



October 25, 2021

TO: Executive Committee Members
FROM: Scott Boettcher, Staff
SUBJECT: Executive Committee Action, GHCD and OCB Cloquallam Creek Erosion Pilot

The following is for discussion at our next Executive Committee meeting. Please feel free to call or email with questions (360/480-6600, scottb@sbgh-partners.com).

I. Background

- a. For the 2021-23 biennium, the Office of Chehalis Basin (OCB) is tasked with developing an erosion management program. To support this effort, OCB is seeking pilot projects to help inform development of the program.
- b. Grays Harbor Conservation District (GHCD) and WDFW have identified a private property at 36 Lower Falls Creek Road (Elma, WA) experiencing significant erosion that could be a good candidate for OCB. The property, located along Cloquallam Creek (tributary to Chehalis River in Grays Harbor County), is considered a good pilot candidate .because it:
 - Meets OCB’s funding criteria (see attachment A).
 - Typifies the kind of erosion (and helplessness) many individual landowners face in the Basin.
 - Provides an opportunity to develop a more informed understanding (for GHCD, WDFW, OCB and Chehalis Basin Board) for how this circumstance came about.
 - Brings the Chehalis Basin Strategy down the ground to the individual private landowner level.
- c. GHCD is proposing to redirect excess funds from this Fall’s Lower Satsop Right Bank Conservation construction project that are available due to the winning construction bid (Brumfield Construction) being substantially below the engineer’s cost estimate.

<u>Proposed Funding</u> for GHCD's Lower Satsop Right Bank Conservation Project	\$1,561,405.00
<u>Actual Funding Need</u>	\$(1,452,292.50)
Excess Funds Available for Redirect -->	\$109,112.50
Proposed Redirect for Project Management/Oversight/Administration	\$7,500.00
Proposed Redirect for Flood Protection at 36 Lower Falls Creek Road	\$100,000.00
Proposed Redirect RCO Admin (1.5%)	\$1,612.50
Redirect Funding Need -->	\$109,112.50

- d. Flood Authority's Project Committee met 10/18/2021 and approved GHCD's proposal to redirect approximately \$109,000 in excess funds for a GHCD-sponsored Cloquallam Creek erosion pilot at the 36 Lower Falls Creek Road property. As part of this approval, the Projects Committee expressed their desire that the following questions be addressed through the pilot:
- What has been the rate of channel migration, how long have people known about it, and how long have people been concerned about it?
 - What disclosure if any was made to the current landowner about the migration threat posed by Cloquallam Creek?
 - Where were the river boundaries in 2002 when the home was built and septic system installed, and what was the FEMA flood designation at that time?

SIDENOTE: While Projects Committee approved GHCD's funding request and participation in OCB's erosion pilot, it also discussed and expressed a desire to document how the Flood Authority as a whole should prioritize emerging projects (like this one) and projects brought forward between formal local project recruitment cycles.

II. Staff Recommendation/Executive Committee Action

1. Staff recommends the Executive Committee approve GHCD's request to redirect approximately \$109,000 in excess funds for a GHCD-sponsored Cloquallam Creek erosion pilot at the 36 Lower Falls Creek Road property.
2. Staff further recommends Executive Committee direct Flood Authority staff (Scott) to:
 - a. Work with OCB to incorporate the Project Committee's questions into the pilot effort.
 - b. Ensure these questions are incorporated into OCB's update to the CBB on 11-04-2021.
 - c. Report back to the Flood Authority at their 11-18-2021 meeting on the erosion pilot, as well other projects that have emerged in recent months and how the Flood Authority as whole might address these types of requests between future local project recruitment cycles.

Attachment A
DRAFT Funding Criteria Responses
Cloquallum Creek Erosion Pilot

10-195-2021

Contributors:

- ✓ Megan Tuttle, WDFW
- ✓ Anthony Waldrop, GHCD
- ✓ Tom Kollasch, GHCD
- ✓ Scott Boettcher, CRBFA

PROJECT MUST MEET THESE FIRST THREE CRITERIA:

1. **A local project sponsor (e.g., conservation district, county, non-profit) can be identified that is willing to develop a reach-scale project with multiple landowners (whether public or private).**
 - Grays Harbor Conservation District (GHCD) is tentatively identified as the local project sponsor. This will be confirmed at GHCD's next Board meeting (10/15/2021).
 - GHCD, the landowner (at 36 Falls Creek Rd.), and WDFW are very interested and willing to develop and implement a reach-scale project. This would likely take the form of:
 - a. A location-specific erosion reduction project implemented through an emergency HPA.
 - b. Either:
 - mitigation on or immediately adjacent to the project area, or
 - off-site, elsewhere in the reach where better "bang for the buck" can be achieved. [Note: Off-site mitigation could include habitat restoration in the upstream parcels adjacent to the river.]
 - c. Where mitigation actually occurs will be determined based on reach characteristics and reach issues, and be implemented through a separate standard five-year HPA.
 - GHCD's proposal to their Board is to serve as local sponsor for both the emergency HPA project and the standard five-year HPA project.
2. **The erosion risk at the site or reach is rapid (above natural rates) and would cause significant damage to valuable structures, infrastructure, or productive agricultural land within the near term (within approximately the next 3 years).**
 - Erosion rates at the site are substantial and above natural rates. WDFW's Megan Tuttle says: "*Based on monitoring I have conducted over the past two years on this location the erosion rates have increased at an alarming rate.*"
 - Erosion risk at the site is predominately the threat to landowner's newly purchased home (primary residence) and septic drain field.

Attachment A

- WDFW's Megan Tuttle further adds: *"If something is not done this winter at a rather expedited rate, it is my professional opinion that both the house and the septic drain field will be captured by the current meander pattern of Cloquallum Creek."*
- Similarly, GHCD's Tom Kollasch states: *"Others likely know the erosion rates from the last winter or two, but it's clear to me that the septic field and the house are both at risk within the next three years if not this coming winter."*
- While the home and septic drain field are (when considered from the standpoint of traditional infrastructure), small-scale, they are more significant when considered from the standpoint of natural infrastructure and ecosystem services (e.g., clean water).

3. The landowner is interested in a bioengineered solution and willing to maintain a bioengineered solution as part of a funding agreement.

- The landowner understands and is supportive of a bioengineered approach.
- More specifically, the landowner understands:
 - a. How bioengineered bank armoring takes place
 - b. That there will be an aggressive replanting plan on his property, likely additionally mitigation elsewhere in the reach, and that their obligations will extend several years forward of the actual project.
- The landowner has expressed support for this approach (bioengineering solution) to maintain habitat for fish and wildlife, and to protect their home and septic drain field.

PROJECT SHOULD ALSO MEET AT LEAST TWO OF THE FOLLOWING CRITERIA:

1. **The landowner (whether public or private) is willing to consider relocation that could provide long-term reduced erosion risk or damages (either with or without an associated bioengineered or habitat solution). This consideration would be further informed by the design process.**
 - Relocation is not a viable option as the landowner's home is directly against a valley wall and the rest of their property is also highly erodible floodplain.
2. **The site provides opportunities for a reach-scale approach to reduce velocities and bank scour through a multi-element solution that could include placement of large wood, riparian revegetation, bank sloping/terracing, reconnecting former channels or swales, or other elements that would benefit the reach and maintain or restore natural processes and habitats.**
 - This specific reach of the Cloquallum has many reach-scale design possibilities including reengaging the old channel, working with upstream landowners on significant plantings (including flood fencing with willow plantings) and wood structure placements, and exploring options to increase the capacity of the two bridges immediately downstream.

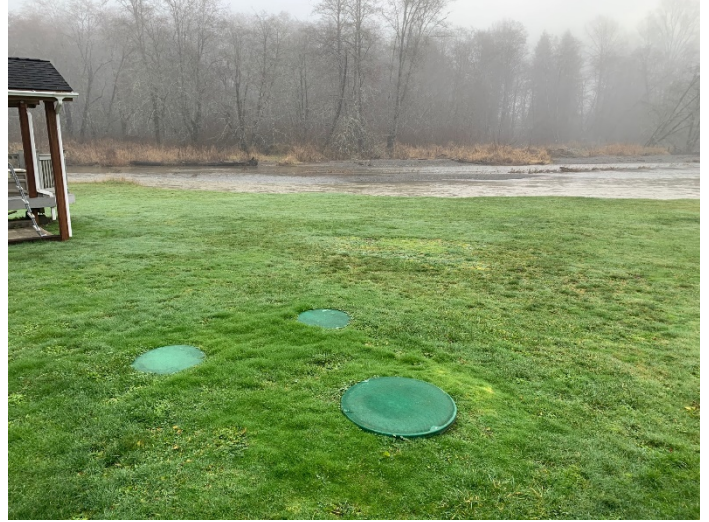
Attachment A

- a. The county bridge is a hydraulic pinch point and an opportunity to create better passage and flow downstream.
- b. Upstream landowners are willing to work with WDFW and others to generate more complex habitat. They too have bank erosion problems that washout county road infrastructure every flood season. Upstream landowners provide an opportunity to implement LWM structures and keep the river "in channel" while generating resting pools and cold water refugia for juveniles in the summer months.

3. The project is likely to provide multiple benefits.

- The multiple benefits from this project include the following:
 - a. Landowner's home (primary residence) does not fall into the river adversely affecting fish habitat and contamination of during salmonid spawning timing.
 - b. Landowners septic field does not erode into the river adversely affecting (contaminating) Cloquallum Creek ecosystem.
 - c. Mitigation plan will introduce more complexity to a broken and sporadic riparian community along the right bank where the treatment will take place
 - d. Structure implemented as bank armoring will include at least one component of bioengineered variable to reduce approach velocities in the reach.
 - e. The bank armoring treatment will include willow introduction to overhang into the channel and generate shade during the summer months and cover for juvenile salmonid to hide from predators.
- There is also a potential that this project could include channel nourishment for spawning gravels. Due to the nature of the emergency, large rock will be used in the integrated bioengineered design. Through coupling this (large rock) with nourishment of smaller gravels after the fact could be an additional solution to mitigate impacts to channel width. This will have to be examined as an option after the hydraulic season has been completed and the group (GHCD, WDFW, landowner) can see where the channel has shifted.
- This project, an emergency protection and mitigation project implemented at a reach-scale, further has the benefit of informing (real-time) the development of the erosion management program the Office of Chehalis Basin and Chehalis Basin Board are developing. This includes such considerations as:
 - a. Permitting and regulatory
 - b. Funding.
 - c. Scope and applicability.
 - d. Implementation, timescale, long-term obligations.

Attachment A
Pictures From Megan Tuttle (January 2021)

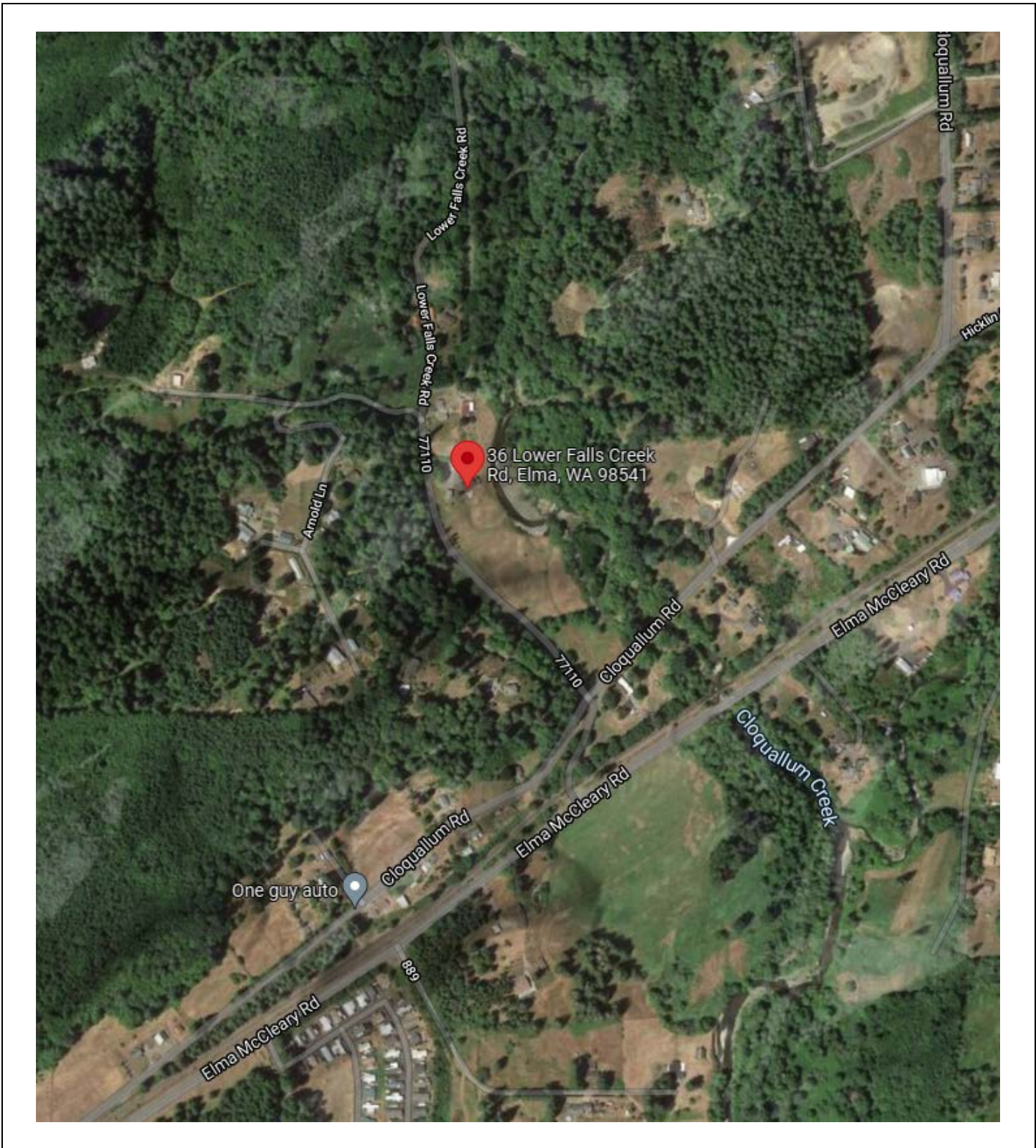


Attachment A
Pictures From Tom Kollasch (October 2021)



Attachment A
Vicinity Map (2021)

<https://www.google.com/maps/place/36+Lower+Falls+Creek+Rd,+Elma,+WA+98541/@47.0235853,-123.3699738,1576m/data=!3m1!1e3!4m5!3m4!1sox5491872c1d17427b:ox82366a88c661278e!8m2!3d47.0243532!4d-123.3682197!5m1!1e4>



Attachment B

Lower Falls Creek Road Emergency Bank Stabilization 2021

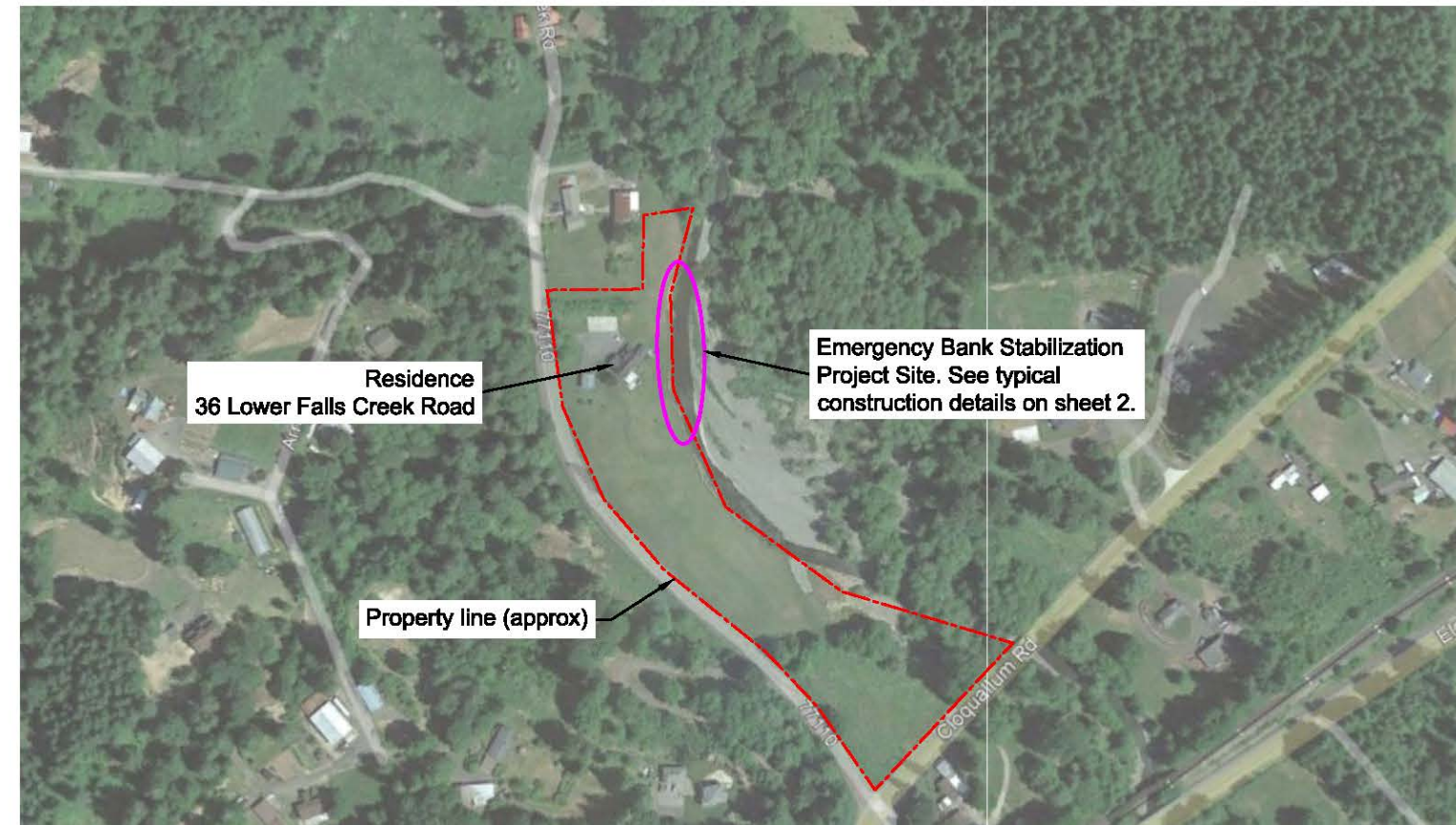
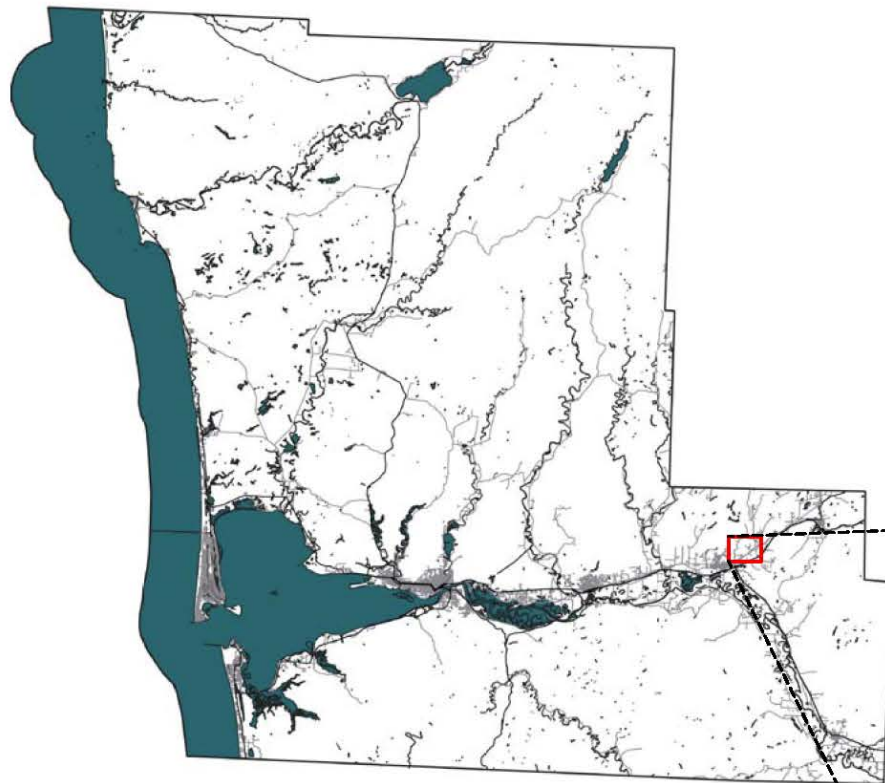
Grays Harbor County Vicinity (Not to Scale)

Project Description:

Grays Harbor Conservation District is partnering with Mick Faulk and Briana Borden to stabilize a rapidly eroding bank that is threatening the residence and septic drainfield at 36 Lower Falls Creek Road, Elma, WA 98541. The project will utilize bank stabilization techniques from the Integrated Streambank Protection Guidelines to halt the bank erosion and prevent the septic and/or house from being undermined. GH CD staff have met on-site with the landowner and WDFW Habitat Biologist to review the project scope and methods. The project will utilize an emergency permit.



EXPIRES APRIL 4, 2022



General Notes:

1. Locations and dimensions of existing underground utilities shown on these plans are in accordance with available information obtained without uncovering, measuring, or other verification. The Contractor shall protect all public and private utilities from damage resulting from the work.

The contractor shall call the Northwest Utility Notification Center at 1-800-424-5555 for field location not less than two nor more than ten business days before the scheduled date of excavation which may affect underground utilities.

No excavation shall begin until all known underground utilities in the vicinity of the excavation area have been located and marked.


2. The project shall be constructed to the lines and grades shown on the drawings, unless otherwise approved by the project engineer.

3. All construction activities shall be construed in a manner that minimizes erosion and sedimentation of site soils and that minimizes adverse impacts on adjacent surface waters. Other measures may be required depending on field conditions.

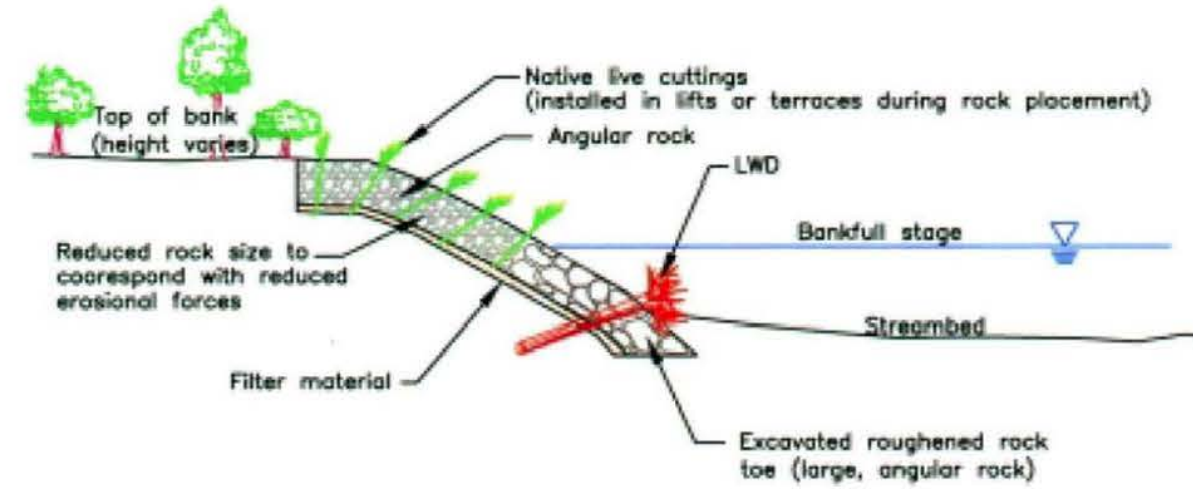
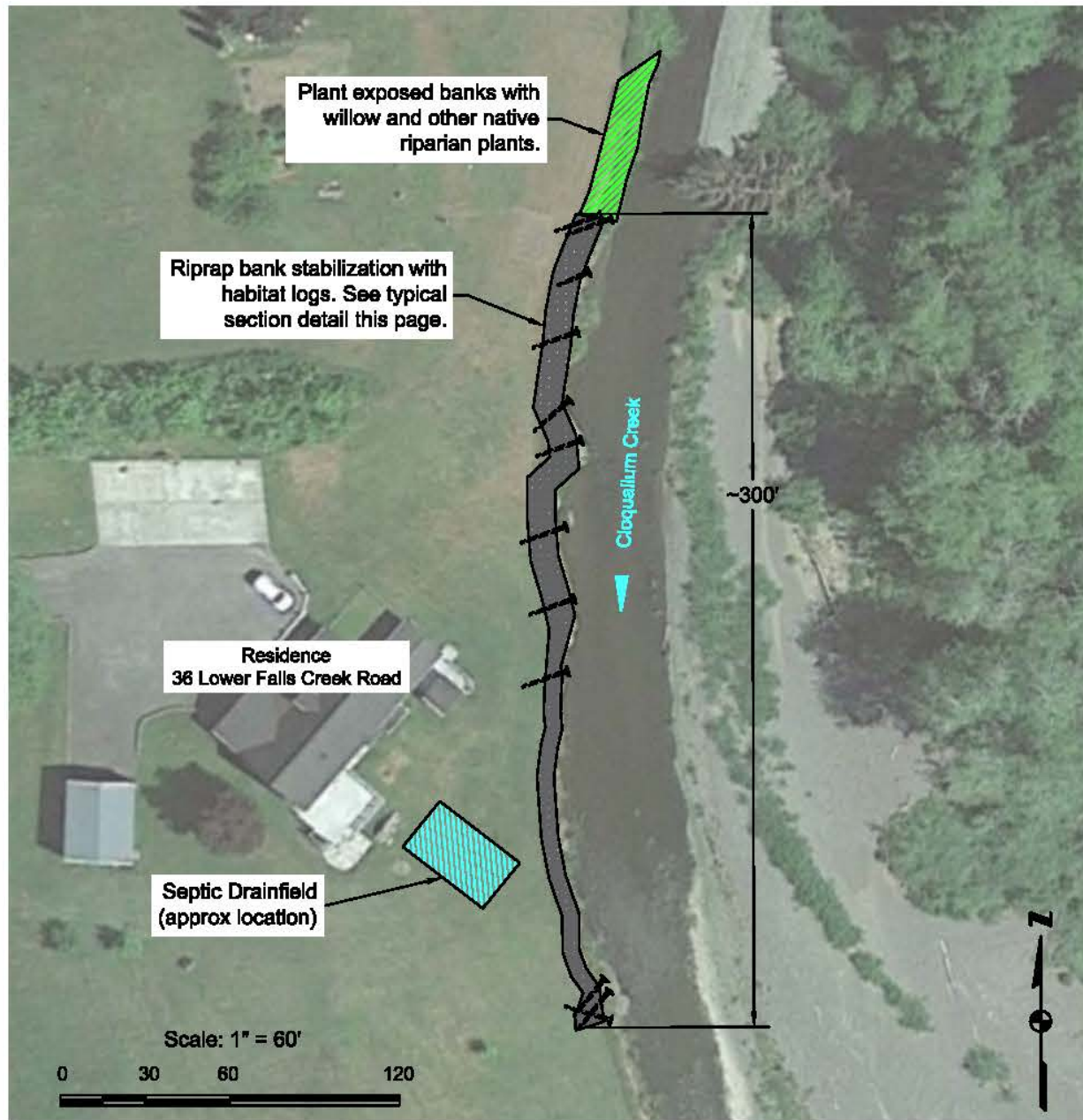
Legal Description: Township 18N, Range 05W, Section 30

Coordinates: 47.02414, -123.36834

Parcel #: 180530220030

 <p>GRAYS HARBOR CONSERVATION DISTRICT 330 W Pioneer Avenue Montesano, WA 98563 360-249-8532</p>	<p>SCALE: HOR: 1" = N/A VER: 1" = N/A</p>	<table border="1"> <thead> <tr> <th>BY</th> <th>DATE</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr> <td>GG</td> <td>10/21/21</td> <td>Conceptual design for permitting.</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td>Print on 11" x 17" paper to preserve scale.</td> </tr> </tbody> </table>	BY	DATE	REVISIONS	GG	10/21/21	Conceptual design for permitting.									Print on 11" x 17" paper to preserve scale.	<p>FOR: Tom Kollasch, Watershed Restoration Project Manager 330 Pioneer Avenue W Montesano, Washington 98563 Email: tkollasch@willapabay.org</p>	<p>Lower Falls Creek Road Bank Stabilization Cover Sheet</p>	<p>JOB NO.</p>
	BY	DATE	REVISIONS																	
	GG	10/21/21	Conceptual design for permitting.																	
		Print on 11" x 17" paper to preserve scale.																		
<p>DESIGNER: GG DRAFTER: GG DATE: 10/21/2021</p>	<p>Owner: Mick Fauld and Briana Borden 36 Lower Falls Creek Rd Elma, WA 98541</p>	<p>SHEET</p>	<p>01</p>	<p>02</p>																
<p> </p>	<p> </p>	<p> </p>	<p> </p>	<p> </p>	<p> </p>															

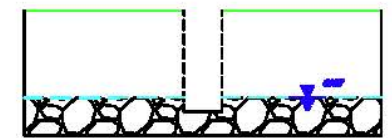
Attachment B



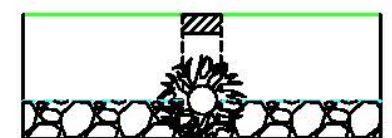
RIPRAP WITH ROUGHENED ROCK TOE, LWD, AND WILLOW PLANTINGS

LWD, Typical Installation Sequence

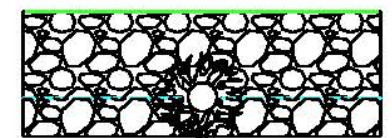
1. Install rock toe and excavate trench



2. Place log in trench, backfill trench with riprap or gravel. Cap backfill with 1' layer of stockpiled topsoil.



3. Complete riprap bank stabilization



General Construction Notes:

- Riprap to be 3' minus or light loose riprap.
- Vertical banks will be sloped back to 2:1 where possible. Max bank slope of finished installation will be no more than 1:1.
- Habitat logs to be coniferous species, minimum diameter 12", minimum length 15' (from end of rootwad to cut end).
- Habitat logs to be installed at toe so that rootwad interacts with Cloquallum Creek at low flows. Logs will be angled upstream and spaced at approximately 30'.
- Use excavated gravels to fill gaps/voids in finished riprap installation.
- Plant top of bank and riprap face with willow stakes.
- Construction access routes will be seeded and mulched after bank stabilization work is completed.

GRAYS HARBOR CONSERVATION DISTRICT
330 W Pioneer Avenue
Montesano, WA 98563
360-249-8532

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

DESIGNER: GG
DRAFTER: GG
DATE: 10/21/2021

BY	DATE	REVISIONS
GG	10/21/21	Conceptual design for permitting.
		Print on 11" x 17" paper to preserve scale.

FOR:
Tom Kollasch, Watershed Restoration
Project Manager
330 Pioneer Avenue W
Montesano, Washington 98563
Email: tkollasch@willapabay.org

Lower Falls Creek Road Bank Stabilization
Typical Details

Owner:
Mick Fauld and Briana Borden
36 Lower Falls Creek Rd
Elma, WA 98541

JOB NO.

SHEET
02 / 02