City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	**King County Coal Creek Trunk Emergency Repair**
Proposal Address:	**4431 Coal Creek Pkwy SE**
Proposal Description:	The applicant requests a retroactive Critical Areas Land Use Permit to re-align the stream channel and stabilize the bank of Coal Creek to protect a King County Wastewater Treatment Division regional sewer trunk line and manhole access point. The project is supported by a Critical Areas Report and includes mitigation and restoration plans. The project qualifies as an emergency under LUC 20.25H.055.C.3.b.
File Number:	**15-115009-LO**
Applicant:	**Cindy Clark, King Co. Wastewater Treatment Division**
Decisions Included:	Critical Areas Land Use Permit (Process II. LUC 20.30P)
Planner:	**David Wong**, Planner
State Environmental Policy Act Threshold Determination:	**Determination of Non-Significance** Pam Elardo, Director King County Wastewater Treatment Divsion
Director's Decision:	**Approval with Conditions** Carol V. Helland, Land Use Director Development Services Department

Application Date:	May 26, 2015
Notice of Application Publication Date:	June 11, 2015
Decision Publication Date:	January 14, 2016
Appeal Deadline Date:	January 28, 2016

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

CONTENTS

I. Proposal Description 1

II. Site Description, Zoning, Land Use and Critical Areas 1

III. Consistency with Land Use Code Requirements: 5

IV. Public Notice and Comment 7

V. Summary of Technical Reviews 7

VI. State Environmental Policy Act (SEPA) 8

VII. Decision Criteria 8

VIII. Conclusion and Decision 9

IX. Conditions of Approval 9

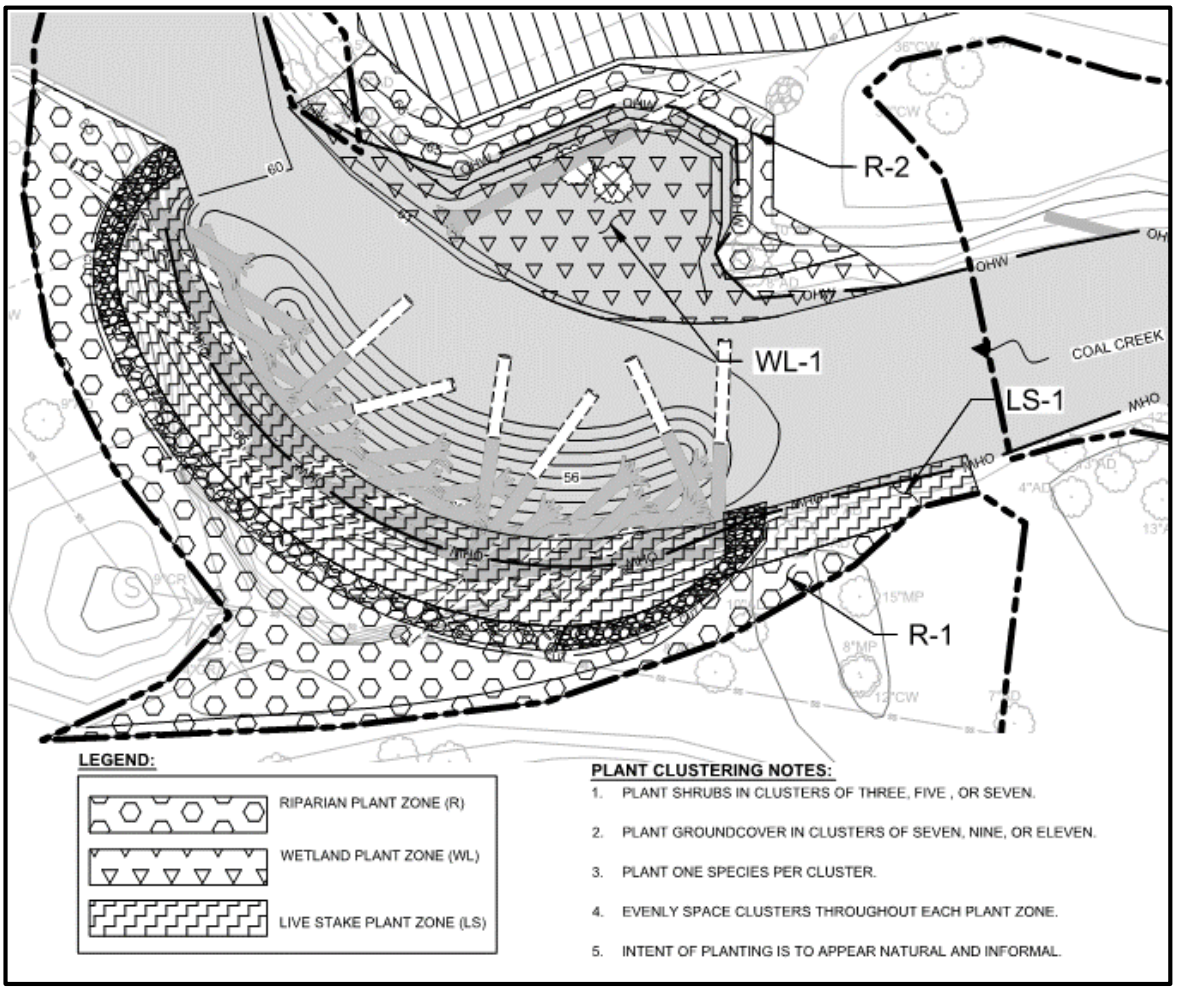
Attachments

1. Mitigation Plan

I. Proposal Description

King County Wastewater Treatment Division proposed to install approximately 140 linear feet of stabilization measures to protect an existing King County sewer pipeline and manhole from rapid erosion along Coal Creek. Bank stabilization will consist of a log revetment structure utilizing anchored logs that will be backfilled with structural fill, native alluvium, and soils from on-site. In addition, the stream channel will be realigned and widened to the north which will also affect a 313 square-foot Category III wetland located on the north side of Coal Creek. As part of the mitigation and restoration package, the proposal includes the creation of a scour pool, a scrub-shrub wetland, and restoration of degraded forested stream bank. See Figure 1 below.

Figure 1



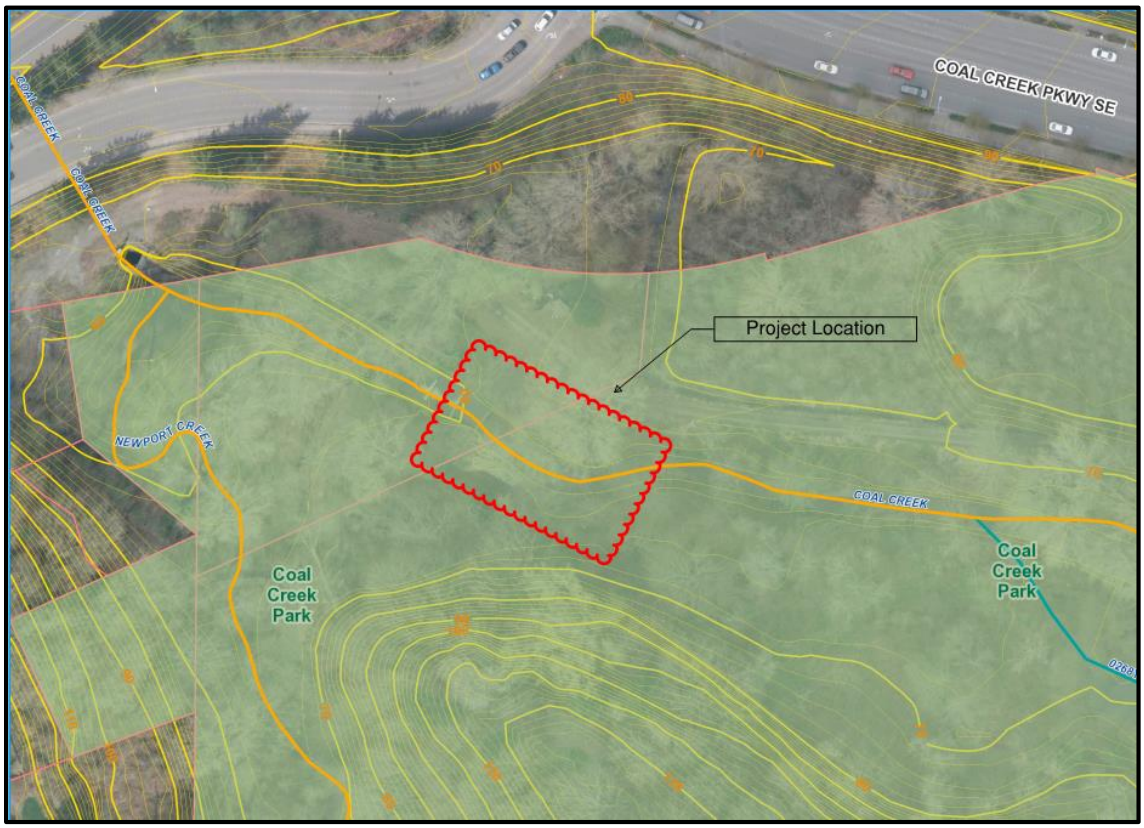
II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The project site is located on King County parcels 1624059212 and 1624059152 in Coal Creek Park. Coal Creek (Type F Stream), Newport Creek (Type F Stream), and one other potentially fish bearing stream (identified as 0268Y) are located within 300

feet of the project location. In addition to streams and stream habitat, six (6) wetlands were verified to exist in the vicinity. Wetland F, a Category III wetland, was identified and delineated within the project location along the north side of Coal Creek. The stream and wetland riparian corridor contains habitat and potential habitat for species of local importance and contains vegetation consistent with a deciduous forest with shrub understory. The project site is also located within an area of special flood hazard that corresponds with the 100-year floodplain. See Figure 2 below.

Figure 2



B. Zoning

The property is zoned R-1 and is located in the Newport Hills subarea.

C. Land Use Context

The project site is located within Coal Creek Park and is bordered by an R-5 residential zoning district to the west and R-1 residential zoning districts to the north, east, and south. The site contains two Comprehensive Plan designations of SF-H (Single-Family High Density – 1624059212) and P/SF-L (Park/Single-Family Low Density – 1624059152).

D. Critical Areas Functions and Values

i. Streams and Riparian Areas

Most of the elements necessary for a healthy aquatic environment rely on

processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi- canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows into riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

ii. Wetlands

Wetlands provide important functions and values for both the human and biological environment—these functions include flood control, water quality improvement, and nutrient production. These "functions and values" to both the environment and the citizens of Bellevue depend on their size and location within a basin, as well as their diversity and quality. While Bellevue's wetlands provides various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well (Novitski et al., 1995). However, the combined effect of functional processes of wetlands within basins provides benefits to both natural and human environments. For example, wetlands provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin.

iii. Floodplains

The value of floodplains can be described in terms of both the hydrologic and ecological functions that they provide. Flooding of occurs when either runoff exceeds the capacity of rivers and streams to convey water within their banks, or when engineered stormwater systems become overwhelmed. Studies have linked urbanization with increased peak discharge and channel degradation (Dunne and Leopold 1978; Booth and Jackson 1997; Konrad 2000). Floodplains diminish the effects of urbanization by temporarily storing water and mediating flow to downstream reaches. The capacity of a floodplain to buffer upstream fluctuations in discharge may vary according to valley confinement, gradient, local relief, and flow resistance provided by vegetation. Development within the floodplain can dramatically affect the storage capacity of a floodplain, impact the hydrologic regime of a basin and present a risk to public health and safety and to property and infrastructure.

iv. Habitat Associated with Species of Local Importance

Urbanization, the increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (McKinney 2002, Blair 2004, Marzluff 2005 Munns 2006), is a major cause of native species local extinctions (Czech et al 2000), and is likely to become the primary cause of extinctions in the coming century (Marzluff et al. 2001a). Cities are typically located along rivers, on coastlines, or near large bodies of water. The associated floodplains and riparian systems make up a relatively small percentage of land cover in the western United States, yet they provide habitat for rich wildlife communities (Knopf et al. 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development (Blair 1999, Marzluff 2005).Protected wild areas alone cannot be depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes (genetic drift, inbreeding, colonization) can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain

biodiversity over a range of geographic scales (Shaughnessy and O'Neil 2001). As well, typological approaches to taxonomy or the use of indicators present the risk that evolutionary potential will be lost when depending on reserves for preservation (Rojas 2007). Urban habitat is a vital link in the process of wildlife conservation in the U.S.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:
The site is located in the R-1 zoning district.

B. Critical Areas Requirements LUC 20.25H:
The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes performance standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area, critical area buffer or structure setback from a critical area or buffer. The proposal is located within a Type F stream, Type F stream buffer, area of special flood hazard, a Category III wetland, and habitat of species of local importance. The project is subject to the performance standards found in LUC 20.25H.055.C.3.B, 20.25H.080, 20.25H.100, 20.25H.160, and 20.25H.180 which are reviewed below.

i. Performance Standards for Emergency Actions – 20.25H.055.C.3.B
The proposed stabilization and repair are considered emergency actions, and are an allowed use according to the Uses and Development Allowed within Critical Areas table found in 20.25H.055.B. Emergency actions are subject to the requirements of 20.25H.055.C.3.b. Chief among these is the requirement that the applicant submit a restoration and/or mitigation plan pursuant to LUC 20.25H.210 based on the impacts of the emergency action to the critical area and critical area buffer. A mitigation and restoration plan pursuant to LUC 20.25H.210 has been included in this application. See attached Critical Areas Report for more information.

C. Consistency with Land Use Code Critical Areas Performance Standards:

i. Performance Standards for Streams – 20.25H.080

1. **Lights shall be directed away from the wetland**
   No lighting is included in this proposal.

2. **Activity that generates noise such as parking lots, generators, and residential uses shall be directed away from the wetland, or any noise shall be minimized through the use of design and insulation techniques.**
   No permanent sources of noise are included in this proposal. All noise related to excavation and repair will be temporary, and will be required to meet the construction noise requirements of Bellevue City Code 9.18.

3. **Toxic runoff from new impervious surface area shall be routed away from**

the wetlands.
No new impervious surface is proposed.

4. **Treated water may be allowed to enter the wetland critical area buffer.**
   No water discharge is proposed.

5. **The outer edge of the stream critical area shall be planted with dense vegetation to limit pet or human use.**
   Per the submitted mitigation and restoration contained within the Critical Areas Report, the disturbance area of the stream buffer will be densely planted with native trees, shrubs, and groundcovers.

6. **Use of pesticides, insecticides, and fertilizers within 150 feet of the edge of the wetland buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.**
   No pesticide, insecticide, or fertilizer use is proposed.

ii. Performance Standards for Wetlands – 20.25H.100

1. **Lights shall be directed away from the wetland**
   No lighting is included in this proposal.

2. **Activity that generates noise such as parking lots, generators, and residential uses shall be directed away from the wetland, or any noise shall be minimized through the use of design and insulation techniques.**
   No permanent sources of noise are included in this proposal. All noise related to excavation and repair will be temporary, and will be required to meet the construction noise requirements of Bellevue City Code 9.18.

3. **Toxic runoff from new impervious surface area shall be routed away from the wetlands.**
   No new impervious surface is proposed.

4. **Treated water may be allowed to enter the wetland critical area buffer.**
   No water discharge is proposed.

5. **The outer edge of the wetland critical area shall be planted with dense vegetation to limit pet or human use.**
   Per the submitted mitigation and restoration contained within the Critical Areas Report, the disturbance area of the stream buffer will be densely planted with native trees, shrubs, and groundcovers.

6. **Use of pesticides, insecticides, and fertilizers within 150 feet of the edge of the wetland buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter**

amended.
No pesticide, insecticide, or fertilizer use is proposed.

iii. Performance Standards for Habitat Associated with Species of Local Importance – 20.25H.160

1. **If habitat associated with species of local importance will be impacted by a proposal, the proposal shall implement the wildlife management plan developed by the Department of Fish and Wildlife for such species. Where the habitat does not include any other critical area or critical area buffer, compliance with the wildlife management plan shall constitute compliance with this part.**
   Herrera Environmental Consultants staff have determined that the project will "comply with management recommendations provided by WDFW," (Critical Areas Report pg. 20) including but not limited to recommendation for riparian priority habitat and amphibians & reptiles.

iv. Performance Standards for Areas of Special Flood Hazard – 20.25H.180
The proposal meets all general performance standards for Areas of Special Flood Hazard. No encroachment or alteration of the Area of Special Flood Hazard or regulated floodway is proposed. See attached Critical Areas Report.

IV. Public Notice and Comment

Application Date:	May 26, 2015
Public Notice (500 feet):	June 11, 2015
Minimum Comment Period:	June 25, 2015

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on June 11, 2015. It was mailed to property owners within 500 feet of the project site. No comments have been received from the public as of the writing of this staff report.

V. Summary of Technical Reviews

Clearing and Grading:
The Clearing and Grading Division of the Development Services Department has reviewed the proposed development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

Utilities
The Utilities Department's Development Review Division has reviewed the proposed development for compliance with Bellevue Utilities' codes and standards. The Utilities Development Review staff found no issues with the proposed development.

VI. State Environmental Policy Act (SEPA)

Determination of Non-Significance (DNS) was issued on June 10, 2015 by King County Department of Natural Resources and Parks Wastewater Treatment Division as lead agency.

VII. Decision Criteria

A. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

1. The proposal obtains all other permits required by the Land Use Code;

Finding: The Emergency Action requires retroactive permitting. In addition to the Critical Areas Land Use Permit, the applicant shall apply and obtain a retroactive Clearing & Grading permit.

2. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;

Finding: The proposal utilizes the best available construction, design, and development techniques to protect existing regional utility infrastructure while providing an increased level of function of stream and wetland critical areas.

3. The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;

Finding: As discussed in Section III of this staff report, the proposal incorporates the performance standards of Part 20.25H to maximum extent applicable.

4. The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;

Finding: No increased service in public facilities will be necessary for this project.

5. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and

Finding: The proposal includes a mitigation and restoration plan consistent with the requirements of LUC 20.25H.210.

6. The proposal complies with other applicable requirements of this code.

Finding: As discussed in Section III and V of this report, the proposal complies with

all other applicable requirements of the Land Use Code.

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposal to conduct bank stabilization measures under Emergency Actions within the Type F Stream, Category III Wetland, Habitat of Species of Local Importance, and Area of Special Flood Hazard critical area/buffer at 4431 Coal Creek Pkwy SE.

Note- Expiration of Approval: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Clearing and Grading Permit or other necessary development permits within one year of the effective date of the approval.

IX. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Tom McFarlane, 425-452-5207
Land Use Code- BCC 20.25H	David Wong, 425-452-4282
Noise Control- BCC 9.18	David Wong, 425-452-4282

The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:

1. Restoration for Areas of Temporary Disturbance: A restoration plan for all areas of temporary disturbance is required to be submitted for review and approval by the City of Bellevue prior to the issuance of the Clearing and Grading Permit. The plan shall include documentation of existing site conditions and shall identify the restoration measures to return the site to its existing conditions per LUC 20.25H.220.H.

Authority: Land Use Code 20.25H.220.H
Reviewer: David Wong, Land Use

2. Mitigation for Areas of New Permanent Disturbance: A mitigation plan for all areas of permanent new disturbance is required to be submitted for review and approval by the City of Bellevue prior to issuance of the Clearing and Grading Permit. The plan shall document the total area of permanent disturbance and area of new critical area buffer to satisfy a replacement ratio of one to one (two to one for wetland mitigation).

Authority: Land Use Code 20.25H.220
Reviewer: David Wong, Land Use

3. Maintenance & Monitoring: All areas of temporary and permanent disturbance shall be self-maintained and self-monitored for a period of no shorter than five (5) years as proposed within the included Critical Areas Report. The following performance standards are required to be met:

Year 1 (2016)
100% survival of planted vegetation
0% invasive species coverage within areas of planted vegetation
Confirmed presence of pool and low-gradient riffle habitats

Year 2 (2017)
Minimum 90% survival of planted vegetation
Less than 10% invasive species coverage within areas of planted vegetation
Confirmed presence of pool and low-gradient riffle habitats

Year 3 (2018)
Greater than 35% cover of native vegetation within areas of planted vegetation
Less than 10% invasive species coverage within areas of planted vegetation
Confirmed presence of pool and low-gradient riffle habitats

Year 4 (2019)
Greater than 50% cover of native vegetation within areas of planted vegetation
Less than 10% invasive species coverage within areas of planted vegetation
Confirmed presence of pool and low-gradient riffle habitats

Year 5 (2020)
Greater than 70% cover of native vegetation within areas of planted vegetation
Less than 10% invasive species coverage within areas of planted vegetation
Confirmed presence of pool and low-gradient riffle habitats

All maintenance and monitoring reports shall be submitted to Land Use by the end of each growing season or by October 31st. The reports can be sent to David Wong at dwong@bellevuewa.gov or to the address below:

Environmental Planning Manager
Development Services Department
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

Authority: Land Use Code 20.25H.220.D
Reviewer: David Wong, Land Use

4. Pesticides, Insecticides, and Fertilizers: The applicant must submit as part of the required Clearing and Grading Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

Authority: Land Use Code 20.25H.220.H
Reviewer: David Wong, Land Use

5. Land Use Inspection: A Land Use inspection is required prior to Clearing & Grading final inspection. All mitigation and restoration planting shall be complete prior to inspection.

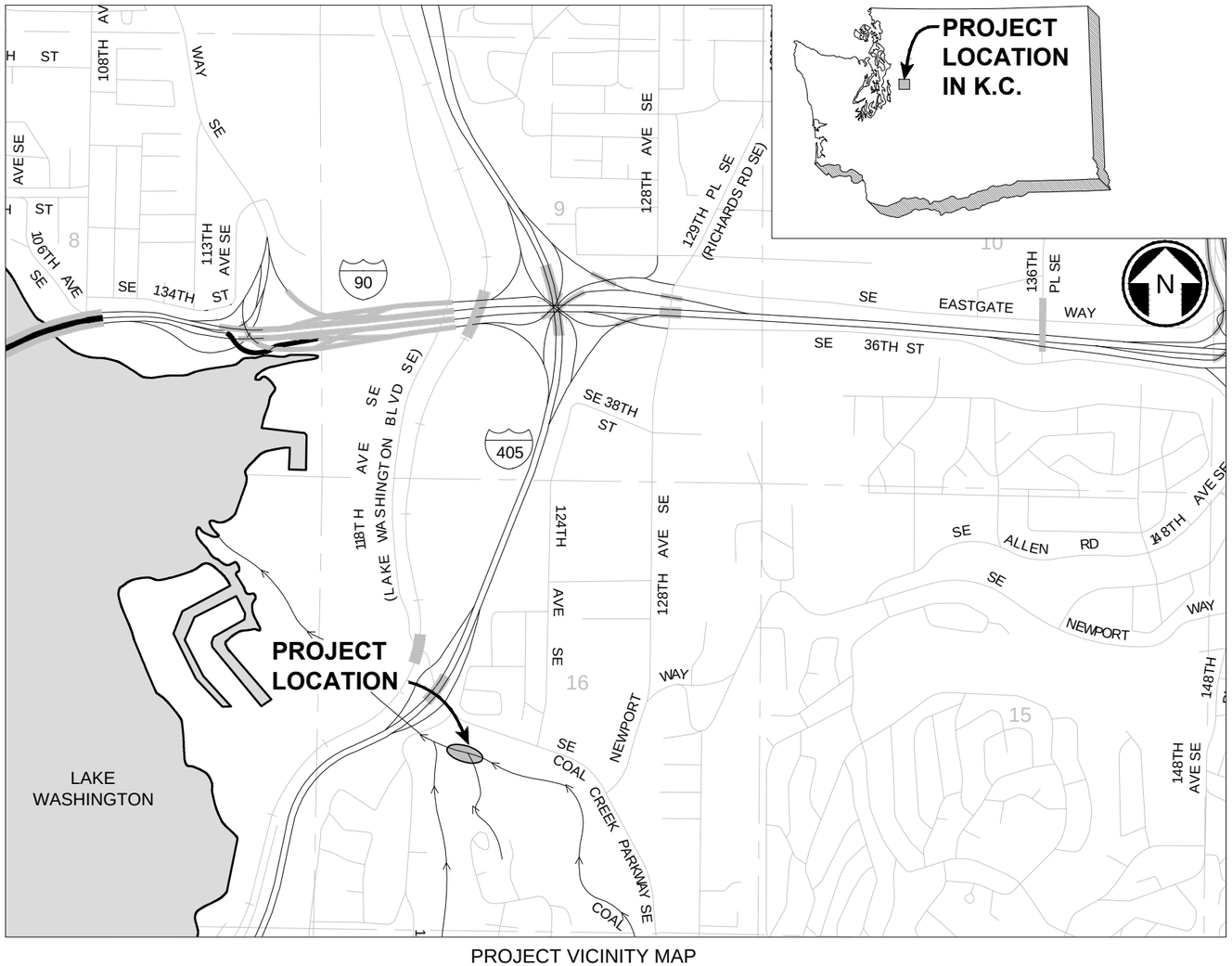
Authority: Land Use Code 20.25H.220.D
Reviewer: David Wong, Land Use

6. Noise Control: Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

Authority: Bellevue City Code 9.18
Reviewer: David Wong, Land Use

COAL CREEK TRUNK
BANK RESTORATION PROJECT

BELLEVUE, WASHINGTON



PROJECT VICINITY MAP
SCALE: N.T.S.

SHEET INDEX		
SHEET NO.	DWG NO.	DRAWING TITLE
1	G-1	VICINITY MAP AND SHEET INDEX
2	G-2	GENERAL NOTES
3	C-1	EXISTING CONDITIONS IN PROJECT AREA
4	C-2	EXISTING CONDITIONS - SITE PLAN
5	C-3	PROPOSED SITE PLAN - LOG REVETMENT
6	C-4	PROPOSED SITE PLAN - GRADING
7	C-5	SECTIONS
8	C-6	DETAILS
9	ESC-1	TESC PLAN
10	ESC-2	TESC DETAILS
11	L-1	PLANTING PLAN

1/5 — DETAIL REFERENCE NUMBER; DRAWING ON WHICH DETAIL IS SHOWN

DETAIL (#/-) SCALE: CUSTOM — DETAIL REFERENCE NUMBER; DRAWING FROM WHICH DETAIL WAS TAKEN

A/5 — SECTION REFERENCE LETTER; DRAWING ON WHICH SECTION IS SHOWN

SECTION (#/-) SCALE: CUSTOM — SECTION REFERENCE LETTER; DRAWING FROM WHICH SECTION WAS TAKEN

"-" INDICATES THAT THE DETAIL/SECTION IS SHOWN ON THE SAME SHEET

"TYP" INDICATES THAT THE DETAIL/SECTION IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED

"VAR" SPECIFIES THAT DETAIL/SECTION WAS TAKEN FROM SEVERAL DRAWINGS

NOTE AND DETAIL/SECTION REFERENCING

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DESIGNED/DRAWN:	L. TURNIDGE
SCALE:	AS NOTED
PROJECT ENGINEER:	I. MOSTRENKO
REFERENCE	0 — 1"
DESIGN APPROVAL:	
FACILITY NUMBER:	
PROJECT ACCEPTANCE:	
CONTRACT NO:	

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

King County

VICINITY MAP AND SHEET INDEX

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	G-1
SHT NO / TOTAL	1 / 11
REV NO:	0

GENERAL CONSTRUCTION NOTES:

1. THE WORK INCLUDES THE INSTALLATION OF 3 LOG REVETMENT STRUCTURES, DEWATERING ALL OR PORTIONS OF THE CREEK VIA A FLOW BY-PASS SYSTEM TO ACCESS AND ISOLATE THE LOG REVETMENT INSTALLATION WORK AREAS FROM CREEK FLOW, TEMPORARY EROSION AND SEDIMENT CONTROL, REVEGETATION, REMOVAL OF TEMPORARY FACILITIES, AND RESTORATION OF THE PROJECT SITE.
2. DISCREPANCIES BETWEEN THESE CONTRACT DRAWINGS AND EXISTING SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT REPRESENTATIVE (IN WRITING) PRIOR TO CONTINUING WORK.
3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES. CONTACT UTILITIES UNDERGROUND LOCATION CENTER (800) 424-5555 PRIOR TO EXCAVATION.
4. WORK SPECIFIED IN PERMIT CONDITIONS NOT MENTIONED IN THE DRAWINGS SHALL BE FURNISHED AND PERFORMED AS THOUGH SPECIFICALLY INDICATED IN BOTH.
5. PRIOR TO INITIATING CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL STAKE FOR APPROVAL BY THE PROJECT REPRESENTATIVE. THE LOCATIONS OF RIPRAP LINING AND EACH REVETMENT UNIT INCLUDING LENGTHS, WIDTHS, ORIENTATION AND ELEVATIONS; TEMPORARY CONSTRUCTION ACCESS PATHS; TEMPORARY FLOW BY PASS SYSTEMS; AND EXCAVATION EXTENTS.
6. THE CONTRACTOR SHALL INSTALL HIGH VISIBILITY FENCING FOR APPROVAL BY THE PROJECT REPRESENTATIVE AT LEAST 7 DAYS PRIOR TO COMMENCING WORK IN THE STREAM CHANNEL.
7. ALL TREES WITHIN THE PROJECT LIMITS SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PROJECT REPRESENTATIVE PRIOR TO REMOVING OR ALTERING ANY TREE.
8. ALTERATION OR DISTURBANCE OF THE CHANNEL, FLOODPLAIN, AND ANY BANK AND FLOODPLAIN VEGETATION SHALL BE MINIMIZED TO THAT NECESSARY TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL KEEP DISTURBED AREAS WITHIN THE HIGH VISIBILITY FENCE LIMITS APPROVED BY THE PROJECT REPRESENTATIVE, AND SHALL NOT EXTEND THESE LIMITS UNLESS APPROVED BY THE PROJECT REPRESENTATIVE.
9. THE CONTRACTOR SHALL PROVIDE 24 HOURS ADVANCE NOTICE TO THE PROJECT REPRESENTATIVE PRIOR TO ANY REQUIRED INSPECTION UNLESS OTHERWISE AUTHORIZED IN ADVANCE BY THE PROJECT REPRESENTATIVE.
10. CONSTRUCTION MATERIAL AND EQUIPMENT STAGING AREAS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. CONSTRUCTION MATERIALS AND EQUIPMENT SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS, UNLESS APPROVED BY THE PROJECT REPRESENTATIVE. THE CONTRACTOR SHALL PROTECT ALL CONSTRUCTION MATERIALS AND EQUIPMENT FROM DAMAGE AT ALL TIMES.
11. NO EQUIPMENT OR CONSTRUCTION MATERIAL SHALL BE STORED OVERNIGHT BELOW THE ORDINARY HIGH WATER (OHW) LINE.
12. EQUIPMENT USED FOR THIS PROJECT SHALL BE FREE OF EXTERNAL PETROLEUM-BASED PRODUCTS WHILE WORKING NEAR ANY SURFACE WATER OR WETLANDS. ACCUMULATION OF SOILS OR DEBRIS SHALL BE REMOVED FROM THE DRIVE MECHANISMS (WHEELS, TRACKS, TIRES, ETC.) AND UNDERCARRIAGE OF EQUIPMENT PRIOR TO ITS WORKING BELOW THE OHW LINE.
13. ALL EQUIPMENT OPERATING IN AREAS OTHER THAN EXISTING UNIMPROVED GRAVEL ACCESS ROADS AND THE CONSTRUCTION MATERIAL AND STAGING AREAS SHALL USE ONLY BIODEGRADABLE, VEGETABLE BASED HYDRAULIC FLUIDS OR APPROVED OTHER.
14. EQUIPMENT SHALL BE CHECKED AT THE BEGINNING OF EACH WORK SHIFT FOR LEAKS, AND ANY NECESSARY REPAIRS SHALL BE COMPLETED PRIOR TO COMMENCING WORK ACTIVITIES.
15. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO PETROLEUM PRODUCTS, HYDRAULIC FLUID, SEDIMENTS, SEDIMENT-LADEN WATER, CHEMICALS, OR ANY OTHER TOXIC OR DELETERIOUS MATERIALS ARE ALLOWED TO ENTER OR LEACH INTO THE CREEK, WETLANDS OR THE PROJECT SITE FROM EQUIPMENT OR SUPPLIES USED DURING CONSTRUCTION.
16. CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO THE LIMITS DEFINED ON THE DRAWINGS OR IDENTIFIED AS ACCEPTABLE BY THE PROJECT REPRESENTATIVE.
17. IF AT ANY TIME, AS A RESULT OF PROJECT ACTIVITIES, FISH ARE OBSERVED IN DISTRESS, A FISH KILL OCCURS, OR WATER QUALITY PROBLEMS DEVELOP (INCLUDING EQUIPMENT LEAKS OR SPILLS), OPERATIONS SHALL CEASE AND THE PROJECT REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY BY THE CONTRACTOR. THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY SHALL BE CONTACTED IMMEDIATELY BY THE PROJECT REPRESENTATIVE. WORK SHALL NOT RESUME UNTIL FURTHER APPROVAL BY THE PROJECT REPRESENTATIVE.
18. EROSION AND SEDIMENT CONTROL METHODS SHALL BE USED TO PREVENT SILT-LADEN WATER FROM ENTERING THE CREEK. MINIMUM EROSION AND SEDIMENT CONTROL METHODS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE PROJECT REPRESENTATIVE 14 DAYS PRIOR TO CONSTRUCTION, A TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN ADDRESSING SITE SPECIFIC EROSION AND SEDIMENT CONTROL TECHNIQUES AND METHODS INCLUDING THEIR PROPOSED MEANS AND METHODS FOR BY-PASSING CREEK FLOWS AND DEWATERING AND DISCHARGING WATER IN EXCAVATIONS.
19. IF HIGH FLOW CONDITIONS THAT MAY CAUSE SILTATION, EROSION OR A DANGEROUS WORK ENVIRONMENT ARE ENCOUNTERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE FLOW SUBSIDES.
20. LOGS SHALL BE DECKED IN THE STAGING AREA SHOWN ON THE DRAWINGS FOR INSPECTION BY THE PROJECT REPRESENTATIVE AND ORGANIZED BY LOG TYPE. LOG TYPE IDENTIFICATION SHALL BE PAINTED ON ALL LOGS IN A PLACE VISIBLE FOR INSPECTION PRIOR TO PLACEMENT WITH LEAD-FREE, BLAZE-ORANGE SURVEY MARKING PAINT.
21. CLEARING SHALL BE LIMITED TO AREAS INSIDE THE HIGH VISIBILITY FENCE WITHIN 10 FEET FROM GRADING AREAS OR AS APPROVED BY PROJECT REPRESENTATIVE.

EXISTING LEGEND:

- MINOR CONTOUR (1 FOOT)
- MAJOR CONTOUR (5 FOOT) (75)
- ORDINARY HIGH WATER (OHW)
- TOP OF BANK (TOB)
- PROPERTY LINE
- SANITARY SEWER (SS)
- STORM DRAIN (SD)
- EXISTING GROUND (SECTION)
- ACTIVE COAL CREEK STREAM CHANNEL - IN SURVEYED AREA (OHW / MHO)
- WETLANDS
- RIPRAP
- UNDISTURBED WETLAND/STREAM BUFFERS
- LOGS
- BOULDER
- STUMP
- CONIFER TREE
- DECIDUOUS TREE
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- CATCH BASIN
- UTILITY POLE
- SURFACE MONUMENT

ABBREVIATIONS:

AD	ALDER TREE
APPROX	APPROXIMATE
BOT	BOTTOM
CB	CATCH BASIN
CONC	CONCRETE
CPP	CORREGATED PLASTIC PIPE
CR	CEDAR TREE
CW	COTTONWOOD TREE
DIA	DIAMETER
DWG	DRAWING
E	EAST
EL	ELEVATION
FT	FEET
IE	INVERT ELEVATION
IN	INCHES
MAX	MAXIMUM
MIN	MINIMUM
MP	MAPLE TREE
N	NORTH
NTS	NOT TO SCALE
O.C.	ON CENTER
OHW	ORDINARY HIGH WATER
PVC	POLYVINYL CHLORIDE
RPE	REINFORCED POLYETHYLENE
S	SOUTH
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SW	SOUTHWEST
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
TOB	TOP OF BANK
TYP	TYPICAL
W	WEST

PROPOSED LEGEND:

- PROJECT LIMITS
- PROPOSED MINOR CONTOUR (1 FOOT) (63)
- PROPOSED MAJOR CONTOUR (5 FOOT) (60)
- FISH BLOCK NET
- FLOW BY-PASS GRAVITY PIPE OPTION
- FLOW BY-PASS PIPE PUMPING OPTION
- SILT FENCE (SF)
- HIGH VISIBILITY FENCE (X)
- PROPOSED ORDINARY HIGH WATER (OHW)
- PROPOSED GROUND (SECTION)
- CONSTRUCTION STAGING AREA
- CONSTRUCTION DEWATERING INFILTRATION AREA
- TOP OF LIGHT LOOSE RIPRAP LINING
- TOP OF LIGHT LOOSE RIPRAP AT TRANSITION
- ALLUVIUM BACKFILL
- FLOW BY-PASS COFFERDAM
- DENSELY PLACED WOOD RACKING AND SLASH MATERIAL
- COIR FACE REINFORCEMENT
- LIVE STAKE
- BURIED PORTION OF PROPOSED LOG / PROPOSED LOG
- CONTROL POINT (CP#)
- LOG TYPE (L2)
- LOG PLACEMENT SEQUENCE NUMBER (9)
- LASHING
- LOG-TO-LOG CONTACT POINT (X)
- FINAL GRADING ELEVATION POINT
- TREE REMOVAL

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

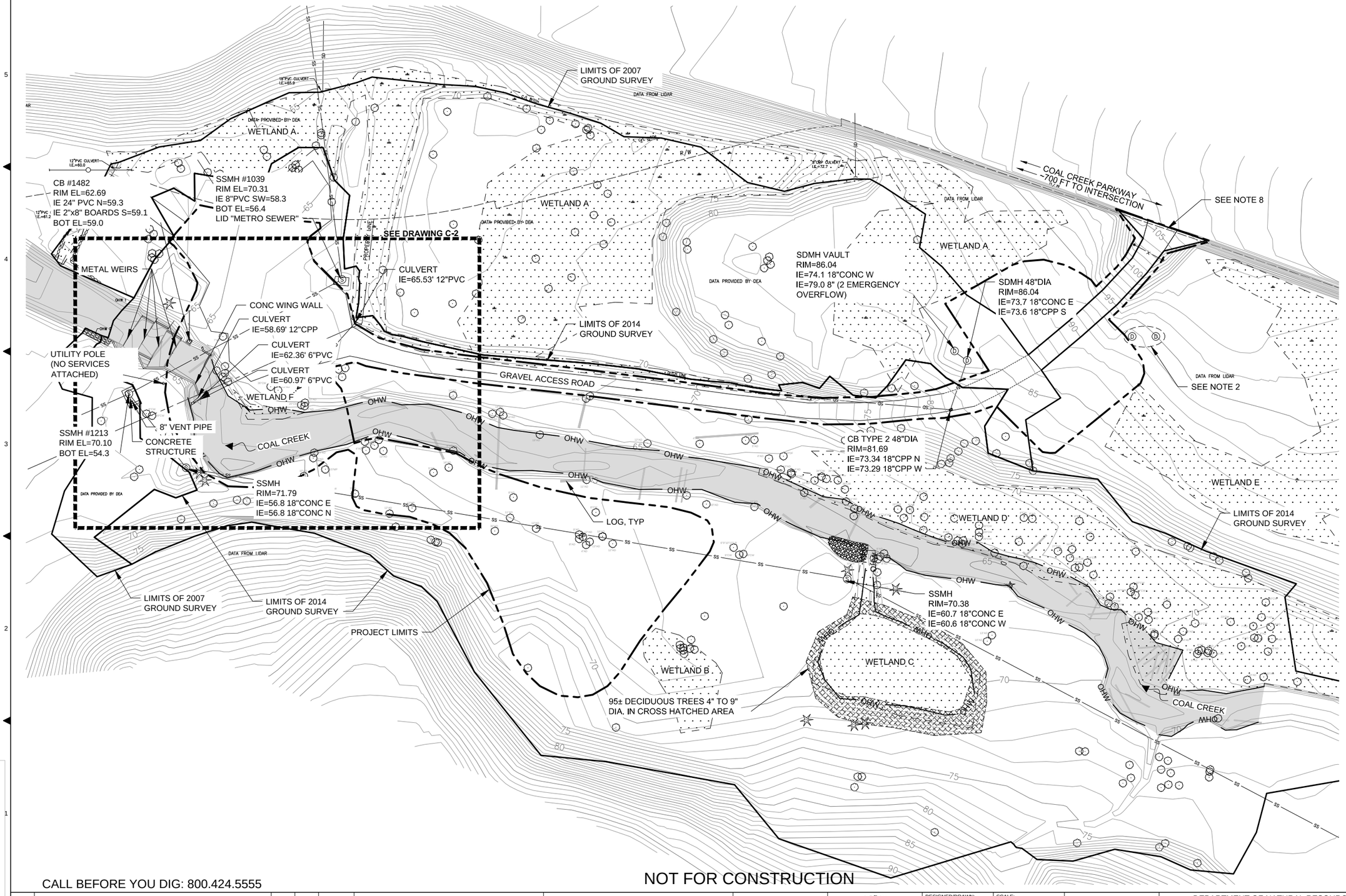
DESIGNED/DRAWN: L. TURNIDGE
PROJECT ENGINEER: I. MOSTRENKO
DESIGN APPROVAL:
PROJECT ACCEPTANCE:
SCALE: AS NOTED
REFERENCE 0 1"
FACILITY NUMBER:
CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

GENERAL NOTES

DCN:
DATE: MAY 2015
PROJECT FILE NO:
DRAWING NO: G-2
SHT NO 2 / TOTAL 11
REV NO: 0



NOTES:

1. SITE CONDITIONS SHOWN ON THESE PLANS ARE BASED ON A PLS CERTIFIED TOPOGRAPHIC SURVEY OF THE PROJECT AREA COMPLETED IN OCTOBER 2014 BY TRUE NORTH, INC., LIDAR DATA, AND A TOPOGRAPHIC SURVEY COMPLETED IN 2007 BY OTHERS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES.
2. LOCATION OF 2 STORMDRAIN MANHOLES SHOWN IS APPROX AND WERE NOT INCLUDED IN THE 2007 OR 2014 SURVEY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STAKING AND SURVEYING NEEDED TO COMPLETE CONSTRUCTION UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. VERTICAL DATUM: NAVD 1988.
5. VERTICAL CONTROL:
   CITY OF BELLEVUE BENCHMARK 172 TOP NW BOLT IN SIG POLE BASE ELEVATION:90.81'(NAVD88).
6. HORIZONTAL DATUM: NAD 83(2011) WASHINGTON NORTH ZONE.
7. HORIZONTAL CONTROL:
   CITY OF BELLEVUE BRASS CAP STAMPED "1743",
   NORTHING: 209636.02
   EASTING: 1307929.72

   CITY OF BELLEVUE BRASS CAP STAMPED "1742"
   NORTHING: 209513.38
   EASTING: 1307645.24
8. CONTRACTOR SHALL SECURE THE PROJECT SITE AND LOCK ACCESS EXISTING GATE DURING NONWORKING HOURS.

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DRAFT

DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	REFERENCE 0 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

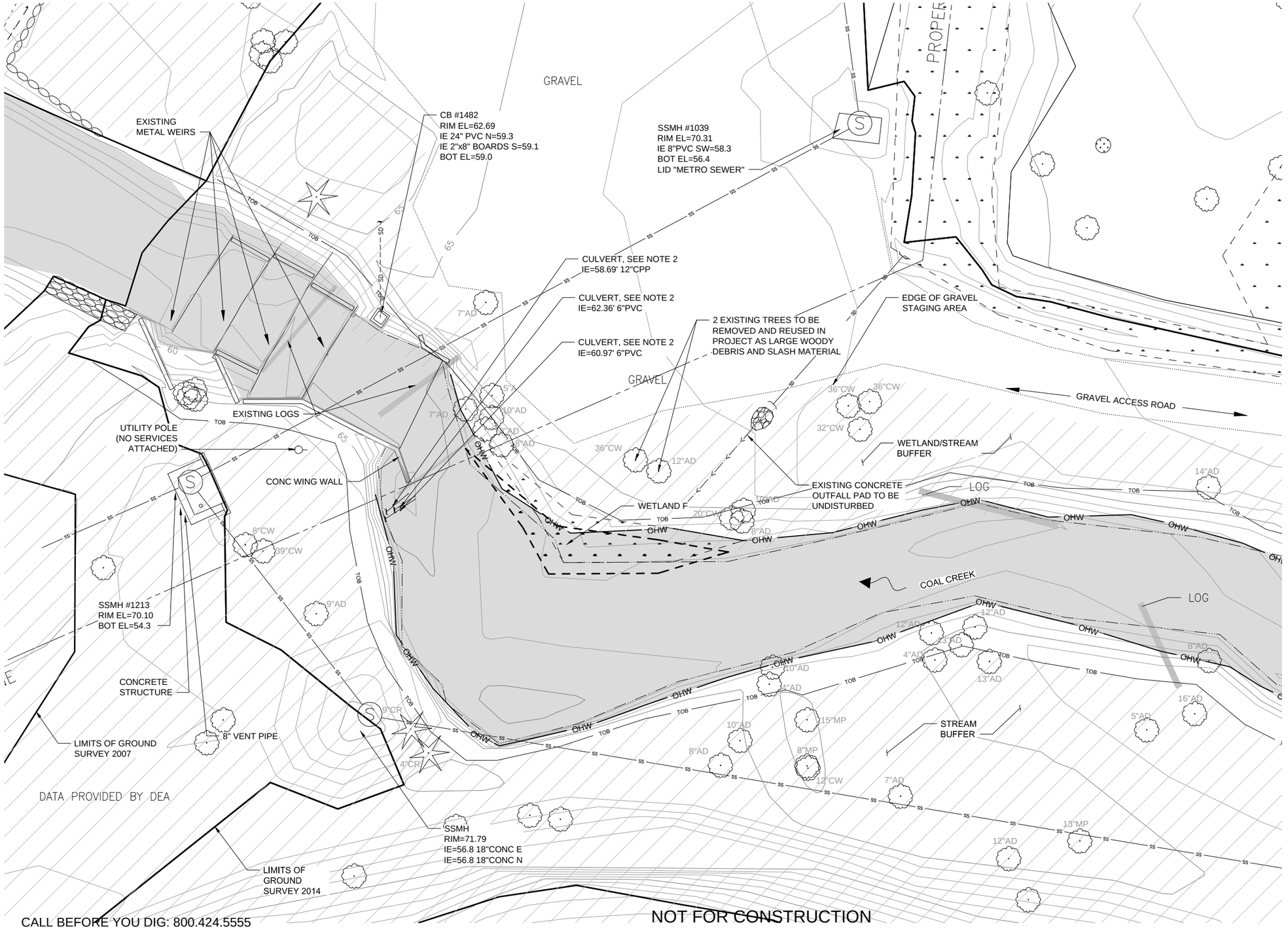
DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

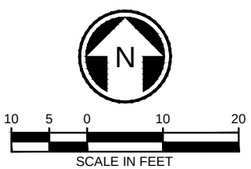
EXISTING CONDITIONS IN PROJECT AREA

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	C-1
SHT NO / TOTAL	3 / 11
REV NO:	0

NOTES:

1. SEE DRAWING C-1 FOR SURVEY CONTROL AND DATUM INFORMATION.
2. PIPE ORIENTATION FOR BURIED PORTION OF PIPE UNKNOWN.





CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DRAFT

DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	REFERENCE 0 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

EXISTING CONDITIONS SITE PLAN

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	C-2
SHT NO / TOTAL	4 / 11
REV NO:	0

EXISTING METAL WEIRS

EXISTING DRAINAGE CULVERTS, SEE NOTES 5-8.

'SEE NOTE 12

SEE NOTE 11

PLACE SLASH AND SALVAGED 12" DIAMETER ALDER TREE AS DESIGNATED BY PROJECT REPRESENTATIVE

PROPOSED WETLAND CREATION

EXISTING RESTORED WETLAND F

GRAVEL ACCESS ROAD (SEE NOTE 4)

COAL CREEK

LOG REVETMENT STRUCTURE 1

LOG REVETMENT STRUCTURE 2

LOG REVETMENT STRUCTURE 3

TOP OF RIPRAP

SEE NOTE 3

TOP OF RIPRAP FOR TRANSITION AT END OF STRUCTURE

FOR TEMPORARY FISH BLACK NETS AND FLOW BY-PASS SEE DRAWING ESC-1

NOTES:

1. LOCATION AND CONTROL POINT INFORMATION PROVIDED ON DRAWING C-6.
2. ALL CREEK FLOW SHALL BE COLLECTED AND ROUTED AROUND WORK AREA AS SHOWN ON DRAWING ESC-1.
3. CONTRACTOR SHALL POTHOLE AND VERIFY LOCATION OF SEWER LINE PRIOR TO REVETMENT CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN ACCESS ALONG ACCESS ROAD AT ALL TIMES FOR CITY OF BELLEVUE STAFF AND CONTRACTORS.
5. CONTRACTOR SHALL POTHOLE AND LOCATE EXISTING DRAINAGE OUTFALLS.
6. CONTRACTOR SHALL PROTECT OR RESTORE EXISTING DRAINAGE OUTFALLS TO CONSTRUCT LOG STRUCTURES.
7. CONTRACTOR SHALL MODIFY LOG PLACEMENT AS REQUIRED AND AS DESIGNATED BY PROJECT REPRESENTATIVE TO MAINTAIN FUCTION OF DRAINAGE OUTFALL CULVERTS.
8. CONTRACTOR SHALL CUT END OF DRAINAGE OUTFALLS FLUSH WITH FINISHED GRADE OF RIPRAP AS DESIGNATED BY THE PROJECT REPRESENTATIVE.
9. DECOMPACT GRAVEL ALLUVIUM IN CREEK BED FOLLOWING COMPLETION OF REVETMENT STRUCTURES.
10. FOR BACKFILLING AND GRADING SEE DRAWING C-4.
11. REUSE 36" DIAMETER COTTONWOOD AND 12" DIAMETER ALDER TREES IN PROPOSED WETLAND CREATION AREA. CONTRACTOR SHALL FALL BOTH TRESS WITH ROOTWADS INTACT AND PLACE AS SHOWN AND AS DESIGNATED BY PROJECT REPRESENTATIVE. COTTONWOOD TREE SHALL BE CUT TO 40 FEET IN LENGTH WITH REMAINS TO BE USED AS SLASH.
12. TRANSITION RIPRAP TO REAR FACE OF EXISTING WING WALL.
13. LOGS SHALL MEET THE FOLLOWING MATERIAL QUALITY SPECIFICATION:
    A. ALL LOGS SHALL BE DERIVED FROM WESTERN RED CEDAR OR DOUGLAS FIR TREES AND SUBJECT TO APPROVAL BY THE PROJECT REPRESENTATIVE. LOGS SHALL BE OF SOUND QUALITY AND FREE OF INSECTS, ROT AND DECAY. BARK SHALL NOT BE REMOVED OR MISSING FROM THE LOG FROM EITHER TRANSPORT OR INSTALLATION SUCH THAT NO MORE THAN 50 PERCENT, BY SURFACE AREA, OF THE BARK IS MISSING.

    B. LOGS WITH ROOTWAD SHALL HAVE INTACT ROOT BALLS MEASURING 4 TO 5 FEET IN DIAMETER THAT ARE NATURAL, FULL, AND INCLUDE A COMPLEX ROOT STRUCTURE CONTAINING MULTIPLE BRANCHES (ROOTS). IF IN THE OPINION OF THE PROJECT REPRESENTATIVE THAT THE ROOTWAD HAS A SPARSE OR OTHERWISE COMPROMISED ROOT STRUCTURE, SAID LOG WILL NOT BE ACCEPTED

    C. DIAMETER OF THE LOGS SHALL BE MEASURED AT "BREAST HEIGHT" WHICH IS APPROXIMATELY FOUR (4) FEET FROM THE TOP OF THE ROOTWAD. FOR LOGS WITHOUT ROOTWADS, THE DIAMETER SHALL BE MEASURED AT FOUR (4) FEET FROM THE END OF THE LOG WITH THE LARGEST DIAMETER. THE DIAMETER OF THE LOG SHALL NOT TAPER MORE THAN 1-INCH PER 10-FEET OF LENGTH

    D. LENGTHS OF THE LOGS SHALL BE MEASURED FROM CUT END TO CUT END FOR LOGS WITHOUT ROOTWADS, OR FROM THE CUT END TO THE MAIN STEM OF THE LOG JUST UP FROM THE ROOT BALL (FORMER GROUND SURFACE OF THE TREE).

N

10 5 0 10 20

SCALE IN FEET

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	REFERENCE 0 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

PROPOSED SITE PLAN - LOG REVETMENT

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	C-3
SHT NO / TOTAL	5 / 11
REV NO:	0

EXISTING METAL WEIRS

EXISTING DRAINAGE CULVERTS, SEE NOTE 8.

TOP OF RIPRAP (FOR TRANSITION SECTION) SEE NOTE 6

TOP OF BANK ELEV 66.0 FEET

TRANSITION FINISH GRADE FROM TOP OF BANK AT ELEV 66 TO EXISTING GRADE AT EXCAVATION EXTENTS

GRADE FINISH SLOPE TO 2.5H:1V

PROPOSED WETLAND CREATION

EXISTING RESTORED WETLAND F

GRAVEL ACCESS ROAD (SEE NOTE 5)

COAL CREEK

TOP OF RIPRAP SEE NOTE 4

TOP OF RIPRAP (FOR TRANSITION SECTION) SEE NOTE 6

TOB1 TOB2 TOB3

W1 W2 W3 W4 W5 W6 W7 W8

OHW MHO CUT

A C-5 B C-5 C C-5

NOTES:

1. LOCATION AND CONTROL POINT INFORMATION FOR GRADING PROVIDED IN TABLE BELOW.
2. EXCAVATION AND FILL VOLUMES PROVIDED ON DRAWING C-6.
3. ALL CREEK FLOW SHALL BE COLLECTED AND ROUTED AROUND WORK AREA AS SHOWN ON DRAWING ESC-1.
4. CONTRACTOR SHALL POTHOLE AND VERIFY LOCATION OF SEWER LINE PRIOR TO REVETMENT CONSTRUCTION.
5. CONTRACTOR SHALL MAINTAIN ACCESS ALONG ACCESS ROAD AT ALL TIMES FOR CITY OF BELLEVUE CONTRACTORS AND STAFF.
6. TRANSITION RIPRAP WIDTH AND SLOPE TO MATCH EXISTING BANK AND CHANNEL GRADE AS SHOWN. IN TRANSITION AREA, REDUCE TOP ELEVATION OF RIPRAP FROM 66' TO 65'; WIDTH FROM 3' TO 2'; FACE SLOPE FROM 1:5H : 1V TO 1H:1V, AND TOE ELEVATION FROM 56' TO 58'. CONTROL POINTS ARE PROVIDED ALONG THE TOP EDGE OF THIS RIPRAP ON DRAWING C-6.
7. SEE DRAWING C-6 FOR TOP OF RIPRAP CONTROL POINTS.
8. CONTRACTOR SHALL POTHOLE, LOCATE, PROTECT AND RESTORE EXISTING DRAINAGE OUTFALLS AS DESCRIBED ON DRAWING C-3.

CONTROL POINT TABLE

POINT	NORTHING	EASTING	ELEVATION
REVETMENT STRUCTURE 1			
TOB 1	209426.74	1308170.49	66.0
TOB 2	209406.37	1308186.72	66.0
TOB 3	209394.90	1308217.61	66.0
W 1	209443.64	1308205.16	63.0
W 2	209448.43	1308217.65	63.0
W 3	209452.34	1308227.14	63.0
W 4	209451.38	1308232.41	63.0
W 5	209448.83	1308237.08	63.0
W 6	209440.84	1308237.04	63.0
W 7	209436.21	1308235.58	63.0
W 8	209431.58	1308236.58	63.0

N

10 5 0 10 20

SCALE IN FEET

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

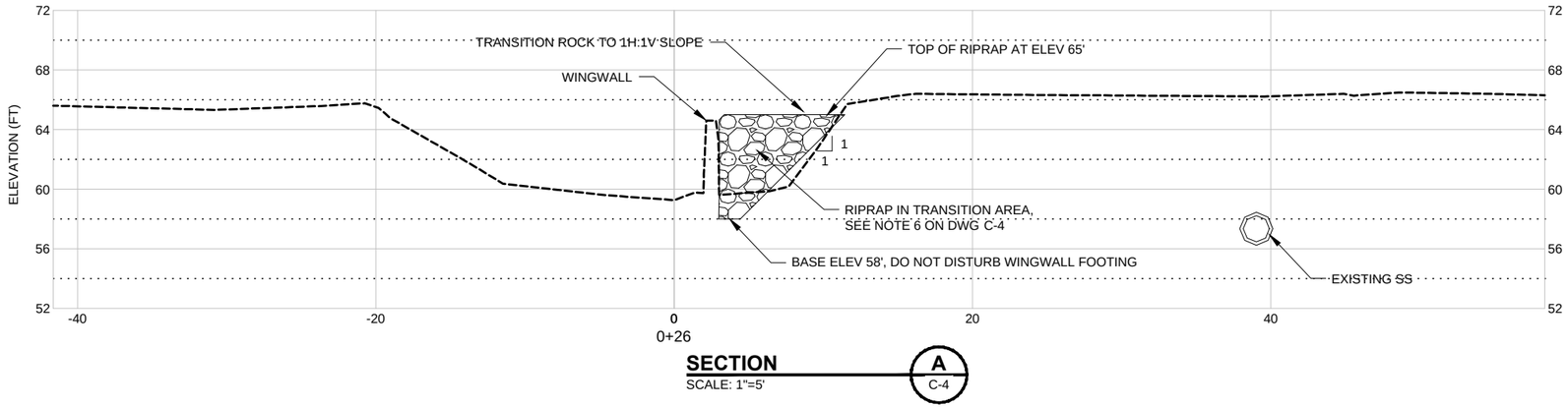
DESIGNED/DRAWN: L. TURNIDGE
SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO
REFERENCE 0 1"
DESIGN APPROVAL:
FACILITY NUMBER:
PROJECT ACCEPTANCE:
CONTRACT NO:

King County

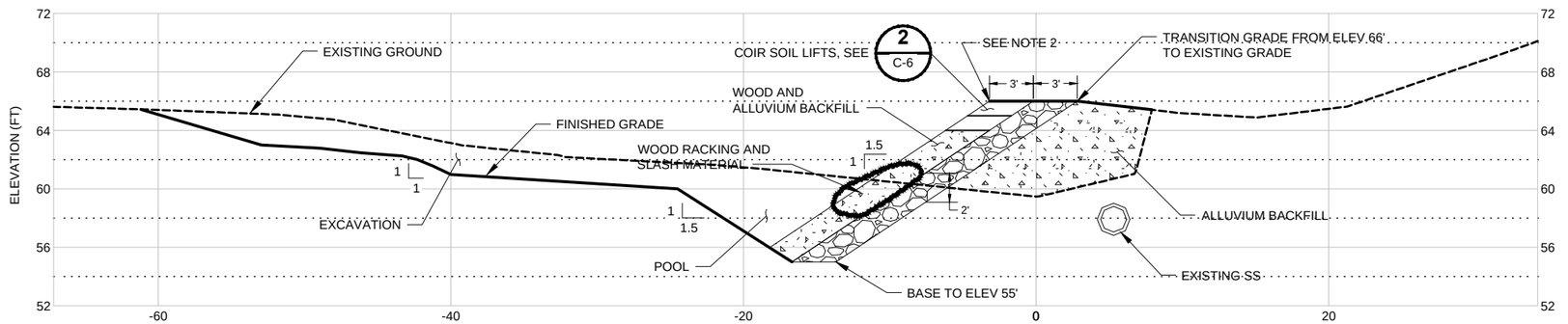
DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

PROPOSED SITE PLAN - GRADING

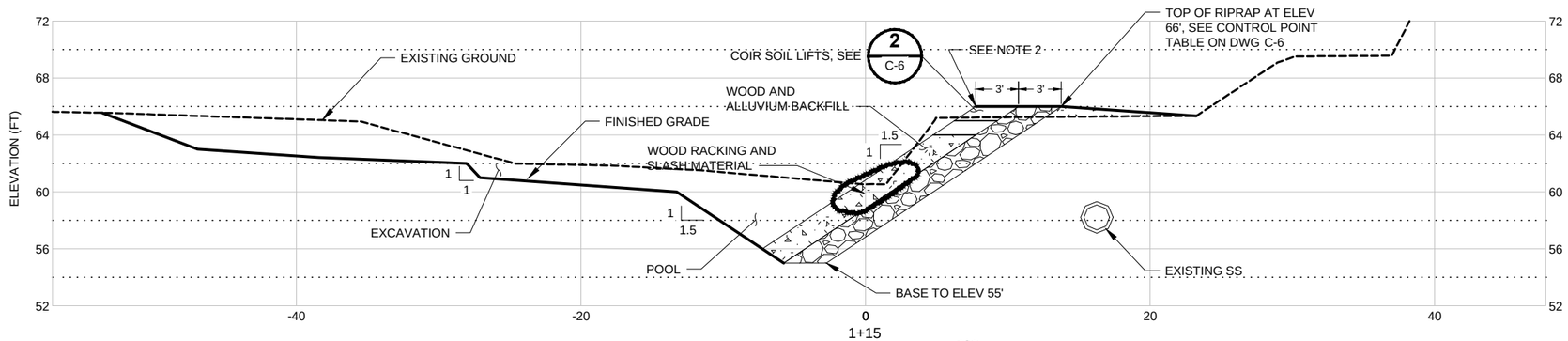
DCN:
DATE: MAY 2015
PROJECT FILE NO:
DRAWING NO: C-4
SHT NO 6 / TOTAL 11
REV NO: 0



SECTION A / C-4
SCALE: 1"=5'



SECTION B / C-4
SCALE: 1"=5'



SECTION C / C-4
SCALE: 1"=5'

EARTHWORK VOLUMES:

TOTAL EXCAVATION:	320 CY
ALLUVIUM BACKFILL:	130 CY
SOIL DISPOSAL:	190 CY
IMPORT RIPRAP:	135 CY
APPROX NET EXPORT:	40 CY
APPROX VOLUME OF BURIED LOGS:	15 CY

NOTES:

1. SECTIONS SHOW EARTHWORKS FOR EXCAVATION AND FILL, FOR RIPRAP, AND GRAVEL ALLUVIUM. LOGS NOT SHOWN FOR CLARITY. FOR LOG PLACEMENT, SEE DWG C-6.
2. TOB FINAL ELEVATION. SEE TABLE ON DWG C-4.
3. RIPRAP SHALL CONSIST OF BROKEN STONE FREE OF ROCK FINES, SOIL OR OTHER EXTRANEOUS MATERIAL, AND FREE OF SEGREGATION, SEAMS, CRACKS, AND OTHER DEFECTS TENDING TO DESTROY ITS QUALITY AND RESISTANCE TO WEATHERING. RIPRAP SHALL HAVE THE FOLLOWING REQUIREMENTS FOR QUALITY:

AGGREGATE PROPERTY	TEST METHOD	REQUIRMENT
DEGRADATION FACTOR	WSDOT T 113	12 MINIMUM
LOS ANGELES WEAR, 500 REV.	AASHTO T 96	50% MAXIMUM
SPECIFIC GRAVITY, SSD	AASHTO T 85	2.55 MINIMUM

4. RIPRAP SHALL BE CONSISENT WITH THE FOLLOWING GRADATION REQUIREMENTS:

	SIZE RANGE	MAXIMUM SIZE
20% TO 90%	300 LBS TO 1 TON (2 CU. FT TO 1/2 CU. YD.)	
15% TO 80%	50 LBS TO 1 TON (1/3 CU. FT TO 1/2 CU. YD.)	
10% TO 20%	3 INCH	50 LBS.

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DRAFT — 36069 — Registered Civil Engineer (STATE)

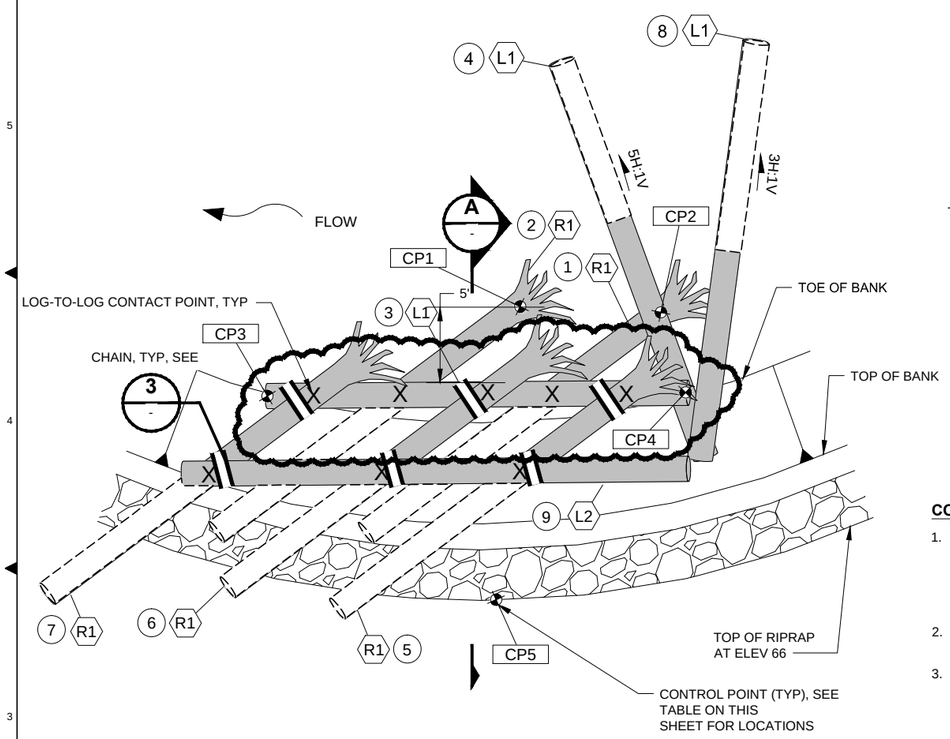
DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	0 REFERENCE 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

SECTIONS

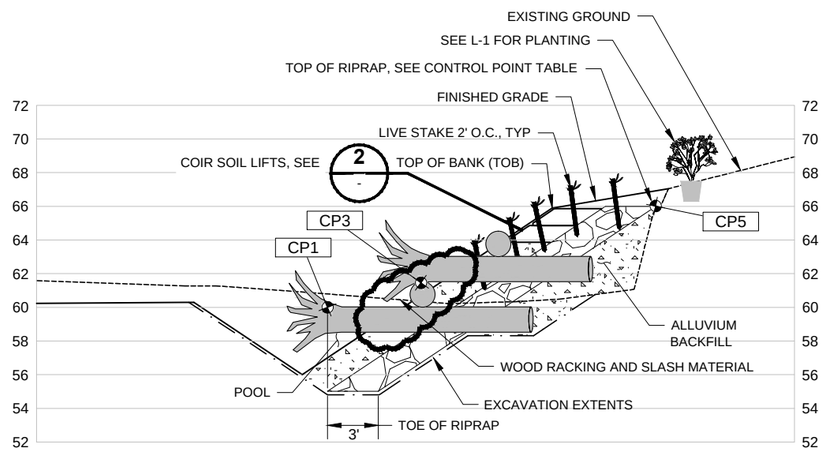
DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	C-5
SHT NO / TOTAL	7 / 11
REV NO:	0



DETAIL - LOG REVETMENT

SCALE: NTS

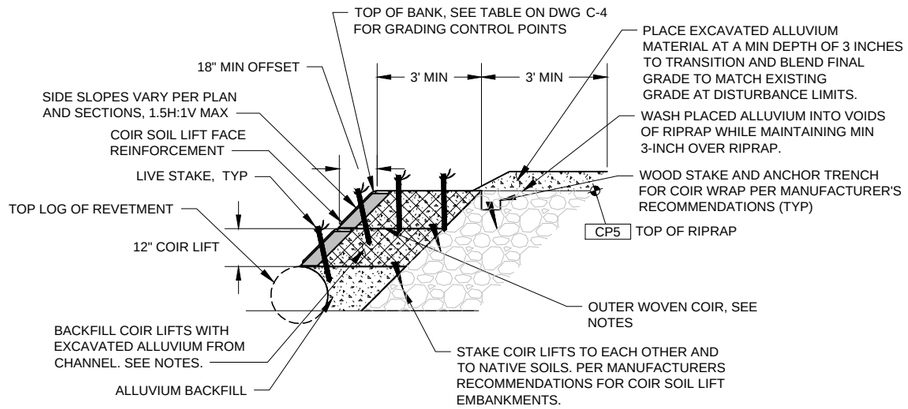
1 / C-3



SECTION - LOG REVETMENT

SCALE: NTS

A / -



DETAIL - TYPICAL COIR SOIL LIFT EMBANKMENT

SCALE: NTS

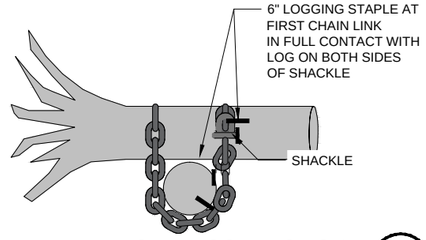
2 / -

COIR LIFT NOTES:

1. CONTRACTOR SHALL CONSTRUCT COIR SOIL LIFTS USING FOLLOWING COMPONENTS (OR APPROVED EQUAL):
   - A. OUTER WRAP WOVEN GEOTEXTILE
   - B. SOIL LIFT FACE REINFORCEMENT (COIR LOG)
   - C. ALLUVIUM BACKFILL
2. CONTRACTOR MAY SUBSTITUTE THE OUTER WRAP WOVEN GEOTEXTILE AND SOIL LIFT FACE REINFORCEMENT WITH A SINGLE PRODUCT SUCH AS A BIOD-BLOCK OR APPROVED EQUAL. BIODBLOCK SHOWN IN DETAIL.
3. MATERIALS:
   - A. OUTER WRAP WOVEN GEOTEXTILE SHALL BE A WOVEN COIR BLANKET SUCH AS DEKOWE 700, BON TERRA CF7, ROLANKA BIOD-MAT, OR EQUIVALENT. WOVEN COIR BLANKET SHALL CONSIST OF 100 PERCENT BIODEGRADABLE COCONUT FIBER STRANDS (COIR), WITH A DENSITY OF NO LESS THAN 700 GRAMS PER SQUARE METER AS DETERMINED BY ASTM D3776 WITH AN OPEN AREA OF NO MORE THAN 50%, AND A TENSILE STRENGTH (DRY) OF NO LESS THAN 0.5/0.20 KN.
   - B. COIR LOG SHALL BE 12 INCHES IN DIAMETER AND CONSIST OF 100 PERCENT BIODEGRADABLE DURABLE COCONUT (COIR) FIBER MATERIAL UNIFORMLY COMPACTED WITHIN A WOVEN NETTING MADE OF BRISTLE COIR TWINE.
   - C. BIOD-BLOCK 12-300 FROM ROLANKA INTERNATIONAL, INC. OR APPROVED EQUAL
   - D. ALLUVIUM BACKFILL FOR COIR SOIL LIFT SHALL CONSIST OF SILTY SAND EXCAVATED MATERIAL WITH THE HIGHEST ORGANIC CONTENT AS DETERMINED BY THE PROJECT REPRESENTATIVE.
4. CONSTRUCTION REQUIREMENTS:
   - A. COIR-WRAPPED SOIL LIFTS SHALL BE INSTALLED WITH COIR WRAPPED AROUND SOIL AS DESCRIBED HEREIN AND IN ACCORDANCE WITH THE DRAWINGS AND THE COIR MATERIAL MANUFACTURER'S RECOMMENDATIONS.
   - B. COIR SOIL LIFTS ASSUME TWO SEPARATE 12-INCH TALL COIR LIFTS AND THE USE OF MINIMUM ROLL WIDTHS OF 2.5 METERS (8 FEET). PLACED PARALLEL TO STREAM CHANNEL AND LOG REVETMENT ALIGNMENT.
   - C. CONTRACTOR SHALL PLACE THE WOVEN OUTER COIR BLANKET ON A LEVEL BENCH AT LEAST 3 FEET WIDE, THEN PLACE THE COIR LOG AT THE EMBANKMENT SLOPE FACE, THEN BACKFILL USING EXCAVATED ALLUVIUM TO A DEPTH OF 12 INCHES AND COMPACT BACKFILL USING THE UNDERSIDE OF AN EXCAVATOR BUCKET.
   - D. CONTRACTOR SHALL WRAP THE REMAINING COIR OVER THE COMPACTED ALLUVIUM AFTER PLACEMENT OF THE SEED AND PLACE THE END OF THE COIR IN ANCHOR TRENCH AND STAKED PER MANUFACTURER'S RECOMMENDATIONS.

LOG REVETMENT NOTES:

1. STRUCTURE LOCATION AND LOG ORIENTATION AND DEPTH SHOWN IS APPROXIMATE AND WILL VARY FOR EACH STRUCTURE BASED ON SITE SPECIFIC CONDITIONS. PRIOR TO CONSTRUCTION CONTRACTOR SHALL FLAG STRUCTURE CONTROL POINT LOCATION. THE PROJECT REPRESENTATIVE SHALL THEN MAKE ANY NECESSARY FIELD ADJUSTMENTS TO LOG LOCATIONS, ORIENTATIONS AND DEPTHS. CONTRACTOR SHALL VERIFY FINAL STRUCTURE LOCATION AND EXCAVATION EXTENTS WITH PROJECT REPRESENTATIVE PRIOR TO CONSTRUCTION.
2. LOGS SHALL BE PLACED AT THE LOCATIONS, ELEVATIONS, DEPTHS AND ORIENTATIONS SPECIFIED ON THE DRAWINGS OR AS DESIGNATED BY THE PROJECT REPRESENTATIVE.
3. CONTRACTOR SHALL BACKFILL ALL EXCAVATIONS USING RIPRAP AND EXCAVATED ALLUVIUM AS SHOWN. CONTRACTOR SHALL PLACE ALLUVIUM BACKFILL IN 1.5 FOOT DEEP LAYERS AND COMPACT EACH LAYER USING UNDERSIDE OF EXCAVATOR BUCKET. SATURATED AND UNWORKABLE BACKFILL MATERIAL WILL NOT BE ALLOWED AND SHALL BE HAULED AND DISPOSED OF OFF SITE AS DESIGNATED BY THE PROJECT REPRESENTATIVE. CONTRACTOR SHALL SEGREGATE EXCAVATED ALLUVIUM MATERIAL AND USE SANDY GRAVEL AS ALLUVIUM BACKFILL BELOW ELEVATION 64 AND SILTY SAND MATERIAL, AND MATERIAL WITH ORGANICS ABOVE EXCAVATION 64.
4. BURIED PORTION OF LOGS SHOWN ON PLAN VIEW ONLY.



DETAIL - CHAIN CONNECTION

SCALE: NTS

3 / -

CHAIN LASHING NOTES:

1. LASH HORIZONTAL LOGS TO WITH CHAIN AS SHOWN ON DETAIL OR AS DIRECTED BY PROJECT REPRESENTATIVE. CHAIN LASHING SYSTEM SHALL BE PUT IN TENSION TO 1/4 OF THE CHAIN WORKING LOAD LIMIT AND BE MAINTAINED DURING CHAIN SHACKLING.
2. CHAIN LENGTH NEEDED PER LASHING WILL VARY BASED ON DIAMETER OF LOGS AT THE ACTUAL LOCATIONS THEY ARE LASHED TOGETHER.
3. CHAIN FOR LASHING SHALL BE 3/8 INCH DIAMETER CARBON-WELDED UNTREATED GRADE 43 HIGH-TEST CHAIN, WITH A MINIMUM WORKING LIMIT OF 5,000 POUNDS.
4. ALL HARDWARE USED FOR LASHING SHALL BE STAINLESS STEEL OR NATURAL UNTREATED STEEL, AND CONNECTIONS SHALL BE OF THE QUANTITY AND TYPE SPECIFIED BY THE MANUFACTURER WITH AN EQUAL OR GREATER STRENGTH THAN THE CHAIN OR AS APPROVED BY THE PROJECT REPRESENTATIVE.
5. MAR OR ROUND ALL EXPOSED HARDWARE NUTS AND BOLT THREADS AFTER INSTALLATION FOR THEFT PROTECTION. PROJECT REPRESENTATIVE SHALL APPROVE ANY COATING PRIOR TO CONTRACTOR APPLYING IT. SECURE CHAIN TO LOGS USING 6 INCH LOGGING STAPLE.
6. CONTRACTOR MAY SUBMIT ALTERNATIVE CHAIN CONNECTION SYSTEM FOR APPROVAL. STEEL CABLE WILL NOT BE PERMITTED.

LOG SCHEDULE - REVETMENT STRUCTURE:

LOG TYPE	MIN DIA (IN)	LENGTH (FT)	ROOTWAD (YES/NO)	TOTAL QTY PER STRUCTURE
R1	18	20	YES	5
L1	18	25	NO	3
L2	18	30	NO	1

LOG SURVEY CONTROL POINT TABLE:

POINT	NORTHING	EASTING	ELEVATION
REVETMENT STRUCTURE 1			
CP1	209432.90	1308187.41	60.0
CP2	209426.194	1308189.73	60.0
CP3	209443.43	1308177.96	61.5
CP4	209413.62	1308181.56	61.5
CP5	209427.52	1308166.47	66.0
REVETMENT STRUCTURE 2			
CP1	209416.10	1308196.58	60.0
CP2	209414.06	1308211.03	60.0
CP3	209418.42	1308189.69	61.5
CP4	209400.26	1308205.98	61.5
CP5	209399.46	1308188.44	66.0
REVETMENT STRUCTURE 3			
CP1	209412.58	1308220.02	60.0
CP2	209415.16	1308235.62	60.0
CP3	209405.94	1308214.29	61.5
CP4	209401.90	1308233.23	61.5
CP5	209389.14	1308226.10	66.0

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DESIGNED/DRAWN: L. TURNIDGE
PROJECT ENGINEER: I. MOSTRENKO
DESIGN APPROVAL:
PROJECT ACCEPTANCE:
SCALE: AS NOTED
REFERENCE 0 1"
FACILITY NUMBER:
CONTRACT NO:

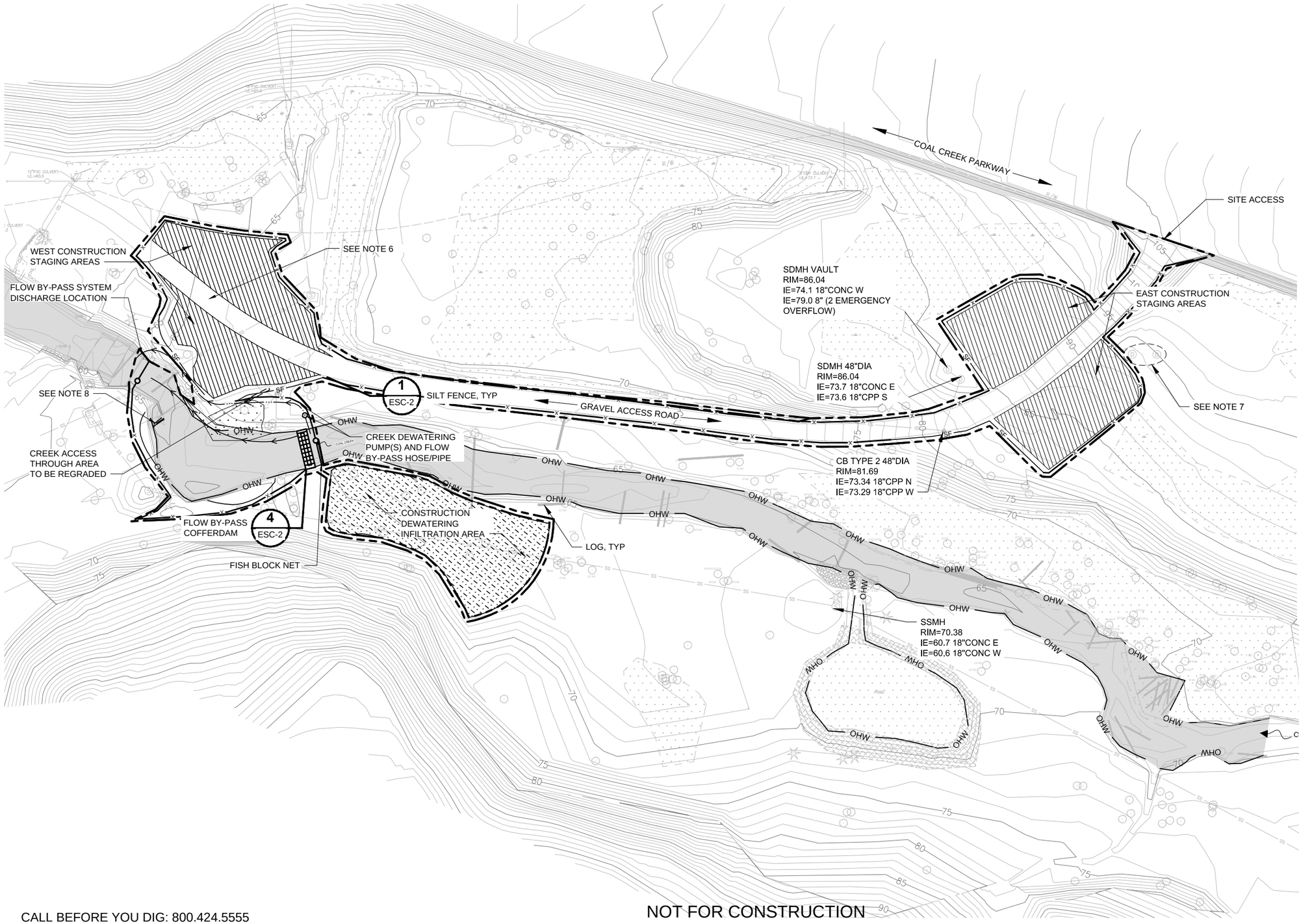
DRAFT 36069

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

DETAILS

DCN:
DATE: MAY 2015
PROJECT FILE NO:
DRAWING NO: **C-6**
SHT NO 8 / TOTAL 11
REV NO: **0**



NOTES:

1. ALL TESC MEASURES SHALL FOLLOW AND COMPLY WITH VOLUME II OF THE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (SMMWW).
2. CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PER THE SMMWW.
3. CONTRACTOR SHALL INSTALL SILT FENCE ON DOWNSLOPE EXTENTS OF STAGING AREAS AS SHOWN. CONTRACTOR MAY HAVE A GAP IN THE SILT FENCE AT THE CREEK ACCESS POINT AS SHOWN.
4. LOCATION OF FLOW BY-PASS SYSTEM IS APPROXIMATE. CONTRACTOR MAY USE PUMP OR GRAVITY BY-PASS (OR BOTH) AS REQUIRED PER THE CONTRACT DOCUMENTS. LOCATION AND TYPE OF BY-PASS SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR BASED ON MEANS AND METHODS AND CONSTRUCTION SEQUENCING. SEE DRAWING ESC-2 FOR FLOW BY-PASS AND WATER MANAGEMENT NOTES.
5. ALL CREEK FLOW SHALL BE COLLECTED AND BY-PASSED AROUND THE WORK AREA AS SHOWN. THE DEWATERED CHANNEL SHALL BE THE PRIMARY ACCESS AND WORK AREA FOR THE REVETMENTS.
6. MAINTAIN ACCESS ALONG GRAVEL ACCESS ROAD AND THROUGH STAGING AREAS AT ALL TIMES FOR CITY OF BELLEVUE STAFF AND CONTRACTORS.
7. LOCATION OF TWO STORM DRAIN MANHOLES SHOWN ARE APPROXIMATE AND WERE NOT INCLUDED IN THE 2007 OR 2014 SURVEY. CONTRACTOR SHALL VERIFY LOCATIONS BEFORE USING EAST STAGING AREA.
8. THREE EXISTING DRAINAGE OUTFALL PIPES WILL BE FLOWING DURING CONSTRUCTION. CONTRACTOR SHALL TEMPORARILY SLEEVE AND DIVERT WATER AROUND THE WORK AREA DURING CONSTRUCTION. FLOW IN DRAINAGE OUTFALL PIPES MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

N

30 15 0 30 60

SCALE IN FEET

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

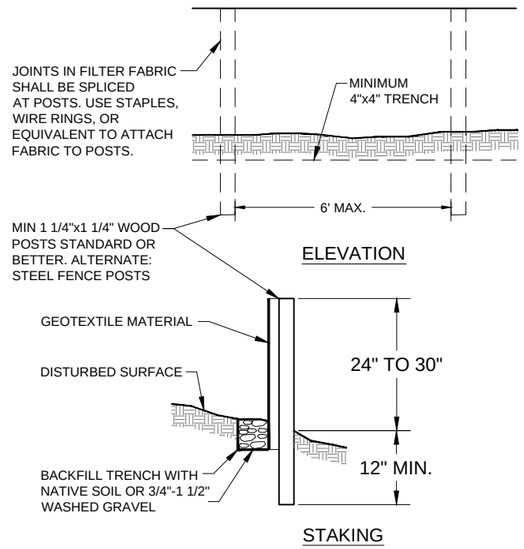
HERRERA

DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	0 REFERENCE 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

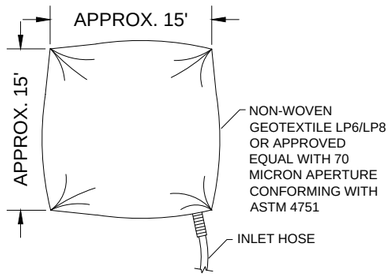
DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

TESC PLAN

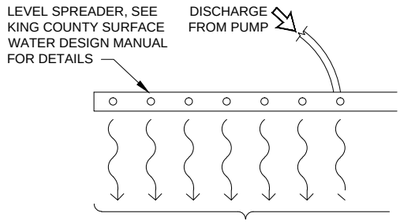
DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	**ESC-1**
SHT NO / TOTAL	9 / 11
REV NO:	**0**



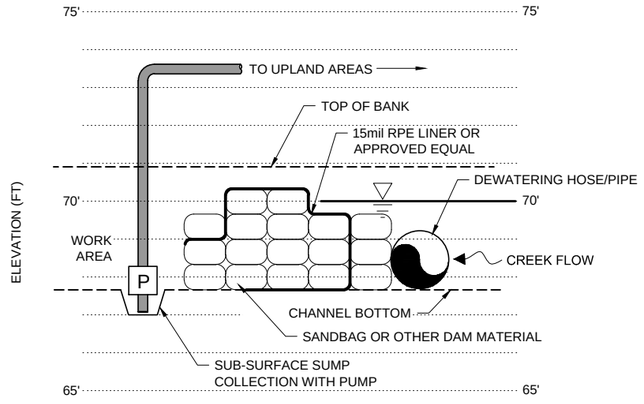
DETAIL - SILT FENCE 1
SCALE: NTS ESC-1



DETAIL - SILT BAG 2
SCALE: NTS -



DETAIL - LEVEL SPREADER 3
SCALE: NTS -



DETAIL - FLOW BY-PASS COFFERDAM 4
SCALE: NTS ESC-1

SILT FENCE NOTES:

1. THE FILTER FABRIC (CONSTRUCTION GEOTEXTILE FOR TEMPORARY SILT FENCE) SHALL BE PURCHASED IN A CONTINUOUS ROLL, 5FT WIDE, CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, THE FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND SECURELY FASTENED TO THE POST.
2. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES.
3. A TRENCH SHALL BE EXCAVATED A MINIMUM OF 4 INCHES WIDE BY 4 INCHES DEEP, UPSLOPE AND ADJACENT TO THE POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
4. THE FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE POSTS, AND 12 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO TREES.
5. THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL OR WITH 3/4"-1 1/2" WASHED GRAVEL.
6. SILT FENCES SHALL BE REMOVED AT DIRECTION OF PROJECT REPRESENTATIVE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
7. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
8. SILT FENCE PERFORMANCE SHALL BE EVALUATED AND SILT FENCE LOCATIONS SHALL BE EVALUATED AND ADJUSTED AS DIRECTED OR APPROVED BY THE PROJECT REPRESENTATIVE AND THE PERMITTING AUTHORITY.
9. SILT FENCE SHALL BE INSTALLED AS SHOWN ON DRAWINGS.
10. ANY DEVIATION OR CHANGE TO SILT FENCE DETAILS MUST BE APPROVED BY PROJECT REPRESENTATIVE.
11. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE MANUFACTURER'S SPECIFICATIONS FOR FILTER FABRIC ON SITE.
12. MAINTENANCE STANDARDS:
    - A. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
    - B. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE SILT FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND, OR OTHERWISE DIVERTED TO A LOCATION THAT DOES NOT RESULT IN TURBID DISCHARGES TO SURFACE WATERS.
    - C. THE UPHILL SIDE OF THE SILT FENCE SHALL BE CHECKED FOR SIGNS OF THE SILT FENCE CLOGGING, ACTING AS A BARRIER TO FLOW, AND CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF SUCH CHANNELIZATION OCCURS, THE CONTRACTOR SHALL REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
    - D. SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN THE SEDIMENT IS 6 INCHES HIGH.
    - E. IF THE FILTER FABRIC HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

TEMPORARY EROSION AND SEDIMENT CONTROL NOTES:

1. THE IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
2. THE TESC FACILITIES SHOWN ON THE PLANS MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, WETLANDS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
3. THE TESC FACILITIES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
4. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR'S TESC SUPERVISOR AND MAINTAINED AS NECESSARY.
5. ANY AREAS OF EXPOSED SOILS THAT WILL NOT BE DISTURBED FOR SEVEN DAYS SHALL BE IMMEDIATELY STABILIZED WITH TESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.)
6. ANY AREA NEEDING TESC MEASURES THAT DOES NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
7. THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
8. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 2 TO 3 INCHES.
9. AT COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL BACKBLADE TO MATCH EXISTING GRADE AND REPAIR SOFT SPOTS BY REPLACING SUITABLE NATIVE MATERIAL.
10. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE TESC FACILITIES AND COPIES PROVIDED TO THE PROJECT REPRESENTATIVE AT THEIR REQUEST.

WATER MANAGEMENT NOTES:

1. WATER MANAGEMENT METHODS SHALL BE USED TO BY-PASS AND/OR DIVERT FLOW TO ISOLATE INSTREAM WORK AREAS AS NECESSARY TO COMPLETE CONSTRUCTION OF THE REVETMENT STRUCTURES AND TO AVOID IMPACTS TO WATER QUALITY. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE PROJECT REPRESENTATIVE 5 DAYS PRIOR TO INITIATING ANY ONSITE CONSTRUCTION ACTIVITIES, A WATER MANAGEMENT, WORK SEQUENCING, AND TESC PLAN ADDRESSING SITE SPECIFIC TECHNIQUES AND METHODS FOR 1) TEMPORARILY BY-PASSING AND/OR DIVERTING FLOW TO ISOLATE WORK AREAS, 2) MANAGING WATER THAT ENTERS THE ISOLATED WORK AREAS, AND 3) ALL DEWATERING THAT MAY BE NEEDED DURING CONSTRUCTION. WORK AREA ISOLATION MEASURES MAY INCLUDE USING DEWATERING PUMPS, PIPES/HOSES, BULK BAGS, SAND BAGS, PLASTIC SHEETING, OR APPROVED EQUAL AS NECESSARY TO ALLOW CONSTRUCTION WHILE PREVENTING IMPACTS TO WATER QUALITY. COMBINATIONS OF ISOLATION MEASURES MAY BE USED AS NECESSARY.
2. PRIOR TO CONSTRUCTING AND OPERATING ANY WORK AREA ISOLATION MEASURE THE CONTRACTOR SHALL INSTALL FISH BLOCK NETS AND COMPLETE ALL FISH REMOVAL WITHIN THE AREA TO BE ISOLATED. CONSTRUCTION WITHIN THE ISOLATED WORK AREA MAY NOT COMMENCE UNTIL THE CONTRACTOR HAS COMPLETED ALL FISH EXCLUSION ACTIVITIES. FISH EXCLUSION, REMOVAL, AND RELEASE SHALL BE CONDUCTED BY A QUALIFIED FISHERIES BIOLOGIST. ALL TEMPORARY FISH BLOCK NETS MUST REMAIN IN PLACE DURING REMOVAL OF ISOLATION MEASURES AND OTHER TESC MEASURES.
3. BY-PASS METHODS SHOWN ON THE PLANS PROVIDE AN EXAMPLE OF THE MINIMUM MEASURES REQUIRED AND INCLUDE BOTH GRAVITY AND PUMPING AS AN EXAMPLE. LENGTH AND CONFIGURATION OF WORK AREA ISOLATION MEASURES NEEDED WILL VARY DEPENDING ON THE CONTRACTORS MEANS AND METHODS AND WORK SEQUENCING. CONTRACTOR SHALL DETERMINE THE APPROPRIATE FLOW BY-PASS METHOD AND MATERIALS REQUIRED AND BE RESPONSIBLE FOR DESIGNING, OPERATING, MAINTAINING AND REMOVING ALL ISOLATION MEASURES. PUMP DEVICE SHALL BE EQUIPPED WITH A FISH GUARD TO PREVENT PASSAGE OF FISH INTO THE DIVERSION DEVICE PURSUANT TO RCW 77.57.010 AND 77.57.070 AS FOLLOWS:
    - a. THE MINIMUM OPEN AREA FOR ALL TYPES OF FISH GUARDS SHALL BE 27 PERCENT
    - b. THE SCREENED INTAKE SHALL CONSIST OF A FACILITY WITH ENOUGH SURFACE AREA TO ENSURE THAT THE VELOCITY THROUGH THE SCREEN IS LESS THAN 0.4 FEET PER SECOND
    - c. PUMP SCREEN MAINTENANCE SHALL BE ADEQUATE TO PREVENT INJURY OR ENTRAPMENT OF JUVENILE FISH
    - d. PUMP SCREEN INTAKE SHALL BE SCREENED BY ONE OF THE FOLLOWING
        1) PERFORATED PLATE: 0.094 INCH (MAXIMUM OPENING DIAMETER)
        2) PROFILE BAR: 0.069 INCH (MAXIMUM WIDTH OPENING)
        3) WOVEN WIRE: 0.087 INCH (MAXIMUM OPENING IN THE NARROW DIRECTION)
4. CONTRACTOR SHALL CONSTRUCT WORK AREA ISOLATION MEASURES STARTING AT THE UPSTREAM END OF THE INTENDED WORK AREA TO DIRECT WATER AWAY FROM THE WORK AREA.
5. SURFACE AND GROUND WATER ENCOUNTERED DURING EXCAVATIONS AND WITHIN THE ISOLATED WORK AREAS MAY BE PUMPED AS NECESSARY TO THE INFILTRATION AREA SHOWN ON DWG ESC-1 TO ALLOW CONSTRUCTION AND INSPECTION OF THE REVETENT STRUCTURES, AND TO FACILITATE THE REMOVAL OF SEDIMENT AND TURBIDITY FROM THE WATER IF APPROVED BY PROJECT REPRESENTATIVE. ANY DISCHARGE OF WATER RETURNING FROM THE INFILTRATION ZONE BACK INTO COAL CREEK (DUE TO DEWATERING ACTIVITIES) SHALL NOT EXCEED THE WATER QUALITY REQUIREMENTS SET FORTH IN THE PROJECT PERMITS.
6. DEWATERING WATER MAY BE PUMPED TO INFILTRATION AREAS AND DISCHARGED THROUGH AN ENERGY DISSIPATOR, LEVEL SPREADER, FILTER SOCK, SILT BAGS, OR OTHER AS APPROVED BY THE PROJECT REPRESENTATIVE. WATER DISCHARGED OR INFILTRATED SHALL NOT CAUSE EROSION OR RESULT IN TURBIDITY IMPACTS TO COAL CREEK.
7. DEWATERING WATER MAY NOT BE PUMPED DIRECTLY TO WETLANDS OR TO THE CHANNEL WITHOUT PRIOR WRITTEN APPROVAL FROM THE PROJECT REPRESENTATIVE. WATER SHALL BE DISCHARGED IN ACCORDANCE WITH THESE DRAWINGS, THE CONTRACTOR'S APPROVED WATER MANAGEMENT, WORK SEQUENCING, TESC PLAN, AND PROJECT PERMITS.
8. THE PROJECT REPRESENTATIVE SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF ANY WATER PUMPING ACTIVITIES.
9. CONSTRUCTION DEWATERING SHALL BE MAINTAINED 24 HOURS PER DAY DURING CONSTRUCTION AND MONITORED BY THE CONTRACTOR DURING NON-WORKING HOURS.

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DRAFT 36069

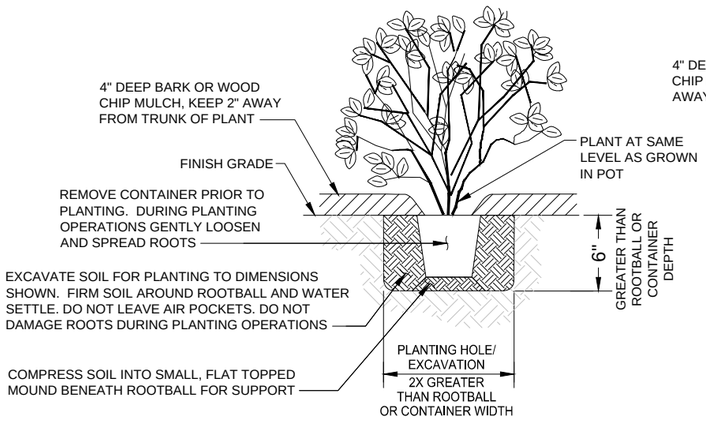
DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	REFERENCE 0 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

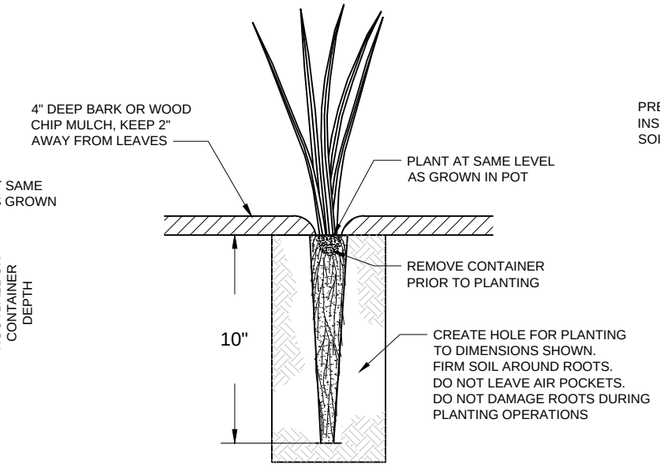
TESC DETAILS

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	ESC-2
SHT NO / TOTAL	10 / 11
REV NO:	0



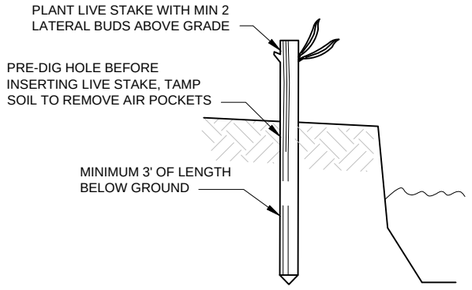
DETAIL - ONE, TWO AND FIVE GALLON CONTAINER TREE AND SHRUB PLANTING 1

SCALE: NTS



DETAIL - 10 CUBIC INCH SEDGE PLUG PLANTING 2

SCALE: NTS



DETAIL - 4' LIVE STAKE PLANTING 3

SCALE: NTS

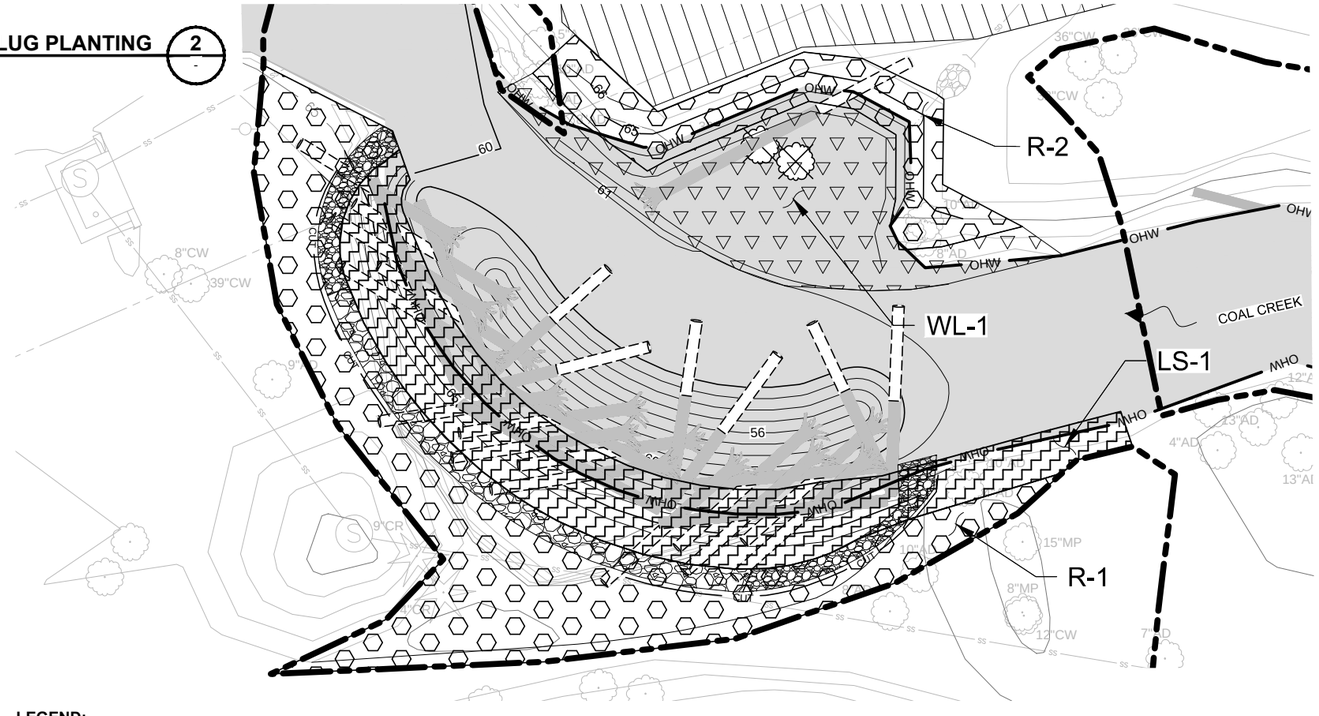
NOTES:

1. REMOVE ALL NOXIOUS NON NATIVE WEEDS FROM PLANTING ZONES PRIOR TO MULCHING AND PLANTING.
2. THE PROJECT REPRESENTATIVE SHALL APPROVE GRADES AND WEED REMOVAL PRIOR TO MULCHING AND PLANT INSTALLATION.
3. PLANT SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE PROJECT REPRESENTATIVE.
4. ALL PLANT MATERIAL AND BARK OR WOOD CHIP MULCH SHALL BE APPROVED BY THE PROJECT REPRESENTATIVE PRIOR TO INSTALLATION. REJECTED MATERIALS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
5. PLANTS SHALL BE TAGGED FOR IDENTIFICATION AND VERIFIED BY THE PROJECT REPRESENTATIVE PRIOR TO INSTALLATION.
6. KEEP PLANTS SHADED UNTIL ACTUAL TIME OF PLANTING. DO NOT LET PLANT MATERIAL SIT IN SUN OR DRY OUT BEFORE PLANTING.
7. INSTALL TREES, SHRUBS, LIVE STAKES, AND GROUNDCOVER FROM OCTOBER 1 THROUGH MARCH 1 OF THE FIRST DORMANT SEASON FOLLOWING LOG INSTALLATION AND GRADING.
8. BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED. MULCH SHALL BE TESTED AND MEET THE FOLLOWING LOOSE VOLUME GRADATION:

SIEVE SIZE	PERCENT PASSING	
	MINIMUM	MAXIMUM
2"	95	100
NO. 4	0	30

PLANT SCHEDULE

STRATUM	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE	SPACING	TOTAL QTY	PLANT ZONE QUANTITIES			
							LS-1	WL-1	R-1	R-2
TREE										
	CRATAEGUS DOUGLASII	BLACK HAWTHORN	FAC	1 GAL. CONT.	8' O.C.	8			6	2
	POPULUS TRICHOCARPA	BLACK COTTONWOOD	FAC	1 GAL. CONT.	8' O.C.	8			6	2
	PICEA SITCHENSIS	SITKA SPRUCE	FAC	2 GAL. CONT.	8' O.C.	4			3	1
	PICEA SITCHENSIS	SITKA SPRUCE	FAC	5 GAL. CONT.	8' O.C.	4			3	1
	RHAMNUS PURSHIANA	CASCARA	FAC-	1 GAL. CONT.	8' O.C.	8			6	2
	SALIX LASIANDRA	PACIFIC WILLOW	FACW	4' LIVE STAKE	2' O.C.	110	110			
	THUJA PLICATA	WESTERN RED CEDAR	FAC	2 GAL. CONT.	8' O.C.	4			3	1
	THUJA PLICATA	WESTERN RED CEDAR	FAC	5 GAL. CONT.	8' O.C.	4			3	1
SHRUB										
	ACER CIRCINATUM	VINE MAPLE	FAC	1 GAL. CONT.	4' O.C.	30			23	7
	AMELANCHIER ALNIFOLIA	SERVICEBERRY	FACU	1 GAL. CONT.	4' O.C.	30			23	7
	CORNUS SERICEA	RED OSIER DOGWOOD	FACW	4' LIVE STAKE	2' O.C.	110	110			
	LONICERA INVOLUCRATA	BLACK TWINBERRY	FAC	1 GAL. CONT.	4' O.C.	15		15		
	OEMLARIA CERASIFORMIS	INDIAN PLUM	FACU	1 GAL. CONT.	4' O.C.	30			23	7
	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	FACW	1 GAL. CONT.	4' O.C.	15		15		
	ROSA PISOCARPA	SWAMP ROSE	FAC	1 GAL. CONT.	4' O.C.	15		15		
	RUBUS SPECTABILIS	SALMONBERRY	FAC	1 GAL. CONT.	4' O.C.	15		15		
	SALIX SITCHENSIS	SITKA WILLOW	FACW	4' LIVE STAKE	2' O.C.	110	110			
	SYMPHORICARPOS ALBUS	SNOWBERRY	FACU	1 GAL. CONT.	4' O.C.	30			23	7
GROUNDCOVER										
	ATHYRIUM FILIX-FEMINA	LADY FERN	FAC	1 GAL. CONT.	1.5' O.C.	511		183	250	78
	CAREX OBNUPTA	SLOUGH SEDGE	OBL	10 CU-IN PLUG	1.5' O.C.	183		183		
	POLYSTICHUM MUNITUM	SWORD FERN	FACU	1 GAL. CONT.	2' O.C.	163			124	39
	TOLMIEA MENZIESII	PIGGYBACK PLANT	FAC	4-INCH POT	1' O.C.	807			616	191



LEGEND:

- RIPARIAN PLANT ZONE (R)
- WETLAND PLANT ZONE (WL)
- LIVE STAKE PLANT ZONE (LS)

PLANT CLUSTERING NOTES:

1. PLANT SHRUBS IN CLUSTERS OF THREE, FIVE , OR SEVEN.
2. PLANT GROUNDCOVER IN CLUSTERS OF SEVEN, NINE, OR ELEVEN.
3. PLANT ONE SPECIES PER CLUSTER.
4. EVENLY SPACE CLUSTERS THROUGHOUT EACH PLANT ZONE.
5. INTENT OF PLANTING IS TO APPEAR NATURAL AND INFORMAL.

N

10 5 0 10 20

SCALE IN FEET

CALL BEFORE YOU DIG: 800.424.5555

NOT FOR CONSTRUCTION

NO	REVISION DESCRIPTION	BY	APVD	DATE

100% DRAWING SET

HERRERA

DRAFT

DESIGNED/DRAWN: L. TURNIDGE	SCALE: AS NOTED
PROJECT ENGINEER: I. MOSTRENKO	0 REFERENCE 1"
DESIGN APPROVAL:	FACILITY NUMBER:
PROJECT ACCEPTANCE:	CONTRACT NO:

King County

DEPARTMENT OF NATURAL RESOURCES & PARKS
WASTEWATER TREATMENT DIVISION
COAL CREEK TRUNK BANK RESTORATION

PLANTING PLAN

DCN:	
DATE:	MAY 2015
PROJECT FILE NO:	
DRAWING NO:	L-1
SHT NO / TOTAL	11 / 11
REV NO:	0