

**Driving Directions**

West on SR 4 from Longview approx 10 miles, north on Abernathy Creek Road 0.1 miles, first road on left.

Sec. 10, T. 8 N., R 4 W., W.M.  
 Lat. 46.115266, Long. -123.100098

PURPOSE: Habitat Restoration and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

**Abernathy Creek Tidal Habitat Restoration**

COVER SHEET

IN Abernathy Creek  
 AT Tributary to Columbia River  
 COUNTY OF Cowlitz STATE Washington  
 APPLICATION BY Washington State Dept. of Fish & Wildlife Habitat Program  
 SHEET 1 OF 27 600 Capital Way N. Olympia Wa. 98501-1091  
 DATE 4-9-12

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**PURPOSE:** Habitat Restoration  
and Enhancement

**DATUM** NAVD 88

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### Abernathy Creek Tidal Habitat Restoration

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Sheet Index

**IN** Abernathy Creek  
**AT** Tributary to Columbia River

**COUNTY OF** Cowlitz      **STATE** Washington

**APPLICATION BY** Washington State  
Dept. of Fish & Wildlife  
Habitat Program

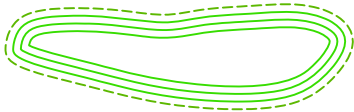
**SHEET 2 OF 27**  
**DATE** 4- 9 - 12  
600 Capital Way N.  
Olympia Wa. 98501-1091

# Symbol Legend

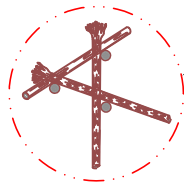
Proposed Center of Blind Channel



Proposed Type "C" Blind Channel



Proposed Planted Hummock (H-#)

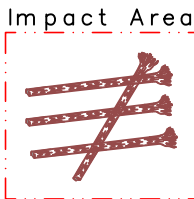


Impact Area  
Approx.  
30' Dia.

Proposed Floodplain Roughness Structure (R-#)

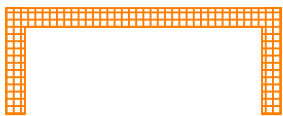


Proposed Habitat Log Structure (L-#)



Impact Area  
Approx.  
40'x40'

Proposed Large Wood Structure (LW-#)



Proposed Temporary Cofferd Dam



Proposed Temporary Stream Crossing

Existing Center of Creek

Existing Water Edge



Existing Water Edge



Existing Water Edge



Existing Wetland Area



Deciduous



Conifer

Existing Trees



Existing Large Wood



Existing Fish Weir



Existing Concrete Boat Ramp

PURPOSE: Habitat Restoration and Enhancement

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## Abernathy Creek Tidal Habitat Restoration

### Symbol Legend

IN Abernathy Creek

AT Tributary to Columbia River

COUNTY OF Cowlitz

STATE Washington

APPLICATION BY

Washington State

SHEET 3 OF 27

Dept. of Fish & Wildlife

Habitat Program

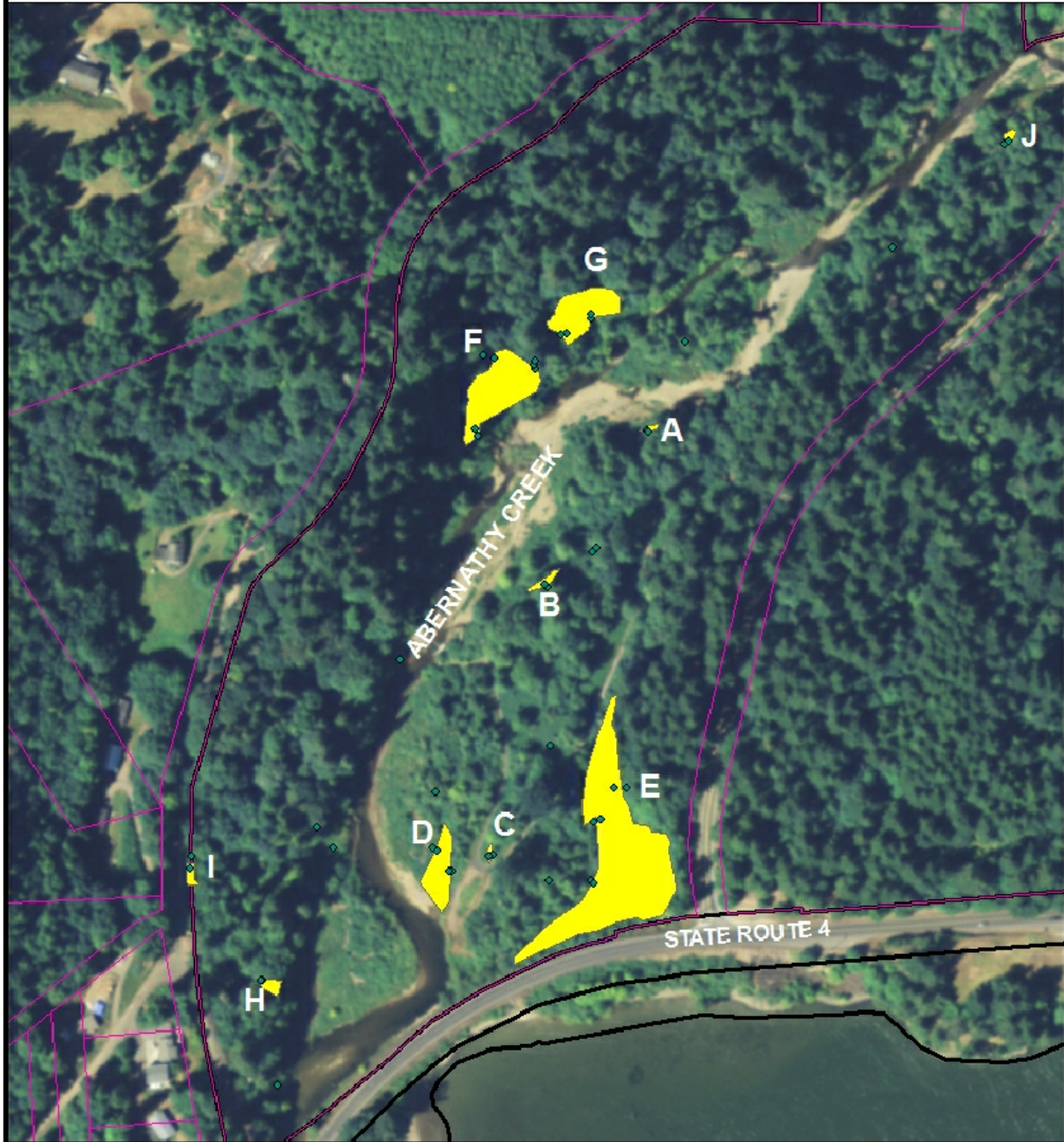
DATE 4- 9 - 12

600 Capital Way N.


Olympia Wa. 98501-1091


# ABERNATHY MAPPED WETLANDS


SECTION 10, TOWNSHIP 8, NORTH, RANGE 4, WEST, W.M.



## Legend

 Mapped Wetlands

 WDFW OWNERSHIP

 Cowlitz Co.

0 0.02 0.04 0.08 0.12 0.16 Miles

Scale: 1" = 0.06 Miles



Washington  
Department of  
**FISH and  
WILDLIFE**

PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

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## Abernathy Creek Tidal Habitat Restoration

Wetland Locations

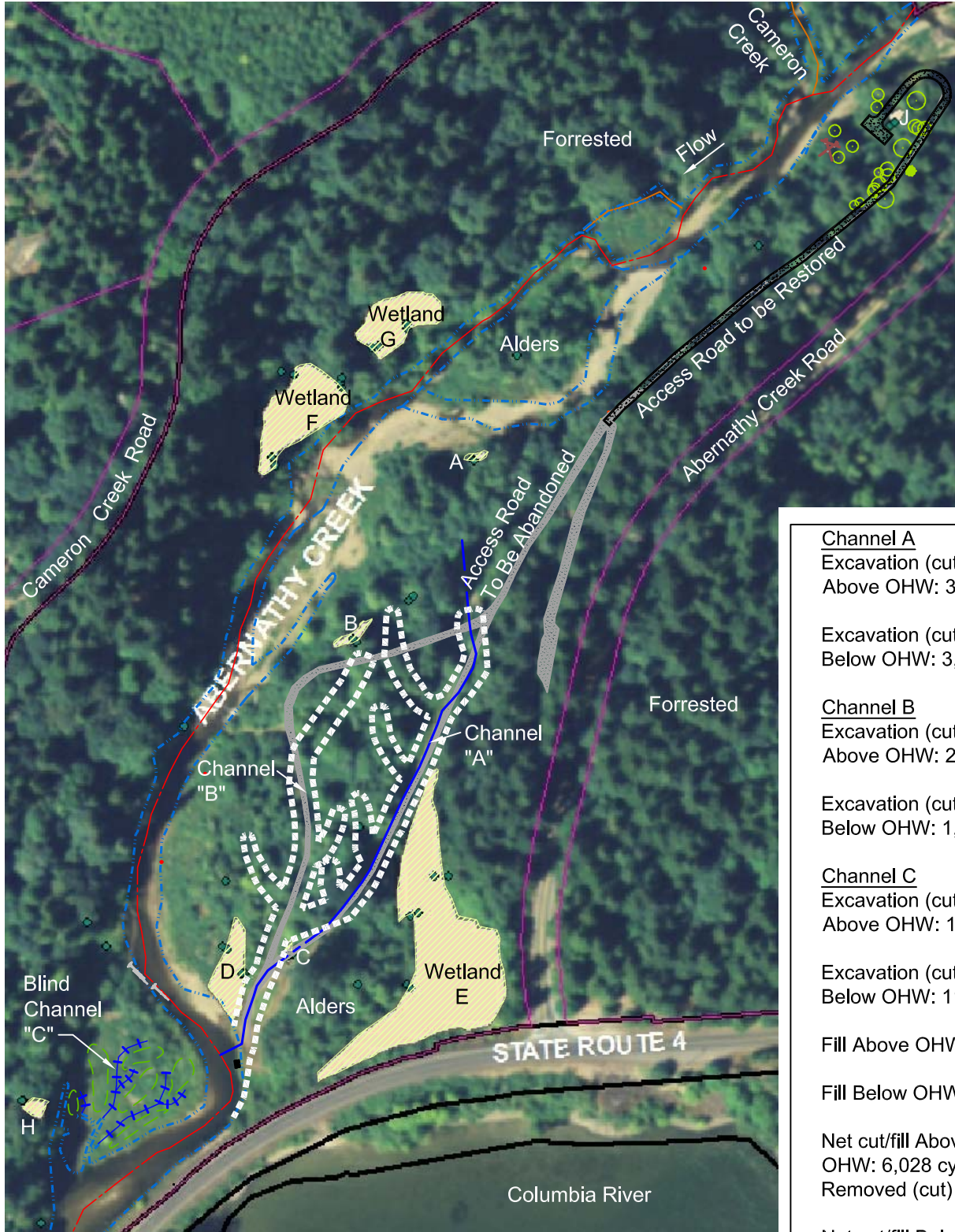
IN Abernathy Creek  
AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
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Scale: 1" = 250'

<b>Channel A</b>
Excavation (cut) Above OHW: 3,893 cy
Excavation (cut) Below OHW: 3,594 cy
<b>Channel B</b>
Excavation (cut) Above OHW: 2,014 cy
Excavation (cut) Below OHW: 1,860 cy
<b>Channel C</b>
Excavation (cut) Above OHW: 121 cy
Excavation (cut) Below OHW: 112 cy
Fill Above OHW: 1,351 cy
Fill Below OHW: 0 cy
Net cut/fill Above OHW: 6,028 cy Removed (cut)
Net cut/fill Below OHW: 5,566 cy Removed (cut)

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## Abernathy Creek Tidal Habitat Restoration

Reach Plan View

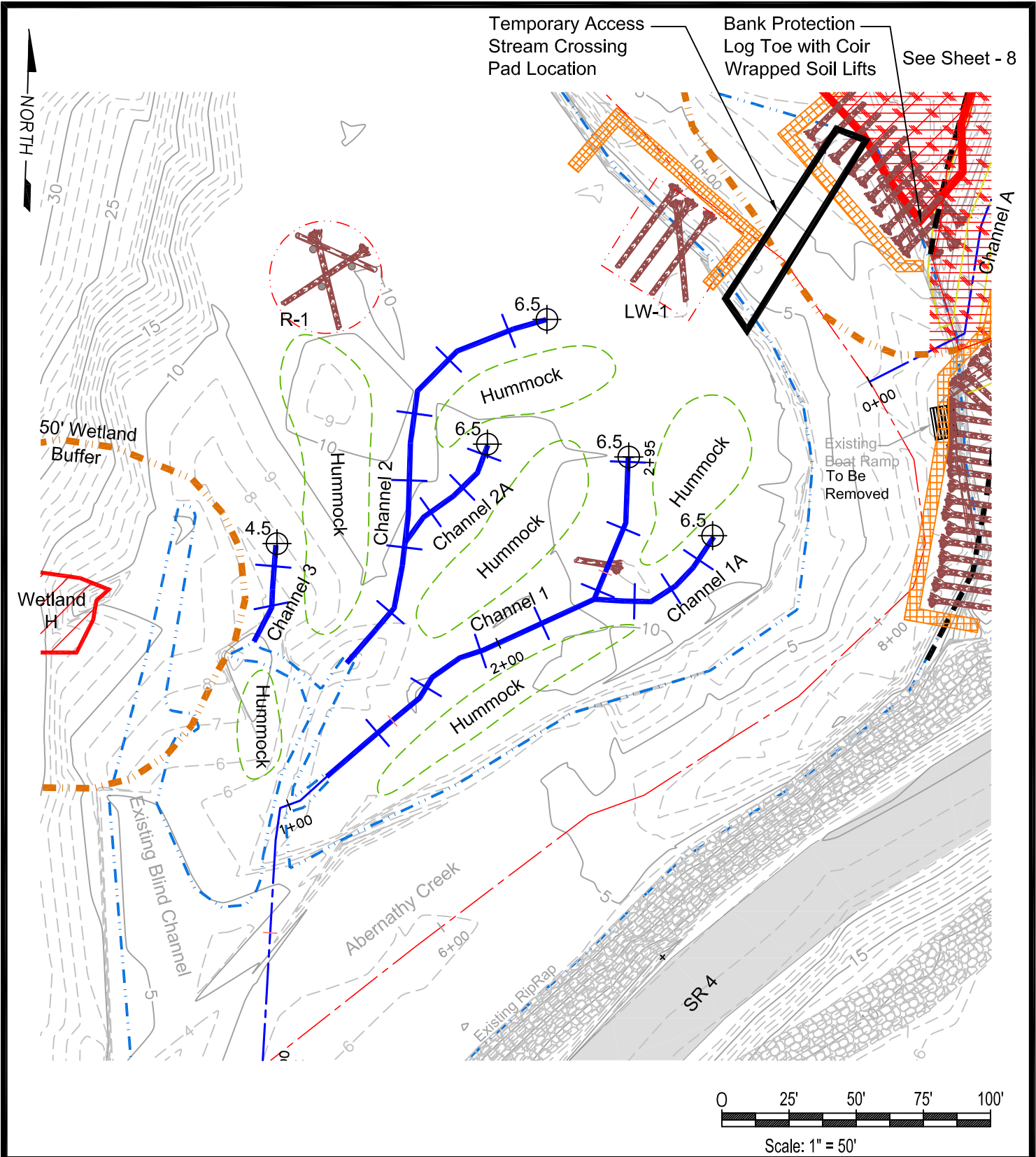
**IN** Sec. 10, T. 8 N., R 4 W., W.M.  
**AT** Tributary to Columbia River

**COUNTY OF** Cowlitz      **STATE** Washington

**APPLICATION BY** Washington State  
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600 Capital Way N.  
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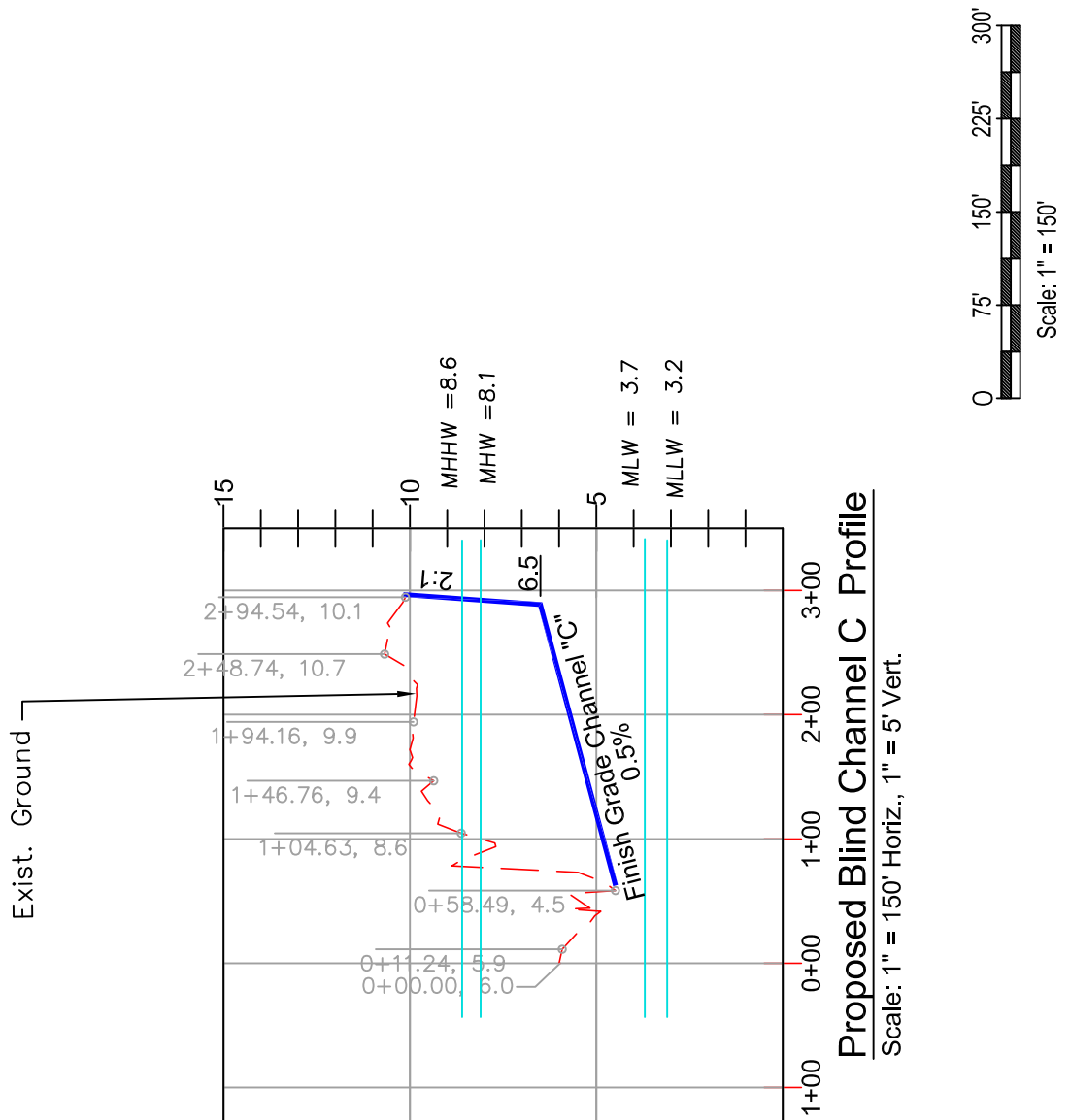
**PURPOSE:** Habitat Restoration and Enhancement  
**DATUM:** NAVD 88  
**ADJACENT PROPERTY OWNERS:**  
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 4. Barbara Spear

**Abernathy Creek  
 Tidal Habitat  
 Restoration**  


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**Channel "C"  
 Plan View**

**IN:** Abernathy Creek  
**AT:** Tributary to Columbia River  
**COUNTY OF:** Cowlitz      **STATE:** Washington  
**APPLICATION BY:** Washington State  
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PURPOSE: Habitat Restoration and Enhancement

DATUM NAVD 88

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### Abernathy Creek Tidal Habitat Restoration

#### Channel C Profile

IN Abernathy Creek

AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State

SHEET 7 OF 27

DATE 4- 9 - 12

Dept. of Fish & Wildlife  
 Habitat Program  
 600 Capital Way N.  
 Olympia Wa. 98501-1091

See Sheet - 12

Note: Exact Channel Locations to Be Located By The Engineer.  
Safeguard Existing Riparian Vegetation (Trees with dbh > 6")

Existing Fish Weir To Be Relocated Upstream

Temporary Access Stream Crossing Pad Location

Temporary Cofferdam, As Req'd to Isolate Work Areas From Stream

Existing Access Road To Be Abandon

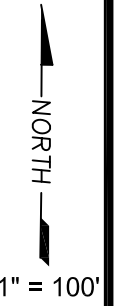
See Sheet 14

Hummock Planting Mounds, Typical (Using Top Soil From Excavation of Blind Channels. See Sheet - 15)

Bank Protection Log Toe with Coir Wrapped Soil Lifts

Existing Boat Ramp Concrete Debris To Be Removed

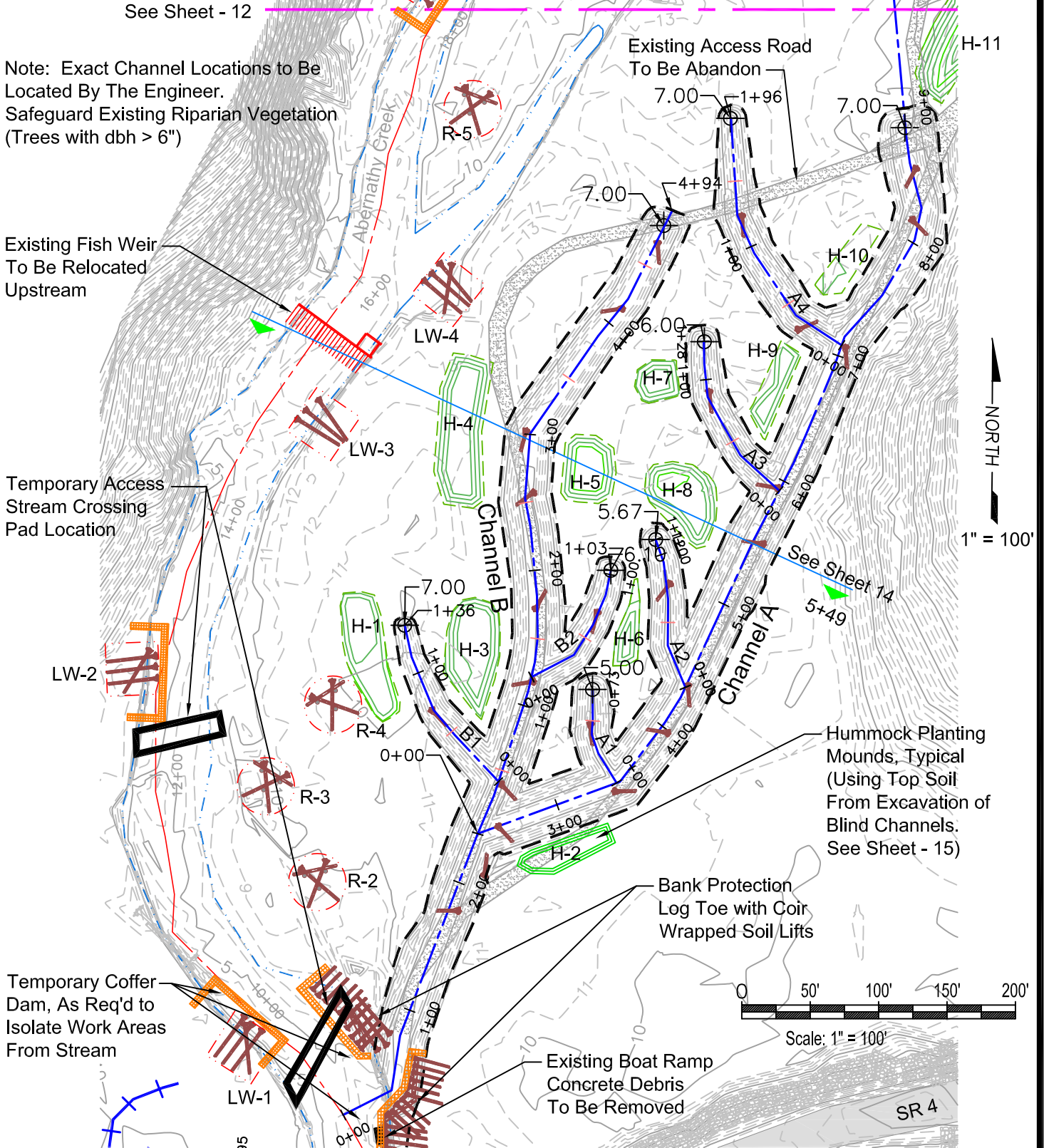
Note: See Sheet 9 for Wetlands and Buffers



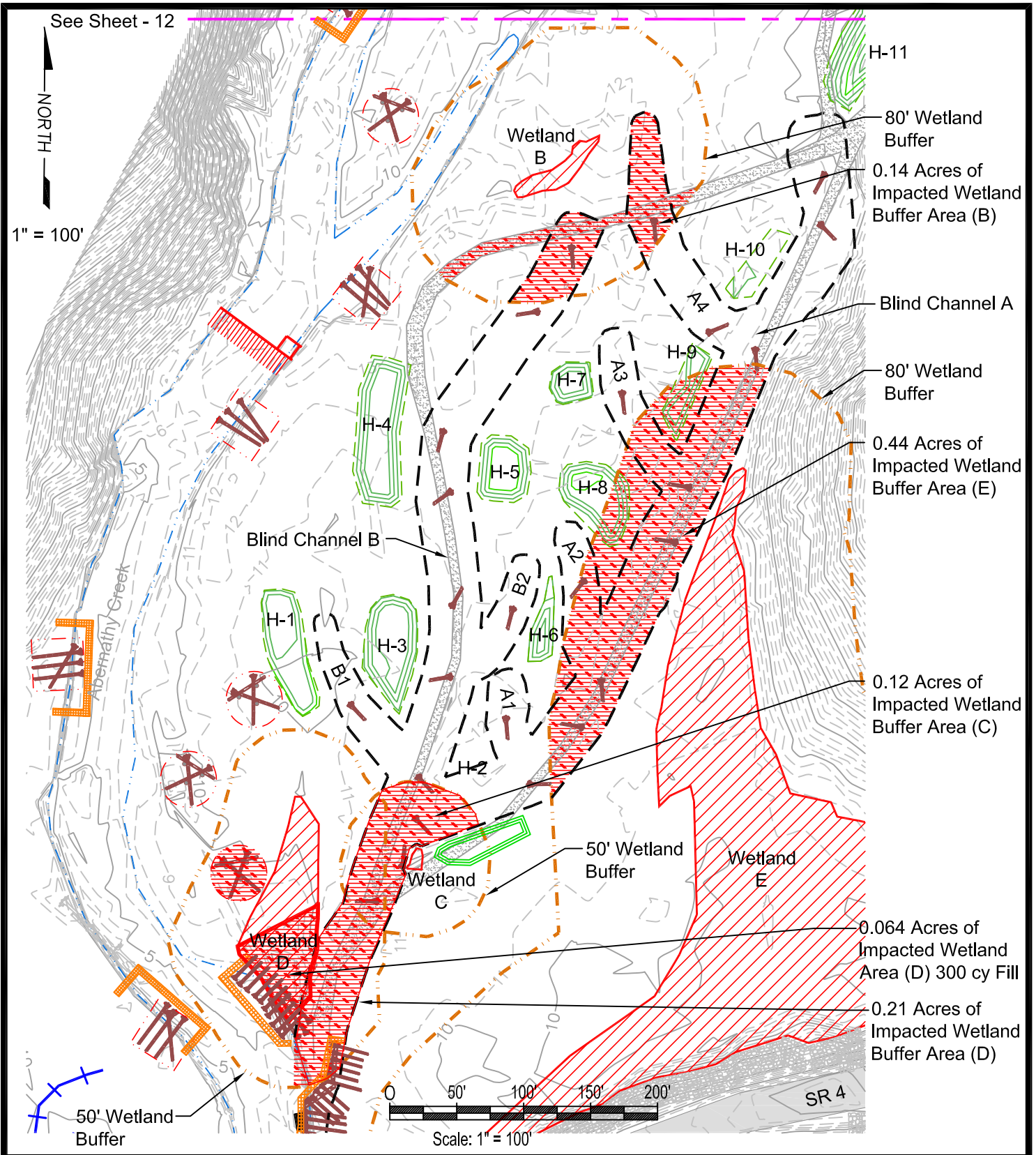
**PURPOSE:** Habitat Restoration and Enhancement  
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**Abernathy Creek  
 Tidal Habitat  
 Restoration**  
**Channels "A" & "B"  
 Plan View**

**IN** Abernathy Creek  
**AT** Tributary to Columbia River  
**COUNTY OF** Cowlitz      **STATE** Washington  
**APPLICATION BY** Washington State  
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**DATUM:** NAVD 88

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### Abernathy Creek Tidal Habitat Restoration

Channels "A" & "B"  
Wetland Impacts

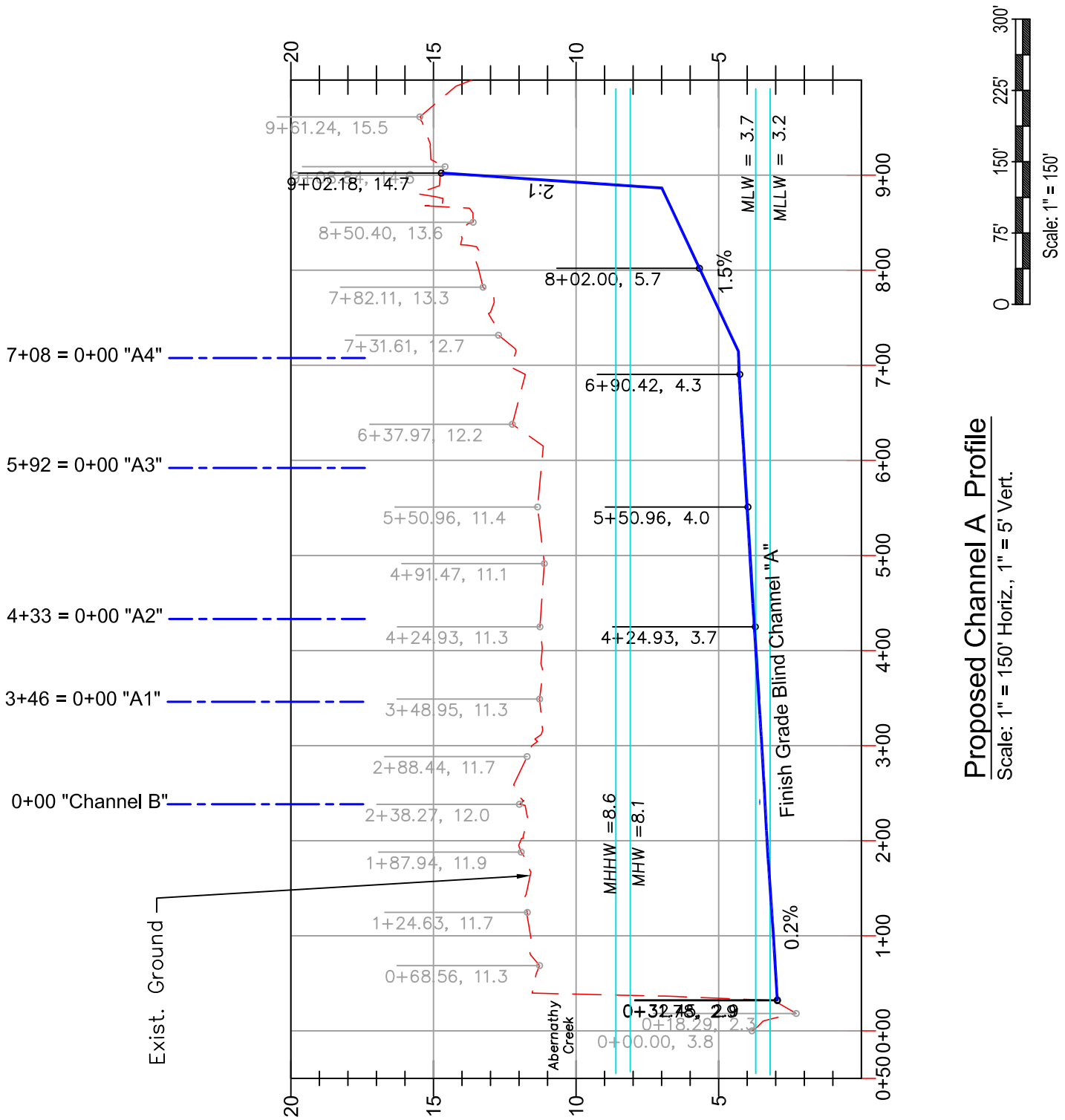
**IN:** Abernathy Creek  
**AT:** Tributary to Columbia River

**COUNTY OF:** Cowlitz      **STATE:** Washington

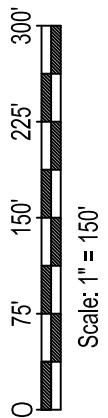
**APPLICATION BY:** Washington State Dept. of Fish & Wildlife Habitat Program  
600 Capital Way N.  
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**Proposed Channel A Profile**  
 Scale: 1" = 150' Horiz., 1" = 5' Vert.



**PURPOSE:** Habitat Restoration and Enhancement

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## Abernathy Creek Tidal Habitat Restoration

### Channel A Profile

**IN:** Abernathy Creek

**AT:** Tributary to Columbia River

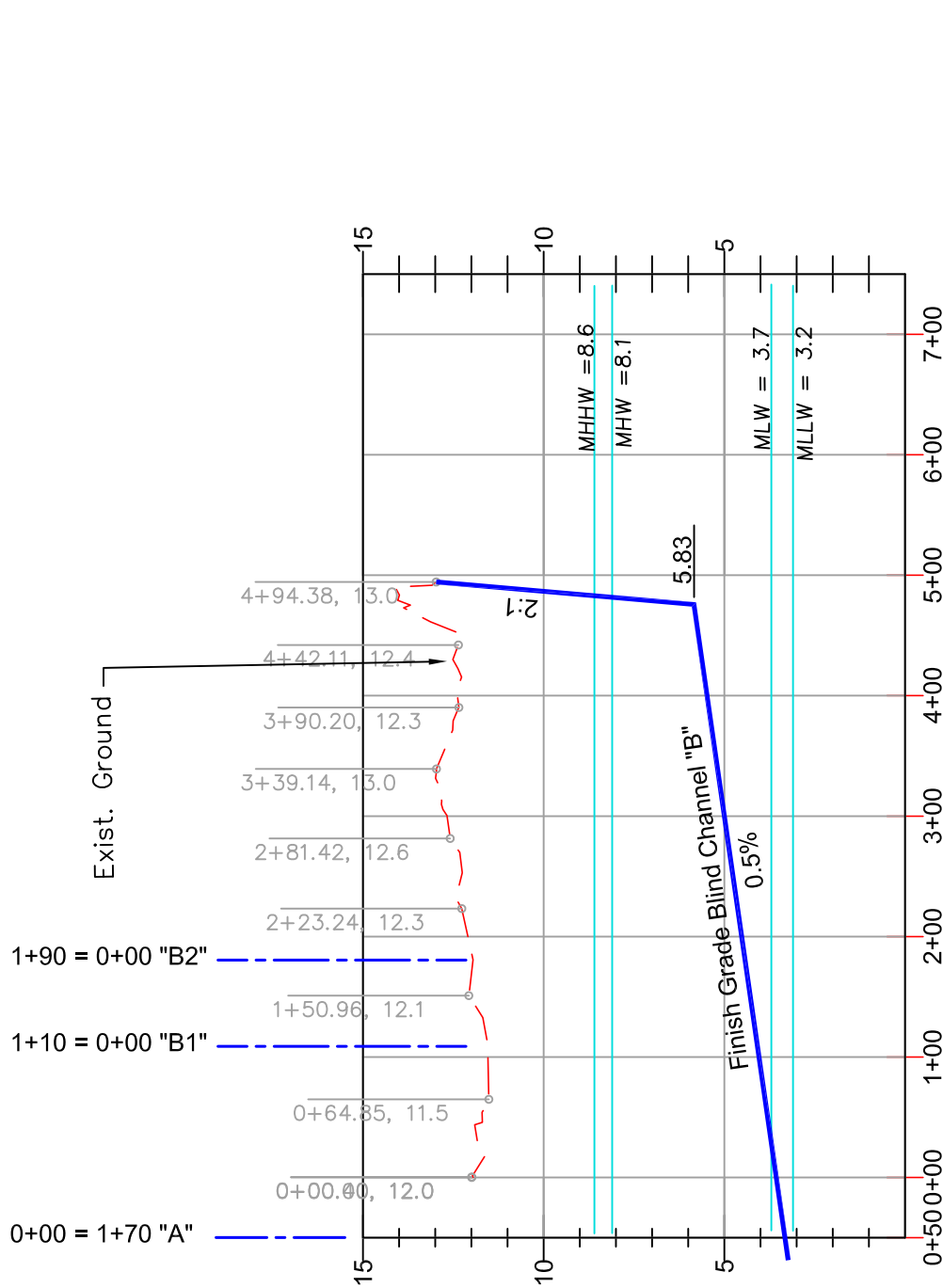
**COUNTY OF:** Cowlitz      **STATE:** Washington

**APPLICATION BY:** Washington State Dept. of Fish & Wildlife Habitat Program

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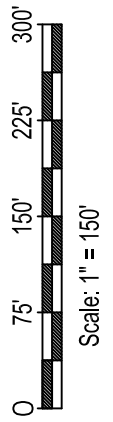
**DATE:** 4- 9 - 12

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 Olympia Wa. 98501-1091



### Proposed Blind Channel B Profile

Scale: 1" = 150' Horiz., 1" = 5' Vert.



PURPOSE: Habitat Restoration and Enhancement

DATUM NAVD 88

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## Abernathy Creek Tidal Habitat Restoration

Channel B Profile

IN Abernathy Creek

AT Tributary to Columbia River

COUNTY OF Cowlitz

STATE Washington

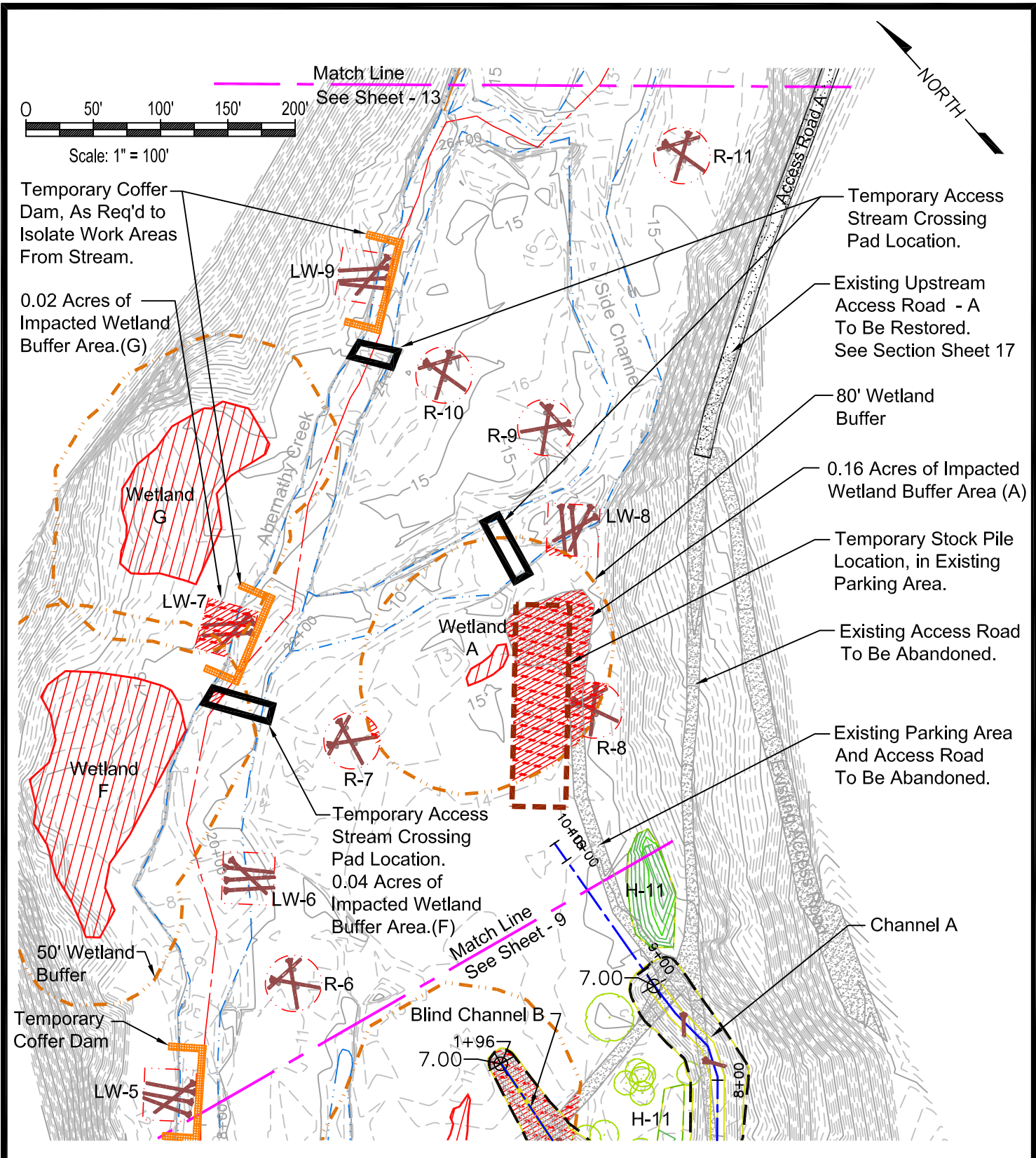
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Dept. of Fish & Wildlife  
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**PURPOSE:** Habitat Restoration and Enhancement

**DATUM:** NAVD 88

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## Abernathy Creek Tidal Habitat Restoration

### Middle Reach Plan View

**IN** Sec. 10, T. 8 N., R 4 W., W.M.  
**AT** Tributary to Columbia River

**COUNTY OF** Cowlitz      **STATE** Washington

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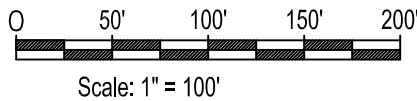
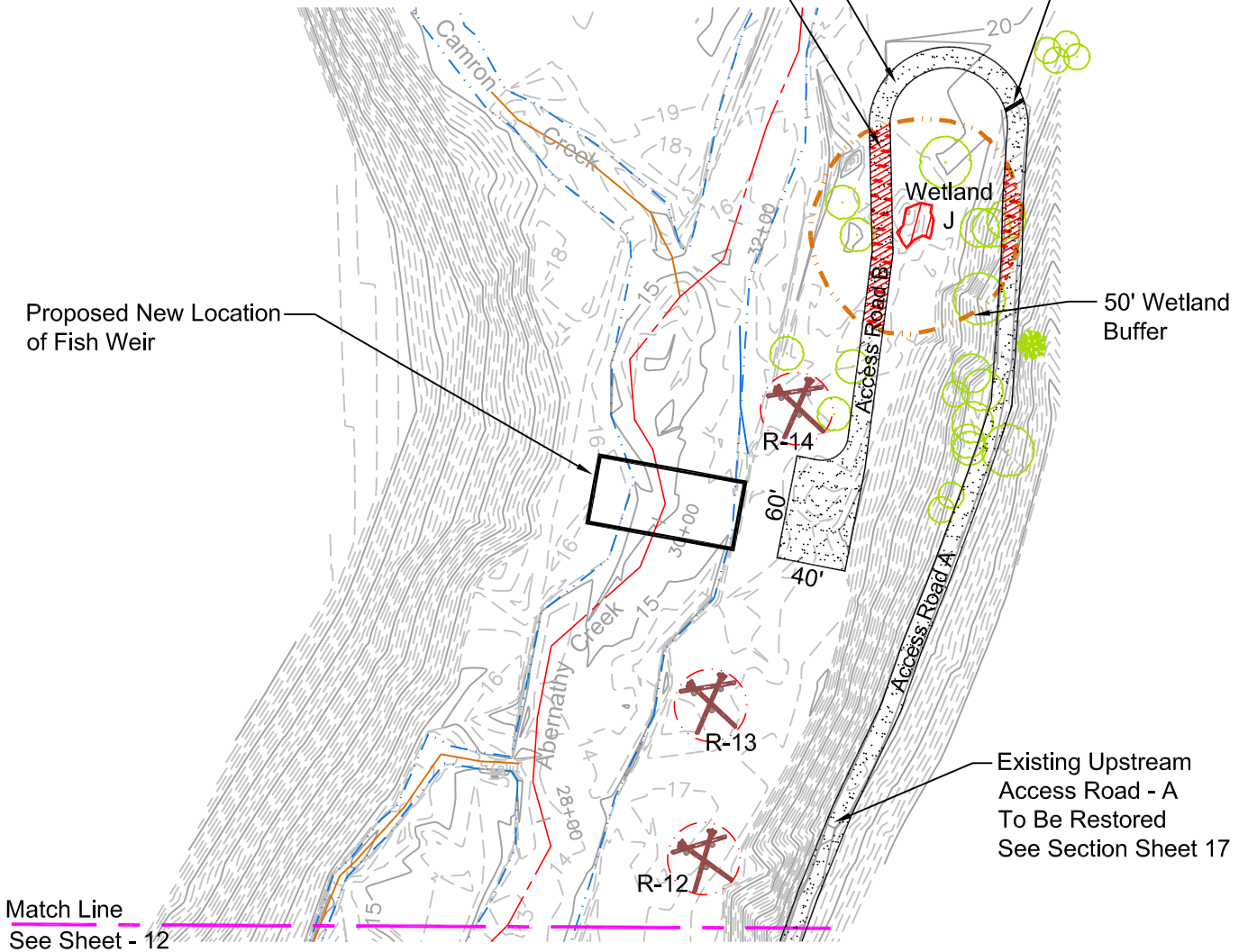
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**DATE** 4- 9 - 12



Proposed Access Road Extension  
and New Parking Area.  
0.04 Acres of Impacted Wetland  
Buffer Area. (J)

End of Existing  
Access Road - A.  
Begin Access Road - B  
To New Trap Location.



PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

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## Abernathy Creek Tidal Habitat Restoration

### Upper Reach Plan View

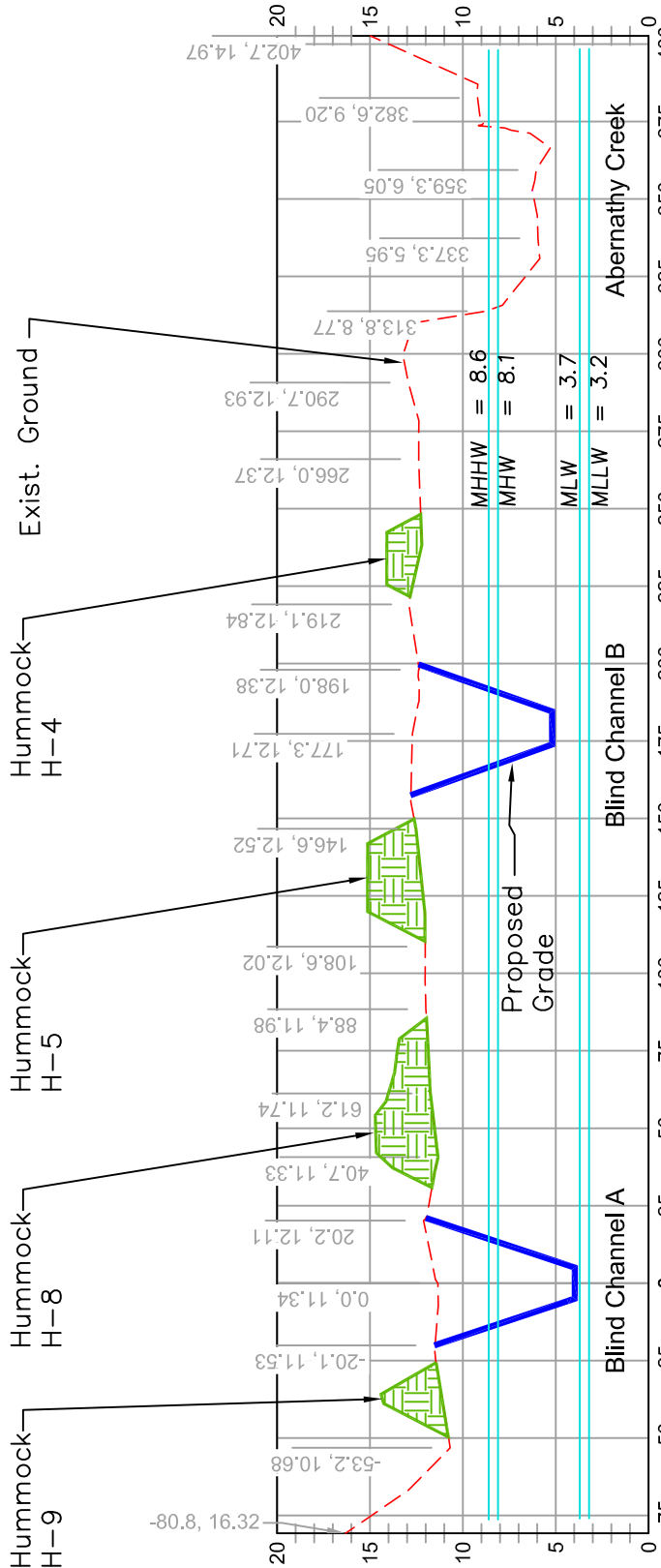
IN Sec. 10, T. 8 N., R 4 W., W.M.  
AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
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600 Capital Way N.  
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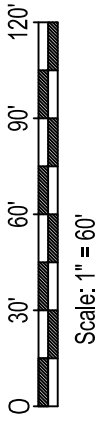
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5+49

## Proposed Blind Channels A & B 5+49 Section



Note:

1. See Sheet - 15 for Blind Channel and Typical Hummock Construction Details.

PURPOSE: Habitat Restoration and Enhancement

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Abernathy Creek  
Tidal Habitat  
Restoration

Floodplain  
Cross Section A

IN Abernathy Creek

AT Tributary to Columbia River

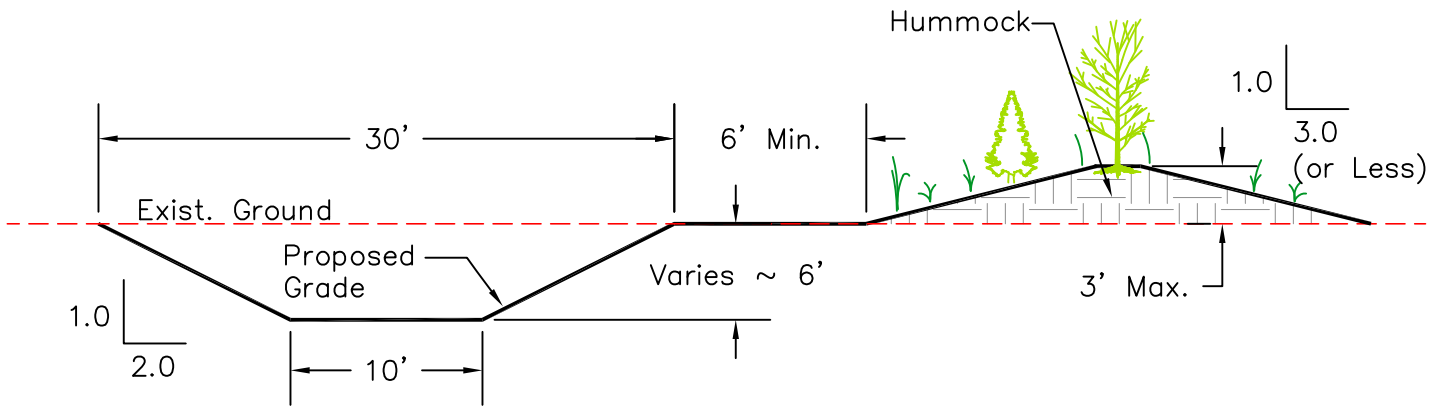
COUNTY OF Cowlitz STATE Washington

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Dept. of Fish & Wildlife  
Habitat Program

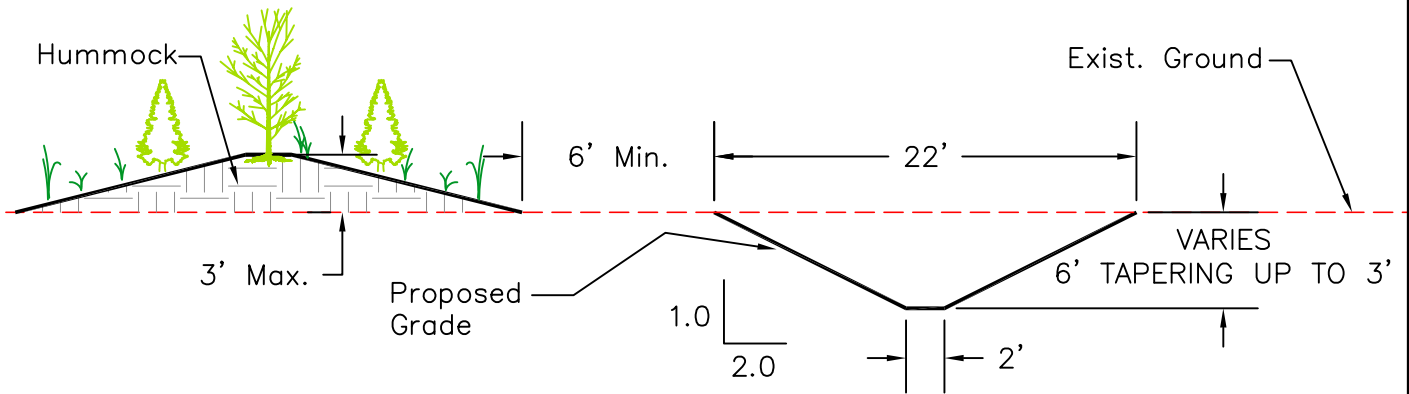
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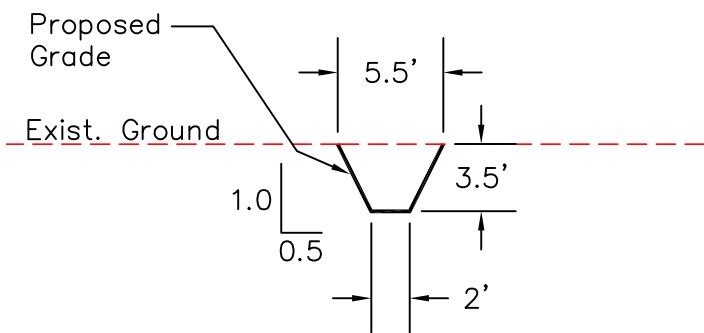
600 Capital Way N.  
Olympia Wa. 98501-1091



**Proposed Blind Channel Type "A" With Adjacent Hummock  
Typical Section**



**Proposed Blind Channel Type "B" With Adjacent Hummock  
Typical Section**



**Proposed Blind Channel Type "C"  
Typical Section**

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**Abernathy Creek  
Tidal Habitat  
Restoration**

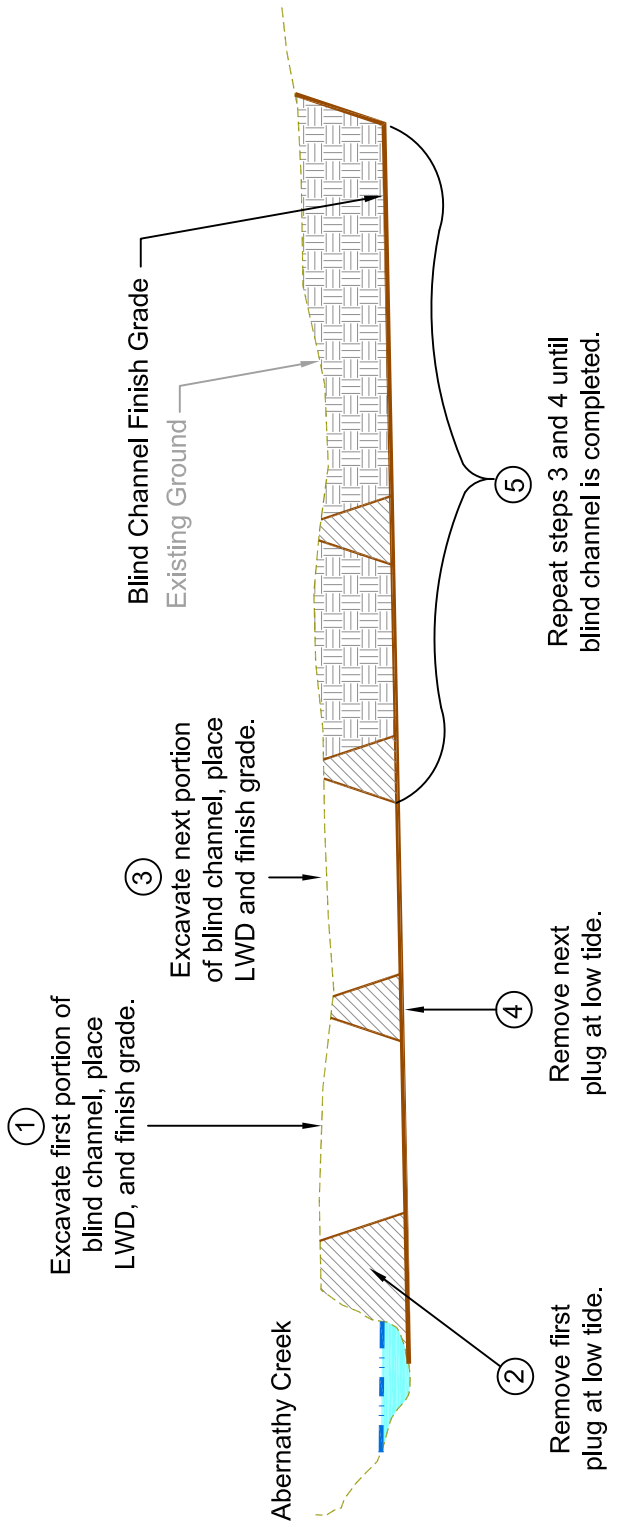
**Hummock & Channel  
Cross Sections**

**IN:** Abernathy Creek  
**AT:** Tributary to Columbia River

**COUNTY OF:** Cowlitz      **STATE:** Washington

**APPLICATION BY:** Washington State  
Dept. of Fish & Wildlife  
Habitat Program

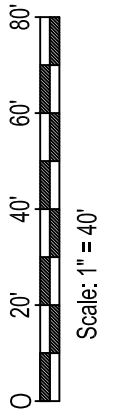
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**Blind Channel Excavation Sequence Detail**  
NTS

**Blind Channel Construction Sequence**

1. Begin blind channel excavation near Abernathy Creek. Isolate the work area from the creek by leaving a plug of native material in place at the point of connection. Excavate approximately 200 linear feet of blind channel, install large wood habitat features and complete final grading.
2. Remove the first plug of native material and complete final grading of the plug area at low tide, in dry conditions if possible.
3. Continue excavation of the blind channel with the work area isolated from the previously completed portion of the blind channel by leaving another plug of native materials in place. Excavate approximately 200 linear feet of blind channel, install large wood habitat features and complete final grading.
4. Remove the next plug of native material and complete final grading of the plug area at low tide, in dry conditions if possible.
5. Repeat steps 3 and 4 until construction of the blind channel is completed.



PURPOSE: Habitat Restoration and Enhancement

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**Abernathy Creek  
Tidal Habitat  
Restoration**

**Blind Channel  
Excavation Sequence**

IN Sec. 10, T. 8 N., R 4 W., W.M.

AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

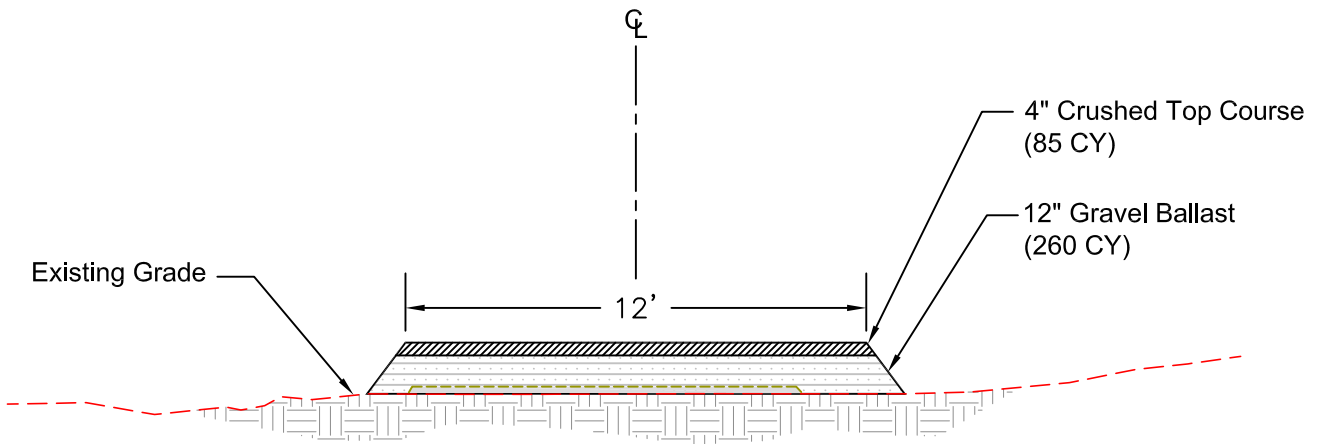
APPLICATION BY Washington State

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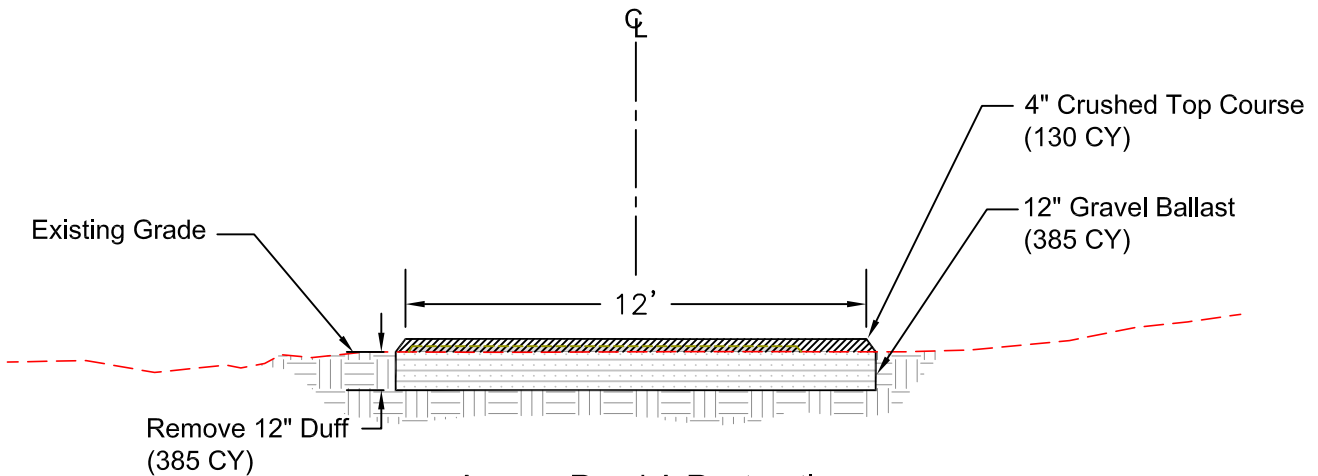
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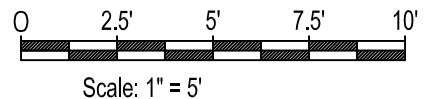




Access Road B to  
New Trap  
Typical Section



Access Road A Restoration  
Typical Section



PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

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## Abernathy Creek Tidal Habitat Restoration

Typical Road  
Sections

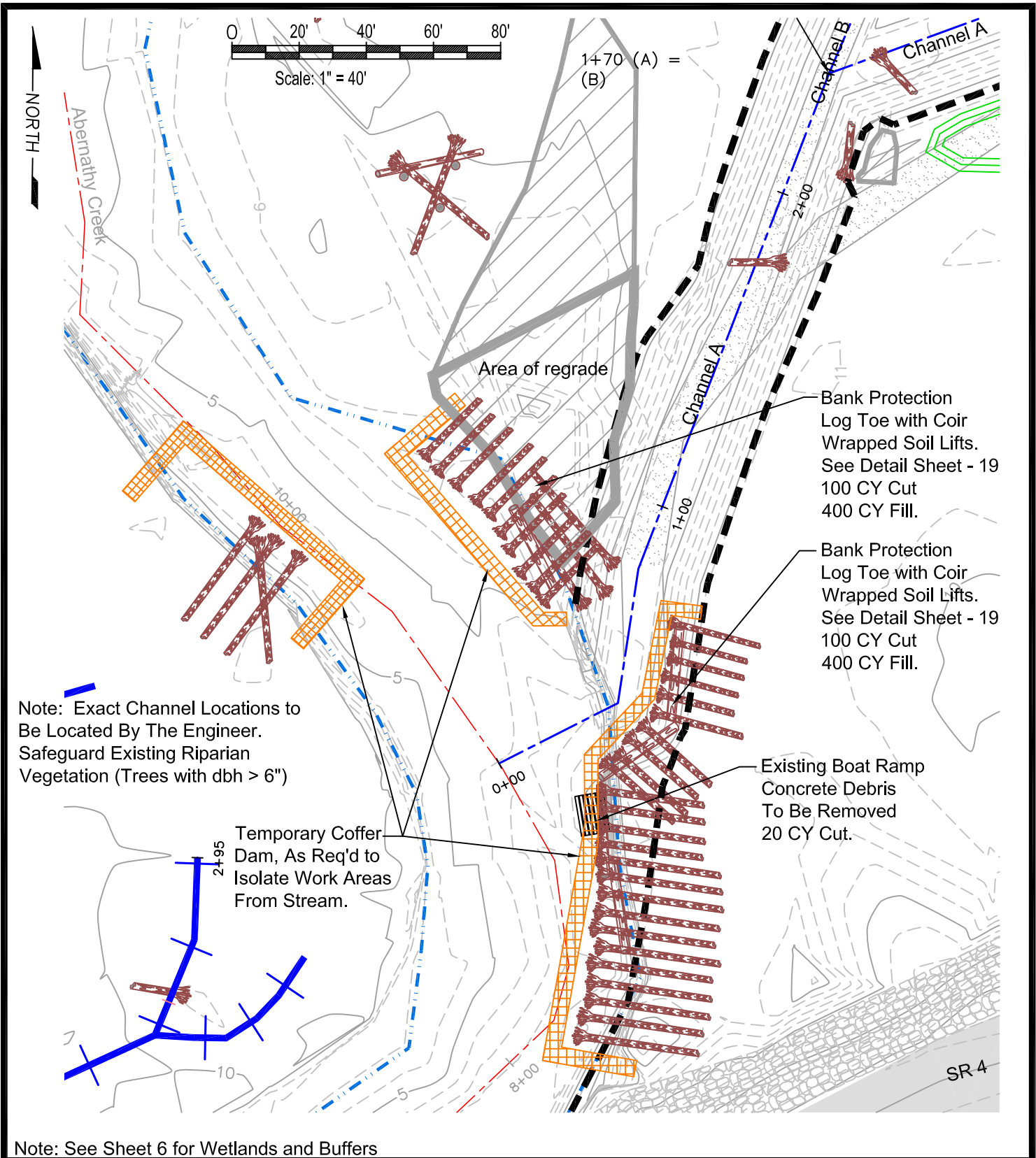
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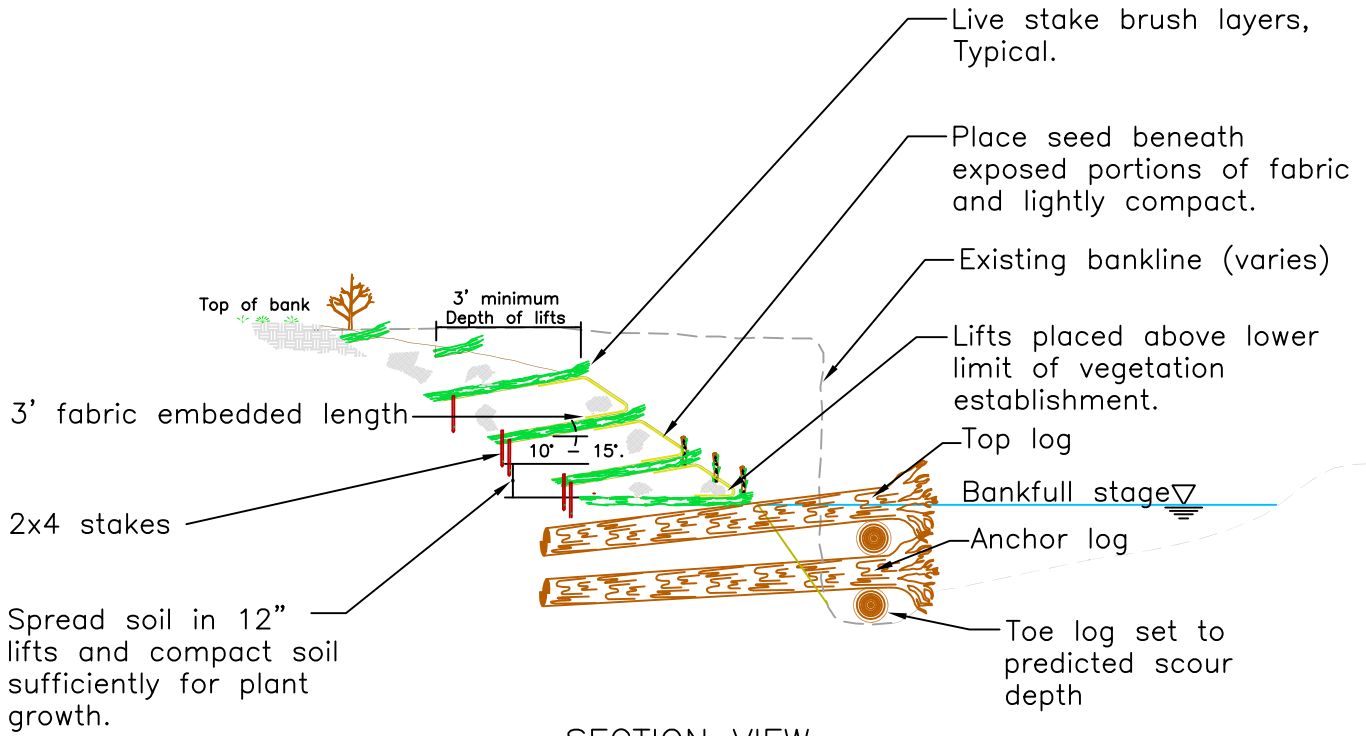
SHEET 17 OF 27

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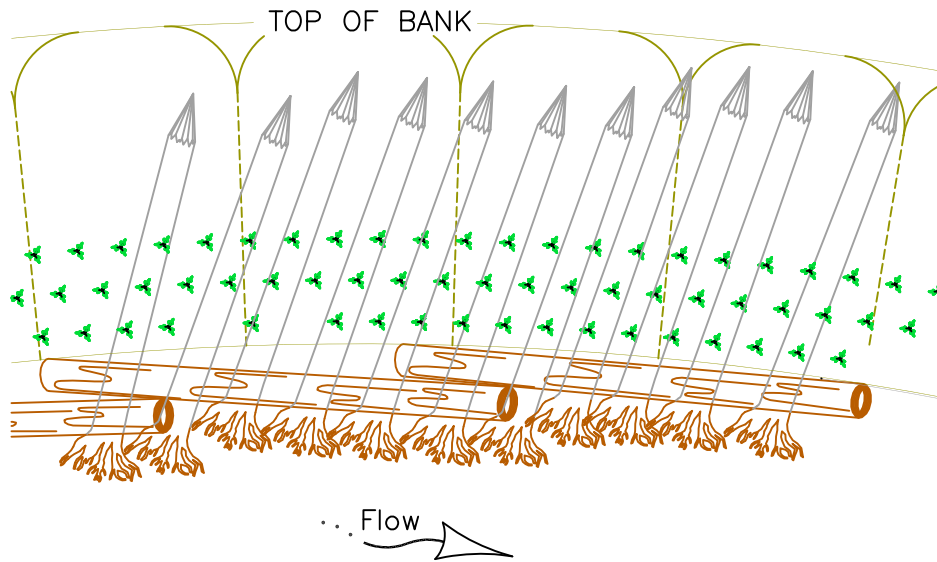


Note: See Sheet 6 for Wetlands and Buffers

<p>PURPOSE: Habitat Restoration and Enhancement</p> <p>DATUM NAVD 88</p> <p>ADJACENT PROPERTY OWNERS:</p> <ol style="list-style-type: none"> <li>1. WSDOT</li> <li>2. Albert Fogliana</li> <li>3. Steven Ross</li> <li>4. Barbara Spear</li> </ol>	<p><b>Abernathy Creek Tidal Habitat Restoration</b></p> <hr/> <p>Blind Channel Entrance Detail</p>	<p>IN Abernathy Creek</p> <p>AT Tributary to Columbia River</p> <p>COUNTY OF Cowlitz STATE Washington</p> <p>APPLICATION BY Washington State Dept. of Fish &amp; Wildlife Habitat Program 600 Capital Way N. Olympia Wa. 98501-1091</p> <p>SHEET 18 of 27</p> <p>DATE 4- 9 - 12</p>
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SECTION VIEW



PLAN VIEW

PURPOSE: Habitat Restoration and Enhancement

DATUM NAVD 88

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### Abernathy Creek Tidal Habitat Restoration

Log Toe Detail

IN Sec. 10, T. 8 N., R 4 W., W.M.

AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
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Habitat Program

SHEET 19 OF 27

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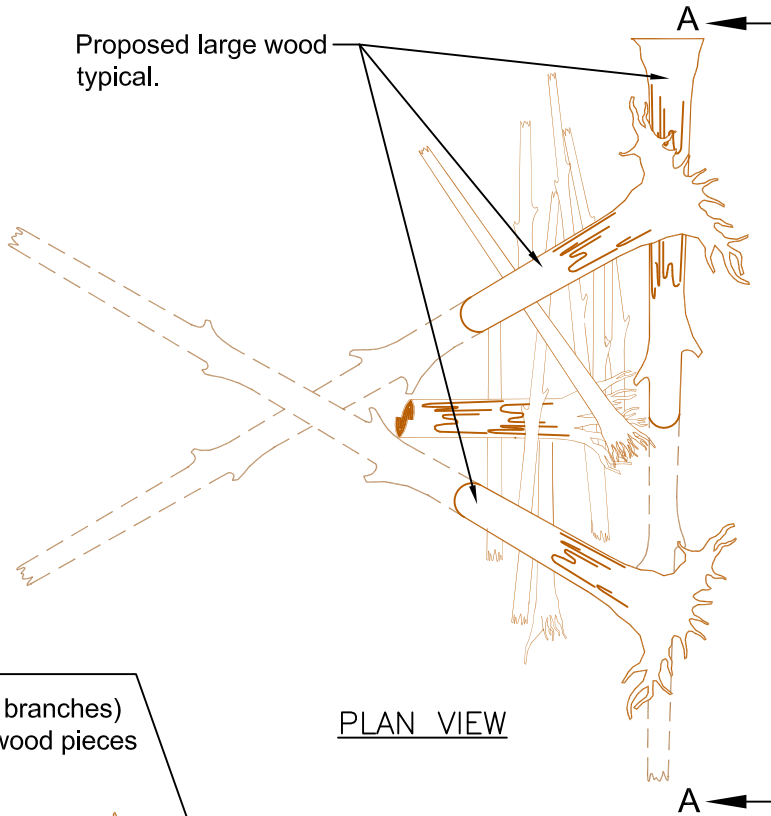
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Abernathy Creek

FLOW

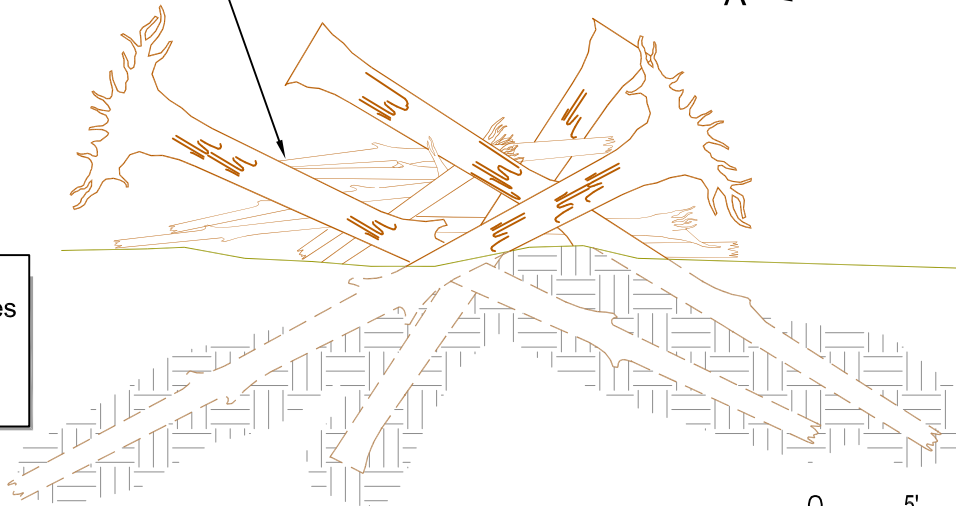
Existing Water Edge

Proposed large wood typical.



PLAN VIEW

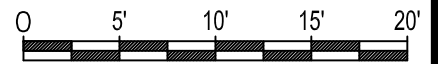
Racking material (Treetops, brush, and branches) Place between large wood pieces from upstream side.



SECTION A-A

Estimated Typical Earthwork Volumes

20 CY Cut  
20 CY Fill



Scale: 1" = 10'

PURPOSE: Habitat Restoration and Enhancement

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## Abernathy Creek Tidal Habitat Restoration

Roughness Logs  
Detail

IN Sec. 10, T. 8 N., R 4 W., W.M.

AT Tributary to Columbia River

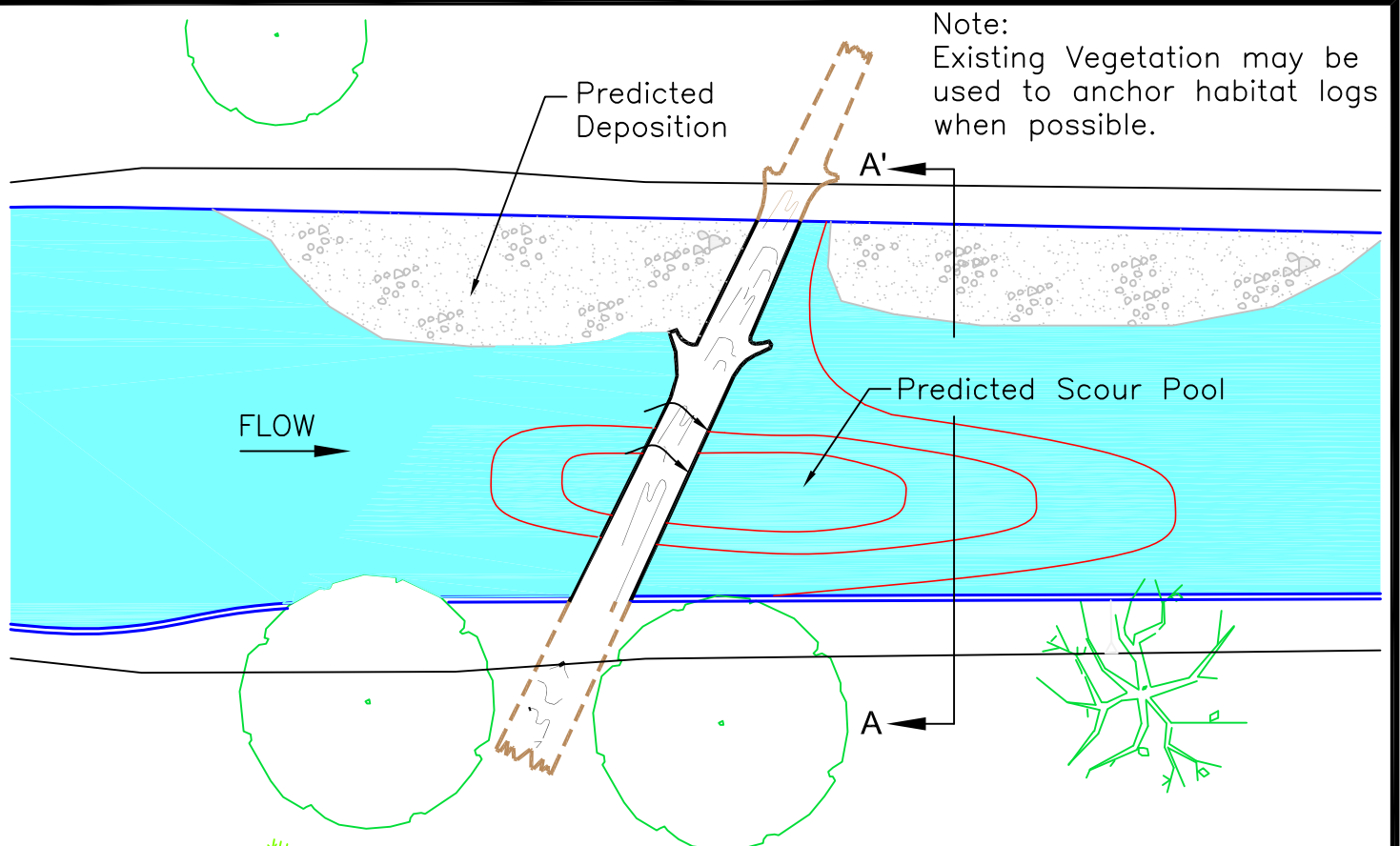
COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program

SHEET 20 OF 27

DATE 4-9-12

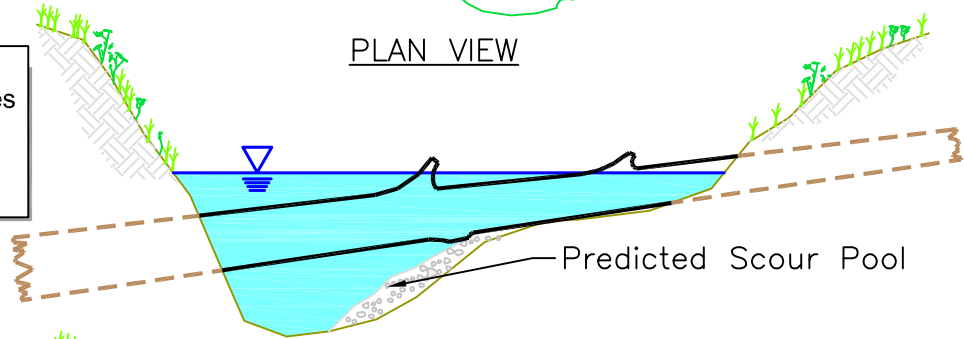
600 Capital Way N.  
Olympia Wa. 98501-1091



Note:  
Existing Vegetation may be  
used to anchor habitat logs  
when possible.

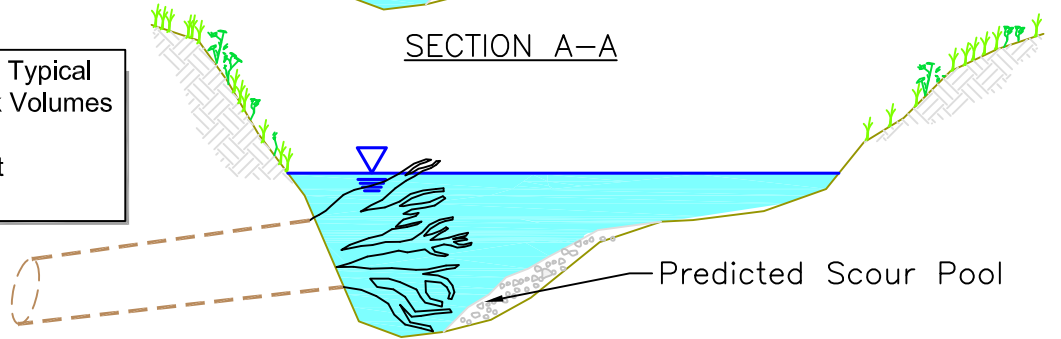
PLAN VIEW

Estimated Typical  
Earthwork Volumes  
20 CY Cut  
20 CY Fill

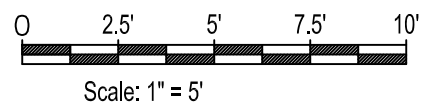


SECTION A-A

Estimated Typical  
Earthwork Volumes  
15 CY Cut  
15 CY Fill



OPTIONAL SECTION A-A



PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

## Abernathy Creek Tidal Habitat Restoration

Habitat Log  
Detail

IN Sec. 10, T. 8 N., R 4 W., W.M.  
AT Tributary to Columbia River

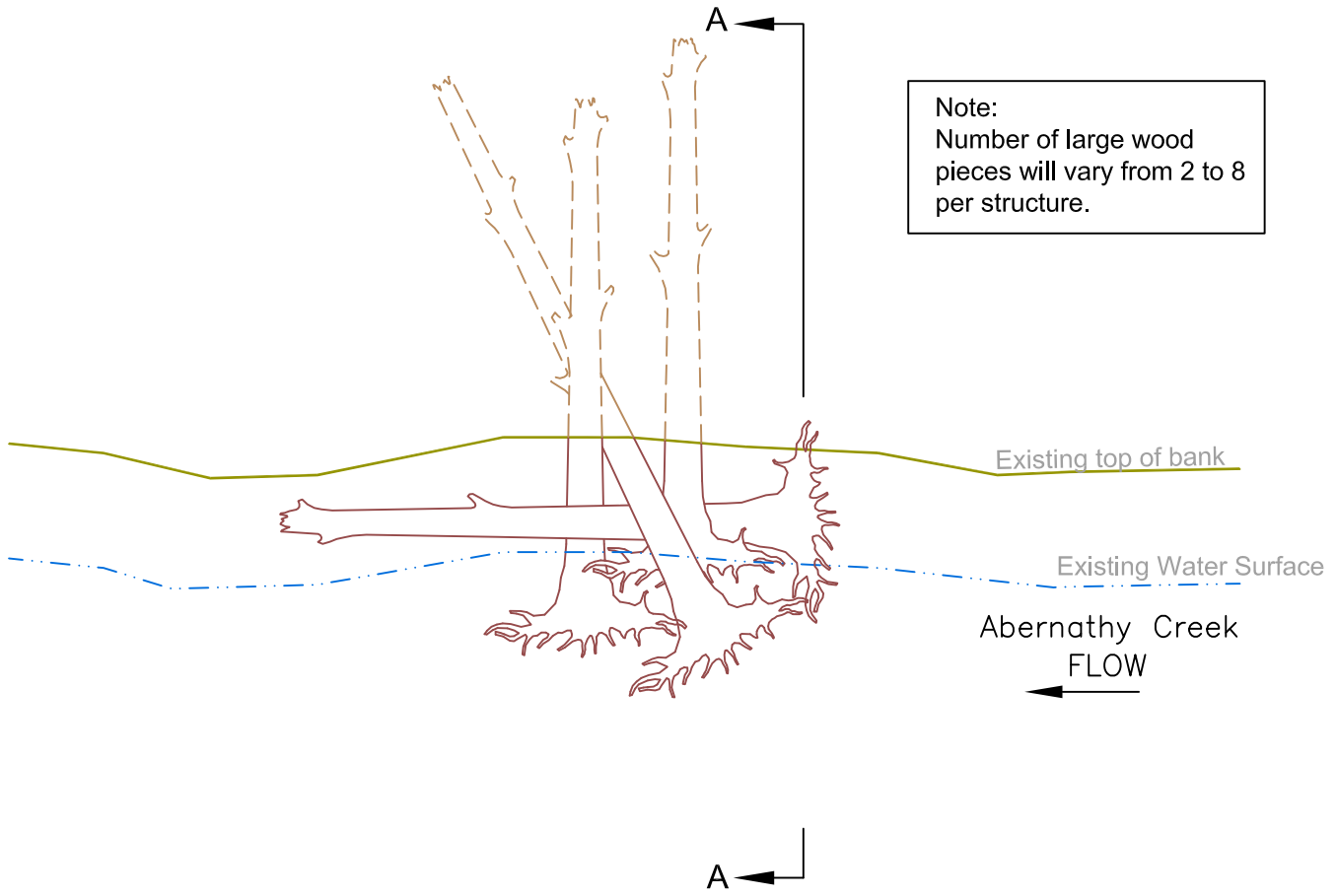
COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
Olympia Wa. 98501-1091

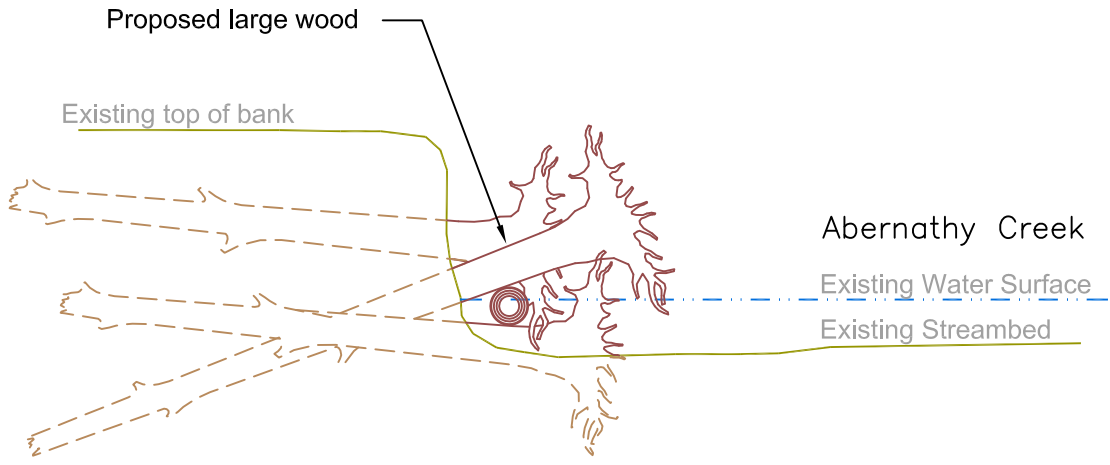
SHEET 21 OF 27

DATE 4-9-12

Note:  
 Number of large wood  
 pieces will vary from 2 to 8  
 per structure.

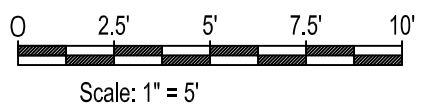


PLAN VIEW



SECTION A-A

Estimated Typical  
 Earthwork Volumes  
 50 CY Cut  
 45 CY Fill



PURPOSE: Habitat Restoration  
 and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

### Abernathy Creek Tidal Habitat Restoration

#### Large Wood Structure Detail

IN Sec. 10, T. 8 N., R 4 W., W.M.  
 AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

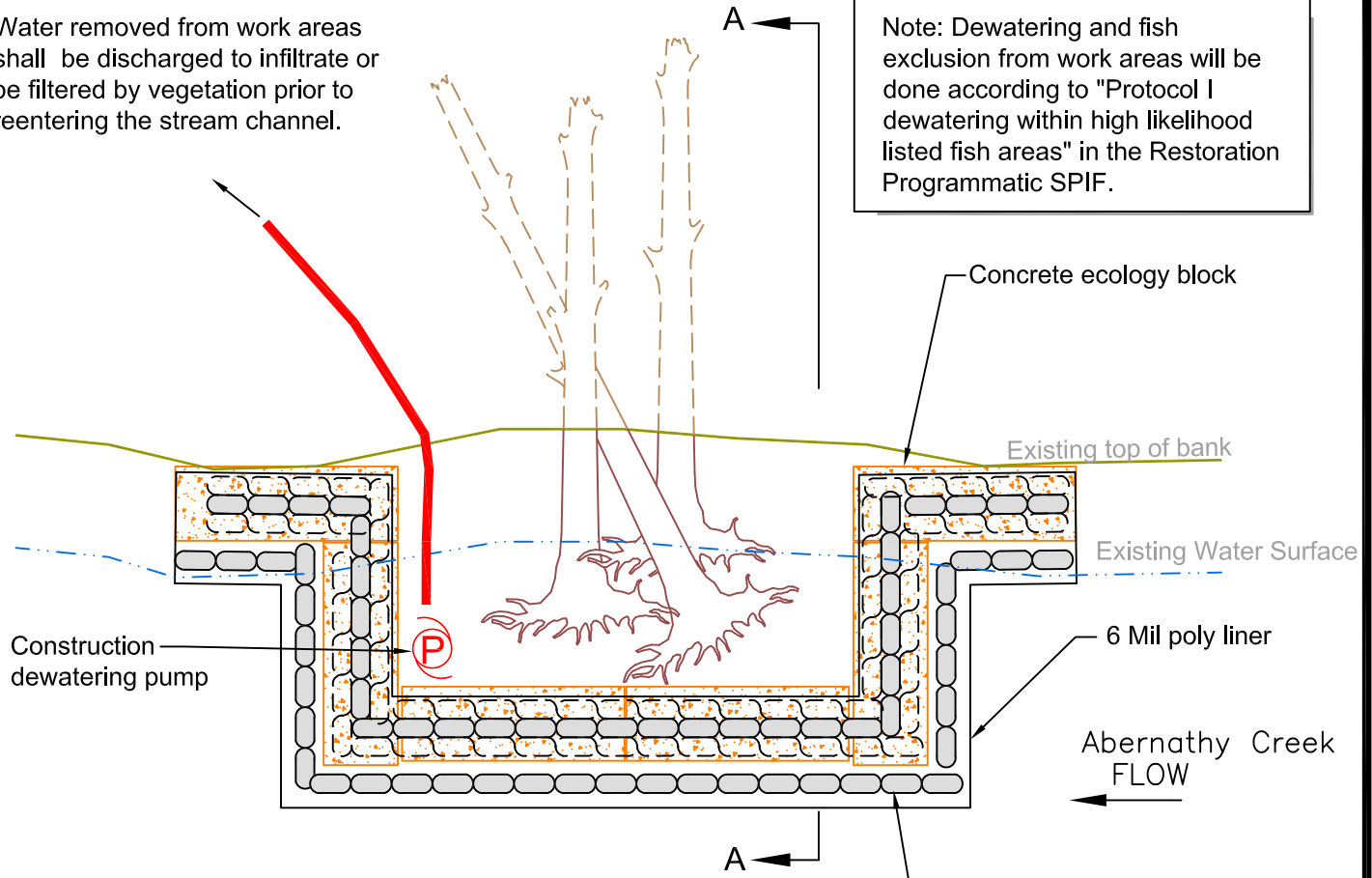
APPLICATION BY Washington State  
 Dept. of Fish & Wildlife  
 Habitat Program  
 600 Capital Way N.  
 Olympia Wa. 98501-1091

SHEET 22 OF 27

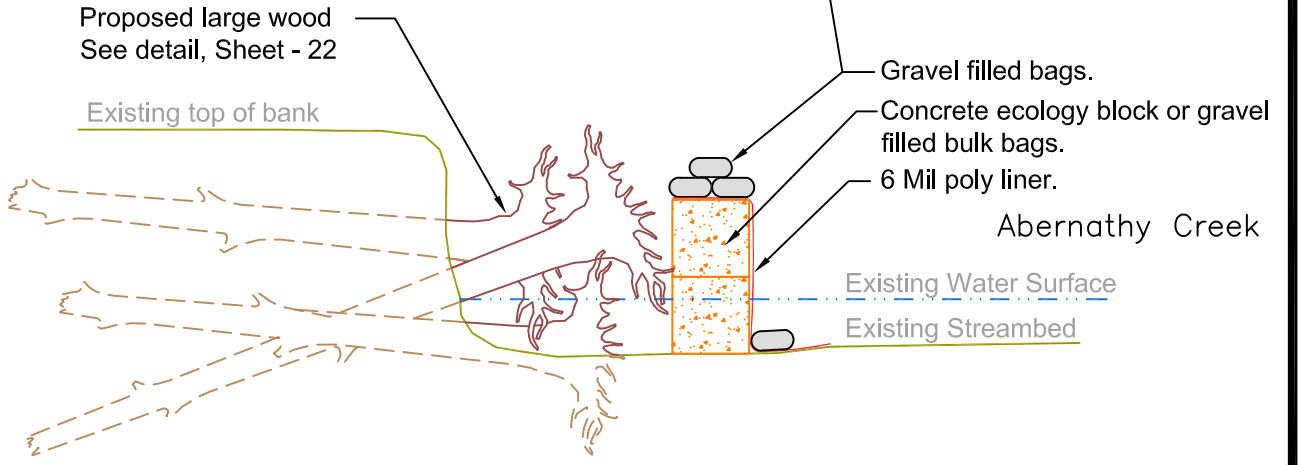
DATE 4-9-12

Water removed from work areas shall be discharged to infiltrate or be filtered by vegetation prior to reentering the stream channel.

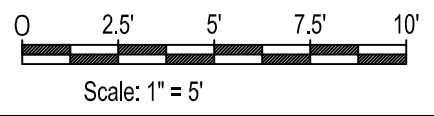
Note: Dewatering and fish exclusion from work areas will be done according to "Protocol I dewatering within high likelihood listed fish areas" in the Restoration Programmatic SPIF.



PLAN VIEW



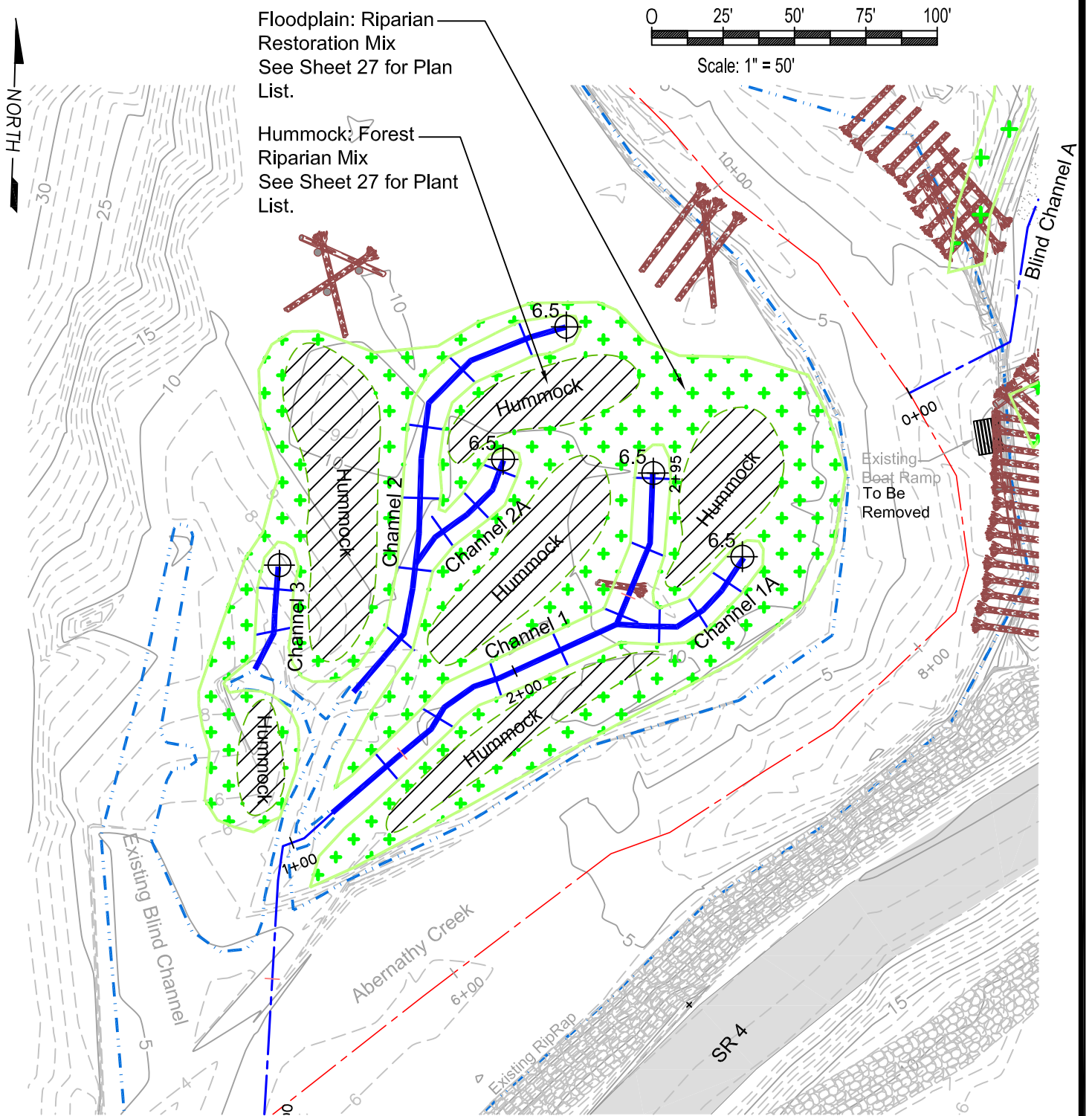
SECTION A-A



**PURPOSE:** Habitat Restoration and Enhancement  
**DATUM:** NAVD 88  
**ADJACENT PROPERTY OWNERS:**  
 1. WSDOT  
 2. Albert Fogliana  
 3. Steven Ross  
 4. Barbara Spear

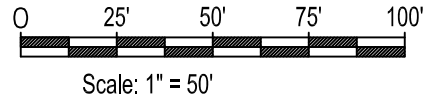
**Abernathy Creek Tidal Habitat Restoration**  
 Cofferdam Detail

**IN** Sec. 10, T. 8 N., R 4 W., W.M.  
**AT** Tributary to Columbia River  
**COUNTY OF** Cowlitz **STATE** Washington  
**APPLICATION BY** Washington State Dept. of Fish & Wildlife Habitat Program  
**SHEET** 23 OF 27  
**DATE** 4-9-12  
 600 Capital Way N.  
 Olympia Wa. 98501-1091



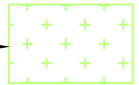
Floodplain: Riparian  
Restoration Mix  
See Sheet 27 for Plan List.

Hummock: Forest  
Riparian Mix  
See Sheet 27 for Plant List.

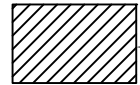


NORTH

Indicates area of  
Floodplain: Riparian  
Restoration Mix



Indicates area of  
Hummock: Forest  
Riparian Mix



PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

## Abernathy Creek Tidal Habitat Restoration

Planting Plan  
Channel C

IN Abernathy Creek  
AT Tributary to Columbia River

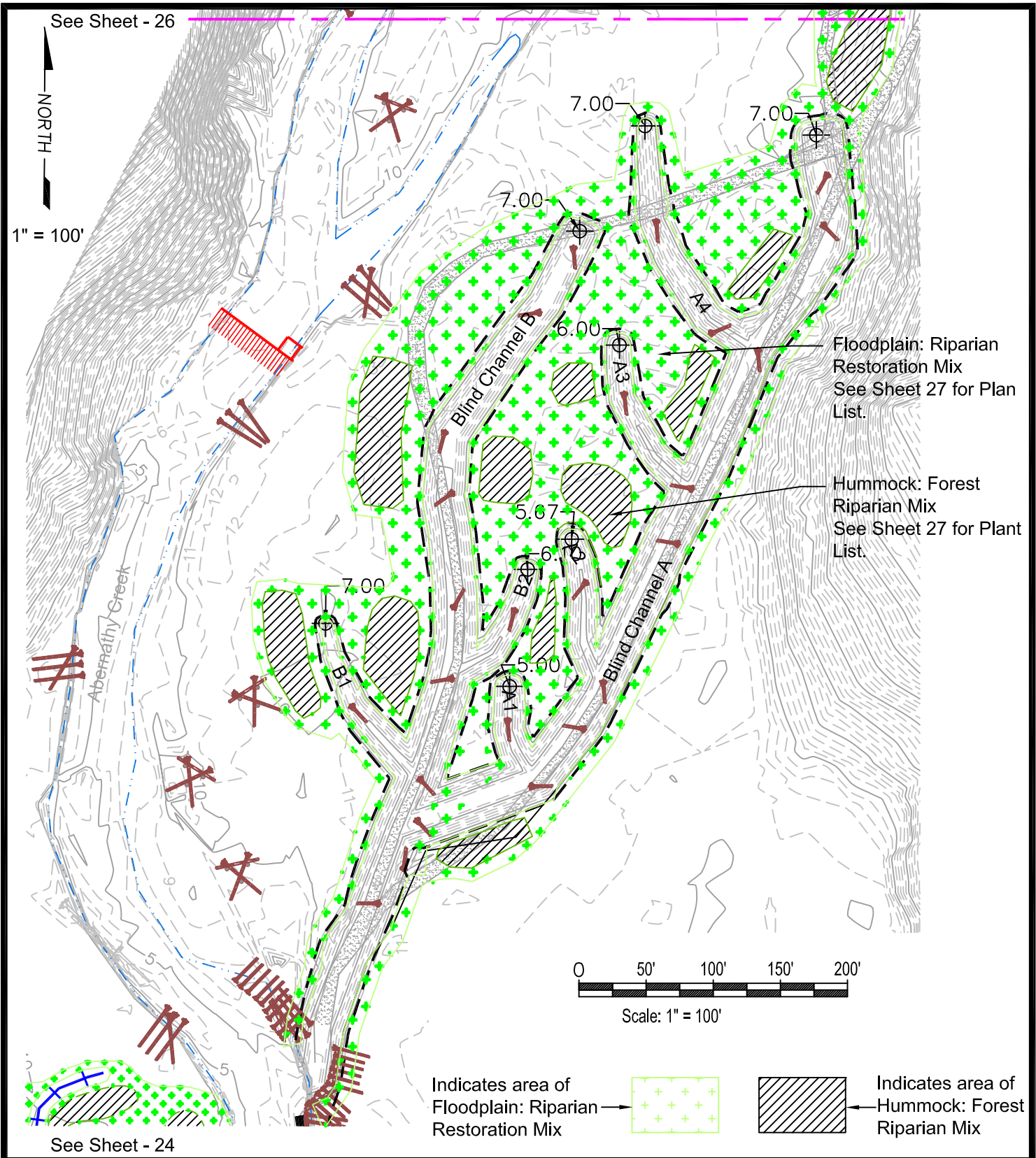
COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
Olympia Wa. 98501-1091

SHEET 24 of 27

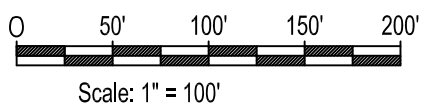
DATE 4- 9 - 12




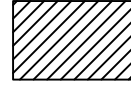


Floodplain: Riparian Restoration Mix  
See Sheet 27 for Plan List.

Hummock: Forest Riparian Mix  
See Sheet 27 for Plant List.



Indicates area of Floodplain: Riparian Restoration Mix → 

Indicates area of Hummock: Forest Riparian Mix → 

PURPOSE: Habitat Restoration and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

**Abernathy Creek Tidal Habitat Restoration**

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Planting Plan  
Channel A & B

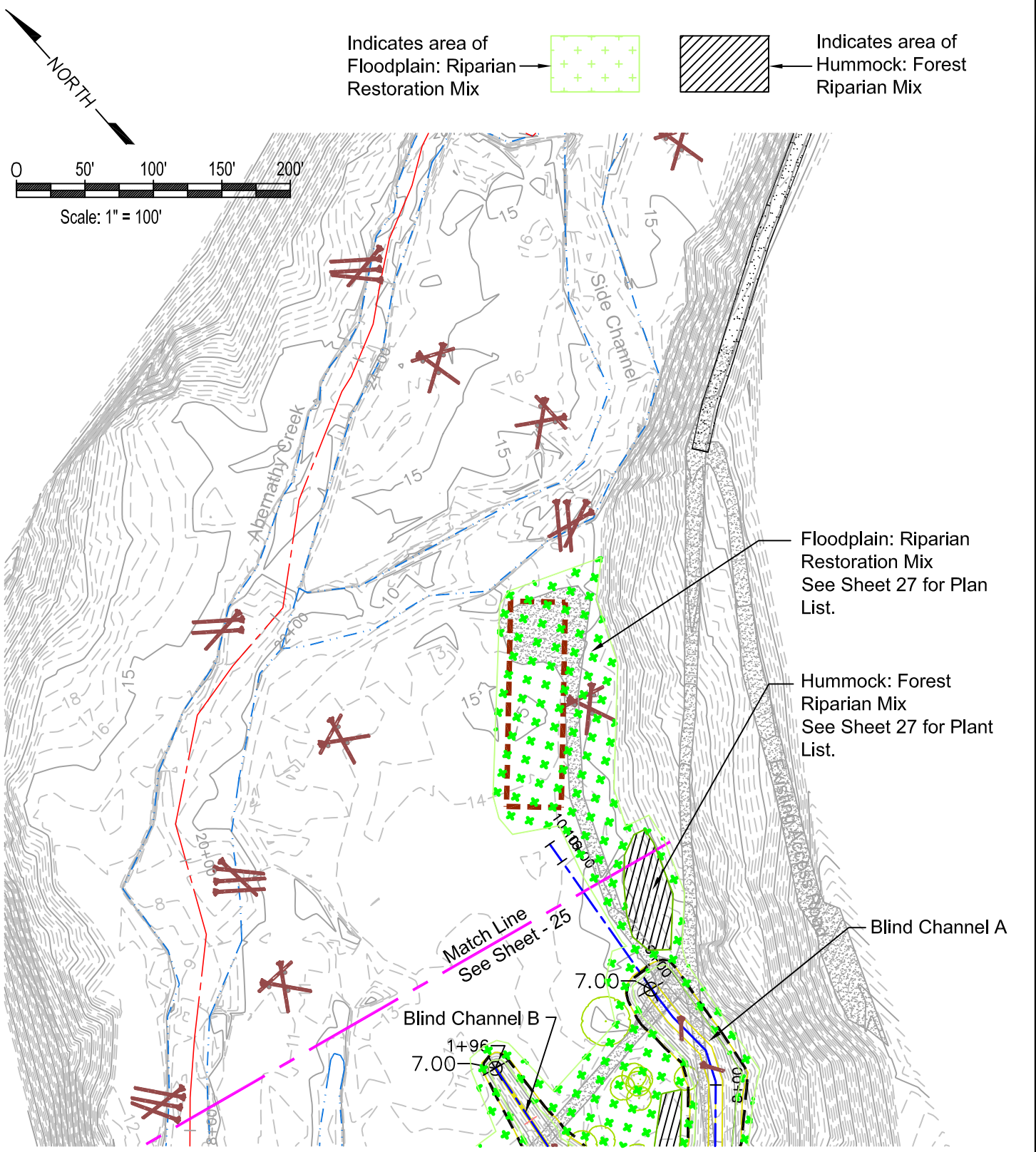
IN Abernathy Creek  
AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

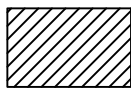
APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
Olympia Wa. 98501-1091

SHEET 25 of 27

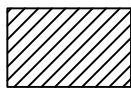
DATE 4- 9 - 12



Indicates area of  
Floodplain: Riparian  
Restoration Mix



Indicates area of  
Hummock: Forest  
Riparian Mix



Floodplain: Riparian  
Restoration Mix  
See Sheet 27 for Plan  
List.

Hummock: Forest  
Riparian Mix  
See Sheet 27 for Plant  
List.

Blind Channel A

Match Line  
See Sheet - 25

Blind Channel B  
1+96  
7.00

PURPOSE: Habitat Restoration  
and Enhancement

DATUM NAVD 88

ADJACENT PROPERTY OWNERS:

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

### Abernathy Creek Tidal Habitat Restoration

### Planting Plan Middle Reach

IN Sec. 10, T. 8 N., R 4 W., W.M.  
AT Tributary to Columbia River

COUNTY OF Cowlitz STATE Washington

APPLICATION BY Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
Olympia Wa. 98501-1091

SHEET 26 of 27

DATE 4- 9 - 12

Floodplain: Riparian Restoration Mix, Approx. 6 Acres			
<b>Trees:</b>	<b>Size</b>	<b>Spacing</b>	<b>Number Req.</b>
Red Alder	24" Min.	12' o.c.	600
Black Cottonwood	24" Min.	12' o.c.	600
Oregon Ash	24" Min.	12' o.c.	600
<b>Shrubs:</b>	<b>Size</b>	<b>Spacing</b>	<b>Number Req.</b>
Pacific Willow	36", Cutting	6' o.c.	1200
Red Osier Dogwood	36", Cutting	6' o.c.	1200
Pacific Ninebark	24"	6' o.c.	1200
Ocean Spray	24"	6' o.c.	1200
Service Berry	24"	6' o.c.	1200
Red Elderberry	24"	6' o.c.	1200
Hummocks: Forest Riparian Mix, Approx. 1 Acre			
<b>Trees:</b>	<b>Size</b>	<b>Spacing</b>	<b>Number Req.</b>
Western Red Cedar	Bareroot, 2+1	10' o.c.	125
Sitka Spruce	Bareroot, 2+1	10' o.c.	125
Douglas Fir	Bareroot, 2+1	10' o.c.	65
Grand Fir	Bareroot, 2+1	10' o.c.	65
Western Hemlock	Bareroot, 2+1	10' o.c.	65
<b>Shrubs:</b>	<b>Size</b>	<b>Spacing</b>	<b>Number Req.</b>
Pacific Ninebark	24"	6' o.c.	300
Ocean Spray	24"	6' o.c.	300
Service Berry	24"	6' o.c.	300
Red Elderberry	24"	6' o.c.	300

**PURPOSE:** Habitat Restoration and Enhancement

**DATUM** NAVD 88

**ADJACENT PROPERTY OWNERS:**

1. WSDOT
2. Albert Fogliana
3. Steven Ross
4. Barbara Spear

## Abernathy Creek Tidal Habitat Restoration

Planting Plan  
Plant Lists

**IN** Abernathy Creek  
**AT** Tributary to Columbia River

**COUNTY OF** Cowlitz      **STATE** Washington

**APPLICATION BY** Washington State  
Dept. of Fish & Wildlife  
Habitat Program  
600 Capital Way N.  
Olympia Wa. 98501-1091

**SHEET** 27 of 27

**DATE** 4- 9 - 12