Holly Street Campus
Permanent Creek Repair
565 NW Holly Street
Issaquah, Washington 98027

for the

Issaquah School District No. 411
5150 220th Ave SE
Issaquah, Washington

PROJECT MANUAL

Project No. 192003

Check Set
March 18, 2022

Cornerstone
ARCHITECTURAL GROUP

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PROJECT INFORMATION

PROJECT:	HOLLY STREET CAMPUS – CREEK BANK REPAIR 565 NW Holly Street Issaquah, WA 98027 ISSAQUAH SCHOOL DISTRICT 5150 220th Ave SE Issaquah, WA 98029	
OWNER	Janelle Walker, Const. Coord. (425) 306-4022 (425) 837-7041 *fax* Walkerj2@issaquah.wednet.edu	Issaquah School District Capital Projects 5150 220th Ave SE Issaquah, WA 98029
ARCHITECT:	Steve Barnes (206) 682-5000 (206) 905-8445 *fax* sbarnes@cornerstonearch.com	Cornerstone Architectural Group 6161 NE 175th Street, Suite 101 Kenmore, WA 98028
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GEOTECHNICAL ENGINEER:	Carston Curd (425) 486-1669 (425) 523-8642 *cell* carstonc@nelsongeotech.com	Nelson Geotechnical Assoc. 17311 135th Ave NE, ste A500 Woodinville, WA 98072
ECOLOGIST:	Meryl Kamowski (425) 337-3174 (971) 267-2721 *cell* meryl@wetlandresources.com	Wetland Resources, Inc 9505 19th Ave SE, ste 106 Everett, WA 98208
CIVIL – SURVEY:	Doug Roupe (425) 408-1152 (425) 877-1341 *fax* dougr@grp4.com	Group Four, Inc. PO Box 1059 1911 Vernon Road, Suite A Lake Stevens, WA 98258

END OF SECTION 00 00 00

TABLE OF CONTENTS

Document No. and Title — Number of Pages

BIDDING REQUIREMENTS

00 00 00 Project Information....1
00 01 00 Table of Contents....2
00 11 00 Advertisement for Bids....2
00 11 15 Contract Documents Listing....1
00 20 00 Instructions to Bidders....9
00 31 00 Information Available to Bidders....1
00 41 00 Form of Bid....6
00 41 01 Form of Payment Bond....1
00 41 13 Bid Security Form....2
00 50 00 Contracting Forms (Appendix A-Federal Grant Requirements)....6
00 50 20 Agreement Between Owner and Contractor (sample)....6
00 61 13 Form of Performance Bond....1
00 72 00 General Conditions....68
00 75 00 Description of Contract Documents....3
00 83 00 Wage Determination Schedule....1
00 83 00a Prevailing Wages—King County....12
00 85 00 Special Conditions....2

CONSTRUCTION PRODUCTS AND ACTIVITIES

DIVISION 1 - GENERAL REQUIREMENTS

01 11 00 Summary of Work....3
01 29 73 Schedule of Values....4
01 31 13 Coordination....2
01 31 19 Project Meetings....3
01 32 16 Contractor's Construction Schedules....11
01 33 00 Submittals....1
01 33 23 Shop Drawings, Project Data and Samples....3
01 41 00 Regulatory Requirements....1
01 45 00 Quality Control....2
01 50 00 Temporary Facilities and Controls....4
01 57 00 Erosion Control....6
01 60 00 Material and Equipment....3
01 71 23 Field Engineering....3
01 78 00 Contract Closeout....10

DIVISION 2 – EXISTING CONDITIONS (not used)

DIVISION 3 - CONCRETE (not used)

DIVISION 4 - MASONRY (not used)

DIVISION 5 - METALS

05 12 00 Structural Steel....4

Document No. and Title — Number of Pages

DIVISION 6 - WOOD AND PLASTICS (not used)

DIVISION 7 - THERMAL AND MOISTURE PROTECTION (not used)

DIVISION 8 - DOORS AND WINDOWS (not used)

DIVISION 9 – FINISHES (not used)

DIVISION 10 – SPECIALTIES (not used)

DIVISION 11 – EQUIPMENT (not used)

DIVISION 12 – FURNISHINGS (not used)

DIVISION 14 – CONVEYING EQUIPMENT (not used)

DIVISION 31 – SITE AND INFRASTRUCTURE

31 10 00 Site Clearing and Demolition....3
31 20 00 Earthwork....5
31 25 15 River Bank Protection & Erosion....4
31 52 00 Cofferdams....2

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 31 00 Chain Link Fences and Gates....5
32 90 00 Landscape Mitigation....14
32 92 00 Tree Protection....3

DIVISION 33 – UTILITIES (not used)

END OF VOLUME ONE TABLE OF CONTENTS

ADVERTISEMENT FOR BIDS

Notice is hereby given that sealed bids will be received by Issaquah School District No. 411, 5150 220th AVE SE, Issaquah, Washington 98029, for the construction of **Holly Street Campus – Creek Bank Repair.**

The Issaquah School District is soliciting bids to remove existing temporary stream bank structure and construct a permanent bio-engineered structure for stream bank stabilization. This work will occur during the 2022 WDWF fish window in Issaquah Creek. The project is located at 565 NW Holly Street, Issaquah, WA 98027. The Base Bid and alternates will be used to determine apparent low bidder and the Contract Sum, as that term is defined and used in the Contract Documents.

The architect's estimate for this project is $1,000,000.

This is a Federal Grant project.

Prevailing Wages/Davis Bacon Act are required.
This project is subject to contractor debarment and suspension regulations
Contractors to assure that small and minority businesses, women's business enterprise and LSA firms are used when possible.
Reference Specifications and Appendix A for further Federal Grant Requirements.

Time is of the essence; begin work as described in the Contract Documents. Critical Work to include establishing Schedule of Values, Contractor's Construction Schedule and Submittal Procedures to ensure procurement of any long lead items. The actual construction work window is limited due to the allowable amount of time for construction work to occur within the creek's ordinary high water mark; per the WDFW fish window this time frame is July 1, 2022 through August 15, 2022. Mobilization and material procurement will take place as soon as an NTP/Contract is issued.

Base bids **Form of Bid and the Byrd Anti Lobbying Amendment Certification** will be received at Issaquah School District Administration Center, 5150 220th Avenue SE, Issaquah, WA 98029, no later than **1:00 PM on Wednesday, April 13, 2022**, time stamped and held unopened. All bids will be opened and read aloud following the 1:00 PM deadline.

Each bid shall be enclosed in an opaque, sealed envelope, bearing the name and address of the Bidder and addressed to the Owner. Mark lower left corner of the envelope ***"Holly Street Campus – Creek Bank Repair".***

A mandatory pre-bid meeting will be held at *Holly Street Campus – Creek Bank Repair site at* 10:00am on Thursday, March 31, 2022 to answer any questions, review the scope of work and documents, and afterwards tour the site. All general contractors submitting a bid are required to have had a representative in attendance at the pre-bid meeting and to sign in on an attendance sheet.
No Exception to this Requirement.

Janelle Walker, Construction Coordinator, may be reached at (425) 306-4022.

Plans will be available on March 22, 2022. Contractors may obtain pdf copies of the bid documents at no cost or purchase copies of the contract documents from United Reprographics (for $150.00), 1515 Central Ave. S, Kent, WA 98032; phone 1-206-382-1177. Plans, specifications, addenda, and plan holders list for this project are available by contacting United Reprographics at csr@unitedpsg.com.
Each Contractor is responsible for ordering or purchasing their own sets of plans.

Copies of Contract Documents may be examined at the following locations:

Abadan Reprographics	509-747-2964	Spokane
Associated Builders and Contractors	509-534-0826	Spokane
Associated General Contractors (Idaho)	208-772-6068	Hayden Lake, ID
Associated Subcontractors of Washington	253-627-6391	Tacoma
Builder's Exchange of Washington, Inc.	425-258-1303	Everett

Contractor Plan Center (Oregon)	503-650-0148	Clackamas, OR
Daily Journal of Commerce	206-622-8272	Seattle
Daily Journal of Commerce	503-274-0624	Portland, OR
Olympia Plan Center	360-943-3960	Olympia
Oregon Contractors	503-650-0148	Milwaukie, OR
Reed Construction Data/Cascade Products	425-823-0685	Kirkland
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Spokane Regional Plan Center	509-328-9600	Spokane
SW Washington Contractor's Association	360-694-7922	Vancouver
The Weekly Construction Reporter	360-738-0370	Bellingham
Tri-City Construction Council	509-582-7424	Kennewick
Walla Walla Valley Plan Center	509-525-0850	Walla Walla
Yakima Plan Center	509-457-4271	Yakima

Contractor must comply with the subcontractor listing requirements specified in Section 002000 of Instructions to Bidders and Section 004100 Form of Bid. A Bid Deposit of five percent (5%) of the amount of the base bid is required and must be either a surety bond, postal money order, cashier's check, or certified check. Bid Deposit of unsuccessful bidders will be returned; however, the three lowest will be held until after award of Contract. Bid Deposit of successful bidder will be returned upon receipt and acceptance of completed Performance and Payment Bond, Certificate of Insurance and signed Contract Agreement.

A one hundred percent (100%) contractor's Performance and Payment Bond; a Public Works Contract (Modified AIA Form A101 or other form supplied by Owner); and Certificate(s) and Endorsement(s) of Issuance per Article II of the General Conditions are required before award is final.

Pursuant to RCW 39.12, no workman, laborer, or mechanic employed in performance of any part of this contract shall be paid less than the "prevailing rate of wage" (in effect as of the date that bids are due) as determined by the Industrial Statistician of the Dept. of Labor & Industries. Copies of the prevailing wage rate schedule are included in the Project Manual and are available directly from the Department of Labor & Industries.

The Issaquah School District reserves the right to reject any and all bids and to waive any irregularities or informalities. The right is reserved by the Issaquah School District to postpone contract award for the period of thirty (30) days after the bid opening. The Issaquah School District is an Equal Opportunity Employer. No bidder may withdraw the bid after the hour set for the opening thereof, or before award of contract, unless said award is delayed for a period exceeding thirty (30) days.

Dated this 18th Day of March 2022.

By the Order of the
BOARD OF DIRECTORS
ISSAQUAH SCHOOL DISTRICT NO. 411
KING COUNTY, WASHINGTON

Published: Daily Journal of Commerce
DATE: March 22, 2022
DATE: March 29, 2022

Published: Issaquah/Sammamish Reporter and Federal Way Mirror

DATE: March 18, 2022
DATE: March 25, 2022

Published: Washington State Office of Minority & Women's Business Enterprises.

DATE: March 23, 2022

END OF DOCUMENT

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A one hundred percent (100%) contractor's Performance and Payment Bond; a Public Works Contract (Modified AIA Form A101 or other form supplied by Owner); and Certificate(s) and Endorsement(s) of Issuance per Article II of the General Conditions are required before award is final.

Pursuant to RCW 39.12, no workman, laborer, or mechanic employed in performance of any part of this contract shall be paid less than the "prevailing rate of wage" (in effect as of the date that bids are due) as determined by the Industrial Statistician of the Dept. of Labor & Industries. Copies of the prevailing wage rate schedule are included in the Project Manual and are available directly from the Department of Labor & Industries.

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END OF DOCUMENT

LIST OF DOCUMENTS

1.0 PROJECT MANUAL

Dated March 18, 2022.

1.2 DRAWINGS

Dated March 18, 2022.

END OF SECTION 00 11 15

INSTRUCTIONS TO BIDDERS

FEDERAL GRANT PROJECT

(Projects Funded by Federal Grant / Subject to 2 C.F.R. § 200.317 -326)

1.01 GENERAL

Your bid, to be entitled to consideration, must comply with the following instructions. A contract, if awarded, will be subject to all of the terms and conditions of the Contract Documents, which are comprised of the Invitation to Bid, Instructions to Bidders, Form of Bid, Contract form Supplied by Owner, General Conditions, and other documents provided by Owner in the Project Manual, if any.

1.02 EXAMINATION OF SITE AND CONDITIONS

The bidder is required to examine carefully the site of the proposed work, the proposal, plans and specifications and contract forms before submitting a proposal. It is mutually agreed that submission of a bid shall be considered prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work as scheduled, or as at any time altered without resulting in increases or decreases of more than the percentage limits stipulated in the hereinafter-mentioned specifications; and as to the character, quality and entities of work to be performed and material to be furnished, including said increases or decreases, and as to the requirements of the plans, specifications, supplemental specifications, special provisions and contract.

No statement made by any officer, agent or employee of the Owner or Architect, in relation to the physical conditions pertaining to the site of the work will be binding on the Owner.

1.03 PROPOSAL AMOUNTS

The sum of money shown on the proposal covering all work included in Base Bid Contract Documents, together with any addenda thereto and/or for unit prices called for, or for any alternates called for, shall include all items of labor, material, equipment, overhead and compensation to complete all of the work under each particular heading. Bid shall not include any applicable State or Local Sales Taxes, but shall include all other taxes, including without limitation, income and business and occupation taxes. In the event of any discrepancy between the amount written in words and the amount expressed in numbers concerning any bid, the amount written in words shall govern.

1.04 SALES TAXES

Sales Taxes will be collected from the Owner and will be paid to the State by the Contractor in conformance with the law. A proportion of the amount of Sales Taxes will be added to each payment voucher. The Contractor shall furnish proof of payment of all taxes required by law.

1.05 LAWS AND REGULATIONS

The bidder is assumed to be familiar with all Federal, State, County and City laws and regulations which in any manner affect those engaged or employed in the work or the materials or equipment used in the proposed construction, or which in any way affect the conduct of the work, and no pleas of misunderstanding will be considered on account of ignorance thereof.

1.06 BID SECURITY

All bids must be accompanied by bid deposit in the form of a Surety Bond, Postal Money Order, Cashier's Check or Certified Check made payable to Issaquah School District 411, in the amount equal to 5% of the amount of the base bid proposed as evidence of good

faith. Failure of the successful bidder to enter into the contract, and to furnish a Contractor's Performance Bond, a Contractor's Payment Bond and required insurance documents within ten (10) days after issuance of Notice of Intent to Award Contract, exclusive of the day of notice, will result in the amount of the bid deposit being forfeited to the Owner, as liquidated damages but not as a penalty. The Owner will retain the bid security of the three lowest bidders until award and execution of the construction contract.

1.07 LIQUIDATED DAMAGES

Time is of the essence of the work under the contract. Contractors shall note that the work must be completed within the time limit stated in the Contract Documents. Failure to timely complete this contract will result in liquidated damages pursuant to the Contract Documents.

Once Substantial Completion is given on the work, the Contractor will have forty-five (45) calendar days to fully complete the work. If the work is not fully complete, the Contractor will be responsible for all costs of Owner.

1.08 FILLING IN THE BID FORMS

The bidder shall submit its bid on the forms furnished by the Owner in these specifications. All blank spaces in the bid form shall be properly filled in. If the bid is made by a partnership, it shall contain the names of each partner and shall be signed in the firm name, followed by the authorized signature of the person signing. If the bid is made by a corporation, it shall be signed by the name of the corporation, followed by the written signature of the officer signing, and the printed or typewritten designation of the office he holds in the corporation. The address of the bidder that is physically located closest to the Project shall be typed or printed on the bid. In the event of any discrepancy between the written amount and the numbers, the written amount shall govern.

Bidder shall fill out and submit with Bid Form, the Byrd Anti-Lobbying Amendment Certification.

1.09 SUBMISSION OF BID

Each Form of Bid shall be completely sealed in a package, properly addressed to the Owner, Issaquah School District #411, 5150 220th Ave SE, Issaquah, Washington, 98029, with the name of the bidder and the project written on the outside of the package.

Bids will be received up to the time and place stated in the Invitation to Bid. The Advertisement for Bids provides that a deposit for plans and specifications will be required from each bidder.

The Owner reserves the right to reject any or all bids and to waive informalities.

1.10 SUBSTITUTIONS AND APPROVAL BEFORE RECEIPT OF BIDS

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's name, trademark, model or catalog number, only such specific items may be used in the base bid, except as hereinafter provided.

When the term "or approved equal" is employed, any item or material not specifically named by manufacturer's name shall be subject to the Owner's or Architect's approval. Requests for approval shall be submitted to the Architect in writing at least ten (10) days prior to receiving of bids. Requests received after that time will not be considered.

Requests for approval shall clearly describe the product for which approval is asked, the specific application, and shall be accompanied by samples, record of performance, certified copies of tests by impartial and recognized laboratories, and such additional information as the Architect may reasonably request. Approval of all items and materials will be given only by written addendum sent to all prime bidders.

Proposals for changes in structure, design or function will not be considered. The cost of any redesign caused by a substitution shall be borne by the substituting Contractor.

1.11 WITHDRAWAL OF BID

At any time prior to the scheduled closing time for receipt of bids, any bidder may withdraw its bid, either personally or by telegraphic or written request. After the scheduled closing time for the receipt of bids or before the award of Contract, no bidder will be permitted to withdraw his bid unless said award is delayed for a period exceeding thirty (30) days, or until execution of Contract, whichever is the shorter time.

Requests to withdraw a Bid due to error must be submitted in writing along with supporting evidence for such claim for review by the Owner. Evidence must be delivered to the Owner within two (2) business days after request to withdraw. The Owner reserves the right to require additional records or information to evaluate the request. Any review by the Owner of a Bid and/or any review of such a claim of error, including supporting evidence, creates no duty or liability on the Owner to discover any other Bid error or mistake, and the sole liability for any Bid error or mistake rests with the Bidder.

1.12 OPENING OF BIDS

At the time and place set for the opening and reading of bids, each and every bid (except those which may have been withdrawn in accordance with the foregoing WITHDRAWAL OF BID) received prior to the scheduled closing time for receipt of bids will be publicly opened and read aloud, irrespective of any irregularities or informalities in such proposals.

1.13 EVIDENCE OF QUALIFICATIONS

Upon request of the Owner, a bidder whose bid is under consideration for award of the Contract, shall promptly submit satisfactory evidence of its financial resources, its experience, and the organization and equipment it has available for the performance of the Contract.

1.14 EXECUTION OF CONTRACT

The successful bidder will be required within ten (10) calendar days after issuance of Notice of Intent to Award Contract to execute a public works Contract (Modified AIA Form or other form supplied by Owner) and to furnish a Performance and a Payment Bond, each for 100% of the Contract sum, plus sales tax, and the required evidence of insurance for the minimum coverages as described in the Contract Documents.

1.15 REQUIREMENTS FOR EXECUTION OF DOCUMENTS

All documents required to be executed by the Contract Documents, such as the Contract, Bonds and Bid Forms, shall comply with the following:

Proprietorship

Execution by the Contractor should be in the correct legal name. If a sole proprietorship (even though the words “And Company” appear), the person should name himself/herself as Owner. Example: John Doe dba/John Doe Company.

Partnership

If the Contractor is a partnership, the managing partner should sign, describing himself/herself as such.

Corporation

If the Contractor is a corporation, a signature for the corporation by the President or equivalent and by the Secretary or equivalent, describing themselves as such

will be presumed sufficient. If the corporation has a resolution or copy of by-laws authorizing some other signature, the resolution or copy of the by-laws should be with the Contract.

Authorized signatures for the bonding company and satisfactory evidence of said authority, is required on the Performance and Payment Bond.

1.16 SUBCONTRACTOR PERFORMANCE BONDS AND BONDABILITY

Within ten (10) days after the issuance of the Notice of Intent to Award, the Subcontractors listed on the Form of Bid shall deliver evidence of their performance bondability to the Owner through the Contractor. Additional Subcontractors with subcontract amounts over $100,000 may be required to submit evidence of bondability within ten (10) days after the issuance of the notice of Intent to Award. The evidence of bondability shall be in an amount equal to the full sum of the subcontract between the Subcontractor and the Contractor but shall not include sales tax. If the Owner elects to require such performance bond(s) from one or more of the Subcontractors, it must so notify the Contractor in writing within fourteen (14) days of receipt of the evidence of bondability from the respective Subcontractor, in which case the Contract Sum shall be increased by a Change Order in the amount specified in the Owner's written notice, unless otherwise agreed by the parties. Such performance bond(s) from Subcontractors shall meet the requirements for same contained in the Contract Documents.

1.17 TIME OF DELIVERY OF BONDS

The Bidder shall deliver the required Performance Bond and a Payment Bond to the Owner not later than ten (10) days after issuance of Notice of Intent to Award Contract or if the Work is commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work submit evidence satisfactory to the Owner that such Bonds will be furnished. Any Work performed prior to the submittal and approval of a Bonds will be at the Contractor's risk.

Unless otherwise specified in the Bidding Documents, the Bonds shall be written in Statutory Form as required by State of Washington RCW 39.08 and the Contract Documents by a surety firm licensed to do business in the State of Washington with an A.M. Best rating of not less than specified in Article 11 of the General Conditions. The Bidder shall require the Attorney-in-Fact who executed the required Bonds on behalf of the surety to affix thereto a certified and current copy of Power of Attorney.

1.18 DISCREPANCIES

Should a bidder find discrepancies in, or omission from, the drawings or specifications, or be in doubt as to their meaning, the bidder should at once notify the Architect, who will send a written instruction to all bidders in the form of an addendum. Neither the Owner nor the Architect will be responsible for any oral instructions. Questions received less than 72 hours before bids close cannot be answered. All addenda issued during the time of bidding will be numbered consecutively and will be incorporated into the contract. It is the Contractor's responsibility to be sure that it has checked all addenda.

1.19 PLANS AND SPECIFICATIONS

Plans and specifications must be returned to the Owner's or Architect's Office in an unmutilated condition within ten (10) days of bid opening in order to have the plan deposit returned.

1.20 MANDATORY PRE-BID CONFERENCE

A pre-bid conference will be held at Holly Street Campus – Creek Bank Repair, 565 NW Holly Street, Issaquah, WA 98027, **10:00am on Thursday, March 31, 2022,** to answer any questions and review the scope of the work and the documents. Failure to attend

this conference will result in the inability of the contractor to submit a bid. All general contractor bidders must sign in on the attendance sheet.

1.21 FORFEITURE OF BID GUARANTEE

Should the successful bidder fail to enter into the Contract and furnish the required Performance Bond and Payment Bond and insurance documents within ten (10) days after issuance of Notice of Intent to Award Contract, its bid guarantee will be forfeited to the Owner as liquidated damages, but not a penalty.

1.22 ALTERNATE BIDS AND UNIT PRICES (If Applicable)

If applicable in the plans and specifications, Contractor shall, at the time of submitting base bids, submit bids on alternates and/or unit prices on the Form of Bid. Alternate bids and unit prices, other than those provided in the Contract Documents, cannot be considered. Failure to bid upon all items called for may cause rejection of bid as irregular and/or nonresponsive.

1.23 REVIEW OF CONTRACT DOCUMENTS

The Contractor shall carefully study and compare the Contract Documents including **"Appendix A: Federal Grant Requirements"** and shall report any error, inconsistency or omission for instructions by the Owner or Architect per Paragraph 1.18 herein. If instructions are issued after the bid this will result in the more costly solution being utilized, with no change in the bid price.

1.24 DISQUALIFICATION OF PRIME BIDDERS

Prime bidders may be determined not to be responsible and qualified to bid on this project for any of the following reasons:

A. Bidder does not have a certificate of registration in accordance with RCW Chapter 18.27 at time of bid;

B. Bidder does not have current Washington Unified Business Identifier (UBI) number;

C. Bidder does not have worker's compensation insurance, an employment security department number, or a state excise tax registration number;

D. Bidder is disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065;

E. Within the three-year period immediately preceding the date of Bid Invitation, Bidder has been determined by a final and binding citation and notice of assessment issued by the State Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, defined in RCW 49.48.082, any provision of RCW Chapters 49.46, 49.48, and/or 49.52. Before award of contract, the successful bidder shall submit to Owner a signed statement in accordance with RCW 9A.72.085, verifying under penalty of perjury that such bidder is in compliance with the requirements of this subparagraph.

F. Bidder has been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation.

G. Owner determines that Bidder does not satisfy the bidder responsibility criteria in RCW 43.19.1911.

1.25. SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA

The Owner intends to award the work to a Contractor who is capable of being a successful partner with the District and Architect in the execution of the Work. The history and experience of the firm, its owners, and its employees with projects of similar scale, complexity, quality, and contracting method is important. For the Contractor to maintain control of the Project and set the pace and standard of quality, the Contractor must self-perform a portion of the work. To that end, a Contractor must self-perform a minimum of three percent of the cost of the Work, in addition to providing required general requirements (office labor, superintendent, trailers, temporary heat, clean up, etc.) and any material purchase(s). To that end, a prime bidder that does not demonstrate within ten days of bid opening, to the Owner's reasonable satisfaction, that it will meet this self-performance requirement will not be considered a responsible or responsive bidder.

1.26 SUBCONTRACTOR RESPONSIBILITY

At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

A. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;

B. Have a current Washington Unified Business Identifier (UBI) number;

C. If applicable, have:

1. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;

2. A Washington Employment Security Department number, as required in Title 50 RCW;

3. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;

4. An electrical contractor license, if required by Chapter 19.28 RCW;

5. An elevator contractor license, if required by Chapter 70.87 RCW.

D. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).

E. Comply with Appendix A – Federal Grant Requirements; including submission of Byrd Anti-Lobbying Amendment Certification.

1.27 AWARD OF CONTRACT

Pursuant to RCW 43.19.1911 the Owner reserves the right to award a contract to the lowest responsive and responsible Bidder as determined by the District. If an award is made, one contract will be awarded for all of the work to be performed. The lowest Bid will be based on the aggregate sum of "Base Bid" plus any Alternates selected by the Owner in its sole discretion. The Owner reserves the right to reject any and all bids and make further calls for bids in the same manner as the original Invitation.

1.28 RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS

In accordance with RCW 39.04.380 and effective March 30, 2012, the Owner will apply a Comparable Percentage Disadvantage (CPD) to bids received from nonresident contractors from states that provide in-state percentage bidding preferences, unless

such contractors have a physical office located in the state of Washington at the time of bidding. The applicable CPD will be the same percentage advantage that such states provide to their resident contractors. As of March 2012, the four states with in-state bidding preferences on public works projects (Alaska, Nevada, New Mexico & Wyoming) all have 5% bid preferences for resident contractors. The state of residence for resident and nonresident contractors is the state in which the contractor was incorporated or, if not a corporation, the state where the contractor's business entity was formed.

For the purpose of determining a successful bidder, the bid amounts submitted by nonresident contractors that do not have a physical office in Washington state will be increased by the applicable CPD. The "bid amount' for such contractors shall be the total of the base bid and all accepted alternate bid items. A CPD of the same percentage as is provided as an advantage by such a non-resident contractor's state of residence shall be added to the bid amount. The resulting Disadvantaged Bid Total shall be compared to the actual bid amounts submitted by resident contractors and nonresident contractors with a physical office located in Washington state at the time of bidding. See example below.

EXAMPLE: Alaska Nonresident Contractor Bid Amount	$100,000
Multiplied by the Alaska CPD rate	x 0.05
Alaska CPD Amount	$ 5,000
Alaska Nonresident Contractor Actual Bid Amount	$100,000
Alaska CPD Amount	$ 5,000
Disadvantaged Bid Total	$105,000*

*Note - If a Disadvantaged Bid Total is lower than all other actual bid amounts, the Alaska Nonresident Contractor would be the successful bidder and would be considered for award of a contract in the amount of $100,000.

If the Disadvantaged Bid Total is higher than the actual bid amounts submitted by resident bidders or bidders with a physical office in Washington state, the lower responsive bids will be considered for award of a contract in the amounts of their actual bids.

1.29 NON- DISCRIMINATION

The Owner is an equal opportunity employer. The bidder understands and agrees that its non-compliance with applicable Federal and State anti-discrimination laws may result in rejection of the bid or subsequent cancellation of this contract.

1.30 PREVAILING WAGES

This is a prevailing wage project, subject to the provisions of RCW 39.12, except that, off-site manufacturers of standard items for sale on the general market are not subject to the prevailing wage requirements of the Statute. Even though prevailing wage rates may be listed in the Contract Documents, the Contractor is responsible to verify the accuracy of any such listing. Contractor shall comply with the Federal requirements including the Davis Bacon Act and Copeland "Anti-Kickback" Act requirements.

1.31 ADDENDA

Addenda will be mailed, delivered or faxed to all who are known by the Architect to have received a complete set of Bidding Documents.

Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

No Addendum will be issued later than 72 hours prior to the date for receipt of Bids except an Addendum if necessary, postponing the date for receipt of Bids or withdrawing the requests for Bids.

It is the Bidder's responsibility to ascertain prior to submitting the Bid that the Bidder has received all Addenda issued, and shall acknowledge their receipt in the space provided on the Bid Form.

1.32 SUBCONTRACTOR LIST

Contractor must submit on the Form of Bid, as part of its Bid, a list of subcontractor names for each of the types of work listed on the Form of Bid and with whom the Contractor will contract for the categories of work listed, or list itself for the listed types of work. On projects where the Owner's estimate of the cost of the work is one million dollars or more, failure to complete properly the subcontractor list renders the bid void.

1.33 RIGHT OF AUDIT

The Owner or its representative shall have the right to audit the books and records of any bidder or any proposed subcontractor or supplier of any tier. The bidder shall provide the Owner with access to any books, correspondence, instructions, receipts, vouchers, memoranda and other records relating to the bid. The bidder authorizes the Owner (and shall require its proposed subcontractors to authorize the owner) to communicate directly with suppliers of labor and material regarding items chargeable to the owner and, if it so elects, to confirm balances due.

1.34 BID PROTESTS

If a bidder submits a written protest to the Owner within two (2) full business days following bid opening, the Owner shall not execute a contract with any other bidder without first providing at least two (2) full business days' written notice to the protesting bidder of the Owner's response and intent regarding executing a contract for the Project. In order to be considered, a bid protest must be submitted to Owner in writing and describe all facts and applicable law on which the protest is based. Owner shall review the written protest, may (but is not obligated to) meet with parties interested in the protest, and shall respond in writing to the protest. Owner's response shall be the final decision of the Owner and, unless otherwise stated in the response, shall constitute notice of the Owner's intent regarding execution of a contract for the Project. Accessing this administrative process is a condition precedent to any right of a disappointed bidder to challenge the Owner's award of contract in court.

1.35 COVID-19 SAFETY MEASURES

Following applicable Washington State Guidelines the Contractor is required to implement and provide the Owner with a COVID-19 safety plan. This plan may change as the State Guidelines change.

Contractor is required to wear masks at all times while inside a school building and/or when working near the Owner Staff, Students, visiting public and entrances/exits to buildings, etc. The contractor is to limit exposure to students and staff.

The Contractor is required to wear a mask as mandated by the State, the School District or the School. The Contractor must follow the most stringent mandate at the time. If a Contractor's employee does not follow the mandate the employee will be required to leave the school site.

END OF SECTION 00 20 00

INFORMATION AVAILABLE TO BIDDERS

The following information is available as described below:

1.1 SURVEY DATA
A survey was prepared for the Owner and is incorporated into the civil drawings.

1.2 SOIL INVESTIGATION DATA
Geotechnical and Engineering Geologic Hazard Evaluation, prepared by Nelson Geotechnical Associates, Inc. dated October 28, 2021, copies of which are included herein (following this section).

1.3 EROSION AND SEDIMENTATION CONTROL REQUIREMENTS
Erosion and Sedimentation Control procedures and requirements for the site are described in the TESC report. The report is included herein (following this section).

1.4 CRITICAL AREA STUDY & MITIGATION PLAN
A report has been developed by Wetland Resources Inc. dated 11/2/2021.The report is included herein (following this section). Drawings related to planting requirements are incorporated as landscape drawings.

1.5 FLOOD PLAIN HABITAT ASSESSMENT
A report has been developed by Wetland Resources Inc. dated 10/29/2021.The report is included herein (following this section).

1.6 ARBORIST REPORT
ISD Holly Street Campus Creek Bank Repair Tree Risk Assessment dated 9/28/2020 has been attached for your use.

1.7 HOLLY STREET FISH EXCLUSION PROTOCOL
A report has been developed by Wetland Resources Inc. for removing fish from the work area.

1.8 ARCHAEOLOGICAL REPORT
Archaeological Report prepared by Tierra Right of Way dated August 3, 2021 includes procedures for inadvertent discoveries of archaeological resources and is included herein (following this section).

END OF SECTION 00 31 00

NELSON GEOTECHNICAL
ASSOCIATES. INC.

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Woodinville, WA 98072
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October 28, 2021

Issaquah School District No. 411
ATTN: Janelle Walker, Capital Projects
5150 – 220th Avenue SE
Issaquah, WA 98029
VIA Email: walkerj2@issaquah.wednet.edu

Geotechnical and Engineering Geologic Hazard Evaluation - *REVISED*
ISD Holly Street Campus - Permanent Streambank Stabilization
565 NW Holly Street
Issaquah, Washington
NGA File No. 1228720

We are pleased to submit the attached report titled "**Geotechnical and Engineering Geologic Hazard Evaluation – ISD Holly Street Campus - Permanent Streambank Stabilization – 565 NW Holly Street – Issaquah, Washington**." This report summarizes our observations of the existing surface and subsurface conditions within the site, qualifies the geologic hazard presented by Issaquah Creek, and provides recommendations for the design of Streambank Stabilization Methods in relation to the geologically critical areas within proximity of the site. Our services were completed in general accordance with the proposal authorized by Issaquah School District No. 411 on December 4, 2020.

The subject site is situated on the southeastern portion of the School District property at the above address. The eastern portion of the property is occupied by Issaquah Creek, which flows in narrow meander bends to the north in the vicinity of the site. The study area comprises a tenth-of-a-mile reach centered at approximately River Mile 2.85 along Issaquah Creek. The creek channel bottom has an average, approximate elevation of 60 feet above Mean Sea Level (MSL) within proximity of the property, and the upland areas in the southwestern portion of the site have an elevation around 70 feet MSL.

The site has experienced significant erosion associated with Issaquah Creek, and infrastructure has been undercut by the stream after flooding occurred in the 2019-2020 wet season. The site is subject to critical areas mapped by the City of Issaquah. The City and other jurisdictional agencies have requested that an analysis and evaluation of the potential of channel migration within this portion of Issaquah Creek near the site be performed prior to issuance of various permits needed for long-term stabilization. The scope of our work includes an evaluation of the reach of the stream in the vicinity of the affected property in accordance with Section 2 of the Forest Practices Board Manual (Title 222 WAC), Standard Methods for Identifying Bankfull Channel Features and Channel Migration Zones (2004).

The evaluation of the channel migration hazards associated with Issaquah Creek was completed to inform stabilization considerations. We reviewed historic imagery and performed site walk-through evaluations to provide the necessary background data to render our opinions regarding future risks based on the prevailing data and conditions. The project is currently in the preliminary process of plan development, and we understand project plans are iteratively being developed at the time this report was prepared.

We have concluded that a combined bioengineered and structural solution can stabilize the site long-term from the effects of erosion associated with flooding on Issaquah Creek, from a geotechnical and engineering geologic standpoint. Various constraints on the project scope, particularly including the limited area between infrastructure and the original Ordinary High-Water Mark, have narrowed possible methods for long-term stabilization. Stakeholder and jurisdictional preferences and requirements were also considered during the evaluation of stabilization alternatives.

The scope of our services for this project are limited to analysis of channel migration hazards and stabilization with bioengineered methods. Other geologic or environmentally hazardous areas may be present within or in proximity to the site. Our report is meant to be interpreted in conjunction with a biological assessment to address other environmental factors in bioengineered stabilization of the affected stream bank. In the attached report, we have only provided general recommendations for foundations, site grading, erosion control, and drainage, as they pertain to the erosion hazard areas and channel migration hazards within the property and immediate vicinity. We should be retained to review and comment on final stabilization plans prior to construction.

It has been a pleasure to provide service to you on this project. Please contact us if you have any questions regarding this report or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.



Khaled M. Shawish, PE
Principal

TABLE OF CONTENTS

INTRODUCTION **1**

SCOPE **2**

SITE CONDITIONS **2**

Interpreted Subsurface Conditions 4
Site Observations and Exposure Mapping 4
Hydrogeologic Conditions 5
Historical Conditions 6

SENSITIVE AREA EVALUATION **8**

Channel Migration Zone (CMZ) Delineation 8
Scour Assessment 8

CONCLUSIONS AND RECOMMENDATIONS FOR STABILIZATION **9**

General 9
Technical Design Criteria 10
Stabilization Alternatives 12
Design Guidance 13
Monitoring Requirements 18

USE OF THIS REPORT **19**

LIST OF FIGURES

Figure 1 – Vicinity Map

Figure 2 – Schematic Site Plan

Figure 3 – Schematic LiDAR Site Plan

Figures 4 through 7 – Cross-Sections A-A', B-B', C-C', D-D'

Figure 8 – Channel Migration Zone Delineation

Figure 9 – Schematic Design Plan

Figure 10 – Schematic Design Detail

Appendix A – Glossary

Appendix B – Subsurface Exploration Logs by Others

Appendix C - HEC-RAS Model Information

Geotechnical and Engineering Geologic Hazard Evaluation - *REVISED*
ISD Holly Street Campus – Permanent Streambank Stabilization
565 NW Holly Street
Issaquah, Washington

INTRODUCTION

This report presents the results of our geotechnical and engineering geologic investigation of the local stream channel migration hazards and subsequent recommendations for bank stabilization for Issaquah Creek in proximity to the Issaquah School District Holly Street Campus property located at 565 NW Holly Street in Issaquah, Washington. The location of the site is shown on the Vicinity Map in Figure 1. Issaquah Creek flows westward and northward directly east of the property, and flooding in 2019-2020 resulted in substantial erosion to streambanks in the vicinity of the site. Specifically, rapid undermining of parking pavement and now-abandoned utility conduit was experienced on the easternmost portion of the subject site. Project stakeholders pursued temporary streambank stabilization measures consisting of driven steel piles spanned by subsurface metal sheets to prevent further damage to the structures on the property while permanent stabilization methods are designed and permitted.

Streams and other fluvial systems are dynamic and frequently change in response to environmental and anthropogenic (human-caused) forces. Channel migration zones (CMZ) describe areas in proximity to existing stream channels that contain a high risk of occupation by the channel within the next century. The purpose of this study is to delineate the channel migration zone within the study area to determine erosion hazards, then to evaluate integrated streambank stabilization approaches to best mitigate recent erosion and improve bank habitat and resiliency. The basis of evaluation has been conducted in accordance with the provisions of Issaquah Municipal Code (IMC) Section 16.36 and 2013 Shoreline Master Program Section 7.1.3, which outline New Shoreline Stabilization guidelines on Issaquah Creek. A glossary of technical terms used in this study is presented in **Appendix A** for clarity. Since the City of Issaquah does not explicitly regulate technical guidance to be used in geotechnical analyses of stabilization methods, we have evaluated the necessity of stabilization in accordance with elements of Section 2 of the Washington State Forest Practices Board Manual (Title 222 WAC), Standard Methods for Identifying Bankfull Channel Features and Channel Migration Zones (2004). Stabilization alternatives and approaches were evaluated in accordance with the Washington State Department of Fish and Wildlife (WDFW) - Aquatic Habitat Guidelines Program's Integrated Streambank Protection Guidelines manual (Cramer, 2003).

The study area comprises a tenth-of-a-mile reach centered at approximately River Mile 2.85 along Issaquah Creek. The location of the site is presented in the Vicinity Map in Figure 1. The creek channel bottom has an average, approximate elevation of 60 feet above Mean Sea Level (MSL) within proximity of the property, and the upland areas in the southwestern portion of the site have an elevation around 70 feet MSL. The existing site layout and approximate topography is shown on the Site Plan in Figure 2.

SCOPE

The purpose of this study is to explore and characterize the site surface conditions, delineate the erosion hazards associated with the channel migration zone within the study area, and to analyze approaches for bank stabilization, where necessary. Specifically, our scope of services included the following:

1. A review of available soil and geologic maps of the area, as well as relevant geotechnical engineering documentation pertaining to the site and surroundings, as provided.
2. Visiting the site to observe current surface conditions, including areas immediately upstream and downstream of the subject property comprising the affected stream reach.
3. Obtaining and reviewing available topographic surveys, aerial and LiDAR imagery of the area to evaluate historic channel conditions.
4. Reviewing historic flooding conditions on nearby stream gauges.
5. Providing an estimate of historic riverbank recession in proximity of the property.
6. Providing our opinions relative to historic, existing, and future potential channel migration within the vicinity of the subject property.
7. Evaluating streambank stabilization approaches and alternatives in accordance with the City of Issaquah's Shoreline Master Program and WDFW Integrated Streambank Protection Guidelines.
8. Documenting the results of our findings, conclusions, and recommendations in a written engineering geologic and geotechnical report.

SITE CONDITIONS

The site is occupied by an Issaquah School District administration building surrounded by vehicle parking and access on the southern and western sides of the structure. The structure was constructed in 1969, and parking areas in proximity to Issaquah Creek's current alignment within the site are composed of concrete. The southeast corner of the structure is set back approximately 57 feet from the Ordinary High Water Mark (OHWM) of Issaquah Creek, while the parking lot on the southeastern portion of the property is within 9 feet of the OHWM and was undercut by repeated flooding first in the wet season of 2019-2020 and again as late as March of this year.

The facilities operated by Issaquah School District occupy a relatively level, valley-fill terrace above Issaquah Creek. The terrace comprises alluvial fill deposited post-glaciation by Issaquah Creek. In the vicinity of the subject site, Issaquah Creek has a moderate, meandering morphology, but has historically been modified to serve agriculture and development in the region. A LiDAR map of the vicinity of the subject site is presented in Figure 3 for regional geomorphic context.

Within the study segment, as the current channel flows westward in proximity to the site, it dramatically shifts northward, with the turning point located immediately adjacent to the affected parking lot. The site is situated along the outside edge of a 'cut bank' downstream of the confluence with the east Fork Issaquah Creek. Downstream on the same side of the stream, Issaquah Creek meanders in the opposite direction and a 'point bar' continues to form and collect sediment. The creek generally occupies a single channel with a maximum bankfull depth of 6.3 feet, as shown on Cross Sections in Figures 4 through 7. The channel depth varies, and of particular note the channel experiences a small knickpoint immediately upstream of the subject site where embedded logs and debris have enabled drop scour on the order of a couple of feet. Based on a review of stream gauge flow data, the flow volume in Issaquah Creek is most strongly tied to seasonal rainfall.

The 0.1-mile reach centered on River Mile (RM) 2.85 is characterized by steeply sloping eastern banks with actively eroding alluvial sands and gravels exposed at the cutbank. The western bank is a gently- to moderately sloping gravel point bar, with vegetation near elevations in the vicinity of 68 feet MSL. Clasts within the creek are consistently fine to coarse gravel in size, coarsening in proximity to the thalweg. Large woody debris installed at the edge of the previous edge of the cutbank alignment now occupy upper- to mid-channel slopes within the stream in front of the property in the critical portion of the study segment. The fluctuation in river stage and measured flow during flooding periods suggests that much of the material eroded from banks is transported short to moderate distances downstream of the study area, and bedload transportation qualitative measures have a limited capability of estimation within the scope of this study. Several logs and debris accumulation were observed on the cutbank in this reach.

Current Conditions Survey: We visited the property to conduct a current conditions survey on July 1, 2021. We documented channel characteristics and geomorphology near RM 2.85. During our site visit, the discharge officially measured at RM 1.2 from the United States Geological Survey (USGS) Stream Flow Station 12121600, Issaquah Creek Near Mouth near Issaquah, WA (SE 56th Street) was 33.6 cubic feet per second (cfs) corresponding to a river stage of 4.21. Informal measurement at the site during our visit corresponded to a discharge of about 47.45 cfs. For reference, in the past year this stream gauge has measured a range of stages between 3.89 and 14.57, with flows ranging between about 9 and 3,580 cfs.

Conditions of the stream banks and exposed soil stratigraphy of eroding banks and modes of bank failure were noted during our site visit. Subsurface conditions were not explored directly, but photographs of eroding banks and aggradational features were documented to provide a qualitative record of grain size distributions.

Channel morphology was documented in four locations, as shown on Cross Sections in Figures 4 through 7. In general, cross sections show the incision of a 'scour pool' landward (west-southwest) of the original OHWM, progressively deepening downstream along the affected cutbank alignment.

Interpreted Subsurface Conditions

Geology: The geologic units for this area are shown in the Geologic Map of the East Half of the Bellevue South 7.5' x 15' Quadrangle, Issaquah Area, King County, Washington, by Derek B. Booth, Walsh, T.J., Troost, K.G., and Shimel, S.A. (USGS, 2012). The regional valley occupied by Issaquah Creek is mapped with a recent mantle of surficial alluvium (river) deposits, and discrete exposures of sedimentary exposures of pre-Fraser glaciation age in upland areas on either side of the regional valley walls, which likely underly the alluvial sediments at depth within the stream channel. We utilized explorations by Associated Earth Sciences, Inc. (AESI) prepared previously for a project on this site to verify subsurface materials. Logs of those explorations are presented in **Appendix B**.

Soils: The Soil Survey of King County Area, Washington, by the Natural Resources Conservation Service (NRCS), classifies the soils in proximity to the site on the southern bank of the River as Briscot silt loam. The material is derived from alluvium and is predominantly located on flood plains.

Site Observations and Exposure Mapping

During our site visit on July 1, 2021, we documented the presence of alluvial materials at the ground surface and in exposures along banks and slopes within the site and nearby vicinity. Bedrock or glacial soil outcrops were not encountered at the site. The cutbank within the site displayed predominantly gravelly, and sandy materials where unobscured by invasive groundcover plants. Elsewhere, banks primarily exposed moderately vegetated sands and gravels generally consistent with previous mapping of alluvium.

Bankfull conditions were determined in accordance with Section 2 of the Forest Practices Board Manual (Title 222 WAC), Standard Methods for Identifying Bankfull Channel Features and Channel Migration Zones (2004). Specifically, bankfull conditions are the average channel dimensions needed to completely fill the channel to a point at which flooding occurs on terraces or at hillslopes. Measured cross sections across Issaquah Creek are presented as Figures 4 through 7 and indicate these interpreted conditions.

Sedimentology: Sediment has historically been supplied by Issaquah Creek to the study area and beyond by landslides and incision along the steep, upper valley tributaries in the Tradition Plateau and Issaquah Alps highland areas. Sedimentary rocks and upland glacial fill gravel sediments within the stream are derived from erosion in the highlands to the south and east of Issaquah. Abundant local sediment sources exist in proximity to the subject stream reaches, and are being actively eroded during peak flow events, mobilizing cobble, gravel, and sand material from older alluvial valley fill.

Hydrogeologic Conditions

The capacity for Issaquah Creek to avulse from its channel has been strongly affected by urbanization and development in Issaquah; however, migration and erosion most frequently occurs during periods of flooding, where peak flow provides the stream with enough energy to erode banks and transport oversize gravels and cobbles. Flow levels downstream of major confluences on Issaquah Creek have been continuously monitored by the USGS at RM 1.2 with Stream Flow Station 12121600, Issaquah Creek Near Mouth near Issaquah, WA (SE 56th Street) since October 10, 1986, although water data back to 1945 are available from this station. The basin area for the gauge is approximately 56.6 square miles. Flooding on Issaquah Creek is officially recognized when the stage is higher than 7.5 feet on an upstream gauge near Hobart, generally and informally corresponding to a measurement of 9.5 feet on this gauge. Data from the stream gauge were reviewed for peak flow conditions, although precise flood recurrence intervals were not computed based on project scope limitations. Furthermore, historical flow events cannot be used as a precise prediction of future conditions due to changing land use and local climatic impacts. Significant flow events organized by date are indicated in Table 1 below.

Table 1 – Selected Historical Peak Flow Events on Issaquah Creek in Issaquah, WA

Date	Gauge Stage (ft)	Stream Flow (cfs)	Date	Gauge Stage (ft)	Stream Flow (cfs)
01/09/1990	13.5	3,200	11/26/1998	11.18	1,870
11/24/1990	13.43	2,410	01/01/1997	11.16	1,830
11/24/1986	13.2	3,100	12/03/2007	11.15	1,970
02/08/1996	12.84	2,420	02/19/1995	10.8	1,740
01/08/2009	12.56	2,450	12/15/1979	10.7	1,940
02/06/2020	12.33	2,620	01/24/1982	10.64	1,920
01/25/1984	11.79	2,330	12/12/2010	10.64	2,060
01/19/1986	11.52	2,300	01/29/2004	10.48	1,750
11/14/2001	11.5	2,080	02/28/1972	10.23	2,260
11/06/2006	11.5	2,080	02/09/2017	9.71	1,510
12/03/1975	11.46	2,870	01/11/2006	9.68	1,500
12/09/2015	11.41	2,000	12/11/2004	9.53	1,460
01/05/1983	11.18	2,110	04/05/1989	9.51	1,330

Woody debris can affect channel migration by diverting flow away from sensitive banks or focusing erosive energy and directing flow if a log jam blocks the active channel. This process can also contribute to avulsion hazards. Wood can be moved downstream or deposited and stored within the channel. During historical aerial review and our site visit, we noted the presence of only individual large logs, sporadically distributed and periodically moved. These logs present only localized influence on channel morphology and are typically located along banks.

Historical Conditions

Aerial Review: Historical channels and locations were determined from available aerial imagery and topographic maps listed in Table 2. Due to mapping discrepancies, the available topographic maps which include the site only provide a general sense of the map-scale channel form and lacks high enough scale to determine the Historic Migration Zone (HMZ) by tracking the lateral position of the channel. Aerial photographs also do not provide best channel position data due to the historically highly vegetated channel being obscured. Rough channel form was determined by aerial imagery review, which suggested avulsion events likely occurring during flooding in 1986 shifting the alignment toward an easterly channel, then again in 1990, shifting the alignment westerly and meandering toward the school district structures. The channel has occupied the same form in the vicinity of the site since approximately 1990 and appears to have been progressively eroding the cutbank since that time.

Table 2 – Historical Aerial Imagery used to Delineate Channel Positions

Date	Type	Source
1936	Aerial Photograph	King County
1964	Aerial Photograph	USGS
1968	Aerial Photograph	USGS
1969	Aerial Photograph	USGS
1980	Aerial Photograph	USGS
1981	Aerial Photograph	USGS
1990	Aerial Photograph	USGS
1998	Aerial Photograph	King County
2000	Aerial Photograph	King County
2002	Aerial Photograph	King County
2003	LiDAR Imagery	WADNR
2005	Aerial Photograph	King County
2005	LiDAR Imagery	Terrapoint
2009	Aerial Photograph	King County
2012	Aerial Photograph	King County
2013	Aerial Photograph	King County
2015	Aerial Photograph	King County
2016	LiDAR Imagery	Quantum Spatial
2017	Aerial Photograph	King County
2019	Aerial Photograph	King County

Regional geomorphic features which may be imperceptible at ground level can be inferred remotely through aerial imagery and data. Light Detection and Ranging (LiDAR)-derived imagery shows mathematically interpolated ground surface elevations by removing vegetation interference. Publicly available LiDAR data for the site were reviewed from a report titled "PSLC King County 2016-2017 LiDAR Final Technical Report." These data were acquired by Quantum Spatial between February and August of 2016. Figure 3 presents the most recently available LiDAR data utilized in this study.

Patterns: LiDAR data were used to identify recent, historic, and relic alluvial features. Relic meander channels are located to the north, east, and southeast of the subject property. The stream channel within the study segment appears to have been modified by the placement of large woody debris in the channel. The timing of the bank modifications is unclear. Meander positions appear generally constant in the record and additional meander growth appears to be fairly well constrained outside the subject cutbank. All the actively eroding bank locations are composed of non-cohesive materials, which support moderate erosion rates based on the historical trend in the area. Short term bank erosion rates at the subject meander throughout a recent photographic record (since 2005) range from 1.9 ft/yr to 2.2 ft/yr within the actively eroding banks, and a rate of 14.9 ft/yr during the 2020 flooding season.

Historically-Reconstructed Rate of Migration: The reach-averaged bank erosion rate for the CMZ delineation reach affecting the site was calculated by dividing the total eroded floodplain area interpreted to be shown in the historical aerial photograph record by the length of the bank edge adjacent to the floodplain, then by the number of years composing the record. The oxbow lake to the southeast of the site was removed from the Historical Migration Area calculation because its origin and periodic presence was likely an agricultural irrigation modification in the early- to mid-20th century.

Table 3 – Reach Variables Utilized in Calculation of Long-Term Average Bank Erosion Rate

Variable	Value
1936 Active Channel Area	78,840 ft^2
2021 HMZ Area	145,052 ft^2
Historically Eroded Area	66,212 ft^2
Erodible Length	1,045 ft
Average Erosion Rate	**0.75 ft/yr**

The bank erosion rate was generally consistent across the study area, outside the subject meander. In specific proximity to the subject site, the main channel migrated a total of about 64 feet westward in 85 years, with an average rate of 0.75 feet/yr. Meander erosion was substantially greater, as previously described.

SENSITIVE AREA EVALUATION

Channel Migration Zone (CMZ) Delineation

We utilized the guidelines in Section 2 of the Forest Practices Board Manual (DNR, 2004) to delineate the CMZ within proximity to the study site. In accordance with the guidelines, a CMZ comprises three distinct areas: the Historical Migration Zone (HMZ), the Avulsion Hazard Zone (AHZ), and the Erosion Hazard Area (EHA). Our CMZ delineation is presented in Figure 8.

Historical Migration Hazard (HMZ): The historical migration hazard was delineated as the spatial sum of all interpreted channels and active side channels originating in the subject reach and visible in aerial photography between 1938 and 2018. To account for distortion and error, slight adjustments were made to match photography to current LiDAR imagery. Due to the extensive forested canopy near the stream, the bank line was sometimes obscured by vegetation and approximated.

Avulsion Hazard Zone (AHZ): Relic side channels seen on LiDAR imagery and historic avulsions recorded in the aerial photography indicate that avulsions are possible in the study area. Avulsion hazards were delineated within floodplain areas where bankfull conditions may selectively divert flow to topographic low points. Systemic aggradation or woody debris may also affect the possibility of avulsion within the study area. Depending on concentrations of flow, avulsion may occur within the point bar of the meander across the river from the property, especially if the side channel develops at a rapid pace.

Erosion Hazard Area (EHA): The Erosion Hazard Area is based on the average bank erosion rate within the reach. We calculated the average erosion rate to be 0.75 ft/yr, but localized rates vary. All actively eroding banks have exposures of alluvial materials. The average rate of erosion was extrapolated over the 75-year design life of a structure to determine the erosion hazard area. A 56-foot erosion buffer has therefore been conservatively applied to the outside of the main channel, beginning along the top of the steep bank slope within the subject property and extending westward.

Disconnected Migration Areas: Disconnected migration areas are those which are behind permanently maintained levees, dikes, or public rights-of-way. No disconnected migration areas were mapped within the project vicinity.

Scour Assessment

The subject site is situated on a meander where a significant change in flow direction occurs. When streams bend, the deepest portion of the cross section moves to the outer portion of the channel and scour occurs at the bend location – the cutbank. High shear stress develops immediately downstream of the bend and increases proportionally with the relative tightness of the bend.

Similarly, an abrupt bend in the stream accommodates erosive energy in a 'sink' and can create 'jet scour' pools at the bend to dissipate the energy of the flow's momentum as it changes direction. The landward pools shown on the Cross Sections in Figures 5 through 7 depict this method of scour.

Estimations of scour depth can be made with empirical formulae for most types of scour, with the exception of 'jet' scour, which will continue to occur until an equilibrium is met between the energy sink and the erosive momentum of the flow. For the purposes of approximating scour depth at the meander to facilitate repair and stabilization alternatives, we calculated scour depth based on the empirical Thorne formula for meander scour.

Equation 1 – Thorne Equation for Meander Scour:

$$\frac{d}{y_1} = 1.09 - \log\left(\frac{R_C}{W} - 2\right) for\ 2 < \frac{R_C}{W} < 22$$

Where:

d= *maximum depth of scour below local stream bed elevation*
y_1= *average flow depth directly upstream of the bend*
W= *width of flow*
R_C= *radius of curvature at channel centerline*

We calculated an approximate meander scour depth of the stream to be 4.3 feet based on an $\frac{R_C}{W}$ value of 2.97 and an average flow depth of 3.88 feet, determined from aerial imagery and field reconnaissance, respectively.

CONCLUSIONS AND RECOMMENDATIONS FOR STABILIZATION

General

It is our opinion from a geotechnical standpoint that the parking lot and administration facility operated by Issaquah School District is within an erosion hazard area associated with channel migration and other hazards from Issaquah Creek. Without permanent stabilization, the meander will continue to erode and undermine public facilities and infrastructure. Since most highly erosive events in proximity to the site have historically occurred during periods of intense flooding, further alterations to the existing channel are likely to occur in future floods. It is therefore impractical to give a precise lifespan of existing facilities and infrastructure based on background erosion rates, given the changing frequency in which flooding will occur in the future and the dynamic changes in the stream channel morphology which can occur during flood events. For the purposes of this study, we consider the parking lot and underlying utilities to be effectively compromised by the erosion hazard, an active condition which warrants urgent streambank stabilization.

In the remainder of this report, we discuss possible stabilization alternatives for the affected cutbank, implications and impacts on the surrounding channel migration zone from these alternatives and provide design-level recommendations for construction of the most practical methods.

Objective: To take action to restore channel morphology and minimize the risk erosion poses to the parking lot area while protecting the aquatic productive capacity of the site.

Background: We interpret Issaquah Creek to be degrading and incising in the subject stream reach. Evidence for degradation includes historic widening of the alluvial flood plain, continual oversteepening and periodic collapse of banks, and the presence of small knickpoints (thalweg drops) along the channel profile in the vicinity of the site. Given the 14.9-foot recession of the cutbank between 2019 and 2020, it is clear the momentum and energy of the stream is channeled toward the meander below the parking lot, which has been critically undermined. Temporary stabilization measures, while sufficient to prevent ongoing erosion, do not meet standards for streambank stabilization in accordance with the City of Issaquah Shoreline Master Program, or requirements from other agencies for permanent stabilization.

Stabilization techniques will require structural improvements in combination with bioengineering and reconstruction of the bank in order to withstand the erosive power directed at the site, an expected increase in the frequency of flooding events on Issaquah Creek due to changing climate, and cause no net loss in aquatic function in accordance with state requirements.

Technical Design Criteria

To achieve the objective established by Issaquah School District, the following technical design criteria were developed to screen and guide possible stabilization alternatives for the project site:

- Stabilization measures shall account for potential bed degradation of 4.3 feet in the event channel degradation continues.
- At a minimum, bank-toe woody material shall resist buoyancy and shear forces up to and including those that occur during a 10-year recurrent flow.
- Vegetation planted on upper bank shall cover at least 60% of the ground surface by the end of the third year following project implementation.
- At least 80% of the woody plant material shall survive three years after placement.
- Modifications to the bank shall only occur landward of the original OHWM prior to 2019-2020 flooding.
- Project shall be monitored at least annually for 5 years during low-flow periods and during significant flooding events to ensure outcomes are maintained.

Specific requirements for bank stabilization in accordance with the following jurisdictions also screened possible alternatives. An incomplete summary of requirements is presented below for reference.

City of Issaquah – Shoreline Master Program, Chapter 7

Bioengineered shoreline stabilization methods are preferred. New shoreline stabilization shall be planted with vegetation suitable for wildlife habitat. New streambank stabilization structures shall incorporate features that minimize adverse effects on riparian habitat, salmon spawning and migration, and water quality.

New stabilization structures shall be placed landward of the floodway established by FEMA. Hard armoring shall not be authorized unless there is a significant possibility of structural damage within three years.

FEMA – Programmatic Requirements

Streambank stabilization methods include: alluvium placement, vegetated riprap with large wood, log or roughened rock toe, woody plantings, herbaceous cover, deformable soil reinforcement, coir logs, bank reshaping and slope grading, floodplain flow spreaders, floodplain roughness, and engineered log jams, alone or in combination.

Design shall retain natural vegetation and permeable soils and be completed during *Times When Spawning or Incubating Salmonids are Least Likely to be Present in Washington State Freshwaters* (WDFW 2015). Erosion control shall abide by the *Stormwater Management Manual for Western Washington*, as amended by the Washington Department of Ecology.

Vegetated riprap with large wood shall be limited to areas identified as most highly erodible with highest shear stress, and provide compensatory mitigation. At a minimum, the amount of wood incorporated into the treated area shall be equal to the number of whole trees whose cumulative summation of rootwad diameters is equal to 80% of linear-feet of treated streambank or 20% of treated area, whichever is greater. Geotextile fabric should not be used as a filter for riprap or sapping.

Large wood should incorporate intact rootwads, minimally spaced no greater than the average rootwad diameter. Minimum rootwad diameter placed at the toe of structures shall be equal to the bankfull depth, unless availability constrains the project. Space between rootwads may be filled with large boulders, or trimmed or untrimmed woody debris. Boulders should be 1.5 to 2 times the log diameter of adjacent logs, no more than 5 or 6 feet, maximum.

WDFW – Integrated Streambank Protection Guidelines

Guidance for riprap, placement of large woody debris, and rock or wood toe is generally presented in the manual, with emphasis on determining impacts to aquatic habitat and function.

Army Corps of Engineers – Nationwide Permit 13: Bank Stabilization

Banks shall be stabilized with the minimum necessary amount of materials needed for erosion protection, such that no material placed will be eroded by normal or expected high flows. There shall be no more than minimal adverse environmental effects from stabilization. “Stabilization” shall not include stream channelization activities.

Stabilization Alternatives

No Action: If no action is taken, the bank will continue to erode and undermine the parking lot; failure of the parking lot into the stream channel would result in detriment to aquatic habitat and does not meet the objective established by the Issaquah School District.

In-Channel Alterations: In channel alterations to balance the flow energy by artificially dredging an energy sink upstream of the affected bank is not allowed as a stabilization alternative in accordance with FEMA programmatic requirements and Army Corps of Engineers restrictions.

Riprap Armoring: While structurally capable of restoring the bank morphology and minimizing the risk erosion poses to the infrastructure, riprap armoring does not meet the preference of the City of Issaquah for stabilization, nor does it meet the 'no-net-loss of aquatic habitat function' requirement from the State of Washington. Riprap armoring does not sufficiently 'roughen' the streambank to provide commensurate habitat to what would be lost by minimizing erosion and armoring the bank.

Bioengineered Stabilization: Biotechnical stabilization (plantings) methods alone are not enough to protect against toe erosion caused by jet scour at this site. While woody plantings and herbaceous cover can increase aquatic function and habitat value, a structural solution is necessary to meet the **Technical Design Criteria**. Constraints based on the amount of space between the original OHWM and the undermined parking lot are not enough to account for the 4.3 feet of possible scour at the toe of the cutbank, nor to resist buoyancy and shear forces at the outside edge of the stream meander.

Vegetated Riprap with Large Wood: It is our opinion that the preferred alternative for stabilization which aligns with the requirements of permitting jurisdictions and the objectives of the Issaquah School District is a combination of structural and biotechnical methods. A Schematic Design Plan for this approach is presented in Figure 9. Large woody debris will be placed in a latticed, cribbing structure constructed landward of the original OHWM. Stream boulders and alluvial material will be utilized to reconstruct the eroded bank within the large woody structure, which will have rootwads fronting the channel to recruit sediment and debris, and to provide aquatic habitat value and mitigate the effects of rock placement. To mitigate bed degradation and expected stream incision, the large wood will be placed at a depth of 4.3 feet below the existing channel to prevent future undermining, should the channel continue to incise. It will extend vertically to protect the bank during periods of flooding. Resistance of shear and buoyancy will be addressed with mechanical anchors drilled into the dry bank prior to construction of the large woody debris reinforced bank toe.

Channel erosion will likely continue to occur in the vicinity of the stabilized bank. Particularly, we would expect residual erosive forces to at first affect the southwestern cut bank immediately upstream of the stabilized bank. It is also possible for the erosive power of the jet scour targeted at the subject bank to move downstream of the anchoring point of the stabilization and repair. The Army Corps of Engineers 'Hydrologic Engineering Center's River Analysis System' (HEC-RAS) software was utilized to calculate flow and analyze sediment transport models. Calculations are presented in **Appendix C**. Based on our preliminary assumptions, the proposed vegetated riprap with large woody debris bank treatment will not result in substantial impacts to the base flood storage capacity on neighboring sites.

Design Guidance

Anchor Points and Extent of Stabilization: It is critical that the bank repair and stabilization area encompass portions of the bank most susceptible to high shear forces and local scour, with the understanding that stabilizing the entire streambank within the property may redirect some scour downstream. Natural anchor points shown on the Schematic Design Plan in Figure 9 are boundary points encompassing the minimum necessary area of the bank both affected by ongoing scour and posing the highest level of risk to infrastructure. The resultant minimum extent of stabilization and bank treatment is approximately 110 linear feet. Streambank modifications shall only occur landward of the prior floodway boundary indicated on the survey established by FEMA on the FIRM panel dated August 19, 2020. The prior floodway boundary in the vicinity of the subject area represents the edge of water prior to the 2020 flooding and subsequent scour.

Construction Considerations: Excavations adjacent to the bank will be required in order to place the large woody debris at sufficient depth to prevent future scour from undermining the installation. At present, the edge of water intersects the proposed bank reconstruction area, even during low-flow portions of the year. Any bank stabilization work in the vicinity of Issaquah Creek must only occur during the WDFW 'fish window'. Since bank stabilization will only occur landward of the prior floodway boundary, the primary stream channel should remain accessible during construction and a temporary bypass of the stream reach will not be necessary due to the anticipated limited disturbance of the channel for the installation.

We estimate the stream stage during the 'fish window' to require partial, temporary barriers of less than 3.0 feet of water at the time of construction. Temporary cofferdam plans shall be developed by the contractor and reviewed by NGA prior to construction. Sandbags with an impermeable liner, water-filled bags or tubes, or collapsible, portable, fabric membranes could be used as temporary water diversion methods for the cofferdam.

Sheet piles may be used if necessary, depending on construction access requirements and hazards. If used, sheet piles shall be designed in accordance with WSDOT standard specification 2-09.3 (3) Section D. In any case, we recommend any temporary cofferdam be installed a minimum of 12-inches above the deepest water surface elevation along the cofferdam alignment associated with the recent 2-week high stage of the stream to prevent overflow flooding in the work area.

Temporary dewatering landward of the partial cofferdam within the work area shall occur in accordance with Element 10 of the SWPPP requirements section outlined in Volume I Chapter 3 of the 2019 Stormwater Management Manual for Western Washington, by the Washington State Department of Ecology. Discharge of water back into Issaquah Creek shall be downstream of the work area and limited to only clean, non-turbid waters. Pump intakes shall be screened at all times. Discharge shall only occur in a manner that does not cause erosion or flooding of downstream waters. Highly turbid waters shall be detained and treated with an appropriate Best Management Practice (BMP), such as a portable treatment unit, sand filters, and flocculants for the duration of the temporary dewatering. After temporary, partial diversion is achieved, the contractor and/or project biologist should remove any stranded fish.

Erosion control methods and temporary dewatering should be observed by a Certified Erosion and Sediment Control Lead (CESCL), which can be staffed by representatives of NGA during construction. BMPs should be used to control erosion before, during, and after construction occurs. For example, stockpiles should be covered during inclement weather, and storm grates should include removable sediment traps. Careful consideration by the contractor should be made prior to construction to ensure placement and staging of materials does not impact the streambank. NGA should review a Temporary Erosion and Sediment Control (TESC) plan prior to construction.

Shoring and Temporary Excavations: Temporary cut slope stability is a function of many factors, including the type and consistency of soils, depth of the cut, surcharge loads adjacent to the excavation, length of time a cut remains open, and the presence of surface or groundwater. It is exceedingly difficult under these variable conditions to estimate a stable, temporary, cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe slope configurations at all times as indicated in OSHA guidelines for cut slopes.

The following information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Nelson Geotechnical Associates, Inc. assumes responsibility for job site safety. Job site safety is the sole responsibility of the project contractor.

It is our opinion that the recently installed temporary steel sheet pile stabilization method may be able to be used to support temporary cut excavations around the proposed permanent repair, and that decommissioning of the temporary stabilization should occur incrementally during the installation of the permanent structures. For planning purposes, we recommend that temporary cuts in the upper undocumented fill and alluvial soils be no steeper than 2.5 Horizontal to 1 Vertical (2.5H:1V). If significant groundwater seepage or surface water flow were encountered, we would expect that flatter inclinations would be necessary. If temporary cut excavations are not able to achieve the above recommended inclinations, we should be retained during construction to collaborate on temporary shoring solutions with the contractor.

Large Woody Debris (LWD): LWD shall be competent, not rotten, and in good condition. Large branches and tangled roots are preferred and should not be trimmed if possible. LWD and rootwads shall be utilized from live trees and shall have a minimum of 30 feet of tree stem including the rootwad unless otherwise noted on the Schematic Design Detail in Figure 10. Depending on sources of LWD, logs may need to be cut into pieces for transport then reassembled on-site by splicing, gluing, and tacking the pieces back together. In accordance with FEMA programmatic requirements, the summation of rootwad diameters utilized for the project must equal 129 linear feet. Therefore, the minimum amount of large woody debris with rootwads is 16 pieces with 12-foot diameter rootwads, or 24 pieces with 8-foot diameter rootwads. All logs shall have a minimum diameter at breast height (DBH) of 18 inches. All LWD shall have a minimum diameter of 10 inches at the small, tapered end unless otherwise noted. LWD shall only consist of Douglas fir (*Pseudotsuga menziesii*) and/or western redcedar (*Thuja plicata*), unless otherwise approved by NGA and the project biologist. We recommend each LWD piece be evaluated by NGA prior to transport to the site for staging. Long logs should be trimmed on site to be situated as close as possible against the steep bank, sharpened and pressed into the bank where possible as well.

Placement of Fill: Structural fill, by definition, is placed in accordance with prescribed methods and standards, and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures might include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction.

The area to receive the fill should be suitably prepared prior to beginning fill placement. Excavations should make terraced, flat cuts and exposed subgrades should be maintained in a semi-dry condition. The contractor should plan to limit machinery from sensitive areas where possible, and/or plan for impacts related to machinery in proximity to the creek. We anticipate impacts could be limited by using large excavators with arm extensions and flat buckets to complete site grading, and/or a boom truck or crane situated in the parking area above the creek to install and situate the large woody debris and heavy rock.

Since wet conditions are likely to be encountered, special site stripping and grading techniques might be necessary. It may be necessary to cover exposed subgrades with a layer of crushed rock for protection. When wet conditions are encountered, the subgrade should not be compacted as this could cause further subgrade disturbance. In wet conditions, it may be necessary to cover the exposed subgrade with a layer of crushed rock as soon as it is exposed to protect the moisture sensitive soils from disturbance by foot traffic during construction. Surface water and seepage should be diverted around prepared subgrade.

In general, all filling should be accomplished in uniform lifts up to eight inches thick. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill underlying building areas and pavement subgrade should be compacted to a minimum of 95 percent of its maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D-1557 Compaction Test procedure. The moisture content of the soils to be compacted should be within about two percent of optimum so that a readily compactable condition exists. It may be necessary to over-excavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction and should be tested.

Rock Requirements: '*Fish Mix Gravel'* shall consist of washed, round fluvial (river) gravel consisting by volume of 60% sand to 2-inch diameter rock, in accordance with WSDOT standard specification 9-03.11 section (1), 20% 2- to 6-inch diameter rock, and 20% 6- to 18-inch diameter rock per section (2). 'Fish Mix' shall be supplemented as necessary with native bed material and/or imported pit run in order to match existing bed material gradation and prevent subsurface flow.

Anchor *'Habitat Boulders'* shall be 2, 3, and 4-man rock in accordance with WSDOT specifications and indicated on the Schematic Design Detail in Figure 10. Streambed cobbles and boulders shall meet WSDOT standard specification 9-03.11 Sections (2) and (3). Large anchor rocks shall be sourced from a naturally occurring fluvial sediment and shall thus be rounded or semi-rounded as possible.

'Riprap' should meet WSDOT standard specification 9-13.1 (2) for light loose rip rap, and quarry spalls should meet WSDOT standard specification 9-13.6.

Tieback Anchors: Tieback anchors will secure the large woody debris to the undisturbed bank to prevent loss and impacts during future flooding events. As shown on the Schematic Design Detail in Figure 10, two sets of anchors will be utilized to secure the placement of the large woody debris. One set of anchors will be near the outboard face of the woody debris and oriented directly downward to redundantly counteract buoyancy forces on the structure. Another set will be situated at a downward angle into the bank and secure the back of the woody debris as a precautionary measure in the event the sharpened ends of anchor logs are unable to be appropriately pressed into the bank.

The contractor should determine the torque values required to achieve the desired capacity. Load carrying capacities on the order of 10 kips or more could be achieved using a triple-helix with 8-, 10-, and 12-inch diameter anchor installed successfully. However, the anchors should advance a minimum of 20 feet into undisturbed soils to achieve sufficient capacities. The helical anchors should be installed as recommended by the supplier using torque levels correlating the desired capacities. Anchors should be spaced a minimum of three times the diameter of the largest helix of the anchor on center. We recommend that we review proposed anchor installation methods from the contractor. We should also observe anchor installation and testing.

Two anchors should be performance tested to 200 percent of the anchor design capacity. The performance test should consist of cyclic loading in increments of 25 percent of the design load, as outlined in the Federal Highways Administration (FHA) report No. FHWA/RD-82/047. The test location should be determined in the field, based on soil conditions observed during anchor installation.

Cabling: Anchorage shall be fastened using 5/8" minimum diameter galvanized or stainless-steel cable, or hot-dip galvanized 5/8" diameter steel chain as indicated on the Schematic Design Detail in Figure 10. Notches a minimum of 1-inch in depth should be made on large woody debris for cable placement. All chain and cable shall be fastened with hot-dip galvanized steel clamps and liberal quantities of hot-dip galvanized 3/8" x 4" steel staples. Epoxy used for anchorage should consist of Hilti HIT-HY 150 resin adhesive or equal.

Vegetation and Restoration: Revegetation shall be completed with native riparian species to be determined by the project biologist and in accordance with prevailing jurisdictional requirements. Density and timing of restoration plantings should also be coordinated by the project biologist. Consideration should be made for plants compatible with the climate of the planting site, reasonable availability, probability of successful establishment, and ability to meet targets for biodiversity and habitat which may be associated with various stakeholder and jurisdictional requirements. In any case, watering and maintenance recommendations for plantings should be supplied by the project biologist to the Owner to ensure successful establishment of the revegetation over a three-year period, consistent with the **Technical Design Criteria** subsection of this project.

Degradable, all-natural coconut coir matting or jute netting should be installed on restoration areas prior to planting, and this erosion control surfacing staked with 18- to 24-inch long, wedge-shaped stakes made by cutting untreated 2x4s diagonally. Stakes should be placed in regular intervals no greater than three feet on-center, and erosion control fabric should incorporate an overlap of at least a foot in restoration areas. We do not recommend synthetic reinforcement mats at this site to prevent microplastic debris from entering Issaquah Creek as a result of this bank stabilization and habitat restoration project. Metal stakes and/or staples or small wooden pegs for tacking erosion control fabrics are similarly incompatible with desired outcomes for the project.

Monitoring Requirements

Construction Monitoring: NGA should be retained to monitor installation and construction of the permanent bank repair at this site. Specifically, we should review TESC plans and temporary partial dewatering plans developed by the selected contractor. During construction, we should review the import of large woody debris to the site, and selection of various rock as fill. We recommend we be present to observe construction of temporary partial dewatering, excavations, tieback anchor installation, large woody debris placement, rock placement, anchorage, and fill on a full-time basis. We should be retained part-time during construction to observe restoration, replanting, and erosion control.

Ongoing Monitoring: Monitoring of the project after construction shall be in accordance with programmatic requirements by FEMA and those of the Army Corps of Engineers. Specifically, we recommend monitoring be conducted during or following 2-year or higher flow events for a minimum of five years following project completion. Loose LWD should be re-anchored, and damage should be assessed during these visits. Hydrologic impacts of the project should be measured periodically within the five-year monitoring period.

Monitoring should result in measurable outcomes to determine project success, as outlined in the **Technical Design Criteria** subsection of this report. Specifically, upstream and downstream geomorphic impacts should be monitored with cross sectional surveys annually during low-flow periods. Video should be recorded to observe local flow patterns during high-flow events. Habitat monitoring should consider percent cover or shading of the stream over time, and plant-survival rate. A summary of recommended long-term monitoring activities is presented in Table 4 below.

Table 4 – Recommended Long-Term Monitoring Program

Monitoring Goal	Metric	Monitoring Frequency	Timing
• Local Impacts • LWD Remains In-Tact	• Qualitative geomorphic observations • Measured Cross Sections	Annually, Five Years	Early Low-Flow Event
• 60% Plant Survival • 80% Plant Coverage	• Planting Survey	Annually, Three Years	Growing Season End
• Stability during High Flow • High Flow Hydrology	• Video Records • Qualitative geomorphic observations	As needed, Five Years +	>2-year High-Flow Events

USE OF THIS REPORT

NGA has prepared this report for the Issaquah School District and associated agents, for use in the planning and design of the development on this site only. Our report, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. The scope of our work does not include services related to other geologic hazards beside Channel Migration Hazards. There are possible variations in subsurface conditions between the explorations and also with time. The variability in earth materials in the vicinity of the site can influence bank erosion rates and susceptibility. Unforeseen changes in watershed conditions could alter sediment and woody debris inputs upstream of the property, changing predictions of future aggradation. Climate-change impacts will influence the magnitude and frequency of peak flows; more frequent and/or more intense flood events may increase rates of channel migration and erosion at this site.

Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this report was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

o-o-o

It has been a pleasure to provide service to you on this project. If you have any questions or require further information, please call.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.

Carston Curd

Carston T. Curd, GIT
Project Geologist



Khaled M. Shawish, PE
Principal

CTC:KMS:ctc

Appendices A, B, C and Ten Figures Attached

VICINITY MAP

Not to Scale



Issaquah, WA

Project Number	Issaquah Creek Bank Stabilization Vicinity Map	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
1228720		Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510	1	7/13/21	Original	DPN	CTC
Figure 1		Wenatchee Office: 105 Palouse St. Wenatchee, WA 98801, (509) 665-7696 / Fax: 665-7692					
		www.nelsongeotech.com					

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Schematic Site Plan

LEGEND

Property line

A A' Approximate location of cross-section

0 40 80

Approximate Scale: 1 inch = 40 feet

Reference: Site plan based on field measurements, observations, and aerial parcel map review.

Project Number 1228720

Figure 2

Issaquah Creek Bank Stabilization
Schematic Site Plan

NELSON GEOTECHNICAL ASSOCIATES, INC

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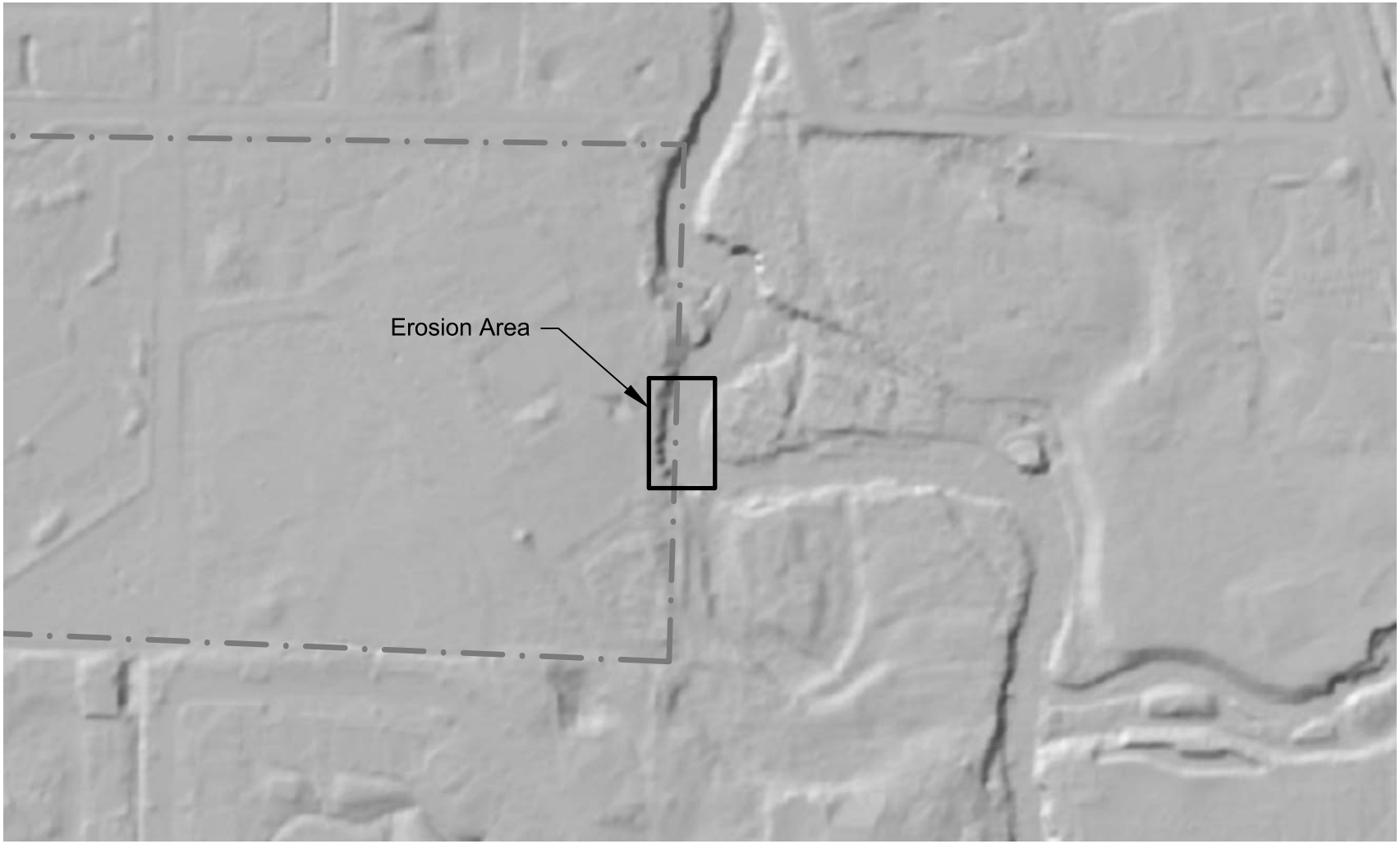
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No.	Date	Revision	By	CK
1	7/13/21	Original	DPN	CTC

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LiDAR Site Plan



LEGEND

Property line

0 200 400

Approximate Scale: 1 inch = 200 feet

Reference: Site plan based on field measurements, observations, and LiDAR map review.

Project Number 1228720

Figure 3

Issaquah Creek Bank Stabilization
LiDAR Site Plan

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Woodinville, WA 98072
(425) 486-1669 / Fax: 481-2510

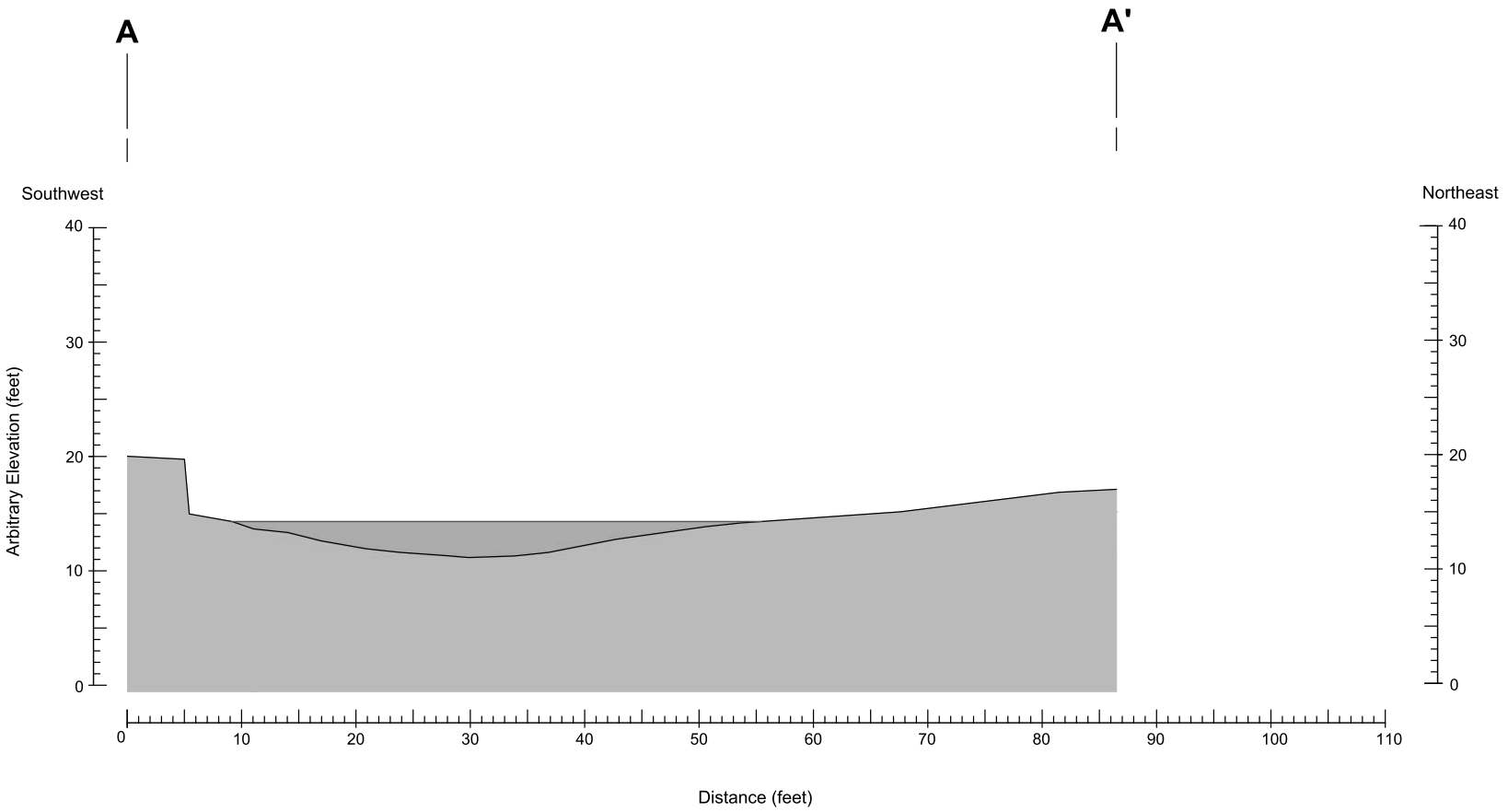
Wenatchee Office
105 Palouse St.
Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

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No.	Date	Revision	By	CK
1	9/8/21	Original	DPN	CTC

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\LiDAR.dwg

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\CS.dwg



NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are arbitrary.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

No.	Date	Revision	By	CK
1	7/13/21	Original	DPN	CTC

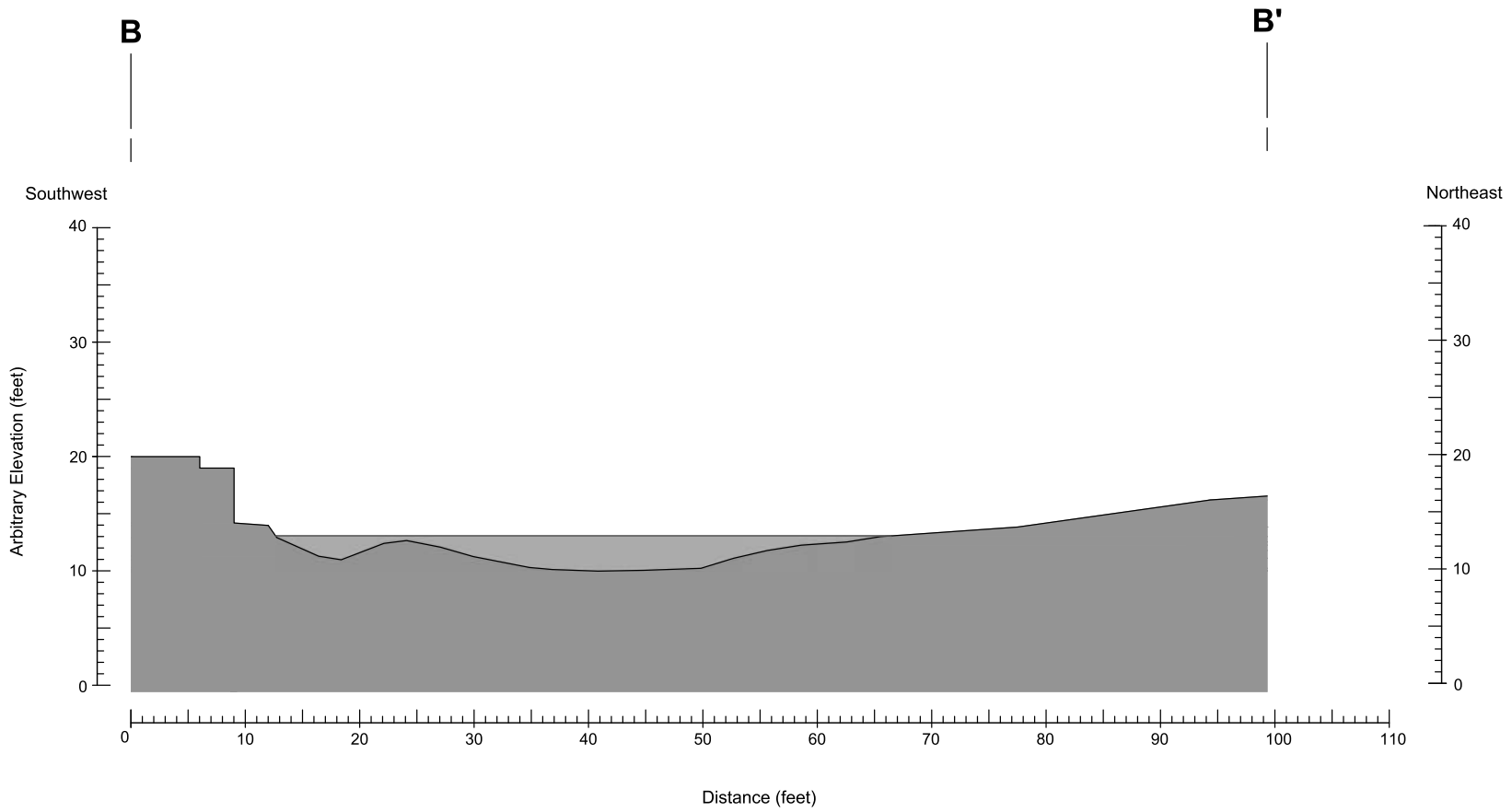
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Issaquah Creek Bank Stabilization
Cross-Section A-A'

Project Number
1228720

Figure 4

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\CS.dwg



NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are arbitrary.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

No.	Date	Revision	By	CK
1	7/13/21	Original	DPN	CTC

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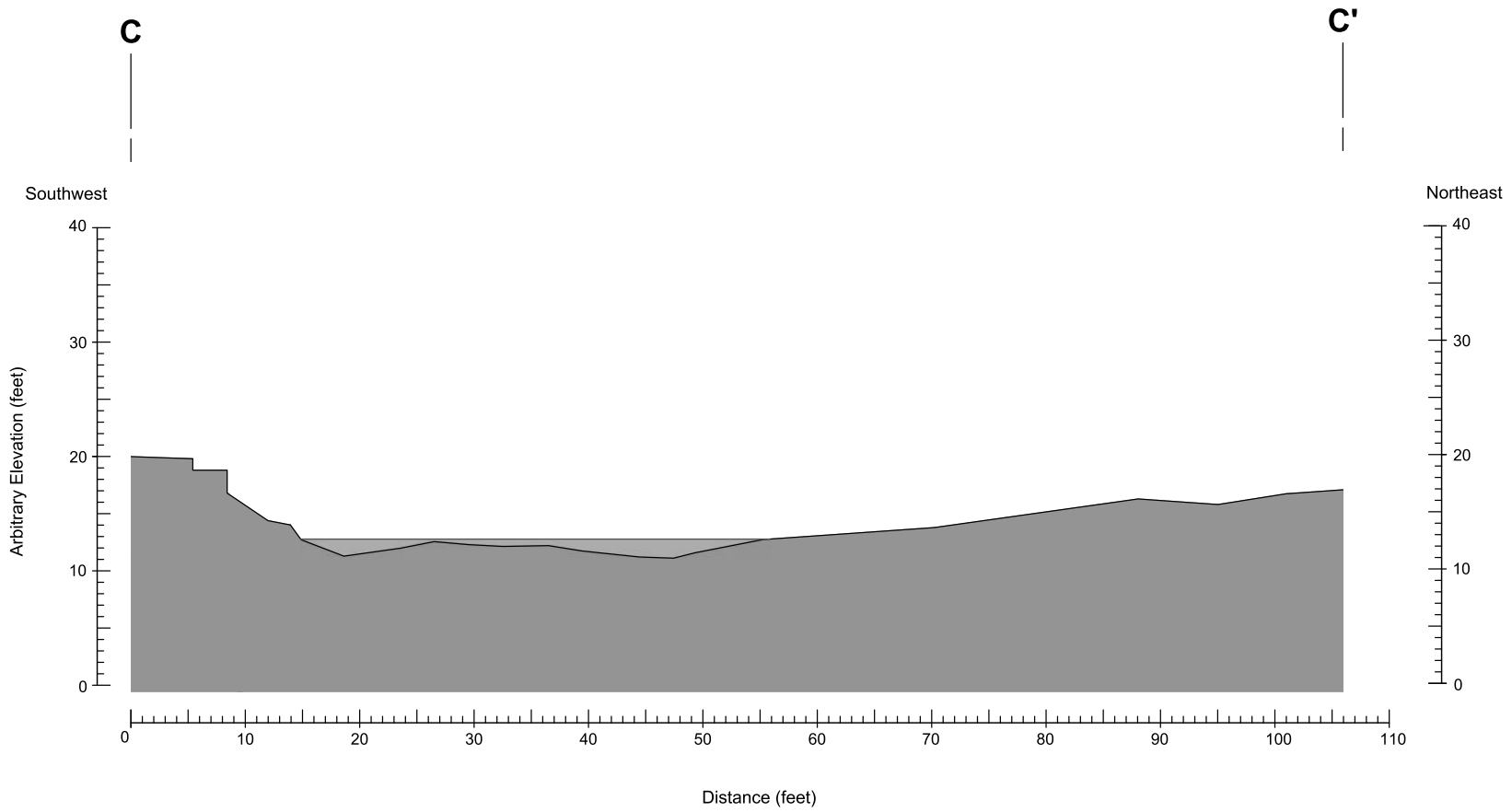
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Issaquah Creek Bank Stabilization
Cross-Section B-B'

Project Number
1228720

Figure 5

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\CS.dwg



NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are arbitrary.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

No.	Date	Revision	By	CK
1	7/13/21	Original	DPN	CTC

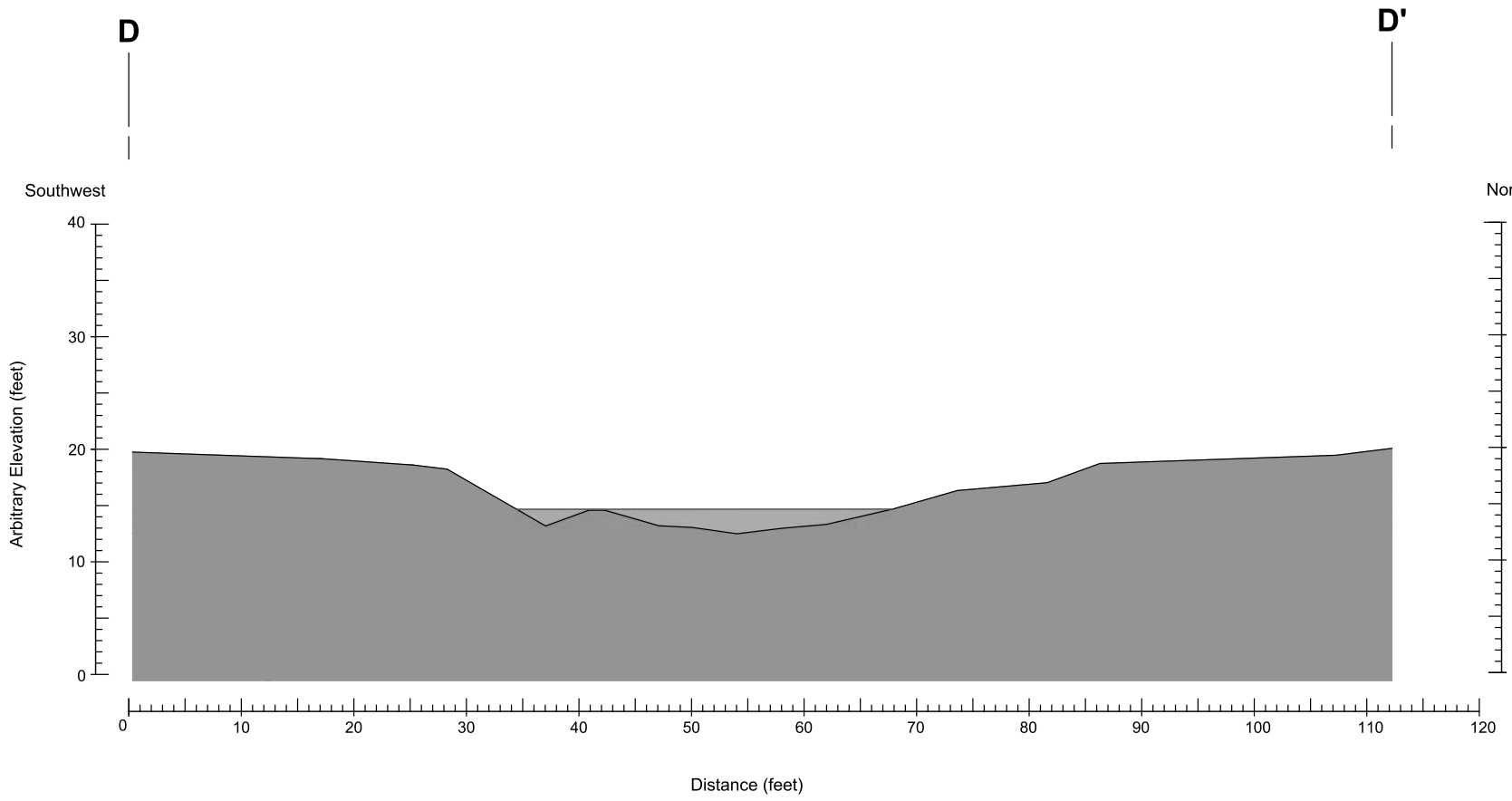
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Woodinville, WA 98072
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Issaquah Creek Bank Stabilization
Cross-Section C-C'

Project Number
1228720

Figure 6

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\CS.dwg



NOTES:
1) Stratigraphic conditions are interpolated between the explorations. Actual conditions may vary.
2) Elevations are arbitrary.

Reference: Cross Section is based on field measurements using a hand-held clinometer and 100-ft tape measure.

No.	Date	Revision	By	CK
1	7/13/21	Original	DPN	CTC

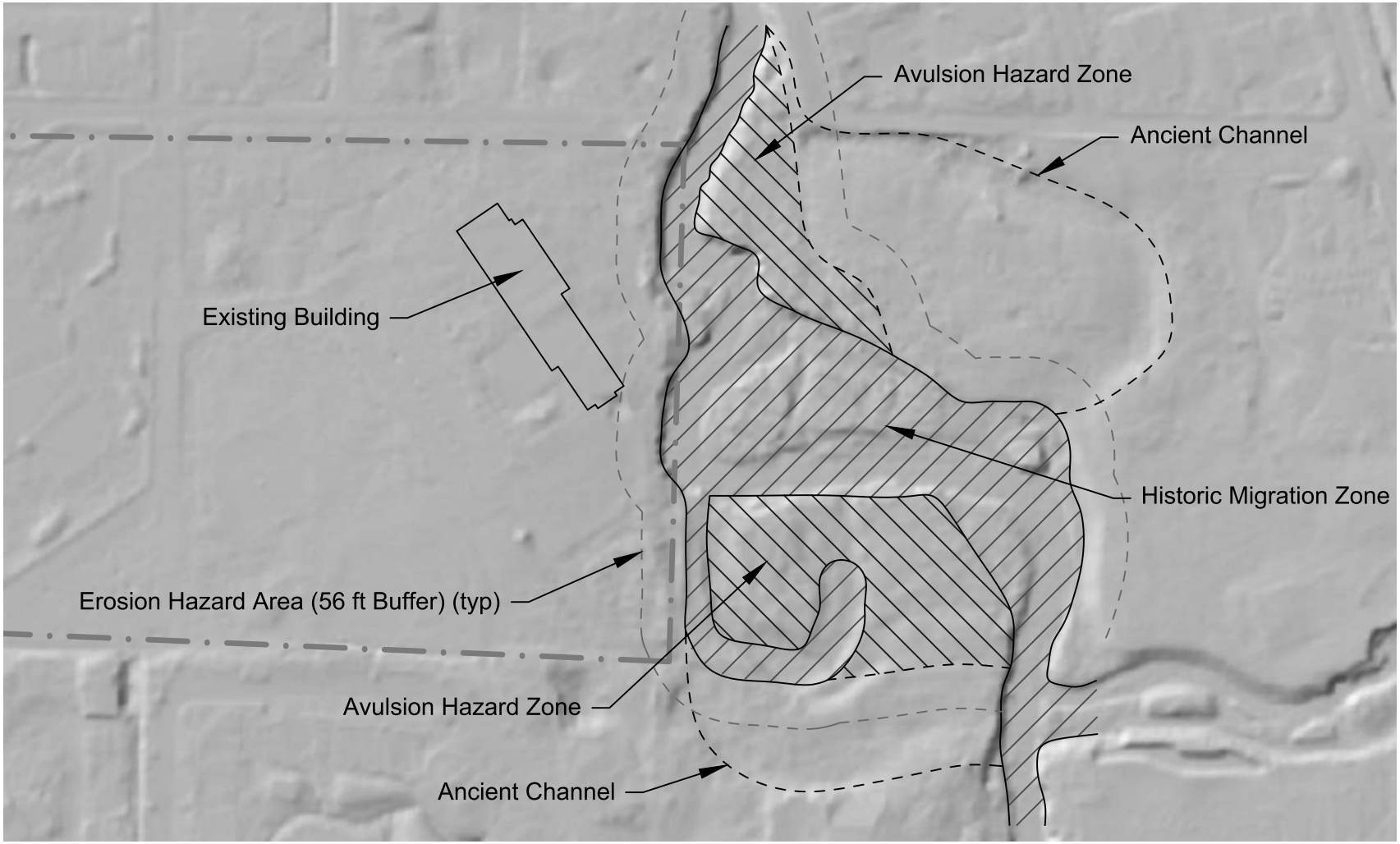
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Issaquah Creek Bank Stabilization
Cross-Section D-D'

Project Number
1228720

Figure 7

Channel Migration Hazard Delineation



N

LEGEND

Property line

0 200 400

Approximate Scale: 1 inch = 200 feet

Reference: Site plan based on field measurements, observations, and LiDAR map review.

Project Number 1228720

Figure 8

Issaquah Creek Bank Stabilization
Channel Migration Hazard Delineation

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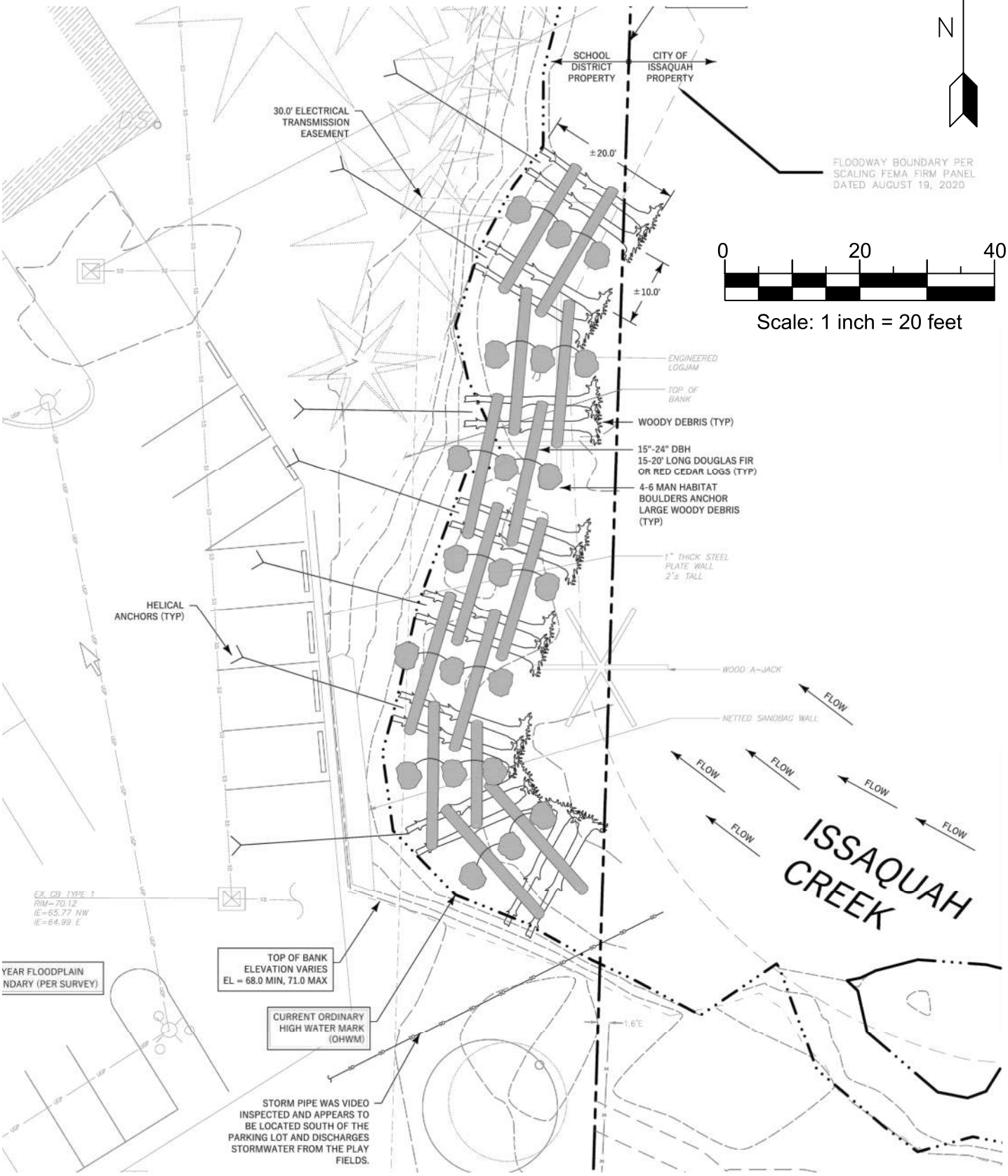
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Wenatchee, WA 98801
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No.	Date	Revision	By	CK
1	9/8/21	Original	DPN	CTC

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Design Plan



Reference: Design Plan based on a plan dated September 3, 2021 titled "IDS Holly Street Campus Permanent Creek Repair," provided by the Issaquah School District.

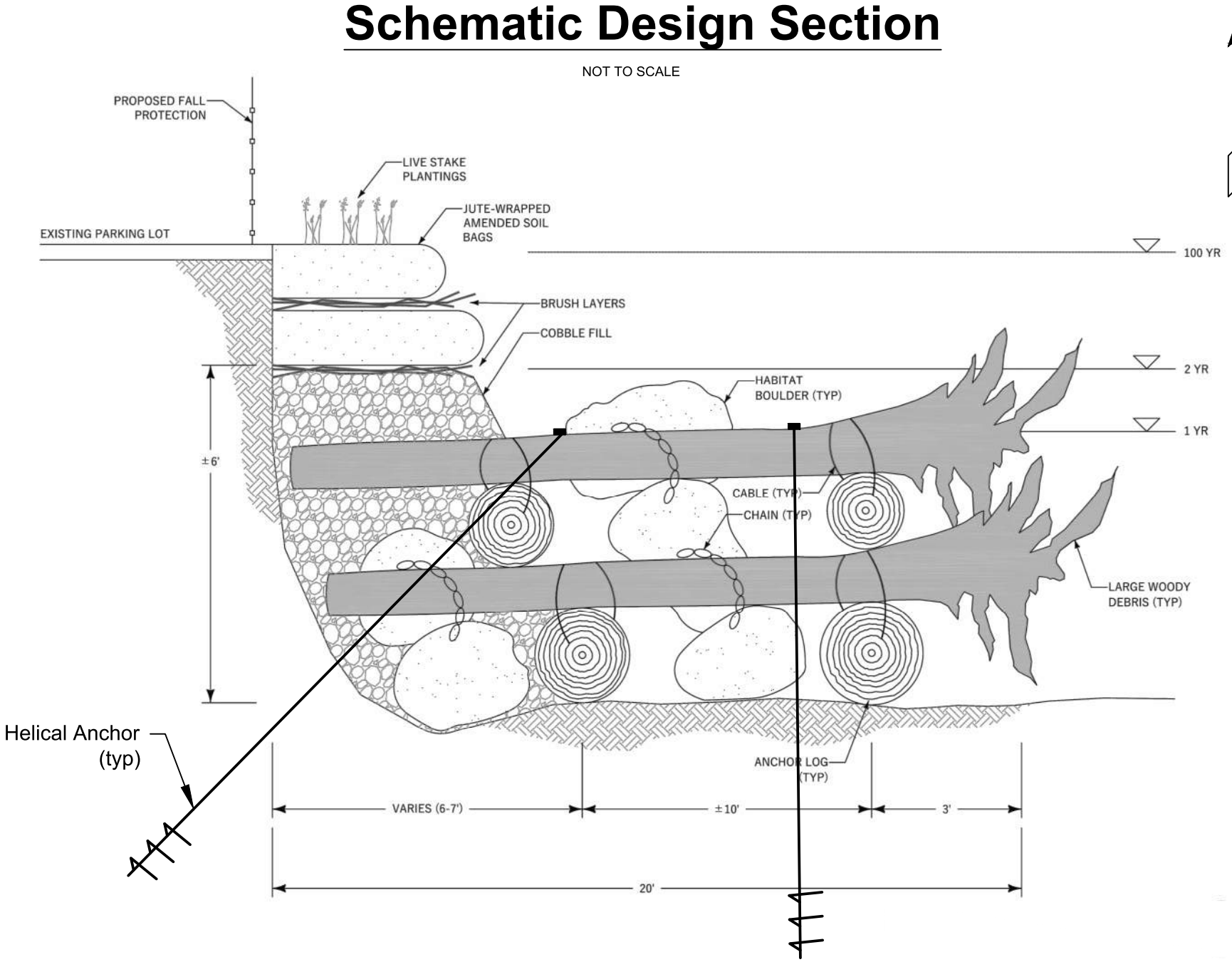
Project Number 1228720	Issaquah Creek Bank Stabilization Design Plan	NELSON GEOTECHNICAL ASSOCIATES, INC
Figure 9		www.nelsongeotech.com **Woodinville Office** 17311-135th Ave. NE, A-500 Woodinville, WA 98072 (425) 486-1669 / Fax: 481-2510 **Wenatchee Office** 105 Palouse St. Wenatchee, WA 98801 (509) 665-7696 / Fax: 665-7692

No.	Date	Revision	By	CK
1	9/8/21	Original	DPN	CTC

\\hill\company\2020 NGA Project Folders\122287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\Design Plan.dwg

Schematic Design Section

NOT TO SCALE



Reference: Design Plan based on a plan dated September 3, 2021 titled "IDS Holly Street Campus Permanent Creek Repair," provided by the Issaquah School District.

Project Number 1228720

Figure 10

Issaquah Creek Bank Stabilization
Schematic Design Section

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1	9/8/21	Original	DPN	CTC

\\hill\company\2020 NGA Project Folders\12287-20 Issaquah School District Holly Street Bank Stabilization\Drafting\Design Detail.dwg

Appendix A: Glossary

Aggradation	An increase in land elevation due to the deposition of sediment
AHZ	Avulsion Hazard Zone: the part of the CMZ where the channel may shift suddenly
Alluvial	Sediment deposited by flowing water or landforms resulting from that type of deposition
Amplitude	A measurement of the maximum, opposite extent of stream meanders
Anthropogenic	Originating in human activity
Avulsion	The process where the stream suddenly shifts to a new channel location
Bankfull Conditions	The width and depth of the active channel at the stage when water just begins to overflow into the active floodplain or bench
Bed Load Transport	The largest of particles transported by stream activity that move along the ground surface by rolling, sliding, or jumping
Channel Migration	The movement of a stream channel back and forth across its valley
CMZ	Channel Migration Zone: for the purposes of this report, the area where the channel may be reasonably predicted to migrate over the 75-year life of the proposed residence
Cutbank	High energy outside bank of a water channel or meander forming a near-vertical bank subject to erosion
EHA	Erosion Hazard Area: the area where future bank erosion is likely
Floodplain	Areas inundated by flood flows
Geomorphic	Having to do with the shape of the earth surface or processes that formed those shapes
HMZ	Historic Migration Zone: the area where the river channel has migrated since approximately 1936
LiDAR	Light Detection and Ranging: remote sensing method using pulsed lasers to precisely measure the surface of the earth
Point Bar	Low energy inside bank of a water channel or meander forming a gentle terrace and subject to aggradation and/ or periodic inundation
Reach	A further section of a segment in the context of watershed mapping
Relic	Surviving remnant of a natural phenomenon, in the context of this study, channel features which are no longer actively conveying surface water
River Miles (RM)	Measurement of distance upstream of the confluence of Issaquah Creek with Lake Sammamish at Lake Sammamish State Park
River Stage	Water level above an arbitrary point measured in feet
Segment	Portion of the watershed subject to study based on similar valley confinement, discharge, channel pattern, and valley gradient ranging from several hundred feet to several miles in length
Stratigraphy	The order and relative position of geologic earth materials
Thalweg	An imaginary line connecting the lowest points of cross sections of a valley or stream
USGS	United States Geological Survey

APPENDIX B

Subsurface Exploration Logs by Others

Associated Earth Sciences, Inc. (AESI) – "Issaquah Creek Bank Erosion Repair," dated July 9, 2020
Site Plan, Borehole Log, CPT Log (3 Plates)



APPROXIMATE AREA OF TEMPORARY EROSION REPAIR

CREEK BANK EXPOSURE RESULTING FROM 2020 FLOODS

EXPLORATION BORING (1999)

EXPLORATION BORING (2018)

EXPLORATION PIT (2017)

MONITORING WELL (2018)

CONE PENETROMETER (2018)

PARCEL

DATA SOURCES / REFERENCES:
KING CO: STREETS, PARCELS, PARKS 3/20, STREAMS 1/18
AERIAL PICTOMETRY INT. 2019

LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE



N

0 80
FEET

BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

associated earth sciences incorporated

EXISTING SITE AND EXPLORATION PLAN

HOLLY STREET CAMPUS - CREEK BANK EROSION
ISSAQUAH, WASHINGTON

PROJ NO.	DATE:	FIGURE:
20180066E002	7/20	2

\\kirkfile2\GIS\GIS_Projects\aaY2018\180066 Issaquah Middle School\mxd\E002\180066E001 F1 F2

associatec earth sciences incorporatec

Exploration Log

Project Number	Exploration Number	Sheet
180066E001	EB-2	1 of 2

Project Name	Issaquah Middle School	Ground Surface Elevation (ft)	
Location	Issaquah, WA	Datum	N/A
Driller/Equipment	Boretec / EC95 Rubber Track Drill	Date Start/Finish	4/30/18,4/30/18
Hammer Weight/Drop	140# / 30"	Hole Diameter (in)	8 inches

Depth (ft)	ST	Samples	Graphic Symbol	DESCRIPTION	Well Completion	Water Level	Blows/6"	Blows/Foot (10 20 30 40)	Other Tests
				Gravel					
				Fill					
		S-1		Very moist, grayish brown, fine SAND, some silt, some gravel (SP).			2 1 2	▲3	
5		S-2		Moist, gray, fine sandy, SILT; faintly laminated with rust colored laminae (ML).			7 6 5	▲11	
				Younger Alluvium					
				Moist, orangish brown, medium SAND, some silt, some gravel (SP).					
10		S-3		Wet, brown, silty, fine SAND, some gravel (SM). Wet, orangish brown, slightly sandy, GRAVEL, some silt (GP). Free water in spoon. Some drill chatter.		▼	12 13 12	▲25	
15		S-4		Wet, brown, fine SAND (SP). Wet, brownish gray, coarse SAND, some gravel (SP). Wet, brownish gray, silty, gravelly, fine SAND (SM).			14 13 13	▲26	
				Fraser Undifferentiated					
				Heavy drill chatter, bouncing. Difficult drilling.					
20		S-5		Wet, brownish gray with trace iron oxide staining, very gravelly, slightly silty, medium SAND; occasional large gravel in spoon; interbeds (<1 inch thick) of coarse sand or silt (SP). Difficult drilling continues.			14 21 27	▲48	
25		S-6		Wet, brownish gray, very gravelly, medium SAND, some silt; thin beds (1/2 to 1 inch thick) of coarse sand and silt (SP).			20 26 22	▲48	
				Smoother drilling.					
30		S-7		Wet, gray, fine SAND; massive; grades to medium SAND with gravel at shoe (SP). Difficult drilling.			7 7 7	▲14	
35		S-8		Wet, gray, fine SAND; massive (SP). Wet, brownish gray, sandy, GRAVEL, some silt; clasts of gray silt and brown silt (GP).			11 20 23	▲43	
				Smoother drilling.					

Sampler Type (ST):

- 2" OD Split Spoon Sampler (SPT)
- 3" OD Split Spoon Sampler (D & M)
- Grab Sample
- No Recovery
- Ring Sample
- Shelby Tube Sample

M - Moisture

- Water Level ()
- Water Level at time of drilling (ATD)

Logged by: NS

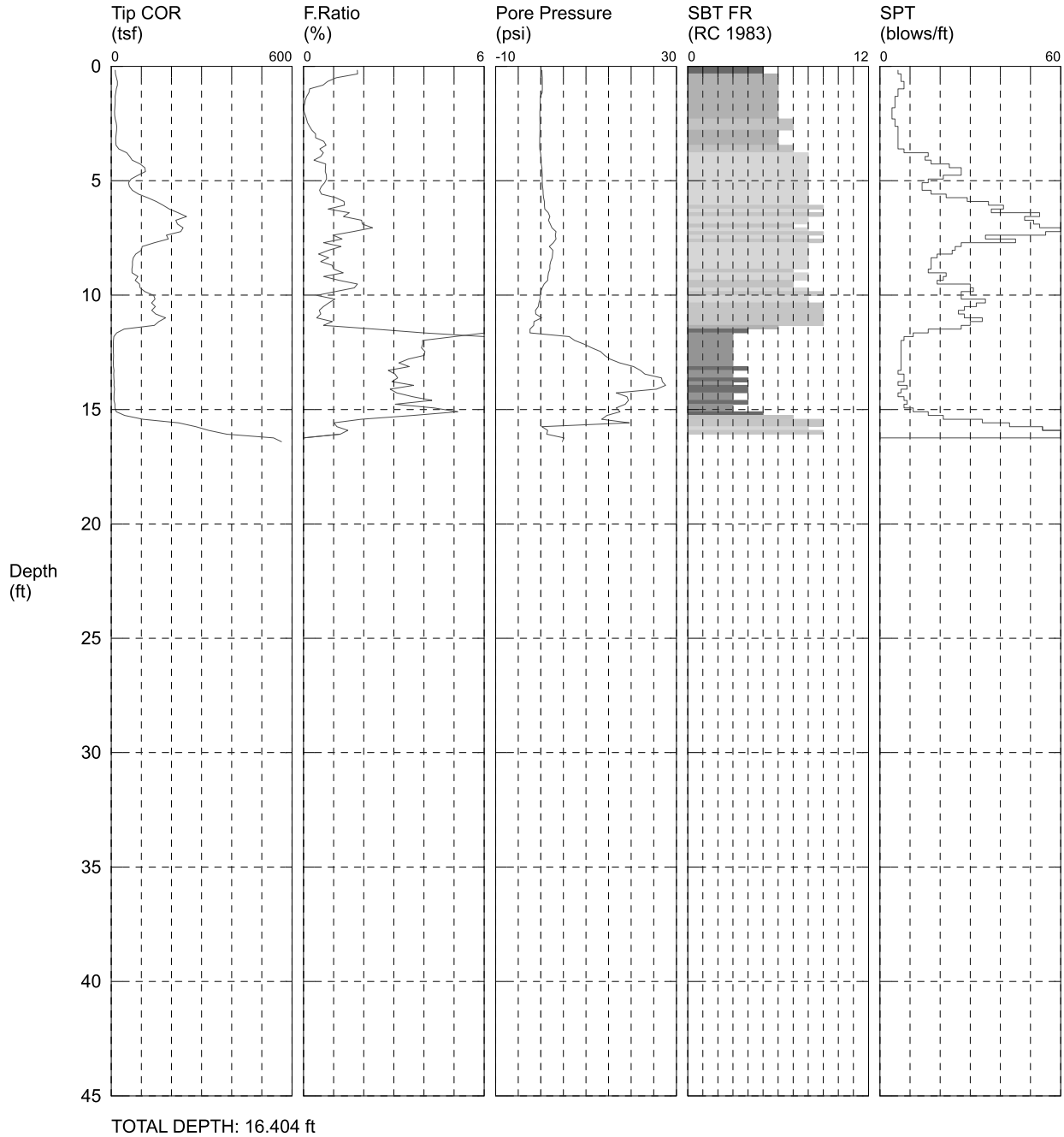
Approved by: CJK

AESIBOR 180066.GPJ June 11, 2018

CPT-06

CPT CONTRACTOR: In Situ Engineering
CUSTOMER: AESI
LOCATION: Issaquah
JOB NUMBER: 180066E001
COMMENT: Issaquah Mid School Admin Site

OPERATOR: Okbay
CONE ID: DDG1263
TEST DATE: 4/23/2018 1:19:59 PM
PRIDRILL: N/A
BACKFILL: Bentonite Chips
SURFACE PATCH: Bentonite Chips



TOTAL DEPTH: 16.404 ft

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

APPENDIX C

Flood Impact Analyses

US Army Corps of Engineers HEC-RAS 6.0.0

HEC-RAS HEC-RAS 6.0.0 May 2021
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Holly Street Existing Conditions - 2021
Project File : HollyStreet2021.prj
Run Date and Time: 9/1/2021 5:16:12 PM

Project in English units

Project Description:
Simple 1D model for a single reach of Issaquah Creek along ISD Holly Street Campus.

PLAN DATA

Plan Title: Plan 01
Plan File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.p01

Geometry Title: ISDGeometry
Geometry File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.g01

Flow Title : Flow
Flow File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.f01

Plan Summary Information:
Number of: Cross Sections = 5 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Flow
Flow File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.f01

Flow Data (cfs)

River	Reach	RS	100 Year
Issaquah Creek	ISD Campus	141	4160
Issaquah Creek	ISD Campus	0	4160

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Issaquah Creek	ISD Campus	100 Year	Known WS = 70.29	Known WS = 69.39

GEOMETRY DATA

Geometry Title: ISDGeometry
Geometry File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.g01

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 141

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	69	5	69	6	64	10	63	15	62
29	60	34	60	40	61	46	62	55	63
66	64	86	67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	10	.035	55	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
10	55	34	22	6	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.34	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.90	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	70.44	Reach Len. (ft)	34.00	22.00
6.00				

Crit W.S. (ft)		Flow Area (sq ft)	38.87	408.66 175.05
E.G. Slope (ft/ft)	0.002026	Area (sq ft)	38.87	408.66 175.05
Q Total (cfs)	4160.00	Flow (cfs)	95.32	3376.06 688.62
Top Width (ft)	86.00	Top Width (ft)	10.00	45.00 31.00
Vel Total (ft/s)	6.68	Avg. Vel. (ft/s)	2.45	8.26 3.93
Max Chl Dpth (ft)	10.44	Hydr. Depth (ft)	3.89	9.08 5.65
Conv. Total (cfs)	92424.3	Conv. (cfs)	2117.7	75007.2 15299.4
Length Wtd. (ft)	19.60	Wetted Per. (ft)	15.66	45.46 34.71
Min Ch El (ft)	60.00	Shear (lb/sq ft)	0.31	1.14 0.64
Alpha	1.30	Stream Power (lb/ft s)	0.77	9.39 2.51
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.33	1.15 0.51
C & E Loss (ft)	0.09	Cum SA (acres)	0.08	0.12 0.09

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 119

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	70	6	70	9	64	13	63	18	61
22	62	27	62	36	60	50	60	57	62
66	63	86	65	93	66	105	67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	13	.035	66	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
13	66	27	22	19	.1 .3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.22	Element	Left OB	Channel Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.050	0.035 0.050
W.S. Elev (ft)	70.61	Reach Len. (ft)	27.00	22.00 19.00
Crit W.S. (ft)		Flow Area (sq ft)	42.93	497.82 217.28
E.G. Slope (ft/ft)	0.001326	Area (sq ft)	42.93	497.82

217.28				
Q Total (cfs)	4160.00	Flow (cfs)	84.68	3381.01
694.31				
Top Width (ft)	105.00	Top Width (ft)	13.00	53.00
39.00				
Vel Total (ft/s)	5.49	Avg. Vel. (ft/s)	1.97	6.79
3.20				
Max Chl Dpth (ft)	10.61	Hydr. Depth (ft)	3.30	9.39
5.57				
Conv. Total (cfs)	114240.7	Conv. (cfs)	2325.5	92848.3
19066.9				
Length Wtd. (ft)	21.41	Wetted Per. (ft)	17.44	54.06
42.82				
Min Ch El (ft)	60.00	Shear (lb/sq ft)	0.20	0.76
0.42				
Alpha	1.30	Stream Power (lb/ft s)	0.40	5.18
1.34				
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.30	0.92
0.48				
C & E Loss (ft)	0.02	Cum SA (acres)	0.07	0.10
0.08				

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 97

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	70	5	70	8	67	14	64	15	63
18	61	21	63	40	62	47	61	49	62
55	63	70	64	87	66	98	66	105	67

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	15	.035	55	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15	55	36	24	21	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.16	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.84	Wt. n-Val.	0.045	0.035
0.045				
W.S. Elev (ft)	70.31	Reach Len. (ft)	36.00	24.00
21.00				
Crit W.S. (ft)		Flow Area (sq ft)	42.70	324.54
266.68				
E.G. Slope (ft/ft)	0.002549	Area (sq ft)	42.70	324.54
266.68				
Q Total (cfs)	4160.00	Flow (cfs)	128.17	2735.11
1296.73				

Top Width (ft)	105.00	Top Width (ft)	15.00	40.00	50.00
Vel Total (ft/s)	6.56	Avg. Vel. (ft/s)	3.00	8.43	4.86
Max Chl Dpth (ft)	9.31	Hydr. Depth (ft)	2.85	8.11	5.33
Conv. Total (cfs)	82397.8	Conv. (cfs)	2538.6	54174.7	25684.5
Length Wtd. (ft)	24.41	Wetted Per. (ft)	17.68	41.63	53.54
Min Ch El (ft)	61.00	Shear (lb/sq ft)	0.38	1.24	0.79
Alpha	1.26	Stream Power (lb/ft s)	1.15	10.46	3.85
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	0.28	0.71	0.37
C & E Loss (ft)	0.05	Cum SA (acres)	0.06	0.07	0.06

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 73

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67	28	65	35	62	37	60	41	62
42	62	47	60	54	59	64	61	68	62
81	64	86	65	93	66	110	67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.04	35	.035	68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
35	68	78	73	62	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.040	0.035	0.045
W.S. Elev (ft)	70.38	Reach Len. (ft)	78.00	73.00	62.00
Crit W.S. (ft)		Flow Area (sq ft)	170.64	326.89	225.27
E.G. Slope (ft/ft)	0.001733	Area (sq ft)	170.64	326.89	225.27
Q Total (cfs)	4160.00	Flow (cfs)	705.16	2558.34	896.50
Top Width (ft)	110.00	Top Width (ft)	35.00	33.00	42.00
Vel Total (ft/s)	5.76	Avg. Vel. (ft/s)	4.13	7.83	

3.98					
Max Chl Dpth (ft)	11.38	Hydr. Depth (ft)	4.88	9.91	
5.36					
Conv. Total (cfs)	99933.6	Conv. (cfs)	16939.7	61457.7	
21536.2					
Length Wtd. (ft)	71.37	Wetted Per. (ft)	39.06	35.08	
45.73					
Min Ch El (ft)	59.00	Shear (lb/sq ft)	0.47	1.01	
0.53					
Alpha	1.33	Stream Power (lb/ft s)	1.95	7.89	
2.12					
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.19	0.54	
0.26					
C & E Loss (ft)	0.08	Cum SA (acres)	0.04	0.05	
0.04					

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 0

INPUT
Description: Downstream Cross Section
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	68	5	68	11	60	13	59	15	58
27	58	32	59	40	60	56	62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11	.035	40	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
11	40	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	70.83	Element	Left OB	Channel	
Right OB					
Vel Head (ft)	1.44	Wt. n-Val.	0.035	0.035	
0.045					
W.S. Elev (ft)	69.39	Reach Len. (ft)			
Crit W.S. (ft)	66.15	Flow Area (sq ft)	39.29	311.81	
134.24					
E.G. Slope (ft/ft)	0.002656	Area (sq ft)	39.29	311.81	
134.24					
Q Total (cfs)	4160.00	Flow (cfs)	153.99	3276.25	
729.76					
Top Width (ft)	56.00	Top Width (ft)	11.00	29.00	
16.00					
Vel Total (ft/s)	8.57	Avg. Vel. (ft/s)	3.92	10.51	
5.44					

Max Chl Dpth (ft)	11.39	Hydr. Depth (ft)	3.57	10.75	8.39
Conv. Total (cfs)	80712.4	Conv. (cfs)	2987.8	63565.7	14158.9
Length Wtd. (ft)		Wetted Per. (ft)	16.39	29.63	23.51
Min Ch El (ft)	58.00	Shear (lb/sq ft)	0.40	1.75	0.95
Alpha	1.26	Stream Power (lb/ft s)	1.56	18.34	5.15
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Issaquah Creek

Reach	River Sta.	n1	n2	n3
ISD Campus	141	.05	.035	.05
ISD Campus	119	.05	.035	.05
ISD Campus	97	.045	.035	.045
ISD Campus	73	.04	.035	.045
ISD Campus	0	.035	.035	.045

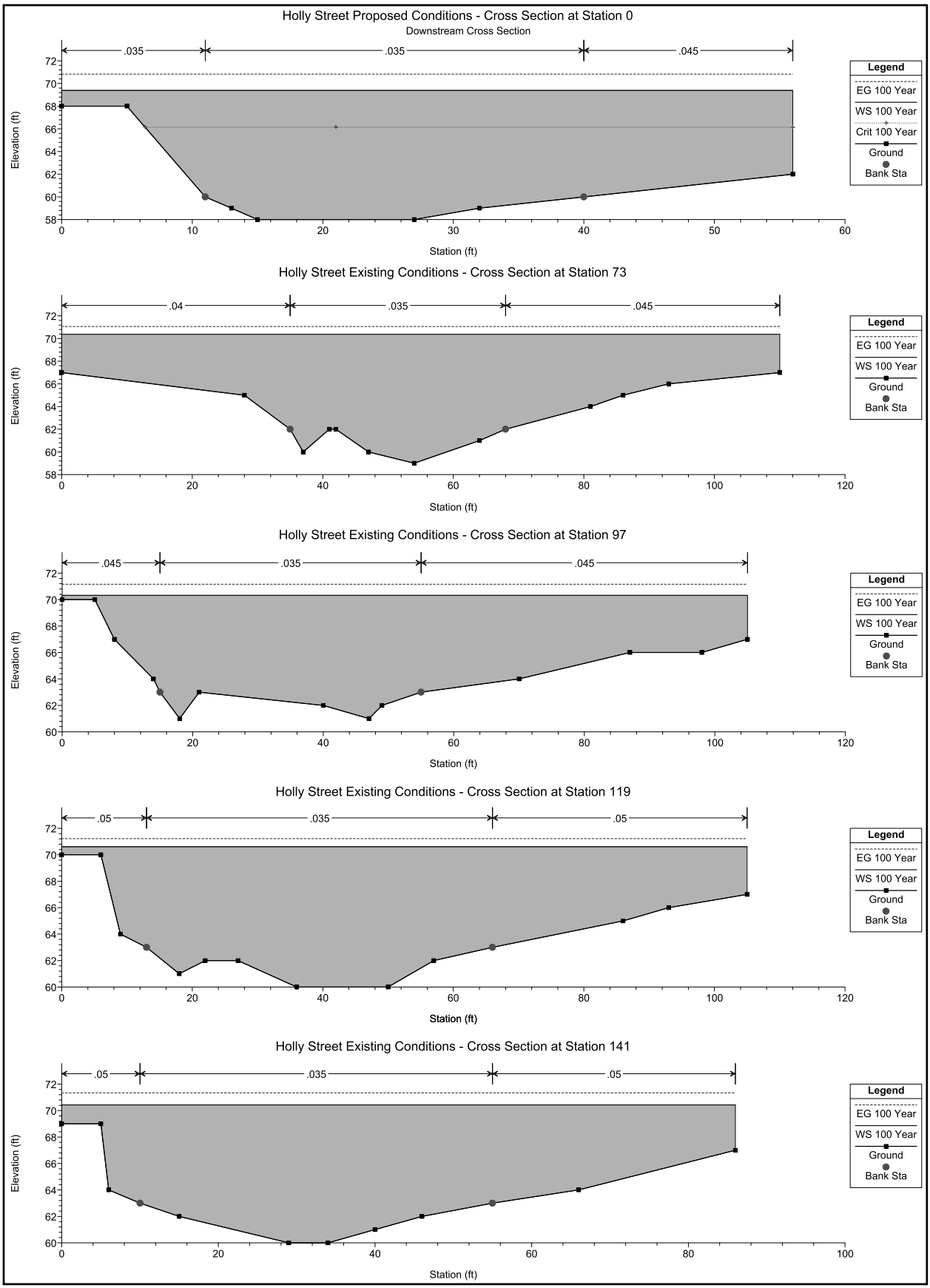
SUMMARY OF REACH LENGTHS

River: Issaquah Creek

Reach	River Sta.	Left	Channel	Right
ISD Campus	141	34	22	6
ISD Campus	119	27	22	19
ISD Campus	97	36	24	21
ISD Campus	73	78	73	62
ISD Campus	0			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Issaquah Creek

Reach	River Sta.	Contr.	Expan.
ISD Campus	141	.1	.3
ISD Campus	119	.1	.3
ISD Campus	97	.1	.3
ISD Campus	73	.1	.3
ISD Campus	0	.1	.3


Holly Street Proposed Conditions - Cross Section at Station 0
Downstream Cross Section
.035
.035
.045
Elevation (ft)
Station (ft)
Legend
EG 100 Year
WS 100 Year
Crit 100 Year
Ground
Bank Sta
Holly Street Existing Conditions - Cross Section at Station 73
.04
.035
.045
Elevation (ft)
Station (ft)
Legend
EG 100 Year
WS 100 Year
Ground
Bank Sta
Holly Street Existing Conditions - Cross Section at Station 97
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
EG 100 Year
WS 100 Year
Ground
Bank Sta
Holly Street Existing Conditions - Cross Section at Station 119
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100 Year
WS 100 Year
Ground
Bank Sta
Holly Street Existing Conditions - Cross Section at Station 141
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100 Year
WS 100 Year
Ground
Bank Sta

HEC-RAS HEC-RAS 6.0.0 May 2021
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Holly Street Proposed Conditions
Project File : HollyStreet2021.prj
Run Date and Time: 9/8/2021 9:34:24 AM

Project in English units

Project Description:
Simple 1D model for a single reach of Issaquah Creek along ISD Holly Street Campus with proposed bank reconstruction from a 2019-2020 flood event.

PLAN DATA

Plan Title: Plan 02
Plan File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.p02

Geometry Title: ISDGeometry (Proposed Conditions)
Geometry File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.g01

Flow Title : Flow
Flow File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.f01

Plan Summary Information:

Number of:	Cross Sections	= 5	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Flow
Flow File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.f01

Flow Data (cfs)

River	Reach	RS	100 Year
Issaquah Creek	ISD Campus	141	4160
Issaquah Creek	ISD Campus	0	4160

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Issaquah Creek	ISD Campus	100 Year	Known WS = 70.29	Known WS = 69.39

GEOMETRY DATA

Geometry Title: ISDGeometry
Geometry File : c:\Users\carstonc\Documents\HEC-RAS\HollyStreet2021.g01

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 141

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	69	5	69	6	64	10	63	15	62
29	60	34	60	40	61	46	62	55	63
66	64	86	67						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	10	.035	55	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
10	55	34	22	6	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.37	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	70.48	Reach Len. (ft)	34.00	22.00
6.00				

Crit W.S. (ft)		Flow Area (sq ft)	39.33	410.74 176.48
E.G. Slope (ft/ft)	0.001988	Area (sq ft)	39.33	410.74 176.48
Q Total (cfs)	4160.00	Flow (cfs)	96.12	3372.97 690.91
Top Width (ft)	86.00	Top Width (ft)	10.00	45.00 31.00
Vel Total (ft/s)	6.64	Avg. Vel. (ft/s)	2.44	8.21 3.92
Max Chl Dpth (ft)	10.48	Hydr. Depth (ft)	3.93	9.13 5.69
Conv. Total (cfs)	93294.5	Conv. (cfs)	2155.6	75644.1 15494.8
Length Wtd. (ft)	19.04	Wetted Per. (ft)	15.71	45.46 34.75
Min Ch El (ft)	60.00	Shear (lb/sq ft)	0.31	1.12 0.63
Alpha	1.30	Stream Power (lb/ft s)	0.76	9.21 2.47
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.27	1.04 0.50
C & E Loss (ft)	0.03	Cum SA (acres)	0.08	0.12 0.09

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 119

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	70	6	70	9	64	13	63	18	61
22	62	27	62	36	60	50	60	57	62
66	63	86	65	93	66	105	67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	13	.035	66	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
13	66	27	22	19	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	27	68

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.30	Element	Left OB	Channel Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.035 0.050
W.S. Elev (ft)	70.51	Reach Len. (ft)	27.00	22.00 19.00

Crit W.S. (ft)		Flow Area (sq ft)	19.59	406.38	213.28
E.G. Slope (ft/ft)	0.002619	Area (sq ft)	19.59	406.38	213.28
Q Total (cfs)	4160.00	Flow (cfs)	36.02	3176.45	947.53
Top Width (ft)	105.00	Top Width (ft)	13.00	53.00	39.00
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	1.84	7.82	4.44
Max Chl Dpth (ft)	10.51	Hydr. Depth (ft)	1.51	7.67	5.47
Conv. Total (cfs)	81286.6	Conv. (cfs)	703.8	62067.9	18514.9
Length Wtd. (ft)	21.14	Wetted Per. (ft)	14.74	59.56	42.72
Min Ch El (ft)	60.00	Shear (lb/sq ft)	0.22	1.12	0.82
Alpha	1.21	Stream Power (lb/ft s)	0.40	8.72	3.63
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.24	0.84	0.47
C & E Loss (ft)	0.02	Cum SA (acres)	0.07	0.10	0.08

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 97

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	70	5	70	8	67	14	64	15	63
18	61	21	63	40	62	47	61	49	62
55	63	70	64	87	66	98	66	105	67

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	15	.035	55	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15	55	36	24	21	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	22	68

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.045	0.035	0.045
W.S. Elev (ft)	70.24	Reach Len. (ft)	36.00	24.00	21.00

Crit W.S. (ft)		Flow Area (sq ft)	21.57	280.49	262.90
E.G. Slope (ft/ft)	0.003970	Area (sq ft)	21.57	280.49	262.90
Q Total (cfs)	4160.00	Flow (cfs)	54.61	2523.70	1581.69
Top Width (ft)	105.00	Top Width (ft)	15.00	40.00	50.00
Vel Total (ft/s)	7.36	Avg. Vel. (ft/s)	2.53	9.00	6.02
Max Chl Dpth (ft)	9.24	Hydr. Depth (ft)	1.44	7.01	5.26
Conv. Total (cfs)	66026.3	Conv. (cfs)	866.8	40055.4	25104.1
Length Wtd. (ft)	24.06	Wetted Per. (ft)	16.07	45.47	53.46
Min Ch El (ft)	61.00	Shear (lb/sq ft)	0.33	1.53	1.22
Alpha	1.16	Stream Power (lb/ft s)	0.84	13.76	7.33
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	0.23	0.66	0.37
C & E Loss (ft)	0.06	Cum SA (acres)	0.06	0.07	0.06

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 73

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67	28	65	35	62	37	60	41	62
42	62	47	60	54	59	64	61	68	62
81	64	86	65	93	66	110	67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.04	35	.035	68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
35	68	78	73	62	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	42	66

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	71.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.040	0.035	0.045
W.S. Elev (ft)	70.30	Reach Len. (ft)	78.00	73.00	62.00

Crit W.S. (ft)		Flow Area (sq ft)	143.37	290.27	221.94
E.G. Slope (ft/ft)	0.002583	Area (sq ft)	143.37	290.27	221.94
Q Total (cfs)	4160.00	Flow (cfs)	652.19	2438.86	1068.95
Top Width (ft)	110.00	Top Width (ft)	35.00	33.00	42.00
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)	4.55	8.40	4.82
Max Chl Dpth (ft)	11.30	Hydr. Depth (ft)	4.10	8.80	5.28
Conv. Total (cfs)	81851.2	Conv. (cfs)	12832.4	47986.5	21032.4
Length Wtd. (ft)	71.11	Wetted Per. (ft)	38.33	37.78	45.65
Min Ch El (ft)	59.00	Shear (lb/sq ft)	0.60	1.24	0.78
Alpha	1.26	Stream Power (lb/ft s)	2.74	10.41	3.78
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	0.16	0.50	0.25
C & E Loss (ft)	0.07	Cum SA (acres)	0.04	0.05	0.04

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Issaquah Creek
REACH: ISD Campus RS: 0

INPUT
Description: Downstream Cross Section
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	68	5	68	11	60	13	59	15	58
27	58	32	59	40	60	56	62		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11	.035	40	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
11	40	.1	.3

CROSS SECTION OUTPUT Profile #100 Year

E.G. Elev (ft)	70.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.035	0.035	0.045
W.S. Elev (ft)	69.39	Reach Len. (ft)			
Crit W.S. (ft)	66.15	Flow Area (sq ft)	39.29	311.81	

134.24					
E.G. Slope (ft/ft)	0.002656	Area (sq ft)	39.29	311.81	
134.24					
Q Total (cfs)	4160.00	Flow (cfs)	153.99	3276.25	
729.76					
Top Width (ft)	56.00	Top Width (ft)	11.00	29.00	
16.00					
Vel Total (ft/s)	8.57	Avg. Vel. (ft/s)	3.92	10.51	
5.44					
Max Chl Dpth (ft)	11.39	Hydr. Depth (ft)	3.57	10.75	
8.39					
Conv. Total (cfs)	80712.4	Conv. (cfs)	2987.8	63565.7	
14158.9					
Length Wtd. (ft)		Wetted Per. (ft)	16.39	29.63	
23.51					
Min Ch El (ft)	58.00	Shear (lb/sq ft)	0.40	1.75	
0.95					
Alpha	1.26	Stream Power (lb/ft s)	1.56	18.34	
5.15					
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Issaquah Creek

Reach	River Sta.	n1	n2	n3
ISD Campus	141	.05	.035	.05
ISD Campus	119	.05	.035	.05
ISD Campus	97	.045	.035	.045
ISD Campus	73	.04	.035	.045
ISD Campus	0	.035	.035	.045

SUMMARY OF REACH LENGTHS

River: Issaquah Creek

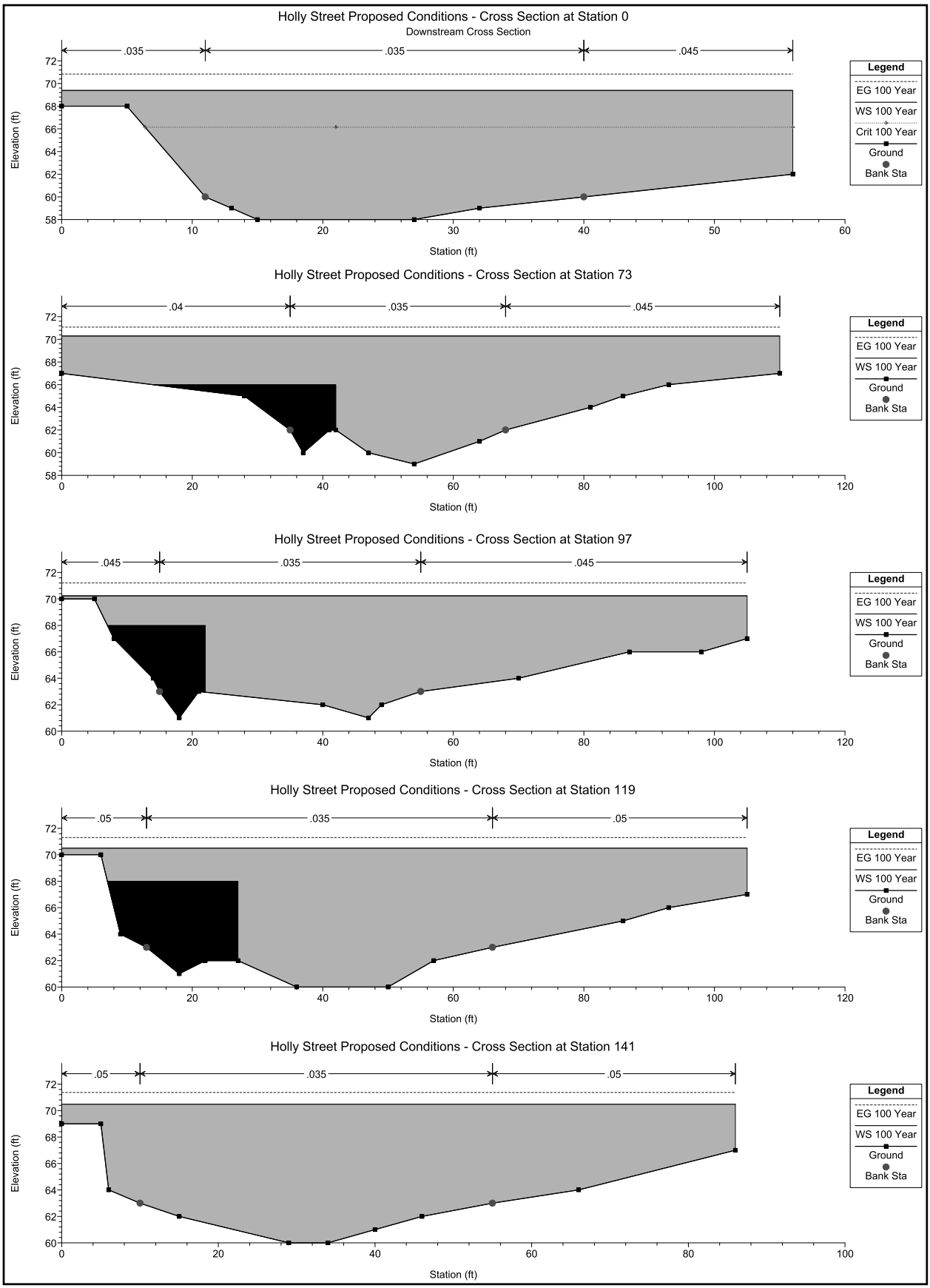
Reach	River Sta.	Left	Channel	Right
ISD Campus	141	34	22	6
ISD Campus	119	27	22	19
ISD Campus	97	36	24	21
ISD Campus	73	78	73	62
ISD Campus	0			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Issaquah Creek

Reach	River Sta.	Contr.	Expan.

ISD Campus	141	.1	.3
ISD Campus	119	.1	.3
ISD Campus	97	.1	.3
ISD Campus	73	.1	.3
ISD Campus	0	.1	.3

Appendix C - HEC-RAS Analysis (Existing Conditions)



CITY OF ISSAQUAH
DEVELOPMENT SERVICES

Development Services
1775 – 12th Ave. NW | P.O. Box 1307
Issaquah, WA 98027
425-837-3100
issaquahwa.gov

Temporary Erosion and Sediment Control (TESC) Report and Stormwater Pollution Prevention Plan For Construction Activities

Type of Project: Commercial/Plat

Project Information

Project Name: ISD Holly Street Campus - Permanent Creek Repair

Project Address/Site Location: 565 NW Holly Street, Issaquah, WA 98027

Permit Number: _____

Owner/Developer: Issaquah School District 411

General Contractor: TBD

Site Contractor: TBD

Certified Erosion and Sediment Control Lead (CESCL): TBD

Prepared by: Chasen Simpson, PE (Latitude 48 Engineers)

Date Prepared: 02/16/2022

Site Information

Property Area (sq ft/acres): 19.31 Acres

Area to be Cleared and Graded (sq ft/acres): +/- 12,400 SF

Estimated Total Fill (cu yds): 780 CY

Estimated Total Excavation (cu yds): 450 CY

Existing Impervious Area (sq ft/acres): 0 SF

New Impervious Area (sq ft/acres): 0 SF

Replaced Impervious Area (sq ft/acres) 0 SF

1. INTRODUCTION

This Temporary Erosion and Sediment Control Report and Stormwater Pollution Prevention Plan for the City of Issaquah (TESC Report) has been prepared as part of the City of Issaquah Permit for the ISD Permanent Creek Repairs construction project.

The Contractor is required to comply with the terms of this TESC Report and the TESC measures shown on the approved permit plans. The Contractor's TESC Supervisor shall be responsible for the performance, maintenance, and review of TESC measures as described in this TESC Report and the approved plans. With the exception of small projects, the TESC supervisor shall be a Certified Erosion and Sediment Control Lead (CESCL).

TESC measures shall be in accordance with the City of Issaquah are described in the 2017 City of Issaquah Stormwater Design Manual Addendum to the 2014 Stormwater Management Manual for Western Washington. This document is available at http://issaquahwa.gov/DocumentCenter/View/1049.

2. SITE DESCRIPTION

Briefly describe below the existing conditions, topography, soils, etc, as appropriate.

The site occurs within Issaquah Creek along the west creek bank approximately 8 feet below the existing asphalt parking lot. See accompanying temporary erosion and sediment control plan.

3. PROPOSED CONSTRUCTION ACTIVITIES AND APPROXIMATE SCHEDULE

Briefly describe below the proposed construction activities for the project. Describe or include as an attachment a schedule for the project activities. Typical activities include utility installation, building foundations, frontage improvements, paving, etc.

The project includes permanent stabilization of the creek bank using a series of large woody debris anchored to the creek bank.

4. CONSTRUCTION TESC BEST MANAGEMENT PRACTICES (BMPS)

Describe below how each of the following BMPs apply to the project. These BMPs are to be shown on the project plans as appropriate. Address the different phases of construction (e.g. clearing and grading, utility installation, building construction).

a. Monitoring Points

Identify Monitoring Points on the TESC plans for all locations where runoff discharges from the project site for all phases of construction. The City will measure the turbidity of the discharge at the Monitoring Points to verify compliance with the permit. Identify any temporary discharge points during construction and also the discharge points for all permanent storm drainage systems.

Description of Monitoring Points: Monitor the downstream end of the creek, where the sediment tank discharges water back into the creek.

b. Clearing Limits

Describe the clearing and grading limits for the project. The purpose of the clearing limits is to define the project boundaries and to prevent disturbance of areas not designated for clearing and grading (e.g. critical areas and buffers).

Description of Clearing Limits:

Clearing will occur along the creek bank, where necessary for installation of the woody debris and associated anchoring.

c. Cover Measures

Describe the temporary cover measures (e.g. straw or other mulch, erosion control blankets, plastic, etc) that will be used to protect disturbed areas. Providing cover measures for as much disturbed area as possible is the most practical way to reduce turbidity in runoff.

Description of Cover Measures:

See temporary erosion and sediment control plan.

d. Perimeter Protection

Describe how and where perimeter protection (e.g. silt fence, straw/compost wattles) to filter sediment from sheet flow shall be provided downstream of all disturbed areas. Perimeter protection shall be provided to protect any critical areas and buffers.

Description of Perimeter Protection:

A temporary cofferdam will be installed (5' from the repair toe) which will establish the perimeter of the improvements within the creek. Straw wattles will be used to stabilize the exposed soils within the limits of disturbance.

e. Traffic Area Stabilization (including Truck Wheel Wash Areas)

Describe the locations and BMPs to be used to stabilize unsurfaced entrances, roads, and parking areas used by construction traffic to minimize erosion and tracking of sediment offsite. Alternative measures such as a wheel wash shall be used if traffic area stabilization does not prevent sediment from being tracked offsite.

Description of Traffic Area Stabilization (including Truck Wheel Wash Areas):

Straw mulch will be used to protect disturbed areas and any stockpiled material will be covered with plastic.

f. Sediment Retention

Describe any temporary sediment ponds/traps, tanks, or other storage methods that will be used to treat surface water collected from disturbed areas prior to discharge from the site. Also describe how storm drain inlet protection measures (e.g. silt socks) will be used for the project.

Description of Sediment Retention Measures:

A temporary sediment trap will be used to collect silt laden runoff. A sediment tank (i.e. Baker Tank) will be used to treat surface water prior to releasing back into the creek.

g. Surface Water Collection

Describe the surface water collection measures (e.g. ditches, berms, etc.) that will be used to intercept and direct surface water from disturbed areas to sediment ponds/traps, tanks, or other storage methods. This includes any diversions needed to address drainage uphill from the project site.

Description of Surface Water Collection Measures:

A temporary sediment trap will located at the low-point behind the temporary cofferdam.

h. Dewatering Control

Describe the BMPs to be used to manage turbid water resulting from the dewatering of utilities, excavations, foundations, etc. Water shall not be pumped offsite without prior approval from the City inspector.

Description of Dewatering Control Measures:

Any dewatering of the site will be directed to a settling tank (i.e Baker Tank) to allow any turbid water to clear.

i. Dust Control

Preventive measures shall be used as needed to minimize wind-borne dust from leaving the project site. Water used for dust control shall be minimized so that it does not generate runoff.

Description of Dust Control Measures:

Preventative measures to minimize wind transport of soil shall be implemented when a traffic hazard may be created or when sediment transported by wind is likely to be deposited in water resources.

j. Flow Control

Provisions shall be made to prevent increases in the existing site conditions 2-year and 10-year runoff peaks discharging from the site during construction.

Description of Flow Control Measures:

The sediment tank (i.e. Baker Tank) can be used to store surface runoff to prevent increases in the existing site conditions 2-year and 10-year runoff peaks discharging from the site during construction.

k. Final Site Stabilization

Describe how disturbed areas will be stabilized at the completion of the project (e.g. permanent landscaping, straw or other mulch, hydroseed, etc.)

Description of Final Site Stabilization Measures:

The site will be fully landscaped with woody debris, brush layers, habitat boulders, jute-wrapped amended soil bags, and live stake plantings.

5. WET SEASON REQUIREMENTS

If construction is scheduled during the wet season (October 1st to April 30), describe any additional BMPs that may be used to meet wet season requirements. If the wet season BMPs can be addressed in these plans and TESC Report, an updated plan and TESC Report will not be required for construction during the wet season.

6. POLLUTION PREVENTION AND SPILL PREVENTION BMPS

Describe the BMPs to be used for each of the following activities:

a. Storage and Handling of Hazardous Materials

Hazardous materials include petroleum products such as oil, fuel, cold mix, paint, solvents, curing compounds, etc. Liquid products stored outside that may contaminate stormwater runoff if spilled shall be stored under cover and in containment. Describe the BMPs for storage and handling of hazardous materials.

Hazardous materials are not anticipated for this project.

b. Concrete Work and Paving Operations

Describe the BMPs to be used to ensure materials used during concrete work and paving operations do not enter storm drainage systems, surface waters, or wetlands.

Concrete work and paving operations is not anticipated for this project.

c. Spill Kits and Spill Response

Describe the spill control plan for the construction project.

Contaminated surfaces will be cleaned immediately following any discharge or spill incident. Spills will be reported within 24 hours. Emergency repairs may be performed on-site using temporary plastic placed beneath and, if raining, over the vehicle.

7. DEVELOPER/CONTRACTOR SITE INSPECTIONS AND RECORDKEEPING

Describe the TESC site inspections and recordkeeping that will be performed by the developer/contractor for the project:

A site log book will be maintained for all on-site construction activities and will include: a record of the implementation of the SWPPP and other permit requirements, site inspections, and sample logs.

8. CONTACTS

Provide contact information (name and phone numbers) for the following:

Owner/developer: Issaquah School District 411

General Contractor: TBD

Site Contractor: TBD

Certified Erosion and Sediment Control Lead (CESCL): TBD

CRITICAL AREA STUDY AND BUFFER MITIGATION

FOR

ISSAQUAH CREEK BANK EROSION REPAIR

ISSAQUAH, WA

Wetland Resources, Inc. Project #21034

Prepared By
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(425) 337-3174

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November 2, 2021

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 SITE DESCRIPTION 2
2.0 REVIEW OF EXISTING INFORMATION 3
3.0 WETLAND & STREAM DETERMINATION REPORT 4
3.1 METHODOLOGY 4
3.2 BOUNDARY DETERMINATION FINDINGS 6
3.2.1 Wetland Determination 6
3.2.2 Issaquah Creek 6
3.2.3 Special Flood Hazard Areas 6
4.0 PROJECT DESCRIPTION 7
4.1 ISSAQUAH MUNICIPAL CODE 18.10.775 ALTERATIONS TO STREAMS AND BUFFERS 7
4.2 MITIGATION SEQUENCING 8
4.3 ECOLOGICAL FUNCTIONS ASSESSMENT 9
4.4 SHORELINE MASTER PROGRAM COMPLIANCE 10
4.5 BUFFER MITIGATION PLAN 10
4.5.1 Buffer Restoration Area A Planting Plan 11
4.5.2 Buffer Restoration Area B Planting Plan 11
4.5.3 Buffer Restoration Area C 11
5.0 BUFFER RESTORATION PROJECT NOTES 12
5.1 PLANTING NOTES 12
6.0 PROJECT MONITORING PROGRAM 15
6.1 CRITERIA FOR SUCCESS 16
6.1.1 Mitigation Plan Objective 16
6.1.2 Definition of Success 16
6.2 MAINTENANCE 17
6.3 CONTINGENCY PLAN 18
7.0 USE OF THIS REPORT 18
8.0 REFERENCES 19

LISIT OF FIGURES

FIGURE 1 - ISSAQUAH CREEK BANK IN MAY 2018 (IMAGE SOURCE: GOOGLE MAPS) 1
FIGURE 2 - ISSAQUAH CREEK BANK DAMAGE FROM FLOODING. PHOTO FROM MARCH 2021 1
FIGURE 3 - TEMPORARY BANK STABILIZATION MEASURES, INSTALLED MARCH 2021. 2
FIGURE 4 - AERIAL VIEW OF SUBJECT PROPERTY. 3
FIGURE 5 -TEMPORARY STABILIZATION MEASURES, OCTOBER 2021. 9

LIST OF APPENDICES

APPENDIX A: FISH EXCLUSION PROTOCOL

APPENDIX B: EXISTING CONDITIONS MAP (SHEET 1/4)

WORK AREA PREPARATION AND IMPACTS (SHEET 2/4)

PERMANENT BANK STABILIZATION PLAN (SHEET 3/4)

BUFFER MITIGATION PLAN (SHEET 4/4)

1.0 INTRODUCTION

During the winter of 2019-2020, during a period of unusually heavy, prolonged rain, Issaquah Creek experienced extensive erosion of its west bank along the eastern boundary of the Issaquah School District's property at 565 Northwest Holly Street. Wetland Resources, Inc. (WRI) conducted site visits in February and March 2020 to assess the bank erosion from recent flooding of Issaquah Creek and to locate wetlands and streams occurring within and near the project area. The site investigations were limited to the east side of the property, as shown on Sheet 1 in Appendix B. Figures 1 and 2 show the portion of stream bank before and after the erosion event.



Figure 1 - Issaquah Creek bank in May 2018 (Image source: Google Maps).



Figure 2 - Issaquah Creek bank damage from flooding. Photo from March 2021.

An initial geotechnical assessment performed by Associated Earth Sciences, Inc. (*Geotechnical Design Recommendations – Issaquah Creek Bank Erosion Repair*, dated July 9, 2020) determined that unless stabilized, the channel erosion would continue to encroach into the District's property. Further erosion would cause damage to existing infrastructure and posed a safety hazard. Temporary, emergency stabilization measures were installed in March 2021 and consist of steel sheet piles and super sacks. Several additional site visits were conducted by WRI between March 2020 and October 2021 to assist with installation of the temporary stabilization and assess site conditions.

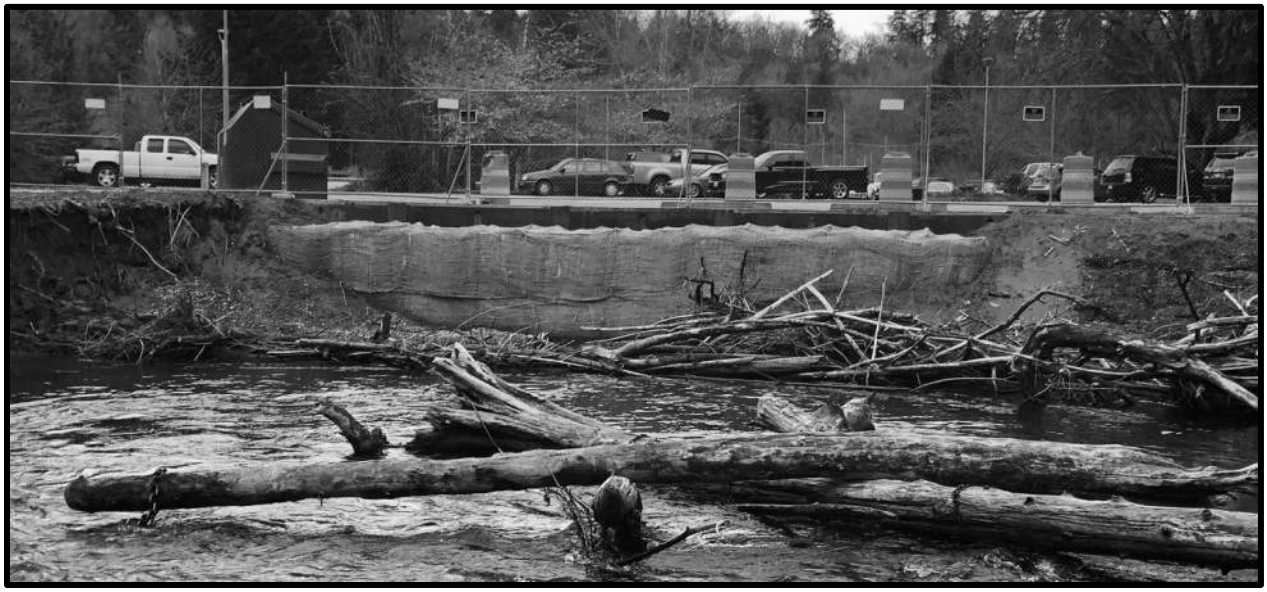


Figure 3 - Temporary bank stabilization measures, installed March 2021.

In order to avoid further erosion of the creek bank, the temporary stabilization will be removed as part of the construction of the proposed permanent stabilization project. The current proposed project is for installation of more comprehensive, permanent stabilization measures consistent with bioengineering techniques required by multiple agencies and the City of Issaquah.

The purpose of this report is to provide information on the proposed permanent bank repair project and compliance with Issaquah Municipal Code and Shoreline Master Program. This report is specific to regulations for wetlands, streams, and Shoreline Jurisdiction. Information on other critical areas is not included in this report. A Floodplain Habitat Assessment and geotechnical report have been prepared for this project.

1.1 SITE DESCRIPTION

The subject site is a 19.31-acre parcel located at 565 Northwest Holly Street, in the city of Issaquah, Washington, (parcel number: 2824069012) within a portion of Section 28, Township 24N, Range 6E, W.M. The site is located in the Issaquah Creek drainage basin within the Cedar-Sammamish Watershed; Water Resources Inventory Area 8. Two access points to the subject site exist. One is located along the western property line along Newport Way Northwest and the second is located along the northern property line along Northwest Holly Street.

Surrounding land use consists primarily of high-density single and multi-family residential development. This site is currently developed with Issaquah Valley Elementary School in the western portion, Dodd Fields Park in the south-central portion, and an Issaquah School District administration building in the eastern portion. Issaquah Creek is located along the eastern property boundary. The shoreline designation associated with Issaquah Creek in this area is 'Issaquah Creek Urban Conservancy Shoreline Environment." The FEMA preliminary 100-year floodplain and preliminary floodway of Issaquah Creek are mapped along the eastern property line, extending onto the subject site (King County iMap).



Figure 4 - Aerial view of subject property.

Topography on the site is relatively flat with a slight slope to the east toward Issaquah Creek. Adjacent to the stream, topography drops steeply to the east. The majority of the property is developed with buildings and fields and has limited native vegetation. However, a few portions of the site contain forested areas with shrubs and groundcover in the understory. The forested areas along the northern and eastern edges of the property are primarily vegetated with native species, with some Himalayan blackberry and other invasive species along the eastern side of the property. Confluence Park is located to the east of the subject site.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the initial site investigation, public resource information was reviewed to gather background information on the subject property and the surrounding area in regards to wetlands, streams, and other critical areas.

- USDA/NRCS Web Soil Survey: The majority of the site is predicted to have Briscot silt loam.

- King County iMap: This resource does not map any wetlands on site. Issaquah Creek is mapped along the eastern property line as a Class 1 waterbody (shoreline of the state). The northeastern and eastern areas of the property are mapped within the FEMA preliminary

100-year floodplain. A small portion of the northeastern area is mapped as FEMA preliminary floodway.

- Washington Department of Fish and Wildlife (WDFW) SalmonScape Interactive Mapping System: This public resource confirms that salmon use Issaquah Creek. Issaquah Creek is documented as spawning area for fall Chinook (*Oncorhynchus tschawytscha*), Coho (*Oncorhynchus kisutch*), winter Steelhead (*Oncorhynchus mykiss*), Sockeye (*Oncorhynchus nerka*), and has documented presence of Kokanee (*Oncorhynchus nerka*).

- WDFW Priority Habitat and Species (PHS) Interactive Map: This resource maps the subject property within a township that contains Yuma myotis (*Myotis yumanensis*), big brown bat (*Eptesicus fuscus*), and little brown bat (*Myotis lucifugus*) breeding areas and Townsend's big-eared bat (*Corynorhinus townsendii*) communal roost area. Issaquah Creek is mapped as a breeding area for fall Chinook, winter Steelhead, Sockeye, and Coho and has documented presence of Resident Coastal Cutthroat and Kokanee.

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory: This resource maps Issaquah Creek as a Riverine, Upper Perennial, Unconsolidated Bottom, Permanently flooded feature. A tributary of Issaquah Creek is mapped along the northern property boundary as a Riverine, Intermittent, Streambed, Seasonally Flooded feature. The tributary is shown extending to the west of the subject site.

- Washington Department of Natural Resources Forest Practices Application Mapping Tool (FPAMT): This public resource identifies Issaquah Creek as a Type S (fish-bearing). A tributary to Issaquah Creek is mapped along the northern property line. This tributary is mapped as Type F for a distance of approximately 450 feet upstream (west) from Issaquah Creek and Type N upstream from there.

- WDNR Wetlands of High Conservation Value interactive map: No resources are depicted on or in the vicinity of the subject site.

3.0 WETLAND & STREAM DETERMINATION REPORT

3.1 METHODOLOGY

The ordinary high water mark (OHWM) of streams is determined using the methodology described in the Washington Department of Ecology's publication, *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson, et al. 2016).

Wetland boundaries in western Washington are determined using the routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountians, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
2.) Examination of the site for hydric soils;
3.) Determining the presence of wetland hydrology

The following criteria must be met in order to make a positive wetland determination:

Vegetation Criteria
The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as "*the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence.*" Field indicators are used to determine whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.

Soils Criteria and Mapped Description
The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils *"that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."* Field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

According to NRCS Web Soil Survey, the soil map unit Briscot silt loam is predicted to occur on the subject property.

Briscot loam is described as very deep, poorly drained soil formed in recent alluvium on floodplains. Slopes are generally 0 to 2 percent. These soils are usually moist and contain irregular distribution of organic matter. Typical surface layers are dark grayish brown or grayish brown silt loam to about 9 inches deep. The subsoil (9 to 17 inches) is typically grayish brown or light brownish gray silt loam with large and prominent dark brown redox concentrations. These soils are poorly drained with very slow runoff, and are moderately permeable. This soil is described as hydric.

Hydrology Criteria
The 2010 Regional Supplement defines wetland hydrology as "*areas that are inundated (flooded or ponded) or the water table is less than or equal to 12 inches below the soil surface for 14 or more consecutive days during the growing season at a minimum frequency of 5 years in 10.*" During the early growing season, wetland hydrology determinations are made based on physical observation of surface water, a high water table, or saturation in the upper 12 inches. Outside of the early growing season, wetland hydrology determinations are made based on physical evidence of recent inundation or saturation (i.e. water marks, surface soil cracks, water-stained leaves).

3.2 BOUNDARY DETERMINATION FINDINGS

No wetlands were identified within the investigation area. Issaquah Creek flows along the eastern property boundary. Issaquah Creek was classified according to the Cowardin System, as described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979), and under Chapter 18.10 of the Issaquah Municipal Code (IMC).

3.2.1 Wetland Determination

Vegetation within the investigation area consists of maintained lawn, landscaping, and forested area along Issaquah Creek. Vegetation bordering the stream includes Douglas fir (*Pseudotsuga menziesii*), big leaf maple (*Acer macrophyllum*), beaked hazelnut (*Corylus cornuta*), Himalayan blackberry (*Rubus armeniacus*), dull Oregon grape (*Mahonia nervosa*), and sword fern (*Polystichum munitum*). Soils in the investigation area are typically very dark brown (10YR 2/2) in the upper layer and dark brown (10YR 3/3) in the sublayer. Soils are generally a sandy loam texture throughout the profile. Soils were moist during the March 2020 site visit. No indications of prolonged inundation, saturation, or high water table were observed outside of the ordinary high water mark of Issaquah Creek. Dominant vegetation communities were distinctly upland, soils do not meet hydric indicators, and evidence of wetland hydrology was not observed within 12 inches of the ground surface. The conditions within the investigation area do not meet the criteria for wetlands as described above.

3.2.2 Issaquah Creek

Cowardin Classification: Riverine, Upper Perennial, Unconsolidated Bottom, Cobble-Gravel
City of Issaquah Classification: Class 1
City of Issaquah Buffer: 100 feet

Issaquah Creek is a Shoreline of the State (Class 1) per WAC section 222-16-030 and IMC 18.10.780. Class 1 waterbodies in the City of Issaquah typically receive 100-foot buffers (IMC 18.10.785). This waterbody flows north into Lake Sammamish and is documented as supporting a variety of salmonid species including Chinook, Steelhead, resident Coastal Cutthroat, Sockeye, Coho, and Kokanee. The Shoreline management area within the subject property is designated as Issaquah Creek Urban Conservancy Shoreline Environment Designation. The historic ordinary high water mark (prior to the recent erosion event) and the current ordinary high water mark of Issaquah Creek are depicted on the Existing Conditions and Proposed Streambank Repair Map (Appendix B).

3.2.3 Special Flood Hazard Areas

The FEMA preliminary 100-year floodplain and preliminary floodway of Issaquah Creek are mapped along the eastern property line, extending onto the subject site (King County iMap). The extent of these areas is depicted on the Existing Conditions Map (Appendix B). Work will take place within the 100-year floodplain and a small portion of the project will take place within the mapped floodway. A separate Floodplain Habitat Assessment report has been prepared to address the work within the floodplain.

4.0 PROJECT DESCRIPTION

The permanent stabilization project will consist of installing streambank protection along approximately 130 feet of cutbank on the west side of Issaquah Creek. Protection will include reconstruction of a portion of the bank lost to channel erosion in proximity to Issaquah School District infrastructure with an engineered, non-deformable 'log toe' incorporating large woody debris and habitat boulders. The log toe will provide protection against the erosive forces directed toward the bank, and provide valuable fish habitat. Habitat boulders will anchor the large woody debris for normal and moderately-high flow flood stages of the stream. Mechanical anchors are included in the design as a supplemental security measure. The woody debris will be situated such that the future possible effects of channel scour are mitigated as much as four feet below the existing channel bottom. Native plants will be installed within the jute soil bags at the top of the stabilization structure, adjacent to the existing parking lot. As the bioengineered structure decays, revegetation within the reconstructed bank will take hold and form permanent, long-term stabilization.

Construction of the stream bank stabilization measures will include work within the ordinary high-water mark of Issaquah Creek, the 100-year floodplain, and a small portion of the mapped floodway. To facilitate work within the stream and reduce impacts associated with construction, fish will be removed from the work area and a temporary coffer dam will be installed along the perimeter to isolate the work area for the duration of construction. All in-water work will be performed between July 1st and August 30th, the approved fish window. Fish exclusion protocol is included in Appendix A.

Impacts to vegetation associated with the project includes removal of eight trees. These trees were recommended for removal in the *Tree Risk Assessment* prepared by Washington Forestry Consultants, Inc. as the erosion has already moved into the critical root zone for the trees. Vegetation in the understory in this area contains bamboo, English ivy (*Hedera helix*), and other invasive species. As mitigation for removal of the trees, additional trees will be installed and 5,515 square feet of stream buffer immediately adjacent to Issaquah Creek will be restored through removal of invasive species and installation of native plants. Details of the Buffer Restoration Plan are provided below in Section 4.4.

4.1 ISSAQUAH MUNICIPAL CODE 18.10.775 ALTERATIONS TO STREAMS AND BUFFERS

Stream Channel Stabilization: Stream channels may be stabilized when movement of the stream channel threatens existing residential or commercial structures, public improvements, unique natural resources, or the only existing access to property, and when stabilization is done in accordance with the requirements in IMC 18.10.530 and the administrative rules.

As discussed in the *Geotechnical and Engineering Geologic Hazard Evaluation* by Nelson Geotechnical Associates, Inc, without stabilization measures the bank will continue to erode. Continued erosion will undermine the parking lot, which would negatively affect the water quality and habitat within Issaquah Creek.

This project meets the requirements of IMC 16.36. A separate Floodplain Habitat Assessment has been prepared to address those requirements.

4.2 MITIGATION SEQUENCING

Per IMC 18.10.490, all development on sites with critical areas must demonstrate mitigation sequencing was followed while designing the project. The mitigation sequence text from IMC is listed below in italics, with WRI discussion following.

1. *Avoid impacts altogether by not taking a certain action or parts of an action;*

While there are temporary stabilization measures currently in place, these measures are not adequate for long-term bank stabilization. The temporary measures do not adequately protect the site from scour at the toe of the bank or velocity of water along this section of the stream channel. Without the installation of permanent stabilization measures, the bank will continue to erode. Further erosion will jeopardize the existing infrastructure on the site. The geotechnical assessment for the project includes a scour analysis as well as flow and sediment transport analysis based on the USACE Hydrologic Engineering Center's River Analysis System. The current OHWM is only about 7 feet from the edge of the parking lot. Per the geotechnical evaluation, this is not enough space to provide stabilization measures that account of the scour at the toe of the bank or velocity of water along the meander. In order to install effective, permanent bank stabilization measures, work within the OHWM, floodplain, floodway, and stream buffer areas is unavoidable.

2. *Minimize impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;*

All in-stream work will occur between July 1 and August 31, the approved work window for Issaquah Creek and during low-flow season. Temporary Erosion and Sediment Control measures will be in place prior to beginning work and a temporary cofferdam will be installed to isolate work area. All water collected within the work area will be pumped to a sediment tank. This will be used to treat surface water prior to releasing back into the creek. This project will minimize impacts associated with construction by performing work within the dry season, isolating the work area, and maintaining the water quality and hydrology of the stream.

The proposed design incorporates structural and bioengineered elements in order to provide effective, permanent stabilization measures. Habitat boulders, large woody debris, and native vegetation plantings will provide important features for fish habitat and minimize impacts to the existing aquatic habitat. The project design reflects the minimum length and area necessary to provide protection from scour along the toe of the eroded bank or withstand the velocity of water moving through this area long-term.

3. *Rectify impacts by repairing, rehabilitating or restoring the affected environment;*

Buffer restoration plantings are proposed in two areas within the buffer of Issaquah Creek. This will create a vegetated corridor along the stream and provide valuable wildlife habitat. The large woody debris incorporated into the stabilization measures provide important features for fish habitat.

4. Compensate for the impact by replacing, restoring, creating, enhancing or providing substitute resources or environments;

Mitigation for vegetation impacts will be provided through buffer restoration. The buffer planting plan will restore vegetation within the tree removal area, remove invasive species and install native plants in an additional 1,700 square feet of buffer area, and include installation of additional trees in the stream buffer.

5. Monitor the impact and the compensation projects and taking appropriate corrective measures.

The buffer restoration plantings will be monitored for five years, as discussed in Section 6. The *Geotechnical and Engineering Geologic Hazard Evaluation* recommends monitoring of the stabilization measures during both low-flow and high-flow events for five years.

4.3 ECOLOGICAL FUNCTIONS ASSESSMENT

Temporary stabilization measures are currently in place and consist of steel sheets and cobble-filled super sacks installed above the OHWM of Issaquah Creek. Vegetation within the stream buffer in this area consists of English ivy, Himalayan blackberry, thistle, and various grasses.



Figure 5 -Temporary stabilization measures, October 2021.

The temporary measures provide some protection of the aquatic habitat, but they are not adequate for long-term stabilization. The steel plates are not set deep enough to provide protection from scour along the toe of the eroded bank. If no action is taken, further erosion will undermine the existing infrastructure and the temporary stabilization. This will have a negative effect on fish habitat within Issaquah Creek.

The proposed permanent bank stabilization includes rounded habitat boulders, large pieces of wood (including rootballs), and native vegetation plantings along the edge of Issaquah Creek. The proposed stabilization project will enhance the terrestrial habitat through removal of invasive

species and installation of native plants. These plantings will provide native food sources, areas of refuge, shading of the stream channel, and opportunity for large woody debris recruitment. Large woody debris will add complexity to existing fish habitat and offer juvenile fish places to hide with protection from high velocity flows. The proposed bank stabilization measures will provide more diverse in-stream habitat, increasing the functions and values of habitat in this section of Issaquah Creek.

4.4 SHORELINE MASTER PROGRAM COMPLIANCE

Pursuant to the City of Issaquah's Shoreline Master Program (SMP), new shoreline stabilization measures are allowed within Shoreline Jurisdiction if the proposed project meets certain criteria. Policies for shoreline stabilization are in Chapter 5 (5.12) and regulations are in Chapters 6 (6.1.4) and 7 (7.1.3) of the SMP. A detailed analysis of compliance with those sections of the SMP is provided in the Shoreline Narrative for this project, included in the application for the Shoreline Substantial Development permit. A summary of compliance with the policies and regulations regarding stabilization is provided below.

- A geotechnical assessment has determined the permanent bank stabilization project is necessary to protect the buildings and infrastructure on the Issaquah School District property.
- Per the geotechnical evaluation, there is not enough space between existing infrastructure and the OHWM to provide effective permanent stabilization measures outside of the OHWM. Work within the OHWM and stream buffer areas are unavoidable.
- The proposed stabilization measures cover the minimum length of shoreline and area necessary to install permanent protection from scour along the toe of the eroded bank and withstand the velocity of water moving through the stream.
- The proposed permanent bank stabilization combines bioengineered and structural elements. The design includes rounded habitat boulders, large pieces of wood (including rootballs), and native vegetation plantings along the edge of Issaquah Creek.
- The proposed stabilization project will enhance the terrestrial habitat through removal of invasive species and installation of native plants. Existing fish habitat will be protected and enhanced through installation of large woody debris within the channel.

4.5 BUFFER MITIGATION PLAN

A total of eight trees will be removed for the bank stabilization project. These trees were recommended for removal in the Tree Risk Assessment prepared by Washington Forestry Consultants, Inc. as the erosion has already moved into the critical root zone for the trees. Understory vegetation within the location of these trees is minimal and contains bamboo, a significant amount of English ivy (*Hedera helix*), and other invasive species.

Two areas of buffer restoration plantings are proposed as part of this project. Buffer Restoration Area A includes the area immediately adjacent to the bank stabilization measures and where trees will be removed. Buffer Restoration Area B is located to the north of Area A. Buffer Restoration Area C is an area of lawn that will be temporarily impacted during construction.

4.5.1 Buffer Restoration Area A Planting Plan

Prior to installation of plants in this area, all English ivy, bamboo, and other invasive species will be removed. Except for the eight trees scheduled for removal, all other native vegetation will be retained. Trees are not proposed in this area due to proximity of the existing administration building. Sword fern should be planted in partial to full shade.

Buffer Restoration Area A (5,515 square feet)

Common Name	Latin Name	Size	Spacing	Quantity
Hooker's willow	*Salix hookeriana*	live stake	3'	50*
Sitka willow	*Salix sitchensis*	live stake	3'	50*
Red osier dogwood	*Cornus sericea*	1 gal	5'	50*
Western hazelnut	*Corylus cornuta*	1 gallon	5'	28
Oceanspray	*Holodiscus discolor*	1 gallon	5'	28
Red elderberry	*Sambucus racemosa*	1 gallon	5'	28
Salmonberry	*Rubus spectabilis*	1 gallon	5'	28
Snowberry	*Symphoricarpos albus*	1 gallon	5'	28
Sword fern	*Polystichum munitum*	1 gallon	5'	28

*Willows and dogwood will be installed within and adjacent to the jute soil logs and/or close to the stream.

4.5.2 Buffer Restoration Area B Planting Plan

This area is primarily maintained lawn adjacent to established vegetation. Any invasive species present will be removed, and any native vegetation will be retained. Cedar trees should be planted in areas with partial shade. Trees will be spaced

Buffer Restoration Area B (~3,500 square feet)

Common Name	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	2 gallon	15'	8
Western red cedar	*Thuja plicata*	2 gallon	15'	4
Big leaf maple	*Acer macrophyllum*	2 gallon	15'	4

4.5.3 Buffer Restoration Area C

This area is approximately 735 square feet in size and is existing lawn. No ground disturbance is proposed for this area, but it is within the project work area and will be used to access the bank of Issaquah Creek during construction. If vegetation in this area is significantly disturbed, this area will be re-seeded after construction is completed.

5.0 BUFFER RESTORATION PROJECT NOTES

Pre-Construction Meeting
Mitigation projects are typically more complex to install than to describe in plans. Careful monitoring by the project's ecologist for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There will be a pre-construction meeting on this site between the Permittee, the project's ecologist, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections
The project's ecologist shall be contracted to periodically inspect the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A City of Issaquah representative and/or the consulting professional will make these decisions during construction.

5.1 PLANTING NOTES

Plant in the early spring or fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some limited species substitutions may be allowed, only with the agreement of the project's ecologist and/or City staff.

Pre-Planting Meeting
Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the project's ecologist shall occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and locations of plant species including wetland verses buffer species shall occur between the landscape contractor and the project's ecologist.

Handling
Plants shall be handled to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Storage
Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the project's ecologist and/or landscape designer prior to installation.

Damaged plants
Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names
Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the project's ecologist or City staff. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition
Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1-inch in diameter will be rejected.

Roots
All plants shall be containerized, unless explicitly authorized by the landscape designer and/or the project's ecologist. Rootbound plants or plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and/or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places.

Sizes
Plant sizes shall be the size indicated in the plant schedule in approved plans. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, branching, and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form
Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Timing of Planting
Unless otherwise approved by City staff and/or project's ecologist, all planting shall occur between November 1 and March 1. Overall, the earlier plants go into the ground during the dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Weeding
Existing and exotic vegetation in the mitigation areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is recommended.

Site conditions
The contractor shall immediately notify the project's ecologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits
Planting pits shall be circular or square with vertical sides, and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

Fertilizer
Slow release fertilizer may be used if pre-approved by the City of Issaquah staff. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not contact stems of the plants). No soil amendment or fertilizers will be placed in planting holes.

Staking
Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location
Colored surveyors' ribbon or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing
The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the project's ecologist and/or City staff.

Inspection(s)
The project's ecologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Woodchip Mulch
After buffer enhancement plant installation, a 36" circle of no less than 2 to 4 inches of organic/untreated woodchips shall be placed around the base of each plant. Woodchips shall be kept well away (at least 2 inches) from the trunks and stems of woody plants.

6.0 PROJECT MONITORING PROGRAM

Requirements for monitoring project:
1. Initial compliance/as-built report
2. Site inspection (twice per year) for five years
3. Annual reports (one report submitted during each monitored year)

Purpose for Monitoring
The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows at the end of five years that the definitions of success stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscape and/or wetland specialist and City of Issaquah during the monitoring period or until the project is evaluated as successful.

Monitoring
Monitoring shall be conducted twice annually for five years in accordance with the approved Mitigation Plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff inspects the site and issues approval of the installation.

Vegetation Monitoring
Sampling points will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report (they may be drawn on approved plans by hand). Each sampling point shall quantity of plants and/or detail herbaceous, shrub, and tree coverage as needed to demonstrate compliance with the definitions of success below. Monitoring of vegetation sampling points shall occur once per monitored year.

Photo points
No less than three permanent photo points will be established within the mitigation areas. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

Monitoring Report Contents
Monitoring reports shall be submitted by December 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions / data for:
1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Slope condition, site stability, any structures or special features

5. Buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
6. Observed wildlife, including amphibians, avians, and others
7. Assessment of nuisance / exotic biota and recommendations for management
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

6.1 CRITERIA FOR SUCCESS

Upon completion of the proposed buffer restoration plantings, an inspection by a qualified biologist/ecologist will be made to determine plan compliance. A compliance report will be supplied to the City of Issaquah within 30 days after the completion of planting. A landscape professional or the project's ecologist will perform condition monitoring of the plantings twice annually in the spring and fall. A written report describing the monitoring results will be submitted to the City for each monitored year. Final inspection will occur five years after completion of this project. The contracted consultant will prepare a report as to the success of the project.

6.1.1 Mitigation Plan Objective

The objective of this buffer restoration plan is to enhance the riparian area adjacent to Issaquah Creek through removal of invasive species and installation of native plants. This objective will be accomplished if the project meets the definition of success below.

6.1.2 Definition of Success

The planting areas shall meet the following performance standards:

a) End of Year 1: 100 percent survival of newly planted species and less than 10 percent cover of weedy/invasive species,
b) End of Year 3: 80 percent survival of newly planted species and less than 10 percent cover of weedy/invasive species,
c) End of Year 5: at least 70 percent aerial cover of native woody plant species, mitigation plantings must contain at least 6 native tree/shrub species, and less than 15 percent cover of weedy/invasive species. Volunteering native species will be included in the aerial cover calculation.

The species mix should resemble that proposed in the planting plans, but strict adherence to obtaining all of the species shall not be a criterion for success.

6.2 MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent
In order to achieve performance standards, the permittee shall have the mitigation area maintained for the duration of the five-year monitoring period. Maintenance will include: watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, and any other measures needed to ensure plant survival. The landscape designer and/or the project's ecologist shall direct all maintenance.

Survival
The permittee shall be responsible for the health of 100% of all newly installed plants for *one growing season* after installation has been accepted by the City of Issaquah. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation (often required), the growing season will begin the following spring. The permittee shall replace any plants that are: failing, weak, defective in manner of growth, or dead during this growing season, as directed by the landscape designer, the project's ecologist, and/or City of Issaquah staff.

Installation Timing for Replacement Plants
Replacement plants shall be installed between October 15 and January 15, unless otherwise determined by the project's ecologist and/or City of Issaquah staff.

Standards for Replacement Plants
Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by the project's ecologist and/or City of Issaquah staff.

Replanting
Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted as directed by the project's ecologist and/or City of Issaquah staff.

Herbicides/Pesticides
Chemical controls shall not be used in the mitigation area, sensitive areas, or their buffers. However, limited use of herbicides may be approved depending on site-specific conditions, only if approved by City of Issaquah staff.

Irrigation/Watering
Water should be provided during the dry season (July 1 through October 15) for the first two years after installation to ensure plant survival and establishment. A temporary above ground irrigation system, current irrigation, or other measures (water truck, hand watering) may be used to provide water. Water should be applied at a rate of 1" of water twice per week for year one and 1" per

week during year two. If the mitigation plantings meet 80 percent survival at the end of year two, watering may cease if approved by the project's ecologist.

General
The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

6.3 CONTINGENCY PLAN

If 20% of the plants are severely stressed during any of the inspections, or it appears 20% may not survive, additional plantings will be added to the planting area. Elements of a contingency plan may include but will not be limited to: more aggressive weed control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

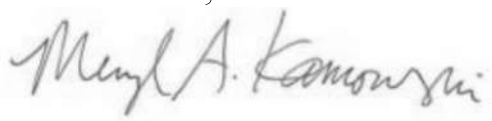
7.0 USE OF THIS REPORT

This Critical Area Study and Buffer Mitigation Plan is supplied to Issaquah School District as a means of determining on-site wetland and stream conditions, as required by the City of Issaquah during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Meryl Kamowski, PWS
Senior Ecologist

8.0 REFERENCES

City of Issaquah. 2021. City of Issaquah Shoreline Master Program.

Cowardin, et al., 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior. FWS/OBS-79/31. December 1979.

Issaquah Municipal Code (IMC). Title 18, Chapter 18.10, Environmental Protections.

King County. 1973. Soil Survey of King County Area Washington.

King County. October 2021. King County iMap Internet Mapping Tool. http://www5.kingcounty.gov/iMAP/viewer.htm?mapset=kcproperty.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C Melvin. 2016. Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17.

NRCS. Accessed October 2021. Web Soil Survey. United States Department of Agriculture. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Vicksburg, MS

USFWS. 2021. National Wetlands Inventory (NWI) Online Mapper. http://www.fws.gov/wetlands/Data/Mapper.html.

WA Department of Natural Resources. 2021a. *Forest Practices Activity Mapping Tool.* http://fortress.wa.gov/dnr/app1/fpars/viewer.htm

WDFW.2021a. Priority Habitat and Species (PHS) Interactive Map. http://apps.wdfw.wa.gov/phsontheweb/.

WDFW. 2021b. SalmonScape Online Mapping Application. http://apps.wdfw.wa.gov/salmonscape/map.html.

Appendix A:
Fish Exclusion Protocol

October 29, 2021

Issaquah School District #411
Attn: Janelle Walker
5150 220th Ave SE
Issaquah, WA 98029

RE: Fish Exclusion Protocol for Holly Street Campus - Bank Erosion Repair Project

Wetland Resources, Inc. follows the fish exclusion protocols listed below. In addition to these general protocols, the project will adhere to any additional requirements stipulated within permits issued from WA State Department of Fish and Wildlife, WA State Department of Ecology, and the US Army Corps of Engineers.

Fish Exclusion Protocols

1. Set block nets (fish screens) upstream and downstream of work area. An upstream block net will be placed first. With a block net secured to prevent movement of fish into the work area from upstream, a second block net will be used as a seine to herd fish in a downstream direction.

a) Field staff will be assigned the responsibility of frequently checking and maintaining the nets for accumulated debris, general stability, and proper function.

2. Establish cofferdam (or similar) and bypass pump with fish screen to divert water from the work area. Fish screens or guards will comply with Washington State law (RCW 77.57.010 and 77.57.070) and will comply with any provisions contained in the Hydraulic Project Approval (HPA).

3. Heard fish out of work area, net and release fish to downstream areas. Care will be taken not to concentrate fish where they are exposed to sources of stress, or to leave them concentrated in such areas for a long duration (e.g., more than 30 minutes).

4. The directing biologist will ensure that fish capture and removal operations adhere to the following minimum performance measures or expectations:

a) Only dip nets and seines composed of soft (non-abrasive) nylon material will be used.

b) The operations will not resort to the use of electrofishing equipment unless and until other, less injurious methods have removed most or all of the adult and sub-adult fish (i.e.,

fish in excess of 300 millimeters); the operations will conduct a minimum of three complete passes without capture using seines and/or nets prior to the use of electrofishing.

c) The operations will confirm success of fish capture and removal before completely dewatering or commencing with other work within the isolated work area; the operations will conduct a minimum of two complete passes without capture using electrofishing equipment.

d) Fish will not be held in containers for more than 10 minutes, unless those containers are dark-colored, lidded, and fitted with a portable aerator.

e) A plan for achieving efficient return to appropriate habitat will be developed before the capture and removal process.

f) Every attempt will be made to release ESA-listed specimens first.

5) Electrofishing will be performed only when other methods of fish capture and removal have proven impracticable or ineffective at removing all fish. The directing biologist will ensure that attempts to seine and/or net fish always precede the use of electrofishing equipment. Larger fish (i.e., adult and sub-adult fish with comparatively longer spine lengths) are more susceptible to electrofishing injury than smaller fish. To minimize the risk of injury (and the number of fish potentially injured), the directing biologist will confirm that other methods have been effective in removing most or all of the adult and sub-adult fish before resorting to the use of electrofishing equipment. As a general rule or performance measure, electrofishing will not be conducted under conditions that offer poor visibility (i.e., visibility of less than 0.5 meter).

Electrofishing will be conducted in a manner that minimizes harm to fish. Once an appropriate fish response (galvanotaxis) is achieved, the isolated work area will be worked systematically. The number of passes will be kept to a minimum, but is dependent upon the numbers of fish and site characteristics and will be at the discretion of the directing biologist. Care will be taken to remove fish from the electrical field immediately and to avoid exposing the same fish repeatedly. Fish will not be held in dip nets while electrofishing is in progress (i.e., while continuing to capture additional fish). The directing biologist will also review and consider changes to the manner in which the electrofishing attempt is proceeding. If adjustments to the electrofishing attempt do not lessen the frequency (or severity) of observed stress, the directing biologist will have the authority to postpone fish capture and removal operations. Each fish must be capable of remaining upright and actively swimming prior to release.

Should you have any questions, do not hesitate to contact our office at (425) 337-3174.

Wetland Resources, Inc.



Meryl Kamowski, PWS
Senior Ecologist

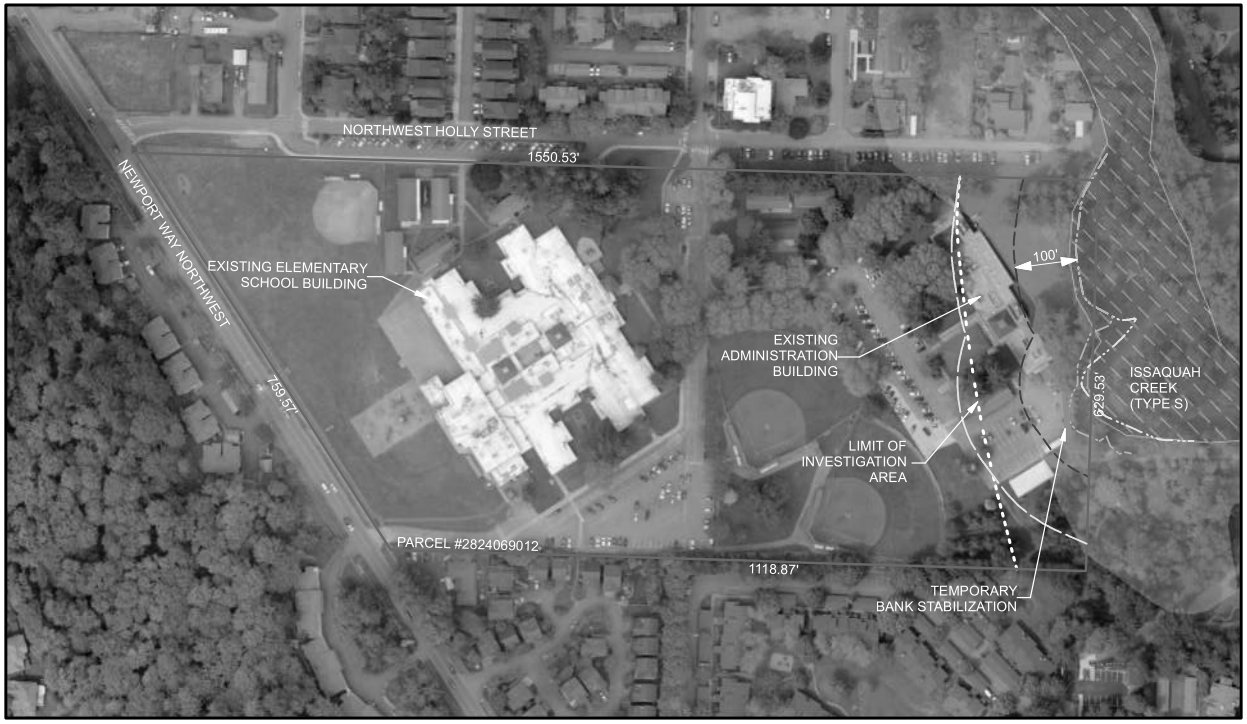
Appendix B:
Critical Area Study and Buffer Mitigation Plan Maps

SEE DRAWINGS

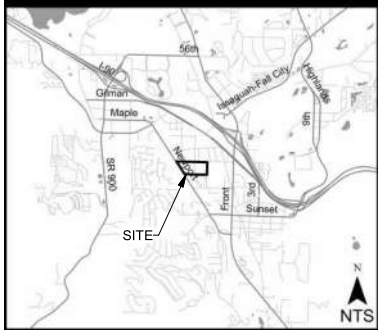
EXISTING CONDITIONS MAP

HOLLY STREET CAMPUS - CREEK BANK REPAIR

PORTION OF SECTION 28, TOWNSHIP 24N, RANGE 06E, W.M.



VICINITY MAP



LEGEND

- PROPERTY BOUNDARY
- ORDINARY HIGH WATER MARK (PRIOR TO EROSION EVENT)
- ORDINARY HIGH WATER MARK (CURRENT)
- STREAM BUFFER
- EXTENT OF SHORELINE JURISDICTION
- LIMIT OF INVESTIGATION AREA
- FEMA PRELIMINARY FLOODWAY (KING COUNTY IMAP)
- FEMA PRELIMINARY 100-YEAR FLOODPLAIN (KING COUNTY IMAP)

Scale 1" = 200'

0 100 200 300 400

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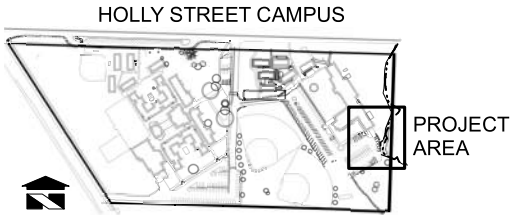
Existing Conditions Map
Holly Street Campus - Creek Bank Repair
City of Issaquah

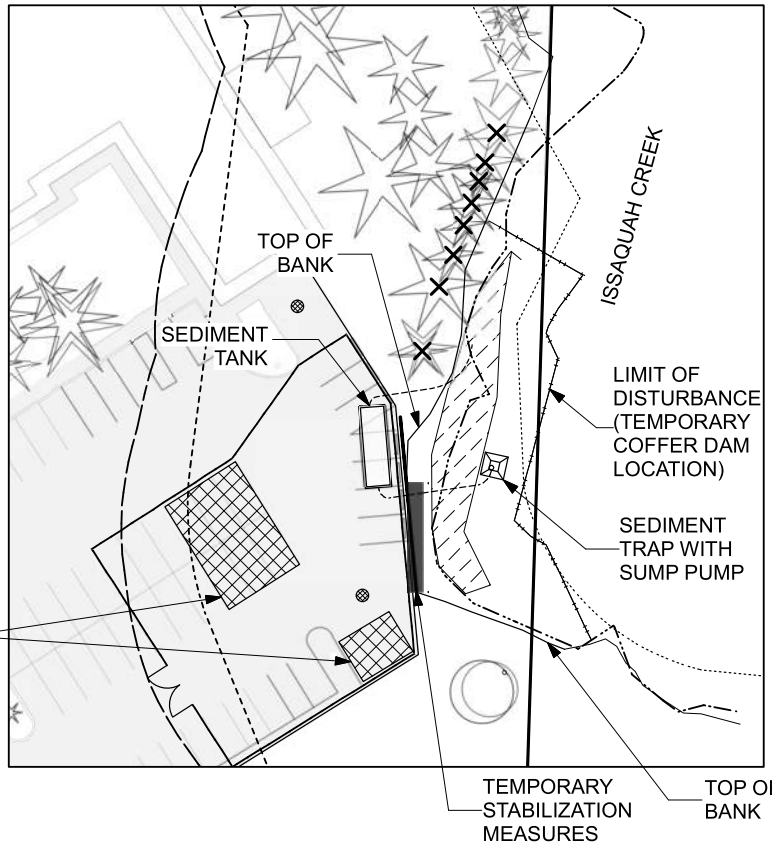
Issaquah School District
Attn: Janelle Walker
5150 220th Ave SE
Issaquah, WA 98029

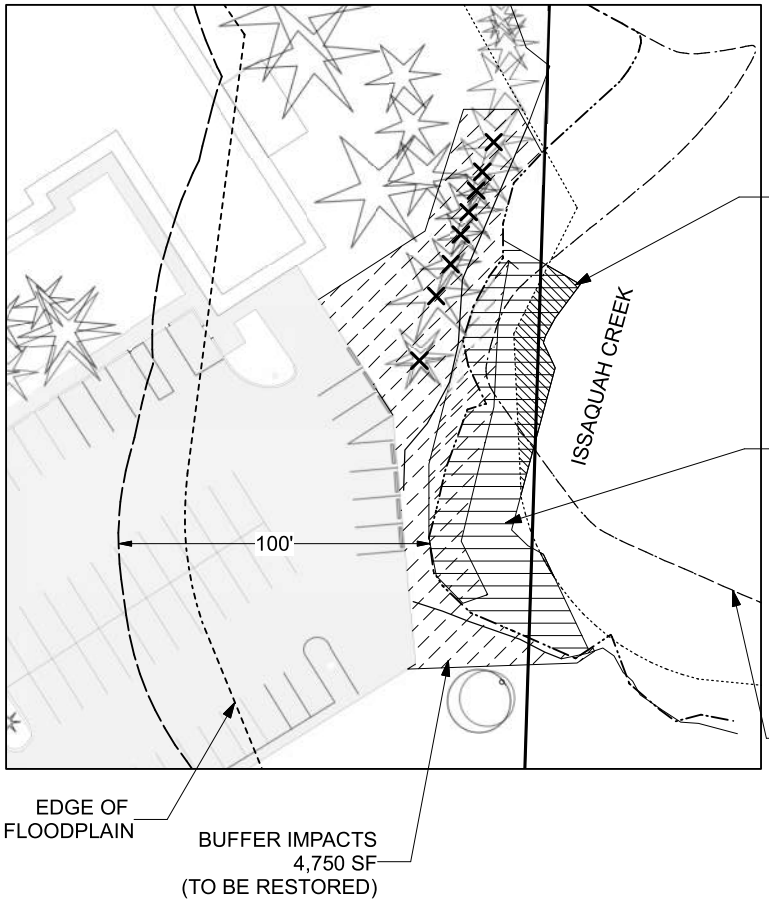
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Date: 11/02/2021

WORK AREA PREPARATION AND IMPACTS
HOLLY STREET CAMPUS - CREEK BANK REPAIR

PORTION OF SECTION 28, TOWNSHIP 24N, RANGE 06E, W.M.







LEGEND	
OHWM (HISTORIC)	TREE TO BE REMOVED
OHWM (CURRENT)	BUFFER IMPACTS
STREAM BUFFER	WORK AREA IN FLOODWAY
FEMA PRELIMINARY 100-YEAR FLOODPLAIN	WORK AREA IN OHWM
FEMA PRELIMINARY FLOODWAY	

Scale 1" = 40'

0 20 40 60 80

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Work Area Preparation and Impacts
Holly Street Campus - Creek Bank Repair
City of Issaquah

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Issaquah, WA 98029

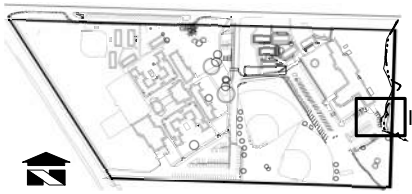
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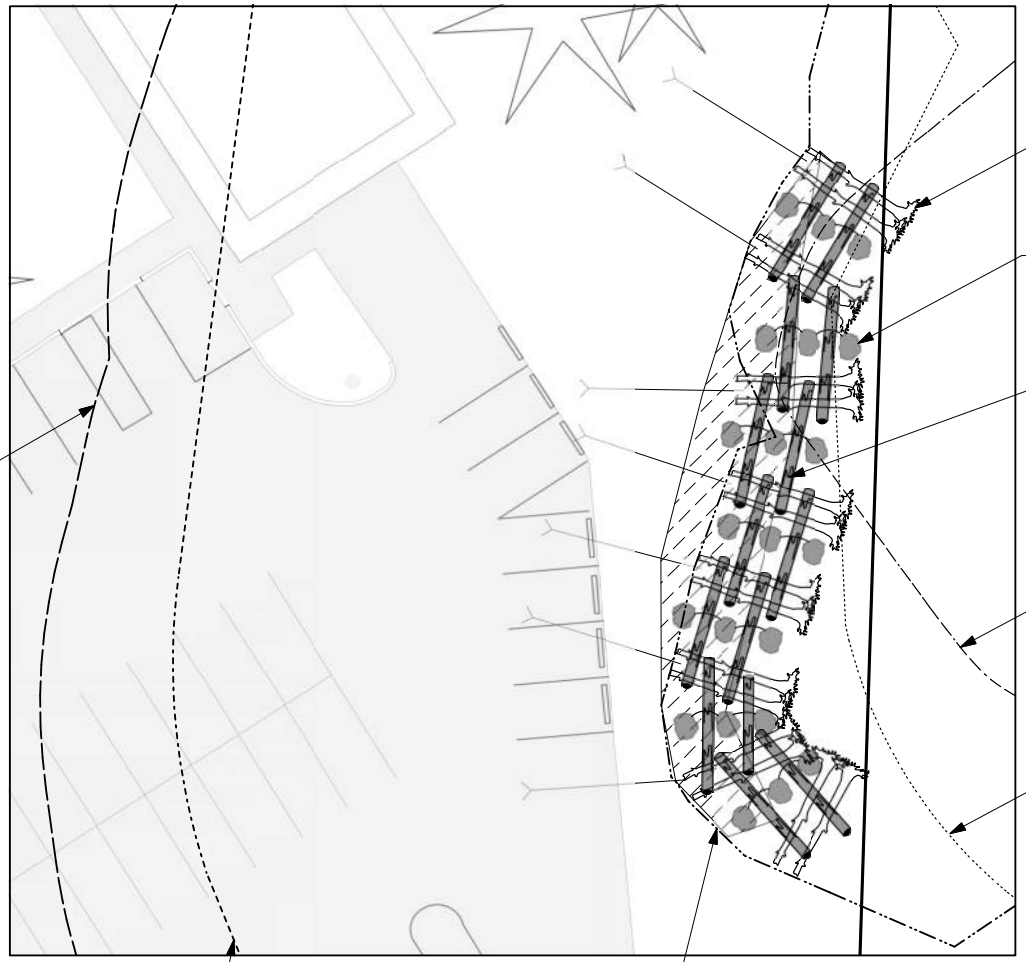
PERMANENT BANK STABILIZATION PLAN

HOLLY STREET CAMPUS - CREEK BANK REPAIR

PORTION OF SECTION 28, TOWNSHIP 24N, RANGE 06E, W.M.

HOLLY STREET CAMPUS





Scale 1" = 20'

0 10 20 30 40

LEGEND
HISTORIC ORDINARY HIGH WATER MARK
ORDINARY HIGH WATER MARK
STREAM BUFFER
FEMA PRELIMINARY 100-YEAR FLOODPLAIN
FEMA PRELIMINARY FLOODWAY

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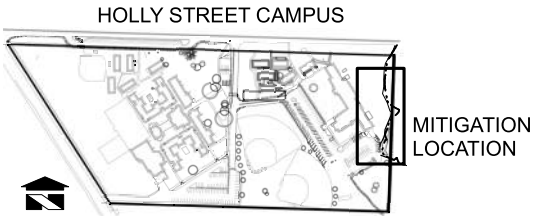
Permanent Bank Stabilization Plan
Holly Street Campus - Creek Bank Repair
City of Issaquah

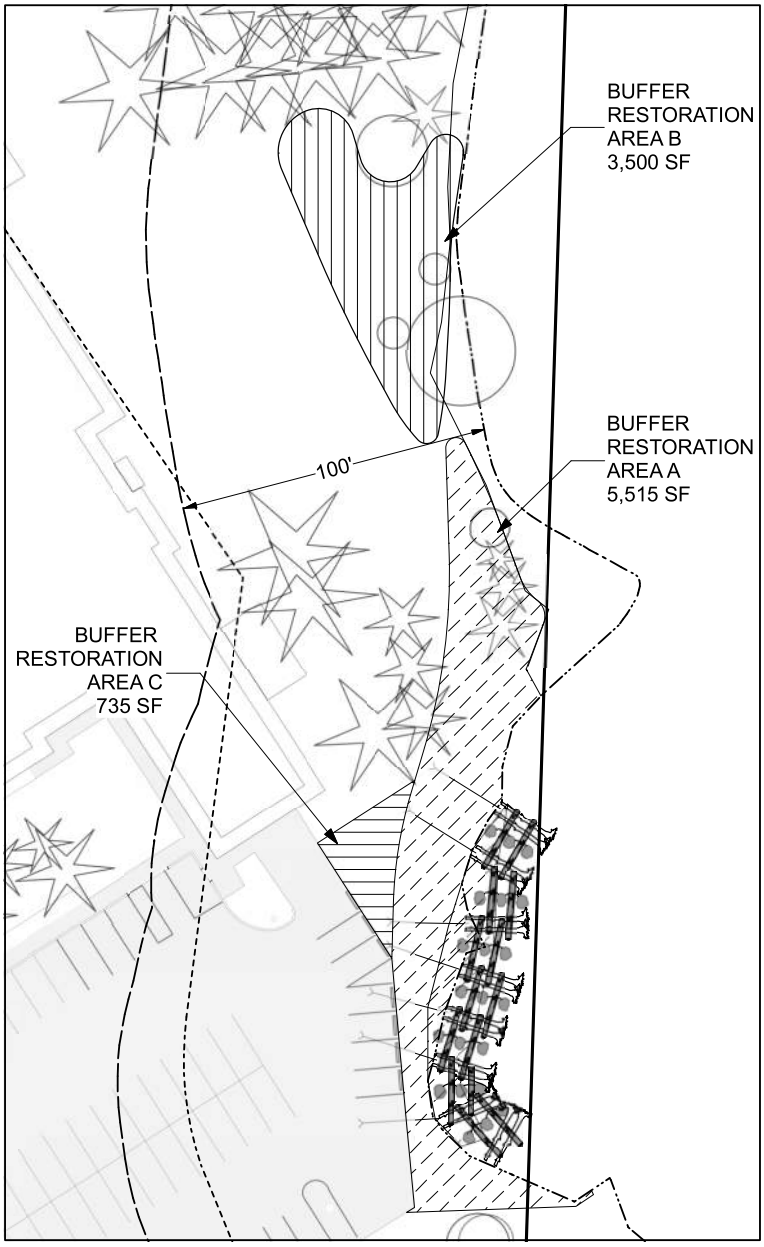
Issaquah School District
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WRI Job#: 21034
Drawn by: MK
Date: 11/02/2021

BUFFER MITIGATION PLAN
HOLLY STREET CAMPUS - CREEK BANK REPAIR

PORTION OF SECTION 28, TOWNSHIP 24N, RANGE 06E, W.M.





LEGEND

- ORDINARY HIGH WATER MARK (CURRENT)
- STREAM BUFFER
- FEMA PRELIMINARY 100-YEAR FLOODPLAIN
- BUFFER RESTORATION AREA A
- BUFFER RESTORATION AREA B
- BUFFER RESTORATION AREA C

Scale 1" = 40'

0 20 40 60 80

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Buffer Mitigation Plan
Holly Street Campus - Creek Bank Repair
City of Issaquah

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Attn: Janelle Walker
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Issaquah, WA 98029

Sheet 4/4
WRI Job#: 21034
Drawn by: MK
Date: 11/02/2021

FLOODPLAIN HABITAT ASSESSMENT

FOR

ISD HOLLY STREET CAMPUS - CREEK BANK REPAIR

CITY OF ISSAQUAH

Wetland Resources, Inc. Project #21034

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 PURPOSE OF STUDY 2
2.0 PROJECT DESCRIPTION 3
2.1 EXISTING SITE CONDITIONS 7
2.2 PROPOSED MITIGATION 8
2.3 CONSERVATION MEASURES 9
3.0 PROJECT ACTION AREA 10
3.1 ESA-LISTED SPECIES REGULATED UNDER THE NFIP WITHIN THE PUGET SOUND REGION 11
4.0 PROJECT EFFECTS ANALYSIS 13
4.1 EFFECTS ON FLOODPLAIN FUNCTIONS 13
4.2 EFFECTS ON ESA-LISTED SPECIES 15
4.3 CRITICAL HABITAT EFFECTS ANALYSIS 16
4.4 ESSENTIAL FISH HABITAT ANALYSIS 16
4.5 INTERRELATED/INTERDEPENDENT ACTIVITIES 17
4.6 BENEFICIAL ACTIVITIES 17
4.7 CUMULATIVE IMPACTS 17
5.0 EFFECTS DETERMINATIONS 17
6.0 CONCLUSION 19
7.0 USE OF THIS REPORT 20
8.0 REFERENCES 21

LIST OF FIGURES

FIGURE 1 - VICINITY MAP OF THE SUBJECT PROPERTY. 2
FIGURE 2 - PREVIOUS CONDITION OF BANK PRIOR TO EROSION EVENT, MAY 2018 (SOURCE: GOOGLE MAPS). 4
FIGURE 3 - EXTENT OF BANK EROSION OF ISSAQUAH CREEK DURING THE MARCH 19, 2020 SITE VISIT. 4
FIGURE 4 - INSTALLED TEMPORARY BANK STABILIZATION MEASURES AND SITE CONDTIONS, FACING NORTHEAST (OCOTBER 8, 2021) 5
FIGURE 5 - PROPOSED SITE PLAN - PRIOR TO INSTALLATION 6
FIGURE 6 - PROPOSED SITE PLAN - BANK STABILIZATION 7
FIGURE 7 - EXISITNG CONDTIONS, FACING SOUTH. (OCTOBER 8, 2021) 8
FIGURE 8 - PROPOSED MITIGATION AREAS 9
FIGURE 9 - PROJECT ACTION AREA SHOWN IN RED 11

List of Tables

Table 1 - Listed Species in Puget Sound Region Subject to NFIP Regulation.....3

List of Appendices

Appendix A: FEMA FIRM Map 53061C1060F

Appendix B: Geotechnical and Engineering Geologic Hazard Evaluation- *REVISED* – ISD Holly Street Campus - Permanent Streabank Stabilization (Nelson Geotechnical Associates, Inc.) October 28, 2021

Appendix C: ISD Holly Street Campus Tree Risk Assessment (Washington Forestry Consultants, Inc.) September 28, 2020

Appendix D: ESA-Listed Species Maps

Appendix E: Species Life Histories & Status of Stock

Appendix F: Justification for Species Absent from Action Area

Appendix G: Essential Fish Habitat (EFH)

Appendix H: Site Plan

Appendix I: TESC Report and SWPPP

1.0 INTRODUCTION

Project Name:	ISD Holly Street Campus - Creek Bank Repair
Applicant:	Issaquah School District #411 Attn: Janelle Walker 5150 220th Ave SE Issaquah, WA 98029 Phone: 425-864-2059
Authorized Agent:	Wetland Resources, Inc. Attn: Alia Richardson 9505 19th Ave. SE, Suite 106 Everett, WA 98208 Phone: 425-337-3174
Project Site Address:	565 Northwest Holly Street; Issaquah, WA 98027
Jurisdiction:	City of Issaquah
Section/Township/Range:	Section 28, Township 24N, Range 6E, W.M.
Latitude, Longitude:	47.5366443°N, -122.0464962°W
Tax Parcel Number(s):	2824069012
Water Resource Inventory Area:	WRIA 8-Lake Washington/Cedar/Sammamish

The subject site is a 19.31-acre parcel located at 565 Northwest Holly Street, in the City of Issaquah, Washington, (parcel number: 2824069012) within a portion of Section 28, Township 24N, Range 6E, W.M. The site is located in the Issaquah Creek drainage basin within the Cedar-Sammamish Watershed; Water Resources Inventory Area 8. Two access points to the subject site exist. One is located along the western property line via Newport Way Northwest and the second is located along the northern property line via Northwest Holly Street.

Issaquah Creek is located along the northeastern portion of the subject property. The creek is classified as a Shoreline of the State (Type S). Type S waters have 250-foot riparian buffer zones (RBZ) and 100-foot critical area buffer (City of Issaquah Municipal Code IMC 18.10). The 100-year floodplain (Floodway Fringe) and floodway of Issaquah Creek cover a portion of the eastern side of the subject property, as mapped by the Federal Emergency Management Agency (FEMA) in the FIRM map panel 53033C0691J (eff. 08/19/2020), see Appendix A. The base flood elevation (BFE) on the subject property is 73.9 feet (NAVD88), as determined by FEMA.

The applicant proposes to replace the temporary bank stabilization, that was installed in March 2021, with permanent bank stabilization measures.



Figure 1 - Vicinity map of the subject property.

1.1 PURPOSE OF STUDY

Development activities proposed within the regulatory floodplain require a Floodplain Habitat Assessment to determine if there are project-related impacts to protected habitats and/or species. The Floodplain Habitat Assessment shall be prepared pursuant to the 2013 FEMA *Floodplain Habitat Assessment and Mitigation Regional Guidance for the Puget Sound Basin* and City of Issaquah's *Flood Hazard Permit - FEMA/ESA Habitat Assessment Checklist*.

In response to a Biological Opinion (BO) prepared by the National Marine Fisheries Service (NMFS) in 2008, FEMA enforces Endangered Species Act (ESA) regulations through the protection of natural functions and processes of special flood hazard areas. Jurisdictions enrolled in the National Flood Insurance Program (NFIP), including the City of Issaquah, must follow minimum criteria to prevent any net adverse effects to ESA-listed species, and their designated habitats, within 100-year floodplains.

The 2008 BO for Puget Sound specifically addresses salmon species and orcas under NMFS, however, pursuant to 2013 FEMA *Floodplain Habitat Assessment and Mitigation Regional Guidance for the Puget Sound Basin* and *City of Issaquah's Flood Hazard Permit Application*, all ESA-listed plant and animal species potentially in or near the project area must be addressed. Potential ESA-listed species within the Puget Sound region, and thus regulated under the NFIP, include those listed in Table

1, below. This list was created from U.S. Fish and Wildlife Service (USFWS 2021) IPaC and NOAA's ESA Threatened and Endangered Species Directory (NOAA 2021).

Species regulated under the NFIP within the Puget Sound region include those listed in Table 1, below. Maps of these species' populations and Critical Habitat are included in Appendix D.

Table 1 - Listed Species in Puget Sound Region Subject to NFIP Regulation

Common Name	***Scientific Name***	***Federal Status***	***Regulatory Agency***
Steelhead - Puget Sound DPS	*Oncorhynchus mykiss*	Threatened	NMFS
Chinook - Puget Sound ESU	*Oncorhynchus tshawytscha*	Threatened	
Chum- Hood Canal Summer ESU	*Oncorhynchus keta*	Threatened	
Sockeye - Ozette Lake ESU	*Oncorhynchus nerka*	Threatened	
Killer whale - southern resident	*Orcinus orca*	Endangered	
Bull Trout - Puget Sound DPS	*Salvelinus confluentus*	Threatened	USFWS
Marbled Murrelet	*Brachyramphus marmoratus*	Threatened	
Streaked Horned Lark	*Eremophila alpestris strigata*	Threatened	
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	

1.1.1 Protected Area

The *Protected Area* consists of those lands within the combined outermost boundary of the floodway, the channel migration zone (CMZ) plus fifty feet, and the riparian buffer zone (RBZ).

Within the project area, the regulatory floodway of Issaquah Creek is located near the ordinary high water mark (OHWM) of the stream. The CMZ is not identified for this reach of Issaquah Creek in the area of the subject site. As no CMZ is mapped for the area, the entire floodplain is assumed to be within the CMZ. Additionally, the RBZ of a Type S stream (such as Issaquah Creek) is 250 feet from the OHWM, which does falls outside the bounds of the floodplain in the immediate project area. Given the extent of the CMZ where the proposed project is located, the entire floodplain is within the "federally protected area." FEMA does not extend the Protected Area beyond the mapped 100-year floodplain (NMFS 2008).

2.0 PROJECT DESCRIPTION

During the winter of 2019-2020, during periods of unusually heavy, prolonged rain, Issaquah Creek experienced extensive erosion of its west bank along the eastern boundary of the subject site.



Figure 2 - Previous condition of bank prior to erosion event, May 2018 (Source: Google Maps).



Figure 3 - Extent of bank erosion of Issaquah Creek during the March 19, 2020 site visit.

An initial geotechnical assessment performed by Associated Earth Sciences, Inc. (*Geotechnical Design Recommendations – Issaquah Creek Bank Erosion Repair*, dated July 9, 2020) determined that unless stabilized, the channel erosion would continue to encroach into the District's property. Further erosion would cause damage to existing infrastructure and posed a safety hazard. A temporary emergency bank stabilization measure was installed to prevent damage to existing infrastructure on the site and ensure safety. The temporary stabilization was installed in March 2021. In order to avoid further erosion of the creek bank, the temporary stabilization will be removed as part of the construction of the permanent stabilization project. The current proposed project is for installation of more comprehensive, permanent stabilization measures consistent with

bioengineering techniques required by multiple agencies and the City of Issaquah.



Figure 4 - Installed temporary bank stabilization measures and site condtions, facing northeast (Ocotber 8, 2021)

The permanent stabilization project will consist of installing streambank protection along approximately 130 feet of cutbank on the west side of Issaquah Creek. Protection will include reconstruction of a portion of the bank lost to channel erosion in proximity to Issaquah School District infrastructure with an engineered, non-deformable 'log toe' incorporating large woody debris and habitat boulders. The log toe will provide protection against the erosive forces directed toward the bank, and provide valuable fish habitat. Habitat boulders will anchor the large woody debris for normal and moderately-high flow flood stages of the stream. Mechanical anchors are included in the design as a supplemental security measure. The woody debris will be situated such that the future possible effects of channel scour are mitigated as much as four feet below the existing channel bottom. Native plants will be installed within the jute soil bags at the top of the stabilization structure, adjacent to the existing parking lot. As the bioengineered structure decays, revegetation within the reconstructed bank will take hold and form permanent, long-term stabilization.

Construction of the stream bank stabilization measures will include work within the ordinary high-water mark of Issaquah Creek, the 100-year floodplain, and a small portion of the mapped floodway. To facilitate work within the stream and reduce impacts associated with construction, fish will be removed from the work area and a temporary coffer dam will be installed along the

perimeter to isolate the work area for the duration of construction. All in-water work will be performed between July 1st and August 30th, the approved fish window

A total of 8 hazard trees are proposed for removal along the streambank (see Appendix C). One tree has already been removed during installation of the temporary bank stabilization. Roots of the trees will remain in place to minimize soil disturbance and reduce further bank erosion. Removal of the trees will be mitigated for with restoration of the area with native shrubs and tree replacement in an area north of the work area. Trees are not proposed to be replaced within the same location as those removed, due to the proximity to the existing administration building and the potential hazard they would pose. Clearing limits are along the portions of the streambank where tree removal, and large-woody debris installation will occur (see Figure 5 below).

All requirements of Issaquah Municipal Code (IMC) chapter 16.36 and any additional permitting conditions will be adhered to.

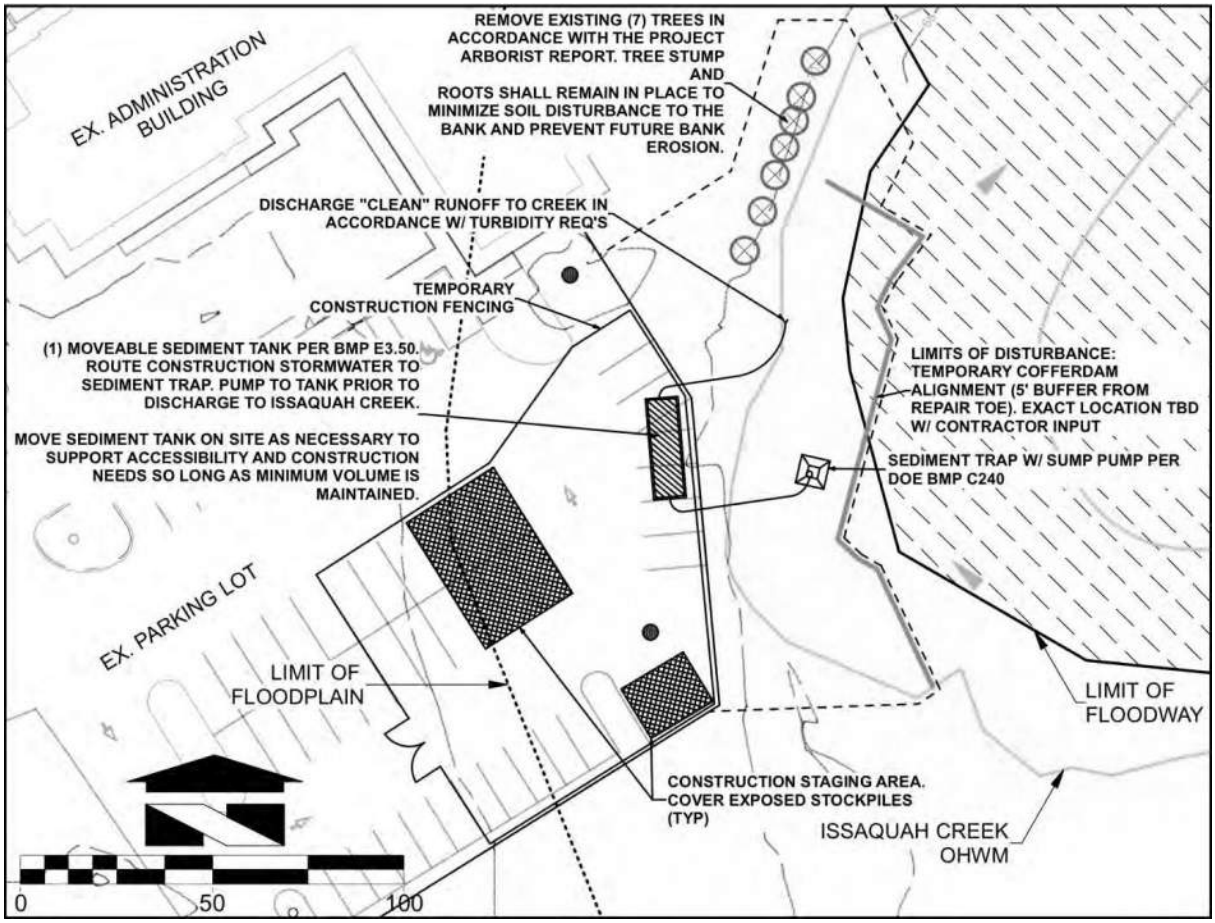


Figure 5 - Proposed Site Plan - Prior to Installation

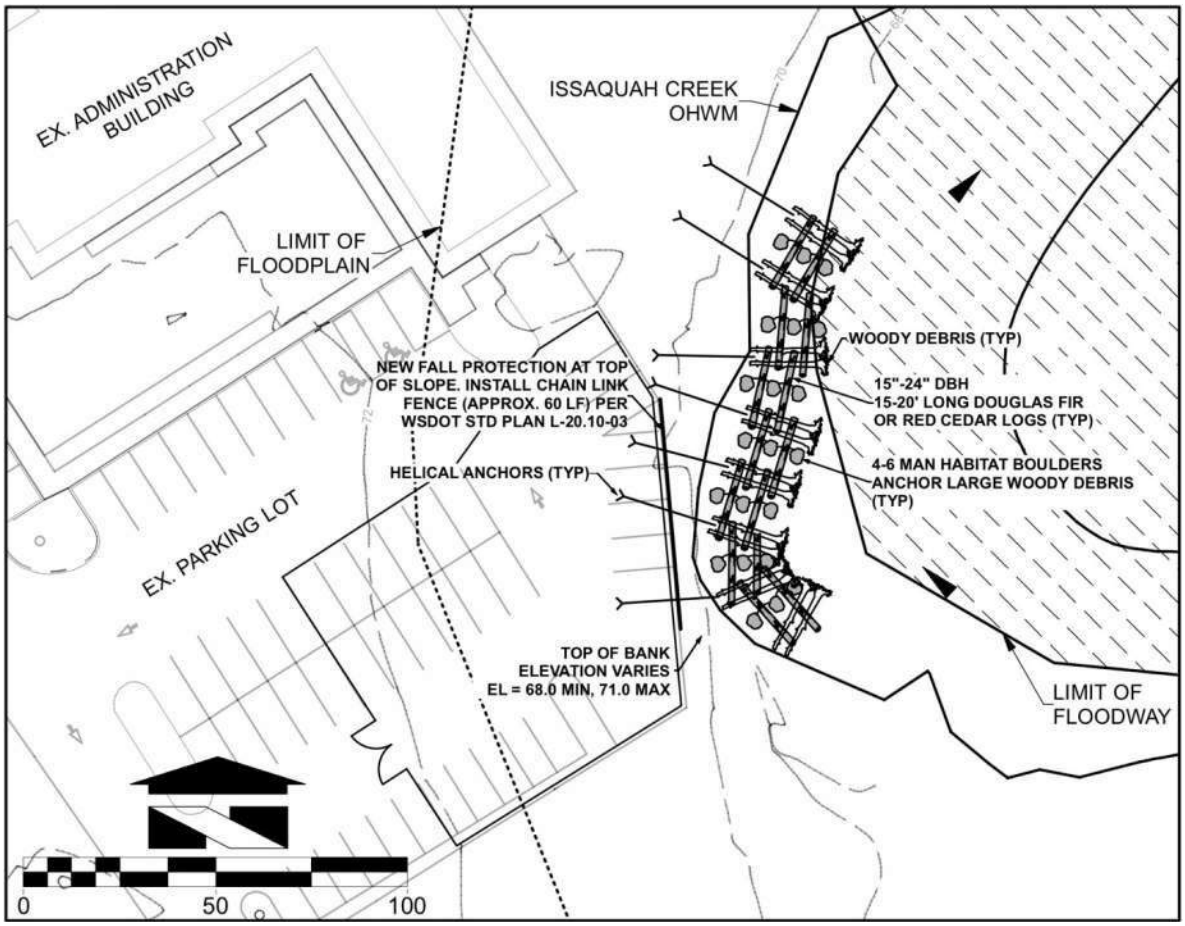


Figure 6 - Proposed Site Plan - Bank Stabilization

Floodplain Avoidance
The preferred method of ensuring no adverse effect to ESA species or environmental factors within the floodplain is avoidance of any development activities in the Special Flood Hazard Area. However, impacts are unavoidable due to the location of the parking lot and administration building adjacent to Issaquah Creek. Permanent bank stabilization measures are required to protect the existing infrastructure.

Although the project must occur within the floodplain and floodway, the project is designed to mimic natural streambank features similar to those found along Issaquah Creek. The project is further designed to inherently avoid adverse impacts to floodplain functions and impacts are minimized to the furthest extent possible, as outlined in section 2.3: *Conservation Measures*.

2.1 EXISTING SITE CONDITIONS

Since installing the temporary bank stabilization measures the area has partially revegetated and some woody debris (drift logs and brush) has accumulated. Vegetation in this area includes unknown grasses, bindweed (*Calystegia sp.*), reed canarygrass (*Phalaris arundinacea*), bull thistle (*Cirsium vulgare*), and Himalayan Blackberry (*Rubus armeniacus*).



Figure 7 - Exisitng condtions, facing south. (October 8, 2021)

Issaquah Creek is mapped as supporting a variety of native fish species. These species include: Chinook, Steelhead, Coho, Sockeye, Kokanee, and Coastal Cutthroat (WDFW 2021b, NWIFC 2021). In addition, Issaquah Fish Hatchery is located 0.5 mile upstream and stocks Issaquah Creek with Coho and Chinook.

2.2 PROPOSED MITIGATION

To mitigate for the removal of trees and impacts to the stream buffer and RBZ, tree replacement plantings and stream buffer restoration are proposed (see Figure 8 below). For more detailed information on critical areas and proposed mitigation please see WRI's *Critical Area Study and Buffer Mitigation Plan* for this project.

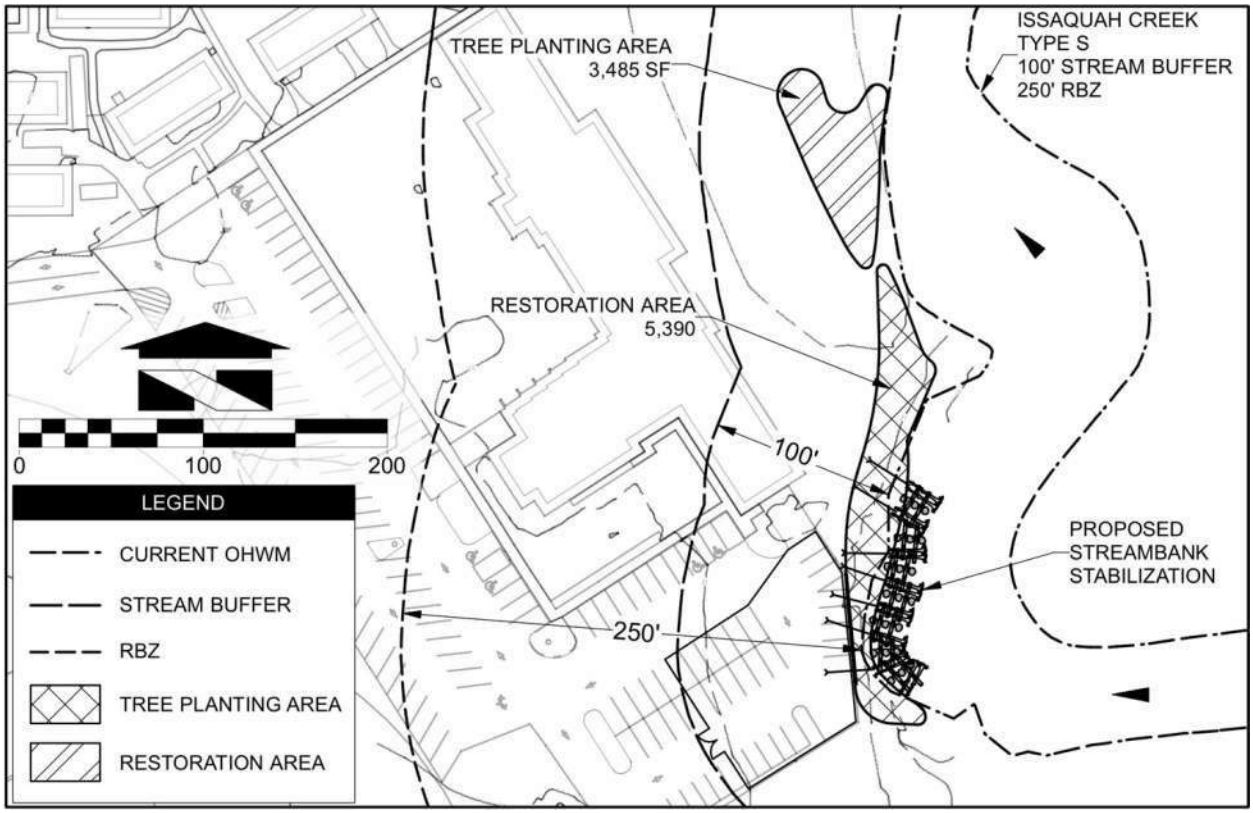


Figure 8 - Proposed mitigation areas

2.3 CONSERVATION MEASURES

Although bank stabilization activities are unavoidable within the floodplain and floodway of Issaquah Creek, impacts are minimized to the maximum extent possible, as outlined below.

- Vegetation removal is limited to the 8 proposed trees and the non-native species that have re-vegetated the temporary streambank stabilization area.
- Stumps and roots of the trees removed will remain to minimize soil disturbance and prevent future bank erosion.
- Bank restoration will include installation of native shrubs.
- Stream bed elevations will be maintained, thereby maintaining the Base Flood Elevation, and avoiding impacts to floodwater storage.
- All conditions of the issued Hydraulic Project Approval (HPA) will be followed.
- Work will be timed during the dry season to avoid flooded conditions, and within specified in-water work window (July 1 - August 31)
- A cofferdam will be installed during the dry season which will exclude any water from the work area.
- Prior to installation, any fish present will be removed from the work area.
- Construction equipment will only run during active operation and will be turned off when not in use. Work will take place during normal daylight hours only.
- All construction activities are proposed outside of the water column.

- Appropriate Best Manage Practices (BMPs) and TESC measures will be in place.

3.0 PROJECT ACTION AREA

An action area is used to identify protected species, habitats, and areas of the floodplain that may be potentially affected by the proposed project. The extent of the overall project action area is the combined geographic coverage of all measurable project-related impacts (including direct, indirect, and interrelated/interdependent actions) within flood hazard areas.

Direct Impacts
The action area for this project is defined by the extent of the clearing limits, installed cofferdam, construction staging areas, and mitigation areas, which covers approximately 21,068 square feet. No areas outside these defined limits will be impacted or experience measurable changes. Construction activities will be accessed from the abutting existing parking lot. Construction of the bank stabilization will permanently alter the floodplain environment by removing the temporary measures, restoring a portion of the streambank, and installing permanent bank stabilizations.

No increase in impervious surfaces is proposed. No measurable changes to floodwater storage are anticipated because the proposed project will comply with IMC 16.36, thereby maintaining the base flood elevation. Sediment generated from installation of the fish exclusion netting will be indiscernible from that naturally occurring in the high-energy system of Issaquah Creek. During installation of large-woody debris, anchors, and habitat boulders the temporary sediment trap will collect silt laden runoff and direct it to a sediment tank. In the tank the surface water will be treated before being released back into the creek. Once construction is complete, cofferdam removed, any remaining sediment introduced into the creek will be indiscernible.

Equipment typically used for tree removal, and installation of streambank stabilization measures will temporarily cause an increase in overland noise pollution during construction activities. Because construction activities are proposed outside the water column, with implementation of a cofferdam, noise pollution from construction activities will only affect the terrestrial environment. Following guidance from WSDOT, potential noise disturbance to aquatic environments is considered discountable, as the water surface is assumed to deflect noise emanating from the terrestrial environment. Given the only species subject to NFIP regulation are located within the aquatic environment, terrestrial noise pollution from construction activities is omitted from the overall project action area.

Indirect Impacts
Typical BMPs and TESC measures will be used surrounding the work site to limit disturbance. Soils will be stabilized after construction activities, as necessary. Construction will occur during the dry season, outside the water column and outside of flooded conditions. These conservation measures are anticipated to prevent the mobilization of sediment/pollutants to areas outside the proposed work area.

Thus, indirect impacts to water quality and sedimentation/turbidity are considered discountable for this project.

Interrelated/Interdependent Actions
No interrelated or interdependent project activities are proposed for the project. This project will have no impact on future or further development in the vicinity.

Overall Project Action Area
The project action area is defined by the extent of the proposed work area within the floodplain and floodway, as displayed in Figure 9 below.

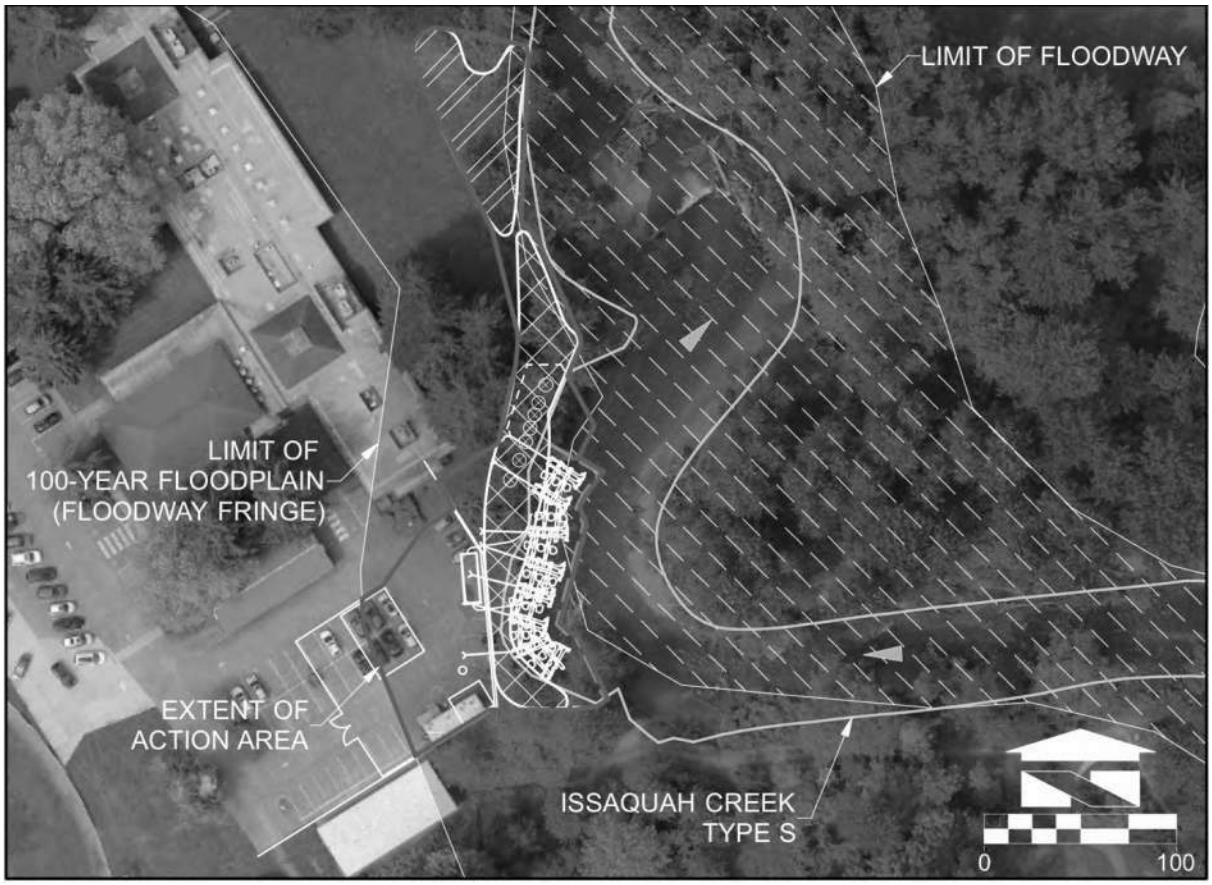


Figure 9 - Project Action Area Shown in Red

3.1 ESA-Listed Species Regulated Under the NFIP within the Puget Sound Region

ESA-listed species population ranges were determined through NOAA DPS/ESU maps and USFWS Critical Habitat maps (NOAA 2013, USFWS 2010). These population maps are included within Appendix D of this report.

National Marine Fisheries Service (NMFS) and USFWS Critical Habitat Final Rules were reviewed for the presence of designated Critical Habitat within the action area. Maps of these species' Critical Habitat ranges are included within Appendix D of this report.

Steelhead - Puget Sound DPS
The NOAA Fisheries' West Coast Region DPS/ESU boundary map displays the Puget Sound Steelhead DPS overlapping Issaquah Creek (see Appendix D).

The WA State Department of Fish and Wildlife (WDFW) SalmonScape map viewer displays documented spawning of winter Steelhead within the portion of Issaquah Creek adjacent to the project site (WDFW 2021b). The Northwest Indian Fisheries Commission (NWIFC) SWIFD Map Viewer displays documented spawning of winter Steelhead within the same location (Issaquah Creek) displayed by WDFW SalmonScape (NWIFC 2021).

Chinook - Puget Sound ESU
The NOAA Fisheries' West Coast Region DPS/ESU boundary map displays the Puget Sound Chinook ESU overlapping the Issaquah Creek (see Appendix D).

WDFW SalmonScape displays documented spawning of fall Chinook use within the Issaquah Creek (WDFW 2021b). The NWIFC SWIFD Map Viewer displays documented spawning of fall Chinook use within Issaquah Creek as displayed by WDFW SalmonScape (NWIFC 2021).

Chum - Hood Canal Summer ESU
The NOAA Fisheries' West Coast Region DPS/ESU boundary map does not display the Hood Canal Summer Chum ESU overlapping the City of Issaquah or Issaquah Creek in particular (see Appendix D).

WDFW SalmonScape does not display any documented Chum within Issaquah Creek (WDFW 2021b). Likewise, the NWIFC SWIFD Map Viewer does not display the presence of document Chum within Issaquah Creek (NWIFC 2021).

Bull Trout - Puget Sound DPS
U.S. Fish and Wildlife Service (USFWS) does not include Issaquah Creek or any tributaries identified as critical habitat for Bull Trout (USFWS 2010). See Appendix D for this map.

WDFW SalmonScape maps Lake Washington as documented rearing for Dolly Varden/Bull Trout and Lake Sammamish as documented presence (WDFW 2021b). Likewise, the SWIFD viewer maps Lake Washington as documented rearing for Dolly Varden/Bull Trout and Lake Sammamish as documented presence (NWIFC 2020). The closest Bull Trout/Dolly Varden population to the action area is shown within Lake Sammamish, approximately 1.97 miles northwest of the work area (WDFW 2021b, NWIFC 2021).

Sockeye - Ozette Lake ESU
According to the NOAA Fisheries' West Coast Region DPS/ESU boundary map (see Appendix D), the Ozette Lake Sockeye ESU does not have a range that overlaps the Issaquah Creek.

Killer whale - southern resident
The southern resident killer whale only occupies marine environments, which is not located within the vicinity of the project site (see map in Appendix D). The nearest marine environment (Puget Sound) is located approximately 17 miles west of the site.

Marbled Murrelet
The Marbled Murrelet occupies marine environments and old-growth forests, which are not located within the project site. See Appendix F for further justification for this species absence within the action area.

Streaked Horned Lark
The Streaked Horned Lark does not occupy areas north of Pierce County, Washington. See Appendix F for further justification for this species absence within the action area.

Yellow-billed Cuckoo
The Yellow-billed Cuckoo occupy continuous riparia forests, which are not located within the project site. See Appendix F for further justification for this species absence within the action area.

Conclusion
ESA-listed species within the action area include Steelhead (Puget Sound DPS) and Chinook (Puget Sound ESU). These species are mapped within the portion of Issaquah Creek adjacent to the project site. ESA-listed species located near the action area and within Lake Sammamish include Bull Trout (Puget Sound DPS). The life histories of these species and their stock statuses are included in Appendix E of this report. No Critical Habitat for any of the above species is located within of in the vicinity of the action area. Maps of these species designated Critical Habitats are included within Appendix D of this report.

4.0 PROJECT EFFECTS ANALYSIS

This document analyzes the effects of both direct and indirect impacts of the project action, as well as any interrelated/interdependent or beneficial activities. Cumulative impacts are considered for reasonably foreseeable projects beyond the subject project scope.

4.1 EFFECTS ON FLOODPLAIN FUNCTIONS

Pursuant to FEMA guidance, floodplain habitat assessments must include an analysis of floodplain habitat and functions, including discussing the effects of the action on water quality, water quantity, flood volumes, flood velocity, flood storage capacity, spawning substrate, and floodplain refugia.

As previously discussed in section 3.0, the action area is composed of the extent of the proposed work area within the 100-year floodplain and floodway of Issaquah Creek. The majority of the subject property is developed with an elementary school, associated sports fields, parking areas, and administration building. There are isolated patches of trees across the site. The eastern boundary of the parcel includes maintained lawn and trees. Tree species in this area include black cottonwood (*Populus balsamifera*), Douglas fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata).*

Water Quality
The portion of Issaquah Creek adjacent to the subject site is mapped as Category 2 in terms of assessed water quality by the Washington State Department of Ecology (ECY) Water Quality Atlas (ECY 2020a). According to the ECY, *"Waters in this category have some evidence of a water quality problem,*

but not enough to show persistent impairment.". However, the portion of Issaquah Creek located south of the subject site as well as, East Fork Issaquah Creek (to the southeast), and North Fork Issaquah Creek (to the north), are mapped by the ECY as Category 5 polluted waters. According to the ECY, *"If a water body is in this category it means that we have data showing that the water quality standards have been violated for one or more pollutants, and there is no TMDL - or pollution control program in place."* However, these bodies of water do have TMDLs in place for treating E. coli (ECY 2021). These portions of streams are mapped with elevated E. coli levels above fecal coliform standards, exceeding this water quality standard. Despite the portion of the Issaquah Creek adjacent to the project area not being mapped as a Category 5, it can be presumed that water within this portion of the stream is likely compromised due the violation of fecal coliform water quality standards located up and downstream of the subject site.

The proposed work area provides limited water quality and retention functions due to a lack of vegetation complexity (filtration, flow reduction), and topographic depressions (water storage, flow reduction). Existing non-native vegetation within the work area provides limited sediment/pollutant control, especially given the relative size of the work area. The proposed project includes removal of 8 hazard trees, and leaving their root systems. After removal this area of streambank will be restored with native shrubs. The native plantings will increase the bank stability and aide infiltration of any stormwater runoff. Conservation measures, as outlined in section 2.3, will include standard BMP and TESC procedures that will prevent direct and indirect impacts to water quality and quantity within the floodplain. Any changes to these functions will be discountable. Water quality and quantity within the action area will not be adversely affected by this project

Floodplain Hydrology

Given the minimal size and condition of the action area, limited flood velocity, flood volume, and flood storage functions are provided by this area. The majority of the action area lacks vegetation complexity that could assist in flow attenuation and water storage. Increases in impervious surface and decreases in vegetation can lead to decreased floodwater retention and increases in stormwater quantity and velocity. The project does not propose an increase in impervious surfaces. The baseline surface and groundwater regimes within the floodplain will be substantially the same after project construction. The height of the streambank will be unchanged. Mitigation measures include restoration of a portion of the stream bank with native trees and shrubs. These plantings will aide in slowing flood waters.

The project will have no impacts on groundwater or hyporheic functions. The base flood elevation will be maintained. Given the insignificant changes proposed, adverse effects to hydrology and flood processes are not anticipated. Baseline hydrology conditions of the floodplain will remain substantially the same. See the *Geotechnical and Engineering Geologic Hazard Evaluation* (Appendix B) for a more detailed analysis of floodplain hydrology impacts.

Floodplain Habitat Elements and Processes

The portion of the streambank that eroded away during the large storm event, in the winter of 2019-2020, originally consisted of native trees and shrubs and Himalayan blackberry. The project site currently provides limited floodplain habitat elements or processes. Existing vegetation lacks complexity, with some native species but a large portion being dominated by invasives. The project area does not provide floodplain refugia from high velocity floodwaters. Given the baseline

vegetation structure and temporary bank stabilizations, the action area does not provide any significant refuge, cover, nesting, foraging, resting, shading, bank stabilization, nutrient cycling, or pollutant removal functions.

The proposed project seeks to provide bank stabilization and restore the stream bank. Bank stabilization measures includes installing large-woody debris and native plantings. To mitigate for hazard trees removed, tree replacements will be installed approximately 110 feet north of the bank stabilization area.

This project will not result in habitat isolation and does not include any channel straightening. No changes to floodplain connectivity will occur. Baseline floodplain habitat conditions will be restored by the proposed project. Floodplain habitat elements and processes within the action area will not be adversely affected.

Conclusion

This project will not adversely affect water quality, water quantity, flood volumes, flood velocities, spawning substrate, or floodplain refugia. No indirect adverse impacts (effects to stormwater, riparian vegetation, bank stability, channel migration, hyporheic flow, or wetlands) are anticipated. An increase in flood hazard area functions is expected after implementation of mitigation measures. Mitigation and conservation measures will return the project area to baseline conditions.

4.2 Effects on ESA-listed Species

This effects analysis pertains to ESA-listed salmonids potentially located in the same watershed as the project. These species include Steelhead (Puget Sound DPS) and Chinook (Puget Sound ESU). The above species are analyzed together as they occupy the same riverine habitat nearest to the action area.

Prior to installation of the cofferdam and construction, fish exclusion netting will be installed and any fish present will be removed and placed downstream of the work area.

Sedimentation and Turbidity

Temporary sedimentation and increased turbidity within the stream may occur during and immediately after the completion of the bank restoration and stabilization measures. Turbidity monitoring will occur downstream of the construction area. After the conclusion of construction activities and the cofferdam is removed, fine sediment may be temporarily suspended in the water column once the stream returns back to the bank, with a potential to redistribute sediment, temporarily altering light penetration, and potentially temporarily increasing pollutant concentration and turbidity in the water column. However, any quantity of particulates that could be reasonably expected to potentially escape would be indiscernible on the overall turbidity of a stream channel as high-energy as Issaquah Creek. Given the rate of discharge for Issaquah Creek (described in section 4.0), it is assumed that hydraulic energy is relatively high in this waterbody (Castro 1995). Streams of this order already generate a base level of turbidity from the stream's substrate and banks. Therefore, given the stream's baseline conditions paired with the proposed TESC measures and filter fabric, any effects to the benthic and aquatic community and downstream listed salmonids from the temporary in water disturbance are anticipated to be discountable.

Structural alterations to floodplain habitat
Measurable effects from structural alterations to floodplain habitat are limited to the extent of the proposed work area. The proposed streambank stabilization measures will include anchoring pieces of large-woody debris, which mimics recruitment similarly to what is found within this river system

No direct or indirect impacts to floodplain structure or functions will occur outside the marked clearing limits. There is no potential for project activities to directly impact the aquatic environment because work is proposed outside the water column, and will only occur during the dry season and approved fish window when flooded conditions are not present. BMP and TESC measures, as outlined in section 2.3, will prevent any indirect impacts to terrestrial and aquatic areas outside the clearing limits.

Conclusion
Any effects to ESA-listed salmonid species within the subject watershed from the proposed permanent bank stabilization actions are anticipated to be discountable.

4.3 CRITICAL HABITAT EFFECTS ANALYSIS

As discussed in section 3.1 and shown in Appendix D, no designated Critical Habitat of any of the above protected species is located within or in the vicinity of the action area. Therefore, there are no potential effects to designated Critical Habitat.

4.4 ESSENTIAL FISH HABITAT ANALYSIS

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 requires that essential fish habitat (EFH) must be identified by NMFS for federally managed marine fish. In addition, federal agencies must consult with NMFS on all proposed actions undertaken or funded by the agency that may affect EFH. The Pacific Fisheries Management Council (PFMC) has designated EFH for the Pacific salmon fishery, for federally managed groundfish, and for coastal pelagic fisheries.

For this project, only species of the Pacific salmon fishery could potentially be affected, as only freshwater systems are located in the action area. The EFH designation for the Pacific salmon fishery includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by PFMC. The Pacific salmon management unit includes Chinook, Coho, and Pink salmon. Within the action area, EFH occurs for Chinook and Coho within Issaquah Creek.

This action may have an effect on EFH for Pacific salmon in Issaquah Creek. However, construction activities will occur outside of the water column, during non-flooded conditions. Installation of large woody-debris will mimic those conditions found elsewhere in the riverine system. Large-woody debris in streams and rivers is an important component in fish habitat. They provide habitat features including refuge, shading, foraging, and spawning beds. Additionally, standard BMP and TESC procedures as outlined in section 2.3 will ensure that construction activities are isolated from the surrounding floodplain habitat and aquatic areas.

No direct or indirect effects are expected to associated Prey Species within the action area, due to conservation measures outlined in section 2.3. Any adverse effects to associated Prey Species are discountable.

No permanent, cumulative adverse effects on EFH for Pacific salmon is anticipated to occur as a result of this project. Any future actions within the floodplain will need to meet the same ESA requirements pursuant to the NFIP program, thereby ensuring no future adverse impacts; cumulative or otherwise. Maps of these species' EFH are included in Appendix G.

4.5 INTERRELATED/INTERDEPENDENT ACTIVITIES

No interrelated or interdependent project activities are proposed for the project.

4.6 BENEFICIAL ACTIVITIES

Replacing the temporary bank stabilization with permanent stabilization measures and reconstruction of a portion of the bank have been designed to mimic similar streambank conditions along Issaquah Creek. The installed large-woody debris, habitat boulders, and plantings will re-establish the habitat that was lost during the large storm event. This project will have beneficial effects on fish habitat.

4.7 CUMULATIVE IMPACTS

Cumulative impacts are the incremental effects of an action, together with impacts of present and reasonably foreseeable future actions, beyond the subject project. Cumulative effects can result from individually minor but collectively significant actions taking place over time.

All measurable effects associated with this project are considered temporary, and therefore will not contribute to a cumulative effect with other actions, similar or dissimilar. Additionally, the actions associated with this project will restore and protect the streambank, thereby ensuring no future adverse impacts; cumulative or otherwise. Therefore, no cumulative effects will occur as a result of the streambank restoration project.

5.0 EFFECTS DETERMINATIONS

ESA-Listed Species (Chum, Sockeye, Killer Whale, and Bull Trout)
No Effect

The project has **no effect** on Chum (Hood Canal Summer ESU), Sockeye (Ozette Lake ESU), or Killer whale (southern resident) because:

- These species do not occupy the same watershed or portion of WRIA that work is proposed in.

The project has **no effect** on Bull Trout (Puget Sound DPS) because:

- This species potentially occupies a waterbody downstream of the work area (Lake Sammamish) but is not within the project's action area.

ESA-Listed Species (Chinook and Steelhead)
May Affect, Not Likely to Adversely Affect

The project **may affect** Steelhead (Puget Sound DPS) and Chinook (Puget Sound ESU) because:

- These species may occupy the same waterbody that work is proposed in.

However, the project **is not likely to adversely affect** these species because:

- These species are not present within the action area, because:
  - Work is proposed outside the water column, during the dry season when flooded conditions are not present, and within fish work windows.
  - BMP and TESC measures will prevent any indirect impacts to aquatic areas outside the work areas.
- The action area contains no designated Critical Habitat for these species.
- The proposed project will follow all conditions of the issued WDFW Hydraulic Project Activities (HPA).
- Any effects to floodplain functions will be either discountable or beneficial.

Critical Habitat
No Effect

The project will have **no effect** on any of the potential species Critical Habitat because:

- The project and project-related effects are not located within or adjacent to habitat areas with known Critical Habitat.

Essential Fish Habitat
May Affect, Not Likely to Adversely Affect

The project action **may affect**, essential fish habitat of Chinook and Coho because:

- Temporary increase in sedimentation/turbidity may occur
- Bank stabilization measures include restoring the streambank with large-woody debris and native plantings.

However, the project **is not likely to adversely affect** these EFH because:

- Any increase in sedimentation/turbidity within the water column is considered discountable based on duration, and quantity similar to what is expected in a high-energy riverine system.
- Installation of native plantings and large-woody debris will increase the quality/and quantity of EFH along this portion of Issaquah Creek.

Floodplain Functions

Through the floodplain functions effects analysis outlined in section 4.1, it has been determined that any possible effects to floodplain habitat will be beneficial. Baseline conditions of the floodplain will be **restored**, and **no adverse effects** to floodplain functions or elements are anticipated.

Within the Protected Area, the project will **not adversely affect** the following floodplain elements:

- Water quality,
- Water quantity,
- Flood volumes,
- Flood velocity,
- Flood storage capacity,
- Spawning substrate, or
- Floodplain refugia

6.0 CONCLUSION

The project proposal has an effect determination of **May Affect, Not Likely to Adversely Affect (NLAA)** on Chinook (Puget Sound ESU) and Steelhead (Puget Sound DPS), and EFH, a **No Effect (NE)** determination on Bull Trout (Puget Sound DPS), Chum (Hood Canal Summer ESU), Sockeye (Ozette Lake ESU), Killer whale (southern resident), Marbled Murrelet, Streaked Horned Lark, and Yellow-billed Cuckoo, and a **No Effect (NE)** determination on designated Critical Habitat.

No adverse effects to floodplain functions within the action area will occur, and baseline conditions of the floodplain will be restored. Any effects that may occur from the project action are considered either discountable or beneficial, as described within section 4.0. Potential impacts analyzed in this habitat assessment include direct, indirect, interrelated/interdependent, beneficial, and cumulative.

This project restores the baseline condition of the existing floodplain area and functions. All "General BiOP Minimum Standards" and "Minimum Habitat Assessment Standards" have been met within this assessment.

7.0 USE OF THIS REPORT

This Floodplain Habitat Assessment was prepared for the Issaquah School District as a means of determining potential project effects on ESA-listed species, as well as on the regulated 100-year floodplain, as required by the Snohomish County and the U.S. Federal Emergency Management Agency during the permitting process.

The laws applicable to listed species biology/management are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by ecologists. No other representation or warranty is made concerning the work of this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc



Alia Richardson
Associate Ecologist & Wildlife Biologist

8.0 REFERENCES

Desimone, S. M. 2016. *Periodic Status Review for the Marbled Murrelet in Washington*. Washington Department of Fish and Wildlife, Olympia, WA. October 2016.

Endangered Species Act of 1973, *50 C.F.R. § 420*. 2016.

Endangered Species Act of 1973, *16 U.S.C. §§ 1531-1544*. 2016.

Endangered Species Act of 1973, *50 C.F.R. § 420*. 2016.

FEMA. 2021. *Flood Insurance Rate Map: Snohomish County, Washington [Panel 1060 of 1575]*. Map Number 53061C1060F. National Flood Insurance Program. Revised 06/19/2020.

FEMA. 2013. *Regional Guidance for Floodplain Habitat Assessment and Mitigation in the Puget Sound Basin*. Region 10. August 10. Bothell, WA.

Hughes, J. M. 1999. *Yellow-billed cuckoo (Coccyzus americanus)*. *In* The Birds of North America, No. 418 (A.Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, Pennsylvania.

Issaquah Municipal Code (IMC). Title 16, Chapter 16.36, Areas of Special Flood Hazard.

Kerwin, J. 2001. *Salmon and Steelhead Habitat Limiting Factors Report for the Cedar–Sammamish Basin (Water Resource Inventory Area 8)*. Washington Conservation Commission. Olympia, WA.

KCDNR (King County Department of Natural Resources).2000. *Literature Review and Recommended Sampling Protocol for Bull Trout in King County*. Seattle, WA.

Lewis, J.C., R.A. Long, J.R. Akins, S.H. Fitkin, J. Rohrer, A.L. Woodrow, P. MacKay, and R.G. Christophersen.2020. *Western States Wolverine Conservation Project: results of the Washington Wolverine Survey, Winter 2016-2017. Final Project Report*. Washington Department of Fish and Wildlife, Olympia, Washington.

Magnuson-Stevens Fishery Conservation and Management Act of 1976, *16 U.S.C. §§ 1801-1891d*.

National Marine Fisheries Service (NMFS). 2021. *Critical Habitat*. West Coast Region. http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm. Accessed October 2021.

NMFS. 2016. *Endangered and Threatened Species; Designation of Critical Habitat for Lower Columbia River Coho Salmon and Puget Sound Steelhead*. 81 Fed. Reg. § 9,252 (final rule Feb. 24, 2016) (to be codified at 50 C.F.R. pt. 17).

NMFS. 2014. *Endangered Species Act Section 7 Effects Determination Guidance*. Southeast Regional Office. Protected Resources Division. March 2014

NMFS. 2008. *Endangered Species Act – Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation.* Implementation of the National Flood Insurance Program in the State of Washington. Phase One Document – Puget Sound Region. Tracking No. 2006-00472. Northwest Region. September 2008. Seattle, WA.

NMFS. 2007. *Endangered and Threatened Species: Final Listing Determination for Puget Sound Steelhead.* 72 Fed. Reg. § 26,722 (final rule May 11, 2007) (to be codified at 50 C.F.R. pt. 17).

NMFS. 2006. *Endangered and Threatened Species; Designation of Critical Habitat for Southern Resident Killer Whale; Final Rule*. 71 Fed. Reg. § 69,054 (final rule Nov 29, 2006) (to be codified at 50 C.F.R. pt. 226).

NMFS. 2005a. *Endangered and Threatened Species; Designation of Critical Habitat for 12 Evolutionary Significant Units of West Coast Salmon and Steelhead in Washington Oregon and Idaho*. 70 Fed. Reg. § 52,630 (final rule Sep. 2, 2005) (to be codified at 50 C.F.R. pt. 17).

NMFS. 2005b. *Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs.* 70 Fed. Reg. § 37,160 (final rule Jun. 28, 2005) (to be codified at 50 C.F.R. pt. 17).

NMFS. 1999. *Endangered and Threatened Species: Final ESA Listing for Hood River Canal Summer-run and Columbia River Chum Salmon. 64* Fed. Reg. § 14508. (final rule Mar 25, 1999)

NMFS. 1996. *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale.* Environmental and Technical Services Division, Habitat Conservation Branch. August 1996.

National Oceanic and Atmospheric Administration (NOAA).2021. *Species Directory - ESA Threatened & Endangered.* https://www.fisheries.noaa.gov/species-directory/threatened-endangered. Accessed October 2021.

NOAA. 2013. *Salmon & Steelhead DPS/ESU Boundaries*. NOAA Fisheries- West Coast Region. Updated January 2013.

Nelson, S.K., M. H. Huff, S. L. Miller, and M. G. Raphael. 2006. *Marbled Murrelet biology: habitat relations and populations in Northwest Forest Plan.* General Technical Report PNW-GTR-650, USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon.

Northwest Indian Fisheries (NWIFC) and Washington Department of Fish and Wildlife (WDFW). 2021. *Statewide Washington Integrated Fish Distribution (SWIFD) Map Viewer*. Accessed October 2021.

Pearson and Altman. 2005. *Range-wide Streaked Horned Lark (Eremophila alpestris strigata) Assessment and Preliminary Conservation Strategy*. WDFW Wildlife Program. Science Division. Olympia, WA.

Pearson, S.F., and M. Hopey. 2005. *Streaked Horned Lark nest success, habitat selection, and habitat enhancement experiments for the Puget lowlands, coastal Washington and Columbia River Islands*. Natural Areas Program Report 2005-1. Washington Dept. of Natural Resources. Olympia, WA.

Pearson, S.F., M. Hopey, W. D. Robinson, R. Moore. 2005. *Range, abundance and movement patterns of wintering Streaked Horned Larks in Oregon and Washington*. Natural Areas Program Report 2005-2. Washington Dept. of Natural Resources. Olympia, WA.

Stinson, D.W. 2016. *State of Washington Periodic Status Review for the Streaked Horn Lark*. Washington State Department of Fish and Wildlife. Olympia, WA.

Tweit, B. 2005. *Yellow-billed cuckoo Coccyzus americanus*. In T. R. Wahl, B. Tweit, and S. G. Mlodinow, editors. Birds of Washington: status and distribution. Oregon State University Press, Corvallis, Oregon.

USFWS (United States Fish and Wildlife Service). 2021. *IPaC: Information for Planning and Conservation project planning tool*. http://ecos.fws.gov/ipac/. Accessed October 2021.

USFWS. 2016. *Listing Endangered and Threatened Species and Designating Critical Habitat; Implementing Changes to the Regulations for Designating Critical Habitat*. 81 Fed. Reg. § 7,414 (final rule Feb. 11, 2016) (to be codified at 50 C.F.R. pt. 424).

USFWS. 2014. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo*. 79 Fed. Reg. § 48,547 (proposed rule Aug. 15, 2014) (to be codified at 50 C.F.R. pt. 17).

USFWS. 2013. *Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States; Establishment of a Nonessential Experimental Population of the North American Wolverine in Colorado, Wyoming, and New Mexico; Proposed Rules*. 50 Fed. Reg. § 7,864 (proposed rule Feb. 4, 2013) (to be codified at 50 C.F.R. pt. 17).

USFWS. 2010. *Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Bull Trout in the Coterminous United States; Final Rule.* 75 Fed. Reg. § 63,898 (final rule Oct. 18, 2010) (to be codified at 50 C.F.R. pt. 17).

USFWS. 1999. *Endangered and Threatened Wildlife and Plants: Determination of Threatened Status for Bull Trout in the Coterminous United States.* 64 Fed. Reg. § 58,910 (final rule Nov. 1, 1999) (to be codified at 50 C.F.R. pt. 17).

USFWS. 1998. *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale*. Adapted from the National Marine Fisheries Service. February 1998.

USFWS. 1996. *Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Marbled Murrelet; Final Rule*. 61 Fed. Reg. § 26,256 (final rule May 24, 1996) (to be codified at 50 C.F.R. pt. 17).

Washington State Department of Ecology (ECY). 2021. *Washington State Water Quality Atlas.* http://www.ecy.wa.gov/programs/wq/303d/. Accessed October 2021.

WDFW. 2021a. *Salmon Conservation Reporting Engine*. Washington State Department of Fish and Wildlife. https://fortress.wa.gov/dfw/score/score/. Accessed October 2021.

WDFW. 2021b. *SalmonScape Online Mapping Application*. http://apps.wdfw.wa.gov/salmonscape/map.html. Accessed October 2021.

WDFW. 2019. *Seabird Ecology: Marbled Murrelet Population Trends*. http://wdfw.wa.gov/conservation/research/projects/seabird/marbled_murrelet_population/

WDFW. 2013. *Threatened and Endangered Wildlife in Washington: 2012 Annual Report*. Listing and Recovery Section, Wildlife Program, Washington Department of Fish and Wildlife, Olympia, Washington.

WDFW. 2008. *Oncorhynchus mykiss: Assessment of Washington State's Steelhead Population and Programs*. Washington State Department of Fish and Wildlife. February 2008.

WDFW. 2004. *Washington State Salmonid Stock Inventory: Bull Trout/Dolly Varden*. Washington State Department of Fish and Wildlife. October 2004.

Washington State Department of Natural Resources (WA DNR). 2021. *Forest Practices Application Mapping Tool (FPAMT)*. https://fpamt.dnr.wa.gov/default.aspx. Accessed October 2021.

WA DNR. September 2007. *Marbled Murrelet Ecology and Life History*. http://www.dnr.wa.gov/Publications/lm_mamu_ch2.pdf

Washington State Department of Transportation (WSDOT). 2019. *Biological Assessment Preparation, Advanced Training Manual*. Version 10-2019.

Wiles, G. J., and K. S. Kalasz. 2017. *Status report for the Yellow-billed Cuckoo in Washington*. Washington Department of Fish and Wildlife. Olympia, Washington.

APPENDIX A

FEMA FIRM MAP 53061C1060F

National Flood Hazard Layer FIRMette

FEMA

122°2'49"W 47°32'23"N



122°2'12"W 47°31'58"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/21/2021 at 6:55 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B

Geotechnical and Engineering Geologic Hazard Evaluation - *REVISED*
ISD Holly Street Campus - Permanent Streambank Stabilization
(Nelson Geotechnical Associates, Inc.) October 28, 2021

See Section 00 31 00

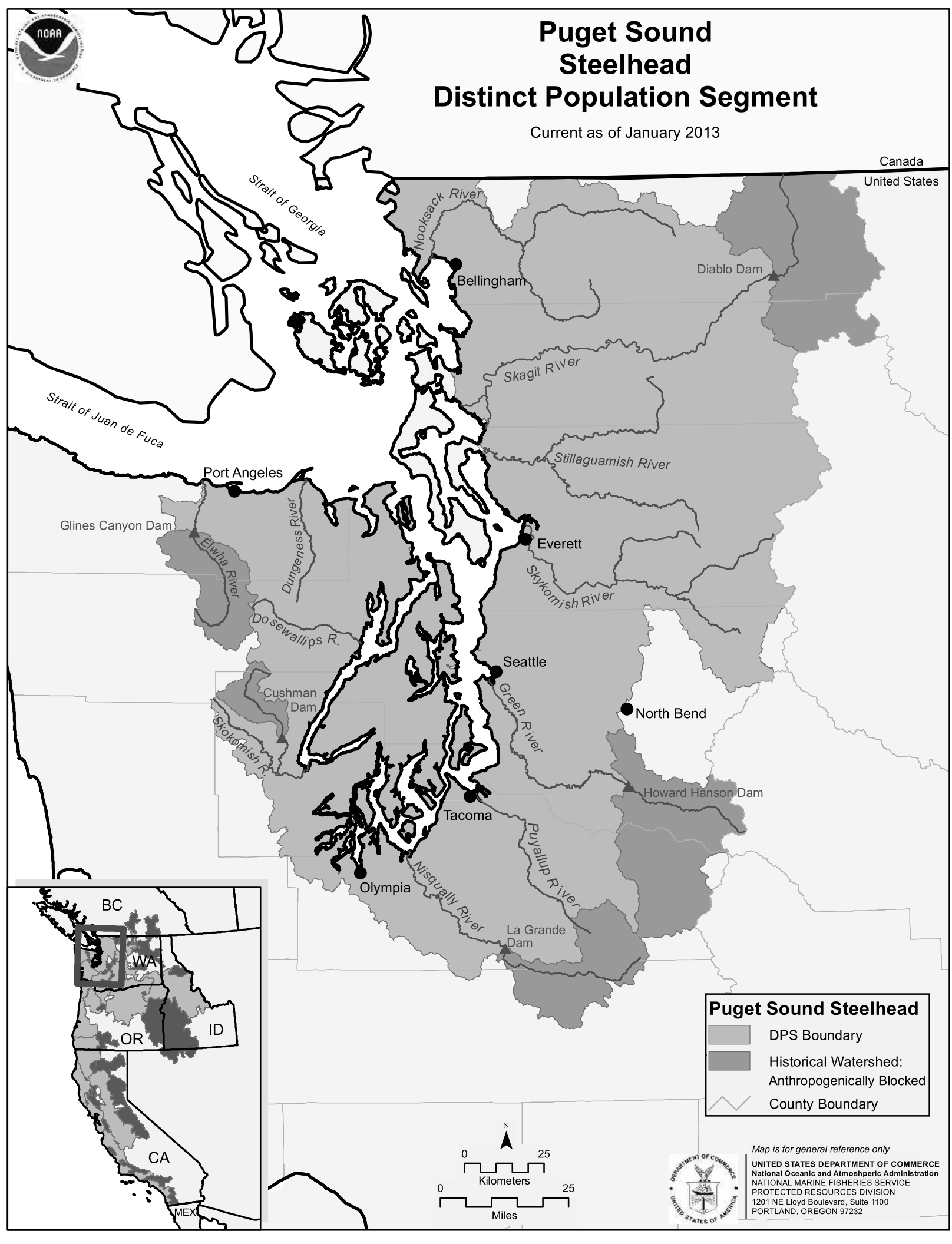
APPENDIX C

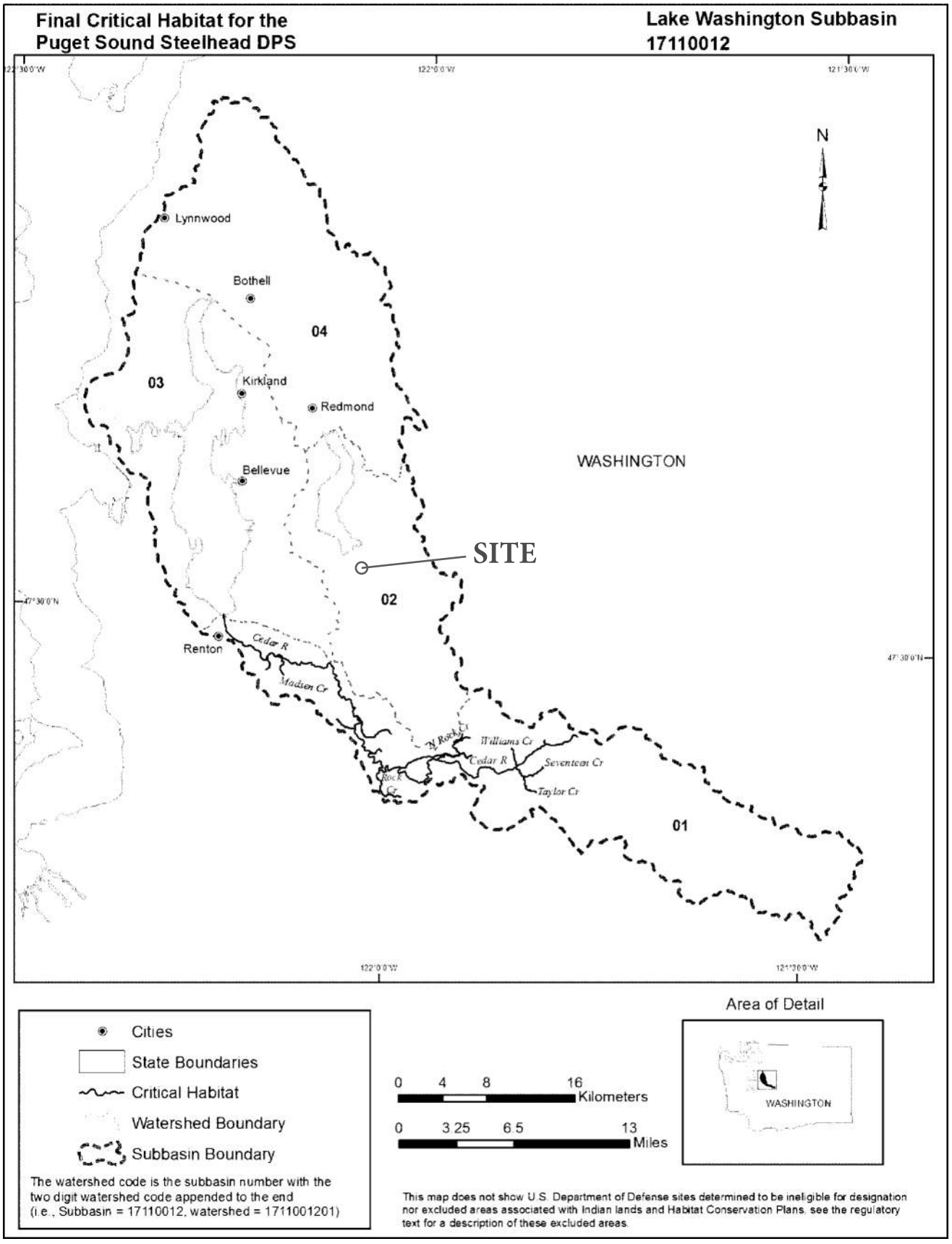
ISD Holly Street Campus Tree Risk Assessment (Washington Forestry Consultants, Inc.) September 28,2020

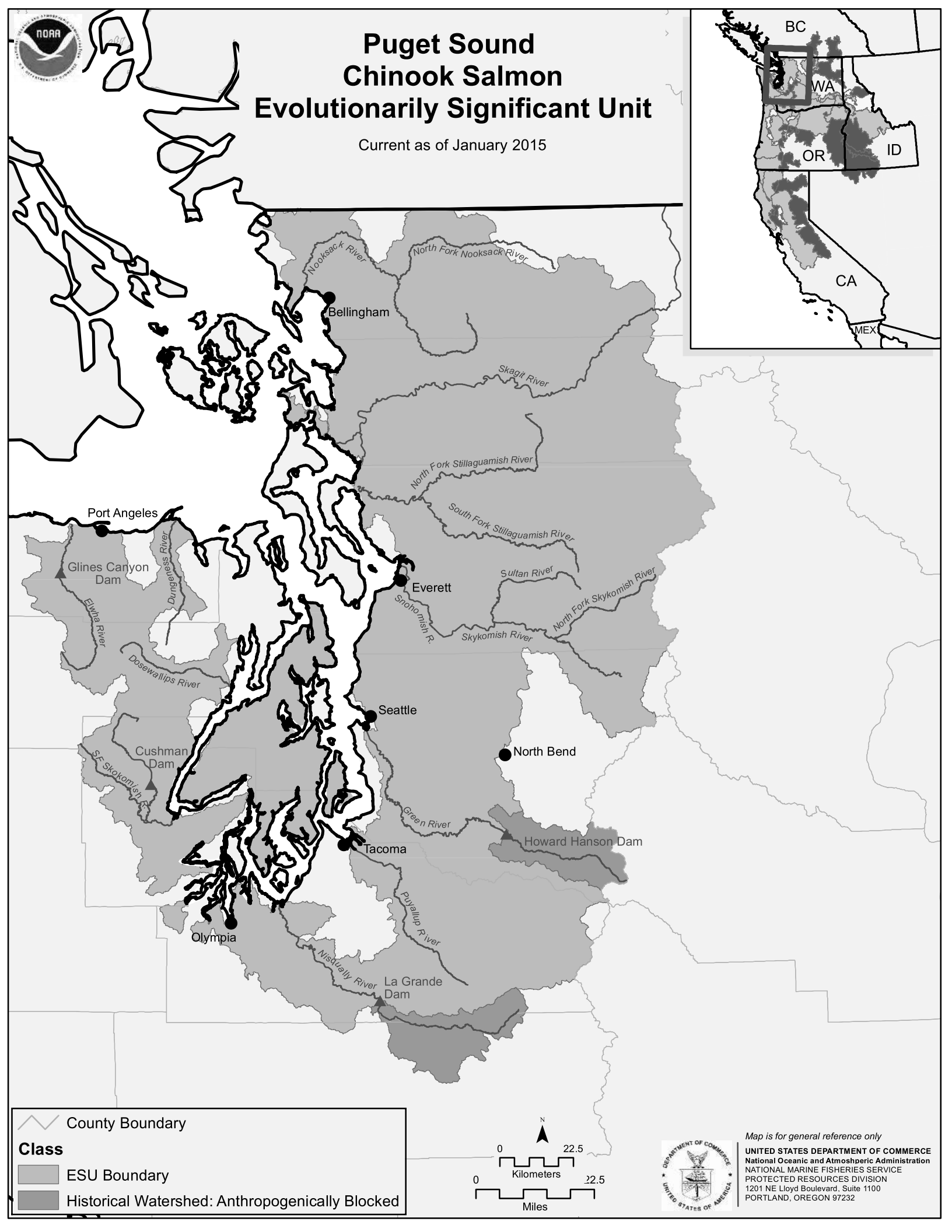
See Section 00 31 00

APPENDIX D

ESA-Listed Species Maps

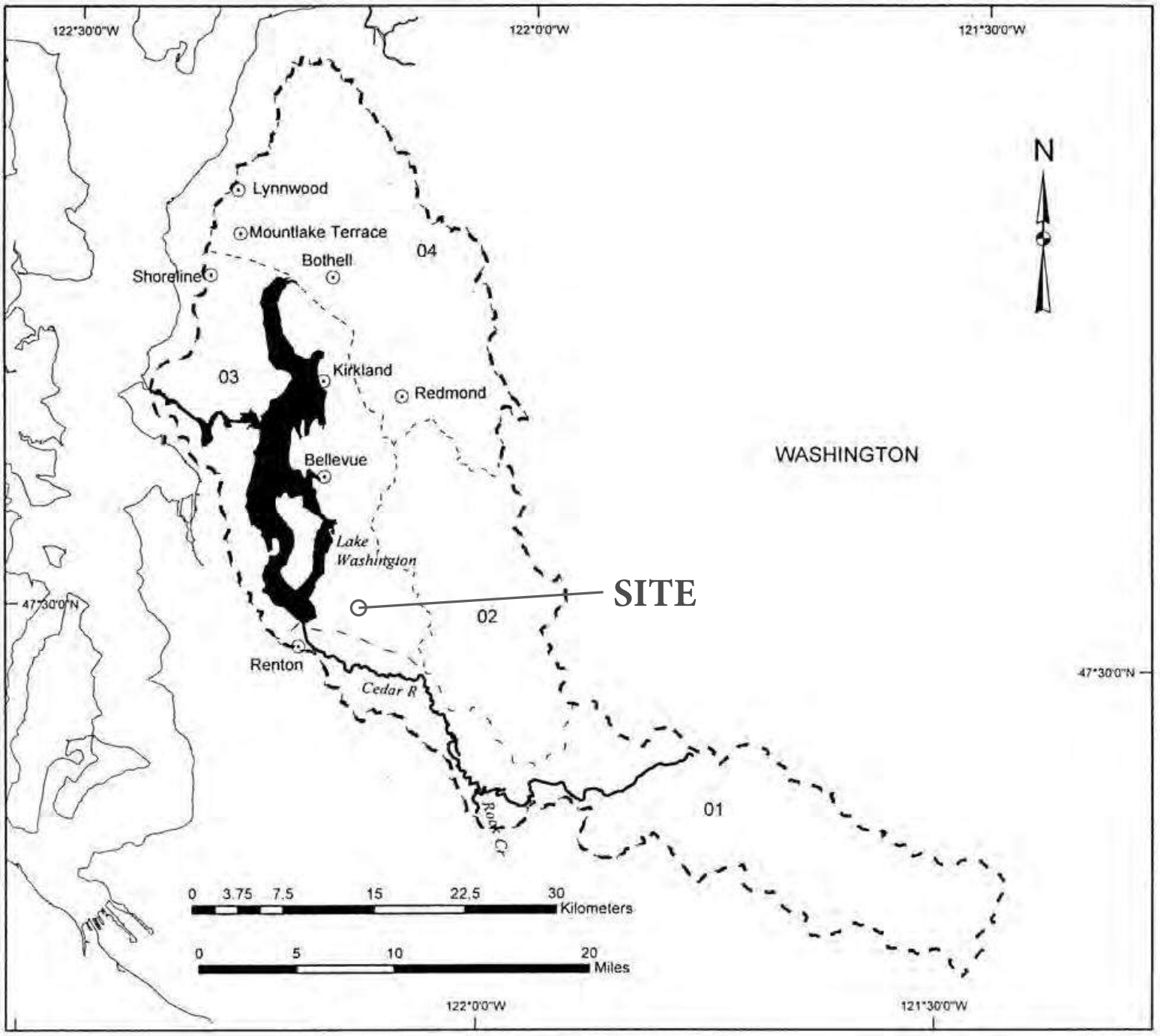

Puget Sound
Steelhead
Distinct Population Segment
Current as of January 2013
Canada
United States
Strait of Georgia
Strait of Juan de Fuca
Nooksack River
Bellingham
Diablo Dam
Skagit River
Stillaguamish River
Port Angeles
Glines Canyon Dam
Elwha River
Dungeness River
Everett
Skykomish River
Dosewallips R.
Seattle
Cushman Dam
Skokomish R.
Green River
North Bend
Howard Hanson Dam
Tacoma
Puyallup River
Olympia
Nisqually River
La Grande Dam
BC
WA
OR
ID
CA
MEX
Puget Sound Steelhead
DPS Boundary
Historical Watershed: Anthropogenically Blocked
County Boundary
N
0
25
Kilometers
0
25
Miles
Map is for general reference only
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Final Critical Habitat for the
Puget Sound Steelhead DPS
Lake Washington Subbasin
17110012
122°30'0"W
122°0'0"W
121°30'0"W
N
Lynnwood
Bothell
04
03
Kirkland
Redmond
Bellevue
WASHINGTON
SITE
02
47°30'0"N
Renton
Cedar R
Madsen Cr
N Rock Cr
Williams Cr
Cedar R
Seventeen Cr
Rock Cr
Taylor Cr
01
Cities
State Boundaries
Critical Habitat
Watershed Boundary
Subbasin Boundary
The watershed code is the subbasin number with the two digit watershed code appended to the end (i.e., Subbasin = 17110012, watershed = 1711001201)
0 4 8 16 Kilometers
0 3.25 6.5 13 Miles
Area of Detail
WASHINGTON
This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans, see the regulatory text for a description of these excluded areas.


Puget Sound
Chinook Salmon
Evolutionarily Significant Unit
Current as of January 2015
BC
WA
OR
ID
CA
MEX
Nooksack River
North Fork Nooksack River
Bellingham
Skagit River
North Fork Stillaguamish River
South Fork Stillaguamish River
Port Angeles
Glines Canyon Dam
Dungeness River
Elwha River
Everett
Sultan River
North Fork Skykomish River
Snohomish R.
Skykomish River
Dosewallips River
Seattle
Cushman Dam
SF Skokomish R.
North Bend
Green River
Howard Hanson Dam
Tacoma
Puyallup River
Olympia
Nisqually River
La Grande Dam
County Boundary
Class
ESU Boundary
Historical Watershed: Anthropogenically Blocked
N
0
22.5
Kilometers
0
22.5
Miles
Map is for general reference only
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Final Critical Habitat for the Puget Sound Chinook Salmon ESU

LAKE WASHINGTON SUBBASIN 17110012



Legend

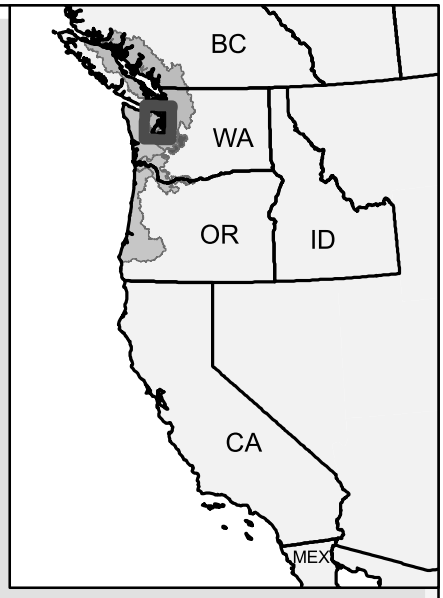
- Cities / Towns
- Shoreline
- Critical Habitat
- Water Bodies
- Subbasin Boundary
- Watershed Boundaries

01 - 04 = Watershed code - last 2 digits of 17110012xx



Hood Canal Summer-run Chum Salmon Evolutionarily Significant Unit

Current as of January 2013



Strait of Juan de Fuca

Port Townsend

Sequim

Discovery Bay

Salmon Creek

Puget Sound

Dungeness River

Little Quilcene River

Dosewallips River

Hamma Hamma River

North Fork Skokomish River

South Fork Skokomish River

Big Beef Creek

Dewatto River

Tahuya River

Union River

Belfair

Cushman Dam

Hoodsport

Hood Canal Summer-run Chum Salmon

- ESU Boundary
- Historical Watershed: Anthropogenically Blocked
- County Boundary

N

0 10

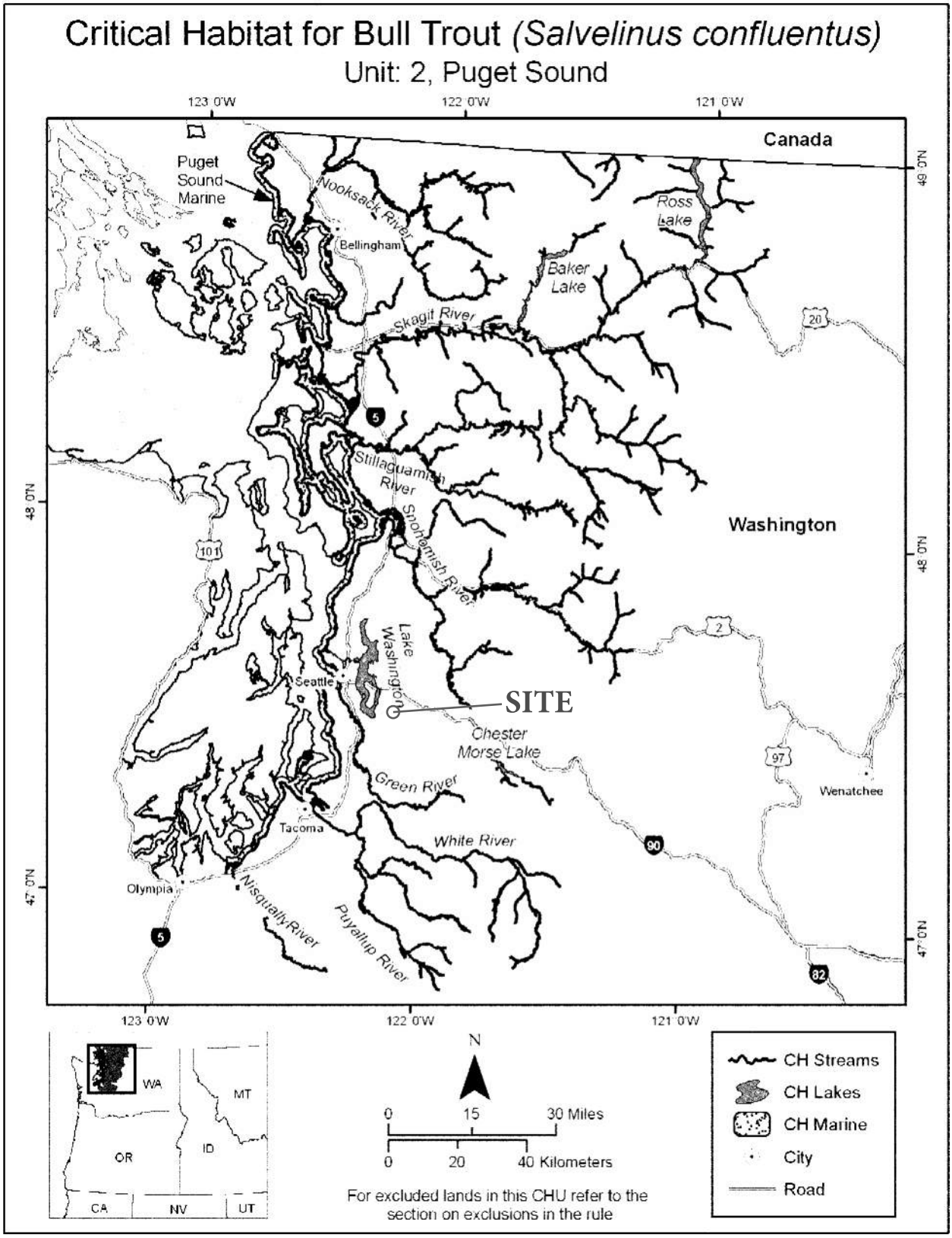
Kilometers

0 10

Miles

Map is for general reference only

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National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PROTECTED RESOURCES DIVISION
1201 NE Lloyd Boulevard. Suite 1100
PORTLAND, OREGON 97232



BILLING CODE 4310–55–C

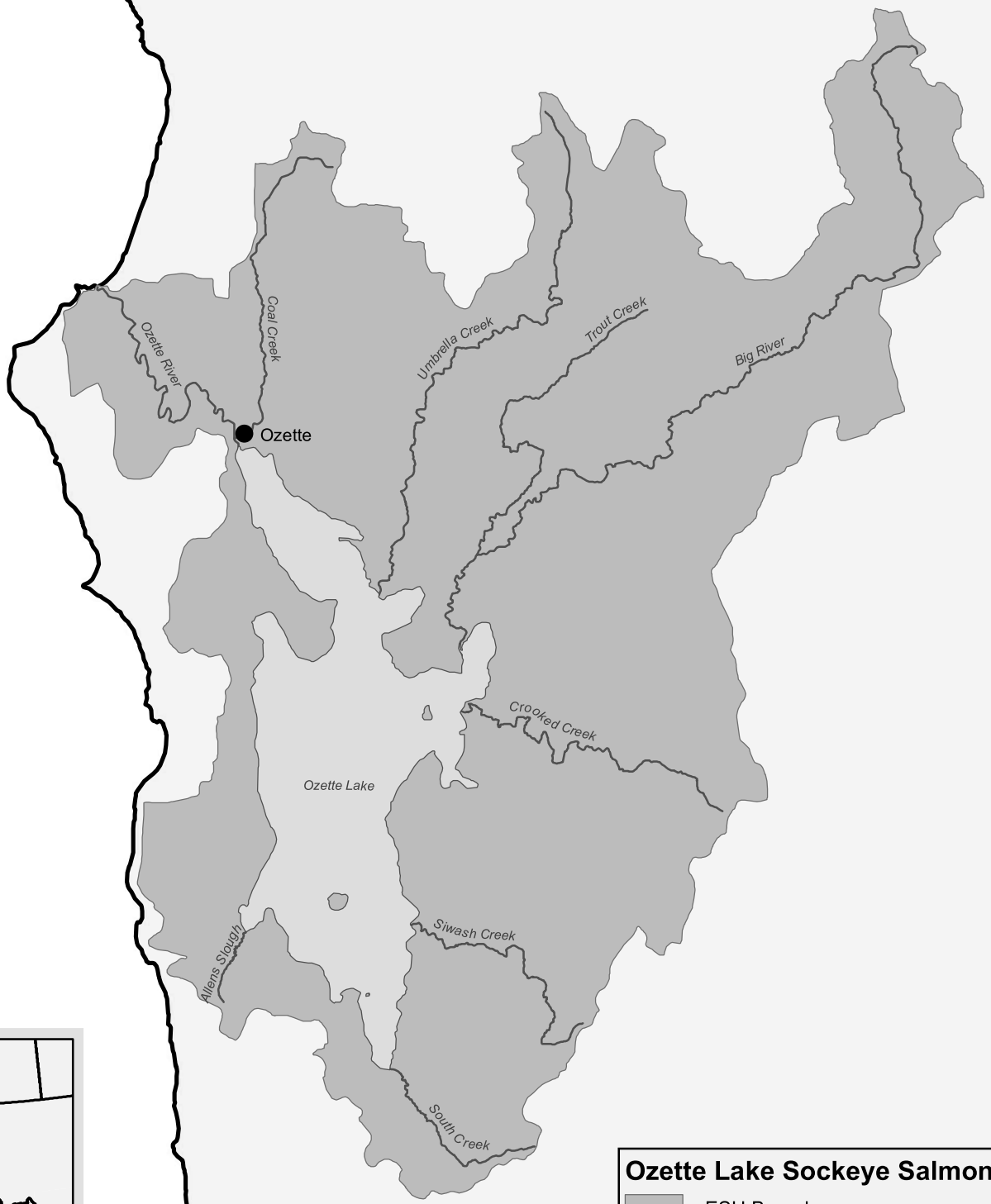
(10) Unit 3: Lower Columbia River Basins

(i) This unit consists of 119.3 km (74.2 mi) of streams. The unit is located in southwestern Washington.

(ii) Individual waterbodies in the unit are bounded by the following coordinates:

Ozette Lake
Sockeye Salmon
Evolutionarily Significant Unit

Current as of January 2013





Ozette Lake Sockeye Salmon

ESU Boundary

County Boundary

N

0 2.5

Kilometers

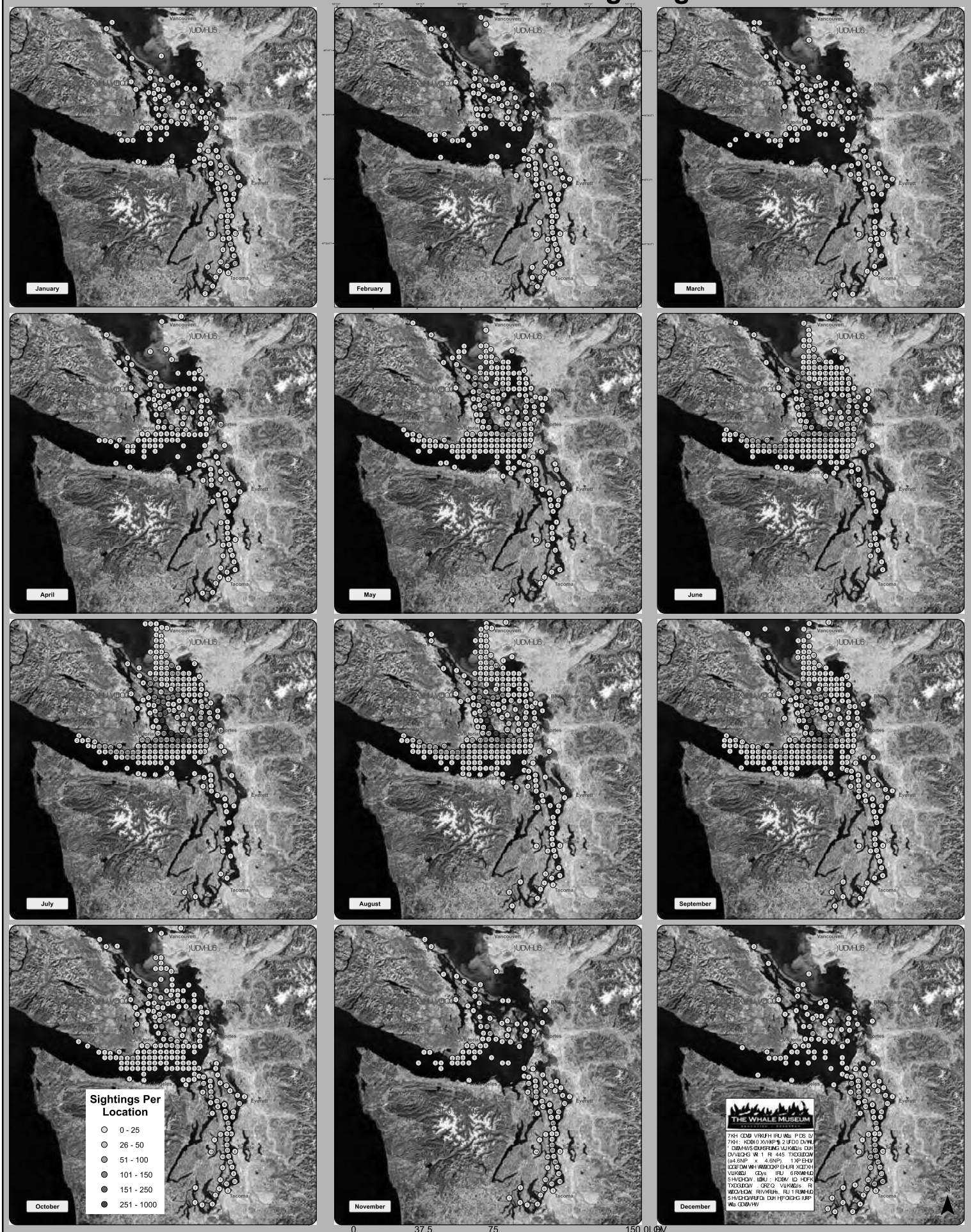
0 2.5

Miles

Map is for general reference only

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PORTLAND, OREGON 97232

Southern Resident Killer Whale Sighting 1990-2013



5HIHUHQFH: 2RQ - , 2014. 6RXWKHUQ5HVLGHQW LOOU: KDBI6LJKWLQJ &RPSLODWLRQ 1948-2013.

3URGXFHG E: : - RKQ$VKRII, - HQQLIHU 0RQ (UF (LV-HQDQGW 7KH: KDBI0 XVHXP

APPENDIX E

Species Life Histories & Status of Stock

STEELHEAD (*ONCORHYNCHUS MYKISS*) - THREATENED

Life History

The life history of (*Oncorhynchus mykiss*) is one of the most complex of any of the salmonid species (Myers 2015). The species exhibits both anadromous (steelhead) and resident (rainbow trout) forms. The anadromous form resides in the marine environment for two to three years prior to returning to their natal stream to spawn as 4- or 5-year-old fish. Unlike Pacific salmon, steelhead trout are iteroparous or capable of spawning more than once before they die. However, it is rare for steelhead to spawn more than twice before dying, and those that do are usually females. Biologically, steelhead can be divided into two reproductive ecotypes, based on their state of sexual maturity at the time of river entry. These two ecotypes are termed "stream-maturing" and "ocean-maturing". Stream-maturing steelhead enter fresh water in a sexually immature condition and require from several months to a year to mature and spawn. These fish are often referred to as "summer run" steelhead. Ocean maturing steelhead enter fresh water with well-developed gonads and spawn shortly after river entry. These fish are commonly referred to as "winter-run" steelhead.

Depending on water temperature, fertilized steelhead eggs may incubate in redds for 1.5 to 4 months before hatching as "alevins". Following yolk sac absorption, young juveniles or "fry" emerge from the gravel and begin active feeding. Juveniles rear in fresh water for 1 to 4 years, then migrate to the ocean as smolts.

Status of the Stock

Species baseline information was obtained using WDFW's Salmon Conservation Reporting Engine (SCoRE; WDFW 2021b). Escapement data for natural spawners within Issaquah Creek has not been recorded by this resource. However, escapement data for North Lake Washington and Lake Sammamish has shown a steady decline from the 1980s to 1999, with total of 4 natural spawners last recorded in 1999. Due to the decline of the population caused by man-made changes to Lake Washington and Black River, North Lake Washington and Sammamish tributaries have not been monitored since 2000 (WDFW 2021b). In addition, due to the small numbers of steelhead seen at the Chittenden Locks and estimated in the Cedar River, it is unlikely that there are currently many steelhead in these tributaries (WDFW 2021b). Therefore, it is unclear to what degree steelhead utilize tributaries in the Lake Washington Basin. Evermann and Meek (1898) suggested that small numbers of steelhead migrated up the Sammamish River into Lake Sammamish, although they did not observe any in their sampling. Currently, WDFW (2021) lists a number of tributaries Lake Washington and Lake Sammamish, including Issaquah Creek, as supporting steelhead even though Chittenden Locks see small numbers. Based on the status of the stock described above, it is unlikely that Steelhead will be present within the Action Area during construction.

CHINOOK (ONCORHYNCHUS TSHAWYTSCHA) - THREATENED

Life History

Chinook salmon (*Oncorhynchus tshawytscha*) is the largest of the pacific salmon (WDFW 2021b). Also known as "king" salmon, adult Chinook salmon migrate from a marine environment into fresh water streams and rivers of their birth where they spawn and die. Among Chinook salmon, two distinct races have evolved. 1) A "stream-type" Chinook is found most commonly in headwater streams. Stream-type Chinook salmon have a longer freshwater residency and perform extensive offshore migrations before returning to their natal streams in the spring or summer months. 2) A "ocean-type" Chinook, which is commonly found in coastal streams in North America. Ocean-type

Chinook typically migrate to sea within the first three months of emergence, but they may spend up to a year in freshwater prior to emigration. They also spend their ocean life in coastal waters. Ocean-type Chinook salmon return to their natal streams or rivers as spring, winter, fall, summer, and late fall runs, but summer and fall runs predominate (Healey 1991). The difference between these life history types is physical, with both genetic and morphological foundations. Puget Sound Chinook salmon primarily exhibit the ocean-type life history, and typically spend up to a few weeks in freshwater.

Adult female Chinook will prepare a spawning bed, called a redd, in a stream area with suitable gravel composition, water depth and velocity. Redds will vary widely in size and in location within the stream or river. After laying eggs in a redd, adult fish will guard the redd for 4 to 25 days before dying. Chinook salmon eggs will hatch, depending upon water temperatures, between 90 to 150 days after deposition. Stream flow, gravel quality, and silt load all significantly influence the survival of developing Chinook salmon eggs. Juvenile Chinook may spend from 3 months to 2 years in freshwater before migrating to estuarine areas as smolts, and then into the ocean to feed and mature. Juvenile Chinook salmon feed primarily on aquatic insect larvae and terrestrial insects, typically in the nearshore areas.

Status of the Stock

Species baseline information was obtained using WDFW's Salmon Conservation Reporting Engine (SCoRE; WDFW 2021b). Sammamish Chinook, formerly North Lake Washington Tribs Chinook primarily spawn in Issaquah Creek, Bear Creek, and Cottage Lake Creek. Escapement data for Sammamish Chinook include both natural and hatchery spawners. Chinook counts have been variable between the years 1983 and 2019, with natural spawners maintaining low counts of less than 500 and hatchery spawners on a general decline since 2017. Counts for spawners in 2019 include109 for natural and 256 for hatchery, substantial down from 2017 counts; 203 for natural and 1,321 for hatchery.

Specific to Issaquah Creek Hatchery, 1,739 hatchery and 47 wild adults were trapped and 30 hatchery and 2 wild adults were released during 2018 - 2019 season. Total trapped represents the total number of fish trapped at the hatchery rack. The total trapped may not represent the total run to any given river due to the presence of either wild, hatchery, or mixed stocks that may spawn below the hatchery rack; may die, or be harvested below the hatchery via sport, commercial, or tribal fisheries (WDFW 2021c). Adult Chinook begin migrating through the Chittenden Locks into the Cedar/Sammamish watershed in June, peaking in August, and continuing until early October (Berg, Hammer, and Foley 2006). Based on the information described above, it is possible that Chinook will be present in Issaquah Creek if construction occurs during this migration window.

BULL TROUT (SALVELINUS CONFLUENTUS) - THREATENED

General Life History

The Coastal/Puget Sound bull trout population segment encompasses all Pacific Coast drainages within Washington, including Puget Sound. This population segment is discrete because the Pacific Ocean and the crest of the Cascade Mountain Range geographically segregate it from subpopulations. The population segment is significant to the species as a whole because it is thought to contain the only anadromous forms of bull trout in the conterminous U.S., thus, occurring in a

unique ecological setting. No bull trout exist in coastal drainages south of the Columbia River.

Bull trout are generally non-anadromous and live in a variety of habitats including small streams, large rivers, and lakes or reservoirs. However, Coastal/Puget Sound bull trout are anadromous, migrating and maturing in Puget Sound or the Pacific Ocean. They may spend the first 2 to 4 years in small natal streams and then migrate through the larger rivers, lakes, and reservoirs to Puget Sound and the Pacific Ocean. Bull trout exhibit resident and migratory life history strategies through much of the current range (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear. Migratory bull trout spawn in tributary streams where juvenile fish rear from one to four years before migrating to either a lake (adfluvial), river (fluvial), or in certain coastal areas, to saltwater (anadromous), where maturity is reached in one of the three habitats (Fraley and Shepard 1989; Goetz 1989). Resident and migratory forms may be found together and it is suspected that bull trout give rise to offspring exhibiting either resident or migratory behavior (Rieman and McIntyre 1993).

In some stocks of bull trout, maturing adults may begin migrating to the spawning grounds in the spring or early summer. Female bull trout may deposit up to 5,000 or 10,000 eggs in the redds they build, depending on their size. The embryos incubate during the fall, winter, and spring; and the surviving fry emerge from the redds in April and May. The rate of embryo development is dependent upon temperature. After they emerge, the young bull trout disperse up and down stream to find suitable areas to feed. Feeding areas for Coastal/Puget Sound bull trout include estuaries and nearshore marine waters. Young fish feed primarily on aquatic invertebrates in the streams during their first 2 or 3 years but become more piscivorous as they get larger.

Bull trout have more specific habitat requirements compared to other salmonids (Rieman and McIntyre 1993). Habitat components that appear to influence bull trout distribution and abundance include water temperature, cover, channel form and stability, valley form, spawning and rearing substrates, and migratory corridors (Pratt 1992; Fraley and Shepard 1989; Goetz 1989; Sedell and Everest 1991; Rieman and McIntyre 1993, 1995; Rich 1996; Watson and Hillman 1997). Bull trout are seldom found in waters where temperatures exceed 59-64 °F (USFWS 2008). Bull trout typically spawn from August to November during periods of decreasing water temperatures. However, migratory bull trout frequently begin spawning migrations as early as April. Bull trout require spawning substrate consisting of loose, clean gravel relatively free of fine sediments (Fraley and Shepard 1989). Depending on water temperature, incubation is normally 100 to 145 days (Pratt 1992), and after hatching, juveniles remain in the substrate. Time from egg deposition to emergence may surpass 200 days. Fry normally emerge from early April through May depending upon water temperatures and increasing stream flows (Pratt 1992, Ratliff and Howell 1992).

Species Baseline within Action Area

WDFW identifies 80 bull trout/Dolly Varden populations in Washington: 14 (18 percent) were healthy; two (3 percent) were in poor condition; six (8 percent) were critical and the status of 58 (72 percent) of the stocks were unknown (WDFW 2004). Native char (either bull trout or Dolly Varden) are rare in Lake Sammamish or its tributaries (NMFS 1999). No bull trout were observed during a one-year creel survey conducted on Lake Sammamish, and only a single bull trout was recorded during a two-year creel survey on Lake Washington (Pfeiffer and Bradbury 1992). Bull trout are known to exhibit "pioneering" behavior, spawning in areas other than their native stream. Bear

Creek, a tributary to the Sammamish River downstream from Issaquah Creek and Lake Sammamish, is listed as "potential" bull trout habitat by the USFWS (Kerwin 2001). However, there is no known resident subpopulation of bull trout in Lake Sammamish or its tributaries.

In addition, Bull Trout are opportunistic foragers, and the USFWS considers the entire distribution area for Coho salmon to be potential foraging habitat for bull trout. Hence, mimicking the distribution of Coho salmon, bull trout are presumed to occupy the action area. However, based on general bull trout life histories and history of elevated water temperatures in Lake Sammamish and Issaquah Creek area during the summer months, it is unlikely that bull trout would be present within the Action Area during the time of construction.

REFERENCES

Berg, F.B, M. L. Hammer, and S. R. Foley. 2006. Timing, abundance, and population characteristics of spawning Chinook salmon in the Cedar/Sammamish Watershed. King County Department of Natural Resources and Parks (Seattle, WA) & Washington Department of Fish and Wildlife (Mill Creek, WA). July 2006.

Fraley, J.J., and B.B. Shepard. 1989. *Life history, ecology and population status of migratory bull trout (Salvelinus confluentus) in the Flathead Lake and River system, Montana*. Northwest Science 63(4):133-143.

Goetz, F.A. 1989. *Biology of the bull trout (Salvelinus confluentus) a literature review*. Willamette National Forest, Eugene, Oregon.

Healey, M.C., 1991. *Life history of Chinook salmon (Oncorhynchus tshawytscha)*. In: Groot, C., Margolis, L. (Eds.), Pacific Salmon Life Histories. UBC Press, Vancouver, BC, pp. 311e391.

Kerwin, J. 2001. Salmon and steelhead habitat limiting factors report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8). Washington Conservation Commission. Olympia, WA.

Myers, J.M., J.J. Hard, E.J. Connor, R.A. Hayman, R.G. Kope, G. Lucchetti, A.R. Marshall, G.R. Pess, and B.E. Thompson. 2015. *Identifying historical populations of steelhead within the Puget Sound distinct population segment*. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-128.

NOAA. 2015. *Chinook, Puget Sound distribution map. Species Maps and Data*. National Oceanic Atmospheric Administration.

NOAA. 2005. *Final Assessment of NOAA Fisheries' Critical Habitat Analytical Review Teams For 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead*. National Oceanic Atmospheric Administration. August 2005.

Pacific States Marine Fisheries Commission (PSMFC). 2021. *StreamNet Mapper*. http://www.streamnet.org/data/interactive-maps-and-gis-data/. Accessed October 2021.

Pfeifer, B. and J. Weinheimer. 1992. Draft Report: Fisheries Investigations of Lakes Washington and Sammamish, Part VI. 1980-1990. Washington Department of Fish and Wildlife, Mill Creek, Washington.

Pratt, K.L. 1992. *A review of bull trout life history*. Pages 5-9 in P.J. Howell, and D.V. Buchanan, editors. Proceedings of the Gearhart Mountain bull trout workshop. Oregon Chapter of the American Fisheries Society, Corvallis, Oregon.

Puget Sound Indian Tribes (PSIT) and WDFW. 2017. *DRAFT Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component*. Puget Sound Indian Tribes and WA State Department of Fish and Wildlife. December 2017.

Ratliff, D.E., and P.J. Howell. 1992. *The status of bull trout populations in Oregon*. Pages 10- 17 in P.J. Howell and D.V. Buchanan, editors. Proceedings of the Gearhart Mountain bull trout workshop. Oregon Chapter of the American Fisheries Society, Corvallis, Oregon.

Rich, C.F. 1996. *Influence of abiotic and biotic factors on occurrence of resident bull trout in fragmented habitats, western Montana*. M.S. Thesis. Montana State University, Bozeman, Montana.

Sedell, J.R., and F.H. Everest. 1991. *Historic changes in pool habitat for Columbia River Basin salmon under study for TES listing*. Draft USDA Report. Pacific Northwest Research Station. Corvallis, Oregon.

Rieman, B.E., and J.D. McIntyre. 1993. *Demographic and habitat requirements for conservation of bull trout*. GTR-INT-302. USDA Forest Service, Boise, Idaho.

Rieman, B.E., and J.D. McIntyre. 1995. *Occurrence of bull trout in naturally fragmented habitat patches of varied size*. Transactions of the American Fisheries Society 124:285-296.

WDFW. 2021a. Salmon/Steelhead Species Information. Recreational Salmon Fishing. Washington Department of Fish and Wildlife.

WDFW. 2021b. *Salmon Conservation Reporting Engine*. Washington State Department of Fish and Wildlife. https://fortress.wa.gov/dfw/score/score/

WDFW. 2021c. Washington Department of Fish and Wildlife 2018 -2019 Draft Hatchery Escapement Report. Olympia, WA. October 2021.

WDFW. 2008. *Oncorhynchus mykiss: Assessment of Washington State's Steelhead Population and Programs*. Washington State Department of Fish and Wildlife. February 2008.

WDFW. 2004. *Washington State Salmonid Stock Inventory: Bull Trout/Dolly Varden*. Washington State Department of Fish and Wildlife. October 2004.

Watson, G., and T.W. Hillman. 1997. *Factors affecting the distribution and abundance of bull trout: an investigation at hierarchical scales*. North American Journal of Fisheries Management 17:237-252.

APPENDIX F

Justification for Species Absent from Action Area

Justification for Species Absent from Action Area

Federally protected species with population ranges overlapping the project action area, as reported by U.S. Fish and Wildlife Service IPaC system (USFWS 2021), include the species shown in the table below. These species are determined to be absent from the action area based upon the rationale provided below.

Regulatory Agency	***Common Name***	***Scientific Name***	***Federal Status***
USFWS	Marbled Murrelet	*Brachyramphus marmoratus*	Threatened
	Streaked Horned Lark	*Eremophila alpestris strigata*	Threatened
	Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened

MARBLED MURRELET (BRACHYRAMPHUS MARMORATUS)

The U.S. Fish and Wildlife Service displays the Marbled Murrelet as potentially occurring within the project action area (USFWS 2021). No Critical Habitat is designated within the action area.

Marbled Murrelet is a small seabird with a unique life history that requires adults to fly extensive distances from marine waters, where they forage exclusively, to mature and old growth forests in order to nest and raise their young. Mature coniferous forests are a habitat requirement for the reproductive behavior of Marbled Murrelet (Nelson et al 2006). Although the action area occurs within Zone 1 of the Marbled Murrelet conservation area (WDFW 2019), the subject site and the surrounding area are too suburban and agrarian, and lack the mature forests required by this species for reproduction. Marbled Murrelet live their entire life at sea, except to reproduce. Therefore, it is unlikely that Marbled Murrelet occur in the action area. Due to the lack of habitat requirements available in the action area, the project will have **no effect** on the Marbled Murrelet.

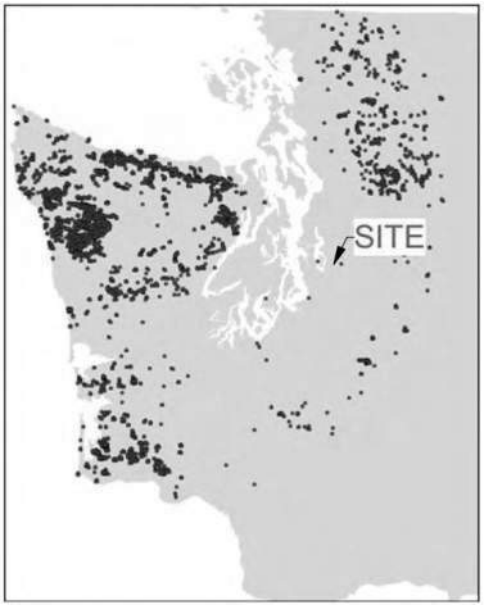


Figure 4 - Breeding season occurrences in Washington (Desimone 2016)

STREAKED HORNED LARK (EREMOPHILA ALPESTRIS STRIGATA)
The U.S. Fish and Wildlife Service lists the Streaked Horned Lark as potentially occurring within the project action area (USFWS 2021). No Critical Habitat is designated within the action area.

Streaked Horned Larks are grassland birds that historically have bred in the prairie and open coastal habitats of British Columbia, Washington, and Oregon. They are a rare subspecies of the horned lark, and prefer open grassland habitat. Streaked Horned Larks have been extirpated from much of their historic range. Recent research indicates that the Lark no longer breeds in southern British Columbia or the northern Puget trough (Stinson 2016). The current winter range of the lark appears to be concentrated in Oregon State, particularly in the Willamette Valley. Individuals occupying the southern Puget lowlands migrate to the Willamette Valley.

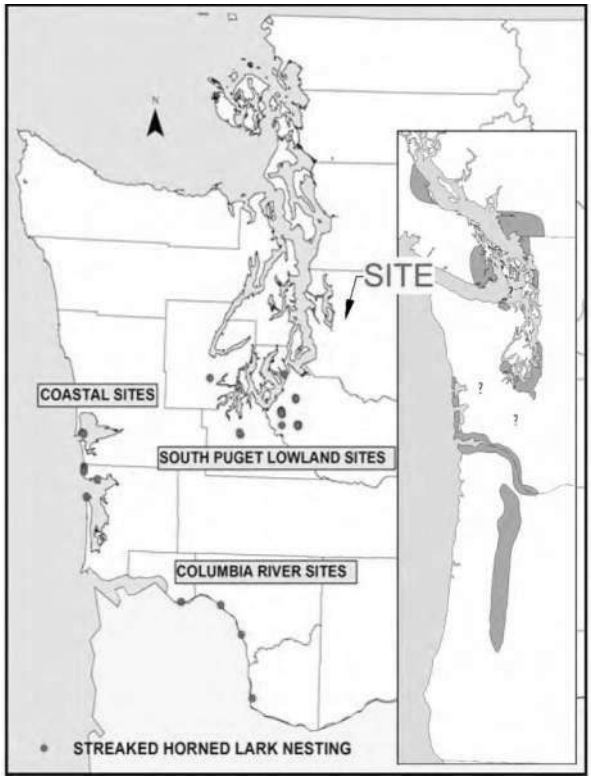


Figure 5 - Current Streaked Horned Lark breeding range, and hypothesizd historic breeding range (in inset). (Stinson 2016)

According to the 2016 Periodic Status Review for the Streaked Horn Lark, this species no longer appears to utilize the northern portion of the Puget Sound trough (north of Pierce County) for either breeding or wintering (Stinson 2016). Thus, this project will have **no effect** on the Streaked Horned Lark.

YELLOW-BILLED CUCKOO (*COCCYZUS AMERICANUS*)
The U.S. Fish and Wildlife Service lists the Yellow-billed Cuckoo as potentially occurring within the project action area (USFWS 2021). No Critical Habitat is designated within the action area.

Yellow-billed Cuckoos strongly prefer continuous dense riparian habitat comprised of cottonwoods (*Populus balsamifera*) and willows (*Salix* spp.)(Hughes 1999). The project area lacks this habitat type.

The project is located along a riparian corridor associated with Issaquah Creek. However, this riparian corridor lacks the habitat type (cottonwoods, willows) and density that the Cuckoo prefers. This area is further surrounded by development. Yellow-billed cuckoos require relatively large continuous undisturbed patches of forested habitat with multiple strata, along streams or rivers. Therefore, it is highly unlikely that the Yellow-billed cuckoo inhabit the area.



Figure 6 - Current breeding range of Western DPS Yellow-billed Cuckoo (Wiles et al. 2017)

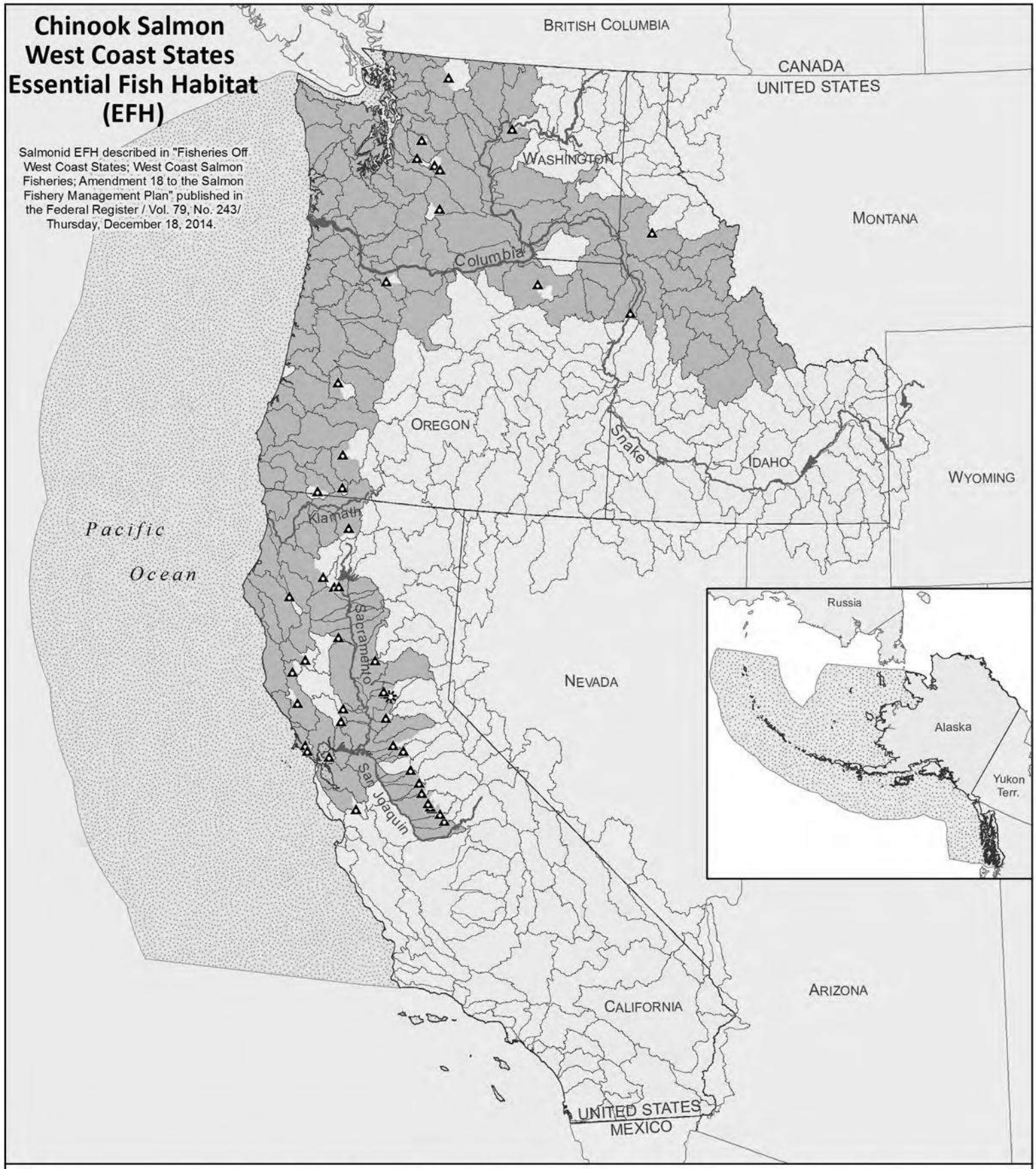
Current breeding ranges in the U.S. are primarily within the central and eastern regions of the country. The Western U.S. Distinct Population Segment (DPS) is federally threatened. While the historic range extended into southern British Columbia, there have only been 20 sightings (non-breeding) since the 1950s in Washington State (most of which were in Eastern Washington) (Wiles et. al. 2017). The species is currently considered fully extirpated from the state of Washington. Thus, Yellow-billed Cuckoos are not considered to be present within the action area. The project will have **no effect** on the Yellow-billed Cuckoo.

APPENDIX G

Essential Fish Habitat (EFH)

Chinook Salmon West Coast States Essential Fish Habitat (EFH)

Salmonid EFH described in "Fisheries Off West Coast States; West Coast Salmon Fisheries; Amendment 18 to the Salmon Fishery Management Plan" published in the Federal Register / Vol. 79, No. 243/ Thursday, December 18, 2014.



Impassable Dam
Natural Barrier
Chinook Salmon EFH (2014)
Marine Salmon EFH (2014)
4th Field Hydrologic Unit (HU)

NOAA FISHERIES

50 0 50 100 150 200 250 Miles

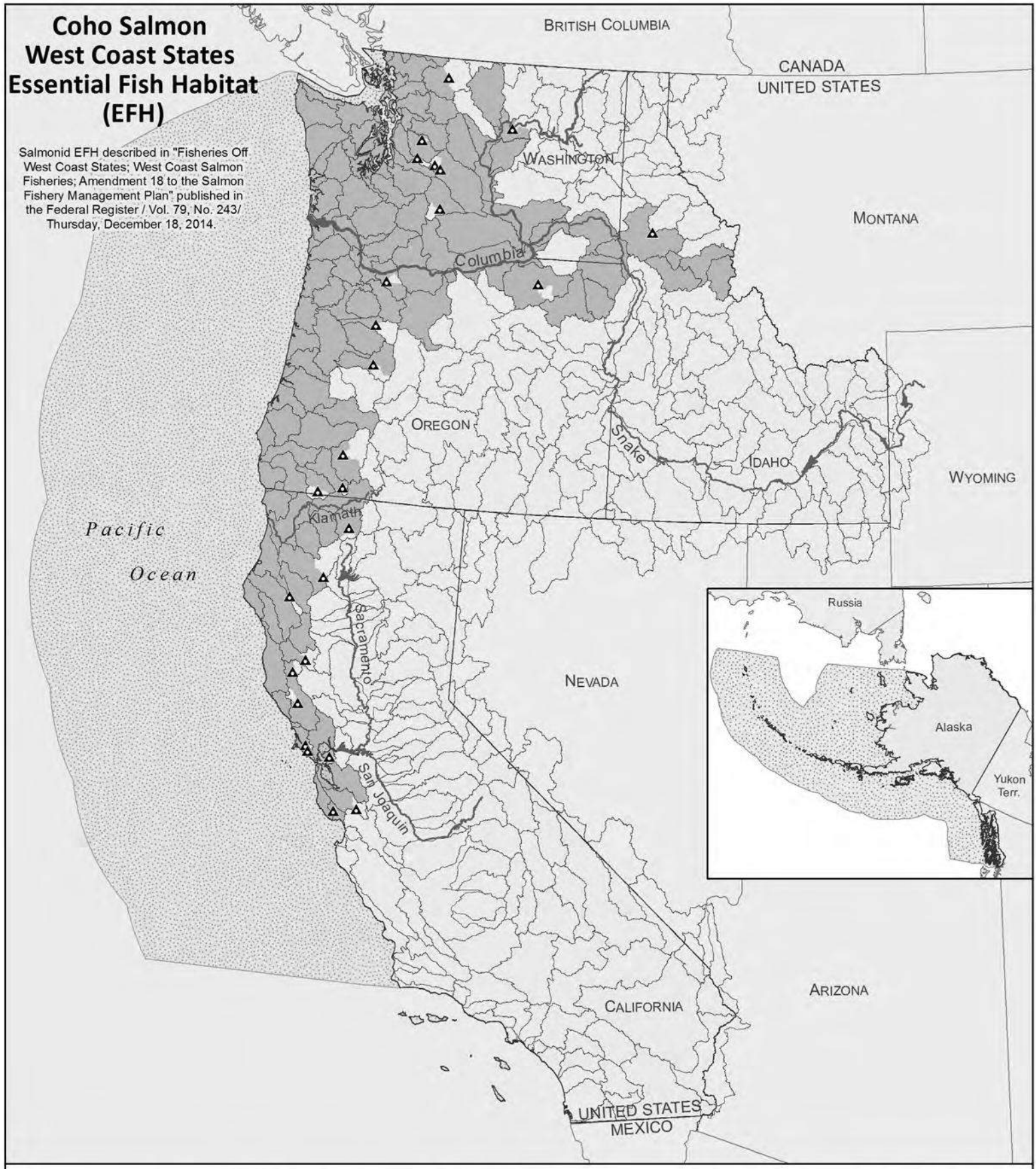
50 0 50 100 150 200 250 Kilometers

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
WEST COAST REGION
777 Sonoma Ave., Room 325
SANTA ROSA, CALIFORNIA 95404

Coho Salmon West Coast States Essential Fish Habitat (EFH)

Salmonid EFH described in "Fisheries Off West Coast States; West Coast Salmon Fisheries; Amendment 18 to the Salmon Fishery Management Plan" published in the Federal Register / Vol. 79, No. 243/ Thursday, December 18, 2014.



Impassable Dam | Coho Salmon EFH (2014) | Marine Salmon EFH (2014) | 4th Field Hydrologic Unit (HU)

NOAA FISHERIES

50 0 50 100 150 200 250 Miles

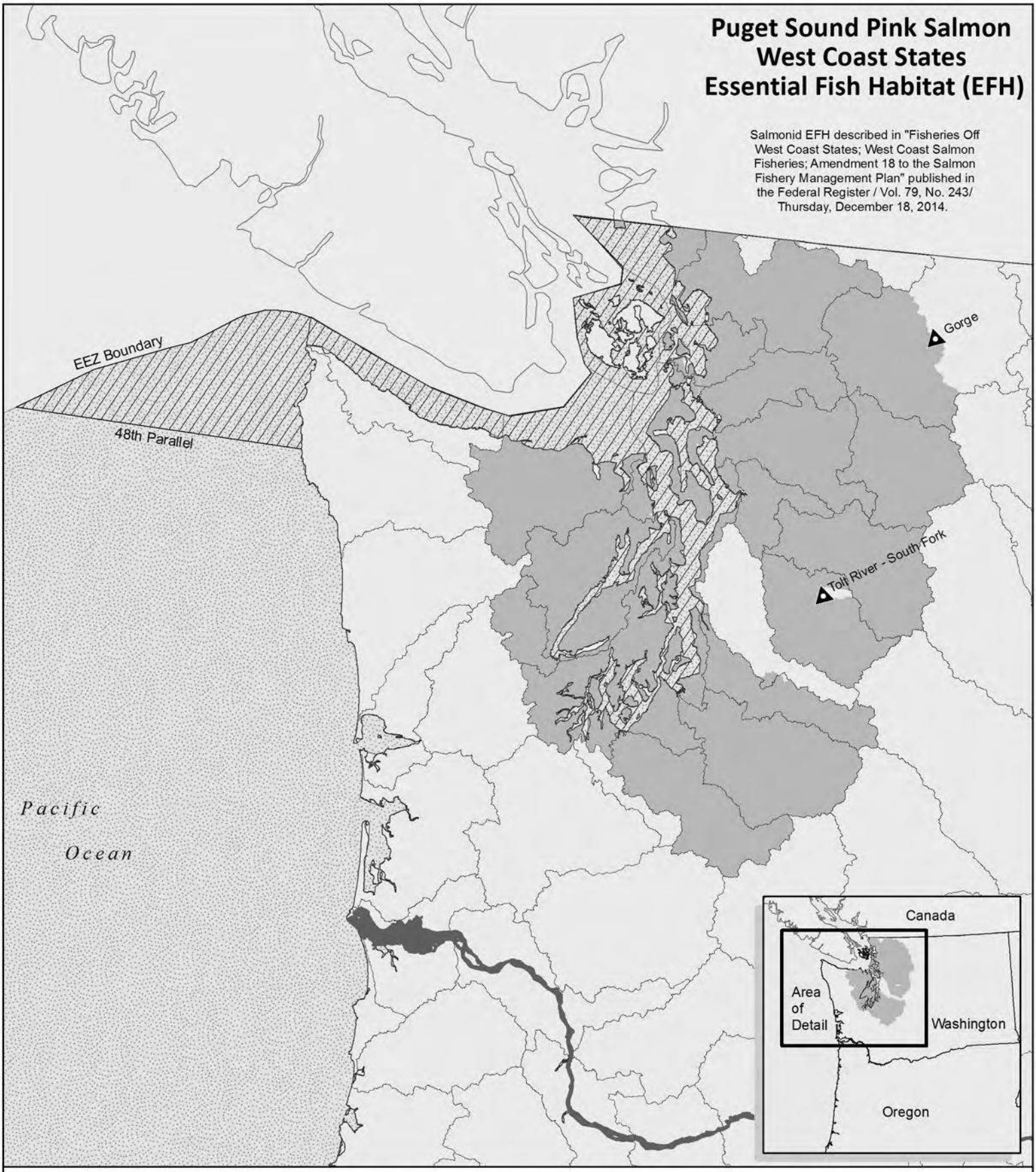
50 0 50 100 150 200 250 Kilometers

12/2014, C. Gavette Coho_EFH_2014.mxd

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Puget Sound Pink Salmon
West Coast States
Essential Fish Habitat (EFH)

Salmonid EFH described in "Fisheries Off West Coast States; West Coast Salmon Fisheries; Amendment 18 to the Salmon Fishery Management Plan" published in the Federal Register / Vol. 79, No. 243/ Thursday, December 18, 2014.



Impassable Dam
Natural Barrier
Puget Sound Pink Salmon EFH (2014)
Puget Sound Pink Salmon Marine EFH (2014)
Marine Salmon EFH (2014)
4th Field Hydrologic Unit (HU)

NOAA FISHERIES

10 0 10 20 30 40 50 Miles

10 0 10 20 30 40 50 Kilometers

12/2014, C. Gavette Pink_EFH_2014.mxd

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NATIONAL MARINE FISHERIES SERVICE
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777 Sonoma Ave., Room 325
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APPENDIX H

Site Plan

SEE DRAWINGS

APPENDIX I

TESC Report and SWPPP

See Section 00 31 00

WASHINGTON FORESTRY CONSULTANTS, INC.
FORESTRY AND VEGETATION MANAGEMENT SPECIALISTS

W F C I

360/943-1723
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1919 Yelm Hwy SE, Suite C
Olympia, WA 98501

September 28, 2020

Janelle Walker
Issaquah School District
5150 220th Ave. SE
Issaquah, WA 98029

RE: ISD Holly Street Campus Creek Bank Repair Tree Risk Assessment

Dear Ms. Walker:

We have evaluated eight trees on the ISD Holly Street Campus in Issaquah, WA. The purpose of the evaluation was to perform a risk assessment, identify any hazard trees and make recommendations for cultural care. A level 2 assessment was conducted on September 23, 2020.

Findings and Recommendations

Six Douglas-fir (*Pseudotsuga menziesii*), one black cottonwood (*Populus trichocarpa*) and one western redcedar (*Thuja plicata*) trees were found growing along the bank of Issaquah Creek. The trees are downstream of a proposed creek bank repair project. The creek is eroding away the creek bank to the east of the trees potentially making them unstable. A number at the base of the tree, in blue paint, was used to identify the subject trees.

Six of tree are in 'Fair' or better condition and two trees are in 'Poor' or worse condition. The edge of the creek bank varies between 5 and 12 feet from the subject trees. The creek edge is within the Critical Root Zones (CRZ) of the all the trees. The CRZ is the area of soil extending from the tree trunk where roots required for future tree health and survival are located. This area can also be defined as a circle with a minimum radius of 1' for every 1" in trunk diameter at 4.5" above ground. The bank will continue to erode further into the CRZ creating higher risk of tree failure. There are already additional areas of the bank that are beginning to sloughing off into the creek.

The trees are all currently at a 'Moderate' risk of failing and impacting targets. The trees should be removed to eliminate the risk of whole tree failure. The trees' stump and roots should remain in place to minimize soil disturbance to the bank and help prevent future bank erosion.

Table 1: Evaluated Trees on the ISD Holly Street Campus Site.

Tree #	Species	DBH (in.)	Condition	Risk Rating	Target	Recommended Work
1	Cottonwood	14	Very Poor- decay in stem	Moderate – Whole Tree	School building and parking area	Remove Tree
2	Douglas-fir	29	Fair- Sound, healthy	Moderate – Whole Tree	School building and parking area	Remove Tree
3	Douglas-fir	20	Good- Sound, healthy	Moderate – Whole Tree	School building and parking area	Remove Tree
4	Douglas-fir	18	Good- Sound, healthy	Moderate – Whole Tree	School building and parking area	Remove Tree
5	Douglas-fir	23	Fair- Sound, healthy	Moderate – Whole Tree	School building and parking area	Remove Tree
6	Douglas-fir	14	Poor- suppressed	Moderate – Whole Tree	School building	Remove Tree
7	Douglas-fir	26	Fair- Sound, healthy	Moderate – Whole Tree	School building	Remove Tree
8	Western Redcedar	19,24	Fair- Sound, healthy	Moderate – Whole Tree	School building	Remove Tree

Summary

Six Douglas-fir, one black cottonwood and one western redcedar trees were evaluated on the ISD Holly Street Campus site. Six of tree are in 'Fair' or better condition and two trees are in 'Poor' or worse condition. The bank of the creek has eroded and encroached into the Critical Root Zone of all the trees, creating the potential for whole tree failure. The trees are at a 'Moderate' risk of failing and impacting targets. The trees should be removed to eliminate the risk of failure, leaving the stump and roots to help prevent future soil erosion.

Please give us a call if you have any questions.

Respectfully Submitted,

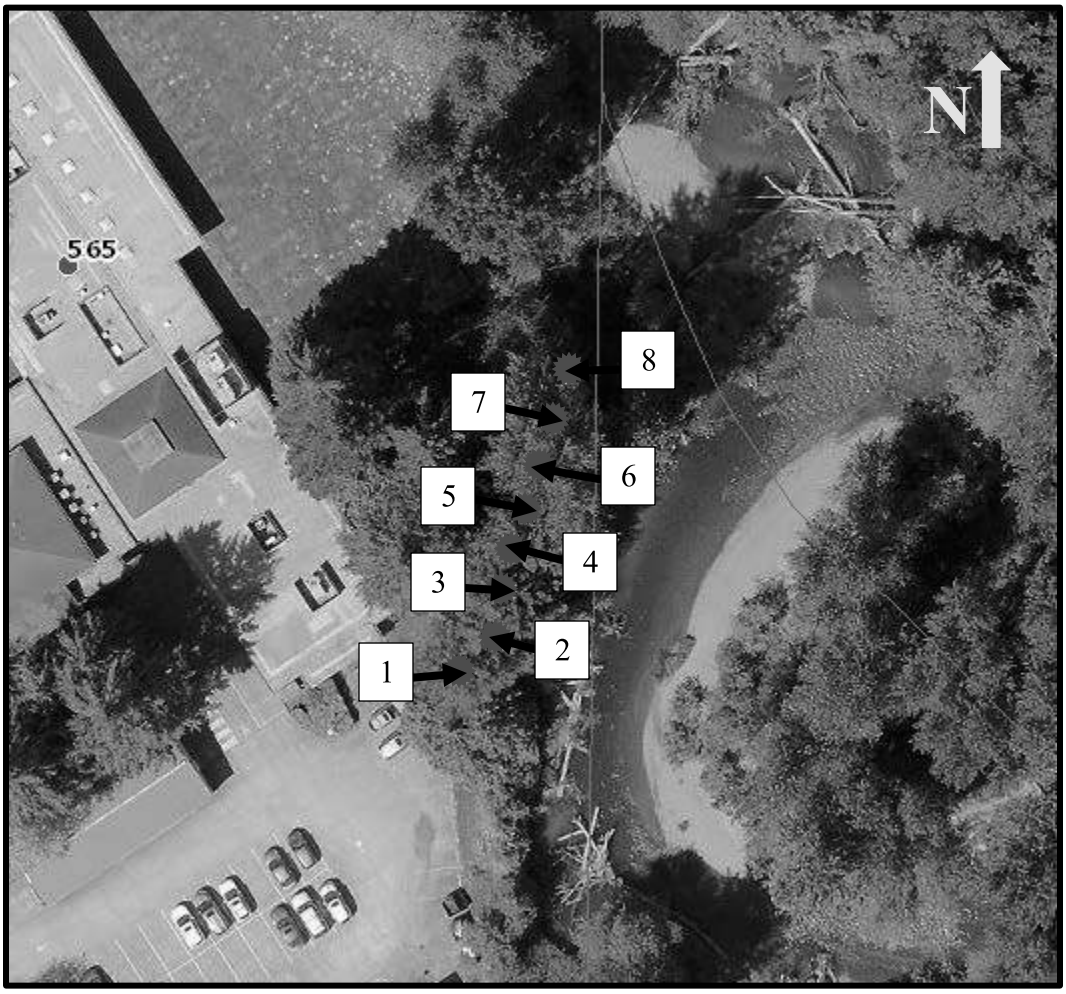
Washington Forestry Consultants, Inc.

Galen M. Wright, ACF, ASCA
ISA Bd. Certified Master Arborist PN-129BU
Certified Forester No. 44
ISA Tree Risk Assessor Qualified
ASCA Tree and Plant Appraisal Qualified

Joshua Sharpes
Certified Arborist/
Municipal Specialist, PN-5953AM

Attachment 1. Location of Evaluated Trees at ISD Holly Street Campus

(King County iMap 2019)



Location of Removal Tree

Attachment 2. Photo Log (WFCI 9/23/20)

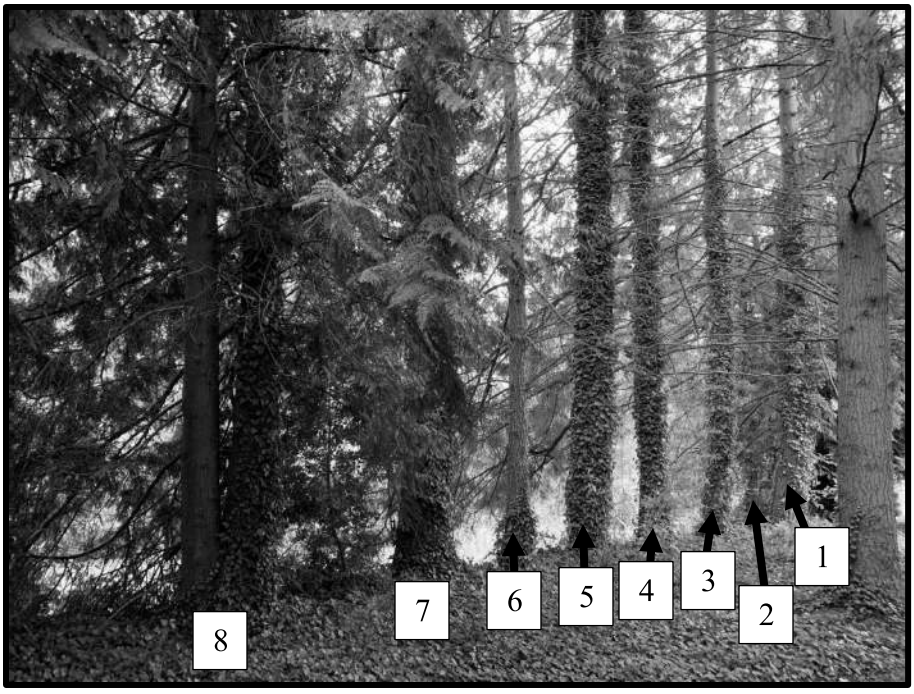


Photo 1. View of evaluated trees.

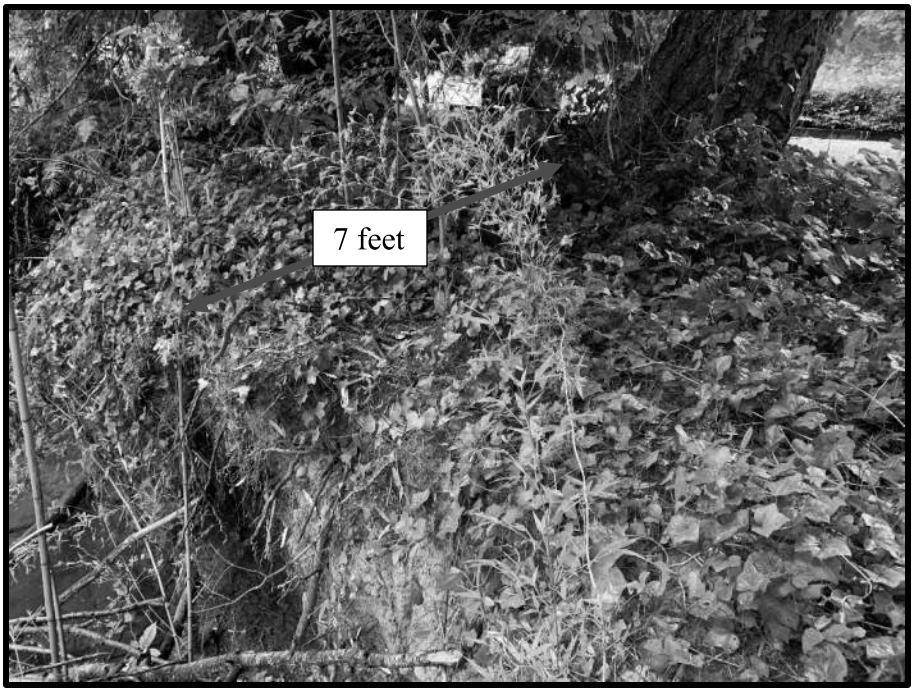


Photo 2. View of edge of bank and Tree #2.

Attachment 3. Tree Risk Assessment – A Description of the Process

The purpose of this attachment is to summarize the methodology of modern tree risk assessment for users of this type of information. This methodology has been put into place by the International Society of Arboriculture and has been in use in its present form since 2013. It updates the initial changes put into place in 2011.

Tree risk assessment is the systematic and qualitative process to identify, analyze, and evaluate tree risk. Tree risk evaluation is the process of comparing the assessed risk against given risk criteria to determine the significance of the risk. This methodology is based on the ANSI A300 standard[1] for tree risk assessment. This standard is supported by a best management practices guide[2].

Those qualified to do tree risk assessment have the qualification from the International Society of Arboriculture called **'Tree Risk Assessor Qualified.'** The methodology for tree risk assessment is more recently detailed in the authoritative tree risk assessment manual[3], which provides the state of the art for tree risk assessment.

Risk is the evaluation and categorizing of both the likelihood (probability) of occurrence of a tree or tree part failure, and the severity of consequences (value of and damage to the target that is impacted). The magnitude of risk can be categorized and compared to the client's tolerances to determine if the risk is acceptable.

Tree risk management is the application of policies, procedures and practices used to identify, evaluate, mitigate, monitor, and communicate tree risk. It is up to the tree owner to determine what level of risk they are able to tolerate, and to conduct any mitigation required when that risk is unacceptable.

There are 3 levels of tree risk assessment:

Level 1 – assessment is limited to a visual assessment of the tree(s) near specified targets, such as along roadways or utility rights-of-ways to identify specified conditions or obvious defects. Assessment shall be from a specified perspective such as foot, vehicle, or aerial patrol.

Level 2 – assessment shall include a 360 degree, ground based visual inspection of the tree crown, trunk, trunk flare, above-ground roots, and site conditions around the tree in relation to

[1] ANSI A300 (Part 9 – 2011) – *American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Management – Standard Practices (Tree Risk Assessment a. Tree Structure Assessment).* American National Standards Institute, Inc. Washington D.C. 14 pgs.
[2] Smiley, E. Thomas, Nelda Matheny, and Sharon Lilly. 2011. *Best Management Practices – Tree Risk Assessment.* International Society of Arboriculture. Champaign, IL.
[3] Dunster, Dr. Julian et al. 2013. *Tree Risk Assessment Manual.* International Society of Arboriculture. Champaign, IL.

targets. It may include sounding the stem to look for internal decay and/or the use of hand tools, or binoculars to view the crown better. Surrounding site conditions are also evaluated.

Level 3 – all of the level 2 techniques, plus advanced methodologies such as coring or drilling the tree stem or roots to look for decay, a climbing assessment, probing, pull testing, or radiation, sonic, or subsurface root assessments.

In tree risk assessment, **targets** are people who could be injured, property that may be damaged, or activities that could be disrupted by a tree failure. A tree must have a target for there to be a risk rating higher than 'Low'. The target has a value and people are the highest value target, followed by structures, cars and other high value objects. Fences would be a low value target. As part of a target assessment, the assessor considers if the target can be moved out of reach of the tree or tree part that might fail, or if people could be excluded from the target area of the tree.

As part of the risk analysis, the assessor must conduct a site analysis. This may include looking for signs of recent tree removal that may expose a previously sheltered subject tree to winds, construction activity that severed roots of the tree, or other site or soils conditions/changes that affected drainage or tree health.

Defects often predispose a tree or part of a tree to failure. A key part of tree risk assessment is to categorize the likelihood of failure of the tree or a defective part. The tree or defect is examined, and the likelihood of failure is categorized in a matrix (below) as: **Improbable, Possible, Probable, or Imminent**. A tree with a lifting root plate would likely be categorized as 'Imminent' to fail. A tree with a broken and hanging branch that is still attached would likely be categorized as 'Improbable' or 'Possible.' Cracks in a trunk or branch would likely be categorized as 'Probable' or 'Imminent' to fail.

This rating of **'Likelihood of Failure'** is then brought forward into the Likelihood of Failure and Impact matrix to assign a level of risk of the tree. The level of risk is then categorized as **Low, Moderate, High, or Extreme.**

The following 2 tables are used by Tree Risk Assessor Qualified professionals to rate the risk of the tree. Note: this system does not use a numerical rating system as old systems used.

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Attachment 4. Assumptions and Limiting Conditions.

1) Any legal description provided to the Washington Forestry Consultants, Inc. is assumed to be correct. Any titles and ownership's to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2) It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, unless otherwise stated.

3) Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, Washington Forestry Consultants, Inc. can neither guarantee nor be responsible for the accuracy of information.

4) Washington Forestry Consultants, Inc. shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5) Loss or alteration of any part of this report invalidated the entire report.

6) Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc.

7) Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc. -- particularly as to value conclusions, identity of Washington Forestry Consultants, Inc., or any reference to any professional society or to any initialed designation conferred upon Washington Forestry Consultants, Inc. as stated in its qualifications.

8) This report and any values expressed herein represent the opinion of Washington Forestry Consultants, Inc., and the fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence neither of a subsequent event, nor upon any finding in to reported.

9) Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

10) Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.

Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.

October 29, 2021

Issaquah School District #411
Attn: Janelle Walker
5150 220th Ave SE
Issaquah, WA 98029

RE: Fish Exclusion Protocol for Holly Street Campus - Bank Erosion Repair Project

Wetland Resources, Inc. follows the fish exclusion protocols listed below. In addition to these general protocols, the project will adhere to any additional requirements stipulated within permits issued from WA State Department of Fish and Wildlife, WA State Department of Ecology, and the US Army Corps of Engineers.

Fish Exclusion Protocols

1. Set block nets (fish screens) upstream and downstream of work area. An upstream block net will be placed first. With a block net secured to prevent movement of fish into the work area from upstream, a second block net will be used as a seine to herd fish in a downstream direction.

a) Field staff will be assigned the responsibility of frequently checking and maintaining the nets for accumulated debris, general stability, and proper function.

2. Establish cofferdam (or similar) and bypass pump with fish screen to divert water from the work area. Fish screens or guards will comply with Washington State law (RCW 77.57.010 and 77.57.070) and will comply with any provisions contained in the Hydraulic Project Approval (HPA).

3. Heard fish out of work area, net and release fish to downstream areas. Care will be taken not to concentrate fish where they are exposed to sources of stress, or to leave them concentrated in such areas for a long duration (e.g., more than 30 minutes).

4. The directing biologist will ensure that fish capture and removal operations adhere to the following minimum performance measures or expectations:

a) Only dip nets and seines composed of soft (non-abrasive) nylon material will be used.

b) The operations will not resort to the use of electrofishing equipment unless and until other, less injurious methods have removed most or all of the adult and sub-adult fish (i.e.,

fish in excess of 300 millimeters); the operations will conduct a minimum of three complete passes without capture using seines and/or nets prior to the use of electrofishing.

c) The operations will confirm success of fish capture and removal before completely dewatering or commencing with other work within the isolated work area; the operations will conduct a minimum of two complete passes without capture using electrofishing equipment.

d) Fish will not be held in containers for more than 10 minutes, unless those containers are dark-colored, lidded, and fitted with a portable aerator.

e) A plan for achieving efficient return to appropriate habitat will be developed before the capture and removal process.

f) Every attempt will be made to release ESA-listed specimens first.

5) Electrofishing will be performed only when other methods of fish capture and removal have proven impracticable or ineffective at removing all fish. The directing biologist will ensure that attempts to seine and/or net fish always precede the use of electrofishing equipment. Larger fish (i.e., adult and sub-adult fish with comparatively longer spine lengths) are more susceptible to electrofishing injury than smaller fish. To minimize the risk of injury (and the number of fish potentially injured), the directing biologist will confirm that other methods have been effective in removing most or all of the adult and sub-adult fish before resorting to the use of electrofishing equipment. As a general rule or performance measure, electrofishing will not be conducted under conditions that offer poor visibility (i.e., visibility of less than 0.5 meter).

Electrofishing will be conducted in a manner that minimizes harm to fish. Once an appropriate fish response (galvanotaxis) is achieved, the isolated work area will be worked systematically. The number of passes will be kept to a minimum, but is dependent upon the numbers of fish and site characteristics and will be at the discretion of the directing biologist. Care will be taken to remove fish from the electrical field immediately and to avoid exposing the same fish repeatedly. Fish will not be held in dip nets while electrofishing is in progress (i.e., while continuing to capture additional fish). The directing biologist will also review and consider changes to the manner in which the electrofishing attempt is proceeding. If adjustments to the electrofishing attempt do not lessen the frequency (or severity) of observed stress, the directing biologist will have the authority to postpone fish capture and removal operations. Each fish must be capable of remaining upright and actively swimming prior to release.

Should you have any questions, do not hesitate to contact our office at (425) 337-3174.

Wetland Resources, Inc.



Meryl Kamowski, PWS
Senior Ecologist

Cultural Resources Inventory for the Holly Street Creek Bank Project, City of Issaquah, King County, Washington

Contains Confidential Information—Not for Public Distribution

Prepared by:
Adam Frugé, M.Sc., RPA

Tierra Archaeological Report No. 2021-116
August 3, 2021

Cultural Resources Inventory for the Holly Street Creek Bank Project, City of Issaquah, King County, Washington

Contains Confidential Information—Not for Public Distribution

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Tierra Archaeological Report No. 2021-116
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TABLE OF CONTENTS

Executive Summary ii
Introduction 1
Project Description 1
Regulatory Context and Area of Potential Effects 1
Environmental Setting 5
Topography and Geology 5
Ecological Setting 5
Cultural Setting 6
Archaeological Record/Precontact Period 6
Late Pleistocene to the Pleistocene/Holocene Transition (~16,500–10,000 B.P.) 6
Pleistocene/Holocene Transition to the Mid-Holocene (10,000–5,000 B.P.) 8
Mid-Holocene to the Late Holocene (5,000–500 B.P.) 8
Ethnographic Record/Contact Period 9
Euroamerican/Postcontact/Historic Period 10
Archival Review 12
Cultural Resources Studies 12
Previously Recorded Archaeological Resources 14
Cemeteries 14
Historic Map Research 14
Anticipated Finds and Field Methods 17
Field Methods 20
Results of Fieldwork 20
Pedestrian Survey 20
Subsurface Investigation 22
Conclusions and Recommendations 27
References 28

LIST OF FIGURES

Figure 1. General Location of project area showing APE 2
Figure 2. Project detail map showing APE and route for materials. 3
Figure 3. Project detail map showing proposed ground disturbance APE along Issaquah Creek. 4
Figure 4. 1864 General Land Office map showing APE, mapped road, trail, and "Issquah Prairie." 15
Figure 5. 1907 Anderson Map Company map showing Issaquah Creek and the APE within private land parcels 16
Figure 6. 1926 Kroll Map Company map showing Issaquah Creek and the APE with some modern roadways mapped and the Hillside Cemetery ("Cemetery") shown to the south 18
Figure 7. 1955 Thomas Brothers map showing the APE and Holly Street (labeled "SE 72nd Street"); the Hillside Cemetery is shown south of the APE ("CEM"); note discrepancies between position of mapped roadways, Issaquah Creek, and the APE. 19
Figure 8. Aerial image showing APE and STP locations. 23

LIST OF PHOTOS

Photo 1. Overview of parking area to be used for staging adjacent to Issaquah Creek, view to east. 21

Photo 2. Overview of ground disturbance APE from southeast corner looking downstream, view to north. 21
Photo 3. Overview of APE showing temporary steel sheet and bale wall with anchored logs along west edge of Issaquah Creek, with ISD administrative campus in background, view to west. 22
Photo 4. Overview of STP 2, view to south. 24
Photo 5. Overview of STP 3, view to east. 24
Photo 6. Detail of STP 1 at 163 cmbs. 26

LIST OF TABLES

Table 1. Previous Cultural Resource Studies within a 0.8-km (0.5-Mile) Radius of the Project Area 12
Table 2. Project STP Summaries 25

APPENDICES

Appendix A. Inadvertent Discovery Plan for Cultural Resources and Human Remains A.1

EXECUTIVE SUMMARY

The Issaquah School District (ISD) is proposing the Holly Street Creek Bank Project (project) to install streambank protection along approximately 33.5 m (110.0 feet) of cut bank on the west side of Issaquah Creek, at 555 NW Holly Street, in the City of Issaquah, King County, Washington. The project is located in Section 28, Township 24 North, Range 6 East, Willamette Meridian (WM), as shown on the Issaquah, Washington, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle map.

The project is located along the western edge of Issaquah Creek, 3.2 km (2.0 miles) southeast of its confluence with Lake Sammamish. The ISD plans to reconstruct a portion of the bank that has been lost to channel erosion. The project will provide protection against the erosive forces directed toward the bank and provide habitat as stream-carried debris is caught and incorporated into the bank. Mechanical anchors will secure the large woody debris into the undisturbed streambank and channel, and the woody debris will be situated such that the effects of channel scour are mitigated. The project requires permitting through the City of Issaquah, the Washington State Department of Fish and Wildlife (WDFW), and the U.S. Army Corps of Engineers (USACE) and is defined as a Federal undertaking. As such, it must comply with the National Historic Preservation Act (NHPA) of 1966, as amended, and the implementing regulations under its Section 106 (36 CFR 800). The USACE is the lead agency for Section 106 compliance.

The ISD contracted Tierra Right of Way Services, Ltd. (Tierra), to carry out a cultural resources inventory of the proposed project. Tierra's background research identified the project as being in an area of very high risk for encountering precontact cultural materials due to the presence of National Register of Historic Places–Eligible buildings both on the ISD property (Issaquah School Building) and less than 0.32 km (0.20 miles) to the southeast of the project area (Tolle Anderson Farm). Additionally, there are four recorded historic period sites within 0.6 km (0.4 miles) and one precontact site within 1.3 km (0.8 miles) of the project area. Historic (1864) map data indicates that the region was heavily traveled by both Native American and early Euroamerican people. Field investigations, consisting of pedestrian survey and three shovel test probe excavations, did not identify any cultural materials. However, intact native alluvial sediments were found to exist within 20 cm (8 inches) of the ground surface within the project area, increasing the likelihood of intact archaeological resources being present. The cut bank profile was obscured behind temporary steel shoring, which limited the ability of the fieldwork to investigate potential cultural resources in the cut bank itself.

The most likely location for intact cultural resources is within the cut bank, which could not be observed. As such, Tierra recommends that an archaeological monitor be present during the removal of the shoring and initial excavation into the cut bank. Subsequent ground-disturbing activities may proceed under the guidance of an Inadvertent Discovery Plan for archaeological resources and human remains (provided in Appendix A). If project plans change in any way that would cause ground disturbance in areas not covered in this report, additional cultural resources investigation is recommended.

INTRODUCTION

The Issaquah School District (ISD) is proposing the Holly Street Creek Bank Project (project) to install streambank protection along approximately 33.5 m (110.0 feet) of cut bank on the west side of Issaquah Creek, at 555 NW Holly Street, in the City of Issaquah, King County, Washington. The project is located in Section 28, Township 24 North, Range 6 East, Willamette Meridian (WM), as shown on the Issaquah, Washington, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle map (Figure 1).

The ISD contracted Tierra Right of Way Services, Ltd. (Tierra), to conduct the cultural resources investigation of the project, including background research and field investigations. This document provides project information, background research, and the results of the archaeological inventory.

Project Description

The ISD plans to reconstruct a portion of the bank lost to channel erosion in proximity to historic register-eligible ISD infrastructure and will provide protection against the erosive forces directed toward the bank and provide habitat as stream-carried debris is caught and incorporated into the bank. The project footprint will impact approximately 33.5 m (110.0 feet) of cut bank adjacent to the ISD parking area along the west edge of Issaquah Creek. Mechanical anchors will secure the large woody debris into the undisturbed streambank and channel, and the woody debris will be situated such that the effects of channel scour are mitigated. Construction of the stream bank protection will include work within the Ordinary High-Water Mark of Issaquah Creek. A temporary cofferdam will be installed along the perimeter of the work area. All construction will occur within the 'Fish Window,' determined by the Washington State Department of Fish and Wildlife (WDFW). As the bioengineered structure decays, new vegetation within the reconstructed bank should take hold and form permanent, long-term stabilization. Ground disturbance for this project is expected to reach depths of up to 1.8 m (6.0 feet) below the existing ground surface at the toe of the cut bank.

Regulatory Context and Area of Potential Effects

The project requires permitting through the City of Issaquah (the City), the WDFW, and the U.S. Army Corps of Engineers (USACE). The project is defined as a Federal undertaking and must comply with the National Historic Preservation Act (NHPA) of 1966, as amended, and the implementing regulations under its Section 106 (36 Code of Federal Regulations [CFR] 800). This legislation requires Federally assisted, regulated, or permitted undertakings to take into account the effects of those undertakings on historic properties, defined as those listed in or Eligible for listing in the National Register of Historic Places (NRHP). Historic properties may include buildings or other structures, archaeological sites, and Traditional Cultural Properties (TCPs). Eligible properties generally must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance (36 CFR 60.4) The USACE is the lead agency for Section 106 compliance.

The parking lot southeast of the ISD building will be used for staging equipment. A material trucking route measuring 320 m (1,050 feet) in length will follow existing paved parking lots and roads from this parking lot to NW Holly Street to the north (Figure 2). The area of potential effects (APE) for ground disturbance is an area approximately 4–10 m (13–32 feet) wide (east-west) and 34 m (110 feet) long (north-south) that encompasses the western edge of Issaquah Creek (Figure 3). Maximum ground disturbance for this project is expected to reach depths of up to 1.8 m (6.0 feet) below the existing ground surface at the toe of the cut bank.

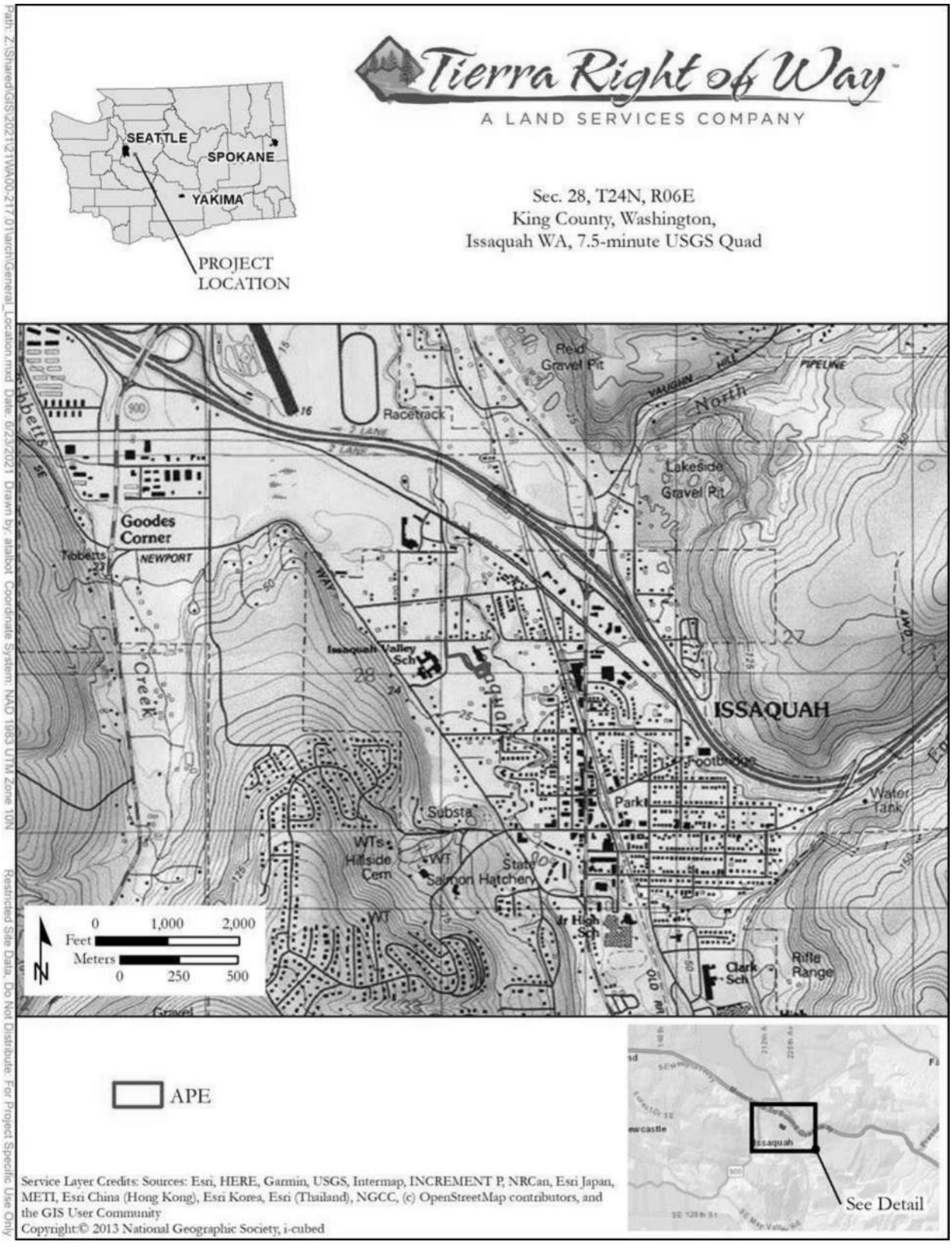


Figure 1. General Location of project area showing APE.

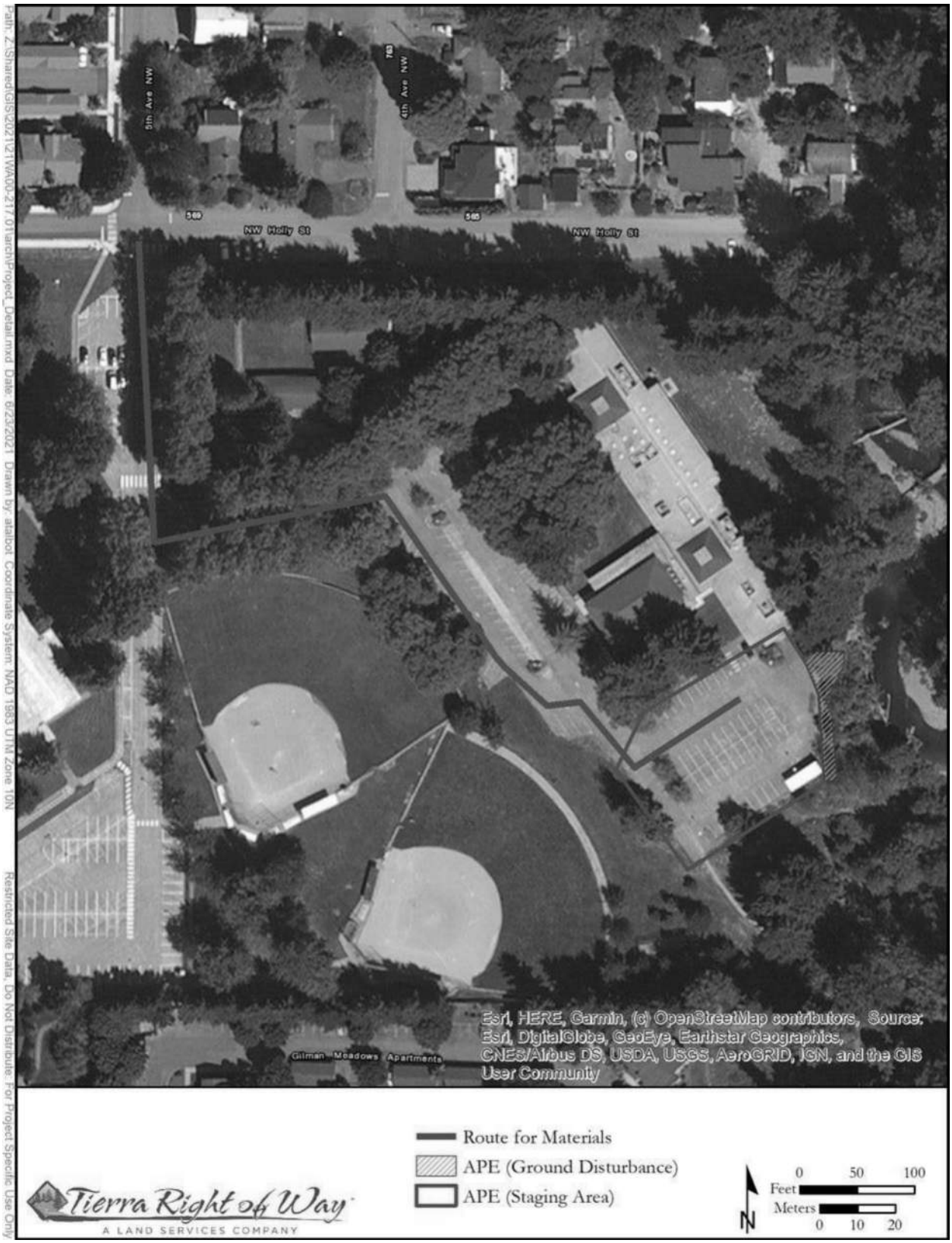


Figure 2. Project detail map showing APE and route for materials.



Figure 3. Project detail map showing proposed ground disturbance APE along Issaquah Creek.

Prior to fieldwork, Tierra sent coordination and project information to the potentially interested Native American Tribes to solicit concerns about cultural resources and to inform them of the date of fieldwork. Email notifications were sent to Cecile Hansen, Chairwoman, Duwamish Tribe; Laura Murphy, Archaeologist, Cultural Resources, Muckleshoot Indian Tribe; Jackie Ferry, Tribal Historic Preservation Office (THPO), Samish Indian Nation; Steven Mullen-Moses, Director of Archaeology and Historic Preservation, and Adam Osbekoff, Assistant Director of Archaeology and Historic Preservation, Snoqualmie Indian Tribe; Rhonda Foster, THPO, and Shaun Dinubilo, Archaeologist, Squaxin Island Tribe; Dennis Lewarch, THPO, Suquamish Tribe; and Richard Young, Cultural Resources, Tulalip Tribes. No responses were received.

ENVIRONMENTAL SETTING

Changing environmental conditions affect the kinds of resources available to people, the distribution of those resources, and the suitability of certain landforms for human occupation. This environmental section describes the depositional conditions that influence the likelihood of intact archaeological deposits being present in the APE and discusses features of the natural environment that would have encouraged or discouraged settlement of the APE by human populations in the past. Literature reviewed for the project included environmental data from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) online soil survey, and resources in Tierra's library related to the geology and landform formation processes and the natural resources available in and around the APE.

Topography and Geology

The project is situated on the western edge of a meander of Issaquah Creek approximately 3.2 km (2.0 miles) southeast from its confluence with Lake Sammamish. The ground disturbance APE encompasses the cut bank along the western edge of the creek. The modern landscape is within the eastern Puget Lowland region at the southern end of the Lake Sammamish trough. The surrounding topography is the result of Pleistocene glaciation and Holocene alluvial and deltaic infilling of this trough and associated mass wasting events (Booth et al. 2012). During the Late Pleistocene, Issaquah's townsite was deeply submerged beneath Glacial Lake Sammamish, as evinced by gravel deposits mantling the tops of the surrounding hills to elevations greater than 120 m (400 feet) above mean sea level (AMSL) (Miller and Cowan 2017). Mapped soil in the APE is primarily classified as Briscot silt loam, which is a stratified fine sand to silt loam that is identified on floodplains and formed from fine textured alluvial deposits (NRCS 2021).

Ecological Setting

The APE is within the Puget Sound area of the western hemlock *(Tsuga heterophylla)* vegetation zone, which exists throughout the Pacific Northwest, from British Columbia south to the Klamath Mountains in Oregon. In addition to western hemlock, the zone includes western red cedar *(Thuja plicata)*, and Douglas fir *(Pseudotsuga menziesii)*. This zone is the most extensive vegetation zone in western Washington, though the Puget lowlands host large areas that differ from the surrounding western hemlock zone, such as stands of pine (*Pinus* sp.) and oak (*Quercus* sp.), and extensive open prairies (Franklin and Dyrness 1988). Puget lowland plant species rarely or never found in other areas in western Washington or northwestern Oregon include Rocky Mountain juniper *(Juniperus scopulorum)*, quaking aspen *(Populous tremuloides)*, ponderosa pine *(Pinus ponderosa)*, and paper birch *(Betula papyrifera)*.

The precontact and Historic period environment provided foraging and breeding habitats for a wide range of terrestrial and aquatic mammals including elk *(Cervus elaphus)*, black-tailed deer *(Odocoileus*

hemionus), black bear *(Ursus americanus)*, coyote *(Canis latrans)*, cougar *(Felis concolor)*, raccoon *(Procyon lotor)*, red fox *(Vulpes vulpes)*, and porcupine *(Erethizon dorsatrum)* (Larrison 1967). Wetland habitats common along stream courses such as Issaquah Creek, supported a diverse array of fauna including waterfowl (*Aix and Anas* sp.), beaver *(Castor canadensis)*, river otter *(Lultra canadensis)*, and mink or weasel (*Mustela* spp.) (Larrison 1967).

Issaquah Creek hosts eight types of salmonid fish, including Chinook salmon *(Oncorhynchus tshawytscha),* and coho salmon *(O. kisutch)*. Both the resident kokanee and anadromous forms of sockeye salmon *(O. nerka)* as well as steelhead trout *(O. mykiss)* are also present in Issaquah Creek (King County 2016). Cutthroat trout *(O. clarkii)* is also present. Each of these species are traditionally important food fish to southern Coast Salish peoples (Stewart 1977).

CULTURAL SETTING

Archaeological studies, ethnographic accounts, and historical records provide a framework in which to identify and evaluate cultural resources within the APE. Archaeological studies documenting successive occupation episodes in the Pacific Northwest region provide general informatin about settlement patterns, resource use, and subsistence economies. Ethnographic and historical sources contain accounts of Native American occupation and land use after Euroamerican settlement. Historical documents, maps, and aerial photographs contain information about settlement, transportation, agricultural, and logging activities.

Archaeological Record/Precontact Period

Late Pleistocene to the Pleistocene/Holocene Transition (~16,500–10,000 B.P.)

Archaeologists have long debated the initial peopling of the Americas, but a number of finds in the last decade have expanded our understanding of these early travel trajectories. Current research suggests that the ancestors of today's Native Americans were highly skilled in navigation, seafaring, and fishing, and that in addition to the long-established migration along the Bering Strait, the earliest settlement of the Americas may have followed the coastal margin along the modern shorelines of Alaska and British Columbia (Davis et al. 2019; Erlandson 2013, 2017, 2019; Jodry 2005; Moss and Cannon 2011). This path continues south, running directly along the Salish Sea, the modern Puget Sound area, and along the outer coast of Washington State, before reaching modern-day Oregon and California (Erlandson 2019, 2017, 2013; Mackie et al. 2018; McLaren et al. 2018; Moss and Cannon 2011). Evidence for this route occurs in recent archaeological discoveries in the Pacific Northwest that have been securely dated to the late Pleistocene and Pleistocene-Holocene transition period, discussed below.

The title of "oldest" discovered archaeological sites in the Pacific Northwest region is frequently revised. Over the last few years, these have shifted to being almost exclusively found along the coasts and waterways. The claim to the oldest site in the area currently belongs to the Cooper's Ferry site along the Salmon River, in modern-day central Idaho, where artifacts and hearth features related to a water-based subsistence have been dated to between 16,560 and 15,280 B.P. (Davis et al. 2019). Other similarly early sites have been located on Triquet and Calvert Islands and Haida Gwaii, off the coast of British Columbia, dating to between 14,000 and 11,000 B.P. (Carlson 2013; Gauvreau and McLaren 2017; McLaren et al. 2018). Archaeological materials discovered from these early sites include unfluted lithic projectile points, obsidian flakes, hearth features, wooden bipoints, bentwood fishhooks, graphite particles, charcoal lenses, and marine mammal remains (Davis et al. 2019; Gauvreau and

McLaren 2017; McLaren et al. 2018). Combined with oral traditions regarding the use of these sites, archaeologists infer that these coastal sites would have been among some of the oldest settlements along the coast (Carlson 2013; Gauvreau and McLaren 2016; McKechnie 2015; McLaren et al. 2018; McMillan and St. Claire 2005; Nicholas and Andrews 1997).

Elsewhere along the Northwest Coast, initial settlement occurred sometime between 13,900 and 9,700 B.P.. The earliest sites found within Washington include one on Orcas Island, within the San Juan Islands group, and one site on the Olympic Peninsula. On Orcas Island, the Ayers Pond site consists of a *Bison antiquus* kill and butcher site dating to ~13,900 B.P. (Hutchings and Williams 2020; Kenady et al. 2010). The Ayer Pond site demonstrates that not only was Orcas Island ice-free by 13,900 B.P., but this island was also a possible route for both large Pleistocene game and early Native American settlement of the Pacific Northwest. Further south, near the modern-day town of Sequim on the Olympic Peninsula, archaeologists recorded the Manis Mastodon site (Gustafson et al. 1979; Hutchings and Williams 2020). Similar to the Ayer Pond site, this consisted of a large, butchered Pleistocene mammal, a male mastodon, that was likely butchered approximately 14,000 years B.P. Archaeologists working in the region indicate that these sites demonstrate the importance of island and coastal regions as ice-free throughways for initial settlement (Hutchings and Williams 2020).

Other evidence for early settlement in the Puget Sound region comes from several Clovis projectile points recovered from various locales around the Puget Sound. As elsewhere in North America, the Clovis point tradition has been narrowly dated to between 13,000 and 11,000 B.P. in the Pacific Northwest (Ames and Maschner 1999; Hutchings and Williams 2020). This tradition is frequently associated with hunter-gatherer groups in North America and has long been considered among the oldest tool traditions in the Americas. While nearly ubiquitous in the interior western United States and elsewhere on the continent, excavations on the northern coast of British Columbia have uncovered few Clovis points, and none in the Northern Salish Sea region (Hutchings and Williams 2020). As such, the cluster of at least 10 Clovis points around the Puget Sound region is a significant divergence from the pattern set further north on the Pacific Northwest Coast (Ames and Maschner 1999; Croes et al. 2008; Hutchings and Williams 2020; LeTourneau 2010).

Further inland, along the plains and western slopes of the Cascade Mountain range, the archaeological record in the Puget Sound area suggests initial exploration or settlement of ice-free areas by 12,600 B.P. (Kopperl 2016). The Bear Creek Site (45KI00839) along the Sammamish River, near the north end of Lake Sammamish, indicates that early Native Americans living in the Puget Sound area had discovered and begun to utilize ice-free inland areas by at least 12,600 B.P. (Kopperl 2016). Though the site does not show evidence for large or long-term settlement, several artifacts and features recovered from the site, such as lithic tools, debitage, and charcoal lenses, suggest temporary or possibly seasonal use of the area during the Late Pleistocene.

Human hunting of extinct fauna has been corroborated by scientific data at the Manis mastodon site (Gustafson et al. 1979). The presence of a bone projectile point embedded in a mastodon rib has been substantiated, and combined DNA testing and accelerator mass spectrometry dates indicate the animal was hunted and killed ca. 13,860 to 13,763 calendar years ago (Lawler 2011; Waters et al. 2011). Archaeological evidence for these early sites (prior to about 8000 years ago) typically include isolated artifacts and lithic scatters representing field camps and procurement/processing sites (Kopperl et al. 2016). As additional archaeological and paleoenvironmental research into the Puget Sound area is conducted, we may begin to better understand how early Native Americans moved through and interacted with inland areas along the Pacific Northwest Coast.

Pleistocene/Holocene Transition to the Mid-Holocene (10,000–5,000 B.P.)

The end of the Pleistocene and the beginning of the Holocene epoch brought well-documented ecological changes to the Northwest Coast. The general retreat of the glacial lobes freed much of the inland areas that had previously been inaccessible to the early Native American communities and brought general warming trends and sea level change to the coastal settlements, many of which would have either been submerged or uplifted by about 8,000 B.P., depending on their locations along the coast (Fedje et al. 2018; Mackie et al. 2018; McLaren et al. 2014). Changing sea levels were accompanied by changing ecological portraits inland, as early Holocene boreal forests began to expand and late Pleistocene megafauna were replaced by Holocene fauna (Mackie et al. 2018; McLaren et al. 2014).

Archaeologically, this period saw an expansion in the number and size of archaeological sites along salmonid-bearing streams and rivers throughout the Pacific Northwest's Inner Coast (Moss and Cannon 2011). The Fraser River valley in modern British Columbia, which may have supported salmon runs as early as 9,000 B.P., was likely initially selected as a settlement site due to the large salmonid populations (Rosseau 2017:248–249). Other locations along the Inner Coast have revealed incipient coastal settlement dependent upon the salmon-bearing waters surrounding the Salish Sea. Archaeologists investigating sites at Namu argue that permanent, year-round settlement of the village was supported by regular and large-scale salmon fishing by at least 7,000 B.P. (Cannon and Yang 2006; Moss and Cannon 2011). Other sites along the Northwest Coast were similarly supported during this period, primarily through the salmon and Pacific herring harvests (Carlson 2013; McKechnie and Moss 2016; Moss and Cannon 2011). Archaeological resources frequently associated with these sites include various types of bentwood hooks, bone and wood harpoons, nets, weirs, and other fishing tools. Unfortunately, most of these resources were crafted from various woods and natural fibers, which will degrade over time unless preserved in an anaerobic environment (Ames and Maschner 1999; Gauvreau and McLaren 2017; Moss and Cannon 2011). Tools that are more frequently preserved include those ground stone adzes, pestles, and lithic artifacts associated with village sites.

Ecological changes may have driven innovation in hunting and gathering techniques and technologies, some of which have been well-documented in the archaeological record in the form of projectile point chronologies and typologies (Meltzer and Dunnel 1987). The development of leaf-shaped (Olcott, Cascade) and side-notched points and microblade technologies expanded with the changing ecological portrait throughout the Pacific Northwest (Ames and Maschner 1999; Croes et al. 2008; Meltzer and Dunnel 1987). In the archaeological record, these technologies become strongly associated with hunting camps ranging inland from the riverine and coastal settlements, as early Native Americans supplemented their marine-based diets and lifestyles with the Holocene elk, deer, bison, bear, and other large mammals common throughout the newly forested western slopes (Croes et al. 2008).

Mid-Holocene to the Late Holocene (5,000–500 B.P.)

The mid- to late Holocene witnessed a drastic surge in population growth along the Northwest Coast, as well as a blossoming of what archaeologists call the "Pacific" period culture (Ames and Maschner 1999:87; Matson and Coupland 1995). By this time, the early Native Americans who had settled the region had developed a complex economic and social system, connecting the disparate groups along the coast and rivers into several large, overlapping interaction spheres (Ames and Maschner 1999; Grier 2015; Mierendorf and Baldwin 2015; Rosseau 2017). Large, permanent villages of split plank houses and multi-family dwellings along both the Inner and Outer Coasts, as well as rivers and smaller streams throughout the Pacific Northwest, became the norm and have been well-preserved and

documented archaeologically (Ames and Maschner 1999; Cannon and Yang 2006; Carlson 2013; Kirk 2015; McKechnie 2015; McMillan and McKechnie 2015; Orchard 2008; Stein 2000).

The permanent villages along the Inner Coast were supported by a complex seasonal pattern of hunting, fishing, and gathering. The patterns suggested by finds from early Holocene and late Pleistocene sites, with a marine-focused subsistence augmented by inland hunting and gathering trips, become established in the archaeological record of the mid- to late Holocene (Ames and Maschner 1999; Haggan et al. 2006; Kopperl 2016; McMillan and McKechnie 2015; McMillan and St. Claire 2005, 2012; Moss and Cannon 2011). Evidence for these inland ranges often come from archaeological deposits of lithic projectile points, quarries, scatters, hearth features with fire-modified rocks, bone, shell, and maintained, upland, seasonal-use habitations (Ames and Maschner 1999; Carlson 2013; McMillan and McKechnie 2015; Mierendorf and Baldwin 2015; Prentiss and Chatters 2003). Shell middens also become much more common along the modern shoreline, demonstrating an intensification of shellfish harvest and population growth along the coast (Ames and Maschner 1999; Carlson 2013; Moss and Cannon 2011; Stein 2000). By adapting to the seasonal variations in one of the most ecologically diverse and bioavailable regions on the planet, Native Americans along the Northwest Coast were able to support a burgeoning population and increasingly complex societies.

As ethnographers would later observe, the Northwest Coast cultures constructed and maintained long-ranging kinship and political networks, tying the coastal peoples to one another and to their relatives living in the mountains and on the inland plateau (Boas 1895; Benedict 1934; Suttles 1987). These networks have also been investigated by archaeologists, who have projected that these networks were constructed considerably before contact, perhaps as early as 7,000 B.P., along the coast and major river networks (Kassa and McCutcheon 2016; Mierendorf 2004; Mierendorf and Baldwin 2015; Quinn 2006; Shulting and Hayden 1997). Archaeologists tracking these networks have studied the movement of people through the proxy of trade goods, including, but not limited to, the obsidian trade, bead trade, foodstuff trades, and the trade of various luxury goods, including ceremonial and artistic artifacts, blankets, and basketry (Ames and Maschner 1999; Grier 2015; Kassa and McCutcheon 2016; Mierendorf 2004; Mierendorf and Baldwin 2015; Quinn 2006; Shulting and Hayden 1997). Relationships and networks across the region flourished until the late 1800s, when they were deconstructed by the U.S. expansion into the Pacific Northwest coast (Dunbar-Ortiz 2014).

Ethnographic Record / Contact Period

The APE is within the traditional territory of the Sammamish, who are a subgroup or independent band of the Duwamish people (Spier 1936:34; Haeberlin and Gunther 1930:8), occupying various locations along the east side of Lake Washington, along the Sammamish River, and on the shores of Lake Sammamish.

The Sammamish were included with the inhabitants of Lake Washington who were referred to as "Lake Duwamish" Indians in an 1854 census of Native groups (Smith 1940:17). They were considered to be intermediate between the Duwamish and the Snoqualmie by ethnographers of the time (Ruby et al. 2010; Smith 1940). The Duwamish traditionally inhabited the land surrounding Elliott Bay, the Duwamish, Cedar, and Black Rivers, Lake Washington, Lake Union, and Lake Sammamish (Eells 1985:20; Haeberlin and Gunther 1930:8, 10; Ruby et al. 2010:115).

The Duwamish and Sammamish peoples are considered to be part of the larger Southern Coast Salish cultural group by researchers (Suttles and Lane 1990:485–502). The Duwamish people were one of

many southern Coast Salish groups that spoke the southern Lushootseed language dialect; other neighboring groups including the Puyallup, Nisqually, Suquamish, Muckleshoot (upper green and White River settlements), Snohomish, and Snoqualmie also spoke the southern Lushootseed language dialect.

In general, Sammamish villages were located on the northern shores of Lake Washington, along the Sammamish River, and along the shores of Lake Sammamish. A permanent Sammamish winter village, *Sqwa'ux*, was reportedly located on Issaquah Creek, near where it empties into Lake Sammamish (Waterman 2001).

The *Sqwa'ux* village site was located 3.2 km (2.0 miles) northwest of the APE on a promontory on the south shore of Lake Sammamish. Other places with Native names are also known nearby along the south shores of Lake Sammamish (Waterman 2001). These include *QatL^{3}a'd1l-qo* ("land otter's water"), located 3.4 km (2.1 miles) north of the APE and named for a creek entering into Lake Sammamish, and *Tsqe'l^{tl}cuL* ("loading things on a canoe"), which is located 3.30 km (2.05 miles) northwest of the project area and is named for nearby Tibbets Creek where it flows into Lake Sammamish (Waterman 2001).

Nearer to the project area are four other locations with Native place names clustered close together roughly 1.6–2.4 km (1.0–1.5 miles) southeast of the APE (Waterman 2001). These are *SiwE'dk* (named for the first stream that flows into Issaquah Creek from the east), *TEqa'iob* (which is said to mean "cougar", there being a story about mountain lions associated with this place), *QwEts^{3}i'ls* ("that which is left over", named for the east fork of Issaquah Creek), and *Ts^{3}upa^{3}lt* (named for a mountain located east of Issaquah) (Waterman 2001). Located roughly 3.7 km (2.3 miles) to the southwest of the APE is *TEqaiyuwa'lt^{tl}*, which may mean "corpse's house" and is named for Squak Mountain, which is west of Issaquah.

Early historical descriptions of local Native American subsistence economies and social interaction emphasize the seasonal nature of certain activities within their traditional territories. The Sammamish, like other members of the Coastal Salish Native groups in the area, lived in permanent villages during the winter, traveling to seasonal camps in the spring, summer, and fall. Winter villages, composed of one or more plank houses where families gathered in the late fall, were typically along waterways, such as the mouth of a river, a river confluence, or protected shoreline. During the winter months, village residents would rely heavily on stored foods supplemented by local hunting and fishing. During the spring, summer, and fall, people would journey from central villages to temporary camps. Some groups moved to camps along local rivers, such as Issaquah Creek, during salmon runs, and smaller groups would visit upland areas to hunt, gather plant resources such as cedar and berries, and fish for non-salmonid fishes. Fish were caught in a variety of ways; fish weirs and dip nets were commonly used along local streams and rivers, while spears, drift nets, and hook and line were used on open water (Hadja 1990).

Euroamerican/Postcontact/Historic Period

Prior to the arrival of Europeans, the Northwest Coast was one of the most densely populated nonagricultural areas in the world. Between 1770 and 1870, repeated outbreaks of infectious disease drastically reduced the Native populations (Boyd 1990). The first documented European contact in the region was by Captain George Vancouver of the Royal British Navy in 1792 (Whitfield 1926). Exploration was followed by influxes of Euroamerican fur traders, and in 1833 the Hudson's Bay

Company established Fort Nisqually as a military and trading post. As the fur trade declined, the Hudson's Bay Company branched out to include agriculture. Following this, Roman Catholic missionaries began travelling the region to convert local populations (Meany 1923; Suttles and Lane 1990).

Between 1854 and 1856, Governor Isaac Stevens negotiated several treaties with Native groups throughout Washington Territory. In 1855, Coast Salish peoples in the Puget Sound Area relented to Euroamerican pressure for land and water rights, and leading men from 22 Tribes in the region signed the Treaty of Point Elliot. U.S. military activity in the Pacific Northwest was paired with the passage of the Donation Land Claim Act in 1850, which encouraged U.S. citizens to settle land in the American West (History Link and Riddle 2010). The Act gave settlers a legal measure within the U.S. courts to claim land in the Oregon Territory. Together, these cleared the way for a wave of Euroamerican settler-colonists, who flooded into the Pacific Northwest and set the groundwork for many modern-day towns and city centers, including Issaquah and other towns around Lake Sammamish.

By the 1860s, Euroamerican settlement in general was on the upswing due to the Homestead Act of 1862 (History Link and Riddle 2010), which offered 160 acres to any settler who resided on and improved a tract of surveyed government land for five consecutive years.

Coal was first discovered in the area around Issaquah (then called Squak Valley by Euroamericans) as early as 1862, though the difficult process of transporting mined coal to Seattle prevented early large-scale development of the area (History Link and Lange 1998; Spanger 1990). As such, early economic activity in the valley was focused on hop farms and dairy farms. The Squak Post Office was established on May 20, 1870, with local dairy farmer William Pickering as its first postmaster (History Link and Lange 1998). The name "Squak" is the attempted pronunciation of a Native American name that is sometimes also written as "Is-qu-ah," and which may mean "snake."

The year 1885 brought the beginnings of change, as some of Seattle's most influential citizens, including Daniel Gilman, Thomas Burke, David Denny, and Henry Yesler, formed the Seattle, Lake Shore, and Eastern Railway with the hope of securing a trans-Cascade railway link for Seattle. The proposed route for this rail link passed close to the Squak Valley, where Burke and Gilman both owned coal mining interests, and in 1888 the railroad came to the future town of Issaquah (Spanger 1990).

Issaquah became a coal boom town after the arrival of the railroad, with over 100,000 tons of coal moving out via rail each year between 1889 and 1904. In addition to coal mining, the railroad also brought opportunities for the logging industry, as essential logging equipment could be shipped directly to local forests and shipments of logs moved out (Spanger 1990). Train passengers were also now able to make complete round trips to Seattle in a day. The south end of town near the train depot saw the construction of businesses and houses. Commercial structures, including mercantile stores, saloons, and hotels, were established to serve the booming town. By the early 1890s, Issaquah had a blacksmith shop, a meat market, a general store, two saloons, a hotel, and two sawmills (History Link and Lange 1998).

In 1885, the population of historic Issaquah was 100. The town was incorporated in 1892 with the name Gilman, in recognition of the prosperity brought by Daniel Gilman's railroad. The town went through several names during the mid- to late-nineteenth century, including Englewood, Olney, and

Gilman, before the inhabitants decided on "Issaquah" in 1895, and the State legislature made it official in 1899 (History Link and Lange 1998). By 1900, the town's population had risen to 1,060.

Trains continued carrying passengers, mail, food, freight, and livestock between Issaquah and Seattle into the twentieth century. Passenger train service through Issaquah remained available until 1922, and after 1958, nearly all freight service was discontinued (Issaquah History Museums 2021). As a result of the Burlington Northern Santa Fe merger, the train stopped coming to Issaquah in 1996.

The volatile cycle of the natural resource industry around Issaquah was slowly replaced by community evolution after World War II. Prior to 1940, Issaquah's population was roughly 1,000, but after the first floating bridge was opened on Lake Washington that year, Issaquah became a short drive from Seattle, and the town began its transformation from a rural community to a modern city-suburb home to 40,000 people (Issaquah History Museums 2021; U.S. Census Bureau 2021).

ARCHIVAL REVIEW

Prior to field investigations, Tierra reviewed archaeological survey and site inventory records using the Washington Department of Archaeology and Historic Preservation's (DAHP's) Washington Information System for Architectural and Archaeological Records Data (WISAARD) for archaeological site records and cultural resource survey reports located within a 1.6-km (1.0-mile) buffer radius surrounding the APE. Tierra also examined online resources including the Bureau of Land Management's (BLM) General Land Office (GLO) survey records database, Historic Map Works, the University of Washington's Digital Collection, and Washington State University's Early Washington Maps Collection.

Cultural Resources Studies

Numerous cultural resources studies have been conducted in Issaquah, and background research showed over 30 previous investigations within a 1.6-km (1.0-mile) radius of the APE. As such, only previous studies within 0.8 km (0.5 miles) of the APE were considered for this report to more properly illustrate the breadth of investigation immediate to the project area (Table 1). This reduction in radius revealed a total of 16 previous studies within 0.8 km (0.5 miles) of the APE. Two of these studies identified precontact lithics (Fagan 1999; Hoyt 2014), six recorded Historic period debris or features (Fagan 1999; LeTourneau 2009; Wilson et al. 2012; Hoyt et al. 2012; Hoyt 2014; Shantry et al. 2014), and two studies observed non-eligible historic properties (Jones and Stokes 2005; Shantry et al. 2014). Nine of these investigations documented no cultural resources.

Table 1. Previous Cultural Resource Studies within a 0.8-km (0.5-Mile) Radius of the Project Area

NADB	Reference	Title	Recorded Resources
1340270	Fagan 1999	Cultural Resources Survey of Level 3's Proposed Fiber Optic Line from Seattle to Boise: Washington Segment, Non-Federal Lands	Precontact lithic scatter, historic period infrastructure

NADB	Reference	Title	Recorded Resources
1339856	Johnson 2000	Letter to Rob Whitlam Regarding Cultural Resources Assessment for the First Phase of the Proposed East Lake Sammamish Trail Project	none
1343438	Johnson 2004	Letter to Mike Lozano Regarding Monitoring of Interim East Lake Sammamish Trail Fence Augers	none
1344670	Brush and Cooper 2004	Letter to Tony Nguyen Regarding Cultural Resources Letter Report of the NW Juniper Street Bridge Replacement Project	none
1346553	Jones & Stokes 2005	Cultural Resources Assessment Interstate 90 Undercrossing Project City of Issaquah, King County, Washington	Non-eligible historic properties
1347180	Goetz 2006	Cultural Resources Report, High Point Regional Trail Connector Project, King County, Issaquah, Washington	none
1353459	LeTourneau 2009	Cultural Resources Investigations, City of Issaquah's Trolley Track Rehabilitation, Issaquah, King County, Washington	Historic rail trackway (part of site 45KI451)
1352597	Stegner and Kelly 2009	USPS Issaquah Cultural Resources Survey, King County, Washington	none
1686874	Wilson et al. 2012	Confluence Park Project, Issaquah, Archaeological Resources Assessment	Historic period debris concentration (site 45KI1100)
1683659	Hoyt et al. 2012	Issaquah Cemetery Transfer Site Improvements Project, Issaquah, King County, Washington, Cultural Resources Assessment	Historic period roadway
1685035	Hoyt 2014	East Lake Sammamish Master Plan Trail, Issaquah Segment, Archaeological Monitoring	Historic period railroad grade and associated debris (part of site 45KI451); red jasper pebble (site 45KI1172)
1685037	Shong and Miss 2014	Cultural Resources Assessment for the NW Dogwood Street Bridge Replacement Project, King County, Washington	none
1685611	Shantry et al. 2014	Cultural Resources Assessment for the Gilman Square Property Development, Issaquah, Washington	Historic period foundation (site 45KI1198); historic period railroad grade (site 45KI1199); non-eligible historic properties
1687687	Berger 2015	Cultural Resources Assessment for the Salmon Run Park Project, Issaquah, King County, WA	none
1688210	Patterson and Chidley 2016	I-90 –North Fork Issaquah Creek Fish Passage Project	none
1691148	Arthur 2017	Cultural Resources Assessment for the Proposed Issaquah Apartments, 955 7th Avenue Northwest, Issaquah, Washington	none

Previously Recorded Archaeological Resources

Background research showed that there are five previously recorded archaeological sites within 1.6 km (1.0 mile) of the APE. Four of these sites consist of Historic period debris and/or features, while one site is precontact. Precontact site 45KI1172 is located 1.2 km (0.77 miles) north of the APE and consists of a single cryptocrystalline solid (CCS) pebble bearing two possible flake scars (Lothrop 2012). The nearest site is Historic period site 45KI1100, located approximately 243 m (800 feet) southeast of the APE across Issaquah Creek, and consists of a Historic period burn pit feature and debris associated with the nearby Anderson farmstead (Lockwood 2012). Located 320 m (1,050 feet) east of the project area is site 45KI451, an abandoned Historic period railway (Hudson and Nelson 1997). The foundations of a Historic period residential structure (45KI1198) were documented 560 m (1,837 feet) to the northwest of the APE (Shantry 2014a), near a section of Historic period railroad grade (45KI1199) that was recorded 610 m (2,001 feet) northwest of the project area (Shantry 2014b).

Cemeteries

The Hillside Cemetery (45KI868) is the only recorded cemetery within 1.6 km (1.0 mile) of the APE. Located approximately 0.7 km (0.44 miles) southwest of the project area, the first burial at this cemetery dates to 1890 (DAHP 2021a).

Historic Register–Listed Properties

A database search showed four historic register–listed properties within a 1.6-km (1.0-mile) radius of the APE. Additionally, the unlisted but NRHP-Eligible Issaquah School Building (DAHP Resource ID 284752) is located directly adjacent to the APE to the west. For register-listed properties, the closest to the APE, at 740 m (0.46 miles) to the southeast, is the Issaquah Railroad Depot (45KI595), built in 1889 following the local coal mining boom brought to the area by the Seattle, Lake Shore, and Eastern Railway (Spanger 1990). Located 1.1 km (0.68 miles) to the northwest is the Pickering Farm property (45KI142), which was first settled in the early 1860s and is the only remaining nineteenth century dairy farm in the Issaquah area (Aubin and Murray 1980). The Victor Taumala Barn (45KI793), located 1.4 km (0.85 miles) west of the APE, is a Washington State Heritage Barn Register–listed structure erected in 1920 for storage and animal cover by its builder, Victor Taumala (DAHP 2021b). Lastly, 1.6 km (1.0 mile) southeast of the APE stands the clubhouse of the Issaquah Sportsmen's Club (45KI637), which is a well-preserved example of a Vernacular Rustic-style, New Deal–era community building, constructed in 1937 and still in use by the club today (Erickson 1998). None of these historic properties will be impacted by this project.

Historic Map Research

An 1864 General Land Office (GLO) map shows a north-south road that is mapped crossing through the APE (Figure 4). An east-west trail labeled "Trail from the mouth of Cedar River" is shown intersecting this road roughly 1.1 km (0.66 miles) north of the APE. The 1864 map also shows a region labeled "Issquah Prairie" roughly 750 m (0.47 miles) northwest of the APE. The 1907 Anderson Map Company map shows Issaquah Creek following its present-day course, with the APE located within a land parcel belonging to Peter Rupp and the surrounding parcels belonging to other private landowners (Figure 5). Modern roadways are not mapped. A large tract of land belonging to Issaquah Coal Company can be seen south of the APE. The Hillside Cemetery is not shown on the Anderson map.

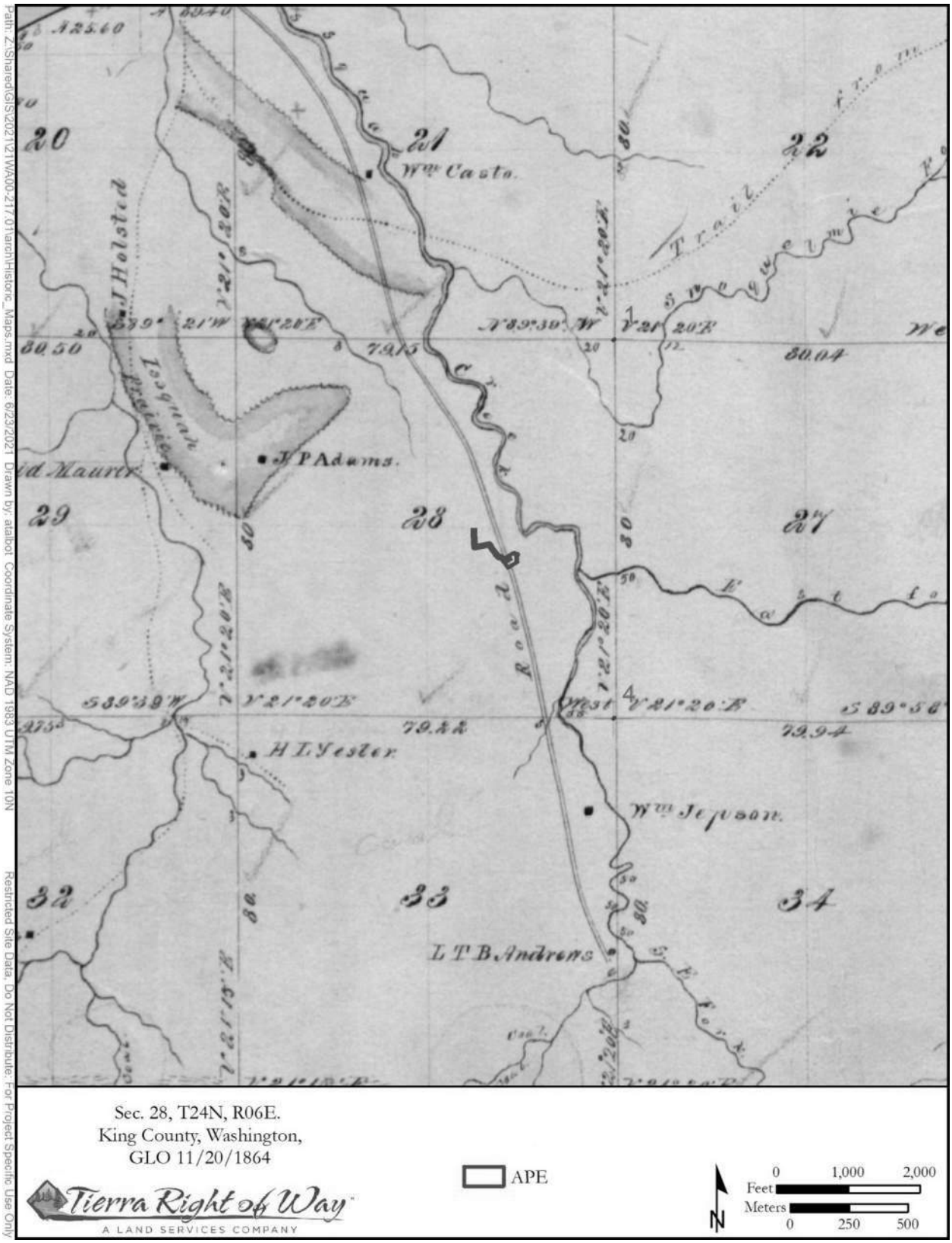


Figure 4. 1864 General Land Office map showing APE, mapped road, trail, and "Issquah Prairie."

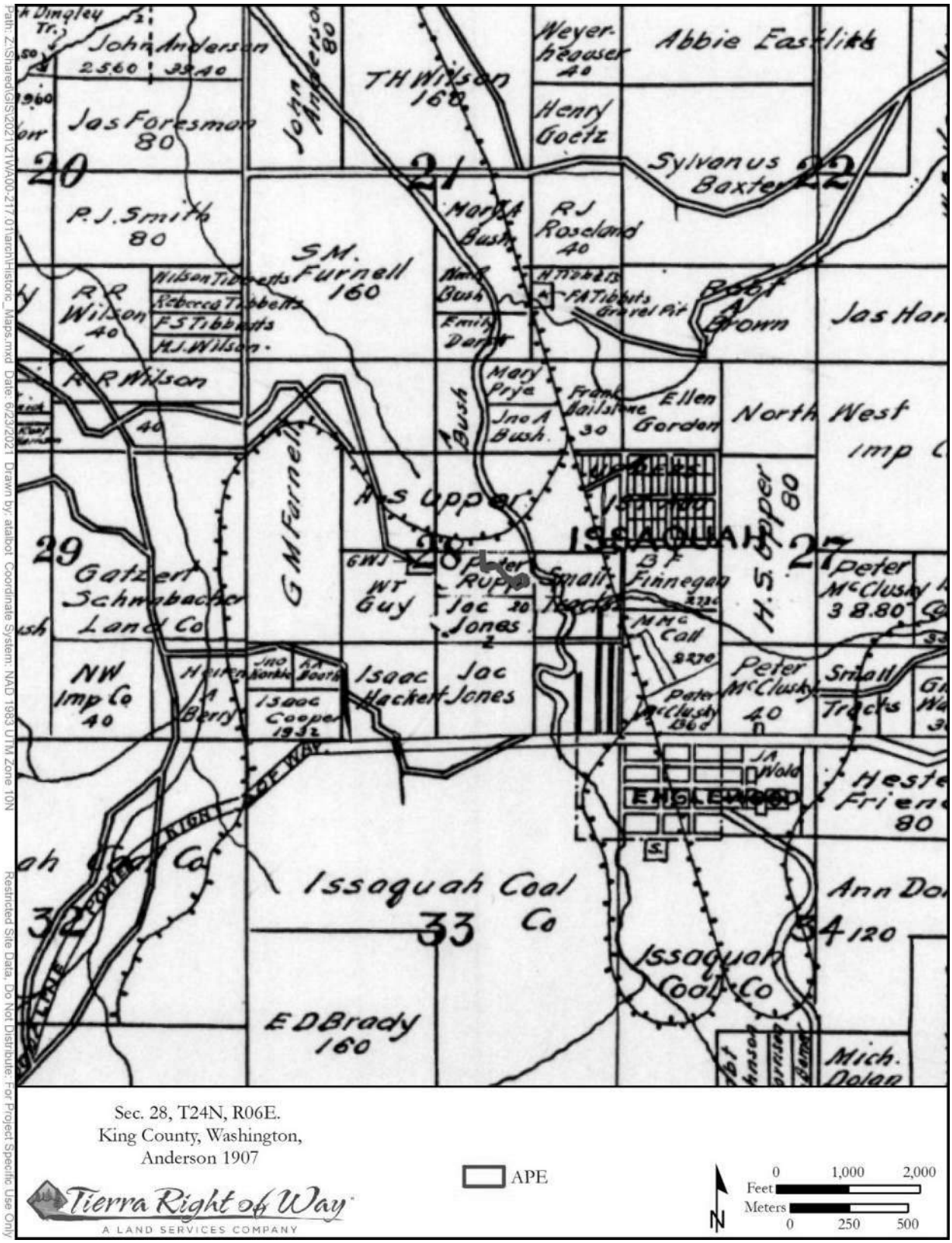


Figure 5. 1907 Anderson Map Company map showing Issaquah Creek and the APE within private land parcels.

The 1926 Kroll Map Company map shows Issaquah Creek, with the APE inside a parcel owned by Peter A. Reppee (Figure 6); it is unclear if this is the same landowner as on the 1907 Anderson map. No roadways around the APE are mapped, but the roadway for Newport Way can be seen to the west following its present-day route. The Hillside Cemetery is shown on this map, south of the APE, located within a large tract of land owned by The Pacific Coast Company.

The modern roadways around the APE are shown on a 1955 Thomas Brothers Maps Popular Atlas of King County map, with street numbers instead of names (Figure 7). Holly Street is labeled as "SE 72nd Street" on this map. The Hillside Cemetery is also visible on this map. The streets and position of Issaquah Creek are mapped noticeably to the northwest of the APE on the Thomas Brothers map, as the APE appears to be on the east side of Issaquah Creek. These differences are likely due to discrepancies in accuracy that can result after georeferencing historic maps using modern global positioning system (GPS) software. The modern APE is within Issaquah School District property and surrounded by single-family residences dating from the mid-twentieth century to the early twenty-first century (King County Assessor's Office 2021).

ANTICIPATED FINDS AND FIELD METHODS

The DAHP has developed a predictive model for the probability of encountering precontact and Historic period cultural resources in the field. The probabilities are calculated using information derived from early ethnographies, previous archaeological investigations, and various environmental factors, such as proximity to water (Kauhi 2009). Based on this model, the DAHP predicts a Very High risk for encountering cultural resources in the APE.

Background research also indicates a high potential for encountering precontact cultural resources within the APE. The project is located along Issaquah Creek, which is a salmon-bearing stream likely utilized by local Native American populations. Recorded archaeological occupation sites are located along the south shore of Lake Sammamish near its confluence with Issaquah Creek, approximately 3.2 km (2.0 miles) northwest of the project area. The relative lack of recorded archaeological sites in the project vicinity is likely a direct reflection of the limited investigations that have taken place. The presence of a foot trail mapped 1.0 km (0.6 miles) to the north of the APE in 1864 (see Figure 4) also suggests that the APE was used by Native people living in the vicinity, as well as those traveling back and forth through the region.

The most likely location for identification of intact precontact cultural resources will be in the exposed profile of the Issaquah Creek cut bank. The probability for encountering precontact cultural resources is tempered by more recent disturbance. Much of the APE is paved for parking at the Issaquah School District administrative building. That said, it is possible that archaeological materials associated with field and base camps for fishing, hunting, and plant procurement/processing are present. Evidence of temporary camps or short-term procurement activities would include fish weirs, charcoal-stained sediments in conjunction with fire-modified rock, flaked stone tools, and tool making/maintenance debris.

The potential for Historic period archaeological material in the APE is also high, particularly given the mapped location of a historic road crossing the APE Historic maps indicate extensive residential development at the project location by 1907, and archaeological materials associated with historic construction may be present. Archaeological evidence may include former roadways, wooden planked roads, structural foundations, burn pits, and/or associated glass, ceramic, wood, or metal artifacts.

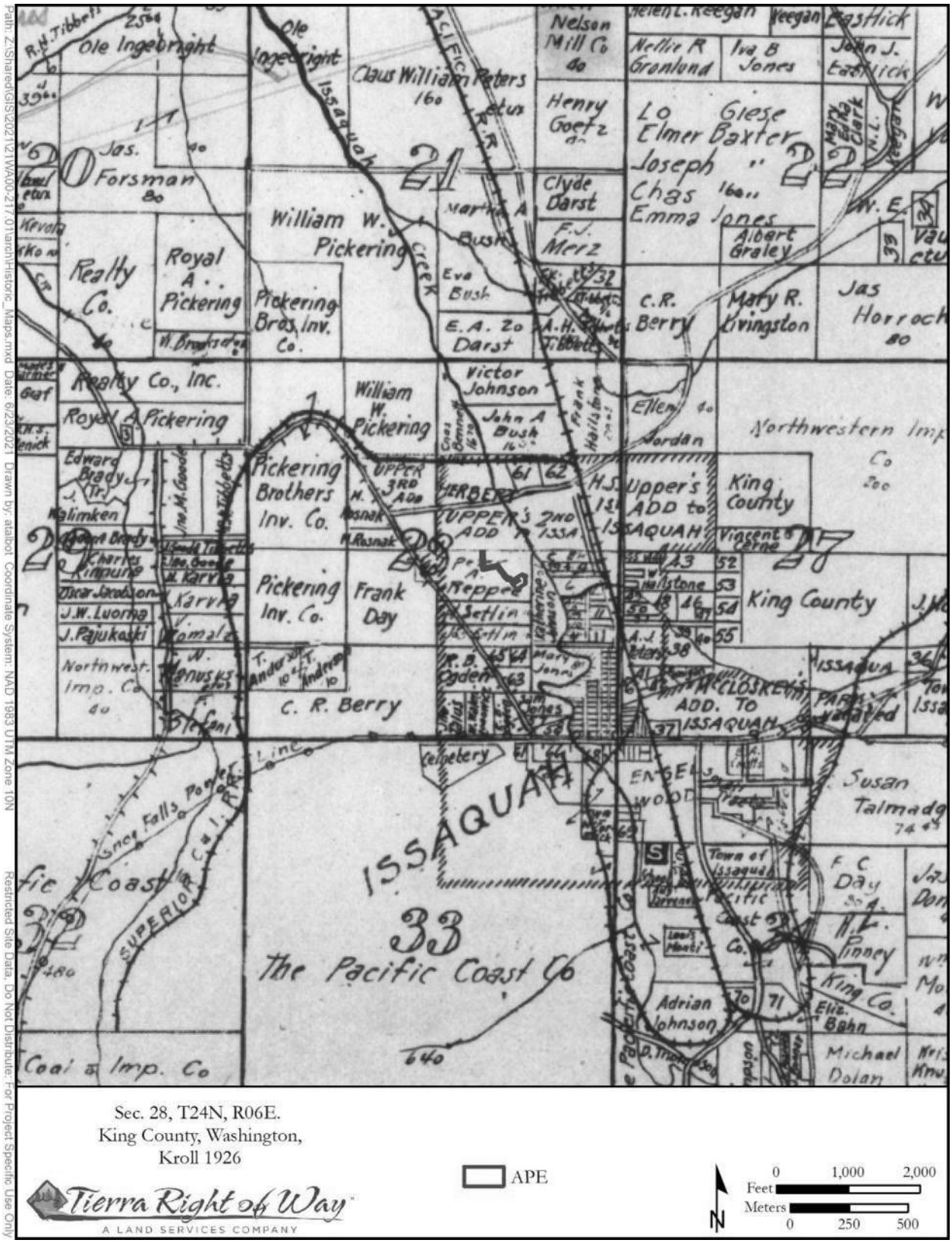


Figure 6. 1926 Kroll Map Company map showing Issaquah Creek and the APE with some modern roadways mapped and the Hillside Cemetery ("Cemetery") shown to the south.

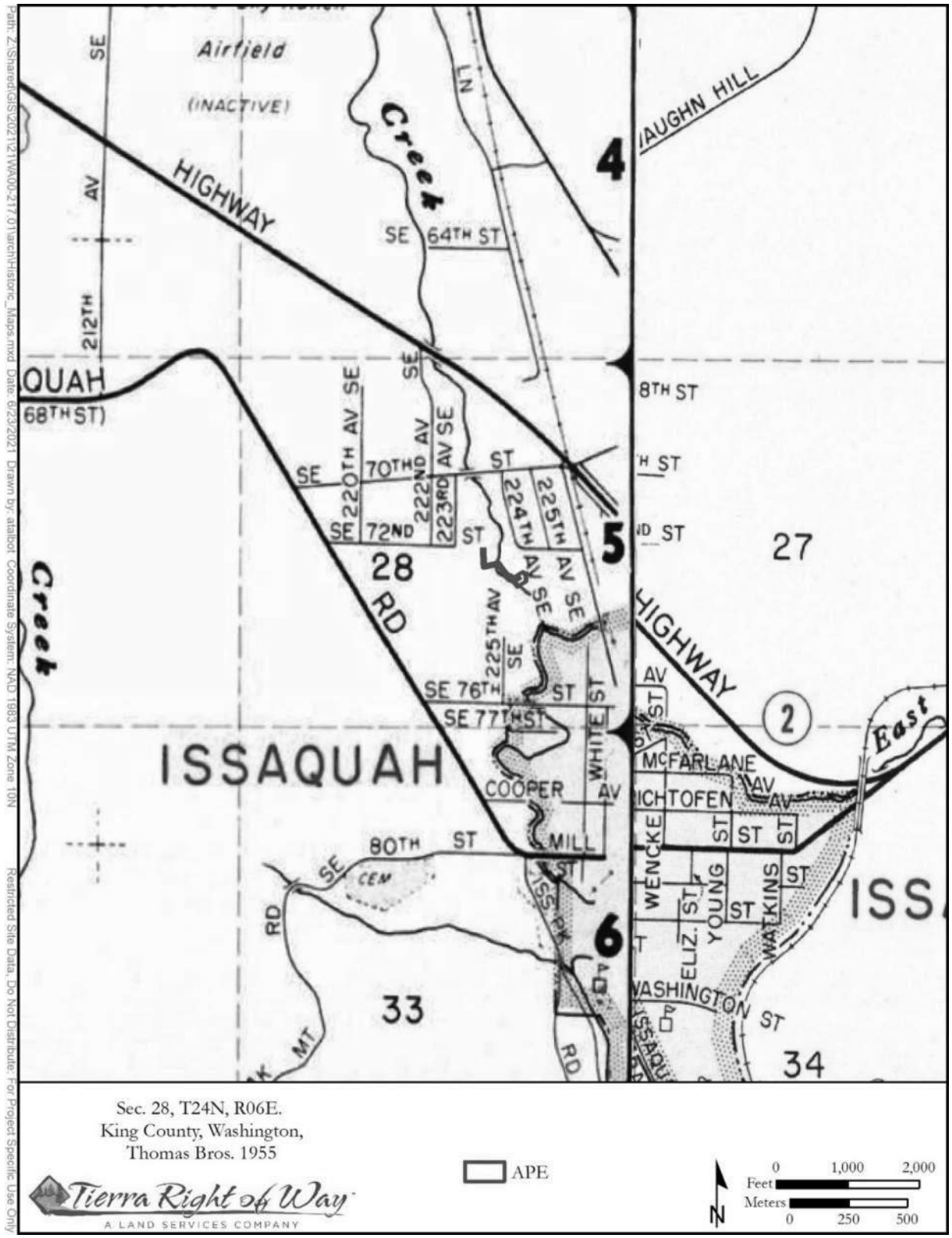


Figure 7. 1955 Thomas Brothers map showing the APE and Holly Street (labeled "SE 72nd Street"); the Hillside Cemetery is shown south of the APE ("CEM"); note discrepancies between position of mapped roadways, Issaquah Creek, and the APE.

Field Methods

In compliance with Washington State law (RCW 19.122), Tierra requested utility locates for the APE prior to the field investigation. The field investigation was designed to identify cultural resources that could be directly impacted by project activities; it included a pedestrian survey of the APE and placement of subsurface investigation shovel test probes (STPs) across the APE. The STPs were placed at approximately 20-m (66-foot) intervals in all accessible areas; placement was limited by pavement, stream bed, and temporary shoring of the cut bank in the form of a buried steel sheet wall reinforced with straw bales. The hand-excavated STPs measured 40 cm (15 inches) in diameter, narrowing to 8 cm (3 inches) in diameter when excavating with a hand auger. Spoils from each STP were screened through quarter-inch hardware mesh.

Observations regarding soil matrix characteristics were recorded on standard Tierra forms. Digital photographs were taken of the project setting and STPs, and photograph information, including direction of view and subject, was recorded. The STP locations were mapped with a handheld Trimble Geoexplorer 6000 Series GPS unit. Tierra's daily work record describing field conditions, procedures, and contacts was completed. Documents and photographs are on file at Tierra.

RESULTS OF FIELDWORK

Field investigation was conducted on June 29, 2021, by Tierra Field Director Adam Frugé, M.S., RPA. Field conditions were sunny and clear with no precipitation, with temperatures in the low to mid-80° F range.

Pedestrian Survey

Tierra conducted a pedestrian survey of the APE with a primary focus on the area of proposed ground disturbance for streambank restoration. The majority of the APE is covered in impervious surface (a paved parking lot) that will be used for staging. This staging area will not be subject to ground disturbance associated with this project (Photo 1). Use of the materials trucking route will also not involve subsurface excavation into native sediments. All the proposed ground disturbance will take place on the west edge of the Issaquah Creek streambed.

The west edge of the meander of Issaquah Creek within the ground disturbance APE includes a steep, overgrown cut bank approximately 1.4 m (4.5 feet) tall that slopes down to the creek (Photo 2). The parking area south of the ISD administration campus abuts the ground disturbance APE to the west. The eroding section of cut bank within the APE has been temporarily shored with a steel sheet wall reinforced by straw bales. The steel sheet wall measures approximately 7.6 m (25.0 feet) long, 0.9 m (3.0 feet) wide, and 1.5 m (5.0 feet) tall. This barrier prevented inspection of sediments exposed in the cut bank (Photo 3). Artificial log jams were observed anchored in the water.

Vegetation within the ground disturbance APE was observed to be Douglas fir, English ivy *(Hedera helix)*, dandelion (*Taraxacum* spp.), milk thistle (*Silybum* spp.), clover (*Trifolium* spp.), Himalayan blackberry *(Rubus armeniacus*), grasses, and sedges.



Photo 1. Overview of parking area to be used for staging adjacent to Issaquah Creek, view to east.



Photo 2. Overview of ground disturbance APE from southeast corner looking downstream, view to north.



Photo 3. Overview of APE showing temporary steel sheet and bale wall with anchored logs along west edge of Issaquah Creek, with ISD administrative campus in background, view to west.

Subsurface Investigation

The pedestrian survey determined a limited area for placement of STPs. Areas suitable for STP excavation were limited to a narrow alluvial terrace between the edge of the parking lot and Issaquah Creek as well as grassy edges within a few meters of the parking lot itself (Figure 8). Excavation of STPs in the middle section of the ground disturbance APE was prohibited by the temporary shoring wall. Tierra placed two STPs within the ground disturbance APE west of Issaquah Creek, on the terrace, 1.4–1.5 m (4.5–5.0 feet) above the water (Photo 4). An additional STP (STP 3) was placed along the southeast edge of the parking lot to supplement the data from the other two (Photo 5). All three STPs were excavated to depths ranging between 110 and 163 cmbs. A hand-powered auger was used to excavate each STP below depths of between 93 and 104 cmbs. All three STPs terminated in intact loose alluvial sediments that are consistent with Briscot sand to silt loam, indicative of floodplain deposits.

The STP results are summarized in Table 2. Below 20–40 cmbs, all three STPs contained grayish brown fine sandy silt that is loose to moderately compact, dry (though slightly damp with depth), and with generally low gravel content (Photo 6). STP 3 was terminated earlier than the other two STPs after encountering an oxidized layer of >50% small to medium-sized pebbles with the auger at 110 cmbs. A buried A-B horizon transition was observed around 100 cmbs in STP 3. No cultural materials were identified during the subsurface investigation.

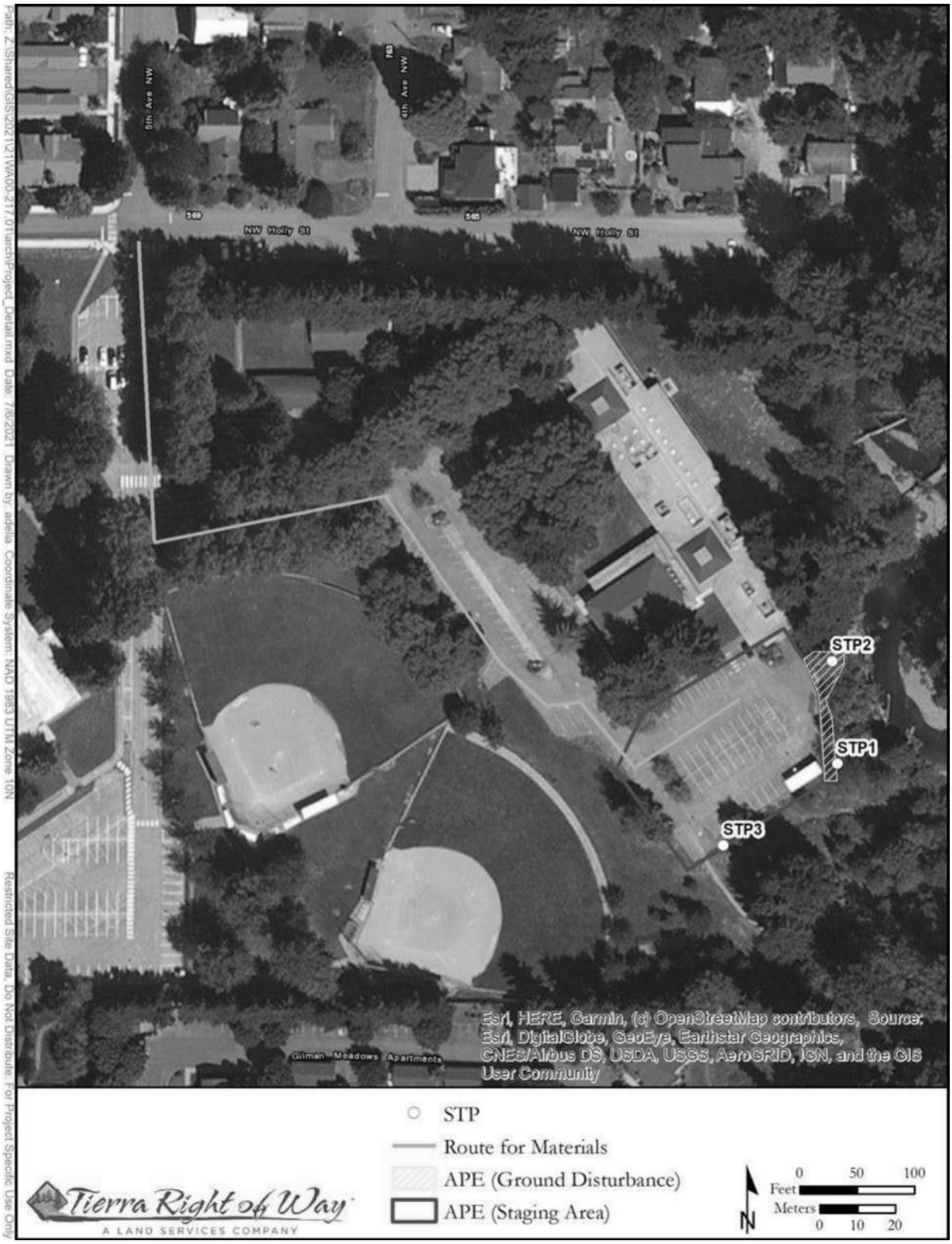


Figure 8. Aerial image showing APE and STP locations.



Photo 4. Overview of STP 2, view to south.



Photo 5. Overview of STP 3, view to east.

Table 2. Project STP Summaries

STP No.	UTM (E, N)	Depth (cmbs)	Stratigraphy	Notes	Cultural
1	572112, 5265198	163	0–40 cmbs: grayish brown silty sand, organics, rootlets, dry, forms medium-size weak angular peds, slight compaction, 15–30% poorly sorted rounded gravels, abrupt lower boundary, few Styrofoam and plastic pieces, disturbed A horizon 40–74 cmbs: grayish brown sandy silt, organics, some roots, sticky, damp, forms medium subround peds, moderate compaction, gravels decreasing with depth, gradual lower boundary, intact native B horizon alluvium 74–120 cmbs: light grayish brown fine silty sand, no organics, loose, dry, 5-15% poorly sorted subround gravels, gradual lower boundary, intact native B-C horizon transition 120–163 cmbs: light gray medium-grained silty sand, slight orange oxidation mottling, soft, dry, loose, no peds, 5-10% poorly sorted round-subround gravels, native C horizon alluvium	Intact floodplain deposits below 40 cm. Hand auger used below 104 cmbs Terminated after reaching end of auger	none
2	572111, 5265226	162	0–20 cmbs: grayish brown silty sand, dry, organics, many roots, 5–15% small poorly sorted rounded gravels, moderate compaction, forms weak rounded peds, gradual lower boundary, disturbed native A horizon 20–120 cmbs: grayish brown sandy silt, sticky, organics, many roots (root ball at 93 cmbs), 5-15% poorly sorted small, rounded gravels (decreasing with depth), clear lower boundary, intact native A-B horizon alluvium 120–162 cmbs: brownish gray silty clay, damp, sticky, slight orange oxidation mottling, <5% poorly sorted small, rounded gravels, intact C horizon	Intact floodplain deposits below 20 cm. Hand auger used below 93 cmbs Terminated after reaching end of auger	none

STP No.	UTM (E, N)	Depth (cmbs)	Stratigraphy	Notes	Cultural
3	572082, 5265177	110	0–28 cmbs: brown sandy silt, dry, organics, many roots, <5% small poorly sorted rounded gravels, asphalt pieces, abrupt lower boundary, disturbed/fill A horizon (grass topsoil) 28–48 cmbs: light gray fine sand, dry, loose, no organics, <5% poorly sorted small, rounded gravels, clear lower boundary, native alluvium C horizon, disturbed 48–100 cmbs: grayish orange-brown sandy silt, organics, damp, soft, compact, <5% poorly sorted small, rounded gravels, forms medium-size strong subrounded peds, heavy reddish oxidation staining, buried native A-B horizon transition 100–110 cmbs: reddish orange medium-grained sand, heavy reddish oxidation staining, no organics loose, damp, >50% poorly sorted round-subround gravels, intact native alluvium C horizon	Flood deposits below 28 cm. Hand auger used below 100 cm, Terminated after no recovery with auger due to gravels	none



Photo 6. Detail of STP 1 at 163 cmbs.

CONCLUSIONS AND RECOMMENDATIONS

Tierra's cultural resources inventory included background and archival research, pedestrian survey, and excavation of STPs in all accessible locations. Background research determined a very high probability for encountering precontact cultural resources. The results of the field investigation indicate that the potential for intact cultural deposits exists within the APE due to shallow previous disturbance and sediment type.

No cultural resources were identified during this investigation. Based on the high probability of the APE's location and the temporary shoring obscuring inspection of the cut bank, Tierra recommends that an archaeological monitor be present during the removal of the shoring and initial excavation into the cut bank. Subsequent ground-disturbing activities may proceed with under an Inadvertent Discovery Plan for archaeological resources and human remains (provided in Appendix A). If project plans change in a manner that would cause ground disturbance in areas not addressed in this report, additional cultural resource investigation is recommended.

REFERENCES

Ames, K. M., and H. D. G. Maschner
1999 *Peoples of the Northwest Coast: Their Archaeology and Prehistory*. Thames and Hudson, New York.

Anderson Map Company
1907 King County Atlas, Township 24 North. Range 6 East. W.M. Available at: http://www.historicmapworks.com/Map/US/1250024/Page+23+++Township+24+North++Range+6+East/King+County+1907/Washington/. Accessed June 23, 2021.

Arthur, Ed
2017 *Cultural Resources Assessment for the Proposed Issaquah Apartments, 955 7th Avenue Northwest, Issaquah, Washington*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Aubin, Steve, and Joann Murray
1980 *National Registration of Historic Places Nomination Form 45KI142*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Berger, Margaret
2015 *Cultural Resources Assessment for the Salmon Run Park Project, Issaquah, King County, WA*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Booth, D. B., T. J. Walsh, K. Goetz Troost, and S. Shimel
2012 *Geologic Map of the East Half of the Bellevue South 7.5' x 15' Quadrangle, Issaquah Area, King County, Washington.* U.S. Geological Survey Scientific Investigations Map 3211. U.S. Department of the Interior, Washington, D.C.

Boyd, Robert
1990 Demographic History 1774–1874. In *Northwest Coast*, edited by Wayne Suttles, pp. 135–148. Handbook of North American Indians, vol. 7, William C. Sturtevant, general editor. Smithsonian Institution Press, Washington, D.C.

Brush, Jeannie, and Jason Cooper
2004 *Letter to Tony Nguyen Regarding Cultural Resources Letter Report of the NW Juniper Street Bridge Replacement Project*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Carlson, Roy (editor)
2013 *Archaeology of Coastal British Columbia: Essays in Honour of Professor Philip M. Hobler*. Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

Croes, D. R., Scott Williams, Larry Ross, Mark Collard, Carolynn Dennler, and Barbara Vargo
2008 The Projectile Point Sequences in the Puget Sound Region. In *Projectile Point Sequences in Northwestern North America*, pp. 105–130. Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

DAHP (Washington Department of Archaeology and Historic Preservation)
2021a *Cemetery Report, 45KI868*. On file, Department of Archaeology and Historic Preservation, Olympia, Washington.

2021b *Washington State Heritage Barn Register Nomination Form 45KI793*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Davis, Loren, David Madsen, Lorena Becerra-Valdivia, Thomas Higham, David Sisson, Sarah Skinner, Daniel Stueber, Alexander Nyers, Amanda Keen-Zebert, Christina Neudorf, Melissa Cheyney, Masami Izuho, Fumie Iizuka, Samuel Burns Clinton Epps, Samuel Willis, and Ian Buvit
2019 Late Upper Paleolithic Occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago. *Science* 365(6456):891–897.

Dunbar-Ortiz, Roxanne
2014 *An Indigenous People's History of the United States*. Beacon Press, Boston.

Eells, M.
1985 The Indians of Puget Sound. *The Notebooks of Myron Eells*, edited by G. P. Castile. University of Washington Press, Seattle.

Erickson, Eric
1998 *National Register of Historic Places Nomination Form 45KI637*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Erlandson, John
2013 After Clovis-first Collapsed: Reimagining the Peopling of the Americas. In *Paleoamerican Odyssey*, edited by K. E. Graf, C. V. Ketron, and M. R. Waters, pp. 127–132. Texas A&M University Press, College Station.

2017 Coastlines, Marine Ecology, and Maritime Dispersals in Human History. In *Human Dispersal and Species Movement: From Prehistory to Present*, edited by N. Boivin, R. Crassard, and M. Petraglia, pp. 147–163. Cambridge University Press, Cambridge, United Kingdom.

2019 Assembling Santarosae. In *An Island through Time: A Deep History of California's Northern Channel Islands*, edited by T. J. Braje, J. M. Erlandson, and T. C. Rick. University of Colorado Press (in review),

Fagan, John
1999 *Cultural Resources Survey of Level 3's Proposed Fiber Optic Line from Seattle to Boise: Washington Segment, Non-Federal Lands*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Fedje, Daryl, Duncan McLaren, Thomas James, Quentin Mackie, Nicole Smith, John Southon, and Alexander Mackie
2018 A Revised Sea Level History for the Northern Strait of Georgia, British Columbia, Canada. *Quaternary Science Reviews* 192:300–316.

Franklin, J. F., and C. T. Dyrness
1988 *Natural Vegetation of Oregon and Washington. Reprinted.* General Technical Report PNW-8. Originally published 1973. USDA Forest Service, Portland, Oregon.

Gauvreau, Alisha, and Duncan McLaren
2016 Stratigraphy and Storytelling: Imbricating Indigenous Oral Narratives and Archaeology on the Northwest Coast of North America. *Hunter Gatherer Research* 2(3):303–325.

2017 Long-term Culture Landscape Development at EkTb-9. Poster presented to Hakai Institute, British Columbia, Canada.

Goetz, Linda Naoi
2006 *Cultural Resources Report, High Point Regional Trail Connector Project, King County, Issaquah, Washington.* On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Grier, Colin
2015 Past Perspectives and Recent Developments in the Archaeology of the Northwest Coast. *Cultura Antiqua* 67(3):45–56.

Haeberlin, H., and E. Gunther
1930 *Indians of Puget Sound.* University of Washington Press, Seattle.

Hadja, Yvonne
1990 Southwestern Coast Salish. In *Northwest Coast*, edited by Wayne Suttles, pp. 503–517. Handbook of North American Indians, vol. 7, William C. Sturtevant, general editor. Smithsonian Institution Press, Washington, D.C.

Haggan, Nigel, Nancy Turner, Jennifer Carpenter, James T. Jones, Quentin Mackie, and Charles Menzies
2006 12,000+ Years of Change: Linking Traditional and Modern Ecosystem Science in the Pacific Northwest. Working Paper Series #2006-02. Fisheries Centre, University of British Columbia, Vancouver, British Columbia, Canada.

History Link and Greg Lange
1998 Issaquah Beginnings: Squak Post Office Opens on May 20, 1870. Available at: https://historylink.org/File/422. Accessed June 25, 2021.

History Link and Margaret Riddle
2010 Donation Land Claim Act, Spur to American Settlement of Oregon Territory, Takes Effect on September 27, 1850. Available at: https://historylink.org/File/9501. Accessed June 14, 2021.

Hoyt, Bryan, Katherine F. Wilson, and Chris Lockwood
2012 *Issaquah Cemetery Transfer Site Improvements Project, Issaquah, King County, Washington, Cultural Resources Assessment*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Hudson, Lorelea, and Meg Nelson
1997 *Washington State Archaeological Site Record 45KI451*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Hutchings, Richard, and Scott Willams
2020 Salish Sea Islands Archaeology and Precontact History. *Journal of Northwest Anthropology* 54(1):22–61.

Issaquah History Museums
2021 General History. Available at: https://issaquahhistory.org/dig-deep/general-history/. accessed June 25, 2021.

Jodry, Margaret
2005 Envisioning Water Transport Technology in Late Pleistocene America. In *Paleoamerican Origins Beyond Clovis*, pp. 133–160. Center for the Study of the First Americans, College Station, Texas.

Johnson, Paula
2000 *Letter to Rob Whitlam Regarding Cultural Resources Assessment for the First Phase of the Proposed East Lake Sammamish Trail Project*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

2004 *Letter to Mike Lozano Regarding Monitoring of Interim East Lake Sammamish Trail Fence Augers*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Jones and Stokes
2005 *Cultural Resources Assessment Interstate 90 Undercrossing Project City of Issaquah, King County, Washington*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Kroll Map Company
1926 Kroll's Atlas of King County T. 24 N. R. 6 E. W.M. Available at: http://www.historicmapworks.com/Map/US/1610892/Plate+023+++T++24+N+++R++6+E+++Issaquah++Lake+Sammamish++Pine+Lake++High+Point++Beaver+Lake/King+County+1926/Washington/. Accessed June 23, 2021.

Kassa, Sonja, and Patrick McCutcheon
2016 The Archaeology of Obsidian Occurence in Stone Tool Manufacture and Use Along Two Reaches of the Northern Mid-Columbia River, Washington. *Journal of Northwest Anthropology* 50(1):79–102.

King County
2016 Stream Report Issaquah Creek-0631. Available at: https://green2.kingcounty.gov/streamsdata/watershedinfo.aspx?Locator=0631. Accessed June 24, 2021.

King County Assessor's Office
2021 Localscape Map Portal. Available at: https://localscape.property/#kingcountyassessor/My-Property. Accessed July 29, 2021.

Kopperl, Robert (editor)
2016 *Results of Data Recovery at the Bear Creek Site (45KI839), King County, Washington*, vol. I. On file, Washington Department of Archaeology and Historic Properties, Olympia.

Kopperl, Robert, Charles Hodges, Christian Miss, Johonna Shea, and Alecia Spooner
2016 *Archaeology of King County, Washington. A Context Statement for Native American Archaeological Resources.* SWCA Environmental Consultants, Inc., Seattle.

Larrison, Earl J.
1967 *Mammals of the Northwest: Washington, Oregon, Idaho, and British Columbia*. Seattle Audubon Society, Seattle.

Lawler, Andrew
2011 Pre-Clovis Mastodon Hunters Make a Point. *Science* 334:302.

LeTourneau, Phillipe D.
2009 *Cultural Resources Investigations, City of Issaquah's Trolley Track Rehabilitation, Issaquah, King County, Washington*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Lockwood, Chris
2012 *Washington State Archaeological Site Record 45KI1100*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Lothrop, Colin
2012 *Washington State Archaeological Site Record 45KI1172*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Mackie, Quentin, Daryl Fedje, and Duncan McLaren
2018 Archaeology and Sea Level Change on the British Columbia Coast. *Canadian Journal of Archaeology* 42:74–91.

McLaren, Duncan, Daryl Fedje, Murray Hay, Quentin Mackie, Ian Walker, Dan Shugar, Jordan Eamer, Olav Lian, and Christina Neudorf
2014 A Post-glacial Sea Level Hinge on the Central Pacific Coast of Canada. *Quaternary Science Reviews* 97:148–169.

McLaren, Duncan, Daryl Fedje, Angela Dyck, Quentin Mackie, Alisha Gauvreau, and Jenny Cohen
2018 Terminal Pleistocene Epoch Human Footprints from the Pacific Coast of Canada. Available at: https://doi.org/10.1371/journal.pone.0193522. Accessed July 2, 2021.

Matson, R. G., and G. C. Coupland
1995 *Prehistory of the Northwest Coast.* Academic Press, San Diego, California.

McKechnie, Iain
2015 Indigenous Oral History and Settlement Archaeology in Barkley Sound, Western Vancouver Island. *BC Studies* 187.

McMillan, Alan, and Denis St. Claire
2005 *Ts'ishaa: Archaeology and Ethnography of a Nuu-chah-nulth Origin Site in Barkley Sound.* Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

McMillan, Alan, and Iain McKechnie
2015 Investigating Indigenous Adaptations to British Columbia's Exposed Outer Coast. *BC Studies* 18(Autumn).

Meany, Edmond J.
1923 *Origin of Washington Geographical Names.* University of Washington Press, Seattle, Washington.

Meltzer, D. J., and R. C. Dunnell
1987 Fluted Point from the Pacific Northwest. *Current Research in the Pleistocene* 4:64–67.

Mierendorf, Robert
2004 *Archeology of the Little Beaver Watershed, North Cascades National Park Service Complex, Whatcom County, Washington.* Report submitted to the Skagit Environmental Endowment Commission. North Cascades National Park, National Park Service, Sedro-Wooley, Washington.

Mierendorf, Robert, and Kevin Baldwin
2015 Toolstone Geography in the Northern Cascades of Washington and Adjacent Areas. In *Toolstone Geography of the Pacific Northwest*, edited by Terry Ozbun and Ron Adams, pp. 76–106. Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

Miller, Marli B., and Darrel S. Cowan
2017 *Roadside Geology of Washington.* Second Edition. Missoula, Mountain Press Publishing Company.

Moss, Madonna, and Aubrey Cannon (editors)
2011 *The Archaeology of North Pacific Fisheries.* University of Alaska Press, Fairbanks.

Office of United States Surveyor General
1864 Township 24 North, Range 6 East Plat. Bureau of Land Management, General Land Office, Washington D.C. Available at: https://glorecords.blm.gov/details/survey/default.aspx?dm_id=320298&sid=zstimyjr.gzr&surveyDetailsTabIndex=1. Accessed June 22, 2021.

Nicholas, George, and Thomas Andrews (editors)
1997 *At a Crossroads: Archaeology and First Peoples in Canada.* Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

NRCS (Natural Resources Conservation Service)
2021 Web Soil Survey. Available at: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 24, 2021.

Patterson, Robert, and Michael Chidley
2016 *I-90–North Fork Issaquah Creek Fish Passage Project.* On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Prentiss, William C., and James C. Chatters
2003 The Evolution of Collector Systems on the Pacific Coast of Northwest North America, edited by J. Habu, J.M. Savelle, S. Koyama and H. Hongo. *Senri Ethnological Studies* 63:49–80.

Quinn, Colin
2006 Exotics, Exchange, and Elites—Exploring Mechanisms of Movement of Prestige Goods in the Interior Northwest. *Journal of Northwest Anthropology* 40(2):207–224.

Rosseau, Mike (editor)
2017 *Archaeology of the Lower Fraser River Region.* Archaeology Press, Department of Archaeology, Simon Fraser University, Burnaby, British Columbia, Canada.

Ruby, Robert H., John A. Brown, and Cary C. Collins
2010 *A Guide to the Indian Tribes of the Pacific Northwest.* University of Oklahoma, Norman.

Shantry, Kate
2014a *Washington State Archaeological Site Record 45KI1198*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

2014b *Washington State Archaeological Site Record 45KI1199*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Shantry, Kate, Eileen Heideman, and Brandy Rinck
2014 *Cultural Resources Assessment for the Gilman Square Property Development, Issaquah, Washington.* On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Shong, Michael, and Christian J. Miss
2014 *Cultural Resources Assessment for the NW Dogwood Street Bridge Replacement Project, King County, Washington*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Shulting, Rick, and Brian Hayden
1997 The Plateau Interaction Sphere and Late Prehistoric Cultural Complexity. *American Antiquity* 62(1):51–85.

Smith, M. W.
1940 *The Puyallup-Nisqually*. New York, Columbia University Press.

Spanger, Greg
1990 *National Register of Historic Places Registration Form 45KI595*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Stegner, Michelle, and Michael Kelly
2009 *USPS Issaquah Cultural Resources Survey, King County, Washington*. On file, Washington Department of Archaeology and Historic Preservation, Olympia.

Stewart, Hilary
1977 *Indian Fishing: Early Methods on the Northwest Coast*. University of Washington Press, Seattle.

Suttles, Wayne, and Barbara Lane
1990 Southern Coast Salish. In *Northwest Coast*, edited by Wayne Suttles, pp. 485–502. Handbook of North American Indians, vol. 7, William C. Sturtevant, general editor. Smithsonian Institution Press, Washington, D.C.

Thomas Brothers Maps
1955 Thomas Bros. Popular Atlas of King County, Map 29. Available at: http://www.historicmapworks.com/Map/US/1601914/Page+029/King+County+1955/Washington/. Accessed June 23, 2021.

U.S. Census Bureau
2021 Quick Facts: Issaquah City, Washington. Available at: https://www.census.gov/quickfacts/issaquahcitywashington. Accessed July 12, 2021.

Waters, Michael R., Thomas W. Stafford Jr., H. Gregory McDonald, Carl Gustafson, Morten Rasmussen, Enrico Cappellini, Jesper V. Olsen, Damian Szklarczyk, Lars Juhl Jensen, M. Thomas, P. Gilbert, and Eske Willerslev
2011 Pre-Clovis Mastodon Hunting 13,800 Years Ago at the Manis Site, Washington. *Science* 334(6054):351–353.

Waterman, Thomas T.
2001 *Puget Sound Geography*. Lushootseed Press, Federal Way, Washington.

Wilson, Katherine F., Bryan Hoyt, and Chris Lockwood
2012 *Confluence Park Project, Issaquah, Archaeological Resources Assessment.* On file, Washington Department of Archaeology and Historic Preservation, Olympia.

APPENDIX A. INADVERTENT DISCOVERY PLAN FOR CULTURAL RESOURCES AND HUMAN REMAINS

The project has been defined as a Federal undertaking and must comply with Section 106 of the National Historic Preservation Act (NHPA). The U.S. Army Corps of Engineers (USACE) is the lead agency for Section 106 compliance and consultation.

This plan has been prepared to outline procedures for dealing with inadvertent discoveries of archaeological resources and/or human remains during project construction. It is intended to comply with applicable laws and regulations, describe the procedures the Issaquah School District (ISD) are to follow in the event of inadvertent archaeological discoveries, and provide direction and guidance to project personnel should an inadvertent discovery occur when no archaeologists are on the construction site.

The ISD will ensure that the provisions of this plan are carried out. During construction activities, the ISD's project manager will have overall authority to initiate action for archaeological resource or human remains discoveries and will be responsible for assuring communication of any such events to the appropriate authorities, as outlined below.

Procedures for Inadvertent Discoveries of Archaeological Resources

If any member of the construction team believes that they have found an archaeological resource, all work at and adjacent to the discovery will stop. A U.S. Secretary of Interior (SOI)–qualified archaeologist must be contacted to verify the nature of the find. The construction supervisor will take appropriate steps to protect the discovery site. A buffer area large enough to protect the find from damage (15 m [50 feet]) will be established around the discovery site. Work may continue in other portions of the work site.

An archaeological resource discovery could consist of, for example:

- an area of charcoal or charcoal-stained soil;
- an area of layered shell (midden) deposits;
- an arrowhead, stone tool, or stone chips;
- a cluster of bones or burned rocks in association with stone tools or chips;
- a cluster of tin cans, ceramic or porcelain ware, or bottles older than 50 years; or
- evidence of a sawn-wood structure or structure foundations older than 50 years.

Once the discovery has been confirmed to be an archaeological resource, the archaeologist will be responsible for notifying the USACE within 24 hours. As the lead agency, the USACE will carry out consultation with the Washington Department of Archaeology and Historic Preservation (DAHP) and the interested Tribes as appropriate. An archaeologist will be contracted to document and photo the discovery and record it on a State of Washington Archaeological Site Inventory Form. The archaeologist will also make a recommendation of national register eligibility. No further disturbance will occur unless directed by USACE to do so. Collection of artifacts will be coordinated by the USACE with the DAHP and the Tribes.

If human skeletal remains are encountered, the procedure described below will be followed.

Inadvertent Discovery Plan for Human Remains

Any human remains, suspected human remains, funerary objects, or objects of cultural patrimony that are discovered during the construction of the project are to be treated with dignity and respect. If

human remains are discovered during ground-disturbing activities, construction should be immediately stopped. All construction activity must be halted in a buffer area with a 15-m (50-foot) radius surrounding the remains to prevent any further disturbance. The USACE should be notified immediately. A professional archaeologist may also be consulted to confirm the identity of the find. Alternatively, if there is a question as to whether the bones are human or animal, the DAHP physical anthropologist, Guy Tasa ([360] 586-3534), is available to view photographs and make a determination.

If the find is determined to be human skeletal material, it must be reported to the King County medical examiner and local law enforcement (contact numbers below). The medical examiner will assume custody over the human remains and determine if they are archaeological or forensic. If they are determined to be archaeological, the medical examiner will report that finding to the USACE. The USACE, acting in its role as lead agency, will inform the DAHP and determine the custody of those remains. The DAHP physical anthropologist will be called upon to determine if the remains are Native American. The USACE will carry out consultation with any affected Tribes and descendants for the final reburial and disposition of the remains.

For more information, visit: https://dahp.wa.gov/archaeology/human-remains/recommended-inadvertent-human-remains-discovery-language.

U.S. Army Corps of Engineers (USACE)
Lance Lundquist, Archaeologist
Phone: (206) 764-6909
Email: lance.a.lundquist@usace.army.mil

City of Issaquah
Janelle Walker, Capital Projects
Phone: (425) 306-4022
Email: WalkerJ2@issaquah.wednet.edu

Issaquah Police Department
Chief Scott Behrbaum
Phone: (425) 837-3200
Email: ScottB@issaquahwa.gov

King County Sheriff's Office
Sheriff Mitzi Johanknect
Phone: (206) 296-3311
Email sheriff@ kingcounty.gov

King County Medical Examiner
Richard Harruff, MD, Ph.D.
Phone: (206) 731-3232

King County Historic Preservation Program
Phil Letourneau, Archaeologist
Phone: (206) 477-4529
Email: philippe.letourneau@kingcounty.gov

Todd Scott, Preservation Architect
Phone: (206) 477-4545
Email: todd.scott@kingcounty.gov

Washington State Department of Archaeology and Historic Preservation (DAHP)
Rob Whitlam, State Archaeologist
Phone: (360) 586-3080 (office)
Email: rob.whitlam@dahp.wa.gov

State Physical Anthropologist
Guy Tasa
Phone: (360) 586-3534 (office)
Email: guy.tasa@dahp.wa.gov

Archaeological Consultant (Tierra)
Carol Schultze, Archaeologist
Phone: (206) 363-1556
Email: cschultze@tierra-row.com

Adam Frugé, Cultural Resources Field Director
Phone: (425) 761-9013
Email: afruge@tierra-row.com

Native American Tribes

Duwamish Tribe
Cecile Hansen, Chairwoman
4705 W. Marginal Way S.W.
Seattle, WA 98106-1514
Phone: (206) 431-1582
Email: cecile@duwamishtribe.org

Muckleshoot Indian Tribe
Laura Murphy, Cultural Resources
39015 172nd Avenue SE
Auburn, WA 98092
Phone: (253) 876-3272
Email: laura.murphy@muckleshoot.nsn.us

Samish Indian Nation
Jackie Ferry, THPO
2918 Commercial Ave.
Anacortes, WA 98221
Phone: (360) 293-6404 ext. 126
Email: jferry@samishtribe.nsn.us

Snoqualmie Indian Tribe
Steven Mullen-Moses, Cultural Resources Director
P.O. Box 969, 8130 Railroad Avenue, Suite 103
Snoqualmie, WA 98065
Phone: (425) 495-6097
Email: steve@snoqualmietribe.us

Squaxin Island Tribe
Rhonda Foster, THPO
200 SE Billy Frank Jr. Way
Shelton, WA 98584-9200
Phone: (360) 432-3850

Suquamish Tribe
Dennis Lewarch, THPO
P.O. Box 498
Suquamish, WA 98392-0498
Phone: (360) 394-8529
Email: dlewarch@Suquamish.nsn.us

Tulalip Tribes
Richard Young, Cultural Resources
6410 23rd Avenue NE
Tulalip, WA 98271
Phone: (360) 716-2652 Cell: (425) 239-0182
Email: ryoung@tulaliptribes-nsn.gov

FORM OF BID:

TO: BOARD OF DIRECTORS
ISSAQUAH SCHOOL DISTRICT 411
5150 220th Ave SE
ISSAQUAH, WASHINGTON 98029

ISSAQUAH SCHOOL DISTRICT 411

Holly Street Campus – Creek Bank Repair

Federal Grant

To Be Submitted No Later Than: **April 13, 2022 1:00 PM**

Pursuant to and in compliance with the Advertisement for Bids and the Instructions to Bidders, and to other documents relating thereto, the Undersigned hereby proposes to furnish all labor and materials and to perform all Work for the **HOLLY STREET CAMPUS – CREEK BANK REPAIR PROJECT**, for Issaquah School District. 411, as requested by and in strict accordance with the Contract Documents, including without limitation any and all Specifications, Schedules and Drawings, and with all addenda prepared by Cornerstone Architectural Group, Architects, Kenmore, Washington, for the following sum:

A. BASE BID: For the Base Bid as defined in the Contract Documents, the sum of:

_____

_____

_____DOLLARS ($_____)

TRENCH SAFETY SYSTEMS: Included within this Base Bid is the sum of

$_____

to cover all costs for adequate trench safety systems (in accordance with RCW Chapters 39.04 and 49.17 and WAC 296-155-650) if the work requires trenching exceeding a depth of four feet. Bidder should include a lump sum amount in the blank immediately above, even if the value is zero dollars. If no amount is entered, the Owner will presume that the Bidder represents that there are no Trench Excavation Safety costs for this project.

B. SUBCONTRACTOR LIST: Contractor must submit a list of subcontractor names for each of the types of work listed on the Form of Bid and with whom the Contractor will contract for the categories of work listed if awarded the Base Bid, or list itself for the listed types of work. On projects where the Owner's estimate of the cost of the work is one million dollars or more, failure to list subcontractors properly renders the bid void.

Accordingly, the Undersigned hereby submits the following list:

Type of Base Bid Work:	Name of Firm
1. Civil/Earthwork	_____
2. _____	_____

C. SUBCONTRACTORS PERFORMANCE BOND AND BONDABILITY: By submitting this bid contractor is confirming that subcontractors are bondable in accordance with section 00 20 00 – Instructions to bidders item 1.16 and as required by individual specification sections.

D . EXPECTED COST OF ACHIEVING APPRENTICESHIP UTILIZATION GOALS: Included within the above Bid amount of $_____ for the costs to be incurred associated with achieving the apprenticeship goals stated in the Specification Section 00 72 00 (paragraph 3.3.5, item 7) - General Conditions.

E. STATE & LOCAL SALES TAX: The above submitted bid does not include State or Local Sales Tax, but does include all the other applicable taxes.

F. OVERHEAD & PROFIT: The Undersigned agrees that the submitted bid(s) includes all of Contractor's overhead and profit or fees.

G. TIME OF COMPLETION: The Undersigned hereby agrees to commence work under this Contract on or before a date specified to be written in a "Notice to Proceed," to substantially and finally complete the Work within the time specified in the Contract Documents.

H TIME IS OF THE ESSENCE: Time is of the essence for all work to be performed under this Contract. Contractors shall note that the Work must be completed within the time limit stated in the Contract Documents.

I. LIQUIDATED DAMAGES: Failure to timely complete this contract will result in liquidated damages pursuant to the Contract Documents.

J. CONTRACT & BOND(S): If written Notice of Award is issued to the Undersigned within thirty (30) days after the date of opening of the bids, or at any time thereafter prior to the bid being withdrawn by the Undersigned, the Undersigned agrees to execute and deliver a contract in the form required by the Contract Documents and in accordance with the bid as accepted, with partial payments provided for in accordance with the Contract Documents and the laws of the State of Washington relating to such payments for Public Works (see Chapter 60.28 RCW); and to provide the Performance and Payment Bond and required insurance documents as specified in the Contract Documents with good and sufficient insurers, surety or sureties acceptable to the Owner, within ten (10) calendar days after issuance of the Notice of Award, exclusive of the day of notice.

K. BID GUARANTEE: The Undersigned further agrees that the postal money order, certified or bank cashier's check, or surety bond (collectively "Bid Guarantee") in the amount of five percent (5%) of the base bid amount, payable to the Owner, accompanying this proposal, is left in escrow with the Owner; that its amount is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Contract and Bond, and that if the Undersigned defaults in executing and delivering that Contract and in providing the Bond and insurance documents within ten (10) calendar days of issuance of Notice of Award, then the Bid Guarantee shall be forfeited to the Owner; but if this bid is not conditionally accepted by the Owner within thirty (30) days of the time set for the opening of bids, or if the Undersigned executes and delivers said Contract, insurance documents and Bond, the Bid Guarantee shall be returned to the Undersigned.

L. ADDENDA: Receipt of addenda numbered ____ through _____ is hereby acknowledged.

M. **BYRD ANTI-LOBBYING AMENDMENT, 31 U.S.C. § 1352 (as amended):** Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Attached at the end of Bid Form.

N. BID PROTESTS: If a bidder submits a written protest to the Owner within two (2) full business days following bid opening, the Owner shall not execute a contract with any other bidder without first providing at least two (2) full business days' written notice to the protesting bidder of the Owner's intent to execute a contract for the Project.

O. CERTIFICATION ON BEHALF OF BIDDER: By signing below, I certify under penalty of perjury under the laws of the State of Washington and verify that it is true and correct that Bidder is in compliance with the bidder responsibility criteria stated in the Instructions to Bidders, including without limitation that Bidder has not been determined by final and binding citation and notice of assessment issued by the Department of Labor and Industries or through civil judgement entered by court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, and provisions of Chapter 49.46, 49.48 or 49.52 RCW within the three year period preceding the date of this bid solicitation.

_____
(Legal name of person, firm or corporation submitting bid)

Street Address	Signed by
City, State, Zip	Title
Telephone	Contractor's License No.

HOLLY STREET CAMPUS – CREEK BANK RPAIR
BYRD ANTI-LOBBYING AMENDMENT, 31 U.S.C & 1352 (as amended)
Required Federal Certification.

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any U. S. Department of Homeland Security Headquarters 500 C St SW Washington, D.C. 20042 Page 20 of 25 www.fema.gov/procurement-disaster-assistance-team To Table of Contents Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure. The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C.Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____
Signature of Contractor's Authorized Official

_____
Name and Title of Contractor's Authorized Official

_____
Date

END OF FORM OF BID

PAYMENT BOND

CONTRACTOR (Name, Address and Phone):
Contract Date):

BOND Date (Not earlier than Construction
Amount:
Modifications to this Bond:

OWNER:
Issaquah School District School #411
Administration Building
5150 220th AVE SE
Issaquah, WA 98029

SURETY (Name and Principal Place of Business)

CONSTRUCTION CONTRACT
Date:
Amount:
Description (Name and Location):

This Bond is executed pursuant to Chapter 39.08 RCW provided, that the Surety and Principal agree that with respect to the notice required by RCW 39.08.030, subcontractors and suppliers of the Principal shall not be required to give the notice in order to be paid for sums which otherwise become due and owing during the course of performance of the Contract but, such subcontractors and suppliers shall be required to give the notice by the deadline provided in the statute in order to have any claim against this bond after the deadline or to file suit under RCW 39.08.065, and after the deadline in RCW 39.08.030 all claims for which notice has not been given thereunder shall be barred.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well and truly pay all laborers, mechanics, subcontractors, materialmen and all persons who shall supply said Principal or said subcontractor with provisions and supplies for the carrying on of such work during the original term of said Contract and any extension thereof that may be granted by the Issaquah School District No. 411, with or without notice to the Surety, and during the life of any guaranty required under the Contract and pay all laborers, mechanics, subcontractors, materialmen and all persons who supply said Principal or said subcontractors with provisions and supplies for the carrying on of modifications of said Contract which may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and effect.

Dated this_____day of_____, 20___

CONTRACTOR AS PRINCIPAL:

Signature: _____
Printed Name:_____
Title:_____

SURETY:

Signature:_____
Printed Name:_____
Title:_____

By_____
(Attach Power of Attorney)

BID SECURITY FORM

KNOW ALL MEN BY THESE PRESENTS: That we,

_____

_____ as Principal and _____, a corporation duly organized and existing under the laws of the State of _____, and legally doing business in the State of Washington, as surety are held and firmly bound and obligated unto the Issaquah School District No. 411, King County and State of Washington, hereinafter called Owner, in the full and just sum of

_____

DOLLARS ($_____), lawful money of the United States of America, which is five percent of the base bid amount, for the payment of which sum of money well and truly to be made, the said Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, Sealed and Dated this _____ day of _____ A.D., 20___.

THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Owner shall make any award to the Principal for:
GENERAL CONTRACT: HOLLY STREET CAMPUS – CREEK BANK REPAIR, ISSAQUAH SCHOOL DISTRICT NO. 411, ISSAQUAH, WASHINGTON, according to the terms of the proposal or bid made by the Principal therefore, and the Principal shall duly make and enter into a contract with the Owner in the faithful performance thereof, which Surety or Sureties approved by the Owner; or if the Principal shall, in case of failure so to do, pay to the Owner damages which the Owner may suffer by reason of such failure not exceeding the amount of this bond, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect. IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed._____

_____
Principal

_____
By

_____
Surety

_____
Attorney in Fact

CONTRACTING FORMS

PART 1 - GENERAL

1.1 GENERAL

A. The following forms are required for portions of this project and are listed in this section to illustrate what information is required by the Contractor. This compilation is not all-inclusive. If other required forms of this project are not familiar to the Contractor he/she may receive copies or direction on where to obtain from the office of the Architect.

B. American Institute of Architects (AIA) forms referenced but not included in the Project Manual. The most current AIA document date is in parenthesis ():
Contractor's Qualification Statement - AIA A305 (1986)
Contractor's Affidavit of Payment of Debts and Claims - AIA G706 (1994)
Contractor's Affidavit of Release of Liens - AIA G706A (1994)
Consent of Surety to Final Payment - AIA G707 (1994)
Change Order Form - AIA G701 (2017)
Work Changes Proposal Request - AIA G709 (2018)
Architects Supplemental Instructions - AIA G710 (2017)
Construction Change Directive - AIA G713 (2017)
Certificate of Substantial Completion - AIA G704 (2017)
Application and Certificate for Payment - AIA G702 (1992)
AIA G702 Continuation Page - AIA G703 (1992)

C. AVAILABILITY
1. AIA forms may be obtained from the AIA Seattle, 1911 First Avenue, Seattle, WA 98101, (206) 448-4938, Fax (206) 448-2562, E-mail: aia@aiaseattle.org

D. Forms referenced and included in the Project Manual:
1. Performance Bond – Document SECTION 00 61 33
2. Payment Bond – Document SECTION 00 41 01
3. Request for Interpretation Form (RFI) – Document SECTION 00 63 13
4. General Conditions (Modified AIA A-201) – Document SECTION 00 72 00
5. Form of Agreement (Modified AIA A-101) – Document SECTION 00 50 00
   5a. Appendix A – Federal Grant Requirements
   5b. Appendix A - Byrd Anti-Lobbying Amendment Certification
6. Hazardous Materials Construction Inventory – Reference the City of Issaquah's website for this document.

END OF SECTION 00 50 00

APPENDIX A: FEDERAL GRANT REQUIREMENTS

A. Equal Employment Opportunity Clause. The Contractor shall comply with the requirements of 41 CFR Ch. 60-1.4(b), which are incorporated by reference into this Contract.

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

   Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled,

terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:
Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

B. Davis-Bacon. Contractor shall comply with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR, Part 5), the requirements of which are incorporated by reference into this Contract. The Contractor shall (1) pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor; and (2) pay wages not less often than once a week.

C. Copeland "Anti-Kickback" Act.

1. Contractor. The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this Contract.
2. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the federal agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
3. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

D. Contract Work Hours and Safety Standards (Applicable to contracts in excess of $100,000). Contractor shall comply with the requirements of 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation.

E. Clean Air Act / Federal Water Pollution Control Act (Applicable to contracts in excess of $100,000). Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387), and will report violations to FEMA and the Regional Office of the Environmental Protection Agency (EPA).

F. Suspension and Debarment. This Contract is subject to the debarment and suspension regulations implementing Executive Order 12549, Debarment and Suspension (1986) and Executive Order 12689, Debarment and Suspension (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (Non-procurement Debarment and Suspension). By entering into this Contract, The Contractor certifies as follows:

1. The Contractor, its principals nor any of its subcontractors are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from entering into this Contract by any federal department or agency.

2. The Contractor shall comply with 2 C.F.R. Part 180, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

G. Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended). Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency. See Certification form attached at end of this section.

H. Recovered/Recycled Materials (Applicable to contracts in excess of $10,000). The Contractor shall make maximum practicable use of recovered/recycled materials consistent with the requirements of 2 C.F.R. § 200.322.

I. OMWBE Participation, 2 C.F.R Subtitle A, Part 2, Subpart D § 200.321 The Contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:

a. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
b. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

HOLLY STREET CAMPUS – CREEK BANK RPAIR
BYRD ANTI-LOBBYING AMENDMENT, 31 U.S.C & 1352 (as amended)
Required Federal Certification.

Each Contractor, Sub-Contractor and Sub-tiered Contractors shall sign this form and provide a copy to the Issaquah School District for Federal documentation.

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any U. S. Department of Homeland Security Headquarters 500 C St SW Washington, D.C. 20042 Page 20 of 25 www.fema.gov/procurement-disaster-assistance-team To Table of Contents Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.
The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C.Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____
Signature of Contractor's Authorized Official

_____
Name and Title of Contractor's Authorized Official

_____
Date

AGREEMENT BETWEEN OWNER AND CONTRACTOR
ISSAQUAH SCHOOL DISTRICT NO. 411
Revised AIA form A101 (1997 and 2007)

FEDERAL GRANT PROJECT
Project utilizing federal funds are subject to the requirements of 2 C.F.R. § 200.317 – 326 (the "Federal Grant Requirements") in the performance of its Work under this Contract, see section 3.3.5 (19).

AGREEMENT made as of the_____day of_____in the Year _____

BETWEEN the Owner: (*Name, address, facsimile and other information*)

Issaquah School District #411
5150 220th AVE SE
Issaquah, Washington 98029

and the Contractor: (*Name, address, facsimile and other information*)

_____
Company:
Address:
City, State:

The Project is: *(Name and location)*
Issaquah SD, Holly Street Campus – Creek Bank Repair
565 NW Holly Street
Issaquah, WA 98027

The Architect is:
Cornerstone Architectural Group
6161 NE 175th Street, Suite 101
Kenmore, Washington 98028

The Civil Engineer is:
Latitude 48
600 1st Ave
Seattle, WA 98104

The Geotechnical Engineer is:
Nelson Geotechnical Assoc
17311 135th Ave NE, ste A500
Woodinville, WA 98072

The Ecologist is:
Wetland Resources, Inc
9505 19th Ave SE, ste 106
Everett, WA 98208

SAMPLE

The Owner and Contractor agree as follows.

ARTICLE 1
THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and/or other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement. These form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 8.

ARTICLE 2
THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3
DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 The date of commencement of the Work shall be fixed in a notice to proceed issued by the Owner.

3.2 The Contract Time shall be measured from the date of commencement.

3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than:

Holly Street Campus – Creek Bank Repair, Issaquah School District #411, MONTH_____ DAY____, YEAR_____, subject to adjustments of the Contract Time as provide in the contract Documents. See Subparagraph 8.2.3 of the General Conditions concerning liquidated damages.

ARTICLE 4
CONTRACT
SUM

4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be $ _____, subject to additions and deductions as provided in the Contract Documents.

5.1 **Progress Payments**

5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor in the form required by the Contract Documents and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents.

5.1.2 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

5.2 **Final Payment**

5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor in accordance with the Contract Documents.

ARTICLE 6
TERMINATION OR SUSPENSION

6.1 The Contract may be terminated or suspended as provided in Article 14 of the General Conditions.

ARTICLE 7
MISCELLANEOUS PROVISIONS

7.1 The Owner's representative is: Janelle Walker, Construction Coordinator, (425) 306-4022 and Tom Mullins, Director of Capital Projects.

7.2 The Contractor's representative is: _____

_____

7.3 The Contractor's Project Manager is: _____

_____

7.4 Neither the Owner's representative, the Contractor's representative, nor the Project Manager shall be changed without ten days' written notice to the other party.

ARTICLE 8
ENUMERATION OF CONTRACT DOCUMENTS

8.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

8.1.1 This Agreement.

8.1.1. a Appendix A – Federal Grant Requirements.
8.1.1. b Appendix A - Byrd Anti-Lobbying Amendment Certification

8.1.2 The General Conditions of the Contract of Construction.

8.1.3 The Supplementary and other Conditions of the Contract are those contained in the Project Manual dated are as follows:

Document	Title	Pages

8.1.4 The Specifications are those contained in the Project Manual and are as follows: (*Either list the Specifications here or refer to an exhibit attached to this Agreement.*)

Section	Title	Pages

8.1.5 The Drawings are as follows and are dated: Issaquah SD, Holly Street Campus – Creek Bank Repair, Issaquah School District #411 – **February 18, 2022**, unless a different date is shown below: (*Either list the Drawings here or refer to an exhibit attached to this Agreement.*

Number	Title	Date

8.1.6 The Addenda, if any are as follows:

This Agreement is entered into as of the day and year first written above and is executed in at least three original copies, of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Jake Kuper *Chief of Finance and Operations* *Issaquah School District*	*(Printed name and title)*

PERFORMANCE BOND

CONTRACTOR (Name, Address and Phone):

BOND Date (Not earlier than Construction Contract Date):

Amount:
Modifications to this Bond:

OWNER:
Issaquah School District #411
Administration Building
5150 220th AVE SE
Issaquah, WA 98029

SURETY (Name and Principal Place of Business)

CONSTRUCTION CONTRACT
Date:
Amount:
Description (Name and Location):

This Bond is executed pursuant to Chapter 39.08 RCW.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said Contract and any extension thereof that may be granted by the Issaquah School District, with or without notice to the Surety, and during the life of any guaranty required under the Contract and shall well and truly perform and fulfill the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract, notice of which modifications to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and effect.

Dated this_____day of_____, 20___

CONTRACTOR AS PRINCIPAL:

Signature: _____
Printed Name_____
Title:_____

SURETY:

Signature:_____
Printed Name:_____
Title:_____

By_____
(Attach Power of Attorney)

END OF SECTION 00 61 13

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

FEDERAL GRANT PROJECT

Project utilizing federal funds are subject to the requirements of 2 C.F.R. § 200.317 – 326 (the "Federal Grant Requirements") in the performance of its Work under this Contract, see section 3.3.5 (19).

ARTICLE 1
GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, addenda issued prior to execution of the Contract, other documents listed in the Agreement and modifications issued after execution of the Contract. A modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect subject to the requirements of Paragraph 7.4. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, meeting minutes, the Contractor's bid or portions of addenda relating to bidding requirements).

1.1.2. THE CONTRACT

The Contract Documents form this Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect and Contractor, (2) between the Owner and a Subcontractor regardless of tier or (3) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, transportation, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.7 THE PROJECT MANUAL

The Project Manual is the volume usually assembled for the Work which may include the bidding requirements, sample forms, General Conditions of the Contract and Specifications.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 The Contract Documents shall be executed by the Owner and Contractor by signing the Agreement.

.1 By executing this Contract, Contractor represents and acknowledges that it has carefully examined the Contract Documents and the Project site and that it has satisfied itself as to, and Contractor does hereby assume full and sole responsibility for: the nature, location, character, quality and quantity of the Work; the labor, materials, equipment, goods, supplies, work, services and other items to be furnished, and all other requirements of this Contract, as well as the conditions and other matters that may be encountered at the Project site or affect the performance of the Work or the cost or difficulty thereof, including but not limited to those conditions and matters affecting: transportation, access, disposal, handling and storage of materials, equipment and other items; availability and quality of labor, water, electric power, utilities and fire protection; availability and condition of streets; climatic conditions and seasons; physical conditions at the Project site and surrounding locality; other construction work planned for the area and required coordination therewith; potentially applicable governmental laws, requirements and permits; potential water and air pollution conditions; topography and ground surface conditions; and equipment and facilities needed preliminary to and at all times during the performance of the Work.

.2 Claims for additional compensation or extensions of time because of the failure of the Contractor to so examine the Contract Documents, Project site, local conditions and potentially applicable laws, regulations and permits and to familiarize itself therewith will not be allowed.

1.2.2 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Work not covered in the Contract Documents will be required if it is reasonably inferable as being necessary to produce the results intended by the Contract Documents for a completed project to the level of quality consistent with the nature and standard of such Work required by the Contract Documents.

1.2.3 Subject to the precedence of categories of documents stated in subparagraph 1.2.6 of these General Conditions, in the case of inconsistency, conflicts or discrepancies within one of

the categories of documents listed in said subparagraph, the more stringent requirement shall take precedence unless waived in writing by the Owner.

1.2.4. Organization of the specifications into divisions, sections and articles, and arrangement of Drawings are for convenience only and shall not be construed as nor imply a division of the Work among Subcontractors nor establish the extent of Work to be performed by any trade. The Contractor shall be responsible for the division of Work and for coordinating the allocation of Work among its Subcontractors and suppliers.

1.2.5. Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.6. In the event of any conflict or inconsistency between or among any of the following categories of documents in Contract Documents, the conflict or inconsistency shall be resolved according to the following hierarchy of categories of documents, with each category governing those categories listed below it:

.1 Contract Amendments signed by both parties;

.2 Change Orders;

.3 Supplementary Conditions;

.4 General Conditions;

.5 Specifications;

.6 Drawings.

1.3 USE OF DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

1.3.1 The Drawings, Specifications and other documents are instruments through which the Work to be executed by the Contractor is described. The Contractor may retain one contract record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents. All copies of them, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications and other documents appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this license shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of copyright or other reserved rights.

1.4 CAPITALIZATION

1.4.1 Terms capitalized in these General Conditions include those which are specifically defined herein.

1.5 INTERPRETATION

1.5.1 In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5.2 The General Conditions of the Contract Documents are modified from AIA Document A201, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, 1997 Edition.

1.5.3 No oral representation prior to bid concerning the Work by the Owner or its representatives shall alter or limit in any way the Contractor’s responsibilities under this Contract, including, but not limited to, obligations to carefully inspect the site of the work and thoroughly examine and be familiar with the Contract Documents and applicable government regulations and permits pertaining to the work.

ARTICLE 2
OWNER

2.1 DEFINITIONS AND AUTHORITY

2.1.1 The Owner of this project is the Issaquah School District (“District” or “Owner”) which is governed by its Board of Directors (“Board”). The District shall designate a representative(s) (“Representative”), to act on its behalf. Unless specifically limited by the District, its Representative(s) shall have, at (their) discretion, complete authority to transmit instruction, receive information, authorize changes to the work within prescribed limits, and to interpret and define the Owner’s policies and decisions with respect to the Work. The Board shall retain the final decision on acceptance of the contract and approval of any proposed Change Orders.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 The Owner shall furnish surveys describing legal limitations for the site of the Project, and a legal description of the site upon written request of the Contractor.

2.2.2 Information or services under the Owner’s control which are required to be furnished to the Contractor under the terms of this agreement shall be furnished by the Owner with reasonable promptness to avoid delay in orderly progress of the Work.

2.2.3 Upon request, the Contractor will be furnished free of charge up to twenty (20) copies, if available, of Drawings and Specifications from copies returned to Owner from the bidding procedure, including up to twenty (20) copies of revised Drawings, Addenda, or Supplementary drawings. Additional sets beyond those readily available to the Owner will be furnished at the cost of reproduction and delivery.

2.2.4 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to Article 6 (Construction by Owner or by Separate Contractors), Article 9 (Payments and Completion) and Article 11 (Insurance and Bonds).

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or fails to carry out Work in accordance with the Contract Documents, the Owner, by written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph 6.1.3. Owner will exercise the right to stop work only if Contractor's performance deviates from the requirements of the Contract Documents in a material way that is damaging to the interests of the Owner as determined by the Owner.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the work in accordance with the Contract Documents and fails within a seven (7) days period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In the event such deficiencies threaten the health or safety of Owners, employees, students or occupants the Owner may proceed to correct such deficiencies with such notice to the Contractor as is reasonable under the circumstances, which notice shall not exceed 48 hours. When the Owner has undertaken to carry out a portion of the work prior to final acceptance of the contract, an appropriate Modification shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect's additional service and expenses made necessary by such default, neglect or failure; and the amounts charged to the Contractor are subject to the prior review of the Architect as to decisions and amounts charged. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall promptly pay the difference to the Owner.

2.4.2 In the exercise of the Owner's right to carry out the Work, the Owner shall have the right to use the Owner's own forces or hire another Contractor, with or without public bid, to carry out such work.

2.5 SUSPENSION OF WORK

2.5.1 Owner may, at any time and without cause, and without liability suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to Contractor and Architect which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed.

ARTICLE 3
CONTRACTOR

3.1 DEFINITION

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 The Contractor shall promptly and carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to Subparagraph 2.2.2 and shall at once report to the Architect and to the Owner any errors, inconsistencies or omissions discovered. Prior to and during the execution of the Work, the Contractor shall check all Drawings, Specifications, and job conditions and shall immediately notify the Architect and the Owner in writing of any errors, discrepancies, conflicts or omissions found therein and have the same explained or corrected by the Architect before proceeding with the Work. Work wrongly ordered, fabricated or constructed by the Contractor without such notification shall be corrected by the Contractor at its own expense. The Contractor shall perform no portion of the Work at any time without appropriate Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

3.2.1.a Reference Appendix A – Federal Grant Requirements

3.2.2 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Architect and to the Owner at once.

3.2.3 The Contractor shall notify the Architect and the Owner in writing of materials, systems, procedures or methods of construction, either shown on the Drawings or specified, of which it has knowledge, experience or other information which supports the conclusion that they are incorrect, inadequate, obsolete or unsuitable for the purpose intended and the basis therefor. The Architect will respond to these matters in writing.

3.2.4 The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Paragraph 3.13.

3.2.5 Investigation of subsurface conditions on the site may have been made for design purposes. If applicable, the results of such investigations are available at the Architect's office for the convenience of the prospective bidders and the Contractor, but are not to be considered a part of the Contract Documents. The Contractor accepts full responsibility for interpreting such results and/or making any assumptions that differ from information stated expressly in such results. The Contractor shall be solely responsible for any interpretations of the information or extrapolations beyond the location of any individual boring or test pit result made available by Owner. There is no guarantee, either express or implied, that the conditions indicated are representative of those existing throughout the site, or that unforeseen developments may not occur. If conditions are encountered which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the

Contract Documents or (2) unknown physical conditions that were not foreseeable because they differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then the Contractor shall give written notice to the Owner and the Architect promptly before conditions are disturbed but no later than three (3) days after first observance of such conditions. If feasible, within ten (10) days after such notice, the Contactor shall submit any proposed changes to the Contract Sum and/or Contract Time.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over safety of the Work Site, for construction means, methods, techniques, sequences and procedures and for protecting and coordinating all portions of the Work under the Contractor, unless the Contract Documents give other specific instructions concerning these matters.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under a contract with the Contractor.

3.3.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.3.4 The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

3.3.5 In performing the Work, the Contractor shall comply with all applicable federal, state and local laws and regulations including, but not limited to, the following:

(1) Chap. 18.27 RCW relating to Contractor's registration;
(2) Chap. 19.27 RCW relating to the State building code;
(3) Chap. 27.44 RCW relating to Indian graves;
(4) Chap. 27.53 RCW relating to archaeological sites;
(5) RCW 28A.210.310 relating to use of tobacco products;
(6) RCW 28A.400.330 prohibiting use of employees of contractor with crimes against children;
(7) RCW 39.04.310 & 320 relating to 15% apprenticeship program;
(8) Chap. 39.06 RCW relating to Contractor's registration;
(9) Chap. 39.08 RCW relating to Contractor's bonds;
(10) Chap. 39.12 RCW relating to prevailing wages;
(11) RCW 39.30.060 relating to submittal of names of subcontractors;
(12) Chap. 49.17 relating to industrial safety and health;
(13) Chap. 49.26 RCW relating to asbestos;
(14) Chap. 49.28 RCW relating to hours of labor;
(15) Chap. 49.60 RCW relating to discrimination;
(16) Chap. 49.70 RCW relating to hazardous materials;
(17) Chap. 50.24 relating to unemployment compensation; and

(18) Chap. 70.92 RCW relating to the provisions for the aged and physically disabled;
(19) Federal Grant Requirements including but not limited to:
(19.1) 2 C.F.R. § 200.317 – 326 (the "Federal Grant Requirements") in the performance of its Work under this Contract, see section 3.3.5;
(19.2) Appendix A Federal Grant Requirements;
(20) Section 106 of the National Historic Preservation Act;
(21) Programmatic Biological Opinion prepared by NMFS January 9, 2018.
(22) Washington Department of Fish and Wildlife (WDFW)
(23) United States Army Corps of Engineers (USACE)

The foregoing list is provided only as a courtesy to the Contractor, and the Owner has not thereby undertaken any obligation to provide legal advice to the Contractor. The Owner makes no representation as to the currency, accuracy, or completeness of the list.

3.4 LABOR AND MATERIALS

3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for a sufficient labor force and shall provide and pay for materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, hauling arrangements and other facilities and services necessary for proper and timely execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2 After the Contract has been executed, the Owner and the Architect may consider a formal written request from the Contractor for the substitution of products in place of those specified only under exceptional conditions. Whether or not to grant such request shall be entirely subject to the Owner's discretion upon recommendation(s) from the Architect. By making requests for substitutions, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

.2 represents that the Contractor will provide the same or greater warranty for the substitution that the Contractor would provide for that specified;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract, and waives all claims for additional costs related to the substitution which subsequently become apparent;

.4 will coordinate the installation of the accepted substitute, making at Contractor's sole cost such changes as may be required for the Work to be complete in all respects; and

.5 shall pay for all the Architect's reasonable and necessary fees in reviewing the proposed substitution and reviewing any resulting changes to the work.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit or insubordinate persons or persons not skilled in tasks assigned to them.

.1 The Contractor and any of its Subcontractors of any tier shall not utilize any employee at the Owner's site in active school use or where there is a likelihood of contact with children or allow any contact between school children and any employee where an employee has pled guilty to or been convicted of any felony crime involving the physical neglect of a child under Chapter 9A.42 RCW, the physical injury or death of a child under Chapters 9A.32 or 9A.36 RCW (except motor vehicle violations under Chapter 46.61 RCW), sexual exploitation of a child under Chapter 9A.68A RCW, sexual offenses under Chapter 9A.44 RCW where a minor is a victim, promoting prostitution of a minor under Chapter 9A.88 RCW, the sale or purchase of a minor child under Chapter 9A.64.030 RCW, or violation of similar laws of another jurisdiction. The Contractor shall remove from the Work and Work site any employee or other person who has engaged in such actions or who the Owner reasonably considers objectionable. Without limiting the generality of the foregoing, the Contractor shall ensure by appropriate provisions in each subcontract agreement that the Contractor may remove from the Work and Work site any Subcontractor or Subcontractor's employee who has engaged in such action. At no change to the Contract Sum or Contract Time, the Contractor shall remove from the Work and Work site any employee or other person pursuant to this paragraph. Failure to comply with these requirements is grounds for immediate termination of the Agreement.

.2 Any employees of Contractor and Subcontractors who will have regularly scheduled access to children shall be subject to a record check through the Washington state patrol criminal identification system under RCW 43.43.830 through 834, RCW 10.97.030 and RCW 10.97.050 and through the Federal Bureau of Investigation before the Contractor permits them to have such access to children. The record check shall include a fingerprint check using a complete Washington state criminal identification fingerprint card. When necessary, applicants may be employed on a conditional basis pending completion of the investigation. If the applicant has had a record check within the previous two years, the Owner or the Contractor may waive the requirement. The Owner, pursuant to chapters 41.59 and 41.56 RCW, shall pay costs associated with the record check as part of the Contract Sum.

.3 The Contractor and subcontractors performing Work shall take reasonable steps to provide a drug and alcohol free site.

3.4.4 The Contractor shall take all reasonable steps to prevent any labor disputes involving the Contractor and any of its Subcontractors or suppliers of any products or services from: (1) disrupting the work under this Contract; (2) interfering with access to the Owner's property by the Owner, including its agents, representatives, employees and officials; (3) interfering with access and work by any other contractors engaged in construction activities; and (4) interfering with access to property by invitees or licensees of the Owner.

In the event any picketing or other activity by employees involved in a labor dispute with the Contractor or its Subcontractors or suppliers interferes in any way with access to the Owner's property or to the site of the work by any persons, the Contractor shall promptly and expeditiously take all reasonable actions to eliminate or minimize such interference, including but not limited to: (1) utilizing all reasonable means of restricting any picketing to a single entrance to the property or site of the work; (2) posting notices or signs which advise interested persons and labor organizations that a particular entrance to the property or site of the work is for the employees of

"primary" or, as the case may be "neutral" employers; (3) policing entrances; (4) notifying all interested labor organizations of the "primary" or "neutral" status of particular entrances; And (5) in the event any such picketing or concerted activity is unlawful or has a secondary impact upon the employees of neutral employers, promptly and expeditiously taking appropriate action to seek recourse through the appropriate governmental agency or state or federal courts to limit the location of such picketing so as to reduce the impact thereof upon neutral employers.

The Owner will cooperate with the Contractor to accomplish the foregoing actions and will render assistance as may be in the best interests of the Owner. However, the Owner shall have the right to direct the Contractor to modify any of the foregoing actions the Contractor has taken or plans to take or to overrule such actions, to designate the entrances to be used as "primary" or "neutral" entrances, and to take appropriate legal action in order to protect the Owner's property and interests. In any event, the Contractor shall be liable for all costs, including costs to the Owner, and actual damages resulting from the relocation, rerouting, delays or actions required to maintain the uninterrupted progress of the work. Failure by the Contractor to take the actions described above or to comply with the directives of the Owner shall be considered a material breach of this Contract and the Owner may terminate the Contract or suspend the Contractor as provided in this Contract.

Whenever Contractor has knowledge of any actual or potential labor dispute which may in any way affect, delay or arise in connection with or as a result of the performance of this Contract, Contractor will immediately notify and submit relevant information to Owner.

3.4.5 Pursuant to RCW 49.70, "Worker and Community Right to Know Act," and WAC 296-62-054 et seq., the Contractor shall provide the Owner copies of and have available at the Project Site a workplace survey or material safety data sheets for all "hazardous" chemicals under the control or use of Contractor or any subcontractor of any tier at the Project Site. Contractor shall not be entitled to any additional Contract Time or compensation arising from its failure or alleged failure to comply with this statute or regulation.

3.4.6 Certified Asbestos Free Products: All products and materials incorporated into the project as part of the Work shall be certified as "asbestos free" by United States standards. At the completion of the project the Contractor shall submit a Certification of Asbestos Free Materials certifying that all materials and products incorporated into the Work meet the requirements of this section.

3.5 WAGES AND BENEFITS (Reference Appendix A – Federal Grant Requirements)

3.5.1 This Contract is subject to the wage and hour requirements of RCW 39.12 and RCW 49.28 (as amended or supplemented). The Contractor, each Subcontractor and other person doing any work under this Contract shall pay laborers, workmen or mechanics not less than the prevailing rate of wage for an hour's work in the same trade or occupation in the locality within the state of Washington where such labor **is** performed. If the state and federal wage rates differ for similar kinds of labor, the Contractor, each Subcontractor and other person, as applicable, shall pay not less than the higher rate. Wages and benefits higher than the minimums required by law may be paid. It is the contractor's sole responsibility to determine the wage rates it will actually have to pay. In the event rates of wages and benefits change while this Contract is in force, the Contractor shall bear the cost of such changes and shall have no claim against the Owner on account of such changes. No claim for additional compensation will be allowed which is based upon a lack of knowledge or a misunderstanding of any such requirements by the Bidder/Contractor or a

failure to include in the Bidder's bid price adequate increases in such wages over the term of this Contract.

3.5.2 All determinations of the prevailing rate of wage shall be made by the industrial statistician of the Department of Labor and Industries of the state of Washington. The schedule of prevailing wage rates as determined by the industrial statistician for the locality or localities where this Contract will be performed are by this reference made a part of this Contract. The state schedule of prevailing wage rates applicable to the Work, as most recently provided by the state, may be set forth in the Project Manual. If or to the extent employing labor is not listed, the Contractor shall request the industrial statistician to determine the correct wage rate for that class and locality. To obtain a listing of current minimum wages for any county contact:

Washington State Department of Labor and Industries
P.O. Box 44810
Olympia, Washington 98504- 4810
(Telephone: (360) 902-5799

3.5.3 In case any dispute arises as to what are the prevailing rates of wages for work of a similar nature and such dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the director of the Department of Labor and Industries of the State of Washington and his or her decision therein shall be final and conclusive and binding on all parties involved in the dispute.

3.5.4 The Contractor, each Subcontractor and other person required to pay the prevailing rate of wage shall post in a location readily visible to workers at the job site: (1) a copy of the statement of intent to pay prevailing wages approved by the industrial statistician of the Department of Labor and Industries under RCW 39.12.040; and (2) the address and telephone number of the industrial statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.

3.5.5 Apprentice workmen employed hereunder for whom an apprenticeship agreement has been registered and approved with the state apprenticeship council pursuant to Chapter 49.04 RCW must be paid at least the prevailing hourly rate for an apprentice for that trade. Any workman for whom an apprenticeship agreement has not been registered and approved by the state apprenticeship council shall be considered to be a fully qualified journeyman, and, therefore, shall be paid at the prevailing hourly rate for journeymen.

3.5.6 Pursuant to RCW 39.12, the Contractor and each Subcontractor from the Contractor or a Subcontractor shall submit the following documents to the Owner:

.1 Before payment is made by Owner, the Contractor and each Subcontractor shall submit a "Statement of Intent to Pay Prevailing Wages" which has been approved by the industrial statistician of the Department of Labor and Industries.

.2 With each request for payment, the Contractor shall submit a signed statement that prevailing wages have been paid in accordance with the "Statement of Intent to Pay Prevailing Wages" filed with Owner.

.3 Following final acceptance of the work and before funds retained according to RCW 60.28.010 are released to the Contractor, the Contractor and each Subcontractor shall submit an

"Affidavit of Wages Paid" which has been approved by the industrial statistician of the Department of Labor and Industries.

Any fees charged by the Department of Labor and Industries for filing the "Statement of Intent to Pay Prevailing Wages" and the "Affidavit of Wages Paid" shall be paid by the Contractor and each Subcontractor, as applicable. If, for any reason, Owner pays such fees, then the Contractor shall be charged the amounts thereof.

3.5.7 The Contractor or subcontractor directly contracting for "Off-Site, Prefabricated, Non-Standard, Project Specific Items" shall identify and report information required on the affidavit of wages paid form filed with the Department of Labor and Industries. The Contractor shall include language in its subcontracts requiring subcontractors and lower-tier subcontractors to comply with the reporting requirements for" Off-Site, Prefabricated, Non-Standard, Project Specific Item" on the affidavit of wages paid. These reporting requirements apply to contracts issued by the Owner that are estimated to cost over $1 million and are entered into by the Owner and Contractor.

3.5.7.1 "Off-site, prefabricated, nonstandard, project specific items" means products or items that are:
.1 Made primarily of architectural or structural precast concrete, fabricated steel, pipe and pipe systems, or sheet metal and sheet metal duct work;
.2 Produced specifically for the public work and not considered to be regularly available shelf items;
.3 Produced or manufactured by labor expended to assemble or modify standard items; and
.4 Produced at an off-site location outside Washington.

3.5.7.2 The Contractor or subcontractor shall comply with the reporting requirements and instructions on the affidavit of wages paid form, and shall report the following information on the affidavit of wages paid form submitted to the Department of Labor and Industries in order to comply with the reporting requirements for use of these items:
.1 The estimated cost of the public works project;
.2 The name of the awarding agency and the project title;
.3 The contract value of the off-site, prefabricated, nonstandard, project specific items produced outside of Washington State, including labor and materials; and
.4 The name, address, and federal employer identification number of the contractor that produced the off-site, prefabricated, nonstandard, project specific items.

3.5.7.3 The Owner may direct the Contractor, at no additional cost to the Owner, to remove and substitute any Subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Items" reporting requirements more than one time as determined by the Department of Labor and Industries.

3.5.8 Owner may inspect or audit the Contractor's wage and payroll records at any time while the Contract is in force and for at least three (3) years after the date of final acceptance. The Contractor shall maintain such records for that period. The Contractor shall also guarantee that wage and payroll records of all his Subcontractors and agents shall be open to similar inspection and auditing for the same period of time. Owner will give the Contractor reasonable notice of the starting date if an audit will begin more than sixty (60) days after the final acceptance date.

3.5.9 The Contractor shall make all payments required for unemployment compensation under Title 50 RCW and for industrial insurance and medical aid required under Title 51 RCW. The Contractor shall also obey all federal, state and local laws, ordinances, and regulations establishing safety standards for the protection of employees. If any payment required by Title 50 or Title 51 is not made when due, Owner may retain such payments from any money due the Contractor and pay the same into the appropriate fund. The Public Works Contract Division of the Department of Labor and Industries will provide the Contractor with applicable industrial insurance and medical aid classification and premium rates. Before release of any funds retained according to RCW 60.28.010, the Contractor shall provide to the Owner such reasonable documentation as the Owner shall require that demonstrates the Contractor has paid such premiums, and Owner shall be entitled to verify the accuracy of such documentation.

3.5.10 Pursuant to RCW 49.28.010, eight (8) hours of labor shall constitute a legal day's work. The Contractor or any Subcontractor shall not require more than eight (8) hours of labor in a day from any person employed in the performance of the Work under this Contract except as may otherwise be allowed by law. Failure of the Contractor to perform the Work in accordance with the hours of labor policies of the State of Washington shall be deemed a failure on his part to comply with the provisions of this Contract.

3.5.11 Subject to applicable laws and governmental permits, overtime and shift work may be established as a regular procedure by the Contractor with reasonable advance written notice to both the Architect and the Owner. Notice must be given a minimum of seventy-two (72) hours prior to the start of overtime and shift work. No work other than overtime and shift work established as a regular procedure shall be performed during weekdays between the hours of 6:00 p.m. and 7:00 a.m. nor on Saturdays or Sundays, except such work as is necessary for the proper care and protection of the Work already performed in case of an emergency or as necessary to recover schedule delays.

The additional cost of Work performed after regular working hours shall be borne by the Contractor. No claim for additional compensation shall be allowed for failure of Bidder/Contractor to include in the bid price adequate reserves for overtime work.

The Contractor shall pay the costs of overtime inspection by the Architect and the Owner except those occurring as a result of overtime and shift work established as a regular procedure. Overtime inspection shall include inspection required during weekdays between the hours of 6:00 p.m. and 7:00 a.m. and on Saturdays or Sundays. Costs of overtime inspection will cover engineering, inspection, general supervision and overhead expenses which are directly chargeable to the overtime work. Contractor agrees that the Owner may deduct such charges from payments due the Contractor. In the event of circumstances beyond the Contractor's control which could not be reasonably foreseen and which require the Contractor to work at other than normal weekday working hours, the Architect may, without obligation and only in writing, waive the requirement that the Contractor pay such overtime inspection costs. In the event of a change order requiring the Contractor to work in excess of the established schedule of working hours, the Contractor will not be charged for inspection costs of the Owner or the Architect associated therewith.

3.6 WORKMANSHIP

3.6.1 The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise specifically required or permitted by the

Contract Documents, that the Work will be of good quality and free from faults or defects and that the Work will conform with the requirements of the Contract Documents. The standard of care for any Work performed by or under the direction of the Contractor shall be the care and skill ordinarily used by members of the trades or professions practicing under similar conditions at the same time and locality. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's responsibility excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operations, or normal wear and tear under normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of Paragraph 12.2 and does not abrogate any warranty or guarantee that may be imposed by law or that may be otherwise provided by the Contractor.

3.6.2 Warranty work shall remedy defective Work, resultant damage to other Work and include any incidental work related to or required for proper correction.

3.7 TAXES

3.7.1 The Work to be performed under this Contract constitutes a "retail sale" as such term is defined in RCW 82.04.050, and the contract price is subject to the State of Washington and local retail sales taxes. The bid price shall not include such retail sales taxes. Based on the Contract Sum, Owner will pay retail sales taxes on each progress payment and final payment to the Contractor for transmittal by the Contractor to the State of Washington Department of Revenue.

All other applicable taxes which the Contractor is required to pay, excepting State and local retail sales tax as specified above, shall be deemed included in the Contractor's proposed prices for the Work under this contract. No adjustment will be made in the amount to be paid by Owner under this contract because of any misunderstanding by the bidder/Contractor as to its liability for or the amount of any taxes or because of any increases in tax rates imposed by any federal, state or local government.

3.8 PERMITS, FEES AND NOTICES

3.8.1 Contractor shall secure all governmental licenses and inspections necessary for the proper execution and completion of the Work, including Occupancy Permit(s), which are customarily secured after execution of the Contract and which are legally required for and during the prosecution of the work and the subsequent warranty period.
The Contractor shall work with the Owner/Architect to coordinate any inspections that will be needed from the various consultants such as Geotechnical Engineer, Wetland Ecologist, Archeological representative, FEMA, etc. Contractor shall be responsible for all City inspections. Owner shall secure and purchase the Site Development Permit, Shoreline Permit, Flood Hazard Permit, Building Permit, WDFW HPA Permit, USACE Permit, WA Dept. of Ecology permit and the SEPA Determination.

3.8.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on performance of the Work.

3.8.3 If the Contractor observes that the Contract Documents are not in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations or that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the

Architect and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

3.8.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs, including, but not limited to, fines, penalties, and interest.

3.9 ALLOWANCES

3.9.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection.

.1 Materials and equipment under an allowance shall be selected promptly by the Owner to avoid delay in the Work;

.2 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site, less applicable trade discounts;

.3 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum and not in the allowances.

.4 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances under Clause 3.9.1.2.

3.10 SUPERINTENDENT

3.10.1 The Contractor shall employ a competent superintendent with minimum 5 years successful experience on **Public or similar** projects of similar complexity and scope and the necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall act as a coordinator and liaison between the construction contractors, Architect and Owner. The superintendent shall be responsible for the onsite management of the project, coordination of the trades, ensuring document compliance, enforcing safety regulations, claims resolution and schedule compliance and shall have a thorough understanding of all aspects of construction (technology, equipment and methods etc). The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be similarly confirmed on written request in each case.

3.10.2 The Contractor's Superintendent shall remain on the job at all times during progress of the Work until the Date of Substantial Completion of the last phase as noted in the Contract and as determined pursuant to Paragraph 9.8. The Contractor shall provide a full resume with references and contact numbers defining the Superintendent's experience to the Owner and the Architect with the Contractors submittal of Insurance and Bonds. Contractor must obtain Owner's approval of the proposed Superintendent before the Contract is signed. Owner's approval may not be

withheld for any discriminatory or other reasons prohibited by law. The Superintendent shall not be changed without the approval of the Owner, which shall not be unreasonably withheld. The Superintendent shall not be employed on any other project during the course of the Work.

3.10.3 The Contractor shall employ a Project Manager with a minimum 5 years successful experience on **Public** or similar projects of similar complexity and scope and who shall be assigned the necessary time required to meet the project schedule during the progress of work. The Project Manager shall have experience with project planning, cost, time and quality management, contract administration and claims resolution. The Contractor provide a full resume with references and contact numbers defining the Project Manager to the Owner and the Architect with the Contractors submittal of Insurance and Bonds. Contractor must obtain Owner's approval of the proposed Project Manager before the Contract is signed. Owner's approval may not be withheld for any discriminatory or other reasons prohibited by law. The Project Manager shall not be changed without the approval of the Owner, which shall not be unreasonably withheld. The Project Manager shall not be employed on any other project during the course of the Work.

3.10.4 The Contractor shall employ a Project Engineer with a minimum 3 years successful experience on **Public** or similar projects of similar complexity and scope and who shall be in attendance at the Project site during the progress of the Work. The Project Engineer shall be familiar with the quality control aspects of projects similar to the Project. The Project Engineer shall review initial pay draw requests for consistency with the Project schedule of values. The Project Engineer shall review submittals and mock-ups prior to submission to the Architect; coordinate shop drawings with major Subcontractors; and review shop drawings for consistency with Project specifications prior to submission.

3.10.5 The Owner reserves the right, after consultation with the Contractor, to require the Contractor to replace a Superintendent, Project Engineer, Project Manager or other assistants if the Owner determines that such replacement is in the best interests of the Project. The Owner shall exercise such right in a reasonable manner. The Owner shall be entitled to exercise the same rights concerning any replacement.

3.10.6 Within ten (10) days after issuance of the Notice to Proceed the Contractor shall furnish to the Architect and Owner a chain-of-command organizational chart which includes all supervisory personnel, including the project manager, the project engineer and the superintendent, that the Contractor intends to use on the Work. The chart shall specify any limits of authority for each person, including but not limited to his/her ability to speak for and bind the Contractor, as well as any limits on decision-making authority with respect to specific dollar values, contract time, and issues affecting quality of the Work. The Contractor shall also provide the Owner with a list of telephone numbers for all key personnel of the Contractor and its principal subcontractors for purposes of contacting personnel after hours in the event of an emergency. The list shall be periodically updated as necessary to ensure the Owner has the most current information.

3.11 CONTRACTOR'S CONSTRUCTION SCHEDULES

Note: There is a limited amount of time to work within the ordinary high water mark; per the WDFW fish window this time frame is July 1, 2022 through August 15, 2022. Mobilization and material procurement will take place May/June 2022 with a hard construction start date of July 1 ,2022.

3.11.1 Within ten (10) days after issuance of the Notice to Proceed, the Contractor shall submit a preliminary schedule of the Work. The preliminary schedule shall include sequence of the Work for the first three (3) months, including critical milestones, start and stop dates of major activities, including Architect and Owner review of submittals and material ordered, and closeout activities for the remainder of the project. Within forty-five (45) days after issuance of the Notice to Proceed, and before any progress payment need be made, the Contractor, after consultations with its subcontractors, shall prepare and submit for the owner's and Architect's information, a Contractor's time-scaled, critical path network construction schedule for the Work. The initial and any revisions of the Project Schedule shall be submitted to the Owner and Architect in four (4) paper copies and electronic transfer by email.

Unless otherwise notified in writing by the Owner, the Contractor must assume that the Owner shall begin to operate the school in accordance with the project schedule, phasing plans, milestones and substantial completion dates developed by the Architect and Owner and included in the Contract Documents. Review by the Owner or Architect of the Contractor's Construction Schedule shall not constitute approval or acceptance of the Contractor's schedules, means, methods, sequencing, or milestone dates or Contractor's ability to complete the Work in a timely manner. Contractor to provide Construction Schedules in compliance with the Project Specification Manual Section 013216 – **"Contractors Construction Schedule"**.

3.11.2 The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time, which normally will be fifteen (15) days, to review submittals.

3.11.3 The Contractor shall perform its work according to the schedule it submits to the Owner and shall conform its Work to the Contractor's most recent schedule. Float time indicated in the Contractor's schedule shall be for the joint use and benefit of the Owner and Contractor.

3.11.4 The Contractor shall prepare a Schedule of Values, which is coordinated with the Contractor's construction schedule. The Schedule of Values serves to break down the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. The Schedule of Values shall indicate at least 4% shall be earned through completion of all Contract closeout and punchlist activities, and other proportional amounts for completion of all landscape maintenance and for technology cabling. The Contractor shall earn said amounts only when said tasks are fully completed; no payments shall be earned for partial completion of said tasks. Said 4% is for closeout and punchlist activities and is distinct and different from statutory retainage. Line items shall correspond with categories required by the Owner, which shall at least include the divisions of work listed in the table of contents in the Specifications and any additional requirements imposed by a third-party governmental entity with authority.

3.12 DOCUMENTS AND SAMPLES AT THE SITE

3.12.1 The Contractor shall maintain at the site for the Owner one reproducible, record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and Owner during the course of the Work. The location of all existing or new underground piping, valves, and utilities, as located during the course of construction, shall be appropriately marked until the actual field location dimensions and coordinates are incorporated on the record drawings. These documents, as well as the approved permit set of

plans, shall be available to the Architect and Owner at the site and reviewed with them on a weekly basis. Upon completion of the Work, the Contractor shall certify that the record documents reflect complete and accurate “as-built” conditions and shall deliver the documents as well as the approved permit set of plans in good condition to the Architect for submittal to the Owner in accordance with the provisions of the Contract Documents. Satisfactory maintenance of up-to-date record drawings will be a requirement for approval of progress payments.

3.13 SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND REQUEST FOR INFORMATION

3.13.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some point of the Work.

3.13.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.13.3 Samples are physical examples which illustrate materials, equipment and workmanship and establish standards by which the Work will be judged.

3.13.4 Shop Drawings, Product Data, Samples and other similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect is subject to the limitations of Subparagraph 4.2.7.

3.13.5 After checking and verifying field measurements, specified performance criteria, installation and materials requirements, catalogue information and the like, the Contractor shall review, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents, with reasonable promptness, bearing the Contractor’s certification that the submittals comply with the requirements of the Contract Documents, and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action. If Shop Drawings, Product Data, Samples and similar Submittals presented to the Architect by the Contractor contain deviations from requirements of the Contract Documents, the Contractor shall, in writing, designate such deviations at the time of submittal and subsequent resubmittals.

3.13.6 The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been reviewed by the Architect as provided in Subparagraph 4.2.7. Such Work shall be in accordance with accepted submittals.

3.13.7 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. Corrections required to bring Shop Drawings into

conformance with the intent of the Contract Documents shall not be cause for extension of time or cost.

3.13.8 The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's review of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect and Owner in writing of such deviation at the time of submittal and the Owner has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or similar submittals by the Architect's review thereof. Any corrections or modifications to Shop Drawings made by the Architect shall be deemed accepted by the Contractor, without change in Contract Sum or Time, unless the Contractor provides the Architect with written notice before commencing any work from such Shop Drawings. The Contractor shall make all corrections requested by the Architect and provide a corrected Submittal without change in Contract Sum or Contract Time.

3.13.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals to revisions other than those requested by the Architect on previous submittals.

3.13.10 Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents.

3.13.11 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications. The Contractor shall make any required corrections and shall resubmit the required number of corrected shop drawings, samples or submittals. Resubmittals necessitated by required corrections shall not be a cause for extension in time.

3.13.12 The Contractor may submit to the Architect requests for clarification or information concerning the Contract Documents. However, if a clarification or information request is unnecessary because the information is clearly provided in the Contract documents, the Contractor shall reimburse the Owner for the costs of the Architect's (and or subconsultant's) time spent responding to the request.

3.14 USE OF SITE

3.14.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site or areas adjacent to the site with materials, equipment or debris. Damage to areas of the Site not scheduled for Work shall be remedied, repaired or replaced at Contractor's expense. The Contractor shall coordinate all of its operations with and secure approval of the Owner before using any portion of the site.
No location within the school or school site shall be used as an office of storage space unless noted in the specifications, plans or Owner's authorization.
The Contractor shall assume all areas of the building may be used by staff and/or student unless noted otherwise.
The Contractor is not to demolish or remove equipment unless new equipment is in possession unless noted otherwise.

3.15 CUTTING AND PATCHING

3.15.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.15.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

3.15.3 Existing structures and facilities, including but not limited to buildings, utilities, landscape topography, streets, curbs, and walks, that are damaged or removed due to excavations or other construction work, shall be patched, repaired or replaced by the Contractor to the satisfaction of the Architect, the owner of such structures and facilities, and governmental authorities having jurisdiction. In the event the governmental authorities require that the repairing and patching be done with their own labor and/or materials, the Contractor shall abide by such regulations and it shall pay for such work at no additional cost to Owner.

3.16 CLEANING UP

3.16.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract during the Work. At completion of the Work the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials and shall perform all cleaning necessary to make premises ready for occupancy and use. Contractor shall submit, and if approved by Owner, follow a waste management/recycle program.
If the Contractor leaves doors open for convenience and easy access the room shall be cleaned to prior condition before its next scheduled school use.

3.16.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.17 ACCESS TO WORK

3.17.1 The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

3.18 ROYALTIES, PATENTS, COPYRIGHTS, AND OTHER INTELLECTUAL PROPERTY

3.18.1 The costs involved in fees, royalties or claims for any patented invention, article, process or method, or any copyright or other intellectual property right that may be used upon or in a manner connected with the work under this Contract or with the use of completed work by the Owner shall be paid by the Contractor. The Contractor and its sureties shall protect and hold Owner together with its officers, agents and employees, harmless against any and all demands made for such fees or claims brought or made by the holder of any such right. Before final payment is made on the account of this Contract, the Contractor shall, if requested by the Owner, furnish acceptable proof of a proper release from all such fees or claims.

Should the Contractor, his agent, servants or employees, or any of them be enjoined from furnishing or using any invention, article, material or appliances, or any copyrighted item or other item of intellectual property supplied or required to be supplied or used under the Contract, the Contractor shall promptly substitute other articles, materials or appliances in lieu thereof of equal efficiency, quality, finish, suitability, and market value, and satisfactory in all respects to the Owner and Architect. In the event that the Owner elects, in lieu of such substitution, to have supplied and to retain and use any such invention, article, material or appliances, or any copyrighted item or other item of intellectual property as may be required to be supplied by the Contract, the Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for the Owner, its officers, agents, servants and employees, or any of them to use such invention, article, material or appliance, or any copyrighted item or other item of intellectual property without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the Contractor neglect or refuse to make the substitution promptly or to pay such royalties and secure such licenses as may be necessary, then in that event the Owner shall have the right to make such substitution or the Owner may pay such royalties and secure such licenses and charge the Contractor even though final payment under the Contract may have been made.

3.19 INDEMNITY AND DEFENSE

3.19.1 To the maximum extent permitted by law, the Contractor shall be liable for all damages and injury which shall be caused to owners of property on or in the vicinity of the work or which shall occur to any person or persons or property whatsoever arising out of the performance of this Contract, whether or not such damage or injury be caused by negligence of the Contractor and whether or not such damage or injury be caused by the inherent nature of the work specified.

3.19.2 To the maximum extent permitted by law, the Contractor shall defend, indemnify and hold the Owner and Architect and all of their officers, principals, agents and employees harmless from any liability whatsoever for any injuries to persons or property arising out of the performance of this Contract; provided, however, that if (and only if) the provisions of RCW 4.24.115 apply to the work and any such injuries to persons or property arising out of performance of this Contract are caused by or result from the concurrent negligence of Contractor or its subcontractors, agents or employees, Architect, and the Owner or its agents or employees, the indemnification applies only to the extent of the negligence of the Contractor, its subcontractors, agents or employees. The Contractor specifically assumes potential liability for actions brought by the Contractor's own employees against the Owner and the Architect and for that purpose the Contractor specifically waives any immunity under the workers compensation act, RCW Title 51. By executing the Agreement, the Contractor recognizes and confirms that this waiver was specifically entered into pursuant to the provisions of RCW 4.24.115 and was the subject of mutual negotiation.

3.19.3 In addition to the amounts required by Chapter 60.28 RCW to be withheld from the progress payments to the Contractor, the Owner may, in its sole discretion, withhold amounts sufficient to pay any property damage claim of which the Owner may have knowledge, regardless of the informalities of notice of such claim, arising out of the performance of this Contract, provided that the total amounts withheld for such purpose shall not exceed one percent of the Contract Price. The term "property damage claim" shall not include any claim for personal injuries or any claim by persons furnishing supplies or materials or performing labor for the Contractor. The amount withheld will not be paid to the claimant by the Owner but will be held until either the

Contractor secures a written release from the claimant, obtains a court decision that such claim is without merit or satisfies any judgment in favor of the claimant on such claims.

3.19.4 In claims against any person or entity indemnified under this Paragraph 3.19 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 3.19 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

3.19.5 The obligations of the Contractor under this Paragraph 3.19 shall not extend to the liability of the Architect, the Architect's consultants, and agents and employees of any of them.

ARTICLE 4
ADMINISTRATION OF THE CONTRACT

4.1 ARCHITECT

4.1.1 The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

4.2 ARCHITECT'S ASSISTANCE IN ADMINISTRATION OF THE CONTRACT

4.2.1 The Architect will assist the Owner in administration of the Contract as described in the Contract Documents, and may, as specifically authorized by the Owner, serve as the Owner's representative (1) during construction, (2) until final payment is due and (3) from time to time during the correction period described in Paragraph 12.2. The Architect will advise and consult with the Owner. The Architect may have authority to act on behalf of the Owner only to the extent provided in the Contract Documents or the agreement between the Owner and the Architect, unless otherwise modified by written instrument in accordance with other provisions of the Contract Documents. The Authority of the Architect is separate from that of the Owner's Representative.

4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction to become familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check quality or quantity of the Work. On the basis of on-site observations as an architect, the Architect will keep the Owner informed of progress of the Work, and will use its best efforts to guard the Owner against defects and deficiencies in the Work. The Architect shall not exercise prerogatives or perform duties in a manner that will increase the cost of construction or increase construction time without Owner's prior written approval. It is the Contractor's responsibility to inform Owner, in writing, of direction by Architect that may affect Contract Sum or Contract Time prior to proceeding with that work.

4.2.3 The Architect will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions

and programs in connection with the Work, since these are solely the Contractor's responsibility as provided in Paragraph 3.3. The Architect and Owner will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

4.2.4 Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner. The Contractor additionally shall PROVIDE THE OWNER WITH A DIRECT COPY OF ALL IMPORTANT WRITTEN COMMUNICATIONS TO THE ARCHITECT, including all notices, claims, and potential changes in the Contract Sum or Time.

4.2.5 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

4.2.6 The Architect will have the authority to reject Work which does not conform to the Contract Documents. If the Contractor disputes the rejection of any Work and the correction thereof shall involve additional costs or time, the Contractor shall inform the Owner of the correction in writing and it shall be the Owner's option to accept such Work whether it is conforming or nonconforming. The Owner will not exercise this option with respect to nonconforming Work that the Architect certifies as presenting a threat to the durability of the building, a threat to human health or life, or that violates any applicable code requirement. Whenever the Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

4.2.7 The Architect will review and take appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purposes of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's review of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4. The Architect is not the agent

of the Owner and is not authorized to agree on behalf of the Owner to changes in the Contract Sum or Contract Time, nor to direct the Contractor to take actions that change the Contract Sum or Contract Time.

4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner for the Owner's review and records written warranties, operations and maintenance manuals, record drawings and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site.

4.2.11 The Architect will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made with reasonable promptness and within any time limits agreed upon. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Paragraph 4.2, then delay, if any, shall not be recognized on account of failure by the Architect to furnish such interpretations until fifteen (15) days after written request is made for them or after the Architect has received from the Owner or Contractor all of the information necessary for the Architect to respond to the request, whichever is later.

4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by Contractor.

4.2.13 As between the Architect and the Contractor, the Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

4.2.14 The Architect shall conduct meetings at least once weekly with the Contractor and such Subcontractors as may be requested by the Architect to review the progress of the work and the status of schedules. The Architect shall prepare and circulate minutes of such meetings.

4.3 INITIAL NOTICES AND CLAIMS

4.3.1 All Claims for additional costs and/or time (regardless of how described) must be made in accordance with the requirements of this Article or they will be waived.

4.3.2 An "Initial Notice" is the mechanism the Contractor must use to provide the Owner with notification of an event(s) that may result in a Claim. At a minimum, Initial Notices must be in writing and describe the event, identify persons with knowledge of the event, qualitatively describe the likely or potential impacts of the event and identify provisions of the Contract Documents that are implicated by the event.

4.3.3 A "Claim" is a substantiated demand or assertion by the Contractor seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes

and matters in question between the Owner and Contractor arising out of or relating to the Contract.

4.3.4 Claims must be made in writing and substantiated by detailed information. The responsibility to substantiate Claims rests solely with the Contractor. The substantiation of a Claim shall include, at a minimum, the following:

.1 A written narrative explaining the factual basis of the claim and the bases for the claim under the Contract Documents;

.2 A written and/or graphic explanation of how the alleged acts or failure to act by the Owner under the Contract directly caused the damages or delay complained of;

.3 Full documentation of the additional costs or damages allegedly resulting in such detail as may be requested by the Owner, including original bid and budget records;

.4 Schedule analyses which demonstrate that the alleged acts or failure to act caused delays to the critical path activities of the Contractor; and

.5 Such other job records, reports, documents, calculations and bid or estimate information as the Owner may reasonably require to evaluate the Claim.

In the event the Contractor believes that a change in the Work that is the responsibility of the Owner has caused, or may cause, an increase in the Contractor's costs in the form of labor and equipment inefficiencies or lost productivity, such alleged costs must be specifically identified in the Claim. In addition, the Contractor must establish that the alleged cost increases result directly from such change and must demonstrate the impact by utilizing comparisons of the Work performed during the impacted period with Work performed during a non-impacted period or on a closely similar but different part of the Work if such comparisons are reasonably available or feasible.

4.3.5 Claims, including those alleging an error or omission by the Architect, shall be submitted to the Architect and Owner. A decision by the Owner, shall be required as a condition precedent to litigation of a Claim between the Contractor and Owner as to all such matters arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the Work or (2) the extent to which the Work has been completed. If the Owner fails to issue such a decision within (30) days of Owner's receipt of a Claim, the Claim shall be deemed denied.

4.3.6 Pending final resolution of a Claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments that are not in dispute in accordance with the Contract Documents.

4.3.7 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which constitute subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, then an Initial Notice by the Contractor shall be given to the Owner within three (3) days of the first observation of such conditions in accordance with 4.3.2 and before such conditions are disturbed. The Architect will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable

adjustment in the Contract Sum or Contract Time, or both, to the Owner for consideration. If the Architect and Owner determine that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Owner shall so notify the Contractor in writing, stating the reasons. Protests in opposition to such determination must be set forth in writing within fourteen (14) days after the Owner has given notice of the decision. If the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, any claim by the Contractor arising there from shall be made in accordance with the dispute resolution procedure in Paragraph 4.4.

4.3.8 If the Contractor claims that an additional cost is involved because of conflicts or omissions within a particular type of Contract Document (e.g., Drawings), the Contractor and Subcontractors will be deemed to have carefully reviewed all of the Contract Documents, including drawings, schedules, and specifications, and the most expensive work indicated on the particular type of Contract Document within which a conflict or omission is claimed shall be provided with no change in the Contract Sum or Time. In the event that work is shown on Drawings but not contained in Specifications, it will be assumed the work as shown shall be provided at no change in the Contract Sum or Time, according to specifications to be issued by the Architect. The Contractor shall not be entitled to an increase in the Contract Sum or Time arising out of an error or conflict where the Contractor failed adequately to review the Contract Documents and timely report the error or conflict to the Architect.

4.3.9 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, a written notice shall be submitted before proceeding to execute the Work and, to be valid, a Claim must be made in accordance with this Article or it will be waived. The Contractor shall give Initial Notice to the Owner and the Architect of all events that may result in a Claim within seven (7) days of such event. A Claim (documented in accordance with paragraphs 4.3.3 and 4.3.4, above) must be submitted to Owner within fourteen (14) days of the Initial Notice Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph 10.6. The Contractor shall not be entitled to an increase in the Contract Sum or Time arising out of an error or conflict in or among the Contract Documents where the Contractor failed adequately to review the Contract Documents and failed timely to report the error or conflict to the Architect and Owner.

4.3.10 Claims for Additional Time. If the Contractor wishes to make a Claim for an increase in the Contract Time, a written notice shall be submitted before proceeding to execute the Work and, to be valid, a Claim must be made in accordance with this Article or it will be waived. The Contractor shall give Initial Notice to the Owner and the Architect of all events that may result in a Claim within seven (7) days of such event. A Claim (documented in accordance with paragraphs 4.3.3 and 4.3.4, above) must be submitted to Owner within fourteen (14) days of written notice. In the case of a continuing delay, only one Initial Notice and one Claim are necessary, provided, they state that the delay and the conditions causing such delay are continuing. If the delay was not caused by the Owner, the Contractor, a Subcontractor or any tier, or the Architect, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time in accordance with the Contract Documents but not a change in the Contract Sum. If the delay was caused by the Contractor, Subcontractor or any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum. Subject to the provisions of Article 8.3. herein limiting the Contractor's right of recovery to time extensions only for reasonable delays, the Contractor's daily cost of any change in Contract Time associated with a delay for which the Contractor is entitled to damages or an adjustment in the Contract Sum shall be limited for each day of such delay to the lesser of the Contractor's actual

costs or five percent (5%) of the Contract Sum divided by the number of calendar days in the Contract Time.

4.3.11 If adverse weather conditions are the basis for a Claim for additional time or cost, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the critical path of the current submitted construction schedule.

Neither Contract Time nor the Contract Sum will be adjusted for normal inclement weather. The Contractor shall be entitled to a change in the Contract Time only if the Contractor can substantiate to the reasonable satisfaction of the Owner and Architect that there was materially greater than normal inclement weather considering the full term of the Contract Time and using a ten-year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce National Oceanic and Atmospheric Administration for the locale closest to the Project, and that the alleged abnormal inclement weather actually extended the critical path of the Work. To preclude the difficulties of actual measurement, the parties hereto agree that weather data at the site of the work shall be expressly deemed to be the same as that measured at the Seattle-Tacoma International Airport by the Environmental Data and Information Service of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. If the total net accumulated number of calendar days lost due to inclement weather from commencement of the Work until Final Completion exceeds the total net accumulated number to be expected for the same period from the aforesaid data, and the Owner grants the Contractor a time extension, the Contract Time will be extended by the corresponding number of calendar days indicated on the critical path of the Contractor's approved Construction schedule.

For the purposes of this subparagraph, a "month" shall mean a calendar month and a "week" shall mean a calendar week of Sunday through Saturday.

4.3.12 If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding fourteen (14) days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to such events is to be asserted, it must comply with the provisions of this Article.

4.4 DISPUTE RESOLUTION

4.4.1 All Claims, disputes and other matters in question of the Contractor arising out of, or relating to, the project or the Contract Documents or the breach thereof, except Claims which have been waived under the terms of the Contract Documents shall be decided exclusively by the following dispute resolution procedure specified in Paragraph 4.4 unless the parties mutually agree in writing otherwise.

4.4.2 The Contractor shall give written notice to the Owner and the Architect of all Claims within seven (7) days of the event giving rise to them. Documentation substantiating the claim(s) must be submitted to Owner within fourteen (14) days of written notice. Failure to properly give such notice shall constitute waiver of the Claim. The Contractor shall not be entitled to any change in the Contract Sum or the Contract Time, nor any other compensation, for any events or costs that occurred more than seven (7) days before the written notice. The written notice and

documentation must be substantiated in accordance with Subparagraph 4.3.2 above. The notice and documentation shall be deemed to include a statement that the Claim covers all changes in cost and in time (direct, indirect, impact, consequential, and otherwise) to which the Contractor (and Subcontractors and Suppliers) is entitled. The Owner or its representative shall have the right to audit the books and records of the Contractor and/or of any Subcontractor of any tier making a Claim.

.1 If a Claim is not resolved, the Contractor may bring no Claim against the Owner in litigation unless the Claim is first subject to consideration by the Project Neutral in accordance with the specification contained in the Contract Documents.

.2 The Contractor may bring no litigation on Claims unless such claims have been properly raised and considered in the procedures of this Article. All unresolved Claims shall be waived and released unless the Contractor has strictly complied with the time limits of the Contract Documents, and litigation is served and filed within 120 days following Final Acceptance. This requirement can be waived only by an explicit written waiver signed by the Owner.

4.4.3 The Contractor shall diligently carry on the Work and maintain the progress schedule during any dispute resolution proceedings, unless otherwise agreed by it and the Owner in writing.

4.4.4 The Contractor agrees that the Owner and Architect may join the Contractor as a party to any litigation/arbitration/mediation involving the Project in any way. All disputes unresolved after mediation shall be decided by litigation in accordance with the Contract Documents.

4.4.5 Notwithstanding the above, the Owner may demand arbitration, before a single arbitrator appointed by the American Arbitration Association under the Expedited Procedure of the Construction Industry Arbitration Rules within five (5) days of the demand, for the purpose of seeking a declaratory judgment regarding the proprietary of the Owner's prospective termination of the Contractor. The hearing shall occur within seven (7) days of the appointment of the arbitrator, and the award shall be made within two (2) of the close of the hearing and shall be final and binding.

4.5 INITIAL NOTICES AND CLAIMS

4.5.1 Any Claim of the Contractor against the Owner for damages, additional payment for any reason, or extension of time, whether under the Contract or otherwise, shall be conclusively deemed to have been waived by the Contractor unless a timely Initial Notice is provided followed by timely submission of a Claim in strict accordance with this Article. No act, omission, or knowledge, actual or constructive, of the Owner or the Architect shall in any way be deemed to be a waiver of the requirement for timely written notice unless the Owner provides the Contractor with an explicit, written waiver of timely Initial Notice and/or timely submission of a Claim.

4.5.2 All Initial Notices and Claims shall be addressed to:

Issaquah School District
Tom Mullins, Director of Capital Projects
5150 220th Ave SE
Issaquah, WA 98029

4.6 RETENTION OF RECORDS AND AUDIT

The Contractor shall maintain and retain for a period of not less than three (3) years after the date of acceptance of Work all documents related to the Contractor's bid for this Contract (e.g., estimating sheets, take-offs, etc.) and all records pertaining to the performance of the Work under this Contract, including Work performed as extra work. The Contractor shall ensure each of his Subcontractors maintains and retains for said period all records pertaining to performance of Subcontractor Work under this Contract, including Work performed as extra work. Upon twenty-one (21) days' notice to Contractor, all such documents and records shall be open to inspection and audit by Owner or others designated or authorized by Owner or under applicable law and regulations. If an audit is to be commenced more than sixty (60) calendar days after the acceptance of Work, Owner will give reasonable notice of the time when the audit is to begin.

ARTICLE 5
SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the subcontractor. The term "Subcontractor" does not include a separate contractor or Subcontractors of a separate contractor.

5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

5.1.3 A Supplier is a person or entity who has a direct or indirect contract with the Contractor or a Subcontractor of any tier to furnish materials or equipment to be incorporated in the Work.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within (10) days of Owner's Notice of Intent to Award, shall furnish in writing to the Owner and the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work, consistent with the listing requirements on the Bid. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection. The Owner shall have the right to reject any proposed Subcontractor when the Owner reasonably believes the Subcontractor is not qualified or responsible to perform the Work or if the Subcontractor is different from one listed on or with the Bid.

5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. The Contract Sum shall be increased or decreased by the difference in cost occasioned by such change which is fully documented to the Owner's and Architect's reasonable satisfaction and an appropriate Change Order shall be issued. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required. The Owner shall not be responsible for any increased cost for any change involving a person or entity who or which was not in all respects qualified, competent and sufficiently experienced to perform proposed Work.

5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such change. The Owner may require the Contractor to change any Subcontractor previously approved for reasonable cause. Actions by the Owner or Architect pursuant to this subparagraph shall not be deemed to make either responsible for the performance or future performance of a Subcontractor.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 The Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.3.2 Any part of the Work performed for the Contractor by a Subcontractor shall be pursuant to a written subcontract agreement between the Contractor and such Subcontractor, which shall be available to the Owner for review upon request. The Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors and Suppliers of any tier. No subcontracting of any of the Work shall relieve the Contractor from its responsibility for the performance of the Work or its obligations under the Contract Documents. Each such Subcontractor Agreement shall:

.1 Require that such Work be performed in accordance with all of the requirements of the Contract Documents and applicable laws and regulations;

.2 Waive all rights the contracting parties and their insurers may have against one another or that the Subcontractor may have against the Owner for damages caused by fire or other perils covered by the property insurance described in the Contract Documents;

.3 Require the Subcontractor to carry and maintain insurance in accordance with the Contract Documents;

.4 Require the Subcontractor to furnish such certificates and waivers as may be reasonably requested to the extent Subcontractor has been paid for Work performed under the Subcontract Agreement;

.5 Require the Subcontractor to incorporate EEO statements in accordance with the Contract Documents;

.6 Require payment of prevailing wages in accordance with the Contract Documents;

.7 Require the Subcontractor to incorporate and follow the Federal Grant Requirements in accordance with the Contract Documents.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

.1 Assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and

.2 Assignment is subject to the prior rights of the surety, if any, obligated under a bond relating to the Contract.

5.5 LIENS

The Contractor shall defend, indemnify and hold harmless the Owner from any liens arising out of the work.

ARTICLE 6
CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. The Contractor shall coordinate its Work with that of separate contractors. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor may file and document a Claim subject to the Claim provisions in the Contract Documents.

6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor that executes each separate Owner-Contractor Agreement.

6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall fully cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule and Contract Sum deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner unless and until subsequently revised.

6.1.4 Occupancy or use of any portion of the Work site by Owner shall not be construed as Substantial Completion.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner and separate contractor's reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

6.2.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefor.

6.2.4 The Contractor shall promptly remedy damage caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subparagraph 10.2.5.

6.2.5 Claims and other disputes and matters in question between the Contractor and a separate contractor shall be subject to the provisions of Paragraphs 4.3 and 4.4 provided the separate contractor has reciprocal obligations.

6.2.6 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Paragraph 3.15.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Paragraph 3.16, the Owner may clean up and allocate the cost among those responsible as the Owner determines to be reasonable.

ARTICLE 7
CHANGES IN THE WORK

7.1 CHANGES

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. The Contractor shall be responsible for notifying the bonding and insurance company(ies) of any changes in the Work; provided that neither the number or quality of changes nor Contractor's failure to provide notice shall release or impair bonding or insurance obligations or coverages.

.1 Before effectuating a change in the Work, the Owner may request the Contractor to propose the amount of change in the Contract Sum, if any, and the amount of change in the Contract Time, if any, arising from a proposed change in the Work. The Contractor shall submit its responsive proposal within no more than seven (7) days and shall in good faith specify the amounts by which the Contract Sum and/or Time would change in accordance with Article 4. The Owner may accept the proposal in writing, in which case it will be included in a future Change Order, and the change in the Work may commence immediately. The Owner may reject the proposal, in which case the Owner may either not effectuate the change or may order the change through a Construction Change Directive.

7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work, for which there is no change in the Contract Sum or Time, may be issued by the Architect alone.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed upon receipt of written Notice to Proceed from the

Owner, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

7.1.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are so changed in a proposed Change Order or Construction Change Directive that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

7.2 CHANGE ORDERS

7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect, stating their agreement upon all of the following:

.1 A change in the Work;

.2 The amount of the adjustment in the Contract Sum, if any; and

.3 The extent of the adjustment in the Contract Time, if any.

7.2.2 A Change Order shall constitute final resolution of the matter addressed by the Change Order.

7.2.3 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 unit prices stated in the Contract Documents or subsequently agreed upon;

.3 cost to be determined in a manner agreed upon by the parties (accompanied by an itemized estimate of probable cost) and a mutually acceptable fixed or percentage fee; or

.4 as provided in Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved. As soon as possible, and within seven (7) days of receipt, the Contractor shall advise the Architect in writing of the Contractor's agreement or disagreement with the proposed adjustment or the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time. The Contractor's response shall reasonably specify the reasons for its disagreement and the amount or other terms that it proposes. Without such timely written response, the Contractor shall conclusively be deemed to have accepted the Owner's adjustment. The Contractor's disagreement shall not relieve the Contractor of its obligation to comply promptly with any written notice issued by the Owner or the Architect. The adjustment shall then be determined by the Architect in strict accordance with the provisions of the Contract Documents.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be incorporated into a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, or if cost is to be determined under Clause 7.3.3.3, the Contractor shall keep and present within seven (7) days' written request from the Owner, in such form as the Architect may prescribe, an itemized accounting of the time and material expended, together with supporting data. In order to facilitate checking of such quotations, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by complete itemization of costs, including labor, materials, equipment and subcontract costs. Labor, equipment and materials shall be itemized in the manner described in Paragraph 7.5. When major cost items arise from Subcontractors of any tier, these items shall also be itemized, and the Contractor must include a statement that the Contractor has reviewed the Subcontractors' costs and believes them to be accurate. Approval may not be given without such itemization. Failure to provide data within fourteen (14) days of the Architect's request shall constitute waiver of any Claim for changes in the Contract Time or Contract Sum. The total cost of any change, including a Claim under Paragraph 4.3 or 4.4, shall be limited to the reasonable value, as determined by the Architect (subject to appeal through the dispute resolution procedure of Paragraph 4.4), of the items in Paragraph 7.5. Unless otherwise agreed in writing by the Owner, the cost shall not exceed the lower of the prevailing cost for the work in the locality of the Project or the cost of the work in the current edition of R. S. Means Company, Inc., Building Construction Cost Data as adjusted to local costs and conditions. The Architect and the Owner may confer directly with Subcontractors of any tier concerning any item chargeable directly or indirectly to the Owner under this article to confirm contract balances due and to obtain statements or lien waivers.

7.3.7 Pending final determination of the total cost of a Construction Change Directive to the Owner, and provided that any reservations of rights in respect to the Construction Change Directive have been initialed by the Owner, amounts not in dispute for such changes in the Work may be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. If the Contractor adds a reservation of rights that has not been initialed by the Owner, all the amounts for the Construction Change Directive shall be considered disputed unless costs are renegotiated or the reservation is withdrawn or changed in a manner satisfactory to the Owner. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be the largest of (i) the reasonable value of the deletion or change, (ii) the line item value in the

Schedule of Values, or (iii) the actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 If the Owner and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Architect for determination. Any adjustment in the Contract Time arising from a Change or a Claim shall be limited to the change in the actual critical path of the Contractor's Construction Schedule directly caused thereby.

7.3.9 When the Owner and Contractor agree with the determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Architect and the Owner will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly even if the Contractor intends to file a Claim, in which case the notice of claim must be filed in advance of any such Work pursuant to the provisions of Paragraph 4.3.

7.5 PRICING COMPONENTS

7.5 The total cost of any changed Work or of any other increase or decrease in the Contract Sum, including without limitation a Claim or a Change, shall be limited to the following components. The Owner shall not be obliged to pay for Claim pricing on a basis different from that bid. Contractor shall provide to the Architect and Owner, prior to the first pay application, a breakdown of the labor burden costs for each trade. Revised labor burden costs shall be required when there is a change to the State Prevailing Wage Rate Schedule.

7.5.1 Direct labor costs: These are the on-site labor costs determined by either an agreed estimate or actual number of additional craft hours and the hourly cost necessary to perform directly the change in the Work, or the unit labor costs applied to the reasonably incurred and necessary material quantities and extended, provided the unit labor costs are developed from the above craft hour cost, whichever is applicable, according to industry practice.

The hourly cost shall be based upon the following:

.1 Basic wages: The hourly wage (without markup, fringe benefits or labor burden and not to exceed that specified in the applicable "Intent to Pay Prevailing Wages") for the laborers, apprentices, journeymen, and foremen performing and/or directly supervising the changed Work on the site. The premium portion of overtime wages is not included unless pre-approved by the Owner.

.2 Fringe benefits: Fringe benefits paid by the Contractor as established by the Washington Department of Labor and Industries, or contributed to labor trust funds as itemized fringe benefits,

whichever is applicable. Cost paid or incurred by the Contractor for vacations, per diem, bonuses, stock options, or discretionary payments to employees are not reimbursable.

.3 Workers' insurances: Direct contributions to the State of Washington as industrial insurance; medical aid; and supplemental pension by class and rates established the Washington Department of Labor and Industries.

.4 Federal insurances: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).

7.5.2 Direct material costs: This is an itemization, including material invoices, of the quantity and cost of additional materials reasonable and necessary to perform the change in the Work. These costs shall be by the unit cost applied to the quantity and extended. The unit cost shall be based upon the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs when applicable. No lump sum costs will be allowed except when approved in advance by the Owner.

7.5.3 Construction equipment usage costs: This is an itemization of the actual length of time that construction equipment appropriate for the Work will be used solely on the change in the Work at the site times the applicable rental cost as established by the lower of the local prevailing rate published in The Rental Rate Blue Book by Data Quest, San Jose, California, as modified by the AGC/WSDOT agreement or the actual rate paid to unrelated third parties as evidenced by rental receipts. Actual, reasonable mobilization costs are permitted if the equipment is brought to the site solely for the change in the Work.

If more than one rate is applicable, the lowest rate will be utilized. The rates in effect at the time of the performance of the Change work are the maximum rates allowable for equipment of modern design and in good working condition and include full compensation for furnishing all fuel, oil, lubrication, repairs, maintenance, and insurance. Equipment not of modern design and/or not in good working condition will have lower rates. Hourly, weekly, and/or monthly rates, as appropriate, will be applied to yield the lowest total cost. The rate for equipment necessarily standing by for future use on the changed Work shall be 50% of the rate established above. The total cost of rental allowed shall not exceed the cost of purchasing the equipment outright.

If equipment is required for which a rental rate is not established by The Rental Rate Blue Book, an agreed rental rate shall be established for that equipment, which rate and use must be approved by the Owner prior to performing the changed Work.

7.5.4 Cost of change in insurance or bond premium. This is defined as:

.1 Contractors' liability insurance: The cost (expressed as a percentage) of any changes in the Contractor's liability insurance arising directly from the changed Work; and

.2 Public works bond: The cost (expressed as a percentage) of the change in the Contractor's premium for performance and payment bonds required by the Owner and arising directly from the changed Work.

Upon request, the Contractor shall provide the Owner with supporting documentation from its insurer or surety.

7.5.5 Subcontractor costs: These are payments the Contractor makes to Subcontractors for changed Work performed by Subcontractors. The Subcontractors' cost of changed Work shall be determined in the same manner as prescribed in Subparagraphs 7.5.1 through 7.5.4.

7.5.6 Fee: The Fee is the allowance for all combined overhead, profit and other costs, including all office, home office and site overhead (including project manager, project engineer, other engineers, project foremen, estimator, and superintendent and their vehicles), facilities, insurance, bonds and taxes (except for sales tax), engineering, estimating, purchasing, quality control or assurance, clerical, preparation and safety costs, hand and small tools and expendable charges, change order or claim preparation, preparation of as-built drawings, impact on unchanged Work, and delay, acceleration and impact costs of any kind, added to the total cost to the Owner of any Change Order, Construction Change Directive, Claim, or any other claim of any kind. It shall be limited in all cases to the following schedule.

.1 The Contractor shall receive 18% of the costs prescribed in Subparagraphs 7.5.1 through 7.5.4 of any materials properly supplied or work satisfactorily performed by the Contractor's own forces.

.2 The Contractor shall receive 11% of the amount owed directly to a Subcontractor for materials properly supplied or work satisfactorily performed by that Subcontractor as prescribed in Subparagraph 7.5.5.

.3 Each Subcontractor of any tier shall receive 15% of the costs prescribed in Subparagraphs 7.5.1 through 7.5.4 of any materials properly supplied or work satisfactorily performed by its own forces.

.4 Each Subcontractor of any tier shall receive 11% of the amount it properly incurs for materials properly supplied or Work satisfactorily performed by its suppliers or subcontractors of any lower tier as prescribed in Subparagraph 7.5.5.

.5 The total summed Fee of the Contractor and all Subcontractors of any tier shall not exceed 25%.

.6 None of the fee percentages authorized in this paragraph 7.5.6 may be compounded with any other fee percentage or percentages authorized in this paragraph.

If a change in the Work involves both additive and deductive items, the appropriate Fee allowed will be added to the net difference of the items. If the net difference is negative, no Fee will be added to the negative figure as a further deduction.

ARTICLE 8
TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents from notice to Proceed to date of Substantial Completion of the Work as defined in subparagraph 8.1.3. The only adjustments thereto are by Change Order.

8.1.2 The date of commencement of the Work is the date established in the Agreement unless otherwise provided by written Notice to Proceed. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Paragraph 9.8

8.1.4 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.1.5 Notice to Proceed is the written notice issued by the Owner identifying the date of commencement of the Work and identifying conditions to be satisfied before execution of the Contract and Work on site may commence.

8.2 PROGRESS AND COMPLETION

8.2.1 Within ten (10) days of Owner’s written notification to the Contractor of its Notice of Intent to Award, the Contractor shall submit an executed contract, surety bond, preliminary progress schedule, certificates of insurance, any documents required by state or local authorities, and all other documents required by the Contract. Failure to make such a submission shall constitute a material breach of the conditions of the bid and bid bond; and, at Owner’s sole discretion, Owner may void the bid award and forfeit contractor’s bid bond.

8.2.2 Time is of the essence for commencement and completion of the Work. The Owner is relying materially on a specific construction period and will suffer serious direct, indirect and consequential damages should the established dates not be met. The Contractor shall promptly start the Work as soon as possible after the date of the Notice to Proceed and shall prosecute the Work so that the various portions of the Work shall be complete in accordance with any intermediate and final completion date(s) set forth in the Contract Documents and the Contractor’s schedule. During periods when weather or other conditions are unfavorable for construction, the Contractor shall pursue only such portions of the Work as will not be damaged thereby; no portions of the Work shall be constructed while those conditions exist if acceptable quality or efficiency will be adversely affected. It is expressly understood and agreed by and between the Contractor and the Owner that the Contract Time for completion of the Work described herein is a reasonable time taking into consideration the weather conditions and other factors prevailing in the locality of the Work.

8.2.3 The Contractor shall provide progress schedules, cash flow projections and additional reports, as may be specified in the Contract Documents or as reasonably requested by the Owner, demonstrating the Contractor's logic and sequencing plan for scheduling and completing the Work within the Contract Time. Contract Time extensions approved by the Owner shall be incorporated into updated schedules reflecting their effect at the time of occurrence. Progress payments will not be considered by the Owner until the Contractor complies with these requirements.

The Contractor shall promptly notify the Architect and the Owner in writing of any facts or conditions which would affect the Contractor's ability to meet the intermediate or final completion date(s) for the Work. If the Contractor fails to maintain the progress necessary for the completion of the intermediate or final completion date(s) as required under this Contract, the Owner shall have all of the rights and remedies provided by law and under this Contract. Notwithstanding such rights and remedies, the Contractor shall, upon written notice by the Owner and at no additional cost to the Owner, work such hours as allowed by applicable permits and other such constraints, and furnish such additional personnel, equipment and construction plant for such a period of time as necessary to regain and thereafter maintain the progress required by the Contract. If the Contractor fails to comply with the Owner's notice or fails to regain and thereafter maintain the progress required by the Contract, the Owner shall have all the rights and remedies provided by law and provided by this Contract, including those set forth in Paragraph 14.2 herein.

8.2.4 In the event the Work is delayed, the Owner will suffer losses and damages which may be impossible or impracticable to calculate. Should the Contractor fail to perform the work within the Contract Time as stipulated in the Contract Documents, Contractor shall pay to Owner, as liquidated damages and not as a penalty, the amount of $500 per day of delay in achieving Substantial Completion for either the entire project or a particular phase, and $500 per day for each day beyond forty-five (45) days after Substantial Completion as noted in the Contract Documents during which the Project is not finally complete, unless extensions of time granted by Owner specifically provide for the waiving of liquidated damages. The Owner shall have the right to deduct the liquidated damages from any money otherwise due, or to become due, to Contractor. The liquidated damages amounts are not intended to preclude the Owner from pursuing claims and causes of action for other damages to the Owner resulting from the failures or defaults of the Contractor unrelated to delay in the Work.

8.2.5 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor. Neither the date of commencement of the Work nor the date of completion of the Work shall be changed by the effective date of such insurance.

8.2.6 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is unavoidably delayed at any time in progress of the Work by an act or neglect of the Owner or Architect or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unavoidable casualties or other causes which are both beyond the Contractor's control and could not be reasonably anticipated, or by other unavoidable causes which the Architect determines may justify delay, then the Contract

Time shall be extended by Change Order for such reasonable time as the Owner may determine after considering the recommendations of the Architect.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraphs 4.3, 4.4 and 4.5.

8.3.3 For delays concerning which the Contractor has given proper and timely notice pursuant to Paragraphs 4.3, 4.4 and 4.5, the Contractor shall submit to the Owner and Architect a substantiated Claim. The Owner may grant an extension of time to the extent that unavoidable and reasonable delays necessarily affect controlling operations in the construction schedule. During such extension of time no damages for delay will be charged to the Contractor. It is understood and agreed by the Contractor and Owner that time extensions due to unavoidable and reasonable delays necessarily involve controlling operations which would prevent completion of Work within the Contract Time. To the extent that any such extension of time is caused by act(s) or omission(s) of someone other than the Owner or persons acting for the Owner, or to the extent that the extension of time arises from a reasonable delay, the Contractor's sole remedy shall be the extension of time and it may not recover any damages whatsoever arising in any manner from such delay. For purposes of this paragraph, any individual delay of up to the greater of 5 days or one percent of the Contract Time (as extended) shall be deemed reasonable and any individual delay of up to the greater of ten (10) days or five percent (5%) of the Contract Time (as extended) shall be presumed reasonable.

ARTICLE 9
PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Within fourteen (14) days after issuance of the Notice to Proceed the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work as required in subparagraph 3.11.4, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

.1 Mobilization shall be a maximum of 0.5% of the Contract Sum and shall be paid only if supported by an itemized breakdown of costs acceptable to the Owner.

.2 The schedule of values shall allocate at least 1% of the Contract Sum to the Commissioning if included in the contract documents.

.3 The Schedule of Values shall also allocate at least 4% of each line item to that portion of the Work between substantial completion and final completion of that line item. This is not the statutory retainage described in the Contract Document or any other retainage but rather requires the Contractor to recognize that the Contractor and its Subcontractors will expend significant costs

in advancing the Work from Substantial Completion to Final Completion, and that this amount is not earned until Final Completion is accomplished.

9.3 APPLICATION FOR PAYMENT

9.3.1 Contractor shall submit to Architect an itemized Application for Payment for Work completed during the monthly application period and not covered in a preceding Application for Payment. Such application shall be in the form required by the Owner, and shall be supported by such data substantiating Contractor's right to payment as Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers and any EEO compliance forms. Such applications shall reflect any retainage amount required herein, shall contain the statements required herein, and shall be accompanied by an updated progress schedule per Section 3.11, and by partial lien releases executed by all Subcontractors, mechanics and materialmen who supplied labor or materials or both in the performance of Work for which progress payments were previously made. Such application may not include a request for payment of any amount Contractor does not intend to pay to a Subcontractor, mechanic or materialman because of a dispute or other reason.

.1 At the last weekly meeting each calendar month, or as otherwise agreed in writing, the Contractor shall submit to the Architect a report on the current progress of the Work as compared to the Contractor's Construction Schedule, and a draft, itemized application for payment for Work performed during the prior month to the date of submission. This shall not constitute a payment request. The Contractor and Architect shall confer at the meeting regarding the current progress of the Work and the amount of payment to which the Contractor is entitled.

.2 The Architect or Owner may request the Contractor to provide data substantiating the Contractor's right to payment, including, without limitation:

.1 Copies of requisitions from Subcontractors;

.2 lien releases (see subparagraph 5.3.2.4);

.3 certified payroll records for Contractor and all major Subcontractors, including sitework and utilities, mill work, framing, electrical, mechanical, painting and drywall, and masonry;

.4 retainage documentation; and

.5 other documentation as provided elsewhere in the Contract Documents.

.3 The Contractor shall not be entitled to make a payment request, nor is any payment due the Contractor, until data requested by Architect or Owner is furnished.

.4 After the Contractor and the Architect have met and conferred regarding the draft application, and the Contractor has furnished all progress information required and all data requested by the Architect under Subparagraphs 9.3.1.1 and 9.3.1.2 above, the Contractor may submit a payment request in the agreed-upon amount, in the form of a signed, itemized Application for Payment for Work performed during the prior month to the date of the last weekly meeting referenced above, on a form supplied or approved by the Owner. Among other things, the Application shall state that prevailing wages have been paid in accordance with the prefiled statement(s) of intent to pay prevailing wages on file with the Owner and that all payments due

Subcontractors and Suppliers of any tier from the Owner's payment the prior month have been made. THE SUBMISSION OF THIS APPLICATION CONSTITUTES A CERTIFICATION THAT THE WORK IS CURRENT ON THE CONTRACTOR'S CONSTRUCTION SCHEDULE, unless otherwise noted on the application.

.5 If the Contractor believes it is entitled to payment for Work performed during the prior calendar month in addition to the agreed-upon amount, the Contractor may, within the same five-day time period, submit to the Owner and the Architect a separate written payment request specifying the exact additional amount due, the category in the Schedule of Values in which the payment is due, the specific Work for which the additional amount is due, and why the additional payment is due. Furthermore, the Contractor and all Subcontractors shall file with the Owner within the five-daytime period certified copies of all payroll records relating to the additional amount due.

.6 A payment request shall not be valid unless it complies with the requirements of the Contract Documents. If a separate payment request concerning a disputed amount does not comply with the requirements of the Contract, the Owner will provide a written statement to the Contractor.

.7 No payment request shall include amounts the Contractor does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason. If after making a request for payment but before paying a Subcontractor or Supplier for its performance covered by the payment request, the Contractor discovers that part or all of the payment otherwise due to the Subcontractor or Supplier is subject to withholding from the Subcontractor or Supplier under the subcontract for unsatisfactory performance, the Contractor may withhold the amount as allowed under the subcontract, but it shall give the Subcontractor, the Owner and the Architect written notice of the remedial actions that must be taken as soon as practicable after determining the cause for withholding but before the due date for the Subcontractor/Supplier payment, and pay the Subcontractor/Supplier within eight working days after the Subcontractor/Supplier satisfactorily completes the remedial action identified in the notice.

9.3.2 If Architect has received the Contractor's Application for Payment in a timely manner, Architect will issue to Owner a Certificate for Payment, with a copy to Contractor, for such amount as Architect and Owner determine is properly due against the pending application for payment. Owner shall make a progress payment to Contractor, in accordance with paragraph 9.6.1.

9.3.3 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at an insured and secure location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's

knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials or equipment relating to the Work.

9.3.5 Owner shall retain from any amount otherwise earned by Contractor hereunder a sum equal to five percent (5%) of the amount earned by Contractor in accordance with RCW Chapter 60.28. If the Contractor elects to submit a retainage bond on behalf of itself or one or more of its Subcontractors in accordance with Chapter 60.28 RCW, each such bond must be issued on a form acceptable to Owner by a surety licensed to do business in the state where the Work is located with an A.M. Best rating of A-/IX or better on behalf of Contractor or A-/V on behalf of a Subcontractor. Contractor is responsible for submitting retainage bond(s) that meet these requirements to Owner on behalf of itself and/or any Subcontractor. Owner will not accept retainage bonds submitted directly to it by a Subcontractor. The Contractor may withhold from Contractor's payments to its Subcontractors and Suppliers in accordance with the requirements of RCW Chapter 60.28 not more than 5% as retainage from moneys earned by such persons or entities.

.1 The retainage shall be held as a trust fund for the protection and payment of any person or persons, mechanic, Subcontractor, or materialman who shall perform any labor under this Contract, as provided by Chapter 60.28 Revised Code of Washington (RCW) and all persons who shall supply such person or persons of Subcontractors with provisions, and supplies for the carrying on of such Work, and the State with respect to taxes imposed pursuant to RCW Title 82 which may be due from Contractor. In accordance with the provisions of Chapter 60.28 RCW, said trust fund shall be retained for the statutory period, and every person performing labor or furnishing supplies toward the completion of said Work shall have a lien upon said fund provided that proper notice of the lien shall be given as required by law. After the expiration of the statutory notice period, and after receipt of a clearance of the Washington Department of Revenue, Washington State Department of Employment Security, and the Washington State Department of Labor & Industries, the reserve in excess of a sum sufficient to discharge the taxes certified as due or to become due by the Department of Revenue, the Department of Labor & Industries, and the claims of materialmen and laborers who have filed their claims, together with a sum sufficient to defray the cost of foreclosing the liens of such claims, and to pay attorneys' fees, shall be paid to Contractor. The provisions of this subparagraph shall supersede any other conflicting provision in this Contract.

.2 Monies reserved under provisions of Chapter 60.28 RCW shall, at the option of the Contractor, be:

a. Retained in a fund by the Owner with no interest paid thereon to the Contractor; or

b. Deposited by the Owner in an interest-bearing account in a bank, mutual savings bank, or savings and loan association, not subject to withdrawal until after final acceptance of all work, or a portion thereof, as may be approved by the Owner; or

c. Placed in escrow in a bank or trust company by the Owner. When the monies reserved are to be placed in escrow, the Owner will issue a check representing the sum of the monies reserved payable to the bank or trust company and the Contractor jointly. Such check shall be converted into bonds and securities chosen by the Contractor and approved by the Owner, and

the bonds and securities held in escrow. Interest on the bonds and securities shall be paid to the Contractor as the interest accrues.

Under option b and c above, interest will be paid to the Contractor as the interest accrues. The Contractor shall designate the option desired on a form as may be provided by the Owner. This form shall be submitted no later than with the Contractor's first partial payment request. The Contractor in choosing option b or c agrees to assume full responsibility to pay all costs which may accrue from escrow services, brokerage charges, or both, and further agrees to assume all risks in connection with the investment of the retained monies. If retainage funds are placed in escrow, the escrow agreement shall be a standard Superintendent of Public Instruction ("SPI") Format.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Architect will, within seven (7) days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect and Owner determine is properly due or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by the Architect.

9.5 CERTIFICATION AND PAYMENTS WITHHELD

9.5.1. The Architect may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made or if the Contractor's Application for Payment does not comply with the requirements of the Contract. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representation to the Owner. The Owner may, with or without the Architect's concurrence, withhold payment, and the Architect may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Owner's or Architect's opinion to protect the Owner from loss because of:

.1 Defective Work or unsatisfactory performance not remedied;

.2 Third party claims filed against the Owner relating to the Work or reasonable evidence indicating probable filing of such claims;

.3 Failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment; or failure to submit affidavits pertaining to wages paid as required by the Contract Documents;

.4 Damage to the Owner or another contractor;

.5 Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover liquidated damages for the anticipated delay;

.6 Failure to carry out the Work in accordance with the Contract Documents;

.7 If Owner or Architect, in its good faith judgment, determines that the portion of the Contract Sum then remaining unpaid will not be sufficient to complete the Work in accordance with the Contract Documents, then the Owner shall make no additional payments and none will become due to the Contractor unless and until the Contractor, at its sole cost, performs a sufficient portion of the Work so that the Contract Sum then remaining unpaid is determined by the Owner or Architect to be sufficient to so complete the Work;

.8 Failure of the Contractor to submit timely schedule updates; or delay by the Contractor and/or its Subcontractor(s) of any tier, or failure to comply with Contractor's Progress Schedule; or

.9 Liquidated damages.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.5.3 Owner shall not be deemed to be in breach of this Contract by reason of the withholding of any payment if the Work in question shall have been rejected by any governmental authority. The Owner shall have no obligation to make payments for defective Work and unsatisfactory performance until such Work and performance is corrected or replaced as provided herein and compensation is thereby earned.

9.5.4 Pursuant to RCW 39.12, the Contractor will not receive any payment until the Contractor and all Subcontractors of any tier have submitted a "Statement of Intent to Pay Prevailing Wage" to the Owner. The statement must have the approval of the Industrial Statistician of the Department of Labor and Industries before it is submitted to the Owner. The statement must include the Contractor's registration number, the number of workers in each trade classification, and the applicable wage rate for each trade listed. The Contractor agrees to provide each Subcontractor with a schedule of applicable prevailing wage rates. The Contractor and the respective Subcontractors shall pay all fees required by the Department of Labor and Industries, including fees for the approval of the "Statement of Intent to Pay Prevailing Wages." Approved copies of the "Statement of Intent to Pay Prevailing Wages" must be posted where workers can easily read them.

9.6 PROGRESS PAYMENTS

9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents and shall so notify the

Architect. The Owner will make a progress payment within thirty (30) days of its receipt of the Architect's Certificate for Payment but shall be entitled to withhold payment according to subparagraph 9.5, notwithstanding the issuance of a Certificate for Payment.

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with Subcontractors, require each Subcontractor to make payments to Sub-subcontractors in similar manner. If the Contractor does not receive payment for any cause which is not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, made at any time after which such payment to the Contractor would have been made, for its work to the extent completed, less the retained percentage.

9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3 and 9.6.4.

9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work.

9.7 LITIGATION DELAY COSTS

9.7.1 In the event of delays primarily due to litigation which qualifies under RCW 60.28.080, the parties hereto agree that the reasonable costs of such litigation delay shall consist only of the following:

.1 Actual and necessary direct costs to the Contractor directly attributable to the period of delay for wages, wage taxes and labor costs other than wages; provided, that such costs could not be otherwise avoided by layoffs or employment on other projects during the period of delay. The wage rates shall not exceed those listed on the Contractor's "Statement of Intent to Pay Prevailing Wages on Public Works Contract" as approved by the Industrial Statistician of the State of Washington.

.2 Additional and necessary direct costs for materials and equipment rentals actually incurred and paid by the Contractor directly attributable to the period of delay.

.3 Actual equipment standby costs established by rental agreements or, if Contractor owned, by the lowest rate utilized by The Contractor for purposes of its project accounting.

.4 Additional and necessary direct costs of insurance premiums and bonds actually incurred and paid by the Contractor directly attributable to the period of delay.

.5 Additional and necessary costs for subcontracts actually incurred and paid by the Contractor directly attributable to the period of delay; provided, that such additional costs could not be avoided by cancellation or renegotiation of such subcontracts.

.6 To such costs shall be added an amount equal to ten percent (10%) thereof as a reasonable amount for overhead, profit, and all other costs not specifically accounted for above.

Within three days after notice of litigation delay under this paragraph, the Contractor shall notify the Owner and Architect in writing of the Contractor's estimated weekly litigation delay costs as described above; provided, however, that in no event will payment for actual litigation delay costs exceed one hundred twenty-five percent (125%) of the said estimated costs. The Contractor shall submit to the Architect no later than the fifth day of each month a request for such litigation delay costs incurred during the previous calendar month. The request for payment shall be in a form satisfactory to the Architect and Owner and shall include copies of invoices, correspondence and such other verifiable evidence of delay costs actually and necessarily incurred by the Contractor as the Owner or Architect may require. This paragraph shall be the Contractor's exclusive remedy for litigation delay costs.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended purpose, as determined by Owner and Architect. No portion of the project will be considered substantially complete until the local building, fire and DSHS authorities have issued Certificates of Occupancies and or other approval for occupancy covering that portion of the Work. All of the Project's parts and systems shall be accessible, operable, and commissioned to be usable by the Owner, including site Work. The Project shall be clean. Preliminary training of personnel must take place. Only incidental corrective Work under "Punch Lists" and final cleaning (if required) may remain to be done.

.1 There will be a Date of Substantial Completion specified in the Contract Documents. The Work is not Substantially Complete if all systems and parts are not usable and commissioned, if utilities are not connected and operating normally, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The fact that the Owner may occupy the Work or designated portion thereof does not indicate that the Work is Substantially Complete or is acceptable in whole or in part, nor does such occupation toll or change any liquidated damages due the Owner.

2. The 12 month warranty for the entire project will commence with Substantial Completion.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete to assist the Contractor in completing the Work. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial

Completion, complete or correct such item upon notification by the Architect. The Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. The cost of this and any additional inspections by the Architect shall be at Contractor's expense in accordance with subparagraph 9.8.2.1 below. When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. The general Project warranty and all other warranties required by the Contract Documents shall commence on the date of Final Completion and Acceptance by Owner's Board of Directors of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

.1 The Architect and Owner will make one Punch List check and perform one back check of the Punch List to determine Final Completion in accordance with Section 9.10. Added inspections or meetings shall be at Contractor's expense at Architect's applicable rates. Such inspection meetings may be required because of:

A. Failure on the part of Contractor to satisfactorily complete all items on Punch List prior to Back Check of the Punch List, or

B. Additional inspections required by defective installations or equipment.

C. If at thirty (30) days after Date of Substantial Completion, the Owner considers that the punch list items are unlikely to be completed within an additional fifteen (15) days, the Owner may, upon seven (7) days' written notice to the Contractor, take over and perform some or all of the punch list items. If the Contractor fails to correct the deficiencies within the time period required, the Owner may deduct the actual cost of performing this punch list work including any design costs, plus 10% to account for the Owner's transaction costs from the Contract Sum.

9.8.3 Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Architect, the Owner shall make payment, for such Work or portion thereof as provided in the Contract Documents.

9.8.4 Contractor's acceptance of Substantial Completion payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified in writing by the Contractor as unsettled at the time of the application for payment for the substantial Completion payment, and except for the Contract Sums due at Final Acceptance.

9.8.5 Date of Commissioning of Critical Systems. The following systems of the Work, and any other systems designated in the Contract Documents, are considered "Critical Systems" but not limited to: the HVAC system, the data communication system(s), the intercom system, the life safety system(s), the security system and the electrical systems When the Contractor considers that the Critical Systems are up and running and ready for normal operation as specified for each phase, the Contractor shall so notify the Architect in writing a minimum of fourteen 14 days prior to the Date of Substantial Completion for that portion or phase as fixed in the Contract Documents. The Architect will then schedule a pre-commissioning inspection of these systems to determine

whether the Critical Systems are complete and ready for normal operation. If the Architect's inspection discloses that the Critical Systems are not Substantially Complete or that any item which is not in accordance with the requirements of the Contract Documents, the Contractor shall expeditiously, and before the Date of Commissioning, complete or correct such item upon notification by the Architect. The Contractor shall then submit a request for another inspection by the Architect to determine completion of the Critical Systems and pay the costs associated with the re-inspection, including fees of the Architect and its consultants. When the Critical Systems are complete, the Architect will notify the Owner in writing, which shall establish the Date of Commissioning. Warranties on the Critical Systems required by the Contract Documents shall commence on the Date of Commissioning, unless otherwise provided. The Date of Commissioning shall not have an effect on the duties of the parties at Substantial Completion.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Subparagraph 11.3.3 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payment, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.9.3 Use by Owner of any finished part of the Work, which has specifically been identified in the Contract Documents, or which Owner, Architect and Contractor agree constitutes a separately functioning process, facility or portion of the Work that can be used by Owner without significant interference with Contractor's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

Owner at any time may request Contractor in writing to permit Owner to use any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If Contractor agrees, Contractor will certify to Owner and Architect that said part of the Work is substantially complete and request Architect to issue a Certificate of Substantial Completion for that part of the Work. Contractor at any time may notify Owner and Architect in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Architect to issue a Certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, Owner, Contractor and Architect shall make an inspection of that part of the Work to determine its status of completion. If Architect does not consider that part of the Work to be substantially complete, Architect will notify Owner and Contractor in writing giving the reasons therefore. If Architect considers that part of the Work to

be substantially complete, the provisions of subparagraphs 9.8.1 and 9.8.2 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

9.9.4 Unless otherwise agreed, Owner's partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect and Owner will promptly make such tests and inspection and, when the Architect and Owner find the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the balance found to be due the Contractor and noted in said final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2 Final Acceptance will not be granted until Owner has received and accepted Record Documents, Operations and Maintenance Manuals, staff training on all operable equipment, final certificates of occupancy from local jurisdictions and all required certificates or other evidence of warranties. Final Completion must be achieved within forty-five (45) of the scheduled Substantial Completion date as described in Paragraph 9.8.

9.10.3 When the Architect finds that the Work has been concluded, a final occupancy permit has been issued, any commissioning process and validation process have been successfully concluded, and the Contractor has submitted all the items in Subparagraph 9.10.4 to the Architect, the Contractor may submit a final Application for Payment. The Architect will then promptly issue a final Certificate for Payment stating that the entire balance found to be due the Contractor and noted in said final Certificate is due and payable. The Architect's final Certificate for Payment shall establish the date of Final Completion upon its execution by the Owner.

9.10.4 "Final Completion" will be attained when the Contractor has accomplished the following:

(1) Complete all requirements listed in Paragraph 9.8 for Substantial Completion.
(2) Complete all remaining punch list items and remaining Work, and obtain approval by Architect and Owner that all Work is complete.
(3) Obtain permanent occupancy permits.
(4) Submit final change order and final Application for Payment.
(5) Submit record documents, final property survey, and operation and maintenance manuals.
(6) Deliver tools, spare parts, extra stock of material and similar physical items to the Owner.
(7) Complete cleaning of punch list activities.

9.10.5 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety to final payment, (5) other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner or as may be required by applicable laws and regulations, and (6) all claims by the Contractor have been waived or resolved. Such forms and filings shall include:

.1 Certificates approved by the Washington State Department of Labor and Industries, Washington State Employment Security Department, and all other departments and agencies having jurisdiction over the activities of the Contractor have been provided to the Owner;

.2 A release obtained from the Washington State Department of Revenue that state taxes have been paid; and

.3 "Affidavits of Wages Paid" for the Contractor and each Subcontractor approved by the Industrial Statistician of the Washington State Department of Labor and Industries have been provided to the Owner.

If such taxes have not been discharged or the claims, expenses, and fees have not been paid, the Owner shall either retain in its funds, or in an interest bearing account, or retain in escrow, at the option of the Contractor, an amount equal to such unpaid taxes and unpaid claims together with a sum sufficient to defray the costs and attorney fees incurred in foreclosing the lien of such claims, and shall pay, or release from escrow, the remainder to the Contractor.

9.10.6 If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and attorneys' fees. Lien notices shall be delivered to:

Issaquah School District
Tom Mullins, Director of Capital Projects
5150 220th Ave SE
Issaquah, WA 98029

9.10.7 The making of final payment shall not constitute a waiver of any claims by the Owner, including, but not limited to, those arising from:

.1 Unsettled liens;

.2 Faulty or defective Work appearing after Substantial completion;

.3 Failure of the Work to comply with the requirements of the Contract Documents; or

.4 Terms of any warranties or guarantees required by the Contract Documents or supplemental agreements between the Owner and Contractor.

9.10.8 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.10.9 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified in writing by that payee as unsettled at the time of final Application for Payment. Such waivers shall be in addition to any waivers of Claims resulting from the operation of Paragraphs 4.3, 4.4, 4.5 and 9.8.4.

9.10.10 The Owner reserves the right pursuant to Chapter 60.28 RCW to withhold from any retainage funds remaining after the clearance of claims for liens and taxes an amount necessary to satisfy claims by the Owner against the Contractor, and the remainder of the retainage shall be released to the Contractor.

09.10.11 The 12 month warranty for the entire project will commence with Substantial Completion.

ARTICLE 10
PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be solely and completely responsible for conditions of the work site, including safety of all persons and property, during performance of the Work. Unless indicated differently in the Contract Documents, the Contractor should assume that the site will be occupied by students during some or all of the period of construction. The Contractor shall maintain the Work site and perform the Work in a manner which meets statutory and common law for the provision of a safe place to work. This requirement shall apply continuously and not be limited to normal working hours. That the Architect or Owner conducts construction review of the Contractor's performance does not and shall not be intended to include review of the adequacy of the Contractor's safety measures in, on or near the site of the Work. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

.1 Employees on the Work and other persons who may be affected thereby;

.2 The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and

.3 Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

The Contractor shall comply with the safety regulations set forth in "Safety Standards for Construction" and "General Safety Standards" and any other requirements published by the Washington State Department of Labor and Industries.

The Contractor shall comply with the Federal Occupational Safety and Health Act of 1970 (OSHA), including all revisions, amendments and regulations issued thereunder, and the provisions of the Washington Industrial Safety Act of 1973 (WISHA), including all revisions, amendments and regulations issued thereunder by the Washington State Department of Labor and Industries. The WISHA regulations shall apply to all excavation, trenching and ditching operations. In case of conflict between any such requirements, the more stringent regulation or requirement shall apply.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety precaution, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users and adjacent sites and utilities. The Contractor shall maintain at the work site office or other well-known place at the work site all materials (e.g., a first aid kit) necessary for giving first aid to the injured, and shall establish, publish and make known to all employees procedures for ensuring immediate removal to a hospital or a doctor's care, persons, including employees, who may have been injured on the site. Employees shall not be permitted to work on the site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care. The Contractor's and/or any Subcontractors shall ensure that at least one of such employees has a valid, effective first aid card.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy damage and loss to property referred to in Subparagraphs 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for

whose acts they may be liable and for which the Contractor is responsible under Subparagraph 10.2.1, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault of negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.19.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

10.2.7 At all times until the Owner's occupancy of the Work or a designated portion of the Work, the Contractor shall protect from damage, weather, deterioration, theft, vandalism and malicious mischief all materials, equipment, tools, and other items incorporated or to be incorporated in the Work or designated portion, or consumed or used in the performance of the Work or designated portion, and all Work in process and completed Work or designated portion.

10.2.8 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

10.3 HAZARDOUS MATERIALS

10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

10.3.2 The Owner shall obtain the services of a licensed or accredited laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has a reasonable objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time may be extended appropriately and the Contract Sum may be increased in the amount of the Contractor's demonstrated, reasonable additional costs of shut-down, delay and start-up, which adjustment shall be accomplished as provided in Article 7.

10.3.3 The Contractor shall not install in the Work any hazardous material. The Owner shall not be responsible under Paragraph 10.3 for materials or substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

10.3.4 The Contractor shall comply with the hazardous material parameters as noted in all of the DHJs associated with this project.

10.4 PUBLIC SAFETY AND CONVENIENCE

10.4.1 The Contractor shall conduct its Work so as to ensure the least possible obstruction to vehicular traffic and inconvenience to the general public and the residents in the vicinity of the Work and to ensure the protection of persons, property and natural resources. No road or street shall be closed to the public except with the permission of the Owner and the proper governmental authority. Fire hydrants on or adjacent to the Work shall be accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor to ensure the use of sidewalks, fire lanes, private and public driveways and proper functioning of gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses, if any, on the Work site.

10.5 SANITATION

10.5.1 The Contractor shall comply with WAC 296-155-140 and other applicable laws and regulations establishing sanitation standards in the construction industry.

10.6 EMERGENCIES

10.6.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of the time claimed by the Contractor on account of an emergency beyond the control of the Contractor shall be determined as provided in Paragraph 4.3 and Article 7.

ARTICLE 11
INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase and maintain in a company or companies licensed to do business in the state which the project is located, with an A.M. Best rating of A/IX or better and reasonably satisfactory to Owner, such insurance as will protect Contractor and Owner from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by itself or by any Subcontractor of any tier or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which is applicable to Work to be performed;

.2 Claims for damages, because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by a person as a result of an act or omission directly or indirectly related to employment of such person by the Contractor, or (2) by another person;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Commercial general liability insurance shall include all major divisions of coverage and be on a comprehensive basis, including:

1. Premises
2. Explosion, Collapse and Underground (XCU) as applicable;
3. Independent Contractor's Protective;
4. Products and completed operations (for six years following substantial completion);
5. Personal injury liability with employment exclusion deleted;
6. Blanket Contractual, including specific provision for Contractor's obligation under the Indemnity provisions of this agreement;
7. Owned, non-owned and hired motor vehicles; and
8. Stop Gap coverage.

11.1.2 The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified below or required by law, whichever coverage is greater. Coverages shall be written on an occurrence basis and be maintained without interruption from date of commencement of the Work through date of final payment.
Commencement of Insurance: Contractor shall not commence work under this contract until it has obtained at its expense all the insurance required hereunder and such insurance has been approved by the Owner. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

Notwithstanding anything to the contrary, with respect to each product or service supplied, sold or delivered by Contractor to Owner, its officers, agents, and employees, the Contractor agrees, prior to commencement of the product or service supplied, to obtain and maintain in full force and effect during the term hereof, at Contractor's sole expense, the following insurance covering the work, product or service supplied:

.1 **Workers Compensation or Industrial Accident Insurance** as required by law, including Employers Liability with minimum limits of $1,000,000 per accident or disease. Evidence of coverage is required:

1. State: Statutory
2. Applicable Federal (e.g., USL&H): Statutory

.2 **Commercial General Liability,** including contractual, explosion, collapse and underground hazards (X, C, U), products and completed operations, Owner's and Contractor's Protective Liability, (and stop gap if applicable) with minimum limits $1,000,000 per occurrence, $2,000,000 aggregate products-completed operations, and $5,000,000 general aggregate. *The Owner shall be named as an additional insured for liability arising out of work under this contract as the result of the negligence, real or alleged, on the part of the Contractor, his subcontractors and their subcontractors.*

.3 **Pollution Liability,** with minimum limits of $5,000,000 General Aggregate, $1,000,000 Each Occurrence Combined Single Limit.

.4 **Comprehensive Automobile Liability** covering owned, hired and non-owned vehicles with minimum limits of $1,000,000 per accident Combined Single Limit bodily injury and property damage.

11.1.3 Certificates of Insurance and Endorsements acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverages afforded under the policies will not be reduced, canceled or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner. The Owner shall be named as an additional insured on all such policies and a copy of this Additional Insured Endorsement naming the Owner shall be attached to the Certificate of Insurance. The Contractor shall furnish to the Owner certified copies of the actual insurance policies upon request.

11.2 OWNER'S LIABILITY INSURANCE

11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

11.3 PROPERTY INSURANCE

11.3.1 The Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form to cover the course of construction in the full amount of the General Contractor's bid proposal as a minimum value thereof less costs of clearing, preparation and excavation of the site under this Agreement. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project. This insurance shall insure against the perils of fire and extended coverage and physical loss or damage and shall provide "all risk" coverage for the interests of the Owner, the Contractor and Subcontractors as named insureds, as their respective interests appear. Upon written request, the Owner will provide a copy of its policy to the Contractor. Each loss may be subject to a deductible of at least $1,000 but not more than $10,000. Losses up to the deductible amount or otherwise not covered by insurance shall be the responsibility of the Contractor. The policy shall be endorsed to allow complete or partial occupancy by the Owner

before or after Substantial Completion without the insurer's approval. All tools and equipment of the Contractor and Subcontractors of any tier not intended as part of the construction or installation of the Work will be the sole responsibility of the Contractor.

11.3.2 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Contractor's services and expenses required as a result of such insured loss.

11.3.3 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit. All tools and equipment of the Contractor and Subcontractors of any tier not intended as part of the construction or installation of the Work will be the sole responsibility of the Contractor.

11.3.4 Upon the occurrence of an insured loss, the Owner, as first named insured, shall have the right to adjust and settle any loss with the insurers. The Owner shall deposit in a separate account any monies received and shall distribute such funds in accordance with such agreement as the parties in interest may reach. If no agreement is reached, any damaged Work shall first be repaired or replaced, and payment therefor made from the separate account by Change Order or by payment to a separate contractor, at Owner's option; further disbursements from the separate account will then be determined pursuant to the provisions of Subparagraphs 4.4 and 4.5 above.

11.3.5 Partial occupancy or use in accordance with Paragraph 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

11.4 PERFORMANCE AND PAYMENT BONDS

11.4.1 The Contractor shall secure and pay for a Performance Bond and a Payment Bond, each in the full amount of the Contract Sum plus sales tax, pursuant to Chapter 39.08 RCW. Said bonds shall meet all requirements of Chapter 39.08 RCW and shall also be issued by a surety with an A.M. Best rating of A/IX or better. All reinsurers that may be called upon to support or share in a surety's obligations specified in connection with the performance and payment bond obligations required of the Contractor by the Contract Documents must also have an A.M. Best rating of A/IX or better. Within ten (10) days after the issuance of the Notice to Proceed, the Contractor shall deliver two copies of the Bond to the Owner and one copy to the Architect. THE OWNER WILL DECLINE TO ENTER INTO THE CONTRACT, AND MAY WITHHOLD ITS "NOTICE TO PROCEED" AND/OR WITHHOLD PAYMENT TO THE CONTRACTOR UNTIL SUCH SURETY BONDS ARE RECEIVED. If the contract is executed, the Contract Time shall be reduced by one day for each day after ten (10) days that said bonds are not received by the Owner, and there shall be no adjustment to the substantial completion date.

11.4.2 The Owner may require certain subcontractors to provide evidence of performance bondability in writing to the Owner and it may also require certain subcontractors to provide and maintain at the Owner's expense during the life of the Contract, a performance bond equal to the total amount of such subcontract, excluding sales tax. Any bond(s) so required by the Owner shall be issued by a surety licensed to do business in this state with an A.M. Best rating of A/V or better.

ARTICLE 12
UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the Work is covered contrary to the Architect's, Owner's or governmental authority with jurisdiction request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect, Owner, or governmental authority with jurisdiction, be uncovered at Contractor's expense for the Architect's observation and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2 If a portion of the Work has been covered which the Architect has not specifically requested to observe prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, and Contractor has notified Owner in writing of Architect's request and Contractor has signed a sworn statement that the Work is in compliance with the Contract Documents and submits evidence of reasonable care, quality control and inspection completed by Contractor to determine such, costs of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work is not in accordance with the Contract Documents, the Contractor shall pay such costs, except to the extent the condition was caused by the Owner or a separate contractor of Owner, in which event the Owner shall be responsible for purposes of this Contract only for payment of such costs to the extent of its proportionate responsibility.

12.2 WARRANTIES AND CORRECTION OF WORK

12.2.1 The Contractor shall promptly correct Work rejected by the Architect or Owner failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby.

12.2.2 The general project warranty period of 12 months from Substantial Completion and Acceptance by the Owner's Board of Directors shall be extended with respect to portions of Work first performed or corrected after Substantial Completion by the period of time between Substantial Completion and the satisfactory performance or correction of the Work. At the election of the Owner, the extended periods of warranty shall be confirmed by submission by the Contractor of written special warranties. If, within 12 months after the date of Substantial Completion and Acceptance of the Work or designated portion thereof, or after the date for commencement of warranties established under Subparagraph 9.8.2, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given

the Contractor a written acceptance of such condition. This obligation under this Subparagraph 12.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

12.2.3 The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner in writing.

12.2.4 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect, the Owner may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten (10) days after written notice, the Owner may sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's services, attorneys' services, and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor promptly shall pay the difference to the Owner.

12.2.5 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of Contract Documents.

12.2.6 Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in Subparagraph 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work. Correction of Work may be performed by Owner's selected contractors at Contractor's expense.

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13
MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1.1 The Contract shall be governed by the law of the place where the Project is located. The venue of any litigation under the Contract shall be in King County, Washington.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except to the extent specifically provided elsewhere in the Contract Documents, neither party to the Contract shall assign the Contract in whole or in part without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, actual receipt by facsimile or if delivered at or sent by registered or certified mail to the last business address of a party. The addresses and facsimile contact numbers for Owner, Architect and Contractor are listed in the Project Manual.

13.4 RIGHTS AND REMEDIES

13.4.1 An alleged cause of action arising out of this project shall be deemed to have accrued in any and all events no later than the date of substantial completion of construction of the project. The statute of limitations for filing suit after accrual shall be as provided by law applicable to public works projects in the Washington state.

13.4.2 Except as limited herein or specially provided for herein, the parties shall have such other duties, obligations, rights, and remedies otherwise imposed or made available by the law of the State of Washington.

13.4.3 The failure of any party to insist in any one or more instances upon the strict performance of any one or more of the provisions of this Contract, or to exercise any right herein contained or provided by law, shall not be construed as a waiver or relinquishment of the performance of such provisions or rights or of the right to subsequently demand such strict performance or exercise of such rights.

13.4.4 If any clause, sentence, or provision of this Contract is held as a matter of law to be void or unenforceable, the remainder of the Contract shall be enforceable without such clause, sentence, or provision.

13.5 TESTS AND INSPECTIONS

13.5.1 Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations, orders of public authorities having jurisdiction shall be made at an appropriate time. The Contractor shall make timely arrangements for such tests, inspections and approvals with an independent testing laboratory or entity provided by the Owner, or with the appropriate public authority and the Owner, and shall bear all related costs of tests, inspections, and approvals except as noted otherwise in the Contract Documents. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so the Architect may observe such procedures. The Owner shall bear costs of tests, inspections or approvals which have become requirements after bids were received.

If the Contractor arranges for an inspection and the inspector is required to wait, to leave without inspecting, to perform a partial inspection, to return to complete or reinspect, or otherwise to expend time other than for the primary inspection, the Contractor shall be responsible for all such costs to the extent caused by the Contractor. If the Contractor does not pay the charges for which it is responsible within 30 days of billing, the Owner may pay the charges directly and back-charge the Contractor on the next progress payment for the amount paid plus a 10% handling fee.

13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Architect will, upon consent of the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by any entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so the Architect may observe such procedures. The Owner shall bear such costs except as provided in Subparagraph 13.5.3.

13.5.3 If such procedures for testing, inspection, or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses. If the Owner is responsible under the Contract Documents, law or regulation to pay only for an inspection of any inspector, consultant or Architect, the Owner shall be required to pay only for the first actual inspection. If the Contractor arranges for an inspection and the inspector is required to wait, to leave without inspecting, to perform a partial inspection, to return to complete or reinspect, or otherwise to expend time other than for the primary inspection, the Contractor shall be responsible for all such costs. If the Contractor does not pay the charges for which it is responsible within 30 days of billing, the Owner may pay the charges directly and back-charge the Contractor on the next progress payment the amount paid plus a 10% handling fee.

13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.5.7 No acceptance of any Work shall be construed to result from any inspections, tests or failure to inspect or test by the Owner, the Owner's representatives, the Architect or any other person. No inspection, test, failure to inspect or test, or failure to discover any defect or nonconformity by the Owner, the Owner's representatives, the Architect or any other person shall relieve the Contractor of its responsibility for meeting the requirements of the Contract Documents or impair the Owner's right to reject defective or nonconforming items or right to avail itself of any other remedy to which the Owner may be entitled, notwithstanding the Owner's knowledge of the defect or nonconformity, its substantiality or the ease of its discovery.

13.6 INTEREST

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate provided under RCW 39.76.010.

13.7 PARTNERING

The Owner, Contractor and Architect may participate together in cooperative procedures mutually developed by the parties to avoid or minimize problems on the Project.

13.8 PROCEDURES FOR INADVERTENT DISCOVERIES OF ARCHAEOLOGICAL RESOURCES OR HUMAN REMAINS

13.8.1 FEMA is the Leading Agency for Section 106. Contactor is required to follow the FEMA Inadvertent Discovery Plan (plan will be provided by Owner/FEMA at the pre-construction site meeting). Plan shall be signed, returned to Owner and a copy shall be kept on site.

13.8.2 If any member of the construction team believes that they have found an archaeological resource, all work at and adjacent to the discovery will stop and the Owner will be notified to contact the various agencies. The Contractor will take appropriate steps to protect the discovery site as indicated in the FEMA Inadvertent Discovery Plan which will be provided by Owner/FEMA at the pre-construction site meeting.

13.8.3 Any human remains, suspected human remains, funerary objects, or objects of cultural patrimony that are discovered during the construction of the project are to be treated with dignity and respect. If human remains are discovered during ground-disturbing activities, construction should be immediately stopped. The Owner should be notified immediately to contact the various agencies. Work may not continue. The Contractor will take appropriate steps to protect the discovery site as indicated in the FEMA Inadvertent Discovery Plan which will be provided by Owner/FEMA at the pre-construction site meeting.

13.8.4 Based on the high probability of the Area of Potential Effect's location and the temporary shoring obscuring inspection of the cut bank, it may be recommended that an archaeological monitor be present during the removal of the shoring and initial excavation into the cut bank.
Contractor will work with Owner to coordinate this activity.

ARTICLE 14
TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 The Contractor shall have the right to terminate the Contract only if the Owner fails to remedy a breach by Owner of a material term of the Contract Documents, and such failure continues to exist after thirty (30) days' advance written notice from Contractor that describes such a material breach and identifies at least one way for Owner to remedy it.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 The Owner may, upon seven (7) days' written notice to the Contractor, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the Contract or Work for cause, including, but not limited to, the following circumstances:

.1 The Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure the Substantial Completion of the Work within the Contract Time;

.2 The Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its insolvency;

.3 The Contractor fails to supply a sufficient number of properly skilled workers or proper materials;

.4 The Contractor fails to make prompt payment due to Subcontractors or for materials or labor;

.5 The Contractor disregards or violates laws, ordinances, rules, regulations or orders of any public authority having jurisdiction; or

.6 The Contractor breaches any material provision of the Contract Documents.

14.2.2 When any of the above reasons exist, or when any other legally sufficient cause exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven (7) days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Paragraph 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient.

14.2.3 When the Owner terminates the Contract for cause pursuant to subparagraph 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services, attorneys' fees, and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall promptly pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

14.2.5 If, after Contractor has been terminated pursuant to this paragraph, it is determined that legally sufficient cause does not exist, then such termination shall be considered a termination for convenience pursuant to Paragraph 14.3.

14.2.6 If the Owner terminates in whole or in any part of the Work pursuant to Paragraph 14.2, the Owner may procure, upon such terms and in such manner as it deems appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the Owner for any excess costs for such similar supplies or services. The Contractor shall continue the performance of this Contract to the extent not terminated hereunder.

14.3 TERMINATION OR SUSPENSION BY THE OWNER FOR CONVENIENCE

14.3.1 The Owner may, at any time upon ten (10) days' written notice to the Contractor and Contractor's surety, terminate (without prejudice to any right or remedy of the Owner) or suspend the whole or any portion of the Work for the convenience of the Owner.

14.3.2 If the Owner terminates the Work or any portion thereof for convenience, the Owner shall be liable to Contractor only for those costs reimbursable to Contractor in accordance with subparagraph 14.3.3, plus ten percent of the actual costs recovered under 14.3.3, unless the Contractor would have sustained a loss on the entire Contract had it been completed, in which case the ten percent markup will not be included, and an appropriate adjustment will be made to reduce the amount due the Contractor in proportion to the rate of loss.

14.3.3 If the Owner terminates the Work or any portion thereof for convenience, the Owner shall pay the Contractor as follows:

.1 An amount consistent with the terms of the Contract Documents for supplies, services, or property accepted by the Owner pursuant to subparagraph 14.4.1.6 (or sold or acquired pursuant to subparagraph 14.4.1.7) for which the Owner has not paid;

.2 the amount due under Article 9 of this Agreement for the performance of the Work already performed, exclusive of any costs attributable to supplies or services otherwise paid or to be paid for under this subparagraph; and

.3 the cost of settling and paying claims arising out of the termination of Work under subcontracts or orders, pursuant to subparagraph 14.4.1.5, which are properly chargeable to the terminated portion of the Work (exclusive of amounts paid or payable on account of completed items of equipment delivered or services furnished by subcontractors or vendors prior to the effective date of the Notice of Termination and exclusive of unearned profit).

14.3.4 If the Owner suspends all or any portion of the Work in accordance with Subparagraph 2.5.1 for the Owner's convenience, the Contract Sum and/or Time shall be

equitably adjusted only to the extent the Contractor can demonstrate actual impact as a result of such suspension.

14.3.5 The total sum to be paid to the Contractor under this paragraph 14.3 shall not exceed the Contract Sum as reduced by the amount of payments otherwise made and the price of Work not terminated, and as otherwise permitted by the Contract Documents. The amounts payable to the Contractor shall exclude the fair value of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Owner or to a buyer pursuant to subparagraph 14.4.1.7.

14.4 CONTRACTOR'S DUTIES ON TERMINATION

14.4.1 Unless the Owner directs otherwise, after receipt of a Notice of Termination from the Owner pursuant to paragraphs 14.2 or 14.3, the Contractor shall promptly:

.1 Stop Work under the Contract on the date and as specified in the Notice of Termination;

.2 place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;

.3 procure cancellation of all orders and subcontracts, upon terms acceptable to the Owner, to the extent that they relate to the performance of Work terminated;

.4 assign to the Owner all of the right, title and interest of the Contractor under all orders and subcontracts, in which case the Owner shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

.5 settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts;

.6 transfer title and deliver to the entity or entities designated by the Owner the fabricated or unfabricated parts, Work in process, partially completed supplies and equipment, materials, parts, tools, dies, jigs and other fixtures, completed Work, supplies and other material produced as part of, or acquired in connection with the performance of, the Work terminated, and the completed or partially completed plans, drawings, information and other property related to the Work;

.7 use its best efforts to sell any property of the types referred to in subparagraph 14.4.1.6. The Contractor shall not be required to extend credit to any buyer, and may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner, and the proceeds of any such transfer or disposition may be applied in reduction of any payments to be made by the Owner to the Contractor;

.8 take such action as may be necessary or as directed by the Owner to preserve and protect the Work and property related to this Project in the possession of the Contractor in which the Owner has an interest; and

.9 continue performance only to the extent not terminated.

14.4.2 The Contractor shall, from the effective Date of Termination until the expiration of three years after final settlement under this Contract, preserve and make available to the Owner, at all

reasonable times at the office of the Contractor, and without charge to the Owner, all books, records, documents, photographs and other evidence bearing on the costs and expenses of the Contractor under this Contract and relating to the terminated or completed Work.

14.4.3 In arriving at any amount due the Contractor after termination, the following shall apply:

.1 The Contractor shall refund to the Owner any amounts paid by the Owner to the Contractor in excess of costs reimbursable under paragraph 14.3.

.2 The damages and relief from termination by the Owner specifically provided in Article 14 shall be the Contractor's sole entitlement in the event of termination.

END OF SECTION 00 72 00

DESCRIPTION OF CONTRACT DOCUMENTS

1.1 PROJECT MANUAL

The Project Manual includes the Bidding Requirements, Conditions of the contract, and Specifications as listed in Section 00 01 00, "Table of Contents." The Contractor shall check his copies of the Project Manual with the index to be sure they are complete.

A. Division and Paragraph Numbering: Numbering and lettering of sections and paragraphs in the specifications are merely for identification. Sections included are listed in the "Table of Contents," together with the number of pages in each section.

B. Wording of These Specifications: The Specifications are of the abbreviated or "streamlined" type and frequently include incomplete sentences. Words such as "a" and "the" are included by reference in the same manner as they are in a note on the Drawings.

C. Number of Specified Items Required: Wherever in the Specifications an article, device, or piece of equipment is referred to in the singular number, such reference applies to as many such articles as are shown on the Drawings or required to complete the installation.

D. Specification by Reference: Any material specified by reference to the number, symbol, or title of a specific standard such as a commercial standard, federal specification, a trade association standard, or other similar standard, shall comply with the requirements in the latest revision thereof and any amendments or supplements thereto, in effect on the date of advertisement for bids, except as limited to type, class or grade, or modified in such reference. The standards referred to, except as modified in the Specifications, have force and effect as though printed in the Specifications.

1.2 DRAWINGS

A. Schedule of Drawings: Refer to INDEX TO DRAWINGS on the drawings for a list of drawings mentioned in the Project Manual and which form a part of the Contract Documents.

B. Description of Drawings: Where portion of Work is drawn and remainder indicated in outline, the parts drawn apply also to other like portions of the Work. Where ornament or other detail is indicated by starting only, such detail shall be implied to continue throughout in all other similar applications, unless otherwise indicated.

C. Number of Items Required: Where in the Drawings an article, device, or piece of equipment is referred to in the singular number, such reference shall include as many such articles as are shown on the Drawings or are required to complete the installation.

1.3 DRAWING/SPECIFICATION COORDINATION SCHEDULE

Abbreviations included in the Drawing/Specification Coordination Schedule are used throughout the Drawings and Specifications to identify specific items materials and assemblies.

Other abbreviations used in the Contract Documents, which are not otherwise defined, shall be interpreted as the words or phrases in common use for the context in which the abbreviations are used.

1.4 ADDENDA

The Contract Documents may be amended by addendum prior to or during the bidding period. Addenda will be issued to all plan holders of record by mail or fax not later than three (3) days prior to bid opening. Delivery of addenda prior to bid opening to the address listed by the plan holder constitutes receipt.

1.5 MODIFICATIONS

The Contract Documents may be amended after the execution of the Contract as defined in the General Conditions as follows:

A. Change Orders: Change orders will be executed using AIA Document G701 and will be approved by the Owner, Architect, and Contractor.

B. Field Observation Reports: The Architect will record pertinent observations, decisions, and instructions for distribution to Owner, Contractors, consultants, and other concerned parties. Field orders, instructions, interpretations, changes, approvals, etc., appearing in the Architect's field observation reports constitute proper written notice or confirmation.

C. Field Questions: Clarifications or questions pertaining to the work will be addressed on the "Request for Information" form, located at the end of this section.

1.6 CONFLICTS

Report conflicts in the Contract Documents to Architect in accordance with the General Conditions. In cases where resolution cannot otherwise be made, the more expensive item or procedure shall be used. Conflicts reported prior to bid opening will be resolved by addenda.

A. Clarifications: In case of inconsistencies between drawings and specifications or within either document, the best quality and most expensive work indicated on the conflicting documents shall be provided with no change to the Contract Sum or Time.

B. Discrepancies: In the event of discrepancies or conflicts among the Contract Documents, interpretations will be based on the following priorities:

1. Agreement between Owner and General Contractor.
2. Addenda, with those of latest date having precedence over those of earlier date.
3. Supplemental Conditions.
4. General Conditions.
5. Specifications except where specified that drawings have precedence.
6. Drawings.

Cornerstone
ARCHITECTURAL GROUP

REQUEST FOR INFORMATION FORM **NO. _____**

PROJECT: _____ **CONTRACTOR:** _____

SUBJECT:

_____

REFERENCE: DRAWING _____ SPECIFICATION _____

QUESTION/CLARIFICATION

_____

_____

_____

_____

_____

_____

RESPONSE

_____

_____

_____

_____

_____

ATTACHMENTS:

____ It is our opinion that this work is not extra to the contract and direct you to do the work. if you consider the above to be an extra to the contract, you must prepare and submit a detailed cost proposal.

____ It is our opinion that this work will result in a change to the contract and/or time. you are authorized to proceed with the work. final cost and time changes shall be subject to review. payment for work authorized will not be made prior to execution of change order.

REVIEWER: _____ DATE: _____

ISD CM: _____ DATE: _____

CORNERSTONE ARCHITECTURAL GROUP GENERAL CONTRACTOR

END OF SECTION 00 75 00

WAGE DETERMINATION SCHEDULE

1.01 WAGE DETERMINATION SCHEDULE

The *Washington State Prevailing Wage Rates for Public Works Contracts – King County*, with the *Benefit Code Key* as provided by the Washington State Department of Labor and Industries are referenced in the link below. General Contractors shall use the applicable prevailing wage rates determined and published by the industrial statistician and in effect as of the date bids are due from the General Contractors to the School District. See attached wage rates dated 04/13/2022.

https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx

1.02 DAVIS-BACON ACT

General Contractor shall comply with the Davis Bacon Act (*40 U.S.C. 276a to a-7*) and as supplemented by Department of Labor regulations (*29 CFR, Part 5*). The General Contractor shall (1) pay wages to laborers and mechanical at a rate not less than the minimum wages specified in a ware determination made by the Secretary of Labor and (2) pay wages not less often than once a week.

1.03 COPELAND ANTI-KICKBACK" ACT

1 Contractor. The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this Contract.

2 Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the federal agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

3 Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

END OF SECTION 00 83 00

State of Washington
Department of Labor & Industries
Prevailing Wage Section - Telephone 360-902-5335
PO Box 44540, Olympia, WA 98504-4540

Washington State Prevailing Wage

The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

Journey Level Prevailing Wage Rates for the Effective Date: 04/13/2022

County	Trade	Job Classification	Wage	Holiday	Overtime	Note	*Risk Class
King	Asbestos Abatement Workers	Journey Level	$54.62	5D	1H		View
King	Boilermakers	Journey Level	$72.54	5N	1C		View
King	Brick Mason	Journey Level	$63.32	7E	1N		View
King	Brick Mason	Pointer-Caulker-Cleaner	$63.32	7E	1N		View
King	Building Service Employees	Janitor	$27.23	5S	2F		View
King	Building Service Employees	Traveling Waxer/Shampooer	$27.68	5S	2F		View
King	Building Service Employees	Window Cleaner (Non-Scaffold)	$31.18	5S	2F		View
King	Building Service Employees	Window Cleaner (Scaffold)	$32.18	5S	2F		View
King	Cabinet Makers (In Shop)	Journey Level	$22.74		1		View
King	Carpenters	Acoustical Worker	$68.19	15J	4C		View
King	Carpenters	Bridge, Dock And Wharf Carpenters	$68.19	15J	4C		View
King	Carpenters	Carpenter	$68.19	15J	4C		View
King	Carpenters	Floor Finisher	$68.19	15J	4C		View
King	Carpenters	Floor Layer	$68.19	15J	4C		View
King	Carpenters	Scaffold Erector	$68.19	15J	4C		View
King	Cement Masons	Application of all Composition Mastic	$67.41	15J	4U		View
King	Cement Masons	Application of all Epoxy Material	$66.91	15J	4U		View
King	Cement Masons	Application of all Plastic Material	$67.41	15J	4U		View
King	Cement Masons	Application of Sealing Compound	$66.91	15J	4U		View

King	Cement Masons	Application of Underlayment	$67.41	15J	4U		View
King	Cement Masons	Building General	$66.91	15J	4U		View
King	Cement Masons	Composition or Kalman Floors	$67.41	15J	4U		View
King	Cement Masons	Concrete Paving	$66.91	15J	4U		View
King	Cement Masons	Curb & Gutter Machine	$67.41	15J	4U		View
King	Cement Masons	Curb & Gutter, Sidewalks	$66.91	15J	4U		View
King	Cement Masons	Curing Concrete	$66.91	15J	4U		View
King	Cement Masons	Finish Colored Concrete	$67.41	15J	4U		View
King	Cement Masons	Floor Grinding	$67.41	15J	4U		View
King	Cement Masons	Floor Grinding/Polisher	$66.91	15J	4U		View
King	Cement Masons	Green Concrete Saw, self-powered	$67.41	15J	4U		View
King	Cement Masons	Grouting of all Plates	$66.91	15J	4U		View
King	Cement Masons	Grouting of all Tilt-up Panels	$66.91	15J	4U		View
King	Cement Masons	Gunite Nozzleman	$67.41	15J	4U		View
King	Cement Masons	Hand Powered Grinder	$67.41	15J	4U		View
King	Cement Masons	Journey Level	$66.91	15J	4U		View
King	Cement Masons	Patching Concrete	$66.91	15J	4U		View
King	Cement Masons	Pneumatic Power Tools	$67.41	15J	4U		View
King	Cement Masons	Power Chipping & Brushing	$67.41	15J	4U		View
King	Cement Masons	Sand Blasting Architectural Finish	$67.41	15J	4U		View
King	Cement Masons	Screed & Rodding Machine	$67.41	15J	4U		View
King	Cement Masons	Spackling or Skim Coat Concrete	$66.91	15J	4U		View
King	Cement Masons	Troweling Machine Operator	$67.41	15J	4U		View
King	Cement Masons	Troweling Machine Operator on Colored Slabs	$67.41	15J	4U		View
King	Cement Masons	Tunnel Workers	$67.41	15J	4U		View
King	Divers & Tenders	Bell/Vehicle or Submersible Operator (Not Under Pressure)	$122.46	15J	4C		View
King	Divers & Tenders	Diver	$122.49	15J	4C	8V	View
King	Divers & Tenders	Diver On Standby	$81.04	15J	4C		View
King	Divers & Tenders	Diver Tender	$73.60	15J	4C		View
King	Divers & Tenders	Manifold Operator	$73.60	15J	4C		View
King	Divers & Tenders	Manifold Operator Mixed Gas	$78.60	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Operator/Technician	$73.60	15J	4C		View
King	Divers & Tenders	Remote Operated Vehicle Tender	$68.64	15J	4C		View

King	Dredge Workers	Assistant Engineer	$73.62	5D	3F		View
King	Dredge Workers	Assistant Mate (Deckhand)	$73.05	5D	3F		View
King	Dredge Workers	Boatmen	$73.62	5D	3F		View
King	Dredge Workers	Engineer Welder	$75.03	5D	3F		View
King	Dredge Workers	Leverman, Hydraulic	$76.53	5D	3F		View
King	Dredge Workers	Mates	$73.62	5D	3F		View
King	Dredge Workers	Oiler	$73.05	5D	3F		View
King	Drywall Applicator	Journey Level	$68.19	15J	4C		View
King	Drywall Tapers	Journey Level	$67.91	5P	1E		View
King	Electrical Fixture Maintenance Workers	Journey Level	$35.19	5L	1E		View
King	Electricians - Inside	Cable Splicer	$97.21	7C	4E		View
King	Electricians - Inside	Cable Splicer (tunnel)	$104.49	7C	4E		View
King	Electricians - Inside	Certified Welder	$93.91	7C	4E		View
King	Electricians - Inside	Certified Welder (tunnel)	$100.86	7C	4E		View
King	Electricians - Inside	Construction Stock Person	$47.03	7C	4E		View
King	Electricians - Inside	Journey Level	$90.59	7C	4E		View
King	Electricians - Inside	Journey Level (tunnel)	$97.21	7C	4E		View
King	Electricians - Motor Shop	Journey Level	$48.68	5A	1B		View
King	Electricians - Powerline Construction	Cable Splicer	$88.89	5A	4D		View
King	Electricians - Powerline Construction	Certified Line Welder	$81.65	5A	4D		View
King	Electricians - Powerline Construction	Groundperson	$52.91	5A	4D		View
King	Electricians - Powerline Construction	Heavy Line Equipment Operator	$81.65	5A	4D		View
King	Electricians - Powerline Construction	Journey Level Lineperson	$81.65	5A	4D		View
King	Electricians - Powerline Construction	Line Equipment Operator	$70.02	5A	4D		View
King	Electricians - Powerline Construction	Meter Installer	$52.91	5A	4D	8W	View
King	Electricians - Powerline Construction	Pole Sprayer	$81.65	5A	4D		View
King	Electricians - Powerline Construction	Powderperson	$60.75	5A	4D		View
King	Electronic Technicians	Journey Level	$59.10	7E	1E		View
King	Elevator Constructors	Mechanic	$103.81	7D	4A		View
King	Elevator Constructors	Mechanic In Charge	$112.09	7D	4A		View
King	Fabricated Precast Concrete Products	All Classifications - In-Factory Work Only	$18.25	5B	1R		View
King	Fence Erectors	Fence Erector	$46.29	15J	4V	8Y	View
King	Fence Erectors	Fence Laborer	$46.29	15J	4V	8Y	View
King	Flaggers	Journey Level	$46.29	15J	4V	8Y	View
King	Glaziers	Journey Level	$72.41	7L	1Y		View

King	Heat & Frost Insulators And Asbestos Workers	Journey Level	$82.02	15H	11C		View
King	Heating Equipment Mechanics	Journey Level	$91.83	7F	1E		View
King	Hod Carriers & Mason Tenders	Journey Level	$57.31	15J	4V	8Y	View
King	Industrial Power Vacuum Cleaner	Journey Level	$14.49		1		View
King	Inland Boatmen	Boat Operator	$61.41	5B	1K		View
King	Inland Boatmen	Cook	$56.48	5B	1K		View
King	Inland Boatmen	Deckhand	$57.48	5B	1K		View
King	Inland Boatmen	Deckhand Engineer	$58.81	5B	1K		View
King	Inland Boatmen	Launch Operator	$58.89	5B	1K		View
King	Inland Boatmen	Mate	$57.31	5B	1K		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Cleaner Operator, Foamer Operator	$31.49		1		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Grout Truck Operator	$14.49		1		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Head Operator	$24.91		1		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Technician	$19.33		1		View
King	Inspection/Cleaning/Sealing Of Sewer & Water Systems By Remote Control	Tv Truck Operator	$20.45		1		View
King	Insulation Applicators	Journey Level	$68.19	15J	4C		View
King	Ironworkers	Journeyman	$80.28	7N	1O		View
King	Laborers	Air, Gas Or Electric Vibrating Screed	$54.62	15J	4V	8Y	View
King	Laborers	Airtrac Drill Operator	$56.31	15J	4V	8Y	View
King	Laborers	Ballast Regular Machine	$54.62	15J	4V	8Y	View
King	Laborers	Batch Weighman	$46.29	15J	4V	8Y	View
King	Laborers	Brick Pavers	$54.62	15J	4V	8Y	View
King	Laborers	Brush Cutter	$54.62	15J	4V	8Y	View
King	Laborers	Brush Hog Feeder	$54.62	15J	4V	8Y	View
King	Laborers	Burner	$54.62	15J	4V	8Y	View
King	Laborers	Caisson Worker	$56.31	15J	4V	8Y	View
King	Laborers	Carpenter Tender	$54.62	15J	4V	8Y	View
King	Laborers	Cement Dumper-paving	$55.62	15J	4V	8Y	View
King	Laborers	Cement Finisher Tender	$54.62	15J	4V	8Y	View
King	Laborers	Change House Or Dry Shack	$54.62	15J	4V	8Y	View

King	Laborers	Chipping Gun (30 Lbs. And Over)	$55.62	15J	4V	8Y	View
King	Laborers	Chipping Gun (Under 30 Lbs.)	$54.62	15J	4V	8Y	View
King	Laborers	Choker Setter	$54.62	15J	4V	8Y	View
King	Laborers	Chuck Tender	$54.62	15J	4V	8Y	View
King	Laborers	Clary Power Spreader	$55.62	15J	4V	8Y	View
King	Laborers	Clean-up Laborer	$54.62	15J	4V	8Y	View
King	Laborers	Concrete Dumper/Chute Operator	$55.62	15J	4V	8Y	View
King	Laborers	Concrete Form Stripper	$54.62	15J	4V	8Y	View
King	Laborers	Concrete Placement Crew	$55.62	15J	4V	8Y	View
King	Laborers	Concrete Saw Operator/Core Driller	$55.62	15J	4V	8Y	View
King	Laborers	Crusher Feeder	$46.29	15J	4V	8Y	View
King	Laborers	Curing Laborer	$54.62	15J	4V	8Y	View
King	Laborers	Demolition: Wrecking & Moving (Incl. Charred Material)	$54.62	15J	4V	8Y	View
King	Laborers	Ditch Digger	$54.62	15J	4V	8Y	View
King	Laborers	Diver	$56.31	15J	4V	8Y	View
King	Laborers	Drill Operator (Hydraulic, Diamond)	$55.62	15J	4V	8Y	View
King	Laborers	Dry Stack Walls	$54.62	15J	4V	8Y	View
King	Laborers	Dump Person	$54.62	15J	4V	8Y	View
King	Laborers	Epoxy Technician	$54.62	15J	4V	8Y	View
King	Laborers	Erosion Control Worker	$54.62	15J	4V	8Y	View
King	Laborers	Faller & Bucker Chain Saw	$55.62	15J	4V	8Y	View
King	Laborers	Fine Graders	$54.62	15J	4V	8Y	View
King	Laborers	Firewatch	$46.29	15J	4V	8Y	View
King	Laborers	Form Setter	$54.62	15J	4V	8Y	View
King	Laborers	Gabian Basket Builders	$54.62	15J	4V	8Y	View
King	Laborers	General Laborer	$54.62	15J	4V	8Y	View
King	Laborers	Grade Checker & Transit Person	$57.31	15J	4V	8Y	View
King	Laborers	Grinders	$54.62	15J	4V	8Y	View
King	Laborers	Grout Machine Tender	$54.62	15J	4V	8Y	View
King	Laborers	Groutmen (Pressure) Including Post Tension Beams	$55.62	15J	4V	8Y	View
King	Laborers	Guardrail Erector	$54.62	15J	4V	8Y	View
King	Laborers	Hazardous Waste Worker (Level A)	$56.31	15J	4V	8Y	View
King	Laborers	Hazardous Waste Worker (Level B)	$55.62	15J	4V	8Y	View

King	Laborers	Hazardous Waste Worker (Level C)	$54.62	15J	4V	8Y	View
King	Laborers	High Scaler	$56.31	15J	4V	8Y	View
King	Laborers	Jackhammer	$55.62	15J	4V	8Y	View
King	Laborers	Laserbeam Operator	$55.62	15J	4V	8Y	View
King	Laborers	Maintenance Person	$54.62	15J	4V	8Y	View
King	Laborers	Manhole Builder-Mudman	$55.62	15J	4V	8Y	View
King	Laborers	Material Yard Person	$54.62	15J	4V	8Y	View
King	Laborers	Motorman-Dinky Locomotive	$55.62	15J	4V	8Y	View
King	Laborers	nozzleman (concrete pump, green cutter when using combination of high pressure air & water on concrete & rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster)	$57.31	15J	4V	8Y	View
King	Laborers	Pavement Breaker	$55.62	15J	4V	8Y	View
King	Laborers	Pilot Car	$46.29	15J	4V	8Y	View
King	Laborers	Pipe Layer (Lead)	$57.31	15J	4V	8Y	View
King	Laborers	Pipe Layer/Tailor	$55.62	15J	4V	8Y	View
King	Laborers	Pipe Pot Tender	$55.62	15J	4V	8Y	View
King	Laborers	Pipe Reliner	$55.62	15J	4V	8Y	View
King	Laborers	Pipe Wrapper	$55.62	15J	4V	8Y	View
King	Laborers	Pot Tender	$54.62	15J	4V	8Y	View
King	Laborers	Powderman	$56.31	15J	4V	8Y	View
King	Laborers	Powderman's Helper	$54.62	15J	4V	8Y	View
King	Laborers	Power Jacks	$55.62	15J	4V	8Y	View
King	Laborers	Railroad Spike Puller - Power	$55.62	15J	4V	8Y	View
King	Laborers	Raker - Asphalt	$57.31	15J	4V	8Y	View
King	Laborers	Re-timberman	$56.31	15J	4V	8Y	View
King	Laborers	Remote Equipment Operator	$55.62	15J	4V	8Y	View
King	Laborers	Rigger/Signal Person	$55.62	15J	4V	8Y	View
King	Laborers	Rip Rap Person	$54.62	15J	4V	8Y	View
King	Laborers	Rivet Buster	$55.62	15J	4V	8Y	View
King	Laborers	Rodder	$55.62	15J	4V	8Y	View
King	Laborers	Scaffold Erector	$54.62	15J	4V	8Y	View
King	Laborers	Scale Person	$54.62	15J	4V	8Y	View
King	Laborers	Sloper (Over 20")	$55.62	15J	4V	8Y	View
King	Laborers	Sloper Sprayer	$54.62	15J	4V	8Y	View

King	Laborers	Spreader (Concrete)	$55.62	15J	4V	8Y	View
King	Laborers	Stake Hopper	$54.62	15J	4V	8Y	View
King	Laborers	Stock Piler	$54.62	15J	4V	8Y	View
King	Laborers	Swinging Stage/Boatswain Chair	$46.29	15J	4V	8Y	View
King	Laborers	Tamper & Similar Electric, Air & Gas Operated Tools	$55.62	15J	4V	8Y	View
King	Laborers	Tamper (Multiple & Self-propelled)	$55.62	15J	4V	8Y	View
King	Laborers	Timber Person - Sewer (Lagger, Shorer & Cribber)	$55.62	15J	4V	8Y	View
King	Laborers	Toolroom Person (at Jobsite)	$54.62	15J	4V	8Y	View
King	Laborers	Topper	$54.62	15J	4V	8Y	View
King	Laborers	Track Laborer	$54.62	15J	4V	8Y	View
King	Laborers	Track Liner (Power)	$55.62	15J	4V	8Y	View
King	Laborers	Traffic Control Laborer	$49.50	15J	4V	9C	View
King	Laborers	Traffic Control Supervisor	$52.45	15J	4V	9C	View
King	Laborers	Truck Spotter	$54.62	15J	4V	8Y	View
King	Laborers	Tugger Operator	$55.62	15J	4V	8Y	View
King	Laborers	Tunnel Work-Compressed Air Worker 0-30 psi	$142.82	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 30.01-44.00 psi	$147.85	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 44.01-54.00 psi	$151.53	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 54.01-60.00 psi	$157.23	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 60.01-64.00 psi	$159.35	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 64.01-68.00 psi	$164.45	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 68.01-70.00 psi	$166.35	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 70.01-72.00 psi	$168.35	15J	4V	9B	View
King	Laborers	Tunnel Work-Compressed Air Worker 72.01-74.00 psi	$170.35	15J	4V	9B	View
King	Laborers	Tunnel Work-Guage and Lock Tender	$57.41	15J	4V	8Y	View
King	Laborers	Tunnel Work-Miner	$57.41	7A	4V	8Y	View
King	Laborers	Tunnel Work-Miner	$57.41	15J	4V	8Y	View

King	Laborers	Vibrator	$55.62	15J	4V	8Y	View
King	Laborers	Vinyl Seamer	$54.62	15J	4V	8Y	View
King	Laborers	Watchman	$42.08	15J	4V	8Y	View
King	Laborers	Welder	$55.62	15J	4V	8Y	View
King	Laborers	Well Point Laborer	$55.62	15J	4V	8Y	View
King	Laborers	Window Washer/Cleaner	$42.08	15J	4V	8Y	View
King	Laborers - Underground Sewer & Water	General Laborer & Topman	$54.62	15J	4V	8Y	View
King	Laborers - Underground Sewer & Water	Pipe Layer	$55.62	15J	4V	8Y	View
King	Landscape Construction	Landscape Construction/Landscaping Or Planting Laborers	$42.08	15J	4V	8Y	View
King	Landscape Construction	Landscape Operator	$75.50	15J	11G	8X	View
King	Landscape Maintenance	Groundskeeper	$17.87		1		View
King	Lathers	Journey Level	$68.19	15J	4C		View
King	Marble Setters	Journey Level	$63.32	7E	1N		View
King	Metal Fabrication (In Shop)	Fitter/Certified Welder	$42.17	15I	11E		View
King	Metal Fabrication (In Shop)	General Laborer	$30.07	15I	11E		View
King	Metal Fabrication (In Shop)	Mechanic	$43.63	15I	11E		View
King	Metal Fabrication (In Shop)	Welder/Burner	$39.28	15I	11E		View
King	Millwright	Journey Level	$69.74	15J	4C		View
King	Modular Buildings	Cabinet Assembly	$14.49		1		View
King	Modular Buildings	Electrician	$14.49		1		View
King	Modular Buildings	Equipment Maintenance	$14.49		1		View
King	Modular Buildings	Plumber	$14.49		1		View
King	Modular Buildings	Production Worker	$14.49		1		View
King	Modular Buildings	Tool Maintenance	$14.49		1		View
King	Modular Buildings	Utility Person	$14.49		1		View
King	Modular Buildings	Welder	$14.49		1		View
King	Painters	Journey Level	$47.70	6Z	2B		View
King	Pile Driver	Crew Tender	$62.69	15J	4C		View
King	Pile Driver	Crew Tender/Technician	$62.69	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 0-30.00 PSI	$85.00	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 30.01 - 44.00 PSI	$90.00	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 44.01 - 54.00 PSI	$94.00	15J	4C		View

King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 64.01 - 68.00 PSI	$106.50	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 68.01 - 70.00 PSI	$108.50	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 70.01 - 72.00 PSI	$110.50	15J	4C		View
King	Pile Driver	Hyperbaric Worker - Compressed Air Worker 72.01 - 74.00 PSI	$112.50	15J	4C		View
King	Pile Driver	Journey Level	$68.64	15J	4C		View
King	Plasterers	Journey Level	$64.14	7Q	1R		View
King	Plasterers	Nozzleman	$67.64	7Q	1R		View
King	Playground & Park Equipment Installers	Journey Level	$14.49		1		View
King	Plumbers & Pipefitters	Journey Level	$94.69	6Z	1G		View
King	Power Equipment Operators	Asphalt Plant Operators	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Assistant Engineer	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Barrier Machine (zipper)	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Batch Plant Operator: concrete	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Boat Operator	$76.87	7A	11H	8X	View
King	Power Equipment Operators	Bobcat	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Brokk - Remote Demolition Equipment	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Brooms	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Bump Cutter	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Cableways	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Chipper	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Compressor	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Concrete Finish Machine - Laser Screed	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Conveyors	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Cranes Friction: 200 tons and over	$79.20	7A	11H	8X	View
King	Power Equipment Operators	Cranes, A-frame: 10 tons and under	$72.30	7A	11H	8X	View
King	Power Equipment Operators	Cranes: 100 tons through 199 tons, or 150’ of boom (including jib with attachments)	$77.63	7A	11H	8X	View

King	Power Equipment Operators	Cranes: 20 tons through 44 tons with attachments	$76.19	7A	11H	8X	View
King	Power Equipment Operators	Cranes: 200 tons- 299 tons, or 250’ of boom including jib with attachments	$78.44	7A	11H	8X	View
King	Power Equipment Operators	Cranes: 300 tons and over or 300’ of boom including jib with attachments	$79.20	7A	11H	8X	View
King	Power Equipment Operators	Cranes: 45 tons through 99 tons, under 150’ of boom(including jib with attachments)	$76.87	7A	11H	8X	View
King	Power Equipment Operators	Cranes: Friction cranes through 199 tons	$78.44	7A	11H	8X	View
King	Power Equipment Operators	Cranes: through 19 tons with attachments, a-frame over 10 tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators	Crusher	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Deck Engineer/Deck Winches (power)	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Derricks, On Building Work	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Dozers D-9 & Under	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Drill Oilers: Auger Type, Truck Or Crane Mount	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Drilling Machine	$77.53	15J	11G	8X	View
King	Power Equipment Operators	Elevator and man-lift: permanent and shaft type	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Forklift: 3000 lbs and over with attachments	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Gradechecker/Stakeman	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Guardrail Punch	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Horizontal/Directional Drill Locator	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Horizontal/Directional Drill Operator	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Hydralifts/Boom Trucks Over 10 Tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators	Hydralifts/boom trucks: 10 tons and under	$72.30	7A	11H	8X	View
King	Power Equipment Operators	Leverman	$78.33	15J	11G	8X	View
King	Power Equipment Operators	Loader, Overhead, 6 Yards. But Not	$76.77	15J	11G	8X	View

		Including 8 Yards					
King	Power Equipment Operators	Loaders, Overhead Under 6 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Loaders, Plant Feed	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Loaders: Elevating Type Belt	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Locomotives, All	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Material Transfer Device	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Mechanics: All (Leadmen - $0.50 per hour over mechanic)	$77.53	15J	11G	8X	View
King	Power Equipment Operators	Motor Patrol Graders	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Overhead, bridge type: 100 tons and over	$77.63	7A	11H	8X	View
King	Power Equipment Operators	Overhead, bridge type: 45 tons through 99 tons	$76.87	7A	11H	8X	View
King	Power Equipment Operators	Pavement Breaker	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Pile Driver (other Than Crane Mount)	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Plant Oiler - Asphalt, Crusher	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Posthole Digger, Mechanical	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Power Plant	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Pumps - Water	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Quad 9, Hd 41, D10 And Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Remote Control Operator On Rubber Tired Earth Moving Equipment	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Rigger and Bellman	$72.30	7A	11H	8X	View
King	Power Equipment Operators	Rigger/Signal Person, Bellman(Certified)	$75.60	7A	11H	8X	View
King	Power Equipment Operators	Rollagon	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Roller, Other Than Plant Mix	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Roller, Plant Mix Or Multi-lift Materials	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Roto-mill, Roto-grinder	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Saws - Concrete	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Scraper, Self Propelled Under 45 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Scrapers - Concrete & Carry All	$75.50	15J	11G	8X	View

King	Power Equipment Operators	Scrapers, Self-propelled: 45 Yards And Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Service Engineers: Equipment	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Shotcrete/Gunite Equipment	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$77.53	15J	11G	8X	View
King	Power Equipment Operators	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$78.33	15J	11G	8X	View
King	Power Equipment Operators	Slipform Pavers	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Spreader, Topsider & Screedman	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Subgrader Trimmer	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Tower Bucket Elevators	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Tower Crane: over 175' through 250' in height, base to boom	$78.44	7A	11H	8X	View
King	Power Equipment Operators	Tower crane: up to 175' in height base to boom	$77.63	7A	11H	8X	View
King	Power Equipment Operators	Tower Cranes: over 250’ in height from base to boom	$79.20	7A	11H	8X	View
King	Power Equipment Operators	Transporters, All Track Or Truck Type	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Trenching Machines	$75.50	15J	11G	8X	View
King	Power Equipment Operators	Truck crane oiler/driver: under 100 tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators	Truck Mount Portable Conveyor	$76.09	15J	11G	8X	View
King	Power Equipment Operators	Welder	$76.77	15J	11G	8X	View
King	Power Equipment Operators	Wheel Tractors, Farmall Type	$72.20	15J	11G	8X	View
King	Power Equipment Operators	Yo Yo Pay Dozer	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Asphalt Plant Operators	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Assistant Engineer	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Barrier Machine (zipper)	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Batch Plant Operator, Concrete	$76.09	15J	11G	8X	View

King	Power Equipment Operators- Underground Sewer & Water	Boat Operator	$76.87	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Bobcat	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Brokk - Remote Demolition Equipment	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Brooms	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Bump Cutter	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cableways	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Chipper	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Compressor	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Concrete Finish Machine - Laser Screed	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Over 42 M	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Concrete Pump: Truck Mount With Boom Attachment Up To 42m	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Conveyors	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes Friction: 200 tons and over	$79.20	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes, A-frame: 10 tons and under	$72.30	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: 100 tons through 199 tons, or 150’ of boom (including jib with attachments)	$77.63	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: 20 tons through 44 tons with attachments	$76.19	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: 20 tons through 44 tons with attachments	$76.19	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: 200 tons- 299 tons, or 250’ of boom including jib with attachments	$78.44	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: 300 tons and over or 300’ of boom including jib with attachments	$79.20	7A	11H	8X	View

King	Power Equipment Operators- Underground Sewer & Water	Cranes: 45 tons through 99 tons, under 150' of boom(including jib with attachments)	$76.87	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: Friction cranes through 199 tons	$78.44	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Cranes: through 19 tons with attachments, a-frame over 10 tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Crusher	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Deck Engineer/Deck Winches (power)	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Derricks, On Building Work	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Dozers D-9 & Under	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Drill Oilers: Auger Type, Truck Or Crane Mount	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Drilling Machine	$77.53	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Elevator and man-lift: permanent and shaft type	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Finishing Machine, Bidwell And Gamaco & Similar Equipment	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Forklift: 3000 lbs and over with attachments	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Forklifts: under 3000 lbs. with attachments	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Forklifts: under 3000 lbs. with attachments	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Grade Engineer: Using Blue Prints, Cut Sheets, Etc	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Gradechecker/Stakeman	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Guardrail Punch	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. & Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Horizontal/Directional Drill Locator	$75.50	15J	11G	8X	View

King	Power Equipment Operators- Underground Sewer & Water	Horizontal/Directional Drill Operator	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom trucks: 10 tons and under	$72.30	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Hydralifts/boom trucks: over 10 tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Leverman	$78.33	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Loader, Overhead, 6 Yards. But Not Including 8 Yards	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Loaders, Overhead Under 6 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Loaders, Plant Feed	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Loaders: Elevating Type Belt	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Locomotives, All	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Material Transfer Device	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Mechanics: All (Leadmen - $0.50 per hour over mechanic)	$77.53	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Motor Patrol Graders	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Oil Distributors, Blower Distribution & Mulch Seeding Operator	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Outside Hoists (Elevators and Manlifts), Air Tuggers, Strato	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Overhead, bridge type: 100 tons and over	$77.63	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Overhead, bridge type: 45 tons through 99 tons	$76.87	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Pavement Breaker	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Pile Driver (other Than Crane Mount)	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Plant Oiler - Asphalt, Crusher	$75.50	15J	11G	8X	View

King	Power Equipment Operators- Underground Sewer & Water	Posthole Digger, Mechanical	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Power Plant	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Pumps - Water	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Quad 9, Hd 41, D10 And Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Remote Control Operator On Rubber Tired Earth Moving Equipment	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Rigger and Bellman	$72.30	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Rigger/Signal Person, Bellman(Certified)	$75.60	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Rollagon	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Roller, Other Than Plant Mix	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Roller, Plant Mix Or Multi-lift Materials	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Roto-mill, Roto-grinder	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Saws - Concrete	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Scraper, Self Propelled Under 45 Yards	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Scrapers - Concrete & Carry All	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Scrapers, Self-propelled: 45 Yards And Over	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Shotcrete/Gunite Equipment	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons	$77.53	15J	11G	8X	View

King	Power Equipment Operators- Underground Sewer & Water	Shovel, Excavator, Backhoes: Over 90 Metric Tons	$78.33	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Slipform Pavers	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Spreader, Topsider & Screedman	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Subgrader Trimmer	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Tower Bucket Elevators	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Tower Crane: over 175' through 250' in height, base to boom	$78.44	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Tower crane: up to 175' in height base to boom	$77.63	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Tower Cranes: over 250’ in height from base to boom	$79.20	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Transporters, All Track Or Truck Type	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Trenching Machines	$75.50	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Truck Crane Oiler/Driver: 100 tons and over	$76.19	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Truck crane oiler/driver: under 100 tons	$75.60	7A	11H	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Truck Mount Portable Conveyor	$76.09	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Welder	$76.77	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Wheel Tractors, Farmall Type	$72.20	15J	11G	8X	View
King	Power Equipment Operators- Underground Sewer & Water	Yo Yo Pay Dozer	$76.09	15J	11G	8X	View
King	Power Line Clearance Tree Trimmers	Journey Level In Charge	$57.22	5A	4A		View
King	Power Line Clearance Tree Trimmers	Spray Person	$54.32	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Equipment Operator	$57.22	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Trimmer	$51.18	5A	4A		View
King	Power Line Clearance Tree Trimmers	Tree Trimmer Groundperson	$38.99	5A	4A		View
King	Refrigeration & Air Conditioning Mechanics	Journey Level	$90.01	6Z	1G		View
King	Residential Brick Mason	Journey Level	$63.32	7E	1N		View

King	Residential Carpenters	Journey Level	$36.44		1		View
King	Residential Cement Masons	Journey Level	$46.64		1		View
King	Residential Drywall Applicators	Journey Level	$68.19	15J	4C		View
King	Residential Drywall Tapers	Journey Level	$36.36		1		View
King	Residential Electricians	Journey Level	$48.80		1		View
King	Residential Glaziers	Journey Level	$28.93		1		View
King	Residential Insulation Applicators	Journey Level	$28.18		1		View
King	Residential Laborers	Journey Level	$29.73		1		View
King	Residential Marble Setters	Journey Level	$27.38		1		View
King	Residential Painters	Journey Level	$23.47		1		View
King	Residential Plumbers & Pipefitters	Journey Level	$94.69	6Z	1G		View
King	Residential Refrigeration & Air Conditioning Mechanics	Journey Level	$90.01	6Z	1G		View
King	Residential Sheet Metal Workers	Journey Level	$91.83	7F	1E		View
King	Residential Soft Floor Layers	Journey Level	$51.91	5A	3J		View
King	Residential Sprinkler Fitters (Fire Protection)	Journey Level	$53.04	5C	2R		View
King	Residential Stone Masons	Journey Level	$63.32	7E	1N		View
King	Residential Terrazzo Workers	Journey Level	$58.71	7E	1N		View
King	Residential Terrazzo/Tile Finishers	Journey Level	$24.39		1		View
King	Residential Tile Setters	Journey Level	$21.04		1		View
King	Roofers	Journey Level	$59.05	5A	3H		View
King	Roofers	Using Irritable Bituminous Materials	$62.05	5A	3H		View
King	Sheet Metal Workers	Journey Level (Field or Shop)	$91.83	7F	1E		View
King	Shipbuilding & Ship Repair	New Construction Boilermaker	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Carpenter	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Crane Operator	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Electrician	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Heat & Frost Insulator	$82.02	15H	11C		View
King	Shipbuilding & Ship Repair	New Construction Laborer	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Machinist	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Operating Engineer	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Painter	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Pipefitter	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Rigger	$39.58	7V	1		View

King	Shipbuilding & Ship Repair	New Construction Sheet Metal	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Shipfitter	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Warehouse/Teamster	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	New Construction Welder / Burner	$39.58	7V	1		View
King	Shipbuilding & Ship Repair	Ship Repair Boilermaker	$47.45	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Carpenter	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Crane Operator	$45.06	7Y	4K		View
King	Shipbuilding & Ship Repair	Ship Repair Electrician	$48.92	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Heat & Frost Insulator	$82.02	15H	11C		View
King	Shipbuilding & Ship Repair	Ship Repair Laborer	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Machinist	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Operating Engineer	$45.06	7Y	4K		View
King	Shipbuilding & Ship Repair	Ship Repair Painter	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Pipefitter	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Rigger	$47.45	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Sheet Metal	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Shipwright	$47.35	7X	4J		View
King	Shipbuilding & Ship Repair	Ship Repair Warehouse / Teamster	$45.06	7Y	4K		View
King	Sign Makers & Installers (Electrical)	Journey Level	$53.62	0	1		View
King	Sign Makers & Installers (Non-Electrical)	Journey Level	$34.42	0	1		View
King	Soft Floor Layers	Journey Level	$54.41	5A	3J		View
King	Solar Controls For Windows	Journey Level	$14.49		1		View
King	Sprinkler Fitters (Fire Protection)	Journey Level	$89.49	5C	1X		View
King	Stage Rigging Mechanics (Non Structural)	Journey Level	$14.49		1		View
King	Stone Masons	Journey Level	$63.32	7E	1N		View
King	Street And Parking Lot Sweeper Workers	Journey Level	$19.09		1		View
King	Surveyors	Assistant Construction Site Surveyor	$75.60	7A	11H	8X	View
King	Surveyors	Chainman	$72.30	7A	11H	8X	View
King	Surveyors	Construction Site Surveyor	$76.87	7A	11H	8X	View
King	Surveyors	Drone Operator (when used in conjunction with survey work only)	$72.30	7A	11H	8X	View
King	Surveyors	Ground Penetrating Radar Operator	$72.30	7A	11H	8X	View
King	Telecommunication Technicians	Journey Level	$59.10	7E	1E		View
King	Telephone Line Construction - Outside	Cable Splicer	$38.27	5A	2B		View
King	Telephone Line Construction - Outside	Hole Digger/Ground Person	$25.66	5A	2B		View

King	Telephone Line Construction - Outside	Telephone Equipment Operator (Light)	$31.96	5A	2B		View
King	Telephone Line Construction - Outside	Telephone Lineperson	$36.17	5A	2B		View
King	Terrazzo Workers	Journey Level	$58.71	7E	1N		View
King	Tile Setters	Journey Level	$58.71	7E	1N		View
King	Tile, Marble & Terrazzo Finishers	Finisher	$49.54	7E	1N		View
King	Traffic Control Stripers	Journey Level	$50.51	7A	1K		View
King	Truck Drivers	Asphalt Mix Over 16 Yards	$69.95	15J	11I	8L	View
King	Truck Drivers	Asphalt Mix To 16 Yards	$69.11	15J	11I	8L	View
King	Truck Drivers	Dump Truck	$69.11	15J	11I	8L	View
King	Truck Drivers	Dump Truck & Trailer	$69.95	15J	11I	8L	View
King	Truck Drivers	Other Trucks	$69.95	15J	11I	8L	View
King	Truck Drivers - Ready Mix	Transit Mix	$69.95	15J	11I	8L	View
King	Well Drillers & Irrigation Pump Installers	Irrigation Pump Installer	$17.71		1		View
King	Well Drillers & Irrigation Pump Installers	Oiler	$14.49		1		View
King	Well Drillers & Irrigation Pump Installers	Well Driller	$18.00		1		View

SPECIAL CONDITIONS

1.1 SPECIAL CONDITIONS

The following Special Conditions modify, change, delete from or add to the "General Conditions of the Contract for Construction," and their supplemental modifications. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause remains in effect.

In the event of conflicts, the most cost-intensive interpretation shall govern.

1.2 REFERENCE TO DIVISION 1, GENERAL REQUIREMENTS

Provisions of Division 1, "General Requirements" apply to all Sections of this Project Manual.

A. Project Administration or Work-related Requirements: Where provisions of the General Conditions of the Contract for Construction relate to project administration or work-related requirements of the Contract, those paragraphs are supplemented and modified in Division 1, "General Requirements." Unaltered portions of the General Conditions remain in effect.

B. Reference To Articles and Paragraphs of the General Conditions: Refer to the Table of Contents for Division 1 Section Titles relating to Article and Paragraph Titles of the General Conditions, and to Division 1 Sections for direct reference to Articles and Paragraph Titles of the General Conditions.

1.3 DEFINITIONS

Where the following terms are used in these Contract Documents, they are defined as follows:

A. Architect: The Architect as defined in the General Conditions means Cornerstone Architectural Group, P.S.

B. Owner: The Owner as defined in the General Conditions means Issaquah School District 411.

C. Contractor: The term "Contractor," as defined in the General Conditions means the prime contractor for the Work of each separate prime contract identified in Section 01 11 00, "Summary of Work."

D. Subcontractor: Subcontractor as defined in the General Conditions means a subcontractor to a prime contractor for the work of a separate prime contract identified in Section 01 11 00, "Summary of Work."

E. Consultant: Where the term "Consultant" is used, it means consultant to the Architect as listed in the Project Manual.

F. Miscellaneous Terms

The term "product" includes materials, systems, and equipment.
The term "selected" means "selected by Architect."
The term "furnish" means "supply and deliver to jobsite, ready for installation."
The term "install" means "place in position for service or use."
The term "provide" means "furnish and install."
The term "directed" means "directed by Architect."
The term "accepted" means "accepted by Architect subject to meeting requirements of the Contract Documents."
The term “project site” means the entire area where Work is described on the Contract Documents, including but not limited to areas within the property lines and right of ways.

1.4 RECYCLING AND RECYCLED CONTENT MATERIALS AND PRODUCTS

A. As part of the overall environmentally sensitive approach to this project the Owner requests that as many building materials and products as possible are recycled during the construction of this project.

B. As part of the overall environmentally sensitive approach to this project the Owner requests that as many recycled-content building materials and products as possible are utilized in the construction of this project. These specifications list some recycled-content products and potential sources. However, there may be additional opportunities to use or maximize the use of recycled-content building materials in the project. If there is a recycled-content material alternative to those specified and the recycled-content material meets the performance criteria of the material originally specified, the contractor is urged to submit a substitution request.

END OF SECTION 00 85 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Descriptions of Work, Contracts, Documents, etc., included in Contract Documents and descriptions of items and work furnished by Owner.

B. Related Work in Other Sections: Refer to the following Sections for related Work:

00 00 00 through 00 85 00 for Bid and Contract requirements.

C. This is a Federal Grant project. Contractor shall follow the Federal Grant Requirements as referenced in the contract documents and Appendix A.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A temporary emergency bank stabilization measure was installed to prevent damage to existing infrastructure on the site and ensure safety. The temporary stabilization was installed in March 2021. To avoid further erosion of the creek bank, the temporary stabilization which includes steel sheet and piles along with ecology blocks and log jam in middle of stream will be removed and disposed of off site as part of the construction of the permanent stabilization project. The current proposed project is for installation of more comprehensive, permanent stabilization measures consistent with bioengineering techniques required by multiple agencies and the City of Issaquah.

The permanent stabilization project will consist of installing streambank protection along approximately 150 feet of cutbank on the west side of Issaquah Creek. Protection will include reconstruction of a portion of the bank lost to channel erosion in proximity to Issaquah School District infrastructure with an engineered, non-deformable ‘log toe’ incorporating large woody debris and habitat boulders. The log toe will provide protection against the erosive forces directed toward the bank and provide habitat as stream-carried debris is caught and incorporated into the bank. Mechanical anchors are included in the design to add additional security for the large woody debris into the undisturbed streambank and channel, although habitat boulders will anchor the debris for normal and moderately-high flow flood stages of the stream. The woody debris will be situated such that the future possible effects of channel scour are mitigated as much as four feet below the existing channel bottom. As the bioengineered structure decays, revegetation within the reconstructed bank will take hold and form permanent, long-term stabilization. Existing soils and gravel excavated from the river-bed will be incorporated into the reconstructed bank.

Construction of the stream bank stabilization measures will include work within the ordinary high- water mark of Issaquah Creek. To facilitate work within the stream buffer and reduce impacts associated with construction, fish will be removed from the work area and a temporary coffer dam will be installed along the perimeter to isolate the work area for the duration of construction. All in-water work will be performed between July 1st and August 15th, the approved fish window.

Issaquah School District will obtain the necessary permits from Washington state and Federal agencies.

1.3 WORK BY OTHERS

A. Owner Furnished Items: Certain items, designated by the Drawings by the abbreviations "FOIC" and "NIC," meaning "furnished by Owner and installed by Contractor," and "not in Contract," respectively, will be furnished by the Owner. Items for installation by the Contractor will be furnished to the job site for consignment to the Contractor. Owner shall assume responsibility for delivery in accordance with the construction schedule, obtaining installation drawings and instructions, submitting claims for transportation damages and arranging for guarantees and warranties. Contractor shall designate required delivery dates and shall assume responsibility for newly delivered items upon uncrating and determining that the contents are complete and in satisfactory condition for installation. Installation for all Owner furnished items shall include delivery to installation location, setting in place, building-in, leveling and attaching to walls, floors and/or ceilings, making mechanical or electrical connections and leaving items completely installed and in operable condition satisfactory to Architect. See related technical sections of the Specifications for additional information. Contractor shall make provisions in its bid for coordination of Work under this Contract with the work of other contracts. No increase in the Contract Sum will be granted due to inconveniences derived from or related to work under other contracts.

1.4 CONTRACTS

A single prime contract including the work of all trades.

1.5 WORK SEQUENCES

Order of procedure and sequence of operations are Contractor options, consistent with approved construction schedules, required work sequences, and stipulated contract time.

1.6 SUBSTANTIAL COMPLETION SCHEDULE

The Owner has established the following Substantial Completion Schedule for the Work.

	Start Date (On Site)	Substantial Completion	Final Completion
Project	w/in 30 days of bid	**Aug 15, 2022**	**Sept 2, 2022**

If the Substantial Completion and Final Completion dates are not met, liquidated damages will be assessed per Sections 00 72 00 and relevant sections of Division 0.

1.7 PERMITS

The Contractor shall secure and pay for all fees and permits required for the execution of the Work with the exception of those outlined below. Right of Way, and other required permits shall be the responsibility of the Contractor or subcontractor responsible for the work. Refer to General and Special Conditions for additional requirements.

A. Owner Paid Fees: The following list includes plan check fees and permit fees paid by the Owner.

1. Site Work, Shoreline, Flood Hazard, SEPA Determination, USACE, WDFW and WA Dept. of Ecology

B. Permit Documents: The Contractor is responsible for collecting all permit documents on site and coordinating, prior to construction, the information from all permit documents with the bidding documents. Inform the Architect and Owner of conflicts for timely resolution.

1.8 INSURANCE REQUIRED PRIOR TO COMMENCEMENT OF WORK

No prime contractor shall commence work under this contract until he has obtained all the insurance required hereunder and certificates of such insurance have been submitted to the Architect and reviewed by the Owner. The Contractor shall not allow any subcontractor to commence work on a subcontract until such subcontractor has obtained insurance similar to that required hereunder for the Contractor. Acceptance of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

END OF SECTION 01 11 00

SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 SUMMARY
Provisions of the Bidding Requirements, Conditions of the Contract, and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

1.2 Related Work in Other Sections: Refer to the following sections for related work:

00 50 00 for application for payment.
01 32 16 for contractor's construction schedule
01 32 16 for progress schedule.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 DESCRIPTION

A. Schedule of Values

1. General:

a. Within fourteen (14) days after Notice to Proceed, submit Schedule of Values to Owner and Architect.

1) Support values if requested by Architect.

2) Use Schedule as basis for Application for Payment.

b. Submit quantities as requested.

c. Coordinate related requirements specified in other parts of the Project Manual.

2. Form and Content of Submittal:

a. Submit the schedule of values in form approved by the Architect listing not less than one item for all pertinent activities as set forth on the attached Schedule of Values List immediately following this Section, and relating directly to the pertinent applicable activities of the CPM schedule. Refer to Divisions 21 through 28 for additional specific mechanical and electrical breakdown requirements.

b. Identify each item with number and title of respective major Specification Sections.

c. Include in each item a directly proportional amount of Contractor's overhead and profit.

d. Correlate line items with other administrative schedules and forms required for the work, including CPM progress schedule, payment request form, listing of subcontractors, schedule of alternates, listing of products and principal suppliers and fabricators, and schedule of submittals.

e. Provide breakdown of Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports.

f. For each line item of installed value exceeding $20,000.00, show breakdown by major projects or operations under each item.

g. Break down principal subcontract amounts into several line items; round off to nearest whole dollar, with total equal to Contract Sum.

h. Upon request of the Architect, submit futher breakdown of the work in any of the Sections of the Project Manual.

i. Submit three (3) copies of schedule to Architect and three (3) copies to Owner.

j. Change orders and their approved sums are to be listed as separate items.

3. Materials/Fabrication Values: For each unit of work where payment requests will be made on account of stored materials or equipment purchased not yet installed, break down the cost into:

   a. The total cost of materials, delivered and unloaded, with taxes and the like paid.

   b. Total installed value.

4. Listing: Arrange schedule with columns to indicate generic name of item, related specification sections, subcontractor, supplier/manufacturer /fabricator, change orders (numbers) which have affected value, dollar value of item, and percentage of Contract Sum (to nearest one-hundredth percent and adjusted to total 100 percent).

5. Scheduling Updating: Update and resubmit schedule of values when Change Orders affecting listing and when actual performance of the work involves necessary changes of substance to values previously listed.

SCHEDULE OF VALUES LISTING

The following listing shall be used by the Contractor as a minimum breakdown for Schedule of Values required for this Project, with the exception of listed items not included in this Project. See Mechanical and Electrical for additional breakdown of values:

Mobilization (not otherwise listed below)
Permits/Bonds/Insurances
Temporary Facilities
Supervision
Closeout
Survey and Layout
Site Demolition
Existing Building Demolition
Hazardous Material Demolition
Site Clearing and Preparation
Building Excavation
Building Backfill and Finish Grading
Unit Price Quantities
Asphalt Paving
ATB Paving
Pavement Markings
Curbs and Wheelstops
Concrete Walks
Sanitary Sewer
Storm Sewer

Water System - On Site
Water System - Off Site
Fencing and Backstops
Irrigation System
Landscaping
Misc. Site Items (benches, bollards, gates, play areas, etc.)
Foundation Drainage
Concrete Reinforcement
Concrete Foundations
Concrete Slabs on Grade
Concrete Slabs Above Grade
Concrete Columns
Masonry
Structural Steel
Metal Decking
Misc. Steel
Steel Erection
Metal Stud Framing Materials
Metal Stud Labor - Walls
Wood Framing Labor - Floors/Roofs
Bar Joists
Wood Beams/Columns
Fiber Cement Siding/Soffits/Trim
Interior Wood Trim
Wood Ceilings
Dampproofing/WP Membranes
Insulation - Walls
Insulation - Floors/Roof
Metal Roofing
Membrane Roofing
Metal Siding
Flashings and Sheet Metal
Roof Accessories
Fire Proofing
Firestopping and Smokestopping
Sealants
Hollow Metal Materials
Hollow Metal Labor
Aluminum Storefront
Aluminum Curtainwall
Wood Doors Materials
Wood Doors Labor
Fiberglass Windows Materials
Fiberglass Windows Labor
Finish Hardware Materials
Finish Hardware Labor
Glass and Glazing
Gypsum Wallboard
Acoustical Ceilings
Acoustical Wall Panels and Baffles
Resilient Flooring
Carpeting
Wood Flooring
Interior Painting
Exterior Painting
Vinyl Wall Covering
Marker/Tack Boards
Cubicle Curtains and Track
Toilet Partitions and Accessories
Flagpole
Signage Interior
Signage Exterior
Athletic Equipment Materials
Athletic Equipment Labor
Fire Extinguishers and Cabinets
Room Accessories
Misc. Specialties
Recreational Equipment Materials
Recreational Equipment Labor
Plastic Laminated Casework Materials
Plastic Laminated Casework Labor

Metal Shelving
Library Casework
Window Treatment
Exterior Sun Shades
Closeout
Mechanical Mobilization
Mechanical Submittals
Insulation
Plumbing Rough-in Materials
Plumbing Rough-in Labor
Plumbing Fixtures Materials
Plumbing Fixtures Labor
Fire Sprinkler Materials
Fire Sprinkler Labor
HVAC Equipment
HVAC Ductwork
HVAC Labor
HVAC Finish
Controls
Tests and Adjustments
Commissioning
Closeout Mechanical
Electrical Mobilization
Electrical Submittals
Electrical Site Work Materials
Electrical Site Work Labor
Electrical Building Rough-in Materials
Electrical Building Rough-in Labor
Panel, Gear and Fuses
Light Fixtures
Site Lighting
Electrical Trim Materials
Electrical Trim Labor
Data Cableing and Termination System
Fire Alarm System
Intercom/Clock System
Gymnasium Sound System
Classroom Sound System
Security System TV System
Emergency Responder System
Commissioning
Closeout Electrical

END OF SECTION 01 29 73

COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide project coordination in accordance with the General Conditions of the Contract and as amplified and modified herein.

B. Related Work in Other Sections: Refer to the following Sections for related Work:

01 31 19 for Project Meetings.

1.2 PROJECT COORDINATION AND SCHEDULING CONTROL

Responsibility for establishing and maintaining close adherence to time schedule rests solely with the General Contractor who shall maintain coordination and scheduling control at all times. Each subcontractor shall be responsible to the General Contractor in the execution of their work so as to cause no delay in the completion of the Project. This responsibility includes the completion of all Work in a timely manner with all items of equipment connected and fully operating at the time of substantial completion. General Contractor and each subcontractor shall diligently comply with the following requirements:

A. Coordination Between Trades: Any contractor furnishing material or equipment which is to be placed, installed or built into the work of another contractor is to coordinate the location of the material or equipment with the General Contractor.

B. Coordination for Use of Materials: Where more than one manufacturer of material or equipment is specified, any contractor furnishing material or equipment other than that which is shown on the drawings to pay all costs for any modifications to other contractors work which is necessary in order to install the equipment or material selected. All modifications subject to acceptance by Architect.

C. Shop Drawing Coordination: General Contractor to furnish other subcontractors with minimum of one (1) copy of all approved shop drawings and other submittals as may be required for full coordination of the Work between all trades.

D. Opening Coordination: General Contractor responsible for physically locating openings required for their work in the work of others.

1.3 NOTIFICATION AND CORRECTION OF DEFECTIVE WORK

Before starting a section of work, each contractor and subcontractor shall carefully examine all preparatory work that has been executed to receive his work. Check carefully, by whatever means required, to ensure that the work and adjacent, related work will finish to proper contours, planes, and levels. Promptly notify the Contractor of any defects or imperfections in preparatory work which will in any way affect satisfactory completion of the Work. Under no condition shall a section of work proceed prior to preparatory work having been completed, cured, dried, or otherwise made satisfactory to receive such related work. Correction of defective Work shall be the responsibility the contractor or subcontractor providing the defective Work. Correction of Work due to underlying defects shall be the responsibility of the contractor or subcontractor providing Work.

1.4 INTENT OF DRAWINGS

The Work of each contractor and subcontractor shall conform to conditions shown on all drawings including architectural, structural, mechanical, and electrical. Drawings showing work of other trades are partly diagrammatic and do not intend to show in detail all features of Work. Each contractor shall carefully review and compare related drawings and shall thoroughly understand the building conditions affecting their work. All changes required in the Work caused by failure to do so shall be at no expense to the Owner.

1.5 INTERFERENCES AND RIGHT-OF-WAY

Make proper provisions to avoid interferences. Where conflicts occur, architectural and structural has right-of-way over mechanical and electrical work; concealed mechanical work has right-of-way over concealed electrical work; exposed electrical fixtures have right-of-way over mechanical fixtures. Submit conflicts which cannot be resolved by right-of-way to Architect for instructions.

1.6 COOPERATION WITH OWNER PERSONNEL

Contractor agrees to coordinate and cooperate fully with the Owner's staff as regards physical and noise interference with the use of the facilities during normal hours of operation.

END OF SECTION 01 31 13

PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Requirements for meetings, lines of communication, and progress and payment.

1.2 ACCESS TO SITE

Give Owner, Architect, and consultants listed in the Project Manual access to the Work insofar as their interests are concerned.

1.3 LINES OF COMMUNICATION

All instructions to Contractor shall be by Owner or Architect for distribution by Contractor to subcontractors and tradesmen on job. No other instructions shall be recognized. All communications to Owner shall be copied to the Architect. Subcontractors and material suppliers shall not contact Owner or Architect to discuss work unless previously authorized by the Owner and/or Architect. All Subcontractor Communication with the Owner and/or Architect shall be copied to the Contractor by the Subcontractor.

1.4 PRECONSTRUCTION CONFERENCE

A meeting will be scheduled by the Architect or Owner prior to the start of construction for the purpose of discussing and clarifying contract administration procedures for the execution of the Work. The meeting will be conducted by the Architect with the Owner, prime contractor, primary subcontractors, and consultants in attendance.

1.5 PREAPPLICATION CONFERENCES

Meetings will be scheduled with the Architect and Owner prior to the start of the following activities for the purpose of clarifying application and installation procedures. Contractor shall notify Architect two (2) weeks prior to start of procedure.

A. Erosion Control Installation, Procedures & Maintenance: Owner, Contractor, Sitework subcontractor to attend.

B. Pre-Roofing Application: Owner, Contractor, Roofing Subcontractor, and Testing Lab to attend.

C. Pre-Window Installation: Owner, Contractor, Window Supplier, Window installation Subcontractor, to attend.

D. Vapor Barrier Installation: Owner, Contractor and Insulation Subcontractor to attend.

E. Pre-Painting Application: Owner Contractor, Painting Subcontractor, and Painting Inspection Services to attend.

F. Keying Schedule: Contractor, Hardware Supplier, and Owner to attend.

1.6 PROGRESS MEETINGS

Meetings will be held at the site as scheduled by the Architect or Owner once each week for the purpose of reviewing progress of the Work. One meeting each month will serve for pay request review. Attendance will be required by representatives of the Owner, prime contractor, major subcontractors and consultants when required.

1.7 PROGRESS AND PAYMENT CHECKLIST

Requirements include but are not limited to the items listed in the following schedule. Meet all requirements not listed herein, as specified in the Contract Documents or as required by other authorities. See the various specification sections indicated for specific requirements.

A. Requirements Prior to Start of Construction: The notice to proceed will be issued by the Architect upon satisfactory fulfillment of the following requirements:

- ☐ Owner's written notice of intent to award contract
- ☐ Execution of contract
- ☐ Payment & Performance bond
- ☐ Certificate of insurance
- ☐ Construction Schedules
- ☐ Unit Price List

B. Requirements For First Progress Payment: The first request for payment will be forwarded by the Architect for processing upon satisfactory fulfillment of the following requirements:

- ☐ Application for payment
- ☐ Progress meeting attendance
- ☐ Schedule of values
- ☐ Subcontractor and material lists
- ☐ Construction Schedule Update
- ☐ State-approved Notice of intent to pay prevailing wages, for Contractor and all subcontractors requesting payment

C. Requirements For Subsequent Progress Payments: The requests for partial payment on portions of work completed will be forwarded by the Architect for processing upon satisfactory fulfillment of the following requirements:

- ☐ Application for payment
- ☐ Notarized Certification of payments to subcontractors and material suppliers
- ☐ Progress meeting attendance
- ☐ Submittals as required prior to, during and at completion of work per specifications
- ☐ Updated construction schedule
- ☐ Project record drawings up to date
- ☐ Contract completion requirements per specification section

D. Requirements For Substantial Completion: A certificate of substantial completion will be issued by the Architect upon satisfactory fulfillment of the following requirements:

- ☐ Contractor submits a written request for Substantial Comp.
- ☐ Building systems operating so that building may be occupied for intended use
- ☐ Satisfaction of all Governing Agency Requirements for Occupancy (including Occupancy Permit)
- ☐ Asbestos Free Certification received
- ☐ Owner and contractor(s) mutually agree to occupancy.
- ☐ Contractor punchlist submitted to Owner and Architect
- ☐ Owner, Architect, and contractor have completed punchlist inspection

E. Requirements For Final Inspection: Final inspection will be conducted by the Architect, Owner, and contractor upon satisfactory fulfillment of the following requirements:
- ☐ Receipt of project completion notice
- ☐ All punchlist items corrected or otherwise satisfied

F. Requirements For Recommendation of Final Acceptance: Letters of recommendation for final acceptance and final certificate for payment and release of retention will be forwarded by the Architect for processing upon satisfactory fulfillment of the following requirements:
- ☐ All punchlist and final inspection items corrected or otherwise satisfied.
- ☐ All submittals received
- ☐ All change orders recorded.
- ☐ All Record Documents Submitted in Final Approved form
- ☐ All Commissioning Items complete.
- ☐ Applications for final payment and release of retention
- ☐ Final certifications of payment to subcontractors and material suppliers

G. Final Acceptance and Payment: Final acceptance and payment will be made by Owner following approval of the School District Board of Directors at a regularly scheduled meeting.

H. Requirements For Release of Retention: The retention will be released by the Owner upon satisfactory fulfillment of the following requirements:
- ☐ Expiration of 45 day lien period following final acceptance and satisfaction of claims
- ☐ State-approved Affidavit of Wages Paid
- ☐ Written clearance by the Department of Revenue
- ☐ Written clearance by the Department of Labor and Industries
- ☐ Written clearance by the Department of Employment Security
- ☐ Lien Release from General Contractor

1.8 SCHEDULE FOR PAY REQUESTS

Contractor may submit pay requests monthly. A schedule of School Board meetings will be provided by the Owner.

END OF SECTION 01 31 19

CONTRACTOR'S CONSTRUCTION SCHEDULES

PART 1 – GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Section Includes:
   1. This section specifies administrative and procedural requirements for preparation of the Preliminary Contractor's Schedule, Contractor's Construction Schedule, Monthly Updates, Short Interval Schedules, and Submittal Schedule. The purpose of the schedules and reports is to:
      a. Ensure adequate planning and execution of the Work by the Contractor
      b. Establish the standard against which satisfactory completion of the project shall be judged
      c. Assist the Owner and Architect in monitoring progress
      d. Assess the impact of any changes to the Contract
      e. Support the basis for progress payments

B. Related Sections:
   1. Section 01 11 00 – Summary of work – project phasing schedule
   2. Section 01 29 73 – Schedule of Values
   3. Section 01 33 00 – Submittal Procedures

1.2 DEFINITIONS

A. Float: Defined as the amount of time between the earliest start date and the latest start date of an activity or chain of activities on the "Critical Path Method" (CPM) construction schedule. Float is not for the exclusive use of either the Contractor or the Owner unless otherwise identified in the Contract Documents. Extensions of time for Contract performance will be granted only to the extent that equitable time adjustments to the affected activity or activities exceed the total float time along the affected paths of the currently approved CPM at the time Notice to Proceed was issued for the change.

B. Day: As used in this Section, 'days' mean consecutive calendar days unless otherwise noted.

1.3 SUBMITTALS

A. All schedule submittals, including the schedule updates, will be reviewed jointly by the Owner, Architect, or Engineer and the Contractor. Such review of the Contractor's schedules shall not constitute an approval or acceptance of the Contractor's construction means, methods, or sequencing or its ability to complete the Work in a timely manner.

1.4 WORK INCLUDED

A. Provide an acceptable Preliminary Contractor's Construction Schedule in accordance with paragraph entitled Preliminary Project Schedule of this section.

B. Provide an acceptable CPM type Contractor's Schedule within 45 calendar days after notice to proceed and prior to the second application for payment. The schedule shall be prepared and reports generated and submitted as specified in paragraphs entitled Contractor's Construction Schedule.

C. Participate in monthly schedule update meetings and provide acceptable monthly updates of the CPM schedule in accordance with paragraphs entitled Monthly Updates.

D. Provide acceptable weekly Short Interval Schedule prepared as specified in paragraphs entitled Short Interval Schedule.

E. Provide a submittal schedule in accordance with paragraphs entitled Submittal Schedule.

1.5 SCHEDULE QUALIFICATIONS

A. Construction Scheduler. The Construction Scheduler shall have at least 5 years of verifiable experience as the person primarily responsible for preparing and maintaining detailed project schedules on projects of the same or similar size and nature as this project. The Construction Scheduler is required to attend all meetings pertaining to scheduling and progress of the Work. If the Construction Scheduler leaves the employ of the Contractor, the Contractor will be required to fulfill the requirements of Paragraph B of this Section within 30 days.

B. Within five (5) days after the Notice of Award the Contractor shall provide a statement to the Owner with the following:

1. Identification, qualification, and experience of the Contractor's Construction Scheduler.
2. References of not less than 2 previous projects on which the Contractor's Construction Scheduler has utilized Primavera Project Planner (P3) or (P6) CPM scheduling or approved equal.

C. The Owner reserves the right to reject any candidate or scheduling system proposed for the project. The Owner reserves the right to remove, without rights to work on the project, any member of the Contractor's scheduling staff that is, in Owner's opinion, incompetent in scheduling.

1.6 SCHEDULING SOFTWARE

A. The Contractor will utilize the latest revision (Version 3 or 3.1) or P6 of Primavera Project Planner or approved equal to perform the scheduling and reporting functions. SureTrak may be utilized based upon the project complexity and owner acceptance.

1.7 PRELIMINARY CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Within ten days of Notice to Proceed, the Contractor shall prepare and submit a Preliminary Contractor's Construction Schedule detailing the first ninety (90) calendar days of the project as well as a general approach to the remainder of the project. Emphasis shall be placed on milestone dates, date of substantial completion, and the work of separate contractors.

B. The Preliminary Contractor's Construction Schedule shall be prepared using the approved software program required by Part 1.6 of this Section.

C. The Owner, Architect and Contractor shall meet within seven (7) days after submittal of the Preliminary Contractor's Construction Schedule to review and

make any necessary adjustments or revisions. The Preliminary Contractor's Construction Schedule, when revised, will represent the Contractor's planned means, methods, and sequences for performance of the work during the first ninety (90) days after Notice to Proceed and is to be incorporated as the first ninety (90) days of the Contractor's Construction Schedule.

D. The Contractor shall submit the revised Preliminary Contractor's Construction Schedule within five (5) days after the meeting.

E. As part of the revised submittal of the Preliminary Contractor's Construction Schedule, the Contractor shall submit to Owner, for approval, a schedule of manpower assigned to each activity on the Preliminary Contractor's Construction Schedule. The schedule of manpower shall be realistic and level so as to not have any unusual manpower requirements.

F. Provide four (4) paper copies and electronic transfer by email for all related schedule submittals.

1.8 Contractor's construcTion schedule

A. Within forty five (45) calendar days of notice to proceed and prior to the second pay application request, the Contractor shall prepare and submit a detailed Contractor's Construction Schedule. This schedule shall be the Contractor's Construction Schedule and corrected version shall be used to plan, organize, and execute the Work, record and report actual performance and progress through updates, and show how the Contractor plans to complete all remaining Work. The Contractor's Construction Schedule and subsequent monthly updates shall be the basis for consideration and analysis of requests for time extensions as specified in paragraphs 1.6 and 1.7 below. The schedule shall be in the form of an activity-oriented precedence network diagram.

B. The Contractor shall submit the completed Contractor's Construction Schedule to the Owner and Architect for review and comment. The Owner and Architect will review the schedule for conformance with the Contract Documents and provide comment within fourteen (14) calendar days of receipt from the Contractor of all submittals required under this paragraph. The Contractor shall respond to all comments within fourteen (14) calendar days of receipt of the comments of the Owner.

C. The Contractor's Construction Schedule shall be constructed to show the order in which the Contractor proposes to carry out the Work and to indicate the restriction of access and availability of work area, and availability and use of manpower, materials, and equipment. The Contractor shall utilize the Contractor's Construction Schedule in planning, scheduling, coordinating, and performing the Work under the Contract including all activities of trade subcontractors, equipment vendors, and suppliers. The Contractor's Construction Schedule shall incorporate the Contract specified limitations and restrictions, contractually specified milestones, including but not limited to date of Substantial Completion and Final Completion. The Contractor shall prepare the schedule in sufficient detail and in consideration of the following factors:

1. The structural breakdown of the project by sub networks;
2. The type of work to be performed and labor trades involved;

3. Procurement, manufacture, and delivery activities for all major materials and equipment;
4. Deliveries of Owner-furnished equipment and materials;
5. Salvage and relocation activities;
6. Preparation and submission of submittals and mock-ups;
7. Review of Architect of submittals and mock-ups;
8. Assignment and coding of all activities by the performing entity such as subcontractors, vendors, the Owner, etc.;
9. Access and availability to the work area for Owner's separate contractors;
10. Identification of interfaces and dependencies with preceding, concurrent, and succeeding subcontractors;
11. Testing, and submission and approval of test results;
12. Planning for phased occupancy by the Owner, if applicable;
13. Approvals required by regulatory agencies or other third parties;
14. Contract-stipulated construction milestones and completion dates.

D. The activities defined in the Contractor's Construction Schedule shall represent the planned durations in anticipation of normal manpower and equipment utilization in durations of whole work days. No activity durations shall exceed fifteen (15) work days unless approved by the Owner or non-construction activities such as procurement, delivery or submittal activities. All duration shall be determined based upon manpower and man-hour loaded construction activities and resource planning under contractually defined on-site work conditions. In calculating activity durations, normal inclement weather shall be considered. The Contractor shall schedule the Work to minimize the effect of adverse weather.

E. Manpower/Manhour loaded schedule: The activities included in the Contractor's Construction Schedule shall be analyzed in detail to determine activity time durations in units of project work days. Durations shall be based on the labor (crafts), equipment, and materials required to perform each activity on a normal work day basis. Labor shall include both manhour and production crew sizes. No on-site activity shall have a duration over fifteen (15) work days except non-construction activities such as submittals, submittal reviews, procurement and delivery of materials or equipment, and concrete curing. Only on-site construction activities will be shown in their resource loaded state to reflect cost, manpower, materials and equipment except for those activities specifically identified. All durations shall be the result of definitive manpower and resource planning by the Contractor to perform the Work in consideration of contractually defined on-site work conditions. The manpower to be assigned, by craft definition, and equipment, by item designation, shall be shown for each construction activity in the schedule. All crafts necessary to execute an activity must be shown. No more than 2 crafts may be assigned to a specific activity. If more crafts are required, then the activity in question must be broken down into additional activities.

F. Scheduled activities shall be identified by single, alphanumeric activity numbers. Activities shall also contain the following data:

1. Activity identification (Activity ID) shall consist of 10 digits (numeric) /characters (alpha); assigned as to be determined in conjunction with the Owner and Architect after Notice to Proceed is given. For example:
   a. First Position (1 character/digit): Phase or pod identifier
   b. Second Position (1 character/digit): Activity type such as:
      (i) A --- Administrative Activity
      (ii) S --- Submittal
      (iii) R --- Review of Submittal
      (iv) C --- Construction/Installation
      (v) T --- Test or Inspection
   c. Third Position (1 character/digit): Floor level
   d. Fourth and Fifth Positions (2 characters/digits): Room or area
   e. Sixth and Seventh Positions (2 characters/digits): Type of work, trade
   f. Eighth through Tenth Positions (3 characters/digits): Unique activity identifier for Contractor's use
2. Activity Description: Provide adequate information to readily identify each activity but do not exceed 30 characters.
3. Activity Codes: The Owner reserves the first 22 character fields for the following code structure, which the Contractor will incorporate into its schedule:

Activity	Length	Description
PHAS / POD	1	Phase or stage
TYPE	4	Type of activity
FLOR	1	Floor
AREA	4	Area and / or room
RESP	7	Responsible party
SPEC	5	Primary CSI specification

4. The Critical Path shall be clearly indicated on all diagrams submitted. An activity is critical when it is part of the longest duration pathway through the CPM network. An activity is critical when its total float is less than or equal to zero.
5. At the Owner's or Architect's request, furnish a written narrative of the Contractor's determination of durations for particular activities. Such explanation may include the number of crews, crew composition, number of shifts per day, number of hours in a shift, and number of work days per week, construction equipment, material quantities, etc.
6. A written explanation shall be provided for each lead and lag relationship and for each constrained date. Logical constraints shall not be allowed unless a compelling reason exists for their use. Negative leads and lags, mandatory constraints and start to finish relationships shall not be used.
7. Clearly identify activities that are planned to be conditioned by use of overtime, double shifts, or work on weekends or holidays.

8. Schedule Statistics Report: Each submittal involving graphical and/or tabular reports produced using CPM shall be accompanied by Primavera's Schedule Statistics Report, to include listing of activities with open ends, out-of-sequence progress, constraints, and so forth and the schedule calculation modes (retained; contiguous or interruptible) and other statistics which are normally a part of this report.
9. Work Breakdown Structure (WBS): At the Contractor's option, a WBS system can be utilized in lieu of or in conjunction with the activity code structure described above.

G. Cost-loaded baseline schedule – only the original baseline schedule shall be cost loaded. The estimated costs to perform each work activity shall be assigned to each activity included in the network as specified by the scheduling software. The sum on the costs assigned to all activities shall equal the total Contract value. No activity costs shall be assigned to manufacture or delivery activities unless approved by the Owner. Using the cost assigned to each activity, develop a cash flow projection demonstrating the estimated cash draw down by month over the period of the project. The cash flow projection shall be illustrated by a graphic display as generated by the computer scheduling software. The value of any one activity shall not exceed $50,000.

H. Tabular reports required by this section shall be prepared by the computer scheduling software. Reports shall contain a listing of the activities as inquired for the type of report being prepared. Each activity shall include the following information:
1. Activity Number,
2. Activity Description;
3. Original and remaining durations in work days;
4. Early start and finish dates;
5. Actual start and finish dates (as applicable for monthly update reports);
6. Late start and finish dates;
7. Total float in work days;
8. Percentage of activity completed;
9. Value of activity as cost loaded;
10. Assigned activity codes; and
11. Predecessor and successor activity numbers (as required for the report specified in paragraph 1.5.I. (1) below.

I. The Contractor shall prepare computer-generated tabular reports as part of the initial schedule submission and for each monthly update thereafter as follows:
1. All activities sorted by activity number including predecessor and successor relationships;
2. All activities not 100% complete, sorted first by early start then float;
3. All activities not 100% complete, sorted first by total float then early start; and
4. The Short Interval Schedule as specified in paragraph entitled Short Interval Schedule.

J. The Contractor shall submit the Contractor's Construction Schedule, consisting of the reports and diagrams as specified by this section, in the following quantities:
   1. 2 copies of a computer generated detailed network diagram displaying all activities in a time scaled format and with their logical relationships. The network need not be confined to a single sheet but shall be printed on 11" x 17" tabloid sheets;
   2. 5 copies of all tabular reports as specified in paragraph 1.5 I above;
   3. 5 copies of all cash flow projections as specified in paragraph 1.5 G above; and
   4. 2 copies of all activity data on a CD-ROM compatible with the Owner's computer.

K. Certification: Submit certification that each subcontractor and major equipment supplier has participated in, reviewed, and concurs with the Contractor's Construction Schedule and the associated cost data as it relates to their work.

1.9 MONTHLY UPDATES

A. The Contractor is required to prepare and submit monthly updates of the Contractor's Construction Schedule and to participate in monthly schedule update meetings with the Owner and Architect as described in paragraphs B through F below. Participation in the meeting and submission of the monthly update is a condition precedent for payment of the line item value for this Work.

B. Status Schedule: Each month, the Contractor shall prepare a status of the current CPM schedule to reflect Work Progress achieved since the previous update. Progress updating shall be performed without changes to the schedule logic or the activities' original durations and prior to incorporating future changes. The statusing may be done by percent complete, remaining duration, or a combination of both. The monthly narrative shall identify activities updated by remaining duration. The amount of time expended for each activity shall be identified if updating by remaining duration. Progress updating only meets the conditions necessary to perform a Contemporaneous Period Analysis, as described in paragraph 1.7 below, of any change to the calculated early completion date from the prior update.

C. The Contractor then shall provide a schedule update that incorporates any logic, duration changes, and executed change orders that represent its revised planning, provided all such changes are identified and submitted to the Owner and Architect for comment in the narrative report required by paragraph 1.6 F (2) below.

D. The Contractor must use and maintain a fixed end date when generating the required reports and diagrams for the Owner as specified by this section. The fixed end date shall be the contractual completion date. The fixed end date will be adjusted in subsequent updates only to reflect approved time extensions incorporated by change order. The Contractor shall also use the contiguous "retained logic" option when executing schedule calculations.

E. The Contractor shall account for all rain days, for major events, and similar excusable noncompensable delays, during which little or no Work is progressed

in the period within which the events occur. The Contractor may account for such delays within the Contractor's Construction Schedule by treating the events as it would a typical holiday at the calendar function of the software. By whatever method the Contractor chooses to account for such days and events, a narrative description of the accounting shall be included with the narrative report required in paragraph F (2) below. The Contractor shall be entitled to a change in Contract Time only to the extent allowed by the Conditions of the Contract.

F. The monthly schedule update meeting will be held at the construction site one week prior to the due date of the Contractor's monthly application for payment. At the meeting:
   1. The Contractor shall provide copies of 2 tabular reports:
      a. A total float report clearly indicating the current critical path through project completion, and
      b. A report of activities sorted by early start dates commencing with the previous update and including all updated activities during the previous month. Actual progress of the previous month will be recorded and incorporated into the update.
   2. The Contractor shall provide copies of a narrative report to include:
      a. A description of the work progressed,
      b. A discussion of work that had been scheduled to be performed in the previous period but was not performed, and explain why it was not performed, and
      c. A discussion of work scheduled for the upcoming period noting any issues or events that could impact his work. If the Contractor intends to make logic or original activity duration changes, the report will include such changes.
   3. In addition to the above, the narrative should contain the following outline:
      a. CONTRACTOR'S Construction Schedule Narrative Report Outline:
         (i) CONTRACTIOR'S Transmittal Letter
         (ii) Description of problem areas
         (iii) Current and anticipated delays
            - Cause of the delay
            - Corrective action and schedule adjustments to correct the delay
            - Impacted the delay on other activities, milestones, and completion dates
         (iv) Changes in construction sequences
         (v) Pending items and status thereof
            - Permits
            - Change Orders
            - Time Extensions
            - Non-Compliance Notices
         (vi) Contract completion date(s) status
            - Ahead of schedule and number of work days

- Behind schedule and number of work days

(vii) Other project or scheduling concerns including any plant shutdowns, duration of each shutdown, and analysis of any work to be performed during the shutdown period

(viii) Include reviewed and updated Detail Network Diagram and Reports

(ix) Include revised Cost Loading and Cash Flow Information

(x) Include revised manpower information

(xi) Include revised construction equipment information

4. The Contractor, Owner and Architect will review these reports and will discuss any difference or issues raised. Decisions made at these meetings and agreed to by all parties are binding. No contractual completion dates will be modified unless directed by an approved Change Order.

G. Timely submission of updates is of significant and crucial importance to the management of this project. Lack of or late receipt of updates diminishes their value to the Owner, therefore, at the Owner's discretion, partial payment may be given for a late monthly update as may be determined by the Owner in consideration of the value of the update at the time of receipt, the circumstances of the late submittal, and the level of progress achieved on the project. Any amount paid by the Owner for a late monthly update is arbitrary. The Owner does not warrant that the Contractor will be paid for future late monthly updates.

H. As-Built Data: The updates

1.10 SCHEDULE TIME EXTENSIONS

A. Consistent with the requirements of the Conditions of the Contract, Contractor's request for a change in Contract time shall include a written Time Impact Analysis illustrating the influence of each change or delay on the current Final Completion Date utilizing the current Contractor's Construction Schedule. Each Time Impact Analysis shall include a fragnet demonstrating how the Contractor proposes to incorporate the change or delay into the Contractor's Construction Schedule. A fragnet is defined as a sequence of new and/or activity revisions that are proposed to be added to the Contractor's Construction Schedule in effect at the time the change or delay is encountered to demonstrate the influence of the delay and the method for incorporating the delay and its impact into the schedule as they are encountered.

B. Each Time Impact Analysis shall demonstrate the estimated time impact based on the events of delay, the date the change or directive was given to the Contractor, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the Contractor's Construction Schedule, in effect at the time the change or delay was encountered.

C. Approval or rejection of each Time Impact Analysis by the Owner shall be made within 15 days after receipt of each Time Impact Analysis, unless subsequent meetings and negotiations are necessary.

1.11 SHORT INTERVAL SCHEDULE

A. Prepare a weekly Short Interval Schedule based upon the Contractor's work plan and the updated Contractor's Construction Schedule.

B. Format for the Short Interval Schedule should be in a form to be approved by the Owner. The format should be reproducible from the available Primavera Project Planner report formats. The format shall include comment annotation as necessary.

C. Content of the Short Interval Schedule shall include the work planned for the next 2 week period and the work that had been performed in the previous week.

D. Copies of the Short Interval Schedule shall be provided at the weekly progress meetings and will be used as a basis for discussion of progress and of planned work at the meetings.

1.12 SUBMITTAL SCHEDULE

A. General: Immediately following the submittal of the revised Preliminary Contractor's Construction Schedule, prepare and submit to the Architect a complete schedule of work-related submittals based on a Detailed Network Diagram, and required by the Specifications. Submit this schedule prior to submittal of the Contractor's Construction Schedule so that Owner and Architect comments may be received and incorporated in to the Contractor's Construction Schedule submittal. Correlate submittal schedule with the listing of principal subcontractors.

B. Form: Prepare schedule in chronological sequence of "fast submittals". Show category of submittal, name of subcontractor, generic description of Work covered, related specification section numbers, activity or event number on progress schedule, scheduled date for first submission, and blank columns for actual date of submittal, resubmittal, and final release or approval by the Architect.

1.13 THE CONTEMPORANEOUS PERIOD ANALYSIS

A. It is the Owner's desire and intent to resolve all issues affecting the Contract Completion Date in a timely, efficient, and effective manner. To achieve this goal, the Owner and Contractor shall prepare a Contemporaneous Period Analysis method. The Contemporaneous Period Analysis shall coincide with the monthly schedule update meetings.

B. The logic and planning elements of the Contractor's Construction Schedule are the Contractor's; however, assessment of impacts due to changes or other events, in accordance with the Contemporaneous Period Analysis method described herein, must be performed on the most recent accepted update of the schedule. Therefore, no logic duration changes shall be made to the updates until changed data has been incorporated into the schedule and the schedule updated to reflect actual progress for the period. All data shall be provided to the Owner.

C. While the Owner might not agree in all instances as to the proper assessment of liability of delay, it is essential that both parties determine and accept the monthly update. Agreement is essential as the update becomes the baseline schedule for

the upcoming period and schedule to be updated for the next monthly schedule meeting.

D. Submission of a valid monthly update and the completion of the Contemporaneous Period Analysis are conditions precedent to the review and approval of any request for an extension in the Final Completion Date or milestone. Failure to complete monthly updates and to participate in Contemporaneous Period Analysis will defer consideration of any time extensions by the Owner until the Work is completed and all as-built progress can be analyzed by the Owner. Further, the Owner will assess liquidated damages, if any, regardless of the status of any requests for time extensions pending, until any such requests are resolved.

E. The Contractor shall obtain training by a qualified consultant in the application of the Contemporaneous Period Analysis method. The training shall be provided to appropriate Contractor field personnel, appropriate major subcontractor personnel, and appropriate Owner personnel. The training should not exceed 1 day. The requirements for training may be waived by the Owner provided the Contractor can demonstrate sufficient working knowledge of the Contemporaneous Period Analysis method. The Contractor shall bare all costs for training.

END OF SECTION 01 32 16

SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Requirements for preparation and submission of all submittals called for in the Contract Documents.

B. Related Work in Other Sections: Refer to the following Sections for related Work:

00 72 00 for revised general conditions
01 29 73 for Schedule of Values.
01 31 19 for Progress and Payment Checklist.
01 33 23 for Shop Drawings, Project Data and Samples.
01 78 00 for Project Closeout.

1.2 GENERAL REQUIREMENTS

Prepare and submit in accordance with the requirements of this section, except as amplified and modified in other sections of these Specifications, all submittals called for in Contract Documents or otherwise required including schedules, lists, receipts, drawings, materials, manuals, reports, certificates, affidavits, notices, guarantees, etc. Requests for payment will be withheld for non receipt of submittals specified and required for portions of Work affected.

1.3 TRANSMITTAL PROCEDURE

Transmit all specified and required submittals to Architect or appropriate consultant of the Architect. Accompany all submittals with a letter of transmittal including transmitter's name and address, project title, number and description of items included, and other pertinent data. Submit duplicate transmittal to Architect of all transmittals to consultants. Refer to Section 01 33 23 for additional shop drawing requirements.

1.4 SUBCONTRACTORS LIST

Submit a complete list of subcontractors in accordance with the requirements of the General Conditions of the Contract. Submit within 10 days after notice to proceed for Architect's review.

1.5 ORGANIZATIONAL CHART

Submit a chain-of-command organizational chart with complete descriptions of roles and responsibilities for all supervisory personnel, (including the Representative and the Superintendent) in accordance with the requirements of the General Conditions of the Contract. Submit within 10 days after notice to proceed for Architect's review.

1.6 MATERIALS LIST

Submit lists of materials proposed for use on the Project as specified and required by specifications sections in accordance with the requirements of this section. Submit within 10 days after notice to proceed for Architect's review.

END OF SECTION 01 33 00

SHOP DRAWINGS, PROJECT DATA & SAMPLES

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of included in the Project Manual.

A. Work Included in This Section: Provide shop drawings, project data, and samples in accordance with the General Conditions of the Contract, except as amplified and modified herein. Prepare and submit as specified and required by technical specifications in accordance with the requirements of this section.

B. Related Work in Other Sections: Refer to the following Sections for related Work:

01 31 13 for coordination requirements.
01 33 00 for general submittal requirements.
01 32 16 for Construction Schedules.

1.2 SHOP DRAWINGS

Original drawings prepared by contractor, subcontractor, manufacturer, supplier, or distributor, which illustrate the Work, including fabrication, layout, setting, or erection details. Drawings shall be prepared by a qualified detailer. Identify details by reference to sheet and detail numbers shown on Contract Drawings. Show relationship to adjacent structure or material. Show and identify field dimensions.

1.3 SAMPLES

Physical examples which illustrate materials, equipment, or workmanship and which establish standards by which completed work is judged.

A. Office Samples: Provide of sufficient size and quantity to clearly illustrate functional characteristics of product or material, with integrally related parts and attachment devices. Provide full range of colors and patterns specified for selection. Samples will be retained by Architect.

B. Field Samples and Mock-Ups: Erect at site in location specified or directed by Architect. Construct each sample or mock-up complete, including work of all trades required in finished work.

1.4 PROJECT DATA

Manufacturer's standard schematic drawings, catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.

A. Standard Drawings: Modify drawings to delete information which is not applicable to project. Supplement standard information to provide additional information applicable to Project.

B. Printed Data: Clearly mark each copy to identify pertinent material, products and models. Show dimensions and clearances required, performance characteristics and capacities, wiring diagrams, and controls.

1.5 CONTRACTOR'S RESPONSIBILITIES

Review shop drawings, project data, and samples prior to submission. Verify field measurements, field construction criteria, catalog numbers, and similar data. Coordinate each submittal with requirements of Contract Documents. Stamp with Contractor's stamp and initial to certify compliance with above. Any written review comments to be in green ink or pencil. Contractor solely responsible for accuracy of quantities and dimensions, for proper and accurate engineering, and for proper fabrication, installation or erection. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect's review of submittals. Begin no work that requires submittals until return of submittals with Architect's stamp and initials indicating review.

1.6 ARCHITECT'S RESPONSIBILITIES

Upon receipt of Contractor's stamped and initialed submittal, Architect to review with reasonable promptness. Review only for conformance with design concept of Project and with information given in Contract Documents. Review of a separate item does not constitute review and approval of an assembly in which item functions. All written review comments to be in red ink or pencil. Stamp with Architect's shop drawing stamp and initial to certify review of submittal. Return submittals to Contractor for distribution.

1.7 SUBMITTALS

A. Transmittal: Identify each submittal by Specification Section and Paragraph. Do not combine submittals from different Specification Sections.

B. Timing: Submit all materials for review within 30 days following Notice to Proceed. Allow minimum of 15 calendar days from date of receipt by Architect or consultant for their review.

C. Number Required: Submit number of copies of shop drawings and project data which Contractor requires for distribution plus 4 copies which will be retained by Architect unless additional copies are noted in the technical specifications. A reproducible transparency may serve for Contractor's distribution, however, reproducible will not be stamped by the Architect or Consultants. Submit number of samples specified in technical sections.

D. Changes in Specified Items: Contractor shall submit a list of all differences from the specified item for those submitted and shall certify that the product will function equal to specified items. All product literature for specified items shall be submitted along with the requests for changes in specified items.

E. Submittal Preparation: Include data and revision dates, project title, name of Architect, Contractor and subcontractor, supplier, manufacturer, or separate detailer when pertinent, identification of product or material and specification number. Reference applicable standards, such as ASTM number or Industry Specification. Identify all deviations from Contract Documents. Provide a 3 in. x 4 in. blank space for Architect's stamp. Include completed transmittal form provided by the Architect.

F. Resubmission Requirements: Revise initial shop drawings as required and resubmit as specified for initial submittal. Indicate on drawings any changes which have been made other than those requested by Architect. Submit new project datum and samples as required for initial submittal.

G. Distribution of Reviewed Submittals: Distribute copies of shop drawings and project data which carry Architect's stamp to Contractor's file, job site file, and to other prime contractors, subcontractors, supplier, or fabricator as applicable. Distribute samples as directed.

1.8 SHOP DRAWING/SAMPLE SUBMITTAL SCHEDULE

Submit shop drawings and samples along with a schedule for review and distribution requirements for meeting the construction schedule. The following sample Schedule is for format purposes only:

SPEC. SECTION	ITEM	LATEST DATE FROM SUPPLIER TO G.C.	LATEST DATE FROM G.C. TO ARCHITECT	LATEST DATE FROM ARCHITECT TO G.C.*	LATEST DATE FROM G.C. TO SUPPLIER
03 20 00	REBAR	1/1/20	1/8/20	1/31/20	2/2/20
05 12 00	STEEL	1/7/20	1/14/20	2/6/20	2/10/20
DIV 23	MECH'L	1/10/20	1/20/20	2/12/20	2/16/20

*Items in this column must be at least 15 calendar days after date shown in preceding column.

END OF SECTION 01 33 23

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Perform all Work in full accordance and conformity with the current requirements of all applicable codes and regulatory agencies in accordance with Article 4 of the General Conditions of the Contract. Conform to additional codes and regulations referenced in these specifications or required by law.

1.2 CODES AND STANDARDS

Where codes and standards are referred to, they shall be current approved copies. It shall be the duty of the supplier of any material on this work to submit evidence, if required by the Architect, that their material is in compliance with the applicable codes and standards in the method in which the material is used in this project.

A. Work in General: Each entity is required to be familiar with recognized industry standards applicable to that portion of work. Copies of applicable standards have not been bound with the Contract Documents. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.

B. Work in Public Right-of-Way: Any and all work performed in public rights-of-way shall be performed in accordance with all requirements of the municipality or public authority having jurisdiction and under the direction of the authorized representative of such body as required. Contractor is responsible to secure and pay for any related permits.

1.3 SPECIFICATION OF HIGHER STANDARDS

Drawings and Specifications govern whenever Drawings and Specifications require higher standards than are required by referenced codes or regulations.

END OF SECTION 01 41 00

QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide all inspections and tests in accordance with the requirements of the General Conditions of the Contract, except as amplified and modified herein and by other sections of these specifications.

B. Related Work in Other Sections: Refer to the following Sections for related Work 01 31 19 for project meetings.

01 57 00 – Erosion Control
05 12 00 for requirements relating to structural steel.
Division 31
Division 32

1.2 REFERENCES

Listed publications form a part of this Section to the extent indicated by references thereto.

A. Testing Agencies: Conduct all specified and required inspections and tests by an independent professional testing laboratory conforming to ASTM E 329.

1.3 SUBMITTALS

Refer to Section 01 33 00 for general submittal requirements.

A. Notices: Notify inspection agency(s) and Architect at least 24 hours before work requiring inspection or tests is started or resumed. Contractor responsible for the actual cost of salaries and travel expenses incurred in reasonable amounts, if work not ready for inspection at the time stated.

B. Reports: Make and promptly deliver copies of test reports, logs, certificates and conclusions as to conformity with Specifications for all specified and required tests and inspections to all designated parties, including Architect and Contractor. Immediately report all non-conforming work to Architect for necessary action.

C. Tests: Contractor to arrange and pay for any testing or samples done by Owner's inspection service that will be for the Contractor's own use.

D. Retesting: Retesting required because of non conformance to specified requirements, shall be performed by the same independent firm on instructions of the Architect. Payment for retesting will be borne by the Contractor.

1.4 INSPECTIONS AND TESTS BY CONTRACTOR

Contractor responsible for all inspections and tests required by laws, ordinances, or any public authority requiring special testing or approval. Contractor shall schedule all inspections and tests by Contractor and by Owner.

A. Contractor shall work with Owner/Consultants for additional inspections that the various agencies may require for this project. IE: FEMA, WDFW, USACE, etc.

1.5 INSPECTIONS AND TEST BY OWNER

Owner responsible for providing the following inspections and tests. Owner shall provide the following inspections and tests.

A. Owner shall work with Contractor/Consultants for additional inspections that the various agencies may rquire for this project. IE: FEMA, WDFW, USACE, etc

1.6 OWNER'S INSPECTORS

The Owner may employ an inspector(s) for on-site inspection of the work in progress. The inspector(s) will be fully authorized by the Architect to enforce the requirements of the contract. The inspector shall be allowed unlimited access to the project site and roof proper as deemed necessary to perform such inspections. The purpose of inspection shall be to determine that the work is proceeding in accordance with the Contract Documents. The inspector is empowered by the Owner to require immediate corrective action by the Contractor, including removing new work when the inspector determines that the work is not proceeding in accordance with the Contract Documents. The inspector may require that such repair be made prior to continuing work in new areas. Any defective work not discovered by the inspector shall not relieve the Contractor of his contractual responsibilities, defective work shall be corrected when discovered both before and during the warranty period. Additional cost of inspection for overtime work will be paid by the Contractor per current billing rates for the inspection agency including overtime and premium pay.

1.7 SCHEDULING INSPECTIONS

Contractor is responsible for organizing and coordinating all inspections whether it is the Owner's independent inspection agency or building inspector.

1.8 UNCOORDINATED INSPECTIONS

If the Contractor requests an inspection and the work is not ready, or workers do not show up, Contractor will be backcharged for minimum inspector's time per agreement.

END OF SECTION 01 45 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide all temporary facilities and controls in accordance with the requirements of this section and other portions of the Contract Documents as amplified or modified therein.

1.2 FIELD OFFICE BUILDING

Provide a substantial weathertight office building, with meeting room large enough to hold ten (10) people seated, on premises where directed prior to start of construction. Equip with shelving, plan rack, plan table, stools, as required. Maintain a separate plan table with complete drawings and legal-size file cabinet of sufficient capacity to accommodate all approved shop drawings on the Work, which is to be made available to the Architect and to his representatives. Orient plan table so that plans laid out will conform to actual directions. Provide adequate heat, light, ventilation, and janitorial service. Remove building from premises upon completion of Contract or sooner if directed.

A. Posting Notices: Notices and posters shall be placed in areas readily accessible to read by employees. Contractor is responsible for making sure signs listed below are updated to most current version. The Contractor shall ensure the following are posted:

- EEOC - P/E-1 (revised 11/09) - Equal Employment Opportunity is THE LAW published by US Department of Labor. Post for projects with federal-aid funding.
- FHWA-1022 (revised 11/11) - NOTICE Federal-Aid Project published by Federal Highway Administration (FHWA). Post for projects with federal-aid funding.
- WH 1321 (revised 04/09) - Employee Rights under the Davis-Bacon Act published by US Department of Labor. Post for projects with federal-aid funding
- WHD 1088 (revised 07/09) - Employee Rights under the Fair Labor Standards Act published by US Department of Labor. Post on all projects.
- WHD - 1420 (revised 01/09) - Employee Rights and Responsibilities under The Family and Medical Leave Act published by US Department Of Labor. Post on all projects.
- WHD-1462 (revised 01/12) – Employee Polygraph Protection Act published by US Department of Labor. Post on all projects.
- F416-081-909 (revised 12/12) - Job Safety and Health Law published by Washington State Department of Labor and Industries. Post on all projects
- F242-191-909 (revised 12/12) - Notice to Employees published by Washington State Department of Labor and Industries. Post on all projects.
- F700-074-909 (revised 12/12) - Your Rights as a Worker in Washington State by Washington State Department of Labor and Industries (L&I). Post on all projects.

- EMS 9874 (revised 04/12) - Unemployment Benefits published by Washington State Employee Security Department. Post on all projects.
- Post one copy of the approved “Statement of Intent to Pay Prevailing Wages” for the Contractor, each Subcontractor, each lower tier subcontractor, and any other firm (Supplier, Manufacturer, or Fabricator) that falls under the provisions. of RCW 39.12 because of the definition of “Contractor” in WAC 296-127-010
- Post one copy of the prevailing wage rates for the project.

1.3 JOB TELEPHONE AND INTERNET SERVICE

Provide a telephone and internet service when work is started, connected to nearest city exchange (may use wireless hotspot for internet connection). Maintain until completion and pay all charges. Allow all those connected with the work to use, provided they pay for toll calls.

1.4 ACCESS

Provide and maintain vehicular access to the site as required for the prosecution of the Work.

1.5 PROTECTIVE FACILITIES AND SAFETY MEASURES

Erect temporary fencing and barricades as required to prevent entering into or passing through the construction area. Maintain access to existing loading dock and building entries for owners use.

Contractor solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Architect to conduct construction observations of the Contractor's performance is not intended to include review of the Contractor's safety measures, in, on or near the construction site. Contractor responsible for compliance with "Safety and Health Regulations for Construction," Volume 36, No. 75, Part II of the Federal Register by the US Department of Labor.

Contractor responsible for providing all such safety measures and consulting with the state or federal safety inspector for interpretation whenever doubt as to whether safe conditions do or do not exist or whether he is or is not in compliance with state and federal regulations.

1.6 DUST CONTROL

Protect persons and property from damage and discomfort caused by dust. Water as necessary to quell dust.

1.7 TRASH AND CLEAN UP

General Contractor to provide trash receptacles for all trades and remove all debris from jobsite. Subcontractor responsible for collecting and depositing debris in collection facilities provided. Do not allow trash and debris to accumulate. Project is to be kept clean.

1.8 SANITATION FACILITIES

General Contractor to provide sanitary facilities and maintain in sanitary condition in accordance with the Rules and Regulations of the State Board of Health Governing Sanitation of Places of Work, WAC 248-62.

1.9 DRINKING WATER

General Contractor to provide, from a proven safe source, for all those connected with the Work. Pipe or transport water in such manner as to keep it clean and fresh. Serve in single service containers or sanitary drinking fountains.

1.10 WATER FOR CONSTRUCTION PURPOSES

General Contractor to provide a temporary water supply to jobsite, centrally located, with outlet suitable for 3/4-inch hose connection. Water to be obtained from existing on-site system. If this system is not available, provide water from nearest fire hydrant run through meter Contractor secures from water meter.

1.11 TEMPORARY ELECTRICITY

General Contractor to provide and maintain temporary electrical, service, wiring, lamps including replacements, receptacles, etc., throughout the construction period, as specified herein, for temporary lighting and power for all trades.

A. Power Distribution: Provide temporary weatherproof electrical panels at support and distribution boxes with a minimum of four 20-amp, 120-volt grounded outlets, each protected by circuit breaker. Provide distributing centers so that power can be secured at any desired point with no more than 100-foot extension. Provide additional power distribution, connected to construction office, and storage buildings. Provide electrical connections to heating equipment as may be required for temporary heat.

B. Power Capacity and Service: Provide 200-amp, 120 volt, single-phase, 60 cycle power service. Temporary power requirements in addition to 200-amp service shall be provided by trade requiring same.

1.12 COSTS OF TEMPORARY FACILITIES AND CONTROLS

A. Services: The cost of fuels, water, and electricity shall be paid by the General Contractor.

B. Facilities and Controls: Pay all costs for permits, installation, operation and maintenance, removal and/or restoration of temporary and permanent facilities required by these specifications.

1.13 PARKING AND STAGING AREA

On-site parking, staging, and storage areas shall be on site in locations developed by Contractor and approved by Owner. No parking will be permitted outside construction work area except as approved by Owner.

1.14 EMERGENCY ACCESS

Provide and maintain fire lane access and fire-fighting water availability as required by local authorities.

1.15 CONSTRUCTION FENCE

Contractor to construct and maintain 6'-0" high temporary construction fences to define construction area. Provide gates as required by Contractor. Contractor may schedule construction and use permanent fencing as designed at his discretion.

A. Construction: Fence to be constructed of 6 in. x 6 in. welded wire fabric on driven steel posts set at approximately 10 ft. Chain link fence may be used at Contractor's option. Barbed wire is not to be used on any part of the fence.

B. Signs: Provide and maintain "NO TRESPASSING" signs in compliance with applicable OSHA requirements.

C. Gates: Contractor to be responsible for keeping gates locked at all times except during working hours.

D. Removal and Repair: Remove all temporary fences upon completion. Permanent fences damaged due to construction work to be repaired.

1.16 HOISTS AND CRANES

Contractor to maintain adequate hoisting facilities as required for his work and for his Subcontractors, shall arrange for the use of these facilities by other Prime Contractors and Subcontractors on Project and shall establish proportionate share of cost to be borne by other Prime Contractors and Subcontractors involved in use of facilities.

Each Contractor requiring a crane for performance of his work to provide same at his own expense unless other satisfactory agreement is established with General Trades Contractor.

1.17 ADDITIONAL EQUIPMENT

A. Personal Protective Equipment: Provide five (5) new, clean, adjustable OSHA-approved hard hats, safety vests, safety glasses and large size pairs of gloves for visitor's use.

1.18 CLEANUP

Contractor to keep site as clean as possible to avoid disruption of Owner's operation. If the Owner's inspector requests the Contractor to clean an area and he does not do so within 24 hours, the Owner may direct his own crew to do the work and back charge the Contractor for costs incurred to do the work.

1.19 WHEEL CLEANING STATION

Provide engineered wheel-cleaning station with water source to clean wheels of any vehicles that are in danger of tracking mud onto city streets. System shall contain as a minimum quarry spalls for driving over to remove mud and a swale for wheels to run through and collect water for cleaning mud from vehicle wheels. A mud-free paved or gravel area at least 40’ long shall be provided between wheel-cleaning area and public streets.

END OF SECTION 01 50 00

01 57 00 EROSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes but is not limited to the implementation and maintenance of a comprehensive erosion control plan that complies with King County Clearing and Grading regulations. The contractor is responsible for implementing Best Management Practices (BMP's) in accordance with King County requirements. The information provided on the contract plans should be considered a minimum for the anticipated construction and conditions. The contractor shall be responsible for adding additional BMP's as conditions change at no additional cost to the Owner as required by the City Inspector or the Architect if warranted by site stability. The Contractor shall coordinate installation and inspections of the BMP's with the local jurisdiction Inspector. Additional BMP's shall be stockpiled on site as requested by the Clearing and Grading Inspector.

B. This Section includes the following:

1. Silt Control Measures
2. Temporary Stormwater Runoff Control
3. Measures to keep streets clean
4. Cover for exposed soil
5. Maintaining, monitoring, and supplementing silt control, storm water runoff control measures and additional BMP's as required by King County

C. Related Sections: The following Sections contain requirements that relate to this Section:

Section 31 10 00	Site Clearing and Demolition
Section 31 20 00	Earthwork
Section 31 25 15	River Bank Protection & Erosion Control
Section 31 52 00	Cofferdams

1.3 REFERENCES

A. This Section incorporates by reference the latest revisions of the following documents. They are part of this section insofar as specified and modified herein. The Contractor shall have one copy of the each of the following documents at the job site. The bidder in submitting a bid acknowledges that he is familiar with the documents named in References and that they are incorporated into this document by reference. The Standard Plans and Policies apply only to performance and materials and how they are to be incorporated into the work. The legal/contractual relationship sections and the measurements and payment sections do not apply to this document.

1. City of Issaquah Public Works Standards
2. 2014 Ecology Management Manual for Western Washington
3. King County Standard Plans, Current Edition.
4. WSDOT 2022 Standard Specifications for Road, Bridge, and Municipal Construction.
5. Standard Plans WSDOT/APWA Standard Plans for Road, Bridge, and Municipal Construction.
6. Geotechnical Report

7. 2012 Stormwater Management Manual for Western Washington, as Amended in December 2014
8. 2017 Stormwater Design Manual Addendum
9. American Public Works Association Standard Specifications

1.4 SUBMITTALS

A. Product Submittals: Product catalog cuts for silt fence, and siltsac inserts. Aggregate Materials: Coarse aggregate for gravel construction entrance.

1.5 REGULATORY REQUIREMENTS

A. Work to comply with Department of Ecology (DOE) and City of Issaquah (COI) standards. The Contractor shall coordinate with the City of Issaquah Inspector.

B. The Contractor shall prepare a Surface Water Pollution Prevention Plan (SWPPP).

1.6 SEQUENCING AND MAINTENANCE

A. Install erosion control measures in work areas prior to any clearing, grubbing, demolition, or other construction in the area. Erosion control items shall be installed and removed at various times throughout the duration of the project.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Filter Fabric Fence: In accordance with Standard Specifications Section 9-33 of WSDOT/APWA, Permanent Erosion Control, High Serviceability, Class B.

B. Straw Mulching: In accordance with WSDOT Standard Specifications Section 9-14.4(1)

C. Filter Fabric: Mirafi 140N or equal.

D. Filter Bag Inserts: Commercially manufactured filter bags specifically manufactured for silt filtering and which will provide filtering performance required. Filter bags shall be equipped with high flow bypass and shall be in accordance with King County standards.

E. Polyethylene (PE) Sheeting: In accordance with WSDOT Standard Specifications 9 14.5(3)

G. Polyvinyl Chloride (PVC) Pipe: PVC pipe shall conform to Standard Specifications Section 9-5.12 of WSDOT-APWA. Pipe shall be ASTM 3034, SDR 35, with rubber gasket joints. PVC pipe may be used in areas where cover over pipe is three (3) feet or greater. Connections to catch basins or manholes shall be by an AC or GPK manhole adaptor.

H. Inlet Protection: Per plan and WSDOT Standard Plan I-40.20-00.

I. Construction Water Settling System (i.e. Baker Tank): A construction water settling system shall be installed and operated by the contractor. Construction water from the sediment trap shall be collected and conveyed to the construction water settling system (i.e. Baker Tank). The settling system will be configured with mechanism hold back water in the settling system for extended settling time. This mechanism could be an inflatable bladder located in an outlet structure of the system. The settling system will also contain an electric pump and floating intake. The pump system shall be operated during construction as necessary to prevent turbid runoff (> 25 NTU) from leaving the site. The components of this settling system shall include the following:

1. A pressurized pipe system consisting of 2-inch diameter class 125 PVC transport pipe to convey pumped water from the settling system back into the creek as shown on the TESC plan.
2. One 30 GPM, 1.5 HP electric pumps and the necessary check valves, unions, float switches, ball valve, controller interface and other related accessories needed to install, operate, and adjust the flow rate and operational timing of the pump system. Recommended products: Orenco PF7515-30, Orenco MF3A-YGRW-33FS-30 float, Orenco HV200BC discharge assembly.
3. A 230 volt electric power source.
4. A pump controller that allows timed operation and dosing of pump flow. Recommended product: Orenco MVP-S2DM control panel.
5. Floating pump intake assembly for each pond to allow pumping of water from the upper part of the water column in the settling system.

PART 3 - EXECUTION

3.1 TESC FACILITIES

A. The implementation of the Erosion Control system and the maintenance, replacement and upgrading of these facilities is the responsibility of the Contractor until all construction is approved. The Temporary Erosion and Sediment Control (TESC) facilities must be maintained in conjunction with all construction activities, and in such a manner as to ensure that sediment laden water does not enter the drainage system or violate applicable water standards in accordance with King County and Department of Ecology requirements and the contract documents.

B. The TESC facilities shown on the plans are the minimum requirements for anticipated site conditions. During the construction period, the erosion control facilities installed may require maintenance, relocation or upgrading (e.g. additional sumps, relocation of ditches and silt fences, etc.) as shown on the plans or as needed. Contractor shall pay for all costs associated with the construction, maintenance, upgrading and removal of the erosion control system throughout project duration.

C. Site preparation and initial construction activities should be planned to minimize disturbance to the existing ground surface. Erosion of the soil will occur as exposed surfaces are disturbed due to construction activity and exposure to climatic conditions. The Contractor shall be responsible for protecting disturbed or prepared surfaces by some form of weather cover if left exposed for more than 2 days or if wet weather is forecasted. Contractor shall also protect disturbed or prepared surfaces from surface ponding, storm water runoff, and construction traffic. The Contractor will be solely responsible for any repairs required to these surfaces at no additional cost to the owner.

D. Access Streets and Roadways: Provide wheel cleaning stations to clean wheels and undercarriage of trucks before leaving site, as necessary to prevent dirt from being carried onto public streets. If streets are fouled, clean immediately in conformance with King County and all governing requirements and regulations.

3.2 TURBIDITY and pH MONITORING

A. The contractor shall be responsible for meeting turbidity and pH requirements as stated within the Turbidity Monitoring Report and the NPDES Permit. The contractor shall be responsible for providing additional measures as work progresses to meet turbidity and pH requirements.

B. The proposed project shall implement a turbidity monitoring program in compliance with the State Surface Water Quality Standards (WAC 173.201 A). The contractor shall be responsible for coordinating the monitoring plan with King County Construction Inspector. Monitoring will be accomplished by testing and comparing upstream flows to on-site construction runoff flows at the point of discharge. A third party shall perform the turbidity measuring using an approved turbidity meter. The person performing the testing and monitoring shall be familiar with the turbidity meter and all applicable laws and regulations associated with the turbidity monitoring program.

C. Two weeks prior to the beginning of construction, background levels will be established by testing upstream tributary area twice per week for two weeks. The stormwater sampling location for establishing the background level will be the catch basin that is also the discharge point for the construction stormwater runoff from the site (see TESC Plan). The background turbidity levels will be established as the baseline of the pre-construction turbidity measurements.

D. Turbidity monitoring and reporting will be required daily during construction in the rainy season (October 1st through April 30th) and weekly between May 1st and September 30th. Turbidity reports may not be necessary during extended periods of low flow or no flow conditions; the contractor shall coordinate this arrangement with King County Inspector. Due to the anticipated low flow or no flow conditions during the drier summer months, storm water flow may cease, causing an interruption in the turbidity monitoring and reporting. The contractor shall make available the monitoring reports to King County Inspector.

E. The benchmark for turbidity is defined as:

1. 25 NTU (nephelometric turbidity units).
2. The contractor shall refer to the NPDES Permit for remedial measures when storm water discharging from the site has a turbidity measurement higher than 25 NTU’s.

F. The monitor shall post the turbidity monitoring results on the attached Turbidity Testing Form. The form shall be posted in the job trailer and distributed to the Owner and King County Inspector. The Turbidity testing results shall be posted immediately after the test is performed.

G. If during the construction season the monitoring reports indicate that the threshold level of turbidity is exceeded, the monitor must report the condition to the Clearing and Grading Inspector immediately, or as soon as practical. The contractor shall maintain a stockpile of materials to implement additional BMP measures as required during construction to bring the project into compliance when the threshold level of turbidity has been exceeded. Upon termination of services of the third party monitor, a final report must be submitted to the Clearing and Grading Inspector.

3.3 EXAMINATION

A. Verify locations of existing catch basins and related storm drainage features that may be impacted by construction activities.

3.4 PREPARATION

A. Locate existing utilities, avoid damage or disturbance. For aid in utility location call "Dial a Dig 1 800 424 5555, 48 hours (two working days) prior to beginning construction. Provide and pay for additional marking as required.

B. Survey limits of work to install silt fence.

C. Perform clearing or other work required to installing erosion control.

3.5 CONSTRUCTION

A. Filter Fabric Fence:

1. Field adjust location to perimeter of clearing and stripping. Location shown on drawings is schematic.
2. Cast all trench excavation soils from fence installation to the Construction side of fence
3. Overlap filter fabric fence joints minimum 1 foot prior to backfilling trench

B. Polyethylene Sheeting:

1. Overlap joints minimum 28 inches. Overlap in direction of drainage and prevent water from draining onto material being protected.
2. Secure in place to prevent movement and damage.
3. Provide sandbags at 2.5 feet spacing and tie the sand bags together with rope on slopes greater than 3:1. Minimize driving stakes through plastic.

C. Filter Bag Inserts.

1. Install on all new and existing catch basins within project limits, or downstream of project subject to possible sedimentation.
2. Install per manufacturer's recommendations, King County requirements and as shown in the documents.

D. Diversion Swales and Berms:

1. Construct in a manner to intercept, divert, and channel runoff to sediment ponds. Plan locations are schematic.
2. Field adjust, move, and reconstruct as necessary during construction to maintain drainage to sediment ponds and allow construction to proceed.
3. Provide rock check dams at minimum 100 feet spacing. Additional straw bale check dams to be used if necessary to trap sediments.

F. Mulch:

1. Mulch exposed soils not protected by other means.
2. Provide continuous covering minimum depth 4 inches.
3. Apply mulch with tackifier to prevent blowing.

3.6 ADJUSTMENTS AND REVISIONS

A. Adjust or move swales, berms, pipes, culverts, bales, and silt fences as necessary during construction to direct site runoff to temporary ponds, silt filters, and grass swales.

3.7 PROTECTION AND MAINTENANCE

A. Protection:

1. Where possible, maintain natural vegetation for additional silt control in addition to the measures indicated in the documents.
2. Prevent silt-laden water from leaving site or from entering off-site storm sewer systems.
3. All slopes, cut, or fill areas where work has stopped for more than 30 days shall be stabilized by mulching, polyethylene sheeting or other method to prevent erosion and sediment transport.
4. Keep all off-site parking areas and streets clean from construction activities. Paved surfaces shall be kept clean by the use of vacuum and sweeping equipment, hand shovels and brooms or other accepted methods suitable of removing dirt, rock, silt and sand.

B. Supplementary measures:

1. Provide additional silt control and temporary erosion control measures as required to protect soils and prevent silt laden runoff from leaving project site at no additional cost to the Owner.

C. Maintenance:

1. Monitor and maintain silt control measures. Remove accumulations of sediment when more than 50 percent of silt storage capacity is filled.
2. Maintain all temporary erosion control facilities until need for each facility has been superseded by other stabilization methods or until Engineer authorizes removal.
3. Inspect and repair temporary erosion control facilities. Inspect entire system to ensure proper operation a minimum of once per week, before forecasted storms, during and after storms, and prior to weekends and holidays.

END OF SECTION 01 57 00

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide materials and equipment, including transportation, handling, storage, protection, and substitutions as specified herein and in the technical sections of these specificaitons.

B. Related Work in Other Sections: Refer to the following Sections for related Work:

01 33 00 for general submittal requirements.

1.2 QUALITY

It is the Contractor's responsibility to be certain that all equipment and materials selected by him or for him by his subcontractors and material suppliers, conform to the requirements of the Contract Documents. The approval of a manufacturer's name does not relieve the Contractor of such responsibility. Contractor shall assume responsibility for any modifications required to accommodate products of other manufacturers. Unless otherwise specified, all materials shall be new.

1.3 TRANSPORTATION AND HANDLING

Cover and otherwise protect all products affected by weather or handling to keep them free from damage while being transported to site. Contractor responsible for handling all products as required and directed for inspection by Architect and for proper storage, protection, and incorporation into Work. Contractor is responsible for acceleration of shipping when required to meet schedule (owner will not pay extra for this).

1.4 STORAGE AND PROTECTION

Products and equipment may be stored on the site in areas designated by the Contract Documents. Move any stored products or equipment which interferes with operations of Owner or other Contractors. Obtain and pay for use of additional off-site storage or work areas needed for operation. If offsite storage is used and the contractor would like to be paid for the materials, the storage facility must be bonded.

1.5 EQUAL PRODUCTS

In order to establish a basis of quality, certain particular processes, types of equipment, or kinds of material are specified by designating a particular manufacturer's name, brand, or number. It is not the intent of these specifications to exclude other processes, equipment, or materials that measure up to the standards of the items listed. Should the Contractor desire to substitute another process, item of equipment or material than that specified, he shall first secure written acceptance of the Architect in accordance with the requirements for requesting substitutions hereinafter outlined.

A. No Substitutions Clause: Where the "no substitutions" clause is used following the listed manufacturer, brand name, or product, the Contractor must include those items as part of the Base Bid or Alternate.

1.6 REQUEST FOR SUBSTITUTIONS

If the bidder or Contractor has knowledge of materials or equipment which they have investigated and will guarantee to be equal to or better than the specified items, a substitution may be considered. It is understood that any cost of redesign necessitated by use of such items will be at the Contractor's expense and that the Contractor will make such changes or modifications on the work of all trades as required at no cost to the Owner. Substitutions are at Contractor's risk and the Architect has the right to reject at any time all substituted items which do not meet the requirement of the Contract Documents without challenge from the Contractor or additional cost to the Owner.

A. Substitutions Prior to Bid Date: All requests for substitutions prior to bid date shall be made in writing on a copy of "Request for Substitution" form located at the end of this section. Requests shall be accompanied by samples, record of performance, certified copies of tests by impartial and recognized laboratories, and such additional information as the Architect may reasonably request. Submittals shall also include a copy of the corresponding technical information of the specified manufacturer or supplier. Such samples and data shall be furnished not less than ten days (including Saturdays, Sundays and Holidays) in advance of the bid date to allow time for investigation by the Architect. FAX SUBMITTALS ARE NOT ACCEPTABLE. All items which are accepted prior to Bid Date under conditions outlined for "REQUEST FOR SUBSTITUTIONS" will be included by Addenda and is attached at the end of this section.

B. Contractor's Alternates: Alternate bids other than those provided for in the specifications cannot be considered. Substitute materials or products are not to be included as part of any Base or Alternate Bid amount. Acceptance of Contractor's Alternates is subject to conditions outlined for "REQUEST FOR SUBSTITUTIONS."

REQUEST FOR SUBSTITUTION

PROJECT: Holly Street Campus – Creek Bank Repair

SPECIFIED ITEM:

_____	_____	_____	_____
Section	Page	Paragraph	Description

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

_____

Attached data includes project description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified. Architect may require samples. Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation. The undersigned certified that the following paragraphs, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance and quality of the proposed substitution are equivalent or superior to the specified item.

SUBMITTED BY:

Signature: _____

Printed Name: _____

Firm: _____

Address: _____

_____

Date: _____

Phone/FAX: _____ / _____

Attachments: _____

If the Architect accepts substitution such acceptance will be set forth in an addendum. Bidders shall not rely upon acceptance made in any other manner

Mail to: Cornerstone Architectural Group,
6161 NE 175TH Street, Suite 101,
Kenmore, WA 98028

END OF SECTION 01 60 00

FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide such field engineering services as are required for proper completion of the Work, including by not limited to:

1. Establishing and maintaining lines and levels.
2. Structural design of shores, forms, and similar items provided by the Contractor as part of his means and methods of construction.
3. All necessary survey and engineering required by and for public utilities including but not limited to power, telephone, gas, and cable TV.
4. All necessary survey and engineering required for record drawings of site utilities and construction, including off-site improvements that are a part of this Work.
5. Additional requirements for field engineering also may be described in other Sections of these Specifications.
6. Coordinating with Contractor for layout and field engineering services.

a. Related Work in Other Sections: Refer to the following sections for related work:
01 45 00 for Quality and Control.
01 78 00 for Contract Closeout.

1.2 SUBMITTALS

Refer to Section 01 33 00 for general submittal requirements.

A. Record Documents: Provide project record documents as required by authorities having jurisdiction over this Work. Governing agencies will require as-built surveying for locating water mains and valves, sewer manholes, storm drainage structures, gas service, electrical service, etc.

B. Certification: Provide evidence of professional registration in the State of Washington as a licensed Civil Engineer and Surveyor. Provide certification verifying accuracy of field engineering work.

C. Qualifications: Upon request of the Architect, provide data demonstrating qualifications of personnel proposed to be engaged for field engineering service.

1.3 QUALITY ASSURANCE

Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section. All Work shall be done under the direct supervision of and under authority of the license of a licensed land surveyor or registered civil engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PROCEDURES

A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:

1. Locate and protect control points before starting work on site. Confirm control points from county bench marks.

2. Preserve permanent reference points during progress of the Work.

3. Do not change or relocate reference points or items of the Work without specific approval from the Architect.

4. Promptly advise the Architect when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.

a. Upon direction of the Architect, require the field engineer to replace referenced stakes or markers.

b. Locate such replacements according to the original survey control. Cost shall be borne by the Contractor.

B. Where local authorities require submittal of as-built records, produce same, including surveying, according to the requirements of said authority including, PDFs, CAD, originals, copies, and include in as-builts.

3.2 PERFORMANCE

A. Working from lines and levels established by the property survey, establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in construction activities, of marked lines and levels provided for their use.

2. As construction proceeds, check every major element for line, level and plumb.

B. Surveyor's Log: Maintain a surveyor's log of control and other survey Work. Make this log available for reference.

1. Record deviations from required lines and levels and advise the Owner's representative when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.

C. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.

D. Building Lines and Levels: Locate and lay out batter boards for structures, building foundations, column grids and locations, floor levels and control lines and levels required for mechanical and electrical work.

E. Existing Utilities: Furnish information necessary to adjust, move or relocate existing structures, utility poles, lines, services or other appurtenances located in, or affected by construction. Coordinate with local authorities having jurisdiction.

END OF SECTION 01 71 23

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Procedures and requirements for contract closeout, including asbestos free certification, guarantees, materials for maintenance, operation and maintenance data, project record documents, cleaning up, inspections, and acceptance shall be in accordance with the requirements of this section and other portions of the Contract Documents as amplified or modified therein.

B. Related Work in Other Sections: Refer to the following Sections for related Work:
00 72 00 for specific closeout direction that takes priority over this section
01 33 00 for general submittal requirements.

1.2 ASBESTOS FREE CERTIFICATION

The Contractor shall certify that all new materials and products provided for this Contract are free of asbestos. Each supplier and subcontractor shall warrant to the Contractor that materials and products provided by them as part of the Work are free of asbestos. If specified materials or products are known to contain asbestos, the Architect shall be informed, and appropriate action shall be taken to provide asbestos free materials or products. Where any doubt exists, it shall be the responsibility of the supplier or subcontractor providing the materials and products to verify test results showing that materials and products are free of asbestos.

Submit notarized statement on Contractor's letterhead addressed to the Owner certifying that "to the best of our knowledge" all materials and products provided for this Contract are free of asbestos. Asbestos Free Certification required prior to Substantial Completion and occupancy of the facilities.

1.3 GUARANTEES

A. One Year Guarantee: Guarantee work for a period of not less than 1 year after date of Final Acceptance of the project by the Owner in accordance with the requirements of Article 12.2 of the General Conditions, and for longer periods of time as may be prescribed by law or by the terms of any special warranties provided by subcontractors and material suppliers or called for in these specifications. Submit manufacturers' standard warranties, guarantees, and affidavits called for in Specifications prior to application for final payment.

B. Submittals: Contractor shall submit one (1) bound copies of all guarantees and warranties not later than ten (10) days prior to Substantial Completion.

1.4 MATERIALS FOR MAINTENANCE

Deliver all maintenance materials as specified in the technical specification sections to a designated representative of the Owner at the completion of the Work. Submit all materials in appropriate containers, labeled with the specification section number, title, quantity, pattern, etc., for proper identification. Submit copy of receipt to Architect

signed by Owner's representative acknowledging receipt of each item prior to application for final payment.

1.5 OPERATION AND MAINTENANCE DATA

Provide operating and maintenance data, demonstrations, and instructions as specified and required by technical specification sections in accordance with the requirements of this section.

A. Operation and Maintenance Manuals: Provide manufacturer's recommended instructions for installation, operation, maintenance, and repair for all materials and equipment that requires any special attention for its proper installation and subsequent care, as applicable. Provide name of subcontractor address, contact name and phone number for each material supplier or subcontractor.

Set forth all information necessary for Owner to operate and make full and efficient use of equipment, and perform such maintenance and servicing as would ordinarily be done by Owner's personnel.

Point out possible hazards with instructions cautioning against mistakes in maintenance and operation that might result in damage or danger to the equipment, building, or personnel.

Provide one (1) sets of manuals, except provide more copies if indicated in other specification sections, and PDF on disc. 8-1/2 x 11 inch size or multiple accordion folds, in three ring binders, bound and indexed form, all properly identified by specification section numbers, with subcontractor's names. Cover and spine to be permanently labeled with title and project name.

B. Demonstrations and Operating Instructions: Furnish competent personnel to instruct the Owner or his designated representative in the use, operation, and maintenance of equipment and materials as required by the technical specifications.

Notify Architect at least 48 hours prior to scheduled time.

Provide written confirmation signed by Owner's representative including dates, duration of time, parties present, project name, and contractor or subcontractor's name.

C. Submittals: Submit manuals and written confirmations not later than 10 days prior to final payment and completion.

1.6 PROJECT RECORD DOCUMENTS (RECORD DRAWINGS)

Maintain and submit project record documents as specified and required by technical specification sections in accordance with the requirements of this section.

A. Maintenance of Documents: Maintain at jobsite 1 copy of Contract Drawings, Project Manual, addenda, reviewed shop drawings, change orders and other modifications to Contract, and field test records, stored apart from documents used for construction. File documents in accordance with Project Manual section numbers. Make documents available at all times for inspection by Architect and Owner.

B. Recording: Keep record documents current. Do not permanently conceal any work until required information has been recorded. Use red pen for all marking. Deliver this document to Architect prior to Final Completion.

C. Contract Drawings: Legibly mark to record actual construction including depths of foundations, horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements, location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure, field changes of dimension and detail and changes by field order or change order. Draft legibly in black ink with only pertinent information. At the end of the project submit one complete as-built set of drawings on bond and provide USB drive with any as-built information that was put on CAD by subcontractors or suppliers.

D. Specifications: Mark legibly in each section to record all addenda, change orders, field orders, and the supplier, manufacturer, and trade name of each product and item of equipment actually installed.

E. Shop Drawings: At the close of the project, provide one complete set of approved shop drawings to the Owner. File in a cardboard file box (Bankers Box) according to CSI format to match the technical specification section numbers.

F. Submittal: Submit project record documents (contract drawings, specifications, and shop drawings) not later than 10 days prior to final payment and completion in accordance with the requirements of Section 01 33 00 "Submittals."

1.7 CLEAN-UP

Provide cleaning up in accordance with paragraph 4.15 of the General Conditions of the Contract except as amplified and modified herein. Cleaning during construction and final clean-up is specified in this section and other sections of these specifications. Refer to technical specification sections for cleaning up required by various trades.

A. Cleaning During Construction: Oversee cleaning and insure that building and grounds are maintained free from accumulations of waste materials and rubbish. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly or hazardous condition. At reasonable intervals collect and remove waste materials, rubbish, and debris from building and site and legally dispose of at public or private dumping areas off Owner's property in accordance with the requirements of Section 01 50 00.

B. Cleaning Storage and Shop Areas: When any portion of the building is used as a storage or shop area, the Contractor or trade making use of such area is responsible for any repairs, patching, or cleaning arising from such use.

C. Final Cleaning: Perform the following cleaning operations, excepting only those specifically required by other trades, after completion of construction but prior to occupancy or acceptance, using experienced workmen or professional cleaners:

1. Remove grease, dust, dirt, stains, labels, finger prints, and other foreign materials from exterior surfaces and parking lot.

2. Repair, patch, and touch-up marred surfaces to match adjacent finishes.

1.8 PUNCHLIST

The Contractor shall conduct a punchlist inspection with no more than 10 items prior to requesting substantial completion from the Architect and submit a copy of his/her findings. After the Architect reviews the Contractor’s punchlist and the Contractor corrects all items requested by the Architect, the Architect will conduct a punchlist inspection prior to substantial completion and prepare a punchlist for Contractor's use. The punchlist will be a tabulated list per area of items that are not complete, defective items and materials, and items that do not conform to the Contract Documents. The

Contractor shall complete the items listed and all subsequent items, added in a timely manner, until the project is accepted. The Contractor's Superintendent and/or Project Manager shall inspect each punchlist item and initial the punchlist adjacent to each item signifying that the item is complete.

1.9 SUBSTANTIAL COMPLETION

The Contractor shall submit a letter to the Architect requesting a date for substantial completion and punchlist walk-through. The Architect will issue a certificate of substantial completion executed on AIA document G704 "Certificate of Substantial Completion" in accordance with Article 8 and 9 of the General Conditions when satisfied that all conditions for substantial completion have been met. When approved by Owner and Contractor, the certificate establishes the date of Substantial Completion.

1.10 FINAL INSPECTION

The Architect will conduct a final inspection with Owner and contractor representatives present, after receipt of a copy of both the Contractor's and the Architect's initialed punch list and a project completion notice in the following sample form for the work of each contractor

A. If the Architect finds 5 uncorrected punchlist items, he will abandon the back-check and the Contractor shall be required to complete work and resubmit a new project completion notice. The Contractor shall reimburse the Architect and Consultants at the rate of $240.00 per hour for any time spent after a back-check of the punchlist has been abandoned.

FORM OF PROJECT COMPLETION NOTICE BY CONTRACTOR

To: Cornerstone Architectural Group
6161 NE 175th Street, Suite 101
Kenmore, WA 98028

Re: General Contract for
Holly Street Campus – Creek Bank Repair
Issaquah School District

We, the undersigned, certify that on this _____ day of _____, 20____, we have reviewed all parts of the Drawings and Project Manual and all portions of the Work, and in accordance with the Contract Agreement dated the _____ day of _____, 20____, state that all punchlist corrections have been completed and that all Work is completed and ready for final inspection and Owner's acceptance.

_____ Signed
Superintendent

_____ Signed
Project Manager

_____ For
Contractor

FINAL ACCEPTANCE, PAYMENT AND RELEASE OF RETENTION
The Architect will submit letter of recommendation for final acceptance, in the following sample form, and final certificate for payment, and release of retention when fully satisfied that all requirements of the Contract Documents have been fulfilled. Final acceptance, payment, and release of retention will be made by Owner, after approvals by the Board of Directors meeting in regular sessions.

FORM OF RECOMMENDATION FOR FINAL ACCEPTANCE BY ARCHITECT

To: Issaquah School District
Re: Holly Street Campus – Creek Bank Repair

Ladies and Gentlemen:
The work of _____, Contractor on the subject project, has been inspected by this office and our consultants and has been found to be satisfactorily completed.

We therefore recommend acceptance of this Contractor's work by the Owner. Work requiring correction under the guarantee is to be accomplished by this Contractor during the normal 1-year guarantee period, except specific items that have a longer period called for in the Specifications.

Board action accepting this recommendation will begin the effective date of the 45-day lien period for release of retention.

Signed _____
Cornerstone Architectural Group

END OF SECTION 01 78 00

STRUCTURAL STEEL

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

B. Work Included in this Section: Provide steel helical pile leads & extensions, cabling for tieing woody debris together and anchoring.

C. Related Work in Other Sections: Refer to the following sections for related work:

31 10 00 Site Clearing & Demolition
31 20 00 Earthwork

1.2 REFERENCE STANDARDS

A. Listed publications form a part of this Section

1. ASTM A29-15/A576-90B
2. Plate Steel ASTM A572.
3. American Welding Society (AWS):
   A2.4-76 Symbols for Welding and Non-Destructive Testing.
   D1.1-85 Structural Welding Code - Steel.
4. Hot dip galvanizing per ASTM A153/ASTM A123.

1.3 SUBMITTALS

A. Refer to Section 01 33 00 for general submittal requirements.

B. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used, including paint products and grout.

1.4 QUALITY ASSURANCE

A. Field Inspections: Will be performed by Owner's testing agency after installation is substantially complete to insure compliance with drawings and specifications.

B. Asbestos Free Certification: All new materials and products installed as part of this work shall be certified to be free of asbestos in accordance with the requirements of Section 00 72 00. Each Supplier and subcontractor shall warrant to the Contractor that materials and products provided by them are free of asbestos.

1.5 HANDLING AND STORAGE

A. Use all means necessary to protect structural steel before, during, and after installation and to protect the installed work and materials of all other trades. In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Architect at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Helical Pile Leads:

1. Pile shaft shall support 90 KSI.
2. Plate steel Grade 50.
3. Standard helix diameters are 8”, 10”, 12” & 14”, thickness is 3/8” or ½”.
4. Hot dip galvanized.
5. Helical pile assemblies manufactured in accordance with ICC-ES AC358 acceptance criteria for helical foundation systems and devices.
6. Galvanized hex bolts and hex jam nut as required, see drawings.

B. Cabling: 5/8” minimum diameter galvanized or stainless-steel cable.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Prior to beginning work of this Section, verify that the installed work of other trades is complete and correct to the extent necessary for the proper execution of the work of this Section. This includes locations of anchor bolts, and lines and grades of bearing areas.

B. In the event of discrepancies, immediately notify the Architect. Do not proceed with work affected by the discrepancies until they have been resolved.

C. Thoroughly clean, remove refuse, oil, mill scale before applying finish or embedding.

3.2 HELICAL PILE INSTALLATION

A. Helix spacing is three (3) times the diameter of the lower helix. Spacing of leading helix on flighted extensions is three (3) times the diameter of the last helix on the preceding shaft.

B. Maximum torque not to exceed 11,000 ft-lbs..

C. Safety: It is solely the Contractor's responsibility to follow all applicable safety codes and regulations governing this work.

D. The Contractor shall install the earth anchor system to withstand the load indicated in the Contract Plans and verified by tests specified in this section.

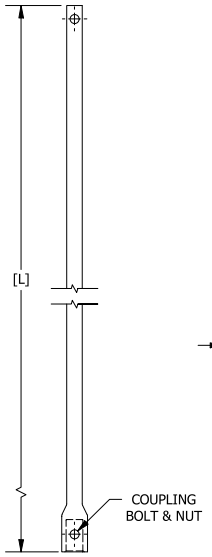
3.3 CABLING INSTALLATION

A. Notches a minimum of 1-inch in depth should be made on large woody debris for cable placement. All cable shall be fastened with hot-dip galvanized steel clamps and liberal quantities of hot-dip galvanized 3/8” x 4” steel staples. Epoxy used for anchorage should consist of Hilti HIT-HY 150 resin adhesive or equal.

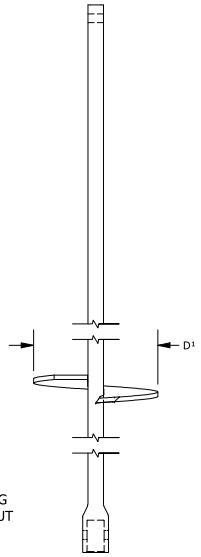
END OF SECTION 05 12 00

MAXIMUM TORQUE NOT TO EXCEED 11,000 FT-LBS.
ULTIMATE CAPACITY IS 110 KIPS BASED ON A CAPACITY TO TORQUE RATIO OF k_t = 10 FT^{-1}

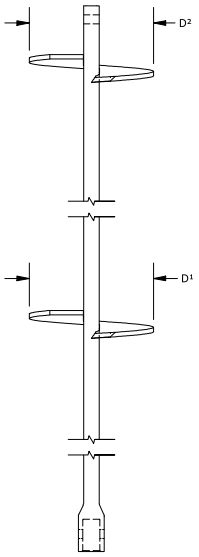
1 3/4" ROUND CORNER SQUARE SHAFT HELICAL PILE LEADS & EXTENSIONS



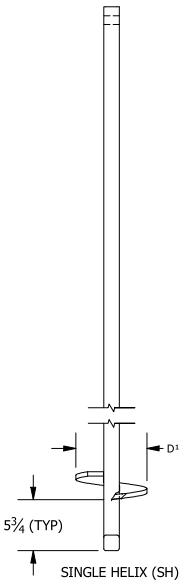
EXTENSION
(EX: SQ175EXT[L]G)



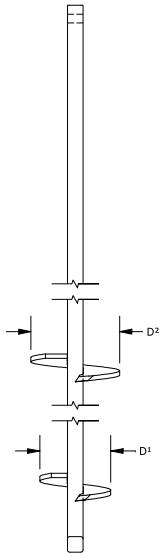
FLIGHTED EXTENSION
SINGLE HELIX (SH)
(EX: SQ175FESH[L][D¹]X[T]G)



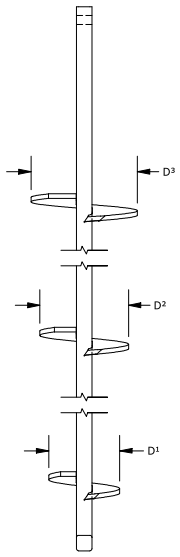
FLIGHTED EXTENSION
DOUBLE HELIX (DH)
(EX: SQ175FEDH[L][D¹D²]X[T]G)



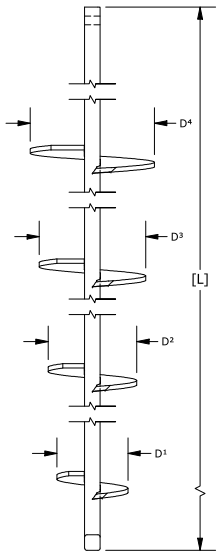
SINGLE HELIX (SH)
LEAD
(EX: SQ175SH[L][D¹]X[T]G)



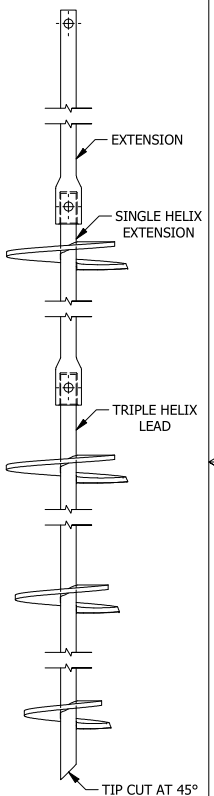
DOUBLE HELIX (DH)
LEAD
(EX: SQ175DH[L][D¹D²]X[T]G)



TRIPLE HELIX (TH)
LEAD
(EX: SQ175TH[L][D¹D²D³]X[T]G)



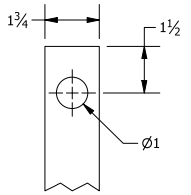
QUAD HELIX (QH)
LEAD
(EX: SQ175QH[L][D¹D²D³D⁴]X[T]G)



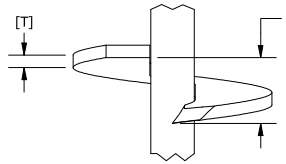
TYPICAL PILE
ASSEMBLY

NOTES:
1. PILE SHAFT TO MEET OR EXCEED REQUIREMENTS OF ASTM A29-15/A576-90B, 90 KSI.
2. PLATE STEEL TO MEET OR EXCEED REQUIREMENTS OF ATSM A572, GRADE 50.
3. ALL HELICES ARE FORMED BY PRESS DIE. LEADING EDGE OF HELICES ARE TAPERED TO IMPROVE INSTALLATION CAPABILITIES.
4. HELIX SPACING IS THREE (3) TIMES THE DIAMETER OF THE LOWER HELIX. SPACING OF LEADING HELIX ON FLIGHTED EXTENSIONS IS THREE (3) TIMES THE DIAMETER OF THE LAST HELIX ON THE PRECEDING SHAFT.
5. STANDARD HELIX DIAMETERS ARE 8", 10", 12", & 14". STANDARD HELIX THICKNESS IS 3/8" OR 1/2".
6. ALL WELDING TO BE PERFORMED BY CERTIFIED WELDOR IN ACCORDANCE WITH AWS D1.1 STRUCTURAL WELDING CODE - STEEL.
7. HOT DIP GALVANIZING PER ASTM A153/ASTM A123. BARE STEEL IS ALSO AVAILABLE.
8. (1) 7/8" DIAMETER X 3 3/4" LONG GALVANIZED HEAVY HEX BOLT ASTM A193 (GRADE B7) AND (1) 7/8" GALVANIZED HEAVY HEX JAM NUT (GRADE A).
9. HELICAL PILE ASSEMBLIES MANUFACTURED IN ACCORDANCE WITH ICC-ES AC358 ACCEPTANCE CRITERIA FOR HELICAL FOUNDATION SYSTEMS AND DEVICES.

IDEAL PART # ABREVIATIONS:
SQ = ROUND CORNER SQUARE SHAFT
175 = SHAFT DIAMETER
EXT = EXTENSION
FE = FLIGHTED EXTENSION
SH, DH, TH, QH = SINGLE, DOUBLE, TRIPLE, OR QUAD. HELIX
[L] = SHAFT LENGTH IN FEET
(EXAMPLE: 7' = 7)
[D] = HELIX DIAMETER(S) IN INCHES
(EXAMPLE: 10" = 10)
X = X (SEPARATES HELIX DIAMETER(S) AND HELIX THICKNESS)
[T] = HELIX THICKNESS
(EXAMPLE: 1/2" = 12)
G = GALVANIZED



BOLT HOLE
DETAIL



HELIX FORMED BY
PRESS DIE

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SITE CLEARING AND DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in this Section: Provide all clearing, protection of trees and structures, grubbing and removal of steel plates and super sack bulk bags (netted sandbag wall) as required for Work represented in the Contract Documents, including identification of existing utilities.

B. Related Work in Other Sections: Refer to the following sections for related work:

01 50 00 Temporary Facilities and Controls
01 57 00 Erosion Control
31 20 00 for earthwork

1.2 SITE CONDITIONS

A. Environmental Requirements: Do no work prior to installation of erosion control, or when the ground is frozen enough to cause unreasonable difficulty in the work.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements:
1. Obtain required permits and licenses in accordance with requirements of Federal Clean Water Act (CWA) and Water Quality Act (WQA). File Notice of Intent (NOI) with United States Environmental Protection Agency, or appropriate state agency where project is located.
2. Provide temporary erosion control systems as indicated on Drawings or as directed by Owner's Representative to protect adjacent properties and water resources from erosion and sedimentation.
3. CWA (1972) and WQA (1987) Requirements:
   a. Where Work on this project will disturb 5 or more acres, do not start Work without obtaining a "National Pollution Discharge Elimination System" (NPDES) permit governing discharge of storm water from project site for duration of Contract. Prepare and obtain approval of a "Storm Water Pollution Prevention Plan" (SWP^3) that includes monitoring of erosion control measures for duration of Contract.
   b. Keep SWP^3 on site and make available for inspection by appropriate authority having jurisdiction at any time.

1.4 PRE-CONSTRUCTION CONFERENCE

Contractor to schedule pre-construction conference no less than 72 hours before starting work. The personnel shall include Contractor, site work subcontractor(s), governing and permitting agencies' representative(s), Architect, Civil Engineer, and Owner's representative.

A. Prior to the meeting the Contractor shall verify the accuracy of the Contract Documents, clearly mark site boundaries, buffer areas, utilities, easements, and clearing limits.

PART 2 – PRODUCTS

2.1 TEMPORARY FENCING

A. Temporary chain link fencing: minimum 6-foot height, line posts at 8 foot on center maximum. Two-inch chain link mesh fence. Brace fence to prevent overturning.

B. Orange clearing limits fencing: plastic mesh fencing, approximately 4 feet high, per King County standards.

2.2 JUTE NETTING

A. Degradable, all-natural coconut coir matting or jute netting with untreated wedge-shaped wood stakes cut diagonally from 2x4's, synthetic reinforcement mats are not allowed at this site to prevent microplastic debris from entering Issaquah Creek. Metal stakes and/or staples or small wooden pegs for tacking erosion control fabrics are similarly incompatible with desired outcomes for the project.

PART 3 - EXECUTION

3.1 PREPARATION

Prior to start of work in this Section, the Contractor shall mark, in the field, the limits of all proposed clearing and grading, critical areas and their buffers, and trees to be retained. Erect a temporary fence around all trees to be saved. Fence shall be located at drip line of tree unless otherwise approved by the Architect.

No demolition work shall begin on the items being removed within the creek bed until cofferdam is in place and area dewatered.

3.2 TEMPORARY EROSION CONTROL

Refer to the temporary erosion and sedimentation control (TESC) requirements on the drawings and in Section 01 57 00 Erosion Control. Adhere to all King County erosion control requirements. Prevent erosion from any portions of the site and/or adjacent property for the duration of the construction.

3.3 RESTORATION OF DAMAGED NATURAL AREAS

Replace trees, shrubs, ground cover, and other growth designated to remain which are damaged as a result of the Contractor's operations in all areas where existing growth is designated to remain undisturbed and all areas beyond boundaries where the Contractor has received permission to clear, store materials, ditch, etc. Replace with plants, topsoil and mulching acceptable to the Architect and guarantee for the 1 year period.

3.4 INSTALLATION OF JUTE NETTING PRIOR TO RESTORATION PLANTING

netting should be installed on restoration areas prior to planting, and this erosion control surfacing staked with 18- to 24-inch long, wedge-shaped stakes made by cutting untreated 2x4s diagonally. Stakes should be placed in regular intervals no greater than three feet on-center, and erosion control fabric should incorporate an overlap of at least a foot in restoration areas.

3.5 BURNING

Do no burning on site.

3.6 CLEARING AND GRUBBING

Clear vegetation from site as necessary to execute work of the Contract Documents. Clear areas 2 ft. of both sides of fences when required. Protect and save trees and other vegetation as indicated on the Drawings and as directed by the Architect, Owner, or Governing Agencies. Grub all areas to be excavated or filled. Conform to requirements of WSDOT 2.01.3(1) and (2).

3.7 UTILITY RELOCATION

Prior to start of Work, contact utility companies having installation within the project site that will be affected by proposed improvements. Arrange for owners of affected utilities to relocate as required.

3.8 DISPOSAL OF CLEARED MATERIAL

Remove to suitable disposal site approved by governing agencies.

END OF SECTION 31 10 00

31 20 00 EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Work includes but is not limited to the following. Excavation of riverbed for installation of river bank protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

Section 01 57 00	Erosion Control Proceedures
Section 31 10 00	Site Clearing and Preparation
Section 31 25 15	River Bank Protection & Erosion Control
Section 31 52 00	Cofferdam

1.3 REFERENCES

A. This Section incorporates by reference the latest revisions of the following documents. They are part of this section insofar as specified and modified herein. The Contractor shall have one copy of the each of the following documents at the job site. The bidder in submitting a bid acknowledges that he is familiar with the documents named in References and that they are incorporated into this document by reference. The Standard Plans and Policies apply only to performance and materials and how they are to be incorporated into the work. The legal/contractual relationship sections and the measurements and payment sections do not apply to this document.

1. City of Issaquah Public Works Standards.
2. 2014 Ecology Management Manual for Western Washington
3. King County Standard Plans, Current Edition.
2. WSDOT/APWA 2016 Standard Specifications for Road, Bridge, and Municipal Construction.
3. Standard Plans WSDOT/APWA Standard Plans for Road, Bridge, and Municipal Construction.
4. Geotechnical Report
5. 2012 Stormwater Management Manual for Western Washington, as Amended in December 2014
6. 2017 Stormwater Design Manual Addendum
7. American Public Works Association Standard Specifications

1.6 QUALITY ASSURANCE

A. Construction Monitoring and Testing:

1. The Owner will secure and pay for the services of a Geotechnical engineer to classify existing soil materials, to recommend and to classify proposed borrow materials when necessary, to verify compliance of materials with specified requirements, and to perform required field and laboratory testing.

2. Coordinate all required testing and furnish copies of test reports to the Architect.

3. The Geotechnical engineer will take samples and perform moisture content, gradation, compaction, and density tests during placement of backfill materials to check compliance with these specifications.

B. Work is to comply with Department of Ecology (DOE) and City of Issaquah (COI) standards. Coordinate with the City of Issaquah Inspector.

E. Tests will be made by the Geotechnical engineer as required for completion of the work.

F. Make arrangements for the Geotechnical engineer to be on site to observe the following activities:

1. Pre-construction meeting

2. Excavation of riverbed

3. Placement of alluvial soils

1.7 QUALIFICATIONS

A. Crew Foreman: Minimum six years' working experience and four years' experience as foreman performing similar work.

B. Regulatory Requirements

1. All work and material shall be in accordance with:

a) King County Public Works Standards, current edition.

b) 2016 WSDOT Standard Specifications.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Stockpiling: Stockpile materials on site within clearing limits. The contractor shall be responsible for protecting the stockpiled material. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials

1. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free-standing surface water.

2. Comply with WSDOT Section 3-02(6). Contractor shall provide survey stakes for stockpiles.

3. Maintain toe of material at least 6 feet from edges of trenches and excavations. Pile so surface water is prevented from flowing into excavations. Provide free access to fire hydrants, water valves, meters; private driveways; and leave clearance to enable the free flow of storm water in gutters, conduits, and natural water courses.

B. Environmental Requirements: Expose, excavate, and place existing site material only in dry weather.

C. Existing Conditions: Existing on-site material in the existing riverbed is to be excavated and stored on site for reinstallation into riverbank protection system. Refer to the Geotechnical engineer's report for soil information.

D. Protection of Existing Improvements: Provide, erect and maintain barricades, coverings, or other types of protection necessary to prevent damage to existing vegetation and improvements not indicated for removal. Restore any on or off site improvements, including but not limited to landscaping, pavement, walks, structures, fences and planters, damaged by this work to their original condition, as acceptable to Owner. Restore to original grades and conditions, areas adjacent to site disturbed or damaged as a result of site preparation and demolition work.

E. Do not interfere with or close public ways without permission of governing authorities. Do not interfere with adjacent private facilities.

F. Objectionable Noises: Limit use of air hammers and other noisy equipment. Conform with local governing requirements regarding noise control. See Division 1 Section for additional information on allowable noise limits.

1.9 DRAINAGE AND GROUNDWATER

A. Refer to Section 31 10 00 "Site Clearing and Preparation"

1.10 SEQUENCING AND SCHEDULING

A. Maintain drainage in areas of site to be occupied during construction.

B. Schedule work in this section to coordinate with the existing buildings abandonment and demolition and proposed building construction schedule.

1.11 DIMENSIONS AND LAYOUTS

A. Refer to Section 31 10 00 "Site Clearing and Preparation"

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials excavated from riverbed are intended to go back into the riverbed and be supplemented by additional materials identified in section 31 25 15.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions: Verify as follows:

1. Verify survey benchmark and intended elevations for the work are as indicated.

2. Verify vegetation to remain is protected and prominently mark.

3. Verify erosion control is in place and operating properly.

3.2 PREPARATION

A. Protection

1. Locate existing utilities, avoid damage or disturbance. For aid in utility location call "Dial Dig 1 800 424 5555," 72 hours (three working days) prior to beginning construction. Provide and pay for additional marking as required.
2. Protect and maintain existing utilities.
3. Identify existing structural foundations near excavations. Verify excavation will not undermine footings and cause damage to structures.
4. Protect plant life, lawns, and other features remaining as a portion of final landscaping or interim erosion control.
5. No parking or driving of mechanized equipment or stockpiling of materials is allowed beyond the clearing limits shown in the documents except as approved in advance by the Inspector and the Engineer.
6. Protect benchmarks, existing structures, sidewalks, railings, paving, and curbs.
7. Protect pavement or paved areas intended to remain from damage.
8. Use all means necessary to prevent the erosion of freshly graded areas during construction or until such time that permanent drainage and erosion control measures are fully operational.
9. Repair and/or replacement of damaged facilities will be accomplished at the Contractor’s expense.

B. Survey and stake limits of clearing, per King County standards.

D. Identify onsite trees to be removed within limits of clearing.

3.3 INSTALLATION OF MATERIALS WITHIN RIVERBANK

A. RIVER BOTTOM GRAVEL: Remove gravel and store, once protection system is installed place gravel back in riverbed on top of other soils that have been set in place.

B. SOIL UNDER GRAVEL TO BE USED AS BACKFILL FOR LARGE WOODY DEBRIS (LWD): Excavate trenches in river bottom to depth indicated for each piece of LWD to be installed. Anchor the LWD as required and backfill around them with the excavated material compacting as required to be held in place for next layer of LWD and rocks.

C. REMOVAL OF UNUSED MATERIAL: It is the intent that all material excavated from riverbed shall be returned into the final built product. Any unused material shall be removed from the site and disposed of at contractor’s expense.

G. Stabilization of Excavations and Trenches within Riverbed.

1. Exercise sound engineering and construction practices for excavations and trenches and maintaining them so that no damage will occur to riverbank, or other facility because of sloughs or slopes, or from any other cause.

2. Provide dewatering, cofferdam or other types of stabilization, in addition to that required for safety by State codes, as required to maintain the integrity of the trench or excavation and protect nearby existing utilities and structures. All earthwork shall conform to the Washington Administrative Code (WAC) 296-155 requirements for Excavation, Trenching, and Shoring. If the Contractor elects to provide stabilization by open pit excavation or flatter side slopes, no additional compensation will be made for the work including excavation, select backfill material, backfilling, and protection of existing facilities.

3.6 FIELD QUALITY CONTROL

A. In accordance with Section 014000 Quality Control.

C. Inspection

1. Subgrade prior to placing fills.

2. Surface after completion of cuts and fills and prior to placing top soil, bases, or pavements.

3.8 CLEARING

A. Dispose of all surplus or unsuitable material.

B. Dispose of waste, surplus, and unsuitable materials according to laws, regulations, and ordinances off site at a site obtained by Contractor.

C. Wet Weather Work: If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when control of soil moisture content is not possible, the following recommendations should be followed.

1. Earthwork should be performed in small areas to minimize exposure to wet weather. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic.

5. Excavation and placement of fill should be observed by the Geotechnical engineer to verify that all unsuitable materials are removed and suitable compaction and site drainage is achieved.

6. Straw wattles and/or geotextile silt fences should be strategically located to control erosion

END OF SECTION 31 20 00

RIVERBANK PROTECTION & EROSION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract, and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide permanent erosion control of riverbank with installation of anchored rootwads. interstitial habitat boulders, fish mix gravel and cabling.

B. Related Work in Other Sections: Refer to the following sections for related work:

01 57 00 for Erosion Control Procedures
05 12 00 for Helical anchors
31 20 00 for Earthwork
31 52 00 for Cofferdams
Permanent Streambank Stabilization document by Nelson Geotechnical Associates, Inc included in these specifications.

1.2 PERFORMANCE REQUIREMENTS

A. Contactor shall be responsible for excavating and preparing the river bottom in existing stream bed for installation of Large Woody Debris anchored with steel cables and helical anchors along with interstitial habitat boulders.

B. Contractor shall be responsible to take necessary measures to protect slopes and soils exposed during execution of the work of these Contract Documents.

C. Control water runoff as required during duration of Project. Stock piles and slopes must be covered with plastic during rain events. This is not limited to only the wet weather season.

D. Remove existing piles and steel plates gradually while installing helical anchors and woody debris so as to prevent existing bank from collapsing.

E. Protect slopes from instability.

F. Sweep public streets to remove sediment from vehicle tracking.

G. Prevent soil and other debris from washing into river and drainage systems.

1.3 SUBMITTALS

Refer to Section 01 33 00 for general submittal requirements.

A. Submit proposed plan, procedures, and product data.

1.4 INSTALLER QUALIFICATIONS

A. Installer shall be an established business performing creek bank stabilization at least the last 3 years under the current business name and State contractor license number.

1.5 QUALITY ASSURANCE

A. Contractor shall have woody debris and interstitial habitat boulders inspected prior to shipping to the site by Nelson Geotechnical.

B. Construction shall conform to plans and details as approved by City of Issaquah, State of Washington, Corp of Engineers and FEMA.

PART 2 - PRODUCTS

2.1 MATERIALS

As indicated on the Drawings and as approved by the Architect.

A. **Large Woody Debris (LWD):** LWD shall be competent, not rotten, and in good condition. Large branches and tangled roots are preferred and should not be trimmed if possible. LWD and rootwads shall be utilized from live trees and shall have a minimum of 30 feet of tree stem including the rootwad unless otherwise noted on the Schematic Design Detail in Figure 10. Depending on sources of LWD, logs may need to be cut into pieces for transport then reassembled on-site by splicing, gluing, and tacking the pieces back together. In accordance with FEMA programmatic requirements, the summation of rootwad diameters utilized for the project must equal 129 linear feet. Therefore, the minimum amount of large woody debris with rootwads is 16 pieces with 12-foot diameter rootwads, or 24 pieces with 8-foot diameter rootwads. All logs shall have a minimum diameter at breast height (DBH) of 18 inches. All LWD shall have a minimum diameter of 10 inches at the small, tapered end unless otherwise noted. LWD shall only consist of Douglas fir (*Pseudotsuga menziesii*) and/or western redcedar (*Thuja plicata*), unless otherwise approved by NGA and the project biologist. We recommend each LWD piece be evaluated by NGA prior to transport to the site for staging. Long logs should be trimmed on site to be situated as close as possible against the steep bank, sharpened and pressed into the bank where possible as well.

B. **Interstitial habitat boulders***: 'Habitat Boulders'* shall be 2, 3, and 4-man rock in accordance with WSDOT specifications and indicated on the Schematic Design Detail in Figure 10. Streambed cobbles and boulders shall meet WSDOT standard specification 9-03.11 Sections (2) and (3). Large anchor rocks shall be sourced from a naturally occurring fluvial sediment and shall thus be rounded or semi-rounded as possible.

C. **Gravel:** '*Fish Mix Gravel'* shall consist of washed, round fluvial (river) gravel consisting by volume of 60% sand to 2-inch diameter rock, in accordance with WSDOT standard specification 9-03.11 section (1), 20% 2- to 6-inch diameter rock, and 20% 6- to 18-inch diameter rock per section (2). 'Fish Mix' shall be supplemented as necessary with native bed material and/or imported pit run in order to match existing bed material gradation and prevent subsurface flow.

D. **Cabling:** Anchorage shall be fastened using 5/8" minimum diameter galvanized or stainless-steel cable as indicated on the Schematic Design Detail in Figure 10. Notches a minimum of 1-inch in depth should be made on large woody debris for cable placement. All cable shall be fastened with hot-dip galvanized steel clamps and liberal quantities of hot-dip galvanized 3/8" x 4" steel staples. Epoxy used for anchorage should consist of Hilti HIT-HY 150 resin adhesive or equal.

PART 3 - EXECUTION

3.1 EXECUTION

A. Large woody debris (LWD) will be placed in a latticed, cribbing structure constructed landward of the original OHWM. Stream boulders and alluvial material will be utilized to reconstruct the eroded bank within the large woody structure, which will have rootwads fronting the channel to recruit sediment and debris, and to provide aquatic habitat value and mitigate the effects of rock

placement. To mitigate bed degradation and expected stream incision, the large wood will be placed at a depth of 4.3 feet below the existing channel to prevent future undermining, should the channel continue to incise. It will extend vertically to protect the bank during periods of flooding. Resistance of shear and buoyancy will be addressed with mechanical anchors drilled into the dry bank prior to construction of the large woody debris reinforced bank toe.

B. Gradually remove existing shoring along river bank during excavation and installation of anchors and LWD.

C. Temporary dewatering landward of the partial cofferdam within the work area shall occur in accordance with Element 10 of the SWPPP requirements section outlined in Volume I Chapter 3 of the 2014 update to Stormwater Management Manual for Western Washington.

D. Install helical anchors with light tools. Limit foot traffic on alluvial subgrade to minimum necessary to install stabilization.

E. Tieback anchors will secure the large woody debris to the undisturbed bank to prevent loss and impacts during future flooding events. As shown on the Schematic Design Detail in Figure 10, two sets of anchors will be utilized to secure the placement of the large woody debris. One set of anchors will be near the outboard face of the woody debris and oriented directly downward to redundantly counteract buoyancy forces on the structure. Another set will be situated at a downward angle into the bank and secure the back of the woody debris as a precautionary measure in the event the sharpened ends of anchor logs are unable to be appropriately pressed into the bank.
The contractor should determine the torque values required to achieve the desired capacity. Load carrying capacities on the order of 10 kips or more could be achieved using a triple-helix with 8-, 10-, and 12-inch diameter anchor installed successfully. However, the anchors should advance a minimum of 20 feet into undisturbed soils to achieve sufficient capacities. The helical anchors should be installed as recommended by the supplier using torque levels correlating the desired capacities. Anchors should be spaced a minimum of three times the diameter of the largest helix of the anchor on center. We recommend that we review proposed anchor installation methods from the contractor. We should also observe anchor installation and testing.

F. Place interstitial habitat boulders and install anchor bolts and fittings for cabling and anchorage in accordance with figure 10 in the geotechnical report. The Geotechnical Engineer shall review proposed anchor installation methods prior to implementation and be continuously present during installation and testing.

G. Continue to place large wood and backfill with materials specified on plans to reconstruct the bank. Secure log framework with cable, extending helical anchorage as needed with extension rods to secure as depicted on plans.

H. Install jute-wrapped amended soil bags between brush layers at top of reconstructed bank.

3.2 FIELD QUALITY CONTROL

A. Erosion control methods and temporary dewatering shall be observed by a Certified Erosion and Sediment Control Lead (CESCL), which will be staffed by representatives of NGA during construction.

B. Two anchors should be performance tested to 200 percent of the anchor design capacity. The performance test should consist of cyclic loading in increments of 25 percent of the design load, as outlined in the Federal Highways Administration (FHA) report No. FHWA/RD-82/047. The test location should be determined in the field, based on soil conditions observed during anchor installation.

END OF SECTION 31 25 15

COFFERDAMS

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in this Section:

B. The work of this section includes, but is not limited to, the following: Cofferdam constructed in river to hold back river water for duration of creek bank repairs and removal and disposal following completion of repairs

C. Related Sections include the following:

1. Section 31 20 00 – Earthwork

1.2 SUBMITTALS

A. Submit under provisions of Division 1 Section 01 33 00 “Submittal Procedures” and as further provided.

B. Submittals that have been submitted and approved shall be available onsite for reference by the Owner and Engineer.

C. Submit the following installer qualifications:

1. Documentation that the installer has experience working in a river to install a cofferdam.
2. Provide a list of projects completed within the last 3 years including name of the Owner, Architect, project name/address, and contact phone number.

1.3 INSTALLER QUALIFICATIONS

A. Installer shall be an established business performing cofferdam installation for at least the last 3 years under the current business name and State contractor license number.

1.4 QUALITY ASSURANCE

A. The Geotechnical Engineer shall observe installation and shall work closely with cofferdam installer on an as needed basis.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Option 1: Sandbags with an impermeable liner shall be filled and installed in accordance with the drawings. Install 6 mill membrane withing sandbags as shown.

B. Option 2: Collapsible, portable water filled bags or tubes as supplied by Murlac (844) 687-5221 or equal.

PART 3 - EXECUTION

3.1 COORDINATION

A. Review, coordinate, and accommodate work of other Sections that interface with, affect, or are affected by the work of to facilitate the execution of the overall Work of this project in a coordinated and efficient manner. Coordinate stream diversion and fish removal with Wetland Resources prior to and during installation of cofferdam.

B. Conform to detail.

3.2 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.

B. Start of installation indicates acceptance of site conditions.

3.3 PREPARATION

A. Confirm locations and elevations required for installation of cofferdam.

B. Confirm riverbed flatness and material so dam will sit tight to river bed and any sharp objects are removed that would potentially damage water filled bags if used.

3.4 INSTALLATION – SANDBAG COFFERDAM

A. Stake face of wall locations in field prior to starting rock wall and review with Architect and Engineer at pre installation conference.

B. Placement: Utilize fork lift or other equipment to reach sand bags into the river to avoid damaging the untouched side of the riverbed.

3.5 INSTALLATION – WATERFILLED BAG COFFERDAM

A. Stake face of wall locations in field prior to starting rock wall and review with Architect and Engineer at pre installation conference.

B. Placement: Starting at upstream end of cofferdam unroll continuous bag along route filling as you go to far end of dam.

3.6 DEWATERING

A. Remove water trapped behind cofferdam and pump into Baker tanks for cleaning prior to dumping water back into the river downstream of the dam.

B. Any fish left behind the dam need to be removed and placed back into the flowing river prior to finishing removal of all the water. All fish removal work will be performed by Wetland Resources.

3.7 REMOVAL

A. Following completion of bank stabilization removed coffer dam and stakes used for layout. All removed material shall be disposed of off-site.

END OF SECTION 31 05 00

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

Provisions of the Bidding Requirements, Conditions of the Contract, and Division 1 apply to all Sections of this Project Manual. Refer to Table of Contents for complete list of Bidding Requirements, Conditions, and Sections included in the Project Manual.

A. Work Included in This Section: Provide all painted chain link fencing as shown on drawings and as specified herein.

1.2 REFERENCES

Listed publications form a part of this Section to the extent indicated by references thereto.

A. ASTM A123 - Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strip.

B. ASTM A392 - Zinc-Coated Steel Chain Link Fence Fabric.

C. ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.

D. ASTM A567 - Standard Practice for Installation of Chain Link Fence.

1.3 GENERAL DESIGN REQUIREMENTS

Proposed fencing design shall conform to the following requirements. Posts shall be spaced at a maximum of 10' on center and as required to provide proper support. All fences shall have tension wire at bottom of fabric. All posts shall have suitable caps. Provide bracing at all corners and terminations and pull posts to produce a stable, secure, and sound installation for anticipated loads. Footings shall be concrete and sized as required to support loads. Install in strict accordance with ASTM A567 or this Specification, which ever is more stringent.

1.4 SUBMITTALS

Refer to Section 01 33 00 for general submittal requirements.

A. Shop Drawings: Submit shop drawings for each type of fence and gate indicated on Drawings.

B. Product Data: Submit catalog cuts for all products.

C. Sample: Submit samples of full range of color coatings.

D. Certificate of Compliance: Submit certification by the materials suppliers and manufacturer's indicating that the materials and mixes are in compliance with these specifications. Certification shall be signed by the material manufacturer.

1.5 ASBESTOS FREE CERTIFICATION

All new materials and products installed as part of this work shall be certified to be free of asbestos in accordance with the requirements of Section 01 78 00. Each supplier and subcontractor shall warrant to the Contractor that materials and products provided by them are free of asbestos.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Framework for color chain link fence systems shall conform to Ameristar® PermaCoat® PC-20™ Powder coated Fence Pipe (commercial weight), as manufactured by Ameristar® Fence Products in Tulsa, Oklahoma or equal.

2.2 STEEL FRAMEWORK

A. The steel material used to manufacture Ameristar® PermaCoat® PC-20™Fence Pipe shall be zinc-coated steel strip, powder coated.

B. The zinc used in the galvanizing process shall conform to ASTM B6. Weight of zinc shall be determined using the test method described in ASTM A90 and shall conform to the weight range allowance for ASTM A653, Designation G-90.

C. The framework shall be manufactured in accordance with commercial standards to meet the strength (50,000 psi minimum yield strength) and coating requirements of ASTM F1043, Group IC, Electrical Resistance Welded Round Steel Pipe, light industrial weight.

D. The exterior surface of the electrical resistance weld shall be recoated with the same type of material and thickness as the basic zinc coating.

E. The manufactured framework shall be subjected to the PermaCoat® process, a complete thermal stratification coating process (multi-stage, high-temperature, multi-layer) including, as a minimum, a six-stage pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish.

F. The material used for the base coat shall be a (black color) thermosetting epoxy; the minimum thickness of the base coat shall be two (2) mils. The material used for the finish coat shall be a thermosetting “no-mar” TGIC polyester powder; the minimum thickness of the finish coat shall be two (2) mils. The stratification coated pipe shall demonstrate the ability to endure a salt-spray resistance test in accordance with ASTM B117 without loss of adhesion for a minimum exposure time of 3,500 hours. Additionally, the coated pipe shall demonstrate the ability to withstand exposure in a weather-ometer apparatus for 1,000 hours without failure in accordance with ASTM D1499 and to show satisfactory adhesion when subjected to the cross-hatch test, Method B, in ASTM D3359. The polyester finish coat shall not crack, blister or split under normal use.

G. The color of all framework shall be black in accordance with ASTM F934.

H. The strength of Ameristar® PermaCoat® PC-20™ Fence Pipe shall conform to the requirements of ASTM F1043; the minimum weight shall not be less than 90% of the nominal weight (see Table 1). The strength of line, end, corner and pull posts shall be determined by the use of 4’ or 6’ cantilevered beam test. The top rail shall be determined by a 10’ free-supported beam test (see Table 1). An alternative method of determining pipe strength is by the calculation of bending moment (see Table 1). Conformance with this specification can be demonstrated by measuring the yield strength of a randomly selected piece of pipe from each lot and calculating the section modulus. The yield strength shall be determined according to the methods described in ASTM E8. For materials under this specification, the 0.2 offset method shall be used in determining yield strength. Terminal posts, line posts and top/bottom rails shall be precut to specified lengths.

I. End, Corner, Pull, and Terminal Posts: 3 inch O.D. galvanized steel pipe, weighing 5.79 pounds per foot.

J. Line Posts: "H" section weighing 2.70 lbs per lineal foot or 2.5 inch O.D. galvanized steel pipe, weighing 3.65 pounds per foot.

1. Gate leaves up to 6 feet: 3 inch O.D. galvanized steel pipe, weighing 5.79 pounds per foot.
2. Gate leaves over 6 feet and up to 13 feet: 4 inch O.D. galvanized steel pipe weighing 9.10 pounds per foot.

K. Top Rail: 1-5/8 inch O.D. galvanized steel pipe weighing 2.27 pounds per foot.

1. Furnish manufacturer's standard lengths of approximately 20 feet with couplings for each joint.
2. One in each five couplings shall have an expansion spring.
3. Provide means to attach top rail to each gate, corner, pull, and end post.

L. Post Bracing: 3/8" diameter truss rod with adjustable take-up.

2.3 FENCE FABRIC

A. The material for chain link fence fabric shall be manufactured from galvanized steel wire. The weight of zinc shall meet the requirements of ASTM F668, Table 4. Galvanized wire shall be PVC-coated to meet the requirements of ASTM F668. The class of the fence fabric shall be class 1- extruded**.**

B. Selvage: Top edge and bottom edges shall be knuckled.

C. The color of all framework and fabric shall be black in accordance with ASTM F934.

D. Wire Size: The size of the steel wire core shall be 8 gauge.

E. Height and Mesh Size: The fabric height shall be height as shown on drawings with a mesh size of 2 inches.

2.4 FENCE FITTINGS

A. The material for fence fittings shall be manufactured to meet the requirements of ASTM F626. The coating for all fittings shall be the same PermaCoat® color coating system required for the framework (see 2.02); the color of all fittings and fasteners shall be black in accordance with ASTM F934. All fasteners shall be stainless steel.

2.5 ACCESSORIES

A. Tension Wire: 7 gauge galvanized steel wire to match fabric finish.

B. Post Tops: Pressed steel or malleable iron designed as a weathertight closure cap for each type of post. Match finish of post. Galvanized finish shall comply with ASTM A153. Provide set screw retainer. Post top shall allow for passage of top rail where required.

C. Stretcher Bars: One piece lengths equal to full height of fabric with a minimum cross section of 3/16" by 3/4". Galvanized in compliance with ASTM A153.

1. Provide one stretcher bar for each gate post and end post, and two stretcher bars for each corner and pull posts.
2. Provide stretcher bar bands required for securing stretcher bars to posts at 14-inch on center spacing. Bands shall be heavy pressed steel or malleable iron galvanized per ASTM A153.

D. Gate Hinges: Non-lift-off type offset to permit 180° gate opening. Fabricated from pressed steel or malleable iron galvanized per ASTM A153. Provide one pair of hinges of sufficient strength to support gate size for each gate.

E. Gate Latch: Plunger-bar type to permit operation from either side. Provide padlock eye as integral part of latch. Materials shall be galvanized steel conforming to ASTM A153.

F. Wire Ties: Ties for attaching fabric shall be as follows:

1. Attachment to H-section Posts: 6 gauge steel wire clips.
2. Attachment to Tubular Posts: 9 gauge steel wire at 14" O.C.
3. Attachment to Rails and Braces: 9 gauge steel wire at 24" O.C.
4. Attachment to Tension Wire: 11 gauge hog rings at 24" O.C.

2.6 SWINGING GATE

A. Material: Swing gates shall be manufactured and coated to meet the requirements of ASTM F900. Slide gates shall be manufactured to meet the requirements of ASTM F1184. The color of all gates shall be black in accordance with ASTM General: All structural shapes shall conform to ASTM A123 for galvanized coating.

B. Fabrication: Fabricate perimeter frames of 2 inch O.D., galvanized steel pipe weighing 2.72 pounds per foot minimum or as required.

1. Provide additional horizontal and vertical members necessary to proper gate operation and for attachment of fabric, hardware, and accessories.
2. Assemble gate with weld or fittings and rivets as required for rigid connections.
3. Fabricate with same fabric as fence. Install fabric with stretcher bars at vertical edges and tie wires at top and bottom edges. Attach stretcher bars to frame a 14 in. O.C. maximum.
4. Attach hardware with rivets or by other means which will provide security against removal or breakage.

C. Diagonal Cross-Bracing: Fabricate with 3/8" diameter galvanized adjustable length truss rods where necessary to provide frame rigidity without sag or twist.

D. Accessories: Provide roller supports and side latches for gates over 5 ft. in length. Provide hinges, latches, center stops, keepers and necessary hardware. Latches shall permit padlocks.

2.7 CONCRETE

Class B concrete (minimum 2500 p.s.i.), maximum 3" slump, and maximum 1" aggregate.

PART 3 - EXECUTION

3.2 EXAMINATION

Verify site conditions are acceptable for start of work. Start of Work of this Section will indicate Contractor's acceptance of existing conditions.

3.3 PREPARATION

Take field measurements as necessary and adjust layout as directed.

3.4 INSTALLATION

A. Posts: Set posts vertical and plumb in concrete footings. Allow to cure at least 72 hours. Support posts until concrete footings have set-up.

B. Excavation: Holes for footings shall be excavated by drilling or auguring to approximately 3 in. below bottom of post and to a minimum of 3 times the diameter of the post member.

C. Depth of Footings: Posts shall extend a minimum of 36 inches (plus an additional three inches for each one foot increase in the fence height over six feet) below finished grade in firm, undisturbed soils and shall extend deeper as necessary for proper support in disturbed or soft soil conditions or for proper structural support of heavy lateral loads.

D. Concrete Footings:

1. Construct a concrete footing of sufficient size to support lateral loads. Compact thoroughly so as to be free of voids.
2. Extend concrete 2 inches above finished grade and trowel top of footing smooth, sloped away from post for positive drainage.
3. At gate posts, concrete footing shall extend to the underside of the bottom hinge.
4. Set stops, sleeves, and other accessories into concrete as required.

E. Rails and Braces: Assemble structural members in accordance with approved shop drawings. Install braces such that posts are plumb when diagonal rod is under proper pressure.

F. Tension Wire: Install prior to stretching fabric and tie to posts with wire ties or approved clips.

G. Fabric:

1. Leave 2 inches between bottom of fabric and finished grade except where fabric is intended to extend into concrete.
2. Pull fabric taut and tie to posts, rails, and tension wires.
3. Install fabric on security side of fence and anchor to framework such that fabric remains in tension after pulling force is released.
4. Thread stretcher bars through and secure to posts with bands at 14 inches on center maximum spacing.
5. Tie Wires: Use U-shaped clips of tie wire securely fastened around posts clasping post and fabric firmly. Bend ends of wire to minimize hazard to person and clothing.

H. Fasteners: Install nuts for stretcher bars and hardware bolts on side of fence that is opposite of the fabric.

I. Gates: Install plumb, level and secure for full opening without interference. Install ground-set items in concrete for anchorage as recommended by the fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.

END OF SECTION 32 31 00

LANDSCAPE MITIGATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section includes, but is not limited to, exterior landscape planting, which comprises of materials, finish grading, soil preparation, and planting trees, shrubs, groundcovers, and grasses, and installation of growing garden area. Warranty for work is included.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this section.

B. Related sections: The following sections, and others, contain requirements that relate to this section:

31 20 00 Earthwork
31 25 15 River Bank Protection & Erosion
32 92 00 Tree Protection

Wetland and Mitigation Documents

Civil Engineering

1.3 SUBMITTALS

All information to be presented in a legible typewritten format and corresponding drawings or graphs.

A. Topsoil, Compost, Bark, Arbor Chips: for planting beds, compost and general lawn areas and mulch

1. Supply 2 quantity, 1 pound of each clearly labeled with date, type, and supplier in clear plastic bag to be reviewed for approval or not. One to leave at job site. One to be delivered to Project ecologist for review.

2. Soil: Furnish representative soil analysis to approved qualified independent soil testing agency. Report to address suitability of all for growth of applicable planting material, PH, organic and inorganic matter, deleterious material, and mineral and nutrient content of soil, sieve. State recommended execution and quantities of soil amendments and organic matter to be added to produce a satisfactory topsoil for plant growth and vigor. Soil to have good drainage characteristics.

a. Soil testing and fees to be the responsibility of the contractor. Any retesting or clarifications is to be the responsibility of the contractor to meet client approval.

B. Fertilizer and Other Planting Products

1. Fertilizer shall only be used if approved by the project's ecologist, Wetland Resources, Inc.
2. Supplier and supplier type designation for all fertilizer and commercial products.
3. Product certificates signed by manufacturer certifying that their products comply with specified requirements.

C. Plants

1. Furnish information on plants, including, but not limited to: supplier, actual location sourced from, quantity, sizes, and types. Provide pictures of trees prior as requested. Submittals to be prior to delivery.
2. Provide schedule date(s) for plant delivery with one week notice and information on what area of project plants will be installed at. At delivery, supply owner representative with order showing size and quantity delivered.

D. Grass:

1. Seed: Certification of grass seed from seed vendor for grass- seed mixture stating the botanical and common name and percentages by weight of each species and variety, and percentages of purity, germination, and weed seed. Include the year of production and date of packaging.

E. Landscape Schedule:

1. Planting schedule indicating anticipated dates for each type of landscape work.
2. Include anticipated maintenance schedule during construction and for warranty period.

F. Planting Maintenance:

1. Maintenance instructions recommending procedures to be established by School District for maintenance period of one year. Submit three months prior to expiration of required maintenance and warranty period to be reviewed. Contractor to include supplier and product information for all landscape material.
2. Temporary irrigation system shall be bidder designed. Provide a temporary, above ground irrigation system to be installed to ensure all restoration planting areas receive sufficient water. The irrigation system must include a programmable timer. Water will be supplied from an existing outdoor faucet on the adjacent building or other source agreed to by the Issaquah School District. System shall be in place for the 1 year maintenance and warranty period and be removed by contractor once the maintenance period has expired.

G. (Sub)Contractor Qualifications:

1. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other pertinent requested information. Contractor must have a minimum of 5 years' experience in similar landscape work in material, design, and extent of the project.

H. As-Installed documents:

1. Note on legible drawing any changes in planting, to be include but not limited to locations and or plant types, sizes, and quantity.

1.4 QUALITY ASSURANCE, DELIVERY, STORAGE, HANDLING

A. Contractor:

1. Contact information to be exchanged.

2. An experienced full-time field supervisor must be on the project site during times that any landscaping activities, including when deliveries are in progress.

B. Material: Materials furnished should be products from suppliers specializing in that resource. All materials to meet governmental codes, restrictions, and conform to approved standards.

C. All packaged material to be clean, dry, and have manufacturer's certified analysis. Deliver packaged materials in containers showing weight, analysis, and name of manufacturer in original and undamaged condition. Protect materials from deterioration, theft, and vandalism while stored on site. Provide warning labels on all necessary materials. Keep material dry.

D. Contract Documents: The drawings, specifications, and other documents are not intended to control the method of performing the work, but only the requirements as to the quality of the completed project. The contractor assumes the entire responsibility for the proper methods of execution of work to achieve the desired results.

1.5 DELIVERY, STORAGE, AND HANDLING, PLANT INSPECTION

A. Packaged material: Store in clean dry area. All packaging to be clearly labeled.

B. Plants: Notify Owner Representative of delivery date for plant material one week in advance. All material is to be inspected prior to placement. Provide cover over all root balls with bark mulch or compost and water all plants. Provide list and quantity of plant material to be inspected prior to site inspection.

1.6 PLANTING MATERIAL

A. All plant material to comply with the current edition of American Standard for Nursery Stock ANSI. Plant material to be Washington Grade No.1 as per State of Washington Department of Agriculture. Botanical and common names conform to industry standards. Plant material to be nursery grown with similar climate conditions.

B. Planting Time

1. Plant only periods which are normal for such work as determined by season, weather conditions and acceptable practice. At the option and on the full responsibility of the Contractor, planting operations may be conducted under unseasonable conditions without additional compensation. Do not plant or prepare beds when ground is excessively frozen or wet, or high winds exist. Hydroseed to be planted approximately April 15th and during spring weather. Contractor is responsible to water it during summer for establishment as needed.

C. Plant inspection

1. All plants are to be inspected prior to placement on site. Provide owner representative with a minimum of one week notice and information regarding plant types and quantity to be delivered. Trees to have canopy untied and in upright position. Remove and replace unsatisfactory material immediately.

1.7 PROJECT/JOB CONDITIONS

A. Utilities

1. Determine location of above grade and underground utilities and perform work in a manner which will avoid damage. Hand excavate, as required. Call before you dig, in advance, 1-800-424-5555.

2. Contractor shall be cognizant of all utility lines and underground obstructions, on property and adjacent areas, and shall become familiar with all utility, irrigation, mechanical and electrical plans so that its digging and or drilling operations do not damage lines. Contractor shall coordinate with Owners Representative to determine new utilities and refer to construction drawings. Any utilities shown on the landscape plans are schematic only.

B. Other Property

1. Maintain grade stakes or any marks for various construction endeavors by others. Do not remove unless mutually agreed upon with all other parties.

2. Repair or replacement by original installer shall be made at contractor’s expense for all existing building, equipment, underground utilities, staking, irrigation equipment, paving , surfacing, stairs and or forms damaged as a result of contractor’s operations before final payment is made.

C. Excavations

1. When conditions detrimental to plant growth are encountered such as rubble, adverse drainage or soil conditions, or obstructions, notify project ecologist and Owner’s Representative before planting. Report work under tree canopy or if tree roots are in excavated areas. Protect existing plant material from damage. Damaged material to be replaced by contractor.

D. Work Areas

1. Confine work areas designated by the contract. If additional storage space is needed, obtain permission from Owner's Representative. Unnecessary material is to be removed immediately from site.

2. Keep all areas clean daily.

E. Coordination and Scheduling

1. To be responsibility of contractor. Confirm with Owner's Representative if required or necessary.

1.8 PROTECTION OF TREES, SHRUBS, GROUNDCOVER, AND GRASS

A. Existing Trees and Shrubs

1. Do not disturb existing vegetation outside of project limit lines.

2. Carefully protect existing trees and shrubs to remain during the course of construction against cutting, breaking or skinning of roots, skinning or bruising of bark, breaking of branches. Where construction occurs within the drip line, work shall be done by hand and any roots encountered, if necessary, shall be cut cleanly and kept moist. Do not cut roots larger than 1" in diameter. Refer to tree preservation information, site drawings, and coordination with Owner Representative to confirm protection of trees.

3. The contractor shall be liable for injury damage or loss to existing plants during delivery or construction operations. In the event of injuries to the crown, trunk or root system of existing trees and shrubs resulting from the contractor's failure to protect them (the just value of which is determined by the Valuation of Landscape Trees, Shrubs, and Other Plants, current edition) damages shall be deducted from the total amount due the contractor. Any replacement of plants or grass shall be equal to or better than originally existing. Warranty period of one year will apply.

B. Reuse of existing material

1. Existing shrubs and groundcover type of plants that will be removed due to construction may be used for infill planting. Owner Representative will identify material to be reestablished on site. Removal, replanting and maintenance for these is the responsibility of the contractor.

C. Grass

1. Protection of existing or newly planted grass is the responsibility of the contractor. Repair any damage promptly.

1.9 MAINTENANCE

A. General Maintenance

1. All planting beds and planting materials to be maintained during construction. Weeding, watering, and maintaining plants is the responsibility of the contractor. Cleaning and maintaining areas affected by work, such as road, pathways, sidewalks, and other areas to be accessible while construction is in progress, is part of the maintenance.

B. One-year maintenance

1. Maintenance shall continue for one year after final acceptance of planting and irrigation. This maintenance shall include but not limited to manual weeding, organic/leaf debris removal, re-staking trees, removing stakes, re-mulching, replacing dead or dying plants, adjusting irrigation schedule.

2. The maintainer shall provide to the School District a schedule of items performed: such as fertilizing, weeding, and irrigation repairs.

1.10 FIELD QUALITY CONTROL

A. Grading Inspections:

1. Rough Grading: Inspected and approved by the civil engineer, project ecologist project ecologistand Owner's Representative prior to placing topsoil.

2. Finish Grading: Inspected and approved by Owner's Representative and project ecologist prior to planting.

3. Existing soil and imported topsoil shall be clean of roots, plants, sods, stones, soil clumps, clay lumps, and other extraneous materials harmful or toxic to plant growth.

1.11 WARRANTY

A. Planting, grass, and Irrigation and Installation Warranty

1. Materials and products provided shall have a one-year warranty after final acceptance of the plantings and irrigation. This will include any defects in materials or installation. No partial approvals will be given.

2. The warranty will include replacing plant material, in a timely manner, as originally specified if they are not in good, healthy and flourishing condition. Rejected plants are to be removed from site immediately. Replaced plants will require an additional one-year warranty. Any installation defects will need to be fixed. Overseeding any areas that are bare of 10% grass germination are to be re-prepped and reseeded. Contractor to ensure establishment.

3. The School District will perform a one-year warranty acceptance walk thru.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. General

1. Topsoil and planting mix shall be free from debris, weeds, parts of weeds, weed seeds, stones, foreign matter, and other extraneous materials harmful to plant growth. All soil to meet regulation standards by Washington state.

2. Ph range of 5. 5 to 7

3. To be a natural, fertile, and friable sandy loam 3 way mix consisting of a minimum of 1/3 composted organic matter, and having good drainage characteristics.
4. All topsoil, site or imported, to have a complete soil analysis is to be prepared from a certified testing laboratory to determine textural class, nutrient content, ph, soil structure . Recommendations for fertilizer, amendments, and organic matter to be provided.
5. Soil alterations to be made at contractor's expense, and a new soil test is to be submitted verifying topsoil quality.
6. Approval required by Owner's Representative and project ecologist for soil alterations and before installations.

B. Site Soil

1. Surface soil stockpile on site, to be screened, altered, and amended as required per soil test to produce an approved topsoil. Screen through a 1-inch or finer screen before installation. Provide weed inhibition.

C. Imported Topsoil

1. Planting Beds: Shall consist of 2/3 soil (sandy loam consisting largely of sand) and 1/3 organic matter by volume. The 3 way mix shall have a pH range of 5.0 to 6.5, with dolomite limestone added to achieve this range.
2. Indicate source of topsoil and obtain approval before hauling to site.

D. Composted Organic Material

1. Composted yard debris composted at a minimum of 140 degrees for a minimum of 6 months. No weed seeds shall be present. Compost to consist of 100% recycled material and meet class "AA" standards.
2. Compost shall have a pH of 5.5 t0 7.5, no finer than ¼" and no greater than ½", shall be hot composted as established by the EPA, and have a maximum carbon to nitrogen ration of 40:1.

2.2 SOIL AMENDMENTS

A. Compost Organic Material:

B. Lime:

1. Fine grind natural dolomite lime shall be retained by Taylor standard sieve as follows: No. 20 sieve retains 0 percent, No. 100 sieve retains 25 percent.

C. Sand:

1. Coarse, clean, fresh water washed, free of toxic materials

D. Nutrient Amendments:

1. Add per recommended by the Topsoil Analysis.

2.3 FERTILIZER

A. Sanctuary 3-3-4

1. If approved by the project ecologist natural based slow release fertilizer to be installed at time of planting: Approved brand conforming to applicable state fertilizer laws. Uniform in composition, dry, free flowing, delivered to the site in original unopened bags, each bearing the manufacturer's guaranteed analysis.

2.5 LAWN

A. Seed General Requirements

1. Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysis' "Rules for Testing Seed" for purity and germination tolerances.
2. Minimum pure seed content of 98%.
3. Minimum germination of 90%.
4. Maximum weed seed of 0.5%.

2.6 MULCH and MISC. COVERAGE

A. Bark Mulch

1. Aged, medium ground, dark bark mulch. Planting beds, and tree perimeters: Shall be of uniform color free from weed, seeds, sawdust and splinters and shall not contain resin, tannin, wood fiber, salts or other components detrimental to plant life.

B. Arbor Chip

1. To be used within native restoration areas, wetland plantings and buffers (refer to wetland information), tree replacements within wetland restoration areas. To be installed for outdoor educational area pathways and open space.

PART 3 - EXECUTION

3.1 GENERAL

A. Examination of areas to receive landscaping to comply with requirements and conditions affecting performance and visual appeal of planting.

B. Coordinate the work in this section with underground irrigation system and drainage.

C. Notify the project ecologist of all subsurface draining or soil conditions detrimental to growth or survival of plant material.

D. Remove all waste material from site. Dispose properly. Keep work areas clean daily.

3.2 WEED CONTROL & INVASIVE MATERIAL

A. Manual weed control only. Remove all weeds and their roots on all plants prior to planting. Dispose of off-site. Removal of weeds within subgrades and topsoil prior to planting or placing new topsoil is to be done manually by contractor.

B. Invasive species on site (existing areas and newly planted areas) are to be removed with root by contractor. This includes but is not limited to Scotch Broom, Ivy, and Himalayan Blackberry Brambles

3.3 GRADING

A. Rough Grades:

1. Confirm that material underneath the planting area is suitable for plant growth. Remove all construction fill and debris to required depths. If conflicts occur, contact Owner's Representative. Additional excavation or amendments may be required. Planting should provide for 18"-24" of initial root growth. Confirm that beds will drain adequately prior to additional soil installation. Planting beds to have a minimum of 36" of soil at shrubs and 48" at areas with trees, including minimum required depth of approved topsoil.

2. Amending existing soil with compost as recommended by soil analysis may be acceptable with Owner's Representative approval.

3. General lawn areas areas: install 4" organic compost as an amendment to soil. Till to an 8" depth. Confirm subsoils is adequate for growth without adding additional topsoil or other amendments. Roughen soil surface to limit runoff rates.

4. Inspection: Rough grades shall be inspected and approved prior to finish grading. Contractor to verify that soil does not contain contaminants and debris from other construction activity. All areas to be cleared of weeds, invasive materials, and other debris.

5. Prior to topsoil or compost spreading, thoroughly rototill or scarify all planting and grass areas to a depth of 6". Remove any vegetation, debris, or material greater than 1".

6. Rough grades to provide a smooth surface with positive drainage.

3.3 PLANTING

A. Layout

1. Tree locations to be approved and obtain Owner's acceptance before start of planting work and after final grading approval. Place trees and shrubs in proposed locations for review before planting. Only position plants that can be maintained or planted within 24 hours. Make adjustments as requested.

B. Excavation for Trees and Shrubs and Groundcover

1. Excavate pits and beds with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation. Scarify sides of hole. For balled and burlapped (B&B) trees and shrubs, make excavations at least twice as wide as the ball diameter and equal to the ball depth.

2. For container grown stock, excavate as specified for balled and burlapped stock, adjusting for size of container width and depth.

3. Dispose of unused subsoil after backfilling as specified. Verify that excavated soil can be used for backfill mixture.

C. Planting Trees and Shrubs and Groundcover:

1. All plant material location to be approved by Owner before installation. Owner's representative shall have the right to adjust location.
2. Fill rough sided hole with water. Observe for adequate drainage.
3. If plants are rootbound, loosen roots or cut as appropriate per industry standards.
4. Set balled and burlapped stock on layer of compacted base or planting soil mixture, plumb and in center of pit with top of ball at same elevation or slightly higher after settling has occurred as adjacent finished landscape grades. Untie and remove burlap. Burlap may remain on bottom of tree and partial sides if unable to remove without damage to roots and approval by Owner Representative. All cages and or wire and ties to be removed completely. Remove all pots. Exposed roots to be spread in a natural manner.
5. When set, place backfill around base and sides of ball (approximately 1/3 high), water, and work each layer to settle backfill and eliminate voids and air pockets. Water. Place additionally backfill, making sure to eliminate air pockets. Use handle of shovel or tamp to compact slightly. Do not step around tree to compact soil.. Water again after placing final layer of backfill and correct any settlement that may occur.
6. Plant should be slightly higher than finish grade to allow for settling and positive drainage.
7. Set container grown stock as specified for balled and burlapped stock, except fully remove container.
8. If container stock is root bound, cut vertically along outside of ball, and loosen roots to allow growth outward.
9. Dish top of backfill of trees in grass area to allow for mulching. Dished areas shall have a diameter of at least 3 feet.
10. Mulch
11. Unless otherwise specified by Owner, do not cut tree leaders, and remove any only injured or dead branches, if any. Prune shrubs to retain natural character. Prune, thin out and shape trees in accordance with standard horticulture practice. Any excessively pruned or misformed stock resulting from improper pruning will be removed and replaced.
12. If necessary, apply anti-dessicant to provide an adequate film over trunks, branches, stems, twigs, and foliage,
13. Immediately after planting support trees as required by rootball anchors or guys and stakes. Orient stakes to resist the force of wind.

D. Planting Groundcover:

1. Space plants as scheduled.

2. Dig holes large enough to allow for spreading roots and backfill with planting soil. Loosen any rootbound plants. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crown of plants with wet soils.

3.3 FERTILIZER

A. Application and Maintenance:

Fertilizer shall only be used if approved by the project ecologist.

3.4 MULCH

A. Arbor Chips

1. For areas affected by construction and designated on plans within restoration planting areas. Clean and grade areas designated.

2. Groom to a uniform smooth surface.

B. Mulch around plants within existing lawn and native areas are to have 4” deep of mulch at a minimum of 3’ diameter. No grass is to be within the new tree planting root areas.

3.5 GRASS PLANTING

A. General Preparation:

1. Prepare areas as noted in the grading section. Install soil and amend areas as required. Areas for grass (hydroseed or sod) to receive 4” minimum of with fine decomposed compost. Remove all quarry spalls and construction debris. Confirm that total soil depth is 12” minimum of noncompacted depth. Install additional topsoil as needed to achieve proper elevations.

2. Limit preparation to areas which will be planted promptly after preparation.

3. Float grass area to create a smooth, uniform surface free of bumps or depressions. Remove any material greater than 2”. All grades shall run smoothly from one another and allow for positive drainage.

4. Restore grass areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

5. Refer to amendment, grading, and surface preparation notes on sheet L1.7, and wetland information.

B. Examination:

1. Notify Owner’s Representative 24 hours before seeding is scheduled. Get approval for designated areas.

C. Protection

1. Protect areas not to be seeded from overspray or damage from access.

2. Grass protection: Identify seeded or sodded areas with stakes, string and flags around periphery. Set string height 12” minimum to 36” maximum. Maintain stakes, string and flags until grass is useable.

3. Temporary chain link fencing may be required. Contractor is responsible for fencing material. Any damage done to area will be the responsibility of the contractor to fix.

3.7 MAINTENANCE

A. General

1. Begin maintenance immediately after planting. One year maintenance is to begin after final acceptance of planting and irrigation, Maintenance shall include but not limited to keeping areas free of trash and debri, remulching, manual weeding, leaf and organic debri removal, adjusting of irrigation and controller, restaking of trees and removal of stakes as determined by school district, replacing and replanting of dead or dying plants, edging grass areas.

2. Provide a maintenance log to school district. Prior to any plant replacement, verify that growing conditions are suitable.

3. Coordinate walk thru and approval with School District prior to one year warranty acceptance.

B. Grass Maintenance

1. Maintenance to be performed by contractor until completion and acceptance of entire project. Acceptance of seeded grass shall be based on a uniform, smooth, weed-free stand of grass. Areas of 6” or more with less than 90% lawn or do not have a uniform stand of grass shall be redone. Reseeding of any areas shall be done and coordinated by contractor.

2. Water, fertilize, remove leaves, weed, trim edges, replant, by manufacturer and seasonal conditions. Confirm schedule with Owner’s Representative.

3. All barriers to remain intact during establishment period. Contractor is responsible to repair damage if barriers are inadequate.

4. Edges of grass shall be kept smooth and uniform and weeds to be removed. Grass is to be removed for 3’ diameter around trees. Contractor is responsible for addition or removal of grass in planter areas.

5. Coordinate times of maintenance with Owner’s Representative.

3.8 CLEANUP AND PROTECTION

A. Cleanup

1. During landscape work, keep pavements clean and work area in an orderly condition. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the site.

2. Prior to being considered ready for inspection, provisional or final, the Contractor shall replace dead, diseased or damaged plant material, clear the job site of all debris, clippings, trimmings and discarded materials from any source whatsoever; clean adjacent areas to the extent that work under this Contract may scatter litter; tighten all guys; flush paved areas and present project in a neat, clean, and orderly fashion.

B. Protection

1. Protect landscape work and materials from damage due to landscape operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods to prevent trespass.

2. Provide proper safeguards.

3. Protect areas from damage from erosion.

4. Treat, repair or replace damaged landscape work as directed.

3.9 INSPECTION AND ACCEPTANCE OF PLANTINGS

A. Maintenance log

1. Submit maintenance supplies and materials used for project in a typewritten legible form if requested, there will be a meeting of the School District representative and contractor to discuss maintenance issues. Have available a typewritten form of maintenance performed.

B. Criteria

1. When landscape work is completed, including maintenance, Project ecologist and Owner’s Representative will, upon request make an inspection to determine acceptability.

2. Landscape work may be inspected for acceptance in parts only if agreeable to by Owner’s Representative, provided work offered for inspection is complete, including maintenance.

3. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by Owner’s Representative and project ecologist and found to be acceptable. Any defects in materials or workmanship to be fixed before approval.

C. Acceptance

1. Request an inspection: Notify at least two weeks before anticipated review.

2. Acceptance of work: upon completion of all repairs, the project ecologist shall verify acceptance with the Owner’s Representative. After final acceptance of the planting and irrigation, the one-year warranty and maintenance shall begin.

3.10 GUARANTEE AND REPLACEMENT

A. Duration

1. Plant material and grass shall be guaranteed for a period of (1) year from the date of final acceptance of planting and irrigation. All plants and grass to be in good, healthy and flourishing condition.
2. Dead or dying plant materials during the guarantee period shall be noted and replaced in a timely manner by the Contractor at no expense. Any grass areas with more than 6” area of bare dirt is to be amended and reseeded by contractor.
3. Contractor shall not be responsible for replacing plants destroyed, disappeared, or damaged by vandalism, vehicular accidents, or unusual weather conditions.
4. It is recommended that the Contractor discuss any concerns with the Owner’s Representative during or before the warranty period has expired.

END OF SECTION 32 90 00

TREE PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Protection of existing trees on site.

1.3 RELATED SECTIONS

A. Section 31 22 00 - Earthwork

B. Section 32 90 00 - Landscape

1.4 QUALITY ASSURANCE

A. Perform tasks with personnel experienced in the work of this Section under direction of a skilled experienced foreman.

1.5 SUBMITTALS

A. The method of tree protection as specified is suggested as a means to accomplish the work. Alternate methods for tree protection may be submitted to the Architect for review prior to implementation. Alternate procedures will be evaluated on their ability to protect existing trees with the highest survival rate possible.

1.6 PRE-CONSTRUCTION MEETING

A. A pre-construction meeting with a consulting arborist may be determined to be necessary. Architect will provide details to Contractor.

PART 2 - PRODUCTS

2.1 PLANTS

A. See plans for trees requiring protection.

2.2 REPLACEMENT MATERIALS

A. Replacement plants will be installed per the Landscape Mitigation Plan.

2.3 FENCING

A. Tree protection fencing shall be Burke Barrier Group Order No. 238 or approved equal. The Burke Co. 8639 S. 190th, Kent, WA 98031. Telephone: (206) 624-4656.

PART 3 - IMPLEMENTATION

3.1 TAGGING

A. Provide numbered tags to identify each tree indicated to be saved on the STRP included in the drawings.

3.2 PROTECTION

A. Tree Protection Zone (TPZ): The tree protection zone is the area around a tree in which no construction activity, traffic or storage of materials occurs. Damage to tree roots can significantly affect tree health and longevity. The root zones of these trees include the grass-parking strip, the sidewalk, and the street. Only a very small percentage of this area is covered in organic matter. This area is most vulnerable to compaction from foot and vehicle traffic. Any work done within the TPZ shall be done by hand with a consulting arborist present.

B. Installation: Prior to commencing any site work, erect and maintain protective fencing around existing trees and vegetation identified by on drawings as shown on drawings. Tree protection fencing shall be approved by the local jurisdiction inspector prior to commencing any site work.

C. Location: Fencing to be placed on projected ‘drip line’ of each tree requiring protection.

D. Restrictions: Areas within protective fencing may be cleaned of unsightly debris by hand methods only, and may not be used for any purpose including but not limited to the following:

1. Parking of construction or other vehicles.
2. Circulation routes for persons or vehicles of any kind.
3. Storage of construction materials.
4. Storage of portable toilets.

E. Excavating for underground utilities - Plans for excavation must be examined by a consulting arborist. An exploratory dig will be conducted to determine the quantity of roots that the excavation would destroy, and the likely effect on the trees.

F. Construction phase monitoring - Provide and allow for access to the site for regular, periodic monitoring of trees and the TPZ’s by the consulting arborist if necessary. Arborist may determine that treatment is necessary to maintain the best health of the trees. These additional treatments will be approved and performed on an as-needed basis by the Owner.

G. Replacement and Liquidated Damages: Any tree which is not ordered removed or provided for removal by the documents which is destroyed or damaged to the extent that, in the opinion of the Owner, the continued life of the tree is questionable, or which is disfigured by Contractor because of carelessness, negligence, or for any other reason, shall be removed by the Contractor at his own expense. In addition thereto, liquidated damages will be assessed against the Contractor according to rates set by the International Society of Arboriculture and by methods contained within their publication. Where any tree has been removed which has not been ordered removed or provided for removal by the documents, Owner shall determine cross-section measurement of stump and apply same principles in determining the value with a minimum assessment of $500.00.

3.3 FENCING

A. Install per manufacturer’s instructions. Completely surround all trees and vegetation indicated as requiring protection on the drawings and approved by the Architect.

3.4 DURATION OF PROTECTION

A. Tree protection fencing is to remain in place until all construction is completed, and substantial completion of all phases has been approved. Fencing may be removed upon approval of the local jurisdiction or the owner.

3.5 PRE-CONSTRUCTION MAINTENANCE

A. Pruning maintenance recommendations will reduce the risk of limb failure, improve the appearance and health by removing dead and rubbing limbs, and removing limbs that will interfere with the construction process.

END OF SECTION 32 92 00