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

September 25, 2025

Christer LaBrecque - Lead Habitat Restoration Project Manager, Tillamook Estuaries Partnership
Noel Bacheller - Ecologist/Natural Resource Coordinator - OPRD
Hunter White, P.E. - Principal Civil and Water Resources Engineer - ESA

TILLAMOOK COUNTY
Land of Cheese, Trees and Ocean Breeze

OREGON STATE PARKS

TILLAMOOK ESTUARIES PARTNERSHIP

ESA

Tech Team Meeting Agenda

- Introductions (TEP, OPRD, ESA)
- Project Timeline and Status
- Brief Project Overview for Context
- ESA to Present an Update on 60% Design Plans
  - Dike Breach and Pedestrian Bridge on Beltz Dike Trail
  - Setback Dike and Tide Gate Structure
  - Habitat Enhancements in Beltz Marsh
  - Reneke Creek Culvert Replacements and Stream Restoration
- Questions and Discussion

Introductions - Key Staff Involved

- **Oregon Parks & Recreation Department (OPRD)**
  - Noel Bacheller – Ecologist/Natural Resource Coordinator
  - Jason Elkins – Cape Lookout Management Unit Park Manager
  - Justin Parker – North Coast District Manager
  - Tracy Johnson – Senior Project Manager
  - Jered Mangini – Coast Region Resource Program Manager
- **Tillamook Estuaries Partnership (TEP)**
  - Kristi Foster – Executive Director
  - Christer LaBrecque – Lead Habitat Restoration Project Manager
- **Tillamook County Public Works (TCPW)**
  - Chris Laity, PE – Director
- **Environmental Science Associates (ESA)**
  - Hunter White, PE – Principal Civil and Water Resources Engineer
  - David Evans and Associates (DEA) – Structural and Roadway Engineering
  - Shannon & Wilson (S&W) – Geotechnical Engineering
- **Technical Advisory Team**
  - Comprised of +15 engineering, science, planning, and design professionals including representatives from TEP, OPRD, NNSLWC, USFS, ODF, DLCD, USFW, ODFW, CTWS, and DEQ

TILLAMOOK ESTUARIES PARTNERSHIP

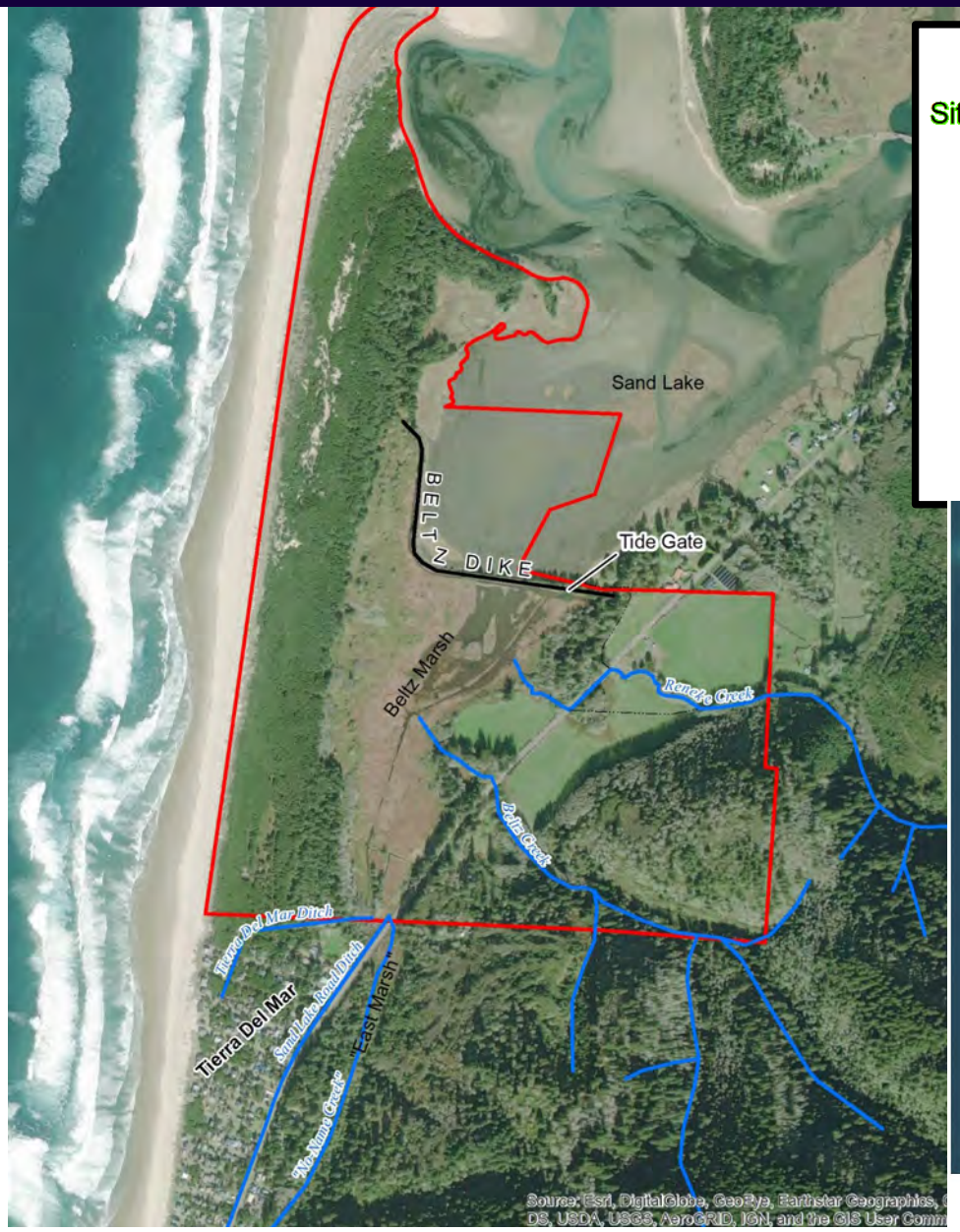
Project timeline to date:

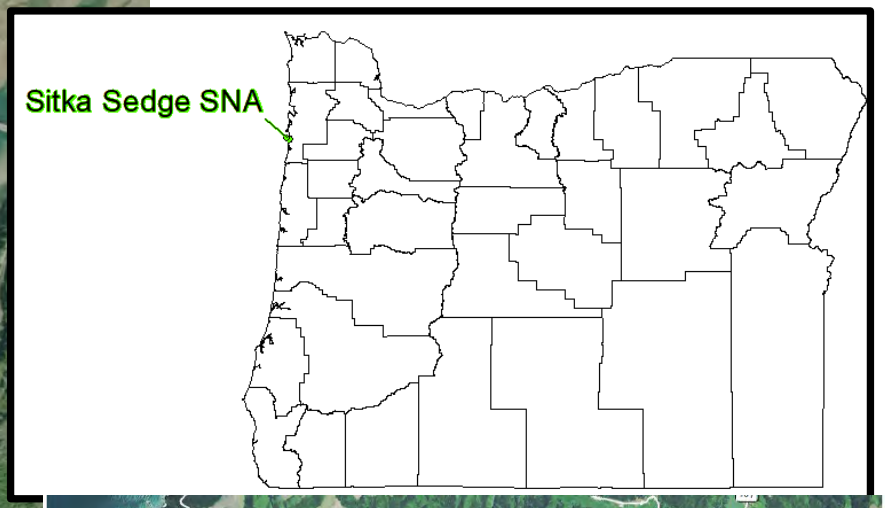
Timing	Process
September 2014	Property acquisition
October 2014-June 2016	OPRD Site and resource assessments: biological, cultural, recreation, scenic
June 2015-December 2016	Master planning and initial park development
October 2015-June 2017	Initial hydrology studies
2016-2018	Groundwater and surface water monitoring and data collection
September 2017-June 2019	Detailed TDM groundwater effects investigation; conceptual surface water refinements
Fall 2019	Technical Team assessment of concptual 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

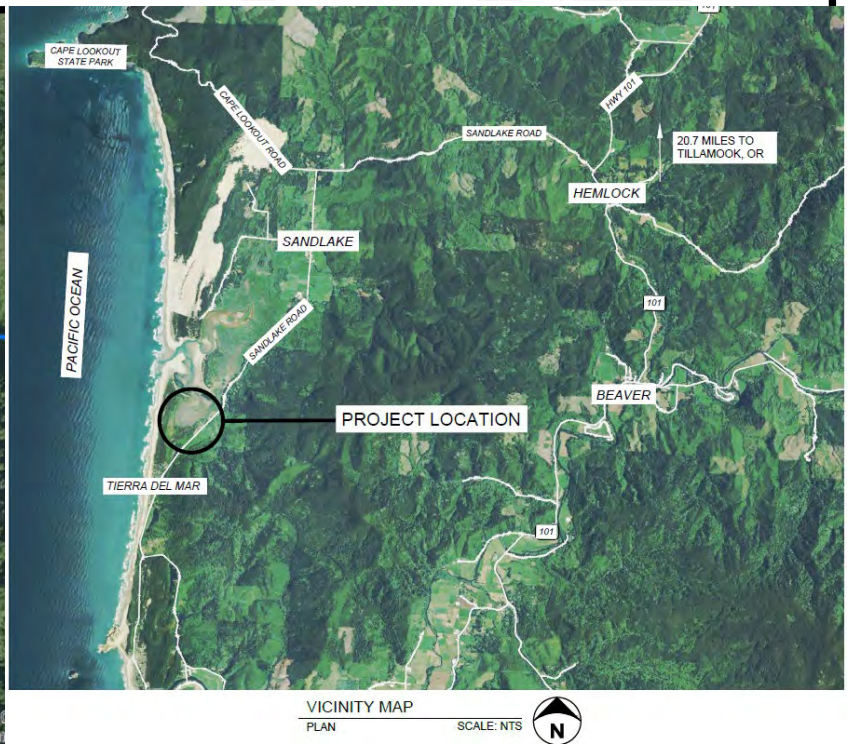
Sitka Sedge Tidal Wetland Restoration - Design Phase timeline

- Detailed Alternatives Analysis was presented in Fall 2023
- ESA completed 30% Designs in Spring 2024
- Fall 2024 – ESA Team entered new contract for final design and permitting phase of work
  - Wetland delineation, cultural resources investigation, geotechnical investigation
  - Permitting pre-application meetings and coordination
  - Advancing design from 30% to 60% level of design
- **60% Design completed in September 2025**
- Permit Applications to be submitted in Fall 2025
  - (Joint Permit Application and Tillamook County Land Use)
- 100% Design expected Spring 2026
- Pending permits and funding, Construction to begin Summer 2026

Location and Setting







Project Purpose –

- **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 opening is too small to efficiently drain - backs up water and acts like an hourglass
  - "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**

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Sitka Sedge Tidal Wetland Restoration

What's the main problem? The existing culvert (the old Tide Gate)

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

TILLAMOOK ESTUARIES PARTNERSHIP

Sitka Sedge Tidal Wetland Restoration

What's the main problem? The existing culvert (the old Tide Gate)

Incoming King Tide - looking north (Video: Hunter White)

Conceptual Alternatives Studied and Compared in 2019 Phase

No action/ existing condition – reference condition

Dike breach – 40' bottom width, 80' top width, or larger

Replace existing tide gate with modern muted tidal regulator– two 10' wide by 8ft' tall gates with 7 or 8' closure valve… Reneke inside or outside… location…

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…

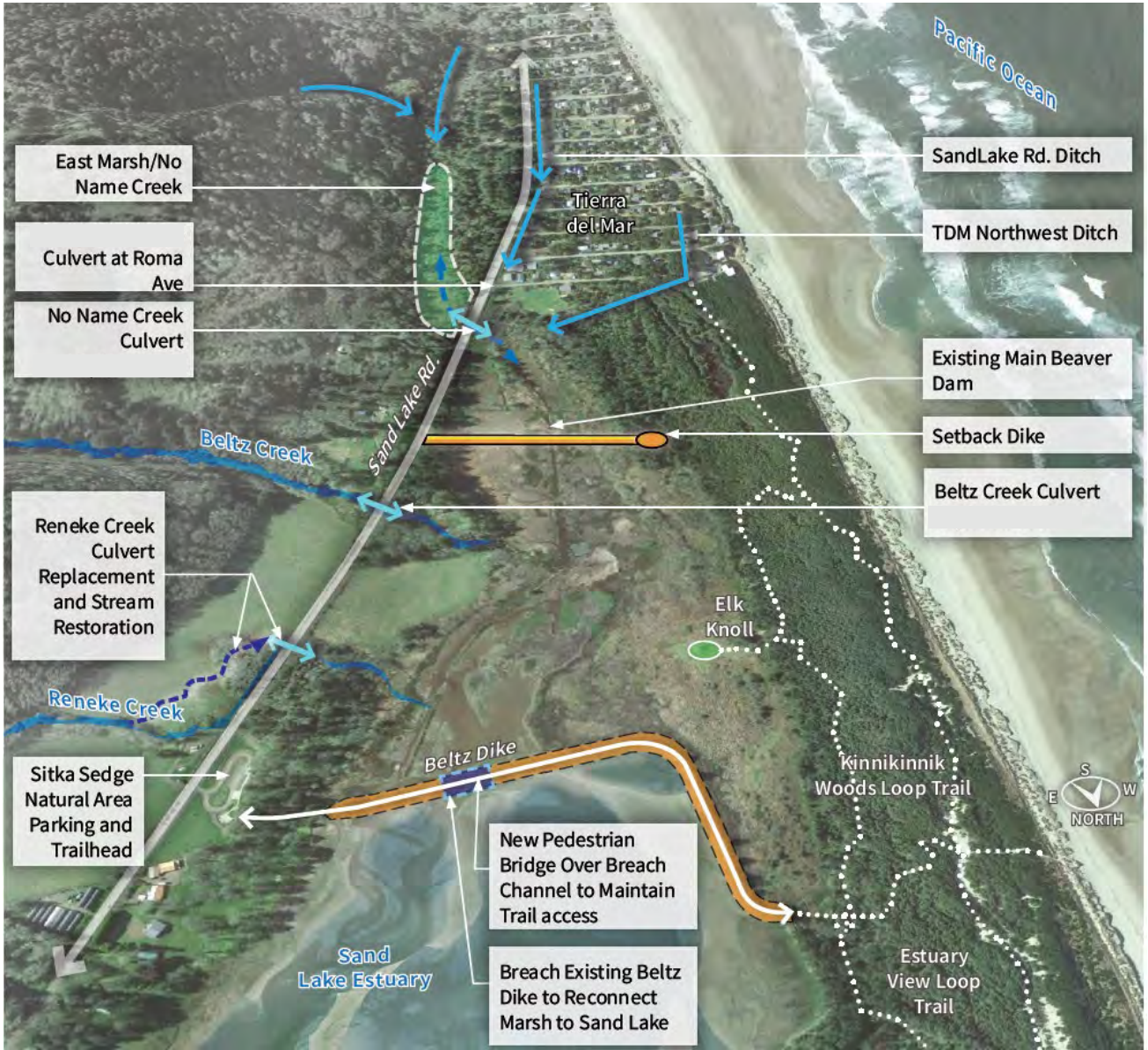
Sitka Sedge Tidal Wetland Restoration

- Reneke Creek Fish Passage, Stream Restoration, and Roadway Improvements

- Reneke Creek (pictured)
  - Floods regularly; **high priority** for County Public Works
- Beltz Creek and No-Name Creek culvert replacements are not yet funded and will be a future project

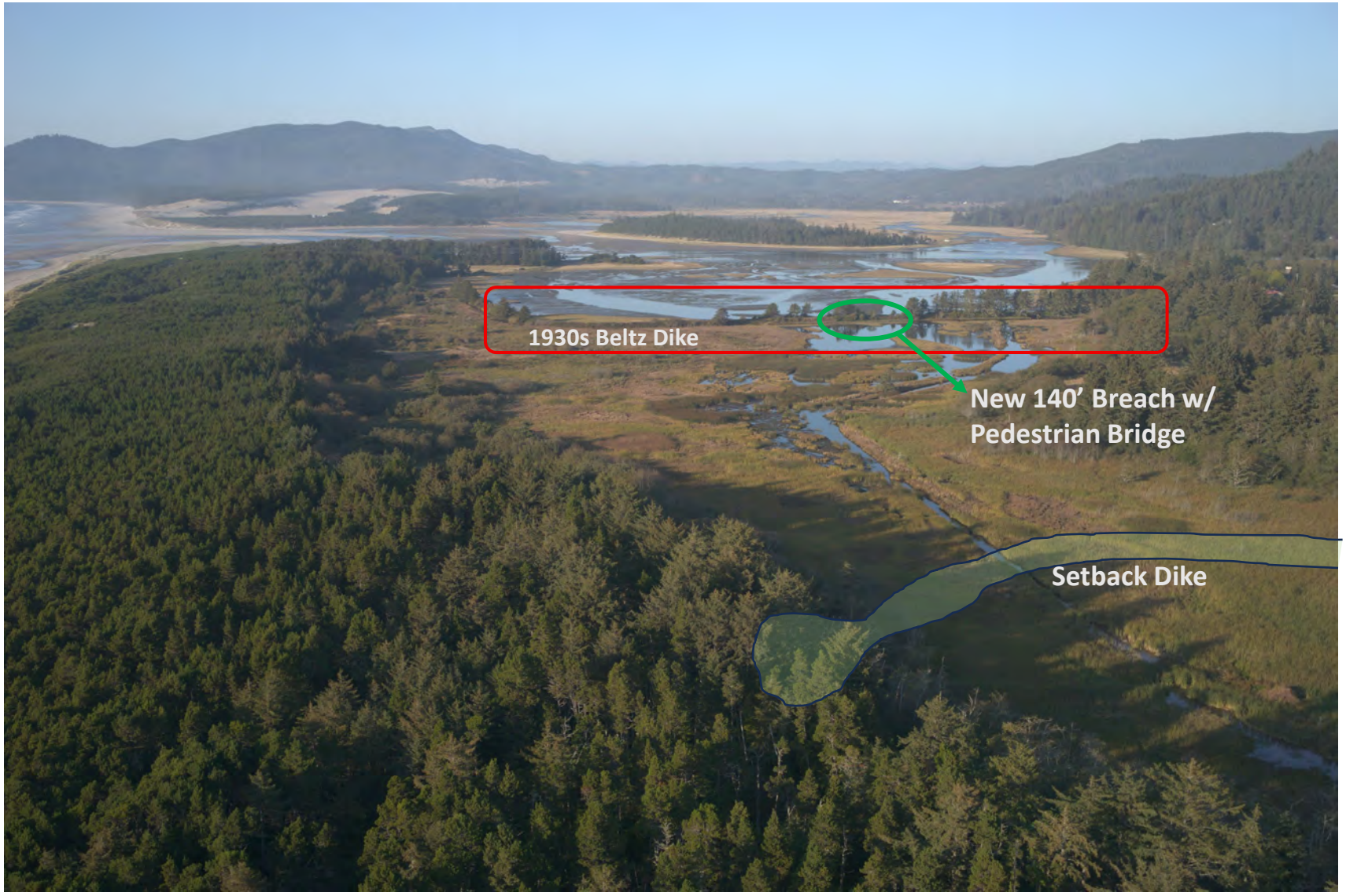
Photo: Christer LaBrecque

Sitka Sedge Tidal Wetland Restoration - Preferred Alternative



TILLAMOOK ESTUARIES PARTNERSHIP

Sitka Sedge Tidal Wetland Restoration



Looking north into Sand Lake Estuary (Photo: Flynn Delaney)

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Sitka Sedge Tidal Wetland Restoration

Looking north into Sand Lake Estuary mudflats (Photo: Christer LaBrecque)

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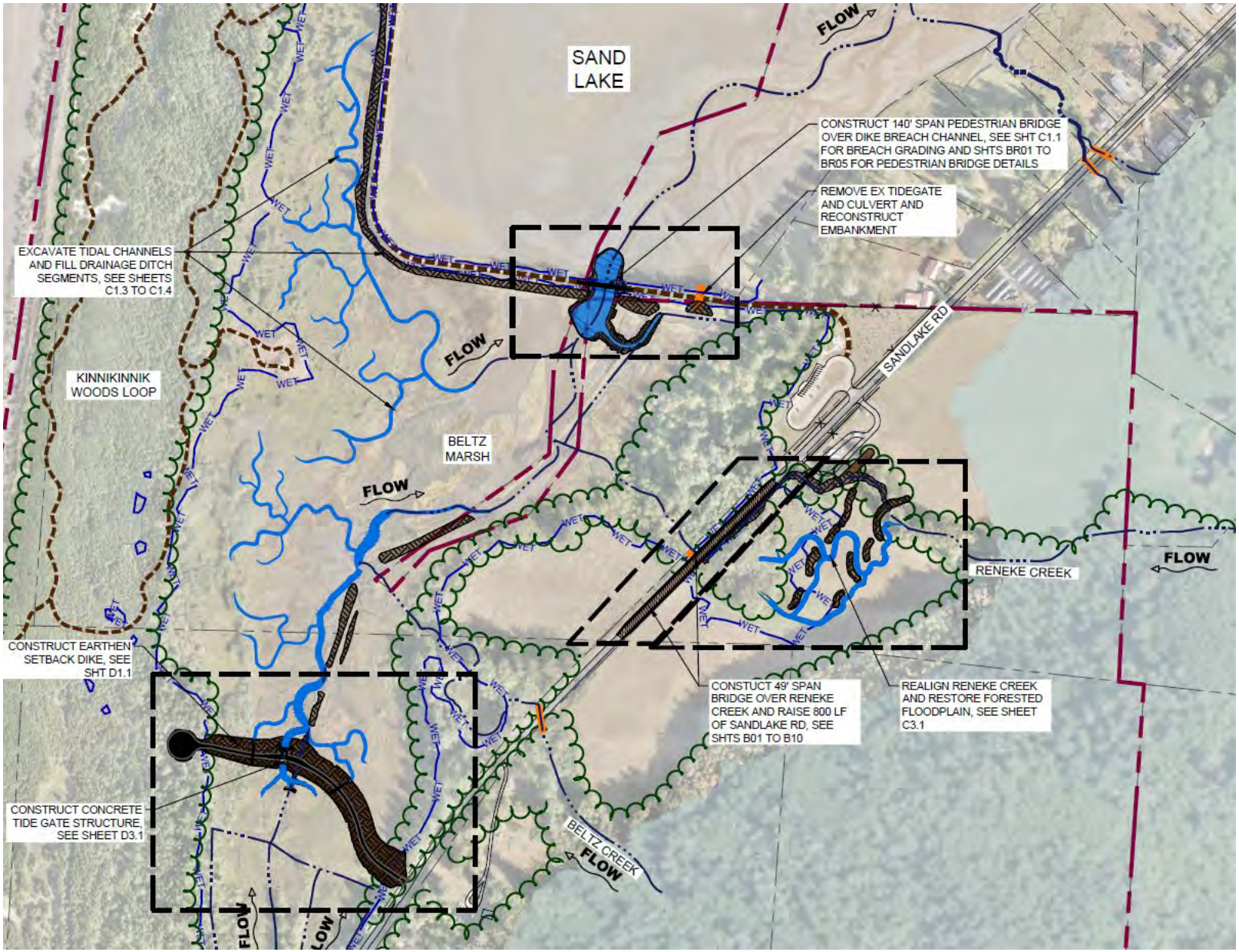
Sitka Sedge Tidal Wetland Restoration

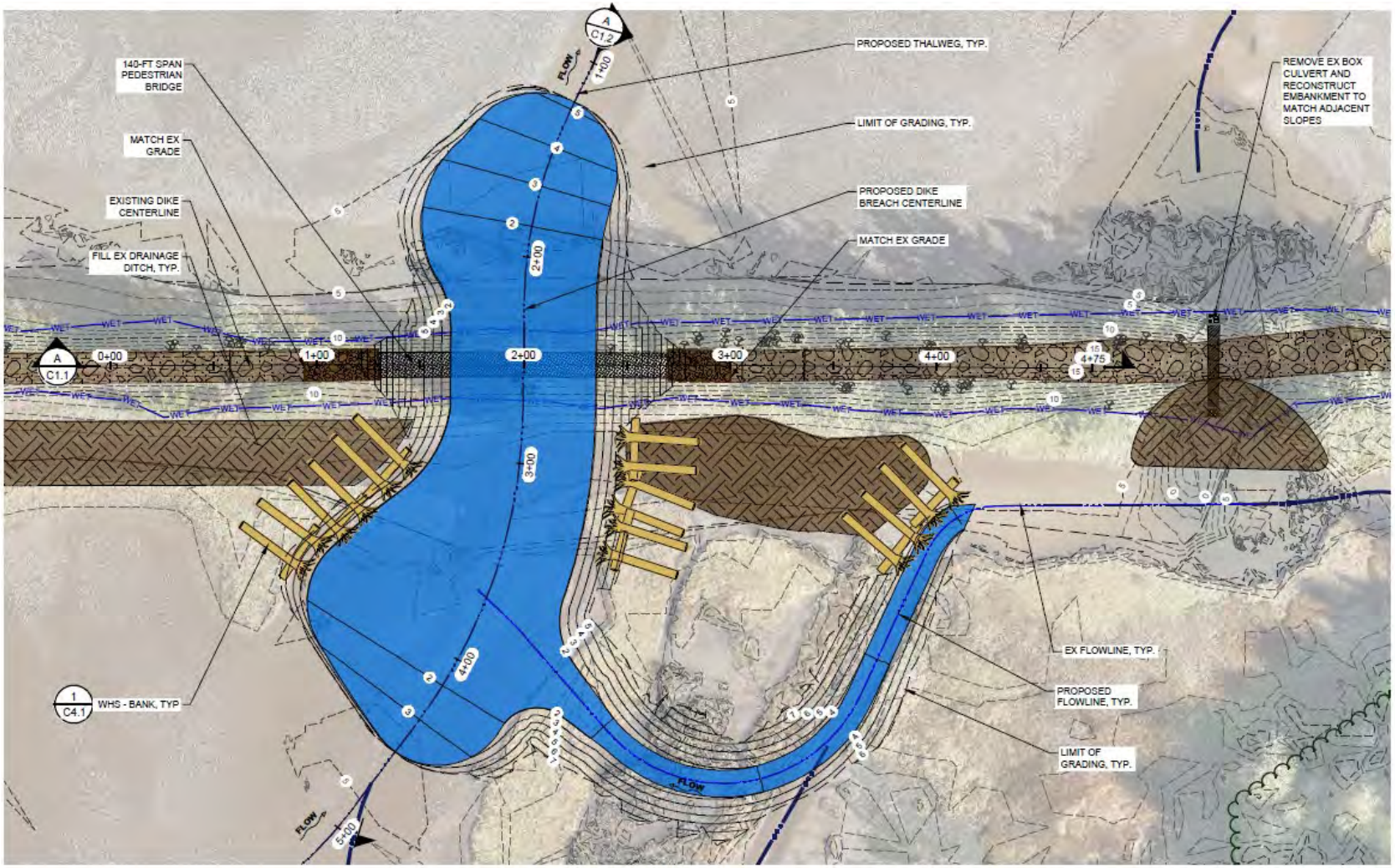
Looking south into what is now mostly freshwater wetland (end of summer) – to be reconnected hydrologically (Photo: Rachel Freeman)

SSTW - 60% Plans – Site Plan Overview



Sitka Sedge Tidal Wetland Restoration
Dike Breach and Pedestrian Bridge

Sitka Sedge Tidal Wetland Restoration
Dike Breach and Pedestrian Bridge

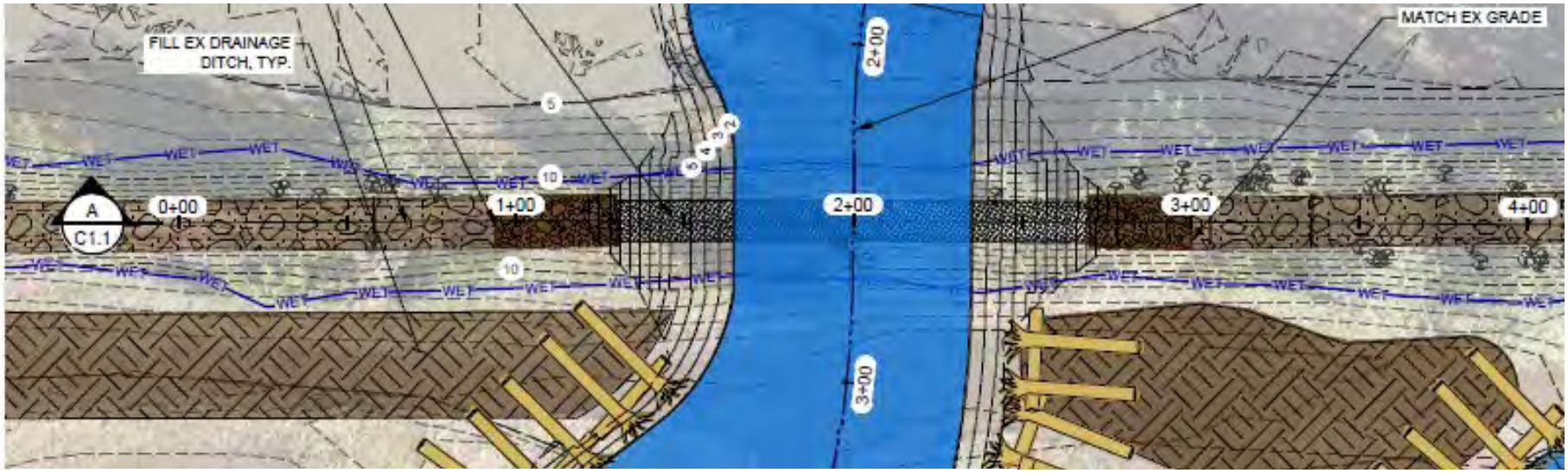


DIKE BREACH PLAN
PLAN SCALE: 1" = 30'

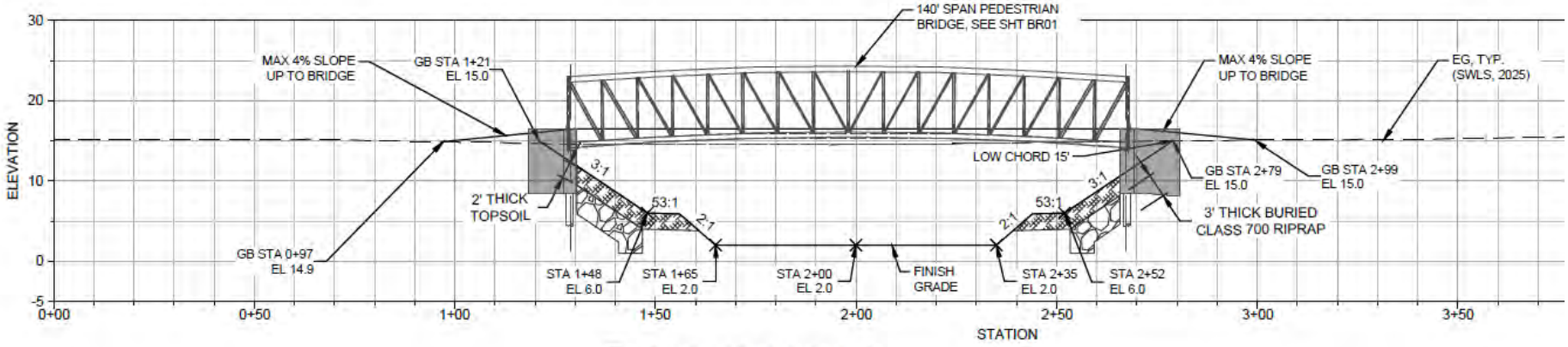
1"=30' 30 15 0 30 60
SCALE FEET

N

Sitka Sedge Tidal Wetland Restoration
Dike Breach and Pedestrian Bridge

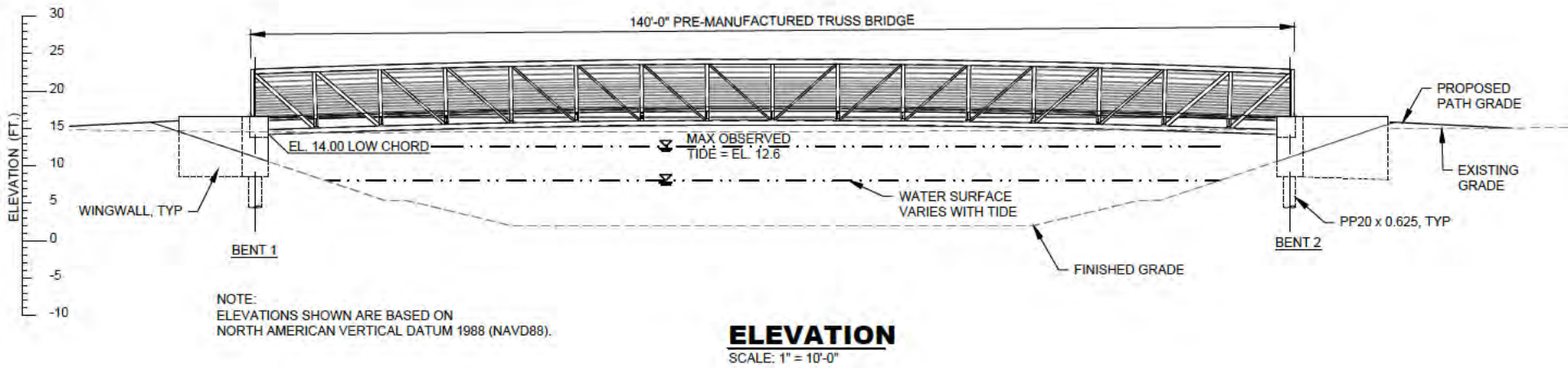


DIKE BREACH PLAN
PLAN SCALE: 1" = 30'



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

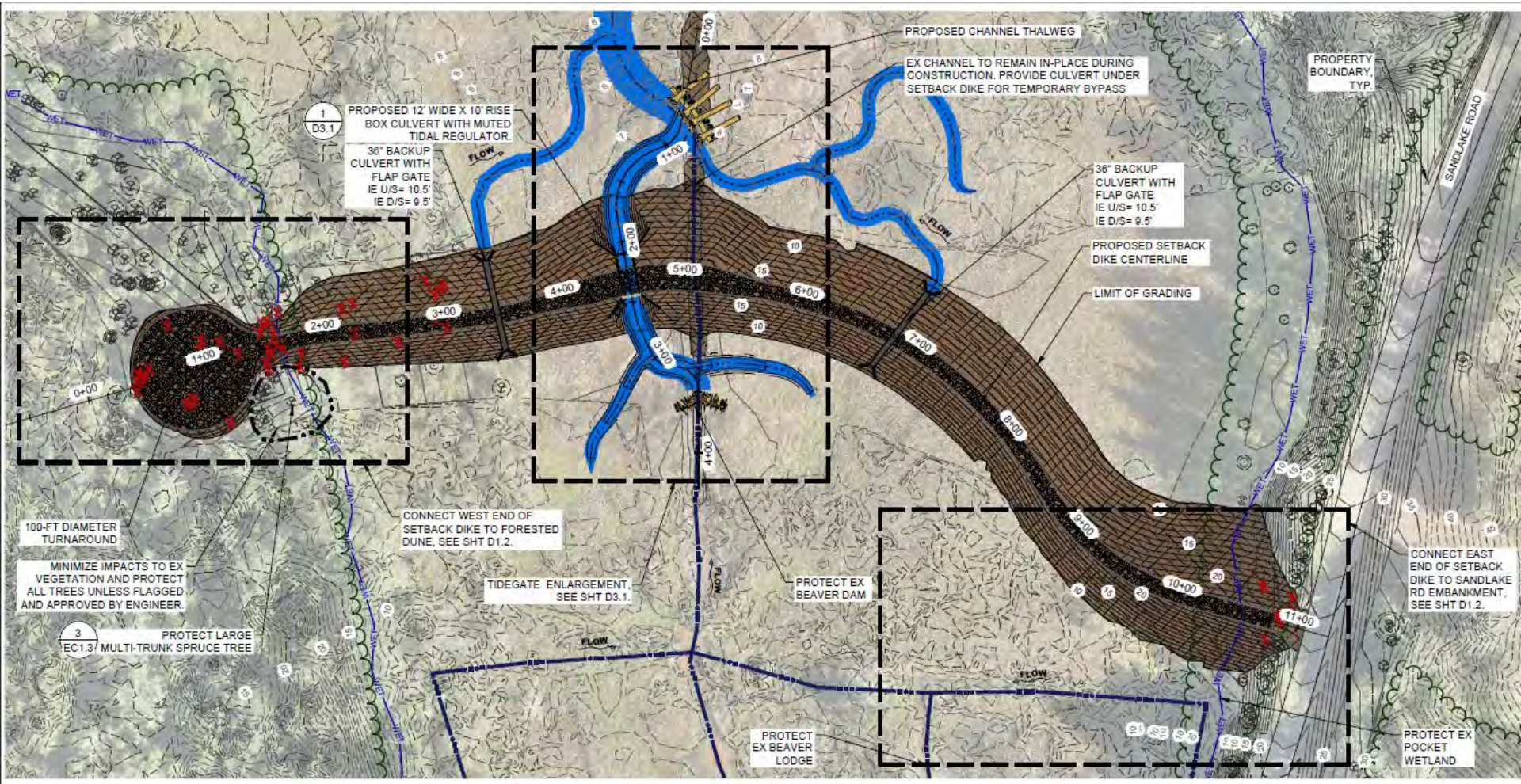


NOTE:
ELEVATIONS SHOWN ARE BASED ON
NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).

ELEVATION
SCALE: 1" = 10'-0"

Continental Connector® **Big Sky, MT**

Sitka Sedge Tidal Wetland Restoration
Setback Dike and Tide Gate Structure

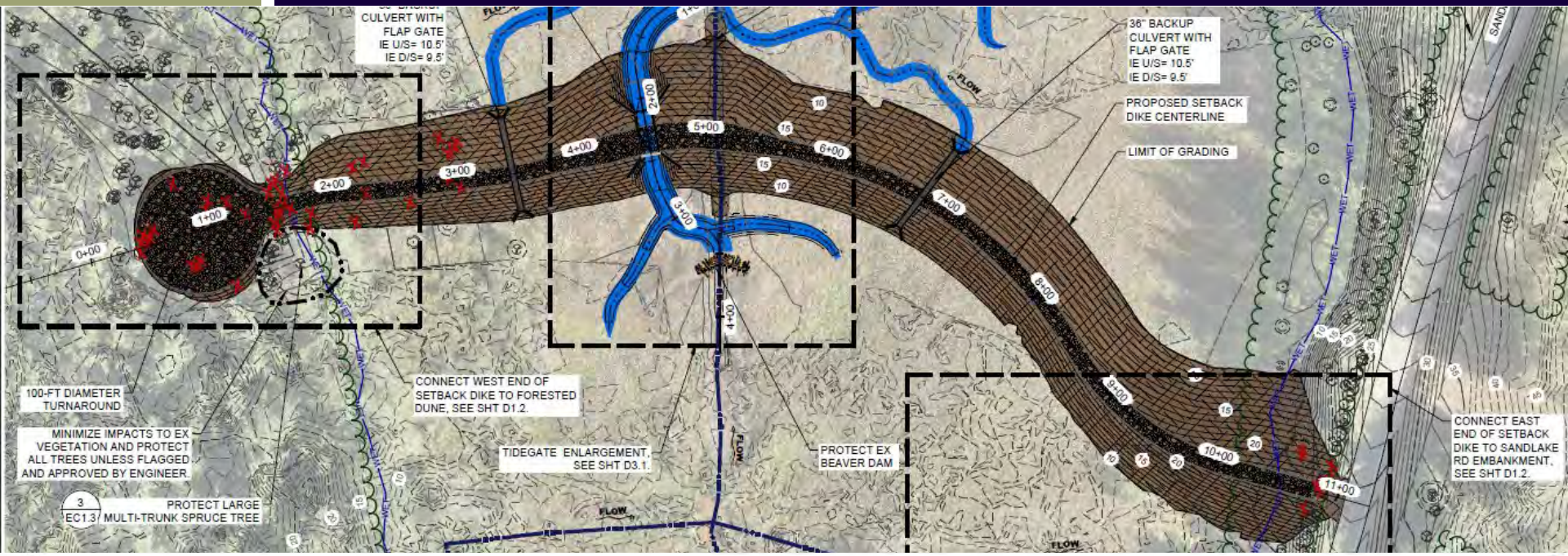


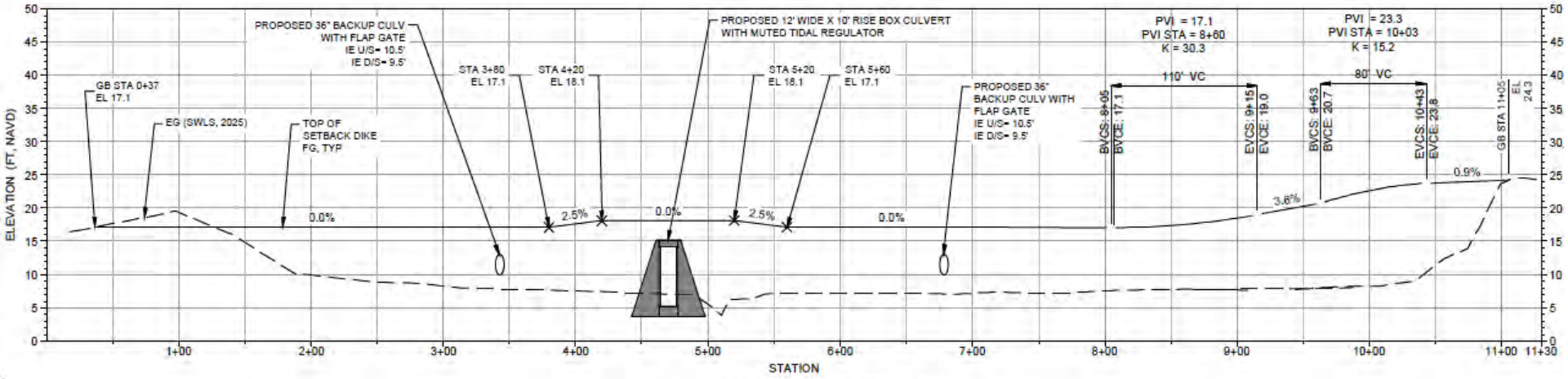
SETBACK DIKE PLAN
PLAN SCALE: 1" = 50'

1"=50' SCALE 50 25 0 50 100 FEET

N

Sitka Sedge Tidal Wetland Restoration
Setback Dike and Tide Gate Structure

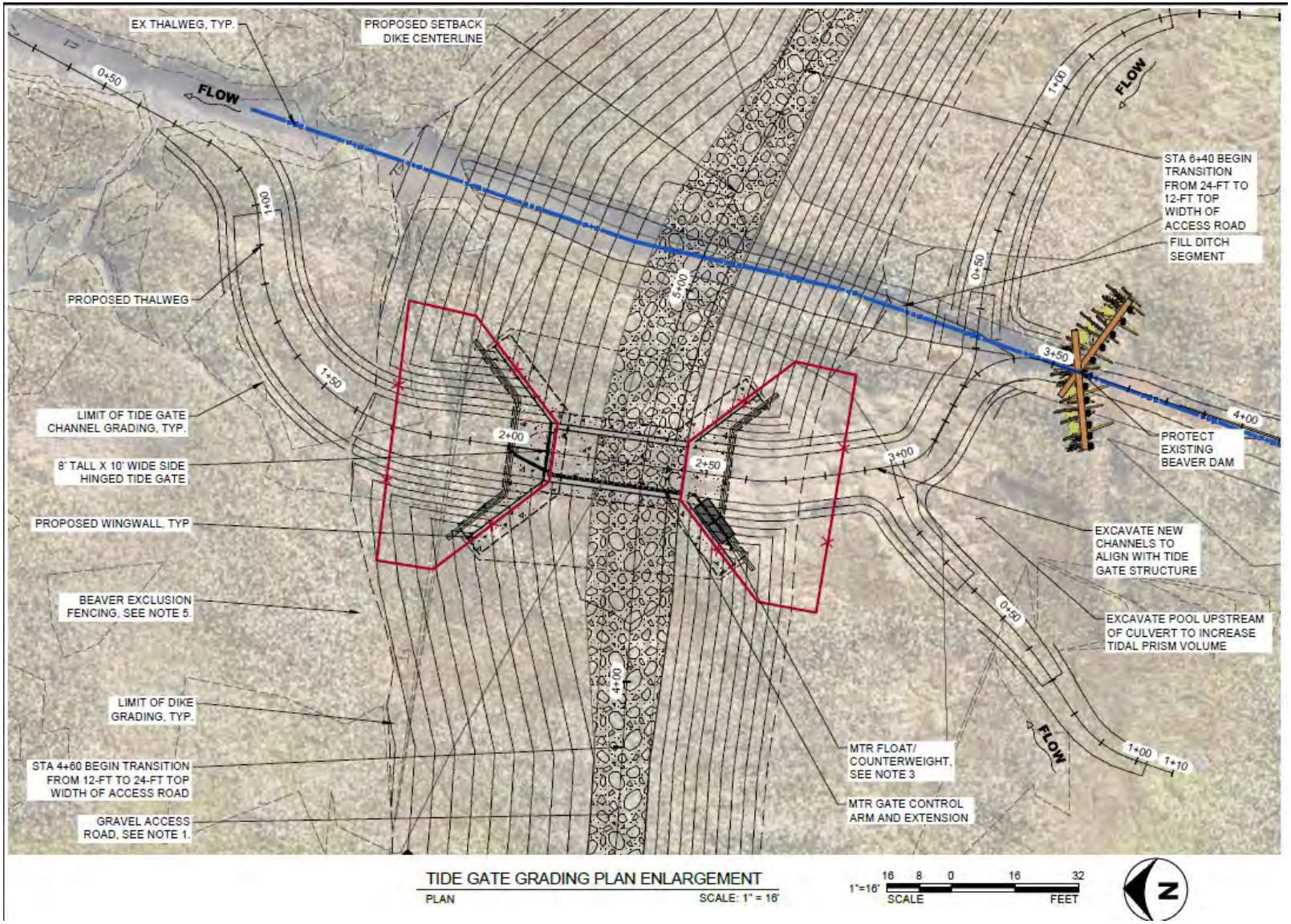




SETBACK DIKE PROFILE

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

Sitka Sedge Tidal Wetland Restoration Setback Dike and Tide Gate Structure

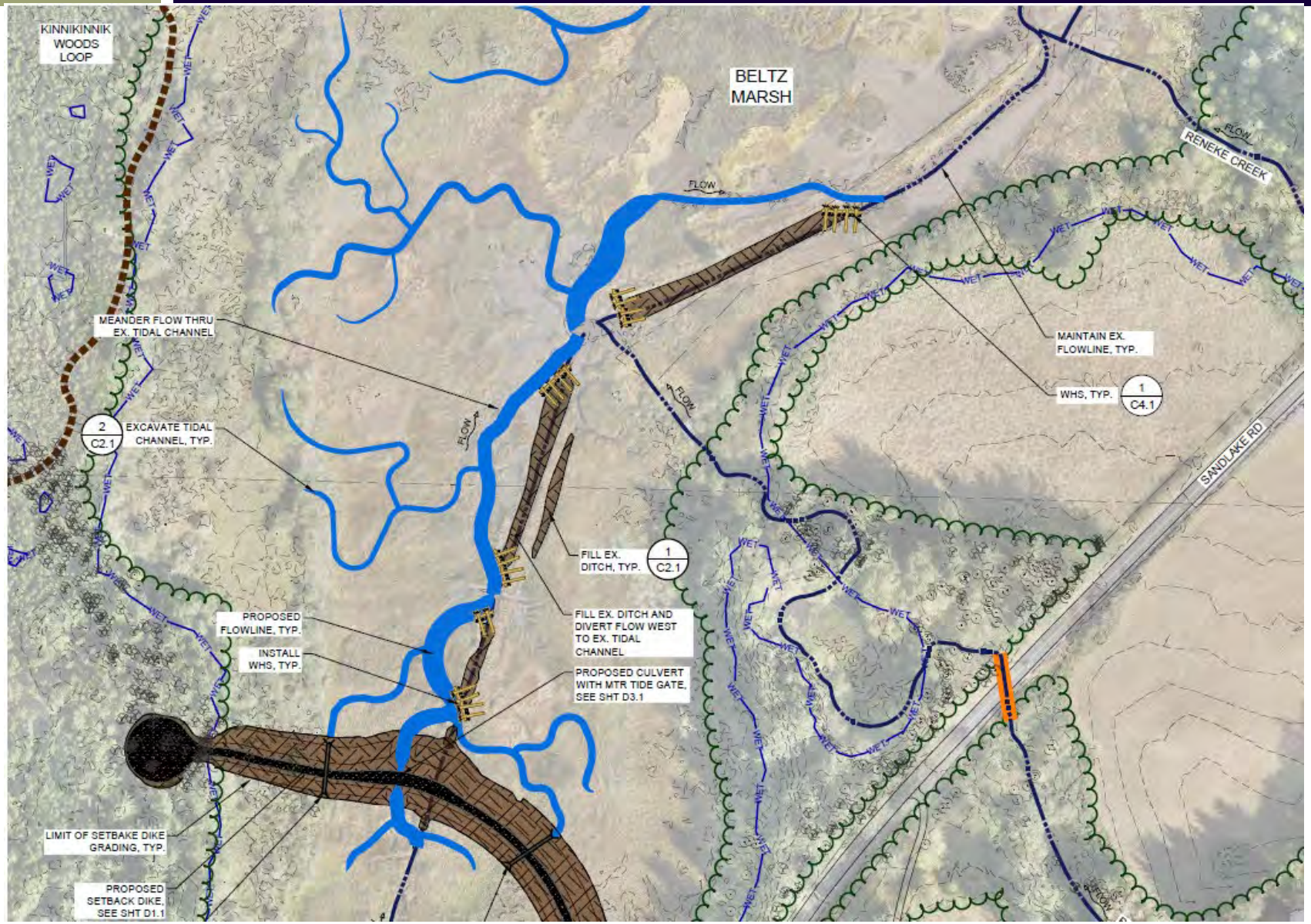


Sitka Sedge Tidal Wetland Restoration - Ditch Fill and Tidal Channel Excavation

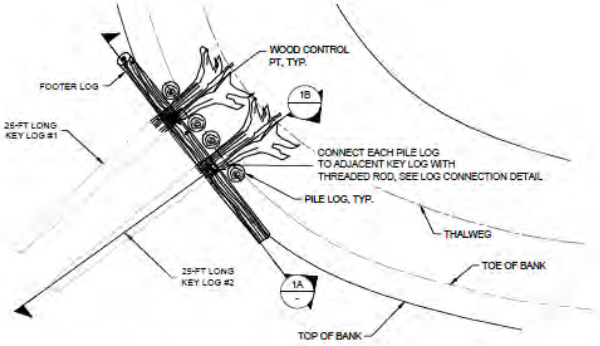
CHANNEL AND DITCH GRADING ENLARGEMENT - 1

PLAN SCALE: 1" = 50'

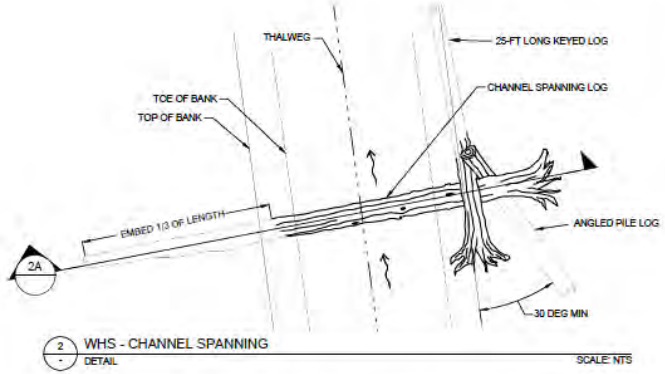
Sitka Sedge Tidal Wetland Restoration - Ditch Fill and Tidal Channel Excavation



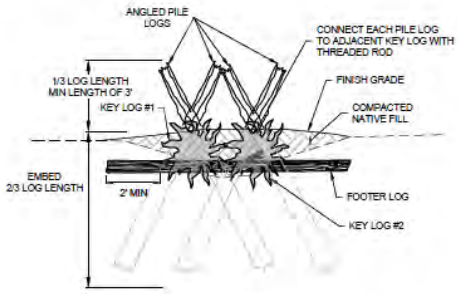
Sitka Sedge Tidal Wetland Restoration -Large Wood Habitat Structures



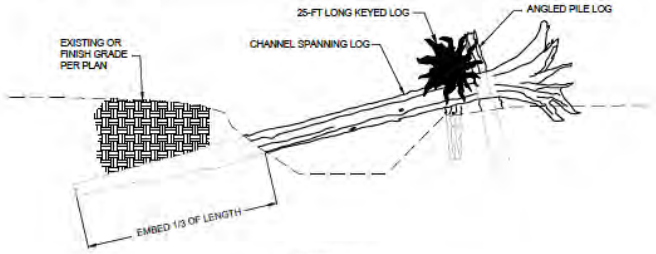
1 - WHS - BANK DETAIL — SCALE: NTS



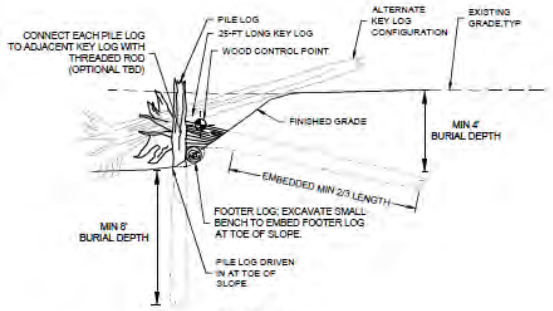
2 - WHS - CHANNEL SPANNING DETAIL — SCALE: NTS



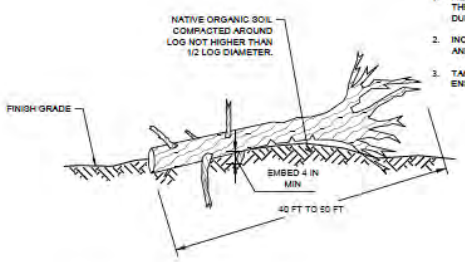
SECTION 1A



SECTION 2A



SECTION 1B



NOTES:

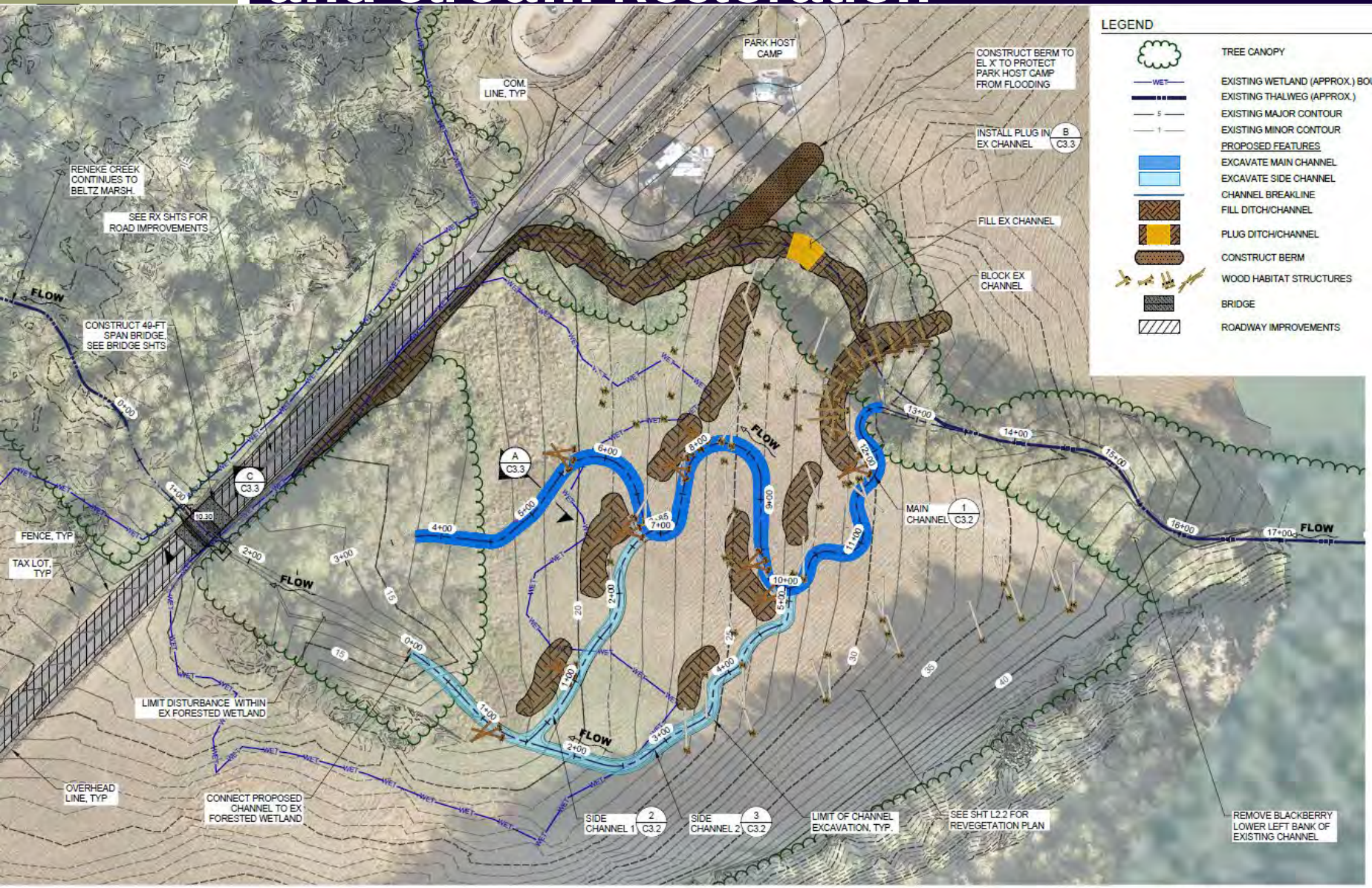
1. FIELD-FIT LOGS SHALL BE PLACED AT THE DISCRETION OF THE ENGINEER DURING CONSTRUCTION.
2. INCLUDE MAJOR BRANCHES, BARK, AND ROOT WAD.
3. TAMP LOG WITH MACHINERY TO ENSURE SECURE PLACEMENT.

3 - FIELD-FIT LOG DETAIL — SCALE: NTS

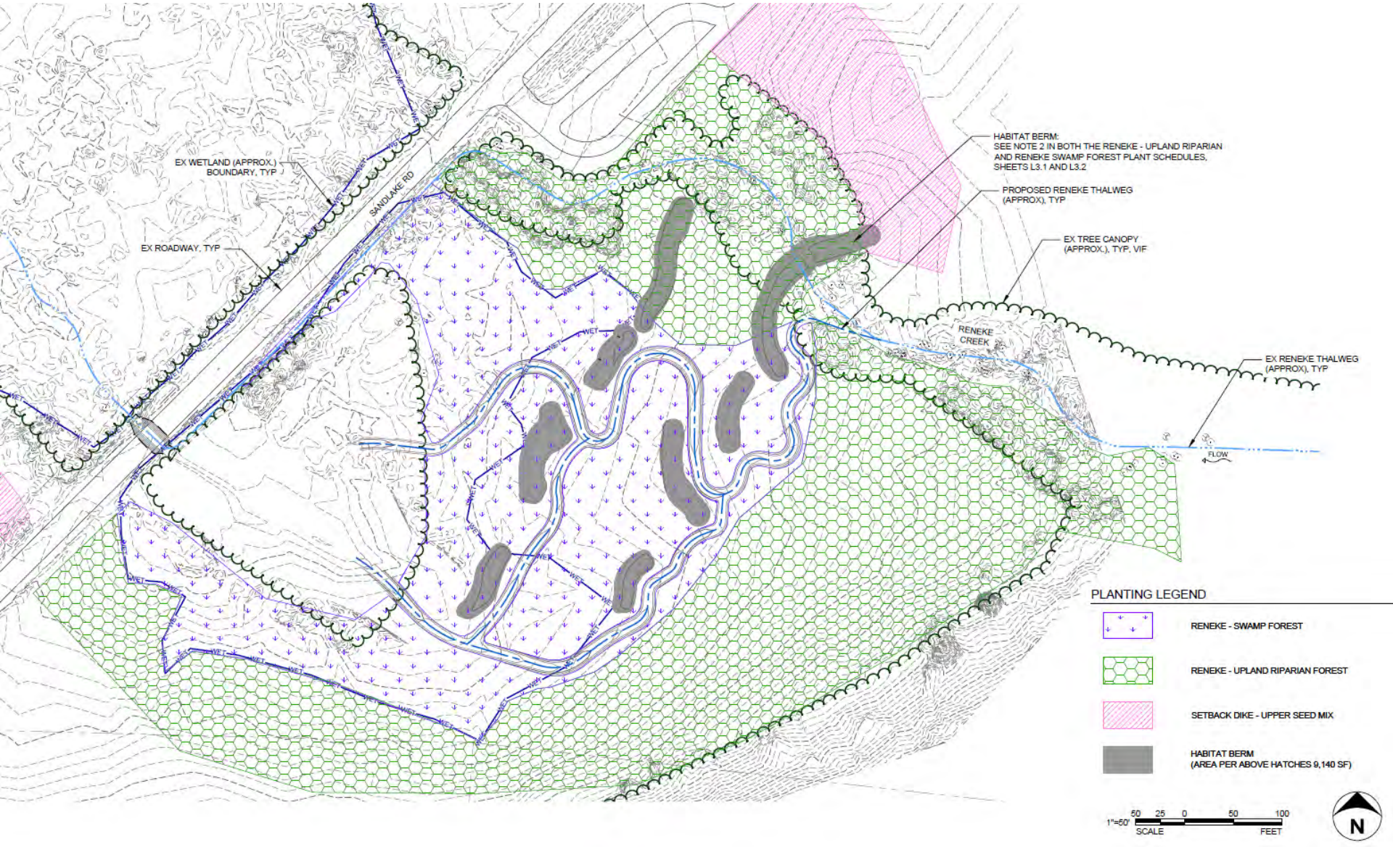
NOTES

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

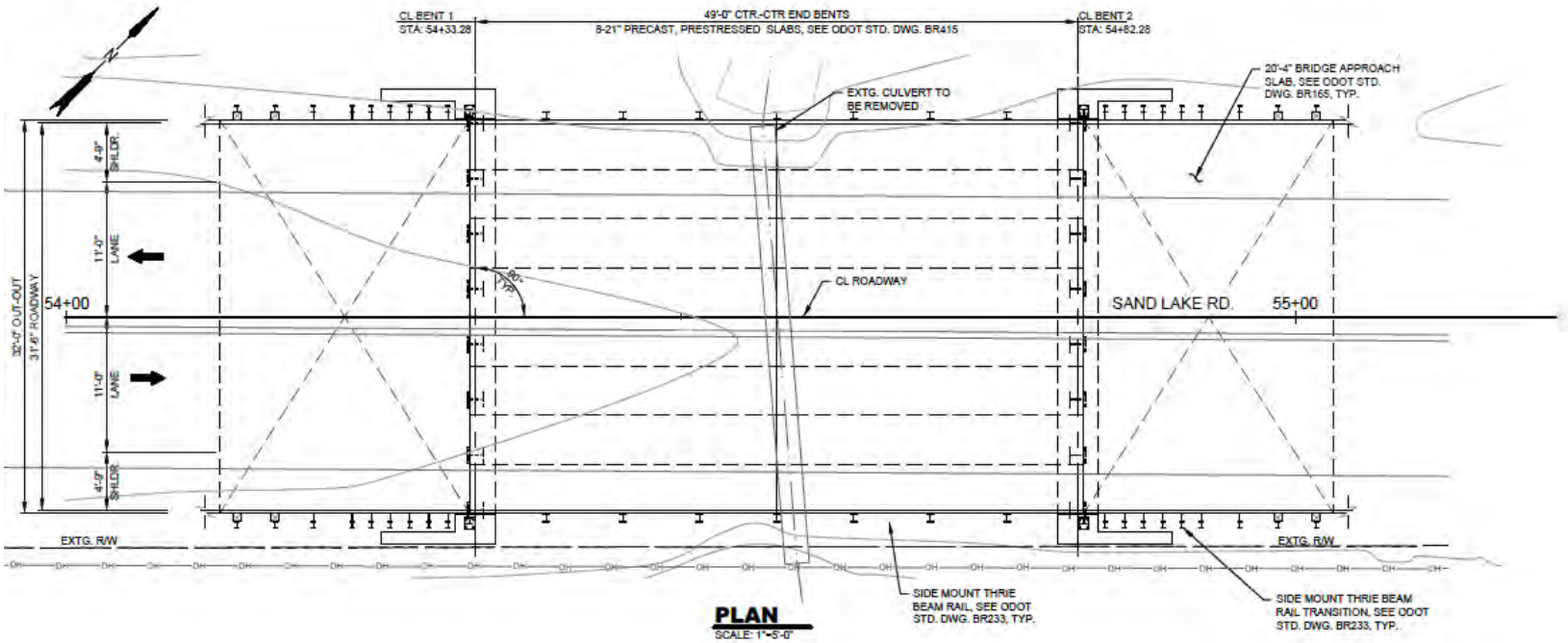
Reneke Creek Culvert Replacement and Stream Restoration

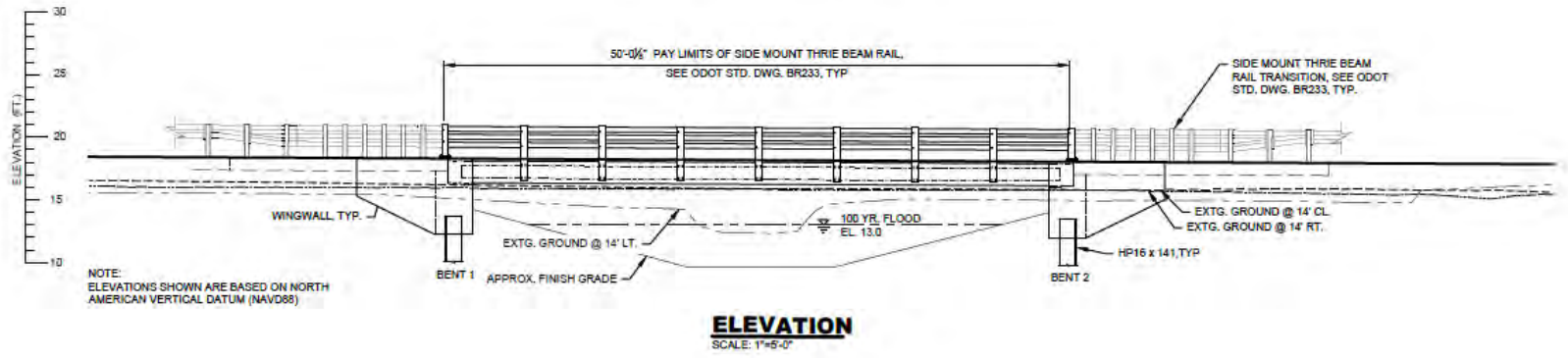


Reneke Creek Revegetation Plan

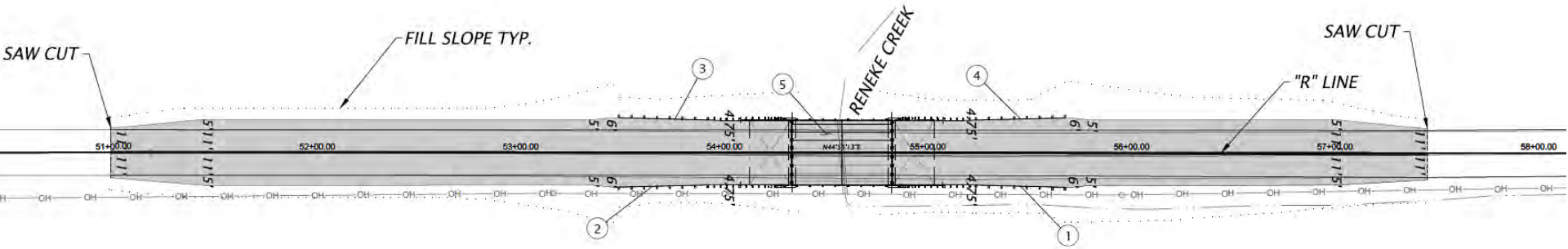


Reneke Creek Bridge and Roadway Improvements

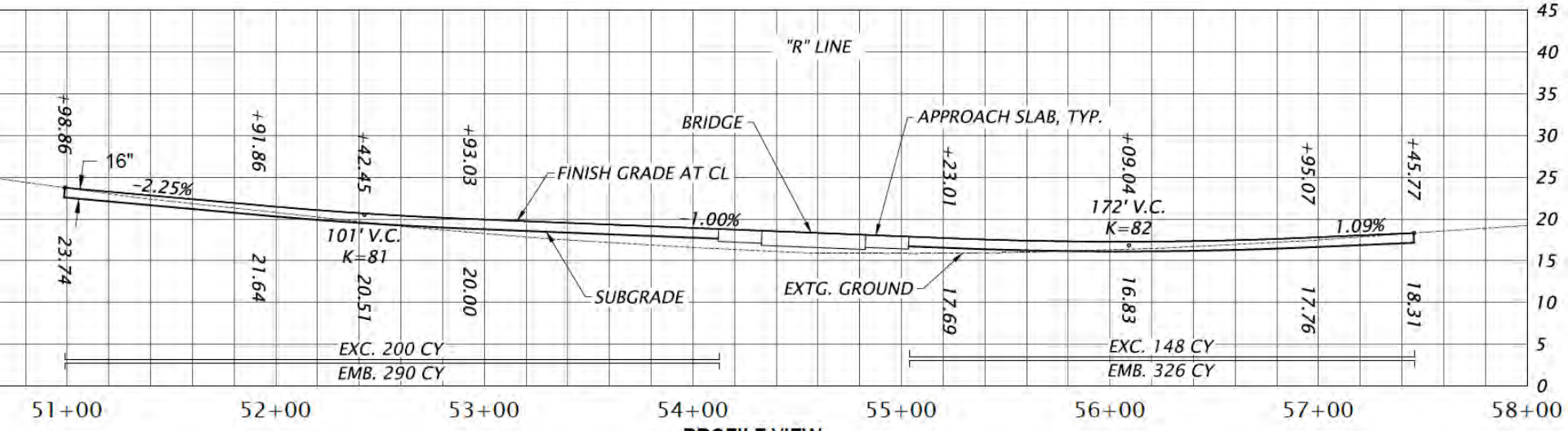




Reneke Creek Bridge and Roadway Improvements

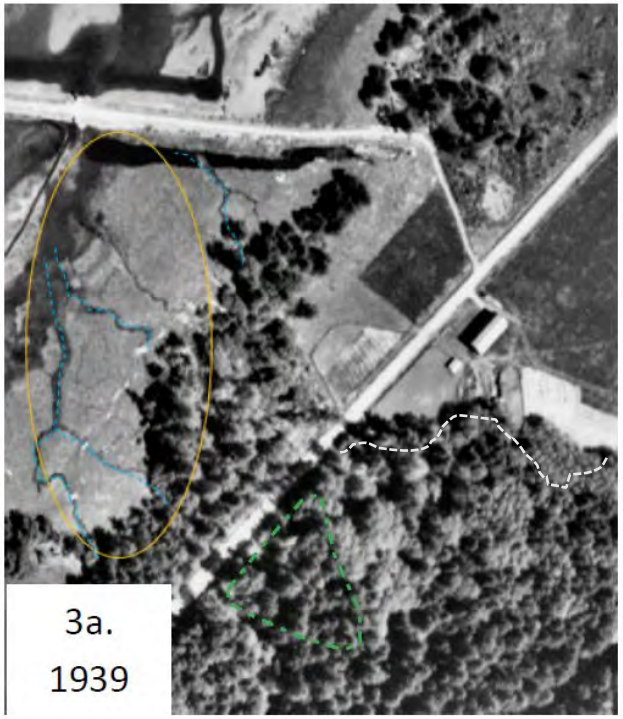


DRAIL – 12.5' (TYPE 3)
DRAIL TO BRIDGE RAIL TRANSITION
DRAIL TERMINAL, NON-FLARED
3

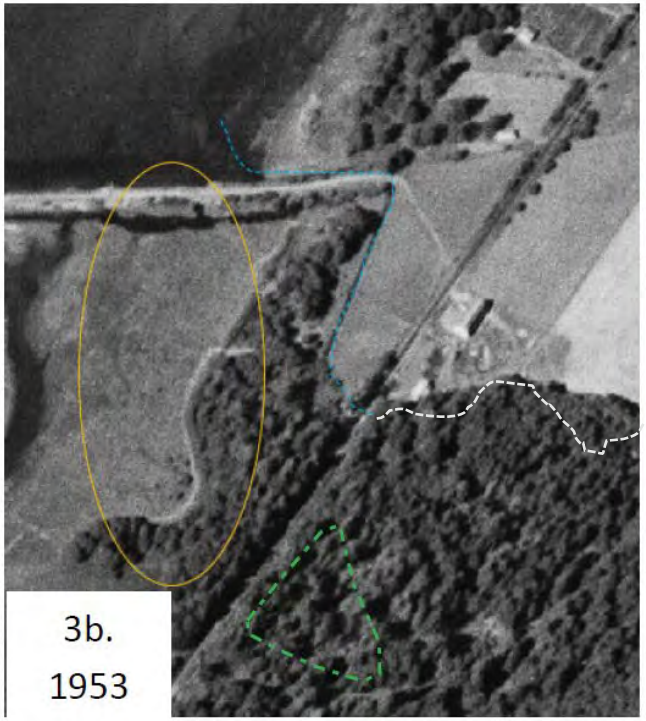


PROFILE VIEW
SCALE: H. 1" = 30', V. 1" = 7.5'

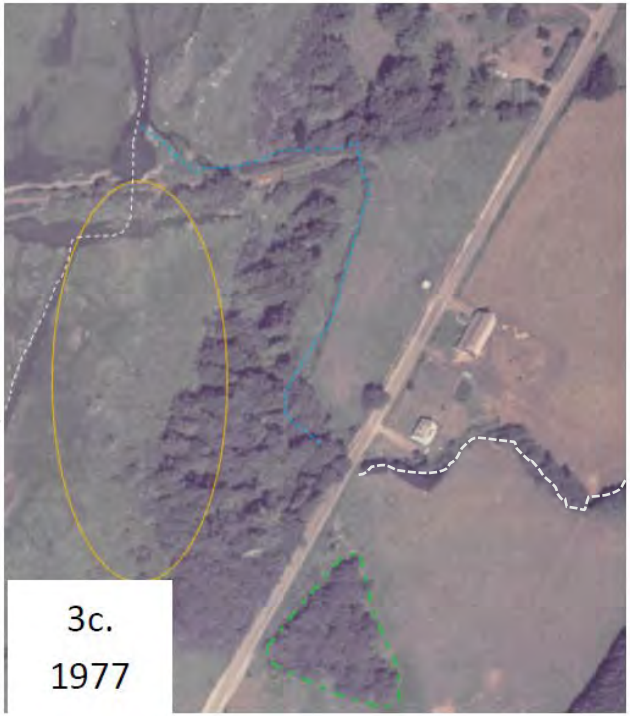
Reneke Creek Hydraulic and Geomorphic Analysis



3a.
1939

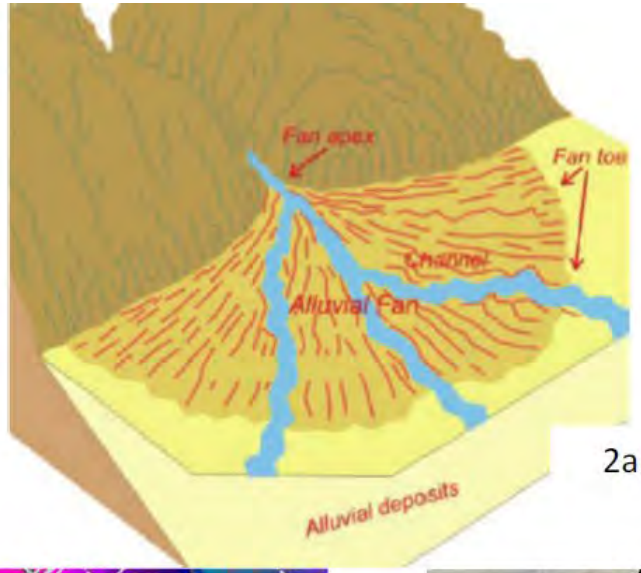


3b.
1953

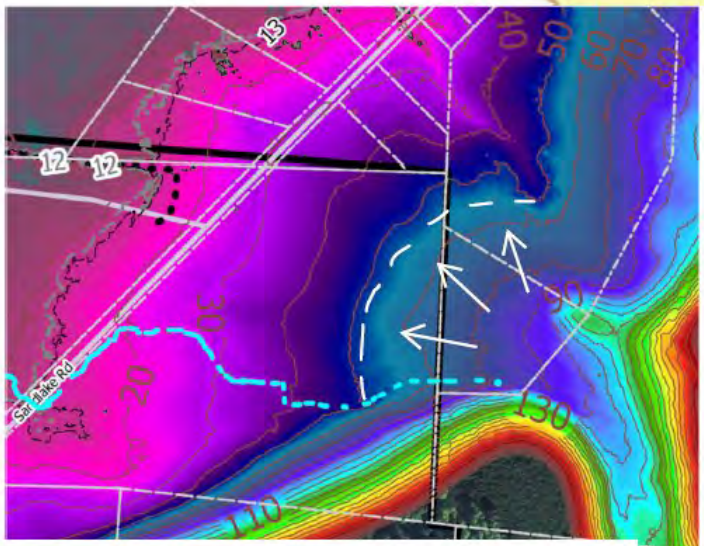


3c.
1977

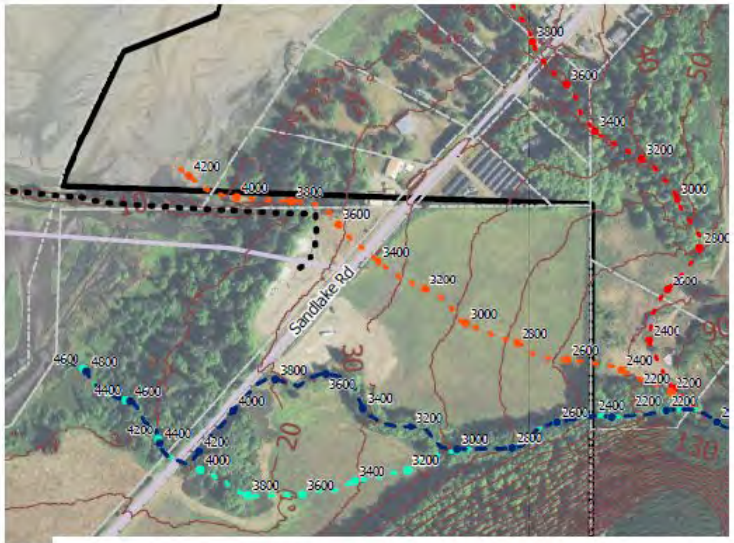
Reneke Creek Hydraulic and Geomorphic Analysis



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

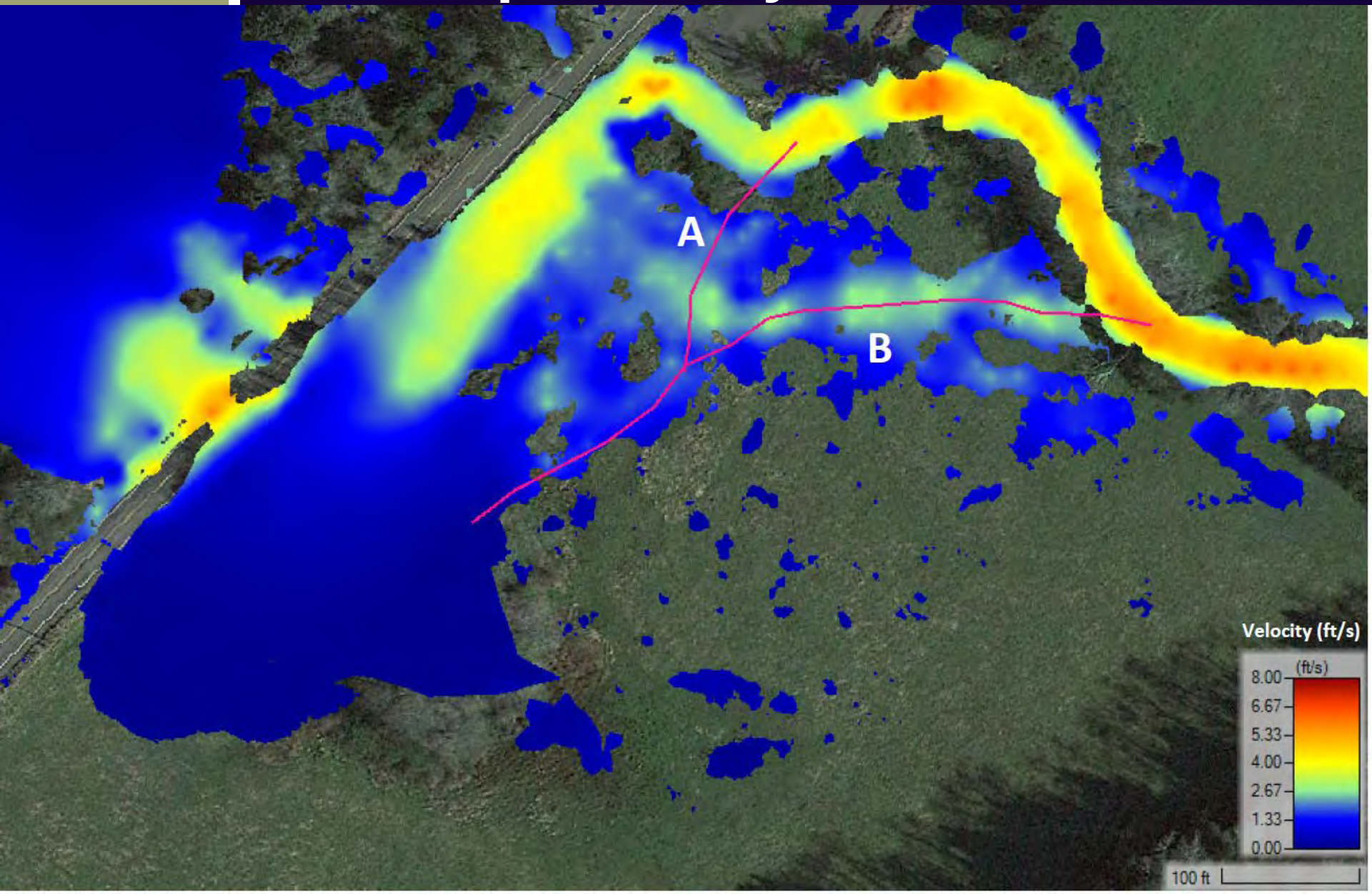


2b. Reneke Creek Alluvial Fan LiDAR Analysis

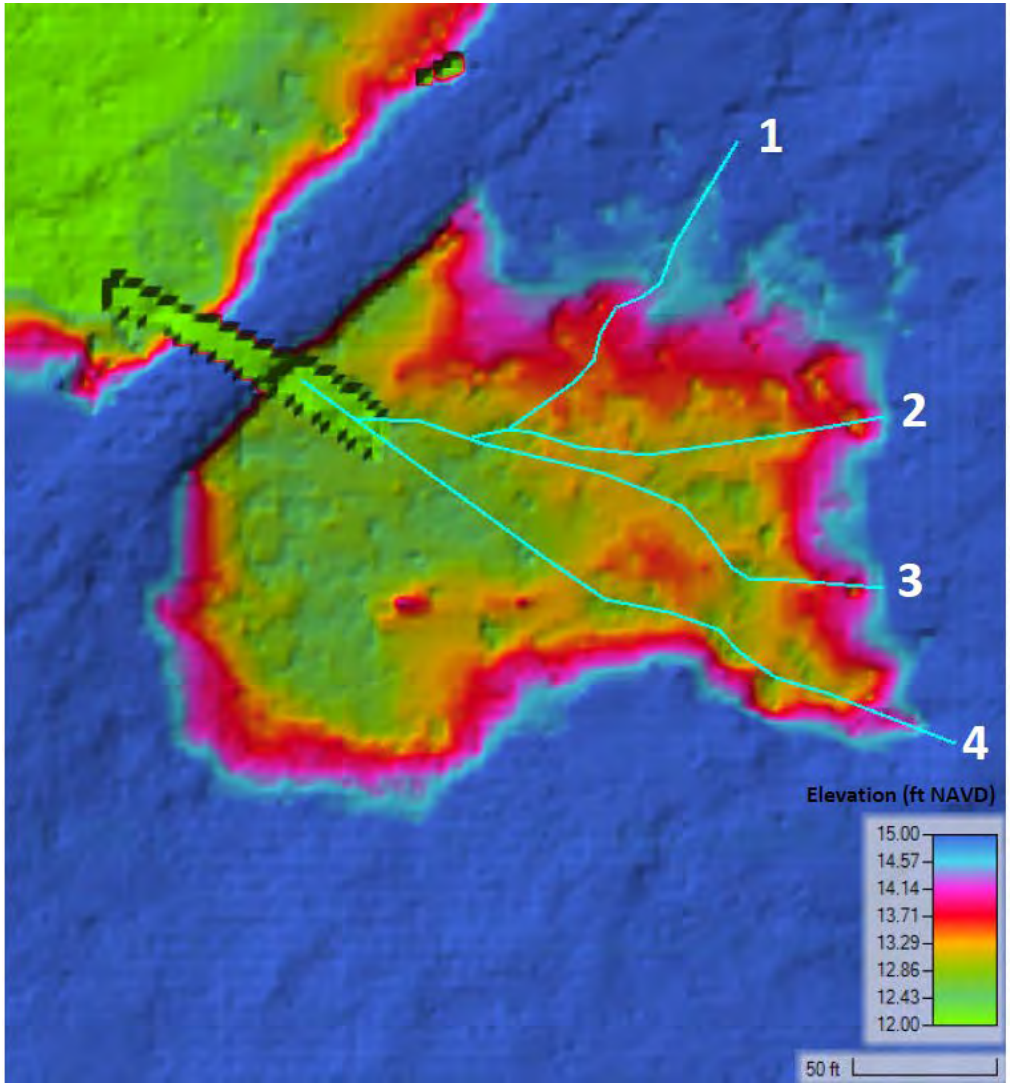


2c. Reneke Creek alignments across alluvial fan

Reneke Creek Hydraulic and Geomorphic Analysis

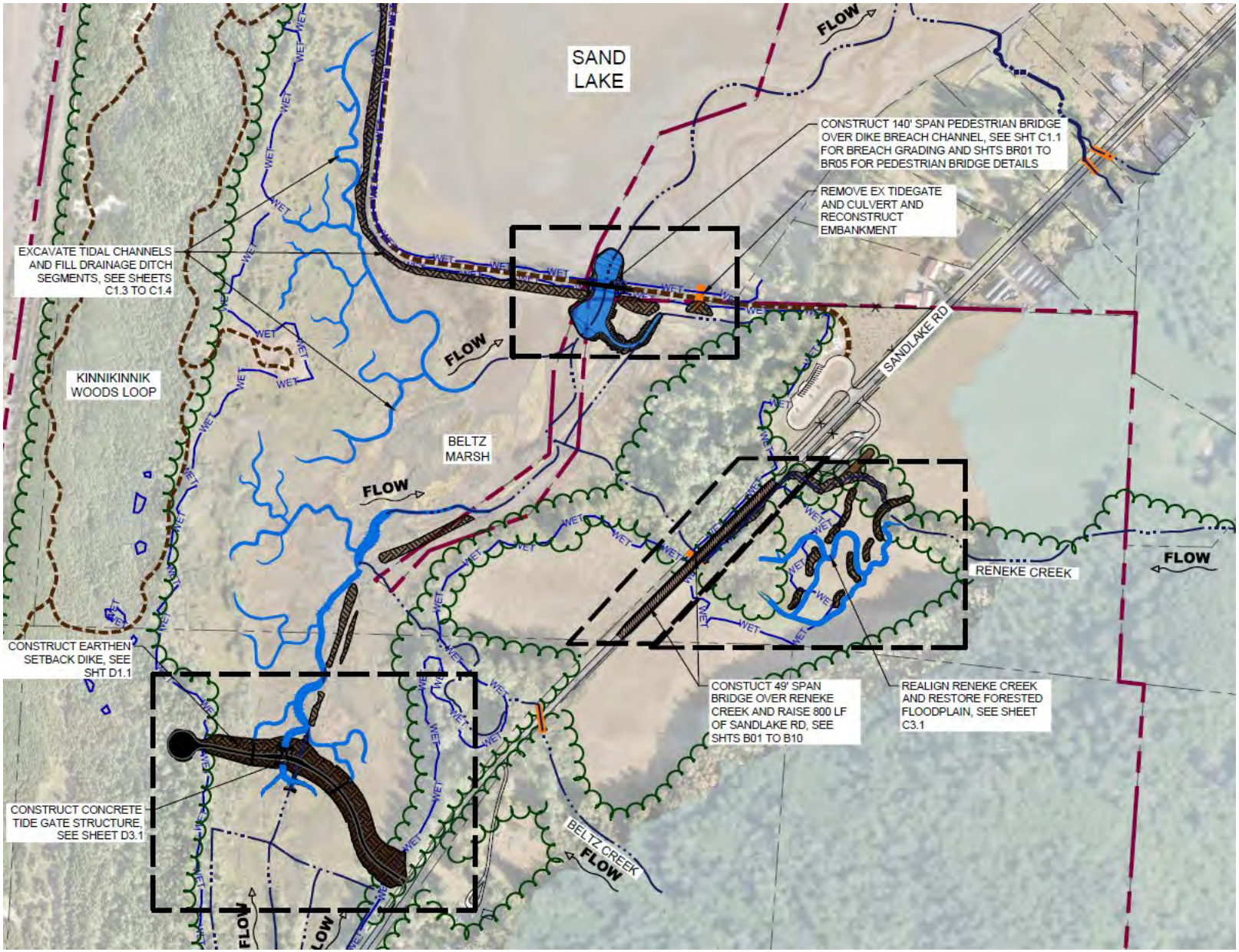


Reneke Creek Hydraulic and Geomorphic Analysis



Reneke Creek – Existing channels within forested wetland

SSTW - 60% Plans – Site Plan Overview



Sitka Sedge Tidal Wetland Restoration: Tech Team Meeting – 60% Design Project Update

Questions or Comments?

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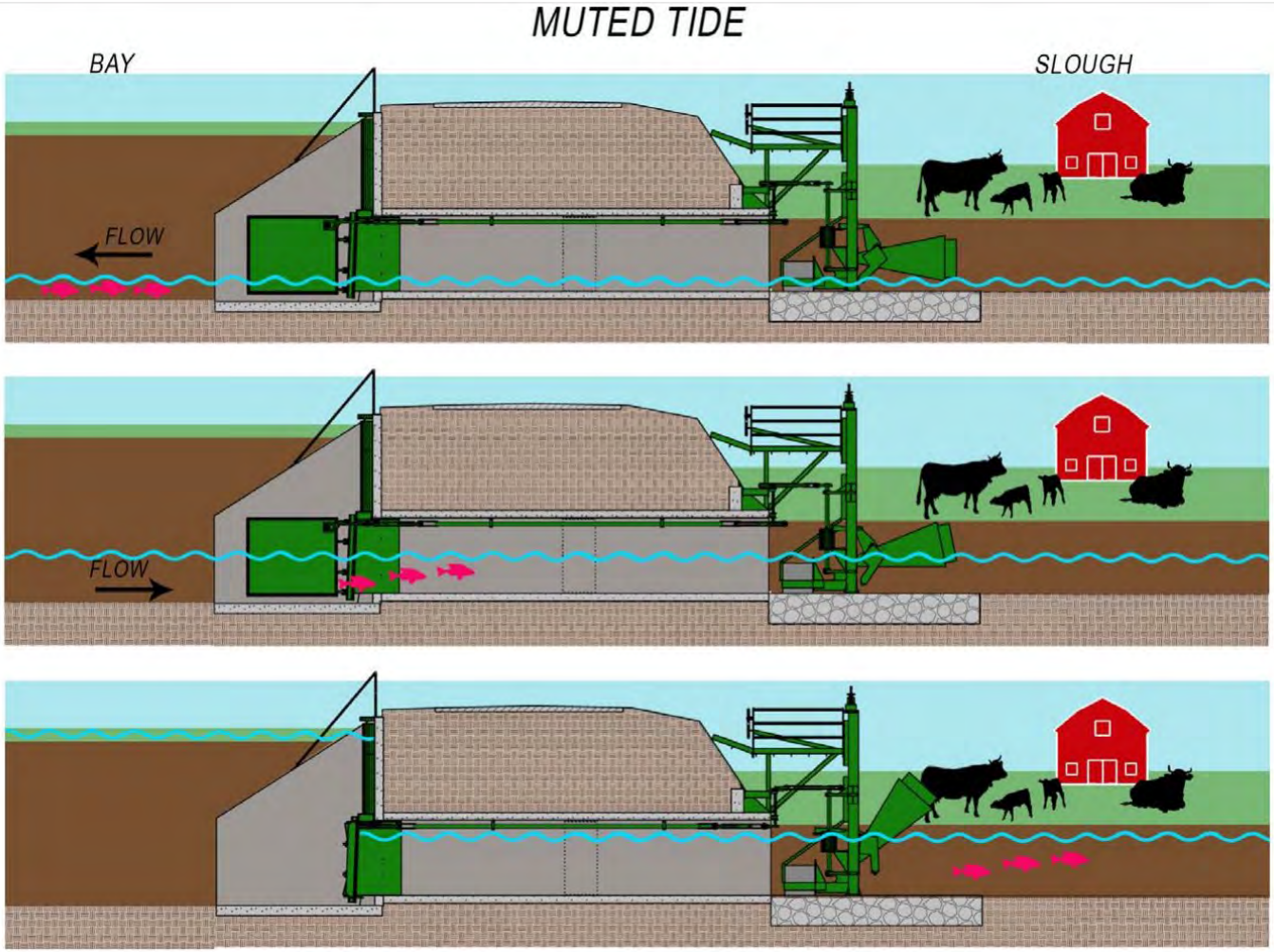
ESA

Muted Tidal Regulator – Tide Gate System Operations Example



- Nehalem Marine Manufacturing – Muted Tidal Regulator