

CITY OF MERCER ISLAND

KING COUNTY, WASHINGTON



MERCER ISLAND PARKS & RECREATION DEPARTMENT
LINCOLN LANDING SHORELINE & STORMWATER ENHANCEMENT

BID NUMBER: 21-26

CONTRACT SPECIFICATIONS NOVEMBER 2021

P|N|D ENGINEERS, INC.
1736 4TH AVENUE S
SEATTLE, WASHINGTON 98134
WWW.PNDENGINEERS.COM
206.624.1387

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FOREWORD

THE ITEMS WHICH MAKE UP THE CONTRACT DOCUMENTS ARE AS FOLLOWS:

DIVISION 0

NOTICES, BIDDING REQUIREMENTS, AND AGREEMENT FORMS

Notices, Bidding Requirements, and Agreement Forms have been copied and bound together with the remainder of the Contract Documents to facilitate the bidder's submittal of this proposal and other required documents.

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MEASUREMENT AND PAYMENT

TECHNICAL SPECIFICATIONS

APPENDICES

- A. Prevailing Minimum Hourly Wage Rates
- B. Lincoln Landing: Enhancement Project – Drainage Report
- C. Lincoln Landing Acquired Permits
- D. Vacated Pump Station As-Built

PLANS (Bound Separately)

The Project Manual for the 21-26 Lincoln Landing Shoreline & Stormwater Enhancement for the City of Mercer Island has been prepared under the direction of the following Registered Professional Engineer and Architect.



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 - 1. Prevailing Wages

2. Washington Department of Labor and Industries Policy Statement (Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)
- B. Lincoln Landing: Enhancement Project – Drainage Report (draft)
- C. Lincoln Landing Acquired Permits
1. City of Mercer Island Shoreline Substantial Development Permit
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PLANS (Bound Separately)

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NOTICES

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Advertisement for Bids City of Mercer Island

Project Title: Lincoln Landing Shoreline & Stormwater Enhancement

Bid Number: 21-26

Engineers Estimated Cost: \$414,000 (excludes WSST)

Sealed bids will be received, not sent, electronically by the City until **2:00 PM on December 14, 2021**. Due to the COVID-19 pandemic and the temporary closure of the City Hall building, bidders shall submit their bids in PDF format to the Public Works email address at: publicworks@mercerisland.gov.

IMPORTANT NOTES:

- 1) A mandatory pre-bid walk through will be held at Lincoln Landing Park at 2:00PM on Tuesday, November 30, 2021. The City, at its sole discretion, may schedule an additional pre-bid walk through. Contact Paul West, CIP Project Manager if interested. Bids submitted by bidders without attending a walk-through will NOT be accepted.
- 2) Bidder questions are to be directed to Paul West, CIP Project Manager, by email only at paul.west@mercerisland.gov. The City will receive questions until **12:00pm on December 8, 2021**. Questions received after this date will not be answered. All questions and responses will be posted in an addendum by **December 10, 2021** to the Builders Exchange site.
- 3) There will be no public bid opening for this project; bid results will be posted on the City's web page at: <https://www.mercerisland.gov/rfps>.

Work to be performed under this contract includes, but is not limited to: install new sanitary sewer manhole, install stormwater vault, construct boulder stream channel and outfall, remove shoreline bulkhead, regrade shoreline, install irrigation, and relandscape the area. Detailed descriptions of work items are summarized in Section 01 11 00 of the technical specifications.

The City reserves the right to reject any and all bids and to waive minor irregularities.

Plans, specifications, addenda, and bidders list are available on-line through Builders Exchange of Washington, Inc. at <http://www.bxwa.com>. Click on "Posted Projects", "Public Works", "City of Mercer Island", "Projects Bidding". Builders Exchange manages the official bidders list. Bidders are encouraged to register in order to receive automatic email notification of future addenda and to be placed on the official bidders list.

Plans and specifications are also available at the City of Mercer Island website <https://www.mercerisland.gov/rfps>. Addenda may not be available or updated on this website.

A bid deposit in the amount of five percent (5%) of the bid total price must accompany each bid.

The City of Mercer Island, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will

affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR Part 23 will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

Andrea Larson, City Clerk

Published: Seattle Daily Journal of Commerce – 11/17/2021, 11/19/2021, 11/22/2021 and 11/29/2021

City of Mercer Island Instructions to Bidders

1. ELIGIBILITY TO BID:

It is the intent of the City to award a contract to the low responsible bidder. At the time of the bid submittal, the bidder must meet the following bidder responsibility criteria to be considered a responsible bidder. To be eligible to bid, each Bidder must:

- A. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW; and
- B. Have a current Washington Unified Business Identifier (UBI) number; and
- C. If applicable:
 - i. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW; and
 - ii. Have a Washington Employment Security Department number, as required in Title 50 RCW; and
 - iii. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW; and
 - iv. Have an electrical contractor license, if required by Chapter 19.28 RCW; and
 - v. Have an elevator contractor license, if required by Chapter 70.87 RCW; and
- D. Not be disqualified from bidding on any public works contract under RCW 39.06.010, RCW 39.12.050, RCW 39.12.055, or 39.12.065; and
- E. Completed the L&I online training or meet the prior experience requirements in RCW 39.04.350(1)(f); and
- F. Within the three-year period immediately preceding the date of the bid solicitation, not have been determined by a final and binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48 or 49.52 RCW.

A contract shall only be awarded to a Bidder that demonstrates to the City's satisfaction that the Bidder is qualified to perform the Work and is, therefore, a responsible bidder.

2. SUBCONTRACTOR RESPONSIBILITY CRITERIA:

The Bidder must verify responsibility criteria for each first-tier subcontractor, and each subcontractor of any tier that hires other subcontractors must verify responsibility criteria for each of its subcontractors. Upon request of the City the Bidder shall promptly provide documentation to the City demonstrating that the subcontractor(s) meets the subcontractor responsibility criteria below. The requirements of this section apply to all subcontractors regardless of tier.

By the time of the Bid Submittal, the Bidder shall verify that each of its subcontractors meets the following bidder responsibility criteria:

- A. Have a current certificate of registration in compliance with chapter 18.27 RCW; and
- B. Have a current Washington Unified Business Identifier (UBI) number; and
- C. If applicable:
 - i. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW; and
 - ii. Have a Washington Employment Security Department number, as required in Title 50 RCW; and
 - iii. Have a Washington Department of Revenue state excise tax registration number as required in Title 82 RCW; and
 - iv. Have an electrical contractor license, if required by Chapter 19.28 RCW; and
 - v. Have an elevator contractor license, if required by Chapter 70.87 RCW; and
- D. Not be disqualified from bidding on any public works contract under RCW 39.06.010, RCW 39.12.050, RCW 39.12.055, or 39.12.065; and
- E. Completed the L&I online training or meet the prior experience requirements in RCW 39.04.350(1)(f); and
- F. Within the three-year period immediately preceding the date of the bid solicitation, not have been determined by a final and binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW
- G. Key personnel must hold an appropriate license in the applicable discipline.

3. EXAMINATION OF PLANS, SPECIFICATIONS AND SITE:

Each bidder is instructed to examine the Plans, Specifications, Addenda, the site of the proposed improvements, and conduct any other examination and investigation which the bidder may desire to make as to the accuracy of the nature of the work and the difficulties to be encountered. The Bidder shall be responsible for all costs associated with these additional examinations including all restoration work and damages which may be a result of such investigation. Bidders shall consider Federal, State, and local laws and regulations that may affect cost, progress, or performance of the work.

4. ADDITIONAL INFORMATION:

All questions about the meaning or intent of the Contract Documents are to be directed to Paul West, Project Manager in writing by email at paul.west@mercerisland.gov. No telephone questions will be accepted or considered. Bidders should include a reference to the specific. Specification Section and paragraph number and/or Drawing number in the Contract Documents and should quote the passage being questioned.

The City will receive questions until **12:00pm on December 8, 2021**. Questions received after this date will not be answered. All questions and responses will be posted by **December 10, 2021** to the Builders Exchange site. The City will delete bidder names from the text of question(s) and answers being sent.

Interpretations or clarifications considered necessary by the City in response to such questions will be issued by Addenda. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5. WAGES:

This Contract is subject to Chapters 39.12 and 49.28 RCW, amendments thereto and regulations issued thereunder, relating to prevailing wages, benefits and other requirements. Bidders shall examine and be familiar with such requirements. 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 or a failure to include in Bidder's price adequate increases in such wages during the performance of this Contract. A copy of the most recent prevailing wage schedule is in the Appendix of the specifications. Current prevailing wage rates for King County can be obtained from the Washington State Department of Labor and Industries at <https://secure.lni.wa.gov/wagelookup/>.

6. PROGRESS AND COMPLETION:

Time is of the essence for this Project. Progress and completion of the Work shall comply with all requirements herein, and intermediate and final completion dates as may be set forth in the specifications. The submission of a bid constitutes the Bidder's acknowledgement that such progress and completion requirements have been taken into account in formulating a price for this Work.

7. PREVENTION OF ENVIRONMENTAL POLLUTION AND PRESERVATION OF PUBLIC NATURAL RESOURCES:

If awarded the Contract, the Bidder shall fully comply with all such environmental protection laws, ordinances and regulations dealing with prevention and environmental pollution and the preservation of public natural resources that may be applicable to this Project. The cost of such compliance shall be included in the bid prices.

8. BID FORM:

The Bid Form is included in the Contract Documents. The Bid Form must be completed in ink. Bids that contain omissions, erasures or irregularities of any kind may be rejected. Any qualification, addition, limitation or provision attached to or contained in a bid may render the bid non-responsive and not eligible for award. No oral, facsimile, telegraphic or telephonic bids or modifications will be considered.

All bids shall be signed by the Bidder, or the Bidder's authorized representative. If the bid is made:

- A. By an individual, the Bidder's name, signature, and address must be shown;
- B. By a partnership or joint venture, it shall contain the names of each partner, the mailing address of the partnership or joint venture and shall be signed in the firm name, followed by the signature of the person signing, indicating that person's position in the partnership or joint venture;

- C. By a corporation or limited liability company (“LLC”), the name of the state under the laws of which the corporation or LLC is chartered, the name and post office address of the corporation or LLC and the title of the person who signs on behalf of the corporation or LLC must be shown.

Upon the City’s request, the Bidder shall provide copies of the articles of incorporation, bylaws, resolutions of board of directors, partnership papers, joint venture agreements, and any other documents evidencing the legal status of the Bidder and the authority of the Bidder’s officer or representative who signed the bid on behalf of the Bidder.

The City is not responsible for any cost incurred in responding to this Call for Bids.

9. MANDATORY PRE-BID WALK THROUGH:

A Mandatory Pre-Bid Walk Through is scheduled on Tuesday, November 30, 2021 at 2:00pm. Meet at Lincoln Landing Park located at 76th Ave SE, Mercer Island, WA 98040. The City, at its sole discretion, may schedule an additional pre-bid walk through. If interested, contact Paul West, CIP Project Manager. Attendance at the Pre-Bid is mandatory for prime bidders and highly recommended for subcontractors. There will be a sign-in sheet and the prime bidder will need to acknowledge their attendance on the Bid Form. Bids from entities not represented at the Pre-Bid will not be considered for contract award.

During the pre-bid walk-through meeting, all conversations are considered informal and are not contractually binding unless stated in the contract bid package, contract drawings, or modified by a written addendum. The order of precedence is written addendum, contract drawings, and lastly contract specifications.

10. ACKNOWLEDGEMENT OF ADDENDA:

Each Bidder shall include on the Bid Form specific acknowledgment of receipt of each Addendum issued by the City during the bidding period. If the Bidder does not specifically acknowledge each addendum, the City may reject the bid as non-responsive unless the City determines from delivery records or from inclusion of information in the bid of information contained in the addenda that the Bidder received constructive notice of the addenda.

11. BID SECURITY:

The Bid shall be accompanied by a bid deposit in the amount equal to at least 5% of the Total Bid Price. The bid deposit shall be in one of the following formats and made payable to the City:

- A. A bid guaranty bond, in accordance with and using a form acceptable to the City which contains provisions substantially similar to those in the bid bond form included with the Contract Documents, duly completed by a guaranty company authorized to carry on business in the state of Washington; or
- B. A postal money order, a certified check, or cashier’s check drawn upon a banking institution with a branch office in the state of Washington.

The surety signing the bid guaranty bond shall be registered with the Washington State Insurance Commissioner, and the surety’s name shall appear in the current Authorized Insurance Company List in

the State of Washington published by the Office of the Insurance Commissioner. A Power of Attorney must accompany the bid guaranty bond and must appoint the surety's true and lawful attorney-in-fact to make, execute, seal and deliver the bid guarantee bond. Failure to submit the required bid security with the Bid shall render the bid non-responsive and the Bid shall be rejected.

12. NON-COLLUSION:

Each bid shall be accompanied by a signed Non-Collusion Declaration in accordance with, and using the form provided by the City. Failure to submit a signed Declaration with the Bid shall render the bid non-responsive and the Bid shall be rejected.

More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the City believes that any Bidder is interested in more than one Bid for the work contemplated, all Bids in which such Bidder is interested will be rejected. If the City believes that collusion exists among the Bidders, all Bids will be rejected.

13. DELIVERY OF BID:

Each Bid shall be submitted in PDF format via electronic transmission to the Public Works email address at: publicworks@mercerisland.gov. The City will not consider bids received after the time fixed for opening bids in the Advertisement for Bids. A Bid is deemed submitted as evidenced by the receipt date and time shown in the source code of the email received by the City's computer system. Contractors accept all risk of late delivery, regardless of fault. Any submittal received after the due date and time shall be deemed non-responsive and will eliminate their Bid from any further consideration. All respondents will receive an email confirmation within the next business day indicating their submittal has been successfully received.

The submission of a Bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of these instructions, that without exception the Bid is premised upon performing the work required by the Contract Documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

14. MODIFICATION OF BID:

A modification of a Bid will be considered only if the modification is received prior to the time announced for the opening of Bids. All modifications shall be made in writing executed and submitted in the same form and manner as the original Bid.

15. RETURN OF BID SECURITY:

After the bid prices have been compared, the City may return the bid security if, in the City's judgment, the Bidder would not be considered for award. All other Proposal Guarantees will be held until the Contract and the Performance Bond of the successful bidder have been executed.

16. EVALUATION OF BIDS AND BID ERRORS:

After opening the Bids, the City will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid

item, the price per unit will control. The total of extensions, corrected where necessary, will be used by the City for award purposes.

Irregular Bids:

- A. A Bid will be considered irregular and will be rejected if:
 - i. The authorized Bid Form furnished by the City is not used or is materially altered;
 - ii. The completed Bid Form contains any unauthorized additions, deletions, alternate bids, or conditions;
 - iii. The bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
 - iv. A price per unit cannot be determined from the Bid Form;
 - v. The Bid Form is not properly executed;
 - vi. An executed non-collusion certificate is not provided; or
 - vii. Proper bid security does not accompany the Bid.

- B. A Bid may be considered irregular and may be rejected if:
 - i. The Bid Form does not include a unit price for every Bid item;
 - ii. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the City;
 - iii. Receipt of Addenda is not acknowledged;
 - iv. A member of a joint venture or partnership and the joint venture or partnership submit Bid Forms for the same project (in such an instance, both Bids may be rejected); or
 - v. If Bid Form entries are not made in ink.

Bids will be evaluated by the City to determine which bid is the apparent lowest, responsive bid. Bid

results will be posted on the City's website at <https://www.mercerisland.gov/rfps>.

The City, in its sole discretion, reserves the right to waive minor bid errors, informalities, and immaterial irregularities when it is in the City's best interest to do so.

17. EVALUATION OF BIDDER RESPONSIBILITY:

A Contract shall only be awarded to a Bidder that demonstrates to the City's satisfaction that the Bidder is qualified to perform the Work and is, therefore, a responsible bidder.

- A. Bidder Responsibility Criteria. To be determined responsible, the Bidder must, in addition to satisfying the bidder responsibility criteria listed in Section 1. ELIGIBILITY TO BID above:
 - i. Have adequate financial resources to perform the contract, or the ability to obtain them;
 - ii. Have a satisfactory performance record;
 - iii. Have a satisfactory record of integrity and business ethics;
 - iv. Have the necessary production, construction, and technical equipment and facilities or the ability to obtain them;

- v. Be otherwise qualified and eligible to receive an award under applicable laws and regulations;
 - vi. Be in compliance with training requirements in RCW 39.04.350(1)(f); and
 - vii. Provide a statement in accordance with RCW 9A.72.085 verifying compliance with responsible bidder criteria requirement of RCW 39.04.350(1)(g).
- B. Reference Checking. To assist the City in the review of the Bidder's qualifications, the Bidder shall, within five (5) days of being requested to do so by the City, provide the following information:
- i. Past Experience in Similar Projects. Provide a list of all construction contracts (whether completed or in progress) entered into or performed by the Bidder within the past five (5) years for projects similar in scope, time and complexity to the work called for under this Contract. Provide the names of the contracts, the total contract price, the name of the foreman, the foreman's previous project experience as a foreman on 3 similar construction contracts, and the names and phone numbers of the owners.
 - ii. References. Provide a list of five (5) references. References will be asked to rate performance on the following items: overall impression of the company; firm experience and technical knowledge; foreman experience and quality of work, effective coordination of subcontractors; ability to coordinate and work with utility companies and governmental entities; responsiveness to owner requests; attention to safety; quality and timeliness of submittals, change order proposals, project schedule, schedule updates and other applicable paperwork.

If the Bidder is a joint venture, the Bidder shall submit information for the joint venture if the members have worked together in the past and also information about each member of the joint venture. The Joint Venture Agreement shall be included in the submission.

If the Bidder fails to supply information requested concerning responsibility within the time and the manner specified, the City may base its determination of responsibility upon any available information related to the responsibility criteria or may find the Bidder is not responsible.

The City reserves the right to inspect records, reports and other information which may be maintained by or for the Bidder to the extent necessary, as determined by the City to verify, clarify or otherwise consider the information provided by the Bidder.

18. DETERMINATION OF NON-RESPONSIBILITY:

If the City determines a Bidder to be not responsible, the City will provide, in writing, the reasons for the determination. The Bidder may appeal the determination within ten (10) days of its receipt of the City's determination of non-responsibility by presenting additional information to the City. The City shall consider the additional information before issuing its final determination. If the City's final determination affirms that the Bidder is not responsible, the City shall not execute a contract with any other bidder until two (2) business days after the Bidder determined to be not responsible has received the final determination.

19. CONTRACT AWARD:

If a Contract is awarded, the City will award the contract to the responsible bidder that submits the lowest total responsive bid for the schedule(s) selected by City after bid opening and prior to award.

If the Contract is to be awarded, City will give the successful Bidder a Notice of Award within sixty (60) days after the day of the Bid opening. No other act of the City or others will constitute acceptance of a Bid.

The City reserves the right to request bidders to extend the effective period of their bids.

20. REJECTION OF ALL BIDS:

The City reserves the right to reject any or all Bids at any time up to actual execution of the Public Works Contract, even if there has been an award of the Contract.

Any or all Bids will be rejected if the City has reason to believe that collusion exists among the Bidders.

21. EXECUTION OF PUBLIC WORKS CONTRACT:

The Bidder to whom award is made shall execute a written Public Works Contract with the City on the form provided, shall secure all insurance, and shall furnish all certificates, endorsements and bonds required by the Contract Documents within ten (10) calendar days after receipt of the forms from the City. Failure or refusal to execute the Public Works Contract as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Public Works Contract, the City may award the Contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Public Works Contract, the City may award the contract to the third lowest responsive, responsible Bidder. On the failure or refusal of such second or third lowest Bidder to execute the Agreement, each such Bidder's Bid securities shall be likewise forfeited to the City.

22. BID PROTEST PROCEDURES:

- A. Form of Protest. In order to be considered, a Protest shall be in writing, addressed and delivered to the attention of the project manager at the City of Mercer Island, 9611 SE 36th Street, Mercer Island, Washington 98040. The Protest shall include the following:
- i. The name, address, and phone number of the Bidder protesting, or the authorized representative of the Bidder;
 - ii. A complete, detailed statement of all grounds for protest, supporting authority, and any supporting documentation. Supplemental information will not be considered unless the supplementation contains information not available at the time of protest;
 - iii. The specific ruling or relief requested; and
 - iv. Evidence that all persons with a financial interest in the procurement have been given notice of the Protest or if such persons are unknown, a statement to that effect.
- B. Who May Protest:
- i. Protests based on specifications: Any prospective Bidder.

- ii. Protests following Bid opening: Any Bidder with a substantial financial interest in the award of a Contract.
- C. Time to Protest:
 - i. Protests based on specifications or other terms in the Contract Documents must be received by the City no later than ten (10) calendar days prior to the date established for submittal of Bids.
 - ii. The City must receive protests based on other circumstances within five (5) calendar days after the bids are opened and publicly read.
 - iii. In no event shall a Protest be considered if all bids are rejected or after execution of the Contract.
- D. Determination of Protest. Upon receipt of a timely written Protest, the City shall investigate the Protest and shall respond in writing to the Protest prior to the award of Contract. If protest is submitted in accordance with the procedures set forth above, the City will not execute a contract any sooner than two (2) business days after the City's decision on the Protest.
- E. Failure to Comply. Failure to comply with the procedures set forth herein may render a Protest untimely or inadequate and may result in rejection thereof by the City.
- F. Exhaustion of Administrative Remedies. By submitting a bid, the Bidder agrees the Bidder's compliance with the protest procedures set forth herein are a mandatory condition precedent to the Bidder initiating a lawsuit against the City.
- G. Venue. By submitting a bid, the Bidder acknowledges and agrees that a lawsuit or action related to or arising out of this procurement shall be brought in the Superior Court of King County, Washington.

Bidder's Checklist

ALL BIDDERS must properly complete, execute and submit the following with their bids:

1. **NON-COLLUSION DECLARATION:** Failure to submit the certificate shall make the bid non-responsive and not eligible for award.
2. **BID FORM:** Bidders must bid on all items contained in the Bid Form and the Form must be signed. The omission or deletion of any bid item may render the bid non-responsive and result in the rejection of the bid. Bidders are reminded to comply with RCW 39.30.060.
3. **CONTRACTOR DECLARATION PURSUANT TO RCW 39.04.350(2):** Failure to submit the declaration shall make the bid non-responsive and not eligible for award.
4. **BID GUARANTY BOND:** Failure to furnish a bid deposit of a minimum of five percent (5%) shall make the bid non-responsive and not eligible for award.
5. **BIDDERS QUALIFICATION CERTIFICATE:** To be completed and signed. The City reserves the right to check all statements and to judge the adequacy of the bidder's qualifications.

To assist the City in the review of the responsible Bidder's qualifications, the Bidder(s) shall, within five (5) days of being requested to do so by the City, provide the information required in Evaluation of Bidder Responsibility of the Instructions to Bidders, including a statement in accordance with RCW 9A.72.085 verifying compliance with responsible bidder criteria requirement of RCW 39.04.350(1)(g).

The **SUCCESSFUL BIDDER** shall properly complete, execute (as required) and submit the following after receiving notice of the award of the Project.

1. Public Works Contract,
2. Performance Bond,
3. Payment Bond,
4. Certificate of Insurance,
5. Retainage Agreement,
6. Statement of Intent to Pay Prevailing Wages,
7. Other documents requested by City.

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BIDDING REQUIREMENTS

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Bidder's Qualification Certificate

The undersigned hereby certifies and submits the following:

Company Name _____

Address _____

Owner Name _____

Contact Person _____

Contact Person's Title _____

Phone _____

E-mail _____

Washington State Contractor Registration # _____

Washington State Unified Business Identifier (UBI) # _____

Federal Tax ID # _____

City of Mercer Island Business License #
(required prior to award of contract) _____

	Yes or No	Account / Registration Number (as applicable)
--	-----------------	--

Does the contractor have industrial insurance coverage for its employees working in Washington as required by Title 51 RCW?	_____	_____
---	-------	-------

Does the contractor have a Washington State excise tax registration number as required by Title 82RCW?	_____	_____
--	-------	-------

Does the contractor have a Washington State Employment Security Department number as required by Title 50 RCW?	_____	_____
--	-------	-------

Has the contractor been disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3)?	_____	
---	-------	--

Has the contractor received training on the requirements related to public works contracts and prevailing wage requirements pursuant to RCW 39.04.350(f) and chapter 39.12 RCW, or is the contractor otherwise exempt from this requirement by the department of labor and industries?	_____	
--	-------	--

Within the three-year period immediately preceding the date of the bid solicitation, has the contractor been determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW?	_____	
--	-------	--

By: _____
Signature & Title

_____ **Print Name & Date**

Non-Collusion Declaration

Project Name: Lincoln Landing Shoreline & Stormwater Enhancement

Bidder/Contractor: _____

I, _____, declare under penalty of perjury under the laws of the State of Washington that the following statements are true and correct:

1. I am the representative for the above-named bidder/contractor, and as its _____, I am authorized to make the declaration herein on its behalf.

2. That the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

Date and Place

Signature

Contractor Declaration Pursuant to RCW 39.04.350(2)

Project Name: Lincoln Landing Shoreline & Stormwater Enhancement

Bidder/Contractor: _____

I, _____, declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct:

1. I am the representative for the above-named bidder/contractor, and as its _____, I am authorized to make the declaration herein on its behalf.

2. Within the three-year period immediately preceding the date of the bid solicitation for the above-named project, the above-named bidder/contractor has not been determined by a final and binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.

Date and Place

Signature

BID FORM

(NOTE TO BIDDER: This BID FORM shall be completed in ink or typewritten)

TO: City of Mercer Island

ADDRESS: 9611 SE 36th Street
Mercer Island, Washington 98040

PROJECT TITLE: 21-26: Lincoln Landing Shoreline and Stormwater Enhancement

Bidder Declaration and Understanding

The undersigned Bidder hereby declares that they have carefully examined the Contract Documents for the construction of the project, that they have personally inspected the site, that they have satisfied themselves as to the quantities involved, including materials and equipment, and conditions of work involved, including the fact that the description of the quantities of work and materials, as included herein, is brief and is intended only to indicate the general nature of the work and to identify the quantities with the detailed requirements of the Contract Documents, and that this Proposal is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Proposal. The Bidder further declares that they have exercised their own judgment regarding the interpretation of subsurface information and has utilized all data, which they believe pertinent from the Engineer, Owner, and other sources and have made such independent investigations as the Bidder deems necessary in arriving at their conclusions.

The Bidder is hereby notified that no goal for disadvantaged business enterprise utilization has been established for this project. As part of the City's affirmative action effort, however, the City encourages participation of certified disadvantaged businesses and women business enterprises to act as prime contractors as well as subcontractors on this project.

The undersigned Bidder hereby declares that the prime contractor has attended the mandatory pre-bid walk through meeting on November 30, 2021 at 2:00 PM, or another mandatory pre-bid walk through that might have been scheduled at the sole discretion of the Project Manager.

Contractor Name _____ Signature _____

The undersigned Bidder hereby declares that Bidder has carefully examined the Contract Documents including the following addenda, receipt of all is hereby acknowledged:

Addendum Number	Date

Start of Construction and Contract Completion Time

The Bidder agrees that he/she will begin work within 10 calendar days of the Notice to Proceed, and Final Completion of the entire project will be achieved by the Final Completion Date (except for extensions of time granted in accordance with the General Terms and Conditions). The Bidder further agrees he/she will, if necessary, accelerate his work, provide additional workers and equipment, and expedite materials delivery to meet these dates, all at no additional expense to the OWNER.

By submitting this bid, the bidder agrees that, if awarded this contract, they will achieve Final Completion within 220 working days from the Notice to Proceed and the Substantial Completion Date will be 15 calendar days prior to the Final Completion Date. Notice to Proceed will be issued in advance of construction to enable the contractor to procure needed labor, materials and equipment with sufficient time remaining to construct in the following work limits:

- City of Mercer Island Seasonal Development Limitation ("Wet Season Moratorium"): October 1 to April 1.
- US Army Corps in-water work window for Lake Washington: July 16 through April 30.
- WA Dept of Fish and Wildlife in-water work window for unnamed stream channel: June 16 through September 30

Lump Sum or Unit Price Work

The Bidder proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the Contract Documents and based on the following lump sum or unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. The Contractor shall be compensated for the actual unit quantities performed in accordance with the General Terms and Conditions set forth in these Contract Documents. The Bidder agrees that the lump sum prices and the unit prices represent a true measure of the labor, services, and materials required to perform the work, including all allowances for Contractor-paid taxes, overhead, and profit for each type and unit of work, as well as any auxiliary costs associated with completing a unit of work called for in these Contract Documents. The City does not guarantee the quantities estimated for unit price items, nor does the City limit itself to the estimated number.

If any material, item, or service required by the Contract Documents has not been mentioned specifically, the same shall be furnished and placed with the understanding that the full cost to the Owner has been merged with the prices named in the Proposal.

To the extent possible, standard bid items have been utilized for the work listed in the Proposal. The Bidder is directed to review the Standard Specifications and the City of Mercer Island's Amendments (Special Provisions herein) for descriptions of bid item work, measurement, and payment.

Bid Schedule

SCHEDULE A – BASE BID:

Item No.	Approx. Qty	Unit	Description of Item	Unit Price Dlrs. Cents	Total Price Dlrs. Cents
A-1	1	LS	Mobilization & Demobilization	\$	\$
A-2	1	LS	SWPPP	\$	\$
A-3	1	LS	Temporary Erosion and Sediment Control (TESC)	\$	\$
A-4	1	LS	Demolition	\$	\$
A-5	1	LS	Earthwork	\$	\$
A-6	1	LS	Site Works	\$	\$
A-7	1	LS	Sanitary Sewer Utility	\$	\$
A-8	1	LS	Landscape Guarantee Period	\$	\$
A-9	60	HR	Brush Cleaning of Pavement Surface by Sweeper	\$	\$
A-10	1	LS	Additional Work for Minor Changes	\$ 10,000.00	\$ 10,000.00
Subtotal				\$	
WA State Sales Tax (10.1%)				\$	
Total Amount of Schedule A – Base Bid				\$	

Bid Summary

Unit prices for all items, all extensions, and the total amount of bid must be shown on all Schedules. Where conflict occurs between the unit price and the total amount named for any item, the unit price shall prevail, and the totals shall be corrected to conform thereto.

The bidder shall bid on all items included in the Bid Form.

The successful bidder will be the bidder submitting the lowest responsible bid for the following project:

21-26 Lincoln Landing Shoreline and Stormwater Enhancement

(insert project name)

Date: _____

Total Bid Amount:

(in words)

\$

(in figures)

PROPOSAL SIGNATURE SHEET

If Sole Proprietor, Partnership or Joint Venture

IN WITNESS hereto the undersigned have set their hands this

_____ day of _____, 20_____.

Name of Bidder (name each partner
or joint venture partner) _____

Washington Contractor's
Registration

No. _____

Address _____

Authorized Signature _____

Position/Title _____

If Corporation or Limited Liability Company (LLC)

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this

_____ day of _____, 20_____.

Name of Corporation or Limited
Liability Company (LLC) _____

Washington Contractor's Registration

No. _____

Address _____

State of Incorporation or Organization _____

Authorized Signature _____

Position/Title _____

SUBCONTRACTOR LISTING

The City of Mercer Island requires a business license for anyone who will be conducting, maintaining, operating or engaging in business within the City limits during any tax year. This includes general contractors and all of the subcontractors working at a Mercer Island job site. This is a general license that grants you, the business owner, the right to conduct business within the City of Mercer Island. The fee for the Business License is \$30.00 a year and needs to be obtained prior to starting work on the Island. This license needs to be renewed each calendar year you work on the Island. A business license application may be obtained online at <https://dor.wa.gov/manage-business/city-license-endorsements/mercer-island>.

Pursuant to RCW 39.30.060, the Bidder shall list as part of its Bid, either itself or the names of the subcontractors with whom the Bidder, if awarded the contract, will subcontract for performance of the work of heating, ventilation and air conditioning (“HVAC”), plumbing as described in chapter 18.106 RCW, and electrical as described in chapter 19.28 RCW. The Bidder shall not list more than one subcontractor for each category of work.

Failure of the Bidder to submit, as part of the Bid, the names of such subcontractors or to name itself to perform such work or the naming of two or more subcontractors to perform the same category of work shall render the Bidder’s Bid nonresponsive and therefore, void.

The requirement of this section to name the Bidder’s proposed HVAC, plumbing, and electrical subcontractors applies only to proposed HVAC, plumbing, and electrical subcontractors who will contract directly with the general contractor submitting the Bid to the City.

Electrical work must be performed by a licensed electrical contractor. Bidders are cautioned that installation of electrical equipment (PVC or metal conduit, junction boxes or similar work) may be considered electrical work even if for future use and no electrical current is involved.

If the subcontract work categories as described above are not applicable to the work being bid, the bidder must indicate that the subcontract category is *“NOT APPLICABLE”*.

HVAC

Subcontractor Name: _____

UBI Number: _____

PLUMBING

Subcontractor Name: _____

UBI Number: _____

ELECTRICAL

Subcontractor Name: _____

UBI Number: _____

FIRE

Subcontractor Name: _____

UBI Number: _____

BID GUARANTY BOND

KNOW ALL BY THESE PRESENTS: That we, _____,
as Principal, and _____, as Surety, are jointly and severally
held and firmly bound unto the City of Mercer Island, hereinafter called the Obligee, each in the
penal sum of five percent (5%) of the Principal's Total Bid Price for the work, this sum not to exceed
_____ DOLLARS (\$) (hereinafter referred to as "penal sum")
of lawful money of the United States, for the payment whereof unto the Obligee.

WHEREAS, the Principal is herewith submitting its bid proposal for the

LINCOLN LANDING SHORELINE & STORMWATER ENHANCEMENT

NOW, THEREFORE, the condition of this obligation is such that if the Principal is awarded the
Contract, and if the Principal, within the time specified, fulfills all of the requirements of the
Contract Documents which are conditions precedent to the execution of the Agreement, enters into,
executes and delivers to the Obligee an agreement on the form provided herein complete with
evidences of insurance, and if the Principal, within the time specified, gives to the Obligee the
performance and payment bond on the forms provided herein, then this obligation shall be void;
otherwise, the Principal and Surety shall pay unto the Obligee the penal sum; provided however, in
no event shall the Surety's liability exceed the penal sum. Provided further, if the difference in
money between the Principal's Total Bid Price and the amount for which the Obligee legally
contracts with another party to fulfill the Contract is greater than the penal sum, the Principal shall
pay unto the Obligee the difference between the penal sum and the amount the Obligee pays
another to fulfill the Contract.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable under this obligation as
Principal, and that nothing of any kind or nature whatsoever that will not discharge the Principal
shall operate as a discharge or a release of liability of the Surety.

IT IS HEREBY FURTHER DECLARED AND AGREED that this obligation shall be binding upon and
inure to the benefit of the Principal, the Surety and the Obligee and their respective heirs,
executors, administrators, successors and assigns.

SIGNED this _____ day of _____, 20 _____.

Principal: _____ Surety: _____

By: _____ By: _____

Title: _____ Title: _____

Address: _____ Address: _____

Telephone: () _____ Telephone: () _____

**Note: A power of attorney must be provided which appoints the Surety's true and lawful attorney-in-
fact to make, execute, seal and deliver this bid guaranty bond.**

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AGREEMENT FORMS

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**CITY OF MERCER ISLAND, WASHINGTON
PUBLIC WORKS CONTRACT
FOR
21-26: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT**

THIS PUBLIC WORKS CONTRACT ("Contract") dated [insert date agreement drafted], is effective on the date the Contract is fully executed by the Parties. The Parties to this Contract are the CITY OF MERCER ISLAND, a Washington municipal corporation ("City" or "Owner"), and [INSERT FULL LEGAL NAME OF CONTRACTOR], a [insert state where formed] [choose type of person or entity] ("Contractor").

A. The City desires to retain an independent contractor to furnish all labor and materials necessary to perform work at [insert address], Mercer Island, Washington ("Property"); and

B. The Contractor has the requisite skill and experience to perform such work and has submitted a proposal dated [insert date proposal received] to complete such work ("Proposal").

NOW, THEREFORE, the parties ("Parties") agree to the following terms and conditions:

1. SERVICES BY CONTRACTOR

- 1.1 Description of Work. Contractor shall perform all work and furnish all tools, materials, supplies, equipment, labor and other items incidental thereto necessary for the construction and completion of the work, more particularly described in the Contract Documents for the [enter project title] Project, including this Public Works Contract, the Contractor's completed Bid Form, the City's General Terms and Conditions (May 2020 ed.), any Supplemental and/or Special Conditions, Technical Specifications, Drawings and Addenda, which documents are incorporated by this reference, ("Work"), which Work shall be completed to the City's satisfaction, within the time period prescribed by the City and pursuant to the direction of the City Manager or his or her designee.
- 1.2 Completion Date. The Work shall be commenced within ten (10) days of receipt by the Contractor of the City's Notice to Proceed and shall be Substantially Completed by _____, (the "Contract Time") as may be extended in accordance with the Contract Documents. In the event the Work is not completed within the time specified, Contractor agrees to pay to the City liquidated damages in the amount set forth in Section 1.3 of this Contract.
- 1.3 Liquidated Damages. TIME IS OF THE ESSENCE OF THIS CONTRACT. Delays inconvenience the residents of Mercer Island and cost taxpayers undue sums of money, adding time needed for administration, engineering, inspection and supervision. It is impractical for the City to calculate the actual cost of delays. Accordingly, the Contractor agrees to pay liquidated damages as follows: Liquidated damages for failure to achieve timely Substantial Completion shall be in the amount of \$100.00 per day.
- 1.4 Performance Standard. Contractor shall perform the Work in a manner consistent with accepted practices for highly skilled and competent contractors performing this type of work in this area.
- 1.5 Compliance with Laws. Contractor shall perform the Work in accordance with all applicable federal, state and City laws, including but not limited to all City ordinances, resolutions, standards, or policies, as now existing, or hereafter adopted or amended, and obtain all necessary permits and

pay all permit, inspection, or other fees, at its sole cost and expense.

- 1.6 Utility Location. Contractor is responsible for locating any underground utilities affected by the Work and is deemed to be an excavator for purposes of Chapter 19.122 RCW, as amended. Contractor shall be responsible for compliance with Chapter 19.122 RCW, including utilization of the "one call" locator system before commencing any excavation activities.
- 1.7 Air Environment. Contractor shall fully cover any and all loads of loose construction materials including without limitation, sand, dirt, gravel, asphalt, excavated materials, construction debris, etc., to protect said materials from air exposure and to minimize emission of airborne particles to the ambient air environment within the City of Mercer Island.

2. TERM

This Contract shall commence on the effective date of this Contract and continue until the Work is complete, and formally accepted by City, and all warranties have expired.

3. REQUISITE SKILL

The Contractor warrants that it has the requisite skill to complete the Work and is appropriately accredited and licensed by all applicable agencies and governmental entities, including but not limited to being registered to do business in the City of Mercer Island by obtaining a City of Mercer Island business registration. Contractor represents that it has visited the site and is familiar with all of the plans and specifications in connection with the completion of the Work.

4. COMPENSATION

- 4.1 Total Compensation. In consideration of the Contractor performing the Services, the City agrees to pay the Contractor an amount not to exceed [insert maximum value of contract in words] Dollars (\$[insert \$ amount in figures]), based on the Proposal submitted by Contractor dated [insert date proposal received] and as may be adjusted under the Contract Documents.
- 4.2 Contractor Responsible for Taxes. Except as otherwise stated in the Contract Documents, the Contractor shall be solely responsible for the payment of any taxes imposed by any lawful jurisdiction as a result of the performance and payment of this Contract.
- 4.3 Method of Payment. Payment by the City for the Work will only be made after the Work has been completed, a voucher or invoice is submitted in a form satisfactory to the City, and such invoice is approved by the appropriate City representative. Payment shall be made within thirty (30) days of receipt of such invoice or voucher unless otherwise set forth in the Bid Form. The Contractor's acceptance of such payment for the Work shall constitute full compensation for the performance of the Work. Invoices shall be submitted to:

City of Mercer Island
ATTN: [enter City's project manager name, title]
9611 SE 36th Street
Mercer Island, WA 98040

- 4.4 Retainage. Pursuant to Chapter 60.28 RCW, five percent (5%) of the Total Compensation shall be retained by the City to assure payment of Contractor's state taxes as well as payment of

subcontractors, suppliers, and laborers. Upon execution of this Contract, Contractor shall complete, execute, and deliver to the City the Contractor's Retainage Agreement set forth in the Contract Documents. No payments shall be made by the City from the retained percentage fund ("Fund") nor shall the City release any retained percentage escrow account to any person, until the City has received from the Department of Revenue a certificate that all taxes, increases, and penalties due from the Contractor and all taxes due and to become due with respect to the Contract have been paid in full or that they are, in the Department's opinion, readily collectible without recourse to the State's lien on the retained percentage. Upon non-payment by the general contractor, any supplier or subcontractor may file a lien against the retainage funds, pursuant to Chapter 60.28 RCW. Subcontractors or suppliers are required to give notice of any lien within thirty (30) days of the completion of the Work and in the manner provided in RCW 39.08.030. Within sixty (60) days after completion of all Work on this Contract, the City shall release and pay in full the money held in the Fund, unless the City becomes aware of outstanding claims made against this Fund.

5. EQUAL OPPORTUNITY EMPLOYER

In all Contractor services, programs or activities, and all Contractor hiring and employment made possible by or resulting from this Contract, there shall be no discrimination by Contractor or by Contractor's employees, agents, subcontractors or representatives against any person because of sex, sexual orientation, age (except minimum age and retirement provisions), race, color, creed, national origin, marital status or the presence of any disability, including sensory, mental or physical handicaps, unless based upon a bona fide occupational qualification in relationship to hiring and employment. This requirement shall apply, but not be limited to the following: employment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Contractor shall not violate any of the terms of Chapter 49.60 RCW, Title VII of the Civil Rights Act of 1964, the Americans With Disabilities Act, Section 504 of the Rehabilitation Act of 1973 or any other applicable federal, state, or local law or regulation regarding non-discrimination. Any material violation of this provision shall be grounds for termination of this Contract by the City and, in the case of the Contractor's breach, may result in ineligibility for further City agreements.

6. INDEPENDENT CONTRACTOR/CONFLICT OF INTEREST

It is the intention and understanding of the Parties that the Contractor shall be an independent contractor and that the City shall be neither liable nor obligated to pay Contractor sick leave, vacation pay or any other benefit of employment, nor to pay any social security or other tax which may arise as an incident of employment. The Contractor shall pay all income and other taxes as due. Industrial or any other insurance which is purchased for the benefit of the City, regardless of whether such may provide a secondary or incidental benefit to the Contractor, shall not be deemed to convert this Contract to an employment contract. It is recognized that Contractor may perform work during the Term of this Contract for other third parties; provided, however, that such performance of other work shall not conflict with or interfere with the Contractor's ability to perform the Work. Contractor agrees to resolve any such conflicts of interest in favor of the City.

7. INDEMNIFICATION

7.1 Indemnification and Hold Harmless.

- A. The Contractor shall protect, defend, indemnify, and hold harmless City, its elected officials, officers, agents, volunteers, and employees, from any and all claims, demands, suits, penalties, losses, damages, judgments, or costs of any kind whatsoever, including

attorneys' fees (hereinafter "claims"), arising out of or in connection with the performance of this Contract except for injuries and damages caused by the sole negligence of the City. However, should a court of competent jurisdiction determine that this Contract is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the City, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence.

- B. The Contractor's obligations under this section shall include, but not be limited to,
 - i. The duty to promptly accept tender of defense and provide defense to City at the Contractor's own expense.
 - ii. The duty to indemnify and defend City, its elected officials, officers, agents, and employees, from any claim, demand, and/or cause of action brought by or on behalf of any of its employees, or agents. The foregoing duty is specifically and expressly intended to constitute a waiver of the Contractor's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects City with a full and complete indemnity and defense of claims made by the Contractor's employees. The parties acknowledge that these provisions were mutually negotiated upon by them.
 - iii. To the maximum extent permitted by law, the Contractor shall indemnify and defend City, its elected officials, officers, agents and employees, from and 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 injury or damage is caused by negligence of the Contractor or caused by the inherent nature of the work specified.
- C. City may, in its sole discretion, (1) withhold amounts sufficient to pay the amount of any claim for injury, and/or (2) pay any claim for injury of which City may have knowledge, regardless of the formalities of notice of such claim, arising out of the performance of this Contract.
- D. Any amount withheld will be held until the Contractor secures a written release from the claimant, obtains a court decision that such claim is without merit, or satisfies any judgment on such claim. In addition, the Contractor shall reimburse and otherwise be liable for claims costs incurred by City, including, without limitation, costs for claims adjusting services, attorneys, engineering, and administration.
- E. In the event City incurs any judgment, award, and/or costs arising therefrom, including attorneys' fees, to enforce the provisions of this article, all such fees, expenses, and costs shall be recoverable from the Contractor.
- F. This provision has been mutually negotiated by the City and the Contractor.

7.2 Survival. The provisions of this Section 7 shall survive the expiration or termination of this Contract with respect to any event occurring prior to such expiration or termination.

8. INSURANCE

- 8.1 The Contractor agrees to carry without interruption from commencement of the Contractor's work through the term of the contract and for thirty (30) days after Physical Completion, unless otherwise indicated herein, the following insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the Work by Contractor, its agents, representatives, employees or subcontractors with a carrier having a current A.M. Best rating of not less than A:VII. The City, at its discretion, may require additional types and greater limits of insurance coverage commensurate with the risk associated with the performance of the Work.
- A. Workers' Compensation and Employer's Liability Insurance in amounts sufficient pursuant to the laws of the State of Washington.
 - B. Commercial general liability insurance shall be written on a form at least as broad as Insurance Services Office (ISO) occurrence form CG 00 01 and shall cover liability arising from premises, operations, independent contractors, products-completed operations for three years following substantial completion of the Work, stop gap liability, personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide the Aggregate Per Project Endorsement ISO form CG 25 03 05 09. There shall be no exclusion for liability arising from explosion, collapse, or underground property damage. The City shall be named as an additional insured under the Commercial General Liability insurance policy with respect to the Work performed for the City using ISO Additional Insured endorsement CG 20 10 10 01 and Additional Insured Completed Operations endorsement CG 20 37 10 01 or substitute endorsements providing coverage at least as broad, with limits of no less than \$2,000,000 each occurrence, \$2,000,000 general aggregate, and a \$2,000,000 products-completed operations aggregate limit.
 - C. Automobile liability insurance covering all owned, non-owned, hired, and leased vehicles. Coverage shall be written on ISO form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage with combined single limits for bodily injury and property damage of not less than \$1,000,000 per accident.
 - D. Asbestos Abatement or Hazardous Materials. If asbestos abatement or hazardous materials work is performed, Contractor shall review coverage with the City Attorney's office and provide scope and limits of coverage that are appropriate for the scope of Work and are satisfactory to the City. Contractor shall not commence any Work until its coverage has been approved by the City Attorney's office.
 - E. Builders Risk insurance covering interests of the City, the Contractor, Subcontractors, and Sub-subcontractors in the work. Builders Risk insurance shall be on a special perils policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including flood, earthquake, theft, vandalism, malicious mischief, and collapse. The Builders Risk insurance shall include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site. This Builders Risk insurance covering the work will have a deductible of \$5,000 for each occurrence, which will be the responsibility of the Contractor. Higher deductibles for flood and earthquake perils may be accepted by the City upon written request by the Contractor and written acceptance by the

City. Any increased deductibles accepted by the City will remain the responsibility of the Contractor. The Builders Risk insurance shall be maintained until the City has granted substantial completion of the project. An installation floater may be acceptable in lieu of Builders Risk for renovation projects only if approved in writing by the City. Builders Risk insurance shall be written in the amount of the completed value of the project with no coinsurance provisions.

- 8.2 The City shall be named as additional insured on all such insurance policies, with the exception of workers' compensation coverages. The Contractor's insurance coverage shall be primary insurance as respect the City. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Contractor's insurance and shall not contribute with it. If the Contractor maintains higher insurance limits than the minimums shown above, the City shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Contractor, irrespectively of whether such limits maintained by the Contractor are greater than those required by this Contract or whether any certificate of insurance furnished to the City evidences limits of liability lower than those maintained by the Contractor. Contractor shall provide certificates of insurance and amendatory endorsements, concurrent with the execution of this Contract, evidencing such coverage and, at City's request, furnish the City with copies of all insurance policies and with evidence of payment of premiums or fees of such policies. The Contractor shall provide the City and all Additional Insureds for this work with written notice of any policy cancellation within two business days of their receipt of such notice.
- 8.3 The Contractor shall cause each and every Subcontractor to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except that the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by Subcontractors. The Contractor shall ensure that the City is an additional insured on each and every Subcontractor's Commercial General Liability insurance policy using an endorsement at least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.
- 8.4. Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the City may, after giving five business days notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand, or at the sole discretion of the City, offset against funds due the Contractor from the City.
- 8.5 Waiver of Subrogation. The Contractor and the City waive all rights against each other, any of their Subcontractors, Sub-subcontractors, agents, and employees, each of the other, for damages caused by fire or other perils to the extent covered by Builders Risk insurance or other property insurance obtained pursuant to the Insurance Requirements Section of this Contract or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.
- 8.6 The Contractor's maintenance of insurance, its scope of coverage and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the City's recourse to any remedy available at law or in equity.
- 8.7 The provisions of this Section shall survive the expiration or termination of this Contract with respect to any event occurring prior to such expiration or termination.

9. PERFORMANCE/PAYMENT BOND OR ADDITIONAL RETAINAGE

Pursuant to RCW 39.08.010, Contractor shall provide Performance Bond and Payment Bond each in an amount equal to 100% of the amount of this Contract to cover the performance of all provisions of this Contract and the payment of all laborers and suppliers. The Contract bonds shall be in a form set forth in the Contract Documents. The Contract bond shall assure that the Contractor will faithfully perform all of the provisions of the Contract as well as pay all laborers, mechanic subcontractors, materialmen, and suppliers. Contractor's obligations under this Contract shall not be limited to the bond amount.

Alternatively, pursuant to RCW 39.08.010, on contracts of Fifty-Five Thousand Dollars (\$55,000) or less, at the option of the Contractor, the City may, in lieu of a bond, retain ten percent (10%) of the Contract amount for a period of thirty (30) days after the date of final acceptance, or until receipt of all necessary releases from the Department of Revenue and the Department of Labor and Industries and settlement of any liens filed under Chapter 60.28 RCW, whichever is later.

10. SAFETY

Contractor shall take all necessary precautions for the safety of its employees on the work site and shall comply with all applicable provisions of federal, state, and municipal safety and health laws and codes, including without limitation, all OSHA/WISHA requirements, Safety and Health Standards for Construction Work (Chapter 296-155 WAC), General Safety and Health Standards (Chapter 296-24 WAC), and General Occupational Health Standards (Chapter 296-62 WAC). Contractor shall erect and properly maintain, at all times, all necessary guards, barricades, signals, and other safeguards at all unsafe places at or near the Work for the protection of its employees and the public, safe passageways at all road crossings, crosswalks, street intersections, post danger signs warning against known or unusual hazards and do all other things necessary to prevent accident or loss of any kind. Contractor shall protect from damage all water, sewer, gas, steam or other pipes or conduits, and all hydrants and all other property that is likely to become displaced or damaged by the execution of the Work. The Contractor shall, at its own expense, secure and maintain a safe storage place for its materials and equipment and is solely responsible for the same.

11. PREVAILING WAGES

11.1 Wages of Employees. This Contract is subject to the minimum wage requirements of Chapter 39.12 of the Revised Code of Washington, as now existing or hereafter amended or supplemented. In the payment of hourly wages and fringe benefits to be paid to any of Contractor's laborers, workpersons and/or mechanics, Contractor shall not pay 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, as determined by the Industrial Statistician of the Department of Labor and Industries of the State of Washington. Prevailing wages paid pursuant to this Agreement shall be the prevailing wage rates which are in effect on the date when the bids, proposals, or quotes were required to be submitted to the City.

The State of Washington prevailing wage rates applicable for this public works project, which is located in King County, may be found at the following website address of the Department of Labor and Industries: <https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/>. A copy of the applicable prevailing wage rates is also available for viewing at the office of the City located at 9611 SE 36th St, Mercer Island, WA 98040. Upon request, the City will mail a hard copy of the applicable prevailing wages for this project.

11.2 Reporting Requirements. Contractor shall comply with all reporting requirements of the Department of Labor and Industries of the State of Washington. Upon the execution of this Contract, Contractor shall complete and file a Statement of Intent to Pay Prevailing Wages with the Department of Labor and Industries. If requested by the City, the Contractor shall provide certified payroll records for its employees and the employees of its subcontractors. Upon completion of the Work, Contractor shall complete and file an Affidavit of Wages Paid with the Department of Labor and Industries. Contractor shall deliver copies of both the Statement of Intent to Pay Prevailing Wages and the Affidavit of Wages Paid, certified by the Department of Labor and Industries, to the City.

12. SUBCONTRACTOR RESPONSIBILITY

Contractor shall verify responsibility criteria for each first-tier subcontractor, and a subcontractor of any tier that hires other subcontractors must verify responsibility criteria for each of its subcontractors. Verification shall include that each subcontractor, at the time of subcontract execution, meets the responsibility criteria listed in the Instructions to Bidders and possesses an electrical contractor license, if required by chapter 19.28 RCW, or an elevator contractor license, if required by chapter 70.87 RCW. This verification requirement must be included in every public works subcontract or every tier.

13. OWNERSHIP OF DOCUMENTS

All originals and copies of work product, including plans, sketches, layouts, designs, design specifications, records, files computer disks, magnetic media, all finished or unfinished documents or material which may be produced or modified by Contractor while performing the Work shall become the property of the City and shall be delivered to the City at its request.

14. CONFIDENTIALITY

If it is necessary to provide proprietary information, the Contractor shall clearly mark the information on each page of the document(s) as "Proprietary and Confidential". The City is subject to laws regarding the disclosure of public records and document. Proposals and other materials, submitted by the Contractor become public record and may be subject to public disclosure, in whole or in part, and may be released by the City in the event of a request for disclosure. In the event the City receives a public record request for information and the Contractor has marked the requested document as "Proprietary and Confidential", the City shall notify the Contractor of such request and withhold disclosure of such information for not less than five (5) business days, to permit the Contractor to seek judicial protection of such information; provided that the Contractor shall be solely responsible for all attorney fees and costs in such action and shall save and hold harmless the City from any costs, attorneys fees or penalty assessments under Chapter 42.56 RCW for withholding or delaying public disclosure of such information.

15. BOOKS AND RECORDS

The Contractor agrees to maintain books, records, and documents which sufficiently and properly reflect all direct and indirect costs related to the performance of this Contract and such accounting procedures and practices as may be deemed necessary by the City to assure proper accounting of all funds paid pursuant to this Contract. These records shall be subject at all reasonable times to inspection, review or audit by the City, its authorized representative, the State Auditor, or other governmental officials authorized by law to monitor this Contract.

16. CLEAN UP

At any time ordered by the City and immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. In the event the Contractor fails to perform the necessary clean up, the City may, but in no event is it obligated to, perform the necessary clean up and the costs thereof shall be immediately paid by the Contractor to the City and/or the City may deduct its costs from any remaining payments due to the Contractor.

17. GENERAL PROVISIONS

This Contract, the Contract Documents and any supporting contract documents contain all of the agreements of the Parties with respect to any matter covered or mentioned in this Contract and no prior agreements or understandings shall be effective for any purpose. No provision of this Contract may be amended except by written agreement of the Parties. Any provision of this Contract which is declared invalid, void or illegal shall in no way affect, impair, or invalidate any other provision hereof and such other provisions shall remain in full force and effect. The Contractor shall not transfer or assign, in whole or in part, any or all of its obligations and rights hereunder without the prior written consent of the City. In the event the City consents to any such assignment or transfer, such consent shall in no way release the Contractor from any of its obligations or liabilities under this Contract. Subject to the preceding sentence, this Contract shall be binding upon and inure to the benefit of the Parties' successors in interest, heirs, and assigns. In the event the City or the Contractor defaults on the performance of any terms in this Contract, and the Contractor or City places the enforcement of the Contract or any part thereof, or the collection of any monies due, in the hands of an attorney, or files suit, each Party shall pay all its own attorneys' fees and expenses. The venue for any dispute related to this Contract shall be King County, Washington. Failure of the City to declare any breach or default immediately upon occurrence thereof, or delay in taking any action in connection with, shall not waive such breach or default. This Contract shall be governed by and interpreted in accordance with the laws of the State of Washington. Each individual executing this Contract on behalf of the City and Contractor represents and warrants that such individuals are duly authorized to execute this Contract. Time is of the essence of this Contract and each and all of its provisions in which performance is a factor. Adherence to completion dates is essential to the Contractor's performance of this Contract.

IN WITNESS WHEREOF, the Parties have executed this Contract the day of , 20 .

CONTRACTOR:

[INSERT FULL LEGAL NAME OF CONTRACTOR]

By: _____
[insert full legal name and title of signator]

Address:

Phone:

Email:

CITY:

CITY OF MERCER ISLAND

By: _____
Jessi Bon, City Manager

Attest:

By: _____
Andrea Larson, City Clerk

Approved as to form:

By: _____
Bio Park, City Attorney

CITY OF MERCER ISLAND
 CONTRACT CHANGE ORDER AGREEMENT

21-26

PROJECT NUMBER _____ CHANGE ORDER NUMBER _____ DATE _____

21-26: Lincoln Landing Shoreline and Stormwater Enhancement

PROJECT TITLE _____

CONTRACTOR _____

SUMMARY OF PROPOSED CHANGES:

THE TIME PROVIDED FOR COMPLETION IN THE CONTRACT IS UNCHANGED INCREASED DECREASED BY _____ CALENDAR DAYS. THIS DOCUMENT SHALL BECOME AN AMENDMENT TO THE CONTRACT AND ALL PROVISIONS OF THE CONTRACT NOT AMENDED HEREIN WILL APPLY TO THIS CHANGE ORDER.

WILL THIS CHANGE AFFECT EXPIRATION OR EXTENT OF INSURANCE COVERAGE?

YES NO
 IF "YES" WILL THE POLICIES BE EXTENDED? YES NO

PRICE CHANGE LUMP SUM: INCREASE \$ DECREASE \$
 UNIT PRICE:

THE ITEMS ARE APPROXIMATE OR ESTIMATED QUANTITIES INVOLVED IN THIS CHANGE

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	ADD OR DELETE
----------	------	----------	------	------------	---------------

TOTAL NET CONTRACT: INCREASE \$ _____ DECREASE \$ _____

STATEMENT:

PAYMENT FOR THE ABOVE WORK WILL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE STANDARD SPECIFICATIONS, AND WITH THE UNDERSTANDING THAT ALL MATERIALS, WORKMANSHIP AND MEASUREMENTS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE STANDARD SPECIFICATIONS, THE CONTRACT PLANS, AND THE SPECIAL PROVISIONS GOVERNING THE TYPES OF CONSTRUCTION.

 CONTRACTOR'S SIGNATURE
 DATE: _____

 CIP MANAGER'S SIGNATURE
 DATE: _____

DEPARTMENT RECAP TO DATE: *ADJUSTMENTS:
 ORIGINAL CONTRACT AMOUNT \$ _____

PREVIOUS CHANGE ORDERS \$ _____
THIS CHANGE ORDER \$ _____
*ADJUSTMENTS \$ _____
NEW CONTRACT AMOUNT \$ _____

*ADJUSTMENTS
CHANGE ORDER ESTIMATE IS HEREBY INCREASED \$ _____
 DECREASED \$ _____

PAY THIS ADJUSTED AMOUNT: \$ _____

DEPARTMENT DIRECTOR'S SIGNATURE

PAYMENT BOND
to City of Mercer Island, WA

Bond No. _____

The City of Mercer Island, Washington has awarded to _____ (Principal), a contract for the construction of the project designated as **LINCOLN LANDING SHORELINE & STORMWATER ENHANCEMENT**, Project No. **21-26**, in Mercer Island, Washington (Contract), and said Principal is required to furnish a bond for performance of all obligations under the Contract.

The Principal, and _____ (Surety), a corporation organized under the laws of the State of _____ and licensed to do business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Dept., are jointly and severally held and firmly bound to the City, in the sum of _____ US Dollars (\$ _____) Total Contract Amount, subject to the provisions herein.

This statutory payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with RCW 39.08, 39.12, and 60.28 including all workers, laborers, mechanics, subcontractors, and materialmen, and all person who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work, and all taxes incurred on said Contract under Titles 50 and 51 RCW and all taxes imposed on the Principal under Title 82 RCW; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any changes, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

This bond may be executed in two (2) original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the office executing on behalf of the surety.

PRINCIPAL

SURETY

Principal Signature Date

Surety Signature Date

Printed Name Date

Printed Name Date

Title

Title

Name, address, and telephone of local office/agent of Surety Company is:

RETAINAGE AGREEMENT

Contract Title 21-26: Lincoln Landing Shoreline and Stormwater Enhancement

 Contract Date _____
 Contractor Name _____
 Contractor Address _____

 Contractor Phone _____
 Contractor Federal ID # _____

State Law on How Contract Retainage Monies can be Reserved:

RCW 60.28.010 Retained percentage, labor and material Contracts for public improvements or work other than for professional services, provides that there shall be reserved by the city from the monies earned by the contractor on estimates during the progress of the improvement or work, a sum of five percent of such estimates, said sum to be retained by the city as a trust fund for the protection and payment of any persons performing work or supplying provisions or supplies during the work. The monies reserved for contract retainage may be reserved by the contractor choosing one of the following four options:

All investments selected below are subject to City approval.

Contractor Options (Contractor shall place an "x" in one of the boxes below.)

- (a) Retained in a non-interest bearing fund by the public body until released in accordance with applicable state statutes;
- (b) Deposited by the public body in an interest bearing account in a bank, mutual savings bank, or savings and loan association, not subject to withdrawal until released in accordance with applicable state statutes, provided that interest on such account shall be paid to the contractor;
- (c) Placed in escrow with a bank or trust company by the public body until released in accordance with applicable state statutes. The cost of the investment program and the risk thereof is to be borne entirely by the contractor.
- (d) Contractor may submit a Retainage Bond equal to 5% of the total awarded bid amount for all schedules to be held by the public body until released in accordance with applicable state statutes.

Contractor's Bank

If Contractor selects options (b) or (c) above, Contractor shall designate below the bank in which the retainage is to be deposited:

ACCOUNT NO. _____
 BANK NAME _____
 BANK ADDRESS _____

 BANK PHONE # _____

Agreement

Contractor and City agree that all or part of the monies in the account can only be approved for disbursement by Bank to Contractor upon written authorization of the City Finance Director, or his/her authorized designee.

By _____
City of Mercer Island

By _____
Contractor

Date _____

Date _____

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**CITY OF MERCER ISLAND
GENERAL TERMS AND CONDITIONS
MAY 2020 EDITION
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ARTICLE 1: GENERAL PROVISIONS

1.1 DEFINITIONS

- A. **“Addendum”** or **“Addenda.”** Alteration or clarification of the plans or specifications provided to bidders by City prior to bid time, which becomes part of the Contract Documents when the Contract is executed.
- B. **“Claim.”** A written demand by the Contractor seeking (1) a change to Contract Price; (2) a change of Contract Time; (3) a payment of money or damages; and/or, (4) any other relief arising out of or relating to this Contract.
- C. **“Change Order.”** A written instrument designated to be a Change Order which alters the Contract, and identifies the following: (1) a change in the Work; (2) a change in Contract Price; and/or (3) a change in Contract Time.
- D. **“Change Proposal.”** A document prepared by the Contractor at the request of City, which proposes changes to the Work and/or changes to the Contract Price and/or Contract Time. City initiates all requests for Change Proposals.
- E. The **“Contract”** or **“Contract Documents.”** The entire integrated agreement between City and the Contractor for the performance of the Work in accordance with the Contract Documents. The Contract Documents include the following:
 - 1. The signed Agreement between City and Contractor (the “Public Works Contract”);
 - 2. The Contractor’s completed Bid Form;
 - 3. The City’s General Terms and Conditions (May 2020 ed.);
 - 4. Any Supplemental or Special Conditions.
 - 5. Technical Specifications;
 - 6. Drawings;
 - 7. Addenda; and
 - 8. Any Change Orders.
- F. **“Contract Execution.”** occurs when City Manager or his/her designee signs the Contract, which shall only occur after the Contractor signs the Contract.
- G. **“Contract Price”** means the total amount payable by City to the Contractor for performance of the Work in accordance with the Contract.
- H. **“Contract Time.”** The number of days or the specific date set forth in the Contract to achieve Substantial Completion of the Work.
- I. **“Contract Work”** or **“Work.”** The labor, supervision, materials, equipment, supplies, services, other items, and requirements of the Contract necessary for the execution, completion and performance of all requirements of the Contract by the Contractor to the satisfaction of City.
- J. **“Contractor.”** The individual, association, partnership, firm, company, corporation, or combination thereof, including joint ventures, contracting with City to do the Contract Work.

- K. **“Critical Path.”** The longest, continuous sequence of interrelated activities that begins at the start of the Project (Notice to Proceed) and extends to Substantial Completion of the Project. These activities are critical because delay to an activity on this path will extend Contract Time.
- L. **“Day.”** A calendar day, unless otherwise specified.
- M. **“Differing Site Conditions.”** (1) Subsurface or latent physical conditions at the site which differ materially from those indicated in the Contract Documents (Type I), or (2) Unknown physical conditions at the Site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in the construction activities of the character provided for in the Contract (Type II).
- N. **“Engineer.”** The City representative who administers the Contract for the City.
- O. **“Final Acceptance.”** Written acceptance of the Project by City.
- P. **“Force Majeure.”** An event that is unforeseeable at the time of Contract Execution and that is beyond the reasonable control of the Contractor and City and includes:
1. Natural Disaster declared by Governor of Washington or President of the United States, including but not limited to earthquakes;
 2. Acts or omissions of any government entity acting within its governmental capacity;
 3. Fire and/or flood for which the Contractor or its Subcontractors is not responsible;
 4. Quarantine or epidemic;
 5. Strike or defensive lockout;
 6. Unusually Severe Weather Conditions; and
 7. Acts of terrorism.
- Q. **“Hazardous Material.”** Any pollutant, contaminant, toxic or hazardous waste, dangerous substance, potentially dangerous substance, noxious substance, toxic substance, flammable material, explosive material, radioactive material, urea formaldehyde foam insulation, asbestos, PCBs, or any other substances the removal of which is required, or the manufacture, preparation, production, generation, use, maintenance, treatment, storage, transfer, handling, or shipment of which is restricted, prohibited, regulated, or penalized by any and all federal, state, City, or municipal statutes or laws and regulations promulgated thereunder, now or at any time hereafter in effect, including, but not limited to, the Comprehensive Environmental Response, Compensation, and Liability Act (42 U. S. C. §§ 9601, *et seq.*), the Hazardous Materials Transportation Act (49 U. S. C. §§ 1801, *et seq.*), the Resource Conservation and Recovery Act (42 U. S. C. §§ 6901, *et seq.*), the Federal Water Pollution Control Act (33 U. S. C. §§ 1251, *et seq.*), the Clean Air Act (42 U. S. C. §§ 7401, *et seq.*), the Toxic Substances Control Act, as amended (15 U. S. C. §§ 2601, *et seq.*), the Occupational Safety and Health Act (29 U. S. C. §§ 651, *et seq.*, and the Model Toxics Control Act (RCW 70.105), or similar state or local statute or code), as the laws have been amended and supplemented.
- R. **“City”** or **“Owner”** may be used interchangeably and refer to the City of Mercer Island.

- S. **“Notice.”** A written document issued by the Engineer or Contractor’s Representative which is submitted to the other party and delivered by:
1. Depositing in the U. S. Mail (or other method of commercial express mail), which notice shall be effective on the date of receipt;
 2. Service on the Parties’ representative or at the Contractor’s home office or field office, which notice shall be effective on the date of service; or,
 3. Facsimile to the Parties’ representative or Contractor’s home office or field office, which notice shall be effective upon receipt.
- T. **“Notice To Proceed.”** A written directive issued by City authorizing the Contractor to perform some or all of the Work.
- U. **“Overhead.”** Charges that may be incurred or allocated in support of the Contract but are not part of the cost of directly performing the physical Contract construction activity. Overhead includes Site or Field Overhead and Home Office Overhead.
1. **Site or Field Office Overhead**
Site or Field Overhead costs are typically those costs that are related to, but are not limited to supervision, including general foremen and their supervisors, planners, schedulers, engineers, managers, etc. and the direct payroll costs of their project-related service, clerical salaries and their direct payroll costs, the costs of all vehicles, travel, meal and lodging costs associated with those personnel, Site or Field office and utility expense, expenses associated with all regulatory compliance, Hand and Other Small Tools provided by the Contractor for the use of its forces, all expendable supplies, and all other items incidental to or integral in supporting the physical completion of the Work.
 2. **Home Office Overhead**
Home office Overhead costs are typically those that include all general office expenses. Such costs include, but are not limited to those associated with officer and office salaries and related payroll taxes and benefits, costs of office occupancy and maintenance, all supporting services (such as utilities, office machines computers, and related items and support) related to the home office function, business taxes and licenses, and all such other costs necessary to operate the business entity. Home office overhead includes unabsorbed home office overhead.
 3. In addition to the above, whether treated as Site or Field Overhead or as Home Office Overhead, costs of any and all bonds, insurance(s), and taxes associated with this Contract are to be considered as Overhead. All items as those identified above are to be treated as Overhead for this purpose regardless of how the Contractor chooses to account for them in its books of account.
 4. Under no circumstances shall City pay the Contractor for direct or allocated costs or charges for officer bonus and profit sharing, project personnel bonuses, charitable contributions, income taxes, or any costs relating to illegal activity.
- V. **“Parties.”** The Contractor and City.
- W. **“Project.”** All activity relative to this Contract including activity of the Contractor, its Subcontractors, and City.

- X. **“Request for Change Order.”** A document, designated as a Request for a Change Order, prepared by the Contractor requesting either (1) a change in Contract Price; (2) a change in Contract Time; (3) a change in t Work; (4) a payment of money or damages; and/or, (5) any other relief arising out of or relating to this Contract.
- Y. **“Request for Information.”** A request from the Contractor to City seeking an interpretation or a clarification of some requirement of the Contract Documents.
- Z. **“Site” or “Project Site.”** The location, at which construction, equipment or services furnished by the Contractor under the Contract will be performed, completed and/or delivered.
- AA. **“Subcontractor.”** An individual, firm, partnership, or corporation having a contract, purchase order, or agreement with the Contractor, or with any Subcontractor of any tier for the performance of any part of the Contract. When City refers to Subcontractor(s) in this document, for purposes of this document and unless otherwise stated herein, the term Subcontractor(s) includes, at every level and/or tier, all subcontractors and subconsultants.
- BB. **“Supplier(s).”** Any person or firm who is not performing work or supplying labor on Site and is engaged in the business of supplying a manufactured product or resource to City, Contractor, or Subcontractors. The term Suppliers includes materialmen, manufacturers, and fabricators.
- CC. **“Substantial Completion.”** That stage in the progress of the Work where:
 1. City has full and unrestricted use and benefit of the Project for the purpose intended;
 2. All the systems and parts of the Contract Work are functional;
 3. Utilities are connected and operate normally;
 4. Only minor incidental work or correction or repair remains to complete all Contract requirements; and
 5. The City has received all certificates of occupancy and any other permits, approvals, licenses and other documents from any governmental authority with jurisdiction necessary for beneficial occupancy of the project.

1.2 INTENT AND INTERPRETATION OF THE DOCUMENTS

- A. The Contract Documents constitute the entire and integrated agreement between the parties hereto and supersede all prior negotiations, representations, or agreements, either written or oral.
- B. The Contract Documents shall not be construed to create a contractual relationship between any parties other than City and the Contractor. No contract between City and a third party shall be construed to create any duty on the part of City or such third party to the Contractor. The Contractor is not an intended or incidental beneficiary of any promises made in City’s contract with a third party, if any.
- C. The Contract Documents are intended to be complementary. What is required by one part of the Contract shall be as binding as if required by all. Should any conflict or inconsistency be found in the Contract Documents, the provision imposing the more expensive duty or obligation on the Contractor shall take precedence.

- D. The words “similar,” “typical” (or other equivalents) shall mean nearly corresponding or having a likeness. Such words shall not be construed to mean that all parts of the Work referred to are identical or substantially identical, or that such elements of the Work are connected identically or substantially identically to the rest of the Work. The Contractor has the responsibility to determine all details of the Work in relation to their location and connection to other parts of the Work. The singular includes the plural and vice versa. Male includes female and vice versa.
- E. The organization of the specifications into divisions, provisions and articles and the organization of the drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.3 CLARIFICATION OF DRAWINGS AND DETAIL DRAWINGS

- A. Where on any drawing a portion of the Work is drawn out and the remainder is indicated in outline, the drawn out parts shall apply also to other similar portions of the Work. Where ornament or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall apply to all other similar parts of the Work, unless otherwise indicated.
- B. With regard to drawings the following shall apply:
 - 1. Written dimensions shall be followed; drawings may not be to scale.
 - 2. Figure dimensions on drawings shall govern over scale dimensions; and detail drawings shall govern over general drawings.

ARTICLE 2: CITY

2.1 AUTHORITY

- A. Unless City, in writing, indicates otherwise, the authority to (1) commit to or bind City to any Change Orders or change in the Work, Contract Price and/or Contract Time; or (2) sign the Contract or Change Orders rests solely in the City Manager or his or her designee.
- B. The Engineer shall have the authority to administer the Contract. Administration of the Contract by the Engineer includes but is not limited to:
 - 1. Receiving all correspondence and information from the Contractor;
 - 2. Issuing request for Change Proposals;
 - 3. Responding to Requests For Information;
 - 4. Reviewing the schedule of values, project schedules, submittals, testing and inspection reports, substitution requests, and other documentation submitted by the Contractor;
 - 5. Negotiating Change Proposals and Change Orders;
 - 6. Recommending Change Orders for approval by the City Manager or its designee;
 - 7. Issuing decisions with respect to Requests for Change Orders and Claims;
 - 8. Processing payment requests submitted by the Contractor, and recommending payment;

9. Monitoring the quality of the Work, rejecting noncompliant Work, and recommending acceptance of the Work;
 10. Transmitting executed Change Orders, amendments, and other Contract correspondence to the Contractor; and
 11. Performing all other contract administrative functions.
- C. All correspondence, questions, and/or documentation shall be submitted to the Engineer.
- D. The Engineer may designate representatives to perform functions under the Contract, such as review and/or inspection and acceptance of supplies, services, including construction, and other functions of a technical or administrative nature.

2.2 INFORMATION SUPPLIED BY CITY

- A. Unless otherwise specifically provided in the Contract, surveys and site information provided by City are intended to describe the general physical characteristics of the Site. City does not represent that this information is complete or sufficient for the Contractor's performance of the Work.
- B. City shall furnish to the Contractor a copy of the Contract Documents. The Contractor shall pay City for any additional copies of Contract Documents.

2.3 WORK BY CITY OR SEPARATE CONTRACTORS

City reserves the right to perform work not included in the Contract or to let other contracts in connection with this Project. The Contractor shall coordinate its Work with City and other City contractors and, at City's request, participate in meetings for the purpose of coordinating the Contractor's construction schedule with those of other contractors at no additional cost to City.

ARTICLE 3: CONTRACTOR

3.1 CONTRACTOR REPRESENTATIONS

The Contractor makes the following representations to City:

- A. Before submission of its bid, the Contractor has:
1. Carefully reviewed the Contract Documents, and visited and examined the Site;
 2. Become familiar with the general and local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of Contract Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and reasonably ascertainable subsurface conditions and other matters that may be encountered at the Site or affect performance of the Work or the cost or difficulty thereof;
 3. Become familiar with and satisfied itself as to the conditions bearing upon transportation, disposal, handling, and storage of materials; and
 4. Become familiar with and satisfied itself as to the availability of labor, water, electric power, and roads; and the uncertainties of access, traffic, parking and weather. Any failure of the Contractor to take the action described in this provision (3.0) or elsewhere in the Contract Documents will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of

successfully performing the Work, or for proceeding to successfully perform the Work without additional expense to City.

- B. The Contract Price is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work as represented by the Contract, site visit, and the general conditions (including but not limited to weather, site, soil) known or reasonably anticipated for the Site.

3.2 GENERAL DUTIES

- A. The Contractor shall give sufficient supervision to the Work, using its best skill and attention. The Contractor is on notice that City will be relying on the accuracy, competence and completeness of the Work. The Contractor shall supervise and be solely responsible for the proper performance of the Work in accordance with the Contract, including the construction means, methods, techniques, sequences, procedures, and for coordination of all portions of the Work.
- B. Unless specified elsewhere in the Contract, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction machinery, utilities, transportation, and other facilities and services (including federal and state tax, industrial insurance, social security liability and all other applicable taxes) necessary for the proper execution and completion of the Work.
- C. The Contractor shall also provide sufficient staffing and supervision to process Requests for Information, Change Proposals, Submittals, Change Orders, close out documentation, and to perform all other requirements of the Contract and all Work.
- D. The Contractor shall lay out its Work from baselines and benchmarks indicated in the Contract, if any, and shall be responsible for the accuracy of all field measurements and surveys used in the lay out.

3.3 DUTY TO INSPECT CONTRACT DOCUMENTS

- A. The Contractor shall carefully study and compare all Contract Documents and check the conditions, dimensions, and instructions as stated therein. Contractor will not be required to provide professional services which constitute the practice of architecture and engineering except to the extent provided for in the technical specifications and drawings.
- B. The Contractor shall immediately notify City in writing of any:
 - 1. Error, inconsistency, or omission in the Contract Documents that a reasonable contractor knew or through the exercise of reasonable diligence should have discovered under the same and similar circumstances;
 - 2. Requirement in the Contract Documents that conflict with any local, state, and federal laws, regulations and/or permits, licenses, and easement conditions that a reasonable contractor knew or through the exercise of reasonable diligence should have discovered under the same and similar circumstances.
- C. The Contractor should not proceed with the work in question until the Contractor receives written direction from the Engineer.
- D. If the Contractor proceeds with the work in question without written direction from the Engineer, the Contractor shall be responsible for any costs or damages associated with:

1. Fines or penalties;
2. Demolition, tear out, removal, cleanup, remediation, or fixing the work in question; and
3. Delay, disruption, and loss of productivity.

3.4 CONTRACTOR'S SUPERVISION AND EMPLOYEES

- A. Contractor shall provide qualified and competent people to administer the contract and perform all the Work.
- B. During performance of the Work the Contractor shall have supervisory personnel on-site and available to administer, manage and coordinate the Work. City shall not be responsible for the acts or omissions of the supervisory personnel or their assistants.
- C. The Contractor shall at all times enforce good order among all persons furnishing labor or materials on-site and shall only employ workers skilled in the work assigned. If requested by the Project Representative, Contractor shall provide the Project Representative with copies of licenses, registrations, and certifications.
 1. City shall have the right to require the Contractor to remove personnel from the Site that do not have the appropriate qualifications and experience to meet or uphold the requirements of the Contract. City shall also have the right to order the Contractor to replace personnel who demonstrate unprofessional behavior.
 2. Failure by City to require removal of any Contractor personnel shall not be deemed an admission that any such personnel are satisfactory, nor shall such failure relieve the Contractor from any contractual responsibility.

3.5 SUBCONTRACTORS AND SUPPLIERS

- A. This Contract is between City and the Contractor.
 1. The Contractor's subcontracting shall not create a contract between City and the Subcontractor and Suppliers. Subcontractors and Suppliers are not intended as incidental third party beneficiaries to the Contract. The Subcontractor and Suppliers shall have no rights against City by reason of their agreements with the Contractor.
 2. The Contractor is responsible for performing all work required by the Contract. The Contract has not been written with the intent of, and City shall not be a party to, defining the division of work between the Contractor and its Subcontractors and Suppliers.
- B. **Selection of Subcontractors and Suppliers**
 1. Subcontractors and Suppliers shall be properly licensed, registered or certified, as applicable, and capable to perform the assigned work.
 2. If requested by City, the Contractor shall provide documentation that the proposed Subcontractors and Suppliers have adequate experience and skill.
 3. The Contractor shall require each Subcontractor and Supplier to comply with all provisions of this Contract. At the request of Subcontractors or Suppliers, Contractor shall make available for copying all Contract Documents.

C. Responsibility for Work of Subcontractors and Suppliers

The Contractor shall be responsible for the acts and omissions of Subcontractors and Suppliers. The Contractor shall also be responsible for the suitability of any materials, components, equipment or supplies furnished by a Subcontractor and/or Supplier irrespective of whether such were designated or approved by City.

3.6 SCHEDULE OF WORKING HOURS

- A. As specified in the Contract, the Contractor shall submit a schedule of working hours, including overtime to City for acceptance. This schedule shall comply with all Contract requirements. Except as permitted elsewhere in the Contract Documents or in the case of an emergency, all Work at the Site shall be performed between the hours of 7am and 6 pm Monday through Friday.
- B. The schedule of working hours accepted by City shall be the only schedule used by the Contractor during performance of the Contract, unless amended to maintain Work progress.
- C. The Contractor shall provide 48 hours advance written Notice of any intent to work outside of approved working hours. Any work at the Site performed outside approved working hours shall be performed without additional expense to City, except as otherwise provided in the Contract Documents. Contractor shall comply with Mercer Island Code Section 8.24.020 (Q) which prohibits construction related noise outside designated hours except in cases of emergency or demonstrated necessity.

3.7 RECORD DOCUMENTS

- A. The Contractor shall maintain an accurate, readable, and orderly set of drawings and specifications, updated as the job progresses to show all approved changes, options, alternates, and all actual deviations from the original Contract Documents. This set of drawings and specifications shall be the Record Documents.
 - 1. The Record Documents shall be maintained in hard copy.
 - 2. In addition to all approved changes, options, alternates, and all actual deviations from the original Contract Documents, the Record Documents shall be marked as follows:
 - a. Record all materials used where options, alternates and/or change orders were indicated, specified and/or authorized;
 - b. Accurate measurements referenced as required by the technical specifications shall be recorded to show the exact location and changes in direction of all underground services and utilities, as well as their depth below finished grade; and
 - c. Record all other requirements as specified in the Technical Specifications.
- B. The Record Documents shall be kept up-to-date and be available for review by City at all times, including but not limited to at each job progress meeting. Failure to have the record set up-to-date shall be sufficient reason for City to withhold payment in accordance with paragraph 7.2, *Payments Withheld*, until all such information is recorded.

- C. Record Documents may be used to assist City to verify the appropriate progress payment.
- D. Neither Final Acceptance nor Final Payment will be issued until a complete set of Record Documents is submitted and the Engineer is satisfied as to its quality and accuracy.

3.8 COST RECORDS

- A. The Contractor, Subcontractors, and Suppliers shall maintain Project cost records by cost codes and shall segregate and separately record at the time incurred all costs (1) directly associated with each work activity and (2) directly or indirectly resulting from any event or condition for which the Contractor seeks an adjustment in the Contract Price, Contract Time, and/or damages.
 - 1. Any costs claimed to result from any such event or condition, including, but not limited to, delay and impact costs, acceleration costs, loss of productivity or efficiency, and increased or extended overhead shall be recorded at the time incurred and be fairly and reasonably allocated to each such event or condition and to other causes of such costs.
 - 2. City shall be provided with a detailed description of all such costs and the basis of allocation. The Contractor, Subcontractors, and Suppliers shall maintain a monthly summary of all costs and shall make all underlying cost records and monthly summary of costs available for review, inspection, and copying by City upon request.
 - 3. Any work performed for which the Contractor intends to seek an adjustment in Contract Price and/or Contract Time shall be recorded on the same day the work is performed and kept separate so as to distinguish it from Contract Work.
- B. In addition to the requirements set forth in Article 5, *Changes to the Contract*, and Article 6, *Time and Price Adjustments*, the Contractor shall be entitled to extra compensation for an event or condition and/or the recovery of damages only to the extent that the Project cost records are kept in full compliance with all Contract requirements and the cost allocations support entitlement to such compensation.

3.9 MAINTENANCE AND INSPECTION OF DOCUMENTS

- A. All Contractor's, Subcontractors', and Suppliers' documents and records relating to the Contract shall be open to inspection, audit, and/or copying by City or its designee:
 - 1. During the Contract Time; and
 - 2. For a period of not less than six years after the date of Final Acceptance of the Contract ("Preservation Period"); or if any Claim, audit or litigation arising out of, in connection with, or related to this Contract is initiated, all documents shall be retained until such Claim, audit or litigation involving the records is resolved or completed, whichever occurs later.
- B. The Contractor shall also guarantee that all Subcontractor and Supplier documents shall be retained and open to similar inspection, audit and/or copying during the Contract Time and also the Preservation Period. The Contractor, Subcontractor, and Supplier shall use its best efforts to cooperate with the inspection, auditing, and/or copying.

- C. Inspection, audit, and/or copying of all documents described herein, may be performed by City or its designee at any time with not less than seven (7) days' Notice. Provided however, if an audit or inspection is to be commenced more than sixty (60) days after the Final Acceptance date of the Contract, the Contractor will be given twenty (20) days' Notice of the date of the audit.
- D. The Contractor, Subcontractors, and Suppliers shall provide adequate facilities, acceptable to City, for inspection, auditing, and/or copying during normal business hours.
- E. If the Contractor is formally dissolved, assigns or otherwise divests itself of its legal capacity under this Contract, then it shall immediately notify City and preserve such records, at its expense, as directed by City.
- F. The Contractor, Subcontractor, and Supplier, shall be subject to audit at any time with respect to this Contract. Failure to maintain and retain sufficient records to allow City to verify all costs or damages or failure to permit City access to the books and records shall constitute a waiver of the rights of the Contractor Subcontractor and Supplier to Claim or be compensated for any damages, additional time or money under this Contract.
- G. At a minimum, the following documents, including the machine readable electronic versions, shall be available for inspection, audits, and/or copying:
 1. Daily time sheets and all daily reports, Supervisor's reports, and inspection reports;
 2. Collective bargaining agreements;
 3. Insurance, welfare, and benefits records;
 4. Payroll registers;
 5. Earnings records;
 6. All tax forms, including payroll taxes;
 7. Material invoices and requisitions;
 8. Material cost distribution worksheet;
 9. Equipment records (list of Contractor's, Subcontractors', and Suppliers' equipment, rates, etc.);
 10. Contracts, purchase orders and agreements between the Contractor and each Subcontractor and Supplier;
 11. Subcontractors' and Suppliers' payment certificates;
 12. Correspondence, including email, with Subcontractors and/or Suppliers;
 13. All meeting notes by and between Contractor, Subcontractors, Suppliers and/or any third parties related to the Project;
 14. Canceled checks (payroll and vendors);
 15. Job cost reports, including monthly totals;
 16. Job payroll ledger;
 17. Certified payrolls;

18. General ledger;
 19. Cash disbursements journal;
 20. Take off sheets, and calculations used to prepare the bid and/or quotes;
 21. Take off sheets, calculations, quotes, other financial data to support change proposals, request for change order and/or claims;
 22. Financial statements for all years during the Contract Time. In addition, City may require, if it deems appropriate, additional financial statements for 3 years preceding execution of the Contract and 6 years following Final Acceptance of the Contract;
 23. Depreciation records on all Contractor's, Subcontractor's, and Supplier's equipment, whether these records are maintained by the Contractor, Subcontractors, and Suppliers involved, its accountant, or others;
 24. If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
 25. All documents which relate to each and every Claim together with all documents which support the amount of damages as to each Claim;
 26. Worksheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, Suppliers, all documents which establish time periods, individuals involved, the hours for the individuals, and the rates for the individuals;
 27. Worksheets, software, and all other documents used (a) by the Contractor to prepare its bid and schedule(s) and/or (b) to prepare quotes and bids to the Contractor;
 28. All schedule documents, including electronic versions, planned resource codes, or schedules and summaries;
 29. All submittals; and
 30. All other documents, including email, related to the Project, Claims, or Change Orders.
- H. The Contractor shall mark any documentation it considers proprietary or confidential accordingly. Such information will be treated as such by City; however, City cannot ensure that this information will not be subject to release pursuant to a public records request. In the event City receives a request for such information, City will advise the Contractor and will not release the requested information for a period of not less than ten (10) days in order to give the Contractor an opportunity to obtain a court order prohibiting the release of the information in response to the public records request.

3.10 MAINTENANCE AND SITE CLEANUP

- A. The Contractor shall at all times keep the Site, access points, and public rights-of-way free from accumulation of dirt, mud, waste materials or rubbish caused by the Contractor or Subcontractors. At the completion of the Contract Work, the Contractor shall remove and lawfully dispose of all its dirt, mud, waste materials,

rubbish, tools, scaffolding and surplus or partly used materials from the Site and shall leave the Site broom clean unless some stricter standard is specified in the Contract.

- B. The Contractor shall obey all applicable laws and regulations relating to the storage, use, and disposal of Hazardous Materials. The Contractor shall promptly notify City of all Contractor or Subcontractor caused spills or releases of Hazardous Materials, and pay the cost to promptly clean up all such spills or releases and any associated fines or penalties. The Contractor shall maintain documentation of the clean up and disposal all Contractor or Subcontractor caused spills or releases of Hazardous Materials.
- C. If the Contractor fails to adequately maintain or cleanup the Site, City may, after written Notice to the Contractor, sweep surfaces or remove the dirt, mud, waste materials, rubbish, or hazardous materials and charge all reasonable costs of such work to the Contractor.

3.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES, AND IMPROVEMENTS

- A. Contractor shall protect from damage all existing structures, curbs, gutters, sidewalks, equipment, improvements, utilities, trees, and vegetation not shown in the Contract Documents to be removed or modified at or near the Site. Contractor shall repair, at no cost to City, any such damage resulting from failure to comply with the requirements of the Contract or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, City may have the necessary work performed and deduct or charge the cost to Contractor or exercise its rights under the Performance and Payment Bond. If there are insufficient funds remaining, excluding retention, the Contractor shall pay City for the costs associated with protection and repairing the damages.

3.12 PERMITS, LAWS, REGULATIONS AND TAXES

- A. Except those permits, easements, and variances specified in the Contract as having been previously obtained by City, all permits, licenses, easements and variances necessary for the execution of the Work shall be secured and paid for by the Contractor. The Contractor shall identify, apply for, and pay for such permits and licenses at the earliest possible time so as to avoid any delay to the Work arising from the permitting and/or licensing process. No actions taken by City to aid the Contractor in securing any permit or license shall relieve the Contractor of any obligations to secure any such permit or license.
- B. The Contractor shall maintain all stamped permit sets of documents at the Site during construction, in good condition and as required by local ordinances.
- C. The Contractor shall perform the Work in full compliance with local, state and federal laws, ordinances, resolutions and regulations, and with permit, license, easement, and variance conditions pertaining to the conduct of the Work. The Contractor shall defend, indemnify, and hold City, its elected officials, officers, agents and employees harmless from any assessment of fines, penalties, or damages arising from violations of the same by the Contractor or Subcontractors. The Contractor shall pay and provide proof of payment for any assessments of fines, penalties or damages. The Contractor shall cooperate with all governmental entities regarding inspection of the Work and compliance with such requirements.

- D. The bid form may include a line item for sales tax on the whole amount, or on items which are not exempt from tax under Washington State Department of Revenue rules, including WAC 458-20-170 and WAC 458-20-171. Unless there are separate line items in the bid form for Washington State sales tax, Contractor shall include all sales tax in its lump sum bid or unit prices. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The City will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability. Except as provided above, the Contractor is required to pay all applicable taxes. No adjustment will be made in the amount to be paid by City under the Contract because of any change in law or regulations covering any applicable taxes, or because of any misunderstanding by the Contractor as to its liability for or the amount of any taxes.

3.13 PATENTS AND ROYALTIES

- A. The Contractor shall assume all costs or fees relating to royalties or claims for any patented invention, article, process or method that may be used upon or in a manner connected with the Work under this Contract or with the use of completed Work by City.

3.14 CONTRACTOR'S CERTIFICATION

A. Conflict of Interest

The Contractor certifies (and shall require each Subcontractor to certify) that it has no direct or indirect pecuniary or proprietary interest, and that it shall not acquire any such interest, which conflicts in any manner or degree with the work, services or materials required to be performed and/or provided under this Contract and that it shall not employ any person or agent having any such interest. In the event that the Contractor or its agents, employees or representatives acquires such a conflict of interest, the Contractor shall immediately disclose such interest to City and take action immediately to eliminate the conflict or to withdraw from this Contract, as City may require.

B. Contingent Fees and Gratuities

The Contractor, by entering into this Contract with City to perform or provide work, services or materials, has thereby covenanted:

1. That no person or selling agency except bona fide employees or designated agents or representatives of the Contractor has been or will be employed or retained to solicit or secure this Contract with an agreement or understanding that a commission, percentage, brokerage, or contingent fee may be paid; and
2. That no gratuities, in the form of entertainment, gifts or otherwise, have been or will be offered or given by the Contractor or any of its agents, employees or representatives, to any official member or employee of City or other governmental agency with a view toward securing this Contract or securing favorable treatment with respect to the awarding or amending thereof, or the making of any determination with respect to the performance of this Contract. The Contractor certifies that it has not made any contributions to any person or entity as a condition of doing business with City and it has disclosed to City all attempts by any person to solicit such payments.

3.15 DEVIATION FROM CONTRACT

- A. The Contractor shall not make an alteration, variation, addition, deviation, or omission from the requirements of the Contract Documents without the prior written consent of the Engineer.
- B. Any alteration, variation, addition, deviation, or omission by the Contractor shall not result in any extra compensation or extension of time.

3.16 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. Temporary Buildings and Utilities

Temporary buildings (including storage sheds, shops, and offices) and utilities may be erected by Contractor on the Site only with the consent of City and without expense to City. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by the Contractor at its expense upon completion of the Work.

B. Disposal/Removal of Materials

The Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal of all materials and components. The Contractor shall provide City with a copy of all manifests and receipts evidencing proper disposal when required by City or applicable law.

C. Protection and Care of Contractor's Materials and Equipment

The Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Site. Materials and equipment may be stored on the Site at the Contractor's own risk and with prior written approval from City. When the Contractor uses any portion of the Site as a shop, the Contractor shall be responsible for any repairs, patching, or cleaning arising from such use and for obtaining any necessary permits to establish such shop or temporary storage facilities.

3.17 CONTRACTOR'S OVERALL RESPONSIBILITY FOR PROTECTION OF WORK, PROPERTY, AND PERSONS

- A. The Contractor shall be responsible for conditions of the Site, including safety of all persons and property, during performance of the Work. The Contractor shall maintain the Site and perform the Work in a manner which meets all statutory and common law requirements or other specific contractual requirements for the provision of a safe place to work and which adequately protects the safety of all persons and property on or near the Site. This obligation shall apply continuously and shall not be limited to normal working hours. City's inspection of the Work or presence at the Site does not and shall not be construed to include review of the adequacy of the Contractor's safety measures in, on or near the site of the Work.
- B. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including adequate safety training, in connection with the Work. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.
- C. The Contractor shall protect and be responsible for any damage or loss to the Work or to the materials and equipment associated with the Work until the date of

Substantial Completion. The Contractor remains responsible for any damage or loss caused directly or indirectly by the acts or omissions of the Contractor, Subcontractors, Suppliers, or third parties authorized or allowed on the Site by the Contractor until Final Acceptance.

- D. The Contractor shall also be solely and completely responsible for damages arising from the Work that affect property adjacent to the Site.
- E. The Contractor shall repair or replace without cost to City any damage or loss that may occur, except damages or loss caused by the acts or omissions of City.
- F. The Contractor shall erect and maintain adequate steel plates, signs, fencing, barricades, lights or security measures and persons to protect the Work until the Engineer authorizes in writing the removal of signs, fencing, barricades, lights or security measures.
- G. The Contractor shall conduct all operations with the least possible obstruction and inconvenience to the public. To disrupt public traffic as little as possible, the Contractor shall permit traffic to pass through the Project Site with the least possible inconvenience or delay. The Contractor shall maintain existing roads, streets, sidewalks and paths within the Project Site, keeping them open and in good, clean, safe condition at all times.

3.18 PROTECTION OF PERSONS

- A. The Contractor shall take all reasonable precautions for the safety of all employees working on this Contract and all other persons who may be affected by such Work. The Contractor shall designate a responsible member of its organization at the Site whose duty shall be to manage and coordinate the safety programs and to prevent accidents of the Contractor and Subcontractors.
- B. Except as otherwise stated in the Contract, if the Contractor encounters, on the Site, material reasonably believed to be Hazardous Material that Contractor shall immediately stop work in the area affected and give Notice of the condition to City. Work in the affected area shall not be resumed without written direction by City.
- C. To protect the lives and health of persons performing work under this Contract, 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 including, without limitation, all excavation, tunneling, trenching and ditching operations. In case of conflict between any such requirements, the more stringent regulation or requirement shall apply. There is no acceptable deviation from these safety requirements, regardless of practice in the construction industry. Any violation of OSHA, WISHA or other safety requirements applicable to the Work may be considered a breach of this Contract.

3.19 SAFETY PROGRAM

The Contractor shall prepare and maintain a written site specific "Safety Program" demonstrating the methods by which all applicable safety requirements of this Contract will be met. The Contractor shall ensure its Subcontractors and Suppliers have a written "Safety Program" or formally adopt the Contractor's site specific "Safety Program." The

Contractor shall conduct a weekly safety meeting with all Subcontractors and others on the Site to discuss general and specific safety matters.

3.20 ARCHAEOLOGICAL AND HISTORICAL PRESERVATION

The Contractor shall comply fully with the requirements set forth in Chapter 27.53 RCW entitled Archaeological Sites and Resources. The Contractor shall immediately notify the City if any artifacts, skeletal remains or other archaeological resources (as defined under RCW 27.53.040 now and as hereinafter amended) are unearthed during excavation or otherwise discovered on the Site.

3.21 WATER POLLUTION CONTROL REQUIREMENTS

The Contractor shall comply with and be liable for all penalties, damages and violations under Chapter 90.48 RCW including any regulations issued pursuant thereto in the performance of the Work.

3.22 EASEMENTS

If the Contractor makes arrangements for use of additional public and/or private property, the Contractor, prior to using such property, shall provide the Engineer with written permission of the landowner, or duly authorized agent of such landowner, for such use.

3.23 TITLE VI / NONDISCRIMINATION ASSURANCES

During the performance of this contract, the contractor/consultant, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations

The contractor shall comply with the Regulations relative to non-discrimination in federally assisted programs of United States Department of Transportation (USDOT), Title 49, Code of Federal Regulations, part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of sub-contractors, including procurement of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for Sub-contracts, Including Procurement of Materials and Equipment

In all solicitations either by competitive bidding or negotiations made by the contractor for work to be performed under a sub-contract, including procurement of materials or leases of equipment, each potential sub-contractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, sex, or national origin.

4. Information and Reports

The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts,

other sources of information, and its facilities as may be determined by the contracting agency or the appropriate federal agency to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to WSDOT or the USDOT as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Non-compliance

In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the contracting agency shall impose such contract sanctions as it or the USDOT may determine to be appropriate, including, but not limited to:

- Withholding of payments to the contractor under the contract until the contractor complies, and/or,
- Cancellation, termination, or suspension of the contract, in whole or in part.

6. Incorporation of Provisions

The contractor shall include the provisions of paragraphs (1) through (5) in every sub-contract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any sub-contractor or procurement as the contracting agency or USDOT may direct as a means of enforcing such provisions including sanctions for non-compliance.

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a sub-contractor or supplier as a result of such direction, the contractor may request WSDOT enter into such litigation to protect the interests of the state and, in addition, the contractor may request the USDOT enter into such litigation to protect the interests of the United States.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 TIME OF ESSENCE

All time requirements set forth in the Contract Documents are of the essence.

4.2 WORK PROGRESS

A. The Contractor shall be required to:

1. Prosecute the Work diligently with adequate forces;
2. Plan, coordinate, and layout the Work in advance so as to avoid delay; and
3. Achieve Substantial Completion of the Work and Final Acceptance in accordance with the requirements of Contract Documents.

4.3 SCHEDULE OF VALUES

A. Unless otherwise specified, within fourteen (14) days after the date of Contract Execution, the Contractor shall submit to City a detailed Schedule of Values that identifies the various activities of the Work and their values and quantities, including the overhead and profit for each activity. The Contractor warrants that the values identified in its Schedule of Values accurately reflect the value of each work activity. The Schedule of Values shall be used as a basis for calculating all Progress Payments. Payment for Contract Work shall be made only for and in accordance

with those activities identified in the Schedule of Values.

- B. The Contractor shall not be entitled to, nor shall City be required to make, payment for any Contract Work until the Schedule of Values has been accepted by City. Such acceptance shall not be unreasonably withheld.
- C. City shall review and accept the Schedule of Values or provide the Contractor with a written explanation of why the Schedule of Values was not acceptable. City shall use reasonable efforts to review the Schedule of Values within thirty (30) days of City's receipt of the Contractor's submittal of its Schedule of Values. City's acceptance of the Schedule of Values shall not relieve the Contractor from its sole responsibility for the accuracy of the Schedule of Values and its compliance with all Contract requirements. The Contractor shall revise the Schedule of Values as necessary to accurately reflect Change Orders.
- D. Each Application for Payment shall include a current status of the Schedule of Values. No Application for Payment will be considered until the current status of the Schedule of Values has been submitted and accepted.
- E. The activities, which the Contractor identifies within its Schedule of Values, shall be specifically referenced within, and conform and be consistent with the activities set forth within the Project Schedule.

4.4 PROJECT SCHEDULE

- A. Unless otherwise specified, within fourteen (14) days after the date of Contract Execution, the Contractor shall submit to City a Project Schedule. The Project Schedule shall show the sequence in which the Contractor proposes to perform the Work, indicate the Critical Path, identify the dates on which the Contractor proposes to start and finish the scheduled activities of the Contract Work, indicate Substantial Completion within the Contract Time, indicate a date for Final Acceptance, and meet all the requirements as may be set forth in the Contract Documents.
- B. Within thirty (30) days of City's receipt of the Contractor's submittal of its Project Schedule or unless stated elsewhere in the Contract, City shall review the Project Schedule and provide the Contractor with written comments. City will review the Project Schedule only to determine whether the Project Schedule meets the requirements in the Technical Specifications on Project Schedule. To the extent the Project Schedule does not meet such Technical Specifications, the Contractor shall revise the Project Schedule to make it compliant.
- C. By reviewing the Project Schedule and providing written comments, City is not approving or adopting the Contractor's plan, schedule, means, methods, techniques, sequences, or procedures required to perform the Work. Review and comment by City of the Project Schedule shall not relieve the Contractor from the sole responsibility for the accuracy of a Project Schedule, and its compliance with all Contract requirements, and its responsibility to meet all required Contract completion dates. Failure by City to indicate items on the Project Schedule that do not conform with the Contract requirements shall not alter or waive the Contract requirements or relieve the Contractor from complying with all Contract requirements.
- D. The Contractor shall not be entitled to, nor shall City be required to make payment for any Contract Work until the Project Schedule complies with all Contract requirements.
- E. The Contractor shall schedule the Contract Work so that the Contract Work is completed within the Contract Time. Float in the project Schedule shall be defined

as the period of time measured by the number of days each non-critical path activity may be delayed before it and its succeeding activities become part of the Critical Path. Contractor and Owner may both utilize float to offset delays to the Work.

- F. The Contractor shall regularly enter the actual progress of the Work and Contract Time extensions, if any, approved by City on the Project Schedule. Updated Project Schedules shall reflect actual progress and completion within the Contract Time and shall be provided to City with each Application for Payment in format(s) as required by the Contract. Applications for Progress Payments will not be considered by City and the Contractor will not be paid until the Contractor complies with these requirements. The updated Project Schedule shall be used to assist City in verifying the appropriate payment.
- G. If, in the opinion of City, the Contractor falls behind in its progress of the Work due to acts or omissions of the Contractor, Subcontractors, and Suppliers, the Contractor shall take all necessary steps to improve its progress and bring its progress back in-line with the accepted Project Schedule, without additional cost to City. In this circumstance the Contractor shall, as necessary, increase the number of shifts, overtime operations, and/or days of work, both on and off the Site, and submit for acceptance any supplementary schedule or schedules as City deems necessary to demonstrate how the accepted rate of progress will be regained. Failure of the Contractor to comply with the requirements under these provisions shall be grounds for a determination by City that the Contractor is not prosecuting the Work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, City may pursue any right it has under the law or the Contract, including but not limited to default termination.

4.5 SUBMITTALS

- A. Submittals include shop drawings, setting and erection drawings, schedules of materials, product data, samples, certificates and other information prepared for the Work by the Contractor or a Subcontractor as set forth in the Technical Specifications ("Submittals"). The Contractor shall perform no portion of the Work requiring Submittals until the Submittals have been reviewed and returned by City with one of the following annotations: (1) no exceptions taken, or (2) note markings.
- B. When submitting information, the Contractor shall identify and state reasons for any alteration, variation, addition, deviation, or omission from the Contract. The Contractor shall not perform work that alters, varies, adds to, deviates from, or omits any requirement of the Contract Documents without prior specific written acceptance by City.
- C. The Contractor shall provide Submittals with reasonable promptness and in such sequence as to facilitate the timely completion of the Contract.
- D. City shall review the Contractor's Submittals and respond in writing with reasonable promptness so as not to unreasonably delay the progress of the Work. Unless otherwise agreed, no delay to the Work shall be attributable to the failure by City to respond to a Submittal until thirty (30) days after the Submittal is received by City, and then only if failure by City to respond is unreasonable and affects the Contract completion date.
- E. If the Contractor is required to resubmit a Submittal, any revisions on resubmittals shall be specifically identified in writing and the resubmitted Submittal shall be sequentially alpha denoted (for example: 22A followed by 22B, etc.) and note revisions in numerical order. The cost of the review of the initial

Submittal and the first revised submittal shall be borne by City. The costs of all additional revised Submittals shall be charged to the Contractor. The cost of review shall include, without limitation, administrative, design, and engineering activities directly related to review of Submittals. City may deduct these costs from any amounts due the Contractor.

- F. City shall review the Contractor's Submittals only for conformance with the design of the Work and compliance with the Contract. Review of the Submittals are not conducted to verify the accuracy of dimensions, quantities, or calculations, the performance of materials, systems, or equipment, or construction means, methods, techniques, sequences, or procedures, all of which remain the Contractor's responsibility. Failure by City to take exception to a Submittal shall not relieve the Contractor from any duty, including its responsibility for errors or omissions in Submittals, its duty to make Submittals and duty to perform the Work according to the requirements of the Contract. City's review of a Submittal shall not alter or waive the requirements of the Contract unless City has issued prior written approval of such change or alteration of the Contract requirements.
- G. The Contractor's failure to identify any error, deviation, or omission and subsequent acceptance of the Submittal by City shall not relieve the Contractor from complying with the Contract requirements.

4.6 REQUESTS FOR INFORMATION

- A. If the Contractor determines that some portion of the drawings, specifications or other Contract Documents require clarification or interpretation by City because of an apparent error, inconsistency, omission, or lack of clarity in the Contract, the Contractor shall promptly submit a Request For Information ("RFI") and, unless otherwise directed, shall not proceed with the affected work until City has responded to the RFI. The Contractor shall plan its work in an efficient manner so as to allow for timely responses to RFIs.
- B. City shall respond in writing with reasonable promptness to Contractor's RFI.
 - 1. At the request of the Engineer, the Contractor shall prioritize its RFIs, identify a date by which the Contractor prefers the RFI be answered, and reasons for such priority.
 - 2. If the Contractor submits a RFI on an activity less than thirty (30) days prior to the commencement of that activity, the Contractor shall not be entitled to any time extension or adjustment in Contract Price due to the time it takes City to respond to the RFI provided that City responds within fifteen (15) days. No delay to the Work or damages to the Contractor shall be attributable to the failure by City to respond to the RFI until fifteen (15) days after City's receipt of the RFI, and then only if the failure by City to respond is unreasonable and affects the Contract completion date.
- C. City's response to a RFI shall not be considered a change to the Contract requirements unless it is accompanied by a Request for Change Proposal. If the Contractor believes that City's response to the RFI constitutes changed work impacting Contract Price or Contract Time, the Contractor shall submit a Notice of Claim, Supplemental Information and a Request for Change Order to City in accordance with Articles 5, *Changes to the Contract*.

4.7 TESTS, INSPECTIONS, AND ACCESS TO THE WORK

- A. Contractor shall be responsible for inspection and quality assurance of all the Work

including all work performed by any Subcontractor. The Contractor shall document and maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract. The Contractor shall maintain all documentation related to testing and inspection and make such documentation available to City at its request. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to City, or with the appropriate public authority. If any governmental, regulatory, or permitting authority requires any portion of the Work to be inspected, tested, or approved, the Contractor shall make all arrangements for and cooperate with such inspections, tests, and approvals so as not to delay completion of the Work. The Contractor shall bear all related costs of tests, inspections, and approvals. The Contractor shall give City at least three (3) days' Notice of: (1) when the work is ready to be tested and inspected and (2) when and where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to City upon request.

- B. The Contractor shall cooperate with City in the performance of any tests and inspections of the Work. The Contractor has the duty to coordinate all tests and inspections in a manner, which does not negatively impact Contractor's compliance with the Contract.
- C. If any Work required to be inspected, tested, or approved is covered without such inspection, testing or approval being obtained, it must, if requested by City, be uncovered for observation, and such uncovering shall be at Contractor's expense.
- D. City may, at any reasonable time and at its own cost, conduct inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract. City shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract. City inspection and tests are for the sole benefit of City and do not:
 - 1. Constitute or imply acceptance;
 - 2. Relieve Contractor of responsibility for providing adequate quality control measures;
 - 3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
 - 4. Relieve Contractor of its responsibility to comply with the requirements of the Contract; or
 - 5. Impair City's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.
- E. Neither observations by an inspector retained by City, the presence or absence of such inspector on the Site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract. Inspectors are not authorized to change any term or condition of the Contract.
- F. Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by City. City may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. City shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

4.8 CORRECTION OF WORK OR DAMAGED PROPERTY

- A. If material, equipment, workmanship, or work proposed for, or incorporated into the Work, does not meet the Contract requirements or fails to perform satisfactorily, City shall have the right to reject such work by giving the Contractor written notice and may require the Contractor to promptly repair, replace or correct it at no cost to the City.
- B. If the Contractor does not repair, replace or correct and/or remove defective or non-conforming Work or repair damaged property as required by City, in manner and/or schedule, City or City's designee may repair, replace or correct and/or remove it and deduct the cost of such effort from any payment due the Contractor.
 - 1. If the remaining payments due the Contractor are not sufficient to cover City's cost of remedying the defective or non-conforming Work, the Contractor shall pay the difference to City.
- C. The Contractor shall be liable for all damages and costs incurred by City caused by defective or non-conforming work or workmanship, including but not limited to all special, incidental, or consequential damages incurred by City.

4.9 SUBSTITUTION OF PRODUCTS & PROCESSES

- A. Substitutions requested by the Contractor will be subject to City's prior written acceptance and at City's sole discretion.
- B. Requests for substitution must specifically identify:
 - 1. Material, equipment, and labor costs included in the Contractor's bid associated with the original item to be substituted;
 - 2. All costs for material, equipment, labor associated with the proposed substitution, including any impact costs;
 - 3. Proposed change to the Contract Price and/or Contract Time; and
 - 4. Compatibility with or modification to other systems, parts, equipment or components of the Project and Contract Work.
- C. Contractor shall provide all documentation supporting its request as requested by City.
- D. All costs of any redesign or modification to other systems, parts, equipment or components of the Project or Contract Work, which result from the substitution, shall be borne by the Contractor.
- E. When City approves a substitution proposed by the Contractor, the Contractor shall guarantee the substituted article or materials to be equal to, or better than, those originally specified and shall be compatible with all other systems, parts, equipment or components of the Project and Contract Work. City has the right to order an unaccepted, substituted article removed and replaced without additional cost to City.
- F. City has a right to a deductive Change Order if the substituted product or process is less costly than the contractually required product or process.
- G. If City does not accept the substitution proposal the Contractor shall proceed, without delay or cost to City, with the Contract Work as originally specified.

4.10 INCREASED OR DECREASED QUANTITIES

- A. Payment to the Contractor will be made only for the actual quantities of work performed and accepted in conformance with the contract. When the accepted quantity of work performed under a unit item varies from the original proposal quantity, payment will be at the unit contract price for all work unless the total accepted quantity of any contract item, adjusted to exclude added or deleted amounts included in change orders accepted by both parties, increases or decreases by more than 25 percent from the original proposal quantity. In that case, payment for contract work may be adjusted as described herein:
1. The adjusted final quantity shall be determined by starting with the final accepted quantity measured after all work under an item has been completed. From this amount, subtract any quantities included in additive change orders accepted by both parties. Then, to the resulting amount, add any quantities included in deductive change orders accepted by both parties. The final result of this calculation shall become the adjusted final quantity and the basis for comparison to the original proposal quantity.
 - a. Increased Quantities: Either party to the contract will be entitled to renegotiate the price for that portion of the adjusted final quantity in excess of 1.25 times the original proposal quantity. The price for excessive quantities will be determined by agreement of the parties, or, where the parties cannot agree, the price will be determined by the City based upon the actual costs to perform the work, including markup for overhead and profit in accordance with Paragraph 6.3, *Allowable Costs*.
 - b. Decreased Quantities: Either party to the contract will be entitled to an equitable adjustment if the adjusted final quantity of work performed is less than 75 percent of the original bid quantity. The equitable adjustment shall be based upon and limited to three factors:
 - i. Any increase or decrease in unit costs of labor, materials or equipment, utilized for work actually performed, resulting solely from the reduction in quantity;
 - ii. Changes in production rates or methods of performing work actually done to the extent that the nature of the work actually performed differs from the nature of the work included in the original plan; and
 - iii. An adjustment for the anticipated contribution to unavoidable fixed cost and overhead from the units representing the difference between the adjusted final quantity and 75% of the original plan quantity.
- B. The following limitations shall apply to renegotiated prices for increases and/or equitable adjustments for decreases:
1. Labor, materials and equipment rates shall be actual costs but shall not exceed the rates set forth in Paragraph 6.3, *Allowable Costs* nor shall overhead and profit exceed the rates set forth in Paragraph 6.3, *Allowable Costs*.

2. No payment for consequential damages or loss of anticipated profits will be allowed because of any variance in quantities from those originally shown in the proposal form, contract provisions, and contract plans.
 3. The total payment (including the adjustment amount and unit prices for work performed) for any item which experiences an equitable adjustment for decreased quantity shall not exceed 75% of the amount original bid for the item.
- C. If the adjusted final quantity of any item does not vary from the quantity shown in the proposal by more than 25% then the Contractor and the City agree that all work under that item will be performed at the original contract unit price and within the original time for completion.
 - D. When ordered by the Engineer, the Contractor shall proceed with the work pending determination of the cost or time adjustment for the variation in quantities.
 - E. The Contractor and the City agree that there will be no cost adjustment for decreases if the City has entered the amount for the item in the proposal form only to provide a common proposal for bidders.

ARTICLE 5: CHANGES TO THE CONTRACT

5.1 GENERAL

- A. No provisions of the Contract may be amended or modified except by written agreement signed by the City.
- B. All Change Order work shall be performed in accordance with the original Contract requirements unless modified in writing by City.
- C. Any response to a Request For Information, or other directive, direction, instruction, interpretation, or determination (hereinafter referred to as "Direction" for the purposes of Article 5), provided by City is not considered a Change Order, a change to Contract requirements, and shall not constitute, in and of itself, entitlement to an adjustment in Contract Price and/or Contract Time.
- D. The Contractor shall not be entitled to any change in the Contract Price and/or Contract Time under the following conditions or events:
 1. They were reasonably foreseeable at the time the Contractor submitted its bid;
 2. They were caused by the acts of the Contractor, Subcontractor and/or Supplier, including but not limited to the choice of means, methods, techniques, sequences, or procedures for the Work, failure to provide labor, materials or equipment in a timely manner, and failure to take reasonable steps to mitigate delays, disruptions, or conditions encountered.
- E. The Contract requirements for time and price impacts related to Change Orders are set forth in Article 6, *Time and Price Adjustments*.
- F. If there is a bid item for "Minor Changes," payments or credits for changes that cost \$5,000 or less and do not affect time, may, at the discretion of the City, be made under that bid item in lieu of the procedures set forth in Sections 5.1 – 5.6. A Minor Change will be documented by a written Order for a Minor Change or by a notation confirming an oral agreement.

5.2 CONTRACTOR'S REQUEST FOR A CHANGE ORDER

A. Notice of Claim and Supplemental Information. If the Contractor believes that it is entitled to additional compensation and/or time for any reason (other than for a differing site condition under Section 5.2), or if the Contractor disagrees with any written or oral direction, instruction, interpretation or determination from the City, the Contractor shall

- (1) Provide the Engineer with a written Notice of Protest before doing any work or incurring any costs for which it may seek additional compensation or time from the City.
- (2) Supplement the written Notice of Protest within 14 days with a written statement that includes the following:
 - a. The date, circumstances, and basis of entitlement to additional compensation and/or time;
 - b. The estimated dollar cost of the protested work and a detailed breakdown showing how that estimate was determined;
 - c. An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption;
 - d. Substantive basis of the Request;
 - e. If the protest is continuing, the information required above shall be supplemented upon request by the Engineer until the protest is resolved; and
 - f. The Contractor waives all claims for additional compensation and time if it fails to provide both a timely Notice of Claim and Supplemental Information with the information required by this Section.

B. Request for Change Order.

1. A Request for a Change Order must be submitted in writing to the Engineer no later than thirty-five (35) days after the Contractor submitted its supplemental information pursuant to Paragraph 5.1(A)(2).
2. The Request for a Change Order shall include:
 - a. Specific dollar amount covering all costs associated calculated in accordance with Article 6, *Time and Price Adjustments*;
 - b. Specific request for time extension (number of days) calculated in accordance with Article 6, *Time and Price Adjustments*;
 - c. A copy of the written Notice of intent, including all attachments;
 - d. All documentation supporting the Request for a Change Order, including but not limited to a cost proposal prepared using the forms provided by City, all cost records, schedule analysis, and the documents identified in §00700, ¶13.10, *Maintenance and Inspection of Documents*, that are in any way relevant to the Contractor's Request for Change Order; and
 - e. The Contractor waives all claims for additional compensation and time if it fails to provide a timely Request for Change Order with the information required by this Section.

C. City's Response to Contractor's Request for Change Order.

1. City will make a written determination with respect to the Contractor's Request for Change Order within thirty (30) days of receipt of said Request, unless one of the following activities occurs.
 - a. City may request additional information and specify a time period for receipt of the information. The Contractor shall comply with City's request for additional information.
 - b. City may inform the Contractor that additional time is needed to review the Contractor's Request for Change Order and identify a date certain when a decision will be rendered.
 2. If City requests additional information, City will make a written determination within thirty (30) days receipt of Contractor's additional information.
 3. If City does not make a determination within the applicable time period, the Request For Change Order is deemed denied.
- D. Approval of Request for Change Order and Execution of Change Order. If City determines that a Change Order is necessary, the parties may negotiate acceptable terms and conditions and execute a Bilateral Change Order or City may issue a Unilateral Change Order.
- E. Contractor Procedure upon Denial or Deemed Denial of a Request for a Change Order. If the Contractor disagrees with the denial, the Contractor's sole remedy shall be to file a fully documented Claim within thirty (30) days of deemed denial or the Contractor's receipt of the denial in accordance with Article 9, *Claims and Litigation*.
- F. Contractor's Obligation to Continue to Work. Pending resolution of the Contractor's Request for a Change Order, the Contractor shall continue to perform all Work including, at the written request of City that work associated with the pending Request for Change Order. The Contractor shall maintain its progress with the Work.
- G. Waiver. Failure to follow the provisions set forth herein shall constitute a waiver of the Contractor's right to receive any additional time or money as a result of any alleged direction, instruction, interpretation, determination by City and/or the event or impact to the Project.

5.3 DIFFERING SITE CONDITIONS

- A. Immediate Written Notice to City. If the Contractor encounters a Differing Site Condition as defined in Article 1.0 the Contractor shall immediately, and before the conditions are disturbed, give written Notice to City of Differing Site Conditions.
- B. Request for Change Order based on Differing Site Condition. Unless otherwise agreed upon in writing by the Engineer, within forty-five (45) days of the Contractor's initial written notification of the Differing Site Condition to City, the Contractor shall provide a Request for Change Order that includes all elements required for such a request, including:
 1. A detailed description of the Differing Site Condition; and
 2. Substantive, contractual, and technical basis supporting the existence of the Differing Site Condition and its impacts.
- C. Waiver.

1. If the Contractor's actions disturb the Site such that City or City's designee cannot adequately and fully investigate the alleged differing site condition, the Contractor waives its right to receive any additional time or money as a result of the Differing Site Condition.
 2. Failure by the Contractor to provide either (a) immediate Notice or (b) Request for Change Order shall constitute a waiver of the Contractor's right to receive any additional time or money as a result of the Differing Site Condition.
 3. The Contractor shall be responsible for any and all costs or damages incurred by City resulting from the Contractor's failure to provide appropriate notice and/or the Detailed Description and Request for Change Order.
- D. City's Response to the Differing Site Condition Request for Change Order. City shall investigate the alleged Differing Site Conditions and respond to the Differing Site Condition in accordance with the Request for Change Order procedures set forth above.
- E. Contractor's Obligation to Continue to Work. The Contractor shall not disturb the condition until receipt of written authorization from the Engineer that work can resume at the location of the alleged Differing Site Condition. The Contractor shall continue with performance of all other Work.

5.4 SUSPENSION OF WORK

A. City Issues Directive Suspending Work

1. City may order the Contractor, in writing, to suspend all or any part of the Work of this Contract for the period of time that City determines appropriate for the convenience of City. The Contractor shall not suspend the Work without written direction from City specifically authorizing the Suspension of Work.
2. Upon receipt of a written Notice suspending the Work, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize costs attributable to such suspension. Within a period up to 120 days after the suspension notice is received by the Contractor, or within any extension of that period which City requires, City shall either:
 - a. Cancel the written notice suspending the Work; or
 - b. Terminate the Work for either default or convenience.
3. If a written notice suspending the Work is canceled or the period of the Suspension or any extension thereof expires, the Contractor shall resume Work as required by City.
4. If the performance of all or any part of the Work is, for an unreasonable period of time, suspended by the written direction of City, the Contractor may be entitled to an adjustment in the Contract Time, or Contract Price, or both, for increases in the time or cost of performance directly attributable to the suspension and provided that the Contractor sufficiently documents all costs and time impacts attributable to the suspension. No adjustments to Contract Price and/or Contract Time shall be allowed unless the Contractor can demonstrate that the period of suspension caused by City impacted Critical Path and delayed the Contractor from completing the Work on time.

B. Constructive Suspension of Work

1. If the Contractor believes that some action or omission on the part of City constitutes constructive suspension of Work, the Contractor shall immediately notify City in writing that the Contractor considers the actions or omission a constructive suspension of Work.
- C. To the extent the Contractor believes it is entitled to any additional money or time as a result of the suspension of Work or constructive suspension, Contractor shall submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.
- D. Failure to comply with these requirements shall constitute a waiver of Contractor rights to any adjustment in Contract Time and/or Contract Price.
- E. No adjustment shall be made under this provision for any suspension to the extent that Contractor's performance would have been suspended, delayed, or interrupted as a result of actions, omissions, fault or negligence caused, in whole or in part, by the Contractor or any of its Subcontractors.

5.5 FORCE MAJEURE

- A. To the extent the Contractor believes it is entitled to any additional time as a result of Force Majeure, Contractor shall submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.
- B. Contractor shall not be entitled to a change in Contract Price resulting from an act of Force Majeure.
- C. Contractor is not entitled to an adjustment in Contract Time if the act of Force Majeure did not impact progress of the Work on the Critical Path and delay the Contractor from completing the Work within the Contract Time.
- D. When a Contractor experiences concurrent delay caused by either City or Contractor and an act of Force Majeure, the Contractor shall only be entitled to an change in Contract Time. No change to the Contract Price shall be allowed as a result of such concurrent delay.

5.6 CHANGE ORDERS

A. Bilateral Change Orders

1. If City and Contractor reach agreement on the terms and conditions of any change in the Work, including any adjustment in the Contract Price and Contract Time, such agreement shall be incorporated into a Change Order and signed by both Parties. Such Bilateral Change Orders shall represent full and complete payment and final settlement of all changes, Claims, damages or costs for all (a) time; (b) direct, indirect, and overhead costs; (c) profit; and (d) any and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, stand-by, and any other costs or damages related to any work either covered or affected by the Change Order, or related to the events giving rise to the Bilateral Change Order.

B. Unilateral Change Order

1. City's Right to Issue Unilateral Change Order.

- a. City may unilaterally issue a Change Order at any time, without invalidating the Contract and without notice to the sureties, making changes within the general scope of this Contract.
- b. If any such Change Order causes an increase or decrease in the cost of, or time required for, performance of any part of the Work, City may make an adjustment in the Contract Price, Contract Time, or both, in accordance with Articles 5, *Changes to the Contract*, and 6, *Time and Price Adjustments*.

2. Contractor Disagreement with Unilateral Change Order. If the Contractor disagrees with the adjustment to the Contract Price and/or Time as indicated in the Unilateral Change Order, the Contractor must submit a Notice of Protest, Supplemental Information and Request for Change Order to City in accordance with Article 5, *Changes to the Contract*.

3. Contractor's Obligation to Continue to Work. The Contractor is required to continue with performance of all Work, including work associated with the Unilateral Change Order.

5.7 CITY REQUEST FOR A CHANGE PROPOSAL

A. Request. City may request a written Change Proposal from the Contractor for a change in the Work.

B. Contractor's Proposal. Contractor shall submit its written Change Proposal within the time specified in City's request with the costs shown in a form acceptable to the City. The Change Proposal shall represent the Contractor's offer to perform the requested work, and the pricing set forth within the proposal shall represent full, complete, and final compensation for the proposed change and any impacts to any other Work, including any adjustments in the Contract Time.

C. City's Acceptance of Contractor Proposal. If City accepts the Change Proposal as submitted by the Contractor or as negotiated by the parties, City shall notify the Contractor in writing of its acceptance of the Proposal and direct that the change in the Work be performed.

D. Execution of a Bilateral Change Order. After acceptance of the Change Proposal or acceptance of the negotiated Change Proposal, City shall direct the Contractor to perform the work in accordance with the agreed upon terms; thereafter, the Parties shall execute a bilateral Change Order in accordance with the terms of the Change Proposal or negotiated Change Proposal.

E. Execution of Unilateral Change Order. If City does not accept the Change Proposal or the Parties cannot agree upon the appropriate price or terms for the Change Proposal, City may issue a unilateral Change Order.

ARTICLE 6: TIME AND PRICE ADJUSTMENTS

6.1 CHANGE IN THE CONTRACT TIME

A. The Contract Time shall only be changed by a Change Order.

- B. No change in the Contract Time shall be allowed to the extent the time of performance is changed due to the fault, act, or omission of Contractor, or anyone for whose acts or omissions the Contractor is responsible.
- C. Contractor is not entitled to a change in Contract Time unless the progress of the Work on the Critical Path is delayed and completion of the Contract Work within Contract Time is delayed.
- D. When a Contractor experiences concurrent delays which impact the Critical Path and are caused by (1) City and the Contractor; (2) City and an act of Force Majeure; or, (3) the Contractor and an act of Force Majeure, the Contractor shall only be entitled to a change in Contract Time. No change to the Contract Price shall be allowed as a result of such concurrent delay.
- E. A Request for Change Order that includes a request for an adjustment in the Contract Time shall:
 - 1. Be in writing and delivered to City within the appropriate time period specified in Article 5, *Changes in the Contract*.
 - 2. Include a clear explanation of how the event or conditions specifically impacted the Critical Path and overall Project Schedule and the amount of the adjustment in Contract Time requested.
 - 3. Be limited to the change in the Critical Path of a Contractor's Project Schedule, and any updates, attributable to the event or conditions, which caused the request for adjustment. No extension of time or compensation for damages resulting from delay will be granted unless the delay affects the timely completion of all Work under the Contract or timely completion of a portion of the Work for which time of completion is specific. Contractor shall be responsible for showing clearly on the Project Schedule, and any updates, that the event or conditions:
 - a. Had a specific impact on the Critical Path and was the sole cause of such impact;
 - b. Could not have been avoided by resequencing of the Work or other reasonable alternatives; and
 - c. Will prevent the Contractor from completing the Project within the current Contract completion date.
- F. Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

6.2 CHANGE IN THE CONTRACT PRICE

- A. The Contract Price shall only be changed by a Change Order.
- B. No change in the Contract Price shall be allowed when:
 - 1. Contractor's changed cost of performance is due to the fault, acts, or omissions of Contractor, or anyone for whose acts or omissions Contractor is responsible, including its subcontractors and suppliers;
 - 2. The change is concurrently caused by Contractor and City; or
 - 3. The change is caused by an act of a third party or Force Majeure.

- C. City shall not be responsible for, and the Contractor shall not be entitled to any compensation for unallowable costs. Unallowable costs include, but are not limited to:
1. Interest or attorney's fees of any type other than those mandated by Washington state statute;
 2. Claim preparation or filing costs;
 3. The cost of preparing or reviewing Change Proposals or Requests for Change Orders;
 4. Lost profits, lost income or earnings;
 5. Costs for idle equipment when such equipment is not at the Site, has not been employed in the Work, or is not scheduled to be used at the Site;
 6. Lost earnings or interest on unpaid retainage;
 7. Claims consulting costs;
 8. The costs of corporate officers or staff visiting the Site or participating in meetings with City;
 9. Loss of other business; and/or
 10. Any other special, consequential, or incidental damages incurred by the Contractor, Subcontractor, or Suppliers.
- D. A Request for Change Order that includes a request for an adjustment in Contract Price shall:
1. Be in writing and delivered to City within the applicable time period specified in Article 5, *Changes to the Contract*.
 2. Identify the following information:
 - a. The event or condition which caused the Contractor to submit its request for an adjustment in the Contract Price;
 - b. The nature of the impacts to Contractor and its Subcontractors, if any; and
 - c. The amount of the adjustment in Contract Price requested calculated in accordance with Paragraph 6.3, *Allowable Costs*, and using forms provided by City.
 3. Any requests by Contractor for an adjustment in the Contract Price and in the Contract Time that arise out of the same event or conditions shall be submitted together.
- E. The adjustments to the Contract Price provided for in this Article represent full, final, and complete compensation for all work done in connection with the request for an adjustment in Contract Price and all costs related to, resulting from, or affected by such change in Work including, but not limited to, all direct and indirect costs, overhead, profit, and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, dilution of supervision, inefficiency, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, and any other costs or damages related to any work either covered or affected by the change in the Work, or related to the events giving rise to the change.

6.3 METHOD TO CALCULATE ADJUSTMENTS TO CONTRACT PRICE

- A. One of the following methods shall be used to calculate damages and/or adjustments to the Contract Price that result from or relate to Change Proposal, Request for Change Order, and/or Claim.
- B. Determination of the method to be used to calculate adjustments in the Contract Price shall be at the sole discretion of City.
- C. One of the following methods shall be used:
 - 1. Unit Price Method;
 - 2. Firm Fixed Price Method (also known as Lump Sum); or
 - 3. Time and Materials Method.
- D. **Unit Price Method**
 - 1. The City may direct the Contractor to perform extra work on a Unit Price basis. Such authorization shall clearly state the:
 - a. Scope of work to be performed;
 - b. Applicable Unit Price; and
 - c. Not to exceed amount of reimbursement as established by City.
 - 2. The applicable unit price shall include reimbursement for all direct and indirect costs of the work, including Overhead and profit, as limited by paragraph 6.3, *Allowable Costs*.
 - 3. Contractor shall only be paid under this method for the actual quantity of materials incorporated in or removed from the Work and such quantities must be supported by field measurement statements verified by City.
- E. **Firm Fixed Price Method**
 - 1. The Contractor and City may mutually agree on a fixed amount as the total compensation for the performance of changed work.
 - 2. The Contractor shall provide a detailed cost breakdown supporting the Contractor's requested adjustment to Contract Price and any other financial documentation requested by the Engineer, as limited by paragraph 6.3, *Allowable Costs*.
 - 3. Any adjustments to the Contract Price using the Firm Fixed Price Method shall include, when appropriate all reasonable costs for labor, equipment, material, Overhead and profit. Such labor, equipment, material, Overhead and profit shall be calculated in accordance with paragraph 6.3, *Allowable Costs*.
 - 4. Whenever City authorizes Contractor to perform changed work on a Firm Fixed Price Method, City's authorization shall clearly state:
 - a. Scope of work to be performed; and
 - b. Total Fixed Price payment for performing such work.
- F. **Time and Materials Method**
 - 1. Whenever City authorizes the Contractor to perform work on a Time and Material basis, City's authorization shall clearly state:

- a. Scope of work to be performed; and
 - b. A not to exceed amount of reimbursement as established by City.
2. Contractor shall:
- a. Cooperate with City and assist in monitoring the work being performed;
 - b. Substantiate the labor hours, materials and equipment charged to work under the Time and Materials Method by detailed time cards or logs completed on a daily basis before the close of business each working day;
 - c. Present the time card and/or log at the close of business each day to the Engineer so that City may review and initial each time card/log;
 - d. Perform all work in accordance with this provision as efficiently as possible;
 - e. Not exceed any cost limit(s) without City's prior written approval; and
 - f. Maintain all records of the work, including all records of the Subcontractor, Supplier, and Materialmen, and make such records available for inspection as required in paragraphs 3.8, *Record Documents*, 3.9, *Cost Records*, and 3.10, *Maintenance and Inspection of Document*.
3. Contractor shall submit costs and any additional information requested by City to support Contractor's requested price adjustment.
4. The Contractor shall only be entitled to be paid for reasonable costs actually incurred by the Contractor. The Contractor has a duty to control costs. If City determines that the Contractor's costs are excessive or unreasonable, City, at its discretion, shall determine the reasonable amount for payment.

G. Deductive Changes to the Contract Price

1. A deductive change to the Contract Price may be determined by taking into account:
- a. Costs incurred and saved by the Contractor as a result of the change, if any;
 - b. The costs of labor, material, equipment, and overhead saved and profit unearned by the deleted work. These costs shall be calculated following as closely as possible with the provisions identified in Article 6, Time and Price Adjustments; and/or,
 - c. At the discretion of City, costs set forth in the documents used by the Contractor to develop its bid.
2. Where City has elected not to correct incomplete or defective Work, the adjustment in the Contract Price shall take into account:
- a. The costs the City would have to expend to correct the Work;
 - b. The decreased value to City resulting from the incomplete or defective Work; and,
 - c. The increased future costs which City may incur by reason of the incomplete or defective Work.

H. Full Compensation

An adjustment calculated in accordance with the provisions of this Article shall be full and complete payment and final settlement of all changes, claims, damages and costs for all (a) time; (b) direct, indirect, and overhead costs; (c) profit; and (d) any and all costs or damages associated with delay, inconvenience, disruption of schedule, impact, ripple effect, loss of efficiency or productivity, acceleration of work, lost profits, standby, and/or any other costs or damages related to any Work either covered or affected by the changed Work, or related to the events giving rise to the change.

6.4 ALLOWABLE COSTS

- A. Any adjustments to the Contract Price shall be based on the following categories and shall incorporate markups for Overhead and profit as provided herein.
1. **Labor.** For all labor, including foreman supervision but excluding superintendents and other project management and consultants, the Contractor shall be reimbursed for labor costs provided herein. The labor cost of an event or condition shall be calculated as the sum of the following:
 - a. **Labor Rate.** The Labor Rate is the actual reasonable wage paid to the individual plus the actual reasonable costs incurred by the Contractor to cover costs associated with Federal Insurance Compensation Act (FICA), Federal Unemployment Tax Act (FUTA), State Unemployment Tax Act (SUCA), industrial insurance, fringe benefits, and benefits paid on behalf of labor by the Contractor. The applicable Labor Rates shall be multiplied by the number of hours reasonably expended in each labor classification because of the event or condition to arrive at a total cost of labor.
 - b. **Travel Allowance and/or Subsistence.** The labor calculation shall include the actual costs of travel and/or subsistence paid to the Contractor's employees engaged upon the Work when said payments are required by a labor agreement.
 2. **Materials.** The cost of materials resulting from an event or condition shall be calculated in one or more of the following methods, at City's election:
 - a. **Invoice Cost.** The Contractor may be paid the actual invoice cost of materials including actual freight and express charges and applicable taxes less all available discounts, rebates, and back-charges,. This method shall be considered only to the extent the Contractor's invoice costs are reasonable and the Contractor provides copies of vendor invoices, freight and express bills, and other evidence of cost accounting and payment satisfactory to City. As to materials furnished from the Contractor's stocks for which an invoice is not available, the Contractor shall furnish an affidavit certifying its actual cost of such materials and such other information as City may reasonably require;
 - b. **Wholesale Price.** The Contractor may be paid the lowest current wholesale price for which the materials are available in the quantities required, including customary costs of delivery and all applicable taxes less all available discounts, rebates, and back-charges; or

- c. **City Furnished Material.** City reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no Claim for any costs, Overhead or profit on such materials. However, should the Contractor be required to pick up, transport and/or unload such materials the Contractor will be reimbursed for reasonable costs thereof.
- 3. **Equipment.** The additional cost, if any, of machine-power tools and equipment usage shall be calculated in accordance with the following rules:
 - a. **Equipment Rates.** The Contractor's own charge rates may be used if verified and approved by City and based on the Contractor's actual ownership and operating cost experience. Rental rates contained in published rate guides may be used if their cost formulas and rate factors are identifiable, reflect the Contractor's historical acquisition costs, utilization, and useful life, and do not include replacement cost, escalation contingency reserves, general and administrative expense, or profit. Rates shall be based on the Contractor's actual allowable costs incurred or the rates established according to the Rental Rate Blue Book for Construction Equipment, published by Equipment Watch, PRIMEDIA, whichever is less. The Rental Rate Blue Book established hourly equipment rate shall be the monthly rental rate for the equipment plus the monthly rental rate for required attachments, divided by 176 work hours per month, multiplied by the appropriate regional adjustment factor, plus the hourly operating cost. The established equipment rate shall apply for actual equipment usage up to eight hours per day. For all hours in excess of eight hours per day or 176 hours per month, the established equipment rate shall be the monthly rental rate plus the monthly rental rate for required attachments, divided by 352, multiplied by the regional adjustment factor, plus the hourly operating cost.
 - b. **Transportation.** If the necessary equipment is not already at the Site and it is not anticipated that it would be required for the performance of other work under the terms of the Contract, the calculation shall include a reasonable amount for the costs of the necessary transportation of such equipment.
 - c. **Standby.** The Contractor shall only be entitled to standby equipment costs if (a) the equipment is ready, able, and available to do the Work at a moment's notice; (b) Contractor is required to have equipment standby because of an event or condition solely caused by City and (c) the Contractor can demonstrate that it could have and intended to use the equipment on other projects/jobs. The Contractor shall be compensated at 50% of the monthly rental rate for the equipment, divided by 176, and multiplied by the appropriate regional adjustment factor, as identified in the Rental Rate Blue Book for Construction Equipment, published by Machinery Information Division of PRIMEDIA Information Inc. Standby shall not be paid during periods of Contractor-caused delay, concurrent delay, Force Majeure, during any seasonal shutdown, routine maintenance, down-time or broken equipment, late delivery of equipment or supplies, or other anticipated occurrence specified in the Contract Documents. No payment shall be made for standby on any piece of equipment, which has been used on the Project in any 24 hour period. Standby costs shall not be paid for weekends, holidays, and any time the equipment was not intended to be used on the Project as demonstrated by the Project Schedule.

4. **Subcontractor & Supplier.** Direct costs associated with Subcontractors and Suppliers shall exclude Overhead and Profit markups and shall be calculated and itemized in the same manner as prescribed herein for Contractor. Contractor shall provide detailed breakdown of Subcontractor and Supplier invoices.
5. **Overhead and Profit Markup.**
 - a. On a change to the Contract Price or any other claim for money by the Contractor, City will only pay Overhead, including Home Office Overhead, Site or Field Office Overhead, and unabsorbed home office overhead, and Profit pursuant to the Overhead and Profit Markups set forth herein. The Overhead and Profit Markups cover all overhead regardless of how the Contractor chooses to account for various costs in its books of account.
 - b. Overhead and Profit markups shall not be applied to freight, delivery charges, express charges, and sales tax.
 - c. The allowed Overhead and Profit markup shall not exceed the following:
 - i. If the Contractor is self-performing work: 18% combined Overhead and Profit markup on the Contractor's Direct Costs;
 - ii. If a Subcontractor or Supplier is performing work: 18% for the Subcontractor's Direct Cost for performing the work and 7% on the Direct Costs of the Subcontractors' or Suppliers'; provided that the 7% is to be divided among upper tier Subcontractors and the Contractor when a Subcontractor or Supplier is performing the work;
 - iii. If the value of material and equipment is greater than 50% of the total value of the change, the Overhead and Profit Markup shall only be 10% for material and equipment; and
 - iv. In no event shall the total combined Overhead and Profit markup for the Contractor and all Subcontractors and Suppliers of any tier exceed 25% of the Direct Cost to perform the Change Order work.

ARTICLE 7: PAYMENT AND COMPLETION

7.1 APPLICATIONS FOR PAYMENT

- A. On or about the first day of each month, the Contractor shall submit to City an Application for Payment. Each application shall be completed on a form acceptable to City and designated as an "Application for Payment."
- B. The Contractor is not entitled to payment for any work unless the Application for Payment includes all required documentation. City reserves the right to withhold payment pursuant to paragraph 7.2, *Payments Withheld* if it is subsequently determined that all required documentation was not provided by the Contractor or is in error.
- C. The application shall correlate the amount requested with the Schedule of Values and with the state of completion of the Work.
- D. The Contractor shall submit a breakdown of the cost of lump sum items to enable the Engineer to determine the Work performed on a monthly basis. Lump sum breakdowns shall be submitted prior to the first progress payment that includes

payment for the Bid Item. Absent a lump sum breakdown, the Engineer will make a determination based on information available.

7.2 PAYMENTS

- A. City shall comply with RCW 39.76, as amended, and promptly review each Application for Payment and identify in writing any cause for disapproval within 8 working days. In addition to withholding payment for unsatisfactory performance or failure to comply with Contract requirements, if the Contractor's Application for Payment fails to recognize any back-charges, off-sets, credits, change orders, or deductions in payment made in accordance with paragraph 7.2, *Payments Withheld*, City shall have the right to revise or disapprove Contractor's Application For Payment because the Application for Payment is not considered a properly completed invoice.
- B. The City shall withhold retainage from each Application for Payment as required by RCW 60.28, as amended.
- C. If an Application for Payment is accepted by City, it shall be paid within thirty (30) days of City's receipt of the properly prepared invoice (Application for Payment).

7.3 PAYMENT WITHHELD

- A. In addition to retainage withheld pursuant to RCW 60.28 and without waiver of any other available remedies, City has the right to withhold, nullify, or back-charge, in whole or in part, any payment or payments due or that have been paid to the Contractor as may be necessary to cover City's costs or to protect City from loss or damage for reasons including but not limited to:
 - 1. Failure of the Contractor to submit or obtain acceptance of a Progress Schedule, Schedule of Values, and any updated Schedules;
 - 2. Defective or non-conforming Work;
 - 3. Costs incurred by City to correct, repair or replace defective or non-conforming Work, or to complete the Work;
 - 4. A reasonable doubt that the Contract can be completed for the balance then unpaid;
 - 5. A reasonable concern by City that the materials, equipment or component parts are not in proper operating condition;
 - 6. Assessment of Liquidated Damages;
 - 7. Failure to perform in accordance with the Contract;
 - 8. Cost or liability that may occur to City as the result of the Contractor's or Subcontractor's acts, omissions, fault, or negligence;
 - 9. Deduction in the Work;
 - 10. Failure of Contractor to repair damaged materials, equipment, property, or Work;
 - 11. Failure of the Contractor to obtain approval of Submittals pertinent to the work accomplished;
 - 12. Failure to pay Subcontractors, Suppliers, employees or other obligations arising out of the Work;

13. Failure to keep Record Documents up to date;
 14. Failure to comply with all applicable federal, state, and local laws, statutes, regulations, codes, licenses, easements, and permits;
 15. Failure to obtain and maintain applicable permits, insurance, and bonds; and
 16. Failure to provide Statement of intent to Pay Prevailing Wage and/or Affidavits of Wages Paid and, if requested, Certified Payroll Records for the Contractor and for Subcontractors of any tier.
- B. The withholding, nullification, or back-charge of any payment(s) by City shall in no way relieve the Contractor of any of its obligations under this Contract.

7.4 TITLE

Title to all Work and materials covered by an accepted and paid Application For Payment shall pass to City at the time of such payment, free and clear of all liens, claims, security interest, and encumbrances. Passage of title shall not, however, (1) relieve Contractor from any of its duties and responsibilities for the Work or materials, including protection thereof, (2) waive any rights of City to insist on full compliance by Contractor with the Contract requirements, or (3) constitute acceptance of the Work or materials.

7.5 SUBSTANTIAL COMPLETION

- A. When the Contractor has achieved Substantial Completion (as defined in Section 1 above), the Contractor shall give written Notice to City.
1. City shall promptly inspect the Work and prepare a Punch List (list of items to be completed or corrected).
 - a. City reserves the right to add to, modify, or change the Punch List.
 - b. Failure by City to include any items on such list does not alter the responsibility of the Contractor to complete or correct the Work in accordance with the Contract.
- B. At the Contractor's request, City may identify those Punch List items that must be completed or corrected in order for the Contractor to achieve Substantial Completion.
1. When City determines that those Punch List items have been completed or corrected by the Contractor, City shall make a determination that the Work is Substantially Complete.
 2. A Certificate of Substantial Completion will be issued by City, which shall establish the date of Substantial Completion.
 3. This Certificate of Substantial Completion shall state the responsibilities of City and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance.
- C. City shall assess liquidated damages for the Contractor's failure to Substantially Complete the Work within the Contract Time. The liquidated damage amounts, set forth elsewhere in the Contract Documents, will be assessed for Contractor's failure to achieve Substantial Completion within the Contract Time. These Liquidated Damages are not a penalty, but will be assessed against the Contractor for failure to achieve these Contract requirements. These Liquidated Damage amounts are

fixed and agreed upon by and between the Contractor and City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages City would in such events sustain. These amounts shall be construed as the actual amount of damages sustained by City, and may be retained by City and deducted from payments to the Contractor. Assessment of Liquidated Damages shall not release the Contractor from any further obligations or duties pursuant to the Work.

- D. As provided in the Contract Documents, City may grant Substantial Completion to specific subsystems or portions of the Work. The dates of Substantial Completion shall be determined, in writing, by City.

7.6 FINAL INSPECTION

- A. The Contractor shall correct all remaining Punch List items and complete all remaining Work within the time period stated in the Certificate of Substantial Completion or within 30 days, whichever is less. When all Punch List items have been successfully corrected and the work is complete the Contractor's shall give written notice to the City that the Work ready for final inspection. After verification by City that such completion was satisfactory, the Contractor shall submit a Final Application for Payment.

7.7 REQUIREMENTS FOR FINAL APPLICATION FOR PAYMENT

- A. In addition to any other requirement identified in the Contract Documents, the Final Application for Payment shall include the following documents:
 - 1. Affidavit of Wages Paid for Contractor and all Subcontractors in accordance with state law;
 - 2. Contractor's release of claims against City, except for Claims specifically described in the release document and submitted in accordance with Article 9, *Claims and Litigation*; and
 - 3. Contractor certification that all Subcontractors and Suppliers have been paid and there are no outstanding liens.

7.8 COMPLETION/FINAL ACCEPTANCE

- A. Completion/Final Acceptance shall be achieved when all the obligations of the Contract have been successfully performed by the Contractor in accordance with the Contract and accepted by City. Should Contractor fail to achieve Final Acceptance within the required time the City may assess actual damages caused by its failure to do so.
- B. Neither Final Acceptance, nor Final Payment, shall release Contractor or its sureties from any obligations under this Contract or the Performance and Payment Bonds, or constitute a waiver of any claims by City arising from or related to Contractor's performance or failure to perform the Work and to meet all Contractual obligations in accordance with the Contract, including but not limited to:
 - 1. Unsettled liens, security interests or encumbrances;
 - 2. Damaged, non-conforming, or defective Work discovered by City;
 - 3. Terms of any warranties or guarantees required by the Contract; and
 - 4. Payments made in error.

- C. Except for any Claims properly submitted in accordance with Article 9, *Claims and Litigation*, acceptance of Payment on the Final Application for Payment by the Contractor shall, on behalf of itself and its Subcontractors or Sureties, forever and unconditionally release and discharge City, its officers, agents, employees, from:
 - 1. Any and all disputes or claims, including but not limited to claims for damages, fines, interest, taxes, attorney fees, or costs, demands, rights, actions or causes of actions, known or unknown, arising out of or in any way related to the parties' performance under the Contract and/or Project; and
 - 2. Any and all known and/or unknown liabilities, obligations, demands, actions, suits, debts, charges, causes of action, requests for money and/or payment under the Contract, outstanding invoices, or claims directly or indirectly arising out of or related to the Contract and/or Project.

7.9 WARRANTY AND GUARANTY

- A. In addition to any special warranties provided elsewhere in the Contract, Contractor warrants that all Work conforms to the requirements of the Contract and is free from any defect in equipment, material, design, or workmanship performed by Contractor or its Subcontractors and Suppliers.
- B. The warranty period shall be for the longer period of: one year from the date of Final Acceptance of the entire Project or the duration of any special extended warranty offered by a supplier or common to the trade.
- C. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract, Contractor shall:
 - 1. Obtain all warranties that would be given in normal commercial practice from the supplier and/or manufacturer;
 - 2. Prior to Final Acceptance require all warranties be executed, in writing, for the benefit of City;
 - 3. Enforce all warranties for the benefit of City; and
 - 4. Be responsible to enforce any warranty of a Subcontractor, manufacturer, or Supplier, should they extend beyond the period specified in the Contract.
- D. If, within an applicable warranty period, any part of the Work is found not to conform to the Contract, the Contractor shall correct it promptly after receipt of written Notice from City to do so. In the event City determines that Contractor corrective action is not satisfactory and/or timely performed, then City has the right to either correct the problem itself or procure the necessary services, recommendations, or guidance from third parties. All damages incurred by City and all costs for City's remedy shall be reimbursed by the Contractor.
- E. The warranty provided in this provision shall be in addition to any other rights or remedies provided elsewhere in the Contract or by applicable law.

7.10 PRIOR OCCUPATION

City shall have the right to occupy such part or parts of the Project in or upon which the Work is being done, as it may see fit, and such occupation shall not be construed as acceptance by City of the Work or constitute Substantial Completion of the Work.

ARTICLE 8: TERMINATION

8.1 CITY'S RIGHT TO TERMINATE CONTRACT

A. Termination for Default

1. City may terminate, without prejudice to any right or remedy of City the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:
 - a. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
 - b. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Final Acceptance of the Work in a timely manner;
 - c. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;
 - d. Contractor fails in a material way to repair, replace or correct Work not in conformance with the Contract;
 - e. Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
 - f. Contractor repeatedly fails to make prompt payment to its employees or Subcontractors;
 - g. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, permits, easements or orders of any public authority having jurisdiction;
 - h. Contractor fails to comply with all Contract safety requirements; or
 - i. Contractor is otherwise in material breach of any provision of the Contract, including but not limited to quality control, environmental requirements, administrative requirements, coordination and supervision.
2. If City reasonably believes that one of the aforementioned events has occurred, City will provide the Contractor with written Notice of its intent to terminate the Contractor for default, specifying within such notice the ground(s) for such termination. City, at its option, shall require the Contractor to either promptly correct the deficiencies noted in City's intent to terminate or provide City with a corrective action plan as to how such deficiencies will be remedied or cured in a timely fashion. However, if after receipt of the proposed remedy, City has a reasonable basis for concluding that the Contractor has (a) failed or is unwilling to repair, replace or correct the deficiencies, or (b) failed or is unwilling to provide a reasonable and satisfactory corrective action plan, City shall thereafter have the right to terminate this Contract for default.
3. Upon termination, City may at its option:
 - a. Take possession of the Site and possession of or use of all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor; and/or

- b. Finish the Work by whatever other reasonable method it deems expedient; or
 - c. Call upon the surety to perform its obligations under the performance and payment bonds, if applicable.
4. The Contractor and its sureties shall be liable for all damages and costs, including but not limited to: (1) compensation for architect and engineering services and expenses made necessary thereby; (2) any other costs or damages incurred by City in completing and/or correcting the Work; and (3) any other special, incidental or consequential damages incurred by City which results or arises from the breach or termination for default.
 5. In the event of termination for default City shall only pay the Contractor for Work successfully completed and accepted by City prior to the date of termination. City shall not be responsible for any other Contractor costs, expenses, or damages including any consequential, special, or incidental damages or lost profits associated with this Contract. In no event shall City reimburse the Contractor for any costs directly or indirectly related to the cause of this termination for default.
 6. If, after termination for default, it is determined that the Contractor was not in default, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of City.
 7. The rights and remedies of City in this provision are in addition to any other rights and remedies provided by law or under this contract.

B. Termination for Convenience

1. Upon written Notice City may terminate the Work, or any part of it, without prejudice to any right or remedy of City, for the convenience of City.
2. If City terminates the Work or any portion thereof for convenience, Contractor shall recover as its sole remedy:
 - a. Reasonable costs for all Work completed prior to the effective date of the termination and not previously paid for by City; and
 - b. A reasonable allowance for Overhead and profit for Work actually performed prior to the date of termination and accepted by City, at a rate not to exceed the percentage amount set forth in the Contract and in paragraph 6.3, *Allowable Costs*, subparagraph A.5, *Overhead and Profit*. The Contractor waives all other claims for payment and damages including without limitation, anticipated profit and overhead on work not performed and accepted by City.
3. The Contractor shall not be entitled to any other costs or damages, whatsoever. The total sum payable upon termination shall not exceed the Contract Price reduced by prior payments. Contractor shall be required to make its request for adjustment in accordance with Article 5, *Changes to the Contract*, and Article 6, *Time and Price Adjustments*.
4. If it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, City shall not reimburse Contractor any profit for the Work completed and shall reduce the settlement to reflect the indicated rate of loss.

C. Contractor's Obligations During Termination

Unless City directs otherwise, after receipt of a written Notice of termination for default or termination for convenience, Contractor shall promptly:

1. Stop performing Work 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 not terminated;
3. Cancel all orders and subcontracts, upon terms acceptable to City, to the extent that they relate to the performance of Work terminated;
4. Assign as specifically requested by City all of the rights, title, and interest of Contractor in all orders and subcontracts;
5. Take such action as may be necessary or as directed by City to preserve and protect the Work, Site, and any other property related to this Project in the possession of Contractor in which City has an interest;
6. Continue performance of Work only to the extent not terminated; and
7. Take any other steps required by City with respect to this Project.

8.2 CITY'S RIGHT TO STOP THE WORK FOR CAUSE

- A. If Contractor fails or refuses to perform its obligations in accordance with the Contract, City may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.
- B. Contractor shall not be entitled to any adjustment in the Contract Time and/or Contract Price for any increased cost or time of performance attributable to Contractor's failure or refusal to perform its obligations under the Contract.

ARTICLE 9: CLAIMS AND LITIGATION

9.1 CONTRACTOR CLAIMS

A. Condition Precedent to Filing a Claim.

1. The following actions are a condition precedent to filing a Claim:
 - a. The Contractor submitted a timely Notice of Protest, Supplemental Information and Request for Change Order as required by paragraph 5.1;
 - b. The Request for Change Order has been denied or deemed denied by City;
or
 - c. A Unilateral Change Order is issued by City.

B. Failure to file a Timely Claim.

1. At least seven (7) days prior to appropriate time to file a Claim, the Contractor may request an extension of time for filing its Claim. The Contractor shall state the reasons for the request and identify a date certain when the Contractor shall provide a fully documented Claim. Unless otherwise agreed to in writing by the Engineer, a fully documented Claim shall be received by the City within thirty (30) days after:
 - a. Denial or deemed denial of a Request for Change Order; or

- b. Contractor's receipt of an Executed Unilateral Change Order.
- 2. Failure to comply with the time requirements set for filing a Claim shall constitute acceptance by the Contractor, on behalf of itself and its Subcontractors and Suppliers, of the Unilateral Change Order and/or City's denial or deemed denial of a Request for Change Order. Such acceptance shall be considered complete, full, and final settlement of all costs, damages, and Claims related to or arising from the Request for Change Order and/or Unilateral Change Order.
- C. Contractor's Obligation to Continue to Work. Pending final decision of a Claim hereunder, the Contractor shall proceed diligently with the performance of the Contract Work, including that work associated with the Claim, and maintain its progress with the Work.
- D. Information required in a Fully Documented Claim. Every Claim must be submitted by the Contractor, in writing and clearly designated by the Contractor as a fully documented Claim. At a minimum, a fully documented Claim must contain the following information:
 - 1. A detailed factual statement of the Claim providing all necessary details, locations, and items of Contract Work affected;
 - 2. The date on which facts arose that gave rise to the Claim;
 - 3. The name of each person employed or associated with the Contractor, Subcontractor, Supplier, and/or City with knowledge about the event or condition which gave rise to the Claim;
 - 4. Copies of documents and a written description of the substance of any oral communications that concern or relate to the Claim;
 - 5. The specific provisions of the Contract Documents on which the Claim is based;
 - 6. If an adjustment in the Contract Price is sought, the exact amount sought, calculated in accordance with the Contract including paragraph 6.3, *Allowable Cost* and accompanied by (a) all records supporting the Claim and (b) all records meeting the requirements of paragraph 3.10, *Cost Records*;
 - 7. If an adjustment in the Contract Time is sought, the specific days and dates for which it is sought; the specific reason the Contractor believes an adjustment in the Contract Time should be granted; and the Contractor's analyses of its Progress Schedule, any specific Schedule analysis as required by the Contract Documents, and all updates to demonstrate the reason for the adjustment in Contract Time; and
 - 8. A statement certifying, under penalty of perjury, that after the exercise or reasonable diligence and investigation the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of the Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Price or Contract Time for which the Contractor believes City is liable.
- E. Contractor's Duty to Cooperate. The Contractor shall cooperate with City or its designee in the evaluation of its Claim and provide all information and documentation requested by City, its auditors or its designee.

F. City's Evaluation of the Claim.

1. To assist City in the review of the Contractor's Claim, City or its designee may visit the Site, request additional information and/or documentation in order to fully evaluate the issues raised in the Claim and/or audit the Claim.
2. After the Contractor has submitted a fully documented Claim that complies with this provision, City shall respond, in writing, to the Contractor within sixty (60) days from the date the fully documented Claim is received with either:
 - a. A decision regarding the Claim; or
 - b. Written Notice extending for another thirty (30) days City's time to respond to the Claim.
3. Absent a thirty (30) day extension, the Claim shall be deemed denied upon the sixty-first (61st) day following receipt of the Claim by City. If City had a thirty (30) day extension, the Claim shall be deemed denied upon the ninety-first (91st) day following receipt of the Claim by City.

9.2 CONTRACTOR'S BURDEN OF PROOF ON CLAIM

- A. The Contractor shall have the burden of proof to demonstrate entitlement and damages.
- B. If the Contractor, on behalf of itself or its Subcontractors and Suppliers seeks an adjustment in the Contract Price or Contract Time not supported by Project cost records meeting the requirements of ¶3.10, *Cost Records*, the Claim is waived.
- C. Compliance with the record keeping requirements set forth in this Contract is a condition precedent to recovery of any costs or damages related to or arising from performance of the Contract Work. If City establishes non-compliance of the record-keeping requirement set forth in ¶ 3.10, *Cost Records*, no adjustment shall be made to the Contract Price and/or Contract Time with respect to that Claim.

9.3 LITIGATION

- A. As a mandatory condition precedent to the initiation of litigation by the Contractor against City, Contractor shall comply with all provisions set forth in this Contract including those stated in Article 5 and Article 9.
- B. Any litigation brought against City shall be filed and served on City within 365 days from either the issuance of the Certificate of Substantial Completion for the entire Contract or Final Acceptance if no Certificate of Substantial Completion of the entire Contract is issued.
- C. Venue and jurisdiction shall vest solely in the King County Superior Court.
- D. Failure to comply with these mandatory condition time requirements shall constitute a waiver of the Contractor's right to pursue judicial relief from or against the City.

ARTICLE 10: MISCELLANEOUS

10.1 COMPENSATION, WAGES, BENEFITS AND TAXES

City assumes no responsibility for the payment of any compensation, wages, benefits, or taxes owed by the Contractor by reason of this Contract. The Contractor shall indemnify and hold City, its elected officials, officers, agents and employees, harmless

against all liability and costs resulting from the Contractor's failure to pay any compensation, wages, benefits or taxes.

10.2 PREVAILING WAGES

The Contractor shall comply with the minimum wage requirements of RCW 39.12, as amended, including the obligation to pay at least the hourly minimum wage and fringe benefits to workers as required by RCW 39.12. The Contractor shall also post all notices required by the Washington Department of Labor & Industries on forms provided by the Department of Labor & Industries. The Contractor shall timely provide a "Statement of Intent to Pay Prevailing Wages" and timely provide an "Affidavit of Prevailing Wages Paid."

10.3 SUCCESSORS AND ASSIGNS

City and the Contractor each binds itself, its partners, successors, assigns and legal representatives to the other with respect to all covenants, agreements and obligations contained in the Contract. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to it hereunder, without the previous written consent of City.

10.4 THIRD PARTY AGREEMENTS

Except as otherwise may be provided, the Contract shall not be construed to create a contractual relationship of any kind between: any architect, engineer, construction manager, Subcontractor, Supplier, or any persons other than City and Contractor.

10.5 NONWAIVER OF BREACH

No action or failure to act by City shall constitute a waiver of any right or duty afforded to City under the Contract; nor shall any such action or failure to act by City constitute an approval of or acquiescence in any breach hereunder, except as may be specifically stated by City in writing.

10.6 NOTICE TO CITY OF LABOR DISPUTES

- A. If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract, Contractor shall immediately give Notice, including all relevant information, to City.
- B. Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by any actual or potential labor dispute, all Subcontractor or lower-tiered Subcontractor shall immediately notify the next higher tier Subcontractor. Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

10.7 HEADINGS

The headings used in the Contract are for convenience only and shall not be considered a part of or affect the construction or interpretation of any contractual provision therein.

10.8 CHOICE OF LAW

In the event that either party shall bring a lawsuit or action related to or arising out of this Contract, such lawsuit or action shall be brought in the Superior Court, King County, Washington. This Contract shall be governed by, and construed and enforced in accordance

with the laws of the State of Washington.

10.9 SEVERABILITY

The provisions of this Contract shall be effective in all cases unless otherwise prohibited by Washington State Law or applicable Federal Law. The provisions of this Contract are separate and severable. The invalidity of any sentence, paragraph, provision, section, Article, or portion of this Contract shall not affect the validity of the remainder of this Contract.

SECTION 00 73 00
SUPPLEMENTAL CONDITIONS

SC-01 Supplementary Conditions

The following supplements shall modify, delete, and/or add to the General Conditions. Where any article, paragraph, or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.

SC-03 Article 4.1: Time is of the Essence

Article 4.1: Time is of the Essence shall be amended to include the following:

Article 4.1. Paragraph A – Add Subsection 4.

4. The Contract, in its entirety, shall be Substantially Completed on or before 205 calendar days after Notice to Proceed is issued and shall be Physically Completed within 15 calendar days of Substantial Completion.

SC-06 Article 3.12 Permits, Laws, Regulations and Taxes

Article 3.12 of the General Conditions is amended to include the following:

The CITY has applied for and obtained the following permits that cover the Work on this project:

- City of Mercer Island Shoreline Substantial Development Permit
- City of Mercer Island Critical Areas Determination
- Washington Department of Fish and Wildlife Hydraulic Project Approval
- US Army Corps of Engineers Nationwide Permit 7
- US Army Corps of Engineers Nationwide Permit 27

The CITY has applied for and expects to obtain the following permits prior to the Notice to Proceed:

- City of Mercer Island Construction Permit

The CONTRACTOR shall comply with all conditions of these permits. Copies of all permits must be posted at the CONTRACTOR'S project field office.

END OF SECTION

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Summary

1. Generally, the 21-26: Lincoln Landing Shoreline and Stormwater Enhancement Project includes, but is not limited to: site preparation, demolition existing site features and infrastructure including, existing step bulkhead, buried utilities, site hardscape and paving; excavation, handling, transport, and offsite disposal of soil; site earthworks including, shoreline excavation and beach material installation, water course excavation and restoration, installation of grading; stormwater management within and adjacent to the development; temporary erosion and sediment control (TESC); utility protection; utility installation; excavation backfilling, paving, signing, landscaping, and site restoration. The estimated extent for all WORK within the Project is as shown in the Contract Drawings, as described within the contract documents, specifications and as directed by the ENGINEER.

B. General Scope of Work

1. The following provides a general summary of the primary elements of the project. The specific details and construction requirements for all WORK within the Project is as shown in the Contract Drawings, as described within the contract documents, specifications and as directed by the ENGINEER.
 - a. Construction scheduling, phasing and coordination
 - b. Development and implementation of the project Stormwater Pollution Prevention Plan (SWPPP)
 - c. Mobilization/Demobilization and work area preparation.
 - d. Temporary Erosion and Sediment Control (TESC)
 - e. Demolition of existing structures and utilities.
 - f. Site construction and surfacing
 - i. Construction of ground inclusions
 - ii. Grading
 - iii. Site Earthworks and Structural Fill
 - iv. Hardscape surfacing and Paving
 - g. In-water/Waterfront

- i. Bulkhead demolition
- ii. In-Water fill and beach restoration
- h. Water-Course Restoration
 - i. Watercourse Excavation
 - ii. Watercourse Grading and Channelization
 - iii. Rockweir installation, and pooling log installation
- i. Permanent stormwater conveyance
- j. Permanent stormwater treatment systems
- k. Temporary stormwater conveyance
- l. Gravity sewer conveyance system construction
- m. Striping and Signage
- n. Landscaping/Irrigation/Planting
- o. As-Built reporting
- p. Final cleanup and project closeout

1.02 LOCATION (ADDRESS)

- A. The work area is located at the City of Mercer Island – Lincoln Landing Park – At the following general locations:
 - 1. 2100 76th Ave SE, Mercer Island WA 98040

1.03 ACCESS TO THE SITE

- A. The Contractor shall have access to the project site via the intersection of 76th Ave SE and SE 22nd Street.
- B. Refer to the Contract Drawings for locations of the on-site contractor laydown areas.
- C. All Contractors’ employee cars and other private vehicles may be parked within the boundaries of the Project, as directed by the City.

1.04 CITY OF MERCER ISLAND FURNISHED MATERIAL

- A. City of Mercer Island will furnish the Contractor with the following material:
NONE

1.05 PRE-ORDERED MATERIALS

- A. The following materials have been pre-ordered for this project:
NONE

1.06 NOT USED

- 1.07 MATERIAL TESTING
- A. As described within the contract documents, specifications and as directed by the ENGINEER. Access to the area necessary to perform any such tests and/or to secure the material for testing, shall be provided by the contractor.
- 1.08 FISH WINDOW
- A. It shall be the CONTRACTORS responsibility to comply with all project permits for all proposed in-water work.
- 1.09 NOT USED
- 1.010 NOT USED
- 1.011 NOT USED
- 1.012 EXISTING SITE FEATURES AND CONDITIONS
- A. Topographic survey information per the 2020 project survey performed by APS is shown on Contract Drawings:
1. D1.01
- B. The contractor shall verify all dimensions and conditions for compatibility before proceeding with any work. Any discrepancies in dimensions or site conditions shall be brought to the attention of the CITY before proceeding. The contractor shall not begin construction until the discrepancy has been resolved by the CITY.
- 1.013 CONTRACTOR'S WORK HOURS
- A. Contractor's work hours shall be limited to the periods designated by the CITY.
- 1.014 WORK TO BE PERFORMED BY OTHERS
- A. The CITY shall perform certain work and oversight activities at the site during this Contract, including but not limited to the following:
1. Administer the Contract; monitor, observe, approve, and accept the Work; coordinate with Department of Ecology and other environmental regulatory agencies; provide required direction for the Work when Contractor requests clarification of the intent of the Contract Documents; and generally ensure that the execution and completion of the Work meets design, construction, and other requirements of the Contract Documents.
- 1.015 PROTECTION OF SITE FEATURES AND ADJACENT PROPERTY USES
- A. Contractor shall take such precautions and develop a construction approach for the project that limits adverse impacts to the adjacent residents, the existing facilities and utilities, the existing access streets and parking areas, and the ongoing site preparation and infrastructure work.
- 1.016 CONFLICTS BETWEEN DRAWINGS, CODES, AND REFERENCES

- A. In the event of conflicting requirements between the Contract Drawings, specifications, codes and references, the more stringent shall control.
- B. The contractor shall notify the CITY and ENGINEER of discrepancies and obtain direction prior to proceeding.
- C. Noted dimensions shall take precedence over scaled dimensions. Do not scale drawings.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 14 19
USE OF SITE

PART 1 GENERAL

1.1 SUMMARY

- A. Various operating personnel will be responsible for operating the site utilities throughout the execution of this contract. Utilities presently installed at the site must be available to operating personnel at all times for use, maintenance, and repair. If it is necessary in the course of operating a site, for the Contractor to move his equipment, materials, or any material included in the work, Contractor shall do so promptly and place that equipment or material in an area which does not interfere with the site operation. The Contractor shall not adjust or operate serviceable or functioning utilities except as specifically required by this contract.
- B. The existing utilities will remain in operation throughout the execution of this contract. The Contractor shall schedule and conduct work to minimize necessary shutdowns and interference with normal distribution operations and maintenance.
- C. The Contractor shall notify the Owner at least 1 week in advance of the time it is necessary to take out of service any existing pipeline, channel, equipment, or structure. The Contractor shall be responsible for providing whatever temporary piping, pumping, power, and control facilities as are required to maintain continuous site operation except as otherwise specified. If a shutdown is required that will impact customer's water service, Contractor shall follow the Owner's shutdown procedures for notifying customers. The integrity of existing site utilities shall be maintained by the Contractor at all times.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 20 00
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 NOT USED

1.02 DEFINITIONS

- A. Unit Price: An amount to be paid to the Contractor for a specific unit measurement of material, products, and Work.

1.03 MEASUREMENT OF QUANTITIES

- A. Unless noted otherwise, measurement of unit price items of Work will be in accordance with paragraphs 1-09.1 of the current edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction, M 41-10.
- B. Measurement by Weight: Weigh on commercial scale per WSDOT Standard Specifications Section 1-09.2. Weight tickets must include time of weighing on standard printout. City will collect all weight tickets and maintain a written log of trucks leaving site with export material. Log will include truck number, date, time leaving site.

1.04 PAYMENT

- A. Payment will be made at the unit price indicated on the following sections for the quantity of each item measured and incorporated into the Work. Payment will be the unit price multiplied by the measured quantity.
- B. Lump sum payment will be paid at the price indicated on the Bid Form.
- C. No separate payment shall be made for any WORK item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of WORK.
- D. All other Work required to complete the Work specified in the contract documents, but not indicated specifically as a pay item, shall be considered necessary and incidental work.
- E. In addition to other incidental items of WORK listed elsewhere in the contract, the following items shall also be considered as incidental to other items of WORK under this contract:
 - 1. Removal and replacement of survey monuments and markers disturbed during construction, whether shown on the Contract Drawings or not.
 - 2. Re-vegetating areas disturbed during construction.

3. Excavating, bedding, and backfilling for all pipes and conduits for water, sewer, stormwater, structures, stormwater treatment facilities, sewer vaults and manholes and vaults.
 4. Temporary shoring of trenches or bracing of existing facilities as required for constructing any/all improvements.
 5. Temporary dewatering of trenches as required for constructing any/all improvements.
 6. Maintain all services through the Project area, including water, storm, garbage pickup, mail delivery, other deliveries and emergency vehicles.
 7. All traffic control, including flaggers and preparation of satisfactory Traffic Control Plans.
 8. Minor grading of fill materials as required to match existing grades and maintain positive surface drainage.
 9. Minor changes in grades to fit field conditions.
 10. Miscellaneous connecting and attachment hardware as required installing new equipment.
 11. Concrete collars required around manhole structures as shown in the Contract Drawings and Standard Details.
 12. Coordination with trash and utility services as required.
- F. In the event of discrepancy between this Specification Section and the Bid Form, pay item names, definitions and units from this document shall be used.

1.05 SCHEDULE OF LUMP SUM AND UNIT PRICES – BID SCHEDULE

A. Mobilization & Demobilization

1. Description

“Mobilization & Demobilization” shall consist of preparatory Work, operations, and cleanup, including, but not limited to, those necessary for the movement of personnel, equipment and supplies to and from the project site; and for all other Work and operations which must be performed or costs incurred prior to beginning Work on the various items on the project site. This shall also include but is not limited to all costs for labor, equipment, and material needed for any Contractor’s field office including utilities, preparation of staging areas, fencing of staging sites, all leasing costs for office and material staging areas including Contractor parking and security. Contractor is responsible for the security of all construction material even after partial payment of project materials until Final Acceptance of the Project. This pay item shall also include the final clean-up if the site and restoration of all property not designated for alteration by the Contract Documents.

2. Method of Measurement
 - i. Mobilization and Demobilization will not be measured for payment. The original contract bid amount for “Mobilization & Demobilization” shall not be adjusted, regardless of the fact that the Contractor may have, for any reason, shut down the Work on the project or moved equipment away from the project and then returned.

3. Basis of Payment
 - i. Payment for Mobilization and Demobilization under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. A-1, which payment shall constitute full compensation for all WORK as shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
 - ii. Partial payments will be made as the Work progresses as follows:
 - a. When 5% of the total original contract amount is earned from other pay items, 50% of the amount bid for Mobilization, or 5% of the original contract amount, whichever is lesser, will be paid.
 - b. When 10% of the total original contract amount is earned from other pay items, 100% of the amount bid for Mobilization, or 10% of the original contract amount, whichever is lesser, will be paid.
 - c. Upon completion of all Work on the Project, payment of any amount bid for Mobilization in excess of 10% of the total original contract amount will be paid.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-1	Mobilization & Demobilization	Lump Sum

B. Stormwater Pollution Prevention Plan (SWPPP)

1. Description
 - i. “Stormwater Pollution Prevention Plan (SWPPP)” shall include all labor, equipment and materials required to develop, implement and monitor the construction SWPPP complete in accordance with the Contract Drawings, Specifications and the requirements of the

Contract Documents. All costs for furnishing necessary equipment and performing water quality monitoring shall be included in this task.

- 2. Method of Measurement
 - i. Measurement for payment for SWPPP shall be based upon the completion of the entire Work as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- 3. Basis of Payment
 - ii. Payment for Demolition under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Item No. A-2, which payment shall constitute full compensation for all WORK as shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
 - iii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
 - iv. Partial payment will be made for approved materials on-site and not installed.
 - v. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-2	SWPPP	Lump Sum

C. Temporary Erosion and Sediment Control (TESC)

- 1. Description
 - i. “Temporary Erosion and Sediment Control (TESC)” shall include construction entrances, and protection of silt fences and filter socks are included under this pay item in accordance with the Contract Drawings, Specifications and the requirements of the Contract Documents. All other permit requirements not defined in other pay items shall be included herein. This Work includes but is not limited to debris containment, environmental monitoring, any or all required State or Local permit applications and compliance.
- 2. Method of Measurement

- ii. Measurement for payment for Temporary Erosion and Sediment Control shall be based upon the completion of the entire Work as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
3. Basis of Payment
- i. Payment for “Temporary Erosion and Sediment Control (TESC)” under the base bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-3, which shall constitute full compensation for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
 - ii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
 - iii. Partial payment will be made for approved materials on-site and not installed.
 - iv. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-3	Temporary Erosion and Sediment Control (TESC)	Lump Sum

D. Demolition

- 1. Description
 - i. “Demolition” shall include all labor, equipment and materials required for clearing, grubbing and demolition of all items indicated with the project Contract Drawings and Specifications in accordance with requirements of the Contract Documents. The disposal of all clearing, grubbing and demolition materials shall be included in this bid item.
- 2. Method of Measurement
 - i. Measurement for payment for Demolition shall be based upon the completion of the entire Work as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.
- 3. Basis of Payment

- i. Payment for “Demolition” under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-4, which shall constitute full compensation for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
- ii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
- iii. Partial payment will be made for approved materials on-site and not installed.
- iv. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-4	Demolition	Lump Sum

E. Earthwork

1. Description

- i. “Earthwork” shall include all labor, equipment and materials required for all site mass cut and grading indicated within the Contract Drawings, Specifications in accordance with requirements of the Contract Documents. This work shall include but not limited to excavation and grading preparation of subgrade for installation of all in-water beach construction, structural fill, structural asphalt paving, and water course construction. The disposal of all unsuitable excavation materials shall be included in this bid item.

2. Method of Measurement

- i. Measurement for payment for “Earthwork” shall be based upon the completion of the entire Work as a Lump Sum Pay unit, complete, all in accordance with the requirements of the Contract Documents.

3. Basis of Payment

- i. Payment for “Earthwork” under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-5, which shall constitute full compensation for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.

- ii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
- iii. Partial payment will be made for approved materials on-site and not installed.
- iv. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-5	Earthwork	Lump Sum

F. Site Works

1. Description

- i. "Site Works" shall include all labor, equipment, apparatus, tools, and materials required to furnish and install all project site improvements not specifically covered within another pay item in accordance with the Contract Drawings, Specifications and the requirements of the Contract Documents. This work shall include but is not limited to Hot-Mix-Asphalt (HMA), Cement Concrete Curb and Gutter and Hardscaping, Permanent Signage, Striping, Pavement Markings, Flag Poles, Seat Walls and Handrails.
- ii. "Site Works" shall also include all labor, equipment, materials required to furnish and install all stormwater trench drains, piping, treatment vault as shown in the Contract Drawings all in accordance with the requirements of the contract documents.
- iii. "Site Works" shall also include all labor, equipment, materials required to furnish and install all landscaping and plantings including but not limited to soil preparation, contouring of planting areas, installation of cobble drains, and hydroseeding complete as shown in the Contract Drawings all in accordance with the requirements of the Contract Documents.
- iv. "Site Works" shall also include all labor, equipment, materials required to furnish and install all irrigation complete as shown in the Contract Drawings all in accordance with the requirements of the Contract Documents. Work shall include, but is not limited to, procurement, transportation and delivery to the site, preparation, irrigation system construction, testing and system checks required for operation.

- v. "Site Works" shall also include all labor, equipment, materials required to furnish and install complete including installation of all benches, trash receptacles, recycle receptacles, and other miscellaneous furnishings and appurtenant materials as shown in the Contract Drawings all in accordance with the requirements of the Contract Documents.
2. Method of Measurement
- i. Measurement for payment for "Site Works" shall be based upon the completion of the entire Work as a Lump Sum Pay unit complete, all in accordance with the requirements of the Contract Documents.
3. Basis of Payment
- v. Payment for "Site Works" under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-6, which shall constitute full compensation for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
 - i. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
 - ii. Partial payment will be made for approved materials on-site and not installed.
 - iii. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-6	Site Works	Lump Sum

G. Sanitary Sewer Utility

1. Description
- i. "Sanitary Sewer Utility" shall include all labor, equipment, apparatus, tools, and materials required to furnish and install all sanitary sewer utility structures, by-pass pumping, piping and fittings as shown in the Contract Drawings all in accordance with the contract documents.
2. Method of Measurement

- i. Measurement for payment for “Sanitary Sewer Utility” shall be based upon the completion of the entire Work as a Lump Sum Pay unit complete, all in accordance with the requirements of the Contract Documents.
3. Basis of Payment
- i. Payment for “Sanitary Sewer Utility” under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-6, which shall constitute full compensation for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.
 - ii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
 - iii. Partial payment will be made for approved materials on-site and not installed.
 - iv. Partial payment for approved material off-site and not installed will be considered on an individual case-by-case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-7	Sanitary Sewer Utility	Lump Sum

H. Landscape Guarantee Period

- 1. Description
 - i. “Landscape Guarantee Period” shall include all WORK complete in accordance as shown in the Contract Drawings all in accordance with the requirements of the Contract Documents.
- 2. Method of Measurement
 - i. Measurement for payment for “Landscape Guarantee Period” shall be based upon the completion of the entire Work as a Lump Sum Pay unit complete, all in accordance with the requirements of the Contract Documents.
- 3. Basis of Payment
 - i. Payment for “Landscape Guarantee Period” under the Base Bid shall be made at the Lump Sum Price named in the Bid Schedule under Pay Items No. A-8, which shall constitute full compensation

for all WORK shown in the Contract Drawings, as described within the Specifications and as directed by the ENGINEER.

- ii. Partial payment for Work will be based on the Contract Bid Schedule on percent complete basis.
- iii. Partial payment will be made for approved materials on-site and not installed.
- iv. Partial payment for approved material off-site and not installed will be considered on an individual case basis.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-8	Landscape Guarantee Period	Lump Sum

I. Brush Cleaning of Pavement Surface by Sweeper

1. Description

- i. “Brush Cleaning of Pavement Surface by Sweeper” shall include all necessary materials, tools, equipment, labor and incidentals associated with brush sweeping City Streets clean of debris and sediment using a street sweeping machine as specified in Section 8-01.3(8) of the WSDOT Standard Specifications. This will be for all areas outside of defined limits of the CONTRACTOR’S laydown area including City Streets and will be performed as directed by the Engineer. The unit cost also includes the cost of waste disposal.

2. Method of Measurement

- i. Measurement for payment for “Brush Cleaning of Pavement Surface by Sweeper” shall be determined on the basis of documentation from the CONTRACTOR indicating actual hours of street sweeping performed.

3. Basis of Payment

- i. Payment for “Brush Cleaning of Pavement Surface by Sweeper” under the Base Bid shall be performed at the Unity Price stated in the Bid Schedule under pay item A-8. This pay item shall only be used at the direction of the Engineer, and shall not be used by the CONTRACTOR to meet the requirements for dust and debris cleanup associated with their work activities associated with City and City roadways within the Vicinity of the Parcel A8 project site.

Payment will be made under:

Payment Item No.	Pay Item	Pay Unit
A-9	Brush Cleaning of Pavement Surface by Sweeper	Hours (HR)

J. Additional Work for Minor Changes

1. The dollar amount for any work paid under this Bid Item are to become a part of the Contractor's total bid. The City does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment for "Additional Work for Minor Changes" will be negotiated prior to commencing Work and shall be for Work to remedy unforeseen conditions or conflicts, not identified in the Contract Drawings or Specifications.

K. Incidental Items

1. No separate payment will be made for project management, construction management and supervision, construction field engineering, construction survey, quality control and associated Work. All costs in connection therewith will be considered a subsidiary obligation of the Contractor.
2. No separate payment will be made for design, submittal preparation and associated Work. All costs in connection therewith will be considered a subsidiary obligation of the Contractor.
3. Any Work shown on the Contract Drawings or specified herein that is not specifically described in the bid descriptions shall be considered incidental to other items of Work and shall not be specifically measured for payment.

FINAL EXAMINATION AND ACCEPTANCE

After construction is complete, notify the City whereupon the City will examine all Work and note any deficiencies in writing. If City analysis of the Work confirms the project to be in satisfactory condition, the Work will be accepted as complete. Should the Work be determined to be incomplete, the Contractor shall immediately perform such additional Work as may be required to satisfactorily complete the project, as determined by the City.

FINAL PAYMENT

Final payment will be subject to deductions for material disposed of in an unauthorized manner, or for Work not completed to the City's satisfaction. Final acceptance of all or

part of the Work and the deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error.

ANY WORK SHOWN ON THE CONTRACT DRAWINGS THAT IS NOT SPECIFICALLY DESCRIBED IN THE BID DESCRIPTIONS SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK AND SHALL NOT BE SPECIFICALLY MEASURED FOR PAYMENT.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for meetings during construction.
- B. Contractor and Subcontractor representatives attending meetings must be qualified and authorized to act on behalf of their firms.

1.2 PRECONSTRUCTION MEETING

- A. The Engineer will schedule a meeting to be held prior to the Contractor mobilizing and beginning any work. This meeting is to review Construction Documents administration requirements and mobilization procedures.
- B. Meeting Location: City of Mercer Island Public Works Maintenance and Engineering Building, or as mutually agreed.
- C. Participants shall include:
 - 1. Contractor's Project Manager, Superintendent, Safety and Health Officer.
 - 2. Owner, Project Manager.
 - 3. Engineer.
 - 4. Owner's Maintenance and Operation Staff, as appropriate.
 - 5. Others, including major Subcontractors, as appropriate.
- D. Engineer will:
 - 1. Administer the meeting.
 - 2. Record and distribute copies of minutes within seven days of meeting to all meeting participants.
- E. Agenda: Discussion will pertain to detailed information, for example:
 - 1. The Work – including, but not limited to:
 - a. Scheduling and phasing requirements.
 - b. Contractor's use of premises.
 - c. Special conditions and coordination.
 - d. Security.
 - e. Permits.

2. Communications – including, but not limited to:
 - a. Change and persons authorized to direct changes.
 - b. Requests for Information (RFI), field decisions, and clarifications.
 - c. Project meetings.
3. Contractor’s Site Specific Safety Plan.
4. Administrative and procedural requirements including, but not limited to:
 - a. Contract modification.
 - b. Progress payment.
 - c. Submittals - including Contractor’s Construction Progress Schedule.
5. Owner testing and inspection.
6. Temporary Facilities and Controls including, but not limited to:
 - a. Deliveries and storage.
 - b. Temporary utilities and enclosures.
 - c. Noise and vibration control.
 - d. Utility process shutdowns.
 - e. Contractor parking.
 - f. Housekeeping and waste management.
7. Closeout Procedures – including Project Record documents.

1.3 CONSTRUCTION PROGRESS MEETINGS

- A. Frequency: Bi-weekly, unless otherwise agreed to by the Owner and Contractor.
- B. Meeting Location: City of Mercer Island Public Works Maintenance and Engineering Building, or as mutually agreed.
- C. Participants shall include:
 1. Contractor's Project Manager, Superintendent.
 2. Owner, Project Manager.
 3. Engineer.
 4. Owner’s Operation and Maintenance Staff, as appropriate.
 5. Others, as appropriate.
- D. Contractor shall:
 1. Administer the meetings.
 2. Provide schedules, logs and other construction activity data in support of the issues discussed and recorded in meeting minutes.
 3. Review meeting minutes and provide comments as appropriate.

- E. Engineer and Owner will:
 - 1. Record and distribute copies of minutes prior to the next meeting.

- F. Agenda: Discussion will pertain to items, such as:
 - 1. Review and approve minutes of previous meeting noting exceptions, if any.
 - 2. Review progress since previous meeting.
 - 3. Review plans for progress during subsequent four-week look ahead schedule work period.
 - a. Identify pending meetings.
 - b. Discuss safety activities and any job hazards
 - 4. Discuss field observations, problems, and conflicts.
 - 5. Review the comprehensive progress schedule, identify problems and discuss mitigation.
 - 6. Review submittal schedule and RFIs.
 - 7. Review proposed changes in the Work and substitution requests.

1.4 DRAFT PROGRESS PAYMENT ESTIMATE REVIEW MEETINGS

- A. Frequency: Monthly (Meeting may be combined with Construction Progress Meetings in Paragraph 1.03)

- B. Meeting Locations: City of Mercer Island Public Works Maintenance and Engineering Building, or as mutually agreed.

- C. Participants shall include:
 - 1. Contractor's Project Manager.
 - 2. Owner.
 - 3. Engineer.
 - 4. Others as appropriate.

- D. The Contractor shall:
 - 1. Administer the meeting.
 - 2. Present the draft monthly Progress Payment Estimate together with required back up information for review and approval by the Owner and Engineer.
 - 3. Revise and submit the monthly Application for Payment in accordance with the findings and agreements of the meeting.

- E. The Engineer will:
 - 1. Review the Contractor's draft Progress Payment Estimate in accordance with the progress of the Work and requirements of General Terms and Conditions

Article 7.

F. Agenda: Discussion will pertain to items such as:

1. Percent of work complete.
2. Off-site storage.
3. Bill of quantities.
4. Percentage of subcontract payment allocations.
5. Other items required to be submitted prior to payment, including but not limited to the schedule update, construction photographs, and review of as-built drawings.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 35 29 HEALTH AND SAFETY

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. This section describes health and safety requirements to be implemented in support of Contractor activities associated with excavating, handling, loading, transporting, and disposal of contaminated materials on designated portions of the site. CONTRACTOR shall prepare and implement a site-specific health and safety plan for the work under this Contract. Additionally, CONTRACTOR shall exercise due caution when excavating and handling impacted soil and construction water to minimize the potential health hazard to persons on the site, adjacent properties, and the general public.
- B. CONTRACTOR shall at all times conduct its activities with appropriate precautions to avoid the risk of bodily harm to persons or the risk of damage to any property or the environment. CONTRACTOR shall continuously inspect all work, materials, and equipment and shall be solely responsible for discovery, determination, and correction of any conditions that may involve such risks.
- C. CONTRACTOR shall supply all equipment, materials, and personnel necessary to meet the requirements of this Section and all applicable codes and regulations for safe handling and disposal of contaminated soil and construction water.
- D. The ENGINEER and the CITY will be responsible for the health and safety protection of their personnel and will conduct their activities in accordance with their own health and safety plan(s).

1.02 SUBMITTALS

- A. Within 21 days of the issuance of the Notice to Proceed and prior to starting the work, submit the following:
 - 1. A site-specific health and safety plan meeting applicable regulatory requirements. Obtain CITY's concurrence with the plan before conducting the work.
 - 2. Submit to the CITY the name and qualifications of CONTRACTOR's health and safety officer for the Work. CONTRACTOR shall not replace this person without prior written approval by the CITY.
 - 3. Submit proof of appropriate WAC 296-62 Part P training for site workers and supervisory personnel who are authorized by the CONTRACTOR to engage in work associated with hazardous materials and potentially

hazardous materials. In addition, for onsite supervisory personnel, submit current certification of WAC 296-62 Part P onsite management or supervisor training and American Red Cross first aid and cardiopulmonary resuscitation (CPR) training.

1.03 REGULATORY REQUIREMENTS AND APPLICABLE PUBLICATIONS

- A. It is not the intent of the CITY to list and identify all applicable safety codes, standards, and/or regulations requiring compliance by the CONTRACTOR. The CONTRACTOR shall be responsible for identifying and determining all safety codes, standards, and regulations that are applicable to the work. These include, but are not limited to, the following:
1. 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response
 2. 29 CFR 1926, Safety and Health Regulations for Construction
 3. 49.17 RCW, Washington Industrial Safety and Health Act
 4. WAC 296-24 and WAC 296-800, General Safety and Health Standards
 5. WAC 296-155, Safety Standards for Construction
 6. WAC 296-62, Part P, Hazardous Waste Operations and Emergency Response
 7. American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices for 1991-1992, or most recent version
 8. NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, DHHS Publication No. 85-115, October 1985.

1.04 SCOPE OF HAZARDOUS MATERIALS WORK

- A. Hazardous materials work shall include, but not be limited to, activities involving personnel or equipment in contact with contaminated or potentially contaminated soil, construction water, or groundwater. Such work shall include, but not be limited to, excavating, handling, stockpiling, loading, transporting, and disposal of contaminated soil, and any other intrusive activities in areas containing contaminated soil or groundwater. CONTRACTOR shall be responsible for monitoring hazardous materials and conditions and determining when work involves hazardous materials and when conditions are present that require conformance with specified regulatory requirements. CONTRACTOR shall be responsible for the planning and scheduling of hazardous material work with all other work under the Contract and shall conduct all hazardous material work in strict accordance with its site-specific health and safety plan.

- B. CONTRACTOR shall plan for and carry out all portions of the work that include contact or potential contact with existing contaminated site soil with a minimum level of personal protection of Modified Level D per applicable regulatory requirements. CONTRACTOR shall apply higher levels of personal protection, if warranted by encountered conditions or specified in Contractor's health and safety plan.

PART 2 – PRODUCTS

2.01 HEALTH AND SAFETY PLAN

- A. Prepare and maintain for the duration of this Contract a site-specific health and safety plan to promote the health and protection of all onsite personnel and the environment. The plan shall be consistent with the requirements of Part 1 of this Section.
- B. Assess the potential risks to onsite personnel and the environment and develop its site-specific health and safety plan to safely execute the work under this Contract. CONTRACTOR shall submit the health and safety plan to the CITY for review and general concurrence. The CITY's review and concurrence with CONTRACTOR's health and safety plan shall not in any way relieve CONTRACTOR of its responsibility for health and safety, nor shall the CITY's concurrence be construed as limiting in any manner CONTRACTOR's obligation to undertake actions that may be necessary or required to establish and maintain safe working conditions at the site, including conditions not related to hazardous materials, nor shall the CITY's concurrence be construed as establishing the CITY in a position of responsibility for implementation or administration of CONTRACTOR's health and safety plan.
- C. CONTRACTOR and subcontractors shall comply with the site-specific health and safety plan for the duration of this Contract. CONTRACTOR shall coordinate with the CITY and with all of its subcontractors on health and safety matters. CONTRACTOR shall furnish all necessary first-aid, safety, personal protective and decontamination equipment and facilities and enforce the use of such equipment and facilities by its employees and its subcontractors of any tier.
- D. As a minimum, CONTRACTOR's site-specific health and safety plan shall include:
 - 1. A description of the site activities to be performed.
 - 2. A listing of hazardous substances known to be, or suspected of being, present at the site, including asbestos cement and raw sewage.
 - 3. A description of the site chemical hazards (e.g., toxicity, flammability, stability, reactivity, etc.), including the nature of each chemical; its physical properties; OSHA, WISHA, or ACGIH standards, where

established; and physical hazards (e.g., noise, heavy equipment, heat stress, etc.).

4. A map of the site showing the known and possible locations of the chemical substances, and the proposed work activity locations and evacuation routes.
5. General health and safety directives regarding onsite conduct, including levels of protection and contingency plans.
6. Site-specific health and safety directives for potentially hazardous activities. These directives shall specify the equipment and safety procedures to be used by personnel engaged in the work activities.
7. Establishment of the work area definitions associated with potential contact with hazardous materials. Planned changes in boundaries during the work shall be identified.
8. Requirements for personal protective equipment. The plan shall include a listing of the health and safety equipment that will be available onsite and required for intrusive site activities during the work under this Contract.
9. Personal decontamination facilities and procedures. Provide decontamination facilities for personnel, as necessary, for conformance with the health and safety plan.
10. Emergency procedures in case of hazardous waste spillage or exposure to personnel, personal injury, fire, explosion, etc. This section of the plan shall include emergency telephone numbers and specific procedures for immediate removal to a hospital or doctor's care of any person who may be injured on the job site.
11. Field monitoring equipment and procedures. This section of the plan shall specify when and how monitoring will be performed (e.g., visual monitoring for airborne dust), what data reporting procedures will be used, and how the data will be used onsite to determine appropriate personal protective equipment.
12. Names and responsibilities of personnel assigned to implement, administer, and supervise the health and safety plan.
13. Names, firms, and staff positions of personnel authorized to work at the site.
14. An employee signature page on which each of CONTRACTOR's employees whose activities involve contact with contaminated materials and each employee of each subcontractor of any tier whose activities involve

contact with contaminated materials will acknowledge receipt of the plan, an understanding of the plan, and an agreement to comply with plan provisions.

15. Recordkeeping requirements and all necessary reporting to cover the implementation of the CONTRACTOR's site-specific health and safety plan.
 16. Handling and disposal procedures for personal protective gear, decontamination residuals, and other potentially contaminated construction waste generated by Contractor and other site personnel during the course of the work.
- E. As conditions change or if new operations are to be performed, CONTRACTOR's health and safety plan shall be modified or amended, or a new health and safety plan shall be developed.

PART 3 – EXECUTION

3.01 HEALTH AND SAFETY

- A. Site activities involving hazardous or potentially hazardous materials shall be conducted in accordance with CONTRACTOR's site-specific health and safety plan.
- B. Designate a qualified representative as Health and Safety Officer whose responsibility will be health and safety monitoring and oversight. The designated qualified health and safety representative shall be onsite at all times when contact with hazardous materials is anticipated.
- C. CONTRACTOR shall be responsible for providing safety training and shall require its subcontractors and all Contractor-authorized visitors to have this training, if appropriate for the work to be conducted by these personnel. Documentation of this training shall be available at the site. Provide appropriate personal protective equipment for CONTRACTOR's employees, as specified in the health and safety plan, and require subcontractors to provide this equipment for subcontractor's employees.
- D. Provide for decontamination of CONTRACTOR's and subcontractor's personnel and equipment that contact hazardous or potentially hazardous materials, in conformance with the requirements of the health and safety plan.
- E. Provide for the proper disposal of disposable safety gear and equipment used by CONTRACTOR's employees, the CITY, federal and state agency representatives, and all site visitors. Such disposal shall conform to all applicable federal and local hazardous waste disposal regulations. Waste material from CONTRACTOR's onsite decontamination facilities shall be properly containerized, labeled, and disposed of by CONTRACTOR. Disposal of rinse water via the sanitary sewer

requires written approval (for each occurrence) by the City of Mercer Island Public Works Department.

- F. Maintain accurate accident and injury reports and furnish a copy of the reports to the CITY within 24 hours of the reported incident.
- G. Provide proper illumination of construction activity, as necessary, to allow all workers and oversight personnel to safely execute their responsibilities and tasks.
- H. Promptly comply with any specific instructions or directions given to CONTRACTOR by the CITY unless overriding health and safety concerns dictate another course of action.
- I. Health and safety plans, emergency procedures, and first-aid procedures shall be conspicuously posted at the site and CONTRACTOR shall hold regularly scheduled meetings, as necessary, to instruct its personnel and its subcontractors on health and safety practices and proper use of personal protective equipment.

3.02 MATERIAL HANDLING AND DISPOSAL

- A. Handle and dispose of contaminated soil, water, and other materials consistent with these Specifications and directives issued by the CITY, and in conformance with all applicable federal, state, and local waste disposal regulations.
- B. Contaminated materials shall be contained within designated areas and shall not, at any time, be placed directly on or otherwise allowed to contaminate the surface of designated uncontaminated areas, except as approved in writing by the CITY.
- C. Transport contaminated soil, water, and other materials from the point of removal to the point of temporary storage or loading in such a manner that contaminated material is not placed on and does not spill or fall on designated uncontaminated areas. Install and maintain chemically resistant liner and containment berm materials and clearly stake and mark temporary storage locations for contaminated materials at all times.
- D. Assist the CITY whenever they elect to acquire confirmational samples. Assist the CITY to the maximum extent practicable and facilitate the removal of contaminated materials within the limits specified by the CITY, subject to contractual provisions related to changes in the scope of work.

END OF SECTION

SECTION 01 45 00
CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services, field inspections and field testing.
- B. The Contractor is responsible for the quality assurance and quality control of their respective work for the construction of this project in accordance with the Contract Documents.

1.02 NOT USED

1.03 DEFINITIONS

- A. Field Tests: Tests and analyses made at or in the vicinity of the job site in connection with the actual construction.
- B. Quality Assurance: The day-to-day, in-process supervisory observations of work and materials conducted by the Contractor to assure that the proper methods and materials are being used and installed by tradesmen.
- C. Field Quality Control: The testing and inspections conducted by the Contractor in the field during and at the completion of each construct to verify that the in-process and completed construction is in compliance with the Contract Documents, applicable Codes and standards.

1.04 NOT USED

1.05 REGULATORY REQUIREMENTS

- A. General: Comply with all Federal, State, and local Codes as referenced herein. Such regulations apply to activities including, but not limited to, site work and zoning, building practices and quality, on and offsite disposal, safety, sanitation, nuisance, and environmental quality.

1.06 CONTRACTOR'S RESPONSIBILITIES

- A. Monitor quality assurance over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

- B. Coordinate the schedule for all specified inspections.
- C. Comply fully with manufacturers' instructions.
- D. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.07 NOT USED

1.08 NOT USED

1.09 JOB SITE CONDITIONS

- A. Schedule to ensure all preparatory work has been accomplished prior to proceeding with current work. Proceeding with the work constitutes acceptance of conditions. Allow adequate time for materials susceptible to temperature and humidity to "stabilize" prior to installation. Establish and maintain environmental conditions (i.e., temperature, humidity, lighting) as recommended by the various material manufacturers for the duration of the work.

PART 2 NOT USED

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Field quality control responsibilities of the Contractor include providing quality control according to paragraph 1.06. on the jobsite as the work progresses.
- B. Acceptable characteristics and quality of a particular item or construct is defined in that item's specification Section.

3.02 NOT USED

3.03 CORRECTION OF DEFECTIVE WORK

- A. Any defective or imperfect Work, equipment, or materials furnished by the Contractor which is discovered before the Final Acceptance of the Work, or during a warranty period, shall be removed immediately even though it may have been overlooked by the Engineer and approved for payment. The Contractor shall repair such defect, without compensation, in a manner satisfactory to the City.

- B. Unsuitable materials and equipment may be rejected, notwithstanding that such defective Work, materials and equipment may have been previously overlooked by the City and accepted or approved for payment.

- C. If any workmanship, materials or equipment shall be rejected by the Engineer as unsuitable or not in conformity with the Specifications or Contract Drawings, the Contractor shall promptly replace such materials and equipment with acceptable materials and equipment at no additional cost to City. Equipment or materials rejected by the City shall be tagged as such and shall be immediately removed from the site.

END OF SECTION

SECTION 01 55 26
TEMPORARY TRAFFIC CONTROL

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The Contractor, utilizing contractor labor and contractor-provided equipment and materials (except when such labor, equipment or materials are to be provided by the City as specifically identified herein), shall plan, manage, supervise and perform all temporary traffic control activities needed to support the Work of the Contract.
- B. The Contractor shall provide flaggers, spotters and all other personnel required for labor for traffic control activities and not otherwise specified as being furnished by the City.
- C. The Contractor shall perform all procedures necessary to support the Contract Work.
- D. The Contractor shall provide signs and other traffic control devices not otherwise specified as being furnished by the City. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, and other traffic control devices necessary to warn and protect the public at all times from injury or damage as a result of the Contractor's operations which may occur on or adjacent to Highways, roads, or streets. No Work shall be done on or adjacent to the Roadway until all necessary signs and traffic control devices are in place.
- E. The traffic control resources and activities described shall be used for the safety of the public, of the Contractor's employees, and of the City's personnel and to facilitate the movement of the traveling public. Traffic control resources and activities may be used for the separation or merging of public and construction traffic when such use is in accordance with a specific approved Traffic Control Plan (TCP).
- F. Upon failure of the Contractor to immediately provide flaggers; erect, maintain, and remove signs; or provide, erect, maintain, and remove other traffic control devices when ordered to do so by the Engineer, the City may, without further notice to the Contractor or the Surety, perform any of the above and deduct all of the costs from the Contractor's payments.
- G. The Contractor shall be responsible for providing adequate labor, sufficient signs, and other traffic control devices, and for performing traffic control procedures needed for the protection of the Work and the public at all times regardless of

whether or not the labor, devices or procedures have been ordered by the Engineer, furnished by the City, or paid for by the City.

- H. Wherever possible when performing Contract Work, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the Work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved TCPs, equipment may operate in a direction opposite to adjacent traffic.
- I. The Contractor is advised that the City may have entered into operating agreements with one or more law enforcement organizations for cooperative activities. Under such agreements, at the sole discretion of the City, law enforcement personnel may enter the work zone for enforcement purposes and may participate in the Contractor's traffic control activities. The responsibility under the contract for all traffic control resides with the Contractor and any such participation by law enforcement personnel in Contractor traffic control activities will be referenced in the Special Provisions or will be preceded by an agreement and, if appropriate, a cost adjustment. Nothing in this Contract is intended to create an entitlement, on the part of the Contractor, to the services or participation of the law enforcement organization.

1.02 NOT USED

1.03 NOT USED

1.04 SUBMITTALS

- A. Traffic Control Plans as further discussed under the Execution Section.

PART 2 PRODUCTS

2.01 PRODUCTS AND MATERIALS

- A. All materials used for temporary traffic control measures shall conform to WSDOT Standard Specifications, Division 9-35, and meet the requirements of the Contract Drawings unless otherwise approved by the Engineer and/or the City.

PART 3 EXECUTION

3.01 TRAFFIC CONTROL MANAGEMENT

- A. General Requirements

1. It is the Contractor's responsibility to plan, conduct and safely perform the Work.
2. The Contractor shall manage temporary traffic control with his or her own staff.
3. Traffic control management responsibilities shall be formally assigned to one or more company supervisors who are actively involved in the planning and management of field Contract activities. The Contractor shall provide the Engineer with a copy of the formal assignment. The duties of traffic control management may not be subcontracted.
4. The Contractor shall designate an individual or individuals to perform the duties of the primary Traffic Control Supervisor (TCS). The designation shall also identify an alternate TCS who can assume the duties of the primary TCS in the event of that person's inability to perform. The TCS shall be responsible for safe implementation of approved TCPs provided by the Contractor.
5. The primary and alternate TCS shall be certified as worksite traffic control supervisors by one of the organizations listed in the Special Provisions. Possession of a current flagging card by the TCS is mandatory. A traffic control management assignment and a TCS designation are required on all projects that will utilize traffic control.
6. The Contractor shall maintain 24-hour telephone numbers at which the Contractor's assigned traffic control management personnel and the TCS can be contacted and be available upon the Engineer's request at other than normal working hours. These persons shall have the resources, ability and authority to expeditiously correct any deficiency in the traffic control system.

B. Responsibilities

1. Responsibilities
 - i. Overseeing and approving the actions of the Traffic Control Supervisor (TCS) to ensure that proper safety and traffic control measures are implemented and consistent with the specific requirements created by the Contractor's work zones and the Contract. Some form of oversight shall be in place and effective even when the traffic control management personnel are not present at the jobsite.
 - ii. Providing the Contractor's designated TCS with approved TCPs

which are compatible with the Work operations and traffic control for which they will be implemented. Having the latest adopted edition of the Manual On Uniform Traffic Control Devices for Streets and Highways (MUTCD,) including the Washington State Modifications to the MUTCD and applicable standards and Specifications available at all times on the project.

- iii. Discussing proposed traffic control measures and coordinating implementation of the Contractor-adopted TCP(s) with the Engineer.
- iv. Coordinating all traffic control operations, including those of Subcontractors and suppliers, with each other and with any adjacent construction or maintenance operations.
- v. Coordinating the project's activities (such as ramp closures, road closures, and lane closures) with appropriate police, fire control agencies, city or county engineering, medical emergency agencies, school districts, and transit companies.
- vi. Overseeing all requirements of the Contract that contribute to the convenience, safety, and orderly movement of vehicular and pedestrian traffic.
- vii. Reviewing the TCS's diaries daily and being aware of field traffic control operations.
- viii. Being present on-site a sufficient amount of time to adequately satisfy the above-listed responsibilities. Failure to carry out any of the above-listed responsibilities shall be a failure to comply with the Contract and may result in a suspension of Work as described in contract documents.

C. Traffic Control Supervisor

1. Traffic Control Supervisor (TCS) shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized or less frequently, as authorized by the Engineer.
2. The TCS shall personally perform all the duties of the TCS. During non-work periods, the TCS shall be available to the job site within a 45-minute time period after notification by the Engineer.
3. The TCS's duties shall include:
 - i. Having a current set of approved TCPs, applicable Contract

Provisions as provided by the Contractor, the latest adopted edition of the MUTCD, including the Washington State Modifications to the MUTCD, the book Quality Guidelines for Work Zone Traffic Control Devices, and applicable standards and Specifications.

- ii. Inspecting traffic control devices and nighttime lighting for proper location, installation, message, cleanliness, and effect on the traveling public. Traffic control devices shall be inspected at least once per hour during working hours except that Class A signs and nighttime lighting need to be checked only once a week. Traffic control devices left in place for 24-hours or more shall also be inspected once during the nonworking hours when they are initially set up (during daylight or darkness, whichever is opposite of the working hours). The TCS shall correct, or arrange to have corrected, any deficiencies noted during these inspections.
- iii. Preparing a daily traffic control diary on each day that traffic control is performed using DOT Forms 421-040A and 421-040B, and filing them at the end of the next working day for City review upon request. The Contractor may use alternate forms if approved by the Engineer. Diary entries shall include, but not be limited to:
 - (i) Time of day when signs and traffic control devices are installed and removed,
 - (ii) Location and condition of signs and traffic control devices,
 - (iii) Revisions to the TCP,
 - (iv) Lighting utilized at night, and
- iv. Observations of traffic conditions. Making minor revisions to the TCP to accommodate site conditions provided that the original intent of the traffic control plan is maintained and the revision has the concurrence of both the Contractor and the Engineer.
- v. Attending traffic control coordinating meetings or coordination activities as necessary for full understanding and effective performance.
- vi. Ensuring that all needed traffic control devices and equipment are available and in good working condition prior to the need to install or utilize them. The TCS may perform the Work described

in Subsection Flaggers and Spotters or in Subsection Other Traffic Control Labor and be compensated under those Bid items, provided that the duties of the TCS are accomplished.

D. Traffic Control Plans

1. Contractor shall prepare a method of handling traffic. All construction signs, flaggers, spotters and other traffic control devices shall be shown on the TCP(s) except for emergency situations. Where mainline Contract TCPs are developed with the intent of operating without the use of flaggers or spotters, the plans shall contain a note that states, "NO FLAGGERS OR SPOTTERS". The use of flaggers or spotters to supplement these TCPs will not be allowed except in a case where no other means of traffic control can be used or in the event of an emergency. If the Contractor proposes the use of flaggers or spotters with one of these plans, this will require approval by the Engineer. The modified plans shall show locations for all the required advance warning signs and a safe, protected location for the flagging station. If flagging is to be performed during hours of darkness, the plan shall include appropriate illumination for the flagging station.
2. When the Contractor's chosen method of performing the Work in the Contract requires some form of temporary traffic control, the Contractor shall either: (1) designate and adopt, in writing, the TCP or plans from the Contract documents that support that method; or (2) submit a Contractor's plan that modifies, supplements or replaces a plan from the Contract documents. Any Contractor-proposed modification, supplement or replacement shall show the necessary construction signs, flaggers, spotters and other traffic control devices required to support the Work. Any Contractor-proposed TCP shall conform to the established standards for plan development as shown in the MUTCD, Part VI. The Contractor's submittal, either designating and adopting a TCP from the Contract documents or proposing a Contractor developed plan, shall be provided to the Engineer for approval at least 10-calendar days in advance of the time the signs and other traffic control devices are scheduled to be installed and utilized. The Contractor shall be solely responsible for submitting any proposed TCP or modification, obtaining the Engineer's approval and providing copies of the approved TCPs to the Traffic Control Supervisor.

E. Conformance to Established Standards

1. Flagging, signs, and all other traffic control devices and procedures

furnished or provided shall conform to the standards established in the latest WSDOT adopted edition of the Manual On Uniform Traffic Control Devices for Streets and Highways (MUTCD), published by the U.S. Department of Transportation and the Washington State Modifications to the MUTCD. Judgment of the quality of devices furnished will be based upon Quality Guidelines for Temporary Traffic Control Devices, published by the American Traffic Safety Services Association. Copies of the MUTCD and Quality Guidelines for Temporary Control Devices may be purchased from the American Traffic Safety Services Association, 15 Riverside Parkway, Suite 100, Fredericksburg, Virginia 22406-1022. The Washington State Modifications to the MUTCD may be obtained from the Washington State Department of Transportation.

2. The condition of signs and traffic control devices shall be acceptable or marginal as defined in the book Quality Guidelines for Temporary Traffic Control Devices, and will be accepted based on a visual inspection by the Engineer. The Engineer's decision on the condition of a sign or traffic control device shall be final. A sign or traffic control device determined to be unacceptable shall be removed from the project and replaced within 12-hours of notification

3.02 TRAFFIC CONTROL LABOR, PROCEDURES, AND DEVICES

A. Traffic Control Labor

1. The Contractor shall furnish all personnel for flagging, spotting, for the execution of all procedures related to temporary traffic control and for the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control traffic during construction operations.
2. Workers engaged as flaggers or spotters shall wear reflective vests and hard hats. During hours of darkness, white coveralls or white or yellow rain gear shall also be worn.
3. The Contractor shall require all personnel at the work site under their control (including Subcontractors and lower tier subcontractors) to comply with the following:
 - i. To wear reflective vests, except that during daylight hours, clothing of orange, yellow, strong yellow green or fluorescent versions of these colors may be worn in lieu of vests. Flaggers must wear reflective vests and hard hats at all times;

- ii. During hours of darkness, to wear vests, white coveralls or either high visibility reflective fluorescent lime yellow pants with fluorescent orange strip or reflective fluorescent orange pants with fluorescent lime yellow strip.
 - iii. When rain gear is worn during hours of darkness, it shall be white or yellow;
 - iv. The reflective vests shall always be the outermost garments.
- 4. Exceptions to these requirements are: 1) When personnel are out of view of, or not exposed to traffic, 2) When personnel are inside a vehicle, or 3) Where it is obvious that such apparel is not needed for the employee's safety from traffic.
 - 5. Reflective vests shall be high visibility lime-yellow in base color with orange-red trim and 3M silver Scotchlite reflective material (or equivalent) or orange-red base color with lime-yellow reflective stripe. Vests shall have 230 or more square inches of reflective trim as measured on a medium vest. The 3M type 6187 (or equivalent) 2-inch-wide lime-yellow reflective stripe can be used as the lime-yellow trim on a red-orange vest. All components to these garments must be visible in 360-degrees, from all angles and the reflective material visible at a minimum of 1,000 feet.
 - 6. Reflective vests, hard hats, white coveralls, rain gear, and other apparel shall be furnished and maintained in a neat, clean, and presentable condition at no expense to the City.

B. Flaggers and Spotters

- 1. Flaggers and Spotters shall be posted where shown on approved TCPs or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. The flagging card shall be immediately available and shown to the City upon request.
- 2. Flagging stations shall be shown on TCPs at locations where construction operations require stopping or diverting public traffic. Flagging stations shall be staffed only when flagging is required. This staffing may be continuous or intermittent, depending on the nature of the construction activity. Whenever a flagger is not required to stop or divert traffic, the flagger shall move away from the flagging station to a safer location. During hours of darkness, flagging stations shall be illuminated in a

manner that insures that flaggers can easily be seen but that does not cause glare to the traveling public. Flaggers shall be equipped with portable two-way radios, with a range suitable for the project. The radios shall be capable of having direct contact with project management (foremen, superintendents, etc.).

3. The Contractor shall furnish Stop/Slow paddles approved by the Engineer for all flagging operations.
4. Spotting stations shall be shown on TCPs at locations where a spotter can detect errant drivers or other hazards and provide an effective warning to other workers. Spotting stations will not be allowed at locations where the spotter will be in unnecessary danger. The Contractor shall furnish noise-makers or other effective warning devices for spotting operations. The duties of a spotter shall not include flagging.

C. Other Traffic Control Labor

1. In addition to flagging or spotting duties, the Contractor shall provide personnel for all other traffic control procedures required by the construction operations and for the labor to install, maintain and remove any traffic control devices shown on TCPs.

3.03 TRAFFIC CONTROL PROCEDURES

A. One-Way Traffic Control

1. The project Work may require that traffic be maintained on a portion of the Roadway during the progress of the Work using one-way traffic control. If this is the case, the Contractor's operation shall be confined to one-half the Roadway, permitting traffic on the other half. If shown on an approved TCP or directed by the Engineer, one-way traffic control, in accordance with the MUTCD, shall be provided and shall also conform to the following requirements:
 - i. In any one-way traffic control configuration, side roads and approaches will be closed or controlled by a flagger or by appropriate approved signing. A side road flagger will coordinate with end flaggers where there is line of sight and with the pilot car where the end flaggers cannot be seen.
 - ii. Queues of vehicles will be allowed to take turns passing through the work zone in the single open lane. When one-way traffic control is in effect, Contractor vehicles shall not use the open traffic lane except while following the same rules and routes

required of the public traffic.

B. Work Area Conditions

1. As conditions permit, the Contractor shall, at the end of each day, leave the Work area in such condition that it can be traveled without damage to the Work, without danger to traffic, and without one-way traffic control. If, in the opinion of the Engineer, one-way traffic control cannot be dispensed with after working hours, then the operation will be continued throughout the non-working hours.

C. Lane Closure Setup/Takedown

1. Where allowed by the Contract and where shown on approved TCPs or directed by the Engineer, the Contractor shall set up traffic control measures to close one or more lanes of a multi-lane facility. When this is to occur, the following sequence shall be followed:
 - i. Advance warning signs are set up on the Shoulder of the Roadway opposite the lane to be closed,
 - ii. Advance warning signs are set up on the same Shoulder as the lane to be closed,
 - iii. A truck-mounted attenuator, with arrow board, is moved into place at the beginning of the closure taper,
 - iv. Channelization devices are placed to mark the taper and the length of the closure as shown on the TCP. Once the lane is closed, the TMA/arrow board combination may be replaced with an arrow board without attenuator.
 - v. If additional lanes are to be closed, this shall be done in sequence with previous lane closures using the same sequence of activities. A truck-mounted attenuator with arrow board is required during the process of closing each additional lane and may be replaced with an arrow board without attenuator after the lane is closed. Each closed lane shall be marked with a separate arrow board at all times.
 - vi. Traffic control for lane closures shall be removed in the reverse order of its installation.

D. Patrol and Maintain Traffic Control Measures

1. At all times, when temporary traffic control measures are in place, the

Contractor shall provide for patrolling and maintaining these measures. The Work shall consist of resetting mislocated devices, assuring visibility of all devices, cleaning and repairing where necessary, providing maintenance for all equipment, including replacing batteries and light bulbs as well as keeping motorized and electronic items functioning, and adjusting the location of devices to respond to actual conditions, such as queue length, unanticipated traffic conflicts and other areas where planned traffic control has proven ineffective.

2. This Work shall be performed by the Contractor, either by or under the direction of the Traffic Control Supervisor. Personnel, with vehicles if necessary, shall be dispatched so that all traffic control can be reviewed at least once per hour during working hours and at least once during each non-working day.

3.04 TRAFFIC CONTROL DEVICES

A. Construction Signs

1. All construction signs required by approved TCPs, as well as any other appropriate signs directed by the Engineer shall be furnished by the Contractor. The Contractor shall provide the posts or supports and erect and maintain the signs in a clean, neat, and presentable condition until the need for them has ended. Post mounted signs shall be installed as shown in the Contract Drawings. When the need for construction signs has ended, the Contractor, upon approval of the Engineer, shall remove all signs, posts, and supports from the project and they shall remain the property of the Contractor.
2. All existing signs, new permanent signs installed under this Contract, and construction signs installed under this Contract that are inappropriate for the traffic configuration at a given time shall be removed or completely covered with metal, plywood, or an Engineer approved product specifically manufactured for sign covering during periods when they are not needed.
3. Construction signs will be divided into two classes. Class A construction signs are those signs that remain in service throughout the construction or during a major phase of the Work. They are mounted on posts, existing fixed Structures, or substantial supports of a semi-permanent nature. Class A signs will be designated as such on the approved TCP. Sign and support installation for Class A signs shall be in accordance with the Contract Drawings. Class B construction signs are those signs that are placed and removed daily, or are used for short durations which may

extend for one or more days. They are mounted on portable or temporary mountings.

4. Where it is necessary to add weight to signs for stability, the only allowed method will be a bag of sand that will rupture on impact. The bag of sand shall have a maximum weight of 40-pounds, and shall be suspended no more than 1 foot from the ground. Signs, posts, or supports that are lost, stolen, damaged, destroyed, or which the Engineer deems to be unacceptable while their use is required on the project shall be replaced by the Contractor.

B. Sequential Arrow Signs

1. Where shown on an approved TCP or where ordered by the Engineer, the Contractor shall provide, operate and maintain sequential arrow signs. In some locations, the sign will be shown as a unit with an attenuator. In other locations, the plan will indicate a stand-alone unit.

C. Portable Changeable Message Sign

1. Where shown on an approved TCP or where ordered by the Engineer, the Contractor shall provide, operate and maintain portable changeable message signs. These signs shall be available, on-site, for the entire duration of their projected use.

D. Barricades

1. Where shown on an approved TCP or where ordered by the Engineer, the Contractor shall provide, install and maintain barricades. Barricades shall be kept in good repair and shall be removed immediately when, in the opinion of the Engineer, they are no longer functioning as designed.
2. Where it is necessary to add weight to barricades for stability, the only allowed method will be a bag of sand that will rupture on impact. The bag of sand shall have a maximum weight of 40 pounds, and shall be suspended no more than 1-foot from the ground.

E. Traffic Safety Drums

1. Where shown on an approved TCP, or where ordered by the Engineer, the Contractor shall provide, install and maintain traffic safety drums. Used drums may be utilized, provided all drums used on the project are of essentially the same configuration.
2. The drums shall be designed to resist overturning by means of a weighted

lower unit that will separate from the drum when impacted by a vehicle.

3. Drums shall be regularly maintained to ensure that they are clean and that the drum and reflective material are in good condition. If the Engineer determines that a drum has been damaged beyond usefulness, or provides inadequate reflectivity, a replacement drum shall be furnished.
4. When the Engineer determines that the drums are no longer required, they shall be removed from the project and shall remain the property of the Contractor.

F. Traffic Cones

1. Where shown on an approved TCP or where ordered by the Engineer, the Contractor shall provide, install and maintain traffic cones. Cones shall be kept in good repair and shall be removed immediately when directed by the Engineer. Where wind or moving traffic frequently displace cones, an effective method of stabilizing cones, such as stacking two together at each location, shall be employed.

G. Tubular Markers

1. Where shown on an approved TCP or where ordered by the Engineer, the Contractor shall provide, install and maintain tubular markers. Tubular markers shall be kept in good repair and shall be removed immediately when directed by the Engineer.
2. Tubular markers are secondary devices and are not to be used as substitutes for cones or other delineation devices without an approved TCP.
3. Where the TCP shows pavement-mounted tubular markers, the adhesive used to fasten the base to the pavement shall be suitable for the purpose, as approved by the Engineer. During the removal of pavement-mounted tubular markers, care shall be taken to avoid damage to the existing pavement. Any such damage shall be repaired by the Contractor at no cost to the City.

H. Warning Lights and Flashers

1. Where shown attached to traffic control devices on an approved TCP or where ordered by the Engineer, the Contractor shall provide and maintain flashing warning lights. Lights attached to advance warning signs shall be Type B, high-intensity.

2. Lights attached to traffic safety drums, barricades or other signs shall be Type C, steady burning low intensity or, where attention is to be directed to a specific device, Type A, flashing low-intensity units.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 01 56 26
TEMPORARY FENCING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The Contractor shall be responsible for cordoning off the work site with temporary fencing and erecting temporary traffic controls as shown on the Contract Drawings and described herein.
- B. These facilities and controls shall be placed to the Owner's satisfaction prior to commencement of any Work activities.
- C. During the construction, the Contractor shall maintain access for neighbors and utilities through and across all work areas.
- D. The Contractor shall provide traffic control and coordination as described herein during the entire period of activities under this contract.

1.02 RELATED SECTIONS

- A. SECTION 01 55 26 – Temporary Traffic Control

1.03 NOT USED

1.04 NOT USED

PART 2 PRODUCTS

2.01 PRODUCTS

- A. The contractor is responsible for identifying and procuring all materials, products, equipment, etc. necessary to complete all of the Work described herein.

PART 3 EXECUTION

3.01 CONTROLS

- A. Temporary Fencing
 1. The Contractor shall erect temporary construction fencing around the entire construction area to protect and restrict access to the site.
 2. The Contractor shall be responsible for ensuring that no unauthorized personnel enter the worksite. Authorized persons shall be limited to those employed by the Contractor specifically for this work, City Public Works employees, and the designated Owner representative(s). The contractor will

be responsible for setting up and managing a “daisy chain” of padlocks at the access gate to allow City employees access to the site.

3. The temporary fencing shall be erected and maintained such that it will remain intact and effective in the Contractor’s absence during weather which can reasonably be expected during the period of the project.
4. The Contractor shall provide the Owner’s representative with a means of contacting a Contractor’s representative during off hours.

B. Work Completion

1. The temporary fencing, traffic controls, and traffic coordination responsibilities are to remain in place for the duration of the project. The fencing and barriers are to be removed only after completion of the work and final inspection of the site, as described in the Bid Documents.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 01 57 13
TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. This Section specifies sediment control and turbidity curtains as required for completion of this project.

1.02 RELATED SECTION

- A. SECTION 01 56 26 – TEMPORARY FENCING
- B. SECTION 31 20 00 – EARTHWORK

1.03 REFERENCES

- A. WSDOT Standard Specifications – Washington State Department of Transportation 2020 Standard Specifications for Road, Bridge, and Municipal Construction.
- B. WSDOT Temporary Erosion and Sediment Control Manual – April 2019

1.04 SUBMITTALS

- A. Product Submittals: Product catalog cuts for products in this section; silt fence.
- B. Product Submittals: Product catalog cuts for products in this section; turbidity curtain.
- C. Submit method or methods for handling and disposing of silt laden stormwater and trench dewatering.
- D. Dispose water offsite accordance with local, state, and federal codes.
- E. Construction Storm Water Pollution Protection Plan (SWPPP), in accordance with state and local standards prior to construction.
- F. Contractor shall submit a copy of its Contingency and Spill Control Plan describing measures to be implemented in the event of spills or discharges during material handling and transporting.

1.05 EXISTING SITE FEATURES AND CONDITIONS

- A. Comply with City of Mercer Island standards.
- B. Comply with state of Washington Department of Ecology NPDES General Permit for Construction.
- C. Contractor is responsible for preparing the Storm Water Pollution Protection

Plan (SWPPP). Contractor to have the SWPPP onsite at all times.

PART 2 PRODUCTS

2.01 FLOATING TURBIDITY CURTAIN

- A. Turbidity Curtain Material shall minimize the migration of silt from the project site into the waters of Lake Washington.
- B. Curtain height shall be sufficient to rest on the lakebed during a water level of 0.5 feet above Ordinary High Water. Curtain toe shall be weighted to ensure that the toe rests on the floor during all water levels. It shall be anchored on each end, and allowed sufficient space to expand and contract as the water level rises and falls during the course of the calendar year.

2.02 SILT FENCE

- A. Silt Fence: Per WSDOT Standard Specifications Section 9-33, Temporary Silt Fence, (Table 6).
- B. Posts: Silt fence support posts shall be steel or wood of sufficient length to support the fence without sagging, bending, or otherwise collapsing.
- C. Support Wire: Support wire for filter fabric shall be 14-gauge woven wire mesh field fencing.

PART 3 EXECUTION

3.01 JOBSITE ACCESS, STAGING, AND EQUIPMENT

- A. Establish the staging area (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants like petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.
- B. Contractor shall clearly mark boundaries to establish the limit of work associated with site access and construction.
- C. Contractor shall confine the use of equipment to specific access and work corridor shown in the approved Contract Drawings.
- D. Contractor shall check equipment daily for leaks and complete any required repairs before using the equipment in or near the water.
- E. Contractor shall allow the Owner and Owner's Representatives access to any barges used as part of the project.
- F. Contractor shall use environmentally acceptable lubricants composed of

biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.

3.02 PREPARATION:

A. PROTECTION:

1. Locate existing utilities, avoid damage or disturbance. Call "Dial Dig 1-800-424-555", 48 hours (two working days) before beginning construction.
2. Employ and pay for a locator service to locate and mark utilities in addition to the "DIAL DIG" service.
3. Survey limits of Work to install silt fence.
4. Protect and maintain existing utilities that are to remain.
5. Protect plant life, lawns, and other features remaining as a portion of final landscaping or interim erosion control.
6. Protect benchmarks, property corners, horizontal control, existing structures, sidewalks, railings, paving, and curbs.
7. Reference survey monuments and benchmarks, property corners, and survey control points that may be disturbed by work.
8. Protect pavement or paved areas intended to remain from damage.
9. Perform any demolition, clearing, or other work required prior to installing erosion control devices.
10. Re-establish benchmarks, monuments, and property corners disturbed as part of construction.

B. FISH KILL AND WATER QUALITY

1. If a fish kill occurs, or, if fish are observed to be in distress at the project site, immediately stop activities causing harm and notify the Owner.

3.03 CONSTRUCTION:

A. TURBIDITY CURTAIN

1. Prior to the start of any demolition, earthwork, or in-water work, an outer turbidity curtain shall be installed in the water surrounding the project as shown in the Contract Drawings to contain turbidity during earthwork and debris removal and subsequent restoration of the shoreline. The outer turbidity curtain may open and close to allow materials to be transported in and out during the Work.
2. An additional, inner turbidity curtain shall be installed around the immediate in-water work area. This curtain shall remain closed until work

in that area is completed and the water quality within the enclosed area meets state regulations.

3. Inspection of the turbidity curtain shall take place daily during construction and following any storm events.
4. Repairs to the turbidity curtain shall be made immediately and shall be done in accordance with the Manufacturer's recommendation. Oil boom shall be replaced at the Owner's discretion and the Contractor's expense.
5. When the curtain is removed, it shall be done in accordance with the Manufacturer's recommendations and in such a manner as to minimize turbidity. Remaining soil particles shall be sufficiently settled before removing the curtain.
6. The Contractor shall remove any floating debris from within the turbidity curtain at the conclusion of each workday.

B. TEMPORARY SILT FENCES

1. The Contractor shall be fully responsible for installing and maintaining temporary silt fences at the locations and manner shown on the Contract Drawings.
2. The silt fence shall prevent soils carried by runoff water from going beneath, through, or over the top of the silt fence, but shall allow the water without soil to pass through the fence.
3. The minimum height of the top of the silt fence shall be 30 inches above the original ground surface, and fence shall follow the contours of the ground.
4. Damaged and otherwise improperly functioning portions of silt fences shall be repaired or replaced to the Engineer's satisfaction at the Contractor's expense.
5. Sediment deposits shall either be removed by the Contractor when the deposit reaches approximately 1/2 the height of the silt fence, or a second silt fence shall be installed as determined by the Engineer.
6. At the completion of all earthwork, the Contractor shall remove only those silt fences that are no longer necessary to control sediment. Review the site with Engineer prior to removing silt fences. Contractor shall remove and properly dispose of all accumulated deposits, silt fence, and associated components.
7. Attach support wire and filter fabric with staples or wire rings.

C. CONSTRUCTION ENTRANCES

1. The Contractor shall be fully responsible for installing and maintaining temporary construction entrances at the locations and in the manner shown on the Contract Drawings.
2. The construction entrance shall be installed at the beginning of construction and maintained for the duration of the project.
3. The construction entrance shall be installed to ensure that all paved areas are kept clean for the duration of the project. Additional measures, such as wash pads, may be required.

D. TREATMENT

1. Provide any required equipment including but not limited to transfer pumps, piping, storage tanks and treatment equipment as required for the handling and disposing of silt laden stormwater and trench dewatering per the SWPPP.
 - i. Operate in accordance with manufacturer's recommendations.
2. Provide onsite testing for turbidity, oils, and grease.

E. INLET SEDIMENT TRAPS

1. Inlet Sediment Traps shall be installed on all storm drains and inlets adjacent to the project site. Additional inlet sediment traps shall be kept on-site in the event that sediment is observed to pass over furthest trap installed. If this occurs, install additional sediment traps on downstream inlets until no sediment is observed to pass over inlet.
2. Inlet Sediment traps shall be inspected daily.
3. When the depth of accumulated sediment reaches $\frac{1}{2}$ the height of the internal device, deposits shall be removed and stabilized on-site in accordance with WSDOT Standard Specification Section 8-01.3(16).

3.04 ADJUSTMENTS AND REVISIONS

- A. Adjust or move swales, barriers, berms, pipes, culverts, and silt fences as necessary during construction.

3.05 PROTECTION AND MAINTENANCE

A. PROTECTION:

1. Where possible, maintain natural vegetation for silt control.
2. Prevent silt-laden water from leaving site or from entering off site storm sewer systems.
3. Stabilize all slopes, cuts, or fill areas where Work has stopped for more than 30 days by covering with polyethylene sheeting, or other method to prevent erosion and sediment transport.

4. Install catch basin protection inserts in all catch basins that may receive run-off generated from the project site. Maintain by emptying and cleaning protection inserts frequently and replacing any torn or otherwise damaged inserts.
5. Keep all off-site parking areas and streets clean from construction activities. Paved surfaces shall be kept clean using mechanical sweeping equipment, hand shovels and brooms, or other accepted methods suitable of removing dirt, rock, silt, and sand. No street washing will be allowed.

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 the project site.

C. MAINTENANCE:

1. Monitor and maintain silt control measures. Remove accumulation 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 replaced by other stabilization methods and Engineer authorizes removal.
3. Inspect and repair temporary erosion control facilities. Inspect entire system to ensure proper operation a minimum of once per week, during and after storms, and before weekends and holidays.
4. Inspect public street around construction area on a daily basis and clean as needed or when directed by the Engineer.

3.06 CLEAN-UP

- A. Obtain Engineer approval for final removal of silt control.
- B. Remove erosion control measures after permanent erosion control is complete and risk for silt erosion and silt laden runoff is past.
- C. Restore all existing and new site improvements to remain post construction.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.1 DAMAGE

- A. Equipment, products and materials shall be shipped, handled, stored, and installed in ways which will prevent damage to the items. Damaged items will not be permitted as part of the work except in cases of minor damage that have been satisfactorily repaired and are acceptable to the Owner.

1.2 NOT USED

PART 2 EQUIPMENT

2.1 PACKAGE AND MARKING

- A. All equipment shall be protected against damage from moisture, dust, handling, or other cause during transport from manufacturer's premises to site. Contractor shall label each item or package indicating the content of each package.
- B. Stiffeners shall be used where necessary to maintain shapes and to give rigidity. Parts of equipment shall be delivered in assembled or sub-assembled units where possible.

2.2 SHIPPING

- A. Irrigation components including, but not limited to pipes, wires, valves, and controllers shall be wrapped or otherwise sealed to prevent contamination by grit and dirt.
- B. Damage shall be corrected to conform to the requirements of the contract before the assembly is incorporated into the work. The Contractor shall bear the costs arising out of dismantling, inspection, repair and reassembly.

2.3 STORAGE

- A. During the interval between the delivery of equipment to the site and installation, all equipment, unless otherwise specified, shall be stored in an enclosed space affording protection from weather, dust and mechanical damage and providing favorable temperature, humidity and ventilation conditions to ensure against equipment deterioration. Manufacturer's recommendations shall be adhered to in addition to these requirements.
- B. Equipment and materials to be located outdoors may be stored outdoors if protected against moisture condensation. Equipment shall be stored at least 6 inches above ground.

PART 3 NOT USED

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for salvaging recycling, and disposal of nonhazardous construction waste.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators.
- B. Packaging: Salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1. Paper
 - 2. Cardboard
 - 3. Boxes
 - 4. Plastic sheet and film
 - 5. Polystyrene packaging
 - 6. Wood crates
 - 7. Plastic pails

PART 2 NOT USED

PART 3 EXECUTION

3.1 WASTE MANAGEMENT PRACTICES

- A. Provide containers, storage, signage, transportation, and other items as required.
- B. Train workers, subcontractors, and suppliers on proper waste management practices.
- C. Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- D. Control runoff from waste management areas to prevent pollution of surface waters and groundwater.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE

- A. General: Recycle paper and beverage containers used by on-site workers.

- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Stockpile materials away from construction area. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Do not store within the drip line of trees.
 - 3. Remove recyclable waste and transport to recycling receiver or processor.

3.3 DISPOSAL OF CONSTRUCTION AND DEMOLITION WASTE

- A. Remove waste materials and legally dispose of them in a location acceptable to authorities having jurisdiction.
- B. Do not allow waste materials to accumulate on-site.
- C. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- D. Do not burn waste materials.

END OF SECTION

SECTION 01 74 23
FINAL CLEANUP

PART 1 GENERAL

1.1 SUMMARY

A. This section specifies administrative and procedural requirements for final cleaning.

1.2 CLEANING

A. General cleaning and maintenance of the site during construction is required by General Terms and Conditions Section 3.10; cleaning required for specific trades of work is specified in sections pertaining to that trade of work.

1. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be back charged to Contractor.

B. Final Cleaning: Perform the following cleaning operations as a prerequisite for Owner's final inspection. The following are examples, but not by way of limitation, of cleaning levels required:

1. Remove labels that are not permanent labels.
2. Clean the Project Site of rubbish, litter and other foreign substances. Sweep paved areas broom clean, remove stains, spills, and other foreign deposits.
3. Leave entire Project Site clean and ready for occupancy.

C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner per Section 01 74 19 – Construction Waste Management and Disposal. Do not use Owner's containers for trash generated by cleaning or construction, unless approved by Owner.

1. Where extra materials of value remain after completion, or associated work has become Owner's property, arrange for disposition of these materials as directed.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. This section specifies requirements for project Record Drawings.

1.2 DEFINITIONS

- A. Contract Drawings: Drawings that are part of this Contract. Contract Drawings include drawings distributed by Addenda and modified or added by Change Order.
- B. Record Drawings: Record Drawings shall include updated Contract Drawings depicting actual work as installed by the Contractor. Record Drawings shall include changes from RFIs, Change Orders, and field conditions. Record Drawings shall include updated working drawings to depict actual work as installed by the Contractor.

1.3 SUBMITTALS

A. Action Submittals:

1. Final Record Drawings shall be submitted at the end of the project. The Contractor shall submit red-line mark-ups of all Contract Drawings depicting work that deviates from the Contract Drawings. Drawings shall depict as-constructed equipment. These drawings shall be identified as Final Record Drawings. The drawings shall be prepared in conjunction with all of the Contractor's subcontractors and suppliers in accordance with Paragraph 2.01 below. The redline mark-ups shall utilize standard engineering drafting methods and inclusion of NOTES and KEY NOTES where notes are applicable. References to other documentation such as RFIs are not acceptable; the changes described in that documentation shall be depicted on the drawings.
2. Contractor-Prepared Drawings: The Contractor shall submit .pdf plots and files of all drawings prepared by the Contractor and all of its subcontractors and suppliers depicting work in all disciplines in accordance with this and other Sections. The Contractor shall submit the AutoCAD files for Contractor-Prepared Drawings on CDs, DVDs, or flashdrives along with the Final Record Drawings.
 - a. Contractor shall submit the final Contractor-Prepared Drawings as .pdf plots and files at the end of the project. Upon completion of the project Work, the Contractor shall provide the final Record Drawings to the Engineer as a condition of Physical Completion.

3. All drawings provided in electronic format shall be provided in the latest .pdf format. Drawing format shall include borders and title blocks clearly identifying Contract, equipment, and the scope of the drawing. Drawings shall be legible at a 50 percent reduction; reduced drawings will be used for insertion in operations and maintenance manuals. Text size shall be 0.125 inch for 22 x 34 inch drawings and 0.063 inch for 11 x 17 inch drawings.

PART 2 PRODUCTS

2.1 GENERAL

- A. The marked-up Record Drawings shall be available for review by the Owner and Engineer at all times. The Record Drawings shall be maintained on full-size drawings 22-inch by 34-inch bond paper, reproduced from the most recent version of the appropriate drawings, stamped "Record Drawings" and marked up to reflect the "as-built" and "as-constructed" conditions of the Contract Drawings.
- B. The Record Drawings shall be marked up with all of the Contractor's subcontractors and suppliers using the methods and devices described below. Record Drawings shall be prepared for all disciplines and mark-ups shall be shown on all affected drawings.
- C. Record Drawings shall show all of the Contractor's work.

2.2 MARKING DEVICES

- A. The Contractor shall utilize standard drawing and drafting tools to draw straight and neat lines depicting elements added to and changed on the drawings. The Contractor shall cloud all areas on the drawings where additions or changes occur. All clouded areas shall be dated to indicate the date the change is being recorded. The drawing markings shall, unless directed otherwise, use the following color coding:
 1. Additions – Red.
 2. Deletions – Green.
 3. Comments – Blue.
 4. Dimensions – Graphite.

PART 3 EXECUTION

3.1 RECORDING

- A. In addition to the items above, the following additional construction items shall be recorded on the Record Drawings:
 1. Field changes of dimensions and details.

2. Changes made by Change Order.

3.2 RECORD DRAWING REVIEW AND ACCEPTANCE

- A. Record Drawings will be used to verify and document progress. The Engineer will not field verify all drawing additions and changes but rather will conduct random spot checks of the drawings by field verifying the accuracy of additions and changes. The Engineer will initial all clouded drawing changes that were field verified. Where the Engineer finds greater than 10% errors in the accuracy of the drawing additions and changes in any month's drawing set review, the Contractor shall be responsible for engineering fees to conduct a detailed review of the drawing set.
- B. All inaccuracies in the Record Drawings, Schedules, and Lists uncovered through random spot checks or in a subsequent detailed review shall be corrected prior to acceptance.
- C. The Contractor shall submit a Transmittal of Final Project Record Documents. The Transmittal of Final Project Record Documents shall be submitted and accepted by the Engineer prior to the Engineer signing off on the portion of the work as being complete. The transmittal of the Final Record Drawings shall include the electronic version of the Record Drawings and Record Conduit, and Cable Schedules and Lists.

END OF SECTION

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TECHNICAL SPECIFICATIONS: CIVIL

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SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. This section includes Work related to the following:
1. Demolition of a timber bulkhead.
 2. Demolition of a concrete bulkhead.
 3. Miscellaneous concrete and pavement.

1.02 RELATED SECTIONS

- A. Section 31 20 00 – EARTHWORK.

1.03 REFERENCES

- A. Washington Department of Transportation (WSDOT) (2020) Standard Specifications – Standard Specifications for Road, Bridge, and Municipal Construction.

1.04 SUBMITTALS

- A. Record As-Built Drawings/Documents
1. Contractor shall accurately record actual as-built locations of pipe runs, connections, and invert elevations. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
 2. Contractor shall identify and describe unexpected variations to subsoil conditions or discovery or uncharted utilities.
 3. Record drawings/documents shall be prepared by the Contractor per City Mercer Island requirements.

1.05 DEFINITIONS

- A. Remove
1. Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the City's property.

1.06 QUALITY ASSURANCE

- A. Comply with all Local, State, and Federal requirements
- B. Regulatory Requirements: Comply with City of Mercer Island's requirements.

1.07 PRODUCTION CONDITIONS

- A. The City assumes no responsibility for actual condition of utility structures, site improvements, and pavements to be demolished.

1.08 SEQUENCING AND SCHEDULING

- A. Sequence utility relocation to minimize service interruptions. Coordinate and schedule utility service interruption with the City a minimum of 3 weeks before service interruption is expected.

1.09 MATERIAL OWNERSHIP

- A. All demolished materials shall become the property of the Contractor and shall be removed from the site and disposed of legally.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Select on-site material: Per Section 31 20 00 – Earthwork.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Contractor shall verify erosion control is in place and operating properly.
- B. Contractor shall survey the condition of utilities, site improvements, and pavements to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of adjacent structures or property during demolition.
- C. Contractor shall perform daily reviews of the project site as the Work progresses to detect hazards resulting from demolition activities prior to starting any work.

3.02 PREPARATION

- A. Elements surrounding Work of this section shall be protected from damage or disfiguration.
- B. Existing utilities shall be protected from damage and disturbance. Provide shoring to support existing utilities and their support prism or remove and replace utilities where shoring is not practical. Removing and replacing to be performed per the City's utility standards.
- C. Existing to Remain
 - 1. Elements to remain shall be protected by the Contractor against damage and soiling during demolition. When permitted by the City, items may be removed to suitable, protected storage location during demolition then cleaned and reinstalled in original locations.
- D. Barriers and barricades shall be erected by the Contractor to direct and protect adjacent traffic.

- E. Existing utilities shall be located to avoid damage or disturbance. For aid in utility location, Contractor shall call 811 or 1-800-424-5555, 48 hours (two working days) prior to beginning construction. Employ and pay for a locator service to locate and mark utilities in addition to the "Dial Dig" service. Utility entities that remove and disconnect utilities with their own workforce (i.e., gas, power, telephone) shall be contacted by the Contractor to perform utility disconnections.
- F. Contractor shall notify the City of any proposed water shut offs that may affect hydrants, fire sprinkler systems, alarm systems, and other services, at least 3 weeks in advance. Should the demolition or excavation work damage any existing utilities, Contractor is to immediately stop work and contact the Owner. Work is not to continue until the Owner is advised and can review the Contractor's proposed repair method and schedule. Any existing utilities that are damaged due to the Contractor's operations shall be replaced by the Contractor, to the satisfaction of the Owner at the Contractor's expense.

3.03 DEMOLITION

- A. Contractor shall demolish only those improvements designated in the Contract Drawings.
- B. Contractor shall conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, docks, and other adjacent occupied and used facilities. Streets, walks, docks, or other adjacent occupied or used facilities shall not be obstructed without permission from the City or property owner. Provide alternate routes around closed or obstructed traffic ways if required.
- C. Contractor shall conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
- D. Use of explosives shall not be permitted.
- E. Contractor shall promptly repair damages to adjacent properties or facilities caused by demolition operations. Repair of damaged property shall be completed to bring the damaged item to equal or better condition than existing condition, at Contractor's expense.
- F. Demolition of the existing bulkheads shall be generally sequenced as follows:
 - 1. Excavate material around the wall while keeping the retaining wall in place.
 - 2. Demolish the retaining wall.

3.04 EXCAVATION

- A. Any excavation done by the Contractor will be observed by the City and its representatives.
- B. Extent of excavation to be performed shall be determined by the following factors, including, but not limited to:
 - 1. As needed to remove pressure from the bulkhead to be demolished
 - 2. As needed per the Contractor's Construction Plan.
- C. Utilities – Contractor shall:
 - 1. Locate, identify, disconnect, and seal or cap off utilities to be demolished.
 - 2. Remove all utilities noted. No utilities shall be abandoned in place.
 - 3. Demolish all structures and backfill with structural fill.
 - 4. Remove and dispose of demolition debris to a Contractor selected, off-site disposal location.
- D. Pavement Demolition – Contractor shall:
 - 1. Break up pavement and dispose of demolition debris to Contractor selected, off-site disposal location.
 - 2. Contractor shall not reuse demolished pavement on site.
- E. Filling Depressions and Grading:
 - 1. Contractor shall fill depressions and holes caused by the demolition of utilities and structures. Use structural fill. Compact material to 90-percent maximum dry density as described in Section 31 20 00 – EARTHWORK.
 - 2. Contractor shall grade and shape area within limits of Work indicated on Contract Drawings to provide positive drainage and avoid ponding as indicated per Section 31 20 00 – EARTHWORK.

3.05 FIELD QUALITY CONTROL

- A. Contractor shall comply with City of Mercer Island requirements.
- B. Tests – The City shall provide for compaction testing:
 - 1. Sub-grade, prior to filling.
 - 2. Filling and grading as work progresses.
- C. Inspection – The City shall observe the Work at the following milestones:
 - 1. After utility disconnect and before demolition.
 - 2. After completion of demolition, and before grading.

3.06 CLEANING

- A. Contractor shall dispose of surplus or unsuitable material.
- B. Waste, surplus, and unsuitable materials shall be disposed of by the Contractor according to laws, regulations, and ordinances off-site at a site selected by Contractor.

3.07 IN-WATER DEMOLITION

- A. Demolition of the existing bulkhead walls shall be generally sequenced as follows:
 - 1. Excavate material in accordance with project permits, while leaving the existing bulkhead in place.
 - 2. Remove existing bulkhead walls at low tides, when possible.

3.08 DISPOSAL

- A. All materials shall be disposed of offsite unless otherwise noted on the Contract Drawings. The Contractor shall provide the City with the locations of all disposal sites to be used and copies of applicable permits and approvals for each site.
- B. Prior to disposal of soils, the Contractor shall provide the City with the locations of all disposal sites to be used and copies of applicable permits and approvals for each site.
- C. Burning shall not be allowed at the designated disposal site.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The Work under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and installing Portland cement concrete for pavement in conformance with the Contract Drawings and Specifications.

1.02 RELATED SECTIONS

- A. SECTION 01 57 13 – TEMPORARY EROSION AND SEDIMENTATION CONTROL.
- B. SECTION 32 12 15 – CONCRETE WALKS AND HARDSCAPING
- C. SECTION 31 20 00 – EARTHWORK.

1.03 REFERENCES

- A. ACI (American Concrete Institute) Manual of Concrete Practice
ACI 347 Recommended Practice for Concrete Formwork
- B. ASTM International (ASTM)
 - ASTM A706 (2014) Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
 - ASTM A767 (2009) Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
 - ASTM C33 (2013) Standard Specification for Concrete Aggregates
 - ASTM C94 (2015) Standard Specification for Ready-Mixed Concrete
 - ASTM C150 (2015) Standard Specification for Portland Cement
 - ASTM C260 (Er. 2006, 2010a) Standard Specification for Air-Entraining Admixtures for Concrete
 - ASTM C309 (2011) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - ASTM C494 (2013) Standard Specification for Chemical Admixtures for Concrete
 - ASTM C719 (2014) Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)

ASTM D994 (2011) Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)

ASTM D1752 (2010) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

C. American Association of State Highway and Transportation Facilities (AASHTO) AASHTO M 171 (2005) Standard Specification for Sheet Materials for Curing Concrete

D. City of Mercer Island Standards

E. Washington State Department of Transportation (WSDOT) (2020) Standard Specification for Road, Bridge, and Municipal Construction; and Amendments
(2020) Standard Plans for Road, Bridge, Municipal Construction; and Amendments

1.04 SUBMITTALS

A. Reinforcement layout drawings.

B. Paving Jointing and Pour Sequence Plan - submit plans indicating the following:

1. Proposed layout of contraction and construction joints. Clearly delineate the two different joint types.
2. Layout of paving types as indicated on plans. Give overall dimensions of each paving type.
3. Concrete pour sequence. Indicated sequence of paving pour installation.

C. Delivery tickets for all concrete delivered to the site

D. Certifications for Reinforcement.

E. Concrete Mix Design. Mix design shall include manufacturer's data stating material properties, installation instructions for all materials included in the concrete mix design. Manufacturer's data shall demonstrate that is in conformance to all specifications and standards outlined in these specifications and referenced standards.

F. Test results certifying conformance to ASTM C150.

G. Aggregate sieve analysis.

H. Concrete repair procedures as required for any re-work to be performed.

I. Slump Test results for each load of concrete delivered to the project site in conformance with ASTM C143.

- J. Air Entrainment test results for each load of concrete delivered to the project site in conformance with ASTM C260.
- K. Material certificates for any other admixtures used.
- L. Material test reports consisting of one set of test cylinders for every 50 cubic yards of concrete delivered to the site, with the creation of the cylinders as directed in ASTM C31.

PART 2 PRODUCTS

2.01 COMPOSITION OF CONCRETE

- A. All Portland cement concrete shall be ready mix, provided by an approved plant regularly engaged in the production of concrete, unless otherwise authorized in writing by the Engineer. Ready mix concrete shall conform to the requirements of ASTM C94.
- B. The Contractor shall furnish the mix design to the Engineer for approval. The mix design shall be suitable for its intended use. Concrete shall be designed using an absolute volume analysis. The Contractor shall be responsible for having each mix laboratory tested. Prior to the start of production of any mix design, the Contractor shall submit test results and certifications for all materials, detailed mix design data and results of laboratory tests to the Engineer for approval. Approval by the Engineer will be based on apparent conformity to these specifications. It shall remain the Contractor's responsibility during production to produce concrete conforming to the mix design and the minimum acceptance criteria in the contract. When requested by the Engineer, the Contractor shall submit samples of all materials for verification testing. Production shall not commence until the mix design is approved by the Engineer.

2.02 MIX CRITERIA

- A. Cast in Place (C.I.P.)
 - 1. Concrete for cast-in-place slabs, sign posts, bollards and fence posts shall be standard weight, Portland cement concrete appropriately proportioned to meet or exceed the following minimum requirements for strength and serviceability.
 - 2. Unless indicated on the Contract Drawings, the Minimum 28 day compressive strength shall be $f'c = 4,000$ psi
 - 3. Minimum Sack per Cubic Yard = 7.0 sacks per cubic yard
 - 4. Maximum water cement ratio = 0.45

2.03 AIR ENTRAINMENT = 5% TO 8% AGGREGATES

- A. Aggregates shall conform to ASTM C33, with maximum aggregate size of 3/4-inch. Aggregates shall be stored so as to prevent deterioration, segregation, and intrusion of foreign material.

2.04 ADMIXTURES

- A. Admixtures, if used, including water reducers, retarders, and accelerators, shall conform to ASTM C494. Calcium chloride shall not be used.
- B. All admixtures used shall be submitted for approval with the Concrete Mix Design.

2.05 AIR ENTRAINING AGENTS

- A. Air entraining mixtures shall conform to ASTM C260.

2.06 PORTLAND CEMENT

- A. Portland cement shall be ASTM C150 Type II.

2.07 MIXING WATER

- A. Water used for the mixing of concrete shall be potable and be free of foreign materials. Water containing 2% or more salt shall not be used.

2.08 SHIPPING AND STORAGE OF CEMENT

- A. Cement may be shipped from pretested approved bins. The cement shall be well protected from rain and moisture, and any cement damaged by moisture or which fails to meet any of the specified requirements shall be rejected and removed from the work.
- B. Cement stored by the Contractor for a period longer than sixty (60) days in containers other than sealed bins or silos shall be retested before being used. Cement of different brands, types, or from different mills shall be stored separately.

2.09 CONSTRUCTION (EXPANSION) JOINT MATERIAL

- A. Pre-formed expansion joint material shall be rubber compound conforming to ASTM D1752, Type 1, and be full depth of the joint less expansion joint sealant and backer rod, 1/2-inch-thick. A.P.S., Rubber Expansion Joint Filler or Engineer-approved equal.
- B. Pre-formed expansion joint material for driveways, sidewalks, etc. shall be asphalt impregnated fiber, conforming to ASTM D994, full depth of joint, 1/2-inch-thick. A.P.S Fiber Board or Engineer-approved equal.

2.010 REINFORCING STEEL.

- A. Reinforcing steel shall be per section 03 20 00 – Concrete Reinforcing

2.011 EXPANSION JOINT SEALANT

- A. Sealant shall be one part cold applied non-sagging silicone. Movement shall be +100% / 50% per ASTM C719. Dow Corning NS Parking Structure Sealant or Engineer-approved equal. Depth of sealant shall be half of the joint width, utilizing closed-cell foam rod under the sealant.

2.012 CONCRETE BONDING

- A. If required for concrete repair procedures, SpecChem Strong Bond acrylic bonder shall be used.

2.013 CONCRETE CURE

- A. Liquid membrane curing compound meeting the requirements of ASTM C309, Type I
- B. Colored concrete product: Dayton Superior Cure and Seal 25% JJ22UV or approved equal. The membrane cure must not alter the colored concrete overall color appearance.

2.014 FORMS

- A. Forms shall be designed so and constructed that they may be removed without injuring the concrete.
- B. Unless otherwise specified, forms for exposed surfaces shall be made of plywood, hard pressed fiberboard, sized and dressed tongue and groove lumber, or metal in which all bolt and rivet holes are countersunk, so that a plane, smooth surface of the desired contour is obtained. Rough lumber may be used for surfaces that will not be exposed in the finished structure. All lumber shall be free from knotholes, loose knots, cracks, splits, warps, or other defects affecting the strength or appearance of the finished structure. All forms shall be mortar tight, free of bulge and warp, and shall be cleaned thoroughly before reuse.
- C. In designing forms and falsework, the Contractor shall design formwork to resist the applied concrete loading based on the equations and procedures outlined in ACI 347.
- D. The Contractor shall state the placement rate and minimum concrete temperature on the working drawings for concrete form work. Deflection of plywood, studs, and walers shall not exceed 1/360 of the span between supports.
- E. Forms shall be designed so that placement and finishing of the concrete will not impose loads on the structure resulting in adverse deflections or distortions.
- F. Forms shall be designed so that portions covering concrete that is required to be finished may be removed without disturbing other portions that are to be removed later. As far as practicable, form marks shall conform to the general lines of the structure.
- G. When possible, forms shall be daylighted at intervals not greater than 10 feet vertically, the openings being sufficient to permit free access to the forms for the purpose of inspecting, and working.
- H. Metal ties or anchorages within the forms shall be so constructed as to permit their removal to a depth of at least 1-inch from the face without injury to the

concrete. All fittings for metal ties shall be of such design that, upon their removal, the cavities which are left will be of the smallest possible size.

- I. All exposed edges 90° or sharper shall be chamfered 3/4-inch unless otherwise noted. Chamfering of forms for reentrant angles shall be required only when specifically indicated on the Contract Drawings.
- J. Forms shall be inspected immediately prior to the placing of concrete. Dimensions shall be checked carefully and any bulging or warping shall be remedied and all debris and standing water within the forms shall be removed. Special attention shall be paid to ties and bracing. Where forms appear to be braced insufficiently or built unsatisfactorily, either before or during placing of the concrete, the Engineer shall order the work stopped until the defects have been corrected.
- K. Forms shall be constructed true to line and grade. Clean out ports shall be provided at construction joints.
- L. The construction of concrete slabs with permanent steel forms shall conform to the requirements of this specification and as shown on the Contract Drawings. Removable forms may be substituted for permanent metal forms with no adjustment in prices.
- M. All forms shall be installed in accordance with approved fabrication and erection plans.
- N. All porous forms shall be treated with non-staining form oil or saturated with water immediately before placing concrete.
- O. Forms shall not be removed without the consent of the Engineer. The Engineer's consent shall not relieve the Contractor of responsibility for the safety of the work. Blocks and bracing shall be removed at the time the forms are removed and in no case shall any portion of the wood forms be left in the concrete.
- P. No load shall be placed upon finished concrete until the Engineer so directs, but the minimum time allowed for the curing of structural concrete shall be seven (7) days.

PART 3 EXECUTION

3.01 GENERAL

- A. All concrete shall be placed before it has taken its initial set and, in any case, within ninety (90) minutes after mixing. Concrete shall be placed in such manner as to avoid segregation of coarse or fine portions of the mixture, and shall be spread in horizontal layers when practicable. Special care shall be exercised in the bottom of slabs and girders to assure the working of the concrete around nests of reinforcing steel, so as to eliminate rock pockets or air bubbles. Enough

rods, spades, tampers and vibrators shall be provided to compact each batch before the succeeding one is dumped and to prevent the formation of joints between batches.

- B. No concrete which has developed an initial set shall be used. Partially hardened concrete shall not be retempered or remixed.
- C. Placement of concrete shall only occur after reinforcement placement has been inspected and approved by the Engineer or their representative.
- D. The Engineer shall be notified of any concrete casting no later than 48 hours before any concrete pour.
- E. The forms shall be free of all ice and debris. No standing water shall be permitted inside of the forms.
- F. Vibrating shall be done along all faces to obtain smooth surfaces. Care shall be taken to prevent mortar from splattering on forms and reinforcing steel and from drying ahead of the final covering with concrete.
- G. Concrete shall not be placed in slabs or other sections requiring finishing on the top surface when precipitation is occurring or when in the opinion of the Engineer precipitation is likely before completion of the finishing, unless the Contractor shall have ready on the job all materials and equipment necessary to protect the concrete and allow finishing operations to be completed.
- H. Troughs, pipes, or short chutes used as aids in placing concrete shall be arranged and used in such a manner that the ingredients of the concrete do not become separated. Where steep slopes are required, troughs and chutes shall be equipped with baffle boards or shall be in short lengths that reverse the direction of movement. All chutes, troughs, and pipe shall be kept clean and free of hardened concrete by flushing thoroughly with water after each run. Water used for flushing shall be discharged clear of the concrete in place. Troughs and chutes shall be steel or plastic or shall be lined with steel or plastic and shall extend as nearly as possible to the point of deposit. The use of aluminum for pipes, chutes or tremies is prohibited. When discharge must be intermittent, a hopper or other device for regulating the discharge shall be provided.
- I. Dropping the concrete a distance of more than 5 feet or depositing a large quantity at any point and running or working it along the forms will not be permitted. The placing of concrete shall be so regulated that the pressures caused by wet concrete shall not exceed those used in the design of the forms.
- J. High frequency internal vibrators of either the pneumatic, electrical, or hydraulic type shall be used for compacting concrete in all structures. The number of vibrators used shall be ample to consolidate the fresh concrete within fifteen (15) minutes of placing in the forms. In all cases, the Contractor shall provide at least two concrete vibrators for each individual placement operation (one may

be a standby), which shall conform to the requirements of these specifications. Prior to the placement of any concrete, the Contractor shall demonstrate that the two vibrators are in good working order and repair and ready for use.

- K. The vibrators shall be an approved type, with a minimum frequency of 5,000 cycles per minute and shall be capable of visibly affecting a properly designed mixture with a 1-inch slump for a distance of at least 18 inches from the vibrator.
- L. Vibrators shall not be held against forms or reinforcing steel nor shall they be used for flowing the concrete or spreading it into place. Vibrators shall be manipulated in such a way as to produce concrete that is free of voids, is of proper texture on exposed faces, and of maximum consolidation. Vibrators shall not be held so long in one place as to result in segregation of concrete or formation of laitance on the surface.
- M. Concrete shall be placed continuously throughout each section of the structure or between indicated joints. If, in an emergency, it is necessary to stop placing concrete before a section is completed, bulkheads shall be placed as the Engineer may direct and the resulting joint shall be treated as a construction joint.
- N. Areas where excessive honeycomb is present may be considered sufficient cause for rejection of a structure. Upon written notice that a given structure has been rejected, the rejected work shall be removed and rebuilt, in part or wholly as specified, at the Contractor's expense.

3.02 SAMPLING AND TESTING

- A. Third Party field tests of all concrete shall be the responsibility of the Contractor. The Contractor shall select and independent testing laboratory, accredited by the American Association of Laboratory Accreditation. The testing laboratory shall be approved by the Owner and shall perform all concrete testing. A minimum testing shall consist of one set of tests every 25 cubic yards or one set of tests every day during which concrete is poured. The required tests for cast-in-place concrete per set are the following: three concrete cylinder compressive tests, two 28-day and one 7-day, a unit weight test, slump test and an air-entrainment test. The same test shall be required for prestressed concrete except that four compressive test cylinders shall be required, two release strength cylinders and two 28-day cylinders. All testing shall be performed under the provisions of ACI and ASTM.
- B. The Engineer may request additional test cylinders be required if an error in batching is suspected. Additional test cylinders shall be provided at the Contractor's expense.
- C. Materials that fail to meet contract requirements, as indicated by laboratory tests, shall not be used in the Work. The Contractor shall remove all defective materials from the site.

- D. Types and sizes of concrete specimens shall be in accordance with ASTM C 31. Additional slump tests and/or test cylinders may be required at the discretion of the Engineer. Should the analysis of any test cylinder not meet the preceding requirements of Article 2.10, Composition of Concrete, its representative concrete shall be removed and replaced at the Contractor's expense.
- E. One hard copy, and one electronic copy via email, of all test reports shall be furnished to the Engineer.

3.03 PUMPING CONCRETE

- A. Concrete may be placed by pumping if the Contractor demonstrates that the pumping equipment to be used will effectively handle the particular class of concrete with the slump and air content specified and that it is arranged so that no vibrations result that might damage freshly placed concrete. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced.
- B. When pumping is completed, the concrete remaining in the pipeline, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients. After this operation, the entire equipment shall be thoroughly cleaned. Slump tests shall be taken at the discharge end of the pipe.

3.04 CONSTRUCTION (EXPANSION) JOINTS

- A. Full depth expansion joints shall be spaced at a minimum interval of 30 feet on center, with a half depth expansion joint at 15 feet intervals between full depth expansion joints. Construction joints shall be perpendicular to the principal lines of stress and in general shall be located at points of minimum shear.
- B. At horizontal construction joints, gage strips 1 1/2 inches thick shall be placed inside the forms along all exposed faces to give the joints straight lines. Before placing fresh concrete, the surfaces of construction joints shall be washed and scrubbed with a wire broom, drenched with water until saturated, and kept saturated until the new concrete is placed.
- C. Immediately prior to placing new concrete, the forms shall be drawn tight against the concrete already in place. Concrete in substructures shall be placed in such manner that all horizontal construction joints will be truly horizontal and, if possible, in locations such that they will not be exposed to view in the finished structure. Where vertical construction joints are necessary, reinforcing bars shall extend across the joint in such a manner as to make the structure monolithic. Special care shall be taken to avoid construction joints through large surfaces which are to be treated architecturally.
- D. Open joints shall be placed in the location shown on the Contract Drawings and shall be formed. The form shall be removed without chipping or breaking the

corners of the concrete. Reinforcement shall not extend across an open joint, unless so specified on the Contract Drawings.

- E. Filled Joints. Unless otherwise shown on the Contract Drawings, expansion joints shall be constructed with pre-molded expansion joint filler with a thickness equal to the width of the joint.
- F. The joint filler shall be cut to the same shape and size as the adjoining surfaces. It shall be fixed firmly against the surface of the concrete already in place in such manner that it will not be displaced when concrete is deposited against it.
- G. Immediately after the forms are removed, the expansion joints shall be inspected carefully. Any concrete or mortar that has sealed across the joint shall be removed.
- H. Joint sealer for use in deck joints shall be of the type shown on the Contract Drawings conforming to the requirements of Article 2.4 – Joint Fillers, of this Section. The faces of all joints to be sealed shall be free of foreign matter, paint, curing compound, oils, greases, dirt, free water, and laitance.
- I. Elastomeric Compression Seals. The joint seal shall be shaped as shown on the Contract Drawings. It shall be installed by suitable hand or machine tools and thoroughly secured in place with a lubricant adhesive recommended by the seal manufacturer. The lubricant adhesive shall cover both sides of the seal over the full area in contact with the sides of the joint.
- J. The seal shall be in one piece for the full width of the joint. Any joints at curbs shall be sealed adequately with additional adhesive.
- K. The seal may be installed immediately after the curing period of the concrete. Temperature limitations of the lubricant adhesive as guaranteed by the manufacturer shall be observed.
- L. Installation of the expansion joints shall be in accordance with the manufacturer's recommendations, except that the joint opening shall be adjusted for the dimensions indicated on the Contract Drawings.
- M. Steel Joints. The plates, angles, or other structural shapes shall be accurately shaped at the shop to conform to the section of the concrete slab. The fabrication and painting shall conform to the requirements of the specifications covering those items. Care shall be taken to insure that the surface in the finished plane is true and free of warping. Positive methods shall be employed in placing the joints to keep them in correct position during the placing of the concrete. The opening at expansion joints shall be that designated on the Contract Drawings at normal temperature.

3.05 CONTRACTION JOINTS

- A. Contraction Joints shall be installed as shown on the Contract Drawings or where designated by the Engineer.

- B. Contraction joints shall be spaced at 5 feet on center, between expansion joints.

3.06 ANCHOR BOLTS

- A. Anchor bolt assemblies conforming to the details shown shall be accurately secured in the forms, in the positions shown on the Contract Drawings, before any concrete is placed in the forms. The positions shall be checked and any adjustments made as soon as the concrete has been placed.
- B. When pipe sleeves or pre-cast holes are provided, no water shall be allowed to freeze in the cavity. If frost causes cracks in the concrete, the entire placement shall be removed and replaced at the CONTRACTOR's expense.

3.07 PIPES, CONDUITS, AND DUCTS.

- A. Pipes, conduits, and ducts that are to be encased in concrete shall be installed in the forms by the CONTRACTOR before the concrete is placed. Unless otherwise indicated, they shall be standard, lightweight cast-iron water pipe or wrought iron. They shall be held rigidly so they will not be displaced during concrete placement.

3.08 FINISHING CONCRETE SURFACES

- A. All concrete surfaces, with the exception of those described below, exposed in the completed Work shall receive an Ordinary Finish, unless otherwise noted on the Contract Drawings or in other Specification sections.

3.09 ORDINARY FINISH

- A. An Ordinary Finish is defined as the finish left on a surface after the removal of the forms, the filling of all holes left by form ties, and the repairing of all defects. The surface shall be true and even, free from stone pockets and depressions or projections. All surfaces that cannot be satisfactorily repaired shall be given a Rubbed Finish.
- B. All exposed concrete surfaces shall have a rough broom finish unless otherwise stated transverse to the path of travel.
- C. The concrete in caps and tops of walls shall be struck off with a straightedge and floated to true grade. The use of mortar topping for concrete surfaces shall in no case be permitted.
- D. As soon as the forms are removed, metal devices that have been used for holding the forms in place, and which pass through the body of the concrete, shall be removed or cut back at least 1-inch beneath the surface of the concrete. Fins of mortar and all irregularities caused by form joints shall be removed.
- E. All small holes, depressions, and voids that show upon the removal of forms shall be filled with cement mortar mixed in the same proportions as that used in the body of the work. In patching larger holes and honeycombs, all coarse or broken material shall be chipped away until a dense uniform surface of concrete

exposing solid coarse aggregate is obtained. Feathered edges shall be cut away to form faces perpendicular to the surface. All surfaces of the cavity shall be saturated thoroughly with water, after which a thin layer of neat cement mortar shall be applied. The cavity shall then be filled with stiff mortar composed of one part of Portland cement to two parts of sand, which shall be thoroughly tamped into place. The mortar shall be pre-shrunk by mixing it approximately twenty (20) minutes before using. The length of time may be varied in accordance with brand of cement used, temperature, humidity, and other local conditions. The surface of this mortar shall be floated with a wooden float before initial set takes place and shall be neat in appearance. The patch shall be kept wet for a period of five (5) days.

- F. For patching large or deep areas, coarse aggregate shall be added to the patching material. All mortar for patching on surfaces which will be exposed to view in the completed structure shall be color matched to the concrete. Test patches for color matching shall be conducted on concrete that will be hidden from view in the completed work and shall be subject to approval.

3.010 COLD WEATHER CONCRETE

- A. Concrete shall not be placed when the descending air temperature in the shade, away from artificial heat, falls below 40° F nor resumed before the ascending air temperature reaches 35°F, without specific written authorization. When the air temperature falls below 40° F, or is, in the opinion of the Engineer, likely to do so within a 24 hour period after placing concrete, the Contractor shall have ready on the job materials and equipment required to heat mixing water and aggregate and to protect freshly placed concrete from freezing.
- B. Concrete placed at air temperatures below 40°F shall have a temperature not less than 50°F nor greater than 70°F when placed in the forms. These temperatures shall be obtained by heating the mixing water and/or aggregate. Mixing water shall not be heated to more than 160°F.
- C. Binned aggregates containing ice or in a frozen condition will not be permitted nor will aggregates which have been heated directly by gas or oil flame or heated on sheet metal over an open fire. When aggregates are heated in bins, only steam coil or water coil heating will be permitted, except that other methods, when approved, may be used. If live steam is used to thaw frozen aggregate piles, drainage times comparable to those applicable for washed aggregates shall apply.
- D. When the temperature of either the water or aggregate exceeds 100°F, they shall be mixed together so that the temperature of the mix does not exceed 80°F at the time the cement is added.
- E. Any additives must have prior approval of the Engineer before being used.
- F. The use of calcium chloride is prohibited.

- G. When placing concrete in cold weather, the following precautions shall be taken in addition to the above requirements:
1. Heat shall be applied to forms and reinforcing steel before placing concrete as required to remove all frost, ice, and snow from all surfaces which will be in contact with fresh concrete.
 2. When fresh concrete is to be placed in contact with hardened concrete, the surface of the previous pour shall be warmed to at least 35°F, thoroughly wet, and free water removed before fresh concrete is placed.
 3. Freshly placed concrete shall be maintained at a temperature of not less than 70°F for three (3) days or not less than 50°F for five (5) days, when Type I or II cement is used, and not less than 70°F for two (2) days or not less than 50°F for three (3) days, when Type III cement is used. The above requirements are not intended to apply during the normal summer construction season when air temperatures of 40°F or higher can reasonably be anticipated during the two week period immediately following concrete placement, or until the concrete is no longer in danger from freezing.
- H. When temperatures below 20°F are not expected during the curing period and, in the opinion of the Engineer, no other adverse conditions, such as high winds, are expected, concrete temperatures may be maintained in thick concrete sections by retention of heat of hydration by means of adequately insulated forms.
- I. When, in the opinion of the Engineer, greater protection is required to maintain the specified temperature, the fresh concrete shall be completely enclosed and an adequate heat source provided. Such enclosure and heat source shall be so designed that evaporation of moisture from the concrete during curing is prevented. Precautions shall be taken to protect the structure from overheating and fire.
- J. At the end of the required curing period protection may be removed, but in such a manner that the drop in temperature of any portion of the concrete will be gradual and not exceed 30°F in the first 24 hours.
- K. For concrete placed within cofferdams and cured by flooding with water, the above conditions may be waived provided that the water in contact with the concrete is not permitted to freeze. Dewatering shall not be carried out until the Engineer determines that the concrete has cured sufficiently to withstand freezing temperatures and hydrostatic pressure.
- L. The Contractor shall be fully responsible for the protection of the concrete during cold weather operations. Any concrete injured by frost action or overheating shall be removed and replaced at the Contractor's expense.

3.011 CURING CONCRETE

A. Water Curing

1. All concrete surfaces shall be kept wet for at least seven (7) days after placing if Type II cement has been used or for three days if Type III cement has been used. Concrete shall be covered with wet burlap, cotton mats, or other materials meeting the requirements of AASHTO M 171 immediately after final finishing of the surface. These materials shall remain in place for the full curing period or they may be removed when the concrete has hardened sufficiently to prevent marring and the surface immediately covered with sand, earth, straw, or similar materials.
2. In either case the materials shall be kept thoroughly wet for the entire curing period. All other surfaces, if not protected by forms, shall be kept thoroughly wet, either by sprinkling or by the use of wet burlap, cotton mats, or other suitable fabric, until the end of the curing period. If wood forms are allowed to remain in place during the curing period, they shall be kept moist at all times to prevent opening at joints.

B. Membrane Curing.

1. Liquid membrane curing compound meeting the requirements of ASTM C309, Type I, may be permitted, subject to approval by the ENGINEER, except compounds utilizing linseed oil shall not be used. All finishing of concrete surfaces shall be performed to the satisfaction of the ENGINEER prior to applying the impervious membrane curing compound. The concrete surfaces must be kept wet with water continuously until the membrane has been applied. The manufacturer's instructions shall be carefully followed in applying the membrane, and in all cases the membrane curing compound must always be thoroughly mixed immediately before application. In case the membrane becomes marred, worn, or in any way damaged, it must immediately be repaired by wetting the damaged area thoroughly and applying a new coat of the impervious membrane curing compound. Membrane curing will not be permitted for concrete slabs that are to be covered with waterproof membranes, polymer modified concrete or at construction joints.

3.012 BACKFILLING

- A. Unbalanced backfilling against concrete structures will not be permitted until the concrete has attained a compressive strength of not less than 80% of the ultimate strength ($f'c$) shown on the Contract Drawings.

3.013 CLEANUP

- A. Upon completion of the structure and before final acceptance, the Contractor shall remove all falsework.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 31 20 00
EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The work in this section shall include all labor, materials, tools and equipment necessary to furnish and install the following items and all other related WORK in accordance with the requirements of the Contract Documents and as shown on the Contract Drawings:

1. Clearing, grubbing and stripping.
2. Excavating unsuitable material
3. Excavating, backfilling, and compacting for structures, pavements, and landscape areas
4. Cutting, grading, and filling (earthwork)
5. Aggregate and soil materials
6. Protecting and conditioning materials
7. Exporting and disposing of unsuitable and excess soil material
8. Excavating, backfilling, and compacting for utilities, including pipe, utility structures and appurtenances.
9. Control of water in trenches
10. Foundation stabilization for pipe and utility structures
11. Pipe bedding for pipe and utility structures
12. Reinforced grass

1.02 RELATED SECTIONS

- A. SECTION 01 57-13 – TEMPORARY EROSION AND SEDIMENT CONTROL.
- B. SECTION 02 41 00 – SITE DEMOLITION.
- C. SECTION 32 12 15 – CONCRETE WALKS AND HARDSCAPING
- D. SECTION 32 12 16 – ASPHALT PAVING.
- E. SECTION 33 31 00 - SANITARY SEWER UTILITY
- F. SECTION 33 44 00 - STORMWATER UTILITY EQUIPMENT

1.03 REFERENCES

- A. American National Standards Institute /American Society of Safety Engineers (ANSI/ASSE)
- B. ANSI/ASSE (2006) Safety and Health Program Requirements for Demolition Operations
- C. ASTM International (ASTM)
- D. ASTM C136 (2014) Standard Test Methods for Sieve Analysis for Fine and Course Aggregates
- E. ASTM D1557 (2012) Standard Test Methods for Laboratory Compaction Characteristics for Soil Using Modified Effort
- F. ASTM D6938 (2015) Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- G. National Fire Protection Association (NFPA)
- H. NFPA 241 (2013) Standard for Safeguarding Construction, Alternation, and Demolition Operations
- I. Washington Department of Transportation (WSDOT) - (2020) Standard Specifications – Standard Specifications for Road, Bridge, and Municipal Construction.

1.04 DEFINITIONS

- A. Useable Material: Useable material shall be defined as clean sand, gravel, quarry spalls, and riprap, free of deleterious or organic material, including excessive silt or clay, or other unsuitable material that is excavated within the project limits as determined by the Engineer. Useable material shall be stockpiled on-site in the construction limits or in the Contractor's staging area for re-use as required.
- B. Unsuitable Material: Unsuitable material shall be defined as any other material excavated from the project site, which does not meet the requirements stated above and shall also include recycled concrete and asphalt. Unsuitable material shall be removed from the project site and disposed at a legal upland disposal site.

1.05 SUBMITTALS

- A. Submit the following documents as PDF's via e-mail for all imported fill material described in Part 2 and on-site material to be incorporated into the Work:
 - 1. Samples: Submit minimum 10-pound sample for each material five business days prior to delivering material to site.
 - 2. Sieve analysis.

3. Certified test results of moisture content and chemical constituents for the imported fill materials, either through documentation of existing chemical analyses or by project-specific testing and analysis, as directed by the Owner. At minimum, materials obtained from commercial quarries shall have a total arsenic level less than 20 mg/kg for diesel and oil range hydrocarbons and below laboratory reporting limits for gasoline. Borrow from sources other than commercial quarries may be subject to additional testing depending on the source and as directed by the Owner.
 4. Modified proctor results for materials to be compacted.
 5. WSDOT pit certifications for each pit.
 6. Disposal site operator certification that disposal complies with all Local, State and Federal regulations.
 7. Certified test results.
 8. Reinforced grass section materials and installation plan.
- B. Construction Traffic control plan for site construction access from SE 22nd St to 76th Ave SE in accordance with WSDOT.
- C. The Contractor shall submit to the Engineer the following information regarding each geotextile proposed for use:
1. Manufacturer's name and current address.
 2. Full product name.
 3. Geotextile structure, including fiber/yarn type.
 4. Proposed geotextile uses(s).
 5. Manufacturer's Certificate of Compliance.

1.06 QUALITY ASSURANCE

- A. Qualifications: Crew Foreman: Minimum 10 years' working experience and 6 years' experience as foreman performing similar work.
- B. Surveyor: Land surveyor licensed in state of Washington with experience on similar projects.
- C. Work and material shall comply with WSDOT Standard Specifications.
- D. Comply with City of Mercer Island Standards.

1.07 JOBSITE CONDITIONS

- A. Earthwork operations shall not be performed if the weather conditions, in the opinion of the Engineer, are inappropriate. Work in muddy or frozen ground will not be allowed.
- B. Maintain proper drainage at all times.
- C. Stockpiles:
 - 1. All stockpile locations shall be approved by the Engineer and shall be located so as not to interfere with other work or disturb adjoining property owners.
 - 2. Stockpiles shall not exceed 10 feet in height.
 - 3. Contractor shall maintain stormwater and erosion controls at all times.
 - 4. Remove stockpile and leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.
 - 5. Maintain toe of material at least 6 feet from edges of trenches and excavations.
 - 6. Control surface water to prevent it from flowing into excavation.
 - 7. Provide free, continuous access to fire hydrants, water valves, meters, driveways, and leave clearance to enable the free flow of stormwater in gutters, conduits, and natural watercourses.

1.08 SAFETY AND PROTECTION

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.
- C. Pre-demolition Conference: Conduct conference at project site.

1.09 PROJECT CONDITIONS

- A. Contractor shall barricade open excavations occurring as part of this Work and post warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required by applicable safety regulations.
- B. Contractor shall protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining washout, and other hazards created by all earthwork related operations.
- C. Contractor shall be responsible for contacting utility companies to locate service lines prior to any excavation.

- D. Contractor shall proceed with caution in the excavation so that damage to underground structures, both known and unknown, may be avoided.
- E. Contractor shall take extreme precautions for the protection of utility lines and other subsurface improvements. Any improvements damaged by construction operations shall be repaired at the Contractor's expense in compliance with the requirements of the utility owner and to the Engineer's satisfaction.
- F. Trenches and excavations shall be sheeted, shored, and braced where required in a manner consistent with established safe practices and in accordance with all applicable safety regulations.
- G. Contractor shall comply with Chapter 49.17 RCW, the Washington State Industrial Safety and Health Act, if trench excavation exceeds 4 feet in depth. Contractor shall also include cost of required safety systems in all bid schedules and shall list as a separate Bid Item on the Bid Proposal Form.
- H. Contractor shall provide all materials, equipment, and labor necessary to provide support to manholes, footings, and foundation walls during excavation and backfilling at all locations.
- I. 76th Ave SE and access to the project site are to be kept clean at all times during construction.
- J. Contractor may be required to wash down equipment in order to minimize tracking of construction material off site prior to leaving the project site as directed by the Owner.
- K. Self-propelled pickup street sweepers shall be used, whenever required by the Engineer, to prevent the transport of sediment and other debris off the project site. Street sweepers shall be designed and operated to meet air quality standards.

PART 2 PRODUCTS

2.01 GENERAL

- A. Comply with WSDOT Standard Specifications

2.02 EXCAVATION MATERIALS

- A. Select On-site Material: On-site granular soils free of wood waste, organics and other deleterious or unsuitable material capable of being compacted as required for use. Use material with particle size and gradation such that required compaction can be attained. Moisture content of material shall be such that required compaction can be attained. Maximum aggregate size shall be 4 inches. Select On-Site Material shall meet the requirements of Useable Material.

2.03 FILL MATERIALS

- A. Quarry Spalls: Quarry spalls shall comply with WSDOT Standard Specification Section 9-13.1(5)

- B. Structural Fill: Crushed, partially crushed, or naturally occurring angular granular material free from wood waste, organics and other deleterious or unsuitable material, per WSDOT Standard Specifications Section 9-03.14 (1).
- C. Surcharge Fill: Crushed, partially crushed, or naturally occurring angular granular material free from wood waste, organics and other deleterious or unsuitable material, per WSDOT Standard Specifications Section 9-03.14 (1).
- D. Crushed Surfacing Base Course: Crushed surfacing base course shall comply with WSDOT Standard Specification Section 9-03.9(3), Base Course. Restrict fines to maximum 5 percent passing Number 200 sieve.
- E. Crushed Surfacing Top Course: Crushed surfacing top course shall comply with WSDOT Standard Specification Section 9-03.9(3), Top Course. Restrict fines to maximum 5 percent passing Number 200 sieve.
- F. Pipe Bedding: Pipe bedding material shall comply with WSDOT Standard Specification Section 9-03.12(3)
- G. Recycled concrete and asphalt shall not be permitted for construction.

2.04 GEOTEXTILE

- A. Geotextiles used on the project shall comply with WSDOT Standard Specification Section 9-33. Geotextiles used in each specific application shall comply with Tables 1 through Table 8 of WSDOT Standard Specification Section 9-33.2(1), based on the summary table specifying use within Section 9-33.1.

2.05 2.06 REINFORCED GRASS

- A. Product: Geoblock 5150
- B. Engineered base is a homogenous mixture consisting of crushed rock having an AASHTO #5 or similar designation blended with pulverized topsoil and void component generally containing air and/or water. This homogenous mixture will promote vegetation growth and provide structural support. The aggregate portion shall have a particle range from 9.5mm to 25mm (0.375 to 1.0 in) with a D50 of 13mm (0.5 in).
- C. The percentage of void-space of the aggregate portion when compacted shall be at least 30% pulverized topsoil portion equal 25% +/- of the total volume and be added and blended to produce a homogenous mixture or washed into the in-place compacted aggregate. California Bearing Ratio (CBR) of greater than 4%.
- D. Design Guidelines: Heavy fire truck access and H/HS-20 loading.
 - 1. Typical 110 psi tire pressure
 - 2. Single axle loadings of 32 kips, tandem axle loadings of 48 kips
 - 3. Gross vehicle weight of 80,000 lbs

4. Infrequent passes

PART 3 EXECUTION

3.01 EXAMINATION

A. Site Verification of Condition:

1. Verify survey benchmark, property corners, horizontal control, and intended elevations for the Work are as indicated.
2. Identify existing survey monuments, benchmarks, and survey control points, that may be distributed by work.
3. Verify erosion control is in place and operating properly
4. Verify compliance with SWPPP
5. Verify demolition is complete
6. Verify locations and elevations of existing pipes and structures at points of connection and at crossings before beginning Work. Pothole, expose pipes, determine invert elevations, verify with design, and inform Engineer of deviations affecting design before mobilizing crews and beginning construction.

3.02 PREPARATION

A. Protection

1. Locate existing utilities, avoid damage or disturbance. For aid in utility location call "Dial Dig 1-800-424-5555", 48 hours (two working days) before beginning construction.
2. Employ and pay for a locator service to locate and mark utilities in addition to the "DIAL DIG" service.
3. Protect and maintain existing utilities to remain.
4. Protect benchmarks, existing and proposed structures, sidewalks, railings, paving, and curbs.
5. Reference survey monuments and benchmarks, property corners, and survey control points that may be disturbed by Work.
6. Protect existing structures scheduled to remain.
7. Protect pavement or paved areas intended to remain from damage.
8. Erect barriers and barricades to direct and protect adjacent traffic.

9. Use all means necessary to prevent erosion of freshly graded areas during construction or until permanent drainage and erosion control measures are fully operational.
10. Re-establish bench marks, monuments and property corners disturbed as part of construction.
11. Protect plant life, lawns, and other features remaining as a portion of final landscaping or interim erosion control.
12. In the event damage occurs to any feature to remain the Contractor shall re-establish or repair at no additional cost to Owner.

B. Preparation:

1. Survey and stake limits of clearing.
2. Reference survey monuments and benchmarks, property corners and survey control points that may be disturbed by work.
3. Identify required lines, levels, contours, and datum. If existing conditions vary or conflict with actual site conditions, notify Engineer and await direction before proceeding.
4. Identify on-site trees to be removed within limits of clearing.
5. Verify existing grade elevations to be matched. Notify Engineer where existing grades to be matched create an adverse effect, such as blocking drainage, abrupt change in grade, slopes steeper than allowed, and grades not conforming with the Americans with Disability Act (ADA).

3.03 CONSTRUCTION

A. Clearing and Grubbing (Stripping):

1. Comply with WSDOT Standard Specification Section 2-01.3
2. Remove all tree roots and stumps as indicated on Contract Drawings.
3. Strip topsoil, organics, loose silty fine sands, and soft surficial soils to full depth within clearing limits.
4. Do not strip more area than can be protected from moisture damage to underlying material.
5. Remove and dispose of debris.

B. Subgrade Preparation:

1. Comply with WSDOT Standard Specifications Section 2-06.
 2. Following stripping and site excavation and prior to backfill, proof roll exposed subgrade of proposed paved areas with appropriate construction equipment approved by the Engineer. Make at least three passes of equipment over the exposed subgrade. In areas where pumping or excessive subgrade movement occurs, scarify, aerate, and re-compact existing material as directed by Engineer.
 3. Where subgrade soils are loose, remove to solid bearing or to required level as directed by Engineer and replace material in compacted lifts.
- C. Grading:
1. Shape subgrade to lines, grades, dimensions and cross sections indicated on the Contract Drawings. Remove and replace soft or unstable material.
- D. Cutting and Filling:
1. Fill areas to contours and elevations with select on-site material or structural fill. Use specific materials where indicated on the Contract Drawings. Where material will be placed in saturated conditions such as below ground water level, fill with structural fill for saturated conditions.
 2. Place and compact fill materials in continuous layers not exceeding 8 inches loose depth.
 3. Maintain optimum moisture content of fill materials to attain required compaction density.
 4. Do not fill over ponding surface water or existing subgrade surfaces that are yielding, disturbed, or softened.
 5. Suspend placing fill when the climatic conditions will not allow the specified placement and fill compaction.
 6. Make grade changes gradually. Blend slope into level areas.
 7. Constrict uniform grades between spot elevations or contours as shown on Contract Drawings.
 8. Remove surplus fill materials from site to an approved upland waste disposal site.
- E. Utility Grade and Alignment:
1. Identify and set required lines, levels, contours, and datum.

2. Stake alignment and grade and construct in locations shown on Contract Drawings.
3. Comply with City requirements for water, sewer, and storm drainage.
4. Establish extent of excavation by area and elevation.
5. Adjust alignment and grade to accommodate conflicts and field conditions. Obtain Engineer approval before adjustments.

F. Shoring:

1. Comply with local, state and federal regulations.
2. Prevent damage to existing utilities and infrastructure.
3. Shoring and bracing system shall be Contractor designed, constructed, monitored and maintained.
4. Modify and maintain shoring system as construction progresses to provide proper support.
5. Provide sheeting, shoring, and bracing per state and local codes.
6. Do not use horizontal strutting below pipe barrel.
7. Do not use pipe as support for trench bracing.
8. Do not remove shoring below top of pipe.
9. Backfill immediately following removal of shoring and bracing.
10. Support adjacent structures, including utilities and pipe chases, which may be damaged by excavating work.

G. General Excavation:

1. Perform excavation to depths, lines, and grades indicated.
2. Pile trench excavated material so surface water is prevented from flowing into excavation and there is minimum inconvenience to public travel. Provide continuous and free access to fire hydrants, water valves, meters, and private driveways. Leave clearance to enable free flow of storm water in gutters, conduits, and natural water courses.
3. Remove and reconstruct utilities as required to perform Work.
4. Do not interfere with or excavate within pressure prism of foundations. Pressure prism is defined as a 1.5 horizontal to 1 vertical line projected from footing bottom.

5. Prevent movement of soil in areas supporting existing foundations, slabs, poles, underground utilities, trees, pipelines, or other structures.
 6. Correct unauthorized excavation at no cost to the Owner.
 7. Schedule work to include backfilling of trenches by completion of each shift.
- H. Trench Excavation:
1. Unless otherwise indicates, excavations are open cut.
 2. Immediately repair leaks or breaks caused by construction operations at no cost to the Owner and in a matter acceptable to Engineer and utility owner.
 3. Control side walls of excavation to minimize caving.
 4. In the event the maximum allowable trench width is exceeded and depending on depth of trench, improve pipe bedding by utilizing concrete, CDF or other bedding materials as directed by Engineer.
 5. Excavate trench bottom to lines and grades shown with proper allowance for pipe thickness and pipe bedding. Place a minimum of 6 inches of pipe bedding under all pipes. Do not permit material containing rocks or cobbles larger than 2 inches in maximum dimension within 6 inches of pipe. Remove material of this type from trench bottom and replace with foundation gravel.
 6. Should excavation be carried below lines and grades as shown because of trenching operations, backfill such excavated space to proper elevation as directed by Engineer, at no additional cost to the Owner.
- I. Trench excavation in fill areas:
1. Prior to installation of pipe or conduit raise fill to a minimum grade of one foot above the proposed crown of the pipe or conduit. In areas where vehicle traffic will occur over proposed pipe route, increase minimum fill over top of proposed pipe to comply with Pipe Manufacturer's recommendation for installation. Excavate trench after fill is placed as noted.
- J. Control of Water:
1. Keep excavation free from water. Dewater as necessary.
 2. Dewatering system shall be Contractor designed, constructed, operated, and maintained.

3. Direct drainage away from excavation.
 4. Grade top perimeter of excavation to prevent surface water from draining into excavation.
 5. Direct runoff and water from entering into sedimentation traps. Provide additional filtration necessary to prevent silt laden water from leaving the site.
 6. Do not allow silty water to enter storm drain system or adjacent waterway.
 7. Comply with the SWPPP requirements.
- K. Pipe Bedding:
1. Place bedding on approved trench bottom before pipe is installed. Spread smoothly to support pipe uniformly. Do not use blocking to adjust pipe to grade. Dig holes for bells as required in order to ensure uniform support along pipe barrel.
- L. Trench Initial Backfill:
1. After pipe is laid properly and inspected, place and compact initial backfill around pipe to a minimum depth of 6 inches over top of pipe. Place initial backfill in lifts of not more than 8 inches in compacted thickness. Bring lifts together on both sides of pipe and carefully work backfill under pipe haunches by means of a shovel, vibration, hand-operated tamping device as approved by Engineer. Take necessary precautions to protect pipe from any damage or shifting.
- M. Trench Backfilling and Compaction:
1. Backfill with Structural Fill or select on-site materials.
 2. Place and compact subsequent backfill after initial backfill is approved by Engineer.
 3. Backfill to grades, contours, levels, and elevations shown on Contract Drawings.
 4. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy sub grade surfaces.
 5. Place and compact backfill materials in continuous layers not exceeding 8 inches in compacted thickness.

6. Employ a placement method which does not disturb or damage utilities in trenches.
7. Condition backfill within plus or minus 2 percent of its optimum moisture content so specified compaction can be attained readily. Material containing excessive moisture, beyond moisture content for specified density as determined by laboratory compaction tests shall not be used for backfill.
8. Raise backfill around structures evenly.
9. Finish area to uniform contour to properly drain and grade entire surface to a smooth and orderly appearing surface.
10. Use hand-operated vibratory compactors within 6 feet of building walls. Compact within 6 feet of wall to 90 percent maximum density as determined by ASTM D1557.
11. Compact backfill material by towed or self-propelled mechanical compactors in uniform layers not exceeding 8 inches in loose depth.

N. Compaction:

1. Compact backfill material using hoepacs, towed, self-propelled compactors or hand-operated compactors. Within 6 feet of existing or new structures, compact backfill with hand-operated vibratory or impact-type compactors. Do not operate heavy equipment or compactors adjacent to structure walls.
2. Compact to a dense, unyielding state, to 95 percent of maximum density per ASTM D1557.
3. Condition Existing Soil: Condition existing material to within 3 percent of optimum moisture content for compacting. If moisture level is above optimum, aerate to dry and reduce moisture. Process may include placing thinner lifts and allowing material to dry, blading, turning, and disking material or other methods approved by Engineer. If moisture level is below optimum, add water and blend uniformly into soil.

O. Reinforced Grass

1. The aggregate/ topsoil mixture placed shall be compacted to 95% standard proctor density.
2. Refer to the Geoblock 5150 Design and Construction Overview for a complete description of the design and construction methods.

3.04 SITE TOLERANCES

- A. Variation from true elevation: Plus or minus ½ inch.
- B. No change in drainage pattern allowed.

3.05 RESTORATION

- A. Restore disturbed pavement and improvements to remain.
- B. Restore pavements in right of way to City of Mercer Island Standards.

3.06 FIELD QUALITY CONTROL

- A. Obtain required inspections, tests, approvals, and location recording before covering or enclosing Work.
- B. Comply with City of Mercer Island requirements.
- C. Site Tests:
 - 1. City will perform compaction tests.
 - 2. If tests indicate Work does not meet specified requirements, re-compact and re-test.
- D. Inspection: Observations required by Engineer:
 - 1. After completion of trench and before placing pipe.
 - 2. After completion of pipe and bedding and before backfilling.
 - 3. Subgrade; Prior to placement of any Recycled Structural Fill
 - 4. Subgrade; Prior to placing fills.
 - 5. Surface: After completion of cuts and fills and prior to placing top soil, base material or pavements.

3.07 PROTECTION

- A. Protect bottom of excavations and soil adjacent to and beneath foundations from freezing.
- B. Protect excavated material and excavating foundation (sub grade) from damage due to excess moisture.
- C. Dewater as necessary.
- D. Protect exposed site material and subgrade from damage due to excess moisture and trafficking.
- E. Take necessary precautions to protect soil from excess moisture by such means as necessary, which may include:

1. Grading rolling and sealing surfaces prior to forecasted or anticipated storms, at end of workday, or completion of Work during the day.
2. Stockpiling select on-site material.
3. Covering stockpiled on-site material.
4. Covering exposed surfaces.
5. Not exposing or stripping more area than can be worked, sealed and protected.
6. Directing surface water flow away from site work and stockpiled materials

3.08 CLEAN-UP

- A. Dispose of surplus or unsuitable material.
- B. Remove abandoned pipe, broken pavement, and rubbish from project site.
- C. Dispose of waste, surplus, and unsuitable materials according to laws, regulations, and ordinances, off site at a site obtained by Contractor.
- D. Provide certification letter from disposal site operator stating that disposal site complies with local, state, and federal regulations.

END OF SECTION

SECTION 32 12 15
CONCRETE WALKS AND HARDSCAPING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The Work in this section shall include all labor, materials, tools and equipment necessary to furnish and install the following items and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Plans.
 - 1. Sidewalks, curbs, gutters, wheelchair ramps, and detectable warning pattern for wheelchair ramps.
 - 2. Preparing sub-grade to receive base course materials for concrete curbs.
 - 3. Placing and compacting base course materials for concrete curbs and sidewalks.
 - 4. Reinforcement for sidewalks.

1.02 RELATED SECTIONS

- A. SECTION 03 30 00 – CAST-IN-PLACE CONCRETE
- B. SECTION 31 20 00 – EARTHWORK
- C. SECTION 32 12 16 – ASPHALT PAVING

1.03 REFERENCES

- A. American Concrete Institute (ACI)
 - ACI 301 (2010) Specifications for Structural Concrete
- B. ASTM International (ASTM)
 - ASTM A143 Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
 - ASTM A706 Specification for Weldable Deformed Bars for Concrete Reinforcement
 - ASTM A767 Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
 - ASTM A1064 Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
 - ASTM C33 (2013) Standard Specification for Concrete Aggregates
 - ASTM C94 (2015) Standard Specification for Ready-Mixed Concrete

- ASTM C150 (2015) Standard Specification for Portland Cement
- ASTM C260 (Er. 2006, 2010a) Standard Specification for Air-Entraining Admixtures for Concrete
- ASTM C309 (2011) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- ASTM C494 (2013) Standard Specification for Chemical Admixtures for Concrete
- ASTM C719 (2014) Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)
- ASTM D994 (2011) Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
- ASTM D1752 (2010) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

C. City of Mercer Island Standards

D. Washington State Department of Transportation (WSDOT)
(2020) Standard Specification for Road, Bridge, and Municipal Construction; and Amendments

1.04 SUBMITTALS

A. Product Data:

1. Add mixtures.
2. Joint Filler.
3. Sealant
4. Curing compound.
5. Welded wire fabric.
6. Rebar.
7. Liquid Membrane.
8. Epoxy

B. Quality Assurance/Control Submittals:

1. Design Data: Portland concrete mix and break test results.
2. Test Reports:

- a. Sieve analysis for each aggregate.
- b. Concrete compression test reports.

3. Contractor experience list.

1.05 REGULATORY REQUIREMENTS

- A. Comply with WSDOT Standard Specifications.
- B. Comply with City of Mercer Island Standards.

1.06 QUALITY ASSURANCE

- A. Comply with WSDOT Standard Specifications
- B. Comply with City of Mercer Island Standards.
- C. Perform Work per ACI 301.
- D. Obtain materials from same source throughout.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperatures at minimum 40 degrees Fahrenheit before, during, and for 24 hours after completion of Work. Use cold weather installation standard ACI 301 at temperatures below 40 degrees Fahrenheit.

PART 2 PRODUCTS

2.01 SUB-GRADE MATERIALS

- A. Crushed Surfacing Base Course: Per SECTION 32 12 16 – ASPHALT PAVING.
- B. Crushed Surfacing Top Course: Per SECTION 32 12 16 – ASPHALT PAVING.

2.02 CONCRETE MATERIALS

- A. Conform to Specification SECTION 03 30 00 – CAST-IN-PLACE CONCRETE
- B. Portland Cement: ASTM C150; normal Type II.
- C. Fine and Coarse Aggregates: ASTM C33.
- D. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.
- E. Admixtures: Air-entrained concrete: Per WSDOT Standard Specification Section 6-02.3(3).

2.03 FORMWORK AND ACCESSORIES

- A. Formwork: Matched, tight fitting, and adequately stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of concrete. Conform to ACI 301.
- B. Joint Filler: Minimum 3/8-inch thick asphaltic impregnated fiberboard.
- C. Concrete Curing Compound: Chlorinated rubber type; clean color; Type I, per WSDOT Standard Specification 9-23.2.
- D. Sealant: Sikaflex 1A Match color of concrete.

2.04 CONCRETE REINFORCING

- A. Conform to Specification Section 03 20 00 – CONCRETE REINFORCING
- B. Welded Steel Wire Fabric: Plain type, ASTM A185; plain finish; 4"X4" W2.9X2.9.
- C. Tie Wire: Minimum 16-gauge annealed type or patented system.

2.05 CONCRETE MIX

- A. Sidewalks: Mix and proportion to produce minimum 3,000 psi concrete at 28 days with five to seven percent air entrainment, ASTM C94, and ASTM C260. Slump range 3-1/2 to 5-1/2 inches maximum.
- B. Use accelerating admixtures in cold weather only when acceptable to City. Use of admixtures shall not relax cold weather placement requirements. Do not use calcium chloride.
- C. Use set-retarding admixtures during hot weather only when acceptable to City.

2.06 BONDING AGENT

- A. Bonding Agent: Per WSDOT Standard Specification Section 9-23.1.

2.07 DETECTABLE WARNING PATTERN

- A. Paint: Per WSDOT Standard Specification Section 8-14.3(3).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Contractor shall verify erosion control is in place and operating properly.

- B. Contractor shall verify compacted sub-grade is dry and ready to support paving and imposed loads and is approved by City.
- C. Contractor shall verify base gradients and elevations are correct.
- D. Contractor shall verify subsurface Work is completed and no further excavation will be required within limits of Work.
- E. Contractor shall verify demolition Work within or adjacent to the Work completed.
- F. Contractor shall verify heavy construction traffic is as complete as possible and traffic remaining will not damage or degrade the Work.
- G. Contractor shall verify weather forecast during planned time of placement is within weather limitations.

3.02 PREPARATION

- A. Prepare and compact sub-grade per WSDOT Standard Specifications Section 2-06.
- B. Subgrade Preparation, Contractor shall:
 - 1. Remove from the placement area, immediately before placing surfacing materials, all brush, weeds, vegetation, grass, and other debris.
 - 2. Drain water from all low spots or ruts
 - 3. Shape the entire Subgrade to a uniform surface running reasonably true to the line, grade, and cross-section as staked.
 - 4. If necessary, the Contractor shall process the Subgrade in cut areas to remove materials too coarse for mechanical trimming and re-compaction.
 - 5. Contractor shall compact the subgrade to a depth of 6 inches. Compaction shall achieve 95 percent of the maximum density determined under the tests described as follows. Maximum density and optimum moisture content shall be determined by one of the following methods:
 - i. Materials with less than 30 percent by weight retained on the No. 4 sieve shall be determined using FOP for AASHTO T 99 Method A.
 - ii. Materials with 30 percent or more by weight retained on the No. 4 sieve and less than 30 percent retained on the 3/4-inch sieve shall be determined by WSDOT Test Method No. T 606 or FOP for AASHTO T 180 Method D. The determination of which test procedure to use will be made solely by the Contracting Agency.
 - iii. Materials with 30 percent or more retained on the 3/4-inch sieve shall be determined by WSDOT Test Method No. T 606.

6. If the underlying material is too soft to permit proper compaction of the Subgrade, the Contractor shall loosen, aerate (or excavate and remove), and compact the Subgrade until the top layer can be compacted as required.
 7. Remove excess material that does not drift to low spots during grading and spacing. The Contractor shall dispose of this excess by placing it where the Subgrade lacks material or by wasting it, as the Engineer directs.
 8. Add materials as the Engineer directs where the Subgrade needs more to bring it up to grade. The Contractor shall water and compact these added materials as needed to produce a true finished Subgrade.
- C. Conditioning of Existing Surface
1. When the surface of the existing pavement or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Plans or approved by the Project Engineer.
- D. The Contractor shall water and mix sub grade thoroughly until optimum moisture content is obtained when deficiency of moisture content exists. When excess moisture exists, re-work and aerate sub grade until optimum moisture content is obtained.
- E. The Contractor shall protect elements surrounding Work from damage or disfiguration. Protect existing vegetation from damage. Do not allow runoff containing deleterious material to drain into planting areas or storm system.
- F. The Contractor shall clean surfaces of curbing receiving epoxy cement. Remove loose and deleterious material. Remove oils and greases. Surface must be dry.
- G. The Contractor shall measure and mark layout as shown on the Drawings. Verify widths and lengths for parking stalls, circulation lanes, and breaks in curbing. Advise City if required lengths and widths do not conform with drawings.
- H. Adjust top of structures, manhole covers, valve boxes, grates, and other structures to grade immediately before placing concrete.

3.03 CONSTRUCTION

- A. Aggregate Base Courses:
1. Place per WSDOT Standard Specifications Division 4.
 2. Spread aggregate over prepared substrate to a total compacted thickness as indicated on Drawings.
 3. Place aggregate in maximum six inch layers and compact to 95 percent per ASTM D1557.
 4. Level and contour surfaces to elevations and gradients indicated.

5. Add small quantities of fine aggregate to coarse aggregate as necessary to assist compaction.
 6. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
 7. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
- B. Forming:
1. Place and secure forms to correct location, dimension, and profile.
 2. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
 3. Place joint fillers vertical in position in straight lines. Secure to formwork during concrete placement.
- C. Placing Reinforcing:
1. Place reinforcement to achieve slab and curb alignment as detailed.
 2. Do not extend reinforcing through expansion and contraction joints.
 3. Place welded wire fabric centered in slab.
- D. Construction Joints:
1. Place construction joints for walks at maximum 15 feet on center or as shown on Drawings. Where possible, make joints of curbs coincide with joints in walks.
 2. Incorporate joints into pattern indicated on Drawings.
 3. Fit construction joints with filler of required profile, set perpendicular to longitudinal axis of sidewalks and curbs, or as shown on Drawings.
 4. Set joint fillers 3/8-inch below finish concrete surface. Fill top of joint with sealant. Place duct tape strip on top of joint filler as bond breaker prior to placing sealant. Topdress the sealant with fine sand immediately after application.
 5. Place joint filler between paving components and building or other appurtenances and to separate sidewalks from driveways and curb ramps.
 6. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- E. Construction Joints (Control Joints):
1. Tooled joints as indicated on Drawings.
 2. Locate and align joints as indicated on Drawings.

- F. Placing Concrete Walks and Curbs:
1. Place concrete per ACI 301.
 2. Hot Weather Placement: Per ACI 301.
 3. Cold Weather Placement: Per ACI 306.
 4. Ensure reinforcement, inserts, embedded items, and formed joints are not disturbed during concrete placement.
 5. Place concrete, screed, and wood float surfaces so smooth and uniform, free of open texturing and exposed aggregate (except where noted on Drawings).
 6. Concrete trucks to be washed only at locations as designated by General Contractor.
- G. Finishing:
1. Verify edge trowel and sidewalk finish with City.
 2. Radius and trowel joint edges.
 3. Sidewalk Paving: Light broom.
 4. Curbs: Light broom.
 5. Apply curing compound on finished surfaces immediately after finishing. Apply per manufacturer's instructions.

3.04 CURING

- A. Immediately after the finishing operations have been completed and as soon as marring of the concrete will not occur, the entire surface of the newly placed concrete shall be cured in accordance with one of the following methods the Contractor may elect.
1. Curing Compound
 - i. Contractor shall apply liquid membrane-forming concrete curing compound Type 2 meeting the requirements of WSDOT Standard Specification Section 9-23.2 to the entire area of the exposed surface of the concrete with an approved mechanical spray machine. The spray fog shall be protected from the wind with an adequate shield. It shall be applied uniformly at the rate of one gallon to not more than 150 square feet.
 - ii. Contractor shall apply the compound with equipment of the pressure tank or pump type equipped with a feed tank agitator which ensures continuous agitation of the compound during spraying operations. The nozzle shall be of the two-line type with sufficient air to properly atomize the compound.

- iii. Contractor shall not apply the curing compound during or immediately after rainfall. If it becomes necessary to leave the pavement uncoated overnight, it shall be covered with polyethylene sheeting, which shall remain in place until weather conditions are favorable for the application of the curing compound
- iv. In the event that rain falls on the newly coated pavement before the film has dried sufficiently to resist damage, or in the event of damage to the film from any cause, the Contractor shall apply a new coat of curing compound in one or two applications to the affected area at the rate which, in the opinion of the Engineer, will result in a film of curing value equal to that specified in the original coat.
- v. Before placing the curing compound in the spray tank, the Contractor shall thoroughly agitate as recommended by the Manufacturer. The compound shall not be diluted by the addition of solvents nor be altered in any manner. If the compound has become chilled to the extent that it is too viscous for proper stirring or application or if portions of the vehicle have been precipitated from solution, it shall be heated to restore proper fluidity but it shall not be heated above 100°F. All curing compound shall have approval prior to placing in the spray tanks.
- vi. The curing compound shall be applied immediately after the concrete has been finished and after any bleed water that has collected on the surface has disappeared, or at a time designated by the Engineer. If hair checking develops in the pavement before finishing is completed, the Engineer may order the application of the curing compound at an earlier stage, in which event any concrete cut from the surface in finishing operations shall be removed entirely from the pavement. If additional mortar is then needed to fill torn areas, it shall be obtained ahead of the spraying operations. All areas cut by finishing tools subsequent to the application of the curing compound shall immediately be given new applications at the rate specified above.
- vii. The curing compound, after application, shall be protected by the Contractor from injury until the pavement has reached a minimum compressive strength of 2,500 psi. All traffic, either by foot or otherwise, shall be considered as injurious to the film of the applied compound.
- viii. The Contractor shall provide on the job a sufficient quantity of white polyethylene sheeting to cover all the pavement laid in 3 hours of maximum operation. This sheeting shall be reserved

exclusively for the protection of the pavement in case of rain or breakdown of the spray equipment used for applying the curing compound. The protective sheeting shall be placed over the pavement when ordered, and in the manner specified by the Engineer.

- ix. Areas from which it is impossible to exclude traffic shall be protected by a covering of sand or earth not less than 1-foot in thickness or by other suitable and effective means. The protective covering shall be placed no earlier than 24 hours after application of the compound.
- x. The Contractor shall assume all liabilities for and protect the Contracting Agency from any damages or claims arising from the use of materials or processes described herein.

2. White Polyethylene Sheeting

- i. Contractor shall place sheeting over the pavement immediately after finishing operations are completed, or at a time designated by the Engineer.
- ii. The sheeting shall be laid so that individual sheets overlap at least 2 feet, and the lapped areas shall be held in close contact with the pavement by weighting with earth or boards to prevent movement by the wind. The sheeting shall extend downward to cover the edges of the pavement and shall be secured to the Subgrade with a continuous bank of earth or surfacing material. Any holes occurring in the sheeting shall be patched immediately to the satisfaction of the Engineer. The sheeting shall be maintained against injury and remain in place until the pavement has reached a minimum compressive strength of 2,500 psi.

3. Wet Curing

- i. Wet curing shall be accomplished by applying a continuous fog or mist spray to the entire pavement surface until it has reached a minimum compressive strength of 2,500 psi. If water runoff is not a concern, continuous sprinkling is acceptable. Sprinkling shall not begin until the concrete has achieved initial set as determined by AASHTO T 197 or other approved method.

3.05 PROTECTION

- A. Immediately after placement, Contractor shall protect concrete from premature drying, excessive hot or cold temperatures, and damage.
- B. Contractor shall provide protection from vandalism and construction traffic.

3.06 FIELD QUALITY CONTROL

- A. Comply with Section 01445.
- B. Comply with City of Mercer Island Requirements.
- C. Site Tests: City will perform following tests:
 - 1. Sub-grade density before placing aggregate base course.
 - 2. Aggregate Base course density.
 - 3. Concrete testing, slump, air entrainment, strength.
- D. Inspection: City will observe the work at the following milestones:
 - 1. After completion of sub-grade and before placing base course.
 - 2. After placing base course, steel, and formwork and before placing concrete.
 - 3. After finishing concrete.

3.07 CLEANING

- A. Contractor shall clean surfaces within five (5) days of substantial completion.
- B. Contractor shall dispose of all surplus, unsuitable, or waste materials according to laws, regulations, and ordinances at a site obtained by Contractor.
- C. Contractor shall provide certification letter from disposal site operator stating that disposal site complies with local, state, and federal regulations.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 31 12 16
ASPHALT PAVING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The work in this section shall include all labor, materials, tools and equipment necessary to furnish materials and perform the related WORK in accordance with the requirements of the Contract Documents and as shown on the Contract Drawings.
1. HMA paving
 2. Soil sterilization.
 3. Base courses
 4. Hot mix asphalt.

1.02 NOT USED

1.03 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO)
- AASHTO M 156 (2013) Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
- AASHTO T 99 (2015) Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- AASHTO T 180 (2015) Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
- B. ASTM International (ASTM)
- ASTM C136 (2014) Standard Test Methods for Sieve Analysis for Fine and Course Aggregates
- ASTM D1557 (2012) Standard Test Methods for Laboratory Compaction Characteristics for Soil Using Modified Effort
- C. Washington Department of Transportation (WSDOT)
- (2020) Standard Specifications – Standard Specifications for Road, Bridge, and Municipal Construction.

1.04 SUBMITTALS

- A. Submit the following documents as PDF's via e-mail for all imported fill material described in Part 2 and on-site material to be incorporated into the Work.

- B. Product Data Submittals
 - 1. Tack coat.
 - 2. Joint sealant.
 - 3. Mix design.
- C. Quality Assurance/Control Submittals
 - 1. Design Data: Asphalt concrete mix.
 - 2. Samples: Submit minimum 10-pound sample for each material five business days prior to delivering material to site.
 - 3. Sieve analysis.
 - 4. Certified test results of moisture content and chemical constituents for the imported fill materials, either through documentation of existing chemical analyses or by project-specific testing and analysis, as directed by the City. At minimum, materials obtained from commercial quarries shall have a total arsenic level less than 20 mg/kg for diesel and oil range hydrocarbons and below laboratory reporting limits for gasoline. Borrow from sources other than commercial quarries may be subject to additional testing depending on the source and as directed by the City.
 - 5. Modified proctor results for materials to be compacted.
 - 6. WSDOT pit certifications for each pit.
 - 7. Test Reports: Sieve analysis for each aggregate.
 - 8. Certifications:
 - i. Asphalt Concrete: Letter of certification from Supplier.
 - ii. Disposal site: Operator certification that disposal site complies with all Local, State and Federal regulations.
- D. Contractor experience list.

1.05 QUALITY ASSURANCE

- A. Qualifications: Paving Contractor and Crew Foreman to each have a minimum of eight (8) years' experience with projects of this type.

1.06 REGULATORY REQUIREMENTS

- A. Comply with WSDOT Standard Specifications.
- B. Comply with City of Mercer Island Standards.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Comply with Section 5-04.3 (16) of WSDOT Standard Specifications.

PART 2 PRODUCTS

2.01 GENERAL

- A. Comply with City of Mercer Island Standards.
- B. Comply with WSDOT Standard Specifications.

2.02 MATERIAL

- A. Top Course: Conforming to WSDOT Standards, Section 9-03.9(3). Restrict fines to maximum 5 percent passing Number 200 sieve.
- B. Base Course: Conforming to WSDOT Standards, Section 9-03.9(3). Restrict fines to maximum 5 percent passing Number 200 sieve.
- C. HMA: Comply with WSDOT Standard Specifications Section 5-04.2, Class HMA as specified on the Contract Drawings.
- D. Tack Coat: Cationic Emulsified Asphalt per WSDOT Standard Specifications Section 9-02.1(6).
- E. Joint Sealant: AR4000.

2.03 SOURCE QUALITY CONTROL

- A. Submit proposed mix design prior to commencement of Work.
- B. Submit sieve analysis for Top Course and Base Course per ASTM C136.
- C. Certified test results for all materials per Section 1.04 of this specification.
- D. Tests and analyses of aggregate material: per WSDOT Standard Specifications.
- E. Certification: Letter for Supplier certifying asphalt concrete mix complies with the Specifications.
- F. If tests indicate materials do not meet specified requirements, change material and re-test.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Site Verification of Conditions
 1. Verify compacted sub grade is dry, ready to support paving and imposed loads and is approved by the Engineer.
 2. Verify base gradients and elevations are correct prior to start of paving.
 3. Verify subsurface Work is completed and no further excavation will be required within limits of Work.
 4. Verify demolition Work within or adjacent to the Work is complete.

5. To the extent possible, verify heavy construction traffic is as complete as possible and traffic remaining will not damage or degrade the Work. Do not drive any track equipment over completed asphalt surface.
6. Verify weather forecast during planned time of placement is within weather limitations. The asphalt concrete mixture shall not be placed on a surface with standing water, on an unstable roadbed when the base material is frozen, or when weather conditions prevent the proper handling or finishing of the mixture. No asphalt concrete, Type II mixture shall be placed unless the surface temperature is 40 degrees Fahrenheit or warmer.

3.02 EQUIPMENT

- A. All equipment shall be in good working order and free of asphalt concrete mix buildup. All equipment shall be available for inspection and demonstration 72 hours prior to placement of asphalt concrete.
- B. Bituminous Mixing Plants
 1. Mixing plants shall conform to AASHTO M 156.
 2. Proportioning (batch) scales shall not be used for weighing material for payment. Weigh scales used in conjunction with a storage silo may be used to weigh the final product for payment, provided the scales are certified.
- C. Hauling Equipment
 1. Trucks used for hauling asphalt mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimum amount of either paraffin oil, lime water solution approved by the Engineer. Diesel or fuel oil shall not be used.
 2. Each truck shall have a watertight canvas cover of such size as to extend at least one foot over the sides and end of the truck bed and be adequately secured to protect the asphalt concrete mixture. The use of the canvas cover shall be at the Engineer's direction.
- D. Asphalt Pavers
 1. Asphalt pavers shall be self-propelled units, provided with a heated vibratory screed. Grade and cross slope shall be controlled through the use of automatic grade and slope control devices. The paver screed control system shall be automatically actuated by the use of a string line, or minimum 30-foot-long ski. The length of the string line shall be adjusted to produce the required surface smoothness.
 2. The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be

equipped with a distribution system to place the mixture uniformly in front of the screed.

3. The screed assembly shall produce a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the asphalt concrete mixture. Screed extensions used for paving a constant width shall be heated and vibrated. Auger extensions shall be the same length as the rigid screed extensions.
4. The use of a pickup machine to transfer the asphalt mixture from a windrow to the paver hopper will be permitted, provided the pickup machine is capable of collection of the windrowed material without damage to the underlying course. The Engineer will not allow the continued use of the pickup machine if segregation, excessive temperature loss, or any detrimental effects are observed.
5. Paver hopper wings shall either be left in the top or down position throughout the paving operation. If the Contractor wishes to dump the wings during paving, the material on the wings and in the hopper shall not be incorporated into the finish mat or included in the quantity for payment.
6. The screed assembly shall have a joint compaction device and a joint edge restrainer.

E. Rollers

1. The Contractor shall supply a sufficient number and weight of rollers to compact the mixture to the required density while maintaining the pace of the paving operations. Rollers shall be of the static steel wheel, vibratory steel wheel, and pneumatic tire type, self-propelled and capable of reversing without backlash. They shall be specifically designated to compact hot asphalt concrete mixtures. The use of equipment which results in crushing of the aggregate will not be permitted. Pneumatic tire rollers shall be fully skirted; shall be at least six (6) feet wide; and shall be configured so that the rear group of tires align to cover the spaces between the front group of tires. The roller shall have an operating weight per tire of at least 3,000 pounds. Tires shall be of equal size, a minimum of 20 inches in diameter, shall be inflated to at least 80 psi and maintained so that tire pressures do not vary more than 5 psi between any two tires.

3.03 PREPARATION

A. Protection

1. Do not allow vehicular traffic on newly paved areas until surface has cooled to atmospheric temperature.
2. Protect pavements from heavy construction traffic and loads.

B. Subgrade Preparation

1. Prepare and compact subgrade per Section 2-06 of the WSDOT Standard Specifications
2. Remove from the Roadbed, immediately before placing surfacing materials, all brush, weeds, vegetation, grass, and other debris.
3. Drain water from all low spots or ruts.
4. Shape the entire Subgrade to a uniform surface running reasonably true to the line, grade, and cross-section as staked.
5. If necessary, the Contractor shall process the Subgrade in cut areas to remove materials too coarse for mechanical trimming and re-compaction.
6. Compact the subgrade to a depth of 6 inches. Compaction shall achieve 95 percent of the maximum density determined under the tests described as follows. Maximum density and optimum moisture content shall be determined by one of the following methods:
 - i. Materials with less than 30 percent by weight retained on the No. 4 sieve shall be determined using FOP for AASHTO T 99 Method A.
 - ii. Materials with 30 percent or more by weight retained on the No. 4 sieve and less than 30 percent retained on the 3/4-inch sieve shall be determined by WSDOT Test Method No. T 606 or FOP for AASHTO T 180 Method D. The determination of which test procedure to use will be made solely by the Contracting Agency.
 - iii. Materials with 30 percent or more retained on the 3/4-inch sieve shall be determined by WSDOT Test Method No. T 606.
7. If the underlying material is too soft to permit proper compaction of the Subgrade, the Contractor shall loosen, aerate (or excavate and remove), and compact the Subgrade until the top layer can be compacted as required.
8. Remove excess material that does not drift to low spots during grading and spacing. The Contractor shall dispose of this excess by placing it where the Subgrade lacks material or by wasting it, as the Engineer directs.
9. Add materials as the Engineer directs where the Subgrade needs more to bring it up to grade. The Contractor shall water and compact these added materials as needed to produce a true finished Subgrade.

- C. Conditioning of Existing Surface
 - 1. Prepare surface per WSDOT Standard Specifications Section 5-04.3(5).
 - 2. When the surface of the existing pavement or old base is irregular, the Contractor shall bring it to a uniform grade and cross-section as shown on the Contract Drawings or approved by the Project Engineer.
 - 3. Pre-leveling of uneven or broken surfaces over which HMA is to be placed may be accomplished by using an asphalt paver, a motor patrol grader, or by hand raking, as approved by the Project Engineer.
- D. Saw-cut existing pavement at match lines with new pavement to form neat straight edges. Field-adjust saw-cut edge to remove existing pavement that is damaged or cracked.
- E. Water and mix sub grade thoroughly until optimum moisture content is obtained when deficiency of moisture content exists. When excess moisture exists, re-work and aerate sub grade until optimum moisture content is obtained.
- F. Adjust storm drainage frames and grates to grade immediately before paving. Adjust tops of other manhole covers, valve boxes, and other structures to grade either immediately before paving or after paving is complete.

3.04 CONSTRUCTION

- A. Base Courses
 - 1. Place base courses per WSDOT Standard Specifications Division 4 - Bases
 - 2. Spread aggregate over prepared substrate to a total compacted thickness as indicated on Contract Drawings.
 - 3. Place aggregate in maximum 6-inch layers and compact to 95 percent of maximum density per ASTM D1557.
 - 4. Level and contour surfaces to elevations and gradients indicated.
 - 5. Add small quantities of fine aggregate to coarse aggregate as appropriate to achieve compaction.
 - 6. Add water as necessary to achieve compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
 - 7. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

- B. Asphalt Concrete Pavement
- C. Construct per the requirements of Section 5-04 WSDOT Standard Specifications. Where thickness of finished pavement will be 3 inches or less, place in one lift.
- D. Apply tack to contact surfaces of curbs, catch basins, gutters and cold pavement joints.
- E. Perform hand tamping in areas not accessible to rolling equipment.
- F. Ensure joints made during paving operations are straight, clean, vertical and free of broken or loose material.
- G. At joint between new and exist AC, saw-cut exist AC full depth in neat continuous line. Match existing AC elevation along joint unless noted otherwise on drawing.
- H. Seal contact joints between asphalt pavement joints, curbs, walls and drains with AR4000.
- I. Asphalt Concrete Pavement Patching
 1. Before patch is constructed, trim pavement cuts so marginal patch lines will form straight edges and vertical faces.
 2. Prepare sub grade per the requirements of Section 3.03B of this Specification Section
 3. When roadway is needed for vehicular traffic and permanent pavement cannot be promptly placed or when weather and availability of materials does not allow for prompt pavement repair, place and maintain a 6-inch thick crushed surfacing base course (CSBC). Remove temporary base and asphalt at such time as the permanent pavement repair can be completed.
 4. Adjust utility structures and castings to grade.
 5. Place bases and asphalt pavement per this section.

3.05 SITE TOLERANCES

- A. Surface smoothness – Per WSDOT Standard Specification Section 5-04.3(13).
- B. At abutting existing surfaces to be matched: Within 1/8 inches.
- C. Variation from True Elevation: Within 0.5 inch, provided any such variation does not result in a level or reverse slope or ponding.

3.06 FIELD QUALITY CONTROL

- A. Comply with City of Mercer Island Requirements.
- B. Site Tests

1. City will perform following tests:
 - i. Subgrade density before placing bases and before paving.
 - ii. Base Course density.
 - iii. Asphalt density.
 - iv. Asphalt treated base density.

C. Inspection

1. Engineer will observe the Work at the following milestones:
 - i. After completion of sub grade and before placing base course.
 - i. After placing base course and before placing asphalt.
 - ii. After placing asphalt base and before placing additional lift of asphalt.

3.07 CLEANING

- A. Clean surfaces within five days of substantial completion.
- B. Dispose of all surplus, unsuitable or waste material according to laws, regulations and ordinances at an upland disposal site provided by Contractor.
- C. Provide certification letter from disposal site operator stating that disposal site complies with local, state and federal regulations.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 33 31 00
SANITARY SEWER UTILITY

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The work in this section shall include all labor, materials, tools and equipment necessary to furnish and install the following items and all other related WORK in accordance with the requirements of the Contract Documents and as shown on the Contract Drawings.
1. Sanitary sewer mains (gravity)
 2. Sanitary side sewers (gravity).
 3. Connection to existing sanitary sewer system.
- B. This Work includes furnishing and installing connecting bands, branch connections, or other fittings, testing and all appurtenances required to complete the sanitary sewer.

1.02 RELATED SECTIONS

- A. SECTION 01 57 13 – TEMPORARY EROSION AND SEDIMENTATION CONTROL.
- B. SECTION 31 20 00 – EARTHWORK.

1.03 REFERENCES

- A. ASTM International (ASTM)
- ASTM C1773 (2013) Standard Test Method for Monotonic Axial Tensile Behavior of Continuous Fiber-Reinforced Advanced Ceramic Tubular Test Specimens at Ambient Temperature
- ASTM D3034 (Er. 2006, 2014a) Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
- ASTM D3212 (Er. 2007, 2013) Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- ASTM D5926 (2011) Standard Specification for Poly (Vinyl Chloride) (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems
- ASTM F477 (2014) Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- ASTM F679 (2016) Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings

ASTM D2657 Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.

ASTM D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.

B. City of Mercer Island – Engineering Standards – Sanitary Sewer (2009)

C. Washington Department of Transportation (WSDOT)

(2020) Standard Specifications – Standard Specifications for Road, Bridge, and Municipal Construction.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer’s literature and specifications for pipe, fittings, castings, check valves, and manholes.

B. Manhole structures are to be designed in accordance with the live load factor requirements in the most current version of AASHTO standard Specifications for Highway Bridges.

C. Record As-Built Drawings:

1. Accurately record actual locations of pipe runs, connections, and invert elevations.

2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

3. Prepare Record Drawings per City of Mercer Island requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with the WSDOT Standard Specifications and City of Mercer Island Standards.

1.06 DELIVERY, STORAGE AND HANDLING

A. Handle pipe, fittings, and appurtenances in such a manner as to ensure delivery to the project site and final installation in a sound, undamaged condition. Keep the pipe clean. Load and unload pipe using hoists in a manner to avoid shock or damage, and under no circumstances shall they be dropped, skidded, or rolled against other pipes. Damaged items shall be rejected and removed from the site within 24 hours.

1.07 SEQUENCING AND SCHEDULING

A. The sanitary sewer system in the areas of the site and City designated facilities are to remain in operation during construction.

B. Notify City of services shutdown. Provide notification at least one week prior to discontinuation of service, including estimated duration of shutdown.

- C. Outages must be scheduled in advance and be limited to no more than four, 1-hour periods.

PART 2 PRODUCTS

2.01 GENERAL

- A. Comply with City of Mercer Island Standards
- B. Comply with WSDOT Standard Specifications

2.02 PRODUCTS

- A. Ductile Iron Pipe (DI):
 - 1. Rubber gasket type conforming to the requirements of Section 9-05.13 of the WSDOT Standard Specifications.
 - 2. Lengths:
 - a. Manufactured and provided in nominal lengths of not less than 10 feet or more than 20 feet. Use shorter pipe lengths to meet special conditions where shown on the Contract Drawings or as approved.
- B. Manholes
 - 1. Comply with City of Mercer Island Standards
 - 2. Manhole Type 1: City of Mercer Island Standard Plan no(s), S-5 and S-15. Diameter as shown on Contract Drawings.
 - 3. Load ratings: Structures to be load rated as indicated on Contract Drawings, if not indicated, the minimum load rating shall be HS20.
- C. Castings:
 - 1. Load ratings: Castings to be load rated as indicated on Contract Drawings, if not indicated minimum load rating shall be HS20.

2.03 NONPRESSURE-TYPE TRANSITION COUPLINGS

- A. Comply with ASTM C1773, elastomeric, sleeve-type, reducing or transition coupling, for joining underground non-pressure piping. Include ends of same sizes as piping to be joined and corrosion-resistant-metal tension band and tightening mechanism on each end.
- B. Sleeve materials for plastic pipes shall be ASTM F477, elastomeric seal or ASTM D5926, PVC.
- C. Coupling for dissimilar sanitary sewer pipes shall be ROMAC INDUSTRIES SS1 sewer clamp or approved equal. Gaskets shall be VIRGIN SBR compounded for water and sewer service. Bolts, washers, nuts, lug and shell shall be stainless steel. Connected pipes shall be cut perpendicular and inserted into coupling so that ends are flush.

2.04 CONCRETE

- A. Concrete shall conform to WSDOT Standard Specification Section 6-02.3(27).

2.05 FRAMES AND GRATES

- A. Castings are to be load rated as indicated on the Contract Drawings. If not indicated, load ratings shall be HS-20.

2.06 CLEAN-OUT FRAME AND COVER

- A. Frame and cover shall be locking type, Olympic Foundry #M 1025 or Engineer-approved equal.

2.07 UNDERGROUND LOCATOR TAPE

- A. Underground locator tape shall be green, at least 4 inches wide, four mil thick, polyethylene tape, with a metallic backing capable of being traced with locators. The tape shall have black letters with the following wording: "Caution: Sewer Line Buried Below." The locator tape shall be installed 12 inches above the top of all sewer mains and services.
- B. Tracer wire shall be TWHN or TWHH #10. Tape shall be sewer tracer tape or magnetic sewer tracer tape.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Contractor Site Verification of Conditions:
 1. Verify excavation is ready to receive Work and excavations, dimensions, and elevations as indicated on Contract Drawings.
 2. Verify existing pipeline material, size, outside diameter, and location prior to starting demolition and connections to the existing sanitary sewer system.
 3. Verify existing utilities have been marked.
 4. Verify erosion control is in place and operating properly.
 5. Verify inverts at points of connection and verify minimum grade can be maintained. Pothole, expose pipes, determine invert elevations, verify dimensions, and inform City's representative of deviations affecting design prior to mobilizing crews and beginning construction.
 6. Verify and coordinate location of existing pressure sewer on float and adjust locations to match.

3.02 PREPARATION

- A. Protection:

1. Protect elements surrounding Work of this section from damage or disfiguration.
2. Protect existing utilities from damage and disturbance. Provide shoring to support existing utilities and their support prism or remove and replace utilities where shoring is not practical. Removing and replacing to be performed per utility owner's standards.
3. Keep excavation free of standing water.
4. Protect finished Work, pipe, and bedding from damage or displacement until backfilling operation is in progress.
5. Protect finished and backfilled work from damage.

3.03 INSTALLATION

- A. Excavation, Foundation, and Bedding: In accordance with Section 31 20 00 EARTHWORK.
- B. Connection to Existing System:
 1. Comply with City of Mercer Island Standards.
 2. Remove debris by screening flushing water prior to discharge to existing sewer system.
- C. Pipe Installation (Gravity Pipe):
 1. Comply with City of Mercer Island and WSDOT Standards.
 2. Follow manufacturer's installation procedures.
 3. Lay pipe to line and grade indicated in Contract Drawings.
 4. Maintain line and grade for straight sections with laser beam operated by qualified personnel. Check line and grade constantly. If they do not meet specified limits, stop work immediately and remedy the cause before proceeding.
 5. Provide equipment required to control flow and conveyance of sewage at connections to existing manholes and at locations where construction disrupts existing sewer mains.
 6. All DI pipe shall have tracer wire and sewer tracer tape. Tracer shall be 18 inches below ground level.

3.04 SITE TOLERANCES

- A. Variance from established line and grade for gravity sewers shall not be greater than 1/32 of an inch per inch of pipe diameter and or not to exceed ½-inch, provided that such variation does not result in a level or reverse sloping invert.
- B. Allowable deviation shall not be accumulative.
- C. Sewer shall be constructed to provide the cover and direction of slope as shown.

- D. The slope need not be constant but no high or low points shall exist in finished installation except as shown.

3.05 FIELD QUALITY CONTROL

A. Tests:

1. Comply with City of Mercer Island requirements.
2. Provide all test equipment and personnel to prepare for and perform test.
3. Perform test after backfilling is complete.
4. Plug wyes, tees, and stubs with flexible jointed plugs or acceptable alternate. Fasten securely to withstand internal test pressure.

B. Inspection:

1. Comply with City of Mercer Island requirements.
2. Provide for inspection by Engineer after completion of pipe, and bedding, and prior to backfilling.

3.06 CLEANING

A. Comply with City of Mercer Island and WSDOT requirements.

B. Prevent debris and foreign matter from entering sewer system. Provide screen at downstream end of cleaning to trap debris. Remove and dispose of debris.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 33 44 00
STORMWATER UTILITY EQUIPMENT

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The Work in this Section shall include all labor, materials, tools and equipment necessary to furnish and install the following items and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Contract Drawings.

1. Trench Drain
2. Pipes and structures
3. Rain Garden
4. Stairway Runnel

1.02 RELATED SECTIONS

A. Section 31 20 00 – Earthwork

1.03 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M252 (2009) Standard Specification for Corrugated Polyethylene Drainage Pipe

AASHTO M278 (2015) Standard Specification for Class PS46 Poly(Vinyl Chloride) (PVC) Pipe

AASHTO M294 (2016) Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter

B. ASTM International (ASTM)

ASTM D1557 (2012) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft³ (2,700 kN-m/m³))

ASTM F477 (2014) Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM F1267 (2015) Standard Specification for Metal, Expanded, Steel

ASTM F2487 (2013) Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene and Polypropylene Pipelines 1, 2

- C. Washington Department of Ecology (WSDOE) – (2019) Stormwater Management Manual for Western Washington
- D. City of Mercer Island Lincoln Landing Drainage Report
- E. Washington State Department of Transportation (WSDOT)
(2020) Standard Specification for Road, Bridge, and Municipal Construction; and Amendments

(2020) Standard Plans for Road, Bridge, Municipal Construction; and Amendments

1.04 SUBMITTALS

- A. Product Data: Catalog cut sheets and specifications for pipe, fittings, control structure, trench drain, catch basin, and accessories.
- B. Manufacturer’s Installation Instructions: Indicate special procedures required to install specified products.
- C. Trench drain and runnel grate patterns for City’s selection.
- D. Record As-Built Drawings
 - 1. Accurately record actual locations of pipe runs and connections.
 - 2. Provide field survey of all inverts and structure lid elevations.
 - 3. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Crew Foreman: Minimum eight years working experience and four years’ experience as foreman performing similar work.
 - 2. Surveyor: Land surveyor licensed in Washington State with experience on similar projects.
- B. Regulatory Requirements: Comply with City of Mercer Island Standards.

PART 2 PRODUCTS

2.01 GENERAL

- A. Comply with City of Mercer Island Standards.

B. Comply with City of Mercer Island and WSDOT Standard Specifications.

2.02 STORM DRAIN

A. Pipe and Coupling Bands: Per WSDOT Standard Specifications Section 9-05; use water tight couplings for all pipes.

B. HDPE pipe shall comply with WSDOT 9-05.23.

C. Corrugated polyethylene pipe (CPEP) shall be high density corrugated polyethylene, smooth interior pipe, and shall be manufactured in conformity with the latest AASHTO M294, Type S.

D. Fittings shall be water tight according to the requirements of AASHTO M252 and AASHTO M294, and gaskets shall meet ASTM F477.

E. All Pipes, to assure water tightness, field performance shall be tested in accordance with ASTM F2487.

F. Pipe bedding shall meet WSDOT 9-03.12(3).

PART 3 EXECUTION

3.01 EXAMINATION

A. Site Verification of Conditions

1. Verify excavation is ready to receive Work; and excavations, dimensions, and elevations are as indicated on Contract Drawings.
2. Verify existing pipeline material, size, outside diameter, and location prior to starting Work.
3. Verify existing utilities are marked.
4. Verify erosion control is in place and operating as specified.

3.02 PREPARATION

A. Protection

1. Protect elements surrounding Work from damage or disfiguration.
2. Protect existing utilities from damage and disturbance. Provide shoring to support existing utilities and their support prism or remove and replace utilities where shoring is practical.
3. Field locate and mark existing utilities, whether shown or not, before construction and avoid damage or disturbance. For aid in utility location call 1-800-424-5555, 48 hours (two working days) before beginning construction.
4. Field stake alignment and grade.

5. Maintain existing drainage during construction. Provide temporary ditches, drains, pipe, sumps, and pumps as required.

3.03 CONSTRUCTION

A. Excavation:

1. Comply with Section 31 20 00 – Earthwork.
2. Remove stones larger than 2 inches or other hard matter which could damage piping or impede consistent backfilling or compaction.

B. Pipe:

1. Install per manufacturer's recommended procedures, ASTM standards, and WSDOT Standard Specifications.
2. Maintain line and grade per Contract Drawings.
3. Join pipe per Manufacturer's recommended procedures and WSDOT Standard Specifications.
4. Pipe Bedding shall conform to Section 31 20 00 - Earthwork.

C. Structures:

1. Comply with WSDOT Section 7-05.
2. From bottom of excavation clean and smooth to correct elevation.
3. Place base Sections on 12-inch-thickness minimum compacted bedding. Smooth and level to ensure uniform contact and support. Where sub grade cannot be compacted due to excess moisture, provide lean concrete pad with minimum 12 inches thick.
4. Extend base course to limits of excavation.
5. Compact base course to 95 percent of maximum density per ASTM D1557. Verify alignment and elevation of entering pipes.
6. Construct structures plumb and level.
7. Make completed catch basin rigid, true to dimensions, and water tight.
8. Backfill evenly around structure to prevent displacement and unequal stresses.
9. Wet lift holes and fill with mortar inside and out.
10. Smooth and point structure joints inside and out. Ensure water tightness.
11. Remove loops flush with inside wall surface after manhole is completed for pre-cast manhole elements where steel loops are provided in lieu of lift holes.

12. Remove sharp cutoff protrusions. If concrete spalling occurs as a result of loop removal, restore spalled area to a uniform smooth surface with cement mortar.

D. Backfilling:

1. Comply with Section 31 20 00 – Earthwork.

3.04 FIELD QUALITY CONTROL

A. Compaction Testing

1. Per Section 31 20 00 – Earthwork.

B. Engineer Inspection

1. After completion of pipe, catch basins, and bedding, and before backfilling.

3.05 CLEANING

A. Before final acceptance, flush accumulated construction debris and remove other foreign matter from storm drains. Do not allow flushed material to enter downstream system.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

SECTION 35 42 00
WATERCOURSE RESTORATION

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. Work under this section includes furnishing all material, labor, and equipment necessary for providing the waterway bank protection and other miscellaneous items supporting the construction of the fish habitat shoreline and stream at the locations shown on the Contract Drawings.

1.02 SUBMITTALS

- A. Channel rock, source identification, and sieve analysis reports.

1.03 RELATED SECTIONS

- A. SECTION 01 57 13 – Temporary Erosion and Sediment Control
- B. SECTION 31 20 00 – Earthwork
- C. SECTION 32 90 00 – Planting

1.04 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- A. American Society for Testing and Materials (ASTM)
- B. ASTM C 127 - Specific Gravity and Absorption of Coarse Aggregate
- C. ASTM C 136 - Test Method for Sieve Analysis for Fine and Coarse Aggregate
- D. ASTM C 535 - Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- E. American Association of State Highway and Transportation Officials (AASHTO)
- F. AASHTO M 55M/M 55 - Standard Method of Test for Steel Welded Wire Reinforcement, Plain, for Concrete
- G. Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction, 2020.
- H. Federal Specification Wire Rope and Strand RR-W-410E, Type VI, Class 3 (Feb 7, 2002)

1.05 SUBMITTALS

- A. Submit name and business address of proposed aggregate source.
- B. Submit one (1) hard copy and one (1) digital copy in PDF form of the following for all imported fill material described in Subsection 2.02 and onsite material to be incorporated into the Work.
 - 1. Sieve Analysis
 - 2. Certified Test Results.
- C. Submit name and business address for source of logs, aside from those from onsite sources.
- D. Submit catalog cuts for chain and fasteners used in engineered log weirs.

1.06 CONSTRUCTION FACILITIES

- A. If material is barged to the site, navigation aids and lights for all marine equipment or facilities shall be installed and maintained as required by and in a manner satisfactory to the U.S. Coast Guard.

PART 2 PRODUCTS

2.01 ACCEPTANCE OF MATERIALS

- A. Materials will be inspected at the source and at the jobsite prior to placement. Contractor shall be responsible for meeting rock specifications. Materials that do not meet size or quality as previously specified will be rejected and no payment will be made regardless of any general or provisional acceptance of materials from a stockpile or quarry source.

2.02 MATERIAL SOURCES

- A. Stream Channel
 - 1. Geotextile Layer
 - i. Woven material used for soil retention
 - 2. Base Substrate and Boulders
 - i. Rock and aggregates shall be selected materials from an existing commercial source meeting the quality requirements specified below.
 - ii. All rock shall comply with information in accordance with the permit.
 - iii. Rock shall be from a source approved by the ENGINEER.
 - iv. All rock will be accepted or rejected at the job site based on test results and visual.
 - v. Comply with the following graduation.

Sieve Designation	Percent Passing
16 in	100
12 in	85
9 in	50
8 in	20
4 in	15

B. Substrate

1. Rock and aggregates shall be selected materials from an existing commercial source meeting the quality requirements specified below.
2. All rock shall comply with information in accordance with the permit.
3. Rock shall be from a source approved by the ENGINEER.
4. All rock will be accepted or rejected at the job site based on test results and visual.
5. Channel substrate gradation shall be a mixture of three parts streambed material with one part fines material. Final gradation of channel substrate shall have less than 50% of rock larger than 6 inches.

STREAMBED MATERIAL GRADATION

(Percent passing by weight)

Sieve Designation	Percent Passing
12 in	100
9 in	85
6 in	50
4 in	30
3 in	15

FINES GRADATION

(Percent passing by weight)

Sieve Designation	Percent Passing
3 in	100
2 in	85
0.75 in	50
0.25 in	30
#10	15

C. Gravel Barrow

1. Gravel backfill for Structural Earth shall conform to the requirements of SECTION 31 20 00 – EARTHWORK.

D. Pooling Log

1. Logs with rootwads shall have their trunk and rootwad. Logs shall have 75% of bark intact. The length of the log shall be of the dimensions shown on the Contract Drawings. The thickness of the log shall be a minimum of 16 inches in diameter, as measured 15 feet from the base of the trunk. The rootwad of the log shall be at least 3 feet in diameter. Logs with rootwads shall consist of sound, natural, rot-free wood that has not been treated by any preservatives. Treated logs are not acceptable. The Contractor shall obtain logs from approved off-site sources. Logs shall be coniferous species native to Washington State, such as Douglas fir. Logs Contractor shall trim Logs with rootwads as directed by the Owner.
2. Pooling Logs shall be salvaged from onsite trees when feasible.
3. Should the Engineer determine that the rootwad from a salvaged tree is unsatisfactory, the Contractor shall source pooling logs that are native to the region of Washington State west of the Cascade Mountains. Pooling logs shall include coniferous trees approximately 12 inches in diameter and a minimum of 12 feet in length. The logs shall be free of visible rot and objectionable foreign material, such as paint, petroleum, and other debris.

E. Rebar

1. See Section 1.02 Related Sections

F. Plantings

1. Plantings – See Section 1.02 Related Sections

G. Beach

1. Beach Rock Aggregate

- i. Import material shall be from sources approved by the Owner. Prior to any on-site placement of import materials, the Contractor shall submit test results to the Owner for approval.
- ii. All aggregate shall be new rough, angular, dense, sound and durable. Rock shall be fine grained, free from faults, fissures and planes of weakness. The greatest dimension of each rock shall be no greater than 3 times the least dimension. Rock shall be from a source pre-approved by the Owner.
- iii. For each import material, the Contractor shall provide one sieve analysis in accordance with American Society of Testing and Materials (ASTM) C 136, Test Method for Sieve Analysis of Fine and Coarse Aggregates. If a material is obtained from a different supplier than the originally tested material, additional testing will be required.

iv. Gradation

1. Beach rocks shall meet the following gradation:

Sieve Size (inches)	Percent Passing
2" square	100
1 1/2" square	80 to 95
3/4" square	50 to 80
U.S. NO. 4	30 to 50
U.S. NO. 200	0-5

2. Helical Anchors

- i. Shall be ½"Ø hot dipped galvanized with aluminum axial strength rating of 20 Kips.

3. Bank Logs

- i. When directed by the Engineer, salvaged timber shall be used for bank logs. All other materials shall conform with the following:
- ii. Bank logs shall consist of sound, natural, rot-free wood that has not been treated by any preservatives. Treated logs are not acceptable. The Contractor shall obtain logs from approved off-site sources. Logs shall be

of a Washington State native, coniferous species, such as Douglas fir. Logs shall be a minimum of 12 inches in diameter at all points along the length. The logs shall also be washed of soil and be free of any debris such as cable, bolts, rope, or any other objectionable foreign materials. All branches shall be cut off flush to the log and removed prior to delivery. Split Logs shall not be accepted.

4. Plantings

- i. Plantings – See Section 1.02 Related Sections

PART 3 EXECUTION

3.01 GENERAL

- A. All construction methods shall comply with information according to the permit.
- B. Excavation shall be completed by the CONTRACTOR and approved by the ENGINEER.
- C. Channel substrate shall be placed to the lines and grades indicated on the Contract Drawings. The finished grade shall form a uniform and regular surface equal to the slopes indicated on the Contract Drawings.
- D. All boulders shall be stable, keyed and interlocked with neighboring rocks. All rock shall be placed individually and in a manner to avoid displacing underlying materials or placing undue impact force on underlying material. Rock shall not be dropped.
- E. Final acceptance of stream channel and beach rock materials shall be in final location following field sorting, mechanical manipulation and placement.
- F. Prior to placement of rock, verify the smooth neat lines have been established to the lines and grades shown in the Contract Drawings. Remove all designated debris in accordance with Section 02 41 00 – Demolition.

3.02 INSTALLATION

- A. Stream Channel
 - 1. Geotextile Layer
 - i. Per SECTION 31 20 00 - EARTHWORK
 - 2. Base Substrate and Boulders
 - i. The intent of this work is to provide a compact layer of substrate over the slope where shown on the Contract Drawings.

- ii. Rock shall be placed in a manner that will produce a smooth and continuous mass of rock with minimum percentage of voids and shall be constructed to the lines, grades, and thicknesses shown.
- iii. The rock shall be placed over the slope to its full course thickness in one operation and in such a manner as to avoid displacing the underlying material. Wire mesh placement shall be integrated with rock placement at plan locations.
- iv. Placing the rock by any method likely to cause segregation will not be permitted. The rock shall be so placed and distributed so that there will be no large accumulations.
- v. A tolerance from slope lines of minus 0.0 to plus 0.5 foot from top elevations and from slope lines shown on the Contract Drawings will be allowed in the finished surface. No allowance will be made for over-placement.
- vi. In general, all channel materials shall be placed from the lower elevations to the higher elevations. Rock shall be placed the full thickness at the base and shall taper into the existing shoreline at the crest of the bank while maintaining the slope shown on the Contract Drawings.

B. Beach

1. Beach Rock Aggregate

- i. The intent of this work is to provide a compact blanket of beach rock over the slope where shown on the Contract Drawings. Beach rock shall be placed in a manner that will produce a smooth and continuous mass of rock with minimum percentage of voids and shall be constructed to the lines, grades, and thicknesses shown. The beach rock shall be placed over the existing slope to its full course thickness in one operation and in such a manner as to avoid displacing the underlying material. Placing the beach rock by any method likely to cause segregation will not be permitted. The mix shall be so placed and distributed so that there will be no large accumulations. A tolerance from slope lines of minus 0.0 to plus 0.5 foot from top elevations and from slope lines shown on the Contract Drawings will be allowed in the finished surface. No allowance will be made for over-placement.
- ii. In general, all shoreline restoration materials shall be placed from the lower elevations to the higher elevations. Mix shall be placed the full thickness at the base and shall taper into the existing shoreline at the crest of the bank while maintaining the slope shown on the Contract Drawings.

iii. Beach rock shall not be placed by dropping the aggregate into the water from above a height of 12 inches.

iv. The Contractor shall maintain the beach rock blankets until accepted by the Owner and any material displaced by any cause shall be replaced to the lines and grades shown at no additional cost to the Owner.

2. Helical Anchors

i. All anchors shall be driven to depths shown on Contract Drawings. Cables and ropes shall be tensioned until free of slack.

3. Bank Logs

i. Anchored Bank logs shall be placed in and alongside the scarps at the locations indicated on the Contract Drawings.

ii. Prior to installing any Anchored Bank Logs, excavate along the base line as indicated on the Contract Drawings such that the bank log is resting upon the ground along its entire length. Dispose of the removed material off-site.

4. Plantings

i. Plantings – See Section 1.02 Related Sections

3.03 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Prevent excessive mud, fluid concrete, epoxy, or other deleterious materials from coming in contact with system components.

C. Polymeric Materials: During storage, geosynthetic rolls shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, precipitation, extended ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, flames including welding sparks, excess temperatures, and any other environmental conditions that may damage the physical property values of the geosynthetic.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 4 NOT USED

PART 5 NOT USED

END OF SECTION

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TECHNICAL SPECIFICATIONS: HBB LANDSCAPE ARCHITECTURE

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SECTION 32 33 00
SITE FURNISHINGS

PART 1 GENERAL

1.01 SUMMARY

- A. Provide and install all site furnishing items hereinafter identified.

1.02 SCOPE OF WORK

- A. Furnish all materials, equipment, labor and related items necessary to complete the work shown in the Contract Drawings and/or as specified in the Specifications. The work included in this section must include but is not limited to:

1. Benches
2. Picnic Table
3. Waste Receptacle
4. Recycle Receptacle
5. All other related items required to complete the work shown on the Contract Drawings and as specified in the Contract Specifications.

1.03 REFERENCES

- A. This specification section incorporates by reference the latest revisions of the following documents.
 1. ASTM A307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.
 2. All standards must include the latest additions and amendments as of the date of advertisement for bids.
 3. Comply with environmental agencies, building codes and other local requirements that are more stringent than the above.

1.04 RELATED WORK

- A. Related work in other sections of these Specifications includes but is not limited to:
 1. Specification 32 12 15 – CONCRETE WALKS AND HARDSCAPING.

1.05 QUALITY ASSURANCE

- A. Before proceeding with any work, the Contractor must inspect the site, carefully check all grades, and verify all dimensions and conditions affecting the work. The Contractor must immediately notify the Owner's Representative of any discrepancy on line and level.
- B. Site furnishing work must be performed by a company with experience in work of similar scope and quality.
- C. Adhere to manufacturer's instructions for product storage and handling, assembly, installation, and maintenance.
- D. Site Inspections will be made by the Owner's Representative.
 - 1. Request Owner's Representative inspection at least 48 hours in advance of the time inspection is required. Inspections for the following are required:
 - a. Inspection of temporarily marked/staked locations and alignments of site furnishings items and/or footings prior to installation.
 - b. Substantial Completion of all work (development of physical punch list items).
 - c. Physical Completion of all work (physical punch list items satisfactorily completed).

1.06 SUBMITTALS

- A. For each product specified, submit the following for approval prior to delivery:
 - 1. Manufacturer's product data including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Manufacturer's written assembly and installation instructions.
 - d. Maintenance instructions.
 - e. Manufacturer warranties.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store site furnishings items in accordance with manufacturer's written recommendations. Handle all site furnishings with sufficient care to prevent scratches to the finish and other damage.

1.08 ENVIRONMENTAL CONDITIONS

- A. Do not install site furnishings items during heavy rain, freezing temperature, or snowfall.

1.09 PROTECTION

- A. Protect new work and work-in-progress from vandalism and damage that might be incurred by construction traffic, equipment, property, and persons.

1.10 PERMITS, CODES, AND REGULATIONS

- A. The Contractor must obtain and pay for all necessary permits and fees as required by Local Authority and prevailing ordinances and/or codes.
- B. The Contractor must keep fully informed and must comply with all existing laws, codes, ordinances, and regulations, which in any way affect the conduct of the work.

1.11 CONDUCT OF WORK

- A. The Contractor must continuously maintain a competent superintendent or foreman during the progress of the work, with the authority to act for the Contractor in all matters pertaining to the work. The Contractor must give personal attention to the fulfillment of the Contract and must keep the work under control. Subcontractors will not be recognized, and all persons engaged in the work will be considered employees of the Contractor. Their work must be subject to the provisions of the Contract, Contract Drawings, and Contract Specifications.
- B. The Contractor must confine operations to the working areas allotted by the Owner for operations, including material and equipment storage.
- C. The Contractor must progressively clean the work site of debris and rubbish as the work proceeds.

1.12 GUARANTEE PERIOD

- A. Guarantee work of this Contract Specification section for one (1) year against all defects of materials and workmanship. The guarantee period begins after the date of physical completion.
- B. Repair any damage caused by settlement and material defects at no cost to the Owner.

PART 2 PRODUCTS

2.01 HARDWARE

- A. All metal hardware not supplied by the manufacturer including bolts, deformed bars for connections, threaded rod, anchor bolts, nuts, and washers must be either 304 stainless steel or hot-dipped galvanized steel. All bolts, threaded rod, and anchor bolts

must conform to ASTM A-307, Grade A, unless otherwise noted. Hardware not noted by size must be sufficient to draw and hold members securely.

- B. Where the manufacturer does not provide a specification for anchoring, use only approved stainless steel concrete wedge anchor bolts with hex head cap nuts as follows:
1. Size to the largest standard diameter that the manufacturer's pre-made hole will accommodate without force.
 2. Size for embedment of $\frac{3}{4}$ of the actual depth of concrete to support the installation, in no case less than 3". Allow for depth of washer and a vandal-resistant cap nut.

2.02 BENCHES

- A. Benches must be 6-foot length Transit Series TN-0200-72 (Formally model T-2) Bench as manufactured and supplied by Tournesol Siteworks; 1540 Leader International Dr; Port Orchard, WA. (800) 542-2282.
1. Metal finish: powder coat; semi-gloss black; with corrosion resistant undercoat. Protective coating shall be a minimum of 4 mils thick on all surfaces.
 2. Seat top: 3-1/2" x 3-1/2" boards; leading edges radiused 1/2", all other edges eased. Recycled plastic in cedar color.
 3. Frame: Fabricated 1/2" x 4" mild steel strap fully welded. Square steel tube: 120" x 3" x 3".
 4. Fasteners: Recycled plastic boards shall be attached to frames with 3/8" x 4-1/2" carriage bolts in all locations.
 5. Installation type: Surface mount per manufacturer's written instructions.

- B. Or approved equal.

2.03 PICNIC TABLE

- A. Picnic table must be Transit Collection Model TN-1200-3636A with TN-seat (Formally model F-4P) steel frame picnic table as manufactured and supplied by Tournesol Siteworks; 1540 Leader International Dr; Port Orchard, WA. (800) 542-2282.
1. Picnic Table must be 3 seat, ADA picnic table, 36" square table top.
 2. Metal finish: powder coat; semi-gloss black; with corrosion resistant undercoat. Protective coating shall be a minimum of 4 mils thick on all surfaces.

3. Table and Seat tops: 3-1/2" x 3-1/2" boards; leading edges radiused 1/2", all other edges eased. Recycled plastic in cedar color.
 4. Frame: Fabricated 0.180" x 5" x 5" steel tube center post. Table top and seat frames fabricated with 3" x 3" x 0.120" wall tube, 2" x 3" x 0.120" wall tube and 3" x 3" x 3/16" angle. Steel shall conform to ASTM A36 hot rolled steel. All angle and flat stock shall be wheelabrated prior to fabrication.
 5. Fasteners: Slats shall be attached to frames with 3/8" plated carriage bolts, nuts, and washers. Assembly hardware is provided by manufacturer.
 6. Installation type: Surface mount per manufacturer's written instructions.
- B. Or approved equal.

2.04 WASTE RECEPTACLE

- A. Waste Receptacle must be Metro Collection MT-07-30 (Formally model TR-2) Trash Receptacle as manufactured and supplied by Tournesol Siteworks; 1540 Leader International Dr; Port Orchard, WA. (800) 542-2282.
1. Metal finish: powder coat; semi-gloss pitch; with corrosion resistant undercoat. Protective coating shall be a minimum of 4 mils thick on all surfaces.
 2. Slats: 1-1/2" x 3-1/2" recycled plastic elements fastened to 1/4" x 2" and 1/4" x 3" mild steel hoops. Hoops shall be powder coated. All steel shall conform to ASTM A36 hot rolled steel. Recycled plastic in cedar color.
 3. Style: Top opening with Spun Steel Dome Top secured with vinyl-coated, stainless-steel security cable. 30 gallons, black polyethylene liner; sides shall be tapered.
 4. Fasteners: Slats shall be attached to hoops with carriage bolts.
 5. Installation type: Standard surface mount per manufacturer's written direction.

2.05 RECYCLE RECEPTACLE

- A. Recycle Receptacle must be Metro Collection MT-07-30 (Formally model TR-2) Receptacle as manufactured and supplied by Tournesol Siteworks; 1540 Leader International Dr; Port Orchard, WA. (800) 542-2282.
1. Metal finish: powder coat; semi-gloss black; with corrosion resistant undercoat. Protective coating shall be a minimum of 4 mils thick on all surfaces.

2. Slats: 1-1/2" x 3-1/2" recycled plastic elements fastened to 1/4" x 2" and 1/4" x 3" mild steel hoops. Hoops shall be powder coated. All steel shall conform to ASTM A36 hot rolled steel. Recycled plastic in cedar color.
3. Style: Top opening with Spun Steel Dome Top; semi-gloss brilliant blue; secured with vinyl-coated, stainless-steel security cable. 30 gallons, black polyethylene liner; sides shall be tapered.
4. Fasteners: Slats shall be attached to hoops with carriage bolts.
5. Installation type: Standard surface mount per manufacturer's written direction.

2.06 ADDITIONAL MATERIALS

- A. Touch up paint: Contractor to provide owner with one additional can of touch-up paint for each color of furnishing as supplied by manufacturer(s).

PART 3 EXECUTION

3.01 GENERAL

- A. Contractor to verify installation conditions are satisfactory before starting work on this Section. Do not install until unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions as satisfactory.
- B. Temporarily mark alignment and locations of all site furnishings for review by Owner's Representative prior to installation. Incorrectly located work must be removed and/or replaced by the Contractor at no additional cost to the Owner.
- C. Install site furnishings items rigid, plumb and true to lines and levels shown in contract drawings or per manufacturer's written instructions.

3.02 SUBGRADE PREPARATION

- A. The Contractor must verify that subgrade has been properly compacted and compaction tests, if required, have been accomplished.

3.03 SURFACE MOUNT INSTALLATIONS

- A. Assemble Site Furnishings per manufacturer's written instructions.
- B. Locate and orient Site Furnishings as shown in Contract Drawings for Owner's Representative on-site review and approval.
- C. Site furnishings must be installed plumb and level, as shown in the Contract Drawings, and in accordance with manufacturer's written instructions. Shim as required to level;

with aluminum or galvanized steel shims or equal as approved by Owner's Representative.

- D. Surface installations must be made only upon approved concrete surfaces. Do not proceed with anchor installation until concrete pavement has had a minimum of 14 days cure time under normal conditions. Where weather conditions are beyond the range of normal, do not proceed with anchor installation without approval by the Engineer.
- E. Use only approved anchoring devices:
 - 1. Do not over drill hole beyond 1/8" the depth necessary to accommodate the wedge anchor bolt.
 - 2. Torque to 80–85% of the anchor bolt manufacturers recommended maximum.
 - 3. Provide at least one anchor bolt for bolt hole location for any site furnishing.

3.04 CLEAN-UP

- A. Clean site furnishings promptly after installation. Remove all residues, stains, scuffs, abrasions, and marks from the finished product in accordance with the manufacturer's instructions. Do not use harsh or abrasive cleaning materials or methods that could damage the finishes.
- B. Touch-up and repair minor damages to the finish in accordance with manufacturer's instructions and as approved by the Owner's Representative.
- C. Remove and replace damaged components that cannot be successfully repaired as determined by the Owner's Representative.
- D. Remove all metal, wood, and concrete slurry and debris, protective wrappings and coverings, and shipping materials from the project site.
- E. Fully restore all areas of the site that were impacted by the installation activities.

3.05 SUBSTANTIAL AND PHYSICAL COMPLETION

- A. Inspection to determine Substantial and Physical Completion of site furnishings will be made by the Owner's Representative. The Contractor will notify the Owner's Representative when the furnishings are ready for these inspections.

END OF SECTION

SECTION 32 84 00
IRRIGATION

PART 1 GENERAL

1.01 GENERAL

- A. Furnish and install an automatically-controlled, underground irrigation system and associated equipment, labor, and materials as indicated.
- B. This Section also includes the Guarantee of the irrigation system during the planting Guarantee Period of one (1) year duration to ensure the health and establishment of plant materials. Refer to Section 32 90 00 Planting.
- C. This Section includes the maintenance of the irrigation system during the one (1) year Maintenance Period.

1.02 SCOPE OF WORK

- A. Furnish and install a complete underground sprinkler irrigation system to provide efficient and even irrigation with head-to-head coverage of all planting areas shown on the Contract Drawings. Irrigation system must have minimum overspray onto signs, paved, or non-planted areas as specified in the Specifications and be complete and ready for operation.
- B. The work included in this Specification (whether mentioned or not) must consist of all tools, materials, tests, permits and other related items necessary for the installation and operation of the irrigation system. Included must be all labor necessary for installation, including trenching, plumbing, back-filling, electrical wiring, adjustments, and all other items of labor necessary for a satisfactory operating system.
- C. Irrigation piping layout is schematic. Locate piping in planting areas unless shown in sleeves between planting areas. Avoid conflicts with plant materials, lighting fixtures, signs, above and below ground utilities, and drainage systems.
- D. Any item of labor, material or equipment not specified or shown in detail, but incidental to or necessary for the complete installation and proper operation of the system, must be furnished by the Contractor without additional cost to the Owner.
- E. All sleeving required for the execution of the work is to be provided as specified. Coordinate locations and installation of pipe sleeving with the general contractor prior to paving operations.

1.03 RELATED WORK

- A. Related work in other sections of these Specifications includes but is not limited to:

1. Specification 32 90 00 – PLANTING, for plant material, landscape Guarantee Period, and planting accessories.
2. Specification 31 20 00 – EARTH MOVING, for excavation, filling, and rough grading, and for subsurface aggregate drainage, and drainage of backfill materials.

1.04 QUALIFICATIONS OF INSTALLER

- A. Contractor must be a licensed, bonded irrigation contractor. The sprinkler irrigation system must be installed by an experienced irrigation mechanic, Certified Irrigation Technician, or Journeyman Plumber.
- B. All testing of the backflow prevention equipment must be done by a Washington State Certified Backflow Assembly Tester (BAT).

1.05 VERIFICATION

- A. Before proceeding with any work, inspect the site, carefully check all grades and verify all dimensions and conditions affecting the work in order to proceed safely. Changes or alterations to the system to meet actual conditions must be made at no additional cost to the Owner.
- B. Report to the Owner's Representative all deviation and/or conflicts between Drawings, Specifications and site conditions. Extra work arising from failure to report deviations or conflicts during construction must be corrected by the Contractor and completed at the Contractor's expense.
- C. Prior to the start of any work, verify available static water pressure (PSI) and gallons per minute (GPM) at point-of-connection to water service. Submit written verification of available PSI and GPM to Owner's Representative for review and approval prior to beginning work. Any replacement, relocation, or additional materials required as a failure to check (PSI) and submit documentation must be completed at the Contractor's expense.

1.06 SUBSTITUTIONS

- A. The intent of the Contract Drawings and Specifications is to provide a totally integrated irrigation system. Substitutions will be accepted only if they are proven to be wholly compatible with this system. If standardization of products is requested by the Owner, no substitutions will be permitted.

1.07 CODES AND REGULATIONS

- A. Keep fully informed and comply with all existing laws, codes, ordinances, and regulations which in any way affect the conduct of the work.

1.08 INTERPRETATION OF THE CONTRACT DRAWINGS

- A. Irrigation Drawings are diagrammatic and are not intended to show the exact locations of such items as piping, valves, controllers, and other equipment. Contractor is responsible for locating these items as closely as possible to the Contract Drawings or as per related details to curbs, fences, or edges of paving. Locate such items as piping, valves, controllers and other equipment inside property line unless otherwise noted on the Contract Drawings.
- B. Pipe lines shown parallel on the Contract Drawings may be placed in a common trench. Sprinkler heads are shown accurately and must be installed as indicated by center of symbol.
- C. Trenching that may potentially disturb root systems of existing trees is to be brought to the attention of the Owner's Representative before proceeding.

1.09 PROTECTION OF WORK, PROPERTY AND PERSONS

- A. Take all necessary precautions to protect work in progress, all property, persons, utilities, walks, curbs, pavement and buildings from any damage that might be incurred arising from this Contract. Any damage to items listed above, including existing landscape, must be repaired to the satisfaction of the Owner, at Contractor's sole expense.

1.10 CONDUCT OF WORK

- A. Continuously maintain a competent superintendent or foreman during progress of the work, with the authority to act in all matters pertaining to the work. The Contractor must give personal attention to the fulfillment of the contract and must keep the work under control.
- B. Confine operations to the working areas allotted by the Owner, including material and equipment storage.
- C. Locate and identify all underground utilities (on or near Public Rights-of-Way / Property Lines) prior to digging and/or driving stakes.
- D. Existing known utilities have been shown on the Project Documents and/or Survey Drawings and additional information may be made available from the Owner and/or Utility Companies. It will be the Contractor's responsibility to verify utility locations on the ground with a pipe-finder or by other means. Contact Utility Locate at 1-800-424-5555 in advance of any digging to have existing utilities located and marked on-site. The Contractor is responsible for the protection when digging around existing utilities. Should the ditching intercept and damage any existing utilities, all further work within said area must stop and the Owner must be contacted. Work is not to continue until the Owner is advised and can review the Contractor's proposed repair method and

schedule. Any existing utilities that are damaged due to the Contractor's operations shall be replaced by the Contractor, to the satisfaction of the Owner at the Contractor's expense.

- E. Provide barricades and safety guards, and any other structures or improvements necessary for the complete protection of the public.
- F. The Contractor must bear sole responsibility for damage to and/or water leaks on the Owner's property and any property located outside of the project site, which is caused by the Contractor's negligence during construction of the project. The Contractor must also bear sole responsibility for any pollution of rivers, streams, groundwater or other waters that may occur as a result of construction operations. The Contractor must replace, repair and pay for all damages caused by his/her negligence to the satisfaction of the Owner prior to final payment.
- G. During the installation of the new irrigation system, if underground utilities are encountered, including (but not limited to) existing irrigation system, notify the Owner's Representative 2 working days in advance and perform repairs to that system as specified and/or as directed by the Owner's Representative. This must also apply to the connection of new irrigation systems to existing, older systems.

1.11 SYSTEM PROTECTION

- A. As part of the guarantee under this contract, the Contractor must be responsible for deactivating and draining the system prior to the onset of the freezing season and for reactivating the system at the onset of the spring growing season; each task must be accomplished once during the one (1) year Guarantee Period.
- B. In the event the system is fully installed during a season when the system will not be in use, the Contractor will winterize the system upon acceptance and will reactivate the system in the spring. The Contractor must, upon completion of the winterizing phase, submit a letter to the Owner and the Owner's Representative certifying that the system was winterized and drained, and indicates the date when such action was accomplished. The Contractor must be liable for any damage resulting from failure to comply. The Contractor must notify both the Owner and the Owner's Representative 48 hours prior to the work so that the Owner's Representative can be present during the winterizing and reactivating phases of work.

1.12 GUARANTEE

- A. Guarantee the irrigation system for all workmanship and material for a period of one (1) year, coinciding with planting Guarantee Period. Repair and/or replace defective irrigation equipment as determined by the Owner for the duration of the guarantee period. Repairs and/or replacements must be made in the same manner as specified in the original irrigation system and must be completed at no cost to the Owner.

- B. Should any trouble develop within one (1) year which, in the opinion of the Owner, is due to inferior or faulty material and/or workmanship, the trouble must be corrected, without delay, to the satisfaction of the Owner and at the Contractor's expense.
- C. Any settling of backfilled trenches must be repaired by the Contractor at the Contractor's expense, including but not limited to, restoration of pavement, sodded lawn, and/or planted areas.

1.13 MAINTENANCE

- A. It is expressly understood the Contractor will be responsible during the one (1) year Guarantee Period for normal maintenance of the project, as defined in the Contractor's Operation and Maintenance Manual and Watering Schedule Submittals. Irrigation Maintenance must coincide with the one (1) year Guarantee Period. After the completion of the one (1) year Guarantee Period, the Owner will be responsible for the maintenance of the irrigation system.

1.14 TESTS

- A. Pre-test for Pressure Test and Coverage Test prior to the Owner's Representative's review of said tests to confirm that the irrigation system will meet the requirements of the specified tests.
- B. Once pre-tests are completed and acceptable results are confirmed by the Contractor, tests must be witnessed by the Owner's Representative. The Contractor must give at least 48 hours advance notice of tests.
- C. Should additional test reviews be required due to conditions found to be the Contractor's responsibility, reimburse the Owner for billed costs for the participation of the Owner's Representative in repeated test reviews. Billed costs may include time, telephone, travel expenses, and per diem allowances for meals and lodging incurred as a direct consequence of the additional activities.

1.15 SUBMITTALS

- A. Irrigation Material Documentation
 - 1. Submit 4 sets of samples and/or digital files of manufacturer's "Catalog Cuts" of all material as noted in Specifications. Failure to do so may result in non-acceptance of materials already used or hauled to the site. Any removal or delays incurred will be at the expense of the Contractor. All samples submitted for approval must be unaltered and of quantity sufficient to allow for proper inspection and review.
- B. Manufacturer's Instruction / Maintenance / Operation Information:

1. The Contractor must provide 2 sets of the following, in three-ring binders with sections indexed and tabbed.
 - a. List of authorized distributors and service representatives for each item of equipment used, including names, addresses, and phone numbers.
 - b. Instruction manuals for all equipment installed.
 - c. Parts list with specifications numbers for each item installed.
 - d. Winterization and start up procedures.
 - e. Controller wire color code chart.
 2. Controller Charts:
 - a. The Chart must be a bond copy print with a different pastel transparent color to show each separate zone. Verify that the zone number as shown on the Controller Chart matches the number on the actual control valve identification tag.
 - b. When completed and approved, hermetically seal (lamine) the chart between two pieces of plastic and enclose sealed chart within a clear, water-tight, resealable bag. Provide one controller chart per controller to owner.
 - c. The charts must be given to Owner before the project can obtain Physical Completion.
- C. Watering Schedule Submittal: Contractor must coordinate with Landscape Contractor to provide Owner with a written “watering schedule” to ensure adequate watering of all plant materials during the Warranty Period of this Contract.
- D. As-Built Drawings: See As-Built Drawing Section herein.
- E. Backflow Preventer inspection and test results.
- F. Written documentation of the date the irrigation system was winterized.
- G. Written documentation of existing static water pressure (PSI) and flow (GPM).
- H. Spare Parts
1. The Contractor must provide to the Owners Representative the following items as spare parts at no additional cost.
 - a. 2 sets of Controller cabinet keys.
 - b. 2 sets of Quick Coupler keys with hose swivels.
 - c. 2 of each type and size of head and nozzle used on this project.

1.16 AS-BUILT DRAWINGS

- A. The Contractor must be responsible for maintaining a current and accurate record of all equipment installed and record any deviations to the plans (all deviations to the plans must be approved by the Owners Representative).

- B. As-Built records must be updated daily and must be available for review by Owners Representative at any time. All mainline, sleeves, quick coupler valves, automatic control valves, manual gate valves, double check valves, electrical splice boxes, controllers, must be dimensioned on As-Built drawings to two permanent monuments.
- C. Upon completion of the system and prior to acceptance, the Contractor must provide the Owner's Representative with a neat and clean reproducible copy set of the As-Built drawings. The contractor may provide the As-Built drawings as a scanned or annotated PDF. Any coordinates used must be based upon Washington State grid.
- D. After acceptance of the As-Built drawings, the Contractor must place a reduced, non-fading, laminated copy enclosed in a clear, water-tight, resealable bag, inside the valve box which contains the controller.

1.17 PIPE SLEEVES

- A. Provide and install pipe sleeves as shown on the Contract Drawings and as specified in these Specifications. Coordinate location and installation of pipe sleeves with general contractor prior to paving operations.

PART 2 PRODUCTS

2.01 GENERAL

- A. All materials and equipment must be new and of the best quality. All items of equipment or material must be as specified or an approved equal.

2.02 PLASTIC PIPE AND FITTINGS

- A. PVC pipe upstream and downstream of the control valves must be Schedule 40 complying with ASTM D1785.
- B. PVC pipe sleeving: Schedule 40 and conform to all requirements of ASTM D1785.
- C. All glued and threaded fittings for lateral lines must conform to the requirements of ASTM D2466 Schedule 40 PVC. All fittings must be of the solvent weld type except where risers, valves, etc. require threaded transition fittings.
- D. All threaded fittings for mainlines must conform to requirements of ASTM D2464 Schedule 80 PVC. All glued fittings for mainline must conform to requirements of ASTM D2466.
- E. All pipe must be marked with manufacturer's name, class of pipe and NSF seal. Pipe must bear no evidence of interior or exterior extrusion marks. Pipe walls must be uniform, smooth and glossy. Pipe may be pre-belled or with individual solvent-weld couplings.

- F. All threaded fittings for mainlines must conform to requirements of ASTM D2464 Schedule 80 PVC. All glued fittings for mainlines must conform to the requirements of ASTM D2466, Schedule 40 PVC.
- G. PVC Threaded Nipples: Schedule 80, complying with ASTM D1785.
- H. All pipe must be delivered in at least 20 foot lengths.
- I. All PVC pipe and fittings must conform to the following minimums:
 1. Tensile strength 78F 5,000 psi
 2. Izod impact strength (notched)0.65 ft. lb./in.
 3. Modulus of elasticity 300,000 psi
 4. Compressive strength 8,500 psi
 5. Flexural strength 10,000 psi

2.03 PVC PIPE JOINT COMPOUND AND PRIMER

- A. Joint compound: Slow drying, heavy-duty PVC solvent cement type.
- B. Primer: Tinted, compatible with joint compound.

2.04 BATTERY OPERATED AUTOMATIC CONTROLLER

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.

2.05 POP-UP SPRAY HEADS

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.

2.06 AUTOMATIC CONTROL VALVES

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.

2.07 CONTROL WIRE FOR AUTOMATIC CONTROL VALVE OPERATIONS

- A. Control wire must be insulated single strand copper designed for 24 to 50 volts and UL approved as Type U.F. (Underground Feeder). UL and U.F. designations must be clearly marked on insulation jacket of wire.

- B. Copper conductor must meet or exceed ASTM B-3 requirements.
- C. Minimum wire size must be No. 14 AWG. Size wire to control valve per valve manufacturer's recommendations.
- D. Red color must be available for lead (hot) wires.
- E. Black color must be available for common wires.
- F. Wire Splice Connections: 3M, DBY, Rainbird Penn-Tite, Scotchlok or approved equal.

2.08 QUICK COUPLING VALVES

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.
- B. Provide 2 matching valve keys, 2 cap keys and 2 hose swivels to the Owner.

2.09 MANUAL GATE VALVES

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.

2.10 MANUAL DRAIN VALVE

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal. AUTOMATIC DRAIN VALVES WILL NOT BE ACCEPTED.

2.11 MANUAL BALL VALVE

- A. PVC, sized to match irrigation line. Manufactured by NDS.
- B. Or approved equal.

2.12 VALVE BOXES

- A. Unless otherwise specified, all automatic valves and manual gate valves must be enclosed in Carson Industries with locking lid or approved equal.
- B. Manual drain and quick coupler valves must be enclosed in a Carsons industries 910-128, 10-inch round box with green bolt down cover or approved equal.
- C. Backflow preventers must be enclosed in a Carson Industries Number 1730 PB-18 Body Box or approved equal.
- D. Provide two lid keys and two valve keys per Valve Box type to the Owner.

- E. Size valve boxes as required to provide approximately 3 inches clear between valve box and valve on all sides. Provide and install valve box extensions as required.

2.13 DOUBLE CHECK VALVE ASSEMBLY (DCVA)

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal. All backflow preventers must be inspected and approved by the controlling agency before final acceptance.

2.14 PRESSURE-REDUCING VALVE.

- A. Must be of the type, manufacturer and size shown on the Contract Drawings or approved equal.

2.15 BACKFILL MATERIALS

- A. Gravel Backfill (for use under valve boxes only):

1. Three-quarter minus round, water worn, washed gravel.

- B. Sand (backfill soils around PVC pipe):

1. Fine granular material naturally produced by rock disintegration and free from organic material, loam, clay and other deleterious substances.

- C. Native Material (backfill soil around PVC pipe):

1. Soil native to project site, free of wood and other deleterious materials and rocks over one inch diameter.

2.16 POLYETHYLENE SWING RISER

- A. All polyethylene swing risers must be "Rainbird SA Swing Pipe"; "Hunter SJ Swing Joint" or approved equal.

2.17 OTHER SUPPLIES

- A. Electrical tape must be black plastic, three-quarters (3/4) inch wide and a minimum of 0.007 inches thick and the all-weather type.
- B. All quick coupling valve pipe joints must be "Triple Swing Joint" or approved equal.
- C. All electrical wire splices must be made watertight with sealing 3M Direct Burial Splice Kit or approved equal.

PART 3 EXECUTION

3.01 TRENCHING

- A. Trenches must allow for 12 inches of cover over lateral lines, 18 inches of cover for irrigation main lines and 24 inches of cover for main supply line from point-of-connection to backflow preventer unless otherwise noted on the Contract Drawings. Maintain a minimum clearance of 3 inches between irrigation lines within a common trench. Trenches for sleeves must allow for a minimum of 18 inches of cover unless otherwise noted on the Contract Drawings. Excavate no wider at any point than is necessary to lay pipe or install equipment. Excavate with vertical sides and provide bracing and shoring as required.
- B. All trenches must be straight and not have abrupt changes in grade. Trenching that may potentially disturb root systems of existing trees must be brought to the attention of the Owner's Representative and the Owner must authorize continuation of the work.
- C. The trench bottoms and bedding material surrounding all pipes must be free of rocks greater than one inch in diameter and all sharp-edged objects. Bed and surround all pipe with Backfill Material as specified in these Specifications.
- D. Pulling of pipe is not permitted unless otherwise reviewed by Owner's Representative and approved by the Owner.

3.02 INSTALLATION

- A. PVC Pipe and Fittings (Includes Pipe Sleeves):
 - 1. Due to the nature of PVC pipe and fittings, the Contractor must exercise care in handling, loading, unloading, and storing to avoid damage. Any pipe that has been dented or damaged must be discarded until such damage has been cut out and the pipe is rejoined with a coupling.
 - 2. PVC pipe ends must be cut to 90 degrees to the pipe length and cleaned of all cutting burrs prior to cementing. Use approved reaming tool. Pipe ends must be wiped clean with a rag lightly wetted with PVC thinner. Cement must be applied with a light coat on the inside of the fitting and a heavier coat on the outside of the pipe. Pipe must be inserted into the fitting and given a quarter turn to seat the cement. Excessive use of cement is not permitted. Pipe will be tested as indicated elsewhere in these specifications. No backfilling will be permitted other than at the centers of pipe lengths until the pressure test is completed.
 - 3. Backfilling must be completed when pipe is not in an expanded condition due to heat or pressure. Cooling of the pipe can be accomplished by operating the

system for a short time before backfill or by backfilling in the early part of the morning before the heat of the day.

4. No PVC pipe may be threaded or connected to a threaded fitting without an adapter.
5. Great care must be taken to insure that the inside of the pipe is absolutely clean. Any pipe ends not being worked on must be protected and not left open.
6. All threaded joints must have Teflon tape installed per manufacturer recommendations.

B. Head Locations

1. Heads immediately adjacent to walks, curbs, pavement, shrub/groundcover planting bed edge, etc. must have one inch clearance between head and walks, curbs, pavement, shrub/groundcover planting bed edge etc. unless otherwise noted on the Contract Drawings. Sprinkler heads located adjacent to parking area curbs must be located on-center with parking stall striping unless otherwise shown on the Contract Drawings.
2. Remove and dispose of off-site pavement (that portion of pavement for head and pipe only) adjacent to curbs to allow one (1) inch clearance per the above.

C. Control Wire

1. Control wires are to be taped together at 5 foot intervals; then this bundle is to be taped to the bottom of the supply line at 10 foot intervals with at least 3 wraps of electrical tape.
2. All wire splices must be made watertight with sealing 3M Direct Burial Splice Kit and contained in valve boxes.
3. Splices will be permitted only at the valves and never between valves or valve and controller unless in a separate valve box. There must be a separate lead (hot) wire to each automatic valve. One ground wire will be acceptable.
4. Minimum size of wire is to be determined strictly by the wire sizing chart provided by the control valve manufacturer.
5. The control wires must be color coded as follows:
 - a. Common Wire – Black
 - b. Lead (Hot) Wire – Red
6. “As-Built Drawings” to show actual sequence of arranged, operatable valve stations.

D. Risers:

1. All sprinklers and quick coupler head risers must be installed per details shown on Contract Drawings. The pipe risers must have the same inlet size as the sprinkler and quick coupler heads.
2. Minimum riser size must be the pipe size of the sprinkler head.
3. Risers are to be capped after installation to keep inside of pipe clean.
4. Care must be taken not to over-tighten the threaded pipe into the PVC fittings.

E. Automatic Controller(s):

1. Electrical wiring must be installed according to local code requirements.
2. Controller location(s) and type of mounting of controller(s) must be as specified and as shown on the Contract Drawings.
3. The Contractor must use readable handwriting to post the valve schedule in the controller to facilitate the selection of the valves to be operated.

F. DCVA:

1. Install in accordance with local plumbing code. See detail shown on the Contract Drawings.
2. Verify location with Owners Representative prior to installation.
3. Inspect and test the backflow preventer assembly before use in accordance with applicable portions of the Washington Administrative Code and other applicable regulations as set forth by the Washington State Department of Health and local jurisdiction.
4. These inspections and tests are to be completed and results recorded by a licensed Backflow Assembly Tester. Inspection and test results must be submitted to Owners Representative prior to operating the irrigation system.
5. Contractor must be responsible for all testing and testing fees.

G. Manual Drain Valve:

1. Install per detail shown on the Contract Drawings. Drain valves are not required for drainage of the entire irrigation system unless otherwise noted on the Contract Drawings.

H. Automatic Control Valves:

1. Install per detail shown on the Contract Drawings.
 2. Before installation of any automatic valves, the supply line must be thoroughly flushed.
 3. All automatic valves must be enclosed in valve boxes set above finish grade as shown on details. Valve box extension may be required. Locate valve boxes in shrub and groundcover planting beds wherever possible and at points of easy access from paved and/or lawn areas.
 4. Locate outside of paved areas and grouped together where possible. Where valves occur adjacent to paved areas, install valves so that valve boxes will not be closer than 12 inches to paving. Valve boxes must be perpendicular or parallel to pavement and grouped to provide a neat appearance.
- I. Manual Gate Valve
1. Install per detail shown on the Contract Drawings.
- J. Manual Ball Valve
1. Install per detail shown on the Contract Drawings.
- K. Pressure Reducing Valve
1. Install per detail shown on the Contract Drawings.
- L. Quick Coupling Valves:
1. Install per detail shown on the Contract Drawings.
 2. Locate all quick couplers in shrub and/or groundcover planting beds when possible and at points of easy access from paved and/or lawn areas.
 3. Provide and install a minimum of one quick coupling valve per Specifications. Final locations to be approved by Owner's Representative.
- M. Pipe Sleeves:
1. All sleeves must extend a minimum of 12 inches beyond the edges of pavement.
 2. Pipe for irrigation mains and laterals may be installed with sleeves but must not include any pipes with couplers whenever possible.
 3. Plug all ends of sleeves and irrigation mains and laterals to prevent soil from entering.

N. Backfilling:

1. When refilling trenches, the bedding around the pipe and fittings must be approved "Backfill Materials" and must be well tamped. If necessary, provide suitable imported backfill. Trenches must be thoroughly compacted and water-settled. Trenches must be backfilled uniform with the surrounding grade, raked to a slight mound, then rolled with a 250 pound roller, or compact with a vibrator.
2. All roots, rocks and surplus excavation must be removed from the site unless otherwise directed.
3. Trenches and pipe sleeves under roads or paved areas must be backfilled and tamped with a mechanical tamper in successive six-inch lifts to at least 95% density as determined by ASTM D1557.
4. Before backfilling, all underground appurtenances including risers, valves, backflow preventers, drain valves, etc., must remain exposed so that they can be viewed during testing. Leave all joints exposed; then complete backfilling after flushing, pressure testing, inspection and preparation of "As-Built Drawings". The location, inspecting and testing provisions of these specifications will be strictly adhered to. If, for any reason, any part of the sprinkler system is backfilled before approved location, testing, or inspection is authorized by Owner's Representative, it must be completely uncovered and exposed until approved for backfilling by the Owner's Representative.

3.03 PRESSURE TESTING

A. For PVC components of the irrigation system:

1. All PVC system joints, connections, couplings, valves, dripper tubing, and all other junction points must be left exposed until completion and acceptance of the pressure test. All leaks, however minor, must be repaired and corrected.
2. Before any testing, all piping must be thoroughly flushed. No automatic control valves shall be connected to the main line prior to testing. All pipe, fittings, gate valves, and automatic control valve stubouts must be exposed for inspections during pressure tests. Center load pipe with a small amount of backfill to prevent arching or movement under pressure.
3. Mainlines must be purged of air and tested with a minimum static water pressure of 150 psi for 60 minutes without the introduction of additional water service or pumping pressure. The maximum allowable pressure loss must be 5 psi within 30 minutes. Pressure gauge must be installed on the mainline at a point approved by Owners Representative.

4. Lateral lines must be tested at static water pressure. All swing joints must be capped. All pipe, fittings and swing joints must be left exposed for inspection. Prior to inspection, lines must be filled with water and air removed from the line. Inspection of lateral lines will be visual.

3.04 COVERAGE TESTING

- A. Before acceptance of the sprinkler system, the Contractor, in the presence of the Owner's Representative, must perform an irrigation water "Coverage Test" to determine if the water coverage and operation of the entire irrigation system is complete and satisfactory. If any part of the system is inadequate, it must be repaired or replaced at the Contractor's expense and the test repeated until accepted. The Contractor must give 48 hours written notice to the Owner's Representative prior to the field review.
- B. The Contractor must also adjust and balance sprinkler heads for optimum and uniform coverage without excessive fogging or overthrow onto signage, pavement(s), and structure(s), adjust all sprinkler head heights and set all valve boxes to proper grade prior to final review by Owner's Representative.
- C. After coverage test, the Owner's Representative may request up to 5% of total spray bodies, nozzles, and swing joints be replaced at no additional cost.

3.05 COMPLETE SYSTEM FUNCTIONALITY TEST (PUNCH LIST)

- A. Upon approved completion of the Coverage Test, trenching and installation of all equipment, the Contractor must request a Complete System Functionality Test of the entire irrigation system including: backfilling, irrigation heads, valves, valve boxes, controller and all other equipment.
- B. From this inspection, a punch list must be prepared by the Owner's Representative and presented to the Contractor for completion. The Owner's Representative must give a date for completion of the punch list, not to exceed 10 working days.

3.06 CLEAN-UP

- A. Clean and remove all debris from work areas including paving, curbs, catch basins, manholes and planting areas, etc. caused by the Contractor's work on this project prior to watering. All hard surfaced areas must be washed clean. Daily clean up must be required on all areas used for circulation, parking, or other daily use.

3.07 SYSTEM FAMILIARIZATION

1. Upon acceptance of the system by the Owner, the Contractor must provide the Owner necessary keys and/or other tools necessary to operate/drain/activate the system and spend sufficient time with the Owner to ensure that the system

operation/maintenance/winterizing can continue after the departure of the Contractor. The Contractor will be liable for all damages or losses resulting from failure to comply with the provisions of this paragraph.

2. The Contractor must cooperate with Landscape Contractor in providing the Owner with a written “watering schedule” to ensure adequate watering of all plant materials during the Guarantee Period of this Contract.

END OF SECTION

SECTION 32 90 00
PLANTING

PART 1 GENERAL

1.01 SUMMARY

- A. Install landscaping using the materials as shown in the Contract Drawings and/or as specified in the Specifications. Install landscape to grades and conform to areas as shown in the Contract Drawings.
- B. The location of work must include all areas within the limits of clearing and grading and all areas outside of the limits which are disturbed in the course of construction activities. Restore all landscape areas impacted by construction to existing or improved conditions. Confine operations to the working areas allotted by the Owner for operations, including material and equipment storage.

1.02 SCOPE OF WORK

- A. Furnish all materials, equipment, labor and related items necessary to complete the work shown in the Contract Drawings and/or as specified in the Specifications. The work included in this section (whether mentioned or not) consists of all labor, tools, materials, tests, permits and other related items necessary for the provision and installation of all plant materials in a first quality workmanlike manner.
- B. Coordinate the layout and installation of plant materials with the installation of the irrigation system to ensure complete and full irrigation coverage of the planted areas.
- C. This section includes a Guarantee Period of one (1) year duration from Physical Completion to ensure the health and establishment of plant materials. The Contractor will be responsible, during the Guarantee Period, for normal establishment and maintenance of the project landscape.

1.03 REFERENCES

- A. This specification section incorporates by reference the latest revisions of the following documents.
 - 1. American Nursery & Landscape Association/American National Standards Institute (ANSI): Z60.1, American Standard for Nursery Stock (ASNS).
 - 2. International Society of Arboriculture Best Management Practice Series.
 - 3. Tree Care Industry Association (TCIA): Standards for Tree Care Operations ANSI A300, Latest Edition.

4. United States Department of Agriculture (USDA): Federal Seed Act and Soil Classification.
 5. Washington State Department of Transportation Standard Specification, latest edition.
- B. In case of conflict between the requirements of this specification section and the listed documents, the requirements of the contract specification sections must prevail.
- C. All standards must include the latest additions and amendments as of the date of advertisement for bids.

1.04 RELATED WORK

- A. Related work in other sections of these Specifications includes but is not limited to:
1. Specification 32 84 00 – IRRIGATION, for underground sprinkler and drip irrigation systems.
 2. Specification 01 56 39 – TEMPORARY TREE & PLANT PROTECTION, for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, the execution of the Work.
 3. Specification 32 33 00 – SITE FURNISHINGS, for picnic tables, benches, litter receptacles, & recycle receptacles.
 4. Specification 31 10 00 – SITE CLEARING, for site clearing and grubbing, protection of existing trees, topsoil stockpiling.
 5. Specification 31 20 00 – EARTH MOVING, for excavation, filling, and rough grading, and for subsurface aggregate drainage, and drainage of backfill materials.
 6. Specification 35 42 00 – WATERWAY BANK PROTECTION, for log weirs, pooling logs, scour logs, bank logs, root wads, and facing rock.

1.05 DEFINITIONS

- A. Nomenclature for plants and varieties must be in accordance with the current edition of:
1. Hortus Third, The Staff of the L. H. Bailey Hortorium. 1976. MacMillan Publishing Co., New York, or
 2. Flora of the Pacific Northwest, Hitchcock and Chronquist, University of Washington Press, 1998, or

3. PLANTS Database Website, as published and maintained by the United States Department of Agriculture, Natural Resources Conservation Service, (<http://plants.usda.gov/>).

- B. The term "Contractor" as used in this Specification section must refer to the Landscape Contractor.
- C. Trees, shrubs, groundcovers, and vines will hereinafter be collectively referred to as, "plants" or "plant material."

1.06 PERMITS, CODES, AND REGULATIONS

- A. Obtain and pay for all necessary permits and fees as required by the Local Authority and prevailing ordinances and/or codes.
- B. Keep fully informed and comply with all existing laws, codes, ordinances and regulations that in any way affect the conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor must promptly notify the Owner's Representative in writing and include a description of any necessary changes. If changes in the work result in changes to the contract price, the Owner may, at its sole discretion, determine if a change order is needed.
- C. Wherever references are made to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards and codes current on the effective date of this contract must apply, unless otherwise expressly set forth.
- D. In case of conflict among any referenced standards and/or codes in the specifications or Contract Drawings, or among any referenced standards and codes and the specifications, the more restrictive standard must apply, or Owner's Representative will determine which must govern.

1.07 QUALITY ASSURANCE

- A. All work must be performed by a licensed and bonded Contractor registered in the State of Washington and must be qualified for landscaping work through certification by the Washington Association of Landscape Professionals (WALP) or by the Washington State Nursery and Landscape Association (WSNLA).
- B. Contractor must have 5 years of documented experience in performing landscape work of comparable size, scope, and quality.
- C. Contractor must be experienced in landscape work of best-accepted trade practices and have equipment and personnel adequate to perform the work specified.

- D. Contractor must be familiar and comply with “American Standard for Nursery Stock” (ANSI Z60.1) published by the American Nursery & Landscape Association.
 - E. The Contractor must continuously maintain a competent superintendent or foreman during the progress of the work, with the authority to act for the Contractor in all matters pertaining to the landscape work. That individual, who must direct the work, must be thoroughly familiar with the types of materials being installed and the proper methods for their installation.
 - F. No use of chemical pesticides and/or herbicides is allowed on this project. Invasive weed and or pest removal must be done by mechanical means only.
 - G. Perform all necessary pruning of trees (existing or new) by an International Society of Arboriculture (ISA) certified arborist who is licensed as an arborist in the State of Washington.
 - H. Site Inspections will be made by the Owner Representative.
 - 1. Request Owner Representative inspections at least 48 hours in advance of the time inspection is required.
 - 2. Inspections for the following critical path items are required:
 - a. Pre-construction meeting prior to start of landscape work.
 - b. Observance of the subgrade percolation test.
 - c. During soil preparation and soil installation activities (at least one inspection).
 - d. Finish grading prior to any planting.
 - e. During installation of salvaged logs.
 - f. Inspection of plant materials before planting.
 - g. Layout of plant material.
 - h. Tree planting and proper staking.
 - i. Installation of mulch.
 - j. Installation of sod.
 - k. For Substantial Completion of all work (development of physical punch list items).
 - l. For Physical Completion of all work (physical punch list items satisfactorily completed).
- Owner reserves the right to conduct excavations of plants or planting media to determine whether plans and specifications have been met.

1.08 SUBMITTALS

- A. Plant Material Documentation:

1. Within 30 calendar days after award of the Contract, submit written documentation to the Owner's Representative that all specified plant materials have been ordered or procured.
2. List plant suppliers' names, addresses, and phone numbers and list respective growing or storage locations with addresses.
3. Submit color photographs of representative specimens of each type of tree and shrub on the plant list from the respective nursery. Photos must be minimum 300 DPI digital *.jpg format, taken from an angle that depicts the size and condition of the typical plant to be furnished. Photos will show foliage, form, rootball, and trunk conditions. A scale rod or other measuring device must be included in the photograph. For species where more than 20 plants are required, include a minimum of three photos that show the average plant, the best quality plant, and the worst quality plant to be provided. Label each photograph with the plant name, plant size, and name of the growing nursery.
4. Approval of plant material documentation is not final acceptance of the plant material itself.

B. Soil Tests

1. Submit Soil Test Reports for:
 - a. Subgrade Soil.
 - b. Planting Soil.
 - c. Lawn Area Soil.

C. Soil Component Submittals

1. Submit a copy of the sales receipt for the purchase and a copy of the product labels and/or manufacturer data sheets for:
 - a. Soil Amendments.
2. Supplier Certifications and test reports for:
 - a. Compost.
 - b. Sand.
 - c. Sandy Loam.
 - d. Mulch.

- D. Watering Schedule: Prior to physical completion of the Landscaping, the Contractor must submit a written "watering schedule" to the Owner's Representative, coordinated with the Irrigation Contractor, to ensure adequate watering (summer, fall, winter & spring) of all plant materials during the Guarantee Period of this Contract.

- E. Temporary Storage: 10 working days prior to delivery of plant material to the project site, submit proposed on-site temporary storage location, water source, and proposed protection measures during various seasonal conditions.
- F. Weed and Pest Control Plan (including Invasive Species Removal & Control Plan).
- G. Suppliers, Sources, and Catalogue Cutsheets
 - 1. Submit suppliers and catalogue cutsheets for planting accessories
 - a. Tree Fabric Tape and Staking.
- H. Sod Analysis: See Lawn Sod as specified herein.
- I. Substitutions
 - 1. The manufacturers, products, and suppliers are acceptable as specified herein. Substitutions may be allowed if proof of equivalent quality, suitable product specifications, manufacturer's literature, and other detailed information is provided to the Owner's Representative for review and approval.
 - 2. No substitution of plant material, species, size, grade, or variety, will be permitted unless evidence is submitted in writing to the Owner's Representative that a specified plant cannot be obtained and has been unobtainable since the Award of the Contract. Provide the names and telephone numbers of at least five nursery suppliers that the Contractor has contacted. Substitution is permitted only with written approval by the Owner's Representative. The nearest variety, size, and grade as approved by the Owner must then be furnished.
 - 3. Should at any time, the procured nursery stock is lost or compromised due to weather or other natural occurrences, notify the Owner's Representative immediately of the need to locate new material.
- J. Closeout Submittals
 - 1. Operations and Maintenance Manual.
 - a. Provide an Operations and Maintenance Manual documenting the care for all plantings on a monthly schedule for one (1) calendar year.

1.09 PROJECT CONDITIONS

- A. Inspect the site before proceeding with any work, carefully check all grades, elevations, service and utility locations, irrigation system components, and verify all dimensions and conditions affecting the work. Any discrepancies, conflicts, or deviations between the Contract Drawings, Specifications, and site conditions must be immediately communicated to the Owner in writing for clarification. Work done after

discovery, unless authorized by the Owner's Representative and extra work arising from failure to notify the Owner is at the Contractor's risk and expense.

- B. Existing known utilities have been shown on the Contract Drawings and additional information may be made available from the Owner and/or the Utility Companies. Verify, locate, and protect all known underground and above-ground utilities prior to digging or other earthwork activities. Promptly notify the Owner's Representative of any conflict between proposed work and obstruction(s). Failure to follow this procedure places upon the Contractor the responsibility and expense of making any and all repairs for damage from work therefrom.
- C. Underground Obstructions
 1. In the event that undisclosed rock, concrete, crushed rock, boulders, gravel, soils contaminated with toxic substances, hardpan, or other underground obstructions are encountered in the subgrade, alternate planting locations may be selected by the Owner's Representative.
 2. Where alternate planting locations are not accepted, the obstruction must be removed to a depth of not less than three (3) feet below the bottom of root balls of plant material, when plants are properly set at the required finished grade. Alternately, other solutions to the problem will be reviewed with the Owner.
 3. Work required to resolve the problem, such as removal of such underground obstructions will be as a unit price basis and agreed upon by a Change Order prior to commencement of work.
- D. Confine work to designated areas. Do not disturb existing vegetation outside project limits and protect all plant materials within project limits not designated to be removed, unless approved by the Owner's Representative prior to construction. Do not permit vehicular traffic or materials storage under or around new or existing trees.

1.10 PROTECTION OF WORK, PROPERTY, AND PERSONS

- A. Take all necessary precautions to protect work in progress, all property, persons, walks, curbs, rooftop membranes and structures, fences, walls, utilities, pavement, and buildings from any damage that might be incurred arising from this Contract. The Contractor must pay for any damage incurred by failure to take precautions at the Contractor's expense.
- B. Protect all paved surfaces from stains that planting soil and mulch may cause. Do not remove protection until after initial acceptance of all work.
- C. Contractor is responsible for protection of landscaping work from theft and vandalism until final acceptance of work in whole or in part.

1.11 MAINTENANCE PRIOR TO PHYSICAL COMPLETION

- A. Begin maintenance immediately after each plant is planted. Water, mulch, weed, cultivate, and otherwise maintain and protect plants and landscape work on a regular basis (at least weekly) until Physical Completion. Adjust and repair tree ties and stakes as required.
- B. Correct defective work as soon as possible after it becomes apparent and weather and season permit. Reset settled plants to proper grade and position, remove and replace dead plant material, and restore lawn areas and/or finish grade conditions.
- C. Maintain mulch in planting beds at required compacted depths indicated in Contract Drawings.
- D. Upon completion of landscape work and prior to receipt of certificate of Physical Completion, remove excess soil and debris from the site and repair all damage resulting from construction operations.
- E. Do no pruning without approval of the Owner's Representative.

1.12 GUARANTEE PERIOD

- A. The Guarantee Period must not begin until:
 - 1. All landscape items on the list of items to be completed or corrected have been resolved.
 - 2. All plantings are alive, healthy, growing, and installed as specified.
 - 3. The landscape work is deemed Physically Complete.
- B. Guarantee Period must be 365 calendar days after the Physical Completion date of the landscape, including irrigation system, to ensure healthy, vigorous growth and establishment of plant material and will end with Final Acceptance.
- C. Guarantee the work of this specification section against all defects of materials and workmanship, and plant material is established, remains alive, and is in a healthy, vigorous condition.
- D. Plant Replacement during the Guarantee Period
 - 1. The Contractor must be responsible for providing enough plants for replacement of unacceptable plant material through the Guarantee Period. Unacceptable plant material includes trees, shrubs, live stakes, groundcovers, bulbs, and sod, that has died, been damaged, are missing, or that are, in the opinion of the Owner in unhealthy or unsightly condition, or that have lost their natural shape and

symmetry due to dead branches, excessive and unnecessary pruning, incorrect staking, or excessive defoliation.

2. Any plant material that is 25% or more dead or disfigured must be considered dead and must be replaced by the Contractor at no extra charge. A tree must be considered dead when the main leader has died back or when 25% of the canopy is dead. Conifers will be considered dead when the tree has dehydrated to the point inevitable needle loss occurs or will occur. Shrubs must be considered dead when 25% of their canopy/foilage is dead.
 3. All plants are subject to one (1) replacement per item during the Guarantee Period. This includes dead plants, missing plants (theft), and plants stolen or damaged by the acts of others (vandalism).
 - a. Replace dead, damaged, or missing plants with the same species, caliper, and/or equal size as the plants they replace, unless the Owner determines a substitute species plant of equal value may be provided.
 - b. Repair all lawn areas that have been damaged by the acts of others before the end of the Guarantee Period. Replacements and lawn repairs must be in accordance with original Specifications.
 4. Plant material replacements made by the Contractor must be completed during the spring (March 1 to May 1) or autumn planting periods (October 1 to December 1) unless otherwise approved by Owner's Representative. Plant material replacement and lawn repair must be subject to the same conditions and must be made in the same manner as specified for the original planting and must be done at no extra cost to the Owner.
 5. After each replacement, the Contractor must submit a marked planting plan showing the exact location of each item replaced and the date when the replacement was made. Guarantee all replaced material during the Guarantee Period for an additional 365 calendar days from the date of replacement.
- E. Site Access: Contractor has the right to enter upon the property for inspection and curative treatment of any plants and materials needing such, and which are still under guarantee during the entire Guarantee Period. Owner is to be notified in a minimum of 48 hours in advance of any inspection, corrective treatment measures, or curative treatment measures so as to arrange for approved, security clearance (if applicable) and convenient access to the area.
- F. The guarantee must be applicable to (1) any growing conditions through which plants of like kind could be expected to survive; and (2) any deformity or cause of death which could be attributed to, or affected by, the physiological condition of the plant (must be deemed replaceable cause). However, this would not apply to plant losses due to:

1. Extreme weather conditions such as wildfires, floods, freezing rain, wind storms (with recorded wind speeds greater than 60 MPH), drought, winter kill caused by extreme cold and severe winter conditions not typical of the project location, or abnormal rains, as determined by the National Weather Service.
 2. Acts of vandalism by the Owner or direct negligence on the part of the Owner.
- G. Inspection: Plants and lawn areas will be inspected quarterly (four times) by the Owner's Representative during the Guarantee Period.
1. Should the Owner's Representative determine that the Contractor is not providing regular adequate and proper care of plant material and lawns or is performing unacceptable work, the Owner's Representative will provide Written Notice to the Contractor to correct and remedy unacceptable work or practice(s).
 2. The Contractor must reply to the Owner's Representative within 5 working days of the date of the Written Notice with proposed corrections. Such corrective measures must occur within 14 days after the date of the Written Notice unless the Owner's Representative agrees otherwise. Notify the Owner's Representative when the corrective work is complete.
 3. Approximately 21 working days before the end of the Guarantee Period, the Contractor must request a final site inspection by the Owner's Representative. Conditions found unacceptable by the Owner's Representative must be corrected by the Contractor within 14 working days immediately following the inspection. After correction, the Contractor must notify the Owner's Representative for a re-inspection. Necessary replanting must be arranged by the Owner's Representative in accordance with the best planting time of the year.
- H. If the Contractor does not perform the corrective work within the 14 working days after the date of the Written Notice, the Owner's Representative may have the corrective work done by others and deduct the entire cost of the corrective work from monies due or to become due to the Contractor under the Contract.
- I. Final Transfer of Landscape to the Owner: Approximately 30 days before the end of the Guarantee Period, the Contractor may be required to accompany the Owner's Representative on a walking inspection of the Project. Conditions found unacceptable by the Owner's Representative must be corrected by the Contractor within a 10 day period immediately following the inspection. After correction, the Contractor must notify the Owner's Representative for another inspection. When all maintenance and guarantee items are completed and at Final Acceptance by the Owner, the Contractor must provide a memorandum to the Owner formally transferring the landscape and its maintenance to the Owner's Operations & Maintenance Division.
- J. Final Acceptance

1. Acceptance of lawn. Acceptance of lawn areas as specified herein must be based on a healthy, full, vigorously growing, and well-manicured stand of grass at the end of the Guarantee Period. Areas that are bare, have a poor stand of grass, are dead or dying, have weeds, or have a spotty or non-uniform grade due to any cause must be remedied by regrading, removing and resodding, removing, and watering, as appropriate.
2. Acceptance of Plant Material. Final Acceptance of all planting work described in this Specification section, with the exclusion of possible replacements of plant materials under the Guarantee, must be made by the Owner's Representative to determine 100% completion of the Contract work as specified herein.
3. Final Acceptance of the landscaping will be provided in writing by the Owner at the end of the Guarantee Period.

1.13 LANDSCAPE MAINTENANCE DURING GUARANTEE PERIOD

- A. It is expressly understood that the Contractor will be responsible, during the Guarantee Period, for normal establishment and maintenance of the project landscape. The landscape establishment must include, but not be limited to, regularly scheduled watering, mowing, weeding, monitoring and treating any disease and/or pest-problems, cultivating and any other proper care according to best horticultural industry practices to keep the plants in a normal healthy growing condition.
- B. Once all landscape work is physically complete, Contract Time will not be assessed for the landscape maintenance work during the Guarantee Period. The Contractor may request a Supplemental Contract for the landscape maintenance work during the Guarantee Period. The minimum services, obligations, and scope for the Supplemental Contract must be as specified herein.
- C. Weed and Pest Control: The Contractor must maintain all mulched planting bed areas in a weed and pest free condition during the Guarantee Period per the approved Weed and Pest Control Plan. Applications of herbicides and pesticides must be per the approved Weed and Pest Control Plan.
- D. Watering Schedule: The Contractor must ensure plants are watered, as needed, to promote healthy and vigorous growth.
 1. All automatic irrigation system components must be maintained and operated as part of the landscape maintenance work. Fully operate the automatic irrigation system, including the setting of patterns and timing of controls during the Guarantee Period. Operate automatic irrigation during the time period of 2:00AM to 5:00AM and coordinate watering with all work in this specification.

2. Change in the established watering schedule may be required to accommodate weather, seasonal factors, and as necessary; however, the Contractor must provide at least 3 working days advance notice to the owner of such proposed change, including the reasoning for the proposed change.
- E. Mulch: Apply mulch to the specified depth as shown in Contract Drawings and maintain by applying additional topdressing of mulch when needed to maintain the specified depth. At a minimum, apply mulch 7 working days before each quarterly inspection of all planting areas and apply final mulch 7 working days before inspection for final acceptance.
 - F. Fastenings: Tree fastenings must be kept intact and effective in maintaining support for plants. Fastenings must be adjusted as needed by the Contractor to prevent tree trunk strangulation, bark scaring, and non-plumb growth of the leader. Allow one inch clearance of tree tie from the bark per the Contract Drawings. Fastenings, ties, and stakes must be removed at the completion of the Guarantee Period. Reusable, doweled wood stakes are to remain the property of the Owner and arrangements must be made by the Contractor to provide for their delivery to a storage facility identified by the Owner.
 - G. Trimming and Pruning. Pruning shall only be done in order to eliminate dead growth and crossing branches and to minimize overgrowth onto walks. Prune during the dormant season to maintain the overall appearance of project. Do not shear or hedge shrubs or trees unless otherwise noted in Contract Drawings. All selective pruning of trees must comply to standards for best arboriculture practices as published by the International Society of Arboriculture and the Tree Care Industry Association ANSI A300.
 - H. Lawn Establishment: Lawn establishment must consist of providing adequate and proper care for all lawn areas installed within the limits of the project, including mowing, cutting, aeration, and thatching. Mow according to heights specified herein. The lawn establishment period must begin upon physical completion by the Owner based upon both a uniform stand of grass and upon completion of the third mowing. During the Guarantee Period, the Contractor must ensure the continuing healthy growth of the lawn. Adequate and proper care must include the labor, materials, and equipment necessary to keep installed lawn in a presentable condition including, but not limited to, watering, mowing, trimming, cutting with an acceptable mulching mower, litter and debris removal, edging, weed control, and soil repair, regrading, and resodding of damaged or eroded lawn areas. Use of pesticides in lawn are prohibited.
 - I. Mowing Schedule: The Contractor must submit at least five (5) Working Days in advance, the proposed mowing schedule to the Owner's Representative. The submittal must also identify the type of mower equipment to be used.

- J. General Cleanup: A general cleanup must be made after any landscape maintenance work. The Contractor must remove all litter and debris to provide a clean appearance at the time of landscape inspections.

1.14 WEED AND PEST CONTROL PLAN

- A. Submit a Weed and Pest Control Plan for review and approval to the Owner's Representative prior to starting any landscape work.
 - 1. The Weed and Pest Control Plan must include:
 - a. methods of removal and scheduling of removal of weeds and pests located inside the tree and plant protection fencing where shown on Contract Drawings.
 - b. methods of removal and scheduling of removal of weeds that occur in newly planted areas.
 - c. methods of removal and scheduling of removal of invasive species and/or noxious weeds that occur within the project limits of the work.
 - 2. The plan must include methods of weed and pest control, and the timing and scheduling of control operations.
 - a. Identify and list the target weeds and unwanted vegetation to be removed specific to the project site.
- B. Weed removal must be by hand or mechanical methods.
- C. Applications of post-emergent herbicide is not allowed. Should unwanted vegetation reach the seed stage in violation of these Specifications, the Contractor must physically remove and bag the seed heads. All physically removed vegetation and seed heads must be disposed of off-site at no cost to the Owner.
- D. All noxious weeds (Class A, B & C) as defined by the County Weed Control Board and invasive weeds, including but not limited to Horsetail (*Equisetum* sp.), reed canary grass, English Ivy, Himalayan blackberry, evergreen blackberry, policeman's helmet, bamboo, yellow flag iris, and Japanese knotweed must be completely removed from the project site.
 - 1. Where noxious or invasive weeds exist, the weed's foliage and roots, planting soil and subgrade soils must be removed and replaced to a depth necessary to completely remove all viable weed seeds, roots, corms, and rhizomes.
 - 2. In areas where existing trees are to remain, all invasive species removal must be done with hand tools. Use of heavy mechanical equipment under the drip lines of existing trees to remain must be prohibited. Avoid damaging existing tree roots during invasive species removal. If existing tree roots are exposed outside of the

tree's drip line, invasive species roots must be removed with hand tools to avoid further damage to the tree roots.

3. Cost to remove weeds, remove, and replace existing soil, and replant must be at the Contractors expense.
- E. The approved Weed and Pest Control Plan will be subject to revision dependent on results of the implemented Plan.
- F. The Contractor must assume all responsibility for rendering any area unsatisfactory for planting by reasons of herbicide or pesticide application. The Contractor must replace, repair, and pay for all damages caused by his/her negligence to the satisfaction of the Owner prior to final payment.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Provide all materials and equipment as required to complete the work as shown on the Contract Drawings and/or as described in the Specifications.

2.02 SOIL TEST REPORTS

- A. Provide soil analysis and test reports from an approved soil testing laboratory. Soil amendments must not be incorporated in the planting work until the Soil Test Reports are approved by the Owner's Representative. Provide Soil Test Reports for:
 1. One (1) representative sample of subgrade soil. The subgrade soil sample must consist of a composite of soils collected from a one (1) inch, 8-inch, and 16-inch depth.
 2. One (1) representative sample of each soil mix specified.
- B. The cost for all soil testing must be borne by the Contractor.
- C. The Contractor shall be paid for the soil amendments that may be required to improve the subgrade soils, as recommended by the soil testing laboratory. Costs must be determined on a unit price basis and agreed upon by a Change Order prior to commencement of subgrade soil amendment work.
- D. The Contractor must be responsible for cost of the soil amendments that may be required for the planting soil mix, as recommended by the soil testing laboratory.
- E. Testing must be performed in accordance with the most current edition of Methods of Soil Analysis published by the Soil Science Society of America, Inc. The Soil Test Reports must include the following:

1. Fertility Analysis:
 - a. Extractable analytes: nitrate, nitrogen, ammoniacal nitrogen, phosphorous, potassium, calcium, magnesium, copper, zinc, manganese and iron.
 - b. Saturation extract values: calcium, magnesium, potassium, sodium, boron, sulfate, pH, lime content, salinity and sodium adsorption ratio.
2. Mechanical Analysis:
 - a. Organic percent by over-dried weight.
 - b. USDA particle size and gradation.
3. Cation Exchange Capacity (CEC).
4. For Subgrade Soil Test Report: Permeability or hydraulic conductivity testing must be performed in accordance with ASTM D 2434, Standard Test Method for Permeability of Granular Soils. Assume a relative compaction of 85 % of modified maximum dry density (ASTM D 1557).
5. The Soil Test Report must make recommendations for fertilizers and soil amendments to effectively amend and develop a productive soil.
6. The Soil Test Report must include a written statement from the soil testing laboratory that the laboratory has reviewed the planting plan and this planting specification, and that its recommendations respond to the specific needs of the Contract.
7. Soil Tests must be dated no later than 60 calendar days prior to proposed use.

2.03 EXISTING SUBGRADE SOIL

- A. Soil tests of the subgrade soil must be made per Soil Test Reports section herein.
- B. Submit Soil Test Reports to the Owner's Representative for review and acceptance prior to procuring soil amendments and incorporating soil amendments into the subgrade soil.
- C. Determine the quantity of soil amendments and procure all soil amendments as recommended by the subgrade soil test report results.
- D. Submit a copy of the itemized sales receipt showing purchase of and quantity of soil amendments for both subgrade soil and planting soil amendment to the Owner's Representative. Provide copy of soil amendment labels showing grade furnished, certification of quality, and guarantee information.

2.04 IMPORTED PLANTING SOIL

- A. Supply of all soil components and soil amendments required for the performance of this Contract and determine the volume of soil and amendments required to fulfill Contract obligations.
- B. Soil Mixes
 - 1. Lawn Soil must be a mix appropriate for turf area soil consisting of 2 parts sand and 1 part compost by volume. The resulting mix must contain approximately 4% to 6% organic matter by weight as tested by the Loss on Ignitions method.
 - 2. Planting Soil mix must consist of 3 parts of sandy loam soil and 1 part compost by volume. The resulting mix must contain approximately 8% to 15% organic matter by weight as tested by the Loss on Ignitions method.
- C. All soil mixes must be thoroughly blended off site.
- D. Soil Test Reports for each soil mix must be as specified herein.
- E. All soil mixes must be free of pests, toxic substances and other undesirable material harmful or detrimental to ornamental plant growth. Soil mixes must not contain any viable seeds, roots, or rhizomes capable of sprouting any State-listed noxious weeds or invasive root propagating plants including but not limited to horsetail, English ivy, blackberry, clematis, knotweed, etc. Soil found to contain these prohibited viable plant materials must be removed and replaced at the Contractor's expense.

2.05 SOIL COMPONENTS

- A. General
 - 1. Submit planting soil supplier's certification of sand, sandy loam, and compost, as applicable for Owner's Representative's review and acceptance prior to use on project site.
 - 2. Certification tests must be dated within ninety (90) days of proposed installation of soil on the project site.
- B. Compost
 - 1. Compost used in soil mixes must be Fine Compost and comply with the requirements of Washington State Department of Transportation Standard Specification 9-14.4(8).
- C. Sand

- Sand must be “Washed Building Sand” and meet the following analysis:

<u>Size</u>	<u>Sieve</u>	<u>Percent Passing</u>
1/4" & 3/8"	ASTM E-11	100
#4 & #6	ASTM E-11	95 – 100
#10	ASTM E-11	65 – 75
#18%	ASTM E-11	35 – 50
#20%	ASTM E-11	< 30
#40	ASTM E-11	< 20
#100	ASTM E-11	2 – 10
#200	ASTM E-11	1 – 5

- Permissible Chemical Ranges:

- Salinity (milliohms per centimeter of saturation extract @ 25°C) Nil – 3.0
- Boron (saturation extract concentration) Nil – 1.0ppm
- Sodium (sodium absorption ratio – SAR) Nil – 6.0

D. Sandy Loam

- Sandy Loam must be topsoil as defined by the United States Department of Agriculture Classification system and the requirements as described herein.
- Sandy Loam must consist of loose, moderately well-drained, and friable soil. And be free of stones, debris, and/or similar objects. Sandy Loam should be fertile and free-flowing (pulverized).

2.06 MULCH

- Wood Chip Mulch must be coarse ground wood chips derived from the mechanical grinding of whole trees or portions of trees. It may contain wood, wood fiber, branches, and leaves, but must not contain visible amounts of soil. It must be free of weeds and weed seeds, including plants on the King County Noxious Weed list and must be free of invasive plant portions capable of resprouting, including but not limited to horsetail, English ivy, clematis, Japanese knotweed, etc. It must not contain more than 0.5% by weight of manufactured inert material (plastic, concrete, ceramics, metal, etc.).

- Wood chip mulch, when tested, must meet the following loose volume gradation:

Sieve Size	Percent Passing	
	Minimum	Maximum
2"	95	100
1"	0	20
5/8"	0	50

1/4"	0	40
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2. Particles must not be longer than eight inches.
3. Acceptable substitutes, subject to the Owner Representative's approval, include chipped or shredded woody material left from tree trimmings, meeting the above size and inert material requirements, derived from composting operation screening ("overs"), or derived from trees on site to be removed that has passed through a metal removal process to meet the 0.5% manufactured inert standard above.

2.07 SOIL AMENDMENTS

- A. Furnish soil amendments that are free of materials detrimental to plant life. Furnish manufacturer or supplier quality compliance certification. Ensure that material testing methods meet the requirements of the Washington Department of Agriculture appropriate to that material. Obtain approval for use of soil amendments before beginning work. Soil amendments may include the following: lime, dolomite lime, gypsum, rock, diammonia, or other phosphate, calcium or potassium nitrate, boron, and iron sulfate.
- B. Soil amendments application rates must meet Soil Test Report recommendations.
- C. Soil amendments must be packaged in new, unopened, waterproof, containers or non-overlaid bags clearly labeled as to weight, chemical analysis, manufacturer and content in accordance with State and Federal Law. Store fertilizer and soil amendments in such a manner as to prevent wetting and deterioration. Do not store fertilizer and soil amendments with plant materials.
- D. Agricultural lime must be low magnesium (not dolomitic) limestone containing not less than 85% of total carbonates. Limestone must be ground to such fineness that 50% will pass a No. 100 sieve.
- E. Iron sulfate must be granulated ferrous sulfate containing a minimum of 20% iron and 10% sulfur.
- F. Fertilizers: Do not use fertilizer.

2.08 PLANT MATERIAL

- A. The Contractor has two (2) options to secure approval of plant materials:
 1. Have plant material available at the project site for review during scheduled site visits.

2. Have Owner's Representative review plants at the place of growth at the Contractor's expense.
- B. Owner reserves the right to reject any or all plant material at any time until final review and acceptance. Remove rejected plants immediately from the site.
- C. All plant material furnished by the Contractor must conform to the requirements of the current issue of "American Standard for Nursery Stock" (ASNS) and in addition, must comply with the following provisions:
1. No less than 10% of each variety and/or species of plant delivered to the project must be accurately labeled with a securely attached, waterproof tag bearing the legible designation of the common name and full scientific name and size of plant. Include the nomenclature for hybrid, variety, or cultivar. Whether or not labeled, any plants, which do not conform to the Plant Schedule and/or Contract Drawings, must be replaced immediately with plants that conform to specifications.
 2. All plant material must meet State and Federal requirements with respect to plant health and absence of diseases and insect infestation.
 3. All plant material must be nursery grown stock that has been held in a nursery for at least one year.
 4. All plant material specified must be first-class representatives of their normal species or varieties in healthy growing condition with normal well-developed branch system and vigorous root systems.
 - a. They must be free from disease and insect infestation, disfiguring knots, sun-scalds, abrasions of the bark, broken tops, broken branches, torn roots, and any other objectionable features.
 - b. Plants, which have suffered damage as the result of girdling of the roots, stem, or a major branch; have deformities of the stem or major branches; have a lack of symmetry; have dead or defoliated tops or branches; or have any defect, injury, or condition which renders the plant unsuitable for its intended use, will be rejected.
 5. Large plants cut back to meet specified sizes will be rejected. Plants must not have cuts or pruning wounds over 3/4-inch diameter that are not satisfactorily callusing over.
 6. Plant material must not have weeds at the tops of rootballs or any foreign plant growth.
 7. Root balls of all plant materials must be solidly held together by a fibrous root system and must be composed only of the soil in which the plant has been actually

growing. The ball must be securely wrapped with non-treated, jute burlap, or other packing material that is not injurious to the plant's life.

8. Provide the number of plants shown on the Plant Schedule in Contract Drawings, or to cover at specified spacing's whichever is greater.
9. Trees
 - a. Trees must have been grown with sufficient spacing to allow for symmetrical branch development and full canopy which reflects the natural characteristics of the species. Tree trunks shall have straight leaders and there should not be noticeable imperfection in vertical alignment, nor shall there be "included bark" in the crotches between the trunk and side branches.
 - b. Trees with multiple leaders, unless specified, must be rejected.
 - c. Trees with a damaged or crooked leader, "Y" crotches, missing leaders, bark abrasions, sunscald, disfiguring knots, insect damage, or cuts of limbs over 3/4-inch in diameter that are not completely closed will be rejected.
 - d. Evergreen and deciduous trees must be furnished balled and burlapped (B&B) unless otherwise specified in the Contract. Broken or "made" root balls will not be accepted.
 - e. Trees grown in fabric bags must have a well-established root system reaching the sides of the fabric bag to maintain a firm ball when the fabric is removed, but must not have excessive root growth encircling the fabric bag. Fabric bags must be entirely removed prior to planting.
 - f. Any pruning wounds must have a diameter of less than one (1) inch and such wounds must show vigorous callous on all edges. Trees must not be pruned within 6 months prior to delivery.
 - g. Provide tree root ball sizes complying with the latest edition of the ASNS. Cracked or mushroomed tree root balls are not acceptable.
10. Container-grown Stock:
 - a. Plants grown in a pot or container must have been given a sufficient length of time for the new fibrous root system to have developed to hold its soil together and keep the root mass firm and whole when removed from the container.
 - b. Plants must not be loose in the container.
 - c. Container stock must not be pot or root bound.
 - d. Plants furnished in pots or other containers must be acclimated to outside conditions and equal to field grown stock. To acclimate plants to Northwest conditions, all plants used on the project must be grown continuously outdoors north of the 42nd Latitude (Oregon-California border) from no later than April 1 of the year prior to the time of planting.
11. Live stake plants:

- a. Shall be 2 feet to 4 feet in length, 1" (one inch) diameter +/- 1/2" and harvested within 48 hours of planting. All live stakes shall be stored with cut ends down in fresh water until time of planting.
- b. Live stake cutting shall have a straight top cut immediately above a bud. The angle of cut at the lower, rooting end, shall be approximately 45-degrees to the stem. Live stakes with unacceptable cuts shall be re-cut prior to installation. Live stake cuttings shall be cut and installed with the bark intact with no branches or stems attached.
- c. Cuttings shall be from one (1) to 2 year old wood.

12. Bulbs:

- a. Bulbs shall be per Contract Documents planting schedule and installation details.

2.09 PLANTING ACCESSORIES

A. Tree Staking Materials

- 1. Tree stakes must be installed as shown on Contract Drawings. Stakes must be pressure-treated lodgepole pine wood stakes, with chamfered tops and 6-inch long conical points.
 - a. Fastening must be webbed fabric tape, 1/2" – 1" wide.
- 2. Or approved equal.

2.10 LAWN SOD

- A. Sod must be "Country Green Perfect Green Mix" or acceptable equal.
- B. Sod must be comprised of 60% Perennial Turf Type Ryegrass, 20% Hybrid Kentucky Bluegrass, 20% Hard Fescue and contain no more than 1% other grasses.
- C. Sod must be premium quality, free of all weeds, pests, diseases, *Poa annua*, and other undesirable material. It must not be less than 12 months old nor more than 24 months old, grown in fumigated soil, healthy, and have a dense, vigorous well-developed root structure.
- D. All sod delivered to the project must be equal to or exceed the quality exhibited in the sod sample. Sod must not be cut from the field more than one (1) day prior to delivery to the project site.
- E. Sod must be grown in Western Washington or Western Oregon. Sod shipments must have a certificate of origin and certification of approved treatment if the shipment originates in a known area containing grass infections. Sod that shows signs of Pink

Patch or Red Thread will be immediately rejected and must be replaced at Contractor's expense.

2.11 HERBICIDE AND PESTICIDE

- A. Do not use herbicide or pesticide on project.
- B. The Contractor shall control weed and pest species within the project area using integrated pest management principles consisting of hand and mechanical and biological control methods that are outlined in the Weed and Pest Control Plan or as designated by the Owner's Representative. Chemical treatment of planting areas is prohibited.

2.12 DOWNED LOG

- A. All timber salvaged from onsite deciduous trees shall be stockpiled onsite and inspected by the Engineer. The Engineer shall designate re-use as downed logs as seen fit and in compliance with the respective specification.
- B. Downed logs shall consist of sound, natural, rot-free wood that has not been treated by any preservatives. Treated logs are not acceptable. Logs shall be a minimum of 12-inches in diameter at all points along the length, with no section along the length exceeding 30-inches in diameter. The logs shall be washed of soil and be free of any debris such as cable, bolts, rope, ivy vines, blackberry canes, or any other objectionable foreign materials. All branches shall be cut to within 6-inches or less of the log and removed prior to placement. No perpendicular cuts across the diameter of the log shall be visible to the public after installation. Cut ends shall be formed to appear as a natural break of the log, defined as a coronet cut.

PART 3 EXECUTION

3.01 GENERAL

- A. All areas as indicated in Contract Drawings must be of finish grade and approved by the Owner's Representative before commencement of planting. All grades must flow smoothly into each other and produce positive drainage. The Contractor is responsible for any adverse drainage conditions that may affect plant growth unless the Contractor contacts the Owner's Representative immediately indicating any possible problem. Verify all grades with Owner's Representative before commencement of planting.
- B. The Contractor must protect soil and provide adequate and proper care of all plant material (both retained and newly installed) and landscape work, including irrigation, done on the project from the time of installation to the end of the Guarantee Period.

- C. Care should be taken to avoid damage to existing trees and their roots. Where excavating for new construction is required within tree and plant protection areas, excavate by hand to minimize damage to roots and perform as follows:
 - 1. Use narrow tine spading forks and comb soil to expose roots.
 - 2. If main lateral roots are immediately adjacent to location of new construction, the contractor must notify the Owner prior to any excavation.
 - 3. Do not allow exposed roots to dry out.
 - 4. Provide temporary, minimum 4-inch depth of mulch and/or plastic covering, or equivalent.
 - 5. Maintain in moist condition until covered with planting soil or mulch.

3.02 SUBGRADE PREPARATION

- A. Verify the existence of proper rough grading and subgrade elevations prior to beginning soil preparation work. All planting area excavation must allow for compost, planting soil, and mulch depths as indicated in Contract Drawings.
- B. Areas to receive plant material must be cleared, grubbed, cultivated, and graded to accommodate the Work prior to planting and to provide the optimum conditions for plant and lawn establishment and growth.
- C. Subgrade must be cleaned of all debris including concrete, stumps, sticks, roots, and rocks or lumps larger than one (1) inch. Subgrade elevations must be as shown in the Contract Drawings.
- D. Percolation Test
 - 1. After the subgrade has been prepared, a percolation test must be performed. This must be accomplished by excavating 3 pits that are 2 feet in depth and minimum 2 feet in diameter. Location of all 3 pits must be per Owner's Representative field directive. Fill each pit with water and allow the pit to drain for 24 hours. After 24 hours, re-fill the pit with water. If the time required for the pit to drain completely after being filled the second time is greater than 24 hours, the Contractor must notify the Owner's Representative immediately.
 - 2. The Contractor must be paid for work required to solve the drainage problem, such as, installation of french drains or drainage sumps at a unit price basis and agreed upon by a Change Order prior to commencement of work.
- E. Contractor is responsible for verifying the subgrade is weed and pest free prior to beginning subgrade preparation work.

- F. Subgrade preparation and percolation tests must be reviewed and approved by Owner's Representative prior to proceeding with the placing of planting soil.
- G. Placing of planting soil constitutes acceptance of subgrade conditions by Contractor.

3.03 SOIL PREPARATION

A. General

1. Soil must not be placed, disked, rototilled, or worked when the ground or planting soil is frozen, excessively wet, there is ponding water, or, in the opinion of the Owner's Representative, in a condition detrimental to the Work.
2. Incorporation of soil amendments in response to soil test recommendations and placing of soils must result in a homogeneous blend to a minimum depth as shown on the Contract Drawings. The Contractor must apply and shape the lifts in such a manner that the planting area has a continuously sloped final surface allowing for drainage from higher elevations to lower outer edges of the planting area. Where possible, ridges and ridge lines must be the approximate center point, or centerline(s), of the planting area.

B. Subgrade Scarification

1. Apply soil amendments and scarify to depths as shown in Contract Drawings. If additional scarification is required to eliminate surface water ponding, notify Owner's Representative of problem areas.
2. After scarification, remove all debris or rocks over 2-inches in size and establish proper grades.
3. Application of amendments and the scarification process must be observed and approved by Owner's Representative prior to installing planting soil.
4. No scarification is permitted within tree protection fencing areas.

C. Placing Soil and Soil Amendments:

1. For Lawn Areas:
 - a. See soil preparation details. Compact each lift of lawn area soil before installing the additional lift of soil. Compact by rolling with 200 pound roller or water settling. Owner's Representative must review and approve soil preparation work between steps.
 - 1) Apply soil amendments for planting areas per soil testing laboratory recommendations.

- 2) Thoroughly mix and scarify or rake soil amendments into top 2 inches of lawn area soil to produce a uniform blend at rates per soil laboratory recommendations.
 - b. Incorporate the following soil amendments by broadcasting over lawn area soil at an even distribution and rate prior to placement of sod. Then, rake the amendments into the top 2 inches of lawn area soil.
 - 1) Lime. Recommended application rate: Incorporate 50 pounds of Non-dolomitic Lime per 1,000 square feet in direct broadcast application.
2. For Planting Areas:
 - a. See soil preparation details. Compact each lift of planting soil before installing the additional lift of soil. Compact by rolling with a 200 pound roller or water settling. Owner's Representative must review and approve soil preparation work between steps.
 - b. Incorporate soil amendments by broadcasting over planting soil at an even distribution and rate prior to installation of plants. Then, mix the amendments into the top 6 inches of planting soil.
 - 1) Soil amendments for planting areas must be applied per soil testing laboratory recommendations.
 - 2) The soil amendments must be thoroughly mixed with soils to produce a broadly-mixed blend at rates per soil laboratory recommendations.
 - 3) All amendments must be delivered to the site in the original, unopened containers bearing the manufacturer's name and guaranteed components analysis. In lieu of containers, amendments may be furnished in bulk, with a Manufacturer's Certificate of Compliance indicating the components analysis complies with the Contract.
3. For areas within tree protection fencing:
 - a. Existing lawn shall be cut to a 1" depth using a mechanical sod cutter and removed from site and properly disposed of. Do not continue to cut sod where tree roots are encountered.
 - b. Exposed subgrades shall be aerated manually to a depth of 2" using a square-tined spading fork. Take care to avoid visible tree roots at the surface and all tree roots over 2" in diameter.
 - c. Install minimum 2" depth and maximum 4" depth wood chip mulch.
 - d. Provide Finish Grading per Section D below.

D. Finish Grading

1. Establish a finish grade with the compacted depths of planting soil and amendments as shown on the Contract Drawings and a specified herein. After installing soils and amendments, drag to an even grade, remove debris and rocks larger than one (1) inch in diameter that appear at the surface, and then roll for firmness prior to planting.

2. Finish grade is defined as the top surface of soil prior to the installation of mulch and sod lawn unless otherwise noted in the Contract Drawings.
3. Finish grading must consist of placing, grading and lightly rolling soil, providing for surface drainage, cutting all necessary drainage swales and generally conforming to finish grades shown in the Contract Drawings and as directed by the Owner's Representative.
4. Compact finish grade of planting and sod lawn areas to 85% of maximum dry density as determined by ASTM: D 1557.
5. After settling, finish grades in sod lawn areas must be one (1) inch below all walks, curbs and/or other hard surfaces.
6. After settling, finish grades in planting areas must be 3 inches below all walks, curbs, and/or other hard surface edges.
7. All planting areas must be finish graded and accepted by the Owner's Representative before commencement of planting, preferably before staking and layout.
8. The top of the mulch must be flush with the top of any adjacent paved surface improvement such as sidewalk, curb, and other pedestrian walking area.

3.04 TRANSPORT AND MOVING PLANT MATERIAL

- A. Plant material transported in enclosed vehicles must receive adequate ventilation. Plant material transported in open vehicles must be protected by suitable cover material such as tarpaulins.
- B. Provide adequate protection to trees so that trunks are not scarred in transport and branches are not broken. Remove covering at the time of plant materials inspection at the job site.
- C. Pack and ship plant material in accordance with prevailing nursery industry standard practice for the type of plant being shipped, and protect at all times against drying sun, wind, heat, freezing, and similar detrimental conditions both during shipment and during related handling.
- D. Move all plants carefully. Exercise care in handling, loading, unloading, and storing of plant materials. Prevent damage to all plant materials. Do not drag plant material without proper root and branch protection.
 1. Trees must be handled only by the rootball, not the trunks, stems, or tops.
 2. Container grown plants must be handled by container only, not the stems or tops.

- E. Plant material damaged in any way from transport and moving activities must be rejected, discarded and replaced with undamaged materials at no cost to Owner.

3.05 TEMPORARY STORAGE OF PLANT MATERIAL

- A. Plants that cannot be planted within 24 hours after arrival to the project site must be “heeled-in” in accordance with accepted horticultural practice and the following requirements:
 1. Protect rootball of balled and burlapped or fabric-grow bag plants with moist earth, sawdust, bark mulch, or other acceptable material and the material must be kept continuously moist. Do not use straw or hay to retain moisture.
 2. Protect plant materials at all times from mechanical damage, excessive wet conditions, drying out, and extreme weather including drying winds and direct sun.
 3. The root system of all plants must not be permitted to dry out at any time. Set plants in the shade and keep roots moist by covering with mulch, soil or other acceptable means of retaining moisture.
 4. Store bulbs in a dry place at 60°F to 65°F until planting.

3.06 PLANT LAYOUT:

- A. Plants must be placed at the spacing and locations as indicated in the Contract Drawings. Plant layout and staking (or otherwise marking the location of each plant) must be the responsibility of the Contractor. No work must start on the installation of plant material until plant layout and staking has been verified and approved by the Owner’s Representative.
- B. The Contractor must notify the Owner at least 5 working days in advance of projected completion of staking and allow 2 working days after the projected completion date for review and any adjustments of the layout by the Owner. The Contractor must sequence the installation of plants to minimize disturbance to new plants and existing landscaping.
- C. No work must start on the installation of plant material until plant layout and staking has been verified and approved by the Owner’s Representative.

3.07 PLANT INSTALLATION:

- A. General
 1. All plant material must be inspected and determined by the Owner’s Representative to be acceptable for planting, prior to installing.

2. Do not install plants in weather conditions detrimental to plant material.
 - a. Do not plant during freezing weather, when the ground is frozen, or when ground is excessively wet.
 - b. Do not install plants when ambient temperatures drop below 40°F or rise above 80°F.
 - c. Do not install plants when wind velocity exceeds 25 MPH.
3. For work performed during unacceptable weather conditions detrimental to plant material, the Contractor may be required to provide the following services at no additional cost:
 - a. Expert consultations with an ISA certified Arborist (for trees) or other expert as approved (for other plant material) to determine what plant care measures are required to maintain the plants installed in a healthy and vigorous condition during the unacceptable weather conditions.
 - b. Replacement of all work performed during unacceptable weather conditions.
 - c. Additional watering and maintenance of the plant materials installed during the unacceptable weather conditions and responsibility for all additional costs incurred.
4. Planting must only occur between the period of September 1st and May 1st. Planting at other times must only be done by written permission by the Owner's Representative and only if an automatic irrigation system is available throughout the summer.
5. Soak all tree rootballs and container plants which have become dry prior to planting.
6. If groundwater is encountered upon excavation of planting holes, the Contractor must promptly notify the Owner.
7. Plants must be removed from containers in a manner that prevents damage to the root system. Containers may require vertical cuts down the full depth of the container to accommodate removal. All circling roots must be loosened to ensure natural directional growth after planting.
8. Dig pits or planting holes for plant material as indicated on Contract Drawings and consistent with good horticultural practices. The inside surfaces of all planting pits are to be rough, not smooth. If the Contractor encounters clay soil or any unusual condition which may be detrimental to the new planting, the Contractor must notify the Owner's Representative immediately. Unsuitable material, if encountered, must be removed from the site and planting soil distributed to replace the unsuitable material. Unsuitable material removal will be considered as Extra Work, in accordance with the Specification, and be paid for as a Change Order.

B. Trees

1. Before planting, completely remove all twine, burlap, wrapping material, fabric grow bags, and wire baskets and completely remove material from the planting hole. All containers must be removed from rootballs before planting. Containers may require vertical cuts down the full depth of the container to accommodate removal. For ball and burlap and container trees, roots showing at the edge of the root ball must be loosened without tearing. The rootball must be placed in the planting pit in a manner that ensures the roots are properly spread for lateral directional growth.
2. Set trees in the planting pit to proper grade and alignment. Set trees upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set crown of rootball up to one (1) inch above the finish grade elevation, unless otherwise noted in the Contract Drawings.
3. Backfill must be carefully placed and compacted by water settling. When planting hole is 3/4 backfilled, apply water to water-settle the backfill and remove voids. After settling occurs, the Contractor must add enough soil to cover the roots but must not rework the soil. Do not use frozen or muddy mixtures for backfilling. No soil filling will be permitted against trunks or stems or above grafts on grafted trees. Form a watering ring of soil around the edge of each planting pit to retain water.

C. Shrubs and Groundcovers:

1. Plants supplied in containers must be kept moist at all times and must be removed from the container in a manner that prevents damage to the root system. The plants must not be removed from the container by pulling on the stem.
2. All plastic, burlap, ties, and other container material must be removed from the plant prior to planting. Containers may require vertical cuts down the full depth of the container to accommodate removal.
 - a. Space groundcover plants using triangular spacing in accordance with indicated dimensions and offsets. Adjust spacing as necessary to evenly and uniformly fill planting bed with indicated quantity of plants. Always plant groundcovers to within eighteen inches (18") of the trunks of planted trees and shrubs within planting bed.
 - b. Set shrubs and groundcovers in the planting pit to proper grade and alignment. Set upright. Install plants so that top of rootball is flush with the finished grade after settlement. Check top of root ball for root flare. If root flare is not found, carefully scrape away excess soil until root flare is exposed. This level must be the top of the rootball and installed flush to the finished grade.

- c. Backfill must be firmly tamped or compacted without voids around the roots, then covered with mulch, and watered immediately after planting.
- D. Bulbs
 1. Install bulbs per plans and detail on Construction Documents.
- E. Live Stakes
 1. Install live stakes per plans and detail on Construction Documents.
- F. Pruning and Staking
 1. Pruning
 - a. Pruning of trees must be performed at the nursery by nursery employees only. Pruning shall be to remove small or minor broken or damaged branches, or for aesthetic purposes unless otherwise directed by the Owner's Representative. Branches must be pruned at the branch collar. Neither stubs nor flush cuts will be acceptable.
 - b. At the time of planting, pruning must only occur to remove minor broken or damaged twigs and branches. No trees or plants must be headed or pruned without reason or prior approval. No pruning is allowed on new plant material that impacts a tree's central leader, removes more than 5% of the foliage, or if foliage has not developed, more than 5% of the foliage buds, or significantly alters the natural form of the plant material being pruned.
 - c. Pruning must be done in such a manner as to retain or to encourage the natural growth characteristics and proper form of the particular plant. Pruning must be done with a sharp tool to produce a clean cut without bruising or tearing the bark. All completed pruning cuts must be in the living wood where callous tissue can develop properly.
 2. Staking and Fastening
 - a. Trees must be staked at the time of planting as indicated on Contract Drawings. Each tree must be staked as indicated and tied to the stake with Webbed Fabric Tape to allow for trunk growth.
 - b. Staking must be in a workmanlike operation. Damaged stakes must be promptly removed and replaced.
 - c. Trees and shrubs found out of plumb by wind or other causes must be re-set by loosening the soil around the root system and re-plumbing the tree or shrub, and backfilling and compacting as necessary. Adjustment must not be made by pushing, pulling or restraining the trunk or stem. If, in the opinion of the Owner, damage to the root system has occurred as a result of re-setting a tree or shrub, the tree or shrub must be replaced by the Contractor.
 - d. Alternate methods of staking may be proposed by the Contractor and requires approval of the Owner.

- e. Tree stakes must be removed at the end of the Guarantee Period.
- G. Mulch planting areas with required mulch material at least 3 inches deep immediately after planting. Top dress the entire tree pit including the watering ring, with the mulch depth tapered at the tree trunk to prevent contact at the trunk. Soil surface interface should be damp prior to application of mulch. Do not install wood chip mulch on top of dry planting soil. 3 inch depth is measured after settling and/or compaction has occurred. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.

3.08 SOD INSTALLATION:

A. Installation:

1. Sod must be brought onto lawn area by hand-operated wheeled equipment with proper protection of sod soil beds from heavy compaction. Sod layering must be performed by an experienced individual, or if inexperienced, must be constantly supervised by an experienced foreman. During the installation process, the individual must kneel on plywood or some other platform when layering sod.
2. Moisten prepared surface immediately prior to laying sod.
3. Do not lay sod or install sod on saturated or frozen soil, or soil covered by snow.
4. Lay sod immediately upon delivery to site, to prevent deterioration or drying. All sod must be installed within 12 hours after delivery to the project site.
5. Lay sod tight with no open joints or gaps visible, with no overlapping edges and with an allowance for shrinkage. Stagger end joints 12" minimum. Lay sod with long edges perpendicular to primary slope. Do not stretch sod pieces. Spread lawn area soil over any exposed edges. Keep edges moistened as required or as directed. The Contractor must ensure that the soil base immediately ahead of each sod layer is moist.
6. When piecing sod, do not use pieces smaller than 1 square foot.
7. Install sod with top flush with adjacent curbs, sidewalks, drains and seeded areas.
8. Sod must be rolled with a two hundred (200) pound roller after installation to ensure proper contact between soil and sod. On slopes 5:1 or less, roll with light lawn roller to ensure contact with subgrade. Final rolling must provide a uniform surface.

- B. Water sod thoroughly with a fine spray immediately after laying. Sod lawn area must be heavily watered, flooded, and saturated for a period of 7 days to trigger active root growth.

- C. Flagging, fencing, and warning signs or other appropriate method of sod lawn protection must be installed and remain for a minimum of 4 weeks. Do not remove flagging and warning signs until sod is firm to walk on and sod is not in a saturated condition.
- D. Water: Watering must be accomplished once a week from March through September. At a minimum, a uniform application of one (1) inch of water must be required over all lawn areas each week. The Contractor must be prepared to water more frequently should very dry conditions persist and based on input from Owner.
- E. Mowing:
 - 1. The Contractor must be responsible for mowing all sod lawn areas.
 - a. Mow whenever lawn reaches an average height of 3 inches. The cutting height must be two (2) inches with all cuttings retained using mulching mower equipment.
 - b. Mowing must be done by an acceptable "reel" type mower. Power driven equipment must not cause ruts or deformation of improved areas. Sickle type grass cutters will be permitted only on slopes of drainage ditches, berms, or other rough areas. The equipment and tools must be in good repair at all times and maintained so that a clean, sharp cut of the grass results. Each mowing must be considered as one (1), complete coverage of all lawn grass areas to be mowed within a defined area.
 - c. Trimming around traffic facilities, structures, curbs, tree pits, planting areas, or other features extending above ground must be accomplished by use of tools that achieve a neat and uniform appearance. Edging along curb and sidewalk interfaces must be incidental to mowing and must be provided by the Contractor to control encroachment of grass.
 - d. Grass cutting equipment must be operated in such a manner and equipped with suitable guards as to avoid throwing rocks or debris onto the pedestrian and vehicular traffic areas or onto permeable pavement areas. Equipment that pulls or rips the grass or damages the turf in any manner will not be allowed. The Owner will be the sole judge of the adequacy of the equipment and methods of use. The Contractor must return and disperse all lawn clippings to the lawn from all pedestrian and vehicular traffic areas, and from any other improvement.
- F. Sod Lawns will be deemed physically complete by the Owner when uniform, healthy, green, and vigorous growth is evident, with no dry or dead spots larger than 3 square inches, and after the third mowing has occurred. Upon physical completion, temporary flagging, warning signs, and other lawn protection measures must be removed.

3.09 DOWNED LOG INSTALLATION

- A. Install per detail shown on the Contract Documents.

- B. All downed logs shall be field staked for owner's rep approval prior to installation. Locations shown on the Contract Documents are approximate. Placement and orientation of each log shall be as directed by the owner's representative on site.
- C. All void space surrounded by the logs shall be packed tightly with planting soil or native topsoil such that 1/3 the diameter of the log is continuously below grade and will be held in place by friction such that physical disturbance of people walking on it will not dislodge, shift, or alter the position of the log.

3.10 CLEAN UP

- A. Perform cleaning during installation of the landscape work. Water, dirt, debris, and rubbish to be kept off of all paved areas, pathways, and permeable pavements. Wash clean all paved areas.
- B. Upon completion of landscape work, all excess materials, soil, debris, and equipment must be removed from the site.
- C. Repair any damage resulting from landscape work at Contractor's expense.
- D. Planting areas immediately adjacent to walks, curbs, pavements, driveways, and other improvement must be compacted and raked to accommodate the depth of mulch cover, with the mulch surface flush with the surface of adjacent improvement. Planting beds must have a fine, even grade around all plants.
- E. Remove all metal, wood, and concrete debris, protective wrappings and coverings, and shipping materials from the project site. Remove all residues, repair all stains, scuffs, abrasions, and marks from boulders.
- F. Leave project in first quality condition.

3.11 SUBSTANTIAL AND PHYSICAL COMPLETION

- A. Inspection to determine Substantial and Physical Completion of planted areas will be made by the Owner's Representative, upon the Contractor's request. Provide notification at least 5 working days before requested inspection date.
 - 1. Planted areas will be accepted provided all requirements, including the maintenance have been complied with and plant materials are alive and in a healthy, vigorous condition.
- B. After the Guarantee Period, as defined, and upon Final Acceptance, the Owner must assume all plant maintenance.

3.12 FINAL ACCEPTANCE

- A. Final acceptance of all landscaping work described in this Specification section, with the exclusion of possible replacements of plant materials under the Guarantee Period, must be made by the Owner's Representative and/or approved representative of the Owner to determine 100% completion and acceptance of the Contract work. This review must be made upon written request to the Owner's Representative no less than 48 hours prior to the anticipated date of inspection.
- B. Should additional substantial completion, physical completion, or final acceptance review(s) be required by the Owner's Representative due to the failure of the contractor to have the entire project landscape work ready for substantial completion, physical completion, or final acceptance review(s), the contractor must pay to the Owner's Representative the sum of \$150.00 per hour and the actual cost of expenses for each additional review.

END OF SECTION

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APPENDIX A – PREVAILING WAGE RATES

PREVAILING WAGES

The State of Washington prevailing wage rates for King County apply to work performed under this contract. The applicable prevailing wage rates may be found at the following website address of the Department of Labor and Industries:

<https://secure.lni.wa.gov/wagelookup/>

Based on the bid submittal date for this project, the applicable date for prevailing wages for this project is December 14, 2021. A copy of the applicable prevailing wage rates are also available for viewing at the City of Mercer Island, Maintenance Department located at 9601 SE 36th Street.

**Washington State Department of Labor and Industries
Policy Statements
(Regarding Production and Delivery of Gravel, Concrete, Asphalt, etc.)**

WAC 296-127-018 Agency filings affecting this section

Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials.

(1) The materials covered under this section include but are not limited to: Sand, gravel, crushed rock, concrete, asphalt, or other similar materials.

(2) All workers, regardless of by whom employed, are subject to the provisions of chapter 39.12 RCW when they perform any or all of the following functions:

(a) They deliver or discharge any of the above-listed materials to a public works project site:

(i) At one or more point(s) directly upon the location where the material will be incorporated into the project; or

(ii) At multiple points at the project; or

(iii) Adjacent to the location and coordinated with the incorporation of those materials.

(b) They wait at or near a public works project site to perform any tasks subject to this section of the rule.

(c) They remove any materials from a public works construction site pursuant to contract requirements or specifications (e.g., excavated materials, materials from demolished structures, clean-up materials, etc.).

(d) They work in a materials production facility (e.g., batch plant, borrow pit, rock quarry, etc.) which is established for a public works project for the specific, but not necessarily exclusive, purpose of supplying materials for the project.

(e) They deliver concrete to a public works site regardless of the method of incorporation.

(f) They assist or participate in the incorporation of any materials into the public works project.

(3) All travel time that relates to the work covered under subsection (2) of this section requires the payment of prevailing wages. Travel time includes time spent waiting to load, loading, transporting, waiting to unload, and delivering materials. Travel time would include all time spent in travel in support of a public works project whether the vehicle is empty or full. For example, travel time spent returning to a supply source to obtain another load of material for use on a public works site or returning to the public works site to obtain another load of excavated material is time spent in travel that is subject to prevailing wage. Travel to a supply source, including travel from a public works site, to obtain materials for use on a private project would not be travel subject to the prevailing wage.

(4) Workers are not subject to the provisions of chapter 39.12 RCW when they deliver materials to a stockpile.

(a) A "stockpile" is defined as materials delivered to a pile located away from the site of incorporation such that the stockpiled materials must be physically moved from the stockpile and transported to another location on the project site in order to be incorporated into the project.

(b) A stockpile does not include any of the functions described in subsection (2)(a) through (f) of this section; nor does a stockpile include materials delivered or distributed to multiple locations upon the project site; nor does a stockpile include materials dumped at the place of incorporation, or adjacent to the location and coordinated with the incorporation.

(5) The applicable prevailing wage rate shall be determined by the locality in which the work is performed. Workers subject to subsection (2)(d) of this section, who produce such materials at an off-site facility shall be paid the applicable prevailing wage rates for the county in which the off-site facility is located. Workers subject to subsection (2) of this section, who deliver such materials to a public works project site shall be paid the applicable prevailing wage rates for the county in which the public works project is located.

[Statutory Authority: Chapter 39.12 RCW, RCW 43.22.051 and 43.22.270. 08-24-101, § 296-127-018, filed 12/2/08, effective 1/2/09. Statutory Authority: Chapters 39.04 and 39.12 RCW and RCW 43.22.270. 92-01-104 and 92-08-101, § 296-127-018, filed 12/18/91 and 4/1/92, effective 8/31/92.]

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CITY OF MERCER ISLAND
**LINCOLN LANDING SHORELINE AND STORMWATER
ENHANCEMENT PROJECT**
DRAFT - DRAINAGE REPORT

Prepared by:



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PND Project No. 154016 – 005.01

October 2021

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1. PROJECT DESCRIPTION

Lincoln Landing Park is a street end park located on the north end of Mercer Island and abuts Lake Washington (addressed as 2100 76th Ave SE; Figure 1).



Figure 1: Vicinity Map and Aerial Photo of Project Limits

The proposed Project includes:

- Renovation of approximately 219 linear feet of highly degraded watercourse channel on west end of the site including a rock-lined channel, new channel substrate step pools, and woody debris. Limits of channel improvements begin at the outlet of the existing culvert under the northern most private driveway on 76th Ave SE and will extend to Lake Washington.
- Maintenance upgrades and improvements to an existing municipal sewer system within the project, including reconfiguration of existing sewer line, demolition, and relocation of a sewer manhole connection.
- Installation of a new stormwater collection, conveyance and treatment system intended to collect and treat site stormwater runoff generated from the driveway access of 76th Ave SE and site parking areas prior to discharging to the improved channel. The outlet pipe from the proposed stormwater system will discharge to the improved channel directly downstream of the existing northern most existing private driveway/culvert.
- Restoration of the shoreline including removal of a concrete bulkhead and a small timber bulkhead, shoreline re-grading to create a shallow-slope beach.
- General site improvements including a new concrete path, lawn, trees and overhanging native vegetation adjacent to the watercourse channel and shoreline.

Overall, this project is meant to improve the lake's water quality and return shoreline to a more natural state.

2. CONDITIONS AND MINIMUM REQUIREMENTS SUMMARY

This report is provided as a summary of all methods and procedures used for analyzing the drainage areas and structures for the proposed Lincoln Landing Shoreline and Stormwater Enhancement Project. This report has been generated in accordance with the standards for new development and redevelopment City of Mercer Island City Code (MICC) 15.19.050 and Washington’s State Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW) 2014 edition. Calculations and supporting documentation are provided in the attached appendices.

Per the requirements of MICC. The Lincoln Landing project is subject to a simplified Stormwater Report because it meets the following threshold requirements:

- This project disturbs less than 1 acres and is not part of a larger common plan of development.
 - The total project area is approximately 0.34 acres
- This project converts less than $\frac{3}{4}$ acre to lawn or landscape areas
 - The project converts 733 sf of hardscape to landscape
- This project will create, add or replace (in any combination) 2,000 sf or greater but less than 5,000 sf of new plus replaced hard surface, or will have a land disturbing activity of 7,000 square or greater.
 - This project results in 2,609 sf of new and replaced hard surface
 - This project consists of 15,420 sf of land disturbing activity.
- This project will not adversely impact a wetland, stream, water of the state, or change a natural drainage course.
 - The direct and indirect effects of the proposed reconstruction will result in a no net loss but would result in a net improvement of critical habitat and buffer of Watercourse A, (HC/PND 2021).

Additionally, the project shall be required to comply with Minimum Requirements #1 through #5 per Volume 1, Chapter 2.4 of the SWMMWW. A summary of which requirements will be required or exempt is provided below.

2.1. Minimum Requirement #1 - Stormwater Site Plan Preparation

This stormwater report and plan have been prepared in accordance with Chapter 1-3 of the SWMMWW.

2.2. Minimum Requirement #2 – Construction Stormwater Pollution Prevention

The project contractor shall prepare and submit a SWPPP as indicated in report section 5 of this report.

2.3. Minimum Requirement #3 – Source Control of Pollution

Per section 6 of this report.

2.4. Minimum Requirement #4 – Preservation of Natural Drainage Systems And Outfalls

Per sections 8.1, 8.2, and 8.3 of this report. All stormwater runoff from the project under the proposed conditions will be discharged to the natural downstream location of Lake Washington and not diverted to or away from any other downstream areas.

2.5. Minimum Requirement #5 – On-Site Stormwater Management

The project site is exempt from Minimum Requirement #7: Flow Control and therefore does not need to achieve the LID performance standard, nor consider bioretention, rain gardens, permeable pavement and full dispersion. The project will use the list approach to meet the On-Site Stormwater Management

requirements; as the project triggers Minimum Requirements 1 through 5, the BMP's in List #1 shall be used to the extent feasible. The applicability of the BMPs in List #1 is discussed below:

2.5.1. LAWN AND LANDSCAPE AREAS:

- **BMP T5.13: Post-Construction Soil Quality and Depth:** This is applicable to the redevelopment. All new grass and landscape surfaces will meet the requirement of this BMP.

2.5.2. ROOFS:

- **There are no new or existing roofs in the project footprint, therefore these BMPs are not applicable.**

2.5.3. OTHER HARD SURFACES:

- **BMP T5.30: Full Dispersion** – This BMP is not applicable as the existing park does not contain natural vegetation or a forested condition to discharge runoff to.
- **BMP T5.15: Permeable Pavements, BMP T5.14A: Rain Gardens, and BMP T7.30: Bioretention Cells, Swales, and Planter Boxes** are not applicable as the project is flow control exempt and the project is located in an area where infiltrating LID facilities are not permitted, per the City of Mercer Island.
- **BMP T5.12: Sheet Flow Dispersion or BMP T5.11: Concentrated Flow Dispersion:** The NPGIS concrete pathway has been graded to avoid concentrating runoff; stormwater will sheet flow off the concrete pathway and into the adjacent lawn. The lawn area meets the criteria for a vegetated flowpath as the lawn area meets the criteria of **BMP T5.20: Post-Construction Soil Quality and Depth**. The vegetated path meets the design guidelines for the BMP as the proposed slopes are less than 20% and a greater than 10-foot-wide vegetated buffer is provided.

2.6. Minimum Requirement #6 – Runoff Treatment

The project site is exempt from minimum requirement #6. However, the Mercer Island Parks and Recreation Department (MIPR) plan to install a new stormwater treatment and conveyance system intended to collect and treat site stormwater which is collected along 76th Ave SE and portions of SE 22nd St and N. Mercer Way. Currently, this stormwater discharges untreated to Lake Washington through the Lincoln Landing site.

2.7. Minimum Requirement #7 – Runoff Treatment

The project is exempt from minimum requirement #7. Furthermore, all stormwater from the project development and contributing hard surfaces discharge directly into Lake Washington. Lake Washington is a flow control exempt receiving water body.

2.8. Minimum Requirement #8 – Minimum Requirement #8 – Wetland Projection

This project is exempt from minimum requirement #8.

2.9. Minimum Requirement #9 – Operation and Maintenance

This project is exempt from minimum requirement #9. However, an operation and maintenance manual for the proposed stormwater treatment system described in Section 2.6 will be provided to the City prior to completion of the project.

3. SITE ANALYSIS – EXISTING CONDITIONS

A topographic survey of the property was conducted and is provided in Appendix A. The property is currently a park with an open lawn space and concrete bulkhead. Topography near the site gently slopes toward the lake (Appendix B Photograph 1). Adjacent properties on either side are small private residences with fences. Dominant land use in the project vicinity is primarily urban and residential.

The park shoreline is bounded by a concrete bulkhead with stairs to allow waterfront access and a timber bulkhead bounds the property to the east. The eastern half of the park is predominantly maintained lawn, with two large trees. The western half of the park is defined by the existing Watercourse A and associated riparian vegetation. Watercourse A is a straightened, u-shaped channel, with cobble substrates and occasional rip rap and concrete debris

Watercourse A is mostly a riffle type habitat and has no wood within the channel. Although fish can access Watercourse A from Lake Washington, the habitat function and value of Watercourse A is low due to the lack of diverse habitat (i.e., meanders, pools, and wood) and riparian shrub layer dominated by non-native vegetation.

3.1. Existing Utilities

Existing utilities along 76th Ave SE and within the Lincoln Landing project site include:

- Gravity sanitary sewer owned by the City of Mercer Island
- King County sewer interceptor line with emergency overflow
- Underground power owned by Puget Sound Energy (PSE)
- Natural gas owned by PSE
- Landscape Irrigation and sprinkler system owned by the City of Mercer Island
- Municipal water supply system owned by the City of Mercer Island
- Stormwater Vault and outfall owned by Washington State Department of Transportation (WSDOT)

3.2. Existing Hydraulic Features

Watercourse A is a straightened, u-shaped channel, with cobble substrates and occasional rip rap and concrete debris and is mostly a riffle type habitat and has no wood within the channel. Although fish can access Watercourse A from Lake Washington, the habitat function and value of Watercourse A is low due to the lack of diverse habitat (i.e., meanders, pools, and wood) and riparian shrub layer dominated by non-native vegetation.

3.3. Existing Site Geology

Per the Geologic Map of Mercer Island (GMMI), the Lincoln Landing project site consists of non-glacial alluvium deposits and Pre-Olympia fine-grained glacial deposits. Additionally, the GMMI indicates that Mercer Island is located within the Seattle Fault Zone, which represents the area where several parallel strands of the Seattle fault have either broken the ground surface or caused deformation of geologic materials. On Mercer Island, evidence for the Seattle fault consists of offset strata and deformation such as sheared, liquefied and folded strata. Additional information regarding the Seattle Fault Zone is included in a copy of the GMMI is presented in Appendix C.

3.4. Existing Site Soils

Soils the project site are mapped as Kitsap silt loam, 2 to 8 percent slopes (KpB) according to the Natural Resources Conservation Service (NRCS) Web Soil Survey (2020). A copy the NRCS soils resource report for the project site is presented in Appendix D.

Per the City of Mercer Island’s Information and Geographic Services – Infiltration and Feasibility Map, the Lincoln Landing site has been designated within a zone where infiltrating and LID facilities are not permitted. A copy of this map is presented in Appendix D.

4. SITE DEVELOPMENT PLAN

The proposed conditions of the project are defined as the fully built-out conditions of the Lincoln Landing project. A summary of land disturbing activities is presented in section 2 of this report and is presented in plan figures in Appendix E. Detailed construction documents of the existing and proposed developed site is presented in the *Lincoln Landing Shoreline and Stormwater Enhancement Project - Issued for Permit* plan set dated February 2021 in Appendix F.

5. CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

Per Section B of the simplified stormwater report, both the full small project construction SWPPP narrative nor a full construction SWPPP is required for the stormwater plan.

However, the onsite contractor will provide a stormwater pollution prevention plan (SWPPP) and a hard copy of the plan will be onsite at all times during construction. Any proposed SWPPP plans shall be reviewed by the City for compliance prior to implementation.

6. SOURCE CONTROL PLAN

6.1. Temporary Erosion and Sediment Control

The TESC plan includes the use of silt fence, rock stabilized construction access points, tree protection fence, and turbidity curtain. TESC plans and construction notes are provided within the *Lincoln Landing Shoreline and Stormwater Enhancement Project - Issued for Permit* plan set dated February 2021 in Appendix F

6.2. Permanent Erosion and Sediment Control

The new stormwater collection, conveyance and treatment system will collect and treat site stormwater runoff generated from 76th Ave SE and portions of SE 22nd St and N. Mercer Way prior to discharging to the improved channel. The outlet pipe from the proposed stormwater system will discharge to the improved channel directly downstream of the existing northern most private driveway/culvert. The new stormwater treatment vault will be installed within the limits of existing impervious surface.

Improvements to Watercourse A will not impact existing flow conditions upstream of the project limits.

Maintenance for outlet protection at treatment will include inspection and repair as necessary.

7. SPECIAL REPORTS AND STUDIES

The following reports have been utilized in the development of the project stormwater plan. Each report is within the project file and can be provided upon request.

- *Critical Area Study - Lincoln Landing Shoreline and Stormwater Enhancement, Mercer Island, Washington*, prepared by Hart Crowser and PND Engineers, Inc. February 2021.

- *Lincoln Landing Coastal Memo*, prepared by PND Engineers, Inc September 2017.

8. EXISTING SITE HYDROLOGY

There are three separate areas of hydrologic analysis of the Lincoln Landing project:

- **Lincoln Landing Park Site Improvements**
This includes all areas of work within the designated limits of construction for the project
- **Watercourse A**
As described in section 8.2 of this report.
- **76th Ave SE Basin 1**
The areas along 76th Ave SE and portions of SE 22nd St and N. Mercer Way which are tributary to the to the new stormwater treatment and conveyance system to be installed within the project limits

8.1. Off-Site Analysis

All three areas of hydrologic analysis directly discharged to Lake Washington, as such an off-site analysis is not required.

8.2. Lincoln Landing Park Site Improvements – Runoff Hydrology

Under the existing conditions of the Lincoln Landing site, surface water runoff drains to Lake Washington. The eastern half of the park is predominantly maintained lawn, with two large trees. Runoff from this area drains overland via sheet flow to Lake Washington. The western half of the park is defined by the existing Watercourse A and associated riparian vegetation. Runoff from this area is collected within Watercourse A and discharges to Lake Washington.

Under the proposed conditions of the Lincoln Landing site, the surface water runoff will drain directly to Lake Washington. Runoff from the new pathways will be dispersed to the redeveloped lawn areas prior to sheet flowing directly to Lake Washington.

Elements of the Lincoln Landing site within the construction limits are exempt from treatment and flow control requirements. As such, peak discharge calculations for existing and proposed conditions are not included within this analysis.

8.3. Watercourse A – Hydrology

The segment of Watercourse A within the project limits is situated downstream of a large semi-urban drainage basin of 106.1 acres which discharges through the project site directly into Lake Washington.

This segment of Watercourse A within the project limit is a straightened, u-shaped channel, with cobble substrates and occasional rip rap and concrete debris (Appendix B- Photograph 3). Watercourse A is mostly a riffle type habitat and has no wood within the channel. Although fish can access Watercourse A from Lake Washington, the habitat function and value of Watercourse A is low due to the lack of diverse habitat (i.e., meanders, pools, and wood) and riparian shrub layer dominated by non-native vegetation.

Peak runoff calculations for this existing basin were performed using MSGFlood, a continuous runoff model approved by Washington State Department of Ecology. Site improvements proposed for this project will not affect the tributary basin, or existing flow conditions upstream of the project limits. Therefore, pre- and post-developed peak flow rates are considered functionally identical.

These flow rates have been utilized in hydraulic analysis of the proposed Watercourse enhancements. A summary of the design flow rates for this hydrologic watershed is provided in Table 1. The detailed MGSFlood analysis, can be found in Appendix G.

Table 1: Watercourse A – Peak Flow Hydrologic Summary

Return Period	Peak Discharge (cfs)
2-year	27.2
10-year	42.1
25-year	54.8
100-year	75.5

8.4. 76th Ave Se Basin 1 – Runoff Hydrology

Currently, Basin 1 consists of approximately .40 acres of Pollution Generating Impervious Surface (PGIS) which discharges untreated to Lake Washington, including; paved roadway and parking along 76th Ave SE and portions of SE 22nd St and N. Mercer Way. The project results in a net reduction of this basin area by reducing the area of the paved entrance and parking by 652 sf. This reduced area will be converted to lawn and native ground cover. Functionally, this reduces the tributary area of contributing PGIS to .39 acres.

Peak runoff calculations pre- and post-developed conditions for this basin were performed using MSGFlood. These flow rates have been utilized in stormwater conveyance and treatment calculations for the proposed modular wetland treatment system. A summary of the design flow rates for this hydrologic watershed is provided in Table 1. Backup for MGSFlood analysis, can be found in Appendix H.

Table 2: Basin 1 - Pre- and Post-Developed Peak Discharge Summary

Return Period	Pre-Developed Peak Discharge (cfs)	Post-Developed Peak Discharge (cfs)
2-year	.133	.128
10-year	.207	.200
25-year	.247	.239
100-year	.355	.343

9. STORMWATER FLOW CONTROL PLAN

Per MICC, Section 15.09.050, the Lincoln Landing project is exempt from flow control requirements, as it discharges directly into Lake Washington, and meets listed restrictions.

10. STORMWATER TREATMENT PLAN

10.1. Lincoln Landing Park Site Improvements

Per the requirements of SWMMWW, Chapter 2.4, the proposed improvements at the Lincoln Landing project site are exempt from stormwater treatment requirements for redevelopment projects. This includes all work within the project site related to renovation of the degraded watercourse, maintenance upgrades and improvements to the existing sewer system, modifications to existing driveway and parking,

shoreline restoration improvements, and site landscaping/hardscaping improvements. Detailed construction documents of the existing and proposed developed site is presented in the *Lincoln Landing Shoreline and Stormwater Enhancement Project - Issued for Permit* plan set dated February 2021 in Appendix F.

10.2. 76th Ave SE Basin 1 – Stormwater Treatment

A new trench drain, located at the edge of new driveway/parking area will collect and convey stormwater generated in Basin 1 to a new stormwater Modular Wetland treatment vault. The proposed Modular Wetland vault will provide a minimum basic level of treatment for collected runoff prior to discharge to the improved channel directly downstream of the existing northern most existing private driveway/culvert. The Modular wetland system shall be designed in accordance with the following:

- Emerging Technologies approved by the Washington State Department of Ecology (DOE), and allowed per COESMM Volume III, Chapter 13 will be used to provide “Basic Treatment”.
- The water quality design treatment flowrate will be the 91st percentile of the 24 –hour runoff volume as developed by MGSFlood Version 4, an approved continuous simulation runoff model by the Department of Ecology.
- The volume calculations developed using MGSFlood Version 4, utilizes a large open channel as the point of compliance.

A summary of the treatment design parameter information is provided in Table 3. Backup for MGSFlood analysis can be found in Appendix H.

Table 3: Treatment System Summary

System	Inlet/ Outlet Pipe Diameter (in)	Off-Line Treatment Flow Rate (cfs)	Bypass Flow Rate 25/100 Year (cfs)
Modular Wetland A	12	0.03	4.34/6.63

10.3. MAINTENANCE AND OPERATION PLAN

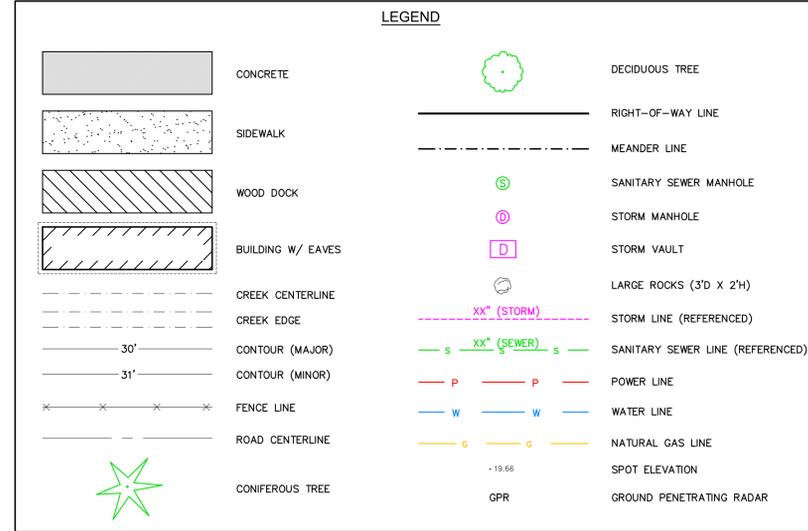
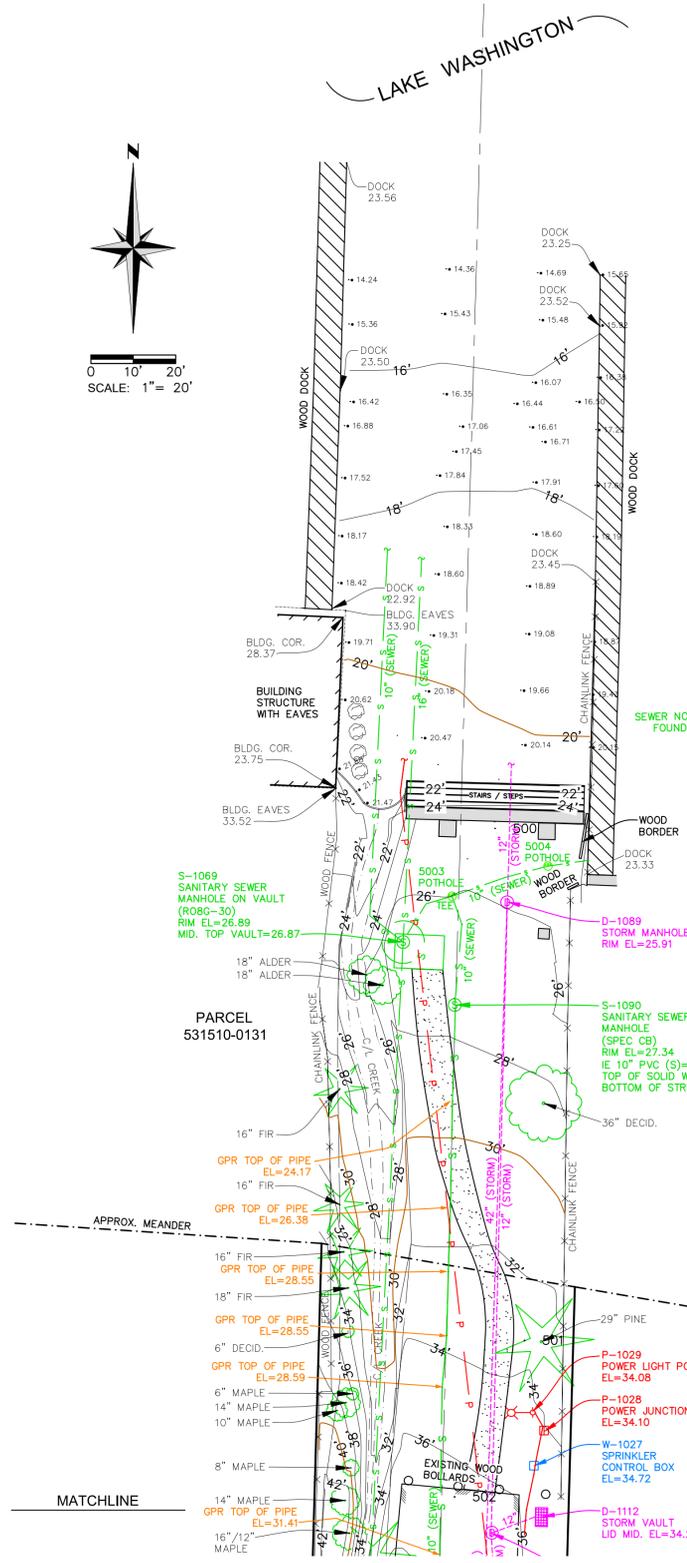
Stormwater treatment facility maintenance will include:

- Proper disposal of any standing water removed during maintenance operations. Any residuals will be disposed of in accordance with current King County Health Department and Department of Ecology requirements.
- Runoff control facilities (including catch basins and associated structures) shall be inspected annually, at a minimum.
- Catch basins shall be cleaned if the depth of deposits is equal to or greater than 1/3 the depth from the basin to the invert of the lowest pipe into or out of the basin.
- Stormwater Treatment vaults shall be inspected according to the manufacturer’s recommendation. Treatment medium shall be cleaned and replaced per manufacturer’s recommendations.
- Stormwater Treatment Vaults shall be inspected according to the Washington State Department of Ecology – General Use Level Designation for Basic, Enhanced, and

APPENDIX A

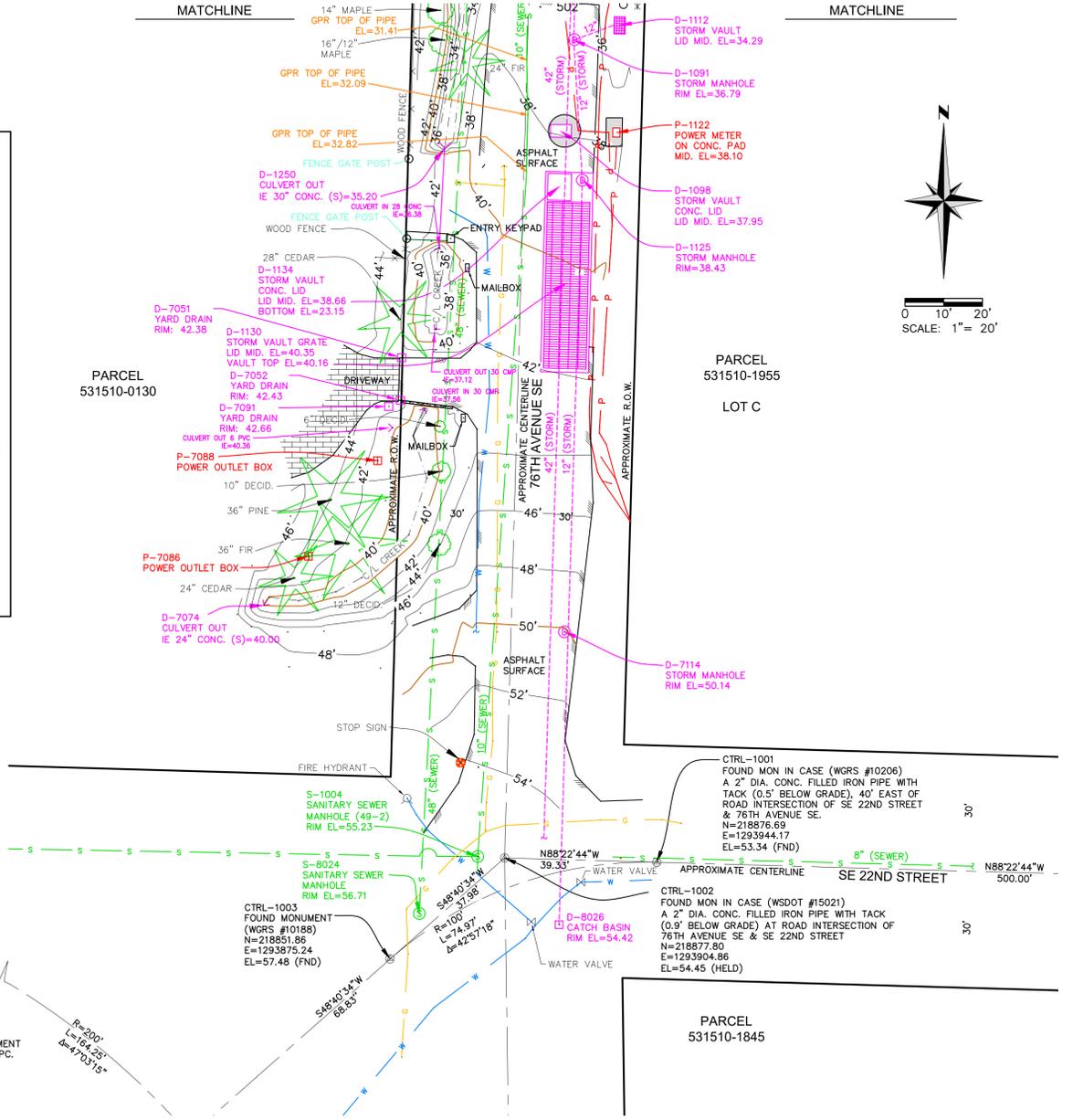
TOPOGRAPHIC SURVEY

WITHIN THE SE 1/4 OF THE SW 1/4 AND THE SW 1/4 OF THE SE 1/4 OF SECTION 01, T24N, R04E, W.M., MERCER ISLAND, IN KING COUNTY, WASHINGTON



PT No. 5003
APS LOCATES No. 1
SANITARY SEWER POT HOLE
N= 219237.61'
E= 1293913.50'
EL= 26.22'
BOTTOM OF PIPE = 19.05'

PT No. 5004
APS LOCATES No. 2
SANITARY SEWER POT HOLE
N= 219244.70'
E= 1293956.12'
EL= 24.87'
BOTTOM OF PIPE = 19.45'

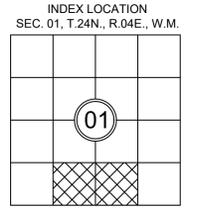


GENERAL NOTES

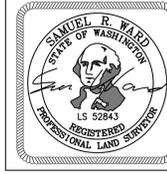
1. THE SOLE PURPOSE OF THIS SURVEY IS TO PRODUCE A TOPOGRAPHIC / HYDROGRAPHIC MAPPING OF LINCOLN LANDING HYDRO & UPLANDS PROPERTY IN MERCER ISLAND, AS ILLUSTRATED HEREON.
2. OUR CLIENT, P/N/D ENGINEERS, INC. HAS NOT FURNISHED APS SURVEY & MAPPING WITH A TITLE REPORT OF THE BOUNDARIES. A COMBINATION OF RECORD OF SURVEYS AND PLATS WERE USED IN CONCERT WITH FOUND MONUMENTATION TO DETERMINE THE BOUNDARIES SHOWN HEREON. ACTUAL OWNERSHIP STATUS AND RIGHT-OF-WAY, MAY VARY.
3. THIS SURVEY WAS BASED ON A RTK VRS SURVEY (USING TOPCON HYPER SR) IN COMBINATION WITH A CONVENTIONAL SURVEY (USING TOPCON DS-203, A 3-SECOND TOTAL STATION). THIS NETWORK MEETS OR EXCEEDS THE ACCURACY STANDARDS SET BY WAC 332-130-090.
4. HORIZONTAL CONTROL IS BASED OF OBSERVED RTK SURVEY AND FOUND RECORD MONUMENTS (#1001, #1002 & #1003).
5. ALL MONUMENTS WERE OCCUPIED OR OBSERVED DURING THE MONTH OF JUNE, 2016, OCTOBER 2018 AND MARCH 2020.
6. ALL MEASURING INSTRUMENTS AND EQUIPMENT USED FOR THIS SURVEY WERE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
7. HORIZONTAL BASIS OF BEARING AND COORDINATES IS BASED ON WASHINGTON STATE PLANE COORDINATE, NORTH ZONE, EXPRESSED IN U.S. FEET.
8. ALL VERTICAL ELEVATIONS ARE BASED ON THE LAKE WASHINGTON SHIP CANAL DATUM. (TO CONVERT TO NAVD88, SUBTRACT 3.22')

SPECIAL SURVEY NOTE

THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF P/N/D ENGINEERS, INC., AND DOES NOT EXTEND TO ANY UNNAMED PARTY WITHOUT EXPRESS RECERTIFICATION BY APS SURVEY & MAPPING AND/OR THE PROFESSIONAL LAND SURVEYOR NAMED HEREON, NAMING SAID PARTY.



SURVEYED BY: TJS/SRW		CHECKED BY: VW/SRW	
DRAWN BY: MAGG/SBM		APPROVED BY: SRW	
DATE	BY	REVISION	CK'D APPR.
10/01/18	SBM	SEWER POT HOLES	TJS TJS
10/24/18	SBM	SEWER DIPS	TJS TJS
04/15/20	MAGG	ADDITIONAL TOPO	SRW SRW

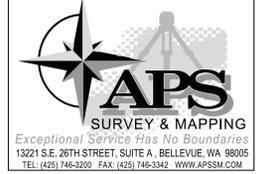


SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF P/N/D ENGINEERING, INC. IN APRIL OF 2020.

Sam Ward 4/21/2020
SAMUEL R. WARD, PLS DATE

STATE OF WASHINGTON CERTIFICATE NO. 52843



TOPOGRAPHIC AND HYDROGRAPHIC MAPPING			
LINCOLN LANDING HYDRO & UPLANDS			
FOR P/N/D ENGINEERING, INC.			
MERCER ISLAND	WASHINGTON		
DWN. BY: MG/SM/SRW	CHKD. BY: VW/SRW	SURV. BY: TJS/SRW	JOB NO.: 1081029
DATE: APRIL 2020	SCALE: 1" = 20'	DWG. NAME: 1081029T (2108).DWG	

SHEET
1
OF
1

APPENDIX B

SITE PHOTOGRAPHY



Photograph 1. Lincoln Landing Park facing North towards the water. Watercourse A on the left.



Photograph 2. Concrete stepped bulkhead and shoreline substrates.



Photograph 3. Watercourse A and riparian vegetation facing north.

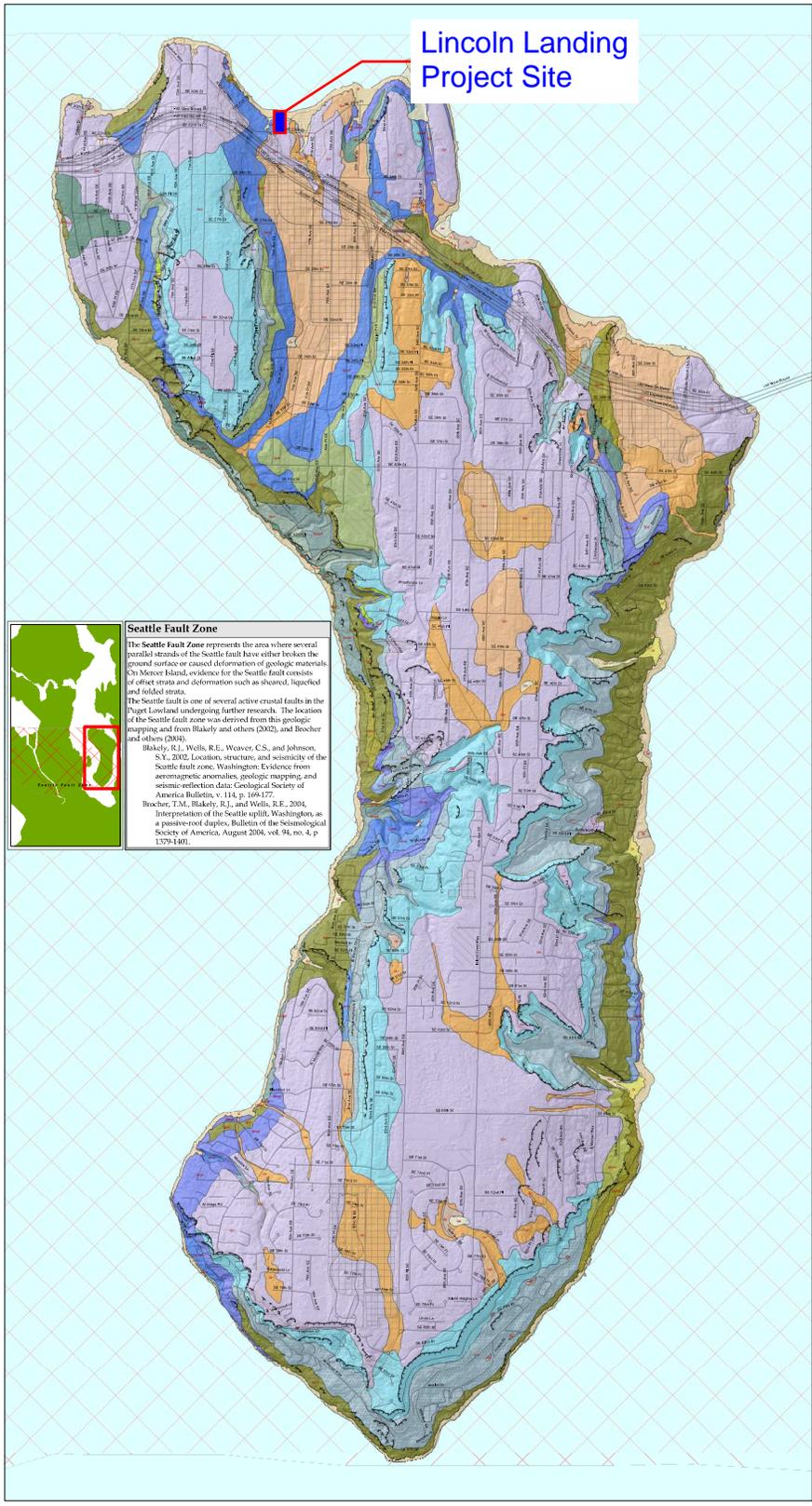


Photograph 4. Confluence of Watercourse A and Lake Washington facing south.

APPENDIX C

GEOLOGIC MAP OF MERCER ISLAND

Lincoln Landing Project Site



Seattle Fault Zone

The Seattle Fault Zone represents the area where several parallel strands of the Seattle fault have either broken the ground surface or caused deformation of geologic materials. On Mever Island, evidence for the Seattle fault consists of offset strata and deformation such as sheared, isopach and folded strata.

The Seattle fault is one of several active crustal faults in the Puget Lowland undergoing further research. The location of the Seattle fault zone was derived from this geologic mapping and from Blakely and others (2002), and Brocher and others (2004).

Blakely, R.J., Wells, R.E., Weaver, C.S., and Johnson, S.Y., 2002. Location, structure, and kinematics of the Seattle fault zone, Washington: Evidence from aeromagnetic anomalies, geologic mapping, and seismic-reflection data. Geological Society of America Bulletin, v. 114, p. 169-177.

Brocher, T.M., Blakely, R.J., and Wells, R.E., 2004. Interpretation of the Seattle uplift, Washington, as a passive-root duplex. Bulletin of the Seismological Society of America, August 2004, vol. 94, no. 4, p. 1379-1400.

Geologic Units	
Nonglacial Deposits (Holocene)	
Qp - Peat	Qm - Mass wastage deposits
Ql - Lake deposits	Qk - Landslide deposits
Qw	mi - Modified land
Qf - Fan deposits	af - Artificial fill
Qd - Alluvium	gr - Graded Land
	SFZ - Seattle Fault Zone
Deposits of Fraser Glaciation (Pleistocene)	
Qv1 - Vashon recessional outwash deposits	
Qv1 - Vashon recessional lacustrine deposits	
Qv1c - Vashon recessional coarse-grained lacustrine deposits	
Qv1 - Vashon ice-contact deposits	
Qv1 - Vashon subglacial till	
Qv1a - Vashon advance outwash	
Qv1c - Lawton Clay	
Older Glacial and Nonglacial Deposits (Pleistocene)	
Qp1h - Pre-Fraser nonglacial deposits	
Qp1b - Olympia beds	
Qp1c - Pre-Olympia fine-grained deposits	
Qp1c - Pre-Olympia coarse-grained deposits	
Qp1g - Pre-Olympia glacial deposits	
Qp1g - Pre-Olympia coarse-grained glacial deposits	
Qp1g - Pre-Olympia fine-grained glacial deposits	
Qp1g - Pre-Olympia glacial till	
Qp1g - Pre-Olympia glacial diamict	
Qp1n - Pre-Olympia nonglacial deposits	
Qp1nc - Pre-Olympia coarse-grained nonglacial deposits	
Qp1nf - Pre-Olympia fine-grained nonglacial deposits	

Geologic Map of Mercer Island, Washington

by Kathy G. Troost & Aaron P. Wisler
October 2006

0 0.25 0.5 Miles
0 0.5 1 Kilometers
1:12,000

APPENDIX D

EXISTING SITE SOILS DATA



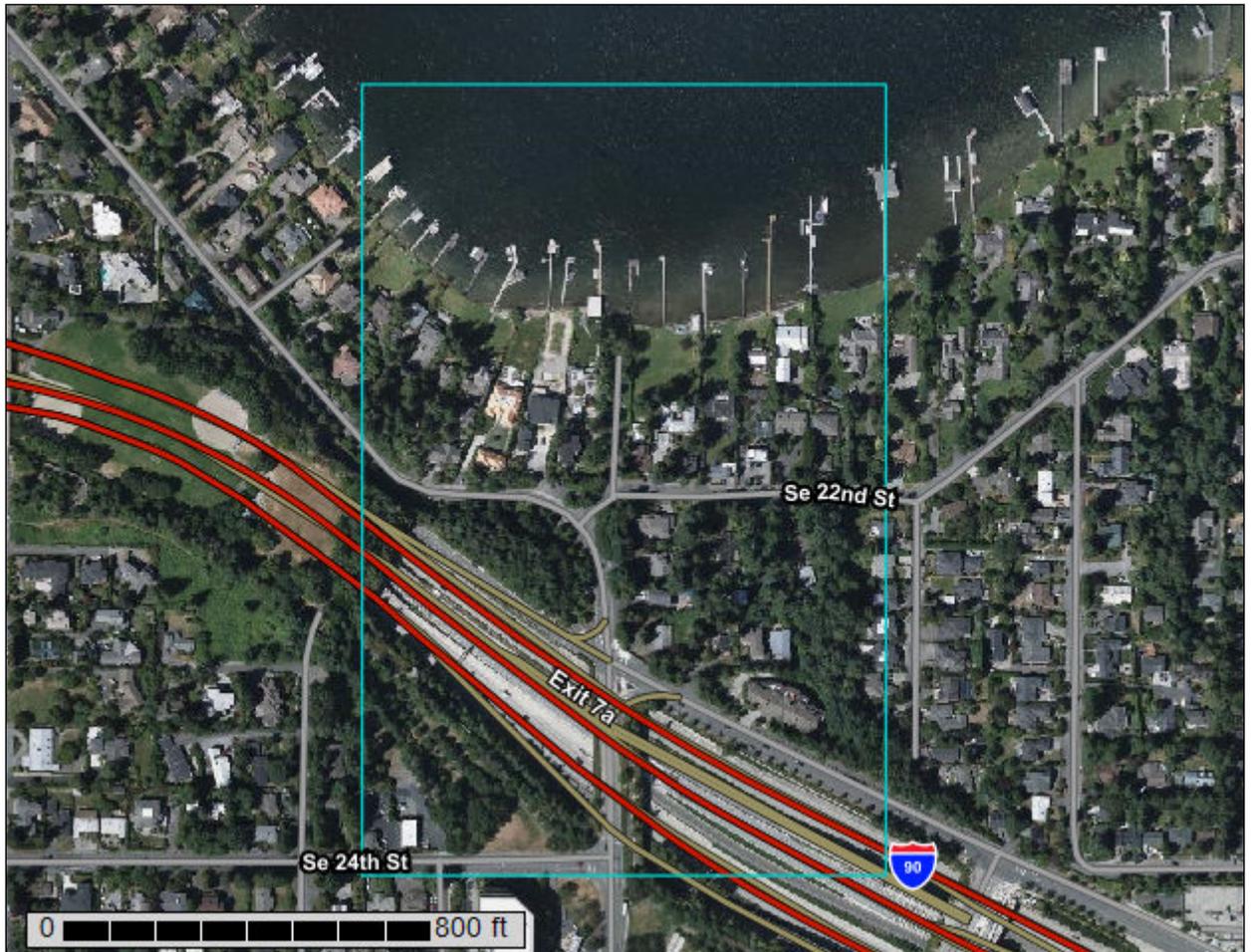
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for King County Area, Washington



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

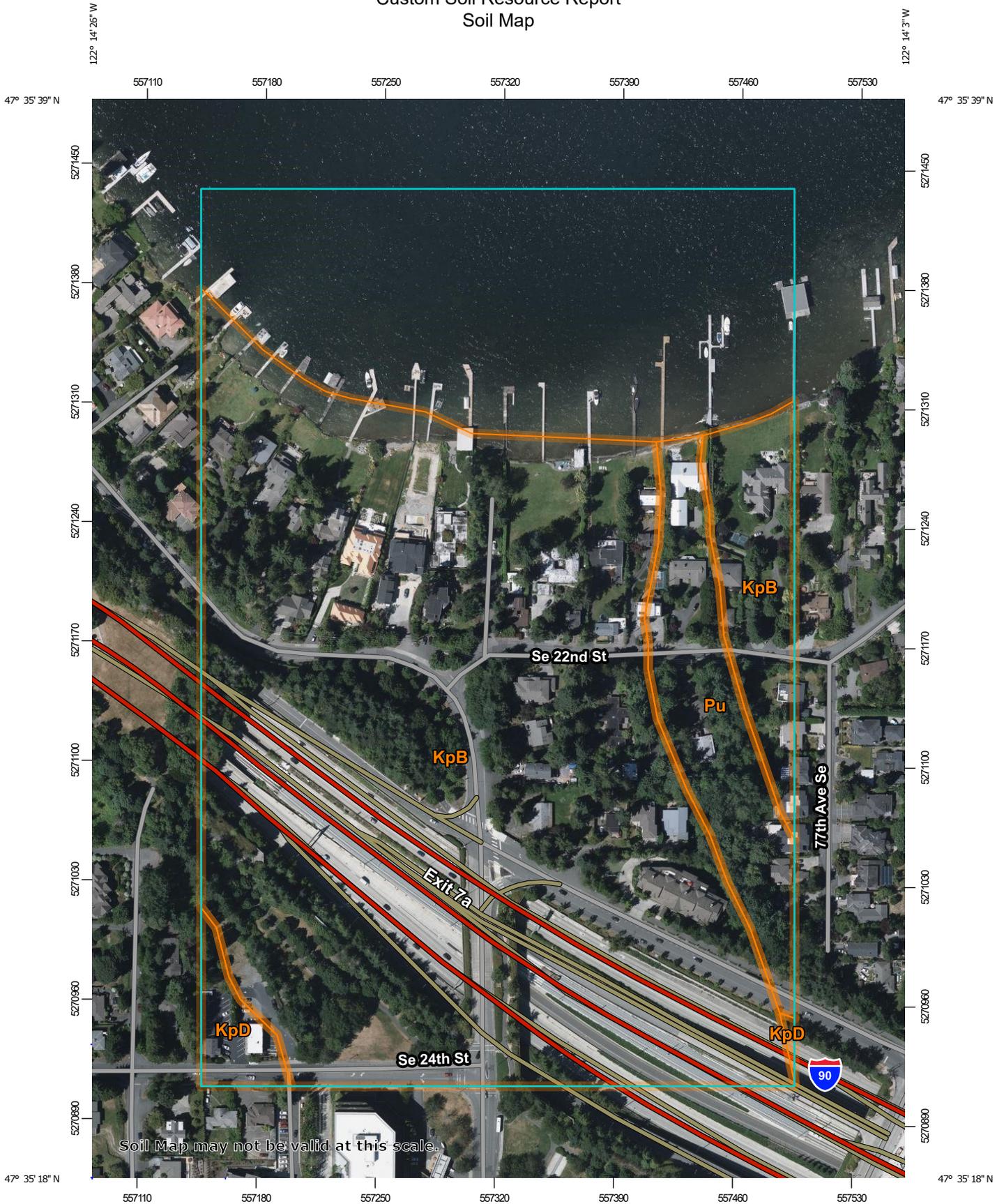
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

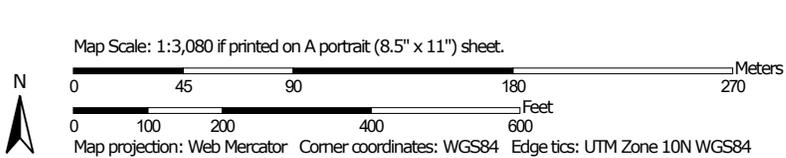
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington
 Survey Area Data: Version 16, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 6, 2020—Jul 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KpB	Kitsap silt loam, 2 to 8 percent slopes	30.5	66.9%
KpD	Kitsap silt loam, 15 to 30 percent slopes	0.7	1.6%
Pu	Puget silty clay loam	3.2	6.9%
Totals for Area of Interest		45.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

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delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

King County Area, Washington

KpB—Kitsap silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1hmt9
Elevation: 0 to 590 feet
Mean annual precipitation: 37 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 160 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kitsap and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kitsap

Setting

Landform: Terraces
Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Forage suitability group: Soils with Few Limitations (G002XN502WA)
Other vegetative classification: Soils with Few Limitations (G002XN502WA)
Hydric soil rating: No

Minor Components

Alderwood

Percent of map unit: 10 percent
Hydric soil rating: No

Bellingham

Percent of map unit: 3 percent
Landform: Depressions

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Hydric soil rating: Yes

Tukwila

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Seattle

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

KpD—Kitsap silt loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 1hmtc

Elevation: 0 to 590 feet

Mean annual precipitation: 37 inches

Mean annual air temperature: 50 degrees F

Frost-free period: 160 to 200 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Kitsap and similar soils: 97 percent

Minor components: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kitsap

Setting

Landform: Terraces

Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 40 inches: silt loam

H3 - 40 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

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Hydrologic Soil Group: C

Forage suitability group: Sloping to Steep Soils (G002XN702WA)

Other vegetative classification: Sloping to Steep Soils (G002XN702WA)

Hydric soil rating: No

Minor Components

Tukwila

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Seattle

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Bellingham

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Pu—Puget silty clay loam

Map Unit Setting

National map unit symbol: 1hmtt

Elevation: 10 to 650 feet

Mean annual precipitation: 35 to 55 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 180 to 200 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Puget and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Puget

Setting

Landform: Flood plains

Parent material: Recent alluvium

Typical profile

H1 - 0 to 7 inches: silty clay loam

H2 - 7 to 45 inches: silty clay loam

H3 - 45 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

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Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: NoneFrequent

Frequency of ponding: Frequent

Available water capacity: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Forage suitability group: Wet Soils (G002XN102WA)

Other vegetative classification: Wet Soils (G002XN102WA)

Hydric soil rating: Yes

Minor Components

Woodinville

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

Snohomish

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: Yes

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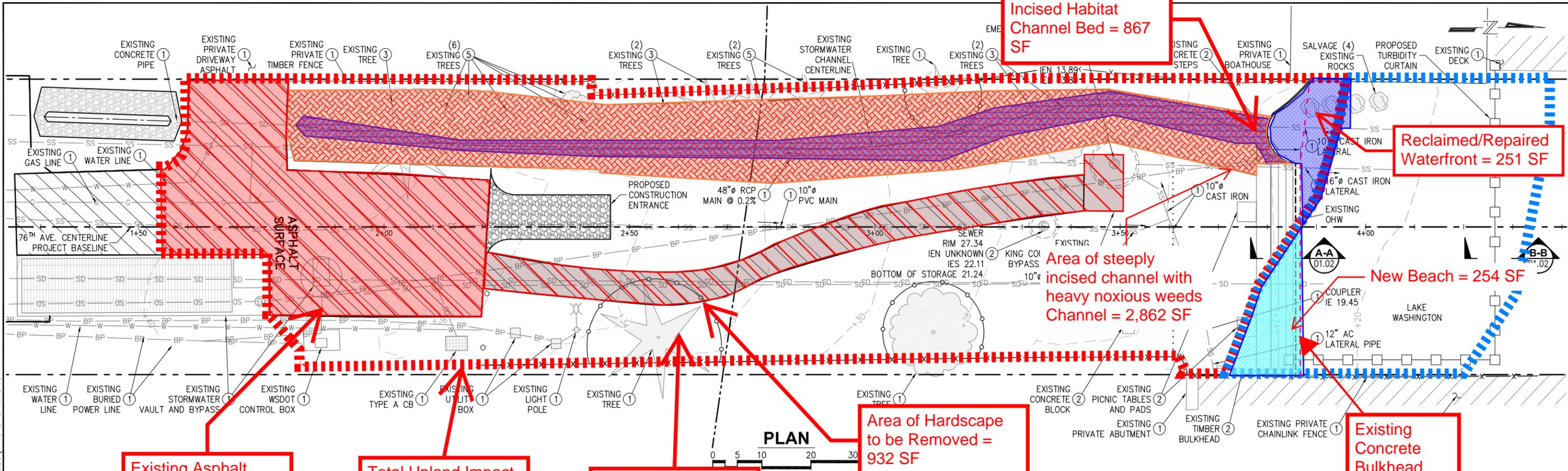
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APPENDIX E

SITE DEVELOPMENT PLAN

8/14/20_CW1EST
 J:\2017 PROJECT FILES\174048 - LINCOLN LANDING STREET & PARK\G. DRAWINGS\2020 FINAL DESIGN\90% DESIGN - AUGUST 2020\174048-D1.01.DWG



Existing Asphalt Driveway and Parking Area to be removed = 2035 SF

Total Upland Impact Area = 12,268 SF

Total Existing Green Space (including noxious weed area) Area = 8434 SF

Area of Hardscape to be Removed = 932 SF

Area of Observed Incised Habitat Channel Bed = 867 SF

Area of steeply incised channel with heavy noxious weeds Channel = 2,862 SF

Reclaimed/Repaired Waterfront = 251 SF

New Beach = 254 SF

Existing Concrete Bulkhead and Steps to be removed = 375 SF

HORIZONTAL BASIS OF BEARING AND COORDINATE, NORTH ZONE, EXPRESS
 ALL VERTICAL ELEVATIONS ARE BASED ON THE LAKE WASHINGTON SHIP CANAL DATUM. (TO CONVERT TO NAVD88, SUBTRACT 3.22')

- DEMOLITION NOTES:**
- ① TO REMAIN.
 - ② DEMOLISH AND REMOVE.
 - ③ REMOVE TREE AND SALVAGE TRUNK BANK STABILIZATION POOLING LOGS.
 - ④ DEMOLISH PIPE. BYPASS FLOW VIA PUMP DURING CONSTRUCTION.
 - ⑤ TOP TREE 25' ABOVE GROUNDLINE, SNAG TO REMAIN. STUB CUTS SHALL RECEIVE CORONET PRUNE FOR NATURAL APPEARANCE. GIRDLE SHAGS AT BASE TO PREVENT FURTHER GROWTH.
 - ⑥ ENCASE PIPE IN CDF TO PROTECT EXISTING SEWER PIPE.
- EXISTING ASPHALT TO BE REMOVED.

LEGEND:

---	76 TH AVE. CENTERLINE	---	IRRIGATION LINE
---	RIGHT-OF-WAY LINE	---	LINE
---	STORMWATER CHANNEL CENTERLINE	---	LINE
---	STORMWATER CHANNEL	---	LINE
---	STORMWATER LINE	---	LINE
---	STORMWATER MANHOLE	---	LINE
---	SANITARY SEWER LINE	---	LINE
---	SANITARY SEWER MANHOLE	---	LINE
---	BURIED POWER LINE	---	LINE
---	TREES	---	LINE
---	FENCE	---	LINE
---	CONTOUR (MAJOR)	---	LINE
---	CONTOUR (MINOR)	---	LINE
---	PROPOSED TURBIDITY CURTAIN	---	LINE
---	TREE PROTECTION FENCE	---	LINE

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REVISIONS		
REV	DATE	DESCRIPTION

ISSUED FOR PERMIT

PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT

TITLE: EXISTING CONDITIONS, DEMOLITION, AND TESC PLAN

DESIGNED BY: CR	PROJECT NO: 174048	SHEET NO:
DRAWN BY: DM	DATE: AUGUST 2020	D1.01
CHECKED BY: CW	SCALE: NOTED	

Total Upland Impact Area = 12,485 SF

Area of Proposed Habitat Channel = 2,044 SF

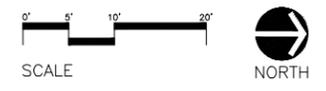
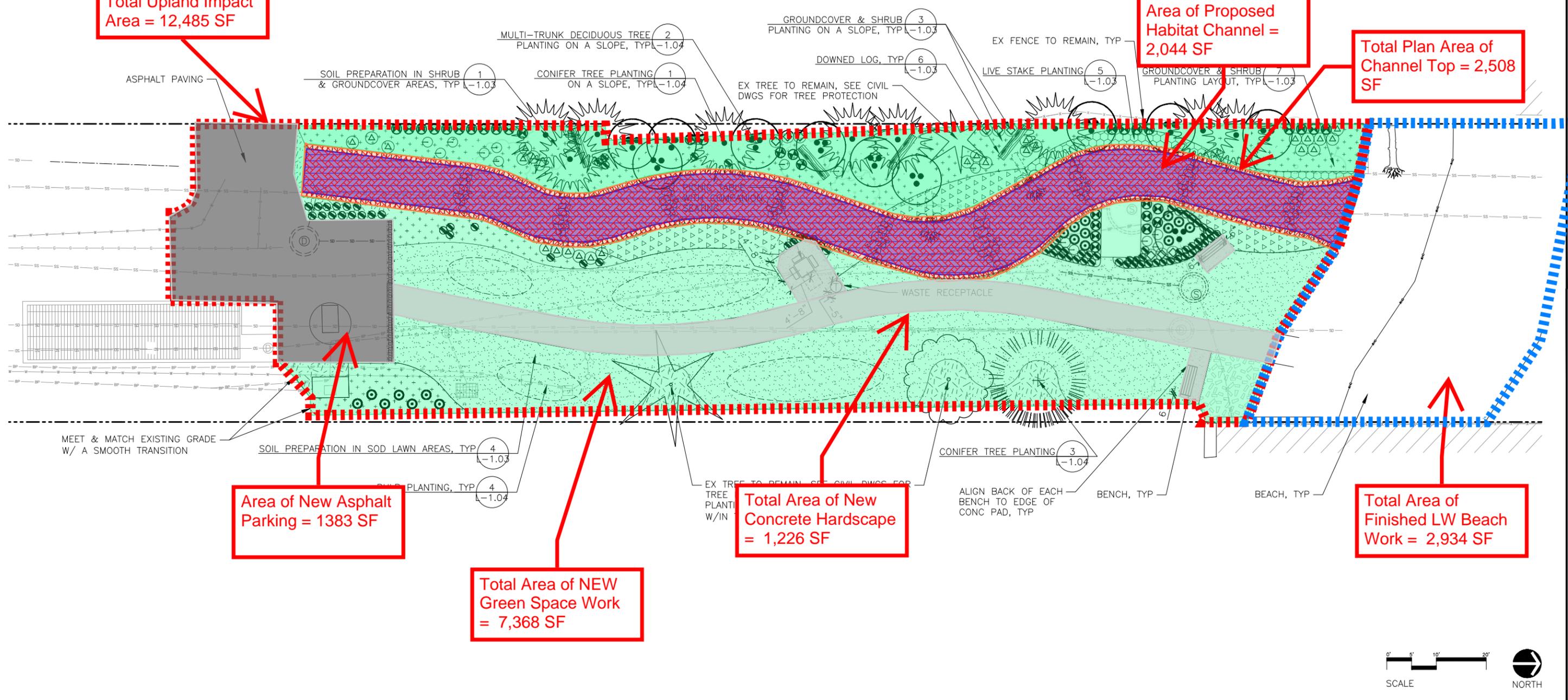
Total Plan Area of Channel Top = 2,508 SF

Area of New Asphalt Parking = 1383 SF

Total Area of NEW Green Space Work = 7,368 SF

Total Area of New Concrete Hardscape = 1,226 SF

Total Area of Finished LW Beach Work = 2,934 SF



9/14/20 MWALTON P: 2017 PROJECTS 2017-13 LINCOLN LANDING\GRAPHICS\AUTOCAD\PLANT-PLANT.DWG

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HBB
LANDSCAPE ARCHITECTURE

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REVISIONS		
REV	DATE	DESCRIPTION

ISSUED FOR PERMIT

LINCOLN LANDING
SHORELINE AND STORMWATER ENHANCEMENT

TITLE: **PLANTING PLAN**

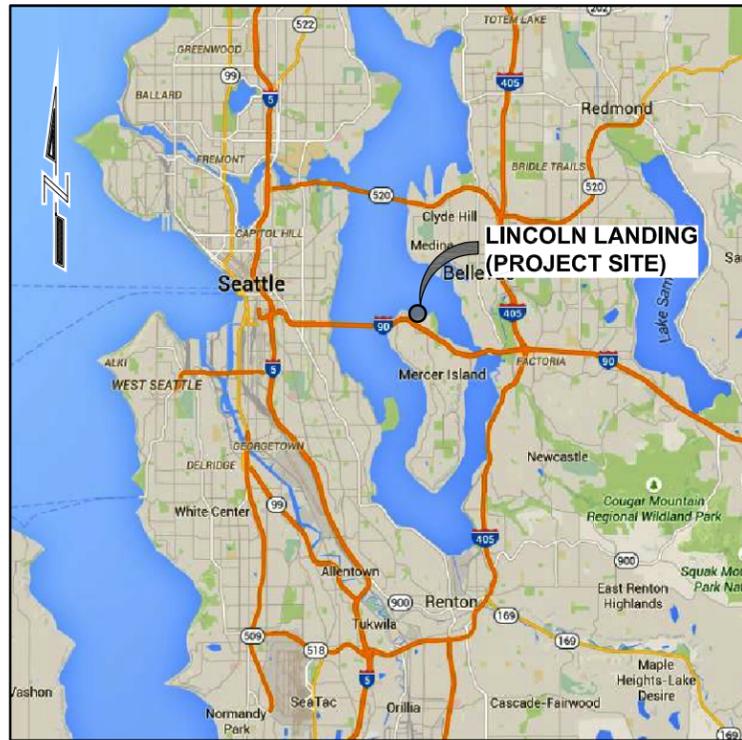
DESIGNED BY: DK	CR PROJECT NO: 174048	SHEET NO: L-1.02
DRAWN BY: MW	DM DATE: AUGUST 2020	16
CHECKED BY: JV	CW SCALE: NOTED	

APPENDIX F

LINCOLN LANDING PROJECT PLANS

LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT

FEBRUARY 2021



VICINITY MAP



AERIAL PHOTO

SHEET INDEX	
TITLE	No.
TITLE SHEET AND DRAWING INDEX	T1.01
EXISTING CONDITIONS, TYPE 1 WATERCOURSE BUFFER PLAN	D1.00
EXISTING CONDITIONS, DEMOLITION, AND TESC PLAN	D1.01
DEMOLITION AND TESC DETAILS	D1.02
GRADING AND CONTROL PLAN	C1.01
GRADING AND SURFACING DETAILS	C1.02
BEACH DETAILS	C1.03
STORMWATER PLAN	C2.01
RESTORED TYPE 1 WATERCOURSE PROFILE	C2.02
STORMWATER DETAILS	C2.03
RESTORED TYPE 1 WATERCOURSE DETAILS	C2.04
RESTORED TYPE 1 WATERCOURSE DETAILS	C2.05
SEWER DETAILS	C3.01
PLANTING SCHEDULE, LEGEND, ABBR, NOTES AND FURNISHINGS LEGEND	L1.01
PLANTING PLAN	L1.02
PLANTING DETAILS	L1.03
PLANTING DETAILS	L1.04

ISSUED FOR PERMIT

PROJECT:		LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT	
TITLE:		TITLE SHEET AND DRAWING INDEX	
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
			T1.01

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REVISIONS		
REV	DATE	DESCRIPTION

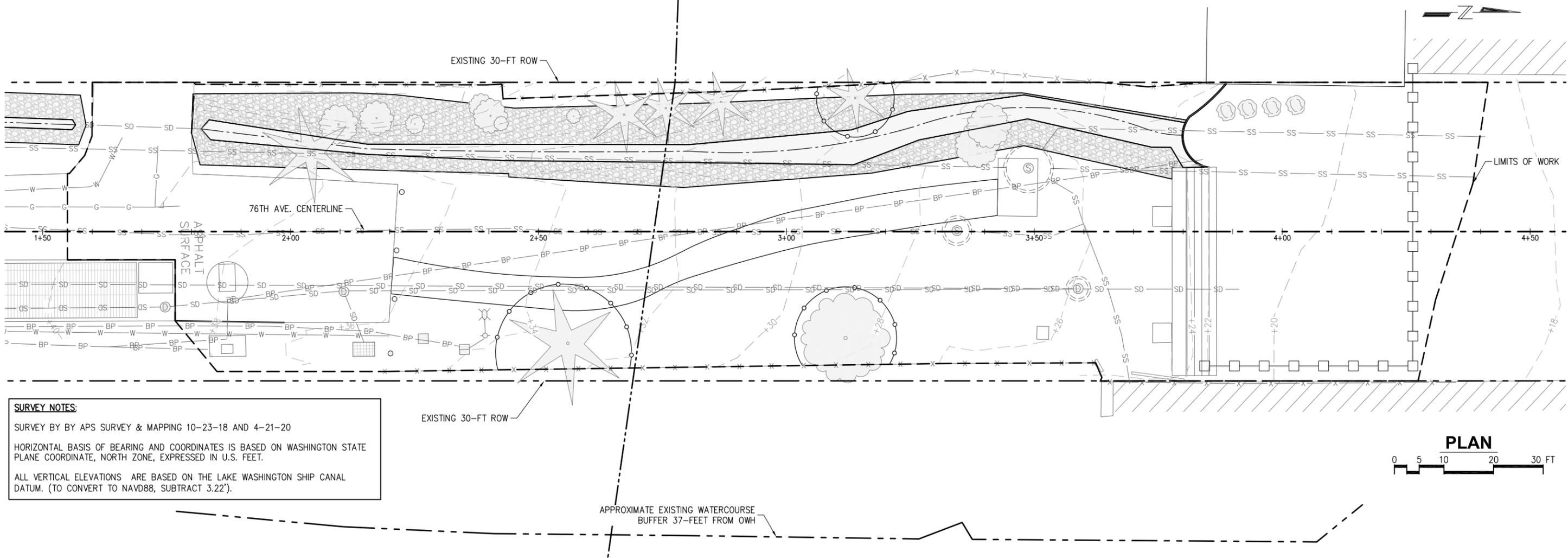
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LEGEND:

---	76 TH AVE. CENTERLINE	—W—	PVC IRRIGATION LINE
- - -	RIGHT-OF-WAY LINE	—G—	GAS LINE
---	WATERCOURSE CHANNEL CENTERLINE	—BP—	BURIED POWER LINE
	WATERCOURSE CHANNEL	⊙	TREES
—SD—	STORMWATER LINE	—X—	FENCE
⊙	STORMWATER MANHOLE	—+20—	CONTOUR (MAJOR)
—SS—	SANITARY SEWER LINE	—+22—	CONTOUR (MINOR)
⊙	SANITARY SEWER MANHOLE	□	PROPOSED TURBIDITY CURTAIN
		○	TREE PROTECTION FENCE

APPROXIMATE EXISTING WATERCOURSE BUFFER 37- FEET FROM OWH



SURVEY NOTES:
 SURVEY BY BY APS SURVEY & MAPPING 10-23-18 AND 4-21-20
 HORIZONTAL BASIS OF BEARING AND COORDINATES IS BASED ON WASHINGTON STATE PLANE COORDINATE, NORTH ZONE, EXPRESSED IN U.S. FEET.
 ALL VERTICAL ELEVATIONS ARE BASED ON THE LAKE WASHINGTON SHIP CANAL DATUM. (TO CONVERT TO NAVD88, SUBTRACT 3.22').



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REVISIONS		
REV	DATE	DESCRIPTION

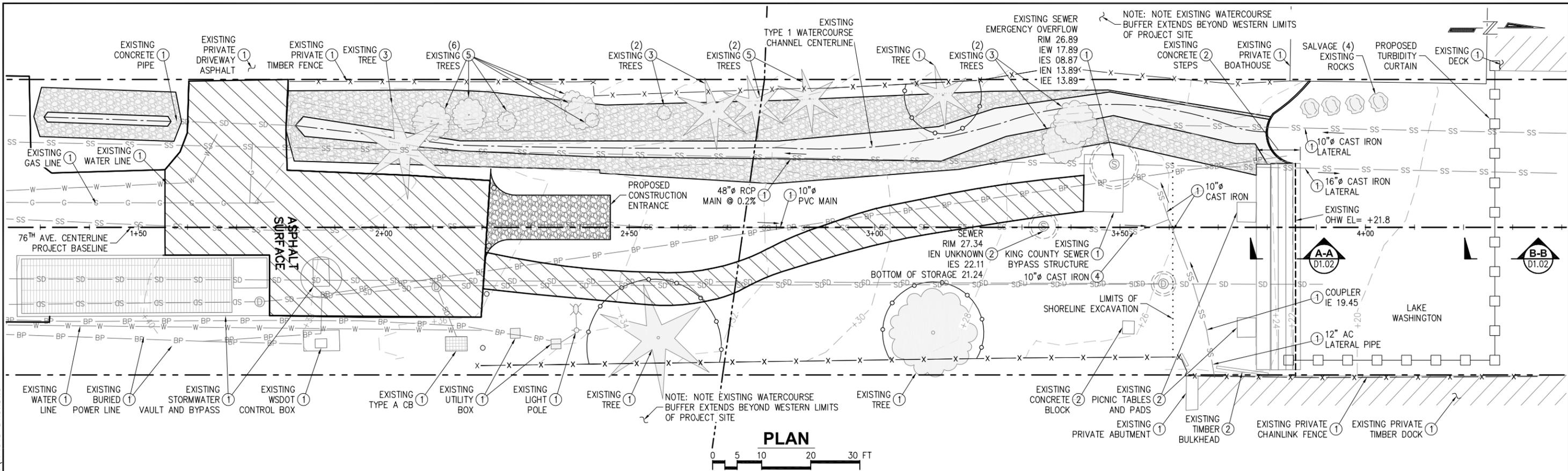
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PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT

TITLE: EXISTING CONDITIONS - TYPE 1 WATERCOURSE BUFFER PLAN

DESIGNED BY:	CR	PROJECT NO:	174048	SHEET NO:
DRAWN BY:	DM	DATE:	FEBRUARY 2021	D1.00
CHECKED BY:	CW	SCALE:	NOTED	

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SURVEY NOTES:

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HORIZONTAL BASIS OF BEARING AND COORDINATES IS BASED ON WASHINGTON STATE PLANE COORDINATE, NORTH ZONE, EXPRESSED IN U.S. FEET.

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DEMOLITION NOTES:

- ① TO REMAIN.
- ② DEMOLISH AND REMOVE.
- ③ REMOVE TREE AND SALVAGE TRUNK BANK STABILIZATION POOLING LOGS.
- ④ DEMOLISH PIPE. BYPASS FLOW VIA PUMP DURING CONSTRUCTION.
- ⑤ TOP TREE 25' ABOVE GROUNDLINE, SNAG TO REMAIN. STUB CUTS SHALL RECEIVE CORONET PRUNE FOR NATURAL APPEARANCE. GIRDLE SHAGS AT BASE TO PREVENT FURTHER GROWTH.
- ⑥ ENCASE PIPE IN CDF TO PROTECT EXISTING SEWER PIPE.

EXISTING ASPHALT TO BE REMOVED.

LEGEND:

---	76 TH AVE. CENTERLINE	—W—	PVC IRRIGATION LINE
- - -	RIGHT-OF-WAY LINE	—G—	GAS LINE
---	WATERCOURSE CHANNEL CENTERLINE	—BP—	BURIED POWER LINE
====	WATERCOURSE CHANNEL	⊙	TREES
—SD—	STORMWATER LINE	—X—	FENCE
⊙	STORMWATER MANHOLE	—+20—	CONTOUR (MAJOR)
—SS—	SANITARY SEWER LINE	—+22—	CONTOUR (MINOR)
⊙	SANITARY SEWER MANHOLE	□	PROPOSED TURBIDITY CURTAIN
		○	TREE PROTECTION FENCE

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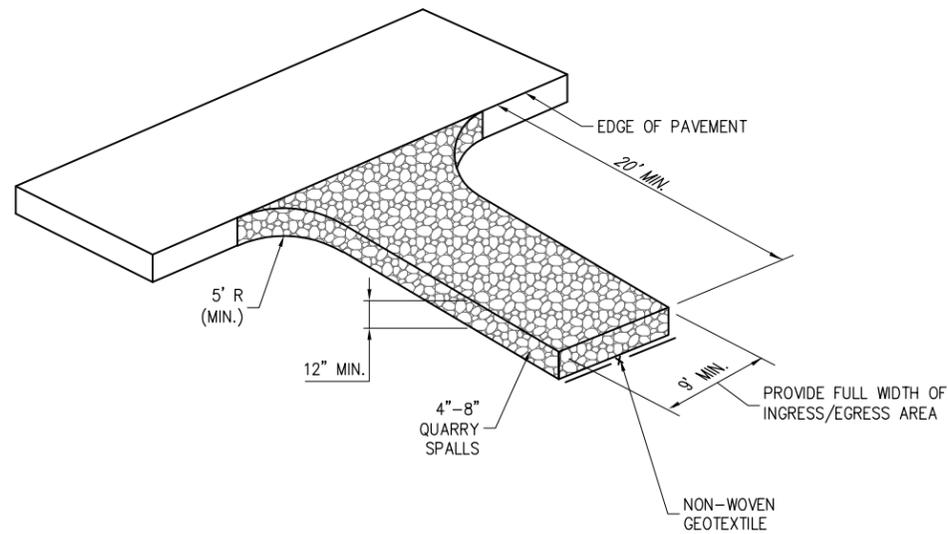
**LINCOLN LANDING
SHORELINE AND STORMWATER ENHANCEMENT**

EXISTING CONDITIONS, DEMOLITION, AND TESC PLAN

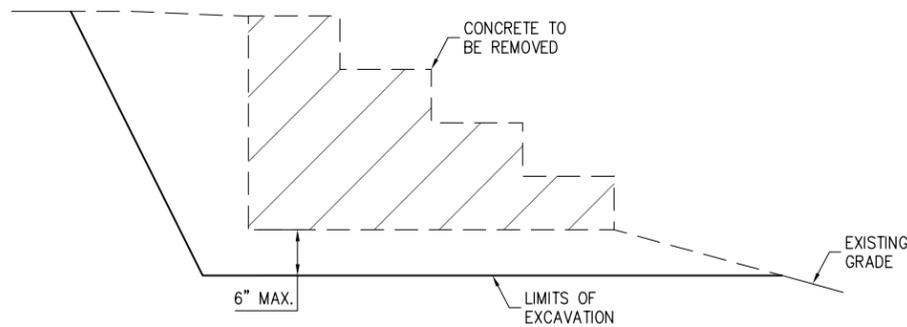
DESIGNED BY:	CR	PROJECT NO:	174048	SHEET NO:	D1.01
DRAWN BY:	DM	DATE:	FEBRUARY 2021		
CHECKED BY:	CW	SCALE:	NOTED		

GENERAL EROSION AND SEDIMENT CONTROL NOTES

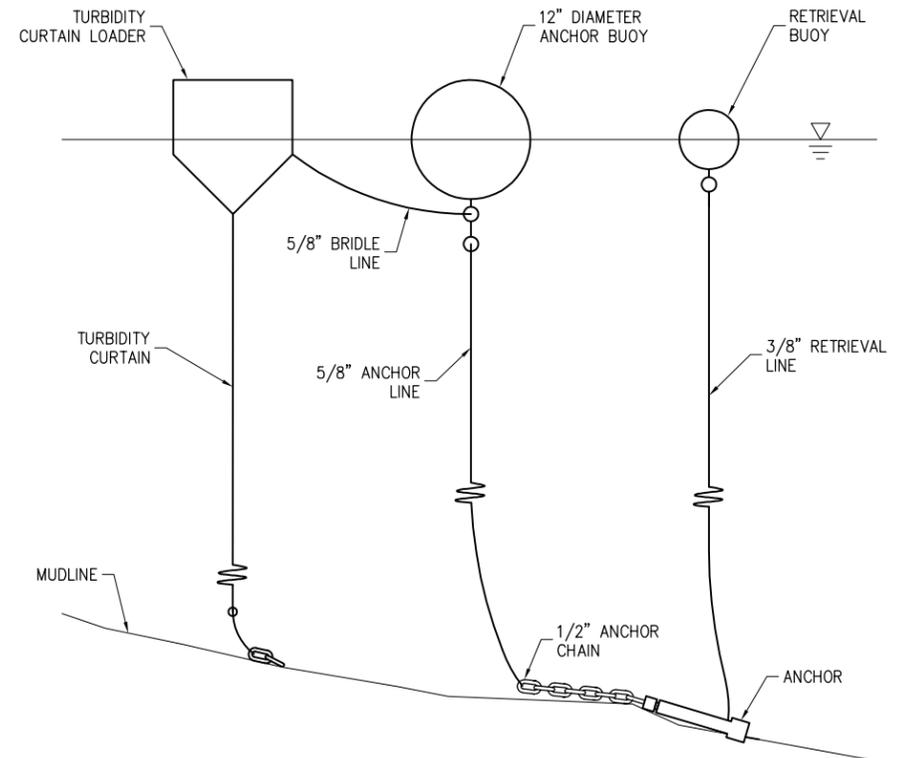
- 1) The implementation of these TESC plans and the construction, maintenance, replacement and upgrading of these TESC facilities is the responsibility of the contractor until all construction is approved.
- 2) The TESC facilities shown on this plan must be constructed prior to or in conjunction with all clearing and grading so as to ensure that the transport of sediment to surface waters, drainage systems, and adjacent properties is minimized.
- 3) The TESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these TESC facilities shall be upgraded as needed for unexpected storm events and modified to account for changing site conditions (e.g., additional sump pumps, relocation of ditches and silt fences, etc.).
- 4) The TESC facilities shall be inspected daily by the Contractor and maintained to ensure continued proper functioning. Written records shall be kept of weekly reviews of the TESC facilities during the wet season.
- 5) Any areas of exposed soils, including roadway embankments, that will not be disturbed for two days during the wet season or seven days during the dry season shall be immediately stabilized with the approved TESC methods (e.g., mulching, plastic covering, etc.).
- 6) Any area needing TESC measures not requiring immediate attention shall be addressed within fifteen (15) days.
- 7) The TESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within forty-eight (48) hours following a storm event.
- 8) At no time shall more than one (1) foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.
- 9) Stabilized construction entrances and roads shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as wash pads, may be required to ensure that all paved areas are kept clean for the duration of the project. Where mulch for temporary erosion control is required, it shall be applied at a minimum thickness of 2 to 3 inches. No straw or hay bales permitted.
- 10) During the period of November 1 through March 31, all project disturbed areas greater than 5,000 square feet and where no further work is anticipated for a period of fifteen (15) days, shall be covered by one of the following cover measures: mulch or plastic covering.



CONSTRUCTION ENTRANCE
NOT TO SCALE



A-A BULKHEAD DEMO
NOT TO SCALE



B-B TURBIDITY CURTAIN
NOT TO SCALE

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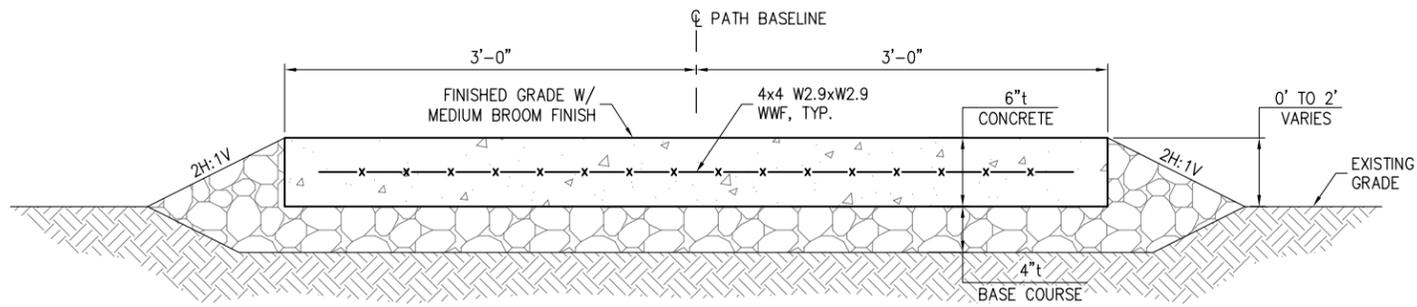
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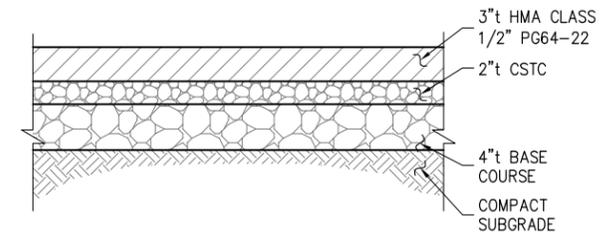
REVISIONS		
REV	DATE	DESCRIPTION

ISSUED FOR PERMIT			
PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT			
TITLE: DEMOLITION AND TESC DETAILS			
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
			SHEET NO: D1.02

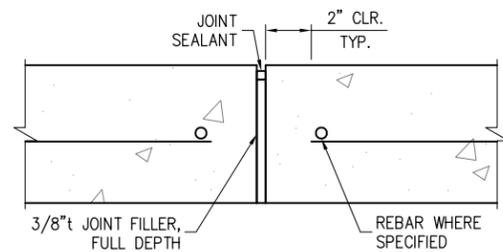
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TYPICAL CONCRETE SURFACING

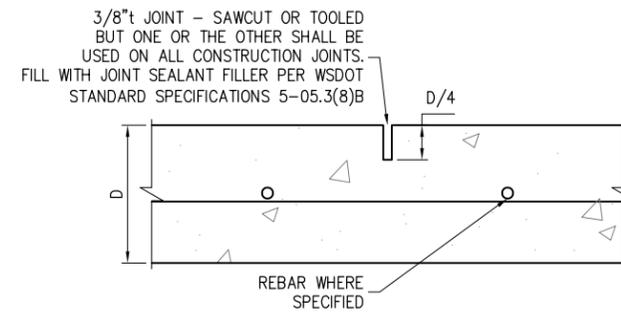


TYPICAL HOT MIX ASPHALT (HMA) STREET SECTION



NOTE:
PROVIDE FULL DEPTH EXPANSION JOINT MINIMUM EVERY 30-FT AND DUMMY JOINT MINIMUM EVERY 15-FT.

TYPICAL CONCRETE CONSTRUCTION JOINT



TYPICAL CONCRETE CONTRACTION JOINT

ISSUED FOR PERMIT

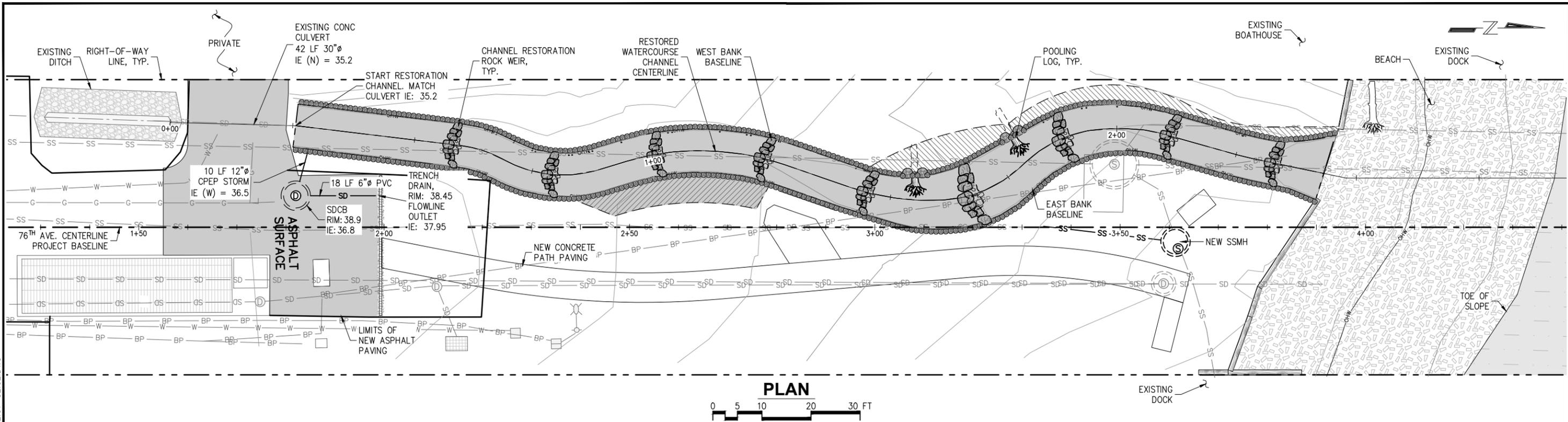
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REV	DATE	DESCRIPTION

PROJECT:		LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT	
TITLE:		GRADING AND SURFACING DETAILS	
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
SHEET NO:			C1.02

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PLAN
0 5 10 20 30 FT

GRADING & CONTROL LEGEND:	
--- 76 TH AVE. CENTERLINE	NEW CONCRETE PATH PAVING
- - - RIGHT-OF-WAY LINE	NEW BEACH ROCK
NEW ASPHALT PAVING	
STORMWATER LEGEND:	
RESTORED WATERCOURSE CHANNEL CENTERLINE	NEW TRENCH DRAIN
RESTORED WATERCOURSE CHANNEL	SD NEW STORMWATER LINE
NEW EMERGENT PLANTINGS SEE LANDSCAPE	NEW STORMWATER MANHOLE
NEW WILLOW STAKED SLOPE SEE LANDSCAPE	
SANITARY SEWER LEGEND:	
SS NEW SANITARY SEWER LINE	NEW SANITARY SEWER MANHOLE
EXISTING UTILITY LEGEND:	
SD EXISTING STORMWATER LINE	BP EXISTING BURIED POWER
EXISTING STORMWATER MANHOLE	G EXISTING GAS LINE
SS EXISTING SANITARY SEWER LINE	W EXISTING WATERLINE
EXISTING SANITARY SEWER MANHOLE	

100% ISSUED FOR CONSTRUCTION

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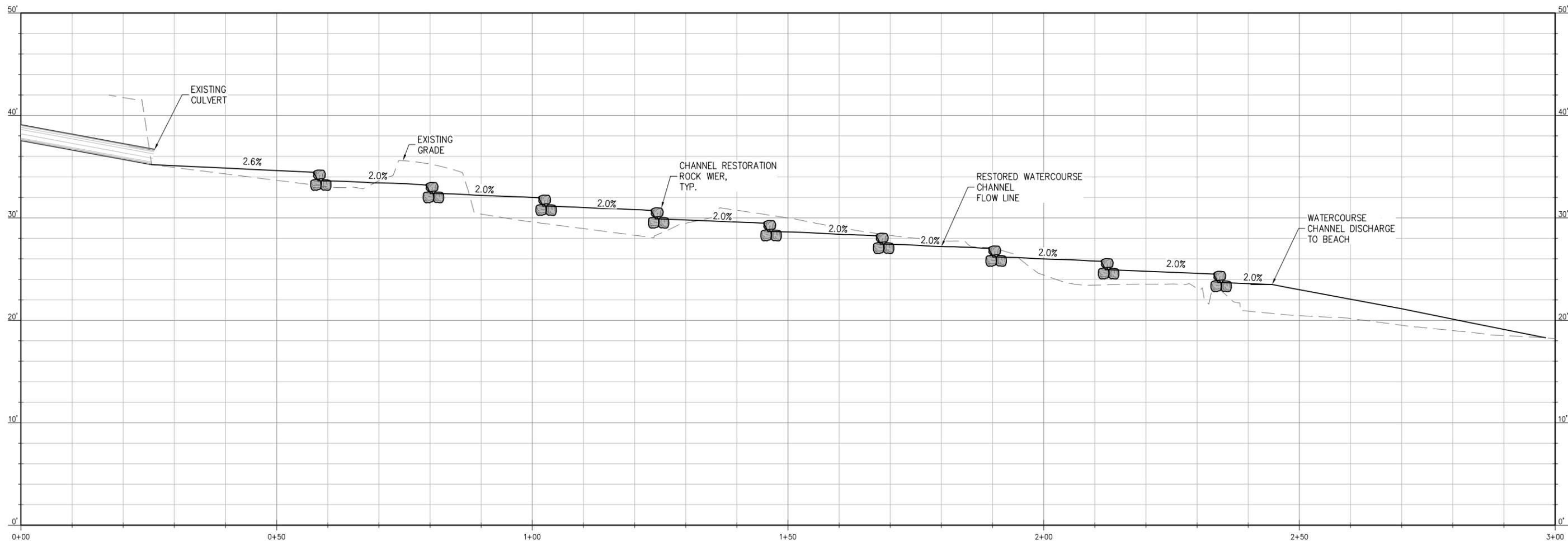
REVISIONS		
REV	DATE	DESCRIPTION

PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT

TITLE: STORMWATER PLAN

DESIGNED BY:	OR	PROJECT NO:	174048	SHEET NO:
DRAWN BY:	DM	DATE:	SEPT 2021	C2.01
CHECKED BY:	CW	SCALE:	NOTED	

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**RESTORED TYPE 1 WATERCOURSE
PROFILE**
1H : 2V

ISSUED FOR PERMIT

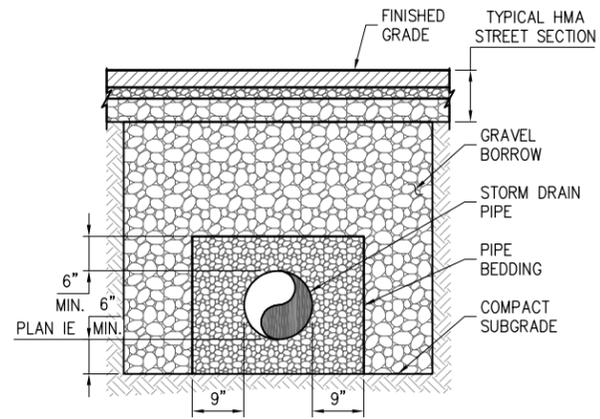
PROJECT:		LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT	
TITLE:		RESTORED TYPE 1 - WATERCOURSE PROFILE	
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
			SHEET NO: C2.02

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REV	DATE	DESCRIPTION

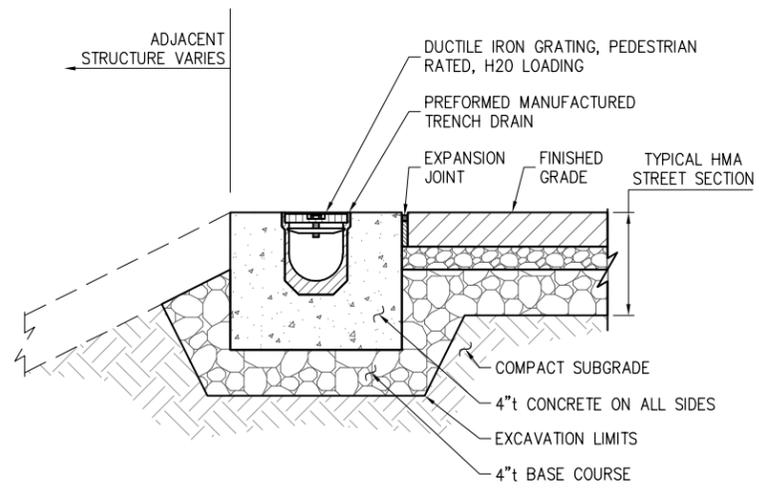
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TYPICAL STORM DRAIN PIPE TRENCH



TRENCH DRAIN

ISSUED FOR PERMIT

PROJECT: **LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT**

TITLE: **STORMWATER DETAILS**

DESIGNED BY:	CR	PROJECT NO:	174048	SHEET NO:
DRAWN BY:	DM	DATE:	FEBRUARY 2021	C2.03
CHECKED BY:	CW	SCALE:	NOTED	

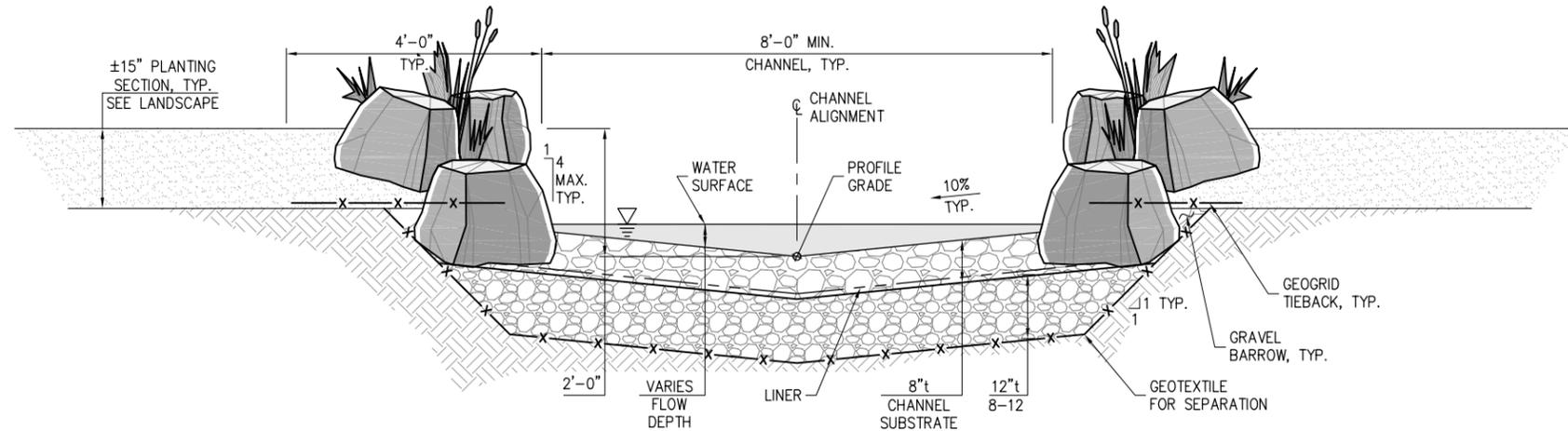
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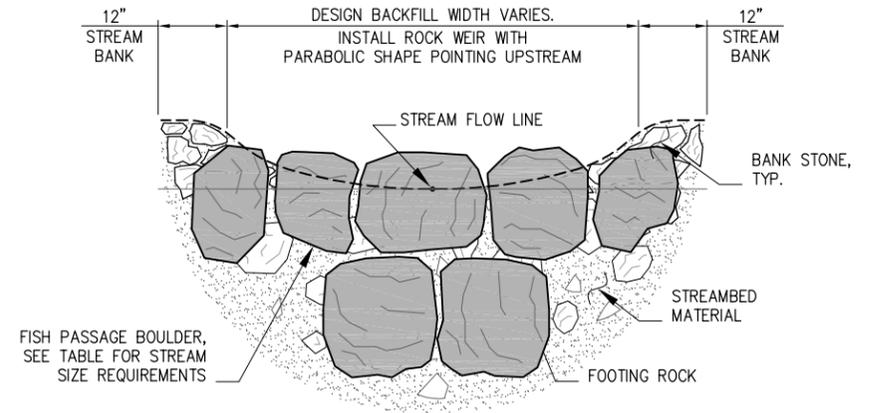


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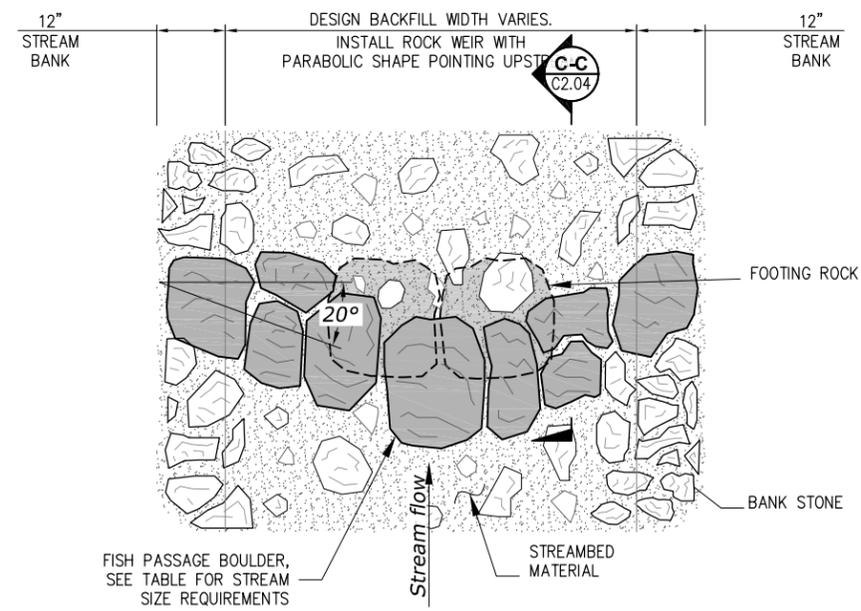
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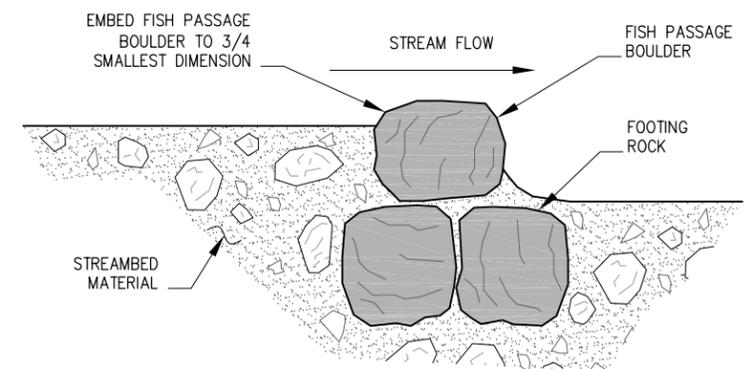
A-A
C2.04
TYPICAL CHANNEL SECTION



C-C
C2.04
TYPICAL ROCK WEIR SECTION



B-B
C2.04
TYPICAL CHANNEL RESTORATION ROCK WEIR PLAN



D-D
C2.04
TYPICAL ROCK WEIR PROFILE

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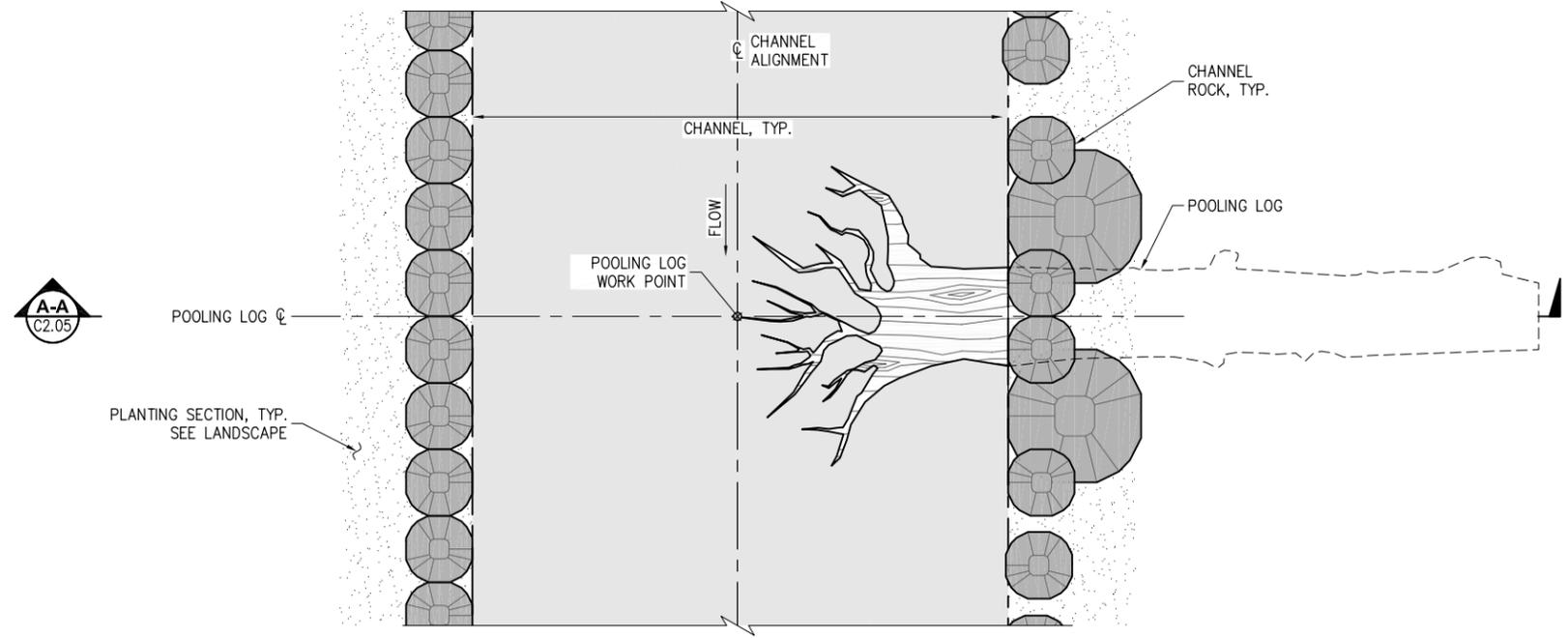
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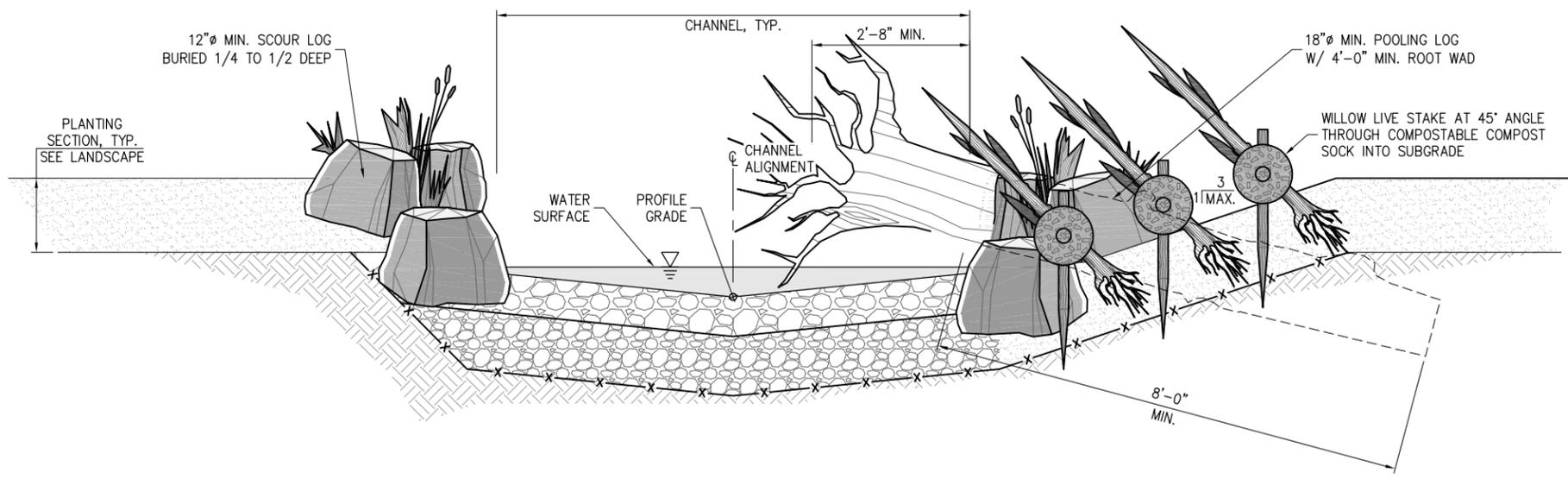
REVISIONS		
REV	DATE	DESCRIPTION

PROJECT:		LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT	
TITLE:		RESTORED TYPE 1 WATERCOURSE DETAILS	
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
SHEET NO:			C2.04

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TYPICAL POOLING LOG & SCOUR LOG PLAN



TYPICAL POOLING LOG & SCOUR LOG SECTION

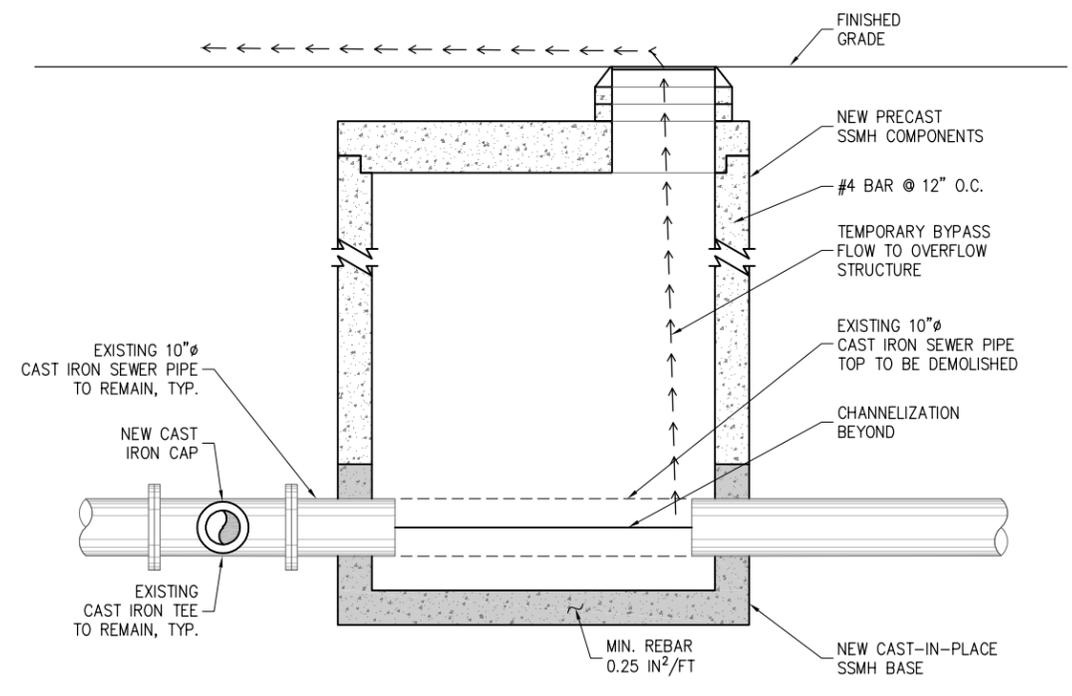
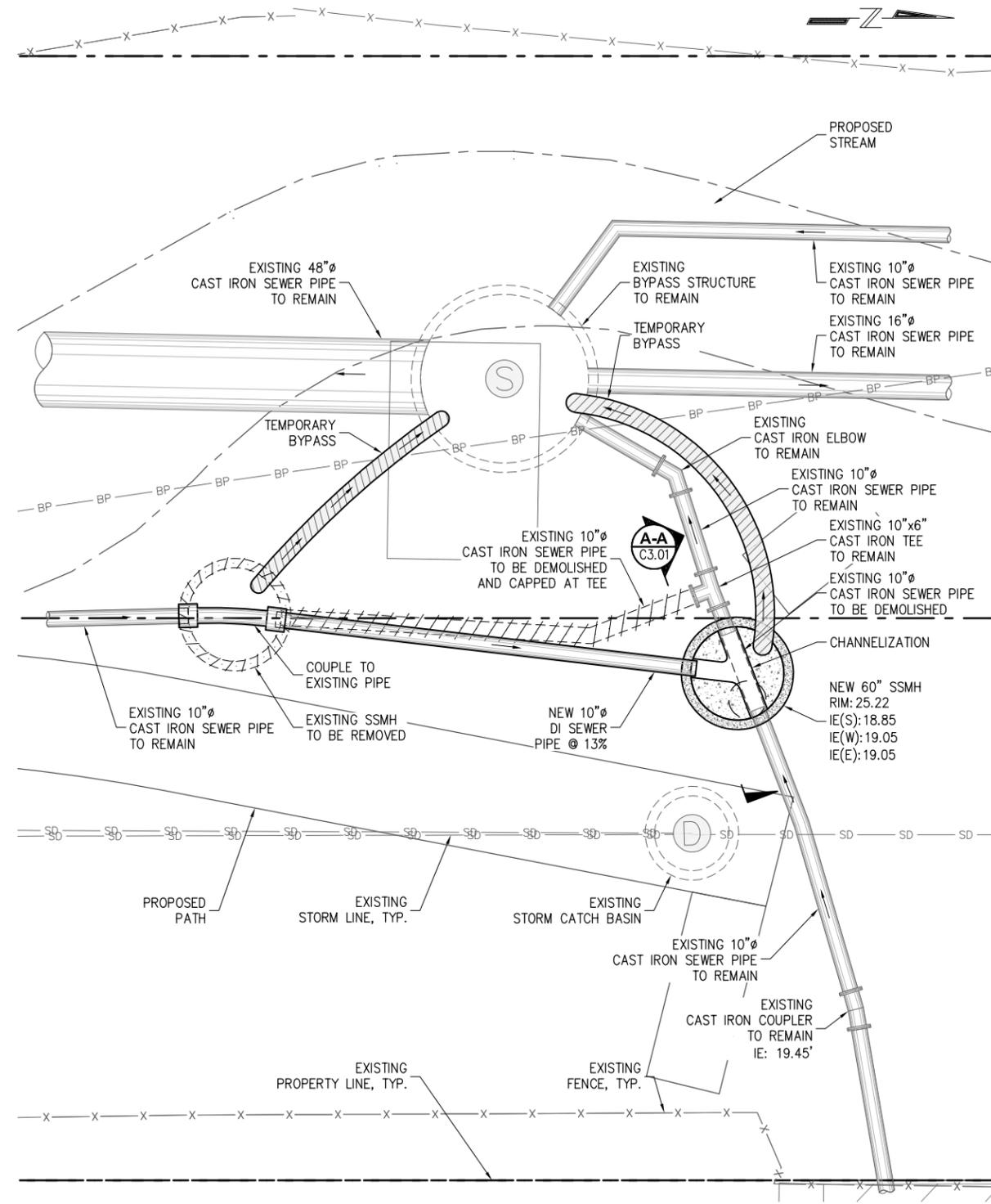
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TITLE:		RESTORED TYPE 1 WATERCOURSE DETAILS	
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
SHEET NO:			C2.05

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LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT			
SEWER PLAN AND SECTION			
DESIGNED BY:	CR	PROJECT NO:	174048
DRAWN BY:	DM	DATE:	FEBRUARY 2021
CHECKED BY:	CW	SCALE:	NOTED
SHEET NO:			C3.01

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PLANTING SCHEDULE

SYM	QTY	SCIENTIFIC/COMMON NAME	SIZE/REMARKS	SYM	QTY	SCIENTIFIC/COMMON NAME	SIZE/REMARKS
TREES				SHRUBS			
	11	Acer circinatum/ VINE MAPLE	6'-8' HT; B&B/FABRIC BAG; FULL & WELL BRANCHED; MULTI-TRUNKED WITH 3 MAIN TRUNKS		18	Cornus sericea/ RED OSIER DOGWOOD	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
	1	Cedrus atlanticus/ ATLAS CEDAR	6' HT; B&B/FABRIC BAG; STRAIGHT TRUNK, NOT SHEARED; SYMMETRICAL, FULL & WELL BRANCHED		75 40 75	Gaultheria shallon/ SALAL Mahonia nervosa/ CREEPING MAHONIA Rosa gymnocarpa/ BALDHIP ROSE	2 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED, 36" OC TRIANGULAR SPACING; INSTALL IN GROUPS OF 3-5 W/ 36" OFFSET FROM NEW AND EXISTING TREES
	9	Thuja plicata/ WESTERN RED CEDAR	4'-5' HT; B&B/FABRIC BAG; STRAIGHT TRUNK, NOT SHEARED; SYMMETRICAL, FULL & WELL BRANCHED		9	Philadelphus lewisii/ MOCK ORANGE	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
					78	Polystichum munitum/ SWORD FERN	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
					15	Ribes sanguineum/ FLOWERING RED CURRANT	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
					25	Symphoricarpos albus/ SNOWBERRY	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
					33	Vaccinium ovatum/ EVERGREEN HUCKLEBERRY	1 GAL CONT; FULL, WELL BRANCHED & WELL ROOTED
PLANTING LEGEND				LIVESTAKE PLANTING			
	DETAIL IDENTIFICATION				42	Cornus sericea/ RED TWIG DOGWOOD	LIVESTAKE, 24" OC TRIANGULAR SPACING
	SHEET IDENTIFICATION			EMERGENT PLANTING			
	SALVAGED CONIFER TREE TRUNK, 8'-12' LENGTH, 12" MIN DIA TO 30" MAX DIA TRUNK, SEE SPECS				80 80 80	Carex obnupta/ SLOUGH SEDGE Iris tenax/ TOUGH LEAF IRIS Sagittaria latifolia/ BROADLEAF ARROWHEAD	1 GAL CONT; FULL AND WELL ROOTED, 18" OC TRIANGULAR SPACING 1 GAL CONT; FULL AND WELL ROOTED, 18" OC TRIANGULAR SPACING TUBER, 18" OC TRIANGULAR SPACING
	BOULDER, SEE CIVIL DWGS			BULBS			
	EX FENCE TO REMAIN, SEE CIVIL DWGS				727	Galanthus nivalis/ COMMON SNOWDROP	BULB, TOP GRADE; APPROX 12" OC TRIANGULAR SPACING BETWEEN BULBS, ENSURE AN OFFSET 36" FROM PAVED SURFACES AND EX TREES
	EX TREES TO REMAIN, SEE CIVIL DWGS				335 SF	3" DEPTH WOOD CHIP MULCH ONLY	SEE SPECS

FURNISHINGS LEGEND

SEE SPEC 32 33 00

	1	WASTE RECEPTACLE
	1	PICNIC TABLE
	2	BENCH

PLANTING NOTES

- ANY DISCREPANCIES WITH THE DWGS AND/OR SPECS & SITE CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF OWNERS REP PRIOR TO PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
- OWNERS REP MUST INSPECT PLANT MATERIALS AND STAKING LOCATIONS PRIOR TO INSTALLATION TO ASSURE THE APPROPRIATE PLANT CHARACTERISTICS ARE MET.
- INSTALL GROUNDCOVERS IN A TRIANGULAR PATTERN AT SPACING SHOWN IN THE PLANT SCHEDULE. WHERE GROUNDCOVER ABUTS CURBING, WALLS, OR WALKS, MIN PLANTING DISTANCE MUST BE NINE (9) INCHES FROM SAME UNLESS OTHERWISE NOTED. INSTALL GROUNDCOVERS CONTINUOUS IN BETWEEN SHRUB PLANTINGS.
- LANDSCAPE CONTRACTOR MUST BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH PLANTING OPERATIONS.
- ALL PLANTS MUST RECEIVE AN ADEQUATE SUPPLY OF WATER, SEE SPECIFICATION 32 84 00.
- PLANTING DRAWING IS BASED UPON BASE DRAWINGS DATED 9/2/20. PREPARED BY: PND ENGINEERS, INC
- TREE LOCATIONS SHOWN ON PLANTING PLANS ARE APPROXIMATE; IF FIELD ADJUSTMENTS ARE NECESSARY THE FOLLOWING MIN SETBACKS FOR CENTERLINE OF TREE TRUNKS TO EDGE OF DRIVEWAY, AND TO CENTER OF ALL OTHERS SHOWN MUST APPLY:
 - STREET LIGHTS 10'
 - DRIVEWAYS 10'
 - UNDERGROUND SEWER & WATER LINES 5'
 - UNDERGROUND GAS LINES 3'
 - UTILITY/POWER POLES 5'
 - FACE OF CURB 3'

PLANTING ABBREVIATIONS

#/NO	NUMBER	CONT	CONTAINER	MAX	MAXIMUM
%	PERCENT	CF	CUBIC FEET	MIN	MINIMUM
&	AND	DIA	DIAMETER	OC	ON CENTER
@	AT	DWGS	DRAWINGS	PREP	PREPARATION
ABBV	ABBREVIATIONS	EA	EACH	QTY	QUANTITY
ALT	ALTERNATE	EQ	EQUAL	REP	REPRESENTATIVE
APPROX	APPROXIMATE	EQUIV	EQUIVALENT	SCH	SCHEDULE
B&B	BALLED AND BURLAPPED	EX	EXISTING	SPEC	SPECIFICATION
CAL	CALIPER	GAL	GALLON	SQ	SQUARE
€	CENTER LINE	HT	HEIGHT	SYM	SYMBOL
CLR	CLEAR	ID	INSIDE DIAMETER	TYP	TYPICAL
CONC	CONCRETE	LF	LINEAR FEET	W/	WITH
CONST	CONSTRUCTION	MFRS	MANUFACTURER'S		

ISSUED FOR PERMIT

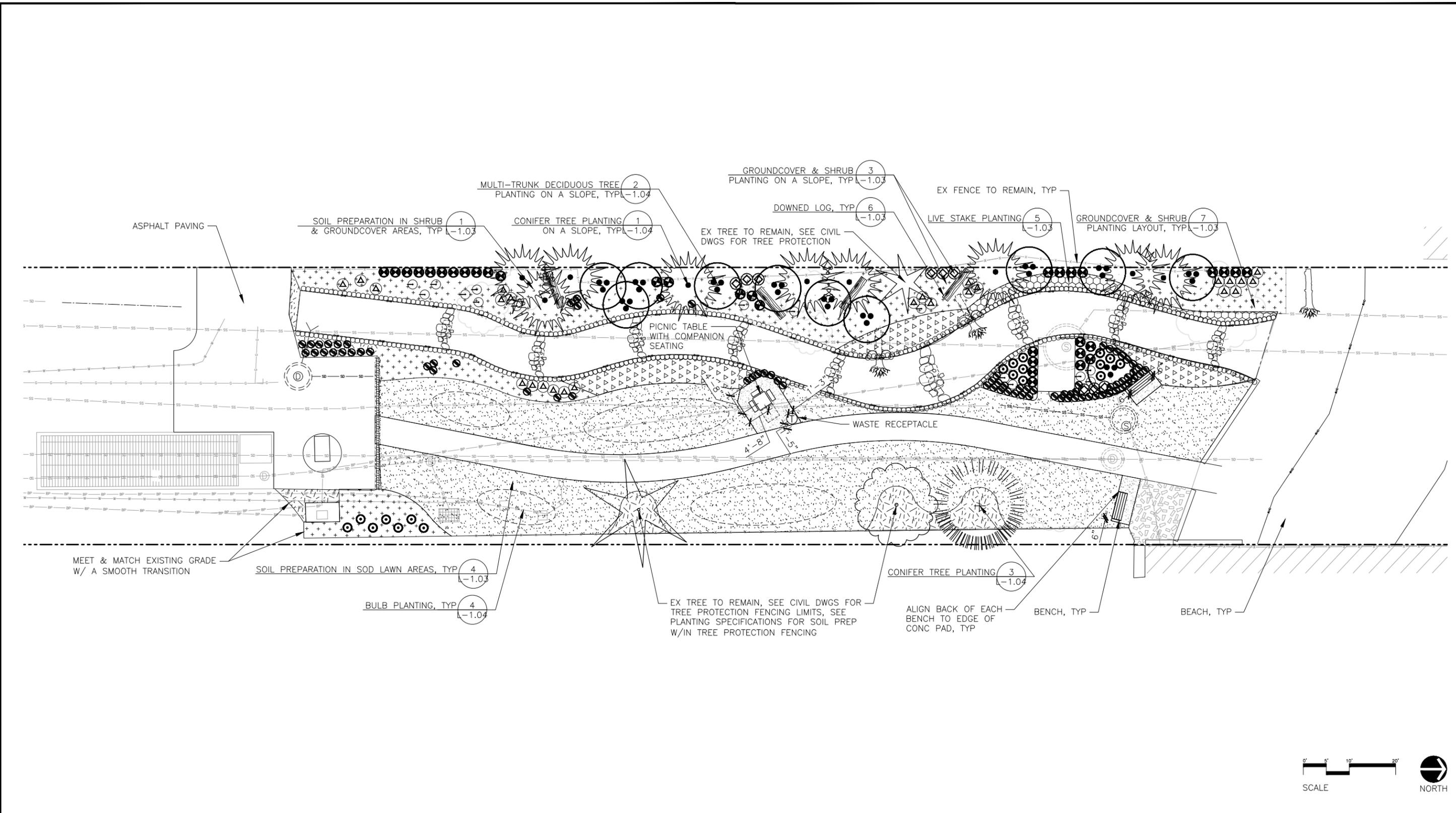
PROJECT:		LINCOLN LANDING	
		SHORELINE AND STORMWATER ENHANCEMENT	
TITLE: PLANTING SCHEDULE, LEGEND, ABBR, NOTES & FURNISHINGS LEGEND			
DESIGNED BY: DK	CR PROJECT NO:	174048	SHEET NO: L-1.01
DRAWN BY: MW	DM DATE:	SEPTEMBER, 2020	
CHECKED BY: JV	CW SCALE:	NOTED	

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9/14/20 MWALTON P: 2017 PROJECTS 2017-13 LINCOLN LANDING\GRAPHICS\AUTOCAD\PLINT-PLANT-DWG



ISSUED FOR PERMIT

PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT

TITLE: PLANTING PLAN

DESIGNED BY: DK	CR PROJECT NO: 174048	SHEET NO: L-1.02
DRAWN BY: MW	DM DATE: SEPTEMBER, 2020	
CHECKED BY: JV	CW SCALE: NOTED	

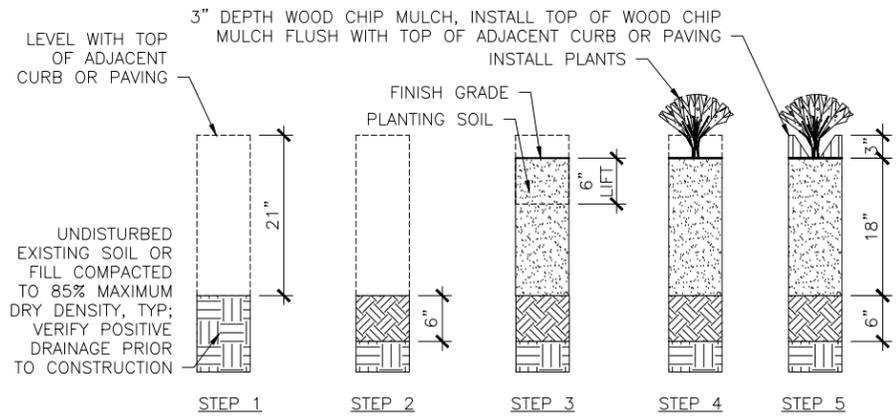
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REVISIONS		
REV	DATE	DESCRIPTION



STEP 1
EXCAVATE EXISTING SOIL TO 21" DEPTH BELOW ADJACENT CURB OR PAVING. AVOID UNDERMINING ADJACENT CURB OR PAVING SUBBASE MATERIAL. PROVIDE PERCOLATION TEST PER SPECS, PRIOR TO PROCEEDING TO STEP 2.

STEP 2
SCARIFY SUBGRADE TO A MINIMUM 6" DEPTH. OWNER'S REP SHALL REVIEW & APPROVE WORK PRIOR TO PROCEEDING TO STEP 3.

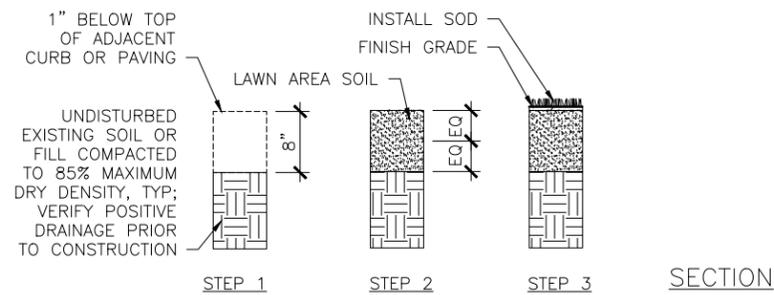
STEP 3
INSTALL MINIMUM 18" DEPTH OF PLANTING SOIL IN 6" LIFTS. WATER SETTLE/COMPACT EACH LIFT PRIOR TO INSTALLING THE

STEP 4
NEXT LIFT. REVIEW FINISH GRADE WITH OWNER'S REP PRIOR TO PLANTING.

STEP 5
INSTALL 3" DEPTH WOOD CHIP MULCH.

NOTES
1. ALL DIMENSIONS INDICATE COMPACTED DEPTHS.
2. SEE SPECIFICATIONS FOR SOIL PREP W/IN TREE PROTECTION FENCING AREAS.

1 SOIL PREPARATION IN SHRUB & GROUNDCOVER AREAS
NOT TO SCALE



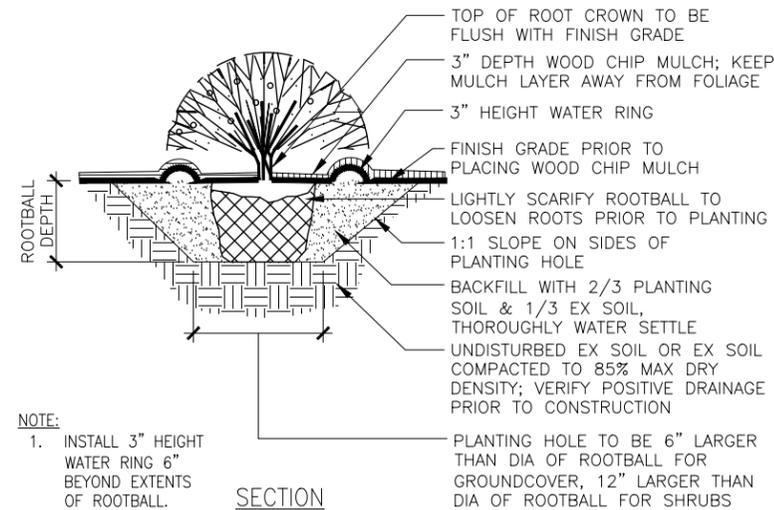
STEP 1
EXCAVATE EXISTING SOIL TO 9" DEPTH BELOW ADJACENT CURB OR PAVING. AVOID UNDERMINING ADJACENT CURB OR PAVING SUBBASE MATERIAL. PROVIDE PERCOLATION TEST, PER SPECS, PRIOR TO PROCEEDING TO STEP 2.

STEP 2
INSTALL MINIMUM 8" DEPTH OF LAWN AREA SOIL IN 2 EQ LIFTS. WATER SETTLE/COMPACT EACH LIFT PRIOR TO INSTALLING THE NEXT LIFT. REVIEW FINISH GRADE WITH OWNER'S REP PRIOR TO SODDING.

STEP 3
INSTALL SOD.

NOTES
1. ALL DIMENSIONS INDICATE COMPACTED DEPTHS.
2. SEE SPECIFICATIONS FOR SOIL PREP W/IN TREE PROTECTION FENCING AREAS.

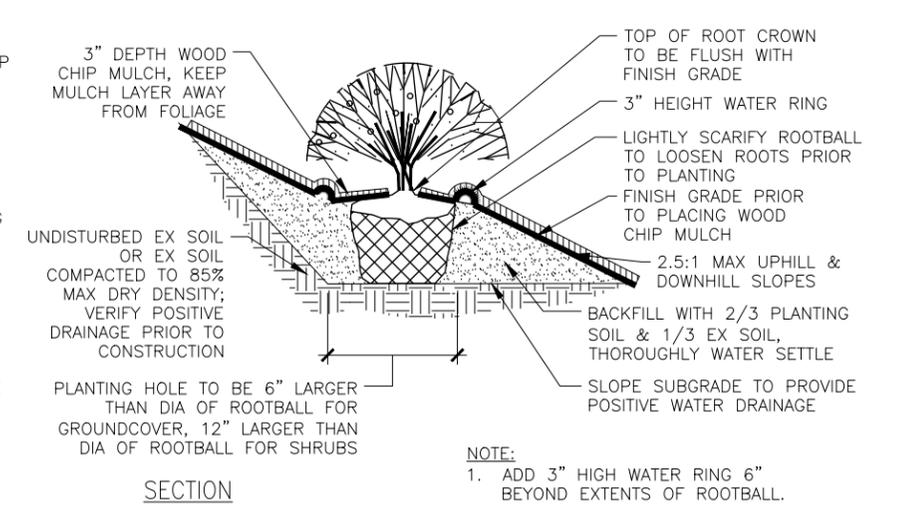
4 SOIL PREPARATION IN SOD LAWN AREAS
NOT TO SCALE



NOTE:
1. INSTALL 3" HEIGHT WATER RING 6" BEYOND EXTENTS OF ROOTBALL.

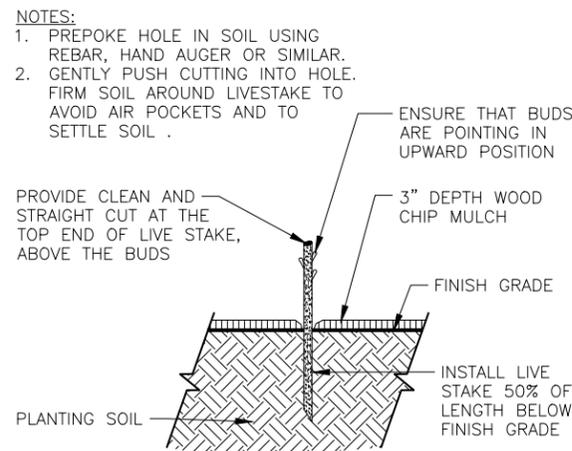
NOTE:
1. PLANTING HOLE TO BE 6" LARGER THAN DIA OF ROOTBALL FOR GROUNDCOVER, 12" LARGER THAN DIA OF ROOTBALL FOR SHRUBS

2 GROUNDCOVER & SHRUB PLANTING
NOT TO SCALE



NOTE:
1. ADD 3" HIGH WATER RING 6" BEYOND EXTENTS OF ROOTBALL.

3 GROUNDCOVER & SHRUB PLANTING ON A SLOPE
NOT TO SCALE



NOTES:
1. PREPOKE HOLE IN SOIL USING REBAR, HAND AUGER OR SIMILAR.
2. GENTLY PUSH CUTTING INTO HOLE. FIRM SOIL AROUND LIVESTAKE TO AVOID AIR POCKETS AND TO SETTLE SOIL.

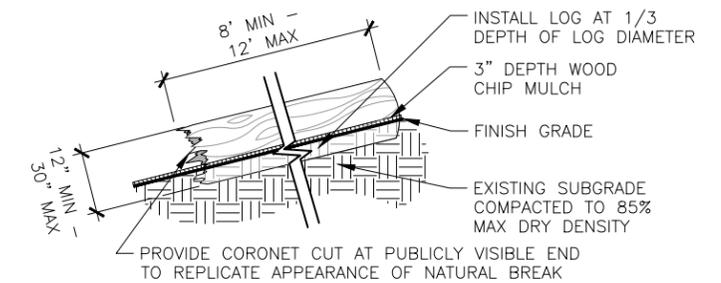
ENSURE THAT BUDS ARE POINTING IN UPWARD POSITION

3" DEPTH WOOD CHIP MULCH

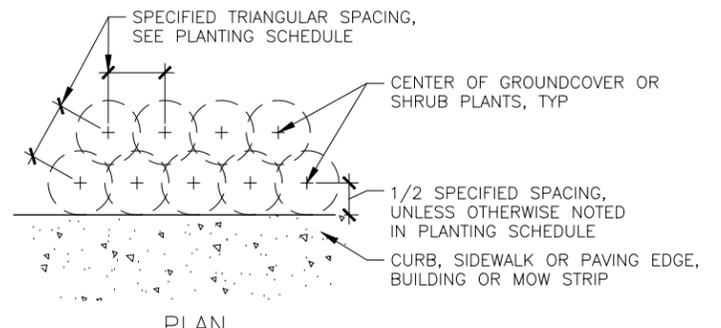
FINISH GRADE

INSTALL LIVE STAKE 50% OF LENGTH BELOW FINISH GRADE

5 LIVE STAKE PLANTING
NOT TO SCALE



6 DOWNED LOG
NOT TO SCALE



7 GROUNDCOVER & SHRUB PLANTING LAYOUT
NOT TO SCALE

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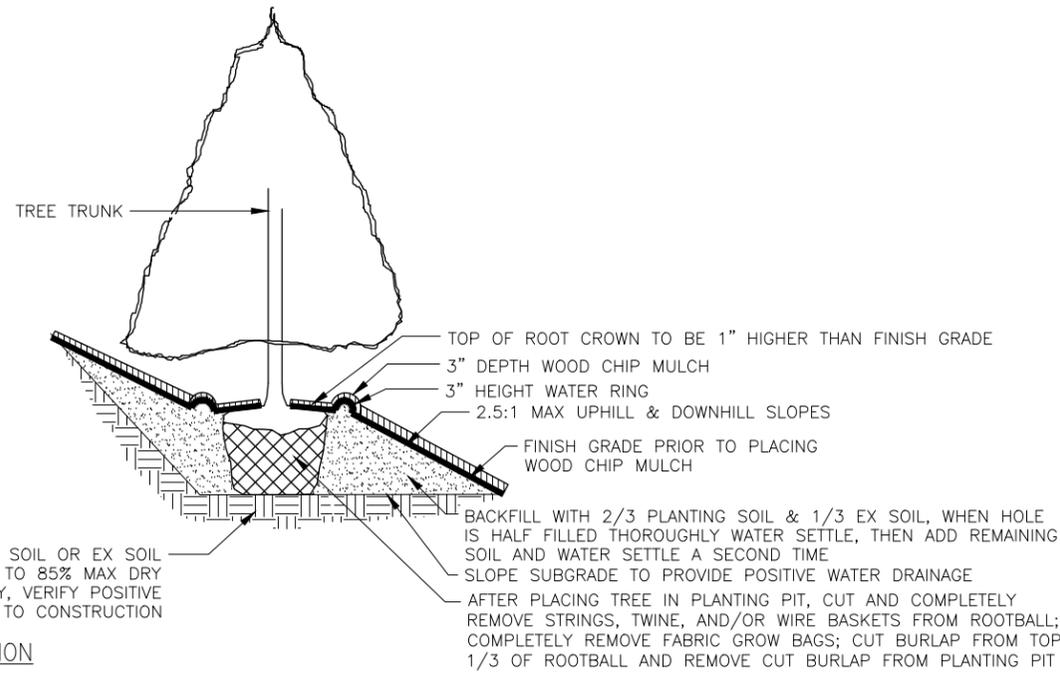
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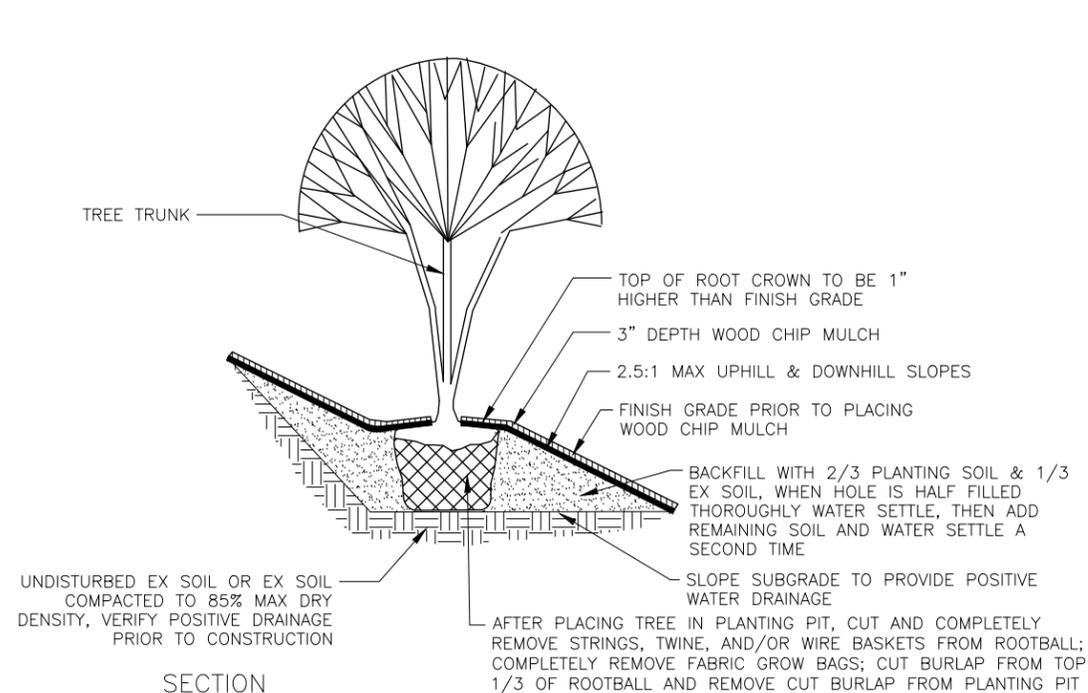
REVISIONS		
REV	DATE	DESCRIPTION

ISSUED FOR PERMIT			
PROJECT: LINCOLN LANDING			
SHORELINE AND STORMWATER ENHANCEMENT			
TITLE: PLANTING DETAILS			
DESIGNED BY: DK	CR	PROJECT NO: 174048	SHEET NO: L-1.03
DRAWN BY: MW	DM	DATE: SEPTEMBER, 2020	
CHECKED BY: JV	CW	SCALE: NOTED	

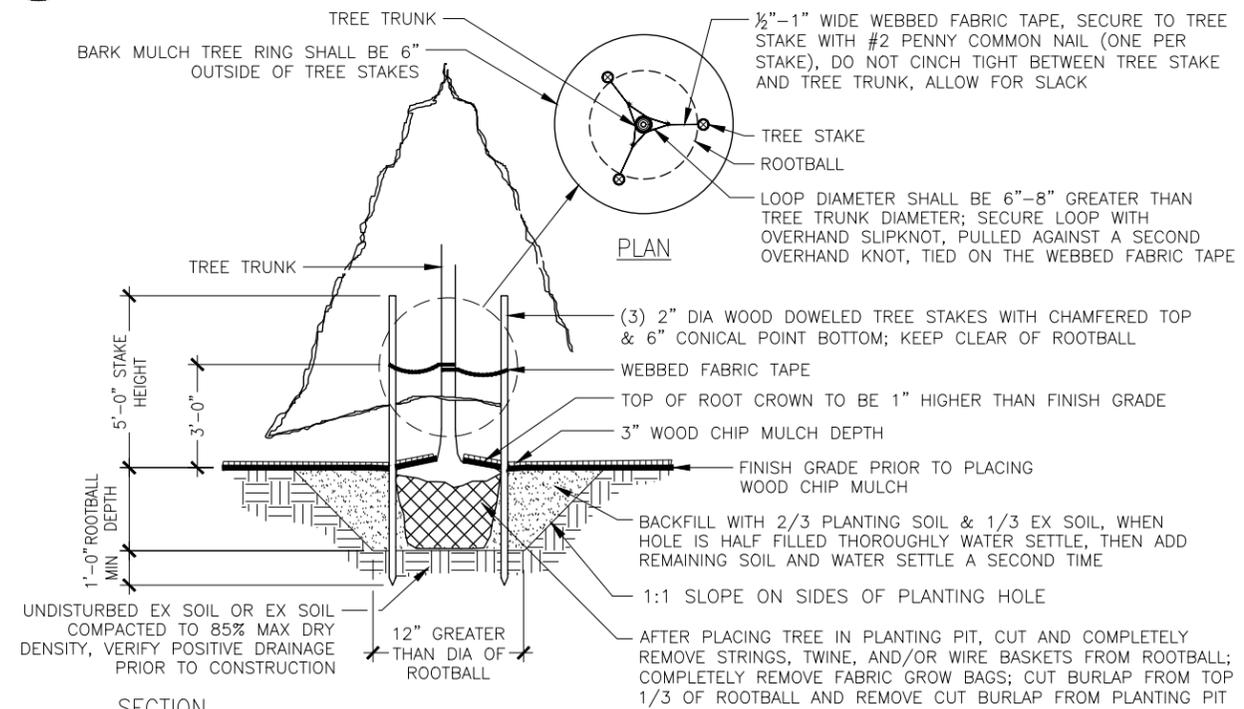
9/14/20 MWALTON P: 2017 PROJECTS 2017-13 LINCOLN LANDING GRAPHICS AUTOCAD PLANT - PLOT.DWG



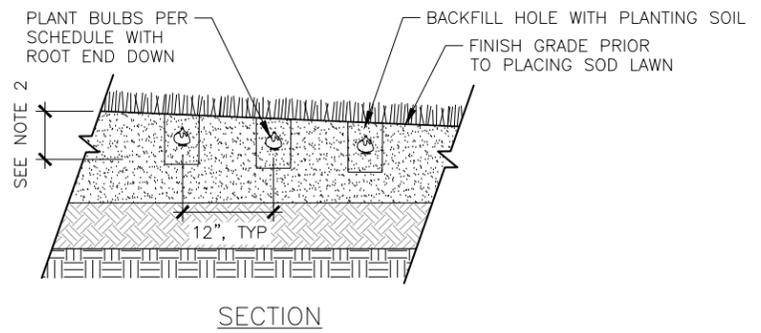
1 CONIFER TREE PLANTING ON A SLOPE
NOT TO SCALE



2 MULTI-TRUNK DECIDUOUS TREE PLANTING ON A SLOPE
NOT TO SCALE



3 CONIFER TREE PLANTING
NOT TO SCALE



- NOTES:**
1. VERIFY LAYOUT OF BULBS WITH OWNERS REP PRIOR TO PLANTING.
 2. PLANT BULBS IN LAWN AREAS PER PLANS. VERIFY LAYOUT IN FIELD WITH OWNERS REP.
 3. DIG HOLES TO A 10" DEPTH AT TWICE THE DIAMETER OF THE BULB. BACKFILL WITH PLANTING SOIL.
 4. PLANT BULBS WITH THE TOP (POINTED END) UP, AND LIGHTLY COMPACT.
 5. ENSURE 2"-3" DEPTH PLANTING SOIL COVER OVER BULBS.
 6. OFFSET BULBS 3'-0" FROM TREE TRUNKS AND PAVED SURFACES. AVOID TREE ROOTS. PLANT BULBS SEPTEMBER-NOVEMBER.

4 BULB PLANTING
NOT TO SCALE

ISSUED FOR PERMIT

PROJECT: LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT	
TITLE: PLANTING DETAILS	
DESIGNED BY: DK	CR PROJECT NO: 174048 SHEET NO: L-1.04
DRAWN BY: MW	DM DATE: SEPTEMBER, 2020
CHECKED BY: JV	CW SCALE: NOTED

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APPENDIX G

WATERCOURSE A HYDROLOGY



LINCOLN LANDING SITE HYDROLOGY ANALYSIS

NOTES AND REFERENCES

MGS FLOOD CONTINUOUS RUNOFF MODEL

1. PRECIPITATION DATA FOR ANALYSIS

A. EXTENDED PRECIPITATION TIME SERIES
 USED - PRODUCES MOST ACCURATE
 RESULTS PER MGS FLOOD USER MANUAL

MGS FLOOD USER
 MANUAL 4.1.1

B. SELECT CLIMATE REGION - PER ATTACHED
 MAPS PROVIDED BY MGS FLOOD
 ↳ USE: PUGET EAST 40 IN MAP

FIGURE 1 d
 LEGEND

2. WATERSHED DEFINITION

A. OVERALL DRAINAGE BASINS AS NOTED IN
 THE FIGURE ARE PROVIDED BY CITY OF
 MERCER ISLAND GIS

FIGURE 2

B. DRAINAGE BASINS WERE SUBDIVIDED
 FOR FURTHER ANALYSIS AS SHOWN. AREAS
 SUB-DIVIDED BY DRAINAGE PATH & COLLECTION.

FIGURE 2

C. TOTAL DRAINAGE AREAS WERE CALCULATED
 USING CAD. GOOGLE EARTH WAS UTILIZED
 FOR A CONSERVATIVE ESTIMATION OF
 PERCENT LAND COVER IMPERVIOUS OR
 TREES/GRASS.

FIGURE 3 TO
 SHOW GROUND
 COVER IMAGE

*Note: Areas estimated in AutoCAD

System	Descrip.	Total Area (SF)	Total Area (Acres)	Impervious (SF)	Impervious (Acres)	Landscape Trees (SF)	Landscape (Acres)	Landscape Grass (SF)	Landscape (Acres)
Lincoln Landing	A1	435,917.30	10.01	217,958.65	5.00	108,979.33	2.50	108,979.33	2.50
	A2	825,940.90	18.96	412,970.45	9.48	41,297.05	0.95	371,673.41	8.53
	A3	549,343.30	12.61	521,876.14	11.98	-	0.00	27,467.17	0.63
	A4	1,016,906.00	23.34	762,679.50	17.51	254,226.50	5.84	-	0.00
	A5	608,660.30	13.97	365,196.18	8.38	243,464.12	5.59	-	0.00
	A6	1,187,347.80	27.26	890,510.85	20.44	296,836.95	6.81	-	0.00

TABLE 1. - AREAS IMPERVIOUS VS. PERVIOUS



LINCOLN LANDING SITE HYDROLOGY ANALYSIS

NOTES AND REFERENCES

MGS FLOOD CONTINUOUS RUNOFF MODEL

3. SUB-BASIN LAND USE INPUT

A. AREAS AS PREVIOUSLY DEFINED IN PART 2.

B. SOIL/GEOLOGIC DATA - DETERMED
 HYDROLOGIC SOIL GROUP C FROM
 USDA WEB SOIL SURVEY. USED
 RELATIONSHIP FOR PROGRAM INPUT

USDA - NATURAL
 RESOURCES
 CONSERVATION
 SERVICES SITE.
 FIGURE 4
 SOIL DATA ATTACH

Table 5.1 - Relationship between SCS and HSPF Soil Groups

<u>SCS Hydrologic Soil Group</u>	<u>MGSFlood/HSPF Soil/Geologic Group</u>
<u>A/B</u>	<u>Outwash</u>
<u>C</u>	<u>Till</u>
<u>D</u>	<u>Wetland</u>

MGS FLOOD USER
 MANUAL

4. PROGRAM SIMULATION

A. COMPUTATIONAL TIME STEP - 15 MIN

Table 9.1 - Recommended Time Step for Various Analyses

<u>Task</u>	<u>Computational Time Step</u>	
	<u>Extended Time Series</u>	<u>Station Data</u>
<u>Detention Sizing</u>	<u>1-Hour</u>	<u>1-Hour</u>
<u>WQ Wet Pool Volume Sizing</u>	<u>15-minutes or 1-hour</u>	<u>1-Hour</u>
<u>WQ Rate Sizing</u>	<u>15-minutes</u>	<u>1-Hour (Program uses Adjustment Factors to compute 15-minute rate)</u>
<u>CAVFS Sizing</u>	<u>15-minutes</u>	<u>1-Hour acceptable</u>
<u>Bioretention Facility Sizing</u>	<u>15-minutes</u>	<u>1-Hour acceptable</u>
<u>Conveyance Sizing Upstream of Detention</u>	<u>5-minutes to 15-minutes</u>	<u>(Cannot Use MGSFlood, Use Single Event Model or Rational Method)</u>

MGS FLOOD USER
 MANUAL

∴ RESULTS:

A. 91% EXCEEDENCE = 344,657 CU-FT

B. OFF-LINE FACILITY DISCHARGE RATE = 5.819 CFS

SEE ATTACHED
 MGS FLOOD
 REPORT

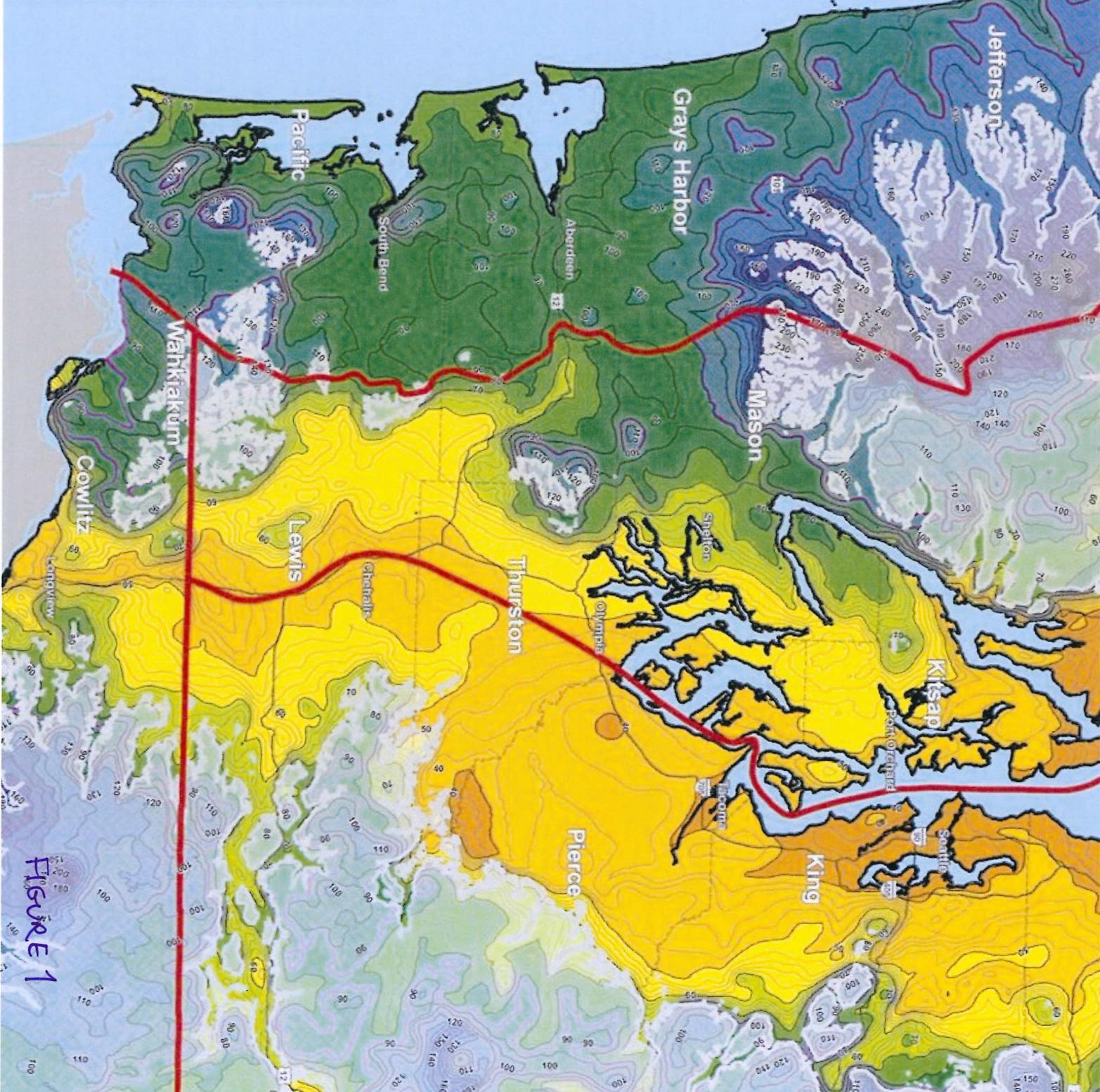
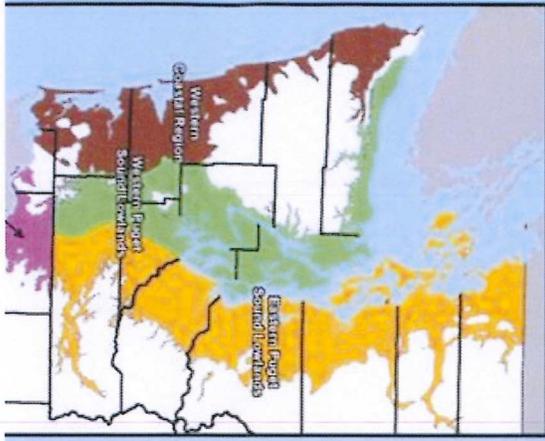
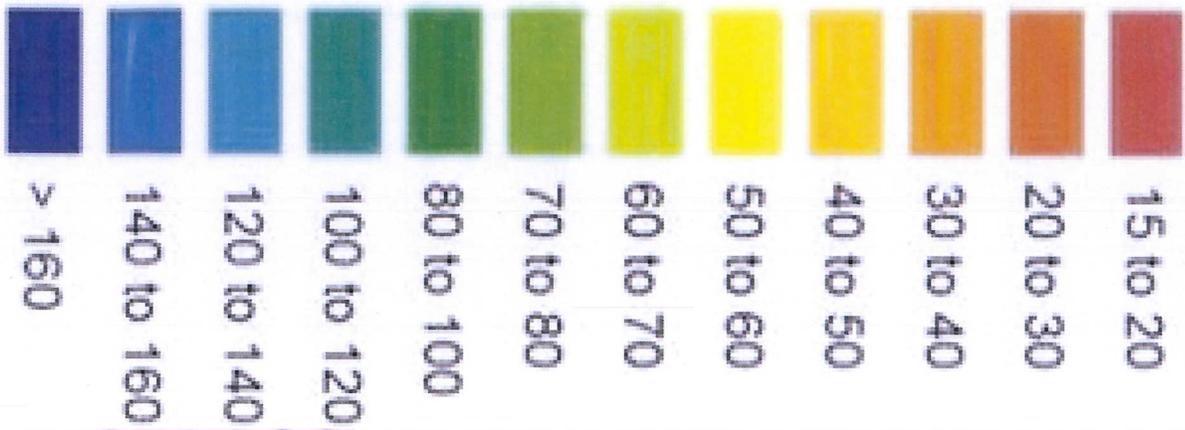


Figure 1

Legend

Mean annual precipitation (inches)



 Region break line

 Precipitation constraint

 Elevation > 1500 feet

 County boundary

 10-inch precipitation contour

 2-inch precipitation contour

Figure 1
Legend

FIGURE 2



NOTE:

- OVERALL DRAINAGE BASINS PROVIDED BY CITY OF RENTON GIS
- SUB-BASINS

FIGURE 3



Area of Interest (AOI) | **Soil Map** | Download Soils Data | Shopping Cart (Free)

Printable V

Search

Map Unit Legend

Legend

Scale (not to scale)

King County Area, Washington (WA633)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmC	Arents, Alderwood material, 6 to 15 percent slopes	18.5	11.3%
KpB	Kitsap silt loam, 2 to 8 percent slopes	91.5	55.8%
KpD	Kitsap silt loam, 15 to 30 percent slopes	26.4	16.1%
Pu	Puget silty clay loam	0.3	0.2%
Ur	Urban land	26.3	16.0%
Totals for Area of Interest		163.8	100.0%



FIGURE 4.

King County Area, Washington

KpB—Kitsap silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1hmt9
Elevation: 0 to 590 feet
Mean annual precipitation: 37 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 160 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kitsap and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kitsap

Setting

Landform: Terraces
Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat):
 Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Other vegetative classification: Soils with Few Limitations (G002XN502WA)
Hydric soil rating: No

Minor Components

Alderwood

Percent of map unit: 10 percent

Hydric soil rating: No

Bellingham

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Tukwila

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Seattle

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: King County Area, Washington

Survey Area Data: Version 12, Sep 8, 2016

King County Area, Washington

KpD—Kitsap silt loam, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 1hmtc

Elevation: 0 to 590 feet

Mean annual precipitation: 37 inches

Mean annual air temperature: 50 degrees F

Frost-free period: 160 to 200 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Kitsap and similar soils: 97 percent

Minor components: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kitsap

Setting

Landform: Terraces

Parent material: Lacustrine deposits with a minor amount of volcanic ash

Typical profile

H1 - 0 to 5 inches: silt loam

H2 - 5 to 40 inches: silt loam

H3 - 40 to 60 inches: stratified silt to silty clay loam

Properties and qualities

Slope: 15 to 30 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat):
Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Other vegetative classification: Sloping to Steep Soils
(G002XN702WA)

Hydric soil rating: No

Minor Components

Bellingham

Percent of map unit: 1 percent

Landform: Depressions
Hydric soil rating: Yes

Tukwila

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Seattle

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 12, Sep 8, 2016

MGS FLOOD PROJECT REPORT

Program Version: MGSFlood 4.40
Program License Number: 201210006
Project Simulation Performed on: 09/25/2017 1:16 PM
Report Generation Date: 09/25/2017 1:16 PM

Input File Name: Lincoln Landing.fld
Project Name: Lincoln Landing
Analysis Title: Site Hydrology
Comments:

PRECIPITATION INPUT

Computational Time Step (Minutes): 15

Extended Precipitation Time Series Selected
Climatic Region Number: 15

Full Period of Record Available used for Routing
Precipitation Station : 96004005 Puget East 40 in_5min 10/01/1939-10/01/2097
Evaporation Station : 961040 Puget East 40 in MAP
Evaporation Scale Factor : 0.750

HSPF Parameter Region Number: 1
HSPF Parameter Region Name : USGS Default

***** Default HSPF Parameters Used (Not Modified by User) *****

***** WATERSHED DEFINITION *****

Predevelopment/Post Development Tributary Area Summary

	Predeveloped	Post Developed
Total Subbasin Area (acres)	106.140	106.140
Area of Links that Include Precip/Evap (acres)	0.000	0.000
Total (acres)	106.140	106.140

-----SCENARIO: PREDEVELOPED

Number of Subbasins: 6

----- Subbasin : A1 -----
-----Area (Acres) -----
Till Forest 2.500
Till Grass 2.500
Impervious 5.000

Subbasin Total 10.000

----- Subbasin : A2 -----
 -----Area (Acres) -----
 Till Forest 0.950
 Till Grass 8.530
 Impervious 9.480

 Subbasin Total 18.960

----- Subbasin : A3 -----
 -----Area (Acres) -----
 Till Grass 0.630
 Impervious 11.980

 Subbasin Total 12.610

----- Subbasin : A4 -----
 -----Area (Acres) -----
 Till Forest 5.840
 Impervious 17.510

 Subbasin Total 23.350

----- Subbasin : A5 -----
 -----Area (Acres) -----
 Till Forest 5.590
 Impervious 8.380

 Subbasin Total 13.970

----- Subbasin : A6 -----
 -----Area (Acres) -----
 Till Forest 6.810
 Impervious 20.440

 Subbasin Total 27.250

-----**SCENARIO: POSTDEVELOPED**

Number of Subbasins: 6

----- Subbasin : A1 -----
 -----Area (Acres) -----
 Till Forest 2.500
 Till Grass 2.500
 Impervious 5.000

 Subbasin Total 10.000

----- Subbasin : A2 -----
 -----Area (Acres) -----
 Till Forest 0.950

Till Grass	8.530
Impervious	9.480

Subbasin Total	18.960

----- Subbasin : A3 -----
-----Area (Acres) -----

Till Grass	0.630
Impervious	11.980

Subbasin Total	12.610

----- Subbasin : A4 -----
-----Area (Acres) -----

Till Forest	5.840
Impervious	17.510

Subbasin Total	23.350

----- Subbasin : A5 -----
-----Area (Acres) -----

Till Forest	5.590
Impervious	8.380

Subbasin Total	13.970

----- Subbasin : A6 -----
-----Area (Acres) -----

Till Forest	6.810
Impervious	20.440

Subbasin Total	27.250

***** LINK DATA *****

-----SCENARIO: PREDEVELOPED
Number of Links: 1

Link Name: Outfall
Link Type: Open Channel
Downstream Link: None

-----Left Overbank

Upper Sideslope (z)	: 0.500
Upper Width (ft)	: 3.000
Middle Sideslope (z)	: 10.000
Middle Width (ft)	: 10.000
Mannings n	: 0.040

-----Main Channel
Lower Sideslope Left (z) : 0.500
Lower Width Left (ft) : 3.000
Lower Sideslope Right (z) : 0.500
Lower Width Right (ft) : 3.000
Mannings n : 0.024
Base Width (ft) : 10.0
Elevation (ft) : 100.00
Channel Slope (ft/ft) : 0.020
Channel Length (ft) : 1000.0

-----Right Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

Massmann Infiltration Option Used
Hydraulic Conductivity (in/hr) : 0.0
Depth to Water Table (ft) : 100.0
Bio-Fouling Potential : Low
Maintenance : Average or Better

***** LINK DATA *****

-----SCENARIO: POSTDEVELOPED
Number of Links: 1

Link Name: Outfall
Link Type: Open Channel
Downstream Link: None

-----Left Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

-----Main Channel
Lower Sideslope Left (z) : 0.500
Lower Width Left (ft) : 3.000
Lower Sideslope Right (z) : 0.500
Lower Width Right (ft) : 3.000
Mannings n : 0.024
Base Width (ft) : 10.0
Elevation (ft) : 100.00
Channel Slope (ft/ft) : 0.020
Channel Length (ft) : 1000.0

-----Right Overbank

Upper Sideslope (z) : 0.500
 Upper Width (ft) : 3.000
 Middle Sideslope (z) : 10.000
 Middle Width (ft) : 10.000
 Mannings n : 0.040

Massmann Infiltration Option Used
 Hydraulic Conductivity (in/hr) : 0.0
 Depth to Water Table (ft) : 100.0
 Bio-Fouling Potential : Low
 Maintenance : Average or Better

*****FLOOD FREQUENCY AND DURATION STATISTICS*****

-----SCENARIO: PREDEVELOPED

Number of Subbasins: 6
 Number of Links: 1

***** Subbasin: A1 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

Tr (yrs)	Flood Peak (cfs)
2-Year	2.104
5-Year	2.682
10-Year	3.371
25-Year	4.503
50-Year	5.444
100-Year	6.522
200-Year	6.551

***** Subbasin: A2 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

Tr (yrs)	Flood Peak (cfs)
2-Year	4.303
5-Year	5.587
10-Year	6.899
25-Year	9.299
50-Year	11.730
100-Year	14.246
200-Year	14.481

***** Subbasin: A3 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

Tr (yrs)	Flood Peak (cfs)
2-Year	4.528

5-Year	5.853
10-Year	6.697
25-Year	8.485
50-Year	10.607
100-Year	12.451
200-Year	12.857

***** Subbasin: A4 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	6.593
5-Year	8.508
10-Year	9.817
25-Year	12.434
50-Year	15.287
100-Year	17.726
200-Year	18.341

***** Subbasin: A5 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	3.188
5-Year	4.072
10-Year	4.777
25-Year	6.150
50-Year	7.321
100-Year	8.513
200-Year	8.793

***** Subbasin: A6 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	7.696
5-Year	9.931
10-Year	11.459
25-Year	14.514
50-Year	17.845
100-Year	20.692
200-Year	21.410

***** Link: Outfall ***** Link Inflow Frequency Stats
 Flood Frequency Data(cfs)

(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	28.246
5-Year	36.133
10-Year	42.731
25-Year	56.584
50-Year	66.395
100-Year	80.432
200-Year	82.339

-----**SCENARIO: POSTDEVELOPED**

Number of Subbasins: 6

Number of Links: 1

***** **Subbasin: A1** *****

Flood Frequency Data(cfs)

(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	2.104
5-Year	2.682
10-Year	3.371
25-Year	4.503
50-Year	5.444
100-Year	6.522
200-Year	6.551

***** **Subbasin: A2** *****

Flood Frequency Data(cfs)

(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	4.303
5-Year	5.587
10-Year	6.899
25-Year	9.299
50-Year	11.730
100-Year	14.246
200-Year	14.481

***** **Subbasin: A3** *****

Flood Frequency Data(cfs)

(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	4.528
5-Year	5.853
10-Year	6.697

25-Year	8.485
50-Year	10.607
100-Year	12.451
200-Year	12.857

***** Subbasin: A4 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	6.593
5-Year	8.508
10-Year	9.817
25-Year	12.434
50-Year	15.287
100-Year	17.726
200-Year	18.341

***** Subbasin: A5 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	3.188
5-Year	4.072
10-Year	4.777
25-Year	6.150
50-Year	7.321
100-Year	8.513
200-Year	8.793

***** Subbasin: A6 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	7.696
5-Year	9.931
10-Year	11.459
25-Year	14.514
50-Year	17.845
100-Year	20.692
200-Year	21.410

***** Link: Outfall ***** Link Inflow Frequency Stats

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
----------	------------------

2-Year	28.246
5-Year	36.133
10-Year	42.731
25-Year	56.584
50-Year	66.395
100-Year	80.432
200-Year	82.339

*******Groundwater Recharge Summary*******

Recharge is computed as input to Perlnd Groundwater Plus Infiltration in Structures

Total Predeveloped Recharge During Simulation
 Model Element Recharge Amount (ac-ft)

Subbasin: A1	736.599
Subbasin: A2	1206.264
Subbasin: A3	76.993
Subbasin: A4	1006.985
Subbasin: A5	963.878
Subbasin: A6	1174.241
Link: Outfall	0.000

Total: 5164.960

Total Post Developed Recharge During Simulation
 Model Element Recharge Amount (ac-ft)

Subbasin: A1	736.599
Subbasin: A2	1206.264
Subbasin: A3	76.993
Subbasin: A4	1006.985
Subbasin: A5	963.878
Subbasin: A6	1174.241
Link: Outfall	0.000

Total: 5164.960

**Total Predevelopment Recharge Equals Post Developed
 Average Recharge Per Year, (Number of Years= 158)
 Predeveloped: 32.690 ac-ft/year, Post Developed: 32.690 ac-ft/year**

*******Water Quality Facility Data*******

-----**SCENARIO: PREDEVELOPED**

Number of Links: 1

***** Link: Outfall *****

Infiltration/Filtration Statistics-----

Inflow Volume (ac-ft): 36954.31

Inflow Volume Including PPT-Evap (ac-ft): 36954.31

Total Runoff Infiltrated (ac-ft): 0.00, 0.00%
 Total Runoff Filtered (ac-ft): 0.00, 0.00%
 Primary Outflow To Downstream System (ac-ft): 37070.36
 Secondary Outflow To Downstream System (ac-ft): 0.00
 Percent Treated (Infiltrated+Filtered)/Total Volume: 0.00%

-----**SCENARIO: POSTDEVELOPED**

Number of Links: 1

***** Link: Outfall *****

Infiltration/Filtration Statistics-----
 Inflow Volume (ac-ft): 36954.31
 Inflow Volume Including PPT-Evap (ac-ft): 36954.31
 Total Runoff Infiltrated (ac-ft): 0.00, 0.00%
 Total Runoff Filtered (ac-ft): 0.00, 0.00%
 Primary Outflow To Downstream System (ac-ft): 37070.36
 Secondary Outflow To Downstream System (ac-ft): 0.00
 Percent Treated (Infiltrated+Filtered)/Total Volume: 0.00%

*******Compliance Point Results*******

Scenario Predeveloped Compliance Link: Outfall
 Scenario Postdeveloped Compliance Link: Outfall

*** **Point of Compliance Flow Frequency Data** ***

Recurrence Interval Computed Using Gringorten Plotting Position

Predevelopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)	Tr (Years)	Discharge (cfs)
2-Year	27.186	2-Year	27.186
5-Year	34.404	5-Year	34.404
10-Year	42.087	10-Year	42.087
25-Year	54.827	25-Year	54.827
50-Year	63.157	50-Year	63.157
100-Year	74.525	100-Year	74.525
200-Year	79.668	200-Year	79.668

** Record too Short to Compute Peak Discharge for These Recurrence Intervals

APPENDIX H

76TH AVE SE BASE 1 – RUNOFF HYDROLOGY

MGS FLOOD PROJECT REPORT

Program Version: MGSFlood 4.52
Program License Number: 201210006
Project Simulation Performed on: 03/05/2021 2:15 PM
Report Generation Date: 03/05/2021 2:15 PM

Input File Name: Lincoln Landing.fld
Project Name: Lincoln Landing
Analysis Title:
Comments:

PRECIPITATION INPUT

Computational Time Step (Minutes): 15

Extended Precipitation Time Series Selected
Climatic Region Number: 14

Full Period of Record Available used for Routing
Precipitation Station : 96003605 Puget East 36 in_5min 10/01/1939-10/01/2097
Evaporation Station : 961036 Puget East 36 in MAP
Evaporation Scale Factor : 0.750

HSPF Parameter Region Number: 1
HSPF Parameter Region Name : USGS Default

***** Default HSPF Parameters Used (Not Modified by User) *****

***** WATERSHED DEFINITION *****

Predevelopment/Post Development Tributary Area Summary

	Predeveloped	Post Developed
Total Subbasin Area (acres)	0.404	0.390
Area of Links that Include Precip/Evap (acres)	0.000	0.000
Total (acres)	0.404	0.390

-----SCENARIO: PREDEVELOPED

Number of Subbasins: 1

----- Subbasin : Subbasin 1 -----
-----Area (Acres) -----
Impervious 0.404

Subbasin Total 0.404

-----SCENARIO: POSTDEVELOPED

Number of Subbasins: 1

----- Subbasin : Subbasin 1 -----
-----Area (Acres) -----
Impervious 0.390

Subbasin Total 0.390

***** LINK DATA *****

-----SCENARIO: PREDEVELOPED

Number of Links: 1

Link Name: New Channel Lnk2

Link Type: Open Channel

Downstream Link: None

-----Left Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

-----Main Channel
Lower Sideslope Left (z) : 0.500
Lower Width Left (ft) : 3.000
Lower Sideslope Right (z) : 0.500
Lower Width Right (ft) : 3.000
Mannings n : 0.024
Base Width (ft) : 10.0
Elevation (ft) : 100.00
Channel Slope (ft/ft) : 0.020
Channel Length (ft) : 1000.0

-----Right Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

Hydraulic Conductivity (in/hr) : 0.0
Massmann Regression Used to Estimate Hydralic Gradient
Depth to Water Table (ft) : 100.0
Bio-Fouling Potential : Low
Maintenance : Average or Better

***** LINK DATA *****

-----SCENARIO: POSTDEVELOPED
Number of Links: 1

Link Name: New Channel Lnk1

Link Type: Open Channel
Downstream Link: None

-----Left Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

-----Main Channel
Lower Sideslope Left (z) : 0.500
Lower Width Left (ft) : 3.000
Lower Sideslope Right (z) : 0.500
Lower Width Right (ft) : 3.000
Mannings n : 0.024
Base Width (ft) : 10.0
Elevation (ft) : 100.00
Channel Slope (ft/ft) : 0.020
Channel Length (ft) : 1000.0

-----Right Overbank
Upper Sideslope (z) : 0.500
Upper Width (ft) : 3.000
Middle Sideslope (z) : 10.000
Middle Width (ft) : 10.000
Mannings n : 0.040

Hydraulic Conductivity (in/hr) : 0.0
Massmann Regression Used to Estimate Hydralic Gradient
Depth to Water Table (ft) : 100.0
Bio-Fouling Potential : Low
Maintenance : Average or Better

*****FLOOD FREQUENCY AND DURATION STATISTICS*****

-----SCENARIO: PREDEVELOPED

Number of Subbasins: 1
Number of Links: 1

***** Subbasin: Subbasin 1 *****

Flood Frequency Data(cfs)
(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	Flood Peak (cfs)
2-Year	0.143
5-Year	0.190

10-Year	0.225
25-Year	0.269
50-Year	0.346
100-Year	0.412
200-Year	0.443
500-Year	0.484

***** Link: New Channel Lnk2 ***** Link Inflow Frequency Stats

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

```
=====
```

2-Year	0.143
5-Year	0.190
10-Year	0.225
25-Year	0.269
50-Year	0.346
100-Year	0.412
200-Year	0.443
500-Year	0.484

-----SCENARIO: POSTDEVELOPED

Number of Subbasins: 1

Number of Links: 1

***** Subbasin: Subbasin 1 *****

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

```
=====
```

2-Year	0.138
5-Year	0.184
10-Year	0.217
25-Year	0.260
50-Year	0.334
100-Year	0.398
200-Year	0.428
500-Year	0.468

***** Link: New Channel Lnk1 ***** Link Inflow Frequency Stats

Flood Frequency Data(cfs)
 (Recurrence Interval Computed Using Gringorten Plotting Position)
 Tr (yrs) Flood Peak (cfs)

```
=====
```

2-Year	0.138
5-Year	0.184
10-Year	0.217
25-Year	0.260
50-Year	0.334

100-Year 0.398
 200-Year 0.428
 500-Year 0.468

*****Groundwater Recharge Summary*****

Recharge is computed as input to PerInd Groundwater Plus Infiltration in Structures

Total Predeveloped Recharge During Simulation	
Model Element	Recharge Amount (ac-ft)
Subbasin: Subbasin 1	0.000
Link: New Channel Lnk2	0.000
Total:	0.000

Total Post Developed Recharge During Simulation	
Model Element	Recharge Amount (ac-ft)
Subbasin: Subbasin 1	0.000
Link: New Channel Lnk1	0.000
Total:	0.000

Total Predevelopment Recharge Equals Post Developed Average Recharge Per Year, (Number of Years= 158)
Predeveloped: 0.000 ac-ft/year, Post Developed: 0.000 ac-ft/year

*****Water Quality Facility Data*****

-----SCENARIO: PREDEVELOPED

Number of Links: 1

***** Link: New Channel Lnk2 *****

Infiltration/Filtration Statistics-----
 Inflow Volume (ac-ft): 159.13
 Inflow Volume Including PPT-Evap (ac-ft): 159.13
 Total Runoff Infiltrated (ac-ft): 0.00, 0.00%
 Total Runoff Filtered (ac-ft): 0.00, 0.00%
 Primary Outflow To Downstream System (ac-ft): 159.13
 Secondary Outflow To Downstream System (ac-ft): 0.00
 Percent Treated (Infiltrated+Filtered)/Total Volume: 0.00%

-----SCENARIO: POSTDEVELOPED

Number of Links: 1

***** Link: New Channel Lnk1 *****

Infiltration/Filtration Statistics-----
 Inflow Volume (ac-ft): 153.76

Inflow Volume Including PPT-Evap (ac-ft): 153.76
 Total Runoff Infiltrated (ac-ft): 0.00, 0.00%
 Total Runoff Filtered (ac-ft): 0.00, 0.00%
 Primary Outflow To Downstream System (ac-ft): 153.76
 Secondary Outflow To Downstream System (ac-ft): 0.00
 Percent Treated (Infiltrated+Filtered)/Total Volume: 0.00%

*******Compliance Point Results*******

Scenario Predeveloped Compliance Link: New Channel Lnk2
 Scenario Postdeveloped Compliance Link: New Channel Lnk1

*** **Point of Compliance Flow Frequency Data** ***

Recurrence Interval Computed Using Gringorten Plotting Position

Predevelopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)	Tr (Years)	Discharge (cfs)
2-Year	0.133	2-Year	0.128
5-Year	0.176	5-Year	0.170
10-Year	0.207	10-Year	0.200
25-Year	0.247	25-Year	0.239
50-Year	0.285	50-Year	0.275
100-Year	0.355	100-Year	0.343
200-Year	0.418	200-Year	0.404
500-Year	0.502	500-Year	0.485

** Record too Short to Compute Peak Discharge for These Recurrence Intervals

**** **Flow Duration Performance** ****

Excursion at Predeveloped 50%Q2 (Must be Less Than or Equal to 0%):	-10.8%	PASS
Maximum Excursion from 50%Q2 to Q2 (Must be Less Than or Equal to 0%):	-10.8%	PASS
Maximum Excursion from Q2 to Q50 (Must be less than 10%):	0.0%	PASS
Percent Excursion from Q2 to Q50 (Must be less than 50%):	1.4%	PASS

 MEETS ALL FLOW DURATION DESIGN CRITERIA: PASS

**** **LID Duration Performance** ****

Excursion at Predeveloped 8%Q2 (Must be Less Than 0%):	-3.6%	PASS
Maximum Excursion from 8%Q2 to 50%Q2 (Must be Less Than 0%):	-3.7%	PASS

 MEETS ALL LID DURATION DESIGN CRITERIA: PASS

Compute Water Quality 15-Minute Design Discharge for Link Inflow

On-Line Facility Design Discharge Rate (cfs):
 Off-Line Facility Design Discharge Rate (cfs):

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APPENDIX C – LINCOLN LANDING ACQUIRED PERMITS

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | www.mercerisland.gov



STAFF REPORT

SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT

Project Nos:	SHL19-001 (SEP19-004)
Description:	A request for a Shoreline Substantial Development to conduct maintenance and restoration work at Lincoln Landing, including repairs to the stormwater channel, removal of a bulkhead, and general site improvements.
Applicant/ Owner:	Alaine Sommargren (City of Mercer Island Public Works) /City of Mercer Island
Site Address:	2100 76th Ave SE Mercer Island WA 98040 (Right of Way).
Zoning District:	Single Family Residential (R-15 and R-12)
Staff Contact:	Robin Proebsting, Senior Planner
Exhibits:	<ol style="list-style-type: none">1. Development Application signed February 5, 2019.2. Public Notice of Application dated April 15, 2019.3. SEPA Determination of Non-significance issued by the City of Mercer Island on May 15, 2021.4. Development plan set prepared by PND Engineers, dated February 2021.5. Critical Areas Study prepared by Hart Crowser, dated February 12, 2021.6. Comment letter from the Muckleshoot Indian Tribe Fisheries Division7. Comment letter from the Washington Department of Fish and Wildlife8. Memorandum prepared by ESA, dated March 26, 2021.

INTRODUCTION

I. Project Description

The applicant has applied for a Shoreline Substantial Development Permit, Critical Area Determination and SEPA Review for restoration work at the Lincoln Landing waterfront park. The scope of work consists of:

1. Renovation of the highly degraded watercourse channel on west end of the site including a rock-lined channel, new channel substrate step pools, and woody debris.
2. Maintenance upgrades and improvements to an existing municipal sewer system within the project, including reconfiguration of existing sewer line, demolition, and relocation of a sewer manhole connection.

3. Installation of a new stormwater collection, conveyance and treatment system intended to collect and treat site stormwater runoff generated from the driveway access of 76th Ave SE and site parking areas prior to discharging to the improved channel. The outlet pipe from the proposed stormwater system will discharge to the improved channel directly downstream of the existing northern most-existing private driveway/culvert.
4. Restoration of the shoreline including removal of a concrete bulkhead and a small timber bulkhead, and shoreline re-grading to create a shallow-slope beach.
5. General site improvements including a new concrete path, lawn, trees and overhanging native vegetation adjacent to the watercourse channel and shoreline.

II. Site Description and Context

1. The site is located within public right-of-way, where the terminus of 76th Ave SE meets Lake Washington. The site contains a lawn, two trees and bulkhead. There is a watercourse on site, which has been straightened and contains cobbles, rip rap, and concrete debris. The area around the watercourse is vegetated with trees, Himalayan blackberry, English laurel, and bamboo.
2. The subject site and adjacent lots are zoned for single-family use and the adjacent lots are developed with single-family homes.

FINDINGS OF FACT & CONCLUSIONS OF LAW

III. Application Procedure

1. The application for a Shoreline Substantial Development Permit (SSDP), together with an application for a Critical Area Determination, was received by the City of Mercer Island Community Planning & Development Department on February 5, 2019 (Exhibit 1) and deemed complete on February 25, 2019. Although the Shoreline Master Program (SMP) was updated in 2020, the application vested to the SMP in place at the time of complete application pursuant to MICC 19.15.170, which was the 2015 SMP. MICC 19.15.170 establishes SSDPs as Type III land use reviews, and Type III applications vest on the date a complete application is filed.
2. Since SSDP and Critical Area Determination decisions have different appeal authorities, a separate decision is being issued for Critical Area Determination CAO19-003.
3. Under MICC 19.15.030, Table A, applications for SSDPs must undergo Type III review. Type III reviews require notice of application (discussed below). A notice of decision is issued once the project review is complete.
4. The City of Mercer Island provided public notice of application for this SSDP and Critical Areas Determination, as set forth in MICC 19.15.090. The comment period for the public notice period lasted for 30 days, from April 15, 2019 to May 15, 2019 (Exhibit 2). The following methods were used for the public notice of application:

- a. A mailing sent to neighboring property owners within 300 feet of the subject parcel.
 - b. A sign posted on the subject parcel.
 - c. A posting in the City of Mercer Island’s weekly permit bulletin.
5. Two comments were received for this project:
- a. The Muckleshoot Indian Tribe Fisheries Division provided comments related to the proposed native landscaping, which included questions and comments regarding the proposed inclusion of a stormwater treatment vault, the stream design, and monitoring of the log weirs (Exhibit 6).
 - b. The Washington Department of Fish and Wildlife provided comment stating that the stormwater treatment vault should be located outside of the watercourse channel, as it would present a fish passage barrier (Exhibit 7).

Staff response: The proposed project design was changed after the above comments were provided so that the in-water stormwater treatment vault and log weirs were removed from the project scope. Doing so removed potential fish passage barriers and the need to monitor the log weirs, the addressing the concerns raised in the comments.

IV. State Environmental Policy Act (SEPA)

A Determination of Non-significance (DNS) was issued on May 28, 2019 following the optional DNS process per WAC 197-11-355 (Exhibit 3). The SEPA application is identified by the City of Mercer Island project number SEP19-001.

V. Consistency with the Shoreline Master Program

1. **MICC 19.07.110(B)** No Net Loss Standard and Mitigation Sequencing. No development shall be approved unless the applicant demonstrates to the code official’s satisfaction that the shoreline development will not create a net loss of ecological function in the shorelands.

Staff Analysis: The aim of the scope of work is to restore ecological functions to the shoreline habitat, through the project components listed in the project description, above. The proposed scope of work will result in a net gain to ecological functions, including enhanced watercourse fish habitat complexity, replacement of invasive vegetation with shoreline riparian habitat vegetation, reconnection of the shoreline to Lake Washington through the removal of the concrete bulkhead, and creation of a vegetated beach with a gradual slope (Exhibit 5).

The City’s third-party reviewer, ESA, has confirmed that the proposed measures are sufficient to document that the proposed scope of work will not create a net loss of ecological function in the shorelands, consistent with this criterion (Exhibit 8).

2. **MICC 19.07.110 Table C** Maximum Impervious Surface Coverage 10%: between 0 and 25 feet from OHWM; 30%: between 25 and 50 feet from OHWM.

Staff Analysis: The proposed design includes rocks to line the watercourse channel, together with a portion of the proposed trail within 50 feet of OHWM, totaling approximately 10% of the area within 0-25 feet from OHWM and 12% of the area within 25-50 of OHWM (Exhibit 4, Sheet C1.01).

CONDITIONS OF APPROVAL

1. The project proposal shall be in substantial conformance with Exhibit 4 and all applicable development standards contained within Mercer Island City Code (MICC) Chapter 19.07.
2. The applicant is responsible for documenting any required changes in the project proposal due to conditions imposed by any applicable local, state and federal government agencies.
3. Construction shall not be authorized, nor may begin within twenty-one days of the date of filing of the decision as defined in RCW 90.58.140(6).
4. Construction of this project proposal shall only occur during approved construction hours by the City of Mercer Island and/or as otherwise restricted by the Building Official.
5. Construction or substantial progress toward construction of a development for which a permit has been granted must be undertaken within two years after the approval of the permit or the permit shall terminate. The code official shall determine if substantial progress has been made. A single extension before the end of the time limit, with prior notice to parties of record, for up to one year, based on reasonable factors may be granted.

DEVELOPMENT REGULATION COMPLIANCE – DISCLOSURE

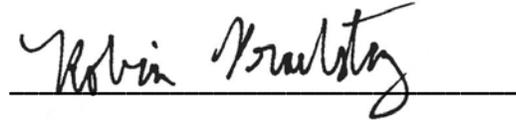
1. The applicant is responsible for obtaining any required permits or approvals from the appropriate Local, State, and Federal Agencies. The applicant is responsible for meeting the conditions are required by the agencies pursuant to MICC 19.07.020(E), 19.07.110(A)(5), and 19.07.110(D)
2. All required permits must be obtained prior to the commencement of construction.
3. The applicant shall abide by the work windows for listed species established by the U.S. Army Corps of Engineers and Washington Department of Fish and Wildlife.

DECISION

Based upon the above noted Findings of Fact and Conclusions of Law, Shoreline Substantial Development Permit application SHL19-001 and Critical Area Determination CAO19-003, as depicted in Exhibit 4, is hereby

APPROVED. This decision is final, unless appealed in writing consistent with adopted appeal procedures, MICC 19.15.130, and all other applicable appeal regulations.

Approved this 10th day of May, 2021

A handwritten signature in black ink, reading "Robin Proebsting", is written over a solid horizontal line.

Robin Proebsting
Senior Planner
Community Planning & Development
City of Mercer Island
robin.proebsting@mercerisland.gov
206-275-7717

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | www.mercerisland.gov



DECISION

CRITICAL AREA DETERMINATION

Project Nos:	CAO19-003 (SEP19-004)
Description:	A request for a Shoreline Substantial Development Permit and Critical Areas Determination to conduct maintenance and restoration work at Lincoln Landing, including repairs to the stormwater channel, removal of a bulkhead, and general site improvements.
Applicant/ Owner:	Alaine Sommargren (City of Mercer Island Public Works) /City of Mercer Island
Site Address:	2100 76th Ave SE Mercer Island WA 98040 (Right of Way).
Zoning District:	Single Family Residential (R-15 and R-12)
Staff Contact:	Robin Proebsting, Senior Planner
Exhibits:	<ol style="list-style-type: none">1. Development Application signed February 5, 2019.2. Public Notice of Application dated April 15, 2019.3. SEPA Determination of Non-significance issued by the City of Mercer Island on May 15, 2021.4. Development plan set prepared by PND Engineers, dated February 2021.5. Critical Areas Study prepared by Hart Crowser, dated February 12, 2021.6. Comment letter from the Muckleshoot Indian Tribe Fisheries Division7. Comment letter from the Washington Department of Fish and Wildlife8. Memorandum prepared by ESA, dated March 26, 2021.

INTRODUCTION

I. Project Description

The applicant has applied for a Shoreline Substantial Development Permit, Critical Area Determination and SEPA Review for restoration work at the Lincoln Landing waterfront park. The scope of work consists of:

1. Renovation of the highly degraded watercourse channel on west end of the site including a rock-lined channel, new channel substrate step pools, and woody debris.
2. Maintenance upgrades and improvements to an existing municipal sewer system within the project, including reconfiguration of existing sewer line, demolition, and relocation of a sewer manhole connection.

3. Installation of a new stormwater collection, conveyance and treatment system intended to collect and treat site stormwater runoff generated from the driveway access of 76th Ave SE and site parking areas prior to discharging to the improved channel. The outlet pipe from the proposed stormwater system will discharge to the improved channel directly downstream of the existing northern most-existing private driveway/culvert.
4. Restoration of the shoreline including removal of a concrete bulkhead and a small timber bulkhead, and shoreline re-grading to create a shallow-slope beach.
5. General site improvements including a new concrete path, lawn, trees and overhanging native vegetation adjacent to the watercourse channel and shoreline.

II. Site Description and Context

1. The site is located within public right-of-way, where the terminus of 76th Ave SE meets Lake Washington. The site contains a lawn, two trees and bulkhead. There is a watercourse on site, which has been straightened and contains cobbles, rip rap, and concrete debris. The area around the watercourse is vegetated with trees, Himalayan blackberry, English laurel, and bamboo.
2. The subject site and adjacent lots are zoned for single-family use and the adjacent lots are developed with single-family homes.

FINDINGS OF FACT & CONCLUSIONS OF LAW

III. Application Procedure

1. The application for a Shoreline Substantial Development Permit (SSDP), together with an application for a Critical Area Determination, was received by the City of Mercer Island Community Planning & Development Department on February 5, 2019 (Exhibit 1) and deemed complete on February 25, 2019. Although the Shoreline Master Program (SMP) was updated in 2020, the application vested to the SMP in place at the time of complete application pursuant to MICC 19.15.170, which was the 2015 SMP. MICC 19.15.170 establishes SSDPs as Type III land use reviews, and Type III applications vest on the date a complete application is filed.
2. Since SSDP and Critical Area Determination decisions have different appeal authorities, a separate decision is being issued for SSDP SHL19-001.
3. Under MICC 19.15.030, Table A, applications for SSDPs must undergo Type III review. Type III reviews require notice of application (discussed below). A notice of decision is issued once the project review is complete.
4. The City of Mercer Island provided public notice of application for this SSDP and Critical Areas Determination, as set forth in MICC 19.15.090. The comment period for the public notice period lasted for 30 days, from April 15, 2019 to May 15, 2019 (Exhibit 2). The following methods were used for the public notice of application:

- a. A mailing sent to neighboring property owners within 300 feet of the subject parcel.
 - b. A sign posted on the subject parcel.
 - c. A posting in the City of Mercer Island's weekly permit bulletin.
5. Two comments were received for this project:
- a. The Muckleshoot Indian Tribe Fisheries Division provided comments related to the proposed native landscaping, which included questions and comments regarding the proposed inclusion of a stormwater treatment vault, the stream design, and monitoring of the log weirs (Exhibit 6).
 - b. The Washington Department of Fish and Wildlife provided comment stating that the stormwater treatment vault should be located outside of the watercourse channel, as it would present a fish passage barrier (Exhibit 7).

Staff response: The proposed project design was changed after the above comments were provided so that the in-water stormwater treatment vault and log weirs were removed from the project scope. Doing so removed potential fish passage barriers and the need to monitor the log weirs, the addressing the concerns raised in the comments.

IV. State Environmental Policy Act (SEPA)

A Determination of Non-significance (DNS) was issued on May 28, 2019 following the optional DNS process per WAC 197-11-355 (Exhibit 3). The SEPA application is identified by the City of Mercer Island project number SEP19-001.

V. Consistency with the Land Development Code

- 1. **MICC 19.07.030(A)(11)** Conservation, preservation, restoration and/or enhancement of critical areas that does not negatively impact the functions of any critical area.

Staff Analysis: The aim of the scope of work is to restore ecological functions to the shoreline habitat, through the project components listed in the project description, above. The proposed scope of work will result in a net gain to ecological functions, including enhanced watercourse fish habitat complexity, replacement of invasive vegetation with shoreline riparian habitat vegetation, reconnection of the shoreline to Lake Washington through the removal of the concrete bulkhead, and creation of a vegetated beach with a gradual slope (Exhibit 5). The proposed scope of work avoids and minimizes impacts to critical areas by limited all in-water work to periods determined by state and federal agencies to avoid potential adverse effects on critical areas, fish, and wildlife; deploying a turbidity curtain waterward of the work area during bulkhead removal; preparation of a spill prevention, control, and countermeasures plan; use of temporary erosion and sediment control best management practices; and refueling of equipment at least 100 feet from surface waters.

The City's third-party reviewer, ESA, has reviewed the critical areas study submitted with the application and confirmed that the proposed mitigation measures are sufficient to document that critical areas will not be negatively impacted, consistent with this criterion (Exhibit 8).

CONDITIONS OF APPROVAL

1. The project proposal shall be in substantial conformance with Exhibit 4 and all applicable development standards contained within Mercer Island City Code (MICC) Chapter 19.07.
2. The applicant is responsible for documenting any required changes in the project proposal due to conditions imposed by any applicable local, state and federal government agencies.
3. Construction shall not be authorized, nor may begin within twenty-one days of the date of filing of the decision as defined in RCW 90.58.140(6).
4. Construction of this project proposal shall only occur during approved construction hours by the City of Mercer Island and/or as otherwise restricted by the Building Official.
5. Construction or substantial progress toward construction of a development for which a permit has been granted must be undertaken within two years after the approval of the permit or the permit shall terminate. The code official shall determine if substantial progress has been made. A single extension before the end of the time limit, with prior notice to parties of record, for up to one year, based on reasonable factors may be granted.

DEVELOPMENT REGULATION COMPLIANCE – DISCLOSURE

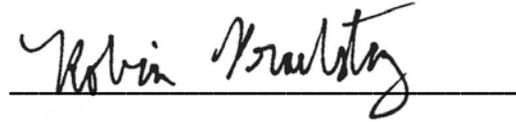
1. The applicant is responsible for obtaining any required permits or approvals from the appropriate Local, State, and Federal Agencies. The applicant is responsible for meeting the conditions are required by the agencies pursuant to MICC 19.07.020(E), 19.07.110(A)(5), and 19.07.110(D)
2. All required permits must be obtained prior to the commencement of construction.
3. The applicant shall abide by the work windows for listed species established by the U.S. Army Corps of Engineers and Washington Department of Fish and Wildlife.

DECISION

Based upon the above noted Findings of Fact and Conclusions of Law, Shoreline Substantial Development Permit application SHL19-001 and Critical Area Determination CAO19-003, as depicted in Exhibit 4, is hereby

APPROVED. This decision is final, unless appealed in writing consistent with adopted appeal procedures, MICC 19.15.130, and all other applicable appeal regulations.

Approved this 10th day of May, 2021

A handwritten signature in black ink, reading "Robin Proebsting", is written over a solid horizontal line.

Robin Proebsting
Senior Planner
Community Planning & Development
City of Mercer Island
robin.proebsting@mercerisland.gov
206-275-7717



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: September 16, 2020
Project End Date: September 15, 2025

Permit Number: 2020-4-721+01
FPA/Public Notice Number: N/A
Application ID: 21369

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
City of Mercer Island ATTENTION: Paul West 2040 84th Ave SE Mercer Island, WA 98040-2222	

Project Name: Lincoln Landing Stream and Shoreline Enhancements (formerly APPS ID #13265)

Project Description: The City of Mercer Island is proposing to perform renovation and restoration work at the Lincoln Landing site. This project is one of many street end park sites across Mercer Island that are undergoing shoreline and stormwater improvements as time and budget allows.

The improvements will include the following:

1. Renovation of the highly degraded watercourse channel on west end of the site. Improvements include a rock-lined channel, new channel substrate step pools, and woody debris.
2. Removal of a concrete bullhead, removal of a small timber bulkhead and shoreline re-grading to create a shallow-slope beach along the shoreline.
3. General site improvements including a new concrete path, lawn, trees and overhanging native vegetation adjacent to the watercourse channel and shoreline.
4. Installation of a new stormwater collection, conveyance and treatment system intended to collect and treat site runoff prior to discharging to the improved channel.
5. Maintenance upgrades to an existing municipal sewer system within the project site.

Overall, this project is meant to improve the lake's water quality and return shoreline to a more natural state.

PROVISIONS

1. **TIMING LIMITATION:** You may begin the project immediately and you must complete the project by September 15, 2025, provided that work within the wetted perimeter of the waters of the state must occur only between June 16 and September 30.
2. **APPROVED PLANS:** You must accomplish the work per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled "LINCOLN LANDING SHORELINE AND STORMWATER ENHANCEMENT", dated September 2020, except as modified by this Hydraulic Project Approval (HPA). You must have a copy of these plans and this HPA available on site during all phases of the project proposal.
3. **INVASIVE SPECIES CONTROL:** Thoroughly clean all equipment and gear before arriving and leaving the job site to



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prevent the transport and introduction of aquatic invasive species. Properly dispose of any water and chemicals used to clean gear and equipment. You can find additional information in the Washington Department of Fish and Wildlife's Invasive Species Management Protocols (November 2012), available online at <http://wdfw.wa.gov/publications/01490/wdfw01490.pdf>.

NOTIFICATION REQUIREMENTS

4. **PRE-, DURING, AND POST-CONSTRUCTION NOTIFICATION:** You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail to larry.fisher@dfw.wa.gov and to HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, one day before removing the temporary bypass and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

5. **PHOTOGRAPHS:** You, your agent, or contractor must take photographs of the job site before the work begins and after the work is completed. You must upload the photographs to the post-permit requirement page in the Aquatic Protection Permitting System (APPS) or mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234 within 30-days after the work is completed.

6. **FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION:** If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife Area Habitat Biologist listed below of the problem by calling 425-449-6790. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS, AND EQUIPMENT

7. Establish staging areas (used for equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

8. Design and locate new temporary access roads to prevent erosion and sediment delivery to waters of the state.

9. Clearly mark boundaries to establish the limit of work associated with site access and construction.

10. Check equipment daily for leaks and complete any required repairs in an upland location before using the equipment in or near the water.

11. Use environmentally acceptable lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols in equipment operated in or near the water.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

12. Work in the stream must occur "in the dry" (when no natural flow is occurring or when flow is diverted around the job site).

13. Protect all disturbed areas from erosion. Maintain erosion and sediment control until all work and cleanup of the job site is complete.



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14. All erosion control materials that will remain onsite must be composed of 100% biodegradable materials.
15. Straw used for erosion and sediment control, must be certified free of noxious weeds and their seeds.
16. Stop all hydraulic project activities except those needed to control erosion and siltation, if flow conditions arise that will result in erosion or siltation of waters of the state.
17. Prevent project contaminants, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.
18. Route construction water (wastewater) from the project to an upland area above the limits of anticipated floodwater. Remove fine sediment and other contaminants before discharging the construction water to waters of the state.
19. Deposit waste material from the project, such as construction debris, silt, excess dirt, or overburden, in an upland area above the limits of anticipated floodwater unless the material is approved by the Washington Department of Fish and Wildlife for reuse in the project.
20. Deposit all trash from the project at an appropriate upland disposal location.

CONSTRUCTION MATERIALS

21. Store all construction and deconstruction material in a location and manner that will prevent contaminants such as petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.
22. Do not stockpile construction material waterward of the ordinary high water line.
23. Use only clean, suitable material as fill material (no trash, debris, car bodies, tires, asphalt, concrete, etc.).

IN-WATER WORK AREA ISOLATION USING A TEMPORARY BYPASS

(References below to fish apply if fish are found present at the work site.)

24. Isolate flows from the work area by using either a total or partial bypass to reroute the stream through a temporary channel or pipe.
25. Provide fish passage during times of the year when fish are expected to migrate.
26. Sequence the work to minimize the duration of dewatering.
27. Use the least-impacting feasible method to temporarily bypass water from the work area. Consider the physical characteristics of the site and the anticipated volume of water flowing through the work area.
28. The hydraulic capacity of the stream bypass must be equal to or greater than the 25-year peak flow event expected when the bypass will be operated.
29. Design the temporary bypass to minimize the length of the dewatered stream channel.
30. During all phases of bypass installation and decommissioning, maintain flows downstream of the project site to ensure survival of all downstream fish.
31. Install the temporary bypass before starting other construction work in the wetted perimeter.



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32. Install a cofferdam or similar device at the upstream and downstream end of the bypass to prevent backwater from entering the work area.

33. Return diverted water to the channel immediately downstream of the work area. Dissipate flow energy from the diversion to prevent scour or erosion of the channel and bank.

34. If the diversion inlet is a gravity diversion that provides fish passage, place the diversion outlet where it facilitates gradual and safe reentry of fish into the stream channel.

35. If the bypass is a pumped diversion, once started it must run continuously until it is no longer necessary to bypass flows. This requires back-up pumps on-site and twenty-four-hour monitoring for overnight operation.

36. If the diversion inlet is a pump diversion in a fish-bearing stream, the pump intake structure must have a fish screen installed, operated, and maintained in accordance with RCW 77.57.010 and 77.57.070. Screen the pump intake with one of the following:

- a) Perforated plate: 0.094 inch (maximum opening diameter);
- b) Profile bar: 0.069 inch (maximum width opening); or
- c) Woven wire: 0.087 inch (maximum opening in the narrow direction).

The minimum open area for all types of fish screens is twenty-seven percent. The screened intake facility must have enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Maintain fish screens to prevent injury or entrapment of fish.

37. The fish screen must remain in place whenever water is withdrawn from the stream through the pump intake.

38. Remove fish screens on dewatering pumps in the isolated work area only after all fish are safe and excluded from the work area.

39. Isolate pump hose intakes with block nets so that fish cannot get near the intake.

FISH LIFE REMOVAL

40. All persons participating in capture and removal must have training, knowledge, and skills in the safe handling of fish life.

41. If electrofishing is conducted, a person with electrofishing training must be on-site to conduct or direct all electrofishing activities.

42. If personnel are available, the Washington Department of Fish and Wildlife and affected tribes may help capture and move fish life from the job site.

43. Place block nets upstream and downstream of the in-water work area before capturing and removing fish life.

44. Capture and safely move fish life from the work area to the nearest suitable free-flowing water.

CHANNEL REALIGNMENT

45. The new channel configuration must incorporate habitat components, bed materials, channel morphology, and native or other approved vegetation to provide equal or better habitat compared to that which previously existed in the old channel.

46. Use fir, cedar, or other coniferous species to construct log or rootwad fish habitat structures.



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47. Install the large wood structures so the rootwads extend to the midpoint of the channel, as shown in the approved plans.

48. Before water is diverted into a permanent new channel configuration, install approved habitat components and bed and bank protection materials to prevent erosion as shown in the approved plan.

50. The Habitat Biologist listed below or his representative must inspect and approve the new channel work before the stream is diverted into the channel.

DEMOBILIZATION AND CLEANUP

51. To minimize sediment delivery to the stream or stream channel, do not return in-stream flows to the work area until all in-channel work is completed and the bed and banks are stabilized.

52. Seed areas disturbed by construction activities with a native seed mix suitable for the site that has at least one quick-establishing plant species.

53. Complete installation of the planting plans prior to the end of the the first dormant season (late fall through late winter) after completion of grading work per the approved plan. Maintain plantings for at least three years to ensure at least eighty percent of the plantings survive. Failure to achieve the eighty percent survival in year three will require you to submit a plan with follow-up measures to achieve requirements or reasons to modify requirements.

54. Upon completion of the project, remove all materials or equipment from the site and dispose of all excess spoils and waste materials in an upland area above the limits of anticipated floodwater.

55. Remove temporary erosion and sediment control methods after job site is stabilized or within three months of project completion, whichever is sooner.

LOCATION #1:		Site Name: Lincoln Landing 2100 76th Ave SE, Mercer Island, WA 98040				
WORK START:		September 16, 2020		WORK END:		September 15, 2025
<u>WRIA</u>		<u>Waterbody:</u>			<u>Tributary to:</u>	
08 - Cedar - Sammamish		Unknown Stream Number			Unknown	
<u>1/4 SEC:</u>	<u>Section:</u>	<u>Township:</u>	<u>Range:</u>	<u>Latitude:</u>	<u>Longitude:</u>	<u>County:</u>
SW 1/4	01	24 N	04 E	47.592	-122.238	King
<u>Location #1 Driving Directions</u>						
1. Take exit 7A from I-90 E 2. Left on 77th Ave SE 3. Left on N Mercer Way 4. Right on 76th Ave SE 5. Right on 22nd St SE 6. Left on 76th Ave SE 7. Park is straight ahead						



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APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: September 16, 2020
Project End Date: September 15, 2025

Permit Number: 2020-4-721+01
FPA/Public Notice Number: N/A
Application ID: 21369

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at <http://wdfw.wa.gov/licensing/hpa/>. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.



HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
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Issued Date: September 16, 2020
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Permit Number: 2020-4-721+01
FPA/Public Notice Number: N/A
Application ID: 21369

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist Larry.Fisher@dfw.wa.gov
Larry Fisher 425-449-6790

 for Director
WDFW



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch

MAR 08 2019

Ms. Alaine Sommargren
City of Mercer Island, Parks and Recreation
2040 84th Avenue Southeast
Mercer Island, Washington 98040

Reference: NWS-2017-1078
Mercer Island, City of
Parks and Recreation
(Lincoln Landing Shoreline
and Stormwater
Enhancement)

Dear Ms. Sommargren:

We have reviewed your application to remove a bulkhead, regrade the shoreline, and install a stormwater treatment vault in Lake Washington at Mercer Island, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 7, *Outfall Structures and Associated Intake Structures* and NWP 27, *Aquatic Habitat Restoration, Enhancement, and Establishment Activities* (Federal Register January 6, 2017, Vol. 82, No. 4), authorizes your proposal as depicted on the enclosed drawings dated January 2019.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 7 and 27, Terms and Conditions* and the following special conditions:

a. In order to meet the requirements of the Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA) programmatic consultation Fish Passage and Restoration Actions in Washington State (FPRP III) (National Marine Fisheries Service (NMFS) Reference Number WCR-2014-1857), you must implement and abide by the ESA requirements and/or agreements set forth in the Biological Opinion (BO) dated June 21, 2017, and the Project Information Form dated January 10, 2019 in the enclosed document Appendix A: FPRP III Guidelines and Implementation Forms. The BO is available on the U.S. Army Corps of Engineers (Corps) website (Permit Guidebook, Endangered Species, Programmatic Consultations, Fish Passage and Restoration Programmatic Consultations). Within 45 days of completing the permitted work in waters of the U.S., you must provide the

Corps the information requested in the FPRP Action Completion Reporting Form in the enclosed document Appendix A: FPRP III Guidelines and Implementation Forms. If fish salvage occurs as part of your project, you must also provide the Corps the information requested in the FPRP Fish Salvage Reporting Form in the enclosed document Appendix A: FPRP III Guidelines and Implementation Forms, within 45 days of completing the permitted work in waters of the U.S. All information must prominently display the reference number NWS-2017-1078. Failure to comply with these requirements constitutes non-compliance with the ESA and your Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of their BO and with the ESA. If you cannot comply with the terms and conditions of this programmatic consultation, you must, prior to commencing construction, contact the Corps, Seattle District, Regulatory Branch for an individual consultation in accordance with the requirements of the ESA and/or the MSA.

b. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Evaluation for Lincoln Landing Park dated November 22, 2017, in its entirety. The U.S. Fish and Wildlife Service (USFWS) provided a LOC with a finding of “may affect, not likely to adversely affect” based on this document on February 15, 2019 (USFWS Reference Number 01EWF00-2019-I-0307). This agency will be informed of this permit issuance. Failure to comply with the commitments made in this consultation constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS is the appropriate authority to determine compliance with ESA.

c. In order to meet the requirements of the Endangered Species Act you may conduct the authorized activities from July 16 through April 30 in any year this permit is valid. You shall not conduct work authorized by this permit from May 1 through July 15 in any year this permit is valid.

d. Incidents where any individuals of fish species, marine mammals and/or sea turtles listed by National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) under the Endangered Species Act appear to be injured or killed as a result of discharges of dredged or fill material into waters of the U.S. or structures or work in navigable waters of the U.S. authorized by this Nationwide Permit verification shall be reported to NOAA Fisheries, Office of Protected Resources at (301) 713-1401 and the Regulatory Office of the Seattle District of the U.S. Army Corps of Engineers at (206) 764-3495. The finder should leave the animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible, take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously injured or killed by discharge exposure or some unnatural cause. The finder may be asked to carry out instructions provided by NOAA Fisheries to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

e. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch. You shall perform any work required by the Corps in accordance with Section 106 of the National Historic Preservation Act and Corps regulations.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification (WQC) requirements and Coastal Zone Management (CZM) consistency determination response for this NWP. No further coordination with Ecology for WQC and CZM is required.

Lake Washington is a water of the U.S. If you believe this is inaccurate, you may request a preliminary or approved jurisdictional determination (JD). If one is requested, please be aware that we may require the submittal of additional information to complete the JD and work authorized in this letter may not occur until the JD has been completed.

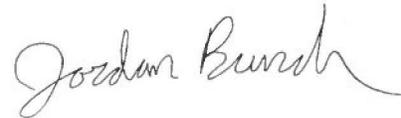
Our verification of this NWP authorization is valid until March 18, 2022, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2022, you will have until March 18, 2023, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit*. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey. These documents and information about

our program are available on our website at www.nws.usace.army.mil, select "Regulatory Branch, Permit Information" and then "Contact Us."

If you have any questions, please contact me at jordan.a.bunch@usace.army.mil or (206) 764-3482.

Sincerely,

A handwritten signature in black ink that reads "Jordan Bunch". The signature is written in a cursive style with a long, sweeping tail on the letter "h".

Jordan Bunch, Project Manager
Regulatory Branch

Enclosures



US Army Corps
of Engineers
Seattle District

NATIONWIDE PERMIT 7

Terms and Conditions

Effective Date: March 19, 2017



-
- A. Description of Authorized Activities
 - B. U.S. Army Corps of Engineers (Corps) National General Conditions for all NWP
 - C. Corps Seattle District Regional General Conditions
 - D. Corps Regional Specific Conditions for this NWP
 - E. Washington Department of Ecology (Ecology) Section 401 Water Quality Certification (401 Certification): General Conditions
 - F. Ecology 401 Certification: Specific Conditions for this NWP
 - G. Coastal Zone Management Consistency Response for this NWP
-

In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit (NWP) authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

Outfall Structures and Associated Intake Structures. Activities related to the construction or modification of outfall structures and associated intake structures, where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted by, or otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (section 402 of the Clean Water Act). The construction of intake structures is not authorized by this NWP, unless they are directly associated with an authorized outfall structure.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 32.) (Authorities: Sections 10 and 404)

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. (b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status. (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by

the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP. (e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required. (g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be

necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site). (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)). (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWP, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation. (2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)). (3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation. (4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWP. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWP. (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management. (i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district

engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
- (4) A description of the proposed activity; the activity’s purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of

the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) **Form of Pre-Construction Notification:** The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and

procedures for electronic submittals. (d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWP and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal. (2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes. (3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision: 1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters

and wetlands, cannot exceed 1/2-acre. 2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns. 3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer. 4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of

a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information: 1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP. 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law. 3. NWPs do not grant any property rights or exclusive privileges. 4. NWPs do not authorize any injury to the property or rights of others. 5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS: The following conditions apply to all NWPs for the Seattle District in Washington State, unless specified.

1. Project Drawings: Drawings must be submitted with pre-construction notification (PCN). Drawings must provide a clear understanding of the proposed project, and how waters of the U.S. will be affected. Drawings must be originals and not reduced copies of large-scale plans. Engineering drawings are not required. Existing and proposed site conditions (manmade and landscape features) must be drawn to scale.

2. Aquatic Resources Requiring Special Protection: Activities resulting in a loss of waters of the United States in mature forested wetlands, bogs and peatlands, aspen-dominated wetlands, alkali wetlands, vernal pools, camas prairie wetlands, estuarine wetlands, wetlands in coastal lagoons, and wetlands in dunal systems along the Washington coast cannot be authorized by a NWP, except by the following NWPs:

- NWP 3 – Maintenance
- NWP 20 – Response Operations for Oil and Hazardous Substances
- NWP 32 – Completed Enforcement Actions
- NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, prospective permittees must submit a PCN to the Corps of Engineers (see NWP general condition 32) and obtain written authorization before commencing work.

3. New Bank Stabilization in Tidal Waters of Puget Sound: Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11 and 12 (within the areas identified on Figures 1a through 1e on Corps website) cannot be authorized by NWP.

4. Commencement Bay: The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 2 on Corps website):

- NWP 12 – Utility Line Activities (substations)
- NWP 13 – Bank Stabilization
- NWP 14 – Linear Transportation Projects
- NWP 23 – Approved Categorical Exclusions
- NWP 29 – Residential Developments
- NWP 39 – Commercial and Institutional Developments
- NWP 40 – Agricultural Activities
- NWP 41 – Reshaping Existing Drainage Ditches
- NWP 42 – Recreational Facilities
- NWP 43 – Stormwater and Wastewater Management Facilities

5. Bank Stabilization: All projects including new or maintenance bank stabilization activities require PCN to the Corps of Engineers (see NWP general condition 32). For new bank stabilization projects only, the following must be submitted to the Corps of Engineers:

- a. The cause of the erosion and the distance of any existing structures from the area(s) being stabilized.
- b. The type and length of existing bank stabilization within 300 feet of the proposed project.
- c. A description of current conditions and expected post-project conditions in the waterbody.
- d. A statement describing how the project incorporates elements avoiding and minimizing adverse environmental effects to the aquatic environment and nearshore riparian area, including vegetation impacts in the waterbody.

In addition to a. through d., the results from any relevant geotechnical investigations can be submitted with the PCN if it describes current or expected conditions in the waterbody.

6. Crossings of Waters of the United States: Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts or bridges, requires submittal of a PCN to the Corps of Engineers (see NWP general condition 32). If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, the project must apply the stream simulation design method from the Washington Department of Fish and Wildlife located in the *Water Crossing Design Guidelines* (2013), or a design method which provides passage at all life stages at all flows where the salmonid species would naturally seek passage. If the stream simulation design method is not applied for a culvert where salmonid species are present or could be present, the project proponent must provide a rationale in the PCN sufficient to establish one of the following:

- a. The existence of extraordinary site conditions.
- b. How the proposed design will provide equivalent or better fish passage and fisheries habitat benefits than the stream simulation design method.

If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, project proponents must provide a monitoring plan with the PCN that specifies how the proposed culvert will be assessed over a five-year period from the time of construction completion to ensure its effectiveness in providing passage at all life stages at all flows where the salmonid species would naturally seek passage. Culverts installed under emergency authorization that do not meet the above design criteria will be required to meet the above design criteria to receive an after-the-fact nationwide permit verification.

7. Stream Loss: A PCN is required for all activities that result in the loss of any linear feet of stream beds. No activity shall result in the loss of any linear feet of perennial stream beds or the loss of greater than 300 linear feet of intermittent and/or ephemeral stream beds. A stream may be rerouted if it is designed in a manner that maintains or restores hydrologic, ecologic, and geomorphic stream processes, provided there is not a reduction in the linear feet of stream bed. Streams include brooks, creeks, rivers, and historical waters of the U.S. that have been channelized into ditches. This condition does not apply to ditches constructed in uplands. Stream loss restrictions may be waived by the district engineer on a case-by-case basis provided the activities result in net increases of aquatic resource functions and services.

8. Mitigation: Pre-construction notification is required for any project that will result in permanent wetland losses that exceed 1,000 square feet. In addition to the requirements of General Condition 23 (Mitigation), compensatory mitigation at a minimum one-to-one ratio will be required for all permanent wetland losses that exceed 1,000 square feet. When a PCN is required for wetland losses less than 1,000 square feet, the Corps of Engineers may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation for impacts to marine waters, lakes, and streams will be determined on a case-by-case basis. If temporary impacts to waters of the U.S. exceed six months, the Corps of Engineers may require compensatory mitigation for temporal effects.

9. Magnuson-Stevens Fishery Conservation and Management Act – Essential Fish Habitat Essential Fish Habitat (EFH) is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. If EFH may be adversely affected by a proposed activity, the

prospective permittee must provide a written EFH assessment with an analysis of the effects of the proposed action on EFH. The assessment must identify the type(s) of essential fish habitat (i.e., Pacific salmon, groundfish, and/or coastal-pelagic species) that may be affected. If the Corps of Engineers determines the project will adversely affect EFH, consultation with NOAA Fisheries will be required. Federal agencies should follow their own procedures for complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act. If PCN is required for the proposed activity, Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

10. Forage Fish: For projects in forage fish spawning habitat, in-water work must occur within designated forage fish work windows, or when forage fish are not spawning. If working outside of a designated work window, or if forage fish work windows are closed year round, work may occur if the work window restriction is released for a period of time after a forage fish spawning survey has been conducted by a biologist approved by the Washington State Department of Fish and Wildlife (WDFW). Forage fish species with designated in-water work windows include Pacific sand lance (*Ammodytes hexapterus*), Pacific herring (*Clupea pallasii*), and surf smelt (*Hypomesus pretiosus*). This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

11. Notification of Permit Requirements: The permittee must provide a copy of the nationwide permit authorization letter, conditions, and permit drawings to all contractors and any other parties performing the authorized work prior to the commencement of any work in waters of the U.S. The permittee must ensure all appropriate contractors and any other parties performing the authorized work at the project site have read and understand relevant NWP conditions as well as plans, approvals, and documents referenced in the NWP letter. A copy of these documents must be maintained onsite throughout the duration of construction.

12. Construction Boundaries: Permittees must clearly mark all construction area boundaries before beginning work on projects that involve grading or placement of fill. Boundary markers and/or construction fencing must be maintained and clearly visible for the duration of construction. Permittees should avoid and minimize removal of native vegetation (including submerged aquatic vegetation) to the maximum extent possible.

13. Temporary Impacts and Site Restoration

- a. Temporary impacts to waters of the U.S. must not exceed six months unless the prospective permittee requests and receives a waiver by the district engineer. Temporary impacts to waters of the U.S. must be identified in the PCN.
- b. No more than 1/2 acre of waters of the U.S. may be temporarily filled unless the prospective permittee requests and receives a waiver from the district engineer (temporary fills do not affect specified limits for loss of waters associated with specific nationwide permits).
- c. Native soils removed from waters of the U.S. for project construction should be stockpiled and used for site restoration. Restoration of temporarily disturbed areas must include returning the area to pre-project ground surface contours. If native soil is not available from the project site for restoration, suitable clean soil of the same textural class may be used. Other soils may be used only if identified in the PCN.
- d. The permittee must revegetate disturbed areas with native plant species sufficient in number, spacing, and diversity to restore affected functions. A maintenance and monitoring plan commensurate with the impacts, may be required. Revegetation must begin as soon as site conditions allow within the same growing season as the disturbance unless the schedule is approved by the Corps of Engineers. Native plants removed from waters of the U.S. for project construction should be stockpiled and used for revegetation when feasible. Temporary Erosion and Sediment Control measures must be removed as soon as the area has established vegetation sufficient to control erosion and sediment.

- e. If the Corps determines the project will result in temporary impacts of submerged aquatic vegetation (SAV) that are more than minimal, a monitoring plan must be submitted. If recovery is not achieved by the end of the monitoring period, contingencies must be implemented, and additional monitoring will be required.

This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWPS: None

E. ECOLOGY 401 CERTIFICATION: GENERAL CONDITIONS

In addition to all the Corps National and Seattle Districts' Regional permit conditions, the following State General Section 401 Water Quality Certification (Section 401) conditions apply to all Nationwide Permits whether **certified** or **partially certified** in the State of Washington.

1. **For in-water construction activities.** Ecology Section 401 review is required for projects or activities authorized under NWPs that will cause, or may be likely to cause or contribute to an exceedance of a State water quality standard (Chapter 173-201A WAC) or sediment management standard (Chapter 173-204 WAC). State water quality standards and sediment management standards are available on Ecology's website. Note: In-water activities include any activity within a wetland and/or activities below the ordinary high water mark (OHWM).

2. **Projects or Activities Discharging to Impaired Waters.** Ecology Section 401 review is required for projects or activities authorized under NWPs if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedances of the specific listed parameter. To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools.

3. **Application.** For projects or activities that will require Ecology Section 401 review, applicants must provide Ecology with a Joint Aquatic Resources Permit Application (JARPA) along with the documentation provided to the Corps, as described in National General Condition 32, Pre-Construction Notification, including, when applicable: (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, best management practices (BMPs), and any other Department of the Army or federal agency permits used or intended to be used to authorize any part of the proposed project or any related activity. (b) Drawings indicating the Ordinary High Water Mark (OHWM), delineation of special aquatic sites and other waters of the state. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff. Guidance for determining the OHWM is available on Ecology's website. (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted. See State General Condition 5 for details on mitigation requirements. (d) Other applicable requirements of Corps Nationwide Permit General Condition 32, Corps Regional Conditions, or notification conditions of the applicable NWP. (e) Within 180 calendar days from receipt of applicable documents noted above **and** a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program Ecology will provide the applicant notice of whether an individual Section 401 will be required for the project. If Ecology fails to act within a year after receipt of **both** of these documents, Section 401 is presumed waived.

4. **Aquatic resources requiring special protection.** Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high

value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings. Ecology Section 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Seattle District Regional General Condition): (a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #14-06-029 and #14-06-030):

- Estuarine wetlands.
- Wetlands of High Conservation Value.
- Bogs.
- Old-growth and mature forested wetlands.
- Wetlands in coastal lagoons.
- Interdunal wetlands.
- Vernal pools.
- Alkali wetlands.

(b) Fens, aspen-dominated wetlands, camas prairie wetlands. (c) Marine water with eelgrass (*Zostera marina*) beds (except for NWP 48). (d) Category I wetlands. (e) Category II wetlands with a habitat score ≥ 8 points. This State General Condition does not apply to the following Nationwide Permits: NWP 20 – *Response Operations for Oil and Hazardous Substances*, NWP 32 – *Completed Enforcement Actions*

5. Mitigation. Applicants are required to show that they have followed the mitigation sequence and have first avoided and minimized impacts to aquatic resources wherever practicable. For projects requiring Ecology Section 401 review with unavoidable impacts to aquatic resources, adequate compensatory mitigation must be provided.

(a) Wetland mitigation plans submitted for Ecology review and approval shall be based on the most current guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (available on Ecology’s website) and shall, at a minimum, include the following:

- i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
- ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded).
- iii. The rationale for the mitigation site that was selected.
- iv. The goals and objectives of the compensatory mitigation project.
- v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths.
- vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
- vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology Publications #09-06-032 (Western Washington) and #10-06-007 (Eastern Washington)) for guidance on selecting suitable mitigation sites and developing mitigation plans. Ecology encourages the use of alternative mitigation approaches, including credit/debit methodology, advance mitigation, and other programmatic approach such as mitigation banks and in-lieu fee programs. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. Information on alternative mitigation approaches is available on Ecology’s website.

(b) Mitigation for other aquatic resource impacts will be determined on a case-by-case basis.

6. Temporary Fills. Ecology Section 401 review is required for any project or activity with temporary fill in wetlands or other waters of the state for more than 90 days, unless the applicant has received written approval from Ecology. Note: This State General Condition does not apply to projects or activities authorized under NWP 33, *Temporary Construction, Access, and Dewatering*

7. Stormwater pollution prevention: All projects that involve land disturbance or impervious surfaces must implement stormwater pollution prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the State.

(a) For land disturbances during construction, the applicant must obtain and implement permits (e.g., Construction Stormwater General Permit) where required and follow Ecology's current stormwater manual.

(b) Following construction, prevention or treatment of on-going stormwater runoff from impervious surfaces shall be provided.

Ecology's Stormwater Management and Design Manuals and stormwater permit information are available on Ecology's website.

8. State Section 401 Review for PCNs not receiving 45-day response from the Seattle District. In the event the Seattle District Corps does not issue a NWP authorization letter within 45 calendar days of receipt of a **complete** pre-construction notification, the applicant must contact Ecology for Section 401 review prior to commencing work.

F. ECOLOGY 401 CERTIFICATION: SPECIFIC CONDITIONS FOR THIS NWP:

Certified, if all applicable State General Conditions are met.

G. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP:

NWP Specific Response: Ecology concurs that this NWP is consistent with the CZMP.



US Army Corps
of Engineers
Seattle District

NATIONWIDE PERMIT 27

Terms and Conditions

Effective Date: March 19, 2017



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- A. Description of Authorized Activities
 - B. U.S. Army Corps of Engineers (Corps) National General Conditions for all NWP
 - C. Corps Seattle District Regional General Conditions
 - D. Corps Regional Specific Conditions for this NWP
 - E. Washington Department of Ecology (Ecology) Section 401 Water Quality Certification (401 Certification): General Conditions
 - F. Ecology 401 Certification: Specific Conditions for this NWP
 - G. Coastal Zone Management Consistency Response for this NWP
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In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit (NWP) authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

27. Aquatic Habitat Restoration, Enhancement, and Establishment Activities. Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To be authorized by this NWP, the aquatic habitat restoration, enhancement, or establishment activity must be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference. An ecological reference may be based on the characteristics of an intact aquatic habitat or riparian area of the same type that exists in the region. An ecological reference may be based on a conceptual model developed from regional ecological knowledge of the target aquatic habitat type or riparian area.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, rehabilitation, or re-establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to enhance, rehabilitate, or re-establish stream meanders; the removal of stream barriers, such as undersized culverts, fords, and grade control structures; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to restore or enhance wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services. Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., the conversion of a stream to wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments. Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted: (1) In accordance with the terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies; (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or establishment activities). The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of: (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map; (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. These documents must be submitted to the district

engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 32), except for the following activities: (1) Activities conducted on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies; (2) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency. However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement. (**Authorities:** Sections 10 and 404) **Note:** This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).
7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.
13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible

inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. (b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status. (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs. (e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take”

provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required. (g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out

appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district

engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site). (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)). (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWP's, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation. (2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)). (3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation. (4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting

a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs. (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management. (i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWP does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: “When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as

possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals. (d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal. (2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes. (3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or

other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision: 1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre. 2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method

may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns. 3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer. 4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information: 1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP. 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law. 3. NWPs do not grant any property rights or exclusive privileges. 4. NWPs do not authorize any injury to the property or rights of others. 5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS: The following conditions apply to all NWPs for the Seattle District in Washington State, unless specified.

1. Project Drawings: Drawings must be submitted with pre-construction notification (PCN). Drawings must provide a clear understanding of the proposed project, and how waters of the U.S. will be affected. Drawings must be originals and not reduced copies of large-scale plans. Engineering drawings are not required. Existing and proposed site conditions (manmade and landscape features) must be drawn to scale.

2. Aquatic Resources Requiring Special Protection: Activities resulting in a loss of waters of the United States in mature forested wetlands, bogs and peatlands, aspen-dominated wetlands, alkali wetlands, vernal pools, camas prairie wetlands, estuarine wetlands, wetlands in coastal lagoons, and wetlands in dunal systems along the Washington coast cannot be authorized by a NWP, except by the following NWPs:

- NWP 3 – Maintenance
- NWP 20 – Response Operations for Oil and Hazardous Substances
- NWP 32 – Completed Enforcement Actions
- NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, prospective permittees must submit a PCN to the Corps of Engineers (see NWP general condition 32) and obtain written authorization before commencing work.

3. New Bank Stabilization in Tidal Waters of Puget Sound: Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11 and 12 (within the areas identified on Figures 1a through 1e on Corps website) cannot be authorized by NWP.

4. Commencement Bay: The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 2 on Corps website):

- NWP 12 – Utility Line Activities (substations)
- NWP 13 – Bank Stabilization
- NWP 14 – Linear Transportation Projects
- NWP 23 – Approved Categorical Exclusions
- NWP 29 – Residential Developments
- NWP 39 – Commercial and Institutional Developments
- NWP 40 – Agricultural Activities
- NWP 41 – Reshaping Existing Drainage Ditches
- NWP 42 – Recreational Facilities
- NWP 43 – Stormwater and Wastewater Management Facilities

5. Bank Stabilization: All projects including new or maintenance bank stabilization activities require PCN to the Corps of Engineers (see NWP general condition 32). For new bank stabilization projects only, the following must be submitted to the Corps of Engineers:

- a. The cause of the erosion and the distance of any existing structures from the area(s) being stabilized.
- b. The type and length of existing bank stabilization within 300 feet of the proposed project.
- c. A description of current conditions and expected post-project conditions in the waterbody.
- d. A statement describing how the project incorporates elements avoiding and minimizing adverse environmental effects to the aquatic environment and nearshore riparian area, including vegetation impacts in the waterbody.

In addition to a. through d., the results from any relevant geotechnical investigations can be submitted with the PCN if it describes current or expected conditions in the waterbody.

6. Crossings of Waters of the United States: Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts or bridges, requires submittal of a PCN to the

Corps of Engineers (see NWP general condition 32). If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, the project must apply the stream simulation design method from the Washington Department of Fish and Wildlife located in the *Water Crossing Design Guidelines* (2013), or a design method which provides passage at all life stages at all flows where the salmonid species would naturally seek passage. If the stream simulation design method is not applied for a culvert where salmonid species are present or could be present, the project proponent must provide a rationale in the PCN sufficient to establish one of the following:

- a. The existence of extraordinary site conditions.
- b. How the proposed design will provide equivalent or better fish passage and fisheries habitat benefits than the stream simulation design method.

If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, project proponents must provide a monitoring plan with the PCN that specifies how the proposed culvert will be assessed over a five-year period from the time of construction completion to ensure its effectiveness in providing passage at all life stages at all flows where the salmonid species would naturally seek passage. Culverts installed under emergency authorization that do not meet the above design criteria will be required to meet the above design criteria to receive an after-the-fact nationwide permit verification.

7. Stream Loss: A PCN is required for all activities that result in the loss of any linear feet of stream beds. No activity shall result in the loss of any linear feet of perennial stream beds or the loss of greater than 300 linear feet of intermittent and/or ephemeral stream beds. A stream may be rerouted if it is designed in a manner that maintains or restores hydrologic, ecologic, and geomorphic stream processes, provided there is not a reduction in the linear feet of stream bed. Streams include brooks, creeks, rivers, and historical waters of the U.S. that have been channelized into ditches. This condition does not apply to ditches constructed in uplands. Stream loss restrictions may be waived by the district engineer on a case-by-case basis provided the activities result in net increases of aquatic resource functions and services.

8. Mitigation: Pre-construction notification is required for any project that will result in permanent wetland losses that exceed 1,000 square feet. In addition to the requirements of General Condition 23 (Mitigation), compensatory mitigation at a minimum one-to-one ratio will be required for all permanent wetland losses that exceed 1,000 square feet. When a PCN is required for wetland losses less than 1,000 square feet, the Corps of Engineers may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation for impacts to marine waters, lakes, and streams will be determined on a case-by-case basis. If temporary impacts to waters of the U.S. exceed six months, the Corps of Engineers may require compensatory mitigation for temporal effects.

9. Magnuson-Stevens Fishery Conservation and Management Act – Essential Fish Habitat Essential Fish Habitat (EFH) is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. If EFH may be adversely affected by a proposed activity, the prospective permittee must provide a written EFH assessment with an analysis of the effects of the proposed action on EFH. The assessment must identify the type(s) of essential fish habitat (i.e., Pacific salmon, groundfish, and/or coastal-pelagic species) that may be affected. If the Corps of Engineers determines the project will adversely affect EFH, consultation with NOAA Fisheries will be required. Federal agencies should follow their own procedures for complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act. If PCN is required for the proposed activity, Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

10. Forage Fish: For projects in forage fish spawning habitat, in-water work must occur within designated forage fish work windows, or when forage fish are not spawning. If working outside of a designated work window, or if forage fish work windows are closed year round, work may occur if the

work window restriction is released for a period of time after a forage fish spawning survey has been conducted by a biologist approved by the Washington State Department of Fish and Wildlife (WDFW). Forage fish species with designated in-water work windows include Pacific sand lance (*Ammodytes hexapterus*), Pacific herring (*Clupea pallasii*), and surf smelt (*Hypomesus pretiosus*). This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

11. Notification of Permit Requirements: The permittee must provide a copy of the nationwide permit authorization letter, conditions, and permit drawings to all contractors and any other parties performing the authorized work prior to the commencement of any work in waters of the U.S. The permittee must ensure all appropriate contractors and any other parties performing the authorized work at the project site have read and understand relevant NWP conditions as well as plans, approvals, and documents referenced in the NWP letter. A copy of these documents must be maintained onsite throughout the duration of construction.

12. Construction Boundaries: Permittees must clearly mark all construction area boundaries before beginning work on projects that involve grading or placement of fill. Boundary markers and/or construction fencing must be maintained and clearly visible for the duration of construction. Permittees should avoid and minimize removal of native vegetation (including submerged aquatic vegetation) to the maximum extent possible.

13. Temporary Impacts and Site Restoration

- a. Temporary impacts to waters of the U.S. must not exceed six months unless the prospective permittee requests and receives a waiver by the district engineer. Temporary impacts to waters of the U.S. must be identified in the PCN.
- b. No more than 1/2 acre of waters of the U.S. may be temporarily filled unless the prospective permittee requests and receives a waiver from the district engineer (temporary fills do not affect specified limits for loss of waters associated with specific nationwide permits).
- c. Native soils removed from waters of the U.S. for project construction should be stockpiled and used for site restoration. Restoration of temporarily disturbed areas must include returning the area to pre-project ground surface contours. If native soil is not available from the project site for restoration, suitable clean soil of the same textural class may be used. Other soils may be used only if identified in the PCN.
- d. The permittee must revegetate disturbed areas with native plant species sufficient in number, spacing, and diversity to restore affected functions. A maintenance and monitoring plan commensurate with the impacts, may be required. Revegetation must begin as soon as site conditions allow within the same growing season as the disturbance unless the schedule is approved by the Corps of Engineers. Native plants removed from waters of the U.S. for project construction should be stockpiled and used for revegetation when feasible. Temporary Erosion and Sediment Control measures must be removed as soon as the area has established vegetation sufficient to control erosion and sediment.
- e. If the Corps determines the project will result in temporary impacts of submerged aquatic vegetation (SAV) that are more than minimal, a monitoring plan must be submitted. If recovery is not achieved by the end of the monitoring period, contingencies must be implemented, and additional monitoring will be required.

This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP:

1. A pre-construction notification (PCN) must be submitted to the district engineer (see NWP general condition 32) for any proposed project located in a Department of the Army permit compensatory mitigation site, Comprehensive Environmental Response, Compensation and Liability Act (Superfund)

site, Resource Conservation and Recovery Act hazardous waste clean-up site, Washington State Department of Ecology compensatory mitigation site, or Washington State Model Toxics Control Act clean-up site.

2. For projects subject to PCN, if there is a loss of waters of the U.S., the project proponent must explain in the PCN why the loss is necessary and show how it would be fully offset by the beneficial elements of the project.

3. The PCN must contain a description of pre-project site conditions (including photographs), aquatic functions the site provides, and benefits anticipated from project construction.

4. The project proponent must include maintenance and monitoring plans with the PCN.

5. Restoration projects involving shellfish seeding must use shellfish native to the watershed.

E. ECOLOGY 401 CERTIFICATION: GENERAL CONDITIONS

In addition to all the Corps National and Seattle Districts' Regional permit conditions, the following State General Section 401 Water Quality Certification (Section 401) conditions apply to all Nationwide Permits whether **certified** or **partially certified** in the State of Washington.

1. **For in-water construction activities.** Ecology Section 401 review is required for projects or activities authorized under NWP that will cause, or may be likely to cause or contribute to an exceedance of a State water quality standard (Chapter 173-201A WAC) or sediment management standard (Chapter 173-204 WAC). State water quality standards and sediment management standards are available on Ecology's website. Note: In-water activities include any activity within a wetland and/or activities below the ordinary high water mark (OHWM).

2. **Projects or Activities Discharging to Impaired Waters.** Ecology Section 401 review is required for projects or activities authorized under NWP if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedances of the specific listed parameter. To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools.

3. **Application.** For projects or activities that will require Ecology Section 401 review, applicants must provide Ecology with a Joint Aquatic Resources Permit Application (JARPA) along with the documentation provided to the Corps, as described in National General Condition 32, Pre-Construction Notification, including, when applicable: (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, best management practices (BMPs), and any other Department of the Army or federal agency permits used or intended to be used to authorize any part of the proposed project or any related activity. (b) Drawings indicating the Ordinary High Water Mark (OHWM), delineation of special aquatic sites and other waters of the state. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff. Guidance for determining the OHWM is available on Ecology's website. (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted. See State General Condition 5 for details on mitigation requirements. (d) Other applicable requirements of Corps Nationwide Permit General Condition 32, Corps Regional Conditions, or notification conditions of the applicable NWP. (e) Within 180 calendar days from receipt of applicable documents noted above **and** a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program Ecology will provide the applicant notice of whether an individual Section 401 will be required for the project. If

Ecology fails to act within a year after receipt of **both** of these documents, Section 401 is presumed waived.

4. Aquatic resources requiring special protection. Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings. Ecology Section 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Seattle District Regional General Condition): (a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #14-06-029 and #14-06-030):

- Estuarine wetlands.
- Wetlands of High Conservation Value.
- Bogs.
- Old-growth and mature forested wetlands.
- Wetlands in coastal lagoons.
- Interdunal wetlands.
- Vernal pools.
- Alkali wetlands.

(b) Fens, aspen-dominated wetlands, camas prairie wetlands. (c) Marine water with eelgrass (*Zostera marina*) beds (except for NWP 48). (d) Category I wetlands. (e) Category II wetlands with a habitat score ≥ 8 points. This State General Condition does not apply to the following Nationwide Permits: NWP 20 – *Response Operations for Oil and Hazardous Substances*, NWP 32 – *Completed Enforcement Actions*

5. Mitigation. Applicants are required to show that they have followed the mitigation sequence and have first avoided and minimized impacts to aquatic resources wherever practicable. For projects requiring Ecology Section 401 review with unavoidable impacts to aquatic resources, adequate compensatory mitigation must be provided.

(a) Wetland mitigation plans submitted for Ecology review and approval shall be based on the most current guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (available on Ecology's website) and shall, at a minimum, include the following:

- i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
- ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded).
- iii. The rationale for the mitigation site that was selected.
- iv. The goals and objectives of the compensatory mitigation project.
- v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths.
- vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
- vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology Publications #09-06-032 (Western Washington) and #10-06-007 (Eastern Washington)) for guidance on selecting suitable mitigation sites and developing mitigation plans. Ecology encourages the use of alternative mitigation approaches, including credit/debit methodology, advance mitigation, and other programmatic approach such as mitigation banks and in-lieu fee programs. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. Information on alternative mitigation approaches is available on Ecology's website.

(b) Mitigation for other aquatic resource impacts will be determined on a case-by-case basis.

6. Temporary Fills. Ecology Section 401 review is required for any project or activity with temporary fill in wetlands or other waters of the state for more than 90 days, unless the applicant has received written approval from Ecology. Note: This State General Condition does not apply to projects or activities authorized under NWP 33, *Temporary Construction, Access, and Dewatering*

7. Stormwater pollution prevention: All projects that involve land disturbance or impervious surfaces must implement stormwater pollution prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the State.

(a) For land disturbances during construction, the applicant must obtain and implement permits (e.g., Construction Stormwater General Permit) where required and follow Ecology's current stormwater manual.

(b) Following construction, prevention or treatment of on-going stormwater runoff from impervious surfaces shall be provided. Ecology's Stormwater Management and Design Manuals and stormwater permit information are available on Ecology's website.

8. State Section 401 Review for PCNs not receiving 45-day response from the Seattle District. In the event the Seattle District Corps does not issue a NWP authorization letter within 45 calendar days of receipt of a **complete** pre-construction notification, the applicant must contact Ecology for Section 401 review prior to commencing work.

F. ECOLOGY 401 CERTIFICATION: SPECIFIC CONDITIONS FOR THIS NWP:

Certified subject to conditions. Ecology Section 401 review is required for projects or activities authorized under this NWP if:

1. The project or activity involves fill in tidal waters.
2. The project or activity affects ½ acre or more of wetlands.
3. The project or activity is a mitigation bank or an advanced mitigation site.

The project or activity is in or adjoining a known contaminated or cleanup site.

G. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP:

(Note: This is only applies in the following counties: Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum and Whatcom)

Response: Ecology concurs that this NWP is consistent with the CZMP, subject to the following condition: An individual Coastal Zone Management Consistency Determination is required for project or activities under this NWP if State Section 401 review is required.

General Conditions: For Non-Federal Permittees

1. **Necessary Data and Information.** A Coastal Zone Management Program "Certification of Consistency" form is required for projects located within a coastal county. "Certification of Consistency" forms are available on Ecology's website. The form shall include a description of the proposed project or activity and evidence of compliance with the applicable enforceable policies of the Washington Coastal Zone Management Program (CZMP). Also, a map of the site location is required.

2. **Timing.** Within 6 months from receipt of the necessary data and information, Ecology will provide a federal consistency determination for the proposed project or activity. If Ecology fails to act within the 6 month period, concurrence with the CZMP is presumed.

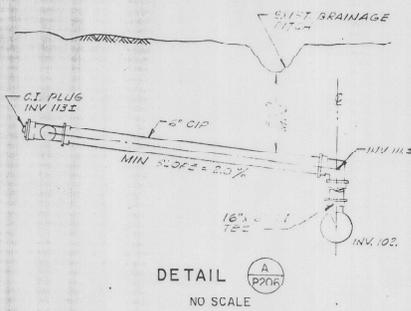
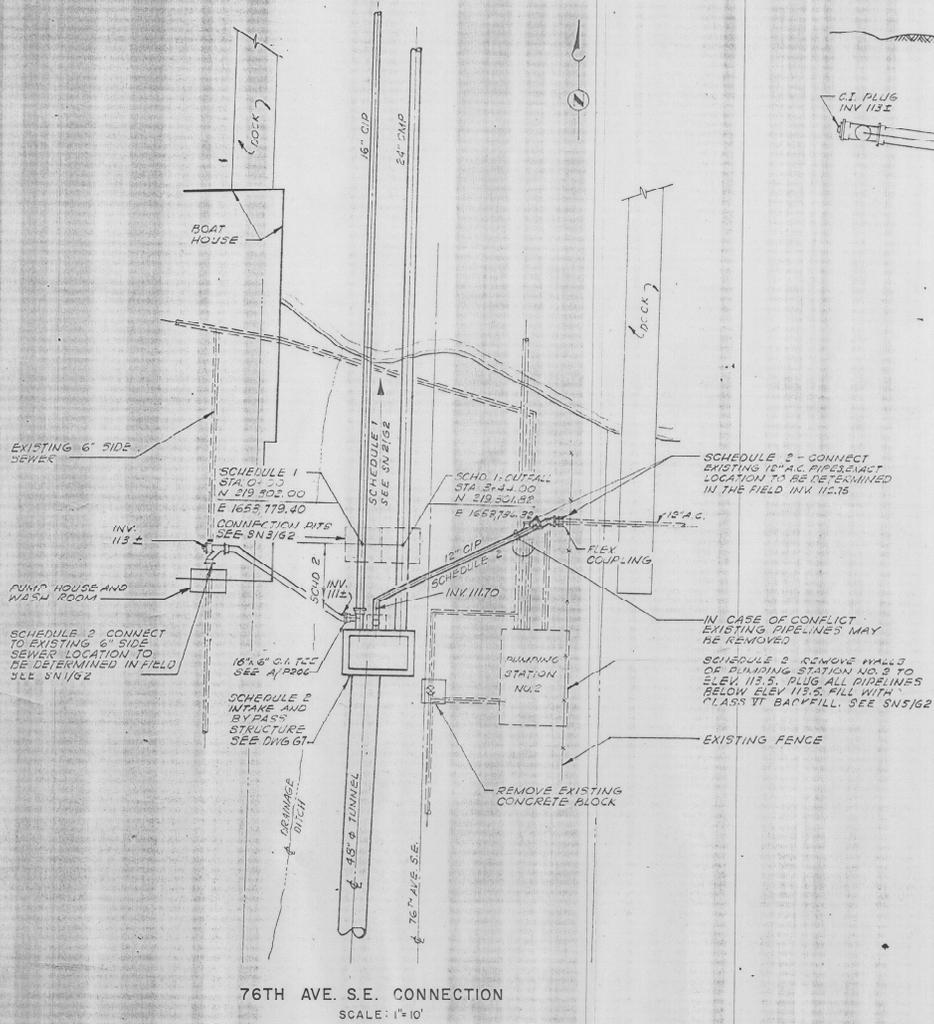
General Conditions: For Federal Permittees (Agencies)

1. **Necessary Data and Information.** Federal agencies shall submit the determination, information, and analysis required by 15 CFR 930.39 to obtain a federal consistency determination.

2. **Timing.** Within 60 days from receipt of the necessary data and information, Ecology will provide a federal consistency determination for the proposed project or activity. If Ecology fails to act within the 60 day period, concurrence with the CZMP is presumed.

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APPENDIX D – VACATED PUMP STATION AS-BUILT



DETAIL A
P206
NO SCALE

76TH AVE. S.E. CONNECTION
SCALE: 1"=10'

DESIGNED BY METROPOLITAN ENGINEERS
DRAWN BY BROWN AND CALDWELL
CHECKED BY PHILL AND HOWLAND

MUNICIPALITY OF METROPOLITAN SEATTLE
SUBMITTED BY [Signature] RECOMMENDED BY [Signature] APPROVED BY [Signature]

FILE R2086
DATE NOV. 1969
A3 NOTED

RENTON SYSTEM

AS CONSTRUCTED DATE OCT. 1970
NORTH MERCER ISLAND INTERCEPTOR
PLAN 76TH AVE. S.E. CONNECTION
DATE 23 30



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