Sitka Sedge Dike Modification
60% Design Update Town Hall

Town Hall meeting at the Kiawanda Community Center in Pacific City, Oregon

October 3, 2025

3:00-5:00 PM

Meeting Purpose and Agenda

This meeting is being broadcast via Zoom webinar. The room has cameras and microphones in place to record meeting content from both the presenters and audience for the benefit of participants that cannot be here in person.

Meeting Purpose:

- To summarize the history and status of the project for anyone that needs background before details
- To present the current status of the project and details of design
- To discuss next steps
- To answer questions and receive comments

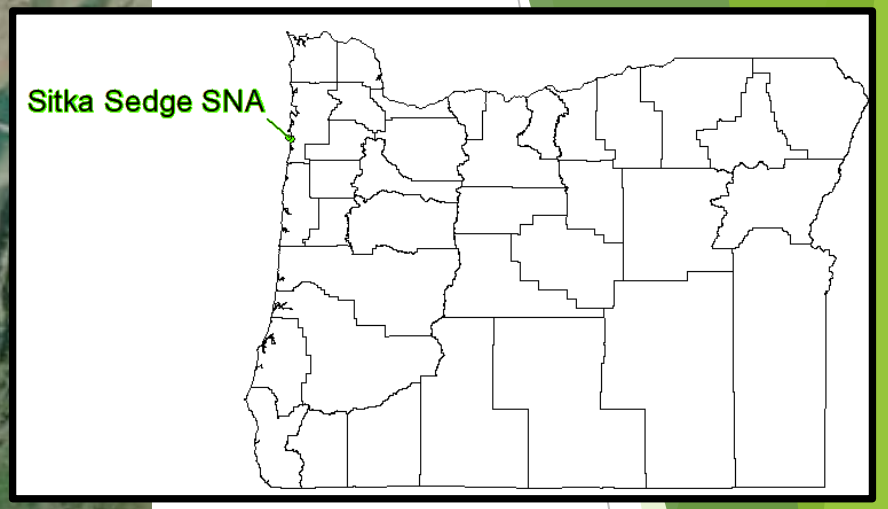
Meeting Agenda:

1. Panelist and project team introductions
2. Noel Bacheller - Summary of project history
3. Hunter White, ESA - Presentation of 60% preliminary designs for dike modification setback dike construction
4. Hunter White - ESA assessment of Sandlake Road Creek crossings
5. Christer LaBrecque – grant funding status
6. Questions/answers/public comments session

History and Background

Town Hall Presentation
10/3/2025
Noel Bacheller, OPRD

Location and Setting



Purpose and Need

- **Current tide gate is failing**
  - Boards on the flap are missing
  - The dike is eroded around the box culvert and wing walls
  - The box culvert itself appears to be compromised
  - The amount of work that would need to be done to repair and stabilize the existing gate would trigger fish passage regulations that would not allow the use of the current old-model structure
- **Current tide gate is undersized**
  - The 4’ x 4’ opening is insufficient to efficiently drain stormwater during major storms – resulting in backed up water inside the dike
  - “firehose” water velocity
- **Current tide gate restricts fish passage to Reneke, Beltz, and No-name Creeks as well as to the marsh behind the dike**
- **The current dike is only barely above current king tides and will soon be at risk of overtopping from sea-level rise**

Purpose and Need

Incoming King Tide – looking south into the degraded marsh (Video: Hunter White)

What has been done so far?

Timing	Process
September 2014	Property acquisition
October 2014-June 2016	OPRD Site and resource assessments: biological, cultural, recreation, scenic
June 2015-December 2016	Master planning and initial park development
October 2015-June 2017	Initial hydrology studies
2016-2018	Groundwater and surface water monitoring and data collection
September 2017-June 2019	Detailed TDM groundwater effects investigation; conceptual surface water refinements
Fall 2019	Technical Team assessment of conceptual alternatives
February 2020	Presentation of findings to Tillamook County Commissioners and public
March 2020	OPRD decision to select the setback dike alternative for further analysis and investigation
2020-2022	TEP takes the lead on moving forward with designs. Grant applications by TEP to assess and preliminarily design setback dike refinements
Summer 2022	ESA begins detailed assessment of setback dike location concepts and Tierra Del Mar stormwater issues
Winter-spring 2023	Conceptual design of refined alternatives and analysis of effecrs: setback dike locations, Tierra Del Mar stormwater effects
June 2023	Presentation of ESA's preliminary work to tech team and public. Northernmost setback dike location selected for continuing analysis
Spring 2024	ESA completed 30% design plans and Basis of Design report documenting 2023 work.
Summer 2024	Coordination, scoping, and contracting final design and permitting phase, including geotechnical cost estimates
Summer 2025	Completion of 60% designs; partial completion of geotechnical investigation; ongoing applications for implementation funding; preliminary permitting steps

Public Involvement and Outreach

Meetings open to the public and advertised on the website and through mailing list

In all, over 20 stakeholder meetings advertised and open to the public

Media

- News releases
- Website
- Email list release of notes and availability of materials on the website

Other

- Meetings with adjacent landowners
- Ongoing email collaboration and correspondence with TDM Community Association, interested landowners

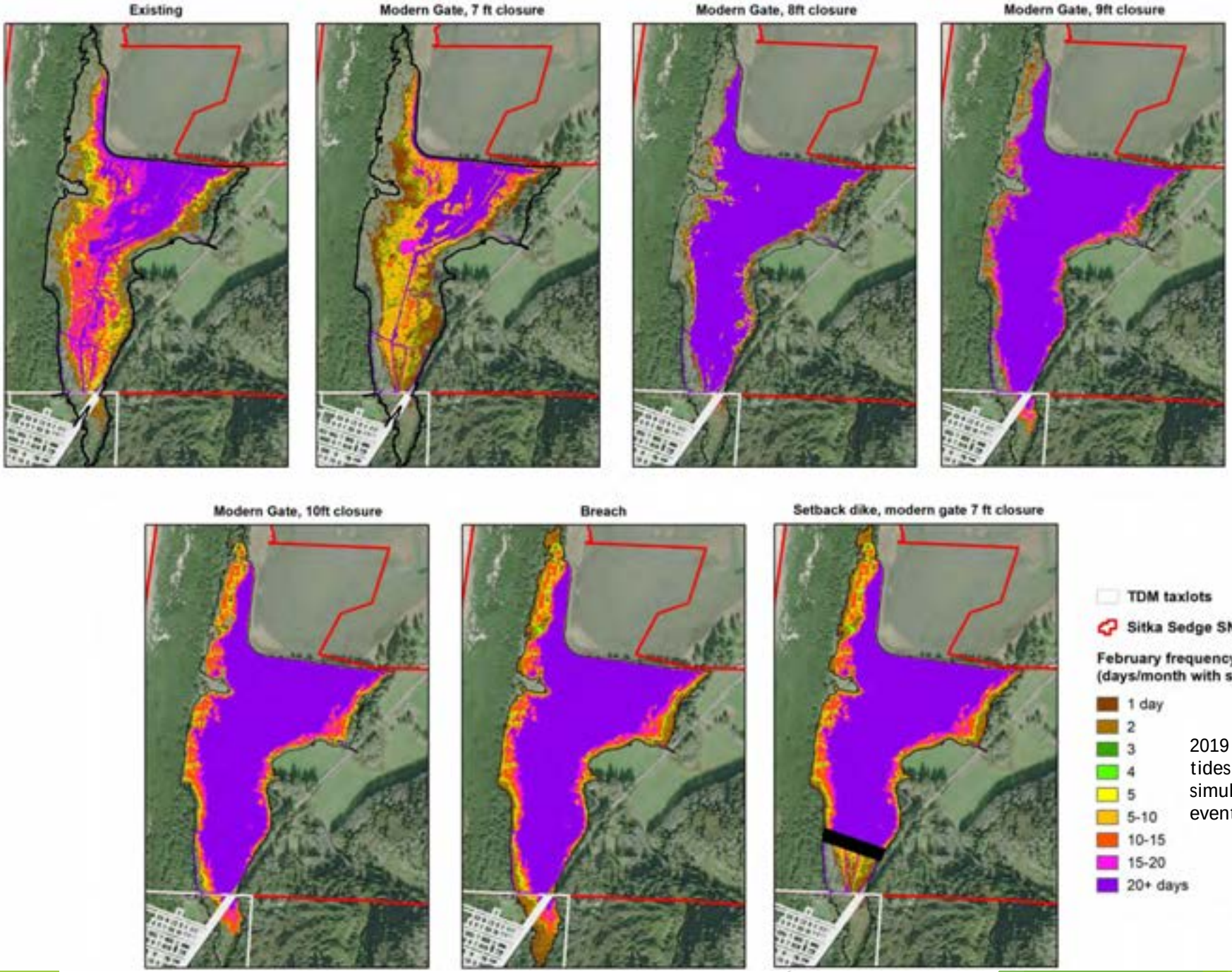
Scenarios Compared in Assessments Completed Through the Years

No action/ existing condition
– reference condition

Dike breach

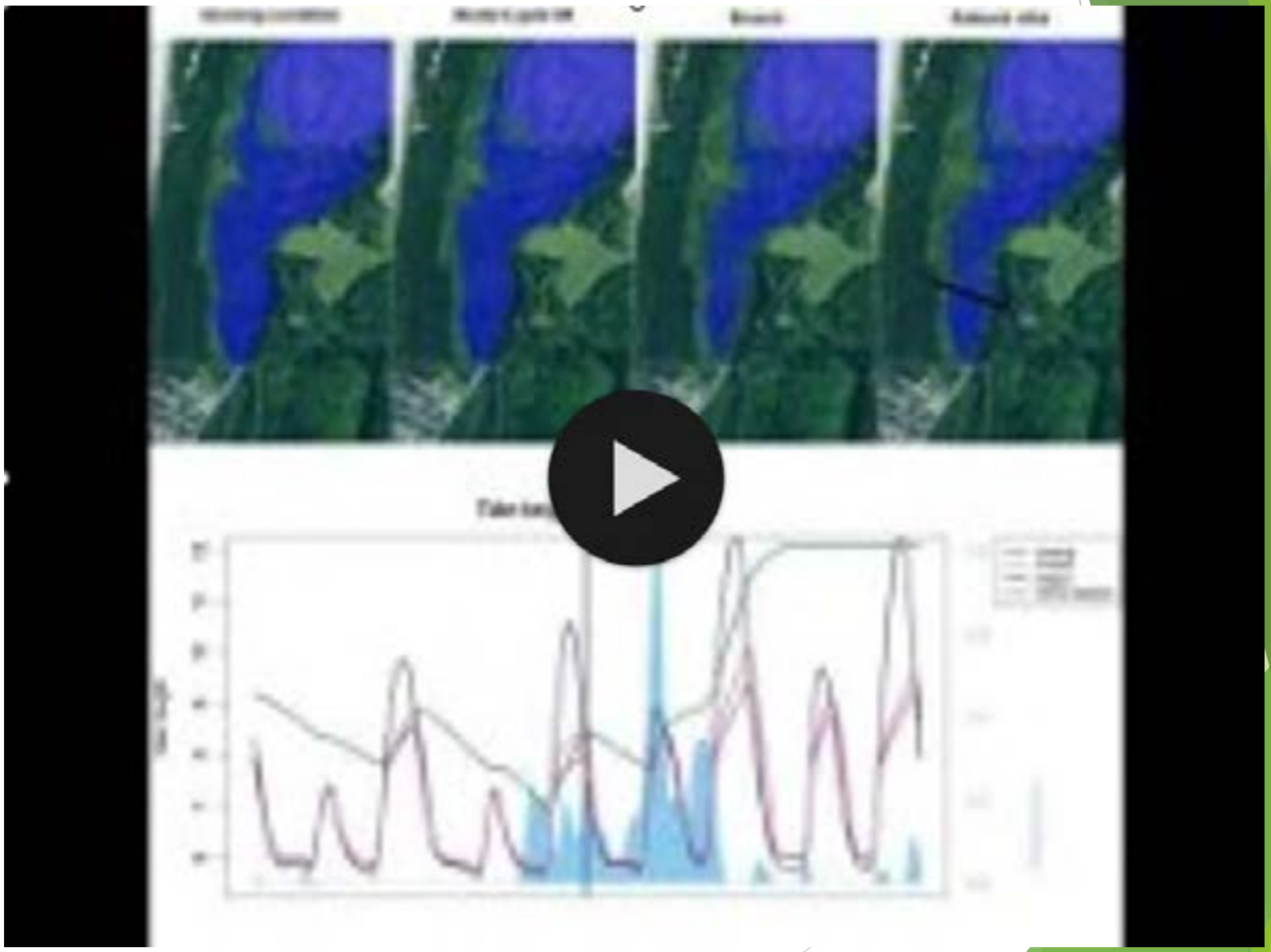
Replace existing tide gate with modern muted tidal regulator – two 10' wide by 8ft' tall gates with 7', 8',9',10' closure setting

Setback dike - construct new dike closer to TDM that includes a modern tide gate, then breach the old dike… tide gate style/sizing/closure settings… location…



2019 model. Just tides without a simulated storm event.

Extreme event conceptual model from 2019



OPRD Project Sideboards and Goals

1. The design should result in virtually no increase in tide water, stormwater, or elevated groundwater on private properties in Tierra Del Mar.
2. The design should result in meaningful improvements to estuary and fish habitats in the area inside the existing dike.
3. The design should restore fish passage to the mouths of Reneke and Beltz Creeks.
4. Recreational access across the marsh should allow visitors to see the marsh up close, reach the beach, and enjoy the diverse coastal environments in between.
5. The design should route Reneke Creek to the marsh naturally, rather than in an artificially constructed and channelized path near the parking area (that would enter the marsh on private property to the north), or along the roadside Sand Lake Road ditch to the south

Brief Summary Comparison of Options that Have Been Considered over the Life of the Project

1. No-action (leaving the dike and tide gate exactly how they are)

- Pros: none
- Cons: Least benefit and highest risk; dike will fail; existing dike is undersized and not to long term sustainable standards for sea level rise. **Does not meet OPRD stated project goals.**

2. Dike breach

- Pro: Highest estuary restoration value
- Cons: more frequent tidal effects to private properties than the other action-alternatives; Potentially lower protection from storm surge with sea level rise; Local public concern; Increased frequency of flooding on Sand Lake Road; **Does not meet OPRD stated project goals.**

3. Modern tidegates in the existing dike

- Pros: limits tide on private properties; lets stormwater out efficiently; improved fish passage
- Cons:

  Dike not resilient to sea level rise. Current king tides reach top of dike low point already. Dike failure may become increasingly likely with increased sea levels or increased storm surge

  Lower estuarine restoration and salmon benefits relative to breach and setback dike options

  Existing dike is undersized. Building it up to install tide gates and increase height for sea level rise resiliency will result in very high cost - perhaps higher cost and more wetland fill than the setback dike option.

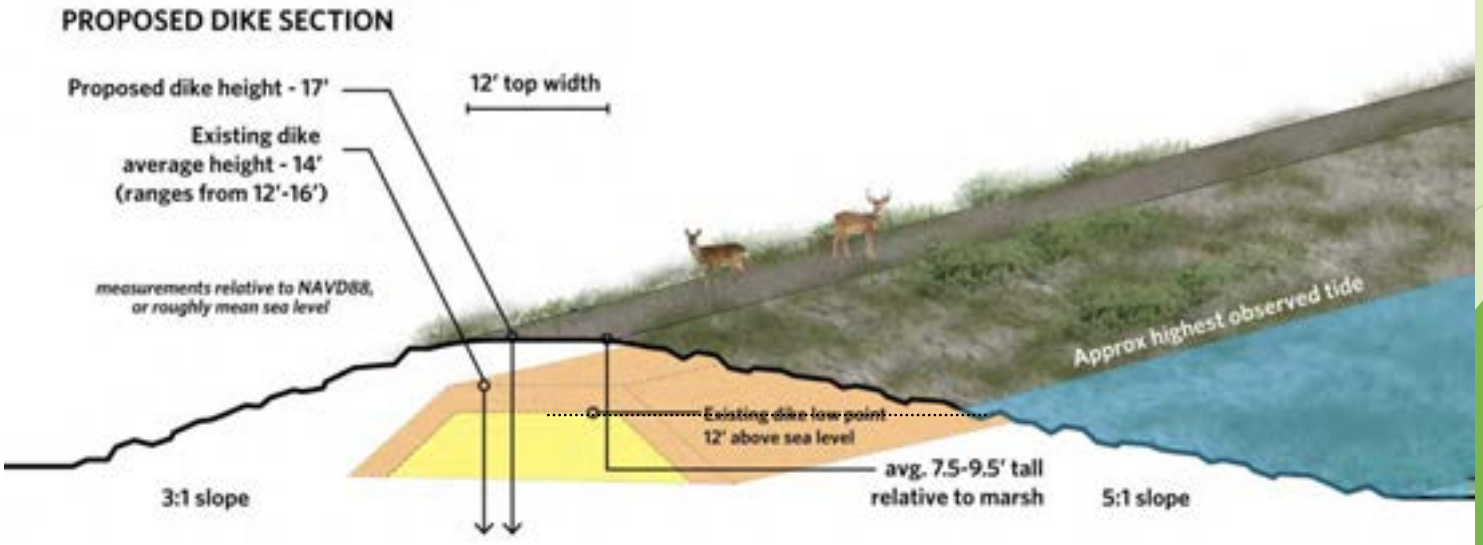
4. Setback dike

- Pros: Fish passage and rearing habitat benefits second only to those of the breach scenario. Higher protection to TDM than the existing dike. Resilient to sea level rise. Stormwater drainage from TDM comparable to Modern Tide Gate Scenarios. Requires much smaller and less expensive tide gate.
- Cons: Would be constructed through high value wetland habitat. Includes a mechanical tide gate structure that would require maintenance. Potential beaver issues. Expensive.

2020 Selection of the Setback Dike as the Alternative to Pursue

- In March 2020 - after the assessments and comparative review of alternatives by the Technical Team, public hearing with the Tillamook County Commission, and review by the Oregon Parks and Recreation Commission – OPRD leadership selected the setback dike alternative as the option to pursue for more detailed study and design.
- OPRD released a decision memorandum and a FAQ shortly thereafter
- OPRD received a letter of support for the setback dike alternative from the TDM Community Association in June 2020 to be used for the purposes of pursuing grants to continue the process

1. No-action
2. Dike breach
3. Modern tide gate in existing dike
4. New setback dike



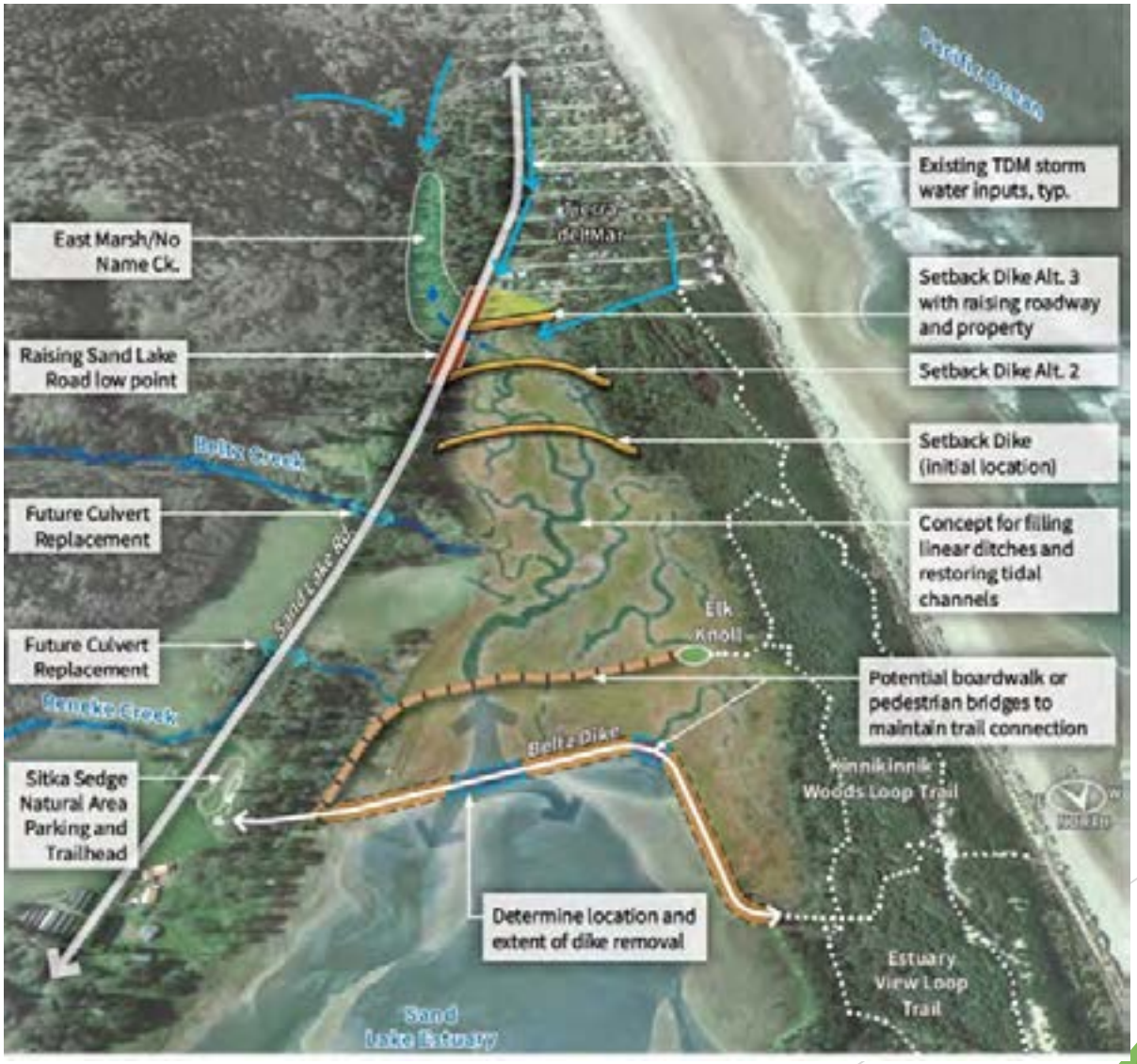
Further Study of the Setback Dike Alternative after 2020

Tillamook Estuaries Partnership and OPRD forged a relationship in 2020 to leverage TEP's expertise and experience in complex estuarine projects and stakeholder engagement

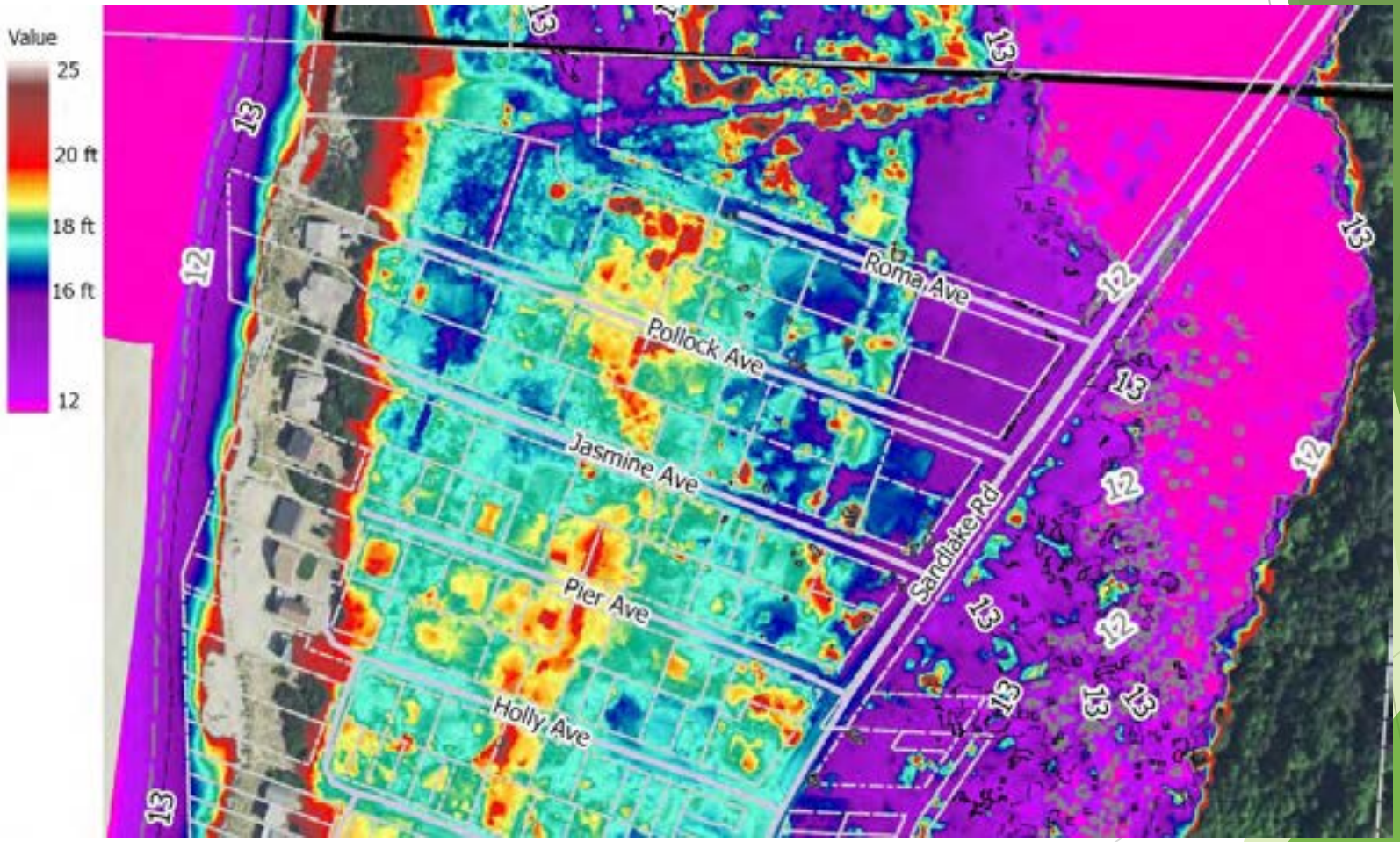
TEP applied for and received grant funding to hire a consultant to pursue detailed designs

The current grant provides funding to continue to explore geotechnical aspects and advance design from 30% to 100%

Further Study of the Setback Dike Alternative in 2022-2023



Also, Further Study of Tierra Del Mar Stormwater Drainage



Setback Dike Location Refinement: “Tapping on the Wall to Find the Stud”

Study involved exploratory trials of moving the potential location of the setback dike further and further back to try to find the sweet spot between:

- minimum footprint of the dike

and

- adequate storage basin for stormwater

The General Location of Alternative 1 is in the "Goldilocks Zone"

Alternative 1 was the only alternative that meets all of OPRD's stated goals.

The goals that guide our work are:

1) The design should result in virtually no increase in tide water, stormwater, or elevated groundwater on private properties in Tierra Del Mar.

2) The design should result in meaningful improvements to estuary and fish habitats in the area inside the existing dike.

3) The design should restore fish passage to the mouths of Reneke and Beltz Creeks.

4) Recreational access across the marsh should allow visitors to see the marsh up close, reach the beach, and enjoy the diverse coastal environments in between.

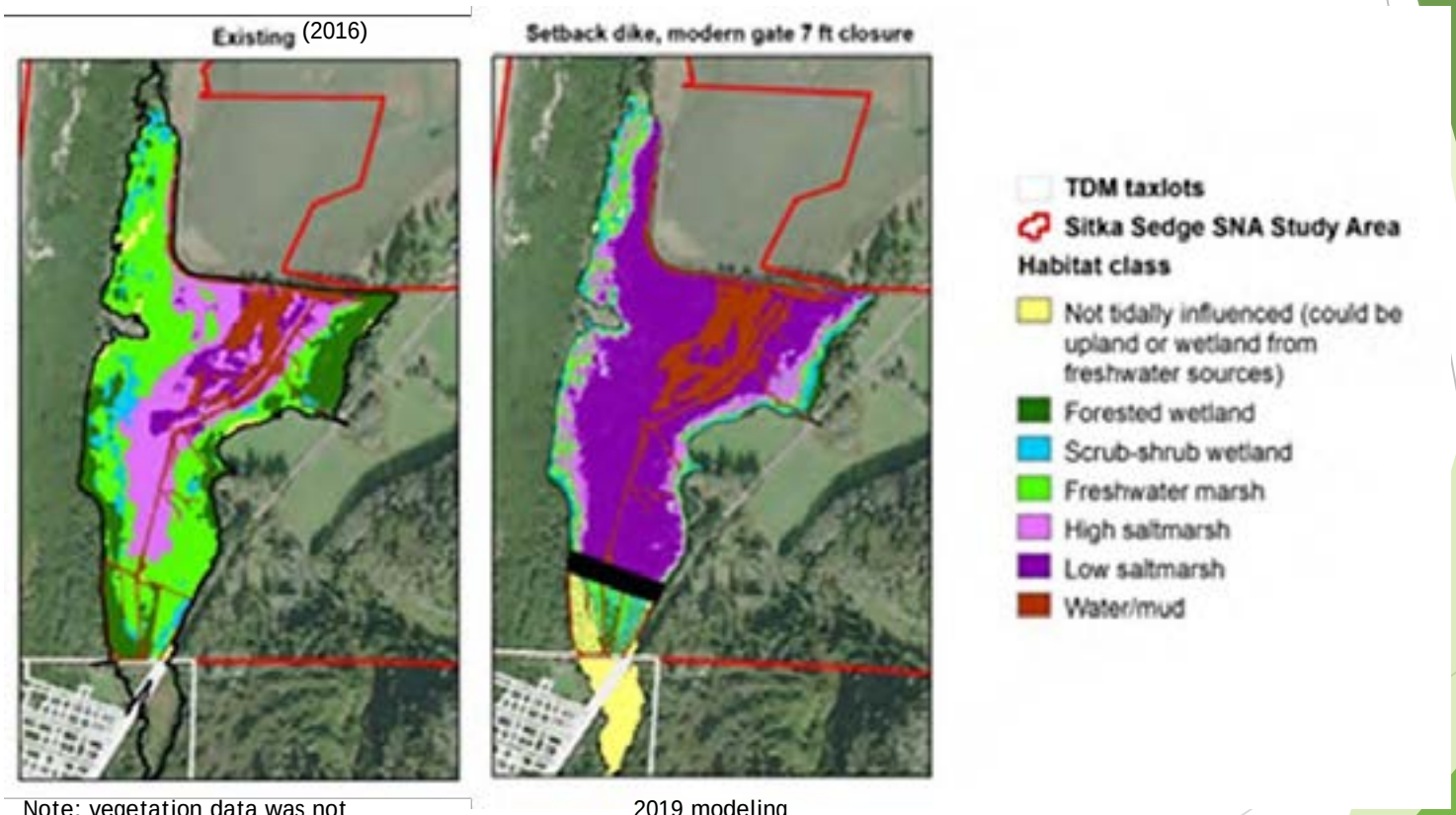
5) The design should route Reneke Creek to the marsh naturally, rather than in an artificially constructed and channelized path near the parking area (that would enter the marsh on private property to the north), or along the roadside Sand Lake Road ditch to the south

Setback Dike Effects on Habitat

- The footprint of the setback dike itself would result in fill of 1.5acres of wetland habitat behind the current dike, which would be partially offset by removal of breached area(s) of the existing dike
- The project would restore approximately 70 acres of natural estuarine conditions and ecology relative to existing conditions
- Natural tide cycle and habitat would be restored in 78% of the land within the range of tides behind the existing dike, and 85% of the marsh within park boundaries.
- Higher tides north of the setback dike would provide fish and aquatic wildlife foraging and rearing habitat in areas previously not receiving tides and sea water, and this connection to new foraging habitat would be much more frequent in some areas that already receive muted tides.
- Full fish passage would be restored to the mouths of Beltz and Reneke Creeks
- Sediment accretion in the restored natural estuarine conditions north of the setback dike would increase likelihood of keeping pace with sea level rise.

Effects on habitat

Aside from hydrology and physical footprint, habitat composition shifts are expected due to altered hydrological niches of vegetation types



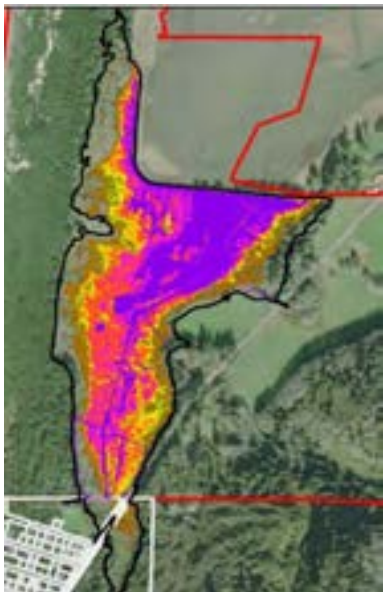
Note: vegetation data was not recorded outside of the park in 2016. This figure shows no habitat values outside of park property.

2019 modeling

Effects on Private Property and Public Infrastructure

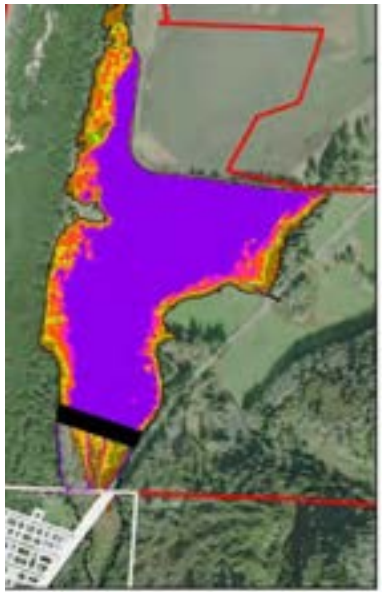
- The setback dike would block tides over the height of the tide gate closure setting from intruding onto private property
- The setback dike is taller than existing dike – giving several feet of resilience against sea level rise. The current dike is within inches of overtopping with current sea levels
- A setback dike would reduce groundwater elevation in properties adjacent to the park during major storm events
- Dramatically improves stormwater drainage from private properties adjacent to the park relative to existing conditions
- Sand Lake Road would be protected from flooding at No-Name Creek to allow continued usage of the road during major storms. Sand Lake Road currently overtops during extreme high stormwater flow events, and would overtop more frequently without modifications in the event of existing dike failure or overtopping due to elevated sea levels.

Existing condition



Pre-1939 Conditions

Setback dike



Next Steps

- Geotechnical assessment of soil conditions in the marsh
- Continued design from 60 to 100% according to findings of geotech and other analyses
- 100% designs expected in Spring 2026
- Permit applications in Fall 2025
- New grants will be needed for the construction phase
- Construction could start in summer of 2026 if all permitting and grant funding steps move quickly

Sitka Sedge Tidal Wetland Restoration:
– 60% Design Project Update Town Hall

October 3rd, 2025

Hunter White, P.E. - Principal Civil and Water Resources Engineer - ESA
Christer LaBrecque - Lead Habitat Restoration Project Manager, Tillamook Estuaries Partnership

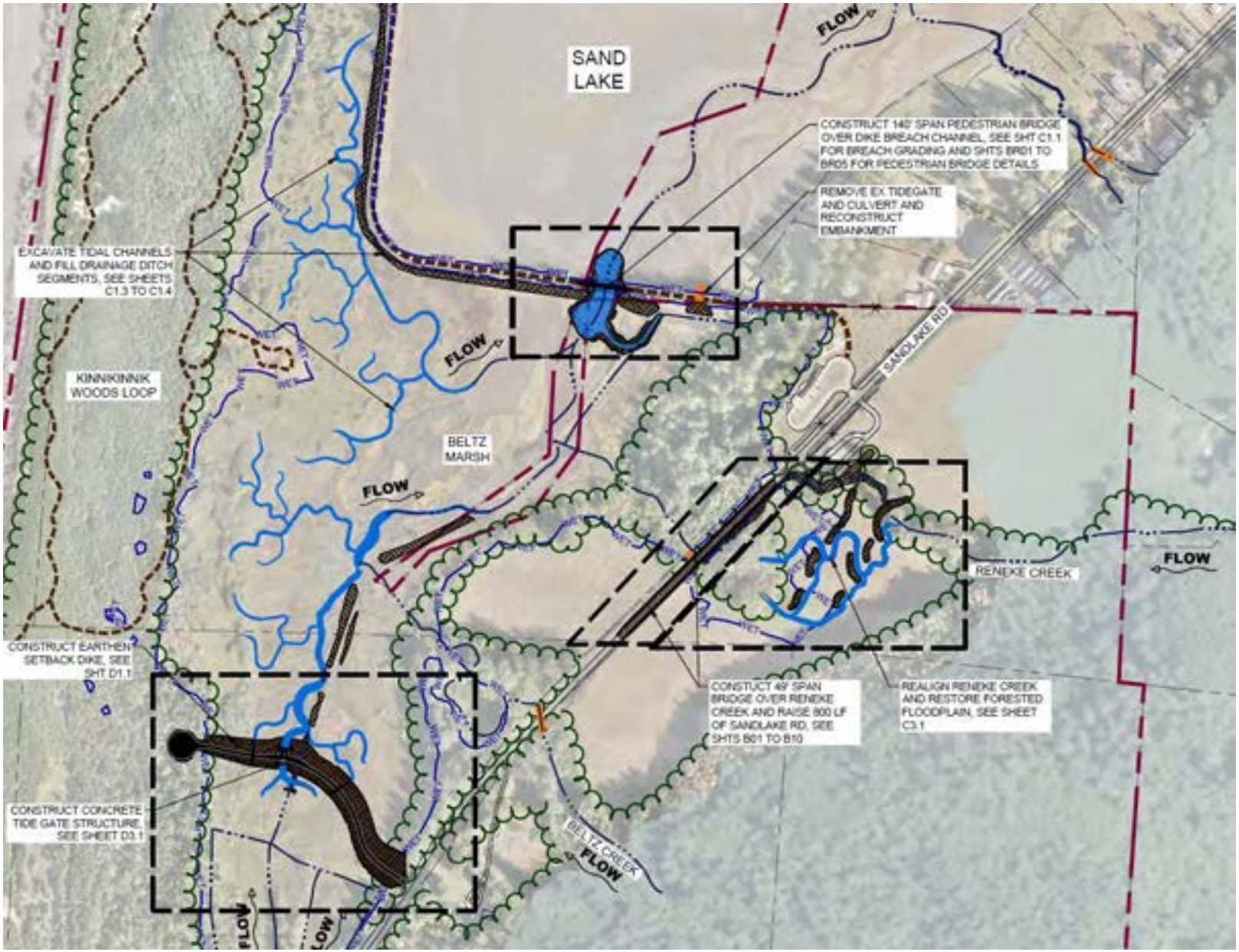
TILLAMOOK COUNTY

OREGON STATE PARKS

TILLAMOOK ESTUARIES PARTNERSHIP

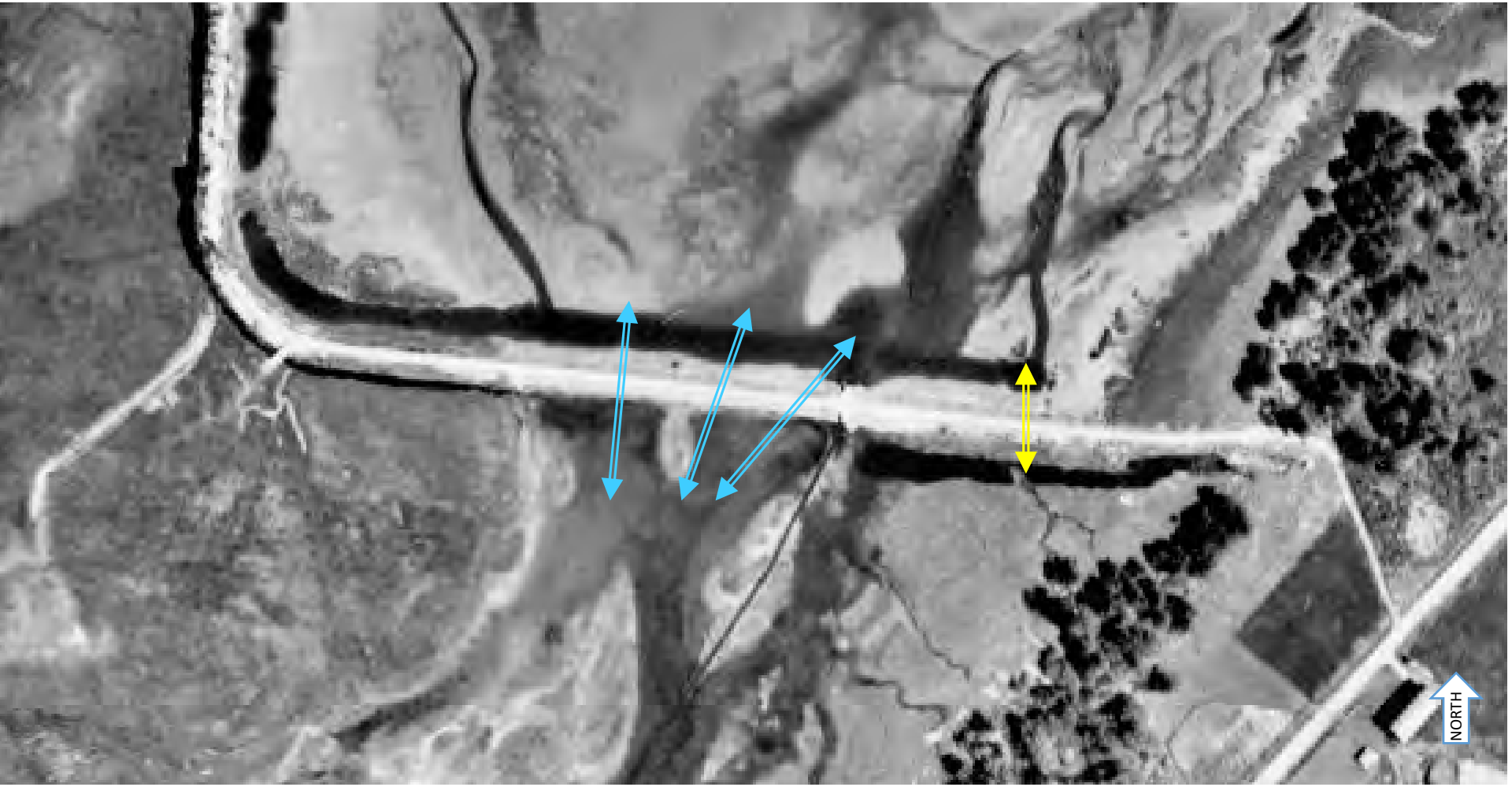
ESA

SSTW - 60% Plans – Site Plan Overview



Historical aerial photo - 1939

Historical aerial photo - 1939



Sitka Sedge Tidal Wetland Restoration
Dike Breach and Pedestrian Bridge

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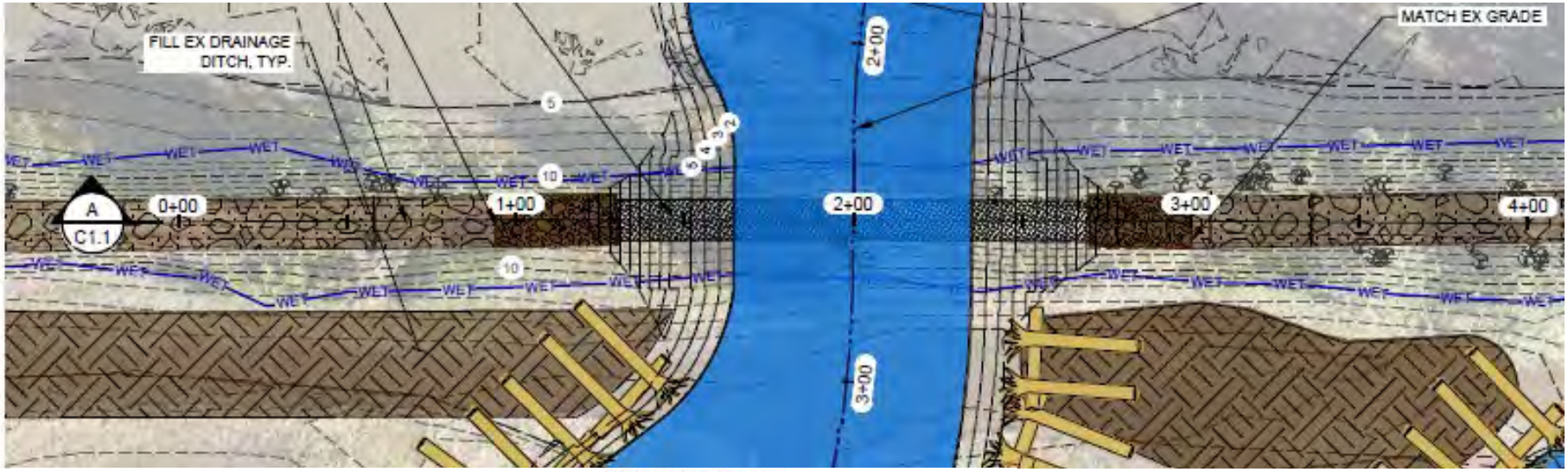
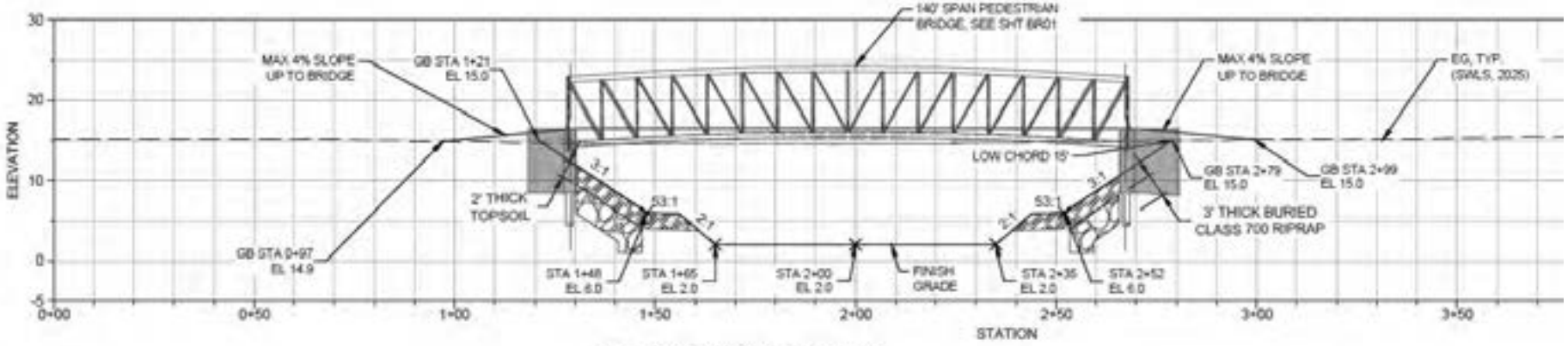
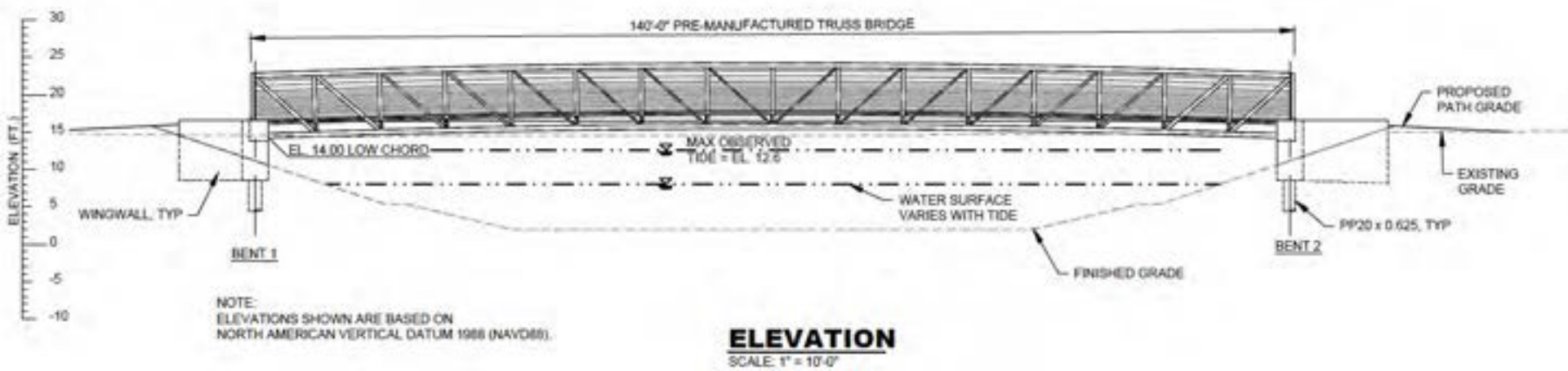


DIKE BREACH PLAN
PLAN SCALE: 1" = 30'



A / C1.1 DIKE BREACH SECTION
PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

Sitka Sedge Tidal Wetland Restoration Dike Breach and Pedestrian Bridge



ELEVATION
SCALE: 1" = 10'-0"

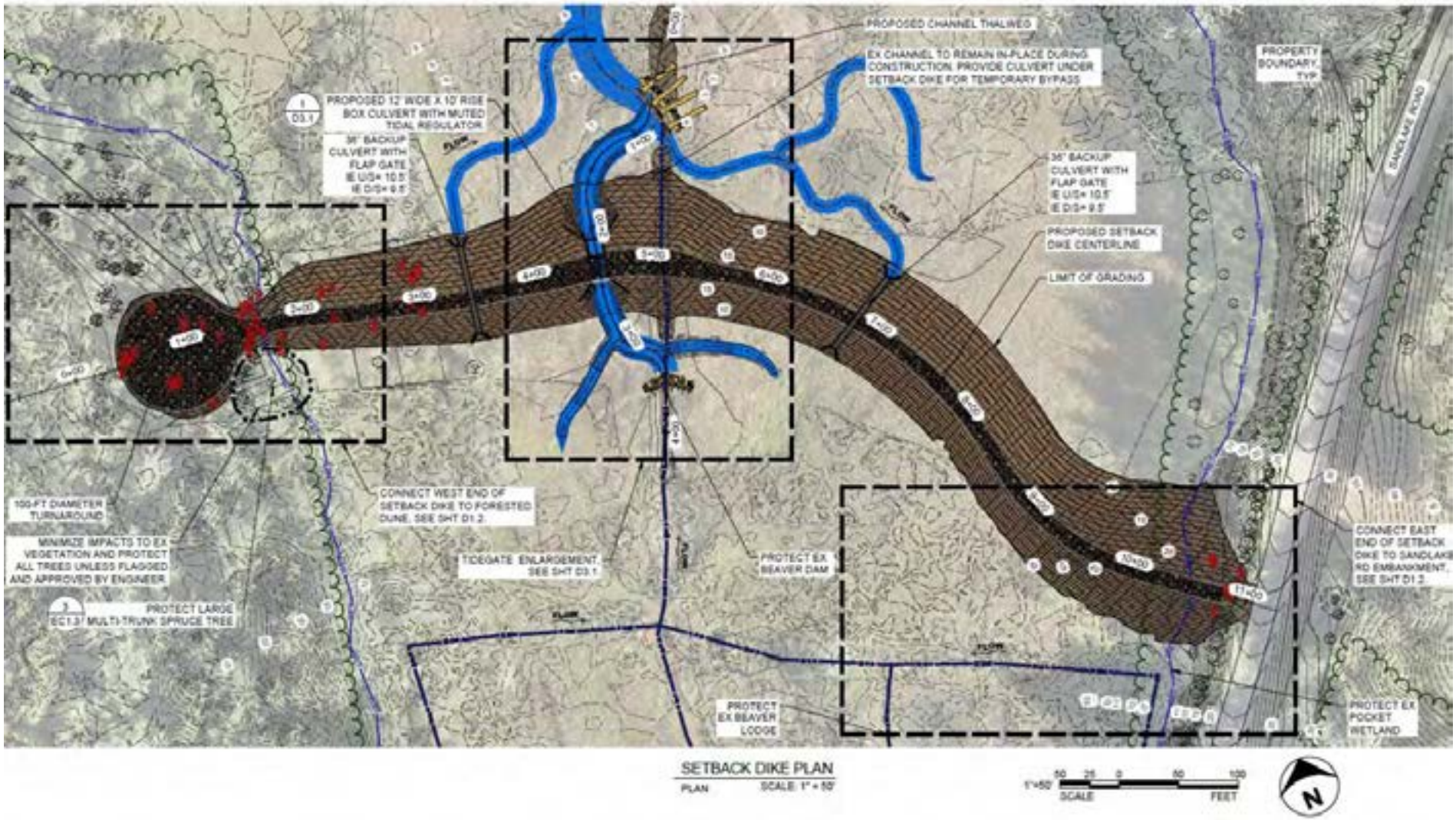
Continental Connector®

Big Sky, MT

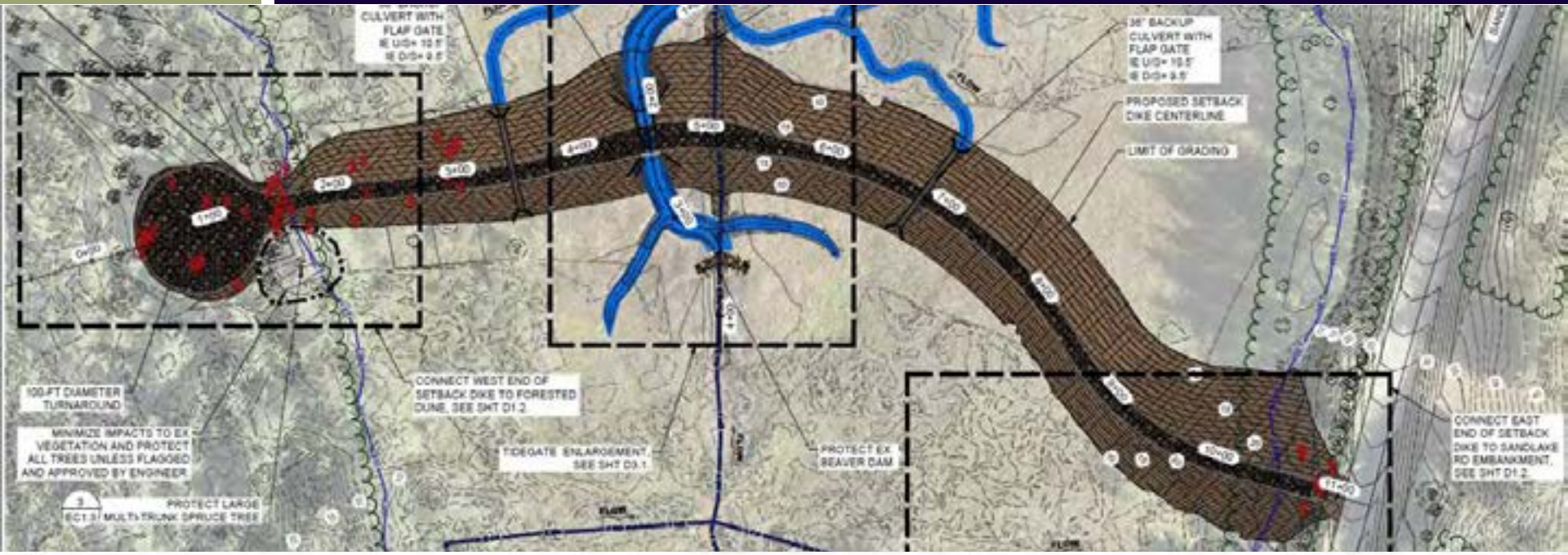
Sitka Sedge Tidal Wetland Restoration Dike Breach and Pedestrian Bridge

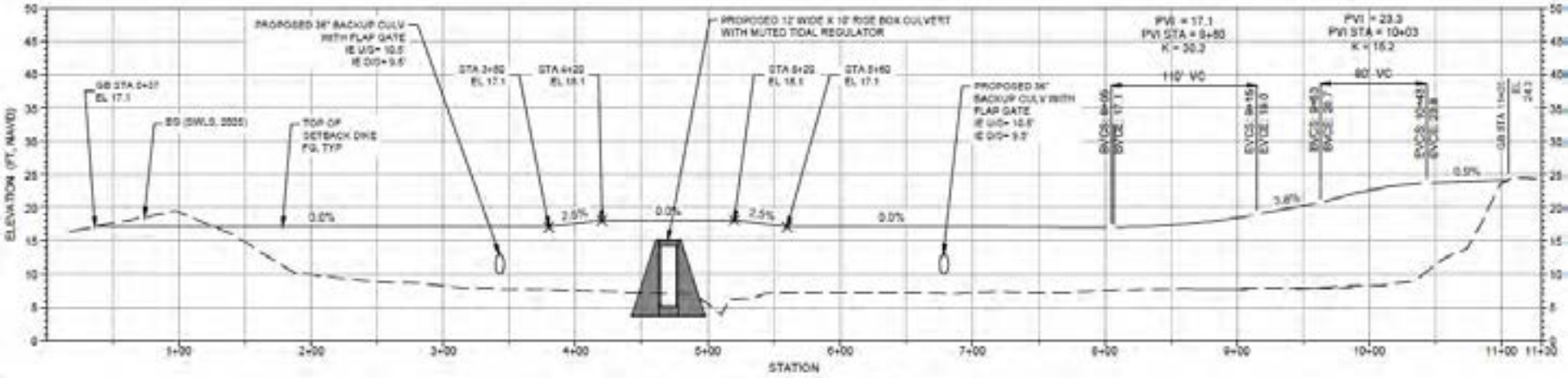
Pedestrian bridge at Lewis and Clark National Historical Park – Warrenton, OR

Sitka Sedge Tidal Wetland Restoration
Setback Dike and Tide Gate Structure



Sitka Sedge Tidal Wetland Restoration
Setback Dike and Tide Gate Structure

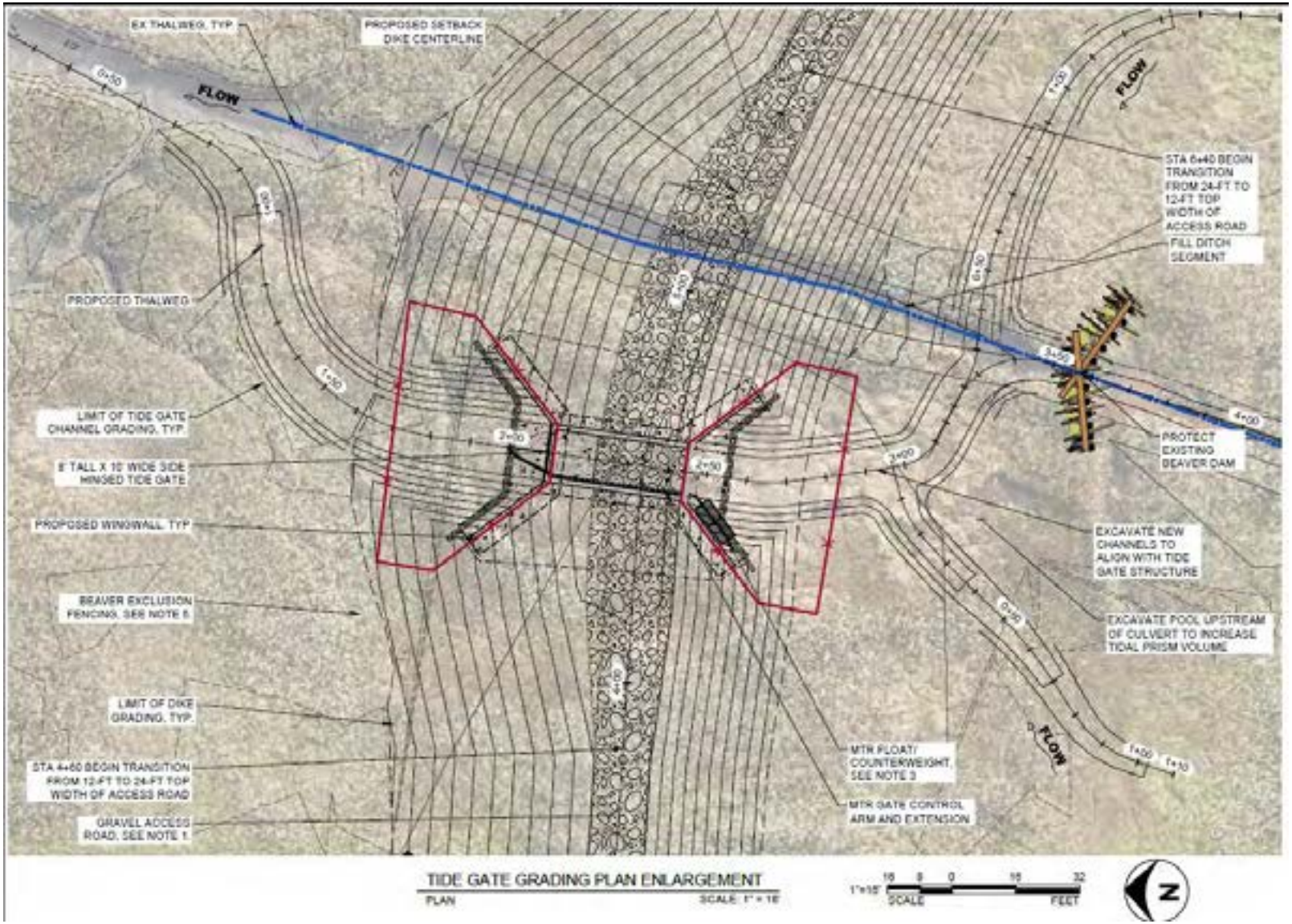




SETBACK DIKE PROFILE

PROFILE HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

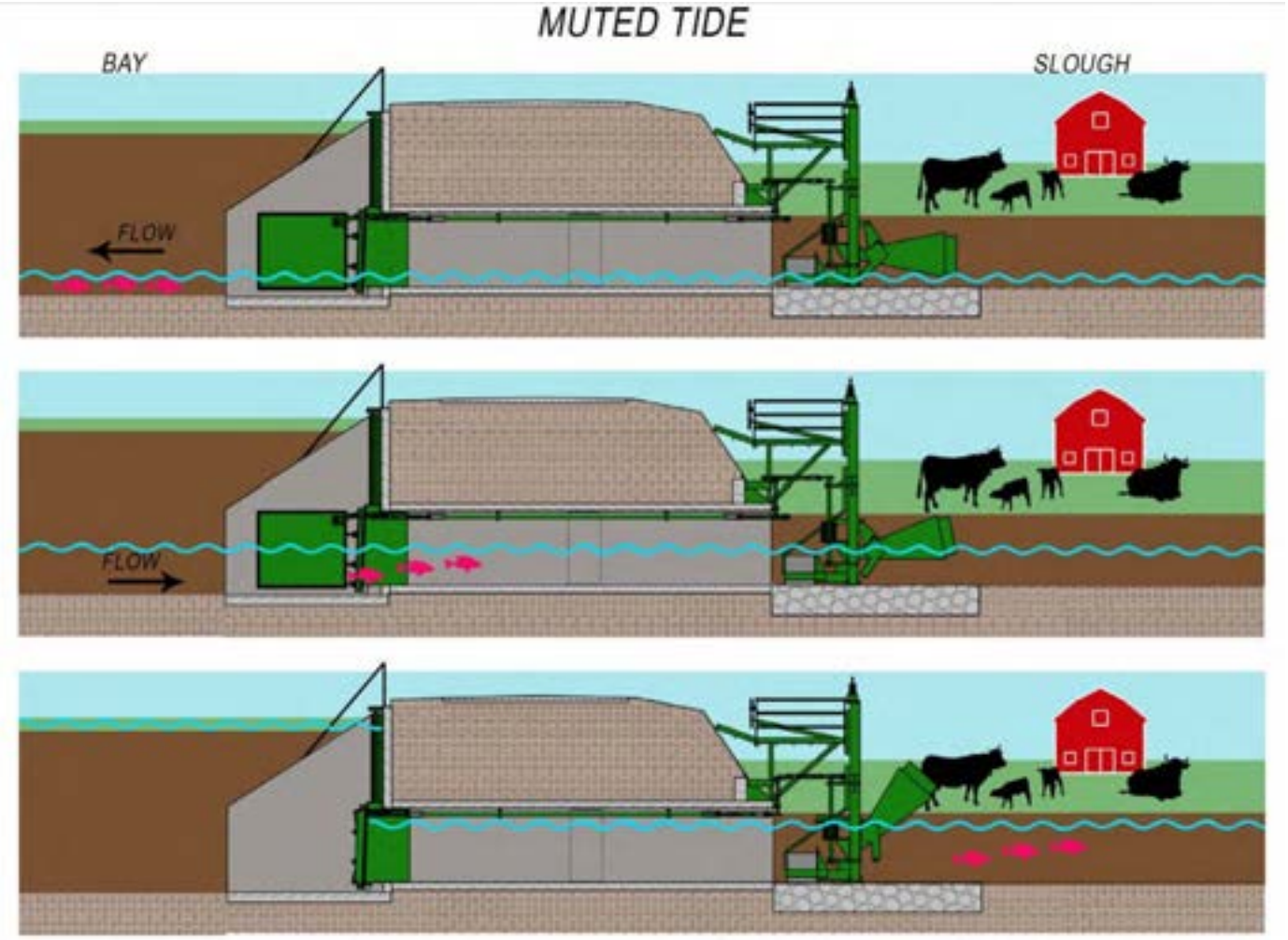
Sitka Sedge Tidal Wetland Restoration Setback Dike and Tide Gate Structure



Sitka Sedge Tidal Wetland Restoration Setback Dike and Tide Gate Structure

Similar tide gate structure with MTR Control System (photo: Leo Kuntz)

Alternative Configuration – Modern Tide Gate System



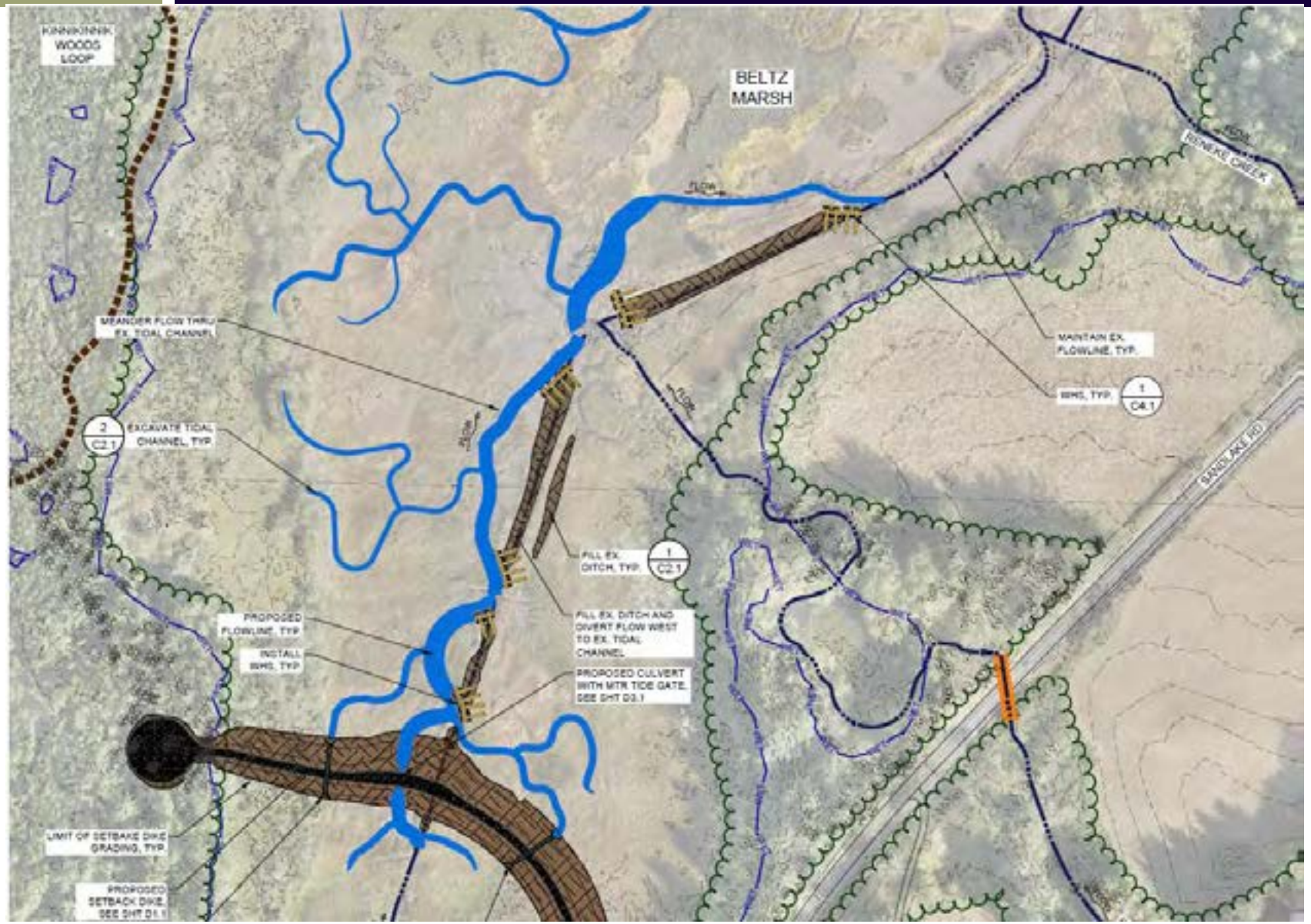
- Nehalem Marine Manufacturing – Muted Tidal Regulator

Sitka Sedge Tidal Wetland Restoration - Ditch Fill and Tidal Channel Excavation

CHANNEL AND DITCH GRADING ENLARGEMENT - 1

PLAN SCALE: 1" = 50'

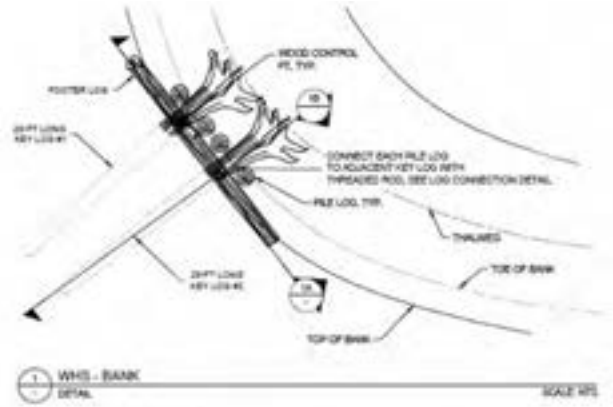
Sitka Sedge Tidal Wetland Restoration - Ditch Fill and Tidal Channel Excavation

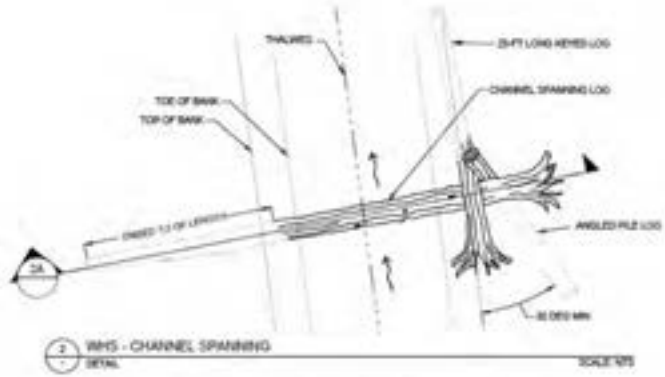


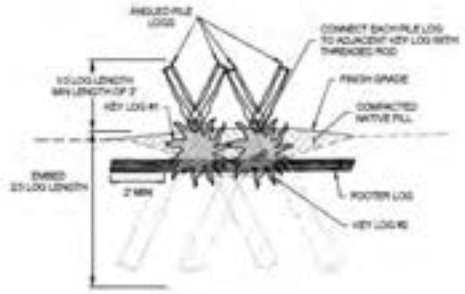
Example tidal channel networks North end of Sand Lake Estuary

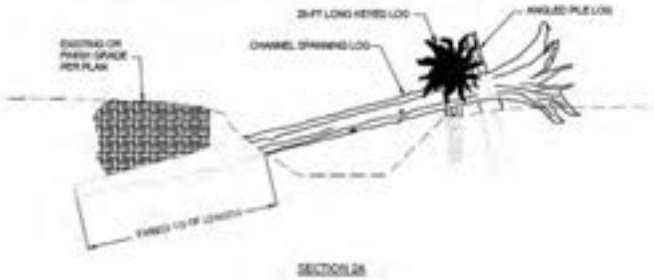
Example network in NE end of Sand Lake

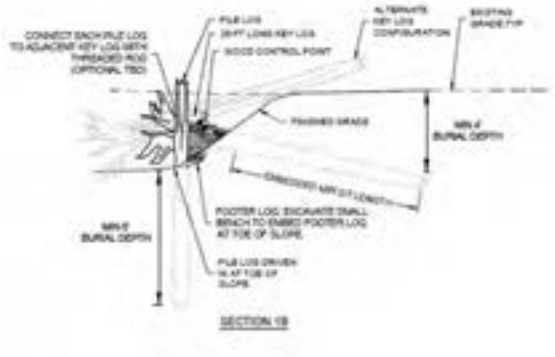
Sitka Sedge Tidal Wetland Restoration -Large Wood Habitat Structures

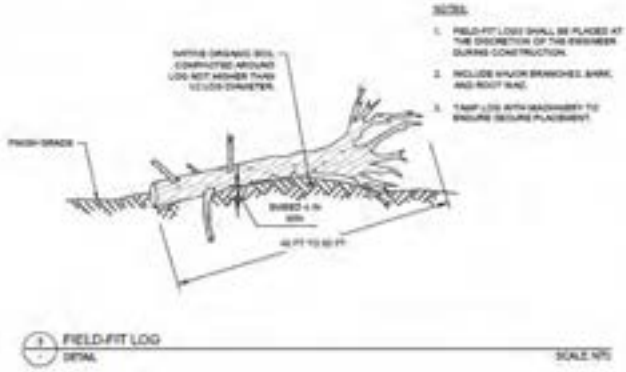












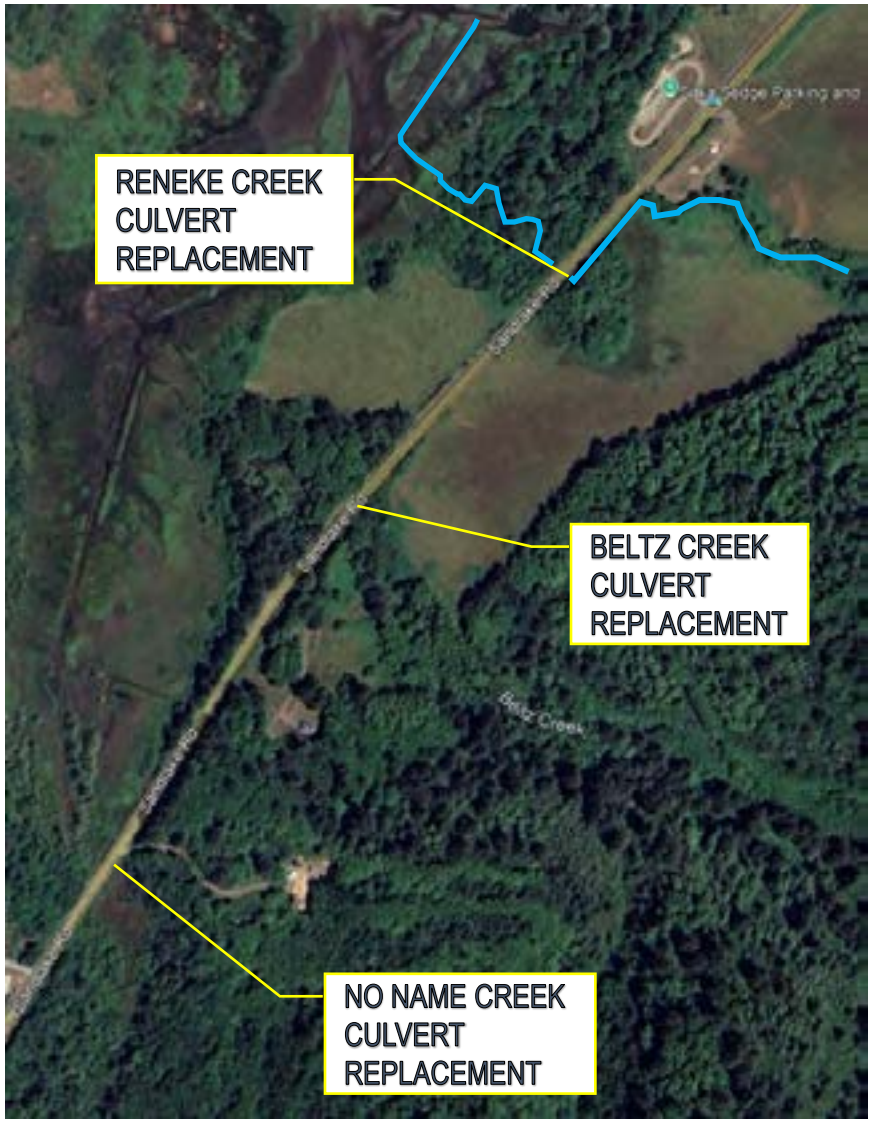
NOTES

1. THIS SHEET DEPICTS PRELIMINARY WOOD HABITAT STRUCTURE (WHS) CONFIGURATIONS. THESE STRUCTURES WILL BE REFINED IN SUBSEQUENT DESIGN PHASES TO FIT PROPOSED WHS LOCATIONS.

Recently excavated tidal channels

Wood Habitat Structures - example

Culvert Replacements at Sandlake Road Crossings – Reneke, Beltz, and No Name Creeks



- Reneke Creek – top priority for fish passage and Tillamook County Public Works infrastructure improvement
- Reneke Creek – included in 60% Design Plans along with Sitka Sedge Tidal Wetland Restoration
- Beltz Creek and No Name Creek culvert replacements to 30% Design – awaiting additional funding for Final Design

Reneke Creek Culvert Replacement

Chris Laity, P.E. – Public Works Director and County Engineer
Tillamook County Public Works

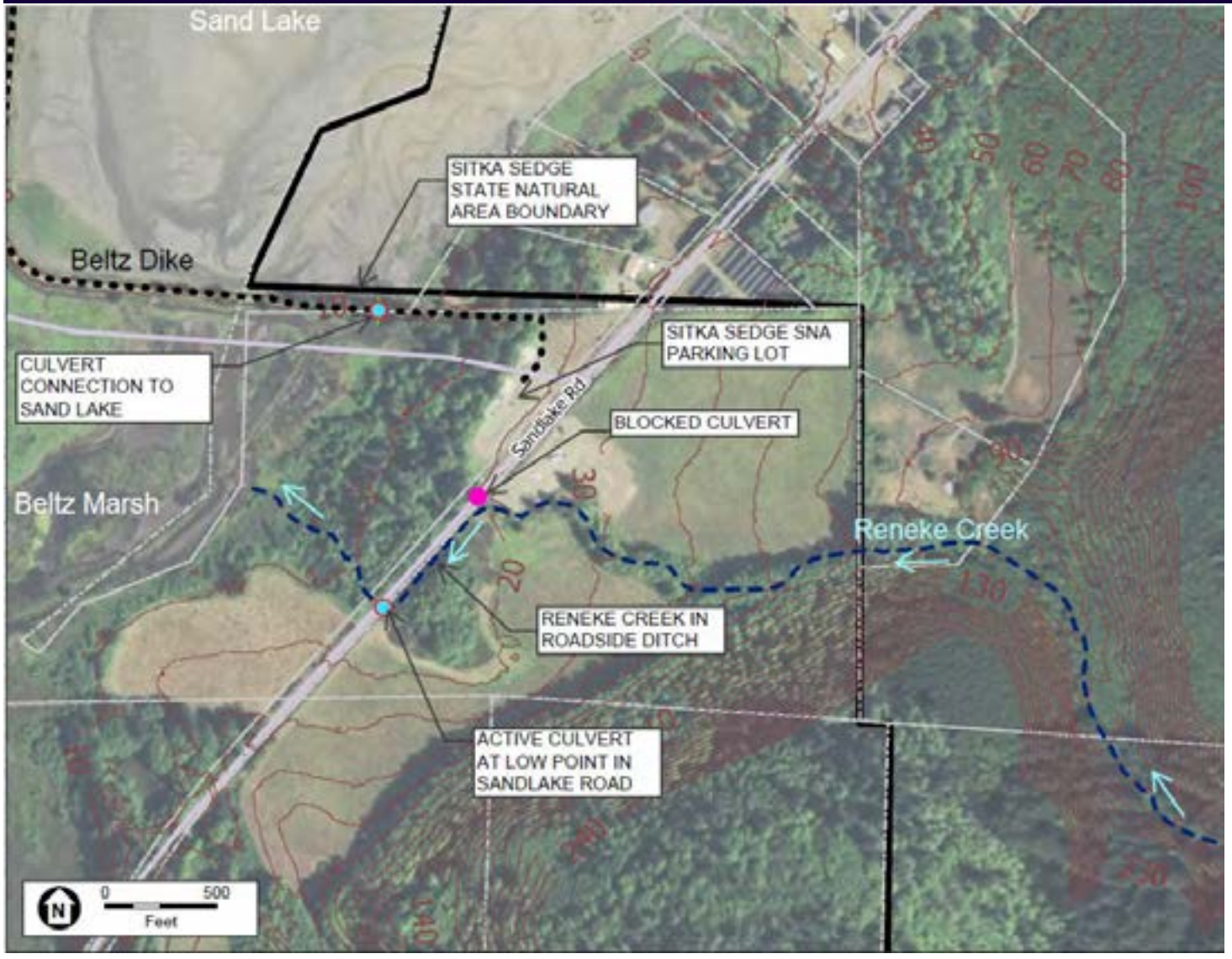
ESA – hydraulic and geomorphic analysis, stream restoration design
David Evans and Associates – roadway and bridge design

TILLAMOOK COUNTY
Land of Cheese, Trees and Ocean Breeze

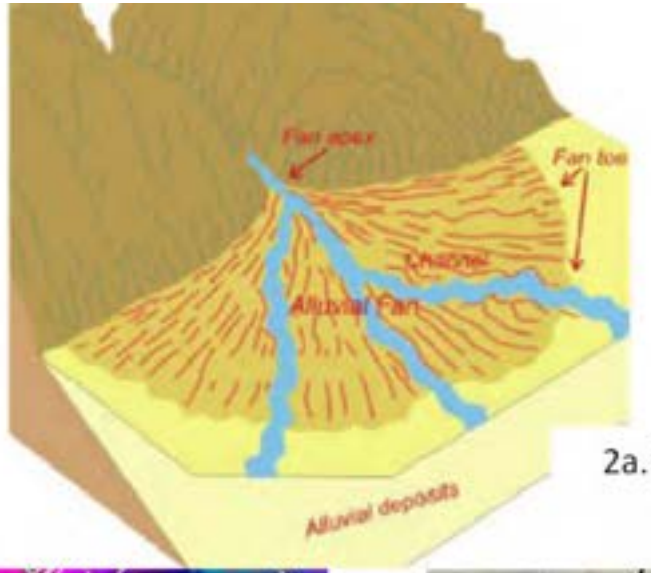
DAVID EVANS AND ASSOCIATES INC.

ESA

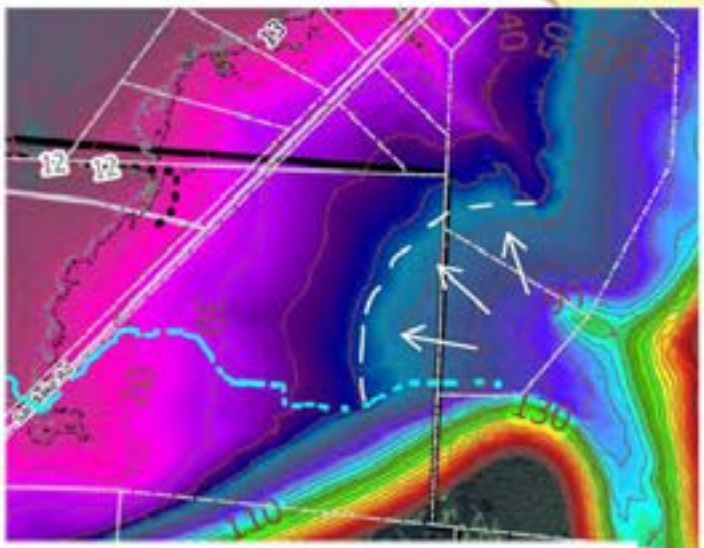
Reneke Creek Existing Conditions



Reneke Creek Hydraulic and Geomorphic Analysis



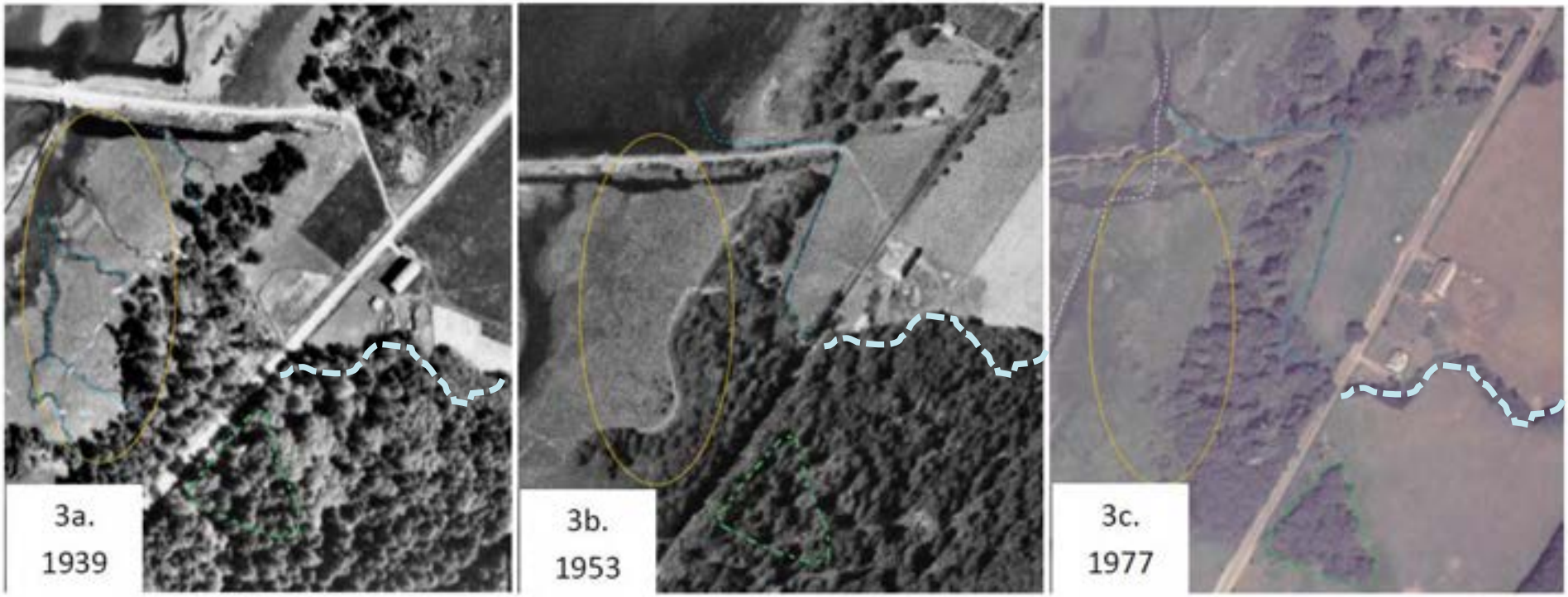
2a. Schematic representation of Alluvial Fan (Ferentinou, et al, 2011)



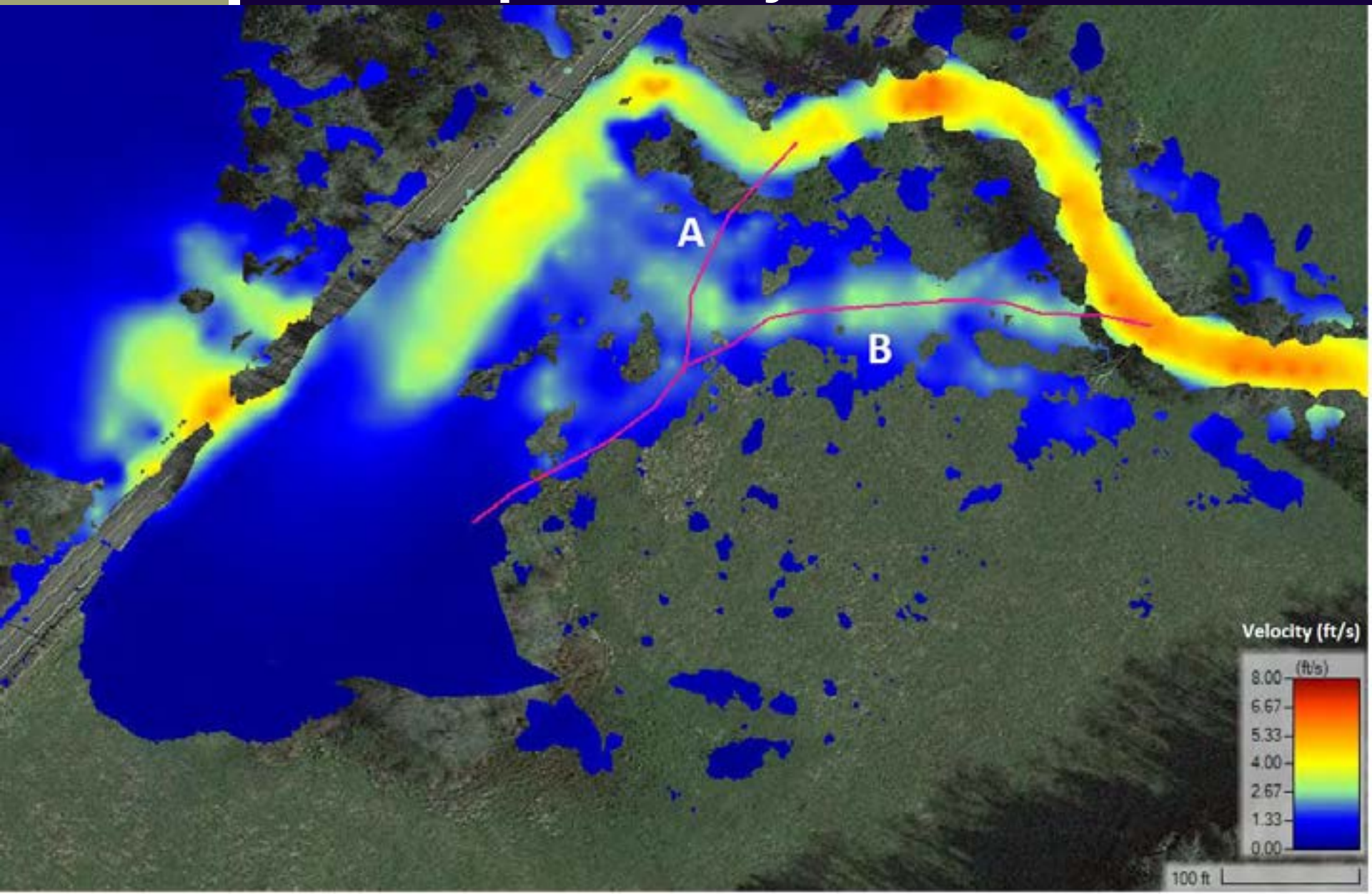
2b. Reneke Creek Alluvial Fan LiDAR Analysis

2c. Reneke Creek alignments across alluvial fan

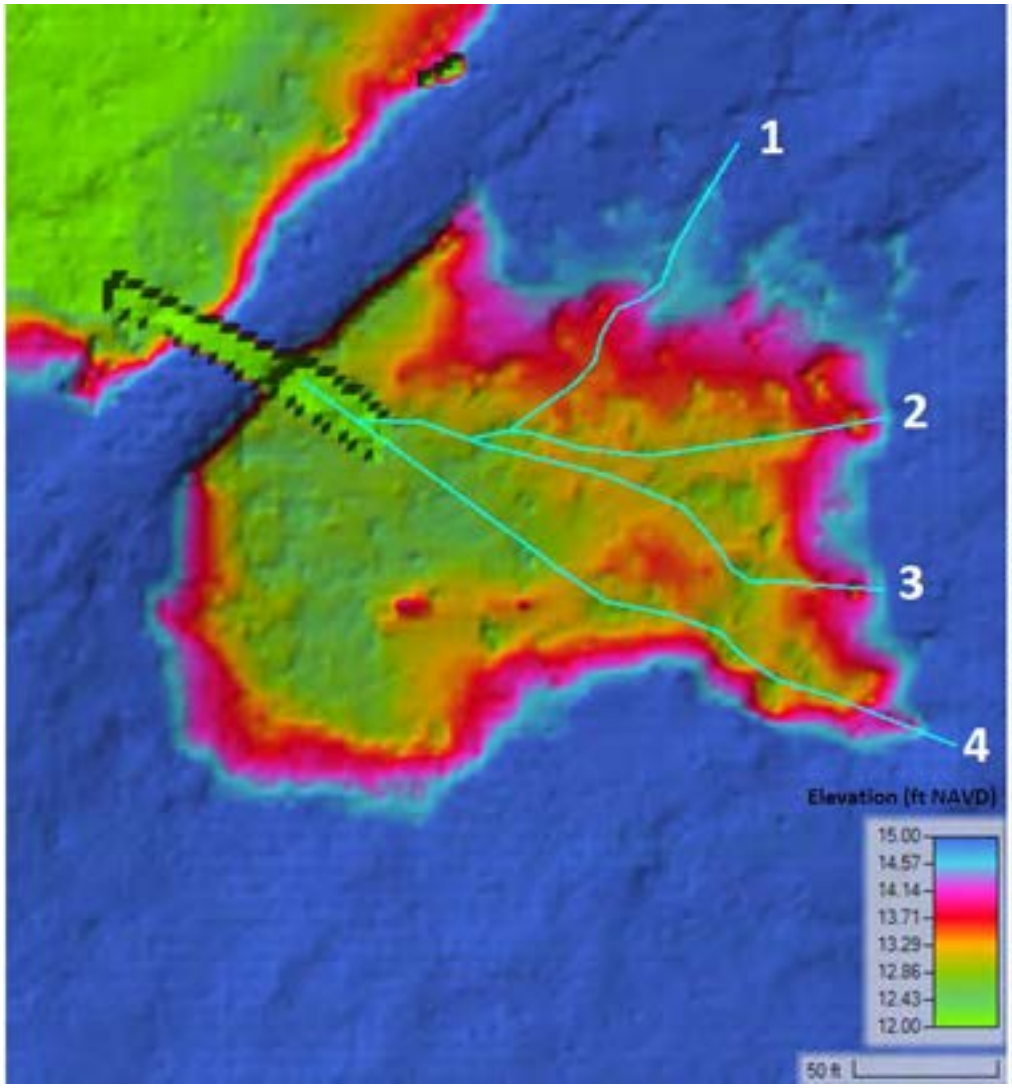
Reneke Creek Hydraulic and Geomorphic Analysis



Reneke Creek Hydraulic and Geomorphic Analysis



Reneke Creek Hydraulic and Geomorphic Analysis

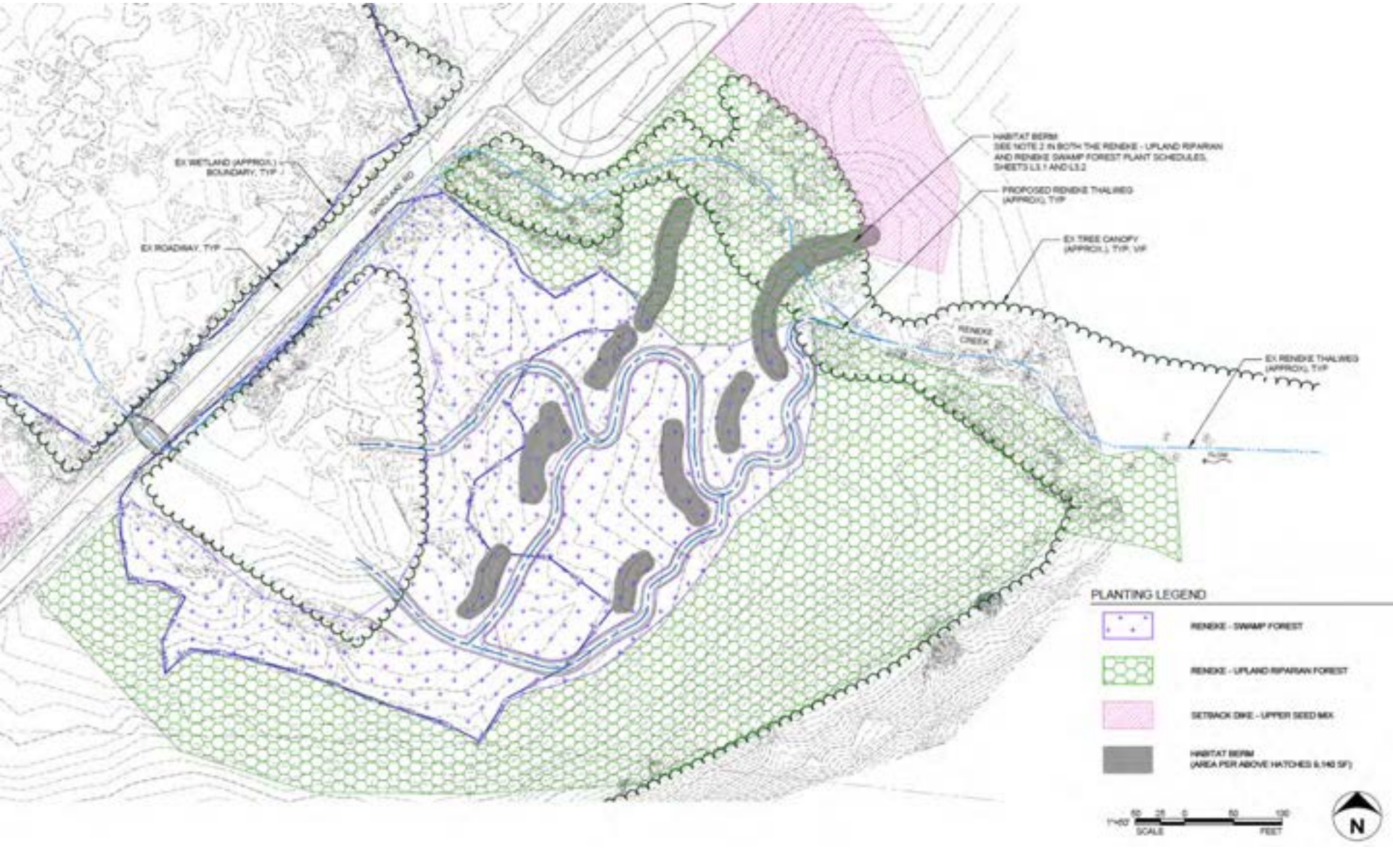


Reneke Creek – Existing channels within forested wetland

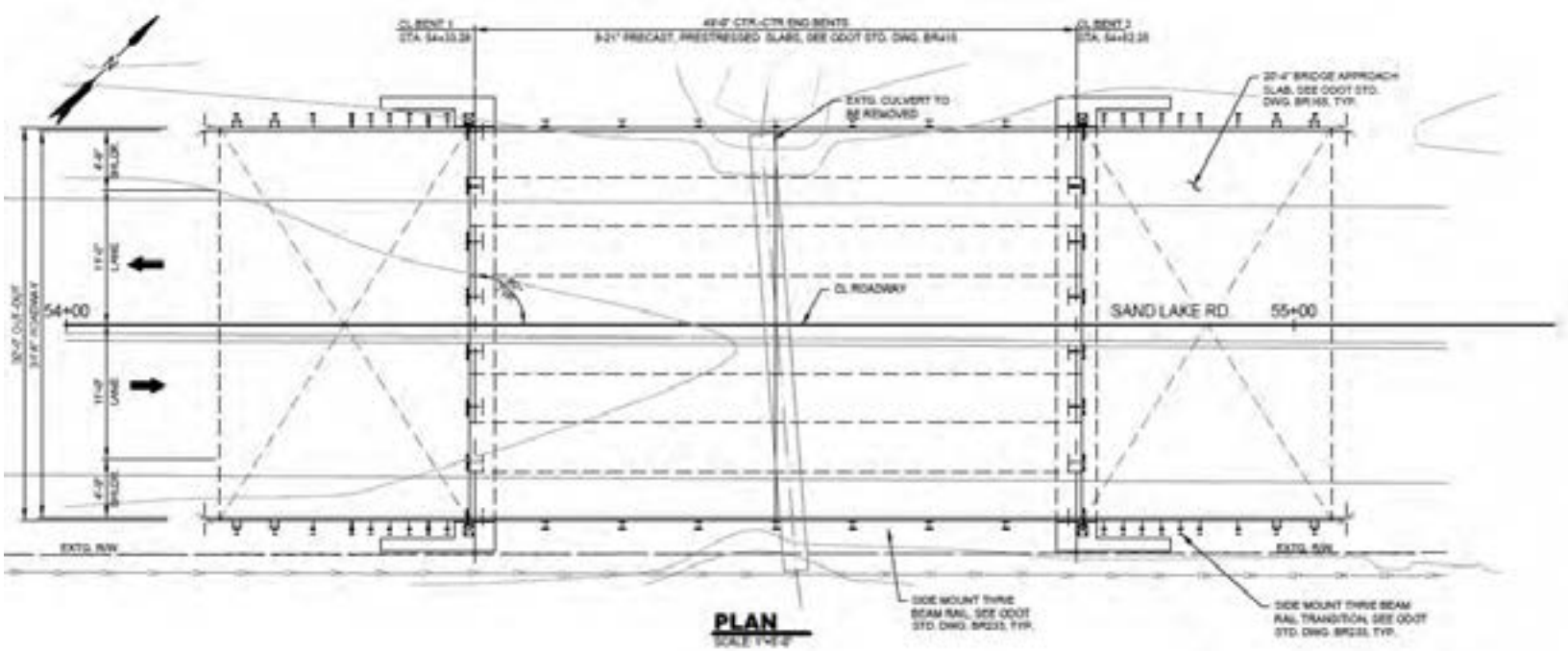
Reneke Creek Culvert Replacement and Stream Restoration

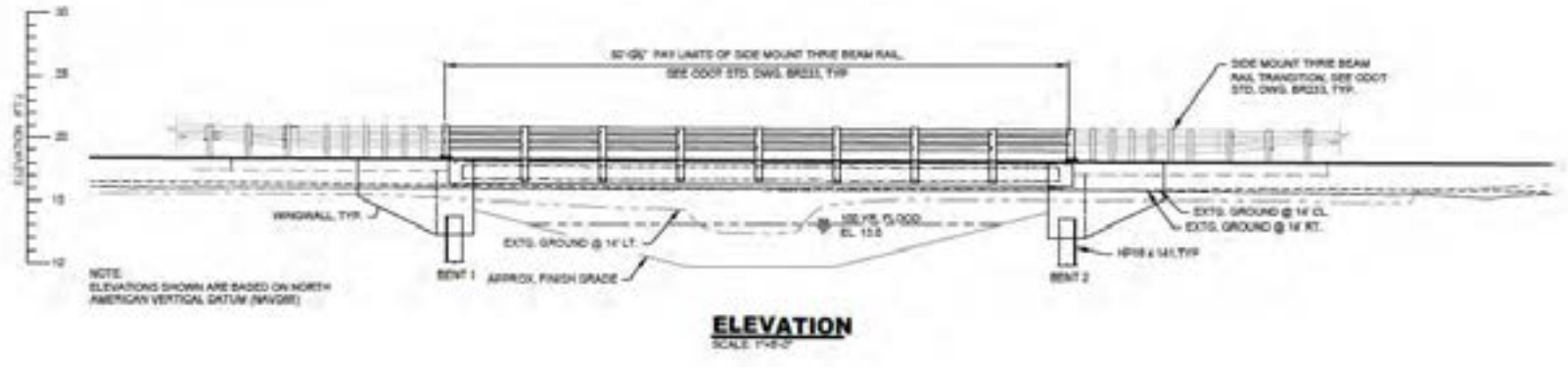
RENEKE CREEK GRADING PLAN
PLAN SCALE: 1" = 50'

Reneke Creek Revegetation Plan

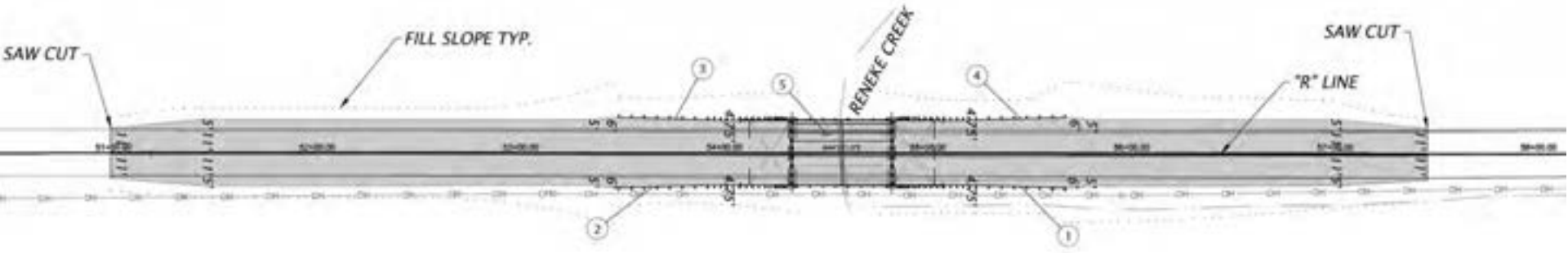


Reneke Creek Bridge and Roadway Improvements

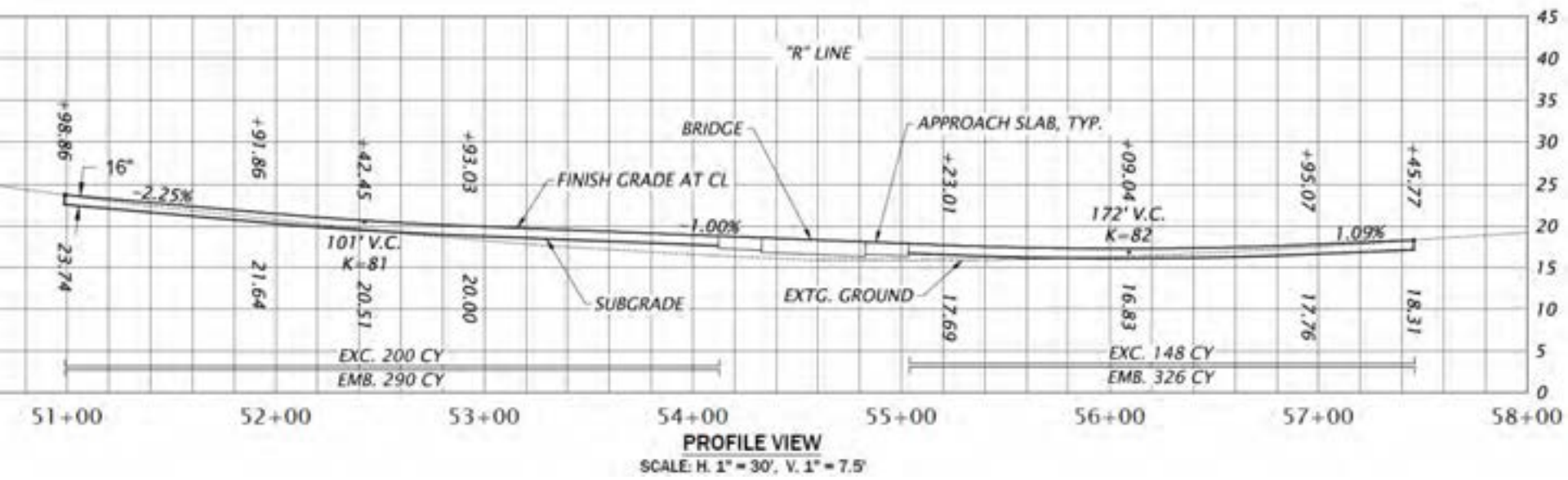




Reneke Creek Bridge and Roadway Improvements

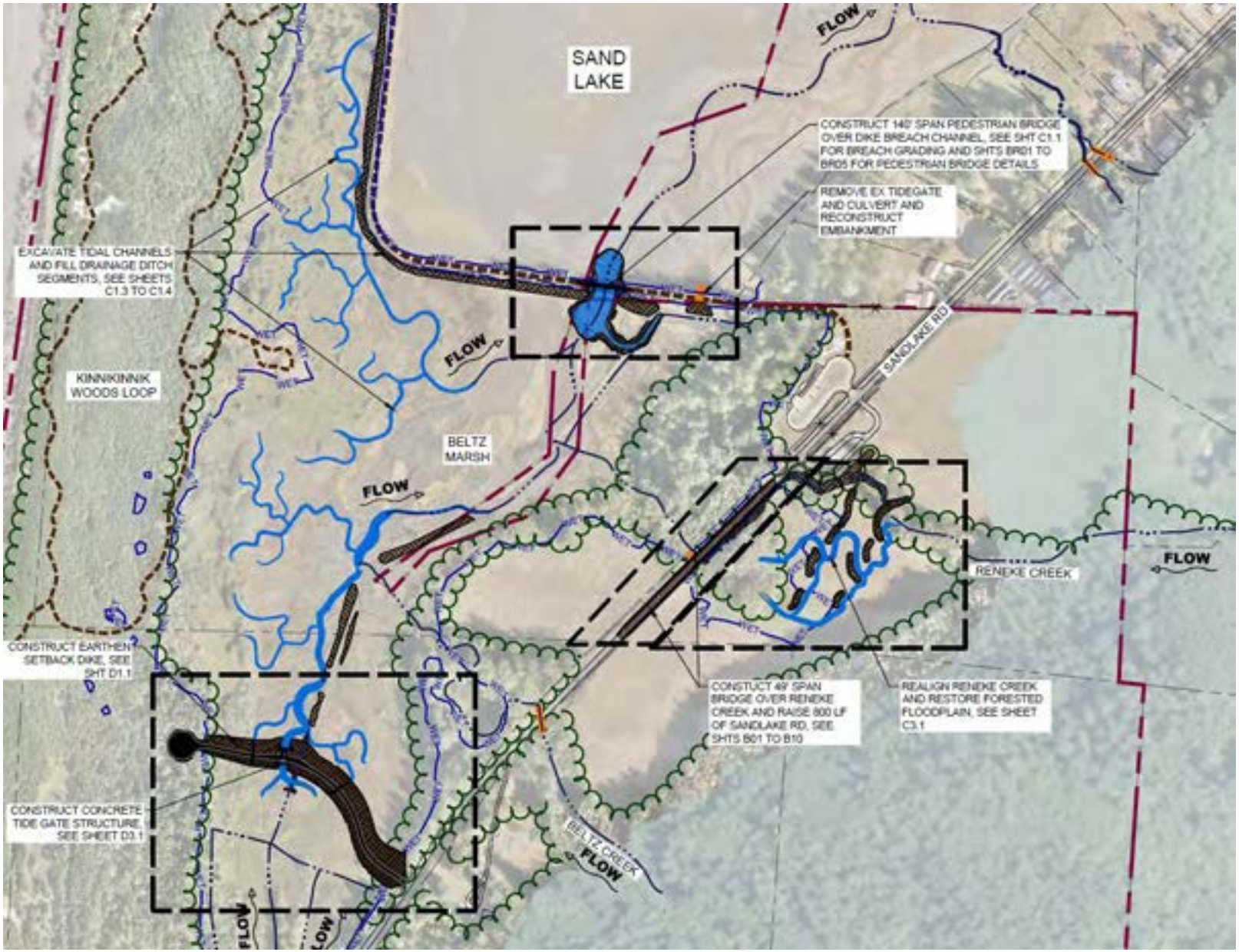


ORAIL - 12.5' (TYPE 3)
ORAIL TO BRIDGE RAIL TRANSITION
ORAIL TERMINAL, NON-FLARED
3



PROFILE VIEW
SCALE: H. 1" = 30', V. 1" = 7.5'

SSTW - 60% Plans – Site Plan Overview



Estimated Construction Costs

60% DESIGN - ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Sitka Sedge Tidal Wetland Restoration

Item Description	*Item Cost*	
Mobilization/Demobilization	$	753,000
Access, Traffic Control, Water Mangement, Survey	$	891,000
Demolition, Clearing, and Grubbing	$	120,000
Tidal Channel and Ditch Fill Earthwork	$	487,000
Setback Dike Embankment, Imported Fill, Access Rd	$	2,681,000
Setback Dike Drainage Structure, Tide Gate, MTR	$	1,441,000
Backup Drainage Culverts and Flap Gates	$	122,000
Seeding and Revegetation	$	194,000
Wood Habitat Structures	$	130,000
Prefabricated Pedestrian Bridge and Foundations	$	1,468,000
20% Contingency for early design stage	$	1,657,000
Sitka Sedge TWR Total Construction Cost	**$**	**9,944,000**

Reneke Creek Bridge and Stream Realignment

Roadway and Bridge Work	$	1,910,000
Stream Realignment and Restoration	$	1,270,000
Reneke Creek Total Construction Cost	**$**	**3,180,000**

Grants and Funding Update

Current grants:

TEP NOAA Fish Passage - $1.4 million
DLCD NOAA - $6 million

Pending grants:

TEP NCRF/NFWF - $3.4 million
Wild Salmon Center NOAA Fish Passage - TOTAL $8.4 million **** appx $3 million for Sitka Sedge*
Tillamook County Federal Highways Aquatic Organism Passage (AOP) - $3.1 million

TOTAL currently awarded and live: $7.4 million
TOTAL pending: appx $9.5 million

Sitka Sedge Tidal Wetland Restoration: Town Hall Meeting – 60% Design Project Update

Questions or Comments?

TILLAMOOK ESTUARIES PARTNERSHIP

ESA