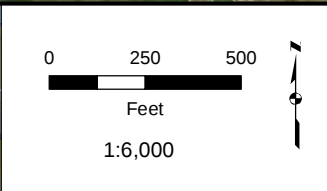
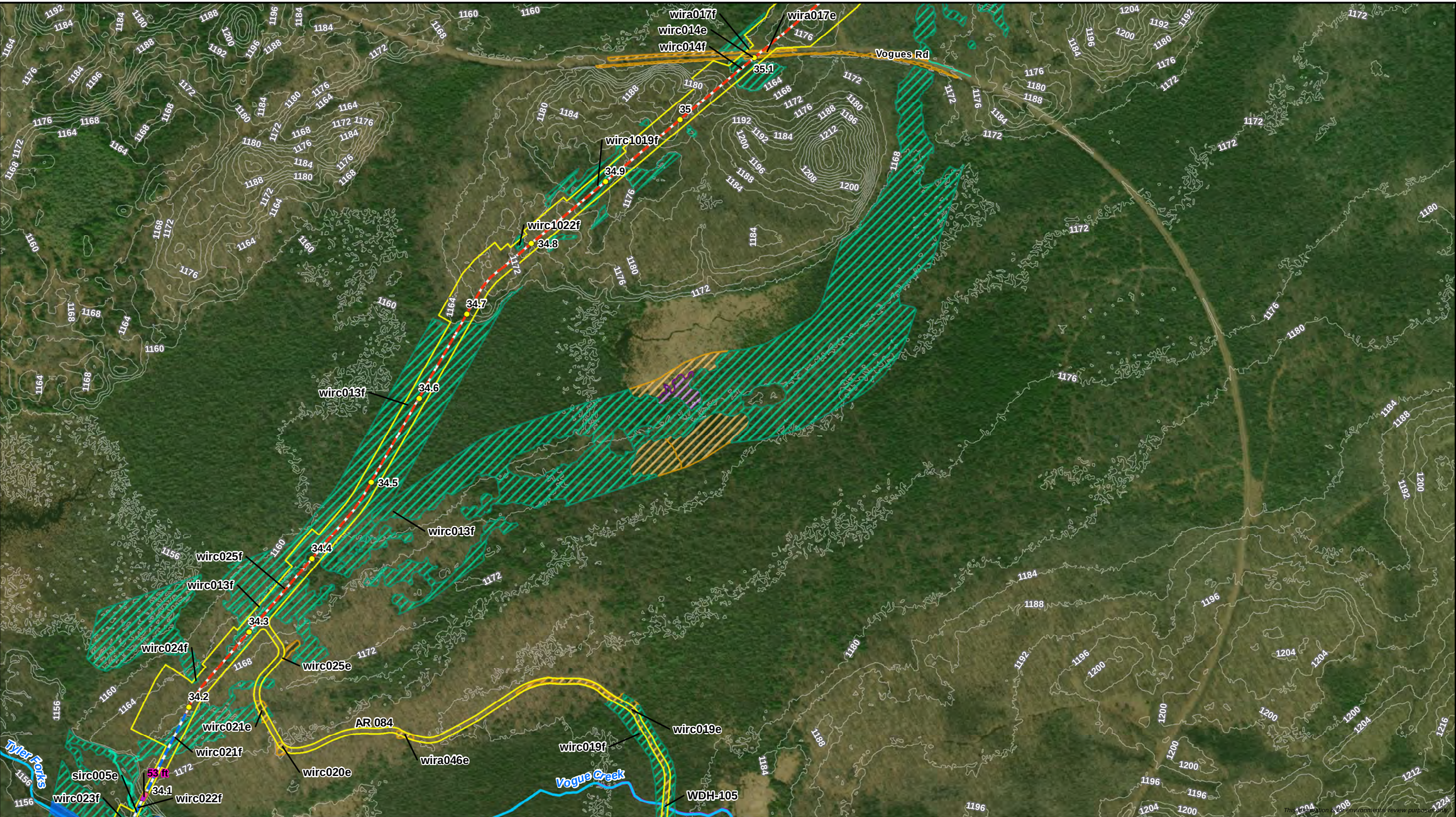


Line 5 Wisconsin Segment Relocation Project
Storm Water Pollution Prevention Plan

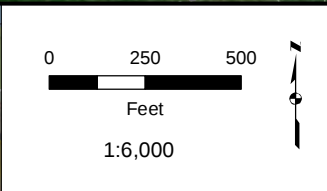
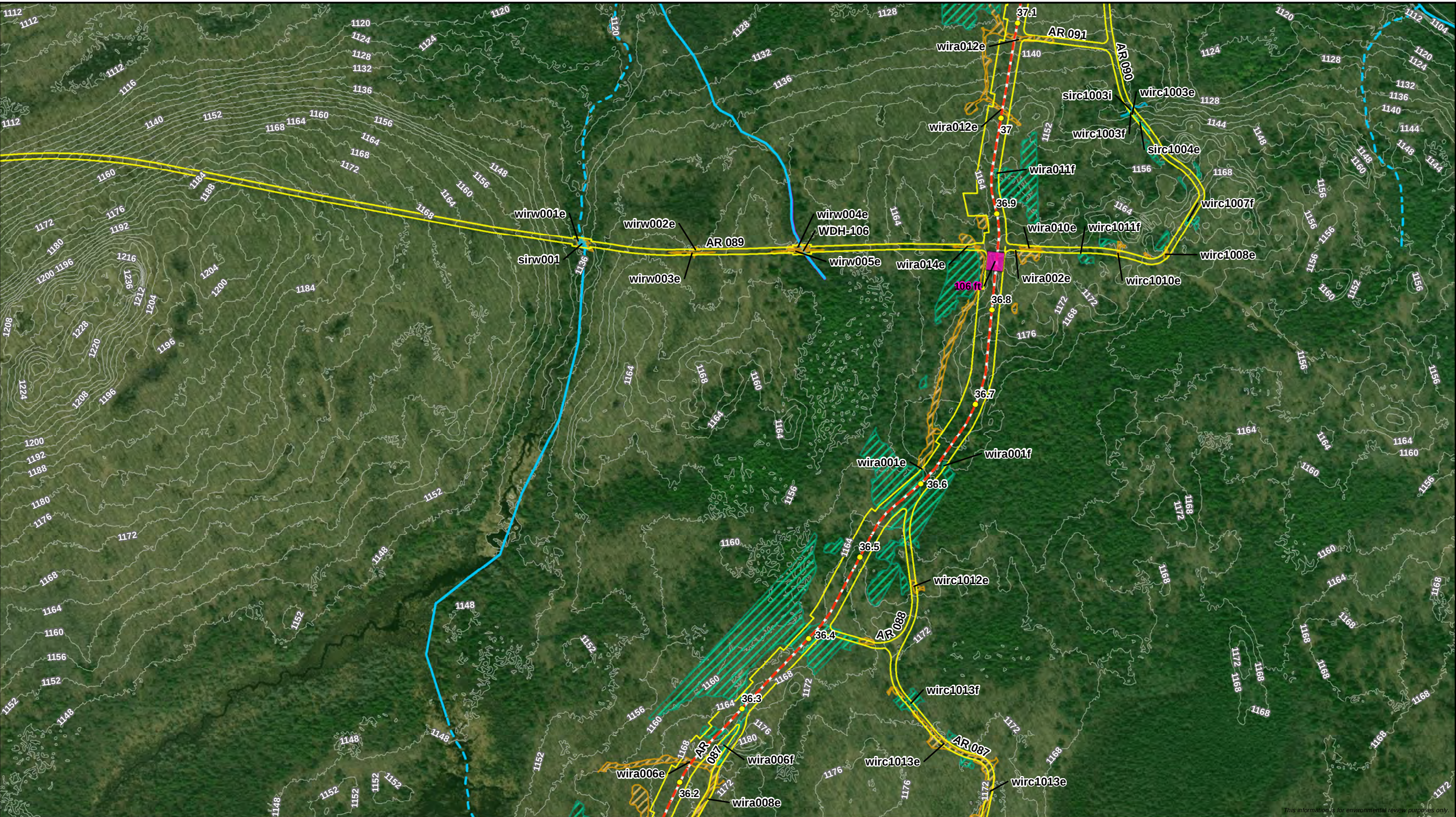
Attachment 2 continued
Erosion and Sediment Control Plan



- Milepost - Proposed Centerline - HDD/Direct Bore - Proposed Workspace 20% and Greater Slope Areas	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 40 of 50



- Milepost - Proposed Centerline - Proposed Workspace 20% and Greater Slope Areas 4' Contour	Wisconsin DNR 24K Hydro Delineated Waterbody - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2

Erosion and Sediment Control Map

Line 5 Wisconsin Segment Relocation Project

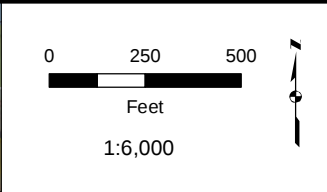
Enbridge Energy, L.P.

Iron County, Wisconsin

Page 42 of 50



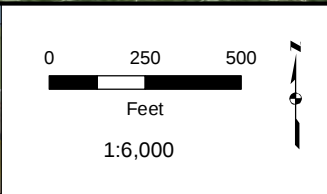
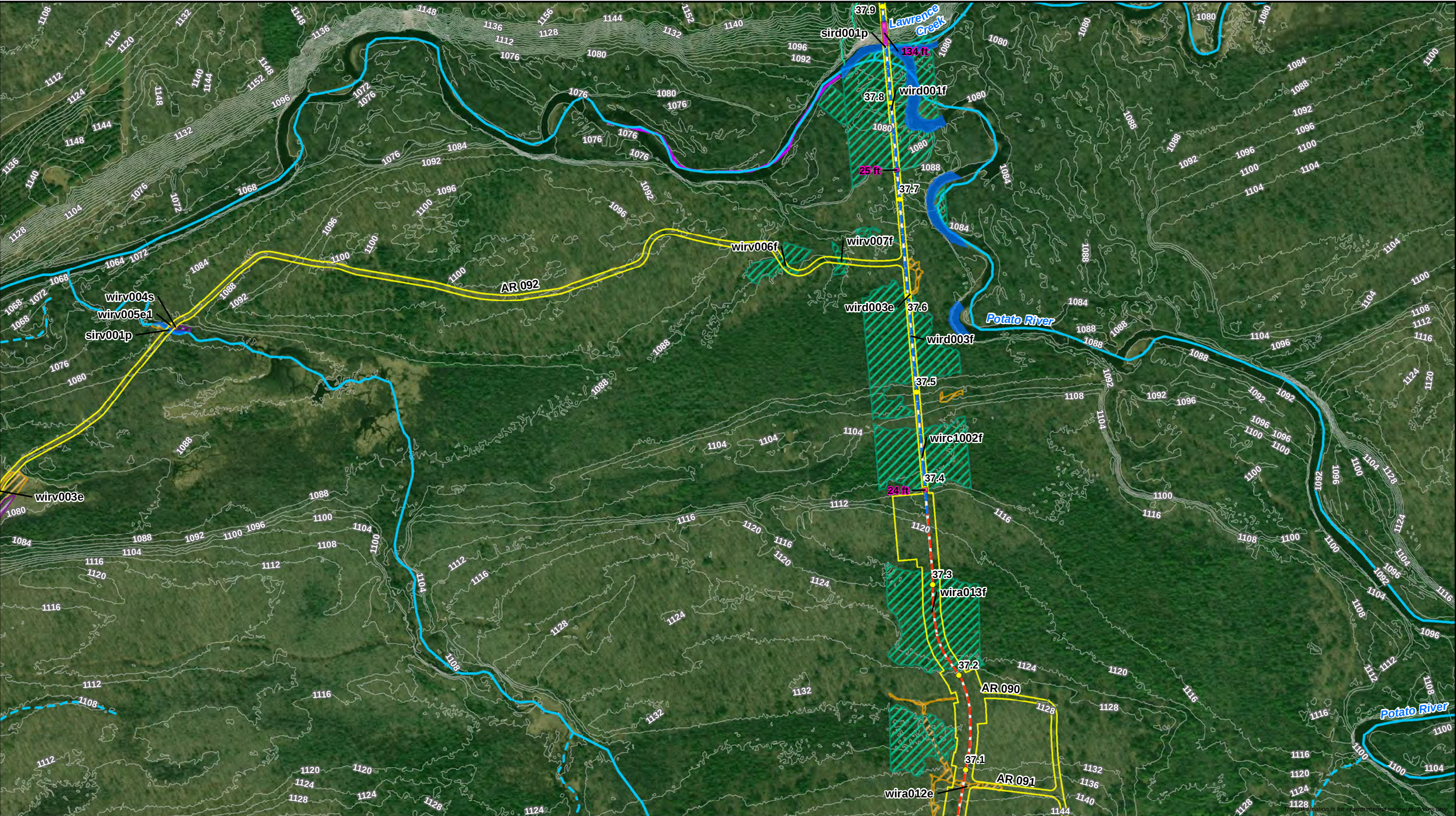
DRAWN BY: R.Cutting



- Milepost - Proposed Centerline - Proposed Workspace 20% and Greater Slope Areas 4' Contour	Wisconsin DNR 24K Hydro Delineated Waterbody - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
	Wisconsin DNR 24K Hydro Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	

Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 43 of 50



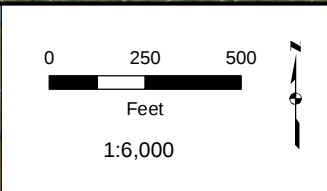
- Milepost - Proposed Centerline - HDD/Direct Bore - Proposed Workspace 20% and Greater Slope Areas	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	- Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 44 of 50

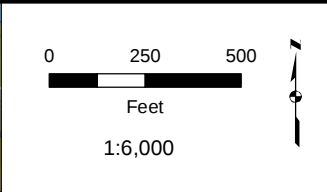
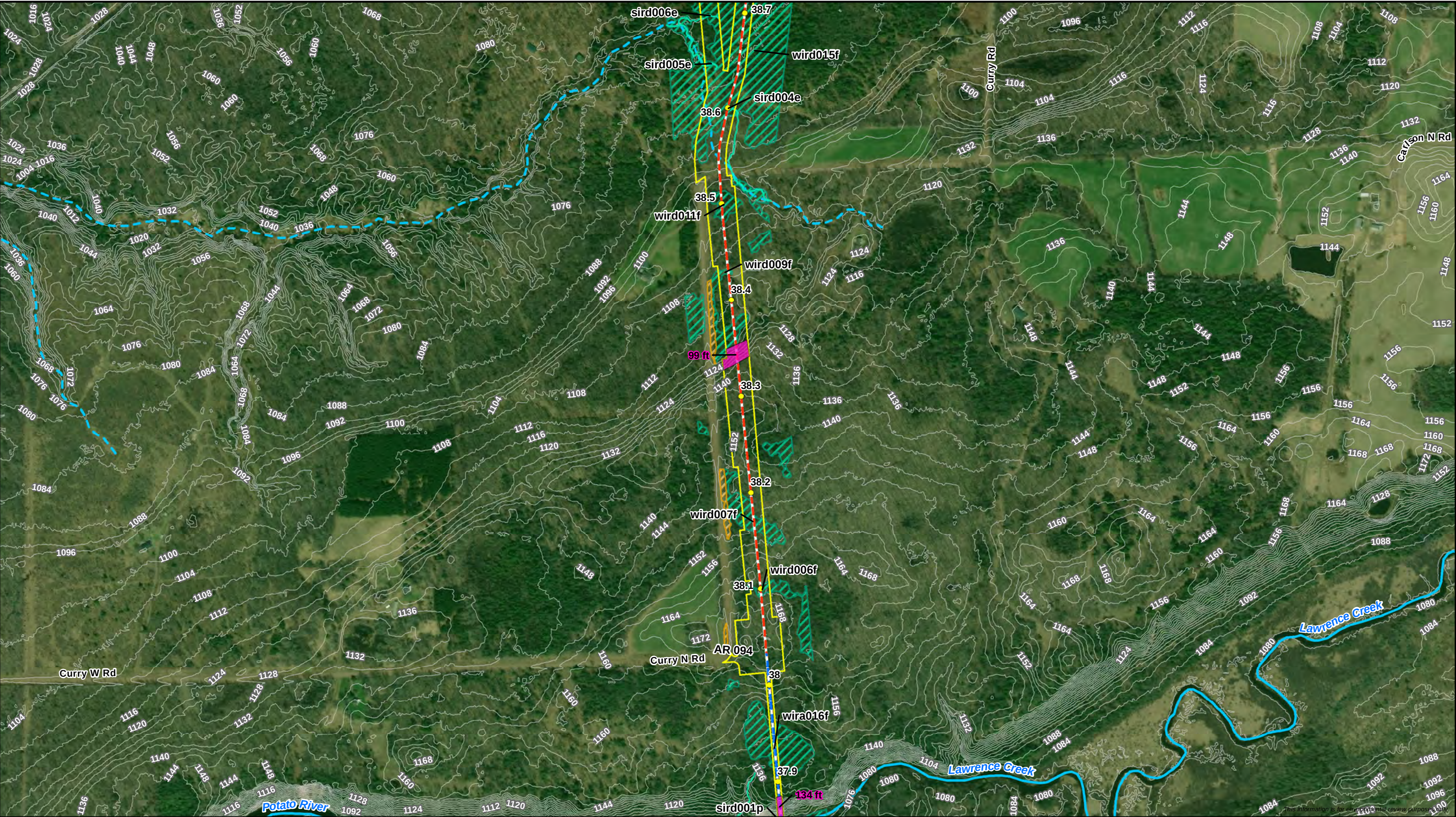




- Milepost - Proposed Centerline - Proposed Workspace 20% and Greater Slope Areas 4' Contour	Wisconsin DNR 24K Hydro Delineated Waterbody - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
	Wisconsin DNR 24K Hydro Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	

Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

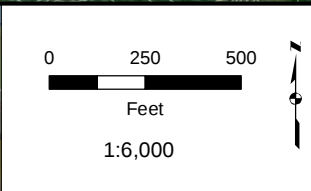
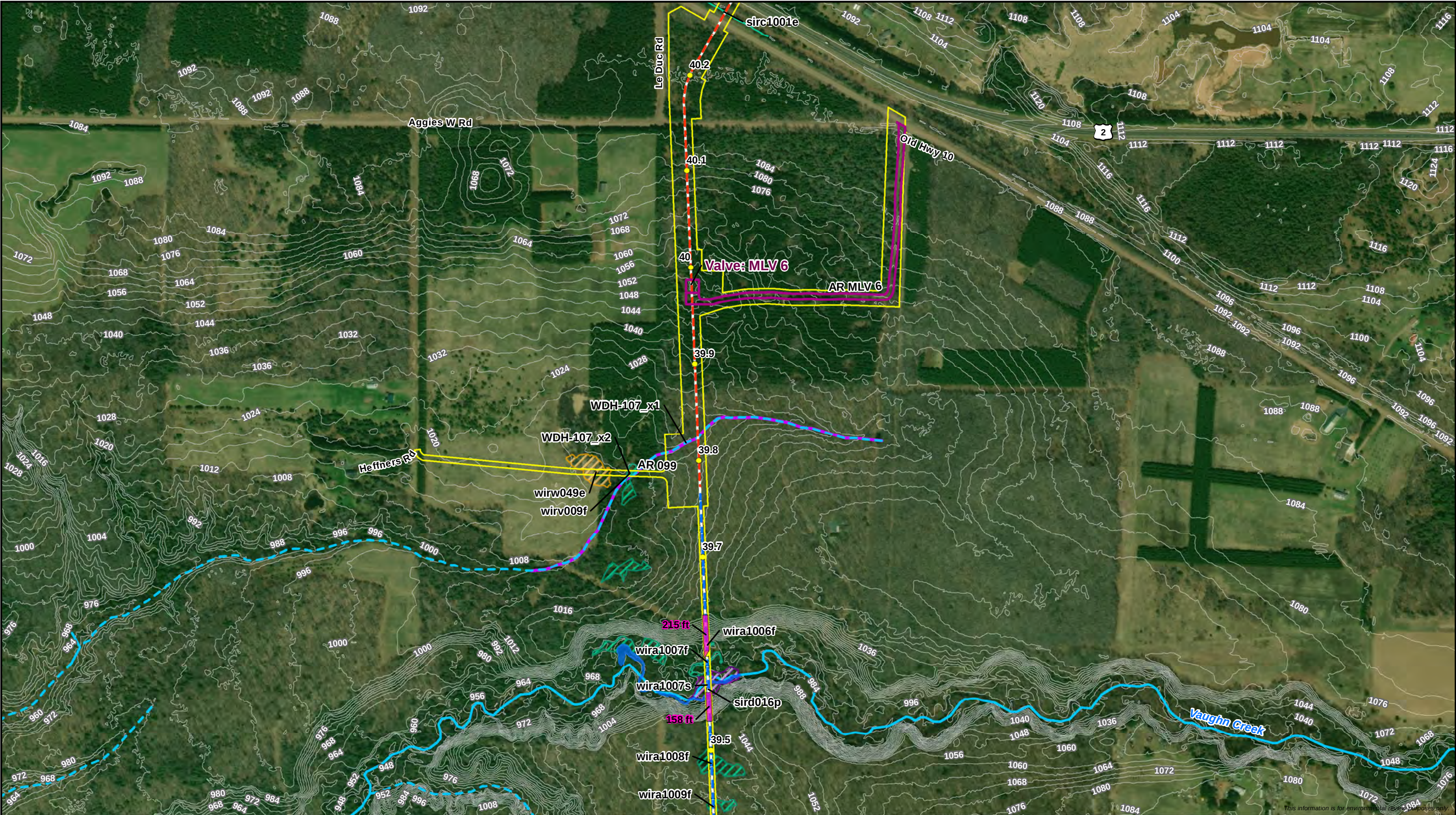
Page 45 of 50



- Milepost - Proposed Centerline - HDD/Direct Bore - Proposed Workspace 20% and Greater Slope Areas	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	- Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 46 of 50

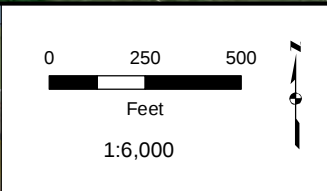
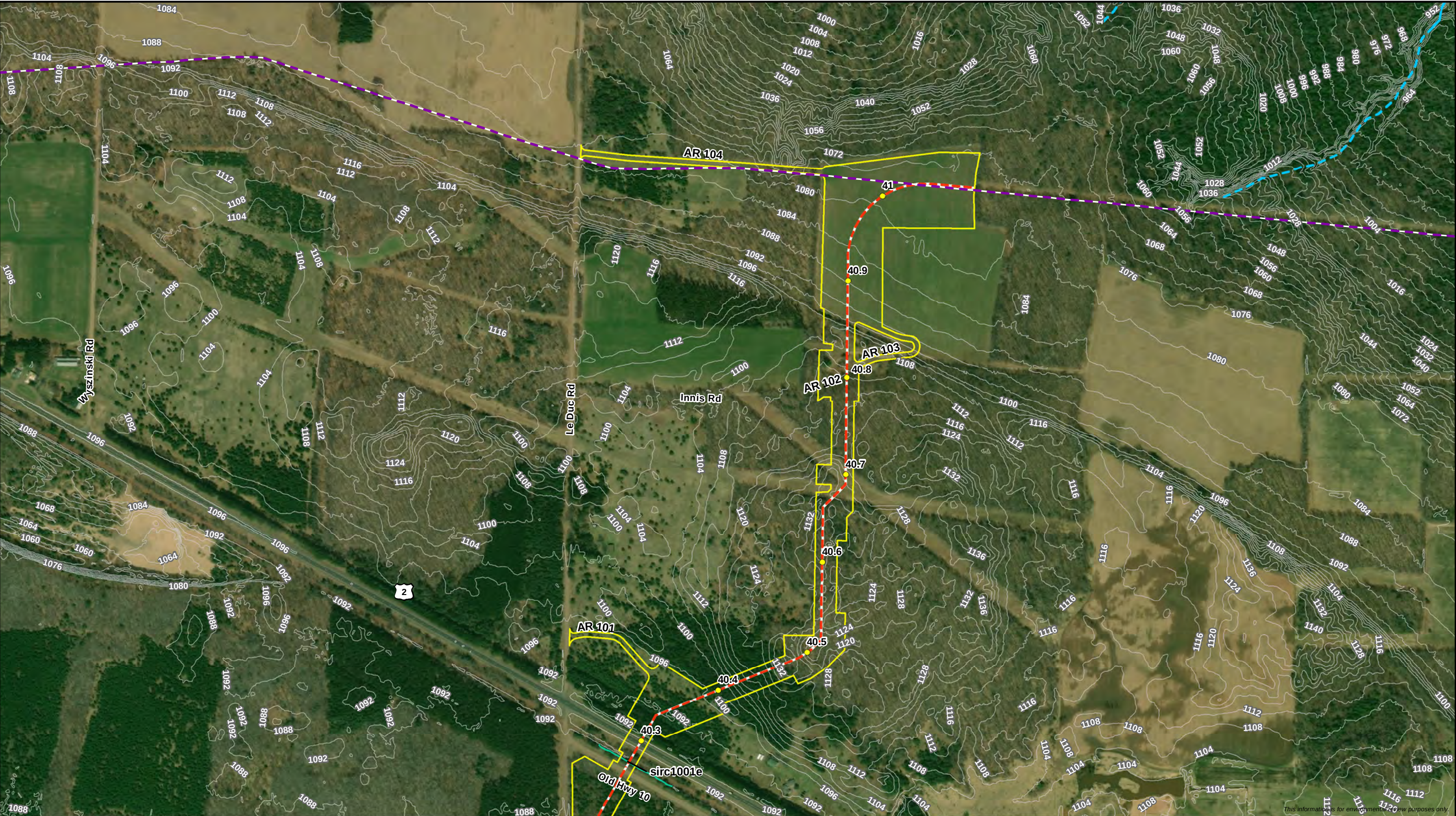


- Milepost - Proposed Centerline - HDD/Direct Bore - Proposed Workspace 20% and Greater Slope Areas - Permanent Valve/Road	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	- Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 48 of 50

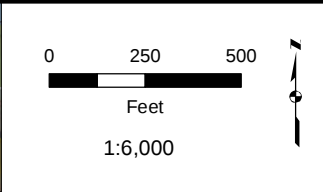
DRAWN BY: R.Cutting



- Milepost - Proposed Centerline - Proposed Workspace 20% and Greater Slope Areas - Existing Enbridge Pipeline	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Delineated Waterbody - Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	- Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 49 of 50



- Milepost - Proposed Centerline - Proposed Workspace 20% and Greater Slope Areas - Existing Enbridge Pipeline - Permanent Valve/Road	4' Contour - Wisconsin DNR 24K Hydro - Perennial Stream/River - Intermittent Stream - WI DNR Waterbody	- Pond - Perennial Waterbody - Intermittent Waterbody - Ephemeral Waterbody	- Delineated Waterbody - Delineated Wetland - PFO Wetland - PSS Wetland - PEM Wetland
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Attachment 2
Erosion and Sediment Control Map
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.
Iron County, Wisconsin

Page 50 of 50

DRAWN BY: R.Cutting

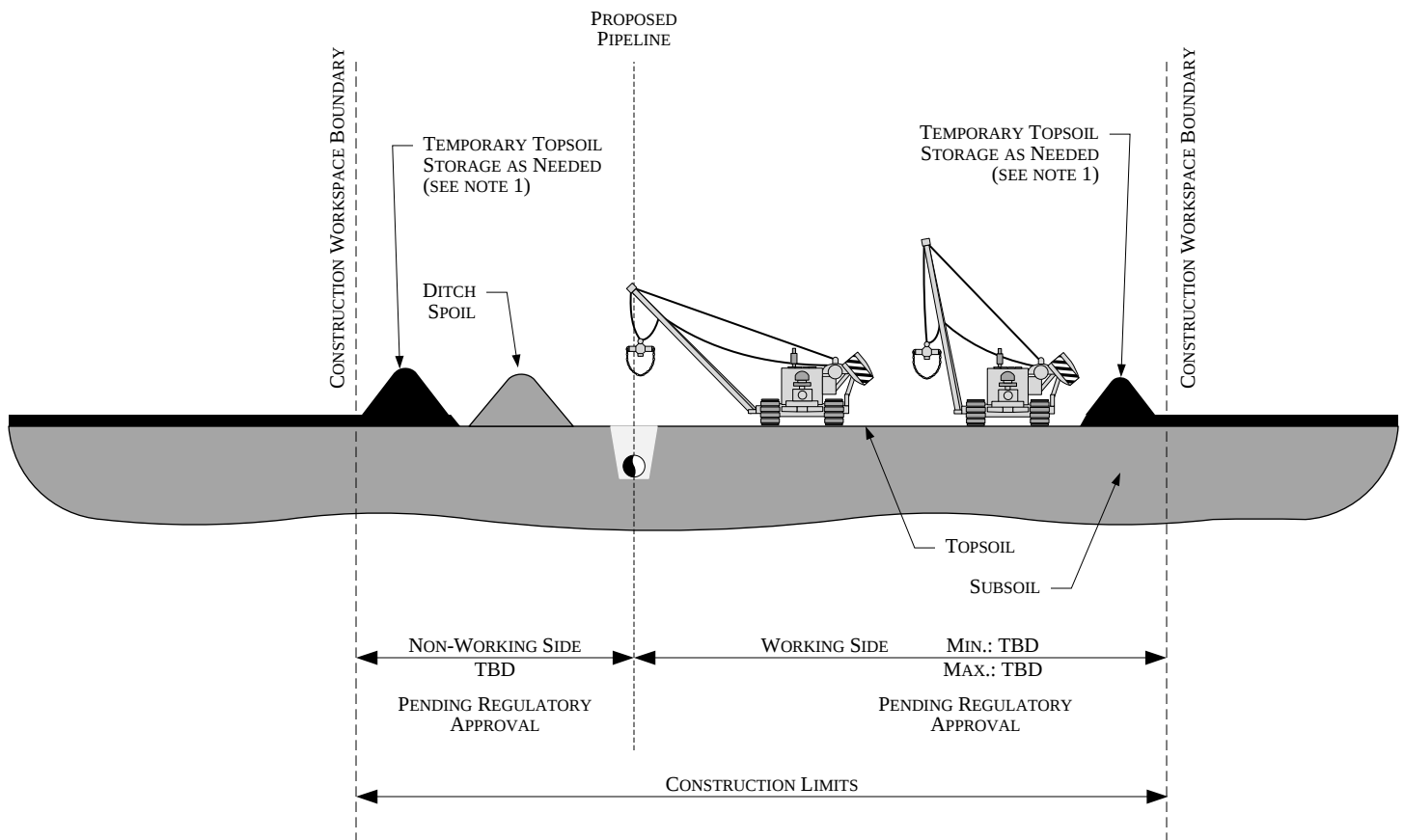
**Line 5 Wisconsin Segment Relocation Project
Storm Water Pollution Prevention Plan**

Erosion and Sediment Control Measures

Figure ^a

Resource area/Stream	MP	1	2	3	4	5	6	7	8	9/ 10	11	12	13	14	15	16	17	18	19	20	21	22/ 23	24	25
Steep Slopes					X	X	X	X	X	X	X								X	X				
Non-steep slope uplands		X	X	X	X	X	X			X									X	X				
Wetland crossings					X	X	X											X	X	X				
Sensitive stream crossings					X	X	X												X	X				
Bay City Creek (sase006p)	0.6				X	X	X					X	X		X	X	X		X	X				X
Little Beartrap Creek (sasa047i)	2.2				X	X	X					X	X		X	X	X		X	X		X		X
Beartrap Creek (sasb007i)	2.9				X	X	X					X	X		X	X	X		X	X		X	X	
Rock Creek (sasc041p)	5.1				X	X	X					X	X		X	X	X		X	X	X		X	
UNT Deer Creek (sasc039i)	5.9				X	X	X					X	X		X	X	X		X	X		X		
UNT Marengo River (sase1015i)	12.8				X	X	X					X	X		X	X	X		X	X	X			X
UNT Brunsweler River (sasc1006p)	14.7				X	X	X					X	X		X	X	X		X	X			X	X
UNT Trout Brook (sasc1003p)	15.9				X	X	X					X	X		X	X	X		X	X		X	X	
UNT Silver Creek (sasd1017p)	19.8				X	X	X					X	X		X	X	X		X	X	X		X	
UNT Gehrman Creek (sasw011i)	28.6				X	X	X					X	X		X	X	X		X	X	X			X
Camp Four Creek (sasw005i)	29.8				X	X	X					X	X		X	X	X		X	X				
Feldcher Creek (WDH103)	31.8				X	X	X					X	X		X	X	X		X	X				
All other stream crossings ^b					X	X	X					X	X	X	X	X	X		X	X				
^a Referenced figures are included in Attachment 2 of this application.																								
^b Refer to waterbody impact table in Attachment 10 of this application for stream-specific crossing method.																								
Figure 1	Typical Topsoil Segregation - Full Right-of-Way										Figure 14 Typical Waterbody Crossing Method Open-Cut Wet Trench Method													
Figure 2	Typical Topsoil Segregation - Trench Line Only										Figure 15 Typical Waterbody Crossing Method Dam and Pump Method													
Figure 3	Typical Topsoil Segregation - Modified Ditch Plus Spoil Side										Figure 16 Typical Waterbody Crossing Method Flume Method													
Figure 4	Typical Silt Fence Installation										Figure 17 Typical Final Stream Bank Stabilization Rip Rap & Erosion Control													
Figure 5	Typical Straw Bale Installation										Figure 18 Typical Wetland Crossing Method													
Figure 6	Typical Biolog Installation										Figure 19 Typical Dewatering Measures													
Figure 7	Typical Erosion Control Blanket Installation										Figure 20 Straw Bale Dewatering Structure													
Figure 8	Typical Cat Tracking										Figure 21 Typical for Remediation Biolog Stream Bank Stabilization													

Figure 9	Typical Temporary or Permanent Berm (Perspective View)	Figure 22	Typical for Remediation Rootwad Stream Bank Stabilization (Plan View)
Figure 10	Typical Temporary or Permanent Berms (Elevation View)	Figure 23	Typical for Remediation Rootwad Stream Bank Stabilization (Side View)
Figure 11	Permanent Slope Breakers (Perspective View)	Figure 24	Typical for Remediation Soil Wraps with Branch Layering & Willow Stake Biostabilization
Figure 12	Typical Span Type Bridge With or Without Instream Support	Figure 25	Typical for Remediation Typical Stream Bank Regrading (Side View)
Figure 13	Typical Rock Flume Bridge		



PROFILE

NOTES:

1. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY
2. TWO FEET (2') MINIMUM SEPARATION OR BARRIER BETWEEN TOPSOIL AND SUBSOIL



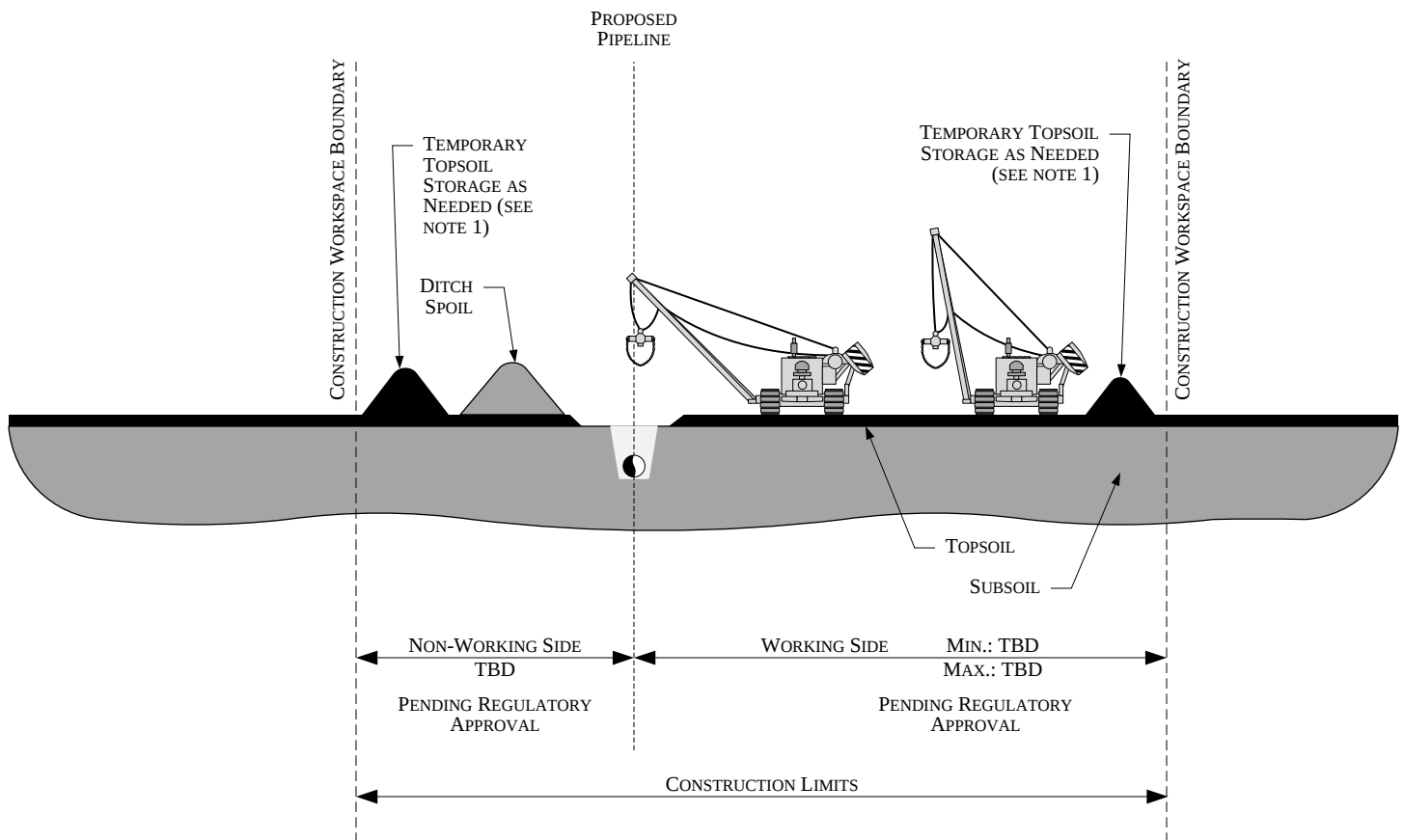
Figure 1
Environmental Protection Plan
 Typical Topsoil Segregation – Full Right-of-Way

Scale: NTS

Date: 10/11/2016

Revised: 12/17/2019

Location: M:\Department Tasks\EPP Figures w\Borders\



PROFILE

NOTES:

1. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY
2. TWO FEET (2') MINIMUM SEPARATION OR BARRIER BETWEEN TOPSOIL AND SUBSOIL



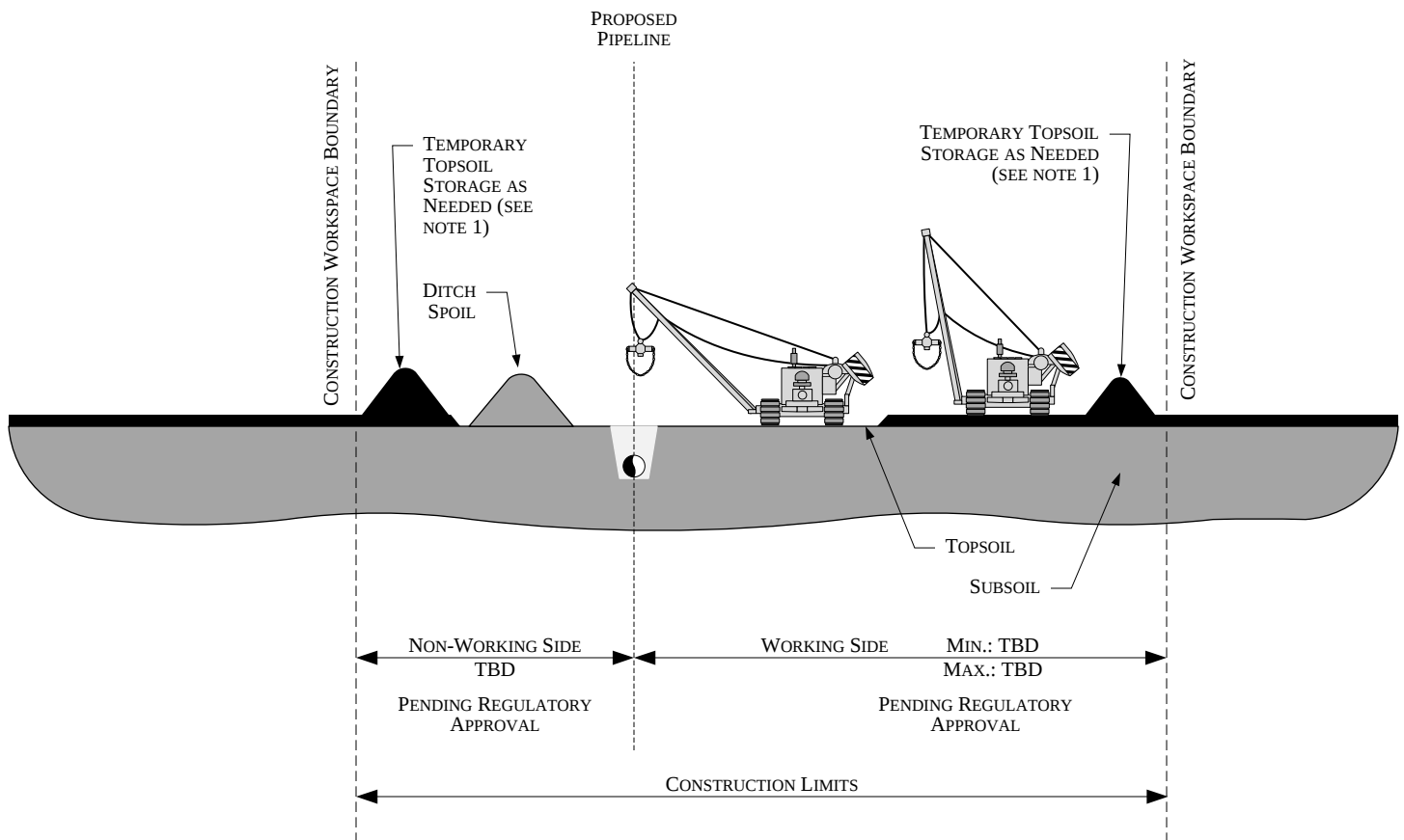
Figure 2
Environmental Protection Plan
 Typical Topsoil Segregation – Trench Line Only

Scale: NTS

Date: 10/11/2016

Revised: 12/17/2019

Location: M:\Department Tasks\EPP Figures w\Borders\



PROFILE

NOTES:

1. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY
2. TWO FEET (2') MINIMUM SEPARATION OR BARRIER BETWEEN TOPSOIL AND SUBSOIL



Figure 3
Environmental Protection Plan
 Typical Topsoil Segregation – Modified Ditch Plus
 Spoil Side

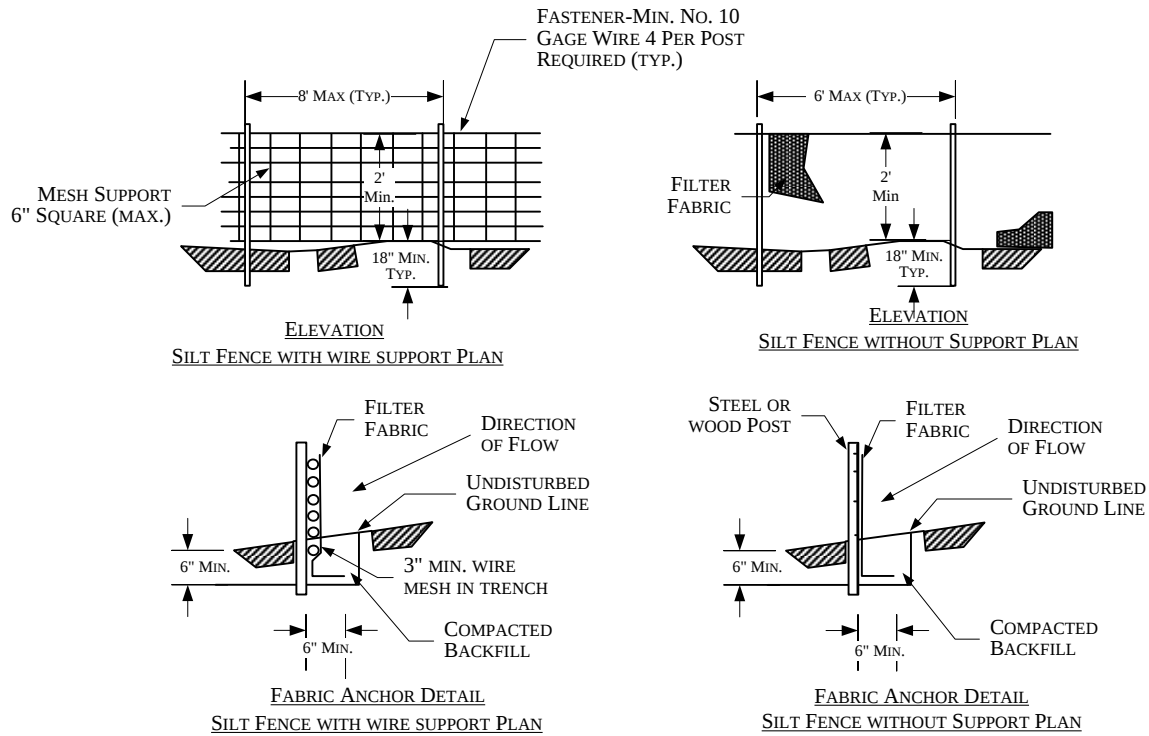
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Date: 10/11/2016

Revised: 12/17/2019

Location: M:\Department Tasks\EPP Figures w\Borders\

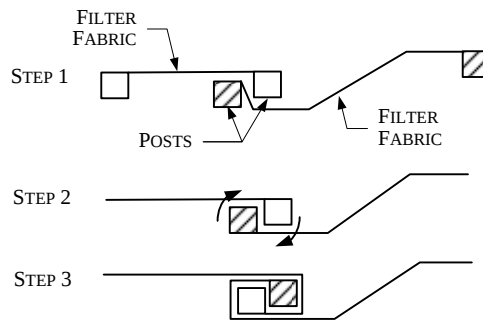
SILT FENCE PLAN (NTS)



NOTES:

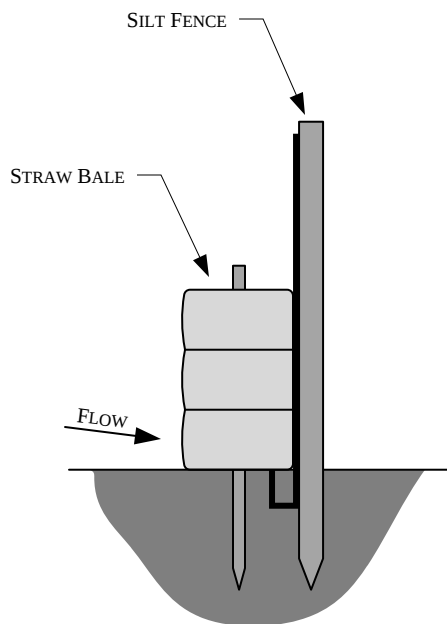
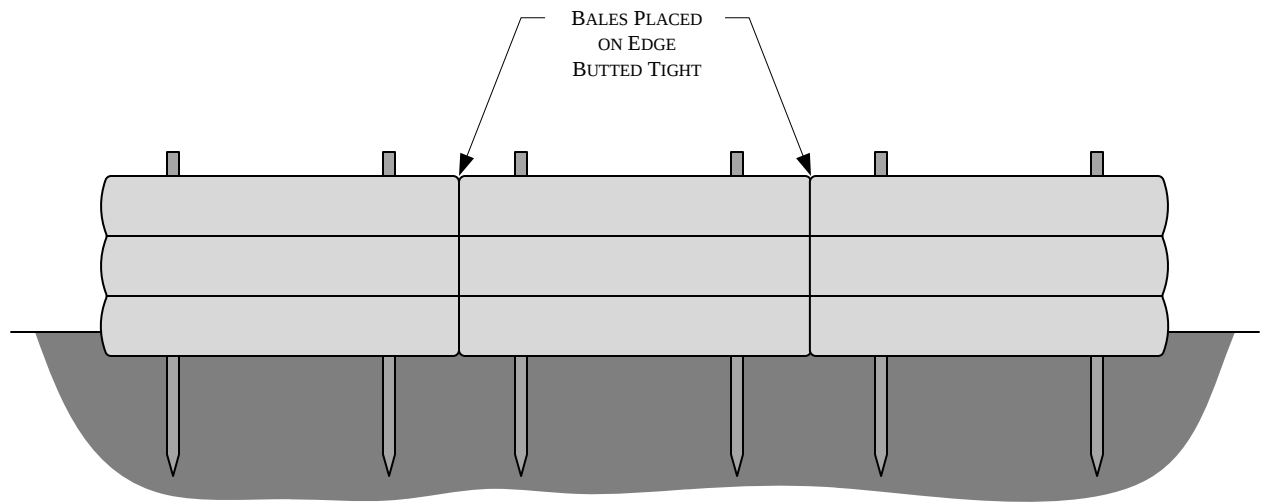
1. WIRES OF MESH SUPPORT SHALL BE MIN. GAGE NO. 12.
2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF THE SPECIFICATION WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN. (SIEVE NO.)
3. THE POSTS USED TO SUPPORT THE SILT FENCE SHOULD BE HARDWOOD MATERIAL WITH A MINIMUM CROSS SECTIONAL AREA OF 4 INCHES SQUARE AND 4 FEET LONG. METAL POSTS SHOULD BE USED IN AREAS THAT POND WATER.

ATTACHING TWO SILT FENCES

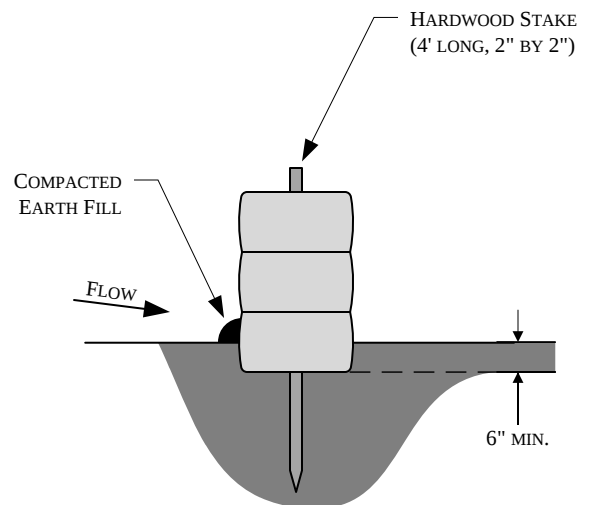


NOTES:

1. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
3. DRIVE BOTH POSTS A MINIMUM OF 18 INCHES IN THE GROUND AND BURY THE FLAP.

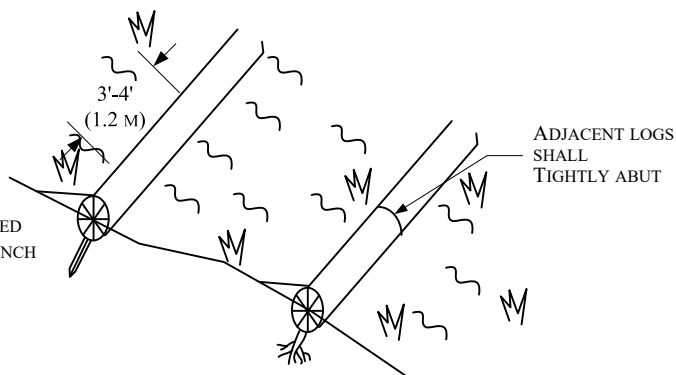


STRAW BALES AND SILT FENCE

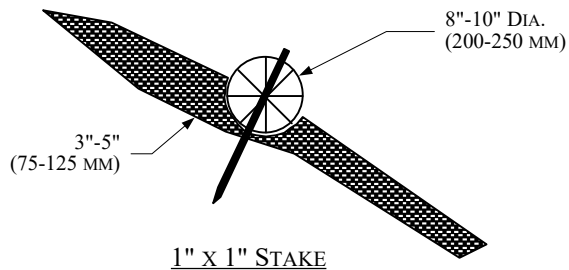
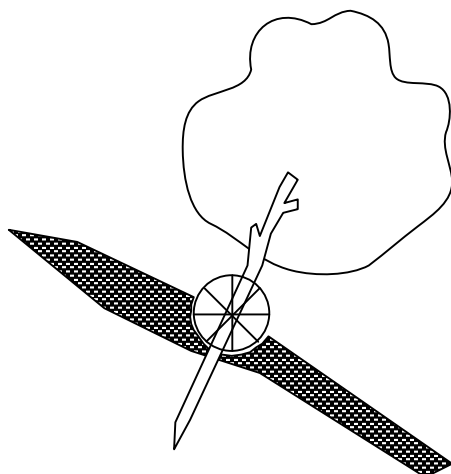
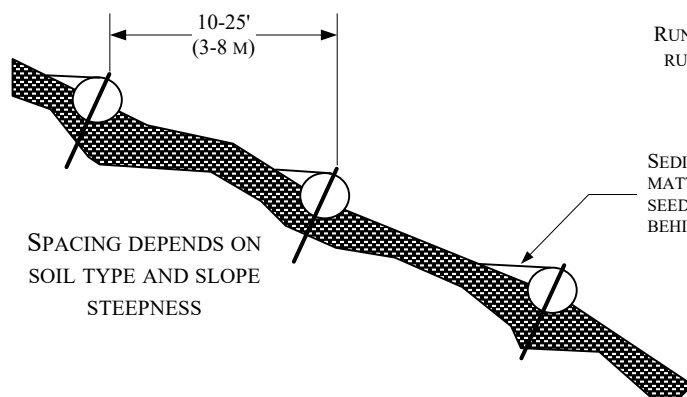


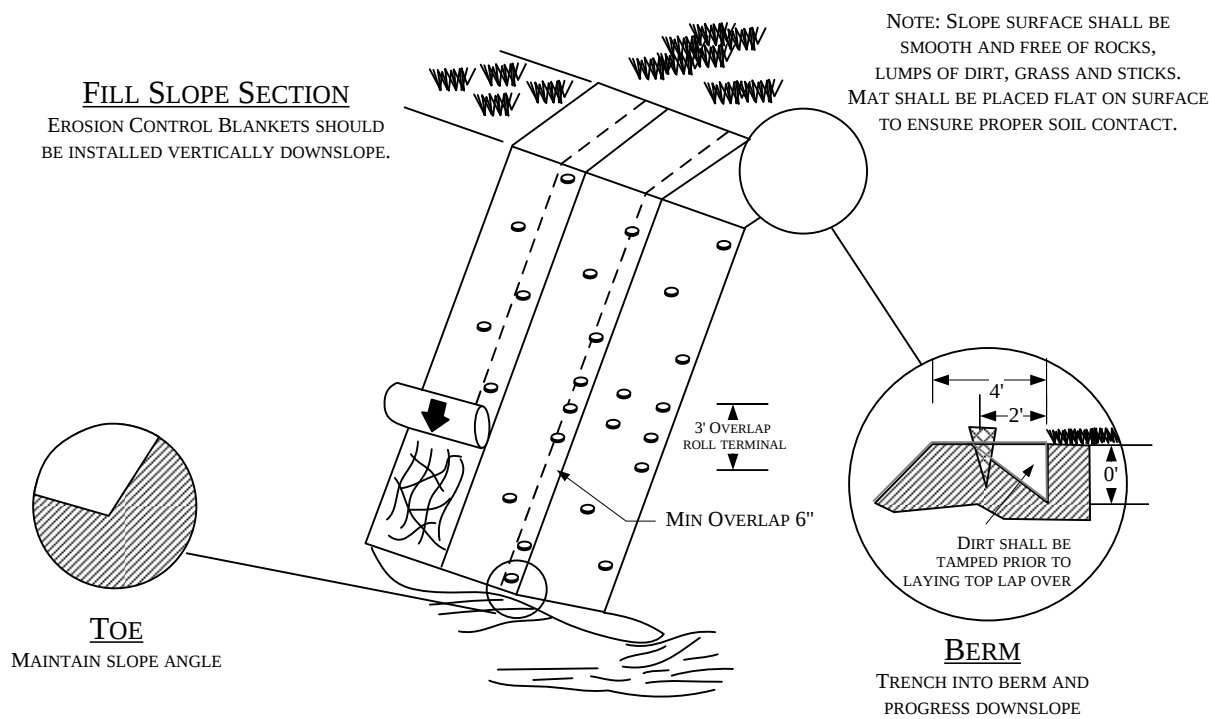
STRAW BALES ONLY

BIOLOGS SHOULD BE PLACED AND STAKED SECURELY ALONG SLOPE CONTOURS. TRENCH SHOULD BE APPROX. 3" X 5".



RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE LOG.





STREAM CHANNEL
EROSION CONTROL BLANKETS SHOULD BE INSTALLED HORIZONTALLY WITH STREAM FLOW.

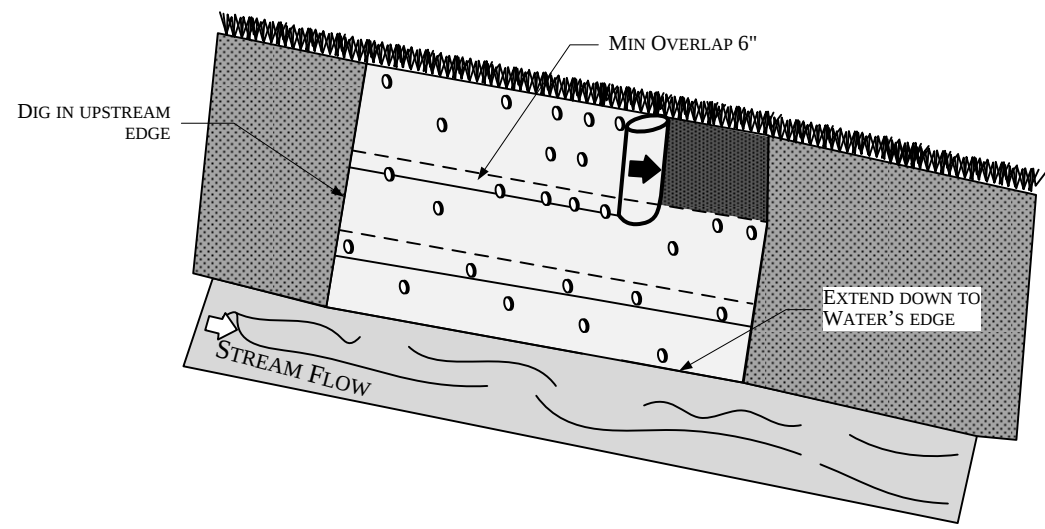
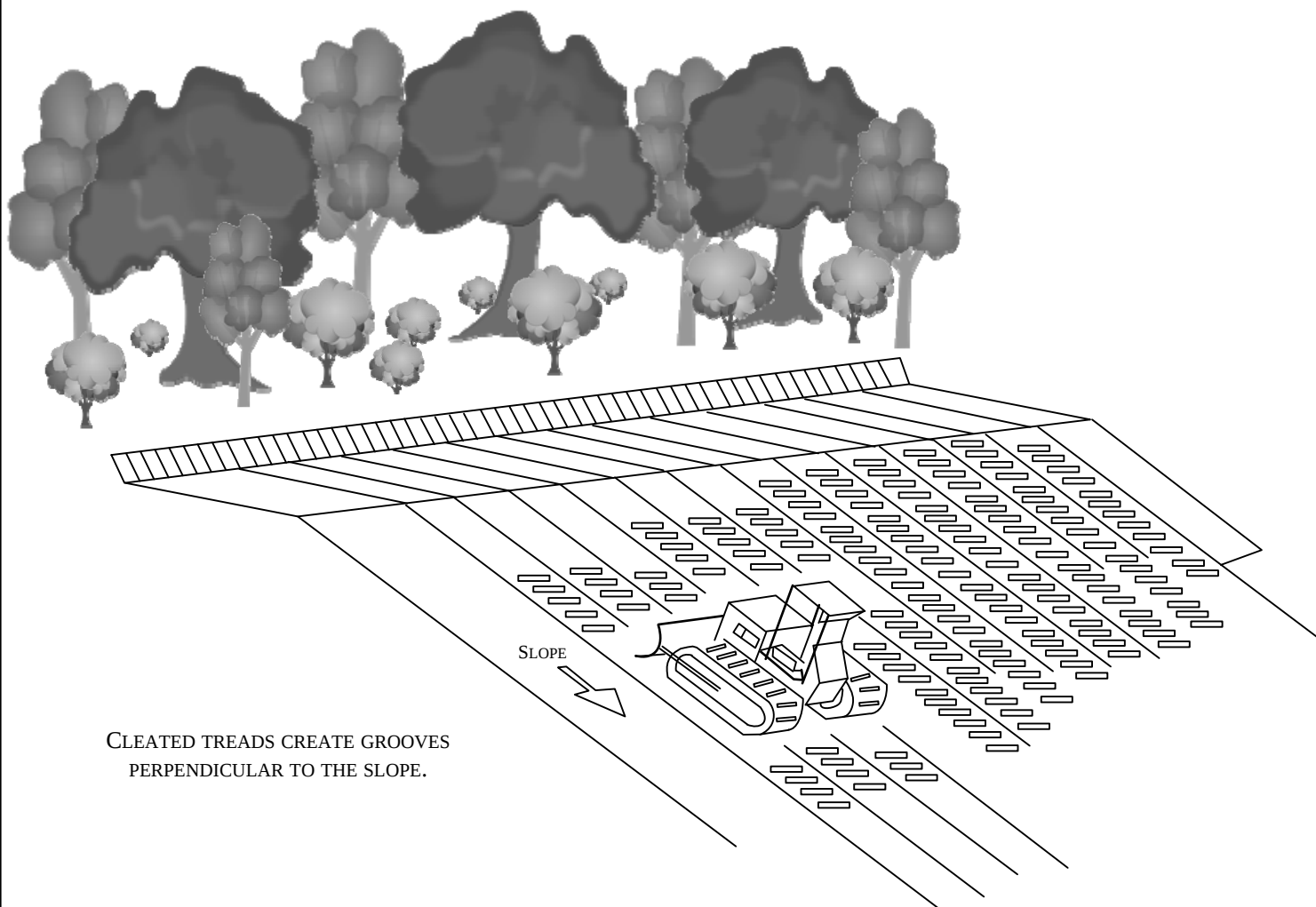


Figure 7
Environmental Protection Plan
Typical Erosion Control Blanket Installation

Scale: NTS
Date: 11/3/2016
Revised: 3/21/2017
Location: M:\Department Tasks\EPP Figures w\Borders\





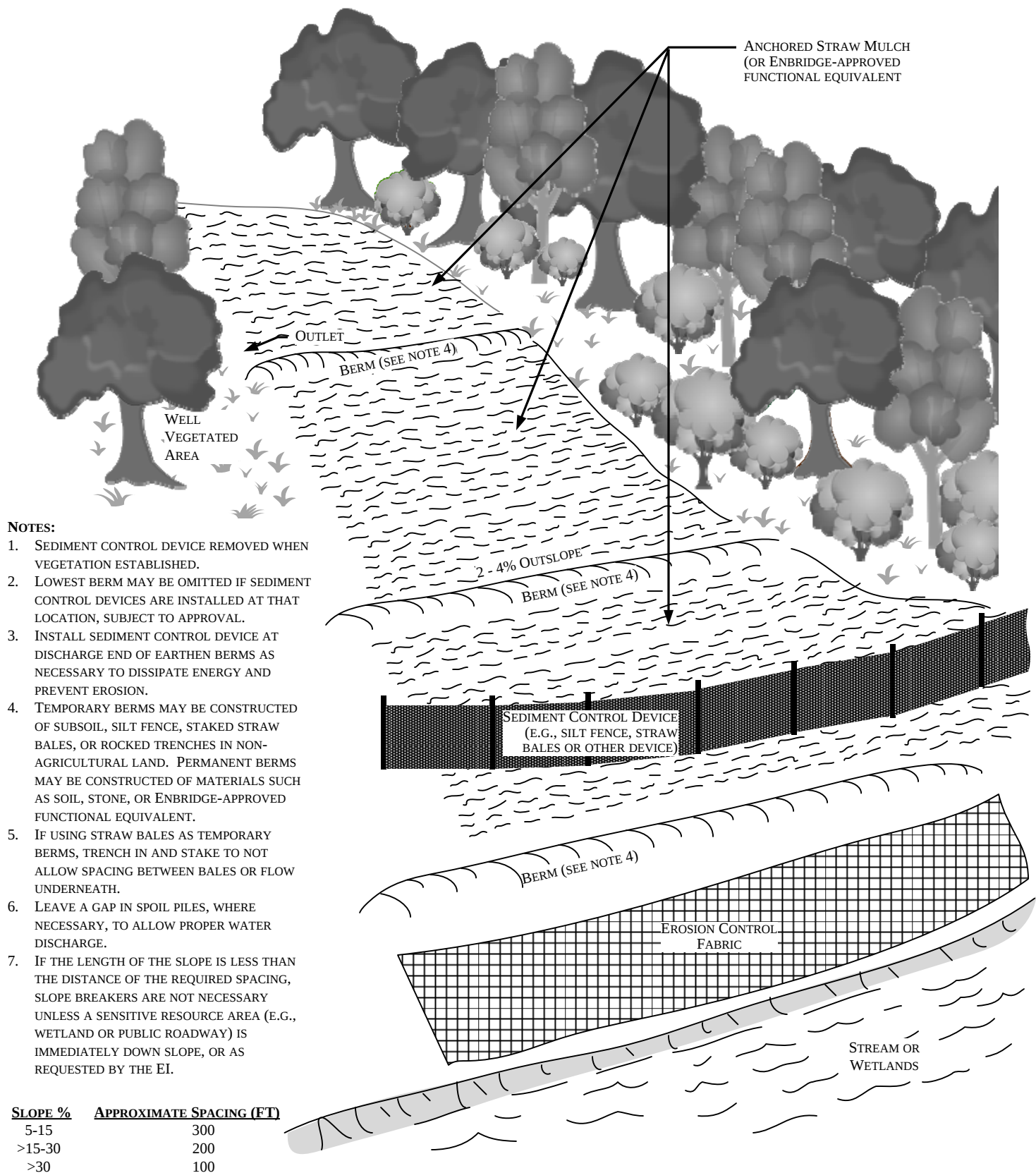


Figure 9

Environmental Protection Plan

Typical Temporary or Permanent Berms (Perspective View)

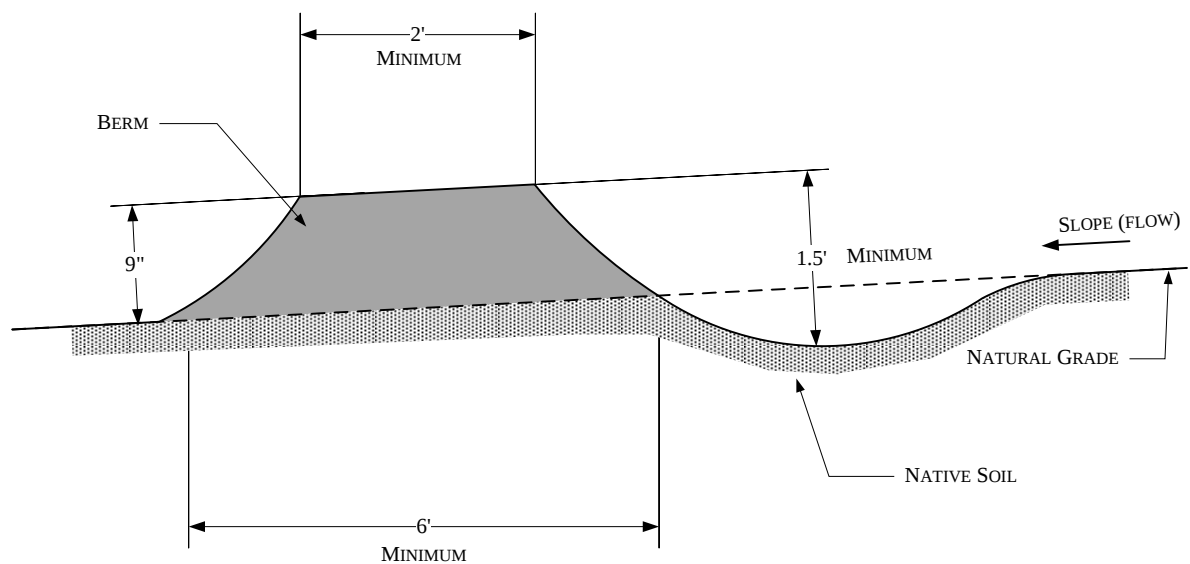
Scale: NTS

Date: 11/14/2000

Revised: 3/21/2017

Location: M:\Department Tasks\EPP Figures w\Borders\





NOTES

1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 4 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL-VEGETATED STABLE AREAS, SEDIMENT CONTROL DEVICES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.
5. DIMENSIONS ARE GUIDELINES AND MAY BE MODIFIED SUBJECT TO FIELD CONDITIONS.



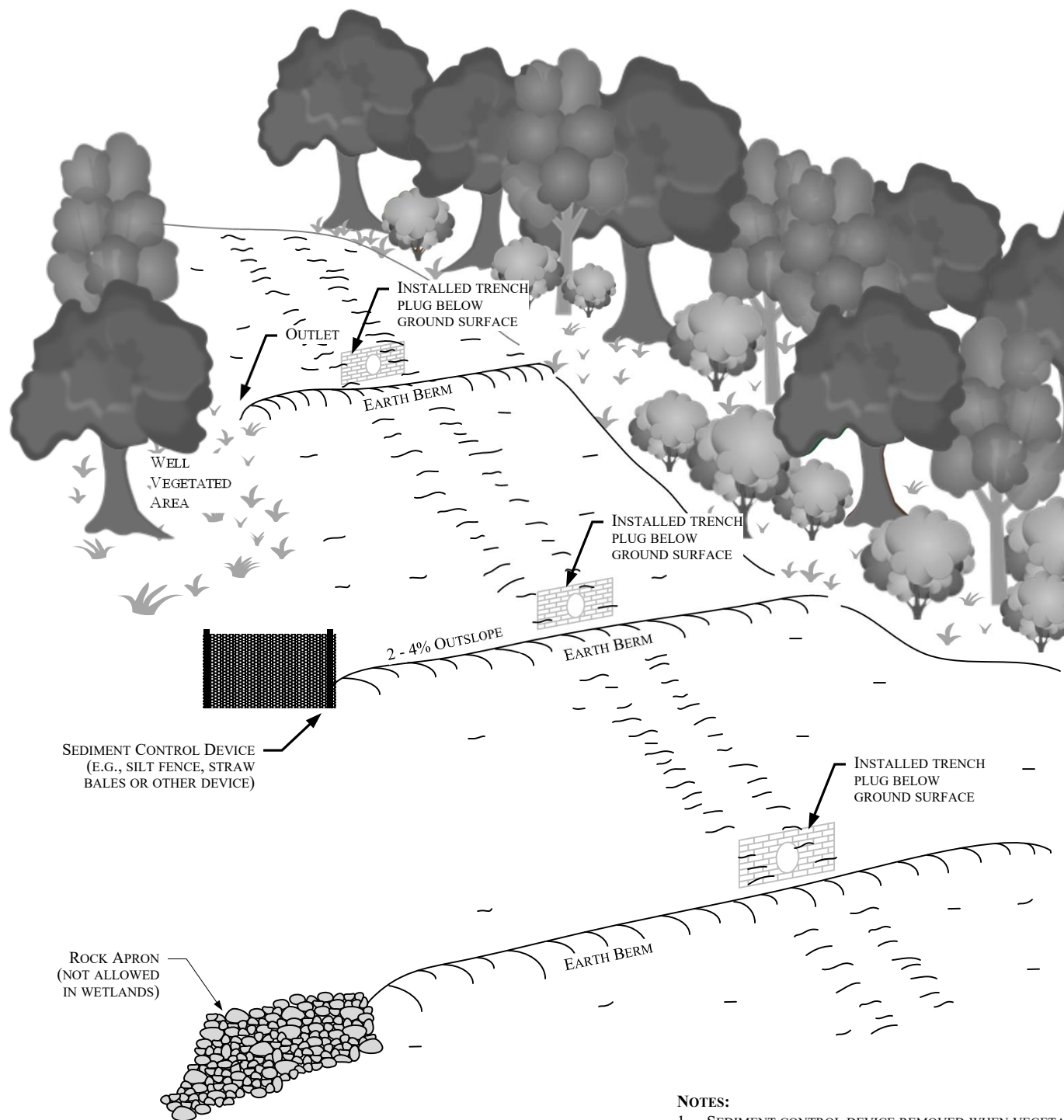
Figure 10
Environmental Protection Plan
 Typical Temporary or Permanent Berms (Elevation View)

Scale: NTS

Date: 11/14/2000

Revised: 3/21/2017

Location: M:\Department Tasks\EPP Figures w\Borders\



<u>SLOPE %</u>	<u>APPROX. SPACING (FT)</u>
3-5	250
5-15	200
15-25	150
>25	<100

NOTES:

1. SEDIMENT CONTROL DEVICE REMOVED WHEN VEGETATION ESTABLISHED.
2. LOWEST BERM MAY BE OMITTED IF SEDIMENT CONTROL DEVICES ARE INSTALLED AT THAT LOCATION, SUBJECT TO APPROVAL.
3. INSTALL SEDIMENT CONTROL DEVICES AT DISCHARGE END OF EARTHEN BERMS AS NECESSARY TO DISSIPATE ENERGY AND PREVENT EROSION.



Figure 11
Environmental Protection Plan
 Permanent Slope Breakers (Perspective View)

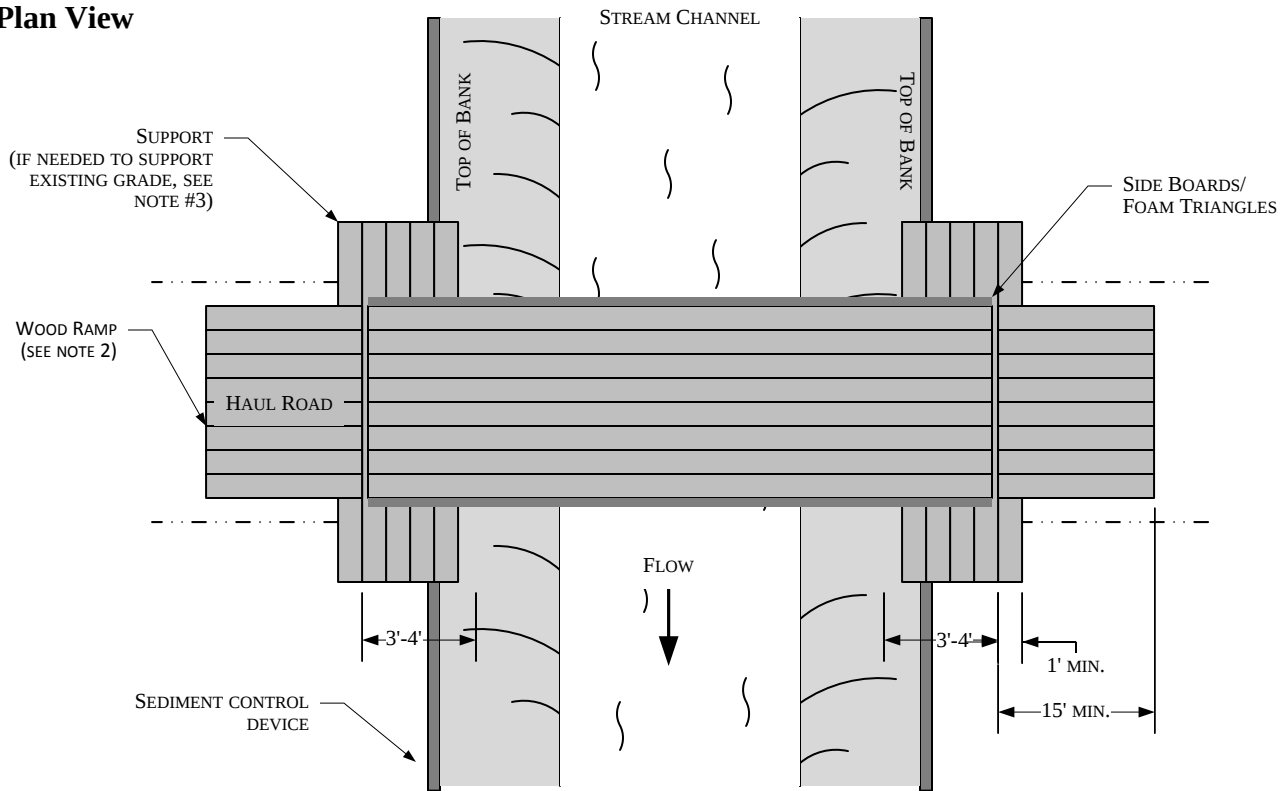
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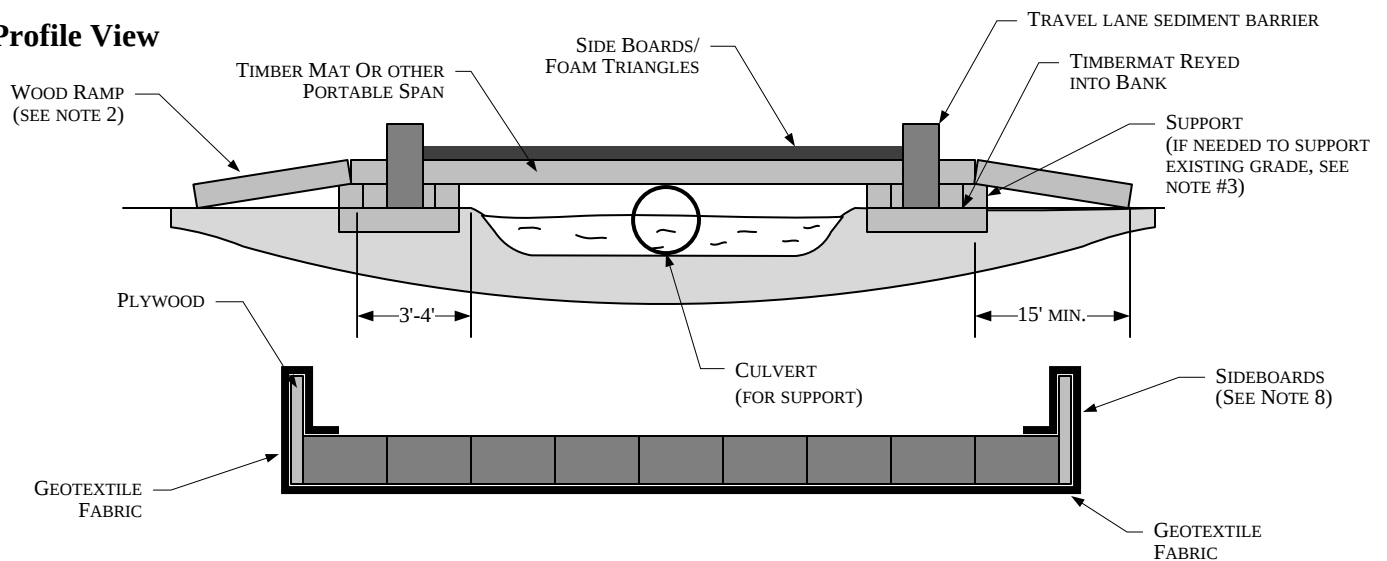
Revised: 3/3/2017

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Plan View



Profile View



NOTES:

1. INSPECT BRIDGE OPENING PERIODICALLY AND FOLLOWING RAINFALLS OF OVER $\frac{1}{2}$ ". REMOVE ANY DEBRIS RESTRICTING FLOW AND DEPOSIT IT AT AN UPLAND SITE OUTSIDE OF FLOODPLAIN.
2. IF PHYSICAL CIRCUMSTANCES PROHIBIT WOOD OR METAL RAMPS, EARTHEN RAMPS MAY BE USED AS APPROVED BY ENBRIDGE.
3. INSPECT BRIDGE ELEVATION SO BRIDGE REMAINS SUPPORTED ABOVE OHWM AND DOES NOT SINK INTO BANK.
4. THE CULVERT SUPPORT MUST BE ANCHORED TO THE STREAM BOTTOM AND MAY NOT BE SUPPORTED WITH FILL.
5. EARTHEN RAMP CANNOT BE TALLER THAN 1' AND CANNOT EXTEND FOR MORE THAN 15' ON EITHER SIDE OF THE CROSSING.
6. THE BRIDGE MUST SPAN FROM TOP OF OHWM.
7. ADDITIONAL SUPPORT MUST BE ADDED ON TOP OF BANK AND UNDER SPAN IF INITIAL SUPPORT STARTS TO SETTLE.
8. SIDEBORDS WILL BE INSTALLED ON TEMPORARY BRIDGES TO MINIMIZE THE POTENTIAL FOR SEDIMENT TRANSPORT. SIDEBORDS MAY BE CONSTRUCTED OUT OF PLYWOOD, OR EQUIVALENT, AND AFFIXED TO THE OUTER SIDES OF THE BRIDGE. GEO-TEXTILE FABRIC, OR EQUIVALENT, MUST ALSO BE ADEQUATELY SECURED TO THE UNDERSIDE OF THE BRIDGE TO PREVENT MATERIAL FROM FALLING THROUGH THE BRIDGE DECK. THE GEO-TEXTILE FABRIC OR AN EQUIVALENT SHOULD BE SECURED TO THE BOTTOM OF THE BRIDGE AND WRAPPED AROUND THE SIDEBORDS IN A CONTINUOUS FASHION.

Figure 12

Environmental Protection Plan
Typical Span Type Bridge
With or Without Instream Support



Scale: NTS

Date: 11/16/2016

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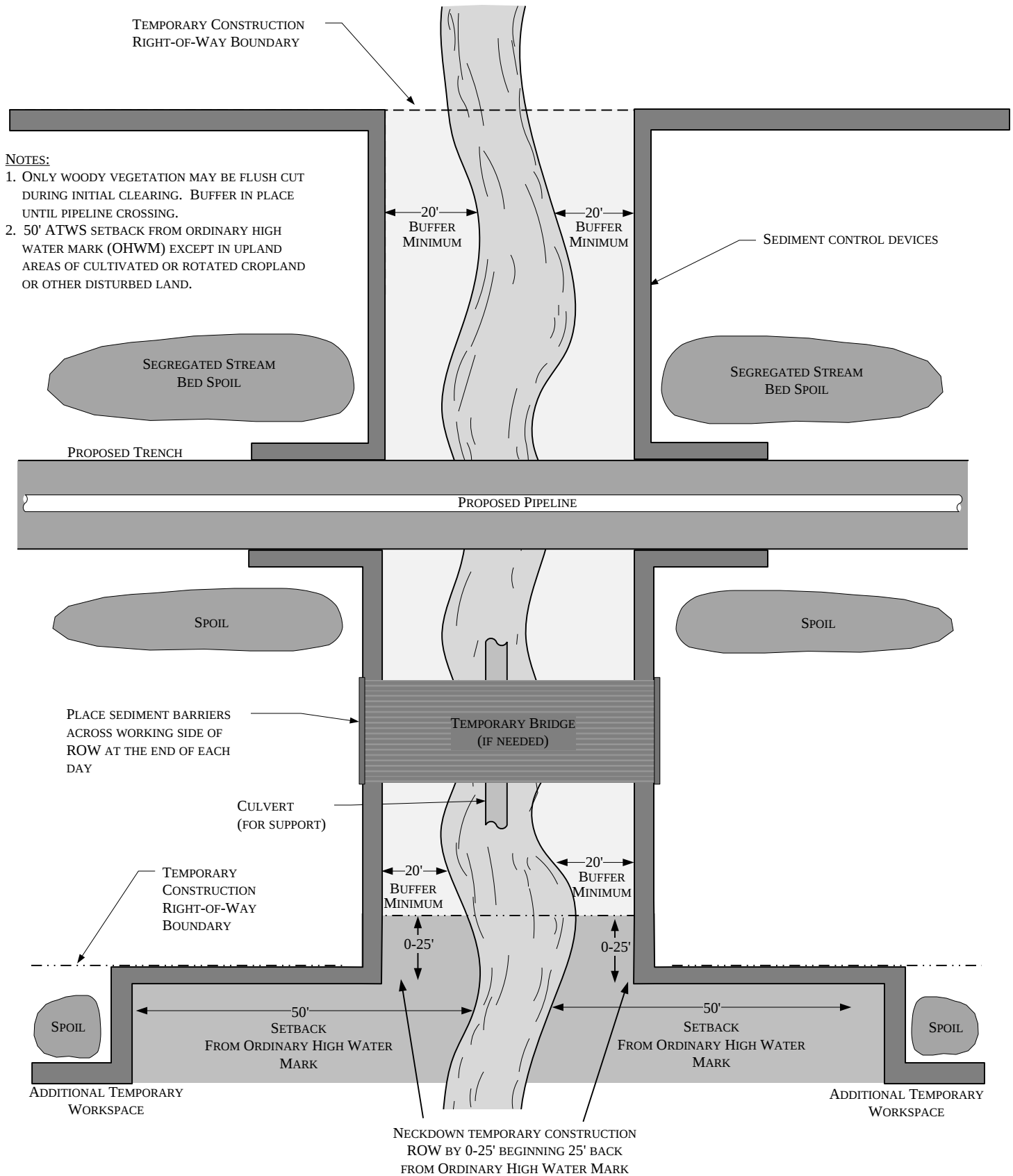


Figure 14
Environmental Protection Plan
 Typical Waterbody Crossing Method
 Open-Cut Wet Trench Method

Scale: NTS

Date: 11/14/2000

Revised: 3/21/2017

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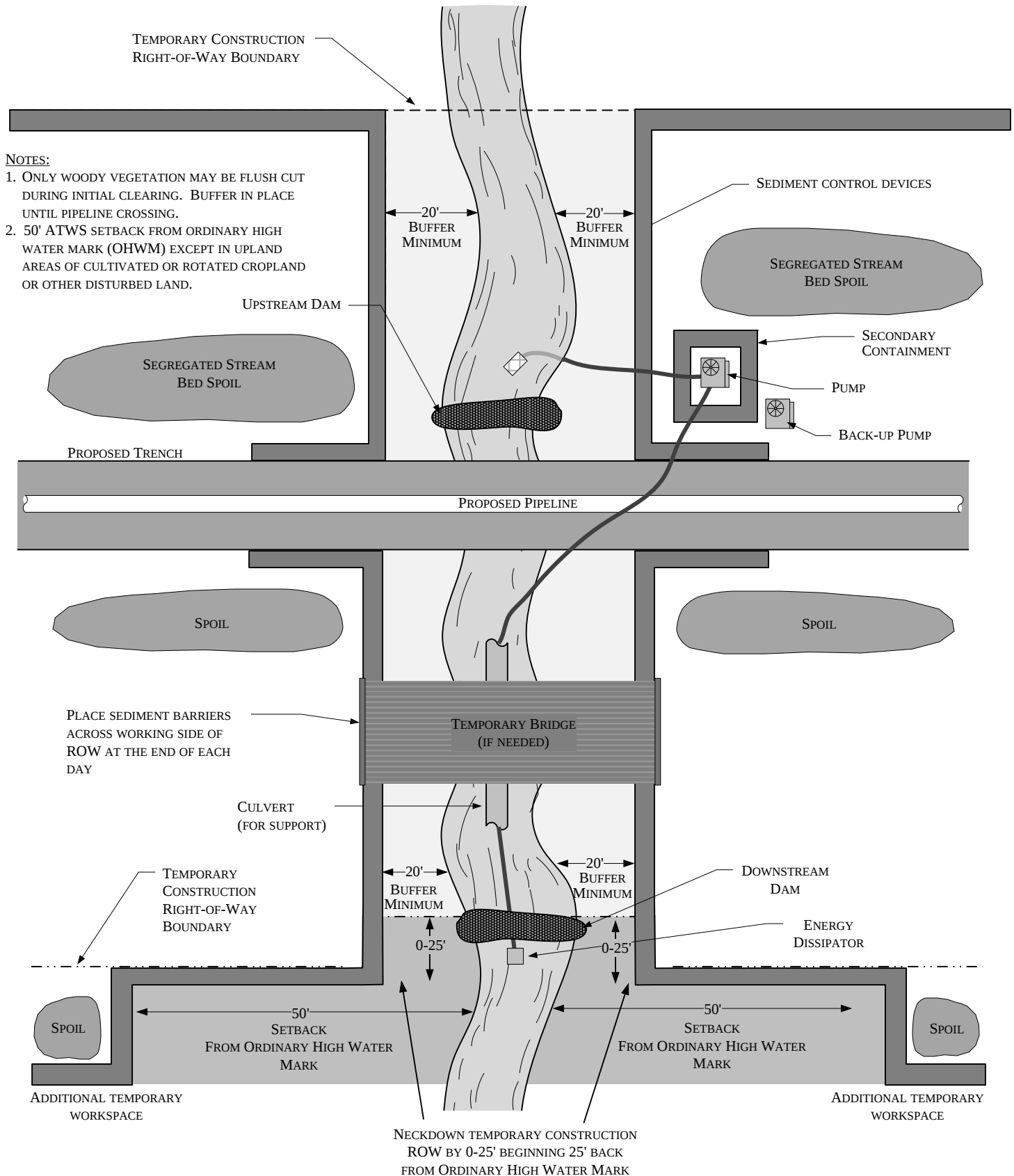


Figure 15
Environmental Protection Plan
 Typical Waterbody Crossing Method
 Dam and Pump Method

Scale: NTS

Date: 11/14/2000

Revised: 3/21/2017

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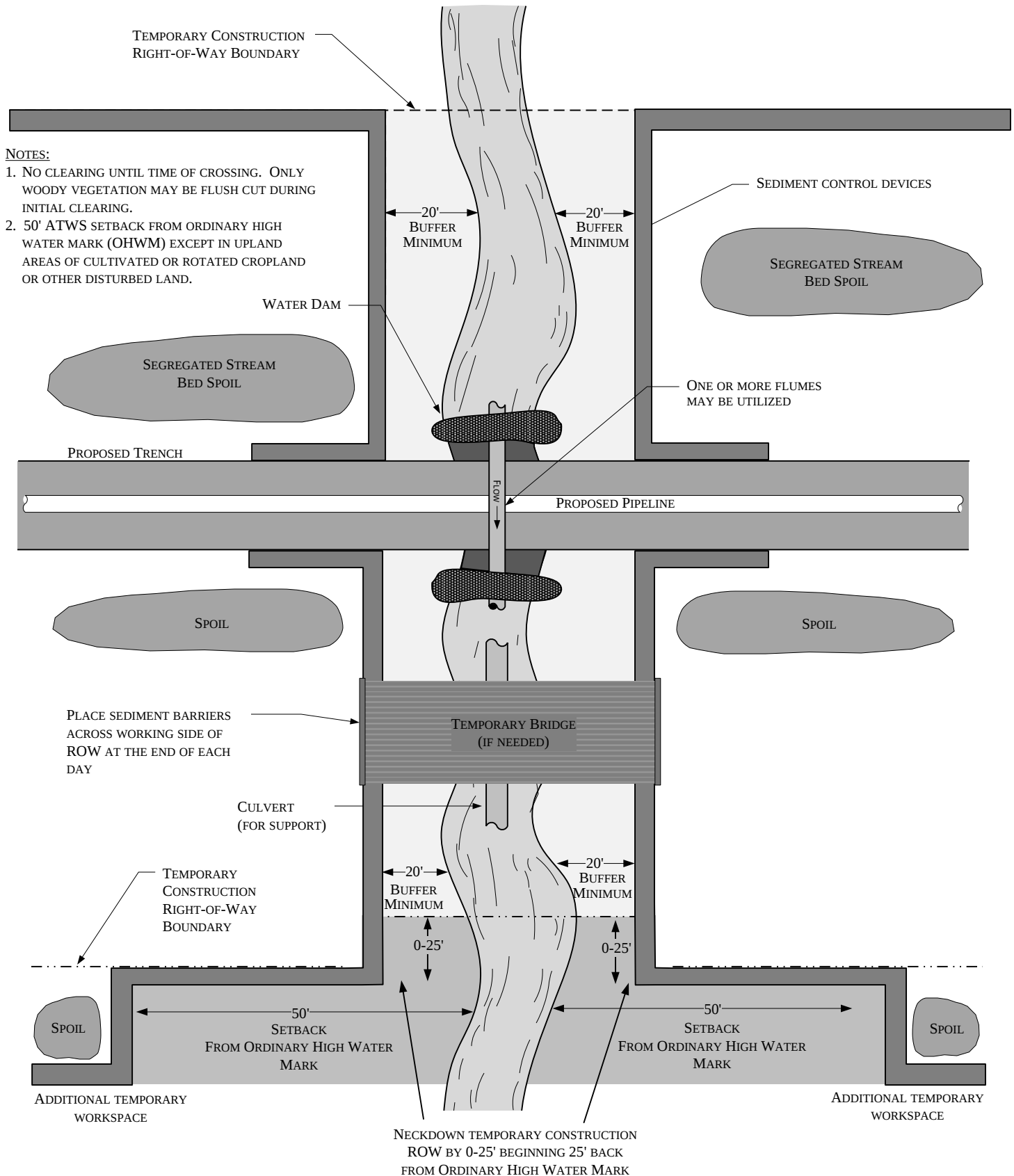
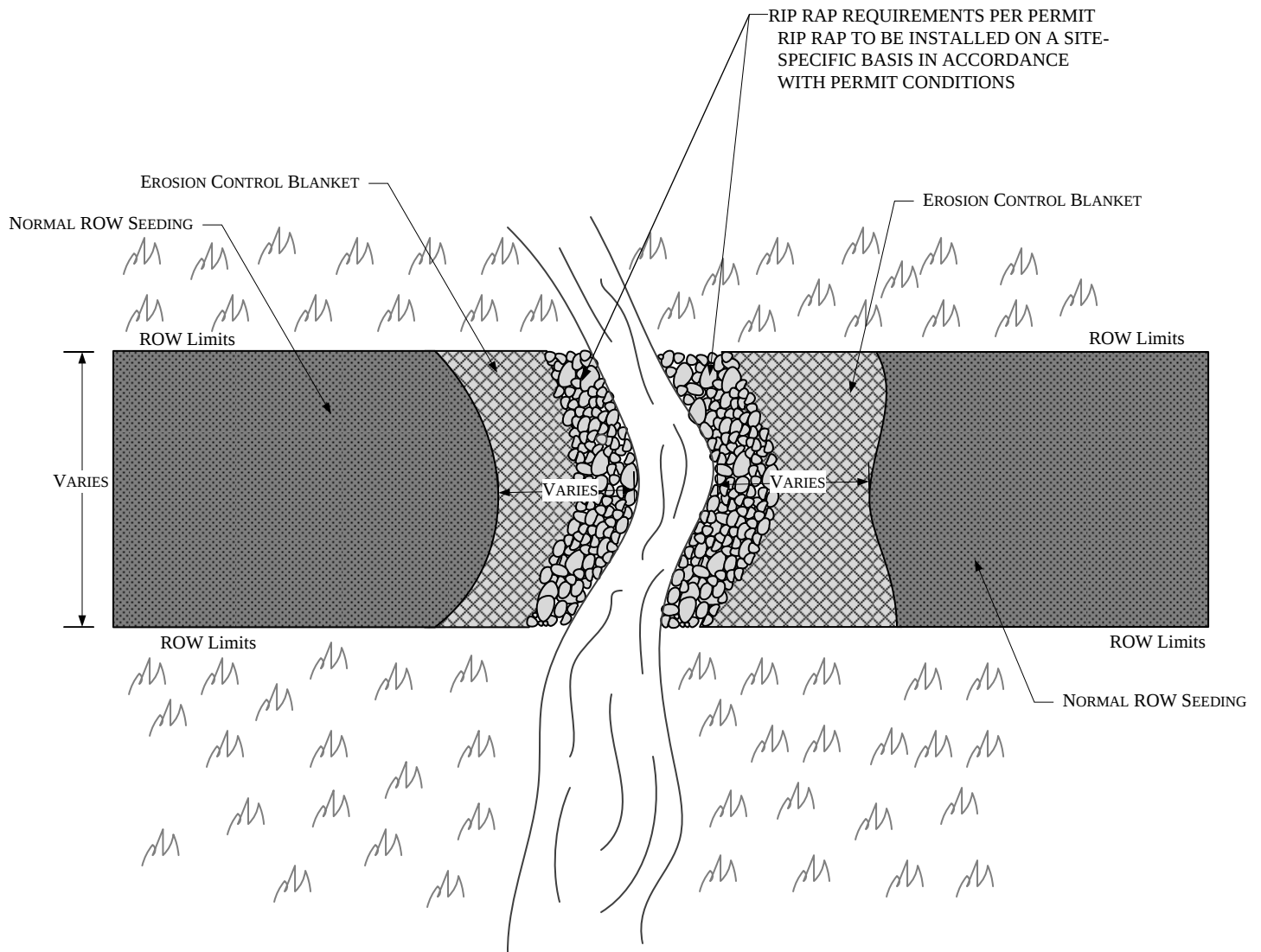


Figure 16
Environmental Protection Plan
 Typical Waterbody Crossing Method
 Flume Method



Scale: NTS
Date: 11/14/2000
Revised: 3/21/2017
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NOTE:
PLACE BLANKET A MINIMUM OF ONE (1) FOOT
UNDER RIP RAP. EXTEND BLANKET FROM
MEAN HIGH WATER LEVEL TO SEVERAL FEET
BEHIND HIGH BANK.



Figure 17
Environmental Protection Plan
Typical Final Stream Bank Stabilization
Rip Rap & Erosion Control

Scale: NTS

Date: 11/30/2016

Revised: 3/21/2017

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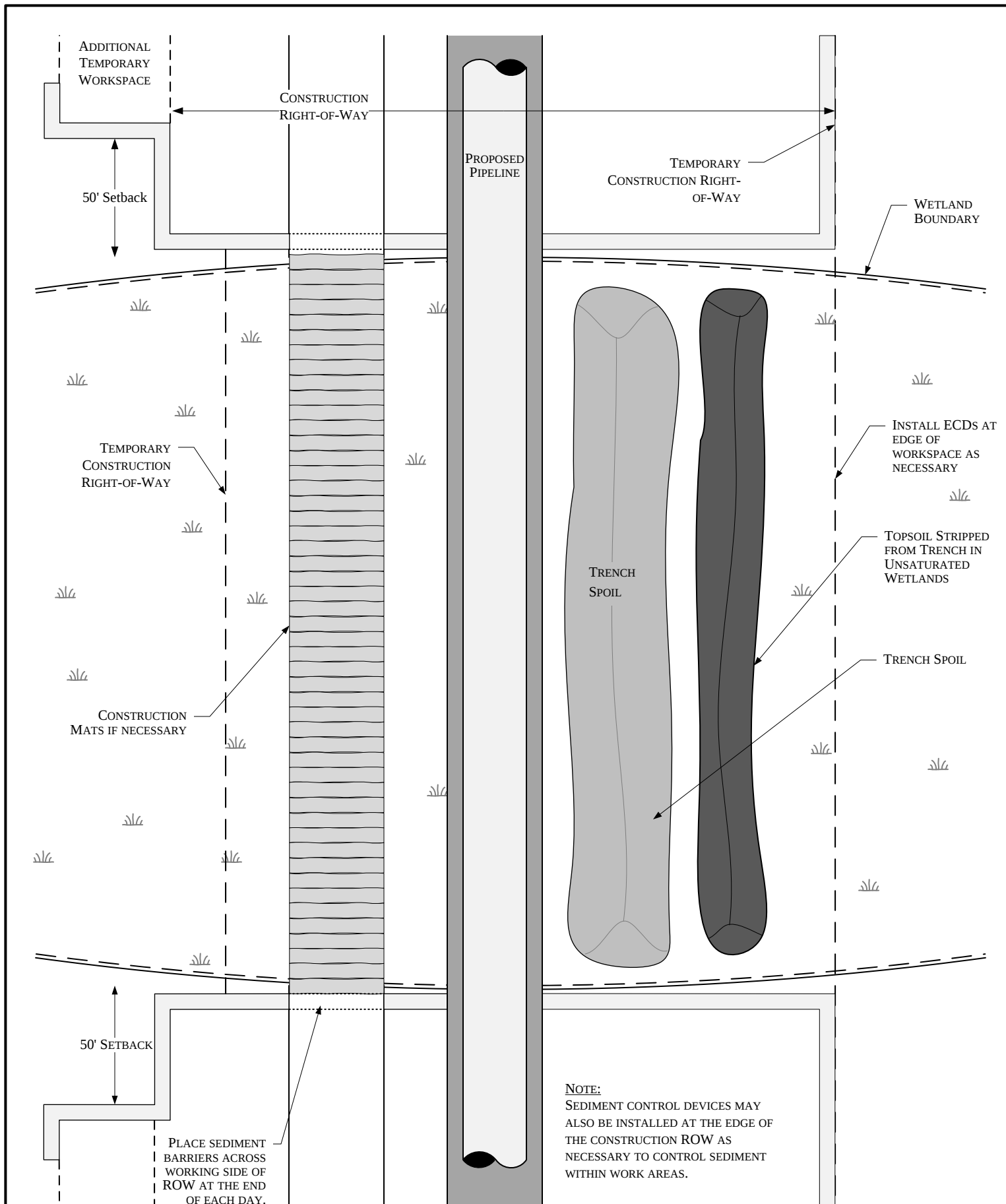


Figure 18

Environmental Protection Plan
Typical Wetland Crossing Method



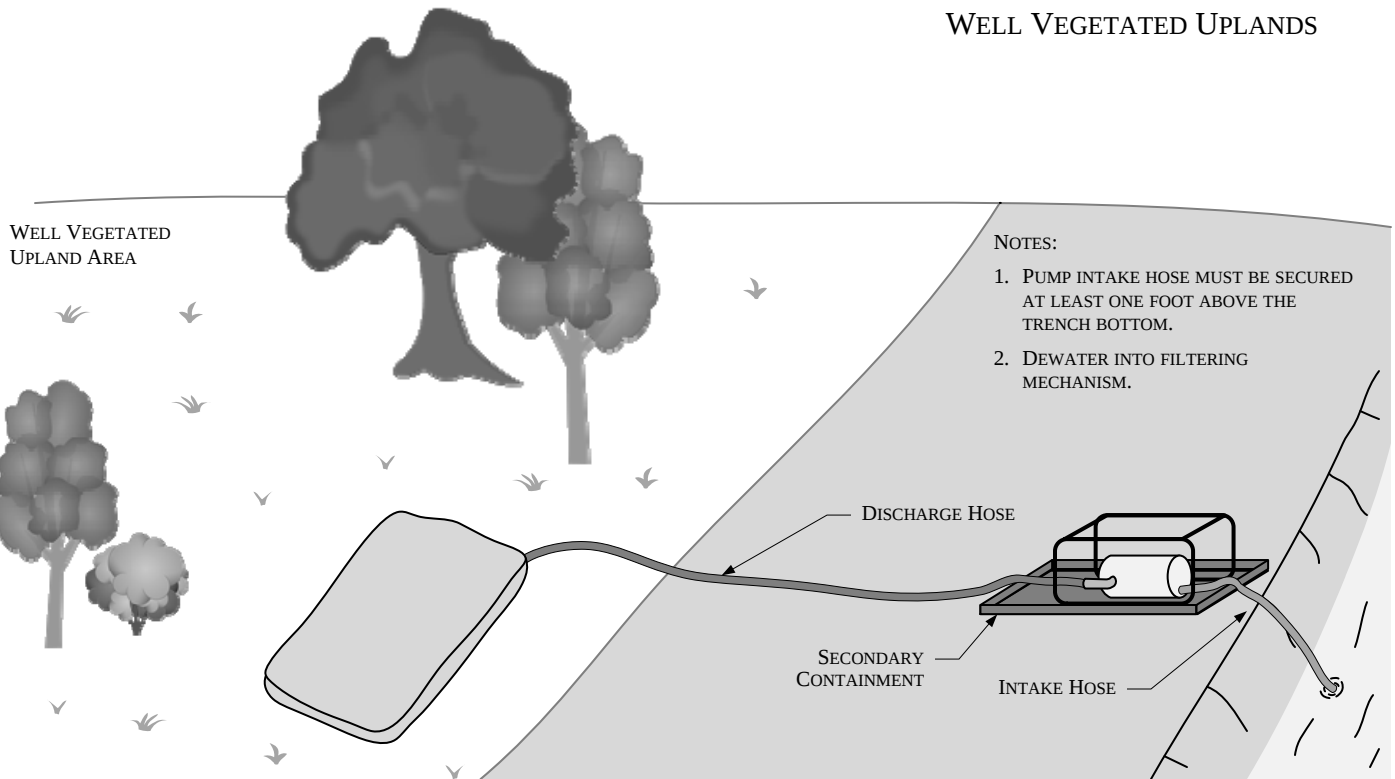
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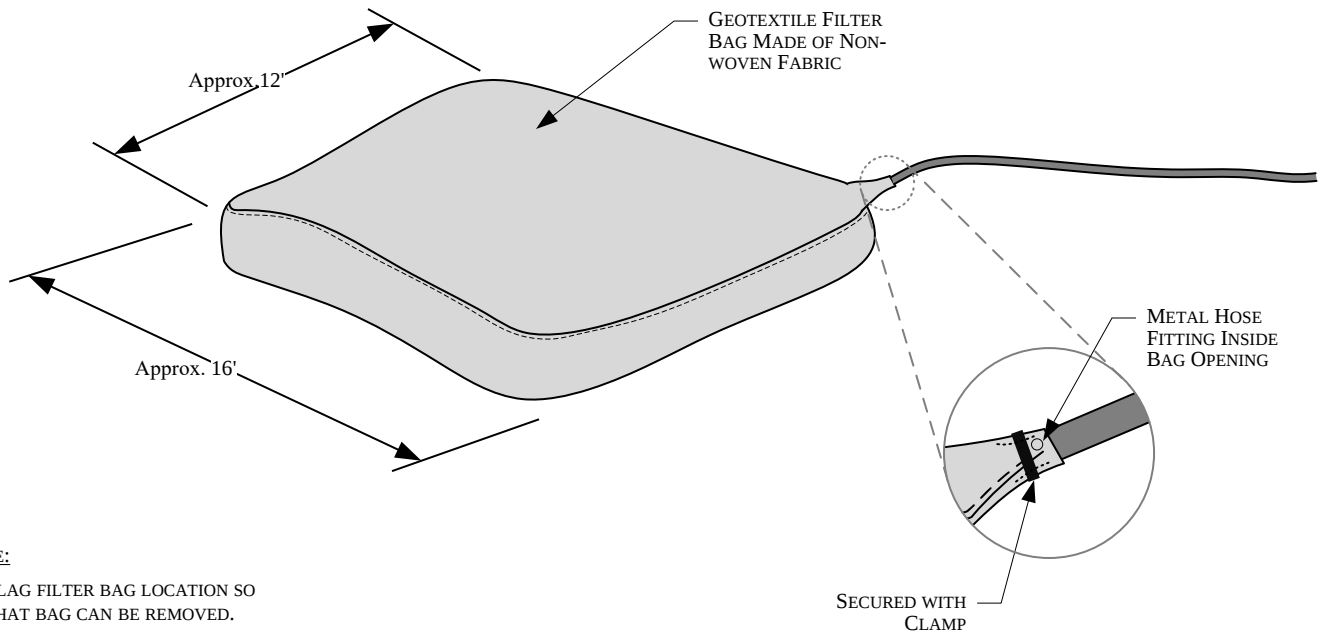
Revised: 3/21/2017

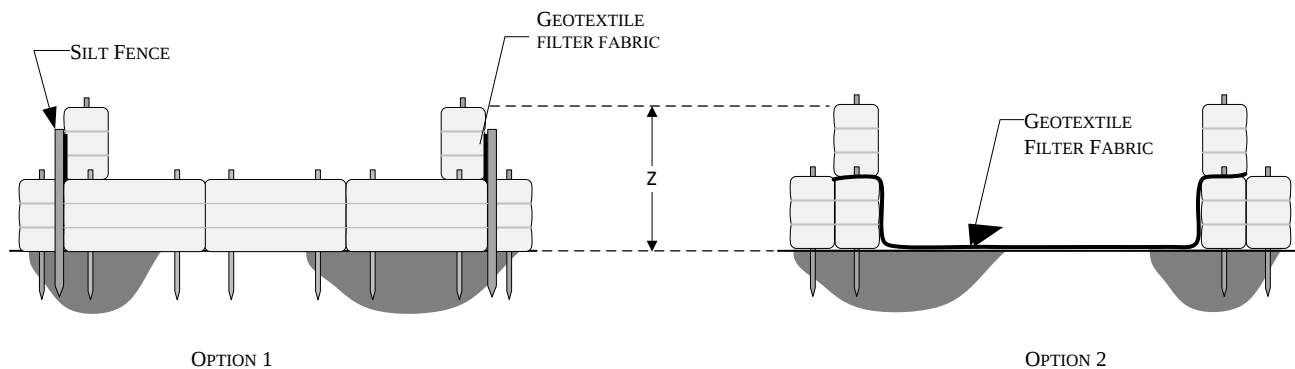
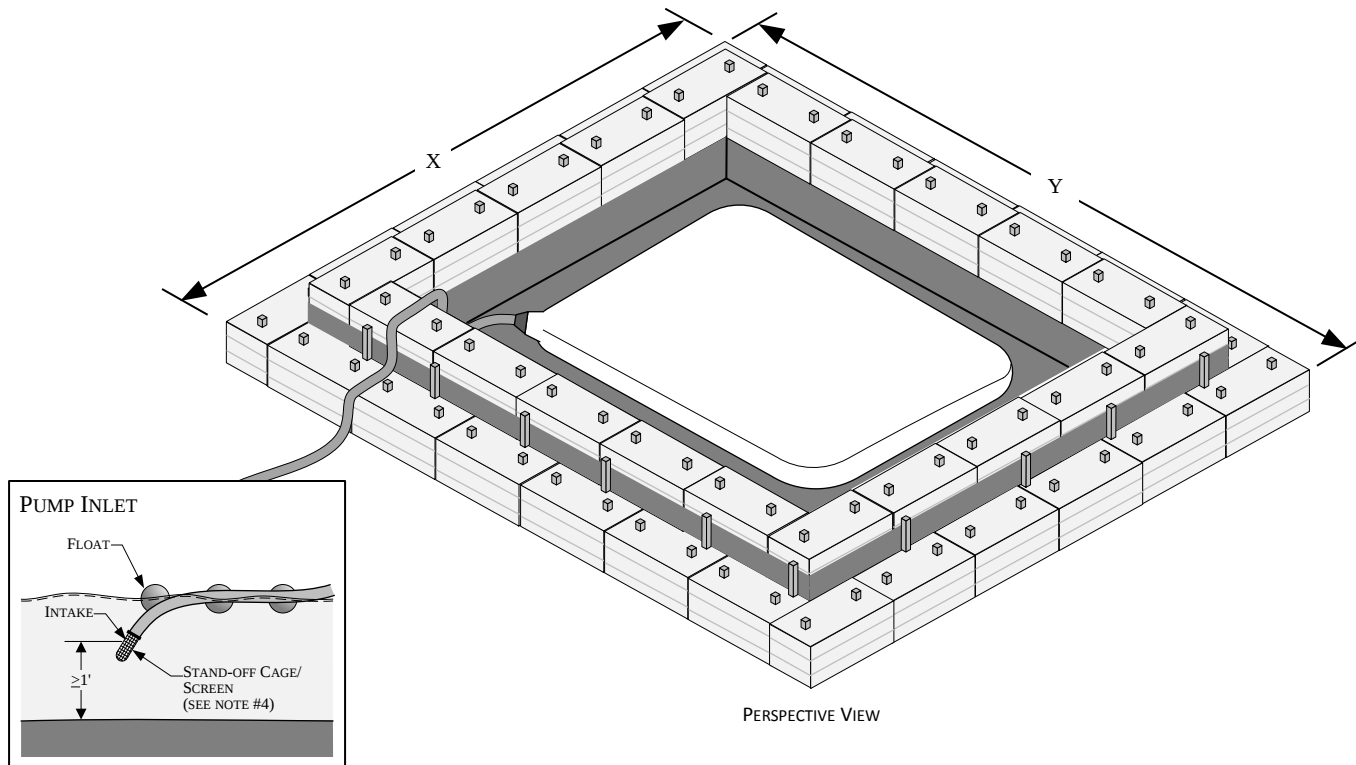
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DEWATERING DISCHARGE IN WELL VEGETATED UPLANDS



GEOTEXTILE FILTER BAG





DEWATERING STRUCTURE SIZING GUIDANCE

PUMP SIZE	TYPICAL PUMP RATES GALLONS PER MINUTE (GPM) ¹	CONTINUOUS DISCHARGE RATE GPM	MINIMUM STRUCTURE CAPACITY X*Y*Z = CUBIC FEET
1.5-INCH	90-120	100	1600
2-INCH	90-300	150	2400
3-INCH	300-800	200	3200
4-INCH	400-1300	250	4000
6-INCH	400-1800	300	4800
		350	5600
		400	6400

¹BASED ON MANUFACTURERS' GENERAL INFORMATION; CHECK PUMP MANUAL FOR MORE INFORMATION.

NOTES:

1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS REQUIRED TO ACCOMMODATE ANTICIPATED PUMPING RATES. SEE DEWATERING STRUCTURE SIZING GUIDANCE.
2. LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.
3. SILT FENCE ENDS MUST BE WRAPPED TO JOIN TWO SECTIONS - OPTION 1.
4. INSTALL SILT FENCE 2-INCHES ABOVE TOP OF STRAW BALE, AND ANCHOR A MINIMUM OF 8 INCHES STRAIGHT DOWN - OPTION 1.
5. SILT FENCE POST STAKING MUST BE 4-FEET OR LESS - OPTION 1.
6. DEWATERING INTAKE HOSE MUST BE SUPPORTED AT LEAST 1-FOOT FROM BOTTOM OF TRENCH BEING DEWATERED.
7. FILTER BAG WITHIN THE BASIC STRUCTURE IS OPTIONAL BASED ON SITE-SPECIFIC PARAMETERS AND/OR CONSTRAINTS - OPTION 2.

Figure 20

Environmental Protection Plan
Straw Bale Dewatering Structure

Scale: NTS

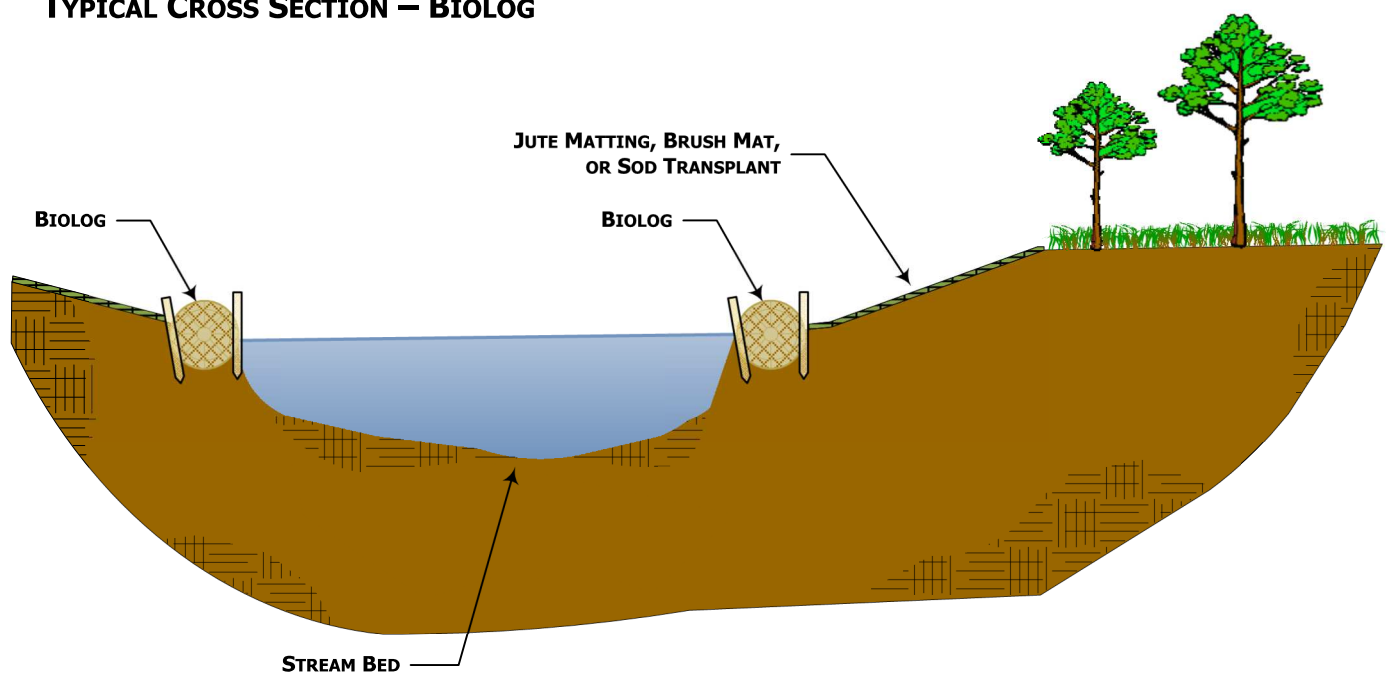
Date: 11/23/2016

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TYPICAL CROSS SECTION – BIOLOG



TYPICAL PLAN VIEW – BIOLOG

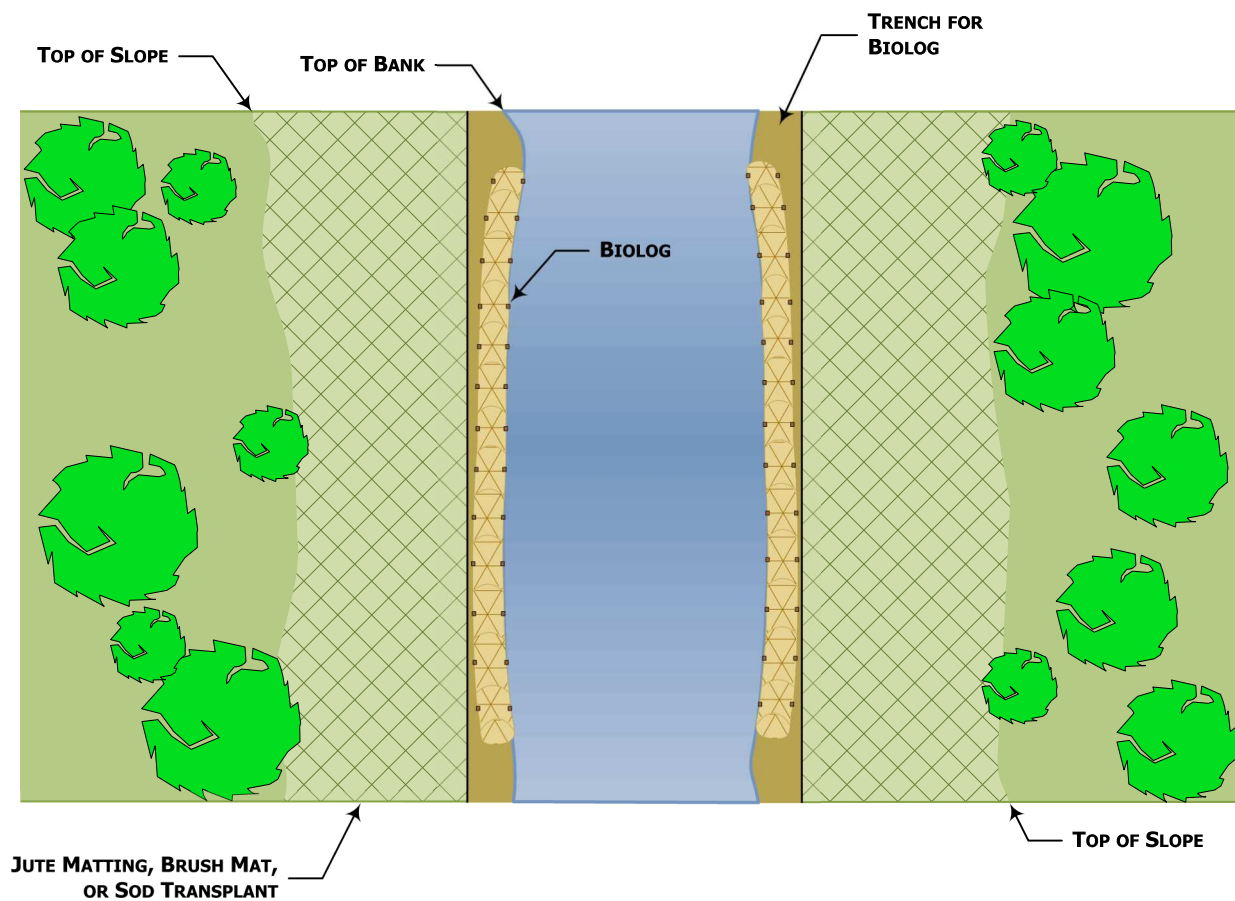
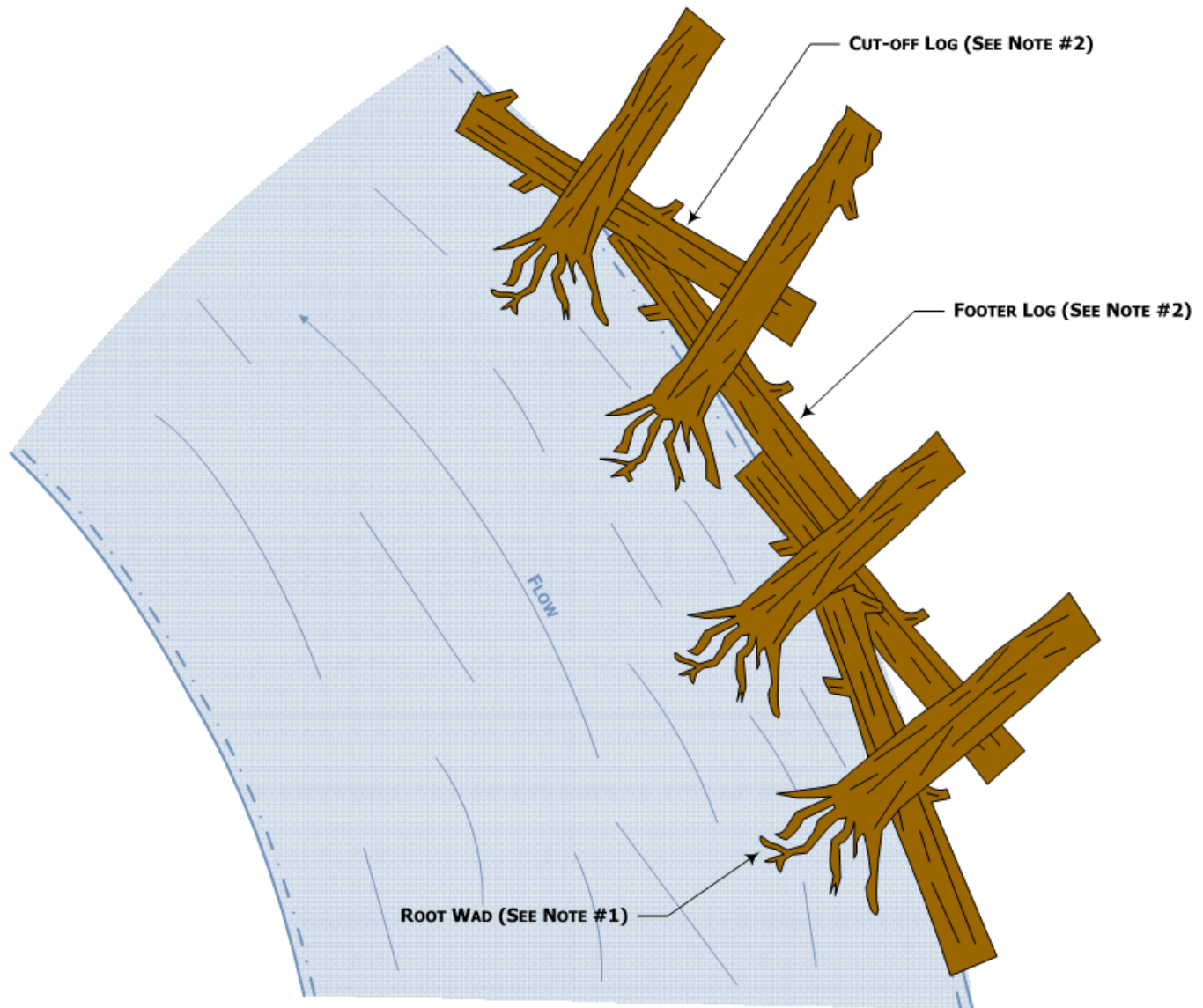


Figure 21

Typical For Remediation
Biolog Stream Bank Stabilization

04/17/2013

TYPICAL PLAN VIEW – NATURAL MATERIAL REVETMENT



Notes:

#1 – Root wad logs to be used on steep banks or based on agency recommendations.

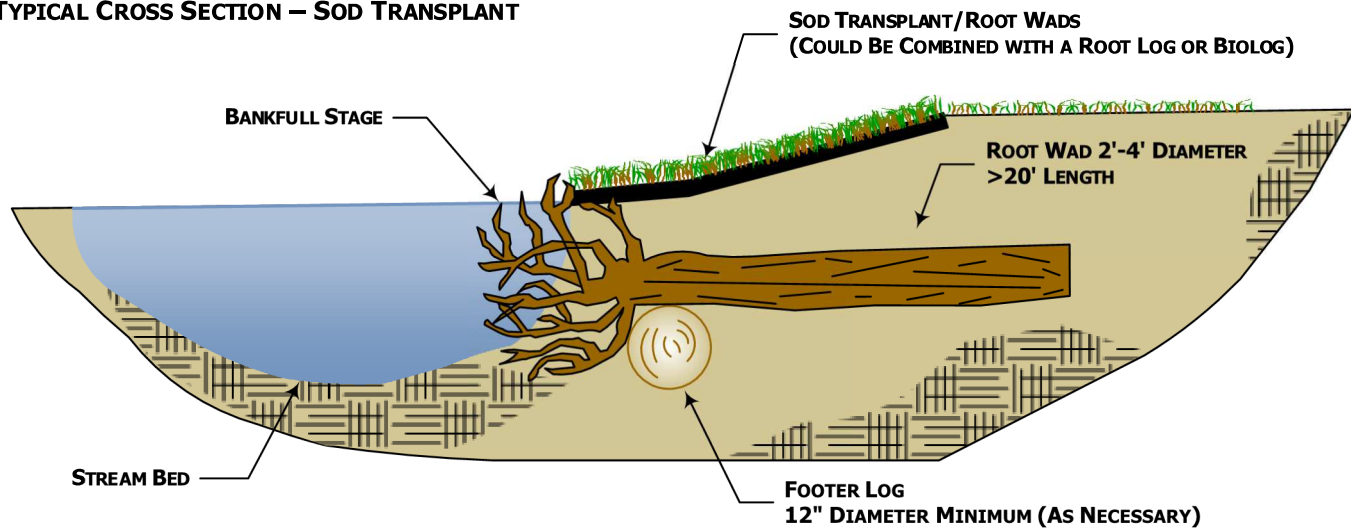
#2 - Root wad logs to be anchored appropriately based on site-specific conditions or agency recommendations.



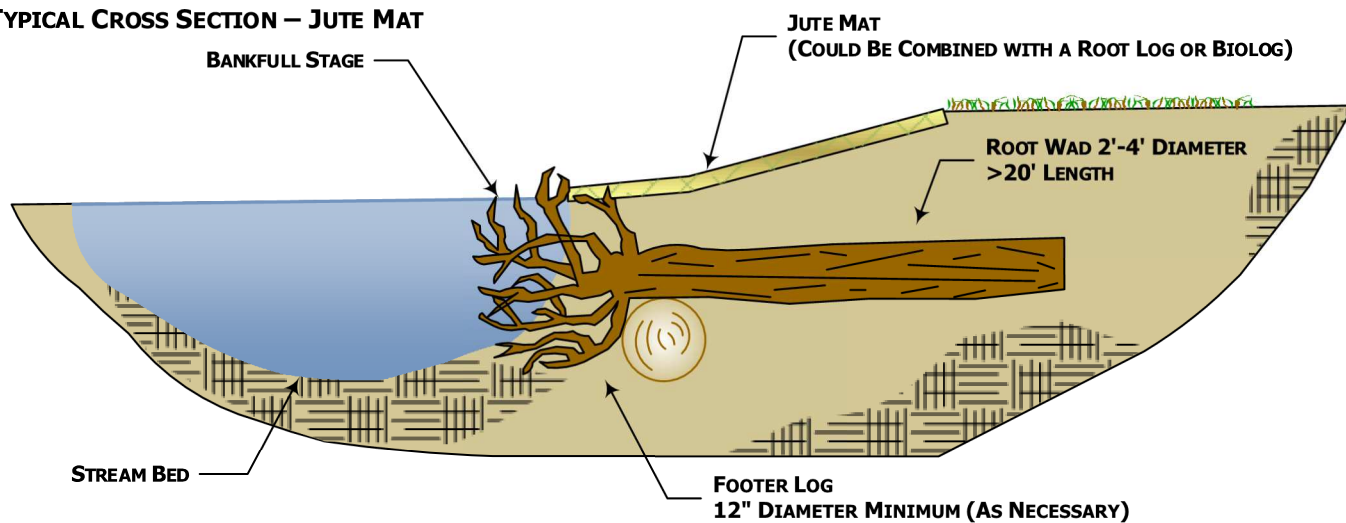
Figure 22
Typical For Remediation
Typical Rootwad Stream Bank Stabilization (Plan View)

04/17/2013

TYPICAL CROSS SECTION – SOD TRANSPLANT



TYPICAL CROSS SECTION – JUTE MAT



TYPICAL CROSS SECTION – BRUSH MAT

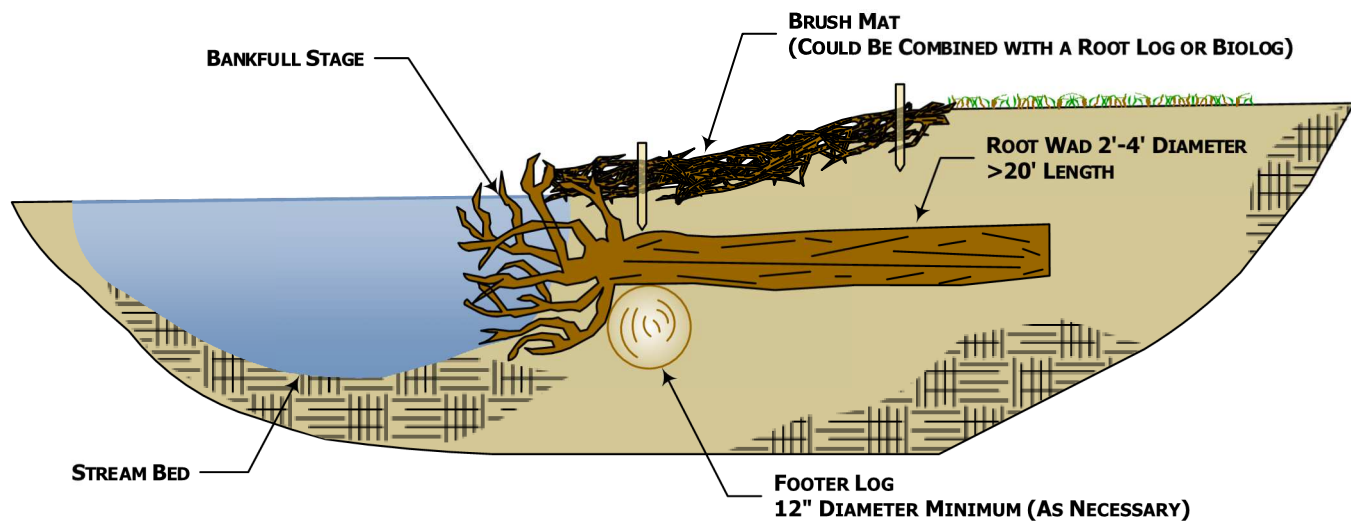


Figure 23

Typical For Remediation
Typical Rootwad Stream Bank Stabilization (Side View)

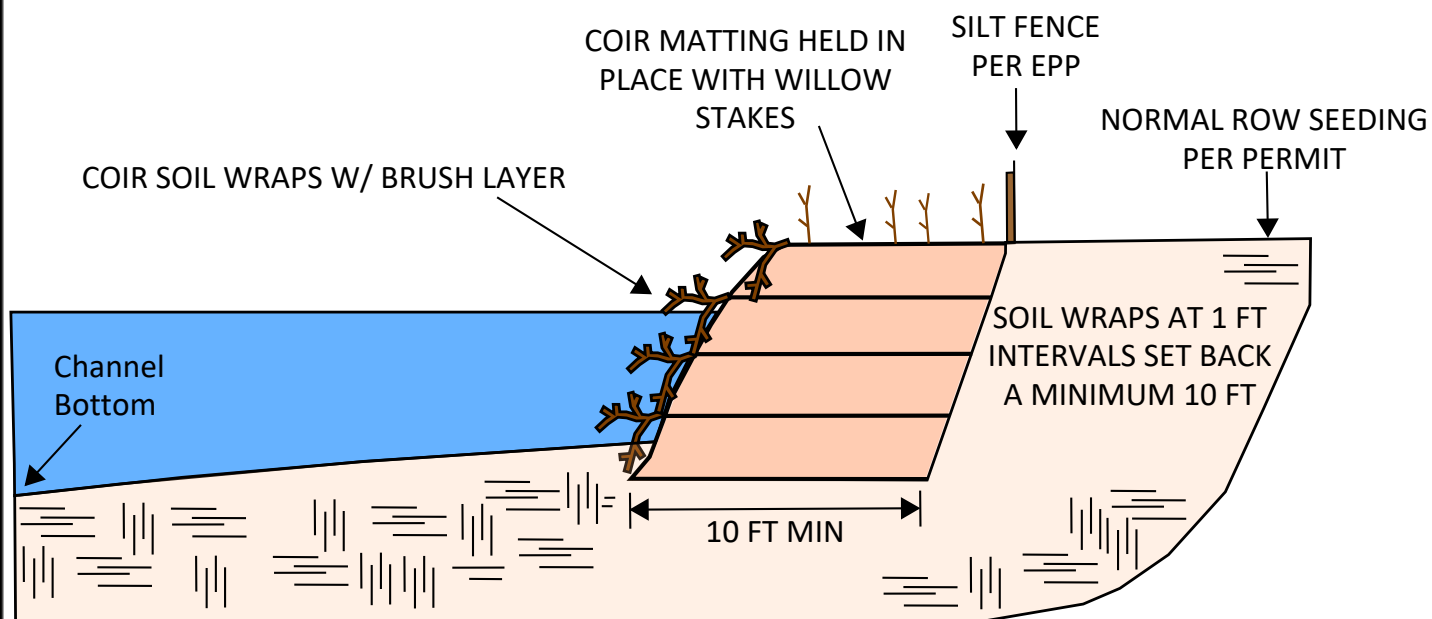


Figure 24

Typical For Remediation

Typical Soil Wraps With Branch Layering & Willow Stake Biostabilization

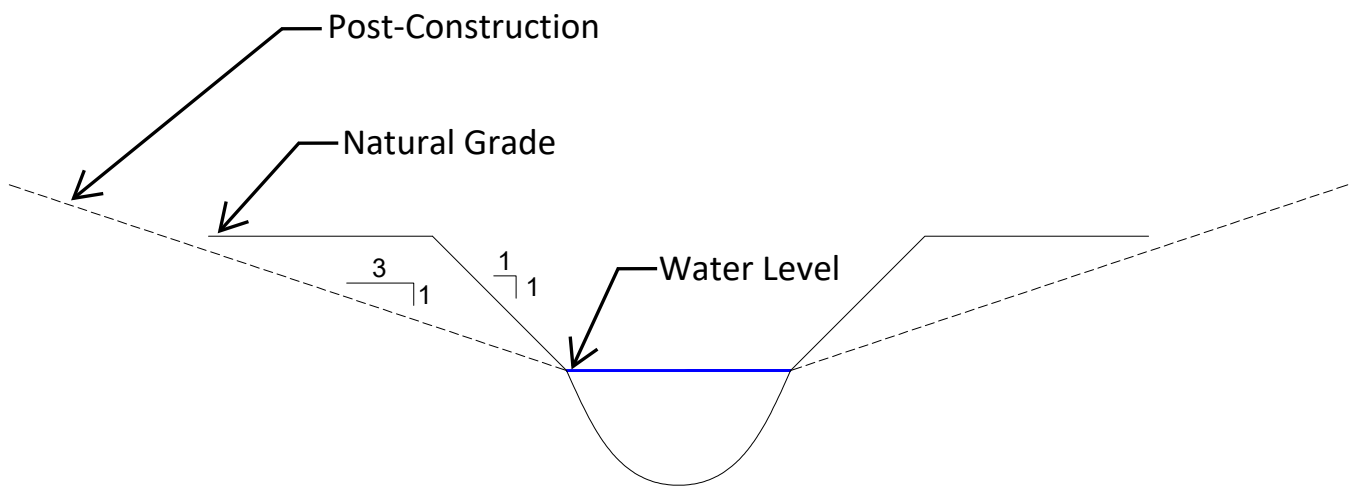


Figure 25
Typical For Remediation
 Typical Stream Bank Regrading (Side View)



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