GRAYLING ENGINEERS

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EXHIBIT A - SCOPE OF WORK

City of Camas
Sunningdale Gardens Pump Station R&R
November 2020

Proposed Scope of Work

Grayling Engineers (Grayling) has developed the following scope of work for the City of Camas (City) for the Sunningdale Gardens Pump Station Repair and Rehabilitation (R&R) project. Installed in 1996, the Sunningdale Gardens Pump Station is a sanitary pump station serving the Sunningdale Gardens subdivision. The pump station is located within a residential neighborhood at 4042 NW Dahlia Loop Camas, WA 98607.

The goal of the project is to rehabilitate and upgrade the mechanical and electrical equipment at this existing pump station. The City provided a summary of the requested upgrades in an email dated March 2, 2020. A copy of the summary is incorporated into this scope of work as **Attachment A**. Pump station improvements will comply with the City's 2019 Sanitary Sewer Pump Station Design Manual. Construction phase services will be contracted under an amendment to this agreement.

Task 1 – Project Management

This task includes correspondence and coordination with the City, tracking and updating the delivery schedule, and tracking the project budget. Included with this task are email and phone correspondence, preparation of monthly invoices, and preparation of monthly progress reports.

Assumptions

- This task does not include in-person meetings.
- Task assumes an average involvement of one hour per week for a total of 30 weeks.

Deliverables

- Monthly invoices
- Monthly progress reports in PDF format

Task 2 – Preliminary Design

This task involves 1) collecting background information to support engineering calculations and final design, 2) completing a hydraulic analysis of the pressure sewer for equipment sizing, 3)

preparing a technical memorandum outlining the basis of design, and 4) preparing 30 percent plans. Work within this task is further divided into subtasks as described below.

Subtask 2.1 - Data Collection

Grayling will coordinate with the City to acquire background information necessary to generate plans and determine pump station capacity. Background information will be reviewed for accuracy and conflicts. Anticipated items include the following:

- Record drawings of the existing pump station.
- Design flows from the City's General Sewer Plan (GSP).
- Drawdown test results for the pump station.
- System map showing the horizontal alignment, vertical profile, and size of the existing force main.

Assumptions

- Professional survey services are not required for the project. Plans will be based on available aerial photography and field measurements.

Subtask 2.2 - Hydraulic Analysis

Grayling will perform a hydraulic analysis of the pressure sewer associated with the Sunningdale Gardens Pump Station. The purpose of the analysis is to determine equipment sizes and operating parameters. Key tasks include the following:

- Basin Plan
- Overflow storage analysis
- Peak design flow will be based on a 20-year forecast, or greater

Assumptions

- The downstream collection system has capacity to accept flows from the upgraded pump station.
- The Lake Road STEP main will be the extent of the analysis.
- Surge analysis is not required.

Subtask 2.3 - Basis of Design TM

Based on the information gathered in Subtask 2.1 and the results of Subtask 2.2, Grayling will prepare a draft technical memorandum (TM) summarizing the basis of design for City review and comment. The TM will summarize the hydraulic analysis and identify the basis for final design. A final version of the TM incorporating City review comments will be stamped and signed by a professional engineer licensed in the State of Washington.

Assumptions

- The TM will be submitted with the 30% plans as described in Subtask 2.4 below.

Deliverables

- Draft TM in electronic (PDF) format.
- Final TM in electronic (PDF) format.

Subtask 2.4 - 30% Design

Grayling will prepare and submit preliminary plans, an outline of technical specifications, and an engineer's opinion of probable construction cost representing 30% design. Following the submittal, a meeting will be held with the City to discuss review comments. The 30% design set will include the following sheets:

1. Cover sheet with maps and sheet index
2. General notes, legend, and symbols
3. Force main hydraulic profile and design criteria
4. Site map with erosion control measures
5. Demolition and bypass pumping plan
6. Civil site plan
7. Wet well and valve vault plans and sections

Assumptions

- Technical specifications will be based on the current version of the WSDOT Standard Specifications with Special Provisions prepared by Grayling.
- One representative of Grayling will attend a single in-person review meeting with the City.
- Utility potholing is not required.
- Stormwater improvements are not required.
- Landscape design is not required.
- Odor control design is not required.
- Land use permitting is not required.

Deliverables

- Two (2) sets of 22"x34" plans in paper format, one copy in electronic (PDF) format.
- Table of contents of Special Provisions.
- Engineer's opinion of probable construction cost reflecting 30% design in electronic (PDF) format.

Task 3 – Final Design

Subtask 3.1 - 60% Design

Construction documents will be modified to address comments on the 30% design received from the City. Grayling will prepare and submit plans, a draft of the technical specifications, and an engineer's opinion of probable construction cost representing 60% design. Work will include coordination with the electrical designers for new electrical equipment and generator sizing. Following the submittal, a meeting will be held with the City to discuss review comments. The 60% design set will include the following sheets:

1. Cover sheet with maps and sheet index
2. General notes, legend, and symbols
3. Force main hydraulic profile and design criteria
4. Site map with erosion control measures
5. Demolition and bypass pumping plan
6. Civil site plan
7. Detailed wet well and valve vault plans and sections
8. Electrical site plan (assume 1 sheet by subconsultant)
9. Electrical one-line diagram (assume 1 sheet by subconsultant)

Assumptions

- Technical specifications will be based on the current version of the WSDOT Standard Specifications with Special Provisions prepared by Grayling.
- Two representatives of Grayling will attend a single in-person review meeting with the City.

Deliverables

- 60% plans in electronic (PDF) format.
- Draft Special Provisions.
- Engineer's opinion of probable construction cost reflecting 60% design in electronic (PDF) format.

Subtask 3.2 - 90% Design

Construction documents will be modified to address comments on the 60% design received from the City. Grayling will prepare and submit 90% plans, technical specifications, front end documents, and an engineer's opinion of probable construction cost to the City for review and comment. The 90% design submittal will include detailed electrical design and structural design of the control panel shelter. Work will include coordination with electrical designers to ensure continuity. Following the submittal, a meeting will be held with the City to discuss review comments. The 90% design set will include the following sheets:

1. Cover sheet with maps and sheet index
2. General notes, legend, and symbols
3. Force main hydraulic profile and design criteria
4. Site map with erosion control measures
5. Demolition and bypass pumping plan
6. Civil site plan
7. Detailed wet well and valve vault plans and sections
8. Surface restoration plan
9. Detail sheets including City standards (assume up to 3 sheets)
10. Structural notes and details (assume 2 sheets by subconsultant)
11. Electrical notes and site plan (assume 2 sheets by subconsultant)
12. Electrical one-line diagram (assume 1 sheet by subconsultant)
13. Electrical and control plans (assume 3 sheets by subconsultant)

Assumptions

- The electrical engineer will coordinate with power and communication utilities.
- Traffic control plans are not required.
- Property acquisition or easements are not required.
- Bidding documents and contract forms will be provided by the City.

Deliverables

- 90% plans in electronic (PDF) format.
- Final draft of bidding documents and contract forms.
- Final draft of technical specifications.
- Engineer's opinion of probable construction cost reflecting 90% design in electronic (PDF) format.

Subtask 3.3 - 100% Design

Construction documents will be modified to address comments on the 90% design received from the City. Grayling will prepare final, bid ready, contract documents as well as a final engineer's opinion of probable construction cost. Contract documents will be stamped and signed by a professional engineer licensed in the State of Washington.

Assumptions

- The City will coordinate permitting, if required. Examples include a building permit for the control panel shelter.

Deliverables

- Four (4) 11"x17" copies of stamped, bid-ready construction documents, and a final engineer's opinion of probable construction cost.
- One copy in electronic (PDF) format.

Task 4 – Bidding Support Services

The City will advertise the project through their online bidding service and conduct the bid opening. Grayling will assist the City during the public bidding process with the following services:

- Schedule and attend a pre-bid meeting.
- Respond to bidder requests for information (RFI)
- Maintain a log of all communications and RFIs
- Prepare addenda to the contract documents as required
- Review the apparent low bidders bid documents and prepare a written recommendation of award
- Prepare a written notice of award to the contractor

Assumptions

- The City will manage the bid opening; Grayling will not attend the opening.
- The City will be responsible for preparing bid tabulations.
- 16 hours have been allocated for this task.

Deliverables

- RFI responses and addenda, if required.
- Letters recommending award and notice of award.

Task 5 – Subconsultant Services

Grayling will subcontract with R&W Engineering for electrical engineering and with Otak for structural engineering. The following subtasks summarize the subcontractor's scope of work.

Subtask 5.1 - Electrical Engineering

R&W Engineering will provide electrical engineering services. A list of services is provided below.

- Site visit to the pump station to gather data.
- Attendance at two design coordination meetings.
- Coordination with CPU for a potential upgrade of the existing electrical service.
- Preparation of electrical drawings.
- Preparation of electrical specifications in CSI format.
- Two design review submittals at 60% and 90%.
- Final construction documents.

Deliverables

- Design drawings at 60%, 90%, and 100%.

- Technical specifications.
- Cost estimate.

Subtask 5.2 - Structural Engineering

Otak will provide structural engineering design and calculations for the control panel shelter.

Assumptions

- The City will submit the building permit application and pay associated fees.

Deliverables

- Design drawings and calculations at 90% and 100%.

Exclusions

- Services and deliverables not defined herein.

Estimated Fee

The total estimated fee based on the scope of work described herein is **$64,602**. Work will be invoiced monthly on a time and materials basis, not to exceed the agreed upon total without prior approval from the City. Please refer to **Exhibit B** for a detailed breakdown of the estimated fee by task.

Schedule

Professional engineering services are assumed to begin in November 2020 and be completed by June 30, 2021. Outlined below is a schedule of the anticipated project milestones.

Contract Execution	December 2020
Preliminary Design Submittal (TM and 30% plans)	February 2020
60% Design Submittal	March 2020
90% Design Submittal	April 2020
Final Design Submittal	May 2020
Bidding Assistance	May 2021
Construction Services (amendment anticipated)	Anticipated June 2021

GRAYLING ENGINEERS

EXHIBIT B - FEE ESTIMATE
City of Camas
Sunningdale Gardens Pump Station R&R
November 2020

Task	Description	Senior Engineer	Design Engineer III	Total Hours	Labor Cost	Expenses		Subconsultants		Total
		$170	$140			Mileage	Printing	Electrical Engineering	Structural Engineering	
1	Project Management	30		30	$ 5,100					$ 5,100
2	Preliminary Design									
2.1	Data Collection	2	4	6	$ 900					$ 900
2.2	Hydraulic Analysis	8	16	24	$ 3,600					$ 3,600
2.3	Basis of Design TM	8	16	24	$ 3,600					$ 3,600
2.4	30% Design	10	32	42	$ 6,180	$ 20	$ 100			$ 6,300
3	Final Design									
3.1	60% Design	10	32	42	$ 6,180	$ 20				$ 6,200
3.2	90% Design	10	24	34	$ 5,060	$ 20				$ 5,080
3.3	100% Design	6	16	22	$ 3,260		$ 500			$ 3,760
4	Bidding Support Services	12	24	36	$ 5,400					$ 5,400
5	Subconsultant Services									
5.1	Electrical Engineering			0	$ -			$ 21,362		$ 21,362
5.2	Structural Engineering			0	$ -				$ 3,300	$ 3,300
	Total	**96**	**164**	**260**	**$ 39,280**	**$ 60**	**$ 600**	**$ 21,362**	**$ 3,300**	**$ 64,602**

ATTACHMENT A

Kyle Thompson <kyle.thompson@graylingeng.com>

Sunningdale Gardens Lift Station Upgrades

2 messages

Bob Busch <BBusch@cityofcamas.us> Mon, Mar 2, 2020 at 3:18 PM
To: Kyle Thompson <kyle.thompson@graylingeng.com>, Nathan Abercrombie <nathan.abercrombie@graylingeng.com>
Cc: Will Blake <WBlake@cityofcamas.us>, Joe Calderone <JCalderone@cityofcamas.us>

Hi Kyle & Nathan,

I know you are probably in the middle of working on the proposal for the Sunningdale Gardens R&R project, but I thought I'd send along a rough scoping list. We already discussed most of the below, but I thought it was important that I get you a written list of what we are looking to accomplish.

Project Scope:

- Provide updated capacity/demand calculation, to facilitate proper sizing of pumps.
- Spec new pumps that meet current and expected future demand at the site.
- Upgrade/replace controls to match city's current PLC-based standard.
    - Us CompactLogix PLC (we are pursuing this a standard for all lift stations)
    - Instrumentation upgrade. Replace float-based level indicator with either multitrode + backup mulitrode or ultrasonic + backup multitrode configuration.
    - Flow meter not necessary.
    - Electronic pressure sensor not necessary.
    - Install "local" disconnect control panel at wet well, with Meltric pump disconnects (?)
- Replace float-based level indicator with either multitrode + backup mulitrode or ultrasonic + backup multitrode configuration.
- Add site lighting.
- Add wet well hatch safety grating.
- Replace valve vault hatch doors and add safety grating (new cap?).
- Replace generator (current generator is obsolete, no parts available).
- Evaluate existing wet well lining, replace if necessary.
- Rust abatement and re-coat piping in valve vault.
- Rebuild check valves (if necessary).
- Replace bad forcemain pressure gauge with a larger gauge that is readable from the surface. Re-orient if necessary.
- Replace pump boots? Currently has Paco pump boots requiring the Flygt pumps to have an adapter.
- Evaluate pump rails. Replace if necessary.

- Definitely need to replace anchors which attach pump rails to wet well slab, with stainless steel hardware. They are badly corroded.

- After work is complete, grade and gravel driveway.

Please forgive the informality of the list…I was just trying jot down everything that has been discussed to date. Let me know if you have any questions.

Thanks,

Bob Busch

WWTP Operations Supervisor

bbusch@cityofcamas.us

D: (360) 817-7164

Camas,WA Wastewater Treatment Facility

(360) 834-3263

Kyle Thompson <kyle.thompson@graylingeng.com> Mon, Mar 2, 2020 at 3:57 PM
To: Bob Busch <BBusch@cityofcamas.us>
Cc: Nathan Abercrombie <nathan.abercrombie@graylingeng.com>, Will Blake <WBlake@cityofcamas.us>, Joe Calderone <JCalderone@cityofcamas.us>

Thanks for the email Bob. This is on our list for this week so your timing is excellent. We will let you know if we have any questions. I will be sending R&W an email shortly about helping us with the work.

Kyle Thompson PE (WA, OR & MT)
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