

PROFILE

NOTES:

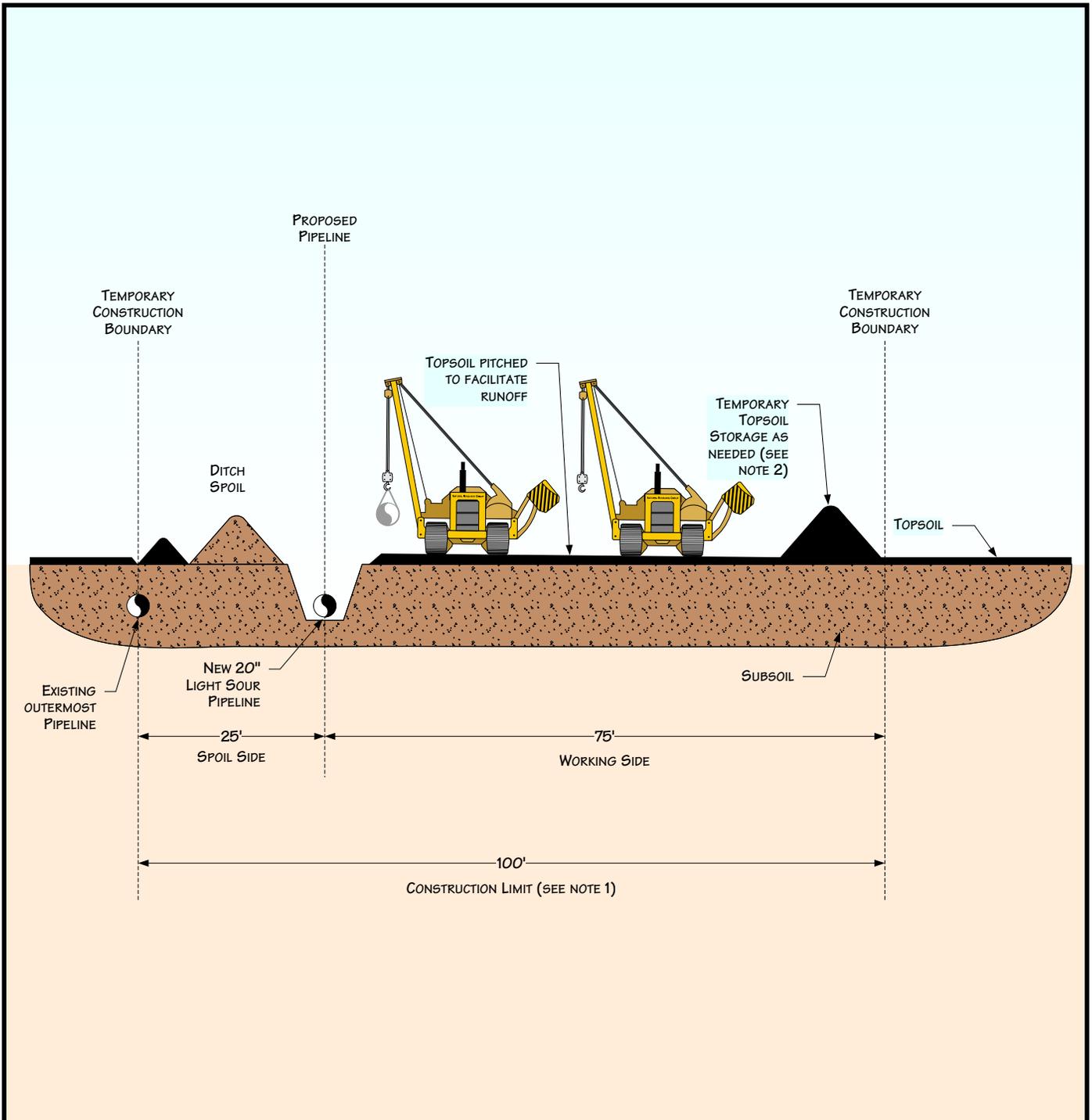
1. CONSTRUCTION LIMITS WILL TYPICALLY BE 100' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE.
2. THIS DRAWING REFLECTS "DITCH PLUS SPOIL" SIDE TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 25' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.

For environmental review purposes only.



Figure 1.1
Environmental Mitigation Plan
Typical Construction Layout

DATE: 7/9/2001	
REVISED: 12/21/05	
SCALE: NTS	
DRAWN BY: KMKENDALL	
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PROFILE

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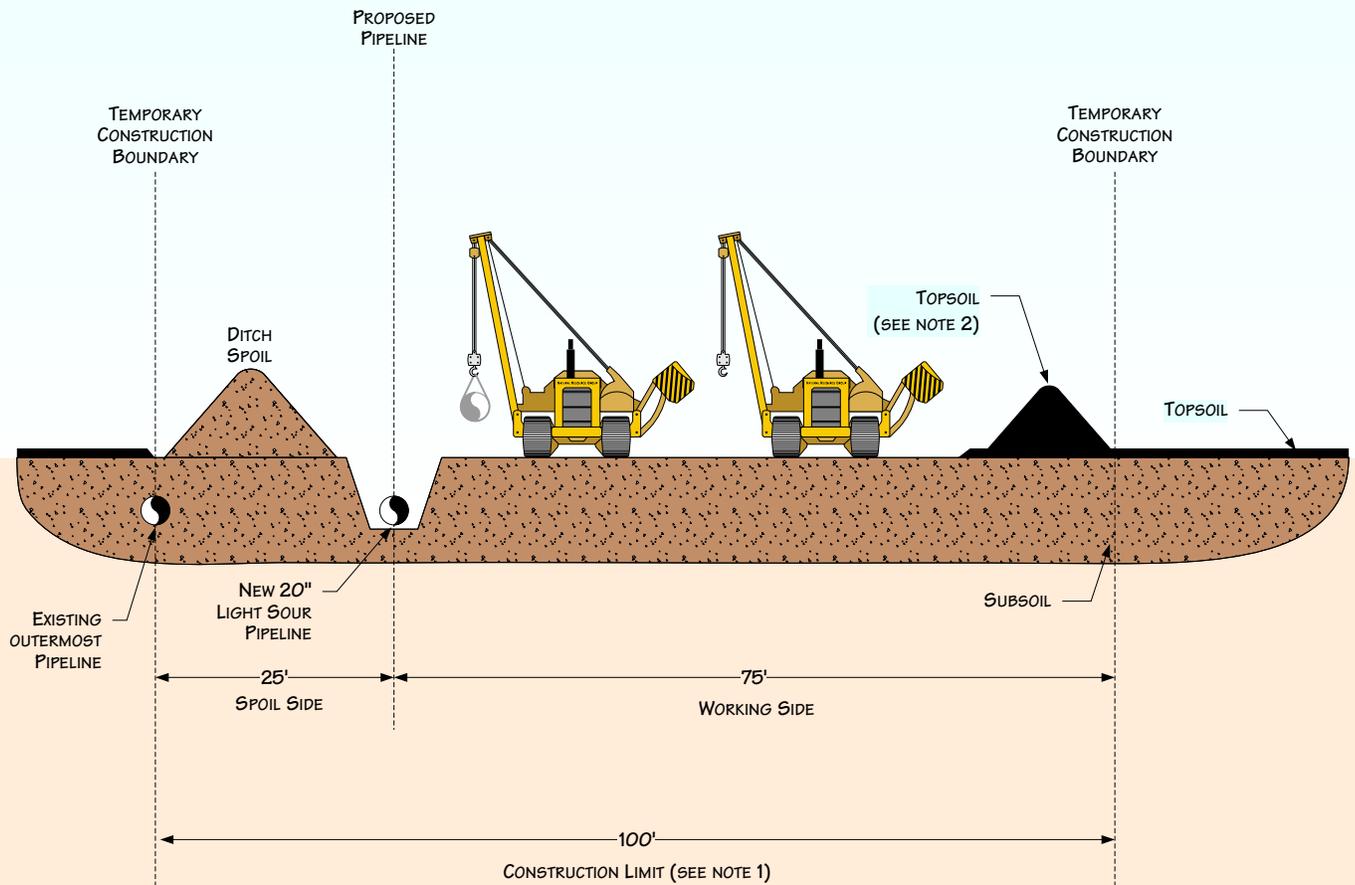
1. CONSTRUCTION LIMITS WILL TYPICALLY BE 100' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE.
2. THIS DRAWING REFLECTS "DITCH PLUS SPOIL" SIDE TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 25' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.

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Figure 1.2
Environmental Mitigation Plan
 Typical Topsoil Segregation
 Ditch Plus Spoil Side

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PROFILE

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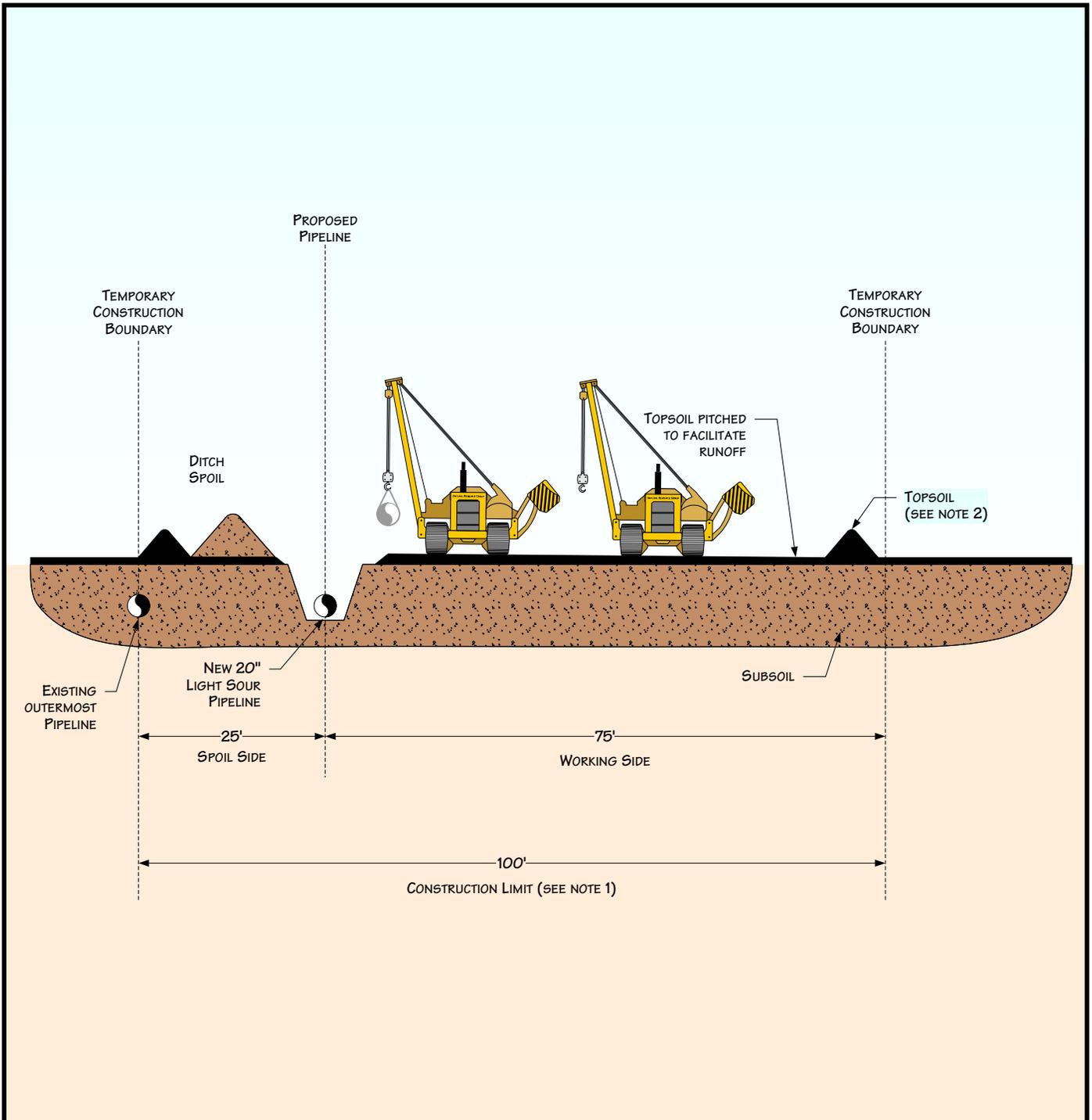
1. CONSTRUCTION LIMITS WILL TYPICALLY BE 100' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE.
2. THIS DRAWING REFLECTS "FULL RIGHT OF WAY" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 25' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.

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Figure 1.3
Environmental Mitigation Plan
 Typical Topsoil Segregation
 Full Right-of-Way

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PROFILE

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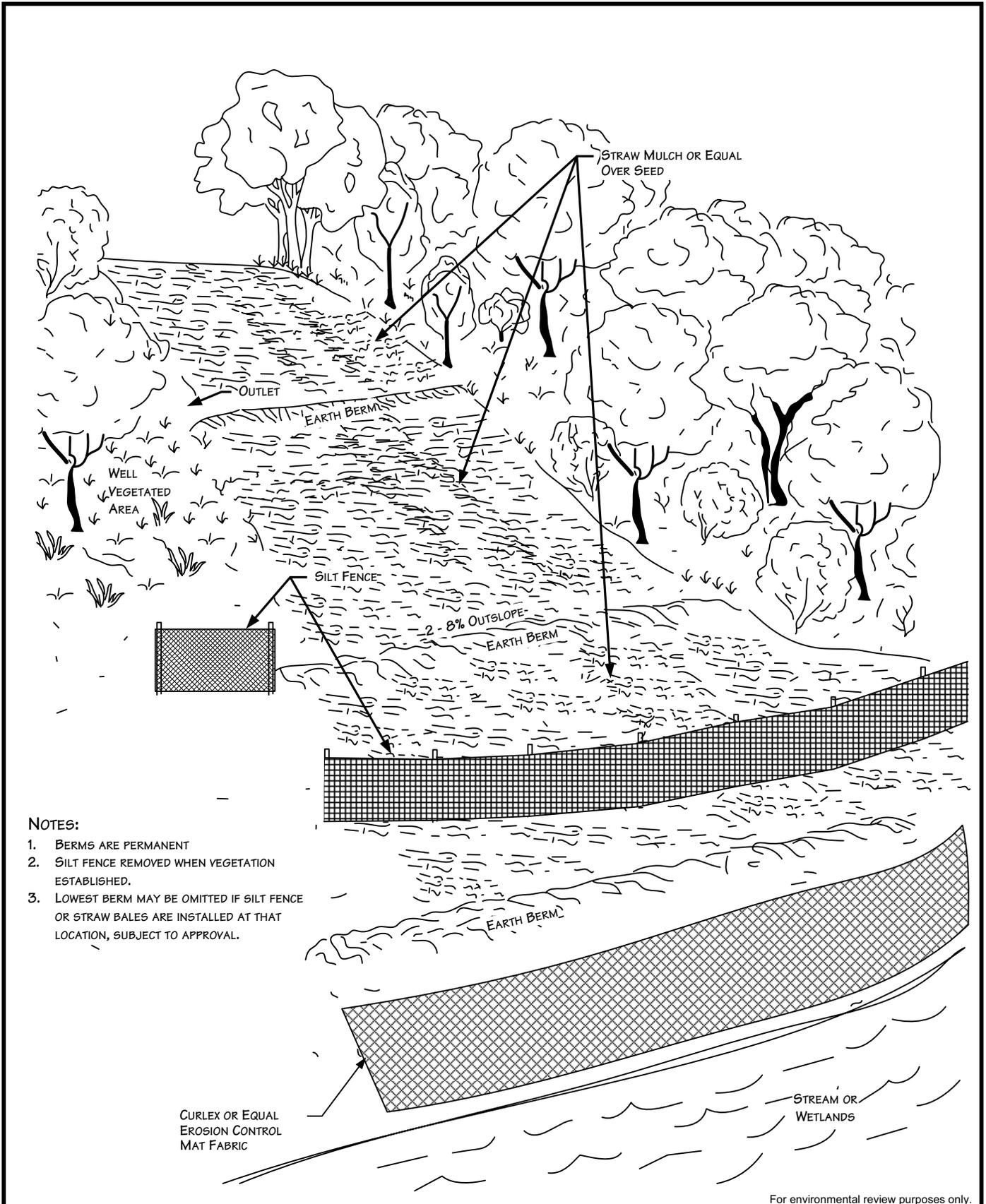
1. CONSTRUCTION LIMITS WILL TYPICALLY BE 100' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE.
2. THIS DRAWING REFLECTS "TRENCH LINE ONLY" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 25' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.

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Figure 1.4
Environmental Mitigation Plan
 Typical Topsoil Segregation
 Trench Line Only

DATE: 7/9/2001	
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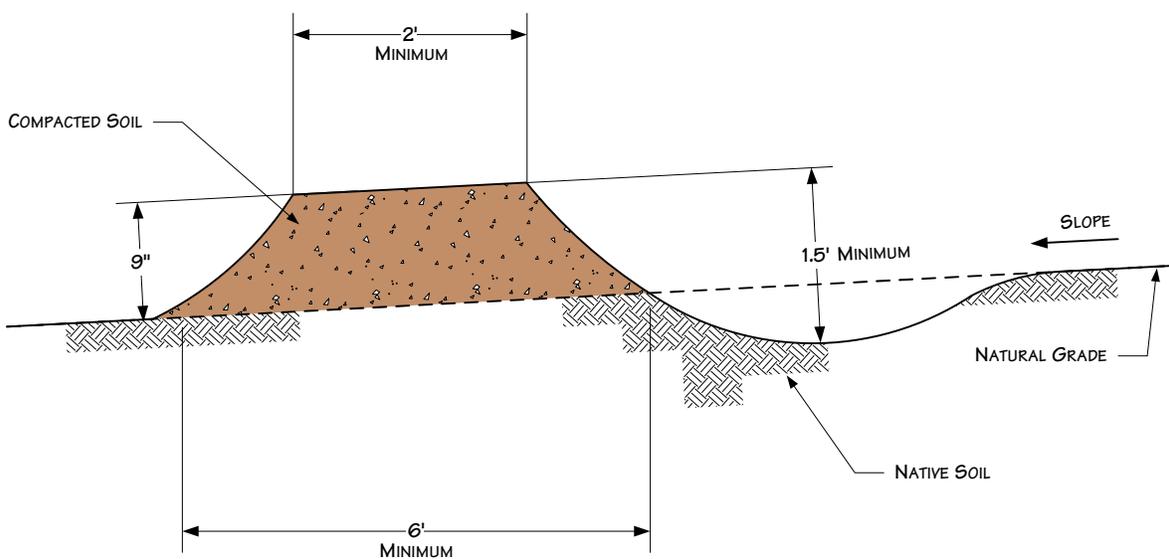
- 1. BERMS ARE PERMANENT
- 2. SILT FENCE REMOVED WHEN VEGETATION ESTABLISHED.
- 3. LOWEST BERM MAY BE OMITTED IF SILT FENCE OR STRAW BALES ARE INSTALLED AT THAT LOCATION, SUBJECT TO APPROVAL.

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Figure 1.5
Environmental Mitigation Plan
 Typical Temporary or Permanent Berms
 Perspective View

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SCALE: NTS	
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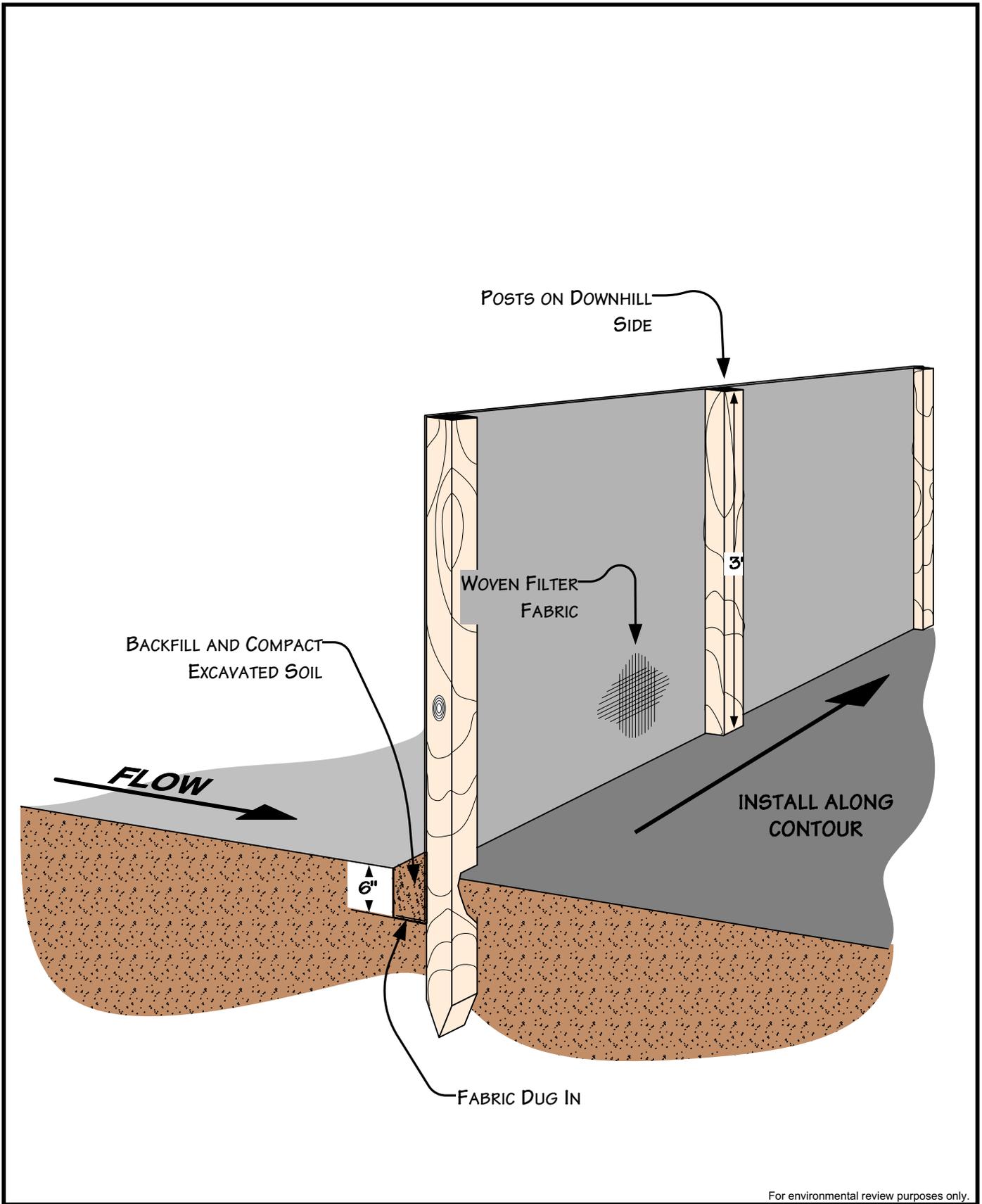
1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 3 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW/HAY BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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Figure 1.6
Environmental Mitigation Plan
 Typical Temporary or Permanent Berms
 Elevation View

DATE: 5/25/2001	
REVISED: 12/21/05	
SCALE: NTS	
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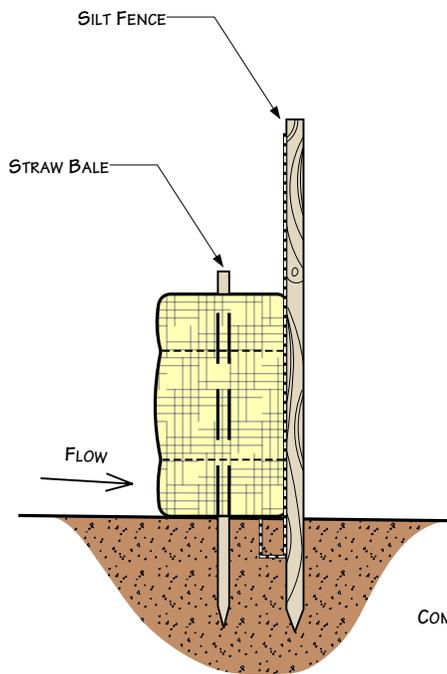
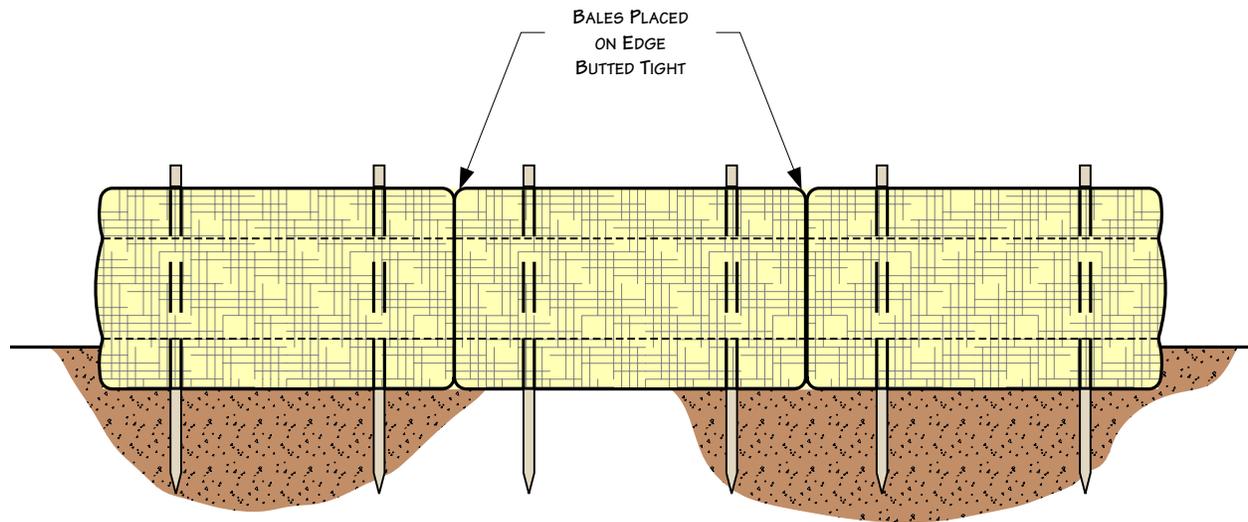


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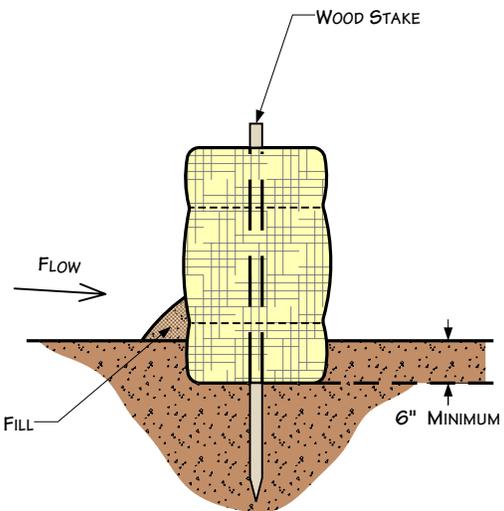


Figure 1.7
Environmental Mitigation Plan
 Typical Silt Fence Installation

DATE: 5/25/2001	
REVISED: 08/02/06	
SCALE: NTS	
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STRAW BALE & SILT FENCE



STRAW BALE ONLY

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Figure 1.8
Environmental Mitigation Plan
Typical Straw Bale Installation

DATE: 5/25/01

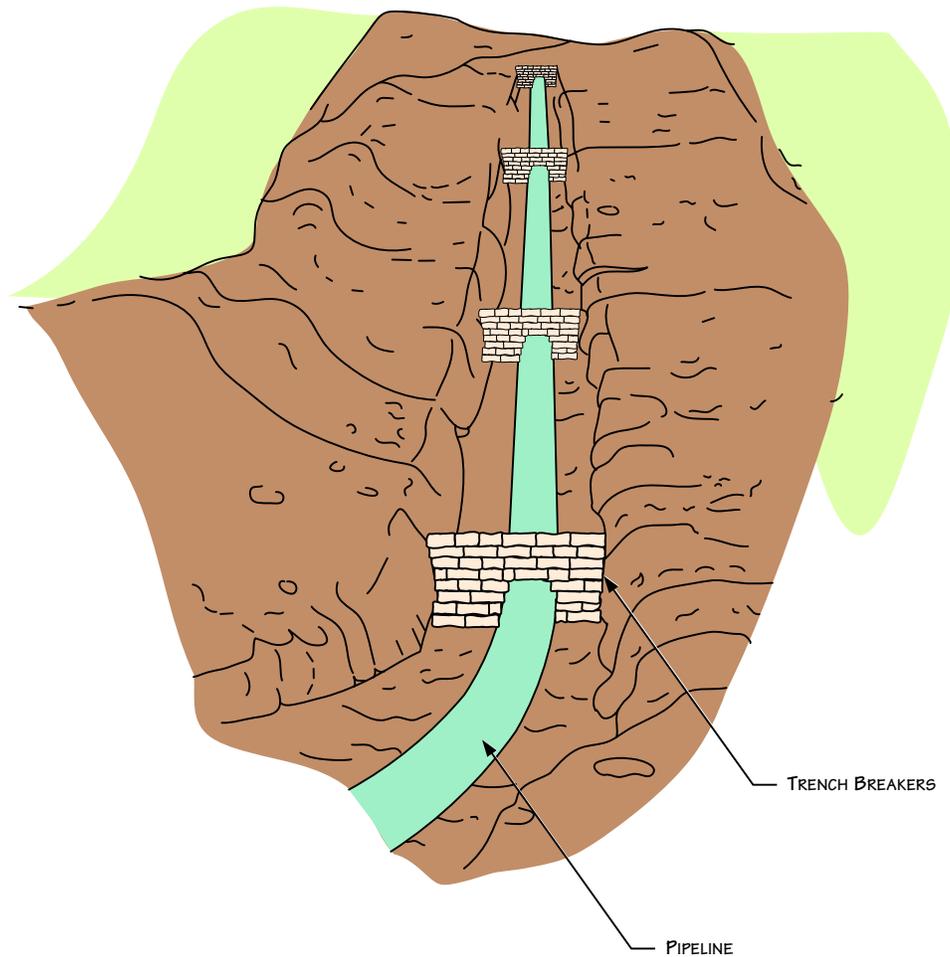
REVISED: 3/14/07

SCALE: Not to Scale

DRAWN BY: KMKENDALL

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NOTES

1. BAGS WILL NOT BE FILLED WITH TOPSOIL.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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Figure 1.9
Environmental Mitigation Plan
 Typical Trench Breakers - Perspective View

DATE: 5/25/2001

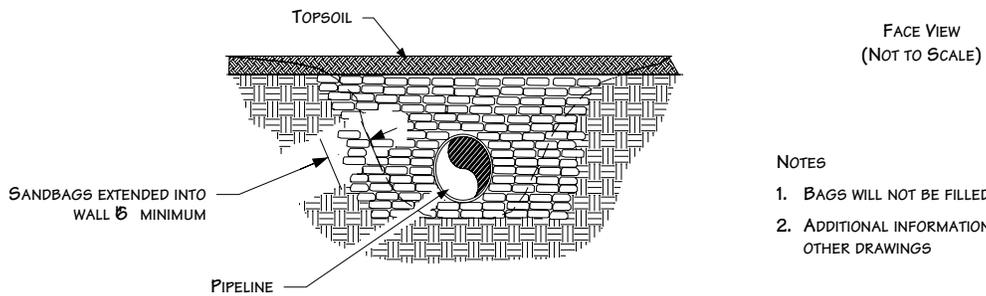
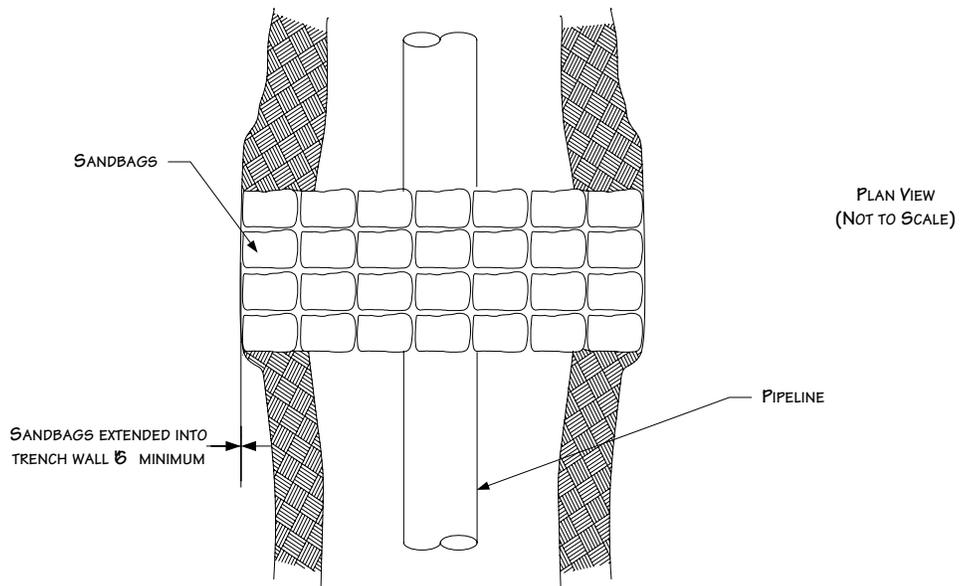
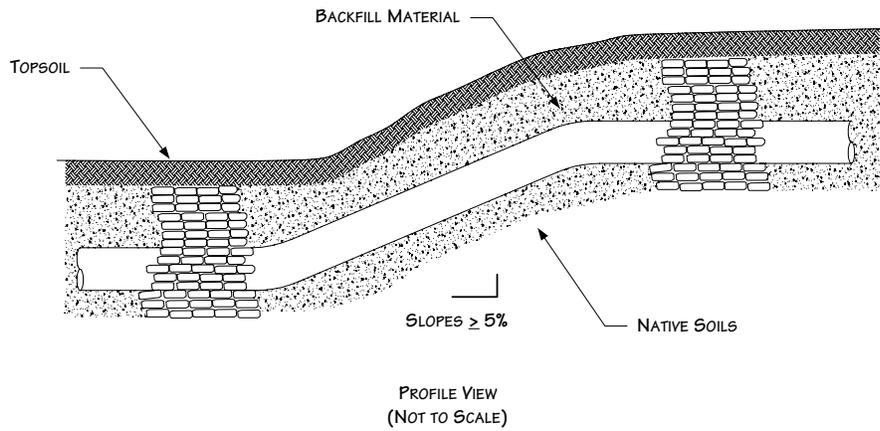
REVISED: 12/21/05

SCALE: NTS

DRAWN BY: KMKENDALL

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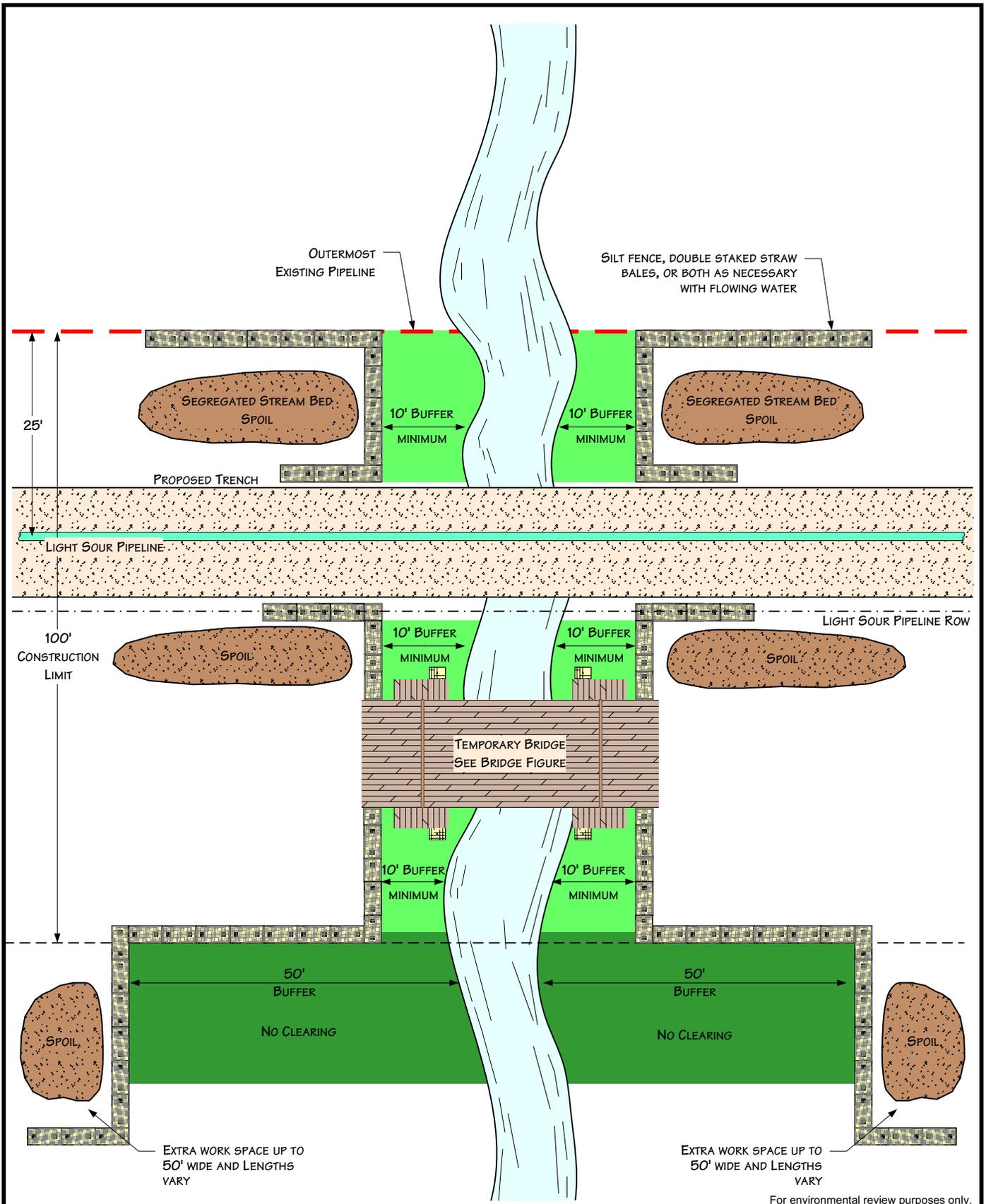


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Figure 1.10
Environmental Mitigation Plan
 Typical Trench Breakers – Plan & Profile View

DATE: 11/15/2000	
REVISED: 5/19/05	
SCALE: NTS	
DRAWN BY: KMKENDALL	
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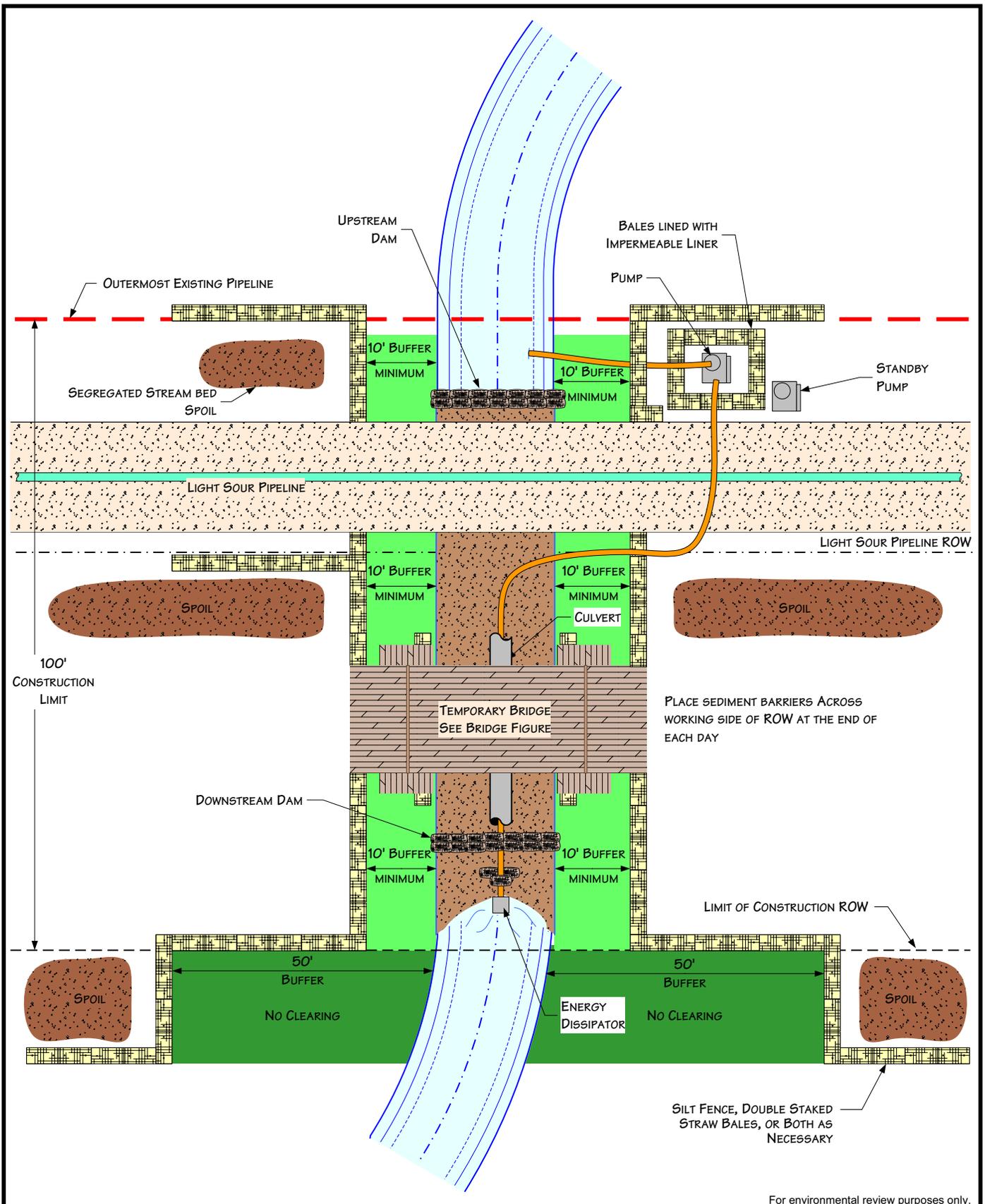


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Figure 2.1
Environmental Mitigation Plan
 Typical Waterbody Crossing
 Wet Trench Method

DATE: 11/29/2005	
REVISED: 08/02/06	
SCALE: NTS	
DRAWN BY: KJA	
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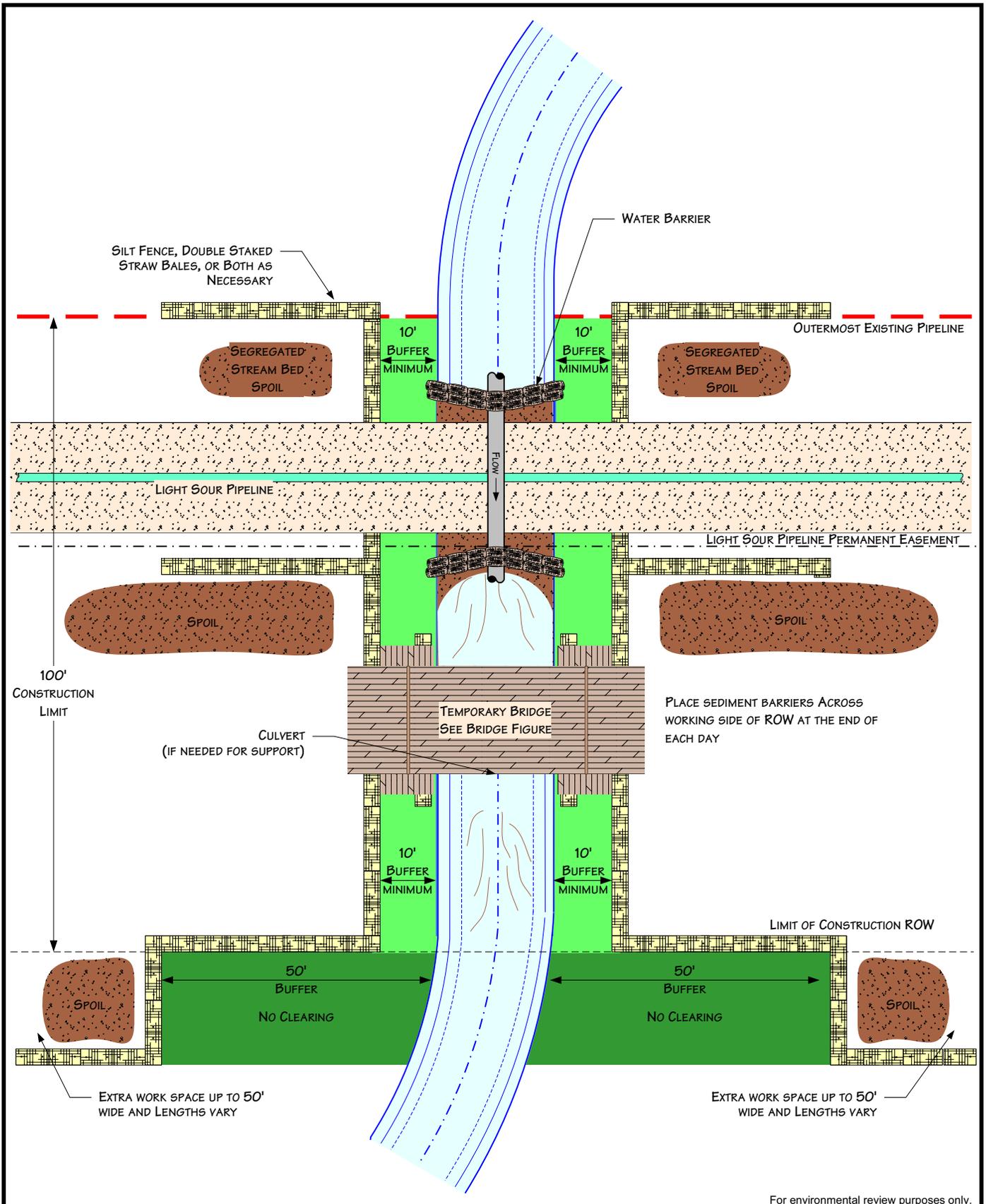


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Figure 2.2
Environmental Mitigation Plan
 Typical Waterbody Crossing
 Dam and Pump Method

DATE: 11/29/2005	
REVISED: 08/02/06	
SCALE: NTS	
DRAWN BY: KJA	
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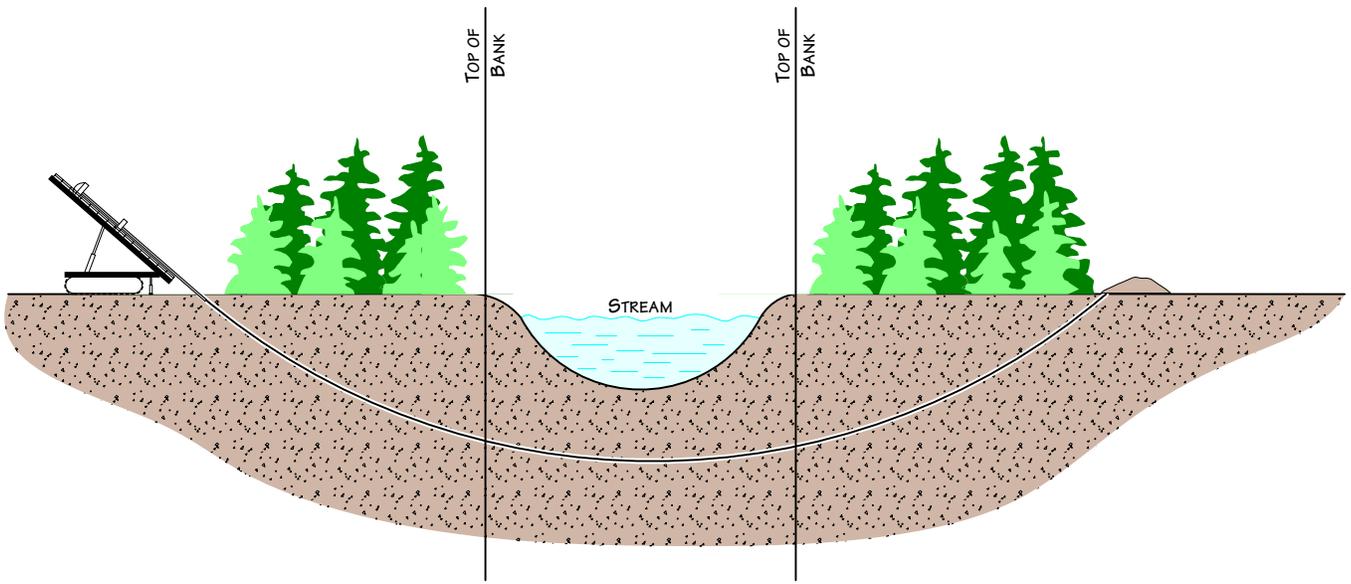


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Figure 2.3
Environmental Mitigation Plan
 Typical Waterbody Crossing
 Flume Method

DATE: 11/29/2005	
REVISED: 08/02/06	
SCALE: NTS	
DRAWN BY: KJA	
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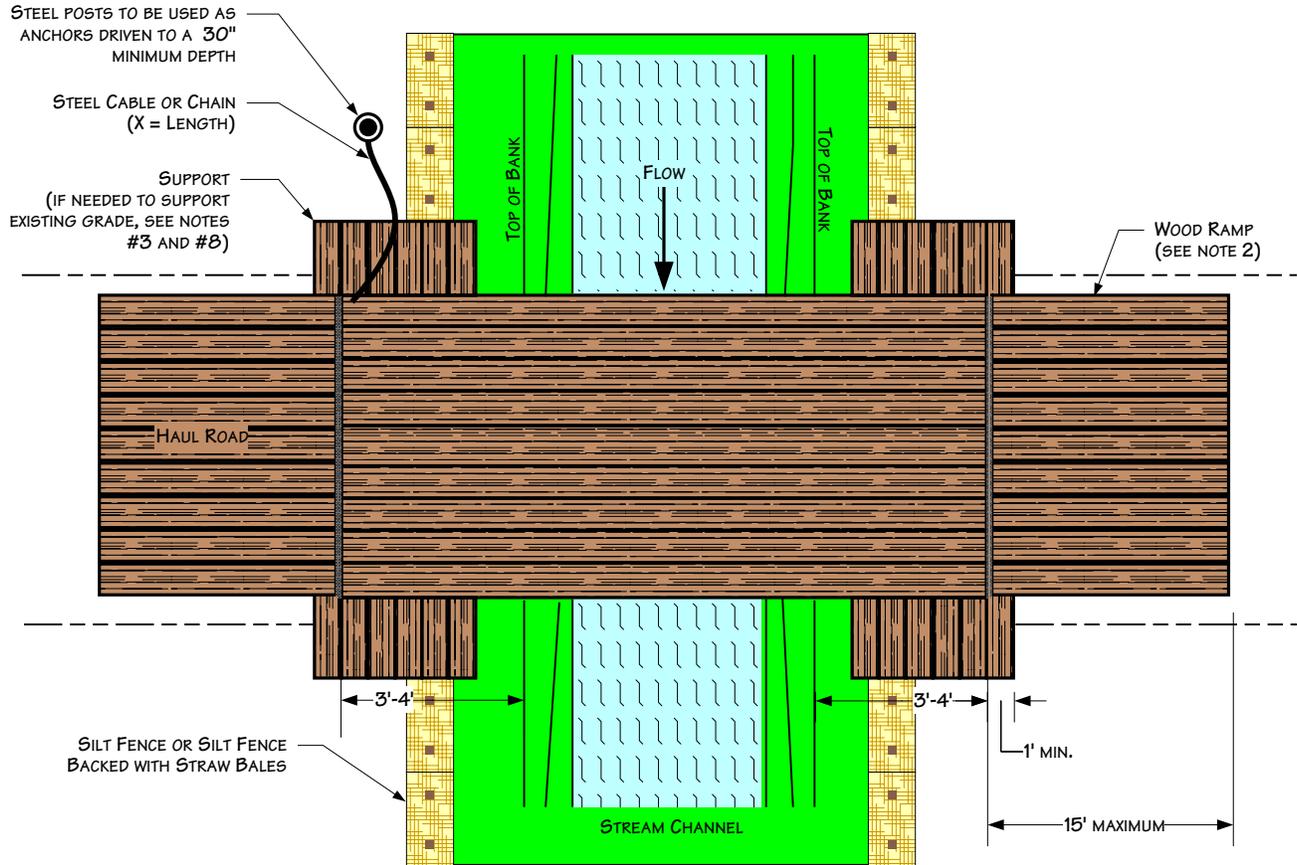
For environmental review purposes only.



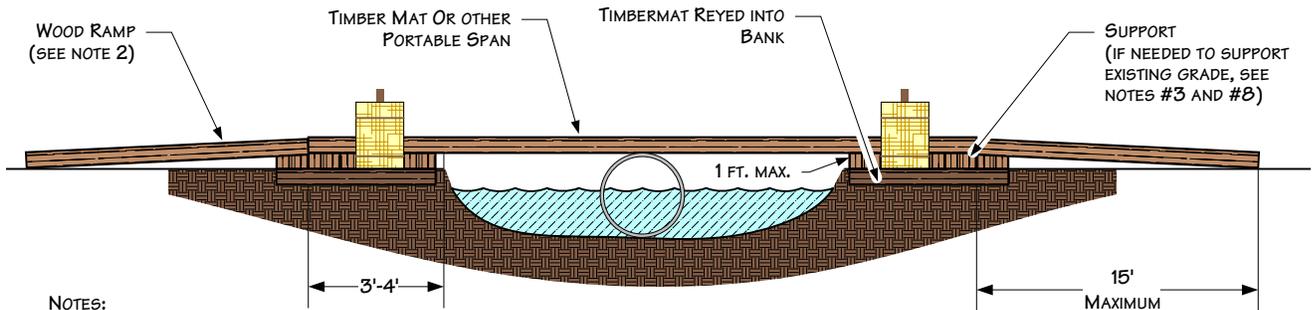
Figure 2.4
Environmental Mitigation Plan
 Typical Waterbody Crossing
 Directional Drill Method

DATE: 7/14/2000	
REVISED: 12/21/05	
SCALE: NTS	
DRAWN BY: KMKENDALL	
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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 RAMP, EARTHEN RAMP MAY BE USED AS APPROVED.
3. INSPECT BRIDGE ELEVATION SO BRIDGE REMAINS SUPPORTED ABOVE HIGH BANK 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 BANK TO TOP OF BANK.
7. THE BRIDGE MUST BE FIRMLY ANCHORED TO PREVENT IT FROM BEING TRANSPORTED DOWNSTREAM DURING HIGH FLOW.
8. ADDITIONAL SUPPORT MUST BE ADDED ON TOP OF BANK AND UNDER SPAN IF INITIAL SUPPORT STARTS TO SETTLE.
9. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE COMPANY'S ENVIRONMENTAL MITIGATION PLAN

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Figure 2.5
Environmental Mitigation Plan
 Typical Span Type Bridge
 With or Without Instream Support

DATE: 3/11/2003

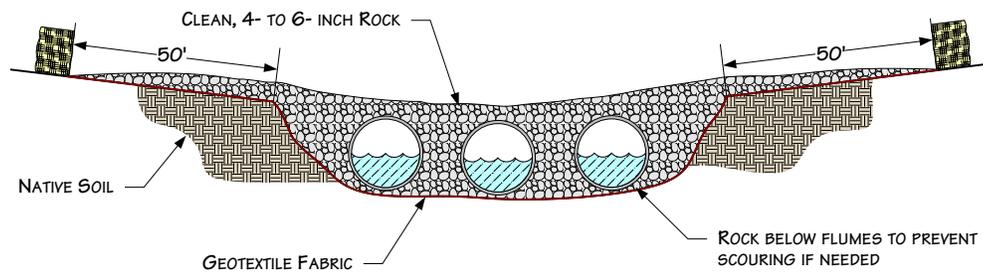
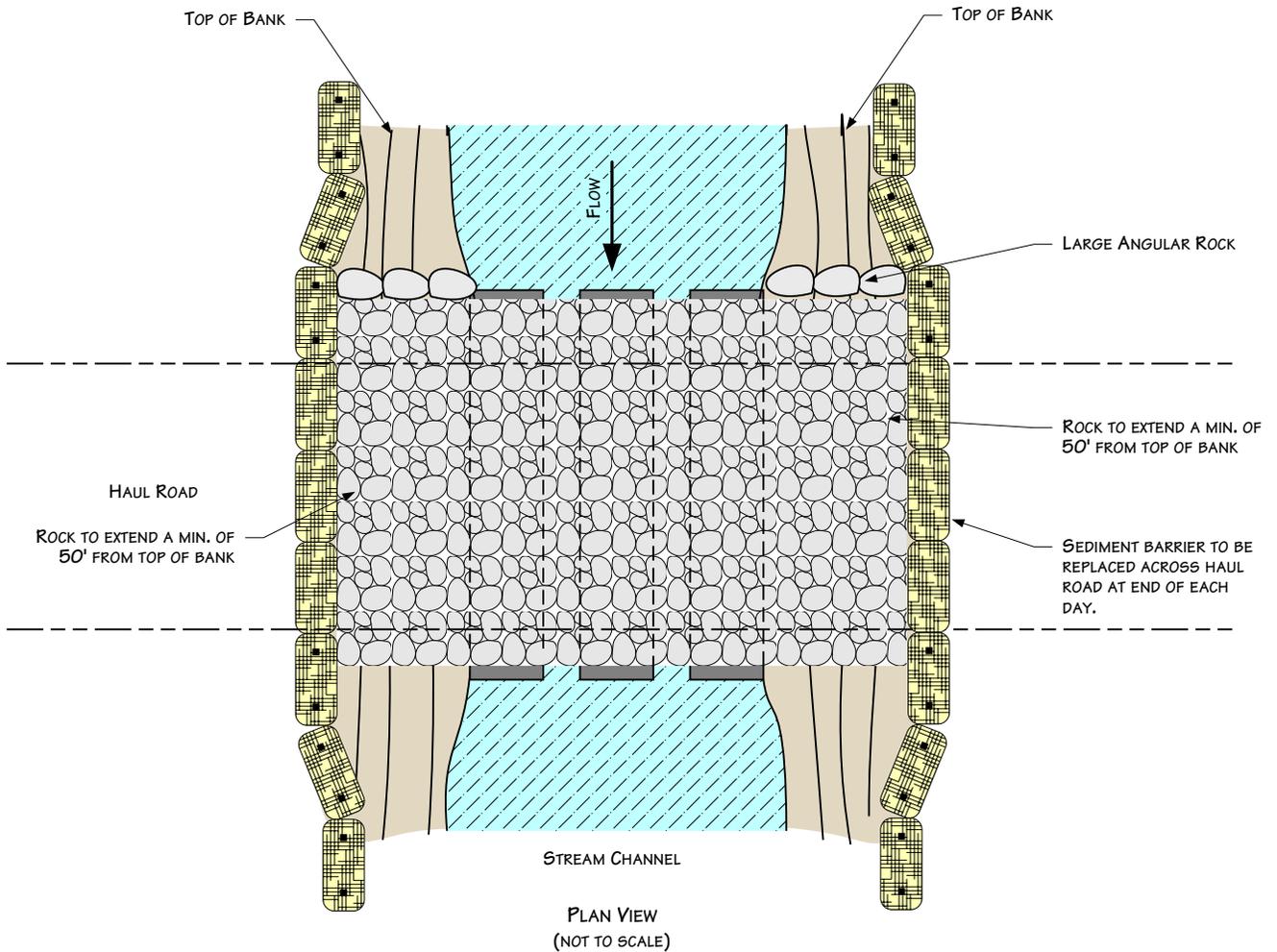
REVISED: 3/14/2007

SCALE: NTS

DRAWN BY: KMK6792

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NOTES:

1. STEEL FLUME PIPE(S) SIZED TO ALLOW FOR STREAM FLOW AND EQUIPMENT LOAD.
2. STRAW BALES SHALL BE PLACED ACROSS BRIDGE ENTRANCE EVERY NIGHT.
3. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

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Figure 2.6
Environmental Mitigation Plan
 Typical Rock Flume Bridge

DATE: 5/25/2001

REVISED: 12/21/05

SCALE: NTS

DRAWN BY: KMKENDALL

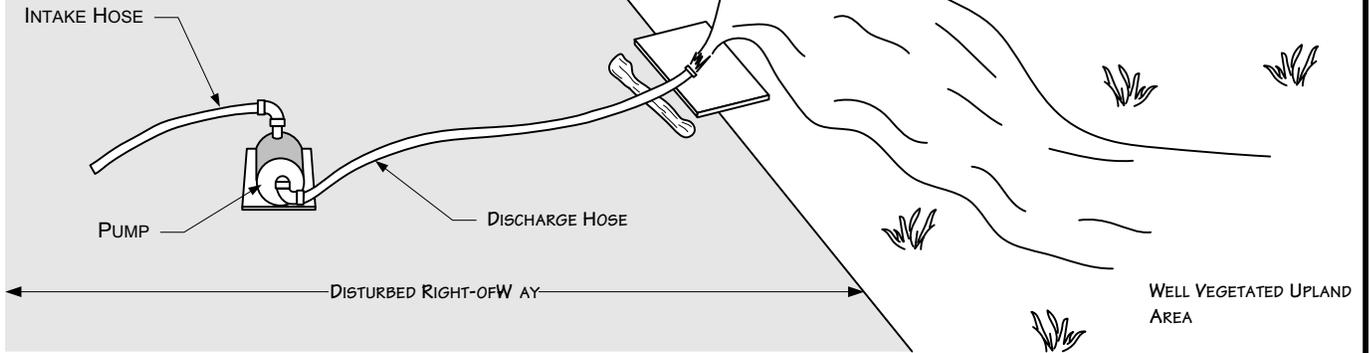
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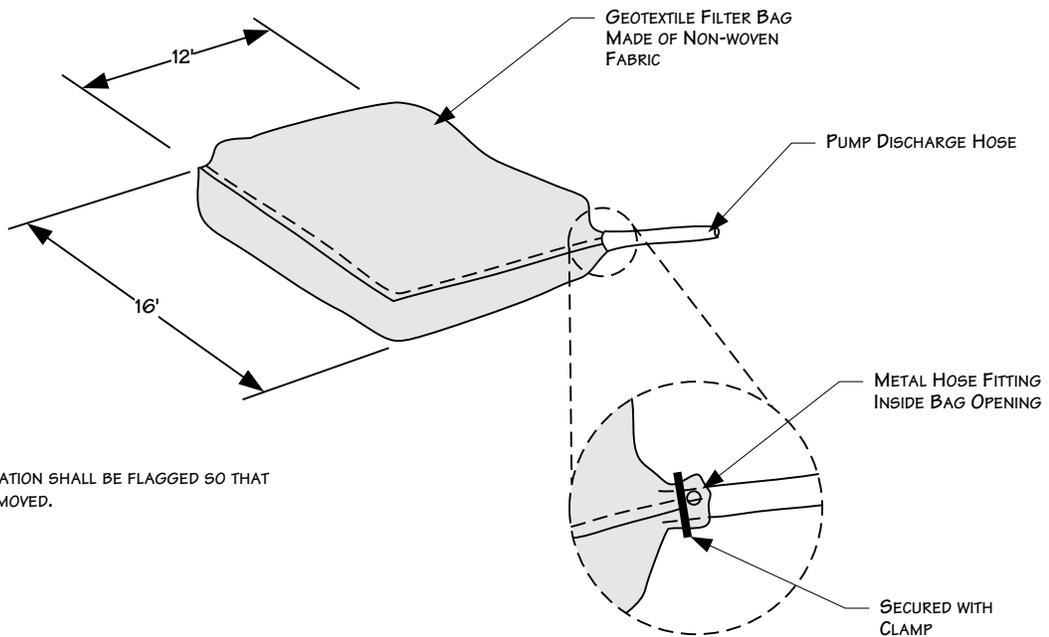
DEWATERING DISCHARGE IN WELL VEGETATED UPLANDS

NOTES:

1. PUMP INTAKE HOSE MUST BE SECURED AT LEAST ONE FOOT ABOVE THE TRENCH BOTTOM.
2. IF VEGETATION IS SPARSE, DEWATER INTO GEOTEXTILE FILTER BAG OR STRAW BALE DEWATERING STRUCTURE.



GEOTEXTILE FILTER BAG



NOTE:

1. FILTER BAG LOCATION SHALL BE FLAGGED SO THAT BAG CAN BE REMOVED.

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Figure 2.7
Environmental Mitigation Plan
Typical Dewatering Measures

DATE: 5/25/2001

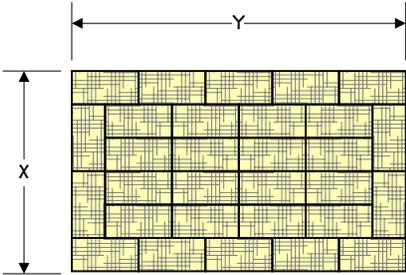
REVISED: 12/21/05

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DRAWN BY: KMKENDALL

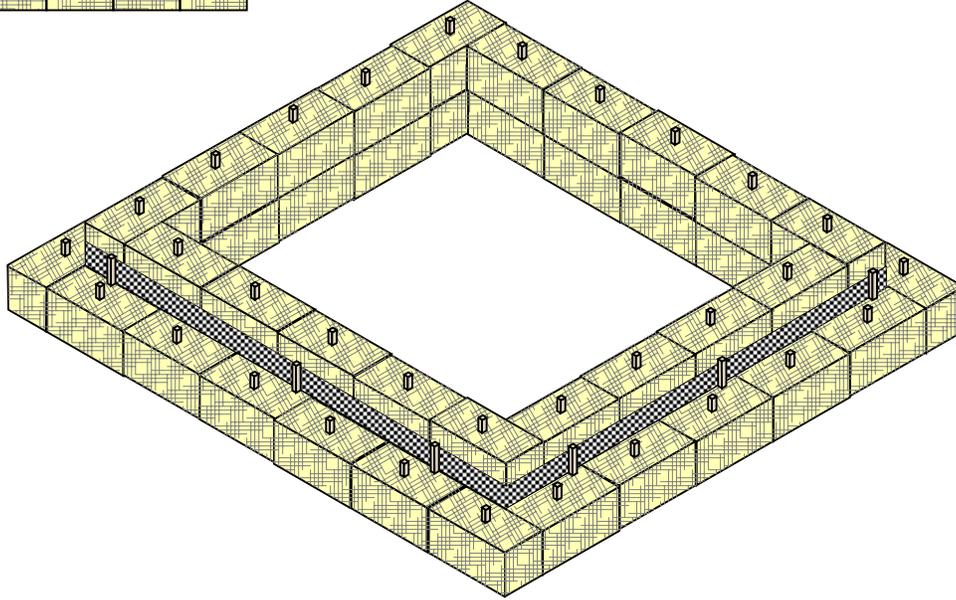
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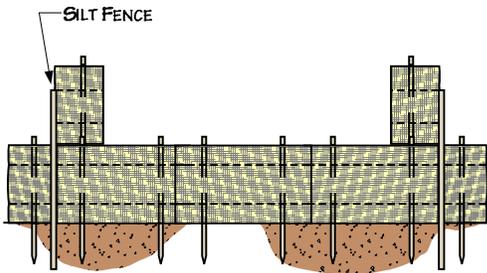


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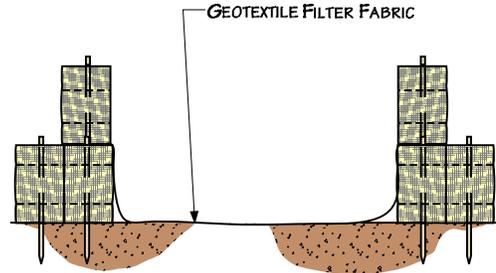
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFIED BELOW.
2. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES (OPTION 1), LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.



PERSPECTIVE VIEW



OPTION 1



OPTION 2

MINIMUM SUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE GALLONS PER MINUTE
X	Y	
10	20	300
15	20	350
20	20	400
20	25	450
25	25	500
25	30	550
30	30	660

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Figure 2.8
Environmental Mitigation Plan
 Typical Straw-Bale Dewatering Structure

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SCALE: NTS	
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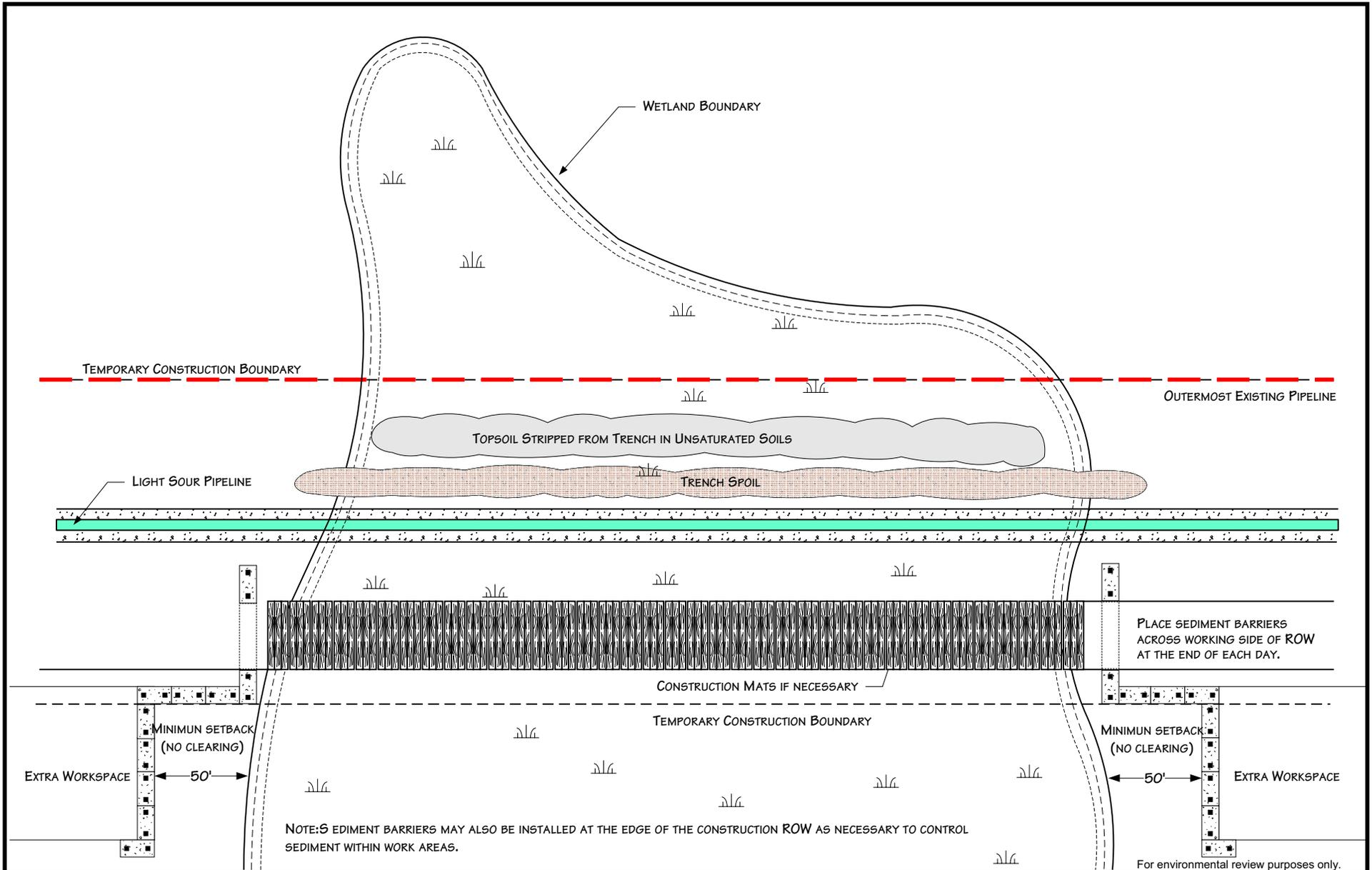
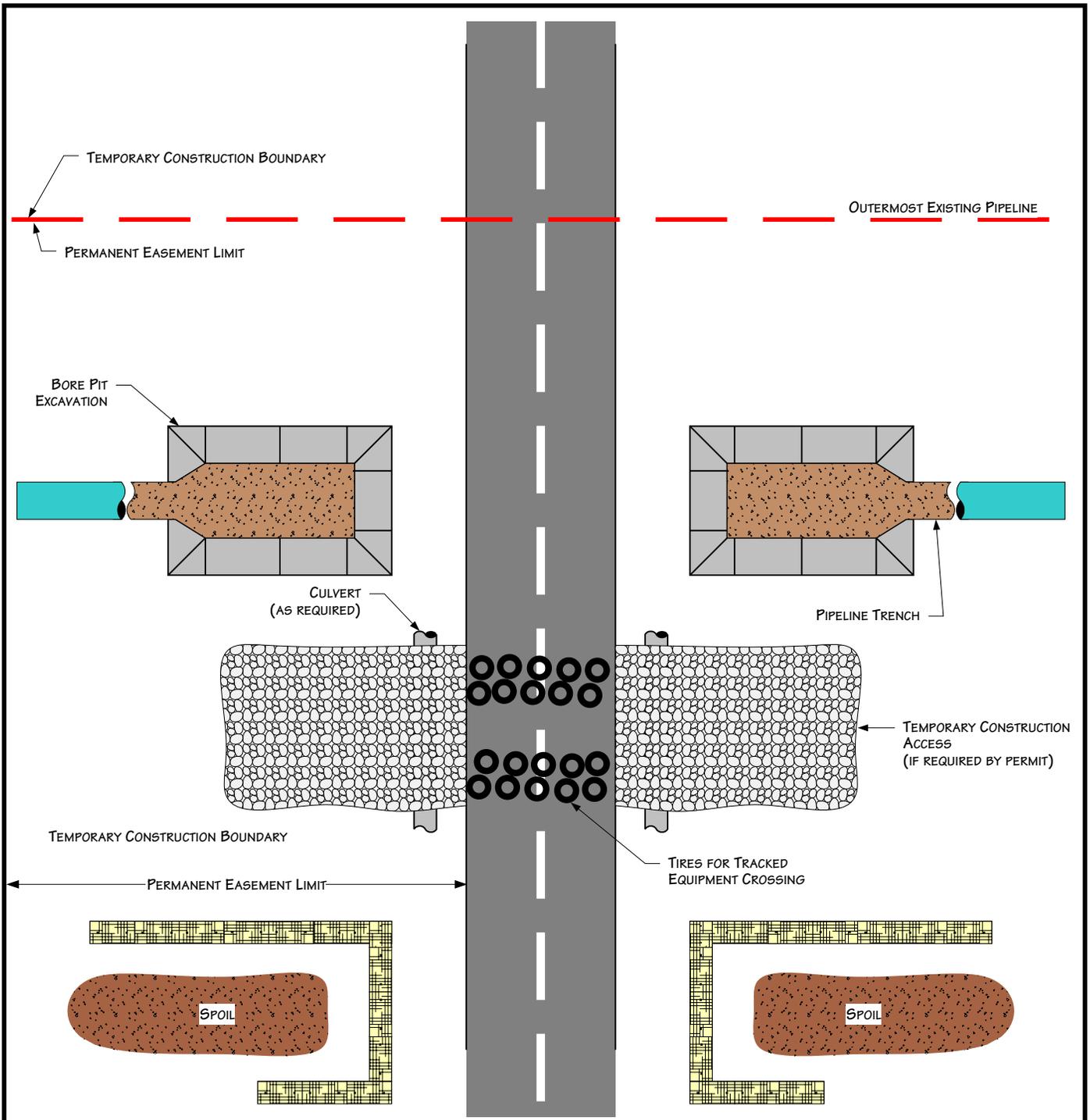


Figure 3.1
Environmental Mitigation Plan
Typical Wetland Crossing Method



DATE: 5/25/2001	
REVISED: 04/19/06	
SCALE: NTS	
DRAWN BY: KMKENDALL	
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PLAN VIEW

NOTES

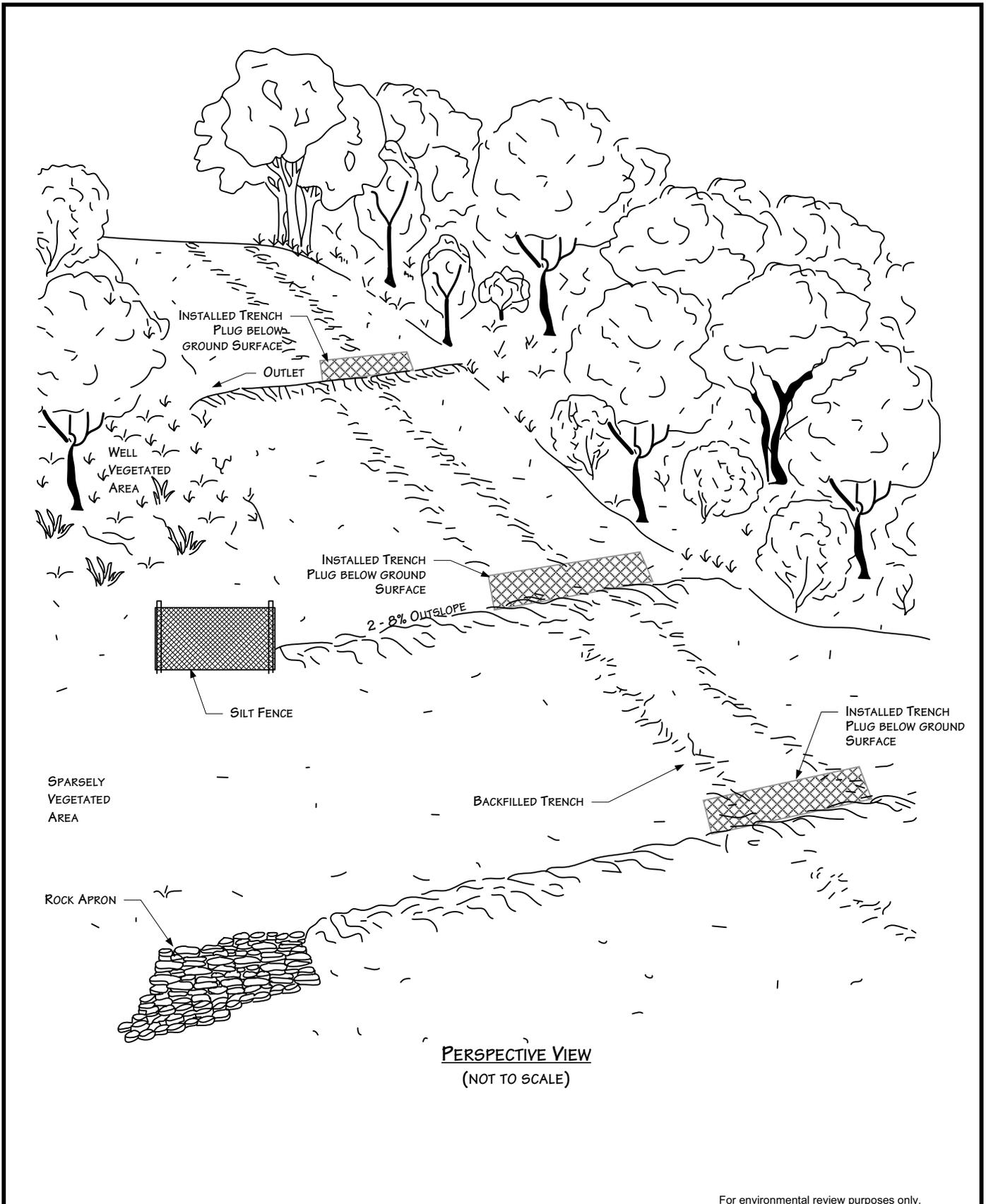
1. PROCEDURES SHOWN IN THIS DRAWING APPLY TO IMPROVED ROADS.
2. ROADS MUST BE CLEANED AFTER EQUIPMENT CROSSES AND DIRT PLACED IN SPOIL CONTAINMENT AREAS.
3. TEMPORARY ACCESS MATERIALS MUST BE REMOVED UPON PROJECT COMPLETION.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS OR PERMITS.
5. CONSTRUCTION AREAS LOCATED OUTSIDE ROAD ROW.

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Figure 4.1
Environmental Mitigation Plan
 Typical Improved Road Crossing
 Directional Bore Method

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REVISED: 3/14/2007	
SCALE: NTS	
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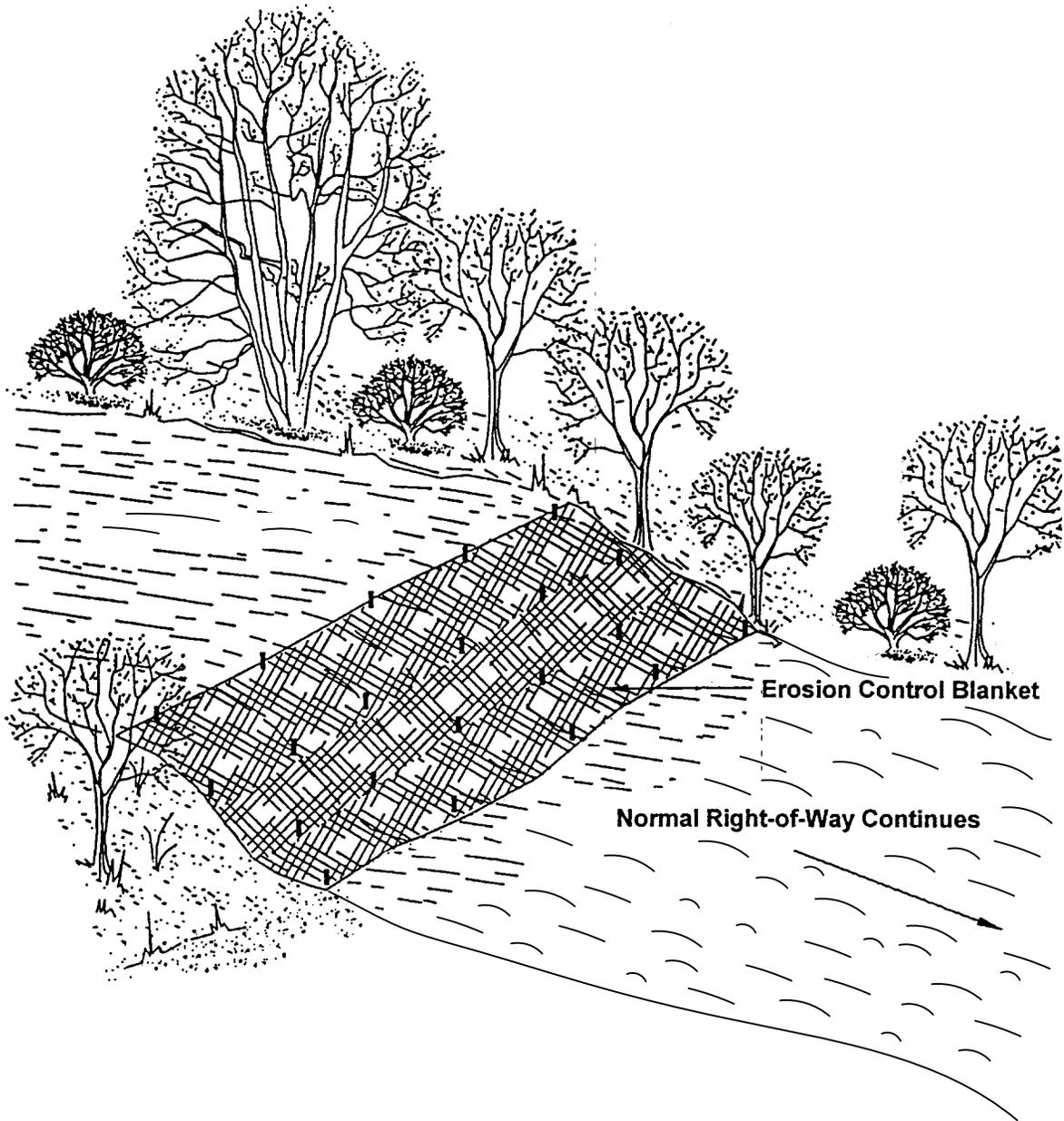


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Figure 7.1
Environmental Mitigation Plan
Permanent Slope Breakers - Perspective View

DATE: 5/25/2001	
REVISED: 12/21/05	
SCALE: NTS	
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NOTES

1. INSTALL EROSION CONTROL BLANKET AS PER MANUFACTURER'S SPECIFICATIONS.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

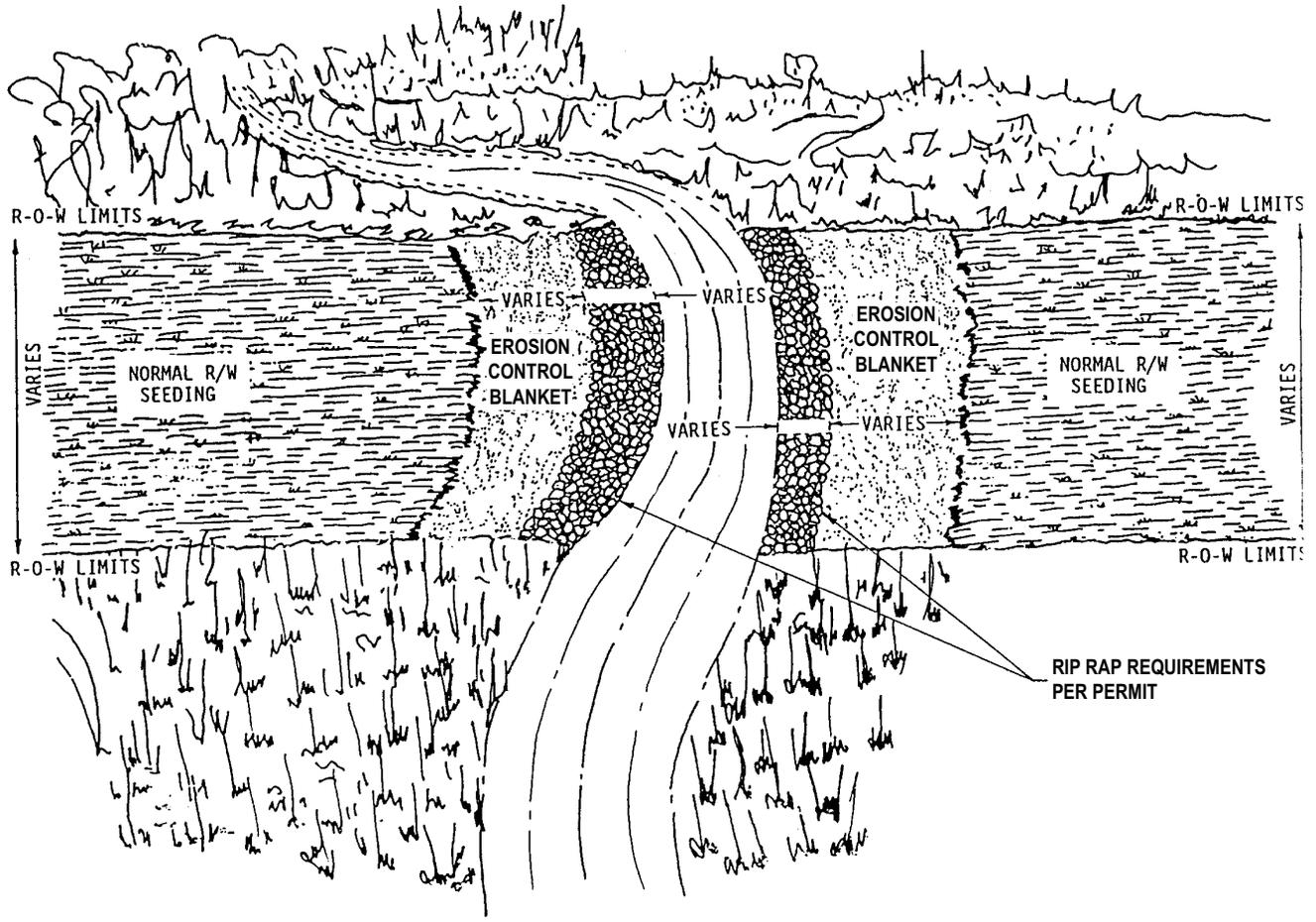
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Figure 7.2
Environmental Mitigation Plan
 Erosion Control Blanket - Steep Slopes ($\geq 30\%$)

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REVISED: 12/21/05	
SCALE: NTS	
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NOTE: PLACE JUTE BLANKET A MINIMUM OF ONE (1) FOOT UNDER RIP RAP. EXTEND JUTE BLANKET FROM MEAN HIGH WATER LEVEL TO SEVERAL FEET BEHIND HIGH BANK.



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Figure 7.3
Environmental Mitigation Plan
 Typical Final Stream Bank Stabilization
 Rip Rap & Erosion Control

DATE: 7/19/2000	
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SCALE: NTS	
DRAWN BY: KMKENDALL	
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