



Land of Cheese, Trees and Ocean Breeze

**Floodway Development Permit #851-22-000405-PLNG:
Carlton/Hat Girl LLC**

*NOTICE TO MORTGAGEE, LIENHOLDER, VENDOR OR SELLER:
ORS 215 REQUIRES THAT IF YOU RECEIVE THIS NOTICE,
IT MUST BE PROMPTLY FORWARDED TO THE PURCHASER*

**NOTICE OF ADMINISTRATIVE REVIEW
Date of Notice: December 19, 2022**

Notice is hereby given that the Tillamook County Department of Community Development is considering the following:

851-22-000405-PLNG: A review of a Floodway Development Permit for the placement 100 cubic-yards of fill to level a parking lot in the Floodway. The subject property is located at 34920 Brooten Road, a County road, and is designated as Tax Lot 7800, of Section 19CC of Township 4 South, Range 10 West of the Willamette Meridian, Tillamook County, Oregon. The property is located in the Pacific City/Woods Community Commercial (PCW-C2) Zone and the Flood Hazard (FH) Overlay. The applicant is Sean Carlton and property owners are Hat Girl LLC.

Written comments received by the Department of Community Development prior to 4:00p.m. on January 3, 2023, will be considered in rendering a decision. Comments should address the criteria upon which the Department must base its decision. A decision will be rendered no sooner than the next business day, January 4, 2023.

Notice of the application, a map of the subject area, and the applicable criteria are being mailed to all property owners within 250 feet of the exterior boundaries of the subject parcel for which an application has been made and other appropriate agencies at least 14 days prior to this Department rendering a decision on the request.

A copy of the application, along with a map of the request area and the applicable criteria for review are available for inspection on the Tillamook County Department of Community Development website: <https://www.co.tillamook.or.us/commdev/landuseapps> and is also available for inspection at the Department of Community Development office located at 1510-B Third Street, Tillamook, Oregon 97141.

If you have any questions about this application, please call the Department of Community Development at 503-842-3408 Ext. 3412 or ltone@co.tillamook.or.us

Sincerely,

Melissa Jenck, CFM, Senior Planner

Sarah Absher, CFM, Director
Enc. Applicable Ordinance Criteria, Maps

REVIEW CRITERIA

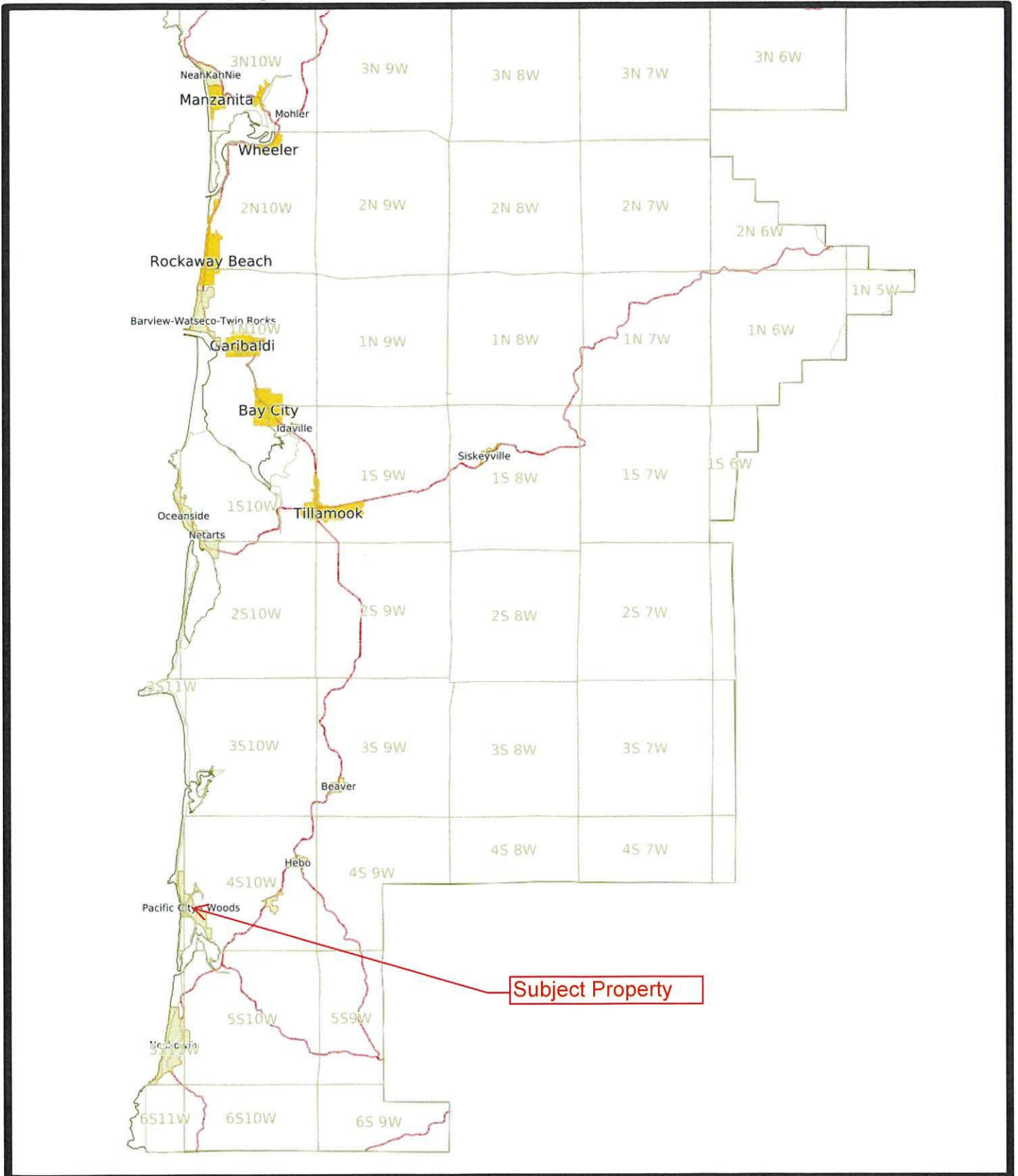
ARTICLE III – ZONE REGULATIONS

TCLUO SECTION 3.510: FLOOD HAZARD OVERLAY ZONE

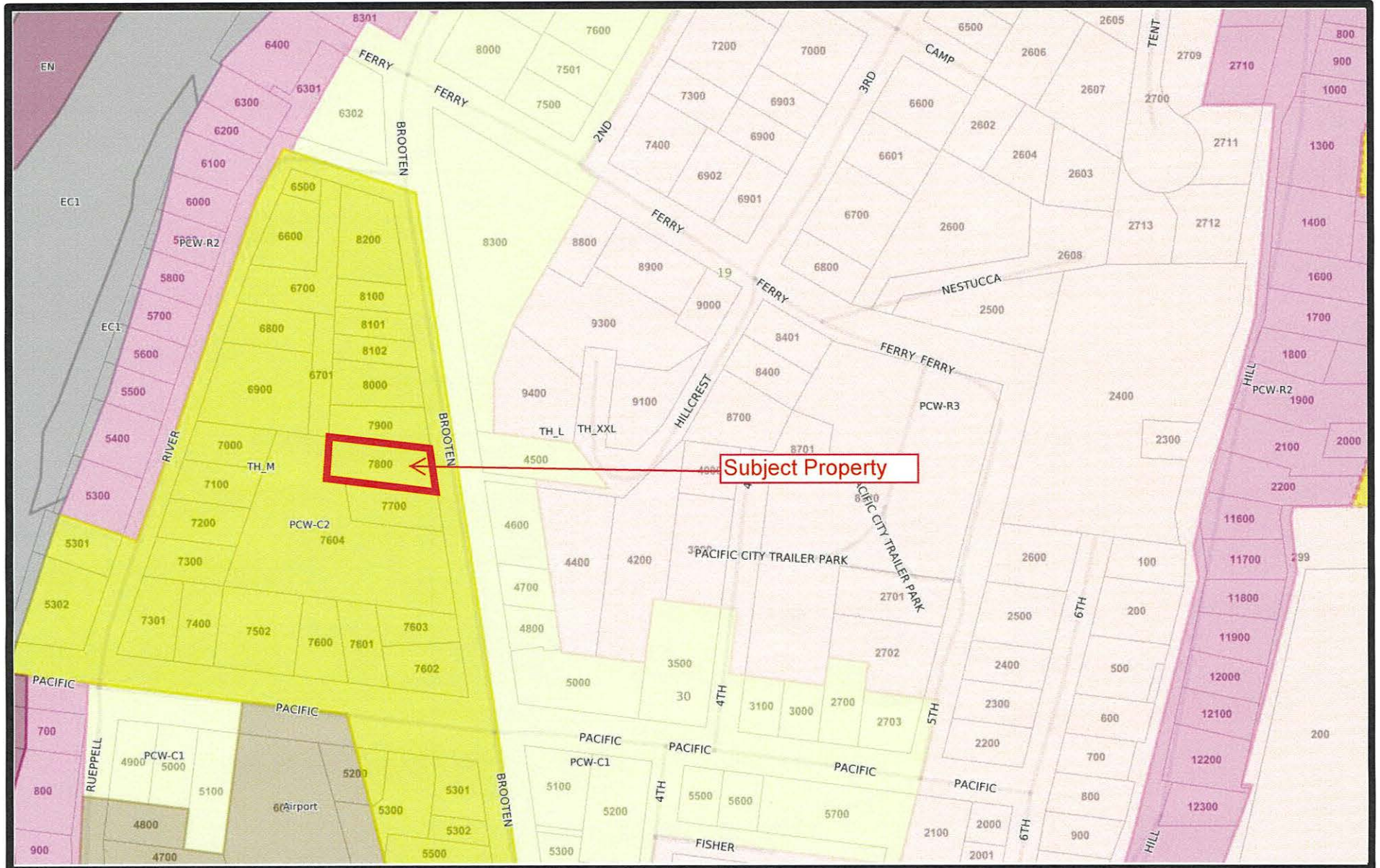
- (1) The fill is not within a Coastal High Hazard Area.
- (2) Fill placed within the Regulatory Floodway shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (3) The fill is necessary for an approved use on the property.
- (4) The fill is the minimum amount necessary to achieve the approved use.
- (5) No feasible alternative upland locations exist on the property.
- (6) The fill does not impede or alter drainage or the flow of floodwaters.
- (7) If the proposal is for a new critical facility, no feasible alternative site is available.
- (8) For creation of new, and modification of, Flood Refuge Platforms, the following apply, in addition to (14)(a)(1-4) and (b)(1-5):
 - i. The fill is not within a floodway, wetland, riparian area or other sensitive area regulated by the Tillamook County Land Use Ordinance.
 - ii. The property is actively used for livestock and/or farm purposes,
 - iii. Maximum platform size = 10 sq ft of platform surface per acre of pasture in use, or 30 sq ft per animal, with a 10-ft wide buffer around the outside of the platform,
 - iv. Platform surface shall be at least 1 ft above base flood elevation,
 - v. Slope of fill shall be no steeper than 1.5 horizontal to 1 vertical,
 - vi. Slope shall be constructed and/or fenced in a manner so as to prevent and avoid erosion.

Conditions of approval may require that if the fill is found to not meet criterion (5), the fill shall be removed or, where reasonable and practical, appropriate mitigation measures shall be required of the property owner. Such measures shall be verified by a certified engineer or hydrologist that the mitigation measures will not result in a net rise in floodwaters and be in coordination with applicable state, federal and local agencies, including the Oregon Department of Fish and Wildlife.

Vicinity Map



Zoning Map



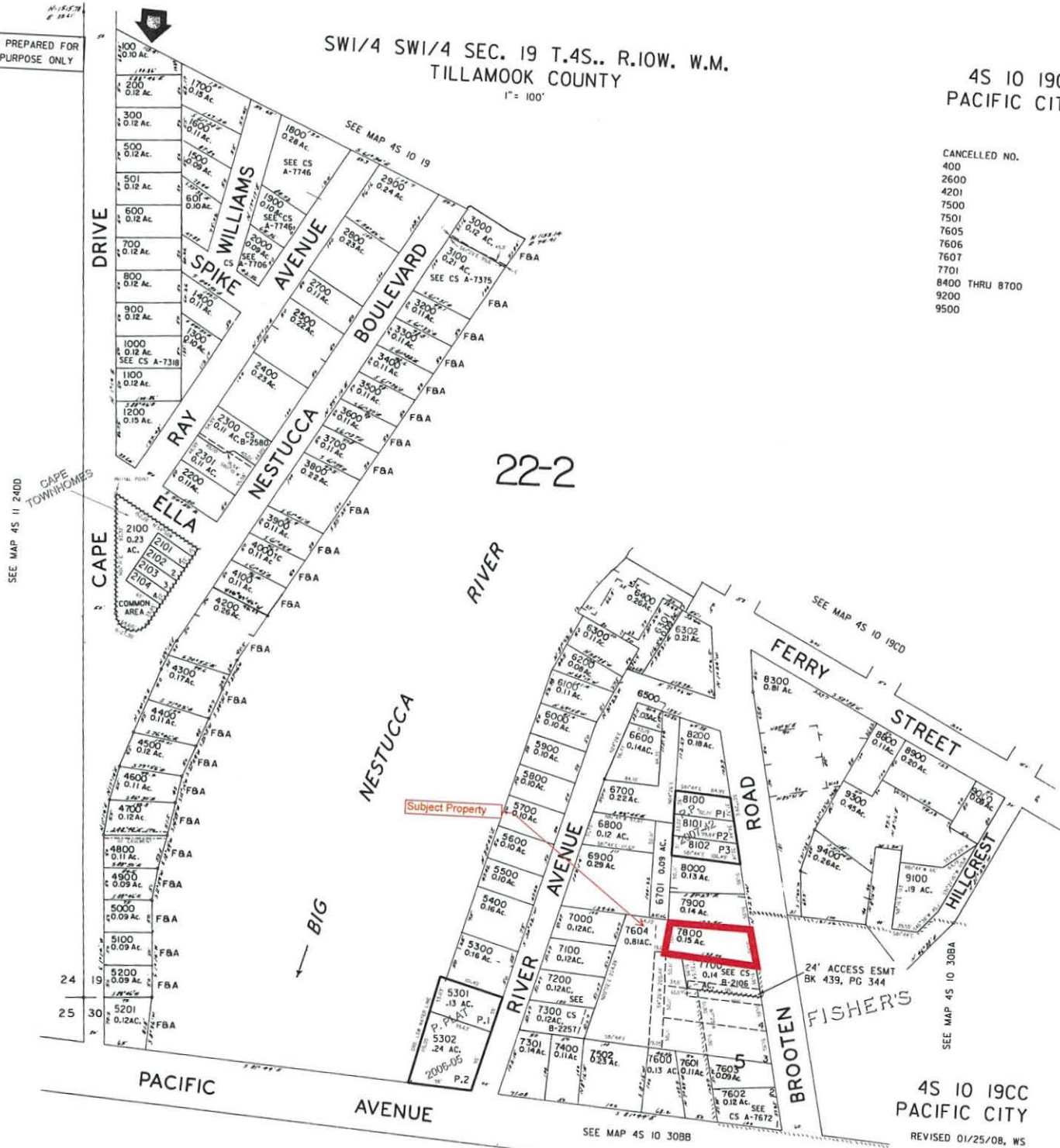
THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

SW1/4 SW1/4 SEC. 19 T.4S.. R.10W. W.M.
TILLAMOOK COUNTY

1" = 100'

45 10 19CC
PACIFIC CITY

- CANCELLED NO.
- 400
- 2600
- 4201
- 7500
- 7501
- 7605
- 7606
- 7607
- 7701
- 8400 THRU 8700
- 9200
- 9500



22-2

Subject Property

24' ACCESS ESMT
BK 439, PG 344

45 10 19CC
PACIFIC CITY

REVISED 01/25/08, WS

SEE MAP 45 10 30BB

SEE MAP 45 11 2400

N. KEY
6 1951

TILLAMOOK County Assessor's Summary Report

Real Property Assessment Report

FOR ASSESSMENT YEAR 2021

December 16, 2022 2:46:06 pm

Account # 233731
 Map # 4S1019CC07800
 Code - Tax # 2202-233731

Tax Status ASSESSABLE
 Acct Status ACTIVE
 Subtype NORMAL

Legal Descr See Record

Mailing Name HAT GIRL LLC

Deed Reference # 2021-3765

Agent

Sales Date/Price 04-27-2021 / \$550,000.00

In Care Of

Appraiser GIL SMITH

Mailing Address PO BOX 236
 PACIFIC CITY, OR 97135

Prop Class 200 MA SA NH Unit
 RMV Class 200 07 01 300 19960-1

Situs Address(s)	Situs City
ID# 1 34920 BROOTEN RD	COUNTY

Code Area	RMV	MAV	Value Summary AV	RMV Exception	CPR %
2202 Land	118,090			Land	0
Impr.	0			Impr.	0
Code Area Total	118,090	71,280	71,280		0
Grand Total	118,090	71,280	71,280		0

Land Breakdown										
Code Area	ID#	RFPD	Ex	Plan Zone	Value Source	TD%	LS	Size	Land Class	Trended RMV
2202	1	<input checked="" type="checkbox"/>		C-2	Commercial Site	110	A	0.15		108,090
2202					OSD - AVERAGE	100				10,000
Grand Total								0.15		118,090

Improvement Breakdown									
Code Area	ID#	Yr Built	Stat Class	Description	TD%	Total Sq. Ft.	Ex% MS Acct #	Trended RMV	
Grand Total							0	0	

Comments: Reappraisal for 2004. gbs 8/16/04 // 1/2/08 Imps were totally removed during late 2006. Adjusted RMV/MAV to reflect. KF

National Flood Hazard Layer FIRMMette



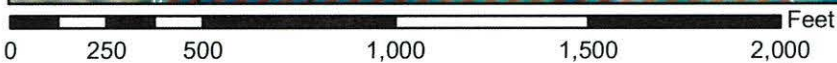
123°58'2"W 45°12'22"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|-----------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
Zone A, V, A99 |
| | | With BFE or Depth Zone AE, AO, AH, VE, AR |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
| | | Future Conditions 1% Annual Chance Flood Hazard Zone X |
| | | Area with Reduced Flood Risk due to Levee. See Notes. Zone X |
| | | Area with Flood Risk due to Levee Zone D |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard Zone X |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard Zone |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |



1:6,000 123°57'25"W 45°11'57"N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards



















The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/16/2022 at 5:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



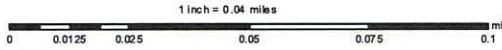
Disclaimer: The spatial information hosted at this website was derived from a variety of sources. Care was taken in the creation of these themes, but they are provided "as is". The state of Oregon, or any of the data providers cannot accept any responsibility for errors, omissions, or positional accuracy in the digital data or underlying records. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying any of these products. However, notification of any errors would be appreciated. The data are clearly not intended to indicate the authoritative location of property boundaries, the precise shape or contour of the earth or the precise location of fixed works of humans.

Statewide Wetlands Inventory

-  Sections
-  LWI Study Area
-  NHD Springs/Seeps
- NHD Streams and Rivers**
-  Perennial
-  Intermittent
-  Ephemeral
-  Unknown
-  Canal/Ditch
-  NHD Area
-  NHD Waterbody
- Wetlands**
-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Riverine
-  SWIPredominantlyHydricSoilMU
-  SWIagateWinlo



R. Sounhein, Department of State Lands, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, R. Sounhein 2018



The Statewide Wetlands Inventory (SWI) represents the best data available at the time this map was published and is updated as new data becomes available. In all cases, actual field conditions determine the presence, absence and boundaries of wetlands and waters (such as creeks and ponds). An onsite investigation by a wetland professional can verify actual field conditions.



Date: 12/16/2022



State of Oregon
 Department of State Lands
 775 Summer Street, NE, Ste 100
 Salem, OR 97301-1279
 (503) 986-6200



Tillamook County Department of Community Development
 1510-B Third Street, Tillamook, OR 97141 | Tel: 503-842-3408 Fax: 503-842-1819
 www.co.tillamook.or.us

DEVELOPMENT PERMIT

OFFICE USE ONLY	
Date Stamp	
<input type="checkbox"/> Approved <input type="checkbox"/> Denied	
Received by:	
Receipt #: 1291104	
Fees: 1100.-	
Permit No: 851-22-000405-PLNG	

Applicant (Check Box if Same as Property Owner)

Name: Sean (John) Carlton Phone: 503-437-0189

Address: PO Box 236--35235 6th St.

City: Pacific City State: OR Zip: 97135

Email: sean@basketcasewine.com

Property Owner

Name: Hat Girl, LLC Phone: 503-932-1744

Address: PO Box 236

City: PC State: OR Zip: 97135

Email: sean@basketcasewine.com

Description of Work: Bringing in approximately 100 CY of fill to level a parking lot

Location:

Site Address: 34920 Brooten Road Pacific City, OR 97135

Map Number: 4S 10 19 CC 07800

Township

Range

Section

Tax Lot(s)

Complete all applicable fields:

Regulatory Floodway: <input checked="" type="checkbox"/>	Estuary: <input type="checkbox"/>	Floodplain: <input type="checkbox"/>
New: <input type="checkbox"/>	Addition: <input type="checkbox"/>	Replacement: <input type="checkbox"/>
Remodel: <input type="checkbox"/>	Demolish: <input type="checkbox"/>	
Dwelling:	Accessory Structure:	
Culvert Diameter:	Bridge Length:	
Length:	Width:	
Fence Height:	Retaining Wall Height:	
Streambank Stabilization:	Other:	
Fill/Removal/Grading: 100 CY	Vegetation Removal: 100 CY	

Flood Insurance Rate Map (FIRM) Panel Info

Tillamook County	Panel Number: 41057C 0855E
Effective Date:	Property Flood Zone(s): Reg. Floodway
Floodway: (Y) N	Project Flood Zone(s):
Stream/Waterbody Name: Nestucca River	

Elevation Data (NAVD 88)

Base Flood Elevation: 17.3'	First Habitable Floor:
Lowest Floor/Horizontal Member:	
Enclosed Area:	Flood Vent Area:

Structure/Damage \$: 5 Year Construction \$: 3000

Substantial improvement/damage threshold 50% cost vs. value

Other Required Permits

Authorization

This permit application does not assure permit approval. The applicant and/or property owner shall be responsible for obtaining any other necessary federal, state, and local permits. The applicant verifies that the information submitted is complete, accurate, and consistent with other information submitted with this application.

Property Owner Signature (Required)

Applicant Signature

Date

Date

TLCUO SECTION 3.510(14)(b) Development Permit Review Criteria:

(1) The fill is not within a Coastal High Hazard Area.

The fill is not within a Coastal High Hazard Area.

(2) Fill placed within the Regulatory Floodway shall not result in any increase in flood levels during the occurrence of the base flood discharge.

As per the included No-Rise Analysis, the Fill will not result in any increase in flood levels.

(3) The fill is necessary for an approved use on the property.

Approximately half of the property is in the floodway and half of the property is in the flood plain. In order for an approved use to be utilized in the flood plain portion, the flood way portion needs to be used for parking. Placing the fill in this area will allow us to meet the required parking requirements for optimal use of the current building and potential use of the floodplain portion of the subject property for additional outdoor seating.

(4) The fill is the minimum amount necessary to achieve the approved use.

The fill is the minimum amount necessary to level the entire lot for parking. The minimum fill will still be below grade of the adjacent developed properties.

(5) No feasible alternative upland locations exist on the property.

The entire property is within the Special Flood Hazard Area. In order to use the Floodplain portion of the property, we will need to use the Floodway portion of the property for parking. There is no portion of this property that is outside the SFHA.

(6) The fill does not impede or alter drainage or the flow of floodwaters.

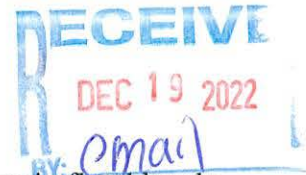
There has never been flood water on this property. Additionally, the proposed fill is lower than the adjacent developed properties but higher than the property between the subject property and the river so there is no impediment to drainage.

(7) If the proposal is for a new critical facility, no feasible alternative site is available.

The proposal is not for a new critical facility.

(8) For creation of new, and modification of, Flood Refuge Platforms, the following apply, in addition to (14)(a)(1-4) and (b)(1-5):

Not Applicable



- i. The fill is not within a floodway, wetland, riparian area or other sensitive area regulated by the Tillamook County Land Use Ordinance.
- ii. The property is actively used for livestock and/or farm purposes,
- iii. Maximum platform size = 10 sq ft of platform surface per acre of pasture in use, or 30 sq ft per animal, with a 10-ft wide buffer around the outside of the platform,
- iv. Platform surface shall be at least 1 ft above base flood elevation,
- v. Slope of fill shall be no steeper than 1.5 horizontal to 1 vertical,
- vi. Slope shall be constructed and/or fenced in a manner so as to prevent and avoid erosion.

Conditions of approval may require that if the fill is found to not meet criterion (5), the fill shall be removed or, where reasonable and practical, appropriate mitigation measures shall be required of the property owner. Such measures shall be verified by a certified engineer or hydrologist that the mitigation measures will not result in a net rise in floodwaters and be in coordination with applicable state, federal and local agencies, including the Oregon Department of Fish and Wildlife.

ENGINEERING "NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified engineer licensed to practice in the State of Oregon.

It is to further certify that the attached technical data supports the fact that the proposed fill at Tillamook County Tax lot 4S1019CC07800 will
(Name of Development)

not impact the 100-year flood elevations, floodway elevations and floodway widths on the Nestucca River at published sections
(Name of Stream)

in the Flood Insurance Study for Tillamook Co. & Incorporated Areas (41057CV001A),
(Name of Community)

dated September 28, 2018 and will not impact the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents that support my findings:

Technical Memorandum by WEST Consultants, Inc. dated October 28, 2022.

(Date) October 28, 2022

(Signature)



(Title) Project Manager

WEST Consultants, Inc.

2601 25th Street

Suite 450

Salem, OR 97302

(Address)

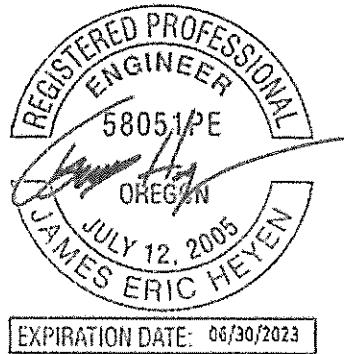


Figure 4 – FEMA No-Rise Certificate

TECHNICAL MEMORANDUM

WEST Consultants, Inc.

2601 25th St. SE

Suite 450

Salem, OR 97302-1286

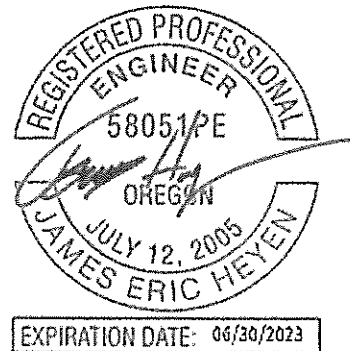
(503) 485-5490

(503) 485-5491 Fax

www.westconsultants.com



Name: Sean Carlton
Company: Twist Wine Company
Date: October 28, 2022
From: James Heyen, P.E.
Subject: No-Rise Analysis, Pacific City, OR



Introduction

Per your request, I have evaluated the potential impacts to flood elevations based on the proposed fill on your property located at 34920 Brooten Road in Pacific City, OR. The property is located within a Special Flood Hazard Area (SFHA) of the Nestucca River as indicated on the U.S. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel number 41057C0855F, effective on September 28, 2018. The specific location of the proposed fill is along the left bank of the river between FEMA lettered cross sections "C" and "D". The location also lies within the regulatory floodway. The effective base flood elevation at the proposed structure is approximately 17.3' and the floodway elevation is approximately 17.9'. All elevations listed in this memorandum are referenced to the North American Vertical Datum of 1988.

Figure 1 presents the study area and effective FEMA flood hazard mapping. All figures referenced in the text are found in Appendix A.

Pertinent information related to the property includes the following:

County Map Taxlot:	4S1019CC07800
Physical Address	34920 Brooten Road in Pacific City, OR
FEMA Community:	Tillamook County, Oregon [410196]
Flooding Source:	Nestucca River
FIRM Number:	41057C0855F

As specified by Article 3, Section 2.03.510(9a) of the Tillamook County Code, new construction is prohibited within a regulatory floodway "unless certification is provided by a professional registered civil engineer demonstrating through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge."

On June 22, 2022, I conducted reconnaissance of the subject property and reviewed the location of the proposed fill. Select photographs from the reconnaissance are provided in Appendix B.

A hydraulic study was conducted in accordance with standard engineering practice for a FEMA No-Rise analysis which indicates that the proposed structure does not result in an increase in water surface elevations during the base flood. This memorandum summarizes the analysis methodology and results.

Analysis Approach

The hydraulic study utilized the U.S. Army Corps of Engineers' (USACE) software HEC-RAS (Hydraulic Engineering Center – River Analysis System) version 5.0.7 (USACE 2019). According to the effective Flood Insurance Study (FIS) for Tillamook County (FEMA 2018), the original hydraulic modeling of this reach of the Nestucca River was conducted by CH2M Hill in July 1977.

Procedures set forth by FEMA Region 10 call for a multi-step analysis approach for evaluating a proposed project for No-Rise certification (FEMA 2013). The steps are as follows:

1. **Current Effective Model:** Obtain the effective model upon which the current effective base flood elevations and floodway extents is based. Effective models are archived by FEMA.
2. **Duplicate Effective Model (DEM):** Use the Current Effective Model input data to create a Duplicate Effective Model to ensure that the results recorded in the effective FIS can be reproduced within an acceptable tolerance.
3. **Corrected Effective Model (CEM):** The Duplicate Effective Model is then modified to correct any errors and incorporate the most recent topographic information.
4. **Existing Conditions Model (ECM):** The Corrected Effective Model is revised to reflect any modifications that have occurred within the floodplain since the date of the original analysis but prior to the proposed project. This model should be the best depiction of existing conditions.
5. **Proposed Conditions Model (PCM):** The Proposed Conditions Model is to reflect conditions following the completion of the project and will be compared with the Existing Conditions Model to determine the projects effects (if any). The direct comparison of water surface elevations between the results of these two models is the basis of a No-Rise analysis.

The effective model was requested from and provided by the FEMA Engineering Library in Alexandria, VA. However, that model was an older HEC-2 model. A more recent model of the lower Nestucca River was produced by WEST Consultants, Inc. (WEST) for a Letter of Map Revision (LOMR), effective September 24, 2015. The model produced for the LOMR is considered by FEMA to be the current effective model and was used to perform the hydraulic analysis for this No-Rise analysis.

Effective Model

Documentation accompanying the effective model indicates that it was produced using Geographic Information System (GIS) data available in the digital flood insurance map (DFIRM) for Tillamook County

(FEMA) and topographic data available from the Oregon Department of Geologic and Mineral Industries (DOGAMI 2009). The model includes FEMA lettered cross sections A through F and 16 unlettered cross sections. Bathymetry at all cross sections was manually created to match thalweg elevations indicated in the FIS profiles and to match water surface elevations (WSE) of the original HEC-2 model. Discharges and downstream boundary conditions were set to published values in the effective Flood Insurance Study. The limits of floodway encroachments were extracted from the S_FLD_HAZ_LN layer in the DFIRM.

Duplicate Effective Model

A Duplicate Effective Model (DEM) was created from a copy of the effective. Results from the DEM were compared with water surface elevations computed by the Effective Model. The DEM results are within the minimum agreement tolerance of 0.1 feet. The DEM is considered sufficient for conducting a No-Rise analysis. Table 1 presents the comparison of DEM and FIS water surface elevations.

Table 1 - Duplicate Effective Model vs. Effective Model

River Station (ft) and FEMA XS Letter	Regulatory Water Surface Elevation (ft)			With Floodway Water Surface Elevation (ft)		
	Effective Model	DEM	Difference (DEM - Eff. Model)	Effective Model	DEM	Difference (DEM - Eff. Model)
0 --	14.15	14.15	0.00	15.15	15.15	0.00
1,271 --	14.28	14.28	0.00	15.27	15.27	0.00
2,646 A	14.76	14.76	0.00	15.61	15.61	0.00
4,529 --	16.04	16.04	0.00	16.72	16.72	0.00
5,739 --	16.25	16.25	0.00	16.90	16.90	0.00
6,092 --	16.35	16.35	0.00	17.01	17.01	0.00
6,888 --	16.61	16.61	0.00	17.19	17.19	0.00
7,804 B	16.82	16.82	0.00	17.42	17.42	0.00
7,949 C	16.97	16.97	0.00	17.61	17.61	0.00
9,267 --	17.73	17.73	0.00	18.30	18.30	0.00
10,296 D	18.50	18.50	0.00	18.91	18.91	0.00
11,441 --	19.37	19.37	0.00	19.84	19.84	0.00
12,521 --	19.41	19.41	0.00	19.88	19.88	0.00
12,629 E	19.43	19.43	0.00	19.89	19.89	0.00
13,850 --	19.49	19.49	0.00	19.94	19.94	0.00
15,553 --	19.53	19.53	0.00	19.99	19.99	0.00
15,776 --	19.52	19.52	0.00	19.98	19.98	0.00
15,920 --	19.53	19.53	0.00	20.00	20.00	0.00
16,980 --	19.70	19.70	0.00	20.14	20.14	0.00
18,057 --	19.94	19.94	0.00	20.45	20.46	0.01
18,909 F	20.08	20.08	0.00	20.63	20.63	0.00
20,454 --	20.49	20.49	0.00	21.12	21.12	0.00

Notes: -- Indicates unlettered FEMA cross section; estimated from FIS flood profile

Corrected Effective Model (CEM)

The DEM was modified to create the Corrected Effective Model (CEM). The modifications included of adding four additional cross sections necessary to characterize the proposed fill on your property. Figure 2 shows the four added cross sections. Additional modifications to the model include updating of downstream reach lengths and bridge modeling methodology. Ineffective flow definitions in the DEM were revised for the CEM to correctly depict flow in the left overbank in the vicinity of the bridge carrying Ferry Street over the river. Ineffective flow definitions were modified at cross sections 11,441 through 15,553. Slight modifications to Manning's roughness values were also made to eliminate interpolated roughness values that remained in the DEM. Results from the CEM were compared with the water surface elevations computed by the DEM. That comparison is presented in Table 2.

Table 2 - Corrected Effective Model vs. Duplicate Effective Model

River Station (ft) and FEMA XS Letter	Regulatory Water Surface Elevation (ft)			With Floodway Water Surface Elevation (ft)		
	DEM	CEM	Difference (CEM - DEM)	DEM	CEM	Difference (CEM - DEM)
0 ---	14.15	14.15	0.00	15.15	15.15	0.00
1,271 ----	14.28	14.30	0.02	15.27	15.29	0.02
2,646 A	14.76	14.77	0.01	15.61	15.63	0.02
4,529 ---	16.04	16.06	0.02	16.72	16.73	0.01
5,739 ---	16.25	16.26	0.01	16.90	16.91	0.01
6,092 ---	16.35	16.36	0.01	17.01	17.02	0.01
6,888 ---	16.61	16.59	-0.02	17.19	17.18	-0.01
7,804 B	16.82	16.80	-0.02	17.42	17.40	-0.02
7,949 C	16.97	16.95	-0.02	17.61	17.59	-0.02
8,140 *		17.15			17.78	
8,147 *		17.18			17.78	
8,184 *		17.21			17.80	
8,192 *		17.22			17.81	
9,267 ----	17.73	17.69	-0.04	18.30	18.27	-0.03
10,296 D	18.50	18.49	-0.01	18.91	18.90	-0.01
11,441 ---	19.37	19.36	-0.01	19.84	19.83	-0.01
12,521 ---	19.41	19.51	0.10	19.88	19.96	0.08
12,629 E	19.43	19.56	0.13	19.89	20.01	0.12
13,850 ---	19.49	19.70	0.21	19.94	20.12	0.18
15,553 ---	19.53	19.78	0.25	19.99	20.24	0.25
15,776 ---	19.52	19.81	0.29	19.98	20.29	0.31
15,920 ---	19.53	19.84	0.31	20.00	20.33	0.33
16,980 ---	19.70	20.03	0.33	20.14	20.5	0.36
18,057 ---	19.94	20.24	0.30	20.46	20.79	0.33
18,909 F	20.08	20.37	0.29	20.63	20.94	0.31
20,454 ---	20.49	20.73	0.24	21.12	21.37	0.25

Notes: --- Indicates unlettered FEMA cross section, estimated from FIS flood profile

As seen in Table 2, the CEM computed water surface elevations for the reach located downstream of the bridge carrying Ferry Street (River Station 12,521) compare well with the values computed by the DEM. Upstream of river station 11,441, the reach length corrections and modifications to ineffective flow definitions resulted in CEM water surface elevation increases of up to 0.36 feet for the 1-percent annual chance flood elevations.

Existing Conditions Model (ECM)

No modifications to the modeling were necessary to create the ECM as there have been no significant modifications of the floodplain along this reach of the Nestucca River since the modeling for the 2015 LOMR was conducted. The ECM is the best representation of existing conditions in the study reach and was used as the basis for determining impacts to the water surface profile, if any, caused by the proposed fill.

Proposed Conditions Model (PCM)

The ECM was modified to create the PCM by adding the proposed fill. The proposed fill will raise the existing low ground to an elevation of 12.5'. The existing ground elevation beneath the proposed fill ranges from approximately 10' to 11.5' and the total quantity of fill is approximately 150 to 200 cubic yards. Figure 3 shows the approximate outline of the proposed fill, the added cross sections, and the underlying terrain.

Analysis Results

Water surface elevations predicted by the ECM and PCM models were compared to determine if the proposed fill resulted in a rise in water surface elevations for either the base flood or the floodway. Table 3 presents the computed water surface elevations for the ECM and PCM, and the calculated difference. As the table indicates, the proposed fill on your property will not result in a rise in water surface elevations along the Nestucca River for either the base flood or the floodway. A FEMA No-Rise Certificate is provided in Figure 4. Supporting data, including the effective FEMA flood hazard mapping and select model cross sections, are included in Appendix C.

Table 3 - Proposed Conditions vs. Existing Conditions

River Station (ft) and FEMA XS Letter	Regulatory Water Surface Elevation (ft)			With Floodway Water Surface Elevation (ft)		
	ECM	PCM	Difference (PCM - ECM)	ECM	PCM	Difference (PCM - ECM)
0 ---	14.15	14.15	0.00	15.15	15.15	0.00
1,271 ---	14.30	14.30	0.00	15.29	15.29	0.00
2,646 A	14.78	14.78	0.00	15.63	15.63	0.00
4,529 ---	16.06	16.06	0.00	16.73	16.73	0.00
5,739 ---	16.26	16.26	0.00	16.91	16.91	0.00
6,092 --	16.36	16.36	0.00	17.02	17.02	0.00
6,888 ---	16.59	16.59	0.00	17.18	17.18	0.00
7,804 B	16.80	16.80	0.00	17.40	17.40	0.00
7,949 C	16.95	16.95	0.00	17.59	17.59	0.00
8,140 *	17.15	17.15	0.00	17.78	17.78	0.00
8,147 *	17.18	17.16	-0.02	17.78	17.78	0.00
8,184 *	17.21	17.20	-0.01	17.80	17.79	-0.01
8,192 *	17.22	17.22	0.00	17.81	17.81	0.00
9,267 ---	17.69	17.69	0.00	18.27	18.27	0.00
10,296 D	18.49	18.49	0.00	18.90	18.90	0.00
11,441 ---	19.36	19.36	0.00	19.83	19.83	0.00
12,521 ---	19.51	19.51	0.00	19.96	19.96	0.00
12,629 E	19.56	19.56	0.00	20.01	20.01	0.00
13,850 ---	19.70	19.70	0.00	20.12	20.12	0.00
15,553 ---	19.78	19.78	0.00	20.24	20.24	0.00
15,776 ---	19.81	19.81	0.00	20.29	20.29	0.00
15,920 ---	19.85	19.85	0.00	20.33	20.33	0.00
16,980 ---	20.03	20.03	0.00	20.50	20.50	0.00
18,057 ---	20.24	20.24	0.00	20.79	20.79	0.00
18,909 F	20.37	20.37	0.00	20.94	20.94	0.00
20,454 ---	20.73	20.73	0.00	21.37	21.37	0.00

Notes: --- Indicates unlettered FEMA cross section; estimated from FIS flood profile

* Indicates cross section added at subject property

If you have any questions, please feel free to contact me by phone at (503) 485-5490, or by email at jheyen@westconsultants.com.

References

U.S. Army Corps of Engineers, Hydrologic Engineering Center; HEC-RAS, River Analysis System, Software Version 6.2; March 2022

U.S. Department of Homeland Security, Federal Emergency Management Agency; Flood Insurance Study for Tillamook County, OR and Incorporated Areas, 41057C002A, Vol. 1 and 2; Effective September 28, 2018

U.S. Department of Homeland Security, Federal Emergency Management Agency; Letter of Map Revision, Case No. 14-10-1727P; Effective September 24, 2015

U.S. Department of Homeland Security, Federal Emergency Management Agency, Region X; Procedures for "No-Rise" Certification for Proposed Developments in the Regulatory Floodway; October 2013

Oregon Department of Geology and Mineral Industries; Light Detection and Ranging (LiDAR) data; OLC North Coast 2020; Published October 1, 2009

Appendix A
Figures

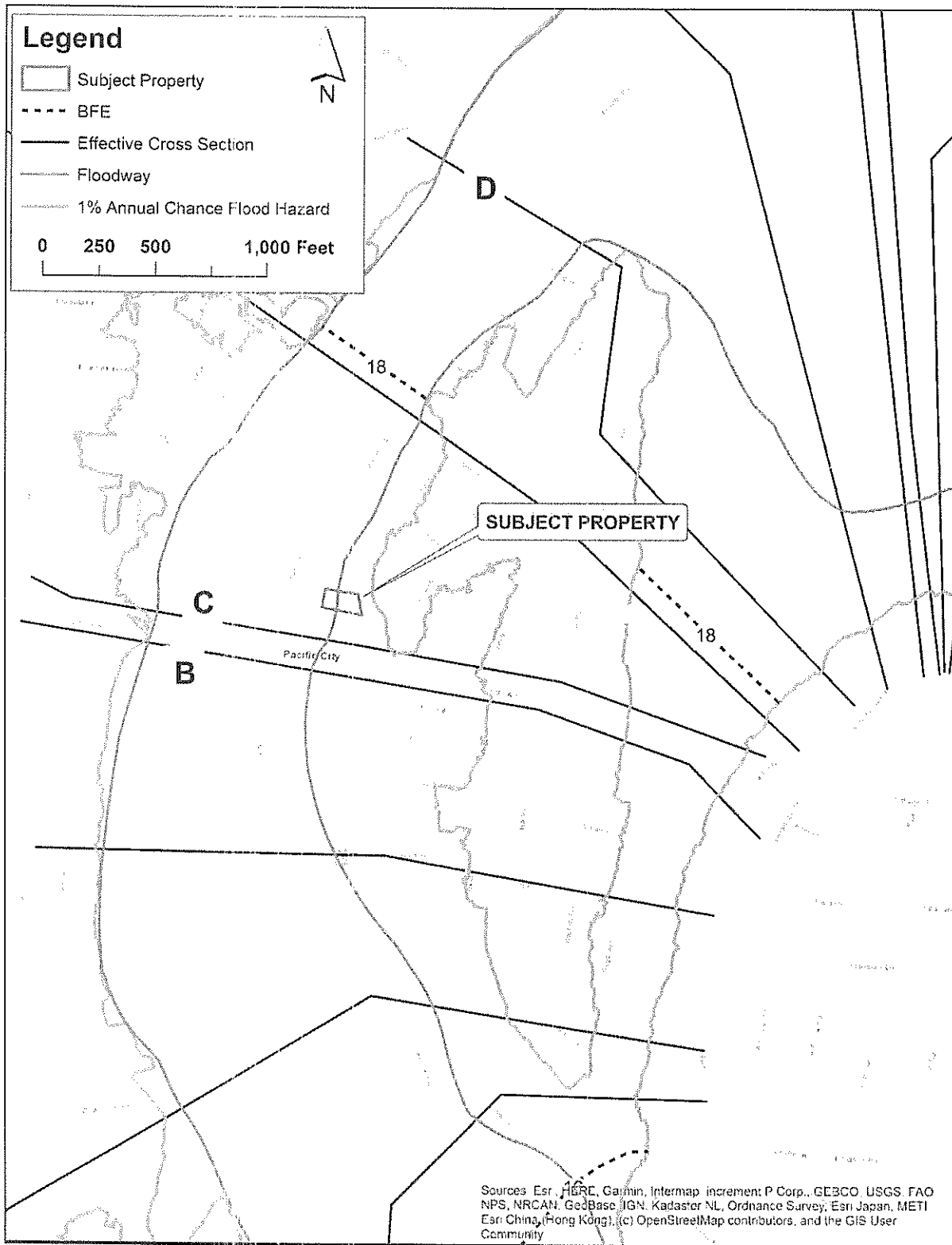


Figure 1 - Study Area and Effective Flood Hazard Mapping

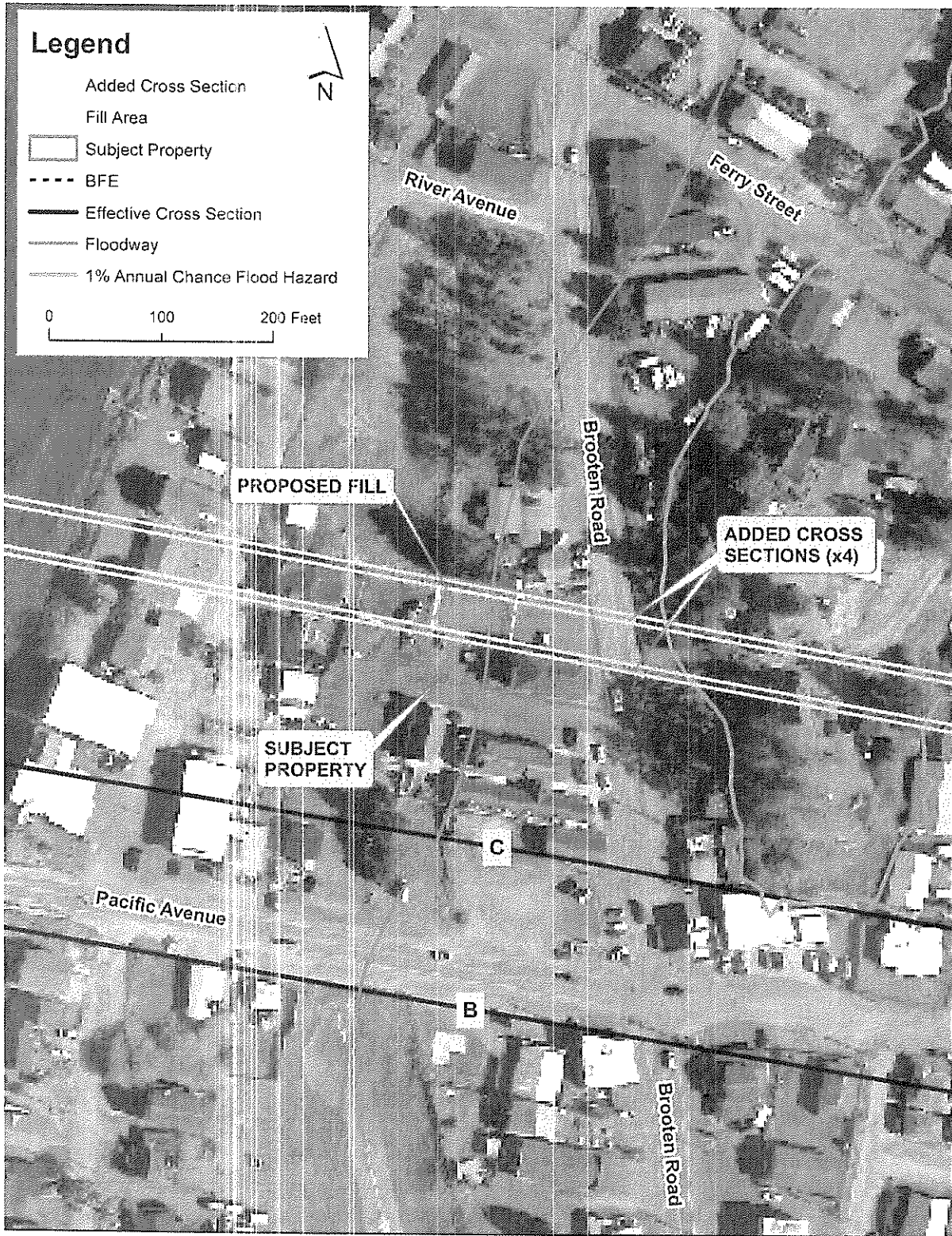


Figure 2 – Added Cross Sections and Proposed Fill

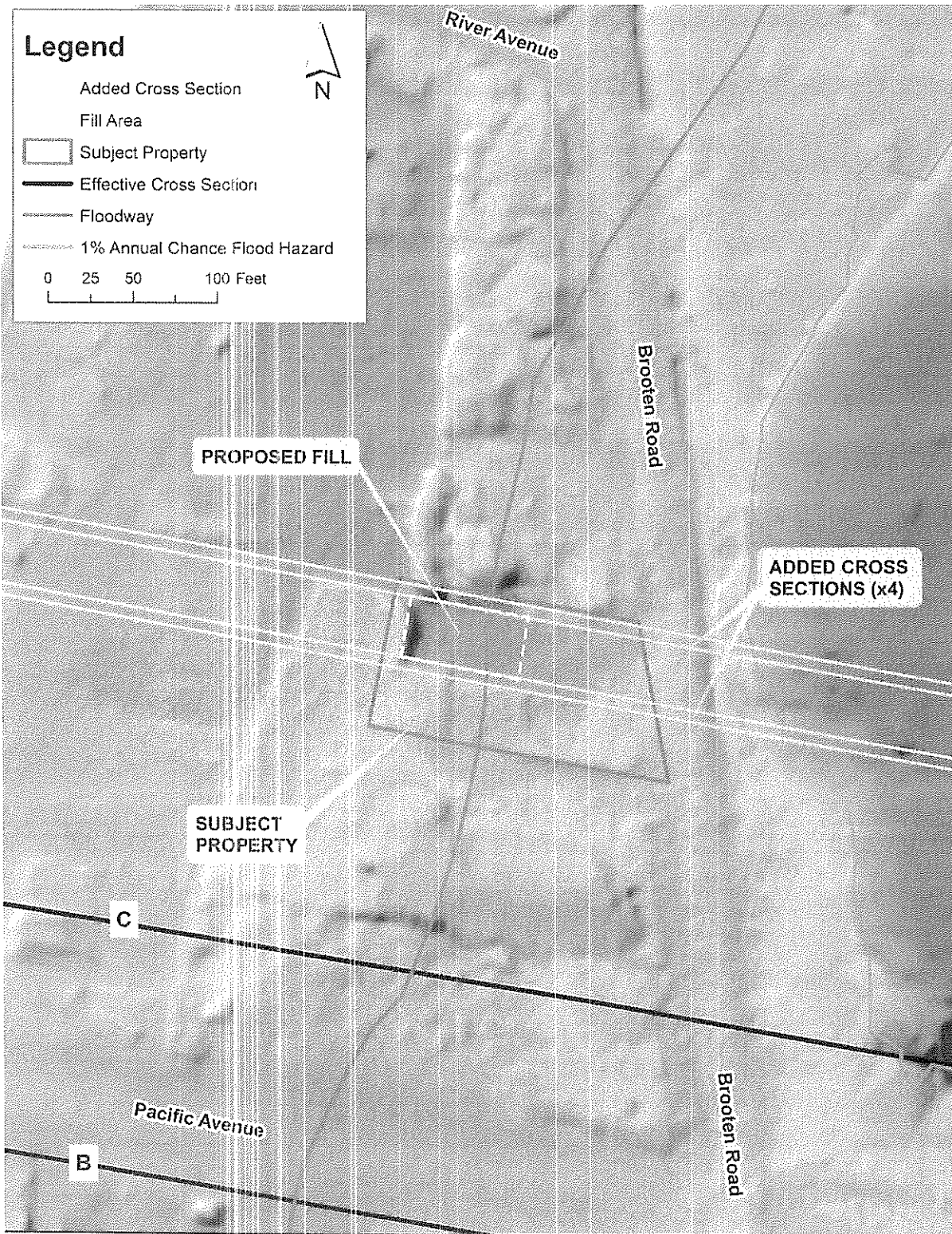


Figure 3 – Proposed Fill, Added Cross Sections, and Terrain

ENGINEERING "NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified engineer licensed to practice in the State of Oregon.

It is to further certify that the attached technical data supports the fact that the proposed fill at Tillamook County Tax lot 4S1019CC07800 will
(Name of Development)

not impact the 100-year flood elevations, floodway elevations and floodway widths on the Nestucca River at published sections
(Name of Stream)


in the Flood Insurance Study for Tillamook Co. & Incorporated Areas (41057CV001A),
(Name of Community)

dated September 28, 2018 and will not impact the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents that support my findings:

- Technical Memorandum by WEST Consultants, Inc. dated October 28, 2022.
- _____
- _____
- _____

(Date) October 28, 2022

(Signature) 

(Title) Project Manager

WEST Consultants, Inc.
2601 25th Street
Suite 450
Salem, OR 97302

(Address)

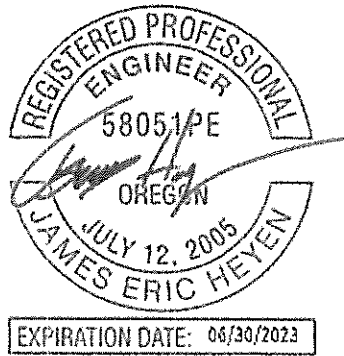
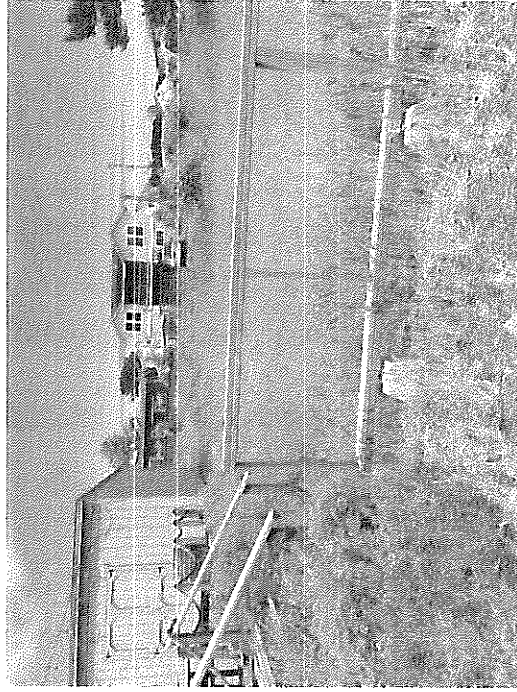


Figure 4 – FEMA No-Rise Certificate

Appendix B
Photographic Log
Site Reconnaissance
June 22, 2022



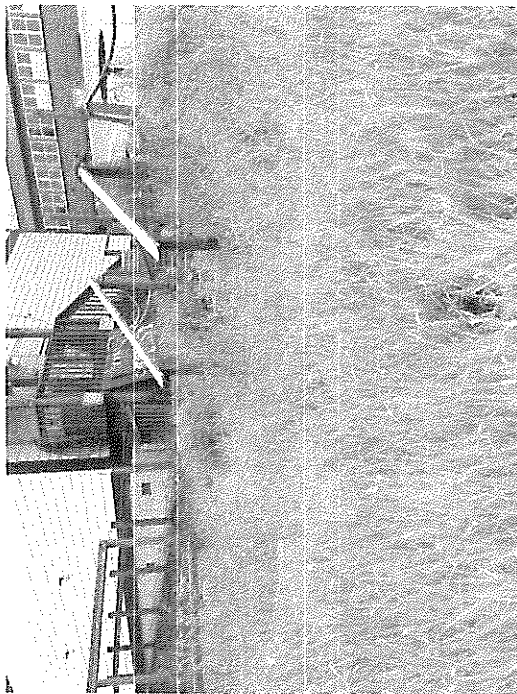
Proposed fill area facing northwest



Proposed fill area from parking lot, facing west



Proposed fill area facing west



Proposed fill area facing southeast

Appendix C
Supporting Data

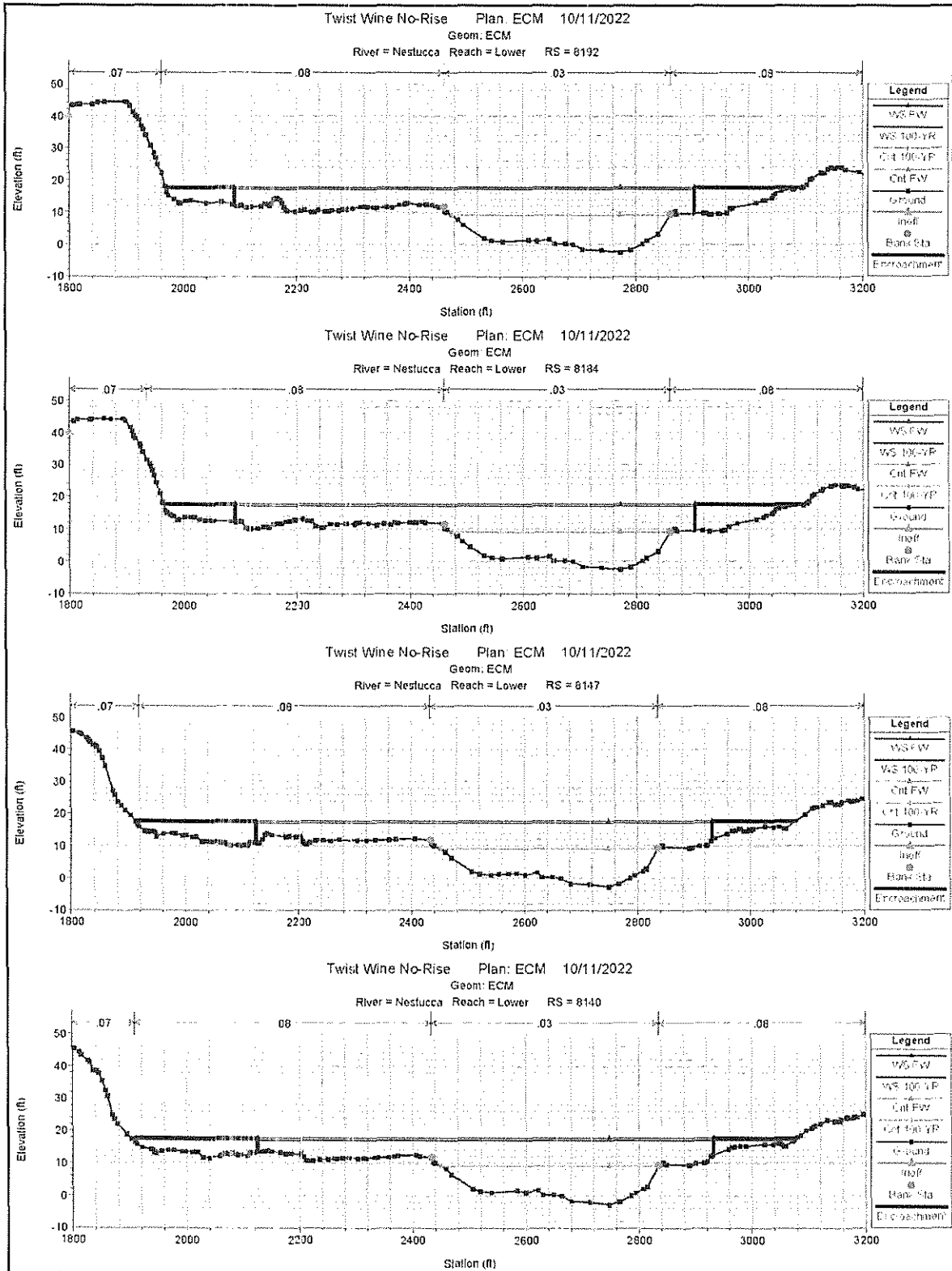
LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,647	607	7,750	6.9	14.9	14.9	15.7	0.8
B	7,805	764	8,765	6.9	16.9	16.9	17.5	0.6
C	7,949	792	9,221	7.2	17.1	17.1	17.7	0.6
D	10,298	700	8,048	7.2	18.6	18.6	19.0	0.4
E	12,629	2,925	36,571	2.4	19.5	19.5	20.0	0.5
F	18,909	1,418	15,555	5.7	20.2	20.2	20.7	0.5
G	24,140	4,186	45,222	1.1	22.3	22.3	23.3	1.0
H	28,300	4,256	43,463	1.1	23.1	23.1	24.1	1.0
I	32,000	3,365	32,222	1.5	24.3	24.3	25.3	1.0
J	34,205	2,020	17,839	2.7	25.5	25.5	26.5	1.0
K	36,400	1,657	13,236	3.6	27.3	27.3	28.3	1.0
L	37,600	451	6,773	7.1	28.6	28.6	29.6	1.0
M	41,950	1,874	16,114	2.9	31.5	31.5	32.4	0.9
N	45,620	1,020	12,882	3.6	32.7	32.7	33.7	1.0
O	48,480	1,033	11,134	4.2	34.4	34.4	35.4	1.0
P	52,980	605	8,356	5.5	38.3	38.3	39.3	1.0
Q	55,350	297	6,473	6.3	41.1	41.1	42.1	1.0
R	57,350	780	7,772	5.2	43.8	43.8	44.8	1.0
S	58,995	235	7,785	5.1	45.5	45.5	46.3	0.8
T	60,400	392	6,738	5.9	46.6	46.6	47.5	0.9
U	61,700	415	6,638	6.0	48.0	48.0	48.9	0.9
V	63,105	227	3,549	11.3	49.2	49.2	50.0	0.8
W	65,200	169	2,827	14.0	52.9	52.9	53.2	0.3
X	67,185	344	4,958	8.0	58.4	58.4	58.5	0.1

¹Feet above Nestucca Bay

Effective FEMA Floodway Data Table

TABLE 24	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	TILLAMOOK COUNTY, OREGON AND INCORPORATED AREAS	FLOODING SOURCE: NESTUCCA RIVER

HEC-RAS Cross Section Plots – Existing Conditions



HEC-RAS Cross Section Plots – Proposed Conditions

