

***Construction Management Plan
Phase I – Interim Upland
Remedial Action
Custom Plywood
Anacortes, WA***

***Prepared for
Washington Department of Ecology***

***July 7, 2011
17800-04***



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Prepared by
Hart Crowser, Inc.

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CONTENTS	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SITE BACKGROUND	1
<i>2.1 Site Environmental Conditions</i>	2
<i>2.2 Site Soil and Groundwater Contaminants</i>	3
<i>2.3 Scope of Phase I - Interim Upland Remedial Action</i>	4
3.0 CONSTRUCTION PHASE MANAGEMENT/SUPPORT ACTIVITIES	5
<i>3.1 Specific Bid Item Procedures, Processes and Documentation</i>	6
<i>3.2 Documentation and Reporting</i>	12
4.0 PERFORMANCE/CONFIRMATION SAMPLING	12
5.0 POST-CONSTRUCTION REPORTING	14

FIGURES

- 1 Site Layout
- 2 Excavation Decision Flowchart

APPENDIX A PLANS

APPENDIX B TECHNICAL SPECIFICATIONS

APPENDIX C FORMS

CONTENTS (Continued)

Page

APPENDIX D

SAMPLING AND ANALYSIS PLAN/ QUALITY ASSURANCE PROJECT PLAN

D1.0 INTRODUCTION	D-1
D2.0 BACKGROUND	D-1
<i>D2.1 Site Environmental Conditions</i>	D-2
<i>D2.2 Site Soil and Groundwater Contaminants</i>	D-3
D3.0 PROJECT OBJECTIVES AND SUMMARY	D-4
D4.0 PROJECT TEAM AND RESPONSIBILITIES	D-4
D5.0 FIELD SAMPLING	D-5
<i>D5.1 Performance Sampling Program</i>	D-5
<i>D5.2 Confirmation Sampling Program</i>	D-5
<i>D5.3 Equipment Decontamination Procedures</i>	D-6
<i>D5.4 Investigation-Derived Waste Management</i>	D-6
<i>D5.5 Sample Containers and Labels</i>	D-7
<i>D5.6 Field Documentation</i>	D-7
D6.0 SAMPLE HANDLING PROCEDURES	D-8
<i>D6.1 Sample Preservation and Holding Times</i>	D-8
<i>D6.2 Chain of Custody Procedures</i>	D-8
<i>D6.3 Delivery of Samples to Analytical Laboratory</i>	D-9
D7.0 LABORATORY ANALYTICAL METHODS	D-9
D8.0 QUALITY ASSURANCE AND QUALITY CONTROL	D-10
<i>D8.1 Data Quality Indicators</i>	D-11
<i>D8.2 Data Quality Assurance Review</i>	D-13
D9.0 DATA ANALYSIS AND REPORTING	D-15
<i>D9.1 Laboratory Reports</i>	D-15
<i>D9.2 Hart Crowser Reports</i>	D-16
D10.0 REFERENCES	D-16

CONTENTS (Continued)

Page

TABLES

- D-1 Storage Temperatures and Maximum Holding times for Physical/Chemical Analyses
- D-2 Analytical methods, Practical Quantitation Limits, and Soil Cleanup Levels
- D-3 Quality Control Procedures, Criteria, and Corrective Actions for TPH-Dx Analysis
- D-4 Quality Control Procedures for Metals Analysis
- D-5 Quality Control Procedures for Semivolatile Organic Compound Analysis

FIGURES

- D-1 Vicinity Map
- D-2 Selected Upland Remedial Action Alternative U-3

CONSTRUCTION MANAGEMENT PLAN

1.0 INTRODUCTION

Hart Crowser, Inc. has been retained by the Washington State Department of Ecology (Ecology) to serve as Construction Manager during implementation of the Phase I – Upland Interim Remedial Action at the Custom Plywood Site in Anacortes, Washington.

This Construction Management Plan (CMP) has been prepared to outline and define the activities, processes, and procedures that the Construction Manager will observe/employ during construction to ensure that the project is executed in accordance with the Contract Documents, including the plans (Appendix A) and specifications (Appendix B). Additionally, this document is intended to be used as a guide in the field, facilitating a complete and uniform standard means of construction documentation and verification. As construction progresses, this document should be flexible enough to account for a change(s) in conditions, while remaining protective to Ecology and the intent of the Contract Documents.

2.0 SITE BACKGROUND

The Custom Plywood Site is one of several Anacortes Area Bay-Wide priority sites for Fidalgo/Padilla Bays being addressed by the Toxics Control Program (TCP) under the Puget Sound Initiative (PSI). The Site includes property owned by GBH (GBH Investments LLC - PLP covering approximately 6.6 acres of upland and 34 acres of intertidal and subtidal areas.

As described in the RI and CAP, the Custom Plywood Site was the location of lumber and plywood milling operations beginning in about 1900. Through the years, the property changed hands several times, and was rebuilt and added onto until Custom Plywood became an operating entity sometime before 1991. The facility was used as a sawmill and plywood manufacturing plant until most of the wooden structures in the main plant area, many of which were built in the 1940s, were consumed in a fire on November 28, 1992. The current Site layout is shown on Figure 1.

Interim remedial actions were conducted under WAC 173-340-515 (Independent Remedial Actions) on the upland portion of the Custom Plywood Site beginning in 1998. These interim actions included removal of soil impacted by hydraulic oil within the City of Anacortes right-of-way located immediately

northwest of the GBH property in 1998 and removal of impacted soil from four areas where petroleum hydrocarbons and other constituents exceeded MTCA Method A cleanup levels in 2007. During the spring of 2011, the site owner conducted concrete demolition and limited piling removal to assist in preparing the uplands portion of the site for the remedial construction being conducted under this plan. Additional information on previous Site remedial actions is presented in the RI.

2.1 Site Environmental Conditions

The upland area of the Custom Plywood property is currently undeveloped with remnant concrete building foundations and structures, pilings, concrete and wood debris, native and non-native grass and shrub vegetation, and wetlands. Former plywood milling operations produced copious amounts of wood waste fill placed in upland and aquatic portions of the Site over many years. Site fill soil consists of a heterogeneous mixture of silt, sand, and gravel with abundant near-surface debris and intermixed wood waste over native clay deposits. Upland fill materials exceed 15 feet in thickness in some areas and include general "upper" and "lower" fill units identified in the RI. Concrete, brick, and other debris are the distinguishing components of the upper unit, while wood waste is more prevalent in the lower unit.

Shallow, perched groundwater is present at the Site and is tidally affected in nearshore areas. As reported in the RI, groundwater has been encountered at depths ranging from approximately 5 to 6 feet below ground surface (bgs) during low tide, and within 2 feet of ground surface at high tide in some nearshore locations. Further monitoring of the variability of groundwater level elevations has reportedly not been conducted.

The northwestern portion of the property is being used as a temporary boat storage yard. The remnants of former structures, including concrete foundations and pilings and abandoned tanks from previous industrial activities, are scattered across the property. Portions of some of the aboveground concrete foundations have been removed from the property. Several debris piles containing wood, metal, and other material are located throughout the property. Most of the surface debris at the site has been cleared during the spring 2011 site preparation activities. This also included demolition and stockpiling of the remaining concrete structures and foundations on the site. Approximately 970 wooden pilings are currently estimated to be present in the upland portion of the GBH property. The condition and number of creosote-treated pilings is uncertain. A limited number of pilings were pulled and stockpiled during the spring 2011 site preparation work by GBH.

Five wetland areas (Wetlands A through E) are located within the southern portion of the property. These wetlands were delineated and their boundaries accepted by the US Army Corps of Engineers (USACE) and Ecology's Shorelands and Environmental Assistance (SEA) Program. Wetlands A (120 square feet [sf] in area), B (124 sf in area), and D (9,910 sf in area) are freshwater wetlands, and Wetlands C (367 sf in area) and E (1,389 sf in area) are estuarine wetlands.

The shoreline of the Site contains industrial debris and significant quantities of naturally occurring woody debris. Woody debris ranges in size from sawdust to larger mill end remnants and logs. Active erosion is occurring along the northeast and central portion of the property where storm events and long-period waves have locally destabilized the shoreline (refer to Appendix B-2 of the FS). Site conditions show an actively eroding shoreline upon which ecology blocks and rubble were placed to help stabilize the shoreline following inundation during a high wave storm event in the winter of 2010.

2.2 Site Soil and Groundwater Contaminants

The primary constituents of potential concern (COPCs) and key indicator hazardous substances in soil identified by the RI are diesel- and oil-range total petroleum hydrocarbons (TPH), inorganic constituents (arsenic, cadmium, copper, chromium, lead, mercury, nickel, selenium, silver, and zinc), and select semivolatile organic compounds (SVOCs)—primarily carcinogenic polycyclic aromatic hydrocarbons (cPAHs). Of these, oil-range TPH had the most significant relative exceedance of preliminary MTCA screening levels with concentrations up to 164,000 milligrams per kilogram (mg/kg) identified near the press pits.

To date, soil samples have identified polychlorinated biphenyls (PCBs) and dioxins/furans each exceeding their respective screening levels at only one location on the Site. Where the concentrations of petroleum hydrocarbons are highest, some SVOCs (e.g., phenanthrene, fluoranthene, and pyrene) were detected. Creosote-treated pilings are an additional potential source of cPAHs in the upland (and aquatic) environments. PCBs, dioxin/furans, and other compounds were identified infrequently and generally at concentrations below screening levels. These compounds were not considered to be key indicator hazardous substances in the RI or FS. The RI provides additional detail regarding the extent of MTCA screening level exceedances, and further information on the primary and secondary sources of upland contaminants is presented in the CAP.

Limited groundwater data were reported in the RI for establishing indicator hazardous substances. Several constituents were detected during 2008 and 2009 sampling and testing of Site groundwater monitoring wells and seeps that

were considered indicator hazardous substances. These included diesel- and oil-range TPH, cPAHs, and arsenic, copper, nickel, and zinc. The RI report provides further information on the frequency and locations of MTCA screening level exceedances for these groundwater constituents, although monitoring data are somewhat limited. Cadmium, lead, and mercury were COPCs identified for soil, and are included as additional COPCs for groundwater based on potential exposure pathways associated with Site construction activities.

2.3 Scope of Phase I - Interim Upland Remedial Action

As outlined in the Engineering Design Report (EDR) and edited based on current knowledge of the Site/Project, the scope of work for the Upland Remediation consists of the following:

- Areas of contaminated soil identified at the Site will be removed to the approximate extents shown on the Phase I drawings, or until analytical results for performance samples show that cleanup levels are achieved at the excavation limits.
- Performance monitoring will be conducted during the excavation work. Areas where field screening or performance sample analytical results show residual contamination remains above cleanup levels, additional lateral excavation may be performed as necessary to achieve compliance with cleanup levels.
- Target excavation depths range from 4 to 8 feet in the shoreline protection zone, and from 4 to 6 feet elsewhere. If necessary, the depth of excavation in the shoreline protection zone may extend to a maximum of 10 feet (human health point of compliance [POC]) or to a maximum of 6 feet elsewhere in the uplands (ecological POC), as described in the FS and CAP.
- Ideally, excavated soils will be loaded directly into trucks and disposed of off site at a permitted Subtitle D (lined) landfill facility. However, the Contractor may elect to stage excavation materials in temporary on-site stockpiles to facilitate dewatering or to otherwise manage off-site shipment.
- As the remedial excavation work proceeds, a wetland mitigation complex will be constructed in the southern portion of the uplands. The wetland mitigation complex will consist of estuarine wetland and a surrounding buffer area planted with local flora.
- Within the buffer area adjacent to the wetland mitigation complex, clean imported fill will be placed to raise existing grades and revegetated to

protect the buffer area from wave inundation. Hydroseeding will be performed over other areas of the Site to stabilize topsoil following excavation backfilling.

- A stormwater swale will be constructed near the western property boundary adjacent to the Tommy Thompson Trail to manage run-off that enters the Site from a City of Anacortes outfall pipe.
- Existing groundwater monitoring wells located in the planned excavation areas will be decommissioned in accordance with Chapter 173-160 WAC, Minimum Standards for Construction and Maintenance of Wells. (New monitoring wells will be installed as part of Phase II work.)

3.0 CONSTRUCTION PHASE MANAGEMENT/SUPPORT ACTIVITIES

In general, the CM's role, based on Hart Crowser's proposal to provide professional services to Ecology is described below. For clarity, the person on-site observing and documenting Contractor activities is referred to as the Construction/Project Manager (CM). However, this role will be filled by different individuals at different phases of the project. For example, during wetland mitigation plantings, a Wetland Biologist will be on-site to serve as CM, while during sheet pile installation, a Field Geologist with experience in sheet piling installation will be the CM.

Quantity Verification

As Ecology's on-site representative, the CM will track and document all quantities used as a basis for progress payments. As outlined in the Contract Documents, the basis for payment on this job is primarily Lump Sum, with additive or deductive Unit Rate provisions. Therefore, it is essential that the Contractor and CM are in agreement with all quantities to ensure proper payment for Ecology's review and approval.

Specific quantities and tracking procedures, based on the Bid Form, are discussed in subsequent section(s).

Compliance with Project Plans and Specifications

The primary role of the CM in any construction project is to ensure that the project is being completed in accordance with the Contract Documents, including the plans and specifications. This is accomplished by being present on a daily basis, actively participating in daily meetings and activities, and

documenting all work activities. Documentation includes keeping a daily log of field activities, filling out inspection forms as required, taking photographs, completing daily field reports, and keeping written logs of all pertinent phone conversations.

Unforeseen and uncontrollable situations arise on all construction projects. Open dialogue with the Contractor is essential to ensure that as issues arise, resolutions can be implemented proactively in a timely fashion, rather than reactively. Looking ahead to anticipate issues minimizes or eliminates unnecessary/controversial change requests and cost overages.

CQA/QC Tracking

Per the specifications, the Contractor is required to perform construction quality assurance/quality control (CQA/QC) activities such as compaction testing. The CM will track and document all CQA/QC activities to ensure compliance with the plans and specifications. Additionally, the CM will be present during all CQA/QC testing to observe procedures and make timely recommendations to Ecology or the Contractor as needed.

Project Coordination with Ecology

The CMs will serve as Ecology's representative in the field. This involves, at a minimum, daily communication between the CM and Ecology and the CM and the Contractor. The CM will prepare daily field reports at the end of each day and will transmit those reports to Ecology in a weekly progress report. In addition, the CM will promptly communicate all deviations from the Contract Documents, change requests, field directives, and information requests from the Contractor to Ecology. A copy of Hart Crowser's Daily Field Report is attached.

In addition to daily/weekly reporting, the CM will review and make recommendations to Ecology on Contractor submittals, Contractor pay applications, requests for information, and change requests. The CM will attend daily job/safety meetings and all scheduled progress meetings.

3.1 Specific Bid Item Procedures, Processes and Documentation

The CM will track, verify and measure quantities of various work and materials to ensure that the project is being executed in accordance with the specifications and as a basis for payment. For Lump Sum bid items, progress payments will be based, in general, on an agreed upon percent complete of the total lump sum amount, unless stated otherwise in the Contract Documents. Unit Price-based bid items will be paid based on the actual quantity of work performed or

material brought on/shipped off Site. Bid Item specific quantities, documentation and other CM responsibilities are as follows: *[Note: Bid Items 3, 6, and 7 do not have any associated quantities or other need for discussion outside of CM verification of completeness, and have not been discussed further.]*

Bid Item #1 – Mobilization and Demobilization

Mobilization/Demobilization will be paid on a lump sum basis per the Contract Documents. The CM will verify that the percent complete represented by the Contractor is factual.

Bid Item #2 – Temporary Erosion and Sediment Controls

Temporary Erosion and Sediment Control will be paid on a lump sum basis per the Contract Documents. The CM will verify that the percent complete represented by the Contractor is factual.

In addition, the CM will closely monitor and document the Contractor's compliance with the Construction Stormwater Permit, including implementation of BMPs.

Bid Item #4 – Field Engineering

Field Engineering will be paid on a lump sum basis per the Contract Documents.

Based on communication with the Contractor, a Washington State Public Land Surveyor (PLS) will establish local survey control points for the project. The Contractor will then use a total station and the established control to document Site features including excavation extents, sampling locations, topographic information, etc.

The CM will observe, document and verify as necessary the collection of total station/survey data. In addition, the CM will verify volume calculations based on topographic or other Contractor supplied data for payment and documentation purposes as discussed in later sections.

Bid Item #5 – Temporary Facilities and Control

Temporary Facilities and Control will be paid on a lump sum basis per the Contract Documents. The CM will verify that the percent complete represented by the Contractor is factual.

Bid Item #8 – Demolition

Demolition will be paid on a lump sum basis per the Contract Documents. The CM will verify that the percent complete represented by the Contractor is factual.

Before the start of Demolition activities, the Contractor and CM will agree upon a basis for measuring percent complete. The basis will be dependent upon the amount and scope of demolition work remaining after the Site Owner has completed preparation activities.

Bid Item #9 – Off-Site Transportation and Disposal

Off-site Transportation and Disposal will be paid on a Unit Rate basis per the Contract Documents. The basis for bid was calculated by multiplying the anticipated volume of excavation, 22,400 cubic yards (cy) by a conversion factor of 1.5 to calculate a tonnage, 33,600 tons. The CM will calculate and track the volume of soil excavated and transported off-site. The volume will be calculated by using aforementioned survey means, measuring soil stockpiles and/or measuring truck bed dimensions. These volume measurements will be compared to respective truck weight tickets from the disposal facility to confirm or further define the appropriate volume to weight ratio(s).

Additionally, the CM will monitor and document, as necessary, the Contractor's efforts to remove water from the soil stockpiles before transportation off-site. Contaminated soil is required to pass the paint filter test before off-site transportation to ensure that Ecology does not pay for excess transportation, disposal, or drying costs.

The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #10 – Baseline Excavation and Stockpiling

Baseline Excavation and Stockpiling will be paid on a lump sum basis per the Contract Documents. The basis for bid was the in-place volume of the Priority 1 and 2 Excavations as shown on the drawings. The CM will document and verify the Contractor's delineation of the excavation areas, prior to excavation, as well as the vertical and horizontal extents of the excavations, post excavation, to ensure that the Contractor has excavated the full extent of the Baseline Excavations prior to commencing any Ecology Directed Overexcavation.

Bid Item #11 – Ecology Directed Overexcavation

Ecology-Directed Overexcavation will be paid on a lump sum basis per the Contract Documents. However, in the event that more or less Ecology-Directed Overexcavation is completed, the contract amount may be adjusted accordingly using the supplied Unit Rate (Bid Item #U2).

The CM will document and verify the Contractors delineation, as discussed under Bid Item #4, of the excavation(s) prior to excavation, as well as the vertical and horizontal extents of the excavations, post excavation. Based on the CM's observations and calculations, the CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #12 – Sheet Piling Installation and Removal

Sheet Piling Installation and Removal associated with the Baseline Excavations will be paid on a lump sum basis per the Contract Documents. In the event that Ecology Directed Overexcavation is required near shore and requires additional sheet pile installation and removal, the Contractor will be compensated at the supplied Unit Rate (Bid Item #U3). The CM will measure and document the length(s) of sheet pile installed and removed. The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #13 – Wetland Shoreline Protection Layer

Wetland Shoreline Protection Layer will be paid on a Unit Rate basis, per ton, in accordance with the Contract Documents. The CM will document all incoming truck loads and will be provided weight tickets for each load to verify the actual tonnage of wetland shoreline protection material imported.

In addition, the CM will verify and document the layout, construction, and the CQA testing of the wetland shoreline protection layer to ensure compliance with the plans and specifications.

The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #14 – Temporary Berm Construction

Temporary Berm Construction will be paid on a Unit Rate basis, per ton, in accordance with the Contract Documents. The CM will document all incoming

truck loads and will be provided weight tickets for each load to verify the actual tonnage of temporary berm material imported.

In addition, the CM will verify and document the layout, construction, and CQA testing of the temporary berm to ensure compliance with the plans and specifications.

The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #15 – Select Borrow

Select Borrow will be paid on a Unit Rate basis, per ton, in accordance with the Contract Documents. The CM will document all incoming truck loads and will be provided weight tickets for each load to verify the actual tonnage of select borrow material imported.

In addition, the CM will verify the layout, construction/placement, and CQA testing of the select borrow to ensure compliance with the plans and specifications.

The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #16 – Common Borrow

Common Borrow will be paid on a Unit Rate basis, per ton, in accordance with the Contract Documents. The CM will document all incoming truck loads and will be provided weight tickets for each load to verify the actual tonnage of common borrow material imported.

In addition, the CM will verify the layout, construction/placement, and CQA testing of the common borrow to ensure compliance with the plans and specifications.

The CM will review progress payment requests from the Contractor and make recommendations regarding payment to Ecology.

Bid Item #17 – Site Finish Grading

Site Finish Grading will be paid on a lump sum basis per the Contract Documents.

The CM will document and verify the extents and execution of the site grading to ensure compliance with the plans and specifications.

Bid Item #18 – Storm Drainage Improvements

Storm Drainage Improvements will be paid on a lump sum basis per the Contract Documents.

The CM will document and verify the installation of storm drainage improvements to ensure compliance with the plans and specifications.

Bid Item #19 – Landscaping/Wetlands Planting

Landscaping/Wetlands Planting will be paid on a lump sum basis per the Contract Documents.

The CM will document and verify the type/species, placement, quantity and installation of all plants, irrigation equipment, fencing and hydroseeding to ensure compliance with the plans and specifications. In addition, the CM will notify and provide required reporting documentation to Ecology's Shoreline and Environmental Assistance (SEA) Program and the City of Anacortes.

Bid Item #20 – Excavation Dewatering and Treatment of Dewatering Effluent

The Contractor will be paid to provide a system capable of treating excavation dewatering effluent to City of Anacortes requirements on a lump sum basis per the Contract Documents. However, in the event that excavations require dewatering and that water requires treatment for discharge, the Contractor will be paid on a Unit Rate basis (Bid Item #U4), per gallon, per the Contract Documents. Dewatering and effluent treatment will be employed only after exhausting all other methods and must be approved by Ecology prior treatment.

The CM will work closely with the Contractor to minimize or eliminate the need for dewatering and subsequent treatment. Should dewatering and treatment be necessary, the CM will monitor and document the quantity (flow meter) and quality (Contractor submitted analytical reports) of water being treated and discharged to ensure compliance with the plans and specifications as well as City of Anacortes (POTW) requirements. The Contractor will coordinate with the local POTW for any necessary treatment requirements and allowable daily peak-loading rates.

3.2 Documentation and Reporting

The CM's primary responsibility is to serve as Ecology's representative in the field. This involves, at a minimum, daily communication between the CM and Ecology and the CM and the Contractor. The CM will prepare daily field reports at the end of each day and will transmit those reports to Ecology in a weekly progress report. In addition, the CM will promptly communicate all deviations from the Contract Documents, change requests, field directives, and information requests from the Contractor to Ecology.

In addition to daily and weekly reporting, the CM will review and make recommendations to Ecology on Contractor submittals, Contractor pay applications, requests for information, and change requests. These recommendations will be developed in sufficient detail to minimize the impact on the Ecology representative's time. The CM will attend daily job/safety meetings and all scheduled progress meetings.

Appendix C contains the following forms:

- Daily Field Report
- Quantity Tracking Table (includes tabs for the following items)
 - Soil Excavation/Stockpiling
 - Off-Site Transportation and Disposal
 - Fill Quantities
 - Dewatering and Treatment
- Soil Sampling and Analysis Tracking
- Change Order Request
- Request for Information
- Field Directive

4.0 PERFORMANCE/CONFIRMATION SAMPLING

Key indicator hazardous substances in soil identified by the RI and further evaluated in the FS include diesel- and oil-range total petroleum hydrocarbons (TPH-D extended or TPH-Dx), metals (arsenic, cadmium, copper, lead, mercury, nickel, and zinc), and carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Of these constituents, oil-range TPH had the most significant relative exceedance of preliminary MTCA screening levels, identified near the former press pits in the central upland portion of the property. Therefore, TPH-Dx will be the only constituent analyzed for during performance testing to determine if soil excavation limits should be expanded. Confirmation testing at the final excavation limits will include TPH-Dx, select metals, and cPAHs.

Hart Crowser will conduct this work in accordance with the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP), included as Appendix D. The SAP/QAPP describes the specific sampling frequencies, sampling procedures, analytical parameters, and quality assurance/quality control requirements, and is intended to convey basic sampling, testing, and related procedural information for Ecology and Hart Crowser field staff. Additionally, Hart Crowser will submit laboratory data following the QAPP procedures to Ecology's Environmental Information Management (EIM) system using the most current EIM database spreadsheets. Because of the nature of this remedial action data QA/QC will be performed using standard laboratory data reports, not using full data packages that incur additional costs.

In general, we propose a two-stage performance/confirmation sampling approach as follows:

Performance Sampling Program. This sampling program is designed to be used during construction to help Ecology make real-time decisions about the extent of contaminated soil removal. We propose to sample the excavation side walls and floor and analyze the samples for oil-range TPH by Ecology Method NWTPH-Dx using 24-hour laboratory turnaround times. In general, the total number of samples is based on four sidewall samples and one floor sample per 20-foot by 20-foot by 10-foot deep excavation, or every 150 cubic yards. This number may vary based on several factors, such as visual impacts, size/orientation of excavations, and functional limits of excavations (i.e. depth achieved, or at OHW line).

Samples will be collected from the excavator bucket or from a pile placed immediately adjacent to the excavation by the excavator. The excavated soil will be allowed to drain before placement in jars. Each sampling location will be surveyed using the Contractor's total station or other survey equipment and related to local coordinate system. .

The samples will be sent by courier service to OnSite Environmental's Redmond, Washington, laboratory every other work day. Based on a 2- to 4-work day turnaround time, this schedule allows up to one additional day to review the laboratory results, make recommendations, and receive Ecology approval.

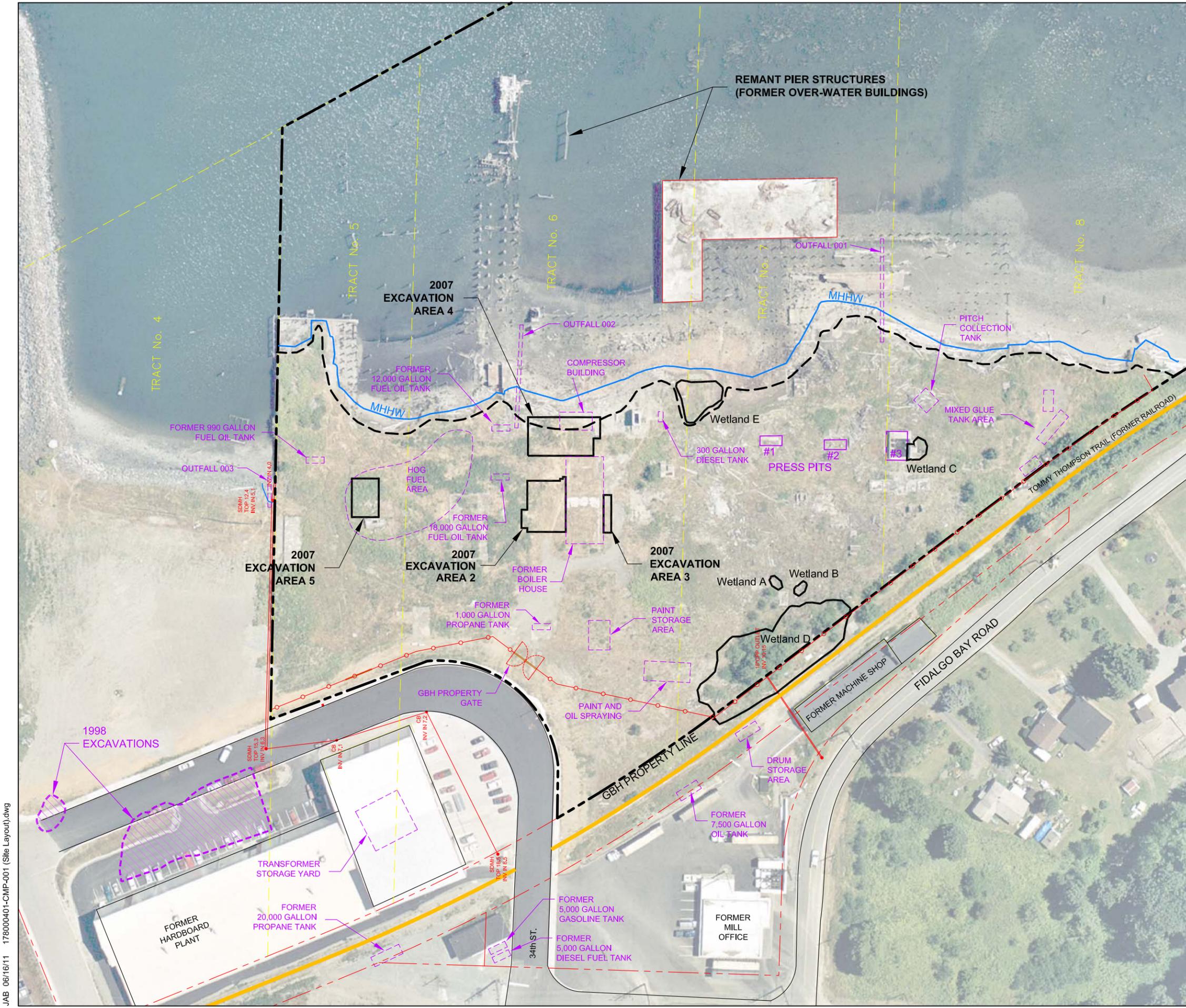
If detected, TPH concentrations will be compared to screening/action levels established in the SAP and recommendations/decisions regarding additional excavation can be made. The decision to perform additional excavation will be based on a matrix of factors including: existing extent of excavation (horizontal and vertical extent), magnitude of action level exceedance, available funds in overall project budget and schedule. The CM will work closely with Ecology to make recommendations in a timely manner with all factors being considered in the overall scope of the project.

Confirmation Sampling Program. Once performance sampling has indicated that no additional excavation is necessary, or the practical extent of excavation has been reached, confirmation sampling will be conducted to document the condition of the remaining site soil. We assume that the “passing” performance sample collected at the excavation limits will serve as the confirmation sample with regards to NWTPH-Dx concentrations. Therefore, it is anticipated that confirmation samples will be analyzed for total metals (arsenic, cadmium, copper, lead, mercury, nickel, and zinc) by EPA 6010/7471A, and cPAHs by EPA Method 8270D-SIM using standard seven-business day turnaround times.

5.0 POST-CONSTRUCTION REPORTING

At the end of construction, Hart Crowser will prepare a Construction Completion Report. The report will present, in a single package, all the daily field reports, site photographs, phone records, sampling results, and other CM documentation. We assume this will be in addition to the Contractor’s Construction Completion Report and will only contain Hart Crowser oversight documentation, not duplicate information that the Contractor is required to provide as part of the Contract Documents.

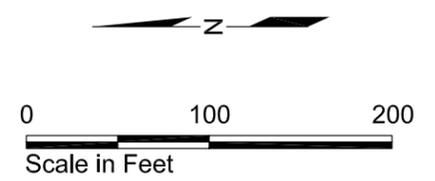
J:\jobs\1780004\Final CMP.doc



- Ordinary High Water
- MHHW Mean Higher High Water
- Fence
- Storm Drain Line
- Historical Feature

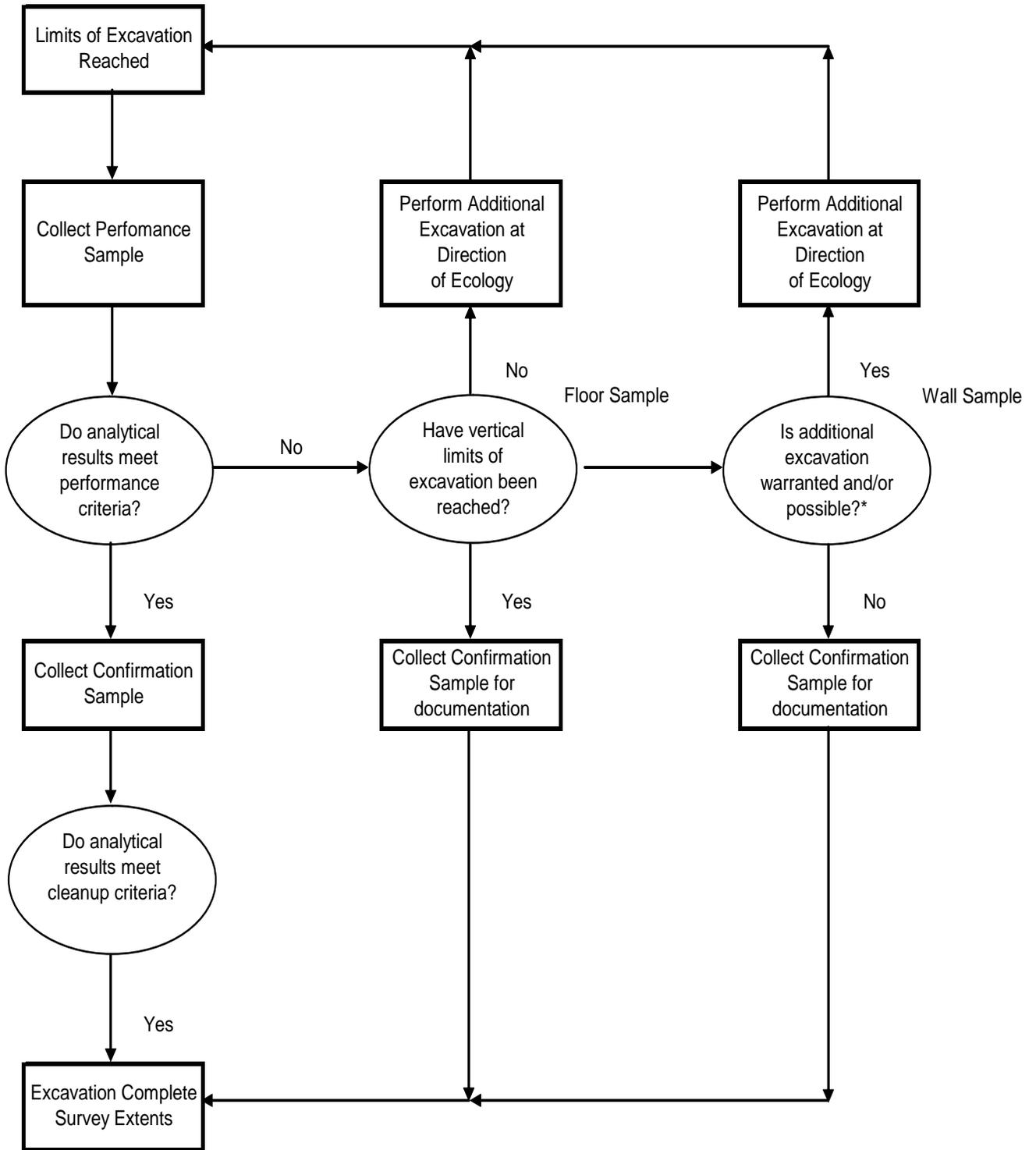
Note:
Adapted from AMEC Geomatrix (2010) First Draft Remedial Investigation (RI) Report Figure 3.

Source: Aerial photo courtesy of City of Anacortes, 2003.



Custom Plywood Site Anacortes, Washington	
Site Layout	
17800-04 (CMP)	6/11
	Figure 1

JAB 06/16/11 178000401-CMP-001 (Site Layout).dwg



* Ecology/Ecology Representative will make decision based on matrix of variables including horizontal limits, budget constraints and cleanup goals.

Custom Plywood Site Anacortes, Washington	
Excavation Decision Flowchart	
17800-04 (CMP)	6/11
	Figure 2

**APPENDIX A
PLANS**

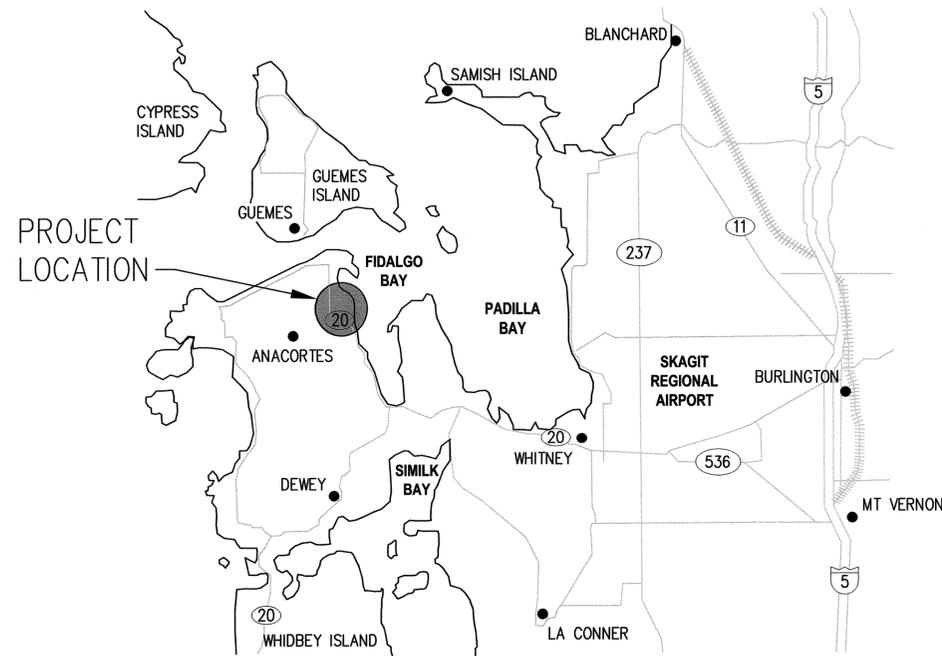
CUSTOM PLYWOOD SITE INTERIM ACTION PHASE I - UPLAND REMEDIATION

ANACORTES, WASHINGTON

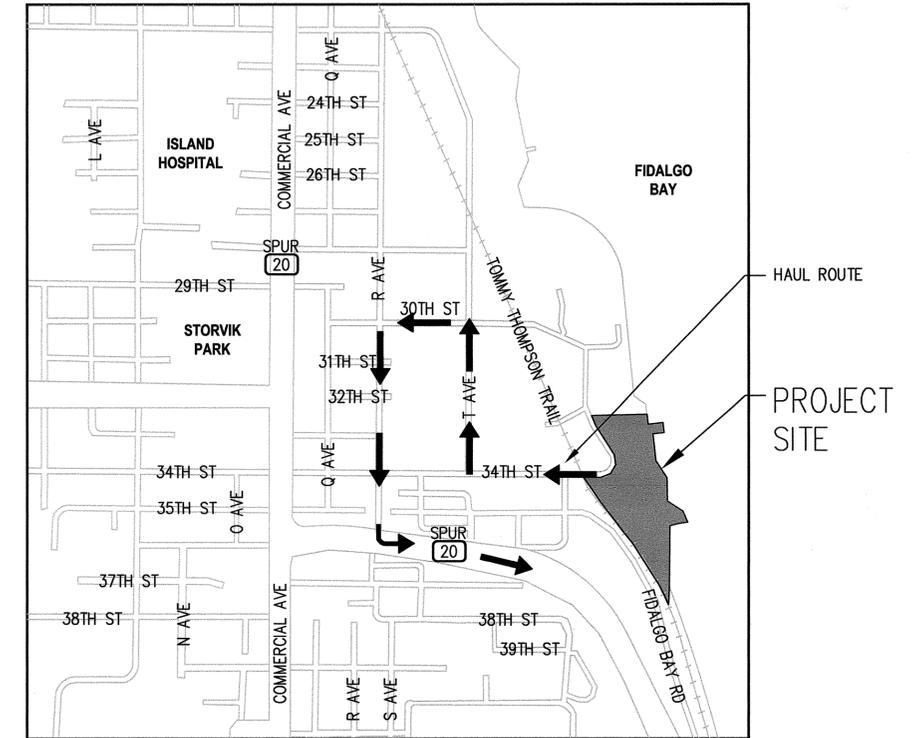
BID SET APRIL 18, 2011

SHEET INDEX

G1.0	COVER SHEET AND INDEX
G1.1	HISTORICAL CONDITIONS PLAN
G1.2	PROPOSED SITE PLAN
G1.3	EXISTING ENVIRONMENTAL EXPLORATION PLAN
G1.4	EXISTING GEOTECHNICAL EXPLORATION PLAN
G1.5	SITE CONSTRAINTS AND ACCESS PLAN
G1.6	EXCAVATION PRIORITY/SEQUENCING PLAN
G1.7	HORIZONTAL CONTROL PLAN
C1.1	TESC PLAN
C1.2	TESC DETAILS
C2.1	SITE DEMOLITION PLAN
C3.1	EXCAVATION KEY PLAN
C3.2	EXCAVATION PLAN
C3.3	EXCAVATION PLAN
C3.4	WETLAND EXCAVATION AREA PLAN
C3.5	TYPICAL EXCAVATION SECTIONS
C3.6	EXCAVATION CONTROL COORDINATES
C3.7	TYPICAL EXCAVATION BACKFILL SECTION
C3.8	WETLAND EXCAVATION AREA SECTION
C3.9	WETLAND EXCAVATION AREA SECTION
C4.1	GRADING PLAN
C4.2	BUFFER/WETLAND GRADING PLAN
C4.3	GRADING SECTIONS
C4.4	GRADING SECTION
C4.5	WETLAND AREA BACKFILL SECTION
C4.6	WETLAND AREA BACKFILL SECTION
C5.1	DRAINAGE PLAN
C5.2	DRAINAGE DETAILS AND SECTIONS
C5.3	DRAINAGE PLAN AND DETAILS
L1.1	LANDSCAPE PLAN
L1.2	WETLAND/BUFFER LANDSCAPE SECTION
L1.3	LANDSCAPE DETAILS



SITE MAP



VICINITY MAP

SURVEY NOTES:

UPLAND SURVEY SHOWN ON THESE DRAWINGS FROM SCHEMMER JOHNSTON ENGINEERING DATED APRIL 2009 PER AMEC GEOMATRIX REMEDIAL INVESTIGATION FIGURE 34 (PROVIDED BY DEPARTMENT OF ECOLOGY)

VERTICAL DATUM: NAVD88 FT
HORIZONTAL DATUM: NAD83

ALL CONTOURS AND ELEVATIONS SHOWN ON THESE DRAWINGS ARE IN NAVD88 VERTICAL DATUM. NOTE THAT WETLAND AND BATHYMETRY IN ENVIRONMENTAL REPORTS (PROVIDED IN APPENDIX) ARE OFTEN SHOWN IN MLLW. WHEN CONVERTING FROM NAVD88 TO MLLW DATUM, ADD 0.65 FEET.

TIDAL INFORMATION:

TIDAL DATUM PLANE-ANACORTES, GUEMES CHANNEL, SKAGIT COUNTY (FROM WASHINGTON DEPARTMENT OF ECOLOGY)

	MLLW DATUM	NAVD88 DATUM (USED FOR THESE DRAWINGS)
HIGHEST RECORDED TIDE: ESTIMATED (EHW)	11.00 FT.	
MEAN HIGHER HIGH WATER: (MHHW)	8.20 FT.	MHHW = 7.55 FT.
MEAN HIGH WATER: (MHW)	7.40 FT.	
MEAN (HALF) TIDE LEVEL: (MTL)	5.00 FT.	
MEAN SEA LEVEL: (MSL)	4.42 FT.	
MEAN LOW WATER: (MLW)	2.60 FT.	
MEAN LOWER LOW WATER: (MLLW)	0.00 FT.	MLLW = -0.65 FT.
LOWEST RECORDED TIDE: (ELW)	-4.50 FT.	

Plotted: Apr 14, 2011 - 10:18am kvang Layout: Layout1 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_G1.0_Cover Sheet & Index.dwg

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HARTCROWSER



NO.	DATE	BY	REVISION

DEPARTMENT OF
ECOLOGY
State of Washington
In Coordination with GBH Investments

**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

COVER SHEET AND INDEX

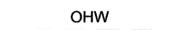
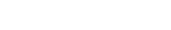
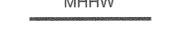
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DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.0
SHEET NO.	1 OF 32

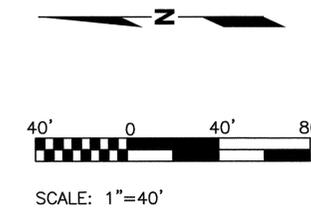
BID SET

NOTES:

1. THIS PLAN IS INTENDED TO ILLUSTRATE THE HISTORICAL USES ON THIS PROPERTY THAT WAS PART OF THE FORMER CUSTOM PLYWOOD MILL WHICH WAS DESTROYED BY FIRE IN 1992. HISTORICAL FEATURES, FORMER TANK LOCATIONS, PREVIOUS EXCAVATION AREAS AND REMNANT FOUNDATIONS SHOWN ARE FOR REFERENCE. FOR FURTHER INFORMATION ON THESE FORMER FEATURES, SEE AMEC GEOMATRIX (2010) FIRST DRAFT REMEDIAL INVESTIGATION (RI) REPORT AND OTHER INFORMATION AVAILABLE AS AN APPENDIX TO THE SPECIFICATIONS. MOST FOUNDATIONS HAVE BEEN PREVIOUSLY REMOVED BY OTHERS. SEE DRAWING C2.1.
2. WORK LIMITS FOR THIS PROJECT ARE BOUND BY PROPERTY LINE AND ORDINARY HIGH WATER LINE SHOWN.
3. SEE DRAWINGS G1.3 AND G1.4 FOR LOCATIONS OF ENVIRONMENTAL AND GEOTECHNICAL EXPLORATIONS.
4. OHW LINE SHOWN IS APPROXIMATE. SEE DRAWING C1.1 FOR WORK RESTRICTIONS.
5. A RETAINING WALL EXISTS ALONG THE WESTERN PROPERTY LIMITS AS SHOWN. THE WALL GENERALLY RETAINS 3 TO 4 FEET OF SOIL ALONG THE TOMMY THOMPSON TRAIL.

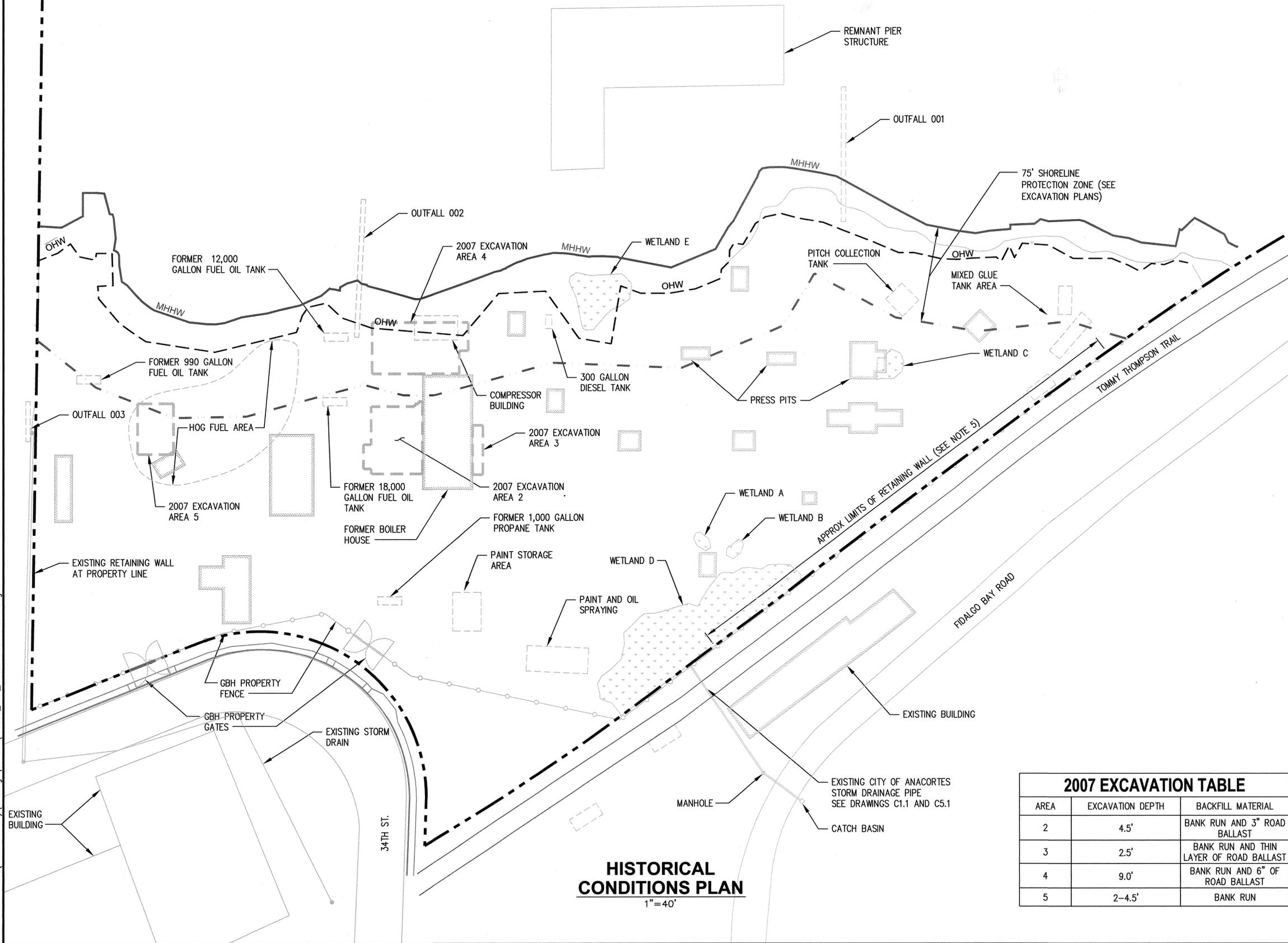
LEGEND:

-  PROPERTY LINE
-  OHW
-  MHHW
-  FENCE
-  SHORELINE PROTECTION ZONE (SEE DRAWING G1.7)
-  STORM DRAIN LINE
-  HISTORICAL FEATURE (SEE NOTE 1)
-  HISTORICAL CONCRETE FOUNDATION (SEE NOTE 1)
-  EXISTING WETLAND
-  APPROX LIMITS OF 2007 EXCAVATIONS (SEE TABLE)



AREA	EXCAVATION DEPTH	BACKFILL MATERIAL
2	4.5'	BANK RUN AND 3" ROAD BALLAST
3	2.5'	BANK RUN AND THIN LAYER OF ROAD BALLAST
4	9.0'	BANK RUN AND 6" OF ROAD BALLAST
5	2-4.5'	BANK RUN

HISTORICAL CONDITIONS PLAN
1"=40'



Plotted: Apr 15, 2011 - 8:17am kvang Layout: G1.1
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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON

HISTORICAL CONDITIONS PLAN

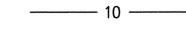
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DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.1
SHEET NO.	2 OF 32

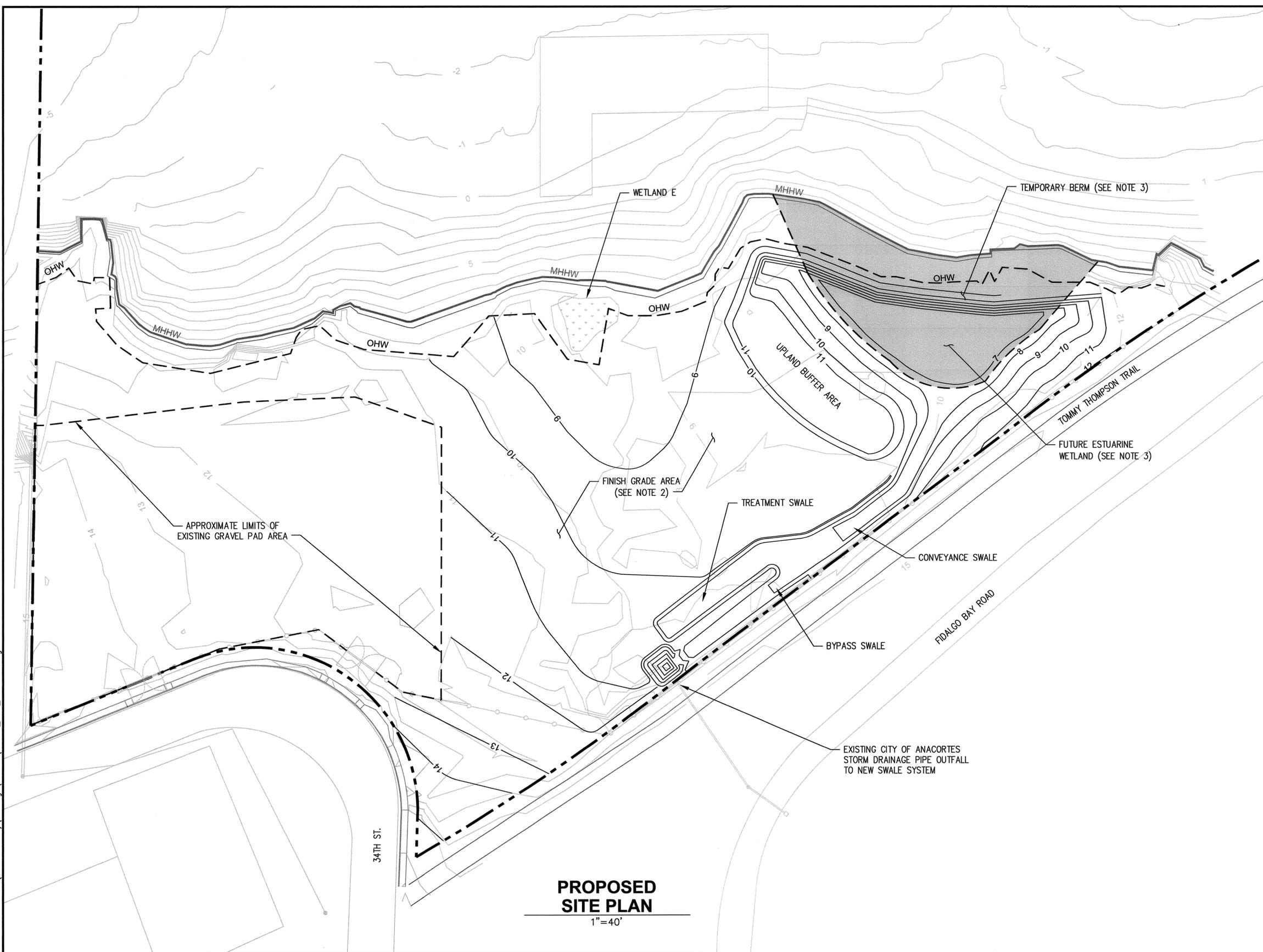
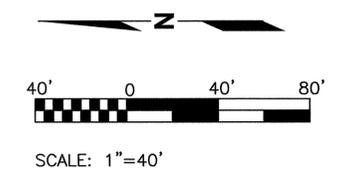
BID SET

NOTES:

1. WORK LIMITS FOR THIS PROJECT ARE BOUND BY PROPERTY LINE AND ORDINARY HIGH WATER (OHW) LINE. NO EXCAVATION OR GRADING WILL OCCUR WATERWARD OF THE OHW LINE.
2. CONTOURS SHOWN REPRESENT FINAL SITE GRADING FOR POSITIVE DRAINAGE FOLLOWING SIGNIFICANT REMEDIAL EXCAVATION ACTIVITIES. SEE DRAWING C4.1. REMEDIAL EXCAVATION LOCATIONS ARE NOT SHOWN.
3. WETLAND AREA SHOWN WILL BE COMPLETED BY OTHERS WHEN TEMPORARY BERM IS BREACHED DURING FUTURE PHASE 2 IN-WATER REMEDIATION CONTACT. WHEN COMPLETE, FUTURE ESTUARINE WETLAND ELEVATIONS WILL VARY BETWEEN APPROXIMATELY ELEVATIONS 6.35' AND 7.55'. SEE DRAWING C4.2 FOR WETLAND HORIZONTAL CONTROL LINE.

LEGEND:

-  PROPERTY LINE
-  ORDINARY HIGH WATER (OHW)
-  PROPOSED CONTOUR
-  EXISTING CONTOUR
-  MEAN HIGHER HIGH WATER (EL. +7.55')
-  FUTURE ESTUARINE WETLAND (SEE NOTE 3)
-  WETLAND



PROPOSED SITE PLAN
1"=40'

Plotted: Apr 15, 2011 - 8:19am kvang Layout: G1.2
M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_G1.2_Site Plan.dwg

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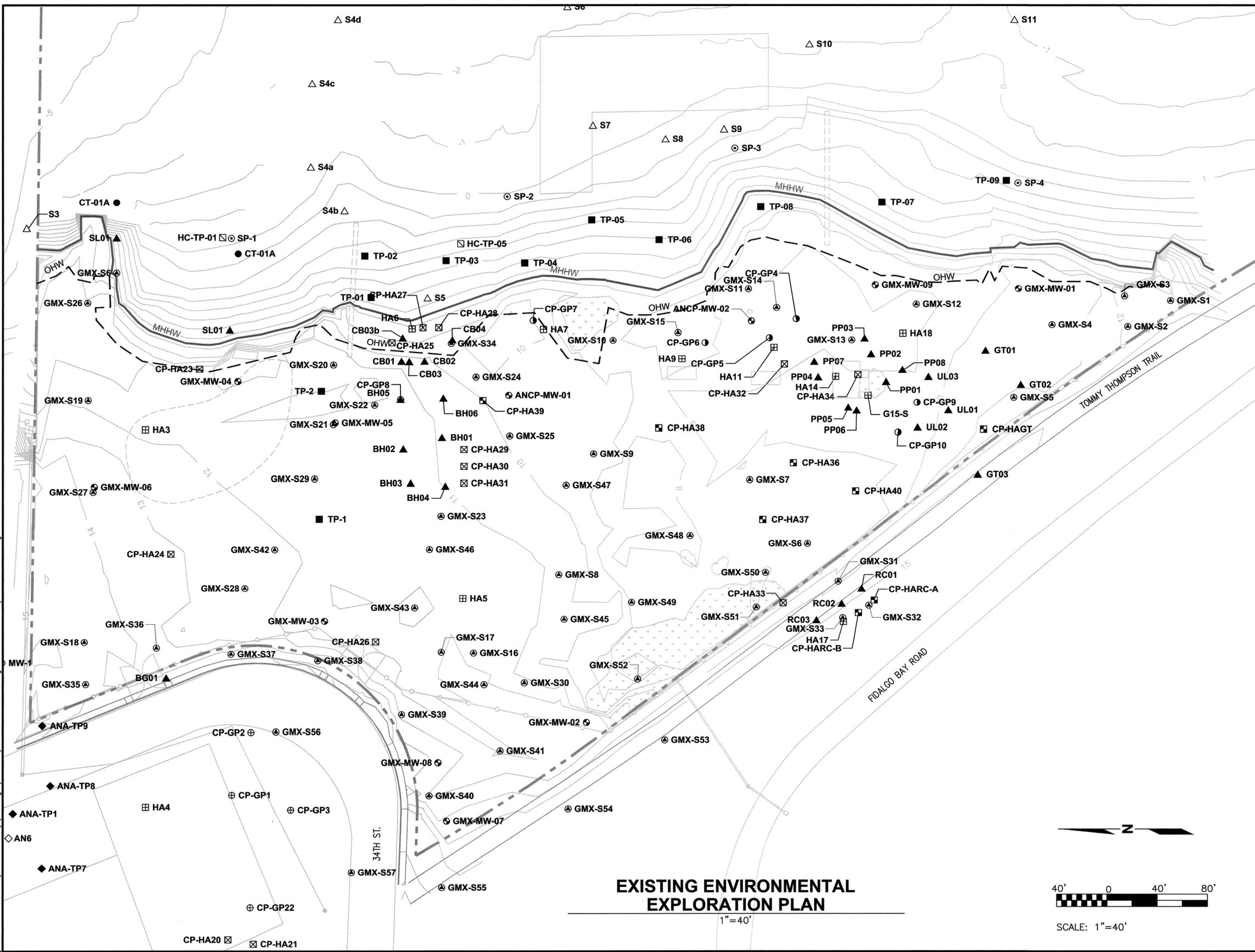
**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

PROPOSED SITE PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.2
SHEET NO.	3 OF 32

BID SET

Plotted: Apr 15, 2011 - 8:21am kvang Layout: G1.3
 Mr. 2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C1.3_Existing Environmental Exploration Plan.dwg



- NOTES:**
1. AVAILABLE BORINGS, TEST PITS, MONITORING WELLS AND EXPLORATIONS SHOWN WERE USED TO CHARACTERIZE EXISTING SOILS AND ESTIMATE REQUIRED LIMITS OF EXCAVATION SHOWN ON THE CIVIL PLANS. SEE ENVIRONMENTAL REPORTS AVAILABLE IN APPENDICES TO THE SPECIFICATIONS FOR MORE INFORMATION.
 2. PRE-2010 EXPLORATION LOCATIONS IDENTIFIED FROM AMEC GEOMATRIX (2010) FIRST DRAFT REMEDIAL INVESTIGATION (RI) REPORT FIGURES 5 AND 32. SEE ENVIRONMENTAL REPORTS INCLUDED AS APPENDICES TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS.
 3. OTHER HISTORICAL EXPLORATIONS BEYOND THE PROPERTY BOUNDARY AND PROJECT LIMITS (OHW) ARE SHOWN FOR REFERENCE ONLY.
 4. SEE DRAWING G1.4 FOR GEOTECHNICALLY FOCUSED EXPLORATION LOCATIONS.
 5. SEE SPECIFICATIONS AND DEMOLITION PLANS FOR MONITORING WELL ABANDONMENT AND DEMOLITION REQUIREMENTS.

- LEGEND:**
- PROPERTY LINE
 - OHW --- ORDINARY HIGH WATER (OHW)
 - MHHW --- MEAN HIGHER HIGH WATER (EL +7.55')
 - 2010 EXPLORATION LOCATION AND NUMBER:
 - CT-01A ● SAMPLE (SAIC 2010)
 - HC-TP-05 ◻ TEST PIT (HART CROWSER 2010)
 - PRE-2010 EXPLORATION LOCATION AND NUMBER:
 - HA4 ◻ HAND AUGER OR GRAB SAMPLE (ENVIROS 1995a)
 - S1 △ SEDIMENT SAMPLE (ENVIROS 1995b)
 - AN1 ◇ TEST PIT SAMPLE (WOODWARD-CLYDE 1997c)
 - CP-GP1 ⊕ GEOPROBE SAMPLE (WOODWARD-CLYDE 1997c)
 - CP-HA26 ◻ HAND AUGER OR GRAB SAMPLE (WOODWARD-CLYDE 1997c)
 - ANA-TP3 ◆ TEST PIT SAMPLE (WOODWARD-CLYDE 1997d)
 - CP-GP9 ⊕ GEOPROBE SAMPLE (WOODWARD-CLYDE 1998b)
 - CP-HA40 ◻ HAND AUGER OR GRAB SAMPLE (WOODWARD-CLYDE 1998b)
 - SL01 ▲ SOIL BORING (EPA 2000)
 - TP-01 ■ TEST PIT (GEOMATRIX 2007; AMEC 2009)
 - GMX-MW-02 ⊕ 2008 AND 2009 MONITORING WELL (AMEC 2009)
 - GMX-S6 ⊕ 2008 AND 2009 SOIL SAMPLE (AMEC 2009)
 - SP-1 ⊕ AUGUST 2008 SEEP SAMPLE (AMEC 2009)
 - MW-1 ○ DECOMMISSIONED MONITORING WELL

EXISTING ENVIRONMENTAL EXPLORATION PLAN

1" = 40'



SCALE: 1" = 40'

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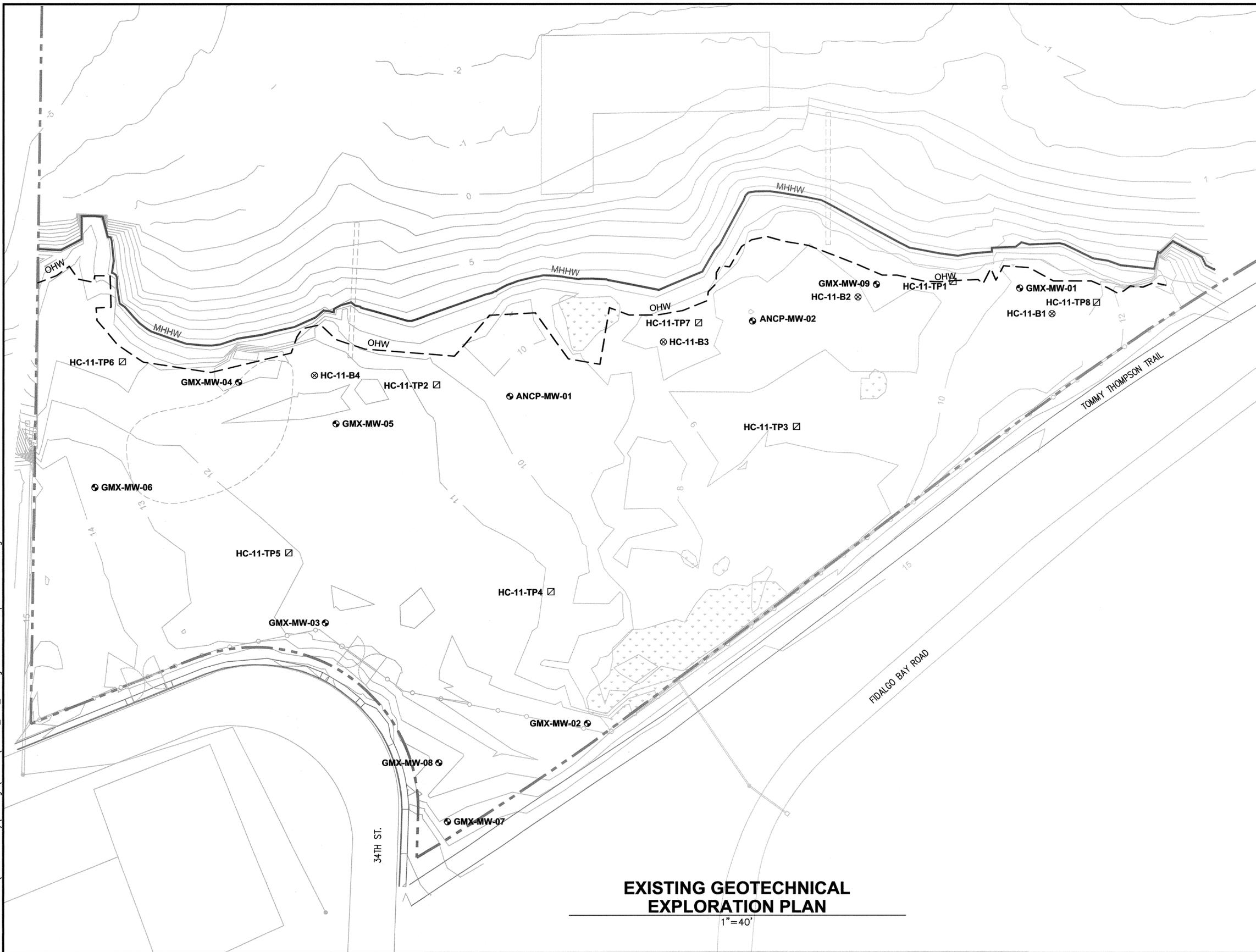
CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON

EXISTING ENVIRONMENTAL EXPLORATION PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.3
SHEET NO.	4 OF 32

BID SET

Plotted: Apr 15, 2011 - 8:28am kvng Layout: G1.4
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NOTES:

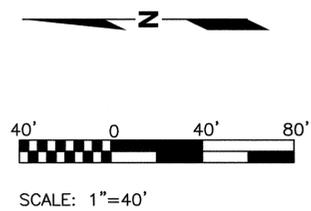
1. MOST OF THE AVAILABLE EXPLORATION DATA PROVIDED ON DRAWING G1.3 IS FOCUSED ON ENVIRONMENTAL CONCERNS. THIS PLAN IS INTENDED TO ILLUSTRATE GEOTECHNICAL EXPLORATIONS PERFORMED TO DETERMINE EXCAVATION REQUIREMENTS FOR THIS UPLAND REMEDIATION PORTION OF THE WORK. SEE GEOTECHNICAL REPORT AVAILABLE IN APPENDICES TO THE SPECIFICATIONS FOR MORE INFORMATION.
2. TEST PITS SHOWN WERE EXCAVATED TO DETERMINE GROUNDWATER LEVELS, FILL TYPES IN DIFFERENT LOCATIONS, BEHAVIOR OF CUT SLOPES AND AMOUNT OF DEBRIS IN EXCAVATIONS.
3. CONTRACTOR SHALL ANTICIPATE ENCOUNTERING GROUNDWATER IN REQUIRED EXCAVATIONS. DATA FROM EXPLORATIONS SHOWN HERE AND ON DRAWING G1.3 ARE AVAILABLE FOR CONTRACTOR REVIEW.

LEGEND:

- PROPERTY LINE
- - - OHW ORDINARY HIGH WATER (OHW)
- MHHW MEAN HIGHER HIGH WATER (EL +7.55')
- HC-11-TP4 □ TEST PIT (HART CROWSER FEB 2011)
- GMX-MW-02 ⊕ 2008 AND 2009 MONITORING WELL (AMEC 2009)
- HC-11-B1 ⊕ BORING (HART CROWER APRIL 2011)

EXISTING GEOTECHNICAL EXPLORATION PLAN

1"=40'



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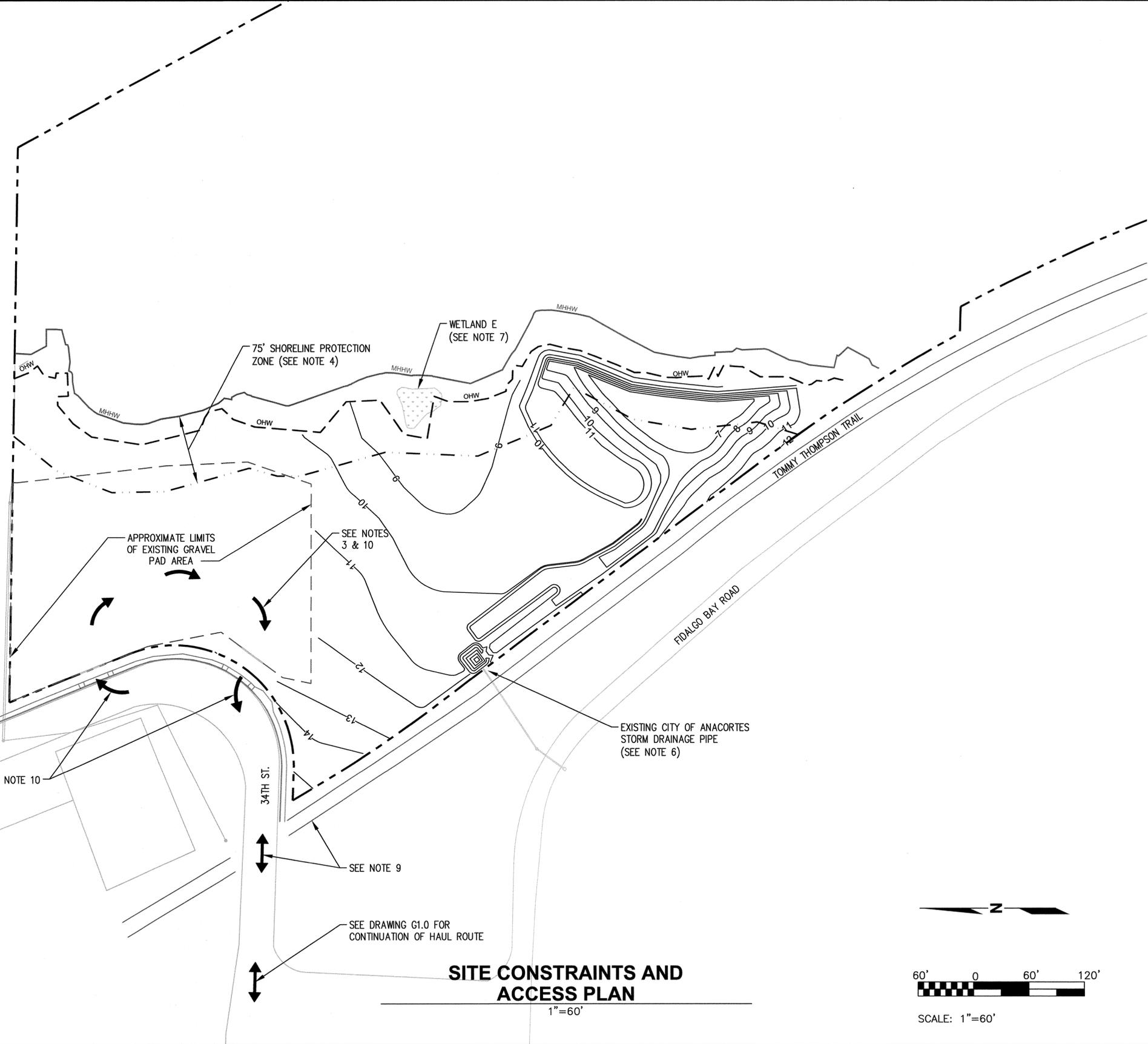
**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

EXISTING GEOTECHNICAL EXPLORATION PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.4
SHEET NO.	5 OF 32

BID SET

Plotted: Apr 15, 2011 - 8:42am kvong Layout: G1.5
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SITE CONSTRAINTS AND ACCESS PLAN

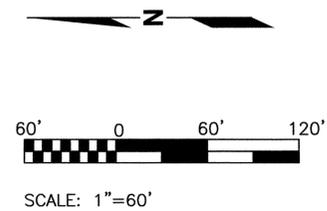
1"=60'

NOTES:

1. THIS PHASE OF THE PROJECT DOES NOT HAVE PERMIT AUTHORIZATION TO WORK WATERSIDE OF THE ORDINARY HIGH WATER (OHW) LINE. NO EXCAVATION OR ANY OTHER WORK SHALL OCCUR WATERWARD OF OHW UNDER ANY CIRCUMSTANCE.
2. THE ORDINARY HIGH WATER (OHW) LINE SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL INSTALL HIGH VISIBILITY FENCE ALONG THE OHW LINE, WHICH WILL BE MARKED BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE PRIOR TO CONSTRUCTION AS SHOWN ON DRAWING C1.1. SEE DRAWING C3.5 FOR INSTALLATION OF SHEET PILE WALL ADJACENT TO OHW IN BASELINE EXCAVATION AREAS.
3. CONTRACTOR SHALL STOCKPILE AND STAGE ALL EQUIPMENT, SUPPLIES AND MATERIALS WITHIN THE WORK LIMITS SHOWN. CONTRACTOR SHALL COORDINATE TRUCK TRAFFIC ROUTING WITHIN THE SITE WITH STOCKPILE AND EXCAVATION LOCATIONS DURING ALL STAGES OF CONSTRUCTION.
4. SEE DRAWING G1.7 FOR LIMITS OF SHORELINE PROTECTION ZONE WITHIN WHICH THERE ARE SPECIFIC EXCAVATION REQUIREMENTS.
5. SEE DRAWING G1.6 FOR PRIORITY AND SEQUENCING REQUIREMENTS ASSOCIATED WITH REMEDIAL EXCAVATION. CONTRACTOR SHALL COMPLETE EXCAVATION AND BACKFILL IN ONE PRIORITY AREA PRIOR TO MOVING TO THE NEXT PRIORITY AREA. SEE SPECIFICATIONS FOR TIMING AND SEQUENCING REQUIREMENTS ASSOCIATED WITH SAMPLING, POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION AND BACKFILL FOR PARTIAL EXCAVATIONS WITHIN EACH PRIORITY AREA.
6. CONTRACTOR SHALL MANAGE THE CITY OF ANACORTES DRAINAGE ON-SITE UNTIL THE PERMANENT STORMWATER SWALE SYSTEM CONSTRUCTION IS COMPLETE. SEE DRAWING C1.1.
7. PROJECT INCLUDES WORK ADJACENT TO EXISTING WETLAND E. WETLAND E SHALL BE PROTECTED IN PLACE AND SURROUNDED BY SILT FENCE DURING CONSTRUCTION AS SHOWN ON DRAWING C1.1.
8. SEE SPECIFICATIONS FOR TRAFFIC CONTROL REQUIREMENTS. EXISTING ADJACENT SURROUNDING BUSINESSES ARE GENERALLY INDUSTRIAL WITH MOST RELATED TO YACHT/BOAT MAINTENANCE AND CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN ACCESS AND NOT RESTRICT TRAFFIC/OPERATIONS FOR THESE ADJACENT BUSINESSES. SEE SPECIFICATIONS FOR STREET USE REQUIREMENTS.
9. TRUCK TRAFFIC TO AND FROM THE SITE WILL CROSS THE TOMMY THOMPSON TRAIL. CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT IMPACTS TO PEDESTRAIN/BICYCLE TRAFFIC THROUGH AND ACROSS THE ADJACENT TOMMY THOMPSON TRAIL.
10. CONTRACTOR SHALL NOT TRACK SEDIMENT ONTO PUBLIC ROADS. SEE DRAWING C1.1 AND SPECIFICATIONS FOR CONSTRUCTION ENTRANCE, DECONTAMINATION FACILITY AND CONTAMINATION EXCLUSION ZONE REQUIREMENTS.
11. CONTRACTOR SHALL MAINTAIN A SECURE SITE PERIMETER FENCE AT ALL TIMES DURING CONSTRUCTION.
12. SEE SECTION 01 50 00-TEMPORARY FACILITIES AND CONTROLS AND OTHER SECTIONS OF THE SPECIFICATIONS FOR SPECIFIC APPLICABLE REQUIREMENTS.
13. SEE SPECIFICATIONS FOR ARCHEOLOGICAL MONITORING REQUIREMENTS DURING EXCAVATION.

LEGEND:

- PROPERTY LINE
- ORDINARY HIGH WATER (OHW) (SEE NOTE 1&2)
- MEAN HIGHER HIGH WATER (EL +7.55')
- ACCESS/HAUL ROUTE (SEE NOTE 8)
- SHORELINE PROTECTION ZONE (SEE NOTE 4)
- PROPOSED CONTOUR



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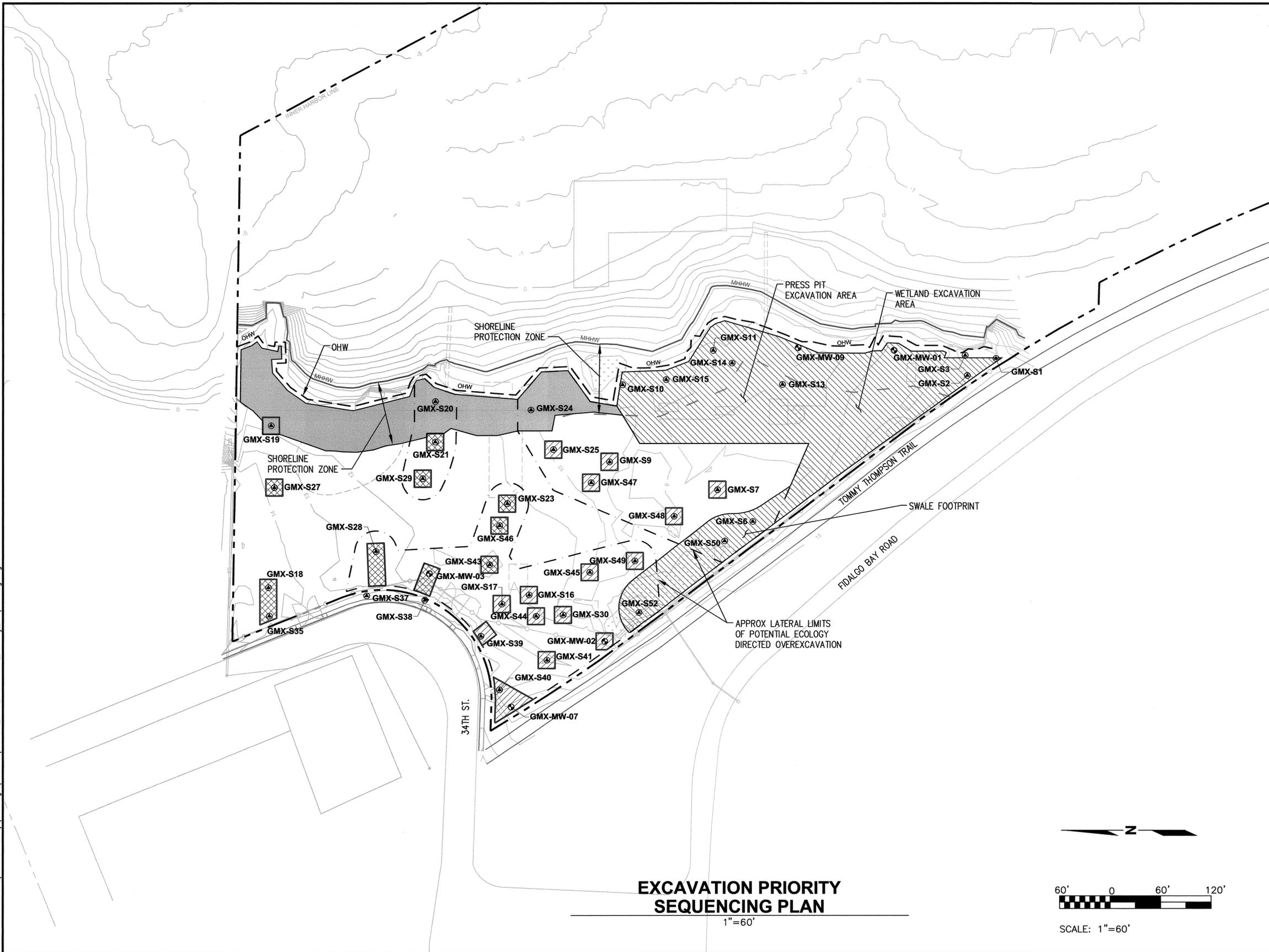
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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
SITE CONSTRAINTS AND ACCESS PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.5
SHEET NO.	6 OF 32

BID SET

Plotted: Apr 15, 2011 - 8:49am kvang Layout: G1.6
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_G1.6_Excavation_Priority_Sequencing.dwg



EXCAVATION PRIORITY SEQUENCING PLAN
1"=60'

NOTES:

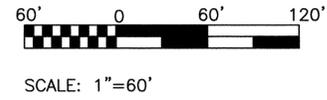
1. THE INTENT OF THIS DRAWING IS TO ILLUSTRATE REQUIRED SEQUENCE OF EXCAVATION WORK TO ENSURE THAT CONTAMINATED SOILS IN TOP PRIORITY AREAS ARE REMOVED FIRST. THE CONTRACTOR SHALL NOT EXCAVATE IN THE NEXT PRIORITY ZONE UNTIL ALL EXCAVATION, SAMPLING AND BACKFILL IN THE PREVIOUS ZONE IS COMPLETE AND APPROVED BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE.
2. THE CONTRACTOR MAY WORK INCREMENTALLY WITHIN EACH PRIORITY AREA TO ALLOW TIME FOR RECEIPT OF SOIL SAMPLE ANALYTICAL TEST RESULTS FROM EXCAVATION AREAS WHILE OTHER REQUIRED EXCAVATION WITHIN THE SAME PRIORITY AREA CONTINUES. THIS INCREMENTAL SAMPLING WITHIN PRIORITY ZONES IS INTENDED TO ALLOW BACKFILL OF PARTIAL EXCAVATION AREAS AND PREVENT SIGNIFICANT TIME BETWEEN EXCAVATION, SAMPLING AND BACKFILL OPERATIONS. SEE SPECIFICATIONS FOR TIMING AND SEQUENCING REQUIREMENTS FOR SAMPLING.
3. SEE EXCAVATION PLAN DRAWINGS C3.2 AND C3.3 FOR EXCAVATION DETAILS INCLUDING DEPTH AND LATERAL EXTENT.
4. THE CONTRACTOR SHALL PLAN FOR POTENTIAL OF HAVING TO EXCAVATE ADDITIONAL CONTAMINATED SOIL BEYOND THE BASELINE EXCAVATION LIMITS SHOWN LATERALLY (AND TO ADDITIONAL DEPTH IN THE SHORELINE PROTECTION ZONE).
5. CONTRACTOR SHALL NOT EXCAVATE BEYOND THE BASELINE EXCAVATION LIMITS SHOWN ON THE EXCAVATION PLANS WITHOUT AUTHORIZATION AND DIRECTION FROM ECOLOGY OR ECOLOGY'S REPRESENTATIVE. IF SIGNIFICANT ADDITIONAL CONTAMINATED SOILS ARE REQUIRED TO BE REMOVED BEYOND THE LIMITS SHOWN, ECOLOGY RESERVES THE RIGHT TO NOT PERFORM PORTIONS OF THE PRIORITY EXCAVATION AREAS SHOWN.
6. ALL EXCAVATIONS SHALL BE BACKFILLED TO EXISTING GRADE. FINISH GRADING SHALL OCCUR OVER ENTIRE SITE, REGARDLESS OF PRIORITY AREA, AFTER COMPLETION OF ALL EXCAVATION OR AT THE DIRECTION OF ECOLOGY OR ECOLOGY'S REPRESENTATIVE.

PRIORITY AREAS:

- PRIORITY 1 (SOUTHERN SHORELINE PROTECTION ZONE, WETLAND EXCAVATION AREA, PRESS PIT EXCAVATION AREA & SWALE FOOTPRINT.)
- PRIORITY 2 (NORTHERN SHORELINE PROTECTION ZONE)
- PRIORITY 3 (NORTHERN UPLAND EXCAVATIONS)
- PRIORITY 4 (WESTERN UPLAND EXCAVATIONS)

LEGEND:

- PROPERTY LINE
- SHORELINE PROTECTION ZONE (SEE DRAWING G1.7)
- ORDINARY HIGH WATER (OHW)
- MEAN HIGHER HIGH WATER (EL. +7.55')
- POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION LIMIT (SEE DRAWINGS C3.2 AND C3.3)



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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
EXCAVATION PRIORITY/SEQUENCING PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.6
SHEET NO.	7 OF 32

BID SET

NOTES:

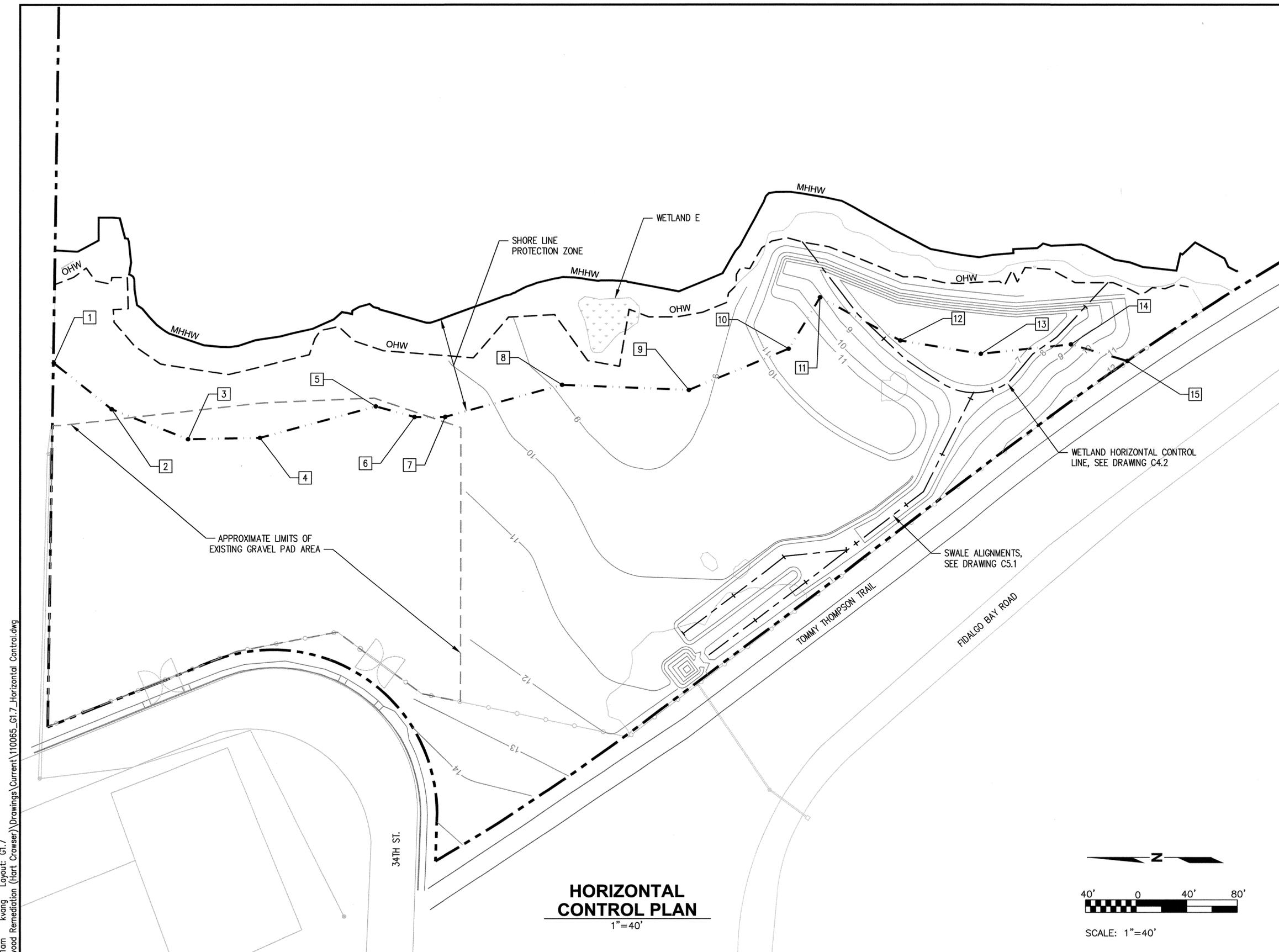
1. THE ORDINARY HIGH WATER (OHW) LINE SHOWN IS APPROXIMATE. LINE WILL BE MARKED BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE PRIOR TO CONSTRUCTION. SEE DRAWING C1.1.
2. INSTALLATION OF SHEET PILE WALL ADJACENT TO OHW FOR BASELINE EXCAVATIONS SHALL BE OFFSET FROM THE OHW LINE AS SHOWN ON DRAWING C3.5.
3. SHORELINE PROTECTION ZONE IS AN APPROXIMATE 75' OFFSET FROM MHHW AS SHOWN. SEE EXCAVATION PLANS AND SPECIFICATIONS FOR EXCAVATION REQUIREMENTS SPECIFIC TO SHORELINE PROTECTION ZONE.
4. SEE DRAWING G1.0 FOR SURVEY DATUM NOTES.
5. SEE DRAWINGS C3.2 THRU C3.6 FOR BASELINE EXCAVATION CONTROL COORDINATES. EXCAVATION AREAS NOT SHOWN HERE FOR CLARITY.

LEGEND:

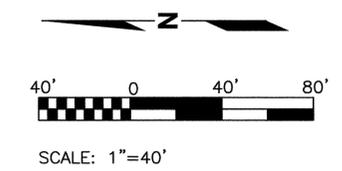
-  PROPERTY LINE
-  OHW
-  SHORELINE PROTECTION ZONE
-  10
-  MHHW
-  SHORELINE PROTECTION ZONE CONTROL COORDINATE (SEE TABLE BELOW)

SHORELINE PROTECTION ZONE CONTROL COORDINATES

POINT NAME	NORTHING	EASTING
1	550428.5	1211841.1
2	550382.7	1211804.2
3	550322.3	1211780.1
4	550265.3	1211781.2
5	550173.6	1211806.4
6	550143.0	1211797.9
7	550118.7	1211797.9
8	550026.3	1211823.4
9	549926.0	1211819.3
10	549847.1	1211852.1
11	549822.2	1211892.5
12	549758.8	1211858.6
13	549695.1	1211848.0
14	549623.7	1211855.6
15	549579.2	1211842.5



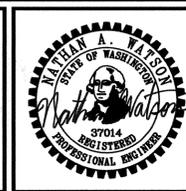
HORIZONTAL CONTROL PLAN
1"=40'



Plotted: Apr 15, 2011 - 11:11am kvang Layout: G1.7
M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_G1.7_Horizontal_Control.dwg

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DEPARTMENT OF **ECOLOGY**
State of Washington

In Coordination with GBH Investments

CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON

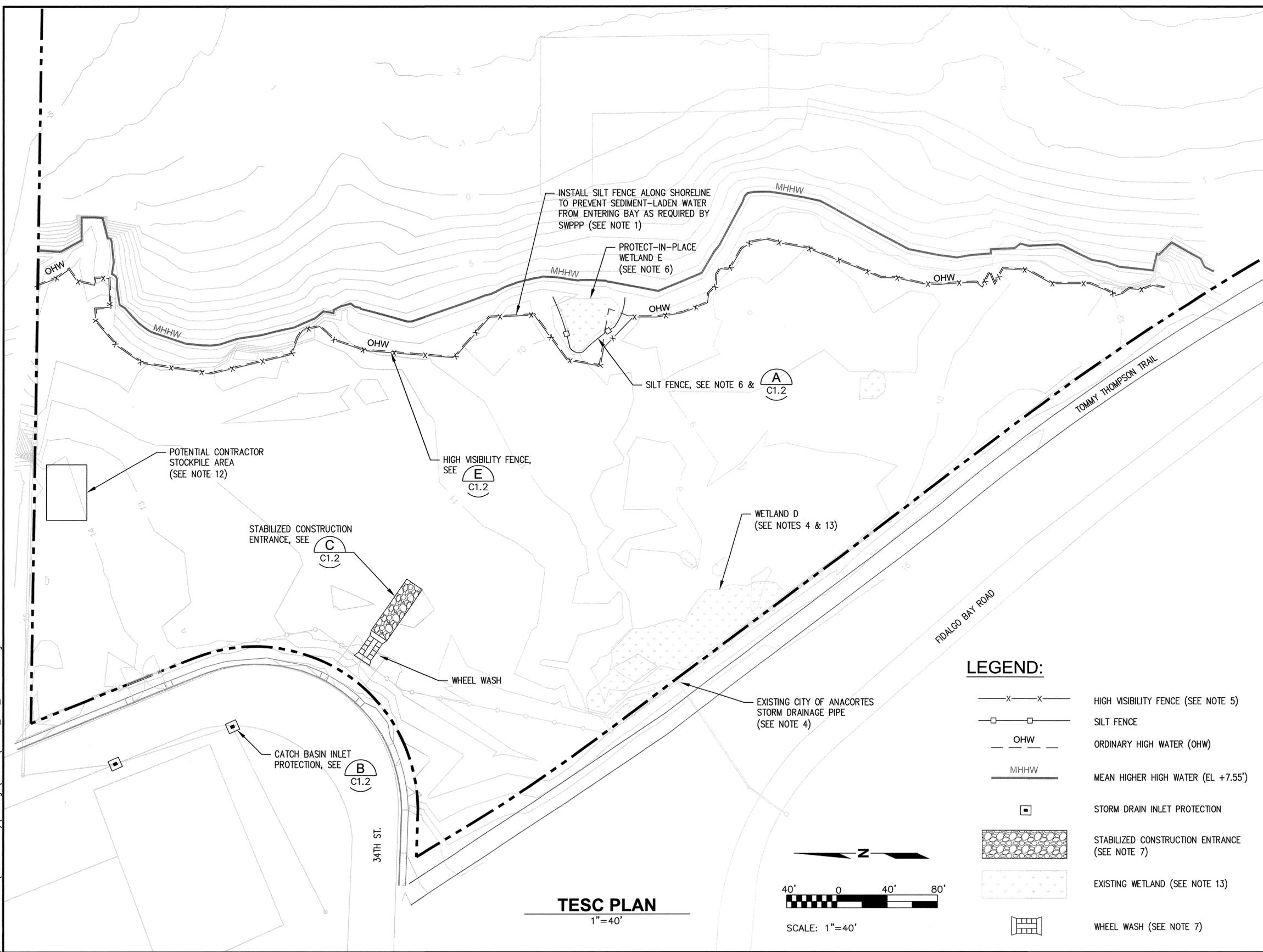
HORIZONTAL CONTROL PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	G1.7
SHEET NO.	8 OF 32

BID SET

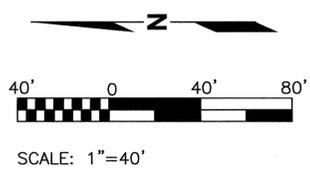
NOTES:

1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND UPDATE A SWPPP IN ACCORDANCE WITH THE SUBSTANTIVE REQUIREMENTS OF THE CONSTRUCTION STORMWATER GENERAL PERMIT (CSGP). THE IMPLEMENTATION OF TESC MEASURES AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND MODIFYING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED.
2. THAT PORTION OF PRECIPITATION OR STORMWATER THAT FALLS ON THE SITE THAT DOES NOT NATURALLY PERCOLATE INTO THE GROUNDWATER SHALL BE MANAGED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION STORMWATER GENERAL PERMIT. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
3. CONTRACTOR SHALL ANTICIPATE ENCOUNTERING GROUNDWATER IN REQUIRED EXCAVATIONS. CONSTRUCTION WATER THAT IS REMOVED FROM EXCAVATIONS OR RESULTS FROM THE DEWATERING OF EXCAVATED SOILS MAY BE MANAGED THROUGH INFILTRATION OR OTHER REQUIREMENTS OF THE CSGP, POTENTIALLY REQUIRING TREATMENT AND/OR DISPOSAL. CONSTRUCTION WATER ORIGINATING FROM CONTAMINATED EXCAVATIONS SHALL NOT BE INFILTRATED INTO AREAS WHERE REMEDIAL EXCAVATION HAS ALREADY BEEN COMPLETED. SEE SPECIFICATIONS FOR SITE CONSTRUCTION WATER HANDLING REQUIREMENTS.
4. DISCHARGE FROM THE EXISTING CITY OF ANACORTES STORM DRAINAGE PIPE THAT CAN NOT BE INFILTRATED ON-SITE, MAY REQUIRE ROUTING FOR SURFACE WATER DISCHARGE OR OTHER MANAGEMENT UNTIL THE PERMANENT STORMWATER BIOSWALE SYSTEM CONSTRUCTION IS COMPLETE. CITY STORMWATER ROUTED FOR SURFACE WATER DISCHARGE WITHOUT CONTACTING SITE SOILS IS NOT SUBJECT TO THE REQUIREMENTS OF THE CONSTRUCTION STORMWATER GENERAL PERMIT. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
5. OHW LINE SHOWN IS APPROXIMATE. ECOLOGY OR ECOLOGY'S REPRESENTATIVE WILL DESIGNATE AND MARK THE OHW LINE FOR THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INSTALL HIGH VISIBILITY FENCE ALONG THIS DESIGNATED OHW LINE TO ENSURE THAT NO EXCAVATION OR ANY OTHER WORK OCCURS WATERWARD OF OHW.
6. PROJECT INCLUDES WORK ADJACENT TO EXISTING WETLAND E. WETLAND E SHALL BE SURROUNDED BY SILT FENCE DURING CONSTRUCTION. ANY DAMAGE TO EXISTING WETLAND E SHALL BE REPAIRED. SEE NOTE 13.
7. STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ALL VEHICLE EXIT POINTS WHERE SEDIMENT MAY BE TRANSPORTED ONTO CITY OF ANACORTES ROADWAYS. A MECHANICAL WHEEL WASH SHALL BE PROVIDED AT EACH VEHICLE EXIT POINT. SEE SPECIFICATIONS FOR REQUIREMENTS FOR SITE DECONTAMINATION FACILITY AND CONTAMINATION EXCLUSION ZONE.
8. THE TESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO AND IN CONJUNCTION WITH ALL CLEARING, GRADING, EXCAVATION, STAGING AND STOCKPILING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND CONSTRUCTION WATER DO NOT ENTER FIDALGO BAY, WETLAND E OR VIOLATE CITY OF ANACORTES REGULATIONS. ALL TESC MEASURES SHALL BE REMOVED AT THE APPROPRIATE TIME DURING CONSTRUCTION SUCH THAT NONE REMAIN AT THE END OF CONSTRUCTION. SEQUENCE AS REQUIRED TO MATCH THE WORK.
9. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE FACILITIES SHALL BE MODIFIED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
10. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY OR AS DIRECTED BY THE CITY OF ANACORTES TO ENSURE THEIR CONTINUED FUNCTIONING.
11. SEE LANDSCAPE DRAWING L1.1 FOR FINAL SITE STABILIZATION INCLUDING SEEDING AND PLANTING REQUIREMENTS.
12. ALL CONTRACTOR STOCKPILES AND LAYDOWN AREAS SHALL BE LOCATED WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL COVER AND PROTECT STOCKPILES PER DETAIL D ON DRAWING C1.2. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
13. ALL WETLAND AREAS EXCEPT WETLAND E WILL BE IMPACTED AND REMOVED BY REQUIRED REMEDIAL EXCAVATION.



LEGEND:

- x — x — HIGH VISIBILITY FENCE (SEE NOTE 5)
- □ — SILT FENCE
- OHW — ORDINARY HIGH WATER (OHW)
- MHHW — MEAN HIGHER HIGH WATER (EL +7.55')
- STORM DRAIN INLET PROTECTION
- [Hatched Box] STABILIZED CONSTRUCTION ENTRANCE (SEE NOTE 7)
- [Stippled Box] EXISTING WETLAND (SEE NOTE 13)
- [Brick Box] WHEEL WASH (SEE NOTE 7)



TESC PLAN
1"=40'

Plotted: Apr 15, 2011 - 9:03am kvang Layout: C1.1
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C1.1_TESC_Plan.dwg

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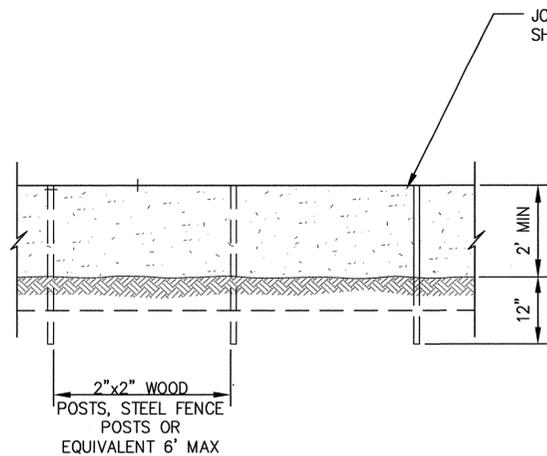
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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON

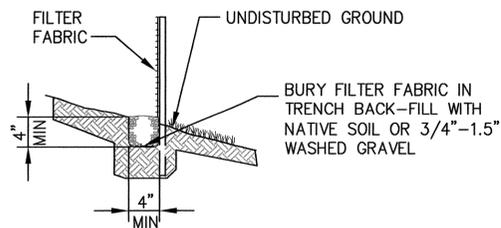
TEMPORARY EROSION AND
SEDIMENTATION CONTROL PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C1.1
SHEET NO.	9 OF 32

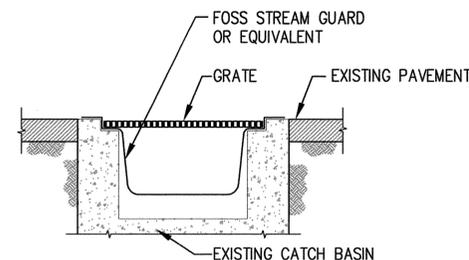
BID SET



ELEVATION



CROSS SECTION



MAINTENANCE STANDARDS:

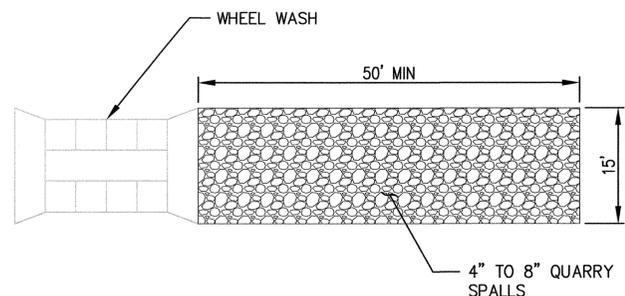
ANY ACCUMULATED SEDIMENT ON OR AROUND THE FILTER FABRIC SHALL BE REMOVED IMMEDIATELY. SEDIMENT SHALL NOT BE REMOVED BY FLUSHING W/WATER. ALL SEDIMENT MUST BE DISPOSED OF AND HAULED OFF-SITE.

NOTES:

- UPON COMPLETION OF THE PROJECT OR WHEN DIRECTED BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE, THE FILTER FABRIC FENCE SHALL BE REMOVED IN ITS ENTIRETY AND DISPOSED OF BY THE CONTRACTOR.
- LOCATE SILT FENCE 1 FOOT MINIMUM BEYOND OR OUTSIDE OF LIMITS OF WETLANDS.

A SILT FENCE
C1.1 NTS

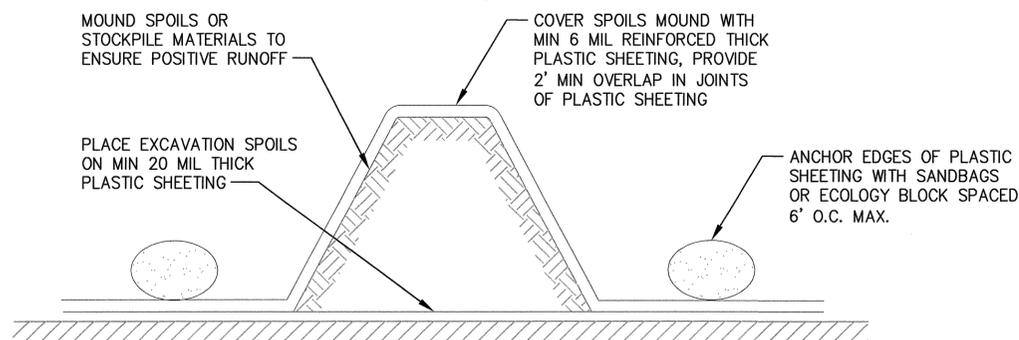
B CATCH BASIN INLET PROTECTION
C1.1 NTS



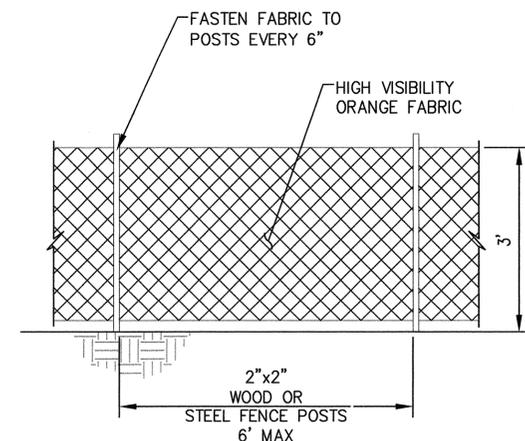
NOTES:

STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SPECIFIED IN 2005 DOE SMMWW UNLESS NOTED OTHERWISE.

C WHEEL WASH AND STABILIZED CONSTRUCTION ENTRANCE
C1.1 NTS



D STOCKPILE PROTECTION
C1.1 NTS



E HIGH VISIBILITY FENCE
C1.1 NTS

Plotted: Apr 15, 2011 - 9:06am kvang Layout: C1.2
M: \2010\110065 Custom Remediation (Hart Crowser)\Drawings\Current\110065_C1.2_TESC_Details.dwg

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**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**
TEMPORARY EROSION AND
SEDIMENTATION CONTROL DETAILS

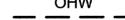
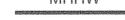
DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C1.2
SHEET NO.	10 OF 32

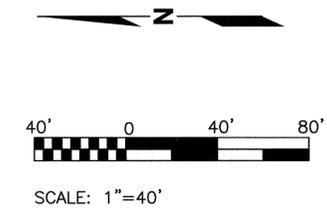
BID SET

NOTES:

1. SITE CLEARING/GRUBBING AND DEMOLITION WERE PREVIOUSLY PERFORMED BY OTHERS. PREVIOUS DEMOLITION INCLUDED HISTORIC CONCRETE STRUCTURES AND REMOVAL OF MISCELLANEOUS SITE SURFACE DEBRIS. SEE ALSO NOTE 3.
2. UNLESS NOTED OTHERWISE, ALL ITEMS MARKED FOR DEMOLITION AND/OR REMOVAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PER THE SPECIFICATIONS.
3. PREVIOUS SITE DEMOLITION DID NOT INCLUDE THE AREA WITHIN APPROXIMATELY 10 FEET OF OHW LINE. CONTRACTOR SHALL CLEAR AND GRUB THIS AREA AND REMOVE MISCELLANEOUS DEBRIS. CONTRACTOR SHALL TAKE CARE TO PREVENT ANY IMPACT TO SHORELINE BELOW OHW.
4. WETLAND E SHALL BE PROTECTED-IN-PLACE THROUGHOUT CONSTRUCTION. NO WORK OR EQUIPMENT IS ALLOWED WITHIN THE WETLAND AREA AND CONTRACTOR SHALL TAKE CARE TO PREVENT ANY DAMAGE OR IMPACT TO THIS WETLAND. ALL OTHER WETLANDS WILL BE IMPACTED AND REMOVED BY REQUIRED EXCAVATION.
5. SEE SPECIFICATIONS FOR MONITORING WELL ABANDONMENT & DEMOLITION REQUIREMENTS. DEMOLITION SHALL INCLUDE EXISTING PROTECTING BOLLARDS.
6. TREATED AND/OR UNTREATED TIMBER PILES MAY BE ENCOUNTERED IN EXCAVATION AREAS. MOST EXISTING TIMBER PILES WILL BE REMOVED BY OTHERS DURING PREVIOUS SITE DEMOLITION ACTIVITIES. SEE SPECIFICATIONS FOR CUT-OFF AT EXCAVATION LIMITS AND DISPOSAL REQUIREMENTS IF PILES ARE ENCOUNTERED IN EXCAVATION.
7. UNLESS NOTED OTHERWISE, ALL EXISTING UTILITIES ON-SITE ARE BELIEVED TO BE ABANDONED. DEMOLISH ANY UTILITIES WITHIN EXCAVATION LIMITS. CAP AT EXCAVATION LIMITS UNLESS NOTED OTHERWISE.
8. CONTRACTOR SHALL CLEAR AND GRUB ANY VEGETATION REMAINING OUTSIDE OF REMEDIAL EXCAVATION AREAS PRIOR TO FINISH GRADING.

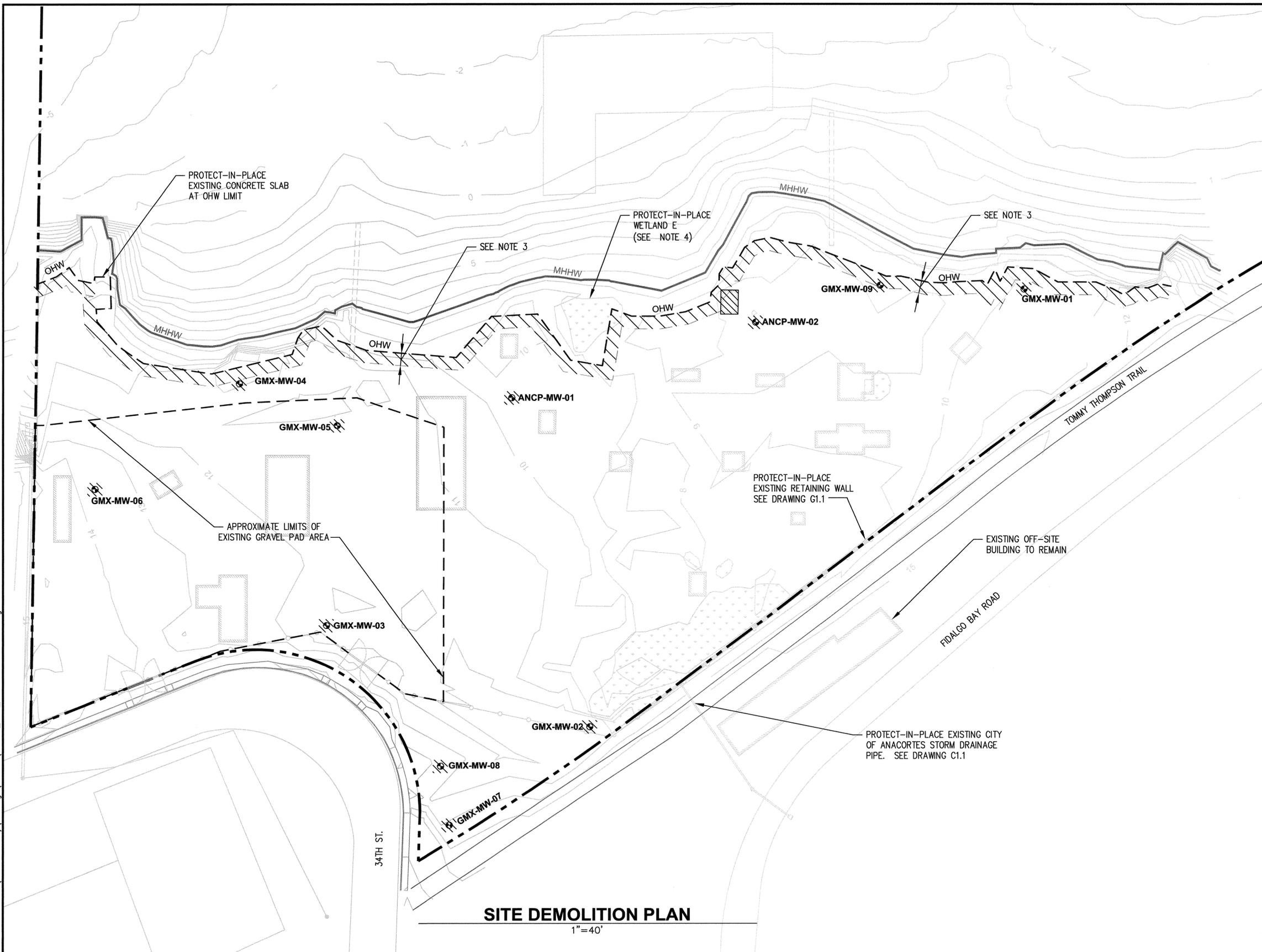
LEGEND:

-  OHW
ORDINARY HIGH WATER (OHW)
-  PROPERTY LINE
-  MHHW
MEAN HIGHER HIGH WATER (EL +7.55')
-  DEMOLISH CONCRETE FOUNDATION
-  MONITORING WELL (SEE NOTE 5)
-  EXISTING WETLAND (SEE NOTE 4)
-  CONCRETE STRUCTURES PREVIOUSLY DEMOLISHED BY OTHERS (SEE NOTE 1)



SITE DEMOLITION PLAN

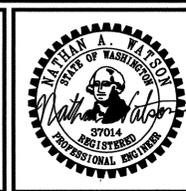
1"=40'



Plotted: Apr 15, 2011 - 9:10am kvang Layout: C1.1
M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C2.1_Site Demolition Plan.dwg

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State of Washington

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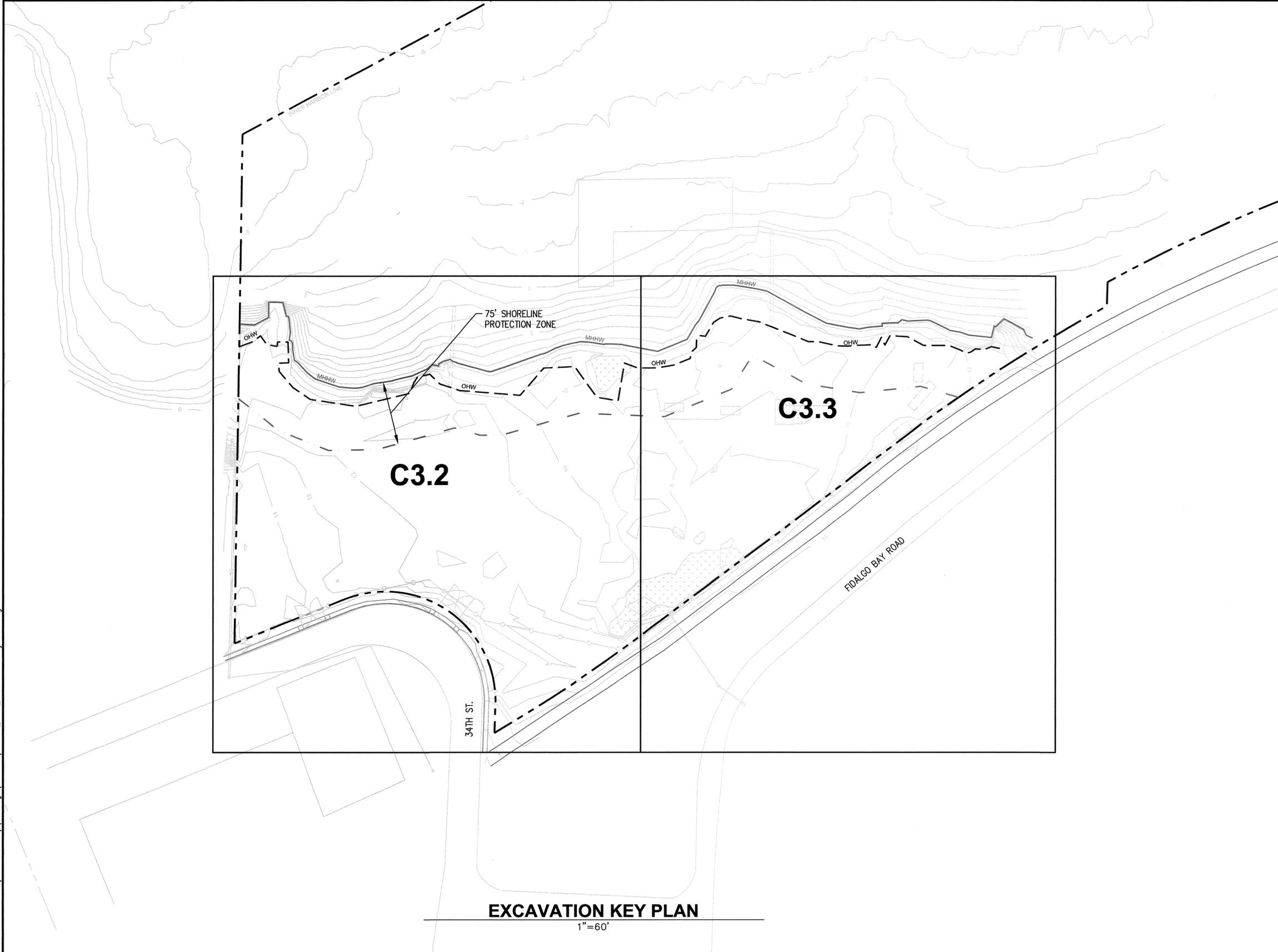
**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

SITE DEMOLITION PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C2.1
SHEET NO.	11 OF 32

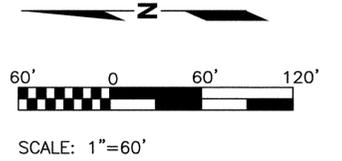
BID SET

Plotted: Apr 15, 2011 - 9:12am kvang Layout: C3.1
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.1_Excavation Key Plan.dwg



- NOTES:**
1. THE PROJECT DOES NOT HAVE PERMIT AUTHORIZATION TO WORK WATERWARD OF OHW. NO EXCAVATION OR ANY OTHER WORK SHALL OCCUR WATERWARD OF OHW UNDER ANY CIRCUMSTANCE. CONTRACTOR'S EQUIPMENT SHALL NOT CROSS THE OHW LINE OR IMPACT THE SHORELINE BEYOND IN ANY WAY.
 2. SOIL AND MATERIAL REMOVED DURING EXCAVATION, INCLUDING CONSTRUCTION WATER, SHALL BE HANDLED PER THE SPECIFICATIONS. CONTRACTOR SHALL CONTACT ECOLOGY OR ECOLOGY'S REPRESENTATIVE IMMEDIATELY UPON NOTICING EVIDENCE OF CONTAMINATION OR SUSPECTED CONTAMINATED MATERIAL BEYOND THAT NOTED HEREIN.
 3. EXPLORATIONS IDENTIFIED SIGNIFICANT QUANTITIES OF SAW DUST, WOOD WASTE AND OTHER DEBRIS WITHIN THE FILL. SEE DRAWING G1.4 AND GEOTECHNICAL DATA FOR FURTHER INFORMATION.
 4. CONTRACTOR SHALL ANTICIPATE ENCOUNTERING GROUNDWATER IN REQUIRED EXCAVATIONS. IT IS EXPECTED THAT REMOVING ALL WATER FROM EXCAVATIONS WILL BE IMPRACTICAL. CONTRACTOR SHALL ANTICIPATE EXCAVATION, SAMPLING AND BACKFILL WILL OCCUR BELOW WATER WITHIN EXCAVATIONS.
 5. CONTRACTOR SHALL ANTICIPATE DEBRIS WHEN INSTALLING SHEET PILE ALONG THE SHORELINE THAT MAY REQUIRE PRE-EXCAVATION TO DRIVE.
 6. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE NOTED.
 7. SEE SPECIFICATIONS FOR ARCHEOLOGICAL MONITORING REQUIREMENTS DURING EXCAVATION
 8. EXCAVATION AREAS SHALL BE BACKFILLED TO EXISTING GRADE PER DRAWING C3.7 UNLESS NOTED OTHERWISE. SEE DRAWING C4.1 FOR FINISH GRADING FOLLOWING BACKFILL.
 9. SEE DRAWING G1.6 FOR PRIORITY AND SEQUENCING REQUIREMENTS FOR EXCAVATION AREAS.
 10. SEE DRAWING G1.0 FOR SURVEY DATUM NOTES.

- LEGEND:**
- PROPERTY LINE
 - ORDINARY HIGH WATER (OHW)
 - SHORELINE PROTECTION ZONE (SEE DRAWING G1.7)
 - MEAN HIGHER HIGH WATER (EL +7.55')



EXCAVATION KEY PLAN
1"=60'

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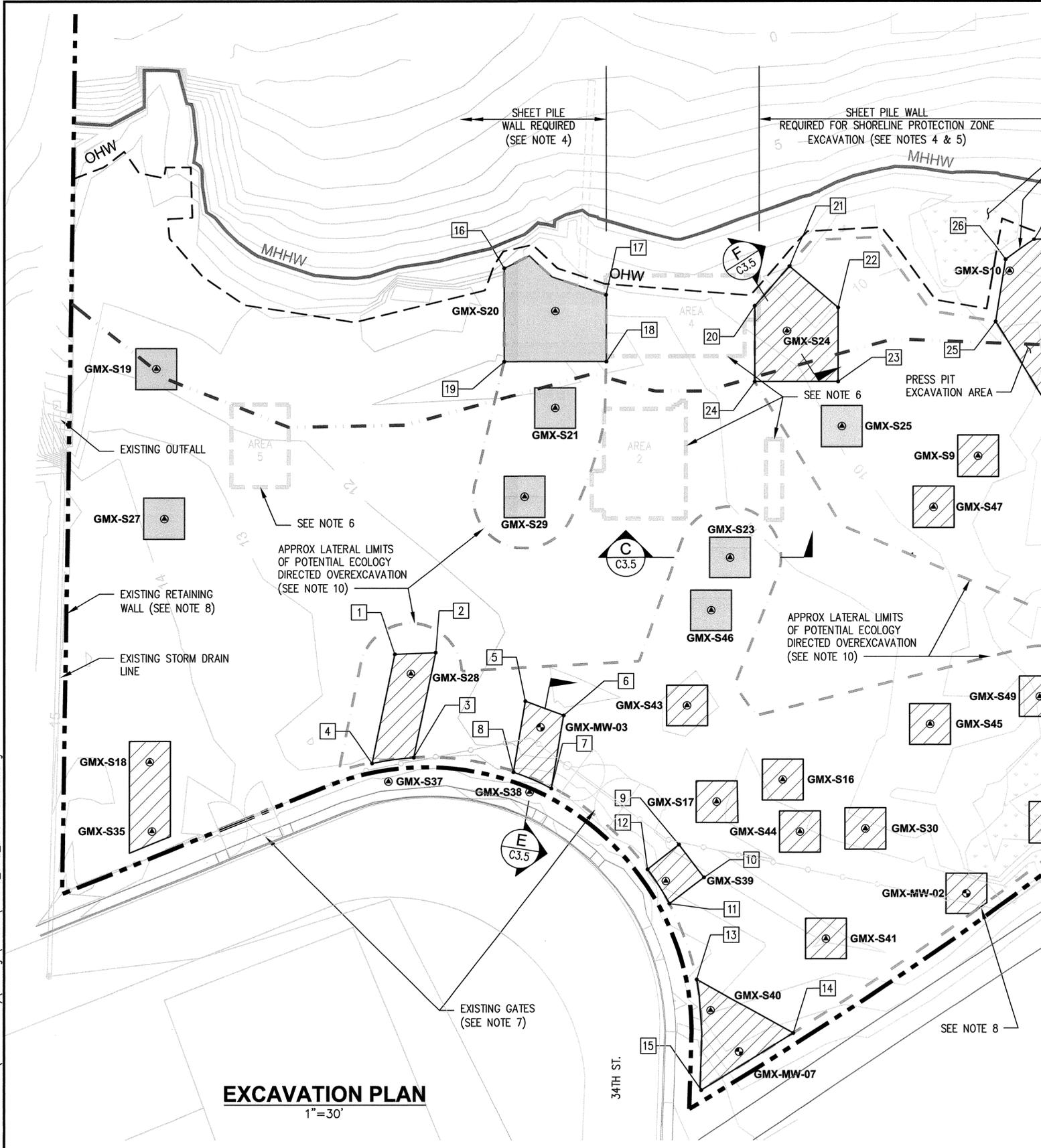
**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

EXCAVATION KEY PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.1
SHEET NO.	12 OF 32

BID SET

Plotted: Apr 14, 2011 - 1:35pm kvang Layout: C3.2
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.2_Excavation Plan.dwg

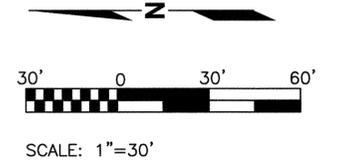


EXCAVATION PLAN
 1"=30'

MATCHLINE SEE SHEET C3.3

LEGEND:

- PROPERTY LINE
- OHW
- MHHW
- SHORELINE PROTECTION ZONE (SEE DRAWING G1.7)
- POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION LIMIT
- EXISTING CONTOUR
- 4 FEET MIN EXCAVATION BELOW EXISTING GRADE (SEE NOTE 1)
- 6 FEET MIN EXCAVATION BELOW EXISTING GRADE (SEE NOTE 1)
- ENVIRONMENTAL EXPLORATION LOCATION (SEE DRAWING C3.6 FOR COORDINATES)
- 2007 EXCAVATION AREA (SEE NOTE 6)
- EXCAVATION CONTROL COORDINATE (SEE DRAWING C3.6)

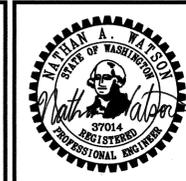


NOTES:

1. HATCHED BASELINE EXCAVATION LIMITS SHOWN ON THIS SHEET INDICATE BOTH BASELINE DEPTH AND LATERAL EXTENTS. UNLESS NOTED OTHERWISE, ASSUME THAT BASELINE EXCAVATION AREAS SHALL BE 20'X20' SQUARE AND CENTERED ON THE PARTICULAR ENVIRONMENTAL EXPLORATION LOCATION SHOWN. SEE DRAWING C3.5 FOR TYPICAL EXCAVATION REQUIREMENTS INCLUDING ECOLOGY DIRECTED OVEREXCAVATION, EXCAVATION OFFSETS FROM PROPERTY LINES AND BACKFILL.
2. SEE DRAWING C3.5 FOR TYPICAL SHORELINE PROTECTION ZONE EXCAVATION REQUIREMENTS INCLUDING SHEET PILE SHORING AND POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION BEYOND THE BASELINE EXCAVATION LIMITS FOR BOTH DEPTH AND LATERAL EXTENT.
3. SEE DRAWING C3.5 FOR TYPICAL UPLAND EXCAVATION REQUIREMENTS (OUTSIDE SHORELINE PROTECTION ZONE) INCLUDING POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION BEYOND THE BASELINE EXCAVATION LIMITS.
4. TO MAXIMIZE REMOVAL OF CONTAMINATED SOILS WITHIN THE SHORELINE PROTECTION ZONE, CONTRACTOR SHALL INSTALL TEMPORARY SHEET PILE WALL NEAR THE OHW LINE FOR SHORING OF BASELINE EXCAVATION AREAS SHOWN. SEE DRAWING C3.5 FOR ADDITIONAL REQUIREMENTS.
5. CONTRACTOR SHALL NOT PERFORM ANY WORK WITHIN OR DISRUPT WETLAND E. AT WETLAND E, SHEET PILE WALL SHALL NOT FOLLOW THE OHW LINE, BUT SHALL ALIGN WALL WITH 5' OFFSET FROM UPLAND SIDE OF WETLAND BOUNDARY.
6. SEE DRAWING G1.1 FOR ADDITIONAL INFORMATION REGARDING PREVIOUS 2007 EXCAVATION AREAS INCLUDING DEPTH OF EXCAVATION AND BACKFILL MATERIALS. BASED ON THESE PREVIOUS CONTAMINATED SOIL REMOVAL EFFORTS, NO EXCAVATION IS ANTICIPATED IN THESE AREAS.
7. SEE DRAWING C1.1 AND SPECIFICATIONS FOR TEMPORARY EROSION CONTROL REQUIREMENTS INCLUDING CONSTRUCTION ENTRANCE AND HANDLING OF CONSTRUCTION WATER FROM EXCAVATIONS.
8. CONTRACTOR SHALL MAINTAIN MINIMUM OFFSET FROM EXISTING RETAINING WALLS AND PROPERTY LINES DURING EXCAVATION AS SHOWN ON DRAWING C3.5 UNLESS DIRECTED OTHERWISE BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE. SEE DRAWING G1.1 FOR APPROXIMATE LENGTH OF RETAINING WALL.
9. CONTRACTOR SHALL PROTECT-IN-PLACE AND NOT IMPACT ANY CITY OF ANACORTES IMPROVEMENTS INCLUDING TOMMY THOMPSON TRAIL, EXISTING RETAINING WALL, BENCHES AND FENCING. ANY DAMAGE SHALL BE PROMPTLY REPAIRED AT CONTRACTOR'S EXPENSE.
10. POTENTIAL LATERAL LIMITS OF ECOLOGY DIRECTED OVEREXCAVATION SHOWN IS BASED ON ENVIRONMENTAL REPORTS PROVIDED IN APPENDIX TO SPECIFICATIONS INCLUDING ENGINEERING DESIGN REPORT.

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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

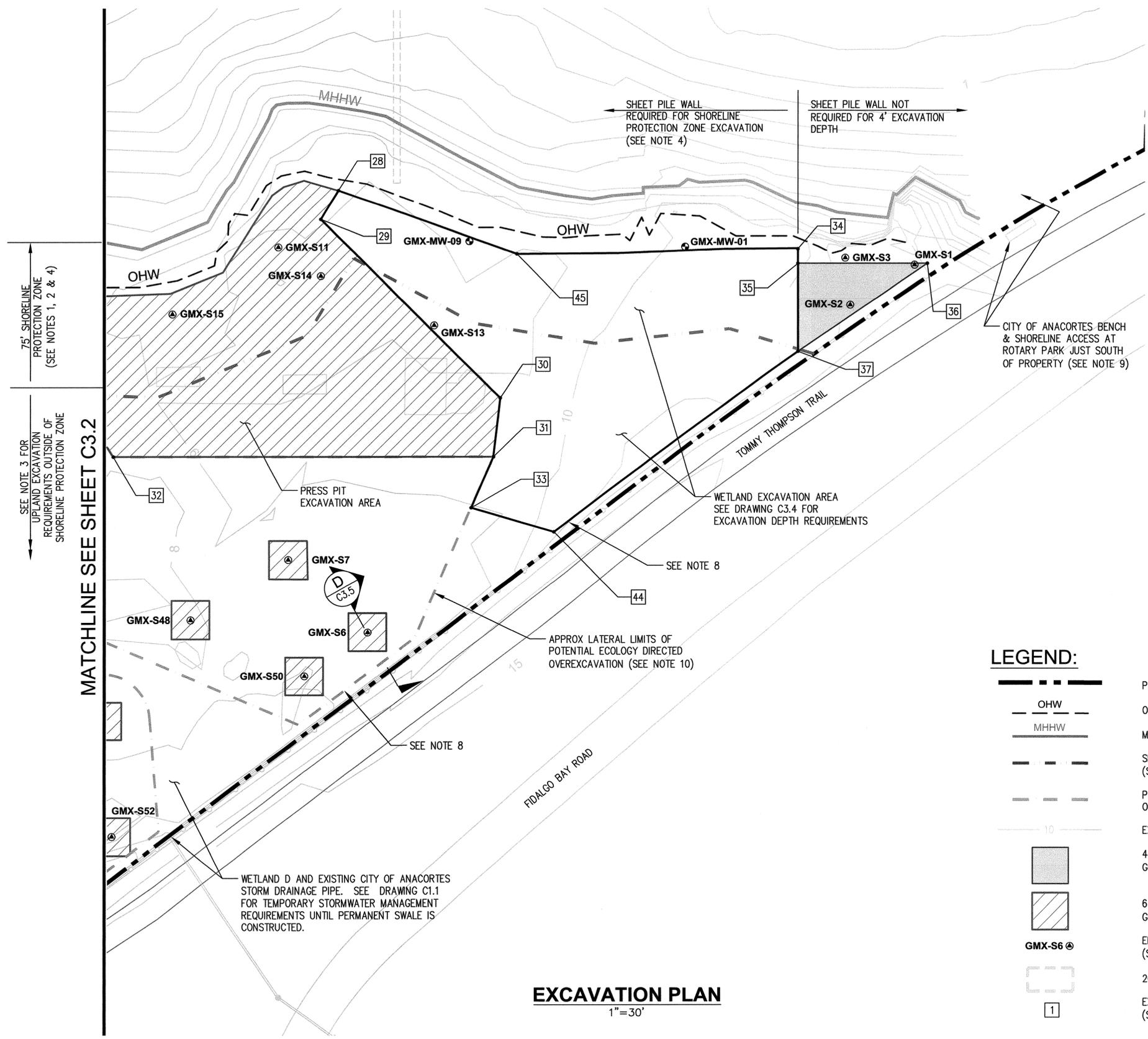
EXCAVATION PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.2
SHEET NO.	13 OF 32

BID SET

NOTES:

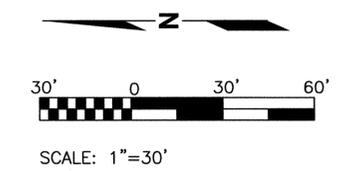
- HATCHED BASELINE EXCAVATION LIMITS SHOWN ON THIS SHEET INDICATE BOTH BASELINE DEPTH AND LATERAL EXTENTS. UNLESS NOTED OTHERWISE, ASSUME THAT BASELINE EXCAVATION AREAS SHALL BE 20'X20' SQUARE AND CENTERED ON THE PARTICULAR ENVIRONMENTAL EXPLORATION LOCATION SHOWN. SEE DRAWING C3.5 FOR TYPICAL EXCAVATION REQUIREMENTS INCLUDING ECOLOGY DIRECTED OVEREXCAVATION, EXCAVATION OFFSETS FROM PROPERTY LINES AND BACKFILL.
- SEE DRAWING C3.5 FOR TYPICAL SHORELINE PROTECTION ZONE EXCAVATION REQUIREMENTS INCLUDING SHEET PILE SHORING AND POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION BEYOND THE BASELINE EXCAVATION LIMITS FOR BOTH DEPTH AND LATERAL EXTENT.
- SEE DRAWING C3.5 FOR TYPICAL UPLAND EXCAVATION REQUIREMENTS (OUTSIDE SHORELINE PROTECTION ZONE) INCLUDING POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION BEYOND THE BASELINE EXCAVATION LIMITS.
- TO MAXIMIZE REMOVAL OF CONTAMINATED SOILS WITHIN THE SHORELINE PROTECTION ZONE, CONTRACTOR SHALL INSTALL TEMPORARY SHEET PILE WALL NEAR THE OHW LINE FOR SHORING OF BASELINE EXCAVATION AREAS SHOWN. SEE DRAWING C3.5 FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL NOT PERFORM ANY WORK WITHIN OR DISRUPT WETLAND E. AT WETLAND E, SHEET PILE WALL SHALL NOT FOLLOW THE OHW LINE, BUT SHALL ALIGN WALL WITH 5' OFFSET FROM UPLAND SIDE OF WETLAND BOUNDARY.
- SEE DRAWING G1.1 FOR ADDITIONAL INFORMATION REGARDING PREVIOUS 2007 EXCAVATION AREAS INCLUDING DEPTH OF EXCAVATION AND BACKFILL MATERIALS. BASED ON THESE PREVIOUS CONTAMINATED SOIL REMOVAL EFFORTS, NO EXCAVATION IS ANTICIPATED IN THESE AREAS.
- SEE DRAWING C1.1 AND SPECIFICATIONS FOR TEMPORARY EROSION CONTROL REQUIREMENTS INCLUDING CONSTRUCTION ENTRANCE AND HANDLING OF CONSTRUCTION WATER FROM EXCAVATIONS.
- CONTRACTOR SHALL MAINTAIN MINIMUM OFFSET FROM EXISTING RETAINING WALLS AND PROPERTY LINES DURING EXCAVATION AS SHOWN ON DRAWING C3.5 UNLESS DIRECTED OTHERWISE BY ECOLOGY OR ECOLOGY'S REPRESENTATIVE. SEE DRAWING G1.1 FOR APPROXIMATE LENGTH OF RETAINING WALL.
- CONTRACTOR SHALL PROTECT-IN-PLACE AND NOT IMPACT ANY CITY OF ANACORTES IMPROVEMENTS INCLUDING TOMMY THOMPSON TRAIL, EXISTING RETAINING WALL, BENCHES AND FENCING. ANY DAMAGE SHALL BE PROMPTLY REPAIRED AT CONTRACTOR'S EXPENSE.
- POTENTIAL LATERAL LIMITS OF ECOLOGY DIRECTED OVEREXCAVATION SHOWN IS BASED ON ENVIRONMENTAL REPORTS PROVIDED IN APPENDIX TO SPECIFICATIONS INCLUDING ENGINEERING DESIGN REPORT.



LEGEND:

- PROPERTY LINE
- ORDINARY HIGH WATER (OHW)
- MEAN HIGHER HIGH WATER (EL. +7.55')
- SHORELINE PROTECTION ZONE (SEE DRAWING G1.7)
- POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION LIMIT
- EXISTING CONTOUR
- 4 FEET MIN EXCAVATION BELOW EXISTING GRADE (SEE NOTE 1)
- 6 FEET MIN EXCAVATION BELOW EXISTING GRADE (SEE NOTE 1)
- ENVIRONMENTAL EXPLORATION LOCATION (SEE DRAWING C3.6 FOR COORDINATES)
- 2007 EXCAVATION AREA (SEE NOTE 6)
- EXCAVATION CONTROL COORDINATE (SEE DRAWING C3.6)

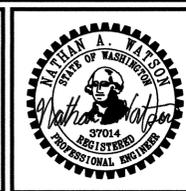
EXCAVATION PLAN
1"=30'



Plotted: Apr 15, 2011 - 9:13am kvang Layout: C3.3
 Mr. \2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.3_Excavation Plan.dwg

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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
EXCAVATION PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.3
SHEET NO.	14 OF 32

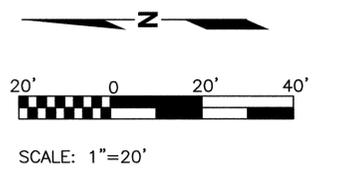
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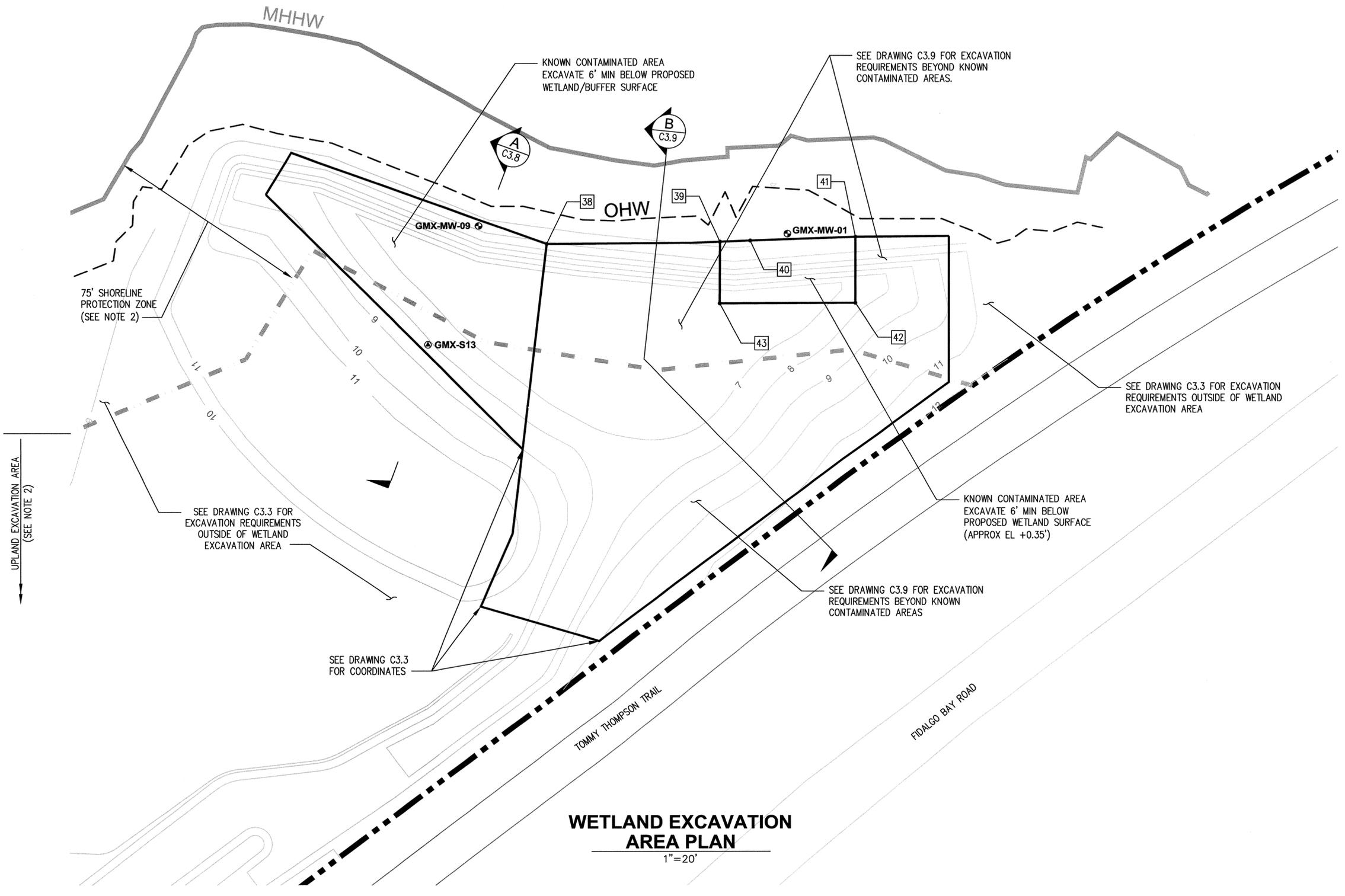
1. WITHIN WETLAND EXCAVATION AREA, DEPTH OF EXCAVATION IS DETERMINED BY FINISHED GRADES OF WETLAND AREA RATHER THAN DEPTH BELOW EXISTING GRADE. SEE DRAWING C4.2 FOR PROPOSED WETLAND AREA FINISH CONTOURS.
2. SEE DRAWING C3.8 AND C3.9 FOR POTENTIAL ECOLOGY DIRECTED OVEREXCAVATION REQUIREMENTS.
3. CONTRACTOR SHALL INSTALL TEMPORARY SHEET PILE WALL FOR SHORING NEAR THE OHW LINE FOR THE ENTIRE SHORELINE SIDE OF THE WETLAND EXCAVATION AREA. SEE GRADING PLANS FOR TEMPORARY BERM CONSTRUCTION REQUIREMENTS PRIOR TO REMOVAL OF THE SHEET PILE.
4. SEE DRAWINGS C4.5 AND C4.6 FOR BACKFILL AND CONSTRUCTION DETAILS SPECIFIC TO WETLAND AREA. IN SOUTH SIDE WETLAND BUFFER AREA, EXCAVATION DEPTH IN SOME AREAS IS DICTATED BY WETLAND SHORELINE PROTECTION LAYER.

LEGEND:

-  PROPERTY LINE
-  OHW
-  MHHW
-  SHORELINE PROTECTION ZONE
-  10
-  EXCAVATION CONTROL COORDINATE (SEE DRAWING C3.6)
-  GMX-S6 @ ENVIRONMENTAL EXPLORATION LOCATION (SEE DRAWING C3.6 FOR COORDINATES)



WETLAND EXCAVATION AREA PLAN
1"=20'

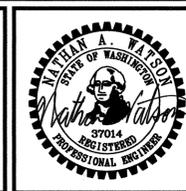


DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.4
SHEET NO.	15 OF 32

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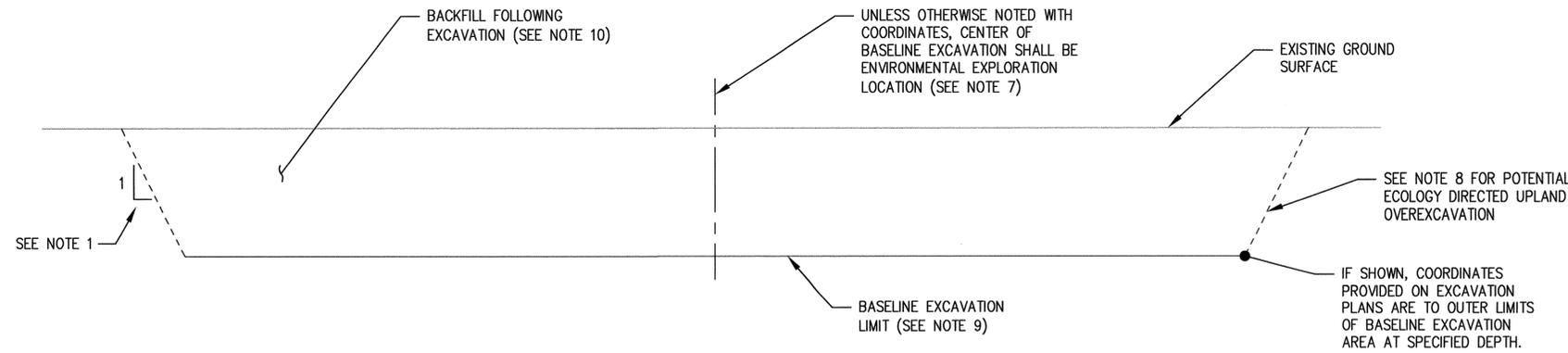
CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON
WETLAND EXCAVATION AREA PLAN



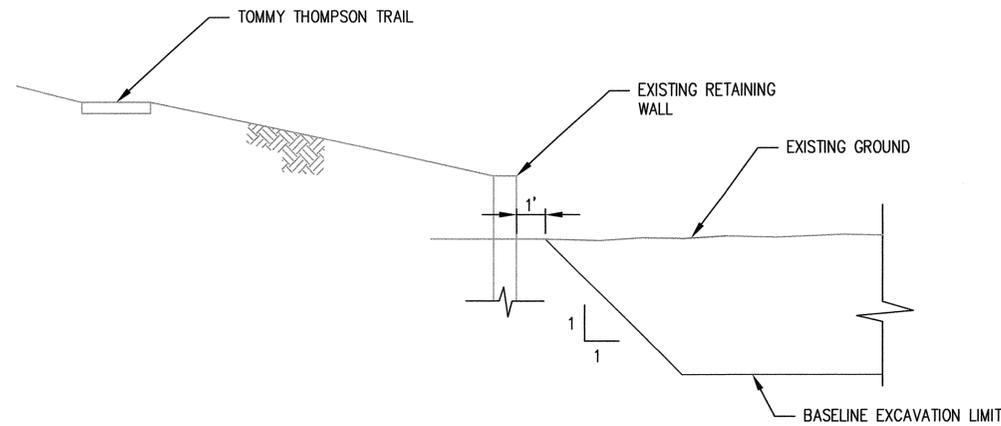
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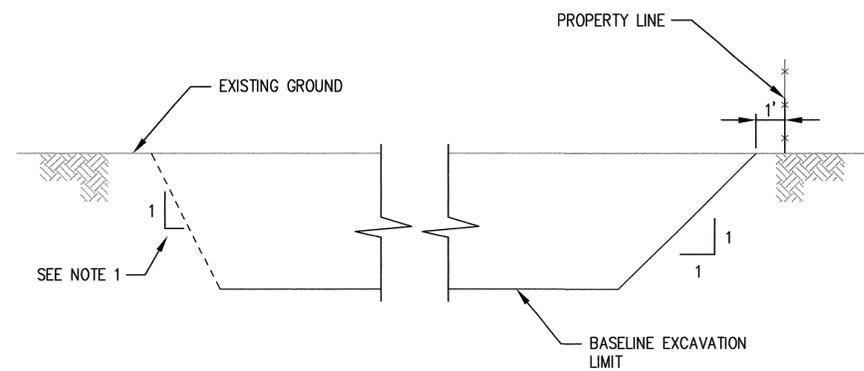
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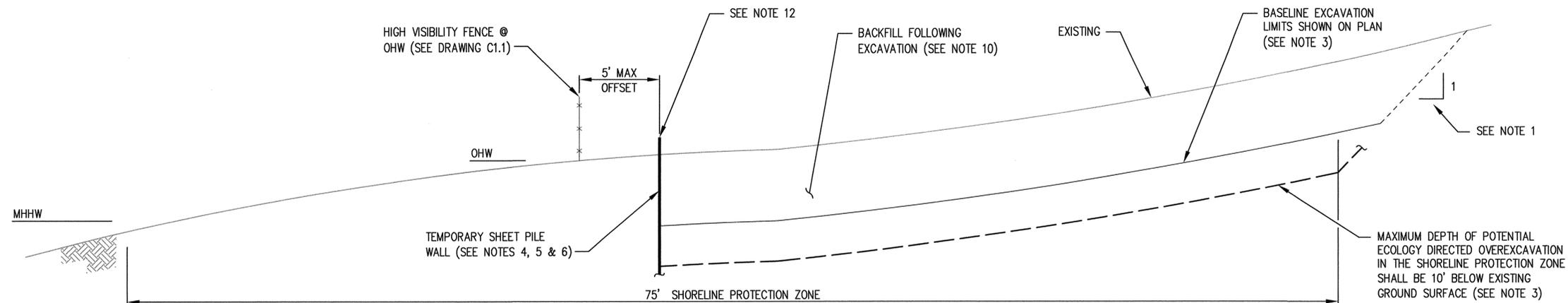
C
C3.2
TYPICAL UPLAND EXCAVATION SECTION
SCALE: 1/4"=1'-0"



D
C3.3
EXCAVATION @ RETAINING WALL
SCALE: 1/4"=1'-0"



E
C3.2
EXCAVATION @ PROPERTY LINE
SCALE: 1/4"=1'-0"



F
C3.2
TYPICAL SHORELINE PROTECTION ZONE EXCAVATION
SCALE: 1/4"=1'-0"

NOTES:

1. WITH THE EXCEPTION OF EXCAVATIONS AT OHW AND AROUND PERIMETER OF SITE, MINIMUM SIDE SLOPES FOR TYPICAL UPLAND EXCAVATIONS SHALL BE DETERMINED BY CONTRACTOR BASED ON FIELD CONDITIONS. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
2. CONTRACTOR SHALL NOT OVEREXCAVATE BEYOND BASELINE EXCAVATION LIMITS SHOWN WITHOUT DIRECTION FROM ECOLOGY OR ECOLOGY'S REPRESENTATIVE.
3. CONTRACTOR SHALL BE PREPARED TO EXCAVATE CONTAMINATION BELOW THE BASELINE EXCAVATION LIMITS WITHIN THE SHORELINE PROTECTION ZONE (LANDSIDE OF OHW). SAMPLING RESULTS MAY REQUIRE ADDITIONAL ECOLOGY DIRECTED OVEREXCAVATION. SEE NOTE 4.
4. UNLESS NOTED OTHERWISE, BASELINE EXCAVATION IN THE SHORELINE PROTECTION ZONE SHALL INCLUDE A TEMPORARY SHEET PILE WALL ALONG THE OHW LINE FOR SHORING TO ALLOW REMOVAL OF SOIL TO THE BASELINE DEPTH AND POTENTIAL OVEREXCAVATION. THE SHEET PILE WALL SHALL BE DESIGNED BY THE CONTRACTOR TO ALLOW ECOLOGY DIRECTED OVEREXCAVATION TO A MAXIMUM DEPTH OF 10 FEET BELOW THE EXISTING GROUND SURFACE. SHEETS MAY BE REUSED AS EXCAVATION PROGRESSES ALONG THE SHORELINE. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
5. CONTRACTOR SHALL ANTICIPATE DEBRIS WHEN INSTALLING SHEET PILE ALONG THE SHORELINE THAT MAY REQUIRE PRE-EXCAVATION TO DRIVE. SEE DRAWINGS G1.3 AND G1.4 FOR ADDITIONAL AVAILABLE EXPLORATION INFORMATION.
6. WITHIN THE SHORELINE PROTECTION ZONE, CONTRACTOR SHALL BE PREPARED TO LATERALLY EXCAVATE BEYOND THE BASELINE EXCAVATION LIMITS. IF ADDITIONAL ECOLOGY DIRECTED OVEREXCAVATION IS REQUIRED ALONG THE OHW LINE BEYOND THE LATERAL BASELINE EXCAVATION LIMITS, CONTRACTOR SHALL INSTALL TEMPORARY SHEET PILES USED FROM PREVIOUS SHORELINE EXCAVATION FOR SHORING. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS AND PAYMENT.
7. UNLESS NOTED OTHERWISE, MINIMUM BASELINE EXCAVATION AREA SHALL BE A 20'X20' SQUARE CENTERED ON THE PARTICULAR ENVIRONMENTAL EXPLORATION SHOWN.
8. OUTSIDE OF THE SHORELINE PROTECTION ZONE, CONTRACTOR SHALL BE PREPARED TO PERFORM ADDITIONAL ECOLOGY DIRECTED UPLAND OVEREXCAVATION INVOLVING LATERAL EXCAVATION BEYOND THE BASELINE EXCAVATION LIMITS SHOWN.
9. IN UPLAND EXCAVATION AREAS (OUTSIDE OF SHORELINE PROTECTION ZONE), NO ECOLOGY DIRECTED OVEREXCAVATION WILL BE REQUIRED BEYOND A 6' DEPTH BELOW EXISTING GROUND SURFACE.
10. EXCAVATION AREAS SHALL BE BACKFILLED TO EXISTING GRADE EXCEPT IN WETLAND EXCAVATION AREAS. SEE SPECIFICATIONS FOR CONFIRMATION SOIL SAMPLING AND BACKFILL TIMING REQUIREMENTS. SEE DRAWING C3.7 FOR TYPICAL BACKFILL REQUIREMENTS AND DRAWING C4.1 FOR FINISH GRADING FOLLOWING BACKFILL.
11. CONTRACTOR SHALL ANTICIPATE EXCAVATION BELOW EXISTING GROUND WATER LEVELS. SEE DRAWING C3.7 AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. TOP OF SHEET PILE SHALL BE AT MINIMUM ELEVATION +10' OR 1' ABOVE EXISTING GROUND SURFACE, WHICHEVER IS HIGHER.

Plotted: Apr 15, 2011 - 9:18am . kvang Layout: C3.4
Mr. \2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.5_Excavation Sections.dwg

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In Coordination with GBH Investments

**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

TYPICAL EXCAVATION SECTIONS

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.5
SHEET NO.	16 OF 32

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Plotted: Apr 15, 2011 - 9:43am kvang Layout: C3.6
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CONTROL COORDINATES		
POINT NAME	NORTHING	EASTING
GMX-S19	550387.2	1211808.8
GMX-S27	550383.3	1211736.0
GMX-S18	550390.3	1211616.0
GMX-S35	550389.2	1211582.3
GMX-S28	550262.5	1211659.3
GMX-S20	550191.9	1211837.3
GMX-S21	550192.0	1211789.5
GMX-S29	550207.0	1211746.5
GMX-MW-03	550199.1	1211632.8
GMX-S43	550127.4	1211643.6
GMX-S39	550137.8	1211558.2
GMX-S23	550106.4	1211716.8
GMX-S46	550115.6	1211690.6
GMX-S17	550112.9	1211596.5
GMX-S40	550115.8	1211494.2
GMX-MW-07	550101.9	1211473.9
GMX-S25	550051.8	1211780.6
GMX-S24	550078.6	1211827.5
GMX-S16	550080.6	1211607.3
GMX-S44	550072.1	1211582.1
GMX-S41	550059.4	1211529.7
GMX-S30	550040.1	1211583.5
GMX-S47	550006.9	1211741.5
GMX-S45	550008.5	1211634.3
GMX-MW-02	549990.7	1211551.9
GMX-S10	549969.6	1211857.1
GMX-S9	549985.1	1211766.1
GMX-S49	549954.8	1211648.0
GMX-S52	549950.0	1211586.5
GMX-S15	549917.9	1211863.3
GMX-S14	549839.6	1211883.3
GMX-S11	549862.0	1211898.4
GMX-S48	549908.3	1211701.7
GMX-S7	549856.8	1211733.2
GMX-S50	549848.3	1211672.0
GMX-S6	549814.8	1211695.4
GMX-S13	549779.7	1211857.5
GMX-MW-09	549761.1	1211901.5
GMX-MW-01	549647.3	1211898.5
GMX-S3	549562.7	1211892.6
GMX-S2	549560.1	1211868.1

CONTROL COORDINATES		
POINT NAME	NORTHING	EASTING
GMX-S1	549526.2	1211888.9
1	550270.4	1211668.9
2	550250.4	1211669.7
3	550261.1	1211618.2
4	550281.5	1211615.3
5	550206.5	1211645.7
6	550187.8	1211638.7
7	550193.8	1211602.9
8	550212.4	1211611.0
9	550131.3	1211575.8
10	550119.1	1211560.0
11	550136.0	1211546.9
12	550146.7	1211563.9
13	550122.7	1211509.5
14	550075.4	1211482.9
15	550120.4	1211455.2
16	550216.9	1211858.6
17	550166.9	1211845.7
18	550166.9	1211812.3
19	550216.9	1211812.3
20	550094.3	1211839.8
21	550077.4	1211859.5
22	550053.6	1211839.0
23	550053.6	1211802.5
24	550094.3	1211802.5
25	549976.5	1211832.1
26	549971.6	1211862.8
27	549957.8	1211872.8
28	549830.2	1211928.7
29	549839.6	1211913.1
30	549744.8	1211819.1
31	549748.5	1211787.7
32	549949.2	1211787.7
33	549760.2	1211760.6
34	549587.7	1211897.3
35	549587.7	1211889.7
36	549519.4	1211889.7
37	549587.7	1211843.8
38	549736.0	1211894.8
39	549672.1	1211895.6
40	549661.0	1211896.0

CONTROL COORDINATES		
POINT NAME	NORTHING	EASTING
41	549622.2	1211897.4
42	549622.2	1211872.8
43	549672.2	1211872.6
44	549716.5	1211748.0
45	549736.0	1211894.8

NOTES:

- COORDINATES SHOWN PROVIDE HORIZONTAL CONTROL FOR EXCAVATION LIMITS SHOWN ON DRAWINGS C3.2, C3.3 AND C3.4.
- SEE DRAWING G1.3 FOR ADDITIONAL INFORMATION ON ENVIRONMENTAL EXPLORATION LOCATIONS LISTED AS CONTROL POINTS.
- SEE DRAWING G1.0 FOR SURVEY DATUM INFORMATION.



NO.	DATE	BY	REVISION



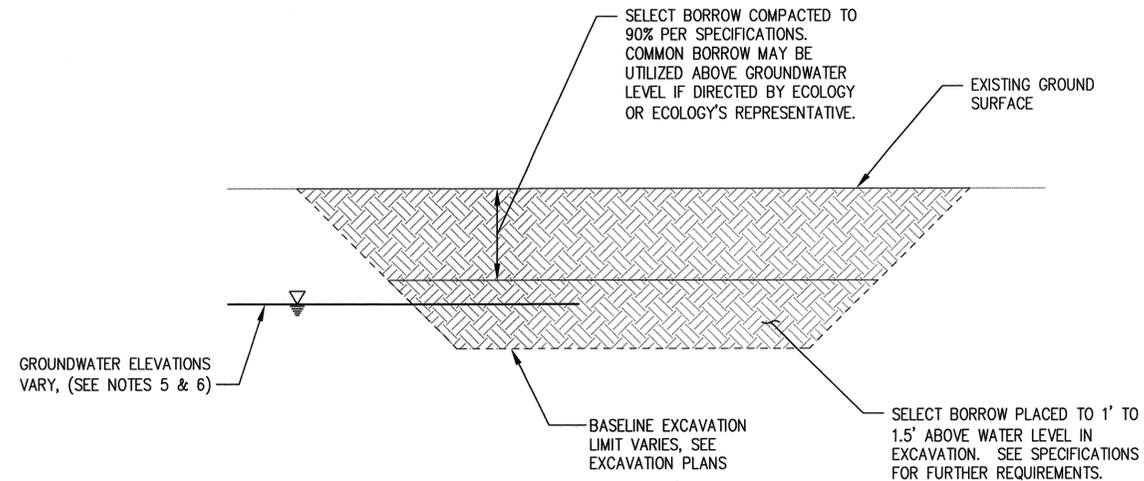
**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON
EXCAVATION CONTROL COORDINATES**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.6
SHEET NO.	17 OF 32

BID SET

NOTES:

1. SEE SPECIFICATIONS FOR SOIL CONFIRMATION SAMPLING AND BACKFILL TIMING REQUIREMENTS FOLLOWING EXCAVATION.
2. SEE DRAWING C4.5 AND C4.6 FOR SEPARATE BACKFILL REQUIREMENTS SPECIFIC TO WETLAND EXCAVATION AREA.
3. SEE DRAWING C4.1 FOR SITE FINISH GRADING FOLLOWING EXCAVATION BACKFILL. FINISH GRADING SHALL USE COMMON BORROW UNLESS NOTED OTHERWISE.
4. SEE SPECIFICATIONS FOR IMPORT MATERIAL CLEANLINESS AND QUALITY REQUIREMENTS.
5. GROUNDWATER ELEVATIONS GENERALLY VARY BETWEEN APPROXIMATELY ELEVATIONS +3' TO +7' ACROSS THE SITE AT VARIOUS TIMES, TIDES AND SURFACE WATER CONDITIONS. GROUNDWATER HAS BEEN OBSERVED NEAR EXISTING GROUND SURFACE AT HIGH TIDE IN SOME NEAR SHORE LOCATIONS. SEE DRAWINGS G1.3 AND G1.4 FOR EXISTING AVAILABLE INFORMATION.
6. SEE SPECIFICATIONS FOR EXCAVATION DEWATERING REQUIREMENTS.



**TYPICAL UPLAND
BACKFILL SECTION**
 X
 C3.2 SCALE: 1/2"=1'-0"

Plotted: Apr 15, 2011 - 9:24am kvong Layout: C3.7
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.7_Typical Excavation Backfill Section.dwg

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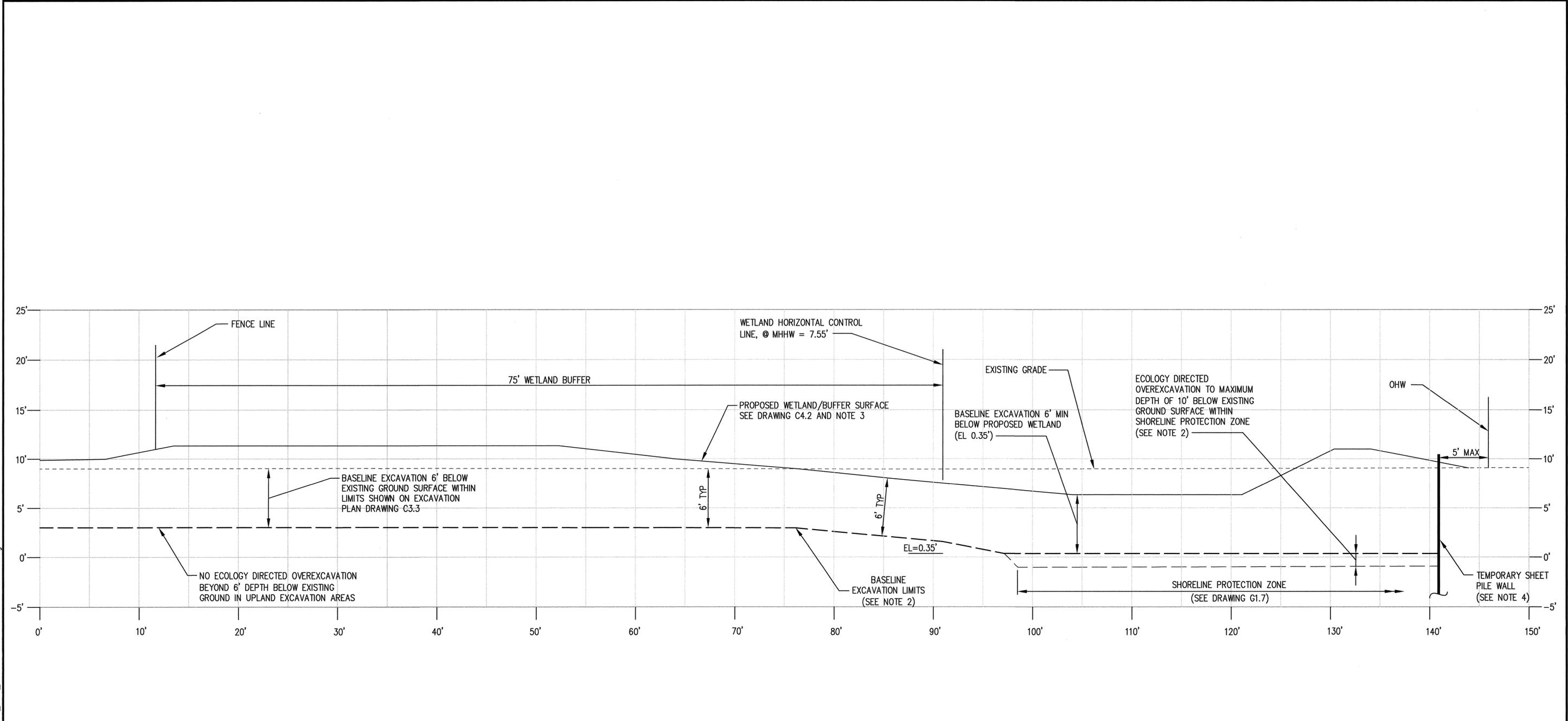


**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**
TYPICAL EXCAVATION BACKFILL SECTION

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.7
SHEET NO.	18 OF 32

BID SET

Plotted: Apr 14, 2011 - 2:29pm kvang Layout: C3.8
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**WETLAND EXCAVATION IN
KNOWN CONTAMINATED AREAS**

A
 C3.4 SCALE: H: 1"=5'
 V: 1"=5'

NOTES:

1. THIS SECTION APPLIES TO WETLAND AREAS OF KNOWN CONTAMINATION. SEE DRAWING C3.4 FOR LIMITS.
2. CONTRACTOR SHALL NOT EXCAVATE BELOW BASELINE EXCAVATION LIMITS WITHOUT DIRECTION FROM ECOLOGY OR ECOLOGY'S REPRESENTATIVE.
3. SEE DRAWING C4.5 FOR BACKFILL AND WETLAND/BUFFER CONSTRUCTION DETAILS FOLLOWING EXCAVATION.
4. SEE DRAWING C3.5 FOR TYPICAL SHORELINE PROTECTION ZONE EXCAVATION AND SHEET PILE REQUIREMENTS.

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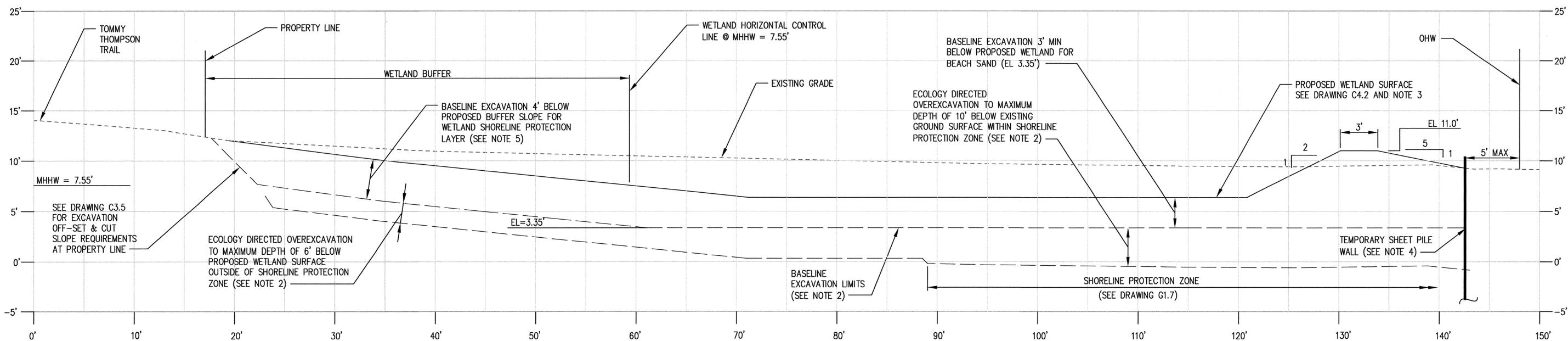
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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
 WETLAND EXCAVATION AREA SECTION**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.8
SHEET NO.	19 OF 32

BID SET

Plotted: Apr 15, 2011 - 9:25am kvng Layout: C3.9
 Mr. \2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C3.9_Wetland Area Excavation Sections.dwg



WETLAND EXCAVATION OUTSIDE OF KNOWN CONTAMINATED AREAS

B
 C3.4 SCALE: H: 1"=5'
 V: 1"=5'

NOTES:

1. THIS SECTION APPLIES TO WETLAND EXCAVATION OUTSIDE OF KNOWN CONTAMINATED AREAS. SEE DRAWING C3.4.
2. CONTRACTOR SHALL NOT EXCAVATE BELOW BASELINE EXCAVATION LIMITS WITHOUT DIRECTION FROM ECOLOGY OR ECOLOGY'S REPRESENTATIVE.
3. SEE DRAWING C4.6 FOR BACKFILL AND WETLAND/BUFFER CONSTRUCTION DETAILS FOLLOWING EXCAVATION.
4. SEE DRAWING C3.5 FOR TYPICAL SHORELINE PROTECTION ZONE EXCAVATION AND SHEET PILE REQUIREMENTS.
5. SEE DRAWING C4.1 FOR APPROXIMATE PLAN LIMITS OF WETLAND SHORELINE PROTECTION LAYER.

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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON
WETLAND EXCAVATION AREA SECTION

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C3.9
SHEET NO.	20 OF 32

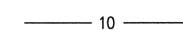
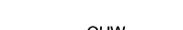
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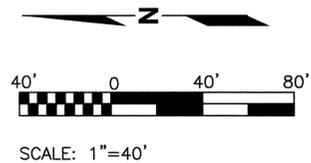
NOTES:

1. FINISH GRADING INCLUDES ALL FILL ABOVE EXISTING GRADE UTILIZING COMMON BORROW INCLUDING AREAS BENEATH WETLAND BUFFER AND SWALE AS SHOWN IN GRADING SECTIONS.
2. FOLLOWING REQUIRED EXCAVATION AND BACKFILL, GRADE AREA NORTH OF WETLAND AND BUFFER TO DRAIN AS SHOWN WITH COMMON BORROW.
3. HYDROSEED ALL AREAS OF SITE FOLLOWING GRADING EXCEPT FOR SWALES, TEMPORARY BERM, GRAVEL PAD AREA, WETLAND AND BUFFER AREAS. SEE DRAWING L1.1. CONTRACTOR SHALL CLEAR AND GRUB ANY VEGETATION REMAINING OUTSIDE OF REMEDIAL EXCAVATION AREAS PRIOR TO FINISH GRADING.
4. NO FINISH GRADING REQUIRED WITHIN EXISTING GRAVEL PAD FOOTPRINT FOLLOWING BACKFILL OF INDIVIDUAL REMEDIAL EXCAVATIONS TO EXISTING GRADE.
5. SEE SPECIFICATIONS FOR IMPORT MATERIAL CLEANLINESS AND QUALITY REQUIREMENTS.

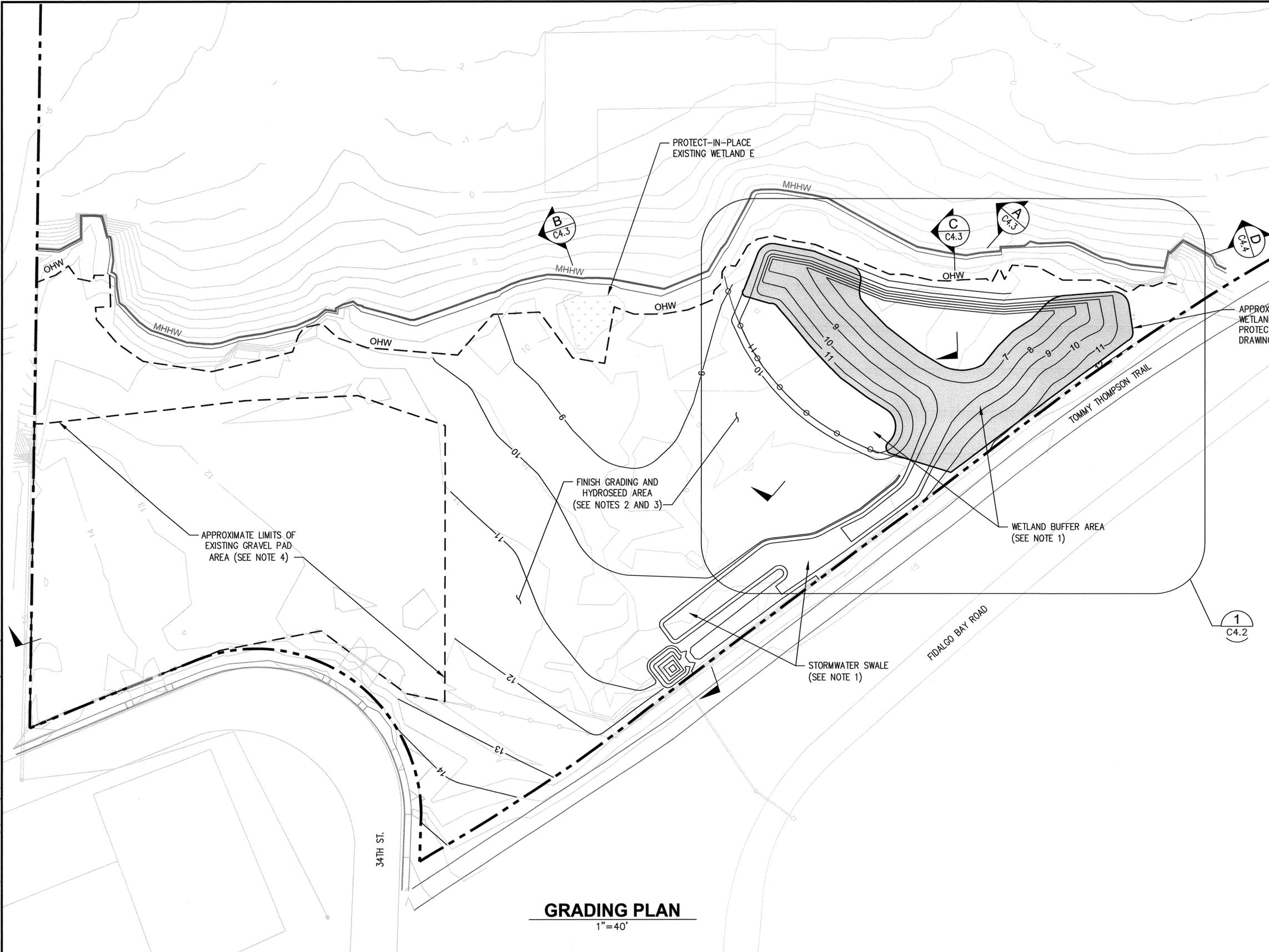
APPROX OUTER LIMIT OF WETLAND SHORELINE PROTECTION LAYER SEE DRAWINGS C4.5 AND C4.6

LEGEND:

-  PROPERTY LINE
-  10' PROPOSED CONTOUR
-  5' EXISTING CONTOUR
-  FENCE (SEE LANDSCAPE PLAN)
-  OHW ORDINARY HIGH WATER (OHW)
-  MHHW MEAN HIGHER HIGH WATER (EL. +7.55')
-  APPROXIMATE PLAN LIMITS OF WETLAND SHORELINE PROTECTION LAYER (SEE DRAWINGS C4.5 AND C4.6)



GRADING PLAN
1"=40'



Plotted: Apr 15, 2011 - 9:30am kvang Layout: C4.1
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C4.1_Grading Plan.dwg

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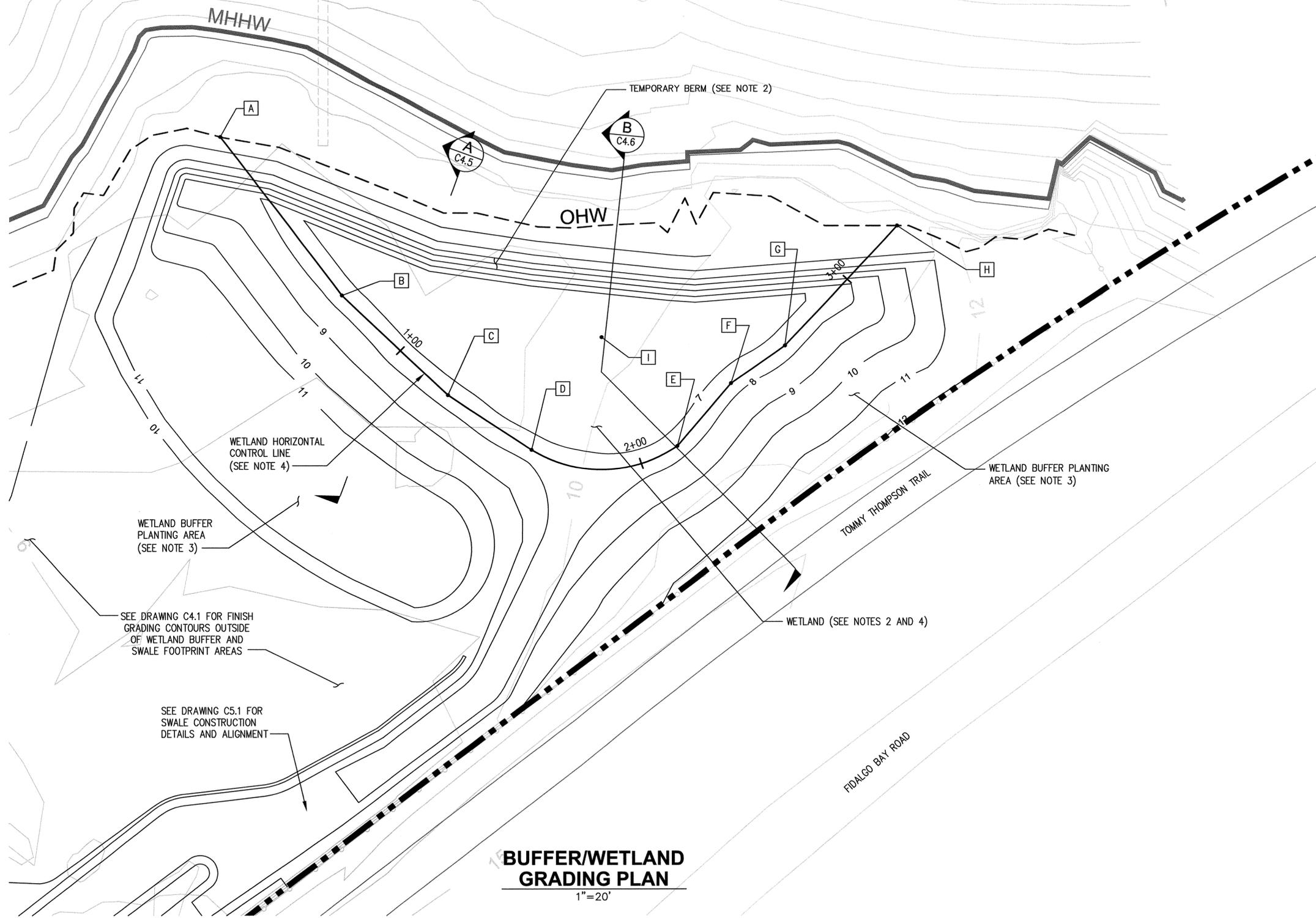
**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

GRADING PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.1
SHEET NO.	21 OF 32

BID SET

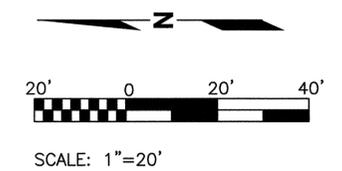
Plotted: Apr 15, 2011 - 10:22am kvang Layout: C4.2
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C4.2_Buffer and Wetland Grading Plan.dwg



- NOTES:**
- SEE DRAWING L1.1 AND SPECIFICATIONS FOR PLANTING REQUIREMENTS FOR WETLAND AND BUFFER AREAS.
 - WETLAND AREA SHOWN WILL BE COMPLETED BY OTHERS WHEN TEMPORARY BERM IS BREACHED DURING FUTURE PHASE 2 IN-WATER REMEDIATION CONTRACT. WHEN COMPLETE FUTURE ESTUARINE WETLAND ELEVATION WILL VARY BETWEEN APPROX ELEVATIONS 6.35' AND 7.55'.
 - SEE DRAWING C4.1 FOR APPROXIMATE PLAN LIMITS OF WETLAND SHORELINE PROTECTION LAYER WHICH IS NOT SHOWN HERE FOR CLARITY.
 - FINISH GRADE OF SAND WITHIN WETLAND HORIZONTAL CONTROL LINE SHALL BE AT OR BELOW ELEVATION +7.55'. SEE SECTIONS ON DRAWINGS C4.5 AND C4.6.

- LEGEND:**
- PROPERTY LINE
 - PROPOSE CONTOUR
 - EXISTING CONTOUR
 - ORDINARY HIGH WATER (OHW)
 - MEAN HIGHER HIGH WATER (EL +7.55')

WETLAND HORIZONTAL CONTROL LINE			
PT	STA	NORTHING	EASTING
A	0+00	549836.2	1211936.1
B	0+71	549792.7	1211879.8
C	1+24	549754.8	1211843.7
D	1+35	549726.0	1211824.7
E	2+14	549672.9	1211825.4
F	2+45	549653.8	1211848.0
G	2+68	549634.5	1211861.7
H	3+26	549594.5	1211904.2
I	RADIUS=47.66'	549698.3	1211864.6



**BUFFER/WETLAND
GRADING PLAN**
 1"=20'

SEE DRAWING C4.1 FOR FINISH GRADING CONTOURS OUTSIDE OF WETLAND BUFFER AND SWALE FOOTPRINT AREAS

SEE DRAWING C5.1 FOR SWALE CONSTRUCTION DETAILS AND ALIGNMENT

NO.	DATE	BY	REVISION



**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

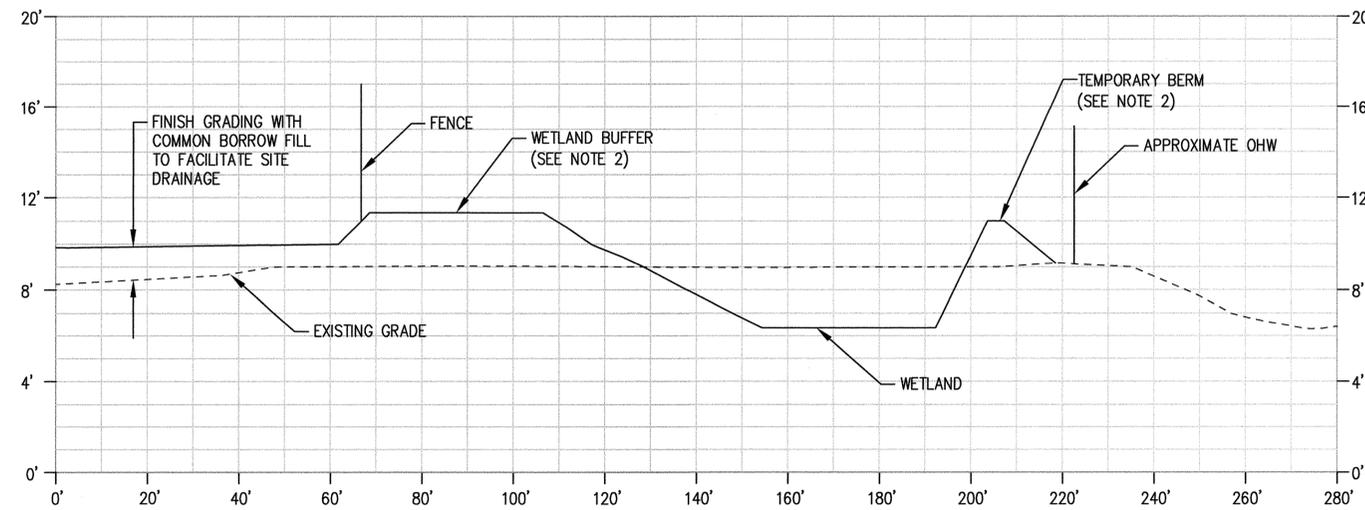
**BUFFER/WETLAND
GRADING PLAN**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.2
SHEET NO.	22 OF 32

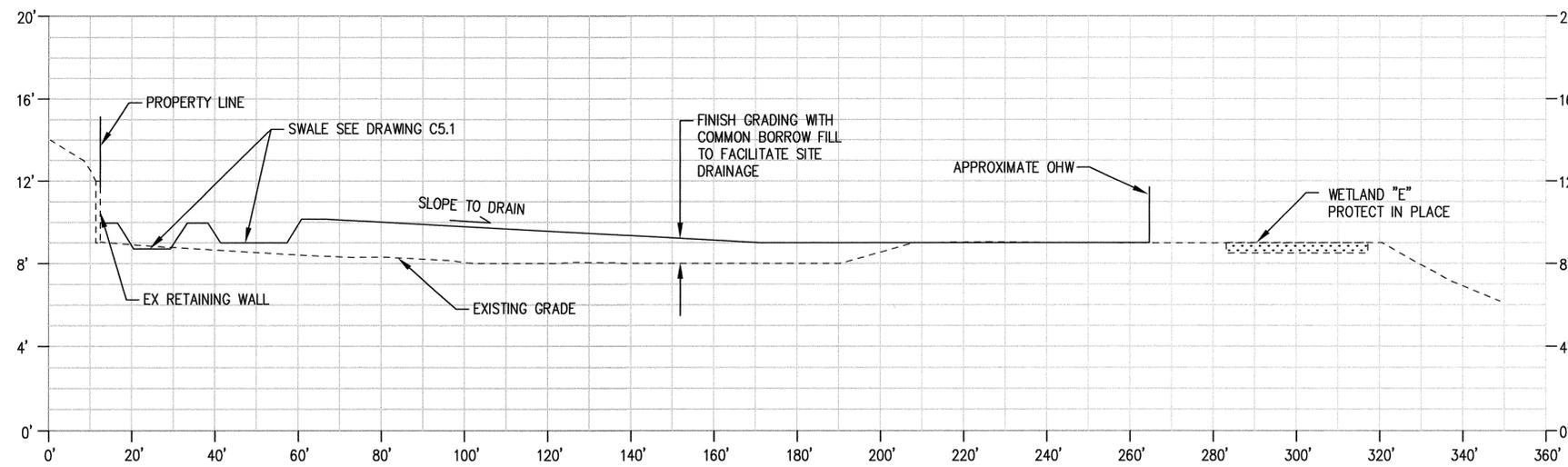
BID SET

NOTES:

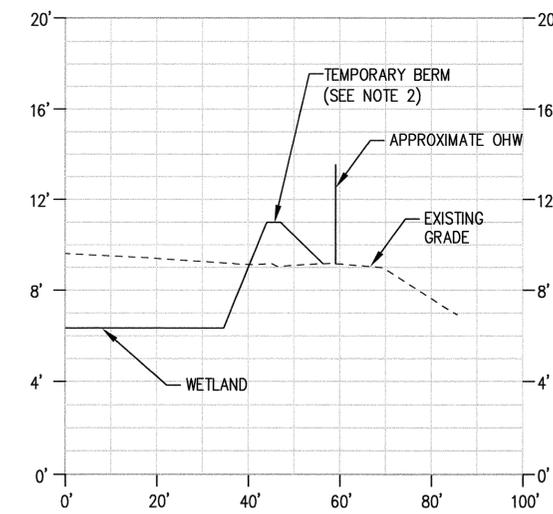
- SEE DRAWINGS C3.2 AND C3.3 FOR EXCAVATION AND BACKFILL PRIOR TO FINISH GRADING SHOWN.
- SEE DRAWING C3.8 AND C3.9 FOR EXCAVATION AND CONSTRUCTION OF WETLAND, BUFFER AND TEMPORARY BERM.



A SECTION
 C4.1 SCALE: H: 1"=20'
 V: 1"=4'



B SECTION
 C4.1 SCALE: H: 1"=20'
 V: 1"=4'



C SECTION
 C4.1 SCALE: H: 1"=20'
 V: 1"=4'

Plotted: Apr 14, 2011 - 2:37pm kvang Layout: C4.3
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C4.3_Grading Sections.dwg

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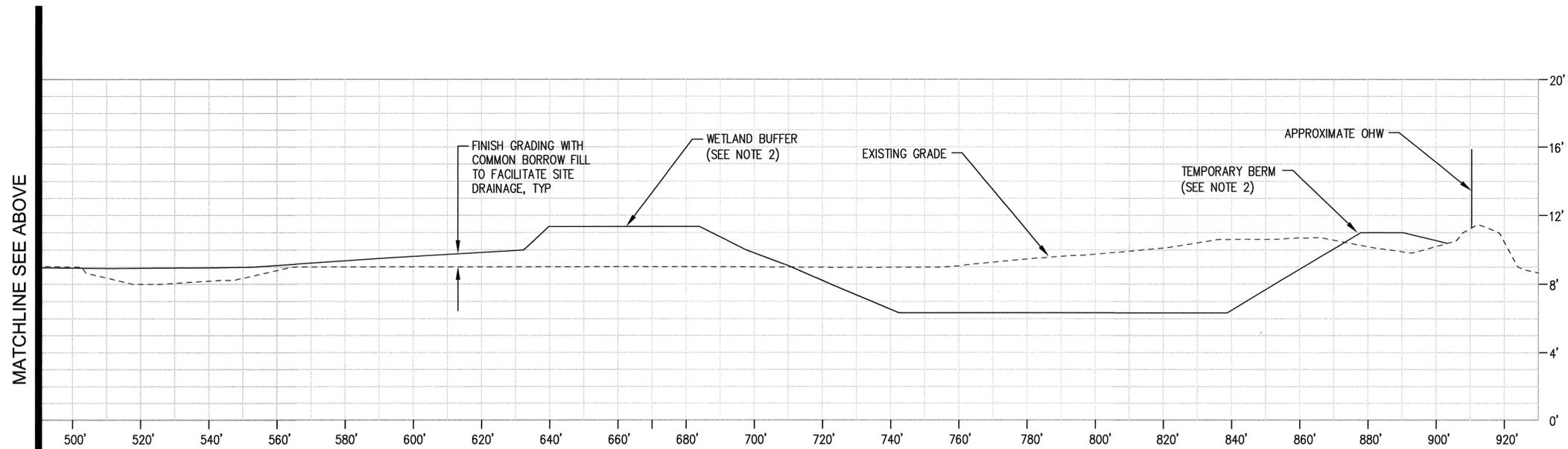
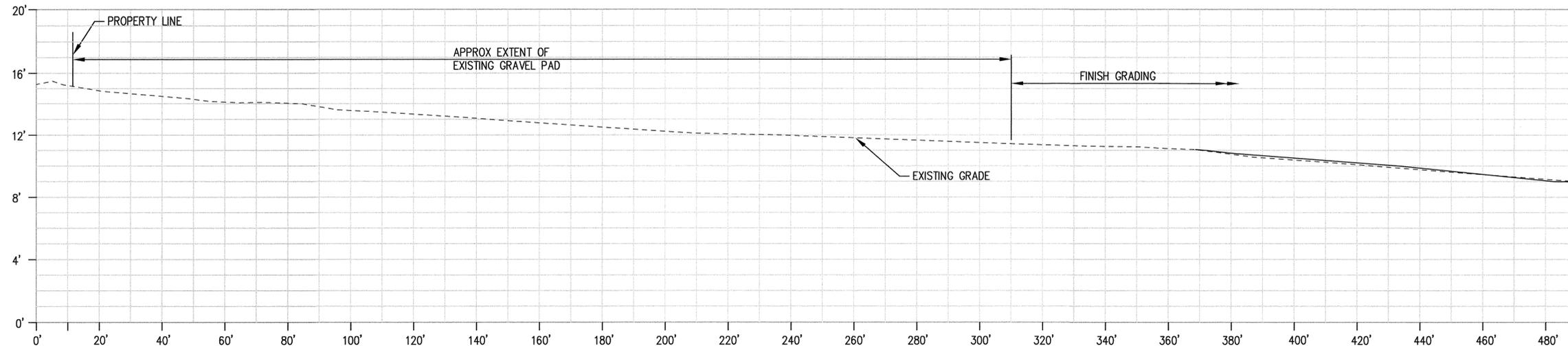
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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

GRADING SECTIONS

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.3
SHEET NO.	23 OF 32

BID SET



D SECTION
 C4.1 SCALE: H: 1"=20'
 V: 1"=4'

NOTES:

- SEE DRAWINGS C3.2 AND C3.3 FOR EXCAVATION AND BACKFILL PRIOR TO FINISH GRADING SHOWN.
- SEE DRAWING C3.8 AND C3.9 FOR EXCAVATION AND CONSTRUCTION OF WETLAND, BUFFER AND TEMPORARY BERM.

Plotted: Apr 15, 2011 - 9:37am kvang Layout: C4.4
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C4.4_Grading Section.dwg

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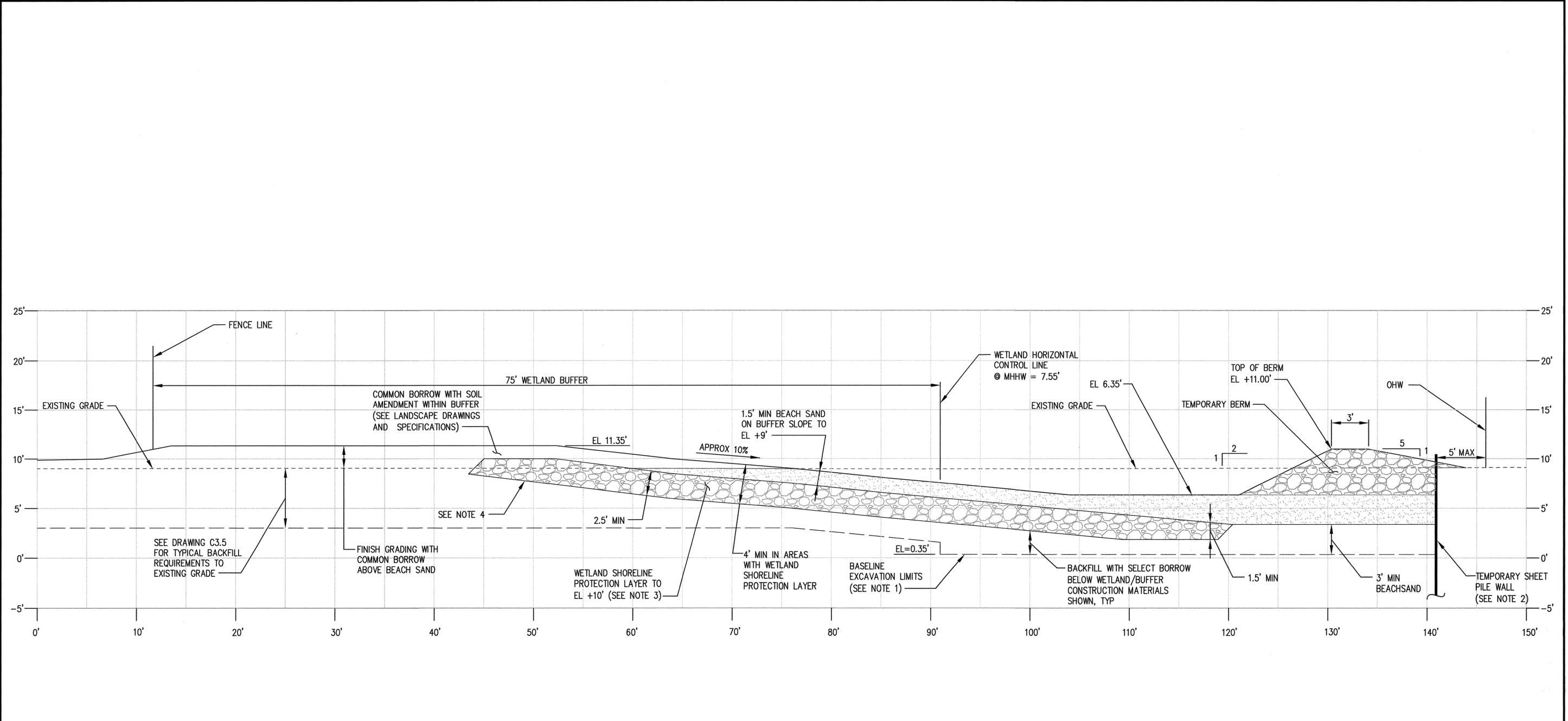


**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
 GRADING SECTION**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.4
SHEET NO.	24 OF 32

BID SET

Plotted: Apr 15, 2011 - 9:42am
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C4.5 Wetland Area Excavation Section.dwg
 Layout: C4.5



**WETLAND BACKFILL IN
 KNOWN CONTAMINATED AREAS**
 A
 C4.2 SCALE: H: 1"=5'
 V: 1"=5'

- NOTES:**
- SEE DRAWING C3.8 FOR EXCAVATION REQUIREMENTS.
 - REMOVE TEMPORARY SHEET PILE FOLLOWING BACKFILL AND TEMPORARY BERM CONSTRUCTION.
 - SEE DRAWING C4.1 FOR APPROXIMATE PLAN LIMITS OF WETLAND SHORELINE PROTECTION LAYER.
 - SEE SPECIFICATIONS FOR EXCAVATION SUBGRADE MAINTENANCE REQUIREMENTS DURING BACKFILL.

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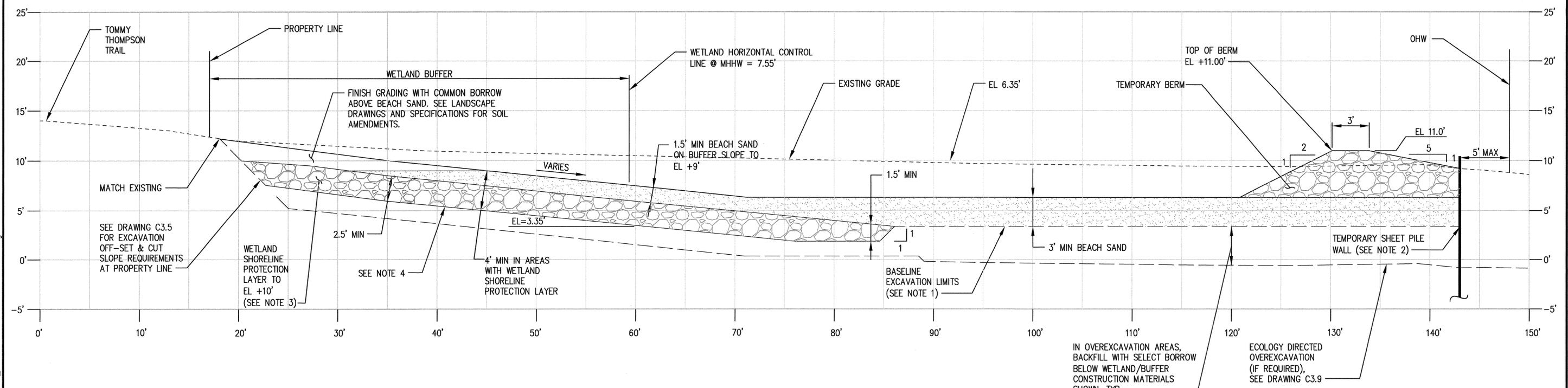
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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
 WETLAND AREA BACKFILL SECTION**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.5
SHEET NO.	25 OF 32

BID SET

Plotted: Apr 15, 2011 - 9:45am kvang Layout: C4.6
 M:\2010\110065 Custom Remediation (Hart Crowser)\Drawings\Current\110065_C4.6_Wetland Area Excavation Section.dwg



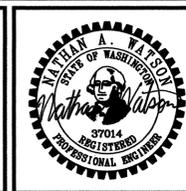
WETLAND BACKFILL OUTSIDE OF KNOWN CONTAMINATED AREAS
 SCALE: H: 1"=5'
 V: 1"=5'

IN OVEREXCAVATION AREAS, BACKFILL WITH SELECT BORROW BELOW WETLAND/BUFFER CONSTRUCTION MATERIALS SHOWN, TYP
 ECOLOGY DIRECTED OVEREXCAVATION (IF REQUIRED), SEE DRAWING C3.9

- NOTES:**
- SEE DRAWING C3.9 FOR EXCAVATION REQUIREMENTS.
 - REMOVE TEMPORARY SHEET PILE FOLLOWING BACKFILL AND TEMPORARY BERM CONSTRUCTION.
 - SEE DRAWING C4.1 FOR APPROXIMATE PLAN LIMITS OF WETLAND SHORELINE PROTECTION LAYER.
 - SEE SPECIFICATIONS FOR EXCAVATION SUBGRADE MAINTENANCE REQUIREMENTS DURING BACKFILL.

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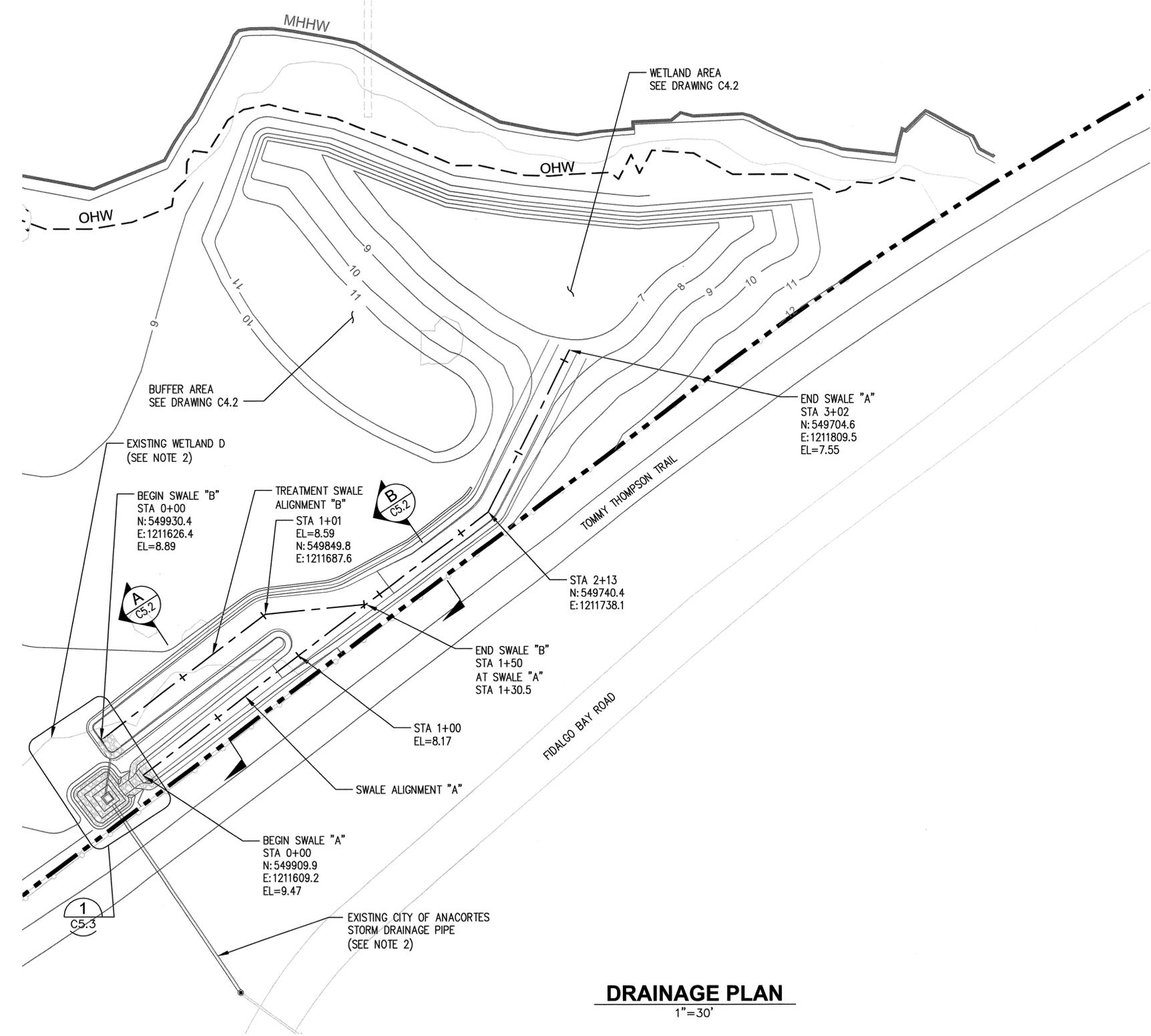
CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON
WETLAND AREA BACKFILL SECTION

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C4.6
SHEET NO.	26 OF 32

BID SET

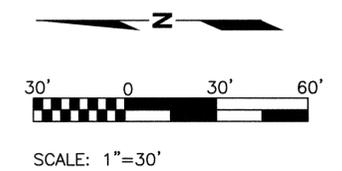
NOTES:

1. SEE LANDSCAPE PLAN DRAWING L1.1 AND SPECIFICATIONS FOR PLANTING AND SEED MIXES WITHIN SWALE.
2. SEE DRAWING C1.1 AND SPECIFICATIONS FOR TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS UNTIL SWALE CONSTRUCTION IS COMPLETE.



LEGEND:

- PROPERTY LINE
- OHW
- MHHW
- PROPOSED CONTOUR
- ORDINARY HIGH WATER (OHW)
- MEAN HIGHER HIGH WATER (EL +7.55')



DRAINAGE PLAN
1"=30'

Plotted: Apr 15, 2011 - 9:50am kvang Layout: C5.1
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C5.1_Drainage Plan.dwg

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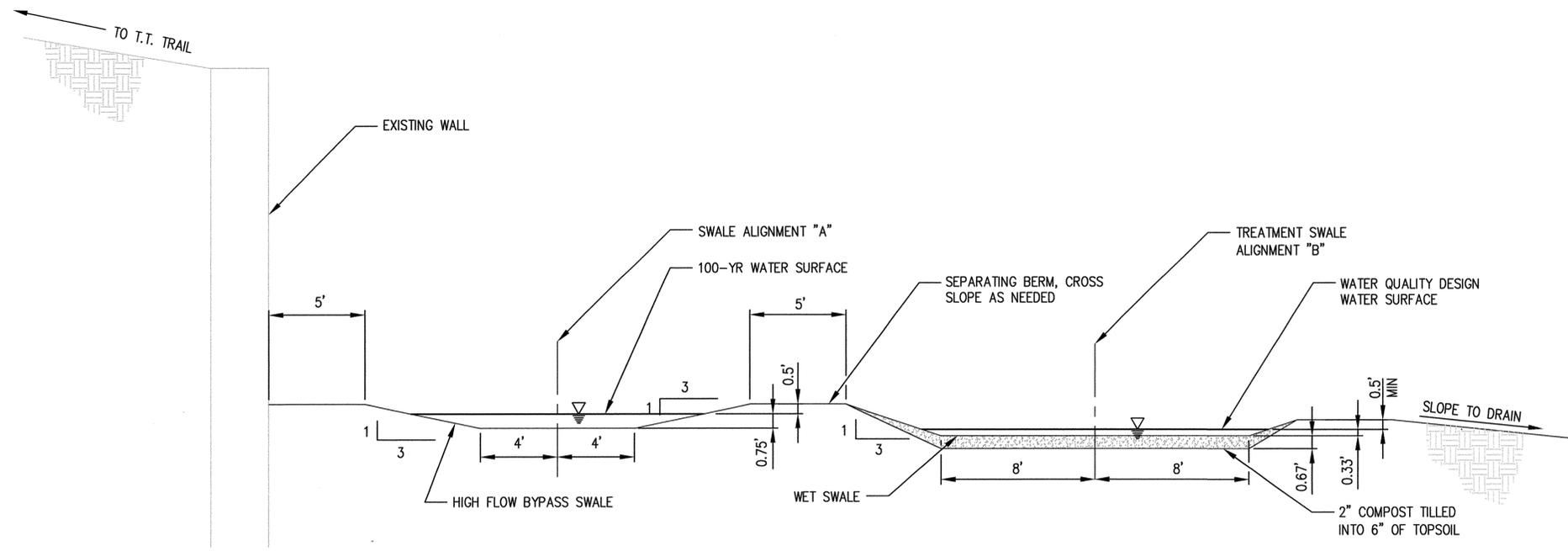
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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON**

DRAINAGE PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C5.1
SHEET NO.	27 OF 32

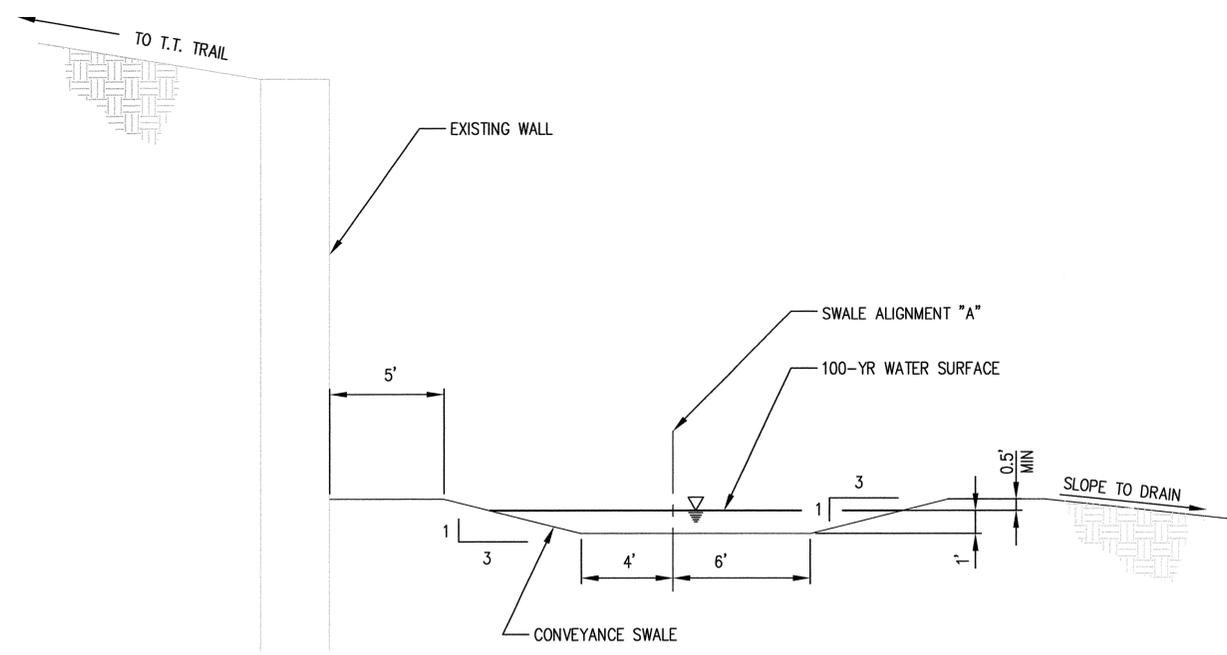
BID SET



A SECTION
C5.1 SCALE: 1"=4'-0"

NOTE:

1. FOR EXISTING GRADE AND REQUIRED FINISH GRADING WITH COMMON BORROW, SEE SECTION B ON SHEET C4.3



B SECTION
C5.1 SCALE: 1"=4'-0"

Plotted: Apr 14, 2011 - 3:08pm kvang Layout: C5.2
M:\2010\110065 Custom Remediation (Hart Crowser)\Drawings\Current\110065_C5.2_Drainage Details & Sections.dwg

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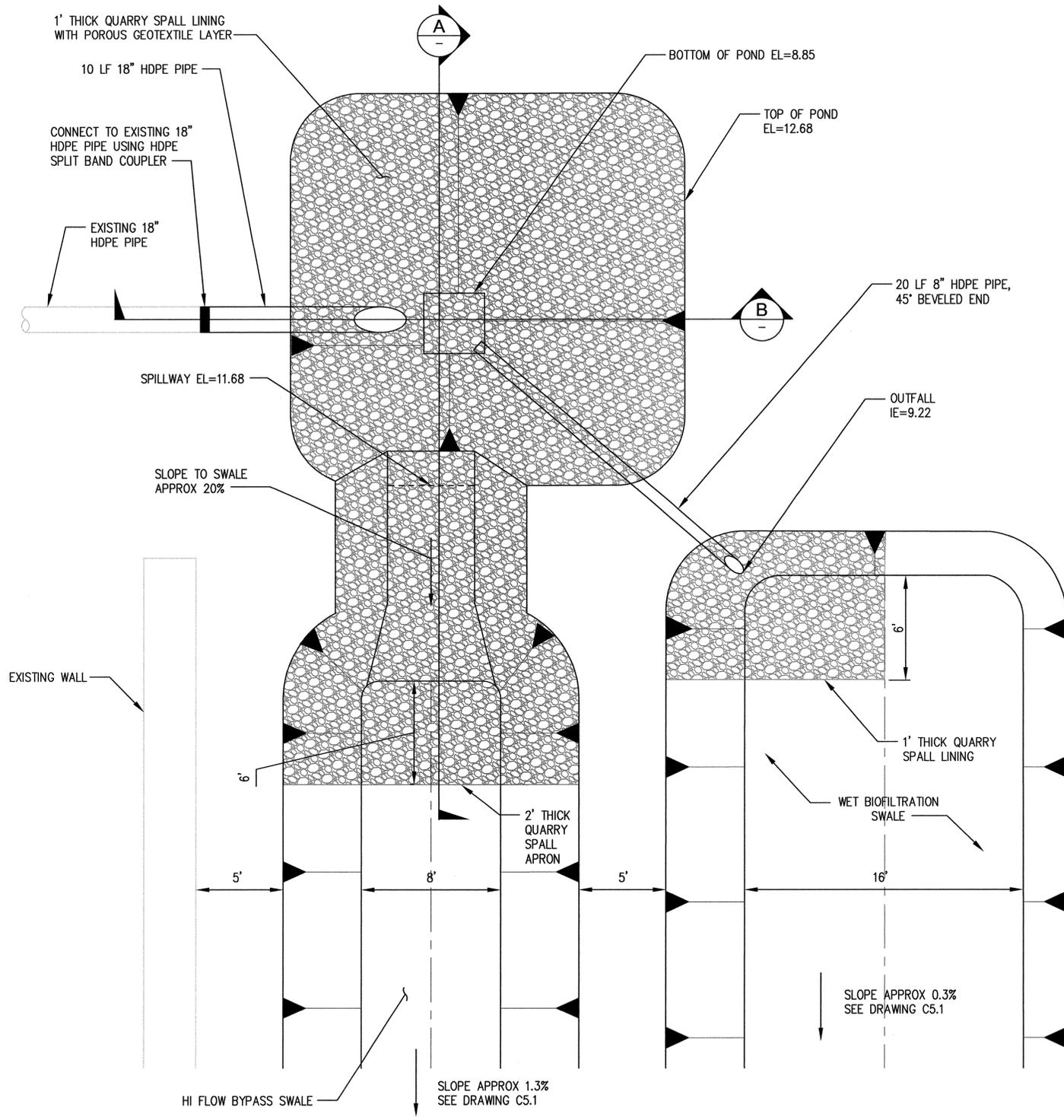
**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON**

DRAINAGE DETAILS AND SECTIONS

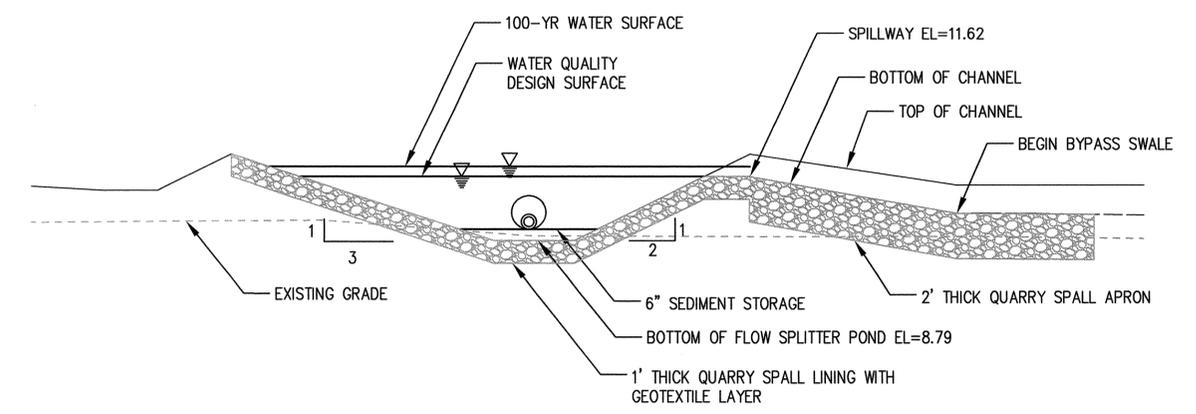
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SHEET NO.	28 OF 32

BID SET

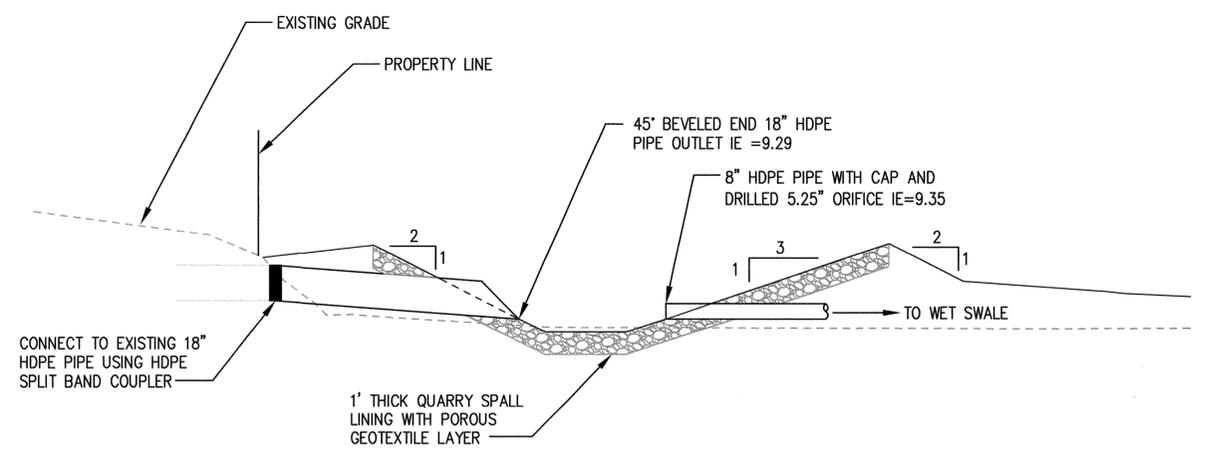
Plotted: Apr 14, 2011 - 3:10pm kvang Layout: C5.3
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_C5.3_Drainage Plan and Details.dwg



1
 C5.1
**DRAINAGE PLAN
 AT FLOW SPLITTER POND**
 SCALE: 1"=4'-0"



A
SECTION
 SCALE: 1"=4'-0"



B
SECTION
 SCALE: 1"=4'-0"

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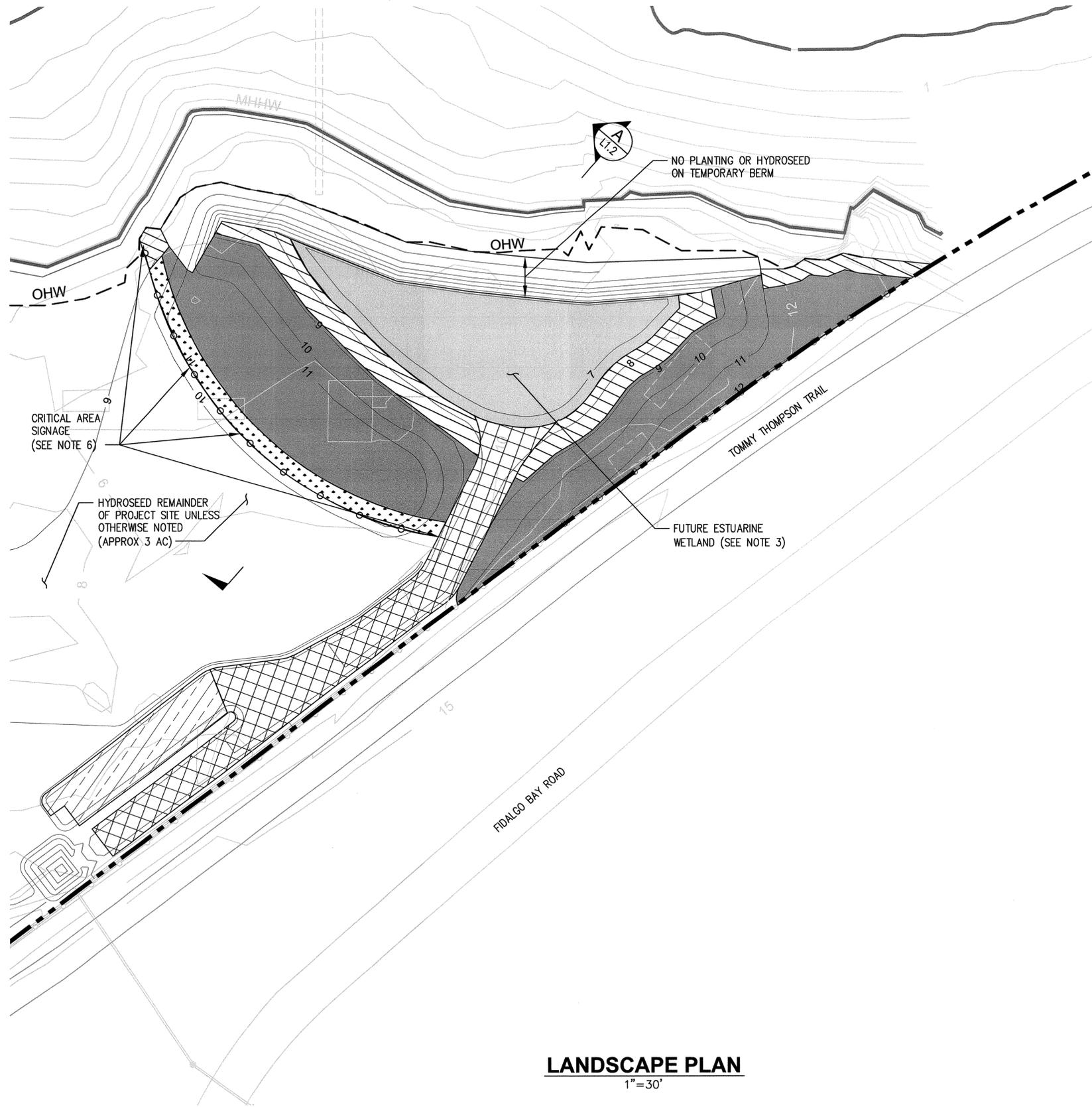
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**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
 DRAINAGE PLAN AND DETAILS**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: NW	DATE: APR 18, 2011
DRAWING NO.	C5.3
SHEET NO.	29 OF 32

BID SET

Plotted: Apr 15, 2011 - 9:55am kvang Layout: L1.1
 M: \2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_L1.1_Landscape Plan.dwg



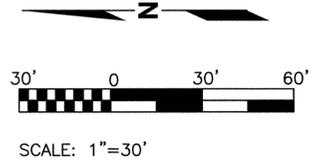
LANDSCAPE PLAN
 1"=30'

NOTES:

- MHHW ELEVATION 7.55' (NAVD88 DATUM) SHOWN IS EQUIVALENT TO MHHW ELEVATION 8.20' (MLLW DATUM). SEE DRAWING G1.0 FOR SURVEY DATUM AND CONVERSION INFORMATION.
- SEE DRAWING C4.2 FOR GRADING OF WETLAND AND BUFFER AREA.
- SEE DRAWING C5.1 FOR SWALE CONSTRUCTION DETAILS AND ALIGNMENT.
- WETLAND AREA SHOWN WILL BE COMPLETED BY OTHERS WHEN TEMPORARY BERM IS BREACHED DURING FUTURE PHASE 2 IN-WATER REMEDIATION CONTRACT. WHEN COMPLETE, FUTURE ESTUARINE WETLAND ELEVATIONS WILL VARY BETWEEN APPROX ELEVATIONS 6.35' AND 7.55'.
- PLANTING/SEEDING OF FUTURE ESTUARINE WETLAND NOT INCLUDED IN THIS CONTRACT. SEE NOTE 4.
- FOUR (4) CRITICAL AREA SIGNS SHALL BE PLACED EQUAL DISTANCE APART ALONG FENCE. SEE SPECIFICATIONS FOR REQUIREMENTS.

LEGEND:

- PROPERTY LINE
- ORDINARY HIGH WATER (OHW)
- MEAN HIGHER HIGH WATER (EL +7.55')
- BARRIER PLANTING AREA (8FT WIDE)
- FUTURE ESTUARINE WETLAND (6.35' TO 7.55' "MHHW") - SEE NOTE 4
- DUNEGRASS PLANTING AREA (7.55 - 8.85)
- UPLAND BUFFER PLANTING AREA (8.85 - 11.35)
- CONVEYANCE SWALE PLANTING (SEE SPECIFICATIONS)
- WET SWALE PLANTING (SEE SPECIFICATIONS)
- TEMPORARY CHAIN LINK FENCE (75' OFFSET FROM WETLAND HORIZONTAL CONTROL LINE)



NO.	DATE	BY	REVISION

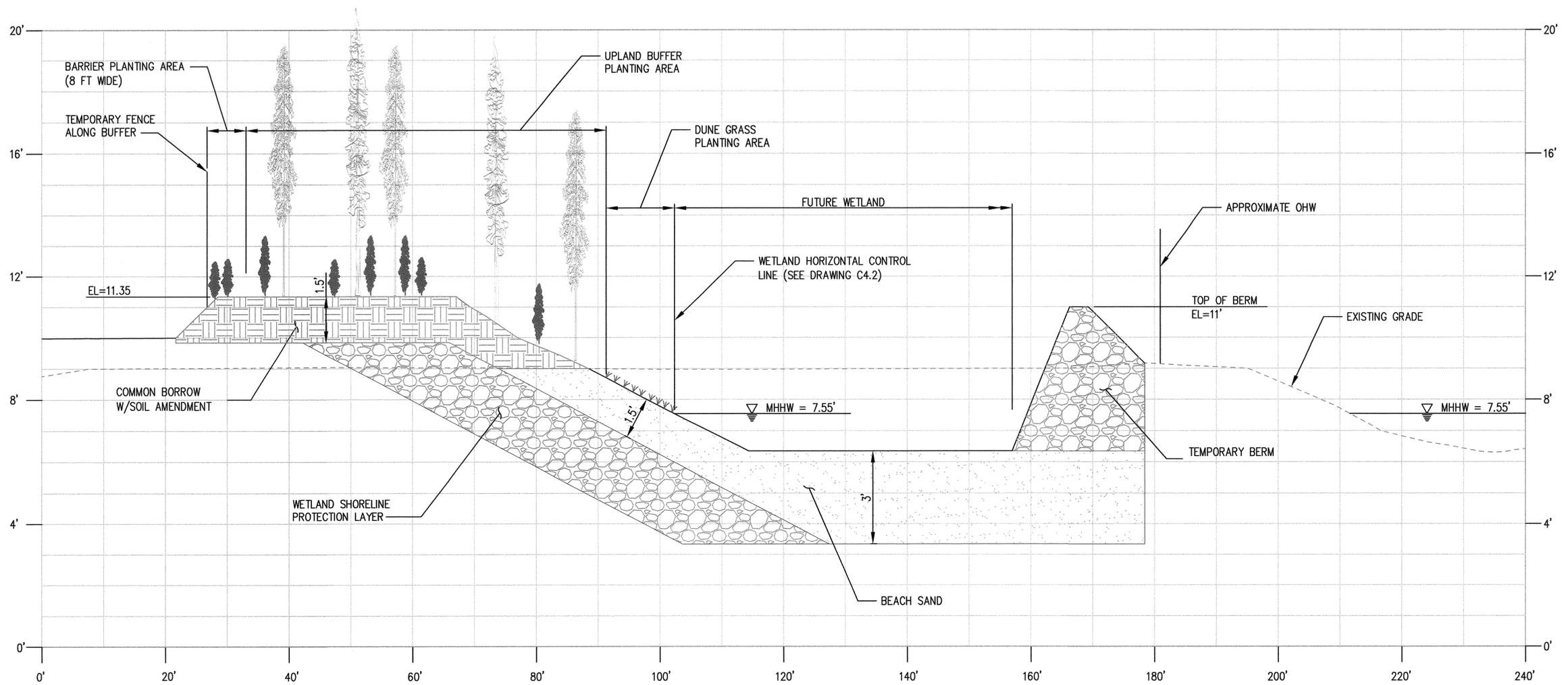
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CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
LANDSCAPE PLAN

DRAWN: KV	PROJECT NO.: 110065
DESIGN: CA	SCALE: AS SHOWN
CHECKED: SH	DATE: APR 18, 2011
DRAWING NO.	L1.1
SHEET NO.	30 OF 32

BID SET

Plotted: Apr 14, 2011 - 3:23pm kvang Layout: L1.2
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_L1.2_Landscape Sections.dwg



**TYPICAL WETLAND/BUFFER
LANDSCAPE SECTION**

A
 L1.1 SCALE: H: 1"=10'
 V: 1"=2'

NOTES:

1. MHHW = 7.55' (NAVD88) DATUM SHOWN IS EQUIVALENT TO MHHW ELEVATION 8.20' (MLLW DATUM. SEE DRAWING G1.0 FOR SURVEY DATUM AND CONVERSION INFORMATION.
2. PLANTING AREAS SHOWN ARE APPROXIMATE, SEE DRAWING L1.1 FOR LOCATIONS AND DETAILS.
3. SEE DRAWINGS C4.5 AND C4.6 FOR CONSTRUCTION DETAILS FOR WETLAND, BUFFER AND TEMPORARY BERM.



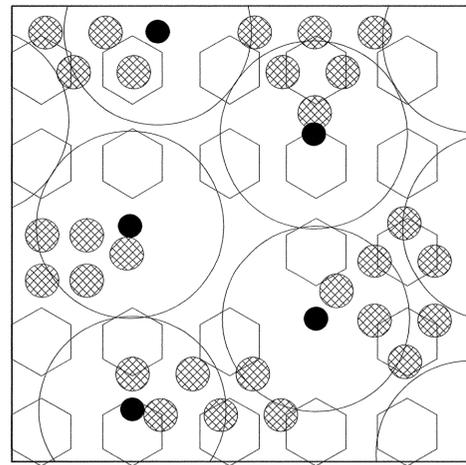
NO.	DATE	BY	REVISION



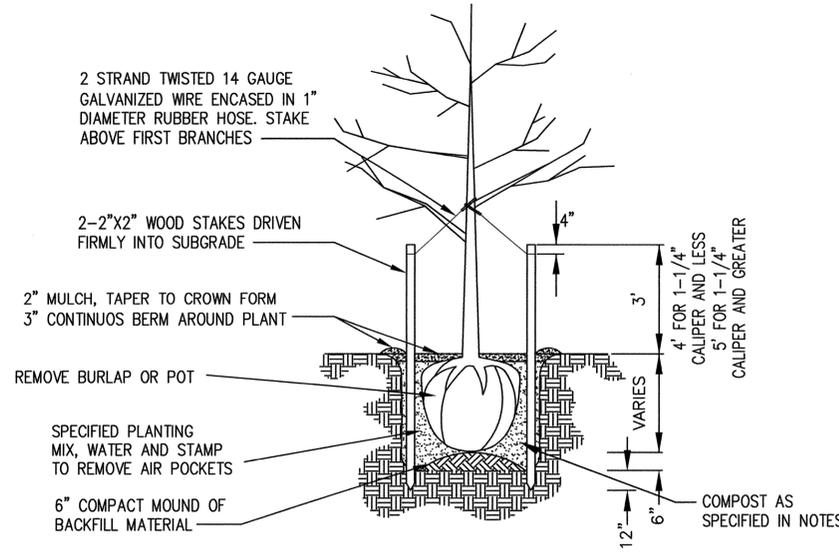
**CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON
WETLAND/BUFFER LANDSCAPE SECTION**

DRAWN: CA	PROJECT NO.: 110065
DESIGN: TZ	SCALE: AS SHOWN
CHECKED: SH	DATE: APR 18, 2011
DRAWING NO.	L1.2
SHEET NO.	31 OF 32

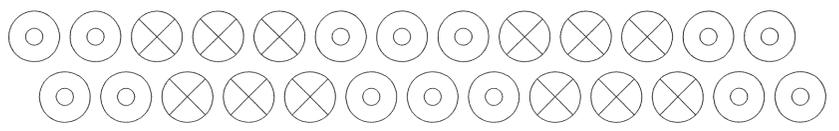
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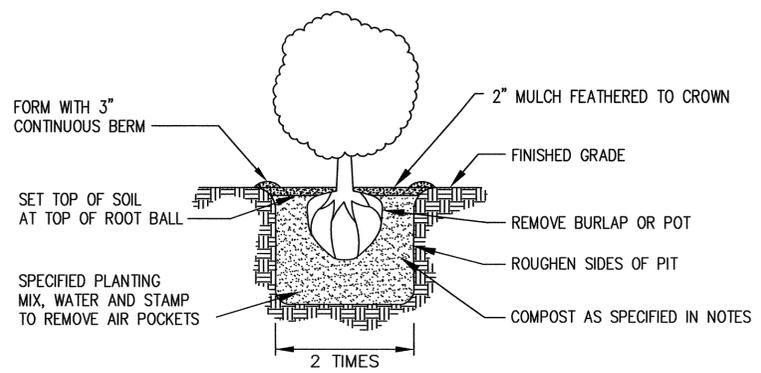
A
L1.X
TYPICAL PLANTING DETAIL
SCALE: 1"=6'-0"



C
L1.X
TREE PLANTING DETAIL
N.T.S.

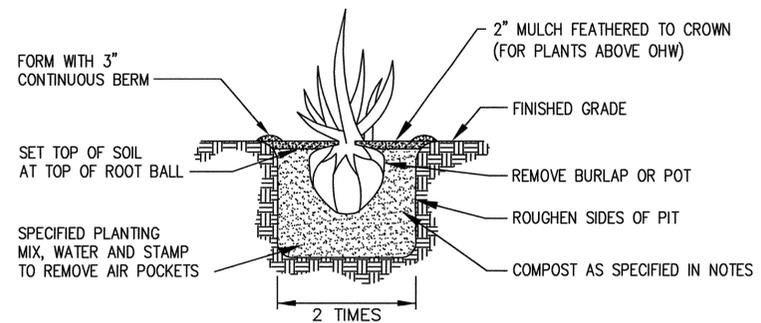
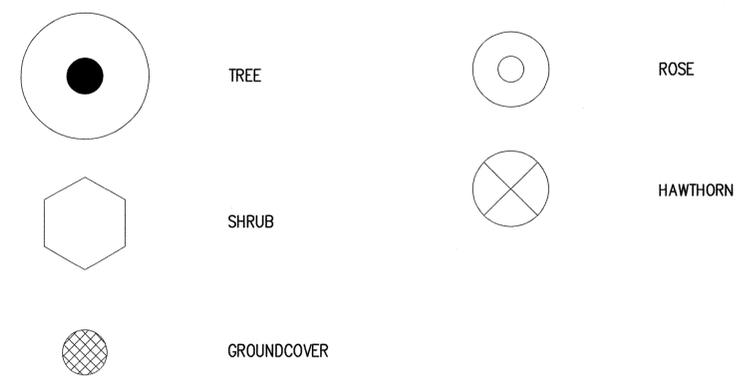


B
L1.X
TYPICAL BARRIER PLANTING DETAIL
N.T.S.



D
L1.X
SHRUB PLANTING DETAIL
N.T.S.

LEGEND:



E
L1.X
GROUNDCOVER PLANTING DETAIL
N.T.S.

PLANT SCHEDULE FOR BUFFER PLANTING AREA					
COMMON NAME	SCIENTIFIC NAME	CONDITION	MINIMUM SPACING (ON CENTER IN FEET)	PLANTING NOTES	QUANTITY
TREES					
DOUGLAS FIR	PSEUDOTSUGA MENZIESII	1 GALLON	10 TO 12	PLANT INDIVIDUALLY	55
SHORE PINE	PINUS CONTORTA	1 GALLON	10 TO 12	PLANT INDIVIDUALLY	55
BLACK COTTONWOOD	POPULUS BALSAMIFERA	1 GALLON	10 TO 12	PLANT INDIVIDUALLY	55
BIG-LEAF MAPLE	ACER MACROPHYLLUM	1 GALLON	10 TO 12	PLANT INDIVIDUALLY	55
TOTAL TREES					220
SHRUBS					
OCEANSPRAY	HOLODISCUS DISCOLOR	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
VINE MAPLE	ACER CIRCINATUM	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
RED ELDERBERRY	SAMBUCUS RACEMOSA	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
NOOTKA ROSE	ROSA NUTKANA	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
RED-FLOWERING CURRANT	RIBES SANGUINEUM	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
SNOWBERRY	SYMPHORICARPOS ALBUS	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
THIMBLEBERRY	RUBUS PARVIFLORUS	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
SALAL	GAULTHERIA SHALLON	1 GALLON	5 TO 7	PLANT IN GROUPS OF 4 TO 8	110
DOUGLAS HAWTHORNE ^a	CRATAEGUS DOUGLASII	1 GALLON	3 TO 5	PLANT INDIVIDUALLY IN ALTERNATING ROWS	110
NOOTKA ROSE ^a	ROSA NUTKANA	1 GALLON	3 TO 5	PLANT INDIVIDUALLY IN ALTERNATING ROWS	110
TOTAL SHRUBS					1,100
HERBS					
DUNEGRASS ^b	LEYMUS MOLLIS	DIVISION OR PLUG	1 TO 3	PLANT IN GROUPS OF 10 TO 15	660
COASTAL STRAWBERRY	FRAGARIA CHILOENSIS	4-INCH	3 TO 5	PLANT IN GROUPS OF 4 TO 8	605
KINNIKINICK	ARCTORSTAPHYLOS UVAURSI	4-INCH	3 TO 5	PLANT IN GROUPS OF 4 TO 8	605
TOTAL HERBS					1,870

NOTE: PLANT SPECIES AND QUANTITIES ARE SUBJECT TO CHANGE.

^a FOR INSTALLATION AS A BARRIER PLANTING ALONG THE PERIMETER OF THE UPLAND BUFFER ONLY.
^b FOR INSTALLATION ALONG THE SHORELINE AND SLOPE BETWEEN WETLAND AND UPLAND BUFFER ONLY.

Plotted: Apr 14, 2011 - 3:27pm kvang Layout: L1.X
 M:\2010\110065 Custom Plywood Remediation (Hart Crowser)\Drawings\Current\110065_L1.3_Landscape_Details.dwg



NO.	DATE	BY	REVISION

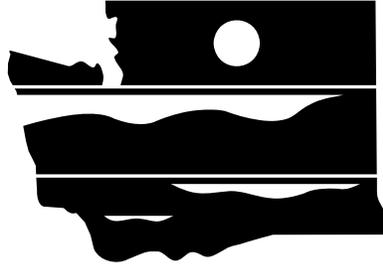


**CUSTOM PLYWOOD SITE INTERIM ACTION
 PHASE I - UPLAND REMEDIATION
 ANACORTES, WASHINGTON
 LANDSCAPE DETAILS**

DRAWN: KV	PROJECT NO.: 110065
DESIGN: CA	SCALE: AS SHOWN
CHECKED: SH	DATE: APR 18, 2011
DRAWING NO.	L1.3
SHEET NO.	32 OF 32

BID SET

APPENDIX B
TECHNICAL SPECIFICATIONS



DEPARTMENT OF
ECOLOGY
State of Washington

SPECIFICATIONS

FOR

CUSTOM PLYWOOD SITE INTERIM ACTION
PHASE I - UPLAND REMEDIATION
ANACORTES, WASHINGTON

DIRECTOR:
Ted Sturdevant

PROJECT MANAGER:
Hun Seak Park, PE

CONTRACTS OFFICER:
Robert D. Swackhamer, PE

MONTH/YEAR:
April 2011

TABLE OF CONTENTS

TABLE OF CONTENTS

Call for Bids

Certification of Technical Specifications

Division 00 – Procurement and Contracting Requirements

- 00 21 00 – Instructions to Bidders
- 00 31 24 – Environmental Assessment Information
- 00 41 43 – Bid Form
- 00 72 00 – General Conditions
- 00 80 00 – Supplemental Conditions

Division 01 – Project Specific Requirements

- 01 10 00 – Summary
 - 01 10 05 – Administrative Requirements
 - 01 10 11 – Contractor Experience
 - 01 10 15 – Safety
 - 01 10 16 – Completion Date
 - 01 10 17 – Request and Approvals
 - 01 10 18 – Site Restoration
 - 01 10 25 – Payments
 - 01 10 90 – Reference Standards
- 01 20 00 – Price and Payment Procedures
- 01 31 00 – Project Management and Coordination
- 01 33 00 – Submittals
- 01 35 29 – Health, Safety, and Emergency Response Procedures
- 01 35 43 – Environmental Procedures
- 01 45 00 – Quality Control
- 01 50 00 – Temporary Facilities and Controls
- 01 57 13 – Temporary Erosion and Sediment Control
- 01 70 00 – Execution and Closeout Requirements
- 01 71 23 – Field Engineering
- 01 80 00 – Archeological Monitoring During Excavation

Division 02 – Existing Conditions

- 02 41 13 – Selective Site Demolition

Division 31 - Earthwork

- 31 23 00 – Remedial Excavation and Fill
 - 31 23 01 – Off-Site Transportation and Disposal of Contaminated Soil
 - 31 23 19 – Construction Dewatering

TABLE OF CONTENTS

Division 32 – Exterior Improvements

32 71 00 – Landscaping and Wetland Mitigation Area

¹APPENDICES:

1. Interim Action Work Plan Documents
 - Draft Remedial Investigation Report for Interim Action Work Plan, Custom Plywood Site, Anacortes, Washington, February 2011
 - Draft Feasibility Study Report for Interim Action Work Plan, Custom Plywood Site, Anacortes, Washington, February 2011
 - Draft Upland Remediation (Phase I) Cleanup Action Plan for Interim Action Work Plan, Anacortes, Washington, February 2011
 - Draft Upland Remediation (Phase I) Engineering Design Report for Interim Action Work Plan, Anacortes, Washington, February 2011
 - Notice of Mitigated Determination of Non-significance (MDNS)
 - Draft State Environmental Policy Act (SEPA) Checklist,
2. Archaeological Monitoring Plan
3. Construction Contract Drawings
4. Test Pit Explorations

²ADDENDA

1. Geotechnical Letter Report to support contractor design of sheet piling (will be posted on or before April 28, 2011)
2. City of Anacortes and Other Permits (will be posted on April 28, 2011 or before the bid opening day)³

¹ Refer to Department Ecology's FTP site for Appendices and Addenda at:
<ftp://www.ecy.wa.gov/CustomPlywood>

² It is bidder's responsibility to check the addenda listed in Ecology's FTP site before submitting the bid.

³ Ecology's Toxics Cleanup Program is in the process of getting these permits.

CALL FOR BIDS

CALL FOR BIDS

Bids will be received by the State of Washington, Department of Ecology (Ecology), until 2:00 p.m. P.D.T on May 18, 2011 (Wednesday) for "CUSTOM PLYWOOD SITE PHASE I UPLAND INTERIM ACTION".

The site is located on the west shore of Padilla Bay, near 35th Street in Anacortes, Washington. The estimated cost of this work for bonding purposes is between \$ 3.5 million and \$ 5.2 million.

To request bid specifications, please contact Robert D. Swackhamer, PE at (360) 407-7210 or at robert.swackhamer@ecy.wa.gov or Department of Ecology's on-line FTP site (<ftp://www.ecy.wa.gov/CustomPlywood/>).

Questions or comments may be directed to Hun Seak Park, Project Manager, Toxics Cleanup Program, Ecology Headquarters (360) 407-7189 or at hpar461@ecy.wa.gov

State of Washington Department of Ecology
Ted Sturdevant

by

Jim Pendowski, Program Manager
Toxics Cleanup Program

NOTE:

1. Bids may be sent by regular mail to:

Attn: Robert D. Swackhamer, PE
Department of Ecology
Toxics Cleanup Program, PO BOX 47600
Olympia, WA 98504-7600

2. Bids may be sent by UPS, Express Mail or hand delivered to Ecology Headquarters receptionist at:

Attn: Robert D. Swackhamer, PE
300 Desmond Drive in
Lacey, Washington 98503

CALL FOR BIDS

A pre-bid meeting (including site walk) will be held at Fidalgo Bay Resort (360-293-5353) near the site:

When: April 28th 2011 (Thursday) at 11 a.m.

Where: Fidalgo Bay Resort (conference room)
4701 Fidalgo Bay Road
Anacortes, WA 98221

Please contact Robert Swackhamer at (360) 407-7210 if you plan on attending. It is highly recommended that all potential bidders attend this meeting.

GENERAL

The construction accomplished within the requirements outlined in this contract will be the responsibility of one Contractor licensed with the State of Washington to perform the work as stated in the specifications and shown on the contract drawings.

This responsibility extends to work accomplished by independent organizations through agreement with the Contractor. The Contractor will assure that all personnel accomplishing work in connection with this contract are familiar with all of the procedures (including payment procedures), instructions, and technical requirements of this contract to insure that construction will proceed to full completion in an orderly manner.

All work will be done in accordance with the best modern construction practices and under the supervision of capable superintendents, foremen, and workmen fully experienced in their field of work.

SCOPE

At a site formerly occupied by a sawmill and plywood manufacturing plant, this contract involves the removal and disposal of small quantities pilings, concrete, and surface debris remaining after completion of site preparation work conducted by a separate contractor; excavation of approximately 22,400 cubic yards (33,600 tons) of contaminated soil to depths as much as 10 feet; transportation and disposal of the contaminated soil off-site; installation and removal of sheet pile wall to assist in the excavation of site soils; the removal, treatment and infiltration or disposal of construction related groundwater from the excavated areas; the placement of clean backfill (approximately 39,200 tons); creation of wetland mitigation including an estuarine wetland beach; creation of a swale to treat stormwater; and decommissioning of groundwater monitoring wells.

CALL FOR BIDS

NOTE:

1. Accessibility of Bid Documents via on-line:
Bid specifications, appendices, plans, addenda are available through the Department of Ecology's on-line FTP site. This on-line FTP site provides bidders with fully usable electronic documents:

<ftp://www.ecy.wa.gov/CustomPlywood/>

2. General site information on "Custom Plywood Site" can be obtained from:

http://www.ecy.wa.gov/programs/tcp/sites/custom_ply/custom_ply_hp.htm

3. Current on-going "Site Preparation and Debris Removal Work" by other party:

This work consists of removal and disposal of surface debris on the site; removal and of non-creosote pilings from areas within actual and potential excavation limits; excavation and stockpiling of creosote pilings from excavation areas (transport and disposal of creosote pilings is included in the bid documents that follow), demolition, crushing, and stockpiling on non-contaminated concrete structures and foundations on the site, and demolition and stockpiling of potentially contaminated concrete structures and foundations on the site. It is possible that portions of this work will not be completed by the time this contract is awarded. The contractor will need to make allowances to complete the remaining portions of this work in this bid.

4. Addenda:

Two addenda are currently planned for this project. The first addendum will provide the Geotechnical Letter Report to be used by Contractor for design of sheet piling installations and including additional related changes in the Specifications. The report will include boring logs from four locations along the sheet pile alignment (shown on drawings) and results of soil property testing, and related engineering recommendations. The second addendum will provide the City of Anacortes Grade and Fill Permit and other permits that may be issued.

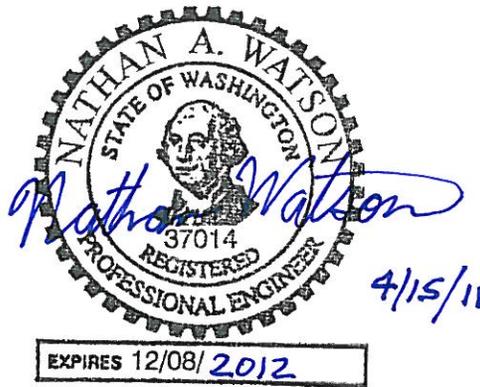
END OF CALL FOR BIDS

CERTIFICATION OF TECHNICAL SPECIFICATIONS

Technical Specifications in this document were prepared by the design professionals listed below for Division 02 and Division 31. The names and stamps of the professional engineers and the specific sections for which they are responsible are presented below. Division 00 and 01 are not technical specification and do not require certification. Division 32 is a technical specification but there are no certification requirements for this work.

1. Division 02 – Existing Conditions, Section 02 41 13 – Selective Site Demolition and Division 31 – Earthwork, Section 31 23 00 – Remedial Excavation and Fill:

Nathan A. Watson, P.E.



2. Division 31 – Earthwork, Section 31 23 01 – Off-Site Transportation and Disposal of Contaminated Soil and Division 31 – Earthwork, Section 31 23 19 – Excavation Dewatering:

Steven R. Hoffman 16391

Steven R. Hoffman, P.E.



END OF SECTION

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 21 00 - Instructions to Bidders

PART 1 - PREBID REQUIREMENTS

- A. Carefully examine all project documents.
- B. Visit the site of all work and determine quantities.
- C. Become fully informed of all existing conditions and limitations.
- D. Be registered by the Department of Labor & Industries (L&I) Division of Building and Construction Safety Inspection and conform to the *Contractor's License Act*. The license number will be indicated in the space provided on the *Bid Proposal Form*.
- E. Include in the proposal a sum sufficient to cover all items required by Project Documents, including applicable federal, state, and local taxes (except State Retail Sales Tax), insurance, license, State Prevailing Wage or Davis Bacon Rates, L&I filing fees, and all other fees that may be necessary to complete the work.
- F. Before award of a public works contract, the bidder must meet the following responsibility criteria to be considered a responsible bidder and qualified to be awarded a public works project. The bidder must:
 - 1. At time of bid submittal, have a certificate of registration in compliance with chapter *18.27 RCW*;
 - 2. Have a current state unified business identifier number (UBI):
 - 3. If applicable, have industrial insurance coverage for the bidder's employees working in Washington as required in *Title 51 RCW*; an employment security department number as required in *Title 50 RCW*; and a state excise tax registration number as required in *Title 82 RCW*; and
 - 4. Not be disqualified from bidding on any public works contract under *RCW 39.06.010 or 39.12.065(3)*.

PART 2 - PREPARATION AND SUBMITTAL OF BIDS

2.01 REQUIRED BID DOCUMENTS

- A. Bid Proposal Form. Two bid forms (Phase I-A and I-B) must be signed and any addendum/addenda acknowledged or bid will be considered non-responsive.
- B. Statement of Bidder's Qualifications

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 21 00 - Instructions to Bidders

C. Subcontractor List For Project Bids Greater Than \$100,000. (See SECTION 00 80 1.18 of the SUPPLEMENTAL CONDITIONS)

D. Bid Bond. (See SECTION 00 80 1.15 of the SUPPLEMENTAL CONDITIONS)

2.02 BID FORMAT

A. Bids and bid modifications will be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation; and (2) showing the time specified for receipt, the solicitation number, and the name and address of the bidder.

B. Telegraphic, facsimile, telephone, or oral bids will not be considered.

NOTE: Allow one (1) extra day to insure mail delivery to the Olympia area.

2.03 BID OPENING

A. Sealed bids for this project will be received by the Toxics Cleanup Program Contract Officer or his representative at the Toxics Cleanup Headquarters Office located at 300 Desmond Drive in Lacey, Washington 98503 until the time and date indicated on the Bid Proposal Form and will be publicly opened and read.

B. Late bids, for whatever cause, are disqualified.

2.04 PERIOD OF ACCEPTANCE

All bid proposals may be held 30 calendar days from the date of bid opening. At the end of this period, the three (3) lowest bids may be retained for 15 additional days, or as may be further extended by the State with the approval of the bidding companies.

2.05 STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder will provide a Statement of Bidder's Qualifications, which includes a statement of Bidder's Work experience and general ability to perform the Work contemplated. Ecology will have the right to make such investigations as it deems necessary to determine the ability of the Bidder to furnish the Work as described in the Contract Documents, and the Bidder will furnish to Ecology all such information and data for this purpose. Each Bidder will be skilled and regularly engaged in the general class or type of Work called for in the Contract Documents. Proposed Subcontractors will be competent, experienced, and thoroughly familiar with aspects of the Work that they will perform. Ecology reserves the right to reject any bid if the evidence submitted by, or the investigation of, such Bidder fails to satisfy Ecology that such Bidder and its

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 21 00 - Instructions to Bidders

proposed Subcontractors are properly qualified to carry out the obligations of the Contract and to furnish the Work described in the Contract Documents at the required standard(s) of quality.

PART 3 - BID EVALUATION

3.01 BASIS OF AWARD

Award will be made to the lowest⁴ responsive and responsible bidder based upon any or all of the bid priced items for both Phase I-A and Phase I-B listed on the Bid Proposal Form. The State reserves the right to award the contract to the lowest and **a (single)** bidder based upon any or all of the bid items listed as necessary to restrict contract payment to the funds available. Moreover, the State reserves the right to further negotiate the bid amounts with the low bidder as necessary to restrict the contract payment to the funds available.

In determining a "Responsive and Responsible Bidder", the following qualifications will be considered by the Department of Ecology:

- a. The ability, capacity, and skill of the bidder to perform the service required with the specified time.
- b. The character, integrity, reputation, judgment experience, and efficiency of the bidder.
- c. The quality of performance of previous contracts or services.
- d. The previous and existing compliance by the bidder with laws and ordinances relating to previous contracts and to the bidders employment practices.
- e. The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the services.
- f. The quality, availability, and adaptability of the supplies, or contractual services, to the particular use required.
- g. Such other information as may be secured by the Department of Ecology having bearing on the decision to recommend the award.

3.02 REJECTION OF BID

Ecology reserves the right to reject any and/or all bids. It also reserves the right to waive any informality in connection with said bids. If the bid includes a supplemental schedule of predetermined unit prices for labor and material, or other items for the purpose of establishing a cost basis on unforeseen contract changes, Ecology reserves the right to reject, without impairing the balance of the bid, any or all such predetermined unit prices in such supplement which the may consider excessive or unreasonable.

⁴ Official bidding amount for this project is the sum of both Phase I-A and Phase I-B.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 21 00 - Instructions to Bidders

3.03 PERFORMANCE AND PAYMENT BOND REQUIRED.

(See *SECTION 00 72 02.04* of the *GENERAL CONDITIONS*)

3.04 INTERPRETATIONS

Questions regarding the contract specifications should be addressed to Robert Swackhamer at telephone (360) 407-7210. Oral explanations or instructions given before the award of a contract will not be binding. Questions that result in changes to the scope, specifications or contract obligations will be answered by addendum addressed to all bidders. Questions received less than forty-eight (48) hours before the bid opening time and date cannot be answered. All addenda issued during the time of bidding will be incorporated into the contract. The State will not be responsible for any oral interpretations.

3.05 MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MWBE) PARTICIPATION

Minority and Women's Business Enterprises (MWBE) are encouraged to participate in the bidding as prime contractors, subcontractors, or suppliers.

3.06 ADDITIVE OR DEDUCTIVE BID ITEMS

The low bidder for purposes of award will be the conforming responsible bidder offering the low aggregate amount for the first or base bid item, plus or minus those additive or deductive bid items providing the most features of the work within the funds determined by Ecology to be available. After determination of the low bidder as stated, award in the best interests of the may be made to that bidder on its base bid and any combination of its additive or deductive bid items for which funds are determined to be available at the time of the award, provided that award on such combination of bid items does not exceed the amount offered by any other conforming responsible bidder for the same combination of bid items.

Ecology plans to administer the additive or deductive unit price bid items as described in the following example. The lump sum contract price for bid item No. 11 (Ecology Directed Overexcavation and Stockpiling) is what Ecology would pay for that bid item if all work in the Specifications and Drawings is performed. In the event Ecology decides not to proceed as planned (either in whole or in part) with the Ecology Directed Overexcavation and Stockpiling, payment would be reduced from the lump sum price for Bid Item No. 11 using the unit price from Bid Item No. U2 and the corresponding change from the quantity identified in Section 01 20 00 – Price and Payment Procedures as the basis for the lump sum price for Bid Item No. 11. For another example, Ecology could decide not to proceed with the Priority 3 or 4 excavations due

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 21 00 - Instructions to Bidders

to unexpectedly large excessive amount of at Priority 1 and 2 excavations beyond the total bid scope⁵.

Similar additions or deductions could also occur if field surveying shows that total actual excavations exceeded or fell short of the volumes called for in the bid specification documents.

PART 4 - AWARD OF CONTRACT

The successful bidder will be required to execute said contract, furnish insurance certificate, payment and performance bond satisfactory to Ecology within ten (10) days after receiving from Ecology properly prepared contract documents.

The agency will retain five percent (5%) of the contract amount for a period of thirty (30) days after date of final acceptance, or until receipt of all necessary releases from the Department of Revenue and the Department of Labor & Industries and settlement of any liens filed, whichever is later.

END OF INSTRUCTIONS TO BIDDERS

⁵ Excavation of approximately 22,400 cubic yards (33,600 tons) as shown in Bid Scope.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 31 24 - Environmental Assessment Information

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

- A. Ecology does not expect materials excavated during the Work to be designated as Dangerous Waste under state regulations (Chapter 173-303 WAC). However, contingency work could include management, handling, and disposal of Dangerous Wastes. If Ecology or Ecology's Representative identifies excavated material as Dangerous Waste, the Contractor shall handle, manage, and dispose of Dangerous Waste in accordance with requirements of Chapter 173-303 WAC.

1.02 SITE CONDITIONS

The property was originally developed as a saw and planing mill in the early 1900s. Through the years, the property ownership has changed several times and was rebuilt and added onto until Custom Plywood became an operating entity sometime before 1991. The facility was used as a sawmill and plywood manufacturing plant until most of the wooden structures in the main plant area, many of which were built in the 1940s, were consumed in a fire on November 28, 1992. Except for the parcels on the periphery that have been sold and redeveloped, the main part of the former mill property has been used sporadically since 1992.

The upland area of the Custom Plywood property is characterized as heavily disturbed, containing relict foundations and structures, concrete and wood debris, native and non-native vegetation, and wetlands. The remnants of former structures, including concrete foundations and pilings and abandoned tanks from previous industrial activities, are scattered across the property. More than 1,500 wooden pilings over the land and in-water associated with the former Custom Plywood mill structures remain on the property.

The shoreline of the Site contains industrial debris and significant quantities of naturally occurring woody debris. Woody debris ranges in size from sawdust to large mill end remnants and logs. Active erosion is occurring along the northeast and central portion of the property where storm events and long-period waves have locally destabilized the shoreline. Temporary measures have been completed with the intent to stabilize the shoreline to prevent or slow further erosion.

Results of the RI identified constituents of potential concern (COPCs) and key indicator hazardous substances in soil and groundwater at the Custom Plywood Site. The COPCs and key indicator hazardous substances that were identified in Site soil include diesel- and oil-range total petroleum hydrocarbons (TPH), inorganic constituents (arsenic, cadmium, copper, chromium, lead, mercury, nickel, selenium, silver, and zinc), and select SVOCs, which primarily include carcinogenic polycyclic aromatic

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 31 24 - Environmental Assessment Information

hydrocarbons (cPAHs). Of these, oil-range TPH had the most significant relative exceedance of preliminary MTCA screening levels, identified near the former press pits located in the central upland portion of the property. Polychlorinated biphenyls (PCBs), dioxins/furans, and other compounds were identified infrequently and generally at concentrations below screening levels. As such, these compounds were not considered to be key indicator hazardous substances in the RI or FS.

The RI reported limited groundwater data for establishing indicator hazardous substances. Several constituents were detected during sampling and testing of Site groundwater monitoring wells and seeps that were considered indicator hazardous substances, which include diesel- and oil-range TPH, cPAHs, and metals (arsenic, copper, nickel, and zinc).

Previous independent and limited interim remedial actions have been conducted in the upland portion of the Custom Plywood Site. These actions include removal of soil impacted by hydraulic oil within the City of Anacortes right-of-way located immediately northwest of the GBH property in 1998 and removal of impacted soils from four areas where petroleum hydrocarbons and other constituents exceeded MTCA Method A cleanup levels in 2007.

On-going “Site Preparation and Debris Removal Work” by other party is currently being conducted. This work consists of removal and disposal of surface debris on the site; removal and disposal of non-creosote pilings from areas within actual and potential excavation limits; excavation and stockpiling of creosote pilings from excavation areas (transport and disposal are included as part of this contract) , demolition, crushing, and stockpiling on non-contaminated concrete structures and foundations on the site (for use as backfill under this contract), and demolition and stockpiling of potentially contaminated concrete structures and foundations on the site (transport and disposal are included as part of this contract). It is possible that portions of this work will not be completed by the time this contract is awarded.

END OF SECTION

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 41 43 - Bid Form

PART 1 – STATEMENT OF BIDDER'S QUALIFICATIONS

1.01 STATEMENT OF BIDDER'S QUALIFICATIONS

Name of Bidder: _____

Address: _____

Number of years the Bidder has been engaged in the business under the present firm name indicated: _____

Gross dollar amount of work completed: _____

Gross dollar amount of work under Contract not completed: _____

Type of work generally performed by Bidder: _____

List of five major projects of a similar nature which have been completed by the Bidder within the last ten years and the gross dollar amount of each project:

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

List of five major pieces of equipment which are anticipated to be used on this project by the Bidder and note which items are owned by the Bidder and which are to be leased or rented from others:

Bank References:

How many general superintendents or other responsible employees in a supervisory position do you have at this time and how long have they been with the Bidder? _____

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 41 43 - Bid Form

Have you changed bonding companies within the last three years? _____

If so, why? (Optional): _____

Have you ever sued or been sued by a special public purpose district, municipality, county, state or the federal government involving a public works contract? _____

For what reason? _____

List case title and cause number of each such lawsuit, as well as the court in which each was or is being filed: _____

Disposition of case, if resolved: _____

Washington State Department of Labor and Industries Workmen's Compensation Account No.:

Washington State Department of Licenses Contractor's Registration No.:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 41 43 - Bid Form

PART 2 - BID FORM(S)

2.01 Phase 1-A Bid Form

BIDDER'S NAME: _____
PROJECT TITLE: CUSTOM PLYWOOD SITE INTERIM ACTION, PHASE I-A UPLAND REMEDIATION⁶

The undersigned bidder declares that it has read the specifications, understands the conditions, has examined the site, and has determined for itself all situations affecting the work herein bid upon. All prices will include complete installation without Washington State Sales Tax. Bidder proposes and agrees, if this proposal is accepted, to provide at bidder's own expense, all labor, machinery, tools, materials, including all work incidental to, or described or implied as incidental to such items, according to the Contract Documents of the Department of Ecology, and that the bidder will complete the work within the time stated, and that bidder will accept in full payment therefore the lump sum price(s) set forth below:

TABLE 1: SCHEDULE OF LUMP SUM/KNOWN QUANTITY PRICES¹

BID ITEM NO.	BID ITEM DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL
1	Mobilization and Demobilization	LS	1	N/A	
2	Temporary Erosion and Sediment Controls	LS	1	N/A	
3	Project Administration	LS	1	N/A	
4	Field Engineering	LS	1	N/A	
5	Temporary Facilities and Control	LS	1	N/A	
6	Health and Safety	LS	1	N/A	
7	Project Close-Out	LS	1	N/A	
8	Demolition	LS	1	N/A	
9	Off-Site Transportation and Disposal	TON	33,600		
10	Baseline Excavation and Stockpiling			N/A	
10a	a. Priority 1 Excavations	LS	1	N/A	
10b	b. Priority 2 Excavations	LS	1	N/A	
10c	c. Priority 3 Excavations	LS	1	N/A	
10d	d. Priority 4 Excavations	LS	1	N/A	
11	Ecology Directed Overexcavation and Stockpiling	LS	1	N/A	

⁶ Phase I-A does not include the maintenance of Landscaping and Wetland Mitigation Area for the first two years.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 41 43 - Bid Form

12	Sheet Piling Installation and Removal	LS	1	N/A	
13	Wetland Shoreline Protection Layer	TON	3,200		
14	Temporary Berm Construction	TON	1,500		
15	Select Borrow	TON	30,500		
16	Common Borrow	TON	4,000		
17	Site Finish Grading	LS	1	N/A	
18	Storm Drainage Improvements	LS	1	N/A	
19	Landscaping/Wetlands Planting ⁷	LS	1	N/A	
20	Excavation Dewatering and Treatment of Dewatering Effluent	LS	1	N/A	

¹ For a better clarification of each bid item, refer to Division 01; Section 01 20 00- Price and Payment Procedures.

PHASE 1A TOTAL⁸ _____

Evaluation of Bids. The evaluation of bids and determination of the low responsive bid will be based on the Not to Exceed Bid Total in the above table in combination with the Unit Prices provided in the table below.

Schedule of Unit Prices: The following unit prices are proposed to apply only in the event of additions to or deletions from the work required and ordered in the above schedule. All prices will include complete installation without Washington State Sales Tax. The bidder will propose a price for each item; failure to propose a price for each item may render the bid non-responsive. Ecology reserves the right to accept or reject the unit prices proposed.

⁷ Do not include the amount for maintenance of Wetland Mitigation Area described in Phase I-B Bid form.

⁸ Exclude Washington State Sales Tax in the proposed Total. Sales Tax will be added to the Contract Amount prior to being awarded.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 41 43 - Bid Form

TABLE 2: SCHEDULE OF UNIT PRICES

Item No.	Item of Work	UOM	Unit Price
U1	Baseline Excavation and Stockpiling	CY	
U2	Ecology Directed Overexcavation and Stockpiling	CY	
U3	Sheet Pile Installation and Removal	LF	
U4	Excavation Dewatering Effluent Treatment ⁹	GAL	

Contract Time. Ecology expects to Award this Contract on May 21, 2011. The Contract, in its entirety, will be Substantially Complete on or before **October 31, 2011**. Final Completion will be issued within One Hundred and Twenty (120) days thereafter.

Bid Security. A certified check, cashiers check, or other obligation of a bank, or a bid security bond in substantially the form set forth in section 00 43 13, for at least 5% of the total bid without sales tax, accompanies this bid.

Liquidated Damages. The Liquidated Damages for failure to achieve Substantial Completion as required will be **\$250.00 per day**, and for failure to achieve Final Completion within One Hundred and Twenty (120) days thereafter will be 10% of the Liquidated Damages daily rate for failure to achieve Substantial Completion. The damages stipulated above are to be deducted as Liquidated Damages from any monies due or to become due. It is agreed that liquidated damages as specified herein will be levied for each and every calendar day by which the completion of the work is delayed beyond the time fixed for completion or extension thereof.

Principal Subcontractors. In accordance with the Instructions to Bidders, Section 00 21 00-2.05, and as additionally requested here, the bidder will list below the name of each subcontractor to whom the bidder proposes to subcontract portions of Landscaping, Irrigation, Plumbing, Electrical, Sheet Piling Installation and Removal, and others as the Contractor determines or name itself for the work. Indicate NA when no subcontracting for work is involved.

⁹ This unit price is based on the treatment of 250,000 Gal of excavation dewatering effluent.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 41 43 - Bid Form

Work to Be Performed	Name of Firm
Landscaping	
Irrigation	
Electrical	
Plumbing	
Sheet Piling Installation and Removal	

Addenda. Bidder acknowledges review of all Addenda¹⁰ through No. _____.

Noncollusion. The undersigned declares under penalty of perjury that the bid submitted is a genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to the bidder an advantage over any other bidder or bidders.

Name of Firm Date

Signature

Signature By (Type or Print) Title

Mailing Address City, State Zip Code

Telephone Number Fax Number Email Address

Washington State Contractor's License No. Date of Issue Expiration Date

Federal Tax Id No. Unified Business Identifier (UBI) No.:

¹⁰ Refer to Department of Ecology's FTP site for Appendices and Addenda at: <ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 41 43 - Bid Form

2.02 Phase I-B Bid Form

BIDDER'S NAME: _____
PROJECT TITLE: CUSTOM PLYWOOD SITE INTERIM ACTION, PHASE I-B;
MAINTENANCE OF WETLAND MITIGATION AREAS FOR FIRST TWO YEARS¹¹

The undersigned bidder declares that it has read the specifications, understands the conditions, has examined the site, and has determined for itself all situations affecting the work herein bid upon. All prices will include complete installation without Washington State Sales Tax. Bidder proposes and agrees, if this proposal is accepted, to provide at bidder's own expense, all labor, machinery, tools, materials, etc., including all work incidental to, or described or implied as incidental to such items, according to the Contract Documents of the Department of Ecology, and that the bidder will complete the work within the time stated, and that bidder will accept in full payment therefore the lump sum price(s) set forth below:

TABLE 3: SCHEDULE OF LUMP SUM/KNOWN QUANTITY PRICES¹

BID ITEM NO.	BID ITEM DESCRIPTION	UNIT	QTY	LUMP SUM TOTAL
1	Maintenance of Wetlands Planting for First Two years	LS		

¹ For a better clarification of each bid item, refer to Division 01; Section 01 20 00- Price and Payment Procedures.

PHASE I-B TOTAL ¹² _____

Evaluation of Bids. The evaluation of bids and determination of the low responsive bid will be based on the Not to Exceed Bid Total in the above table in combination with the Unit Prices provided in the table below.

Addenda. Bidder acknowledges review of all Addenda¹³ through No. _____.

Contract Time. Ecology expects to Award this Contract on May 21, 2011. The Contract, in its entirety, will be Substantially Complete on or before **October 31, 2013**. Final Completion will be issued within One Hundred and Twenty (120) days thereafter.

¹¹ Refer to "Division 32; Section 32 71 00" for the specific requirement for Wetland Mitigation Area.

¹² Exclude Washington State Sales Tax in the proposed Total. Sales Tax will be added to the Contract Amount prior to being awarded.

¹³ Refer to Department of Ecology's FTP site for Appendices and Addenda at: <ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 41 43 - Bid Form

Bid Security. A certified check, cashiers check, or other obligation of a bank, or a bid security bond in substantially the form set forth in section 00 43 13, for at least 5% of the total bid without sales tax, accompanies this bid.

Liquidated Damages. The Liquidated Damages for failure to achieve Substantial Completion as required will be **\$250.00 per day**, and for failure to achieve Final Completion within One Hundred and Twenty (120) days thereafter will be 10% of the Liquidated Damages daily rate for failure to achieve Substantial Completion. The damages stipulated above are to be deducted as Liquidated Damages from any monies due or to become due. It is agreed that liquidated damages as specified herein will be levied for each and every calendar day by which the completion of the work is delayed beyond the time fixed for completion or extension thereof.

Principal Subcontractors. In accordance with the Instructions to Bidders, Section 00 21 00-2.05, and as additionally requested here, the bidder will list below the name of each subcontractor to whom the bidder proposes to subcontract portions of Landscaping, Irrigation, Plumbing, Electrical, Sheet Piling Installation and Removal, and others as the Contractor determines or name itself for the work. Indicate NA when no subcontracting for work is involved.

Work to Be Performed	Name of Firm
Landscaping	
Irrigation	

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 41 43 - Bid Form

Noncollusion. The undersigned declares under penalty of perjury that the bid submitted is a genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to the bidder an advantage over any other bidder or bidders.

Name of Firm

Date

Signature

Signature By (Type or Print)

Title

Mailing Address City, State Zip Code

Telephone Number Fax Number Email Address

Washington State Contractor's License No. Date of Issue Expiration Date

Federal Tax Id No. Unified Business Identifier (UBI) No.:

END OF SECTION

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

PART 1 - GENERAL CONDITIONS

- 1.01 Definitions
- 1.02 Order of Preference
- 1.03 Execution and Intent

PART 2 - INSURANCE/BONDS

- 2.01 Contractor's Liability Insurance
- 2.02 Coverage Limits
- 2.03 Insurance Coverage Certificates
- 2.04 Payment and Performance Bonds
- 2.05 Additional Bond Security
- 2.06 Builder's (Contractor's) Risk

PART 3 - TIME/SCHEDULE

- 3.01 Progress and Completion
- 3.02 Construction Schedule
- 3.03 Ecology's Right to Suspend the Work for Convenience
- 3.04 Ecology's Right to Stop Work for Cause
- 3.05 Delay
- 3.06 Notice to Ecology of Labor Disputes
- 3.07 Damages for Failure to Achieve Timely Completion

PART 4 – SPECIFICATIONS, DRAWINGS AND OTHER DOCUMENTS

- 4.01 Discrepancies and Contract Document Review
- 4.02 Project Record
- 4.03 Shop Drawings
- 4.04 Organization of Specifications
- 4.05 Ownership and Use of Drawings, Specifications, and Other Documents

PART 5 - PERFORMANCE

- 5.01 Contractor Control and Supervision
- 5.02 Permits, Fees, and Notices
- 5.03 Permits and Royalties
- 5.04 Prevailing Wages
- 5.05 Hours of Labor
- 5.06 Nondiscrimination
- 5.07 Safety Precautions
- 5.08 Operations, Material Handling, and Storage Area
- 5.09 Prior Notice of Excavation
- 5.10 Unforeseen Physical Conditions
- 5.11 Protection of Existing Structures, Equipment, Vegetation, Utilities, and Improvements
- 5.12 Layout of Work
- 5.13 Material and Equipment
- 5.14 Offshore Items
- 5.15 Availability and Use of Utility Services

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- 5.16 Test and Inspection
- 5.17 Correction of Nonconforming Work
- 5.18 Cleanup
- 5.19 Access to Work
- 5.20 Other Contracts
- 5.21 Subcontractors and Suppliers
- 5.22 Warranty of Construction
- 5.23 Indemnification

PART 6 - PAYMENT AND COMPLETION

- 6.01 Contract Sum
- 6.02 Schedule of Values
- 6.03 Application for Payment
- 6.04 Progress payments
- 6.05 Payments Withheld
- 6.06 Retainage and Bond Claim Rights
- 6.07 Substantial Completion
- 6.08 Prior Occupancy
- 6.09 Final Completion, Acceptance, and Payment

PART 7 - CHANGES

- 7.01 Changes in the Work
- 7.02 Change in the Contract Sum
- 7.03 Change in the Contract Time

PART 8 - CLAIMS AND DISPUTE RESOLUTION

- 8.01 Claims Procedure
- 8.02 Arbitration
- 8.03 Claims Audits

PART 9 - TERMINATION OF THE WORK

- 9.01 Termination by Ecology for Cause
- 9.02 Termination by Ecology for Convenience

PART 10 - MISCELLANEOUS PROVISIONS

- 10.01 Governing Law
- 10.02 Successors and Assigns
- 10.03 Meaning of Words
- 10.04 Rights and Remedies
- 10.05 Contractor Registration
- 10.06 Time Computations
- 10.07 Record Retention
- 10.08 Third-Party Agreements
- 10.09 Antitrust Assignment

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 72 00 - General Conditions

PART 1 –GENERAL CONDITIONS

1.01 DEFINITIONS

- A. Application for Payment: A written request submitted by Contractor to A/E for payment of Work completed, in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Ecology or A/E may require.
- B. Architect, Engineer, or A/E: A person or entity lawfully entitled to practice architecture or engineering, representing Ecology within the limits of its delegated authority.
- C. Change Order: A written instrument signed by “Ecology or Ecology’s Representative” and Contractor stating their agreement upon all of the following:
 - (1) a change in the Work Scope;
 - (2) the amount of the adjustment in the Contract Sum, if any; and
 - (3) the extent of the adjustment in the Contract Time, if any.
- D. Claim: Contractor's exclusive remedy for resolving disputes with Ecology regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in *SECTION 00 72 08 - CLAIMS AND DISPUTE RESOLUTION*.
- E. Contract Documents: The Advertisement for Bids, Instructions to Bidders, completed Form of Proposal, *GENERAL CONDITIONS*, Modifications to the *GENERAL CONDITIONS*, *SUPPLEMENTAL CONDITIONS*, Public Works Contract, other Special Forms, Drawings and Specifications, and all addenda and modifications thereof.
- F. Contract Sum: The total amount payable by Ecology to Contractor for performance of the Work in accordance with the Contract Documents.
- G. Contract Time: The number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.
- H. Contractor: The person or entity who has agreed with Ecology to perform the Work in accordance with the Contract Documents.
- I. Days or Hours: Refers to the number calendar days or hours allotted to accomplish the associated requirement unless stated otherwise. Business days or hours are specifically cited if required.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- J. Drawings: The graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.
- K. Final Acceptance: The written acceptance issued to Contractor by Ecology after Contractor has completed the requirements of the Contract Documents.
- L. Final Completion: The Work is fully and finally completed in accordance with the Contract Documents.
- M. Force Majeure: Those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in *00 72 03.05A*.
- N. Notice: A written notice that has been delivered in person to the individual or a member of the firm or entity, or to an officer of the corporation for which it was intended, or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.
- O. Notice to Proceed: A notice from Ecology to Contractor that defines the date on which the Contract Time begins to run.
- P. Ecology or Ecology's Representative: The state agency, institution, or its authorized representative with the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents and make related determinations and findings.
- Q. Person: A corporation, partnership, business association of any kind, trust, company, or individual.
- R. Prior Occupancy: Ecology or property owner use of all or parts of the Project before Substantial Completion.
- S. Progress Schedule: A schedule of the Work, in a form satisfactory to Ecology or Ecology's Representative, as further set forth in *SECTION 00 72 03.02*.
- T. Project: The total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Ecology or by separate contractors.
- U. Project Manual: The volume usually assembled for the Work, which may include documents such as the bidding requirements, sample forms, and other Contract Documents.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- V. Project Record: The separate set of Drawings and Specifications as further set forth in *SECTION 00 72 04.02A*
- W. Schedule of Values: A written breakdown allocating the total Contract Sum to each principle category of Work, in such detail as requested by Ecology.
- X. Site or Property Owner: GBH Investments, LLC.
- Y. Specifications: That portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.
- Z. Subcontract: A contract entered between the Contractor and a Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for, or in connection with, the Work.
- AA. Subcontractor: Any person other than the Contractor who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.
- BB. Substantial Completion: That stage in the progress of the Work where Ecology has full and unrestricted use and benefit of the facilities for the purposes intended, as more fully set forth in *SECTION 00 72 06.07*.
- CC. Work: The construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.
- DD. Owner: Washington State Department of Ecology unless stated otherwise.

1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents will be resolved by giving the documents precedence in the following order:

1. Signed Public Works Contract, including any Change Orders and any Special Forms

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

2. *SUPPLEMENTAL CONDITIONS and ADDENDUM*¹⁴
3. Modifications to the *GENERAL CONDITIONS*
4. *GENERAL CONDITIONS*
5. Specifications: Provisions in *DIVISION 01* will take precedence over provision of any subsequent divisions.
6. Drawings: In case of conflict within the Drawings, large-scale drawings will take precedence over small-scale drawings.
7. Signed and Completed Bid Form
8. Instruction to Bidders
9. Advertisement for Bids

1.03 EXECUTION AND INTENT

Contractor makes the following representations to Ecology or Ecology's Representative:

- A. The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents.
- B. Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, labor, materials, equipment, goods, supplies, services, and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof.
- C. Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents.
- D. Contractor is able to furnish the plants, tools, materials, supplies, equipment, and labor required to complete the Work and perform the

¹⁴ Refer to Department of Ecology's FTP site for supplemental conditions and Addenda at:
<ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 – INSURANCE/BONDS

2.01 CONTRACTOR'S LIABILITY INSURANCE

Prior to commencement of the Work, Contractor will obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Ecology that such insurance has been procured. Review of the Contractor's insurance by Ecology will not relieve or decrease the liability of Contractor. Companies writing the insurance to be obtained by this section will be licensed to do business under *Chapter 48 RCW* or comply with the *Surplus Lines Law* of the State of Washington. Contractor will include in its bid the cost of all insurance and bonds required to complete the base bid work and accepted alternates. Insurance carriers providing insurance in accordance with the Contract Documents will be rated "A + VII" or better by A.M. Best and ratings will be indicated on the insurance certificates.

- A. Contractor will maintain the following insurance coverage during the Work and for one year after Final Acceptance. Contractor will also maintain the following insurance coverage during the performance of any corrective Work required by *SECTION 00 72 05.17*.
 - 1. General liability on the *ISO 1986 New Occurrence Form* or its equivalent, which will include:
 - a. Completed operations/products liability
 - b. Explosion, collapse, and underground
 - c. Employer's liability coverage
 - 2. Automobile liability
- B. Contractor will comply with the *Washington State Industrial Insurance Act*, and, if applicable, the *Federal Longshoremen's and Harbor Workers' Act*, and the *Jones Act*.
- C. All insurance coverage's will protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.
- D. All insurance coverage's will be endorsed to include Ecology as an additional named insured for Work performed in accordance with the

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

Contract Documents, and all insurance certificates will evidence as an additional insured.

2.02 COVERAGE LIMITS

The coverage limits will be as follows:

- A. Limits of Liability will not be less than \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage (other than Automobile liability) Each Occurrence; Personal Injury and Advertising Liability Each Occurrence.
- B. \$2,000,000 Combined Single Limit Annual General Aggregate.
- C. \$2,000,000 Annual Aggregate for Products and Completed Operations Liability.
- D. \$1,000,000 Combined Single Limit for Automobile Bodily Injury and Property Damage Liability, Each Accident or Loss.

2.03 INSURANCE COVERAGE CERTIFICATES

- A. Prior to the commencement of the Work, Contractor will furnish to Ecology a completed Certificate of Insurance coverage.
- B. All insurance certificates will name Ecology's Project number and Project title.
- C. All insurance certificates will specifically require 45 days prior notice to Ecology of cancellation or any material change, except 30 days for surplus line insurance.

2.04 PAYMENT AND PERFORMANCE BONDS

Payment and performance bonds for 100 percent of the Contract Sum, including all Change Orders and state sales tax, will be furnished for the Work. No payment or performance bond is required if the Contract Sum is \$35,000 or less and Contractor agrees that Ecology may, in lieu of the bond, retain 50 percent of the Contract Sum for the period allowed by *RCW 39.08.010*.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

2.05 ADDITIONAL BOND SECURITY

Contractor will promptly furnish additional security required to protect Ecology and persons supplying labor or materials required by the Contract Documents if:

- A. Ecology has a reasonable objection to the surety; or
- B. Any surety fails to furnish reports on its financial condition if requested by Ecology.

2.06 BUILDER'S (CONTRACTOR'S) RISK

- A. Contractor will purchase and maintain property insurance in the amount of the Contract Sum including all Change Orders for the Work on a replacement cost basis until Final Completion. The insurance will cover the interest of Ecology, Contractor, and any Subcontractors, as their interests may appear.
- B. Contractor property insurance will be placed on an "all risk" basis and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, debris removal including demolition occasioned by enforcement of any applicable legal requirements, and will cover reasonable compensation for A/Es' services and expenses required as a result of an insured loss.
- C. Ecology and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/Es' sub consultants, separate contractors described in *SECTION 00 72 05.20*, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Ecology as fiduciary. The policies will provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation will be effective to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

PART 3 – TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

Contractor will diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within a reasonable period thereafter.

3.02 CONSTRUCTION SCHEDULE

- A. Contractor will, within seven (7) days after issuance of the *Notice to Proceed*, submit a preliminary Progress Schedule. The Progress Schedule will show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.
- B. The Progress Schedule will be in the form of a bar chart, or a critical path method analysis, as specified by Ecology or Ecology's Representative. The preliminary Progress Schedule may be general, showing the major portions of the Work, with more specific Progress Schedules in subsequent months as directed by Ecology or Ecology's Representative.
- C. Ecology or Ecology's Representative will return comments on the preliminary Progress Schedule to Contractor within seven (7) days of receipt. Review by Ecology or Ecology's Representative of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor will revise and resubmit its schedule, as necessary. Ecology may withhold progress payments until a Progress Schedule has been submitted that meets the requirements of this section.
- D. Contractor will utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Ecology or Ecology's Representative, Contractor will submit an updated Progress Schedule at its own expense to Ecology or Ecology's Representative indicating actual progress. If, in the opinion of Ecology or Ecology's Representative, Contractor is not in conformance with the Progress Schedule, the Contractor will take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, or revise the Progress Schedule to reconcile with the actual progress of the Work.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- E. Contractor will promptly notify Ecology or Ecology's Representative in writing of any actual or anticipated event that is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor will indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

3.03 ECOLOGY'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

- A. Ecology or Ecology's Representative may, at its sole discretion, order the Contractor in writing to suspend all or any part of the Work for up to 90 days, or for such longer period as mutually agreed.
- B. Upon receipt of a written notice suspending the Work, Contractor will immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 days after the notice is delivered to Contractor, or within any extension of that period to which the parties will have agreed, Ecology or Ecology's Representative will either:
 - 1. Cancel the written notice suspending the Work; or
 - 2. Terminate the Work covered by the notice as provided in the termination provisions of *SECTION 00 72 09.00 - TERMINATION OF THE WORK*.
- C. If a written notice suspending the Work is canceled or the period of the notice or any extension thereof expires, Contractor will resume the Work.

Contractor will be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in *SECTION 00 72 07.00 - CHANGES*.

3.04 ECOLOGY'S RIGHT TO STOP THE WORK FOR CAUSE

- A. If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Ecology or Ecology's Representative may order the Contractor in writing to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- B. Contractor will not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Ecology or Ecology's Representative based upon such failure.

3.05 DELAY

- A. Any delay in or failure of performance by Ecology or Ecology's Representative or Contractor, other than the payment of money, will not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party (*force majeure*). Acts of *force majeure* include, but are not limited to:
1. Acts of God or the public enemy
 2. Acts or omissions of any government entity
 3. Fire or other casualty for which Contractor is not responsible
 4. Quarantine or epidemic
 5. Strike or defensive lockout
 6. Unusually severe weather conditions that could not have been reasonably anticipated
 7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Ecology or Ecology's Representative was available.
- B. Contractor will be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of *force majeure*, provided it makes a request for equitable adjustment according to *SECTION 00 72 7.03*. Contractor will not be entitled to an adjustment in the Contract Sum resulting from an act of *force majeure*.
- C. Contractor will be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Ecology or Ecology's Representative, provided the Contractor makes a request according to *SECTIONS 00 72 7.02* and *00 72 7.03*.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- D. Contractor will not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.
- E. To the extent any delay or failure of performance was concurrently caused by Ecology or Ecology's Representative and Contractor, Contractor will be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to *SECTION 00 72 7.03*, but will not be entitled to an adjustment in Contract Sum.
- F. Contractor will make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of *force majeure* or otherwise.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor will immediately give notice, including all relevant information, to Ecology or Ecology's Representative.

Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor will immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

- A. Liquidated Damages:
 - 1. Timely performance and completion of the Work is essential to Ecology and time limits stated in the Contract Documents are of the essence. Ecology will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.
 - 2. The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Ecology because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages Ecology would in such event sustain. This amount will be construed as the actual amount of damages sustained by Ecology, and may be retained by Ecology and deducted from periodic payments to the Contractor.

3. Assessment of liquidated damages will not release Contractor from any further obligations or liabilities pursuant to the Contract Documents.

B. Actual Damages:

1. Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Final Completion should have been achieved, based on the date Substantial Completion is actually achieved, to the date Final Completion is actually achieved. Ecology may offset these costs against any payment due Contractor.

PART 4 – SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

- A. The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor will furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.
- B. The Contract Documents are complementary. What is required by one part of the Contract Documents will be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, will be of like effect as if shown or mentioned in both.
- C. Contractor will carefully study and compare the Contract Documents with each other and with information furnished by Ecology or Ecology's Representative. If during the performance of the Work Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it will

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

promptly and before proceeding with the Work affected thereby report such conflict, error, inconsistency, or omission to A/E in writing.

- D. Contractor will do no Work without applicable Drawings, Specifications, or written modifications, or shop drawings where required, unless instructed to do so in writing by Ecology or Ecology's Representative. If Contractor performs any construction activity, and it knows or should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor will be responsible for the performance and will bear the cost for its correction.
- E. Contractor will provide any work or materials the provision of which is clearly implied in the Contract Documents even if the Contract Documents do not mention them specifically.
- F. Questions regarding interpretation of the requirements of the Contract Documents will be referred to the A/E.

4.02 PROJECT RECORD

- A. Contractor will legibly mark in ink on a separate set of the Drawings and Specifications all actual construction including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order proposals. This separate set of Drawings and Specifications will be the "Project Record."
- B. The Project Record will be maintained on the project site throughout the construction and will be clearly labeled "PROJECT RECORD." The Project Record will be updated at least weekly noting all changes and will be available to Ecology or Ecology's Representative at all times.
- C. Contractor will submit the completed and finalized Project Record to A/E prior to Final Acceptance.

4.03 SHOP DRAWINGS

- A. "Shop Drawings" means documents and other information required to be submitted to A/E by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Shop drawings include, but are not limited to,

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal will include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor will submit all samples at its own expense. Ecology or Ecology's Representative may duplicate, use, and disclose shop drawings provided in accordance with the Contract Documents.

- B. Contractor will coordinate all shop drawings and review them for accuracy, completeness, and compliance with the Contract Documents and will indicate its approval thereon as evidence of such coordination and review. Where required by law, shop drawings will be stamped by an appropriate professional licensed by the State of Washington. Shop drawings submitted to A/E without evidence of Contractor's approval will be returned for resubmission. Contractor will review, approve, and submit shop drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Ecology or Ecology's Representative or separate contractors. Contractor's submittal schedule will allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the shop drawings. Contractor will perform no portion of the Work requiring submittal and review of shop drawings until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Ecology or Ecology's Representative and A/E will respond to shop drawing submittals with reasonable promptness. Any Work by Contractor will be in accordance with reviewed shop drawings. Submittals made by Contractor that are not required by the Contract Documents may be returned without action.
- C. Approval or other appropriate action with regard to shop drawings by Ecology or Ecology's Representative or A/E will not relieve Contractor of responsibility for any errors or omissions in such shop drawings, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Ecology or Ecology's Representative or A/E will not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor's means or methods of construction. If Contractor fails to obtain approval before installation, and the item or work is subsequently rejected, Contractor will be responsible for all costs of correction.
- D. If shop drawings show variations from the requirements of the Contract Documents, Contractor will describe such variations in writing, separate

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

from the shop drawings, at the time it submits the shop drawings containing such variations. If A/E approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification will be recorded on the Project Record.

- E. Unless otherwise provided in *DIVISION 01*, Contractor will submit to A/E for approval 5 copies of all shop drawings. Unless otherwise indicated, 3 sets of all shop drawings will be retained by A/E, and 2 sets will be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

Specifications are prepared in sections that conform generally with trade practices. These sections are for Ecology and Contractor convenience and will not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

- A. Drawings, Specifications, and other documents prepared by A/E are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor will own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E will be deemed the author of them and will, along with any rights of Ecology, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, will be returned or suitably accounted for to A/E, on request, upon completion of the Work.
- B. The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Ecology or Ecology's Representative and A/E. Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E appropriate to and for use in the execution of their Work.
- C. Contractor and all Subcontractors grant a nonexclusive license to Ecology or Ecology's Representative, without additional cost or royalty, to use for

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

its own purposes (including reproduction) all shop drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing shop drawings, Contractor and all Subcontractors warrant that they have authority to grant to Ecology or Ecology's Representative a license to use the shop drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Ecology and Ecology's Representative pursuant to the indemnity provisions in *SECTION 00 72 5.23* from any violations of copyright or other intellectual property rights arising out of Ecology or Ecology's Representative use of the shop drawings hereunder, or to secure for Ecology or Ecology's Representative, at Contractor's own cost, licenses in conformity with this section.

- D. The shop drawings and other submittals prepared by Contractor, Subcontractors, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Ecology or Ecology's Representative. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the shop drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

PART 5 – PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

- A. Contractor will supervise and direct the Work, using its best skill and attention, and will perform the Work in a skillful manner. Contractor will be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor will disclose its means and methods of construction when requested by Ecology or Ecology's Representative.
- B. Performance of the Work will be directly supervised by a competent superintendent who is satisfactory to Ecology or Ecology's Representative, and has authority to act for Contractor. The superintendent will not be changed without the prior written consent of Ecology or Ecology's Representative.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- C. Contractor will be responsible to Ecology or Ecology's Representative for acts and omissions of Contractor, Subcontractors, and their employees and agents.
- D. Contractor will enforce strict discipline and good order among Contractor's employees and other persons performing the Work. Contractor will not permit employment of persons not skilled in tasks assigned to them. Contractor's employees will at all time conduct business in a manner that assures fair, equal, and nondiscriminatory treatment of all persons. Ecology or Ecology's Representative may, by written notice, request Contractor to remove from the Work or Project site any employee Ecology or Ecology's Representative reasonably deems incompetent, careless, or otherwise objectionable.
- E. Contractor will keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed shop drawings, and permits and permit drawings.
- F. Contractor will ensure that its owner(s) and employees, and those of its Subcontractors, comply with the *Executive Conflict of Interest Act, RCW 42.18*, which, among other things, prohibits state employees from having an economic interest in any Public Works Contract that was made by, or supervised by, that employee. Contractor will remove at its sole cost and expense any of its, or its Subcontractors', employees if they are in violation of this Act.

5.02 PERMITS, FEES, AND NOTICES

- A. Unless otherwise provided in the Contract Documents, Contractor will pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits will be delivered to Ecology or Ecology's Representative.
- B. If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor's bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference will be adjusted by Change Order.
- C. Contractor will comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

5.03 PATENTS AND ROYALTIES

Contractor is responsible for, and will pay, all royalties and license fees. Contractor will defend, indemnify, and hold Ecology and Ecology's Representative harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor will not be responsible for such defense or indemnity when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it will promptly notify Ecology or Ecology's Representative of such potential infringement.

5.04 PREVAILING WAGES

- A. Contractor will pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with *RCW 39.12* and the rules and regulations of the Department of Labor and Industries (L&I). The schedule of prevailing wage rates for the locality or localities of the Work, as determined by the Industrial Statistician of L&I, is by reference made a part of the Contract Documents as though fully set forth herein.
- B. Before commencing the Work, Contractor will file a statement under oath with Ecology or Ecology's Representative and with the Director of L&I certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage will not be less than the prevailing wage rate.
- C. Disputes regarding prevailing wage rates will be referred for arbitration to the Director of L&I. The arbitration decision will be final and conclusive and binding on all parties involved in the dispute as provided for by *RCW 39.12.060*.
- D. Each Application for Payment submitted by Contractor will state that prevailing wages have been paid in accordance with the pre-filed statement(s) of intent, as approved. Copies of the approved intent statement(s) will be posted on the job site with the address and telephone number of the Industrial Statistician of L&I where a complaint or inquiry concerning prevailing wages may be made.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- E. In compliance with *CHAPTER 296-127 WAC*, Contractor will pay to L&I the currently established fee for each statement of intent and/or affidavit of wages paid submitted to L&I for certification.

5.05 HOURS OF LABOR

- A. Contractor will comply with all applicable provisions of *RCW 49.28*, and they are incorporated herein by reference. Pursuant to that statute no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work will be permitted or required to work more than 8 hours in any one calendar day, provided that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of 8 hours of each calendar day will be not less than 1½ times the rate allowed for this same amount of time during 8 hours of service.
- B. Notwithstanding the preceding paragraph, *RCW 49.28* permits a Contractor or Subcontractor in any Public Works Contract subject to those provisions to enter into an agreement with its employees in which the employees work up to 10 hours in a calendar day. No such agreement may provide that the employees work 10-hour days for more than 4 calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of *RCW 49.28* will not apply to the hours, up to 40 hours per week, worked pursuant to any such agreement.

5.06 NONDISCRIMINATION

- A. Discrimination in all phases of employment is prohibited by, among other laws and regulations, *Title VII of the Civil Rights Act of 1964*, the *Vietnam Era Veterans Readjustment Act of 1974*, *Sections 503 and 504 of the Vocational Rehabilitation Act of 1973*, the *Equal Employment Act of 1972*, the *Age Discrimination Act of 1967*, the *Americans with Disabilities Act of 1990*, the *Civil Rights Act of 1991*, *Presidential Executive order 11246*, *Executive Order 11375*, the *Washington State Law Against Discrimination*, *RCW 49.60*, and *Gubernatorial Executive Order 85-09*. These laws and regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.
- B. During Performance of the Work:
 - 1. Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, age, marital status, or the presence of any

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in *RCW 49.60*.

2. Contractor will, in all solicitations or advertisements for employees placed by or for it, state that all qualified applicants will be considered for employment without regard to race, creed, color, national origin, sex, sexual orientation, age, marital status, or the presence of any physical, sensory, or mental disability.
3. Contractor will send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and *RCW 49.60*.
4. Contractor will permit access to its books, records, and accounts, and to its premises by Ecology or Ecology's Representative, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.
5. Contractor will include the provisions of this section in every Subcontract.

5.07 SAFETY PRECAUTIONS

- A. Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work.
- B. In carrying out its responsibilities according to the Contract Documents, Contractor will protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether onsite or stored offsite; and prevent damage to other property at the site or adjacent thereto. Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property, or to protect them from damage, injury, or loss; will erect and maintain all necessary safeguards for such safety and protection; and will notify owners of adjacent property and utilities when prosecution of the Work may affect them.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- C. Contractor will maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor will immediately report any such incident to Ecology or Ecology's Representative. Ecology or Ecology's Representative will, at all times, have a right of access to all records of exposure.
- D. Contractor will provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.
1. Information: At a minimum, Contractor will inform persons working on the Project site of:
 - a. The requirements of *CHAPTER 296-62 WAC, General Occupational Health Standards and as defined in 01 35 29 – Health Safety and Safety and Emergency Response Procedures*.
 - b. Any operations in their work area where hazardous chemicals are present
 - c. The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and Material Safety Data Sheets (MSDS) required by *CHAPTER 296-62 WAC*.
 2. Training: At a minimum, Contractor will provide training for persons working on the project site, which includes:
 - a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.).
 - b. The physical and health hazards of the chemicals in the work area.
 - c. The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

practices, emergency procedures, and personal protective equipment to be used.

- d. The details of the hazard communication program developed by Contractor or its Subcontractors, including an explanation of the labeling system and the MSDS, and how employees can obtain and use the appropriate hazard information.
- E. Contractor's responsibility for hazardous, toxic, or harmful substances will include the following duties:
1. Contractor will not keep, use, dispose, transport, generate, or sell on or about the Project site any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state, or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances"), in violation of any such law, regulation, statute, or ordinance, but in no case will any such hazardous substance be stored more than 90 days on the Project site.
 2. Contractor will promptly notify Ecology or Ecology's Representative of all spills or releases of any hazardous substances that are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor will promptly notify Ecology or Ecology's Representative of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.
- F. All Work will be performed with due regard for the safety of the public. Contractor will perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic will be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours will be borne by Contractor.
- G. In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor will so act if so authorized or instructed.
- H. Nothing provided in this section will be construed as imposing any duty upon Ecology or Ecology's Representative or A/E with regard to, or as

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

- A. Contractor will confine all operations, including storage of materials, to Ecology or Ecology's Representative-approved areas.
- B. Temporary buildings (e.g. storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Ecology or Ecology's Representative and without expense to Ecology or Ecology's Representative. The temporary buildings and utilities will remain the property of Contractor and will be removed by Contractor at its expense upon completion of the Work.
- C. Contractor will use only established roadways or temporary roadways authorized by Ecology or Ecology's Representative. When materials are transported in prosecuting the Work, vehicles will not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.
- D. Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor will immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor will be responsible for compliance with all laws governing the storage and ultimate disposal. Contractor will provide Ecology or Ecology's Representative with a copy of all manifests and receipts evidencing proper disposal when required by Ecology or Ecology's Representative or applicable law.
- E. Contractor will be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Ecology or Ecology's Representative. When Contractor uses any portion of the Project site as a shop, Contractor will be responsible for any repairs, patching, or cleaning arising from such use.
- F. Contractor will protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and will repair or replace without cost to Ecology or Ecology's Representative any damage or loss that may occur, except damages or loss caused by the acts or omissions of Ecology or Ecology's

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

Representative. Contractor will also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and will repair or replace without cost to Ecology any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.

5.09 PRIOR NOTICE OF EXCAVATION

"Excavation" means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor will provide notice of the scheduled commencement of excavation to all owners of underground facilities and utilities through locator services.

5.10 UNFORESEEN PHYSICAL CONDITIONS

- A. If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor will give written notice to Ecology or Ecology's Representative promptly before conditions are disturbed and in no event later than seven (7) days after the first observance of the conditions.
- B. If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum or both, provided it makes a request thereof as provided in *SECTION 00 72 07.00 - CHANGES*.

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

- A. Contractor will protect from damage all existing structures, equipment, improvements, utilities, and vegetation at or near the Project site, and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor will repair any damage, including that to the property of a third party, resulting from failure to

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Ecology or Ecology's Representative may have the necessary work performed and charge the cost to Contractor.

- B. Contractor will only remove trees when specifically authorized to do so, and will protect vegetation that will remain in place.

5.12 LAYOUT OF WORK

- A. Contractor will plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.
- B. Contractor will lay out the Work from Ecology or Ecology's Representative-established baselines and benchmarks indicated on the Drawings, and will be responsible for all field measurements in connection with the layout. Contractor will furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor will be responsible for executing the Work to the lines and grades that may be established. Contractor will be responsible for maintaining or restoring all stakes and other marks established.

5.13 MATERIAL AND EQUIPMENT

- A. All equipment, material, and articles incorporated into the Work will be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, will be regarded as establishing a standard quality and will not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E, is equal to that named in the Specifications, unless otherwise specifically provided in the Contract Documents.
- B. Contractor will do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonable implied by, the Contract Documents. Contractor will not endanger any work by cutting, excavating, or otherwise altering the Work and will not cut or alter the work of any other contractor unless approved in advance by Ecology or Ecology's Representative.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- C. Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Ecology or Ecology's Representative.

5.15 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Unless otherwise provided in the Contract Documents, the utility service consumed will be charged to or paid for by Contractor at prevailing rates. Contractor will carefully conserve any utilities furnished.
- B. Contractor will, at its expense and in a skillful manner satisfactory to Ecology or Ecology's Representative, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor will remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.16 TESTS AND INSPECTION

- A. Contractor will maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor will be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor will make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Ecology or Ecology's Representative, or with the appropriate public authority, and will bear all related costs of tests, inspections, and approvals. Contractor will give Ecology or Ecology's Representative timely notice of when and where tests and inspections are to be made. Contractor will maintain complete inspection records and make them available to Ecology or Ecology's Representative.
- B. Ecology or Ecology's Representative may, at any reasonable time, conduct such inspections and tests, as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Ecology or Ecology's Representative will promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Ecology or Ecology's Representative, such Ecology or Ecology's Representative inspection and tests are for the sole benefit of Ecology and do not:
 - 1. Constitute or imply acceptance

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

2. Relieve Contractor of responsibility for providing adequate quality control measures
 3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment
 4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents
 5. Impair Ecology's right to reject defective or nonconforming items or to avail itself of any other remedy to which it may be entitled.
- C. Neither observations by an inspector retained by Ecology or Ecology's Representative, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, will relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.
- D. Contractor will promptly furnish, without additional charge, all facilities, labor, material, and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Ecology or Ecology's Representative. Ecology or Ecology's Representative may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes re-inspection or retest necessary. Ecology or Ecology's Representative will perform its inspections and tests in a manner that will cause no undue delay in the Work.

5.17 CORRECTION OF NONCONFORMING WORK

- A. If a portion of the Work is covered contrary to the requirements of the Contract Documents, it must, if required in writing by Ecology or Ecology's Representative, be uncovered for Ecology's Representative observation and be replaced at the Contractor's expense and without change in the Contract Time.
- B. If any time prior to Final Completion Ecology or Ecology's Representative desires to examine the Work or any portion of it that has been covered, Ecology or Ecology's Representative may request to see such Work, and it will be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor will be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes a request therefore as provided in *SECTION 00*

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

72 07.00 - CHANGES. If such Work is not in accordance with the Contract Documents, the Contractor will pay the costs of examination and reconstruction.

- C. Contractor will promptly correct Work found by Ecology or Ecology's Representative not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor will bear all costs of correcting such nonconforming Work, including additional testing and inspections.
- D. If, within 1 year after the date of Substantial Completion of the Work, or designated portion thereof, or within 1 year after the date for commencement of any system warranties established under *SECTION 00 72 06.08*, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor will correct it promptly after receipt of written notice from Ecology to do so. Ecology will give such notice promptly after discovery of the condition. This period of 1 year will be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced will run for 1 year from the date of repair or replacement. Obligations under this paragraph will survive Final Acceptance.
- E. Contractor will remove from the Project site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Ecology or Ecology's Representative.
- F. If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Ecology or Ecology's Representative may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.
- G. Contractor will bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.
- H. Nothing contained in this section will be construed to establish a period of limitation with respect to other obligations that Contractor might have according to the Contract Documents. Establishment of the time period of 1 year, as described in *SECTION 00 72 05.17D*, relates only to the specific obligation of Contractor to correct the Work, and has no

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.

- I. If Ecology or Ecology's Representative prefers to accept Work that is not in accordance with the requirements of the Contract Documents, Ecology or Ecology's Representative may do so instead of requiring its removal and correction, in which case the Contract sum may be reduced as appropriate and equitable.

5.18 CLEANUP

Contractor will at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor will remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor will leave the Project site in a clean, neat, and orderly condition satisfactory to Ecology or Ecology's Representative. If Contractor fails to clean up as provided herein, and after reasonable notice from Ecology or Ecology's Representative, Ecology or Ecology's Representative may do so and the cost thereof will be charged to Contractor.

5.19 ACCESS TO WORK

Contractor will provide Ecology or Ecology's Representative and A/E access to the Work in progress wherever located.

5.20 OTHER CONTRACTS

Ecology may undertake or award other contracts for additional work at or near the Project site. Contractor will reasonably cooperate with the other contractors and Ecology's employees and will carefully adapt scheduling and perform the Work in accordance with Contract Documents to reasonably accommodate the other work.

5.21 SUBCONTRACTORS AND SUPPLIERS

- A. Before submitting its first Application for Payment, Contractor will furnish in writing to Ecology or Ecology's Representative the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers providing materials in excess of \$2,500. Contractor will utilize Subcontractors and suppliers which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor will not utilize any Subcontractor or supplier to whom or Ecology's

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

Representative has a reasonable objection, and will obtain Ecology's written consent before making any substitutions or additions.

- B. All Subcontracts must be in writing. By appropriate written agreement, Contractor will require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Ecology or Ecology's Representative in accordance with the Contract Documents. Each Subcontract will preserve and protect the rights of Ecology and Ecology's Representative in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor will require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph will be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.
- C. Contractor will schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work will relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.
- D. Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Ecology provided that:
 - 1. The assignment is effective only after termination by Ecology for cause pursuant to *SECTION 00 72 09.01* and only for those Subcontracts which Ecology accepts by notifying the Subcontractor in writing; and
 - 2. After the assignment is effective, Ecology will assume all future duties and obligations toward the Subcontractor that Contractor assumed in the Subcontract.
 - 3. The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.22 WARRANTY OF CONSTRUCTION

- A. In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

equipment, material, or design furnished, or workmanship performed by Contractor.

- B. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor will:
 - 1. Obtain all warranties that would be given in normal commercial practice
 - 2. Require all warranties to be executed, in writing, for the benefit of Ecology
 - 3. Enforce all warranties for the benefit of Ecology, if directed by Ecology or Ecology's Representative
 - 4. Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranty should they extend beyond the period specified in the Contract Documents.
- C. The obligations under this section will survive Final Acceptance.

5.23 INDEMNIFICATION

- A. Contractor will defend, indemnify, and hold Ecology and Ecology's Representative and A/E harmless from and against all claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, caused by or resulting from:
 - 1. The sole negligence of Contractor or any of its Subcontractors
 - 2. The concurrent negligence of Contractor, or any Subcontractor, but only to the extent of the negligence of Contractor or such Subcontractor
 - 3. The use of any design, process, or equipment which constitutes an infringement of any United States patent presently issued or violates any other proprietary interest, including copyright, trademark, and trade secret.
- B. In any action against Ecology or Ecology's Representative and any other entity indemnified in accordance with this section by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section will not be limited by a limit on the amount or type

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under *RCW Title 51*, the *Industrial Insurance Act*, or any other employee benefit acts. In addition, Contractor waives immunity as to Ecology or Ecology's Representative and A/E only, in accordance with *RCW Title 51*.

PART 6 – PAYMENTS AND COMPLETION

6.01 CONTRACT SUM

Ecology will pay Contractor the Contract Sum for performance of the Work in accordance with the Contract Documents. The Contract Sum will include all taxes imposed by law and properly chargeable to the Project, including sales tax.

6.02 SCHEDULE OF VALUES

Before submitting its first Application for Payment, Contractor will submit to Ecology or Ecology's Representative for approval a breakdown allocating the total Contract Sum to each principle category of work, in such detail as requested by Ecology or Ecology's Representative ("Schedule of Values"). The approved Schedule of Values will include appropriate amounts for demobilization, record drawings, operation and maintenance manuals, and any other requirements for Project closeout and will be used by Ecology as the basis for progress payments. Payment for Work will be made only for and in accordance with those items included in the Schedule of Values.

6.03 APPLICATION FOR PAYMENT

- A. At monthly intervals, unless determined otherwise by Ecology or Ecology's Representative, Contractor will submit to Ecology or Ecology's Representative an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application will be supported by such substantiating data as Ecology or Ecology's Representative may require.
- B. By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with *RCW 60.28.010*, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in *SECTION 00 72 01.03* are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- C. At the time it submits an Application for Payment, Contractor will analyze and reconcile, to the satisfaction of Ecology or Ecology's Representative, the actual progress of the Work with the Progress Schedule.
- D. If authorized by Ecology or Ecology's Representative, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:

6.04 PROGRESS PAYMENTS

- A. Ecology will make progress payments, in such amounts as Ecology or Ecology's Representative determines are properly due, within 30 days after receipt of a properly executed Application for Payment. Ecology or Ecology's Representative will notify Contractor in accordance with *RCW 39.76* if the Application for Payment does not comply with the requirements of the Contract Documents.
- B. Ecology will retain 5 percent of the amount of each progress payment until 30 days after Final Acceptance and receipt of all documents required by law or the Contract Documents including, at Ecology's request, consent of surety to release of the retainage. In accordance with *RCW 60.28*, Contractor may request that monies reserved be retained in a fund by Ecology, deposited by Ecology in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Ecology may permit Contractor to provide an appropriate bond in lieu of the retained funds.
- C. Title to all Work and materials covered by a progress payment will pass to Ecology at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title will not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Ecology to insist on full compliance by Contractor with the Contract Documents.
- D. Payments due and unpaid in accordance with the Contract Documents will bear interest as specified in *RCW 39.76*.

6.05 PAYMENTS WITHHELD

- A. Ecology may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

be necessary to protect Ecology from loss or damage for reasons including but not limited to:

1. Work not in accordance with the Contract Documents
 2. Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum
 3. Work by Ecology or Ecology's Representative to correct defective Work or complete the Work in *accordance with SECTION 00 72 05.17*
 4. Failure to perform in accordance with the Contract Documents
 5. Cost or liability that may occur to Ecology as the result of Contractor's fault or negligent acts or omissions.
- B. In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Ecology or Ecology's Representative will notify Contractor in accordance with *RCW 39.76*.

6.06 RETAINAGE AND BOND CLAIM RIGHTS

RCW CHAPTERS 39.08 and 60.28, concerning the rights and responsibilities of Contractor and Ecology with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.

6.07 SUBSTANTIAL COMPLETION

Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Ecology or Ecology's Representative) when the construction is sufficiently complete, in accordance with the Contract Documents, so Ecology and property owner can fully occupy the Work (or the designated portion thereof) for the use for which it is intended. All Work other than incidental corrective or punch list work will have been completed. Substantial Completion will not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The date Substantial Completion is achieved will be established in writing by Ecology or Ecology's Representative. Contractor may request an early date of Substantial Completion, which must be approved by Change Order. Ecology's or property owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

6.08 PRIOR OCCUPANCY

- A. Ecology or property owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("prior occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, prior occupancy will not: be deemed an acceptance of any portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of Ecology provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or constitute a waiver of claims.
- B. Notwithstanding anything in the preceding paragraph, Ecology will be responsible for loss or damage to the Work resulting from its prior occupancy. Contractor's 1-year duty to repair and any system warranties will begin on building systems activated and used by Ecology as agreed in writing by Ecology or Ecology's Representative and Contractor.

6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

- A. Final Completion will be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved will be established by Ecology or Ecology's Representative in writing.
- B. Final Acceptance is the formal action of Ecology or Ecology's Representative acknowledging Final Completion. Prior to Final Acceptance, Contractor will, in addition to all other requirements in the Contract Documents, submit to Ecology or Ecology's Representative a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance nor final payment will release Contractor or its sureties from any obligations of these Contract Documents or the Public Works Bond, or constitute a waiver of any claims by Ecology arising from Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Acceptance of final payment by Contractor or any Subcontractor will constitute a waiver and release to Ecology or Ecology's Representative of all claims by Contractor or any such Subcontractor for an increase in the Contract Sum or the Contract Time, and for every act or omission of Ecology or Ecology's Representative relating to or arising out of the Work, except for those Claims made in accordance with the procedures,

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

including the time limits, set forth in *SECTION 00 72 08.00 - CLAIMS AND DISPUTE RESOLUTION*.

PART 7 – CHANGES

7.01 CHANGES IN THE WORK

- A. Ecology or Ecology's Representative may at any time and without notice to Contractor's surety order additions, deletions, revisions, or other changes in the Work. These changes in the Work will be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Ecology or Ecology's Representative causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment will be made as provided in *SECTION 00 72 07.02* or *00 72 07.03*, respectively, and such adjustment(s) will be incorporated into a Change Order.
- B. If Ecology or Ecology's Representative desires to order a change in the Work, it may request a written Change Order proposal from Contractor. Contractor will submit a Change Order proposal within seven (7) days of the request from Ecology or Ecology's Representative, or within such other period as mutually agreed. Contractor's Change Order proposal will be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.
- C. Upon receipt of the Change Order proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in *SECTIONS 00 72 07.02* and *00 72 07.03*, Ecology or Ecology's Representative may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Ecology or Ecology's Representative may direct Contractor to proceed immediately with the Change Order Work. Contractor will not proceed with any change in the Work until it has obtained Ecology or Ecology's Representative approval. All Work done pursuant to any Ecology Representative-directed change in the Work will be executed in accordance with the Contract Documents.
- D. If Ecology or Ecology's Representative and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement will be incorporated in a Change Order. The Change Order will constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.

- E. If Ecology or Ecology's Representative and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time, in writing, request a final offer from Ecology or Ecology's Representative. Ecology or Ecology's Representative will provide Contractor with its written response within 30 days of Contractor's request. Ecology or Ecology's Representative may also provide Contractor with a final offer at any time. If Contractor rejects Ecology's final offer or the parties are otherwise unable to reach agreement, Contractor's only remedy will be to file a Claim as provided in *SECTION 00 72 08.00 - CLAIMS AND DISPUTE RESOLUTION*.

7.02 CHANGE IN THE CONTRACT SUM

A. General Application:

1. The Contract Sum will only be changed by a Change Order. Contractor will include any request for a change in the Contract Sum in its Change Order proposal.
2. If the cost of Contractor's performance is changed due to the fault or negligence of Ecology or anyone for whose acts Ecology Representative is responsible, Contractor will be entitled to make a request for an equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum will be allowed to the extent that Contractor's changed cost of performance is due to the fault or negligence of Contractor or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Ecology or Ecology's Representative; or the change is caused by an act of force majeure, as defined in *SECTION 00 72 03.05*.
 - a. A request for an equitable adjustment in the Contract Sum will be based on written notice delivered to Ecology or Ecology's Representative within 7 days of the occurrence of the event-giving rise to the request. For purposes of this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event-giving rise to the request. If Contractor believes it is entitled to an adjustment in the Contract Sum, Contractor will

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- immediately notify Ecology or Ecology's Representative and begin to keep and maintain complete, accurate, and specific daily records. Contractor will give Ecology or Ecology's Representative access to any such records and, if requested, will promptly furnish copies of such records to Ecology or Ecology's Representative.
- b. Contractor will not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than 7 days before Contractor's written notice to Ecology or Ecology's Representative. The written notice will set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors, if any; and, to the extent possible, the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice will, to the extent Ecology's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
- c. Within 30 days of the occurrence of the event giving rise to the request, unless Ecology or Ecology's Representative agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor will supplement written notice provided in accordance with Subparagraph "a" (above) with additional supporting data. Such additional data will include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for such act, event, or condition; and documentation sufficiently detailed to permit an informed analysis of the request by Ecology or Ecology's Representative. When the request for compensation relates to a delay or other change in Contract Time, Contractor will demonstrate the impact on the critical path, in accordance with *SECTION 00 72 07.03C*. Failure to provide such additional information and documentation within the time allowed or within the format required will, to the extent Ecology's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- d. Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor will proceed diligently with performance of the Work.
 - e. Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) will be submitted together.
 3. The value of any work covered by a Change Order or of any request for an equitable adjustment in the Contract Sum, will be determined by one of the following methods:
 - a. On the basis of a fixed price as determined in *SECTION 00 72 07.02B*.
 - b. By application of unit prices to the quantities of the items involved as determined *SECTION 00 72 07.02C*.
 - c. On the basis of time and material as determined in *SECTION 00 72 07.02D*.
 4. When Ecology or Ecology's Representative has requested Contractor to submit a Change Order proposal, Ecology or Ecology's Representative may direct Contractor as to which method in Subparagraph 3 (above) to use when submitting its proposal. Otherwise, Contractor will determine the value of the Work or of a request for an equitable adjustment, on the basis of the fixed price method.
- B. Change Order Pricing - Fixed Price: When the fixed price method is used to determine the value of any Work covered by a Change Order or of a request for an equitable adjustment in the Contract Sum, the following procedures will apply:
 1. Contractor's Change Order Proposal or request for adjustment in the Contract Sum will be accompanied by a complete itemization of the costs including labor, materials, subcontractor costs, and overhead and profit. The costs will be itemized in the manner set forth below and will be submitted on breakdown sheets in a form approved by Ecology or Ecology's Representative.
 2. All costs will be calculated based on appropriate industry standard methods of calculating labor, material quantities, and equipment costs.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

3. If any of Contractor's pricing assumptions are contingent upon anticipated actions of Ecology or Ecology's Representative, Contractor will clearly state them in the proposal or request for an equitable adjustment.
4. The cost of any additive or deductive changes in the Work will be calculated as set forth below, except that overhead and profit will not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or Subcontractor, small tools, overhead, profit, bond, and insurance markups will apply to the net difference.
5. If the total cost of the change in the Work or request for equitable adjustment does not exceed \$1,000, Contractor will not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Ecology or Ecology's Representative to determine fair value.
6. If the total cost of the change in the Work or request for equitable adjustment is between \$1,000 and \$2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit Ecology or Ecology's Representative to determine fair value:
 - a. Lump sum labor
 - b. Lump sum material
 - c. Lump sum equipment usage
 - d. Overhead and profit as set forth below
 - e. Insurance and bond costs as set forth below
7. Any request for adjustment of Contract Sum based upon the fixed price method will include only the following items:
 - a. Craft Labor Costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor as well as indirect labor due to trade inefficiencies. The hourly costs will be based on the following:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- 1) Basic Wages and Benefits: Hourly rates and benefits as stated on the L&I approved Statement Of Intent To Pay Prevailing Wages. Direct supervision will be a reasonable percentage not to exceed 15 percent of the cost of direct labor. No supervision markup will be allowed if a working supervisor's hours are included in the breakdown.
 - 2) Worker's Insurance: Direct contributions to the State of Washington for industrial insurance, medical aid, and supplemental pension by the class and rates established by L&I.
 - 3) Federal Insurance: Direct contributions required by the *Federal Insurance Compensation Act*, *Federal Unemployment Tax Act*, and the *State Unemployment Compensation Act*.
 - 5) Safety: Costs incurred due to the *Washington Industrial Safety and Health Act*, which will be a reasonable percentage not to exceed 2 percent of the sum of the amounts calculated in SUBPARAGRAPHS (1), (2), and (3) above.
 - 6) Travel Allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.
- b. Material Costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs will be developed from actual known costs, supplier quotations or standard industry pricing guides. Material costs will consider all available discounts. Freight costs, express charges, or special delivery charges will be itemized.
- c. Equipment Costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work or for additional rental costs actually incurred by the Contractor. Equipment charges will be developed from the current edition of one of the following sources:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- 1) *Associated General Contractors - Washington State Department of Transportation Equipment Rental Agreement; 1987 Edition*, unless use of the 1982 edition is previously approved by Ecology or Ecology's Representative as appropriate for the particular Work covered by the change.
 - 2) *The State of Washington Utilities and Transportation Commission* for trucks used on highways.
 - 3) *The National Electrical Contractors Association* for equipment used on electrical work.
 - 4) *The Mechanical Contractors Association of America* for equipment used on mechanical work.
 - 5) *The Data Quest Rental Rate (Blue Book)* will be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment will not exceed 50 percent of the applicable rate.
- d. Allowance for Small Tools, Expendables, and Consumable Supplies: Small tools consist of tools that cost \$250 or less and are normally furnished by the performing Contractor. The maximum rate for small tools will not exceed the following:
- 1) For Contractor, 3 percent of direct labor costs.
 - 2) For Subcontractors, 5 percent of direct labor costs.
- Expendables and consumable supplies directly associated with the change in Work must be itemized.
- e. Subcontractor Costs: This is defined as payments Contractor makes to Subcontractors for changed Work performed by Subcontractors of any tier. The Subcontractors' cost of Work will be calculated and itemized in the same manner as prescribed herein for Contractor.
- f. Allowance for Overhead and Profit: This is defined as costs of any kind attributable to direct and indirect delay, acceleration, or impact, added to the total cost to Ecology or Ecology's Representative of any Change Order, or any

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

request for additional Work or extra payment of any kind on the Project. This allowance will compensate Contractor for all non-craft labor, temporary construction facilities, field engineering, schedule updating, as-built drawings, home office cost, Business and Occupation taxes, office engineering, estimating costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It will be strictly limited in all cases to a reasonable amount, mutually acceptable, or if none can be agreed upon to an amount not to exceed the following:

- 1) For Contractor, for any Work actually performed by Contractor's own forces, 22 percent of the first \$50,000 of the cost and 10 percent of the remaining cost, if any.
 - 2) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 22 percent of the first \$50,000 of the cost and 10 percent of the remaining cost, if any.
 - 3) For Contractor, for any Work performed by its Subcontractor(s), 8 percent of the first \$50,000 of the amount due each Subcontractor and 6 percent of the remaining amount, if any.
 - 4) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 8 percent of the first \$50,000 of the amount due the sub-Subcontractor and 6 percent of the remaining amount, if any.
 - 5) The cost to which overhead and profit is to be applied will be determined in accordance with *SUBPARAGRAPHS a-e* above.
- g. Cost of Change in Insurance or Bond Premium: This is defined as:
- 1) Contractor's Liability Insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and
 - 2) Public Works Bond(s): The cost of the additional premium for Contractor's bond arising directly from the changed Work.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

The costs of any change in insurance or bond premium will be added after overhead and profit are calculated in accordance with *SUBPARAGRAPH "f"* above.

C. Change Order Pricing - Unit Prices:

1. Whenever Ecology authorizes Contractor to perform Work on a unit-price basis, Ecology's authorization will clearly state:
 - a. Scope of work to be performed
 - b. Type of reimbursement including pre-agreed rates for material quantities
 - c. Cost limit of reimbursement
2. Contractor will:
 - a. Cooperate with Ecology or Ecology's Representative and assist in monitoring the Work being performed. As requested by Ecology or Ecology's Representative, Contractor will identify workers assigned to the Change Order Work and areas in which they are working.
 - b. Leave access as appropriate for quantity measurement.
 - c. Not exceed any cost limit(s) without Ecology or Ecology's Representative prior written approval.
3. Contractor will submit costs in accordance with *SECTION 00 72 07.02B* and satisfy the following requirements:
 - a. Unit prices will include reimbursement for all direct and indirect costs of the Work, including overhead and profit and bond and insurance costs.
 - b. Quantities must be supported by field measurement statements signed by Ecology or Ecology's Representative.

D. Change Order Pricing - Time and Material Prices:

1. Whenever Ecology or Ecology's Representative authorizes Contractor to perform work on a time-and-material basis, Ecology's authorization will clearly state:
 - a. Scope of work to be performed

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- b. Type of reimbursement including pre-agreed rates, if any, for material quantities or labor
 - c. Cost limit of reimbursement
2. Contractor will:
- a. Cooperate with Ecology or Ecology's Representative and assist in monitoring the Work being performed. As requested by Ecology or Ecology's Representative, identify workers assigned to the Change Order Work and areas in which they are working.
 - b. Identify on daily timesheets all labor performed in accordance with this authorization. Submit copies of daily timesheets within 2 working days for Ecology or Ecology's Representative review.
 - c. Leave access as appropriate for quantity measurement.
 - d. Perform all Work in accordance with this section as efficiently as possible.
 - e. Not exceed any cost limit(s) without Ecology's prior written approval.
3. Contractor will submit costs in accordance with *SECTION 00 72 07.02B* and additional verification supported by:
- a. Labor detailed on daily timesheets
 - b. Invoices for material

7.03 CHANGE IN THE CONTRACT TIME

- A. The Contract Time will only be changed by a Change Order. Contractor will include any request for a change in the Contract Time in its Change Order proposal.
- B. If the time of Contractor's performance is changed due to an act of force majeure or due to the fault or negligence of Ecology or Ecology's Representative or anyone for whose acts Ecology or Ecology's Representative is responsible, Contractor will be entitled to make a request for an equitable adjustment in the Contract Time in accordance

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

with the following procedure. No adjustment in the Contract Time will be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor or anyone for whose acts Contractor is responsible.

1. A request for an equitable adjustment in the Contract Time will be based on written notice delivered within 7 days of the occurrence of the event-giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor will immediately notify Ecology or Ecology's Representative and begin to keep and maintain complete, accurate, and specific daily records. Contractor will give Ecology or Ecology's Representative access to any such records and, if requested, will promptly furnish copies of such records to Ecology or Ecology's Representative.
2. Contractor will not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 days before Contractor's written notice to Ecology or Ecology's Representative. The written notice will set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and, to the extent possible, the amount of the adjustment in Contract Time requested. Failure to properly give such written notice will, to the extent Ecology's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.
3. Within 30 days of the occurrence of the event-giving rise to the request, unless Ecology or Ecology's Representative agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor will supplement the written notice provided in accordance with *SECTION 00 72 07.03B.2* with additional supporting data. Such additional data will include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Ecology or Ecology's Representative. Failure to provide such additional information and documentation within the time allowed or within the format required will, to the extent Ecology's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

4. Pending final resolution of any request in accordance with this paragraph, unless otherwise agreed in writing, Contractor will proceed diligently with performance of the Work.
- C. Any change in the Contract Time covered by a Change Order or based on a request for an equitable adjustment in the Contract Time will be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order proposal or request for an adjustment in the Contract Time will demonstrate the impact on the critical path of the schedule. Contractor will be responsible for showing clearly on the Progress Schedule that the change or event: had a specific impact on the critical path, and except in case of concurrent delay, was the sole cause of such impact; and could not have been avoided by re-sequencing of the Work or other reasonable alternatives.
- D. Contractor may request compensation for the cost of a change in Contract Time in accordance with this section, *00 72 07.03D*, subject to the following conditions:
1. The change in Contract Time will solely be caused by the fault or negligence of Ecology or Ecology's Representative or A/E.
 2. Compensation under this paragraph is limited to changes in Contract Time for which Contractor is not entitled to be compensated under *SECTION 00 72 07.02*.
 3. Contractor will follow the procedure set forth in *SECTION 00 72 07.03B*.
 4. Contractor will establish the extent of the change in Contract Time in accordance with *SECTION 00 72 07.03C*.
 5. The daily cost of any change in Contract Time will be limited to:
 - a. Cost of nonproductive field supervision or labor extended because of the delay
 - b. Cost of weekly meetings or similar indirect activities extended because of the delay
 - c. Cost of temporary facilities or equipment rental extended because of the delay
 - d. Cost of insurance extended because of the delay

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- e. General and administrative overhead in an amount to be agreed upon, but not to exceed 3 percent of Contract Sum divided by the Contract Time for each day of the delay.

PART 8 – CLAIMS AND DISPUTE RESOLUTION

8.01 CLAIMS PROCEDURE

- A. If the parties fail to reach agreement on the terms of any Change Order for Ecology or Ecology's Representative-directed Work as provided in *SECTION 00 72 07.01*, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in *SECTION 00 72 07.02* or the Contract Time as provided in *SECTION 00 72 07.03*, Contractor's only remedy will be to file a Claim with Ecology or Ecology's Representative as provided in this section.
- B. Contractor will file its Claim within the earlier of: 120 days from Ecology's final offer in accordance with either *SECTION 00 72 07.01E* or *SECTION 00 72 07.04C*; or the date of Final Acceptance.
- C. The Claim will be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It will be fully substantiated and documented. At a minimum, the Claim will contain the following information:
 - 1. A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim
 - 2. The date on which facts arose which gave rise to the Claim
 - 3. The name of each employee of Ecology or Ecology's Representative or A/E knowledgeable about the Claim
 - 4. The specific provisions of the Contract Documents that support the Claim
 - 5. The identification of any documents and the substance of any oral communications that support the Claim
 - 6. Copies of any identified documents, other than the Contract Documents, that support the Claim;
 - 7. If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- believes an extension in the Contract Time should be granted; and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time.
8. If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail required by, *SECTION 00 72 07.02*.
 9. A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Ecology is liable.
- D. After Contractor has submitted a fully documented Claim that complies with all applicable provisions of *SECTIONS 00 72 07.00* and *00 72 08.00*, Ecology or Ecology's Representative will respond, in writing, to Contractor as follows:
1. If the Claim amount is less than \$50,000, with a decision within 60 days from the date the Claim is received; or
 2. If the Claim amount is \$50,000 or more, with a decision within 60 days from the date the Claim is received or, with notice to Contractor, of the date by which it will render its decision. Ecology or Ecology's Representative will then respond with a written decision in such additional time.
- E. To assist in the review of Contractor's Claim, Ecology or Ecology's Representative may visit the Project site or request additional information in order to fully evaluate the issues raised by the Claim. Contractor will proceed with performance of the Work pending final resolution of any Claim. Ecology's written decision, as set forth above, will be final and conclusive as to all matters set forth in the Claim unless Contractor follows the procedure set forth in *SECTION 72 08.02*.
- F. Any Claim of the Contractor against Ecology for damages, additional compensation, or additional time will be conclusively deemed to have been waived by the Contractor unless timely made in accordance with the requirements of this section.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

8.02 ARBITRATION

- A. If Contractor disagrees with Ecology's decision rendered in accordance with *SECTION 00 72 08.01D*, Contractor will provide Ecology or Ecology's Representative with a written demand for arbitration. No demand for arbitration of any such Claim will be made later than 30 days after the date of Ecology's decision on such Claim. Failure to demand arbitration within said 30-day period will result in Ecology's decision being final and binding upon Contractor and its Subcontractors.
- B. Notice of the demand for arbitration will be filed with the American Arbitration Association (AAA), with a copy provided to Ecology or Ecology's Representative. The parties will negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA or mutually acceptable service before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:
1. Disputes involving \$30,000 or less will be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or
 2. Disputes over \$30,000 will be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.
- C. All Claims arising out of the Work will be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work will be maintained.
- D. Claims between Ecology and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Ecology and A/E will, upon demand by Ecology, be submitted in the same arbitration or mediation.
- E. If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution will be incorporated in a Change Order. The Change Order will constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 72 00 - General Conditions

8.03 CLAIMS AUDITS

- A. All Claims filed against Ecology or Ecology's Representative will be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Ecology or Ecology's Representative to verify all or a portion of the Claim or to permit Ecology or Ecology's Representative access to the books and records of Contractor, or Subcontractors of any tier, will constitute a waiver of the Claim and will bar any recovery.
- B. In support of Ecology's audit of any Claim, Contractor will, upon request, promptly make available to Ecology or Ecology's Representative the following documents:
1. Daily time sheets and supervisor's daily reports
 2. Collective bargaining agreements
 3. Insurance, welfare, and benefits records
 4. Payroll registers
 5. Earnings records
 6. Payroll tax forms
 7. Material invoices, requisitions, and delivery confirmations
 7. Material cost distribution worksheet
 9. Equipment records (list of company equipment, rates, etc.)
 10. Vendors', rental agencies', Subcontractors', and agents' invoices
 11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts
 12. Subcontractors' and agents' payment certificates
 13. Canceled checks (payroll and vendors)
 14. Job cost report, including monthly totals
 15. Job payroll ledger
 16. Planned resource loading schedules and summaries

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

17. General ledger
 18. Cash disbursements journal
 19. Financial statements for all years reflecting the operations on the Work. In addition, or Ecology's Representative may require, if it deems it appropriate, additional financial statements for 3 years preceding execution of the Work.
 20. Depreciation records on all company equipment, whether these records are maintained by the company involved, its accountant, or others
 21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents
 22. All non-privileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim
 23. Worksheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for individuals
 24. Worksheets, software, and all other documents used by Contractor to prepare its bid.
- C. The audit may be performed by employees of Ecology or a representative of Ecology. Contractor and its Subcontractors will provide adequate facilities acceptable to Ecology or Ecology's Representative for the audit during normal business hours. Contractor and all Subcontractors will make a good-faith effort to cooperate with Ecology's auditors.

PART 9 – TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

- A. Ecology or Ecology's Representative may, upon seven (7) days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Ecology) the Work or any part of it for cause upon the occurrence of any one or more of the following events:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

1. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time.
 2. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency.
 3. Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents.
 4. Contractor repeatedly fails to supply skilled workers or proper materials or equipment.
 5. Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor.
 6. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction.
 7. Contractor is otherwise in material breach of any provision of the Contract Documents.
- B. Upon termination, Ecology may at its option:
1. Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of and to finish the Work
 2. Accept assignment of subcontracts pursuant to *SECTION 00 72 05.21*.
 3. Finish the Work by whatever other reasonable method it deems expedient.
- C. Ecology's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.
- D. When Ecology terminates the Work in accordance with this section, Contractor will take the actions set forth in *SECTION 00 72 09.02B* and will not be entitled to receive further payment until the Work is accepted.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

- E. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Ecology or Ecology's Representative in completing the Work, or as a result of Contractor's actions, such excess will be paid to Contractor. If such costs exceed the unpaid balance, Contractor will pay the difference to Ecology. These obligations for payment will survive termination.
- F. Termination of the Work in accordance with this section will not relieve Contractor or its surety of any responsibilities for Work performed.
- G. If Ecology terminates Contractor for cause, and it is later determined that none of the circumstances set forth in *SECTION 00 72 09.01A* exist, then such termination will be deemed a termination for convenience pursuant to *SECTION 00 72 09.02*.

9.02 TERMINATION BY OWNER FOR CONVENIENCE

- A. Ecology may, upon written notice, terminate (without prejudice to any right or remedy of Ecology or Ecology's Representative) the Work or any part of it for the convenience of Ecology or Ecology's Representative.
- B. Unless Ecology or Ecology's Representative directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor will promptly:
 - 1. Stop performing Work on the date and as specified in the notice of termination.
 - 2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated.
 - 3. Cancel all orders and subcontracts, upon terms acceptable to Ecology or Ecology's Representative, to the extent that they relate to the performance of Work terminated.
 - 4. Assign to Ecology or Ecology's Representative all of the right, title, and interest of Contractor in all orders and subcontracts.
 - 5. Take such action as may be necessary or as directed by Ecology or Ecology's Representative to preserve and protect the work, Project site, and any other property related to this Project in the possession of Contractor in which Ecology or Ecology's Representative has an interest.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

6. Continue performance only to the extent not terminated.
- C. If Ecology terminates the Work or any portion thereof for convenience, Contractor will be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination plus a reasonable allowance for overhead and profit on Work performed prior to termination and the reasonable administrative costs of the termination but will not be entitled to any other costs or damages whatsoever, provided however, the total sum payable upon termination will not exceed the Contract Sum reduced by prior payments. Contractor will be required to make its request in accordance with the provisions of *SECTION 00 72 07.00*.
 - D. If Ecology terminates the Work or any portion thereof for convenience, the Contract Time will be adjusted as determined by Ecology.

PART 10 – MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

The Contract Documents and the rights of the parties herein will be governed by the laws of the State of Washington. Venue will be in Thurston County unless otherwise specified by Ecology.

10.02 SUCCESSORS AND ASSIGNS

Ecology and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party will assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the State of Washington. If either party attempts to make such an assignment without such consent, that party will nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

10.03 MEANING OF WORDS

Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or the code of

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 72 00 - General Conditions

any governmental authority, whether such reference be specific or by implication, will be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference will apply to as many such articles as are shown on the Drawings or are required to complete the installation.

10.04 RIGHTS AND REMEDIES

No action or failure to act by Ecology or Ecology's Representative or A/E will constitute a waiver of a right or duty afforded them under the Contract Documents, nor will such action or failure to act constitute approval of an acquiescence in a breach therein, except as may be specifically agreed in writing.

10.05 CONTRACTOR REGISTRATION

Pursuant to *RCW 39.06*, Contractor will be registered or licensed as required by the laws of the State of Washington, including but not limited to *RCW 18.27*.

10.06 TIME COMPUTATIONS

When computing any period of time, the day of the event from which the period of time begins will not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation unless stated otherwise.

10.07 RECORDS RETENTION

The wage, payroll, and cost records of Contractor and its Subcontractors, and all records subject to audit in accordance with *SECTION 00 72 08.03*, will be retained for a period of not less than 6 years after the date of Final Acceptance.

10.08 THIRD-PARTY AGREEMENTS

The Contract Documents will not be construed to create a contractual relationship of any kind between: A/E and Contractor; Ecology or Ecology's Representative and any Subcontractor; or any persons other than Ecology and Contractor.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 72 00 - General Conditions

10.09 ANTITRUST ASSIGNMENT

Ecology and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Ecology any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges that result from antitrust violations commencing after the Contract Sum is established and that are not passed on to Ecology or Ecology's Representative under a Change Order. Contractor will put a similar clause in its Subcontracts and require a similar clause in its sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Ecology by Contractor.

END OF SECTION

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

PART 1 – SUPPLEMENTAL CONDITIONS

- 1.01 Insurance
- 1.02 Permits
- 1.03 Changes
- 1.04 Schedule
- 1.05 Right-of-Way
- 1.06 Codes
- 1.07 Inspection
- 1.08 Payment Withheld
- 1.09 Existing Facilities and Structures
- 1.10 Not Used
- 1.11 Trade Name Reference
- 1.12 Prevailing Wage
- 1.13 Required Payroll Documents
- 1.14 Liquidated Damages
- 1.15 Proposal Guarantee or Bid Bond
- 1.16 Not Used
- 1.17 Offshore Items
- 1.18 Subcontractor List

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

In accordance with the *GENERAL CONDITIONS, SUPPLEMENTAL CONDITIONS* take precedence over *GENERAL CONDITIONS*.

1.01 INSURANCE

- A. Contractor's Liability Insurance: **This section supplements SECTION 2.01 of the GENERAL CONDITIONS.**

Insurance carriers providing insurance in accordance with Contract Documents will be listed in the Authorized Insurance Company List in the State of Washington as maintained by the Office of the Insurance Commissioner with a minimum B+ rating by A. M. Best.

- B. Required Coverage's: **This section supplements SECTION 2.02 of the GENERAL CONDITIONS.**

Bodily Injury Liability and Property Damage Liability Insurance: The Contractor will take out and maintain during the life of the Contract and for a 24-month tail on "claims made" insurance.

1. For a Contract under \$250,000, the Coverage required is:

- a. Comprehensive General Bodily Injury Liability Insurance

<u>EACH OCCURRENCE</u>	<u>AGGREGATE</u>
\$500,000	\$1,000,000

- b. Comprehensive Property Damage Insurance

<u>EACH OCCURRENCE</u>	<u>AGGREGATE</u>
\$500,000	\$1,000,000

or \$1,000,000 each occurrence/aggregate Bodily Injury and Property Damage combined single limit.

- c. Comprehensive Automobile Bodily Injury Insurance

<u>PER PERSON</u>	<u>PER ACCIDENT</u>
\$500,000	\$1,000,000

- d. Comprehensive Automobile Property Damage Insurance

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

EACH
OCCURRENCE
\$250,000

or \$1,000,000 each occurrence/aggregate Bodily Injury and Property Damage combined single limit.

- e. Employer's Liability Insurance, on an occurrence basis, in an amount not less than \$500,000.
2. For a Contract over \$250,000 the required Coverage, in addition to the requirements listed for a Contract under \$250,000, is:

Excess Liability Insurance in an amount not less than \$1,000,000 each occurrence/aggregate excess of primary liability policies.

3. For a Contract containing hazardous waste, the Coverage Required is: (Asbestos Abatement, PCB, etc.)

- a. On a Contract where the only work is hazardous waste, the Contractor will provide the following limits of insurance:

Comprehensive General Bodily Injury Liability Insurance:

EACH
OCCURRENCE
\$500,000

AGGREGATE
\$500,000

Comprehensive Property Damage Insurance:

EACH
OCCURRENCE
\$500,000

AGGREGATE
\$500,000

or \$500,000 each occurrence/aggregate Bodily Injury and Property Damage combined single unit.

- b. On a Contract including other work along with hazardous waste work, the Contractor will provide a Certificate of Insurance complying with the requirements listed for a Contract under or over \$250,000; and will also provide a Certificate of Insurance from the Contractor or Subcontractor performing hazardous waste work for the limits of insurance as listed in *Paragraph "3a"* above. A statement must appear on the face of the insurance certificate confirming that the insurer is covering hazardous waste. Should limits be

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

secured on a "claims made" basis, "tail" coverage will be required at completion of project for a minimum duration of 24 months. This will be a condition of the project acceptance.

- c. Self-Insured: Ecology may accept a Contractor to be self-insured if it receives acceptable: (1) current financial statement; (2) irrevocable letter of credit equal to the Contract amount; (3) construction "work in process" schedule with Contract values; (4) if "stop loss" involved, provide limit amount; (5) if Third Party Administrator, provide name, address, and telephone number; and (6) a current *Dunn and Bradstreet Report*, the cost of which to be borne by the Contractor.

C. Insurance Coverage Certificates: **This section supplements SECTION 2.03(A) of the GENERAL CONDITIONS.**

The Contractor will furnish acceptable proof of insurance coverage on the *State of Washington Certificate of Insurance Form SF 500A, dated 07/02/92.*

1.02 PERMITS

This section supplements SECTION 5.02 of the GENERAL CONDITIONS.

All permits or fees required by local, state, or federal governmental agencies necessary for the accomplishment of this project will be obtained and paid for by the Contractor unless otherwise listed in *DIVISION 01*.

Ecology is responsible for obtaining the following permit for the project scope of work:

- Grade and Fill Permit (Demolition is included) from City of Anacortes.

The Contractor must comply with any and all permit conditions or substantive requirement if official permits are issued. The Contractor is responsible for obtaining all other permits required to complete the project scope of work.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

1.03 CHANGES

This section supplements SECTION 7 of the GENERAL CONDITIONS.

Ecology or Ecology's Representative reserves the right to determine fair value for Contract changes in the following order:

- A. Negotiation of costs using lump-sum totals.
- B. Review and negotiation of cost breakdown as detailed in SECTION 7.02(B) or (C).
- C. If no agreement is reached with the Contractor, costs of the change will be based on time and materials as detailed in SECTION 7.02D.

1.04 SCHEDULE

This section supplements SECTION 3.02 of the GENERAL CONDITIONS.

- A. The Contractor will notify or Ecology's Representative or Engineer at least 2 week days in advance if work is to be performed on a Saturday, Sunday, and/or legal holiday.
- B. No excavation work, as defined by SECTION 00 72 05.09, will be allowed on Saturdays, Sundays, and/or legal holidays unless specifically authorized by or Ecology's Representative or Engineer.

1.05 RIGHT OF WAY

This section supplements SECTION 5.08(A) of the GENERAL CONDITIONS.

Ecology has acquired ownership and/or easement of lands for the construction as indicated on the Drawings without cost to the Contractor. It is understood and agreed by the Contractor that if it should appear at any time that Ecology has not acquired title to all of the right-of-ways and lands necessary for the performance of the Work under the provisions of this Contract, and that if any delay in the performance of said Work occasioned by the failure of Ecology, its officers, or employees to acquire a title of any of said lands or right-of-way, such failure will extend the Contract completion date the number of days equal to the period of such delay. The Contractor waives any and all claims for damages against Ecology or Ecology's Representative, its officers, and employees which the Contractor may sustain by reason of delay in the Work.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

1.06 CODES

This section supplements SECTION 5.02 of the GENERAL CONDITIONS.

The Contractor will conform to all local, state, and national codes in all phases of this project. Where conflicts arise between Drawings, Specifications, and code requirements, the code will prevail unless the Drawings or Specifications are more stringent.

1.07 INSPECTION

This section supplements SECTION 5.16 of the GENERAL CONDITIONS.

In addition to any inspections required by local authorities or permitting agencies, the State will appoint its own inspector for the project. Construction inspectors employed by the State will assist the Engineer in making all necessary inspections and measurements and will enforce a strict compliance with the terms of the Contract and the orders of the Engineer. The Inspector will have the authority to reject materials or workmanship which do not fulfill the requirements of these Specifications. In case of dispute, the Contractor may appeal to the Engineer whose decision will be final. The acceptance of any material by the Inspector will not hinder its subsequent rejection if found defective. Rejected materials and workmanship will be replaced promptly or be made good by the Contractor, without additional cost to Ecology.

1.08 PAYMENT WITHHELD

This section supplements SECTION 6.05 of the GENERAL CONDITIONS.

The Engineer may also withhold any part or all of any payment or payments to such an extent as may be necessary in his opinion to protect Ecology from loss or damage including, but not limited to:

- A. Liens properly filed per *RCW Chapters 39.08 and 60.28* for material, equipment, etc. supplied to the job and not sufficiently covered in the retained percentage.
- B. Failure to comply with the requirement for utilization of Minority/Women's Business Enterprises as stipulated in the Contract Documents.
- C. Failure to provide documents required in 1.12.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

1.09 EXISTING FACILITIES AND STRUCTURES

This section supplements SECTION 5.11 of the GENERAL CONDITIONS.

In general, the locations of existing major utilities and equipment, whether aboveground or underground, are indicated on the Drawings. This information has been obtained from utility maps and verbal descriptions. The Engineer does not guarantee the accuracy or completeness of this information. It is to be understood that other aboveground or underground facilities not shown on the Drawings may be encountered during the course of the Work. It is the responsibility of the Contractor to properly locate and identify these facilities in the construction area.

Existing aboveground and underground facilities and appurtenant structures, including but not limited to power transmission and distribution, telephone, alarm systems, sanitary sewers, gas services, water service, house or yard drains, and fences will be located, protected, maintained, relocated, rerouted, removed, and restored as may be necessary by the Contractor for completion of the Work, but in a manner satisfactory to owners and operators of the services and to the Engineer with the least possible interruption to existing services.

1.11 TRADE NAME REFERENCE

This section supplements SECTION 5.13 of the GENERAL CONDITIONS.

It will be the responsibility of the Contractor to furnish proof of equality in all respects to specified items when proposing alternate brands or items. Any significant deviations from Specifications, Drawings, or equality must be noted by the Contractor when submitting alternate materials for approval. The Engineer will be the sole judge of the equality and suitability of any products, materials, or components proposed by the Contractor as alternates to specified items. The Contractor will, **AT ITS OWN EXPENSE**, make any secondary changes required to incorporate an approved substitute or alternate into the project. No offers for substitution will be acknowledged from suppliers, distributors, manufacturers, or Subcontractors.

1.12 PREVAILING WAGE

This section supplements SECTION 5.04 of the GENERAL CONDITIONS.

All laborers, mechanics, and other workers employed by the Contractor or Subcontractors to work on construction projects financed by federal assistance must be paid wages not less than those established for the locality of the project by the U.S. Secretary of Labor (*40 Stat 1494, Mar. 3, 1921, Chap. 411, 40 USC276A-276A-S*).

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

1.13 REQUIRED PAYROLL DOCUMENTS

Certified payrolls are required to be submitted by the Contractor to the Engineer for the Contractor and all Subcontractors or agents on all federally funded projects, and when requested in writing by the Engineer, on projects funded with only Contracting Agency funds. If these payrolls are not supplied within 10 calendar days of the end of the proceeding weekly payroll period for federally funded projects, or within 10 calendar days from the date of the written request on projects with only Contracting Agency funds, any or all payments may be withheld until compliance is achieved. Also, failure to provide these payrolls could result in other sanctions as provided by state laws (*RCW 39.12.050*) and/or federal regulations (*29 CFR 5.12*). All certified payrolls will be complete and explicit. Employee work classification codes used on certified payrolls will coincide exactly with the occupation codes listed on the minimum wage schedule, unless the Engineer specifically approves an alternate method to identify the occupation coding used by the Contractor to compare with the codes listed. When an apprentice is shown on the certified payroll at a rate less than the minimum prevailing journey wage rate, the apprenticeship registration number for that employee from the State Apprenticeship and Training Council will be shown, along with the correct employee classification code.

1.14 LIQUIDATED DAMAGES

This section supplements SECTION 3.07 of the GENERAL CONDITIONS.

Since it is not possible to determine at this time the amount of financial damages the State will suffer if the Contract work is not completed on time, it is mutually agreed that the State will withhold from the Contractor as liquidated damages a sum (not to exceed) of \$250 per calendar day. Said sum includes inspection, engineering, and other costs to the State incurred by such delay.

1.15 CONTRACT, BONDS AND INSURANCE

All contractors are required to be locally licensed, have a state contractor's license, and accounts with the Washington Department of revenue and the Washington Labor and Industries Agency. CONTRACTOR REGISTRATION IS PREREQUISITE TO SUBMITTING A RESPONSIBLE BID PROPOSAL. Under certain circumstances some or all of the following may be required. If any of the following items are checked, the successful bidder will provide the necessary documentation and be subject to those requirements.

 X A written contract executed by the successful bidder including evidence of registration of the contractor.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 80 00 - Supplemental Conditions

 X For bids of \$35,000 or less, no bid bond is required. Bids greater than \$35,000 will be accompanied by a certified check, cashier's check, or bid bond payable to the Treasurer of the State of Washington in an amount equal to at least 5 percent of the bid as evidence of good faith and as a guarantee that, if awarded the Contract, the bidder will execute the Contract and give Performance Bond as required. All proposal guarantees may be held a maximum of 30 calendar days, and the 3 lowest bids may be held 45 calendar days from the date of the bid opening. At the end of the 30 calendar day period, all proposal guarantees, except those accompanying the 3 lowest bids, will be returned to the respective bidders. After the Contract and bonds have been executed, the remaining 3 proposal guarantees will be returned to their respective bidders.

Only a cashier's check or certified check will be accepted in lieu of a bid bond. State statute requires deposit of negotiable receipts at the time of receipt. The bidder should be prepared to accept an additional 60 to 90 day delay in obtaining repayment from the State Treasurer. Subsequent fiscal procedures in preparing repayment are time consuming, and result in the requirement for additional time. Failure to comply with this section will cause bid to be considered nonresponsive.

 X A performance and Payment Bond: The successful bidder will, before entering into Public Works Contract, furnish a bond with a surety company as surety, in the form furnished by the State in the full amount of the contract price, conditioned on the faithful performance of all of the provisions of the contract and on the payment to all laborers, mechanics, subcontractors, material suppliers, and to all persons who will supply the Contractor or subcontractors with provisions and supplies to carry out the work. The Surety Company must be licensed to do business in the State of Washington. A deposit in lieu of bond will not be acceptable.

 X A written contract executed by the successful bidder including evidence of registration of the contractor.

 X Washington State Contractors Business License. (Unified Business Identification Number.)

 X Certificates of Insurance

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS
Section 00 80 00 - Supplemental Conditions

1.17 OFFSHORE ITEMS

GENERAL CONDITIONS SECTION 5.14 is deleted in its entirety.

1.18 SUBCONTRACTOR LIST

When a bid is in excess of \$100,000 for the Public Works described in these documents, the bidder must submit as part of the bid the names of the subcontractor(s) whose subcontract amount is more than 10 percent of the Contract price with whom the bidder, if awarded the Contract, will subcontract for performance of the categories of work designated on the list. **Failure to include this list with the bid or to name such subcontractors may render the bid nonresponsive, and therefore void.**

END OF SECTION

END OF DIVISION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 10 00 - Summary

Provisions of the "Project Specific Requirements" of the contract are by this reference a part of this Section and shall govern work under this section where applicable.

01 10 05 – ADMINISTRATIVE REQUIREMENTS

The Contractor shall provide an overall schedule for the project within ten (10) days of project award and provide an update on Monday of each week to the schedule of activities for that week. The Contractor will be required to provide to abide by the requirements as listed in the American Recovery and Investment Act section shown in the supplementary conditions. The cost of this and other administrative requirements should be included in the mobilization cost.

01 10 11 – CONTRACTOR EXPERIENCE

The Contractor will be relied upon to manage the project. The Contractor must also be able to inform the Ecology Project Manager (and Ecology or Ecology's Representative) with information throughout the work so that he can make informed and effective decisions.

01 10 15 – SAFETY

The Contractor shall establish and maintain a safe work place in compliance with all applicable Federal, State, and local codes. **The Contractor shall also submit a site-specific health and safety plan to Ecology prior to starting work. This health and safety plan must be followed and a copy kept on site at all times.** The Contractor shall furnish, erect, and maintain such fences, barriers, lights, and signs and provide such flagging and guards as are necessary in the opinion of the Department to give adequate warning to the public of the construction and of any dangerous condition which may be encountered as a result thereof. The Contractor shall also maintain a minimum of one operable fire extinguisher on site during the entirety of construction operations which all staff are notified of.

All personnel working on or visiting the site will wear a protective hard hat, appropriate clothing, and gloves. Air purifying respirators and appropriate splash garments will be available when a potential for spill or the release of health threatening levels of air contaminants exists.

The Contractor shall meet all safety requirements of **WAC 296-155-650 Part N, EXCAVATION, TRENCHING, AND SHORING** when excavating over four feet in depth.

The Contractor shall also be familiar with and meet the requirements of the following Washington Administrative Codes (WAC) and recommended industry standards.

- **WAC 173-303 Dangerous Waste Regulations**

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 10 00 - Summary

- **40 Hour Health & Safety Training for all on-site workers**
- **WAC 173-360-610 Certification of UST supervisors who perform services on underground storage tank systems.**
- **WAC 173-360-385 Permanent closure and change-in-service.**
- **WAC 173-360-390 Site Assessment at closure or change-in-service**
- **American Petroleum Institute Recommended Practice 1604, “Removal and Disposal of Used Underground Petroleum Storage Tanks”;**
- **American Petroleum Institute Publication 2015, “Cleaning Petroleum Storage Tanks”;**

01 10 16 – COMPLETION DATE

- **Phase I-A work** shall be completed on or before **October 31, 2011.**
- **Phase I-B work** shall be completed on **October 31, 2013.**

01 10 17 – REQUEST AND APPROVALS

Any request by the Contractor for approval of items, or proposals for change in the work of whatever nature, shall be submitted in writing to Project Manager. The Contractor shall, at his own expense, make any secondary changes required to incorporate an approved substitute into the project.

Any approvals or change orders shall be issued to the Contractor in writing by the Ecology Contracts Officer. No verbal agreement or conversation with any officer, agent, or employee of the State shall effect or modify the terms of obligation of this contract.

01 10 18 – SITE RESTORATION

Upon completion of the work, a site walk will be made with the Ecology Project Manager and owner to ensure that the work has been completed and is acceptable.

01 10 25 – PAYMENTS

Monthly payments will be made on this contract. On or about the 15th of each month, the Contractor shall submit the State Payment Estimate form, after approval of the percentages completed by the Ecology Project Manager. Payment estimate with voucher (A19) will be processed for payment within the following month. Contractor shall exercise the escrow option and any addition to the bid payment itemization prior to the first payment.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 10 00 - Summary

A retention of 5% of each payment, shall be made and held in escrow as a trust fund for the protection and payment of persons, subcontractors, suppliers, due under this contract. In accord with RCW 60.28, this fund shall be retained for 30 days after completion of the work or longer until all releases are received from the State.

No payment made or estimate approved shall be evidence of the performance of the contract, either wholly or in part, against the claim of the State to the contrary, and no payment shall be construed to be an acceptance of any defective work, which may appear.

The Contracts Officer may withhold any part or all of any payment to such an extent as may be necessary in his opinion to protect the Washington State from loss or damage including, but not limited to:

- A. Defective work not remedied.
- B. A reasonable doubt that contract can be completed for the balance then unpaid.
- C. Liens properly filed for material, equipment etc., supplied to the job and not sufficiently covered in the retained percentage.
- D. Failure to comply with the requirement for utilization of minority/women business enterprises as stipulated on the contract documents.

The Contractor shall maintain all records of payments to individuals and subcontractors in conjunction with this public works project for a period of three years from the day of the final payment. The records shall be available to the State Auditor upon request.

01 10 90 – REFERENCE STANDARDS

The Contractor shall also comply with all local, state, and federal laws and codes.

END OF SECTION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 20 00 - Price and Payment Procedures

PART 1 –GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General and Supplemental Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications.
- B. Individual submittals are required in accordance with the pertinent sections of these Specifications

1.02 PAYMENT PROCEDURES

- A. “Pencil Copies” of the monthly pay estimates will be presented to Ecology or Ecology’s Representative not more than three (3) days prior to the anticipated submittal of the “formal” pay estimate. The Contractor will hold a meeting with Ecology or Ecology’s Representative, required subcontractor representatives to discuss the quantities to be included in the pay estimate for the respective month. Upon agreement of the quantities performed, the Contractor will complete the pay estimate for submittal
- B. Monthly pay estimates will clearly identify the work performed for the given time period based on a percentage of work completed for lump sum bid items and actual quantities installed for unit price items. Prior to submitting pay estimates to Ecology, the Contractor and Ecology or Ecology’s Representative will review the work accomplished to determine the actual quantities including labor, materials and/or equipment charges to be billed. Following review, the Contractor will prepare an original pay estimate with complete supporting documentation attached and submit to the attention of Robert D. Swackhamer, Contracts Officer. The pay estimate may be mailed, or hand delivered to:

Attn: Robert D. Swackhamer
Washington State Department of Ecology
Toxics Cleanup Program, PO Box 47600
Olympia, WA 98504

The Ecology Contracts Officer will review the amount invoiced to verify costs are in accordance with the Ecology Project Manager’s recommendations, authorized scope of work, proposed rates, and the terms and conditions of Contract. Once verified, the Ecology Contracts Manager will forward to Ecology for approval and authorization to make payment. Payments for approved pay estimates will be made within thirty (30) days of receipt by the Contracts Manager, unless pay estimate has been returned for revision(s) and resubmittal. Pay estimates requiring revision(s) will be returned to the Contractor per Article 7.04 Progress Payments of the General Conditions.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

1.03 PAYMENT PRICING

- A. Pricing for the various lump sum or unit prices in the Bid Form, as further specified herein, will include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work in accordance with the requirements of the Contract Documents.
- B. Pricing also includes all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).
- C. No separate payment will be made for any item that is not specifically set forth in the Bid Form, and all costs therefore will be included in the prices named in the Bid Form for the various appurtenant items of work.
- D. All other work not specifically mentioned in the measurement and payment sections identified below will be considered incidental to the work performed and merged into the various unit and lump sum prices bid. Payment for work under one item will not be paid for under any other item.
- E. Ecology reserves the right to make changes should unforeseen conditions necessitate such changes. Where work is on a unit price basis, the actual quantities occasioned by such changes will govern the compensation.

1.04 MEASUREMENT FOR PAYMENT – PHASE 1-A

- A. Measurement for payment will be in accordance with the schedules below and will be based upon: 1) Lump Sum/Known Quantity bid items as stipulated in the Phase I-A Bid Form – Table 1. Payment will be considered full compensation for furnishing all labor, materials and equipment to complete the Work specified.
- B. Lump Sum/Known Quantity Bid items are described as follows:
 - 1. Bid Item No. 1 - MOBILIZATION AND DEMOBILIZATION
 - a. Payment for MOBILIZATION AND DEMOBILIZATION will be for preparatory work and operations performed by the Contractor including, but not limited to, those necessary for the movement of its personnel, equipment, supplies and incidentals to the Project Site; for the establishment of its offices, buildings and other facilities necessary for work on the Project; for premiums on bonds and insurance for the Project and for other work and operations which it must perform or costs it must incur before beginning production work on the various items on the Project Site.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

- b. Mobilization and Demobilization will be paid at the lump sum price listed in the bid, but not to exceed a maximum of five percent (5%) of the Total Base Bid. Incremental payment will be made as follows:
 - 1) 50% after completion of 5% of the total contract amount of other bid items have been earned.
 - 2) 30% after completion of 70% of the total contract amount of other bid items have been earned.
 - 3) 20% after completion of all work on the project has been completed, including cleanup and acceptance of the project by Ecology.
- c. Execute the Mobilization and Demobilization work as required by the various sections of Division 00 and Division 01 and other parts of the Contract Documents.

2. Bid Item No. 2 – TEMPORARY EROSION AND SEDIMENT CONTROLS

- a. Payment for TEMPORARY EROSION AND SEDIMENT CONTROLS will be full compensation for the cost of labor, materials, tools, equipment and incidentals necessary to perform at a minimum, the below listed items of work, which are defined in Section 01 57 13 and may be identified further in separate sections of these specifications and/or on the plans.
 - 1) Construction General Stormwater General Permit (CSGP) and Stormwater Pollution Prevention Plan (SWPPP) legal and administrative responsibility and implementation; SWPPP modifications as needed; Spill Prevention, Control, and Countermeasures (SPCC) Plan; and Temporary Erosion and Sediment Control (TESC) Plan.
 - 2) Installation/maintenance/removal of all SWPPP and TESC materials, erosion control features and best management practices (BMPs) including but not limited to: Silt and high visibility fence, Stabilized construction entrance, wheel wash station, Inlet protection, and Erosion/Runoff pollution Control. See bid Item No. 18 for Excavation Dewatering/Treatment of Dewatering Effluent.
- b. The quantity for payment for completed work will be an estimated percentage of the lump sum amount, agreed to between Ecology and Contractor, payable in monthly progress payments in increments proportional to the work performed.
- c. If a spill occurs due to the Contractor's operations or negligence, nothing in this section will be construed as relieving the Contractor of the responsibility for damage and all cost of response, containment, and any cleanup, which will be borne solely by the Contractor.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

3. Bid Item No. 3 - PROJECT ADMINISTRATION

- a. Payment for PROJECT ADMINISTRATION will be full compensation for all administrative costs, including but not limited to supervision, coordination of all work, Contractor utilities and overhead for the project.
- b. Payments will be made at the contract lump sum price for Project Administration. This bid item will include all cost to provide labor, materials, equipment, and appurtenances necessary to perform at a minimum the items of work, which may be identified further in separate sections of these specifications and/or on the plans.
- c. Coordination with Ecology or Ecology's Representative; coordination with other contractors; temporary utilities; submittals and the cost of performing any element of work not included in the other bid items.

4. Bid Item No. 4 - FIELD ENGINEERING

- a. Payment for FIELD ENGINEERING will be for all work necessary for field engineering, including verifying survey reference points, for conducting preconstruction, progress, and post-construction surveys and utility locates.
- b. Payment for Field Engineering will be made at the contract lump sum price as stated in the bid and will be full compensation for furnishing all labor, equipment and incidentals required to accomplish the work as specified in Section 01 71 23 - Field Engineering of these Specifications.

5. Bid Item No. 5 – TEMPORARY FACILITIES AND CONTROL

- a. Payment for TEMPORARY FACILITIES AND CONTROL will be for all labor and materials necessary to provide and implement the temporary facilities and controls work plan described in Section 01 50 00 that defines temporary traffic controls, utilities, site maintenance, air pollution control, noise abatement, and decontamination facility requirements.
- b. The quantity for payment for completed work will be an estimated percentage of the lump sum amount, agreed to between Ecology and Contractor, payable in monthly progress payments in increments proportional to the work performed.

6. Bid Item No. 6 - HEALTH AND SAFETY

- a. Payment for HEALTH AND SAFETY will be for the requirements for health and safety provisions necessary for all work at the site for this project. The work also includes compliance with all laws, regulations and ordinances with respect to safety, noise, dust, fire and police action, civil disobedience,

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

security or traffic as defined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures of these Specifications.

- b. Health and Safety will be paid at the lump sum price listed in the bid.

7. Bid Item No. 7 - PROJECT CLOSEOUT

- a. Payment for PROJECT CLOSEOUT will be for all work necessary for Project Closeout, including operations and maintenance manuals, project as-built drawings, certificates and cleanup will be measured by the Lump Sum.
- b. Project Closeout will be paid at the lump sum price listed in the bid and will be full compensation for furnishing all labor, equipment and incidentals required to accomplish the work to be completed on or before October 31, 2011 under Phase I-A as specified in Section 01 70 00 - Execution and Closeout Requirements of these Specifications.

8. Bid Item No. 8 – DEMOLITION

- a. Payment for DEMOLITION will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to demolish, remove and dispose of off-site, concrete building foundations, above grade piles, or other surface debris, not removed by others prior to construction as shown on the Drawings and as defined in Division 02 of these Specifications.
- b. Payment of DEMOLITION will include monitoring well abandonment and clearing/grubbing of areas outside of excavation limits as shown on the Drawings and defined in Section 02 41 13.
- c. The quantity for payment for completed work will be an estimated percentage of the lump sum amount, agreed to between Ecology and Contractor, payable in monthly progress payments in increments proportional to the work performed.

9. Bid Item No. 9 – OFF-SITE TRANSPORTATION AND DISPOSAL

- a. Payment for OFF-SITE TRANSPORTATION AND DISPOSAL will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to load dewatered excavated soils and materials into trucks, and to transport to a Subtitle D disposal facility as described in Section 31 23 01 – Off-Site Transportation and Disposal of Contaminated Soils and Section 31 23 00 – Excavation and Backfill. Costs will include equipment, materials, and labor necessary to dry out and/or amend material stockpile for the purpose of passing the paint filter test (SW-846 Method 9095A) prior to loading.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

- b. The quantity for payment for completed work will be based upon the actual tonnage, as verified by weight tickets of all material transported to the off-site disposal facility.
- c. Timber piles and other debris encountered in the excavation will be disposed of with the excavated material unless otherwise directed by Ecology or Ecology's Representative.
- d. The loading, transport, and disposal of stockpiled creosote pilings and potentially contaminated concrete from the work being done under the ongoing "Site Preparation and Debris Removal Work" by other party is included in this pay item.
- e. This pay item includes off-site disposal costs/tipping fees.
- f. Assumed tonnage, as shown on bid form, is based on design excavation volume multiplied by a factor of 1.5 to convert to tons. In the event that the actual tonnage disposed of varies from assumed, supplied unit rates will be used to adjust total cost. Ecology Representative must verify or otherwise concur with pay adjustments.

10. Bid Item No. 10 – BASELINE EXCAVATION AND STOCKPILING

- a. Payment for BASELINE EXCAVATION AND STOCKPILING will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to excavate and stockpile contaminated soils as indicated on the Drawings and described in Section 31 23 00 – Excavation and Backfill. Payment will also include all costs associated with installation and removal of the containment system required for stockpiling this material. As indicated on the drawings and further defined in Section 31 23 00 – Excavation and Backfill, the excavations have been prioritized as follows:
 - 1) Priority 1 Excavations – includes the southern half of the Shoreline Protection Zone, all wetlands excavation, the Press Pit excavations and spot excavations as shown on the Drawings. Assumed volume for Priority 1 baseline excavation is 10,500 cubic yards.
 - 2) Priority 2 Excavations – includes excavations within the northern portion of the Shoreline Protection Zone as shown on the Drawings. Assumed volume for Priority 2 baseline excavations is 1,000 cubic yards.
 - 3) Priority 3 Excavations – includes the northern upland excavations as shown on the Drawings and is assumed to include 1,500 cubic yards of soil.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

- 4) Priority 4 Excavations – includes the remainder of the excavations in the southern uplands area as shown on the Drawings. Assumed remaining volume includes 2,400 cubic yards.
 - b. The Contractor shall provide Lump Sum prices for excavation based on the in place volume of soils to be excavated and shown on the Drawings and described in Section 31 23 00 – Excavation and Backfill.
 - c. The quantity for payment for completed work will be an estimated percentage of the lump sum amount, agreed to between the Ecology Representative and Contractor, payable in monthly progress payments in increments proportional to the work performed.
11. Bid Item No. 11 – ECOLOGY DIRECTED OVEREXCAVATION AND STOCKPILING
- a. Payment for ECOLOGY DIRECTED OVEREXCAVATION AND STOCKPILING will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to excavate and stockpile contaminated soils as directed by Ecology and described in Section 31 23 00 – Excavation and Backfill.
 - b. The Contractor shall provide Lump Sum prices for excavation based on an assumed volume of material of 7,000 cubic yards.
 - c. The quantity for payment for completed work will be an estimated percentage of the lump sum amount, agreed to between the Ecology Representative and Contractor, payable in monthly progress payments in increments proportional to the work performed.
12. Bid Item No. 12 – SHEET PILING INSTALLATION AND REMOVAL
- a. Payment for SHEET PILING INSTALLATION AND REMOVAL will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to install and remove sheet piling associated with the Baseline Excavation in the Shoreline Protection Zone, as shown on the Drawings and discussed in Section 31 23 00 of these Specifications
 - b. For purposes of the bid the Contractor will only include costs associated with the Baseline Excavation in the Shoreline Protection Zone. In the event that the Contractor is directed to perform additional Ecology Directed Overexcavation which requires shoreline sheet piling in the Shoreline Protection Zone, Unit Rates will apply as discussed later in this section.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

- c. Contractor is urged to phase excavation in such a manner as to re-use sheet pile to the extent practicable, rather than install the entire length prior to construction.

13. Bid Item No. 13 – WETLAND SHORELINE PROTECTION LAYER

- a. Payment for WETLAND SHORELINE PROTECTION LAYER will be full compensation for the cost of labor, materials, tools, equipment and incidentals to complete the installation of backfill, including final berm construction, within the constructed wetlands area as shown on the Drawings and discussed in Section 31 23 00 – Excavation and Backfill.
- b. The quantity for the completed work will be on a per ton basis as stated in the Bid Form and based on weight tickets supplied by the material supplier.

14. Bid Item No. 14 – TEMPORARY BERM CONSTRUCTION

- a. Payment for TEMPORARY BERM CONSTRUCTION will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to complete the installation of the temporary berm within the constructed wetlands area as shown on the Drawings and defined in Section 31 23 00 –Excavation and Backfill.
- b. The quantity for the completed work will be on a per ton basis as stated in the Bid Form and based on weight tickets supplied by the material supplier.

15. Bid Item No. 15 – SELECT BORROW

- a. Payment for SELECT BORROW will be full compensation for the cost of labor, materials, tools, equipment and incidentals for backfilling excavation areas to existing grade with Select Borrow shown on the Drawings and discussed in Section 31 23 00 - Excavation and Backfill.
- b. The quantity for the completed work will be on a per ton basis as stated in the Bid Form and based on weight tickets supplied by the material supplier.

16. Bid Item No. 16 – COMMON BORROW

- a. Payment for COMMON BORROW will be full compensation for the cost of labor, materials, tools, equipment and incidentals to import of Common Borrow to the site for use for finish grading, including that required for fill in areas beneath the wetland buffer and storm drainage swale footprint, as shown on the Drawings and discussed in Section 31 23 00 - Excavation and Backfill.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

- b. The quantity for the completed work will be on a per ton basis as stated in the Bid Form and based on weight tickets supplied by the material supplier.
- c. Costs for placement and compaction of Common Borrow imported to the site are included in Bid Item No. 17 – SITE FINISH GRADING.
- d. The Contractor shall not be allowed to bring common borrow material to the site which is excessively wet, as determined by Ecology or Ecology's Representative. Import material that does not meet moisture content and compaction requirements in Section 32 23 00 may be rejected by Ecology or Ecology's Representative. If the material is rejected, it is the Contractor's responsibility to remove it from the site at not additional cost to Ecology. No payment will be provided for such material.

17. Bid Item No. 17 – SITE FINISH GRADING

- a. Payment for SITE FINISH GRADING will be full compensation for the cost of labor, tools, equipment and incidentals required to rough and fine grade, place and compact imported Common Borrow, and compact and prepare the subgrade in preparation of planting as shown on the Drawings and as defined in Sections 31 23 00 – Earthwork and 32 71 00 – Landscaping and Wetland Mitigation Area.
- b. The quantity for the completed work will be the Lump Sum Bid Item as stated in the Bid Form.

18. Bid Item No. 18 – STORM DRAINAGE IMPROVEMENTS

- a. Payment for STORM DRAINAGE IMPROVEMENTS will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to install permanent site drainage features, including treatment and conveyance swale features, soil amendments, hydroseeded areas, quarry spall placement, installation of HDPE pipes, and pipe coupler and collar as shown and defined on the Drawings and defined in Sections 32 71 00 – Landscaping and Wetland Mitigation Area and 31 23 00 – Remedial Excavation and Backfill.
- b. The quantity for the completed work will be the Lump Sum Bid Item as stated in the Bid Form.

19. Bid Item No. 19 – LANDSCAPING AND WETLANDS PLANTINGS

- a. Payment for LANDSCAPING/WETLANDS PLANTINGS will be full compensation for the cost of labor, materials, tools, equipment and incidentals required to install all landscape items including beach sand import and placement, topsoil, soil amendments, hydroseeded areas, wetlands

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

plantings, shrubs, and trees as shown on the Drawings and defined in Section 32 71 00 – Landscaping and Wetland Mitigation Area.

- b. The quantity for the completed work will be the Lump Sum Bid Item as stated in the Bid Form.

20. Bid Item No. 20 - EXCAVATION DEWATERING/TREATMENT OF DEWATERING EFFLUENT

- a. Payment for EXCAVATION DEWATERING/TREATMENT OF DEWATERING EFFLUENT will be full compensation for the cost of labor, materials, tools, equipment, and incidentals necessary to perform, at a minimum, the below listed items of work, which are defined in Sections 01 57 13 and 31 23 19 and may be identified further in separate sections of these specifications and/or on the plans.

- 1) Preparation of a Dewatering Plan described in Part 1.02 of Section 31 23 19.
- 2) Provide labor, equipment, and materials to design and construct/provide an excavation dewatering and water treatment systems as described in Part 3.01 of Section 31 23 19. Contractor shall be prepared to treat dewatering effluent at the direction of Ecology to meet the requirements of the City of Anacortes treatment facility (refer to Section 01 57 13).

C. In addition to the aforementioned Phase I-A Lump Sum/Known Quantity bid items, the Contractors price will be based on Unit Rates as stipulated in the Phase I-A Bid Form – Table 2 for the items listed below. Payment will be considered full compensation for furnishing all labor, materials and equipment to complete the Work specified. Unit Prices are proposed to apply to additions to or deletions from the work listed in Table 1, for contingency purposes, and/or for unknown quantity bid items. Contractor bids will be evaluated for both Table 1 and Table 2 pricing.

1. Bid Item No. U1 – BASELINE EXCAVATION AND STOCKPILING

- a. Payment for ECOLOGY DIRECTED OVEREXCAVATION will be full compensation for the cost of labor, materials, tools, equipment, and incidentals required to excavate, transport and stockpile additional soils as directed by Ecology's Representative and in accordance with Division 31 – Earthwork.
- b. The quantity for payment for completed work will be based on the Unit Price provided. This price will be additive or deductive to Bid Item No. 10a through d, as appropriate. Final volume will be measured in place as determined by before and after surveys performed by the Contractor and

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

verified by the Ecology Representative (Section 01 71 23 – Field Engineering).

2. Bid Item No. U2 – ECOLOGY DIRECTED OVEREXCAVATION AND STOCKPILING
 - a. Payment for ECOLOGY DIRECTED OVEREXCAVATION will be full compensation for the cost of labor, materials, tools, equipment, and incidentals required to excavate, transport and stockpile additional soils beyond the Baseline Excavation limits shown on the Drawings as directed by Ecology or Ecology's Representative and in accordance with Section 32 23 00 – Remedial Excavation and Fill.
 - b. The quantity for payment for completed work will be based on the Unit Price provided. This price will be additive or deductive to Bid Item No. 11, as appropriate. Final volume will be measured in place as determined by before and after surveys performed by the Contractor and verified by Ecology or Ecology's Representative (Section 01 71 23 – Field Engineering).
3. Bid Item No. U3 –SHEET PILE INSTALLATION AND REMOVAL
 - a. Payment for SHEET PILE INSTALLATION AND REMOVAL will be full compensation for the cost of labor, materials, tools, equipment, and incidentals required to install and remove sheet pile for additional Ecology Directed Overexcavation in the Shoreline Protection Zone beyond the Baseline Excavation limits shown.
 - b. Payment will be based on the total number lineal feet of sheet pile installed at the direction of and confirmed by Ecology or Ecology's Representative.
 - c. The quantity for payment for completed work will be based on the Unit Price provided. This price will be additive or deductive to Bid Item No. 11.
4. Bid Item No. U4 – EXCAVATION DEWATERING EFFLUENT TREATMENT
 - a. Payment for EXCAVATION DEWATERING EFFLUENT TREATMENT will be full compensation for the cost of labor and materials required to treat dewatering effluent as described in Section 01 57 13 Temporary Erosion and Sediment Controls and Section 31 23 19 - Dewatering.
 - c. Payment will be based on the total gallons treated and discharged at the direction of Ecology.
 - d. Cost of disposal fees shall be included in this Bid Item.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 20 00 - Price and Payment Procedures

1.05 MEASUREMENT FOR PAYMENT – PHASE I-B

- A. Measurement for payment will be in accordance with the schedules below and will be based upon: 1) Lump Sum/Known Quantity bid items as stipulated in the Phase I-B Bid Form – Table 3. Payment will be considered full compensation for furnishing all labor, materials and equipment to complete the Work specified.

- B. Lump Sum/Known Quantity Bid items are described as follows:
 - 1. Bid Item No. 1 - MAINTENANCE OF WETLANDS PLANTING FOR FIRST TWO YEARS
 - a. Payment for MAINTENANCE OF WETLANDS PLANTING FOR FIRST TWO YEARS will be full compensation for the cost of labor, materials, tools, equipment, and incidentals necessary to maintain the Constructed Wetlands for a period of two years as defined in Sections 32 71 00 – Landscaping and Wetland Mitigation Area.
 - b. Payment will be on a lump sum basis. Progress payments will be issued based on the percentage of time elapsed over the two year maintenance period.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 31 00 - Project Management and Coordination

PART 1 –GENERAL

1.01 MEETINGS

The Contractor will attend, at a minimum, the following meetings with Ecology or Ecology's Representative:

A. PRECONSTRUCTION MEETING

Following the award, Ecology or Ecology's Representative will notify the selected bidder of the time and date of a preconstruction meeting. The preconstruction meeting will be conducted at the Site. The following are requested to attend and suggested agenda:

1. Ecology or Ecology's Representatives:
 - a. Ecology Contracts Manager
 - b. Ecology Project Manager
 - c. Ecology's Representative- Ecology's A&E (Consultants)

2. Contractor's Representatives:
 - a. Project Manager (Superintendent)
 - b. Contract Administrator
 - c. Major Subcontractors
 - d. Major Suppliers

3. Suggested Agenda:
 - a. Communications and routing
 - b. Pre-contract Submittals
 - 1) Certificate of Insurance
 - 2) Performance Bond
 - 3) Labor and Materials Payment Bond
 - 4) Schedule of Values
 - c. Execution of the Contract
 - d. Discussion of the General Conditions
 - e. Discussion of the Special Conditions
 - f. Discussion of the Project Specific Requirements
 - g. Discussion of the Technical Specifications
 - h. Change Order
 - i. Terms and Conditions of Payment
 - j. Site visit
 - k. Others if any

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 31 00 - Project Management and Coordination

- B. Weekly Progress Meetings¹⁵:
1. Ecology or Ecology's Representative will schedule and administer weekly progress meetings throughout progress of the work.
 2. Ecology or Ecology's Representative will arrange meetings, prepare standard agenda with copies for participants, preside at meetings, record minutes and distribute copies within 10 working days to the Contractor, meeting participants, and others affected by decisions made.
 3. Attendance is required for the Contractor's job superintendent, major subcontractors and suppliers, Ecology or Ecology's Representative, and others as appropriate to the agenda topics for each meeting.
 4. Standard Agenda
 - a. Review minutes of previous meeting.
 - b. Review of work progress.
 - c. Field observations, problems, and decisions.
 - d. Identification of problems that impede planned progress.
 - e. Maintenance of Progress Schedule (3 weeks ahead; 1 week back).
 - f. Corrective measures to regain projected schedules.
 - g. Planned progress during succeeding work period.
 - h. Coordination of projected progress.
 - i. Maintenance of quality and work standards.
 - j. Effect of proposed changes on progress schedule and coordination.
 - k. Demonstration that the project record drawings are up-to-date.
 - l. Other business relating to the work.

¹⁵ Tentatively the Week Progress meeting is scheduled to be held on Monday AM.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 31 00 - Project Management and Coordination

C. Special Meetings

Contractor shall attend special meetings that may be held at Ecology's or Ecology's Representative's request when a problem or deficiency is present or likely to occur. The purpose of these meetings will be to define and discuss a problem or recurring work deficiency, review alternative solutions, and identify a plan to efficiently and effectively resolve the problem or deficiency.

Contractor's project manager and/or project superintendent will attend other meetings at Ecology's or Ecology's Representative's request to coordinate Contractor's activities with related work being conducted by Ecology or Ecology's Representative.

Contractor's attendance at off-site meetings with regulatory agencies or other parties will be arranged as necessary. Contractor will participate in offsite meetings at no additional cost to Ecology.

D. Health and Safety Meetings

Contractor will conduct health and safety meetings for Contractor personnel as required by Contractor's health and safety plan, including but not limited to daily tailgate safety meetings. Ecology or Ecology's Representative may attend Contractor's health and safety meetings, as needed, to be aware of work conditions or health and safety concerns that could affect the normal business activities of Ecology's or Ecology's Representative's employees or tenants, or the coordination or execution of work under other contracts.

1.02 NOTIFICATION POINTS

The Contractor will notify Ecology or Ecology's Representative at the following points in the project, prior to proceeding further, to allow inspection of the Contractor work progress. Ecology or Ecology's Representative may request additional Notification points based on review of the above information provided by the Contractor.

- A. After installation of traffic controls per Section 01 50 00 and temporary erosion and sediment control measures and construction water treatment/disposal per Section 01 57 13; prior to commencement of any construction activities per Division 02.

PART 2 – PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

PART 1 –SUBMITTAL REQUIREMENTS

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General and Supplemental Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications
- B. Individual submittals required in accordance with the pertinent sections of these specifications. Other submittals may be required during the course of the project and are considered part of the normal work to be completed under the Contract.
- C. The list below may be incomplete and it is the Contractor's responsibility to ensure that the Contractor has met all conditions of the contract requirements.

1.02 PRECONSTRUCTION SUBMITTALS

The following is a list of required submittals, applicable reference section and/or minimum requirements for each. The following documents shall be submitted to Ecology or Ecology's Representative within 14 days after Notice to proceed and prior to commencement of work unless stated otherwise.

- A. Engineering Design Report for installation of temporary shoring with sheet piling¹⁶ as specified in Section 31 23 00.
- B. Construction Quality Assurance Plan (CQAP)

The Contractor will provide a comprehensive Construction Quality Assurance Plan (CQAP) in writing before commencing the work. The CQAP will include sketches as applicable. Ecology or Ecology's Representative may request additional information if deemed necessary based on review of the Contractor's proposed activities. The CQAP will be submitted to Ecology or Ecology's Representative within 14 days after Notice to Proceed and prior to commencement of work. The CQAP will include detailed construction plans for each of the primary elements of the work.

- C. Project Schedule

The Contractor will submit a Preliminary Project Schedule no later than seven (7) days after the date the Contract is executed and the Notice to Proceed issued. The schedule will be a Critical Path Method (CPM)

¹⁶ Please refer to Addendum #1 that contains Geotechnical Letter Report to be used by Contractor for design of sheet piling installations and including additional related changes in the Specifications if any.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

schedule developed by the Precedence Diagramming Method (PDM). The Project Schedule will display the following information, at a minimum:

- Construction Start Date
- Critical Path
- Identification and sequencing of contract work by Work Area
- Listing of Each Contract Bid Item
- Activity Description
- Activity Duration
- Predecessor Activities
- Successor Activities
- Identification of necessary coordination dates with Ecology or Ecology's Representative to coordinate tenant interaction
- Interruptions to utility service
- Roadway closures
- Parking lot closures
- Physical completion Date

The Contractor will update the Project Schedule on a weekly basis, and bring the required number of copies to the Weekly Construction Meeting. At a minimum, schedule updates will reflect the following information:

The actual duration and sequence of as-constructed Work activities, including changed Work.

- Approved time extensions.
- Unresolved requests for time extensions will be reflected in the Schedule Update by assuming no time extension will be granted, and by showing the effects to follow-on activities necessary to physically complete the project within the currently authorized time for completion.
- Any construction delays or other conditions that affect the progress of the Work.
- Any modifications to the as-planned sequence or duration of remaining activities.
- Any modifications to the Critical Path.
- The Physical Completion of all remaining Work in the remaining Contract time.

Refer to Section 00 72 00 – General Conditions, Part 3.02 – Construction Schedule for additional requirements.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

D. Site-Specific Health and Safety Plan (Section 01 35 29)

Assess the potential safety risks to on-site personnel and the environment and develop a site-specific health and safety plan to safely execute the work under this Contract. The Contractor is responsible for independently evaluating the physical and chemical hazards associated, or potentially associated with the project site and the work under this Contract and developing a plan that adequately addresses these hazards in compliance with applicable local, state, and federal regulations. The Contractor will submit the health and safety plan to Ecology or Ecology's Representative for review and general concurrence. A copy of the approved Health and Safety Plan will be maintained on site at all times.

E. Excavation Treatment and Disposal Plan (Section 31 23 00, Section 01 50 00)

The Excavation Plan will outline the Contractor's approach to accomplishing soil excavation and disposal tasks and identify the following, as a minimum:

- Sequence and method(s) for excavating soil, including: shoring methods; equipment to be used; and sequencing backfilling of excavated areas.
- Sequence and method for stockpiling and hauling excavated soil, including: expected number, locations, and construction of soil stockpiles; expected stockpiling, loading, and hauling equipment and quantities (e.g., number of trucks to be used); and work schedule for hauling to disposal facility.
- Measures to be taken and equipment to be employed to ensure worker safety and full compliance with applicable regulations.
- Measures to be taken to ensure soil and/or debris does not enter storm water drainage features.
- Measures to be taken to ensure run-off from the site does not enter storm water drainage features.
- Measures to be taken to ensure materials are legally disposed of including: specific disposal site(s) for contaminated and clean soil, the manner by which receipt at the disposal site will be documented, draft of legal transfer documentation (bill of lading), procedure for supplying Ecology or Ecology's Representative with appropriate documentation of material transfer and disposal.

F. Temporary Facilities and Control Plan (Section 01 50 00)

The Contractor shall develop and implement a Temporary Facilities and Control Plan that defines temporary traffic controls, utilities, site maintenance, air pollution control, noise abatement, and decontamination

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

facility requirements. These measures will be planned and implemented by Contractor including, but not limited to, the components shown on the Drawings, and described in the Section 01 50 00.

G. Stormwater Pollution Prevention Plan

The Contractor will prepare a Stormwater Pollution Prevention Plan that includes a modified site plan that shows the work areas and Contractor's proposed staging and storage area, and indicates Contractor's planned means and methods for management of stormwater runoff in accordance with project permit requirements, containment of potentially contaminated surface water, and prevention of erosion during the work as described in Section 01 57 13. The modified site plan will indicate the points where stormwater runoff potentially leaves the site, is collected in a surface water conveyance system (i.e., storm sewer, ditch, etc.), and enters receiving waters of the state.

H. Quality Control Plan (Section 01 45 00)

The Contractor will establish a Quality Control Plan to perform inspection and testing of all items of work required by the Contract Documents, including those performed by subcontractors. The Contractor will ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Plan will be effective for control of all construction work performed under this Contract and will specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control. The Quality Control Plan will, at a minimum, include and address the following:

- General and Project Specific requirements
- Contractors quality control and project management organization
- A comprehensive summary of the inspection and testing requirements
- A comprehensive list of inspection and test methods, schedules, and procedures
- Documentation methods and procedures
- Requirements for corrective action when quality control and/or acceptance criteria are not met
- Procedures to be followed to comply with the Record Document requirements
- Any additional elements that the Contractor deems necessary to adequately control all construction processes required by this contract.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

- I. Excavation Dewatering Plan (Sections 31 23 19)
 - The contractor shall develop and implement a Dewatering Plan that defines the methods and equipment that will be used for shoring systems including sheet pile installation and removal, excavation dewatering and water storage, treatment and disposal at the City of Anacortes STP. The plan will include the information specified in Part 1.02 of Section 21 23 19.

- J. Traffic Control Plan (City of Anacortes Permit and Section 01 50 00)
 - The contractor shall prepare, submit, obtain City of Anacortes and Ecology or Ecology's Representative approval, and implement a Traffic Control Plan that meets the requirements of the City of Anacortes Permit included in the Appendices and Section 01 50 00.

1.03 PERIODIC SUBMITTALS

The contractor will provide the following submittals to Ecology or Ecology's Representative at specified intervals.

A. Contractor Weekly Construction Report

The Contractor Weekly Construction Report will contain a summary description of all work performed during that week, including Daily Field Reports/Logs, names of Contractor employees, equipment, hours worked, and a seven day look ahead for anticipated project activities. In addition, the Contractor Weekly Construction Report will include quantities of work accomplished for all Pay Items identified in the Bid Form and a projection for work activities to be completed over the following week. The Contractor Weekly Construction Report will be submitted to Ecology or Ecology's Representative at the end of each work week or one day prior to the weekly progress meeting, whichever is sooner.

B. Final Completion Report and As-Built Drawings as defined in Section 01 70 00 – Execution and Close-Out Requirements.

PART 2 - PRODUCTS

2.01 COMPLIANCE

- A. Failure to comply with these requirements shall be deemed as the Contractor's agreement to furnish the exact materials specified or materials selected by Ecology or Ecology's Representative based on these specifications.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

2.02 SHOP DRAWINGS

- A. Ecology will not accept shop drawings that prohibit Ecology from making copies for its own use.
- B. Quality: Shop drawings shall be prepared accurately to scale sufficiently large to indicate all pertinent features of the products and the method of fabrication, connection, erection, or assembly with respect to the work.
- C. All drawings submitted to Ecology or Ecology's Representative for approval shall be drawn on full-size (ANSI D) copy or half-scale sets on 11 inches by 17 inches, bond paper only. Electronic versions of the drawings will also be submitted in the following formats on CD-ROM:
 - 1. DWG
 - 2. TIF
 - 3. PDF - Formatted to print to half-scale set on 11" x17" paper.
- D. Type of Prints Required:
 - 1. The Contractor shall submit six (6) paper copies of all shop drawings or supplemental working drawings in accordance with the General Conditions.
 - 2. In lieu of the above, the Contractor may submit shop drawings or supplemental working drawings in the form of one sepia transparency of each sheet plus one blue line or black line print of each sheet. Blueprint submittals will not be acceptable.
 - 3. Distribution: In the event the action described in D.2. above is selected by the Contractor, Ecology will review the drawings, mark the sepia with appropriate notations, prepare the required number of prints for their use, and return the marked sepia to the Contractors. The Contractor may then order as many additional copies as required for Contractor's work.
- E. In lieu of the above, submittals typically provided on paper may be submitted electronically as Adobe portable document format (PDF).

2.03 MANUFACTURERS' LITERATURE

- A. The Contractor shall submit six (6) paper copies of manufacturers' literature for approval.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

- B. Catalog cuts or brochures shall show the type, size, ratings, style, color, manufacturer, and catalog number of each item and be complete enough to provide for positive and rapid identification in the field. Catalog data shall be submitted in an orderly bound form. General catalogs or partial lists will not be accepted.
- C. In lieu of the above, submittals typically provided on paper may be submitted electronically as Adobe portable document format (PDF). The manufacturer's original electronic issue is preferred.

2.04 SAMPLES

- A. The sample submitted shall be the exact or precise article proposed to be furnished.
- B. Samples, color chips, finish styles, etc., shall be submitted in sufficient number as to provide Ecology or Ecology's Representative with alternate choices.

2.05 SUBSTITUTIONS

- A. Refer to the General Conditions 00 72 00, paragraph 3.07.
- B. Catalog data for equipment approved by Ecology or Ecology's Representative does not in any case supersede the Contract Documents. The approval by Ecology or Ecology's Representative shall not relieve the Contractor from responsibility for deviations from Drawings or Specifications, unless Contractor has in writing called Ecology's or Ecology's Representative's attention to such deviations at the time of the submission, nor shall it relieve it from responsibility for errors of any sort in the items submitted. The Contractor shall check the work described by the catalog data with the Contract Documents for deviations and errors.

PART 3 - EXECUTION

3.01 TRANSMITTALS

- A. General: The Contractor shall submit all shop drawings, catalog cuts, brochures and mailable samples accompanied with a "Shop Drawing Multi-Transmittal" form supplied by Ecology. Six (6) copies of each submittal shall be transmitted.
- B. Preparation: A separate submittal form shall be prepared for each product or procedure and shall be further identified by referencing the

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 33 00 - Submittals

Specification Section and paragraph number and each submittal shall be numbered consecutively.

- C. Mailing: The original shall be sent in every instance and will be the Contractor's record and final correspondence for every submittal.
- D. In lieu of the above, submittals typically provided on paper may be submitted electronically as Adobe portable document format (PDF).

3.02 COORDINATION

- A. Shop and detail drawings shall be submitted in related packages. All equipment or material details which are interdependent or are related in any way must be submitted indicating the complete installation. Submittals shall not be altered once approved for Construction. Revisions shall be clearly marked and dated. Major revisions must be submitted for approval.
- B. The Contractor shall thoroughly review all shop and detail drawings, prior to submittal, to assure coordination with other parts of the work. The Contractor's failure to do this will be the cause for rejection. Submittals shall bear this approval stamp and initials.
- C. Components or materials which require shop drawings and which arrive at the job site prior to approval of shop drawings shall be considered as not being made for this project and shall be subject to rejection and removal from the premises.

END OF SECTION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 29 - Health, Safety, and Emergency Response Procedures

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes the requirements for health and safety provisions necessary for all work at the site for this project. The work also includes compliance with all laws, regulations, and ordinances with respect to safety, noise, dust, fire and police action, civil disobedience, security, or traffic.
- B. Detailed information regarding the known nature and extent of refuse and contaminated soil in the project area is summarized in Section 00 31 24 Environmental Assessment Information.
- C. The Contractor shall monitor soils, groundwater, and waste materials for indications of potentially hazardous, dangerous, and/or contaminated materials (Suspect Materials) not reasonably anticipated based on the nature and extent of Suspect Materials described in Section 00 31 24. If such conditions are encountered, the Contractor shall stop all work in that area and notify Ecology or Ecology's Representative immediately.

1.02 SUBMITTALS

- A. The Contractor shall prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan prior to the start of any Work. The Contractor may submit the Health and Safety Plan (HASP) and SPCC Plan as one comprehensive document or may submit the plans as separate documents.
- B. Prior to the start of any Work, the Contractor shall provide a site specific HASP, which meets all the requirements of local, state, and federal laws, rules, and regulations and the pertinent regulations listed in Section 01 10 15 Safety. The HASP shall address all requirements for general health and safety and shall include but not be limited to:
 - 1. Description of work to be performed and anticipated chemical and/or physical hazards associated with the work.
 - 2. Map of the site illustrating the location of the anticipated hazards and areas of control for those hazards.
 - 3. Hazardous material inventory and material safety data sheets (MSDSs) for all chemicals which will be brought on site.
 - 4. Signage appropriate to warn site personnel and visitors of anticipated site hazards.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 29 - Health, Safety, and Emergency Response Procedures

5. Documentation that the necessary workers have completed the required 40-hour HAZWOPER training, as defined in Section 00 72 00, Article 5.07 (Safety Precautions).
6. Engineering controls/equipment to be used to protect against anticipated hazards.
7. Personal protective equipment and clothing including head, foot, skin, eye, ear, and respiratory protection.
8. Procedures which will be used for:
 - a. Lockout/Tagout;
 - b. Fall Protection;
 - c. Trenching and shoring;
 - d. Oxygen deficient conditions;
 - e. Hazards;
 - f. Suspect Materials;
 - g. Confined-space entry (could include dewatering storage tanks, manholes, or other items);
 - h. Odorous conditions and toxic gases.
9. Exposure monitoring to be used to evaluate actual hazards compared with anticipated conditions.
10. Site housekeeping procedures and personal hygiene practices.
11. Personnel and equipment decontamination plan.
12. Administrative controls.
13. Emergency plan including locations of and route to nearest hospital.
14. Medical surveillance program for site personnel before, during, and after completion of site work.
15. Medical removal protection.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 29 - Health, Safety, and Emergency Response Procedures

16. Record keeping including:
 - a. Documentation of appropriate employee training.
 - b. Respirator fit testing.
17. Name and qualifications of person preparing the HASP and person designated to implement and enforce the plan.
18. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the plan.

1.03 POTENTIAL CHEMICAL HAZARDS

A. Site Contaminants

1. The Contractor must provide site workers with Hazard Communication standard information for potential site contaminants (in accordance with WAC 296-62-054). The Contractor shall ensure that all site workers are aware of and understand this information. Additional information shall also be provided by the Contractor, as necessary, to meet the Hazard Communication Standard and HASP requirements as noted in WAC 296-62-054 and 296-62-300. Workers shall be instructed on basic methods or techniques to assist in detecting suspicious material.

B. Potential Exposures Routes

1. Inhalation: Airborne dust may be created during site activities. Inhalation of vapors or gases may occur if volatile contaminants or hydrogen sulfide are present.
2. Skin and Eye Contact: Dusts generated during site work activities may settle on the skin or clothing of site workers. Also, workers may contact contaminated sediments, or water in the normal course of their work. Precautions to prevent skin or eye contact with hazardous materials shall be included in the HASP.
3. Ingestion: Inadvertent transfer of site contaminants from hands or other objects to the mouth could occur if site workers eat, drink, smoke, chew tobacco, or engage in similar activities in contaminated areas. This could result in ingestion of site contaminants. Precautions to prevent accidental or inadvertent ingestion of hazardous materials shall be included in the HASP.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

4. Injection: Potentially contaminated debris material at the site presents a potential injection hazard in the event of accidental puncture, laceration, or abrasion of the skin, causing internal exposure to the contaminant(s) present.
- C. Chemical hazards may also result from Contractor operations resulting in inadvertent release of fuel, oil, or other chemicals in a manner that would expose workers.

1.04 POTENTIAL PHYSICAL AND OTHER HAZARDS

- A. The Work of the Contractor is described elsewhere in these specifications. Precautions to prevent all anticipated physical and other hazards, including heavy equipment and vessels, shall be addressed in the HASP.
- B. Specific aspects of construction resulting in physical hazards anticipated for this project include, but are not limited to the following:
 1. Slips, trips, and falls.
 2. Operation of equipment and vehicles presenting hazards of entrapment, ensnarement, and being struck by moving parts.
- C. Other anticipated physical hazards include, but are not limited to the following:
 1. Heat stress, such as that potentially caused by impermeable clothing (may reduce the cooling ability of the body due to evaporation reduction).
 2. Cold stress, such as that potentially caused during times when temperatures are low, winds are high, especially when precipitation occurs during these conditions.
 3. Biological hazards, such as insect stings or bites.

PART 2 – PRODUCTS

2.01 PRODUCTS SPECIFIED FOR HEALTH AND SAFETY

- A. Provide the equipment and supplies necessary to support the work as described in the site-specific HASP. Equipment and supplies as needed may include but are not limited to:
 1. Hazardous materials inventory and MSDSs for the chemicals brought on site;

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 29 - Health, Safety, and Emergency Response Procedures

2. Enclosure equipment (for dust control as needed);
 3. Fencing and barriers;
 4. Warning signs and labels;
 5. Trenching equipment;
 6. Fire extinguishers;
 7. Equipment to support lockout/tag-out procedures;
 8. Fall protection equipment;
 9. Personal protective equipment (hard hats, foot, skin, eye, ear, and respiratory protection);
 10. Area and personnel exposure monitoring equipment;
 11. Demolition equipment and supplies;
 12. Decontamination equipment and supplies;
 13. First aid equipment;
 14. Release prevention equipment; and
 15. Field documentation logs/supplies
- B. The Contractor's HASP shall be amended as needed to include special work practices warranted by site conditions actually encountered.
- C. The Contractor shall maintain the HASP and SPCC on site at all times.

PART 3 – EXECUTION

3.01 WORK AREA PREPARATION

- A. Contractor shall comply with health and safety rules, regulations, and ordinances promulgated by the local, state, and federal government, the various construction permits, and other sections of the Contract Documents. Such compliance shall include, but not be specifically limited to any and all protective devices, equipment and clothing; guards; restraints; locks; latches; switches; and other safety provisions that may be required or necessitated by state and federal safety regulations. The

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

Contractor shall determine the specific requirements for safety provisions and shall cause inspections and reports by the appropriate safety authorities to be conducted to ensure compliance with the intent of the regulations.

- B. Contractor shall inform employees and subcontractors and their employees of the potential danger in working with any potentially contaminated materials, equipment, soils, and groundwater at the project site.
- C. Contractor shall perform whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees and representatives of Ecology and the Contractor) and property during the Contract period. This requirement applies continuously and is not limited to normal working hours. Contractor employees, subcontractors, employees of subcontractors, and visitors shall be required to read and adhere to the Contractor's HASP.
- D. Ecology's or Ecology Representative's review of the Contractor's performance does not include an opinion regarding the adequacy of, or approval of, the Contractor's safety supervisor, the site specific HASP, safety program, or any safety measures taken in, on, or near the construction site.
- E. Accidents causing death, injuries, or damage must be reported immediately to Ecology or Ecology's Representative in person or by telephone or messenger. In addition, promptly report in writing to Ecology or Ecology's Representative all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- F. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing within 24 hours after occurrence to Ecology or Ecology's Representative, giving full details of the claim.

3.02 SITE SAFETY AND HEALTH OFFICER

- A. Contractor shall provide a person designated as the Site Safety and Health Officer, who is thoroughly trained in rescue procedures, HAZWOPER, and the use of all necessary safety equipment, air monitoring equipment, and gas detectors. The person must be present at all times while work is being performed and conduct testing, as necessary.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

- B. The Contractor's site Health and Safety Officer or designee shall conduct inspections of the site in accordance with the HASP to determine the HASP's effectiveness and shall immediately correct any deficiencies identified.
- C. The Site Safety and Health Officer shall be empowered with the delegated authority to order any person or worker on the project site to follow the safety rules. Failure to observe these rules is sufficient cause for removal of the person or worker(s) from this project.
- D. The Site Safety and Health Officer is responsible for determining the extent to which any safety equipment must be utilized, depending on conditions encountered at the site.

3.03 GENERAL SAFETY GUIDELINES FOR HAZARDOUS GASES

- A. The generally accepted procedure to protect the worker from the effects of the dangers from hazardous gases is through the use of four safeguard measures:
 - 1. Test the atmosphere;
 - 2. Ventilate confined spaces;
 - 3. Use appropriate safety equipment;
 - 4. Provide backup safety personnel.
- B. Test the Atmosphere: Before entering a trench, underground vault, or any other excavation, the atmosphere shall be tested to detect any adverse environmental conditions. At a minimum, the excavation interior shall be tested for oxygen deficiency, toxic gases, and combustible gases with a gas detector instrument. Test instruments shall be properly maintained and calibrated. The test shall be conducted from top to bottom of the excavation. When testing an excavation or confined space, the presence of explosive gases shall be checked first. If this test indicates non-explosive conditions, asphyxiating (toxic) gases and oxygen deficiency conditions shall then be determined. An oxygen deficiency condition indicates that gases or vapors undetected in the toxic gas test are probably present. Because carbon monoxide, carbon dioxide, hydrogen sulfide, or other vapors may have accumulated in the lower levels of the excavation, their presence would not have been detected in the upper portions of the excavation.
- C. Ventilate Confined Spaces: To mitigate against toxic and combustible gases or oxygen deficiency, an excavation or other confined space shall

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

be thoroughly ventilated before entry and during the entire time workers are in the confined space. Forced ventilation is the generally accepted procedure. Start by blowing air in the excavation until the atmosphere is suitable for entry. Blower equipment shall be placed upwind from the excavation so that emerging gases will not be ignited by the blower equipment or recycled into the excavation. Blower equipment should also be located away from the exhaust of internal combustion engines so that the exhaust fumes are not introduced into the work area. Gas engine blowers, if used, shall also be situated so that the exhaust is not introduced into the excavation. The hose from the blower unit shall be set and inspected periodically to ensure that it is not bent or kinked, to guarantee that air flow to the excavation will not be reduced or restricted.

- D. **Use Appropriate Safety Equipment:** All personnel shall be trained to operate the appropriate safety equipment that would be utilized during the course of their work. It is the responsibility of the Contractor's Site Safety and Health Officer to ascertain that all safety equipment is being used when appropriate.
- E. **Backup Safety Personnel:** Prior to any personnel entering an excavation or confined space, a separate individual shall be positioned outside the space, but always within eyesight of the personnel within the space, to assist should the worker become overcome by loss of oxygen or exposed to other vapors. The safety individual shall have a radio or other communication device to call for assistance. A minimum of one emergency escape oxygen air-pack shall be readily available to the observing individual.
- F. **Safety Monitoring Instrumentation:** The Safety Officer shall have appropriate instruments (detector[s]) to test for oxygen deficiency and for the presence of other known or suspected vapors and gases. A portable gas detector shall be available for this purpose. The Safety Officer shall periodically calibrate its instruments, regularly test the excavation areas and other work areas for safe working conditions, and ensure that appropriate safety equipment is available at the site.

3.04 FIRST AID

- A. The Contractor shall have available at the site, at all times, a person(s) holding a valid certificate of first-aid training. A valid first-aid certificate is one that is less than three years old. The Contractor's crew leaders, supervisors, or persons in direct charge of crews (i.e., a group of two or more employees working at the site) shall possess a valid first-aid certificate.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

- B. The Contractor shall provide first-aid supplies at the work site for its employees as required by WAC 296-155-125.

3.05 SPILL PREVENTION AND CONTROL

- A. The Contractor shall be responsible for prevention, containment, and cleanup of spilled oil, fuel, and other petroleum products used in the Contractor's operations. All such prevention, containment, and cleanup costs shall be borne by the Contractor. The Contractor shall prepare a SPCC Plan prior to the start of construction activity.
- B. The Contractor is advised that discharge of oil from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.
- C. The Contractor shall, at a minimum, take the following measures regarding oil spill prevention, containment, and cleanup.
 - 1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities shall be inspected regularly for drips, leaks, or signs of damage, and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
 - 2. All land-based oil and product storage tanks shall be diked, contained, and/or located so as to prevent spills from escaping into the water. Diking and containment area surfaces shall be lined with impervious material to prevent oil from seeping through the ground and dikes.
 - 3. All visible floating oils shall be immediately contained with booms, dikes, or other appropriate means and removed from the water prior to discharge into state waters. All visible oils on land shall be immediately contained using dikes, straw bales, or other appropriate means and removed using sand, ground clay, sawdust, or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leak-proof containers after cleanup and during transport for disposal. Waste materials shall be disposed off site in accordance with applicable local, state, and federal regulations.
 - 4. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the parties as indicated in Section 01 35 43 Environmental Procedures.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 29 - Health, Safety, and Emergency Response Procedures

- D. The Contractor shall maintain the following materials (as a minimum) at each of the project sites:
1. Oil-absorbent booms: 4 each, 5 feet long.
 2. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area.
 3. Oil-skimming system.
 4. Oil dry all, gloves, and plastic bags.

END OF SECTION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The Work shall consist of completing notifications and other actions required for the Contractor as summarized in Table 013543-01. Other notifications and actions will be performed by Ecology or Ecology's Representative as listed in the table. These notifications and actions listed constitute environmental procedures for the project.

1.02 SUBMITTALS

- A. Applicable Contractor submittals include, but are not limited to:
1. Construction Water sampling, testing, shipment, and disposal records shall be transmitted to Ecology or Ecology's Representative per Section 01 57 13 Temporary Erosion and Sediment Control.
 2. Off-site shipment and disposal documentation for all excavated material shall be transmitted to Ecology or Ecology's Representative in accordance with Section 31 23 01 – Off-Site Transportation and Disposal of Contaminated Soil.
 3. Documentation of imported materials quality,

1.03 REFERENCES

- A. The following rules, requirements, and regulations that apply to this work include but are not limited to:
1. Chapter 173-303 WAC Washington State Dangerous Waste Regulations.
 2. Chapter 173-340 WAC Model Toxics Control Act Cleanup Regulations.
 3. City of Anacortes Grade and Fill Permit.
 4. Natural Background Soil Metals Concentrations in Washington State, Toxics Cleanup Program, Department of Ecology, October 1994.

PART 2 –PRODUCTS

Not used.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

PART 3 –EXECUTION

3.01 CONTRACTOR ENVIRONMENTAL PROCEDURES

- A. In addition to Contractor submittals listed above in this section, required environmental procedures by the Contractor include but are not limited to:
1. Observing excavations for unexpected waste material or Dangerous Waste as defined by Chapter 173-303 WAC and immediately reporting any discovered unexpected waste or Dangerous Waste to Ecology or Ecology's Representative. Management of discovered unexpected waste material or Dangerous Waste shall be determined by Ecology or Ecology's Representative.
 2. Maintaining temporary stockpiles of excavated and other material in accordance with Section 31 23 00 (Remedial Excavation and Fill) and Section 31 23 19 (Dewatering).
 3. Managing Suspect Materials including:
 - a. Unexpected waste material or Dangerous Waste as defined by Chapter 173-303 WAC and as determined by Ecology or Ecology's Representative, in accordance with Division 31 (Earthwork).
 - b. Construction Water collection and holding tank solids in accordance with Section 01 57 13 (Temporary Erosion and Sediment Control) and Section 31 23 19 (Dewatering).
 4. Controlling and managing site Construction Water including:
 - a. Stormwater, potential excavation seepage, and dewatering water in accordance with Section 01 57 13 (Temporary Erosion and Sediment Control) and Section 31 23 19 (Dewatering).
 - b. Free-phase petroleum product recovered from Construction Water in accordance with Section 01 57 13 (Temporary Erosion and Sediment Control) and Section 31 23 19 (Dewatering).
 5. Sampling and testing Construction Water prior to discharge in accordance with Section 01 57 13 (Temporary Erosion and Sediment Control) and Section 31 23 19 (Dewatering).

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

6. Completing sampling and testing of imported soils used for backfill material.
7. Authorizing bills of lading and other shipment documentation other than Dangerous Waste.
8. Completing sampling, testing, and reporting to meet imported fill materials quality requirements prior to importing any material.
 - a. Prior to delivery of any imported fill material, the Contractor shall submit documentation of the fill quality.
 - b. The supplier must provide an environmental certification, signed by the owner or officer of the supplier, that the material is free of contamination.
 - c. If the material is from a WSDOT-approved source, the certification and acceptance information must be submitted.
 - d. If the material is from a non-WSDOT-approved borrow pit, the supplier must provide documentation of the source area land use and operational history and chemical composition sufficient to identify the site as free from environmental contamination.
 - e. For purposes of these specifications, environmental contamination is defined as concentrations of petroleum hydrocarbons (gasoline, diesel, or heavy oil) and carcinogenic PAHs above MTCA Method A Soil Cleanup Levels for Unrestricted Land Use, concentrations of RCRA 8 heavy metals above Puget Sound background levels defined by Ecology, TEC concentrations of dioxins 5 ppt¹⁷ /furans 3 ppt), or any other characteristics (e.g., unpleasant odor) making the material unsuitable for use.
 - f. Acceptance of fill material quality is at Ecology or Ecology's Representative discretion.
 - g. In the absence of adequate soil quality testing documentation, the Contractor or fill source owner will be required to submit the results of analytical testing from the fill source, at their sole expense, at a sampling frequency as follows: Five (5) samples for the first 5,000 cubic yards of material and one (1) additional sample for every additional 2,000 cubic yards.
 - h. Necessary analytical test methods will be determined by Ecology or Ecology's Representative.

¹⁷ ppt = ng/kg

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

- i. The Contractor shall allow five (5) working days for review by Ecology or Ecology's Representative. If the submitted documentation or test results are unsatisfactory, additional testing will be required.

3.02 ENVIRONMENTAL PROCEDURES

- A. Applicable environmental procedures to be conducted by Ecology or Ecology's Representative include:
 1. Observing the excavations for the presence of potential Suspect Material, including unexpected Dangerous Waste as defined by Chapter 173-303 WAC, and identifying and/or confirming appropriate management actions.
 2. Completing excavation performance soil sampling and testing from the excavation surfaces at the Baseline Limits of excavation, and identifying and/or confirming need for Ecology Directed Overexcavation as defined in Section 31 23 00 (Remedial Excavation and Fill).
 - a. Contractor shall assume that sampling results will be available (along with resulting direction on any required or Ecology Directed Overexcavation) between two (2) and four¹⁸(4) business days following notification from the Contractor that a particular excavation area is complete to the Baseline Limits
 3. Completing performance sampling and testing of soil from the excavation surfaces as needed during Ecology Directed Overexcavation, and identifying and/or confirming need for additional overexcavation.
 - a. Contractor shall assume that sampling results will be available (along with resulting direction on any additional required Ecology Directed Overexcavation) between two (2) and four (4)¹⁹ business days following collection of the overexcavation performance samples.
 4. Completing additional sampling and testing of excavated material if required.

¹⁸ During the period of state and national holidays, period could be five (5) business days.

¹⁹ During the period of state and national holidays, period could be five (5) business days.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

- a. Completing confirmational sampling and testing of post-excavation surfaces in accordance with Section 31 23 00 (Remedial Excavation and Fill).
- B. The Contractor shall provide access as needed for Ecology or Ecology's Representative to collect the samples described above and any other observation or sampling needed.
- C. Contractor will compile testing data, including data from existing environmental reports for off-site disposal materials (refer to IAWP documents identified in Appendices for necessary data) and forward to the appropriate agents for off-site disposal facilities as needed to obtain disposal acceptance. Contractor shall provide documentation to Ecology or Ecology's Representative regarding disposal acceptance and any related conditions.
- D. The Property or Site Owner will authorize Dangerous Waste manifests and related Dangerous Waste documentation as the generator, if necessary.

3.03 SPILL REPORTING

- A. Any person observing a spill of any material to the ground surface, to surface water, or groundwater shall immediately report the condition as noted in Table 013543-1.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 43 - Environmental Procedures

Table 013543-1 – Actions, Notifications, and Responsible Parties

Action	Responsible Parties and Notifications	Specification Sections
<p>1. Environmental Field Observation:</p> <p>a. Observe excavation for potential Suspect Material conditions, including unexpected DW, and provide recommendations for characterization and handling.</p> <p>b. Observe excavation for Suspect Material or potential unexpected DW.</p>	<p>Ecology or Ecology's Representative – Notify Contractor Site Superintendent if Suspect Material noted.</p> <p>Contractor – Notify Ecology or Ecology's Representative if potential unexpected DW noted.</p>	<p>01 35 43 – Environmental Procedures</p> <p>01 35 43 – Environmental Procedures</p>
<p>2. Maintain temporary stockpiles of excavated material and Suspect Material (as needed) in protected manner.</p>	<p>Contractor</p>	<p>01 57 13 – Temporary Erosion and Sediment Control</p> <p>02 41 43 – Selective Site Demolition</p> <p>31 23 00 – Remedial Excavation and Fill</p>
<p>3. Control and manage site Construction Water per CSGP, SWPPP, TESC, and permit conditions.</p>	<p>Contractor</p>	<p>01 57 13 – Temporary Erosion and Sediment Control</p> <p>31 23 19 – Excavation Dewatering</p>
<p>4. Implement contingency DW handling and disposal, including maintaining segregated storage of DW, as needed.</p>	<p>Contractor, based on direction from Ecology or Ecology's Representative.</p>	<p>01 35 43 – Environmental Procedures</p> <p>31 23 00 – Remedial Excavation and Fill</p>
<p>5. Sampling and Testing:</p> <p>a. Additional excavated material characterization (if required).</p> <p>b. Contingency Suspect Material characterization.</p> <p>c. Construction Water prior to discharges to on-property location, City of Anacortes</p>	<p>Ecology or Ecology's Representative – Notify Contractor of testing results.</p> <p>Contractor – Notify Ecology or Ecology's Representative of testing results.</p> <p>Contractor – Notify Ecology or Ecology's Representative</p>	<p>01 35 43 – Environmental Procedures</p> <p>01 35 43 – Environmental Procedures</p> <p>01 57 13 – Temporary Erosion and Sediment</p>

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 35 43 - Environmental Procedures

Action	Responsible Parties and Notifications	Specification Sections
<p>sanitary sewer, or off-site reprocessing facility.</p> <p>d. Baker tank holding system and holding tank solids.</p> <p>e. Excavation soil performance samples.</p> <p>f. Imported soil backfill material samples.</p> <p>g. Post-excavation confirmational samples.</p> <p>h. Imported material quality samples.</p>	<p>of testing results.</p> <p>Contractor – Notify Ecology or Ecology’s Representative of testing results.</p> <p>Ecology or Ecology’s Representative – Provide testing results and overexcavation decisions to Contractor (two to four business day turnaround time).</p> <p>Contractor – Provide Ecology or Ecology’s Representative with testing results.</p> <p>Ecology or Ecology’s Representative</p> <p>Contractor – Provide Ecology or Ecology’s Representative with testing results.</p>	<p>Control 31 23 19 – Excavation Dewatering</p> <p>01 35 43 – Environmental Procedures</p> <p>01 35 43 – Environmental Procedures 31 23 00 – Remedial Excavation and Fill</p> <p>31 23 00 – Remedial Excavation and Fill</p> <p>01 35 43 – Environmental Procedures 31 23 00 – Remedial Excavation and Fill</p> <p>01 35 43 – Environmental Procedures 31 23 00 – Remedial Excavation and Fill</p>
<p>6. Compile laboratory testing data from the IAWP, transmit to disposal facilities for disposal authorization, and notify disposal facility agents as needed prior to disposal of excavated material.</p>	<p>Contractor – Notify Ecology or Ecology’s Representative regarding disposal acceptance.</p>	<p>01 35 43 – Environmental Procedures</p>
<p>7. Coordinate disposal of waste materials:</p> <p>a. Load excavated material for shipment to Subtitle D landfill disposal facility.</p> <p>b. Construction Water discharges to on-property location or City of Anacortes sanitary sewer.</p>	<p>Contractor</p> <p>Contractor</p>	<p>31 23 00 – Remedial Excavation and Fill</p> <p>01 57 13 – Temporary Erosion and Sediment Control</p>

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS

Section 01 35 43 - Environmental Procedures

Action	Responsible Parties and Notifications	Specification Sections
c. Contingency DW disposal at permitted and Ecology-approved Subtitle C facility.	Contractor	31 23 19 – Excavation Dewatering 31 23 00 – Remedial Excavation and Fill
8. Obtain and complete off-site shipment and disposal documentation for all media and transmit to landfill, transporter, and Ecology or Ecology's Representative.	Contractor	01 35 43 – Environmental Procedures
9. Authorize shipment bills of lading for non-DW.	Contractor	01 35 43 – Environmental Procedures
10. Authorize manifests for DW.	Property or Site Owner as DW generator	01 35 43 – Environmental Procedures
11. Immediately report spills into water, spills onto land with potential for entry into waters, or other significant water quality impact to: a. Ecology or Ecology's Representative (contact information to be provided) b. Ecology Northwest Regional Office (425) 649-7000 (24-hour phone number) c. Washington Emergency Management Division (800) 258-5990 d. NRC (800) 424-8802	Any person observing spill or significant water quality impact	01 35 43 – Environmental Procedures
12. Immediately report all other spills of any nature to Ecology or Ecology's Representative.	Contractor	01 35 43 – Environmental Procedures

CSGP – Construction Stormwater General Permit

CESCL – Certified Erosion and Sediment Control Lead

DW – Dangerous Waste

IAWP – Interim Action Work Plan

NRC – National Response Center

SWPPP – Stormwater Pollution Prevention Plan

TESC – Temporary Erosion and Sediment Control

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 45 00 - Contractor Quality Control

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

This section describes the Contractor's general quality control requirements, duties, and responsibilities during execution of the Contract Work. Detailed quality control requirements are presented in individual specification sections.

The Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction conform to requirements of the Contract Documents and Manufacturer recommendations. Although the guidelines are established and certain minimum requirements are specified herein and elsewhere in the Contract Documents, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall be prepared to discuss and present, at the Preconstruction Meeting, its understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Plan has been reviewed and approved by Ecology or Ecology's Representative.

1.02 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturer's instructions, including each step in the sequence.
- C. Should manufacturer's instructions conflict with contract Documents, request clarification from Ecology or Ecology's Representative before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce required and specified quality.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 45 00 - Contractor Quality Control

1.03 REFERENCES AND STANDARDS

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with the requirements of the standard, except where more rigid requirements are specified by applicable codes.
- B. Conform to reference standard by date of issue current on date of contract documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.

1.04 TESTING SERVICES

- A. Necessary materials testing shall be performed by an independent testing laboratory during the execution of the Work and paid for by Ecology, unless otherwise specified. Access to the area necessary to perform the testing and/or to secure the material for testing shall be provided by the Contractor.
- B. Testing does not relieve the Contractor from performing work to contract requirements.
- C. Retesting required because of non-performance to specified requirements shall be performed by the same independent firm. Payment for re-testing will be charged to the contractor by deducting testing charges from the contract sum.
- D. Subsequent sampling and testing, required as the work progresses to assure continued control of materials and compliance with all requirements of Contract documents, shall be the responsibility of Ecology, except as required by other sections of these specifications.

1.05 SUBMITTALS

The Contractor shall provide the Quality Control Plan to the Owner in accordance with Section 01 33 00 – Submittals, Meetings & Notification Points.

PART 2 – PRODUCTS

2.01 CONTRACTORS DAILY REPORT REQUIREMENTS

- A. Date the report is issued.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 45 00 - Contractor Quality Control

- B. Project name and Ecology number.
- C. Work performed each day.
- D. Name of workers, subcontractors performing work each day including hours worked by each person.
- E. Type of equipment and hours used each day.
- F. Identification of bid item quantities used each day, or percent complete for lump sum items.
- G. Identification of potential items that may result in schedule overruns or added costs.

PART 3 –EXECUTION

3.01 CONTRACTOR QUALITY CONTROL

A. Quality Control Plan

The Contractor shall establish a Quality Control Plan to perform inspection and testing of all items of work required by the Contract Documents, including those performed by subcontractors. The Contractor shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Plan shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of quality control.

The Quality Control Plan shall, at a minimum, include and address the following:

1. General requirements
2. Quality control organization
3. A comprehensive summary of the inspection and testing requirements
4. A comprehensive list of inspection and test methods, schedules, and procedures
5. Documentation methods and procedures
6. Requirements for corrective action when quality control and/or acceptance criteria are not met

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 45 00 - Contractor Quality Control

7. Procedures to be followed to comply with the Record Document requirements (Section 01 72 00 Part 4.02 Project Record and Section 01 70 00 Execution and Close Out Requirements)
8. Any additional elements that the Contractor deems necessary to adequately control all construction processes required by this contract.

B. Documentation

The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, proposed corrective action; and corrective actions taken.

C. Noncompliance

Ecology or Ecology's Representative may notify the Contractor of any non-compliance with project quality control requirements. The Contractor shall, after receipt of such notice, immediately take corrective action.

In cases where quality control activities do not comply with either the Contractor's Quality Control Plan or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by Ecology or Ecology's Representative, Ecology or Ecology's Representative may:

1. Direct the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
2. Carry out the functions and operations of the Contractor's Quality Control Plan. Costs incurred by Ecology to operate the Quality Control Program plan or to otherwise remedy the Contractor's non-compliance with quality-related provisions of the Contract shall be deducted from the total amount due the Contractor.
3. Order the Contractor to stop operations until appropriate corrective actions are taken.

Any failure by Ecology or Ecology's Representative to notify the Contractor of any non-compliance with any of the foregoing requirements shall not be deemed as a waiver of its enforcement rights hereunder and

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 45 00 - Contractor Quality Control

that the Contractor is still bound by the terms and conditions of said requirement.

3.02 CONTRACTOR QUALITY ASSURANCE PLAN

The Contractor will submit a Construction Quality Assurance Plan (CQAP) that contains the components specified in Section 01 33 00. These components include:

1. Project Schedule
2. Site Specific Health and Safety Plan
3. Excavation and Disposal Plan
4. Traffic Access and Control Plan

3.03 CONTRACTORS DAILY REPORT

Contractor shall provide Ecology or Ecology's Representative with a written daily report at the end of each day's work. The Contractors Daily Report shall describe the work accomplished that day and address each item listed in Part 2.01 of this Section. The Contractors Dailey Reports will be one of the agenda items discussed at the weekly project meeting described in Section 01 33 00.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. This section describes the requirements to provide the temporary facilities required by both the contractor and Ecology or Ecology's Representative until final completion of the Work. The Work includes compliance with all controls and ordinances with respect to safety, noise, security, traffic, temporary utilities, site maintenance and air pollution control.
1. The Contractor shall be responsible for cordoning off the work site with temporary fencing and erecting temporary traffic controls as shown on the Plans and described herein.
 2. These facilities and controls shall be in place to the Owner's satisfaction prior to commencement of construction activities.
 3. During the construction, the Contractor shall pre-plan and coordinate with Ecology or Ecology's Representative to minimize interference with traffic adjacent to the site, parking in the adjacent parking spaces, and traffic accessing nearby operating businesses and as required under the Traffic Control Plan to be approved by the City of Anacortes and Ecology or Ecology's Representative.
 4. During the construction, the Contractor shall maintain pedestrian access through and across the Tommy Thompson Trail.
 5. The Contractor shall be responsible for traffic control and coordination as described herein during the entire period of activities under this contract.
 6. The contractor will provide temporary utilities, site maintenance, air pollution control, noise control; and operate a decontamination facility as discussed below.

1.02 SUBMITTALS

- A. In addition to the Traffic Control Plan, the Contractor shall provide a Temporary Facilities and Controls Work Plan that details management of environmental conditions presented during the performance of the Work and provides methods for how the work will be performed. This Plan can be combined with the SPCC and other plans identified in Section 0133 00.
- B. Plan shall be submitted to Ecology or Ecology's Representative for

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

approval prior to beginning Work. The temporary Facilities and Control Plan shall include at a minimum:

1. A general description of the construction work to be performed discussing anticipated chemical and physical hazards associated with the Work.
2. Hazardous Waste Contingency Plan
3. Description of anticipated waste streams and procedures for site management, transportation and off-site disposal/recycling.
4. Methods for managing, accumulating/stockpiling soil, ground asphalt, crushed concrete and suspect materials on-site.
5. Document Control, including the documentation of all waste transportation and disposal, and including submission of a complete and final report to Ecology or Ecology's Representative.
6. Methods for site maintenance and security.
7. Description of air pollution control procedures.
8. Methods for management of noise.
9. Hazardous Waste Management Plan to address onsite conditions.
10. Methods to protect groundwater and other critical areas from contamination and methods to decommission monitoring wells.
11. Run-off Management Plan detailing controls to be used during dust control, and any other use of water during the project which may impact the stormwater system.
12. Oil Spill Response and Prevention Procedures.

PART 2 – PRODUCTS

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

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

PART 3 – EXECUTION

3.01 TEMPORARY TRAFFIC CONTROLS

The Contractor will be allowed to close one lane of the adjacent roadway for use during construction activities only as allowed in the City of Anacortes Permit. The following traffic control elements, as a minimum, shall be provided as shown on the Plans and maintained during the course of the project:

- A. Lane closure sign (DOT Type W4-12).
- B. Lighted traffic safety drums on 10 foot spacing along closed lane.
- C. The Contractor may provide additional control elements, with Owner's approval, if deemed necessary to ensure the safety of workers and others or to facilitate better traffic flow into and out of the area.

3.02 CONSTRUCTION TRAFFIC

The Contractor shall minimize interference with the activities of adjacent property owners as described below, and by other means identified and agreed upon during the course of the project:

- A. The Contractor shall minimize vehicular traffic into and out of the site.
- B. Construction vehicles shall enter and exit the site from 34th Street and follow the haul path shown in the Drawings.
- C. A Contractor's employee shall oversee any vehicle's entrance to or exit from the site, and direct the construction vehicle and any non-construction traffic as-needed to prevent accidents and ensure smooth traffic flow around the site.
- D. If the open traffic lane needs to be temporarily blocked for purposes of placing or removing equipment, coordinate such activities in advance with adjacent property owners to minimize disruption to their activities. The duration of the blocking activity shall be kept to a minimum and the estimated duration is to be communicated to the adjacent property owners prior to commencement. The Contractor shall be responsible for directing both the construction and non-construction traffic during such times that the through-lane is blocked.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

3.03 PEDESTRIAN TRAFFIC

The Contractor shall not restrict pedestrian access to the Tommy Thompson Trail except during ongoing material delivery or material export activities. When ongoing material delivery or export activities require closure of pedestrian sidewalk or walkway entrances to the Trail, a Contractor's employee shall oversee the closure and ensure that alternative pedestrian routing is established to prevent accidents and ensure smooth pedestrian and vehicular traffic flow around the site.

3.04 TEMPORARY UTILITIES

The contractor will provide adequate facilities for Contractor's Operation at contractor's expense including:

- A. Water
 - 1. Fresh drinking water for employees shall be provided in sanitary containers by the Contractor. The Contractor shall make arrangements with the City of Anacortes to supply construction water for the duration of the contract.
 - 2. All connections to the water supply shall be furnished and installed by the Contractor and be removed at the completion of the Work to the satisfaction of Ecology or Ecology's Representative.

- B. Construction Electricity
 - 1. The contractor will make arrangements with the local utility to provide a power drop within the project site. The contractor shall have the power meter registered in its name during the construction period.

- C. Toilet Room Facilities
 - 1. Contractor shall install and maintain temporary sanitary toilet facilities during the term of this contract. Toilets shall be of the chemical type, and removed at the completion of the Work.

- D. Communications
 - 1. Contractor shall install and maintain the appropriate equipment to allow for the efficient communication via voice, fax and the internet with Ecology or Ecology's Representative and with outside parties at all times during the term of this contract. Remove at the completion of work. All accounts to be registered in the name of the Contractor.

- E. Fences and Enclosures
 - 1. Temporary fences shall consist of woven wire mesh not less than 6 feet in height, complete with metal or wood posts and all required bracing and with truck and pedestrian gates, as required to accomplish

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

- the work.
2. Contractor shall furnish its own fence to further protect its materials and equipment.
- F. Contractor Field Office
1. Contractor shall install and maintain necessary field office space during the Work and remove at Substantial Completion of Work, to the satisfaction of Ecology or Ecology's Representative.
 2. Contractor's office space shall include a meeting area/room of sufficient size to hold weekly construction meetings. The contractor shall assume that up to five (5) Ecology or Ecology's representatives shall attend the meeting.
 3. Contractor's office space shall include dedicated work spaces for two (2) Ecology or Ecology's Representatives. The work spaces shall be equipped with a phone line, high speed internet connection, desk and chair.

3.05 SITE MAINTENANCE

- A. Contractor shall keep the work site, staging areas, and contractor's facilities clean and free from dirt, rubbish, and debris at all times. Materials and equipment shall be removed from the site when they are no longer necessary. Before Final Completion of Work, the work site shall be cleared of equipment, unused materials, and dirt and rubbish to present a clean and neat appearance. Disturbed areas shall be restored per Ecology's or Ecology's Representative's direction.
- B. Waste material of any kind shall not be permitted to accumulate, remain at the site of the Work, nor on adjacent streets.
- C. In the event that waste material, refuse, debris or rubbish is not so removed from the work area or on adjacent streets by the Contractor, Ecology or Ecology's Representative reserves the right to have such material removed and the cost of the removal and disposal charged to the Contractor.

3.06 AIR POLLUTION CONTROL

- A. Contractor shall not discharge smoke, dust, or other contaminants into the air that violate local, state or federal regulations. Internal combustion engines shall not be allowed to idle for prolonged periods of time. Exhaust emissions that are determined to be excessive by Ecology or Ecology's Representative shall be repaired or the equipment replaced at the Contractors expense.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

- B. Contractor shall minimize nuisance dust by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. The use of water, in amounts that result in mud on public streets or runoff to on-site or off-site drain catchments is not acceptable as substitute for sweeping or other methods.
- C. Contractor shall minimize dust and waste during demolition. Water misting during demolition may be utilized for dust control. Water from misting operations shall not be allowed to discharge off site, into surface water, nor to the storm water system.

3.07 NOISE CONTROL

- A. Construction involving noisy operations, including starting and warming up of equipment shall be in compliance with local noise ordinances.
- B. Contractor shall comply with all local controls and noise level rules, regulations and ordinances which apply an any work pursuant to the Contract.
- C. Workers shall not be exposed to noise levels from scrapers, pavers, graders and trucks; that exceed 90 dBA as measured under the noisiest operating conditions. For all other equipment, workers shall not be exposed to noise levels exceeding 85 dBA. Equipment that cannot meet these levels, shall be quieted by use of improved exhaust mufflers, portable acoustical screens, or other means. Equipment not modified to meet these requirements shall be removed from the project.

3.08 DECONTAMINATION FACILITY AND CONTAMINATION EXCLUSION ZONE

The Contractor shall provide decontamination facilities for equipment and workers (including Ecology or Ecology's representatives) based upon the requirements listed below:

1. Equipment shall be decontaminated to prevent tracking contaminated soils from trucks or other equipment leaving the site. The contractor shall collect decontamination water and incidental runoff and dispose of them appropriately.
2. The equipment decontamination area shall consist of a stabilized construction exit area and wheel wash system as shown on the drawings.
3. The decontamination facility and the contamination exclusion zone shall

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 50 00 - Temporary Facilities and Controls

- conform to the Contractor Health and Safety Plan specified in Section 01 35 29.
4. Because of the small footprint of the site, the designated contamination zones are likely to change as work proceeds from one portion of the site to another. Contractor shall use signs or flagging to designate areas as needed. The contractor shall arrange the following work areas at the site:
 - A. An Exclusion Zone to encompass areas where contaminated soil will be excavated, handled and stockpiled.
 - B. A Contamination Reduction Zone to provide a physical separation between the Exclusion Zone and Support Zones to enable decontamination of personnel and equipment prior to entering the Support Zone, from the Exclusion Zone.
 - C. A support Zone for support facilities, clean equipment storage and stockpiling clean materials. Workers may rest, eat, and drink in this area.

END OF SECTION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

The proper control of stormwater runoff and excavation dewatering water to prevent discharge of contaminants to surface water and groundwater is of critical importance under this contract. The Work shall consist of planning, installing, inspecting, maintaining, monitoring and removing Temporary Erosion and Sediment Control (TESC) Best Management Practices (BMPs) to prevent pollution of air and water, and control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract. Additionally, the Contractor shall implement procedures to minimize stormwater flow damage to the site and equipment.

Requirements of this section shall apply to: Stormwater (that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow and via the features of the stormwater drainage system into Fidalgo Bay, or a constructed infiltration facility); and water from excavation seepage, and/or dewatering water (herein referred to as Construction Water). Drainage water from excavated soil and stockpiles shall be considered Construction Water for the purposes of this TESC.

- A. The Washington State Department of Ecology requires that the Contractor meet substantive requirements of the Construction General Stormwater Permit (CSWGP) under the National Pollutant Discharge Elimination System and State Waste Discharge Permit for Stormwater Discharges Associated with Construction Activity for site construction work (including applicable Construction Water). The CSWGP governs discharges to Fidalgo Bay as a surface water of the state. The Contractor is not required to submit a Notice of Intent for CSWGP coverage.
- B. The contractor shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in accordance with requirements of the current CSWGP that became effective in January 2011. The SWPPP will describe the anticipated construction activities and Temporary Erosion and Sediment Control (TESC) measures, related pollution prevention measures, inspection/monitoring activities, and record keeping and reporting requirements. The Contractor is responsible for the implementation of the SWPPP and the TESC measures including monitoring, sampling, testing, and reporting required by the CSWGP.
- C. An expanded grading permit for the construction work has been issued by the City of Anacortes (COA). The permit lists conditions for demolition, land clearing, earthwork, and other construction activities. The permit includes an exemption from the COA shorelines master program requirements. Permit conditions also cover construction of the stormwater swale and related conveyance system improvements for post-construction

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

management of COA stormwater entering the site. The Contractor is responsible for implementing all COA permit requirements for stormwater.

- D. The Contractor shall establish temporary routing for the COA stormwater entering the site from the existing outfall pipe to Wetland D. Depending on ground conditions and flows at the time of the work, flow that cannot be infiltrated may require routing for surface water discharge or other management until the permanent bioswale and stormwater conveyance system defined in Section 31 23 00 (Remedial Excavation and Fill) are operational. COA stormwater routed for surface water discharge that contacts site soils is subject to requirements of the CSWGP and Contractor's SWPPP.
- E. Stormwater, Construction Water originating on site, and COA stormwater entering the site during construction may be manageable through infiltration. If construction water originating within a contaminated area of the site is infiltrated, it must be infiltrated within a contaminated area of the site or within another location approved in advance by Ecology or Ecology's Representative. Regardless the contractor must develop, implement, and update a SWPPP in accordance with the substantive requirements of the CSWGP. The Contractor is advised that the current COA stormwater discharge volumes and rates to Wetland D are unknown; however, all COA discharge currently infiltrates, with no direct discharge to other surface water bodies other than existing Wetland D.
- F. Contractor shall, as specified in the SWPPP, collect and appropriately manage all Stormwater, Construction Water, and COA stormwater entering the site (unless the latter is conveyed to surface water without contacting site soils) until final site stabilization as described in the CSWGP. This may at times require monitoring weather forecasts and site conditions, and mobilizing additional conveyance, storage and/or treatment equipment to the site in advance of runoff events.
- G. The Contractor shall protect the excavation areas, particularly in the shoreline protection zone, from tidal and sediment intrusion and/or the resulting cave in. Temporary retaining techniques will be allowed as described in Section 31 23 00 and in Addendum²⁰ - Geotechnical Letter Report for sheet piling design (to be issued on or before April 28, 2011), as long as all field construction work including installation of retaining structures is conducted above the OHW line.
- H. These TESC and CSWGP requirements shall apply to all areas disturbed by site construction activities including but not limited to the following:

²⁰ Refer to Department of Ecology's FTP site for Addenda at: <ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

1. Work areas
2. Equipment and material storage areas
3. Staging areas
4. Stockpiles
5. Site ingress/egress points

1.02 SUBMITTALS

- A. The Contractor shall submit its SWPPP (including the TESC features discussed below) to Ecology or Ecology's Representative in accordance with provisions listed in Part 3 – Execution that follows later in this Section.

1.03 REFERENCES

The following rules, requirements and regulations apply to this work:

- A. CSWGP – National Pollutant Discharge Elimination System and State Waste Discharge Permit for Stormwater Discharges Associated with Construction Activity (Ecology 2011) (see Appendices).
- B. Department of Ecology, "Stormwater Management Manual for Western Washington," 2005 (Including Corrections).
- C. COA - Grading and related permits.
- D. Section 31 23 19 – Excavation Dewatering

1.04 AUTHORITY OF ECOLOGY

- A. Ecology or Ecology's Representative has the authority to limit the surface area of erodable earth material exposed by clearing and grubbing or other construction activities, and to direct the Contractor to provide immediate pollution control measures to prevent:
 1. Discharge of contaminated stormwater and/or Construction Water to Fidalgo Bay or regulated wetlands.
 2. Discharge of potential pollutants to groundwater or other media as determined by Ecology or Ecology's Representative.

However, failure of Ecology or Ecology's Representative to direct the Contractor to provide permanent or temporary pollution control measures

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

in no way relieves Contractor of its responsibility to properly plan for, collect, and manage Stormwater and Construction Water within the project site and COA stormwater entering the site.

- A. In the event that additional BMPs, temporary erosion and sediment control measures, or other actions are required due to the Contractor's negligence, carelessness, or failure to implement the CSWGP, SWPPP, and/or related TESC measures as a part of the work or as directed by Ecology or Ecology's Representative, such work shall be performed by the Contractor at the Contractor's expense.
- B. Ecology or Ecology's Representative may increase or decrease the area of erodable earth material to be exposed at one time.
- C. In the event that site areas are exhibiting degradation due to erosion, sediment deposit, water flows, or other causes, Ecology or Ecology's Representative may stop construction activities until the situation is rectified by the Contractor, and at the Contractor's expense.

PART 2 – PRODUCTS

This work consists of providing all materials and equipment necessary to implement requirements of this section.

PART 3 – EXECUTION

3.01 GENERAL

- A. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply, unless specified otherwise in this section.
- B. No discharge of contaminated Construction Water to Fidalgo Bay from the project construction area is allowed.
- C. Discharge of Stormwater that complies with CSWGP requirements, to Fidalgo Bay is allowed.

3.02 CSWGP, SWPPP, AND TESC IMPLEMENTATION

- A. The Contractor shall be solely responsible for executing requirements of this section in accordance with the CSWGP and SWPPP, COA permits, TESC notes and details shown on the Drawings, or as otherwise directed herein as minimum requirements.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

1. The Contractor shall provide a Certified Erosion and Sediment Control Lead (CESCL) and implement CESCL activities as described in the CSWGP.
2. The Contractor shall implement all SWPPP requirements including but not limited to planning, installation, inspection, maintenance, and removal of temporary erosion and sediment controls and BMPs as shown on the Drawings, as determined by the Contractor to be necessary, and/or as otherwise directed by Ecology or Ecology's Representative. Contractor-implemented SWPPP requirements also include monitoring, sampling, testing, and reporting.
3. TESC details shown on the Drawings represent the minimum requirements for the project. During the construction period the Contractor shall, at no additional cost to Ecology, upgrade the TESC facilities as needed to address requirements of the CSWGP and this section, address all storm events, and modify site facilities for changing conditions.
4. The Contractor is advised that COA permit conditions require an equipment/vehicle wheel wash at site entrance/exit points to paved COA right of ways.

3.03 CONSTRUCTION WATER COLLECTION AND HOLDING TANKS SYSTEMS

- A. Soil excavations will encounter wet conditions and groundwater. The contractor must make provisions for the excavation and handling of wet soil and groundwater.
- B. The Contractor is advised that dewatering will be needed to complete many of the planned excavations to design depths. The Contractor is responsible for determining when dewatering is necessary to complete work described herein and on the construction drawings.
- C. The Contractor must control and manage dewatering as prescribed in the CSWGP. Management, treatment and disposal options for Construction water may include:
 1. Following removal of visible petroleum hydrocarbon product, Infiltration into soils within the footprint of areas remaining to be excavated on the site. This is the preferred treatment and disposal option, as practicable.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

2. Conveyance of dewatering water to temporary above ground storage tanks prior to treatment and/or discharge according to the requirements of the CSWGP and this Section. This may be necessary if the capacity of site soils to accept infiltration is reached, and necessitates temporary storage for later infiltration or other disposal method.
3. The holding tank system may be configured to provide separate tanks for active loading of Construction Water for settling/solids separation (i.e. primary treatment), holding of Construction Water following primary treatment for potential secondary treatment (as necessary), and available contingency holding capacity. The Contractor shall specify the capacity and configuration of the holding tank system that is included in its bid price for this item.
4. Holding tank system components shall be available to the Contractor on an on-call basis for mobilization to the site within 24-hours as either individual components or in combination.

3.04 CONSTRUCTION WATER TREATMENT, DISPOSAL, AND TESTING

- A. The Contractor shall test and treat Construction Water in the holding tank system to meet requirements for the discharge options described in Paragraph 3.04(C) of this Section, or as otherwise directed by Ecology or Ecology's Representative.
- B. Construction Water treatment shall consist of:
 1. Primary settling via a weir or baffle-type tank(s) as part of the holding tank system.
 2. Secondary treatment, as determined by the Contractor to remove additional turbidity, adjust pH, remove petroleum sheen, or to reduce the concentration of other individual chemical constituents if needed to meet discharge criteria established in this Section.
 3. The Contractor shall fully optimize and adjust primary and secondary (if used) treatment systems to provide maximum performance to reduce suspended solids and turbidity to the maximum degree practicable.
 4. Additional information about the treatment of construction water is provided in Section 31 23 19 (Excavation Dewatering).
- C. Treated Construction Water disposal options include 1) discharge in an on-site contaminated area to be excavated, or other Ecology-approved

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

area near the construction area (i.e. on-property discharge); and 2) discharge to a COA sanitary sewer.

D. Construction Water Sampling and Testing.

1. The Contractor shall collect representative composite samples of Construction Water from the holding tank system using sample collection methods acceptable to Ecology or Ecology's Representative and approved in advance of sampling.
2. Following either primary treatment, secondary treatment, or both if directed by Ecology or Ecology's Representative, the Contractor shall collect representative Construction Water samples. The Contractor shall conduct turbidity and pH tests using calibrated meter(s) in good working condition and, submit the samples to a Washington State-accredited laboratory for the following analytical tests:
 - a. On-Property Disposal: At the discretion of Ecology or Ecology's Representative, Construction Water may be discharged following either primary treatment, or secondary treatment to a designated area near the construction area (i.e. on-property discharge). Sampling and testing is not required, provided visible petroleum-hydrocarbon product has been removed to the satisfaction of Ecology or Ecology's Representative.
 - b. Discharge to COA sanitary sewer. Refer to Sections 3.04 E below.

E. COA Sanitary Sewer Discharge.

1. Construction Water may be discharged to the COA sanitary sewer system if it can not be infiltrated, at the direction of Ecology or Ecology's Representative. The Contractor shall be responsible for coordinating Construction Water disposal with the COA, obtaining COA approval for discharge, and meeting all COA sampling, monitoring, and disposal requirements.
2. The Contractor shall follow all applicable requirements for discharge to the COA sanitary sewer as listed in the Anacortes Code of Ordinances, Title 13, Chapter 13.40, and as directed by the COA.
3. The Contractor may be considered to be a significant industrial user (SID) by the COA. Each SID must submit detailed plans showing pretreatment facilities and operating procedures to the COA prior to the commencement of discharge to the sanitary sewer. The COA

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

will issue an industrial wastewater acceptance (IWA) form if the COA determines that it will allow the discharge to its sewer system.

4. The Contractor shall verify applicable administrative fees and service charges with the COA based on the discharge volume and water quality.
5. The Contractor shall use a flow and volume measurement system acceptable to the COA.
6. The Contractor shall verify acceptable sanitary sewer discharge locations, timing constraints, and other disposal requirements with the COA.
7. Typical COA sanitary sewer discharge criteria (daily average maximum concentrations) are summarized below. The Contractor shall verify these criteria with the COA. The COA may require additional sampling analysis of biological oxygen demand (BOD), and other constituents as determined by the COA.

Flow	Determined by the COA
pH	6 - 9 pH units
Settleable Solids	zero
TSS	50 mg/l
Salinity	3,400 lbs/day
Total Lead	5 ug/l
TPH-D	1,000 ug/l
TPH-G	1,000ug/l
BTEX	100 ug/l
Benzene	5 ug/l

3.05 ANALYTICAL TESTING AND DISPOSAL RECORDS FOR COA OR OFF-SITE CONSTRUCTION WATER DISCHARGE

- A. The Contractor shall transmit all analytical testing results as reported by the laboratory to Ecology or Ecology's Representative within 24 hours of Contractor's receipt of final testing data for a given batch or sample set. Analytical results must be transmitted to and acknowledged by Ecology or Ecology's Representative to the Contractor before Construction Water discharge.
- B. The Contractor shall obtain all final disposal records of discharges to the COA sanitary sewer. The Contractor shall provide such records, including

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

individual batch disposal volumes to Ecology or Ecology's Representative within 1 week of disposal. The Contractor shall also provide individual batch disposal volumes to Ecology or Ecology's Representative within 1 day of on-property discharges.

3.06 MAINTAINING SITE CONSTRUCTION WATER CONTROL AND TREATMENT SYSTEMS

- A. The Contractor shall operate all Construction Water control and treatment systems as required by site conditions, including continuous operation if required. System operation and maintenance shall include, but not be limited to, continuous supervision by at least one person skilled in the operation, maintenance, replacement of system components, and any other work required to maintain the systems. Interruptions due to outages or other reasons are not permitted.
- B. The Contractor shall take responsible precautions to ensure successful operation of the systems, including keeping spare parts and supplies on site, and having adequate safety and operational personnel.
- C. The Contractor shall repair any damage to the excavation or site resulting from failure of the Construction Water control and treatment systems.
- D. The Contractor shall remove any contaminants discharged from system failure, inadequate or improper system design, installation, maintenance and operation; mechanical or electrical failure; or the Contractor's negligence. The supply of all labor and materials and the performance of the work necessary to carry out additional work for reinstatement of the structures, cleanup of contamination, or repair of the site resulting from inadequacy or failure of the systems shall be accomplished by the Contractor at the Contractor's sole expense.
- E. The Contractor shall keep site water control and treatment systems in operation until final site stabilization as described in the CSWGP, or in accordance with permit conditions.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 57 13 - Temporary Erosion and Sediment Control

3.07 FINAL HOLDING TANK SOLIDS CLEANOUT

- A. Following completion of Construction Water collection and treatment activities, the Contractor shall remove settled solids from the storage tanks and place the solids in a separate stockpile for testing by Ecology or Ecology's Representative. Ecology or Ecology's Representative will identify the appropriate disposal option for this material and authorize the Contractor to disposition the material.

END OF SECTION

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 70 00 - Execution and Closeout Requirements

PART 1 – GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions and other sections of the Project Specific Requirements apply to this work as if specified in this section. Wetlands work related to this section is described throughout the specifications and particularly in Section 32 71 00 – Landscaping and Wetlands Mitigation Area.
- B. Prior to requesting final inspection, the Contractor shall assure itself that the project is complete in all aspects.

PART 2 – PRODUCTS

2.01 WARRANTY

- A. The Contractor warrants the labor, materials, and equipment delivered under the contract to be free from defects in design, material, or workmanship, and against damage caused prior to final inspection. Unless otherwise specified, this warranty extends for a period of two (2) years from the date of Substantial Completion. An extended two (2) year warranty for all plants replaced during the Maintenance Program shall begin at the end of the Landscape Maintenance Program.
- B. The Contractor shall promptly (within 48 hours) repair or replace all defective or damaged items delivered under the contract. The Contractor will haul away all defective or damaged items prior to Substantial Completion.
- C. In the event of equipment failure, during such time or in such a location that immediate repairs are mandatory, the Contractor shall respond promptly, irrespective of time. If the Contractor is not available, Ecology or Ecology's Representative will effect repairs. The Contractor shall then reimburse Ecology or Ecology's Representative for parts and labor necessary to correct deficiencies as defined within the warranty clause and time.

2.02 TWO-YEAR LANDSCAPE MAINTENANCE PROGRAM

A. MAINTENANCE INSTRUCTIONS:

- 1. All maintenance by Contractor during the two-year landscape maintenance program includes but is not limited to quarterly maintenance reviews, providing irrigation a minimum of four (4) times per month from May through September and making all

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 70 00 - Execution and Closeout Requirements

adjustments to irrigation system(s), monthly control of invasive species and noxious weeds from early spring to late summer, removal of competitive vegetation that crowds new plantings, control of pests, regular monitoring of plant health, adjusting root crown elevations, preparing and submitting quarterly reports detailing all dates and times including names of staff, equipment, tasks performed, supervision and actions taken to keep all plants in vigorous, continuous optimum plant health throughout the maintenance program. Submit maintenance and quality standards for Ecology's or the Ecology Representative's review before start of required maintenance periods.

B. SITE INSPECTIONS:

1. Conduct project walkthrough with Ecology or Ecology's Representative every quarter in March, June, and September during the two-year maintenance program. Create a list of deficiencies, complete list, and verify with Ecology or Ecology's Representative. Replace all plants that are dead, dying, or unhealthy as determined by Ecology or Ecology's Representative following project walkthrough each September and April or May with specified size and species unless directed otherwise by Ecology or Ecology's Representative.

C. PLANT REPLACEMENTS:

1. The Contractor agrees to replace plantings that do not show vigorous health or materials and workmanship are found unacceptable to Ecology or Ecology's Representative.
 - a. Failures include, but are not limited to, the following:
 - 1) Death and unsatisfactory vigorous growth, except for defects resulting from acts of God and conditions accepted by Ecology or Ecology's Representative that are beyond Contractor's control.
 - 2) Structural failures including plantings falling or blowing over.
 - b. Include the following response actions as a minimum:
 - 1) Immediately remove dead plants and replace unless required to plant in the succeeding planting season.

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 70 00 - Execution and Closeout Requirements

- 2) Replace all plants that have stems or portions composing more than 25 percent of the total plant that are in an unhealthy condition at review dates of March, June, and September during two-year landscape maintenance program.
- 3) Replacement plantings will be of another species if Ecology or Ecology's Representative determines an increased probability of plant vitality during the two-year landscape maintenance program.
- 4) A limit of one replacement of each plant per year will be required except for losses or replacements due to failure to comply with requirements.
- 5) Provide extended warranty for period equal to original two-year landscape maintenance program (see Section 01 70 00, 2.01 Warranty) for replaced plant material.

D. MAINTENANCE SERVICE

1. Initial Maintenance Service for Trees, Shrubs and Groundcovers: Provide maintenance by skilled employees of landscape Installer. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for no less than maintenance period below.
 - a. Maintenance Period: 24 months from date of Final Completion.

E. INVASIVE SPECIES CONTROL

1. Control all invasive species by hand or mechanical means as needed, in a manner that conforms with landscape industry standards and as accepted by local, state, and federal agencies.
2. Protect all existing and new plantings to remain.
3. Acceptable results for invasive species control is at least 95% control with not more than 5 square feet of any living invasive species in any 100 square foot area.

F. PLANT MAINTENANCE

1. Maintain plantings by monitoring plant health at least weekly during dry periods including, but not limited to: watering a minimum of four

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 70 00 - Execution and Closeout Requirements

(4) times per month from May through September, adjusting irrigation, providing pest control, removal of invasive plants monthly, weeding at least monthly during the growing season, mulching, installing, adjusting and/or repairing tree-stabilization devices as needed, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

2. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

G. SEEDED AREA MAINTENANCE

1. Provide maintenance and an establishment warranty to achieve dense established cover. Remove invasive species and trim grass on a bi-annual basis or more frequently as needed. Reseed as needed each March and September of the two-year landscape maintenance program, with all replacement seed, mulch, and other items required to be furnished and installed by Contractor.

PART 3 – EXECUTION

3.01 FINAL DOCUMENTS

A. Project As-Built Drawings

1. Project As-Built Drawings shall be compiled by the Contractor and submitted to Ecology or Ecology's Representative for translation to the Record Drawings on a monthly basis.
2. The Project As-Built Drawings will be submitted on paper full-sized (ANSI D) copy.
3. Drawings shall be kept current and shall be done at the time the material and equipment is installed. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:
 - a. Additions – Red
 - b. Deletions – Green
 - c. Comments – Blue
 - d. Dimensions – Graphite

DIVISION 01 – PROJECT SPECIFIC REQUIREMENTS
Section 01 70 00 - Execution and Closeout Requirements

4. Project As-Built Drawings must be complete and accepted by Ecology or Ecology's Representative before Final Completion is issued.
5. As-Built Drawings shall be in accordance with horizontal and vertical control as shown on the drawings.

B. Final Survey

1. See Section 01 71 23 (Field Engineering) for Final Survey requirements. The Final Survey shall be completed and submitted to Ecology or Ecology's Representative within 30 days of Substantial Completion. Final Survey must be complete and accepted by Ecology or Ecology's Representative before Final Completion is issued.

- C. Final Documents shall be submitted by the Contractor to Ecology or Ecology's Representative prior to Final Completion, as defined in Section 01 33 00 (Submittals and Reporting Requirements) and Division 00 (Procurement and Contracting Requirements).**

3.02 CLEANUP

- A. Final completion requirements are defined in the General Conditions, Article 6.09, and cleanup requirements during the course of the work are defined in Section 01 50 00, Article 3.05. Those paragraphs are supplemented to provide the following:**

1. **General:** Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste.
2. **Site:** Unless otherwise specifically directed by Ecology or Ecology's Representative, all public sidewalks and streets shall be thoroughly cleaned by means of a street sweeper and arrangements shall be made with the City of Anacortes to have catch basins that may have been impacted by the project cleaned. All costs associated with this work shall be paid by the Contractor. Completely remove all resultant debris.

- B. Timing:** Schedule final cleaning as approved by Ecology or Ecology's Representative to enable Ecology or the site/property Owner to occupy a completely clean project.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 71 23 - Field Engineering

PART 1 – GENERAL

1.01 RELATED SECTIONS

- A. The provisions and intent of the Contract, including the General Conditions and Project Specific Requirements, apply to this work as if specified in this section. Coordinate related requirements in other sections of the Specifications, including but not limited to the following:
1. Section 01 33 00 - Submittals
 2. Section 01 70 00 - Execution and Closeout Requirements

1.02 DESCRIPTION OF WORK

- A. This section describes the general requirements for site surveying and grade control including pre-construction, pre-finish grading and post-construction topographic surveys, utilities and record drawings, construction progress surveying for excavation limits and import materials, final limits of remedial excavations, record keeping, and submittals. In addition, establish and maintain design lines and grades shown on the Contract Documents.

1.03 QUALITY ASSURANCE

- A. It is the responsibility of the Contractor to schedule Contractor's survey and to verify that it has met the Contract requirements prior to proceeding to the next sequence of work. Ecology or Ecology's Representative shall review and approve each survey or survey increment prior to the Contractor proceeding to the next phase of work in that specific area. The Contractor shall allow up to five (5) business days for Ecology or Ecology's Representative's review. This review period will run in parallel with the period for sample analysis prior to Ecology or Ecology's Representative's determination that backfilling or additional excavation will be required in the area surveyed. Surveys of the Project shall be surveyed using the same vertical datum and horizontal coordinate system as the Contract Drawings. Surveys may need to be completed in small increments to document work progress, sequential excavation and backfill, and temporary sheet pile installation alignments. Survey requirements include:
1. Pre-Construction Surveying: The Contractor shall conduct a pre-construction topographic survey following completion of the site preparation and debris removal work being conducted by others. The survey shall be approved by Ecology or Ecology's Representative prior to commencement of construction. This survey

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 71 23 - Field Engineering

shall include the existing project site topography; location and invert elevation of all existing drainage structures, outfalls and ponds; location of all fence lines, gates, well heads, the location of building foundations and the location of roads. The Contractor shall establish local horizontal and vertical control on the project site. Local control shall be established using local survey markers. The Contractor shall ensure closure of all survey loops. The survey shall be adequate resolution to allow subsequent accurate calculations of excavated volumes. The survey shall consist of a minimum 25-foot by 25-foot grid spacing of points; locate all tops and toes of slopes, and locate all grade breaks, with horizontal and vertical coordinates.

2. Interim topographic survey shall be performed to support progress payments.xxx
3. Temporary sheet pile installation alignments shall be surveyed and as included as part of the Post-Construction Surveying drawing.
4. Construction Progress Surveying: The Contractor shall perform Construction Progress Surveying in order to verify compliance with the Plans and Specifications, determine quantities of materials moved or placed, and define horizontal and vertical limits of all excavations prior to backfill.
5. Pre-Finish Grading Survey: Upon completion of all backfill activities to existing grade (except in the wetland area), Contractor shall perform a topographic survey to confirm quantities of Finish Grading to establish a baseline condition prior to the Post-Construction Survey described below.
6. Post-Construction Surveying: Upon completion of all grading activities, the Contractor shall conduct a topographic survey of the entire project site and produce a finished site plan drawing at a scale of 1 inch equals 50 feet and a contour interval of 1 foot. The post-construction survey, at a minimum, shall show all constructed features, including, but not limited to the location of all fence lines, gates and poles, stormwater treatment and conveyance swales, wetland horizontal control line and extent of wetland buffer area including the temporary berm. Survey shall show, at a minimum, 1-foot contours. The survey shall consist of a minimum 25-foot by 25-foot grid spacing of points with horizontal and vertical coordinates and 25-foot spacing along any grade break lines, tops or toes of slopes, drainage swales, and other linear features.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 71 23 - Field Engineering

- B. All surveys for verification of pay quantities shall be performed and stamped by a Professional Land Surveyor registered in the State of Washington, independent of the Contractor, and acceptable to Ecology. The independent surveyor shall have actively engaged in land survey operations for the past ten (10) years, and shall have equipment and work force separate from the Contractor's.
- C. The surveyor shall have insurance that has limits that meet or exceed the requirements of the General and Supplemental Conditions.
- D. Ecology reserves the right to retain an independent surveyor to periodically check the Contractor's survey. Surveying performed by Ecology will be at no cost to the Contractor.

1.04 SUBMITTALS

- A. General submittals required in accordance with this section include:
 - 1. Name, address, telephone number, and statement of qualifications of Professional Land Surveyor before starting survey work. This surveyor shall be responsible for stamping and signing all work as noted below.
 - 2. On request, field notes and documentation verifying accuracy of survey work, to include cross section of interim surveys by the Contractor.
 - 3. Project survey data shall be stored as electronic files on a compact disc formatted as a) DWG; b) TIF; c) PDF and printed to a mylar sheet. At a minimum, data for each survey point shall include a sequential reference number, the elevation, and appropriate northing and easting coordinates.
 - 4. Field notes, Drawings, quantity computations, and point data for each survey shall be submitted to Ecology or Ecology's Representative.
 - 5. Progress surveys shall be conducted to monitor the accuracy of the work being performed. Progress surveys shall be submitted prior to submittal of progress payment requests.
 - 6. Closure calculation for horizontal and vertical control. Submit prior to commencing preconstruction survey work.
 - 7. Pre-Construction and Pre-Finish Grading Surveys, as well as progress surveys to confirm as-built excavation limits.

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 71 23 - Field Engineering

B. As-Built Drawings:

1. Upon completion of all activities, the Contractor shall prepare As-Built drawings for each survey described in this section. The post-construction As-Built drawing shall locate all features as constructed including but not limited to the limits of planting, finished topography, prescribed boundaries including wetland buffer and all real estate/property boundaries and public land survey section corners and lines. The As-Built drawings shall be produced full size (ANSI D) on bond paper signed by the surveyor and Contractor. A paper copy of half-size As-Built shall also be created by the Contractor. Contractor to submit As-Built drawings in paper and electronic formats.
2. Contractor shall provide a single final as-built drawing representing the extent of remedial excavation performed on the site. This drawing shall include all interim progress surveys that were used to confirm as-built excavation limits (prior to backfill) combined into a single CAD file. This as-built excavation drawing shall include the surveyed limits of the temporary sheet pile wall installed as described herein and in Section 32 23 00 – Remedial Excavation and Fill.
3. Contractor electronic files for the As-Built shall be fully editable and manipulatable so as to allow future changes by Ecology. The Contractor shall submit the electronic version of the As-Built drawings with hard copies as specified.

1.05 SURVEY VERTICAL DATUM

- A. Project survey elevations shall reference the City of Anacortes vertical datum, NAVD88.

1.06 SURVEY HORIZONTAL DATUM

- A. Project horizontal datum based on Washington State Plane Coordinate System, North Zone, NAD 83 (91).

PART 2 – PRODUCTS - NOT USED

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 71 23 - Field Engineering

PART 3 – EXECUTION

3.01 GENERAL

- A. At the Preconstruction Meeting, the Surveyor shall meet with Ecology or Ecology's Representative to discuss the survey proceedings, methods, and equipment to be employed for the Contractor's surveys, and the survey submittal schedules.

3.02 SURVEY REFERENCE POINTS

- A. Verify locations of survey control points prior to starting work. Promptly notify Ecology or Ecology's Representative in writing of any discrepancies discovered.
- B. Mark and protect survey control points prior to starting site work. Make no change without prior written notice to Ecology or Ecology's Representative.
- C. Promptly report to Ecology or Ecology's Representative the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- D. Replace or relocate dislocated survey control points, or establish new control points, based on original survey control at no added cost to Ecology.

3.03 PROCEDURES

- A. Contractor survey procedures (positioning modes, equipment calibration, and data reduction, adjustment, processing, and plotting) shall conform to industry standards.
- B. Failure to perform and process such surveys in accordance with recognized standards will result in a rejection and nonpayment for work performed.
- C. All systems, methods, and procedures shall be described in the Work Plan and be subject to Ecology's or Ecology's Representative's approval.

3.04 NEW CONSTRUCTION

- A. Contractor shall develop and make all detailed surveys necessary for construction of new work, including setting bench marks for location of working points, verification of existing structures and critical topographic features, cut sheets, slope stakes and other surveys as required to ensure

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 71 23 - Field Engineering

the work is performed and installed in accordance with the Contract Documents. Contractor is responsible for notifying Ecology or Ecology's Representative of any discrepancies found as a result of the detailed survey.

END OF SECTION

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 80 00 - Archeological Monitoring During Excavation

PART 1 –GENERAL

1.01 DESCRIPTION OF WORK

This section describes the Contractor's archeological monitoring requirements, duties, and responsibilities during excavation work executed as part of the Contract Work.

In order to comply with applicable laws and regulations, particularly 36 CFR Part 800 "Protection of Historic Properties," which implements Section 106 of the National Historic Preservation Act of 1966, as amended, and Title 27 Revised Code of Washington, Chapter 27.44 Indian Graves and Records, and Chapter 27.53, Archaeological Sites and Resources, archaeological monitoring must be performed during any excavation or earthwork activities associated with the Phase 1 remediation to address any unanticipated discoveries of archaeological resources or human remains.

1.03 REFERENCES AND STANDARDS

- A. Final Draft Archaeological Monitoring Plan²¹ for the Custom Plywood Remediation Project dated February 7, 2011.

1.05 SUBMITTALS AND NOTIFICATIONS

The Contractor shall provide the submittals and notifications required by the Archaeological Monitoring Plan for the Custom Plywood Remediation Project dated February 7, 2011.

PART 2 – PRODUCTS

Not used

PART 3 –EXECUTION

This monitoring must be directed according by an approved archaeologist. The archaeologist is to train the Contractor's Project Environmental Inspector and Construction Supervisor(s) about identification of and the appropriate procedures to follow in the event of encountering archaeological deposits and human remains. The training will be held before any ground-disturbing activity commences. In each week's Construction Safety Meeting during these ground-disturbance activities, the Environmental Inspector/Construction Supervisor will emphasize the need for vigilance regarding the unanticipated discovery of archaeological deposits and human remains, and the procedures for treating unanticipated discoveries. Refer to the Archaeological

²¹ Refer to Department of Ecology's FTP site for "Final Draft Archaeological Monitoring Plan" at: <ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 01 – GENERAL REQUIREMENTS
Section 01 80 00 - Archeological Monitoring During Excavation

Monitoring Plan for the Custom Plywood Remediation Project dated February 7, 2011 for further procedural details and requirements.

END OF SECTION

END OF DIVISION

DIVISION 2 – EXISTING CONDITIONS
Section 02 41 13 - Selective Site Demolition

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent and location of the "Selective Site Demolition" work is indicated on the Drawings. The work includes, but is not limited to, the requirements for the removal, wholly or in part, and satisfactory disposal of remaining concrete foundations and slabs, fences, miscellaneous site debris, timber piling and other above grade obstructions which are designated to be demolished on the Drawings or within these Specifications. Work also includes clearing/grubbing of areas outside of excavation limits and monitoring well abandonment. Most site demolition is anticipated to be completed by the "Site Preparation and Debris Removal Work" by others as described in Section 00 31 24 – Environmental Assessment Information as indicated on the Drawings.
- B. The demolition work included on the Drawings is for guidance only to indicate typical general construction features of the various types of structures and is not to be construed as definitive or adequate to supplant the actual on-site inspection by the Contractor.
- C. Timber piles and other debris encountered in the excavation will be disposed of with the excavated material as described in Section 32 23 00 – Remedial Excavation and Fill.

1.02 SITE CONDITIONS

- A. The Contractor represents that it has visited the site to become familiar with the quantity and character of all materials to be demolished. The Contractor agrees that the premises were made available prior to deadline for submission of bids for whatever inspection and tests the Contractor deemed appropriate. The Contractor assumes full responsibility for the proper disposal of all demolition materials.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Products that are required to accomplish, or to be incorporated into, the work of this section shall be as selected by the Contractor.

DIVISION 2 – EXISTING CONDITIONS
Section 02 41 13 - Selective Site Demolition

PART 3 – EXECUTION

3.01 DEMOLITION OF STRUCTURES

- A. Completely remove and dispose of foundations, concrete slabs, fences and other obstructions. Adjacent materials designated to remain that are damaged by the Contractor due to his operations shall be replaced at no additional cost to Ecology.
- B. Contractor shall stockpile stained or potentially contaminated concrete and foundations on the site to await further direction from Ecology or Ecology's Representative on disposal requirements.
- C. The Contractor shall take care and provide protection and barriers to prevent demolition debris from falling into critical areas including Wetland E or waterward of the Ordinary High Water (OHW) line.

3.02 DEMOLITION OF UTILITIES

No active utilities are expected to be encountered. If active utilities are encountered Contractor shall cease all work in the area and immediately notify Ecology or Ecology's Representative for direction on how to proceed. All non-active utilities shall be demolished as noted below:

- A. Piping: Unless noted otherwise, remove all piping in the excavation areas and cap at the excavation limits.
- B. Electrical and Telephone Items: Remove electrical conduit, fixtures and communication equipment from excavation areas.
- C. Outfall Pipes and Sewer Lines: Remove and cap lines encountered in excavation areas. Removal and capping shall be in accordance with applicable codes, unless noted otherwise.

3.03 REMOVAL OF PILING

- A. Although most piling is intended to be removed during previous "Site Preparation and Debris Removal Work" by others, it is expected that some piling and concrete debris may be encountered if currently ongoing demolition of concrete foundations and structures is not completed by a separate contractor as well as during excavation activities. All piling and debris encountered within designated excavation areas shall be removed from the excavation by pulling or by cutting off at the bottom of the baseline excavation as indicated on the Drawings.

DIVISION 2 – EXISTING CONDITIONS
Section 02 41 13 - Selective Site Demolition

- B. Excavation, removal and disposal of debris contained in subsurface soils, including existing timber piles (whether treated or not) and remaining site concrete debris shall be incidental to Baseline Excavation and Ecology Directed Overexcavation and Stockpiling pay items and removed from the site with the excavated material as described in Section 32 23 00 – Remedial Excavation and Fill.

3.04 DISPOSAL AND DISPOSITION OF MATERIALS

A. Title to Materials

- 1. Except where specified in other sections or as noted on the Drawings, all materials and equipment removed, shall become the property of the Contractor and shall be removed from the property. Ecology will not be responsible for the condition or loss of, or damage to, such property after contract award.
- 2. The Contractor assumes full responsibility for the proper disposal of all demolition materials under this Contract in a manner that meets the requirements of federal, state and local regulations for protecting the health and safety of employees, the public, and for protecting the environment. Contaminated material including creosote treated piles and contaminated concrete, especially in press pit areas, are expected. These materials are not suitable for general disposal and will require disposal at a Subtitle D facility, as defined in Section 31 23 01.

B. Transportation

- 1. All WSDOT transportation requirements for waste shall be met.

C. Cleanup:

- 1. There shall be no debris, rubble or litter left at the site from any of the demolition operations and the site shall be clean.

3.05 CLEARING AND GRUBBING

- A. Clearing includes removing and disposing of all brush, grasses, and other surface vegetation outside the excavation limits as shown on the Drawings or as designated by Ecology or Ecology's Representative. Clearing and grubbing shall be performed as necessary by Contractor to achieve final grading and stabilization seeding as shown on the Drawings. Grubbing shall involve ripping the soil to a depth of 12 inches and includes removal from the ground of all stumps, roots, buried logs and other vegetation within that depth in the limits shown on the Drawings or as designated by

DIVISION 2 – EXISTING CONDITIONS
Section 02 41 13 - Selective Site Demolition

Ecology or Ecology's Representative. Large buried wood and other debris within the Excavation areas can be left and excavated with during baseline excavation activities.

- B. Clearing and Grubbing operations shall limit removal of topsoil to the maximum degree possible.
- C. Vegetation and material removed during clearing and grubbing shall be disposed of and removed from the site with the excavated material as described in Section 32 23 00 – Remedial Excavation and Fill.

3.06 GROUNDWATER MONITORING WELL DECOMMISSIONING AND REMOVAL

- A. The Contractor shall provide all labor, materials, and equipment for the complete and satisfactory decommissioning of groundwater monitoring wells GMX-MW-01 through GMX-MW-09 and ANCP-MW-01 through ANCP-MW-02 identified on the Drawings and included Environmental and Geotechnical Reports in Appendix. The Contractor shall complete all work relating to well decommissioning in accordance with regulations under WAC Chapter 176-160 – Minimum Standards for Construction and Maintenance of Wells.
- B. Contractor requirements for decommissioning of wells include but are not limited to:
 - 1. Notifying the Washington State Department of Ecology of the intent to decommission wells at least 3 business days before starting the work. The Contractor shall follow notification procedures listed in WAC 173-160-151 and -420. The Contractor is responsible for applicable well decommissioning fees at the time of notification.
 - 2. Submitting a well decommissioning report to the Washington State Department of Ecology within 30 days after equipment for decommissioning has left the site. The Contractor shall follow reporting and related documentation procedures listed in WAC 173-160-141 and -420.
 - 3. Obtaining a Washington State licensed well construction operator to perform well decommissioning activities.
 - 4. Decommissioning wells in accordance with standards and procedures listed in WAC 173-160-381 and -420, and -460.
 - 5. Use of well sealants and procedures listed in WAC 173-160-221 and -450.

DIVISION 2 – EXISTING CONDITIONS
Section 02 41 13 - Selective Site Demolition

6. Providing copies of all notifications, decommissioning reports, and other correspondence with the Washington State Department of Ecology concurrently to Ecology or Ecology's Representative.
7. Performing decommissioning activities prior to any other work that would impair the integrity or proper function of the wells.
8. The Contractor is advised that the bottoms of the existing site monitoring wells may be either above or below the final excavation grade. Remove decommissioned wells during either Remedial Excavation or Finish Grading as follows:
 - a. If the bottom of a well installation is below final grade, the Contractor shall cut the well casing or screen at the final grade elevation after decommissioning, and not remove or otherwise disturb the remaining well length below the final elevation grade.
 - b. If the bottom of a well installation is above final grade, the Contractor shall remove the decommissioned well during the excavation process. Alternatively, the Contractor may propose and apply for a variance in lieu of sealing the wells during decommissioning. The Contractor shall submit variance applications to the Washington State Department of Ecology in accordance with WAC 173-160-106 and -406.
9. All removed decommissioned well materials shall be loaded and disposed of in accordance with all applicable requirements.

END OF SECTION

END OF DIVISION

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes remedial excavation, handling, temporary stockpiling or staging, loading, transportation, backfill, filling and finish grading activities as indicated on the Drawings and Specifications.
- B. Remedial Excavation and Fill is generally divided into three separate operations:
1. The first operation is Remedial Excavation which consists of removal of soil to the Baseline Excavation Limits shown on the Drawings. The Baseline Excavation Limits shown on the Drawings were selected to include areas of known or likely contamination that would require off-site landfill disposal based on previous environmental explorations. Once Baseline Excavation is completed to the limits shown on the Drawings, any Ecology Directed Overexcavation shall be as directed by Ecology or Ecology's Representative based on soil sampling analytical test results. See Section 01 35 43 – Environmental Procedures for handling requirements and protocols associated with these soils. See further requirements for excavating/backfilling in groundwater and dewatering herein.
 2. Following approval by Ecology or Ecology's Representative that Remedial Excavation in an area is complete; the second operation involves backfill of the excavations to existing grade (except in the wetland excavation area which has specific grading requirements and import fill materials).
 3. The final operation following backfill of Remedial Excavation Areas consists of Final Grading of the entire site with Common Borrow as shown on the Drawings.
- C. The Contractor shall follow the excavation priority/sequencing plan shown on Drawing G1.6, with the Contractor finishing and backfilling all excavations (including Ecology Directed Overexcavation) in one Priority Area prior to moving to the next Priority Area unless directed otherwise by Ecology or Ecology's Representative. The Priority Areas are generally summarized as follows:
1. Remedial excavation work shall begin within Priority 1 Area, which includes the southern half of the Shoreline Protection Zone, Wetland Excavation Area, Press Pit Excavation Area and individual

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- Excavation Areas within the footprint of the Stormwater Conveyance Swale as shown on the Drawings.
2. Priority 2 Area includes excavations within the northern half of the Shoreline Protection Zone as shown on the Drawings.
 3. Priority 3 Area includes the northern upland excavations as shown on the Drawings.
 4. Priority 4 Area includes the western upland excavations as shown on the Drawings.
- D. The Contractor may work incrementally within each Priority Area in the most cost effective and efficient sequence to allow time for receipt of soil sample analytical test results from excavation areas while other required excavation within the same Priority Area continues, to allow the Contractor ability to work in multiple areas. This incremental sampling within Priority Zones is intended to allow backfill of partial excavation areas and prevent significant time between excavation, sampling and backfill operations. See Paragraph 3.02.F of this Specification Section for general timing and sequencing requirements for sampling, Ecology Directed Overexcavation and backfill. Ecology or Ecology's Representative reserves the right to modify the Contractor's incremental work plan if in his or her opinion the proposed plan compromises the project clean-up objectives.
- E. Other work includes grading required for stormwater conveyance swale construction as shown on the Drawings.
- F. Excavation and excavated material management activities associated with Remedial Excavation must be performed by appropriate health and safety trained personnel as described in Section 01 35 29 – Health, Safety, and Emergency Response Procedures.
- G. The project does not have permit authorization to work waterside of the ordinary high water (OHW) line as shown on the Drawings. **No excavation or other work shall occur waterward of OHW under any circumstance.** Contractor's equipment shall not cross the OHW line or impact the shoreline beyond in any way.
- H. Before and throughout executing the field construction work, the Contractor shall install and maintain orange-colored construction fencing or similar visual/physical barrier as shown on the Drawings along the OHW line to ensure no work is performed water-ward of this line.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- I. In addition to work restrictions along shoreline at OWH, special attention shall be paid to requirements associated with minimizing impacts to the maximum extent possible to existing critical areas including Wetland E.
- J. It is anticipated that all backfill or fill materials to be placed on the site will utilize imported borrow materials. No reuse of excavated materials is anticipated, as all soils shall be transported off-site and disposed of at an approved landfill as described herein.
- K. Archeological Monitoring

The Contractor will be required to conduct archeological monitoring during all site excavation or other activities that disturb the soil in conformance with the requirements of Section 01 80 00 – Archeological Monitoring During Excavation and the Archaeological Monitoring Plan²² for the Custom Plywood Remediation Project dated January 6, 2011.

1.02 REFERENCES

- A. All references to WSDOT shall refer to 2010 Standard Specifications for Road, Bridge, and Municipal Construction of the Washington State Department of Transportation.
- B. 29 CFR 1910 - Occupational Safety and Health Regulations.
- C. WAC 296-155, Safety Standards for Construction Work, including Part N, Excavations, Trenches, and Shoring.
- D. 29 CFR 1926 - Safety and Health Regulations for Construction.
- E. R.C.W. Chapter 49.17 WISHA.
- F. WAC 296-155-660.
- G. R.C.W. Chapter 39.04.180 Public Works/Trench Excavations - Safety Systems Required.
- H. Section 01 57 13 Temporary Erosion and sediment Control
- I. Section 31 23 01 Off-Site Transportation and Disposal of Contaminated Soil
- J. Section 31 23 19 Excavation Dewatering

²² Refer to Department of Ecology's FTP site for "Archaeological Monitoring Plan" at: <ftp://www.ecy.wa.gov/CustomPlywood>

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

1.03 QUALIFICATIONS

- A. Personnel engaged in hazardous materials work shall be Hazmat, OSHA, and WISHA trained and certified. Conduct earthwork associated with known or potentially contaminated materials in accordance with Contractor's site-specific health and safety plan prepared in accordance with Section 01 35 29.
- B. Transportation of known or potentially contaminated materials shall be performed by properly licensed, insured, and registered waste haulers that are acceptable to Ecology and in accordance with applicable local, state, and federal regulations for transportation. Transportation contractor(s) shall submit documentation that demonstrates it is properly licensed and in compliance with applicable DOT regulations, as well as a copy of its contingency and spill control plans describing measures to be implemented in the event of spills or discharges during material handling and transporting. See Section 31 23 01 for specific requirements.

1.04 CONTRACTOR'S RESPONSIBILITY

- A. Furnish all labor, equipment, supplies, and materials necessary to perform the remedial excavation and backfill activities associated with the work under this Contract.

1.05 QUALITY ASSURANCE

- A. Contractor shall retain a third party geotechnical/materials testing and inspection service to confirm compaction is performed in conformance with contract requirements to the satisfaction of Ecology or Ecology's Representative. Sampling and testing for compliance with the Contract provisions shall be in accordance with Section 01 45 00 – Quality Control and as described herein.
- B. See Section 01 35 43 – Environmental Procedures for sampling and laboratory testing to be performed by Ecology and the Contractor during the work.

1.06 SUBMITTALS

- A. Prepare and submit for Ecology or Ecology's Representative approval an Excavation, Treatment, and Disposal Plan as a component of the CQAP described in Section 01 30 00 (Submittals) that includes details of Contractor's methods and equipment to accomplish the work under this section, including equipment to be used, coordination of

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

loading/scheduling of trucks, berm and wetland construction, sequencing of excavation/backfill activities, and schedule.

- B. Refer to Section 32 23 01 – Off-Site Transportation and Disposal of Contaminated Soil for coordination and record keeping associated with transportation and weight tickets from soil disposal activities.
- C. The Contractor shall submit test reports for all import materials in accordance with Section 01 33 00 for Contractor furnished material as follows:
 - 1. Sieve analyses for all materials specified in accordance with ASTM D 422.
 - 2. Maximum Dry Density and optimum moisture content (ASTM D1557).
 - 3. Submit transportation and weight tickets for all import materials unless noted otherwise.
 - 4. Submit the test results or pre-certifications for all required laboratory tests to confirm materials to be imported to the site are free from contaminants.
- D. Contractor shall prepare and submit to Ecology or Ecology's Representative a list of proposed material suppliers, referencing the materials to be provided and used in the work.
- E. Contractor shall submit calculations for sheet pile wall for excavations in the Shoreline Protection Zone as described in Paragraph 3.03 of this Specification.
- F. The Contractor shall submit a method to periodically measure the ton per cubic yard conversion factor of all imported and exported materials that is acceptable to Ecology or Ecology's Representative. Ecology or Ecology's Representative may require that this be done periodically to confirm conversion factors as required for verification of quantities or conversions.

1.07 SITE CONDITIONS

- A. Ecology and the PLP have completed environmental and geotechnical investigations in the vicinity of site work areas. General site environmental, geotechnical, subsurface and groundwater conditions are described in reports and documents included in appendices to these Specifications. Subsurface conditions include the presence of isolated large concrete debris, timber piles and other debris. The Contractor shall review these

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

reports in their entirety. See Section 00 31 24 – Environmental Assessment Information for further information on site conditions.

- B. The Contractor shall make its own interpretations, deductions and conclusions as to the nature of the materials to be excavated, the difficulties of making and maintaining the required excavations, and the difficulties of doing any other work affected by environmental, geotechnical, subsurface and groundwater conditions and shall accept full responsibility therefore.
- C. Excavation, removal and disposal of debris contained in subsurface soils, including existing timber piles (whether treated or not) and concrete debris shall be incidental to Baseline Excavation and Ecology Directed Overexcavation pay items and removed from the site with the excavated material. See Section 02 41 13 – Selective Site Demolition for additional requirements.

1.08 OFF-SITE HAUL AND DISPOSAL

- A. All excavated soils shall be loaded into trucks on the site for delivery to the landfill. All soils excavated and leaving the site shall go to a RCRA Subtitle D landfill as described in Section 32 23 01 - Off-Site Transportation and Disposal of Contaminated Soils unless directed otherwise by Ecology or Ecology's Representative. This includes soil that is outside limits of known contamination within the Wetland Excavation Area as shown in Drawings.
- B. See Section 32 23 01 – Off-Site Transportation and Disposal of Contaminated Soils for further requirements associated with trucking.
- C. The Contractor shall be responsible for coordinating truck scheduling. The Contractor shall coordinate truck traffic and loading locations on-site with stockpile and excavation locations, including providing suitable on-site truck routes.

PART 2 – PRODUCTS

2.01 GENERAL IMPORT MATERIAL QUALITY REQUIREMENTS

- A. Imported materials shall be tested and certified to be free of contaminants as approved by Ecology or Ecology's Representative. See Section 01 35 43 - Environmental Testing Procedures for the details of the required testing, submittals, and approval.
- B. Ecology or Ecology's Representative maintains the right to reject any materials that have been determined to be substandard for any reason. In

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

the event of rejection, it shall be the responsibility of the Contractor to remove all rejected material from the site at its sole expense.

- C. Visually inspect each load of imported material upon delivery. Material shall be inspected for presence of foreign, recycled or reprocessed material. Ecology or Ecology's Representative may at any time perform an independent inspection. Material may be rejected due to identification of any such material or as a result of substandard test results.

2.02 SELECT BORROW

- A. Select Borrow shall be used for backfilling excavations (both below and above groundwater) as shown on the Drawings or as directed by Ecology or Ecology's Representative. Select Borrow shall consist of soil that can be compacted as specified herein. Select Borrow shall conform to Section 9-03.14(1) of the 2010 WSDOT Standard Specifications for imported gravel borrow with the following modifications:
 - 1. Imported soil shall contain at least 30 percent material coarser than a 3/4-inch sieve.
 - 2. Imported soil shall contain less than 5 percent passing a U.S. No. 200 sieve based on the minus 3/4 fraction, and shall be used where necessary to facilitate compaction.
 - 3. The maximum particle size shall be less than half the specified loose lift thickness.

2.03 COMMON BORROW

- A. Common Borrow shall be used for site finish grading as shown on the Drawings. Common Borrow shall consist of soil which can be compacted as specified herein.
- B. Common Borrow may be used for backfill of excavations above water levels in excavations if approved by Ecology or Ecology's Representative.
- C. Imported common borrow shall conform to Section 9-03.14(3) of the 2010 WSDOT Standard Specifications with the following modifications:
 - 1. Imported Common Borrow soil shall contain less than 15 percent passing a U.S. No. 200 sieve based on the minus 3/4 fraction.
 - 2. Suitable alternates may be submitted for approval by Ecology or Ecology's Representative or Geotechnical Engineer, provide they can attain the compaction specified herein.

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

2.04 WETLAND SHORELINE PROTECTION LAYER

- A. Wetland Shoreline Protection Layer shall be constructed in the Wetland Buffer Slope Areas as shown on the Drawings. This material shall be rounded granular material and shall be free from wood waste and other objectionable materials. Shoreline Protection Backfill shall meet the following gradation requirements:

Sieve Size (inches)	Percent Passing
8"	100%
6"	80 – 95%
4"	35 – 55%
2"	20 – 35%
1"	15 – 30%
0.375"	5 – 20%

2.05 TEMPORARY BERM

- A. Temporary Berm shall be constructed in the Wetland Area as shown on the Drawings. This material shall be rounded granular material and shall be free from wood waste and other objectionable materials. Temporary Berm material shall meet the following gradation requirements:

Sieve Size (inches)	Percent Passing
18"	100%
12"	60 – 95%
8"	35 – 65%
4"	20 – 40%
1"	0 – 20%

2.06 POND & SWALE EROSION PROTECTION ROCK LINING

The Flow Splitter Pond and its entrances to treatment/bypass swales for the new storm drainage improvements shall be lined with Quarry Spalls that conform to the requirements of Section 9-13.6 of the 2010 WSDOT Standard Specifications as shown on the Drawings.

2.07 CRUSHED CONCRETE BACKFILL

- A. Previous site demolition activities will leave a stockpile of recycled concrete on site that will be crushed to 3" minus. The Contractor shall use

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

this material as Select Borrow if directed by Ecology and Ecology's Representative. Hauling and placement of this material will be paid by Force Account.

2.08 BEACH SAND

- A. See Section 32 71 00– Wetland Mitigation Area for material requirements for Wetland Beach Sand.

PART 3 – EXECUTION

3.01 GENERAL EXCAVATION AND GRADING

- A. Excavating and grading which is part of this Contract, shall be completed within the tolerances established or within reasonably close conformity with the alignment grade and cross sections indicated on the Drawings or as established within these Specifications. Specific requirements for verification surveys and measurement for pay quantities are described in Section 01 71 23 - Field Engineering.
- B. Excavation: Excavation material shall be moved with the use of mechanical equipment, such as shovels, loaders, bulldozers, graders, rippers, etc., but shall not require drilling and blasting or drilling and line breaking. Excavation by sluicing method will not be permitted unless specifically approved by Ecology or Ecology's Representative. In general, excavation shall be removed in horizontal layers.
- C. Unauthorized excavation consists of removal of materials beyond indicated Baseline Excavation Limits shown on the Drawing without specific direction of Ecology or Ecology's Representative. Unauthorized excavation shall be at no change in contract amount.
- D. Conduct all required activities associated with excavation, stockpiling, and disposal of soil in accordance with the requirements of the Contract Documents and as directed by Ecology or Ecology's Representative to complete the work under this Contract. Coordinate the work with Ecology or Ecology's Representative to limit adverse effects of the work on the activities of other adjacent public and privately owned areas and/or the public.
- E. Contractor operations will require work in a potentially hazardous environment. Ensure adequate protection for all personnel, comply with all health and safety requirements of Contractor's site-specific health and safety plan, and perform construction equipment decontamination and other environmental controls, as specified. Level D protection may be assumed for work associated with excavation and handling of

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

contaminated soil and debris, excavation dewatering and water handling, and other activities with a potential for exposure to contaminated materials. Contractor is responsible for identifying the appropriate level of protection for its employees and subcontractors, and implementing the requirements of its health and safety plan.

- F. Implement environmental protection measures, site access and traffic control, utility protection, air emissions control, dust control, drainage, erosion, and sedimentation control, spill prevention and pollution control, noise control, and all other controls needed to protect environmental quality during the work.
- G. Excavation dewatering, when required, shall be performed in accordance with the Contract Drawings and the procedures outlined in Sections 01 57 13 – Temporary Erosion and Sediment Control and 31 23 19 - Excavation Dewatering.
- H. The Contractor may construct temporary stockpile areas located within the Project site, unless alternative locations are pre-approved by Ecology or Ecology’s Representative. Soil placed in stockpiles shall be protected from the weather as described herein. Contractor may remove water within the stockpile area and infiltrate it into another contaminated area of the site or pump it to a containment vessel for treatment, analysis and disposal as specified in Section 31 23 19 – Excavation Dewatering and Section 01 57 13 – Temporary Erosion and Sediment Control. Contractor shall be responsible for proper treatment and disposal of water collected within the stockpile areas as defined in Section 01 57 13 – Temporary Erosion and Sediment Control. Stockpile areas shall be restored to original conditions on completion of use.
- I. Filling: Place material used for backfill or finish grading in horizontal layers upon earth which has been stabilized or otherwise approved by Ecology or Ecology’s Representative for construction. Select Borrow may be placed below water, but Common Borrow shall not be placed in standing water.
- J. Brace and shore sides of excavations as necessary to meet Contractor or regulatory needs. Comply with all federal, state, and local regulations regarding shoring, bracing, and other protection requirements.
- K. Implement site erosion control including management of stormwater runoff, potential excavation seepage and dewatering (i.e. Construction Water), protection of temporary stockpiles and related activities per Section 01 57 13 – Temporary Erosion and Sediment Control and as described herein.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- L. Unsuitable Excavation: Shall consist of unstable materials, such as peat, muck, water-impregnated clays, swampy or other undesirable materials. Unsuitable excavation materials shall be removed to the depth designated by Ecology or Ecology's Representative. Unsuitable material excavated shall be replaced with Common or Select Borrow as directed by Ecology or Ecology's Representative. Unsuitable materials shall be disposed of off-site or loaded for disposal with Remedial Excavation as directed by Ecology or Ecology's Representative.

3.02 REMEDIAL EXCAVATION

- A. Maintain open excavations during analytical testing periods specified herein for excavations extending to and beyond the Baseline Excavation limits shown on the Drawings, unless directed otherwise by Ecology or Ecology's Representative. See paragraph 3.02.F of this Section for further description of maximum depths for Ecology Directed Overexcavation.
- B. Confirmation samples will be obtained from excavation sidewalls and bottom for Baseline Excavations and Ecology Directed Overexcavation as described in Paragraphs 3.02.E and F below. It is anticipated that groundwater will enter excavations and that it will be impractical to remove all of this water from the excavations. Ecology or Ecology's Representative may direct the Contractor to provide wet excavation samples representative of the soils present at the bottom and from the side walls of an excavation.
- C. The finished surface of Remedial Excavations shall be cut at a minimum to the Baseline Excavation Limits (lines and grades) shown on the Excavation Plan Drawings unless noted otherwise, with an allowable vertical tolerance of 0.25 feet.
- D. To maximize removal of contaminated soils within the Shoreline Protection Zone, Contractor shall install temporary sheet piles for shoring excavation sides near the OHW line to ensure a vertical cut as shown on the drawings and described in Section 3.03 below.
- E. Excavation Sampling Procedures and Ecology Directed Overexcavation

Following completion of Baseline Excavation shown on the Drawings for each individual excavation, further overexcavation may be directed by Ecology or Ecology's Representative based on laboratory analysis results of these soil sample tests and/or other factors. Contractor shall assume that sampling results (along with resulting direction on any additional required Ecology Directed Overexcavation) will be available between 1 and 3 business days following notification from the Contractor that a

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

particular excavation area is complete to the Baseline Limits. Sequencing/timing requirements for sampling, Ecology Directed Overexcavation and backfill is described below:

1. Ecology or Ecology's Representative will collect soil samples for laboratory testing from side walls and the bottom of the cut per Section 01 35 43 – Environmental Procedures.
2. If sample analytical test results are acceptable to Ecology or Ecology's Representative, confirmation post-excavation survey of the finished Remedial Excavation shall be performed prior to backfill.
3. If sample analytical test results detect unacceptable concentrations of contamination, then Contractor shall perform Overexcavation as directed by Ecology or Ecology's Representative.
4. Contractor shall not backfill the excavation until directed by Ecology or Ecology's Representative that overexcavation is complete and subsequent final as-built survey of the excavation is performed.

F. Ecology Directed Overexcavation Limits

Ecology Directed Overexcavation beyond the Baseline Excavation limits shown on the Plans shall be as described below:

1. Within the Shoreline Protection Zone, Ecology Directed Overexcavation may include:
 - a. Overexcavation to a maximum depth of 10 feet below the existing ground surface as directed by Ecology or Ecology's Representative.
 - b. Chase contamination laterally beyond the Baseline Excavation limits as directed by Ecology or Ecology's Representative.
2. Outside of the Shoreline Protection Zone, Ecology Directed Overexcavation (landward or upland of the shoreline protection zone) may include:
 - a. Overexcavation to a maximum depth of 6 feet below either the existing ground surface or proposed finish grade in the wetland area as directed by Ecology or Ecology's Representative.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- b. Chase contamination laterally beyond the Baseline Excavation limits as directed by Ecology or Ecology's Representative.
- G. Stockpile soil requiring characterization for suspect materials or dewatering to pass the Paint Filter Test as shown on the Drawings and as directed by Ecology or Ecology's Representative.
 - 1. Contractor shall control moisture content so that Remedial Excavation Material passes the Paint Filter Test (SW-846 Method 9095A) at point of loading of the trucks. See Section 31 23 01 Off-Site Transportation and Disposal of Contaminated Soils for specific requirements.
 - 2. See Section 01 35 43 Environmental Procedures for requirements for handling unexpected Dangerous Waste or other suspect materials.

3.03 TEMPORARY SHEET PILE WALL FOR EXCAVATION ALONG OHW

- A. Unless noted otherwise, Baseline Excavation within the Shoreline Protection Zone shall include a temporary sheet pile wall near the OHW line for shoring to allow removal of contaminated soil both to the Baseline Excavation depth and maximum potential Ecology Directed Overexcavation.
- B. The Contractor shall secure the services of a professional engineer licensed to practice in the State of Washington to design and stamp calculations for the sheet pile wall. The sheet pile wall shall be designed to allow maximum Ecology Directed Overexcavation in the Shoreline Protection Zone to 10 feet below existing ground surface.
 - 1. The stamped sheet pile design and calculations shall be submitted to Ecology or Ecology's Representative as described in Paragraph 1.06 of these Specifications.
 - 2. The Contractor and Contractor's sheet pile design engineer shall determine the design differential water levels across the sheet pile wall based on available water level information and anticipated excavation means and methods, providing water level limits as part of the design calculation submittal.
- C. Minimum sheet pile wall top elevation shall be as shown on the Drawings.
- D. Sheets may be reused as excavation progresses along the shoreline and for any Ecology Directed Overexcavation that is required along the OHW

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

line. Contractor is encouraged to phase excavation in such a manner as to re-use sheet pile to the extent practical along the shoreline.

- E. Contractor shall anticipate debris when installing sheet pile along the shoreline that may require pre-excavation to drive the sheets to required depth. See drawing G1.4 for geotechnical borings for which existing data is available as an appendix to these Specifications.
- F. See Geotechnical Letter included as an Appendix to these Specifications for design earth pressures and other geotechnical requirements for sheet pile design. Additional details and Geotechnical Letter will be provided by Addendum.
- G. Sheet pile shall be removed following backfill or temporary berm construction for individual portions of the excavation.
- H. Contractor shall perform confirmation post-excavation survey of all sheet piles installed prior to backfill and sheet pile removal, to record the as-built location for use in future removal of contaminated soil remaining at and below the OHW line in a future Phase 2 construction contract. See Section 01 71 23 – Field Engineering for submittal requirements.

3.04 BACKFILL

- A. No Backfill shall occur until after post-excavation survey and laboratory analysis of soil sample testing of the finished Remedial Excavation surface is completed for each area and approved by Ecology or Ecology's Representative as described in Paragraph 3.02.
- B. Contractor shall backfill excavations back to existing grade unless notes otherwise. See Part 2 of this section for other requirements for Backfill materials.
- C. Contractor shall be responsible to maintain excavation subgrades to excavated depth and lateral extent during backfilling operations, especially for Wetland Shoreline Protection Layer construction. The Contractor shall be responsible to remove displaced soil (loose fill or soft clay/silt mud waves) greater than 1 foot above base of excavation or subgrade that occurs during backfilling.

3.05 FINISH GRADING

- A. Following backfill of individual Remedial Excavation areas to existing grade, Common Borrow shall be used as shown to accomplish the finish contours shown on the Grading Plan Drawings.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- B. Finishing grading includes all fill above existing grade utilizing Common Borrow, including Common Borrow beneath the wetland buffer and swale areas as shown in Grading Sections in the Drawings.
- C. Prior to finish grading, Contractor shall clear and grub remaining surface vegetation from site areas where excavation did not disturb the surface. Common Borrow shall not be placed on top of existing vegetation. Vegetation that is removed during clearing and grubbing shall be disposed of at a Subtitle D landfill with the rest of the excavated material unless noted otherwise. See Section 02 41 13 for additional requirements.
- D. No finish grading is required within the existing gravel pad footprint at the north end of the site following backfill to existing grade as shown on the Drawings.

3.06 GENERAL COMPACTION REQUIREMENTS

- A. Compaction shall be performed with compaction equipment suitable for the soil and the area being compacted. Each lift of material placed shall be uniformly compacted to the density indicated for the specific material and use set forth in these Specifications. The compaction equipment may be of any type, provided it is capable of compacting each lift of the material to the specified density. Ecology or Ecology's Representative may require that the use of particular compaction equipment be discontinued if it is not capable of compacting the material to the required density within a reasonable time, or if the equipment may damage underlying or adjacent soils.
- B. Lab determined optimum moisture content and maximum dry density of different soils shall be determined by the Contractor's testing laboratory in accordance with ASTM D1557 and as described in Paragraph 3.15 of this Section.
- C. The Contractor shall moisten or aerate material as necessary to achieve the required specified percent compaction and/or moisture content.
- D. Contractor shall place fill in 12-inch maximum loose lift thickness, unless specified otherwise.
- E. All soil materials shall be compacted and tested to the requirements of this Specification. If the specified densities with the maximum lift thicknesses specified cannot be attained, the lift thickness shall be reduced and/or heavier compaction equipment shall be provided. Adjustments to achieve compaction shall be at no additional cost to Ecology.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- F. Concrete and rocks greater than half the loose lift thickness in any dimension shall be removed prior to compaction, unless specified elsewhere. Garbage, debris, pieces of wood larger than 4 inches in any dimension, and other deleterious material shall be removed and disposed of appropriately prior to compaction.
- G. Large non-contaminated concrete debris, greater than half the loose lift thickness, may be incorporated into backfill if placed so voids do not occur between concrete pieces, soil is placed and compacted between/around concrete pieces, and Ecology or Ecology's Representative or Geotechnical Engineer observes and confirms appropriate placement and compaction methods of soil around the concrete pieces.
- H. Lifts shall be uniform thickness, sloped to drain, and even across the entire width of the fill surface. Shape the surfaces to uniform cross sections and eliminate ruts and holes.
- I. Specific compaction requirements for the specific different types of fill materials are described in the following Paragraphs of this Section.

3.07 SELECT BORROW PLACEMENT AND COMPACTION

- A. Unless noted otherwise, Select Borrow shall be used to backfill excavation areas (both above and below groundwater) or in wet subgrade areas as needed to achieve compaction specified on the Drawings.
- B. Select Borrow placed below groundwater shall be placed in loose lift thicknesses less than 2 feet and compacted by tamping/compressing with a trackhoe bucket to a firm condition.
- C. Select Borrow placed above water levels in excavations or within 2 feet of final grades, shall be compacted to at least 90% of the maximum dry density (per Paragraph 3.15) as determined by compaction control tests. For Select Borrow placed and compacted within 1.5 feet above water levels, it may be difficult to achieve required compaction. Percent compaction may be modified by Ecology or Ecology's Representative or Geotechnical Engineer based on field conditions.
- D. Contractor shall control moisture content of Select Borrow to within +/- 2% of the optimum water content (per Paragraph 3.06) to aid in achieving specified compaction.

3.08 COMMON BORROW PLACEMENT AND COMPACTION

- A. Common Borrow shall be placed in loose lift thicknesses less than 12 inches.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- B. Contractor shall compact each layer of Common Borrow within 2 feet of final grades to at least 90% of the maximum dry density as determined by compaction control tests.
- C. Contractor shall compact each layer of Common Borrow more than 2 feet below final grades to a firm non-yielding condition by tamping with trackhoe bucket, compaction equipment, trafficking with heavy construction equipment, or other means acceptable to Ecology or Ecology's Representative or Geotechnical Engineer.
- D. Contractor shall control moisture content of Common Borrow to within +/- 2% of the optimum water content (per Paragraph 3.06) to aid in achieving specified compaction.

3.09 WETLAND SHORELINE PROTECTION BACKFILL AND TEMPORARY BERM PLACEMENT AND COMPACTION

- A. Wetland Shoreline Protection Backfill and Temporary Berm material shall be placed in lifts with a loose thickness no greater than 12 inches and compacted to a firm non-yielding condition by tamping with trackhoe bucket, compaction equipment, trafficking with heavy construction equipment, or other means acceptable to Ecology or Ecology's Representative or Geotechnical Engineer.

3.10 WETLAND BEACH SAND AND BUFFER AREA PLACEMENT AND COMPACTION

- A. Wetland Beach Sand and Common Borrow placed as backfill in the Wetland Buffer Area, where trees and shrubs are to be planted, do not require compaction.
- B. Common Borrow in the Wetland Buffer Area shall be amended per requirements in Section 32 71 00 – Wetland Mitigation Area as shown on the Drawings.
- C. Common Borrow in Wetland Planting Areas shall be placed in horizontal lifts no greater than 18 inches thick and then compacted by track walking with low-ground-pressure equipment. The Contractor shall track walk the entire surface area. Track walking may be omitted upon approval of Ecology or Ecology's Representative based on conditions in the field. Final grades shall be smooth with no furrows.
- D. Contours shown on Finish Grading Plan Drawings are finish contours to top of final landscape surface in the wetland buffer and stormwater swale areas. Contractor shall account for soil amendments per the Landscape

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

Drawings in their Final Grading operations. See Landscape Drawings for soil preparation and compost amendments.

3.11 CUT SLOPES INTO EXISTING MATERIALS AND TEMPORARY SHORING/SAFETY SYSTEMS

- A. All permanent slopes shall not be constructed steeper than a slope of 3-horizontal to 1-vertical unless noted otherwise.
- B. See Drawings for permanent cut slope and offsets adjacent to property lines and the existing retaining wall.
- C. The Contractor shall be responsible for stability of temporary cut slopes.
- D. Construction site safety is the sole responsibility of the contractor, who also is solely responsible for the means, methods, and sequencing of the construction operations and choices regarding the temporary excavations and shoring within the shoreline protection zone.
- E. If workers will be in the excavations, then temporary slopes and shoring shall be in accordance with Washington State Administrative Code (WAC) 296-155, Part N. The stability of open-cut slopes is a function of soil type, groundwater level, slope inclination and nearby surface loads. The use of inadequately designed open cuts could impact the stability of adjacent structures and existing utilities and endanger personnel.
 - 1. The existing site soils are classified as “Type C” by these regulations. The state regulations allow temporary slopes of 1.5H:1V (Horizontal:Vertical). The regulations assume that surface loads such as construction equipment and storage loads will be kept a sufficient distance away from the top of the cut so that the stability of the excavation is not affected. The regulations assume that no groundwater is present. It should be expected that unsupported cut slopes would experience some sloughing and raveling if exposed to surface water or groundwater. Berms, hay bales, plastic sheeting, fencing laid over the slope or other provisions could be installed along the top and sides of the excavation to reduce the potential for sloughing and erosion of cut slopes during wet weather, as appropriate.

3.12 GRADING TOLERANCES

- A. The profiles finish site grading shall be graded within a vertical tolerance of 0.25 feet plus or minus and maintain positive site drainage unless noted otherwise.

DIVISION 31 – EARTHWORK

Section 31 23 00 - Remedial Excavation and Fill

- B. See Paragraph 3.02.D of this Section for vertical tolerances for Remedial Excavation.

3.13 SURVEY

- A. The Contractor shall provide for all survey needs on this project as identified in these Specifications or as required to complete the work. See Section 01 71 23 – Field Engineering and Section 01 20 00 – Price and Payment Procedures for requirements for payment verification, required control and as-built documentation.

3.14 STOCKPILING

- A. General Stockpile Requirements:
 - 1. The Contractor may also elect to temporarily stockpile Remedial Excavation material for dewatering and other imported materials on the site.
 - 2. The Contractor shall locate stockpiles as necessary within the project site to complete the work. No stockpiles may be located in such a manner as to impair access to adjacent sites or facilities or be detrimental to work progress or the completed work in any way. Stockpile locations and configurations must be approved by Ecology or Ecology's Representative.
 - 3. All stockpile areas shall be sized to accommodate anticipated volumes and rates of excavation and import.
 - 4. All stockpiles shall be covered, lined, and bermed as shown on the Drawings. Weather-resistant sheeting or other suitable means shall be used to protect stockpiles when stockpiles are not in use, and to prevent precipitation and other materials from contacting the stockpiles. The stockpile covers shall be anchored to prevent them from being removed by wind as shown on the Drawings. Stockpile berms or enclosures shall be maintained in good condition and constructed of materials that are compatible with the material to be stored. Vehicle access points to the stockpiles shall also be bermed. Alternatively, ecology blocks may be placed around stockpiles to serve as berms, except at vehicle access points. The Contractor shall repair or replace torn covers immediately.
 - 5. The Contractor shall minimize potential contact of stormwater runoff and precipitation with stockpiles through best management practices, including diverting precipitation falling on the stockpile covers to outside the stockpile areas. See Section 01 57 13 –

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

Temporary Erosion and Sediment Control for additional requirements.

6. Stockpile underliners shall be constructed as shown on the Drawings:
 - a. Adjacent underliner sections shall be continuously overlapped by a minimum of 3 feet. It is not necessary to seam adjacent underliner sections below the stockpiles.
 - b. The Contractor shall place a layer of geotextile or plywood to fully underlie and protect the underliner for Remedial Excavation stockpiles in any locations containing rocks or debris which are greater than 0.5 inch in diameter, on the ground surface, or under any areas through which vehicular traffic will travel. Geotextile or plywood protection shall also be used to protect the underliner for Remedial Excavation stockpiles, if created by the Contractor. The geotextile shall be woven sheet of polymeric material, which is chemically resistant to the conditions to which it will be exposed. Geotextile shall be Mirafi 500X or approved equivalent. The plywood shall have a minimum thickness of 0.5 inch.
7. Stockpiles of Remedial Excavation material may be established without underliners over areas containing the same material to be subsequently excavated. Such stockpiles shall be bermed and covered as shown on the Drawings and as described herein.
8. The Contractor shall not stockpile Remedial Excavation material or any suspect material on exposed soils following completion of Remedial Excavation in that area.
9. Stockpiles of imported material may be established without underliners if located on clean soils, but shall be bermed and covered as shown on the Drawings and as described herein.
10. The Contractor shall maintain a written log for stockpiles containing excavated materials from on-site.
11. The Contractor shall inspect all stockpile areas daily and after rain events, and shall maintain a written inspection log. The inspection log shall be available at the request of Ecology or Ecology's Representative and also submitted with the Contractor's Weekly Report. Inspection logs shall contain date and time of inspection, name of individual conducting the inspection, observations, problems noted, and corrective actions taken. For each stockpile,

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

the log shall note the material present; dates that the stockpile was established or modified; daily volumes based on visual or other estimates; condition of the stockpile covers, berms, and liners where visible; presence and estimated volumes of stockpile drainage water; and sump condition as applicable. The log shall also note dates that stockpiles are shipped for off-site disposal, or relocated on-site. The log shall establish a sequential numbering system for each stockpile.

3.15 QUALITY CONTROL TESTING FOR COMPACTION

- A. The Contractor shall provide the testing laboratory with soil samples for soils requiring compaction testing to perform grain size (ASTM D 422), natural moisture content (ASTM D2216), and moisture density tests (ASTM D 1557). Results shall be provided to Ecology or Ecology's Representative at least one week prior to use of this material on site. If the material type changes sufficiently that it is not the same as the original moisture density test as determined by Ecology or Ecology's Representative, additional samples shall be tested by the Contractor and results submitted.
- B. The Contractor shall be responsible to obtain density testing in accordance with ASTM D 2922 at the frequency specified below for the various different areas, unless specified otherwise:
 - 1. Select Borrow: Contractor shall obtain a representative number of density tests to demonstrate required compaction from Contractor's methods to Ecology's or Ecology's Representative's satisfaction. Ecology or Ecology's Representative may request additional tests based on field conditions and/or departures from the agreed upon methods.
 - 2. Common Borrow: Contractor shall obtain a representative number of density tests to demonstrate required compaction from Contractor's methods to Ecology's or Ecology's Representative's satisfaction. Ecology or Ecology's Representative may request additional tests based on field conditions and/or departures from the agreed upon methods.
- C. See Section 01 35 43 – Environmental Procedures for additional requirements for environmental sampling and quality control.

3.16 SITE CLEANUP AND MANAGEMENT OF DEBRIS AND WASTE MATERIALS

- A. Contractor shall be responsible for preventing the offsite movement of all waste materials, spills, etc., resulting from the work under this Contract,

DIVISION 31 – EARTHWORK
Section 31 23 00 - Remedial Excavation and Fill

and shall be responsible for any consequences of any such offsite movement of material.

- B. Contractor shall return stockpile areas to original conditions on completion of use.
- C. Contractor shall clean up soil tracked from the site onto public roadways on a daily basis or more frequently, as directed by Ecology or Ecology's Representative.
- D. Periodically clean up wastes, debris and leftover materials resulting from the earthwork activities. Clear the work areas of all debris and waste materials which may have accumulated during execution of the work, and dispose of such materials in accordance with all applicable regulations.
- E. Maintain dewatering systems during use to prevent leakage or loss of effluent.

END OF SECTION

DIVISION 31 – EARTHWORK

Section 31 23 01 - Off-Site Transportation and Disposal of Contaminated Soil

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. This section specifies soil disposal requirements for the project, including handling, transportation, and off-site disposal of contaminated soil, and other work incidental to the disposal as shown on the Drawings or required to accomplish the work under this Contract. Activities covered under this section include, but is not limited to loading, and transporting contaminated soil to an approved off-site disposal facility.

1.03 REFERENCES

- A. 29 CFR 1910 - Occupational Safety and Health Regulations.
- B. WAC 296-155, Safety Standards for Construction Work, including Part N, Excavations, Trenches, and Shoring.
- C. 29 CFR 1926 - Safety and Health Regulations for Construction.
- D. R.C.W. Chapter 49.17 WISHA.
- E. R.C.W. Chapter 39.04.180 Public Works/Trench Excavations - Safety Systems Required.
- F. Section 31 23 00 – Remedial Excavation and Fill

1.04 QUALIFICATIONS

- A. Personnel engaged in hazardous materials work shall be Hazmat, OSHA, and WISHA trained and certified. Conduct dewatering and loading activities associated with known or potentially contaminated materials in accordance with Contractor's site-specific health and safety plan prepared in accordance with Section 01 33 00 (Submittals, Meetings and Notifications).
- B. Transportation of known or potentially contaminated materials shall be performed by properly licensed, insured, and registered waste haulers that are acceptable to Ecology and in accordance with applicable local, state, and federal regulations for transportation. Truck bed liners and covers are required unless this requirement is removed by Ecology or Ecology's Representative. Transportation contractor(s) shall submit documentation that demonstrates it is properly licensed and in compliance with applicable DOT regulations, as well as a copy of its contingency and spill control plans describing measures to be implemented in the event of spills or discharges during material handling and transporting.

DIVISION 31 – EARTHWORK

Section 31 23 01 - Off-Site Transportation and Disposal of Contaminated Soil

1.05 CONTRACTOR RESPONSIBILITY

- A. Furnish all labor, equipment, supplies, and materials necessary to perform the loading, transportation and disposal activities associated with the work under this Contract.

1.06 SUBMITTALS

- A. Prepare and submit for Ecology's or Ecology's Representative's approval an Excavation, Treatment, and Disposal Plan as a component of the Contractor Quality Assurance Plan (CQAP) described in Section 01 33 00 (Submittals, Meetings and Notifications) that includes details of Contractor's methods and equipment to accomplish the work under this section.
- B. Prepare and submit to Ecology or Ecology's Representative for approval prior to transporting any contaminated soil off-site a list of proposed transporters and permitted RCRA Subtitle D disposal facilities. Ecology or Ecology's Representative will coordinate submitting any required documentation or soil samples to the facilities for waste disposal approval.
- C. Disposal facility weigh tickets will be used to identify the quantities associated with the transportation of contaminated soil and disposal of contaminated soil pay items.

PART 2 –PRODUCTS

This work consists of providing all materials and equipment necessary to implement requirements of this section including the loading, transportation and disposal of contaminated materials

PART 3 –EXECUTION

3.01 GENERAL

- A. Conduct all required transportation and disposal activities in accordance with the requirements of the Contract Documents and as otherwise directed by Ecology or Ecology's representative to complete the work under this Contract. Coordinate the work with Ecology or Ecology's representative to limit adverse effects of the work on the activities of other adjacent public and privately owned areas; and/or the public.
- B. Contractor operations will require work in a potentially hazardous environment. Ensure adequate protection for all personnel, comply with all health and safety requirements of Contractor's site-specific health and

DIVISION 31 – EARTHWORK

Section 31 23 01 - Off-Site Transportation and Disposal of Contaminated Soil

safety plan, and perform construction equipment decontamination and other environmental controls, as specified. Appropriate levels of personnel protection may be assumed for work associated with excavation and handling of contaminated soil and debris, excavation dewatering and water handling, and other activities with a potential for exposure to contaminated materials. Contractor is responsible for identifying the appropriate level of protection for its employees and subcontractors, and implementing the requirements of its health and safety plan.

- C. Implement environmental protection measures, site access and traffic control, and utility protection, air emissions control, dust control, drainage and erosion control, spill prevention and pollution control, noise control, and all other controls needed to protect environmental quality during the work.
- D. Excavated soil not passing the standard paint filter test (SW-846 Method 9095A) will require draining. If conditions allow, drain within the excavation footprint prior to loading and transport off site; and possibly in an upland contained drainage cell. Excavation dewatering, when required, shall be performed in accordance with the Contract Drawings and the procedures outlined in Section 01 57 13 (TESC specification) and 31 23 19 (Excavation Dewatering).
- E. The Contractor shall select an appropriate permitted RCRA Subtitle D disposal facility for the disposal of contaminated soil and shall select the transporter that will haul contaminated materials to the selected facility, to be approved by Ecology or Ecology's Representative.

END OF SECTION

DIVISION 31 – EARTHWORK
Section 31 23 19 - Excavation Dewatering

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. This section specifies requirements for the management of water associated with excavation and backfilling (herein after and above called excavation dewatering) of the areas on the site to be remediated; and potentially other excavations, and the handling, storage, treatment, and disposal of such water during implementation of the work under this Contract.
- B. Temporary sheet piles will be driven around a portion of the Remedial Excavation areas as necessary, to achieve removal of contaminated soil within the Shoreline Protection Zone and Wetland Excavation areas shown on the Drawings. Shoring systems shall be designed by the Contractor as defined in Section 31 23 00 (Remedial Excavation and Fill).
- C. It is anticipated that groundwater will enter most excavations and that the bulk of the excavation and backfilling work will be accomplished “in the wet” in a manner similar to dredging. However, dewatering of the remedial excavations will likely have to be incorporated into the Contractor’s plans at various occasions to facilitate contaminated soil removal and excavation backfilling activities. Water generated by excavation dewatering activities from within excavations shall be infiltrated into a contaminated area of the site or into another location approved in advance by Ecology or Ecology’s Representative; or conveyed to an above ground storage tank prior to treatment and discharge according to the requirements of Section 01 57 13 (TESC).
- D. Construction water that can not be infiltrated, and pooled water that may be present in above ground basins located in the Press Pit area, shall be collected, stored and treated as required to demonstrate the effluent meets the City of Anacortes’ standards for discharge to the sanitary sewer system, according to the requirements of Section 01 57 13 (TESC).

1.02 SUBMITTALS

- A. Submit a Dewatering Plan as a component of the Contractor Quality Assurance Plan (CQAP) described in Section 01 33 00 (Submittals, Meetings and Notification Points) for Ecology or Ecology’s Representative approval that includes:
 - 1. Design drawings and description of the methods and equipment that will be used for shoring systems including sheet pile installation and removal, excavation dewatering and water storage, treatment, and disposal.

DIVISION 31 – EARTHWORK

Section 31 23 19 - Excavation Dewatering

2. Estimated dewatering rates assumed by Contractor in sizing the various components of the dewatering and water storage and treatment systems and assumptions regarding additional quantities of stormwater that may be collected/removed from the excavations during storm events.
3. Description of the number, types, sizes, capacity, and other relevant information for the various components of the dewatering and water storage and treatment systems (e.g., vacuum wellpoints, pumps, discharge hoses, storage and treatment tanks, etc.).
4. Estimated storage capacity to be provided for temporary containment/settling of water between extraction and final disposal, and plans for promptly increasing water storage capacity as needed during the work.

1.03 SITE CONDITIONS

A. The following site information is intended to provide a brief overview of pertinent site conditions. Contractor shall be solely responsible for reviewing available project documents to verify site conditions critical to the execution of the work under this section, and modifying excavation dewatering and water storage, treatment, and disposal operations as required to adequately address actual site conditions encountered during the work.

1. Soil: In general, the subsurface materials consist of a heterogeneous mix of silt, sand, and gravel with abundant near-surface and intermixed saw dust/wood waste over native clay deposits. Upland fill materials exceed 15 feet in thickness in some areas and include general 'upper' and 'lower' fill units identified in the RI (Included in the Appendix). Concrete, brick and other debris are the distinguishing components of the upper unit, while wood waste is the more prevalent in the lower unit.
2. Groundwater: The depth to groundwater in the remedial excavation areas will vary due to several factors, but has been observed at elevations ranging from approximately 3 to 7 feet during different tide and surface water conditions. It has been observed within two feet of the ground surface at high tide in some nearshore locations. The rate of groundwater seepage into the excavations will vary with depth and time. Free phase (floating) petroleum product has been observed in a monitoring well and within excavations (refer to Appendix IAWP documents for details). It is possible that small amounts of residual product will be encountered during dewatering and excavation

DIVISION 31 – EARTHWORK
Section 31 23 19 - Excavation Dewatering

activities. Contractor shall control runoff of clean stormwater into the excavations to limit the amount of water requiring removal, treatment, and disposal.

3. Water Quality: The primary chemical constituents in pumped water are anticipated to be diesel-range hydrocarbons, cPAHs, and metals.

1.04 QUALITY ASSURANCE/QUALITY CONTROL

- A. Performance Operation and Maintenance Monitoring. Monitor dewatering and water handling/treatment/disposal operations and notify Ecology or Ecology's Representative immediately if any portions of the systems are not operating as intended. Operational problems may include, but are not limited to, insufficient capture of stormwater and groundwater within the work area, lack of containment of decontamination and construction water, plugging or breakage of pipes or hoses used for water conveyance, leaking of water containment vessels, and malfunction of pumps used to transfer water.
- B. Sampling and Analysis: Contractor will perform sampling and analysis of representative samples of the treated water as required to demonstrate that the effluent meets the City of Anacortes' water quality discharge limits before discharge into the sanitary sewer system as required by Section 01 57 13.

PART 2 – PRODUCTS

2.01 SYSTEM COMPONENTS

- A. The Contractor shall provide equipment/product specifications, as proposed to meet these performance specifications, including make, model, and manufacturer in the Dewatering Plan.
- B. Temporary sheet piles will be driven around a portion of the Remedial Excavation areas as necessary, to achieve removal of contaminated soil within the shoreline protection zone and wetland construction areas as described in Section 32 23 00 - Remedial Excavation and Fill.
- C. All dewatering and water handling/storage/treatment equipment and accessories shall be properly sized and suitable for its intended use.
- D. Water storage tanks shall be weir type tanks with internal baffles designed to aid in the retention of floating oil and settleable solids.
- E. Provide suitable water storage tanks, oil-water separation and water treatment equipment, skimmers, absorbent booms and pads, and all

DIVISION 31 – EARTHWORK
Section 31 23 19 - Excavation Dewatering

ancillary materials and equipment needed to remove free-phase petroleum hydrocarbon product or sheen from construction water and to treat extracted water to meet the City of Anacortes' water quality discharge limits prior to discharge to the sanitary sewer system. Contractor shall install an oil absorbent boom in each weir tank to float on the water surface and assist in the retention and recovery of petroleum product/sheen. The oil absorbent boom shall be adequately secured to the tank to prevent clogging of the discharge pipe or hose.

- F. If discharge effluent sampling indicates that activated carbon treatment is required to meet the City's water quality discharge limits for BETX and petroleum hydrocarbons, Contractor shall be prepared to supply a granular activated carbon (carbon) filtration system consisting of at least two carbon vessels piped in series. Ecology or Ecology's Representative will evaluate the need for a carbon filtration system by conducting chemical testing of pumped water.
- G. To prevent plugging the carbon vessels with solids, Contractor shall be prepared to provide and maintain a particle filter to be installed upstream of the carbon vessels. The filter can be a bag-style filter, sand filter, or cartridge filter that is rated for at least the maximum flow rate of the carbon vessels. If a bag or cartridge style filter is used, the bags or cartridges shall be 50-micron nominal particle size retention or smaller. A particle filter may be needed to achieve the settleable solids discharge standard even if a carbon filtration system is not used.
- H. Contractor shall provide a transfer pump to pump water from the weir tanks to the particle filter and/or the carbon vessels.
- I. Provide a totalizing flow meter to measure and record the volume of water discharged to the sanitary sewer.

PART 3 – EXECUTION

3.01 DEWATERING

- A. Provide labor, equipment, and materials to design, construct, operate, maintain, and modify as needed, effective excavation dewatering and water treatment systems. Continue operation of the systems as required to complete the work and to protect completed work and adjacent property, until such time that protection is no longer required.
- B. It is anticipated that groundwater will enter most excavations and that the bulk of the excavation and backfilling work will be accomplished "in the wet". Wet confirmation samples may be collected by Ecology or Ecology's representative. Modify excavation dewatering and water storage methods

DIVISION 31 – EARTHWORK

Section 31 23 19 - Excavation Dewatering

and equipment if permit conditions are not being met or if Ecology or Ecology's Representative determines that Contractor's methods and equipment are not adequate for site conditions encountered during the work. Do not cease excavation dewatering activities until excavations are satisfactorily confirmed and backfilled, unless otherwise approved by Ecology or Ecology's Representative.

3.02 Water Treatment

- A. Store pumped excavation water onsite until treated to adequately settle suspended solids and meet the City of Anacortes' pretreatment standards listed Section 01 57 13 prior to discharge to the sanitary sewer system.
- B. Contractor shall abide by any other requirements or limitations contained in the City's wastewater discharge authorization. Contractor will perform periodic sampling of treated discharge to ensure effluent meets City of Anacortes' discharge quality maximum concentration levels.
- C. If activated carbon treatment is necessary, to meet COA requirements, the effluent water from the lead (first in series) carbon vessel shall be sampled by the Contractor periodically, to ensure that the carbon in the lead vessel is replaced when it has become spent (i.e., fully saturated with the contaminants of concern). During periodic carbon replacement activities, the former downstream (second in series) vessel will be moved into the lead position and the vessel with the new carbon shall be placed in the downstream (second in series) position.
- D. Discharge treated effluent to an approved location of the City of Anacortes' sanitary sewer system, and provide effluent flow meter monitoring to document the volume of water discharged to the sanitary sewer system.
- E. Replace oil absorbent boom in the weir tank as necessary to ensure collection of petroleum product or sheen. Remove accumulated solids from the weir tank as necessary to assure that the maximum thickness of settled solids at the bottom of the weir tank is 6 inches.

3.03 INSPECTIONS

- A. Contractor shall perform visual inspections daily during dewatering, water treatment, and water discharge activities. At a minimum, examine piping and hoses for leaks or excessive wear, inspect the weir tanks and oil absorbent boom for accumulated oil, check pressure drops across the particle filter unit and each carbon vessel, replace filter bags or cartridges as necessary, and examine the discharge connection point to the sanitary sewer.

DIVISION 31 – EARTHWORK
Section 31 23 19 - Excavation Dewatering

- B. On a daily basis, record totalizer readings from the discharge flow meter, provide readings to Ecology or Ecology’s Representative, and prepare discharge monitoring reports to the City as required. Also examine the quantity of solids accumulated in the weir tank on a daily basis and total quantity of removed solids.

3.04 HEALTH AND SAFETY

- A. Contractor shall include within its site-specific health and safety plan a description of the hazards associated with the contaminants expected in the water removed from excavations. The plan shall include site-specific conditions of potential exposure associated with confined spaces (e.g. accessing or opening hatches on the top of the weir tank and accessing or opening lids of sewer manholes).
- B. The City of Anacortes’ dewatering discharge permit/authorization may require the Contractor to perform monitoring for hydrogen sulfide gas concentrations during dewatering discharge if a “rotten egg” – like odor associated with hydrogen sulfide is observed in the vicinity of the water storage tanks or discharge location (manhole).

3.05 REMOVAL

- A. Properly contain spent oil absorbent booms, used filter bags/cartridges, spent activated carbon, and sediment removed from the weir tank. Dispose of these materials in accordance with all applicable regulations.
- B. Disassemble, clean, and remove materials and equipment when no longer required for dewatering, water collection, storage, treatment, handling, and disposal operations.
- C. Decommission all wells and/or vacuum wellpoints in accordance with chapter 173-160 WAC after dewatering is completed.
- D. Remove all sheet pile and other shoring components prior to completion of the project as defined in Section 31 23 00 (Remedial Excavation and Fill).

END OF SECTION

END OF DIVISION

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. Install upland (riparian) vegetation within the wetland buffer and barrier vegetation along the outer edge of the buffer area at the mitigation site. Provide soil amendments and mulch to support a viable vegetation community. Install temporary fencing and permanent signs along the perimeter of the mitigation area. Provide irrigation and maintenance services to support continued growth and development of the mitigation area plantings.
- B. Hydroseed the drainage swale and the remainder of the site after final grading. Provide maintenance services for hydroseeded areas at the site.
- C. See Section 01 70 00 – Execution and Project Closeout Requirements for additional work and details associated with the section.

1.02 REFERENCES

- A. Work shall conform to landscape and shoreline restoration industry standards. Mitigation is required for permit compliance by the U.S. Army Corps of Engineers, Washington State Department of Ecology, and the City of Anacortes.

1.03 QUALIFICATIONS

- A. Contractor shall be familiar with restoration standards and practices, and apply these practices to all site installation activities.

1.04 SUBMITTALS

- A. Contractor shall provide receipts and confirmation of installation for all plant materials, soil amendments, mulch, fencing, and irrigation tasks. Plant material, soil amendment and mulch receipts shall identify the species, quantity, size and source of materials installed at the site.
- B. Contractor shall provide a Maintenance Plan including, but not limited to, noxious weed control, weeding, irrigation, fencing, and general maintenance of all mitigation area features. The Maintenance Plan shall be designed to ensure the long-term survival of vegetation and viability of the mitigation area.

1.05 INSTALLATION TIMING

- A. The recommended time for plant installation is early spring or late fall.

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

1.06 MEETINGS

- A. A pre-construction meeting shall be held with all participating parties prior to commencement of work in the planting areas to review the project goals, specifications and planting details, site conditions, clearing/excavation limits, and construction sequencing.

1.07 QUALITY CONTROL

- A. The Contractor shall meet the quality control requirements defined in Section 01 45 00 Contractor Quality Control.

1.08 ADDITIONAL PROVISIONS

- A. Following installation of the mitigation area, the Contractor shall ensure that excess excavated material is disposed of in an appropriate location outside of the mitigation site and above the 100-year floodplain, no material is stockpiled within the mitigation site, and no construction debris is deposited within the mitigation site.
- B. The Contractor shall not use Polyacrylamide on exposed or disturbed soil within the mitigation site.
- C. The Contractor shall not use hay or straw on exposed or disturbed soils within the mitigation site.

PART 2 – PRODUCTS

- 2.01 The Contractor shall furnish all labor, equipment, supplies, and materials necessary to perform the work described in this section under this Contract.
- 2.02 The Contractor warrants the labor, materials, and equipment delivered under the Contract to be free from defects in design, material, or workmanship, and against damage caused prior to final inspection, as detailed in Section 01 70 00 Execution and Closeout Requirements.
- 2.03 The Contractor shall provide a 2-year guarantee for survival and replacement of all plant material installed on the project site, as detailed in Section 01 70 00 Execution and Closeout Requirements.
- 2.04 The Contractor shall provide on-going maintenance services to ensure the long-term viability of the mitigation site.

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

PART 3 – EXECUTION

3.01 PRE-INSTALLATION WORK

- A. Prior to placement of upland soil and mulch and plant installation, the Contractor shall remove invasive species throughout the site, including but not limited to, blackberry, bindweed, ivy and thistle, using machinery or by hand. On-site soils containing invasive plant species shall not be re-used within the planting areas.

3.02 SAND, SOIL AMENDMENT, AND MULCH SPECIFICATIONS

- A. All soils within the upland planting area shall be scarified or loosened prior to plant installation to reduce compaction and promote healthy plant growth.

B. SAND:

1. A 3-foot deep layer of fine to medium beach sand shall be placed between the wetland and the upland planting areas for dune plantings. Sand shall be placed following invasive weed removal and habitat mix fill slope placement (see Section 9.36) but prior to plant material installation.
2. The beach sand material shall meet the following gradation:

U.S. Standard <u>Sieve Size</u>	Percent Passing by <u>Weight</u>
No. 8	95 to 100
No. 16	70 to 100
No. 30	40 to 75
No. 50	10 to 35
No. 80	15 to 35
No. 100	2 to 15
No. 200	0 to 5

3. The Contractor shall test sample(s) of the beach sand to be imported for grain size distribution (ASTM D 422-63). The sieve test should be completed on a representative material sample no more than 2 weeks prior to the start of import. The sieve analysis report shall be submitted to Ecology or Ecology's Representative for approval prior to the start of import.
4. Ecology or Ecology's Representative will have the right to refuse all material brought to the site by the Contractor.

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

C. Compost (Soil Amendment):

1. A minimum of 12 inches of compost shall be incorporated throughout the upland planting area. The compost shall be free of debris, large rocks or deleterious material. The compost shall be tilled into the top 2 feet of existing soils throughout the upland planting area.
2. Compost shall come from an approved State of Washington permitted compost facility and shall conform to WSDOT SPEC 9-14.4(8) for either fine or coarse compost and contain a minimum of 40 percent organic matter.
3. All soil amendments and mulch shall be certified free to material toxic to plant growth and noxious weed seeds.

D. Mulch:

1. An approximately 3-inch deep layer of mulch shall be placed throughout the upland planting area following the compost amendment for erosion control, weed prevention and moisture retention. The material shall extend from the landward edge of the dunegrass planting area along the shoreline to the edge of the upland planting area including the barrier planting area on the outer edge of the mitigation area. Mulch shall be placed before or following plant installation. If placed before plant installation, the mulch shall be moved to the side of the individual plantings and replaced following installation of the plant stock to ensure soil to root contact.
2. Mulch shall conform to WSDOT SPEC 9-14.4(3) or (4) for either bark or wood chips, or wood strand mulch.
3. All soil amendments and mulch shall be certified free to material toxic to plant growth and noxious weed seeds.

3.03 PLANT SPECIFICATIONS

- A. All plants and planting activities shall conform to landscape industry standards. Plant stock shall be free of defects, disease, infestations, and shall be healthy. Replacement or substitution of any unsuitable plants may be required. Plant stock shall be obtained from a reputable nursery and whenever possible, plant stock shall be locally grown in the Puget Sound Region. All plant material shall be available for inspection prior to installation by Ecology or Ecology's Representative. Ecology has the right

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

to refuse any materials that contain defects, are unhealthy, or do not conform to the specifications identified in Section 32 71 00.

B. Plant Installation:

1. All plant stock shall be handled with care to ensure protection from injury. Plants shall be kept moist and stored in a shaded area until installation while being stored on the project site. Before and after planting, soil in the planting pits shall be saturated.
2. Following earthwork, the plantings shall be installed per the species, quantities, sizes, grouping and spacing identified on the Custom Plywood Plant Schedule. No plantings will be installed within the wetland (elevation 7.55 feet [MHHW] or lower).

Custom Plywood Plant Schedule – Upland and Dunegrass Plantings

Common Name	Scientific Name	Condition	Minimum Spacing (on center in feet)	Planting Notes	Quantity
Trees					
Douglas fir	<i>Pseudotsuga menziesii</i>	1 gallon	10 to 12	Plant individually	55
Shore pine	<i>Pinus contorta</i>	1 gallon	10 to 12	Plant individually	55
Black cottonwood	<i>Populus balsamifera</i>	1 gallon	10 to 12	Plant individually	55
Big-leaf maple	<i>Acer macrophyllum</i>	1 gallon	10 to 12	Plant individually	55
Total Trees					220
Shrubs					
Oceanspray	<i>Holodiscus discolor</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Vine maple	<i>Acer circinatum</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Red elderberry	<i>Sambucus racemosa</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Nootka rose	<i>Rosa nutkana</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Red-flowering currant	<i>Ribes sanguineum</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Thimbleberry	<i>Rubus parviflorus</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Salal	<i>Gaultheria shallon</i>	1 gallon	5 to 7	Plant in groups of 4 to 8	110
Douglas hawthorne ^a	<i>Crataegus douglasii</i>	1 gallon	3 to 5	Plant two rows deep in alternating groups of 6	110

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

Common Name	Scientific Name	Condition	Minimum Spacing (on center in feet)	Planting Notes	Quantity
Nootka rose ^a	<i>Rosa nutkana</i>	1 gallon	3 to 5	Plant two rows deep in alternating groups of 6	110
Total Shrubs					1,100
Herbs					
Dunegrass ^b	<i>Leymus mollis</i>	Division or plug	1 to 3	Plant in groups of 10 to 15	660
Coastal strawberry	<i>Fragaria chiloensis</i>	4-inch	3 to 5	Plant in groups of 4 to 8	605
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	4-inch	3 to 5	Plant in groups of 4 to 8	605
Total Herbs					1,870

^a For installation as a barrier planting along the perimeter of the buffer only.

^b For installation along the shoreline and slope between wetland and buffer only.

3. Plants shall be installed in groups or individually and arranged throughout the planting area using similar planting layout schematics shown on the Typical Planting Details.

C. Tree and Shrub Installation (between elevation of 8.85 and 11.35 feet):

1. Excavate planting pits as shown in the tree and shrub planting details. Scarify and loosen roots of containerized plant stock prior to planting.
2. Backfill planting pits with existing amended soils placed throughout the planting area. Mix the containerized stock soil with the amended soils placed on site prior to installation. No chemicals shall be added to the backfill soils.
3. Stake trees greater in height than 5 feet.
4. Water each plant thoroughly after planting in order to eliminate air pockets and aid in natural soil compaction.

D. Dunegrass Plant Installation (between elevation of 7.55 and 8.85 feet):

1. Excavate planting pits as shown in the groundcover planting details. Scarify and loosen roots of containerized plant stock prior to planting.

DIVISION 32 – EXTERIOR IMPROVEMENTS

Section 32 71 00 – Landscaping and Wetland Mitigation Area

2. Backfill planting pits with existing sand placed throughout the planting area. Mix the containerized stock soil with the amended sand placed on site prior to installation. No chemicals shall be added to the backfill material.
3. Water each plant thoroughly after planting in order to eliminate air pockets and aid in natural soil compaction.

3.04 IRRIGATION

- A. Contractor shall provide irrigation necessary for plant survival within the planting areas. Irrigation of the planting areas shall occur at a minimum of 4 times per month for the first 2 years following plant installation during May through September. Depending on precipitation and climate patterns during the third growing season, the Contractor shall operate the system into the third year on a more limited basis to promote optimal plant establishment and survival. Conditions that could require watering during the third growing season include anomalous precipitation during the spring or prolonged drought in the summer and fall.
- B. No irrigation source or water exists at the project site. The Contractor shall provide a portable method of irrigation and appropriate permits and hookups to fire hydrants on adjacent properties or use a water truck.

3.05 FENCING AND SIGNS

- A. Contractor shall install temporary fencing along the outside/landward edge of the wetland buffer/barrier planting area. The fence shall extend from the ordinary high water (OHW) line at the northern corner of the wetland mitigation area to the existing fence and slope along the southwestern property line. Fencing shall be: 1) chain link, 2) include light reduction slats, and 3) be a minimum of 6 feet tall. The fence shall be sturdy enough to withstand a period of 2 to 5 years before removal from the site. The fencing material shall conform to WSDOT SPEC 9-16.1(1) for post material, chain link fence fabric, tension wire, fittings and hardware, and concrete.
- B. Contractor shall install 4 permanent signs along the outside/landward edge of the wetland buffer/barrier planting area immediately adjacent to the temporary fence at an interval of approximately every 100 feet. Signage shall start and extend from the ordinary high water (OHW) line at the northern corner of the wetland mitigation area to the existing fence and slope along the southwestern property line. Signs shall: (1) conform to City of Anacortes critical area wetland protection standards, (2) be installed on sturdy 4x4 treated wood or metal posts, (3) face away from the wetland mitigation area, and (4) extend a minimum of 4 feet above

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

ground and be sunk at least 2 feet below ground. Sign posts shall be installed as permanent features and sturdy enough to withstand long-term environmental conditions at the site. Signs shall meet the following size and text requirements:

1. Size: 8 inch by 12 inch rectangle
 2. Color: Black lettering on azure blue background
 3. Wording: WETLAND BUFFER BOUNDARY, CITY OF ANACORTES PLANNING AND COMMUNITY DEVELOPMENT
- C. Contractor shall submit shop drawing of sign including list of all materials for approval by Ecology or Ecology's Representative prior to installation.

3.06 MAINTENANCE

- A. At a minimum, for the first 2-year guaranteed survival period, maintenance and contingency measures shall include, but are not limited to, irrigation, pruning of unhealthy or dead material, replacement of dead/dying or undesirable transplants with the appropriate vegetation, substitution of plant species, weeding and removal of noxious or invasive plants species throughout the planting areas.

3.07 HYDROSEEDING

- A. Hydroseeding applications shall conform to WSDOT SPEC 8-01.3(2)A, B, D, F, G, and H for seeding, fertilizing, mulching application, protection of seeded areas, and inspection. A standard erosion control seed mix shall be applied throughout the project site in areas that will not receive plantings and will not be used for stormwater treatment.
- B. All areas to be seeded shall be compacted and prepared unless otherwise specified by Ecology or Ecology's Representative. A cleated roller, crawler tractor, or similar equipment that forms longitudinal depressions at least 2-inches deep shall be used for compaction and preparation of the surface to be seeded. The entire area shall be uniformly covered with longitudinal depressions formed perpendicular to the natural flow of water. The soil shall be conditioned with sufficient water so the longitudinal depressions remain in the soil surface until the completion of seeding. Seeding shall not be done during windy weather or when the ground is frozen, excessively wet, or otherwise untillable.
- C. All seed shall conform to the current rules and regulations of the U.S. Department of Agriculture and be certified free of noxious, invasive, non-native seed or material toxic to plant growth and establishment. Seed shall be thoroughly pre-mixed and delivered to the project site. Appropriate documentation including tags showing the name and address of the

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

supplier, the net weight for each species of seed in the mix, and the guaranteed percentage for purity and germination for each species shall be furnished.

D. Seeding shall be performed using one or more of the following application methods:

1. An approved hydroseeder that utilizes water as the carrying agent and maintains continuous agitation through paddle blades, with options of combining seeding, tackifiers, and tracers;
2. Approved blower equipment with adjustable disseminating device capable of maintaining a constant, measured rate of material discharge that will ensure an even distribution of seed at the rate specified;
3. Approved power-drawn drilling equipment or seeders; and
4. Areas in which the above methods are impractical may be seeded by approved hand seeding methods.

E. Erosion Control Grass Seed Mixture

1. The following grass seed mixture shall be applied over the site, excluding the mitigation area and stormwater treatment area, and shall be applied at a minimum of 80 pounds per acre:

Festuca rubra (creeping red fescue) – 40 %
Lolium perenne (perennial ryegrass) – 40 %
Agrostis tenuis (colonial bentgrass) – 10 %
Trifolium repens (white Dutch clover) – 10 %

F. Treatment Swale Seed Mixture

1. The following seed mixture shall be applied over the Treatment Swale area as indicated in the Drawings at a minimum rate of 80 pounds per acre:

Holcus lanatus (velvetgrass)
Alopecurus geniculatus (water foxtail)
Glyceria occidentalis (western mannagrass)

2. Mix shall include equal amounts of each species identified.

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 32 71 00 – Landscaping and Wetland Mitigation Area

G. Bypass and Conveyance Swale Seed Mixture

1. The following seed mixture shall be applied over the Bypass and Conveyance Swale area as indicated in the Drawings at a minimum rate of 80 pounds per acre:

Festuca Pratensis (meadow fescue) – 75%

Agrostis Tenuis (colonial bentgrass) – 15%

Agrostis Gigantea (Redtop) – 10%

END OF SECTION

END OF DIVISION

**APPENDIX C
FORMS**



HARTCROWSER

Hart Crowser, Inc.
1700 Westlake Ave N, Suite 200
Seattle, Washington 98109-3056
FAX 206.328.5581
206.324.9530

Job No. 17800-04

Field Report No. _____

Page 1 of _____

DATE _____

S M T W Th F S

JOB Custom Plywood ARRIVAL TIME . _____

LOCATION Anacortes, WA DEPARTURE TIME _____

CLIENT WA Dept. of Ecology WEATHER _____

PURPOSE OF OBSERVATIONS _____

HC REPRESENTATIVE _____ HC PROJECT MANAGER C. Poulsen

CONTRACTOR Strider PERMIT NO. _____

CONTRACTOR REP. _____ JOB PHONE _____

This report presents opinions formed as a result of our observation of the contractor's activities relating to geotechnical engineering. We rely on the contractor to comply with the plans and specifications throughout the duration of the project irrespective of the presence of the Hart Crowser representative. The presence of our field representative will be for the purpose of providing observation and field testing. Our work does not include supervision or direction of the actual work of the contractor, nor the contractor's employees and agents. Neither the presence of our representative nor the observation and testing by our firm shall excuse the contractor in any way for defects discovered in the contractor's work. Our firm will not be responsible for job or site safety on this project. The conclusions and recommendations of this field report are subject to review by the Hart Crowser Project Manager.

SPECIFIC OBSERVATIONS:

Summary of Field Activities:

Communications/Coordination Notes:

Earthwork Activities:

Excavation Dewatering/POTW Treatment Activities:

Temporary Erosion and Sediment Control Activities/Inspection:

Landscaping/Wetlands Mitigation Activities:

Deviations from Plans and Specifications:

Requests for Information/Change Requests:

Other Issues:

Planned Activities/Approaching Milestones:

BY:

REVIEWED BY:

I have read and understand the content of this Field Report.

HART CROWSER REPRESENTATIVE

HART CROWSER PROJECT MANAGER

CONTRACTOR REPRESENTATIVE

**APPENDIX D
SAMPLING AND ANALYSIS PLAN/
QUALITY ASSURANCE PROJECT PLAN**

APPENDIX D

SAMPLING AND ANALYSIS PLAN/QUALITY ASSURANCE PROJECT PLAN

CUSTOM PLYWOOD SITE UPLAND REMEDIATION

D1.0 INTRODUCTION

This Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) was developed for the Washington State Department of Ecology (Ecology) for upland remediation performance and confirmation monitoring at the Custom Plywood site. This SAP/QAPP describes the sampling locations, field sampling procedures, laboratory analytical methods, data evaluation procedures, and quality control criteria to support the interim remedial activities.

The scope of work described in the SAP is designed to determine the extent of contamination during remediation and to address confirmation sampling and analysis.

D2.0 BACKGROUND

The Custom Plywood Site is one of several Anacortes Area Bay-Wide priority sites for Fidalgo/Padilla Bays being addressed by the Toxics Control Program (TCP) under the Puget Sound Initiative (PSI). The Site includes property owned by GBH covering approximately 6.6 acres of upland and 34 acres of intertidal and subtidal areas.

As described in the RI and CAP, the Custom Plywood Site was the location of lumber and plywood milling operations beginning in about 1900. Through the years, the property changed hands several times, and was rebuilt and added onto until Custom Plywood became an operating entity sometime before 1991. The facility was used as a sawmill and plywood manufacturing plant until most of the wooden structures in the main plant area, many of which were built in the 1940s, were consumed in a fire on November 28, 1992. The current Site layout is shown on Figure 1. Milling activities produced wood waste and chemical contaminants affecting Site soils and groundwater that are the focus of this EDR.

Interim remedial actions were conducted under WAC 173-340-515 (Independent Remedial Actions) on the upland portion of the Custom Plywood Site beginning in 1998. These interim actions included removal of soil impacted by hydraulic oil within the City of Anacortes right-of-way located immediately northwest of the GBH property in 1998 and removal of impacted soils from four areas where petroleum hydrocarbons and other constituents exceeded MTCA Method A cleanup levels in 2007. During the spring of 2011, the site owner

conducted demolition and limited piling removal to assist in preparing the uplands portion of the site for the remedial construction being conducted under this plan. Additional information on previous Site remedial actions is presented in the RI.

D2.1 Site Environmental Conditions

The upland area of the Custom Plywood property is currently undeveloped with remnant concrete building foundations and structures, pilings, concrete and wood debris, native and non-native grass and shrub vegetation, and wetlands. Former plywood milling operations produced copious amounts of wood waste fill placed in upland and aquatic portions of the Site over many years. Site fill soils consist of a heterogeneous mixture of silt, sand, and gravel with abundant near-surface debris and intermixed wood waste over native clay deposits. Upland fill materials exceed 15 feet in thickness in some areas and include general "upper" and "lower" fill units identified in the RI. Concrete, brick, and other debris are the distinguishing components of the upper unit, while wood waste is more prevalent in the lower unit.

Shallow, perched groundwater is present at the Site and is tidally affected in nearshore areas. As reported in the RI, groundwater has been encountered at depths ranging from approximately 5 to 6 feet below ground surface (bgs) during low tide, and within 2 feet of ground surface at high tide in some nearshore locations. Further monitoring of the variability of groundwater level elevations has reportedly not been conducted.

The northwestern portion of the property is being used as a temporary boat storage yard. The remnants of former structures, including concrete foundations and pilings and abandoned tanks from previous industrial activities, are scattered across the property. Portions of some of the aboveground concrete foundations have been removed from the property. Several debris piles containing wood, metal, and other material are located throughout the property. Most of the surface debris at the site has been cleared during the spring 2011 site preparation activities. This also included demolition and stockpiling of the remaining concrete structure and foundations on the site. Approximately 970 wooden pilings are currently estimated to be present in the upland portion of the GBH property. The condition and number of creosote-treated pilings is uncertain. A limited number of pilings were pulled and stockpiled during the spring 2011 site preparation work.

Five wetland areas (Wetlands A through E) are located within the southern portion of the property. These wetlands were delineated and their boundaries accepted by the US Army Corps of Engineers (USACE) and Ecology's Shorelands

and Environmental Assistance (SEA) Program. Wetlands A (120 square feet [sf] in area), B (124 sf in area), and D (9,910 sf in area) are freshwater wetlands, and Wetlands C (367 sf in area) and E (1,389 sf in area) are estuarine wetlands.

The shoreline of the Site contains industrial debris and significant quantities of naturally occurring woody debris. Woody debris ranges in size from sawdust to larger mill end remnants and logs. Active erosion is occurring along the northeast and central portion of the property where storm events and long-period waves have locally destabilized the shoreline (refer to Appendix B-2 of the FS). Site conditions show an actively eroding shoreline upon which ecology blocks and rubble were placed to help stabilize the shoreline following inundation during a high wave storm event in the winter of 2010.

D2.2 Site Soil and Groundwater Contaminants

The primary constituents of potential concern (COPCs) and key indicator hazardous substances in soil identified by the RI are diesel- and oil-range total petroleum hydrocarbons (TPH), inorganic constituents (arsenic, cadmium, copper, chromium, lead, mercury, nickel, selenium, silver, and zinc), and select semivolatile organic compounds (SVOCs)—primarily carcinogenic polycyclic aromatic hydrocarbons (cPAHs). Of these, oil-range TPH had the most significant relative exceedance of preliminary MTCA screening levels with concentrations up to 164,000 milligrams per kilogram (mg/kg) identified near the press pits.

To date, soil samples have identified polychlorinated biphenyls (PCBs) and dioxins/furans each exceeding their respective screening levels at only one location on the Site. Where the concentrations of petroleum hydrocarbons are highest, some SVOCs (e.g., phenanthrene, fluoranthene, and pyrene) were detected. Creosote-treated pilings are an additional potential source of cPAHs in the upland (and aquatic) environments. PCBs, dioxin/furans, and other compounds were identified infrequently and generally at concentrations below screening levels. These compounds were not considered to be key indicator hazardous substances in the RI or FS. The RI provides additional detail regarding the extent of MTCA screening level exceedances, and further information on the primary and secondary sources of upland contaminants is presented in the CAP.

Limited groundwater data were reported in the RI for establishing indicator hazardous substances. Several constituents were detected during 2008 and 2009 sampling and testing of Site groundwater monitoring wells and seeps that were considered indicator hazardous substances. These included diesel- and oil-range TPH, cPAHs, and arsenic, copper, nickel, and zinc. The RI report provides further information on the frequency and locations of MTCA screening level

exceedances for these groundwater constituents, although monitoring data are somewhat limited. Cadmium, lead, and mercury were COPCs identified for soil, and are included as additional COPCs for groundwater based on potential exposure pathways associated with Site construction activities.

D3.0 PROJECT OBJECTIVES AND SUMMARY

As outlined in the Engineering Design Report (EDR) and edited based on current knowledge of the Site/Project, the scope of work for the Upland Remediation consists of the following:

- Areas of contaminated soil identified at the Site will be removed to the approximate extent shown on the EDR Phase I drawings, or until analytical results for performance samples show that cleanup levels are achieved at the excavation limits.
- Performance monitoring will be conducted during the excavation work. Areas where field screening or performance sample analytical results show residual contamination remains above cleanup levels, additional lateral excavation may be performed as necessary to achieve compliance with cleanup levels.
- Target excavation depths range from 4 to 8 feet in the shoreline protection zone, and from 4 to 6 feet elsewhere. If necessary, the depth of excavation in the shoreline protection zone may extend to a maximum of 10 feet (human health point of compliance [POC]) or to a maximum of 6 feet elsewhere in the uplands (ecological POC), as described in the FS and CAP.

D4.0 PROJECT TEAM AND RESPONSIBILITIES

Key staff members and their project functions are listed below.

- Ecology: Hun Seak Park/Sandra Caldwell Project Manager
- Ecology's representatives (Hart Crowser):
 - Steve Hoffman, PE, Senior Technical Reviewer
 - Chris Poulsen, PE, Project Manager
 - Roger McGinnis, PhD, Project Chemist
 - Chris Poulsen, Paul Kastens, Celina Abercrombie - On-site Construction Manager

Chemical analysis will be primarily performed by On-Site Environmental laboratory located in Redmond, Washington. On-Site is accredited by the State of Washington.

D5.0 FIELD SAMPLING

D5.1 Performance Sampling Program

Performance sampling will be performed during construction to help Ecology make real-time decisions about the extent of contaminated soil removal. The side walls and floor of excavated areas will be sampled and samples will be analyzed for diesel- and oil-range TPH by Ecology Method NWTPH-Dx using 24-hour laboratory turnaround times.

Samples will be collected from the excavator bucket or from a pile placed immediately adjacent to the excavation by the excavator. If samples are collected from the excavator bucket, care will be taken to collect soil from the center that is not in contact with the bucket to prevent cross contamination of samples. The excavated soil will be allowed to drain prior to placement in jars. Each sampling location will be surveyed using the Contractor's total station.

The samples will be sent by courier service to OnSite Environmental's Redmond, Washington, laboratory every other work day. Based on a 2- to 4-work day turnaround time, this schedule allows up to one additional day to review the laboratory results, make recommendations, and receive Ecology approval.

If detected, TPH concentrations will be compared to screening/action levels established in the SAP and recommendations/decisions regarding additional excavation can be made. The decision to perform additional excavation will be based on a matrix of factors including: existing extents of excavation (horizontal and vertical extents), magnitude of action level exceedance, available funds in overall project budget and schedule. The CM will work closely with Ecology to make recommendations in a timely manner with all factors being considered in the overall scope of the project.

D5.2 Confirmation Sampling Program

Once performance sampling has indicated that no additional excavation is necessary, or the practical extent of excavation has been reached, confirmation sampling will be conducted to document the condition of the remaining site soil. We assume that the "passing" performance sample collected at the excavation limits will serve as the confirmation sample with regards to NWTPH-Dx

concentrations. Therefore, it is anticipated that confirmation samples will be analyzed for total metals (arsenic, cadmium, copper, lead, mercury, nickel, and zinc) by EPA 6010/7471A, and cPAHs by EPA Method 8270D-SIM using standard seven-business day turnaround times.

D5.3 Equipment Decontamination Procedures

All reusable or non-dedicated field equipment (e.g., sampling spoons, mixing bowls, spade/shovel) will be decontaminated prior to reuse. Equipment will be decontaminated in the following manner:

- Nitrile gloves (or equivalent) must be worn during the decontamination process.
- Excess soil will be removed using paper towels or by dry brushing.
- Rinse with potable water, collecting rinse water in one of the decontamination buckets.
- Wash with a spray bottle containing a nonphosphate detergent and water and clean with the stiff-bristle brush until all evidence of soil or other material has been removed.
- Rinse with deionized or distilled water three times, ensuring that all detergent from the previous step has been removed.
- Place the equipment on a piece of aluminum foil to air dry.
- A trash bag will be provided for waste paper towels, aluminum foil, and used nitrile gloves.

The excavator bucket will not be decontaminated between collecting sidewall and bottom samples. Care will be taken to collect soil that is not in contact with the excavator bucket to prevent cross contamination of samples.

D5.4 Investigation-Derived Waste Management

Contaminated or potentially contaminated materials generated during field work will be managed in accordance with applicable federal, state, and local regulations. IDW will be handled in accordance with applicable regulations and in a manner consistent with ultimate disposition.

IDW is anticipated to include the following categories of waste:

- Non-hazardous solid waste, including personal protective equipment (PPE; e.g., gloves), paper towels, other disposable materials, etc.;
- Soil IDW from soil; and
- Liquid IDW from decontamination wastewater.

Non-hazardous solid waste will be double-bagged in heavy duty garbage bags, sealed with duct tape, and disposed of in an on-site dumpster for solid waste disposal in a municipal landfill.

Soil and liquid IDW will be segregated into separate, labeled 55-gallon US Department of Transportation-approved drums, which will be left on site for temporary storage pending receipt of laboratory analytical testing results from the soil and groundwater samples. Hart Crowser will coordinate transportation and disposal of this waste; Ecology is the generator and will sign all manifests, bills of lading, profile sheets, and any other shipping documents.

D5.5 Sample Containers and Labels

Sample container requirements vary according to analyte. Precleaned sample containers will be provided by the analytical laboratory. Sample containers shall be cleaned following the requirements described in Specifications and Guidance for Contaminant-Free Sample Containers (EPA 1992a, OSWER Directive 92.0-05a). Required sample containers, preservatives, and holding times are summarized in Table 1.

D5.6 Field Documentation

Field notes will be maintained during sampling and processing operations. The following will be included in the field notes:

- Site name and location;
- Date and time;
- Names of the person collecting and logging the samples;
- Weather conditions;
- Date, time, and identification of each sample, including number of jars and tests requested;

- Details of sample collection, including GPS coordinates; actual sampling point locations will be recorded on a sketch map;
- Any deviation from the approved SAP; and
- General observations.

D6.0 SAMPLE HANDLING PROCEDURES

D6.1 Sample Preservation and Holding Times

Samples will be preserved according to the requirements of the specific analytical methods to be employed, and all samples will be extracted and analyzed within method-specified holding times. Required sample containers, preservatives, and holding times are summarized in Table 1.

D6.2 Chain of Custody Procedures

Chain of custody forms will be used to document the collection, custody, and transfer of samples from their initial collection location to the laboratory, and their ultimate use and disposal. Entries for each sample will be made on the custody form after each sample is collected.

Sample custody procedures will be followed to provide a documented record that can be used to follow possession and handling of a sample from collection through analysis. A sample is considered to be in custody if it meets at least one of the following conditions:

- The sample is in someone's physical possession or view;
- The sample is secured to prevent tampering (i.e., custody seals); and/or
- The sample is locked or secured in an area restricted to authorized personnel.

A chain of custody form will be completed in the field as samples are packaged. At a minimum, the information on the custody form shall include the sample number, date and time of sample collection, sampler, analysis, and number of containers. Two copies of the custody form will be placed in the cooler prior to sealing for delivery to the laboratory with the respective samples. The other copy will be retained and placed in the project files after review by the Project

Chemist. Custody seals will be placed on each cooler or package containing samples so the package cannot be opened without breaking the seals.

D6.3 Delivery of Samples to Analytical Laboratory

After sample containers have been filled, they will be packed on ice in coolers. The coolers will be transferred to On-Site laboratory in Redmond, Washington, for chemical analysis. Specific procedures are as follows:

- Samples will be packaged and shipped in accordance with U.S. Department of Transportation regulations as specified in 49 CFR 173.6 and 49 CFR 173.24;
- Individual sample containers will be packed to prevent breakage;
- The coolers will be clearly labeled with sufficient information (name of project, time and date container was sealed, person sealing the cooler, and the Hart Crowser office name and address) to enable positive identification;
- A sealed envelope containing custody forms will be enclosed in a plastic bag and taped to the inside lid of the cooler;
- Signed and dated custody seals will be placed on all coolers prior to shipping;
- Samples will either be shipped by courier or will be hand delivered to the laboratory by Hart Crowser personnel; and
- Upon transfer of sample possession to the testing laboratories, the custody form will be signed by the persons transferring custody of the coolers. Upon receipt of samples at the laboratory, the shipping container custody seal will be broken and the laboratory sample-receiving custodian will compare samples to information on the chain of custody form and record the condition of the samples received.

D7.0 LABORATORY ANALYTICAL METHODS

Samples will be analyzed according to EPA methods as described in Analytical Methods for Petroleum Hydrocarbons (Ecology 1977) and Update III to Test Methods for Evaluating Solid Waste; Physical/Chemical Methods, SW-846 (EPA 1986) as summarized below.

- Diesel and oil-range petroleum hydrocarbons by Ecology's NWTPH-Dx methods;
- Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270D-SIM;
- Metals (As, Cd, Cr, Cu, Pb, Ag, Zn) by EPA Method 6010B;
- Mercury by EPA Method 7471A (soil) and EPA Method 1631 (water).

Laboratory methods, practical quantitation limits (PQL; reporting limits) and cleanup levels are presented in Table 2. The individual analytes requested for the different tests are also listed in Table 2.

D8.0 QUALITY ASSURANCE AND QUALITY CONTROL

The quality of analytical data generated is assessed by the frequency and type of internal QC checks developed for analysis type. The quality of laboratory measurements will be assessed by reviewing results for analysis of method blanks, matrix spikes, duplicate samples, laboratory control samples, surrogate compound recoveries, instrument calibrations, performance evaluation samples, interference checks, etc., as specified in the analytical methods to be used. The following general procedures will be followed for all laboratory analyses:

- Laboratory blank measurements at a minimum frequency of 5 percent or one per batch of 20 samples or fewer for each matrix;
- Matrix spike (MS) analysis to assess accuracy at a minimum frequency of 5 percent or one per batch of 20 samples or fewer for each matrix;
- Matrix spike duplicate or laboratory duplicate to assess precision at a minimum frequency of 5 percent or one per batch of 20 samples or fewer for each matrix;
- Surrogate or labeled compound spikes in each sample for organics analysis to assess accuracy; and
- Laboratory control sample analysis or a certified reference material (CRM), if appropriate CRM is available, with each analytical batch to assess accuracy in the absence of any matrix effect at a minimum frequency of 5 percent or one per batch of 20 samples or fewer for each matrix. Acceptance criteria for the CRM results (based on the 95 percent confidence interval) must be provided by the laboratory. If results fall outside the acceptance range, the

laboratory may be required to re-extract and reanalyze the associated samples.

Laboratory quality control procedures, criteria, and corrective action are summarized in Tables 3 through 5 for the various analyses.

D8.1 Data Quality Indicators

The overall quality assurance objectives for field sampling, field measurements, and laboratory analysis are to produce data of known and appropriate quality. The procedures and quality control checks specified herein will be used so that known and acceptable levels of accuracy and precision are maintained for each data set. This section defines the objectives for accuracy and precision for measurement data. These goals are primarily expressed in terms of acceptance criteria for the quality control checks performed.

The quality of analytical data generated is controlled by the frequency and type of internal quality control checks developed for analysis type. Laboratory results will be evaluated by reviewing results for analysis of method blanks, matrix spikes, duplicate samples, laboratory control samples, calibrations, performance evaluation samples, interference checks, etc., as specified in the analytical methods to be used.

D8.1.1 Precision

Precision is the degree of reproducibility or agreement between independent or repeated measurements. Analytical variability will be expressed as the relative percent difference (RPD) between laboratory replicates and between matrix spike and matrix spike duplicate analyses. RPD will be used to measure precision for this investigation and is defined as follows:

$$RPD = \frac{(D_1 - D_2)}{(D_1 + D_2)/2} \times 100$$

Where,

D_1 = Sample value
 D_2 = Duplicate sample value

D8.1.2 Accuracy

Accuracy is the agreement between a measured value and its true or accepted value. While it is not possible to determine absolute accuracy for environmental samples, the analysis of standards and spiked samples provides an indirect assessment of accuracy.

Laboratory accuracy will be assessed as the percent recovery of matrix spikes, matrix spike duplicates, surrogate spiked compounds (for organic analyses), and laboratory control samples. Accuracy will be defined as the percentage recoverable from the true value and is defined as follows:

$$\% \text{Recovery} = \frac{(\text{SSR} - \text{SR})}{\text{SA}} \times 100$$

Where,

SSR = spiked sample result

SR = sample results (not applicable for surrogate recovery)

SA = amount of spike added

D8.1.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Care will be taken in the design of the sampling program to confirm sample locations are selected properly, sufficient numbers of samples are collected to accurately reflect conditions at the site, and samples are representative of sampling locations. A sufficient volume of sample will be collected at each sampling point to minimize bias or errors associated with sample particle size and heterogeneity.

D8.1.4 Completeness

Completeness is the percentage of measurements made that are judged to be valid. Completeness will be calculated separately for each analytical group, e.g., metals or PAHs. Results must also contain all quality control check analyses required to verify the precision and accuracy of results to be considered complete. Data qualified as estimated during the validation process will be considered complete. Nonvalid measurements will be results that are rejected during the validation review or samples for which no analytical results were

obtained. Completeness will be calculated for each analysis using the following equation:

$$\text{Completeness} = \frac{\text{valid data points obtained}}{\text{total data points planned}} \times 100$$

The target goal for completeness is a minimum of 95 percent. Completeness will be monitored on an ongoing basis so that archived sample extracts can be reanalyzed, if required, without remobilization.

D8.1.5 Comparability

Comparability is the degree to which data from separate data sets may be compared. For instance, sample data may be compared to data from background locations, to established criteria or guidance, or to data from earlier sampling events. There has been little consistency among historical studies used to estimate background chemical concentrations. For example, intervals defined as surface soil have varied often ranging from 1 inch to 6 or more inches in depth. In addition, analytical methods have not been consistent across studies.

Sample collection will be performed in a consistent manner by field personnel at all sampling locations to verify all data collected as part of this study are comparable. Comparability is attained by careful adherence to standardized sampling and analytical procedures, based on rigorous documentation of sample locations (including depth, time, and date).

The use of standardized methods to collect and analyze samples, along with laboratory instrument calibration against National Institute for Standards and Technology (NIST) and US EPA traceable standards will also confirm comparability, particularly for comparison of data collected from this study (within-study comparability).

Comparability also depends on other data quality characteristics. Only when data are judged to be representative of the environmental conditions, and when precision and accuracy are known, can data sets be compared with confidence.

D8.2 Data Quality Assurance Review

A project chemist at Hart Crowser will perform an independent data quality review of the chemical analytical results provided by On-Site. This report will assess the adequacy of the reported detection limits in achieving the project screening levels for soil; the precision, accuracy, representativeness, and

completeness of the data; and the usability of the analytical data for project objectives. Exceedances of analytical control limits will be summarized and evaluated.

A data evaluation review will be performed on all results using QC summary sheet results provided by the laboratory for each data package. The data evaluation review is based on the Quality Control Requirements previously described and follows the format of the EPA National Functional Guidelines for Inorganic (EPA 2010) Superfund Data Review and EPA National Functional Guidelines for Organic (EPA 2008) Superfund Data Review modified to include specific criteria of individual analytical methods. The laboratory will be contacted to obtain raw data (instrument tuning, calibrations, instrument printouts, bench sheets, and laboratory worksheets) for review if any problems or discrepancies are discovered during the routine evaluation. The following is an outline of the data evaluation review format:

- Verify that sample numbers and analyses match the chain of custody request;
- Verify sample preservation and holding times;
- Verify that laboratory blanks were performed at the proper frequency and that no analytes were present in the blanks;
- Verify that laboratory duplicates, matrix spikes, surrogate compounds, and laboratory control samples were run at the proper frequency and that control limits were met; and
- Verify that required detection limits have been achieved.

Data qualifier flags, beyond any applied by the laboratory, will be added to sample results that fall outside the QC acceptance criteria. An explanation of data qualifiers to be applied during the review is provided below:

- U** The compound was analyzed for but was not detected. The associated numerical value is the sample reporting limit.
- J** The associated numerical value is an estimated quantity because QC criteria were slightly exceeded.
- UJ** The compound was analyzed for, but not detected. The associated numerical value is an estimated reporting limit because QC criteria were not met.

- T** The associated numerical value is an estimated quantity because reported concentrations were less than the practical quantitation limit (lowest calibration standard).
- R** Data are not usable because of significant exceedance of QC criteria. The analyte may or may not be present; resampling and/or reanalysis are necessary for verification.

D9.0 DATA ANALYSIS AND REPORTING

D9.1 Laboratory Reports

The laboratory data reports will consist of summary sample and quality control results to allow independent data review of analytical results. Each laboratory data report will include the following:

- Case narrative identifying the laboratory analytical batch number, matrix and number of samples included, analyses performed and analytical methods used, and description of any problems or exceedance of QC criteria and corrective action taken. The laboratory manager or their designee must sign the narrative.
- Copy of chain of custody forms for all samples included in the analytical batch.
- Tabulated sample analytical results with units, data qualifiers, percent solids, sample weight or volume, dilution factor, laboratory batch and sample number, Hart Crowser sample number, and dates sampled, received, extracted, and analyzed all clearly specified.
- Blank summary results indicating samples associated with each blank.
- MS/MSD result summaries with calculated percent recovery and relative percent differences.
- Surrogate compound recoveries, when applicable, with percent recoveries.
- Laboratory control sample results, when applicable, with calculated percent recovery.
- Performance evaluation or certified reference material sample results, if applicable, with acceptance limits.

- Electronically formatted data deliverable (CD) results.

D9.2 Hart Crowser Reports

At the end of construction, Hart Crowser will prepare a Construction Completion Report. The report will present, in a single package, all the daily field reports, site photographs, phone records, sampling results, and other CM documentation. We assume this will be in addition to the Contractor's Construction Completion Report and will only contain Hart Crowser oversight documentation, not duplicate information that the Contractor is required to provide as part of the Contract Documents.

D10.0 REFERENCES

Ecology 1997. Analytical Methods for petroleum Hydrocarbons. Publication No. ECY 97-602. June 1997.

EPA 1986. Test Methods for Evaluating Solid Waste; Physical/Chemical Methods, SW-846, 3rd Update.

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Table D-1 - Storage Temperatures and Maximum Holding Times for Physical/Chemical Analyses

Sample Type	Sample Container	Sample Preservation Technique	Maximum Holding Time
Total solids	Included in metals or organics container	Cool, < 6°C Freeze, -18°C	14 days 6 months
Diesel and heavy oil range petroleum hydrocarbons	Soil - 1-4 oz wide mouth glass jar	Cool to < 6°C	14 days
Metals (except mercury)	Soil - 1-4 oz wide mouth glass jar	Cool, < 6°C Freeze, -18°C	6 months 1 years
Total Mercury	Soil - Included in metals container	Freeze, -18°C	28 days
Semivolatile organic compounds (SVOCs)	Soil - 1-16 oz wide mouth glass jar	Cool, < 6°C Freeze, -18°C	14 days 1 year
- after extraction		Cool, < 6°C	40 days

Table D-2 - Analytical Methods, Practical Quantitation Limits, and Soil Cleanup Levels

Soil Constituent Key Indicator Hazardous Substances Identified in Bold	Preparation Method	Analytical method	Practical Quantitation Limit	Cleanup Level	Regulatory Criteria				National Background ^c
					MTCA Method B Soil-Direct Contact Unrestricted Land Use Carcinogen	MTCA Method B Soil-Direct Contact Unrestricted Land Use Noncarcinogen	MTCA Method B Protective of Groundwater as Marine Surface Water ^a	MTCA Method B Protective of Terrestrial Ecological Receptors ^b	
Total Metals in mg/kg									
Arsenic	EPA 3050B	EPA 6010B	5	8.47	0.67	24	0.08	20	8.47
Cadmium	EPA 3050B	EPA 6010B	0.2	1.2	2 ^d	80	1.21	25	1.2
Copper	EPA 3050B	EPA 6010B	0.2	52.9	NE	3,000	1.07	100	52.9
Lead	EPA 3050B	EPA 6010B	2	220	250 ^d	NE	1,620	220	NE
Mercury	EPA 7471A	EPA 7471A	0.05	0.13	2 ^d	24	0.03	9	0.13
Nickel	EPA 3050B	EPA 6010B	0.3	54.2	NE	1,600	10.7	100	54.2
Zinc	EPA 3050B	EPA 6010B	0.60	101	NE	24,000	101	270	85.6
TPH in mg/kg									
Diesel-range hydrocarbons	NWTPH-Dx	NWTPH-Dx	5	1,700	2,000 ^d	NE	NE	1,700	
Oil-range hydrocarbons	NWTPH-Dx	NWTPH-Dx	5	2000	2,000 ^d	NE	NE	8500	
SVOCs in mg/kg									
Acenaphthene	EPA 3540C	EPA 8270D-SIM	0.005	100.99	NE	4,800	100.99	NE	
Acenaphthylene	EPA 3540C	EPA 8270D-SIM	0.005	NE	NE	NE	NE	NE	
Anthracene	EPA 3540C	EPA 8270D-SIM	0.005	18,560	NE	24,000	18,560	NE	
Benzo[a]anthracene	EPA 3540C	EPA 8270D-SIM	0.005	0.13	NE	NE	0.13	NE	
Benzo[a]pyrene	EPA 3540C	EPA 8270D-SIM	0.005	0.14	0.14	NE	0.35	30	
Benzo[b]fluoranthene	EPA 3540C	EPA 8270D-SIM	0.005	0.43	NE	NE	0.43	NE	
Benzo(g,h,i)perylene	EPA 3540C	EPA 8270D-SIM	0.005	NE	NE	NE	NE	NE	
Benzo[k]fluoranthene	EPA 3540C	EPA 8270D-SIM	0.005	0.43	NE	NE	0.43	NE	
Chrysene	EPA 3540C	EPA 8270D-SIM	0.005	0.14	NE	NE	0.14	NE	
Dibenzo[a,h]anthracene	EPA 3540C	EPA 8270D-SIM	0.005	0.65	NE	NE	0.65	NE	
Fluoranthene	EPA 3540C	EPA 8270D-SIM	0.005	137.8	NE	3,200	137.8	NE	
Fluorene	EPA 3540C	EPA 8270D-SIM	0.005	837.4	NE	3,200	837.4	NE	
Indeno[1,2,3-cd]pyrene	EPA 3540C	EPA 8270D-SIM	0.005	1.26	NE	NE	1.26	NE	
Naphthalene	EPA 3540C	EPA 8270D-SIM	0.005	137.4	NE	1,600	137.4	NE	
Phenanthrene	EPA 3540C	EPA 8270D-SIM	0.005	NE	NE	NE	NE	NE	
Pyrene	EPA 3540C	EPA 8270D-SIM	0.005	2,400	NE	2,400	5,456	NE	
Total cPAHs - benzo(a)pyrene TEQ				0.14	0.14	NE	0.35	30	

Notes

^a Calculated using fixed-parameter three-phase partitioning model WAC 173-340-747(4).

^b Based on simplified terrestrial evaluation in WAC 173-340-7492, criteria listed in Table 749-2 for all constituents except TPH. TPH criteria based on bioassay data reported by AMEC (2010).

^c The screening level adjusted for national background concentrations within Western Washington as reported by Ecology (1994).

^d MTCA Method A value.

mg/kg = milligrams per kilogram

NE = Not established

SVOC = semivolatile organic compounds

TEQ = toxicity equivalent concentration

TPH = total petroleum hydrocarbons

Table D-3 – Quality Control Procedures, Criteria, and Corrective Actions for TPH-Dx Analysis

Hydrocarbons NWTPH-Dx			
Laboratory Quality Control			
Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
Method blank	1 per batch of every 20 or fewer samples	All analytes < reporting limit	Re-extract and reanalyze associated samples unless concentrations are > 5 x blank level
Initial calibration	5-point external calibration prior to analysis of samples	%RSD < 25%	Recalibrate instrument
Continuing calibration	Every 10 samples with mid-range standard	% Difference < 20% of initial calibration	Recalibrate instrument and re-analyze affected samples
System monitoring compounds (surrogates)	o-Terphenyl; Every lab and field sample	50 – 150% recovery	Evaluate data for useability
Laboratory duplicates	1 per batch of every 10 or fewer samples	None specified	Evaluate data for useability
Retention time windows	All samples and continuing calibration checks	±0.06 relative retention time units (sample and standard)	Reanalyze affected samples

Table D-4 - Quality Control Procedures for Metal Analyses

Quality Control Procedure	Frequency	Control Limit	Corrective Action
Instrument Quality Assurance/Quality Control			
Initial Calibration	Daily	Correlation coefficient ≥ 0.995	Laboratory to optimize and recalibrate the instrument and reanalyze any affected samples
Initial Calibration Verification	Immediately after initial calibration	90 to 110 % recovery for ICP-AES, ICP-MS, and GFAA (80 to 120 % for mercury), or performance-based intralaboratory control limits, whichever is lower	Laboratory to resolve discrepancy prior to sample analysis
Continuing Calibration Verification	After every 10 samples or every 2 hours, whichever is more frequent, and after the last sample	90 to 110 % recovery for ICP-AES and GFAA, 85 to 115 % for ICP-MS (80 to 120 % for mercury)	Laboratory to recalibrate and reanalyze affected samples
Initial and Continuing Calibration Blanks	Immediately after initial calibration, then 10 percent of samples or every 2 hours, whichever is more frequent, and after the last sample	Analyte concentration < PQL	Laboratory to recalibrate and reanalyze affected samples
ICP Interelement Interference Check Samples	At the beginning and end of each analytical sequence or twice per 8 hour shift, whichever is more frequent	80 to 120 percent of the true value	Laboratory to correct problem, recalibrate, and reanalyze affected samples
Method Quality Assurance/Quality Control			
Holding Times	Not applicable	See Table 2	Qualify data or collect fresh samples
Detection Limits	Not applicable	See Table 1	Laboratory must initiate corrective actions and contact the QA/QC coordinator and/or the project manager immediately
Method Blanks	One per sample batch or every 20 samples, whichever is more frequent	Analyte concentration \leq PQL	Laboratory to redigest and reanalyze samples with analyte concentrations < 10 times the highest method blank
Analytical (Laboratory) Replicates and Matrix Spike Duplicates	One duplicate analysis with every sample batch or every 20 samples, whichever is more frequent	Soil - RPD \leq 35 % applied when the analyte concentration is > PQL	Laboratory to redigest and reanalyze samples if analytical problems suspected, or to qualify the data if sample homogeneity problems suspected and the project manager consulted

Table D-4 - Quality Control Procedures for Metal Analyses

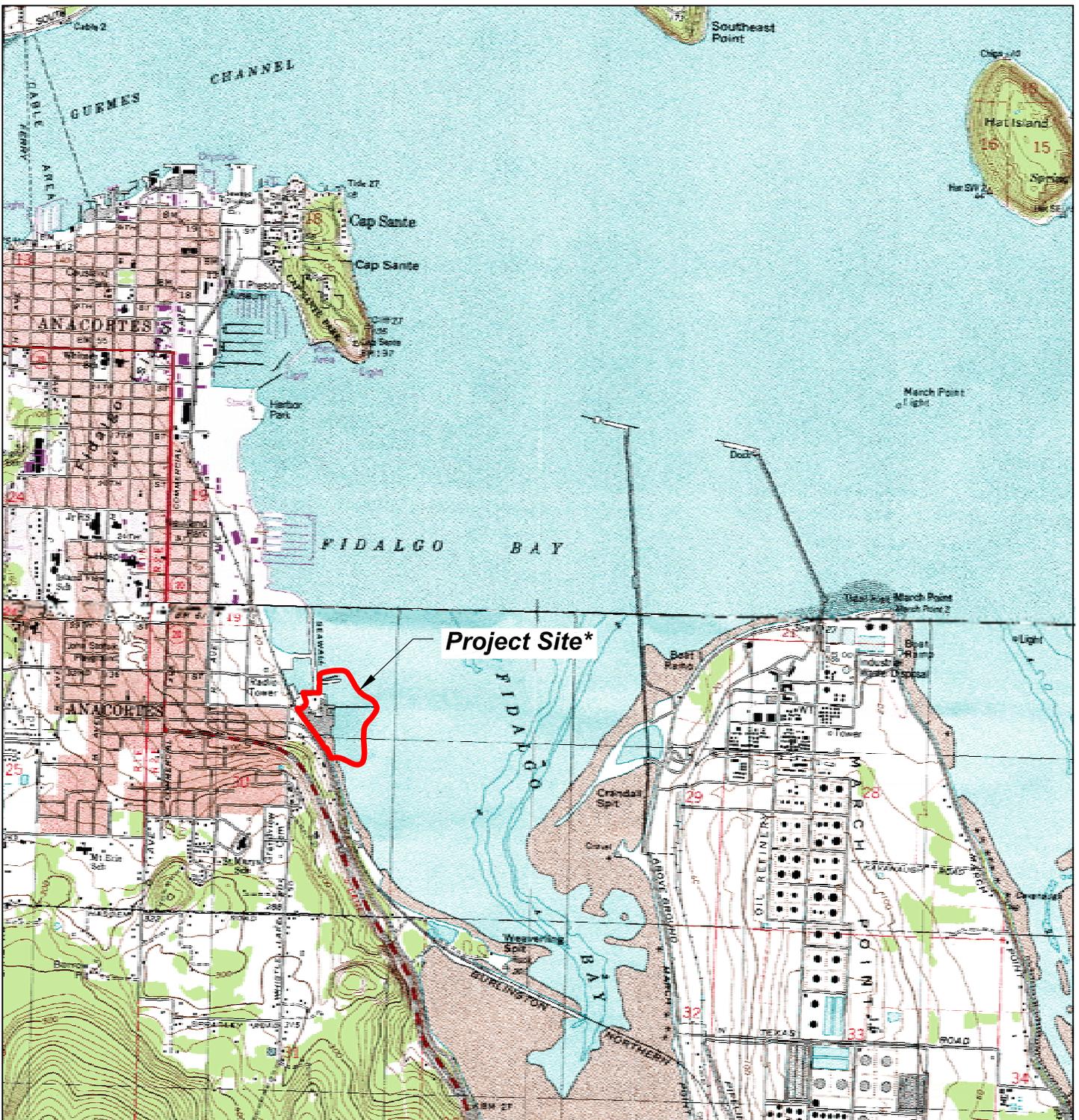
Quality Control Procedure	Frequency	Control Limit	Corrective Action
Matrix Spikes	One per sample batch or every 20 samples, whichever is more frequent	75 to 125 % recovery applied when the sample concentration is < 4 times the spiked concentration for a particular analyte	Laboratory may be able to correct or minimize problem; or qualify and accept data
Laboratory Control Samples, Certified or Standard Reference Material	Overall frequency of 5 percent of field samples	80 to 20 % recovery, or performance based intralaboratory control limits, whichever is lower	Laboratory to correct problem to verify the analysis can be performed in a clean matrix with acceptable precision and recovery; then reanalyze affected samples

Table D-5 – Quality Control Procedures for Semi-volatile Organic Analyses

Quality Control Procedure	Frequency	Control Limit	Corrective Action
Instrument Quality Assurance/Quality Control			
Instrument Performance Check (Tuning)	Prior to initial calibration and every 12 hours	See Method 8270D: Sections 11.3.1 and 11.4.1 and Table 4 and 5	Retune and recalibrate instrument
Initial Calibration	See Method 8270D: Sections 11.3	< 20% relative percent difference	Laboratory to recalibrate and reanalyze affected samples
Continuing Calibration	Every 12 hours	See Method 8270D: Sections 11.4 < 20% percent difference	Laboratory to recalibrate if correlation coefficient or response factor does not meet method requirements
Internal Standards	All samples and calibration standards	Areas within - 50% to + 150% of initial calibration	Reanalyze affected samples
Method Quality Assurance/Quality Control			
Holding Times	Not applicable	See Table 2	Qualify data or collect fresh samples in cases of extreme holding time or temperature exceedance
Detection Limits	Annually	See Table 1	Laboratory must initiate corrective actions (which may include additional cleanup steps as well as other measures, see Table 4) and contact the QA/QC coordinator and/or project manager immediately.
Method Blanks	One per sample batch or every 20 samples, whichever is more frequent, or when there is a change in reagents	Analyte concentration < PQL	Laboratory to eliminate or greatly reduce laboratory contamination due to glassware or reagents or analytical system; reanalyze affected samples
Analytical (Laboratory) Replicates and Matrix Spike Duplicates	One duplicate analysis with every sample batch or every 20 samples, whichever is more frequent; Use analytical replicates when samples are expected to contain target analytes. Use matrix spike duplicates when samples are not expected to contain target analytes	Performance based intralaboratory control limits	Laboratory to redigest and reanalyze samples if analytical problems suspected, or to qualify the data if sample homogeneity problems suspected and the project manager consulted
Matrix Spikes	One per sample batch or every 20 samples, whichever is more frequent; spiked with the same analytes at the same concentration as the LCS	Performance based intralaboratory control limits	Matrix interferences should be assessed and explained in case narrative accompanying the data package.

Table D-5 – Quality Control Procedures for Semivolatile Organic Analyses

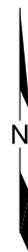
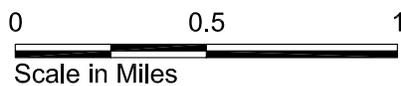
Quality Control Procedure	Frequency	Control Limit	Corrective Action
Surrogate Spikes	Added to every organics sample as specified in analytical protocol	Performance based intralaboratory control limits	Follow corrective actions specified in Method 8270.
Laboratory Control Samples (LCS), Certified or Standard Reference Material	One per analytical batch or every 20 samples, whichever is more frequent	Compound-specific, recovery and relative standard deviation for repeated analyses should not exceed the control limits specified in the method or performance-based intralaboratory control limits, whichever is lower	Laboratory to correct problem to verify the analysis can be performed in a clean matrix with acceptable precision and recovery; then reanalyze affected samples



Source: Base map prepared from USGS 7.5-Minute Series Topographic Map, Anacortes North and Anacortes South Quadrangles.



* Represents upland and aquatic portions of the site included with current CAP.



Custom Plywood Site
Anacortes, Washington

Vicinity Map

17800-04 (SAP/QAPP)

6/11



Figure

D-1



Target Excavation Area and Depth in Feet Below Grade

-  4 Feet
-  6 Feet
-  8 Feet

 Shoreline Protection Zone (75 Feet Landward of MHHW)

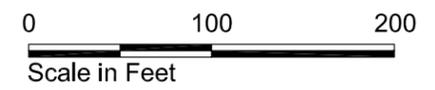
 MHHW Mean Higher High Water

 OHW Ordinary High Water

 5 Ground Surface Elevation Contour in Feet (NAVD 88)

 A A' Cross Section Location and Designation

- Notes:**
1. Excavate up to 15 feet depth (Human Health Point of Compliance) in shoreline protection zone and up to 6-feet depth (Ecological POC) elsewhere.
 2. Excavations include nominal 1H:1V side walls from base of contaminated area and property boundaries.
 3. Target excavation areas located seaward of OHW to be excavated as part of aquatic remediation alternatives.
 4. See Figure 5-1 for exploration locations and inferred extent of contamination.
 5. Extent of contamination below 8 feet depth is generally uncertain and not included with excavation areas.
 6. See Appendix B for stormwater swale and wetland mitigation/buffer element details.



Custom Plywood Site
Anacortes, Washington

**Selected Upland Remedial Action
Alternative U-3**

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6/11



Figure
D-2