| **Local Agency A&E Professional Services Supplemental Agreement** | Consultant/Address/Telephone<br>**Jacobs Engineering Group, Inc.**<br>1100 112th Ave NE, Suite 500<br>Bellevue, WA 98004<br>Contact Name / E-Mail Address<br>Jeannette Delay / jeannette.delay@jacobs.com<br>Telephone 425-233-3222 Fax 425-452-1212 | |
|---|---|---|
| Supplement Number<br>**Supplement No. 7** | | |
| Agreement Number<br>**CCF02-18** | Execution Date<br>9/26/2018 | Completion Date<br>12/31/2024 |
| Project Title<br>**Ash Way: 164th Street SW to Gibson Road** | New Maximum Amount Payable<br>$3,353,739.00 | |
| Description of Work<br>*Provide all design services necessary to prepare 60% plans and proposed specifications, for improvements to Ash Way: 164th St SW to Gibson Rd, west of Mill Creek city limits, in unincorporated Snohomish County. Provide an opinion of cost based on 60% design development, for the roadway and drainage improvements of Ash Way from 18th Avenue West to the intersection of Admiralty Way and Gibson Road (approximately 12,000 linear feet of roadway). Assist the County in identifying Right-of-Way needs in support of its work in preparation of the Right-of-Way plans.* | | |

The Local Agency of Snohomish County desires to supplement the Agreement entered into with **Jacobs Engineering Group, Inc.** and executed on September 26, 2018, as amended by Supplement No. 1 on December 2, 2019, as amended by Supplement No. 2 on March 5, 2020, as amended by Supplement No. 3 on December 11, 2020, as amended by Supplement No. 4 on February 26, 2021, as amended by Supplement No. 5 on June 24, 2021, as amended by Supplement No. 6 on October 14, 2021 and identified as Agreement No. **CCF02-18**. All provisions in the basic agreement remain in effect except as expressly modified by this supplement.

The changes to the Agreement are described as follows:

**I**

The "Completion Date" on the Agreement title page is amended as follows:

Completion Date December 31, 2024

**II**

The "Maximum Amount Payable" amount on the Agreement title page is amended as follows:

Maximum Amount Payable $3,353,739.00

**III**

**EXHIBIT A-2 Supplemental Scope of Work**, attached hereto and by this reference made part of the original Agreement, as additional work to be performed under Exhibit A.

**IV**

**EXHIBIT D Prime Consultant Cost Computations – Fee Schedule,** attached hereto by this reference made part of the previously amended Agreement, has been further amended and hereby replaces the previously amended EXHIBIT D, and adds supplemental cost computations for the additional work to be performed under Exhibit A-2 of this Agreement.

**V**

**EXHIBIT E Subconsultant Cost Computations – Fee Schedule**, attached hereto by this reference made part of the previously amended Agreement, has been further amended and hereby replaces the previously amended EXHIBIT E, and adds supplemental cost computations for the additional work to be performed under Exhibit A-2 of this Agreement.

If you concur with this supplement and agree to the changes as stated above, please sign in the appropriate spaces below and return to this office for final action.

By: **JACOBS ENGINEERING GROUP, INC.**

Kristie Casarez Digitally signed by Kristie Casarez
Date: 2022.04.18 07:38:49 -07'00'

Consultant Signature

By: **SNOHOMISH AGENCY**

Klein, Kenneth
2022.05.12 07:46:16 -07'00'

Approving Authority Signature

Date

Supplement No. 7
Snohomish County Public Works
Final 90% Design Plans, Specifications and Estimate for
Ash Way: 164th St SW to Gibson Rd
RC-1638, UPI# 11-0011-1

## INTRODUCTION

This amendment includes Final 90% Design Plans, Specifications and Opinion of Cost for construction.

Final 90% Design is based on the proposed improvements shown on the 60% Ash Way: 164TH ST SW TO GIBSON RD plans submitted in Spring of 2021 and the 60% comments provided by the AGENCY.

The target for completing final 90% design deliverables is 24 months following this supplement's notice to proceed.

The full impact of the COVID-19 pandemic is not fully known at this time. The schedule and cost estimate for the work outlined in this proposal are based on typical project delivery estimates and assumptions without taking into consideration any schedule or cost impacts resulting from any COVID-19 federal, state, or local restrictions or guidelines. Any schedule delays or cost impacts resulting from COVID-19 restrictions will be assessed by the CONSULTANT and communicated to the AGENCY, and vice versa.

## GENERAL SCOPE OF SERVICES

*(Amend the original scope of work to include the following additional scope of work summary)*

This scope of work describes the work elements to be accomplished by the CONSULTANT as summarized under each Task. This scope consists of the following work elements:

Task 1 – Project Management and Coordination
Task 2 – Survey and Basemapping
Task 3 – Right-of-Way Assistance and Coordination
Task 4 – Environmental and Public Involvement Support
Task 5 – Agency Coordination
Task 6 – Geotechnical Coordination
Task 7 – Utility Coordination
Task 8 – Storm Drainage Design
Task 9 – Swamp Creek Culvert Design
Task 10 – Curb Ramp Type and Location Analysis (No additional work in this supplement)
Task 11 – 60% Plan Preparation, Specification List and Opinion of Cost (No additional work in this supplement)
Task 12 – Roundabout Design (No additional work in this supplement)

Agreement Number: CCF02-18

Task 13 – Project File Management and Electronic Exchange of Engineering and Other Data (No additional work in this supplement)

Task 14 – Final Design (new task)

Task 15 – Final Design Project File Management and Electronic Exchange of Engineering and Other Data (new task)

This Scope of Services is defined in the tasks below:

**SCOPE OF SERVICES DEFINED**

**Task 1 – Project Management and Coordination**

*(Amend the original scope of work with the following)*

Overall project management and coordination work elements include:

**1.1 Project Administration**

The CONSULTANT will provide project management and administration (including invoicing, monthly progress reports, and schedule updates) and coordination with AGENCY staff throughout the project's duration. The CONSULTANT will provide oversight, direction, and management of the consultant's project team for execution of work as identified in this scope of services and will monitor the project budget and schedule. For budgeting purposes, the project duration is assumed to be 24 months, beginning from this supplement's notice to proceed.

The CONSULTANT will manage the schedule, scope, budget, and quality of deliverables over the term of the Agreement. Progress report including project progress, upcoming work, schedule status and financial status will be included with each invoice. This work element is intended to help monitor costs and budgets, and to propose corrective actions. This will include development of formal scope and/or budget modifications.

The CONSULTANT's Project Manager will maintain communication with the AGENCY's Project Manager and the CONSULTANT's Project Team via informal meetings, telephone discussions, electronic mail, and other means necessary.

**1.2 Project Coordination Meetings**

Participate in coordination meetings, assuming monthly for the first 15 months and biweekly for the last 9 months, (assume 33 meetings). Attend up to twelve (12) additional coordination meetings with AGENCY resource groups and staff on an as needed basis. Project coordination meetings are anticipated to last approximately 1 hour each. The CONSULTANT will prepare meeting agendas and meeting notes with the assistance from the AGENCY. Utility coordination meetings are not included in this task (see Task 7). Up to five (5) staff will attend each coordination meeting.

**1.3 Project Work Plan**

The CONSULTANT will update a work plan for the project after the Notice to Proceed which includes a project team communication plan, identification of deliverables and a quality control plan.

### 1.4 Project Schedule

The CONSULTANT will create, maintain, and submit a Microsoft Project schedule including milestones dates for each work item and will include AGENCY predecessor tasks (if provided by the AGENCY). The CONSULTANT will update and submit this schedule up to eight (8) times as requested by the County throughout the life of the project.

Assumptions for Task 1:

- Project meetings will all be held online via MS Teams.
- The number of CONSULTANT's staff attending each meeting are approximate and limited to the hours shown within the project level of effort (budgeting) spreadsheet.
- Hours required for quality control (checking) of work products are included in the tasks under which those work products are scoped.

Deliverables for Task 1:

- Project Meeting Agenda and Meeting Notes, when applicable (up to 45 meetings)
- Monthly Invoices and Progress Reports (up to 24 invoices)
- Draft and Final project work plan including the Quality Assurance plan (1 each)
- Project Schedule (up to 8 (eight) project schedule updates in Microsoft Project)

**Task 2 – Survey and Basemapping**

*(Amend the original scope of work with the following)*

The CONSULTANT will provide supplemental 90% design level topographic mapping services.

Additional Topographic Mapping Services (as defined below): This task includes up to twenty- seven (27) working days of supplemental field topographic survey work with corresponding office mapping support.

Supplemental 90% design level 3D laser scanning and mapping will be provided if rights of entries are unable to be obtained along roadway corridor. Primary focus of the laser scanning is to obtain open driveways and adjacent front yard areas not obstructed from sight.

The level of effort to perform this task is limited to hours shown within the project level of effort (budgeting) spreadsheet which includes project management, data processing and Quality Control for supplemental survey and potholing.

### 2.1 Survey PM, Admin, QA/QC

This task includes the survey project management, administrative duties, and quality control required for a project of this complexity and magnitude.

### 2.2 Survey Control

Survey horizontal and vertical datums will be based on the provided Snohomish County survey control.

## 2.3 DTM (Digital Terrain Model) Supplement and Update

This task includes the field surveying and mapping required for this specific effort.

- Supplemental mapping of areas that lack sufficient 3-dimensional data.
- These areas are defined in figures on pages 6-10.

## 2.4 Modified Areas

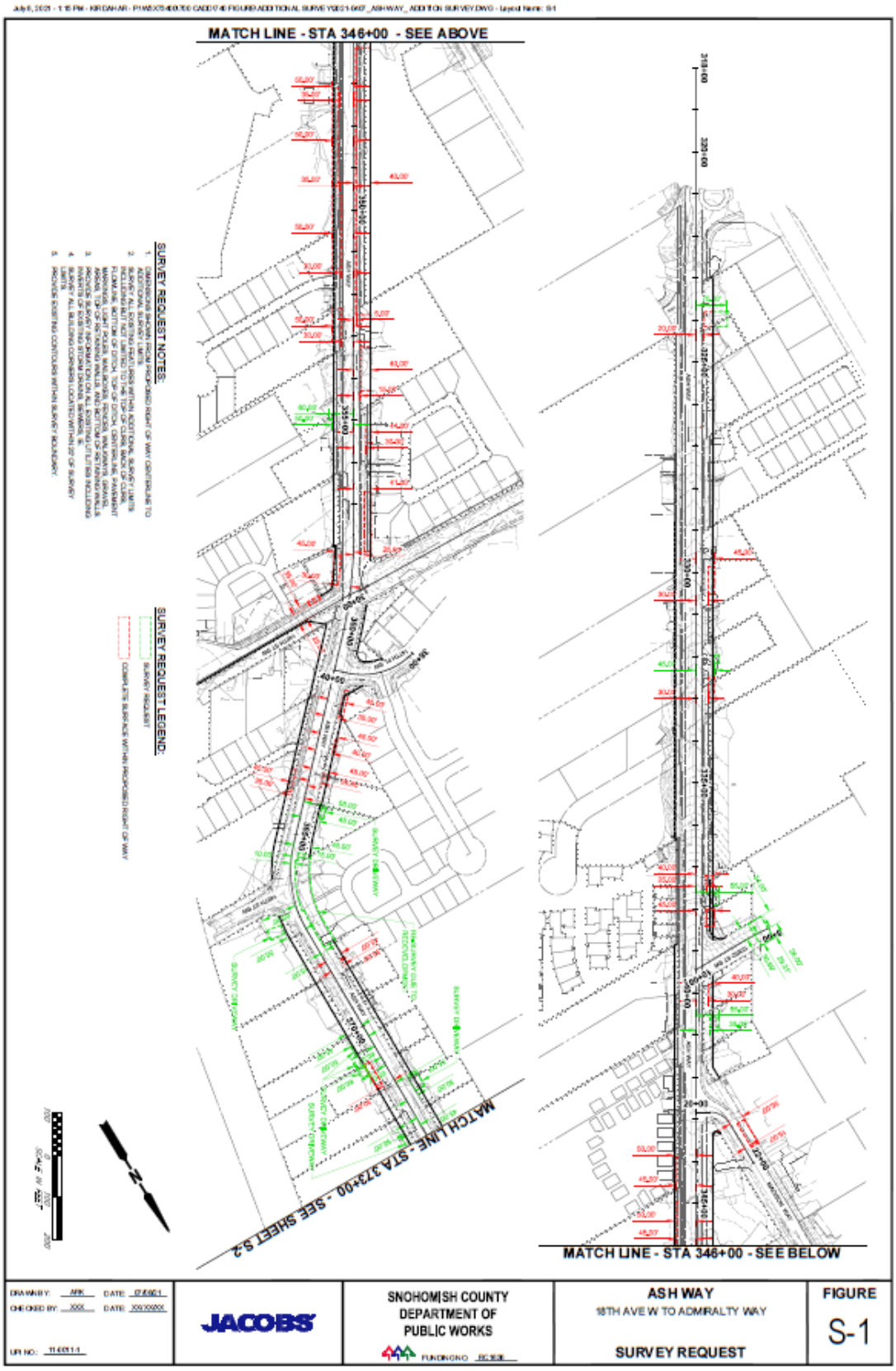
This task includes the field mapping of areas that have been modified since the original mapping was performed.

- Several areas have been identified as being developed or otherwise modified since the original basemap was created. These areas are shown in green on pages 6-10. In addition to the areas shown below, survey for TDA 5 Pond is included. The TDA 5 Vault included in the 60% design will be replaced with a TDA 5 pond, with the site yet to be determined. The same level of detail from previous mapping efforts will be used for these modified areas.

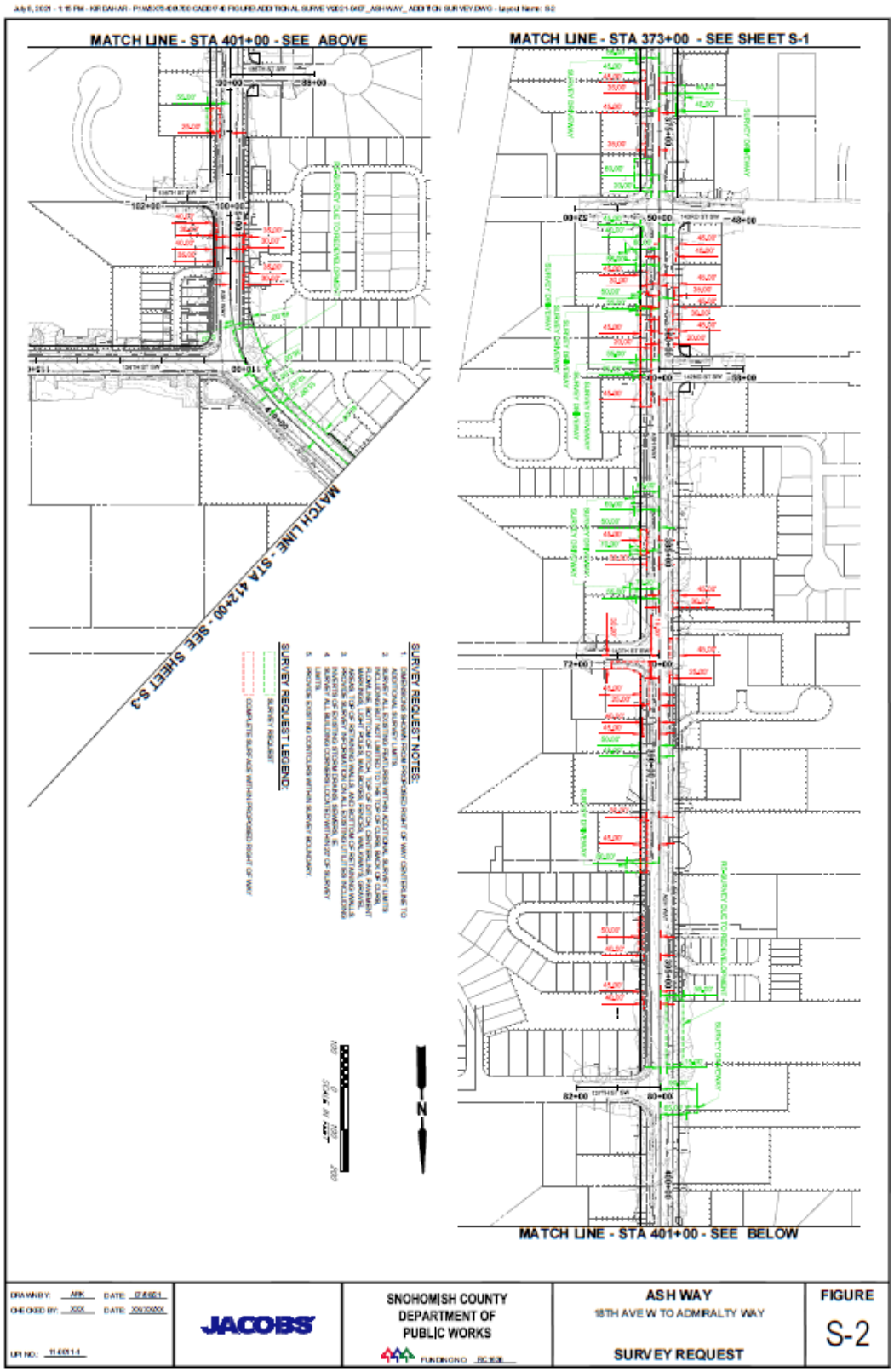
## 2.5 Miscellaneous Survey Areas

- As development, including corridor overlays, occurs along the corridor additional survey may be needed. The CONSULTANT will identify the limits of the additional survey needed and submit the information to the AGENCY for approval. The level of effort to perform this task is limited to hours shown within the project level of effort (budgeting) spreadsheet.

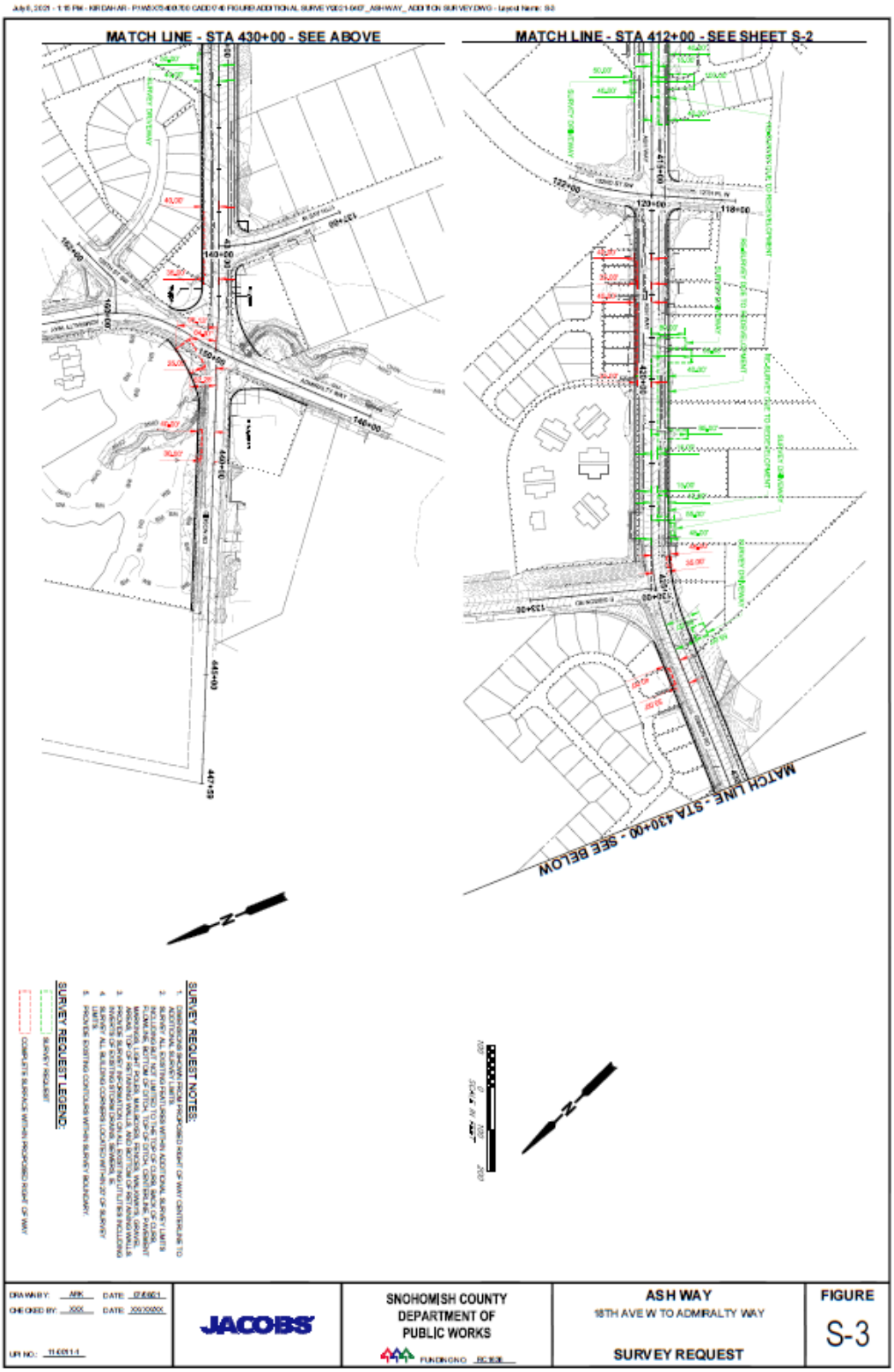
**Survey Figure S-1**



**Survey Figure S-2**



**Survey Figure S-3**



**Survey Exhibit B**


**POND - TDA 1**

**Parcel ID:** 00373701700901
**Property Address:** UNKNOWN
**Owner:** SNOHOMISH COUNTY


**POND - TDA 3**

**Parcel ID:** 00373701100201
**Property Address:** 14909 ASH WAY
**Owner:** NICKELSON SONG KYLA

ATTACHMENT B - POND PARCELS

Agreement Number: CCF02-18

**Survey Exhibit B**


**POND - TDA 7**

**Parcel ID:** 00374700001100
**Property Address:** 13628 ASH WAY
**Owner:** TOR CORPORATION


**POND - TDA 11**

**Parcel ID:** 00374000001100
**Property Address:** 1714 GIBSON RD
**Owner:** FLETCHER HENRY VR III

ATTACHMENT B - POND PARCELS

## 2.6 Utility Information Gathering

The CONSULTANT will complete field survey of existing above ground utility features and evidence of below ground utilities as identified by the Washington Utility Notification Center (One Call) Services within the PROJECT limits. The CONSULTANT will field mark the project limits on the existing pavement. The AGENCY will notify One Call. Surface observable utilities and potholes locations (reference task 2.9) will be located as found within the surveying limits. Measure downs for sewer manholes and cleanouts, water valves, catch basins and storm drain manholes with pipe size, material, direction, and invert elevations will be obtained, if possible, at each structure. Nearest drainage structures outside the mapping limits will also be collected.

## 2.7 Additional Mapping for Swamp Creek

This task includes the additional mapping of the culvert at the intersection of Gibson Rd and Admiralty Way.

- Additional mapping will be collected at the inlet and outlet of the culvert including more detail of the culvert itself and the surrounding pool at the upstream end of the culvert.

## 2.8 Tree Locations

This task will survey trees within the project area. Tree diameters, type (deciduous/evergreen) and driplines will be surveyed and added to the base file.

- Trees greater than 6" Diameter at Breast Height (DBH) will be located.

## 2.9 Pothole Locations

The CONSULTANT will survey pothole locations performed by the utility companies. The level of effort to perform this task is limited to hours shown within the project level of effort (budgeting) spreadsheet.

Assumptions for Task 2.9:

- The CONSULTANT will not perform the potholes.

## 2.10 Office Processing

This task includes the office processing of the collected survey data, data extraction, field book note reductions, CADD drafting, and other duties required for the generation of the deliverable(s). For 3D laser scanning efforts, sub-tasks include the registering of point clouds; evaluating the registrations; exporting the point cloud data to AutoCAD Civil3D; creating or picking of appropriate points in AutoCAD Civil3D; Linework and Layering, and standard CADD drafting of the deliverables. AutoCAD Civil 3D deliverables will be compliant with Snohomish County drafting standards.

CONSULTANT will provide an AutoCAD Civil 3D drawing containing only the mapping performed by the CONSULTANT. CONSULTANT will also integrate the Snohomish County collected mapping into a separate standalone drawing for the use of the design team. A merged DTM of both the CONSULTANT and the Snohomish County DTMs will also be provided.

Assumptions for Task 2:

- Right of Entries (ROE) if required, will be organized, secured, and confirmed by the AGENCY.
- Boundary and Right-of-Way resolution are not a part of these services.
- A Record of Survey/setting of property corners is not a part of these services.
- The AGENCY will notify One-Call.

- Locating geotechnical boreholes (see Task 6) and utility potholes are part of this contract.
- Snohomish County to provide survey control.
- Snohomish County mapping will be provided to CONSULTANT as soon as possible.
- Professional certification of any mapping by CONSULANT will be limited to only mapping that was collected by the CONSULTANT.
- If laser scan is used, best attempts will be made to scan beyond the Right-of-Way limits including driveways.

Deliverables for Task 2:

- Two supplemental AutoCAD Civil 3D (e-transmitted) survey base maps at 1"= 20' (electronic copy) in Snohomish County Standards. Initial plan with the proposed pothole locations and updated pothole plan with final locations.
- Land XML-compatible digital terrain model (DTM): 2 surfaces, one stand-alone of supplemental survey, and one combined surface.
- ASCII file (including land xml file of the point cloud data if obtained) with point numbers, coordinates, elevations, and descriptions for each survey point, with benchmarks and survey control points clearly identified.

**Task 3 – Right-of-Way Assistance and Coordination**

*(Amend the original scope of work with the following)*

The CONSULTANT will work with the AGENCY to determine changes to Right-of-Way lines and easement areas. The CONSULTANT will provide up to four (4) AutoCAD Civil 3D base files containing proposed line work for permanent right-of-way and easements.

The CONSULTANT will provide up to thirty (30) figures in PDF format showing right-of-way impacts to assist the AGENCY with property owner discussions up to maximum of 120 staff hours, which includes quality control (QC).

Assumptions for Task 3:

- The AGENCY will be responsible for preparing and assembling all the Right-of-Way plans and acquisition documents, including easements in PDF format.
- Right-of-Way Appraisals, Acquisitions and Negotiation Services are not included in this scope of services.
- The AGENCY will facilitate and attend all property owner discussions.
- The CONSULTANT is not participating in property owner discussions.

Deliverables for Task 3:

- AutoCAD Civil 3D files (e-transmitted with all the necessary data shortcuts), using AGENCY standards, containing proposed line work for permanent right-of-way and easements for road and drainage improvements; and approximate temporary easements for construction of driveways and cut/fill slopes (up to four (4) transmittals).
- Property owner figures showing proposed impacts.

**Task 4 – Environmental and Public Involvement Support**

*(Amend the original scope of work with the following)*

The CONSULTANT will assist the AGENCY with environmental documentation and public involvement as defined below.

### 4.1 Support for Environmental Documentation and Permit Requirements

CONSULTANT will provide supporting data for environmental permit development by the AGENCY, based on 90% design development of the project including Swamp Creek Culvert. The CONSULTANT will provide disturbed area base file in AutoCAD Civil 3D and EXCEL file. The disturbed area base file will include cut/fill lines, disturbed area, quantity boundaries and wetland/stream impacts lines. The EXCEL file will include earthwork quantities, amount of existing and new impervious surfaces and flow control/water quality information. Additionally, CONSULTANT will provide input for the environmental permit applications developed by the AGENCY. The CONSULTANT will provide permit application fill-in information as requested by the AGENCY. The level of effort to perform this task is limited to the level of hours shown within the project level of effort (budgeting) spreadsheet.

Assumptions for Task 4.1:

- The AGENCY will coordinate, create, and apply for all environmental permits.
- The AGENCY is proceeding with design as a federally funded project in the event that federal funds are allocated.
- If additional wetland and stream impacts are identified after the 60% design phase. AGENCY staff will provide updated wetland delineations to the CONSULTANT in AutoCAD Civil 3D. The CONSULTANT will overlay wetland/stream impacts lines in AutoCAD Civil 3D quantifying the extent of critical areas impacts (wetland, stream, and buffer impacts).

Deliverables for Task 4.1:

- Disturbed area base file - One (1) AutoCAD Civil 3D file (e-transmitted)
- Disturbed area EXCEL file - One (1) EXCEL

### 4.2 Assistance in Public Involvement

CONSULTANT will participate in an open house. CONSULTANT will provide four (4) staff to attend open house. CONSULTANT will provide figures and plots as requested by the AGENCY, with effort to be limited to that allocated within the level of effort budgeting spreadsheet.

Assumptions for Task 4.2:

- The AGENCY will lead public outreach efforts.
- The AGENCY will coordinate open house location.

Deliverables for Task 4.2:

- Figures and Roll plots as requested by the AGENCY
- Attendance of Open House

**Task 5 – Agency Coordination**

*(Amend the original scope of work with the following)*

The CONSULTANT will update plans showing mailbox information, to be submitted to the US Post Office for review by the AGENCY. The CONSULTANT will update plans showing transit stop information, to be submitted to Community Transit for review by the AGENCY. The AGENCY will provide the CONSULTANT with related information necessary in the preparation of these plans.

Assumptions for Task 5:

- The AGENCY will coordinate with the Postal Service and Transit Agencies.
- The CONSULTANT will participate in a coordination meeting with the US Post Office and Community Transit (2 – one-hour meetings)
- The AGENCY will provide meeting agenda, minutes, and direction on locations for mailbox relocations and transit stops.
- The design of the mailboxes and transit stops will be incorporated into the 90% roadway plans. Mailbox and transit plans will be submitted to the AGENCY separate from the 90% plans.

Deliverables for Task 5:

- One update to AGENCY mailbox relocation plans. (PDF)
- One update to AGENCY transit stop plans. (PDF)
- Meeting attendance for agency meeting.

**Task 6 – Geotechnical Coordination**

*(Amend the original scope of work with the following)*

The CONSULTANT will provide a base file in AutoCAD Civil 3D identifying areas needing geotechnical exploration. The file will include geotechnical exploration locations for proposed wall locations, signal pole locations and stormwater facility locations for use by the AGENCY in developing a geotechnical investigation plan.

The CONSULTANT will attend four (4) coordination meetings with a AGENCY geotechnical engineer. Meetings will be one (1) hour each with two (2) attendees from the CONSULTANT. The CONSULTANT will prepare meeting agendas and meeting notes with the assistance from the AGENCY.

Assumptions for Task 6:

- The AGENCY will perform all geotechnical exploration.
- The AGENCY will provide a stamped Geotechnical Report for the project. This report will include retaining wall type recommendations with retaining wall and stormwater (infiltration data) design parameters.

Deliverables for Task 6:

- Geotechnical exploration base file in AutoCAD Civil 3D (e-transmitted)
- Attend coordination meeting with AGENCY geotechnical staff including meeting agendas and minutes.

**Task 7 – Utility Coordination**

*(Amend the original scope of work with the following)*

The AGENCY will coordinate with the various public and private utilities along the route. Coordination will include working with the identified utilities to allow for each to be included under the AGENCY's project permits and environmental documents.

The CONSULTANT will create utility conflict plans to assist the AGENCY with utility relocations.

Due to the uncertainty inherent in coordinating utility relocations, additional work beyond what the level of effort estimated for this task may be required. Additional work requested by the AGENCY project manager may require a supplement.

The CONSULTANT's specific tasks for utility coordination are described below:

## 7.1 Utility Conflict Plans

The AGENCY will coordinate with the utilities to request utility as-builts.

The CONSULTANT will compare its own surveyed utility CAD file with the as-built file provided by the AGENCY. The CONSULTANT will go on a site visit to review the utility mapping. If conflicting information is determined: the CONSULTANT will field verify existing utilities up to the 40 hours allocated within the level of effort budgeting spreadsheet.

Due to construction phasing and additional developer improvements: the CONSULTANT will create 2D utility conflict plans between 18th Avenue W and 135th St SW and utility conflict plan and profiles between 135th St SW and Admiralty Way.

The CONSULTANT will determine potential utility conflicts, identify pothole locations, and check if conflict resolution requires a design change or utility relocation along Ash Way between 135th St SW and Admiralty Way.

The AGENCY will confirm the pothole locations and coordinate the necessary pothole work with the utility franchises.

The AGENCY will then assist in scheduling the time and day of potholing and have the CONSULTANT survey the pothole locations (See Subtask 2.9 for Survey Pothole Locations).

The CONSULTANT will survey pothole locations (horizontal and vertical) and add the information to the base map as defined in Task 2 and utility plans.

Upon determination of actual conflicts (post-potholing), the AGENCY will coordinate with utilities to provide notice, discussion, and resolution of all conflicts. Utility relocations that occur prior to completion of 90% plans will be shown in the plans by the CONSULTANT based on utility-provided plans or the latest available survey. The CONSULTANT will update the Utility Conflict plan and Utility Conflict EXCEL spreadsheet based on the outcome of the potholing and utility coordination meetings (limited to hours shown in the fee estimate).

The CONSULTANT will provide utility conflict plans (assume 33 plans) and profiles (assume 17 profiles) to the AGENCY and revisions (up to three (3) updates). The plan submittals will include:

Initial Submittal - Initial creation with preliminary pothole locations
Update One – Finalized pothole locations
Update Two - Updated to include pothole information
Update Three - Storm drainage revisions to avoid conflict

## 7.2 Franchise Utility Coordination

The AGENCY will arrange and facilitate utility coordination meetings. The CONSULTANT will attend up to nine (9) meetings with AGENCY and Utility Owners:

- Attend one meeting between the County and the Consultants to coordinate the utility conflict plan and spreadsheet. Assume one 2-hour meeting with two attendees from the consulting firm.
- Attend one 2-hour utility coordination kick-off meeting to discuss improvements, potential conflicts, and pothole locations. Assume two attendees from the consulting firm.
- Attend one 2-hour meeting to discuss the results for the potholing and the utilities that need to be relocated. Assume two attendees from the consulting firm.
- Attend one 2-hour meeting to discuss the underground relocation schedule and utility map. Assume two attendees from the consulting firm.
- Attend one 2-hour meeting to discuss the overhead relocation schedule and utility map. Assume two attendees from the consulting firm.
- Attend two 2-hour meetings to discuss the progress of the relocation, potential permits, easements' acquisitions, and agreements for the underground relocation. Assume two attendees from the consulting firm per meeting.
- Attend two 2-hour meetings to discuss the progress of the relocation, potential permits, easements' acquisitions, and agreements for the overhead relocation. Assume two attendees from the consulting firm per meeting.
- All meetings are assumed to be virtual.
- The CONSULTANT will prepare appropriate figures and the AGENCY will prepare meeting agendas and meeting minutes for the virtual utility coordination meetings. The CONSULTANT will provide figures (limited to hours shown in the fee estimate).
- The CONSULTANT will review and provide comments on (proposed) utility franchise relocation plans (up to seven plans).

Assumptions for Task 7:

- The following utilities and utility franchises exist along the project corridor:
  - Power (Snohomish AGENCY PUD)
  - Communication and Fiber-optics (Ziply Fiber and MCI)
  - Cable (Comcast and Wave Broadband)
  - Water (Alderwood Water and Wastewater District)
  - Gas Distribution (Puget Sound Energy)
- The AGENCY approach to utility coordination assumes that the design will be modified (wherever feasible) during the development of the 90% design to reduce the impact of utility relocations on development of the project.
- The utilities generally agree to bear the cost of the pothole work or perform the pothole work with their own forces. Potholing costs are not included in the fee estimate and it is assumed will be completed by the utility companies.

- Incorporation of any utility franchise design, such as new or upgraded waterlines, into the contract documents is not included in this scope of services and considered additional work.
- The AGENCY will prepare and maintain a utility coordination log.
- The CONSULTANT will provide utility conflict plans (assume 33 plans) and profiles (assume 17 profiles) to the AGENCY and revisions (up to three (3) updates).
- The CONSULTANT will create a utility conflict EXCEL spreadsheet and provide up to three (3) updates for proposed drainage designs.
- The AGENCY will prepare inter-local agency agreements between the AGENCY and the utility agencies for incorporation of contract services to be included in the AGENCY's construction contracts. Examples of the services that could be included: adjustment of utilities, removal of abandoned structures and facilities, trenching, relocation of water lines, and traffic control.

Deliverables for Task 7:

- Site visit to confirm utilities
- Site visit to delineate with white paint the project limits for One Call
- Create utility conflict plans (PDF and AutoCAD Civil 3D (e-transmitted) file)
- Three updates to utility conflict plans (PDF and AutoCAD Civil 3D (e-transmitted) file)
- Create utility conflict EXCEL spreadsheet
- Three updates to utility conflict EXCEL spreadsheet
- Attendance of virtual coordination meetings including figures
- Review and provide comments on (proposed) utility franchise relocation plans

**Task 8 – Storm Drainage Design**

*(Amend the original scope of work with the following)*

The 90% design will build off the 60% design noting the following impacts to the design effort:

- The TDA 5 Vault included in the 60% design will be replaced by a combined flow control/water quality pond, with the site yet to be determined.
- Limits of pervious sidewalk within the corridor will need to be revised based on the assumption that all developers will not be installing pervious sidewalk
- Because existing utility information was not available at 60%, it is assumed there will be utility conflicts and re-design of some portion of the conveyance system for the 60% design

## 8.1 Design Criteria

The drainage design will be developed using Snohomish County Engineering Design and Development Standards (EDDS), the 2021 edition of the Snohomish County Drainage Manual, and Snohomish County Code. The Department of Ecology (DOE) 2012 Low Impact Design Technical Guidance Manual for Puget Sound will also be used. Stormwater detention and water quality treatment will be designed according to the 2021 Snohomish County Drainage Manual. The flow control and water quality treatment Best Management Practices (BMPs), which may include detention ponds, vaults, bioretention cells, Filterra units, Modular Wetlands and plastic detention chambers will be designed and sized using MGSFlood V4, a HSPF-based continuous runoff model.

Assumptions for Task 8.1:

- The culvert crossing at 348+75 connecting Wetlands E and F is not currently classified as a stream.
- The culvert at 348+75 will be replaced; existing flows through the wetland will be determined (2, 25 and 100-year flows) and an analysis completed to analyze flow conveyance for the culvert

- The AGENCY will be responsible for wetland mitigation permitting and plans
- The CONSULTANT will be responsible for the hydraulic analysis and determination of the size and elevation of the culvert to retain the hydrologic connectivity between the two wetlands

## 8.2 Threshold Discharge Area (TDA) Maps

CONSULTANT will update the 60% threshold discharge area (TDA) maps to reflect any changes based on recent development along the Ash Way corridor, and the new TDA 5 pond location. The maps will show existing drainage features and patterns within the Ash Way corridor and identify TDAs, including the ¼ mile flow paths used in determining each TDA. The maps, produced by the CONSULTANT, will be prepared with aerial mapping background, and show critical areas such as wetlands and streams as delineated by the AGENCY.

These TDA maps will include:

- Threshold discharge areas for each basin
- Hatched or colored areas for new Pollution Generating Impervious Surface (PGIS), replaced PGIS, new Non-Pollution Generating Impervious Surface (NPGIS), and pervious surface
- Downstream discharge flow paths (1/4-mile distance)
- Wetlands, streams, riparian areas, and other critical areas (mapped by the AGENCY)
- Existing water wells and drain fields (determined during 60% phase)

The CONSULTANT will provide the TDA Maps to the AGENCY for one draft and one final review.

Deliverables for Task 8.2:
- Draft TDA Maps to be included as an Appendix in the drainage report (PDF and AutoCAD Civil 3D (e-transmitted))
- Final TDA Maps to be included as an Appendix in the drainage report (PDF and AutoCAD Civil 3D (e-transmitted))

## 8.3 Offsite Analysis

The CONSULTANT will review the downstream analysis completed for each TDA during the 60% design phase and update accordingly to address changes due to recent development.

The information of each TDA will be revised to include updates from the AGENCY Drainage Needs Report and recent drainage complaint information provided by the AGENCY.

One (1) site visit will be conducted to visually confirm the downstream conditions documented during the 60% phase have not changed significantly, and changes will be documented in the updated drainage report.

A review of the upstream off-site basins will be completed and off-site flow entering the Ash Way drainage system will be calculated using MGSFlood V4, a HSPF-based continuous runoff model.

Assumptions for Task 8.3:
- In areas that have been re-developed since the 60% submittal, the CONSULTANT will confirm the downstream routes and ¼ mile points for each TDA.

- The downstream analysis field work and visual inspection of the upstream contributing basin areas will be conducted on the same site visit. Field work to complete these tasks for the TDAs will be limited to hours shown in the fee estimate.
- The downstream route field investigation is assuming the CONSULTANT has or will have permission to enter private properties to conduct the work. Any formal permission to enter private property will be acquired by the AGENCY. The CONSULTANT will coordinate at least 96 hours in advance with the AGENCY prior to entering private properties.
- A quantitative analysis will not be provided, and detailed hydraulic analysis or computations of the downstream section is considered out of scope.

Deliverables for Task 8.3:

- Draft Offsite Analysis to be included as an appendix in the Drainage report (PDF)
- Final Offsite Analysis to be included as an appendix in the Drainage report (PDF)

## 8.4 Change in Land Use Area Maps

The CONSULTANT will update the maps prepared during the 60% phase that identify existing and proposed surface types and reflect changes due to limits of pervious sidewalk and the new TDA 5 pond. This is used for threshold determination in accordance with the drainage standards, and to identify mitigation needs for detention and stormwater quality treatment. TDA boundaries, based on roadway high points and conveyance system configuration, will be identified on these maps.

Deliverables for Task 8.4:

- Change in Land Use Maps and corresponding table of change in land use areas (PDF and EXCEL). These maps will include:
    - Existing Pollution Generating Impervious Surfaces (PGIS) and Non-Pollution Generating Impervious Surfaces (NPGIS) Maps (approximately 28 sheets)
    - Proposed Pollution Generating Impervious Surfaces, Replaced Impervious Areas and Non-Pollution Generating Surfaces Maps (approximately 28 sheets)
    - Tables identifying the different type of surface areas

## 8.5 Stormwater Quality Treatment Calculations

The CONSULTANT will prepare final calculations for stormwater quality treatment facilities using MGSFlood V4, a HSPF-based continuous model.

The CONSULTANT will provide maps/exhibits indicating where geotechnical explorations will be required for stormwater facilities feasibility and provide ongoing coordination with the AGENCY's geotechnical engineer.

Deliverables for Task 8.5:

- Stormwater Quality calculations (to be included in the Drainage Report)
- Map/exhibit of geotechnical exploration needs

## 8.6 Stormwater Flow Control Calculations

CONSULTANT will prepare final calculations for stormwater flow control (detention or infiltration) facilities using MGSFlood V4, a HSPF-based continuous model.

The CONSULTANT will provide maps/exhibits indicating where geotechnical explorations will be required for stormwater facilities feasibility and provide ongoing coordination with the AGENCY's geotechnical engineer.

Deliverables for Task 8.6:

- Storm Flow Control Calculations (to be included in the Drainage Report, PDF and electronic files)
- Map/exhibit of geotechnical exploration needs

### 8.7 Pipe Conveyance Calculations

CONSULTANT will prepare storm pipe conveyance capacity calculations for pipe segments within the road project in accordance with the Snohomish County EDDS Section 5-03 Conveyance Systems, 5-04 Conveyance Systems – Open Channels, 5-05 Conveyance Systems – Pipes and Snohomish County Code 30.63A.740. Calculations will include flow capacity, velocity, and hydraulic grade line for the pipe system.

Deliverables for Task 8.7:

- Conveyance Calculations (to be included in Drainage Report).

### 8.8 Gutter Flow Calculations

The CONSULTANT will conduct a gutter flow analysis for the entire project using the WSDOT spreadsheet or an equivalent spreadsheet. Results of the analysis will be included in the Drainage Report.

Deliverables for Task 8.8:

- Gutter Flow Calculations (to be included in Drainage Report).

### 8.9 Drainage Report

The CONSULTANT will assemble a draft (90%) Drainage Report. The drainage report will include a written assessment and summary of the surface water design features on the project, summary of tables, Site Assessment Maps, Offsite Analysis, Change in Land Use Maps, Stormwater Quality Treatment Calculations, Stormwater Flow Control Calculations, Pipe Conveyance Calculations, Gutter Flow Calculations, Culvert Design Calculations, and supporting exhibits.

This subtask will also include independent QA/QC reviews of the full drainage report for the 90% submittal. QA/QC reviews will be conducted by senior staff.

Deliverables for Task 8.9:

- Draft Drainage Report at pre-90% Design (two (2) hard copies, comb bound hard copies, one (1) electronic file transfer in Word/Excel (editable) and PDF formats)
- Finalized Drainage Report at 90% Design (two (2) comb bound hard copies, one (1) electronic file transfer in Word/EXCEL (editable) and PDF formats)

## Task 9 – Swamp Creek Culvert Design

*(Amend the original scope of work with the following)*

The existing Swamp Creek fish passage pipe arch culvert at the intersection of Admiralty Way and Gibson Road will be replaced with a larger fish passage structure. The culvert design shall comply with WAC 220-660-190 & WAC 220-660-200.

**Structures Preliminary Design**
The CONSULTANT will meet with the AGENCY to discuss culvert options before proceeding with preliminary evaluation, then prepare the Basis of Design Memorandum. The CONSULTANT shall evaluate up to three different structure alternatives for use at proposed culvert location based on the hydraulics analysis and roadway conditions and determine the most feasible type, size, and location of the new fish passage culvert. The new culvert may need to be constructed in stages to maintain traffic during construction, but it will be evaluated with inputs from the AGENCY and other team members.

**Hydraulic Preliminary**
The CONSULTANT will prepare hydraulic calculations and stream design for the full replacement of the existing Swamp Creek pipe arch culvert at the intersection of Admiralty Way and Ash Way. Stream Simulation methodology will be used for the culvert design to provide fish passage, and it is assumed the existing culvert will be replaced entirely with a three-sided concrete structure. The design will be developed using the Washington Department of Fish and Wildlife (WDFW) 2013 Water Crossing Design Guidelines.

The CONSULTANT and AGENCY will meet to determine if the upstream channel needs to be realigned. If realignment is needed, the upstream channel may be realigned up to a distance of 250' upstream and 50' downstream of the culvert to provide better fish habitat, reduce scour on the upstream end of the culvert, and to provide a consistent channel slope that eliminates the vertical drops in the existing channel.

## 9.1 Meetings and Stakeholder Coordination

The CONSULTANT will participate in the following meetings:

- One (1) meeting with the AGENCY Design, Environmental, and Surface Water Management (SWM) staff to discuss channel realignment and go over the comments and input from the WDFW and Tribes gathered during the "Bankfull Widths' Measurements" site visit.
- One (1) site visit with AGENCY, WDFW, and Tribes to discuss proposed design.
- Two (2) follow-up virtual meetings with AGENCY, WDFW, and Tribes to discuss comments on the preliminary culvert plans and other design criteria. The AGENCY will lead the coordination effort, and the CONSULTANT will participate.
- One (1) meeting to present the three (3) structural options for proposed culvert to the AGENCY
- Attendance of up to two (2) culvert design coordination meetings

Assumptions for Task 9.1:

- Up to four (4) CONSULTANT staff members will attend each meeting listed above.
- The CONSULTANT will provide the agenda and minutes for the coordination meeting with the AGENCY to discuss the channel realignment and earlier comments from the WDFW and Tribes.
- The AGENCY will provide the agenda and minutes for all the coordination meetings with the stakeholders.

## 9.2 Culvert Alternative Analysis

The CONSULTANT will prepare the Culvert Alternative Analysis. The analysis will include:

- Draft Culvert Alternative Memo
    - Three (3) conceptual alternatives for review including:
        - Description
        - Evaluation criteria (Pros/Cons)
        - Planning level cost estimate

    - Type, Size & Location (Include a section in the memo for TS&L)
        - Plan, Elevation, and Typical Section of Preferred Alternative
- Final Culvert Alternative Memo
    - Review AGENCY provided comments
    - Comment resolution meeting
    - Address AGENCY provided comments

### 9.3 Culvert Design Memo Update

The CONSULTANT will update the 60% Culvert Design Memo as follows based on the preferred culvert alternative:

- Finalize the bankfull width memo based on comments from the AGENCY, agencies, and tribes.

- Calculate the upstream floodplain utilization ratio based on additional topographic survey and field reconnaissance of the upstream area.

- Utilize the additional topographic survey to update the HEC-RAS model. The HEC-RAS model will be used to size the proposed crossing structure and develop the typical channel section.

- Conduct a stream bed material analysis, using at least three pebble counts along the channel, to aid in developing the streambed material recommendations for the open channel and culvert.

- Address comments on the draft "Swamp Creek Basis of Design Memo" and update the memo to the 90% design phase.

The CONSULTANT will complete analysis and design for the culvert as follows:

    - Hydraulic Analysis
        - Model flows using HEC-RAS for the existing culvert and stream (conditions when survey was completed)
    - Model flows using HEC-RAS for the proposed culvert (based on selected alternative) and existing stream
        - Model flows using HEC-RAS for the proposed stream realignment and proposed culvert
- Geomorphic Study (including the 6 steps below)
    - Define Stream platform, bed, channel geometry, wood loading, and riparian characteristics
    - Evaluate Land use changes
    - Assess Overall stability
    - Evaluate Lateral stability
    - Evaluate Vertical stability
    - Evaluate Channel response to Change
- Scour Analysis
- Climate Change Analysis for preferred alternative
    - Use WDFW Culverts and Climate Change web app
- Identify ROW impacts (TCE's and Permanent Easements)

### 9.4 Plans

The CONSULTANT will prepare 60% level plans for the following sheets:

- Stream Plan and Profile (up to 3 sheets)
- Stream Channel Typical Sections (up to 2 sheets)
- Stream Details (up to 2 sheets)
- Culvert Replacement Plan and Elevation (up to 1 sheet)
- Culvert Structural Plan and Elevation (up to 2 sheets)
- Culvert Structural Details (up to 2 sheets)
- Temporary Stream Bypass Plans (up to 1 sheet)

Assumptions for Task 9:

- The AGENCY's SWM Staff provided flows for Swamp Creek at the 60% design phase. These flows from the AGENCY HSPF model will be used for hydraulic modeling for the 90% design.
- Large Woody Debris (LWD) will be incorporated into the design of the channel..
- The channel will not be realigned outside of the 300' referenced above.
- Stream Simulation methodology will be used.
- The AGENCY will compile a single document with comments from agencies and tribes on bankfull width memo.
- The structural design of culvert structure and wingwalls will be in accordance with the WSDOT Bridge Design Manual.
- This scope is based on a prefabricated three-sided precast concrete culvert. The final PS&E will specify the manufacturer will prepare the structural calculations and plans to submit to the AGENCY for review and approval for construction.
- Bridge load rating analysis will be performed by the Consultant who prepared the structural design and plans for the prefabricated concrete culvert.
- All necessary permits and coordination for the removal of the existing culvert and construction of the new culvert (HPA, etc.) will be provided by the AGENCY.
- All other adjacent private culverts will not be removed or replaced as part of this scope of work and are expected to remain in place as potential barriers to fish passage.
- Geotechnical investigation for the design of the culvert structure and its wingwalls, which will include design parameters required for structural design and culvert and its wingwalls/retaining walls construction, will be performed by the AGENCY and provided to the CONSULTANT.
- The AGENCY will be the geotechnical engineer of record for all culvert structures and culvert structure wingwalls.
- The AGENCY will provide unit costs for planning level cost estimate.

Deliverables for Task 9:

- Meetings and stakeholder coordination meeting minutes input (up to 6 meetings)
- Site visit (up to 1 meeting)
- Culvert Alternative Analysis
    - Draft and Final
- Culvert Design Memorandum
    - Draft and Final
- PDF and word document and supporting files in original format
- 60% Stream Restoration Plans (up to 13 sheets)
- 90% Plans see Task 14

**Task 10 - Task 13**
*(No additional work in this amendment)*

**Task 14 – Final Design**
*(New task from original contract)*

The CONSULTANT will prepare 90% level plans, details, bid items, quantities, special provisions, and estimate for detailed review by AGENCY staff. The 90% package will incorporate comments from the 60% AGENCY review.

### 14.1 Roadway Design

The CONSULTANT will finalize the proposed surface including the following items:

- Finalize surfaces for the side streets
- Update the corridor model with the new survey
- Update model with items from the 60% comments
- Refine model based on the proposed culvert on Admiralty Way and Gibson Road (assume revisions within 300 ft of the proposed culvert)

Assumptions for Task 14.1:

- Only minor modifications will be made to the current profile for Ash Way
- Update side street profiles highlighted based on AGENCY's 60% review comments
- Surfaces will be combined into one final proposed surface

Deliverables for Task 14.1:

- AutoCAD Civil 3D (e-transmitted) file of proposed surface

### 14.2 Signal Design and Plans

The CONSULTANT will develop the Basis of Design documentation including jurisdictional design standards, design documentation, and deviation documentation for traffic signal design. The following are the locations identified for traffic signal and pedestrian warning beacons:

- Ash Way and 134$^{th}$ St SW (Traffic Signal, 1 location)
- Rectangular Rapid-Flashing Beacon (three (3) locations)

The design criteria will be based on Chapter 7 of the EDDS, 2021, and the WSDOT Design Manual and other applicable standards.

The CONSULTANT will develop 30%, 60% and 90% Traffic Signal Plans. Traffic Signal Plans will be 1"=20' plans and will include location of new signal poles, planned signal phasing, controller location, signal head displays, loop layout, pole schedule, general notes, and all other details for a complete signal installation. The signal design will be coordinated with civil design to maintain/provided ADA pathways.

Each submittal will advance plans to the next design level. Design issues will be resolved prior to developing the 90% design submittal.

Assumption for Task 14.2:

- Signal warrant analysis has not been completed for the intersections of Ash Way and 134th St SW and Admiralty Way and Gibson Rd.
- Signal warrant analysis has not been included in the current scope. AGENCY will provide the signal warrant analysis.
- 30% Signal Plans: preliminary signal pole layout locations.
- 30% and 60% Signal and Illumination plans will be submitted together.
- 90% Signal Plans will be submitted with the 90% package.

Deliverables for Task 14.2:

- Draft Basis of Design Document (PDF)
- Final Basis of Design Document (PDF)
- 30% Submittal: Preliminary signal layout plans (PDF)
- 60% Submittal:
    - 60% Signal Plans and Details incorporating AGENCY comments on 30% submittal (PDF)
    - Comment responses to 30% comments (PDF)

### 14.3 Illumination and Interconnect Design and Plans

The CONSULTANT will develop the preliminary design lighting analysis memorandum including jurisdictional design standards, design documentation, and deviation documentation for illumination design. The lighting analysis will be conducted for the 2.2 mi Ash Way project corridor with modeled photometrics, in AGI32, and depict existing luminaires, or new luminaires to meet lighting guidelines per EDDS and WSDOT Design Manuals. The lighting analysis will be summarized in a Final Illumination Memo including lighting level results.

Three empty conduits will be provided; two 4-inch and one 2-inch; and associated junction boxes for the future installation of interconnects.

The CONSULTANT will coordinate with Snohomish County PUD to verify available power locations for illumination and to confirm power requirements with the AGENCY.

Each submittal will advance plans to the next design level. Design issues will be resolved prior to developing the 90% design submittal.

The CONSULTANT will develop 30%, 60% and 90% Illumination Plans. Illumination and Interconnect Plans will be developed at 1" =20' scale for the corridor. The lighting and interconnect plans will include street luminaires, poles, pedestrian lights, conduits, junction boxes for lighting, spare conduits, junction boxes for interconnects and electrical services.

Assumption for Task 14.3:

- The AGENCY will complete the illumination warrants for the corridor.
- 30% Illumination and Interconnect Plans: preliminary illumination pole locations.
- Signal and Illumination plans (30% and 60%) will be submitted together (see Subtask 14.2).
- 90% Illumination Plans will be submitted with the 90% package.

Deliverables for Task 14.3:

- Draft Design Lighting Analysis Memo (PDF)
- Final Design Lighting Analysis Memo (PDF)
- 30% Submittal: Preliminary illumination pole layout plans (PDF and AutoCAD Civil 3D (e-transmitted))
- 60% Submittal:
    - 60% Illumination Plans and Details incorporating AGENCY comments on 30% submittal (PDF and AutoCAD Civil 3D (e-transmitted))
    - Comment responses to 30% comments (PDF)

### 14.4 Retaining Walls for Ponds

The CONSULTANT will develop the cut retaining walls around Ponds 3, 5, and 11, up to 1,100ft linear foot with exposed wall height ranging from 6-9ft, to a 90% design. Retaining wall types will be determined by the CONSULTANT with recommendation from the AGENCY.
The AGENCY will arrange and facilitate coordination meetings. Retaining wall coordination meetings are anticipated to last approximately two hours each. The CONSULTANT will prepare meeting agendas and meeting notes. The CONSULTANT will attend up to two (2) virtual meetings with the AGENCY:

- Initial geotechnical kickoff meeting with the AGENCY geotechnical engineer and CONSULTANTS.
    - Assume four attendees from the consulting firm.
    - Assume geotechnical information is available for all ponds.
- Over the Shoulder 60% design review meeting with the AGENCY geotechnical engineer and CONSULTANTS.
    - Assume four attendees from the consulting firm.

Assumption for Task 14.4:

- Selected retaining wall types will be cast-in-place or MSE wall.
- The AGENCY geotechnical engineer will serve as geotechnical engineer of record for retaining wall design as defined in Section 14.4.

Deliverables for Task 14.4:

- Over the shoulder 60% retaining wall plan set including:
    - Retaining wall plans and profile (up to 14 sheets)
    - Retaining wall details and typical sections (up to 6 sheets)
    - Submitted seven days prior to over the shoulder 60% coordination meeting in PDF format
- Attendance of meetings including meeting agendas and minutes (up to 2 meetings with 4 CONSULTANTS)
-

### 14.5 Construction Sequencing and Detour Plans

The CONSULTANT will prepare 90% Construction sequencing for Admiralty Way and Gibson Road. Construction staging will include the following:

- 6-8 stages to construct the roundabout and culvert
    - Up to 2 cross sections per stage
    - Culvert will be constructed in 2 or 3 sections
    - Intersection sequencing overview will be shown with hatching, ~~no~~ traffic control plans will be provided.
- Up to 4 detour plans

The CONSULTANT will prepare 90% sequencing plans for Ash Way & 134th St SW and Gibson Rd & Admiralty Way

- Gibson Rd & Admiralty Way
    - Intersection sequencing overview will be shown with hatching, no traffic control plans will be provided.
- Ash Way & 134th St SW
    - Intersection sequencing overview will be shown with hatching, no traffic control plans will be provided.

The CONSULTANT will attend up to 6 meetings to coordinate the sequencing and detour plans (up to 6 CONSUTLANT)

Deliverables for Task 14.5:

- 90% Construction Sequencing  see Task 14.6
-

**14.6 Final Design PS&E (90%)**

The CONSULTANT will prepare 90% level plans, details, bid items, quantities, special provisions, and estimate for detailed review by AGENCY staff. The 90% design will incorporate the agreed upon 60% AGENCY review comments.

Final Design is based on the proposed improvements shown on the 60% Ash Way plans and the AGENCY's 60% review comments.

Final Design will provide detailed grading and design layouts for up to 45 Tier 2 curb ramps based on Snohomish County ADA Design and Plan Production Guidelines. It is assumed that the additional 25 curb ramps proposed along the corridor are Tier 1 ramps and will reference a WSDOT standard plan and no detailed grading will be provided at these locations.

Design documents will include the following:

**90% Plans:**

It is anticipated that the 90% plans will consist of the following sheets:

- Cover Sheet with Vicinity Map and Index (1)
- Survey Control Sheets (17 Provided by the AGENCY)
- Legend, Abbreviations and General Notes (1)
    - Legend will be based on AGENCY provided symbols.
- Temporary Erosion and Sediment Control Notes (1)
- Temporary Erosion and Sediment Control Plans (33)
- Site Preparation Plans (33)
- Site Prep Details (2)
- Typical Roadway Sections (7) including:
    - One specific roundabout cross-section showing the central island
    - Four specific roundabout approaches showing the splitter islands
- Miscellaneous Roadway Details (4)

- Roadway Plans and Profiles (66) including:
  - Project limits
  - Begin and end of proposed improvements
  - Relocations of fire hydrants
  - Mailbox and bus stop locations
  - Reference to other sheet sets with additional information
- Drainage Plans (33)
- Drainage Profiles (33) including:
  - Existing utilities as needed
  - Proposed storm drainage improvements
- Paving Plans (33) including:
  - Defining areas of overlay, grind and overlay, full depth, and full depth with leveling course.
- Drainage Details (8)
- Roundabout Overall Plan and Profiles (6) including:
  - General roundabout plan defining horizontal PC, PT of outside roundabout curbs as well as the central island curb.
  - Profile for flowline of roundabout curbs including central island and the 4 quadrants.
- Roundabout Details (8)
  - Splitter island details including horizontal and vertical definition of islands
  - Vertical definition of roundabout curbs including profiles and grading tables
- Retaining Wall Plan, Profile and Details (57 sheets)
  - 74 Retaining wall plan view and profile view
    - 4-ft or less in height
  - Wall limits (vertical and horizontal)
    - Individual blocks not shown
    - Applicable horizontal and vertical geometry
  - Wall type notes (as needed)
  - Typical wall type section(s)
  - Wall termination detail(s)
  - Wall drainage detail(s)
  - Wall/Utility coordination detail(s)
    - ITS, Signal, Power, Illumination, Water, Sewer, Storm and Sanitary Sewer
- Ponds Retaining Wall Plan, Profile and Details (20 sheets)
  - Approx. wall length is 1,100-ft
  - Wall limits (vertical and horizontal)
    - Individual blocks not shown
    - Applicable horizontal and vertical geometry
  - Wall type notes (as needed)
  - Typical wall type section(s)
  - Wall termination detail(s)
  - Wall drainage detail(s)
  - Wall/Utility coordination detail(s)
    - ITS, Signal, Power, Illumination, Water, Sewer, Storm and Sanitary Sewer
- Driveway Key Map (16)
  - Plan over Plan

- Driveway Table and Details (3)
- Driveway Plan / Profiles (19 sheets)
    - 55 Detail Driveways of the total 155 driveways
    - Driveways centerline profile
    - Cross-slope of driveways
    - Limits of impacts
- Intersection Grading Plans (14)
    - Slopes of intersection paving
    - Radii definition including grading points and curve data.
- Curb Ramp Details (12)
    - Horizontal and Vertical Layouts of 45 Tier 2 Curb Ramps
    - Lengths and slopes of Tier 2 curb landings and ramps
    - Tier 1 ramps will not be detailed out
- Traffic Signal Plans and Details – Ash Way & 134th St SW (6)
- Rectangular Rapid Flashing Beacon (RRFB) Plans and Details (4)
- Illumination and Interconnect Plans (33) including:
    - 2-4" and 1-2" Spare Conduits with Junction Boxes throughout the corridor
- Illumination Schedules, Details, and Panel Loading (7)
- Roadway Detail Sheets (2)
    - Roundabout bike ramps
- Channelization and Signing Plans (33)
    - Plans will include but limited to callouts at begin, end, radii, PC and PT of proposed channelization.
    - Callouts referencing the schedules for the removal, relocation, and proposed locations of signs.
- Channelization and Signing Details (4)
    - Removal sign schedule
    - Relocation sign schedule
    - Proposed sign schedule
    - Detail of non-standard signs
- Stream Plan and Profile (3)
- Stream Channel Typical Sections (2)
- Stream Details (2)
- Culvert Replacement Plan and Elevation (1)
- Culvert Structural Plan and Elevation (2)
- Culvert Structural Details (2)
- Stream Buffer Revegetation Plan (3)
- Stream Plant Schedule and Quantities (1)
- Stream Planting Details (1)
- Construction Sequencing Plans (20)
- Detour Plans (8)
    - Four detour plans
- Wetland Mitigation Plans and Details (17 Provided by the AGENCY)
- Updated AutoCAD Civil 3D Alignment Cross Sections every 25 feet along the corridor (93).

**90% Special Provisions:**
The CONSULTANT will prepare Draft Special Provisions for non-standard bid items; draft list of bid items, and list of proposed AGENCY and WSDOT standard details.

The CONSULTANT will review the specification package prepared by the AGENCY and provide any feedback.

**90% Opinion of Costs:**
The CONSULTANT will calculate 90% level quantities based upon the 90% plans. Quantities will be generated from AutoCAD Civil 3D measurements and EXCEL file summaries.

The opinion of cost will be developed from quantities calculated by the CONSULTANT and AGENCY provided unit costs.

Assumptions for Task 14.6:

- The AGENCY will provide a stamped Geotechnical Report for the project. This report will include recommendations for signal foundation, illumination foundation, retaining wall type, retaining wall design parameters, and infiltration rates for storm drainage design.
- Ramps that are designated to the Maximum Extent Feasible (MEF) will be noted on the plans. A separate MEF document will not be required.
- Landscaping plans for roadside planting and storm drainage facilities will be consider additional work.
- The AGENCY will compile the specification package for the project.
- The AGENCY will provide unit prices for the opinion of cost.
- The cost will be calculated in up to two (2) control groups.
- Development of tree protection requirements and tables to account for protected trees within the contract plans or creation of an arborist report or memorandum are not included.

Deliverables for Task 14.6:

- Draft list of bid items for AGENCY provided specification package.
- 90% plan (22”x34” PDF, AutoCAD Civil 3D (e-transmitted) and 7 – 11”x17” copies)
- Alignment cross sections at 25-foot intervals with earthwork quantities (22”x34” PDF and AutoCAD Civil 3D (e-transmitted))
- 90% opinion of cost (PDF and quantity calculation spreadsheet)
- Draft Special Provisions (PDF and word document)

**Task 15 —Final Design Project File Management and Electronic Exchange of Engineering and Other Data**

The CONSULTANT will submit in-progress working electronic base files, using AGENCY standards, for the AGENCY’s use, as requested by the AGENCY throughout the project duration up to four (4) submittals. AGENCY accepts the risk of using in-progress working base map files. In-progress files are preliminary and not for construction.

The CONSULTANT will submit 90% level electronic base files and AutoCAD Civil 3D (e-transmitted) files at the conclusion of the 90% design phase.

**Items to Be Furnished by the AGENCY**

The CONSULTANT is relying on the accuracy and completeness of the following information provided by the AGENCY or others:

- Refer to Assumptions listed in Tasks above.
- Initial surveying and base mapping.
- Right of entry onto properties as necessary to perform the work.
- Initial electronic base map file for the existing conditions using AutoCAD Civil3D with field survey data, DTM surface, and support files suitable for external referencing into design files.
- All requested and available "As-Built" and design information pertaining to recent development and roadway improvements along Ash Way within the project limits.
- Drafting standards. Standards include AutoCAD layer/line-type/symbol conventions, font specifications, title blocks, line weights, plot setups, AutoCAD project file naming conventions, and survey collector codes.
- State and AGENCY general special provisions including current amendments, summary of quantities spreadsheet, standard item table requirements.
- Geotechnical information to support the design development of Ash Way.
- All required environmental documentation and permitting.
- Survey Control Plan.
- Unit Prices for Opinion of Cost.
- Masterwork Summary of Quantities.
- Copy of existing traffic forecasting information.
- County SWM drainage complaint information.

**Design Criteria**

The AGENCY will designate the basic premises and criteria for the design. Reports and plans, to the extent feasible, will be developed in accordance with the latest edition and amendments as of the date of signing of this Agreement, of the following documents.

Measurements will be in English units. Electronic documents will be in AutoCAD Civil 3D version 2021, PDF format, and Microsoft Office 365.

Current Design Manuals will be used on the project based on when the supplement is signed.

1. Snohomish AGENCY, "Engineering Design and Development Standards", September 2021.
2. Snohomish AGENCY Code Title 30, "Unified Development Code".
3. Snohomish AGENCY Drainage Manual, July 1, 2021
4. Snohomish AGENCY ADA Design and Plan Production Guidelines
5. Department of Ecology (DOE) 2012 Low Impact Design Manual
6. Washington State Department of Ecology, "Stormwater Management Manual for Western Washington", 2019 edition.
7. Washington State Department of Transportation, "Standard Specifications for Road and Bridge Construction", 2022 edition.
8. Washington State Department of Transportation, "Standard Plans for Road and Bridge Construction (M 21-01)", September 2021 edition.

9. Washington State Department of Transportation, "Design Manual", September 2021 edition.
10. Washington State Department of Transportation, "Highway Runoff Manual (M 31-16)", April 2019 edition.
11. Washington State Department of Transportation, "Hydraulics Manual (M 23-03)", April 2019 edition
12. Washington State Department of Transportation, "Materials Laboratory Outline".
13. Washington State Department of Transportation, "Construction Manual".
14. Washington State Department of Transportation, "Local Agency Guidelines".
15. Washington State Department of Transportation, Amendments and General Special Provisions, current edition
16. Washington State Department of Transportation, Standard Item Table, current edition
17. Highway Research Board's Manual entitled "Highway Capacity".
18. FHWA and Washington State Department of Transportation, "Manual on Uniform Traffic Control Devices for Streets and Highways".
19. Public Right-of-Way Accessibility Guidelines (PROWAG, 2005)
20. AASHTO 2011, "A Policy of Geometric Design of Highways and Streets."
21. NCHRP Report 672 Roundabouts - An Informational Guide, March 2010 edition.

**Additional Services**
The following additional services can be provided as needed. Scope of services and fee determination may be negotiated separately as a supplement to this Agreement.

1. Construction Management Services
2. Value Engineering Services
3. Legal descriptions and parcel maps.
4. Right-of-Way acquisition services.
5. Environmental documentation and permitting assistance beyond what is described in the scope of services.
6. Offsite drainage analysis not included or specified in this scope of services.
7. Downstream analysis beyond ¼ mile downstream analysis.
8. Additional hydrologic analysis not included in this scope of services.
9. Analysis of structural systems not included in this agreement.

**Project Deliverables**
The documents, exhibits or other presentations for the work covered by this Agreement ("Documents") will be furnished by the CONSULTANT to the AGENCY upon completion of the various phases of the work. Whether the Documents are submitted in electronic media or in paper format, any use of the Documents on another project or on extensions of this project beyond the use for which they were intended, or any modification of the Documents, or conversion of the Documents to an alternate system or format will be without liability legal exposure to the CONSULTANT: AGENCY will assume all risks associated with such use, modifications, or conversions. CONSULTANT may remove from the electronic Documents delivered to AGENCY all references to CONSULTANT's involvement and will retain a paper copy of the Documents delivered to AGENCY which will govern the interpretation of the Documents and the information recorded. Electronic files are considered working files only-CONSULTANT is not required to maintain electronic files beyond 90 days after final project billing and makes no warranty as to the viability of electronic files beyond 90 days from date of transmittal.

See deliverables under each task for those items the CONSULTANT will provide.

Ash Way 90%
Design Fee

| Classification - Jacobs | Hours | x | | Rate | = | | Cost |
|---|---|---|---|---|---|---|---|
| Project Manager, Sr. Manager | 413 | | $ | 202.15 | | $ | 83,488 |
| Project Manager 3 | 1,275 | | $ | 177.62 | | $ | 226,466 |
| Stream Designer 4 | 262 | | $ | 160.94 | | $ | 42,166 |
| Senior Construction Manager | 44 | | $ | 178.48 | | $ | 7,853 |
| Project Manager, Sr. Manager | 126 | | $ | 251.72 | | $ | 31,717 |
| Civil Engr 3 | 756 | | $ | 134.38 | | $ | 101,594 |
| Civil Engr 1 | 2,581 | | $ | 115.00 | | $ | 296,786 |
| Civil Engr 1 | 1,932 | | $ | 110.00 | | $ | 212,548 |
| Structural Engr 4 | 646 | | $ | 157.56 | | $ | 101,784 |
| Structural Engr 1 | 752 | | $ | 120.00 | | $ | 90,240 |
| CADD Design 5 | 974 | | $ | 130.00 | | $ | 126,620 |
| Engineering Project Manager 04 | 132 | | $ | 187.00 | | $ | 24,684 |
| Project Manager 1 | 154 | | $ | 172.41 | | $ | 26,551 |
| Civil Engr 01 | 180 | | $ | 110.00 | | $ | 19,800 |
| Civil Engr 01 | 60 | | $ | 110.00 | | $ | 6,600 |
| Civil Engr 01 | 438 | | $ | 110.00 | | $ | 48,180 |
| Civil Engr 01 | 617 | | $ | 110.00 | | $ | 67,870 |
| Landscape Architect 02 | 86 | | $ | 135.27 | | $ | 11,633 |
| Landscape Architect 04 | 14 | | $ | 164.06 | | $ | 2,297 |
| CADD Design 5 | 68 | | $ | 130.00 | | $ | 8,840 |
| Contract Admin | 32 | | $ | 117.00 | | $ | 3,744 |
| Project Admin. Assistant | 97 | | $ | 86.09 | | $ | 8,351 |
| **Subtotal** | **11,639** | | | | | **$** | **1,549,811** |
| | | | | | **Escalation 4%** | **$** | **30,996** |
| | | | | | **Total Labor** | **$** | **1,580,807** |

| Direct Non-Salary Costs | | | | | | Cost |
|---|---|---|---|---|---|---|
| Mileage | 200 | Miles @ | $ | 0.545 | $ | 109.00 |
| Misc(courier, postage, phone, etc.) | 1 | @ | $ | 500.00 | $ | 500.00 |
| Plan Reproduction Cost | 1 | @ | $ | 3,000.00 | $ | 3,000.00 |
| Parking | 8 | @ | $ | 15.00 | $ | 120.00 |
| | | | **Direct Non-Salary Costs Total** | | **$** | **3,729** |
| | | | **Subtotal** | | **$** | **1,584,536** |

Agreement Number: CCF02-18

Ash Way 90%
Design Fee

| Subconsultant | | |
|---|---|---|
| CM Design | $ | 400,909 |
| 1 Alliance | $ | 152,810.01 |
| **Subconsultant Costs Total** | **$** | **553,719** |

| | | |
|---|---|---|
| **Jacobs Engineering Group Inc. TOTAL** | **$** | **2,138,255** |

**Jacobs**

Includes Esc on Direct Labor

Escalation is applied for 01/01/2023-12/31/2023

Rates will not be increased beyond the rates shown in Exhibit D or E without a Supplement.

**Salary Escalation**

**Assumed:** 24 Months to Complete Work

**Time Factor:**

| | | |
|---|---|---|
| (Current Rate Months/Total Months) (12 Months/24 Months) | | 50% |
| (Escalated in Months/Total Months) (12 Months/24 Months) | | 50% |
| | Total | 100% |

**Salary Rate Increases:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (First Portion of w Current | $ 1,549,811 | x | 50% | x | 0.0% | $ | - |
| (Second Portion of work) | $ 1,549,811 | x | 50% | x | 4.0% | $ | 30,996 |
| | | | | | Reflected in Above Total | **$** | **30,996** |

# Fee Schedule

**Consultant: Jacobs Engineering Group**

| Position Classification | Direct Salary Rate | ICR @109.43% | Profit @27.40% | Max Rate Per Hour |
|---|---|---|---|---|
| Project Manager, Sr. Manager, Kevin Kim | $106.33 | $116.26 | $29.13 | $251.72 |
| Project Manager, Sr. Manager, Jeannette DeLay | $85.39 | $93.36 | $23.40 | $202.15 |
| Project Manager 4 | $78.99 | $86.37 | $21.64 | $187.00 |
| Project Manager 3 | $78.99 | $86.37 | $21.64 | $187.00 |
| Project Manager 2 | $74.34 | $81.29 | $20.37 | $176.00 |
| Project Manager 1 | $74.34 | $81.29 | $20.37 | $176.00 |
| Civil Engineer 4 | $69.30 | $75.77 | $18.99 | $164.06 |
| Civil Engineer 3 | $61.88 | $67.66 | $16.96 | $146.49 |
| Civil Engineer 2 | $57.14 | $62.48 | $15.66 | $135.27 |
| Civil Engineer 1 | $51.08 | $55.85 | $14.00 | $120.93 |
| Structural Engineer 6 | $82.37 | $90.06 | $22.57 | $195.00 |
| Structural Engineer 5 | $76.03 | $83.13 | $20.83 | $180.00 |
| Structural Engineer 4 | $67.45 | $73.75 | $18.48 | $159.68 |
| Structural Engineer 3 | $59.15 | $64.67 | $16.21 | $140.03 |
| Structural Engineer 2 | $52.53 | $57.44 | $14.39 | $124.36 |
| Structural Engineer 1 | $51.08 | $55.85 | $14.00 | $120.93 |
| CADD Design 5 | $61.25 | $66.97 | $16.78 | $145.00 |
| CADD Design 4 | $52.22 | $57.10 | $14.31 | $123.63 |
| Contract Administration | $49.42 | $54.04 | $13.54 | $117.00 |
| Senior Project Administrative Assistant | $46.20 | $50.52 | $12.66 | $109.37 |
| Project Administrative Assistant | $36.54 | $39.95 | $10.01 | $86.50 |
| Intern - Engineering | $36.54 | $39.95 | $10.01 | $86.50 |
| Environmental Planner 4 | $67.98 | $74.33 | $18.63 | $160.94 |
| Biologist 5 | $75.40 | $82.44 | $20.66 | $178.50 |
| Estimating Manager | $75.40 | $82.44 | $20.66 | $178.50 |
| Estimating Professional | $74.31 | $81.25 | $20.36 | $175.92 |
| Senior Construction Manager | $75.39 | $82.43 | $20.66 | $178.48 |
| Construction Manager | $65.00 | $71.07 | $17.81 | $153.88 |
| Landscape Architect 4 | $69.30 | $75.77 | $18.99 | $164.06 |
| Landscape Architect 3 | $61.88 | $67.66 | $16.96 | $146.49 |
| Landscape Architect 2 | $57.14 | $62.48 | $15.66 | $135.27 |
| Stream Design | $69.30 | $75.77 | $18.99 | $164.06 |

The indirect cost rate (ICR), profit, and max rate per hour listed above are the maximum rates payable under this AGREEMENT. Rates invoiced shall be based on the direct salary of the individual employee plus ICR plus profit and shall not exceed the Max Rate Per Hour for each classification listed in this Exhibit D without prior written consent of the AGENCY.

Subconsultant Services and Other Direct Costs (ODC) will be reimbursed at the Actual Cost to the Consultant with no markup. ODCs are limited to the following items:

| Reimbursable Classifications | Rates |
|---|---|
| Mileage | Current IRS Rate |
| Outside Vendor Costs | At Cost |
| | |

Any ODC not included in the above list shall not be eligible for payment without prior written consent of the County. All reimbursable charges must be necessary for the services provided under this AGREEMENT.

Ash Way 90%
Design Fee
CM Design

| Classification - CM Design | Hours | x | | Rate | = | | Cost |
|---|---|---|---|---|---|---|---|
| Principal/ PM | 724 | | $ | 193.20 | | $ | 139,877 |
| Sr Proj Mgr | 78 | | $ | 136.50 | | $ | 10,647 |
| Eng 3 | 1,906 | | $ | 88.20 | | $ | 168,109 |
| Eng 1 | 1,036 | | $ | 71.40 | | $ | 73,970 |
| **Subtotal** | **3,744** | | | | | **$** | **392,603** |
| Annual Raises | | | | **Escalation 4%** | | **$** | **7,852** |
| | | | | **Total Labor** | | **$** | **400,455** |

| Direct Non-Salary Costs | | | | | | Cost |
|---|---|---|---|---|---|---|
| Mileage | 300 | Miles @ | $ | 0.545 | $ | 163.50 |
| Misc(courier, postage, phone, etc.) | 1 | @ | $ | 150.00 | $ | 150.00 |
| Parking | 8 | @ | $ | 15.00 | $ | 120.00 |
| Reproduction | 200 | Page@ | $ | 0.10 | $ | 20.00 |

Direct costs are paid based on actual expenses with no mark ups.
Receipts, logs, etc are required for reimbursement.

**Direct Non-Salary Costs Total** **$** **454**

| **CM Design TOTAL** | **$** | **400,909** |
|---|---|---|

**CM Design**
Includes Esc on Direct Labor
Escalation is applied for 01/01/2023-12/31/2023
Rates will not be increased beyond the rates
shown in Exhibit D without a Supplement.

Agreement Number: CCF02-18

Ash Way 90%
Design Fee
CM Design

**Salary Escalation**

**Assumed:**

24 Months to Complete Work

**Time Factor:**

| | |
|---|---|
| (Current Rate Months/Total Months) (12 Months/24 Months) | 50% |
| (Escalated in Months/Total Months) (12 Months/24 Months) | 50% |
| Total | 100% |

**Salary Rate Increases:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (First Portion of w Current | $ | 392,603 | x | 50% | x | 0.0% | $ | - |
| (Second Portion of work) | $ | 392,603 | x | 50% | x | 4.0% | $ | 7,852 |
| | | | | | | Reflected in Above Total | **$** | **7,852** |

Ash Way 90%
Design Fee
1Alliance

| Classification - 1 Alliance | Hours | x | | Rate | = | | Cost |
|---|---|---|---|---|---|---|---|
| Director | 16 | | $ | 234.51 | | $ | 3,752 |
| Land Surv. 3 | 18 | | $ | 165.11 | | $ | 2,972 |
| Land Surv. 2 | 4 | | $ | 123.23 | | $ | 493 |
| Eng. Aide 4 | 280 | | $ | 114.14 | | $ | 31,959 |
| Eng. Aide 2 | 0 | | $ | 87.34 | | $ | - |
| Eng. Aide 4 | 410 | | $ | 114.14 | | $ | 46,797 |
| Eng. Aide 2 | 410 | | $ | 87.34 | | $ | 35,809 |
| Eng. Aide 2 | 244 | | $ | 87.34 | | $ | 21,311 |
| Admin. Ass. 3 | 12 | | $ | 74.18 | | $ | 890 |
| Admin. Ass. 5 | 8 | | $ | 119.65 | | $ | 957 |
| **Subtotal** | **1,402** | | | | | **$** | **144,941** |
| Annual Raises | | | | **Escalation 4%** | | **$** | **2,899** |
| | | | | **Total Labor** | | **$** | **147,840** |

| Direct Non-Salary Costs | | | | | | Cost |
|---|---|---|---|---|---|---|
| Mileage | 810 | Miles @ | $ | 0.580 | $ | 469.80 |
| Traffic Control (Uniformed Officer) | 1 | @ | $ | 2,000.00 | $ | 2,000.00 |
| Scanner Rental | 1 | @ | $ | 2,500.00 | $ | 2,500.00 |
| Reproduction | 0 | Page@ | $ | - | $ | - |

Direct costs are paid based on actual expenses with no mark ups.
Receipts, logs, etc are required for reimbursement.

**Direct Non-Salary Costs Total** **$** **4,970**

**1 Alliance TOTAL** **$** **152,810**

**1 Alliance**
Includes Esc on Direct Labor
Escalation is applied for 01/01/2023-12/31/2023
Rates will not be increased beyond the rates
shown in Exhibit D without a Supplement.

Ash Way 90%
Design Fee
1Alliance

**Salary Escalation**

**Assumed:**

24 Months to Complete Work

**Time Factor:**

| | |
|---|---|
| (Current Rate Months/Total Months) (12 Months/24 Months) | 50% |
| (Escalated in Months/Total Months) (12 Months/24 Months) | 50% |
| Total | 100% |

**Salary Rate Increases:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (First Portion of w Current | $ | 144,941 | x | 50% | x | 0.0% | $ | - |
| (Second Portion of work) | $ | 144,941 | x | 50% | x | 4.0% | $ | 2,899 |
| | | | | | | Reflected in Above Total | **$** | **2,899** |