ADDENDUM #1
FORMAL BID #2016-156

KITSAP COUNTY PUBLIC WORKS WASTEWATER DIVISION
MANCHESTER PUMP STATIONS
45, 46, & 47 AND
BEACH LINES REHABILITATION

September 21, 2016

TO:	All Respondents
FROM:	Colby Wattling, Buyer
CLOSING DATE:	**October 6, 2016 at 3:00 PM (CHANGED PER ITEMS 3 & 4)**
REF NO.:	Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation
DATE:	September 21, 2016

The purpose of this addendum is to modify the Contract Documents for the referenced project. This addendum shall become a part of these Contract Documents. Bidder shall acknowledge receipt of this 425 page addendum (including attachments) on the Bid Form.

VOLUME 1 OF 2 OF THE CONTRACT DOCUMENTS IS MODIFIED AS FOLLOWS:

TABLE OF CONTENTS

Item 1. ADD the following Sections to the Table of Contents:

1-06.8 Construction Quality Assurance Plan

1-07.16(4) Archaeological and Historical Objects

Item 2. MODIFY the Appendices as follows:

REVISE **Appendix I – ~~Addenda~~ Contracting Agency-Furnished Permits**

ADD **Appendix J – Addenda**

A copy of Appendix I is attached to this addendum.

Addendum #1 is made part of the Contract Documents and shall be included in Appendix J.

INVITATION TO BID

Item 3. REVISE the Bid Submission Date & Time to October 6, 2016 @ 3:00 pm.

Item 4. REVISE the Bid Opening Date & Time to October 6, 2016 @ 3:15 pm.

Item 5. Add the attached Pre-Bid Meeting Attendance List to the Contract Documents.

WASHINGTON STATE DEPARTMENT OF ECOLOGY WATER POLLUTION CONTROL REVOLVING FUND SPECIFICATIONS INSERT

Item 6. REMOVE EPA FORM 6100-2, EPA FORM 6100-3 and EPA FORM 6100-4 from the Contract Documents. The current 6100 forms can be found at the web address provided on page 6 of the SRF Specification Insert.

WSDOT DIVISION 1 – SPECIAL PROVISIONS

Item 7. ADD the following new specification Section.

1-06.8 Construction Quality Assurance Plan

Section 1-06.8 is added as the following:
(Local Agency SP)

A Construction Quality Assurance (CQA) Plan has been developed for the project as a requirement of the State Revolving Fund agreement between the State of Washington Department of Ecology and Kitsap County. The CQA Plan is included as Appendix D. The County will use this CQA Plan throughout construction. The Contractor shall review and comply with the requirements necessary for the County to implement the CQA Plan.

All costs associated with CQA Plan compliance shall be considered incidental to the construction and included in other items of work.

Item 8. REVISE the second paragraph in Section 1-07.6(1) to read as follows:

Copies of these Contracting Agency-Furnished permits are ~~available at the Kitsap County Sewer Utilities Construction Management offices, 12351 Brownsville Hwy NE, Poulsbo, WA 98370.~~ included as Appendix I.

Item 9. ADD the following supplemental specification Section.

1-07.16(4) Archaeological and Historical Objects

Section 1-07.16(4) is supplemented with the following:
(Local Agency SP)

The project is subject to archaeological monitoring at Pump Station 46 and 47 sites. The County will provide an archaeologist to perform the required monitoring. The Contractor shall perform work and coordinate with the County to comply with the requirements stated in the Archaeological Monitoring Plan for Pump Station 46 and Pump Station 47 included within the Construction Quality Assurance Plan included as Appendix D.

Item 10. DELETE “Willey” from the table provided in Section 1-07.24 Rights of Way. This property has been acquired by the County, therefore, no easements or special conditions exist.

SECTION 02 22 26 CONSTRUCTION MONITORING PROGRAM

Item 11. REVISE Paragraph 1.02.A to read as follows:

A. Qualifications of independent engineering firm and their Independent Professional Engineer who will perform the pre-and post-construction inspections. Note that several western Washington firms that provide construction vibration monitoring/instrumentation services (as Required in Section ~~01860~~ 02 22 29) also provide pre-construction inspections.

Item 12. REVISE the first paragraph of Paragraph 1.02.C to read as follows:

C. Pre-construction Inspection Reports: Prepare a separate report for each structure. Structures shall be selected ~~be~~ by the Independent Professional Engineer, and ~~may~~ must include but are not limited to:

SECTION 02 22 29 CONSTRUCTION NOISE AND VIBRATION CONTROL

Item 13. REVISE Paragraph 1.04 to read as follows:

Contractor shall employ an independent Professional Engineer, with at least 5 years of experience in preparing CNVMC Plans and monitoring. Submit qualifications to the Engineer for approval. A list of companies with capabilities to provide these services is included below for Contractor reference:

- SubTerra Inc., North Bend, WA.
- Golder Associates Inc., Redmond, WA
- Shannon & Wilson, Inc., Seattle, WA
- GeoEngineers, Tacoma, WA
- GeoDesign Inc., Tacoma, WA

Listed companies are not pre-approved and shall still demonstrate conformance to the specified requirements.

SECTION 03 10 00 CONCRETE FORMWORK

Item 14. REVISE Paragraph 2.01.C.1 to read as follows:

1. Cast elevated pump station slab with concrete form liner on all four sides of the pump station structures and in other locations as shown on the Drawings. Contractor shall perform one mock-up on buried concrete used elsewhere in the project or pour and dispose of a sample mock-up for County acceptance prior to installation of final, exposed form liner. Mock-up shall be minimum 8 square feet in size.

SECTION 22 13 11 PIPING SYSTEMS

Item 15. ADD the following System Abbreviation and System to the table in Paragraph 2.01:

RCP Reinforced Concrete Pipe

Item 16. ADD PIPING SYSTEM SPECIFICATIONS sheets (Pages 22 13 11-9 & -10) for Reinforced Concrete Pipe to the end of Section 22 13 11. DELETE "END OF SECTION" on Page 22 13 11-8.

A copy of the PIPING SYSTEM SPECIFICATIONS sheets (Pages 22 13 11-9 & -10) for Reinforced Concrete Pipe is attached to this addendum.

SECTION 26 00 00 ELECTRICAL GENERAL

Item 17. REVISE Paragraph 3.08.A to read as follows:

A. The pump stations are existing and operating facilities. The existing pump stations must remain fully operational during construction. The following are the base requirements.

1. Two sources of power must always be available ~~and connected for automatic transfer~~ – utility power and ~~existing~~ temporary portable standby generator power. ~~or new standby generator or contractor furnished trailer mounted generator.~~ The Contractor shall furnish at least one (1) temporary standby generator (25kW minimum size), complete with fuel, power cables and plugs to match existing receptacles, to power any one of the three existing pump stations in the event of a utility power outage. The temporary standby generator shall be portable and remain on-site for the full duration of construction.

2. Remote alarm and monitoring (telemetry) system must stay operational. The existing telemetry system must remain operational on the existing pump station until the new ~~system~~ pump station is installed and inspected and passes testing. The existing telemetry system shall then be relocated to the new pump station and retested.

~~3. Three pumps and associated power and control system must be operational for the triplex stations and two pumps for the duplex station, utilizing all of the existing pumps or a combination of the new and existing pumps or temporary pumps.~~

APPENDICES

Item 18. REPLACE Appendix D – Construction Quality Assurance Plan with a revised Appendix D - Construction Quality Assurance Plan attached to this addendum.

VOLUME 2 OF 2 OF THE CONTRACT DOCUMENTS IS MODIFIED AS FOLLOWS:

Item 19. Drawing G-3: ADD the following to Abbreviations:

RCP REINFORCED CONCRETE PIPE

Item 20. Drawing C-1: ADD Note 9 as follows to Detail 2:

9. FRAME AND GRATE SHALL BE EJ COMPANY 7700M2, OR ACCEPTED EQUAL.

Item 21. Drawing C-1: DELETE Note 2 in Detail 7. REVISE the following callout in Detail 7 to read as follows:

From SST KORBAND ASSEMBLY, SEE NOTE 2

To 304 SST KORBAND ASSEMBLY

Item 22. Drawing D45-1: DELETE Permanent Sewer Easement and Temporary Construction Easement limits from the beach property denoted "Dain Robert Willey 4522-003-007-0008" on Drawing D45-1 and all other site plans (C45-1, R45-1, R45-2, and E45-1) depicting these easement boundaries. DELETE property callout "Dain Robert Willey 4522-003-007-0008" on Drawing D45-1 and all other site plans (C45-1, R45-1, R45-2, and E45-1) depicting these easement boundaries. This property has been acquired by the County, therefore, the permanent and temporary easements identified on this property are not required. This property is County right-of-way.

A copy of the Revised Drawing D45-1 is attached to this addendum. Drawings C45-1, R45-1, R45-2 and E45-1 shall be revised similarly.

Item 23. Drawing C45-1: ADD the following sentence to the end of Construction Note 2:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 24. Drawing C45-1: ADD the following sentence to the end of Construction Note 4:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 25. Drawing C46-1: ADD the following sentence to the end of Construction Note 4:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 26. Drawing C46-1: ADD the following sentence to the end of Construction Note 6:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 27. Drawing S46-3: REVISE the following callout in Section A to read as follows:

From FORMLINER

To FORMLINER, TYP SW AND NW WALL

Item 28. Drawing C47-1: ADD the following sentence to the end of Construction Note 2:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 29. Drawing C47-1: ADD the following sentence to the end of Construction Note 4:

CONTRACTOR SHALL PAY NEW SERVICE CONNECTION FEES.

Item 30. Drawing E47-1: REVISE the following callout on the west end of the pump station to read as follows:

From RELOCATED EX TERMINAL PANEL, SEE DWG E47-3

To RELOCATED EX TELEMETRY PANEL, SEE DWG E47-3

Attachments For:

Item 2. Appendix I – Contracting Agency-Furnished Permits

Item 5. Pre-Bid Meeting Attendance List

Item 16. PIPING SYSTEMS SPECIFICATIONS (Pages 22 13 11-9 & -10) for Reinforced Concrete Pipe

Item 18. Revised Appendix D – Construction Quality Assurance Plan

Item 22. Revised Drawing D45-1

End Addendum #1

APPENDIX I

CONTRACTING AGENCY-FURNISHED PERMITS

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SEPA Mitigated Determination of Non-Significance

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KITSAP COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT
614 DIVISION STREET MS-36, PORT ORCHARD WASHINGTON 98366-4682 LARRY KEETON, DIRECTOR
(360) 337-5777 FAX (360) 337-4415 HOME PAGE - www.kitsapgov.com/dcd/

MITIGATED DETERMINATION OF NONSIGNIFICANCE

Description of Proposal: **Shoreline Substantial Development Permit 16 00278 and Conditional Use Permit 16 00291 for Kitsap County Public Works, Wastewater Division Sewer Lift Stations 45, 46 and 47 Upgrade Project**. The project addresses the Kitsap County Wastewater Division's upgrade and replacement of three pump stations within the unincorporated village of Manchester. These upgrades and replacements include conveyance upgrades of 3,300 lineal feet of existing sewer lines on the beach, and for complete pump station relocations and rehabilitation. Other improvements include several utility improvements and elements of 35 feet and 50 feet of shoreline stabilization subject to the conditional use permit, necessary for the protection of the existing facilities.

Proponent: Barbara Zaroff, Project Manager, Kitsap County Waste Water Division

Lead Agency: KITSAP COUNTY

Location of proposal, including street address, if any: The project area is located in the unincorporated area of Manchester, generally within existing Right of Way at road ends at East Daniels Loop; East Caraway Road; and East Hemlock Street, Manchester, WA. Work also entails sewer line refurbishment of 3,300 lineal feet beneath the beach adjacent and associated with the specific lift stations.

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

COMMENTS**:** The SEPA comment period previously occurred concurrent with the Notice of Application dated 2/17/2016. There were two public comments received for this proposal.

1. A comment was received related to a private property drainage concern near East Hemlock, requesting that this drainage be addressed through a new public conveyance into this portion of the project. Private drainage conveyances are not subject to County drainage facility requirements, and is therefore not possible as a component of this project. The individual has been directed to continue to work on a resolution with the Clean Water Kitsap Division of Public Works.
2. A comment was related to shoreline protections and the planned armoring on East Caraway, as well as decorative treatments for the facilities. The project incorporates the concerns related to armoring and continued protections for this shoreline related to the sewer castle and associated lift station. In addition, the proposal will provide for a decorative façade for the new lift stations. Fencing and new landscaping will also be incorporated as design elements.

CONDITIONS**:** The proposal will be conditioned for Stormwater control per KCC Title 12. This SEPA determination is conditioned to follow the Shoreline Residential and Shoreline Conservancy guidance under Kitsap County Code, Title 22. The project is also conditioned to follow the guidelines under KCC Title 19, and KCC Title 17, addressing general landscaping requirements.

MITIGATION MEASURES:

1. Construction activity shall be subject to Washington Department of Fish and Wildlife requirements to limit habitat impacts, as established through the Hydraulic Project Approval process.
2. Shoreline construction activity shall be conducted in a manner such that private properties adjacent to the project area are not impacted.
3. Mitigation of the shoreline is required to enhance and restore portions of the project area, as

outlined in the Technical Memorandum by Landau and Associates, dated January 11, 2016.

Responsible Official: Scott Diener Project Contact: Steve Heacock
Position/Title: SEPA Coordinator, Dept. of Community Dev. Phone: (360) 337-5777
Address: 614 Division Street, Port Orchard, WA 98366

DATE: 3/17/2016 Signature: Steve Heacock

You may appeal this determination to the Dept. of Community Development, at 614 Division Street, Port Orchard WA 98366, no later than March 31, 2016 in writing, with a $500.00 appeal fee. You should be prepared to make specific factual objections. Contact Steve Heacock to read or ask about the procedures for SEPA appeals.

Hydraulic Project Approval

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HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 27, 2016
Project End Date: February 15, 2021

Permit Number: 2016-6-369+01
FPA/Public Notice Number: N/A
Application ID: 4589

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Kitsap County Public Works	Landau Associates
ATTENTION: Barbara Zaroff	ATTENTION: Steven Quarterman
Kitsap County Public Works, MS-26; 614 Division Street	130 2nd Ave S
Port Orchard, WA 98366	Edmonds, WA 98020-3512

Project Name: Manchester Sewer Beach Line Rehabilitation and Pump Station Rehabilitation

Project Description: The proposed project consists of two main activities:

Beach Line Rehabilitation:

Approximately 3,330 ft of cured in-place pipe (CIPP) liner will be installed in the existing beach line from existing manholes, and side sewers will be reconnected. Nine (9) existing beach line manholes will be also repaired.

Pump Station Rehabilitation:

Pump Stations (PS) 45, 46, and 47 are located adjacent to the beach line described above. PS-45 and PS-46 currently jut out into the Puget Sound shoreline on raised areas protected by concrete and boulder riprap. As part of the project, these pump stations will be moved landward, above the 100-year flood elevation, and associated structures will be removed from the shoreline above the ordinary high water mark. Four new manholes and connecting beach sewer lines will be required on the beach to intercept the existing beach sewer pipeline and divert flow to and out of the new pump stations. Four existing beach manholes will be removed and/or abandoned. Three new force mains will also be required and are located above the ordinary high water mark.

New rockery walls (revetments) will extend approximately 35 linear ft and 50 linear ft along the shoreline in the area formerly occupied by PS-45 and PS-46, respectively. The revetments will protect residential areas, roadways, and new facilities landward of the shoreline.

Soft bank protection, consisting of anchored logs, beach material, and dune grass will be installed at pump station 45 to transition the rockery into the neighbor's property.

PROVISIONS

AUTHORIZED WORK TIMES

1. TIMING LIMITATION: For the protection of migrating juvenile salmonids and spawning surf smelt, work waterward of and below the ordinary high water line is authorized from August 1st through August 31st of any calendar year.

2. TIMING LIMITATION: Work will also be allowed from August 31st through February 15th of any calendar year if a biologist approved by the Department of Fish and Wildlife does not detect surf smelt eggs during a beach survey. Work must begin within seventy-two hours of survey and you must complete the work within two weeks of the survey. The

biologist must follow the department-approved intertidal forage fish spawning protocol and use the standard department data sheets when conducting forage fish spawning beach surveys. A list of certified biologists, the approved protocol and data sheets are available on the department's web site http://wdfw.wa.gov/licensing/hpa/technical_assistance.html . The biologist must submit the completed, data sheets to the department within seventy-two hours of completing the survey to WDFW by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946. In addition, the biologist must preserve the winnowed portion of the sediment samples and retain them for a minimum of four weeks. The sediment samples must be provided to WDFW staff upon request. If available, WDFW staff may conduct or assist with the forage fish survey.

PLANS

3. 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 "Kitsap County Manchester Pump Stations 45, 46, & 47 And Beach Lines Rehabilitation," dated February 2016 and revised July 2016, except as modified by this Hydraulic Project Approval. You must have a copy of these plans available on site during all phases of the project proposal.

NOTIFICATION

4. PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at 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, 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. 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 of the problem. 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

6. 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.

7. Limit the removal of native bankline vegetation to the minimum amount needed to construct the project.

8. Retain all natural habitat features on the beach larger than twelve inches in diameter including trees, stumps, logs, and large rocks. These natural habitat features may be moved during construction but they must be placed near the preproject location before leaving the job site.

9. Minimize access points and equipment operation on the beach to the maximum extent feasible.

10. Check equipment daily for leaks and complete any required repairs before using the equipment in or near the water.

11. Construction material may be stockpiled waterward of the ordinary high water line only if the stockpile and any pits, trenches, or man-made depressions are isolated from tidal inundation.

12. BARGE OPERATION

13. Operate vessels with minimal propulsion power to avoid prop scour damage to the bed and marine vegetation

habitats.

14. Operate vessels during tidal elevations that are adequate to prevent grounding of the barge.

15. Restrict vessel operation to tidal elevations adequate to prevent propeller related damage to seagrass and kelp.

16. Do not deploy anchors or spuds in seagrass or kelp.

17. Maintain anchor cable tension, set and retrieve anchors vertically, and prevent mooring cables from dragging to avoid impacts to seagrass and kelp.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

18. Do not conduct project activities when the work area is inundated by tidal waters. If needed, the work area may be isolated using sheet piling, or a similar cofferdam device. Isolate the work area at low tide and ensure that fish will not be able to enter the work area at high tide. A pump may be used to keep the isolated work area dewatered. The pump discharge must not result in beach or bank scour, sedimentation, or turbidity.

19. Prevent contaminants from the project, 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.

20. Use tarps or other methods to prevent treated wood, sawdust, trimmings, drill shavings and other debris from contacting the bed or waters of the state.

21. To prevent leaching, construct forms to contain any wet concrete. Place impervious material over any exposed wet concrete that will come in contact with waters of the state. Forms and impervious materials must remain in place until the concrete is cured.

22. Do not use wood treated with oil-type preservative (creosote, pentachlorophenol) in any hydraulic project. Wood treated with waterborne preservative chemicals (ACZA, ACQ) may be used if the Western Wood Preservers Institute has approved the waterborne chemical for use in the aquatic environment. The manufacturer must follow the Western Wood Preservers Institute guidelines and the best management practices to minimize the preservative migrating from treated wood into aquatic environments. To minimize leaching, wood treated with a preservative by someone other than a manufacturer must follow the field treating guidelines. These guidelines and best management practices are available at www.wwpinstitute.org.

BULKHEAD - ROCK

23. The new bulkhead and toe protection must be constructed in accordance with the dimensions shown on Sheet 34 of 73 of the approved plans. The new toe protection must not extend more than 4 ft waterward of the northern adjacent property owner's existing bulkhead. The new rockery wall to protect the pump station must not extend waterward of the northern adjacent property owner's existing bulkhead.

24. Establish the waterward distance of the rock bulkhead from a permanent benchmark(s) (fixed objects) before starting work on the project. The benchmarks must be located and shown on the approved plans, marked in the field, and protected to serve as a post-project reference for ten years.

25. Remove the existing rip-rap associated with the pump station and armoring and dispose of this material in an upland location such that it will not re-enter waters of the state.

26. Bury base rocks a minimum of 18 inches below the preproject natural beach grade.

27. Build the rock bulkhead using clean, angular material of a sufficient durability and size to prevent its being broken up or washed away by high water or wave action.

28. Outfalls incorporated into the bulkhead must be constructed in accordance with the approved plans and must not result in scour to the beach or banks.

29. Do not stockpile excavated materials containing silt, clay, or fine-grained soil waterward of the ordinary high water line unless these materials are isolated from tidal inundation and are removed prior to tidal inundation..

30. Prior to tidal inundation, backfill all trenches, depressions, or holes created during construction waterward of the ordinary high water line. Native material excavated for bulkhead construction may be used as backfill if it meets the specifications for surf smelt spawning substrate below (see Habitat Features).

31. Remove all stockpiled and excavated material from the beach within 72 hours of bulkhead construction.

32. SOFT BANK PROTECTION

33. Install soft bank protection according to Sheet 35 of 73 of the approved plans.

34. Anchor logs to withstand tidal inundation and wave action.

35. Backfill terraced areas with beach sediment and plant with dune grass (Elymus mollis).

36. VAULT ABANDONMENT

37. Abandon the vaults in accordance with Sheet 42 of 73 of the approved plans. The vaults must be removed to a minimum of 3 ft below grade.

38. If, due to beach re-grade or any other reason, the vaults become exposed in the future, they must be removed to a minimum of 3 ft below grade.

HABITAT FEATURES

39. Project activities must not adversely impact seagrass and kelp (e.g., barge must not ground, anchor or spud down, equipment must not operate, and other project activities must not occur in seagrass and kelp).

40. Limit the removal of native bankline vegetation to the minimum amount needed to construct the project.

41. Project activities must not adversely impact intertidal wetland vascular plants (e.g., barge must not ground, anchor or spud down, equipment must not operate, and other project activities must not occur in intertidal wetland vascular plants).

42. Retain all natural habitat features on the beach larger than twelve inches in diameter including trees, stumps, logs, and large rocks. These natural habitat features may be moved during construction but they must be placed near the preproject location before leaving the job site.

DEMOBILIZATION/CLEANUP

43. Remove all trash and unauthorized fill in the project area, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper, that is waterward of the ordinary high water line and deposit upland.

44. Within 25 feet of surfaces impacted by construction activity, remove any riprap (including quarry spalls) scattered, or abandoned outside the original design footprint from the bed and deposit in an upland area above the limits of extreme high tidal water.

45. Remove all debris or deleterious material resulting from construction from the beach area or bed and prevent from entering waters of the state.

46. Replace damaged or destroyed native riparian vegetation in-kind during the first dormant season (late fall through late winter) after project completion. 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.

MITIGATION

47. The project will result in a net gain of intertidal habitat. Additionally, the County will remove any riprap (including quarry spalls) within 25 feet of surfaces impacted by construction activity and has also agreed to remove the abandoned concrete float south of existing pump station 45. Disturbed areas will be restored to match the native beach condition, including addition of beach gravels (up to 2.5-inch diameter) and sediment to match existing beach material and provide substrate for forage fish.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 27, 2016
Project End Date: February 15, 2021

Permit Number: 2016-6-369+01
FPA/Public Notice Number: N/A
Application ID: 4589

LOCATION #1:	Site Name: Manchester 8139 East Daniels Loop, Manchester, WA 98353					
WORK START:	August 1, 2016			WORK END:	February 15, 2021	
WRIA		Waterbody:			Tributary to:	
15 - Kitsap		Wria 15 Marine			Puget Sound	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
	22	24 N	02 E	47.556329	-122.543373	Kitsap
Location #1 Driving Directions						
From WA-16 West, take the SE Mullenix Rd exit and turn right (continue on SE Mullenix Rd for 1.1 miles). Turn left onto Phillips Rd SE (continue on Phillips Rd SE for 2.6 miles). Turn right onto WA-160 E (continue on WA-160 E for 1.7 miles). Turn left onto Locker Rd SE (continue on Locker Rd SE for 1.7 miles). Turn left onto SE Southworth Dr (continue on SE Southworth Dr for 0.6 mile). Turn right onto Colchester Dr SE (continue on Colchester Dr SE for 1.7 miles). Turn right onto E Daniels Loop. Continue until the road ends.						

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 a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor 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.

HYDRAULIC PROJECT APPROVAL

Issued Date: July 27, 2016
Project End Date: February 15, 2021
Permit Number: 2016-6-369+01
FPA/Public Notice Number: N/A
Application ID: 4589

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. Minor modifications do not require you to pay additional application fees or be issued a new HPA. 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. Do not include payment with your request. You should allow up to 45 days for the department to process your request.

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 paid an application fee for your original HPA you must pay an additional $150 for the major modification. If you did not pay an application fee for the original HPA, no fee is required for a change to it. 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, payment if the original application was subject to an application fee, and the requestor's signature. Send your written request and payment, if applicable, 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, but must send a check or money order for payment by surface mail. 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.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 27, 2016
Project End Date: February 15, 2021

Permit Number: 2016-6-369+01
FPA/Public Notice Number: N/A
Application ID: 4589

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, 600 Capitol Way North, Olympia, Washington 98501-1091; 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 will conduct an informal hearing 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.

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, 600 Capitol Way North, Olympia, Washington 98501-1091; 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	Brittany.Gordon@dfw.wa.gov		for Director
Brittany Gordon	360-895-4756		WDFW

Section 10 / Section 404 Nationwide Permit, Including Coastal Zone Management Act Consistency and Section 401 Water Quality Certification

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DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

Regulatory Branch

July 26, 2016

Ms. Barbara Zaroff
Kitsap County Public Works, MS-26
614 Division Street
Port Orchard, Washington 98366

Reference: NWS-2015-637
Kitsap County
(Manchester Sewer Beach
Line and Pump Station
Rehabilitation)

Dear Ms. Zaroff:

We have reviewed your application to rehabilitate an existing beach sewer line and three pump stations in Puget Sound near Manchester, Kitsap County, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 3, Maintenance (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated January 8, 2016.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 3, Terms and Conditions* and the following special conditions:

a. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the *Biological Assessment and Essential Fish Habitat Evaluation Manchester Pump Stations Nos, 45, 46, 47 and Beach Line Rehabilitation* dated January 11, 2016, in their entirety. The U.S. Fish and Wildlife Service (USFWS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on May 19, 2016 (USFWS Reference Number 01EWFW00-2016-I-0496). The National Marine Fisheries Service (NMFS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on May 19. 2016 (NMFS Reference Number WCR-2016-4208). Both agencies will be informed of this permit issuance. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS/NMFS is the appropriate authority to determine compliance with ESA.

b. In order to protect the listed threatened and endangered species in the project area, you may conduct the authorized activities in the work window as agreed to and documented in

writing through consultation by the U.S. Fish and Wildlife Service and National Marine Fisheries Service (Services) in any year this permit is valid. If changes to the originally authorized work window are proposed, you must re-coordinate these changes with the Services and receive written concurrence on the changes. Copies of the concurrence(s) must be sent to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch, within 10 days of the date of the revised concurrence.

The Environmental Protection Agency completed National Historic Preservation Act, Section 7 Endangered Species Act (ESA) consultation, and Magnuson Stevens Act essential fish habitat (EFH) consultation for its involvement in the proposed activity [National Marine Fisheries Service reference WCR-2016-4208, U.S. Fish and Wildlife Service reference 01EWFW00-2016-I-0496 (collectively called the Services)]. For the purpose of this Department of the Army authorization, we have determined this project will comply with the requirements of these laws provided you comply with all of the permit general and special conditions. We have determined the permit action is sufficiently addressed in their ESA and EFH consultation documents. By this letter we are advising you and the Services, in accordance with 50 CFR 402.07 and 50 CFR 600.920(b), that this agency has served as the lead Federal agency for the ESA and EFH consultation responsibilities for the activity described above.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification and the Coastal Zone Management Act requirements for this NWP. No further coordination with Ecology is required.

We have prepared and enclosed a *Preliminary Jurisdictional Determination* (JD) dated July 11, 2016, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the U.S. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may <u>not</u> occur until the approved JD has been finalized.

Our verification of this NWP authorization is valid until March 18, 2017, 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, 2017, you will have until March 18, 2018, 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* form. 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 form. This form and information about our program is available on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." A copy of this letter with enclosures will be furnished to Mr. Steve Quarterman of Landau Associates at 130 2nd Avenue South, Edmonds, Washington 98020. If you have any questions, please contact me at brian.d.hooper@usace.army.mil or (206) 316-3975.

Sincerely,

Brian Hooper, Project Manager
Regulatory Branch

Enclosures

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 11 July 2016

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Barbara Zaroff , Kitsap County Public Works, 614 Division Street , Port Orchard, Washington 98366

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Seattle District, Manchester Sewer Beach Line and Pump Station Rehabilitation; NWS-2015-637

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
State: WA County: Kitsap City: Manchester
Center coordinates of site (lat/long in degree decimal format): Lat. 47.55631°N, Long. -122.54316°W
Name of nearest waterbody: Puget Sound and Duncan Creek
Name of any water bodies on the site, in the review area, that have been identified as Section 10 waters:
Tidal: Puget Sound
Non-Tidal: _____

Identify (estimate) amount of waters in the review area (if there are multiple sites, use the table instead):
Non-wetland waters (total for site): linear feet 30 and width (ft) 10 or _____ acres.
Stream Flow : perennial Flow path: Duncan Creek flows into Puget Sound, a traditional navigable water of the U.S.
Wetlands: _ acres (total for site).
Cowardin Class(es): _____

Site Name	Latitude	Longitude	Cowardin Classification	Estimated amount of aquatic resource in review area	Hydrogeomorphic Class
Duncan Creek	47.55338	-122.5427	Riverine	30 linear feet	

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 7/11/2016
☒ Field Determination. Date(s): 8/20/2016

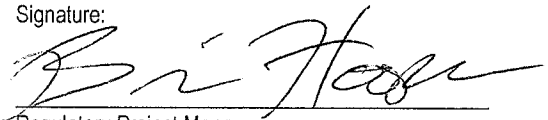
SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: project drawings dated 1/18/2016.
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report. Explain: _____
☐ Data sheets prepared by the Corps: _____.
☐ Corps navigable waters' study: _____.
☐ U.S. Geological Survey Hydrologic Atlas: _____.
☐ USGS NHD data. ☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: _____.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: _____.
☐ National wetlands inventory map(s). Cite name: _____.
☐ State/Local wetland inventory map(s): _____.
☐ FEMA/FIRM maps: _____.
☐ 100-year Floodplain Elevation is: _____(National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth 6/2015.
☐ Photographs: ☐ Other (Name & Date): _____.
☐ Previous determination(s). File no., date (and findings) of response letter (determination and coordination): _____.
☐ Other information (please specify): _____.

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the information in this document.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature:



Regulatory Project Manager

11 July 2016

Date

Person[1] Requesting Preliminary JD

Date

[1] Permit applicant, landowner, a lease, easement or option holder, or individual with identifiable and substantial legal interest in the property; this signature is not required for preliminary JDs associated with enforcement actions.

US Army Corps of Engineers ®
Seattle District

NATIONWIDE PERMIT 3
Terms and Conditions

Effective Date: June 15, 2012

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 authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

3. Maintenance. (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and/or the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization. The placement of new or additional riprap must be the minimum necessary to protect the structure or to ensure the safety of the

structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.

(c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Sections 10 and 404)

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

Note: 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. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. 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.

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 and storm water management activities, 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.

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. No 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. 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).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

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 Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(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 project, or if the project 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 work or that utilize the designated critical habitat that might be affected by the proposed work. 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 project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until 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 regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a 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 U.S. 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) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect 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. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may 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 may be affected by the proposed work 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 resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, 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 and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may 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 or that consultation under Section 106 of the NHPA has been completed.

(d) 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. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work 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 (16 U.S.C. 470h-2(k)) 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, and 38, notification is required in accordance with general condition 31, 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 adverse effects on the aquatic environment are 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 adverse effects to the aquatic environment are 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 effects of the proposed activity are minimal, and provides a project-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 minimal adverse effects on the aquatic environment. 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 minimal

adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) 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) – (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)). (4) 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. (5) 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.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) 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 project 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 a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. 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 establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing 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 compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory 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.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of 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 effects of the project to the 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 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 work 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 work and mitigation.

31. 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 in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may 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 (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 project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; 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. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project 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); (4) 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 waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) 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 effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(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 a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(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 project's adverse environmental effects to a minimal level. (2) For 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, for 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 intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, 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 (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), 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 telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse 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 to the aquatic environment of the proposed activity are 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. (3) 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. (4)

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. For a linear project, this determination will include an evaluation of the individual crossings 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 intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. 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 assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. 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 projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are 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 effects on the aquatic environment are 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 no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project 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 project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project 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 effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When 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.

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS

1. Aquatic Resources Requiring Special Protection. Activities resulting in a loss of waters of the United States in a mature forested wetland, bog, bog-like wetland, aspen-dominated wetland, alkali wetland, wetlands in a dunal system along the Washington coast, vernal pools, camas prairie wetlands, estuarine wetlands, and wetlands in coastal lagoons cannot be authorized by a NWP, except by the following NWPs:

NWP 3 – Maintenance
NWP 20 – Oil Spill Cleanup
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, you must submit a pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 (Pre-Construction Notification) and obtain written approval before commencing work.

2. Commencement Bay. The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 1 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) requiring Department of the Army authorization:

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 Management Facilities

3. New Bank Stabilization Prohibition Areas 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 specific area identified on Figure 2 at www.nws.usace.army.mil, select Regulatory Permits then Permit Guidebook, then Nationwide Permits) cannot be authorized by a NWP.

4. Bank Stabilization. Any project including new or maintenance bank stabilization activities requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety. The notification must also include a justification for the need to place fill or structures waterward of the line of the Corps' jurisdiction (typically, the ordinary high water mark or mean higher high water mark).

b. Current and expected post-project sediment movement and deposition patterns in and near the project area. In tidal waters, describe the location and size of the nearest bluff sediment sources (feeder bluffs) to the project area and current and expected post-project nearshore drift patterns in the project area.

c. Current and expected post-project habitat conditions, including the presence of fish, wildlife and plant species, submerged aquatic vegetation, spawning habitat, and special aquatic sites (e.g., vegetated shallows, riffle and pool complexes, or mudflats) in the project area.

d. In rivers and streams, an assessment of the likely impact of the proposed work on upstream, downstream and cross-stream properties (at a minimum the area assessed should extend from the nearest upstream bend to the nearest downstream bend of the watercourse). Discuss the methodology used for determining effects. The Corps reserves the right to request an increase in the reach assessment area to fully address the relevant ecological reach and associated habitat.

e. For new bank stabilization activities in rivers and streams, describe the type and length of existing bank stabilization within 300 feet up and downstream of the project area. In tidal areas, describe the type and length of existing bank stabilization within 300 feet along the shoreline on both sides of the project area.

f. Demonstrate the proposed project incorporates the least environmentally damaging practicable bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody material, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to fish. If the Corps determines you have not incorporated the least environmentally damaging practicable bank protection methods and/or have not fully compensated for impacts to aquatic resources, you must submit a compensatory mitigation plan to compensate for impacts to aquatic resources.

g. A planting plan using native riparian plant species unless the applicant demonstrates a planting plan is not appropriate or not practicable.

5. Crossings of Waters of the United States. Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts, requires pre-construction notification to the District Engineer in accordance with Nationwide Permit General Condition 31 for Pre-Construction Notification. This requirement does not apply to maintenance work exempt by 33 CFR 323.4 (a)(2). Each notification must also include the following information:

a. Need for the crossing.

b. Crossing design criteria and design methodology.

c. Rationale behind using the specific design method for the crossing.

6. Cultural Resources and Human Burials. Permittees must immediately stop work and notify the District Engineer within 24 hours if, during the course of conducting authorized work, human burials, cultural resources, or historic properties, as identified by the National Historic Preservation Act, are discovered. Failure to stop work in the area of discovery until the Corps can comply with the provisions of 33 CFR 325 Appendix C, the National Historic Preservation Act, and other pertinent laws and regulations could result in a violation of state and federal laws. Violators are subject to civil and criminal penalties.

7. Essential Fish Habitat. An activity which may adversely affect essential fish habitat, as identified under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), may not be authorized by NWP until essential fish habitat requirements have been met by the applicant and the Corps. Non-federal permittees shall notify the District Engineer if essential fish habitat may be affected by, or is in the vicinity of, a proposed activity and shall not begin work until notified by the District Engineer that the requirements of the essential fish habitat provisions of the MSA have been satisfied and the activity is authorized. The notification must identify the type(s) of essential fish habitat (e.g., Pacific salmon, groundfish, and/or coastal-pelagic species) managed by a Fishery Management Plan that may be affected. Information about essential fish habitat is available at www.nwr.noaa.gov/.

8. Vegetation Protection and Restoration. Permittees must clearly mark all construction area boundaries before beginning work. The removal of native vegetation in riparian areas and wetlands, and the removal of submerged aquatic vegetation in estuarine and tidal areas must be avoided and minimized to the maximum extent practicable. Areas subject to temporary vegetation removal shall be replanted with appropriate native species by the end of the first planting season following the disturbance except as waived by the District Engineer. If an aquaculture area is permitted to impact submerged aquatic vegetation under NWP 48, the aquaculture area does not need to be replanted with submerged aquatic vegetation.

9. Access. You must allow representatives of this office to inspect the authorized activity at any time deemed necessary to ensure the work is being, or has been, accomplished in accordance with the terms and conditions of your permit.

10. Contractor Notification of Permit Requirements. The permittee must provide a copy of the nationwide permit verification letter, conditions, and permit drawings to all contractors involved with the authorized work, prior to the commencement of any work in waters of the U.S.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP: NONE

E. STATE 401 CERTIFICATION GENERAL CONDITIONS:

1. **For in-water construction activities**. Individual 401 review is required for projects or activities authorized under NWPs that will cause, or be likely to cause or contribute to an exceedence of a State water quality standard (WAC 173-201A) or sediment management standard (WAC 173-204).

   ***Note**: State water quality standards are posted on Ecology's website: http://www.ecy.wa.gov/programs/wq/swqs/. Click "Surface Water Criteria" for freshwater and marine water standards. Sediment management standards are posted on Ecology's website: http://www.ecy.wa.gov/biblio/wac173204.html. Information is also available by contacting Ecology's Federal Permit staff.*

2. **Projects or Activities Discharging to Impaired Waters**. Individual 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 exceedences of the specific listed parameter.

   ***Note**: 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, http://www.ecy.wa.gov/programs/wq/303d/2008/. Information is also available by contacting Ecology's Federal Permit staff.*

3. **Notification**. For projects or activities that will require Individual 401 review, applicants must provide Ecology with the same documentation provided to the Corps (as described in Corps Nationwide Permit General Condition 31, 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, and any other Department of the Army permits used or intended to be used to authorize any part of the proposed project or any related activity.

   (b) Delineation of special aquatic sites and other waters of the United States. 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.

   ***Note**: Wetland rating forms are available on Ecology's Wetlands website: http://www.ecy.wa.gov/programs/sea/wetlands/ratingsystems or by contacting Ecology's Federal Permit staff.*

   (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

   Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b).

   (d) Coastal Zone Management Program "Certification of Consistency" Form if the project is located within a coastal county (Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom counties).

   ***Note**: CZM Certification of Consistency forms are available on Ecology's Federal Permit website: http://www.ecy.wa.gov/programs/sea/fed-permit/index.html or by contacting Ecology's Federal Permit staff.*

(e) Other applicable requirements of Corps Nationwide Permit General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

***Note**: Ecology has 180 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 to issue a WQC and CZM consistency determination response. If more than 180 days pass after Ecology's receipt of these documents, your requirement to obtain an individual WQC and CZM consistency determination response becomes 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.

   Individual 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Regional Condition 1):

   (a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #04-06-025 and #04-06-015):
   - Estuarine wetlands
   - Natural Heritage wetlands
   - 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, and marine water with eelgrass (*Zostera marina*) beds (except for NWP 48).

   (c) Category 1 wetlands

   (d) Category II wetlands with a habitat score ≥ 29 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. For projects requiring Individual 401 review, adequate compensatory mitigation must be provided for wetland and other water quality-related impacts of projects or activities authorized under the NWP Program.

   (a) Mitigation plans submitted for Ecology review and approval shall be based on the guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (Ecology Publications #06-06-011a and #06-06-011b) 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) for guidance on developing mitigation plans.

Ecology encourages the use of alternative mitigation approaches, including advance mitigation and other programmatic approaches such as mitigation banks and programmatic mitigation areas at the local level. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. (see http://www.ecy.wa.gov/programs/sea/wetlands/contacts.htm)

Information on the state wetland mitigation banking program is available on Ecology's website: http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/index.html

6. **Temporary Fills.** Individual 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 discharge pollution prevention**: All projects that involve land disturbance or impervious surfaces must implement prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the state. For land disturbances during construction, the permittee must obtain and implement permits where required and follow Ecology's current stormwater manual.

   ***Note**: Stormwater permit information is available at Ecology's Water Quality website: http://www.ecy.wa.gov/programs/wq/stormwater/index.html. Ecology's Stormwater Management and Design Manuals are available at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html. Information is also available by contacting Ecology's Federal Permit staff.*

8. **State Certification for PCNs not receiving 45-day response.** In the event the U.S. Army Corps of Engineers does not respond to a complete pre-construction notification within 45 days, the applicant must contact Ecology for Individual 401 review.

F. STATE 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP:

Certified, subject to conditions. Permittee must meet Ecology 401 General Conditions. Individual 401 review is required for projects or activities authorized under this NWP if:

1. The project or activities are below the OHWM with new work being proposed outside the original footprint.

2. The proposed project or activity increases the original footprint of the structure by more than 1/10th acre in wetlands. Note 1: "Original footprint" refers to the configuration of the structure or filled area within the last two years. Note 2: This may include causing surrounding wetlands to be drained.

3. The project or activity includes adding a new structure, such as a weir, flap gate/tide gate, or culvert to the site.

G. EPA 401 CERTIFICATION GENERAL CONDITIONS:

A. Any activities in the following types of wetlands and waters of the United States will need to apply for an individual 401 certification: Mature forested wetlands, bogs, bog-like wetlands, wetlands in dunal systems along the Washington coast, coastal lagoons, vernal pools, aspen-dominated wetlands, alkali wetlands, camas prairie wetlands, estuarine wetlands, including salt marshes, and marine waters with eelgrass or kelp beds.

B. A 401 certification determination is based on the project or activity meeting established turbidity levels. The EPA will be using as guidance the state of Washington's water quality standards [WAC 173-201a] and sediment quality standards [WAC 173-204]. Projects or activities that are expected to exceed these levels or that do exceed these levels will require an individual 401 certification.

The water quality standards allow for short-term turbidity exceedances after all necessary Best Management Practices have been implemented (e.g., properly placed and maintained filter fences, hay bales and/or other erosion control devices, adequate detention of runoff to prevent turbid water from flowing off-site, providing a vegetated buffer between the activity and open water, etc.), and only up to the following limits:

Wetted Stream Width at Discharge Point	Approximate Downstream Point for Determining Compliance
Up to 30 feet	50 feet
>30 to 100 feet	100 feet
>100 feet to 200 feet	200 feet
>200 feet	300 feet
LAKE, POND, RESERVOIR	Lesser of 100 feet or maximum surface dimension

C. 401 certification of projects and activities under NWPs will use Washington State Department of Ecology's most recent stormwater manual or an EPA approved equivalent manual as guidance in meeting water quality standards.

D. For projects and activities requiring coverage under an NPDES permit, certification is based on compliance with the requirements of that permit. Projects and activities not in compliance with NPDES requirements will require individual 401certification.

E. Individual 401certification is required for projects or activities authorized under NWPs if the project will discharge to a waterbody on the list of impaired waterbodies (the 303(d) List) and the discharge may result in further exceedance of a specific parameter the waterbody is listed for. The EPA shall make this determination on a case-by-case basis.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved Total Maximum Daily Load (TMDL) or an approved water quality management plan, the applicant must provide documentation for EPA approval showing that the discharge will not result in further exceedance of the listed contaminant or impairment.

For projects or activities that will discharge to a 303(d)-listed waterbody that does not have an approved TMDL, the applicant must provide documentation for EPA approval showing that the discharge is within the limits established in the TMDL. The current list of 303(d)-listed waterbodies in Washington State will be consulted in making this determination and is available on Ecology's web site at: www.ecy.wa.gov/programs/wq/303d/2012/index.html

The EPA may issue 401 certification for projects or activities that would result in further exceedance or impairment if mitigation is provided that would result in a net decrease in listed contaminants or less impairment in the waterbody. This determination would be made during individual 401 certification review.

F. For projects requiring individual 401 certification, applicants must provide the EPA with the same documentation provided to the Corps, (as described in Corps' National General Condition 31, 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, any other U.S. Department of the Army permits used or intended to use to authorize any part of the proposed project or any related activity.

(b) Delineation of special aquatic sites and other waters of the United States. Wetland delineations must be prepared in accordance with the current method required by the Corps.

(c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted.

(d) Other applicable requirements of Corps National General Condition 31, Corps Regional Conditions, or notification conditions of the applicable NWP.

A request for individual 401 certification- review is not complete until the EPA receives the applicable documents noted above and the EPA has received a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program.

G. No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

H. An individual 401 certification is based on adequate compensatory mitigation being provided for aquatic resource and other water quality-related impacts of projects or activities authorized under the NWP Program.

A 401 certification is contingent upon written approval from the EPA of the compensatory mitigation plan for projects and activities resulting in any of the following:

- impacts to any aquatic resources requiring special protection (as defined in EPA General Condition A or Corps General Regional Condition 1)
- any impacts to tidal waters or non-tidal waters adjacent to tidal waters (applies to NWP 14)
- Or, any impacts to aquatic resources greater than ¼ acre.

Compensatory mitigation plans submitted to the EPA shall be based on the Joint Agency guidance provided in *Wetland Mitigation in Washington State, Parts 1 and 2* (Ecology Publication #06-06-011a and #06-06-011b) and shall, at a minimum, include the following:

(1) A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
(2) The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded)
(3) The rationale for the mitigation site that was selected
(4) The goals and objectives of the compensatory mitigation project
(5) How the mitigation project will be accomplished, including proposed performance standards for measuring success (including meeting planting success standard of 80 percent survival after five years), evidence for hydrology at the mitigation site, and the proposed buffer widths;
(6) How it will be maintained and monitored to assess progress towards goals and objectives.
(7) Completion and submittal of an "as-built conditions report" upon completion of grading, planting and hydrology establishment at the mitigation site;
(8) Completion and submittal of monitoring reports at years 3 and 5 showing the results of monitoring for hydrology, vegetation types, and aerial cover of vegetation.
(9) For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.
(10) Documentation of legal site protection mechanism (covenant or deed restriction) to show how the compensatory mitigation site will be legally protected for the long-term.

I. An individual 401 certification is required for any activity where temporary fill will remain in wetlands or other waterbodies for more than 90 days. The 90 day period begins when filling activity starts in the wetland or other waterbody.

J. An individual 401 is required for any proposed project or activity in waterbodies on the most current list of the following Designated Critical Resource Waters (per Corps General Condition 22).

K. An individual 401 certification is required for any proposed project that would increase permanent, above-grade fill within the 100-year floodplain (including the floodway and the flood fringe).

[***Note:*** The 100-year floodplain is defined as those areas identified as Zones A, A1-30, AE, AH, AO, A99, V, V1-30, and VE on the most current Federal Emergency Management Agency Flood Rate Insurance Maps, or areas identified as within the 100-year floodplain on applicable local Flood Management Program maps. The 100-year flood is also known as the flood with a 100-year recurrence interval, or as the flood with an exceedance probability of 0.01.]

H. EPA 401 CERTIFICATION SPECIFIC CONDITIONS FOR THIS NWP:

Partially denied without prejudice. Permittee must meet EPA 401 General Conditions. An individual 401 certification is required for projects authorized under this NWP if:

1. The project or activity would extend beyond the original project footprint (either along the shoreline or below MHHW or OHWM), or

2. Any activity requiring excavation or dredging in open water.

I. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP:

Concur, subject to the following condition: When individual 401 review is triggered, a CZM Certificate of Consistency form must be submitted for project located within the 15 coastal counties (See State General 401 Condition 3 (Notification)).

US Army Corps of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-_____

Name of Permittee: _____

Date of Issuance: _____

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☐	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____ ☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☐	If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: _____ ☐ N/A ☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

☐	Provide phone number/email for scheduling site visits (must have legal authority to grant property access). Printed Name: _____ Phone Number: _____ Email: _____

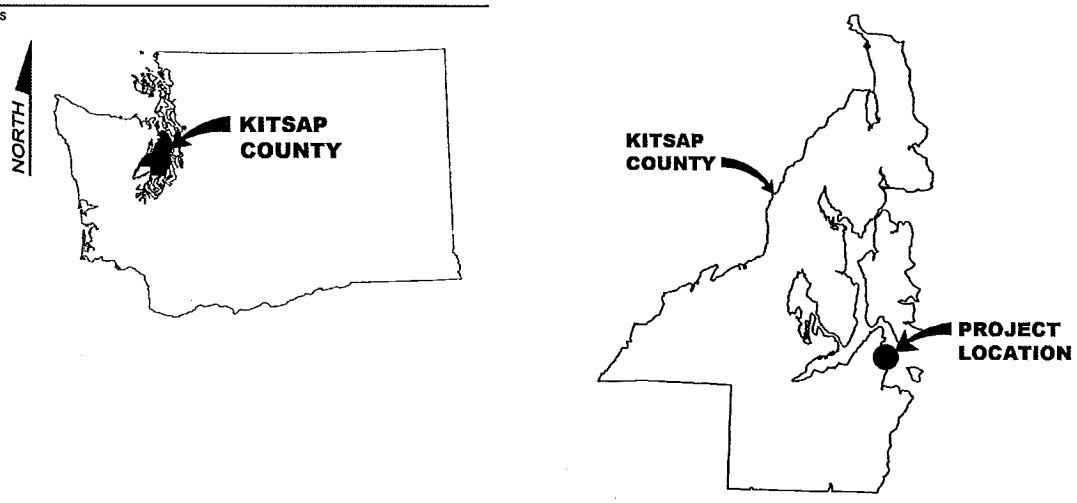
Printed Name: _____

Signature: _____

Date: _____

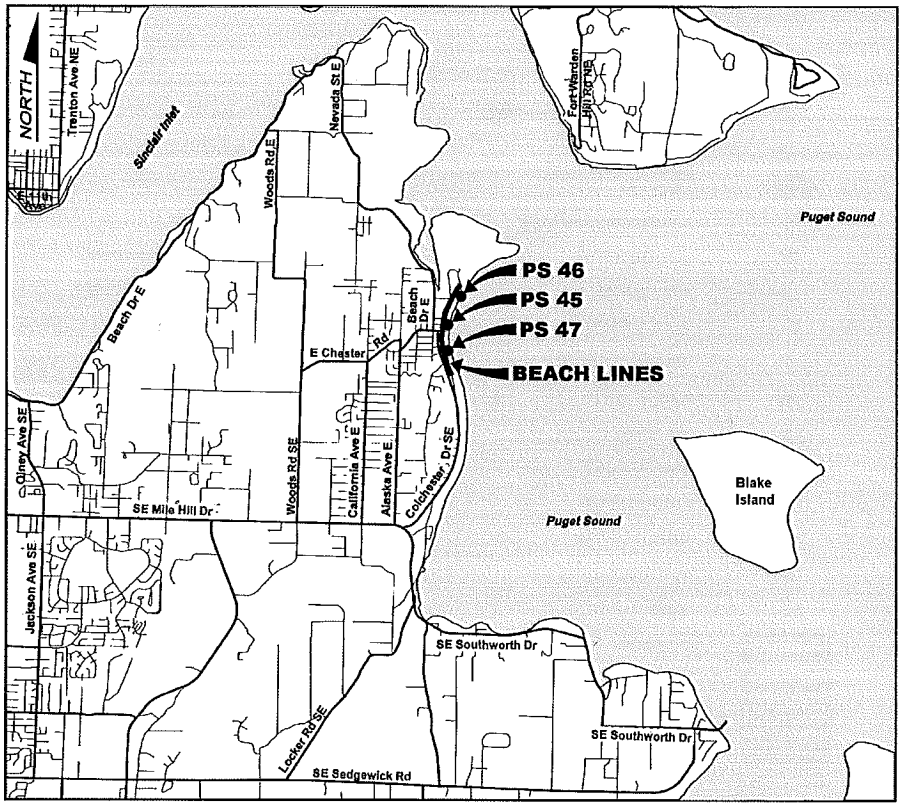
LOCATION MAPS

NTS



VICINITY MAP

NTS



PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	KITSAP COUNTY, WASHINGTON	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	NWS-2015-637	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29		**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA	VICINITY MAP	**DATE:** 1-8-2016
		SHEET: 1 OF 53

G:\Projects\1073\004\020\JARPA\F01 VicinityMap.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

LEGEND:

EXISTING		PROPOSED	
	RIGHT OF WAY		TEMPORARY CONSTRUCTION EASEMENT
	CENTERLINE		PERMANENT CONSTRUCTION EASEMENT
	PROPERTY LINE		CLEARING LIMIT/WORK ZONE DELINEATION FENCE
	EASEMENT		FILTER FABRIC FENCE
-4	CONTOUR - 1' INTERVAL		WETLAND BUFFER BOUNDARY
9.80	100 YR FLOOD ELEVATION		SEWER FACILITY/PIPING
SD	STORM DRAIN		SANITARY SEWER MANHOLE OR STRUCTURE
W	WATER	SS	CURED IN PLACE SANITARY SEWER
SS	SANITARY SEWER (GRAVITY)	SS	TO BE REMOVED OR ABANDONED
FM	SANITARY SEWER FORCE MAIN		VALVE BOX
OP OP	OVERHEAD POWER		CONCRETE THRUST BLOCK
BP BP	BURIED POWER		FLANGE FITTING
OT OT	OVERHEAD TELEPHONE		MECHANICAL JOINT FITTING (RESTRAINED FOR ALL PRESSURE PIPE)
BT BT	BURIED TELEPHONE		FLEXIBLE COUPLING (RESTRAINED FOR ALL PRESSURE PIPE)
G G G	BURIED GAS		CATCH BASIN INSERT
	EDGE OF ASPHALT		SLOPE (PROFILE)
	EDGE OF GRAVEL		DIRECTION OF FLOW (PLAN)
O O	CHAIN LINK FENCE		SIGN LOCATION
X X	WIRE FENCE		CHANNELIZING DEVICES
BH	SOIL BORING		HMA PAVEMENT (PLAN)
S	SANITARY SEWER MANHOLE		HMA PAVEMENT (SECTION)
	CATCH BASIN		GRAVEL SURFACE (PLAN)
	ROCKERY		CAST-IN PLACE CONCRETE
	STREET OR YARD LAMP		PRE-CAST CONCRETE
	JUNCTION BOX		FOUNDATION MATERIAL
	UTILITY POLE		PIPE BEDDING
	POLE ANCHOR		CSTC
	TELEPHONE PEDESTAL		CSBC
	GAS METER		SELECT BORROW
	WATER METER AND BOX		UNDISTURBED NATIVE
	WATER VALVE		TRENCH BACKFILL
	FIRE HYDRANT		GROUT OR SAND
	SIGN		LIGHTWEIGHT FILL
	MAILBOX		
	TREE		
	BUILDING		
	CONCRETE (PLAN)		
	GRAVEL SURFACE (PLAN)		
	HMA (PLAN)		
	HEDGE OR BRUSH LINE		

Tidal Datum

Description	*Elevation (feet)*
MHHW	5.52
MHW	4.65
MTL	0.80
MLW	-3.01
MLLW	-5.84
ELLW	-10.34

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

LEGEND

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 2 OF 53

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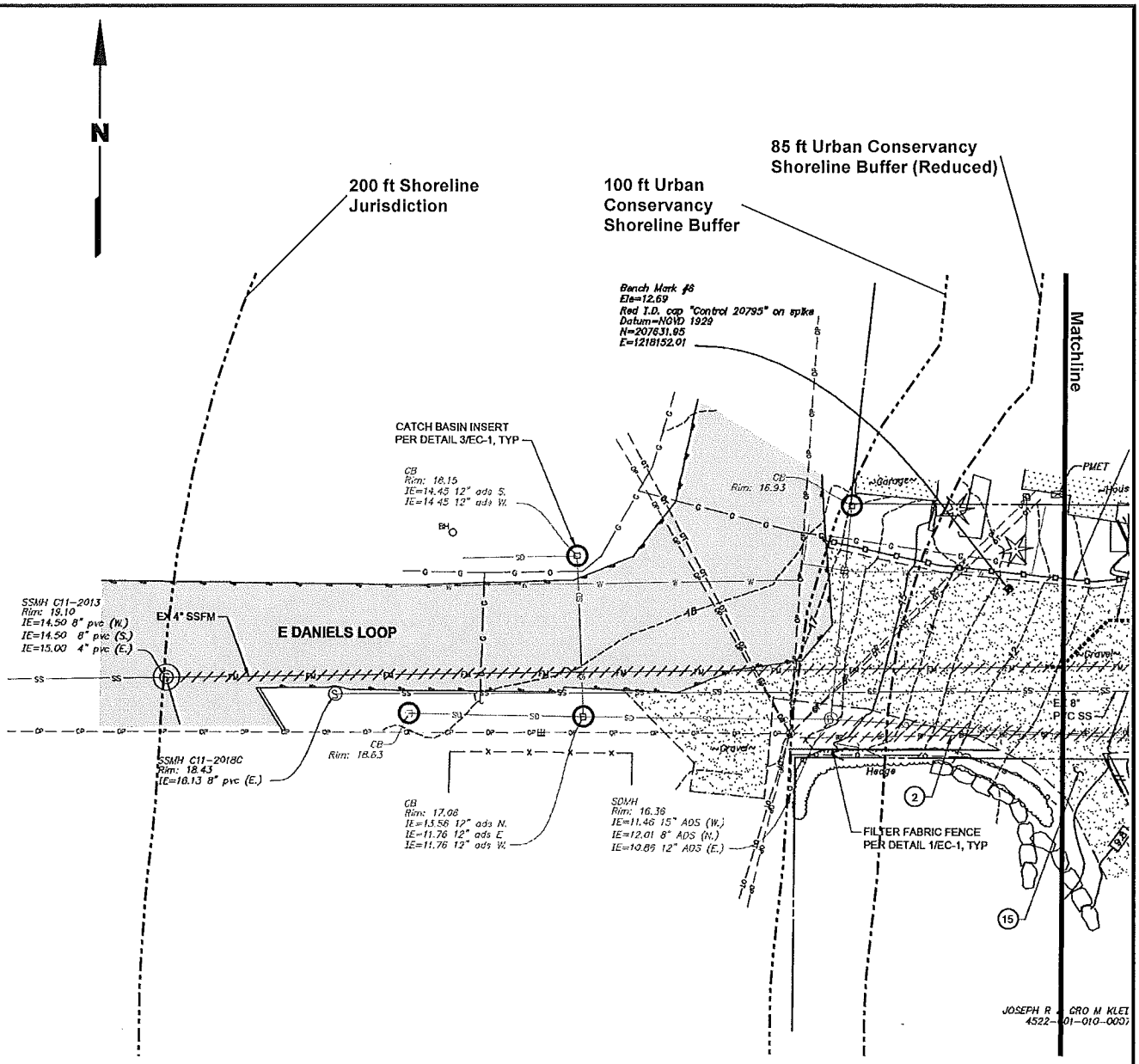

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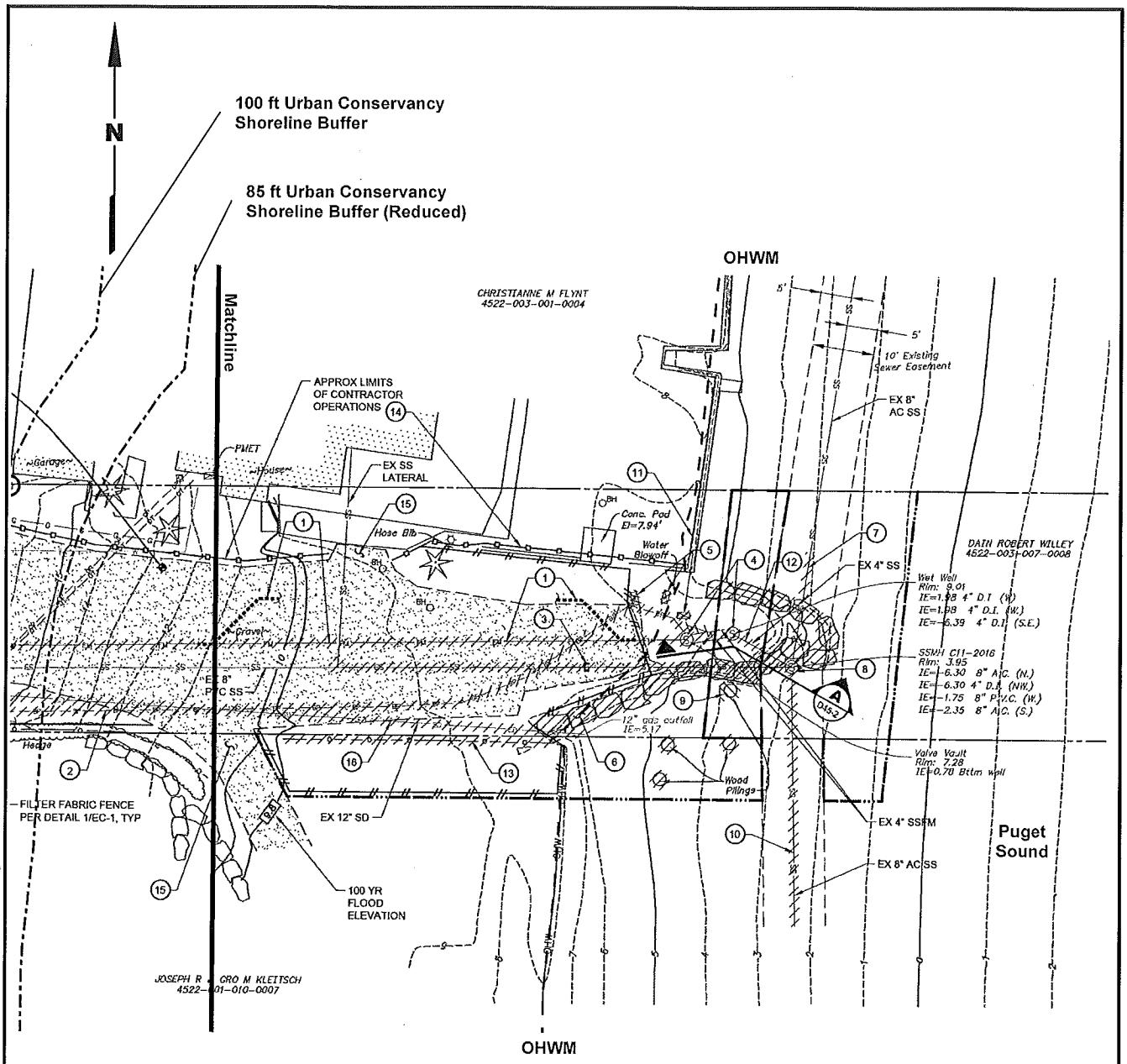
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **EXISTING CONDITIONS/ DEMO PLAN**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 3 OF 53



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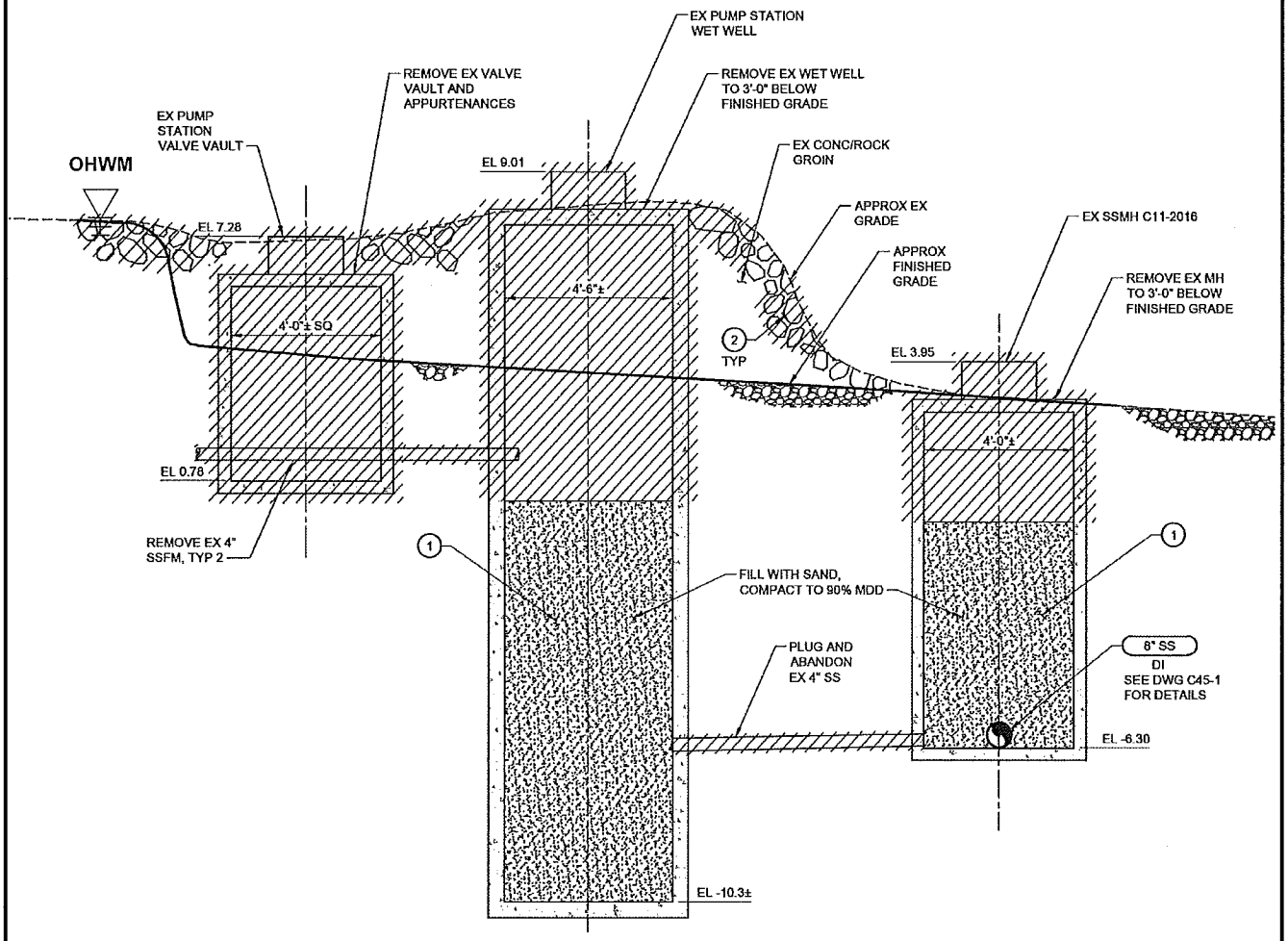
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**PS-45 EXISTING CONDITIONS/ DEMO PLAN**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 4 OF 53

CONSTRUCTION NOTES:

1. REROUTE EXISTING FORCE MAIN FOR CONSTRUCTION OF NEW FACILITIES. REMOVE EXISTING FORCE MAIN IN AREA OF NEW IMPROVEMENTS. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY FORCE MAIN AND PLUG AND ABANDON REMAINING EXISTING FORCE MAIN.
2. RELOCATE POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
3. PLUG AND ABANDON EXISTING SEWER TO EAST, REMOVE EXISTING SEWER TO WEST.
4. DECOMMISSION AND REMOVE MECHANICAL, ELECTRICAL, AND MISCELLANEOUS EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISCHARGE PIPING BETWEEN STRUCTURES.
5. RELOCATE EXISTING PUMP STATION ELECT EQUIP FOR USE DURING CONSTRUCTION PER ELECT DWGS. REMOVE ELECT EQUIP FOLLOWING COMMISSIONING OF NEW PUMP STATION.
6. REMOVE EXISTING CONC/ROCK GROIN DURING DEMOLITION OF EXISTING PUMP STATION, SEE DWG R45-1 FOR RESTORATION DETAILS. MINOR DISTURBANCE/REMOVAL WILL BE ALLOWED FOR INSTALLATION OF NEW SEWER AND BEACH MANHOLE.
7. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION.
8. REMOVE EXISTING SSMH.
9. FULLY REMOVE EXISTING WOOD PILINGS, TYP OF 4.
10. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED.
11. REMOVE AND RECONSTRUCT CONC BULKHEAD TO MATCH EXISTING IF DISTURBED DURING CONSTRUCTION.
12. REMOVE EXISTING SEWER.
13. REMOVE CHAINLINK FENCE.
14. COORDINATE OPENINGS WITH HOMEOWNER FOR ACCESS.
15. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
16. REMOVE AND REPLACE EXISTING STORM DRAIN.

G:\Projects\1073\004\020\JARPA\F05 PS45-DEMO NOTES.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45 EXISTING CONDITIONS/ DEMO PLAN NOTES**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 5 OF 53



NOTES:

1. REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.
2. FULLY REMOVE ALL CONCRETE AND ROCKERY MAKING UP THE EXISTING GROIN. EXCAVATE UP TO 3' DEPTH TO REMOVE ANY GROIN MATERIAL KEYED INTO THE EXISTING BEACH GRADE.

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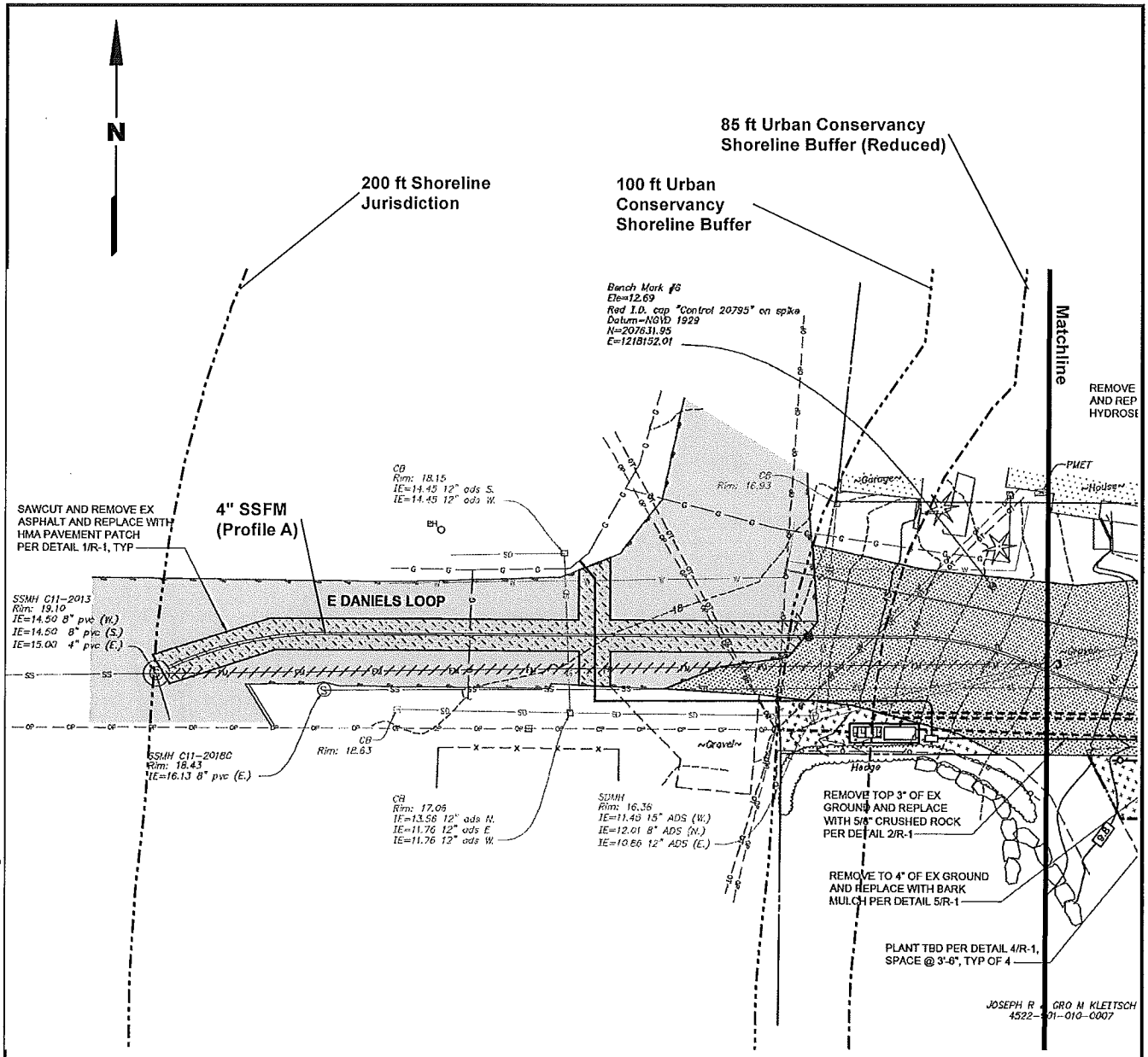
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **EXISTING CONDITIONS/ DEMO PLAN SECTION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 6 OF 53



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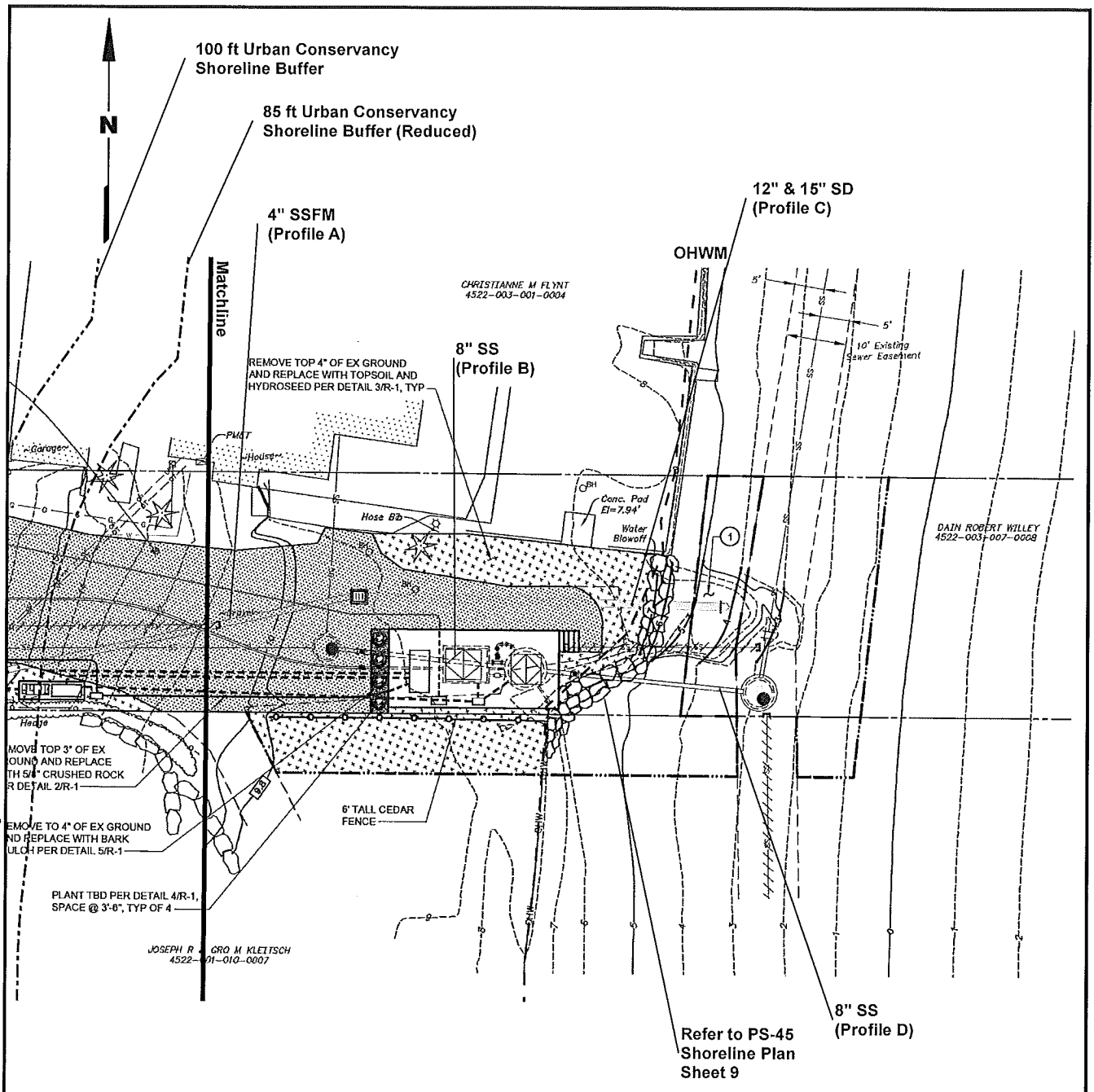
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **FINISHED SITE PLAN**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 7 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-45
FINISHED SITE PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

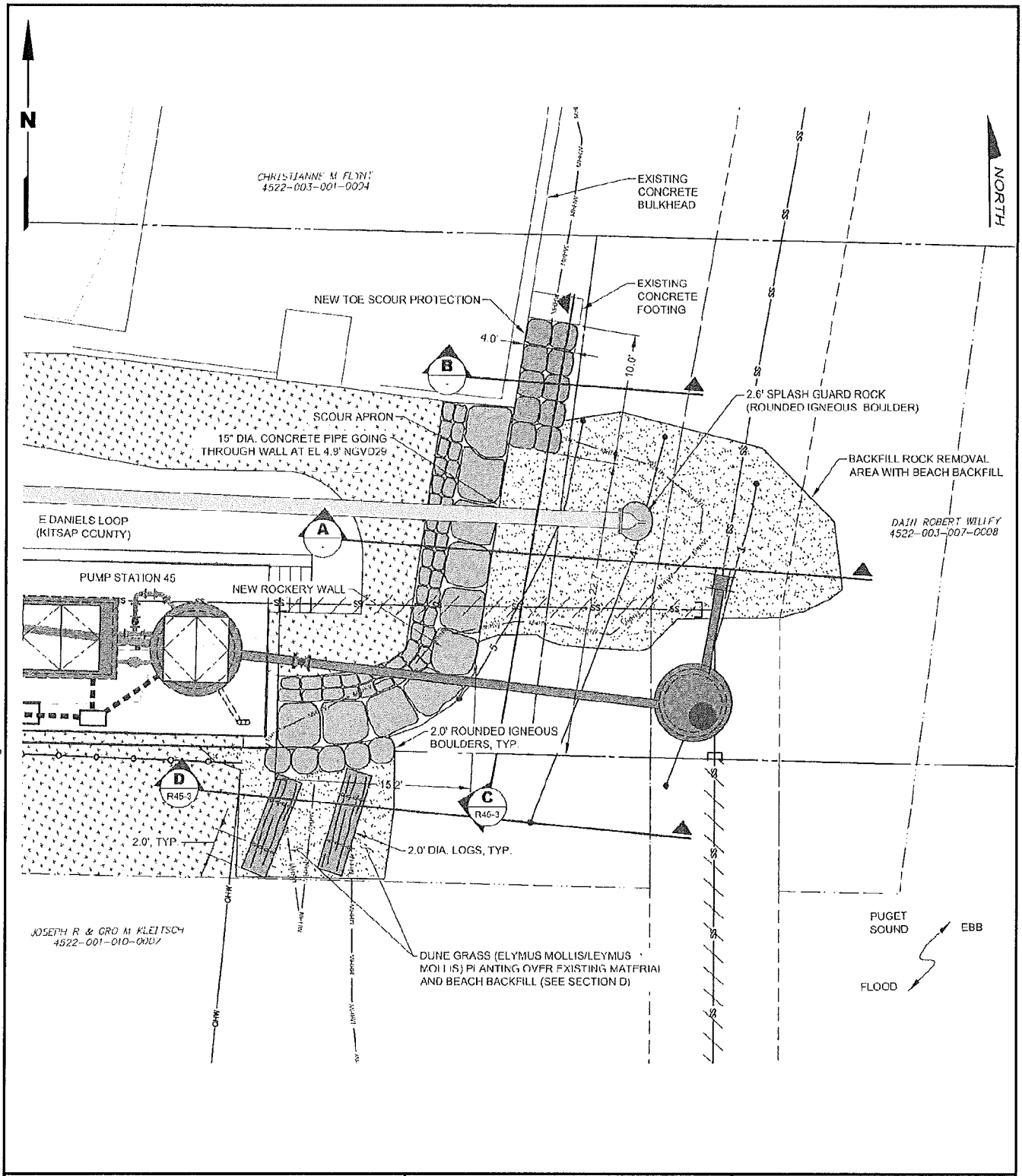
IN: PUGET SOUND

AT: KITSAP COUNTY
(UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

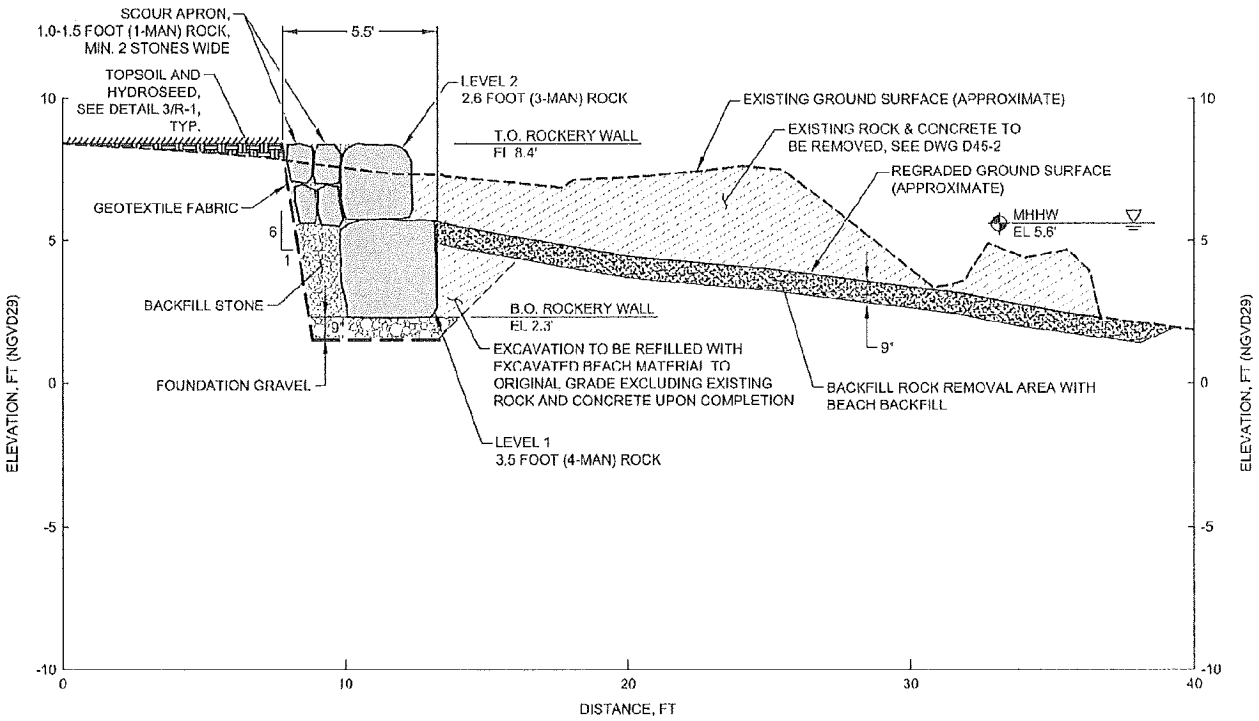
DATE: 1-8-2016

SHEET: 8 OF 53



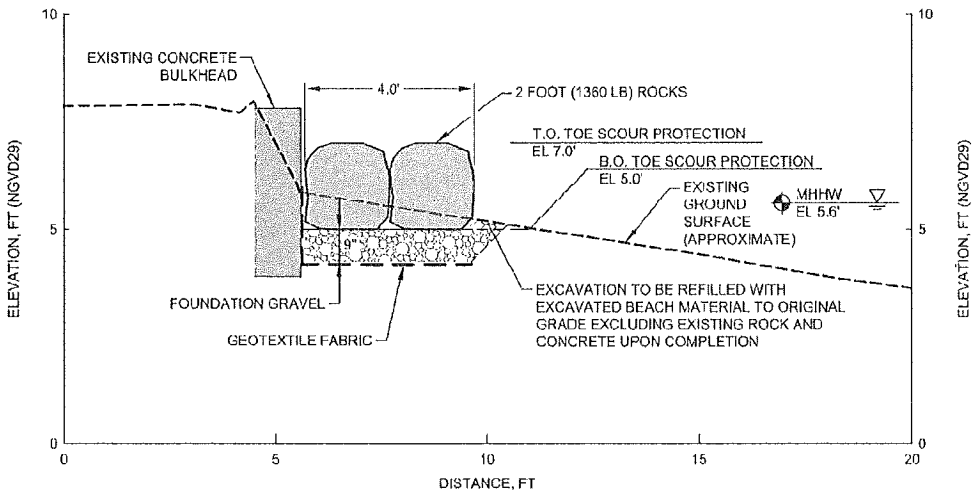
G:\Projects\10731\004\020\JARPA\F09 PS45-PROTECTION PLAN.mxd 7/21/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45 SHORELINE PROTECTION PLAN**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 (revised 7-21-2016) **SHEET:** 9 OF 53



SECTION A

SCALE: 1" = 3'



SECTION B

SCALE: 1" = 2'

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-45
SHORELINE PROTECTION
SECTION A & B

PROPOSED: WATERWAY AND SHORELINE IMPACTS
IN: PUGET SOUND
AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 1-8-2016 (revised 7-21-2016)
SHEET: 10 OF 53

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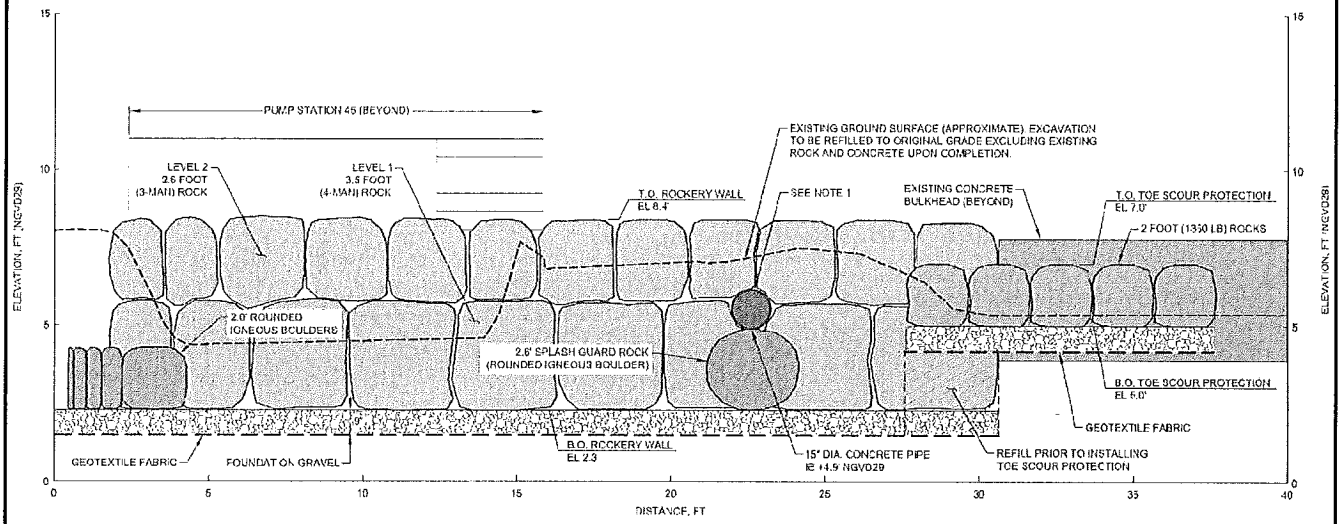
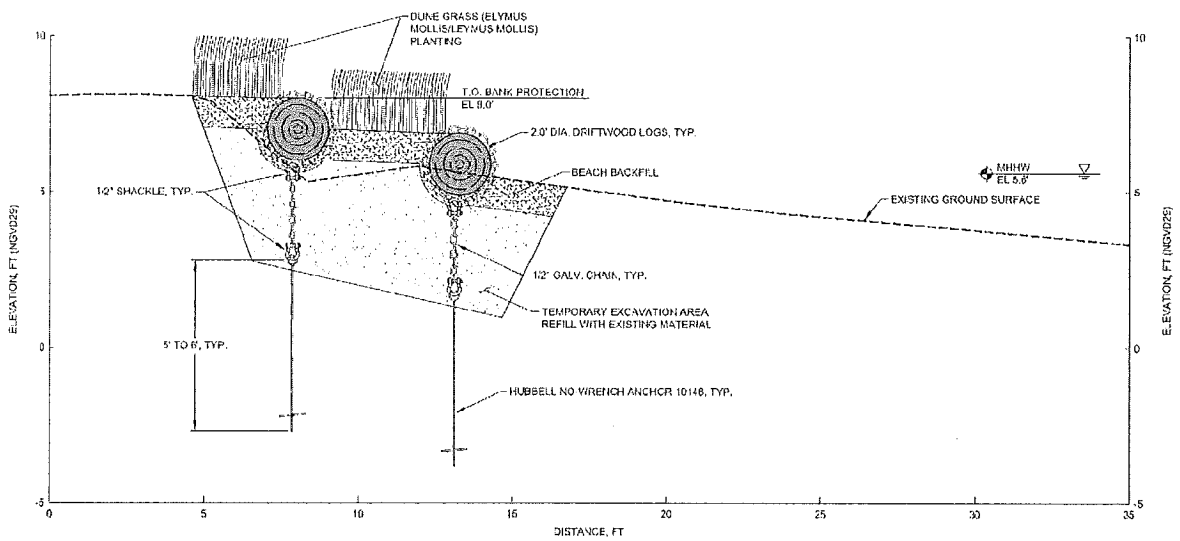


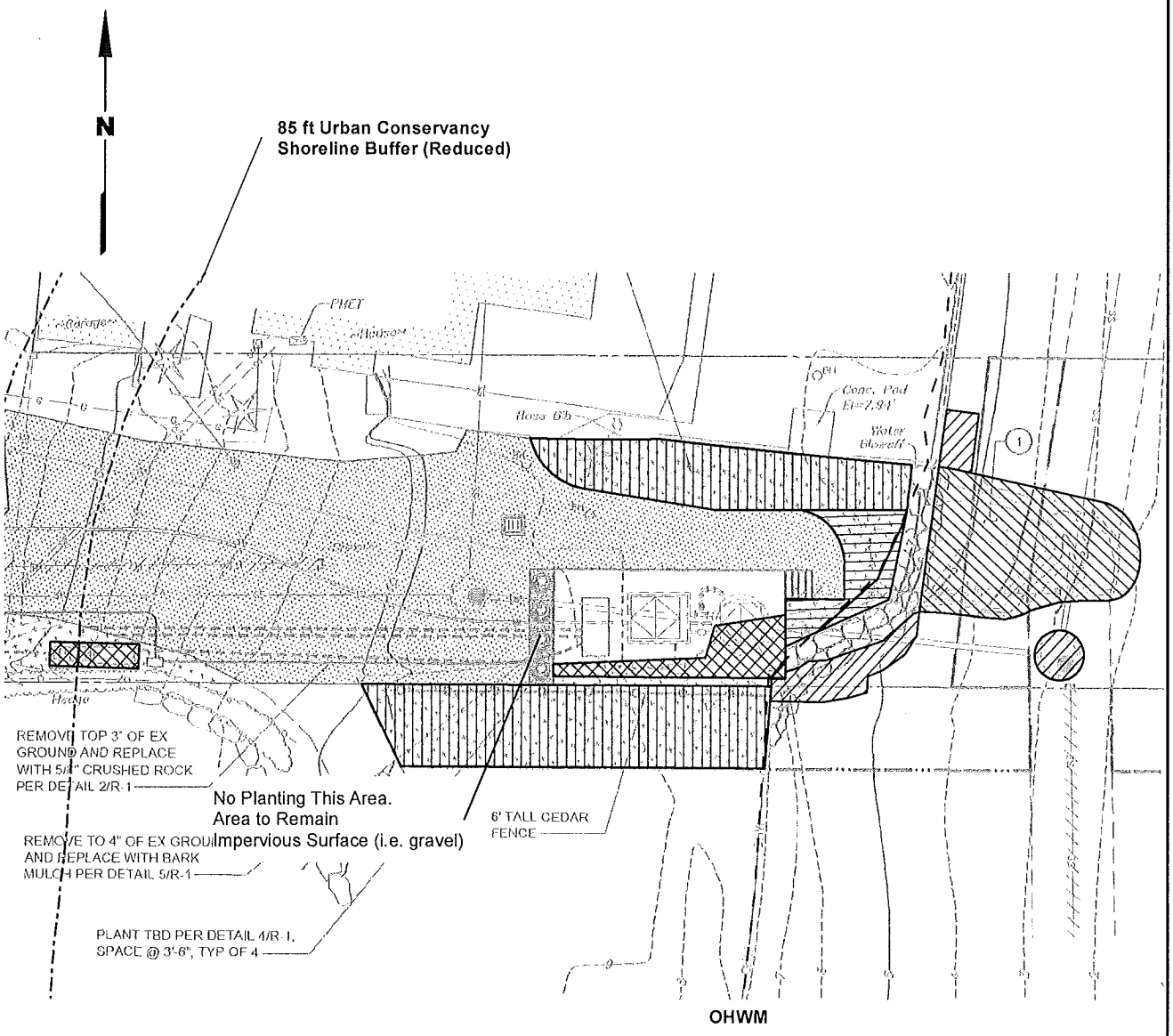
SECTION C
SCALE: 1" = 2' R45-2



SECTION D
SCALE: 1" = 2' R45-2

G:\Projects\10730\004\020\JARPA\F11 PS45-PROTECTION SECTION C-D.mxd 7/21/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **SHORELINE PROTECTION** **SECTION C & D**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 (revised 7-21-2016) **SHEET:** 11 OF 53



Legend

- Area Converted to Impervious
- Impervious Converted to Native Vegetation
- Intertidal Habitat Gained (372 ft²)
- Intertidal Habitat Lost (90 ft²)
- Lawn Converted to Native Vegetation

Note

1. Native Vegetation is Hydroseed Mix Consisting of Native Grasses

Buffer Area Calculations	100'-85'	85'-OHWM	Total
Area Converted to Impervious	10 ft²	121 ft²	131 ft²
Impervious Converted to Native Vegetation	0 ft²	94 ft²	94 ft²
Lawn Converted to Native Vegetation	0 ft²	777 ft²	777 ft²

0 20 40

Scale in Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-45
SHORELINE BUFFER PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS
IN: PUGET SOUND
AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 1-8-2016 (revised 7-21-2016)
SHEET: 12 OF 53

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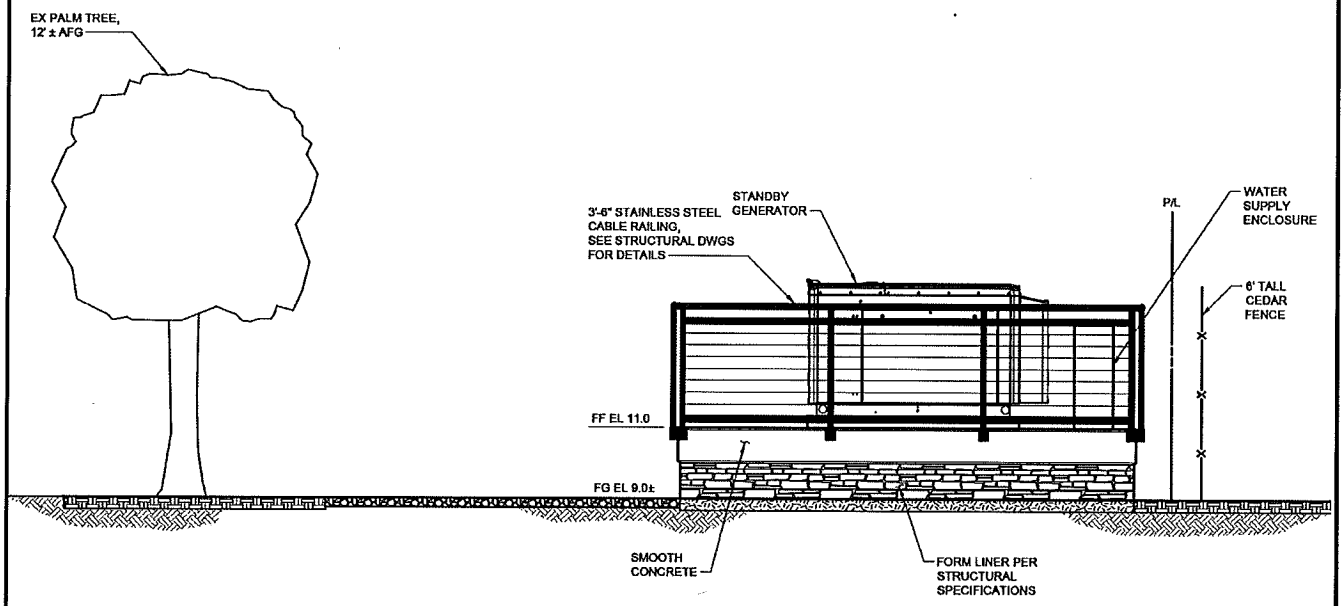


G:\Projects\1073\004\020\JARPA\F13 PS45-ELEVATION.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-45
ELEVATION

PROPOSED: WATERWAY AND SHORELINE IMPACTS

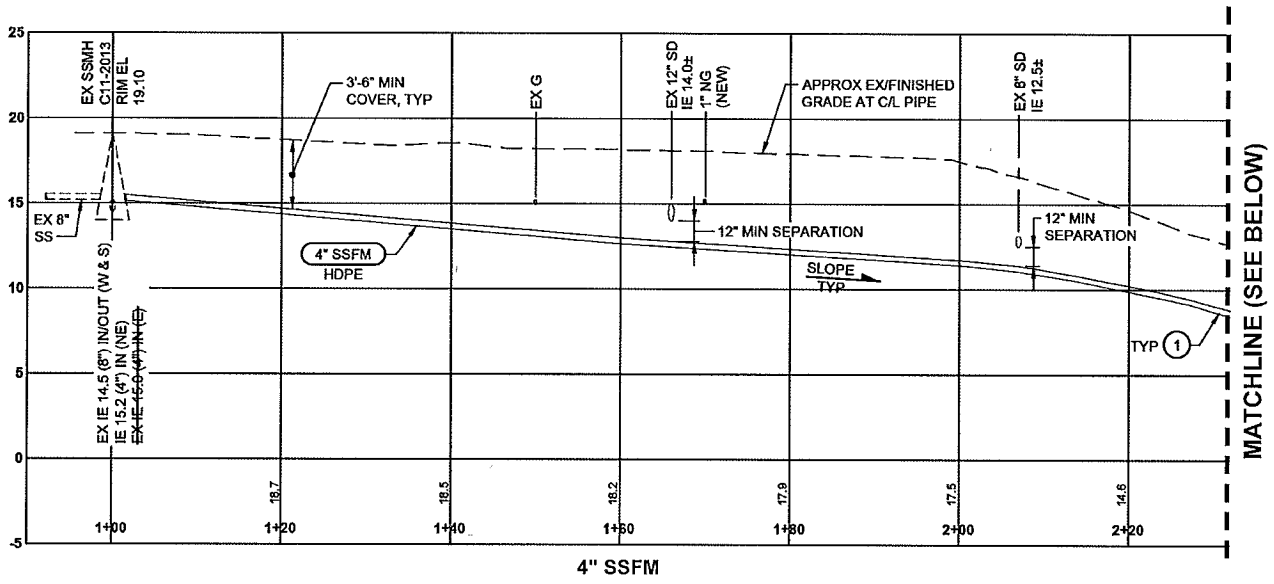
IN: PUGET SOUND

AT: KITSAP COUNTY
(UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

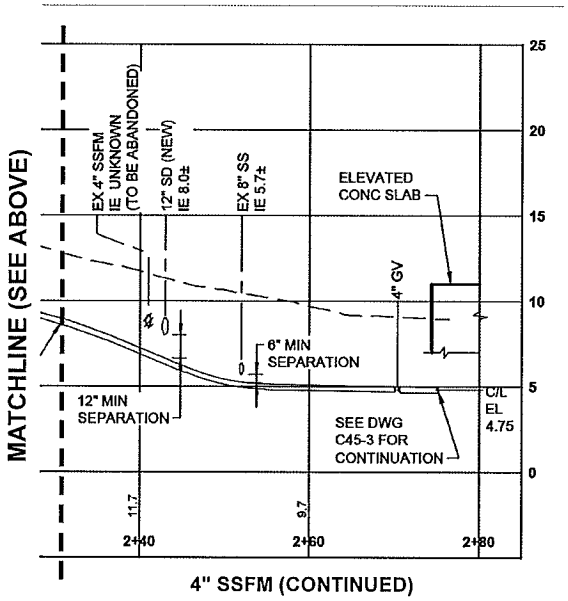
DATE: 1-8-2016

SHEET: 13 OF 53



4" SSFM

PROFILE A

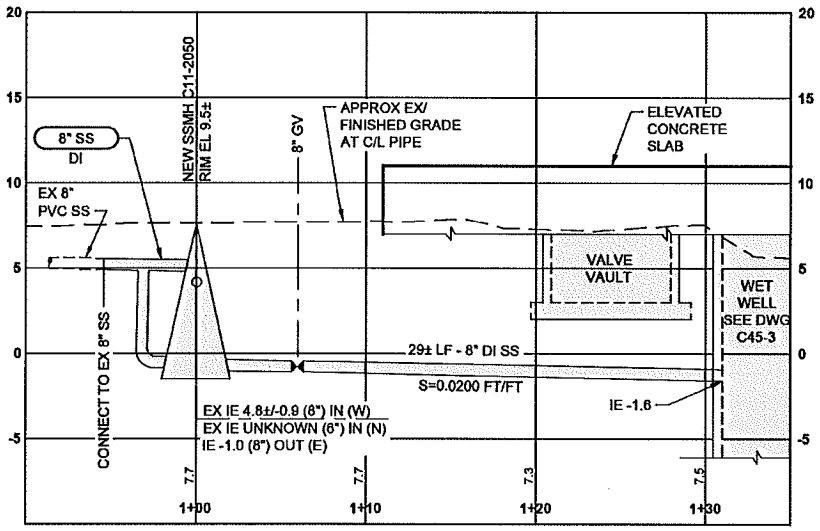


4" SSFM (CONTINUED)

PROFILE A (CONTINUED)

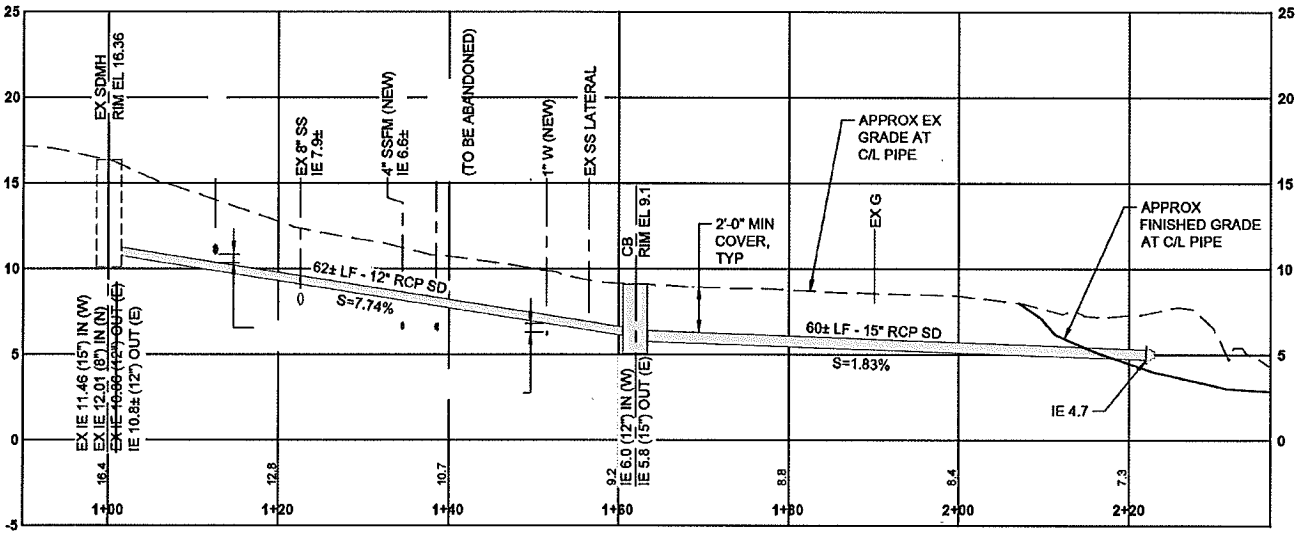
G:\Projects\10730\004\020\JARPA\F14 PS45-PROFILE A.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**PS-45 PROFILE A**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 14 OF 53



8" SS
(CONNECT TO NEW SSMh C11-2050)

PROFILE B



12" & 15" SD

PROFILE C

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **PROFILES B & C**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 15 OF 53

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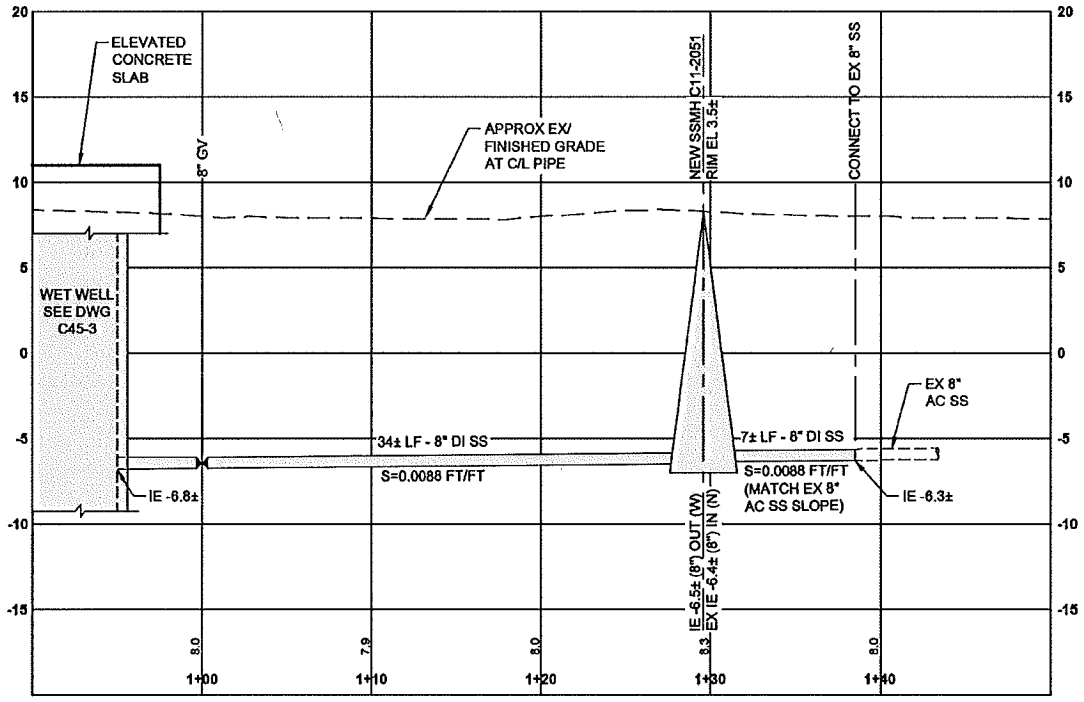

8" SS
(CONNECT TO NEW SSMH C11-2051)

PROFILE D

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-45** **PROFILE D**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 16 OF 53

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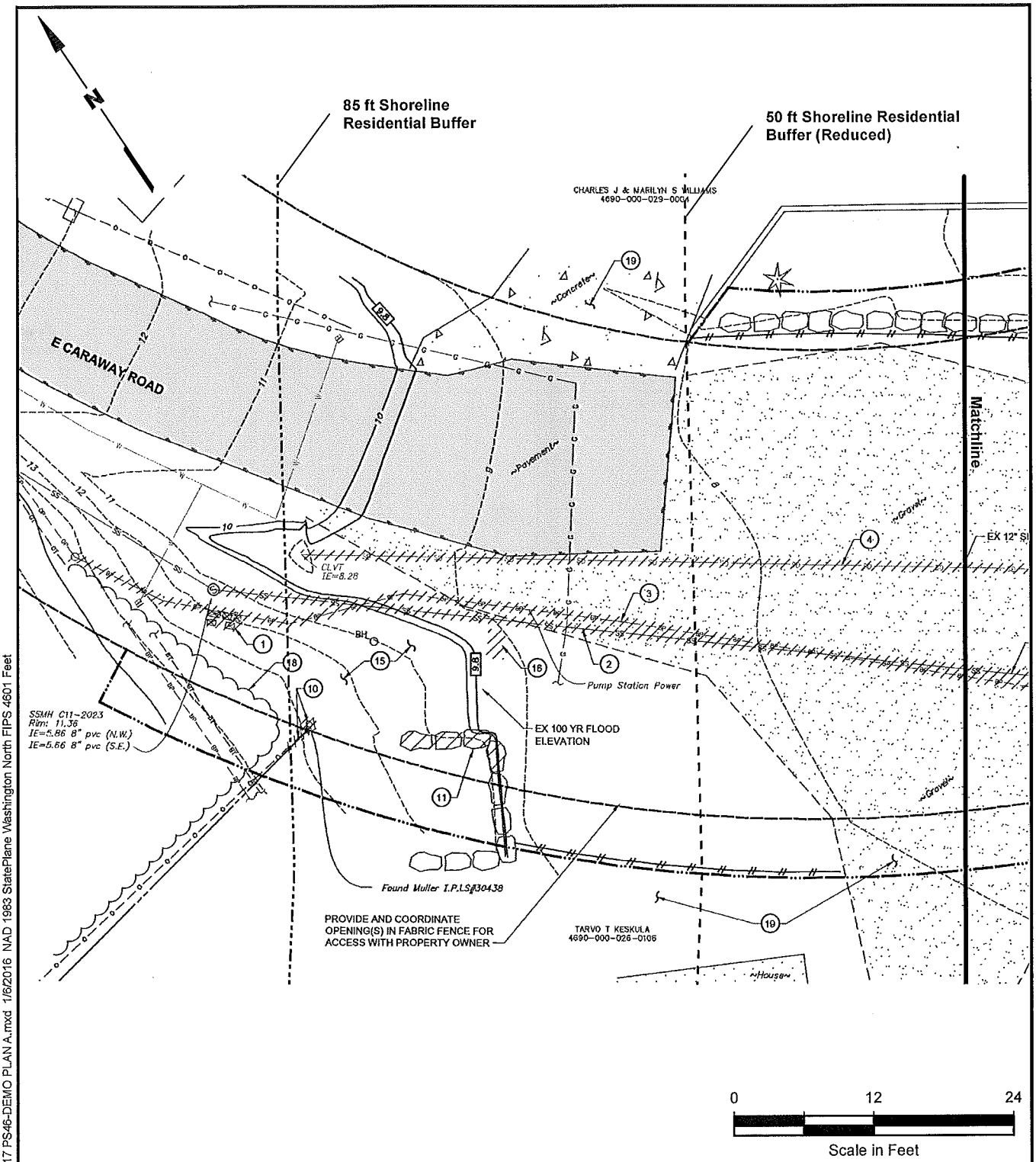

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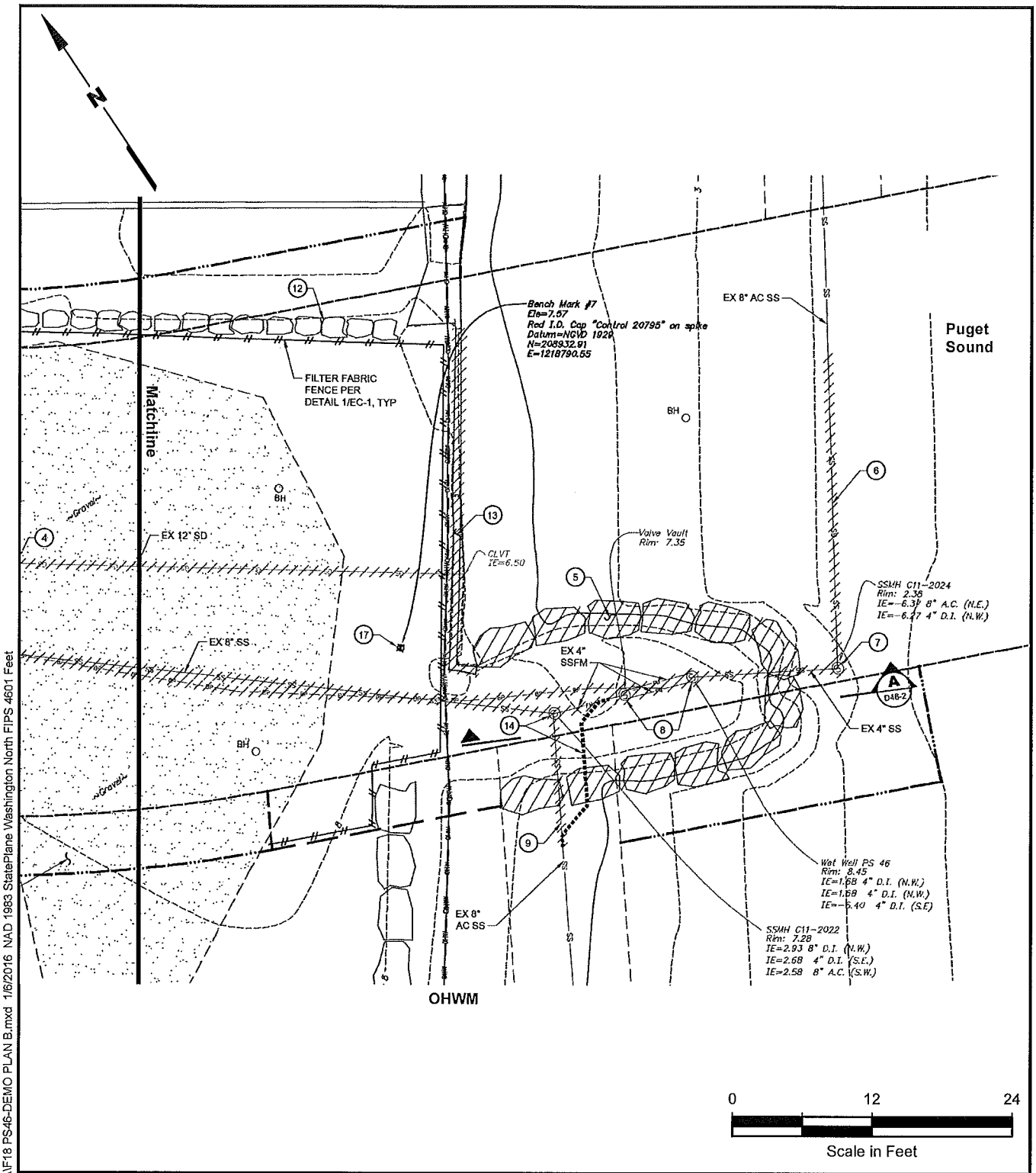
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **EXISTING CONDITIONS/ DEMO PLAN**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 17 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**PS-46 EXISTING CONDITIONS/ DEMO PLAN**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 18 OF 53

CONSTRUCTION NOTES:

1. RELOCATE EXISTING PUMP STATION ELECT EQUIP FOR USE DURING CONSTRUCTION PER ELECT DWGS. REMOVE ELECT EQUIP FOLLOWING COMMISSIONING OF NEW PUMP STATION.
2. REMOVE AND REPLACE EXISTING SEWER.
3. RELOCATE POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
4. REMOVE AND REPLACE EXISTING STORM DRAIN.
5. REMOVE EXISTING CONC/ROCK GROIN DURING DEMOLITION OF EXISTING PUMP STATION, SEE DWG R46-1 FOR RESTORATION DETAILS. MINOR DISTURBANCE/REMOVAL WILL BE ALLOWED FOR INSTALLATION OF NEW MANHOLE AND 8" SS.
6. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION.
7. REMOVE EXISTING SSMH.
8. DECOMMISSION AND REMOVE MECH, ELECT, AND MISC EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE PIPING ENTERING AND EXITING STRUCTURES.
9. REMOVE EXISTING SEWER TO FACILITATE NEW MANHOLE AND PIPING CONNECTION.
10. REMOVE AND REINSTALL EXISTING FENCE TO EDGE OF PROPERTY LINE TO MATCH EXISTING. RE-ESTABLISH PROPERTY MARKER.
11. REMOVE AND REINSTALL EXISTING ROCK WALL PLANTER.
12. REMOVE AND REINSTALL ROCKERY AND LANDSCAPING TO MATCH EXISTING AS NECESSARY.
13. REMOVE EXISTING CONCRETE BULKHEAD AFTER CONSTRUCTION OF NEW PUMP STATION.
14. REMOVE EXISTING SSMH. INSTALL TEMPORARY FORCE MAIN FOR EXISTING PUMP STATION AS REQUIRED.
15. CUT/FILL AND REGRADE AREA TO CONSTRUCT NEW IMPROVEMENTS.
16. REMOVE AND RELOCATE MAILBOX TO LOCATION DIRECTED BY PROPERTY OWNER.
17. RE-ESTABLISH BENCH MARK AT COMPLETION OF CONSTRUCTION WITH A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF WASHINGTON.
18. HEAVY SHRUBBERY, TRIM BACK TO CONSTRUCT NEW IMPROVEMENTS AS REQUIRED.
19. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **EXISTING CONDITIONS/ DEMO PLAN NOTES**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 19 OF 53

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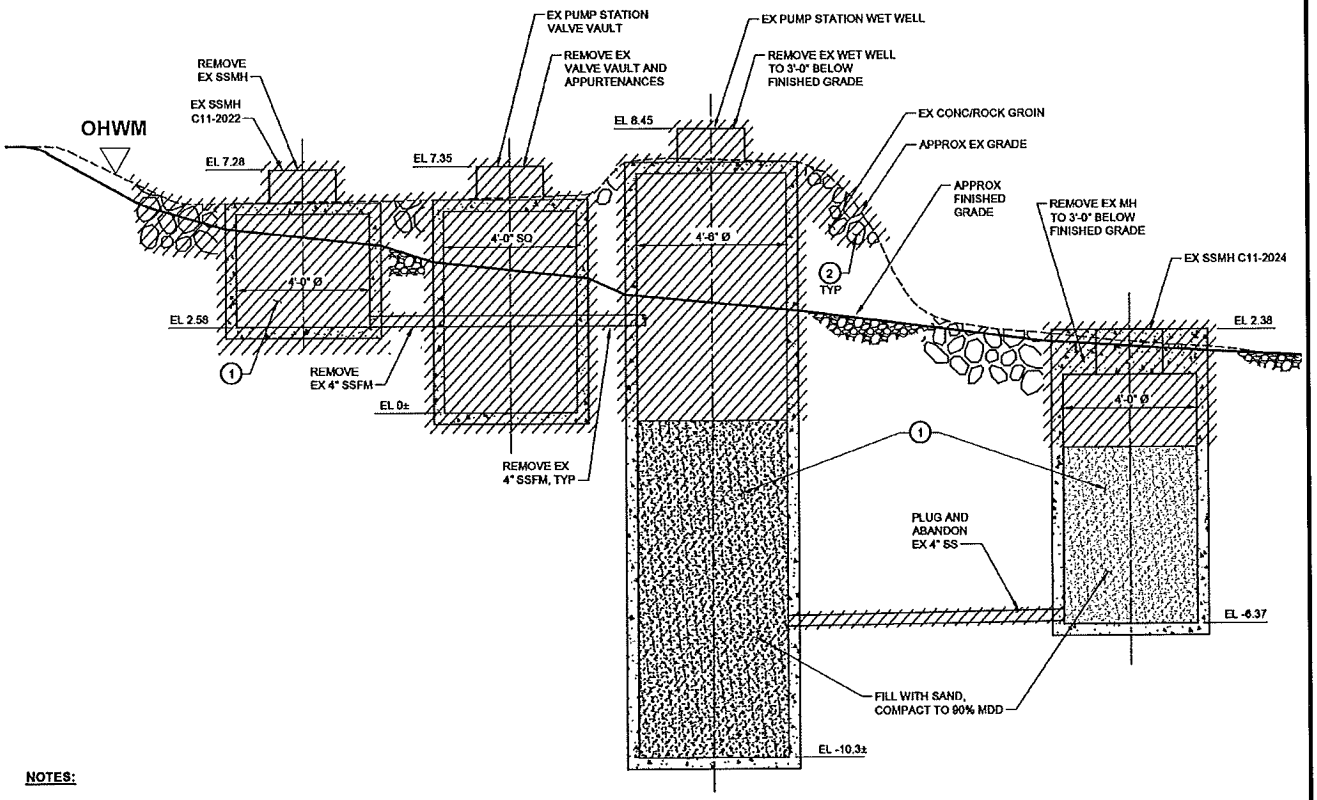
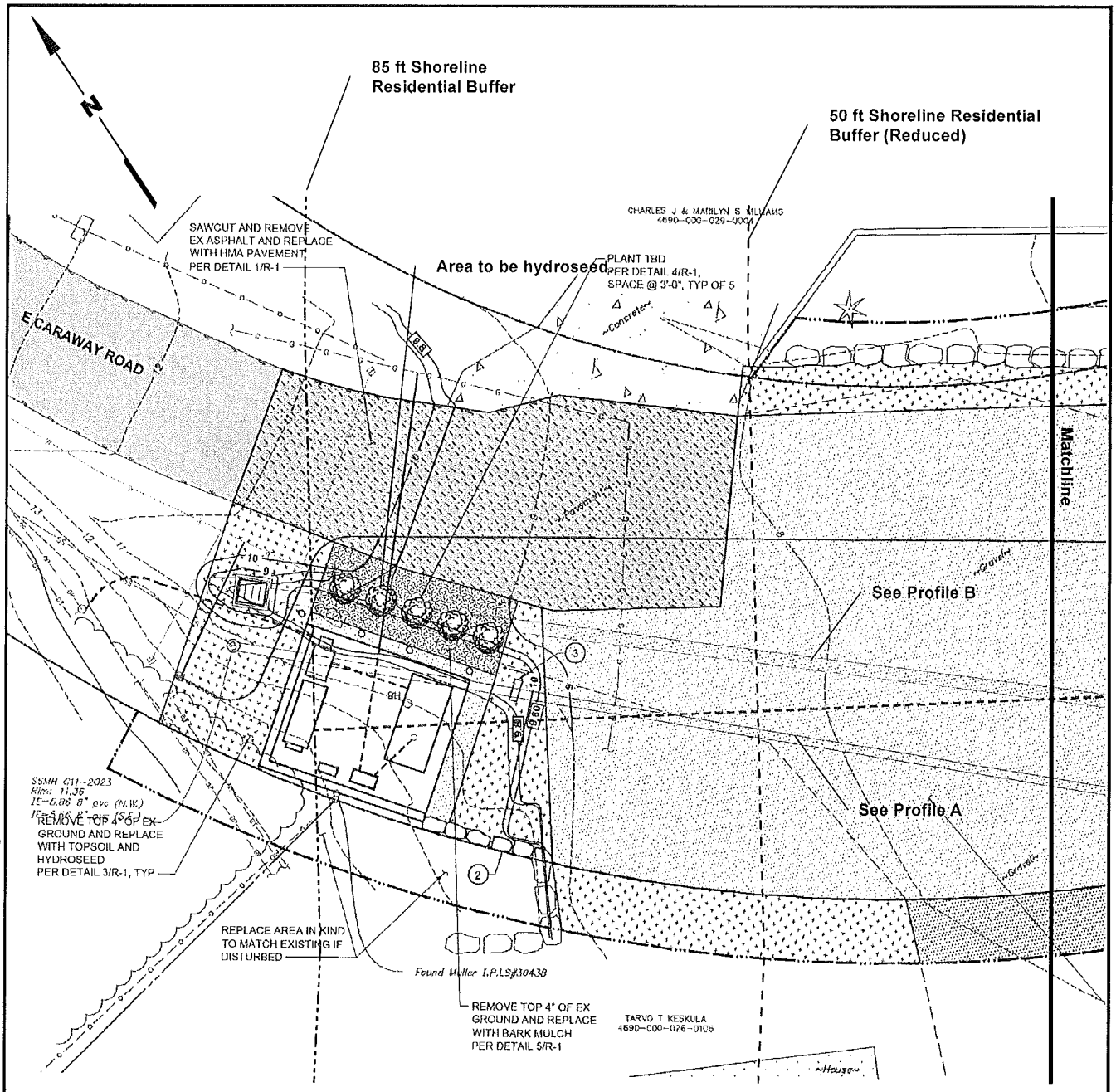


NOTES:

1. REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.
2. FULLY REMOVE ALL CONCRETE AND ROCKERY MAKING UP THE EXISTING GROIN. EXCAVATE UP TO 3' DEPTH TO REMOVE ANY GROIN MATERIAL KEYED INTO THE EXISTING BEACH GRADE.

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **EXISTING CONDITIONS/ DEMO PLAN SECTION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 20 OF 53

G:\Projects\1073\004\020\JARPA\F20 PS46-DEMO SECTION.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet



G:\Projects\10730\041020\JARPA\F21 PS46-FINISHED PLAN A.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-46
FINISHED SITE PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

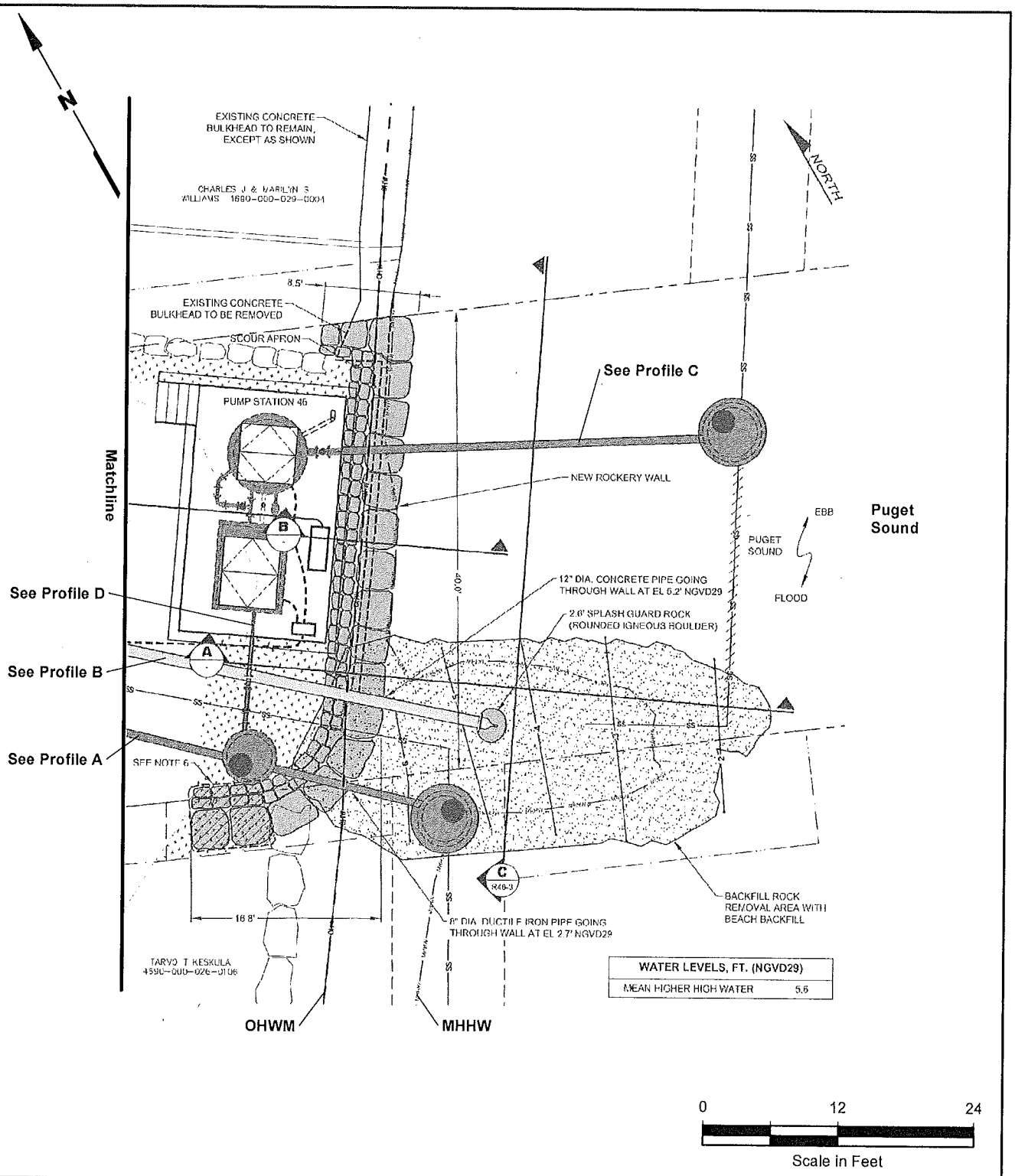
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 21 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-46
FINISHED SITE PLAN/
SHORELINE PROTECTION PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

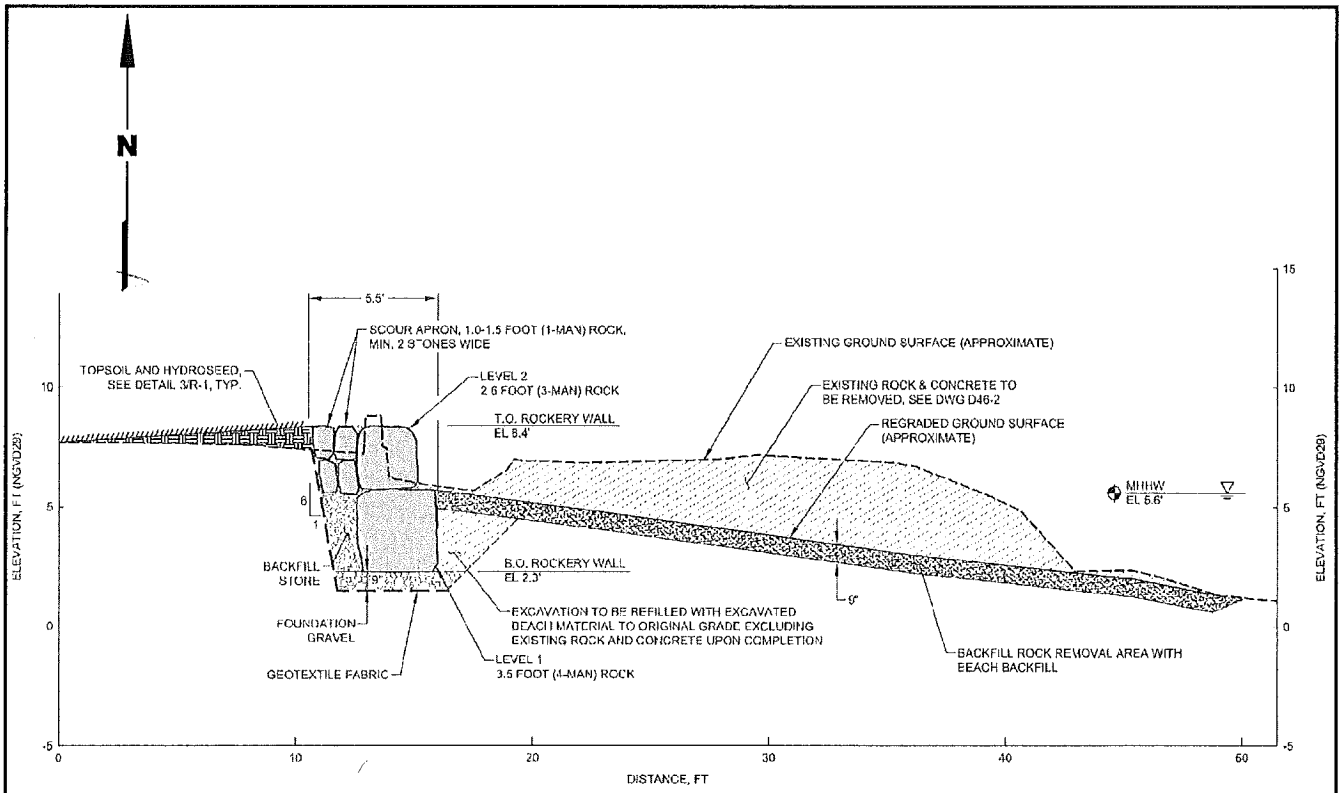
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

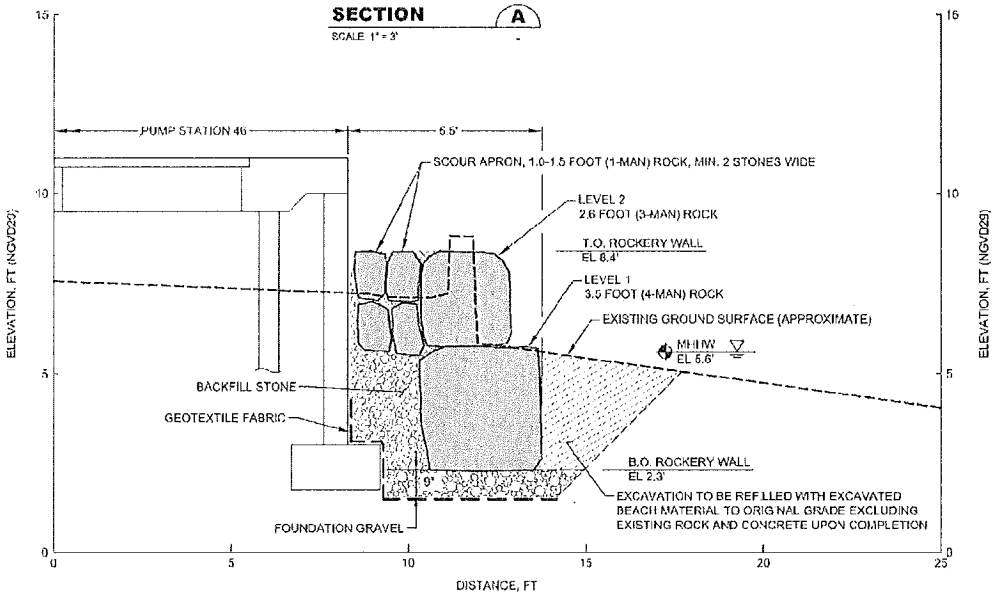
APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016 (revised 7-21-2016)

SHEET: 22 OF 53



SECTION A
SCALE 1" = 3'



SECTION B
SCALE 1" = 2'

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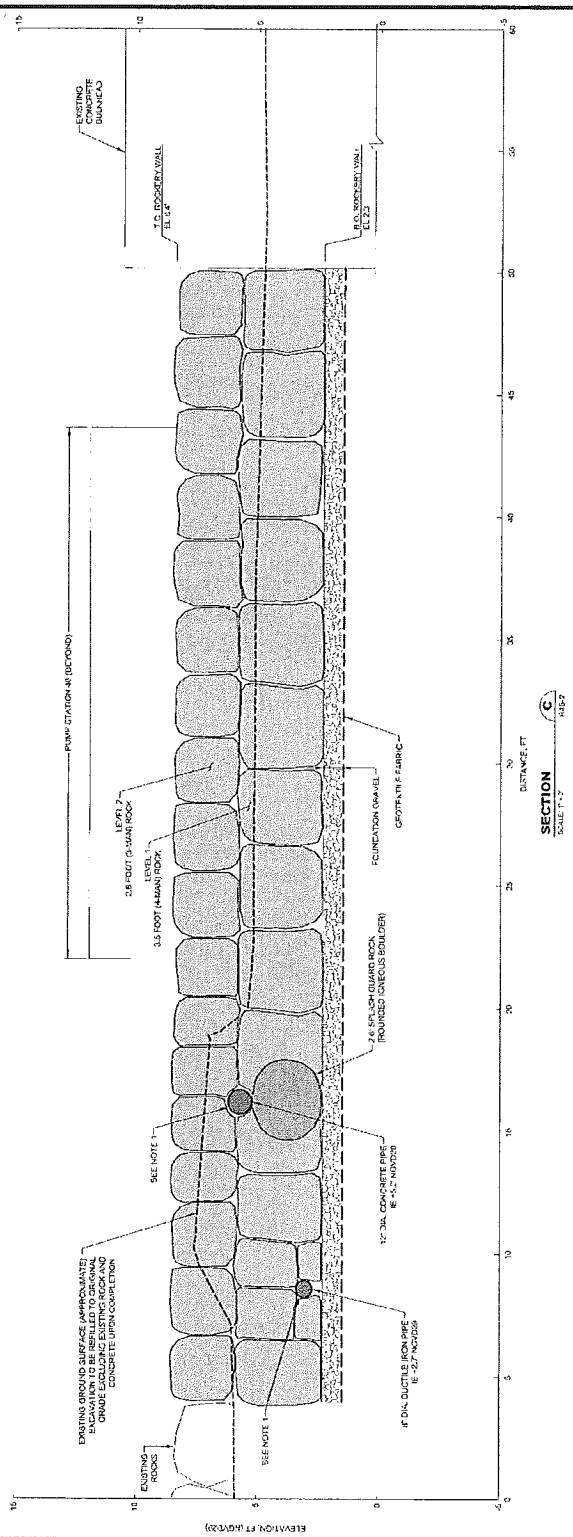
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**PS-46 SHORELINE PROTECTION SECTION A & B**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016 (revised 7-21-2016)
		SHEET: 23 OF 53



PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **SHORELINE PROTECTION** **SECTION C**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 (revised 7-21-2016) **SHEET:** 24 OF 53

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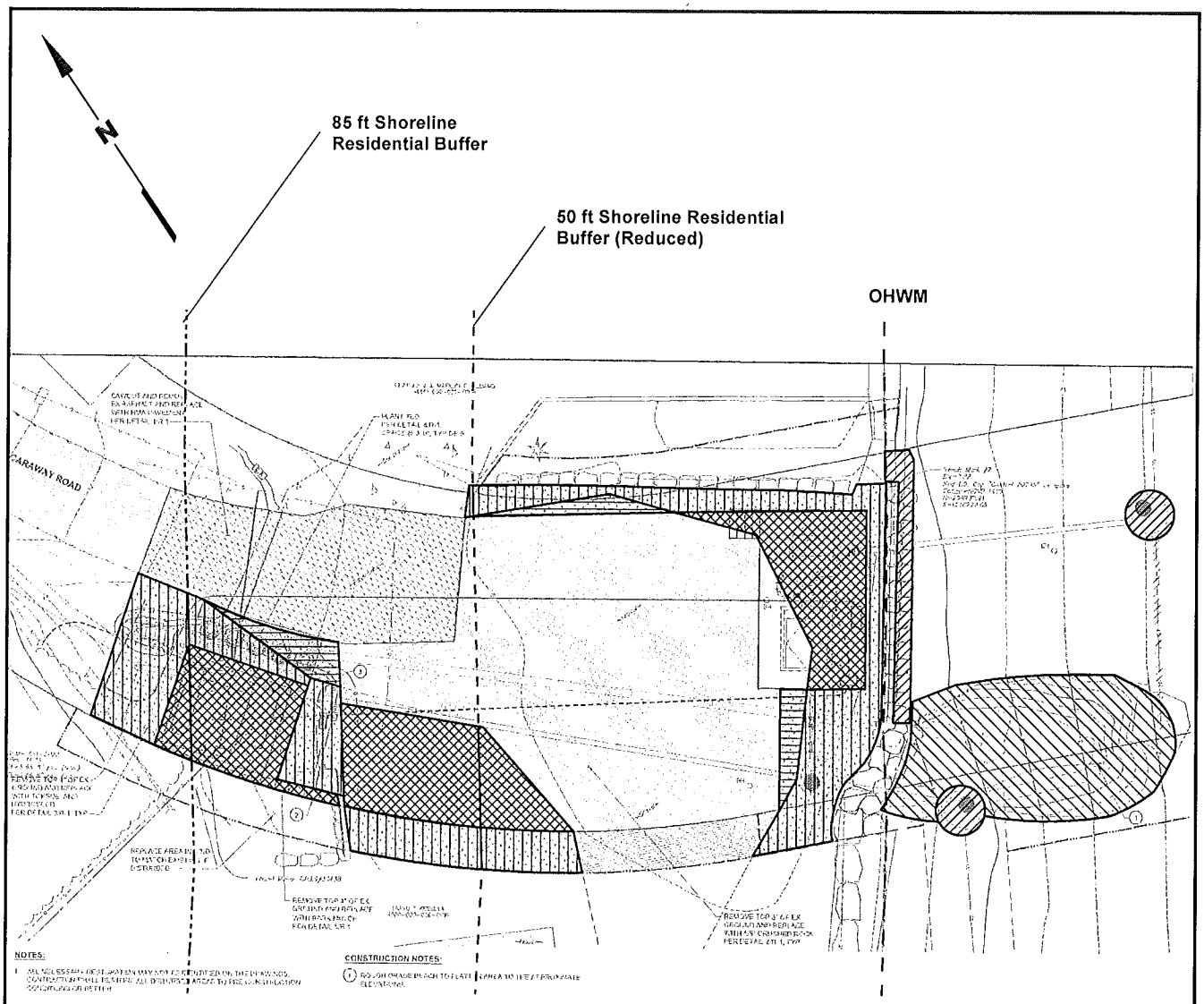

Legend

- Area Converted to Impervious
- Impervious Converted to Native Vegetation
- Intertidal Habitat Gained (497 ft²)
- Intertidal Habitat Lost (126 ft²)
- Lawn Converted to Native Vegetation

Buffer Area Calculations	85'-50'	50'-OHWM	Total
Area Converted to Impervious	388 ft²	294 ft²	682 ft²
Impervious Converted to Native Vegetation	45 ft²	62 ft²	107 ft²
Lawn Converted to Native Vegetation	225 ft²	325 ft²	550 ft²

Note

1. Native Vegetation is Hydroseed Mix Consisting of Native Grasses

0 20 40

Scale in Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-46
SHORELINE BUFFER
PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016 (revised 7-21-2016)

SHEET: 25 OF 53

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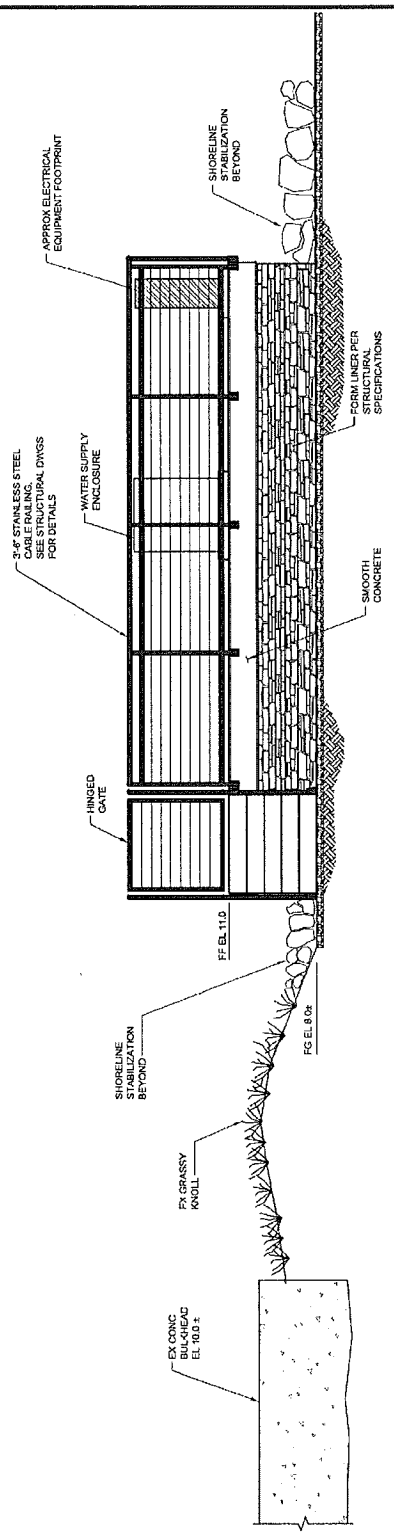


WEST ELEVATION (A) C48-1

SCALE: 1/8" = 1'-0"

G:\Projects\107310041020\JARPA\F26 PS46-ELEVATION.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-46
ELEVATION

PROPOSED: WATERWAY AND SHORELINE IMPACTS

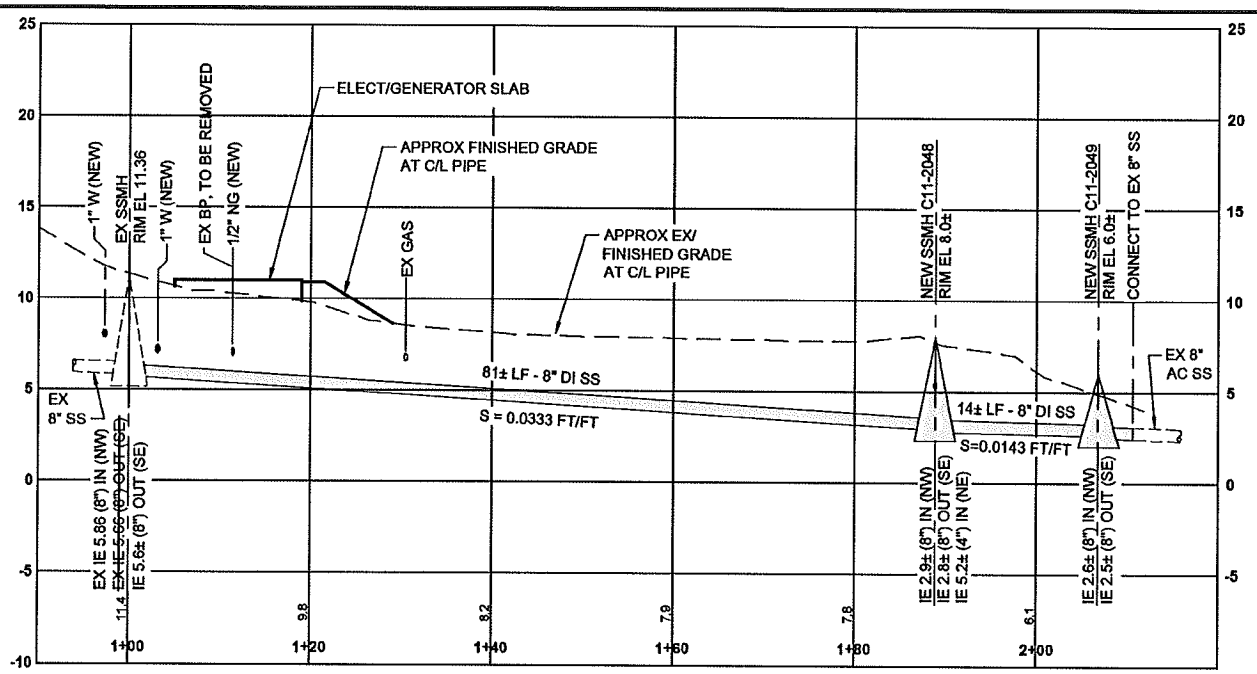
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

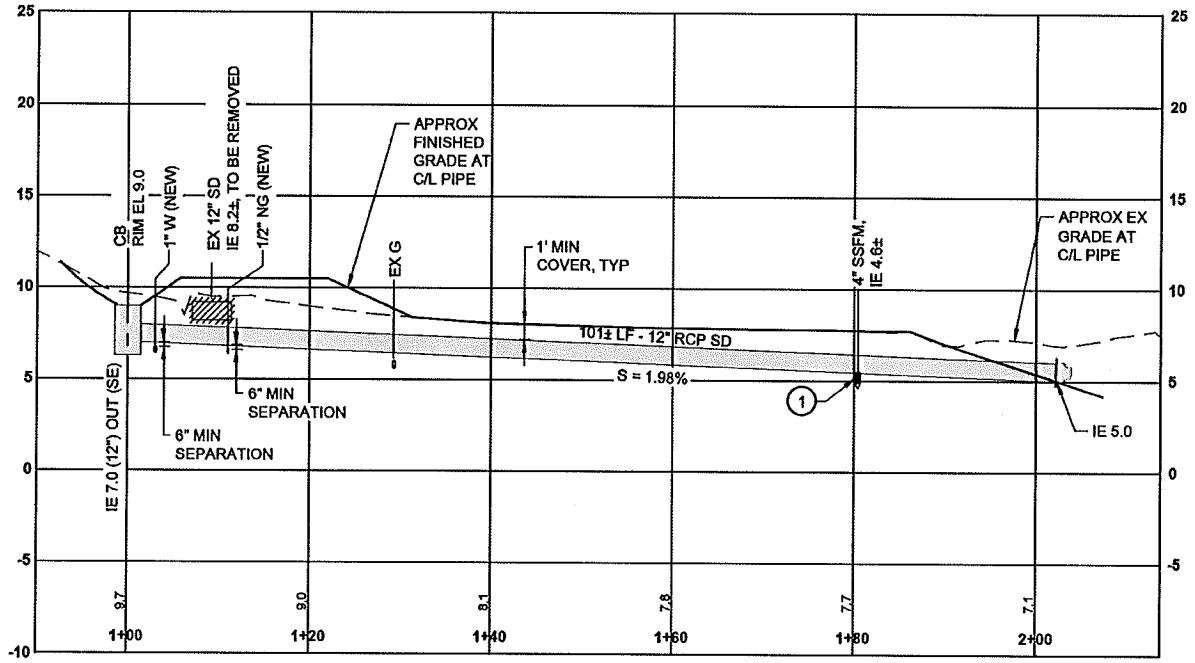
DATE: 1-8-2016

SHEET: 26 OF 53



8" SS
(CONNECT TO NEW SSMH C11-2049)

PROFILE A



12" SD

PROFILE B

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **PROFILE A & B**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 27 OF 53

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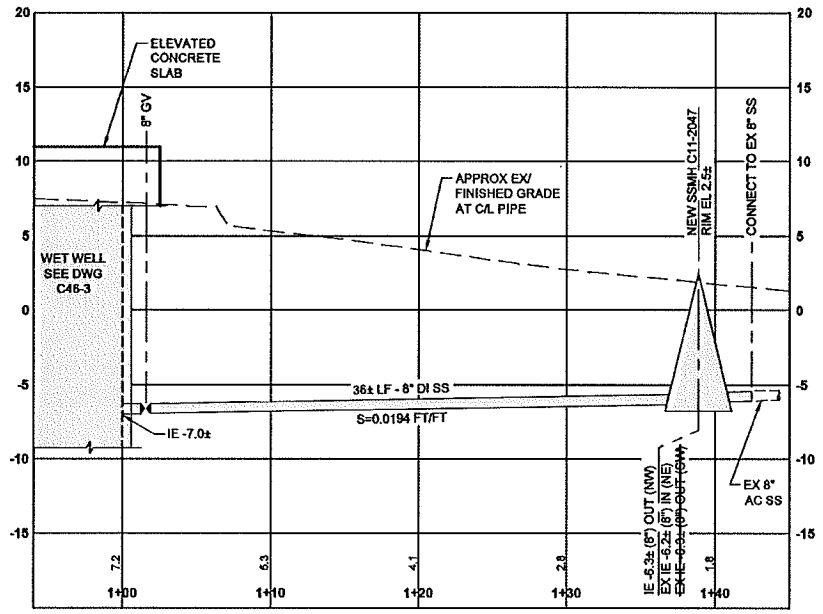
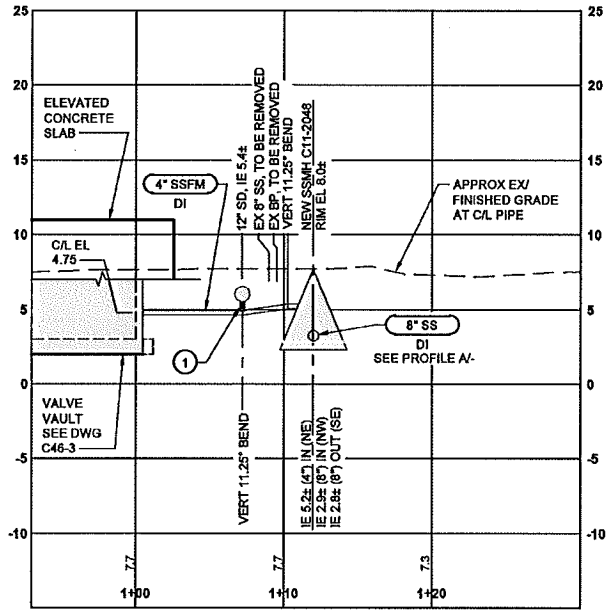


8" SS
(CONNECT TO NEW SSMH C11-2047)

PROFILE C



4" SSFM AND 8" SS
(CONNECT TO NEW SSMH C11-2048)

PROFILE D

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-46** **PROFILE C & D**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 28 OF 53

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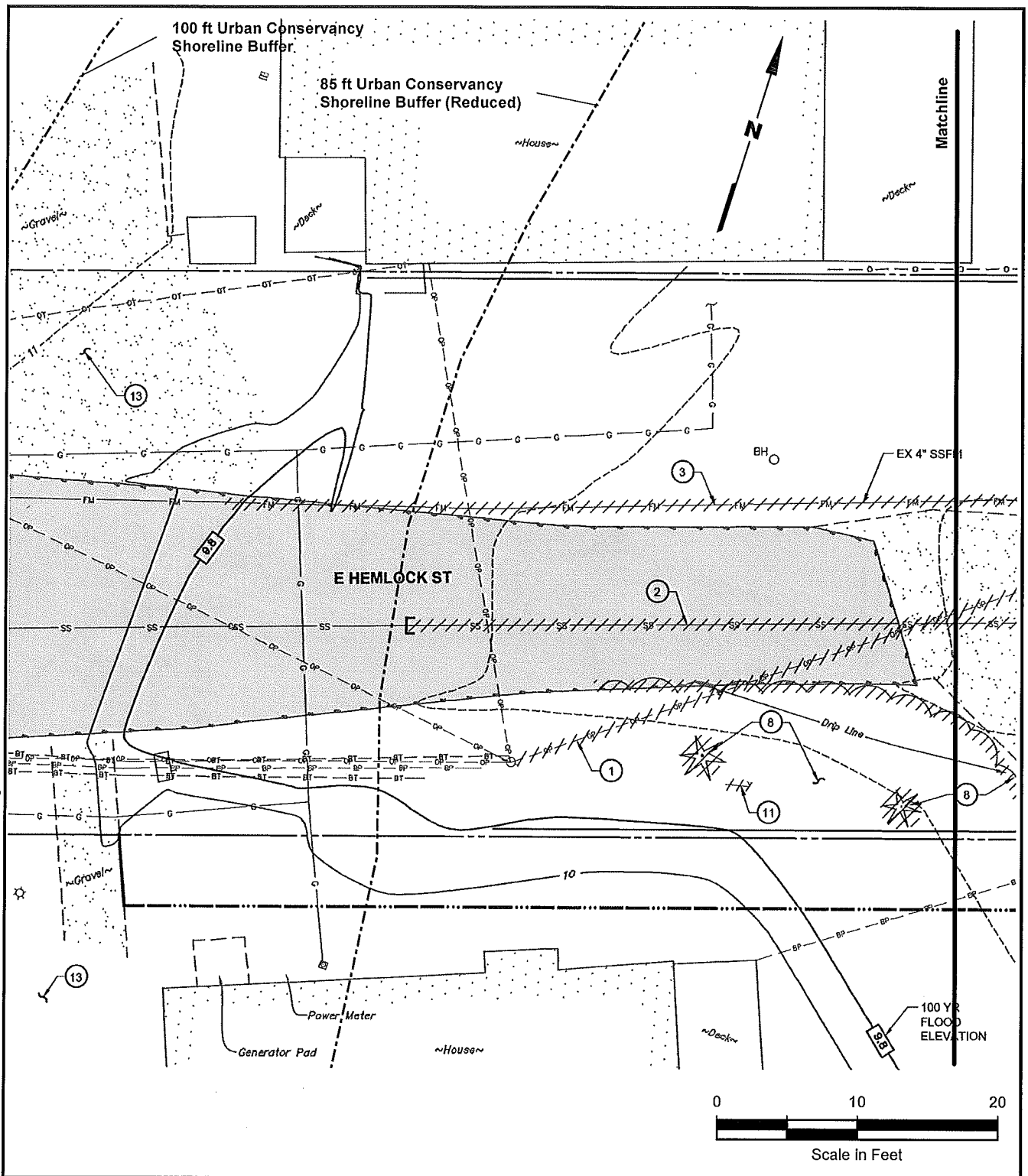

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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-47
EXISTING CONDITIONS/
DEMO PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

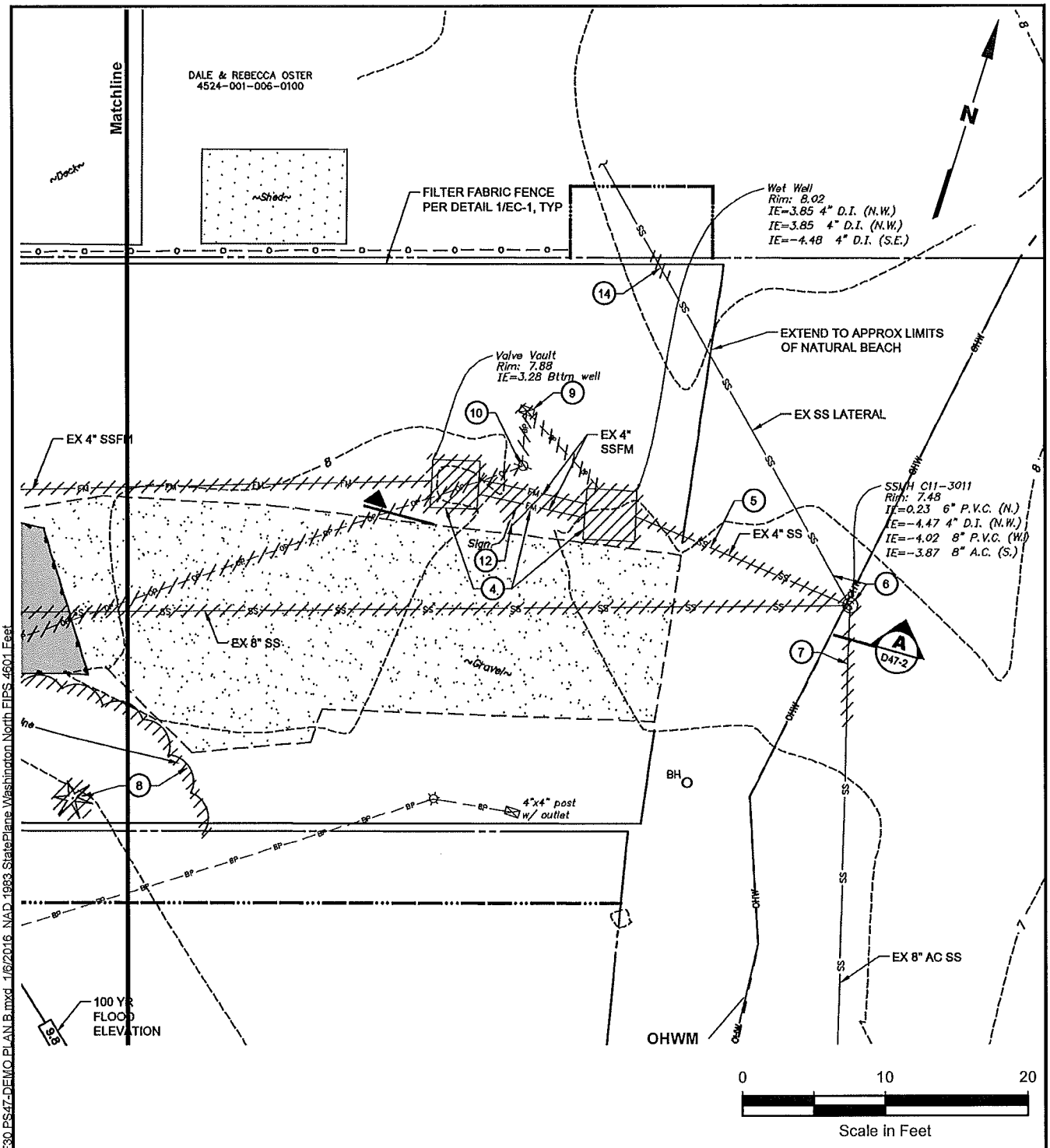
IN: PUGET SOUND

AT: KITSAP COUNTY
(UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 29 OF 53



G:\Projects\107300\400\JARPA\F30 PS47-DEMO PLAN B.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

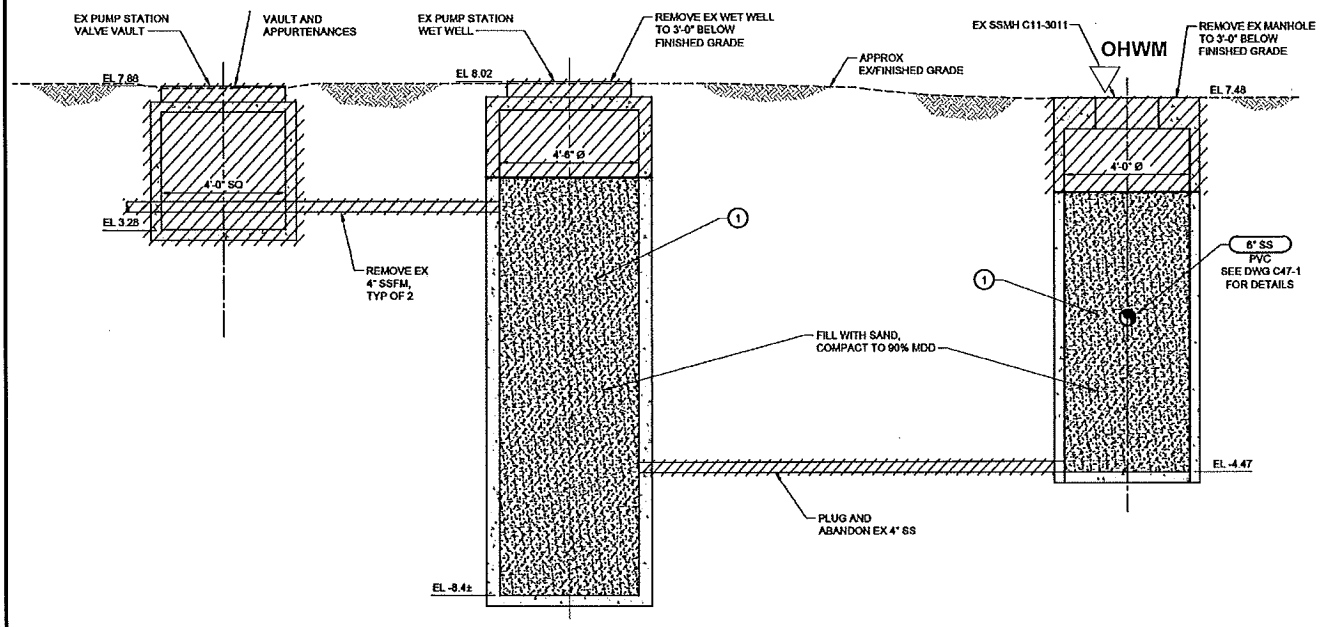
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-47** **EXISTING CONDITIONS/ DEMO PLAN**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 30 OF 53

CONSTRUCTION NOTES:

1. RELOCATE OVERHEAD POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
2. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED.
3. REMOVE EXISTING FORCE MAIN.
4. DECOMMISSION AND REMOVE MECH, ELECT, AND MISC EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISHARGE PIPING BETWEEN STRUCTURES.
5. PLUG AND ABANDON EXISTING SEWER.
6. MAINTAIN SERVICE OF EXISTING SEWER LATERAL DURING AND AFTER CONSTRUCTION.
7. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION.
8. REMOVE TREE AND HEAVY SHRUBBERY FOR CONSTRUCTION OF NEW IMPROVEMENTS.
9. REMOVE ELECT EQUIP.
10. REMOVE EXISTING POWER POLE.
11. REMOVE AND REPLACE OR RELOCATE POWER POLE GUY WIRE. COORD W/ UTILITY PROVIDER.
12. REMOVE AND REINSTALL SIGN IN LOCATION DIRECTED BY COUNTY.
13. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
14. REMOVE EXISTING SEWER LATERAL TO INSTALL CLEANOUT,

G:\Projects\10730\04020\JARPA\F31 PS-47-DEMO NOTES.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-47** **EXISTING CONDITIONS/** **DEMO PLAN** **NOTES**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 31 OF 53



NOTES:

1. REMOVE ALL EXISTING MECHANICAL AND STRUCTURAL APPURTENANCES. CUT PIPE, SUPPORTS, ANCHORS, ETC FLUSH WITH WALL. PLUG ALL PIPE CONNECTIONS THROUGH WALL WITH CONCRETE. HOSE DOWN AND PUMP OUT EXISTING STRUCTURE BEFORE BACKFILLING.

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-47** **EXISTING CONDITIONS/ DEMO PLAN SECTION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 32 OF 53

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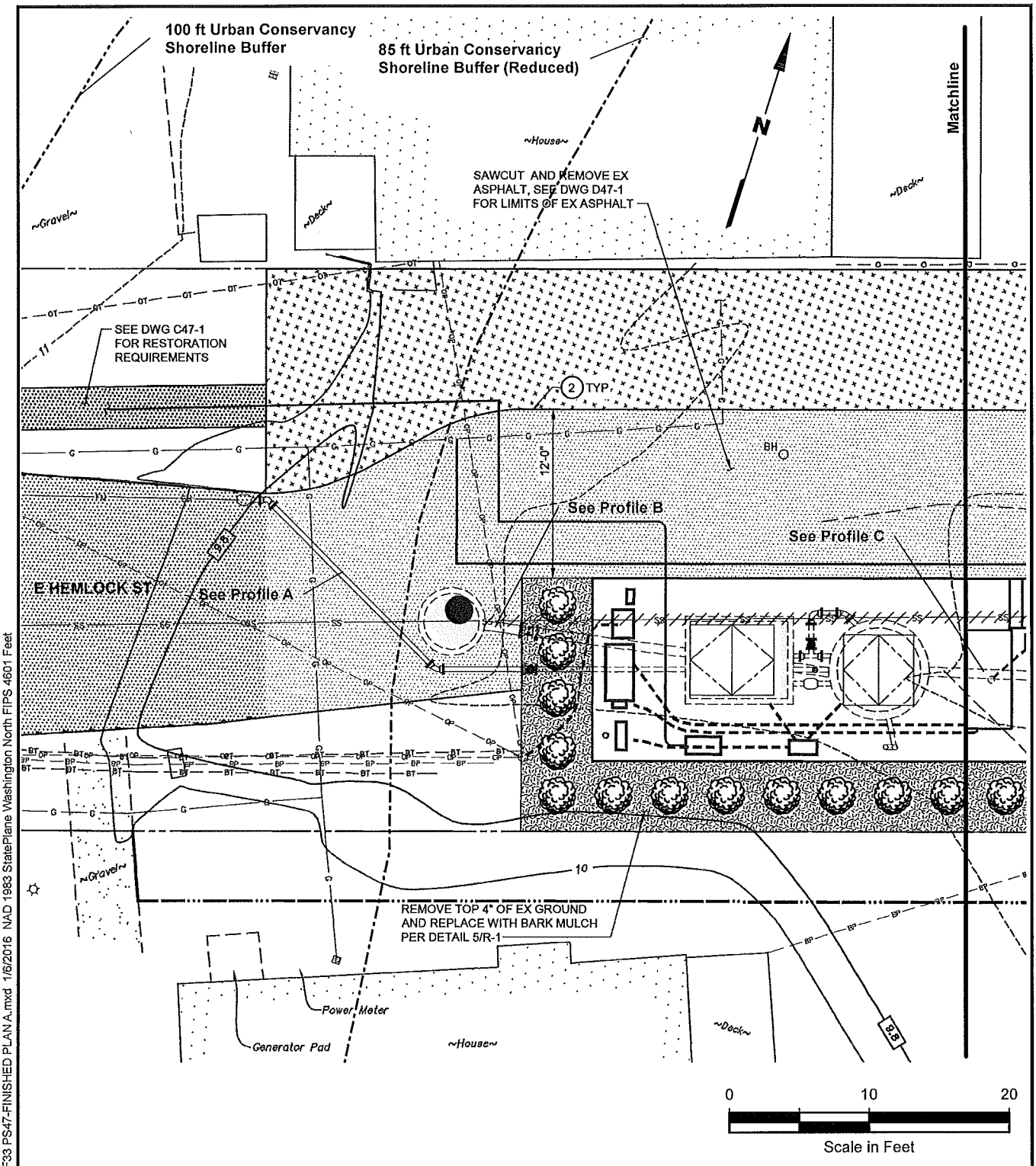


G:\Projects\107300\4020\JARPA\F33 PS47-FINISHED PLAN A.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-47
FINISHED SITE PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

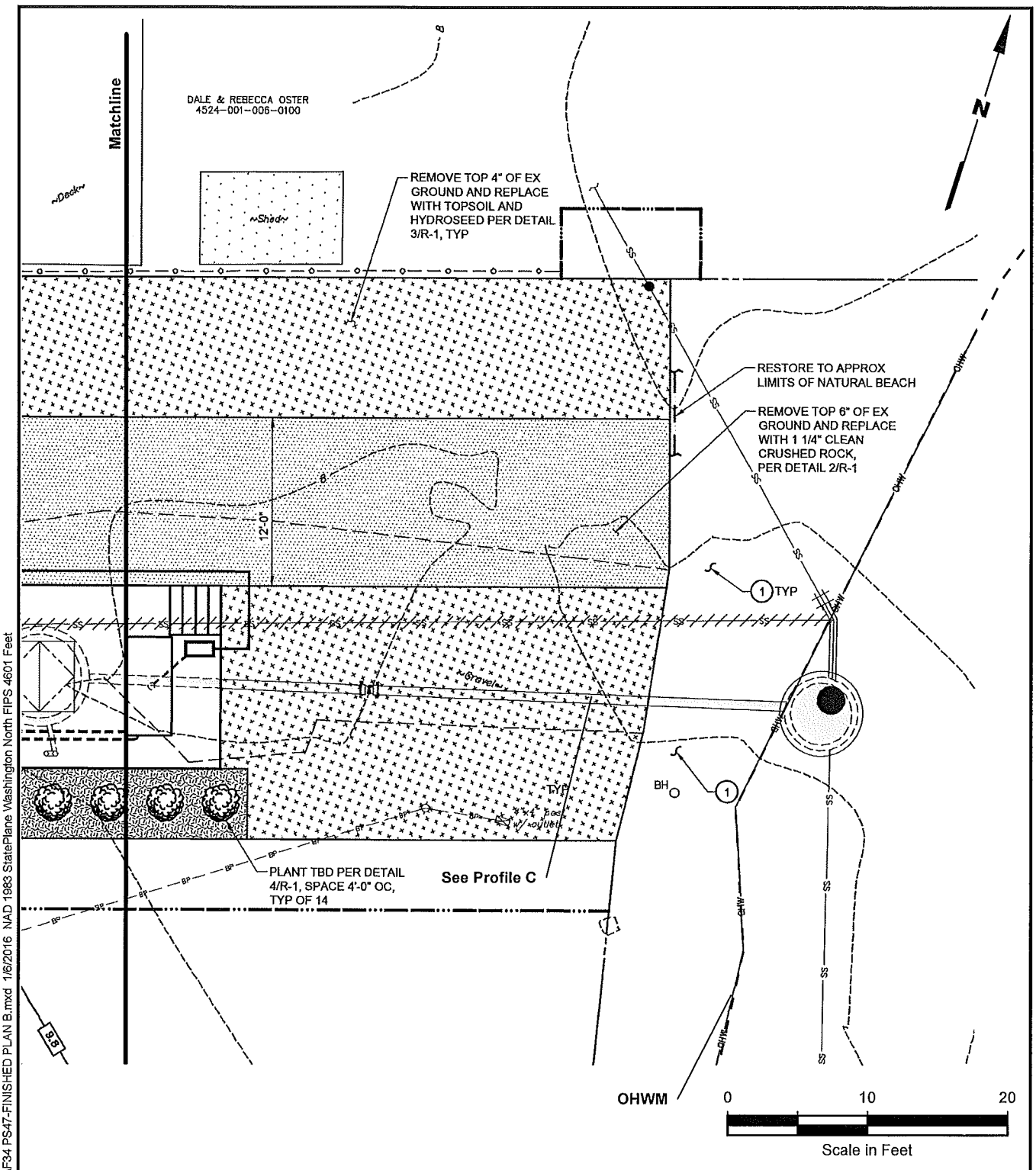
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 33 OF 53



G:\Projects\1073\004\020\JARPA\F34 PS47-FINISHED PLAN B.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-47
FINISHED SITE PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

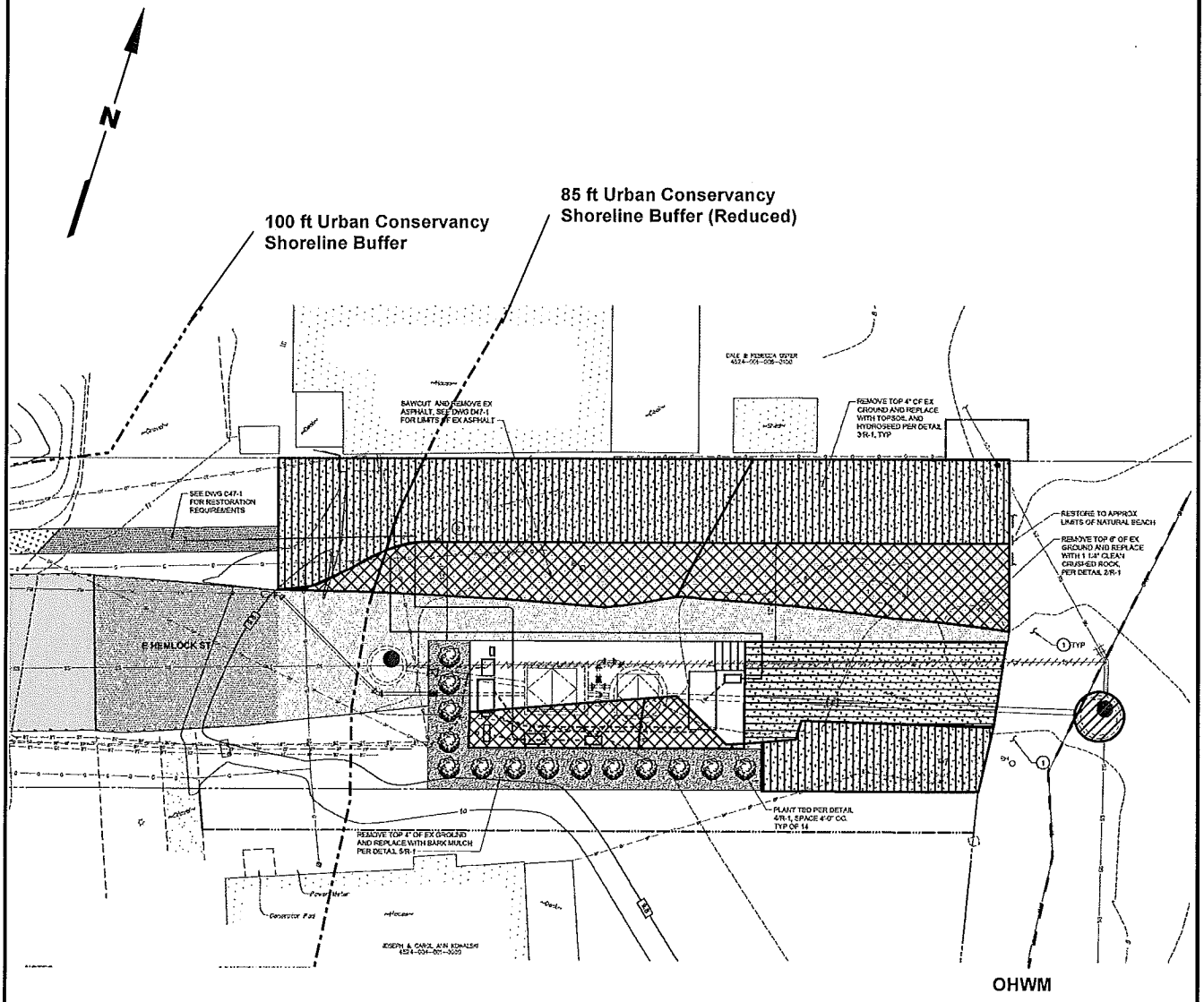
IN: PUGET SOUND

AT: KITSAP COUNTY
(UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 34 OF 53



Legend

- Area Converted to Impervious
- Impervious Converted to Native Vegetation
- Intertidal Habitat Lost (19 ft²)
- Lawn Converted to Native Vegetation

Note

1. Native Vegetation is Hydroseed Mix Consisting of Native Grasses

Buffer Area Calculations	100'-85'	85'-OHWM	Total
Area Converted to Impervious	22 ft²	746 ft²	768 ft²
Impervious Converted to Native Vegetation	0 ft²	322 ft²	322 ft²
Lawn Converted to Native Vegetation	208 ft²	959 ft²	1,167 ft²

0 20 40

Scale in Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-47
SHORELINE BUFFER PLAN

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

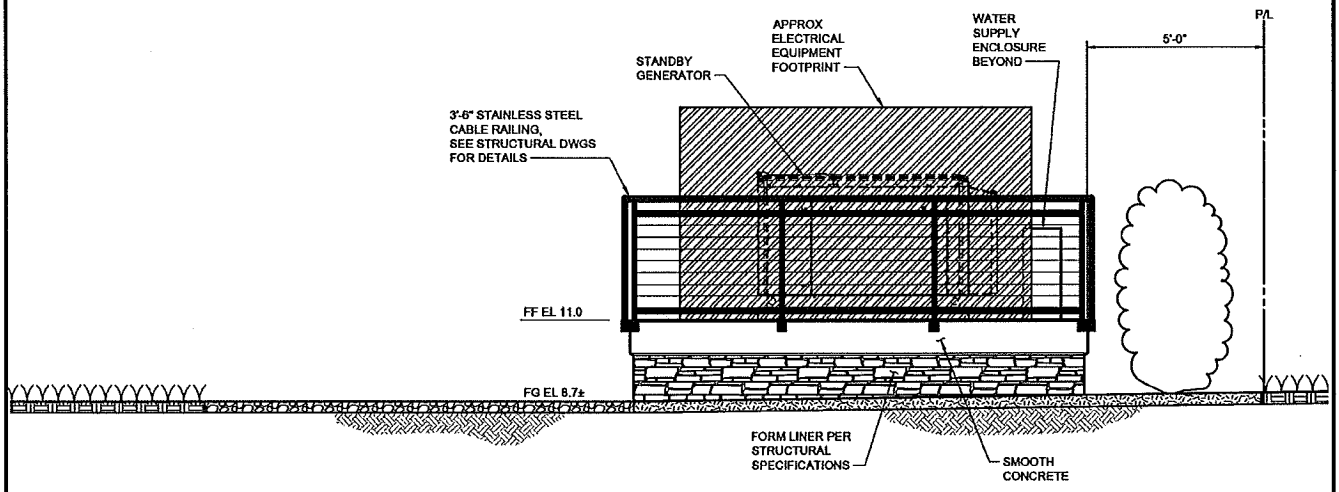
AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 35 OF 53

G:\Projects\107310041020\JARPA\F35 PS47-RESTORATION PLAN.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet



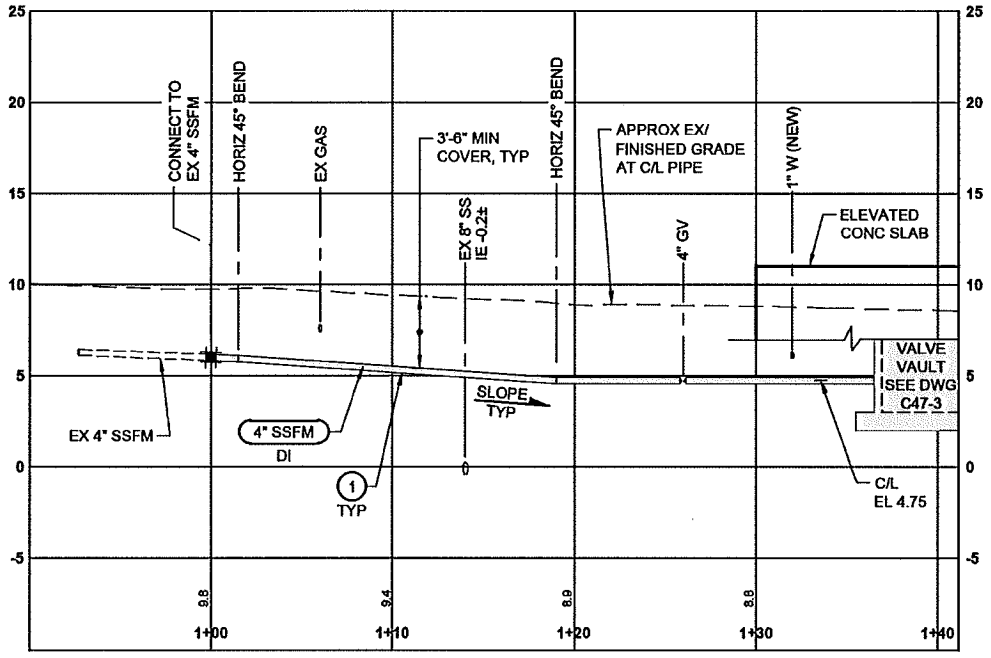
NOTES:

1. PLANTS IN FRONT OF PUMP STATION ARE NOT SHOWN FOR CLARITY,

2. ELEVATION VIEW IS ILLUSTRATIVE, NOT ALL ABOVEGROUND FEATURES ARE SHOWN. MAJOR COMPONENTS ARE ILLUSTRATED ONLY.

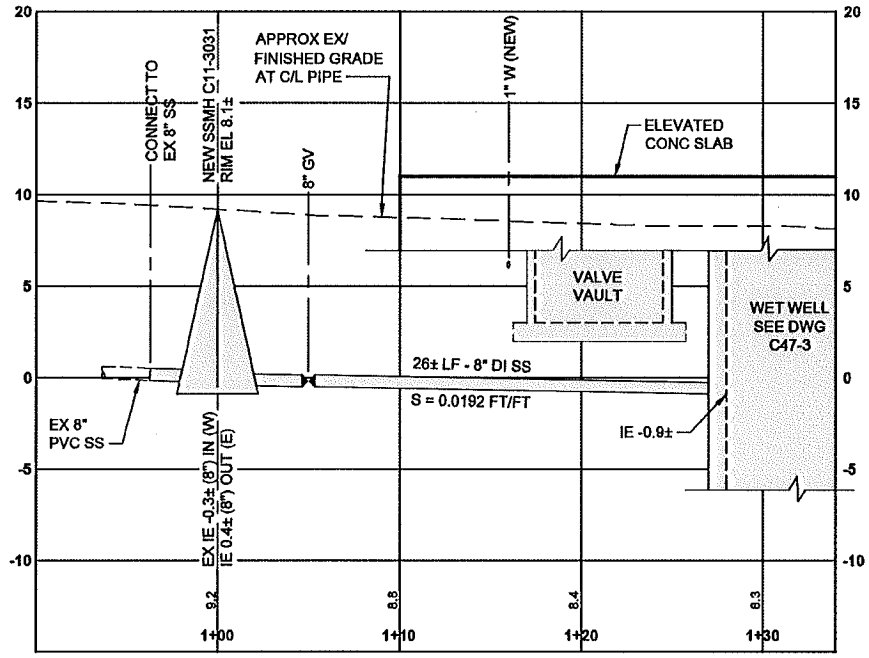
G:\Projects\107310041020\JARPA\F36 PS-47-ELEVATION.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **PS-47** **ELEVATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 36 OF 53



4" SSFM
(CONNECT TO EX SSFM)

PROFILE A



8" SS
(CONNECT TO NEW SSMH C11-3031)

PROFILE B

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

PS-47
PROFILE A & B

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY
(UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 37 OF 53

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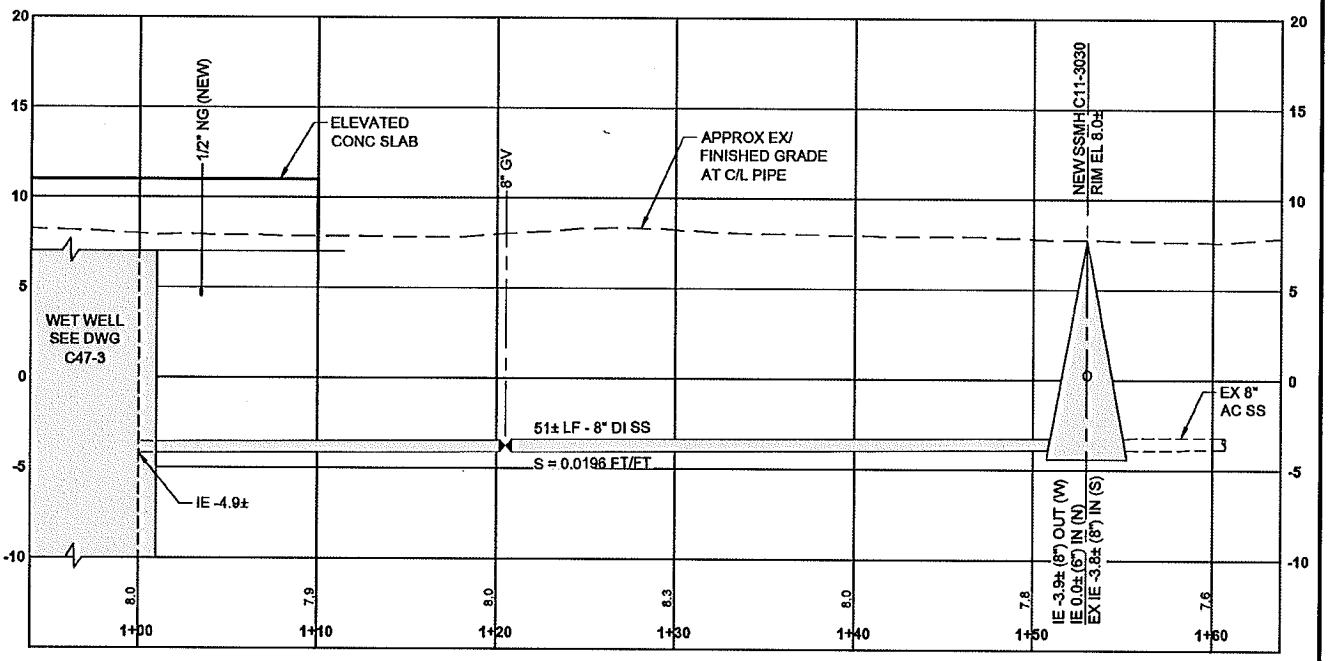
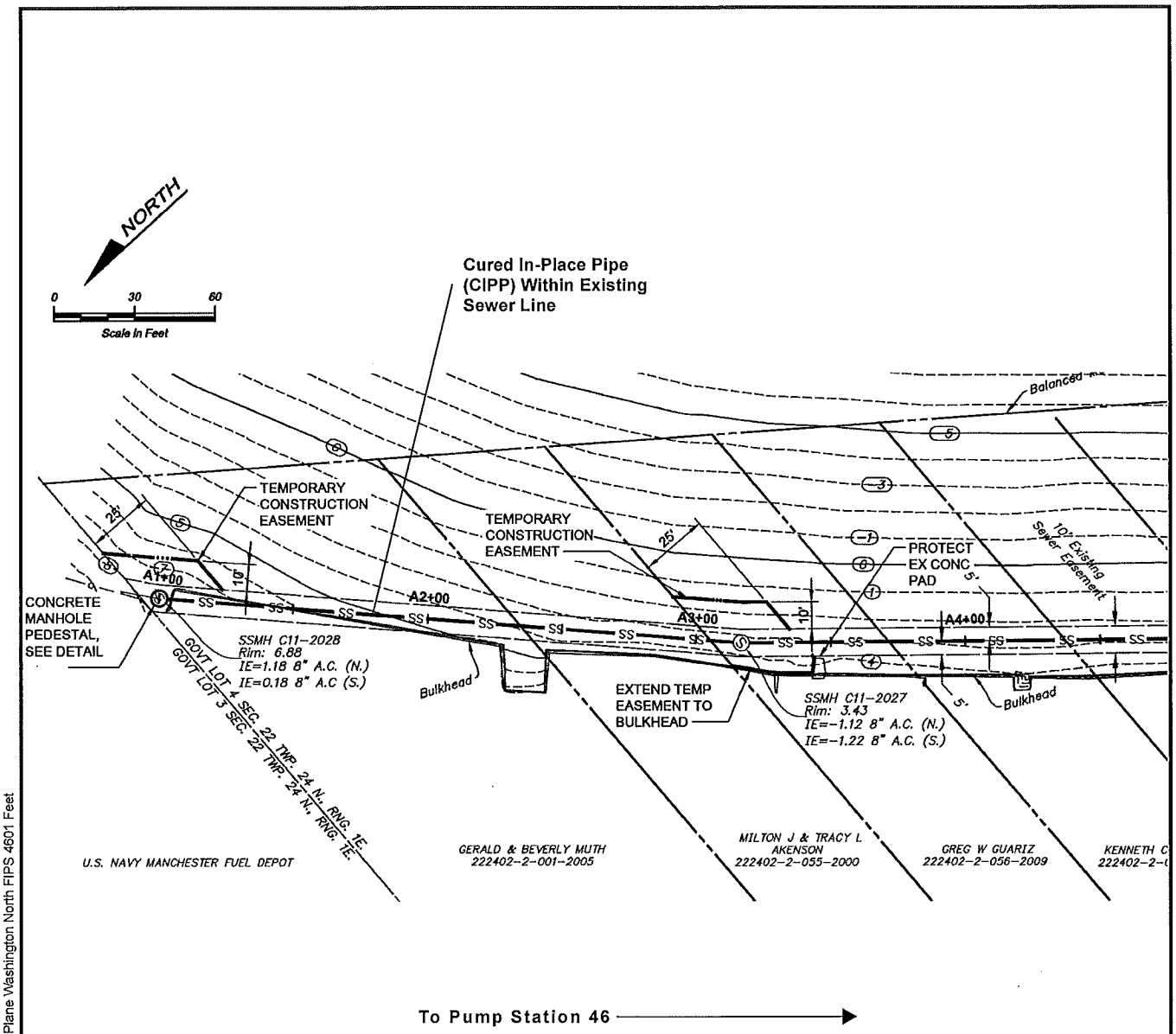


8" SS
(CONNECT TO NEW SSMH C11-3030)

PROFILE C

G:\Projects\1073\004\020\JARPA\F38 PS47-PROFILE C.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**PS-47 PROFILE C**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 38 OF 53



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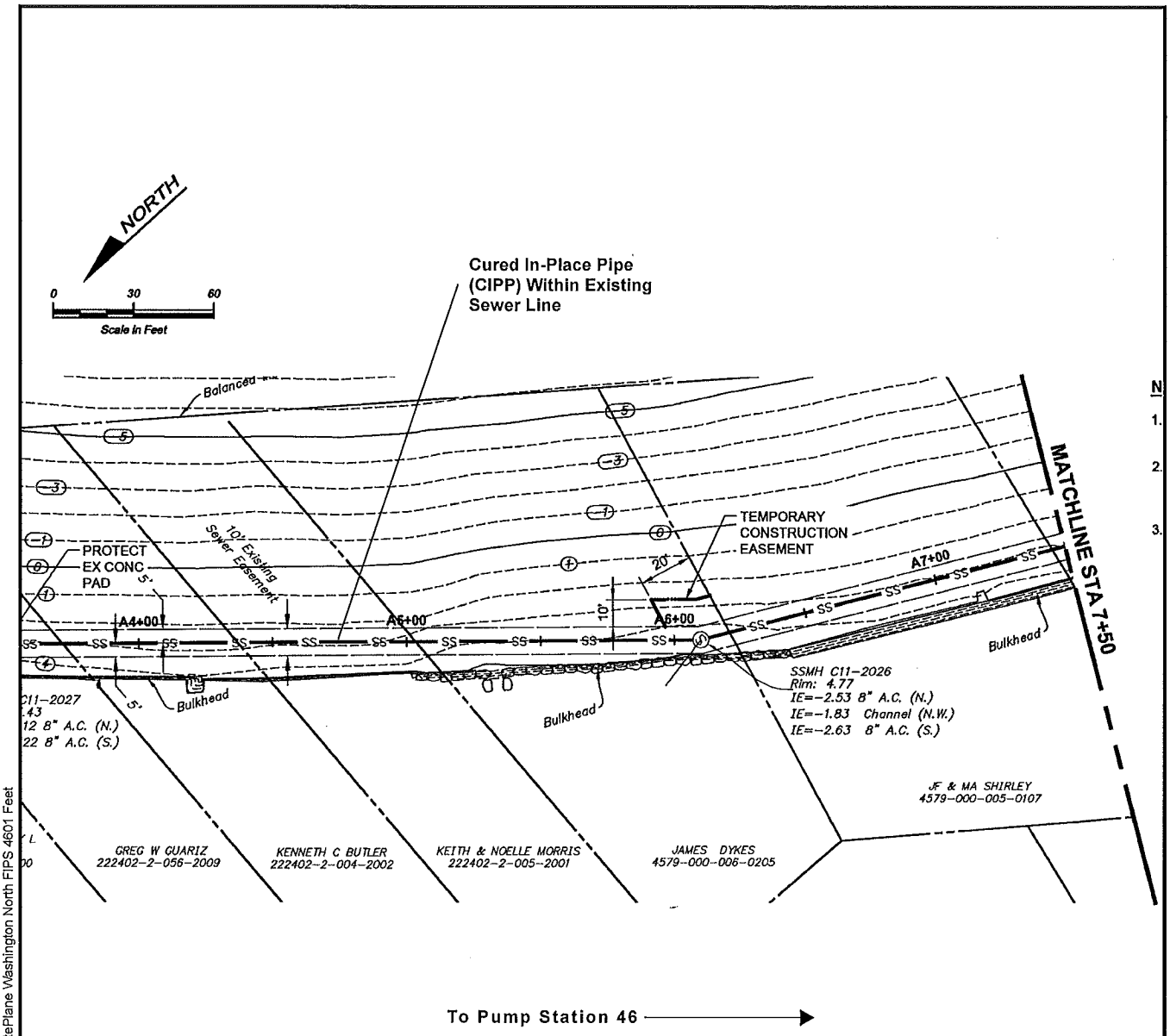
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 39 OF 53



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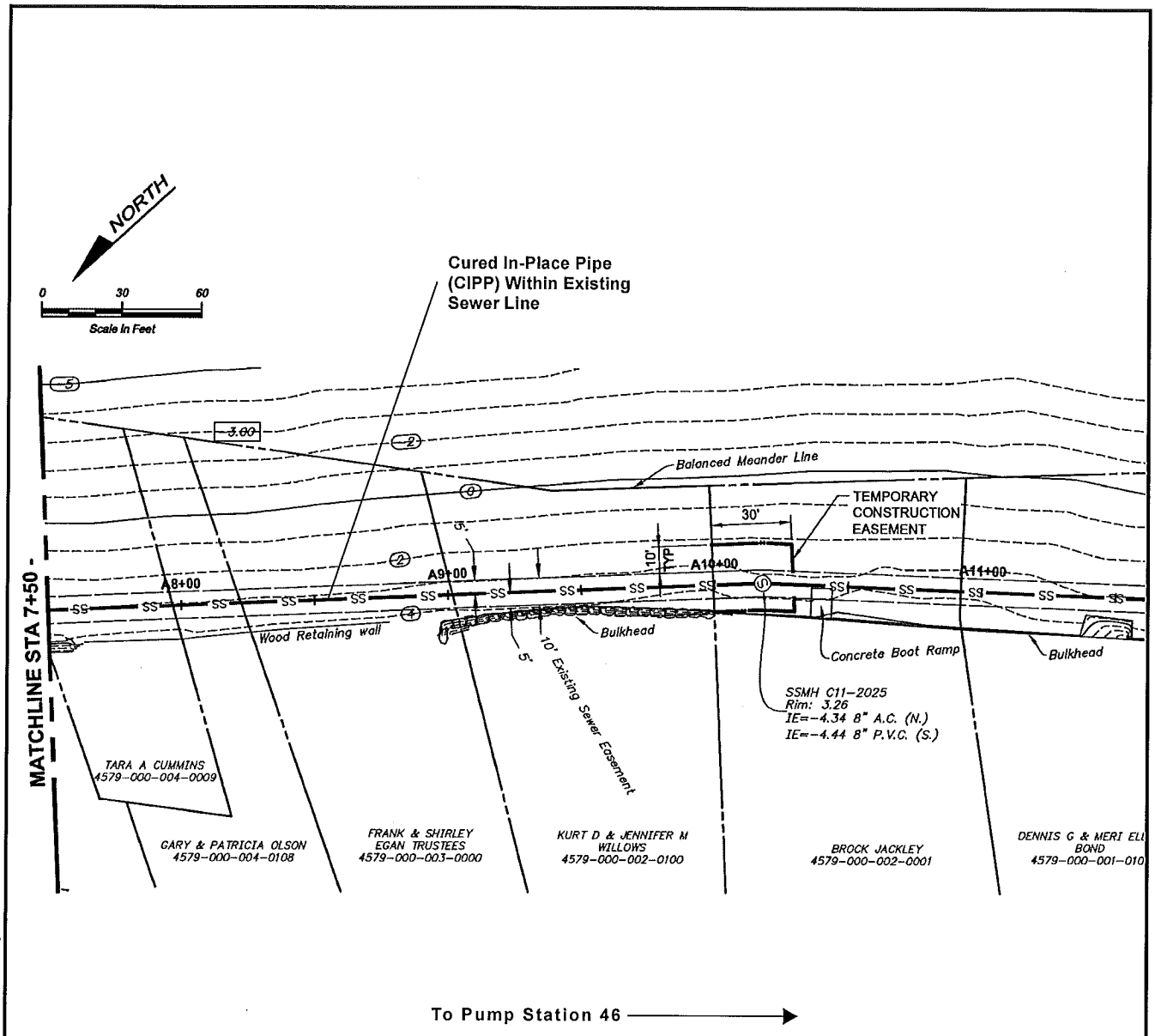
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 40 OF 53



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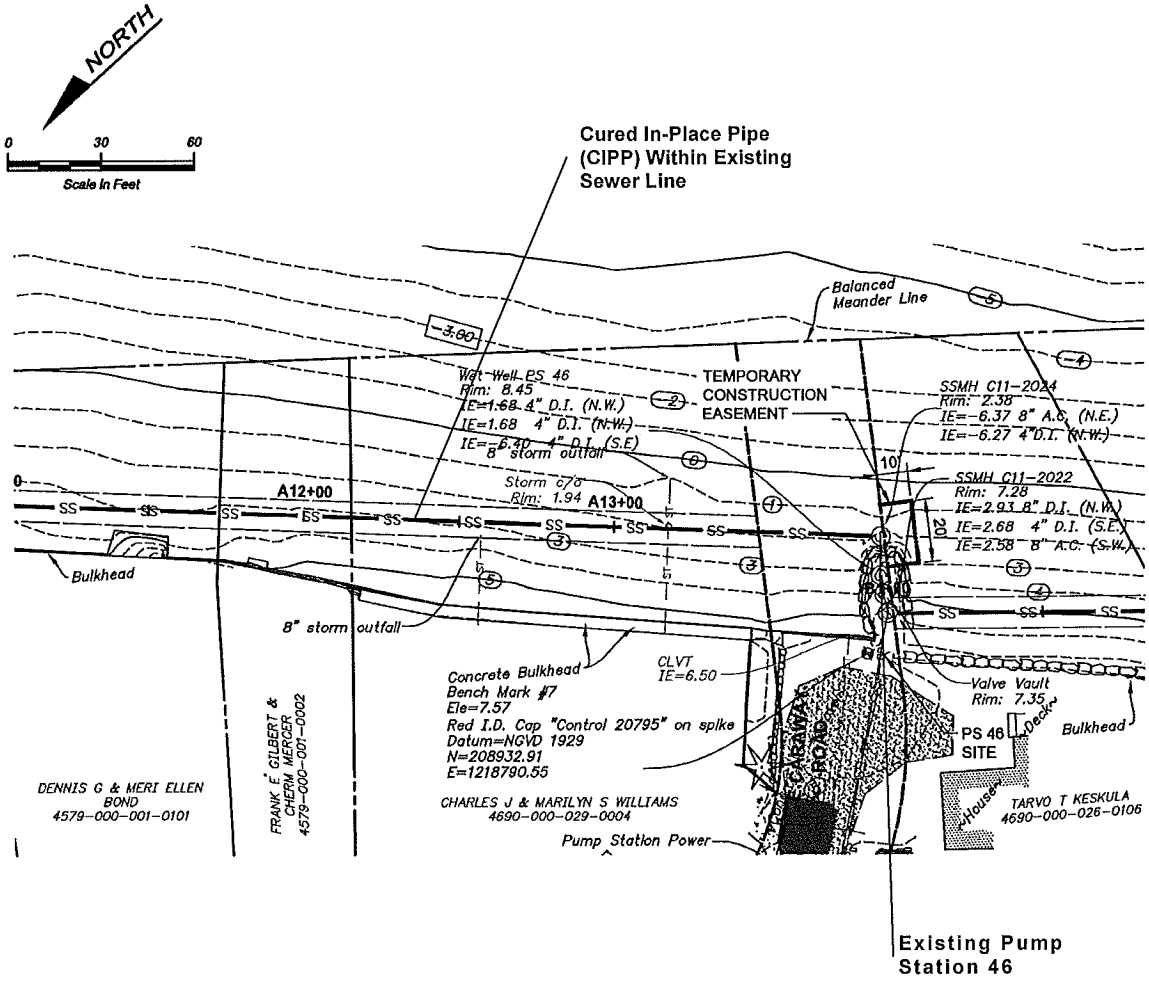
PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 41 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 42 OF 53

CURED IN PLACE PIPE FOR SANITARY SEWER TABLE

UPSTREAM STATION	UPSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	DOWNSTREAM STATION	DOWNSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	EXISTING PIPE MATERIAL	PIPE SIZE	APPROX RUN LENGTH	APPROX # LATERALS TO REINSTATE
A1+00	C11-2026	8.70 FT	A3+17	C11-2027	4.55 FT	AC	8"	217 FT	2
A3+17	C11-2027	4.65 FT	A6+10	C11-2026	7.30 FT	AC	8"	293 FT	3
A6+10	C11-2026	7.40 FT	A10+18	C11-2025	7.60 FT	AC	8"	408 FT	8
A10+18	C11-2025	7.70 FT	A13+86	C11-2024	8.75 FT	PVC/AC, SEE NOTE 1	8"	368 FT	4

NOTES:

1. EXISTING PIPE MATERIAL CHANGES FROM PVC TO AC ABOUT 10'± SOUTH OF MH C11-2025.
2. ALL SERVICE LATERALS WILL BE UPGRADED WITH A TOP HAT LATERAL MAIN CONNECTION DURING CIPP INSTALLATION. SEE DETAIL 2/BL-4.
3. CONTRACTOR SHALL SUBMIT SEWER BYPASS PLAN PRIOR TO CIPP INSTALLATION.

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 43 OF 53

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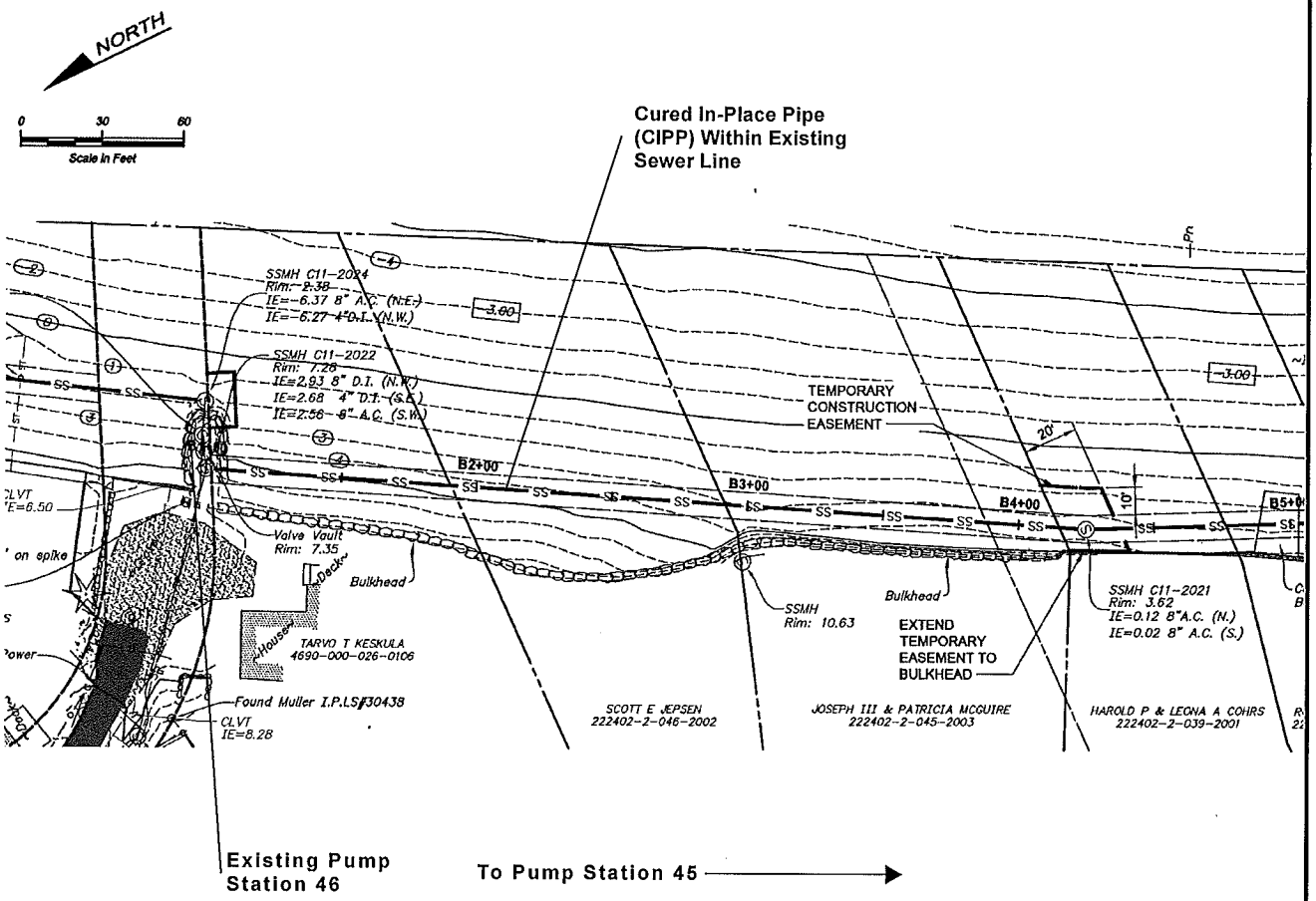

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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

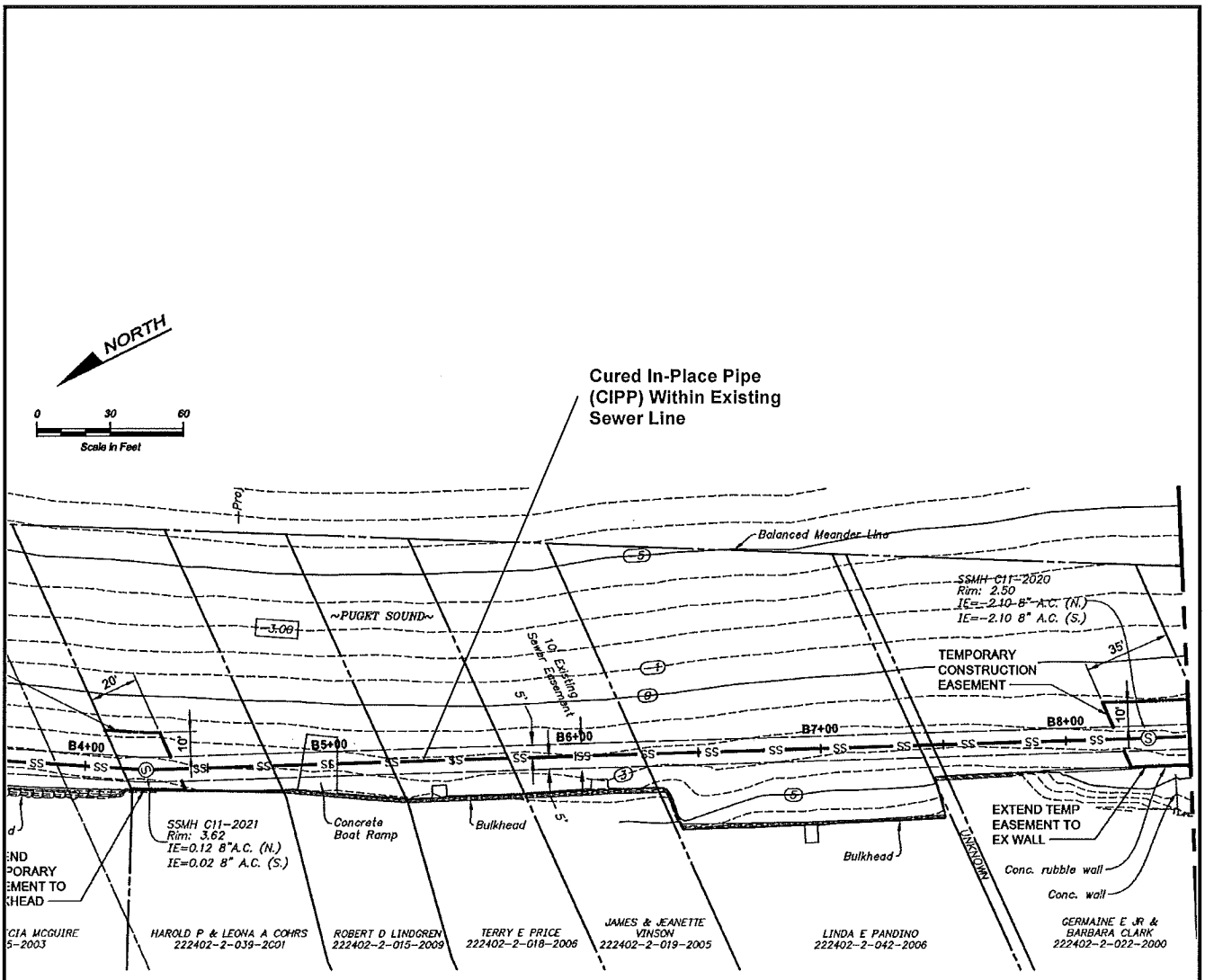
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 44 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

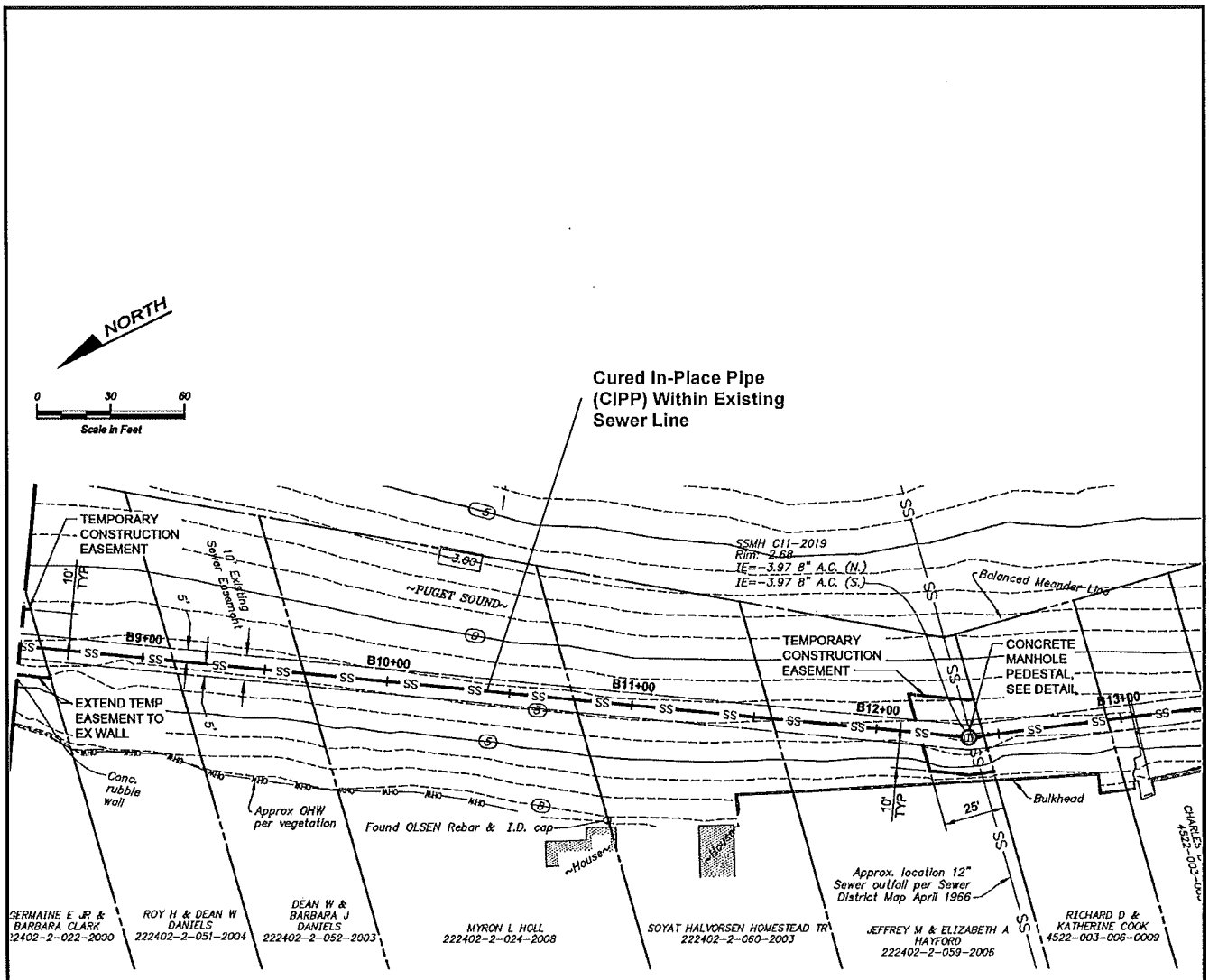
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 45 OF 53



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PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

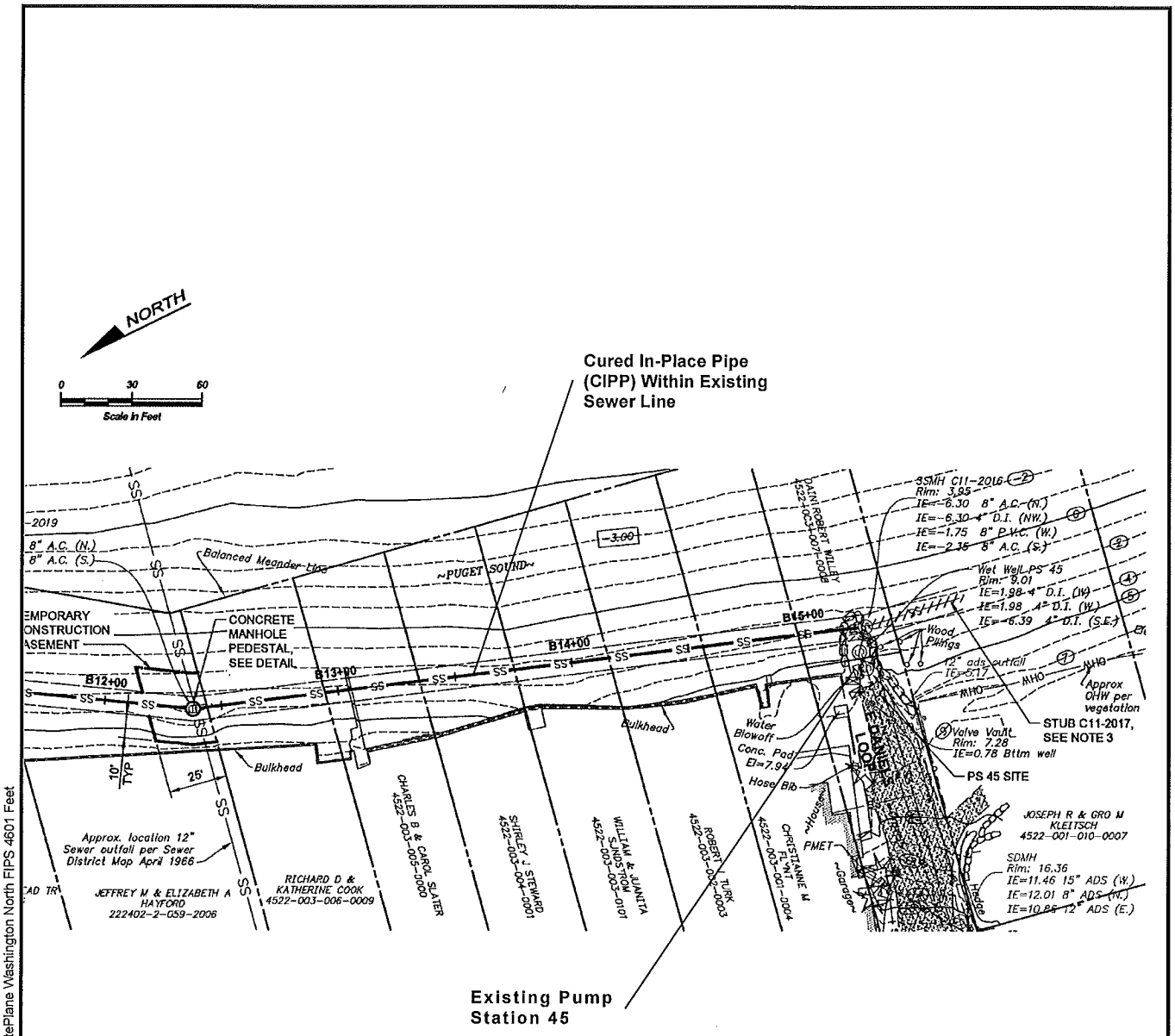
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 46 OF 53



PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 47 OF 53

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CURED IN PLACE PIPE FOR SANITARY SEWER TABLE

UPSTREAM STATION	UPSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	DOWNSTREAM STATION	DOWNSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	EXISTING PIPE MATERIAL	PIPE SIZE	APPROX RUN LENGTH	APPROX # LATERALS TO REINSTATE
B1+00	C11-2022	4.70 FT	B4+25	C11-2021	3.50 FT	AC	8"	325 FT	3
B4+25	C11-2021	3.60 FT	B8+34	C11-2020	4.60 FT	AC	8"	409 FT	5
B8+34	C11-2020	4.60 Ft	B12+38	C11-2019	6.65 FT	AC	8"	404 FT	6
B12+38	C11-2019	6.65 FT	B15+26	C11-2016	10.25 FT	AC	8"	288 FT	6

NOTES:

1. ALL SERVICE LATERALS WILL BE UPGRADED WITH A TOP HAT LATERAL MAIN CONNECTION DURING CIPP INSTALLATION.
2. CONTRACTOR SHALL SUBMIT SEWER BYPASS PLAN PRIOR TO CIPP INSTALLATION, SEE DETAIL 2/BL-4.
3. APPROXIMATELY 40± FEET OF 8" AC PIPE TO BE ABANDONED IN PLACE FROM SSMH C11-2016 TO STUB C11-2017 AND WILL NOT BE LINED WITH CIPP.

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

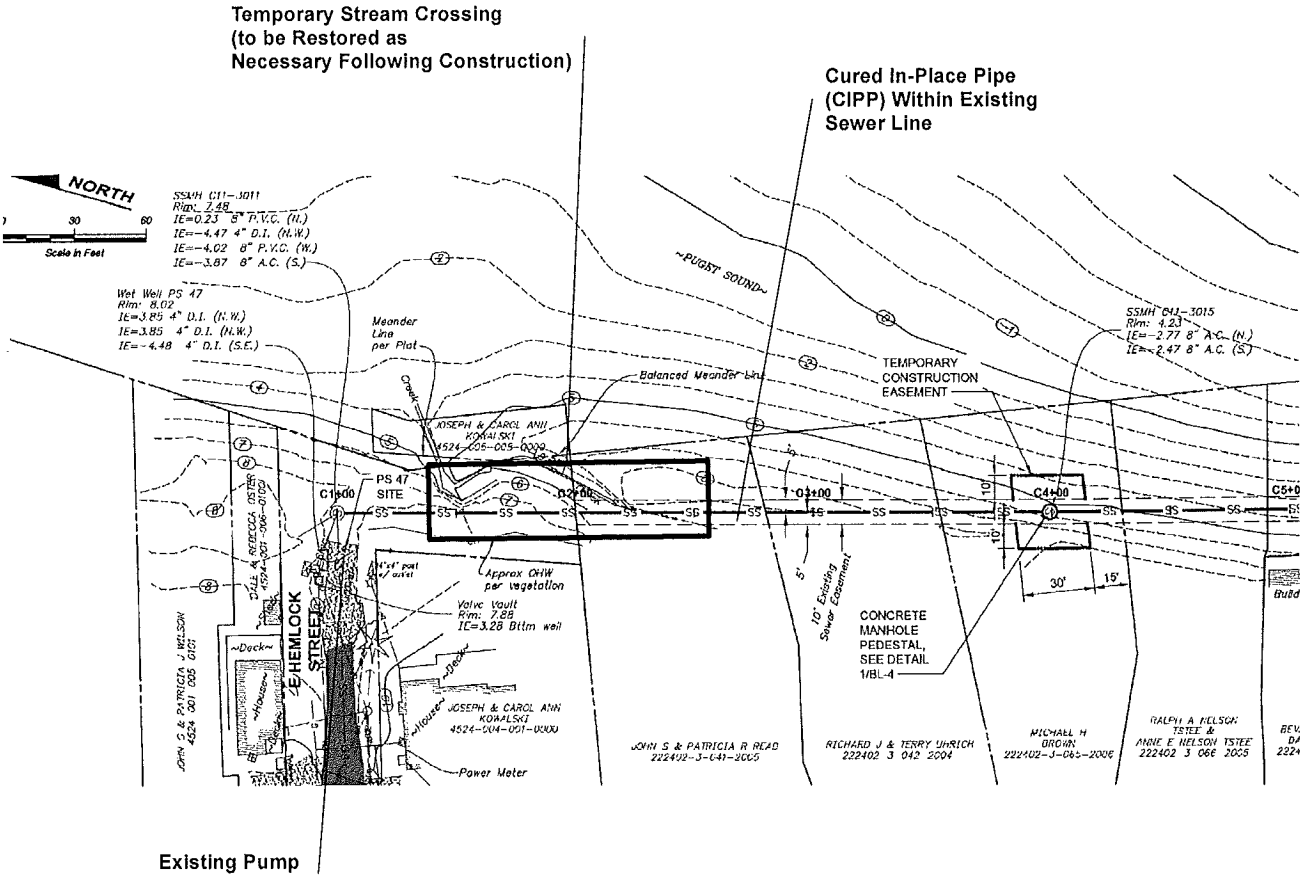
IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

SHEET: 48 OF 53



PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 49 OF 53

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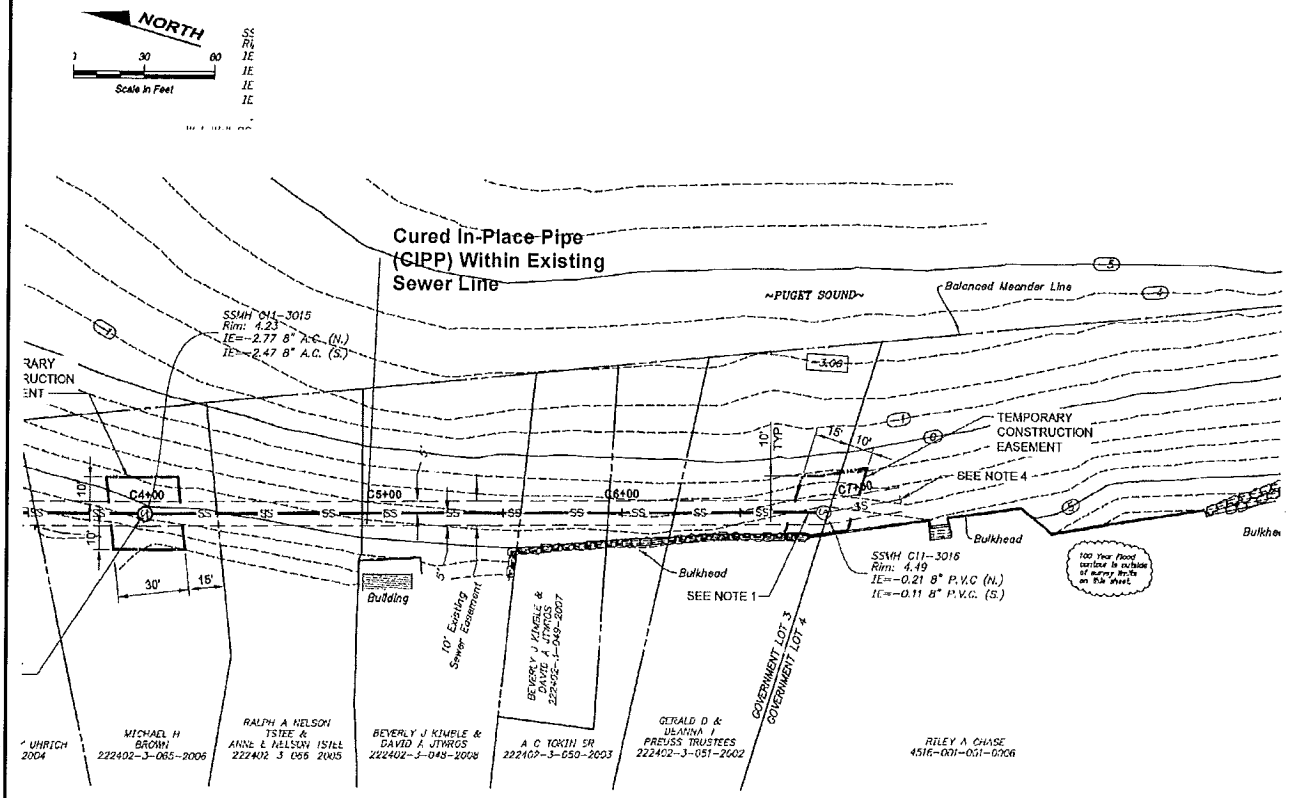

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 50 OF 53

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CURED IN PLACE PIPE FOR SANITARY SEWER TABLE								
UPSTREAM STATION	UPSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	DOWNSTREAM STATION	DOWNSTREAM MANHOLE	APPROX DEPTH TO PIPE INVERT	EXISTING PIPE MATERIAL	PIPE SIZE	APPROX RUN LENGTH	APPROX # LATERALS TO REINSTATE
C1+00	C11-3011	11.35 FT	C3+99	C11-3015	7.00 FT	AC	8"	299 FT	3
C3+99	C11-3015	6.7 FT	C6+85	C11-3016	4.7 FT	AC/PVC, SEE NOTE 1	8"	286.27 FT	7

NOTES:

1. EXISTING PIPE MATERIAL CHANGES FROM AC TO PVC ABOUT ±10' NORTH OF MH C11-3016.
2. ALL SERVICE LATERALS WILL BE UPGRADED WITH A TOP HAT LATERAL MAIN CONNECTION DURING CIPP INSTALLATION, SEE DETAIL 2/BL-4.
3. CONTRACTOR SHALL SUBMIT SEWER BYPASS PLAN PRIOR TO CIPP INSTALLATION.
4. EXISTING 8" PVC PIPE EXTENDS SOUTH FROM SSMH C11-3016. THIS PIPE WILL NOT BE LINED WITH CIPP AND IS NOT INCLUDED IN THE PROJECT.

G:\Projects\1073\004\020\ARPA\F51 BL PLAN C 3.mxd 1/6/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE

TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E

LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)

ELEVATION DATUM: NGVD29

ADJACENT PROPERTY OWNERS:
1. REFER TO JARPA

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

KITSAP COUNTY, WASHINGTON

NWS-2015-637

BEACH LINE SEWER RELINE PLAN STA A1+00 TO A13+86

PROPOSED: WATERWAY AND SHORELINE IMPACTS

IN: PUGET SOUND

AT: KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)

APPLICATION BY: KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 1-8-2016

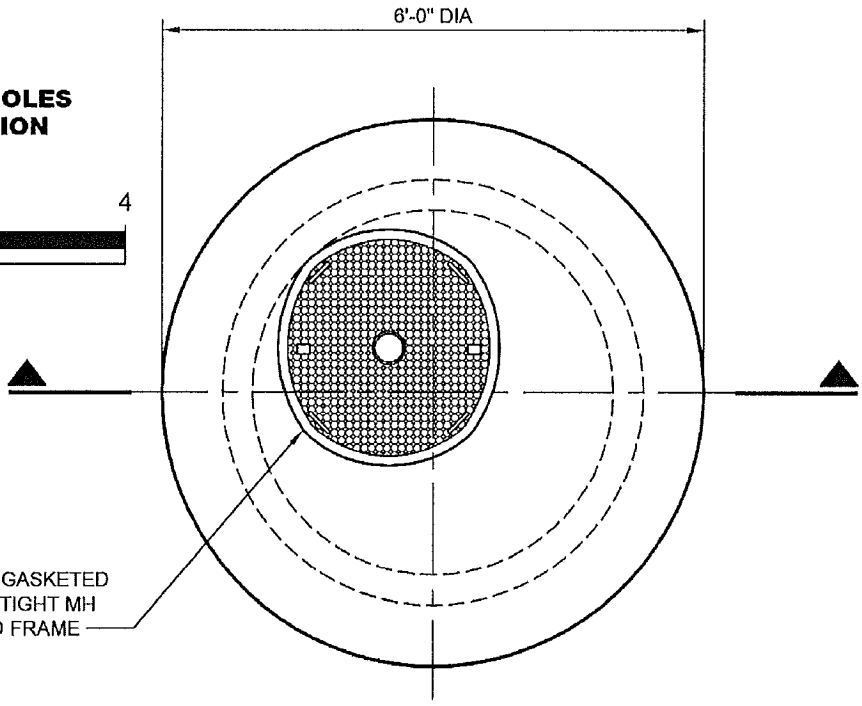
SHEET: 51 OF 53

BEACH MANHOLES REHABILITATION

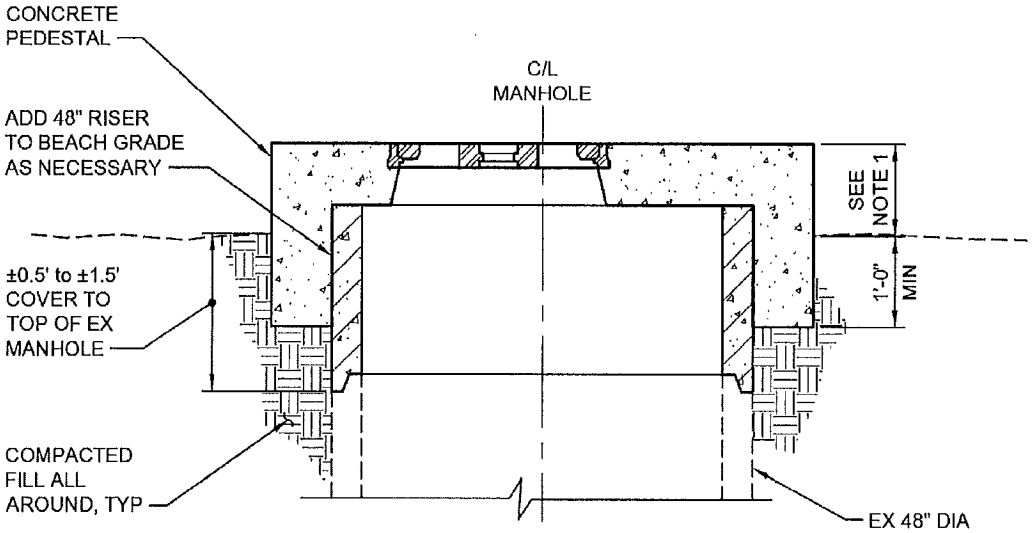
DETAIL

0 2 4

Feet



PLAN



SECTION

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS
TOWNSHIP/RANGE: SEC 22 TWP 24N RGE 2E	**KITSAP COUNTY, WASHINGTON**	**IN:** PUGET SOUND
LAT/LONG: 47.556329 N/ -122.543373 W (DATUM NAD83)	**NWS-2015-637**	**AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER)
ELEVATION DATUM: NGVD29	**BEACH LINE SEWER RELINE DETAILS STA A1+00 TO A13+86**	**APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
ADJACENT PROPERTY OWNERS: 1. REFER TO JARPA		**DATE:** 1-8-2016
		SHEET: 52 OF 53

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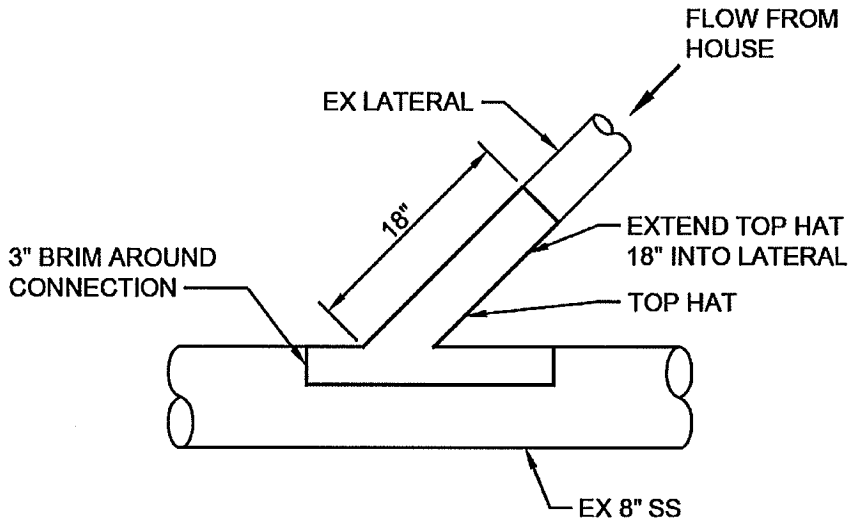

NOTE:

LATERAL REPAIR BEYOND TOP HAT INSTALLATION IS NOT INCLUDED IN THIS PROJECT UNLESS DIRECTED BY THE ENGINEER

NOTES:

1. MANHOLE C11-3015, C11-2028, AND C11-2019 REQUIRE OUTSIDE PEDESTAL AND ADDITIONAL MANHOLE RISER(S) TO BRING MANHOLES ABOVE BEACH ELEVATION, SIMILAR TO OTHER EXISTING BEACH MANHOLES.

2. INTERIOR OF THE FOLLOWING EXISTING BEACH MANHOLES SHALL BE COATED WITH INTERIOR MANHOLE LINER PER SPECIFICATIONS:
   C11-3016 C11-2025
   C11-3015 C11-2021
   C11-2028 C11-2020
   C11-2027 C11-2019
   C11-2026

3. MANHOLE C11-3011 AND C11-2028 SHALL BE RETROFIT WITH A BOTTOM FIBERGLASS LINER PER SPECIFICATIONS.

4. THE FOLLOWING EXISTING BEACH MANHOLES SHALL BE RETROFIT WITH 30" DIAMETER GASKETED WATERTIGHT MANHOLE LID AND FRAME:
   C11-3016 C11-2025
   C11-3015 C11-2021
   C11-2028 C11-2020
   C11-2027 C11-2019
   C11-2026

PURPOSE: REHABILITATION OF EXISTING SEWER INFRASTRUCTURE **TOWNSHIP/RANGE:** SEC 22 TWP 24N RGE 2E **LAT/LONG:** 47.556329 N/ -122.543373 W (DATUM NAD83) **ELEVATION DATUM:** NGVD29 **ADJACENT PROPERTY OWNERS:** 1. REFER TO JARPA	**MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION** **KITSAP COUNTY, WASHINGTON** **NWS-2015-637** **BEACH LINE SEWER RELINE DETAILS STA A1+00 TO A13+86**	**PROPOSED:** WATERWAY AND SHORELINE IMPACTS **IN:** PUGET SOUND **AT:** KITSAP COUNTY (UNINCORP. VILLAGE OF MANCHESTER) **APPLICATION BY:** KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS **DATE:** 1-8-2016 **SHEET:** 53 OF 53

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Section 106 Letter of Concurrence

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Allyson Brooks Ph.D., Director
State Historic Preservation Officer

February 9, 2016

Ms. Liz Ellis
Water Quality Program
Department of Ecology
PO Box 47775
Olympia, Washington 98504

RE: Manchester Shoreline Sewer Facility Project
Log No: 2016-01-00805-ECY

Dear Ms. Ellis:

Thank you for contacting our Department. We have reviewed the materials you provided for the proposed Kitsap County Public Works' Manchester Shoreline Sewer Facility Project. Kitsap County, Washington.

We concur with your determination of the Area of Potential Effect (APE). We look forward to the results of your cultural resources review, consultations with the concerned tribes, and your finalized Determination of Effect.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800.

Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: *rob.whitlam@dahp.wa.gov*

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 26, 2016

Sent electronically

Barbara Zaroff
Kitsap County Sewer Utility
614 Division Street (MS-26)
Port Orchard, WA 98366

RE: Section 106 of the National Historic Preservation Act
Kitsap County Public Works, Manchester Shoreline Sewer Facility
Clean Water Act State Revolving Fund, WQC-2016-KiCoPW-00037
Final Determination – Revised

Dear Ms. Zaroff:

Washington State Department of Ecology (Ecology) is revising this Final Determination to reflect conditions still required in order to complete Section 106 Consultation and successfully move your project forward.

Ecology is prepared to conclude Section 106 Consultation under the National Historic Preservation Act (Section 106) for the *Kitsap County Manchester Shoreline Sewer Facility project*. The required survey (Cascadia, 2-23-2016) contains recommendations monitoring of sensitive areas. What the survey does not include is an Inadvertent Discovery Plan (IDP). An IDP is required prior to ground disturbance, for all Ecology Water Quality funded projects, where Ecology is the lead agency. The Suquamish Tribe has also requested an IDP. The Survey states the IDP will be "developed during construction" which implies ground disturbance. To move this project forward and conclude Section 106 Consultation, please send your IDP to the Regional Project Manager and cc Liz Ellis, Environmental Review Coordinator.

Please send additional comments you receive from tribes or interested parties to myself and include your Ecology Project Manager. As a reminder, any concerns that you received during the 30-day comment period must be addressed prior to beginning work.

If the initial plan or project area changes, please contact me so we can amend your first review and include the changes. Please contact me if you have any more questions about the cultural resources review process at 360-407-6429 or liz.ellis@ecy.wa.gov.

Sincerely,

4/26/2016

X Liz Ellis

Liz Ellis
Environmental Review Coordinator
Signed by: lell461

Liz Ellis
Environmental Review Coordinator
Financial Management, Water Quality Program

cc: Dennis Lewarch, Suquamish Tribe
Kris Miller, Skokomish Indian Tribe
Richard Young, Tulalip Tribe
Rhonda Foster, Squaxin Island Tribe
Josh Wisniewski, Port Gamble S'Klallam Tribe
Darrell Brownell, Jamestown S'Klallam Tribe
Bill White, Lower Elwha Klallam Tribe
Robert Whitlam, PhD, DAHP
Lazaro Eleuterio, Ecology

Section 7 Endangered Species Act Letters of Concurrence

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, Washington 98115

Refer to NMFS No:
WCR-2016-4208

May 9, 2016

Rob Pedersen
Environmental Engineer
United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter for the Kitsap County/Manchester Sewer Beach Lines and Pump Station Rehabilitation Projects

Dear Mr. Pedersen:

On February 29, 2016, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the proposed intertidal work for the rehabilitation and replacement of existing sewer lines and pump stations along the Puget Sound shoreline in the unincorporated village of Manchester, Kitsap County, Washington, with funding administered by the United States Environmental Protection Agency (EPA) under the Clean Water State Revolving Fund Program is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. In this case, NMFS concluded the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public

Law 106-554). A complete record of this consultation is on file at the Oregon-Washington Coastal Area Office in Lacey, Washington.

Proposed Action and Action Area

The EPA, through its funding authority for the Clean Water State Revolving Fund program, is the lead agency for consultation of Kitsap County's proposed sewer beach line and pump station rehabilitation project. This, as well as the required U.S. Army Corps of Engineers Section 10/404 permit for the proposed work, establishes a federal nexus for the project.

The proposed project will rehabilitate a beach sewer line, and replace and relocate three pump stations located within the 100-year floodplain or intertidal habitat of the Puget Sound. Approximately 3,330 ft. of cured in-place pipe (CIPP) liner will be installed in the existing beach line from existing manholes, and side sewers will be reconnected. Beach sewer line rehabilitation will require limited excavation to expose four existing manholes. This will be completed in the dry during low tide. All 13 existing beach line manholes will also be repaired as needed (i.e. replacement of manhole frames and lids). Access to the sewer line will require a temporary crossing of Duncan Creek below the Puget Sound ordinary high water mark (OHWM) at low tide. The channel will be restored as necessary following construction.

Three pump stations in disrepair (PS-45, PS-46 and PS-47) located adjacent to the beach line will be replaced. Under existing conditions PS-45 and PS-46 are located in the upper intertidal zone, and PS-47 is located in and upland area. The new pump stations will be constructed so that the finished floor elevations are located above the 100-year flood level at elevation 11.0 ft., which includes a 14-inch allowance for future sea level rise. Replacement and rehabilitation of structures (i.e. wet wells, pipes, force mains) associated with the pump stations will also be completed. New influent manholes will be installed in the beach to intercept the existing beach sewer pipeline and divert flow through a new 8-inch diameter sewer pipeline to the new pump stations. Temporary excavations for the new valve vault and wet well, beach manhole and gravity pipeline connecting the counterparts of the new pump stations will be completed as single, shored excavations. Shoring and dewatering measures for the projects may be limited to a sheet pile cutoff wall, with a concrete bottom seal. Dewatering requirements, after the bottom seal is poured and initial water is pumped out, would be limited to removing the nominal water that seeps through the sheet pile interlocks.

After the new pump stations are placed in operation, the existing pump station facilities and cemented rock jetties projecting into the Puget Sound at PS-45 and PS-46 sites will be removed. However, existing deep pump station structures (wet well and influent manhole) are proposed to be removed to 3 feet below grade, filled with sand and abandoned in place. Similar to PS-45 and PS-46, the existing PS-47 facilities will be removed and existing deep pump station structures (wet well and influent manhole) are proposed be removed to 3 feet below grade, filled with sand and abandoned in place. A temporary bypass will be installed during both beach line repair and pump station construction. Pump station removal activities will be completed in the dry during low tide. Temporary stabilizing measures will be used during high tides until removal/restoration activities are complete.

There are no interrelated activities associated with the proposed project. An interdependent activity associated with the proposed project is maintenance dredging. Since the sewer infrastructure has been inexistence for years, dredging will not change the character of the area.

Conservation measures and best management practices outlined in Section 2.2.6 of the Biological Assessment and Essential Fish Habitat Evaluation, Manchester Pump Stations Nos. 45, 46, and 47 and Beach Line Rehabilitation, Kitsap County, Washington (BA) will minimize potential project effects on the environment. The anticipated in-water work window is August 1 to August 31.

The project area consists of gravel substrate and aquatic vegetation has not been observed on exposed areas of the intertidal zone. Some algae has been observed within the channel of Duncan Creek in the intertidal zone of Puget Sound. Aquatic vegetation habitats were not identified by the WDFW PHS data within the project area.

The aquatic component of the action area is limited to the in-water work area in the intertidal zone associated with removal of PS-45 and PS-46, and beach line rehabilitation, plus mixing zones that will extend 150 ft. from the limits of construction activities. This represents the point of compliance established for mixing zones associated with turbidity in marine waters based on WAC 173-201A.

Action Agency's Effects Determination

The EPA, as the action agency, made determinations of "may affect, not likely to adversely affect" (NLAA) for Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*) and its critical habitat, PS steelhead (*O. mykiss*) and its critical habitat, PS/Georgia Basin (PSGB) canary rockfish (*Sebastes pinniger*) and its critical habitat, PSGB bocaccio (*S. paucispinis*) and it's critical habitat, PSGB yelloweye rockfish (*S. ruberrimus*), and southern resident killer whale (*Orcinus orca*) and its critical habitat (Table 1). Nearshore habitat has not been designated as critical habitat for yelloweye rockfish and is, therefore, critical habitat for yelloweye rockfish is not present within the project area. Potential effects to these species and critical habitats could result from construction activities in the intertidal zone of the Puget Sound, with potential turbidity effects extending into adjacent nearshore habitat.

Table 1. Endangered Species Act (ESA)

Species	Federal Status	Species Determination	Critical Habitat Determination	Listing/Designation
Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*)	Threatened	NLAA	NLAA	6/28/05 (70 FR 37160)/ 9/2/05 (70 FR 52630)
Puget Sound steelhead (*O. mykiss*)	Threatened	NLAA	NLAA	6/28/05 (70 FR 37160)/ 2/24/16 (81 FR 9285)
Puget Sound/Georgia Basin canary rockfish (*Sebastes pinniger*)	Threatened	NLAA	NLAA	4/28/10 (75 FR 22276)/ 11/13/14 (79 FR 68041)
Puget Sound/Georgia Basin yelloweye rockfish (*S. ruberrimus*)	Threatened	NLAA	N/A	4/28/10 (75 FR 22276)/ 11/13/14 (79 FR 68041)
Puget Sound Georgia Basin bocaccio (*S. paucispinis*)	Endangered	NLAA	NLAA	4/28/10 (75 FR 22276)/ 11/13/14 (79 FR 68041)
Southern Resident killer whale (*Orcinus orca*)	Threatened	NLAA	NLAA	11/18/05 (70 FR 69903)/ 11/29/06 (71 FR 69054)

The in-water work will be conducted during times (August 1 to August 31, except for dredging) that minimize potential overlap with use of nearshore habitat by PS Chinook salmon and PS steelhead (i.e. during approved in-water work windows for these species). BMPs for construction activities will reduce project impacts associated with turbidity, which will be localized and brief. The BA identifies that project-related work will occur in an area that does not exhibit the rugosity and structure typical of rockfish habitat, and aquatic vegetation has not been observed or documented making the shallow nearshore project area unlikely to support rockfish. Therefore, yelloweye, canary and bocaccio rockfish are not expected to be present in the area. The proposed project will provide a net gain of 477 ft^2 of intertidal habitat, which may be beneficial for salmonid and forage fish predator-prey interactions through the increase of available forage fish spawning area. The proposed project is expected to have no permanent adverse effects on Pacific salmon, groundfish, or coastal pelagic EFH.

Consultation History

We received a biological assessment (BA) and request for informal ESA Section 7 consultation from the EPA on February 29, 2016. The EPA requested concurrence with the determinations of "may affect, not likely to adversely affect" for PS Chinook salmon and its critical habitat, PS steelhead and its critical habitat, PSGB canary rockfish and its critical habitat, PSGB bocaccio and it's critical habitat, PSGB yelloweye rockfish, and Southern Resident killer whale and its critical habitat. A complete record of this consultation is on file at the Oregon and Washington Coastal Area Office in Lacey, Washington.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the

effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action are reasonably likely to include slight increases in suspended sediments in the intertidal zone and nearshore area during tidal inundations of the project areas during construction activities and during the first tidal inundation after work has been completed; benthic disturbance from excavation; a reduction in hardened and altered substrate from the removal of pump stations; and an increase in intertidal habitat.

Listed fish species are unlikely to occur near the project during construction activities. The action area does not exhibit the rugosity and structure typical of rockfish habitat, and aquatic vegetation has not been observed or documented making the shallow nearshore project area unlikely to support rockfish. Southern Resident killer whale are also unlikely to be present near the project during construction activities as a result of the in-water work window minimizing potential for overlap with the use of intertidal habitat by forage fish. The net gain of intertidal habitat from the project may be beneficial through the increase in area available for forage fish spawning.

The in-water work window (August 1 to August 31) will minimize potential for overlap with the use of nearshore habitat by PS Chinook salmon and PS steelhead in the action area. PS Chinook salmon juveniles generally emigrate from freshwater natal areas to estuarine and nearshore habitats from January to April as fry, and from April through early July as larger sub-yearlings. Juvenile PS steelhead primarily emigrate from natal streams in April and May, and appear to move directly out into the ocean to rear, spending little time in the nearshore zone. During August (the proposed in-water work window), we expect juvenile Chinook salmon and steelhead densities in the action area to be very low to zero. Adult Chinook salmon and steelhead could pass through the action area beginning in the later summer, but we expect their densities to also be very low to zero at any given time. These low densities, combined with the small potential zone of exposure to increased suspended sediment concentrations indicates discountable exposures.

The NMFS concurs with the EPA's determination that the project "may affect, is not likely to adversely affect" PS Chinook salmon, PS steelhead, PSGB canary rockfish, PSGB bocaccio, and PSGB yelloweye rockfish and Southern Resident killer whale.

The physical and biological features (PBF) (previously known as primary constituent elements; PCE) for PS Chinook salmon critical habitat in the action area is:

> Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

Increased suspended sediment concentrations generated during project activities will be localized and only briefly affect water quality, with insignificant effects on critical habitat. Nearshore and intertidal forage fish spawning habitat may be disturbed on beach excavations, these will be

short-term. The net gain of 477 ft^2 of intertidal habitat from the proposed project may increase forage fish habitat, and therefore, we believe that any potential decrease in forage fish numbers resulting from the temporary disturbance to spawning habitat will have an insignificant effect on the forage fish component of the PBF.

Nearshore habitat has not been designated as critical habitat for PS steelhead and critical habitat has not been designated in Duncan Creek. The species is also not known to occur in Duncan Creek. Therefore we have determined that there will be no effects of the proposed project on PS steelhead critical habitat.

Designated critical habitat in the action area for canary rockfish and boccacio include the nearshore environment, where primarily juveniles may occur. The PBF for canary rockfish and boccacio in the action area is:

> Water quality and sufficient levels of dissolved oxygen to support growth, survival, reproduction, and feeding opportunities.

As with PS Chinook salmon critical habitat in the nearshore, we expect localized increased suspended sediment concentrations in the nearshore environment to only briefly affect water quality, with insignificant effects on designated canary rockfish and boccacio critical habitat.

The PBF for Southern Resident killer whale in the action area is:

> Prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth.

The net gain of 477 ft^2 of intertidal habitat from the proposed project may increase forage fish habitat, and be beneficial to salmonid/forage fish predator-prey interactions. The proposed project is not expected to have long-term impacts on salmonid populations, important prey species of the Southern Resident killer whale, and will have insignificant effects on critical habitat of the Southern Resident killer whale.

The NMFS concurs with the EPA's determination that the project "may affect, is not likely to adversely affect" designated critical habitat of PS Chinook salmon, PSGB canary rockfish, PSGB bocaccio and Southern Resident killer whale. Critical habitat for PS steelhead does not occur in the action area. Nearshore habitat has not been designated at critical habitat for PS steelhead, critical habitat is not designated in Duncan Creek, and the species is not known to occur in Duncan Creek.

Conclusion

Based on this analysis, NMFS concurs with the EPA that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by [*name of action agency*] or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified

action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Please direct questions regarding this letter to Jeff Vanderpham of the Oregon and Washington Coastal Area Office, Lacey, Washington (360) 753-9530, jeff.vanderpham@noaa.gov.

Sincerely,

for William W. Stelle, Jr.
Regional Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503

MAY 19 2016

In Reply Refer To:
01EWFW00-2016-I-0496

Rob Pedersen
U.S. Environmental Protection Agency
1200 Sixth Avenue
Suite 900
Seattle, Washington 98101-3140

Dear Mr. Pedersen:

Subject: Manchester Sewer Line and Pump Station Rehabilitation

This letter is in response to your February 18, 2016, request for our concurrence with your determination that the proposed action located in Manchester, Kitsap County, Washington, "may affect, but is not likely to adversely affect" federally listed species. We received your letter and Biological Assessment (BA), providing information in support of "may affect, not likely to adversely affect" determinations, on February 23, 2016. A copy of your transmittal document(s) describing the proposed action is enclosed.

Specifically, you requested informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(ESA) for the federally listed species and critical habitat identified below.

- Bull trout (*Salvelinus confluentus*)
- Marbled murrelet (*Brachyramphus marmoratus*)

The U.S. Environmental Protection Agency has determined that the action will have "no effect" on additional species and critical habitat that are known to occur in Kitsap County. These determinations rest with the federal action agency. The U.S. Fish and Wildlife Service (Service) has no regulatory or statutory authority for concurring with "no effect" determinations, and no consultation with the Service is required. We recommend that the federal action agency document their analyses and maintain that documentation as part of their project file.

We believe that sufficient information has been provided to determine the effects of the proposed action and to conclude whether it would adversely affect federally listed species and/or designated critical habitat. Our concurrence is based on information provided by the federal action agency, best available science, and complete and successful implementation of agreed-upon conservation measures.

EFFECTS TO BULL TROUT

Effects and Disturbance

Temporary and/or long-term effects from the action are not expected to measurably disrupt normal bull trout behaviors (i.e., the ability to successfully feed, move, and/or shelter), and are therefore considered insignificant and/or discountable:

- The action is located on the Kitsap Peninsula, where, at present, bull trout occurrence is rare or unlikely.
- The action is short in duration (approximately 60 working days) and will occur during a time of year (August 1 to August 31) when few, if any, bull trout are present in the project area.
- The action will occur during the recommended in-water work window (July 15 to February 15), when bull trout are least likely to be present in the project area.
- Work will occur in the dry or at low tide and minimal amounts of sediments will be discharged into waters that may be used by bull trout.
- The action will result in temporary impacts to water quality, including potential temporary increases in turbidity. These effects will be intermittent and limited in physical extent and duration.
- The action includes pile driving or activities that will result in elevated sound pressure levels. However, because of the location, duration, type of material, and construction methods that will be used, project-related effects are unlikely to result in injury or to disrupt normal bull trout behaviors.
- The action includes conservation measures to prevent entrainment or stranding of fish. We do not expect any capture or handling of bull trout.
- Long-term use and operations will not disrupt normal bull trout behaviors (i.e., the ability to successfully feed, migrate and/or shelter).

Effects to Bull Trout Habitat and Prey Sources

With successful implementation of the agreed-upon conservation measures, we expect that impacts from the action will not measurably degrade or diminish habitat functions or prey resources in the action area, and effects are therefore considered insignificant and/or discountable:

- Construction methods and proposed permanent features may impact habitat that supports bull trout and/or their prey sources. These impacts will be limited in physical extent and/or duration, and will not measurably degrade habitat functions, including prey resources, that are important to bull trout within the action area.
- The action will result in limited temporary and/or permanent impacts to native substrates, aquatic vegetation, the benthic invertebrate community, and nearshore marine (intertidal) habitat. However, the action includes conservation measures, and/or a restoration component, which at least partially offset the action's unavoidable impacts to bull trout habitat and/or prey resources.
- The action includes replacing or repairing bank armoring, which will maintain degraded conditions for bull trout prey resources. However, the action will result in a net gain of intertidal habitat and will not result in the loss of any forage fish spawning habitat (bull trout prey resources).
- The action may include placement of beach substrate. Whether the substrate will remain or provide any measurable beneficial function is uncertain.

EFFECTS TO MARBLED MURRELET

Effects - Terrestrial Environment

Temporary exposures and effects from the action are not expected to measurably disrupt normal marbled murrelet behaviors while in the terrestrial environment (i.e., the ability to successfully feed, move, and/or shelter) and are therefore considered insignificant and/or discountable:

- The project will not result in sound that will extend into nesting habitat or impact nesting marbled murrelets or their young. Thus, nesting marbled murrelets are extremely unlikely to be exposed to project stressors, including sound and visual disturbance.

Effects - Marine Environment

Temporary exposures and effects from the action are not expected to measurably disrupt normal marbled murrelet behaviors (i.e., the ability to successfully feed, move, and/or shelter) and are therefore considered insignificant and/or discountable:

- Work will occur in the dry or at low tide and minimal amounts of sediments will be discharged into waters that may be used by marbled murrelets.

- Marbled murrelets are not expected to be present in the action area during project construction.
- The action will result in temporary impacts to water quality, including potential temporary increases in turbidity. These effects would be intermittent and limited in physical extent and duration.
- The action includes pile driving or activities that will result in elevated sound pressure levels. However, because of the location, duration, type of material, and construction methods that will be used, project-related effects are unlikely to result in injury or disrupt normal marbled murrelet behaviors.
- Long-term use and operations will not disrupt normal marbled murrelet behaviors (i.e., the ability to successfully feed, migrate and/or shelter).

Effects to Marbled Murrelet Foraging Habitat and Prey Sources

With successful implementation of the agreed-upon conservation measures, we expect that impacts from the action will not measurably degrade or diminish habitat functions or prey resources in the action area, and effects are therefore considered insignificant and/or discountable:

- Construction methods and proposed permanent features may impact habitat that supports marbled murrelets and/or their prey sources. These impacts will be limited in physical extent and/or duration, and will not measurably degrade habitat functions, including prey resources, that are important to marbled murrelets within the action area.
- The action will result in limited temporary and/or permanent impacts to native substrates, aquatic vegetation, the benthic invertebrate community, and nearshore marine (intertidal) habitat. However, the action includes conservation measures, and/or a restoration component, which at least partially offset the action's unavoidable impacts to marbled murrrelet habitat and/or prey resources.
- The action includes replacing or repairing bank armoring, which will maintain degraded conditions for marbled murrelet prey resources. However, the action will result in a net gain of intertidal habitat and will not result in the loss of any forage fish spawning habitat (marbled murrelet prey resources).
- The action may include placement of beach substrate. Whether the substrate will remain or provide any measurable beneficial function is uncertain.

CONCLUSION

This concludes consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). Our review and concurrence with your effect determination is based on the implementation of the project as described. It is the responsibility of the federal action agency to ensure that projects that they authorize or carry out are in compliance with the regulatory permit and/or the

ESA, respectively. If a permittee or the federal action agency deviates from the measures outlined in a permit or project description, the federal action agency has the obligation to reinitiate consultation and comply with section 7(d).

This project should be re-analyzed and re-initiation may be necessary if 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation, 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or 3) a new species is listed or critical habitat is designated that may be affected by this project.

This letter and its enclosures constitute a complete response by the Service to your request for informal consultation. A complete record of this consultation is on file at the Washington Fish and Wildlife Office, in Lacey, Washington. If you have any questions about this letter or our joint responsibilities under the ESA, please contact the consulting biologist identified below.

U.S. Fish and Wildlife Service Consultation Biologist(s):
Ryan McReynolds (360-753-6047)

Sincerely,

Martha L. Jensen

for Eric V. Rickerson, State Supervisor
Washington Fish and Wildlife Office

Enclosure(s)

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Manchester beach lines and pump stations are located along the shoreline of Puget Sound in Section 22, Township 24 North, Range 02 East in Manchester, Kitsap County, Washington (Figure 1). Manchester is located adjacent to Puget Sound in hydrologic unit code 17110019 and water resource inventory area (WRIA) 15 (Kitsap).

2.2 PROJECT DESCRIPTION AND PROJECT ELEMENTS

Kitsap County (County) is proposing system rehabilitations to the existing sewer system located along the Puget Sound shoreline in the unincorporated village of Manchester. The proposed project consists of two main activities: beach lines rehabilitation and pump station rehabilitation (Appendix A). Both project components occur within areas of 100-year floodplain and intertidal habitat of Puget Sound. In addition, temporary crossing of Duncan Creek will be needed as part of the beach line rehabilitation within the intertidal habitat of Puget Sound.

2.2.1 BEACH LINES REHABILITATION

Approximately 3,330 ft of cured in-place pipe (CIPP) liner will be installed in the existing beach line from existing manholes, and side sewers will be reconnected. Nine (9) existing beach line manholes will be also repaired, which includes:

1. Manhole C11-2028 will be retrofitted with a bottom fiberglass liner.
2. Manholes C11-3015, C11-2028, and C11-2019 elevations will be raised using riser sections to provide ease of operation and maintenance and to conform to the other beach lines manholes.
3. All nine of the cast iron manhole frames and lids are experiencing high levels of rusting and failure due to salt water corrosion and will be replaced with watertight frames and lids, in addition to a new concrete flat top at each manhole.
4. All of the existing beach manholes will be coated with an interior coating system for corrosion protection.

The existing beach lines and associated manholes are located in an intertidal zone of Puget Sound. In addition, a temporary stream crossing over Duncan Creek, along a segment of this waterway intersecting the beach of Puget Sound, will be required for construction access to manholes at the southern end of the alignment. The temporary crossing of Duncan Creek may result in temporary impacts to the creek channel and bed, which will be restored as necessary following construction.

2.2.2 PUMP STATION REHABILITATION

Pump Stations 45, 46, and 47 (PS-45, PS-46, and PS-47) are located adjacent to the beach line described above:

- PS-45 is a beach line pump station located at the easternmost portion of East Daniels Loop. The pump station conveys sewage directly west approximately 250 lineal feet (LF) through a 4-inch-diameter force main and discharges into a gravity manhole in East Daniels Loop.
- PS-46 is a beach line pump station located at the end of East Caraway Road. The pump station pumps nearly vertical (approximately 20 ft) through a 4-inch-diameter force main and discharges to an adjacent beachfront manhole.
- PS-47 is a beach line pump station located at the end of East Hemlock Street. The pump station conveys sewage directly west approximately 210 LF through a 4-inch-diameter force main into a gravity manhole located at the intersection of Nubling Avenue East and East Hemlock Street.

All three pump stations are aging and in need of complete replacement. The goal at each pump station site is to locate the facilities further upland at a reasonable location to 1) create a safe working environment for operation and maintenance (O&M) staff, 2) minimize improvements necessary to elevate the facility above the 100-year flood plain, 3) maintain accessibility of the site for O&M staff and adjacent residences, and 4) improve habitat conditions within Puget Sound.

2.2.3 FLOODPLAIN/SHORELINE

All three pump stations are located within the 100-year floodplain of Puget Sound, and PS-45 and PS-46 currently jut out into the Puget Sound intertidal zone on raised areas protected by concrete and boulder riprap. As part of the project, the pump stations will be moved landward, and will be elevated above the 100-year flood elevation. Associated structures will be removed from the shoreline/intertidal zone. Three new manholes will likely be required on the beach to intercept the existing beach sewer pipeline and divert flow to the new pump stations. Work in floodplain and shoreline/intertidal areas include:

- Work will occur in intertidal zone, but will occur in the dry during low tides.
- The project will result in a net gain of approximately 30 cubic yards (yd^3) of floodplain volume. The gain in volume is largely due to relocation and removal of PS-45 and PS-46 from the Puget Sound shoreline.
- New rock revetments will extend approximately 35 linear ft and 50 linear ft along the shoreline in the area formerly occupied by PS-45 and PS-46, respectively. The revetments will protect residential area and roadways landward of the shoreline.
- A net gain of approximately 477 square feet (ft2) of intertidal habitat (i.e., beach) will be reclaimed following removal of PS-45 and PS-46, which currently jut out into the Puget Sound. Beach nourishment may be included as part of project restoration, as substrate conditions below the existing pump stations are unknown.

- Three wood pilings located in intertidal habitat in the vicinity of PS-45 will be removed as part of project construction. Select debris removal from in intertidal habitat in the project area may also occur to compensate for temporary impacts during construction.
- Areas of vegetation removal will occur landward of the shoreline as a result of construction of the relocated pump stations. Vegetation to be removed includes areas of residential landscaping encroaching on County rights-of-way, consisting of lawns and small trees/shrubs. The areas of vegetation to be removed are landward of shoreline armored with concrete and boulder riprap, concrete bulkheads, and soft shore armoring, such as logs.

Shoreline Permit

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Kitsap County Hearing Examiner

ADMINISTRATION BUILDING, 619 DIVISION ST, MS-36 PORT ORCHARD, WA 98366
http://www.kitsapgov.com/dcd/lu_env/he/ (360) 337-5777
cblackburn@co.kitsap.wa.us

NOTICE OF HEARING EXAMINER DECISION

May 3, 2016

To: Interested Parties and Parties of Record

RE:	Project Name:	Manchester Pump Stations #45, #46, and #47
	Applicant:	Kitsap County Public Works 614 Division Street MS-36 Port Orchard, WA 98366
	Application:	Shoreline Substantial Development Permit and Shoreline Conditional Use Permit
	Permit Number:	16 00278 and 16 00291

Enclosed is the Decision issued by the Kitsap County Hearing Examiner in the above-referenced matter.

The applicant is encouraged to review the Kitsap County Office of Hearing Examiner Rules of Procedure found at: http://www.kitsapgov.com/dcd/lu_env/he/HE%20Rules%20for%20Kitsap%20County%20-%206-23-09.pdf

The Decision of the Hearing Examiner is final, unless appealed, as provided under Washington law.

Please note affected property owners may request a change in valuation for property tax purposes, notwithstanding any program of revaluation. Please contact the Assessor's Office at 360-337-5777 to determine if a change in valuation is applicable due to the issued Decision.

The complete case file is available for review at the Department of Community Development, Monday through Thursday, 8:00 AM to 4:00 PM and Friday 9:00 AM to 1:00 PM, except holidays. If you wish to view the case file or have other questions, please contact Constance Blackburn at cblackburn@co.kitsap.wa.us or (360) 337-5777.

Cc Applicant and/or Rep:

Public Works: bzaroff@co.kitsap.wa.us
Landau Associates Inc.: squarterman@landauinc.com
BHC Consultants: adam.schuyler@bhcconsultants.com

Interested Parties:
Robert Lamb: rhlamb@wavecable.com
Paul Nuchims: pnuchims@aol.com
David Kimble: cndkimble@wavecable.com
Jerry Clark: cookie@wavecable.com
Jon & Melinda Daeley: 8222 E Caraway Rd Port Orchard, WA 98366

BEFORE THE HEARING EXAMINER
FOR KITSAP COUNTY

In the Matter of the Application of	)	Nos. 16-00278 & 16-00291
	)	
Kitsap County Wastewater Division	)	**Pump Stations 45, 46, and 47 Upgrades**
	)	
For Approval of a Shoreline Substantial	)	
Development Permit and Shoreline	)	FINDINGS, CONCLUSIONS,
Conditional Use Permit	)	AND DECISION

SUMMARY OF DECISION

The request for a Shoreline Substantial Development Permit and Shoreline Conditional Use Permit to replace and upgrade Pump Stations 45, 46, and 47, with associated beach line and manhole rehabilitation, is **APPROVED.** Conditions are necessary to mitigate specific impacts of the proposed development and to ensure compliance with existing County ordinances.

SUMMARY OF RECORD

Hearing Date:
The Hearing Examiner held an open record hearing on the request on April 14, 2016.

Testimony:
The following individuals presented testimony under oath at the open record hearing:

Steve Heacock, County Senior Environmental Planner
Barbara Zaroff, PE, Kitsap County Public Works, Applicant Representative
Jerry Clark

Exhibits:
The following exhibits were admitted into the record:

1. Project Application, received January 25, 2016
2. Submittal Checklist, received January 25, 2016
3. Submittal Waiver, received January 25, 2016
4. Joint Aquatic Resources Permit Application, dated January 11, 2016
5. Preliminary Project Plans (13 sheets), dated January 2016
6. Site Photographs, dated January 12, 2016

7. Technical Memorandum and Shoreline Master Program Compliance Evaluation, Landau Associates, Inc., dated January 11, 2016
8. SEPA Checklist, dated December 4, 2015
9. Geotechnical Report, dated July 28, 2015
10. Notice of Complete Application, dated January 25, 2016
11. Notice of Application, dated February 17, 2016
12. Comments from Candy Mursell, County Development Services and Engineering, dated February 22, 2016
13. Email from Paul Nuchims to Steve Heacock, dated February 25, 2016, with email string
14. Letter from Jerry Clark, dated March 1, 2016
15. Email from David Kimble to Steve Heacock, dated March 18, 2016, with email string
16. Mitigated Determination of Nonsignificance, dated March 17, 2016
17. Staff Report, dated April 6, 2016
18. Certification of Public Notice, dated April 6, 2016
19. Letter from Steve Heacock, dated April 6, 2016
20. Email from Barbara Zaroff to Steve Heacock, dated April 12, 2016
21. Staff PowerPoint presentation, dated April 14, 2016

The Hearing Examiner enters the following Findings and Conclusions based upon the testimony and exhibits admitted at the open record hearing:

FINDINGS

Application and Notice

1. Kitsap County Wastewater Division (KCWD) (Applicant) requests a Shoreline Substantial Development Permit (SSDP) and Shoreline Conditional Use Permit (SCUP) to replace and upgrade Pump Stations (PS) 45, 46, and 47 in the Manchester Village community. The project includes conveyance upgrades to redirect flows from the current pump stations, located in the intertidal zone, to new stations located upland within existing public rights-of-way. Approximately 3,330 feet of existing transport beach lines would be restored using cured in-place pipe (CIPP) liner. Nine existing beach-line manholes would be repaired and retrofitted as necessary. New rock revetments would extend approximately 35 linear feet and 50 linear feet along the shoreline in the area formerly occupied by PS 45 and 46, respectively, and would serve to protect residential areas, roadways, and new facilities landward of the shoreline.[1] The proposal would produce a net increase of approximately 477 square feet of intertidal habitat following the removal and relocation of PS 45 and 46, which currently jut into the Puget Sound.[2] *Exhibit 1; Exhibit 5; Exhibit 7; Exhibit 17, Staff Report, pages 1 and 2; Exhibit 21.*

[1] In response to a request from a neighbor living near PS 45, the Applicant may extend the shoreline armoring by an additional 10 feet if it is deemed necessary during construction. *Exhibit 20.*

[2] If the rock revetments near PS 45 are extended an additional 10 feet, the Applicant expects the net intertidal habitat gain would be approximately 447 square feet. *Exhibit 20.*

2. Kitsap County (County) determined the application was complete on January 25, 2016. The County mailed notice of the application to the Applicant, Applicant Representative, interested parties, and owners of property within 800 feet of the subject property on February 17, 2016. The County published notice in the County's publishing newspaper of record the same day. On March 31, 2016, the County published notice of the open record hearing associated with the application in the County's publishing newspaper and mailed notice to the Applicant, Applicant Representative, interested parties, and owners of property within 800 feet of the property. The next day, the County posted notice of the hearing at the site. *Exhibit 10; Exhibit 11; Exhibit 18; Exhibit 19.*

3. The County received three public comments from area residents in response to its notice materials. Dave Kimble initially expressed concern about the potential for extensive beach line excavation during the project. After connecting with Chris Waldbillig from Washington State Department of Fish and Wildlife (WDFW) and learning that the beach transport lines would be repaired with CIPP technology, as opposed to being excavated and replaced, Mr. Kimble wrote the County again, noting that his concerns about beach disruption were resolved. Jerry Clark expressed concern about design elements of the project, especially the manholes. Paul Nuchims requested additional information related to existing drainage facilities near his residence. After multiple interactions with Mr. Nuchims, including an office visit where the Applicant detailed the project design and plans, the Applicant determined that a retrofit of Mr. Nuchims private drainage facilities could not be incorporated into the scope of this public project. Chris May and Chuck Smiley of Clean Water Kitsap, however, both informed Mr. Nuchims they would continue to work with him outside the scope of this project to solve drainage problems on his property from seasonal flood events. *Exhibit 13; Exhibit 14; Exhibit 15; Exhibit 17, Staff Report, page 5.*

State Environmental Policy Act

4. The County acted as lead agency and analyzed the environmental impacts of the proposal, as required by the State Environmental Policy Act (SEPA), Chapter 43.21C Revised Code of Washington (RCW).[3] The County reviewed the Applicant's SEPA checklist and other available information on file, and determined that the proposal would not have a probable significant adverse impact on the environment. The County issued a Mitigated Determination of Nonsignificance (MDNS) on March 17, 2016. Mitigation measures require that the Applicant adhere to WDFW requirements to limit habitat impacts, as established through the Hydraulic Project Approval process; that shoreline construction activity be conducted so that private properties adjacent to project areas are not impacted; and that the Applicant enhance and restore portions of the project area as

[3] The County used the optional DNS process under Washington Adminsitrative Code (WAC) 197-11-355. *Exhibit 16.*

outlined in the Technical Memorandum prepared by Landau Associates, Inc. (discussed more fully below). The SEPA appeal period ended on March 31, 2016, and no appeals were filed. *Exhibit 7; Exhibit 8; Exhibit 16; Exhibit 17, Staff Report, page 3.*

Comprehensive Plan, Zoning and Surrounding Property

5. The areas affected by the project are in the Manchester Limited Area of More Intensive Rural Development (Manchester LAMIRD) under the County Comprehensive Plan.[4] County staff has specifically identified the following Comprehensive Plan policies as relevant to this application: Policy SH-1 (supporting shoreline diversity through planned and coordinated development); Policy SH-3 (uses and activities along shorelines should not have a significant adverse affect on water quality); Policy SH-8 (land use activities shall be sited and designed to minimize impacts on the shoreline environment); and Policy UT-2 (encourage the designation and development of utility corridors and facilities in a manner consistent with the needs and resources of Kitsap County). *Exhibit 17, Staff Report, page 4.*

6. Work on PS 45 and PS 47 would occur in areas zoned Manchester Village Residential. The area associated with work performed on PS 46 is zoned Manchester Village Low Residential. Surrounding areas are similarly zoned. *Exhibit 17, Staff Report, page 3.*

7. The shoreline area spanned by the approximately 3,300 linear feet of transport pipeline that would be restored is densely developed with residences and a public boat launch. Duncan Creek, a fish-bearing stream, discharges into Puget Sound within the project area. The intertidal zone associated with the project area is not vegetated and consists of a gravel substrate with sand, cobbles, and boulders. The shoreline is armored with concrete and boulder riprap, concrete bulkheads, and some soft shore armoring, such as logs. A U.S. Navy marine fueling facility is located north of the project area. *Exhibit 7.*

Shoreline Management Act

8. The primary goal of the State Shoreline Management Act (SMA) is to protect the public interest in the state's shorelines through a coordinated development process. The SMA contemplates protecting against adverse effects to public health, the land, vegetation, wildlife, and waters, and preserving the public's opportunity to enjoy the physical and aesthetic qualities of the natural shoreline to the greatest extent feasible. Permitted uses in the shorelines must be designed and conducted in a manner that minimizes damage to

[4] The new pump stations would be located at the end of existing rights-of-way adjacent to residential properties within the Manchester community. PS 45 would be located on East Daniels street, adjacent to tax parcel 4522-003-001-0004. PS 46 would be located on East Caraway Street, adjacent to tax parcel 222402-2-045-2003. PS 47 would be located on East Hemlock Street, adjacent to tax parcel 4524-005-008-0000. A legal description of the areas affected by the proposal is included with the staff report. *Exhibit 7; Exhibit 17, Staff Report, page 2.*

the ecology and environment of the shoreline area and minimizes any interference with the public's use of the water. *RCW 90.58.020*.

9. The purpose of the County Shoreline Master Program (SMP) is to guide the future development of the shorelines in Kitsap County in a manner consistent with the Shoreline Management Act. *KCC 22.100.110*. The SMP establishes six shoreline environment designations, policies applicable to each designation, and policies applicable to all shoreline environments. *KCC 22.200.105.* Policies applicable to all shoreline environments encourage uses consistent with the character of the specific shoreline environment. *Exhibit 7; Exhibit 17, Staff Report, page 3.*

10. The County SMP provides that no substantial development will be undertaken on shorelines of the state without first obtaining a shoreline substantial development permit (SSDP). *KCC 22.500.100.B*. The SMA defines *substantial development* as any development that materially interferes with the normal public use of the water or shorelines of the state. *RCW 90.58.030(3)(e)*. Because work on this project would cause some interference with public use of the shoreline, an SSDP is required. Regulations implementing the SMA construe exemptions from the shoreline substantial development permit process narrowly. *Washington Administrative Code (WAC) 173-27-040(1)(a)*. If any part of a proposed development is not eligible for exemption from the shoreline substantial development permit process, then an SSDP is required for the entire proposed development project. *WAC 173-27-040(1)(d)*.

11. The proposed project would be located within the Urban Conservancy and Shoreline Residential environments. The purpose of the Urban Conservancy environment is to "protect and restore ecological functions of open space, floodplain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses." *KCC 22.200.120.A.* The purpose of the Shoreline Residential environment is to "accommodate residential development and appurtenant structures that are consistent with [the SMP] and to provide appropriate public access and recreational uses." *KCC 22.200.115.A. Exhibit 17, Staff Report, page 3.*

<u>Shoreline Substantial Development Permit</u>

12. A Utility Development occurs for services that carry electric power, gas, sewage, water, communications, or oil, including drainage conveyances and swales. *KCC 22.150.630.* Utilities are a permitted use in both the Urban Conservancy and Shoreline Residential environments with an SSDP, subject to the provisions of KCC 22.600.185, discussed more fully below. *KCC 22.600.105; KCC 22.600.185.A.2.* This proposal involves retrofitting and upgrading existing utilities within the shoreline (the beach transport lines and manholes) and replacing and upgrading the associated pump stations. *Exhibit 1; Exhibit 4; Exhibit 5; Exhibit 7; Exhibit 17, Staff Report, page 1; Exhibit 21.*

13. The SMA policies for Utility Developments within the shoreline include: locating utilities where they will have the least possible adverse effect on shoreline ecological functions and existing or planned water-dependent uses (Policy SH-41); locating essential facilities in areas that do not require shoreline stabilization, such as within existing rights-of-way or outside the shoreline jurisdiction when possible (Policy SH-43); locating utilities in a manner that does not impede public access to the shoreline (Policy SH-44); and maintaining existing utility facilities such that a net loss of shoreline ecological functions is avoided and unavoidable impacts are mitigated (Policy SH-46). *KCC 22.300.140.*

The County analyzed the proposal for consistency with KCC 22.300.140 and determined that the project would satisfy the policy requirements of the SMA. Specifically, the County determined that the proposal would not impact any existing or planned water-dependent uses, would generally be located in existing rights-of-way and utility corridors, would not significantly modify public access to the shoreline, and would cause a net gain in shoreline ecological function with the removal of PS 45 and 46 from the shoreline area, and determined that all unavoidable impacts would be mitigated through beach nourishment and restoration. *Exhibit 17, Staff Report, pages 5 and 6.*

14. KCC 22.600.185.B dictates that all proposals for utility facilities subject to the SMA must include, at a minimum, the following: an explanation of why the facility must be located in the shoreline jurisdiction; the reason for rejecting alternative locations; the location of other facilities near the proposed project; the proposed method of construction and plans to control erosion and turbidity during construction; plans for restoration of areas disturbed during construction; whether proposed facilities could be sited within existing utility rights-of-way; and a geotechnical report when a project is proposed within a geologically hazardous area. The Applicant provided a detailed Technical Memorandum, prepared by Landau Associates, addressing each of these requirements. *Exhibit 7.*

15. The Technical Memorandum determined that:
    - The proposed project involves rehabilitation of existing facilities. The existing pump stations would be relocated, but are required to be within the shoreline jurisdiction due to the proximity of the existing sewer line along the beach.
    - Alternative locations for beach line rehabilitation are not feasible and CIPP rehabilitation is the least intrusive method. Alternatives for siting the pump stations were limited to existing rights-of-way within relatively close proximity to the existing beach sewer line.
    - A U.S. Navy marine fueling facility is located north of the project area. The existing Manchester Wastewater Treatment Plant is located near the proposed project but outside the shoreline jurisdiction. The proposal would not include any additional facilities.

- CIPP liner is a rehabilitative measure that provides a new interior surface to an existing pipe while minimizing impacts. Access to the beach line manholes would only be available during low tides, unless water was effectively kept out of manholes during higher tides by means of a cofferdam or structure above the tide level. CIPP liner installation typically involves multiple large, heavy trucks and a scaffolding tower, although portable CIPP equipment may also be used. To access the sewer line, a temporary crossing of the Duncan Creek channel below the Puget Sound ordinary high water mark at low tide would be required, which could result in temporary impacts to the creek channel and bed. The channel, however, would be restored to existing conditions as necessary following construction.
- Temporary bypass systems would be installed during both beach line CIPP repair and pump station construction.
- The finished floor elevation of the proposed pump station structure at each project site would be located above the 100-year flood level. The elevated structures would allow pump station equipment to remain in operation and be accessible to operation and maintenance staff during high Puget Sound flood events. The elevated structures would be equipped with guard railing around perimeters for staff safety and pump station security. All elevate concrete structures would include textured concrete on the outside walls for improved visual appearance.
- The proposed location for the electrical equipment serving PS 45 would be upland approximately 50 feet from the elevated structure, next to a tall row of arborvitae. A cedar fence or similar screening structure would be placed south of the pump station to provide additional screening if requested by adjacent property owners.
- The proposed location for the electrical equipment for PS 46 would be upland approximately 60 feet from the elevated structure, near existing pump station electrical equipment.
- The electrical equipment for PS 47 would be housed on the elevated structure. To screen the facility, natural looking shrubbery on the south and west sides of the structures would be planted, and the Applicant would coordinate with adjacent property owners prior to finalizing the design of the screening materials.
- It is anticipated that temporary excavation for the new valve vault and wet well, beach manhole, and gravity pipeline connecting the counterparts of the proposal would be completed as a single, shored excavation.
- The wet well and valve vault proposed for each pump station would be precast concrete structures with design features that would counteract buoyancy uplift forces.
- Given the location of the existing pump station influent manhole and the proposed location of the new wet well at each project site, a new influent manhole located in the beach would be required to intercept the existing beach sewer pipeline and divert flow through a new 8-inch diameter sewer pipeline to each new pump

station. The existing stations would remain in service during construction of the beach manholes.

- Each existing pump station pumps through a 4-inch diameter force main that free discharges into an existing manhole within close proximity to the project sites. The force mains for PS 45 and PS 46 would be replaced.
- The existing pump stations would be partially or fully demolished after the new pump stations are placed in operation. The existing pump station facilities and cemented rock jetties projecting into Puget Sound at PS 45 and 46 would be removed. Existing deep pump station structures, however, would be removed to 3 feet below grade, filled with sand, and abandoned in place. The existing PS 47 facility would be removed and existing deep pump station structures would be removed to 3 feet below grade, filled with sand, and abandoned in place.
- Work would occur in the intertidal zone, but only during low tides. A temporary erosion and sediment control (TESC) plan would be implemented prior to construction activity.
- A net increase of approximately 477 square feet of intertidal habitat would be reclaimed following the removal of PS 45 and PS 46.
- Two small areas of the pump station rehabilitations would require new permanent sewer easements, which would be obtained prior to construction.
- The Applicant prepared a geotechnical report for the proposal.
- The proposal provides mitigation in excess of that required by the County SMA and achieves no net loss of ecological function in both the shoreline and areas waterward of the buffer.

Exhibit 7.

16. County Senior Environmental Planner Steve Heacock testified that County staff reviewed the Technical Memorandum and concurred with its assessment that the proposal would satisfy the requirements of KCC 22.600.185.B. *Testimony of Mr. Heacock.*

Shoreline Conditional Use Permit

17. Hard shoreline stabilization, like the proposed rock revetments, requires a Shoreline Conditional Use Permit (SCUP).[5] KCC 22.600.175(C) dictates that applications for hard shoreline stabilization must include information on: upland, on-site improvements and any existing shoreline structures; a description of the proposed shore protection and any alternative to hard approaches where proposed, including a discussion of the environmental impacts of each approach alternative; a habitat survey prepared by a qualified professional biologist; a description of any proposed vegetation removal and plans to revegetate following construction; tidal elevations and field verified lines of the ordinary high water mark; established ownership of the tidelands, shorelands, and/or

[5] Conditional use permits for hard shoreline stabilization projects are normaly processed administratively. *KCC 22.600.175.A.2.* KCC 22.500.100.A.3 and KCC 22.500.100.D.2, however, provide for consolidated permit review.

bedlands; the prupose of the shore protection; the direction of net longshore drift for the marine shoreline; the plan and profile of the existing bank and beach; the profile of adjacent existing bulkheads; the need to prevent potential damage to primary structures through use of shoreline stabilization measures; the urgency associated with the need for stabilization; and any other information demonstrating compliance with the SMA and the guiding provisions of WAC 173-26-231(3)(a). The Applicant provided a detailed Technical Memorandum, prepared by Landau Associates, addressing each of these requirements. *Exhibit 7.*

18. The Technical Memorandum specifically noted that:
    - The area of the existing PS 45 and PS 46 would be regraded and restored to match adjacent intertidal habitat.
    - Anchoring large wood is not a feasible shoreline stabilization strategy for the project. With existing conditions and the project objectives, rock revetments are the most feasible shoreline strategy.
    - Data from WDFW identifies the project area as estuarine intertidal aquatic habitat and identifies surf smelt breeding habitat within the project area. Intertidal habitat would be reclaimed following removal of PS 45 and 46, resulting in a net increase of approximately 477 square feet of intertidal habitat for surf smelt spawning.
    - The purpose of the proposed shoreline protection is to maintain upland infrastructure, which includes the proposed pump stations and existing roadways within the County rights-of-way that provide access to adjacent residences.
    - High wave energy from the Puget Sound occasionally impacts the project shoreline. Shore protection associated with the relocated pump stations 45 and 46 would account for wave heights in the offshore area and diminished wave height at the shore. The shore protection features are designed to survive a 100-year return period or a 2 percent annual chance wave event, and are located at tidal elevation. The revetments would include a scour apron to minimize loss of backfill due to overtopping.

    Exhibit 7.

19. Mr. Heacock testified that County staff reviewed the Technical Memorandum and concurred with its assessment that the proposal would satisfy the requirements of KCC 22.600.185.B. *Testimony of Mr. Heacock.*

Additional Regulations

20. Chapter 22.400 KCC provides additional, general regulations applicable to projects occurring within the shoreline jurisdiction. These regulations relate generally to: water quality and quantity (KCC 22.400.125); historic, archeological, cultural, scientific, and educational resources (KCC 22.400.130); view blockage (KCC 22.400.135); bulk and dimension standards (KCC 22.400.140); public access KCC 22.400.145); flood hazard reduction (KCC 22.400.150); and no net loss analysis (KCC 22.400.110, -.115, and -

.200). The Applicant provided a detailed Technical Memorandum, prepared by Landau Associates, addressing each of these requirements. *Exhibit 7.*

21. The Technical Memorandum specifically notes:
    - The project does not require stormwater mitigation through a Site Development Activity Permit because the Planning Director determined the project is strictly a utility project, with work being performed primarily within existing rights-of-way, and does not involve true above ground structures, such as a building.
    - Historic and cultural resources review is being coordinated with the Department of Ecology. Consultation with Ecology would be completed to fulfill requirements of Section 106 of the National Historic Preservation Act.
    - The new facilities are not anticipated to result in view blockage to adjacent principal buildings. Similarly, raising the elevation of manholes would not result in view blockage to adjacent buildings.
    - The height of structures associated with the project are below the 35-foot maximum allowed in KCC 22.400.140.A.
    - The pump stations would be at the end of existing road rights-of-way perpendicular to the shoreline and would maintain or improve shoreline access.
    - All three pump stations are currently located within the 100-year floodplain of Puget Sound. The new pump stations would be moved landward, elevated above the 100-year flood elevation.
    - Impacts within the shoreline jurisdiction would include: a net gain of approximately 30 cubic yards of floodplain volume, primarily from removal of PS 45 and 46; protection to residential areas and roadways landward of the shoreline provided by the new rock revetments; a net increase of approximately 477 square feet of intertidal habitat; a temporary stream crossing over Duncan Creek would be required for construction access to two manholes and may result in temporary impacts to the creek channel and bed; some vegetation removal would occur landward of the shoreline as a result of construction of the relocated pump stations; mitigation sequencing would be used, as required by KCC 22.400.110.A, to minimize construction impacts; the proposed revegetation plan would include replanting native vegetation within the shoreline buffer beyond mitigation requirements; and the mitigation sequence would achieve no net loss of ecological function from the development and no net loss of shoreline ecological function.

    Exhibit 7.

22. County staff reviewed the Technical Memorandum's assessment of the general regulations and concurred with its assessment that the proposal would satisfy the additional requirements of Chapter 22.400 KCC. *Exhibit 17, Staff Report, page 6.*

Testimony

23. Area resident Jerry Clark, who submitted a letter in response to the County's notice materials (see Finding 3), testified at the open record hearing. Mr. Clark reiterated the concerns expressed in his letter, specifically noting that the manhole structures would be in place for many years and, because of this, aesthetic concerns should be addressed. In response to Mr. Clark's testimony, Applicant Representative Barbara Zaroff noted that the Applicant met with residents on three separate occasions to address design concerns.[6] She noted that the Applicant is concerned about mitigation costs because all such costs would be borne by ratepayers but that, as appropriate, aesthetic concerns are being addressed. *Testimony of Mr. Clark; Testimony of Ms. Zaroff.*

24. Mr. Heacock testified generally about the project. He specifically noted that the SCUP related only to the rock revetments and that any impacts from the armoring would be offset. He testified that, under the County's recently updated SMA, "no net loss" of ecological function is the highest priority. Mr. Heacock noted that an eelgrass study was not required for this application because it has been well documented that there are no eelgrass beds in the area. He stated that he was unsure of the status of the Applicant's Hydraulic Project Approval (HPA) but that the proposal would have to comply with any permit conditions of the HPA required by WDFW. He testified that the Navy was notified of the proposal and had no comments, and that an Army Corps permit would be required for work performed below mean high tide. Mr. Heacock also briefly touched on the public concerns expressed in response to the County's notice materials. He noted that Mr. Nuchims concerns related to a private stormwater facility could not be properly combined with a project upgrading the public sewer system. In relation to Mr. Clark's concerns, Mr. Heacock testified that there is no requirement in the SMP for addressing aesthetic concerns but that mitigation components of the proposal would address landscaping. He also noted that the manholes need to be elevated to provide safe access for maintenance. *Testimony of Mr. Heacock.*

Staff Recommendation

25. Mr. Heacock testified that the County recommends approval of the proposal, with conditions. The conditions generally include complying with all requirements of the HPA, ensuring that construction activities do not impact private property adjacent to the project sites, that all recommendations of the geotechnical report are followed, that mitigation conforms to the recommendations in the Technical Memorandum, and that the project commences and is completed within a specific timeframe. Ms. Zaroff did not indicate that the Applicant had any issues with the County's conditions. *Exhibit 17, Staff Report, page 10; Testimony of Mr. Heacock; Testimony of Ms. Zaroff.*

[6] Ms. Zaroff specifically referred to Sheets 26, 33, 34, and 35 of the plans submitted with the Applicant's JARPA (Exhibit 4) to illustrate how aesthetic concerns and visual buffering would be used to screen the pump stations and associated facilities. She stressed that plans for visual buffering would be implemented. *Testimony of Ms. Zaroff.*

CONCLUSIONS

Jurisdiction

The Hearing Examiner has jurisdiction to hear and decide Shoreline Substantial Development Permit and Shoreline Conditional Use Permit applications as a Type III permit decision. *Kitsap County Code (KCC) Table 21.04.100; KCC 22.500.100; KCC 22.500.105*.

Criteria for Review

Shoreline Substantial Development Permit

The SMA provides that no substantial development shall be undertaken on the shoreline of the state without first obtaining an SSDP. *KCC 22.500.100.B.* Regardless of whether a development constitutes a substantial development, a development must comply with the requirements contained in the SMA and the County SMP, and other permits or approvals under the County SMP may be required. Permits may be issued with conditions or limitations that ensure consistency with the SMA and SMP. *KCC 21.04.080.H; KCC 22.500.100.B.4.*

The Applicant has the burden of proof to establish that the development is consistent with the SMA, the SMP, and any other applicable County policies and regulations. *KCC 22.500.100.B.3.* Upon consideration of the evidence offered at the public hearing, the Hearing Examiner will issue a decision containing findings of fact and conclusions describing the manner in which the decision is consistent with the SMA and SMP. *KCC 22.500.105.E.1.*

Shoreline Conditional Use Permit

The criteria for a Shoreline Conditional Use Permit provide are provide:

a. That the proposed use is consistent with the policies of RCW 90.58.020 and this program;
b. That the proposed use will not interfere with the normal public use of public shorelines and does not conflict with existing water-dependent uses;
c. That the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and this program;
d. That the proposed use will not result in significant adverse effects or a net loss to the shoreline ecosystem functions in which it is to be located;
e. That the public interest suffers no substantial detrimental effect;
f. That consideration has been given to the cumulative impact of additional requests for like actions in the area and shall not result in substantial adverse effects or net loss of shoreline ecosystem functions…
g. Other uses which are not classified or set forth in this program may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this section and the requirements for conditional uses contained in the master program;

h. Uses which are specifically prohibited by this master program may not be authorized pursuant to this section.

KCC 22.500.100.D.3

Shoreline Management Act, Chapter 90.58 RCW

The SMA is codified at RCW 90.58.020. Applicable policies of RCW 90.58.020 include those to foster "all reasonable and appropriate uses"; protect against adverse effects to the public health, the land, vegetation, and wildlife; and give priority to single-family residences and appurtenant structures in authorizing alternations to the natural condition of the shoreline. Permitted shoreline uses must be designed to "minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water." *RCW 90.58.020.*

Shoreline Management Act Regulations

The Department of Ecology shoreline regulations are located in Chapters 173-26 and 173-27 of the Washington Administrative Code (WAC). Chapter 173-26 WAC sets forth procedures and guidelines for local adoption of shoreline master programs that are not applicable to the Applicant's permit request. Chapter 173-27 WAC sets forth permitting procedures and permit criteria. The Hearing Examiner reviews the application under the following criteria:

(1) A substantial development permit shall be granted only when the development proposed is consistent with:
   (a) The policies and procedures of the act;
   (b) The provisions of this regulation; and
   (c) The applicable master program adopted or approved for the area. Provided, that where no master program has been approved for an area, the development shall be reviewed for consistency with the provisions of chapter 173-26 WAC, and to the extent feasible, any draft or approved master program which can be reasonably ascertained as representing the policy of the local government.

(2) Local government may attach conditions to the approval of permits as necessary to assure consistency of the project with the act and the local master program.

WAC 173-27-150.

Thus, the Hearing Examiner must review the relevant Kitsap County SMP goals and policies.

The criteria for review adopted by the Kitsap County Board of Commissioners are designed to implement the requirement of Chapter 36.70B RCW to enact the Growth Management Act. In particular, RCW 36.70B.040 mandates that local jurisdictions review proposed development to ensure consistency with County development regulations, considering the type of land use, the level of development, infrastructure, and the characteristics of development. *RCW 36.70B.040*.

Conclusions Based on Findings

1. **With conditions, the proposed project would be consistent with the Kitsap County Shoreline Management Master Program (SMP) and other applicable County policies and regulations.** Utility developments are permitted in the Urban Conservancy and Residential Shoreline environments with an SSDP. The County analyzed the environmental impacts of the proposed development and determined that, with mitigation conditions, the proposal would not have a probable significant adverse impact environment. The County's determination was not appealed. The County provided reasonable notice and opportunity to comment on the application. The proposed project would be consistent with the County Comprehensive Plan designations, the area zoning classifications, and the SMP shoreline designations. The project would involve decommissioning and burying two pump stations (PS 45 and 46) that currently jut into the Puget Sound and replacing them with stations upland in existing rights-of-way, and moving a third station (PS 47) further upland, as well. In addition, the project would restore approximately 3,300 linear feet of existing transport beach lines and repair and retrofit existing beach-line manholes to ensure public safety.

   The project would produce a net increase of approximately 477 square feet of intertidal habitat and would produce no net loss of ecological function to the shoreline or its buffers. The proposal would comply with all requirements for siting/repairing utilities within the shoreline, as required by KCC 22.600.185.B, and with general regulations for all shoreline projects, as delineated in Chapter 22.400 KCC. The expected short-term shoreline impacts of the proposed project would be minimal compared to the long-term benefits of decommissioning outdated pump stations and ensuring the viability of existing beach transport lines and manholes.

   Conditions are necessary to ensure that the Applicant follows all requirements of the HPA, does not impact private property adjacent to the project sites during construction, follows all recommendations of the geotechnical report and Technical Memorandum, and commences and completes the proposal within the timeframe allowed by the County code. *Findings 1 – 16, 20 – 25.*

2. **With conditions, the proposed project would be consistent with state Shoreline Management Act policies, guidelines, and rules.** The SSDP request is evaluated individually for compliance with the County SMP, based on facts in the record consistent with SMA regulations. The proposed development would have minimal shoreline impacts and, ultimately, would provide a net gain of intertidal habitat and produce no net loss of ecological function to the shoreline or its buffers. Conditions are necessary to ensure that the Applicant follows all requirements of the HPA, does not impact private property adjacent to the project sites during construction, follows all recommendations of

the geotechnical report and Technical Memorandum, and commences and completes the proposal within the timeframe allowed by the County code. *Findings 1 – 25*.

3. **With conditions the proposed project would be consistent with the specific Shoreline Conditional Use Permit criteria of KCC 22.500.100.D.3.** The area of the existing PS 45 and 46 stations would be regraded and restored to match adjacent intertidal habitat. Anchoring large wood is not a feasible shoreline stabilization strategy for the project: rock revetments are the most feasible shoreline stabilization strategy. The revetments would maintain upland infrastructure, including the proposed pump stations and existing roadways within the County rights-of-way that provide access to adjacent residences. The shore protection features are designed to survive a 100-year return period or a 2 percent annual chance wave event, and would be located at tidal elevation.

   Conditions are necessary to ensure that the Applicant follows all requirements of the HPA, does not impact private property adjacent to the project sites during construction, follows all recommendations of the geotechnical report and Technical Memorandum, and commences and completes the proposal within the timeframe allowed by the County code. *Findings 1 – 25.*

DECISION

Based on the preceding Findings and Conclusions, the request for a Shoreline Substantial Development Permit and Shoreline Conditional Use Permit to upgrade and replace wastewater Pump Stations 45, 46, and 47, with associated beach line and manhole rehabilitation, is **APPROVED.** Conditions are necessary to mitigate specific impacts of the proposed development and to ensure compliance with existing County ordinances:[7]

1. If any work is to be done below the ordinary high water mark, a Hydraulic Project Approval permit is required from the Washington Department of Fish and Wildlife.

2. Project work shall be subject to the conditions of the Washington Department of Fish and Wildlife Hydraulics Project Approval (HPA).

3. Shoreline construction activities shall be conducted in a manner such that private properties adjacent to the project area are not impacted.

4. All recommendations of the July 28, 2015 Geotechnical Report by Landau Associates, prepared for Kitsap County Department of Public Works Wastewater Division must be followed.

[7] This decision includes conditions required to reduce project impacts as well as conditions required to meet County Code standards.

5. Upon final permit issuance, all construction for the project must commence within two years and be complete within five years. A one time one-year extension is available but only if requested on or before ninety days of original permit expiration. No exceptions are allowed unless provided for by law.

6. This project is located within a Critical Drainage area as defined in Title 12.28.020 of the Kitsap County Code. As the project will be located in its entirety with County right-of-way and secured easements, a Site Development Activity Permit (SDAP) will not be required.

7. Mitigation shall conform to the Technical Memorandum SMP Compliance Evaluation and Mitigation Plan, prepared by Landau and Associates, and dated January 11, 2016, shall guide all construction activities.

DECIDED this 28th day of April 2016.

THEODORE PAUL HUNTER
Hearing Examiner
Sound Law Center

Building Permits

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DEV. COPY

Kitsap County
614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01840
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 45
SITE ADDRESS: 8139 E DANIELS LOOP

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

PARCEL: 4522-003-001-0004
Zone: MVR

Setbacks: **Front:** 20'
Rear: 5'
Side: 5'

APPLICANT: KITSAP COUNTY PUBLIC WORKS
614 DIVISION ST MS26A
PORT ORCHARD, WA 98366
1-360-337-5777

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

VALUATIONS:

U Utility, miscellaneous accessory structure, type V-B	371.00	$16,557.73
Mech/Plumb - cost of fixtures + installation for the project	185000.00	$185,000.00
	Total:	**$201,557.73**

FEES:

	Paid	Due
Building Permit Fee, Commercial (all except TI)	$165.58	$0.00
Road Impact Fee With CPI Modifier		$0.00
State Surcharge DCD	$4.50	$0.00
Commercial Mechanical and Plumbing Fee	$3,219.00	$0.00
Permit Center Base Fee	$90.00	$0.00
Technology Fee	$20.16	$0.00
	Total Due:	**$0.00**

FIXTURES

Qty	Mechanical Fixtures
1	C-Gaspipe System LPG/NATL/OIL (first 4 outlets)
2	C- Mechanical System Pumps (Misc.)

Qty	Plumbing Fixtures
1	C-Backflow protective device 2 inches or less
1	C-Commercial Hose Bibbs, each
2	C-Miscellaneous Plumbing fixtures on one trap

REQUIRED INSPECTIONS

Printed: 09-20-2016 11:18:19

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Temporary Silt & Erosion Control Inspection	Final Field Inspection
Foundation, Footing Inspection	Special Inspection required, to be conducted by 3rd Party
Foundation, Stem Wall Inspection	Final Building Inspection
Framing Inspection	Landscape Inspection

CONDITIONS

Permit Expiration: Building permits expire 365 days after permit issuance, or 180 days after the last approved inspection activity is performed. The Building Official may extend the time for action for a period not exceeding 180 days, upon the receipt of a written extension request indicating that circumstances beyond the control of the permit holder have prevented action from being taken. Additional fees may be due to reactivate the permit. _____

ELECTRICAL WORK. If electrical work is proposed, a separate electrical permit is required. You can contact L&I at 360-415-4000 to obtain an electrical permit. Electrical systems must be inspected by L&I prior to requesting a framing inspection and final approval granted prior to requesting a final building inspection from the Department of Community Development. _____

Reinspection Fee: All approved construction plans, the approved site plan, the printed building permit, and the permit inspection placard are required to be on-site for inspection purposes, and work to be inspected shall be complete and ready for inspection. If an inspection is called for and plans are not available on site, or the work is not ready for inspection, or if previously identified corrections have not been made, approval will not be granted. In addition, a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Final Inspection Required: All building permits shall have a final inspection performed and approved by the Kitsap County Department of Community Development prior to permit expiration. The failure to request a final inspection or failure to obtain final approval prior to expiration will be documented in the legal property records on file with Kitsap County as being non-compliant with Kitsap County ordinances and building regulations and will be referred to Kitsap County Code Compliance for action. _____

A separate permit is required for each proposed sign. _____

Certificate of Occupancy. All buildings require a certificate of occupancy. No building or structure shall be used or occupied, until a final inspection has been approved and a certificate of occupancy issued. Issuance of a certificate of occupancy shall not be construed as an approval of any violation of the provisions of this code or of other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. _____

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Commercial Address: Numerals for commercial buildings shall be conspicuously displayed on a contrasting background and shall be a minimum of 12 inches in height with a minimum stroke of 1-1/2 inches when within 50 feet of the way of travel. Buildings located between 50 and 100 feet from the way of travel shall have numerals a minimum height of 18 inches with a minimum stroke of 2 inches. Buildings located more than 100 feet from the way of travel shall have numerals a minimum of 24 inches in height with a minimum stroke of 2-1/2 inches. Numerals designating suite numbers shall be a minimum of 4 inches in height. All sizes may be reduced by 50 percent if numerals are illuminated 24 hours per day. If the building is not clearly visible from a named way of travel, the numerical designation (address) shall also be displayed near the main entrance to the property as well as at the driveway entrance that leads to the building. Property addresses shall be posted prior to requesting any inspections. If property addresses are not posted upon inspection, inspection will not be approved and a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Prior to final building inspection scheduling, all work associated with SDAP (XX XXXXX) shall be completed and a satisfactory final SDAP inspection obtained. _____

This permit shall comply with all Kitsap Public Health District regulations and conditions of approval. _____

The uses of the subject property are limited to the uses proposed by the applicant and any other uses will be subject to further review pursuant to the requirements of the Kitsap County Code (KCC). Unless in conflict with the conditions stated and/or any regulations, all terms and specifications of the application shall be binding conditions of approval. Approval of this project shall not, and is not, to be construed as approval for more extensive or other utilization of the subject property. _____

Landscaping shall be installed and maintained in conformance with the requirements of Kitsap County Code (KCC) 17.385. Landscaping shall be installed and inspected prior to requesting a final inspection, or guaranteed by means of an assignment of funds or bonded in the amount of 150 percent of the cost of installation. _____

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of Laws and Ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state/local law regulating construction or the performance of construction.

_____
Print Name

_____ _____
Signature Date

Let us know how we are doing by taking the short customer survey at www.surveymonkey.com/s/DCDCustomerSurvey

KITSAP COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING INSPECTION CARD

Please Note: Only approved inspections extend permit expiration date

PERMIT NUMBER:
16 01840

This Placard must be posted on or near building and the "Approved" plans must be available at the site.

Permit Type:
Commercial Public Works & Utilities

Site Address:
8139 E DANIELS LOOP

Owner:

Applicant:
KITSAP COUNTY PUBLIC WORKS

Code Edition:
IBC 2012

Additional Notes:
Inspection Results Legend:
AP = Approved
DA = Disapproved
DP = Disapproved with Penalty

All conditions of approval must be met prior to final occupancy. See printed permit for a list of all conditions associated with your permit.

A reinspection fee will apply if the project is not ready for the requested inspection, or corrections have not been completed.

No concrete shall be poured or reinforcement shell covered without inspection and approval.

Required Inspections Kitsap County Inspection Line (360) 337-5777 Online at: www.kitsapgov.com/dcd	**Approved By:**	**DATE**
Temporary Silt & Erosion Control Inspection		
Foundation, Footing Inspection		
Foundation, Stem Wall Inspection		
Framing Inspection		
Final Field Inspection		
Special Inspection required, to be conducted by 3rd Party		
Landscape Inspection		

Prior to calling for your final inspection:

Health Approval
If applicable, this permit shall comply with all Kitsap Public Health District regulations and conditions of approval and shall have final Health Approval prior to calling for a final inspection.

L&I Electrical Approval
If electrical work is proposed, a separate electrical permit is required and must be inspected by and approved by L&I prior to requesting a final building inspection. You can contact L&I at 360-415-4000.

Final Building Inspection		

Finals require a 2 business day advance notice and must be requested by 3:00pm. No use or occupancy is permitted prior to final inspection and approval for occupancy.

BROCHURE # 7

YOUR PERMIT IS ISSUED

Now that your building permit has been issued, there are a few things that you can do to help ensure a smooth process of inspections and project success:

1. **Post the Building Permit Placard.**

   (Red, yellow or blue card) The building permit placard must be posted on site in an easily seen place, protected from the elements. Remember: this placard must last as long as your project.

2. **Ensure that your address is clearly posted.**

   If we can't find your project, we can't inspect or approve the work. In addition, you want to make sure that emergency responders can also find your work site.

3. **Ensure that the plans are available on site.**

   The "APPROVED" set of "DEV COPY" construction plans, engineering calculations and the site plan must be available on site for inspections. The documents must be protected and maintained in the same condition as when issued, and they may not be taken apart or altered in any way at the project site. If the plans are mutilated or unreadable... or missing, the inspector will not approve your inspection, an hourly re-inspection fee will be charged, and you will need to contact DCD to arrange for a replacement set at your cost, before any further inspections can be performed. Remember, it is your responsibility to keep these protected and easily available for the inspection.

4. **Build "PER THE PLANS."**

   Ensure that the project is constructed in full accordance with the "APPROVED" plans. This is the single most common cause of inspection disapprovals and subsequent delays and expense, yet is so simply avoided. If during the course of the project, changes are necessary, the building permit and plans must be revised prior to proceeding. Revisions to approved plans must be submitted to the Department of Community Development for review and approval prior to implementing such change. If an inspector finds that the project is not in accordance with the approved plans, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged.

5. **Use: Go to the Online Permit Center at http://permits.kitsapgov.com/Public/Welcome or Call: 360-337-5777 and ask to schedule an inspection.**

   The minimum required inspections have been indicated on your building permit placard as well as the printed building permit that you signed. When you are confident that you are ready for a required inspection, call or submit via the website a request. Inspections are for the next available business day. (Exception: "FINAL" inspections require two business days)

Permit Expiration

Building permits expire 180 days after the last approved inspection activity is performed. Having required inspections performed identifies on-going activity and automatically extends the permit expiration out another 180 days. However, if you are not going to be ready for an inspection within 180 days, and your permit has not yet expired, then a written extension request may be sent to DCD requesting up to 180 additional days. Such request must include the specific circumstances; that were beyond your control, that have prevented the work from progressing. Please note that for an extension request to be granted, it must be received prior to the permit expiration. Please see brochure #3 - Permit Expiration, for additional information.

Being "Ready for Inspection"

When you reach a stage where you are ready for an inspection, please be sure that the project is completely ready for such inspection. Inspectors' responsibility is not to create a "punch-list" of what is left to be done. Inspectors have a very limited time set aside to perform the inspection of your project, and they must quickly move on to the next scheduled site. If an inspector finds numerous non-

Kitsap County Department of Community Development
614 Division Street, MS-36
Port Orchard, WA 98366-4682
www.kitsapgov.com/dcd/
Revision Date: 11/16/15

Phone: (360) 337-5777
Fax: (360) 337-4925
Form Number: 1104B
Email: Kitsap1@co.kitsap.wa.us

compliant issues, the inspection will cease, and the correction notice will simply state that the project is not ready for inspection. If a project is not ready for inspection, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged. **Please note: both plans and permit need to be on-site for the inspection.**

Final Inspection Required.

All building permits require a final inspection prior to being used or occupied regardless of the size of the project, or whether or not it is new work, or a remodel, addition, or repair. The International Building Code, Section 110.1 (IRC R110.1) states in part: No building or structure shall be used or occupied until the building official has issued a Certificate of Occupancy. The Certificate of Occupancy will not be issued until all required inspections have been performed and approved, and any associated permits such as SDAP, fire sprinkler, fire alarm, road approach, etc. have been completed and finaled. In addition, any "deferred" impact fees must be paid prior to the issuance of the Certificate of Occupancy.

Some projects may be exempted from the certificate of occupancy requirement, such as fences or small accessory structures. However, these projects still require a final inspection to complete the permit.

It is a civil infraction to occupy a building without obtaining a valid Certificate of Occupancy, or to otherwise violate the provisions of the Kitsap County Building & Fire Code. In addition, if a project is abandoned, or if a building permit expires without completion, DCD may initiate code compliance actions and/or file a notice to title with the Kitsap County Auditor's office identifying that the property is not in compliance with current codes, which could negatively affect future sales or refinancing efforts.

Builder's Responsibilities

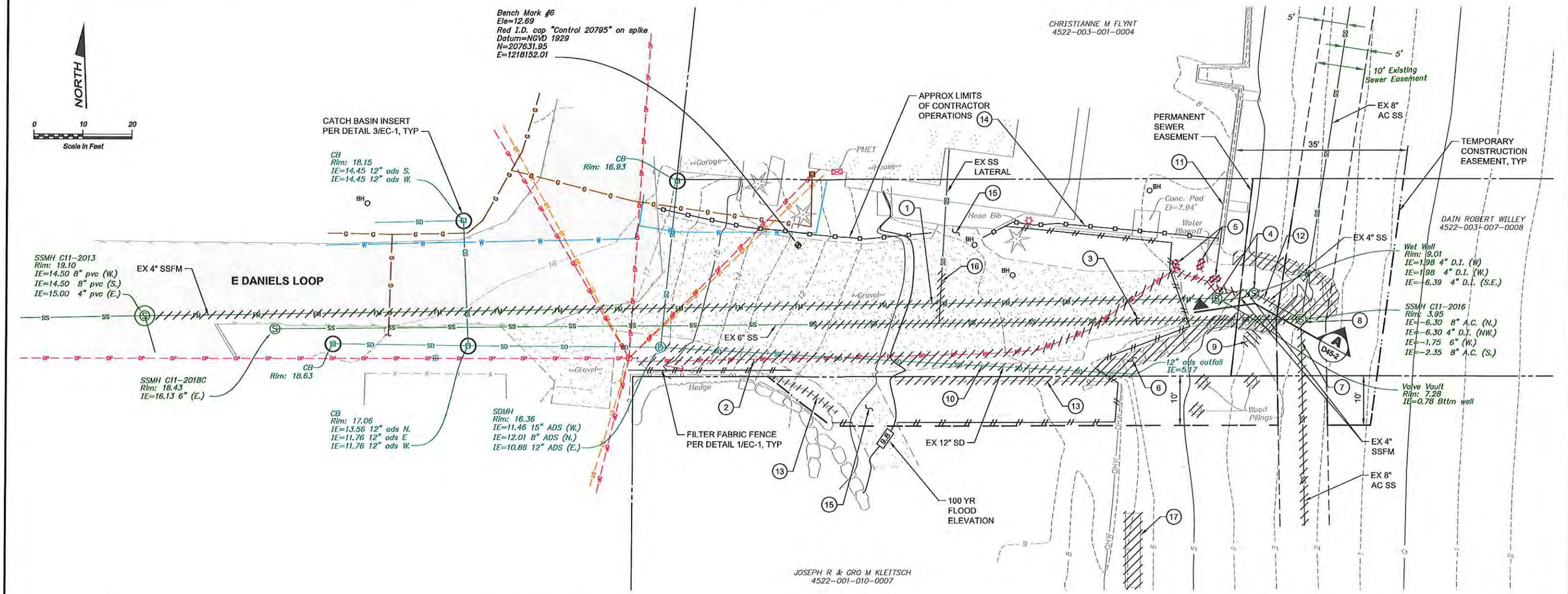
As the builder or person responsible for the project, compliance with the adopted codes is your responsibility; just like it is your responsibility to obey all traffic laws when driving. There is a common misconception that county inspectors should identify "all" code violations. However, the reality is that the county implements a general permitting and inspection program for code compliance, but is not a "quality assurance" agency. Much like a sheriff's department can't identify and write citations to each and every person who drives too fast, or "creeps" past a stop sign; a building inspector does not have an opportunity to look at each and every detail in a structure. Each inspection is essentially a "spot-check" for code compliance. Two identical houses, with identical violations, though not necessarily possible, could potentially have different correction items identified. Likewise, on a follow-up inspection additional violations that may have previously been overlooked could be identified, though every effort is made to avoid such instances. Please remember, just because an inspector may not identify a particular problem, does not mean that the problem does not exist, or does not need to be corrected. Ultimately, when you sell or transfer this project, you will remain the person responsible to ensure that it is code compliant. Again, it is your responsibility to pursue construction, monitor timeframes, request inspections, and complete the project in accordance with the approved plans, permit conditions, and applicable codes.

Need Help?

Staff at the Department of Community Development wants to help ensure that your project is successful, safe, and code compliant. If you have questions regarding your project, where to purchase copies of particular codes, or want help understanding certain code requirements, please contact us via e-mail at: openline@co.kitsap.wa.us or call us at 360-337-5777.

PUMP STATION 45

LANDSCAPE PLANS



NOTES:

1. DEMOLITION OF EXISTING PUMP STATION FACILITIES SHALL OCCUR ONLY AFTER COMMISSIONING (INSTALLATION, TESTING, AND CONFIRMED OPERATION) OF THE NEW PUMP STATION, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. SEE SPEC SECTION 02 41 00 FOR ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS.
4. PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, TREES, ETC. UNLESS SPECIFICALLY INDICATED TO BE REMOVED.
5. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
6. SEE RESTORATION DWGS FOR REMOVAL OF EXISTING ASPHALT AND GROUND.
7. ADJUST/REMOVE/REINSTALL FILTER FABRIC FENCE AS NECESSARY TO CONSTRUCT IMPROVEMENTS.

CONSTRUCTION NOTES:

(1) REROUTE EXISTING FORCE MAIN FOR CONSTRUCTION OF NEW FACILITIES. REMOVE EXISTING FORCE MAIN IN AREA OF NEW IMPROVEMENTS. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY FORCE MAIN AND PLUG AND ABANDON REMAINING EXISTING FORCE MAIN.

(2) RELOCATE POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.

(3) PLUG AND ABANDON EXISTING SEWER TO EAST, REMOVE EXISTING SEWER TO WEST. SEE DWG C45-1 FOR LIMITS OF NEW IMPROVEMENTS.

(4) DECOMMISSION AND REMOVE MECHANICAL, ELECTRICAL, AND MISCELLANEOUS EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISCHARGE PIPING BETWEEN STRUCTURES. SEE DWG D45-2 FOR ADDITIONAL DEMOLITION DETAILS.

(5) RELOCATE EXISTING PUMP STATION ELECT EQUIP FOR USE DURING CONSTRUCTION PER ELECT DWGS. REMOVE ELECT EQUIP FOLLOWING COMMISSIONING OF NEW PUMP STATION.

(6) REMOVE EXISTING CONC/ROCK GROIN DURING DEMOLITION OF EXISTING PUMP STATION, SEE R45 DWGS FOR RESTORATION DETAILS. MINOR REMOVAL AND REPLACEMENT WILL BE ALLOWED FOR INSTALLATION OF NEW SEWER AND BEACH MANHOLE.

(7) PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION, SEE NEW BEACH MANHOLE LOCATION ON DWG C45-1.

(8) REMOVE EXISTING SSMH. SEE DWG D45-2 FOR ADDITIONAL DEMOLITION DETAILS.

(9) FULLY REMOVE EXISTING CREOSOTE-TREATED WOOD PILINGS, TYP OF 4.

(10) REMOVE AND REPLACE EXISTING STORM DRAIN. SEE DWG C45-1 FOR REROUTING.

(11) PROTECT EXISTING CONCRETE BULKHEAD DURING CONSTRUCTION IN ACCORDANCE WITH SPEC SECTION 02 41 10.

(12) PLUG AND ABANDON EXISTING SEWER.

(13) REMOVE CHAINLINK FENCE, GATE AND POST. PROTECT EXISTING HEDGE.

(14) INSTALL DELINEATION FENCING PER DETAIL 2/EC-1, COORDINATE OPENINGS WITH HOMEOWNER FOR ACCESS.

(15) MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.

(16) REMOVE EXISTING SEWER LATERAL IN AREA OF NEW IMPROVEMENTS. SEE DRAWING C45-1 FOR REROUTING.

(17) REMOVE APPROXIMATELY 15' x 3' x 3' REINFORCED, CONCRETE ENCASED STYROFOAM CORE BLOCK. ACTUAL LOCATION IS APPROXIMATELY 30' SOUTH OF THE LOCATION DEPICTED ON THIS PLAN.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER
STATE OF WASHINGTON
19911
REGISTERED
PROFESSIONAL ENGINEER
4/29/16

TYLER JAMES WHITEHOUSE
STATE OF WASHINGTON
21545
REGISTERED
PROFESSIONAL ENGINEER
4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

Designed: T. Whitehouse, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 10'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

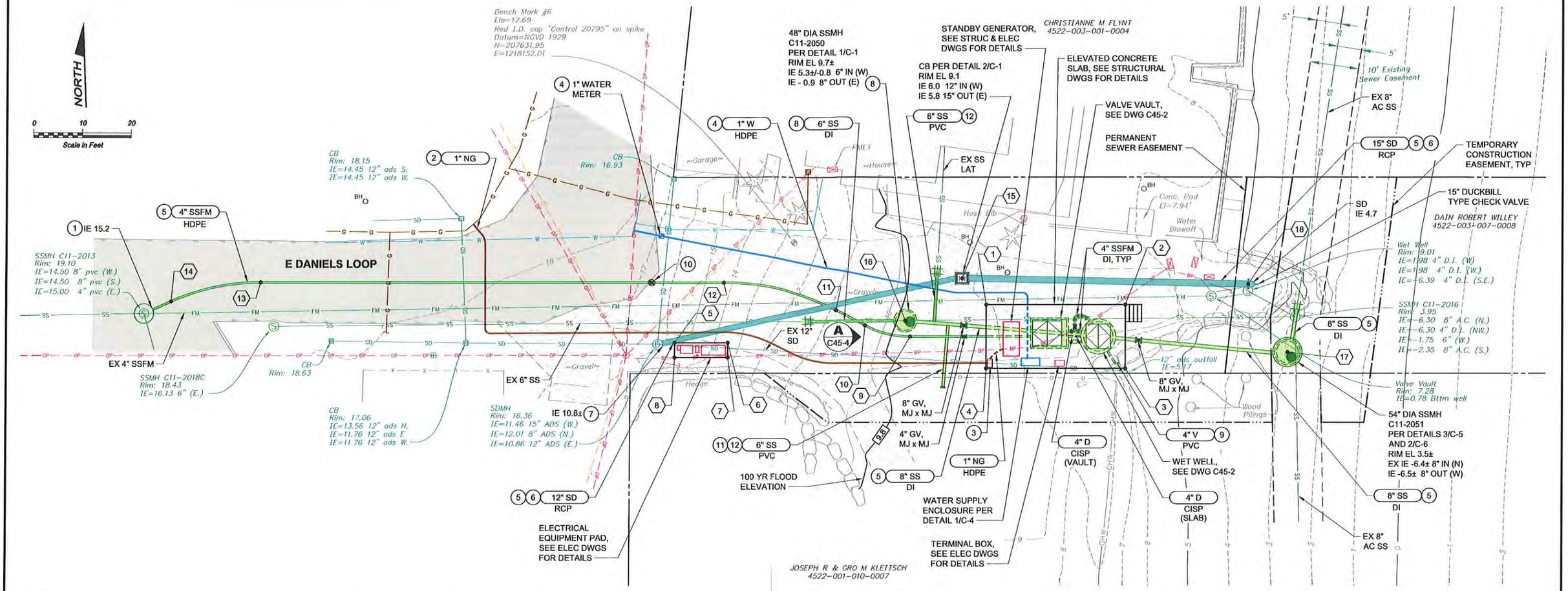
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

EXISTING PUMP STATION SITE, TESC AND DEMOLITION PLAN

Drawing: D45-1
Sheet: 26 of 73
File: P15-10341_D45-1
Date: April 2016

S:\CAD\KITSAP COUNTY\15-10341_PS_45_46_47_Bid_DESIGN\DWG\P15-10341_D45-1.DWG (R.S)
XREFS: Dorn_Datum_Schuyler_Adam_Schuyler_Erika_Whitehouse_15-10341_45-46-47-Sprtls_15-10341_45-46-47-Topo_15-10341_ctb
FILE NAME (OPERATED BY)
PLOT DATE & TIME
APR 29, 2016 08:41:49



NOTES:

1. EXISTING PUMP STATION FACILITIES ARE SHOWN AND SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION. SEE DEMOLITION DWGS FOR DECOMMISSIONING, DEMOLITION, REMOVAL AND ABANDONING OF EXISTING PUMP STATION FACILITIES. SEE RESTORATION DWGS FOR FINISHED SITE AND RESTORATION PLAN.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
4. ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
5. INSTALL BURIED VALVES PER DETAIL 1/C-2.

CONSTRUCTION NOTES:

(1) CORE DRILL AND SEAL WITH FLEXIBLE BOOT PER DETAIL 7/C-1.

(2) CASCADE NATURAL GAS WILL PROVIDE AND INSTALL NATURAL GAS PIPELINE, CONNECTION TO MAIN, AND METER. CONTRACTOR SHALL EXCAVATE TRENCH PER DETAIL 5/C-5 AND PROVIDE AND INSTALL REQUIRED BACKFILL AND RESTORE SURFACE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS DOWNSTREAM OF METER. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY CASCADE NATURAL GAS WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.

(3) FINAL LOCATION OF METER TO BE DETERMINED BY COUNTY CONSTRUCTION MANAGER AND ENGINEER IN FIELD.

(4) MANCHESTER WATER DISTRICT WILL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE FROM CONNECTION TO EXISTING WATER MAIN TO NEW WATER METER. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE DOWNSTREAM OF NEW WATER METER. TRENCH SECTION PER DETAIL 5/C-5. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY MANCHESTER WATER DISTRICT WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.

(5) SEE DRAWING C45-5 FOR PIPE PROFILE.

(6) FINAL INSTALLATION SHALL OCCUR AFTER REMOVAL OF ROCK JETTY TO PERMIT FREE DISCHARGE, INSTALL TEMPORARY FLEXIBLE STORM DRAIN DURING CONSTRUCTION.

(7) CAREFULLY CUT/CHIP OUT TO REMOVE EXISTING 12" SD AT MANHOLE. CUT/CHIP OUT ADDITIONAL CONCRETE AS REQUIRED TO ACCOMMODATE NEW PIPE EXIT ANGLE. GROUT TO FILL VOIDS AND CREATE A SMOOTH SURFACE, SEAL WITH FLEXIBLE BOOT PER DETAIL 7/C-1.

(8) INSTALL OUTSIDE DROP MANHOLE CONNECTION FOR 6" INLET SEWER PER DETAIL 2/C-4.

(9) SEE DETAIL 4/C-5 FOR VENT LOCATION AND DETAILS.

(10) TRACER WIRE AND HAND HOLE PER DETAIL 4/C-4.

(11) EXTEND SEWER LATERAL 3' BEYOND PROPERTY LINE, IE AT TERMINATION = 3.5. CAP PIPE AND MARK LOCATION WITH STAKE AT PROPERTY LINE.

(12) CONNECT SIDE SEWER TO NEW SEWER MAIN PER DETAIL 5/C-4.

COORDINATE TABLE

PT (#)	NORTHING	EASTING	DESCRIPTION
1	207617.72	1218190.84	NW CORNER, PS SLAB
2	207616.58	1218219.32	NE CORNER, PS SLAB
3	207603.65	1218218.89	SE CORNER, PS SLAB
4	207604.73	1218190.32	SW CORNER, PS SLAB
5	207612.53	1218126.65	NW CORNER, ELECTRICAL EQUIPMENT PAD
6	207612.09	1218137.64	NE CORNER, ELECTRICAL EQUIPMENT PAD
7	207609.09	1218137.52	SE CORNER, ELECTRICAL EQUIPMENT PAD
8	207609.53	1218126.53	SW CORNER, ELECTRICAL EQUIPMENT PAD
9	207611.84	1218175.06	PT, 4" SSFM
10	207614.48	1218165.87	PC, 4" SSFM
11	207617.85	1218159.97	PT, 4" SSFM
12	207624.36	1218137.25	PC, 4" SSFM
13	207628.15	1218042.39	PT, 4" SSFM
14	207624.98	1218023.88	PC, 4" SSFM
15	207623.27	1218186.05	CB CENTER, APPROXIMATE
16	207615.12	1218174.20	MH CENTER, APPROXIMATE
17	207605.57	1218252.13	MH CENTER, APPROXIMATE
18	207619.75	1218244.69	C/L SD TERMINATION, APPROXIMATE

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UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 19911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

TYLER JAMES WHITEHOUSE — STATE OF WASHINGTON — 49545 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
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Designed: T. Whitehouse, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 10'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

PUMP STATION AND PIPING PLAN

Drawing: C45-1
Sheet: 28 of 73
File: P15-10341_C45-1
Date: April 2016

PLOT DATE & TIME: APR 26, 2016 09:41:54
FILE NAME: (UPDATED BY)
S:\CAD\KITSAP COUNTY\P15-10341 PS 45, 46, & 47 DESIGN\DWGS\P15-10341_C45-1.DWG (PLS)
XREFS: Dorn, Gibson, Schuyler, Adam, Schuyler_Ed via Whitehouse, Tyler\P15-10341_45-46-47-Topo, P15-10341_PS45-Prelim, P15-10341_TB

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Kitsap County

Manchester Pump Stations Nos. 45, 46, and 47 Upgrades Design

PUMP STATION 45

Structural Calculations

BHC CONSULTANTS
SEATTLE TACOMA

April 2016

4-8-16

Design Criteria

KITSAP COUNTY PUMP STATIONS 45, 46, AND 47

APRIL 2016

DESIGN CRITERIA

A. CODES:

1. 2012 International Building Code with Kitsap County Amendments
2. ASCE 7-10 – Minimum Design Loads for and Buildings and Other Structures
3. ACI 318-11 – Building Code Requirements for Structural Concrete
4. ACI 350-06 – Environmental Engineering Concrete Structures Code Requirements
5. AISC 360-10 – Structural Provisions for Structural Steel Buildings

B. LOCATION:

N 47.55, W 122.55, Elevation 11 ft.

C. RISK CATEGORY IV

D. DESIGN LOADS:

1. Dead Load:

   Actual building structure weight

2. Live Load

   Top Slab: 250 psf or HS-20 (whichever is greater)

3. Wind Design Data

   Not Applicable

4. Earthquake Design Data:

   Site Class: C
   Mapped Spectral Accelerations: Ss = 1.59 S1 = .61 per Geotechnical Report

   Fa=1.0; Fv=1.3

   Sds = 1.59x1.0x.67=1.06; Sd1= 0.61x1.3x.67= 0.53

   Seismic Design Category: D

5. Buoyancy:

   Top of groundwater is assumed at the ground surface. Contractor is responsible to provide buoyancy design for underground structures.

E. GENERAL SLAB SYSTEM:

The pump station slabs are constructed to be supported by consolidated fill. However, a design check has been done to see if slab system has capacity to carry loading in case fill material settles away from slab.

F. SOILS DATA:

Soils exploration information is contained in "Geotechnical Report for Manchester Pump Stations 45, 46, and 47 Upgrades Design, Kitsap County" dated July 28, 2015 prepared by Landau Associates.

Soil Bearing = 2000 psf at PS 45 and 46. At PS 47, obtain "net zero bearing result" due to low capacity existing soils below.
Wall Pressures = 95 pcf equivalent

G. MATERIAL ASSUMPTIONS:

Concrete: Structural Concrete 4.5 ksf @ 28 days

Reinforcing Steel: ASTM A615 Grade 60

Calculations

Project Kitsap Co. PS 45, 46, 47 Date 3-30-16
Subject Sheet of
Computed By KSD Job Number
Checked By KS Task Number

BHC CONSULTANTS

Concrete System Alternate Design CHECK

NOTE: Pump Station slabs are constructed to act as slabs on ground supported by compacted fill around underground structures. In case the fill under the slab settles, check to see that remaining slab has capacity for support.

Back up support check provided below:

Concrete slab : 12" Span 18'

Loading : DL + 250 psf LL

$M_u = [1.4(.150) + 1.7(.250)]\ 13^2/8$

$= .63 \times 13^2/8 = 13.4$ K-FT/FT

$K_u = \frac{13.4 \times 12000}{12" \times 9^2} = 165 \Rightarrow a_w = 4.37$

$A_s = 13.4/4.17 \times 9 = .34"/FT$ OK

Use #5@12 since these are top bars + 2 way action

Assume Footings take full weight of spanning slab

DL = .150 x 7' = 1.05 K

LL = .250 x 7' = 1.75 K

Total 2.80 K/FT USE 2'6" WIDTH FTG

2.5 x 2 KSF = 5 K/FT

OK

BHC CONSULTANTS

Project Title:
Engineer:
Project Descr:

Project ID:

Point Load on Slab

File = c:\Users\kdahl\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : Manchester Slab on Ground

Code References

Calculations per ACI 318-11, IBC 2012, CBC 2013, ASCE 7-10
Load Combinations Used : ASCE 7-10

Analytical Values

d - Slab Thickness	5.0 in	Ks - Soil Modulus of Subgrade Reaction	50.0 pci
FS - Req'd Factor of Safety	3.0 : 1	Ec - Concrete Elastic Modulus	3,122.0 ksi
		f'c - Concrete Compressive Strength	4.0 ksi
		μ - Poisson's Ratio	0.150
		Min. Adjacent Load Distance	42.841 in

Analysis Formulas

Pn = 1.72 [(Ks R1 / Ec) 10,000 + 3.6] Fr d^2

Ks = Soil modulus of subgrade reaction
R1 = 50% plate average dimension = sqrt(PlWld * PlLen) /2
Ec = Concrete elastic modulus
Fr - Concrete modulus of rupture = 7.5 * sqrt(f'c)
d - Slab Thickness

Min Adjacent Column Distance = 1.5 * ([Ec d^3 / (12 * (1- u^2) Ks] ^ 1/4)

Ec = Concrete elastic modulus
d - Slab Thickness
u - Poisson's ratio
Ks = Soil modulus of subgrade reaction

Load & Capacity Table

Load ID	Plate (In) Wld	Len	R1 (In)	Applied Concentrated Load on Plate - (kip) D	Lr	L	S	W	E	Governing Ld Comb	Pu (kip)	Pn (kip)	Check
point load	8.00	8.00	4.00	5.00							0.0	86.5	Fail, FS= 0.00 < 3

Check Slab on Ground for Point load
DUE TO HSS LOADING.

Check FOR INDIVIDUAL POINT LOAD OF 10,000 lbs.
over 8" x 8" Area. (Conservative)

Project Kitsap Co. Rs 45-47 Date 3-30-16
Subject Sheet of
Computed By KBD Job Number
Checked By Task Number

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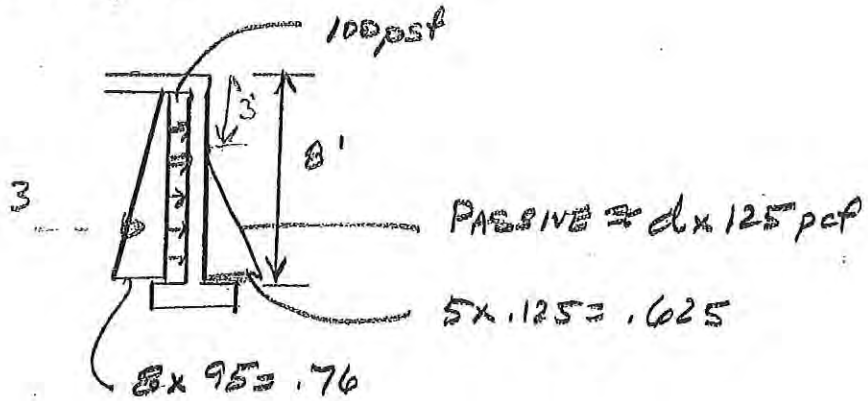
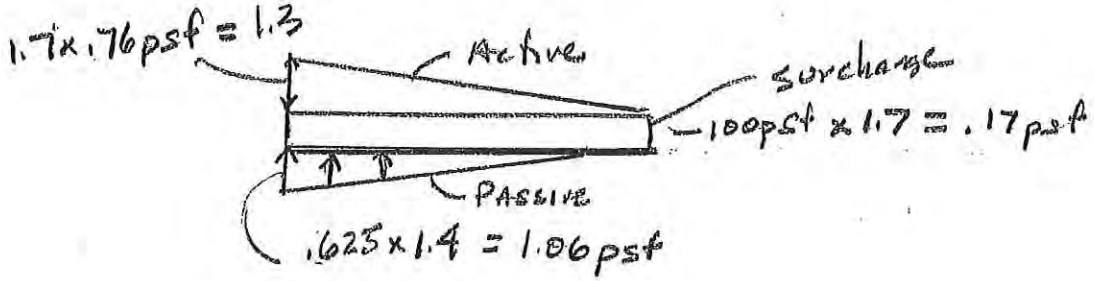
Check wall for soil and surcharge pressures.

Assume support at slab and ftg.

. Max height 8'

AT Rest = 95 pcf
Surcharge = 100psf





SEE ATTACHED EWENCALC Calculations

Use #5 @ 12" vert

BHC CONSULTANTS

Project Title:
Engineer: KED
Project Descr:

Project ID:

Concrete Beam ~~Stem~~ WALL

File = c:\Users\kdah\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : wall analysis

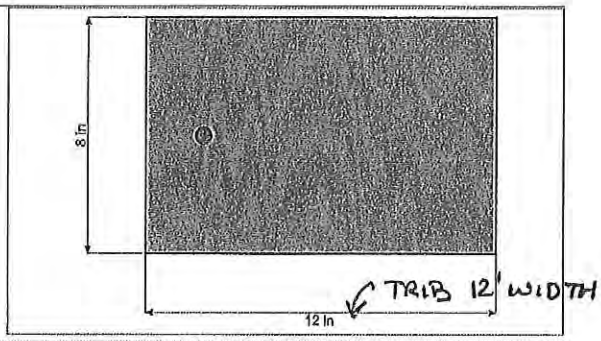
CODE REFERENCES

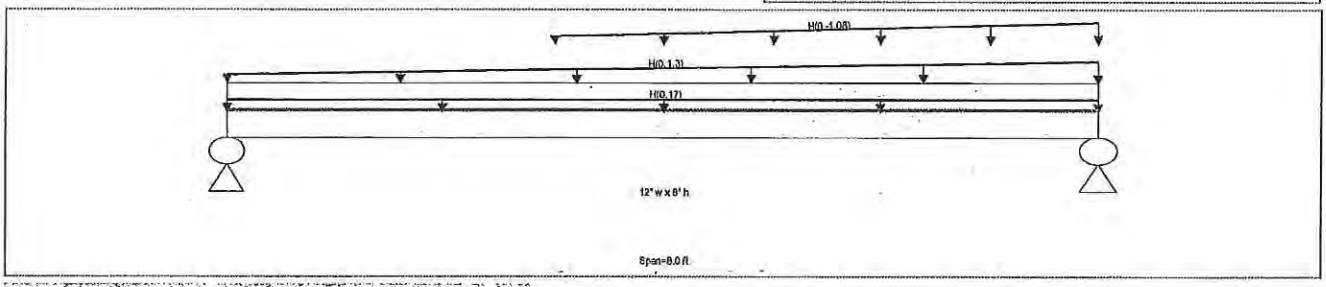
Calculations per ACI 318-11, IBC 2012, ASCE 7-10
Load Combination Set : ASCE 7-10

Material Properties

f'c	=	4.50 ksi	ϕ Phi Values	Flexure :	0.90
fr = f'c^1/2 * 7.50	=	503.12 psi		Shear :	0.750
ψ Density	=	145.0 pcf	β_1	=	0.8250
λ LtWt Factor	=	1.0			
Elastic Modulus	=	3,122.0 ksi	Fy - Stirrups		40.0 ksi
			E - Stirrups	=	29,000.0 ksi
fy - Main Rebar	=	60.0 ksi	Stirrup Bar Size #	=	# 3
E - Main Rebar	=	29,000.0 ksi	Number of Resisting Legs Per Stirrup	=	2

Load Combination ASCE 7-10





Cross Section & Reinforcing Details

Rectangular Section, Width = 12.0 in, Height = 8.0 in
Span #1 Reinforcing....
1-#5 at 4.0 in from Bottom, from 0.0 to 8.0 ft in this span

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Load for Span Number 1
Varying Uniform Load : H(S,E) = 0.0->1.30 k/ft, Extent = 0.0 -->> 8.0 ft, Trib Width = 1.0 ft, (active)
Uniform Load : H = 0.170 k/ft, Tributary Width = 1.0 ft, (surcharge)
Varying Uniform Load : H(S,E) = 0.0->-1.060 k/ft, Extent = 3.0 -->> 8.0 ft, Trib Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	**0.828** : 1	Maximum Deflection			
Section used for this span		Typical Section	Max Downward Transient Deflection	0.031 in	Ratio =	3081
Mu : Applied		4.387 k-ft	Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Mn * Phi : Allowable		5.297 k-ft	Max Downward Total Deflection	0.031 in	Ratio =	3081
Load Combination		+D+H	Max Upward Total Deflection	0.000 in	Ratio =	999 <180
Location of maximum on span		3.978ft				
Span # where maximum occurs		Span # 1				

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
Overall MAXimum	1.861	2.049
Overall MINimum	1.117	1.229
+D+H	1.861	2.049
+D+L+H	1.861	2.049
+D+Lr+H	1.861	2.049
+D+S+H	1.861	2.049
+D+0.750Lr+0.750L+H	1.861	2.049
+D+0.750L+0.750S+H	1.861	2.049
+D+0.60W+H	1.861	2.049
+D+0.70E+H	1.861	2.049
+D+0.750Lr+0.750L+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.5250E+H	1.861	2.049

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Kitsap County
614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01841
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 46
SITE ADDRESS: 8222 E CARAWAY RD

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

PARCEL: 222402-2-045-2003
Zone: MVLR

Setbacks: **Front:** 20'
Rear: 5'
Side: 5'

APPLICANT: KITSAP COUNTY PUBLIC WORKS
614 DIVISION ST MS26A
PORT ORCHARD, WA 98366
1-360-337-5777

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

VALUATIONS:

U Utility, miscellaneous accessory structure, type V-B	300.00	$13,389.00
Mech/Plumb - cost of fixtures + installation for the project	185000.00	$185,000.00
	Total:	**$198,389.00**

FEES:

	Paid	Due
Technology Fee	$19.84	$0.00
Commercial Mechanical and Plumbing Fee	$3,219.00	$0.00
Permit Center Base Fee	$90.00	$0.00
Building Permit Fee, Commercial (all except TI)	$133.89	$0.00
State Surcharge DCD	$4.50	$0.00
Road Impact Fee With CPI Modifier		$0.00
	Total Due:	**$0.00**

FIXTURES

Qty	Mechanical Fixtures
1	C-Gaspipe System LPG/NATL/OIL (first 4 outlets)
2	C- Mechanical System Pumps (Misc.)

Qty	Plumbing Fixtures
1	C-Backflow protective device 2 inches or less
1	C-Commercial Hose Bibbs, each
3	C-Miscellaneous Plumbing fixtures on one trap

REQUIRED INSPECTIONS

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

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Temporary Silt & Erosion Control Inspection	Final Field Inspection
Foundation, Footing Inspection	Special Inspection required, to be conducted by 3rd Party
Foundation, Stem Wall Inspection	Final Building Inspection
Plumbing, Rough-In Inspection	Landscape Inspection
Framing Inspection	

CONDITIONS

Permit Expiration: Building permits expire 365 days after permit issuance, or 180 days after the last approved inspection activity is performed. The Building Official may extend the time for action for a period not exceeding 180 days, upon the receipt of a written extension request indicating that circumstances beyond the control of the permit holder have prevented action from being taken. Additional fees may be due to reactivate the permit. _____

ELECTRICAL WORK. If electrical work is proposed, a separate electrical permit is required. You can contact L&I at 360-415-4000 to obtain an electrical permit. Electrical systems must be inspected by L&I prior to requesting a framing inspection and final approval granted prior to requesting a final building inspection from the Department of Community Development. _____

Reinspection Fee: All approved construction plans, the approved site plan, the printed building permit, and the permit inspection placard are required to be on-site for inspection purposes, and work to be inspected shall be complete and ready for inspection. If an inspection is called for and plans are not available on site, or the work is not ready for inspection, or if previously identified corrections have not been made, approval will not be granted. In addition, a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Final Inspection Required: All building permits shall have a final inspection performed and approved by the Kitsap County Department of Community Development prior to permit expiration. The failure to request a final inspection or failure to obtain final approval prior to expiration will be documented in the legal property records on file with Kitsap County as being non-compliant with Kitsap County ordinances and building regulations and will be referred to Kitsap County Code Compliance for action. _____

A separate permit is required for each proposed sign. _____

Certificate of Occupancy. All buildings require a certificate of occupancy. No building or structure shall be used or occupied, until a final inspection has been approved and a certificate of occupancy issued. Issuance of a certificate of occupancy shall not be construed as an approval of any violation of the provisions of this code or of other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. _____

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www.kitsapgov.com/dcd/

16 01841
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 46
SITE ADDRESS: 8222 E CARAWAY RD

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

Commercial Address: Numerals for commercial buildings shall be conspicuously displayed on a contrasting background and shall be a minimum of 12 inches in height with a minimum stroke of 1-1/2 inches when within 50 feet of the way of travel. Buildings located between 50 and 100 feet from the way of travel shall have numerals a minimum height of 18 inches with a minimum stroke of 2 inches. Buildings located more than 100 feet from the way of travel shall have numerals a minimum of 24 inches in height with a minimum stroke of 2-1/2 inches. Numerals designating suite numbers shall be a minimum of 4 inches in height. All sizes may be reduced by 50 percent if numerals are illuminated 24 hours per day. If the building is not clearly visible from a named way of travel, the numerical designation (address) shall also be displayed near the main entrance to the property as well as at the driveway entrance that leads to the building. Property addresses shall be posted prior to requesting any inspections. If property addresses are not posted upon inspection, inspection will not be approved and a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Prior to final building inspection scheduling, all work associated with SDAP (XX XXXXX) shall be completed and a satisfactory final SDAP inspection obtained. _____

This permit shall comply with all Kitsap Public Health District regulations and conditions of approval. _____

The uses of the subject property are limited to the uses proposed by the applicant and any other uses will be subject to further review pursuant to the requirements of the Kitsap County Code (KCC). Unless in conflict with the conditions stated and/or any regulations, all terms and specifications of the application shall be binding conditions of approval. Approval of this project shall not, and is not, to be construed as approval for more extensive or other utilization of the subject property. _____

Landscaping shall be installed and maintained in conformance with the requirements of Kitsap County Code (KCC) 17.385. Landscaping shall be installed and inspected prior to requesting a final inspection, or guaranteed by means of an assignment of funds or bonded in the amount of 150 percent of the cost of installation. _____

Prior to completion of this permit with the Department of Community Development, the Applicant shall apply for and satisfy all conditions of a Right-of-Way Permit through the Department of Public Works for any and all work performed in the county Right-of-Way associated with this project. You may contact Kitsap County Public Works, Right-of-Way Division at (360) 337-5777 to obtain a Right-of-Way permit. _____

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01841
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 46
SITE ADDRESS: 8222 E CARAWAY RD

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of Laws and Ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state/local law regulating construction or the performance of construction.

_____
Print Name

_____ _____
Signature Date

Let us know how we are doing by taking the short customer survey at www.surveymonkey.com/s/DCDCustomerSurvey

KITSAP COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING INSPECTION CARD

Please Note: Only approved inspections extend permit expiration date

PERMIT NUMBER:
16 01841

This Placard must be posted on or near building and the "Approved" plans must be available at the site.

Permit Type:
Commercial Public Works & Utilities

Site Address:
8222 E CARAWAY RD

Owner:

Applicant:
KITSAP COUNTY PUBLIC WORKS

Code Edition:

Additional Notes:
Inspection Results Legend:
AP = Approved
DA = Disapproved
DP = Disapproved with Penalty

All conditions of approval must be met prior to final occupancy. See printed permit for a list of all conditions associated with your permit.

A reinspection fee will apply if the project is not ready for the requested inspection, or corrections have not been completed.

No concrete shall be poured or reinforcement shell covered without inspection and approval.

Required Inspections Kitsap County Inspection Line (360) 337-5777 Online at: www.kitsapgov.com/dcd	Approved By:	DATE
Temporary Silt & Erosion Control Inspection		
Foundation, Footing Inspection		
Foundation, Stem Wall Inspection		
Plumbing, Rough-In Inspection		
Framing Inspection		
Final Field Inspection		
Special Inspection required, to be conducted by 3rd Party		
Landscape Inspection		

Prior to calling for your final inspection:

Health Approval
If applicable, this permit shall comply with all Kitsap Public Health District regulations and conditions of approval and shall have final Health Approval prior to calling for a final inspection.

L&I Electrical Approval
If electrical work is proposed, a separate electrical permit is required and must be inspected by and approved by L&I prior to requesting a final building inspection. You can contact L&I at 360-415-4000.

Final Building Inspection		

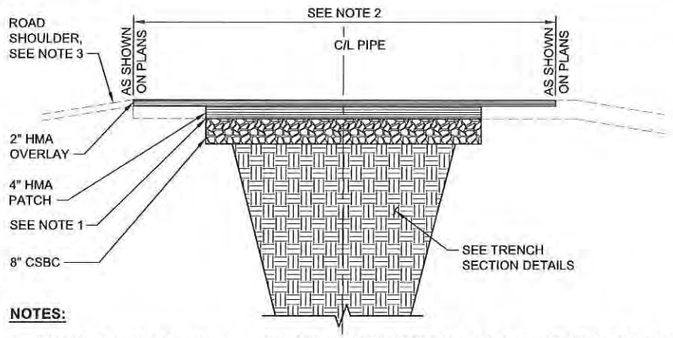
Finals require a 2 business day advance notice and must be requested by 3:00pm. No use or occupancy is permitted prior to final inspection and approval for occupancy.

PUMP STATION 46

LANDSCAPE PLANS

DEV. COPY

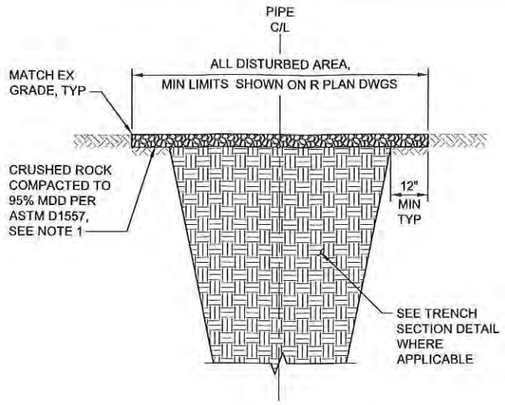
16 01841



NOTES:

1. SAW CUT EXISTING AC PAVEMENT 12" WIDER THAN TOP OF TRENCH. CUT SHALL BE STRAIGHT AND FULL DEPTH. REMOVE AND DISPOSE OF EXISTING AC OVER TRENCH. CLEAN, HEAT, AND TACK EDGES OF EXISTING AC WITH SEALER PRIOR TO INSTALLING NEW HMA PATCH.
2. SAW CUT EXISTING AC PAVEMENT AT EDGE OF OVERLAY LIMITS. GRIND AND REMOVE EXISTING AC TO FACILITATE HMA OVERLAY. CUTS SHALL BE STRAIGHT AND VERTICAL. CLEAN, HEAT, AND TACK EDGES WITH SEALER. PROVIDE SMOOTH TRANSITION BETWEEN EXISTING ROADWAY AND NEW HMA OVERLAY.
3. RESTORE DISTURBED GRAVEL SHOULDER WITH 4" OF CSTC. REMOVE EXISTING GRAVEL AS NECESSARY TO MAINTAIN GRADES.
4. EXISTING AC MAY BE GROUND AND REUSED IN LIEU OF CSBC.
5. GRIND TRANSITION ZONES AT LIMITS OF PAVING PERPENDICULAR TO THE CENTERLINE PER SECTION 5-04.3 (23) OF SPECIAL PROVISIONS.
6. ALL JOINTS SHALL BE SEALED WITH A 12" WIDE STRIP OF AR 2000 ASPHALT SEALER CENTERED ON JOINT.
7. MATCH ELEVATIONS OF EXISTING PAVEMENT, DRIVEWAYS, SHOULDERS, AND OTHER SURFACE FEATURES.
8. RESTORE ALL DISTURBED PAVEMENT MARKINGS.

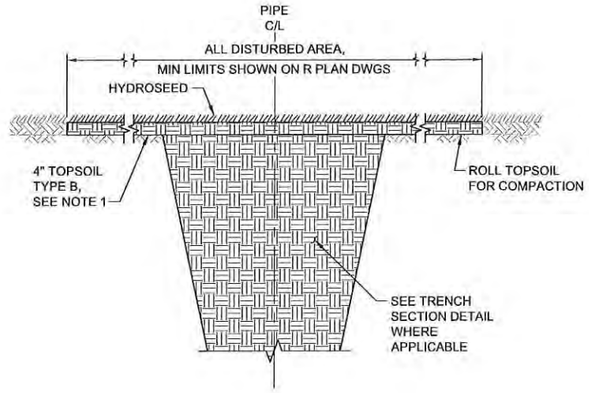
HMA PAVEMENT PATCH & OVERLAY
DETAIL 1
NTS TYP



NOTES:

1. CRUSHED ROCK SIZE AND DEPTH AS NOTED ON RESTORATION PLAN DWGS.

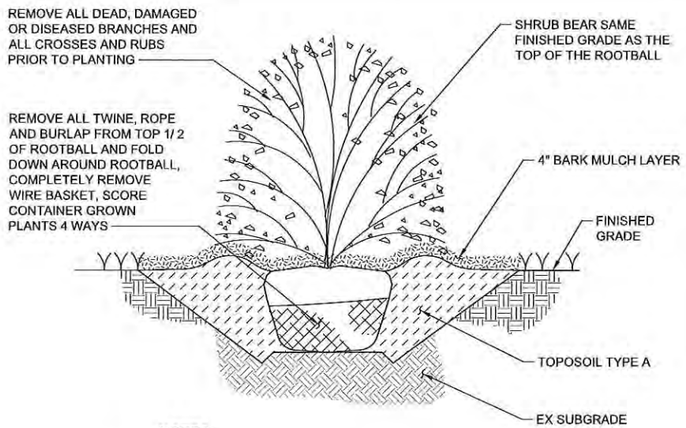
GRAVEL SURFACING
DETAIL 2
NTS TYP



NOTES:

1. REGRADE DISTURBED AREAS TO ORIGINAL CONTOURS LESS DEPTH OF NEW TOPSOIL PRIOR TO INSTALLING NEW TOPSOIL. RESTORE ORIGINAL GRADE AND ELEVATIONS AFTER INSTALLATION OF TOPSOIL.

HYDROSEED
DETAIL 3
NTS TYP



NOTES:

1. SEE RESTORATION PLAN DWGS FOR PLANT TYPE.

PLANTING
DETAIL 4
NTS TYP

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 39911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

TYLER JAMES WHITEHOUSE — STATE OF WASHINGTON — 49548 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3408 (fax)
www.bhcconsultants.com

Designed: T. Whitehouse, P.E.
Drawn: S. Olson
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: NTS
One Inch at Full Scale
If Not One Inch Scale Accordingly

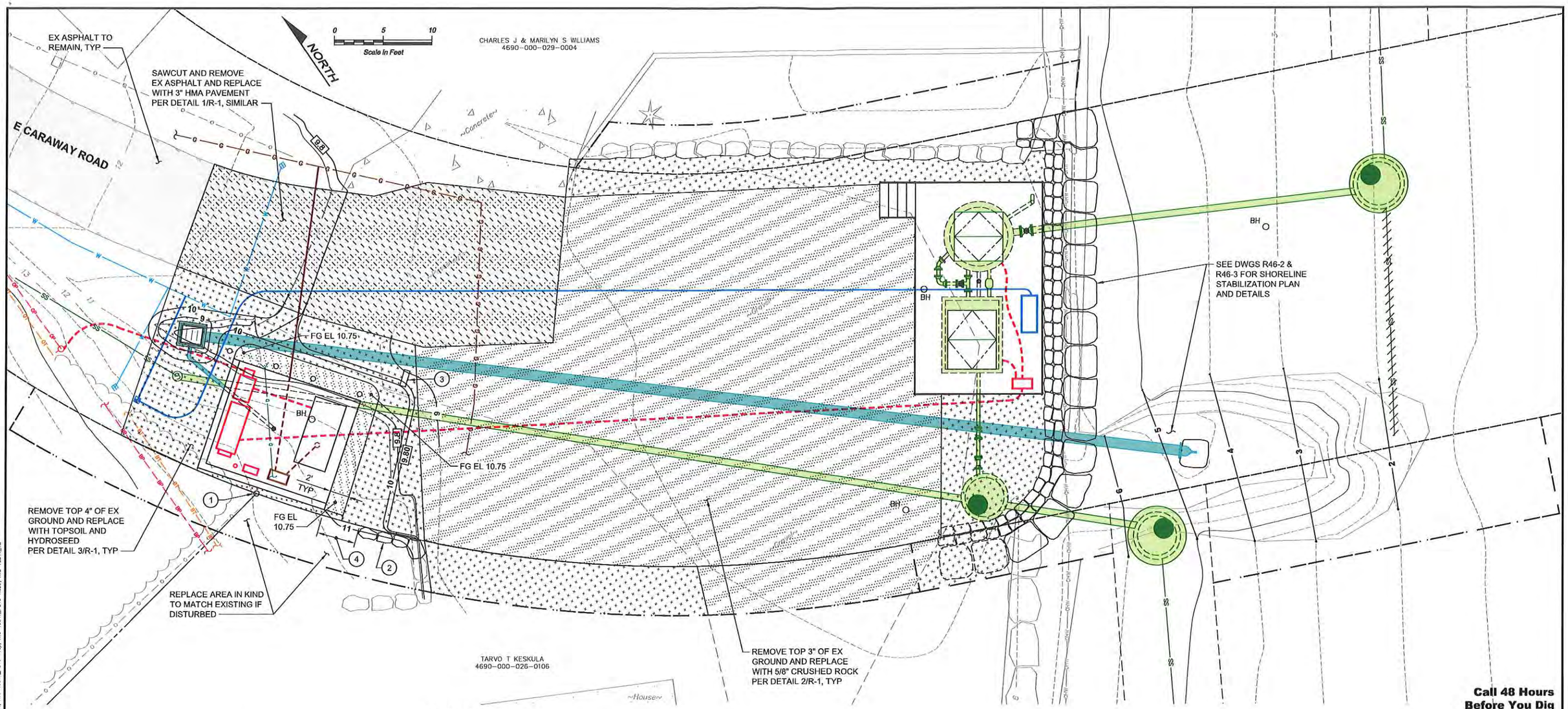
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

RESTORATION DETAILS

Drawing: R-1
Sheet: 13 of 73
File: P15-10341_R-1
Date: April 2016

S:\CAD\KITSAP COUNTY\15-10341 PS 45 46 47 BL DESIGN\DWGS\P15-10341_R-1.DWG (ISO)
XREFS: Data, Glass, Schuyler_Adam, Schuyler_Erika, Whitehouse, XTS-10341_TB
FILE NAME (UPDATED BY)
PLOT DATE & TIME
FEB 19 2016 10:09:10



NOTES:

1. ALL NECESSARY RESTORATION MAY NOT BE IDENTIFIED ON THE DRAWINGS. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER.

CONSTRUCTION NOTES:

1. RE-ESTABLISHED PROPERTY MARKER.
2. REINSTALL ROCK WALL PLANTER TO MATCH EXISTING. REMOVE AND RELOCATE/REPLACE IRRIGATION SYSTEM IN KIND AS NECESSARY.
3. RELOCATED MAILBOX, FINAL LOCATION AS DIRECTED BY PROPERTY OWNER.
4. PROVIDE 4'-0" CLEAR OPENING BETWEEN EDGE OF ROCKERY AND STRUCTURE. GRADE OPENING AT CONSTANT SLOPE TO TRANSITION FROM PROPOSED TO EXISTING GRADES.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 39911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

TYLER JAMES WHITEHOUSE — STATE OF WASHINGTON — 49545 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

Designed: T. Whitehouse, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

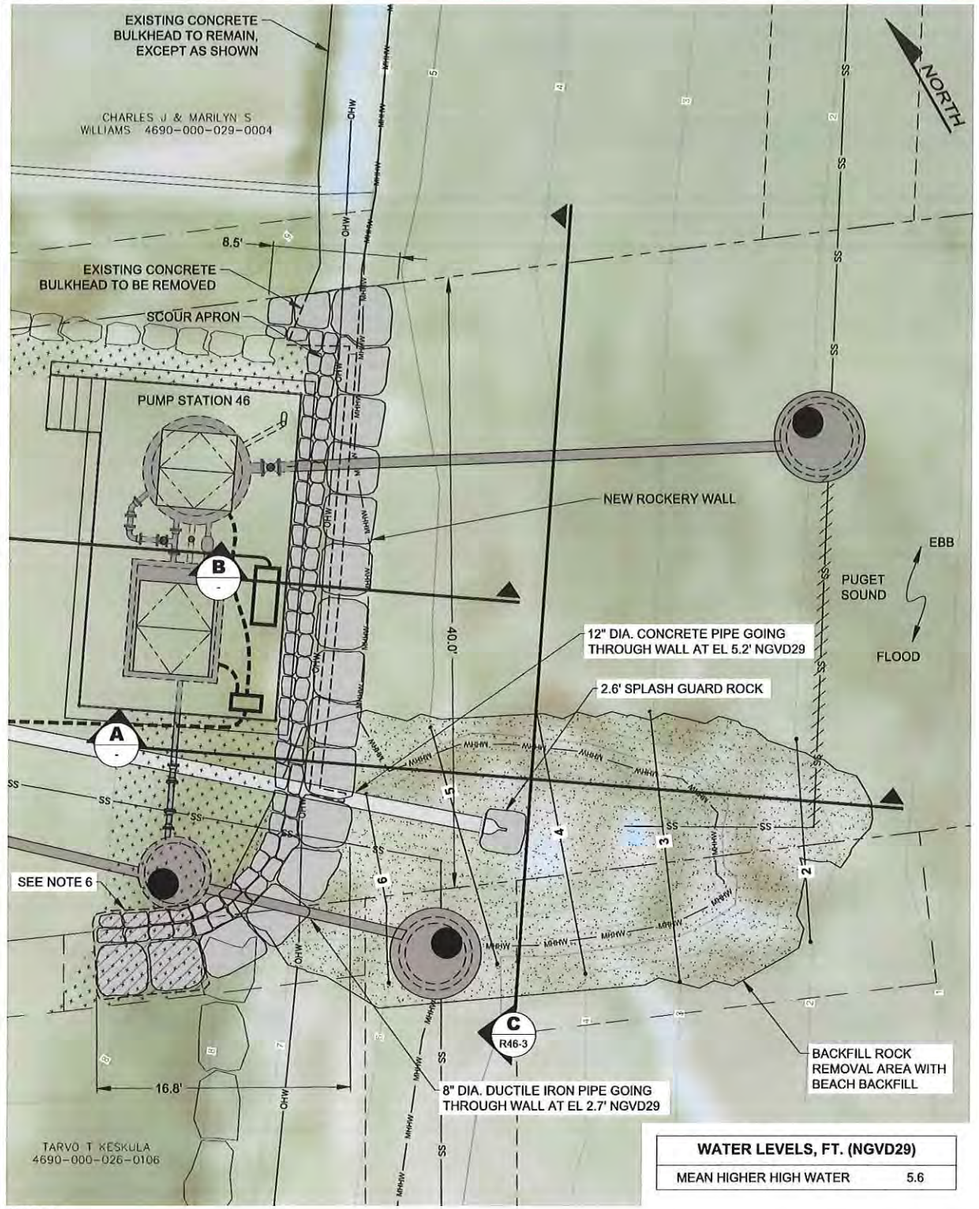
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

FINISHED SITE AND RESTORATION PLAN

Drawing: **R46-1**
Sheet: 48 of 73
File: P15-10341_R46-1
Date: April 2016

S:\CAD\KITSAP COUNTY\15-10341_PS_45_46_47_BL_DESIGN\DWGS\P15-10341_R46-1.DWG (R.S.)
FILE NAME (UPDATED BY)
PLOT DATE & TIME
MAR 10, 2016 8:19:30
XREFS: Dahl, Gibson, Schuyler_Adam, Schuyler_Erika, Whitehouse, X15-10341_45-46-47-Ecmts, X15-10341_45-46-47-Topo, X15-10341_PS46-Prop, X15-10341_PS46-Restr, X15-10341_TB



WATER LEVELS, FT. (NGVD29)	
MEAN HIGHER HIGH WATER	5.6

NOTES:

1. HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD83, U.S. SURVEY FEET.
2. VERTICAL DATUM: NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
3. TOPOGRAPHIC SURVEY CONDUCTED BY AES CONSULTANTS, INC., IN FEBRUARY 2015.
4. ORDINARY HIGH WATER MARK SHOWN IS APPROXIMATE BASED ON VEGETATION BY AES SURVEY.
5. BEACH BACKFILL SHALL BE SIMILAR TO EXISTING BEACH MATERIAL (UP TO 2" GRAVEL/COBBLE).
6. TOPSOIL AND HYDROSEED TO BE PLACED OVER ROCKS INDICATED. HEIGHT OF ROCK TO BE FIELD ADJUSTED BY ±0.5 FOOT TO ALLOW PLACEMENT OF TOPSOIL AND HYDROSEED.

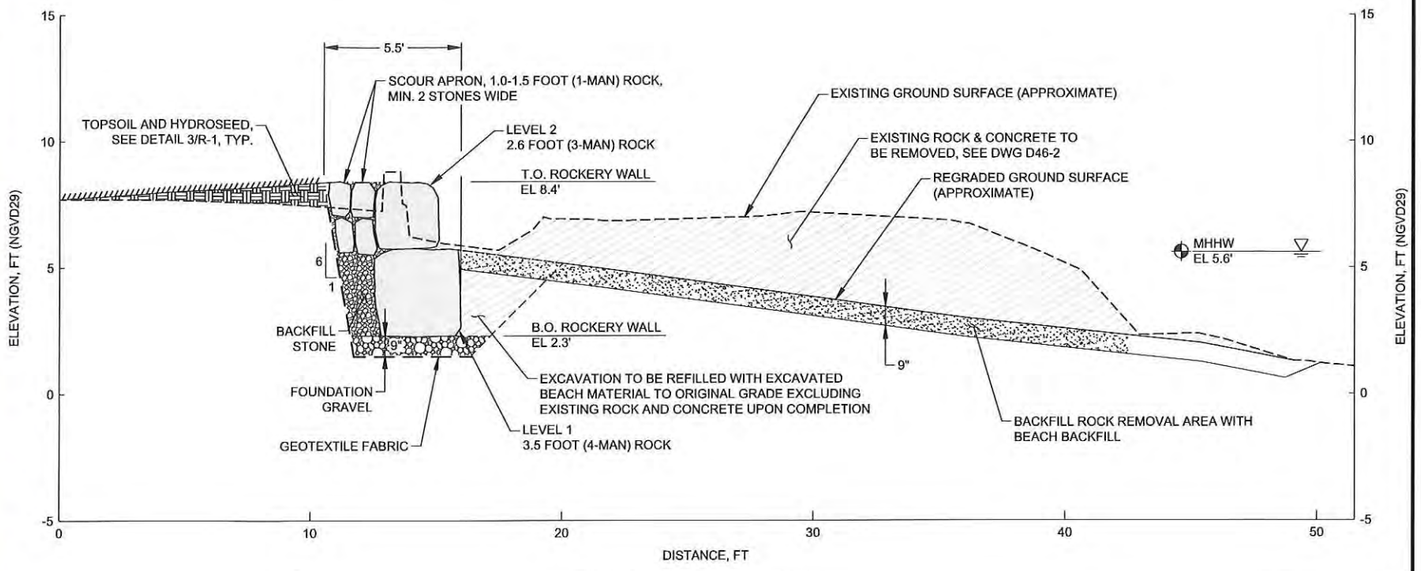
PUMP STATION 46

PLAN 1

SCALE: 1" = 5' R46-1

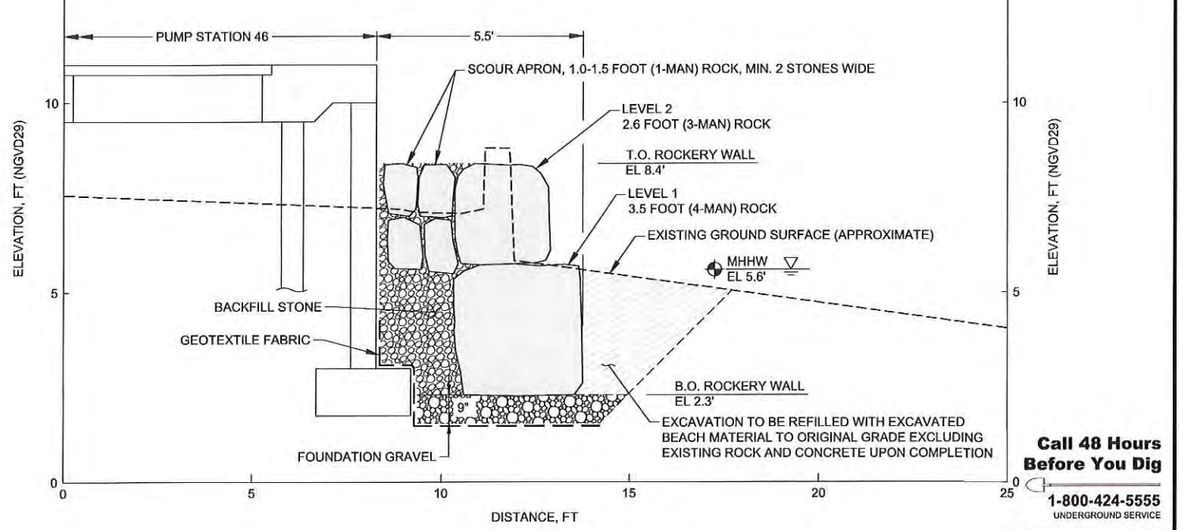
0 5 10

Scale in Feet



SECTION A

SCALE: 1" = 3'



SECTION B

SCALE: 1" = 2'

Call 48 Hours Before You Dig

1-800-424-5555

UNDERGROUND SERVICE

CHRISTOPHER M. DAAT — STATE OF WASHINGTON — 51800 REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	CMD	RSP
	ECOLOGY SUBMITTAL	02-2016	CMD	RSP

BHC CONSULTANTS

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
110 JAMES ST, STE 101 EDMONDS, WA 98020
TEL 425-778-2542 • FAX 425-778-6883

Designed:	C. Day, P.E.
Drawn:	C. Taylor
Checked:	D. Simpson, P.E.
Approved:	R. S. Phillips, P.E.

Scale: AS NOTED

One Inch At Full Scale — If Not One Inch Scale Accordingly

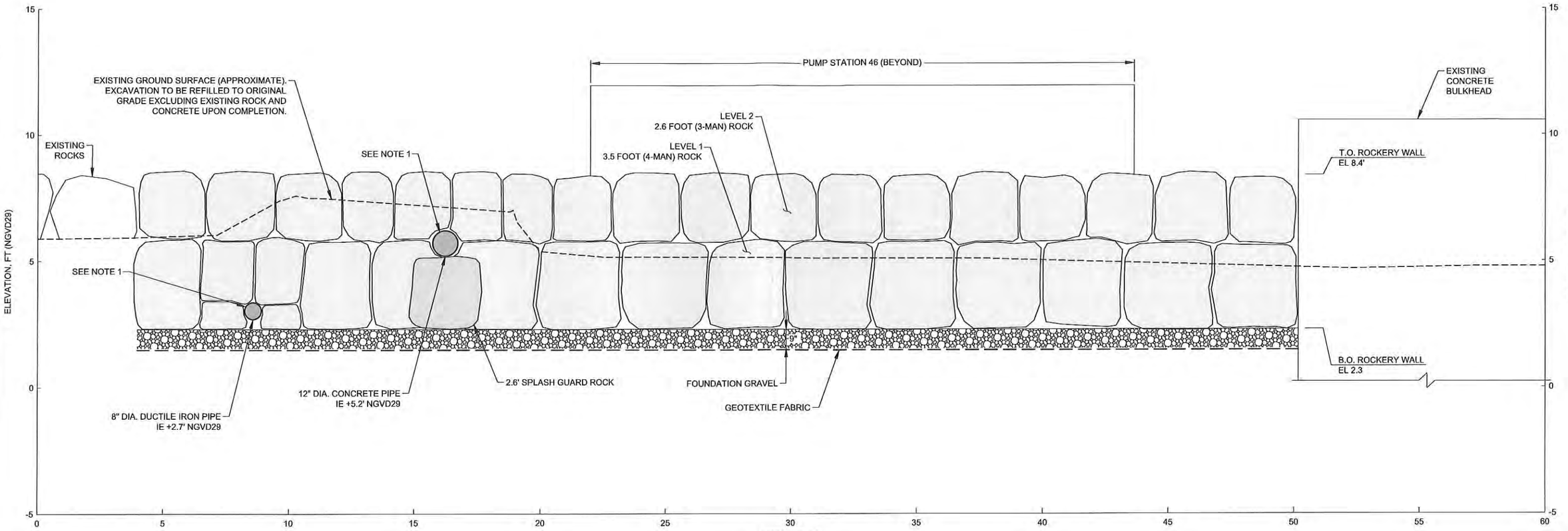
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

SHORELINE STABILIZATION PLAN AND SECTIONS

Drawing: R46-2
Sheet: 49 of 73
File: 365056-Design Site
Date: April 2016

PLOT DATE & TIME: 2016-02-18 | 9:03 AM | Taylor, Claire
FILE NAME (DRAWING BY): J:\365056 - Manchester Pump Station's - Design\365056-Design Site.dwg
XREFS: XJ(R46)P



SECTION C

SCALE: 1" = 2' R46-2

NOTES:

1. SELECT ROCK SIZE AND SHAPE TO REMAIN STABLE WITHOUT RESTING ON PIPE.

Call 48 Hours Before You Dig

1-800-424-5555
UNDERGROUND SERVICE

CHRISTOPHER M. DAY — STATE OF WASHINGTON — 51809 REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	CMD	RSP
	ECOLOGY SUBMITTAL	02-2016	CMD	RSP

BHC CONSULTANTS
BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
110 JAMES ST, STE 101 EDMONDS, WA 98020
PH 425-778-2532 • FAX 425-778-6883

Designed: C. Day, P.E.
Drawn: C. Taylor
Checked: D. Simpson, P.E.
Approved: R. S. Phillips, P.E.

Scale: AS NOTED
One Inch At Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

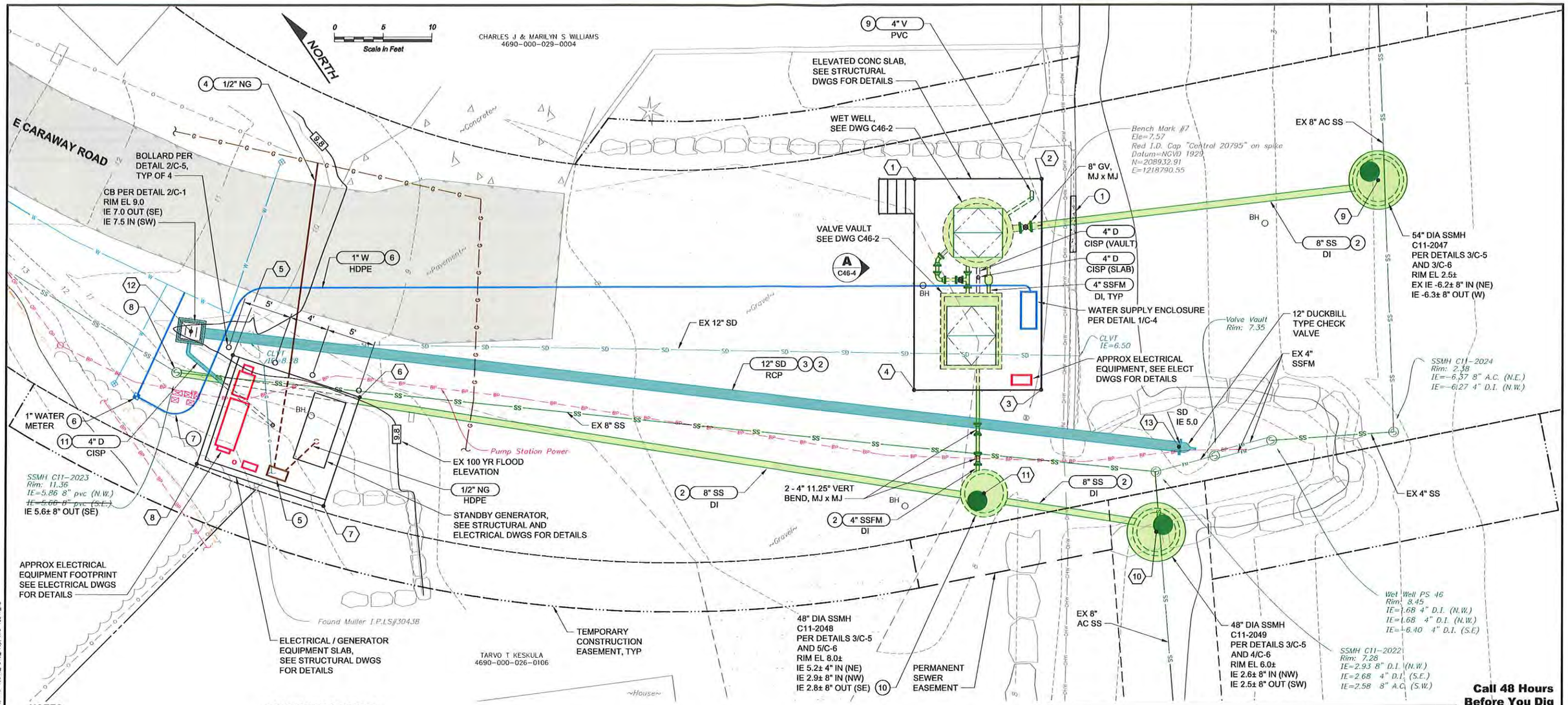
SHORELINE STABILIZATION SECTION

Drawing: R46-3
Sheet: 50 of 73
File: 365056-Design Site
Date: April 2016

PLT DATE & TIME: 2016-02-18 9:03 AM | Taylor, Cathryn
FILE NAME (UPDATED BY): Z:\365056 - Manchester Pump Station\7 - Design\365056-Design Site.dwg
XREFS: XREFS?P?

PUMP STATION 46

SITE PLANS



NOTES:

1. EXISTING PUMP STATION FACILITIES ARE SHOWN AND SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION. SEE DEMOLITION DRAWINGS FOR DECOMMISSIONING, DEMOLITION, REMOVAL AND ABANDONING OF EXISTING PUMP STATION FACILITIES. SEE RESTORATION DRAWINGS FOR FINISHED SITE AND RESTORATION PLAN.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
4. ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
5. INSTALL BURIED VALVES PER DETAIL 1/C-2.

CONSTRUCTION NOTES:

1. SAWCUT AND REMOVE A PORTION OF EXISTING CONCRETE BULKHEAD TO FACILITATE CONSTRUCTION OF NEW SEWER. BRIDGE WITH SECURED BOARDS AND STAINLESS STEEL ANCHORAGE DURING CONSTRUCTION UNTIL REMOVED AND REPLACED. PROTECT EXISTING CONCRETE BULKHEAD DURING CONSTRUCTION IN ACCORDANCE WITH SPEC SECTION 02 41 10.
2. SEE DRAWING C46-5 FOR PIPE PROFILE.
3. FINAL INSTALLATION SHALL OCCUR AFTER REMOVAL OF ROCK JETTY TO PERMIT FREE DISCHARGE, INSTALL TEMPORARY FLEXIBLE STORM DRAIN DURING CONSTRUCTION.
4. CASCADE NATURAL GAS WILL PROVIDE AND INSTALL NATURAL GAS PIPELINE, CONNECTION TO MAIN, AND METER. CONTRACTOR SHALL EXCAVATE TRENCH PER DETAIL 5/C-5 AND PROVIDE AND INSTALL REQUIRED BACKFILL AND RESTORE SURFACE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS DOWNSTREAM OF METER. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY CASCADE NATURAL GAS WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
5. FINAL LOCATION OF METER TO BE DETERMINED BY COUNTY CONSTRUCTION MANAGER AND ENGINEER IN FIELD.
6. MANCHESTER WATER DISTRICT WILL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE FROM CONNECTION TO EXISTING WATER MAIN TO NEW WATER METER. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE DOWNSTREAM OF NEW WATER METER. TRENCH SECTION PER DETAIL 5/C-5. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY MANCHESTER WATER DISTRICT WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.
7. ROUTING IS APPROXIMATE, FIELD ROUTE WITH COUNTY CONSTRUCTION MANAGER.
8. CAREFULLY CUT/CHIP OUT TO REMOVE EXISTING 8" SANITARY SEWER. GROUT TO PROVIDE A SMOOTH, CIRCULAR SURFACE, SEAL PIPE CONNECTION WITH FLEXIBLE BOOT PER DETAIL 7/C-1.
9. SEE DETAIL 4/C-5 FOR VENT LOCATION AND DETAILS.
10. PROVIDE STANDARD PRECAST FLAT TOP WITH MANHOLE FRAME AND COVER PER DETAIL 6/C-1.
11. FIELD ROUTE TO AVOID CONFLICT, MINIMIZE FITTINGS. CONTINUOUSLY SLOPE TO DRAIN.

COORDINATE TABLE

PT (#)	NORTHING	EASTING	DESCRIPTION
1	208959.50	1218794.80	NW CORNER, PS SLAB
2	208952.17	1218805.53	NE CORNER, PS SLAB
3	208934.41	1218793.41	SE CORNER, PS SLAB
4	208941.75	1218782.67	SW CORNER, PS SLAB
5	208984.09	1218727.05	N CORNER, ELECT/GEN EQPT PAD WALL
6	208973.23	1218735.35	E CORNER, ELECT/GEN EQPT PAD
7	208966.15	1218726.07	S CORNER, ELECT/GEN EQPT PAD WALL
8	208977.01	1218717.78	W CORNER, ELECT/GEN EQPT PAD WALL
9	208932.59	1218833.90	MH CENTER, APPROXIMATE
10	208915.77	1218795.01	MH CENTER, APPROXIMATE
11	208929.01	1218782.64	MH CENTER, APPROXIMATE
12	208988.53	1218724.84	CB CENTER, APPROXIMATE
13	208921.62	1218801.79	C/L SD TERMINATION, APPROXIMATE

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 19911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

PETER JAMES WHITEHOUSE — STATE OF WASHINGTON — 49545 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS

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206.505.3406 (fax)
www.bhcconsultants.com

Designed: T. Whitehouse, P.E.
Drawn: S. Olson
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

PUMP STATION AND PIPING PLAN

Drawing: C46-1
Sheet: 43 of 73
File: P15-10341_C46-1
Date: April 2016

PLOT DATE & TIME: FEB 19, 2016 07:34:56
FILE NAME: (DRAWED BY) S:\CAD\KITSAP COUNTY\15-10341 PS 45 46 47 BEACH\DWGS\P15-10341_C46-1.DWG (RLS)
XREFS: Dorn_Datum_Schuyler_Adam_Schuyler_Elev_Whitehouse_P15-10341_45-46-47-Layout_P15-10341_45-46-47-Topo_P15-10341_C46-1.DWG

Kitsap County

Manchester Pump Stations Nos. 45, 46, and 47 Upgrades Design

PUMP STATION 46

Structural Calculations

16 01841

BHC CONSULTANTS
SEATTLE TACOMA

April 2016

KENNETH E. DAHL
STATE OF WASHINGTON
23044
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

4-8-16

CALCULATION INDEX

5. Buoyancy:

   Top of groundwater is assumed at the ground surface. Contractor is responsible to provide buoyancy design for underground structures.

E. GENERAL SLAB SYSTEM:

The pump station slabs are constructed to be supported by consolidated fill. However, a design check has been done to see if slab system has capacity to carry loading in case fill material settles away from slab.

F. SOILS DATA:

Soils exploration information is contained in "Geotechnical Report for Manchester Pump Stations 45, 46, and 47 Upgrades Design, Kitsap County" dated July 28, 2015 prepared by Landau Associates.

Soil Bearing = 2000 psf at PS 45 and 46. At PS 47, obtain "net zero bearing result" due to low capacity existing soils below.
Wall Pressures = 95 pcf equivalent

G. MATERIAL ASSUMPTIONS:

Concrete: Structural Concrete 4.5 ksf @ 28 days

Reinforcing Steel: ASTM A615 Grade 60

Calculations

Project Kitsap Co. PS 45, 46, 47 Date 3-30-16
Subject Sheet of
Computed By KSD Job Number
Checked By KS Task Number

BHC CONSULTANTS

Concrete System Alternate Design CHECK

NOTE: Pump station slabs are constructed to act as slabs on ground supported by compacted fill around underground structures. In case the fill under the slab settles, check to see that remaining slab has capacity for support.

Back up support check provided below:

Concrete slab : 12" Span 13'

loading : DL + 250 psf LL

$M_u = [1.4(.150) + 1.7(.250)]\ 13^2/8$

$= .63 \times 13^2/8 = 13.4$ K-FT/FT

$K_u = \frac{13.4 \times 12000}{12" \times 9^2} = 165 \Rightarrow a_u = 4.37$

$A_s = 13.4/4.37 \times 9 = .34"/FT$ ok

use #5@12 since there are top bars + 2 way actn.

Assume Footings take full weight of spanning slab

DL = .150 x 7' = 1.05 K

LL = .250 x 7' = 1.75 K

total 2.80 K/FT use 2'6" width FTG

2.5 x 2 KSF = 5 K/FT

ok

BHC CONSULTANTS

Project Title:
Engineer:
Project Descr:

Project ID:

Point Load on Slab

File = c:\Users\kdah\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : Manchester Slab on Ground

Code References

Calculations per ACI 318-11, IBC 2012, CBC 2013, ASCE 7-10
Load Combinations Used : ASCE 7-10

Analytical Values

d - Slab Thickness	5.0 in	Ks - Soil Modulus of Subgrade Reaction	50.0 pci
FS - Req'd Factor of Safety	3.0 : 1	Ec - Concrete Elastic Modulus	3,122.0 ksi
		f'c - Concrete Compressive Strength	4.0 ksi
		μ - Poisson's Ratio	0.150
		Min. Adjacent Load Distance	42.841 in

Analysis Formulas

Pn = 1.72 [(Ks R1 / Ec) 10,000 + 3.6] Fr d^2

Ks = Soil modulus of subgrade reaction
R1 = 50% plate average dimension = sqrt(PlWld * PlLen) /2
Ec = Concrete elastic modulus
Fr - Concrete modulus of rupture = 7.5 * sqrt(f'c)
d - Slab Thickness

Min Adjacent Column Distance = 1.5 * ([Ec d^3 / (12 * (1- u^2) Ks] ^ 1/4)

Ec = Concrete elastic modulus
d - Slab Thickness
u - Poisson's ratio
Ks = Soil modulus of subgrade reaction

Load & Capacity Table

Load ID	Plate (in) Wld	Len	R1 (in)	Applied Concentrated Load on Plate - (kip) D	Lr	L	S	W	E	Governing Ld Comb	Pu (kip)	Pn (kip)	Check
point load	8.00	8.00	4.00	5.00							0.0	86.5	Fail, FS= 0.00 < 3

Check Slab on Ground for Point load
DUE TO HSS LOADING.

Check FOR INDIVIDUAL POINT LOAD OF 10,000 lbs.
over 8" x 8" Area. (conservative)

Project Kitsap Co. Rt 45-47 Date 3-30-16
Subject Sheet of
Computed By MSD Job Number
Checked By Task Number

BHC CONSULTANTS

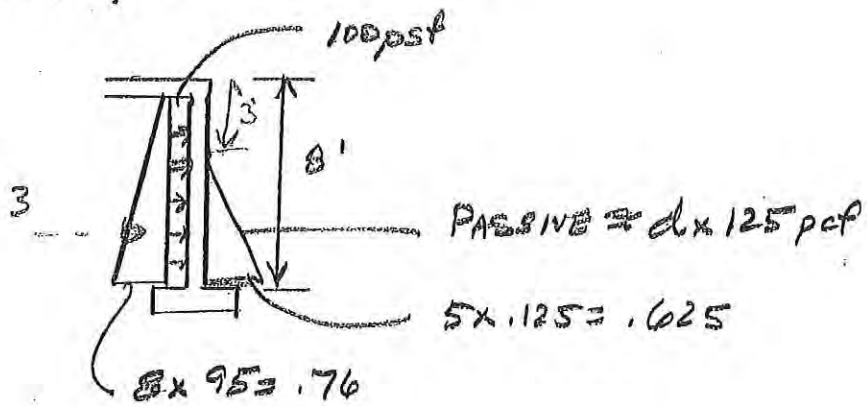
Check wall for Soil and surcharge pressures.

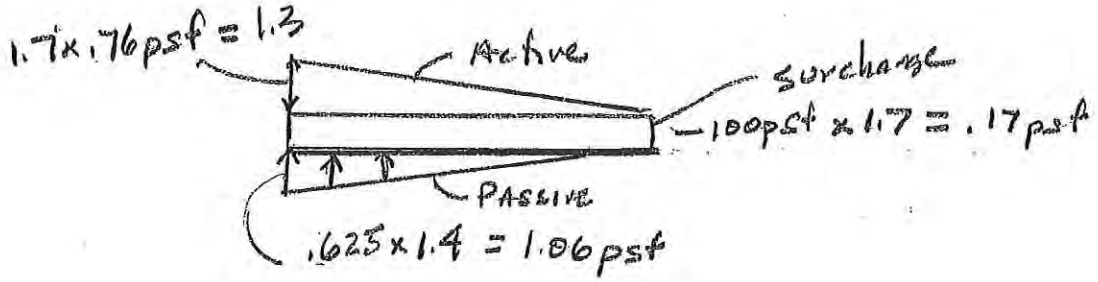
Assume support at slab and ETC.

Max height 8'

AT Rest = 95 pcf

Surcharge = 100psf





See attached Ewercare calculation

Use #5 @ 12" vert

BHC CONSULTANTS

Project Title:
Engineer: KED
Project Descr:

Project ID:

Concrete Beam ~~[illegible]~~ WALL

File = c:\Users\kdahl\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : wall analysis

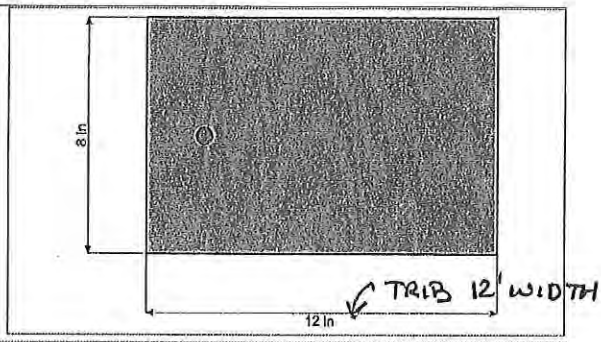
CODE REFERENCES

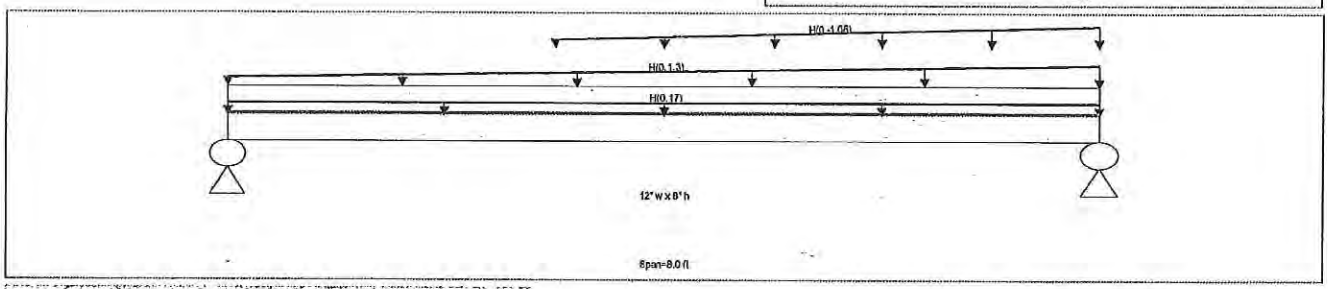
Calculations per ACI 318-11, IBC 2012, ASCE 7-10
Load Combination Set : ASCE 7-10

Material Properties

f'c	=	4.50 ksi	ϕ Phi Values	Flexure :	0.90
fr = f'c^1/2 * 7.50	=	503.12 psi		Shear :	0.750
ψ Density	=	145.0 pcf	β_1	=	0.8250
λ LtWt Factor	=	1.0			
Elastic Modulus	=	3,122.0 ksi	Fy - Stirrups		40.0 ksi
			E - Stirrups	=	29,000.0 ksi
fy - Main Rebar	=	60.0 ksi	Stirrup Bar Size #	=	# 3
E - Main Rebar	=	29,000.0 ksi			
Number of Resisting Legs Per Stirrup	=	2			

Load Combination ASCE 7-10





Cross Section & Reinforcing Details

Rectangular Section, Width = 12.0 in, Height = 8.0 in
Span #1 Reinforcing....
1-#5 at 4.0 in from Bottom, from 0.0 to 8.0 ft in this span

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Load for Span Number 1
Varying Uniform Load : H(S,E) = 0.0->1.30 k/ft, Extent = 0.0 -->> 8.0 ft, Trib Width = 1.0 ft, (active)
Uniform Load : H = 0.170 k/ft, Tributary Width = 1.0 ft, (surcharge)
Varying Uniform Load : H(S,E) = 0.0->-1.060 k/ft, Extent = 3.0 -->> 8.0 ft, Trib Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.828 : 1	Maximum Deflection		
Section used for this span		Typical Section	Max Downward Transient Deflection	0.031 in	Ratio = 3081
Mu : Applied		4.387 k-ft	Max Upward Transient Deflection	0.000 in	Ratio = 0 <360
Mn * Phi : Allowable		5.297 k-ft	Max Downward Total Deflection	0.031 in	Ratio = 3081
Load Combination		+D+H	Max Upward Total Deflection	0.000 in	Ratio = 999 <180
Location of maximum on span		3.978ft			
Span # where maximum occurs		Span # 1			

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
Overall MAXimum	1.861	2.049
Overall MINimum	1.117	1.229
+D+H	1.861	2.049
+D+L+H	1.861	2.049
+D+Lr+H	1.861	2.049
+D+S+H	1.861	2.049
+D+0.750Lr+0.750L+H	1.861	2.049
+D+0.750L+0.750S+H	1.861	2.049
+D+0.60W+H	1.861	2.049
+D+0.70E+H	1.861	2.049
+D+0.750Lr+0.750L+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.5250E+H	1.861	2.049

DEV. COPY

Kitsap County
614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01842
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 47
SITE ADDRESS: 8168 E HEMLOCK ST

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

PARCEL: 4524-005-008-0000
Zone: MVR

Setbacks: **Front:** 20'
Rear: 5'
Side: 5'

APPLICANT: KITSAP COUNTY PUBLIC WORKS
614 DIVISION ST MS26A
PORT ORCHARD, WA 98366
1-360-337-5777

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

VALUATIONS:

U Utility, miscellaneous accessory structure, type V-B	436.00	$19,458.68
Mech/Plumb - cost of fixtures + installation for the project	185000.00	$185,000.00
Total:		**$204,458.68**

FEES:

	Paid	Due
Technology Fee	$20.45	$0.00
Permit Center Base Fee	$90.00	$0.00
Commercial Mechanical and Plumbing Fee	$3,219.00	$0.00
Building Permit Fee, Commercial (all except TI)	$194.59	$0.00
State Surcharge DCD	$4.50	$0.00
Road Impact Fee With CPI Modifier		$0.00
Total Due:		**$0.00**

FIXTURES

Qty	Mechanical Fixtures
1	C-Gaspipe System LPG/NATL/OIL (first 4 outlets)
2	C- Mechanical System Pumps (Misc.)

Qty	Plumbing Fixtures
1	C-Backflow protective device 2 inches or less
1	C-Commercial Hose Bibbs, each
2	C-Miscellaneous Plumbing fixtures on one trap

REQUIRED INSPECTIONS

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
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Temporary Silt & Erosion Control Inspection	Framing Inspection
Foundation, Footing Inspection	Final Building Inspection
Foundation, Stem Wall Inspection	Final Field Inspection
Special Inspection required, to be conducted by 3rd Party	Landscape Inspection

CONDITIONS

Permit Expiration: Building permits expire 365 days after permit issuance, or 180 days after the last approved inspection activity is performed. The Building Official may extend the time for action for a period not exceeding 180 days, upon the receipt of a written extension request indicating that circumstances beyond the control of the permit holder have prevented action from being taken. Additional fees may be due to reactivate the permit. _____

ELECTRICAL WORK. If electrical work is proposed, a separate electrical permit is required. You can contact L&I at 360-415-4000 to obtain an electrical permit. Electrical systems must be inspected by L&I prior to requesting a framing inspection and final approval granted prior to requesting a final building inspection from the Department of Community Development. _____

Reinspection Fee: All approved construction plans, the approved site plan, the printed building permit, and the permit inspection placard are required to be on-site for inspection purposes, and work to be inspected shall be complete and ready for inspection. If an inspection is called for and plans are not available on site, or the work is not ready for inspection, or if previously identified corrections have not been made, approval will not be granted. In addition, a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Final Inspection Required: All building permits shall have a final inspection performed and approved by the Kitsap County Department of Community Development prior to permit expiration. The failure to request a final inspection or failure to obtain final approval prior to expiration will be documented in the legal property records on file with Kitsap County as being non-compliant with Kitsap County ordinances and building regulations and will be referred to Kitsap County Code Compliance for action. _____

A separate permit is required for each proposed sign. _____

Certificate of Occupancy. All buildings require a certificate of occupancy. No building or structure shall be used or occupied, until a final inspection has been approved and a certificate of occupancy issued. Issuance of a certificate of occupancy shall not be construed as an approval of any violation of the provisions of this code or of other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. _____

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
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www.kitsapgov.com/dcd/

16 01842
PROJECT NAME: Kitsap County Wastewater - Upgrades to Structure Manchester Pump Station No 47
SITE ADDRESS: 8168 E HEMLOCK ST

C-PW/UTILITIES
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

Commercial Address: Numerals for commercial buildings shall be conspicuously displayed on a contrasting background and shall be a minimum of 12 inches in height with a minimum stroke of 1-1/2 inches when within 50 feet of the way of travel. Buildings located between 50 and 100 feet from the way of travel shall have numerals a minimum height of 18 inches with a minimum stroke of 2 inches. Buildings located more than 100 feet from the way of travel shall have numerals a minimum of 24 inches in height with a minimum stroke of 2-1/2 inches. Numerals designating suite numbers shall be a minimum of 4 inches in height. All sizes may be reduced by 50 percent if numerals are illuminated 24 hours per day. If the building is not clearly visible from a named way of travel, the numerical designation (address) shall also be displayed near the main entrance to the property as well as at the driveway entrance that leads to the building. Property addresses shall be posted prior to requesting any inspections. If property addresses are not posted upon inspection, inspection will not be approved and a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Prior to final building inspection scheduling, all work associated with SDAP (XX XXXXX) shall be completed and a satisfactory final SDAP inspection obtained. _____

This permit shall comply with all Kitsap Public Health District regulations and conditions of approval. _____

The uses of the subject property are limited to the uses proposed by the applicant and any other uses will be subject to further review pursuant to the requirements of the Kitsap County Code (KCC). Unless in conflict with the conditions stated and/or any regulations, all terms and specifications of the application shall be binding conditions of approval. Approval of this project shall not, and is not, to be construed as approval for more extensive or other utilization of the subject property. _____

Landscaping shall be installed and maintained in conformance with the requirements of Kitsap County Code (KCC) 17.385. Landscaping shall be installed and inspected prior to requesting a final inspection, or guaranteed by means of an assignment of funds or bonded in the amount of 150 percent of the cost of installation. _____

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of Laws and Ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state/local law regulating construction or the performance of construction.

_____
Print Name

_____ _____
Signature Date

Let us know how we are doing by taking the short customer survey at www.surveymonkey.com/s/DCDCustomerSurvey

KITSAP COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING INSPECTION CARD

Please Note: Only approved inspections extend permit expiration date

PERMIT NUMBER:
16 01842

This Placard must be posted on or near building and the "Approved" plans must be available at the site.

Permit Type:
Commercial Public Works & Utilities

Site Address:
8168 E HEMLOCK ST

Owner:

Applicant:
KITSAP COUNTY PUBLIC WORKS

Code Edition:
IBC 2012

Additional Notes:
Inspection Results Legend:
AP = Approved
DA = Disapproved
DP = Disapproved with Penalty

All conditions of approval must be met prior to final occupancy. See printed permit for a list of all conditions associated with your permit.

A reinspection fee will apply if the project is not ready for the requested inspection, or corrections have not been completed.

No concrete shall be poured or reinforcement shell covered without inspection and approval.

Required Inspections Kitsap County Inspection Line (360) 337-5777 Online at: www.kitsapgov.com/dcd	**Approved By:**	**DATE**
Temporary Silt & Erosion Control Inspection		
Foundation, Footing Inspection		
Foundation, Stem Wall Inspection		
Special Inspection required, to be conducted by 3rd Party		
Framing Inspection		
Final Field Inspection		
Landscape Inspection		

Prior to calling for your final inspection:

Health Approval
If applicable, this permit shall comply with all Kitsap Public Health District regulations and conditions of approval and shall have final Health Approval prior to calling for a final inspection.

L&I Electrical Approval
If electrical work is proposed, a separate electrical permit is required and must be inspected by and approved by L&I prior to requesting a final building inspection. You can contact L&I at 360-415-4000.

Final Building Inspection		

Finals require a 2 business day advance notice and must be requested by 3:00pm. No use or occupancy is permitted prior to final inspection and approval for occupancy.

BROCHURE # 7

YOUR PERMIT IS ISSUED

Now that your building permit has been issued, there are a few things that you can do to help ensure a smooth process of inspections and project success:

1. **Post the Building Permit Placard.**

   (Red, yellow or blue card) The building permit placard must be posted on site in an easily seen place, protected from the elements. Remember: this placard must last as long as your project.

2. **Ensure that your address is clearly posted.**

   If we can't find your project, we can't inspect or approve the work. In addition, you want to make sure that emergency responders can also find your work site.

3. **Ensure that the plans are available on site.**

   The "APPROVED" set of "DEV COPY" construction plans, engineering calculations and the site plan must be available on site for inspections. The documents must be protected and maintained in the same condition as when issued, and they may not be taken apart or altered in any way at the project site. If the plans are mutilated or unreadable... or missing, the inspector will not approve your inspection, an hourly re-inspection fee will be charged, and you will need to contact DCD to arrange for a replacement set at your cost, before any further inspections can be performed. Remember, it is your responsibility to keep these protected and easily available for the inspection.

4. **Build "PER THE PLANS."**

   Ensure that the project is constructed in full accordance with the "APPROVED" plans. This is the single most common cause of inspection disapprovals and subsequent delays and expense, yet is so simply avoided. If during the course of the project, changes are necessary, the building permit and plans must be revised prior to proceeding. Revisions to approved plans must be submitted to the Department of Community Development for review and approval prior to implementing such change. If an inspector finds that the project is not in accordance with the approved plans, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged.

5. **Use: Go to the Online Permit Center at http://permits.kitsapgov.com/Public/Welcome or Call: 360-337-5777 and ask to schedule an inspection.**

   The minimum required inspections have been indicated on your building permit placard as well as the printed building permit that you signed. When you are confident that you are ready for a required inspection, call or submit via the website a request. Inspections are for the next available business day. (Exception: "FINAL" inspections require two business days)

Permit Expiration

Building permits expire 180 days after the last approved inspection activity is performed. Having required inspections performed identifies on-going activity and automatically extends the permit expiration out another 180 days. However, if you are not going to be ready for an inspection within 180 days, and your permit has not yet expired, then a written extension request may be sent to DCD requesting up to 180 additional days. Such request must include the specific circumstances; that were beyond your control, that have prevented the work from progressing. Please note that for an extension request to be granted, it must be received prior to the permit expiration. Please see brochure #3 - Permit Expiration, for additional information.

Being "Ready for Inspection"

When you reach a stage where you are ready for an inspection, please be sure that the project is completely ready for such inspection. Inspectors' responsibility is not to create a "punch-list" of what is left to be done. Inspectors have a very limited time set aside to perform the inspection of your project, and they must quickly move on to the next scheduled site. If an inspector finds numerous non-

Kitsap County Department of Community Development
614 Division Street, MS-36
Port Orchard, WA 98366-4682
www.kitsapgov.com/dcd/
Revision Date: 11/16/15

Phone: (360) 337-5777
Fax: (360) 337-4925
Form Number: 1104B
Email: Kitsap1@co.kitsap.wa.us

compliant issues, the inspection will cease, and the correction notice will simply state that the project is not ready for inspection. If a project is not ready for inspection, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged. **Please note: both plans and permit need to be on-site for the inspection.**

Final Inspection Required.

All building permits require a final inspection prior to being used or occupied regardless of the size of the project, or whether or not it is new work, or a remodel, addition, or repair. The International Building Code, Section 110.1 (IRC R110.1) states in part: No building or structure shall be used or occupied until the building official has issued a Certificate of Occupancy. The Certificate of Occupancy will not be issued until all required inspections have been performed and approved, and any associated permits such as SDAP, fire sprinkler, fire alarm, road approach, etc. have been completed and finaled. In addition, any "deferred" impact fees must be paid prior to the issuance of the Certificate of Occupancy.

Some projects may be exempted from the certificate of occupancy requirement, such as fences or small accessory structures. However, these projects still require a final inspection to complete the permit.

It is a civil infraction to occupy a building without obtaining a valid Certificate of Occupancy, or to otherwise violate the provisions of the Kitsap County Building & Fire Code. In addition, if a project is abandoned, or if a building permit expires without completion, DCD may initiate code compliance actions and/or file a notice to title with the Kitsap County Auditor's office identifying that the property is not in compliance with current codes, which could negatively affect future sales or refinancing efforts.

Builder's Responsibilities

As the builder or person responsible for the project, compliance with the adopted codes is your responsibility; just like it is your responsibility to obey all traffic laws when driving. There is a common misconception that county inspectors should identify "all" code violations. However, the reality is that the county implements a general permitting and inspection program for code compliance, but is not a "quality assurance" agency. Much like a sheriff's department can't identify and write citations to each and every person who drives too fast, or "creeps" past a stop sign; a building inspector does not have an opportunity to look at each and every detail in a structure. Each inspection is essentially a "spot-check" for code compliance. Two identical houses, with identical violations, though not necessarily possible, could potentially have different correction items identified. Likewise, on a follow-up inspection additional violations that may have previously been overlooked could be identified, though every effort is made to avoid such instances. Please remember, just because an inspector may not identify a particular problem, does not mean that the problem does not exist, or does not need to be corrected. Ultimately, when you sell or transfer this project, you will remain the person responsible to ensure that it is code compliant. Again, it is your responsibility to pursue construction, monitor timeframes, request inspections, and complete the project in accordance with the approved plans, permit conditions, and applicable codes.

Need Help?

Staff at the Department of Community Development wants to help ensure that your project is successful, safe, and code compliant. If you have questions regarding your project, where to purchase copies of particular codes, or want help understanding certain code requirements, please contact us via e-mail at: openline@co.kitsap.wa.us or call us at 360-337-5777.

16 01842

Kitsap County

Manchester Pump Stations Nos. 45, 46, and 47 Upgrades Design

PUMP STATION 47

Structural Calculations

BHC CONSULTANTS
SEATTLE TACOMA

April 2016

4-8-16

CALCULATION INDEX

Design Criteria

KITSAP COUNTY PUMP STATIONS 45, 46, AND 47

APRIL 2016

DESIGN CRITERIA

A. CODES:

1. 2012 International Building Code with Kitsap County Amendments
2. ASCE 7-10 – Minimum Design Loads for and Buildings and Other Structures
3. ACI 318-11 – Building Code Requirements for Structural Concrete
4. ACI 350-06 – Environmental Engineering Concrete Structures Code Requirements
5. AISC 360-10 – Structural Provisions for Structural Steel Buildings

B. LOCATION:

N 47.55, W 122.55, Elevation 11 ft.

C. RISK CATEGORY IV

D. DESIGN LOADS:

1. Dead Load:

   Actual building structure weight

2. Live Load

   Top Slab: 250 psf or HS-20 (whichever is greater)

3. Wind Design Data

   Not Applicable

4. Earthquake Design Data:

   Site Class: C
   Mapped Spectral Accelerations: Ss = 1.59 S1 = .61 per Geotechnical Report

   Fa=1.0; Fv=1.3

   Sds = 1.59x1.0x.67=1.06; Sd1= 0.61x1.3x.67= 0.53

   Seismic Design Category: D

5. Buoyancy:

   Top of groundwater is assumed at the ground surface. Contractor is responsible to provide buoyancy design for underground structures.

E. GENERAL SLAB SYSTEM:

The pump station slabs are constructed to be supported by consolidated fill. However, a design check has been done to see if slab system has capacity to carry loading in case fill material settles away from slab.

F. SOILS DATA:

Soils exploration information is contained in "Geotechnical Report for Manchester Pump Stations 45, 46, and 47 Upgrades Design, Kitsap County" dated July 28, 2015 prepared by Landau Associates.

Soil Bearing = 2000 psf at PS 45 and 46. At PS 47, obtain "net zero bearing result" due to low capacity existing soils below.
Wall Pressures = 95 pcf equivalent

G. MATERIAL ASSUMPTIONS:

Concrete: Structural Concrete 4.5 ksf @ 28 days

Reinforcing Steel: ASTM A615 Grade 60

Calculations

Project Kitsap Co. PS 45, 46, 47 Date 3-30-16
Subject Sheet of
Computed By KSD Job Number
Checked By KS Task Number

BHC CONSULTANTS

Concrete System Alternate Design CHECK

NOTE: Pump Station slabs are constructed to act as slabs on ground supported by compacted fill around underground structures. In case the fill under the slab settles, check to see that remaining slab has capacity for support.

Back up support check provided below:

Concrete slab : 12" span 13'

loading : DL + 250 psf LL

$M_u = [1.4(.150) + 1.7(.250)]\ 13^2/8$

$= .63 \times 13^2/8 = 13.4$ K-FT/FT

$K_u = \frac{13.4 \times 12000}{12" \times 9^2} = 165 \Rightarrow a_u = 4.37$

$A_s = 13.4/4.37 \times 9 = .34"/FT$ OK

use #5@12 since there are top bars + 2 way action

Assume Footings take full weight of spanning slab

DL = .150 x 7' = 1.05 K

LL = .250 x 7' = 1.75 K

total 2.80 K/FT use 2'6" width FTG

2.5 x 2 KSF = 5 K/FT

OK

BHC CONSULTANTS

Project Title:
Engineer:
Project Descr:

Project ID:

Point Load on Slab

File = c:\Users\kdahl\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : Manchester Slab on Ground

Code References

Calculations per ACI 318-11, IBC 2012, CBC 2013, ASCE 7-10
Load Combinations Used : ASCE 7-10

Analytical Values

d - Slab Thickness	5.0 in	Ks - Soil Modulus of Subgrade Reaction	50.0 pci
FS - Req'd Factor of Safety	3.0 : 1	Ec - Concrete Elastic Modulus	3,122.0 ksi
		f'c - Concrete Compressive Strength	4.0 ksi
		μ - Poisson's Ratio	0.150
		Min. Adjacent Load Distance	42.841 in

Analysis Formulas

Pn = 1.72 [(Ks R1 / Ec) 10,000 + 3.6] Fr d^2
Ks = Soil modulus of subgrade reaction
R1 = 50% plate average dimension = sqrt(PlWid * PlLen) /2
Ec = Concrete elastic modulus
Fr - Concrete modulus of rupture = 7.5 * sqrt(f'c)
d - Slab Thickness

Min Adjacent Column Distance = 1.5 * ([Ec d^3 / (12 * (1- u^2) Ks] ^ 1/4)
Ec = Concrete elastic modulus
d - Slab Thickness
u - Poisson's ratio
Ks = Soil modulus of subgrade reaction

Load & Capacity Table

Load ID	Plate (in) Wid	Len	R1 (in)	Applied Concentrated Load on Plate - (kip) D	Lr	L	S	W	E	Governing Ld Comb	Pu (kip)	Pn (kip)	Check
point load	8.00	8.00	4.00	5.00							0.0	86.5	Fail, FS= 0.00 < 3

Check Slab on Ground for Point load
DUE TO HSS LOADING.

Check FOR INDIVIDUAL POINT LOAD OF 10,000 lbs.
over 8" x 8" Area. (conservative)

Project Kitsap Co. PB 45-47 Date 3-30-16
Subject Sheet of
Computed By Job Number
Checked By Task Number

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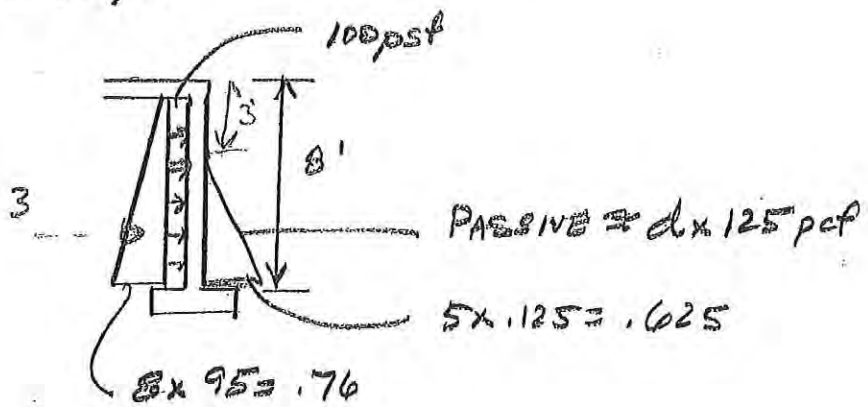
Check wall for Soil and surcharge pressures.

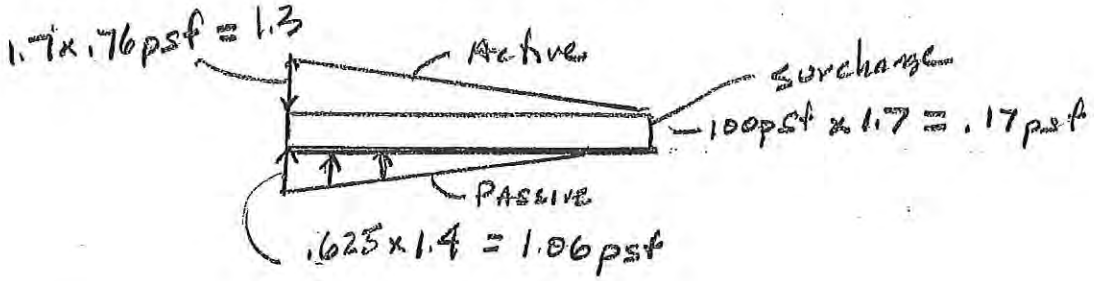
Assume support at slab and ftg.

Max height 8'

AT Rest = 95 pcf

Surcharge = 100psf





See attached EWERCAVE calculation

Use #5 @ 12" vert.

BHC CONSULTANTS

Project Title:
Engineer: KED
Project Descr:

Project ID:

Concrete Beam ~~SLAB~~ WALL

File = c:\Users\kdahl\DOCUME~1\ENERCA~1\MANCHE~1.EC6
ENERCALC, INC. 1983-2015, Build:6.15.7.30, Ver:6.15.8.31

Lic. # : KW-06010113 — Licensee : BHC Consultants

Description : wall analysis

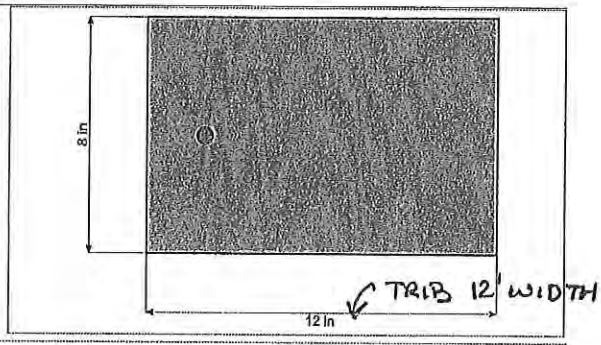
CODE REFERENCES

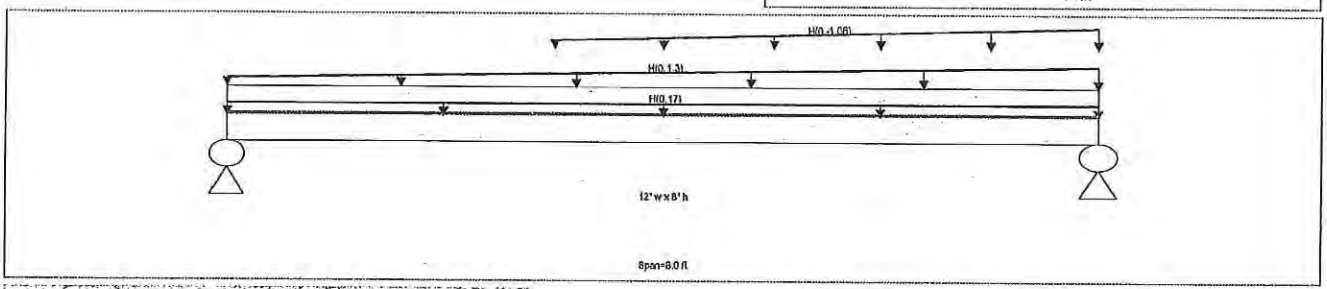
Calculations per ACI 318-11, IBC 2012, ASCE 7-10
Load Combination Set : ASCE 7-10

Material Properties

f'c	=	4.50 ksi	ϕ Phi Values	Flexure :	0.90
fr = f'c^1/2 * 7.50	=	503.12 psi		Shear :	0.750
ψ Density	=	145.0 pcf	β_1	=	0.8250
λ LtWt Factor	=	1.0			
Elastic Modulus	=	3,122.0 ksi	Fy - Stirrups		40.0 ksi
fy - Main Rebar	=	60.0 ksi	E - Stirrups	=	29,000.0 ksi
E - Main Rebar	=	29,000.0 ksi	Stirrup Bar Size #	=	# 3
			Number of Resisting Legs Per Stirrup	=	2

Load Combination ASCE 7-10





Cross Section & Reinforcing Details

Rectangular Section, Width = 12.0 in, Height = 8.0 in
Span #1 Reinforcing....
1-#5 at 4.0 in from Bottom, from 0.0 to 8.0 ft in this span

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Load for Span Number 1
Varying Uniform Load : H(S,E) = 0.0->1.30 k/ft, Extent = 0.0 -->> 8.0 ft, Trib Width = 1.0 ft, (active)
Uniform Load : H = 0.170 k/ft, Tributary Width = 1.0 ft, (surcharge)
Varying Uniform Load : H(S,E) = 0.0->-1.060 k/ft, Extent = 3.0 -->> 8.0 ft, Trib Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.828 : 1	Maximum Deflection			
Section used for this span	Typical Section	Max Downward Transient Deflection	0.031 in	Ratio =	3081
Mu : Applied	4.387 k-ft	Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Mn * Phi : Allowable	5.297 k-ft	Max Downward Total Deflection	0.031 in	Ratio =	3081
Load Combination	+D+H	Max Upward Total Deflection	0.000 in	Ratio =	999 <180
Location of maximum on span	3.978ft				
Span # where maximum occurs	Span # 1				

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
Overall MAXimum	1.861	2.049
Overall MINimum	1.117	1.229
+D+H	1.861	2.049
+D+L+H	1.861	2.049
+D+Lr+H	1.861	2.049
+D+S+H	1.861	2.049
+D+0.750Lr+0.750L+H	1.861	2.049
+D+0.750L+0.750S+H	1.861	2.049
+D+0.60W+H	1.861	2.049
+D+0.70E+H	1.861	2.049
+D+0.750Lr+0.750L+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.450W+H	1.861	2.049
+D+0.750L+0.750S+0.5250E+H	1.861	2.049

Project Kitsap PS 45-47 Date 3-30-16

Subject _____ Sheet _____ of _____

Computed By KEO Job Number _____

Checked By _____ Task Number _____

BHC CONSULTANTS

PS 47

Check WEIGHT OF SLAB SYSTEM AND lightweight Fill so that Less than or equivalent to SOIL Removed.

FOR SLAB Structure Assume 4' OF GROUND Removed

WEIGHT = 4 x 125 pcf = 500 psf

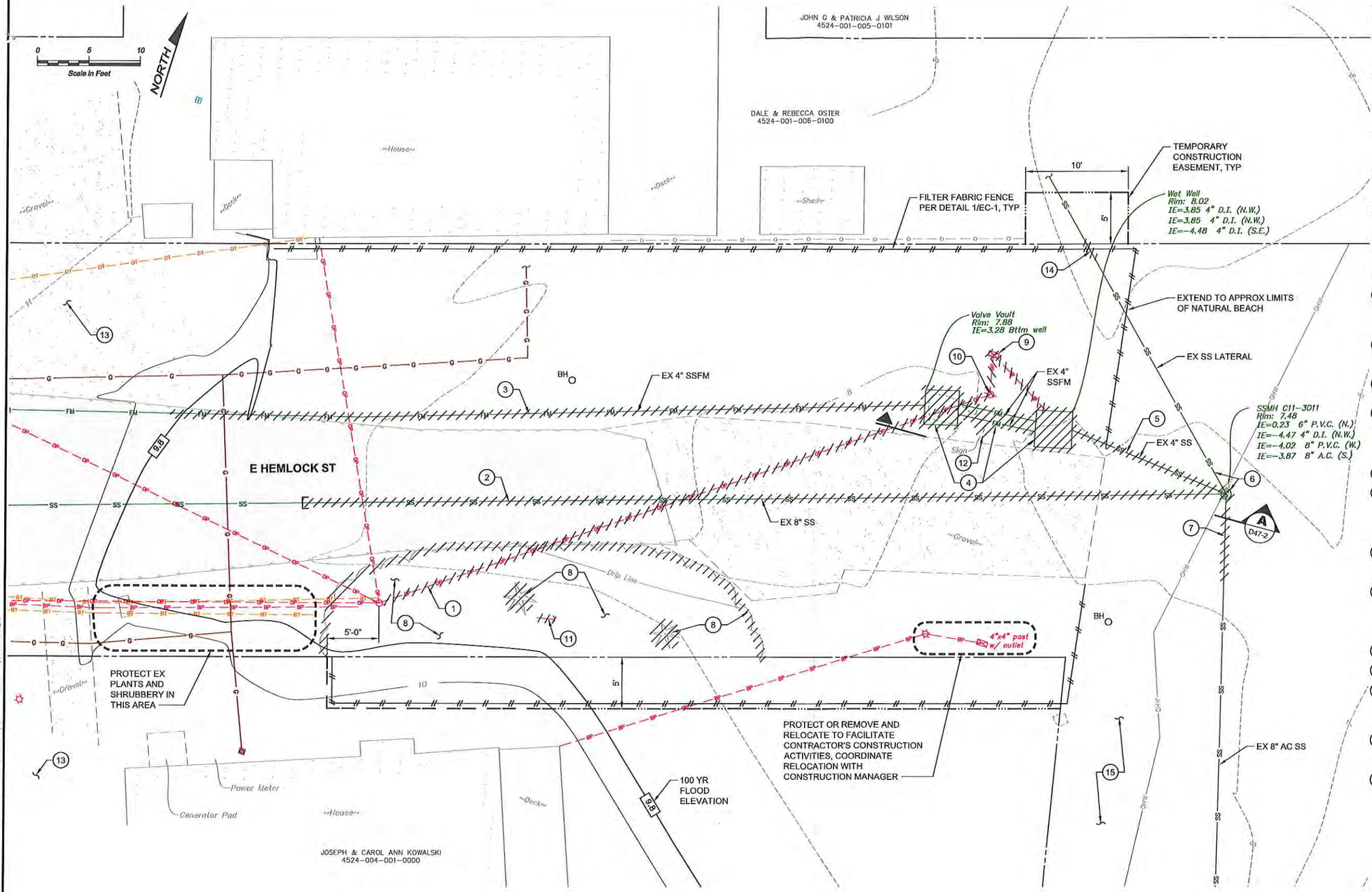
NEW SLAB = 12" conc = 150 psf

NEW FILL = 4' x .070 pcf = 280 psf

430 psf OK

PUMP STATION 47

SITE PLANS



NOTES:

1. DEMOLITION OF EXISTING PUMP STATION FACILITIES SHALL OCCUR ONLY AFTER COMMISSIONING (INSTALLATION, TESTING, AND CONFIRMED OPERATION) OF THE NEW PUMP STATION, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. SEE SPEC SECTION 02 41 00 FOR ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS.
4. PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, TREES, ETC. UNLESS SPECIFICALLY INDICATED TO BE REMOVED.
5. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
6. SEE RESTORATION DWGS FOR REMOVAL OF EXISTING ASPHALT AND GROUND.
7. ADJUST/REMOVE/REINSTALL FILTER FABRIC FENCE AS NECESSARY TO CONSTRUCT IMPROVEMENTS.

CONSTRUCTION NOTES:

1. RELOCATE OVERHEAD POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
2. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. SEE DWG C47-1 FOR LIMITS OF NEW IMPROVEMENTS.
3. REMOVE EXISTING FORCE MAIN. SEE DWG C47-1 FOR LIMITS OF NEW IMPROVEMENTS.
4. DECOMMISSION AND REMOVE MECH, ELECT, AND MISC EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISCHARGE PIPING BETWEEN STRUCTURES. SEE DWG D47-2 FOR ADDITIONAL DEMOLITION DETAILS.
5. PLUG AND ABANDON EXISTING SEWER.
6. MAINTAIN SERVICE OF EXISTING SEWER LATERAL DURING AND AFTER CONSTRUCTION. SEE DWG D47-2 FOR ADDITIONAL DEMOLITION DETAILS. SEE NEW BEACH MANHOLE LOCATION ON DWG C47-1 FOR EXISTING SEWER LATERAL RECONNECTION.
7. REMOVE AS REQUIRED AND CONNECT TO NEW SSMH. MAINTAIN SERVICE DURING CONSTRUCTION, SEE NEW BEACH MANHOLE LOCATION ON DWG C47-1.
8. CAREFULLY REMOVE BOXWOOD SHRUB SCREEN, WRAP IN BURLAP AND DELIVER TO ADJACENT PROPERTY OWNER (KOWALSKI) FOR REPLANTING. REMOVE TREE AND REMAINING HEAVY SHRUBBERY FOR CONSTRUCTION OF NEW IMPROVEMENTS.
9. REMOVE ELECT EQUIP.
10. REMOVE EXISTING POWER POLE.
11. REMOVE AND REPLACE OR RELOCATE POWER POLE GUY WIRE. COORD W/ UTILITY PROVIDER.
12. REMOVE AND REINSTALL SIGN IN LOCATION DIRECTED BY COUNTY.
13. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
14. REMOVE EXISTING SEWER LATERAL TO INSTALL CLEANOUT, SEE C47-1 FOR LOCATION.
15. REMOVE CREOSOTE TREATED DRIFT LOGS AND STYROFOAM AS DIRECTED BY THE CONSTRUCTION MANAGER.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 19911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

TYLER JAMES WHITEHOUSE — STATE OF WASHINGTON — 49545 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

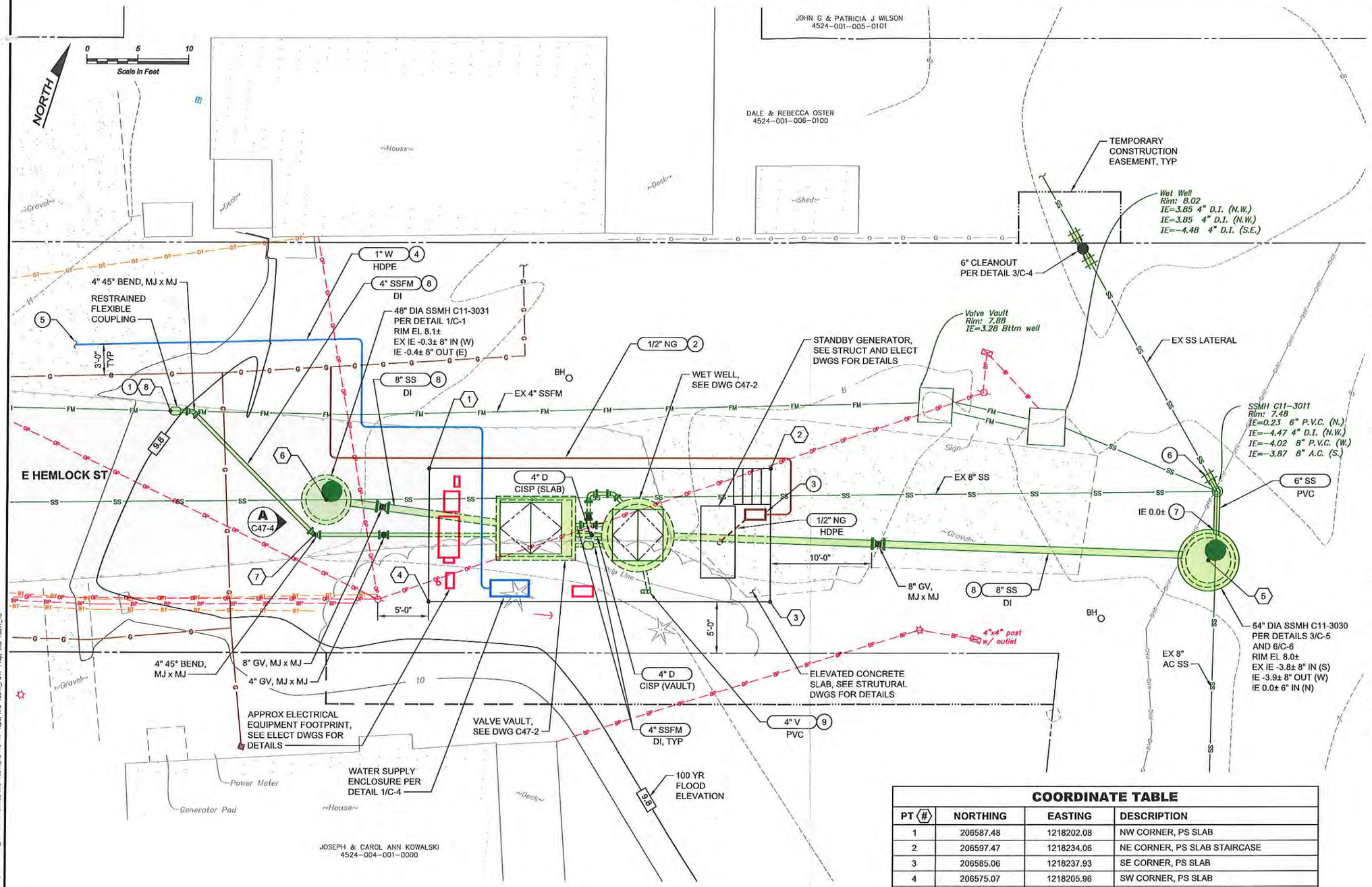
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

EXISTING PUMP STATION SITE, TESC AND DEMOLITION PLAN

Drawing: D47-1
Sheet: 57 of 73
File: P15-10341_D47-1
Date: April 2016

PLOT DATE & TIME: APR 28, 2016 14:47:32
FILE NAME (UPDATED BY): S:\CAD\KITSAP COUNTY\15-10341 PS 45, 46 & 47 BL DESIGN\DWGS\P15-10341_D47-1DWG (RLS)
XREFS: Dorn_Gibson_Schuyler_Adam_Schuyler_Erika_Whitehouse_X15-10341_45-46-47-Elems_X15-10341_45-46-47-Topo_X15-10341_D47-2Dwgs_X15-10341_TB



NOTES:

1. EXISTING PUMP STATION FACILITIES ARE SHOWN AND SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION. SEE DEMOLITION DWGS FOR DECOMMISSIONING, DEMOLITION, REMOVAL AND ABANDONING OF EXISTING PUMP STATION FACILITIES. SEE RESTORATION DWGS FOR FINISHED SITE AND RESTORATION PLAN.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
4. ALL SSFM PIPE AND VALVE JOINTS, FITTINGS AND COUPLINGS SHALL BE RESTRAINED.
5. INSTALL BURIED VALVES PER DETAIL 1/C-2.

CONSTRUCTION NOTES:

(1) POTHOLE AND VERIFY CONNECTION DEPTH AND LOCATION PRIOR TO CONSTRUCTION. NEW FORCE MAIN SHALL SLOPE UP FROM VALVE VAULT TO CONNECTION POINT. NOTIFY ENGINEER OF ANY DISCREPANCY.

(2) CASCADE NATURAL GAS WILL PROVIDE AND INSTALL NATURAL GAS PIPELINE, CONNECTION TO MAIN, AND METER. CONTRACTOR SHALL EXCAVATE TRENCH PER DETAIL 5/C-5 AND PROVIDE AND INSTALL REQUIRED BACKFILL AND RESTORE SURFACE. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS DOWNSTREAM OF METER. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY CASCADE NATURAL GAS WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.

(3) FINAL LOCATION OF METER TO BE DETERMINED BY COUNTY CONSTRUCTION MANAGER AND ENGINEER IN FIELD.

(4) MANCHESTER WATER DISTRICT WILL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE FROM CONNECTION TO EXISTING WATER MAIN TO NEW WATER METER. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS AND RESTORE SURFACE DOWNSTREAM OF NEW WATER METER. TRENCH SECTION PER DETAIL 5/C-5. CONTRACTOR SHALL COORDINATE ALL PIPING AND APPURTENANCES INSTALLED BY MANCHESTER WATER DISTRICT WITH EXISTING AND NEW PIPING AND FACILITIES TO AVOID CONFLICT.

(5) CONTRACTOR TO INSTALL NEW WATER PIPING APPROXIMATE 110 LF TO NEW 1" WATER METER INSTALLED AT THE NE CORNER OF HEMLOCK AND NUBLING. RESTORE TRENCH SURFACE WITH EXISTING SOD/GRAVEL TO MATCH EXISTING.

(6) CONNECT TO EXISTING 6" SEWER LATERAL WITH FLEXIBLE COUPLING. ROUTE TO NEW SSMH MATCHING EXISTING SLOPE, INSTALL BEND AS REQUIRED.

(7) CORE DRILL AND SEAL WITH FLEXIBLE BOOT PER DETAIL 7/C-1.

(8) SEE DRAWING C47-5 FOR PIPE PROFILE.

(9) SEE DETAIL 4/C-5 FOR VENT LOCATION AND DETAILS.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

COORDINATE TABLE

PT (#)	NORTHING	EASTING	DESCRIPTION
1	206587.48	1218202.08	NW CORNER, PS SLAB
2	206597.47	1218234.06	NE CORNER, PS SLAB STAIRCASE
3	206585.06	1218237.93	SE CORNER, PS SLAB
4	206575.07	1218205.96	SW CORNER, PS SLAB
5	206601.76	1218277.80	MH CENTER, APPROXIMATE
6	206581.52	1218193.38	MH CENTER, APPROXIMATE
7	206577.93	1218193.29	45 DEGREE BEND, 4" SSFM
8	206585.19	1218176.09	CONNECT TO EX 4" SSFM, APPROXIMATE

SAMUEL ADAM SCHUYLER
STATE OF WASHINGTON
19911
REGISTERED PROFESSIONAL ENGINEER
4/27/16

TYLER JAMES WHITEHOUSE
STATE OF WASHINGTON
21535
REGISTERED PROFESSIONAL ENGINEER
4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

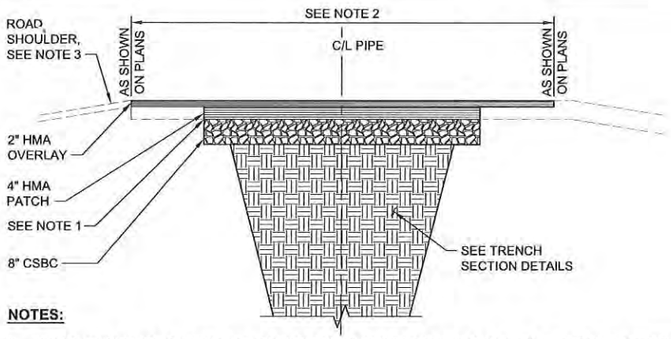
PUMP STATION AND PIPING PLAN

Drawing: C47-1
Sheet: 59 of 73
File: P15-10341_C47-1
Date: April 2016

PLOT DATE & TIME: FEB 19 2016 08:20:19
FILE NAME (UPDATED BY): S:\CAD\KITSAP COUNTY\P15-10341 PS 45 46 47 BL DESIGN\DWGS\P15-10341_C47-1.DWG (PLS)
XREFS: bohl_Glason_Schuyler_Adam_Schuyler_Erika_Whitehouse_X15-10341_45-46-47-Events_X15-10341_45-46-47-Topo_X15-10341_P547-Prop_X15-10341_TB

PUMP STATION 47

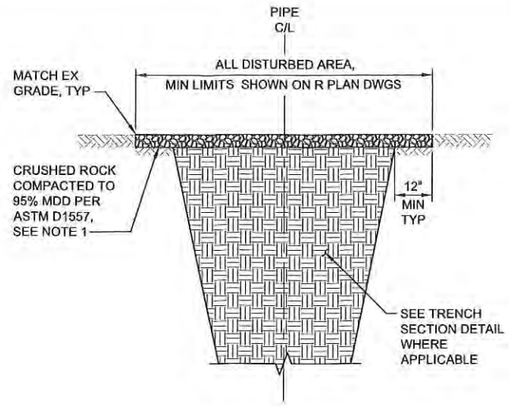
LANDSCAPE PLANS



NOTES:

1. SAW CUT EXISTING AC PAVEMENT 12" WIDER THAN TOP OF TRENCH. CUT SHALL BE STRAIGHT AND FULL DEPTH. REMOVE AND DISPOSE OF EXISTING AC OVER TRENCH. CLEAN, HEAT, AND TACK EDGES OF EXISTING AC WITH SEALER PRIOR TO INSTALLING NEW HMA PATCH.
2. SAW CUT EXISTING AC PAVEMENT AT EDGE OF OVERLAY LIMITS. GRIND AND REMOVE EXISTING AC TO FACILITATE HMA OVERLAY. CUTS SHALL BE STRAIGHT AND VERTICAL. CLEAN, HEAT, AND TACK EDGES WITH SEALER. PROVIDE SMOOTH TRANSITION BETWEEN EXISTING ROADWAY AND NEW HMA OVERLAY.
3. RESTORE DISTURBED GRAVEL SHOULDER WITH 4" OF CSTC. REMOVE EXISTING GRAVEL AS NECESSARY TO MAINTAIN GRADES.
4. EXISTING AC MAY BE GROUND AND REUSED IN LIEU OF CSBC.
5. GRIND TRANSITION ZONES AT LIMITS OF PAVING PERPENDICULAR TO THE CENTERLINE PER SECTION 5-04.3 (23) OF SPECIAL PROVISIONS.
6. ALL JOINTS SHALL BE SEALED WITH A 12" WIDE STRIP OF AR 2000 ASPHALT SEALER CENTERED ON JOINT.
7. MATCH ELEVATIONS OF EXISTING PAVEMENT, DRIVEWAYS, SHOULDERS, AND OTHER SURFACE FEATURES.
8. RESTORE ALL DISTURBED PAVEMENT MARKINGS.

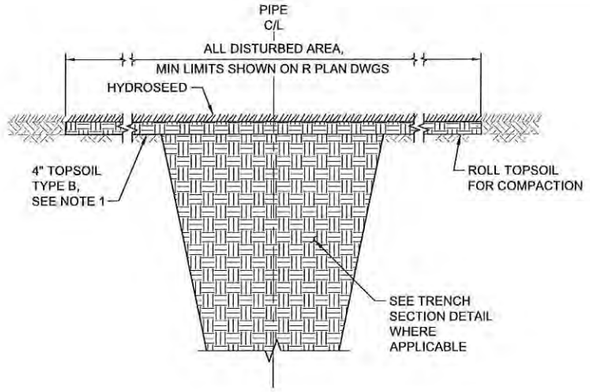
HMA PAVEMENT PATCH & OVERLAY
DETAIL 1
NTS TYP



NOTES:

1. CRUSHED ROCK SIZE AND DEPTH AS NOTED ON RESTORATION PLAN DWGS.

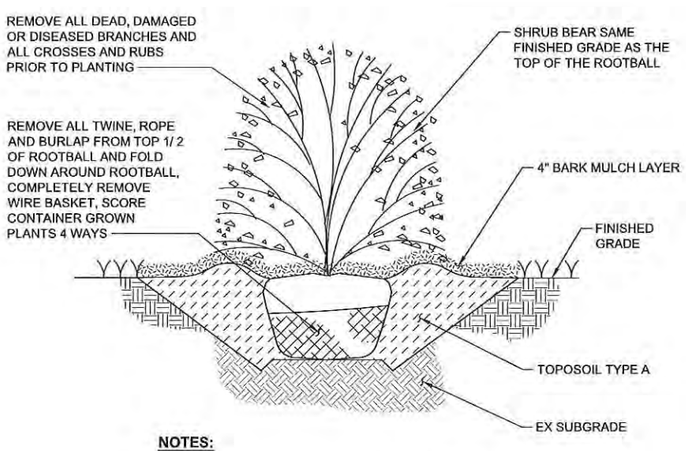
GRAVEL SURFACING
DETAIL 2
NTS TYP



NOTES:

1. REGRADE DISTURBED AREAS TO ORIGINAL CONTOURS LESS DEPTH OF NEW TOPSOIL PRIOR TO INSTALLING NEW TOPSOIL. RESTORE ORIGINAL GRADE AND ELEVATIONS AFTER INSTALLATION OF TOPSOIL.

HYDROSEED
DETAIL 3
NTS TYP



NOTES:

1. SEE RESTORATION PLAN DWGS FOR PLANT TYPE.

PLANTING
DETAIL 4
NTS TYP

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER, STATE OF WASHINGTON, 19917, REGISTERED PROFESSIONAL ENGINEER, 4/27/16

TYLER JAMES WHITEHOUSE, STATE OF WASHINGTON, 19345, REGISTERED PROFESSIONAL ENGINEER, 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Drawn: S. Olsoe
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: NTS
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

RESTORATION DETAILS

Drawing: R-1
Sheet: 13 of 73
File: P15-10341_R-1
Date: April 2016

PLOT DATE & TIME: FEB 19 2016 10:05:10
FILE NAME (UPDATED BY): S:\CAD\KITSAP COUNTY\P15-10341 PS 45, 46 47 BL DESIGN\DWGS\P15-10341_R-1.DWG (SO)
XREFS: Dorn, Olsoe, Schuyler_Adam, Schuyler_Erika, Whitehouse, P15-10341_TB

NORTH

0 5 10
Scale in Feet

JOHN G & PATRICIA J WILSON
4524-001-005-0101

DALE & REBECCA OSTER
4524-001-006-0100

SAWCUT AND REMOVE EX ASPHALT, SEE DWG D47-1 FOR LIMITS OF EX ASPHALT

REMOVE TOP 4" OF EX GROUND AND REPLACE WITH TOPSOIL AND HYDROSEED PER DETAIL 3/R-1, TYP

RESTORE DISTURBED AREA TO MATCH EXISTING CONDITIONS

EX ASPHALT TO REMAIN

SEE DWG C47-1 FOR RESTORATION REQUIREMENTS

RESTORE TO APPROX LIMITS OF NATURAL BEACH

REMOVE TOP 6" OF EX GROUND AND REPLACE WITH 1 1/4" CLEAN CRUSHED ROCK, PER DETAIL 2/R-1

(2) TYP

(1) TYP

E HEMLOCK ST

12'-0"

5'-0" TYP

4"x4" post w/ outlet

TERMINATE GRAVEL SURFACING EVEN WITH EX GRAVEL DRIVE

REMOVE TOP 4" OF EX GROUND AND REPLACE WITH BARK MULCH AND PLANT 6 - 7' TALL ENGLISH LAUREL, PER DETAIL 4/R-1, SPACE @ 4'-0", TYP OF 14

JOSEPH & CAROL ANN KOWALSKI
4524-004-001-0000

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

NOTES:

1. ALL NECESSARY RESTORATION MAY NOT BE IDENTIFIED ON THE DRAWINGS. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER.

CONSTRUCTION NOTES:

(1) RESTORE BEACH WITH NATIVE MATERIALS TO MATCH EXISTING. MATCH EXISTING CONTOURS.

(2) TRANSITION WITH GRADUAL CURVE.

SAMUEL ADAM SCHUYLER
STATE OF WASHINGTON
39911
REGISTERED PROFESSIONAL ENGINEER
4/27/16

TYLER JAMES WHITEHOUSE
STATE OF WASHINGTON
49545
REGISTERED PROFESSIONAL ENGINEER
4/27/16

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	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

FINISHED SITE AND RESTORATION PLAN

Drawing: R47-1
Sheet: 64 of 73
File: P15-10341_R47-1
Date: April 2016

PLOT DATE & TIME: APR 27 2016 11:34:54
FILE NAME (UPDATED BY): S:\CAD\KITSAP COUNTY\15-10341 PS 45 46 47 BL DESIGN\DWGS\P15-10341_R47-1.DWG (PALS)
XREFS: Dahl_Gibson_Schuyler_Adam_Schuyler_Erika_Whitehouse_X15-10341_45-46-47-Events_X15-10341_45-46-47-Topo_X15-10341_P547-Prop_X15-10341_P547-Rev1_X15-10341_TB

Retaining Wall Permits

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DEV. COPY

Kitsap County
614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01836
PROJECT NAME: Kitsap County Wastewater - Retaining Wall
Manchester Pump Station No 45
SITE ADDRESS: 8139 E DANIELS LOOP

C-RET/WALL
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

PARCEL: 4522-003-001-0004
Zone: MVR

Setbacks: **Front:**
Rear:
Side:

APPLICANT: KITSAP COUNTY PUBLIC WORKS
614 DIVISION ST MS26A
PORT ORCHARD, WA 98366
1-360-337-5777

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

VALUATIONS:

Commercial Valuation Based on Project, enter value	40000.00	$40,000.00
	Total:	**$40,000.00**

FEES:

	Paid	Due
State Surcharge DCD	$4.50	$0.00
Building Permit Fee, Commercial (all except TI)	$400.00	$0.00
Technology Fee	$4.00	$0.00
Permit Center Base Fee	$90.00	$0.00
	Total Due:	**$0.00**

REQUIRED INSPECTIONS

- Temporary Silt & Erosion Control Inspection
- Foundation, Footing Inspection
- Foundation, Stem Wall Inspection
- Special Inspection required, to be conducted by 3rd Party
- Final Building Inspection

CONDITIONS

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01836
PROJECT NAME: Kitsap County Wastewater - Retaining Wall
Manchester Pump Station No 45
SITE ADDRESS: 8139 E DANIELS LOOP

C-RET/WALL
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

Permit Expiration: Building permits expire 365 days after permit issuance, or 180 days after the last approved inspection activity is performed. The Building Official may extend the time for action for a period not exceeding 180 days, upon the receipt of a written extension request indicating that circumstances beyond the control of the permit holder have prevented action from being taken. Additional fees may be due to reactivate the permit. _____

Reinspection Fee: All approved construction plans, the approved site plan, the printed building permit, and the permit inspection placard are required to be on-site for inspection purposes, and work to be inspected shall be complete and ready for inspection. If an inspection is called for and plans are not available on site, or the work is not ready for inspection, or if previously identified corrections have not been made, approval will not be granted. In addition, a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Final Inspection Required: All building permits shall have a final inspection performed and approved by the Kitsap County Department of Community Development prior to permit expiration. The failure to request a final inspection or failure to obtain final approval prior to expiration will be documented in the legal property records on file with Kitsap County as being non-compliant with Kitsap County ordinances and building regulations and will be referred to Kitsap County Code Compliance for action. _____

Prior to completion of this permit with the Department of Community Development, the Applicant shall apply for and satisfy all conditions of a Right-of-Way Permit through the Department of Public Works for any and all work performed in the county Right-of-Way associated with this project. You may contact Kitsap County Public Works, Right-of-Way Division at (360) 337-5777 to obtain a Right-of-Way permit. _____

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of Laws and Ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state/local law regulating construction or the performance of construction.

_____
Print Name

_____ _____
Signature Date

Let us know how we are doing by taking the short customer survey at www.surveymonkey.com/s/DCDCustomerSurvey

KITSAP COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING INSPECTION CARD

Please Note: Only approved inspections extend permit expiration date

PERMIT NUMBER:
16 01836

This Placard must be posted on or near building and the "Approved" plans must be available at the site.

Permit Type:
commercial retaining wall over four feet high

Site Address:
8139 E DANIELS LOOP

Owner:

Applicant:
KITSAP COUNTY PUBLIC WORKS

Code Edition:

Additional Notes:
Inspection Results Legend:
AP = Approved
DA = Disapproved
DP = Disapproved with Penalty

All conditions of approval must be met prior to final occupancy. See printed permit for a list of all conditions associated with your permit.

A reinspection fee will apply if the project is not ready for the requested inspection, or corrections have not been completed.

No concrete shall be poured or reinforcement shell covered without inspection and approval.

Required Inspections Kitsap County Inspection Line (360) 337-5777 Online at: www.kitsapgov.com/dcd	**Approved By:**	**DATE**
Temporary Silt & Erosion Control Inspection		
Foundation, Footing Inspection		
Foundation, Stem Wall Inspection		
Special Inspection required, to be conducted by 3rd Party		

Prior to calling for your final inspection:

Health Approval
If applicable, this permit shall comply with all Kitsap Public Health District regulations and conditions of approval and shall have final Health Approval prior to calling for a final inspection.

L&I Electrical Approval
If electrical work is proposed, a separate electrical permit is required and must be inspected by and approved by L&I prior to requesting a final building inspection. You can contact L&I at 360-415-4000.

Final Building Inspection		

Finals require a 2 business day advance notice and must be requested by 3:00pm. No use or occupancy is permitted prior to final inspection and approval for occupancy.

BROCHURE # 7

YOUR PERMIT IS ISSUED

Now that your building permit has been issued, there are a few things that you can do to help ensure a smooth process of inspections and project success:

1. **Post the Building Permit Placard.**

   (Red, yellow or blue card) The building permit placard must be posted on site in an easily seen place, protected from the elements. Remember: this placard must last as long as your project.

2. **Ensure that your address is clearly posted.**

   If we can't find your project, we can't inspect or approve the work. In addition, you want to make sure that emergency responders can also find your work site.

3. **Ensure that the plans are available on site.**

   The "APPROVED" set of "DEV COPY" construction plans, engineering calculations and the site plan must be available on site for inspections. The documents must be protected and maintained in the same condition as when issued, and they may not be taken apart or altered in any way at the project site. If the plans are mutilated or unreadable... or missing, the inspector will not approve your inspection, an hourly re-inspection fee will be charged, and you will need to contact DCD to arrange for a replacement set at your cost, before any further inspections can be performed. Remember, it is your responsibility to keep these protected and easily available for the inspection.

4. **Build "PER THE PLANS."**

   Ensure that the project is constructed in full accordance with the "APPROVED" plans. This is the single most common cause of inspection disapprovals and subsequent delays and expense, yet is so simply avoided. If during the course of the project, changes are necessary, the building permit and plans must be revised prior to proceeding. Revisions to approved plans must be submitted to the Department of Community Development for review and approval prior to implementing such change. If an inspector finds that the project is not in accordance with the approved plans, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged.

5. **Use: Go to the Online Permit Center at http://permits.kitsapgov.com/Public/Welcome or Call: 360-337-5777 and ask to schedule an inspection.**

   The minimum required inspections have been indicated on your building permit placard as well as the printed building permit that you signed. When you are confident that you are ready for a required inspection, call or submit via the website a request. Inspections are for the next available business day. (Exception: "FINAL" inspections require two business days)

Permit Expiration

Building permits expire 180 days after the last approved inspection activity is performed. Having required inspections performed identifies on-going activity and automatically extends the permit expiration out another 180 days. However, if you are not going to be ready for an inspection within 180 days, and your permit has not yet expired, then a written extension request may be sent to DCD requesting up to 180 additional days. Such request must include the specific circumstances; that were beyond your control, that have prevented the work from progressing. Please note that for an extension request to be granted, it must be received prior to the permit expiration. Please see brochure #3 - Permit Expiration, for additional information.

Being "Ready for Inspection"

When you reach a stage where you are ready for an inspection, please be sure that the project is completely ready for such inspection. Inspectors' responsibility is not to create a "punch-list" of what is left to be done. Inspectors have a very limited time set aside to perform the inspection of your project, and they must quickly move on to the next scheduled site. If an inspector finds numerous non-

Kitsap County Department of Community Development
614 Division Street, MS-36
Port Orchard, WA 98366-4682
www.kitsapgov.com/dcd/
Revision Date: 11/16/15

Phone: (360) 337-5777
Fax: (360) 337-4925
Form Number: 1104B
Email: Kitsap1@co.kitsap.wa.us

compliant issues, the inspection will cease, and the correction notice will simply state that the project is not ready for inspection. If a project is not ready for inspection, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged. **Please note: both plans and permit need to be on-site for the inspection.**

Final Inspection Required.

All building permits require a final inspection prior to being used or occupied regardless of the size of the project, or whether or not it is new work, or a remodel, addition, or repair. The International Building Code, Section 110.1 (IRC R110.1) states in part: No building or structure shall be used or occupied until the building official has issued a Certificate of Occupancy. The Certificate of Occupancy will not be issued until all required inspections have been performed and approved, and any associated permits such as SDAP, fire sprinkler, fire alarm, road approach, etc. have been completed and finaled. In addition, any "deferred" impact fees must be paid prior to the issuance of the Certificate of Occupancy.

Some projects may be exempted from the certificate of occupancy requirement, such as fences or small accessory structures. However, these projects still require a final inspection to complete the permit.

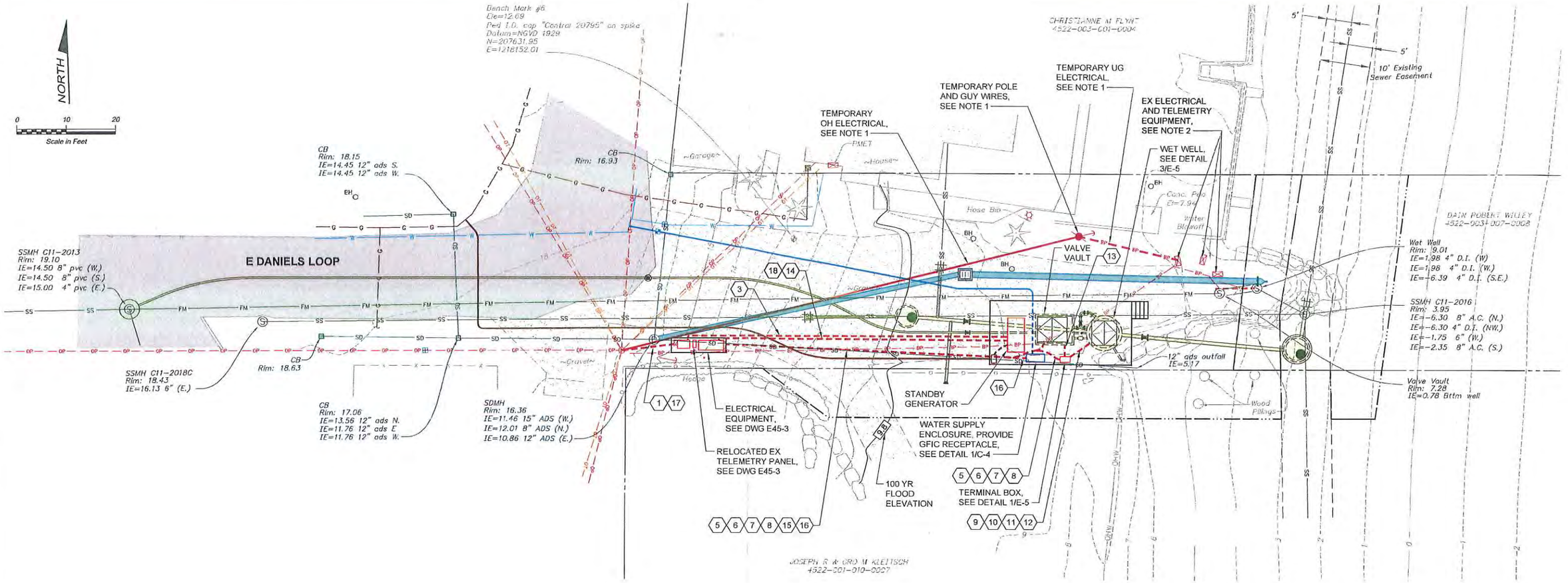
It is a civil infraction to occupy a building without obtaining a valid Certificate of Occupancy, or to otherwise violate the provisions of the Kitsap County Building & Fire Code. In addition, if a project is abandoned, or if a building permit expires without completion, DCD may initiate code compliance actions and/or file a notice to title with the Kitsap County Auditor's office identifying that the property is not in compliance with current codes, which could negatively affect future sales or refinancing efforts.

Builder's Responsibilities

As the builder or person responsible for the project, compliance with the adopted codes is your responsibility; just like it is your responsibility to obey all traffic laws when driving. There is a common misconception that county inspectors should identify "all" code violations. However, the reality is that the county implements a general permitting and inspection program for code compliance, but is not a "quality assurance" agency. Much like a sheriff's department can't identify and write citations to each and every person who drives too fast, or "creeps" past a stop sign; a building inspector does not have an opportunity to look at each and every detail in a structure. Each inspection is essentially a "spot-check" for code compliance. Two identical houses, with identical violations, though not necessarily possible, could potentially have different correction items identified. Likewise, on a follow-up inspection additional violations that may have previously been overlooked could be identified, though every effort is made to avoid such instances. Please remember, just because an inspector may not identify a particular problem, does not mean that the problem does not exist, or does not need to be corrected. Ultimately, when you sell or transfer this project, you will remain the person responsible to ensure that it is code compliant. Again, it is your responsibility to pursue construction, monitor timeframes, request inspections, and complete the project in accordance with the approved plans, permit conditions, and applicable codes.

Need Help?

Staff at the Department of Community Development wants to help ensure that your project is successful, safe, and code compliant. If you have questions regarding your project, where to purchase copies of particular codes, or want help understanding certain code requirements, please contact us via e-mail at: openline@co.kitsap.wa.us or call us at 360-337-5777.



NOTES:

1. PROVIDE AND MAINTAIN A TEMPORARY ELECTRICAL SERVICE TO THE EXISTING PUMP STATION DURING CONSTRUCTION OF NEW STATION. COORDINATE WITH ELECTRIC UTILITY (PSE) AND PAY ALL FEES.
2. PROVIDE TEMPORARY SUPPORTS OR RELOCATE EXISTING EQUIPMENT TO FACILITATE NEW STORM DRAIN INSTALLATION. THE EXISTING STATION SHALL REMAIN IN SERVICE UNTIL ACCEPTANCE OF NEW STATION. PROVIDE TEMPORARY PUMPING DURING CUTOVER AND TESTING OF RELOCATED EQUIPMENT.

LEGEND:

- PROPOSED ELECTRICAL STRUCTURES & EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT
- (#) CONDUIT TAG - SEE DWG E-3

DEV. COPY

16 01836

RECEIVED

MAY 2 2016

KITSAP COUNTY DEPT. OF COMMUNITY DEVELOPMENT

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

JEFFREY S. GIBSON — STATE OF WASHINGTON — 21902 — REGISTERED PROFESSIONAL ENGINEER
4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS
BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

Designed: J. Gibson, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: As Noted
One Inch at Full Scale
If Not One Inch Scale Accordingly

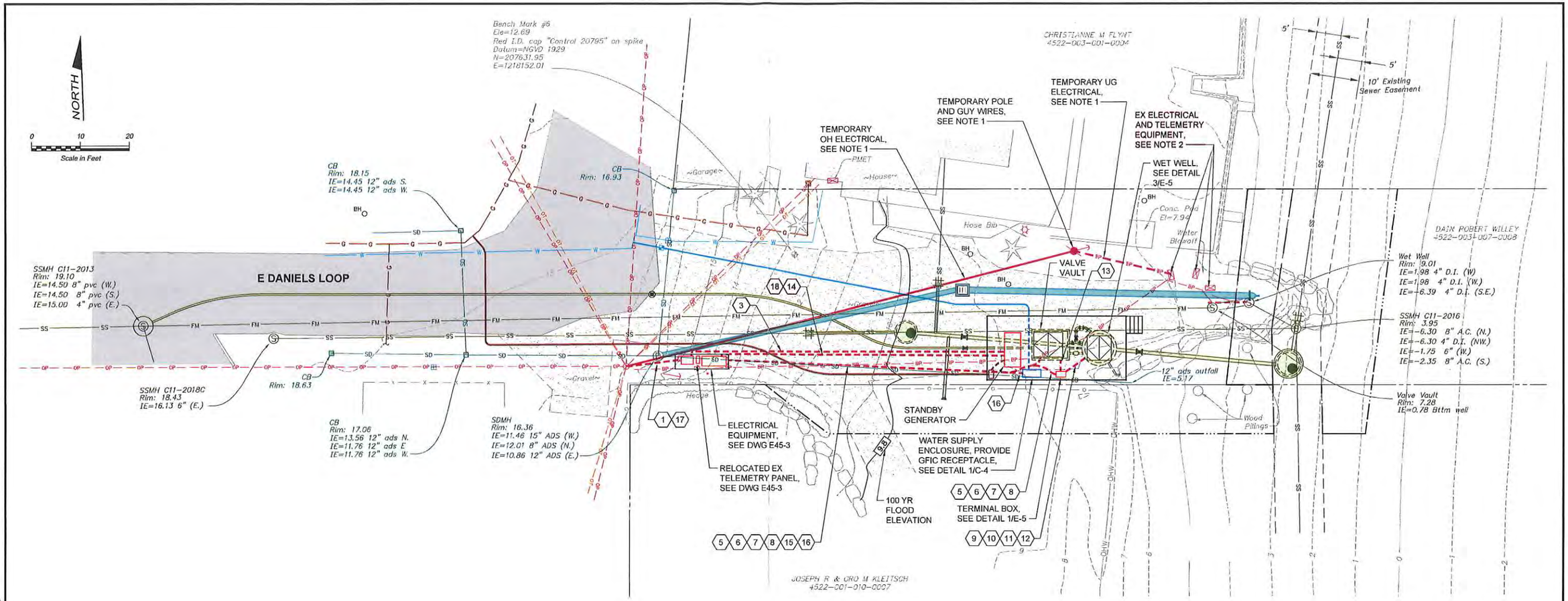
Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

ELECTRICAL SITE PLAN

Drawing: E45-1
Sheet: 38 of 73
File: P15-10341_E45-1
Date: April 2016

PLOT DATE & TIME: APR 27 2016 11:15:09
FILE NAME: U:\P15-10341_Manchester\Drawings\P15-10341_E45-1.DWG (PLS)
XREFS: P15-10341_A2-46-47 Topo, P15-10341_C45-Proj, P15-10341_TB



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LEGEND:

- PROPOSED ELECTRICAL STRUCTURES & EQUIPMENT
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FILE COPY

16 01836
RECEIVED
MAY 2 2016
KITSAP COUNTY DEPT. OF COMMUNITY DEVELOPMENT

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

JEFFREY S. GIBSON — STATE OF WASHINGTON — 15080 — REGISTERED PROFESSIONAL ENGINEER
4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS
BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
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Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

ELECTRICAL SITE PLAN

Drawing: E45-1
Sheet: 38 of 73
File: P15-10341_E45-1
Date: April 2016

FILE NAME: (Model)
DATE & TIME
Apr 27 2016 8:15:09
XREFs: Dark_Classic_Schuyler_Alpha, Waterpass, X15-10341_Ex-Ac-17-Cont, X15-10341_45-46-47-Topo, X15-10341_P&Pmap, X15-10341_TB

DEV. COPY

Kitsap County

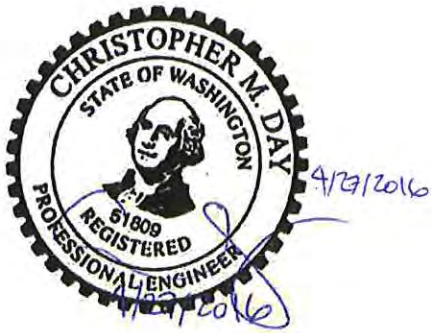
Manchester Pump Stations Nos. 45, 46, and 47 Upgrades Design

PUMP STATION 45

Retaining Wall Structural Calculations

COAST & HARBOR
ENGINEERING
A Division of Hatch Mott MacDonald
110 JAMES ST, STE 101 EDMONDS, WA 98020
PH 425-778-2542 • FAX 425-778-6883

April 2016



Manchester, WA Pump Stations 45-46 Rockery Wall

Cover Sheet	File Ref	365056CC01	Version	A
	Originator	Christopher M. Day	Date	27/04/16
	Checker	James M. LaFave	Date	4/27/16

Project Information

Workbook Name:	Manchester, WA Pump Stations 45-46 Rockery Wall		
Project Title:	Manchester, WA Pump Stations 45-46		
Section:	WPC (CHE)	Divn/Dept:	WPC (CHE)
Subject:	Rockery Wall	Project Nr:	365056
Project Manager:	Christopher M. Day	File Ref:	365056CC01
Originator	Christopher M. Day	Calc Nr:	1
Checker	James M. LaFave	Nr Sheets:	2
Template Version	E		

Design Phase

A) ☐ Concept or preliminary B) ☐ Analysis & detailed design C) ☑ Design verification

D) ☐ Other (specify)

Computer Applications Used	Version/Date
Microsoft Excel	2010

Scope of Checking	
Manual calculations	Computer generated calculations

	Calculations by			Checked by		
Sheets	Name	Signature	Date	Name	Signature	Date
PS46	C. Day		4/27/2016	J. LaFave		4/27/2016
RockSizes	C. Day		4/26/2016	J. LaFave		4/27/2016

Approved by		
Approver	Signature	Date
SHANE PHILLIPS, P.E.		4/27/16

Manchester, WA Pump Stations 45-46 Rockery Wall

Introduction				
	File Ref	365056CC01	Version	A
	Originator	Christopher M. Day	Date	27/04/16
	Checker	James M. LaFave	Date	4/27/16

Introduction

Check on stability of rock walls being proposed for Manchester, WA Pump Stations 45 and 46.

Purpose

(See above)

Required Output

Factors of safety for sliding, overturning, eccentricity, and bearing capacity.

Conclusions

Rockery wall as designed is stable.

Assumptions

Soil unit weight of 144 lbs per cubic foot, rock unit weight of 150 lbs per cubic foot, soil friction angle of 30 degrees, areas landward of rockery walls will be subject to pedestrian loads, not vehicular traffic. Bearing capacity factors from AASHTO Table 4.4.7.1A.

Basic Design Information or Source and Reference

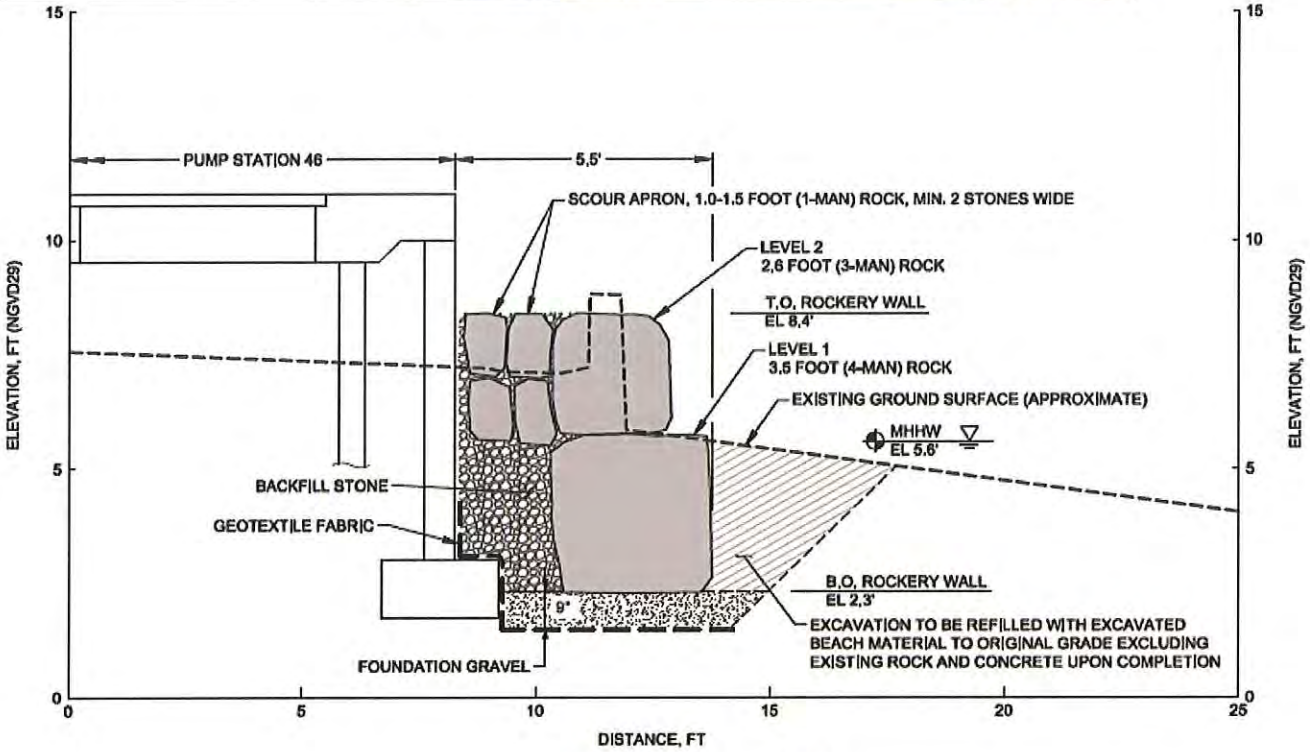
See "PS46" sheet page 8.

Identify documents/technical records where output will be used

Kitsap County, WA buiding permit application.

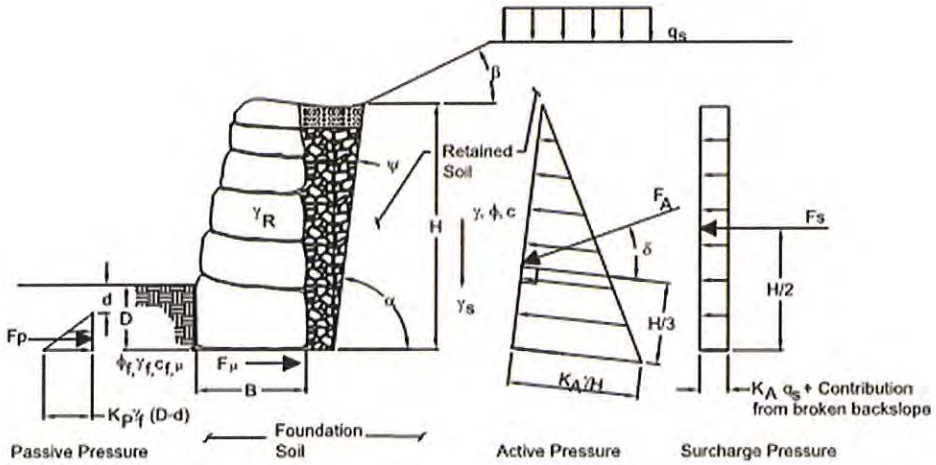
Manchester, WA Pump Stations
45-46 Rockery Wall

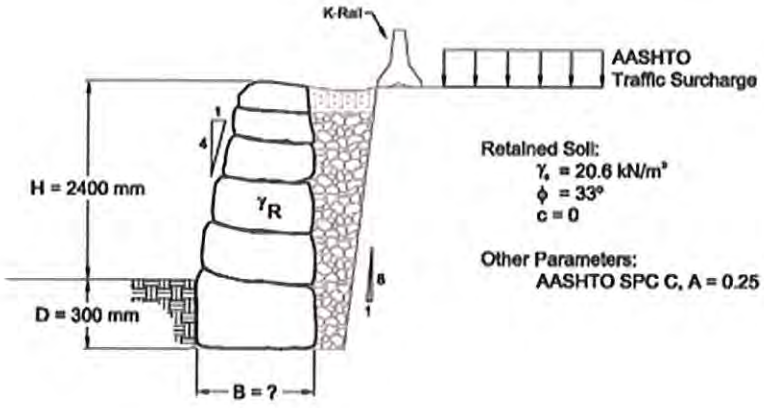
PS46	File Ref	365056CC01	Version	A
	Originator	C. Day	Date	4/27/2016
	Checker	J. LaFave	Date	4/27/2016

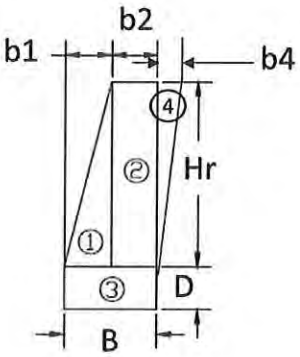


SECTION B

SCALE: 1" = 2'







Inputs

Rockwall slope =	4	:1H slope		
Soil slope =	6	:1H slope		
Total Wall Height, H =	6.1	ft		
Height of Exposed Wall, Hr =	4.1	ft		
Wall Embedment Depth, D =	2	ft		
friction angle, ϕ =	30	degrees		
Soil Unit Weight, γs =	145	lb/ft^3	(see page 8 of this sheet)	soil
Rock Unit Weight, γr =	150	lb/ft^3		rock
Ground Surface Inclination, β =	0	(level backslope)		
Angle of wall friction, δ =	20	degrees		(2/3)*ϕ
Slope Inclination, α =	80.54	degrees		ATAN(slope)
Allowable Backcut Angle, Ψ =	9.46	degrees		90 - α
μ =	*0.577*		*30 = Bottom friction angle (deg.) for μ value.*	
Surcharge, qs =	75	lb/ft^2		
Top Width of Wall, A =	2.6	ft		
Bottom Width of Wall, B =	3.5	ft		

Note - The top of the footing is located at +3' NGVD29, as depicted on the cross-section above. The rockery sections that are not along the pump station housings will be either vegetated or otherwise unable to accommodate any vehicles. Accordingly a surcharge of 75 psf is assumed based on FHWA (2012), p. 6.

SUMMARY:

FS_SL =	OKAY	2.37
FS_OT =	OKAY	3.73
FS_OT_int =	OKAY	14.00
FS_BC =	OKAY	4.67
e/B =	OKAY	0.09

Lateral Earth Pressure Coefficient:

Ka = 0.235

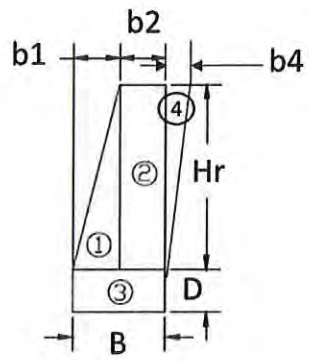
$$\frac{COS^2(\Psi+\varphi)}{COS^2(\Psi)*COS(\delta-\Psi)*\left[1+\sqrt{\frac{SIN(\varphi+\delta)*SIN(\varphi-\beta)}{COS(\delta-\Psi)*COS(-\Psi-\beta)}}\right]}$$

Total Horizontal Force

Retained Soil Load, Fa,h =	623.19	lb/ft	$0.5\gamma_s K_A H^2 * COS(\delta-\Psi)$
Surcharge Load, Fs =	107.50	lb/ft	$[q_s K_A H]$
Total Horizontal Force, Fh =	730.69	lb/ft	[Fa,h + Fs]

Wall Weight

γr =	150	lb/ft^3	rock unit weight
b1 =	1.025	ft	[Hr/(rockwall slope)]
b2 =	2.475	ft	[B-b1]
b4 =	0	ft	[D-(Hr/(soil slope))]
W1 =	315.1875	lb/ft	[0.5*b1*Hr*γr]
W2 =	1522.125	lb/ft	[b2*Hr*γr]
W3 =	1050	lb/ft	[B*Hr*γr]
W4 =	0	lb/ft	[0.5*b4*Hr*γr]
ΣWi =	2887.313	lb/ft	[W1 + W2 + W3 + W4]



Frictional Resistance

Fa,v =	115.93	lb/ft	$0.5\gamma_s K_A H^2 * SIN(\delta-\Psi)$
Fμ =	1733.92	lb/ft	[μ*(ΣWi + Fa,v)]

Factor of Safety against External Sliding:

FS_SL =	2.37	≥	1.5	OKAY

Factor of Safety against External Overturning:

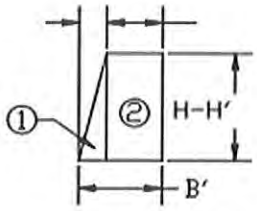
Mo =	1595	lb*ft/ft	[(Fa,h*(H/3)) + (Fs*(H/2))]

ΣWixi = 5496.69 lb*ft/ft [(W1*(2/3)*b1)+(W2*(b1+(0.5*b2)))+(W3*B)+(W4*(B+(b4/3)))]

Mr = 5941.71 lb*ft/ft [ΣWixi + (Fa,v)*((H/3)*TAN(Ψ)+B)]

FS_OT = 3.73 ≥ 2 OKAY

Factor of Safety against Individual Rock Overturning:



H-H' = 2.6 ft
B' = 3.25 ft

γr = 150 lb/ft^3

b1 = 0.65 ft
b2 = 2.6 ft
b4t = 0.5 ft
b4b = 0.276 ft

W1 = 126.75 lb/ft
W2 = 1014 lb/ft
W4 = 151.32 lb/ft

ΣWi = 1292.07 lb/ft

x1 = 0.433333 ft
x2 = 1.733333 ft
x4 = 3.416667 ft
x' = 0.15 ft

Mo_int = 157.69 lb*ft/ft

ΣWixi = 2135.725

Mr_int = 2207.21 KN*m/m

FS_OT_int = 14.00 ≥ 2 OKAY

Factor of Safety against Bearing Capacity:

e = 0.302669

|e| = 0.302669 ≤ B/6 = 0.583333 OKAY

qmax = 1303 lb/ft^2 ((W+Fa,v)/B)*(1+((6e)/B))

(Cohesion term) cNc = 0 q = 75
B'' = B - 2e = 2.894662 ft Nq = 18.4 [From AASHTO Table 4.4.7.1A]
N_γ 22.4 qNq = 1380

qult =	6081	lb/ft^2		$q_{ult} = cN_c + 0.5\gamma BN_\gamma + qN_q$
FS_BC =	4.67	≥	2	OKAY

References:

Associated Rockery Contractors, 1999. Rock Wall Construction Guidelines, Associated Rockery Contractors, Woodinville, WA.

Federal Highway Administration, 2006. Rockery Design and Construction Guidelines, Federal Highway Administration Central Federal Lands Highway Division, Lakewood, CO.

Federal Highway Administration, 2012. Steel Bridge Design Handbook, Loads and Load Combinations, U.S. Department of Transportation Federal Highway Administration, Office of Bridge Technology, Washington, DC, page 8

Wieser, Wolfgang, 1959. The Effect of Grain Size on the Distribution of Small Invertebrates Inhabiting the Beaches of Puget Sound, Association for the Sciences of Limnology and Oceongraphy, Vol. 4 (2), pp. 181-194.

Based on Wieser (1959, p. 190), materials like those on Puget Sound can have porosities ranging from 20 to 44.7%. For the densest, most fully saturated sand, or worst-case, scenario:

165 = Sediment grain density (typical for sands), lbs per cubic foot
64.0 1025 = Water density (seawater), lbs per cubic foot, kg per cubic m
20% = Porosity (min.)

145 = In situ sand density = (Grain density) x [(100%-P)/100%] +
(Water density) x (P/100%)

Manchester, WA Pump Stations 45-46 Rockery Wall

RockSizes	File Ref	365056CC01	Version	A
	Originator	C. Day	Date	4/26/2016
	Checker	J. LaFave	Date	4/27/2016

ARC, 1999, 2.10.3 Rock Size Table (155 lbs/cubic foot): lbs = B (feet)^{M}

feet	lbs.	"Man" size	LN(feet)	LN(lbs)	
1	50		0.00	3.91	3.14 = M
		1			3.99 = LN(B)
1.5	200		0.41	5.30	54.0 = B
		2			
2.25	700		0.81	6.55	
		3			
3	2000		1.10	7.60	
		4			
4	4000		1.39	8.29	
		5			
4.5	6000		1.50	8.70	
		6			
5	8000		1.61	8.99	

City of Brier, WA Rock Sizes, FHWA, 2006, p. 9 (Similar to ARC, 1999):

feet	lbs.	"Man" size	m	kg	LN(feet)	LN(lbs)
1.0	51		0.3	23	-0.02	3.93
		1				
1.5	198		0.460	90	0.41	5.29
		2				
2.3	701		0.710	318	0.85	6.55
		3				
3.0	2002		0.910	908	1.09	7.60
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4.0	4004		1.220	1816	1.39	8.29
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4.5	6005		1.370	2724	1.50	8.70
		6				
5.0	8007		1.520	3632	1.61	8.99

Rock sizes

Level 1		Level 2	
feet	lbs	feet	lbs
3.25	2186	2.40	844
3.50	2759	2.60	1085
3.75	3426	2.80	1369

DEV. COPY

Kitsap County

614 Division StreetMS-36, Port Orchard WA 98366
(360) 337-5777
www.kitsapgov.com/dcd/

16 01837
PROJECT NAME: Kitsap County Wastewater - Retaining Wall
Manchester Pump Station No 46
SITE ADDRESS: 8222 E CARAWAY RD

C-RET/WALL
ISSUED: 09/20/2016
EXPIRES: 09/20/2017

Be sure to register at the Kitsap County Online Permit Center at permits.kitsapgov.com

PARCEL: 222402-2-045-2003
Zone: MVLR

Setbacks: **Front:** n/a
Rear: n/a
Side: n/a

APPLICANT: KITSAP COUNTY PUBLIC WORKS
614 DIVISION ST MS26A
PORT ORCHARD, WA 98366
1-360-337-5777

ENGINEER: BHC CONSULTANTS
1601 5th Ave, Suite 500
SEATTLE, WA 98104
(206) 505-3400

VALUATIONS:		
Commercial Valuation Based on Project, enter value	40000.00	$40,000.00
	Total:	**$40,000.00**

FEES:	Paid	Due
State Surcharge DCD	$4.50	$0.00
Technology Fee	$4.00	$0.00
Building Permit Fee, Commercial (all except TI)	$400.00	$0.00
Permit Center Base Fee	$90.00	$0.00
Total Due:		**$0.00**

REQUIRED INSPECTIONS

- Temporary Silt & Erosion Control Inspection
- Foundation, Footing Inspection
- Foundation, Stem Wall Inspection
- Special Inspection required, to be conducted by 3rd Party
- Final Building Inspection

CONDITIONS

Kitsap County

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Permit Expiration: Building permits expire 365 days after permit issuance, or 180 days after the last approved inspection activity is performed. The Building Official may extend the time for action for a period not exceeding 180 days, upon the receipt of a written extension request indicating that circumstances beyond the control of the permit holder have prevented action from being taken. Additional fees may be due to reactivate the permit. _____

Reinspection Fee: All approved construction plans, the approved site plan, the printed building permit, and the permit inspection placard are required to be on-site for inspection purposes, and work to be inspected shall be complete and ready for inspection. If an inspection is called for and plans are not available on site, or the work is not ready for inspection, or if previously identified corrections have not been made, approval will not be granted. In addition, a re-inspection fee will be charged and must be collected by the Department of Community Development prior to any further inspections being performed or approvals granted. _____

Final Inspection Required: All building permits shall have a final inspection performed and approved by the Kitsap County Department of Community Development prior to permit expiration. The failure to request a final inspection or failure to obtain final approval prior to expiration will be documented in the legal property records on file with Kitsap County as being non-compliant with Kitsap County ordinances and building regulations and will be referred to Kitsap County Code Compliance for action. _____

Prior to completion of this permit with the Department of Community Development, the Applicant shall apply for and satisfy all conditions of a Right-of-Way Permit through the Department of Public Works for any and all work performed in the county Right-of-Way associated with this project. You may contact Kitsap County Public Works, Right-of-Way Division at (360) 337-5777 to obtain a Right-of-Way permit. _____

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of Laws and Ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state/local law regulating construction or the performance of construction.

_____
Print Name

_____ _____
Signature Date

Let us know how we are doing by taking the short customer survey at www.surveymonkey.com/s/DCDCustomerSurvey

KITSAP COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING INSPECTION CARD

Please Note: Only approved inspections extend permit expiration date

PERMIT NUMBER:
16 01837

This Placard must be posted on or near building and the "Approved" plans must be available at the site.

Permit Type:
commercial retaining wall over four feet high

Site Address:
8222 E CARAWAY RD

Owner:

Applicant:
KITSAP COUNTY PUBLIC WORKS

Code Edition:

Additional Notes:
Inspection Results Legend:
AP = Approved
DA = Disapproved
DP = Disapproved with Penalty

All conditions of approval must be met prior to final occupancy. See printed permit for a list of all conditions associated with your permit.

A reinspection fee will apply if the project is not ready for the requested inspection, or corrections have not been completed.

No concrete shall be poured or reinforcement shell covered without inspection and approval.

Required Inspections Kitsap County Inspection Line (360) 337-5777 Online at: www.kitsapgov.com/dcd	**Approved By:**	**DATE**
Temporary Silt & Erosion Control Inspection		
Foundation, Footing Inspection		
Foundation, Stem Wall Inspection		
Special Inspection required, to be conducted by 3rd Party		

Prior to calling for your final inspection:

Health Approval
If applicable, this permit shall comply with all Kitsap Public Health District regulations and conditions of approval and shall have final Health Approval prior to calling for a final inspection.

L&I Electrical Approval
If electrical work is proposed, a separate electrical permit is required and must be inspected by and approved by L&I prior to requesting a final building inspection. You can contact L&I at 360-415-4000.

Final Building Inspection		

Finals require a 2 business day advance notice and must be requested by 3:00pm. No use or occupancy is permitted prior to final inspection and approval for occupancy.

BROCHURE # 7

YOUR PERMIT IS ISSUED

Now that your building permit has been issued, there are a few things that you can do to help ensure a smooth process of inspections and project success:

1. **Post the Building Permit Placard.**

   (Red, yellow or blue card) The building permit placard must be posted on site in an easily seen place, protected from the elements. Remember: this placard must last as long as your project.

2. **Ensure that your address is clearly posted.**

   If we can't find your project, we can't inspect or approve the work. In addition, you want to make sure that emergency responders can also find your work site.

3. **Ensure that the plans are available on site.**

   The "APPROVED" set of "DEV COPY" construction plans, engineering calculations and the site plan must be available on site for inspections. The documents must be protected and maintained in the same condition as when issued, and they may not be taken apart or altered in any way at the project site. If the plans are mutilated or unreadable... or missing, the inspector will not approve your inspection, an hourly re-inspection fee will be charged, and you will need to contact DCD to arrange for a replacement set at your cost, before any further inspections can be performed. Remember, it is your responsibility to keep these protected and easily available for the inspection.

4. **Build "PER THE PLANS."**

   Ensure that the project is constructed in full accordance with the "APPROVED" plans. This is the single most common cause of inspection disapprovals and subsequent delays and expense, yet is so simply avoided. If during the course of the project, changes are necessary, the building permit and plans must be revised prior to proceeding. Revisions to approved plans must be submitted to the Department of Community Development for review and approval prior to implementing such change. If an inspector finds that the project is not in accordance with the approved plans, the inspector will not approve your inspection, and an hourly re-inspection fee will be charged.

5. **Use: Go to the Online Permit Center at http://permits.kitsapgov.com/Public/Welcome or Call: 360-337-5777 and ask to schedule an inspection.**

   The minimum required inspections have been indicated on your building permit placard as well as the printed building permit that you signed. When you are confident that you are ready for a required inspection, call or submit via the website a request. Inspections are for the next available business day. (Exception: "FINAL" inspections require two business days)

Permit Expiration

Building permits expire 180 days after the last approved inspection activity is performed. Having required inspections performed identifies on-going activity and automatically extends the permit expiration out another 180 days. However, if you are not going to be ready for an inspection within 180 days, and your permit has not yet expired, then a written extension request may be sent to DCD requesting up to 180 additional days. Such request must include the specific circumstances; that were beyond your control, that have prevented the work from progressing. Please note that for an extension request to be granted, it must be received prior to the permit expiration. Please see brochure #3 - Permit Expiration, for additional information.

Being "Ready for Inspection"

When you reach a stage where you are ready for an inspection, please be sure that the project is completely ready for such inspection. Inspectors' responsibility is not to create a "punch-list" of what is left to be done. Inspectors have a very limited time set aside to perform the inspection of your project, and they must quickly move on to the next scheduled site. If an inspector finds numerous non-

Kitsap County Department of Community Development
614 Division Street, MS-36
Port Orchard, WA 98366-4682
www.kitsapgov.com/dcd/
Revision Date: 11/16/15

Phone: (360) 337-5777
Fax: (360) 337-4925
Form Number: 1104B
Email: Kitsap1@co.kitsap.wa.us

16 01837

Kitsap County

Manchester Pump Stations Nos. 45, 46, and 47 Upgrades Design

PUMP STATION 46

Retaining Wall Structural Calculations

COAST & HARBOR
ENGINEERING
A Division of Hatch Mott MacDonald
110 JAMES ST, STE 101 EDMONDS, WA 98020
PH 425-778-2542 • FAX 425-778-6883

April 2016

4/29/2016

Manchester, WA Pump Stations 45-46 Rockery Wall

Cover Sheet	File Ref	365056CC01	Version	A
	Originator	Christopher M. Day	Date	27/04/16
	Checker	James M. LaFave	Date	4/27/16

Project Information

Workbook Name:	Manchester, WA Pump Stations 45-46 Rockery Wall		
Project Title:	Manchester, WA Pump Stations 45-46		
Section:	WPC (CHE)	Divn/Dept:	WPC (CHE)
Subject:	Rockery Wall	Project Nr:	365056
Project Manager:	Christopher M. Day	File Ref:	365056CC01
Originator	Christopher M. Day	Calc Nr:	1
Checker	James M. LaFave	Nr Sheets:	2
Template Version	E		

Design Phase

A) ☐ Concept or preliminary B) ☐ Analysis & detailed design C) ☑ Design verification

D) ☐ Other (specify)

Computer Applications Used	Version/Date
Microsoft Excel	2010

Scope of Checking	
Manual calculations	Computer generated calculations

	Calculations by			Checked by		
Sheets	Name	Signature	Date	Name	Signature	Date
PS46	C. Day		4/27/2016	J. LaFave		4/27/2016
RockSizes	C. Day		4/26/2016	J. LaFave		4/27/2016

Approved by		
Approver	Signature	Date
SHANE PHILLIPS, P.E.		4/27/16

Manchester, WA Pump Stations 45-46 Rockery Wall

Introduction				
	File Ref	365056CC01	Version	A
	Originator	Christopher M. Day	Date	27/04/16
	Checker	James M. LaFave	Date	4/27/16

Introduction

Check on stability of rock walls being proposed for Manchester, WA Pump Stations 45 and 46.

Purpose

(See above)

Required Output

Factors of safety for sliding, overturning, eccentricity, and bearing capacity.

Conclusions

Rockery wall as designed is stable.

Assumptions

Soil unit weight of 144 lbs per cubic foot, rock unit weight of 150 lbs per cubic foot, soil friction angle of 30 degrees, areas landward of rockery walls will be subject to pedestrian loads, not vehicular traffic. Bearing capacity factors from AASHTO Table 4.4.7.1A.

Basic Design Information or Source and Reference

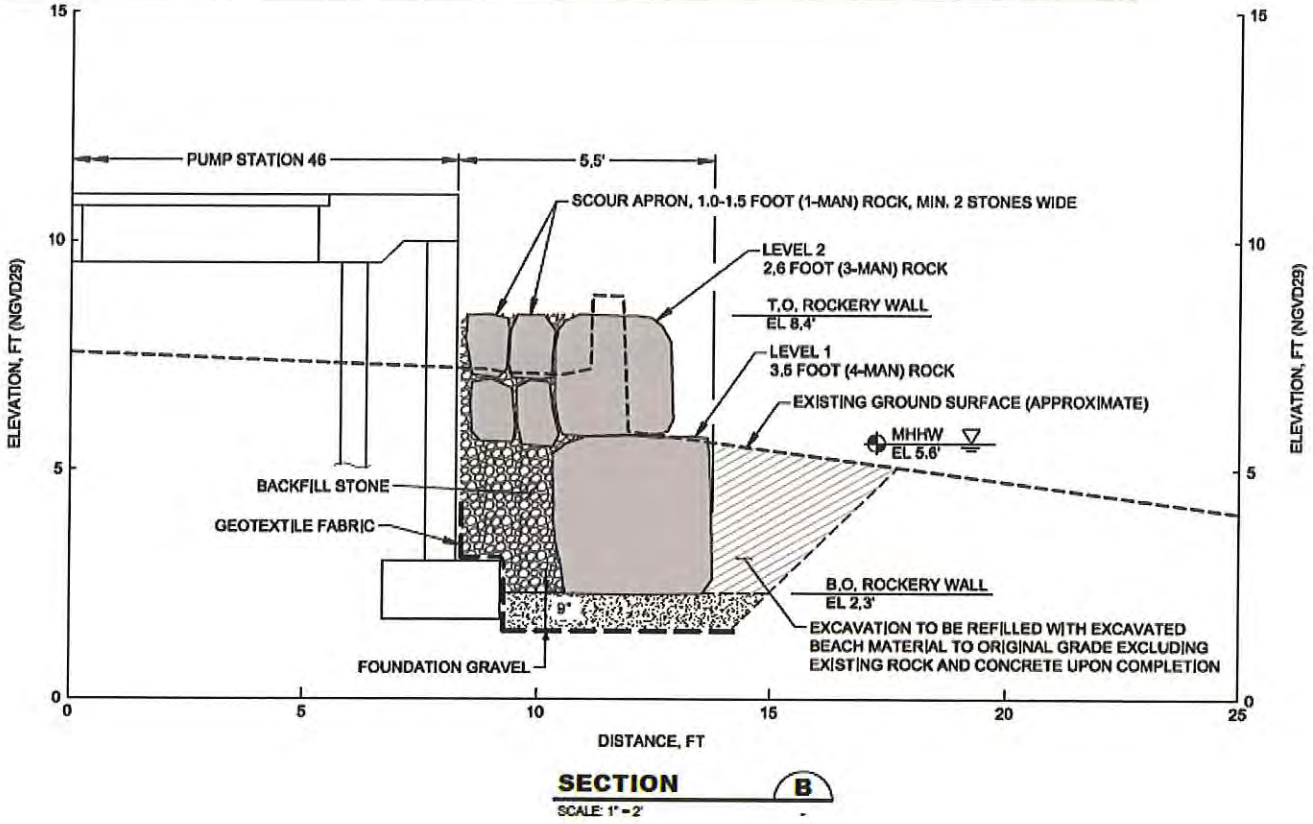
See "PS46" sheet page 8.

Identify documents/technical records where output will be used

Kitsap County, WA buiding permit application.

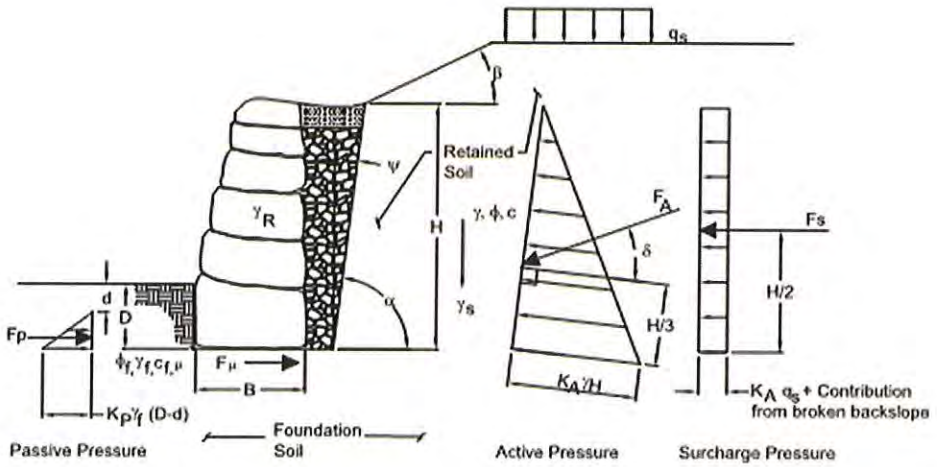
Manchester, WA Pump Stations
45-46 Rockery Wall

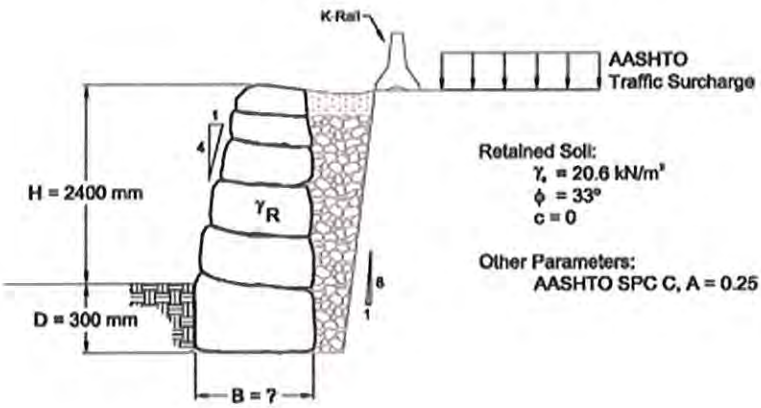
PS46	File Ref	365056CC01	Version	A
	Originator	C. Day	Date	4/27/2016
	Checker	J. LaFave	Date	4/27/2016

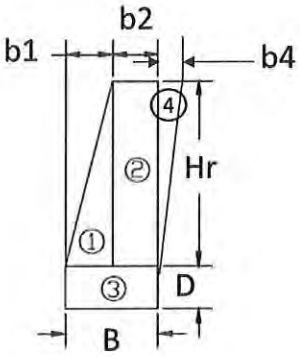


SECTION B

SCALE: 1" = 2'







Inputs

Rockwall slope =	4	:1H slope		
Soil slope =	6	:1H slope		
Total Wall Height, H =	6.1	ft		
Height of Exposed Wall, Hr =	4.1	ft		
Wall Embedment Depth, D =	2	ft		
friction angle, ϕ =	30	degrees		
Soil Unit Weight, γs =	145	lb/ft^3	(see page 8 of this sheet)	soil
Rock Unit Weight, γr =	150	lb/ft^3		rock
Ground Surface Inclination, β =	0	(level backslope)		
Angle of wall friction, δ =	20	degrees		(2/3)*ϕ
Slope Inclination, α =	80.54	degrees		ATAN(slope)
Allowable Backcut Angle, Ψ =	9.46	degrees		90 - α
μ =	*0.577*		*30 = Bottom friction angle (deg.) for μ value.*	
Surcharge, qs =	75	lb/ft^2		
Top Width of Wall, A =	2.6	ft		
Bottom Width of Wall, B =	3.5	ft		

Note - The top of the footing is located at +3' NGVD29, as depicted on the cross-section above. The rockery sections that are not along the pump station housings will be either vegetated or otherwise unable to accommodate any vehicles. Accordingly a surcharge of 75 psf is assumed based on FHWA (2012), p. 6.

SUMMARY:

FS_SL =	OKAY	2.37
FS_OT =	OKAY	3.73
FS_OT_int =	OKAY	14.00
FS_BC =	OKAY	4.67
e/B =	OKAY	0.09

Lateral Earth Pressure Coefficient:

Ka = 0.235

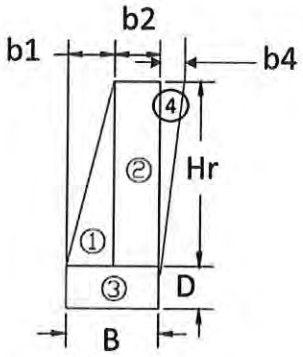
$$\frac{COS^2(\Psi+\varphi)}{COS^2(\Psi)*COS(\delta-\Psi)*\left[1+\sqrt{\frac{SIN(\varphi+\delta)*SIN(\varphi-\beta)}{COS(\delta-\Psi)*COS(-\Psi-\beta)}}\right]}$$

Total Horizontal Force

Retained Soil Load, Fa,h =	623.19	lb/ft	$0.5\gamma_s K_A H^2 * COS(\delta-\Psi)$
Surcharge Load, Fs =	107.50	lb/ft	$[q_s K_A H]$
Total Horizontal Force, Fh =	730.69	lb/ft	[Fa,h + Fs]

Wall Weight

γr =	150	lb/ft^3	rock unit weight
b1 =	1.025	ft	[Hr/(rockwall slope)]
b2 =	2.475	ft	[B-b1]
b4 =	0	ft	[D-(Hr/(soil slope))]
W1 =	315.1875	lb/ft	[0.5*b1*Hr*γr]
W2 =	1522.125	lb/ft	[b2*Hr*γr]
W3 =	1050	lb/ft	[B*Hr*γr]
W4 =	0	lb/ft	[0.5*b4*Hr*γr]
ΣWi =	2887.313	lb/ft	[W1 + W2 + W3 + W4]



Frictional Resistance

Fa,v =	115.93	lb/ft	$0.5\gamma_s K_A H^2 * SIN(\delta-\Psi)$
Fμ =	1733.92	lb/ft	[μ*(ΣWi + Fa,v)]

Factor of Safety against External Sliding:

FS_SL =	2.37	≥	1.5	OKAY

Factor of Safety against External Overturning:

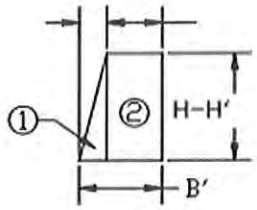
Mo =	1595	lb*ft/ft	[(Fa,h*(H/3)) + (Fs*(H/2))]

ΣWixi = 5496.69 lb*ft/ft [(W1*(2/3)*b1)+(W2*(b1+(0.5*b2)))+(W3*B)+(W4*(B+(b4/3)))]

Mr = 5941.71 lb*ft/ft [ΣWixi + (Fa,v)*((H/3)*TAN(Ψ)+B)]

FS_OT = 3.73 ≥ 2 OKAY

Factor of Safety against Individual Rock Overturning:



H-H' = 2.6 ft
B' = 3.25 ft

γr = 150 lb/ft^3

b1 = 0.65 ft
b2 = 2.6 ft
b4t = 0.5 ft
b4b = 0.276 ft

W1 = 126.75 lb/ft
W2 = 1014 lb/ft
W4 = 151.32 lb/ft

ΣWi = 1292.07 lb/ft

x1 = 0.433333 ft
x2 = 1.733333 ft
x4 = 3.416667 ft
x' = 0.15 ft

Mo_int = 157.69 lb*ft/ft

ΣWixi = 2135.725

Mr_int = 2207.21 KN*m/m

FS_OT_int = 14.00 ≥ 2 OKAY

Factor of Safety against Bearing Capacity:

e = 0.302669

|e| = 0.302669 ≤ B/6 = 0.583333 OKAY

qmax = 1303 lb/ft^2 ((W+Fa,v)/B)*(1+((6e)/B))

(Cohesion term) cNc = 0 q = 75
B'' = B - 2e = 2.894662 ft Nq = 18.4 [From AASHTO Table 4.4.7.1A]
N_γ 22.4 qNq = 1380

qult = 6081 lb/ft^2

$$q_{ult} = cN_c + 0.5\gamma BN_\gamma + qN_q$$

FS_BC = 4.67 ≥ 2 OKAY

References:

Associated Rockery Contractors, 1999. Rock Wall Construction Guidelines, Associated Rockery Contractors, Woodinville, WA.

Federal Highway Administration, 2006. Rockery Design and Construction Guidelines, Federal Highway Administration Central Federal Lands Highway Division, Lakewood, CO.

Federal Highway Administration, 2012. Steel Bridge Design Handbook, Loads and Load Combinations, U.S. Department of Transportation Federal Highway Administration, Office of Bridge Technology, Washington, DC, page 8

Wieser, Wolfgang, 1959. The Effect of Grain Size on the Distribution of Small Invertebrates Inhabiting the Beaches of Puget Sound, Association for the Sciences of Limnology and Oceongraphy, Vol. 4 (2), pp. 181-194.

Based on Wieser (1959, p. 190), materials like those on Puget Sound can have porosities ranging from 20 to 44.7%. For the densest, most fully saturated sand, or worst-case, scenario:

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64.0 1025 = Water density (seawater), lbs per cubic foot, kg per cubic m
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145 = In situ sand density = (Grain density) x [(100%-P)/100%] +
(Water density) x (P/100%)

Manchester, WA Pump Stations 45-46 Rockery Wall

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feet	lbs.	"Man" size	m	kg	LN(feet)	LN(lbs)
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Rock sizes

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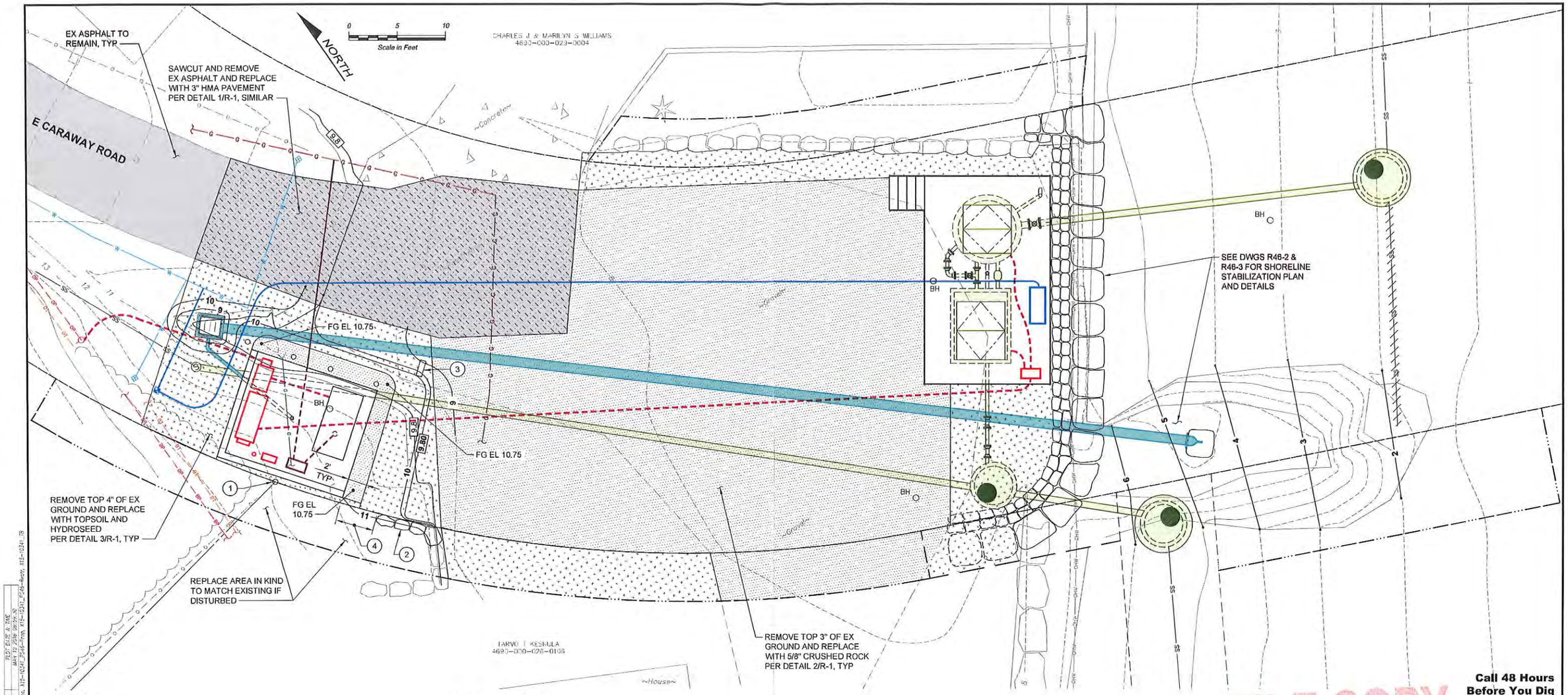

NOTES:

1. ALL NECESSARY RESTORATION MAY NOT BE IDENTIFIED ON THE DRAWINGS. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS OR BETTER.

CONSTRUCTION NOTES:

(1) RE-ESTABLISHED PROPERTY MARKER.

(2) REINSTALL ROCK WALL PLANTER TO MATCH EXISTING. REMOVE AND RELOCATE/REPLACE IRRIGATION SYSTEM IN KIND AS NECESSARY.

(3) RELOCATED MAILBOX, FINAL LOCATION AS DIRECTED BY PROPERTY OWNER.

(4) PROVIDE 4'-0" CLEAR OPENING BETWEEN EDGE OF ROCKERY AND STRUCTURE. GRADE OPENING AT CONSTANT SLOPE TO TRANSITION FROM PROPOSED TO EXISTING GRADES.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM SCHUYLER — STATE OF WASHINGTON — 19911 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

TYLER JAMES WHITEHOUSE — STATE OF WASHINGTON — 19519 — REGISTERED PROFESSIONAL ENGINEER — 4/27/16

No.	Revision	Date	By	App'd
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

BHC CONSULTANTS
BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101
206.505.3400
206.505.3406 (fax)
www.bhcconsultants.com

Designed: T. Whitehouse, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 5'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

FINISHED SITE AND RESTORATION PLAN

Drawing: R46-1
Sheet: 48 of 73
File: P15-10341_R46-1
Date: April 2016

PLOT DATE & TIME: MAR 19 2016 09:56:30
FILE NAME: (UPDATED BY)
I:\projects\2015\P15-10341_046-047-BEACH LINES (PH-2)\CAD\Plan Sheets\P15-10341_R46-1.dwg, P15-10341_R46-1, 3/19/2016 9:56:30 AM, tyler

State of Washington Department of Ecology
Construction Stormwater General Permit

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 10, 2016

Barbara Zarhoff
Kitsap County
8600 SW Imperial Way
Port Orchard, WA 98367

RE: Coverage under the Construction Stormwater General Permit

Permit number:	**WAR303925**	
Site Name:	**Pump Station 45**	
Location:	**8139 E Daniels Lp**	
	Port Orchard, WA	**County: Kitsap**
Disturbed Acres:	**0.95**	

Dear Ms. Zarhoff:

The Washington State Department of Ecology (Ecology) received your Notice of Intent for coverage under Ecology's Construction Stormwater General Permit (permit). This is your permit coverage letter. Your permit coverage is effective on May 10, 2016. **Please retain this permit coverage letter with your permit (enclosed), stormwater pollution prevention plan (SWPPP), and site log book. These materials are the official record of permit coverage for your site.**

Please take time to read the entire permit and contact Ecology if you have any questions.

Appeal Process

You have a right to appeal coverage under the general permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this letter. This appeal is limited to the general permit's applicability or non-applicability to a specific discharger. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do the following within 30 days of the date of receipt of this letter:

- File your appeal and a copy of the permit cover page with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and the permit cover page on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

Address and Location Information:

Street Addresses:	**Mailing Addresses:**
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board (PCHB) 1111 Israel Road SW, Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Electronic Discharge Monitoring Reports (WQWebDMR)
This permit requires that Permittees submit monthly discharge monitoring reports (DMRs) electronically using Ecology's secure online system, WQWebDMR. To sign up for WQWebDMR go to: www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html. If you have questions, contact the portal staff at (360) 407-7097 (Olympia area), or (800) 633-6193/option 3, or email WQWebPortal@ecy.wa.gov.

Ecology Field Inspector Assistance
If you have questions regarding stormwater management at your construction site, please contact Sam Knox of Ecology's Southwest Regional Office in Lacey at sam.knox@ecy.wa.gov or (360) 407-6294.

Questions or Additional Information
Ecology is committed to providing assistance. Please review our web page at: www.ecy.wa.gov/programs/wq/stormwater/construction. If you have questions about the construction stormwater general permit, please contact Josh Klimek at josh.klimek@ecy.wa.gov or (360) 407-7451.

Sincerely,

Bill Moore, P.E., Manager
Program Development Services Section
Water Quality Program

Enclosure

Issuance Date: November 18, 2015
Effective Date: January 1, 2016
Expiration Date: December 31, 2020

CONSTRUCTION STORMWATER GENERAL PERMIT

National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
Chapter 90.48 Revised Code of Washington
(State of Washington Water Pollution Control Act)
and
Title 33 United States Code, Section 1251 et seq.
The Federal Water Pollution Control Act (The Clean Water Act)

Until this permit expires, is modified, or revoked, Permittees that have properly obtained coverage under this general permit are authorized to discharge in accordance with the special and general conditions that follow.

Heather R. Bartlett
Water Quality Program Manager
Washington State Department of Ecology

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LIST OF TABLES

SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions within this permit for additional submittal requirements. Appendix A provides a list of definitions. Appendix B provides a list of acronyms.

Table 1: Summary of Required Submittals

Permit Section	Submittal	Frequency	First Submittal Date
S5.A and S8	High Turbidity/Transparency Phone Reporting	As Necessary	Within 24 hours
S5.B	Discharge Monitoring Report	Monthly*	Within 15 days following the end of each month
S5.F and S8	Noncompliance Notification – Telephone Notification	As necessary	Within 24-hours
S5.F	Noncompliance Notification – Written Report	As necessary	Within 5 Days of non-compliance
S9.C	Request for Chemical Treatment Form	As necessary	Written approval from Ecology is required prior to using chemical treatment (with the exception of dry ice or CO_2 to adjust pH)
G2	Notice of Change in Authorization	As necessary	
G6	Permit Application for Substantive Changes to the Discharge	As necessary	
G8	Application for Permit Renewal	1/permit cycle	No later than 180 days before expiration
G9	Notice of Permit Transfer	As necessary	
G20	Notice of Planned Changes	As necessary	
G22	Reporting Anticipated Non-compliance	As necessary	

SPECIAL NOTE: *Permittees must submit electronic Discharge Monitoring Reports (DMRs) to the Washington State Department of Ecology monthly, regardless of site discharge, for the full duration of permit coverage. Refer to Section S5.B of this General Permit for more specific information regarding DMRs.

Table 2: Summary of Required On-site Documentation

Document Title	Permit Conditions
Permit Coverage Letter	See Conditions S2, S5
Construction Stormwater General Permit	See Conditions S2, S5
Site Log Book	See Conditions S4, S5
Stormwater Pollution Prevention Plan (SWPPP)	See Conditions S9, S5

SPECIAL CONDITIONS

S1. PERMIT COVERAGE

A. Permit Area

This Construction Stormwater General Permit (CSWGP) covers all areas of Washington State, except for federal operators and Indian Country as specified in Special Condition S1.E.3.

B. Operators Required to Seek Coverage Under this General Permit:

1. Operators of the following construction activities are required to seek coverage under this CSWGP:

   a. Clearing, grading and/or excavation that results in the disturbance of one or more acres (including off-site disturbance acreage authorized in S1.C.2) and discharges stormwater to surface waters of the State; and clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.

      i. This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State (that is, forest practices that prepare a site for construction activities); and

   b. Any size construction activity discharging stormwater to waters of the State that the Washington State Department of Ecology (Ecology):

      i. Determines to be a significant contributor of pollutants to waters of the State of Washington.

      ii. Reasonably expects to cause a violation of any water quality standard.

2. Operators of the following activities are not required to seek coverage under this CSWGP (unless specifically required under Special Condition S1.B.1.b. above):

   a. Construction activities that discharge all stormwater and non-stormwater to ground water, sanitary sewer, or combined sewer, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.

   b. Construction activities covered under an Erosivity Waiver (Special Condition S2.C).

   c. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

C. Authorized Discharges:

1. *Stormwater Associated with Construction Activity*. Subject to compliance with the terms and conditions of this permit, Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the State or to a storm sewer system that drains to surface waters of the State. (Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.)

2. *Stormwater Associated with Construction Support Activity*. This permit also authorizes stormwater discharge from support activities related to the permitted construction site (for example, an on-site portable rock crusher, off-site equipment staging yards, material storage areas, borrow areas, etc.) provided:

    a. The support activity relates directly to the permitted construction site that is required to have an NPDES permit; and

    b. The support activity is not a commercial operation serving multiple unrelated construction projects, and does not operate beyond the completion of the construction activity; and

    c. Appropriate controls and measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) for the discharges from the support activity areas.

3. *Non-Stormwater Discharges*. The categories and sources of non-stormwater discharges identified below are authorized conditionally, provided the discharge is consistent with the terms and conditions of this permit:

    a. Discharges from fire-fighting activities.

    b. Fire hydrant system flushing.

    c. Potable water, including uncontaminated water line flushing.

    d. Hydrostatic test water.

    e. Uncontaminated air conditioning or compressor condensate.

    f. Uncontaminated ground water or spring water.

    g. Uncontaminated excavation dewatering water (in accordance with S9.D.10).

    h. Uncontaminated discharges from foundation or footing drains.

    i. Uncontaminated water used to control dust. Permittees must minimize the amount of dust control water used.

    j. Routine external building wash down that does not use detergents.

    k. Landscape irrigation water.

The SWPPP must adequately address all authorized non-stormwater discharges, except for discharges from fire-fighting activities, and must comply with Special Condition S3.

At a minimum, discharges from potable water (including water line flushing), fire hydrant system flushing, and pipeline hydrostatic test water must undergo the following: dechlorination to a concentration of 0.1 parts per million (ppm) or less, and pH adjustment to within 6.5 – 8.5 standard units (su), if necessary.

D. Prohibited Discharges:

The following discharges to waters of the State, including ground water, are prohibited.

1. Concrete wastewater.
2. Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
3. Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2 (see Appendix A of this permit).
4. Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed according to Special Condition S9.D.9.j.
5. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
6. Soaps or solvents used in vehicle and equipment washing.
7. Wheel wash wastewater, unless managed according to Special Condition S9.D.9.
8. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to Special Condition S9.D.10.

E. Limits on Coverage

Ecology may require any discharger to apply for and obtain coverage under an individual permit or another more specific general permit. Such alternative coverage will be required when Ecology determines that this CSWGP does not provide adequate assurance that water quality will be protected, or there is a reasonable potential for the project to cause or contribute to a violation of water quality standards.

The following stormwater discharges are not covered by this permit:

1. Post-construction stormwater discharges that originate from the site after completion of construction activities and the site has undergone final stabilization.
2. Non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance, from which there is natural runoff as excluded in 40 CFR Subpart 122.
3. Stormwater from any federal operator.

4. Stormwater from facilities located on "Indian Country" as defined in 18 U.S.C.§1151, except portions of the Puyallup Reservation as noted below.

   Indian Country includes:

   a. All land within any Indian Reservation notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation. This includes all federal, tribal, and Indian and non-Indian privately owned land within the reservation.

   b. All off-reservation Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

   c. All off-reservation federal trust lands held for Native American Tribes.

      Puyallup Exception: Following the *Puyallup Tribes of Indians Land Settlement Act of 1989*, 25 U.S.C. §1773; the permit does apply to land within the Puyallup Reservation except for discharges to surface water on land held in trust by the federal government.

5. Stormwater from any site covered under an existing NPDES individual permit in which stormwater management and/or treatment requirements are included for all stormwater discharges associated with construction activity.

6. Stormwater from a site where an applicable Total Maximum Daily Load (TMDL) requirement specifically precludes or prohibits discharges from construction activity.

S2. APPLICATION REQUIREMENTS

A. Permit Application Forms

1. Notice of Intent Form/Timeline

   a. Operators of new or previously unpermitted construction activities must submit a complete and accurate permit application (Notice of Intent, or NOI) to Ecology.

   b. Operators must apply using the electronic application form (NOI) available on Ecology's website http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

      Department of Ecology
      Water Quality Program - Construction Stormwater
      PO Box 47696
      Olympia, Washington 98504-7696

c. The operator must submit the NOI at least 60 days before discharging stormwater from construction activities and must submit it on or before the date of the first public notice (see Special Condition S2.B below for details). The 30-day public comment period begins on the publication date of the second public notice. Unless Ecology responds to the complete application in writing, based on public comments, or any other relevant factors, coverage under the general permit will automatically commence on the thirty-first day following receipt by Ecology of a completed NOI, or the issuance date of this permit, whichever is later; unless Ecology specifies a later date in writing as required by WAC173-226-200(2).

d. If an applicant intends to use a Best Management Practice (BMP) selected on the basis of Special Condition S9.C.4 ("demonstrably equivalent" BMPs), the applicant must notify Ecology of its selection as part of the NOI. In the event the applicant selects BMPs after submission of the NOI, it must provide notice of the selection of an equivalent BMP to Ecology at least 60 days before intended use of the equivalent BMP.

e. Permittees must notify Ecology regarding any changes to the information provided on the NOI by submitting an updated NOI. Examples of such changes include, but are not limited to:

    i. Changes to the Permittee's mailing address,

    ii. Changes to the on-site contact person information, ***and***

    iii. Changes to the area/acreage affected by construction activity.

f. Applicants must notify Ecology if they are aware of contaminated soils and/or groundwater associated with the construction activity. Provide detailed information with the NOI (as known and readily available) on the nature and extent of the contamination (concentrations, locations, and depth), as well as pollution prevention and/or treatment BMPs proposed to control the discharge of soil and/or groundwater contaminants in stormwater. Examples of such detail may include, but are not limited to:

    i. List or table of all known contaminants with laboratory test results showing concentration and depth,

    ii. Map with sample locations,

    iii. Temporary Erosion and Sediment Control (TESC) plans,

    iv. Related portions of the Stormwater Pollution Prevention Plan (SWPPP) that address the management of contaminated and potentially contaminated construction stormwater and dewatering water,

    v. Dewatering plan and/or dewatering contingency plan.

2. Transfer of Coverage Form

   The Permittee can transfer current coverage under this permit to one or more new operators, including operators of sites within a Common Plan of Development, provided the Permittee submits a Transfer of Coverage Form in accordance with General Condition G9. Transfers do not require public notice.

B. Public Notice

For new or previously unpermitted construction activities, the applicant must publish a public notice at least one time each week for two consecutive weeks, at least 7 days apart, in a newspaper with general circulation in the county where the construction is to take place. The notice must contain:

1. A statement that "The applicant is seeking coverage under the Washington State Department of Ecology's Construction Stormwater NPDES and State Waste Discharge General Permit".

2. The name, address and location of the construction site.

3. The name and address of the applicant.

4. The type of construction activity that will result in a discharge (for example, residential construction, commercial construction, etc.), and the number of acres to be disturbed.

5. The name of the receiving water(s) (that is, the surface water(s) to which the site will discharge), or, if the discharge is through a storm sewer system, the name of the operator of the system.

6. The statement: "Any persons desiring to present their views to the Washington State Department of Ecology regarding this application, or interested in Ecology's action on this application, may notify Ecology in writing no later than 30 days of the last date of publication of this notice. Ecology reviews public comments and considers whether discharges from this project would cause a measurable change in receiving water quality, and, if so, whether the project is necessary and in the overriding public interest according to Tier II antidegradation requirements under WAC 173-201A-320. Comments can be submitted to: Department of Ecology, PO Box 47696, Olympia, Washington 98504-7696 Attn: Water Quality Program, Construction Stormwater."

C. Erosivity Waiver

Construction site operators may qualify for an erosivity waiver from the CSWGP if the following conditions are met:

1. The site will result in the disturbance of fewer than 5 acres and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater.

2. Calculation of Erosivity "R" Factor and Regional Timeframe:

   a. The project's rainfall erosivity factor ("R" Factor) must be less than 5 during the period of construction activity, as calculated (see the CSWGP homepage http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html for a link to the EPA's calculator and step by step instructions on computing the "R" Factor in the EPA Erosivity Waiver Fact Sheet). The period of construction activity starts when the land is first disturbed and ends with final stabilization. In addition:

   b. The entire period of construction activity must fall within the following timeframes:

      i. For sites west of the Cascades Crest: June 15 – September 15.

      ii. For sites east of the Cascades Crest, excluding the Central Basin: June 15 – October 15.

      iii. For sites east of the Cascades Crest, within the Central Basin: no additional timeframe restrictions apply. The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches. For a map of the Central Basin (Average Annual Precipitation Region 2), refer to http://www.ecy.wa.gov/programs/wq/stormwater/construction/resourcesguidance.html.

3. Construction site operators must submit a complete Erosivity Waiver certification form at least one week before disturbing the land. Certification must include statements that the operator will:

   a. Comply with applicable local stormwater requirements; ***and***

   b. Implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

4. This waiver is not available for facilities declared significant contributors of pollutants as defined in Special Condition S1.B.1.b. or for any size construction activity that could reasonably expect to cause a violation of any water quality standard as defined in Special Condition S1.B.1.b.ii.

5. This waiver does not apply to construction activities which include non-stormwater discharges listed in Special Condition S1.C.3.

6. If construction activity extends beyond the certified waiver period for any reason, the operator must either:

    a. Recalculate the rainfall erosivity "R" factor using the original start date and a new projected ending date and, if the "R" factor is still under 5 *and* the entire project falls within the applicable regional timeframe in Special Condition S2.C.2.b, complete and submit an amended waiver certification form before the original waiver expires; ***or***

    b. Submit a complete permit application to Ecology in accordance with Special Condition S2.A and B before the end of the certified waiver period.

S3. COMPLIANCE WITH STANDARDS

A. Discharges must not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges not in compliance with these standards are not authorized.

B. Prior to the discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate SWPPP, with all appropriate BMPs installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.

C. Ecology presumes that a Permittee complies with water quality standards unless discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully:

    1. Comply with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.

    2. Implement stormwater BMPs contained in stormwater management manuals published or approved by Ecology, or BMPs that are demonstrably equivalent to BMPs contained in stormwater technical manuals published or approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology.)

D. Where construction sites also discharge to ground water, the ground water discharges must also meet the terms and conditions of this CSWGP. Permittees who discharge to ground water through an injection well must also comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.

S4. MONITORING REQUIREMENTS, BENCHMARKS, AND REPORTING TRIGGERS

A. Site Log Book

The Permittee must maintain a site log book that contains a record of the implementation of the SWPPP and other permit requirements, including the installation and maintenance of BMPs, site inspections, and stormwater monitoring.

B. Site Inspections

The Permittee's site inspections must include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points under the Permittee's operational control. (See Special Conditions S4.B.3 and B.4 below for detailed requirements of the Permittee's Certified Erosion and Sediment Control Lead [CESCL].)

Construction sites one acre or larger that discharge stormwater to surface waters of the State must have site inspections conducted by a certified CESCL. Sites less than one acre may have a person without CESCL certification conduct inspections.

1. The Permittee must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. The Permittee must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

   Based on the results of the inspection, the Permittee must correct the problems identified by:

   a. Reviewing the SWPPP for compliance with Special Condition S9 and making appropriate revisions within 7 days of the inspection.

   b. Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.

   c. Documenting BMP implementation and maintenance in the site log book.

2. The Permittee must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one inspection is required that week.) The Permittee may reduce the inspection frequency for temporarily stabilized, inactive sites to once every calendar month.

3. The Permittee must have staff knowledgeable in the principles and practices of erosion and sediment control. The CESCL (sites one acre or more) or inspector (sites less than one acre) must have the skills to assess the:

    a. Site conditions and construction activities that could impact the quality of stormwater, ***and***

    b. Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

4. The SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times. The CESCL must obtain this certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the manual referred to in Special Condition S9.C.1 and 2).

5. The Permittee must summarize the results of each inspection in an inspection report or checklist and enter the report/checklist into, or attach it to, the site log book. At a minimum, each inspection report or checklist must include:

    a. Inspection date and time.

    b. Weather information, the general conditions during inspection and the approximate amount of precipitation since the last inspection, and precipitation within the last 24 hours.

    c. A summary or list of all implemented BMPs, including observations of all erosion/sediment control structures or practices.

    d. A description of the locations:

        i. Of BMPs inspected;

        ii. Of BMPs that need maintenance and why;

        iii. Of BMPs that failed to operate as designed or intended; ***and***

        iv. Where additional or different BMPs are needed, and why.

    e. A description of stormwater discharged from the site. The Permittee must note the presence of suspended sediment, turbidity, discoloration, and oil sheen, as applicable.

    f. Any water quality monitoring performed during inspection.

    g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made following the inspection.

    h. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.

i. The name, title, and signature of the person conducting the site inspection, a phone number or other reliable method to reach this person, and the following statement: "I certify that this report is true, accurate, and complete to the best of my knowledge and belief."

Table 3: Summary of Primary Monitoring Requirements

Size of Soil Disturbance[1]	Weekly Site Inspections	Weekly Sampling w/ Turbidity Meter	Weekly Sampling w/ Transparency Tube	Weekly pH Sampling[2]	CESCL Required for Inspections?
Sites that disturb less than 1 acre, but are part of a larger Common Plan of Development	Required	Not Required	Not Required	Not Required	No
Sites that disturb 1 acre or more, but fewer than 5 acres	Required	Sampling Required – either method[3]		Required	Yes
Sites that disturb 5 acres or more	Required	Required	Not Required[4]	Required	Yes

[1] Soil disturbance is calculated by adding together all areas that will be affected by construction activity. Construction activity means clearing, grading, excavation, and any other activity that disturbs the surface of the land, including ingress/egress from the site.

[2] If construction activity results in the disturbance of 1 acre or more, and involves significant concrete work (1,000 cubic yards of poured over the life of a project) or the use of recycled concrete or engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer stormwater collection system that drains to other surface waters of the State, the Permittee must conduct pH sampling in accordance with Special Condition S4.D.

[3] Sites with one or more acres, but fewer than 5 acres of soil disturbance, must conduct turbidity or transparency sampling in accordance with Special Condition S4.C.

[4] Sites equal to or greater than 5 acres of soil disturbance must conduct turbidity sampling using a turbidity meter in accordance with Special Condition S4.C.

C. Turbidity/Transparency Sampling Requirements

1. Sampling Methods

   a. If construction activity involves the disturbance of 5 acres or more, the Permittee must conduct turbidity sampling per Special Condition S4.C.

   b. If construction activity involves 1 acre or more but fewer than 5 acres of soil disturbance, the Permittee must conduct either transparency sampling **or** turbidity sampling per Special Condition S4.C.

2. Sampling Frequency

   a. The Permittee must sample all discharge points at least once every calendar week when stormwater (or authorized non-stormwater) discharges from the site or enters any on-site surface waters of the state (for example, a creek running through a site); sampling is not required on sites that disturb less than an acre.

   b. Samples must be representative of the flow and characteristics of the discharge.

   c. Sampling is not required when there is no discharge during a calendar week.

   d. Sampling is not required outside of normal working hours or during unsafe conditions.

   e. If the Permittee is unable to sample during a monitoring period, the Permittee must include a brief explanation in the monthly Discharge Monitoring Report (DMR).

   f. Sampling is not required before construction activity begins.

   g. The Permittee may reduce the sampling frequency for temporarily stabilized, inactive sites to once every calendar month.

3. Sampling Locations

   a. Sampling is required at all points where stormwater associated with construction activity (or authorized non-stormwater) is discharged off site, including where it enters any on-site surface waters of the state (for example, a creek running through a site).

   b. The Permittee may discontinue sampling at discharge points that drain areas of the project that are fully stabilized to prevent erosion.

   c. The Permittee must identify all sampling point(s) on the SWPPP site map and clearly mark these points in the field with a flag, tape, stake or other visible marker.

   d. Sampling is not required for discharge that is sent directly to sanitary or combined sewer systems.

e. The Permittee may discontinue sampling at discharge points in areas of the project where the Permittee no longer has operational control of the construction activity.

4. Sampling and Analysis Methods

a. The Permittee performs turbidity analysis with a calibrated turbidity meter (turbidimeter) either on site or at an accredited lab. The Permittee must record the results in the site log book in nephelometric turbidity units (NTUs).

b. The Permittee performs transparency analysis on site with a 1¾-inch-diameter, 60-centimeter (cm)-long transparency tube. The Permittee will record the results in the site log book in centimeters (cm).

Table 4: Monitoring and Reporting Requirements

Parameter	Unit	Analytical Method	Sampling Frequency	Benchmark Value	Phone Reporting Trigger Value
Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs	250 NTUs
Transparency	cm	Manufacturer instructions, or Ecology guidance	Weekly, if discharging	33 cm	6 cm

5. Turbidity/Transparency Benchmark Values and Reporting Triggers

The benchmark value for turbidity is 25 NTUs or less. The benchmark value for transparency is 33 centimeters (cm). Note: Benchmark values do not apply to discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus; these discharges are subject to a numeric effluent limit for turbidity. Refer to Special Condition S8 for more information.

a. Turbidity 26 – 249 NTUs, or Transparency 32 – 7 cm:

If the discharge turbidity is 26 to 249 NTUs; or if discharge transparency is less than 33 cm, but equal to or greater than 6 cm, the Permittee must:

i. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

ii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

iii. Document BMP implementation and maintenance in the site log book.

b. Turbidity 250 NTUs or greater, or Transparency 6 cm or less:

If a discharge point's turbidity is 250 NTUs or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive management process described below.

i. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) number (or through Ecology's Water Quality Permitting Portal [WQWebPortal] – Permit Submittals when the form is available) within 24 hours, in accordance with Special Condition S5.A.

- Central Region (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490
- Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
- Northwest Region (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
- Southwest Region (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

Links to these numbers and the ERTS reporting page are located on the following web site: http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html.

ii. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

iii. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

iv. Document BMP implementation and maintenance in the site log book.

v. Sample discharges daily until:

a) Turbidity is 25 NTUs (or lower); ***or***

b) Transparency is 33 cm (or greater); ***or***

c) The Permittee has demonstrated compliance with the water quality limit for turbidity:

1) No more than 5 NTUs over background turbidity, if background is less than 50 NTUs, ***or***

2) No more than 10% over background turbidity, if background is 50 NTUs or greater; ***or***

d) The discharge stops or is eliminated.

D. pH Sampling Requirements – Significant Concrete Work or Engineered Soils

If construction activity results in the disturbance of 1 acre or more, ***and*** involves significant concrete work (significant concrete work means greater than 1000 cubic yards poured concrete used over the life of a project) or the use of recycled concrete or engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD], or fly ash), and stormwater from the affected area drains to surface waters of the State or to a storm sewer system that drains to surface waters of the State, the Permittee must conduct pH sampling as set forth below. Note: In addition, discharges to segments of water bodies on Washington State's 303(d) list (Category 5) for high pH are subject to a numeric effluent limit for pH; refer to Special Condition S8.

1. For sites with significant concrete work, the Permittee must begin the pH sampling period when the concrete is first poured and exposed to precipitation, and continue weekly throughout and after the concrete pour and curing period, until stormwater pH is in the range of 6.5 to 8.5 (su).

2. For sites with recycled concrete, the Permittee must begin the weekly pH sampling period when the recycled concrete is first exposed to precipitation and must continue until the recycled concrete is fully stabilized and stormwater pH is in the range of 6.5 to 8.5 (su).

3. For sites with engineered soils, the Permittee must begin the pH sampling period when the soil amendments are first exposed to precipitation and must continue until the area of engineered soils is fully stabilized.

4. During the applicable pH monitoring period defined above, the Permittee must obtain a representative sample of stormwater and conduct pH analysis at least once per week.

5. The Permittee must sample pH in the sediment trap/pond(s) or other locations that receive stormwater runoff from the area of significant concrete work or engineered soils before the stormwater discharges to surface waters.

6. The benchmark value for pH is 8.5 standard units. Anytime sampling indicates that pH is 8.5 or greater, the Permittee must either:

a. Prevent the high pH water (8.5 or above) from entering storm sewer systems or surface waters; ***or***

b. If necessary, adjust or neutralize the high pH water until it is in the range of pH 6.5 to 8.5 (su) using an appropriate treatment BMP such as carbon dioxide (CO_2) sparging or dry ice. The Permittee must obtain written approval from Ecology before using any form of chemical treatment other than CO_2 sparging or dry ice.

7. The Permittee must perform pH analysis on site with a calibrated pH meter, pH test kit, or wide range pH indicator paper. The Permittee must record pH sampling results in the site log book.

S5. REPORTING AND RECORDKEEPING REQUIREMENTS

A. High Turbidity Reporting

Anytime sampling performed in accordance with Special Condition S4.C indicates turbidity has reached the 250 NTUs or more (or transparency less than or equal to 6 cm) high turbidity reporting level, the Permittee must either call the applicable Ecology Region's Environmental Report Tracking System (ERTS) number by phone within 24 hours of analysis or submit an electronic ERTS report (or submit an electronic report through Ecology's Water Quality Permitting Portal (WQWebPortal) – Permit Submittals when the form is available). See the CSWGP web site for links to ERTS and the WQWebPortal: http://www.ecy.wa.gov/programs/wq/stormwater/construction/index.html. Also, see phone numbers in Special Condition S4.C.5.b.i.

B. Discharge Monitoring Reports (DMRs)

Permittees required to conduct water quality sampling in accordance with Special Conditions S4.C (Turbidity/Transparency), S4.D (pH), S8 (303[d]/TMDL sampling), and/or G13 (Additional Sampling) must submit the results to Ecology.

Permittees must submit monitoring data using Ecology's WQWebDMR web application accessed through Ecology's Water Quality Permitting Portal. To find out more information and to sign up for WQWebDMR go to: http://www.ecy.wa.gov/programs/wq/permits/paris/portal.html.

Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper copy DMR at:

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

Permittees who obtain a waiver not to use WQWebDMR must use the forms provided to them by Ecology; submittals must be mailed to the address above. Permittees shall

submit DMR forms to be received by Ecology within 15 days following the end of each month.

If there was no discharge during a given monitoring period, all Permittees must submit a DMR as required with "no discharge" entered in place of the monitoring results. DMRs are required for the full duration of permit coverage (from issuance date to termination). For more information, contact Ecology staff using information provided at the following web site: www.ecy.wa.gov/programs/wq/permits/paris/contacts.html.

C. Records Retention

The Permittee must retain records of all monitoring information (site log book, sampling results, inspection reports/checklists, etc.), Stormwater Pollution Prevention Plan, copy of the permit coverage letter (including Transfer of Coverage documentation), and any other documentation of compliance with permit requirements for the entire life of the construction project and for a minimum of three years following the termination of permit coverage. Such information must include all calibration and maintenance records, and records of all data used to complete the application for this permit. This period of retention must be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

D. Recording Results

For each measurement or sample taken, the Permittee must record the following information:

1. Date, place, method, and time of sampling or measurement.
2. The first and last name of the individual who performed the sampling or measurement.
3. The date(s) the analyses were performed.
4. The first and last name of the individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

E. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Special Condition S4 of this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Permittee's DMR.

F. Noncompliance Notification

In the event the Permittee is unable to comply with any part of the terms and conditions of this permit, and the resulting noncompliance may cause a threat to human health or the environment (such as but not limited to spills of fuels or other materials, catastrophic pond or slope failure, and discharges that violate water quality standards), or exceed

numeric effluent limitations (see S8. Discharges to 303(d) or TMDL Waterbodies), the Permittee must, upon becoming aware of the circumstance:

1. Notify Ecology within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (refer to Special Condition S4.C.5.b.i. or www.ecy.wa.gov/programs/wq/stormwater/construction/turbidity.html for Regional ERTS phone numbers).

2. Immediately take action to prevent the discharge/pollution, or otherwise stop or correct the noncompliance, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to Ecology within five (5) days of becoming aware of the violation.

3. Submit a detailed written report to Ecology within five (5) days, of the time the Permittee becomes aware of the circumstances, unless requested earlier by Ecology. The report must be submitted using Ecology's Water Quality Permitting Portal (WQWebPortal) - Permit Submittals, unless a waiver from electronic reporting has been granted according to S5.B. The report must contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   The Permittee must report any unanticipated bypass and/or upset that exceeds any effluent limit in the permit in accordance with the 24-hour reporting requirement contained in 40 C.F.R. 122.41(l)(6).

   Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply. Upon request of the Permittee, Ecology may waive the requirement for a written report on a case-by-case basis, if the immediate notification is received by Ecology within 24 hours.

G. Access to Plans and Records

1. The Permittee must retain the following permit documentation (plans and records) on site, or within reasonable access to the site, for use by the operator or for on-site review by Ecology or the local jurisdiction:

   a. General Permit

   b. Permit Coverage Letter

   c. Stormwater Pollution Prevention Plan (SWPPP)

   d. Site Log Book

2. The Permittee must address written requests for plans and records listed above (Special Condition S5.G.1) as follows:

a. The Permittee must provide a copy of plans and records to Ecology within 14 days of receipt of a written request from Ecology.

b. The Permittee must provide a copy of plans and records to the public when requested in writing. Upon receiving a written request from the public for the Permittee's plans and records, the Permittee must either:

   i. Provide a copy of the plans and records to the requester within 14 days of a receipt of the written request; ***or***

   ii. Notify the requester within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed; and provide access to the plans and records within 14 days of receipt of the written request; ***or***

   iii. Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requester at an Ecology office, or a mutually agreed location. If plans and records are viewed and/or copied at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged. The Permittee must notify the requester within 10 days of receipt of the request where the plans and records may be viewed and/or copied.

S6. PERMIT FEES

The Permittee must pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit are established by Chapter 173-224 WAC. Ecology continues to assess permit fees until the permit is terminated in accordance with Special Condition S10 or revoked in accordance with General Condition G5.

S7. SOLID AND LIQUID WASTE DISPOSAL

The Permittee must handle and dispose of solid and liquid wastes generated by construction activity, such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, in accordance with:

A. Special Condition S3, Compliance with Standards

B. WAC 173-216-110

C. Other applicable regulations

S8. DISCHARGES TO 303(d) OR TMDL WATERBODIES

A. Sampling and Numeric Effluent Limits For Certain Discharges to 303(d)-listed Waterbodies

1. Permittees who discharge to segments of waterbodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorus, must conduct water quality sampling according to the requirements of this section, and Special Conditions S4.C.2.b-f and S4.C.3.b-d, and must comply with the applicable numeric effluent limitations in S8.C and S8.D.

2. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters (Category 5) that exists on January 1, 2016, or the date when the operator's complete permit application is received by Ecology, whichever is later.

B. Limits on Coverage for New Discharges to TMDL or 303(d)-listed Waters

Operators of construction sites that discharge to a TMDL or 303(d)-listed waterbody are not eligible for coverage under this permit *unless* the operator:

1. Prevents exposing stormwater to pollutants for which the waterbody is impaired, and retains documentation in the SWPPP that details procedures taken to prevent exposure on site; ***or***

2. Documents that the pollutants for which the waterbody is impaired are not present at the site, and retains documentation of this finding within the SWPPP; ***or***

3. Provides Ecology with data indicating the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retains such data on site with the SWPPP. The operator must provide data and other technical information to Ecology that sufficiently demonstrate:

   a. For discharges to waters without an EPA-approved or -established TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; ***or***

   b. For discharges to waters with an EPA-approved or -established TMDL, that there is sufficient remaining wasteload allocation in the TMDL to allow construction stormwater discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

   Operators of construction sites are eligible for coverage under this permit if Ecology issues permit coverage based upon an affirmative determination that the *discharge will not cause or contribute to the existing impairment.*

C. Sampling and Numeric Effluent Limits for Discharges to Water Bodies on the 303(d) List for Turbidity, Fine Sediment, or Phosphorus

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for turbidity, fine sediment, or phosphorus must conduct turbidity sampling in accordance with Special Condition S4.C.2 and comply with either of the numeric effluent limits noted in Table 5 below.

2. As an alternative to the 25 NTUs effluent limit noted in Table 5 below (applied at the point where stormwater [or authorized non-stormwater] is discharged off-site), Permittees may choose to comply with the surface water quality standard for turbidity. The standard is: no more than 5 NTUs over background turbidity when the background turbidity is 50 NTUs or less, or no more than a 10% increase in turbidity when the background turbidity is more than 50 NTUs. In order to use the water quality standard requirement, the sampling must take place at the following locations:

   a. Background turbidity in the 303(d)-listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge.

   b. Turbidity at the point of discharge into the 303(d)-listed receiving water, inside the area of influence of the discharge.

3. Discharges that exceed the numeric effluent limit for turbidity constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

Table 5: Turbidity, Fine Sediment & Phosphorus Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Sampling Frequency	Numeric Effluent Limit[1]
• Turbidity • Fine Sediment • Phosphorus	Turbidity	NTU	SM2130	Weekly, if discharging	25 NTUs, at the point where stormwater is discharged from the site; OR In compliance with the surface water quality standard for turbidity (S8.C.2.a)

[1]Permittees subject to a numeric effluent limit for turbidity may, at their discretion, choose either numeric effluent limitation based on site-specific considerations including, but not limited to, safety, access and convenience.

D. Discharges to Water Bodies on the 303(d) List for High pH

1. Permittees who discharge to segments of water bodies on the 303(d) list (Category 5) for high pH must conduct pH sampling in accordance with the table below, and comply with the numeric effluent limit of pH 6.5 to 8.5 su (Table 6).

Table 6: pH Sampling and Limits for 303(d)-Listed Waters

Parameter identified in 303(d) listing	Parameter Sampled/Units	Analytical Method	Sampling Frequency	Numeric Effluent Limit
High pH	pH /Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

2. At the Permittee's discretion, compliance with the limit shall be assessed at one of the following locations:

   a. Directly in the 303(d)-listed waterbody segment, inside the immediate area of influence of the discharge; or

   b. Alternatively, the Permittee may measure pH at the point where the discharge leaves the construction site, rather than in the receiving water.

3. Discharges that exceed the numeric effluent limit for pH (outside the range of 6.5 – 8.5 su) constitute a violation of this permit.

4. Permittees whose discharges exceed the numeric effluent limit shall sample discharges daily until the violation is corrected and comply with the non-compliance notification requirements in Special Condition S5.F.

E. Sampling and Limits for Sites Discharging to Waters Covered by a TMDL or Another Pollution Control Plan

1. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL. Refer to http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html for more information on TMDLs.

   a. Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges must be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

      i. The Permittee must sample discharges weekly or as otherwise specified by the TMDL to evaluate compliance with the specific waste load allocations or requirements.

      ii. Analytical methods used to meet the monitoring requirements must conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136. Turbidity and pH methods need not be accredited or registered unless conducted at a laboratory which must otherwise be accredited or registered.

   b. Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but has not identified specific requirements,

compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

c. Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with Special Conditions S4 (Monitoring) and S9 (SWPPPs) will constitute compliance with the approved TMDL.

d. Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

2. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus that is completed and approved by EPA before January 1, 2016, or before the date the operator's complete permit application is received by Ecology, whichever is later. TMDLs completed after the operator's complete permit application is received by Ecology become applicable to the Permittee only if they are imposed through an administrative order by Ecology, or through a modification of permit coverage.

S9. STORMWATER POLLUTION PREVENTION PLAN

The Permittee must prepare and properly implement an adequate Stormwater Pollution Prevention Plan (SWPPP) for construction activity in accordance with the requirements of this permit beginning with initial soil disturbance and until final stabilization.

A. The Permittee's SWPPP must meet the following objectives:

1. To implement best management practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.

2. To prevent violations of surface water quality, ground water quality, or sediment management standards.

3. To control peak volumetric flow rates and velocities of stormwater discharges.

B. General Requirements

1. The SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

a. Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

b. Potential erosion problem areas.

c. The 13 elements of a SWPPP in Special Condition S9.D.1-13, including BMPs used to address each element.

d. Construction phasing/sequence and general BMP implementation schedule.

e. The actions to be taken if BMP performance goals are not achieved—for example, a contingency plan for additional treatment and/or storage of stormwater that would violate the water quality standards if discharged.

f. Engineering calculations for ponds, treatment systems, and any other designed structures.

2. The Permittee must modify the SWPPP if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must then:

   a. Review the SWPPP for compliance with Special Condition S9 and make appropriate revisions within 7 days of the inspection or investigation.

   b. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, addressing the problems no later than 10 days from the inspection or investigation. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a Permittee within the initial 10-day response period.

   c. Document BMP implementation and maintenance in the site log book.

   The Permittee must modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

C. Stormwater Best Management Practices (BMPs)

BMPs must be consistent with:

1. Stormwater Management Manual for Western Washington (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; ***or***

2. Stormwater Management Manual for Eastern Washington (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; ***or***

3. Revisions to the manuals listed in Special Condition S9.C.1. & 2., or other stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230; ***or***

4. Documentation in the SWPPP that the BMPs selected provide an equivalent level of pollution prevention, compared to the applicable Stormwater Management Manuals, including:

    a. The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.

    b. An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

D. SWPPP – Narrative Contents and Requirements

The Permittee must include each of the 13 elements below in Special Condition S9.D.1-13 in the narrative of the SWPPP and implement them unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP.

1. Preserve Vegetation/Mark Clearing Limits

    a. Before beginning land-disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

    b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access

    a. Limit construction vehicle access and exit to one route, if possible.

    b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking sediment onto roads.

    c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.

    d. If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.

    e. Conduct street washing only after sediment removal in accordance with Special Condition S9.D.2.d. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging into systems tributary to waters of the State.

3. Control Flow Rates

    a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the

velocity and peak volumetric flow rate of stormwater runoff from the project site, as required by local plan approval authority.

b. Where necessary to comply with Special Condition S9.D.3.a, construct stormwater retention or detention facilities as one of the first steps in grading. Assure that detention facilities function properly before constructing site improvements (for example, impervious surfaces).

c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from siltation during the construction phase.

4. Install Sediment Controls

The Permittee must design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the Permittee must design, install and maintain such controls to:

a. Construct sediment control BMPs (sediment ponds, traps, filters, infiltration facilities, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.

b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

c. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Special Condition S9.D.3.a.

d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.

f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

5. Stabilize Soils

a. The Permittee must stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide

(PAM), the early application of gravel base on areas to be paved, and dust control.

b. The Permittee must control stormwater volume and velocity within the site to minimize soil erosion.

c. The Permittee must control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.

d. Depending on the geographic location of the project, the Permittee must not allow soils to remain exposed and unworked for more than the time periods set forth below to prevent erosion:

West of the Cascade Mountains Crest
During the dry season (May 1 - September 30): 7 days
During the wet season (October 1 - April 30): 2 days

East of the Cascade Mountains Crest, except for Central Basin*
During the dry season (July 1 - September 30): 10 days
During the wet season (October 1 - June 30): 5 days

The Central Basin*, East of the Cascade Mountains Crest
During the dry season (July 1 - September 30): 30 days
During the wet season (October 1 - June 30): 15 days

*Note: The Central Basin is defined as the portions of Eastern Washington with mean annual precipitation of less than 12 inches.

e. The Permittee must stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.

f. The Permittee must stabilize soil stockpiles from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

g. The Permittee must minimize the amount of soil exposed during construction activity.

h. The Permittee must minimize the disturbance of steep slopes.

i. The Permittee must minimize soil compaction and, unless infeasible, preserve topsoil.

6. Protect Slopes

a. The Permittee must design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).

b. The Permittee must divert off-site stormwater (run-on) or ground water away from slopes and disturbed areas with interceptor dikes, pipes, and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.

   i. West of the Cascade Mountains Crest: Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area."

   ii. East of the Cascade Mountains Crest: Temporary pipe slope drains must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.

e. Place check dams at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets

   a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.

   b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets

   a. Design, construct and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:

      i. West of the Cascade Mountains Crest: Channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land

cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the WWHM to predict flows, bare soil areas should be modeled as "landscaped area."

ii. East of the Cascade Mountains Crest: Channels must handle the expected peak flow rate from a 6-month, 3-hour storm for the developed condition, referred to as the short duration storm.

b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

9. Control Pollutants

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The Permittee must:

a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.

b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.

e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.

f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete

pumping and mixer washout waters. (Also refer to the definition for "concrete wastewater" in Appendix A--Definitions.)

g. Adjust the pH of stormwater or authorized non-stormwater if necessary to prevent an exceedance of groundwater and/or surface water quality standards.

h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete trucks or concrete handling equipment onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.

i. Obtain written approval from Ecology before using any chemical treatment, with the exception of CO_2 or dry ice used to adjust pH.

j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

10. Control Dewatering

a. Permittees must discharge foundation, vault, and trench dewatering water, which have characteristics similar to stormwater runoff at the site, into a controlled conveyance system before discharge to a sediment trap or sediment pond.

b. Permittees may discharge clean, non-turbid dewatering water, such as well-point ground water, to systems tributary to, or directly into surface waters of the State, as specified in Special Condition S9.D.8, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.

c. Other dewatering treatment or disposal options may include:

i. Infiltration.

ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.

iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies (see S9.D.9.i. regarding chemical treatment written approval).

iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.

v. Use of a sedimentation bag with discharge to a ditch or swale for small volumes of localized dewatering.

d. Permittees must handle highly turbid or contaminated dewatering water separately from stormwater.

11. Maintain BMPs

a. Permittees must maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.

b. Permittees must remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project

a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.

b. Inspection and monitoring – Inspect, maintain and repair all BMPs as needed to assure continued performance of their intended function. Conduct site inspections and monitoring in accordance with Special Condition S4.

c. Maintaining an updated construction SWPPP – Maintain, update, and implement the SWPPP in accordance with Special Conditions S3, S4 and S9.

13. Protect Low Impact Development (LID) BMPs

The primary purpose of LID BMPs/On-site LID Stormwater Management BMPs is to reduce the disruption of the natural site hydrology. LID BMPs are permanent facilities.

a. Permittees must protect all Bioretention and Rain Garden facilities from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden facilities. Restore the facilities to their fully functioning condition if they accumulate sediment during construction. Restoring the facility must include removal of sediment and any sediment-laden Bioretention/Rain Garden soils, and replacing the removed soils with soils meeting the design specification.

b. Permittees must maintain the infiltration capabilities of Bioretention and Rain Garden facilities by protecting against compaction by construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.

c. Permittees must control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy

construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements.

d. Permittees must clean permeable pavements fouled with sediments or no longer passing an initial infiltration test using local stormwater manual methodology or the manufacturer's procedures.

e. Permittees must keep all heavy equipment off existing soils under LID facilities that have been excavated to final grade to retain the infiltration rate of the soils.

E. SWPPP – Map Contents and Requirements

The Permittee's SWPPP must also include a vicinity map or general location map (for example, a USGS quadrangle map, a portion of a county or city map, or other appropriate map) with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

The SWPPP must also include a legible site map (or maps) showing the entire construction site. The following features must be identified, unless not applicable due to site conditions:

1. The direction of north, property lines, and existing structures and roads.
2. Cut and fill slopes indicating the top and bottom of slope catch lines.
3. Approximate slopes, contours, and direction of stormwater flow before and after major grading activities.
4. Areas of soil disturbance and areas that will not be disturbed.
5. Locations of structural and nonstructural controls (BMPs) identified in the SWPPP.
6. Locations of off-site material, stockpiles, waste storage, borrow areas, and vehicle/equipment storage areas.
7. Locations of all surface water bodies, including wetlands.
8. Locations where stormwater or non-stormwater discharges off-site and/or to a surface waterbody, including wetlands.
9. Location of water quality sampling station(s), if sampling is required by state or local permitting authority.
10. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.
11. Location or proposed location of LID facilities.

S10. NOTICE OF TERMINATION

A. The site is eligible for termination of coverage when it has met any of the following conditions:

1. The site has undergone final stabilization, the Permittee has removed all temporary BMPs (except biodegradable BMPs clearly manufactured with the intention for the material to be left in place and not interfere with maintenance or land use), and all stormwater discharges associated with construction activity have been eliminated; ***or***

2. All portions of the site that have not undergone final stabilization per Special Condition S10.A.1 have been sold and/or transferred (per General Condition G9), and the Permittee no longer has operational control of the construction activity; ***or***

3. For residential construction only, the Permittee has completed temporary stabilization and the homeowners have taken possession of the residences.

B. When the site is eligible for termination, the Permittee must submit a complete and accurate Notice of Termination (NOT) form, signed in accordance with General Condition G2, to:

Department of Ecology
Water Quality Program – Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

When an electronic termination form is available, the Permittee may choose to submit a complete and accurate Notice of Termination (NOT) form through the Water Quality Permitting Portal rather than mailing a hardcopy as noted above.

The termination is effective on the thirty-first calendar day following the date Ecology receives a complete NOT form, unless Ecology notifies the Permittee that the termination request is denied because the Permittee has not met the eligibility requirements in Special Condition S10.A.

Permittees are required to comply with all conditions and effluent limitations in the permit until the permit has been terminated.

Permittees transferring the property to a new property owner or operator/Permittee are required to complete and submit the Notice of Transfer form to Ecology, but are not required to submit a Notice of Termination form for this type of transaction.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this general permit must be consistent with the terms and conditions of this general permit. Any discharge of any pollutant more frequent than or at a level in excess of that identified and authorized by the general permit must constitute a violation of the terms and conditions of this permit.

G2. SIGNATORY REQUIREMENTS

A. All permit applications must bear a certification of correctness to be signed:

1. In the case of corporations, by a responsible corporate officer;
2. In the case of a partnership, by a general partner of a partnership;
3. In the case of sole proprietorship, by the proprietor; ***or***
4. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

B. All reports required by this permit and other information requested by Ecology (including NOIs, NOTs, and Transfer of Coverage forms) must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph G2.B.2 above must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document under this section must make the following certification:

> "I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my

knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G3. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

A. To enter upon the premises where a discharge is located or where any records are kept under the terms and conditions of this permit.

B. To have access to and copy – at reasonable times and at reasonable cost – any records required to be kept under the terms and conditions of this permit.

C. To inspect – at reasonable times – any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.

D. To sample or monitor – at reasonable times – any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G4. GENERAL PERMIT MODIFICATION AND REVOCATION

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

A. When a change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this permit.

B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of dischargers covered under this permit.

C. When a water quality management plan containing requirements applicable to the category of dischargers covered under this permit is approved, ***or***

D. When information is obtained that indicates cumulative effects on the environment from dischargers covered under this permit are unacceptable.

G5. REVOCATION OF COVERAGE UNDER THE PERMIT

Pursuant to Chapter 43.21B RCW and Chapter 173-226 WAC, the Director may terminate coverage for any discharger under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:

A. Violation of any term or condition of this permit.

B. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.

C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

D. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

E. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.

F. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.

G. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.

The Director may require any discharger under this permit to apply for and obtain coverage under an individual permit or another more specific general permit. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within ninety (90) days from the time of revocation and is submitted along with a complete individual permit application form.

G6. REPORTING A CAUSE FOR MODIFICATION

The Permittee must submit a new application, or a supplement to the previous application, whenever a material change to the construction activity or in the quantity or type of discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least sixty (60) days prior to any proposed changes. Filing a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

G7. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit will be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G8. DUTY TO REAPPLY

The Permittee must apply for permit renewal at least 180 days prior to the specified expiration date of this permit. The Permittee must reapply using the electronic application form (NOI) available on Ecology's website. Permittees unable to submit electronically (for example, those who do not have an internet connection) must contact Ecology to request a waiver and obtain instructions on how to obtain a paper NOI.

Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696

G9. TRANSFER OF GENERAL PERMIT COVERAGE

Coverage under this general permit is automatically transferred to a new discharger, including operators of lots/parcels within a common plan of development or sale, if:

A. A written agreement (Transfer of Coverage Form) between the current discharger (Permittee) and new discharger, signed by both parties and containing a specific date for transfer of permit responsibility, coverage, and liability (including any Administrative Orders associated with the Permit) is submitted to the Director; and

B. The Director does not notify the current discharger and new discharger of the Director's intent to revoke coverage under the general permit. If this notice is not given, the transfer is effective on the date specified in the written agreement.

When a current discharger (Permittee) transfers a portion of a permitted site, the current discharger must also submit an updated application form (NOI) to the Director indicating the remaining permitted acreage after the transfer.

G10. REMOVED SUBSTANCES

The Permittee must not re-suspend or reintroduce collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to the final effluent stream for discharge to state waters.

G11. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information that Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

G12. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G13. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G15. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Special Condition S5.F, and; 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than $20,000 per day of violation, or imprisonment of not more than four (4) years, or both.

G20. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, give notice to Ecology of planned physical alterations, modifications or additions to the permitted construction activity. The Permittee should be aware that, depending on the nature and size of the changes to the original permit, a new public notice and other permit process requirements may be required. Changes in activities that require reporting to Ecology include those that will result in:

A. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).

B. A significant change in the nature or an increase in quantity of pollutants discharged, including but not limited to: for sites 5 acres or larger, a 20% or greater increase in acreage disturbed by construction activity.

C. A change in or addition of surface water(s) receiving stormwater or non-stormwater from the construction activity.

D. A change in the construction plans and/or activity that affects the Permittee's monitoring requirements in Special Condition S4.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G21. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to Ecology, it must promptly submit such facts or information.

G22. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee must give advance notice to Ecology by submission of a new application or supplement thereto at least forty-five (45) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate

unavoidable interruption of operation and degradation of effluent quality, must be scheduled during non-critical water quality periods and carried out in a manner approved by Ecology.

G23. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT

Any discharger authorized by this permit may request to be excluded from coverage under the general permit by applying for an individual permit. The discharger must submit to the Director an application as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons will fully document how an individual permit will apply to the applicant in a way that the general permit cannot. Ecology may make specific requests for information to support the request. The Director will either issue an individual permit or deny the request with a statement explaining the reason for the denial. When an individual permit is issued to a discharger otherwise subject to the construction stormwater general permit, the applicability of the construction stormwater general permit to that Permittee is automatically terminated on the effective date of the individual permit.

G24. APPEALS

A. The terms and conditions of this general permit, as they apply to the appropriate class of dischargers, are subject to appeal by any person within 30 days of issuance of this general permit, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.

B. The terms and conditions of this general permit, as they apply to an individual discharger, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that discharger. Consideration of an appeal of general permit coverage of an individual discharger is limited to the general permit's applicability or nonapplicability to that individual discharger.

C. The appeal of general permit coverage of an individual discharger does not affect any other dischargers covered under this general permit. If the terms and conditions of this general permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

G25. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

G26. BYPASS PROHIBITED

A. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited for stormwater events below the design criteria for

stormwater management. Ecology may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, 3 or 4) is applicable.

1. Bypass of stormwater is consistent with the design criteria and part of an approved management practice in the applicable stormwater management manual.

2. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

   Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health.

3. Bypass of stormwater is unavoidable, unanticipated, and results in noncompliance of this permit.

   This bypass is permitted only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.

   c. Ecology is properly notified of the bypass as required in Special Condition S5.F of this permit.

4. A planned action that would cause bypass of stormwater and has the potential to result in noncompliance of this permit during a storm event.

   The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

   a. A description of the bypass and its cause.

   b. An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.

   c. A cost-effectiveness analysis of alternatives including comparative resource damage assessment.

   d. The minimum and maximum duration of bypass under each alternative.

   e. A recommendation as to the preferred alternative for conducting the bypass.

f. The projected date of bypass initiation.

g. A statement of compliance with SEPA.

h. A request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated.

i. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

5. For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the Stormwater Pollution Prevention Plan (SWPPP) and must be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

   Ecology will consider the following before issuing an administrative order for this type bypass:

   a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.

   b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.

   c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

   After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve, conditionally approve, or deny the request. The public must be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by Ecology under RCW 90.48.120.

B. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

APPENDIX A – DEFINITIONS

AKART is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the *pollutants* and controlling pollution associated with a discharge.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which was completed and approved by EPA before January 1, 2016, or before the date the operator's complete permit application is received by Ecology, whichever is later.

Applicant means an *operator* seeking coverage under this permit.

Benchmark means a *pollutant* concentration used as a permit threshold, below which a *pollutant* is considered unlikely to cause a water quality violation, and above which it may. When *pollutant* concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: *stormwater* associated with construction activity, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Buffer means an area designated by a local *jurisdiction* that is contiguous to and intended to protect a sensitive area.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Calendar Day A period of 24 consecutive hours starting at 12:00 midnight and ending the following 12:00 midnight.

Calendar Week (same as **Week**) means a period of seven consecutive days starting at 12:01 a.m. (0:01 hours) on Sunday.

Certified Erosion and Sediment Control Lead (CESCL) means a person who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160 in the SWMM).

Chemical Treatment means the addition of chemicals to *stormwater* and/or authorized non-stormwater prior to filtration and discharge to surface waters.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Common Plan of Development or Sale means a site where multiple separate and distinct *construction activities* may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1) phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g., a development where lots are sold to separate builders); 2) a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3) projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4) linear projects such as roads, pipelines, or utilities. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements.

Composite Sample means a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increases while maintaining a constant time interval between the aliquots.

Concrete Wastewater means any water used in the production, pouring and/or clean-up of concrete or concrete products, and any water used to cut, grind, wash, or otherwise modify concrete or concrete products. Examples include water used for or resulting from concrete truck/mixer/pumper/tool/chute rinsing or washing, concrete saw cutting and surfacing (sawing, coring, grinding, roughening, hydro-demolition, bridge and road surfacing). When *stormwater* comingles with concrete wastewater, the resulting water is considered concrete wastewater and must be managed to prevent discharge to *waters of the State*, including *ground water*.

Construction Activity means land disturbing operations including clearing, grading or excavation which disturbs the surface of the land. Such activities may include road construction, construction of residential houses, office buildings, or industrial buildings, site preparation, soil compaction, movement and stockpiling of topsoils, and demolition activity.

Contaminant means any hazardous substance that does not occur naturally or occurs at greater than natural background levels. See definition of "*hazardous substance*" and WAC 173-340-200.

Contaminated Groundwater means groundwater which contains *contaminants*, *pollutants*, or *hazardous substances* that do not occur naturally or occur at levels greater than natural background.

Contaminated Soil means soil which contains *contaminants*, *pollutants*, or *hazardous substances* that do not occur naturally or occur at levels greater than natural background.

Demonstrably Equivalent means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:

1. The method and reasons for choosing the stormwater BMPs selected.

2. The *pollutant* removal performance expected from the BMPs selected.
3. The technical basis supporting the performance claims for the BMPs selected, including any available data concerning field performance of the BMPs selected.
4. An assessment of how the selected BMPs will comply with state water quality standards.
5. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment (AKART).

Department means the Washington State Department of Ecology.

Detention means the temporary storage of *stormwater* to improve quality and/or to reduce the mass flow rate of discharge.

Dewatering means the act of pumping *ground water* or *stormwater* away from an active construction site.

Director means the Director of the Washington State Department of Ecology or his/her authorized representative.

Discharger means an owner or *operator* of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington State Department of Ecology.

Engineered Soils means the use of soil amendments including, but not limited, to Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to *surface water* or to *ground water* than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, sediment traps, and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Federal Operator is an entity that meets the definition of "*Operator*" in this permit and is either any department, agency or instrumentality of the executive, legislative, and judicial branches of

the Federal government of the United States, or another entity, such as a private contractor, performing construction activity for any such department, agency, or instrumentality.

Final Stabilization (same as **fully stabilized** or **full stabilization**) means the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (examples of permanent non-vegetative stabilization methods include, but are not limited to riprap, gabions or geotextiles) which prevents erosion.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface waterbody.

Hazardous Substance means any dangerous or extremely hazardous waste as defined in RCW 70.105.010 (5) and (6), or any dangerous or extremely dangerous waste as designated by rule under chapter 70.105 RCW; any hazardous substance as defined in RCW 70.105.010(10) or any hazardous substance as defined by rule under chapter 70.105 RCW; any substance that, on the effective date of this section, is a hazardous substance under section 101(14) of the federal cleanup law, 42 U.S.C., Sec. 9601(14); petroleum or petroleum products; and any substance or category of substances, including solid waste decomposition products, determined by the director by rule to present a threat to human health or the environment if released into the environment. The term hazardous substance does not include any of the following when contained in an underground storage tank from which there is not a release: crude oil or any fraction thereof or petroleum, if the tank is in compliance with all applicable federal, state, and local law.

Injection Well means a well that is used for the subsurface emplacement of fluids. (See Well.)

Jurisdiction means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of *pollutants* to surface waters of the State from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology.

Notice of Intent (NOI) means the application for, or a request for coverage under this general permit pursuant to WAC 173-226-200.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S10 of this permit.

Operator means any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

- The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Permittee means individual or entity that receives notice of coverage under this general permit.

pH means a liquid's measure of acidity or alkalinity. A pH of 7 is defined as neutral. Large variations above or below this value are considered harmful to most aquatic life.

pH Monitoring Period means the time period in which the pH of *stormwater* runoff from a site must be tested a minimum of once every seven days to determine if *stormwater* pH is between 6.5 and 8.5.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, and container from which *pollutants* are or may be discharged to surface waters of the State. This term does not include return flows from irrigated agriculture. (See Fact Sheet for further explanation.)

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the CWA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the CWA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the State; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any *waters of the State* as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. If *stormwater* commingles with process wastewater, the commingled water is considered process wastewater.

Receiving Water means the waterbody at the point of discharge. If the discharge is to a *storm sewer system*, either surface or subsurface, the receiving water is the waterbody to which the storm system discharges. Systems designed primarily for other purposes such as for ground water drainage, redirecting stream natural flows, or for conveyance of irrigation water/return flows that coincidentally convey *stormwater* are considered the receiving water.

Representative means a *stormwater* or wastewater sample which represents the flow and characteristics of the discharge. Representative samples may be a grab sample, a time-proportionate *composite sample*, or a flow proportionate sample. Ecology's Construction Stormwater Monitoring Manual provides guidance on representative sampling.

Responsible Corporate Officer for the purpose of signatory authority means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Sanitary Sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

Sensitive Area means a waterbody, wetland, stream, aquifer recharge area, or channel migration zone.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Significant Amount means an amount of a *pollutant* in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a *pollutant* that has a reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant Concrete Work means greater than 1000 cubic yards poured concrete used over the life of a project.

Significant Contributor of Pollutants means a facility determined by Ecology to be a contributor of a significant amount(s) of a *pollutant*(s) to waters of the State of Washington.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural or mechanical devices or facilities that are intended to prevent *pollutants* from entering *stormwater*. A few examples of source control

BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the *sanitary sewer* or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as, temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of Erosion and Sediment Control BMPs.

Storm Drain means any drain which drains directly into a *storm sewer system*, usually found along roadways or in parking lots.

Storm Sewer System means a means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains designed or used for collecting or conveying *stormwater*. This does not include systems which are part of a *combined sewer* or Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Stormwater means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface waterbody, or a constructed infiltration facility.

Stormwater Management Manual (SWMM) or **Manual** means the technical Manual published by Ecology for use by local governments that contain descriptions of and design criteria for BMPs to prevent, control, or treat *pollutants* in *stormwater*.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of *stormwater*.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the State of Washington.

Temporary Stabilization means the exposed ground surface has been covered with appropriate materials to provide temporary stabilization of the surface from water or wind erosion. Materials include, but are not limited to, mulch, riprap, erosion control mats or blankets and temporary cover crops. Seeding alone is not considered stabilization. Temporary stabilization is not a substitute for the more permanent "*final stabilization*."

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet state water quality standards. Percentages of the total maximum daily load are allocated to the various pollutant sources. A TMDL is the sum of the allowable loads of a single *pollutant* from all contributing point and nonpoint sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the *pollutant*. The calculation must also account for seasonable variation in water quality.

Transfer of Coverage (TOC) means a request for transfer of coverage under this general permit as specified by General Condition G9 of this permit.

Treatment BMPs means BMPs that are intended to remove *pollutants* from *stormwater*. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

Transparency means a measurement of water clarity in centimeters (cm), using a 60 cm transparency tube. The transparency tube is used to estimate the relative clarity or transparency of water by noting the depth at which a black and white Secchi disc becomes visible when water is released from a value in the bottom of the tube. A transparency tube is sometimes referred to as a "turbidity tube."

Turbidity means the clarity of water expressed as nephelometric turbidity units (NTUs) and measured with a calibrated turbidimeter.

Uncontaminated means free from any contaminant. See definition of "*contaminant*" and WAC 173-340-200.

Waste Load Allocation (WLA) means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation (40 CFR 130.2[h]).

Water-only Based Shaft Drilling is a shaft drilling process that uses water only and no additives are involved in the drilling of shafts for construction of building, road, or bridge foundations.

Water quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the State" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Well means a bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. (See Injection well.)

Wheel Wash Wastewater means any water used in, or resulting from the operation of, a tire bath or wheel wash (BMP C106: Wheel Wash), or other structure or practice that uses water to physically remove mud and debris from vehicles leaving a construction site and prevent track-out onto roads. When *stormwater* comingles with wheel wash wastewater, the resulting water is considered wheel wash wastewater and must be managed according to Special Condition S9.D.9.

APPENDIX B – ACRONYMS

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CESCL	Certified Erosion and Sediment Control Lead
CFR	Code of Federal Regulations
CKD	Cement Kiln Dust
cm	Centimeters
CTB	Cement-Treated Base
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
FR	Federal Register
LID	Low Impact Development
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UIC	Underground Injection Control
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality
WWHM	Western Washington Hydrology Model

Project SIGN-IN SHEET Date 9/14/16

Subject Manchester Pre-Bid Mtg Sheet ____ of ____

Computed By ____ Job Number ____

Checked By ____ Task Number ____

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Project Manchester PS Date 9/14/16

Subject _____ Sheet _____ of _____

Computed By _____ Job Number _____

Checked By _____ Task Number _____

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Adam Schuyler	BHC		

PIPING SYSTEM SPECIFICATIONS

System	**Background Color**	**Legend**	**Abbreviations**
Reinforced Concrete Pipe	—	—	RCP
Gasket: As specified.	**Test Medium:** ☐ Air ☒Water		**Duration:** * Min

Pressure — PSIG			**Temperature — °F**	
Work: —	Max: —	Test: *	Normal: 65	Max: 85

Pipe Size	**Exposure**	**Item**	**Description**
12” & 15”	BURIED	Pipe	Class V reinforced concrete storm sewer pipe per Section 9-05.7(2) of the Standard Specifications.
		Lining	None.
		Coating	None.
		Joints & Gaskets	In accordance with Section 9-05.7(3) of the Standard Specifications.
		Joint Lubricant	Manufacturer’s standard.
Remarks:	*in accordance with the Section 9-05.7(4) of the Standard Specifications.		

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APPENDIX D

CONSTRUCTION QUALITY ASSURANCE PLAN

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MANCHESTER
PUMP STATIONS 45, 46, & 47
AND BEACH LINES REHABILITATION

CONSTRUCTION QUALITY ASSURANCE PLAN

Prepared For:

Kitsap County
Public Works, MS-26
614 Division Street
Port Orchard, WA 98366

September 2016

BHC CONSULTANTS
1601 Fifth Avenue, Suite 500
Seattle, WA 98101

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

The Construction Quality Assurance Plan was prepared under the supervision and direction of the undersigned whose seal as a Professional Engineer is affixed below:

Adam Schuyler, PE, PMP
Project Manager
BHC Consultants, LLC

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Figures

Appendices

Chapter 1 Introduction

A Construction Quality Assurance (CQA) plan for the Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation project (Project) is a requirement of the State Revolving Fund agreement between the State of Washington Department of Ecology and Kitsap County. The CQA plan has been prepared in accordance with WAC 173-240-075.

This plan describes the services that will be provided by BHC Consultants, LLC (BHC) and its sub-consultants, during the construction of the Project. It is to be used for guidance by Kitsap County Department of Public Works (County) and their representatives responsible for quality assurance during this project.

1.1 Purpose and Scope

The purpose of this CQA Plan is to identify procedures that will be used to obtain independent, documented confirmation that standards of quality required by the Contract Documents for the construction of the Project are met. The Project is funded by the State Revolving Fund Loan through the Washington State Department of Ecology. This CQA Plan:

- Identifies the organization, roles, and responsibilities of individuals who will be participating in the project during construction.
- Describes key activities that will take place and processes that will be used to meet the quality standards including communication, documentation, technical records handling, review and observation functions, sampling and testing requirements, acceptance/rejection criteria, and corrective measures to be used when deficiencies are found
- Includes a summary of documentation procedures for work clarification and changes to the Project.

1.2 Key Terms

Three related but independent processes will be used during construction to verify that the standards of quality identified in the Contract Documents are met. These processes are: Construction Quality Assurance (CQA), Construction Quality Control (CQC), and Construction Management and Administration (CMA). Definitions for each of these processes follow.

- **Construction Quality Assurance** – Refers to a system of activities that provide adequate documentation and confidence that a facility is constructed as specified in the Contract Documents and that the materials used in construction are manufactured according to the Specifications. Construction quality assurance performed for this project generally includes observations, verifications, audits, sampling and evaluation of materials and workmanship necessary to determine and document the quality of the constructed facility.

- **Construction Quality Control** – Refers to a planned system of actions taken by manufacturers, fabricators, and/or the Contractor to monitor and control the quality of products and work to meet the requirements of the contract. Quality control includes inspections and testing to directly monitor the quality of all furnished, constructed, and

installed components. CQC activities are the responsibility of the Contractor. They are independent of CQA activities.

- **Construction Management and Administration** – Refers to those activities taken to control and administer the construction project, including conducting project meetings, monitoring project schedules, reviewing and acting on requests for payment, and coordinating changes to contract documents resulting from changed site conditions or the selection of alternative methods of construction or installation. BHC will be responsible for these CMA activities as described herein.

1.3 Reference Documents

A list of available reference documents is provided below.

- Contract Construction Plans and Specifications; Kitsap County – Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation, *BHC Consultants, LLC*, August 2016 (subject to modifications during the bid period)
- Kitsap County – Manchester Sewer Facilities Strategies Plan, *BHC Consultants, LLC,* October 2014
- Standard Specifications for Road, Bridge and Municipal Construction, 2014, *Washington State Department of Transportation*
- Storm Water Pollution Prevention Plan for Kitsap County Manchester Pump Stations 45, 46, and 47 and Beach Lines Rehabilitation, *BHC Consultants, LLC,* July 2016

Chapter 2 Scope of Construction

The Project consists of rehabilitation of pump stations 45, 46 and 47 and approximately 3,330 feet of beach line sewer (installed from existing manholes), reconnection of side sewers, and replacement of all 13 existing beach line manholes.

The major components of this project include:

- Pump station rehabilitations including new submersible wastewater pumps, wet wells, valve/meter vaults, and onsite piping at three existing pump station sites.
- Removing and relocating the power, telemetry, and control panels with new, modern equipment.
- New standby generators at all three pump stations.
- Elevated concrete slabs, steps and handrails at all three pump stations.
- Associated site work and surface restoration at all three sites.
- Decommissioning and removal of three existing pump stations.
- Restoring disturbed areas with asphalt, gravel, and sod.
- Providing a temporary bypass pumping system to handle incoming flows when the existing station has to be taken offline
- Shoreline stabilization at two sites.
- Cured-in-place pipe (CIPP) beach line sewer rehabilitation.

Construction Contract Documents were prepared by BHC. These documents, titled *Kitsap County – Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation*, detail work associated with the improvements, the Contractor's responsibilities, the Engineer's authority, and the County's requirements. All work is to be performed in accordance with the Special Provisions, the 2014 WSDOT Standard Specifications, and the Plans.

Chapter 3 Construction Schedule

Key dates associated with the anticipated construction schedule are presented in the table below. The actual construction schedule and period will vary based on approved changes. A detailed construction schedule for the contract will be prepared by the Contractor and submitted to the County following award of the contract. The detailed construction schedule will include planned construction activities, their sequence, inter-relationship, duration and completion dates.

Construction Schedule	
Event	**Calendar Date**
Bid Opening	Anticipated to be October 2016
Limited Notice to Proceed	Anticipated to be January 2017
Notice to Proceed with Construction	Anticipated to be March 2017
Substantial Completion	400 Working Days from Full Notice To Proceed
Physical Completion	430 Working Days from Full Notice To Proceed

Chapter 4 Project Organization, Roles and Responsibilities

The major parties involved in the construction phase of this project are the County, the Contractor, and the Resident Engineer. Only the County and the Contractor are parties to the Construction Contract. The Resident Engineer serves as the representative of the County for the purpose of providing CQA and CMA services, as well as technical support, as requested by the County.

4.1 Project Organization

The key personnel and the relationships between the County and the CQA organization are shown in Figure 4-1. Lines of communication are discussed in Section 6.

A contact list for specific project personnel and associated addresses and telephone/fax numbers will be prepared and distributed following Contract Award and the Preconstruction Conference.

In general, responsibilities for the Project are as follows:

- Contract Execution and Administration — County
- Construction Management and Administration — County
- Resident Engineer — Third Party Contracted with County
- Construction Quality Control — Contractor
- Construction Quality Assurance — County
- Design Assistance During Construction — Engineer

Kitsap County
WWTP Upgrades
CQA\CMA Organization Chart

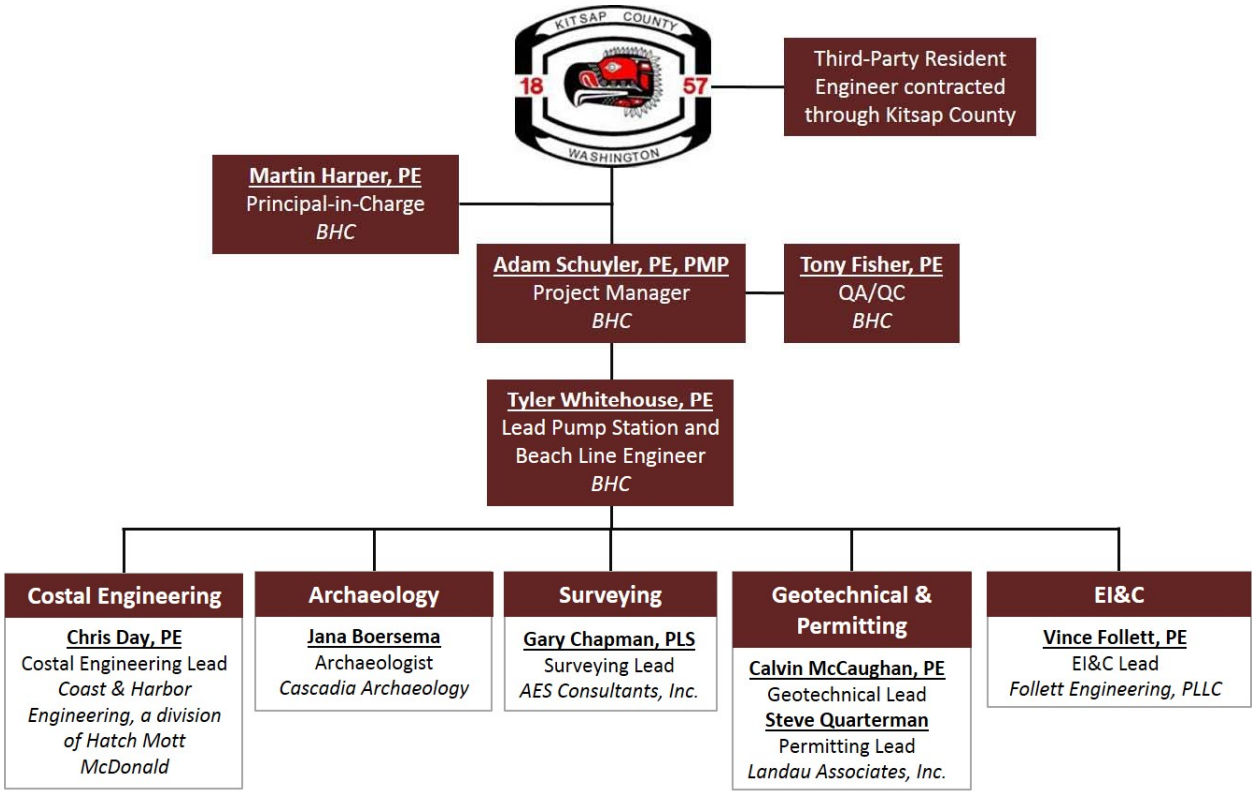


Figure 4-1 CQA\CMA Organization Chart

4.2 Owner – Kitsap County

The Owner of the project is Kitsap County (County). The County has overall responsibility for the construction of the project in conformance with Washington State Department of Ecology Criteria for Sewer Works Design. The County is responsible for funding the project and has ultimate responsibility for making decisions regarding acceptance of the work.

4.2.1 County Project Engineer

The Kitsap County Project Engineer, Barbara Zaroff, is responsible for overall administration of the project Contract. Responsibilities of the County Project Engineer, or the County's delegated representative, are listed below:

- Review and approval of contract amendments
- Review and approval of major design changes
- Attendance at the preconstruction conference, weekly construction progress meetings, and other meetings as necessary

4.2.2 Construction Manager

The County's Construction Manager, Floyd Bayless, or designated representative, will be involved throughout the construction project. Responsibilities of the Construction Manager, or the County's delegated representative, are listed below:

- Review and approval Contractor's pay requests
- Approval and execution of contract change orders, request for proposals, and work directives
- Prepare requests for information responses in conjunction with the Engineer
- Coordinate with the Resident Engineer, engineering office staff and Contractor regarding engineering issues
- Coordinate with Contractor to allow continuity of existing and new pump station operations in conjunction with the Engineer
- Conduct the construction progress meetings and any other coordination meetings as necessary
- Coordinate with Engineer in review and approval of quality assurance testing of materials included as Appendix C
- Coordinate with Contractor to meet all regulatory requirements for pump stations and beach line sewer following review and recommendation by the Engineer
- Make determination of substantial completion.
- Preparation of punch lists

4.3 Contractor

The Contractor selected for this project will have the authority and responsibility to perform construction activities within the binding terms of the Project Contract between the County and the Contractor.

The Contractor must be licensed by the State of Washington. In addition, the Contractor will be required to demonstrate qualifications and experience of their employees and subcontractors performing specialized components of the work.

To accomplish the work, the Contractor shall designate individuals to serve as the Contractor's Project Manager and the Contractor's Superintendent throughout the duration of the project.

The Contractor will be responsible for Construction Quality Control (CQC). Specifically, the Contractor will be responsible to provide evidence of the Contractor's, and all of its subcontractor's, qualifications, submit quality control documentation and certifications that materials were made to the requirements of the Contract Documents, and perform the work in accordance with the Contract Documents. The Contractor's responsibilities are fully defined in the Contract Documents and include all of the work that the Contractor may delegate to subcontractors.

The Contractor is responsible for the development and maintenance of a detailed construction schedule. The schedule is intended to provide a basis for the Contractor to manage progress, coordinate activities and initiate corrective action as necessary.

The Contractor is responsible for all safety measures on the job. They are responsible to meet all Local, State, and Federal safety requirements.

4.4 Engineer

The Engineer for this Project, BHC Consultants, will perform the County in Construction Management and Administration (CMA) services and assist the County. The scope of CMA services includes:

- Review of materials/equipment submittals
- Office engineering
- Change order(s) support to County
- Assist in review and coordination of quality assurance testing of materials included as Appendix C. All other testing coordinated by County.

BHC will be supported during construction by the following sub-consultants:

- AES Consultants, Inc.
- Landau Associates, Inc.
- Cascadia Archaeology
- Coast & Harbor Engineering a division of Hatch Mott MacDonald

BHC is responsible for coordinating sub-consultant activities, maintaining records, and functioning as the point of contact between the sub-consultants, the County, and the Contractor. The Contractor will be required to give the County a minimum of 48-hours notice prior to needing any special inspections or sign-offs from the Engineer or its sub-consultants.

4.4.1 Project Manager

The Project Manager for the Engineer, Adam Schuyler, P.E., is responsible for overall engineering administration for this project. Responsibilities of the Project Manager are listed below:

- Budget management for Engineering Services during Construction
- Supervision and coordination of the office and field engineering activities, including overall responsibility for the performance of the engineering services during construction
- Review contract change orders, request for proposals, and work directives
- Coordination with the County and Contractor regarding engineering issues
- Attendance at Preconstruction Conference and other meetings as included in the Engineer's contract

4.4.2 Resident Engineer (Third Party Contracted with County)

The Resident Engineer is responsible for coordination and review of the design requirements, resolution of engineering issues, onsite construction quality assurance, observation and documentation, and construction management activities for this project. Responsibilities are listed below:

- Maintain project files, including distribution of project submittals and other project documents.
- Review of Contractor's certified payroll and compliance with prevailing wage. Resident Engineer will assist County staff in gathering required documentation from Contractor.
- Attendance at the Preconstruction Meeting, Progress Meetings, and other meetings as necessary, including preparation of meeting minutes

- Assist County in quality assurance activities including observation and documentation of the Contractor's activities and verification that the Contractor is satisfying the requirements of the Contract Documents
- Coordinate quality assurance testing of materials included as Appendix C.
- Coordinate Special Inspections and required Engineering Observations with Contractor, Engineer and third-party Inspectors
- Coordinate with Construction Manager, County Staff, and other project team members
- Coordinate with the Construction Manager, and Contractor regarding engineering issues
- Verify that Contractor record drawing are being updated
- Assist in the determination of substantial completion
- Assist in the preparation of punch lists
- Review Contractor's Pay Request quantities and provide recommendation to Construction Manager
- Review Contractor's progress schedule and provide recommendations to the Construction Manager
- Follow the safety polices of the Contractor, or at a minimum those safety policies set forth in Employer's Accident Prevention Program

Chapter 5 Field Documentation

Field documentation for this Contract is divided into the following categories:

- Reports
- Photographs
- Quantities
- Survey
- Pay Requests
- QA/QC Test Results
- Contract Correspondence and Forms.

Technical records handling is discussed in Section 8.

5.1 Reports

The Resident Engineer will be required to complete a daily report documenting the contract work that was performed. Daily reports will include, at a minimum, the following information:

- Weather and site conditions
- Visitors to the project site
- Contractor's equipment and personnel on site
- Specific contract work (including quantities) performed by the Contractor
- Items requiring special attention, such as:
  - Conflicts or deviations from the plans
  - Environmental issues
  - Erosion control
  - Traffic
  - Lost time

Discussions and conversations between the Contractor, Engineer, County and any public interaction will also be documented in the daily reports. Copies of the daily reports will be uploaded to the County's EADOC web site and made available to the County and Engineer.

5.2 Photographs

The Resident Engineer will also document work progress using digital photographs. Photographs will be used to document as-constructed conditions as well as areas of conflict. Photographs will be logged with the following information:

- Date
- Area Designation

Each photograph will also require a brief description of the subject matter. Photographs will be uploaded weekly and maintained on the County's EADOC web site.

5.3 Quantities

The Resident Engineer will maintain documentation of in-place quantities for review by the Construction Manager. The documentation will include measurements, calculations, weight tickets, and other back-up as required, tabulated per bid item or schedule of value item. In the case of the unit price bid items, a summary sheet for each bid item will also be maintained. This documentation will be used to determine the monthly pay recommendations.

5.4 Survey

The Resident Engineer will obtain and maintain copies of the Contractor's survey control and recorded shots for review and use in verification that lines and grades are within the required tolerances. Copies of the Engineer's survey data will also be kept on the County's EADOC web site.

5.5 Pay Requests

Review the Contractor's monthly pay request(s) quantities and provide a recommendation to the Construction Manager. Copies of each executed pay request will be made available on the County's EADOC web site.

5.6 QA/QC Test Results

Quality assurance (QA) and quality control (QC) testing is discussed further in Section 7. Test results will be documented by the responsible party. Copies of the test results will be uploaded to the County's EADOC site and made available to the County, the Contractor, and the Engineer. Complete testing records will be kept on file on the County's EADOC web site.

5.7 Contract Correspondence Files

Official contract correspondence files will be kept on the County's EADOC web site, however, the Resident Engineer may also maintain relevant contract correspondence files that assist with his daily job performance. Correspondence files including letters, memorandums, facsimile correspondence and telephone conversation records, emails, etc., will be on file for correspondence with the County, the Contractor, and sub-consultants.

In addition, correspondence files including Requests for Information (RFI), Work Directives (WDs), Change Orders and Daily Field Reports will be maintained on the County's EADOC website.

5.8 Forms

The standard forms used to document and track the work for this project are included in Appendix A. All forms should be filled out by the initiator, i.e. "Submittal Transmittal" form is initiated by the Contractor and all appropriate fields need to be filled in prior to submission. Engineer or County required forms that are to be used by the Contractor will be provided both in digital format, hard copies and made available upon request.

Chapter 6 Communication

6.1 General

Project communication includes verbal discussions between the Engineer and the Contractor, formal written correspondence, and project meetings. Verbal discussions in the field will be documented in daily reports or on telephone conversation record forms and may be followed by formal written correspondence.

6.2 Correspondence

Daily correspondence and communication will occur between the Resident Engineer and Contractor in the field. Additionally, all formal correspondence issued by the Contractor shall be directed through the Construction Manager in email or paper form. Furthermore, all formal correspondence from the Engineer or County will be issued through the Construction Manager. Copies of all formal correspondence will be distributed as deemed appropriate by the Construction Manager.

6.3 Project Meetings

Project meetings will be scheduled to define and maintain responsibility and authority by promoting communication among the various personnel responsible for designing, constructing, managing, and observing the construction. The Construction Manager will be responsible for conducting these meetings. Meeting minutes will be taken by the Resident Engineer and distributed to attendees and appropriate non-attending personnel.

At a minimum, all meetings will be attended by a County representative and the Contractor. The Engineer will attend, as requested by the County. The following are formal meetings and every attendee is to conduct themselves in a professional and respectful manner for the purpose of project coordination through constructive behavior and verbal interaction.

6.3.1 Preconstruction Meeting

A meeting will be held prior to the start of construction to review the project schedule and to clarify or resolve issues before construction startup. At a minimum, the County, Engineer's Project Manager, Resident Engineer, the Contractor's Project Manager, and the Contractor's Superintendent shall be present. Topics to be discussed during this meeting are listed below.

- Provide each party with relevant construction documents and supporting information. Supporting information may include construction drawings, specifications, CQA plans, and other applicable documents. This information transfer is not limited to documents distributed by the Engineer.
- The Contractor will submit a preliminary construction schedule and other documents as required in the Contract Documents
- All parties should use the opportunity to distribute documents they believe relevant to the satisfactory completion of the Project.
- Review Division 1 (General Requirements) of the Special Provisions. Identify project limitations, requirements of current permits, and coordination with other possible contractors and utilities.

- Review the responsibilities of each party as outlined in the Contract Documents. Discuss specific milestone dates, project sequencing, working hours, imported material schedule, etc.
- Discuss the purpose of this CQA Plan and the documentation structure provided by it as a means of verifying that the project will be constructed efficiently and within the specified design criteria and schedule.
- Review lines of authority and communication for each party.
- Discuss the established procedures and protocol for observations and tests, including sampling strategies.
- Discuss the established procedures and protocol for handling construction deficiencies, repairs, and retesting.
- Discuss the established procedures and protocol for handling contract questions/clarifications and contract modifications (change orders, work directives, etc.).
- Review methods for documenting and reporting inspections and testing data.
- Review work area security, traffic control and safety protocol.
- Conduct a site walk to review construction material and equipment storage locations.
- Discuss Contractor's plans for site logistics, including staging area location and preparation, field office setup and utility plans, and onsite parking.
- Discuss payment for work, including schedule of values, retainage, method of payment, unit price work, and lump sum breakdowns.

6.3.2 Progress Meetings

Progress meetings will be held at a location and schedule agreed to by all parties. The purpose of the progress meetings and the topics to be discussed are listed below.

- Review, and revise as necessary, minutes of previous meetings.
- Review any safety issues or incidents
- Review the previous week's activities and accomplishments. Discuss status of critical work elements.
- Review the Contractor's Activity Schedule. Activity Schedule shall include the scheduled construction activities for the following fourteen (14) calendar days. Review the Contractor's updated temporary water pollution/erosion control plan.
- Determine schedule for the County's technical support staff or subcontractor's personnel to witness specified testing.
- Discuss existing or potential design, construction or schedule issues, including delivery of any long-lead items.
- Discuss construction impacts utility operations; or constraints on construction activity dictated by these operations.
- Develop corrective measures and procedures to regain planned schedule.
- Discuss status of submittal review.
- Discuss status of contract modifications.
- Review progress payment estimates.

The progress meetings will be documented by the Resident Engineer. Copies of the meeting minutes will be sent to all meeting attendees and others as applicable.

6.3.3 Work Deficiency Meetings

Special meetings may be held if a problem or deficiency is observed or is thought to be likely to occur. At a minimum, such meetings will be attended by the Construction Manager, Resident Engineer and Contractor's Superintendent. The Engineer and/or their sub-consultants, Contractor's Project Manager, County and others (as appropriate) may also attend these meetings if necessary.

The purpose of these meetings will be to resolve problems or recurring work deficiencies by defining and discussing the problem or deficiency, reviewing alternative solutions, and implementing plans for resolution.

These meetings will be documented by the Resident Engineer. Copies of the meeting minutes will be sent to all meeting attendees and others as applicable.

6.3.4 Weekly Safety Meetings

The Contractor will hold weekly safety meetings and include all employees, subcontractors and all others working with in the construction area. Contractor will take attendance and take meeting minutes. Attendance by the Resident Engineer will be encouraged but in no way relieve the Contractor of any liability or responsibility for the safety measures of the job.

6.4 Coordination

Installation of the new facilities and conversion from the existing systems to the newly constructed facilities will require coordination and clear communication. The Contractor must coordinate his efforts so that construction activities do not adversely affect existing systems, regulated effluent quality, facilities operations and/or utilities. Clear communication will facilitate the coordination process.

6.4.1 Coordination with County's Contractors and Operations Personnel

It is the responsibility of the Contractor to coordinate his work so that impacts to the County's facilities are either prevented altogether or minimized.

Kitsap County operations personnel include:

Contact Name	Phone Number
Floyd Bayless, Construction Manager	Kitsap County Sewer Utility 360-509-1209

6.4.2 Coordination with Utilities and Regulatory Agencies

Several existing utilities, including water service, natural gas, power, fiber optic cable, and telephone service utilities are or may be located within the project areas. It is the responsibility of the Contractor to coordinate his construction activities so that interruptions in service are minimized. The Contractor may address correspondence directly to the affected utility; however, the Construction Manager must receive copies to verify that the intent of the design is maintained and that the interests of the County are not adversely affected.

Following is a list of the utilities that have infrastructure within or near the project limits:

Utilities	Contact Name	Phone Number
Centurylink	Royce Klein Dan O'Tool	360-478-5930
Cascade Natural Gas	Rick Coy Chris Bassard	360-373-1405
Puget Sound Energy	Tom Brobst	425-392-6412
Washington State Department of Archaeology and Historic Preservation	Allyson Brooks Guy Tasa Rob Whitlam	360-586-3066 360-586-3534 360-586-3080
Washington State Department of Ecology	Lazaro Eleuterio	425-649-7027

See Appendix D "Inadvertent Discovery Plan" for additional contacts and procedures regarding archaeological deposits. Additionally, the Contractor shall review and follow the procedures and requirements of the Archaeological Monitoring Plan for Pump Station 46 and Pump Station 47, which is attached as Appendix E.

Chapter 7 Quality Assurance/Quality Control

7.1 General

This section describes the Quality Assurance and Quality Control (QA/QC) activities that will take place and processes that will be used during construction. The purpose of the QA activities performed by the County and assisted by the Resident Engineer is to ascertain that the work conforms to the requirements of the Contract Documents. The QA activities include:

- Review and observation
- Sampling and testing
- Use of acceptance/rejection criteria
- Identification of corrective measures

QA activities shall apply to all portions of work in the Contract Documents.

QC activities are required of the Contractor to verify and document that all materials and work conform to the requirements of the Contract Documents. These efforts include, but are not limited to:

- Source testing for all imported and borrow materials
- Review of manufacturer's submittals and certifications by the Contractor prior to submission to the Construction Manager
- Field and laboratory testing to verify compaction of embankment, trench backfill, road subgrade, crushed surfacing and asphalt
- Material testing for pump station building materials
- Pipe testing for force main & gravity lines
- All other testing required to assure the Contractor's work meets the requirements of the Contract Documents.

QA\QC activities and responsibilities associated with the individual components of the Project are described below. These components are as follows but not limited to:

- Gravity and Force Main Piping Construction
  - Material submittal review
  - Lines and grades
  - Bedding and backfill compaction
  - Pipe deformation testing
  - Pipe pressure testing
- Pump Station Construction
  - Site fill
  - Material submittal review
  - Special inspections required by sub-consultants
- Equipment Installation
  - Pump, piping, valves, and appurtenances
  - Electrical equipment
  - Auxiliary equipment

- General Site Work
  - Earthwork and compaction
  - Construction QA/QC
  - Electrical
- Pavement
  - Road section installation QA/QC
  - Testing asphalt compaction, temperature at delivery & during compaction
  - Testing crushed surfacing compaction
- CIPP Construction
  - Material submittal review
  - Material installation
  - Pipe pressure testing
- Facility Construction
  - Structure material placement and installation
  - Structure thermal & moisture protection, and finishes
  - Building permit inspections

7.2 Project Staffing and Effort

On-site construction observation will be performed primarily by the Resident Engineer. Additional personnel will be utilized on an as-needed basis. Duties of on-site personnel will involve observation and documentation (see Section 5) of construction activities, verification of conformance with Contract Documents, performance and coordination of CQA activities, as well as communication with the Engineer, County, Contractor, and others. Maintenance of field files and verification of in-place quantities are also responsibilities of on-site personnel.

7.3 Review and Observation

Review, observation, and recording of the Contractor's submittals, quality control testing, and work methods will be performed to confirm that products and methods are meeting the intent and the requirements of the Contract Documents. These efforts will take place before, during and after construction as described in the following subsections.

7.3.1 Preconstruction

The Resident Engineer will familiarize himself with the project design and have an understanding of the intent of the Contract Documents. The Resident Engineer shall also review the observation procedures set forth in this CQA plan. Prior to construction, the Resident Engineer shall review the following:

- Construction schedule
- Contractor's schedule of values for the pump station
- Submittal log
- Any other schedule or plan required prior to commencement of construction
- Construction testing requirements
- Transportation, unloading, handling, and storage procedures for the construction products
- Contractor's and installer's proposed construction procedures for design and specification compatibility and constructability

7.3.2 Construction

Construction oversight by the County and Resident Engineer will include, but is not limited to, the following:

- Verifying that required submittals have been submitted for review by the Engineer and have been approved for use in construction
- Check any materials coming on site against the accepted material submittals and Contract Documents. The Resident Engineer shall keep a basic log of materials reviewed and accepted or rejected
- Observing that stored or installed pipe, valves, concrete products, pumps, electrical components, building materials, etc. are not damaged
- Observing construction and maintenance of erosion control measures and facilities
- Observing each phase of the construction, documenting the contractor's compliance or noncompliance with the Contract Documents, and verifying the correction of defective work
- Reviewing the Contractor's updated Construction Activity Schedule and compare with actual progress
- Confirming that lines and grades have been verified by the Contractor prior to subsequent component construction and recommended conformance survey as needed
- Documentation of imported and in-place quantities completed by the Contractor and recommendations for progress payment
- Checking that the project piping, trenching, and grading work has been performed in general accordance with the Contract Documents
- Observing performance compliance testing performed by the Contractor as part of the Contractor's CQC program

These oversight activities will not relieve the Contractor from meeting the requirements, including Contractor's CQC procedures, set forth in the Contract Documents. Submittal requirements are discussed further in Section 8.

7.4 Sampling and Testing

7.4.1 Quality Control Testing

Quality Control Testing will be provided by the Contractor to verify the quality of construction materials and as the Contractor deems necessary to ensure the work product meets the requirements of the Contract Documents.

7.4.2 QA Testing

QA testing for this project will be performed using a certified testing laboratory under subcontract to the County and/or Engineer to determine and document the quality of the constructed facility and to verify the adequacy of the Contractor's QC testing. The testing lab will collect samples and perform in-situ and/or laboratory testing at the types and frequencies specified in the Contract Documents or as specified by the County and/or Engineer. The recommended QC tests including sample collection, in-situ or laboratory testing, field observation and oversight, documentation, and review of test results, as applicable, are detailed in the attached Tables in Appendix C.

The County and/or Engineer may conduct additional sampling and testing beyond that specified at any time.

7.5 Acceptance/Rejection of Work

7.5.1 Criteria for Acceptance/Rejection

The criteria for acceptance or rejection of elements of work will be as stated in the Contract Documents. Regular checks will be made through field and laboratory testing to ensure that the Contractor's QC procedures are adequate. The Resident Engineer is to ensure copies of all test results are available on the County's EADOC web site. Test results that fail to meet the standards shall require corrective action by the Contractor as directed by the Construction Manager and/or Resident Engineer.

7.5.2 Corrective Measures

Corrective measures will be implemented as necessary to bring the work to the required quality and may include replacement of the work. Where replacement of work is required, the area to be replaced will be defined by the County, reviewed and documented by the Resident Engineer, based on test results, visual analysis, and professional judgment. Replacement of work may include special measures at borders of such areas to provide continuity.

Any deficiencies identified will be rectified upon discovery and subsequent Contractor notification. If deficiencies identified during construction are not rectified upon the County's request, payment for non-conforming work will be withheld until the corrections are complete.

7.5.3 Equipment Start-up and Operational Testing

Equipment and instrumentation installed in association with the Pump Station and Beach Line Sewer Upgrades will be subject to operational testing as part of the start-up procedures. Specific operational testing and start-up requirements are specified in the Contract Documents. Start-up and operational testing shall be performed by the Contractor, in the presence of the Construction Manager and/or Engineer, prior to acceptance of the work. The Contractor shall conduct preliminary activities to ensure equipment or systems are ready for testing. These items include, but are not limited to:

- Equipment performance
- Troubleshooting
- SCADA system and telemetry
- Alarm systems

The Contractor is responsible for scheduling all start up and testing activities. The Contractor must coordinate these activities with the Construction Manager who will coordinate with the appropriate County staff and Engineer.

Chapter 8 Technical Records Handling

8.1 Submittals

Specific requirements concerning submittals are detailed in the Contract Documents. General features of the submittal process are detailed below.

- The Contractor shall coordinate, check and submit shop drawings, samples, catalog cuts, layouts, color charts, bills of material, etc. as specified in each section of the Specification and required by the Project Data Submittals.
- The Contractor shall submit a Submittal Transmittal form, together with all product data, to the Construction Manager. The request will be submitted on a standard form as shown in Appendix A.
- Each Submittal shall receive an individual and unique submittal number. More than one item from a specific section may be included under a submittal number. Submittals for materials in the same section, but submitted at different times, will need separate numbers. Resubmittal of materials, in part or whole, shall have the same number as the original submittal plus a revision number.
- An electronic copy in accordance with the contract documents will be required for each Submittal. Copies will be distributed to the Engineer, appropriate sub-consultant, and the County. A reviewed electronic copy will be returned to the Contractor.

8.1.1 Filing

A complete set of construction management files will be maintained on the County's EADOC web site including correspondence, submittals, contract administration, pay estimates, and Quality Assurance/Quality Control testing result files.

8.1.2 Contract Record Drawings

The Resident Engineer will maintain a set of mark-up Contract Documents to be updated continuously as changes/modifications occur during construction.

The Contractor is also required to maintain an updated set of Contract Drawings at the construction site. Following completion of the project the Contractor must provide a complete set of contract record drawings detailing the constructed project.

The Construction Manager and Resident Engineer will review the Contractor's record drawings on a monthly basis prior to Pay Requests. The Engineer will prepare the final set of contract record drawings. The final set of contract record drawings will then be submitted to the County.

Chapter 9 Work Clarification/Changes

During construction and as work progresses, it will be necessary to respond to the Contractor's questions (including providing technical clarification and/or instruction), provide direction to perform extra or modified work and amend the Contract (formally). The intended protocol for these procedures is outlined in the following sections. Specific requirements regarding changes to the Contract are defined in the Contract Documents.

9.1 Request(s) for Information

Request(s) for Information (RFIs) will be used to provide written direction to clarify points or give additional instructions to the Contractor. All work-related questions requiring clarification or additional instruction should be initiated formally by the Contractor using the standard form provided in Appendix A. The Engineer may also initiate an RFI to clarify points or provide additional detail.

9.2 Work Directive(s)

Where situations involve changes in the work which, if not processed expeditiously, might delay the project, the modifications may be initiated through use of a Work Directive. The Work Directive is not a Change Order, but only a directive issued by the County to proceed with work that will be included in a subsequent Change Order. Work directives may also be used to document changes in the work that do not involve adjustments to the contract price or contract time.

The intent of this procedure is to help expedite changes and modifications without delaying the construction schedule. Utilization of Work Directives will follow the procedures outlined in the Contract Documents. If deemed necessary, several Work Directives may be grouped into a single Change Order. County authorization may be initiated via facsimile, telephone, or in person.

9.3 Change Order(s)

The County, without invalidating the Contract, may order extra work or may make changes by altering or deleting any portion of the work, as deemed necessary or desirable (as set forth in the Contract Documents). Extra work and changes will be executed in writing by the County by means of a Change Order. Change Orders are required for situations involving the adjustments of Contract Price and/or Contract Time. Change Orders shall be signed by the County and the Contractor. The value of extra work and changes shall be determined and paid for in accordance with the construction Contract Documents.

9.4 Review and Approval Process for Changes

Changes in the work shall be negotiated by the County and the Contractor. The County may request that the Contractor provide a proposal detailing the impacts to the contract amount and the contract schedule associated with a proposed contract modification. In addition, change orders that represent a significant deviation from the Contract Documents may require review and approval by a regulatory agency prior to execution of the change order. The County shall review and approve all negotiated changes. All Change Order and Work Directive forms require the signature of the County and Contractor in order for a change to be valid.

APPENDIX A

Construction Documentation Forms

CONTRACTOR'S
REQUEST FOR INFORMATION

Project:	Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation	KC Contract No: KC 050-16	
Date:	Click here to enter a date.	RFI No:	**RFI No**
Contractor:		Specification Section:	Spec Sec Ref.
Subcontractor:	Subcontractor name text.	Drawing Reference:	Drawing Ref.

Subject: **RFI subject text.**

Transmittal Record	Attention	Date Sent	Date Received	Date Due	Reviewed By (Initial)
Contractor to CM	Floyd Bayless, Kitsap County	Select date.			
CM to Contractor					

Information Requested:
Enter requested information text here.

Contractor Recommendation:
Enter recommendation, if any, here.

Attachments:	Cost Impacts	Est Cost Impact Amount	Work Schedule Impacts:
☐ Yes ☐ No	☐ Yes ☐ No	$0	☐ Yes – Describe Above ☐ No

Date: Click here to enter a date. Requested By: Enter name & title.

Response:

Date: Response By:

CONTRACTOR'S SUBMITTAL TRANSMITTAL

Manchester Pump Stations 45, 46, & 47 and
Beach Lines Rehabilitation
Contract No. KC

Submittal No: Enter Submittal No
RE: Enter Submittal General Name.

CONTRACTOR:

Date Submitted: Click here to enter a date.

THE FOLLOWING ITEMS ARE HEREBY SUBMITTED FOR YOUR REVIEW AND ACTION:

LEGEND: **1)** No Exceptions Taken **2)** Make Corrections Noted **3)** Amend and Resubmit **4)** Rejected – See Remarks **5)** Eng Review Not Req'd

Item NO.	Paragraph	**DESCRIPTION**	(1)	(2)	(3)	(4)	(5)
1							
2							
3							
4							
5							
6							
7							

Remarks:

Click here to enter contractor remarks.

Response:

Click here to enter review comments/response text.

Date: Click here to enter a date. Response By: Enter reviewer's name here

CONTRACTOR'S CERTIFICATION:

CHECK ONE OF THE FOLLOWING:

☐Submittal contains no deviations to requirements specified or shown.

☐Submittal contains deviations to requirements specified or shown as noted and justified in the letter attached to this transmittal sheet.

Contractor hereby certifies that (i) Contractor has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

Submitted By: Click here to enter text.

Corrections or comments made on Contractor's shop drawings during this review do not relieve the Contractor from compliance with Contract Drawings and Specifications. This submittal has been reviewed for conformance with the design concept and general compliance with the Contract Documents only. Contractor is responsible for confirming and correlating all quantities and dimensions; fabrication processes and techniques; coordinating work with other trades; and satisfactory and safe performance of the work.

Reviewed By: Click here to enter text.

Returned By: Click here to enter text.

PROPOSED CHANGE NOTICE

Project:

Contract No:
Change Type:

Date:
Contractor:

PCN Number:

Subject:

Document References:

Proposed Change Details:

Reason for Change:

Notification By:

Approved Cost/Credit: $ _____ **Approved Contract Time Extension (Days):** _____

☐ Minor Changes Allowance Schedule

☐ Contract Change Order/Amendment

Contractor's Concurrence:

_____ Date: _____

Owner's Authorization to Proceed:

_____ Date: _____

REQUEST FOR OUTAGE/SHUTDOWN # Type

Project: Manchester Pump Stations 45, 46, & 47 and Beach Lines Rehabilitation

From: **Date:** Click here to enter a date.

To: Floyd Bayless, Kitsap County

---

1. A Shutdown is requested on the following system(s): Click here to enter text.
2. Proposed date of Shutdown: Click here to enter a date.
3. Estimated duration: Type number of hours or days here Beginning at: Enter time here.
4. Reason for Shutdown: Click here to enter text.
5. Kitsap County Staff assistance required: ☐ Yes ☐ No
6. Sequence of Events: Click here to enter text.
7. Contractor Preparation & Temporary Facilities for Shutdown: Click here to enter text.
8. Contractor Contingency Plans: Click here to enter text.

REVIEW COMMENTS & STATUS

Comments:

Status: ☐ Accepted ☐ Accepted As Noted ☐ Not Accepted Date: _____

By: _____
Kitsap County
Operations/Maintenance Manager

By: _____
Kitsap County
Construction Manager

APPENDIX B

Testing Forms

LANDAU ASSOCIATES

Construction Field Report

Project No.: _____ Report No.: _____

Client/Owner: _____ Date: _____

Project Name: _____

Location: _____

Weather Conditions: _____

Prepared By: _____ Reviewed By: _____

Visitors: _____

Unsatisfactory Conditions & Recommended Correction: _____

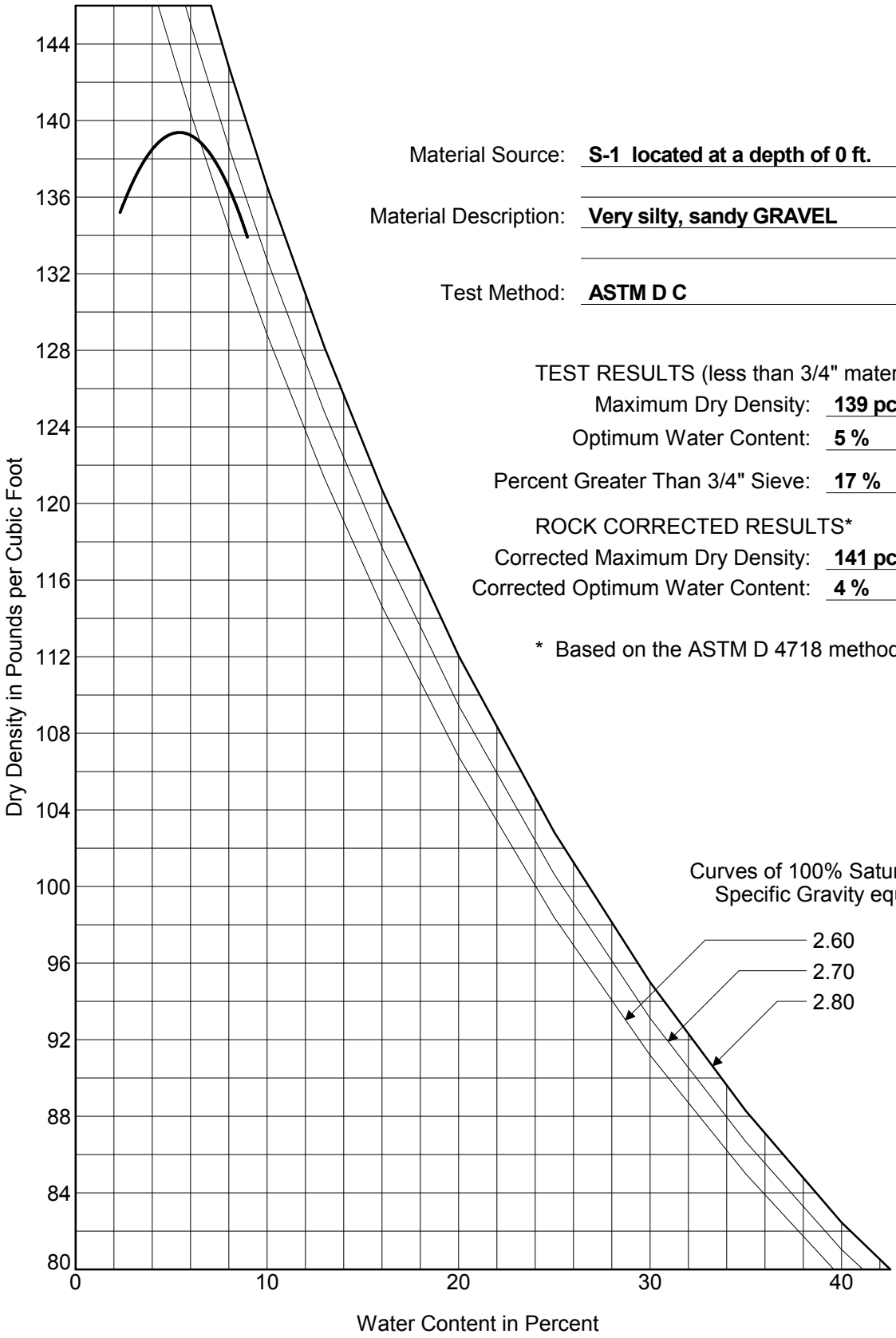
Attachments: _____

Distribution: _____

Landau Associates' representatives are onsite solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and report those opinions to our client. The presence and activities of our field representative do not relieve the contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, and sequences of construction.

A preliminary copy of the Field Report may be provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the Field Report are subject to review and revision by Landau Associates' project manager or designee. A reviewed Field Report shall take precedence over a preliminary report.

Signed:



Material Source: **S-1 located at a depth of 0 ft.**

Material Description: **Very silty, sandy GRAVEL**

Test Method: **ASTM D C**

TEST RESULTS (less than 3/4" material)

Maximum Dry Density: **139 pcf**

Optimum Water Content: **5 %**

Percent Greater Than 3/4" Sieve: **17 %**

ROCK CORRECTED RESULTS*

Corrected Maximum Dry Density: **141 pcf**

Corrected Optimum Water Content: **4 %**

* Based on the ASTM D 4718 method.

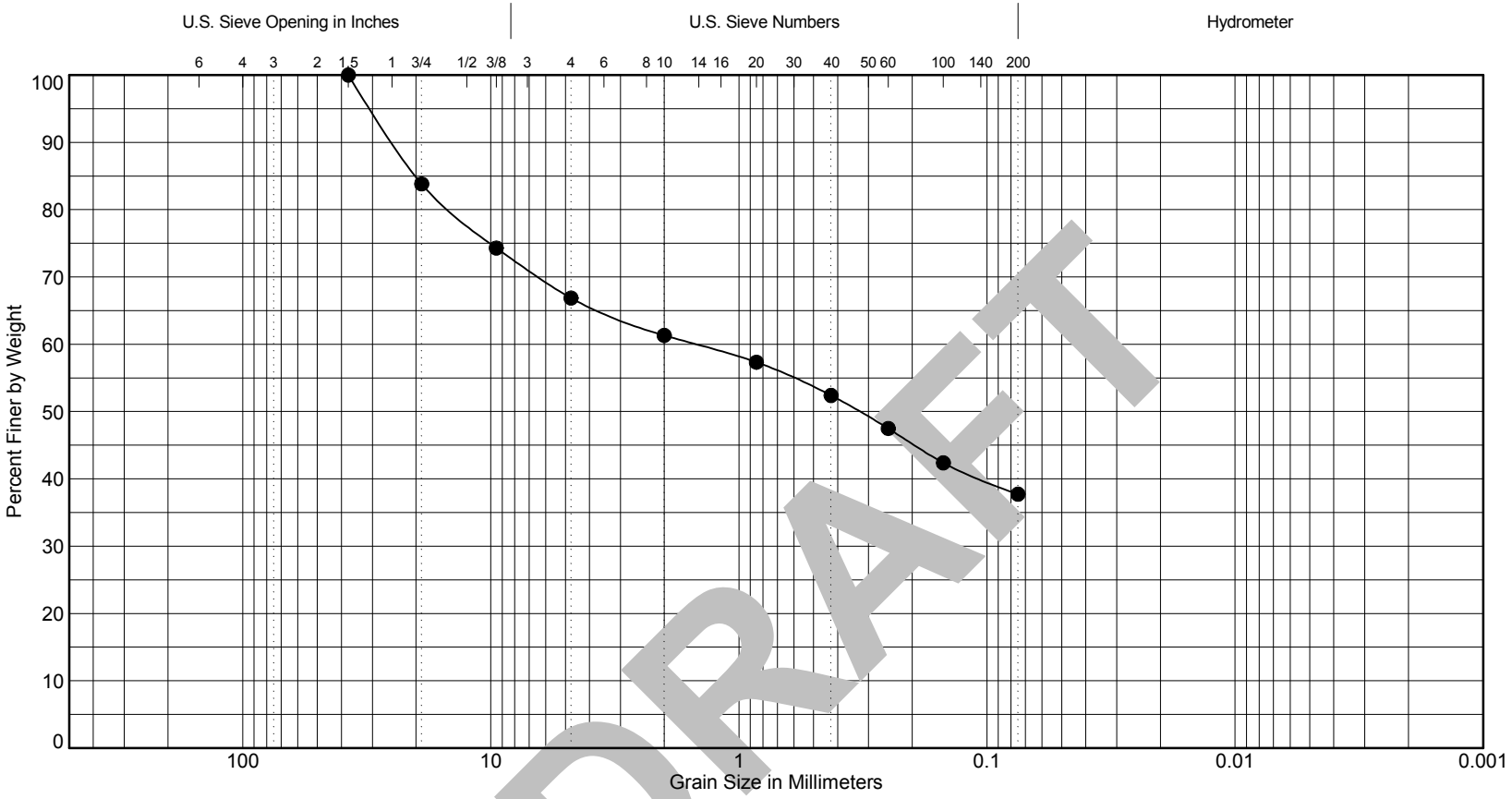
Curves of 100% Saturation for Specific Gravity equal to:

2.60
2.70
2.80

8/9/16 C:\USERS\AWARNELL\DESKTOP\EXAMPLE.GPJ COMPACTION FIGURE (PARABOLA WO POINTS)

LANDAU ASSOCIATES

Manchester Pump Stations Kitsap County, Washington	Moisture-Density Relationship	Figure 1



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

Symbol	Exploration Number	Sample Number	Depth (ft)	Natural Moisture (%)	Soil Description	Unified Soil Classification
●	S-1		0.1		Very silty, sandy GRAVEL	GM

LANDAU ASSOCIATES

Manchester Pump Stations Kitsap County, Washington	Grain Size Distribution	Figure 1

LANDAU ASSOCIATES

PAGE: _____ OF _____

Field Nuclear Density Test Report

PROJECT NAME _____ PROJECT NO.: _____
LOCATION: _____ DATE: _____ REPORT #: _____
CLIENT: _____ GENERAL CONTRACTOR: _____
WEATHER: _____ SUBCONTRACTOR: _____

METHOD OF COMPACTION

VIBRATING PLATE _____
VIBRATING ROLLER _____
HOE-PACK _____
SHEEPS FOOT ROLLER _____

GAGE TYPE/NUMBER: _____
STANDARD COUNTS: MC= _____
DC= _____

MODIFIED PROCTOR [ASTM D 1557] TEST RESULTS (MDD-Maximum Dry Density, OMC-Optimum Moisture Content)

SAMPLE	MDD	OMC	DESCRIPTION/SOURCE

FIELD TEST DATA

TEST NO.	GENERAL LOCATION	ELEVATION (ft)	BELOW FINISH GRADE	SOIL TYPE	DRY DENSITY	MOISTURE	REL. OMC +/-	COMPACTION (%) FIELD	COMPACTION (%) SPECIFICATION	TEST RESULTS

REMARKS: _____

TESTED BY: _____

Landau Associates' representatives are onsite solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and report those opinions to our client. The presence and activities of our field representative do not relieve the contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, and sequences of construction.

REVIEWED BY: _____

APPENDIX C

Material and Testing
Quality Assurance/Quality Control Requirements

Table 1 - General Sitework

TEST	ASTM METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY		ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Source Testing [1]	Conformance Testing	Source Testing	Conformance Testing[3]	CONTRACTOR	RESIDENT ENG.
Native Backfill								
Gradation	ASTM C136/C117	WSDOT 9-03.15	1 test prior to use				Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A	N/A			1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD	N/A			1/100 LF		
Imported Trench Backfill								
Gradation	ASTM C136/C117	WSDOT 9-03.19	1 test prior to import				Submit test results to Engineer.	
Sand Equivalent	ASTM D2419	WSDOT 9-03.10						
Dust Ratio		WSDOT 9-03.10						
Moisture-Density	ASTM D1557	N/A				1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD				1 test per lift/200 lf of trench		
Pipe Zone Bedding								
Gradation	ASTM C136/C117	WSDOT 9-03.12(3)	1 Test prior to import				Submit test results to Engineer.	

TEST	ASTM METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY		ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Source Testing [(1)]	Conformance Testing	Source Testing	Conformance Testing[(3)]	CONTRACTOR	RESIDENT ENG.
Sand Equivalent	ASTM D2419	WSDOT 9-03.12(3)	1 test prior to import				Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A				1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	Refer to Section 31 23 43						
Foundation Material								
Gradation	ASTM C136/C117	WSDOT 9-03.17	1 test prior to import				Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A				1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD				1 test per lift/100 lf of trench		
Structural Fill								
Gradation	ASTM C136/C117	WSDOT 9-03.12(1)	1 test prior to import				Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A				1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results
In-place Density Testing	ASTM D6938	95% MDD				6 tests under pump station bldg,		
Structural Backfill								
Gradation	ASTM C136/C117	WSDOT 9-03.12(2)	1 test prior to import				Submit test results to Engineer.	

TEST	ASTM METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY		ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Source Testing (1)	Conformance Testing	Source Testing	Conformance Testing(3)	CONTRACTOR	RESIDENT ENG.
Sand Equivalent	ASTM D2419	WSDOT 9-03.12(2)	1 test prior to import				Submit test results to Engineer.	
Dust Ratio								
Moisture-Density	ASTM D1557	N/A				1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results
In-place Density Testing	ASTM D6938	95% MDD				1 test at each structure		
CSBC								
Gradation	ASTM C136/C117	WSDOT 9-03.9(3)	1 test prior to import				Submit test results to Engineer.	
Las Angeles Wear	ASTM C131							
Degradation Factor	ASTM D3744							
Sand Equivalent	ASTM D2419							
% Fracture	D5821							
Moisture-Density	ASTM D1557	N/A	N/A			1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD	N/A			1/100 LF		

TEST	ASTM METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY		ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Source Testing [1]	Conformance Testing	Source Testing	Conformance Testing[3]	CONTRACTOR	RESIDENT ENG.
Select Fill								
Gradation	ASTM C136/C117	Refer to Section 31 23 43	1 test prior to import				Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A	N/A			1 test per similar product	Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD	N/A			1/100 LF		

TEST	METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY		ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Source Testing (1)	Conformance Testing	Source Testing	Conformance Testing(3)	CONTRACTOR	RESIDENT ENG.
Unit Paving Base Course								
Gradation	ASTM C136/C117	WSDOT 2-03 & 2-06					Submit test results to Engineer.	
Moisture-Density	ASTM D1557	N/A					Provide notification of materials onsite or areas of work ready for testing. Allow access to work area for testing.	Coordinate with County's Consultant. Review test results.
In-place Density Testing	ASTM D6938	95% MDD						
Asphalt Concrete Pavement								
Gradation/ Extraction	WSDOT T308/T27/T11	HMA PG64-22 Class 1/2" aggregate		Submit Mix Design			Submit test results to Engineer	
Rice Density	ASTM D2041							
Density	WSDOT Test Method TM8	91% minimum density	N/A			1/100 lf of road lane	Allow access to work area for testing	Coordinate with County's Consultant.Review test results.
Surface Smoothness		Transverse slope of completed surface of the wearing course shall not be greater than 1/8" from edge of 10' straightedge						

Note:
1. Additional testing required if source changes
2. See Contract documents for complete Contractor sampling and testing requirements.
3. All conformance testing will be at the discretion of the Resident Engineer.

Table 2 – Pipe Testing

TEST	METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY	ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Conformance	Source Testing	Conformance Testing	CONTRACTOR	RESIDENT ENG.
Gravity Sewer Pipe							
Low Pressure Air Test	Pneumatic	WSDOT 7-17.3.(2)F	All new pipes & appurtenances		All gravity pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
Deflection Test	Mandrel	WSDOT 7-17.3.(2)G	All new pipes & appurtenances		All gravity pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
TV Test	TV Camera	WSDOT 7-17.3.(2)H	All new pipes & appurtenances		All gravity pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
Force Main Sewer Pipe							
Hydrostatic Test	ASTM F2164	Refer to Section 22 13 00	All new pipes & appurtenances		All FM pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
Water Main							
Hydrostatic Test		WSDOT 7-09.3(23)	All new pipes & appurtenances		All Water pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
Disinfection of Water Main		WSDOT 7-09.3(23)	All new pipes & appurtenances		All Water pipe	Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.
OTHER PIPING							
		Refer to Section 22 13 00	All new pipes & appurtenances			Submit testing plan. Conduct and document test as specified.	Review testing plan. Observe testing.

Table 3 – Concrete Testing

TEST	METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY	ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Conformance	Source Testing	Conformance Testing	CONTRACTOR	RESIDENT ENG.
Reinforced Concrete Exposed to the weather or earth – Class 1							
Mix Design		Refer to Division 03	Per each Mix Design			Submit Mix Design for review	Review mix design, monitor concrete placed on site.
Field Batch Test		Refer to Division 03			1 sample per 50 cubic yards	Provide access to pour and assist County's Consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Compressive Strength		Refer to Division 03			4 cylinders per 50 cubic yards	Provide access to pour and assist County's consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Reinforced concrete not exposed to the weather except floor slabs on grade – Class 2							
Mix Design		Refer to Division 03	Per each Mix Design			Submit Mix Design for review	Review mix design, monitor concrete placed on site.
Field Batch Test		Refer to Division 03			1 sample per 50 cubic yards	Provide access to pour and assist County's Consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Compressive Strength		Refer to Division 03			4 cylinders per 50 cubic yards	Provide access to pour and assist County's consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.

TEST	METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY	ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Conformance	Source Testing	Conformance Testing	CONTRACTOR	RESIDENT ENG.
Slabs on grade at interior locations – Class 3							
Mix Design		Refer to Division 03	Per each Mix Design			Submit Mix Design for review	Review mix design, monitor concrete placed on site.
Field Batch Test		Refer to Division 03			1 sample per 50 cubic yards	Provide access to pour and assist County's Consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Compressive Strength		Refer to Division 03			4 cylinders per 50 cubic yards	Provide access to pour and assist County's consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Unreinforced concrete for pavements and sidewalk slabs – WSDOT Class 4000							
Mix Design		Refer to Division 03	Per each Mix Design			Submit Mix Design for review	Review mix design, monitor concrete placed on site.
Field Batch Test		Refer to Division 03			1 sample per 50 cubic yards	Provide access to pour and assist County's Consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Compressive Strength		Refer to Division 03			4 cylinders per 50 cubic yards	Provide access to pour and assist County's consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.

TEST	METHOD	REQUIREMENTS Proposed criteria or Specification	CONTRACTOR - QUALITY CONTROL TEST FREQUENCY	ENGINEER - QUALITY ASSURANCE TEST FREQUENCY		ADDITIONAL QA/QC SUPPORT	
			Conformance	Source Testing	Conformance Testing	CONTRACTOR	RESIDENT ENG.
Unreinforced concrete for thrust blocks, channel filler, and other general uses – WSDOT Class 3000							
Mix Design		Refer to Division 03	Per each Mix Design			Submit Mix Design for review	Review mix design, monitor concrete placed on site.
Field Batch Test		Refer to Division 03			1 sample per 50 cubic yards	Provide access to pour and assist County's Consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
Compressive Strength		Refer to Division 03			4 cylinders per 50 cubic yards	Provide access to pour and assist County's consultant with obtaining samples	Coordinate with County's Consultant. Observe testing.
CDF							
Mix Design		WSDOT 2-09.3(1)E	Mix Design if mixed offsite. Material data sheet if mixed on site.			Submit Mix Design for review	Review mix design, monitor concrete placed on site.

APPENDIX D

Inadvertent Discovery Plan

I might implement the IDP / UDP if …

I see chipped or ground stone artifacts.

Note: All scales are in centimeters.

I might implement the IDP / UDP if …

I see chipped or ground stone artifacts.

Note: All scales are in centimeters.

I might implement the IDP / UDP if …

I see ground or pecked stone artifacts.

- Striations or scratching
- Unusual or unnatural shapes
- Unusual stone
- Etching
- Perforations
- Pecking
- Regularity in modifications
- Variability of size, function, and complexity

I might implement the IDP / UDP if …

I see bone or shell artifacts.

- Often smooth
- Unusual shape
- Carved
- Often pointed if used as a tool
- Often wedge shaped like a "shoe horn"

Bone Awls from Oregon and Bone Wedge from California

I might implement the IDP / UDP if …

I see bone or shell artifacts.

- Often smooth
- Unusual shape
- Perforated
- Variability of size

Tooth Pendant and Bone Pendants from Oregon and Washington

I might implement the IDP / UDP if …

I see fiber or wood artifacts.

- Wet environments needed for preservation
- Variability of size, function, and complexity
- Rare

Artifacts from Mud Bay, Olympia, Washington

I might implement the IDP / UDP if …

I see historic period artifacts.

Artifacts from Downtown Seattle, Alaskan Way Viaduct (Upper Left and Lower) and Unknown Site (Upper Right)

I might implement the IDP / UDP if …

I see strange, different or interesting looking dirt, rocks, or shells

- Human activities leave traces in the ground that may or may not have artifacts associated with them
- “Unusual” accumulations of rock (especially fire-cracked rock)
- “Unusual” shaped accumulations of rock (e.g., similar to a fire ring)
- Charcoal or charcoal-stained soils
- Oxidized or burnt-looking soils
- Accumulations of shell
- Accumulations of bone or artifacts
- Look for the “unusual” or out of place (e.g., rock piles or accumulations in areas with few rock)

I might implement the IDP / UDP if …

I see strange, different or interesting looking dirt, rocks, or shells

- "Unusual" accumulations of rock (especially fire-cracked rock)
- "Unusual" shaped accumulations of rock (e.g., similar to a fire ring)
- Look for the "unusual" or out of place (e.g., rock piles or accumulations in areas with few rock)

Site on Muckleshoot Indian Reservation, near WSDOT ROW along SR 164

I might implement the IDP / UDP if …

I see strange, different or interesting looking dirt, rocks, or shells

- Often have a layered or “layer cake” appearance
- Often associated with black or blackish soil
- Often have very crush and compacted shell

I might implement the IDP / UDP if …

I see historic foundations or buried structures.

PLAN AND PROCEDURES FOR THE UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

MANCHESTER PUMP STATIONS 45, 56, AND 47
AND BEACH LINE REHABILITATION
KITSAP COUNTY WASHINGTON
June 23, 2015

1. INTRODUCTION

Kitsap County is proposing system rehabilitations to the existing sewer system located along the shore of Puget Sound in the unincorporated village of Manchester. The improvements generally include the rehabilitation of Pump Stations 45, 46, and 47 (PS45, PS46, PS47), which includes installation of new pump station vaults, wet wells, beach manholes, and reconnection of sanitary sewer lines (i.e., gravity and force main) to the system. In addition, approximately 175 feet (ft) of sanitary sewer force main will be replaced to the west of the proposed PS45. The project also includes installation of approximately 3,330 ft of cured in place pipe liner in the existing beach line (installed from existing manholes) and reconnection of side sewers.

2. RECOGNIZING CULTURAL RESOURCES

A cultural resource discovery could be prehistoric or historic. Examples include:

- An accumulation of shell, burned rocks, or other food related materials,
- Bones or small pieces of bone,
- An area of charcoal or very dark stained soil with artifacts,
- Stone tools or waste flakes (i.e. an arrowhead, or stone chips),
- Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years,
- Buried railroad tracks, decking, or other industrial materials.

When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

STEP 1: STOP WORK. If any employee, contractor or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work in the immediate area of the discovery must stop (typically a 10 foot radius, but depends on site conditions). The discovery location should be secured at all times. Do not call or speak with the media about the remains specifically.

If human remains are encountered, treat them with dignity and respect at all times. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection in place and to shield them from being photographed (See Section 5).

STEP 2: NOTIFY MONITOR. If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow its provisions.

STEP 3: NOTIFY PROJECT MANAGEMENT. Contact the Project Manager:

Project Manager:
Adam Schuyler, BHC Consultants, LLC
(206) 357-9955 or (206) 505-3400

If you can't reach the Project Manager, contact the project's alternate point of contact:

Alternate Contact:
Erika Schuyler or Tyler Whitehouse, BHC Consultants, LLC
(206) 505-3400

The Project Manager or their designated Alternate Contact will make all other calls and notifications. A complete listing of Contacts is provided in Section 7.

4. FURTHER CONTACTS AND CONSULTATION

A. Project Manager's Responsibilities:

- Protect Find: The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop in an area adequate to provide for the total security, protection, and integrity of the resource (typically a 10 foot radius, but depends on site conditions). Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating archaeological/cultural material as set forth in this document.

- Direct Construction Elsewhere On-site: The Project Manager may direct construction away from cultural resources to work in other areas prior to contacting the concerned parties.

- Identify Find: The Project Manager will ensure that a qualified professional archaeologist examines the find to determine if it is archaeological. This will either be an archaeological consultant hired by the Project or staff from DAHP.

    - If the discovery is determined not archaeological, work may proceed with no further delay.

    - If the discovery is determined to be archaeological, the Project Manager will continue with notification.

    - If the discovery is human remains, potentially human remains, a burial, or funerary objects, the Project Manager will follow the the procedure described in Section 5. *Do not call 911*.

- Contact the Department of Archaeology and Historic Preservation (DAHP)

  Dr. Allyson Brooks
  State Historic Preservation Officer (SHPO)
  (360) 586-3066 or (360) 586-3064

  Dr. Rob Whitlam
  State Archaeologist
  (360) 586-3080

  Dr. Guy Tasa
  State Physical Anthroplogist
  (360) 586-3534 or (360) 790-1633

- Notify involved federal or permitting agencies (if any).

  Lazaro Eleuterio
  Washington State Department of Ecology
  (425) 649-7027

  Barbara Zaroff
  Kitsap County
  (360) 981-1767

- Notify the interested and affected Tribes.

  Tribes consulted on this project are:

Dennis Lewarch, Tribal Historic Preservation Officer (THPO) Suquamish Tribe	(360) 394-8529
Kris Miller, THPO Skokomish Indian Tribe	(360) 426-4232 ext. 215
Josh Wisniewski, THPO Port Gamble S'Klallam Tribe	(360) 633-1899
Gideon Cauffman, Cultural Resources Jamestown S'Klallam Tribe	(360) 681-4638
Bill White, Cultural Resources Lower Elwha Klallam Tribe	(360) 460-1617
Richard Young, Cultural Resources Tulalip Tribes	(360) 716-2652

5. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect.

If the project occurs on federal lands (e.g., national forest or park, military reservation) or Indian lands (e.g., reservations, allotments, communities) the provisions of the Native American Graves Protection and Repatriation Act of 1990 apply, and the responsible federal agency will follow its provisions. Note that state highways that cross federal and Indian lands are on easements and are not owned by the state.

If the project occurs on non-federal lands, it will comply with applicable state laws, and the following procedure:

A. Notify Law Enforcement Agency or Coroner's Office (*Do not call 911*):

In addition to the actions described in Sections 3 and 4, the Project Manager will immediately notify the local law enforcement agency or coroner's office.

The coroner (with assistance of law enforcement personnel) will determine if the remains are human, whether the discovery site constitutes a crime scene, and will notify DAHP.

Kitsap County Sheriff, Port Orchard (360) 337-7101

B. Participate in Consultation:

Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains.

C. Further Activities:

- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, construction in the discovery area may resume as described in Section 7.

6. PROCEEDING WITH CONSTRUCTION

Project construction outside the discovery location may continue while documentation and assessment of the cultural resources proceed. A Professional Archaeologist must determine the boundaries of the discovery location. In consultation with DAHP and affected tribes, the Project Manager will determine the appropriate level of documentation and treatment of the resource. If federal agencies are involved, the agencies will make the final determinations about treatment and documentation.

Construction may continue at the discovery location only after the process outlined in this plan is followed and DAHP (and the federal agencies, if any) determine that compliance with state and federal laws is complete.

7. LIST OF CONTACTS

POSITION	NAME	PRIMARY PHONE	ALTERNATE PHONE
Project Manager	Adam Schuyler	(206) 357-9955	(206) 505-3400
Project Manager (Alternate) BHC Consultants, LLC	Erika Schuyler or Tyler Whitehouse	(206) 505-3400	
SHPO DAHP	Dr. Allyson Brooks	(360) 586-3066	(360) 586-306
State Archaeologist DAHP	Dr. Rob Whitlam		
State Physical Anthropologist DAHP	Dr. Guy Tasa	(360) 586-3534	(360) 790-1633
Washington State Department of Ecology	Lazaro Eleuterio	(425) 649-7027	
Kitsap County	Barbara Zaroff	(360) 981-1767	
THPO Suquamish Tribe	Dennis Lewarch	(360) 394-8529	
THPO Skokomish Indian Tribe	Kris Miller	(360) 426-4232 ext. 215	
THPO Port Gamble S'Klallam Tribe	Josh Wisniewski	(360) 633-1899	
Cultural Resources Jamestown S'Klallam Tribe	Gideon Cauffman	(360) 681-4638	
Cultural Resources Lower Elwha Klallam Tribe	Bill White	(360) 460-1617	
Cultural Resources Tulalip Tribes	Richard Young	(360) 716-2652	
Kitsap County Sheriff, Port Orchard		(360) 337-7101	

APPENDIX E

Archaeological Monitoring Plan

MANCHESTER PUMP STATIONS 45, 46, AND 47 AND BEACH LINES REHABILITATION PROJECT KITSAP COUNTY, WASHINGTON

ARCHAEOLOGICAL MONITORING PLAN FOR PUMP STATION 46 AND PUMP STATION 47

Prepared by:

Teresa Trost

Prepared for:

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, WA 98101

Lead governmental agency:
Washington State Department of Ecology

June 29, 2016

CASCADIA ARCHAEOLOGY

P.O. Box 51058
Seattle, WA 98115

SECTION 1. INTRODUCTION

BHC Consultants, LLC (BHC) retained Cascadia Archaeology to carry out a cultural resources survey for the Manchester Pump Stations 45, 46, and 47 and Beach Lines Rehabilitation Project located in the unincorporated village of Manchester, Kitsap County. The Project is receiving federal funds distributed through the Washington State Department of Ecology (DOE) State Revolving Fund (SRF) and is therefore subject to the National Historic Preservation Act, 16 United States Code (USC) § 470(f) et seq.; 36 CFR Part 800, which is commonly referred to as Section 106. As the project will not occur on federal or tribal lands, if human remains are exposed, Washington State regulations including, but not limited to, RCW 68.50 and 27.44 apply.

Cascadia Archaeology employed pedestrian surface survey, shovel probes, and shovel turnovers to detect whether significant cultural resources are present or are likely to be present within the Area of Potential Effects (Figure 1). No cultural resources were observed. However, the efficacy of the sub-surface survey was limited due to ground water and other obstructions. Although no cultural resources were identified, based on the sediments exposed and the environmental and historic contexts, Pump Station (PS) 46 and PS47 are still considered to have a moderate potential for archaeological resources to be present. The PS46 project area may sit on a Holocene-age raised lagoon-type landform. Such landforms often were utilized by Native Americans as the shoreline berm provided shelter from the wind and the estuarine and marine environments backed by forest provided for a wide-array of resources to be present. Sediments observed at PS47 and in a nearby creek's bank are not indicative of a coastal archaeological site; however, the location is recorded in ethnographies as being a summer camp.

Based upon the survey results, the following three recommendations were made:

1. An archaeological monitor should be present at PS46 during any ground disturbance for the proposed pump station and inland manhole (Appendix A, Drawing D46-1) to a depth not to exceed the base of the peat deposit. Excavation for the Standby Generator and Electrical Equipment Structure and manhole, and demolition of the existing pump station are not recommended to require monitoring.

2. An archaeological monitor should be present at PS47 for at least a portion of the excavations within this project area. When excavation occurs, if trench profiles aligned east-west and north-south and spanning most the length of excavations are exposed and no potentially anthropogenic sediments or archaeological artifacts are observed, the monitor may at their discretion discontinue monitoring.

3. Throughout the project, utilize the *Plan and Procedures for the Unanticipated Discovery of Cultural Resources and Human Skeletal Remains* developed for this project.

This monitoring plan was developed from the project plans dated January 2016 and consists of two sections and two appendices. The first section is this introduction. The other section is the Monitoring Procedures. Appendix A is the January 2016 design plans. Appendix B is the monitoring procedures tailored to only include information pertinent to the construction crew and is meant to be handed out to the on-site crew.

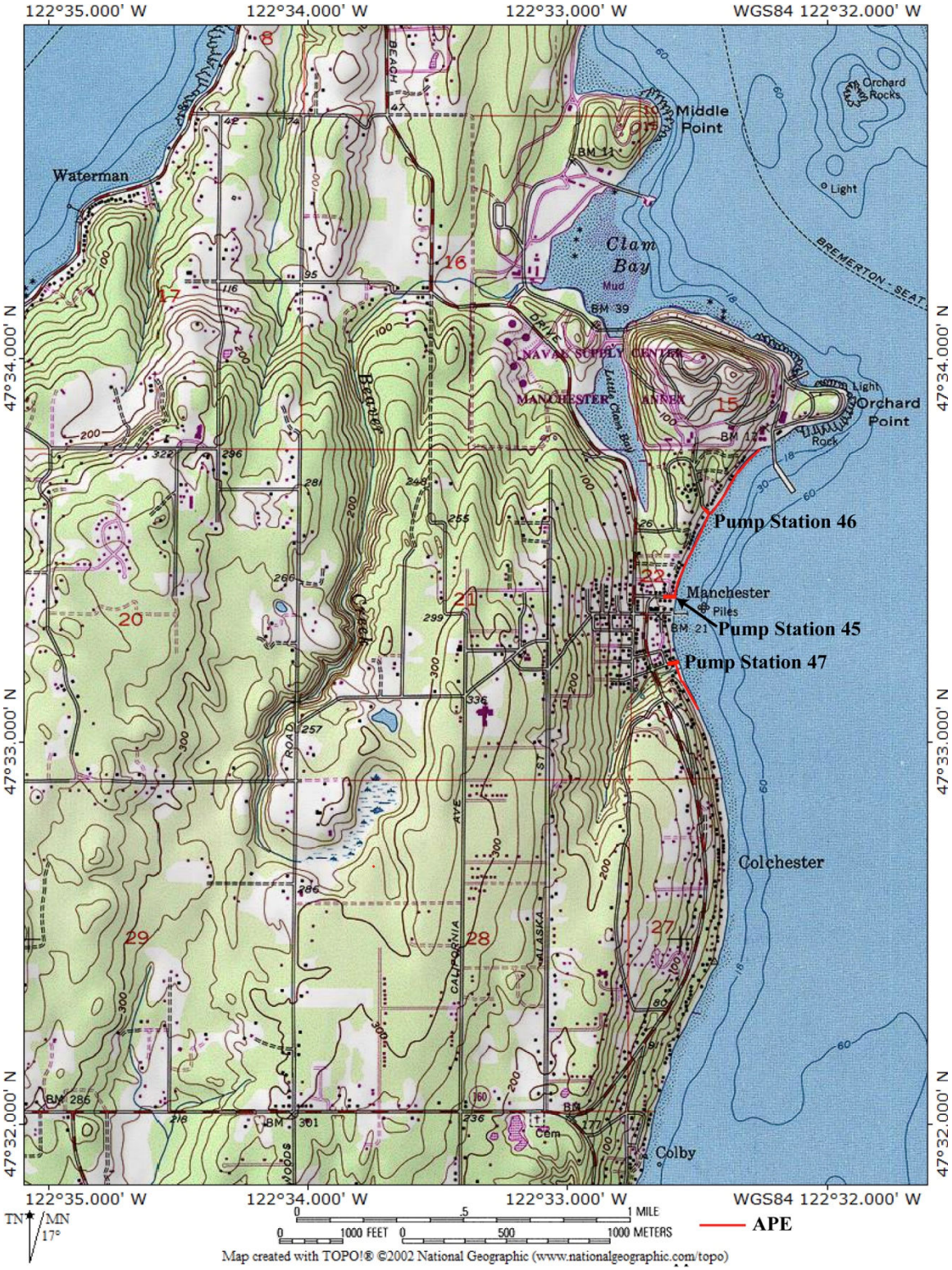


Figure 1. Location of the Area of Potential Effects (APE) shown on 7.5' USGS quadrangle Bremerton East, WA (1981); Section 22 in T. 24 N, R. 2 E.

SECTION 2. MONITORING PROCEDURES

1. An archaeological monitor must be present prior to any ground disturbing work (grading, excavation, potholing, etc.) associated with the installation of PS46 and the inland manhole to a depth not to exceed the base of the peat deposit. Excavation for the Standby Generator and Electrical Equipment Structure and manhole, and demolition of the existing pump station are not recommended to require monitoring.

And, an archaeological monitor must present on site prior to any ground disturbing work at PS47 unless the archaeological monitor determines otherwise.

2. The archaeological monitor must be given two (2) business-days advance notice of the need to be on-site.

3. The supervising professional archaeologist or the archaeological monitor will brief the on-site crew of the potential for archaeological resources and of the monitoring and inadvertent discovery procedures. Appendix B and the inadvertent discovery plan (IDP) will be given to the construction supervisor. *The monitor will have copy of this monitoring plan, the IDP, and human remains identification materials on-site whenever monitoring takes place*.

4. The archaeological monitor will examine all disturbed material including backdirt and soil profiles. Any backdirt may be screened at the discretion of the archaeological monitor; however, a sample of backdirt comprised of peat at PS46 will be screened over ¼-inch mesh hardware cloth. The volume of the sample will be dependent on the volume of backdirt and field observations.

5. The monitor will inform the on-site construction supervisor if there is a need to temporarily gain access to any excavation to examine it so that safe working conditions can be maintained.

6. Initially, when a trackhoe or other machinery is used, the excavator must make shallow scrapes of 4-8 inches at a time. Excavation may continue with thicker scrapes after the monitor has identified underlying soil horizons or strata that are highly unlikely to contain cultural material, such as culturally sterile beach sediments, lower B horizon, and C horizon sediments. The monitor will determine, based upon soil conditions, if monitoring is necessary within each stratum encountered.

7. If concurrent excavation is occurring at locations more than 30 ft. (10 m) apart, an archaeological monitor must be present at each location.

8. Each day the archaeological monitor will:
   a. Complete a Cascadia monitoring form;
   b. Take a minimum of three photographs including examples of sediments exposed and overviews;
   c. Telephone the supervising professional archaeologist to status them on progress, sediments exposed, and discuss management decisions.

In case of exposure of cultural material

1. If possible cultural material is exposed, the archaeological monitor will:
    a. Communicate to the appropriate construction personnel that work must be suspended at the discovery location while they investigate the exposure. The monitor will determine the extent of a buffer in which construction cannot proceed around the discovery location.
    b. Consult with a professional archaeologist regarding identification and assessment procedures appropriate to the find. If the find is determined to be cultural remains, the construction supervisor, in consultation with the professional archaeologist, will ensure the client and the DOE are notified as soon as possible.
    c. If the cultural remain is an isolated artifact, the archaeological monitor can allow work to proceed after they have consulted with the professional archaeologist and documented the find.
    d. If the cultural remains constitute a feature and/or anthropogenic stratum, ground-disturbing activities within the area defined by the monitor will be suspended until the DOE gives a notice to proceed.

2. Any archaeological material found or exposed will be recorded using standard techniques including photographs (including overviews showing the location in relation to identifiable landmarks), drawings/maps, and written descriptions. All information required for the completion of a Washington State site or isolate inventory form will be collected.

3. Any backdirt containing cultural material will remain on site unless approval is obtained from the DOE to remove the backdirt.

4. If human remains or potentially human remains are discovered, work will cease within an area large enough to protect the find from disturbance. The zone of protection will be determined by the archaeological monitor in consultation with the professional archaeologist; but, at a minimum, will have a radius of 3 meters (10 ft.). The find will be protected in place and the area secured. The remains will be covered with a tarp, plywood sheet, or other such material for temporary protection and to shield from being photographed; soil and rocks will not be used. The project manager, the DOE, and the County Sheriff and Coroner will be notified as soon as possible. If the sheriff determines that the remains are not associated with a crime scene, the DOE or the professional archaeologist will contact the State Physical Anthropologist.

LIST OF CONTACTS

Cascadia Archaeology	(206) 366-0337*
Teresa Trost, Professional Archaeologist	(503) 804-9967 cell
Meg Nelson, alternate Professional Archaeologist	(206) 226-9474 cell
Jana Boersema, alternate Professional Archaeologist	(303) 406-8089 cell

*Primary contact number

Contact the Department of Archaeology and Historic Preservation (DAHP)

Dr. Allyson Brooks
State Historic Preservation Officer (SHPO)
(360) 586-3066 or (360) 586-3064

Dr. Rob Whitlam
State Archaeologist
(360) 586-3080

Dr. Guy Tasa
State Physical Anthropologist
(360) 586-3534 or (360) 790-1633

- Notify involved federal and permitting agencies.

Lazaro Eleuterio
Washington State Department of Ecology
(425) 649-7027

Barbara Zaroff
Kitsap County
(360) 337-5777, ext. 3663

- Notify the interested and affected Tribes.

Tribes consulted on this project are:

Dennis Lewarch, Tribal Historic Preservation Officer (THPO) Suquamish Tribe	(360) 394-8529
Kris Miller, THPO Skokomish Indian Tribe	(360) 426-4232 ext. 215
Josh Wisniewski, THPO Port Gamble S'Klallam Tribe	(360) 633-1899
Gideon Cauffman, Cultural Resources Jamestown S'Klallam Tribe	(360) 681-4638
Bill White, Cultural Resources Lower Elwha Klallam Tribe	(360) 460-1617
Richard Young, Cultural Resources Tulalip Tribes	(360) 716-2652

Archaeological Monitoring Supervisory Plan

Archaeological monitoring will be conducted by a Professional Archaeologist or a qualified archaeological monitor under the supervision of a Professional Archaeologist. Professional Archaeologist Teresa Trost will supervise the project. If an archaeological monitor is employed in the field, they will meet or exceed the following qualifications:

Archaeological Monitors' Required Qualifications:

- At least 4 years of archaeological field experience
- Experience in archaeological excavation
- Experience in archaeological laboratory analysis
- Experience in archaeological monitoring
- Experience with historical and prehistoric artifacts
- Experience with identifying human remains
- Experience with coastal Puget Sound sites and deposits

Supervisory Procedures:

(1) The supervisor will insure the archaeological monitor has a cell phone and digital camera and the ability to transfer photographs by email or secure internet site.

(2) The supervisor will confer with the archaeological monitor by telephone at least once each day during monitoring to discuss excavation methods and findings.

(3) A Professional Archaeologist will be available to visit the site on short notice if a find needs immediate attention.

(4) The supervisor will insure the archaeological monitor has sufficient copies of monitoring plans, design plans, and site maps and will have them available on-site at all times.

(5) The Supervisor will via email give 48-hours advance notice to BHC, DOE, DAHP, and Interested Tribes as to when a monitor is required on site.

(8) The Supervisor will via email provide a weekly status report to the BHC, DOE, DAHP, and Interested Tribes.

(9) The Supervisor will submit a draft of the monitoring report to BHC within 15 business-days of completion of all archaeological monitoring field work and submit a final draft to BHC within 5 business-days of receipt of comments

APPENDIX A

DESIGN PLANS

REFER TO VOLUME 2 OF 2 - CONTRACT DRAWINGS AUGUST 2016

APPENDIX B

HANDOUT FOR THE ON-SITE CONSTRUCTION CREW

REGULATORY CONTEXT

This Project is subject to the National Historic Preservation Act, 16 United States Code (USC) § 470(f) et seq.; 36 CFR Part 800, which is commonly referred to as Section 106. The Washington State Department of Ecology (DOE) is acting as the lead federal agency. If human remains are exposed, Washington State regulations including, but not limited to, RCW 68.50 and 27.44 will apply as the project is not located on federal or tribal lands.

WHEN A MONITOR IS REQUIRED

An archaeological monitor must be present prior to any ground disturbing activity (grading, excavating, potholing, etc.):

1. For the installation of PS46 and inland manhole (Plan Drawing D46-1 as of January 2016) to a depth not to exceed the base of the peat deposit. Excavation for the Standby Generator and Electrical Equipment Structure and manhole, and demolition of the existing pump station do not require monitoring.
2. At PS47, unless the archaeological monitor determines otherwise.

MONITORING PROCEDURES

1. The archaeological monitor must be given two (2) business-days advance notice of the need to be on-site.

2. If concurrent excavation is occurring at locations more than 30 ft. (10 m) apart, an archaeological monitor must be present at each location.

3. The archaeological monitor will brief the crew of the potential for archaeological resources and of the monitoring and inadvertent discovery procedures. A hard copy of these monitoring plans and the Inadvertent Discovery Plan must be on-site and available for the crew.

4. The archaeological monitor will examine all disturbed material including backdirt and soil profiles. Any backdirt may be screened at the discretion of the archaeological monitor.

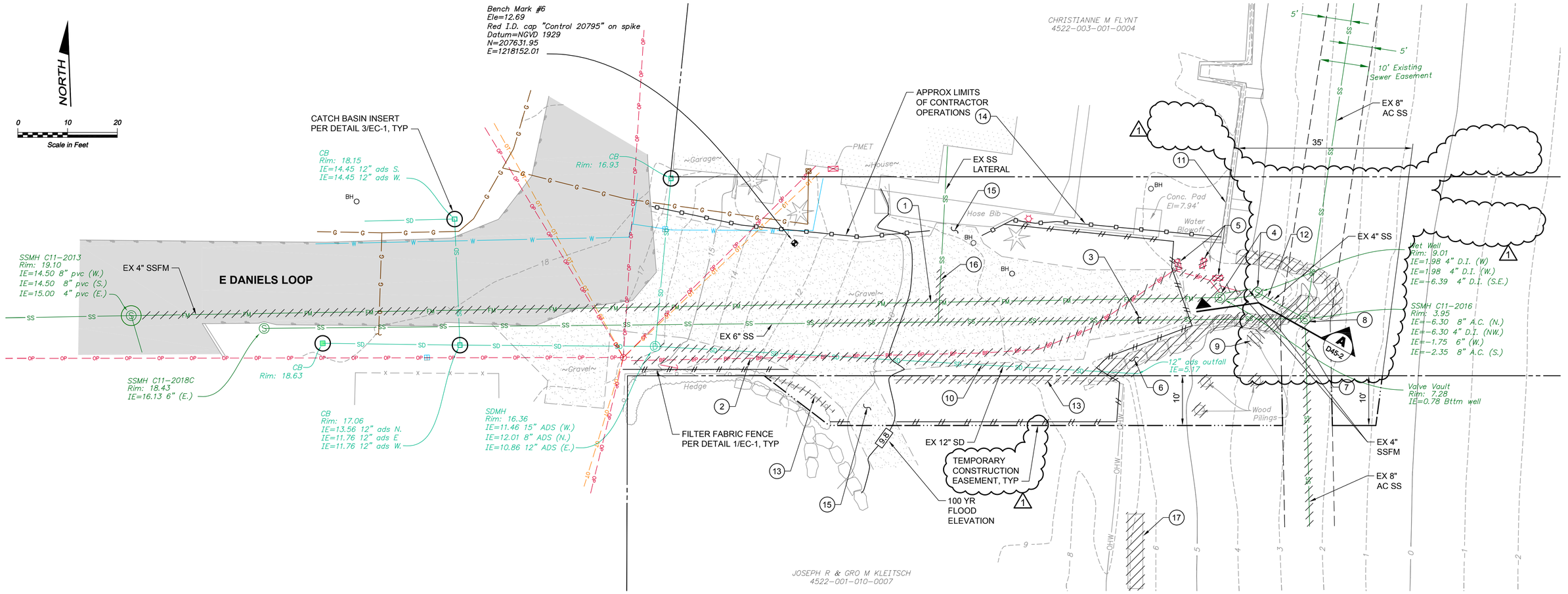
5. The monitor will inform the on-site construction supervisor if there is a need to temporarily gain access to any excavation to examine it so that safe working conditions can be maintained.

6. Initially, when a trackhoe or other machinery is used, the excavator must make shallow scrapes 4-8 inches thick at a time. Excavation may continue with thicker scrapes if the monitor approves.

7. The archaeological monitor may require that work be halted at any time to more closely inspect exposed surfaces and sediment.

8. Any sediment containing, or that may potentially contain, cultural material must remain on-site unless approval is obtained from the DOE to remove the material off site.

9. If archaeological material or human remains or potentially archaeological material or human remains are exposed when a monitor is not present, work must cease and the on site manager alerted immediately. The IDP for this project will then apply.



NOTES:

1. DEMOLITION OF EXISTING PUMP STATION FACILITIES SHALL OCCUR ONLY AFTER COMMISSIONING (INSTALLATION, TESTING, AND CONFIRMED OPERATION) OF THE NEW PUMP STATION, UNLESS OTHERWISE APPROVED BY THE COUNTY.
2. SEE SPECIAL PROVISIONS SECTION 1-08.3(2)C FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS.
3. SEE SPEC SECTION 02 41 00 FOR ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS.
4. PROTECT ALL EXISTING UTILITIES, STRUCTURES, FACILITIES, TREES, ETC. UNLESS SPECIFICALLY INDICATED TO BE REMOVED.
5. MAINTAIN ACCESS TO EXISTING PUMP STATION AND SITE FACILITIES FOR COUNTY STAFF AND SERVICE TRUCKS AT ALL TIMES DURING CONSTRUCTION.
6. SEE RESTORATION DWGS FOR REMOVAL OF EXISTING ASPHALT AND GROUND.
7. ADJUST/REMOVE/REINSTALL FILTER FABRIC FENCE AS NECESSARY TO CONSTRUCT IMPROVEMENTS.

CONSTRUCTION NOTES:

1. REROUTE EXISTING FORCE MAIN FOR CONSTRUCTION OF NEW FACILITIES. REMOVE EXISTING FORCE MAIN IN AREA OF NEW IMPROVEMENTS. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY FORCE MAIN AND PLUG AND ABANDON REMAINING EXISTING FORCE MAIN.
2. RELOCATE POWER SERVICE PER ELECT DWGS AND REMOVE EXISTING PUMP STATION POWER SERVICE. FOLLOWING COMMISSIONING OF NEW PUMP STATION, REMOVE TEMPORARY SERVICE.
3. PLUG AND ABANDON EXISTING SEWER TO EAST, REMOVE EXISTING SEWER TO WEST. SEE DWG C45-1 FOR LIMITS OF NEW IMPROVEMENTS.
4. DECOMMISSION AND REMOVE MECHANICAL, ELECTRICAL, AND MISCELLANEOUS EQUIPMENT FROM EXISTING PUMP STATION WET WELL AND VALVE VAULT. REMOVE DISCHARGE PIPING BETWEEN STRUCTURES. SEE DWG D45-2 FOR ADDITIONAL DEMOLITION DETAILS.
5. RELOCATE EXISTING PUMP STATION ELECT EQUIP FOR USE DURING CONSTRUCTION PER ELECT DWGS. REMOVE ELECT EQUIP FOLLOWING COMMISSIONING OF NEW PUMP STATION.
6. REMOVE EXISTING CONC/ROCK GROIN DURING DEMOLITION OF EXISTING PUMP STATION, SEE R45 DWGS FOR RESTORATION DETAILS. MINOR REMOVAL AND REPLACEMENT WILL BE ALLOWED FOR INSTALLATION OF NEW SEWER AND BEACH MANHOLE.
7. PLUG AND ABANDON EXISTING SEWER, REMOVE AS REQUIRED. MAINTAIN SERVICE DURING CONSTRUCTION, SEE NEW BEACH MANHOLE LOCATION ON DWG C45-1.
8. REMOVE EXISTING SSMH. SEE DWG D45-2 FOR ADDITIONAL DEMOLITION DETAILS.
9. FULLY REMOVE EXISTING CREOSOTE-TREATED WOOD PILINGS, TYP OF 4.
10. REMOVE AND REPLACE EXISTING STORM DRAIN. SEE DWG C45-1 FOR REROUTING.
11. PROTECT EXISTING CONCRETE BULKHEAD DURING CONSTRUCTION IN ACCORDANCE WITH SPEC SECTION 02 41 10.
12. PLUG AND ABANDON EXISTING SEWER.
13. REMOVE CHAINLINK FENCE, GATE AND POST. PROTECT EXISTING HEDGE.
14. INSTALL DELINEATION FENCING PER DETAIL 2/EC-1, COORDINATE OPENINGS WITH HOMEOWNER FOR ACCESS.
15. MAINTAIN DRIVEABLE ACCESS TO PROPERTIES DURING CONSTRUCTION. NOTIFY HOMEOWNERS ONE DAY IN ADVANCE OF ANY CONSTRUCTION ACTIVITY REQUIRING BLOCKAGES OF 30 MINUTES OR MORE. BLOCKAGES SHALL LAST NO LONGER THAN 4 HOURS UNLESS PRIOR APPROVAL IS GIVEN BY THE HOMEOWNER.
16. REMOVE EXISTING SEWER LATERAL IN AREA OF NEW IMPROVEMENTS. SEE DRAWING C45-1 FOR REROUTING.
17. REMOVE APPROXIMATELY 15' x 3' x 3' REINFORCED, CONCRETE ENCASED STYROFOAM CORE BLOCK. ACTUAL LOCATION IS APPROXIMATELY 30' SOUTH OF THE LOCATION DEPICTED ON THIS PLAN.

Call 48 Hours Before You Dig
1-800-424-5555
UNDERGROUND SERVICE

SAMUEL ADAM DAHL — STATE OF WASHINGTON — 39911 — REGISTERED PROFESSIONAL ENGINEER — 8-10-16

JAMES WHITEHOUSE — STATE OF WASHINGTON — 49545 — REGISTERED PROFESSIONAL ENGINEER — 8/10/16

No.	Revision	Date	By	App'd
1	ADDENDUM #1	09-2016	TJW	SAS
	ISSUED FOR BID	08-2016	TJW	RAD
	BUILDING PERMIT SUBMITTAL	04-2016	TJW	RAD
	ECOLOGY SUBMITTAL	02-2016	TJW	RAD

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Designed: T. Whitehouse, P.E.
Drawn: P. Simon
Checked: A. Schuyler, P.E.
Approved: R. Dorn, P.E.

Scale: 1" = 10'-0"
One Inch at Full Scale
If Not One Inch Scale Accordingly

Kitsap County Public Works
614 Division Street, MS 26
Port Orchard, WA 98366

MANCHESTER PUMP STATIONS 45, 46, & 47 AND BEACH LINES REHABILITATION

EXISTING PUMP STATION SITE, TESC AND DEMOLITION PLAN

Drawing: **D45-1**
Sheet: **26** of **73**
File: P15-10341_D45-1
Date: August 2016