



US Army Corps
of Engineers
Seattle District



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

Joint Public Notice

Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

US Army Corps of Engineers

Regulatory Branch
4735 E. Marginal Way S, Bldg 1202
Seattle, WA 98134-2388
Telephone: (206) 764-6071
ATTN: Jennifer Lang,
Project Manager

WA Department of Ecology

SEA Program
Post Office Box 47600
Olympia, WA 98504-7600
Telephone: (360) 407-6076
ATTN: SEA Program,
Federal Permit Coordinator

Public Notice Date: May 6, 2022

Expiration Date: June 5, 2022

Reference No.: NWS-2021-283
Name: City of Enumclaw (Boise
Creek Restoration at Enumclaw
Golf Course)

Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the U.S. as described below and shown on the enclosed drawings dated October 2021.

The Corps will review the work in accordance with Section 404 of the Clean Water Act (CWA). Ecology will review the work pursuant to Section 401 of the CWA, with applicable provisions of State water pollution control laws and the Coastal Zone Management Act.

APPLICANT: City of Enumclaw
Attention: Mr. Eric Palmer
1309 Myrtle Avenue
Enumclaw, Washington 98022
Telephone: (253) 740-2665

AGENT: Herrera Environmental Consultants, Inc.
Attention: Ms. Tina Mirable
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
Telephone: (360) 202-6839

LOCATION: In Boise Creek, Chappel Springs, and wetlands at Enumclaw Golf Course, Enumclaw, King County, Washington.

WORK: The applicant proposes to excavate and place fill waterward of the ordinary high water mark (OHWM) of wetlands and Boise Creek to install a vegetated berm and realign Boise Creek through a new channel excavated near the toe of forested slope at the eastern edge of the Enumclaw Golf Course. The realignment would include excavating a 10-foot wide side channel (530 linear feet) along the new channel's east bank to increase braided channel complexity. The applicant also proposes to daylight approximately 900 linear feet of Chappel Springs that is currently piped.

NWS-2021-283, City of Enumclaw (Boise Creek Restoration at Enumclaw Golf Course)

In Water Work: Excavation of the Boise Creek realignment and side channel would include excavating 1,301 cubic yards (cy) within 0.33 acre of two Category II riverine wetlands, resulting in direct conversion of wetlands to stream channel. 26 cy of native fill within the existing OHWM of Boise Creek (2,068 sf, 0.047 acre) would be excavated for the new creek channel. Installation of the vegetated berm would involve placing 383 cy of permanent fill within 1,339 sf (0.03 acre) waterward of the OHWM of Boise Creek and placing 9,219 cy of permanent fill within 0.92 acre of two Category II riverine wetlands. 0.615 acre of four wetlands would be temporarily impacted for site access. After Boise Creek waters have been redirected into the new channel, approximately 100 linear feet (3,000 sf, 0.07 acre) of the existing Boise Creek channel would be permanently filled with 12 cy of material.

A temporary construction bridge would be installed over Boise Creek and two permanent bridges would be installed over the daylighted portion of Chappel Springs. A total of 94,920 sf (2.17 acres) of project area, including the newly created riparian area, would be revegetated. The disturbed portions within the golf course would be restored with ryegrass mix but all other areas would be replanted with appropriate native trees, shrubs, and ground cover plants. Installation of native plants within the floodplain shelf situated between the newly restored channel and the braided side channel will be delayed until after Year 1 or Year 2 monitoring in order to evaluate the results of anticipated channel re-deposition and or scoring within this area.

PURPOSE: The purpose of the project is to restore salmonid spawning habitat within the highly modified segment of Boise Creek that runs through the Enumclaw Golf Course while maintaining the functionality of the golf course as a public resource.

ADDITIONAL INFORMATION: The wetland boundaries and location of the ordinary high water mark shown on the project drawings have not yet been verified by the U.S. Army Corps of Engineers (Corps). If the Corps determines the boundaries of the wetland/waters are substantially inaccurate a new public notice may be published.

MITIGATION: The proposed mitigation is under review and has not been approved by the Corps or Ecology. The applicant proposes to create 2.1 acres and enhance 0.31 acre of wetland adjacent to the realigned Boise Creek channel and create 0.078 acre of wetland along Chappel Springs to compensate for permanent impacts to wetlands.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. After receipt of comments from this public notice, the U.S. Army Corps of Engineers will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The proposed action would impact EFH in the project area. If the U.S. Army Corps of Engineers (Corps) determines that the proposed action may adversely affect EFH for federally managed fisheries in Washington waters, the Corps will initiate EFH consultation with the NMFS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

NWS-2021-283, City of Enumclaw (Boise Creek Restoration at Enumclaw Golf Course)

CULTURAL RESOURCES: The Corps has reviewed the latest published version of the National Register of Historic Places, Washington Information System for Architectural and Archaeological Records Data and other sources of information. A historic properties investigation has been conducted within the permit area. No historic properties determined eligible for or listed on the National Register of Historic Places were found to exist within the permit area. The Corps invites responses to this public notice from Native American Tribes or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns regarding historic properties and sites of religious and cultural significance at or near the project area. After receipt of comments from this public notice, the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the National Historic Preservation Act, as appropriate. A historic properties investigation has been conducted within the permit area. No historic properties determined eligible for or listed on the National Register of Historic Places were found to exist within the permit area.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION – CORPS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

SOURCE OF FILL MATERIAL: The applicant has not yet identified the source of the fill material. Should a permit be issued, the Corps will evaluate the fill material source prior to the start of construction.

EVALUATION – ECOLOGY: Ecology is soliciting comments from the public; Federal, Native American Nations or tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny a Section 401 Water Quality Certification for the proposed project.

ADDITIONAL EVALUATION: The City of Enumclaw has issued an exemption from the requirement of obtaining a Shorelines Substantial Development permit for this project. Per 33 CFR 325(b)(1)(i), this

NWS-2021-283, City of Enumclaw (Boise Creek Restoration at Enumclaw Golf Course)

public notice serves as the Section 401(a)(2) neighboring jurisdiction notification to the Environmental Protection Agency.

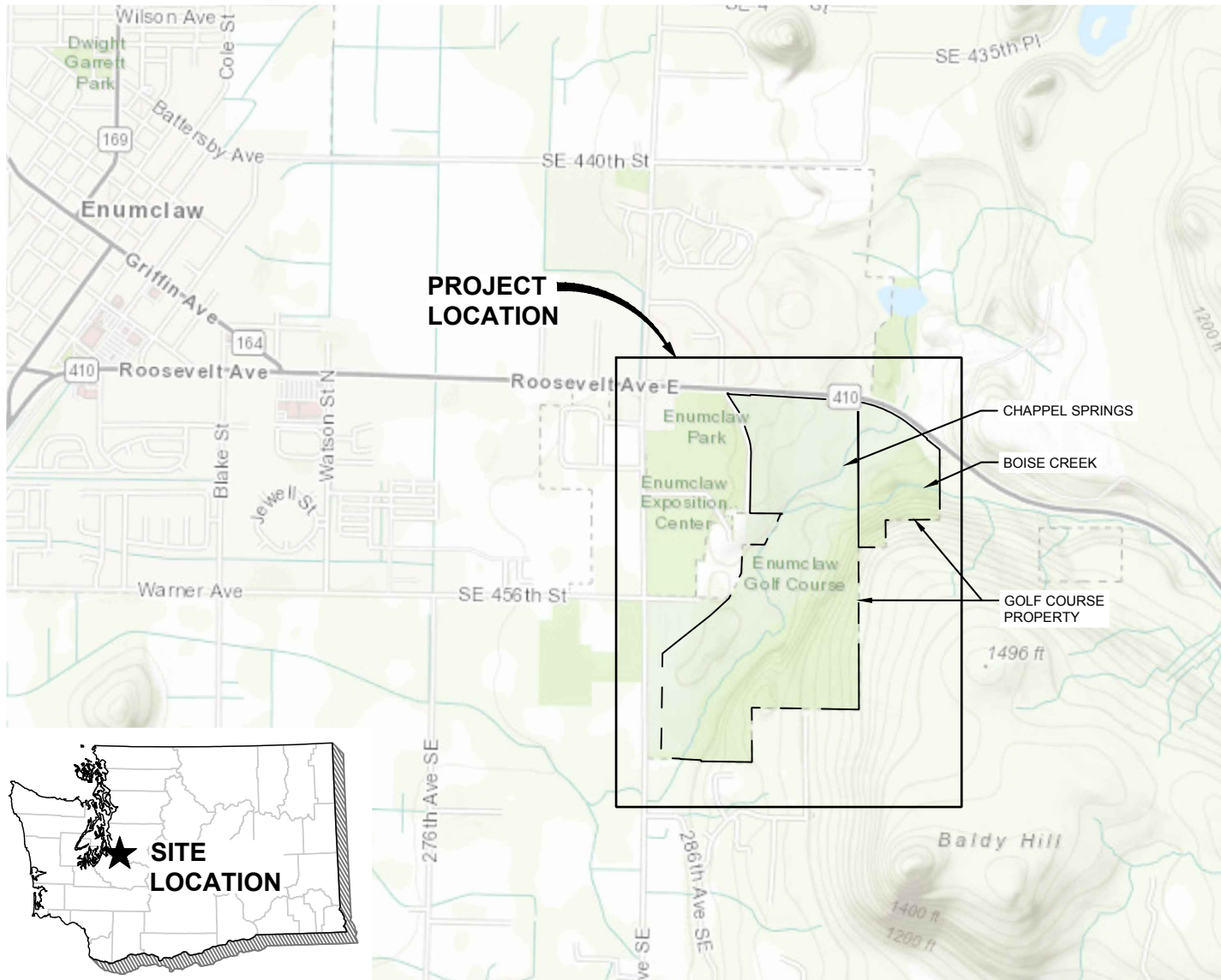
COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether authorizing the work would not be contrary to the public interest. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

CORPS COMMENTS: All e-mail comments should be sent to jennifer.w.lang@usace.army.mil. Conventional mail comments should be sent to: U.S. Army Corps of Engineers, Regulatory Branch, Attention: Ms. Jennifer Lang, 4735 E. Marginal Way S, Bldg 1202, Seattle, Washington, 98134-2388. All comments received will become part of the administrative record and are subject to public release under the Freedom of Information Act including any personally identifiable information such as names, phone numbers, and addresses.

ECOLOGY COMMENTS: Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA and/or Coastal Zone Management consistency concurrence, may do so by submitting written comments to the following address: Washington State Department of Ecology, Attention: Federal Permit Coordinator, Post Office Box 47600, Olympia, Washington, 98504-7600, or e-mail to ecyrefedpermits@ecy.wa.gov.

To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: City of Enumclaw; NWS-2021-283

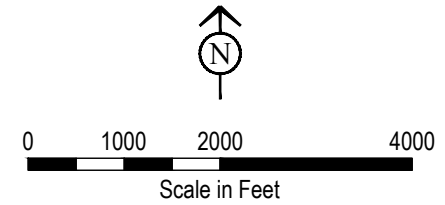
Encl: Figures (24)



SHEET INDEX	
SHEET	DESCRIPTION
1	VICINITY MAP
2	LEGEND
3	PARCEL MAP
4	EXISTING CONDITIONS PLAN
5	TESC PLAN
6	SITE PLAN
7	PLAN AND PROFILE
8	BOISE CREEK SECTIONS
9	BOISE CREEK SECTIONS
10	FILLED CHANNEL REACH SECTION
11	PLAN AND PROFILE
12	CHAPPEL SPRINGS SECTIONS
13	CHAPPEL SPRINGS BRIDGES DETAILS
14	DETAIL - ENGINEERED LOG STRUCTURE
15	DETAIL - BULK BAG DAM
16	DETAIL - SILT FENCE 1
17	DETAIL - SILT FENCE 2
18	DETAIL - HI-VISIBILITY FENCE
19	DETAIL - CLAY KEY
20	PLANTING PLAN
21	PLANTING PLAN
22	PLANTING SCHEDULE
23	PLANTING SCHEDULE
24	PLANTING SCHEDULE



VICINITY MAP
SCALE: 1"=2000'



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:56 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Cover.dwg

VICINITY MAP

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT
 ENUMCLAW GOLF COURSE
 RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:






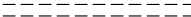



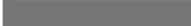
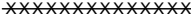


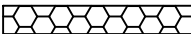













Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 1 OF 24 DATE: OCTOBER 2021

LEGEND

	PROJECT LIMITS		APPROXIMATE EXISTING CHAPPEL SPRINGS CULVERT SYSTEM
	ORDINARY HIGH WATER		EXISTING GRAVEL PATH
	RIVER		EXISTING ASPHALT PATH
	WETLAND		EXISTING BRIDGE
	FISH EXCLUSION SCREEN		CONSTRUCTION STAGING AND STOCKPILE AREA
	HI-VISIBILITY FENCE		TEMPORARY ACCESS ROAD
	SILT FENCE		BOISE CREEK CHANNEL ACCESS
	RIGHT OF WAY / PARCEL LIMITS		CHAPPEL SPRINGS ACCESS
	EXISTING TREELINE		TREE PROTECTION
	FAIRWAY / GREEN / TEE BOX BOUNDARY		EVERGREEN TREE
	EXISTING BUILDING		SOIL TEST PLOT
	100 YEAR FEMA FLOODPLAIN (ZONE A)		EXISTING TEE BOX
			EXISTING PUTTING GREEN



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:57 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Legend.dwg

LEGEND

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



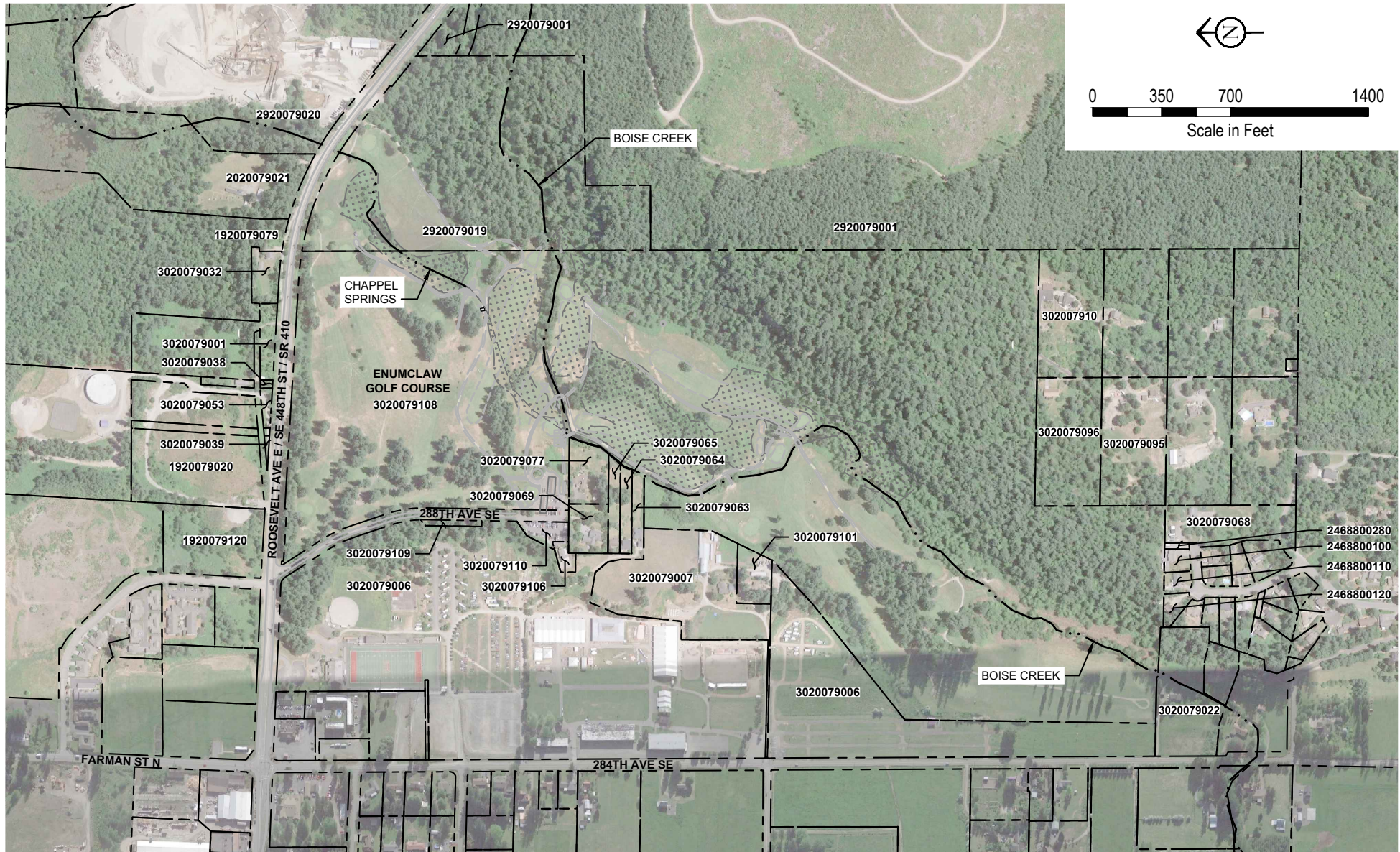
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

2

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: **2** OF: 24 DATE: OCTOBER 2021



HERRERA PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:57 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Parcels.dwg

PARCEL MAP

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT
 ENUMCLAW GOLF COURSE
 RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



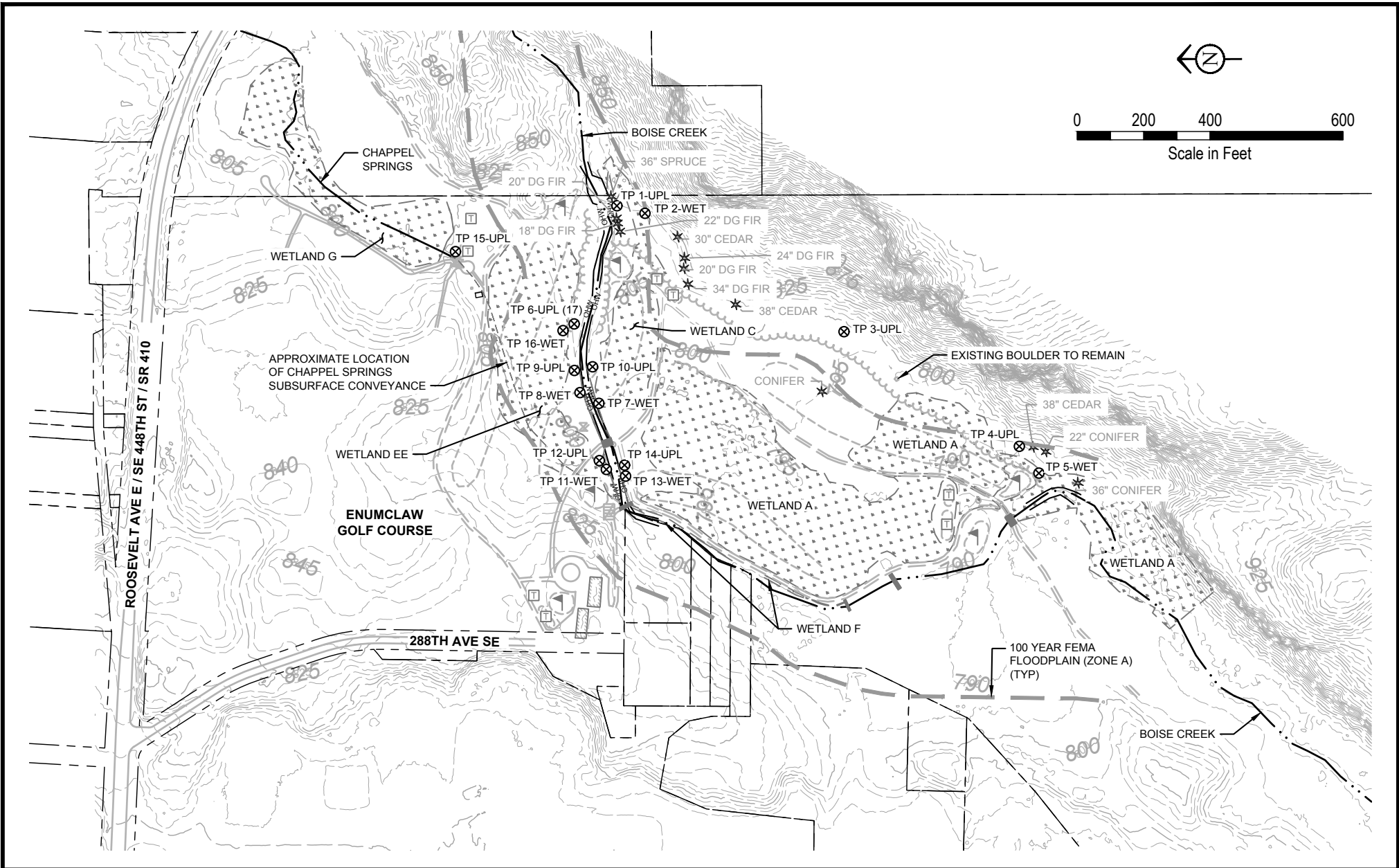
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

3

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: **3** OF: 24 DATE: OCTOBER 2021



HERRERA PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:58 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\ExistCond.dwg

EXISTING CONDITIONS PLAN

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



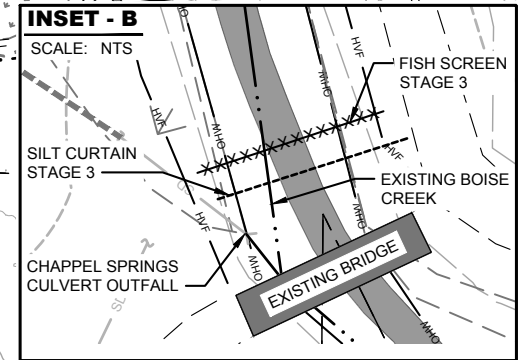
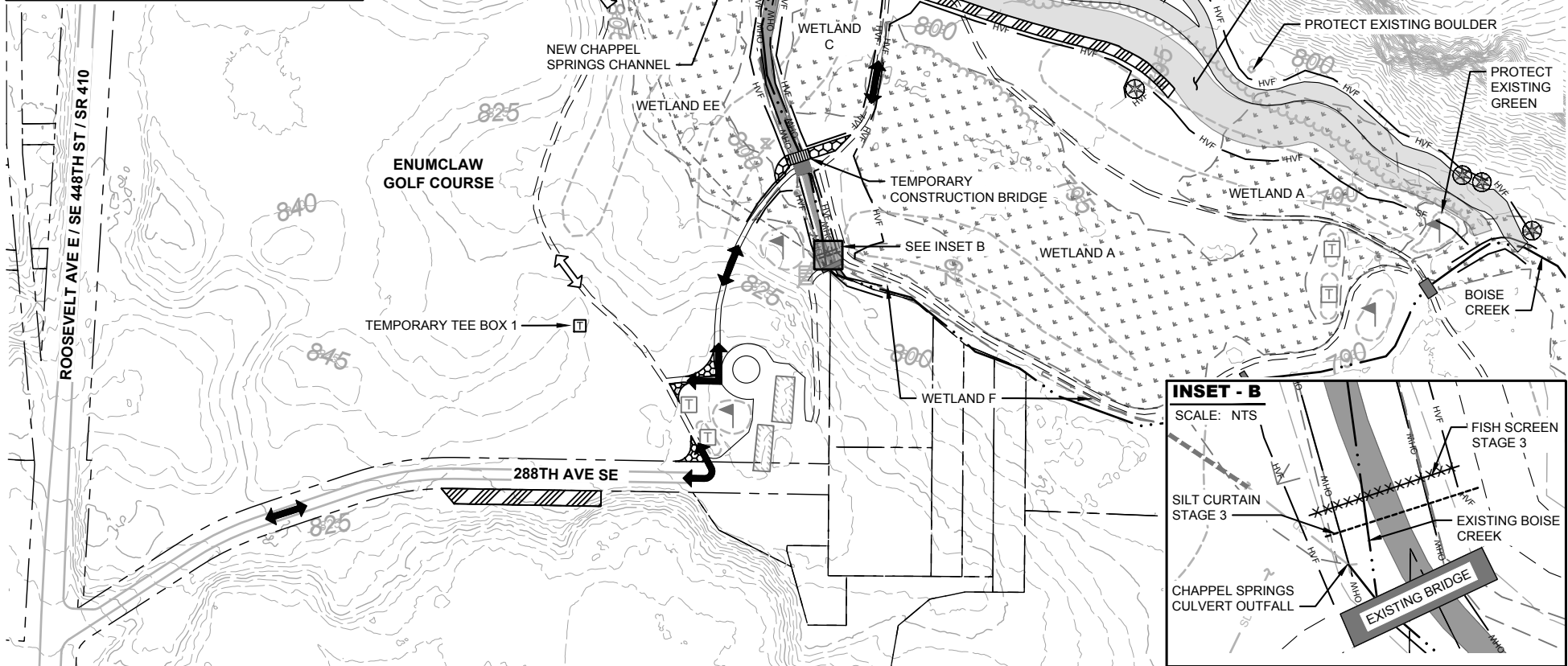
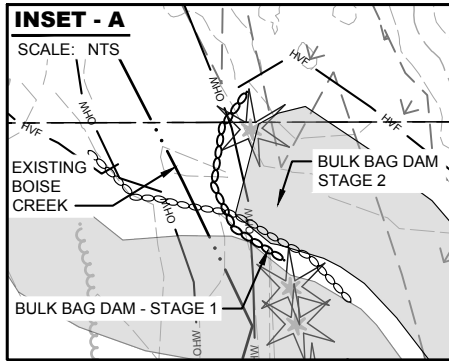
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

4

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 4 OF: 24 DATE: OCTOBER 2021



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:59 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\TESC.dwg

TESC PLAN

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:

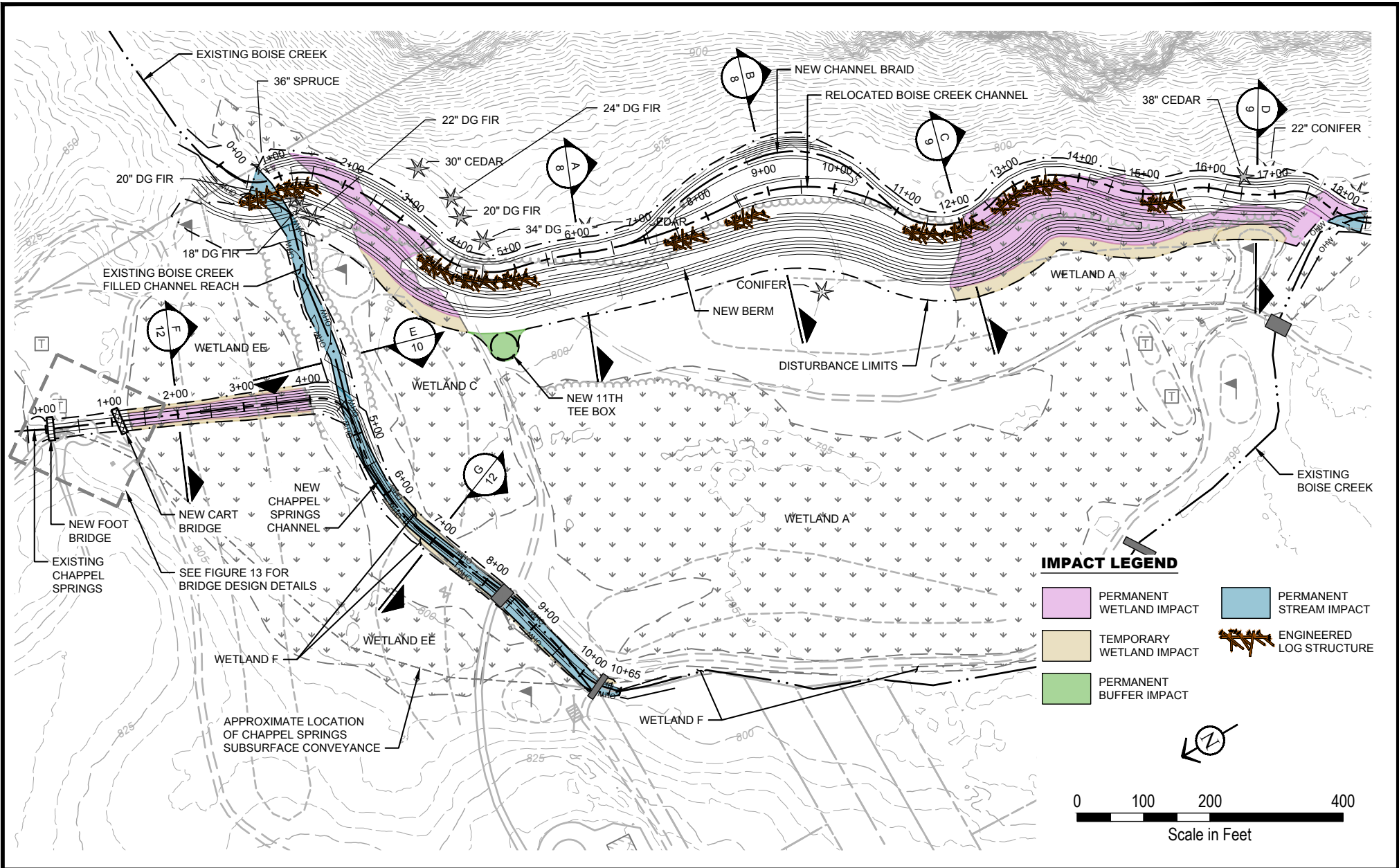


Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 5 OF: 24 DATE: OCTOBER 2021



HERRERA PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 11:59 AM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Site.dwg

SITE PLAN

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:

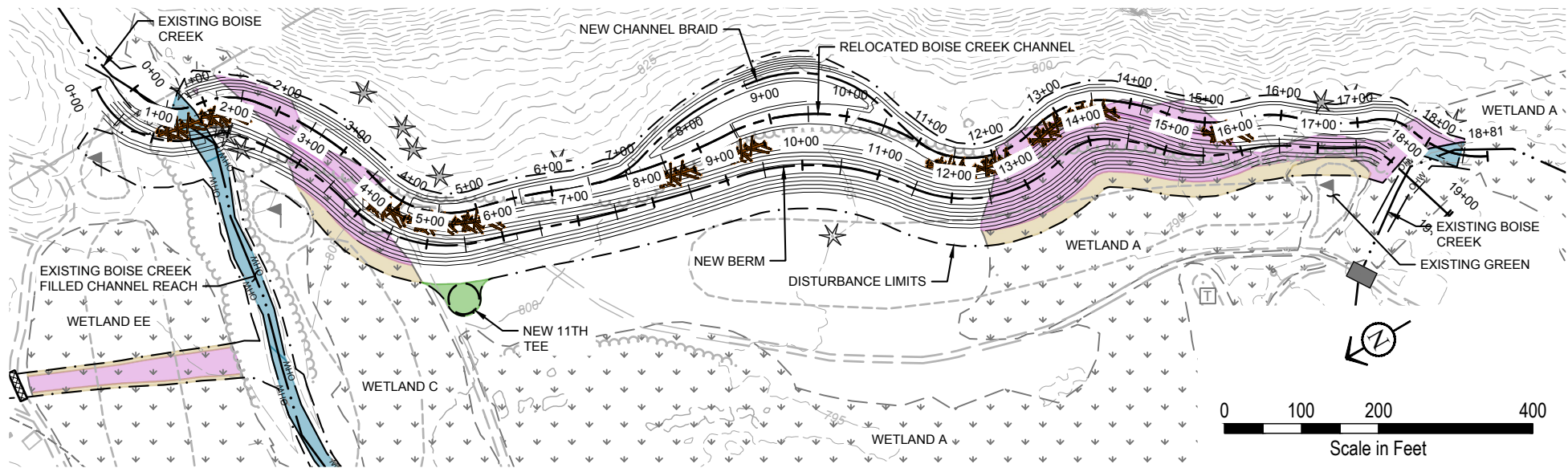
CITY OF ENUMCLAW

Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE 6

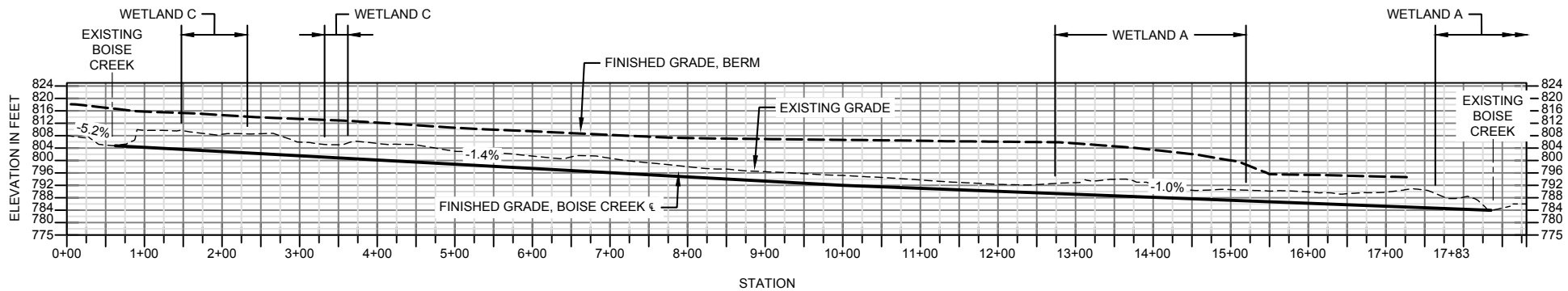
STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 6 OF: 24 DATE: OCTOBER 2021



IMPACT LEGEND

- PERMANENT WETLAND IMPACT
- PERMANENT BUFFER IMPACT
- ENGINEERED LOG STRUCTURE
- TEMPORARY WETLAND IMPACT
- PERMANENT STREAM IMPACT



PLAN AND PROFILE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



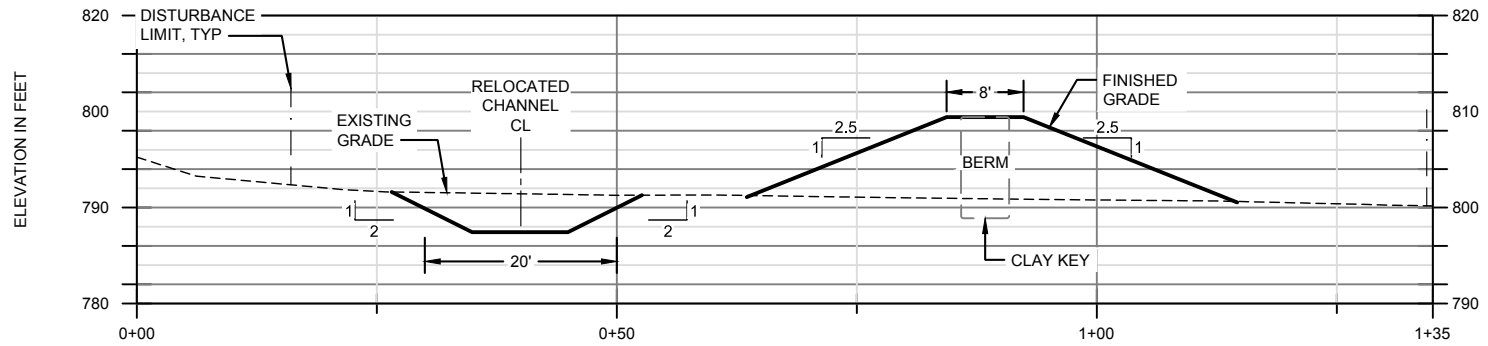
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

7

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

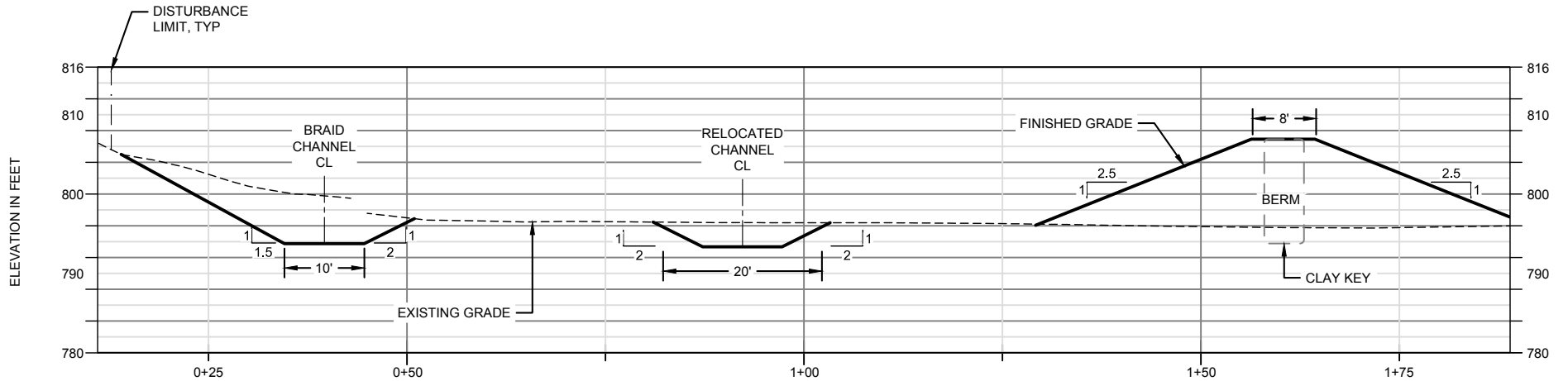
REFERENCE NO: -
 SHEET: 7 OF 24 DATE: OCTOBER 2021



SECTION - BOISE CREEK RELOCATED CHANNEL AND NEW BERM - STA 6+00

SCALE: 1"=20'

A
6



SECTION - BOISE CREEK BRAID CHANNEL, RELOCATED CHANNEL, AND NEW BERM - STA 9+00

SCALE: 1"=20'

B
6



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:01 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Sect.dwg

BOISE CREEK SECTIONS

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT
 ENUMCLAW GOLF COURSE
 RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



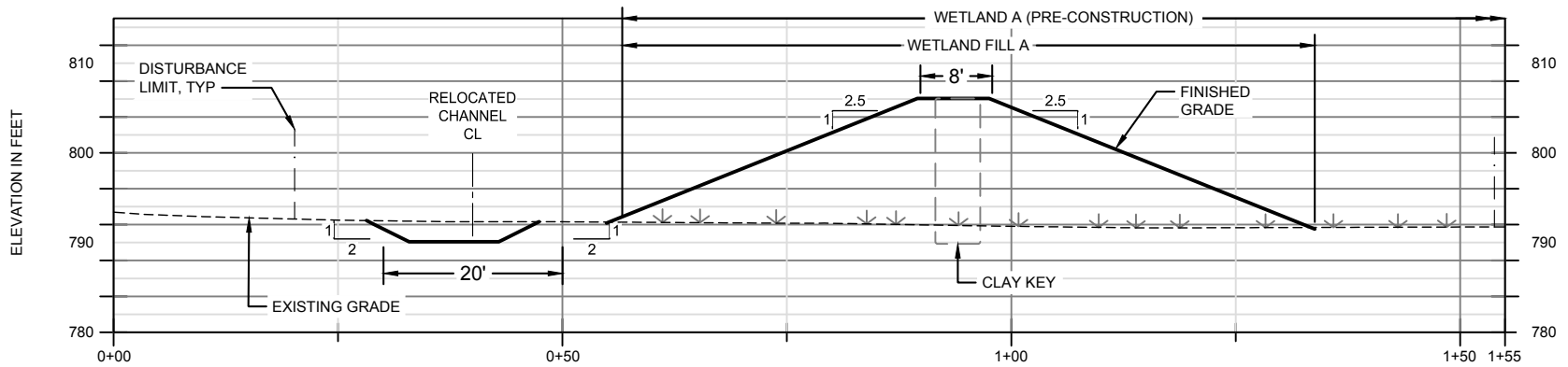
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

8

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

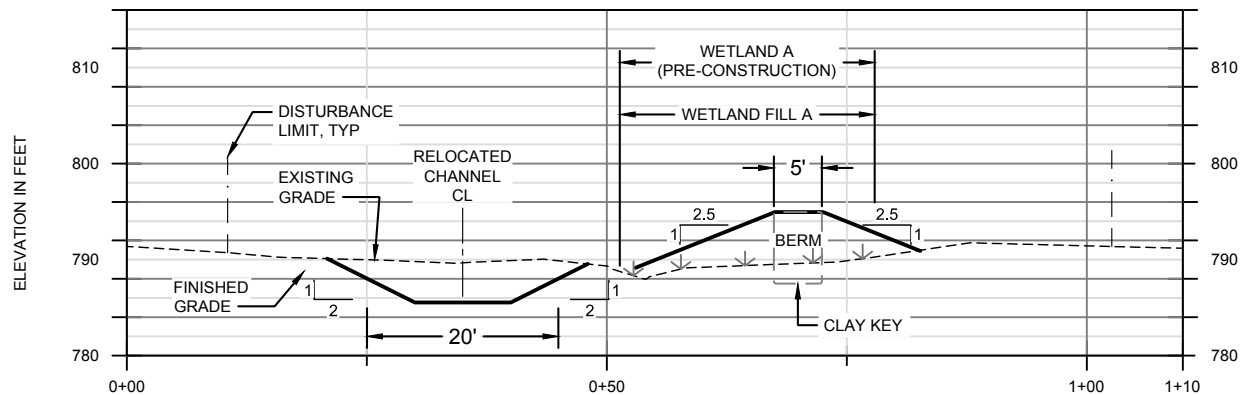
REFERENCE NO: -
 SHEET: 8 OF: 24 DATE: OCTOBER 2021



SECTION - BOISE CREEK RELOCATED CHANNEL AND BERM - STA 12+00

SCALE: 1"=20'

C
6



SECTION - BOISE CREEK RELOCATED CHANNEL AND BERM - STA 16+75

SCALE: 1"=20'

D
6



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:01 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Sect.dwg

BOISE CREEK SECTIONS

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



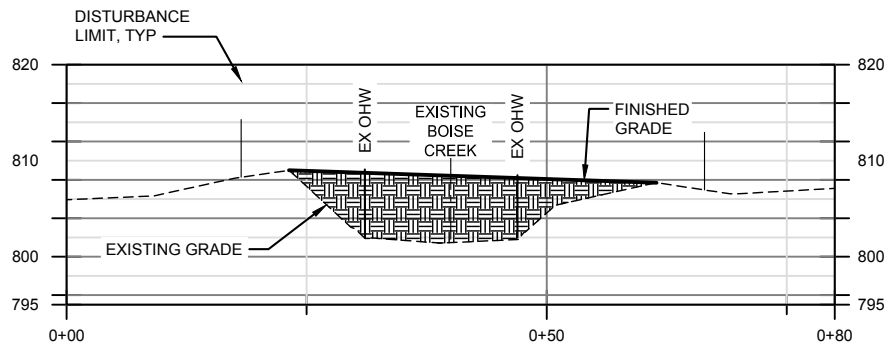
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

9

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 9 OF: 24 DATE: OCTOBER 2021



SECTION - EXISTING BOISE CREEK FILLED CHANNEL REACH

SCALE: 1"=20'



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:01 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Sect.dwg

FILLED CHANNEL REACH SECTION

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



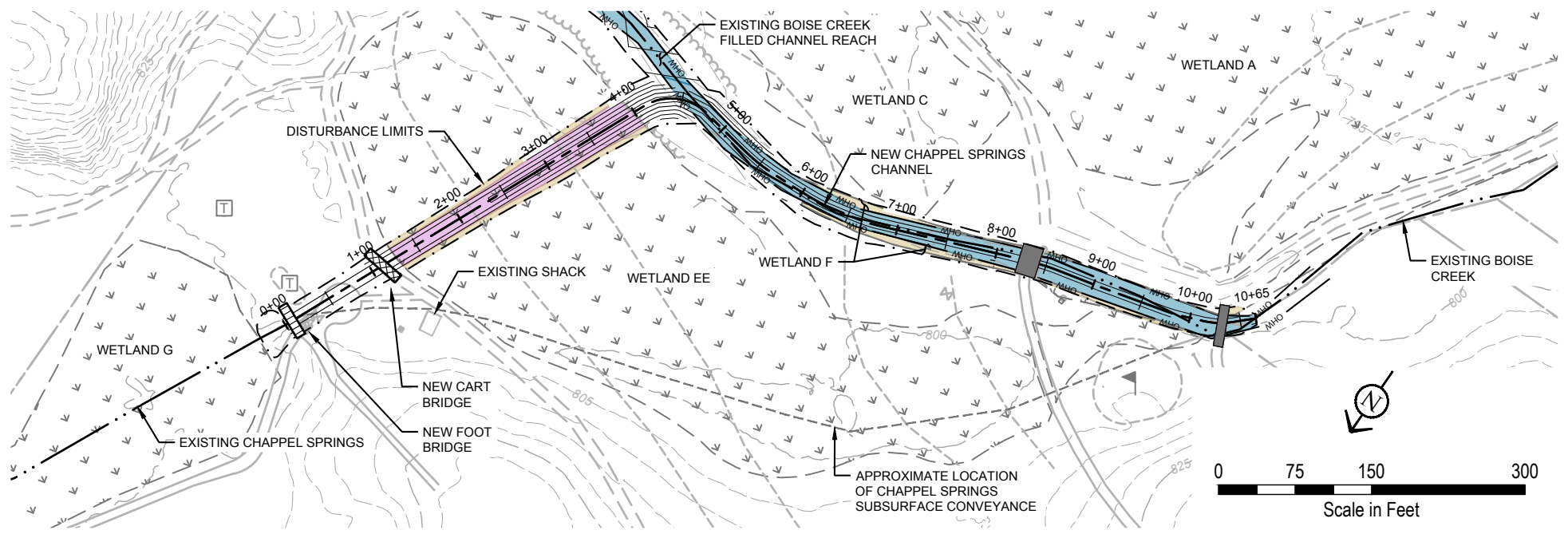
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

10

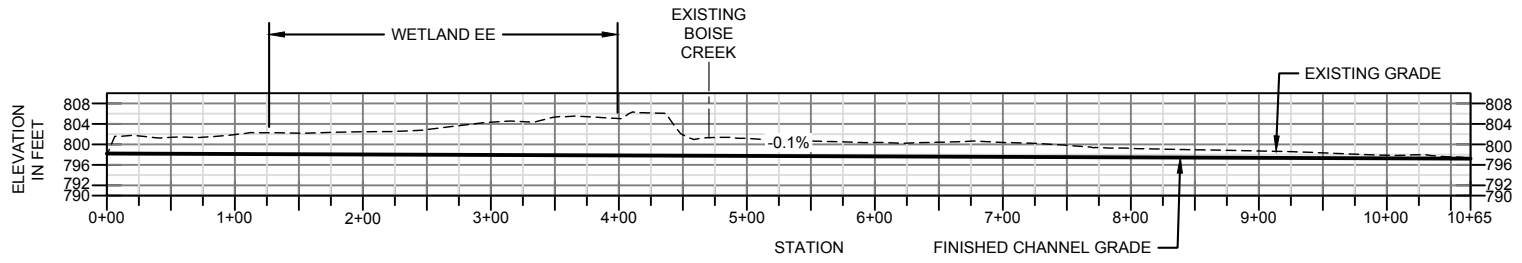
STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: **10** OF: **24** DATE: **OCTOBER 2021**



IMPACT LEGEND

- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND IMPACT
- PERMANENT STREAM IMPACT
- PERMANENT BUFFER IMPACT
- ENGINEERED LOG STRUCTURE



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:01 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Site.dwg

PLAN AND PROFILE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



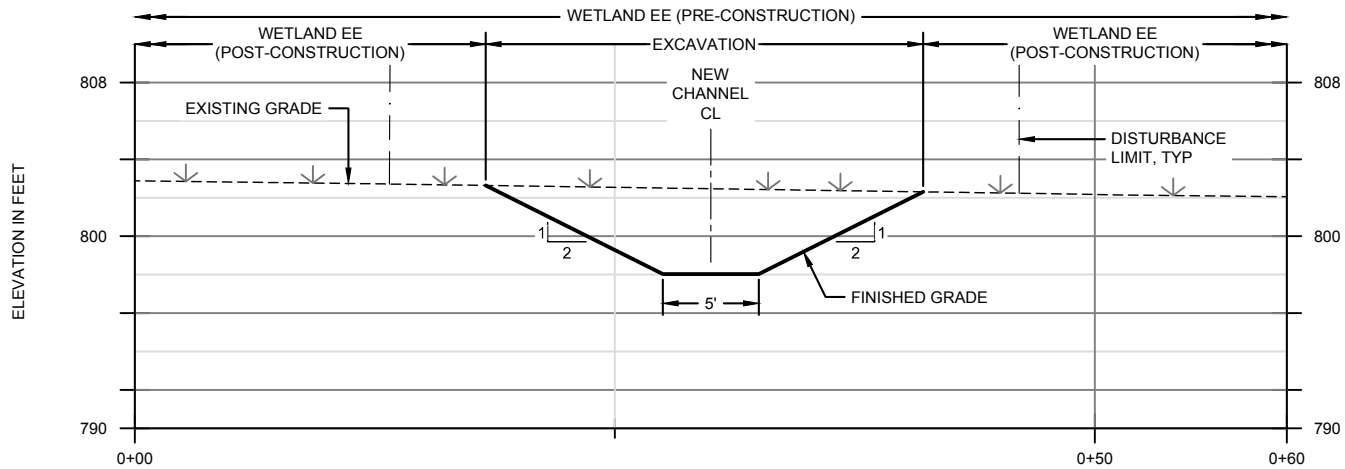
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

11

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

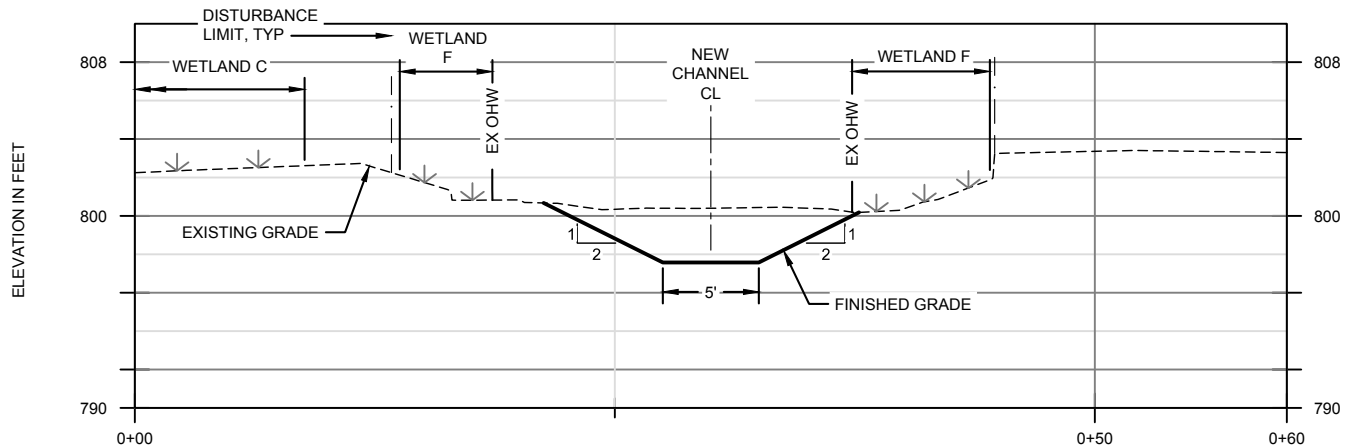
REFERENCE NO: -
 SHEET: 11 OF 24 DATE: OCTOBER 2021



SECTION - NEW CHAPPEL SPRINGS CHANNEL - STA 2+00

SCALE: 1"=10'

F
6



SECTION - NEW CHAPPEL SPRINGS CHANNEL - STA 7+00

SCALE: 1"=10'

G
6

CHAPPEL SPRINGS SECTIONS

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



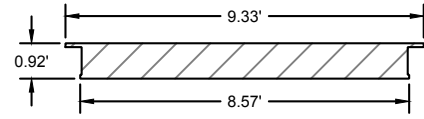
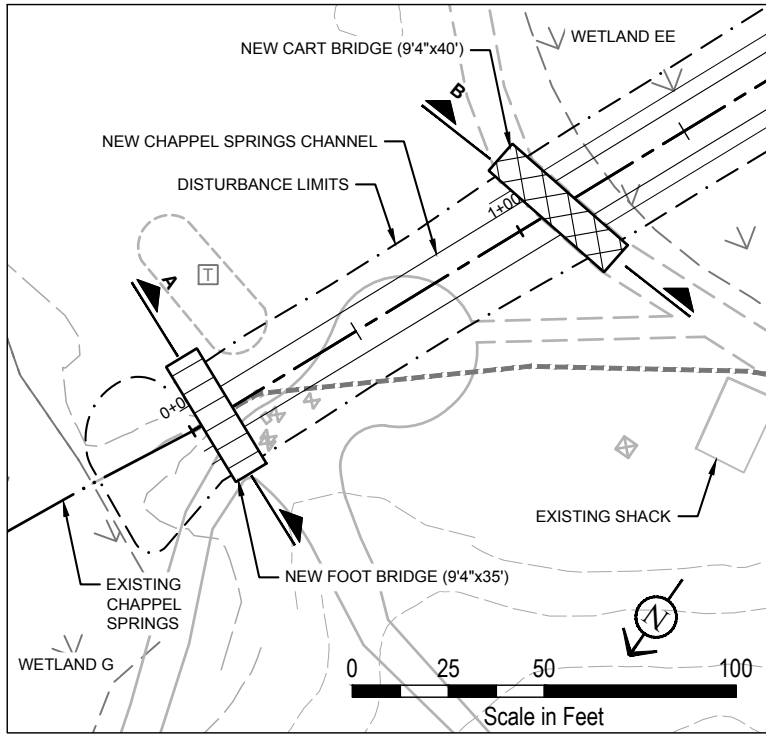
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

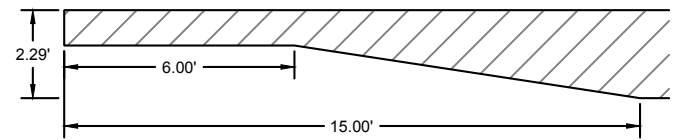
12

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

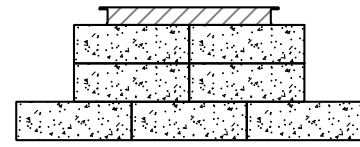
REFERENCE NO: -
 SHEET: 12 OF: 24 DATE: OCTOBER 2021



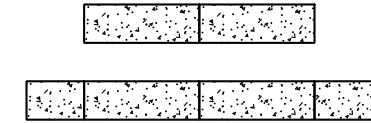
SECTION VIEW - TYPICAL DIMENSIONS OF BRIDGE END



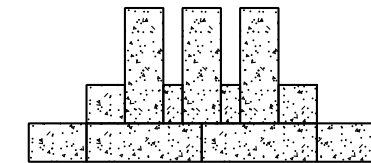
SIDE VIEW - TYPICAL DIMENSIONS OF BRIDGE END



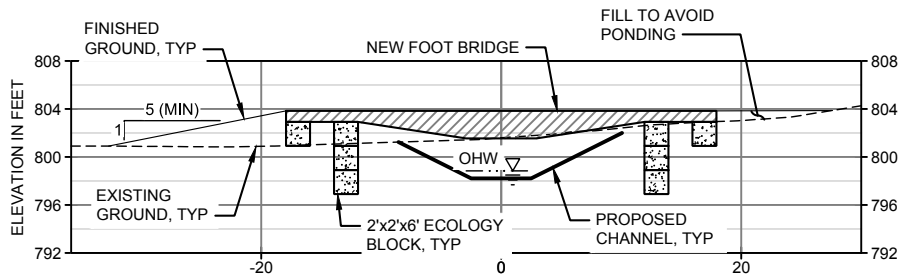
SECTION VIEW - ABUTMENTS AT BOTH BRIDGES



PLAN VIEW - ABUTMENTS AT SECTION A BRIDGE

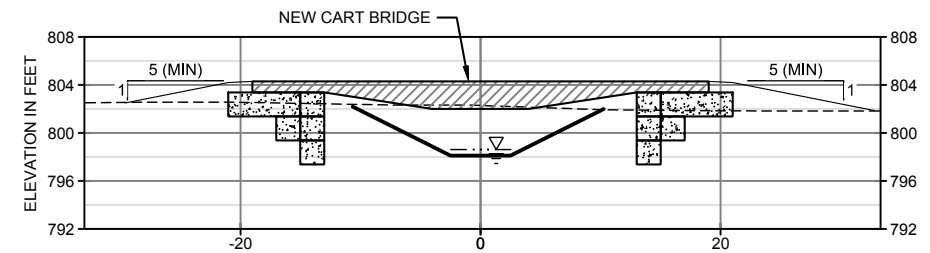


PLAN VIEW - ABUTMENTS AT SECTION B BRIDGE



CROSS SECTION

HORIZ. SCALE: 1"=16'
VERT. SCALE: 1"=16'



CROSS SECTION

HORIZ. SCALE: 1"=16'
VERT. SCALE: 1"=16'



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Site.dwg

**CHAPPEL SPRINGS BRIDGES
DETAILS**

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
VERTICAL DATUM: NAVD 88
PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



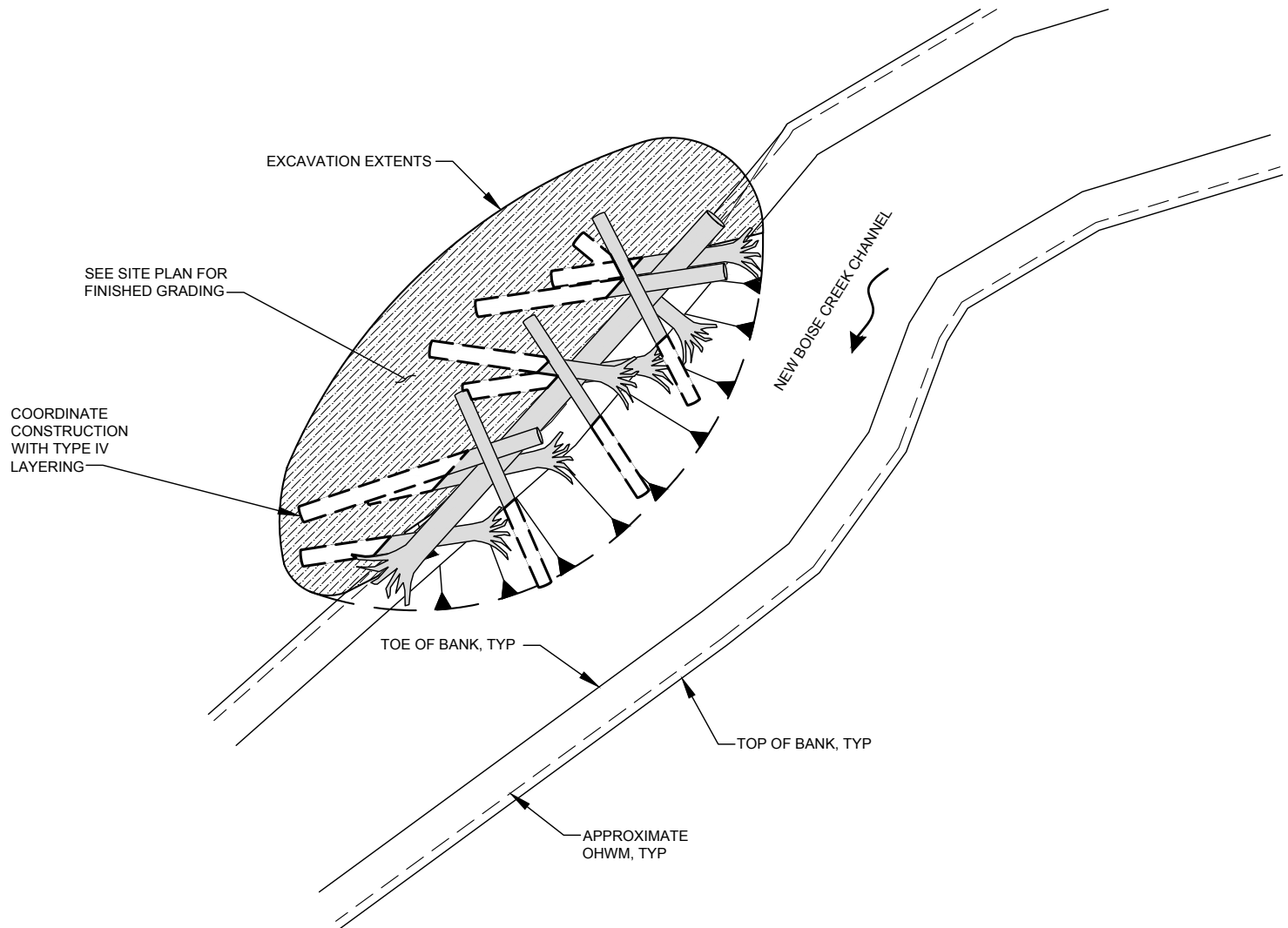
Eric Palmer - Stormwater Engineer, Project Manager
1309 Myrtle Ave
Enumclaw, WA 98022
epalmer@ci.enumclaw.wa.us
Office: 360-615-5668
Mobile: 253-740-2665

FIGURE

13

STATE: WASHINGTON
COUNTY: PIERCE
CITY: ENUMCLAW
LOCATION: S29.30 T20N R07E
WATERBODY: BOISE CREEK

REFERENCE NO: -
SHEET: 13 OF 24 DATE: OCTOBER 2021



DETAIL - TYPICAL ENGINEERED LOG STRUCTURE

SCALE: NTS



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Details.dwg

DETAIL - ENGINEERED LOG STRUCTURE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



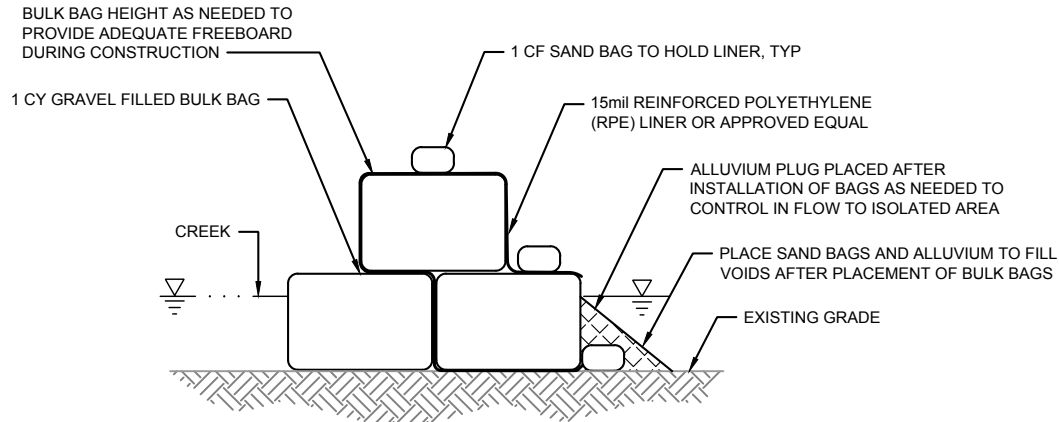
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

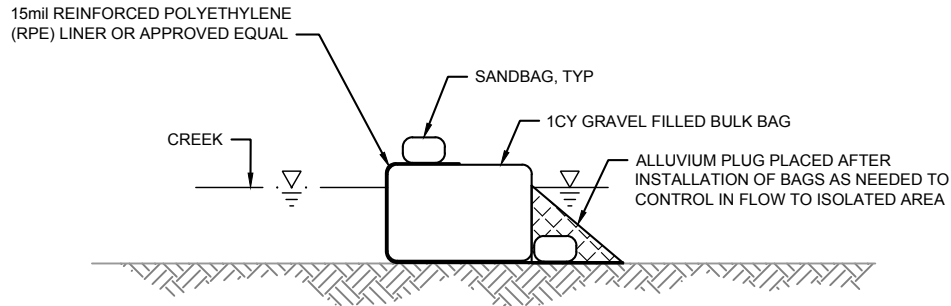
14

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 14 OF: 24 DATE: OCTOBER 2021



DETAIL - TYPICAL BULK BAG ISOLATION 1
SCALE: NTS



DETAIL - TYPICAL SINGLE BULK BAG ISOLATION 2
SCALE: NTS

BULK BAG NOTES:

1. PLACE/REMOVE ALLUVIUM AS LAST/FIRST STEP OF BULK BAG ISOLATION SYSTEM INSTALLATION/REMOVAL.
2. ONLY INSTALL SINGLE BULK BAG ISOLATION WHERE WATER SURFACE EXPECTED TO BE LESS THAN 2 FT.
3. TRANSITION LINER FROM EXTERIOR (UPSTREAM END) OF ISOLATION TO INTERIOR OF ISOLATION APPROXIMATELY 1/2 THE LENGTH OF THE ISOLATION WHERE RIVER WATER INFILTRATION INTO THE WORK AREA TRANSITIONS TO EXFILTRATION.
4. TRANSITION ISOLATION HEIGHT INTO BANKS USING SAND BAGS.



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Details.dwg

DETAIL - BULK BAG DAM

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

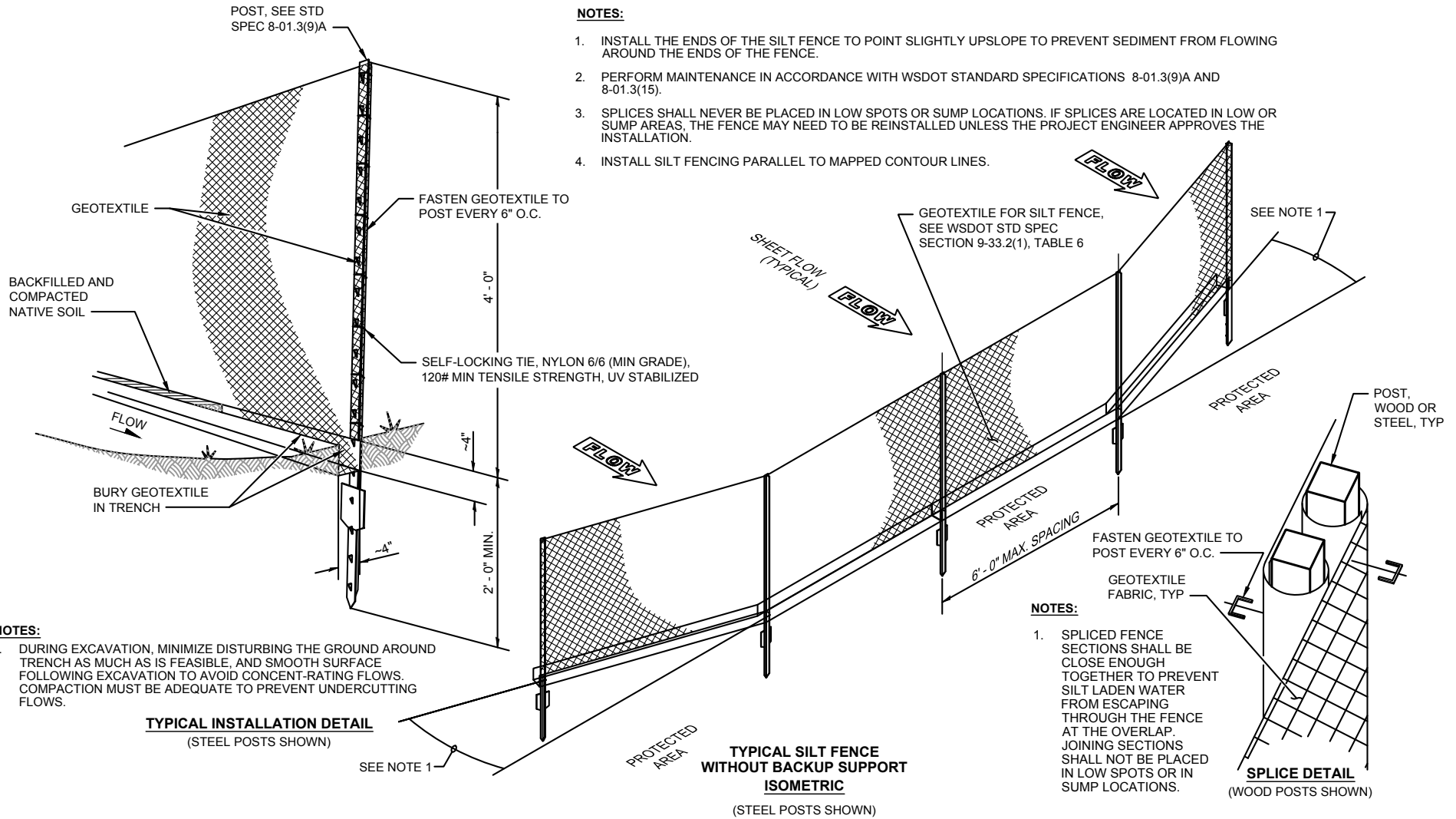
15

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 15 OF: 24 DATE: OCTOBER 2021

NOTES:

1. INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UPSLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.
2. PERFORM MAINTENANCE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS 8-01.3(9)A AND 8-01.3(15).
3. SPLICES SHALL NEVER BE PLACED IN LOW SPOTS OR SUMP LOCATIONS. IF SPLICES ARE LOCATED IN LOW OR SUMP AREAS, THE FENCE MAY NEED TO BE REINSTALLED UNLESS THE PROJECT ENGINEER APPROVES THE INSTALLATION.
4. INSTALL SILT FENCING PARALLEL TO MAPPED CONTOUR LINES.



NOTES:

1. DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENT-RATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

TYPICAL INSTALLATION DETAIL
(STEEL POSTS SHOWN)

TYPICAL SILT FENCE WITHOUT BACKUP SUPPORT ISOMETRIC
(STEEL POSTS SHOWN)

NOTES:

1. SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

SPLICE DETAIL
(WOOD POSTS SHOWN)

DETAIL - SILT FENCE

SCALE: NONE



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Details.dwg

DETAIL - SILT FENCE 1

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



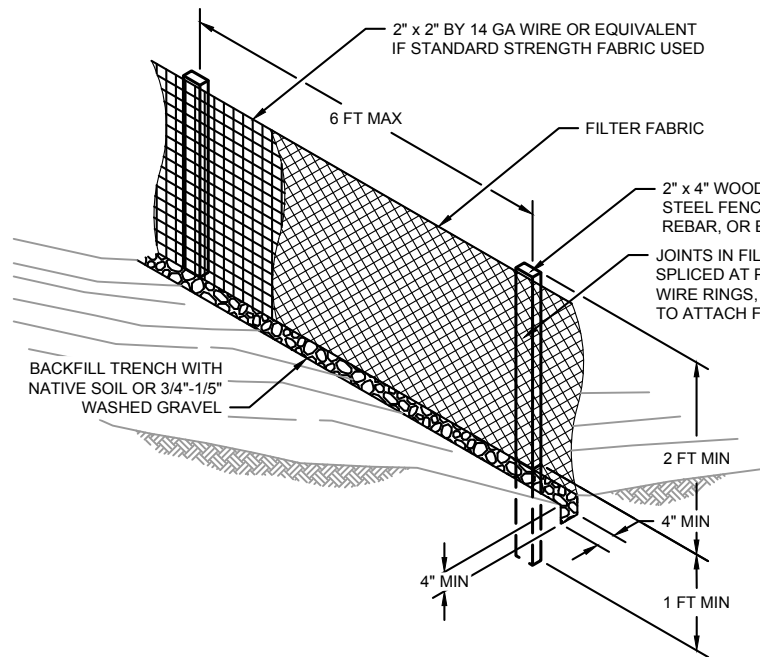
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

16

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 16 OF: 24 DATE: OCTOBER 2021



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 ENGINEER, 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 ENGINEER 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 THE OWNERS 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.

DETAIL - SILT FENCE

SCALE: NTS



DETAIL - SILT FENCE 2

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



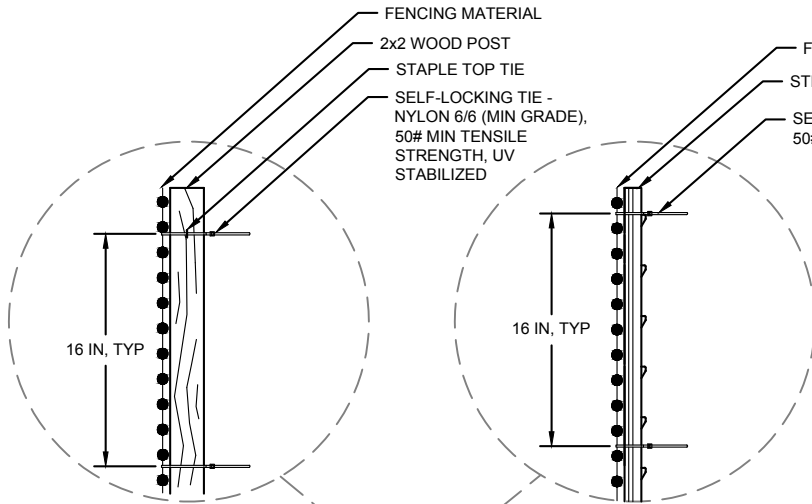
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

17

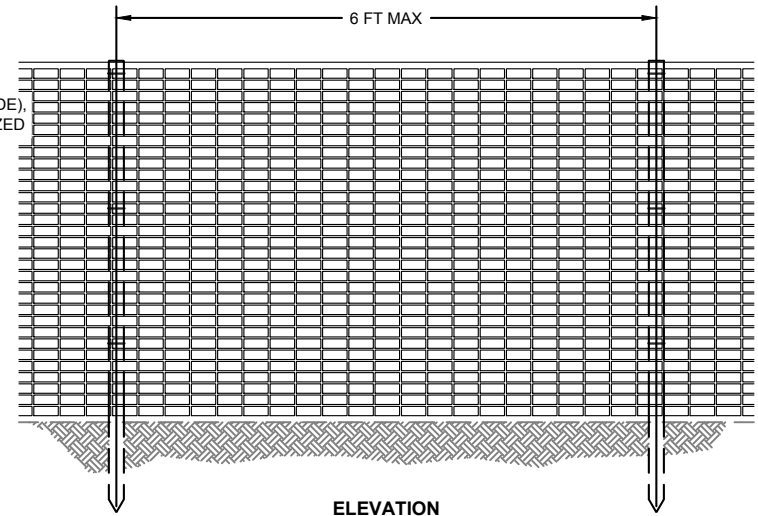
STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 17 OF: 24 DATE: OCTOBER 2021

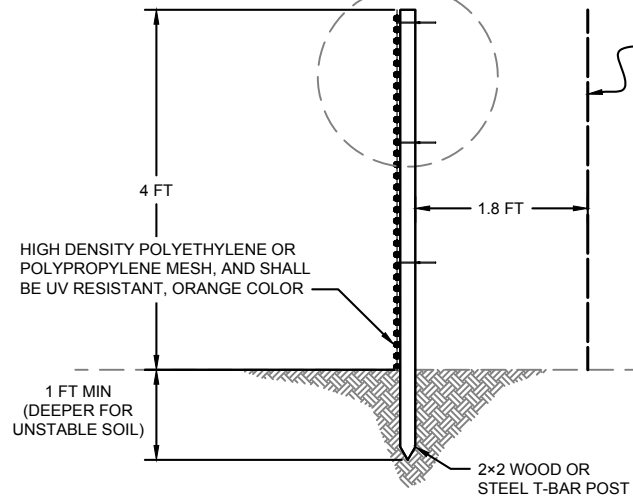


NOTES:

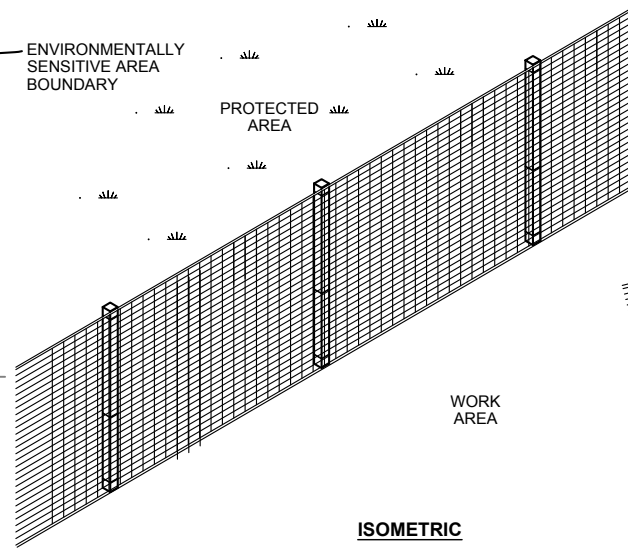
1. POST SHALL HAVE SUFFICIENT STRENGTH AND DURABILITY TO SUPPORT THE FENCE THROUGH THE LIFE OF THE PROJECT.



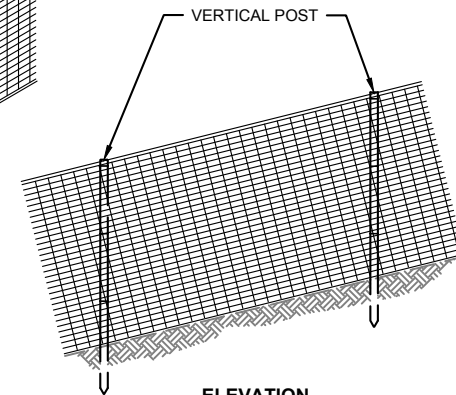
ELEVATION



SECTION



ISOMETRIC



**ELEVATION
FENCE ON SLOPE**

DETAIL - HIGH VISIBILITY FENCE

SCALE: NTS



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Details.dwg

DETAIL - HI-VISIBILITY FENCE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



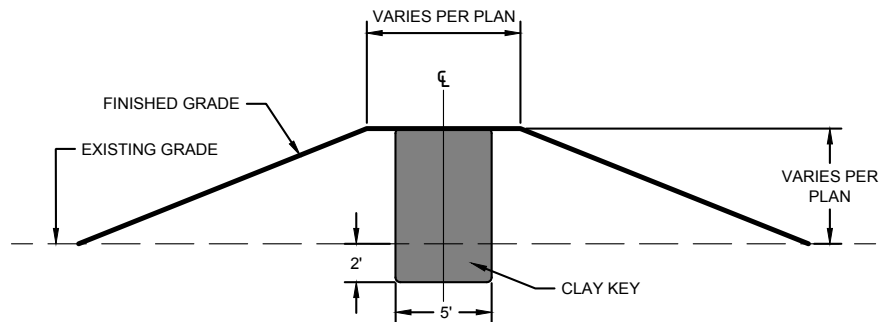
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

18

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 18 OF: 24 DATE: OCTOBER 2021



DETAIL - TYPICAL CLAY KEY PLACEMENT

SCALE: NTS



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:03 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Details.dwg

DETAIL - CLAY KEY

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT
 ENUMCLAW GOLF COURSE
 RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



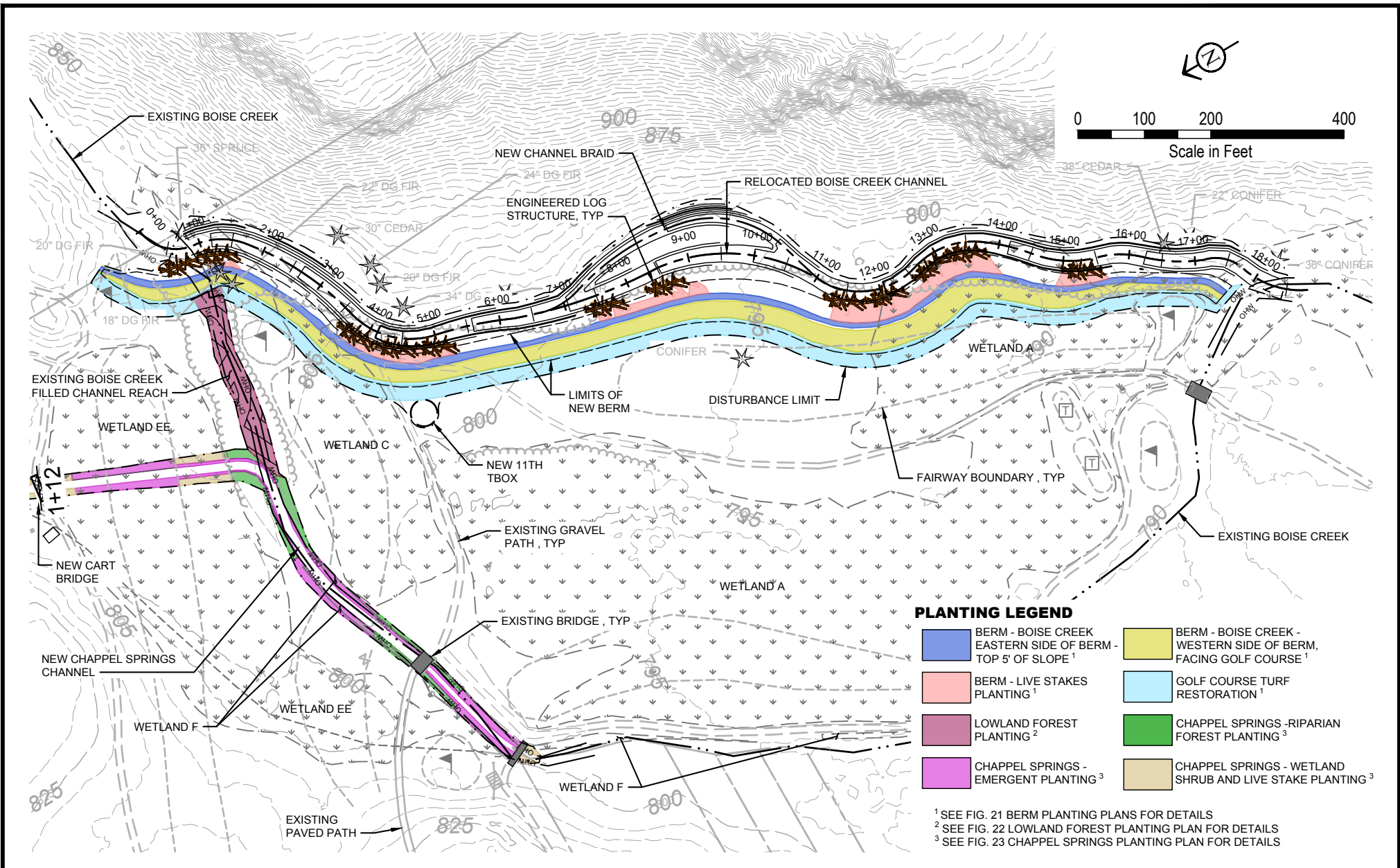
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE









19

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: **19** OF: **24** DATE: **OCTOBER 2021**



PLANTING LEGEND

- | | |
|--|--|
|  BERM - BOISE CREEK EASTERN SIDE OF BERM - TOP 5' OF SLOPE ¹ |  BERM - BOISE CREEK - WESTERN SIDE OF BERM, FACING GOLF COURSE ¹ |
|  BERM - LIVE STAKES PLANTING ¹ |  GOLF COURSE TURF RESTORATION ¹ |
|  LOWLAND FOREST PLANTING ² |  CHAPPEL SPRINGS - RIPARIAN FOREST PLANTING ³ |
|  CHAPPEL SPRINGS - EMERGENT PLANTING ³ |  CHAPPEL SPRINGS - WETLAND SHRUB AND LIVE STAKE PLANTING ³ |

¹ SEE FIG. 21 BERM PLANTING PLANS FOR DETAILS

² SEE FIG. 22 LOWLAND FOREST PLANTING PLAN FOR DETAILS

³ SEE FIG. 23 CHAPPEL SPRINGS PLANTING PLAN FOR DETAILS



PREPARED BY HERRERA ENVIRONMENTAL CONSULTANTS DATE OF PRINT: 10/22/2021 12:05 PM - BY: ERIC MARSHALL - FILE LOCATION: O:\proj\Y2020\20-07308-000\CAD\Sheet\JARPA\Planting.dwg

PLANTING PLAN

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



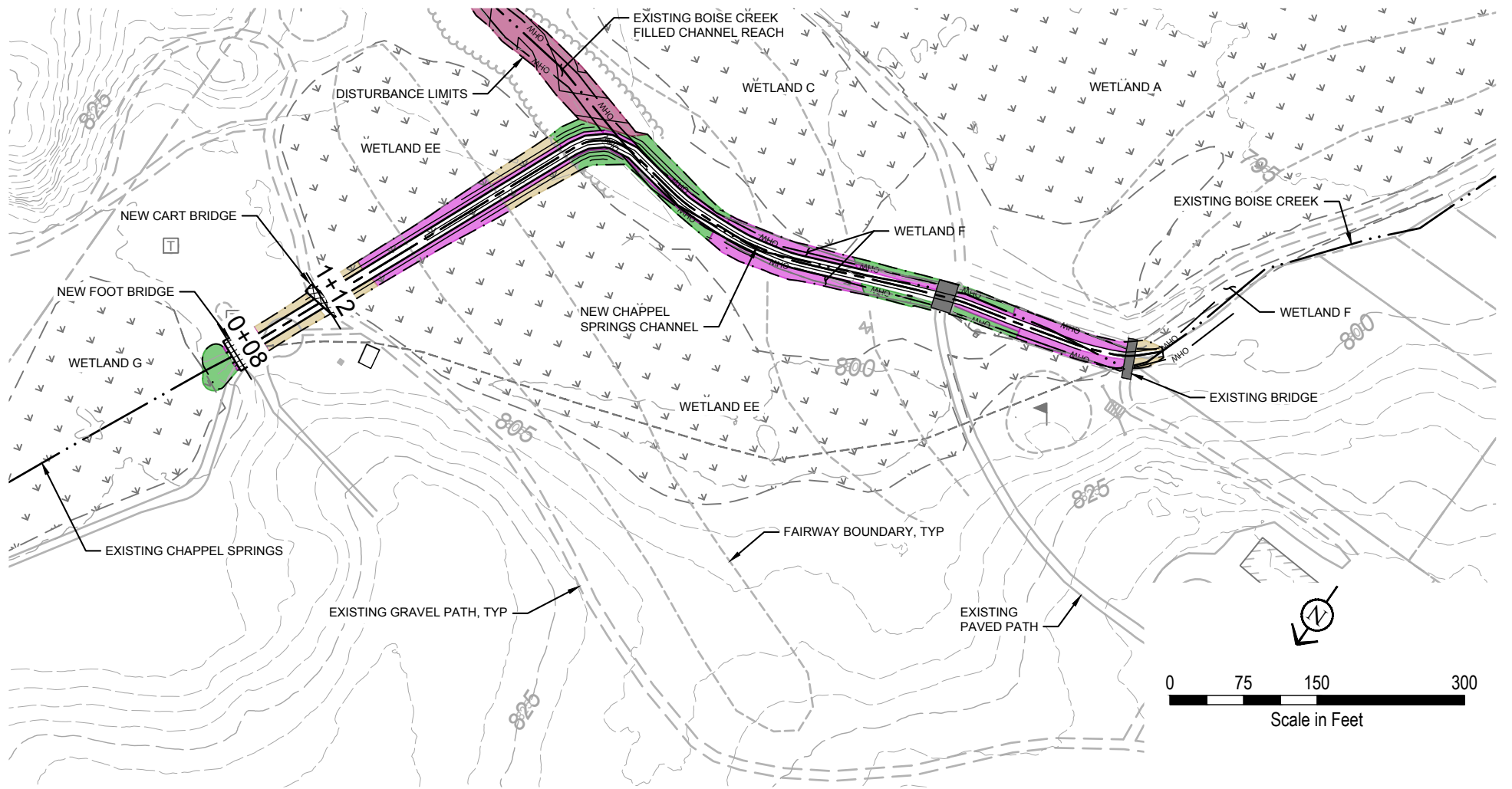
Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

20

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 20 OF: 24 DATE: OCTOBER 2021



PLANTING LEGEND

- LOWLAND FOREST PLANTING²
- CHAPPEL SPRINGS - RIPARIAN FOREST PLANTING³
- CHAPPEL SPRINGS - EMERGENT PLANTING³
- CHAPPEL SPRINGS - WETLAND SHRUB AND LIVE STAKE PLANTING³

¹ SEE FIG. 21 BERM PLANTING PLANS FOR DETAILS
² SEE FIG. 22 LOWLAND FOREST PLANTING PLAN FOR DETAILS
³ SEE FIG. 23 CHAPPEL SPRINGS PLANTING PLAN FOR DETAILS

PLANTING PLAN

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

21

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29,30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 21 OF: 24 DATE: OCTOBER 2021

BOISE CREEK - EASTERN SIDE OF BERM, TOP 5' OF SLOPE (15,827 SQ FT)					
SPECIES	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	SPACING ON CENTER (FEET)	PLANT QUANTITY TOTALS
TREES					
<i>ACER CIRCINATUM</i>	VINE MAPLE	FAC	20'+	15'	4
<i>ACER MACROPHYLLUM</i>	BIGLEAF MAPLE	FAC	100'	25'	5
<i>ALNUS RUBRA</i>	RED ALDER	FAC	70'	15'	8
<i>PICEA SITCHENSIS</i>	SITKA SPRUCE	FAC	100'+	25'	6
<i>PSEUDOTSUGA MENZIESII</i>	DOUGLAS FIR	FACU	100'+	25'	5
<i>THUJA PLICATA</i>	WESTERN REDCEDAR	FAC	100'+	25'	6
<i>TSUGA HETEROPHYLLA</i>	WESTERN HEMLOCK	FAC	100'+	25'	5
SHRUBS					
<i>CORNUS SERICEA</i>	REDOSIER DOGWOOD	FAC	12'	6'	44
<i>GAULTHERIA SHALLON</i>	SALAL	FACU	4'	4'	100
<i>MAHONIA AQUIFOLIUM</i>	HOLLYLEAVED BARBERRY	FACU	8'	6'	22
<i>MAHONIA NERVOSA</i>	CASCADE BARBERRY	FACU	4'	36"	180
<i>PHYSOCARPUS CAPITATUS</i>	PACIFIC NINEBARK	FACW	12'	6'	22
<i>RIBES SANGUINEUM</i>	REDFLOWER CURRANT	FACU	10'	6'	22
<i>ROSA PISOCARPA</i>	CLUSTER ROSE	FAC	6'	4'	50
<i>RUBUS PARVIFLORUS</i>	THIMBLEBERRY	FAC	8'	6'	100
<i>RUBUS SPECTABILIS</i>	SALMONBERRY	FAC	20'+	6'	44
<i>SAMBUCUS NIGRA SSP. CERULEA</i>	BLUE ELDERBERRY	FAC	20'	6'	22
<i>SAMBUCUS RACEMOSA</i>	RED ELDERBERRY	FACU	20'	6'	22
<i>SYMPHORICARPOS HESPERIUS</i>	TRAILING SNOWBERRY	FACU	24"	24"	201
GROUND COVER					
<i>ATHYRIUM FILIX-FEMINA</i>	LADY FERN	FAC	36"	36"	144
<i>DICENTRA FORMOSA</i>	PACIFIC BLEEDING HEART	FACU	24"	24"	80
<i>POLYSTICHUM MUNITUM</i>	WESTERN SWORDFERN	FACU	4'	36"	90
TOTAL					1185
BOISE CREEK LOG STRUCTURE INTERPLANTING - LIVE STAKES (6,152 SQ FT)					
<i>CORNUS SERICEA</i>	REDOSIER DOGWOOD	FAC	12'	6'	59
<i>POPULUS BALSAMIFERA SSP. TRICOCARPA</i>	BLACK COTTONWOOD	FAC	100'	6'	20
<i>SALIX LUCIDA SSP. LASIANDRA</i>	PACIFIC WILLOW	FAC	20'+	6'	39
<i>SALIX SCOULERIANA</i>	SCOULER'S WILLOW	FACW	20'+	6'	39
<i>SALIX SITCHENSIS</i>	SITKA WILLOW	FACW	20'+	6'	39
TOTAL					197

BOISE CREEK - WESTERN SIDE OF BERM, FACING GOLF COURSE (36,621 SQ FT)					
SPECIES	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	SPACING ON CENTER (FEET)	PLANT QUANTITY TOTALS
TREES					
<i>ACER CIRCINATUM</i>	VINE MAPLE	FAC	20'+	15'	18
<i>ACER MACROPHYLLUM</i>	BIGLEAF MAPLE	FAC	100'	25'	7
<i>ALNUS RUBRA</i>	RED ALDER	FAC	70'	15'	9
<i>FRANGULA PURSHIANA</i>	CASCARA	FAC	30'	15'	18
<i>PICEA SITCHENSIS</i>	SITKA SPRUCE	FAC	100'+	25'	7
<i>PINUS MONTICOLA</i>	WESTERN WHITE PINE	FACU	100'+	25'	11
<i>PSEUDOTSUGA MENZIESII</i>	DOUGLAS FIR	FACU	100'+	25'	11
<i>THUJA PLICATA</i>	WESTERN REDCEDAR	FAC	100'+	25'	7
<i>TSUGA HETEROPHYLLA</i>	WESTERN HEMLOCK	FAC	100'+	25'	11
SHRUBS					
<i>CORNUS SERICEA</i>	REDOSIER DOGWOOD	FAC	12'	6'	50
<i>GAULTHERIA SHALLON</i>	SALAL	FACU	4'	4'	227
<i>HOLODISCUS DISCOLOR</i>	OCEANSPRAY	FACU	15'	6'	50
<i>MAHONIA AQUIFOLIUM</i>	HOLLYLEAVED BARBERRY	FACU	8'	6'	50
<i>MAHONIA NERVOSA</i>	CASCADE BARBERRY	FACU	4'	36"	205
<i>OEMLERIA CERASIFORMIS</i>	INDIAN PLUM	FACU	20'	6'	50
<i>PHILADELPHUS LEWISII</i>	LEWIS' MOCKORANGE	FACU	10'	6'	101
<i>RIBES SANGUINEUM</i>	REDFLOWER CURRANT	FACU	10'	6'	50
<i>ROSA PISOCARPA</i>	CLUSTER ROSE	FAC	6'	4'	114
<i>RUBUS PARVIFLORUS</i>	THIMBLEBERRY	FAC	8'	6'	227
<i>SAMBUCUS NIGRA SSP. CERULEA</i>	BLUE ELDERBERRY	FAC	20'	6'	50
<i>SAMBUCUS RACEMOSA</i>	RED ELDERBERRY	FACU	20'	6'	50
<i>SYMPHORICARPOS ALBUS</i>	COMMON SNOWBERRY	FACU	5'	4'	227
<i>SYMPHORICARPOS HESPERIUS</i>	TRAILING SNOWBERRY	FACU	24"	24"	366
GROUND COVER					
<i>ATHYRIUM FILIX-FEMINA</i>	LADY FERN	FAC	36"	36"	164
<i>DICENTRA FORMOSA</i>	PACIFIC BLEEDING HEART	FACU	24"	24"	92
<i>POLYSTICHUM MUNITUM</i>	WESTERN SWORDFERN	FACU	4'	36"	205
<i>TELLIMA GRANDIFLORA</i>	BIGFLOWER FRINGECUP	FACU	24"	24"	92
TOTAL					2474
GOLF COURSE SEED MIX ON LOWER 5 FT OF BERM (8,560 SQ FT)					
100 PLS POUNDS PER ACRE					
LATIN NAME	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	% SPECIES COMPOSITION OF MIX	TOTAL (PLS LBS PER ACRE)
<i>LOLIUM PERENNE</i>	WINFIELD UNITED PERENNIAL RYEGRASS	FAC	N/A	100%	0.2

PLANTING SCHEDULE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

22

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 22 OF: 24 DATE: OCTOBER 2021

BOISE CREEK - LOWLAND FOREST (9,632 SQ FT)					
SPECIES	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	SPACING ON CENTER (FEET)	PLANT QUANTITY TOTALS
TREES					
<i>ACER CIRCINATUM</i>	VINE MAPLE	FAC	20'+	15'	5
<i>ACER MACROPHYLLUM</i>	BIGLEAF MAPLE	FAC	100'	25'	2
<i>CORNUS NUTTALLII</i>	PACIFIC DOGWOOD	FAC	70'	15'	5
<i>FRANGULA PURSHIANA</i>	CASCARA	FAC	30'	15'	5
<i>PICEA SITCHENSIS</i>	SITKA SPRUCE	FAC	100'+	25'	2
<i>PINUS MONTICOLA</i>	WESTERN WHITE PINE	FACU	100'+	25'	3
<i>PSEUDOTSUGA MENZIESII</i>	DOUGLAS FIR	FACU	100'+	25'	2
<i>THUJA PLICATA</i>	WESTERN REDCEDAR	FAC	100'+	25'	2
<i>TSUGA HETEROPHYLLA</i>	WESTERN HEMLOCK	FAC	100'+	25'	3
SHRUBS					
<i>GAULTHERIA SHALLON</i>	SALAL	FACU	4'	4'	59
<i>LONICERA INVOLUCRATA</i>	BLACK TWINBERRY	FAC	12'	6'	26
<i>MAHONIA AQUIFOLIUM</i>	HOLLYLEAVED BARBERRY	FACU	8'	6'	13
<i>MAHONIA NERVOSA</i>	CASCADE BARBERRY	FACU	4'	36"	107
<i>OEMLERIA CERASIFORMIS</i>	INDIAN PLUM	FACU	20'	6'	13
<i>RIBES SANGUINEUM</i>	REDFLOWER CURRANT	FACU	10'	6'	13
<i>ROSA PISOCARPA</i>	CLUSTER ROSE	FAC	6'	4'	30
<i>RUBUS PARVIFLORUS</i>	THIMBLEBERRY	FACU	5'	4'	59
<i>SAMBUCUS NIGRA SPP. CERULEA</i>	BLUE ELDERBERRY	FAC	20'	6'	13
<i>SAMBUCUS RACEMOSA</i>	RED ELDERBERRY	FAC	20'	6'	13
<i>SYMPHORICARPOS ALBUS</i>	COMMON SNOWBERRY	FACU	6'	4'	59
GROUNDCOVER					
<i>ATHYRIUM FILIX-FEMINA</i>	LADY FERN	FAC	36"	36"	80
<i>DICENTRA FORMOSA</i>	PACIFIC BLEEDING HEART	OBL	36"	36"	24
<i>POLYSTICHUM MUNITUM</i>	WESTERN SWORDFERN	FACU	4'	36"	112
<i>TELLIMA GRANDIFLORA</i>	BIGFLOWER FRINGECUP	FACU	24"	24"	24
TOTAL					675

PLANTING SCHEDULE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT
 ENUMCLAW GOLF COURSE
 RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

23

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK
 REFERENCE NO: -
 SHEET: **23** OF: **24** DATE: **OCTOBER 2021**

BOISE CREEK - CHAPPEL SPRINGS CREEK (24,380 SQ FT)					
SPECIES	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	SPACING ON CENTER (FEET)	PLANT QUANTITY TOTALS
TREES					
<i>ACER MACROPHYLLUM</i>	BIGLEAF MAPLE	FAC	100'	25'	1
<i>ALNUS RUBRA</i>	RED ALDER	FAC	70'	15'	5
<i>PICEA SITCHENSIS</i>	SITKA SPRUCE	FAC	100'+	25'	3
<i>THUJA PLICATA</i>	WESTERN REDCEDAR	FAC	100'+	25'	3
<i>TSUGA HETEROPHYLLA</i>	WESTERN HEMLOCK	FAC	100'+	25'	3
LIVE STAKES					
<i>CORNUS SERICEA</i>	REDSIER DOGWOOD	FAC	8'	6'	70
<i>LONICERA INVOLUCRATA</i>	BLACK TWINBERRY	FAC	12'	6'	53
<i>PHYSOCARPUS CAPITATUS</i>	PACIFIC NINEBARK	FACW	10'	6'	53
<i>RUBUS SPECTABILIS</i>	SALMONBERRY	FAC	8'	6'	53
<i>SPIRAEA DOUGLASII</i>	ROSE SPIREA	FACW	10'+	6'	88
<i>SYMPHORICARPOS ALBUS</i>	COMMON SNOWBERRY	FACW	5'	6'	35
EMERGENTS					
<i>CAREX STIPATA</i>	AWLFRUIT SEDGE	OBL	36"	36"	267
<i>DESCHAMPSIA CESPITOSA</i>	TUFTED HAIRGRASS	OBL	30"	24"	596
<i>GLYCERIA ELATA</i>	TALL MANNAGRASS	FACW	36"	36"	267
<i>JUNCUS ARCTICUS SSP. LITTORALIS</i>	MOUNTAIN RUSH	OBL	4'	36"	267
<i>JUNCUS ENSIFOLIUS</i>	DAGGERLEAF RUSH	OBL	40"	24"	199
<i>JUNCUS PATENS</i>	SPREADING RUSH	FACW	24"	36"	267
<i>SCHOENOPLECTUS ACUTUS</i>	HARDSTEM BULRUSH	OBL	6'	36"	89
<i>SCIRPUS MICROCARPUS</i>	SMALL-FRUITED BULRUSH	OBL	5'	36"	89
GRAND TOTAL					2407
GOLF COURSE SEED MIX AT STAGING AND DISTURBED AREAS- 100 PLS POUNDS PER ACRE					
LATIN NAME	COMMON NAME	WETLAND STATUS	MATURE HEIGHT	% SPECIES COMPOSITION OF MIX	TOTAL (PLS LBS PER ACRE)
<i>LOLIUM PERENNE</i>	WINFIELD UNITED PERENNIAL RYEGRASS	FAC	N/A	100%	0.16

PLANTING SCHEDULE

LAT/LONG: 42° 11' 42.85" N, 121° 57' 10.42" W
 VERTICAL DATUM: NAVD 88
 PROPOSED PROJECT: BOISE CREEK RESTORATION AT ENUMCLAW GOLF COURSE RESTORATION PLAN (RM 3.7 TO RM 4.2)

APPLICANT:



Eric Palmer - Stormwater Engineer, Project Manager
 1309 Myrtle Ave
 Enumclaw, WA 98022
 epalmer@ci.enumclaw.wa.us
 Office: 360-615-5668
 Mobile: 253-740-2665

FIGURE

24

STATE: WASHINGTON
 COUNTY: PIERCE
 CITY: ENUMCLAW
 LOCATION: S29.30 T20N R07E
 WATERBODY: BOISE CREEK

REFERENCE NO: -
 SHEET: 24 OF: 24 DATE: OCTOBER 2021