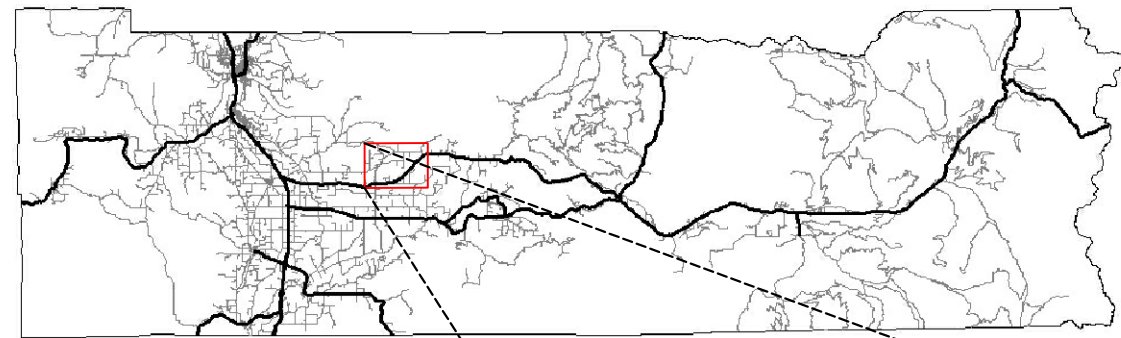


Guenther Bridge, Tributary to Middle Fork Newaukum Fish Passage Improvement Project 2023

Lewis County Vicinity
(Not to Scale)



Project Description

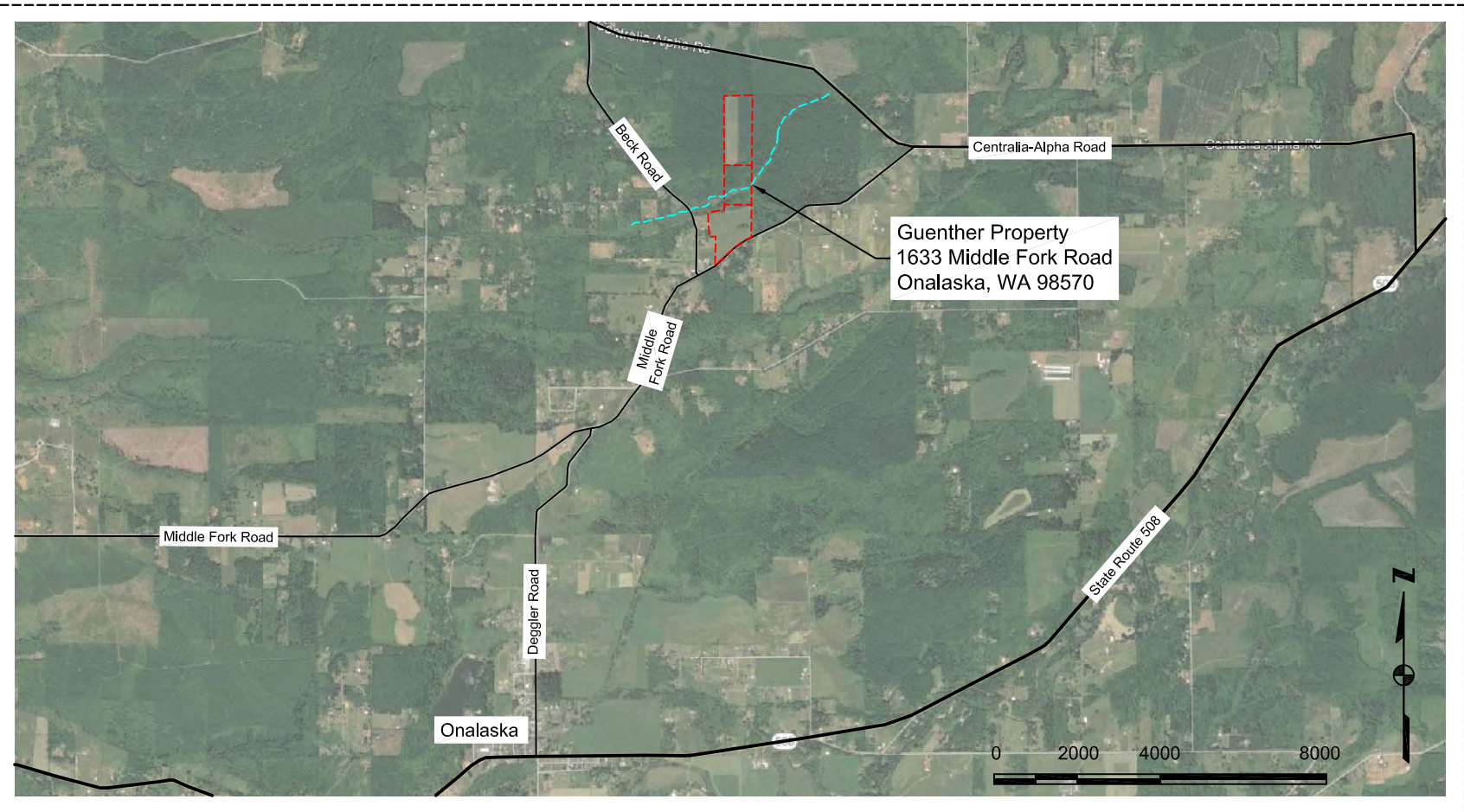
This project will improve fish passage on Dave Guenther's property at 1633 Middle Fork Road, Onalaska, WA 98570 by replacing two undersized barrier culverts with a 26' long by 14' wide prefabricated steel bridge. The existing stream crossing features two undersized culverts (3' diameter x 20' long corrugated steel and 2' diameter x 20' long concrete) with wetland habitat upstream and downstream. A buried water line is within the road prism and passes through the work site. The existing culverts will be removed and a channel will be cut through the existing road prism. A new 26' long x 14' wide prefabricated steel bridge will be installed over the new channel. The existing water line will be spliced, with the new section of water line installed through the work site. The new line will be conveyed within 3" utility conduit attached to the downstream side of the bridge. The completed project will restore unrestricted aquatic access to approximately 1.8 miles of upstream habitat. This project is funded by a grant from Salmon Recovery Funding Board administered by the Washington Recreation and Conservation Office.



EXPIRES APRIL 4, 2024

Sheet Index

Sheet No	Description
1 of 6	Cover Sheet
2 of 6	Site Overview
3 of 6	Site Plan
4 of 6	Road Profiles
5 of 6	Stream Profiles
6 of 6	Utility Details and Road Section



Legal Description: Township 13N, Range 01E, Section 17
Parcel #'s: 032523002000, 032537001001
Coordinates: 46.61234, -122.70109



2057 Salsbury Ave. Chehalis, WA 98532
360-996-4560

SCALE:
HOR: 1" = 200'
VER: 1" = N/A

DESIGNER: GG
DRAFTER: GG
DATE: 2/06/24

BY	DATE	REVISIONS
GG	10/19/2023	Preliminary design for review.
GG	2/06/2024	Final design for permitting and bidding.

FOR:

Kelly Verd, Special Projects Coordinator
2057 SW Salsbury Ave
Chehalis, WA 98532
(360) 996-4560

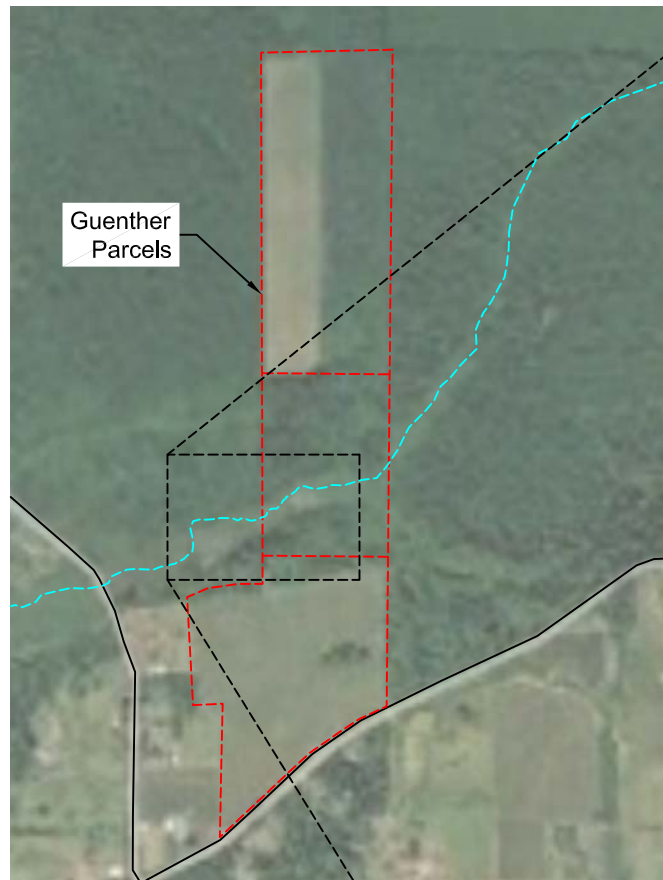
Cover Sheet

Owner:
David Guenther
1633 Middle Fork Road
Onalaska, WA 98570

JOB NO.

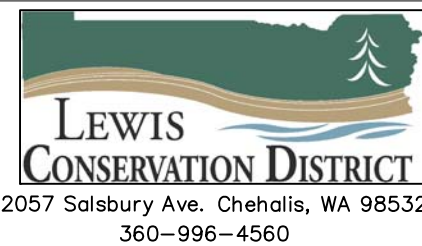
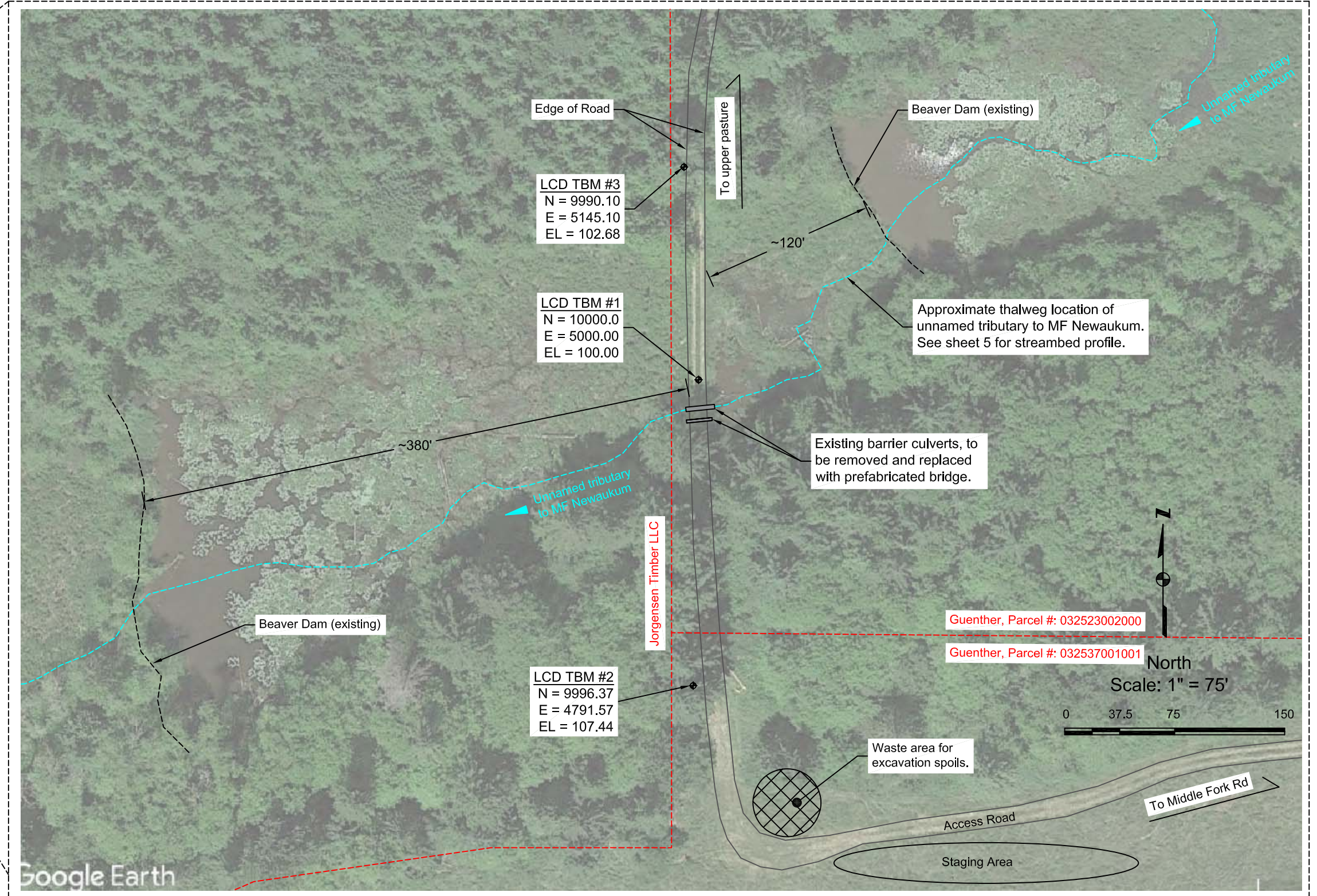
SHEET
01
06

Guenther Property
Not-to-Scale



Guenther Site, Existing Conditions

Scale: 1" = 75'



SCALE:
HOR: 1" = 75'
VER: 1" = N/A

DESIGNER: GG
DRAFTER: GG
DATE: 2/06/24

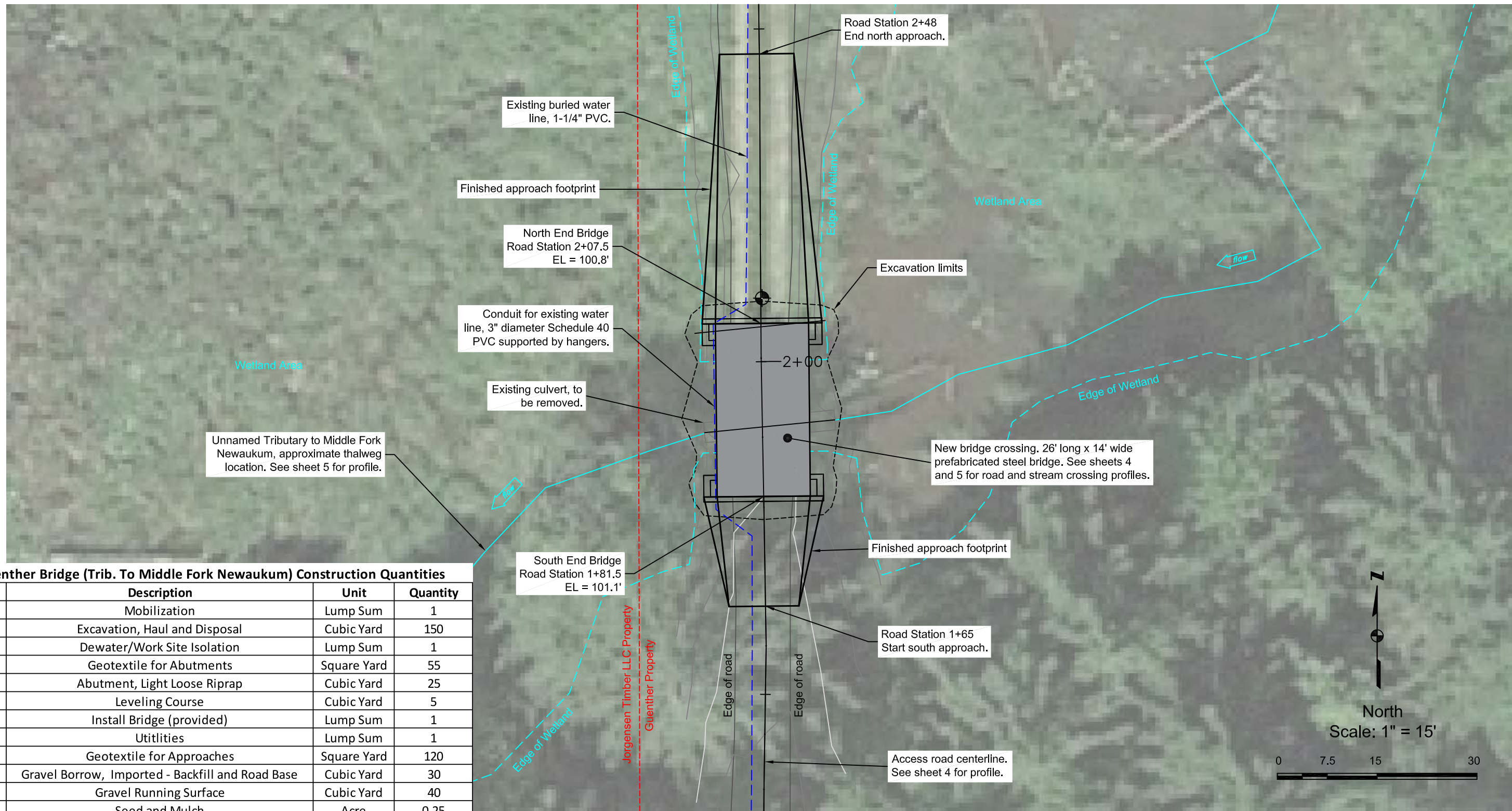
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Existing Conditions	JOB NO.
Owner: David Guenther 1633 Middle Fork Road Onalaska, WA 98570	SHEET 02 06

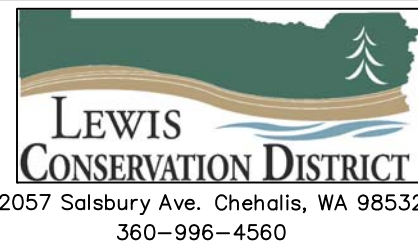
Guenther Bridge, Site Plan

Scale: 1" = 15'



Guenther Bridge (Trib. To Middle Fork Newaukum) Construction Quantities

Item No	Description	Unit	Quantity
1	Mobilization	Lump Sum	1
2	Excavation, Haul and Disposal	Cubic Yard	150
3	Dewater/Work Site Isolation	Lump Sum	1
4	Geotextile for Abutments	Square Yard	55
5	Abutment, Light Loose Riprap	Cubic Yard	25
6	Leveling Course	Cubic Yard	5
7	Install Bridge (provided)	Lump Sum	1
8	Utilities	Lump Sum	1
9	Geotextile for Approaches	Square Yard	120
10	Gravel Borrow, Imported - Backfill and Road Base	Cubic Yard	30
11	Gravel Running Surface	Cubic Yard	40
12	Seed and Mulch	Acre	0.25
13	Project Cleanup	Lump Sum	1



SCALE:
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VER: 1" = N/A

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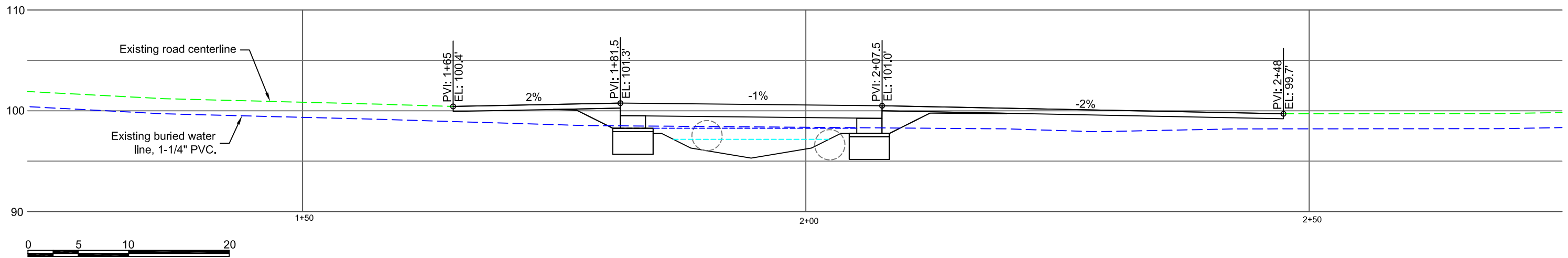
FOR:

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2057 SW Salisbury Ave
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Site Plan	JOB NO.
Owner: David Guenther 1633 Middle Fork Road Onalaska, WA 98570	SHEET 03 06

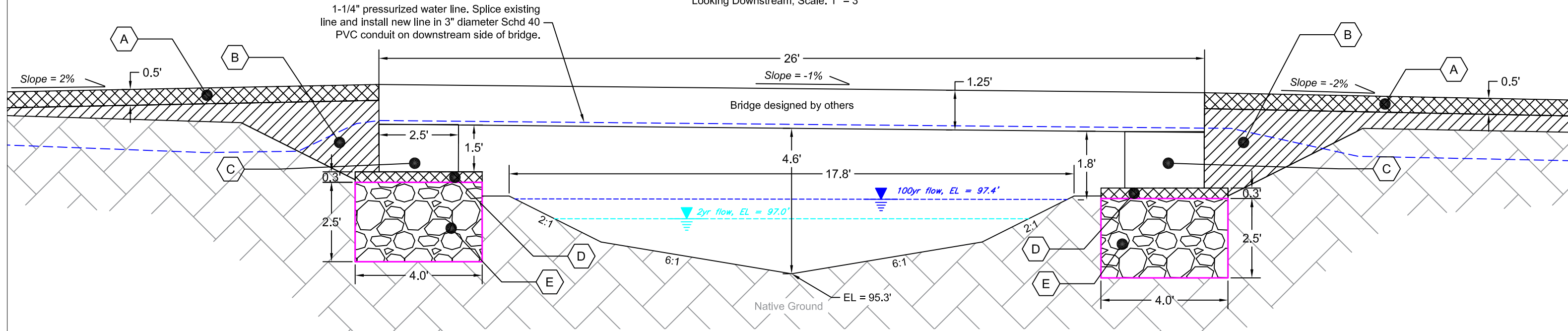
Guenther/Middle Newaukum Tributary Bridge - Road Profile

Looking Downstream, Scale: 1" = 10'



Guenther/Middle Newaukum Tributary Bridge - Bridge Detail Section

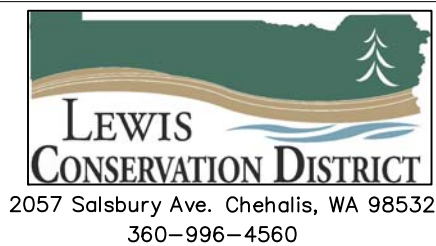
Looking Downstream, Scale: 1" = 3'



Legend

- A.** 6" layer of $\frac{5}{8}$ " minus crushed gravel, compacted to 95%
- B.** Gravel borrow, imported. For structural backfill and road base.
- C.** Concrete sills, 2.5' wide x 1.25' tall x 18' long
- D.** Leveling course - 4" layer of $\frac{5}{8}$ " minus crushed gravel, compacted to 95%
- E.** Abutments - light loose riprap wrapped in geotextile fabric (Mirafi 500X or equiv.), 2.5' tall x 4.0' wide x 20' long

Bridge clearance over 100 year flow: This crossing is sited in a low gradient, headwater wetland system with a small contributing basin (0.86 sq miles). Well established beaver dams upstream and downstream regulate flows and prevent large woody debris from moving through the system. The original bridge design by WDFW engineering staff provided 1' clearance over 100-year flow. After meeting on-site with WDFW Habitat Biologist, the bridge deck was raised 0.8' to provide additional clearance. The proposed deck elevation and clearance will be adequate to pass any woody debris that may be transported to (and through) the bridge crossing site.



SCALE:
HOR: 1" = VARIES
VER: 1" = N/A

DESIGNER: GG
DRAFTER: GG
DATE: 2/06/24

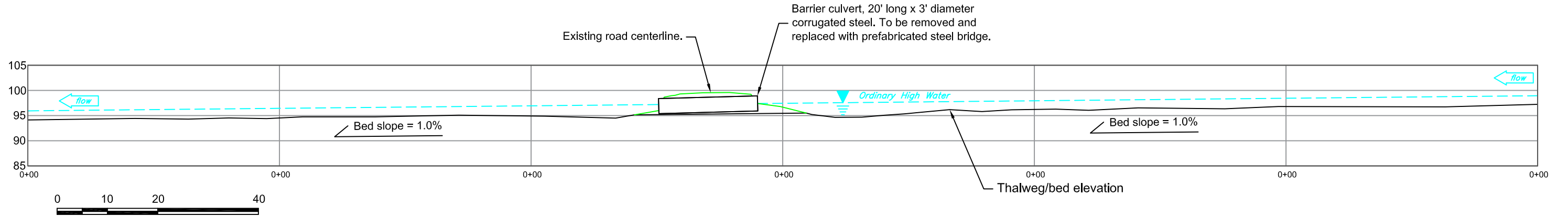
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Road Profiles	JOB NO.
Owner: David Guenther 1633 Middle Fork Road Onalaska, WA 98570	SHEET 04 06

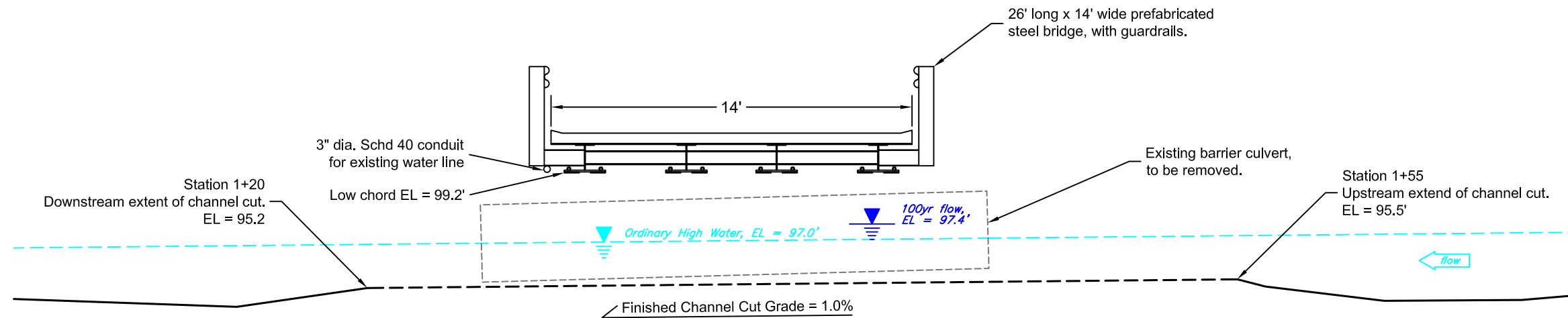
Channel Profile, Unnamed Tributary to Middle Fork Newaukum

Scale: 1" = 20'

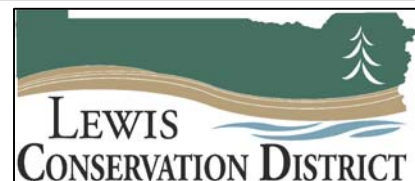
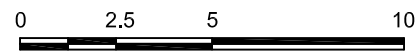


Bridge Crossing Profile

Scale: 1" = 5'



Bridge clearance over 100 year flow: This crossing is sited in a low gradient, headwater wetland system with a small contributing basin (0.86 sq miles). Well established beaver dams upstream and downstream regulate flows and prevent large woody debris from moving through the system. The original bridge design by WDFW engineering staff provided 1' clearance over 100-year flow. After meeting on-site with WDFW Habitat Biologist, the bridge deck was raised 0.8' to provide additional clearance. The proposed deck elevation and clearance will be adequate to pass any woody debris that may be transported to (and through) the bridge crossing site.



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360-996-4560

SCALE:
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VER: 1" = N/A

DESIGNER: GG
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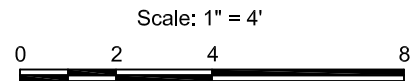
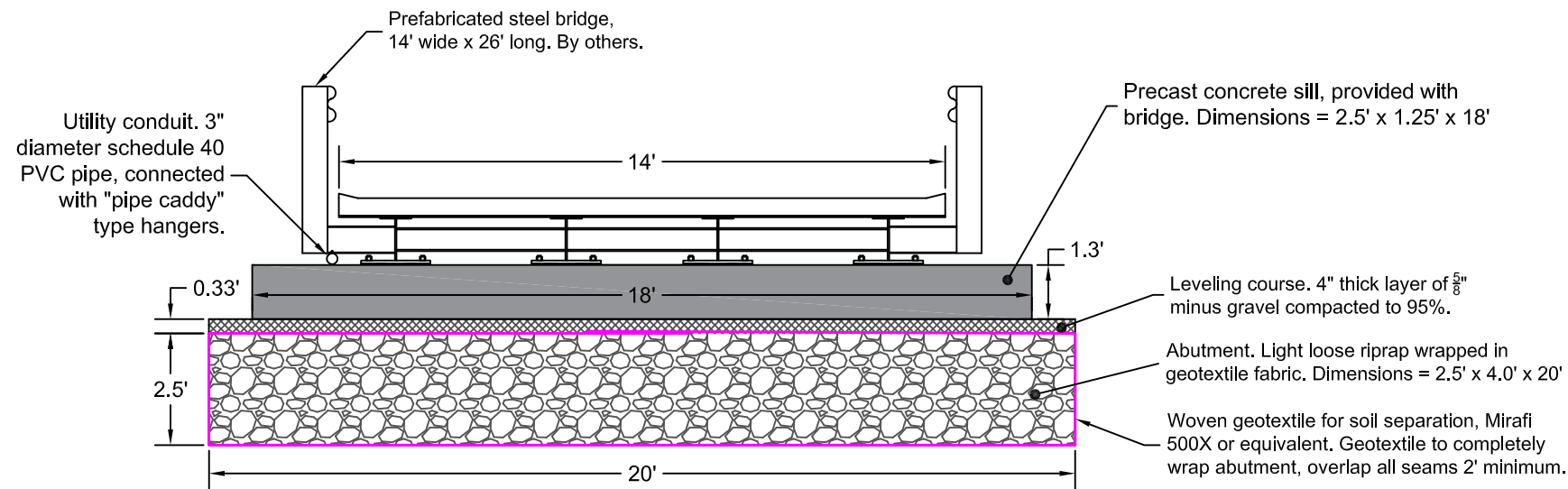
FOR:

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2057 SW Salisbury Ave
Chehalis, WA 98532
(360) 996-4560

Stream Profiles		JOB NO.
Owner: David Guenther 1633 Middle Fork Road Onalaska, WA 98570		SHEET
		05 / 06

Finished Bridge and Abutment Configuration, Typical Section

Scale: 1" = 4'



Existing Utilities - Pressurized Water Line

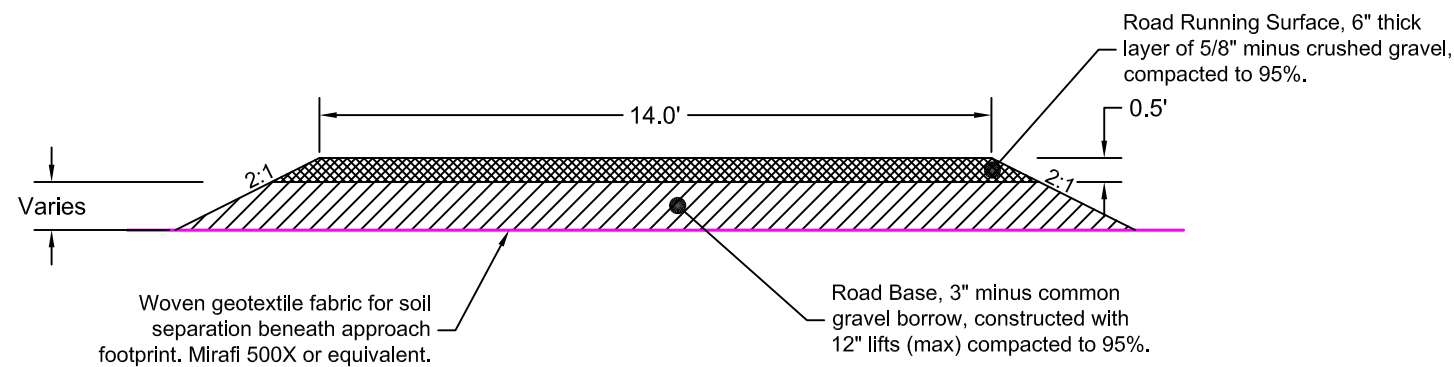
NOTE: An existing pressurized 1-1/4" water line is buried in the road prism. Prior to excavation, the line will be depressurized (shut off). Contractor will cut existing water line at excavation limits and splice new section of 1-1/4" line through bridge installation site. The new line will be encased in 3" diameter schedule 40 PVC pipe and hung from the downstream side of the bridge using "pipe caddy" type hangers (see images below). The hangers will be installed by drilling through the guardrail struts and installing 3/8" stainless steel all-thread and nuts.

"Pipe Caddy" Type Utility Hanger

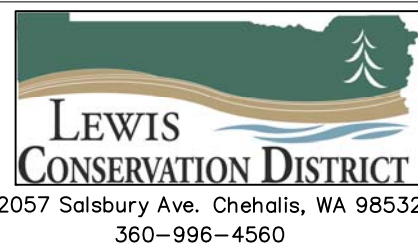


Bridge Approach, Typical Section

Scale: 1" = 4'



"Pipe Caddy" Type Utility Hanger - Installation Example



SCALE:
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Chehalis, WA 98532
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Utility and Road Section Details		JOB NO.
Owner: David Guenther 1633 Middle Fork Road Onalaska, WA 98570		SHEET 06
		06