LINE 5 WISCONSIN SEGMENT RELOCATION PROJECT

ASHLAND AND IRON COUNTIES, WISCONSIN

EROSION & SEDIMENT CONTROL PLAN

PROJECT CONTACTS

ENBRIDGE

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ERM

CONSULTANT
ENVIRONMENTAL RESOURCES MANAGEMENT
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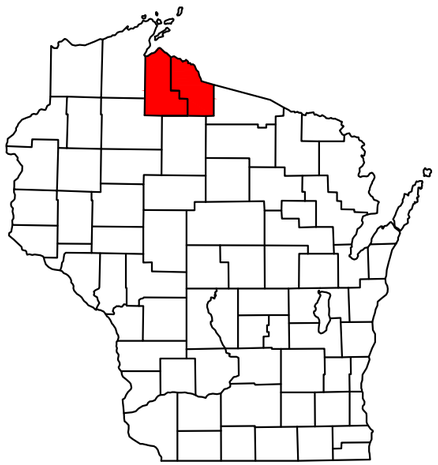

WISCONSIN

PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON 11"X17" SHEETS FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING, AND SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

WARNING INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

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Call before you dig.

THREE DAYS BEFORE YOU DIG
CALL WI ONE CALL SYSTEM TOLL FREE
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OR
800-242-8511

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●		02/12/2021	SHEET 1A - COVER SHEET
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●		02/12/2021	SHEET 3A - EROSION & SEDIMENT CONTROL NOTES
●		02/12/2021	SHEETS 4A-13A - EROSION & SEDIMENT CONTROL DETAILS
●		02/12/2021	SHEETS 1-115 - EROSION & SEDIMENT CONTROL PLAN

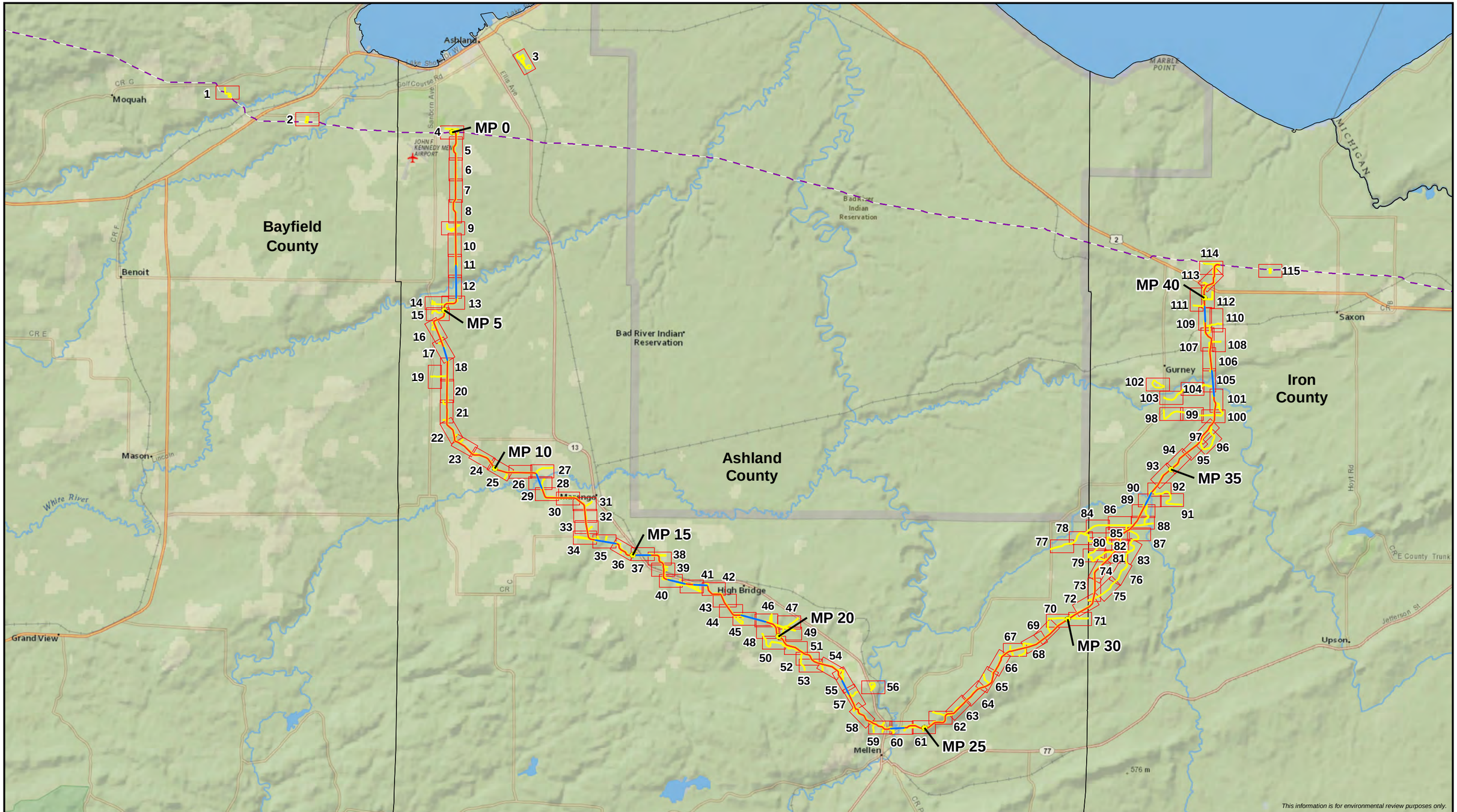
DRAWING INDEX LEGEND

- FILLED CIRCLE INDICATES DRAWING INCLUDED WITHIN THIS ISSUE
- MOST RECENT REVISION NUMBER
- MOST RECENT ISSUE OR REVISION DATE

●	-	X/XX/20XX	SHEET X - SHEET TITLE

USGS LOCATION MAP

SITE LOCATION MAP



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- Milepost
- Proposed Centerline
- HDD/Direct Bore
- Proposed Workspace
- Existing Enbridge Pipeline

Sheet 2A

Map Index
Modeled Erosion and Sediment Control
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

ENBRIDGE

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EROSION AND SEDIMENT CONTROL PLAN NOTES

The Erosion and Sediment Control Plan (ESCP) implements measures identified in the Environmental Protection Plan (EPP) prepared by Enbridge Energy, Limited Partnership (Enbridge). The EPP outlines construction-related environmental policies, procedures, and protection measures Enbridge developed as a baseline for construction. Enbridge developed this EPP based on its experience implementing Best Management Practices (BMPs) during construction, as well as the Federal Energy Regulatory Commission's (FERC's) Upland Erosion Control, Revegetation, and Maintenance Plan (May 2013 Version) and Wetland and Waterbody Construction and Mitigation Procedures (May 2013 Version). The EPP is intended to meet or exceeds federal, state, and local environmental protection and erosion control requirements, specifications, and practices. The EPP addresses typical circumstances that may occur along the Project right-of-way (ROW).

Project-specific permit conditions and/or landowner agreements may supersede the general practices described in the EPP; however, alternative construction procedures implemented in lieu of this EPP will provide an equal or greater level of protection to the environment, and required advance approval from Enbridge. There may be discrepancies between the content of the EPP and the requirements of regulatory permits. For any discrepancy, particularly regarding construction conditions, protection measures, and required notifications, the regulatory permits are controlling and supersede landowner agreements, EPP, and ESCP content.

Environmental Protection Plan - Index

GENERAL ESCP & EPP NOTES

THE FOLLOWING ESCP NOTES AND EXPERTS FROM THE EPP ARE FOR REFERENCE ONLY, REFER TO THE FULL EPP DOCUMENT FOR A COMPLETE OUTLINE OF CONSTRUCTION RELATED POLICIES, PROCEDURES, AND BMP MEASURES.

- BMP measures identified in the ESCP may adjusted and/or modified due to varying site conditions at the time of construction.
- All construction equipment and vehicles will be confined to the approved construction right-of-way (ROW) and additional temporary workspace (ATWS). Construction activities are restricted to the approved designated areas.
- Prior to commencement of clearing operations, Enbridge will mark the outer limits of the construction ROW and ATWS.
- The initial stage of construction involves the clearing of brush, trees, and tall herbaceous vegetation from the ROW. Clearing may be accomplished with chain saws, mowers, and hydraulic tree-cutting equipment.

EROSION AND SEDIMENT CONTROL (ESC)

- Silt Fence, Straw Bales, and Biologs – Refer to Figures 4, 5, and 6.
- Slope Breakers - Temporary and permanent slope breakers will be installed to minimize concentrated or sheet flow runoff in disturbed areas in accordance with the maximum allowable spacing included on Figure 9, unless otherwise specified in permit conditions.
- Trench breakers - installed at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland, and where necessary to avoid draining a waterbody or wetland.

MAINTENANCE

- All non-functional ECDs will be repaired, replaced, or supplemented within 24 hours after discovery, or as soon as practicable following discovery.
- Sediment must be removed where accumulation reaches one-third of the height of the control measure.

WETLANDS

- Enbridge will post signs identifying the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area.
- Vegetation and trees within wetlands will be cut off at ground level, leaving existing root systems intact; clearing debris will be removed from the wetland for disposal. Hydro-axe debris, or similar can be left in the wetland if spread evenly in the construction ROW to a depth which will allow for normal revegetation, as determined by the Environmental Inspector (EI).
- In wetlands that are not in actively cultivated or rotated cropland, the extent of tree stump removal will be limited to directly over the ditch line. Stumps and root systems from the rest of the construction ROW in wetlands will not be removed, unless Enbridge determines that safety-related considerations require them to do so.
- When constructing in wetland areas without standing water, up to 12 inches of topsoil (organic layer) will be stripped from the trench line and stockpiled separate from trench spoil to preserve the native seed stock.
- Equipment used for mixing, pouring, casting, or coating will not be washed within 100 feet of any wetland or waterbody.
- Backfilling - Wetlands will be restored as near as practicable to pre-construction conditions and reasonable attempts will be made to return the subsoil to its pre-construction density.
- Non-standing water wetlands will be seeded using the mix provided in EPP, Appendix B to provide temporary cover and allow natural revegetation via the seeds and rhizomes in the topsoil spread back over the ROW after pipe installation. No fertilizer, lime, or mulch will be applied in wetlands.
- Refer to Section 24.0 and Figure 18 for additional Wetland Crossing General Requirements.

SEEDING AND MULCHING

- When used, mulch will be applied at a rate of 2 tons per acre to cover at least 75 percent of the ground surface, unless otherwise stipulated by permit conditions; and distribution will occur by a mechanical mulch blower or by hand in areas not accessible to the mulch blower. Mulch will be anchored/crimped using a mulch-anchoring tool or disc set in the straight position to minimize loss by wind and water, as site conditions allow.
- The Contractor can use hydro-mulch and liquid tackifier in place of straw or weed-free hay mulch with prior approval from Enbridge.
- Deep tillage will be performed in actively cultivated areas and in non-agricultural areas (as directed by Enbridge) to relieve soil compaction and promote root penetration. Deep tillage will not occur in non-farmed wetlands. The soil will then be tilled with a disc, field cultivator, or chisel plow (or equivalent) to prepare a seedbed, breaking up large clods and firm the soil surface.
- Swales will be restored as near as practicable to original conditions. Swales will be seeded and either mulched with straw or erosion control blankets will be installed to the perceivable top of bank for the width of the construction ROW.
- Upon final grading of the construction ROW, and upon the restoration of wetland and waterways, seeding and restoration/stabilization will occur within 48 hours if weather and soils conditions allow. Other methods of stabilization will be used if temporary seeding is not appropriate due to seasonal conditions (e.g., mulch, erosion control blanket).
- Refer to EPP, Section 21.0 for seed specification and guidelines. Project-specific permit conditions and landowner requests (with exception to wetlands) for specific seed mixes (as indicated in the Project Construction Line List) take precedence over this section.

MATERIAL WASTE HANDLING

- Enbridge requires that the storage of petroleum products, refueling, maintenance, and lubricating operations take place in upland areas that are more than 100 feet from wetlands, streams, and waterbodies (including drainage ditches), and water supply wells. In addition, the Contractor will store hazardous materials, chemicals, fuel and lubricating oils, and perform concrete coating activities outside these areas.

POLLUTANT CONTROLS

- Spills occurring during construction, operation and maintenance are to be reported immediately to the Enbridge Representative and the EI, regardless of volume.

GENERAL SEQUENCE OF CONSTRUCTION

- Limits of construction must be field marked prior to clearing, installation of sediment control measures, construction, or other land disturbing activities.
  1. Install stabilized construction entrances.
  2. Clear vegetation in the ROW, as required.
  3. Install sediment control devices.
  4. Prepare temporary parking and storage area(s).
  5. Start construction of the ROW.
  6. Begin grading the ROW.
  7. Install pipeline.
  8. Establish final grades and contours. Conduct seeding and stabilization include installation of erosion and sediment controls.
  9. Remove all temporary erosion and sediment control devices (upon successful vegetation establishment).

GENERAL NOTES AND COMMENTS:

SYM.	DATE	BY	REVISION INFORMATION	PROJECT/TASK	APP.
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SHEET 3A

Erosion & Sediment Control Notes
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

ENBRIDGE ERM

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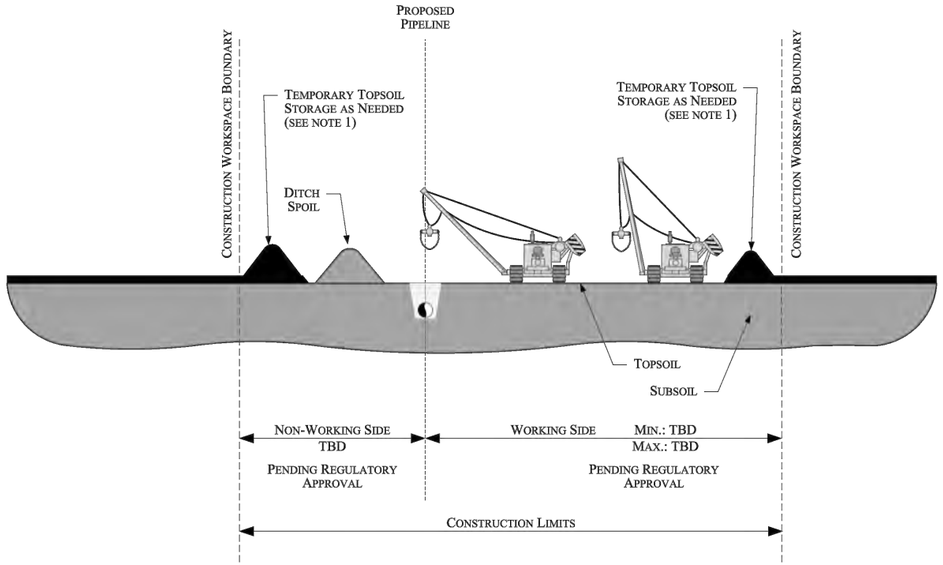
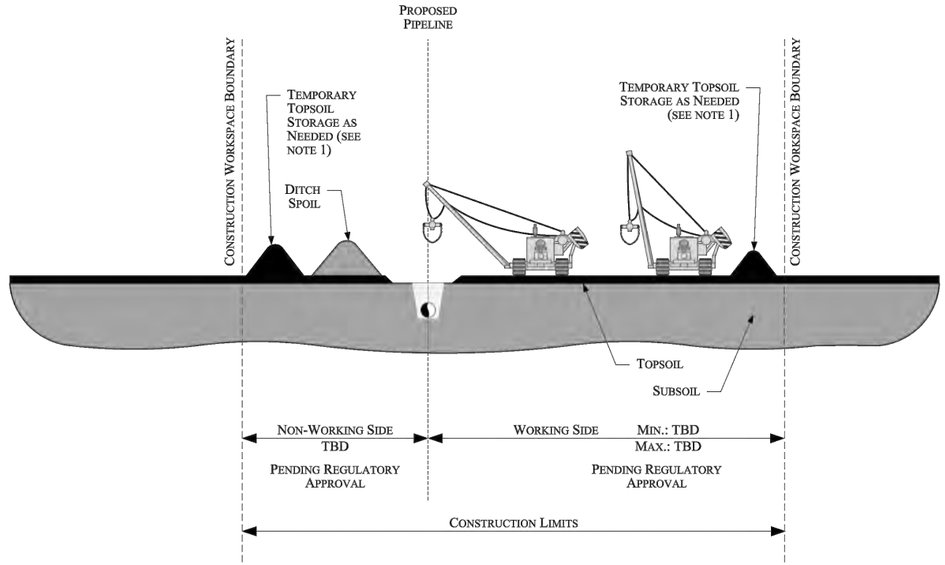


PROFILE

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\

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SHEET 4A
Erosion & Sediment Control Details Page 1
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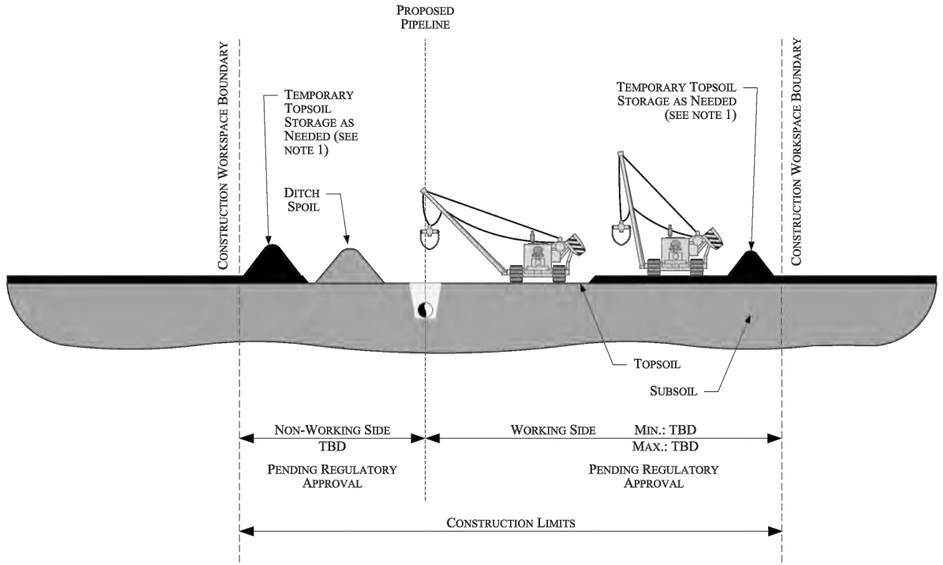


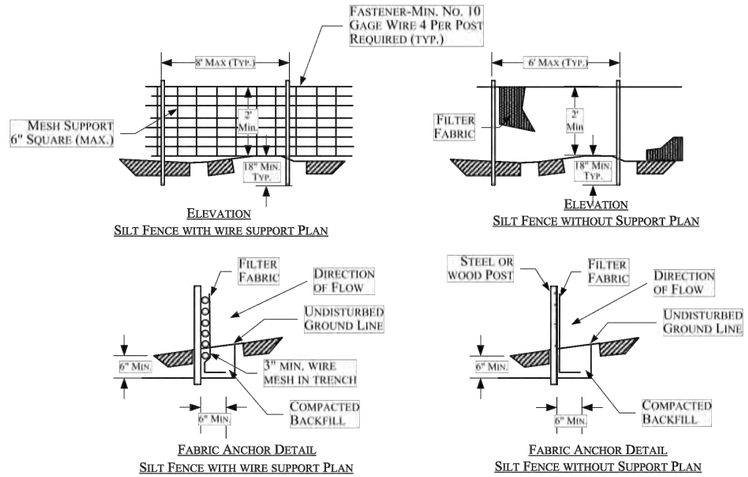
Profile

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

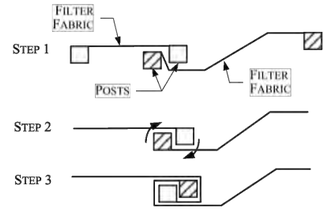
Scale: NTS
Date: 10/11/2016
Revised: 12/17/2019

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.

Figure 4
Environmental Protection Plan
Typical Silt Fence Installation

Scale: NTS
Date: 5/25/2001
Revised: 3/21/2017

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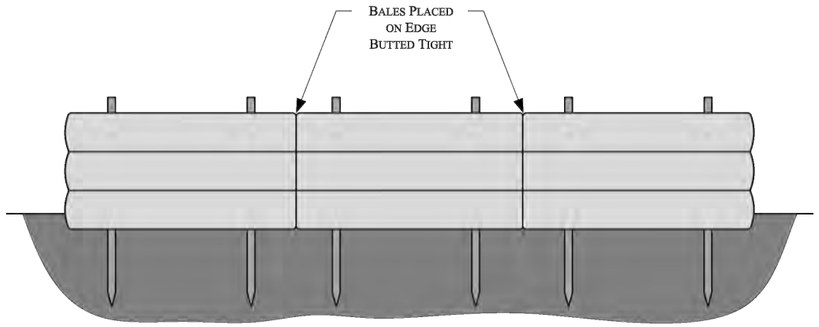
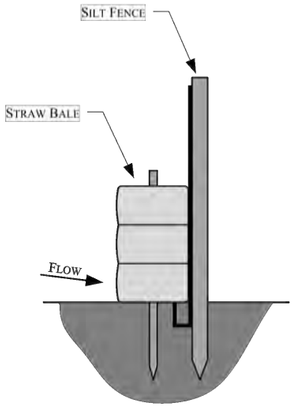
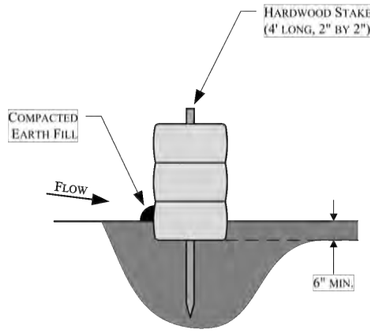




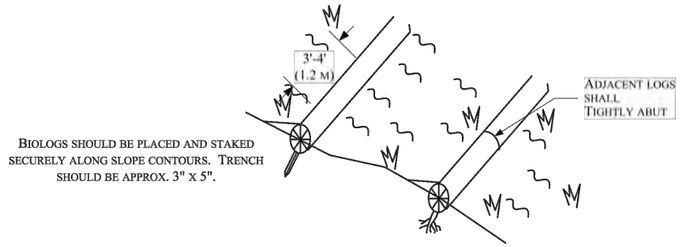
Straw Bales and Silt Fence



Straw Bales Only

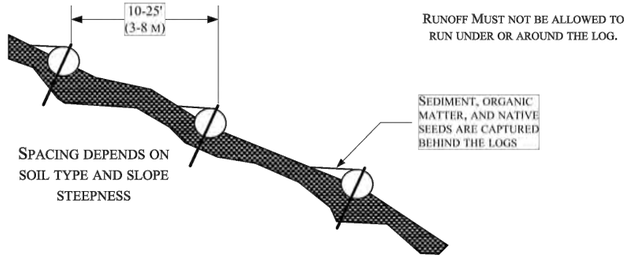
Figure 5
Environmental Protection Plan
Typical Straw Bale Installation

Scale: NTS
Date: 10/28/2016
Revised: 3/21/2017

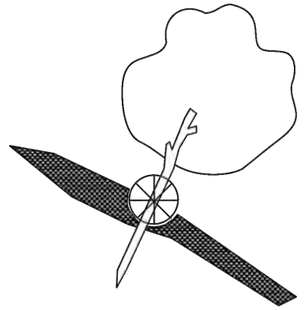


Biologs should be placed and staked securely along slope contours. Trench should be approx. 3" x 5".

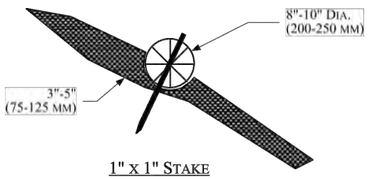
Runoff Must not be allowed to run under or around the log.



Spacing depends on soil type and slope steepness



Live Stake
(Willow, dogwood, or other native species)



1" x 1" Stake

Figure 6
Environmental Protection Plan
Typical Biolog Installation

Scale: NTS
Date: 11/3/2016
Revised: 3/21/2017

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Erosion & Sediment Control Details Page 3
Line 5 Wisconsin Segment Relocation Project
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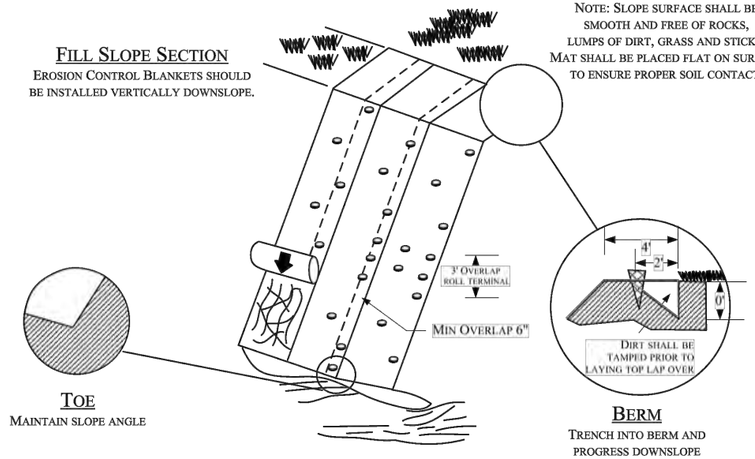
Fill Slope Section

Erosion Control Blankets should be installed vertically downslope.

Note: Slope surface shall be smooth and free of rocks, lumps of dirt, grass and sticks. Mat shall be placed flat on surface to ensure proper soil contact.



Toe

Maintain slope angle

Berm

Trench into berm and progress downslope

Stream Channel

Erosion Control Blankets should be installed Horizontally with Stream Flow.

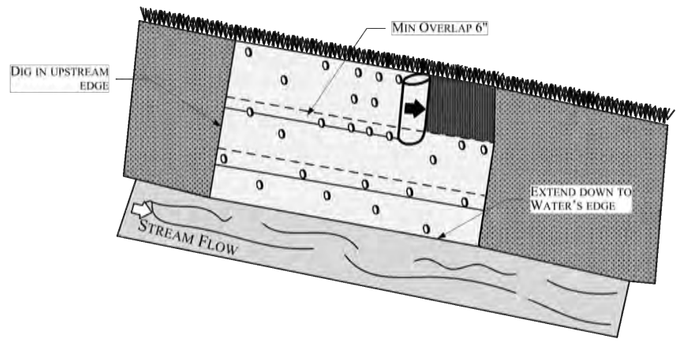


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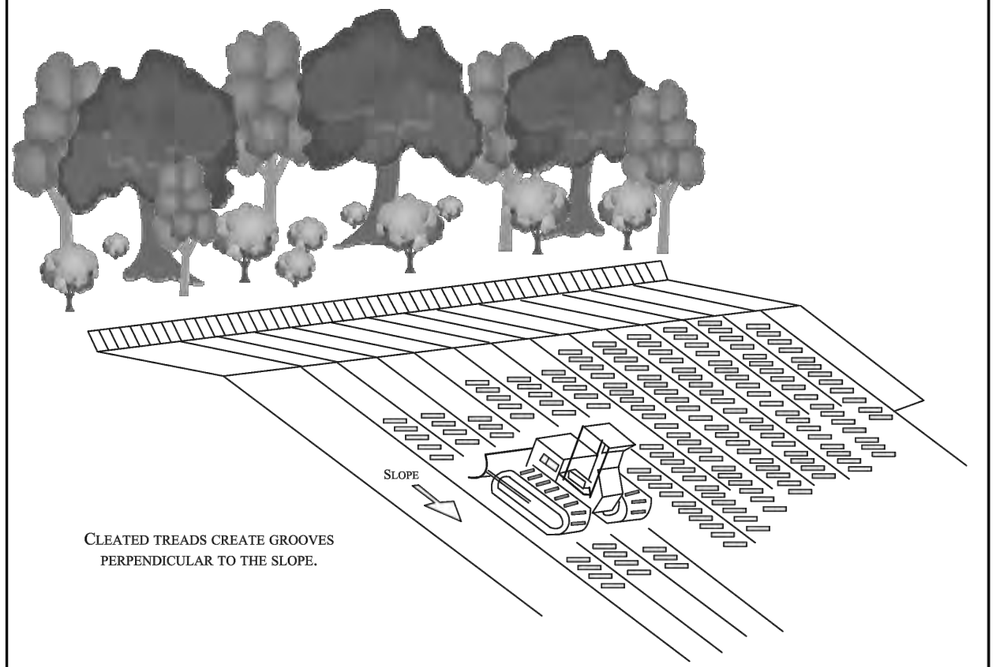
Figure 7
Environmental Protection Plan
Typical Erosion Control Blanket Installation

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



Cleated treads create grooves perpendicular to the slope.

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Figure 8
Environmental Protection Plan
Typical Cat Tracking

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

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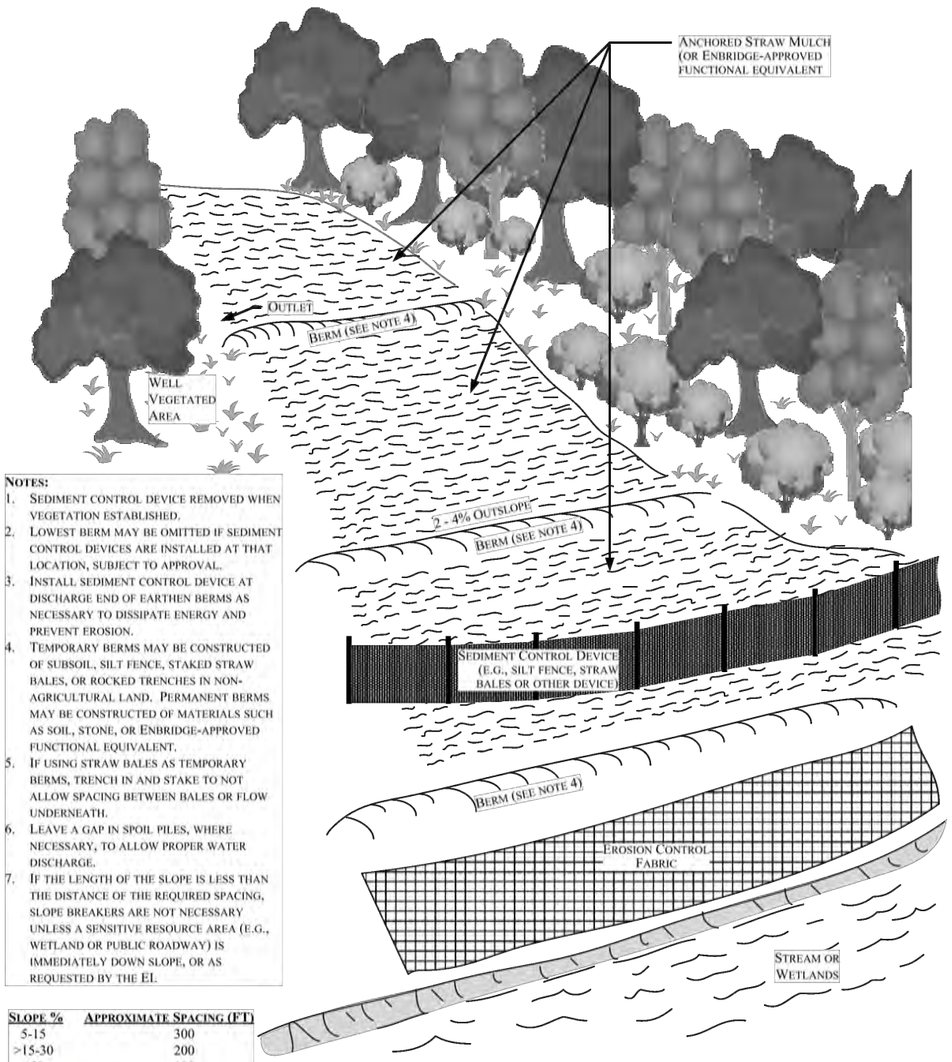


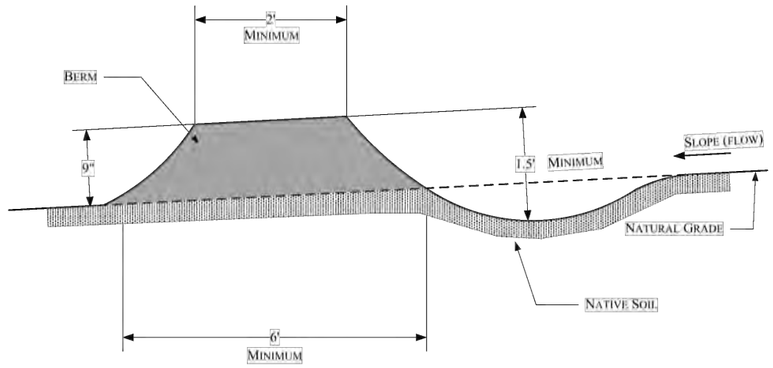
Notes:

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 device at discharge end of earthen berms as necessary to dissipate energy and prevent erosion.
4. Temporary berms may be constructed of subsoil, silt fence, staked straw bales, or rocked trenches in non-agricultural land. Permanent berms may be constructed of materials such as soil, stone, or Enbridge-approved functional equivalent.
5. If using straw bales as temporary berms, trench in and stake to not allow spacing between bales or flow underneath.
6. Leave a gap in spoil piles, where necessary, to allow proper water discharge.
7. If the length of the slope is less than the distance of the required spacing, slope breakers are not necessary unless a sensitive resource area (e.g., wetland or public roadway) is immediately down slope, or as requested by the EI.

Slope %	Approximate Spacing (ft)
5-15	300
>15-30	200
>30	100

Figure 9
Environmental Protection Plan
Typical Temporary or Permanent Berms (Perspective View)

Scale: NTS
Date: 11/14/2000
Revised: 3/21/2017



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

GENERAL NOTES AND COMMENTS:

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SHEET 8A
Erosion & Sediment Control Details Page 5
Line 5 Wisconsin Segment Relocation Project
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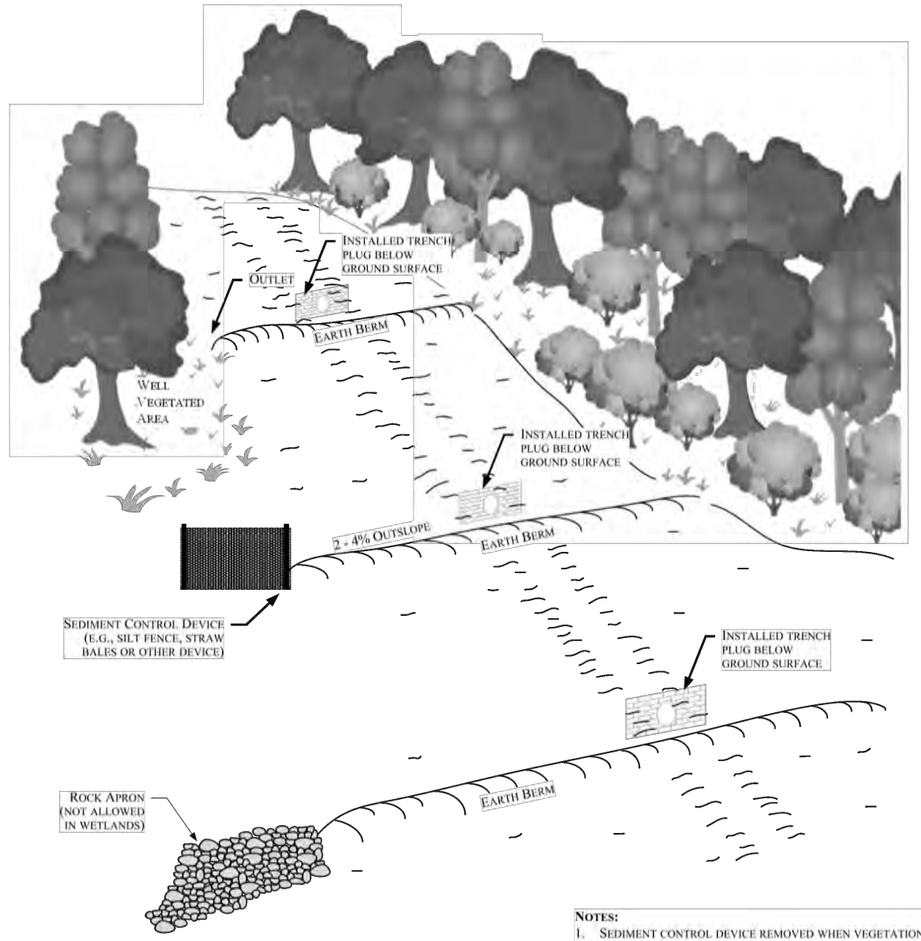

SLOPE %	APPROX. SPACING (FT)
3-5	250
5-15	200
15-25	150
>25	<100

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.

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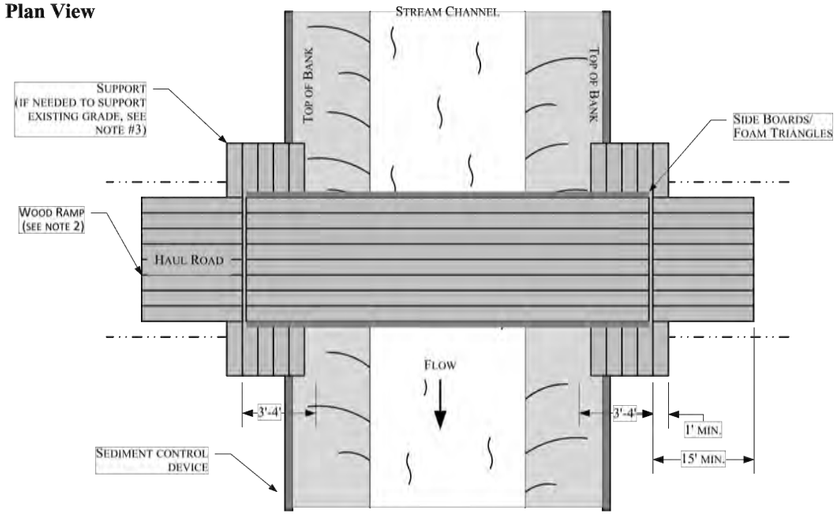
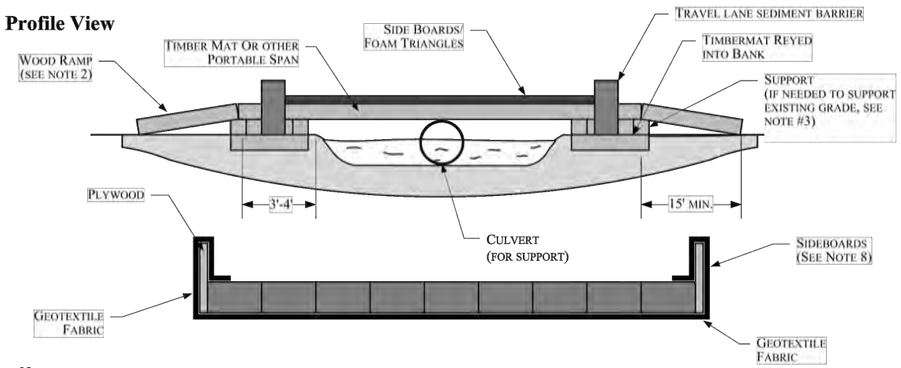
Figure 11
Environmental Protection Plan
Permanent Slope Breakers (Perspective View)

Scale: NTS
Date: 11/14/2000
Revised: 3/3/2017
Location: M:\Clients\ET-E\LL\RadRiver\Documents\

Plan View



Profile View



NOTES:

1. INSPECT BRIDGE OPENING PERIODICALLY AND FOLLOWING RAINFALLS OF OVER ½". 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. SIDEBOARDS WILL BE INSTALLED ON TEMPORARY BRIDGES TO MINIMIZE THE POTENTIAL FOR SEDIMENT TRANSPORT. SIDEBOARDS 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 SIDEBOARDS IN A CONTINUOUS FASHION.

ENBRIDGE

Figure 12
Environmental Protection Plan
Typical Span Type Bridge
With or Without Instream Support

Scale: NTS
Date: 11/16/2016
Revised: 3/21/2017
Location: M:\Department Tasks\EPP Figures w/Borders\

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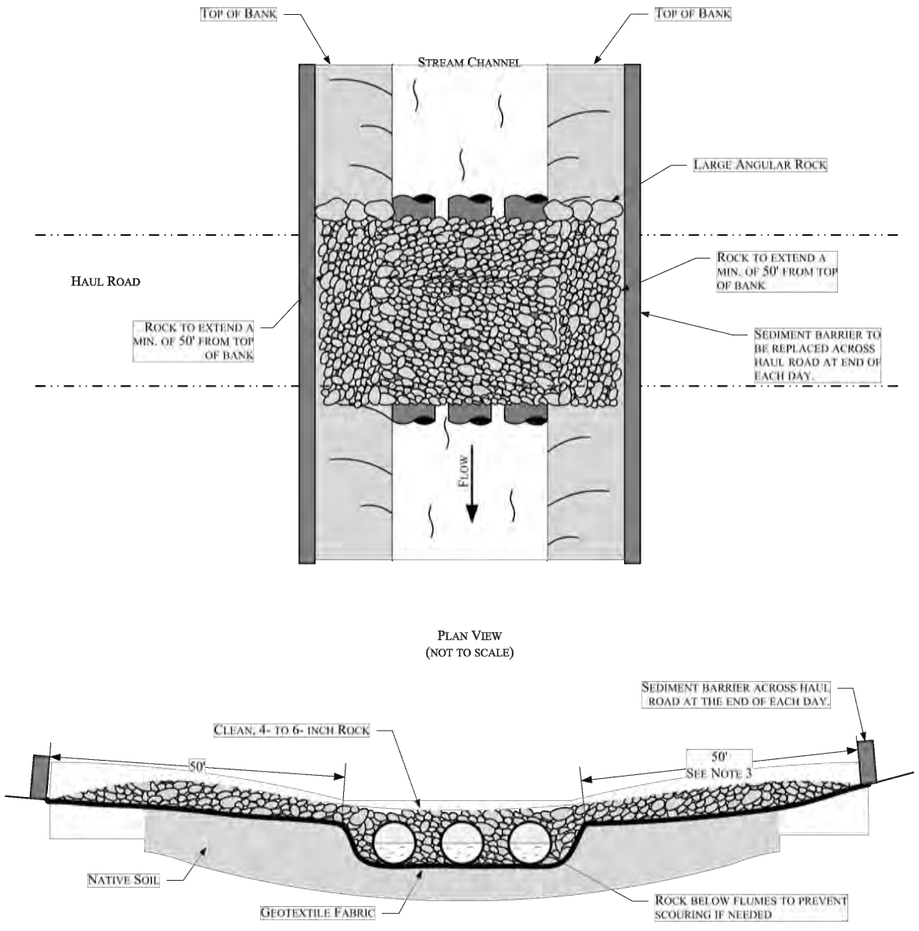

PLAN VIEW
(NOT TO SCALE)

NOTES:
1. STEEL FLUME PIPE(S) SIZED TO ALLOW FOR STREAM FLOW AND EQUIPMENT LOAD.
2. SEDIMENT BARRIER SHALL BE PLACED ACROSS BRIDGE ENTRANCE EVERY NIGHT.
3. NOT PERMISSIBLE IN AGRICULTURAL FIELDS.

ENBRIDGE

Figure 13
Environmental Protection Plan
Typical Rock Flume Bridge

Scale: NTS
Date: 11/18/2016
Revised: 12/13/2019
Location: M:\Department Tasks\EPP Figures\Figure

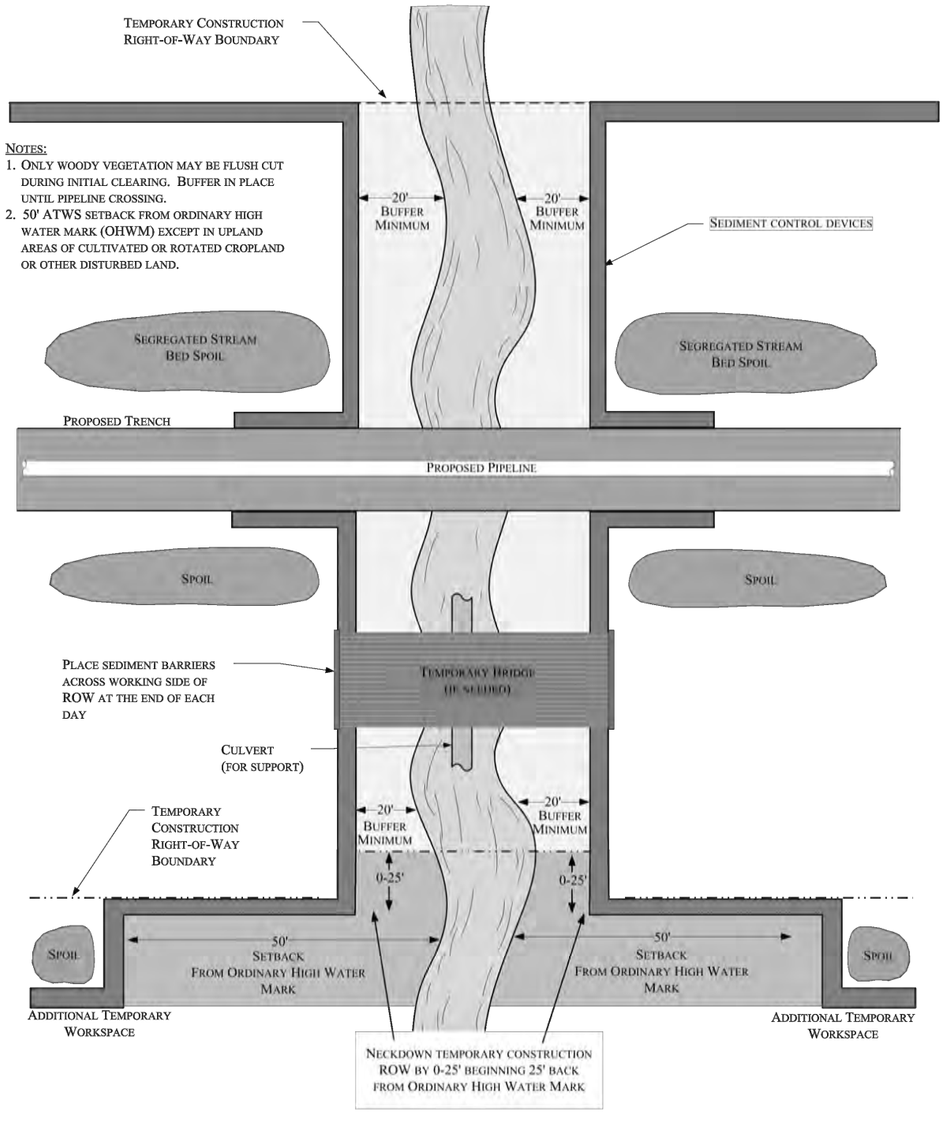

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Figure 14
Environmental Protection Plan
Typical Waterbody Crossing Method
Open-Cut Wet Trench Method

Scale: NTS
Date: 11/14/2000
Revised: 3/21/2017
Location: M:\Department Tasks\EPP Figures\Figure

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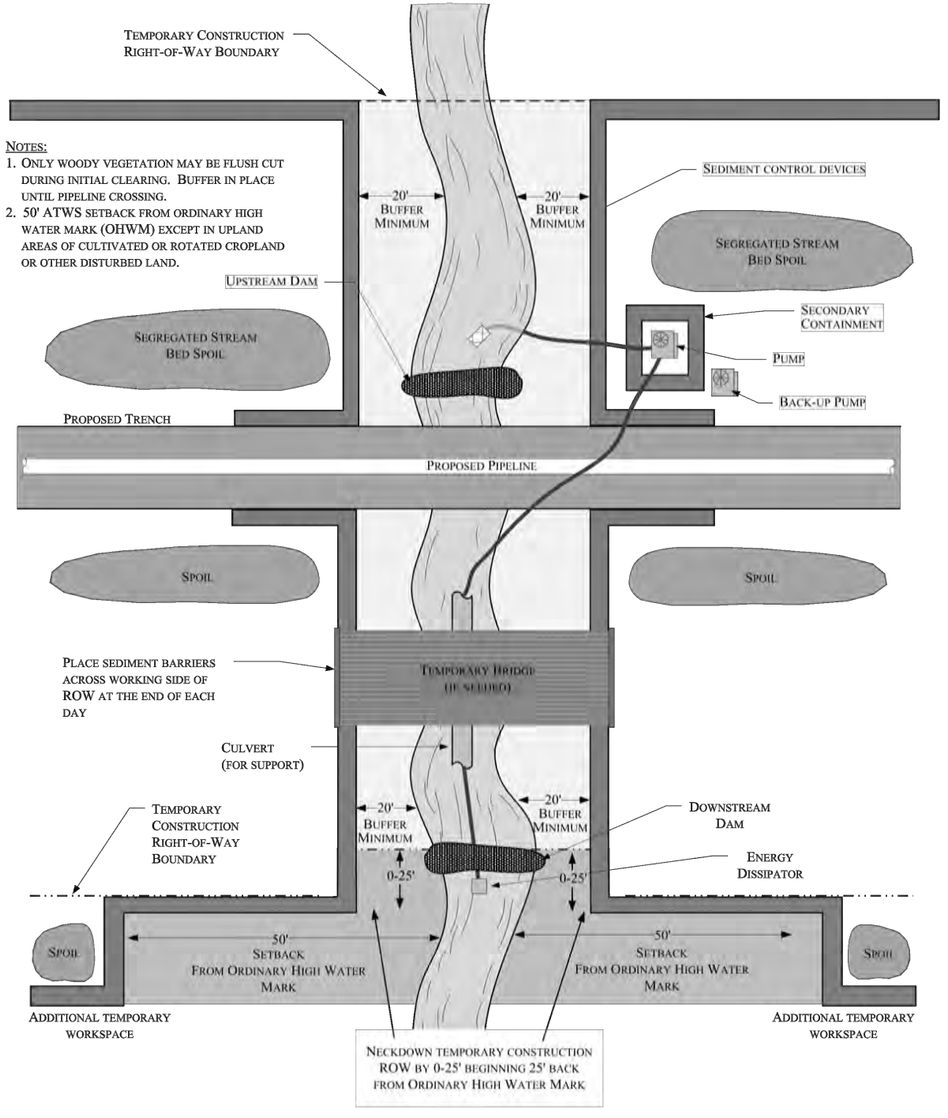

Figure 15
Environmental Protection Plan
Typical Waterbody Crossing Method
Dam and Pump Method

Scale: NTS
Date: 11/14/2000
Revised: 3/21/2017

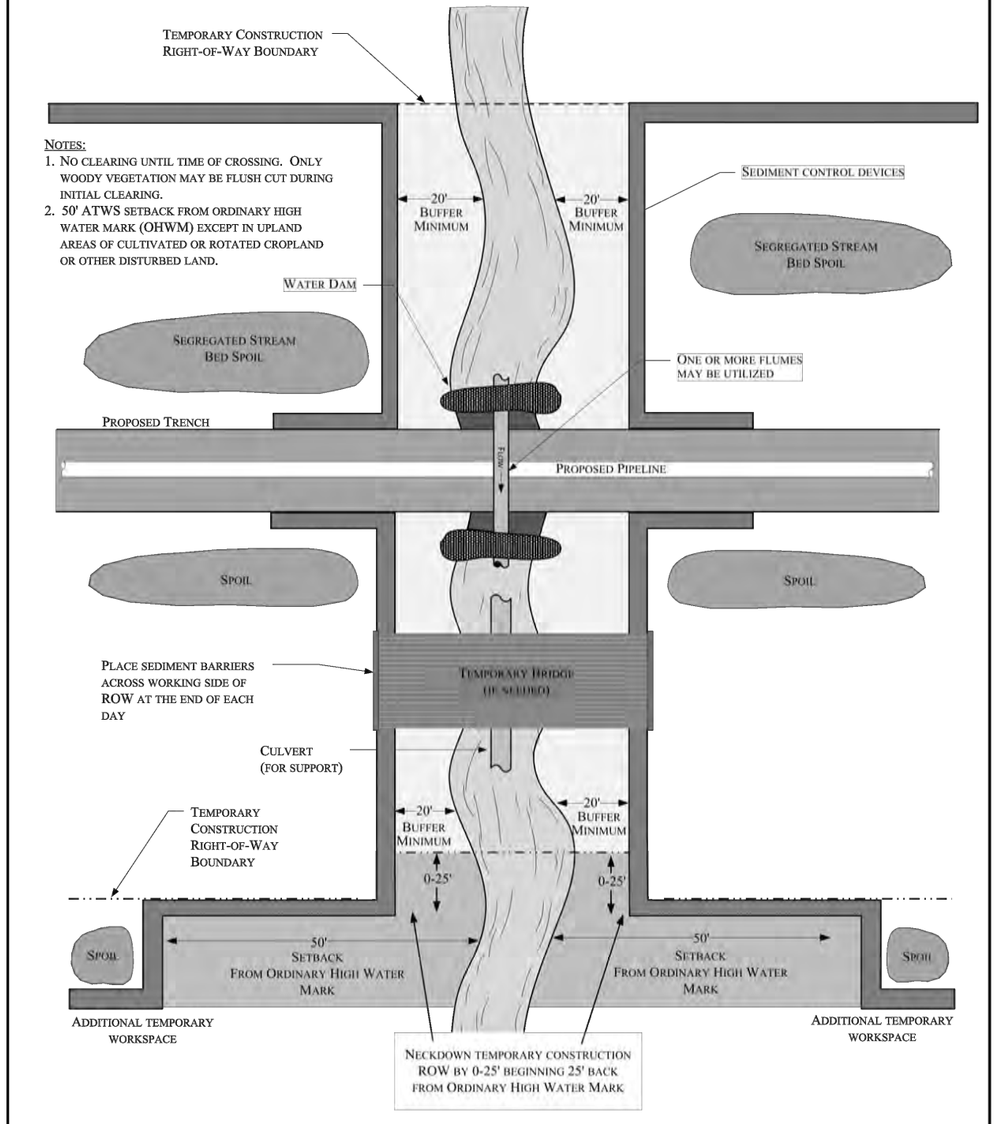

Figure 16
Environmental Protection Plan
Typical Waterbody Crossing Method
Flume Method

Scale: NTS
Date: 11/14/2000
Revised: 3/21/2017

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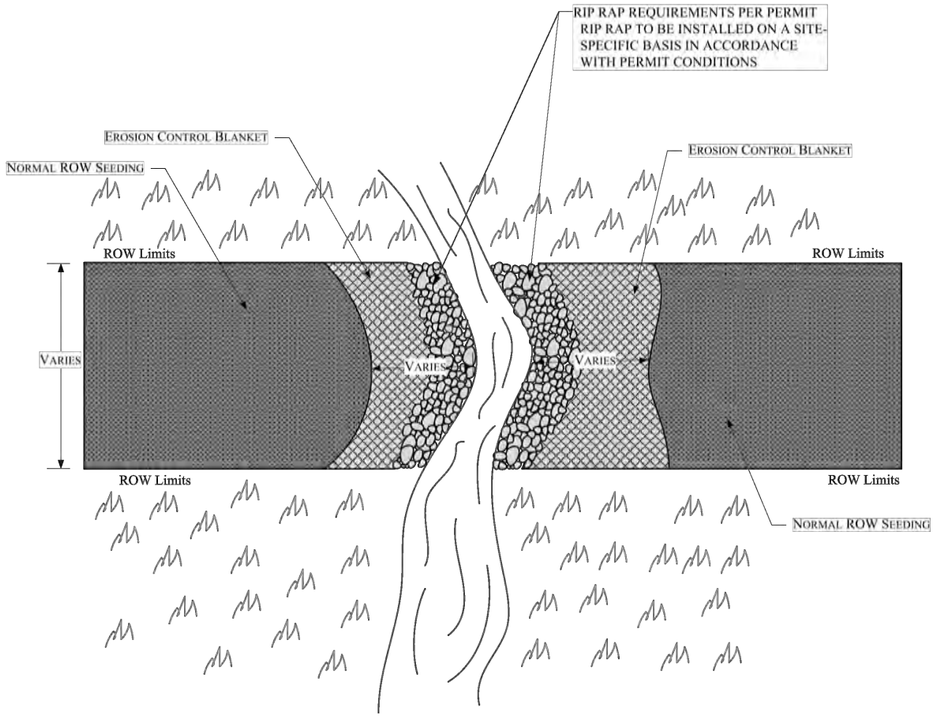
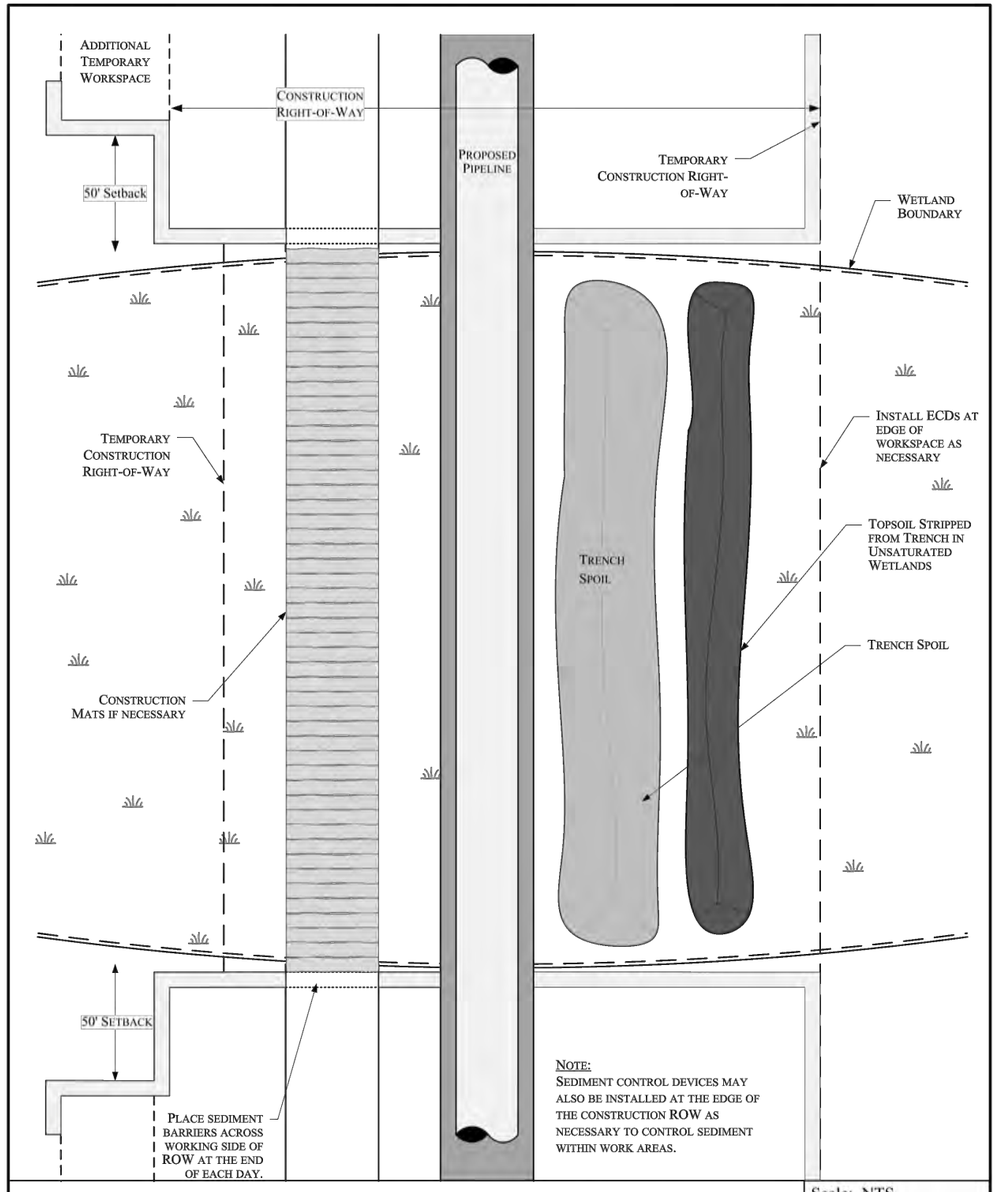


NOTE:
PLACE BLANKET A MINIMUM OF ONE (1) FOOT UNDER RIP RAP. EXTEND BLANKET FROM MEAN HIGH WATER LEVEL TO SEVERAL FEET BEHIND HIGH BANK.

ENBRIDGE

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

Scale: NTS
Date: 11/30/2016
Revised: 3/21/2017
Location: M:\Department Tasks\EPP Figures\wBorders\



NOTE:
SEDIMENT CONTROL DEVICES MAY ALSO BE INSTALLED AT THE EDGE OF THE CONSTRUCTION ROW AS NECESSARY TO CONTROL SEDIMENT WITHIN WORK AREAS.

ENBRIDGE

Figure 18
Environmental Protection Plan
Typical Wetland Crossing Method

Scale: NTS
Date: 12/1/2016
Revised: 3/21/2017
Location: M:\Department Tasks\EPP Figures wBorders\

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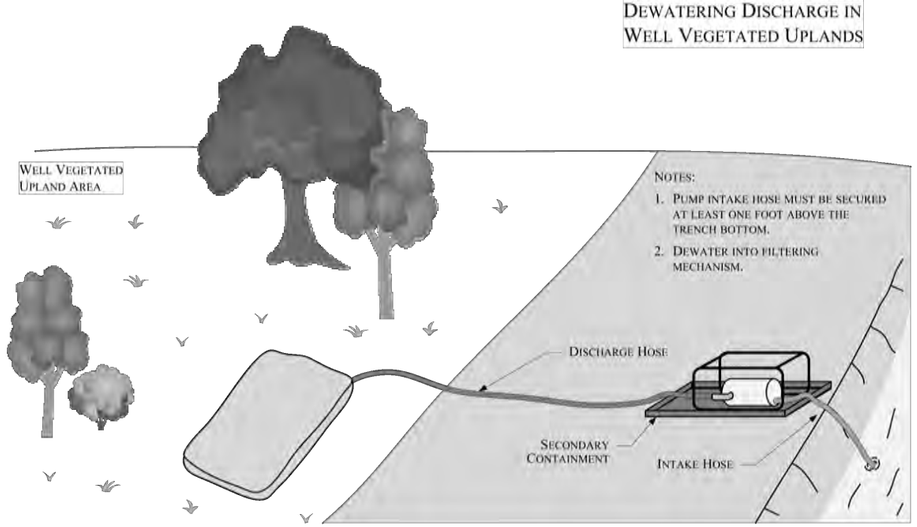
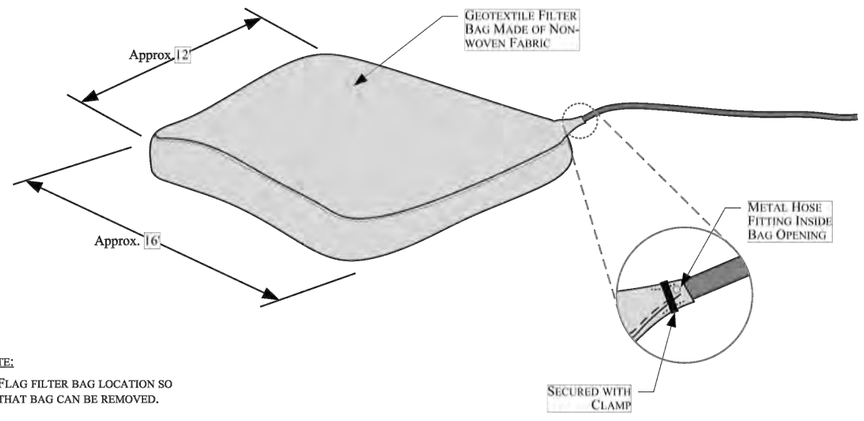
Dewatering Discharge in Well Vegetated Uplands



Geotextile Filter Bag



Note:

1. Flag filter bag location so that bag can be removed.

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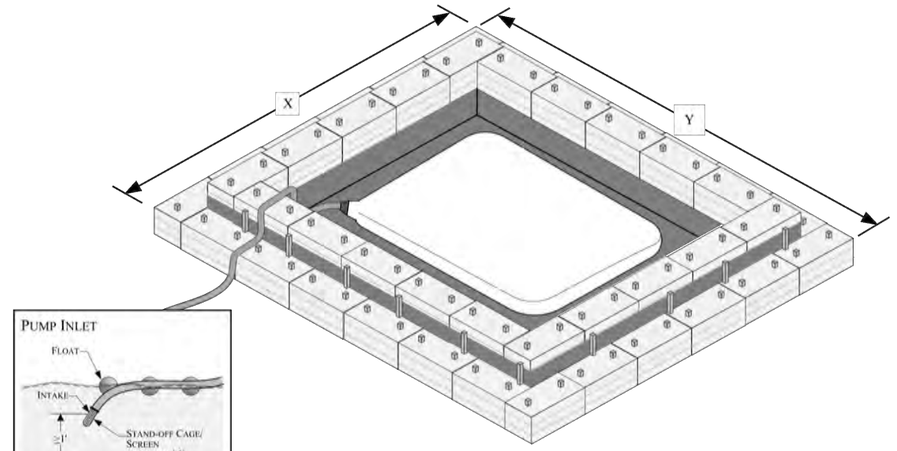
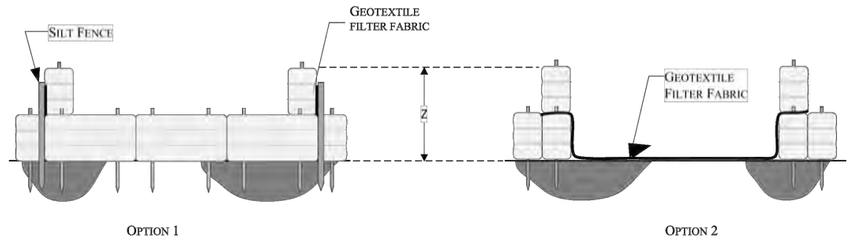
Figure 19
Environmental Protection Plan
Typical Dewatering Measures

Scale: NTS
Date: 11/21/2016
Revised: 12/13/2019
Location: M:\Department Tasks\EPP Figures\Border



Perspective View



Option 1 Option 2

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

[1]Based 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.

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Figure 20
Environmental Protection Plan
Straw Bale Dewatering Structure

Scale: NTS
Date: 11/23/2016
Revised: 12/13/2019
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Hillsdale Rd

Sutaric Rd

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AR MLV 1

MLV 1

wbad1005e

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1. Install Construction Entrance per EPP Section 8.1.
2. Install Silt Fence/Biolog per EPP Figures 4 and 6 - Adjust according to site conditions.
3. Construct temporary Diversion Berm/Channel per EPP Figures 9 and 10 - Install cross-conveyance outlets as needed.
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7. Access Roads crossing wetlands and/or waterbodies will be matted or bridged in accordance with applicable federal and state permits (see General Notes page).

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N W E S

- Construction Entrance
- Trench Breaker/Plug
- Sediment Barrier
- >20% Ground Slope
- 5ft Contour
- Milepost
- Proposed Centerline
- HDD/Direct Bore
- Proposed Workspace
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- PSS Wetland
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- Ephemeral Waterbody

Modeled best management practices (BMPs) are presented to illustrate how Environmental Protection Plan (EPP) measures may be implemented based on field conditions during construction. Refer to General Notes and Typical Details provided in this plan for BMP installation and sequencing.

Sheet 1 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
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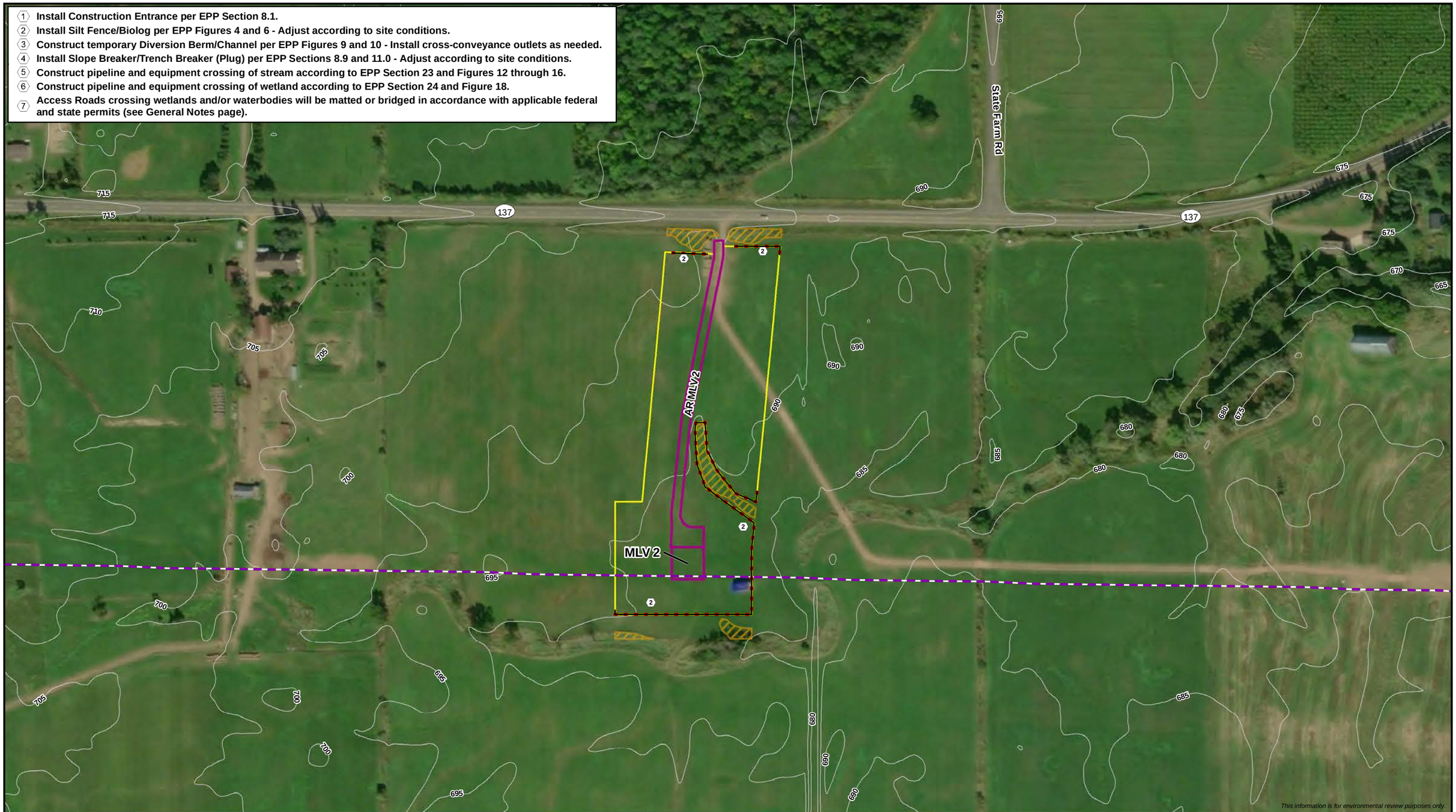

This information is for environmental review purposes only.

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Sheet 2 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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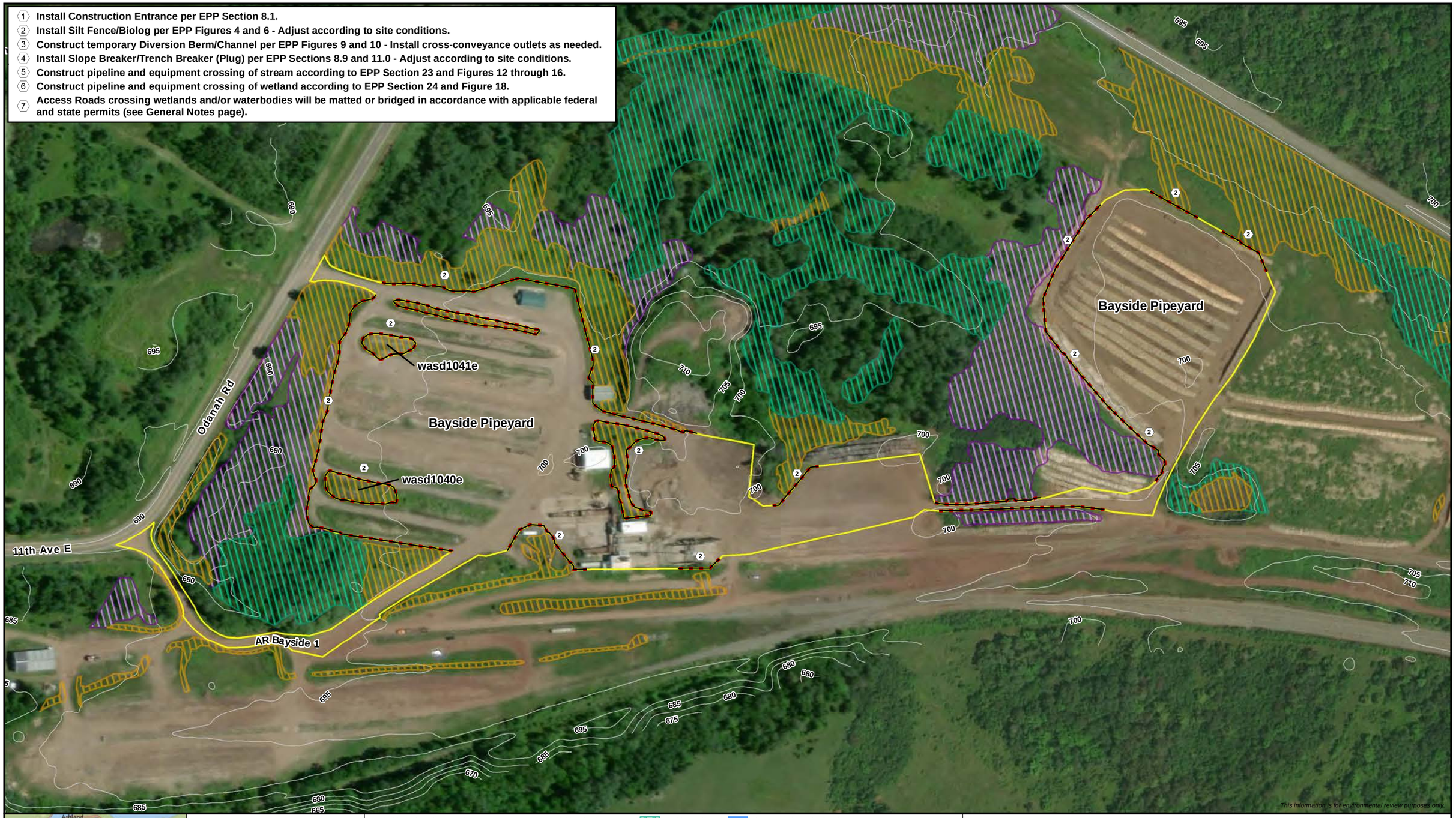

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Sheet 3 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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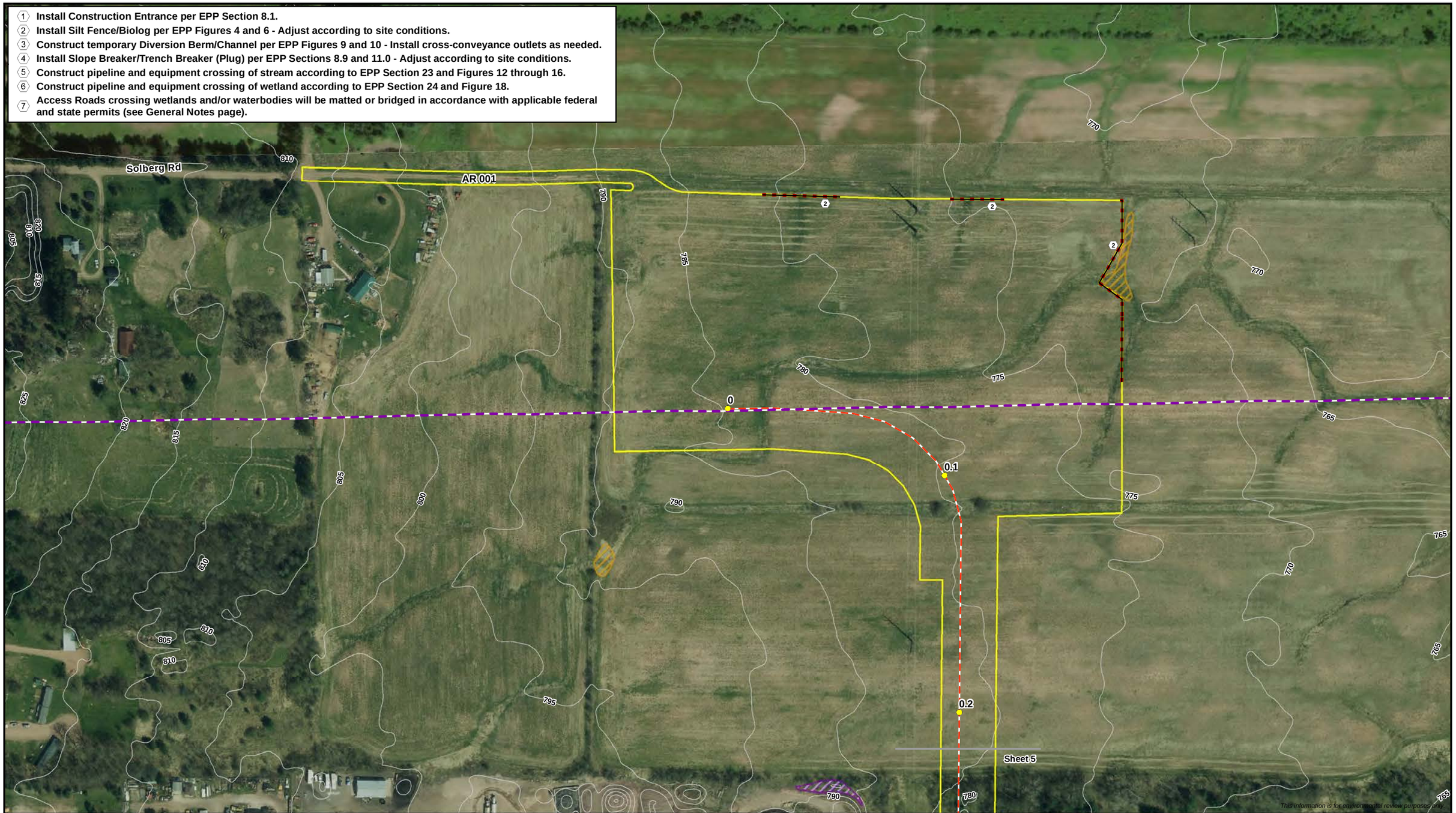

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Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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Sheet 5 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
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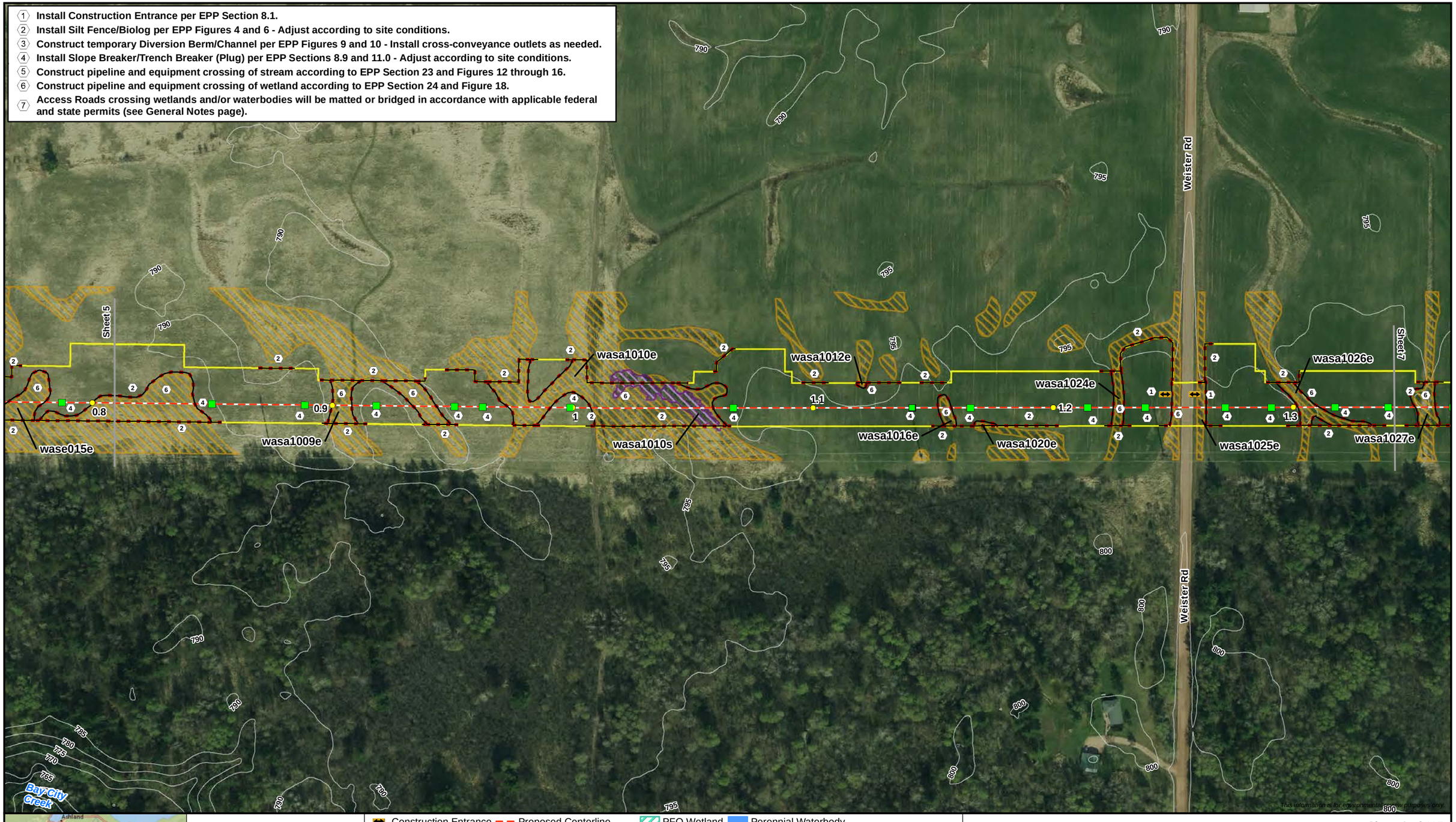

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Sheet 6 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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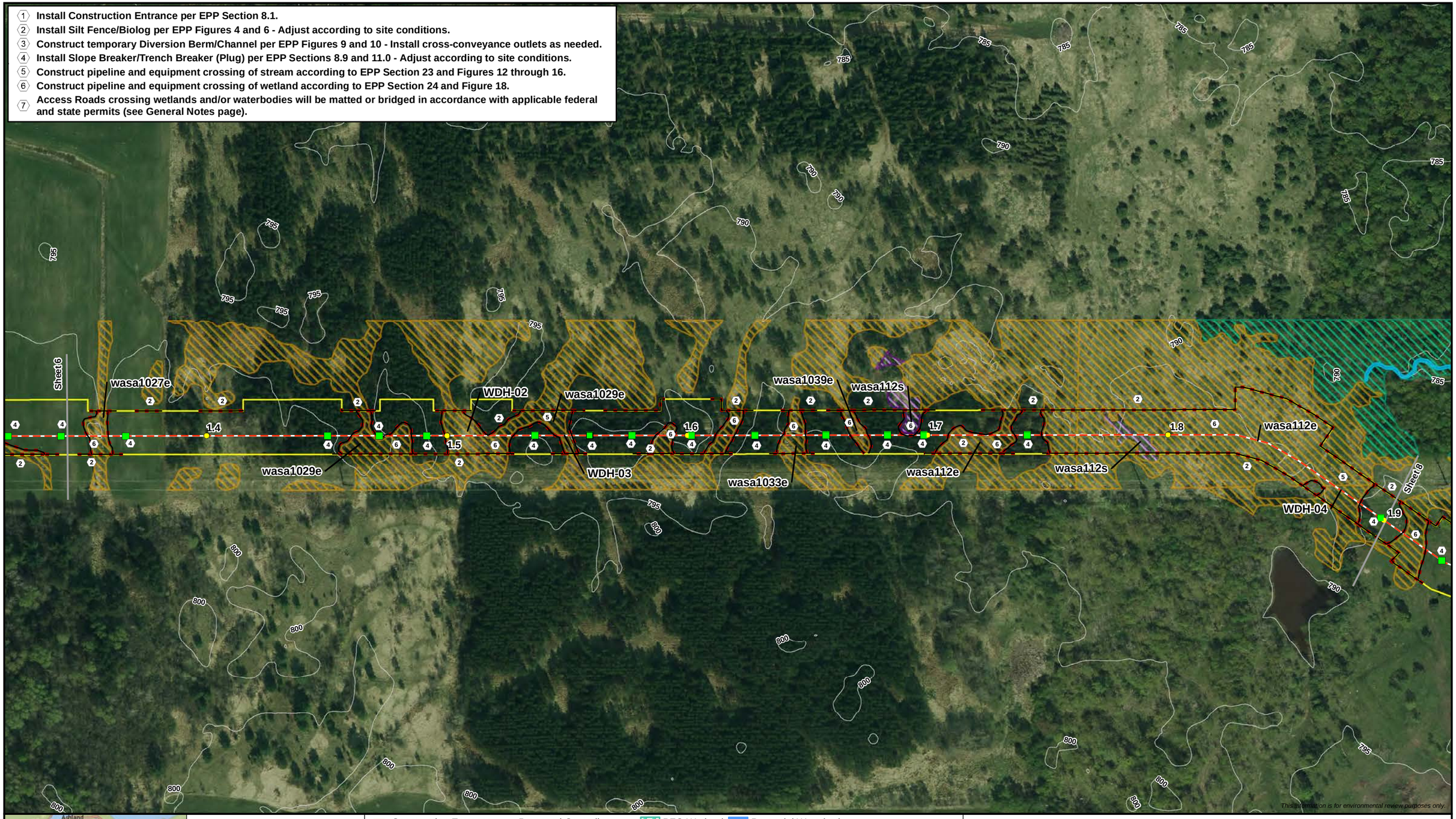

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Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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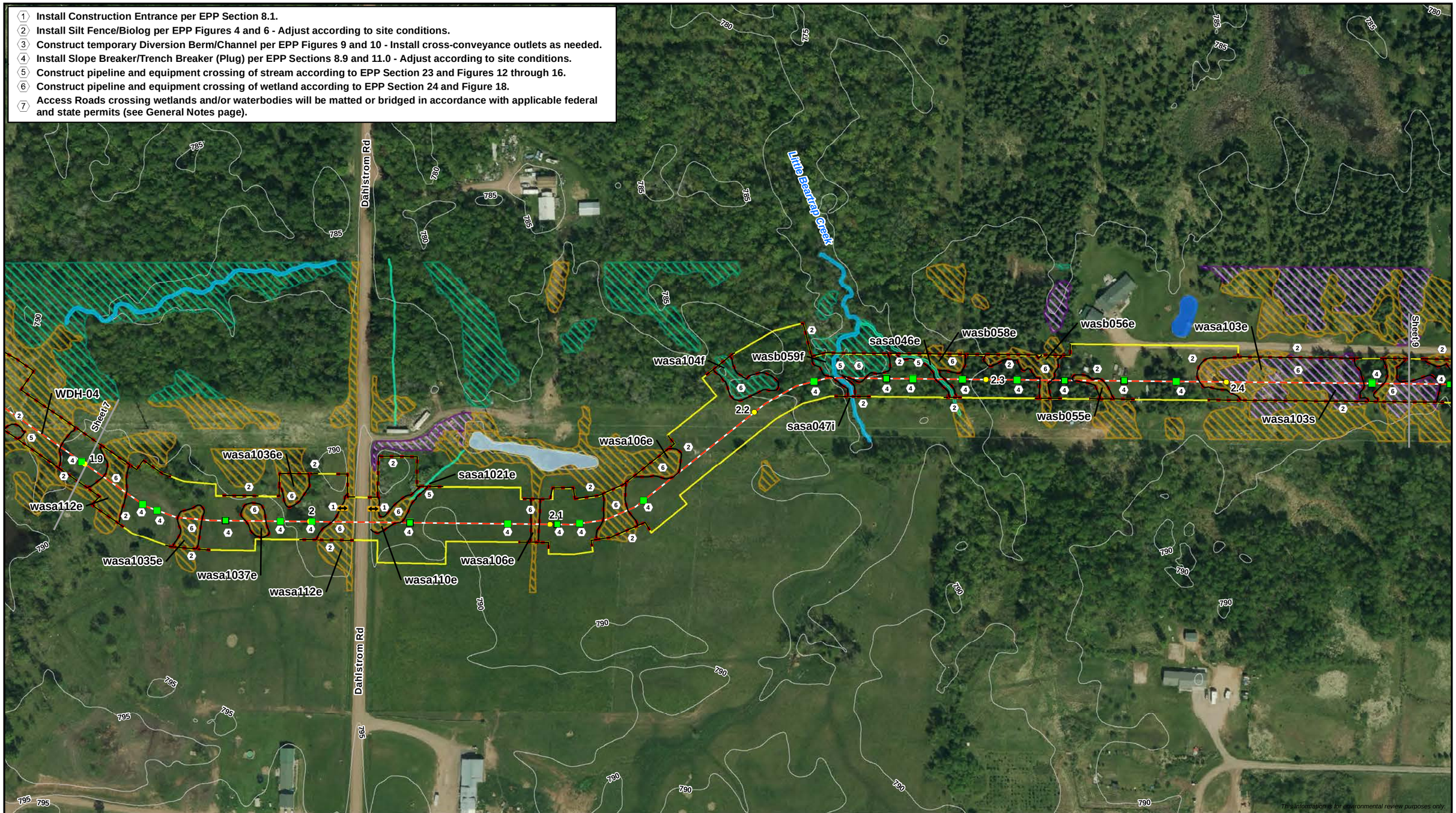

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N E S W

- Construction Entrance
- Trench Breaker/Plug
- Sediment Barrier
- >20% Ground Slope
- 5ft Contour
- Milepost
- Proposed Centerline
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Sheet 8 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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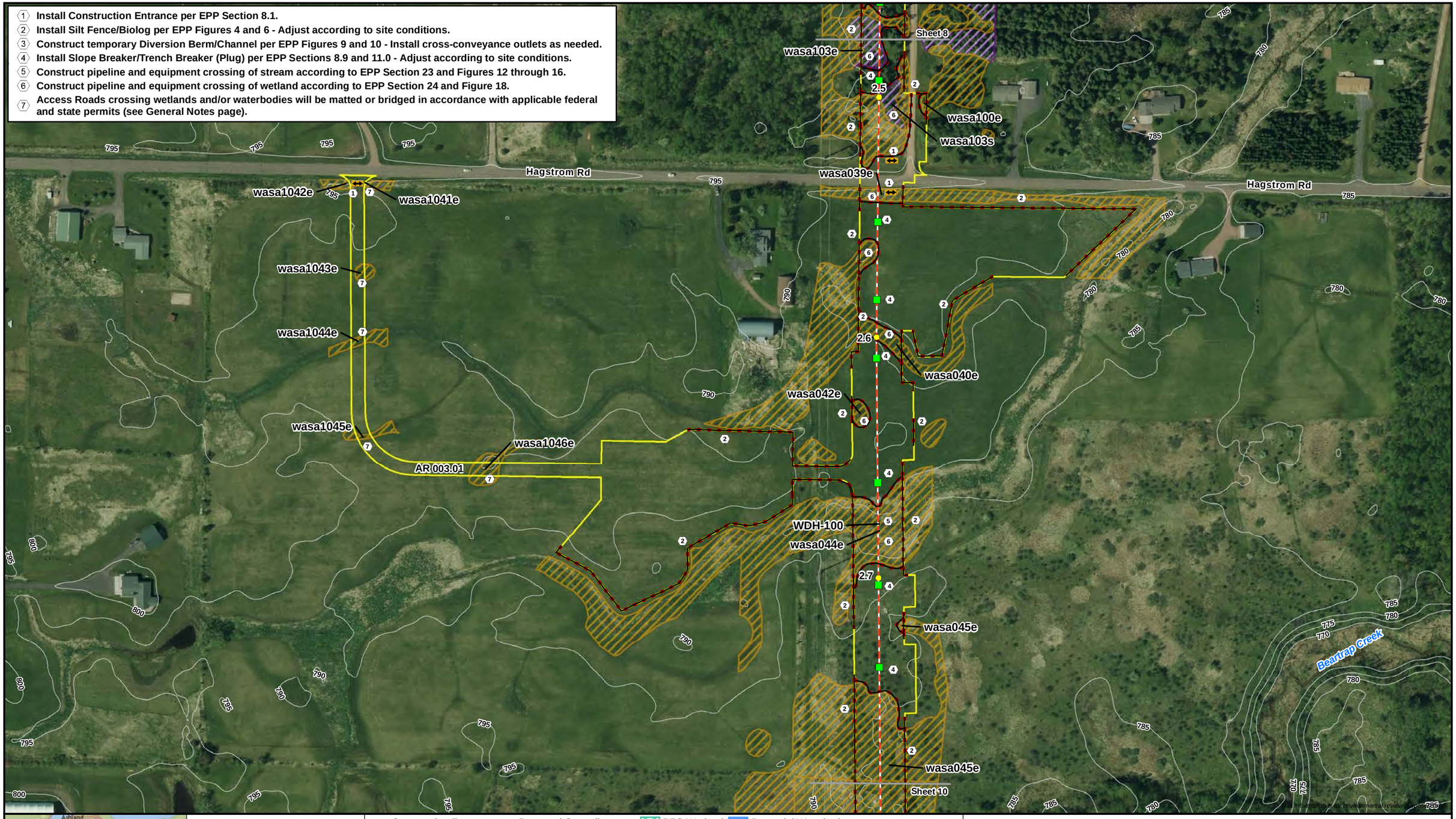

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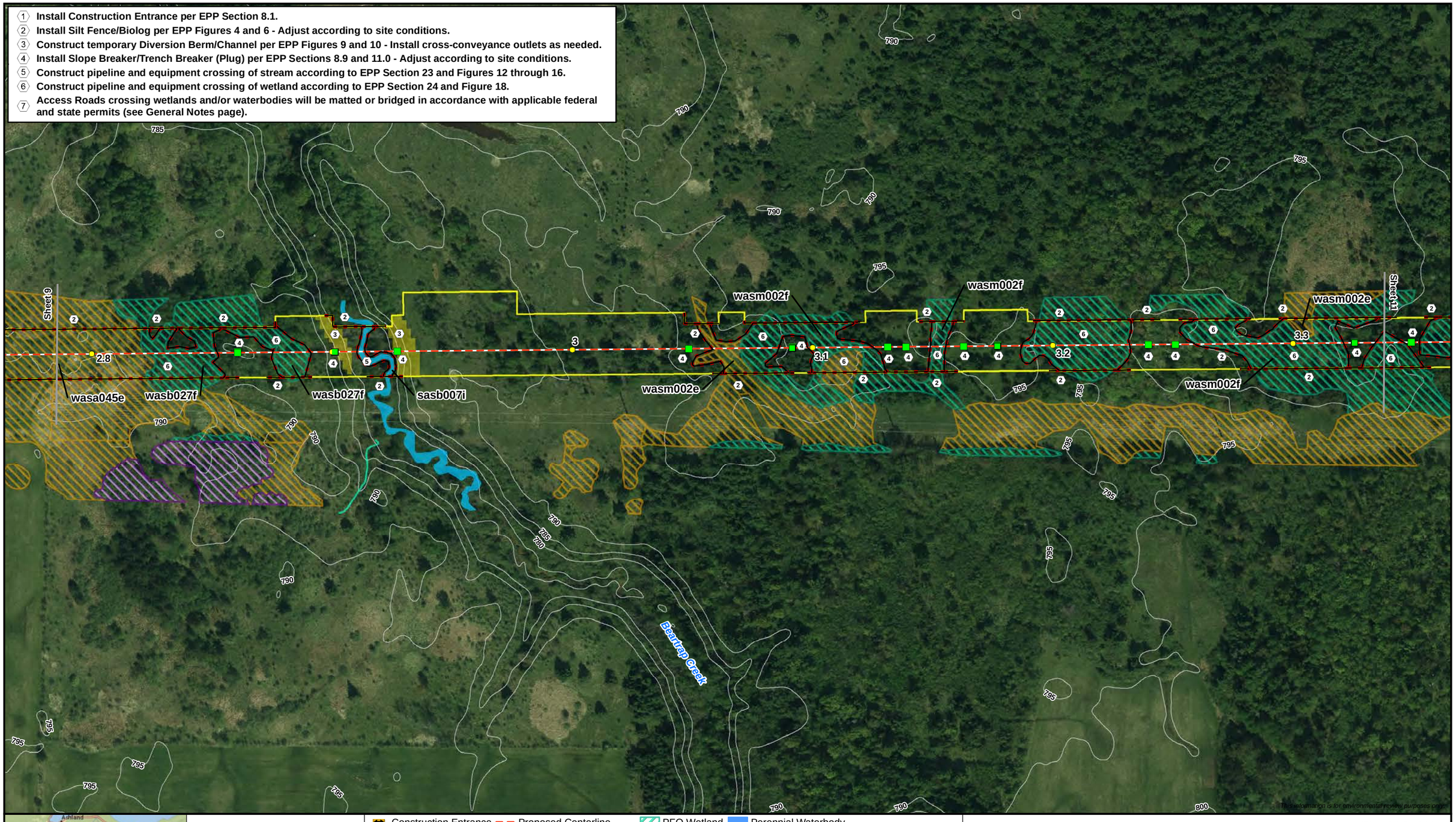

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Sheet 10 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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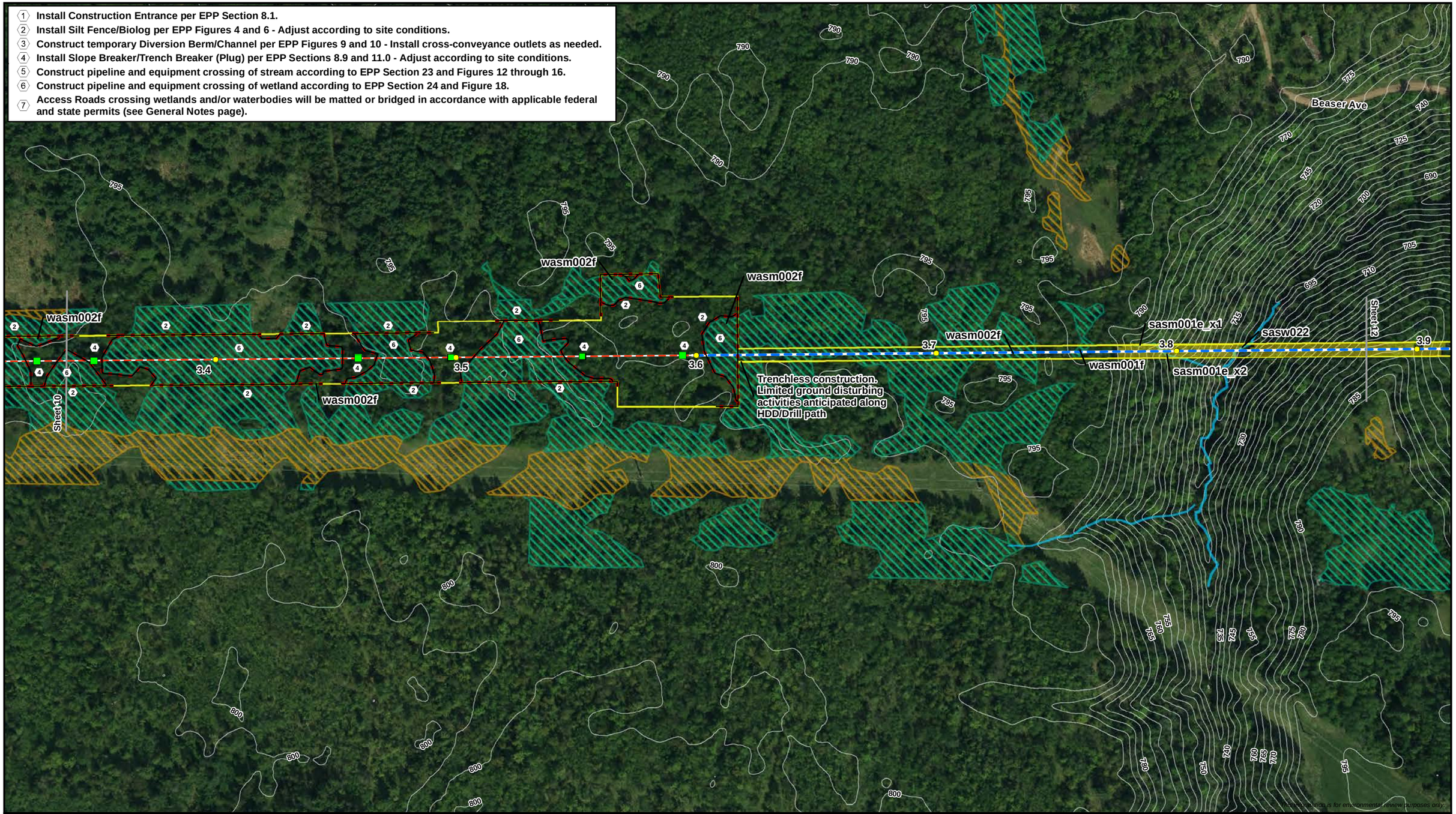

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Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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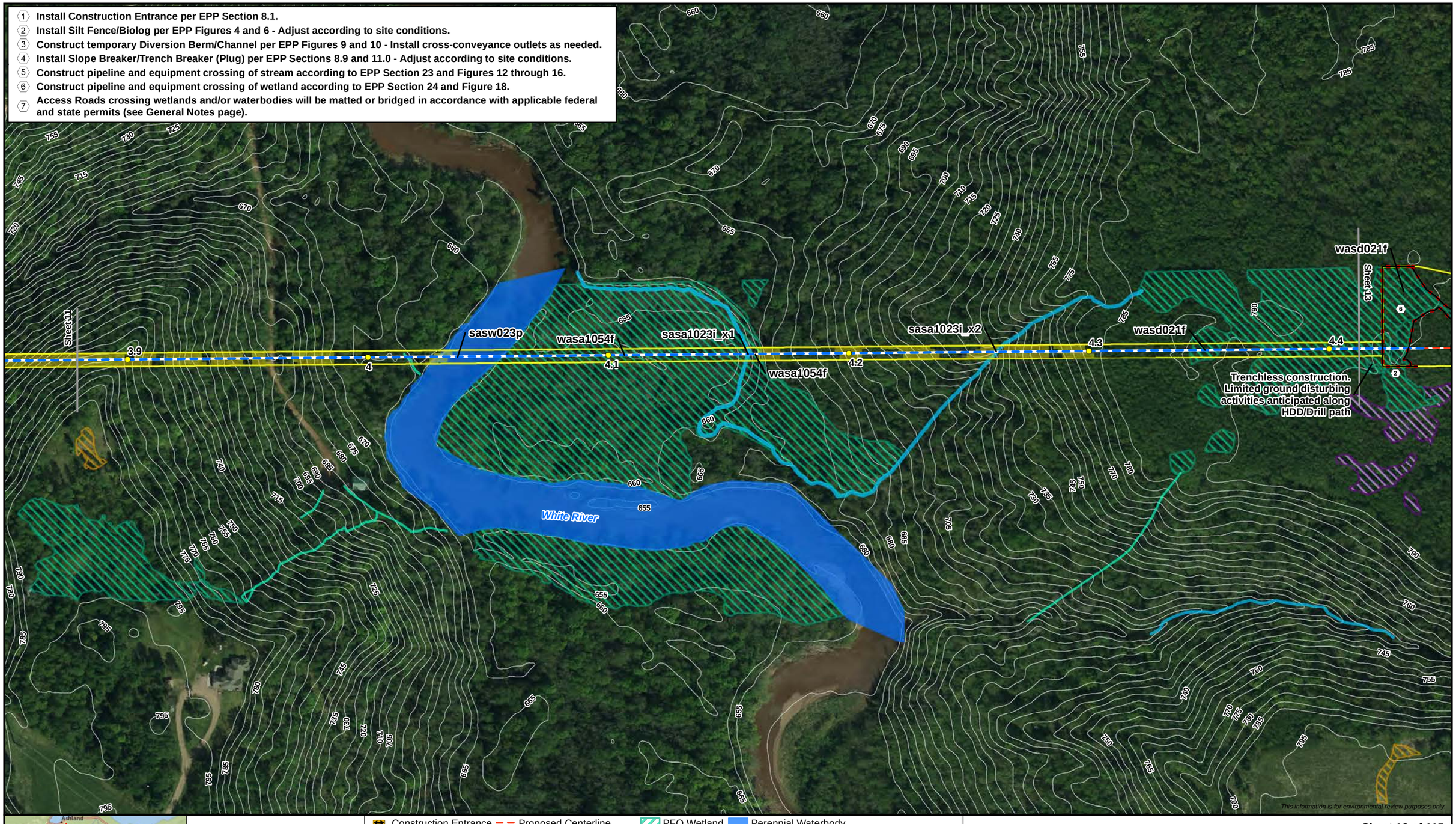

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Sheet 12 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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Trenchless construction. Limited ground disturbing activities anticipated along HDD/Drill path

Sheet 12

4.4

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wasd021s

wasa1061f

4.5

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sasd014e

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Sheet 14

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Sheet 15

Rock Creek

Ashland

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Sheet 13 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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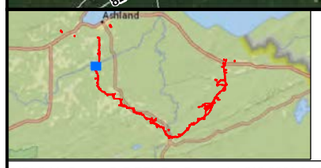

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Sheet 14 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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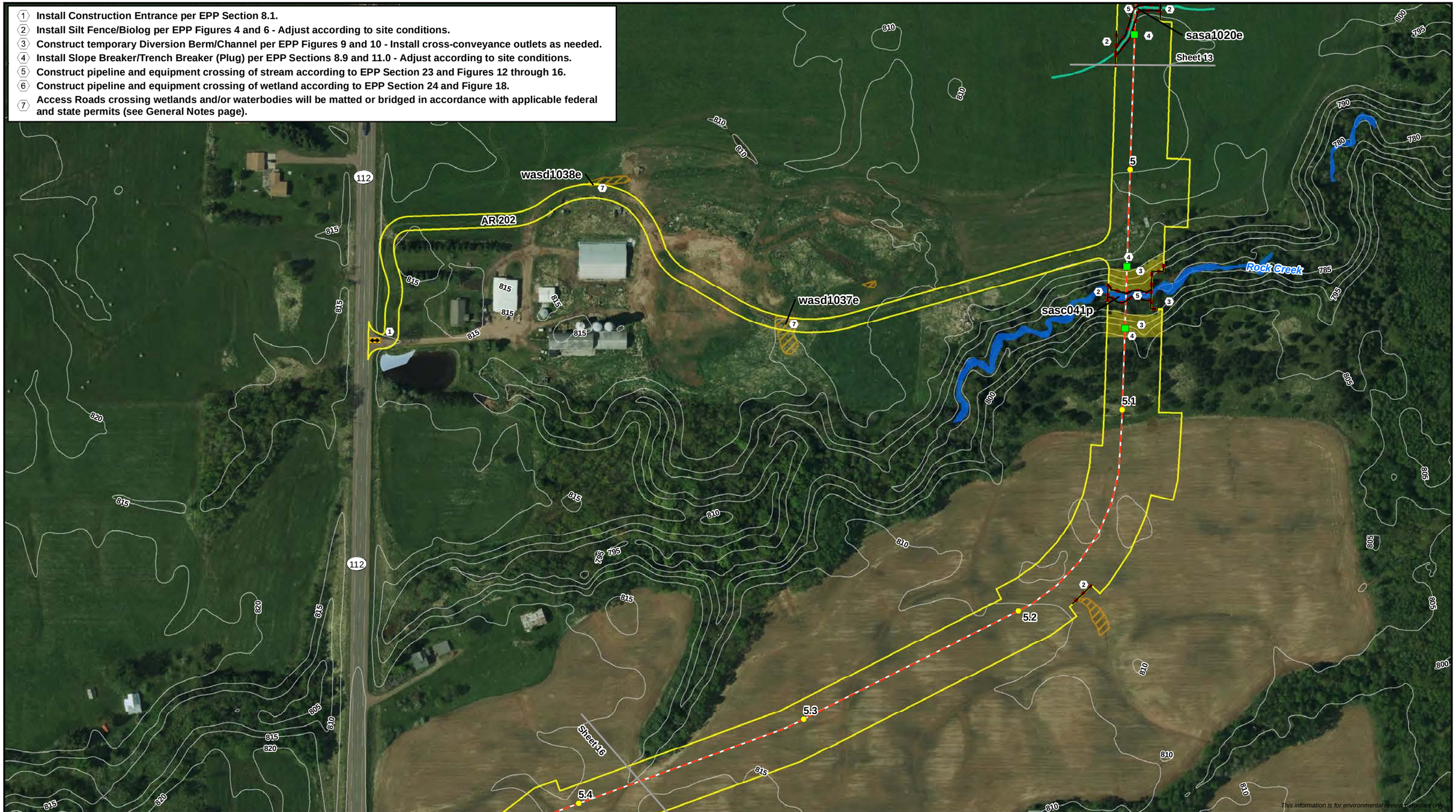

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Sheet 15 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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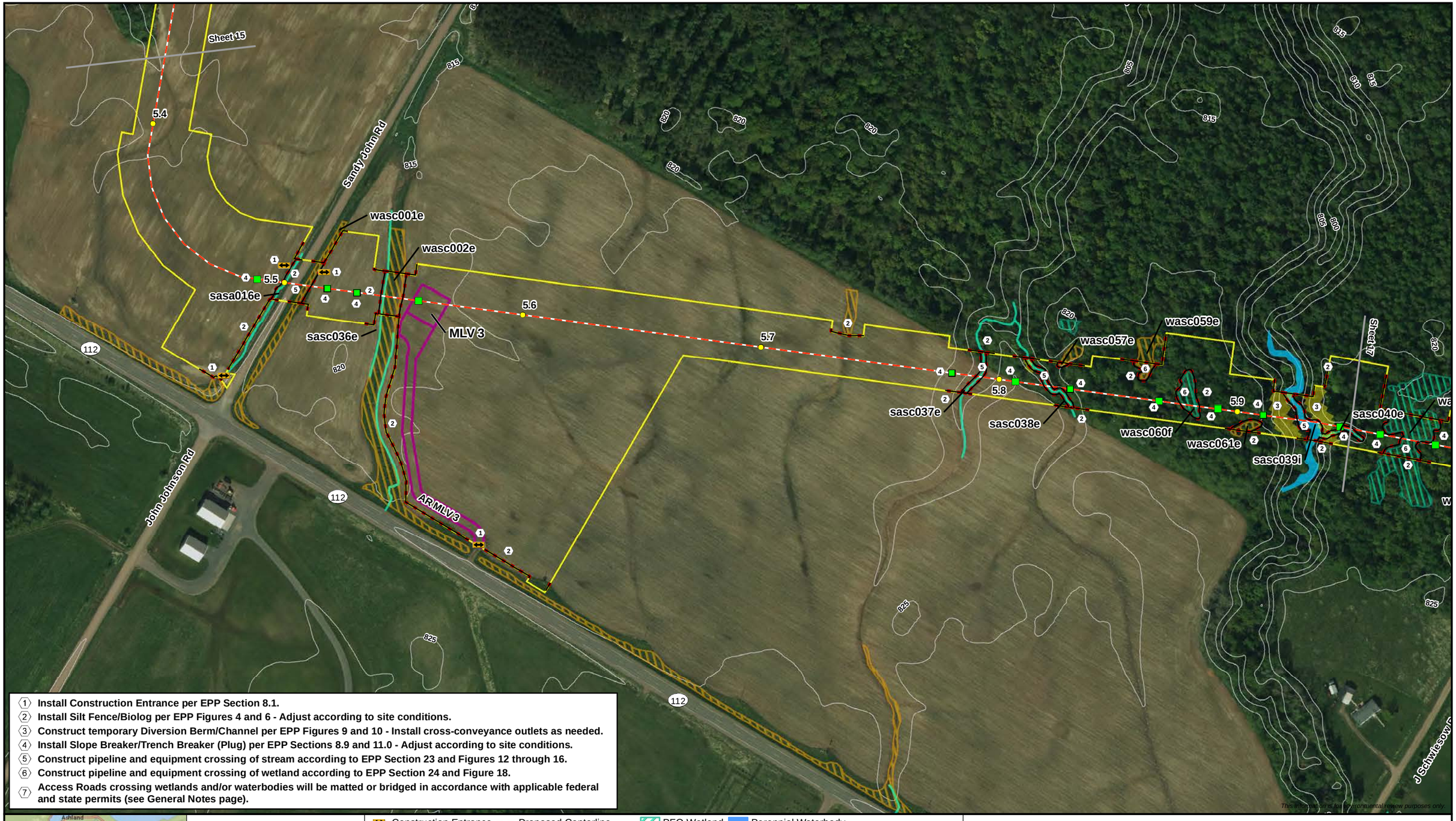

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Sheet 16 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
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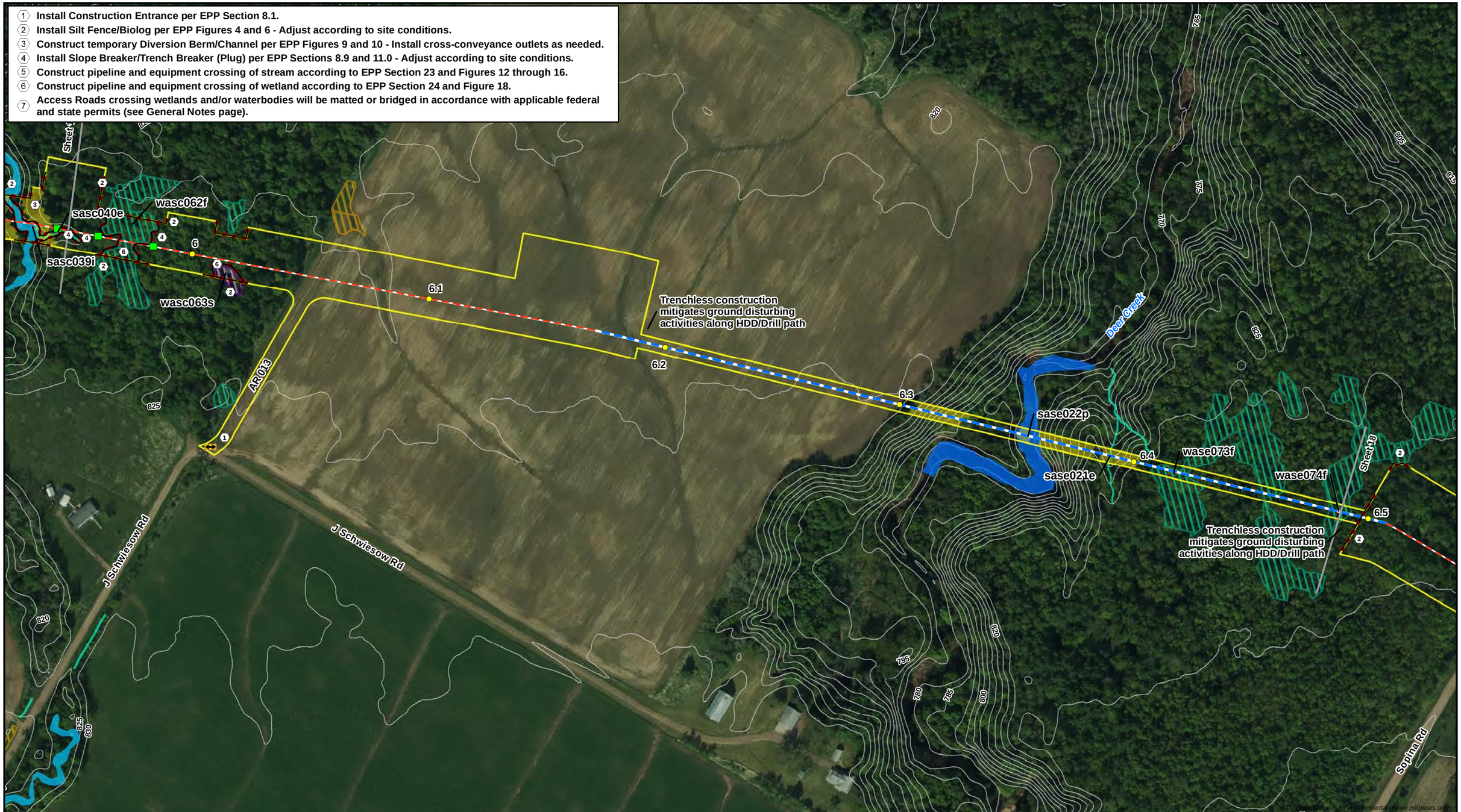

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Erosion and Sediment Control Plan
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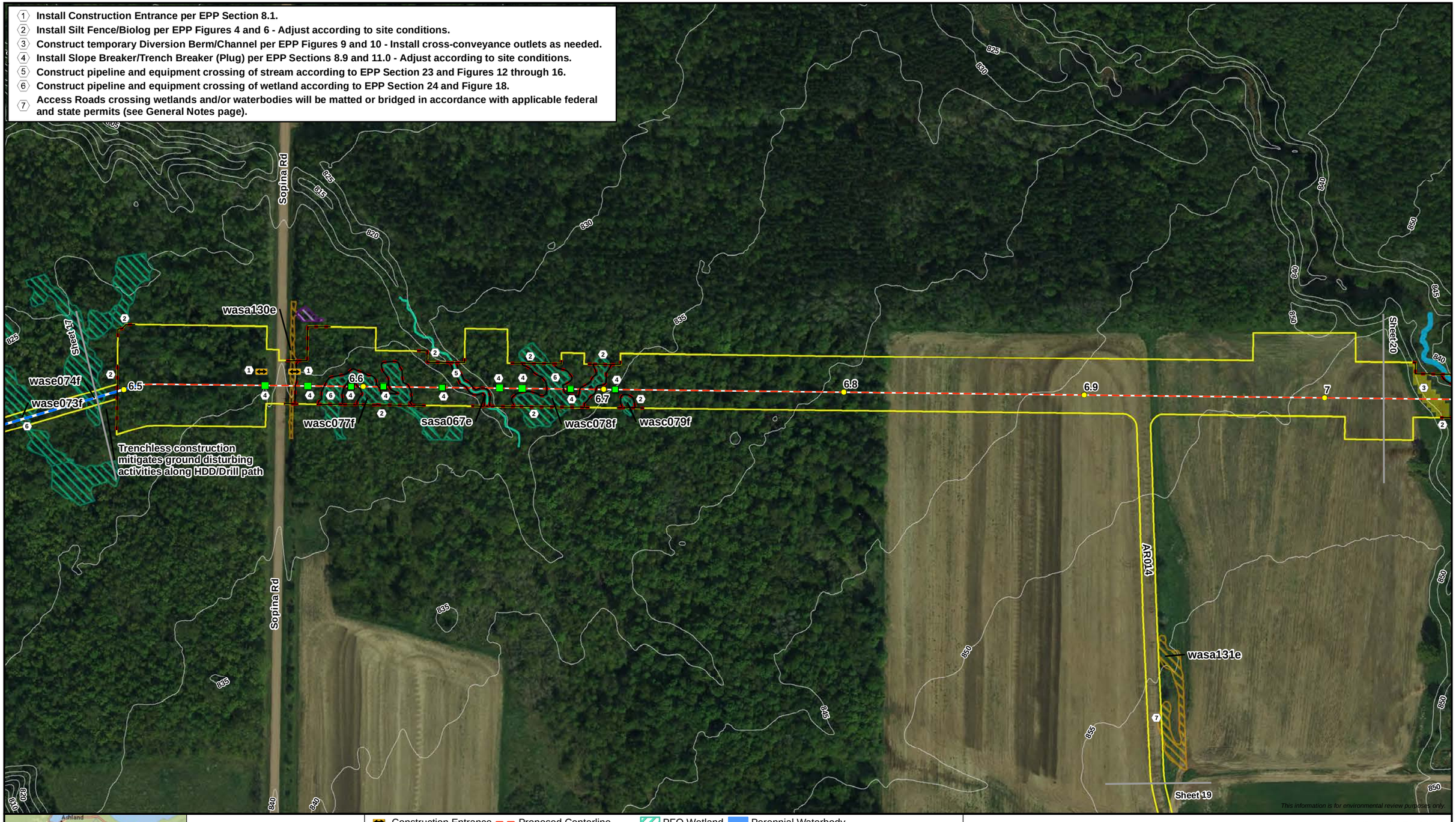

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Erosion and Sediment Control Plan
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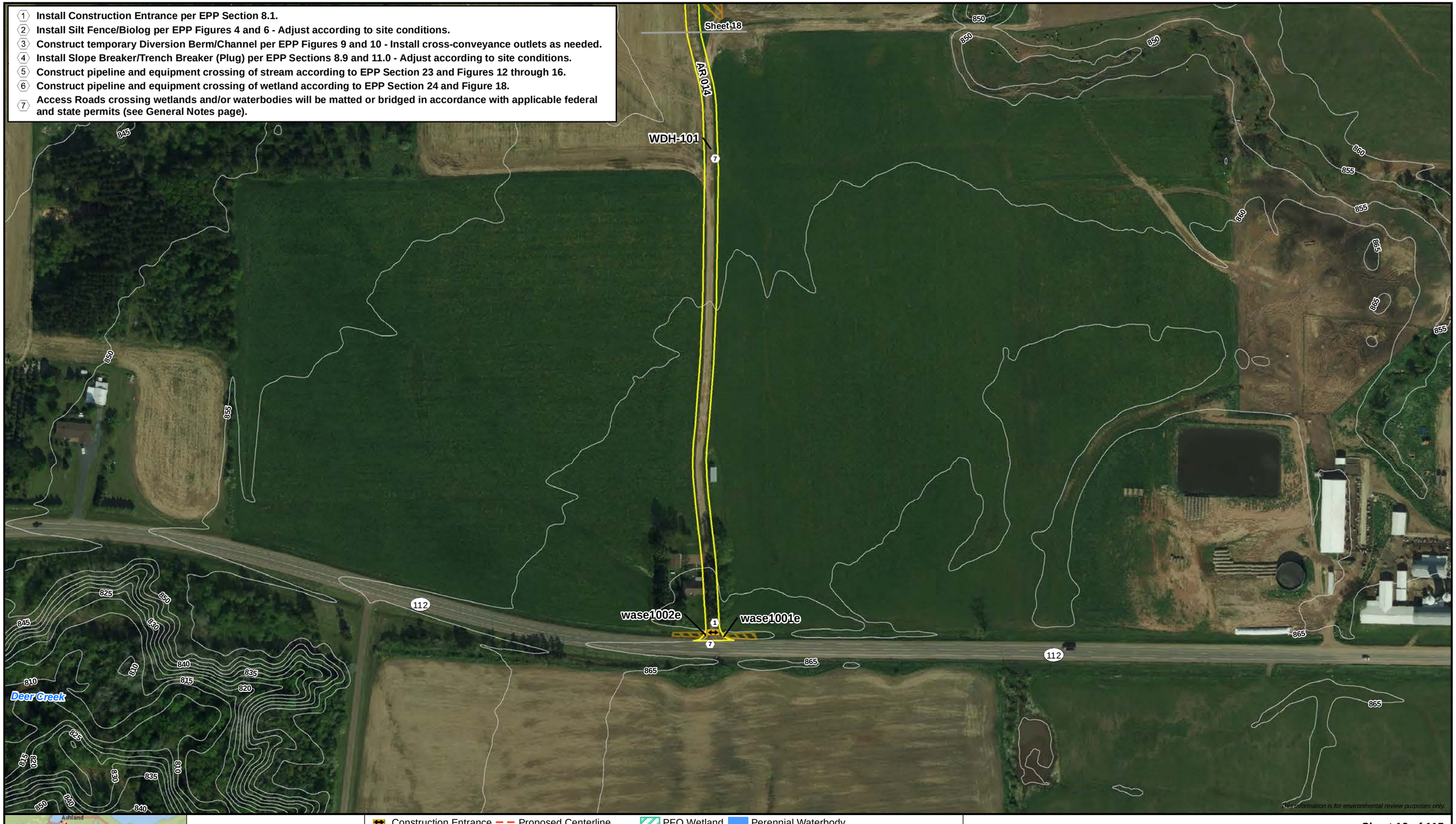

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Erosion and Sediment Control Plan
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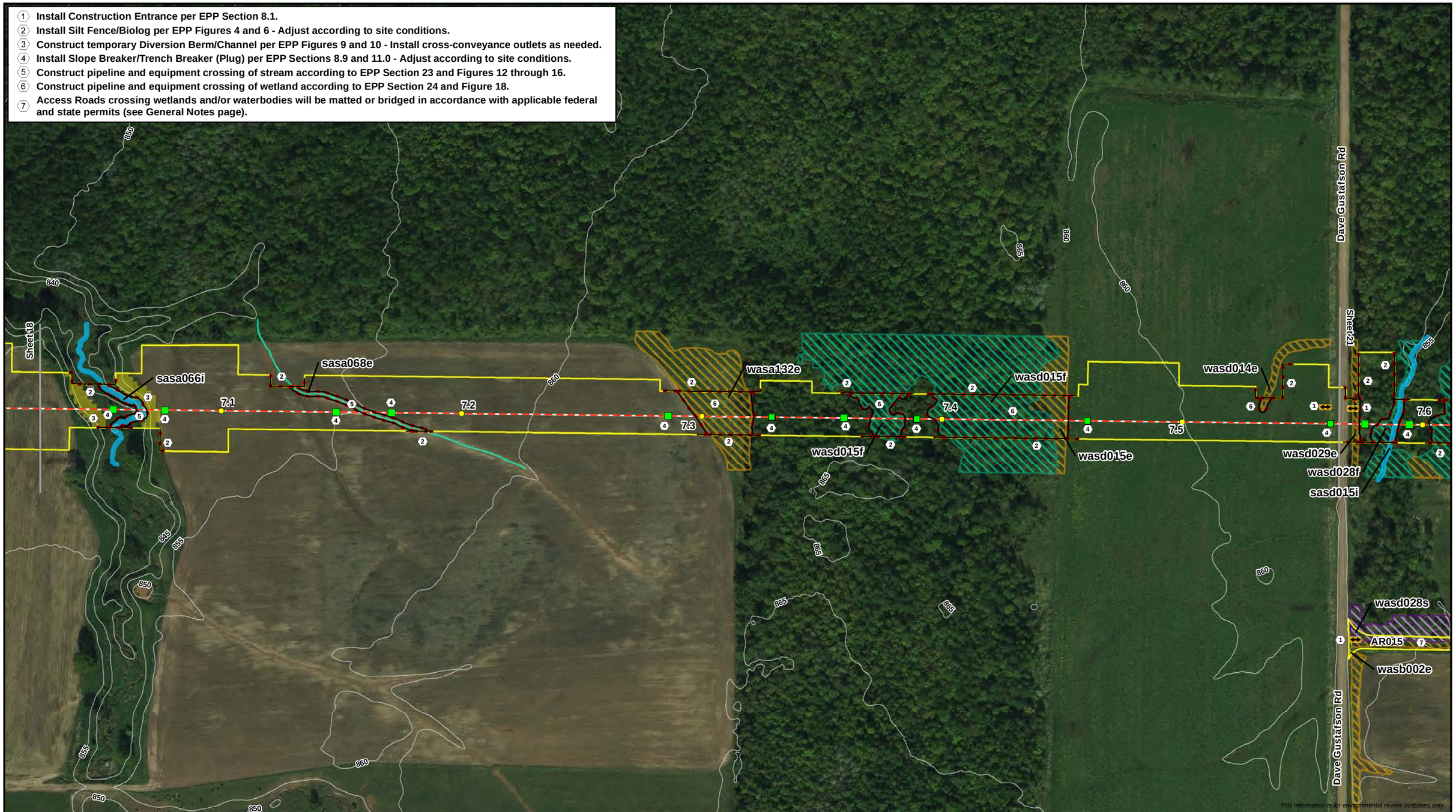

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Erosion and Sediment Control Plan
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3. Construct temporary Diversion Berm/Channel per EPP Figures 9 and 10 - Install cross-conveyance outlets as needed.
4. Install Slope Breaker/Trench Breaker (Plug) per EPP Sections 8.9 and 11.0 - Adjust according to site conditions.
5. Construct pipeline and equipment crossing of stream according to EPP Section 23 and Figures 12 through 16.
6. Construct pipeline and equipment crossing of wetland according to EPP Section 24 and Figure 18.
7. Access Roads crossing wetlands and/or waterbodies will be matted or bridged in accordance with applicable federal and state permits (see General Notes page).

Dave Gustafson Rd
Sheet20
Sheet22
AR 015
AR 016
Yonkovich Rd
sasd015i
wasd029e
wasd028f
wasd028s
wasd028e
7.6
7.7
7.8
7.9
8
8.1
oasd003_x1
oasd003_x2
wasd030f
sasd011p
wasd031e
sasc012e_x1
sasc012e_x2
wasb002e
sasc012e_x
850
855
860
865

0 100 200
Feet
1:2,400

Construction Entrance
Trench Breaker/Plug
Sediment Barrier
>20% Ground Slope
5ft Contour
Milepost
Proposed Centerline
HDD/Direct Bore
Proposed Workspace
Permanent Valve/Road
Existing Enbridge Pipeline
PFO Wetland
PSS Wetland
PEM Wetland
Pond
Perennial Waterbody
Intermittent Waterbody
Ephemeral Waterbody

Modeled best management practices (BMPs) are presented to illustrate how Environmental Protection Plan (EPP) measures may be implemented based on field conditions during construction. Refer to General Notes and Typical Details provided in this plan for BMP installation and sequencing.

Sheet 21 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

ENBRIDGE
ERM

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DRAWN BY: RCutting

1. Install Construction Entrance per EPP Section 8.1.
2. Install Silt Fence/Biolog per EPP Figures 4 and 6 - Adjust according to site conditions.
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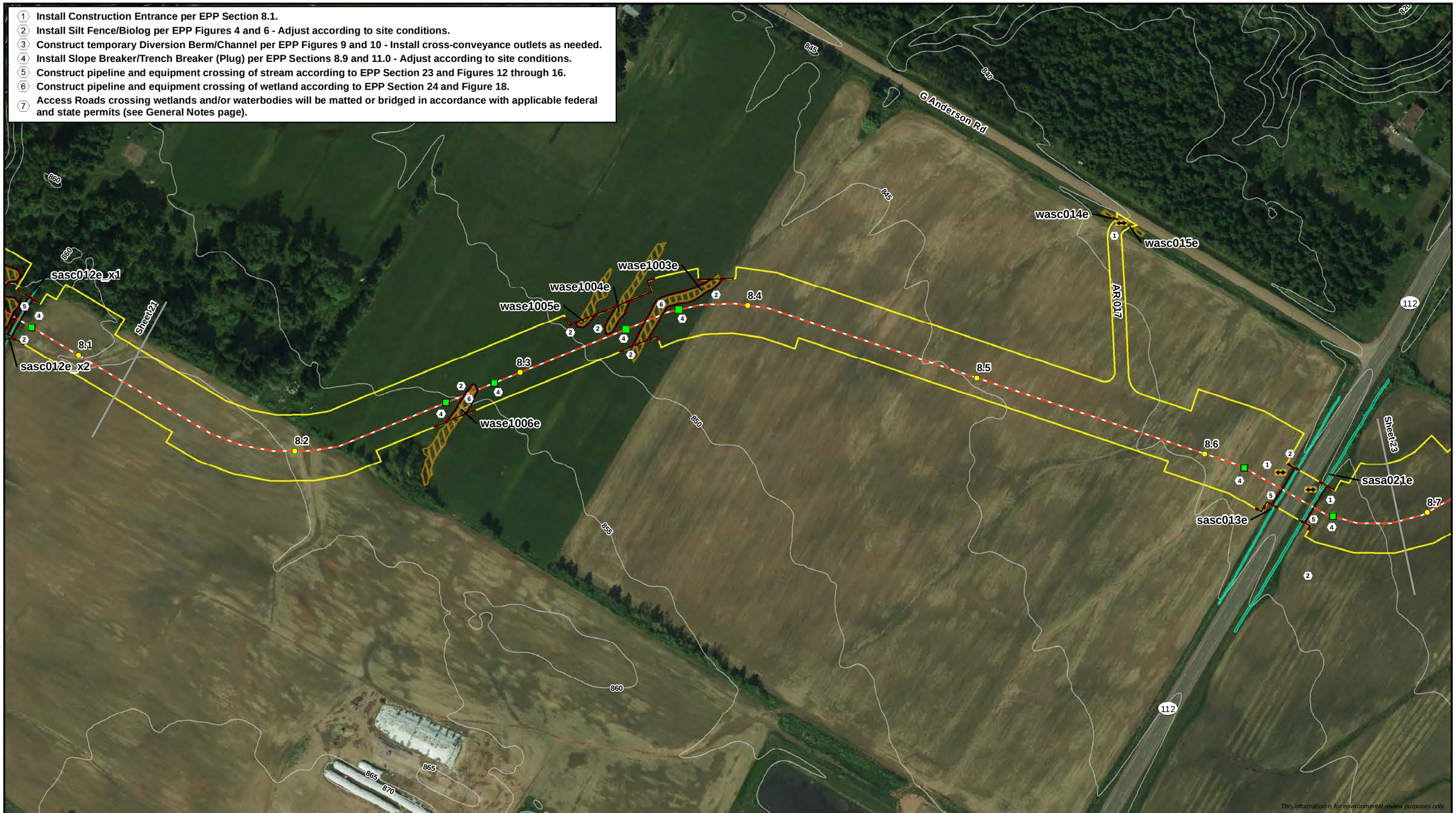

0 100 200
Feet
1:2,400

- Construction Entrance
- Trench Breaker/Plug
- Sediment Barrier
- >20% Ground Slope
- 5ft Contour
- Milepost
- Proposed Centerline
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- Permanent Valve/Road
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- Perennial Waterbody
- Intermittent Waterbody
- Ephemeral Waterbody

Modeled best management practices (BMPs) are presented to illustrate how Environmental Protection Plan (EPP) measures may be implemented based on field conditions during construction. Refer to General Notes and Typical Details provided in this plan for BMP installation and sequencing.

Sheet 22 of 115

Erosion and Sediment Control Plan
Line 5 Wisconsin Segment Relocation Project
Enbridge Energy, L.P.

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