: Construction Observation (Phase II)
Task 8: Project Closeout (Phase II)
Task 9: Owner Directed Services (Phases I and II)

As identified above, the tasks included in the Scope for Phase I are a portion of Tasks 1, Task 2, Task 3, Task 4, Task 5, and a portion of Task 9. Additional information regarding the tasks for Phase I is provided below.

Task 1: Project Management

This task includes overall project management throughout the entirety of the Project. Project management tasks include, but are not limited to, general coordination with the District, staff, Stantec, preparation of monthly status reports, invoices, and associated administrative time.

Deliverables:

- Monthly invoices

Task 2: Permitting Support

This task includes the coordination with Stantec and the District during the pre-design portion of the Project. During this portion of the Project, Stantec and the District will be performing efforts to gather information, coordinate with agencies, and formulating project descriptions for all required permitting requirements. Farr West's role within this task will be to develop and provide supporting materials to Stantec and the District. Farr West will attend the District's preliminary design meeting with CalTrans and TTSA. The anticipated items are presumed to include, but not be limited to, conceptual design layouts, Project approach, preliminary design meeting, timing and sequencing, and project descriptions.

It has been determined that this task will contain an estimated two weeks of support time. Efforts will be discussed and recorded on a time and materials basis. Any additional requirements beyond the task budget identified within Task 2 will be presented to the District for prior approval.

Deliverables:

- Conceptual design layouts, approach, timing and sequencing, and project descriptions.

Assumptions:

- The District will contract directly with Stantec.

- The District will perform day-to-day correspondence with Stantec for overall requirements, legal determinations, and any permitting detailed information.
- Meetings with CalTrans and TTSA will occur either at the District's office, or an entity's office in the Truckee area.
- All permitting related efforts to be completed by Stantec – estimated to include, but not limited to, Caltrans, CEQA, LRWQCB, State Lands, County, TRPA, TTSA, Army Corps of Engineers, and USFS.

Task 3: Preliminary Design

This task shall be inclusive of the Project's preliminary steps of initiation and data collection. Data collection of existing record drawing information within the project limits from the District (water and sewer), Southwest Gas, AT&T, SuddenLink Communications, Liberty Energy, and any other adjacent utilities. All information gathered from water/sewer service drawings and water service account information will be included in the design. Farr West will also organize and export GIS information into CAD for purposes of design. Additionally, Farr West will update the District's GIS with applicable gathered utility information.

This task also includes the preliminary efforts that will be required to review and determine the most feasible project approach to continue with detailed design. The Project contains many unknowns at this time. The proposed alignment impacts many agencies and natural settings – CalTrans, USFS, Truckee River, among others. The Project is presumed at this time to be a CEQA categorical exemption, which simplifies many factors for permitting and design requirements. Additionally, constructability unknowns exist that can greatly skew the design and overall cost impacts to the District.

To further understand the constructability aspects of this project, the District will contract directly with Holdrege and Kull (H&K) to perform a geotechnical evaluation of the project site. Farr West will provide a review of H&K's scope of work to ensure the proper parameters are being investigated and tested to provide information that is required for the design.

Upon receipt of H&Ks geotechnical report, Farr West will review and consider all results for the Project. The results are crucial in determining the available construction options for the installation of the new siphon lines. Depending on conditions, the siphon lines may be installed via directional drilling or open excavation. Directional drilling is more cost effective and less intrusive than open excavation; however, this Scope includes a conservative approach in estimated time and efforts that are based on open excavation construction methods.

The District will also contract directly with Andregg Geomatics (Andregg) for all field topographic survey within the project area. Farr West will assist with Project coordination and provide Andregg with general layouts for Project limits and considerations.

Farr West will also open a constructability dialogue with reputable directional drilling and general construction contractors to review the Project's conditions and gather information on the most feasible approach moving into detailed design.

All of the findings of this task will be summarized in a Basis of Design Report in the form of a Technical Memorandum. The report will provide clarification of the outcomes and discoveries

throughout the preliminary permitting and design efforts, and a recommendation of the approach leading into the next phase of the Project; Detailed Design.

Deliverables:

- Constructability notes from meetings with contractors.
- Draft Basis of Design Report for District review and comments.
- Final Basis of Design Report.

Assumptions:

- Scope includes a conservative approach in estimated time and efforts that are based on open excavation construction methods.
- District to contract directly with H&K and Andregg.
- One Basis of Design review meeting will be held at Farr West with the District.

Task 4: Detailed Design

This task shall include all efforts associated with the development of plans and specifications for the Project. Farr West shall incorporate all information gathered in subsequent tasks and include it into the Project's design. Coordination with the District to obtain missing information from District water and sewer record drawings to finalize existing data and mapping. We will also work with the District to obtain its standard details and other specific design parameters. Farr West will utilize sewer flows from the existing hydraulic model to perform all siphon calculations. Additionally, this task includes project planning, preparation of plans and specifications, constructability review, as well as an opinion of probable cost for the Project. Farr West shall work closely with the District and field personnel with the design of the Project.

Design documents will be provided to the District for review and comment at the 60% and 90% level. At a minimum, the 60% design plans will include the following: cover sheets, preliminary note sheets, plan and profile sheets with existing parcel base, owner names, and addresses, rights-of-way, existing utilities, proposed vertical and horizontal sewer main alignments, manhole locations, and preliminary detail sheets. The 90% design plans will address all comments generated from the 60% design plan review, final notes, and details, and include a draft copy of the contract documents and technical specifications.

The final 100% design plans and specifications will address all comments generated from the 90% review, and provide a set ready for bidding. Farr West will also coordinate with Stantec through this process to incorporate required mitigation measures into the final design.

Included in this task is one (1) Farr West visit for a 60% design review meeting with the District at its office. One (1) additional on-site visit for investigation purposes or additional review meeting with the District is also included in this task.

Deliverables:

- 60% submittal will include an electronic delivery of half size plans (11"x17").
- 90% submittal will include an electronic delivery of half size plans (11"x17"), specifications, and an opinion of probable construction cost.

- 100% submittal will include an electronic delivery of half size plans (11"x17"), specifications, and an opinion of probable construction cost.

Assumptions:

- Scope includes a conservative approach in estimated time and efforts that are based on open excavation construction methods.
- All permitting related efforts to be completed by Stantec – estimated to include, but not limited to, Caltrans, CEQA, LRWQCB, State Lands, County, TRPA, TTSA, Army Corps of Engineers, and USFS.
- Hydraulic modeling and analysis is not part of this Scope.
- Two (2) total visits to the District for review, or other, meetings.
- Specifications will be in the EJCDC and CSI format.

Task 5: Bidding

This task will include related responsibilities to be performed during the bidding phase. Farr West will coordinate with the District for all applicable dates required for advertisement, bidding, and award of the Project's contract. Farr West will advertise the Project for bidding electronically through its online Bid Room, put notices in local plan rooms, and maintain a plan holders list. Plans and specifications will be available electronically only. The District will provide a Project advertisement to local newspapers, any other mandated advertisement requirement, and be responsible for all associated fees. Farr West will organize and conduct the pre-bid conference located at the District's office. We will assist the District in answering contractors' questions, RFIs, and phone calls regarding the Project. Two (2) addendum is assumed for the bidding phase. Bid opening will occur at Farr West's office. Farr West will prepare bid tabulation and will make a recommendation to the District to award the contract to the lowest responsible and responsive bidder.

After approval by the District Board, Farr West will prepare the Notice of Award to the successful contractor, and then work with the contractor to obtain signed agreements, bonds, and insurance; lastly, issuing the notice to proceed.

Deliverables:

- Bid tabulation

Assumptions:

- District to provide bid solicitation requirements and associated fees
- Two (2) addenda
- Farr West to attend pre-bid conference at the District's office

Task 6: Owner Directed Services

This task shall be utilized as a 10% contingency task for any required tasks to be performed that are not identified within this Scope. Any task identified will be directed and pre-approved by the District prior to Farr West execution.

Schedule

Assuming approval of the Scope at the March 2017 Board meeting, work will begin immediately thereafter. The major project milestones include:

April 2017	Board Approval
May – August 2017	Preliminary Design (Phase I)
August – January 2017	Detailed Design (Phase I)
February – March 2018	Bidding (Phase I)
June – October 2018	Construction (Phase II)

Engineering Budget

Farr West proposes to perform the above Phase I Scope for an estimated fee not to exceed $107,806.00. We reserve the right to adjust and transfer task budgets as necessary to accomplish the overall project objective without exceeding the total project budget. The estimated fee will not be exceeded without prior authorization. The work will be billed on a time and expense basis according to the 2017 Farr West Fee Schedule (Attachment A). The task breakdown and fee estimate are enclosed as Attachment B.

We appreciate the opportunity to present this Scope to the District for its Truckee River Siphon Replacement Project – Phase I. Please contact me at (775) 853-7267 if you have any questions regarding this Scope. We are prepared to commence work immediately upon your authorization.

Sincerely,

Matt Van Dyne, P.E.
Principal Engineer

Lucas Tipton, P.E.
Principal Engineer
Scope Review

Enclosures

Attachment A – 2017 Farr West Fee Schedule
Attachment B – Task Breakdown and Fee Estimate – Phase I

FARR WEST
ENGINEERING

2017 RATE SCHEDULE

Title	Hourly Rate	Title	Hourly Rate
Principal Engineer	$140	Planner	$125
Senior Engineer	$130	Building Inspector II	$80
Engineer III	$120	Building Inspector I	$65
Engineer II	$110	Designer II	$100
Engineer I	$100	Designer I	$90
Engineer in Training II	$90	GIS Analyst II	$125
Engineer in Training I	$80	GIS Analyst I	$110
Senior Hydrogeologist	$140	GIS Specialist	$90
Hydrogeologist III	$120	GIS Technician	$80
Hydrogeologist II	$100	Water Rights Specialist III	$150
Hydrogeologist I	$80	Water Rights Specialist II	$125
Electrical Engineer	$150	Water Rights Specialist I	$100
Environmental Scientist	$110	Water Rights Technician III	$90
Construction Inspector III	$95	Water Rights Technician II	$80
Construction Inspector II	$85	Water Rights Technician I	$70
Construction Inspector I	$75	Professional Surveyor	$125
Project Assistant	$70	Survey Technician II	$85
Admin III	$80	Survey Technician I	$70
Admin II	$65	1 Man Survey Crew	$125
Admin I	$50	2 Man Survey Crew	$165
Intern	$45	3 Man Survey Crew	$240

Other Fees and Charges:

1. All direct project expenses, including subconsultants, will be billed at actual cost plus 15%.
2. Vehicles used for travel to meetings, deliveries, etc. will be charged at the current federal reimbursement rate.
3. A daily rate of $40 will be charged for field personnel staying overnight to cover meals.
4. An overtime surcharge of 25% will be applied to the hourly rates of non-salaried employees for authorized overtime work.
5. Different survey and construction inspection labor rates will apply on prevailing wage projects. Rates for prevailing wage projects will be provided on a case by case basis.

ATTACHMENT B
Squaw Valley PSD
Truckee River Siphon Replacement Project - Phase I
Engineering Fee Estimate

TASKS	Principal Engineer - M. Van Dyne	Principal Engineer - G. Lyman	EIT II - S. Gavin	Designer II - T. Hall	Project Assistant - L. Clifford	GIS Analyst II - M. Forest	Construction Inspector - TBD Phase 2	Admin II - J. Estes	Total Labor		Expenses (a)	TOTAL
Rate ($/hr)	$140	$140	$90	$100	$70	$125	$95	$65	Hours	($)	($)	($)
1.0 Project Management												
Project Coordination and Management	24	24							48	$6,720		$6,720
Monthly Reports/Progress Billings		12						12	24	$2,460		$2,460
Subtotal	**24**	**36**						**12**	**72**	**$9,180**		**$9,180**
2.0 Permitting Support												
Permitting Support for Stantec	2	32	40						74	$8,360		$8,360
Preliminary Meetings with CalTrans and TTSA		8	8						16	$1,840	$65	$1,905
Subtotal	**2**	**40**	**48**						**90**	**$10,200**	**$65**	**$10,265**
3.0 Preliminary Design												
Data Collection and Review / Update GIS		8	24			12			44	$4,780		$4,780
Holdrege & Kull Review (b)		16	8						24	$2,960		$2,960
Andregg Geomatics Survey Coordination (b)		8	4						12	$1,480		$1,480
Constructability Review	6	8	8						22	$2,680	$25	$2,705
Basis of Design Report (Draft)	2	16	32						50	$5,400		$5,400
Basis of Design Review Meeting with District (Reno)		2	2						4	$460		$460
Basis of Design Report (Final)	2	16	24						42	$4,680		$4,680
Subtotal	**10**	**74**	**102**			**12**			**198**	**$22,440**	**$25**	**$22,465**
4.0 Detailed Design												
Survey Processing for Design		8	8	12					28	$3,040		$3,040
60% Design Drawings, Technical Specifications	4	56	60		8	8			136	$15,360		$15,360
Siphon Calculations		24	12						36	$4,440		$4,440
90% Design Drawings, Technical Specifications, Opinion of Probable Cost	8	40	50		8				106	$11,780		$11,780
100% Design Drawings, Technical Specifications, Opinion of Probable Cost	8	32	40		8				88	$9,760		$9,760
Quality Assurance/Quality Control Throughout	8								8	$1,120		$1,120
Two District Meetings (60% review and miscellaneous)		16	8						24	$2,960	$130	$3,090
Subtotal	**28**	**176**	**178**	**12**	**24**	**8**			**426**	**$48,460**	**$130**	**$48,590**
5.0 Bidding Assistance												
Organize and Conduct Pre-Bid Meeting		4	8						12	$1,280	$65	$1,345
RFI's, Questions During Bidding, Addendum (c)		16	12		4				32	$3,600		$3,600
Bid Opening, Tabulation, and Recommendation		4	8						12	$1,280		$1,280
Awarding Activities (NoA, Agreements, Bonds and Insurance)		4	8						12	$1,280		$1,280
Subtotal		**28**	**36**		**4**				**68**	**$7,440**	**$65**	**$7,505**
9.0 District Directed Services												
District Directed Services Outside of Scope (10% Contingency)											$9,801	$9,801
Subtotal											**$9,801**	**$9,801**
	64	**354**	**364**	**12**	**28**	**20**		**12**	**854**	**$97,720**	**$10,086**	**$107,806**

(a) Expenses include travel, mileage, per-diem, lodging, reproduction costs, etc.
(b) Geotechnical and Survey contracted directly with District
(c) Assumes two addendums

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS

Proposal No. PT16265-01PW
December 9, 2016

Squaw Valley Public Service District
P.O. Box 2026
Olympic Valley, California 96146

Attention: Dave Hunt, District Engineer

Reference: ***Squaw Valley Public Service District***
Truckee River Sewer Siphon Replacement Project
Olympic Valley, Placer County, California

Subject: ***Proposal for Geotechnical Engineering Services***

This letter presents our proposal to prepare a geotechnical engineering report for the proposed Squaw Valley Public Service District (SVPSD) Truckee River Sewer Siphon Replacement Project located near Olympic Valley, Placer County, California. The project will involve replacement of 10-inch diameter ductile iron sewer pipe with two parallel 10-inch to 12-inch diameter HPDE pipes. The purpose of our services will be to explore and evaluate subsurface conditions at the project site, and to develop geotechnical engineering recommendations for project design and construction.

Holdrege & Kull will provide site specific design recommendations to help reduce construction costs for your project. We have a reputation for responsive, innovative, yet practical approaches to geotechnical problems. Included in this proposal is a brief summary of our understanding of the project, the scope of services we can provide, and an estimate of our fees.

PROJECT DESCRIPTION

This proposal is based on conversations with you and A site visit. We understand that the existing iron sewer pipe conveys sewage from Olypmic Valley on the west side of Highway 89 near Squaw Creek to the Tahoe-Truckee Sanitation Agency (TTSA) sewer interceptor on the east side of the Truckee River. The existing iron pipe is approximately 350 lineal feet in length, crosses under the Truckee River, and has reached it's life expectancy and capacity. The project will invovle replacement of the iron pipe with two parallel 10-inch to 12-inch diameter HDPE sewer pipelines to provide sufficient capacity and flow. The new pipelines will be installed using either directional boring or open trench techniques. Subsurface information, particullarly the depth and quality of rock, is needed in the area of the new pipelines to help evaluate the appropriate technique to use for installation.

ANTICIPATED CONDITIONS

In preparation of this proposal, we reviewed geologic maps and reports in our files regarding subsurface conditions in the project vicinity and we visited the site. Based on this information and our experience in the site area, we anticipate that subsurface soil conditions will consist of silt, sand, gravel, cobbles, and boulders associated with recent alluvium and glacial till deposits. Based on our recent site visit, volcanic rock outcrops were observed in the road cut along the west shoulder of Highway 89 and within the bed of the Truckee River immediately south of the proposed pipeline alignments. Therefore, we anticipate that volcanic rock may be encountered within 10 feet of the existing ground surface in the west portion of the project area.

We anticipate that groundwater will be present at relatively shallow depths and will be encountered near the surface of the Truckee River. Groundwater is also anticipated to fluctuate seasonally. We anticipate that the project area can be accessed by truck-mounted equipment.

SCOPE OF SERVICES

Underground Utility Clearance and Permitting

Prior to our subsurface exploration, we will mark the site for Underground Service Alert (USA) and contact this agency for underground utility locating.

We will obtain a boring permit from Placer County Environmental Health Department (PCEHD) prior to our subsurface exploration. We understand that portions of the proposed new pipelines will cross existing Caltrans easements, property owned by the United States Forest Service (USFS), and private property. We have budgeted 8 hours of Senior Engineer time to obtain permits and access for borings that may be located within Caltrans easements and USFS property. We anticipate that borings will not be located on privately owned property.

Geologic Mapping

To help evaluate subsurface conditions and existing volcanic rock exposures in the project area, we will perform geologic mapping along the proposed pipeline alignments and in the immediate site area. Our mapping will primarily focus on contacts between soil or alluvial deposits and rock. The results of our geologic mapping will help identify boring locations, and rock outcrops; and will be presented on a geologic map to be included in our report.

Field Exploration

We propose to explore the subsurface conditions at the project site by drilling 3 borings to depths of approximately 25 to 35 feet below the existing ground surface (1 to 1.5 days of drilling). We are planning two borings on the east side of the river and one on the west side of Hwy 89. The borings will be drilled with a truck- mounted drill rig equipped with hollow stem augers and rock core barrels. The borings will be visually logged by a field representative who will obtain relatively undisturbed and bulk soil samples for classification and laboratory testing. Upon completion, the borings will be backfilled with neat cement grout in accordance with PCEHD regulations.

Laboratory Testing

The purpose of laboratory testing is to evaluate the physical and engineering properties of the soil and/or samples collected in the field. We anticipate the laboratory testing program will consist of tests for moisture and density, and soil classification (gradations and plasticity), and rock compressive strength.

Analysis and Report

Based on the results of our field exploration and laboratory testing, we will provide our opinions and recommendations regarding the following:

- General soil and groundwater conditions at the project site, with emphasis on how the conditions are expected to affect the proposed construction;
- Discussion of special geotechnical engineering constraints such as existing fill, depth and quality of rock, presence of cobbles and boulders, near-surface groundwater, liquefaction potential, and potential secondary seismic hazards;
- Recommendations for earthwork construction, including site preparation recommendations, a discussion of reuse of existing near surface soil as structural fill, and a discussion of remedial earthwork recommendations, if warranted; and
- Recommendations for temporary excavations and trench backfill.

We will present our opinions and recommendations in a written report that will be complete with a geologic map, boring location plan, logs of our borings, and laboratory test results.

SCHEDULE AND FEES

The drilling schedule will be based on weather conditions and the availability of drilling equipment. At this time, we anticipate the drilling program will be completed in the spring of 2017. If weather, access, or site conditions restrict our field operations, we may need to revise our scope of services and fee estimate.

We anticipate submitting our final written report within three weeks after completion of our subsurface exploration. If requested, we can provide preliminary verbal information with respect to our anticipated conclusions and recommendations prior to completion of our final report.

We can provide the scope of services described above for a lump sum fee of $21,600. This cost includes mobilization/demobilization fees and the drilling equipment we plan to use for our subsurface exploration. In addition, this cost also includes Placer County boring permit fees that will be on the order of $1,200, and professional staff time to obtain access to Caltrans right-of-way and USFS property.

Billing will be monthly on a percent complete basis. Additional services beyond the scope of this proposal performed at the client's request will be billed on a time and materials basis using the fee schedule applicable at the time the services are provided.

LIMITATIONS

Prior to initiating our subsurface exploration, all site utilities and utility easements must be accurately located in the field, on a scaled map, or both. This information must be made available to Holdrege & Kull by the client before beginning our subsurface exploration. Our fee is not adequate to compensate for both the performance of the services and the assumption of risk of damage to such structures. Holdrege & Kull will not accept responsibility for damage to existing utilities not accurately located in the manner described above. Services rendered by Holdrege & Kull to repair them will be billed at cost.

Holdrege & Kull will perform its services in a manner consistent with the standard of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity and at the time the services will be performed. No warranty or guarantee, express or implied, is part of the services offered by this proposal.

CLOSING

Enclosed with this proposal is our firm's Agreement for Geotechnical Engineering Services. Please sign and return one copy of the attached Agreement for Geotechnical Engineering Services to our attention if this proposal meets with your approval. This proposal is deemed to be incorporated into and made part of the Agreement for Geotechnical Engineering Services.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. If you have any questions or need additional information, please contact the undersigned.

Sincerely,

Holdrege & Kull

Pamela J. Raynak, P.G.
Senior Geologist

John K. Hudson, P.E., C.E.G.
Principal

Enclosures: Agreement for Geotechnical Engineering Services

We take your position precisely.

November 10, 2016

Mr. Dave Hunt, P.E.
District Engineer
Squaw Valley Public Services District
P.O. Box 2026
Olympic Valley, CA 96146

Office: (530) 583-4692 x-209
Mobile: (775) 846-1404
Email: dhunt@svpsd.org
P16-0556

RE: Design and Boundary/Easement Surveys
SVPSD Truckee River Siphon Replacement Project
APN 096-230-039, 096-33-001 and 096-630-064
Ptn Section 27 & 27, T 16 N, R 16 E, MDM
Olympic Valley, Placer County, CA

Dear Dave,

This letter is our proposal to provide surveying and mapping services for the Truckee River Siphon Replacement Project. Our proposed scope of work and estimate of fee are as follows:

Task 1: Control and Boundary Surveys
Provide field surveys and office services to 1) research Caltrans right of way and property boundary records for parcels and easements affected by the existing and proposed siphon, 2) retrieve and coordinate TTSD and Squaw Valley manhole surveys performed by ANDREGG, 3) expand existing horizontal and vertical survey control to project area and set permanent survey control for construction reference, 4) locate an adequate number of property corners to establish the Highway 89 right of way, record property boundaries and easement lines, 5) process data, evaluate and determine right of way boundaries and easements and 6) prepare base exhibit depicting results of survey.
Fee: $3,960

Task 2: Design Surveys
Provide field surveys and office services to perform topographic design surveys along a strip of land approximately 100' in width by 350' in length centered on the best evidence of the existing siphon. Features to be located shall include ground surface, slope to the Truckee River and river bottom, highway pavement areas with striping, surface evidence of utilities, existing manholes, evidence of existing siphon, trees and other features discovered during survey or requested by SVPSD. Tree elevation at base and dbh will be noted and trees outside of the USFS boundary will be tagged. Process data and compile mapping at a scale of 1"=10' with 1' foot contours and spot elevations or as specified by SVPSD. Prepare composite map including control, boundary and easement information developed under Task 1.
Fee: $3,950

Task 3: Color Digital Orthophotography (Optional)
Prepare hi-resolution 0.10' pixel aerial color orthophotograph of site and surrounding 200' for mapping backdrop.
Fee: $ 350

Task 4: Easements (Optional)
Provide office services to prepare legal description and plat for permanent or temporary construction easements as needed.
Fee: $1,400 each

Notes:
1. Above tasks are sequentially dependent
2. All deliverables will be submitted in digital format. Hardcopies will be provided upon request at no cost.

The above fees will not be exceeded without prior authorization from client and are valid for 90 days. We are currently in a position to begin work at your direction and complete Tasks 1, 2 and 3 within 25 days thereafter, weather, river flows and snow cover permitting. The schedule is subject to review when work is authorized. If you would like us to proceed, please provide the standard SVPSD authorization or reply to this email in the affirmative authorizing the work under the terms of our recent contracts.

Let me know if you have any questions or need additional information.

Thank you for this opportunity.

Best Regards,
ANDREGG GEOMATICS

Dennis Meyer, PLS
CEO / President

_____ _____ Auburn, CA
Authorization to Proceed Date

_____
Please Print Name

_____ (Signing Capacity)
(Owner, Pres., V/P, Director, Officer, Proxy, etc.)