

Lower Columbia Fish Recovery Board Wind River - Stabler Bend Side Channel Habitat Enhancement Project Preliminary Design

February 6, 2017

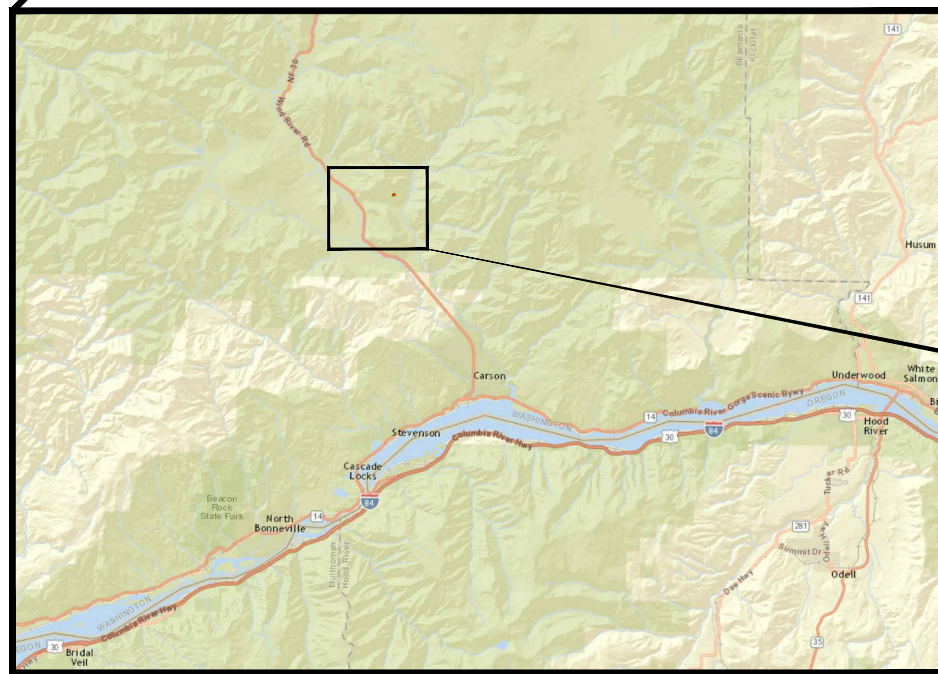
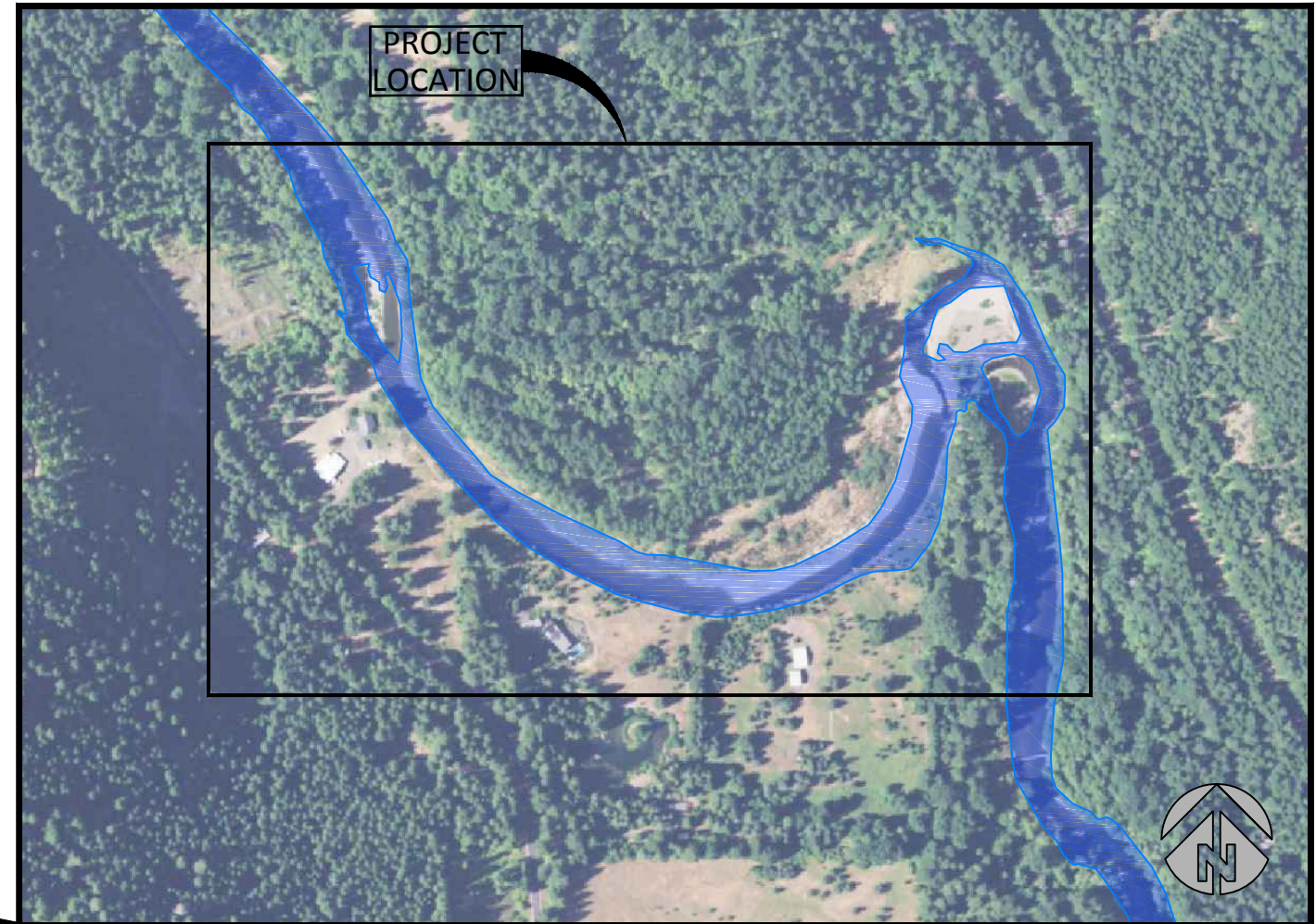


COORDINATES:
LATITUDE: 45°49'19.77"N
LONGITUDE: 121°55'05.04"W

SECTION 22, TOWNSHIP 4N, RANGE 7E

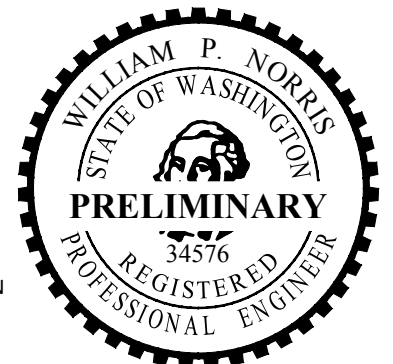
WATERBODY: Wind River

TRIBUTARY OF: Columbia River



SHEET INDEX

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- 2 - EXISTING CONDITIONS AND LAND OWNERSHIP
- 3 - PROPOSED CONDITIONS, ACCESS, STAGING, AND SHEET INDEX
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REP DRAWN	GJ,BN DESIGNED	GJ,BN CHECKED
GJ,BN APPROVED	2-6-17 DATE	150256 PROJECT

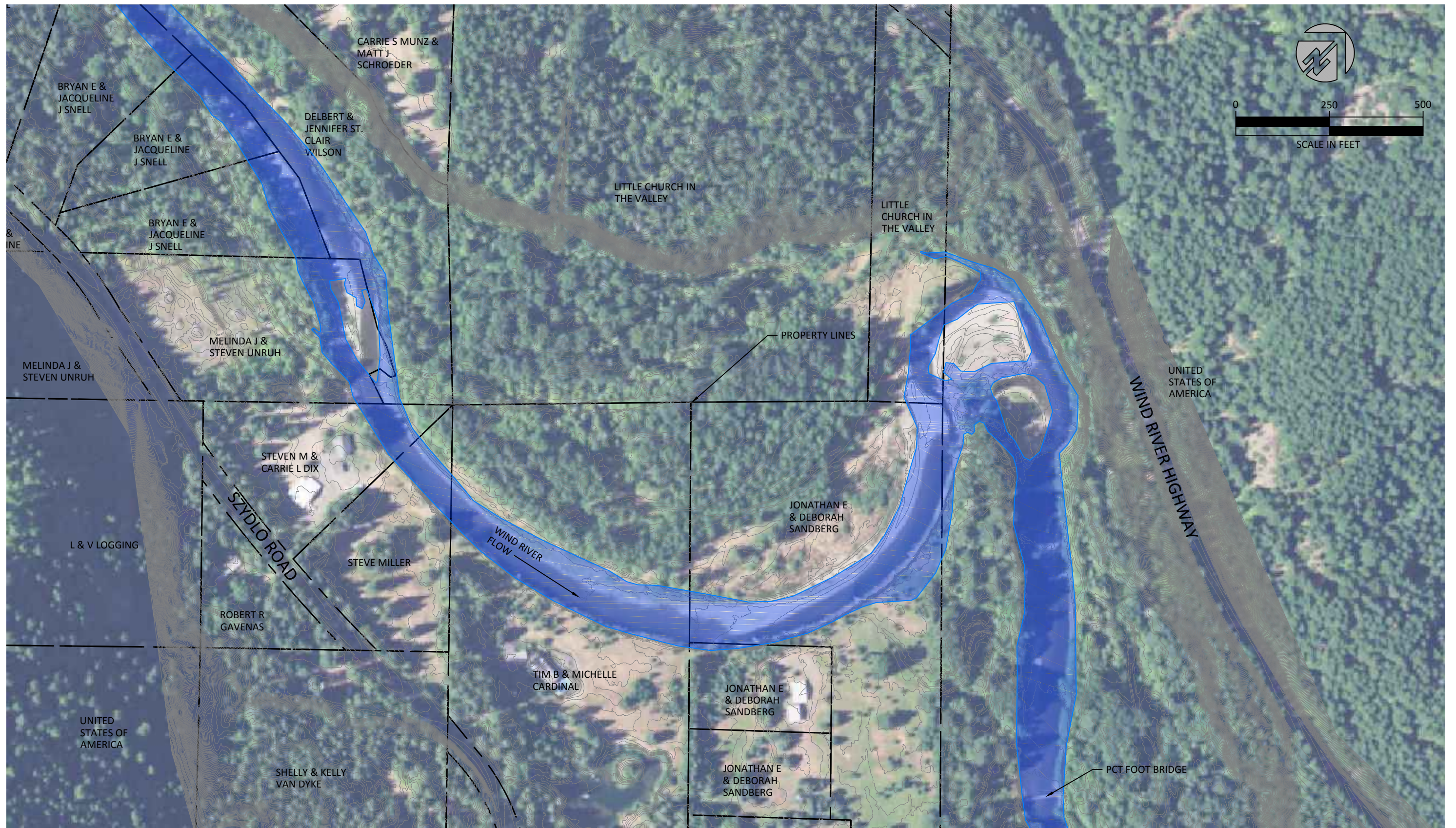
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COVER SHEET INDEX, AND
VICINITY MAPS

SHEET
1 OF 14



SITE MAP

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EXISTING CONDITIONS AND
 LAND OWNERSHIP



LEGEND

- PROPOSED CHANNEL
- WIND RIVER
- STAGING AREAS
- ACCESS ROADS

SCALE IN FEET

SITE MAP
NOT TO SCALE

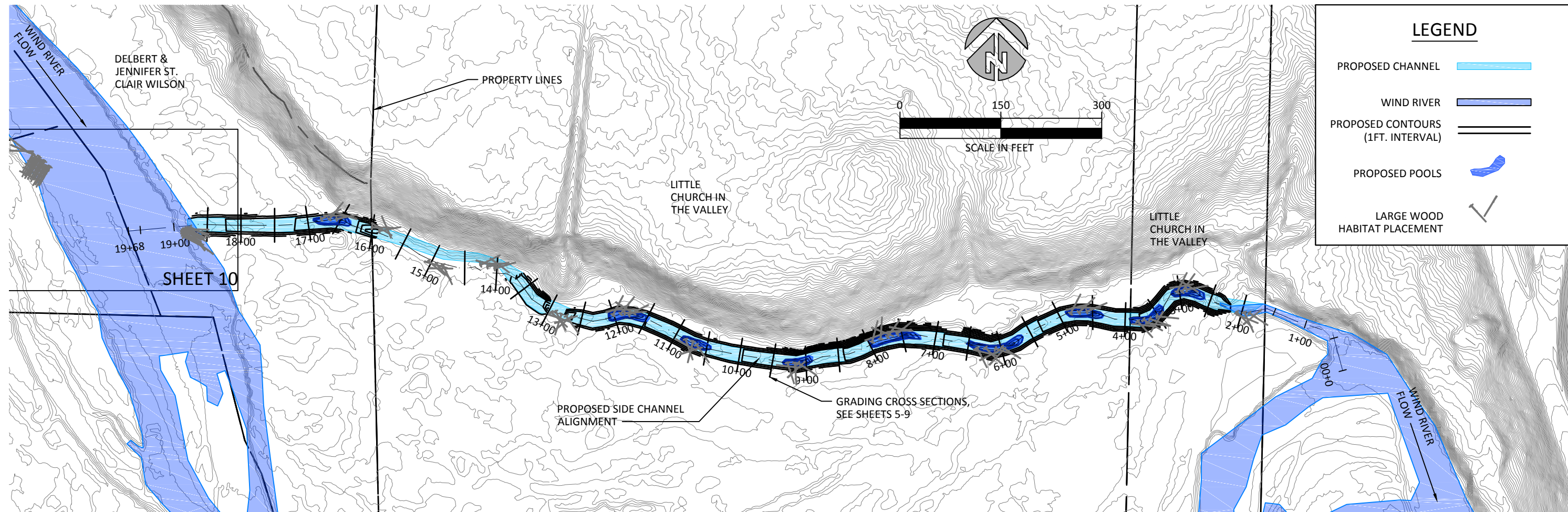
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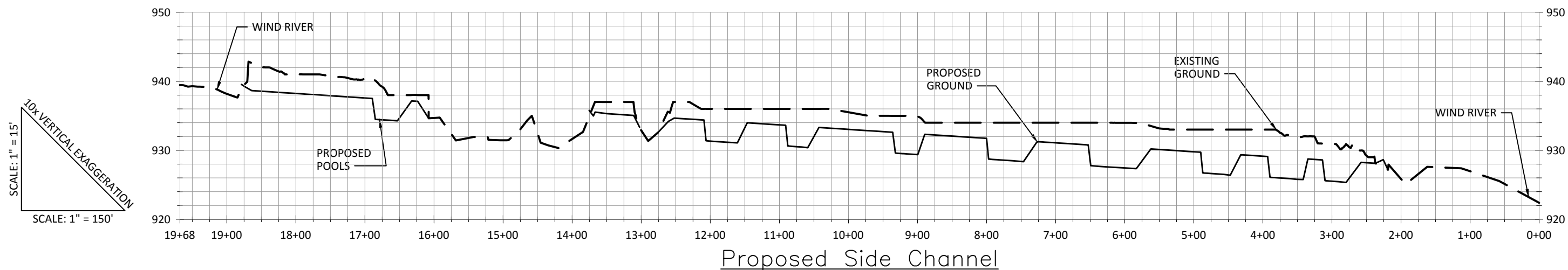
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**PROPOSED CONDITIONS,
ACCESS, STAGING AND SHEET
INDEX**



SITE MAP
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Proposed Side Channel

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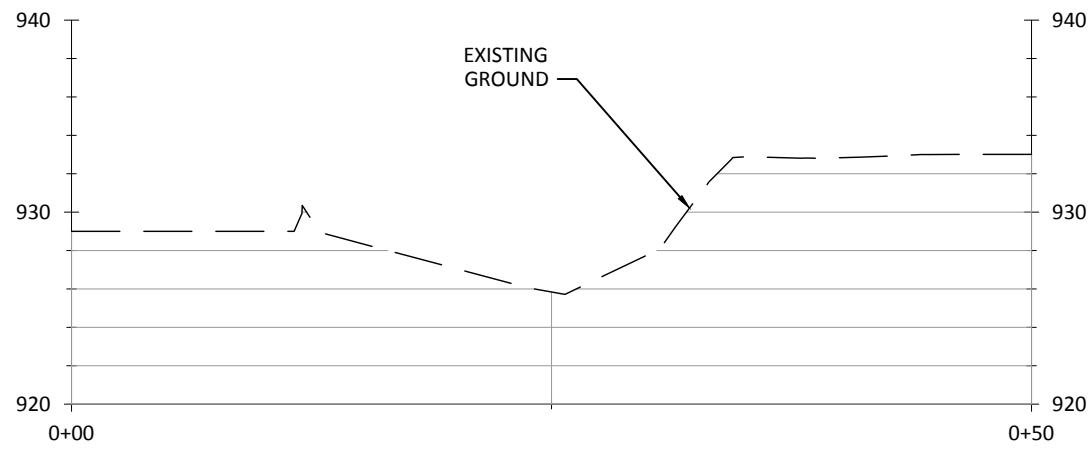
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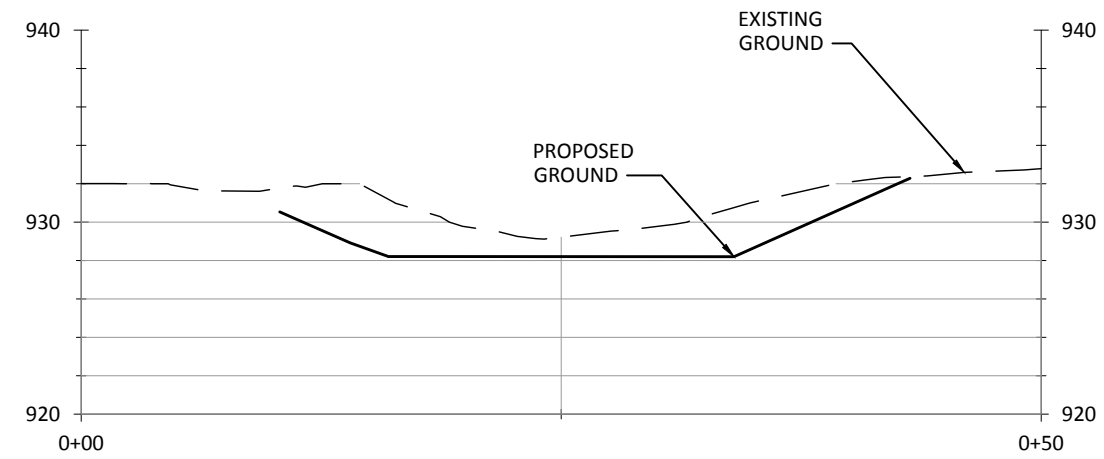
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**PROPOSED SIDE CHANNEL -
PLAN VIEW**

SHEET
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Proposed Cross-Section - 2+00

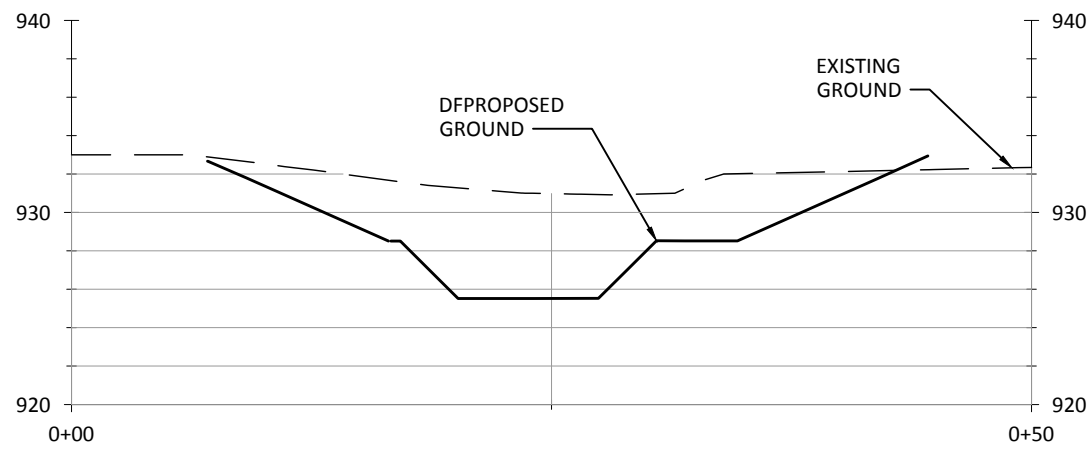


Proposed Cross-Section - 2+50

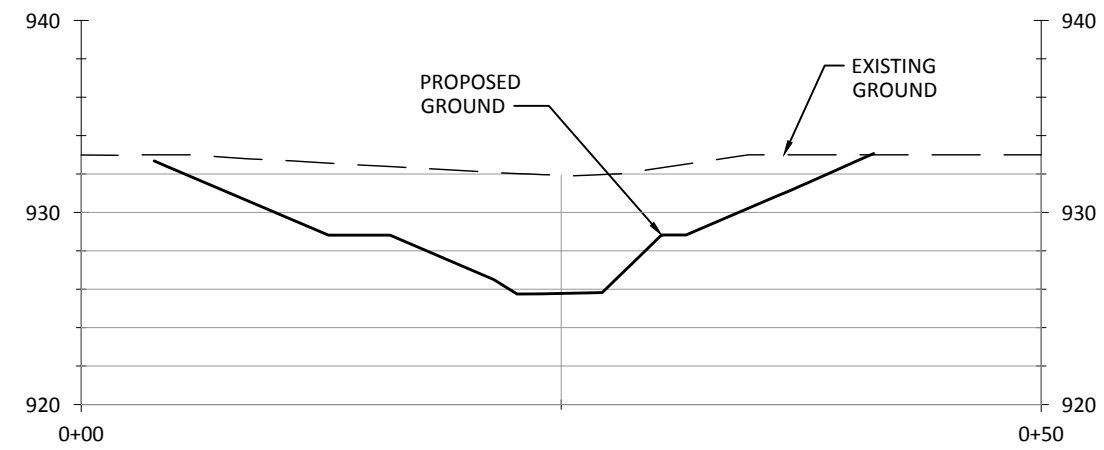
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 SCALE: 1" = 10'

LEGEND

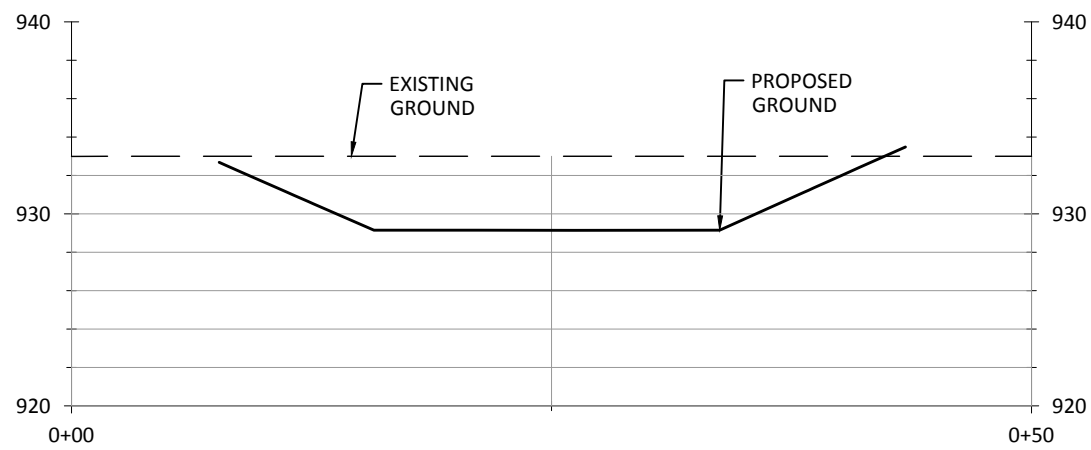
EXISTING GROUND ———
 PROPOSED GROUND ———



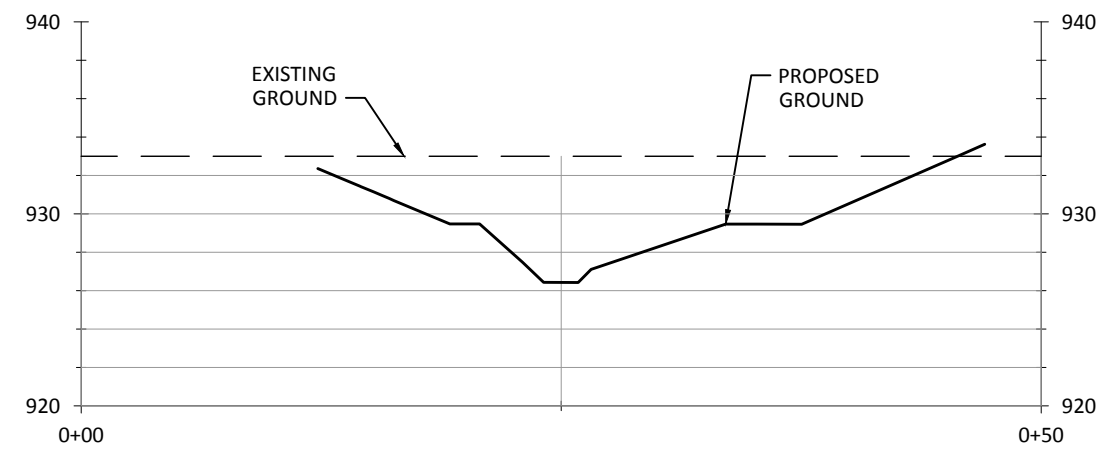
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Proposed Cross-Section - 3+50



Proposed Cross-Section - 4+00



Proposed Cross-Section - 4+50

NO.	BY	DATE	REVISION DESCRIPTION

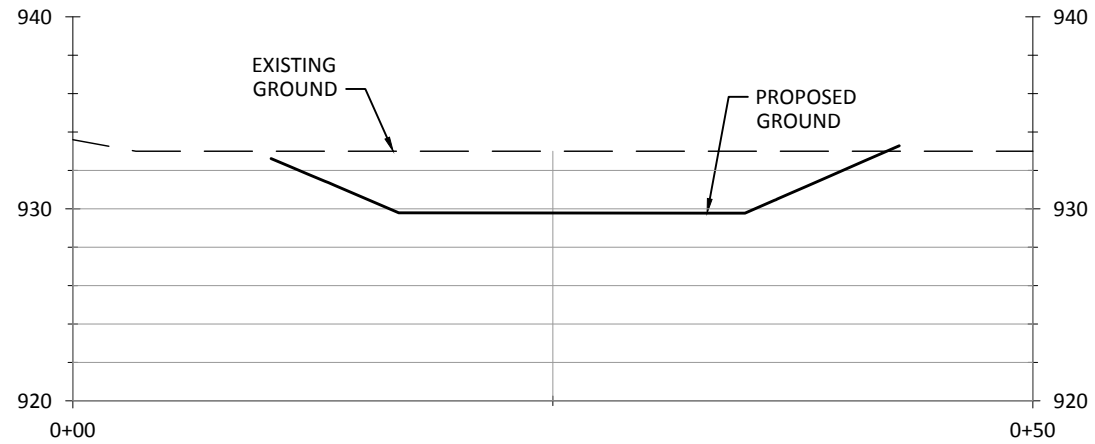
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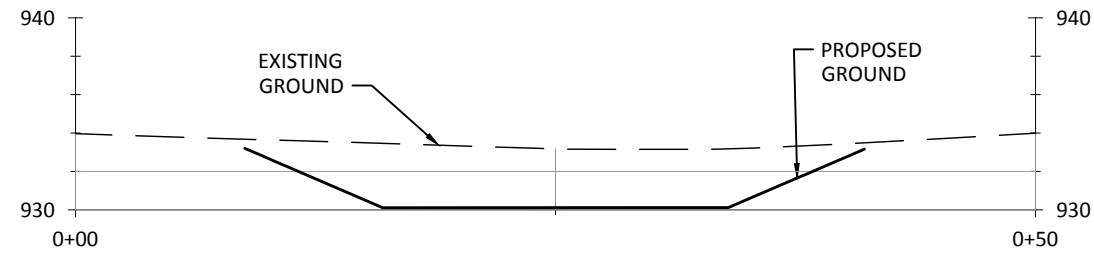


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PROPOSED SIDE CHANNEL
 CROSS SECTIONS



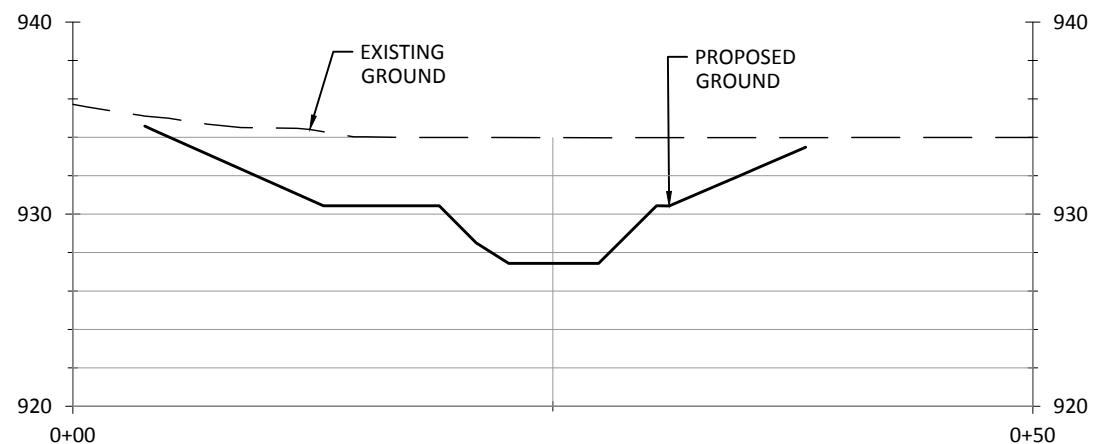
Proposed Cross-Section - 5+00



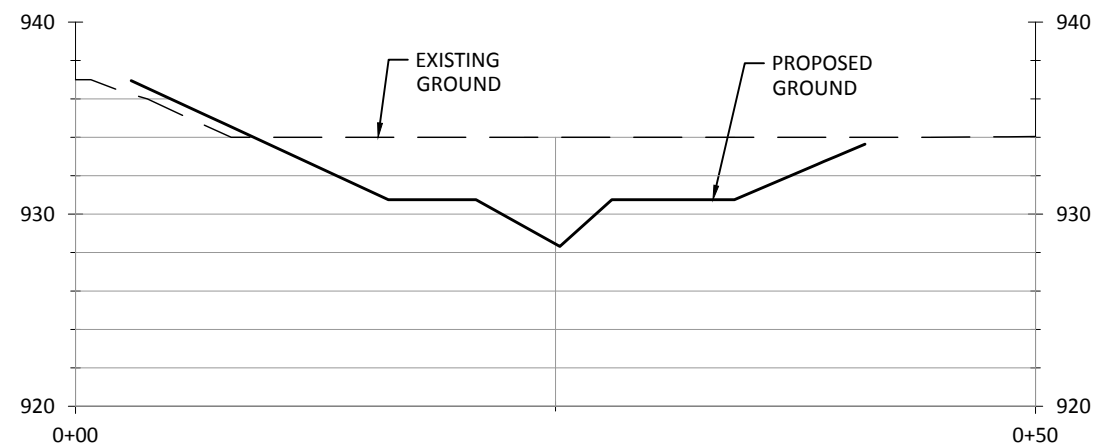
Proposed Cross-Section - 5+50

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SCALE: 1" = 10'

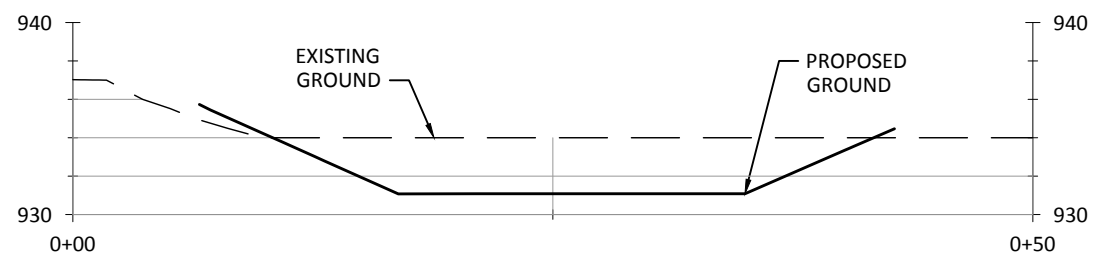
LEGEND
EXISTING GROUND ———
PROPOSED GROUND ———



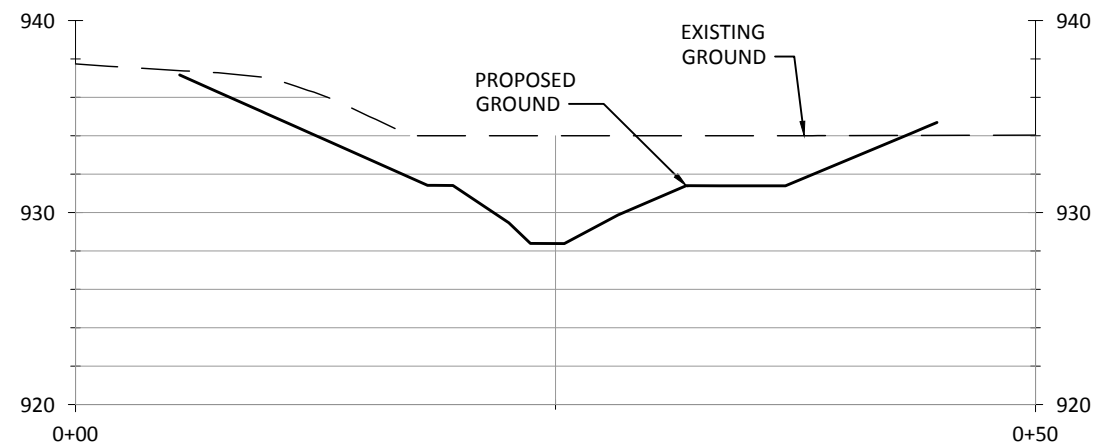
Proposed Cross-Section - 6+00



Proposed Cross-Section - 6+50



Proposed Cross-Section - 7+00



Proposed Cross-Section - 7+50

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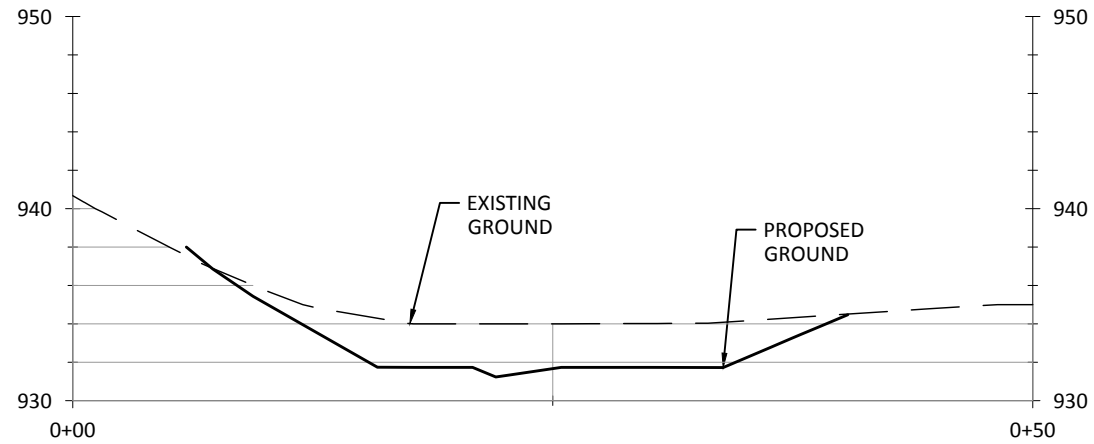
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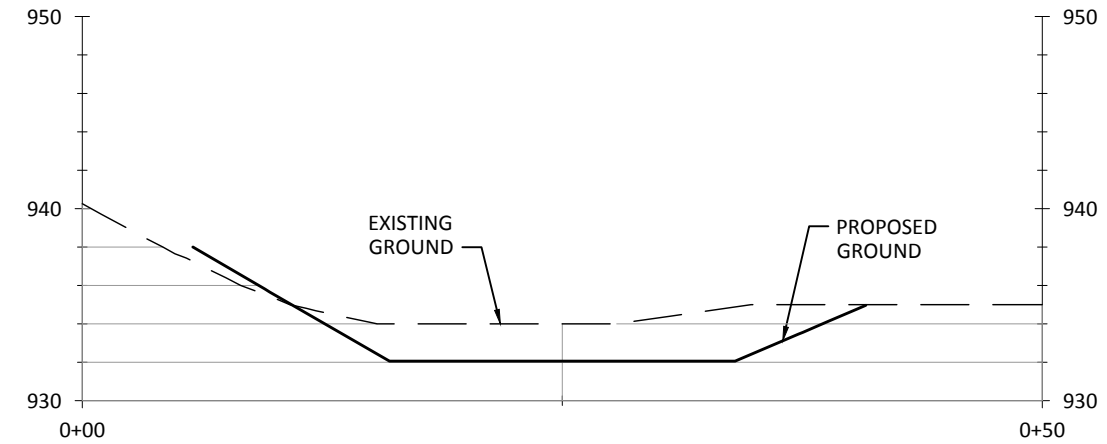


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PROPOSED SIDE CHANNEL
CROSS SECTIONS



Proposed Cross-Section - 8+00

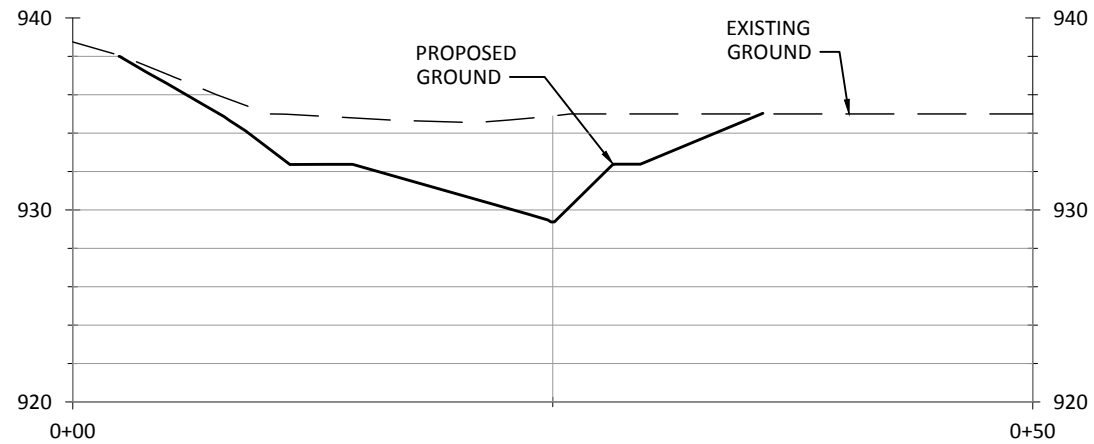


Proposed Cross-Section - 8+50

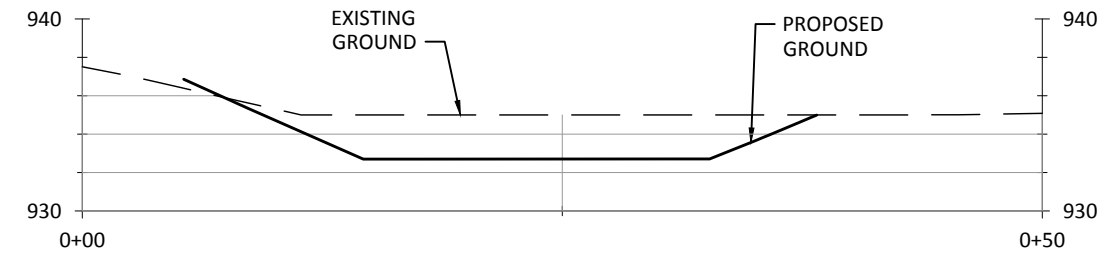
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1x VERTICAL EXAGGERATION

LEGEND

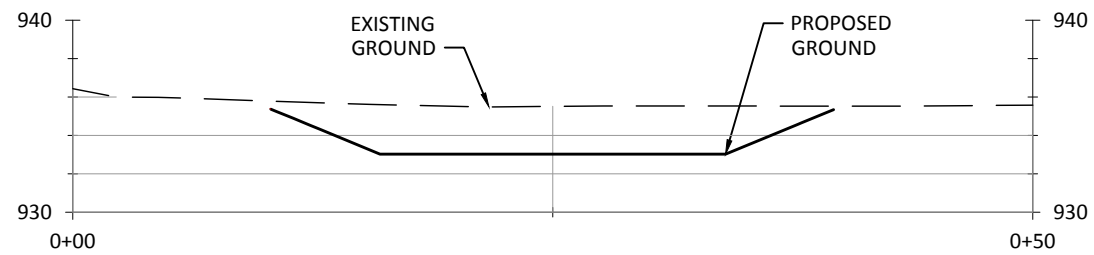
EXISTING GROUND ———
PROPOSED GROUND ———



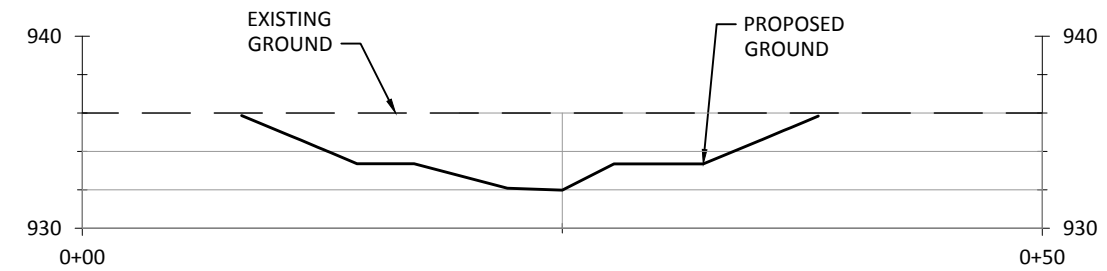
Proposed Cross-Section - 9+00



Proposed Cross-Section - 9+50



Proposed Cross-Section - 10+00



Proposed Cross-Section - 10+50

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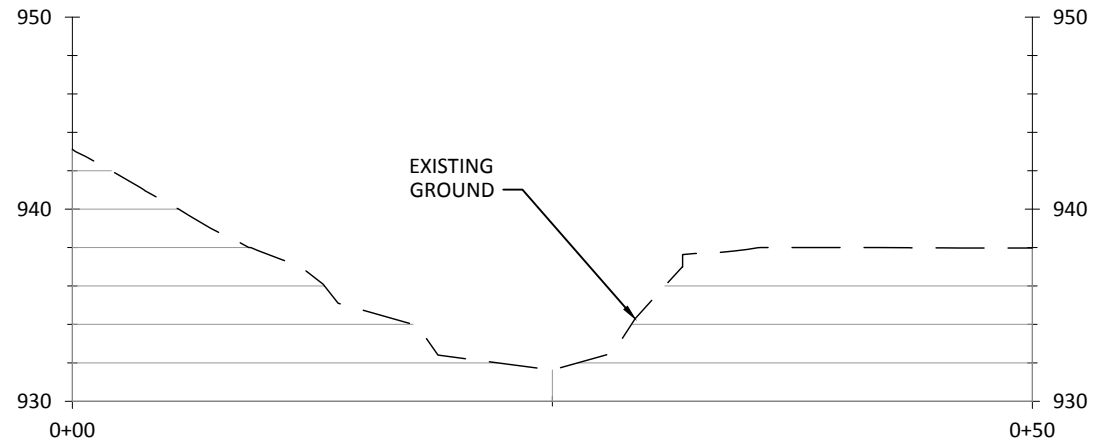
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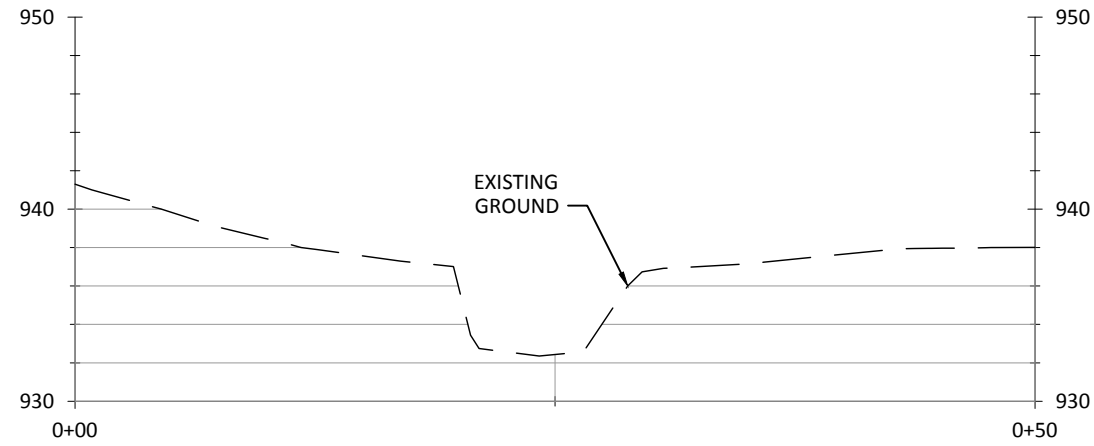
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PROPOSED SIDE CHANNEL
CROSS SECTIONS

SHEET
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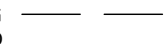
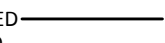
Proposed Cross-Section - 14+00

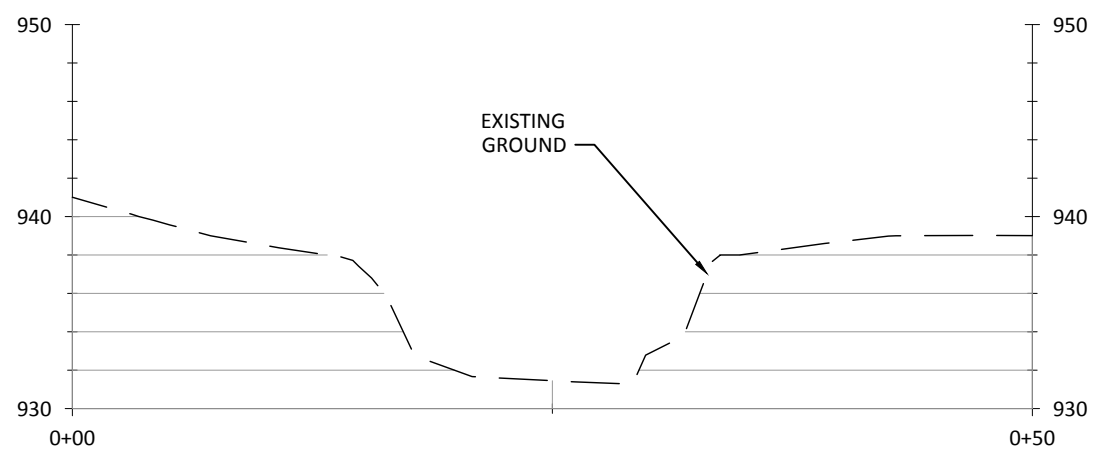


Proposed Cross-Section - 14+50

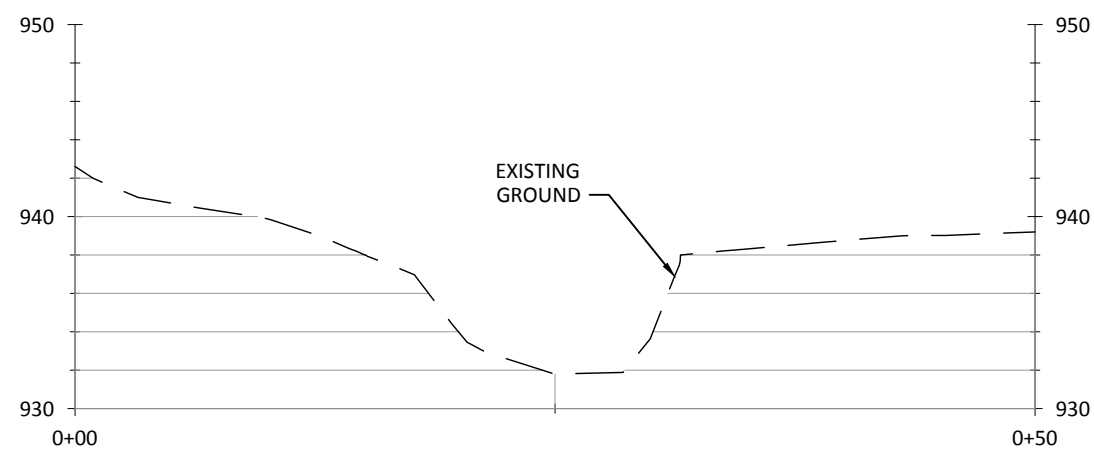
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SCALE: 1" = 10'

LEGEND

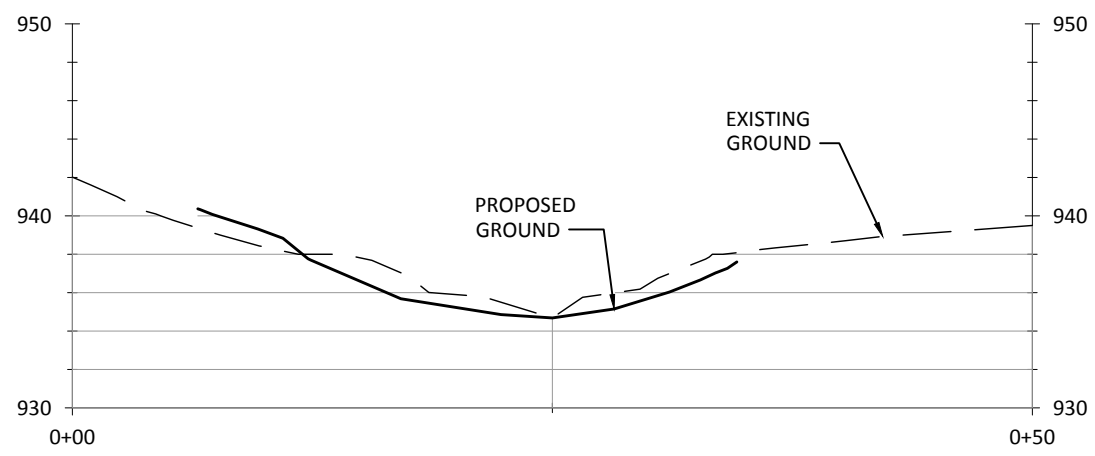
EXISTING GROUND 
PROPOSED GROUND 



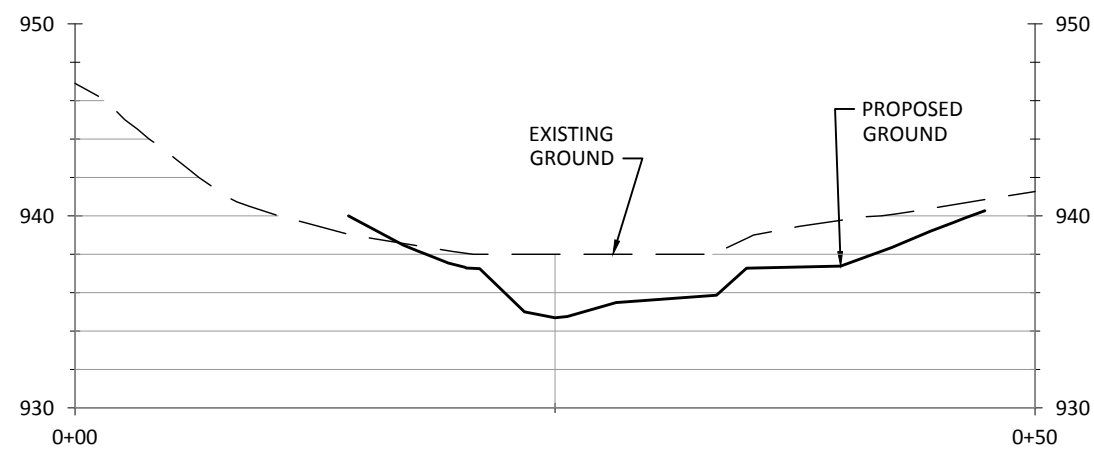
Proposed Cross-Section - 15+00



Proposed Cross-Section - 15+50



Proposed Cross-Section - 16+00



Proposed Cross-Section - 16+50

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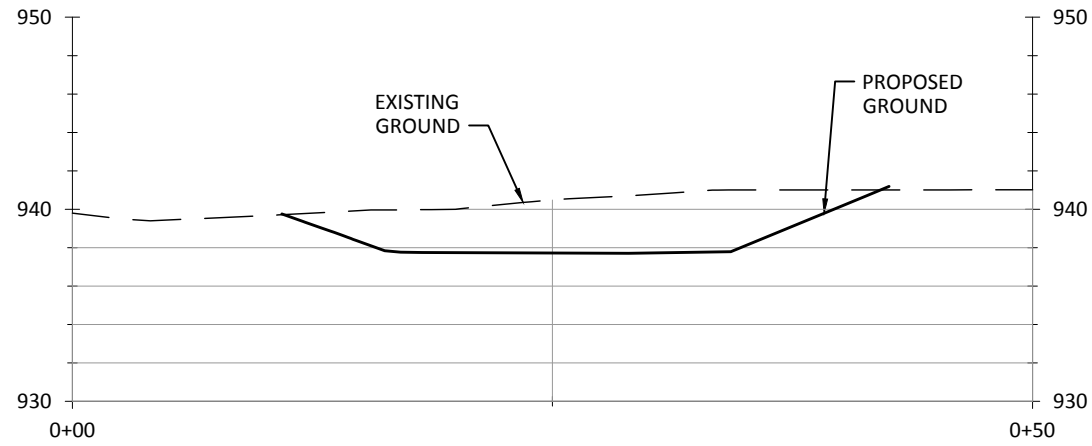
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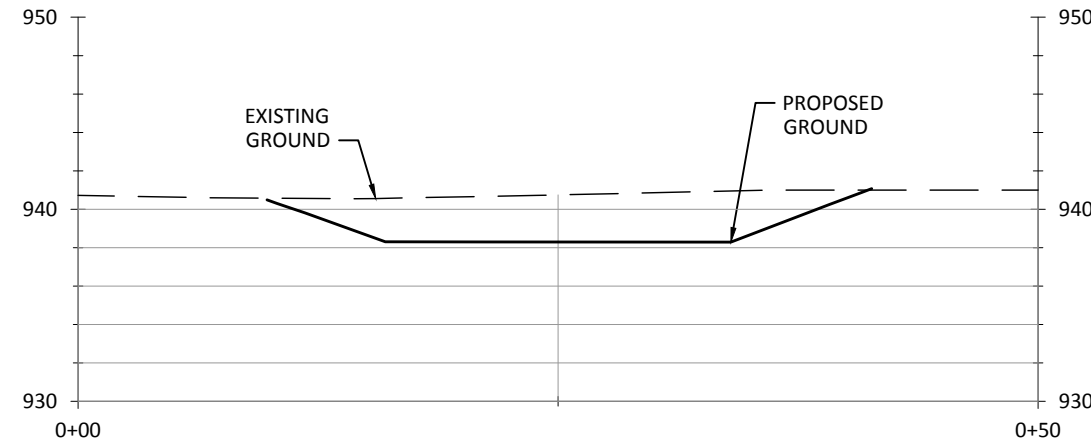


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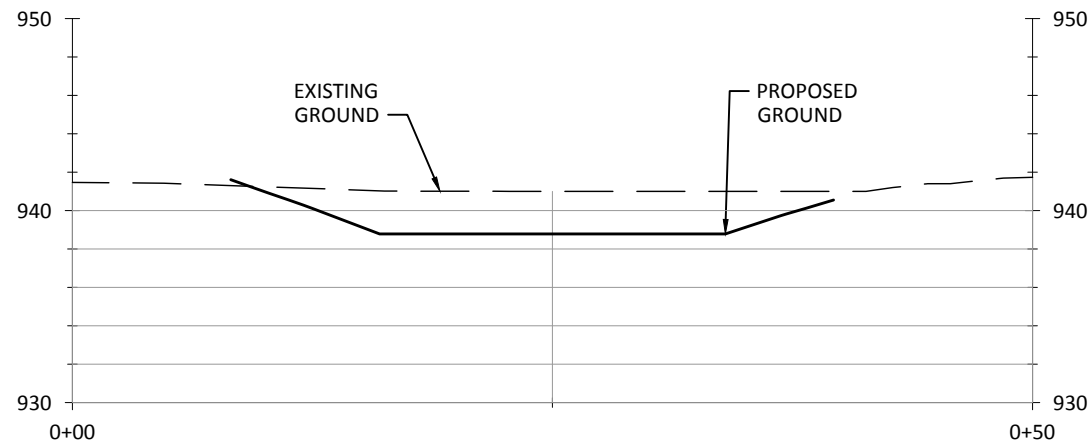
PROPOSED SIDE CHANNEL
CROSS SECTIONS



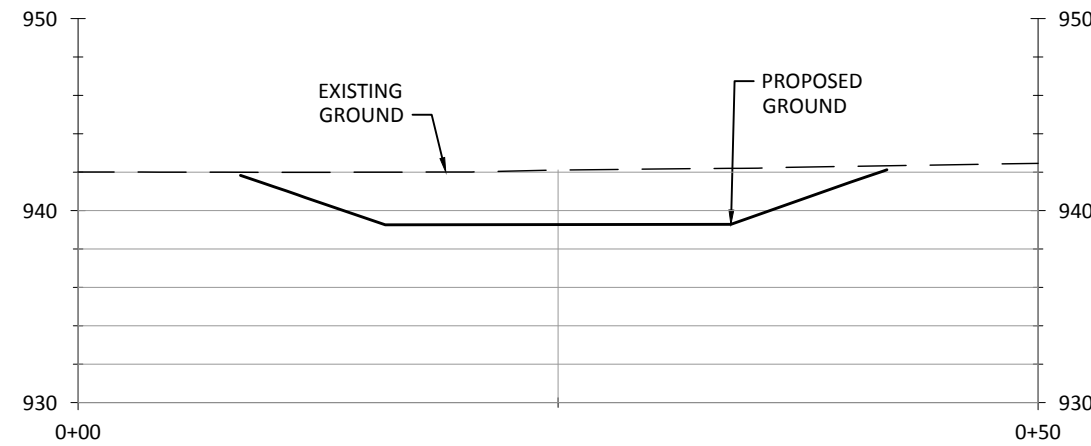
Proposed Cross-Section - 17+00



Proposed Cross-Section - 17+50



Proposed Cross-Section - 18+00



Proposed Cross-Section - 18+50

SCALE: 1" = 10'
 1X VERTICAL EXAGGERATION
 SCALE: 1" = 10'

LEGEND

EXISTING GROUND ———
 PROPOSED GROUND ———

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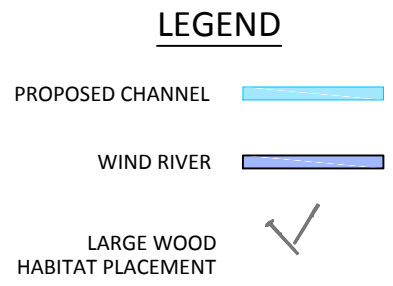
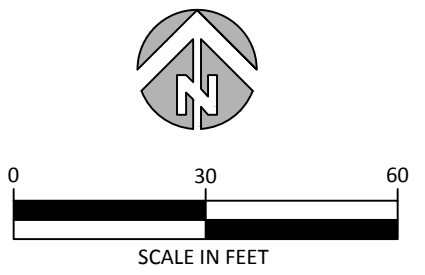
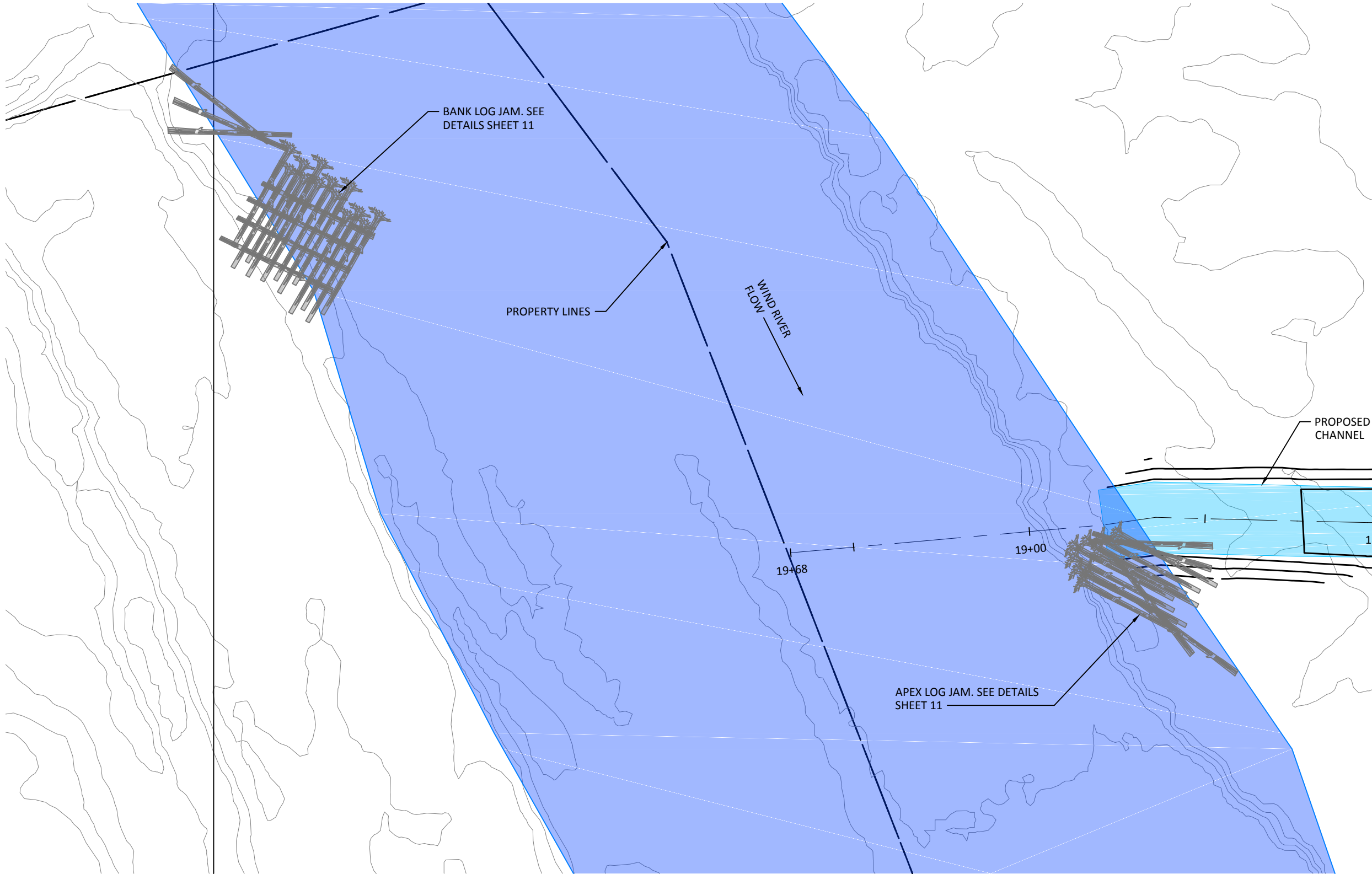
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PROPOSED SIDE CHANNEL
 CROSS SECTIONS



SITE MAP
NOT TO SCALE

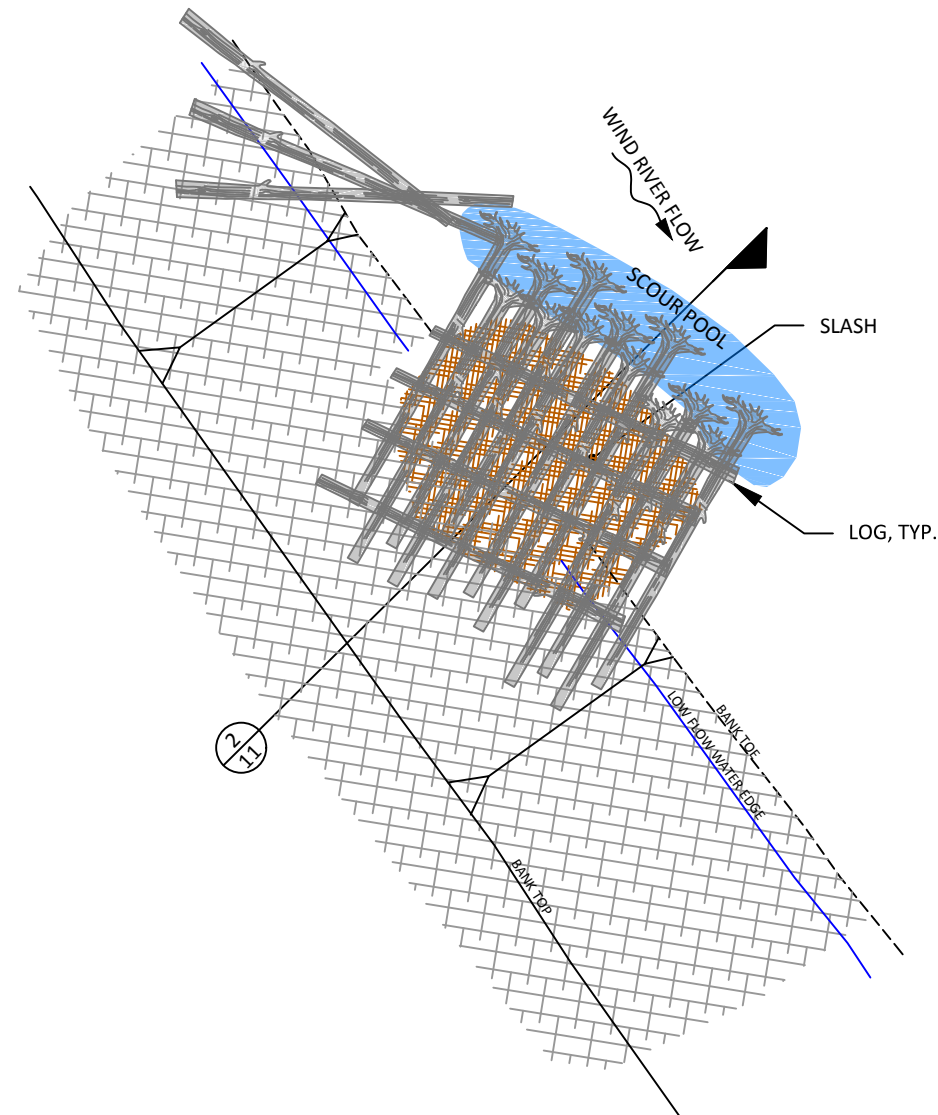
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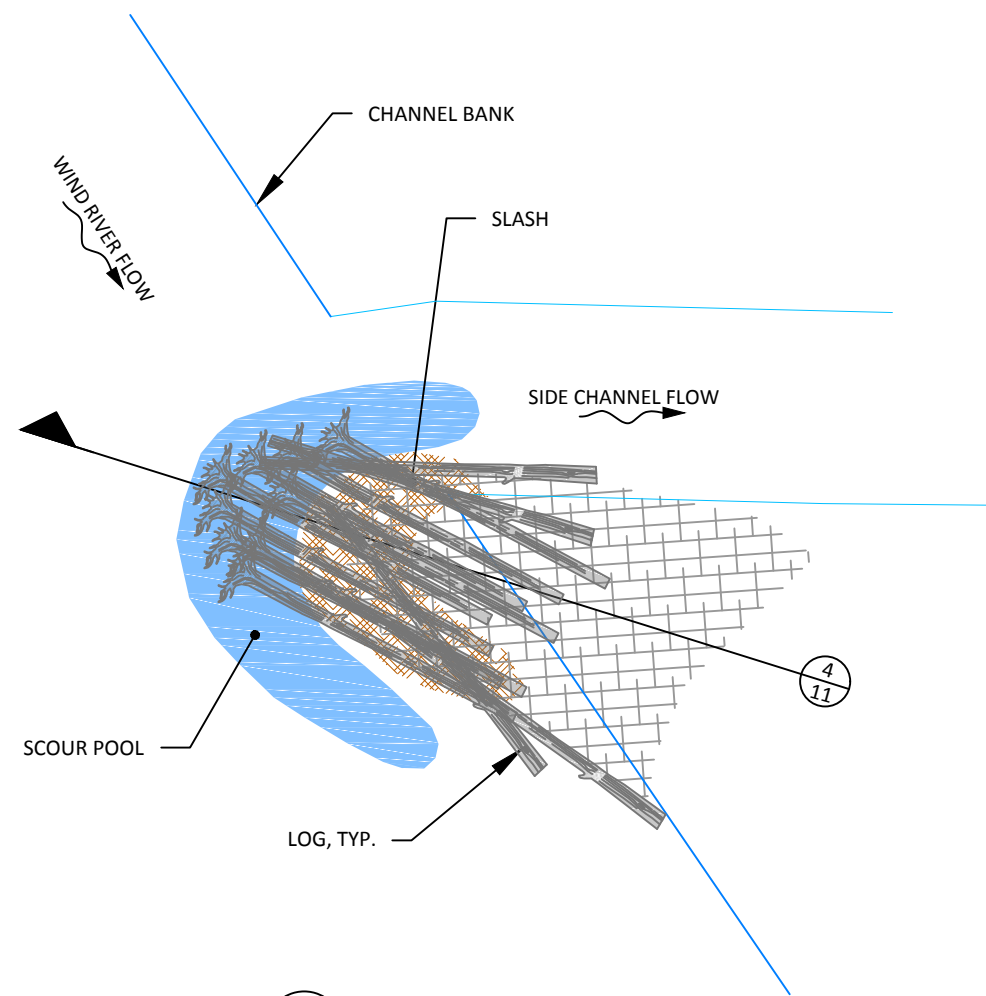
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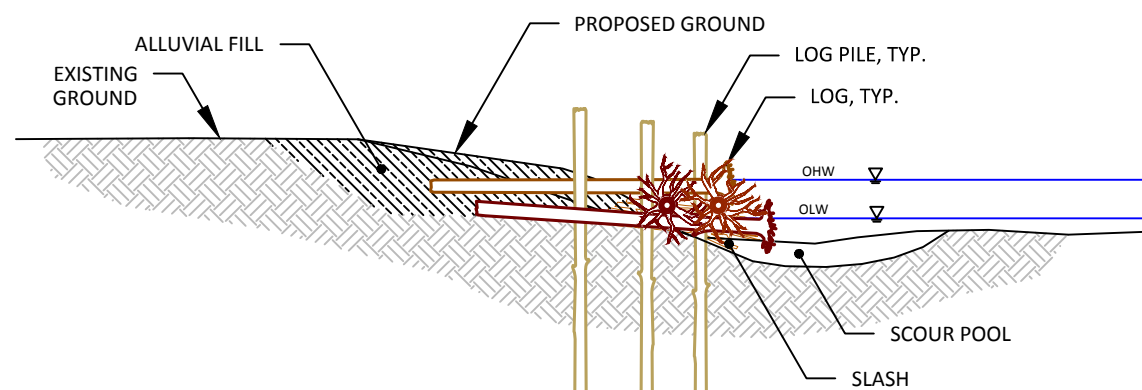
**PROPOSED CONDITIONS
LARGE WOOD STRUCTURES**



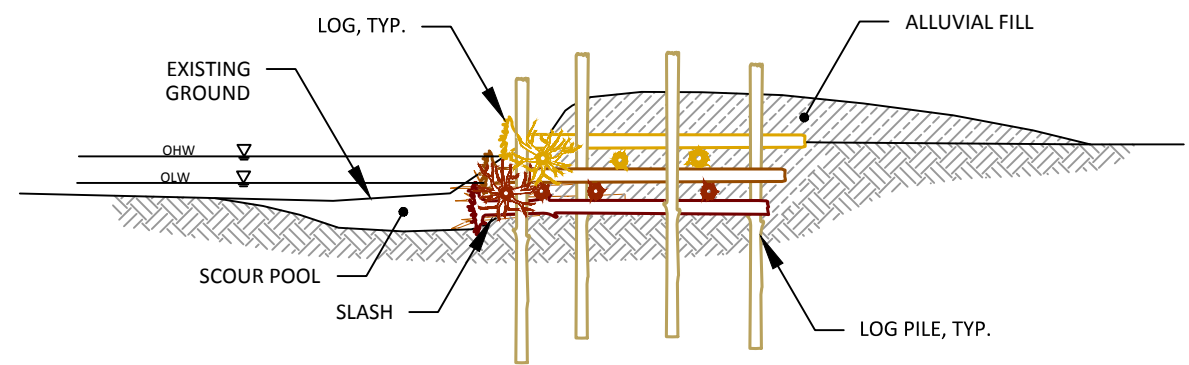
1 PLAN
11 BANK LOG JAM



3 PLAN
11 APEX LOG JAM



2 SECTION
11 BANK LOG JAM



4 SECTION
11 APEX LOG JAM

NO.	BY	DATE	REVISION DESCRIPTION

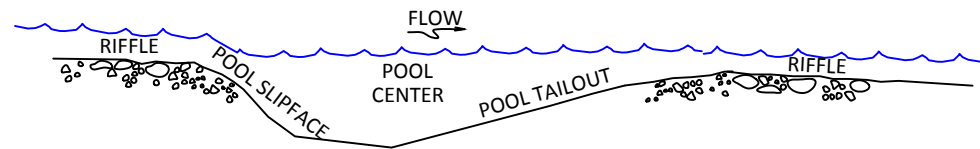
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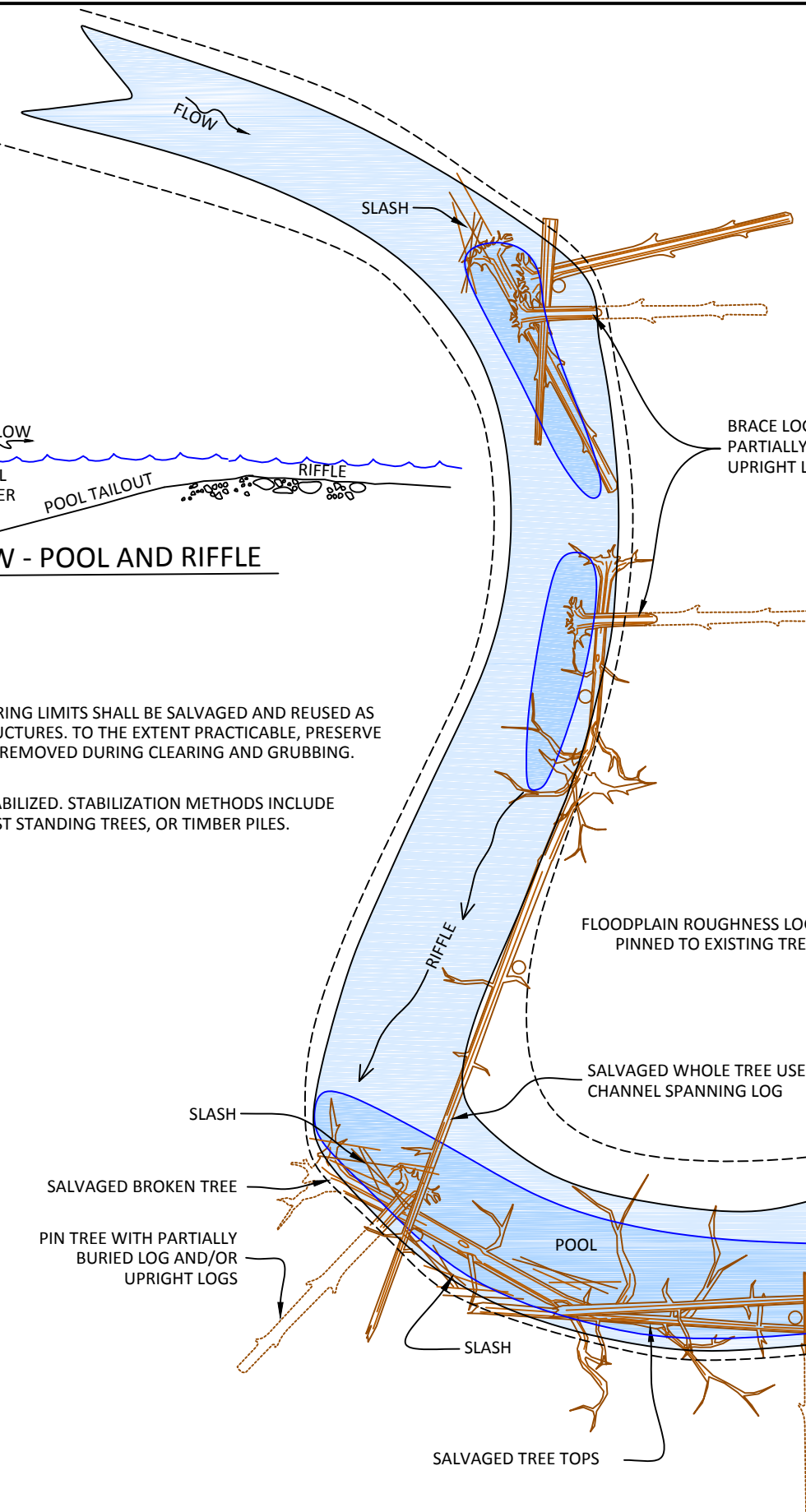
PROPOSED CONDITIONS
LARGE WOOD STRUCTURES
DETAILS



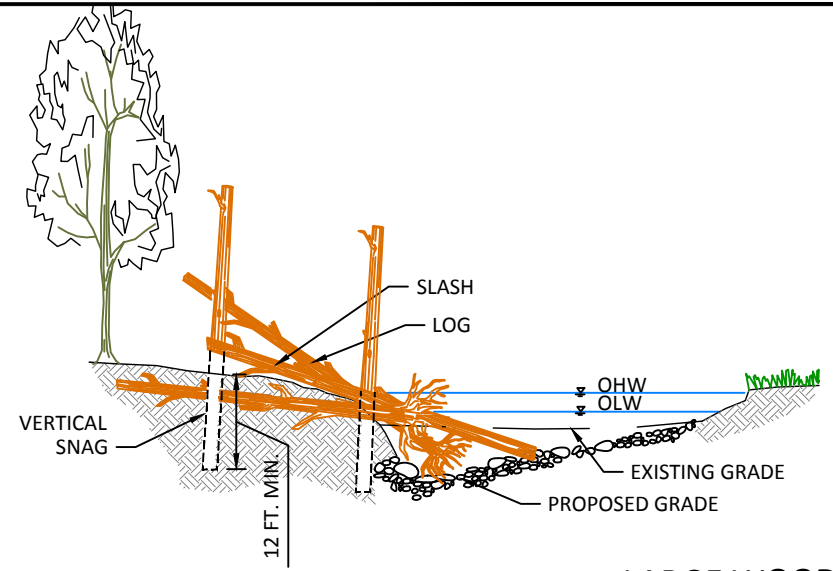
1
12 PROFILE VIEW - POOL AND RIFFLE
NOT TO SCALE

NOTES:

1. TREES AND SHRUBS WITHIN CLEARING LIMITS SHALL BE SALVAGED AND REUSED AS LOGS AND SLASH IN HABITAT STRUCTURES. TO THE EXTENT PRACTICABLE, PRESERVE BRANCHES AND ROOTS ON TREES REMOVED DURING CLEARING AND GRUBBING.
2. WOOD STRUCTURES SHALL BE STABILIZED. STABILIZATION METHODS INCLUDE PARTIAL BURIAL, BRACING AGAINST STANDING TREES, OR TIMBER PILES.



2
12 PLAN VIEW- TYPICAL SIDE CHANNEL LARGE WOOD CONFIGURATIONS
NOT TO SCALE



3
12 SECTION VIEW - TYPICAL SIDE CHANNEL LARGE WOOD PLACEMENT"
NOT TO SCALE

NO.	BY	DATE	REVISION DESCRIPTION

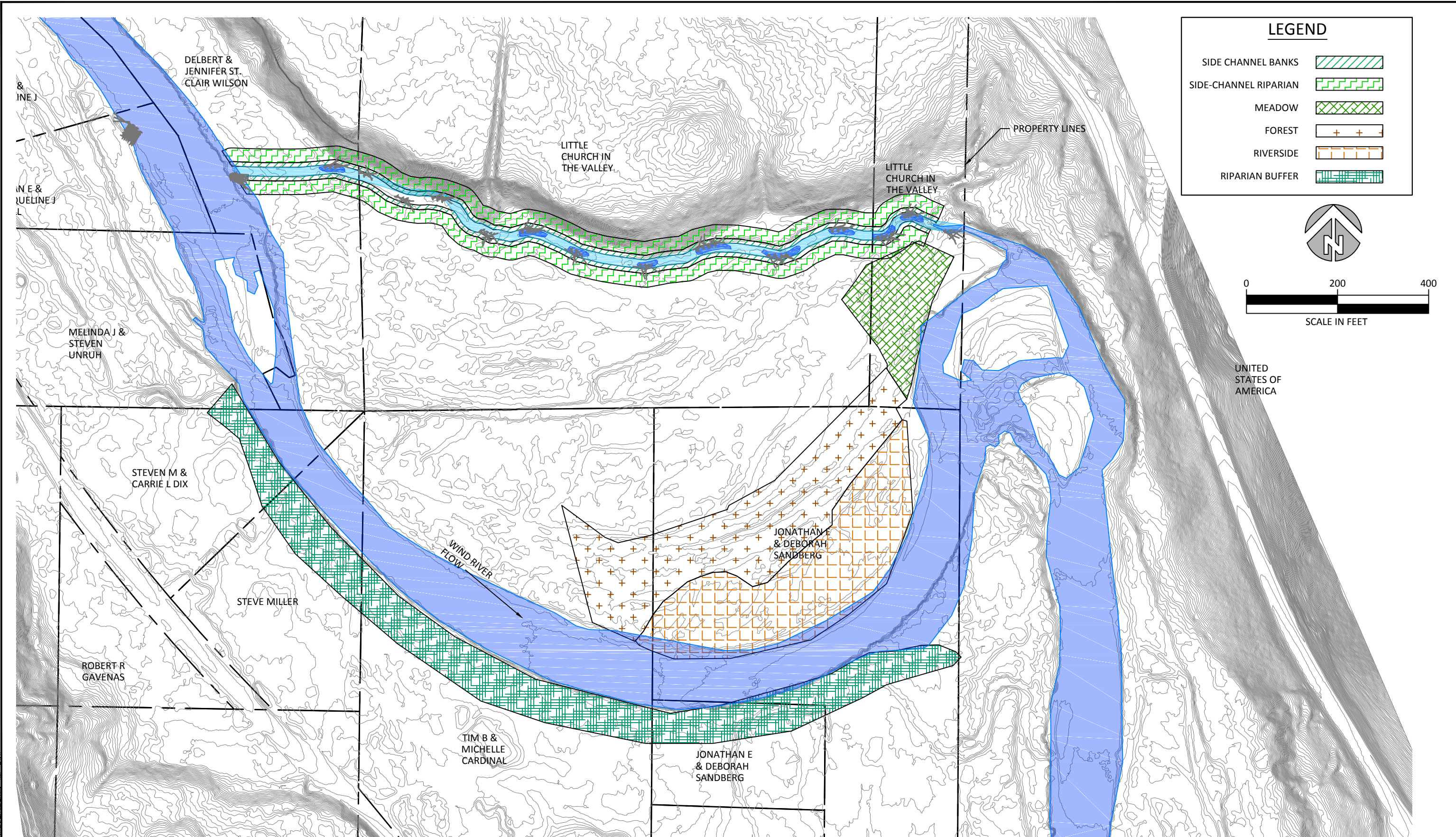
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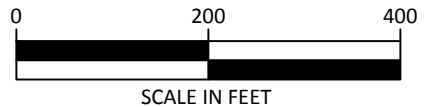
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PROPOSED CONDITIONS
SIDE CHANNEL DETAILS



LEGEND

- SIDE CHANNEL BANKS
- SIDE-CHANNEL RIPARIAN
- MEADOW
- FOREST
- RIVERSIDE
- RIPARIAN BUFFER



UNITED STATES OF AMERICA

SITE MAP
NOT TO SCALE

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**PROPOSED CONDITIONS
RIPARIAN REVEGETATION**

Phase I Vegetation

Meadow

Species	Common name	Density
<i>Populus trichocarpa</i>	Black cottonwood	200/acre
<i>Alnus rubra</i>	Red alder	
<i>Pseudotsuga menziesii</i>	Douglas fir	200/acre
<i>Abies grandis</i>	Grand fir	

Riverside

Species	Common name	Density
<i>Salix spp.</i>	Willow spp.	1000/acre
<i>Acer circinatum</i>	Vine maple	
<i>Alnus rubra</i>	Red alder	200/acre
<i>Pseudotsuga menziesii</i>	Douglas fir	
<i>Populus trichocarpa</i>	Black cottonwood	
<i>Acer macrophyllum</i>	Bigleaf maple	

Forest

Species	Common name	Density
<i>Acer circinatum</i>	Vine maple	1000/acre
<i>Ribes sanguineum</i>	Red-flowering currant	
<i>Acer macrophyllum</i>	Bigleaf maple	200/acre
<i>Tsuga heterophylla</i>	Western hemlock	
<i>Thuja plicata</i>	Western redcedar	
<i>Abies grandis</i>	Grand fir	

Phase II Vegetation

Side-Channel Banks

Species	Common name	Density
<i>Elymus glaucus, Bromus carinatus, Deschampsia elongata, Lupinus latifolia, Festuca idahoensis, Poa compressa</i>	Native grass seed mix, species could include: blue wildrye, California brome, slender hairgrass, broadleaf lupine, Idaho fescue, Canada bluegrass	35-50 lbs/acre
<i>Mahonia nervosa</i>	Oregon grape	1000/acre
<i>Gaultheria shallon</i>	Salal	
<i>Polystichum munitum</i>	Sword fern	
<i>Aruncus dioicus</i>	Goatsbeard	
<i>Cornus stolonifera</i>	Red-osier dogwood	
<i>Rubus spectabilis</i>	Salmonberry	
<i>Rosa nutkana</i>	Nootka Rose	

Side-Channel Riparian

Species	Common name	Density
<i>Salix spp.</i>	Willow	1000/acre
<i>Acer circinatum</i>	Vine maple	
<i>Fraxinus latifolia</i>	Oregon ash	200/ acre
<i>Populus trichocarpa</i>	Black cottonwood	
<i>Acer macrophyllum</i>	Bigleaf maple	
<i>Alnus rubra</i>	Red alder	
<i>Thuja plicata</i>	Western redcedar	
<i>Tsuga heterophylla</i>	Western hemlock	

Riparian Buffer

Species	Common name	Density
<i>Salix spp.</i>	Willow spp.	1000/acre
<i>Ribes sanguineum</i>	Red-flowering currant	
<i>Acer macrophyllum</i>	Bigleaf maple	200/ acre
<i>Populus trichocarpa</i>	Black cottonwood	
<i>Alnus rubra</i>	Red alder	
<i>Pseudotsuga menziesii</i>	Douglas fir	

2014-2015 Wind River - Stabler Bend Preliminary Design - Riparian Revegetation Plant List - 14 of 14

NO.	BY	DATE	REVISION DESCRIPTION

REP DRAWN	GJ,BN DESIGNED	GJ,BN CHECKED
GJ,BN APPROVED	2-6-17 DATE	150256 PROJECT

Lower Columbia Fish Recovery Board
 Wind River - Stabler Bend
 Preliminary Design



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