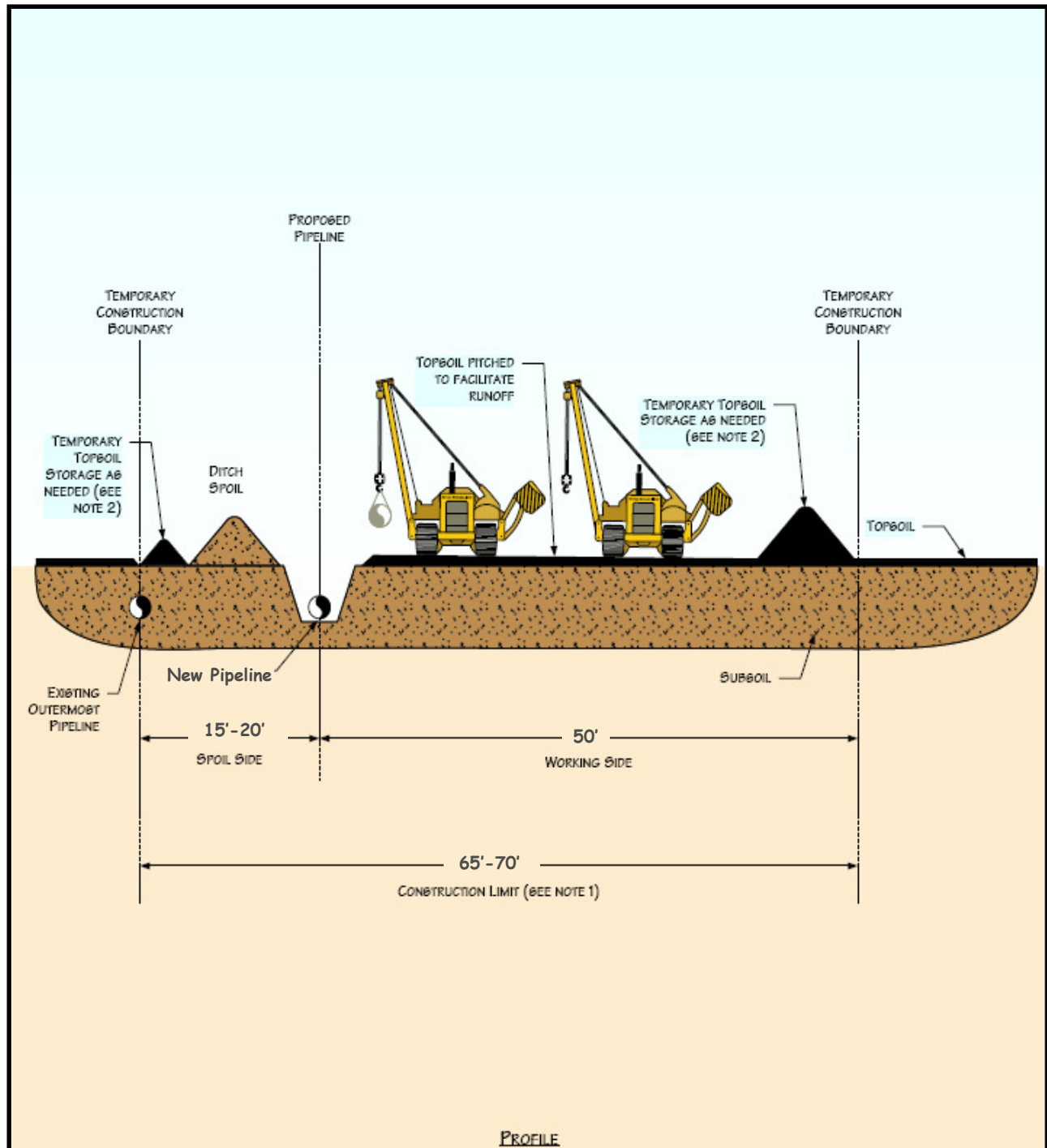


## **TAB 6 – Environmental Mitigation Plan Exhibits**

- Figure 6.1.1 Typical Construction Layout
- Figure 6.1.2 Typical Topsoil Segregation – Ditch plus Spoil Side
- Figure 6.1.3 Typical Topsoil Segregation – Full Right-of-Way
- Figure 6.1.4 Typical Topsoil Segregation – Trench Line Only
- Figure 6.1.5 Typical Temporary or Permanent Berms – Perspective View
- Figure 6.1.6 Typical Temporary or Permanent Berms – Elevation View
- Figure 6.1.7 Typical Silt Fence Installation
- Figure 6.1.8 Typical Straw Bale installation
- Figure 6.1.9 Typical Trench Breakers – Perspective View
- Figure 6.1.10 Typical Trench Breakers – Plan and Profile Views
- Figure 6.2.1 Typical Waterbody Crossing – Wet Trench Method
- Figure 6.2.2 Typical Waterbody Crossing – Dam and Pump Method
- Figure 6.2.3 Typical Waterbody Crossing – Flume Method
- Figure 6.2.4 Typical Waterbody Crossing – Directional Drill Method
- Figure 6.2.5 Typical Span Type Bridge
- Figure 6.2.6 Typical Rock and Flume Bridge
- Figure 6.2.7 Typical Dewatering Measures
- Figure 6.2.8 Typical Straw Bale Dewatering Structure
- Figure 6.3.1 Typical Wetland Crossing
- Figure 6.4.1 Typical Paved Road Crossing – Sediment Control
- Figure 6.7.1 Permanent Slope Breakers – Perspective View
- Figure 6.7.2 Erosion Control Blanket - Steep Slopes ( $\geq 30\%$ )
- Figure 6.7.3 Typical Final Stream Bank Stabilization – Rip Rap & Erosion Control



PROFILE

NOTES:

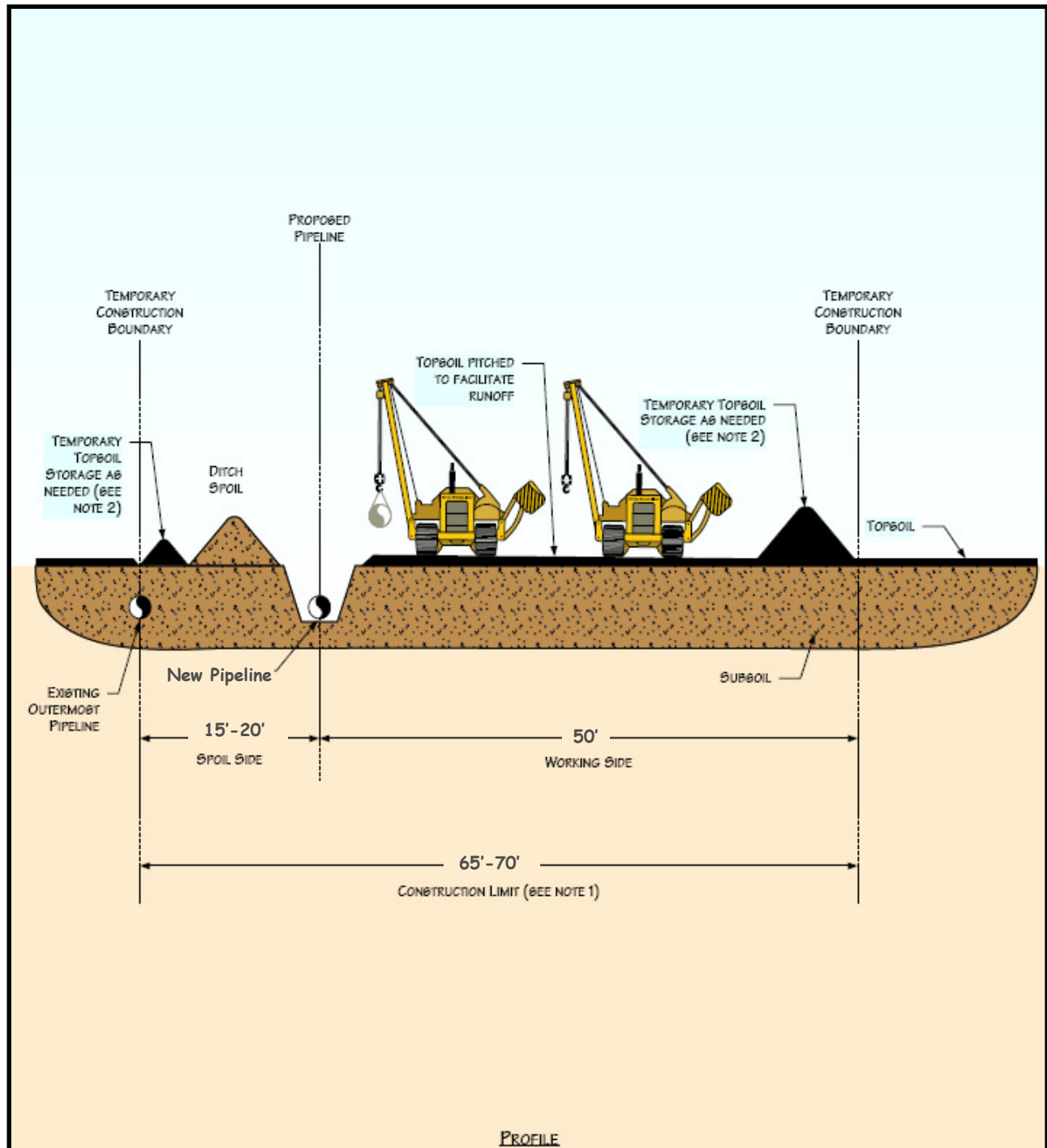
1. CONSTRUCTION LIMITS WILL TYPICALLY BE 70' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 15'-20' WIDE.
2. THIS DRAWING REFLECTS "DITCH PLUS SPOIL" SIDE TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 15'-20' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.



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**Figure 6.1.1 – Typical Construction Layout**

Dore Crude Oil Loop Pipeline  
 McKenzie County



PROFILE

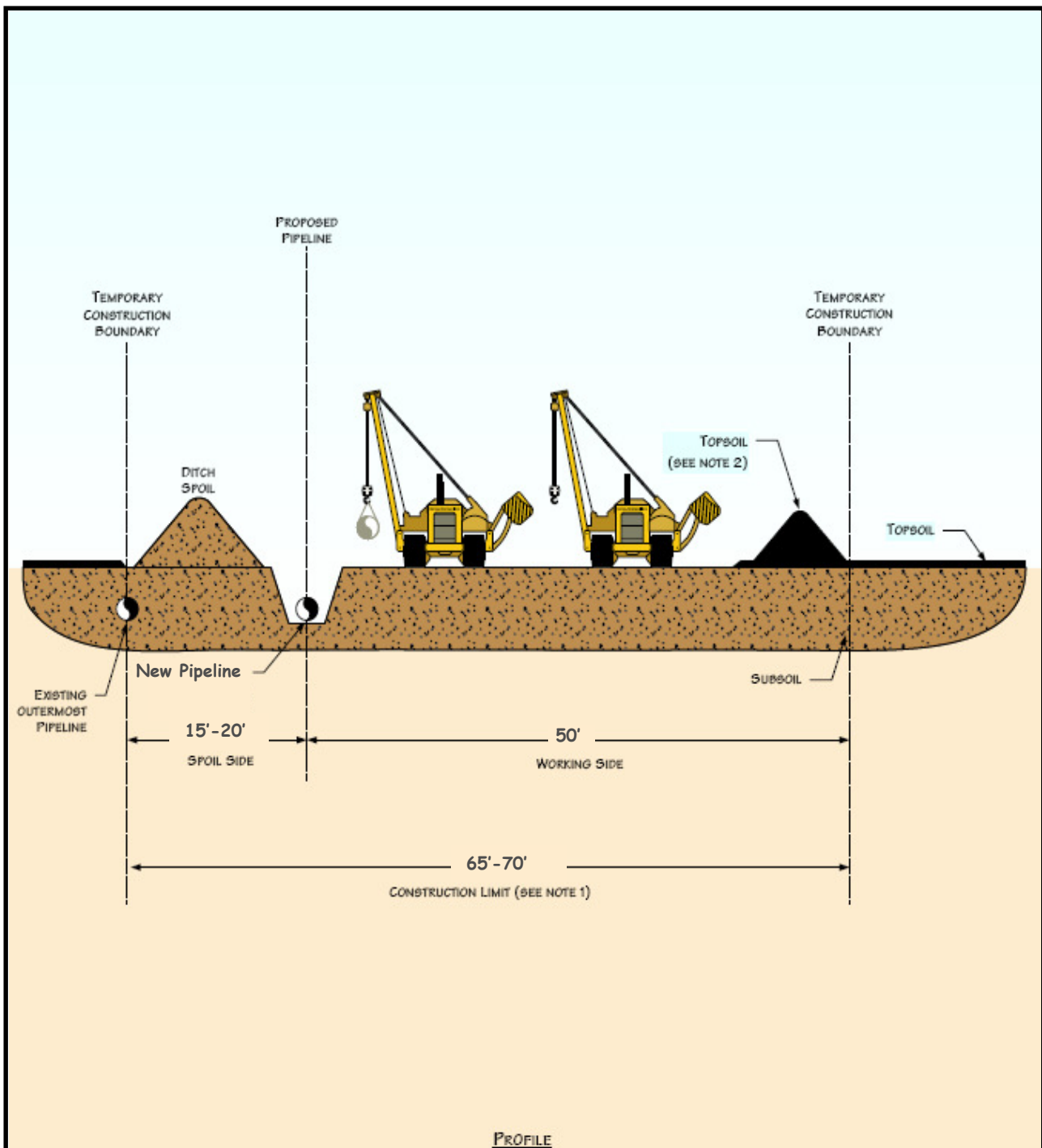
NOTES:

1. CONSTRUCTION LIMITS WILL TYPICALLY BE 70' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 15'-20' 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 15'-20' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.



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**Figure 6.1.2 – Typical Topsoil Segregation  
 Ditch Plus Spoil Side**  
 Dore Crude Oil Loop Pipeline  
 McKenzie County



PROFILE

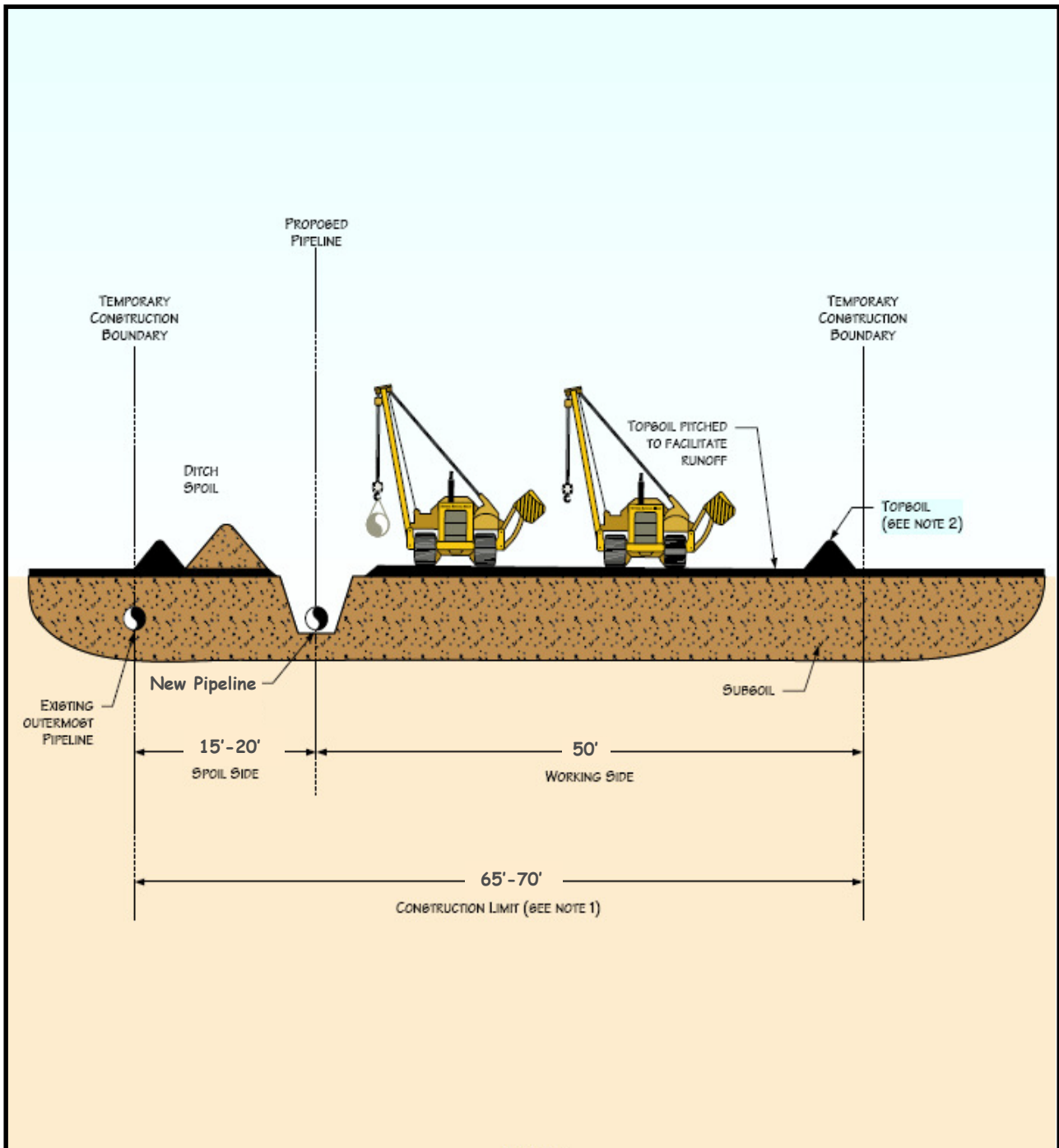
NOTES:

1. CONSTRUCTION LIMITS WILL TYPICALLY BE 70' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 15'-20' 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 15'-20' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.



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**Figure 6.1.3 – Typical Topsoil Segregation Full Right-of-Way**  
 Dore Crude Oil Loop Pipeline  
 McKenzie County



PROFILE

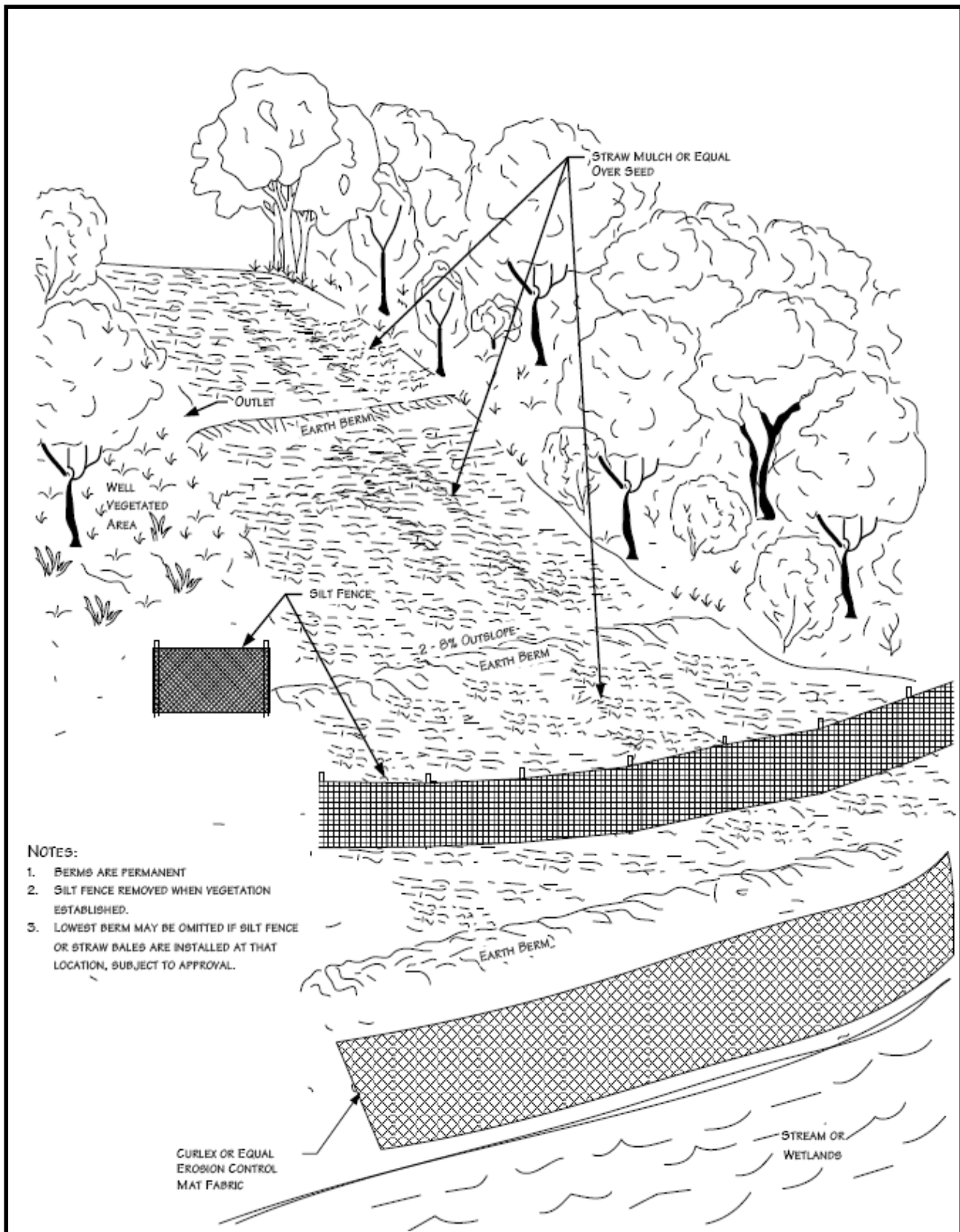
NOTES:

1. CONSTRUCTION LIMITS WILL TYPICALLY BE 70' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 15'-20' 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 15'-20' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.



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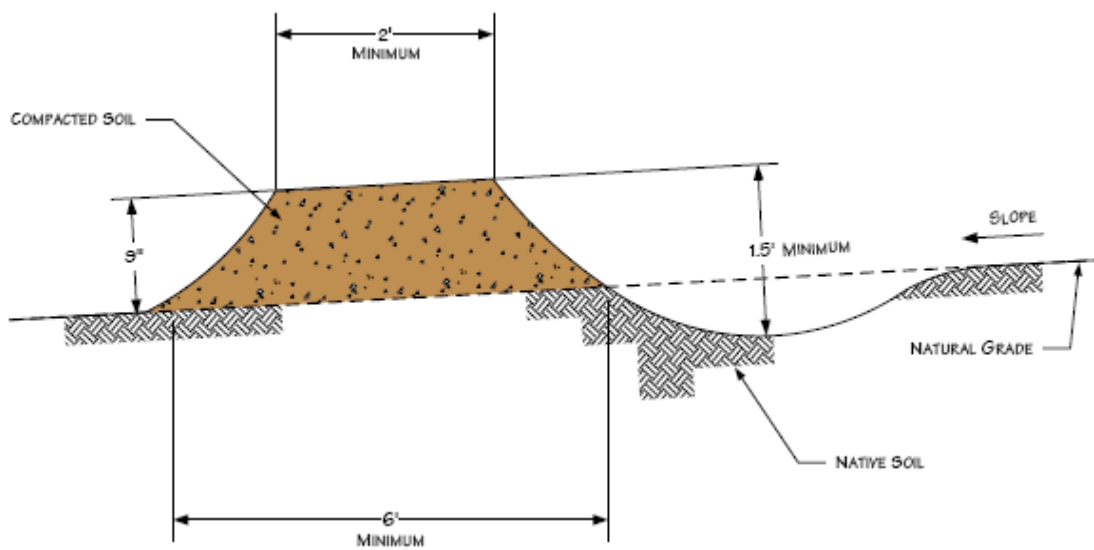
**Figure 6.1.4 – Typical Topsoil Segregation  
 Trench Line Only**  
 Dore Crude Loop Pipeline  
 McKenzie County



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**Figure 6.1.5 – Typical Temporary or Permanent Berms-Perspective View**

Dore Crude Oil Loop Pipeline  
 McKenzie County



**NOTES**

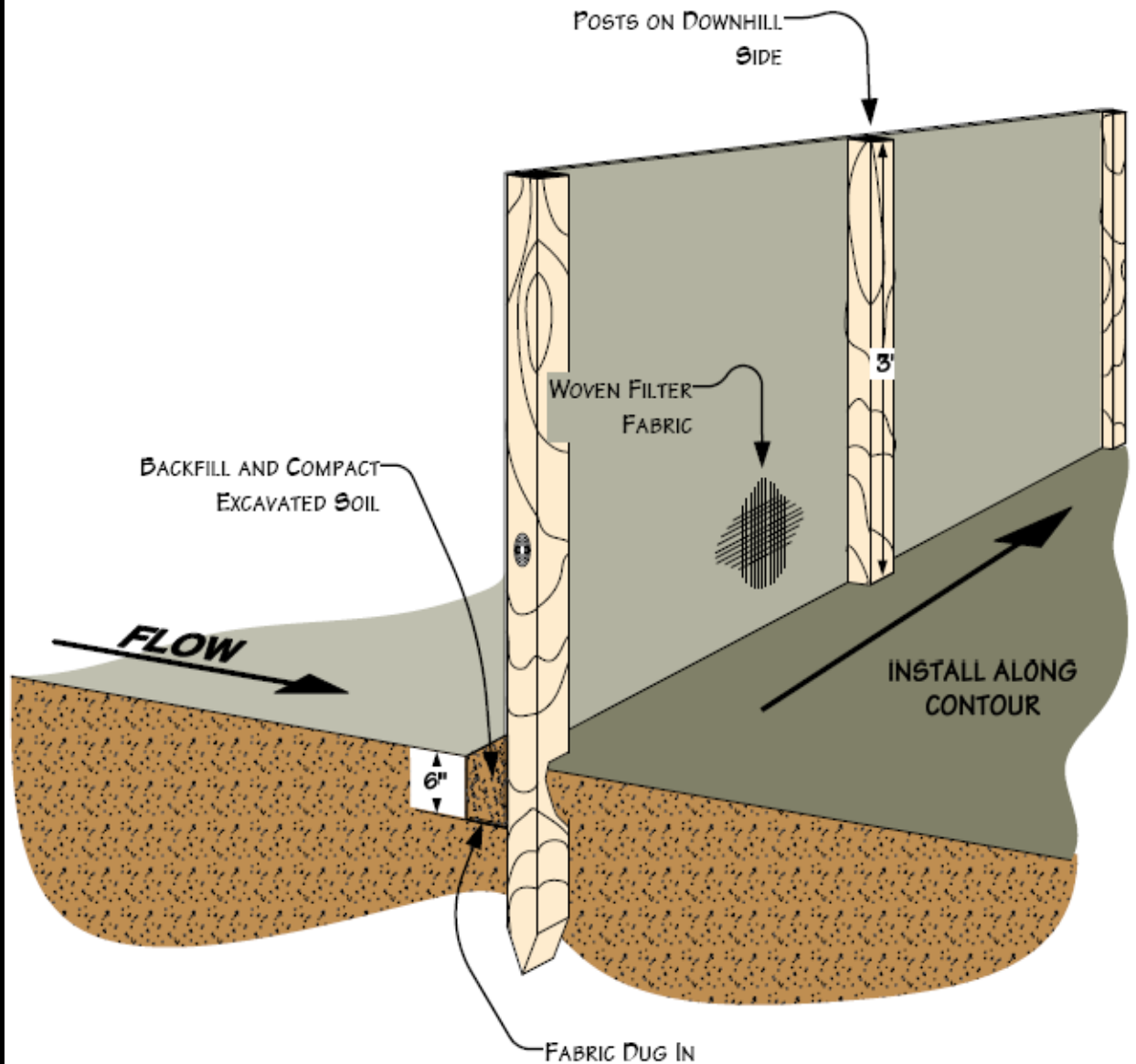
1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 5 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW/HAY BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.



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**Figure 6.1.6 – Typical Temporary or Permanent Berm-Elevation View**

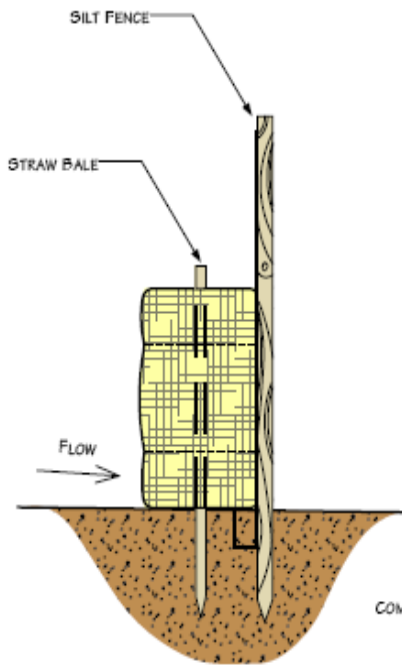
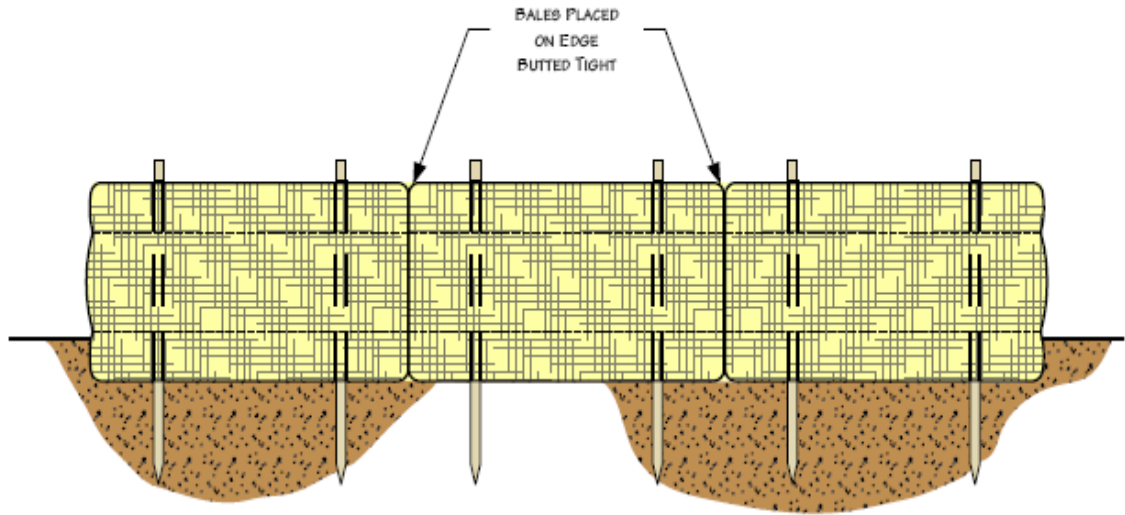
Dore Crude Oil Loop Pipeline  
 McKenzie County



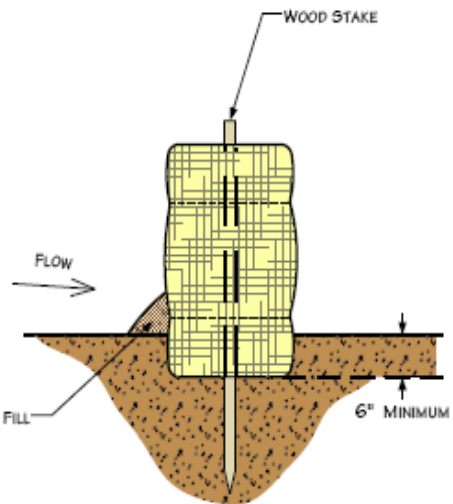
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**Figure 6.1.7 – Typical Silt Fence Installation**

Dore Crude Oil Loop Pipeline  
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STRAW/HAY BALES & SILT FENCE



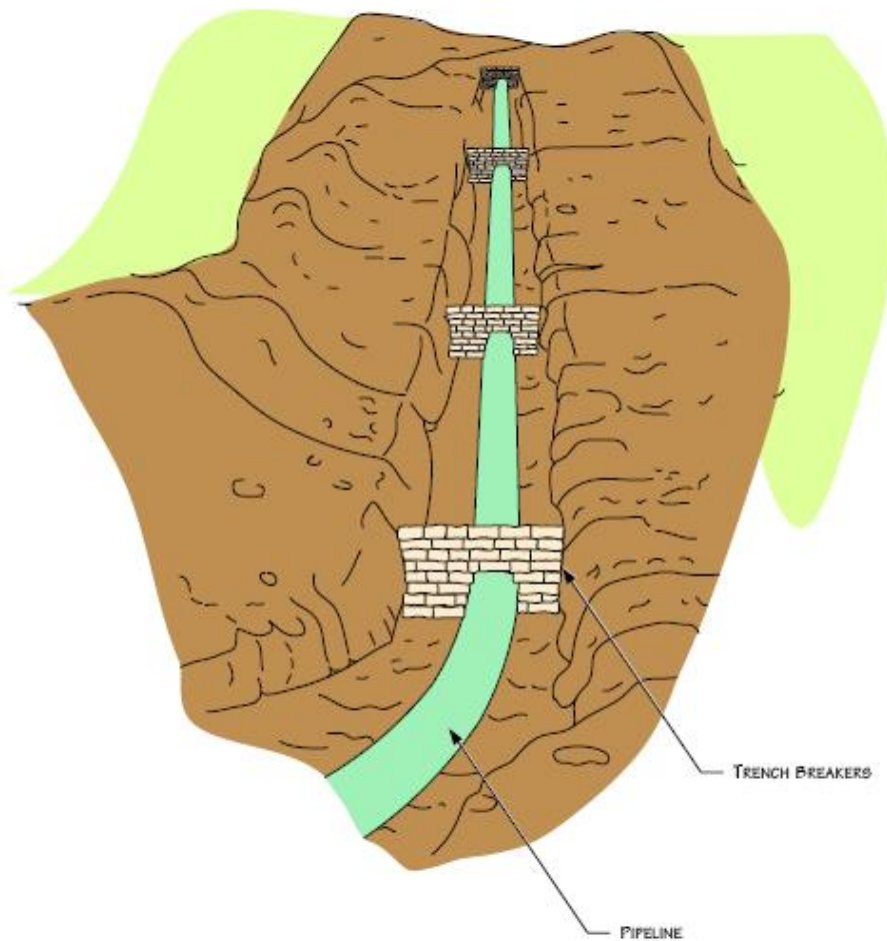
STRAW/HAY BALES ONLY



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Figure 6.1.8 –Straw Bale Installation

Dore Crude Oil Loop Pipeline  
 McKenzie County



NOTES

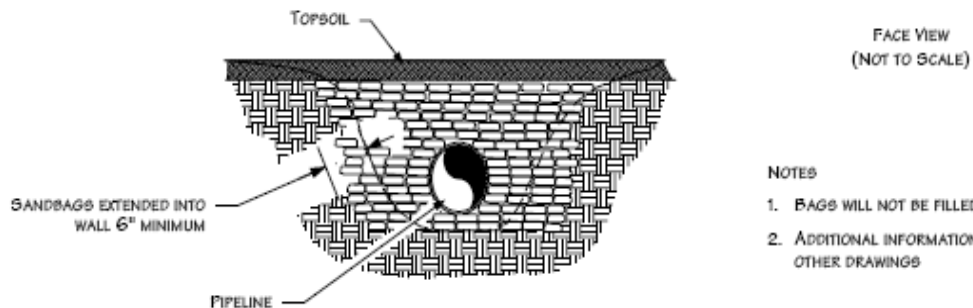
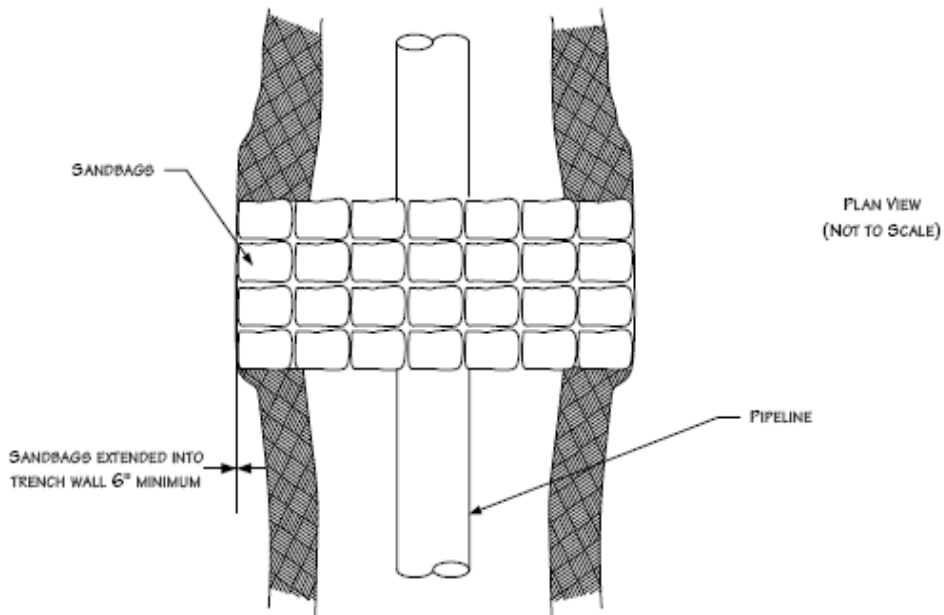
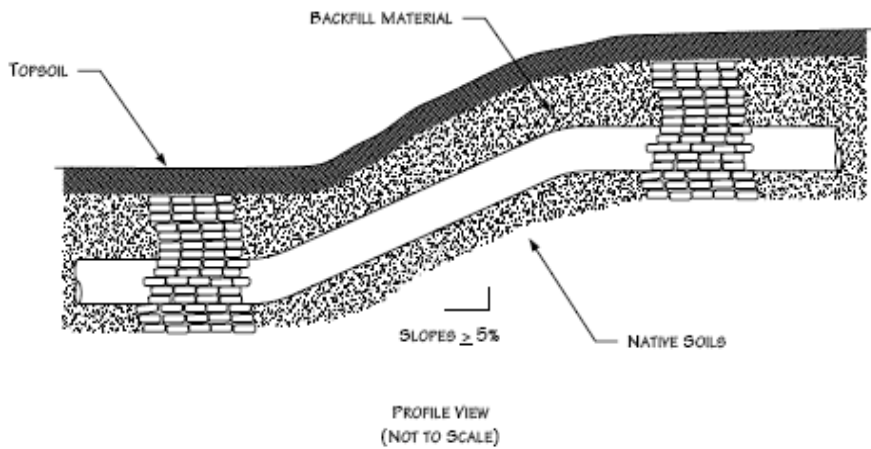
1. BAGS WILL NOT BE FILLED WITH TOPSOIL.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.



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**Figure 6.1.9 Typical Trench Breaker  
 (Perspective View)**

Dore Crude Oil Loop Pipeline  
 McKenzie County



NOTES

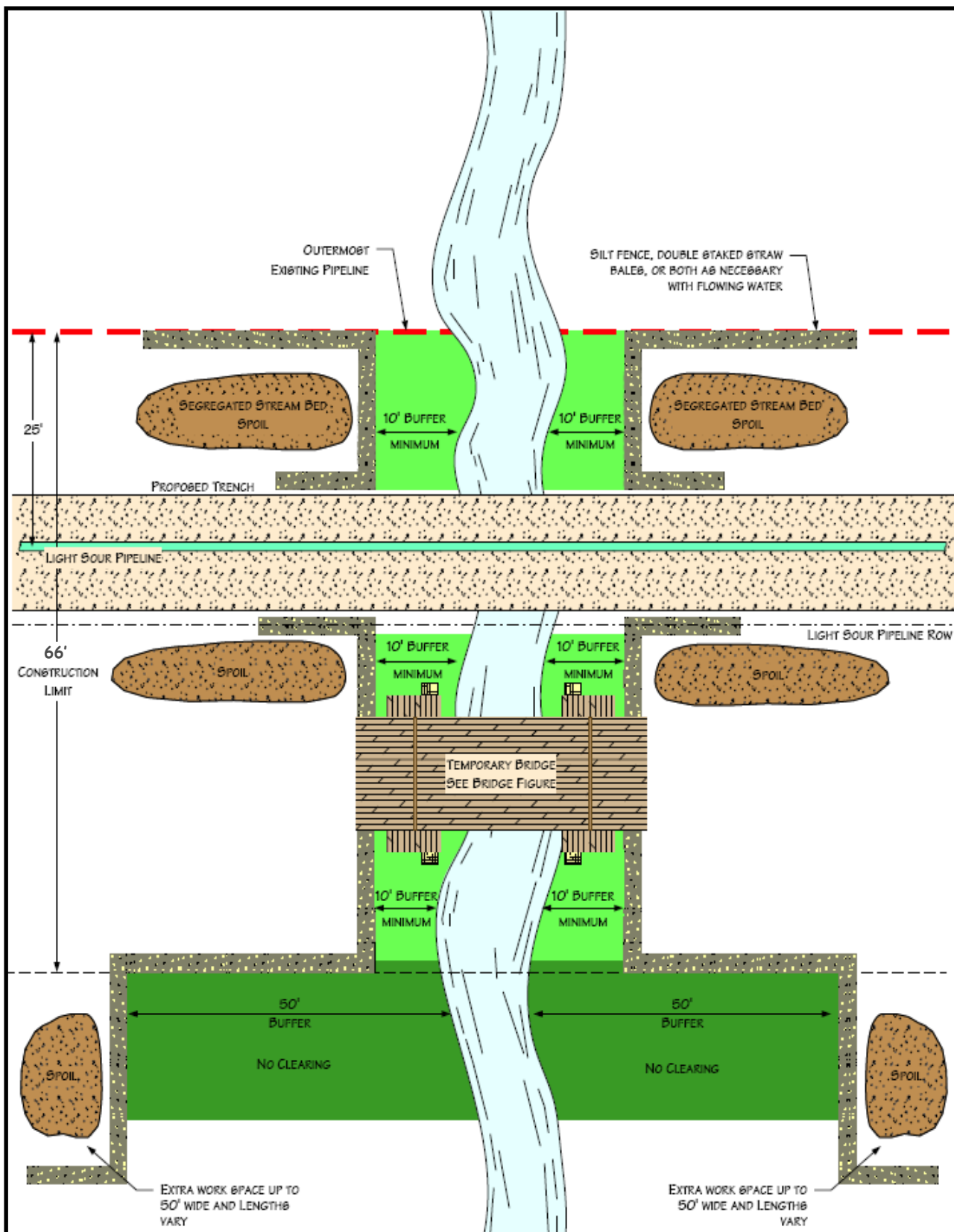
1. BAGS WILL NOT BE FILLED WITH TOPSOIL
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS



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**Figure 6.1.10 – Typical Trench Breaker  
 Plan and Profile View**

Dore Crude Oil Loop Pipeline  
 McKenzie County

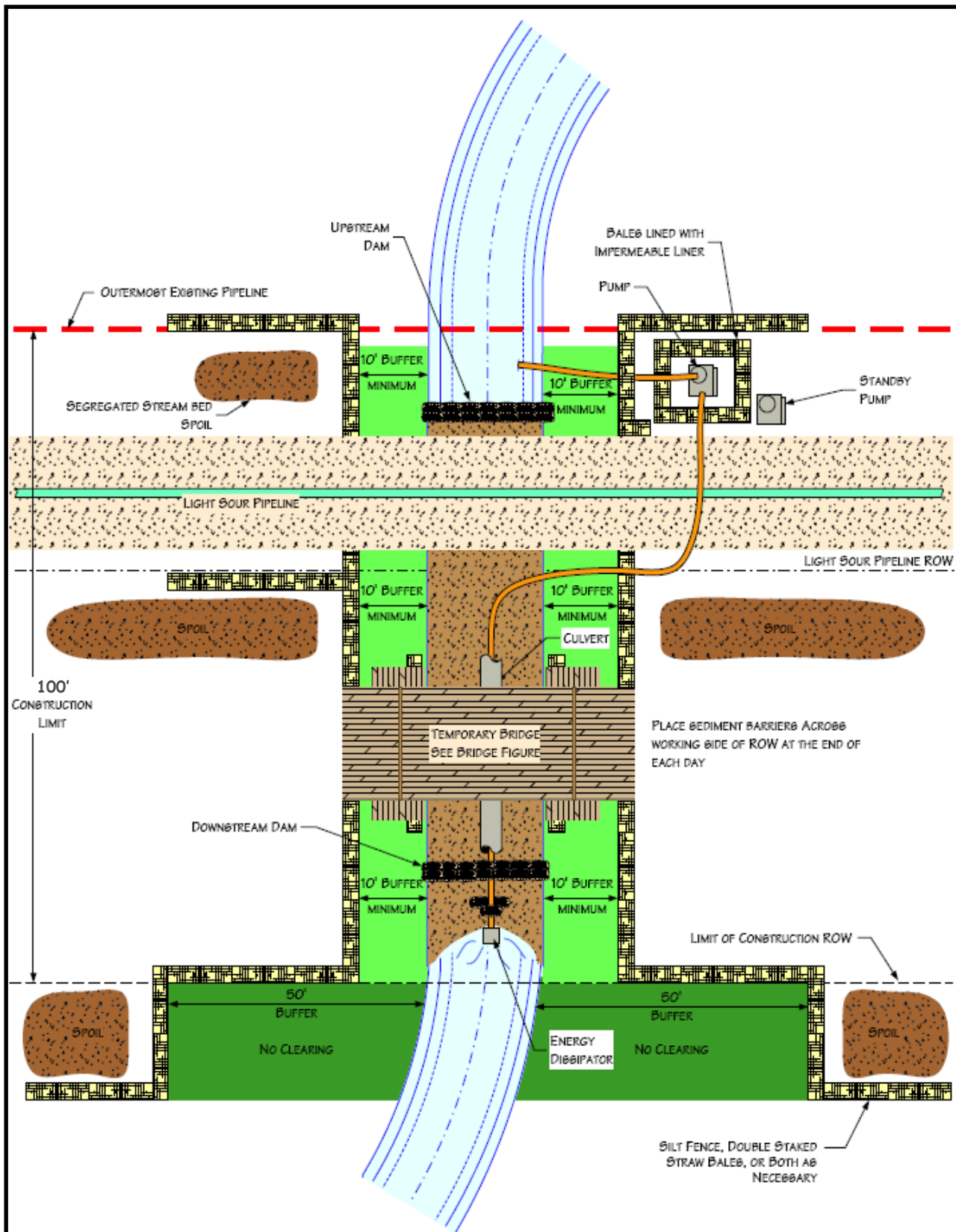


**Figure 6.2.1 – Typical Waterbody Crossing  
Wet Trench Method**

Dore Crude Oil Loop Pipeline  
McKenzie County



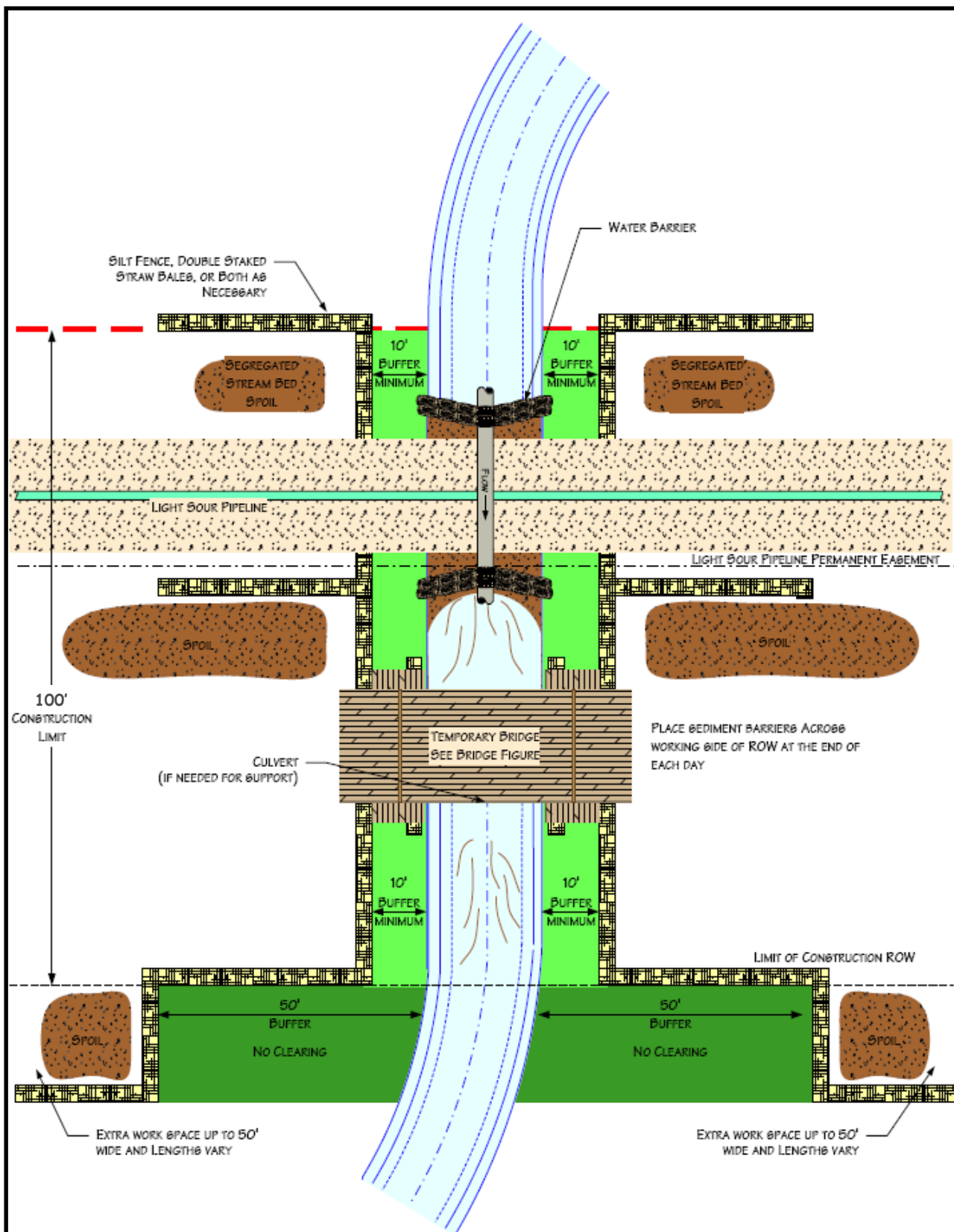
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**Figure 6.2.2 Typical Waterbody Crossing Dam and Pump Method**

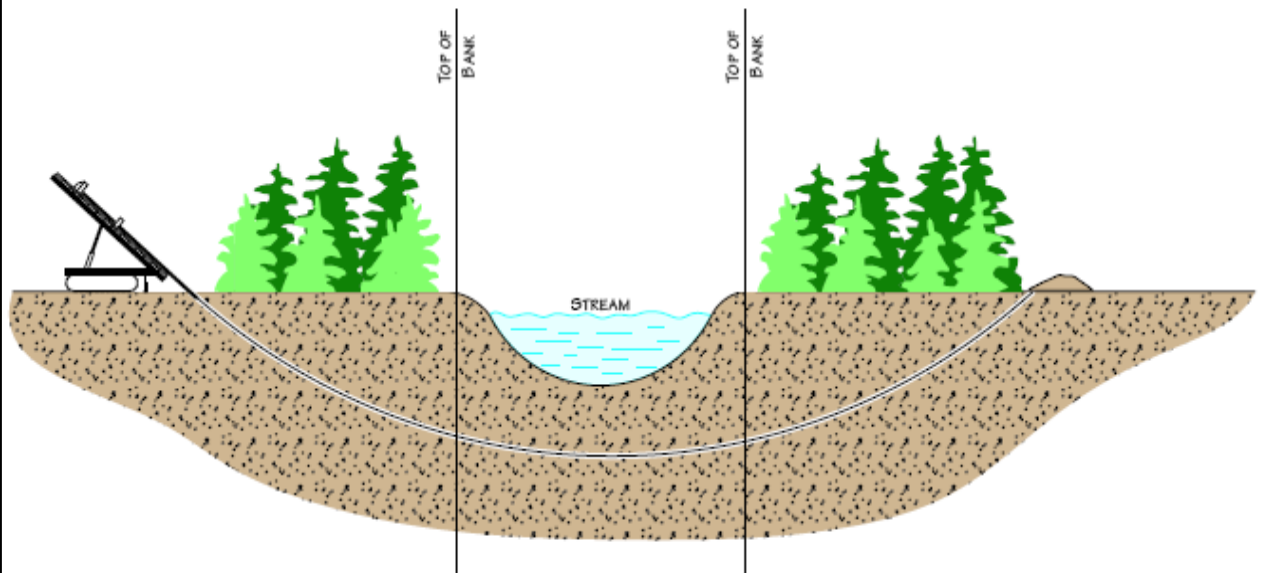
Dore Crude Oil Loop Pipeline  
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**Figure 6.2.3 – Typical Waterbody Crossing Flume Method**

Dore Crude Oil Loop Pipeline  
 McKenzie County

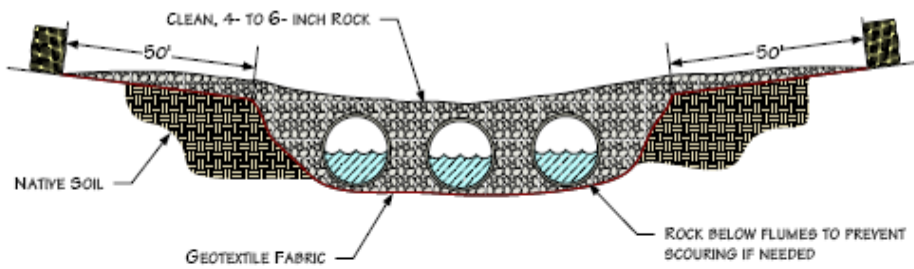
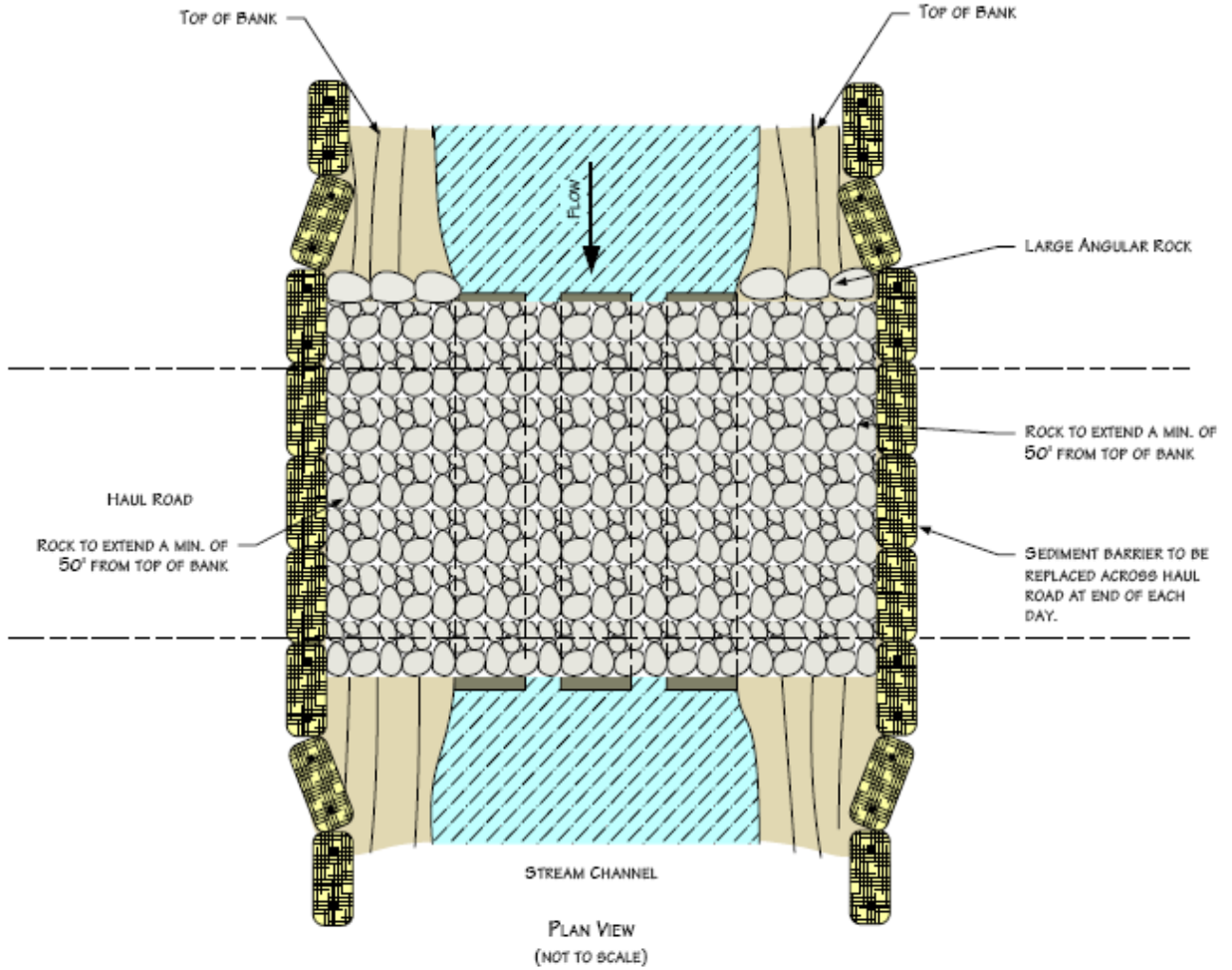


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**Figure 6.2.4 – Typical Waterbody Crossing  
 Directional Drill Method**

Dore Crude Oil Loop Pipeline  
 McKenzie County





**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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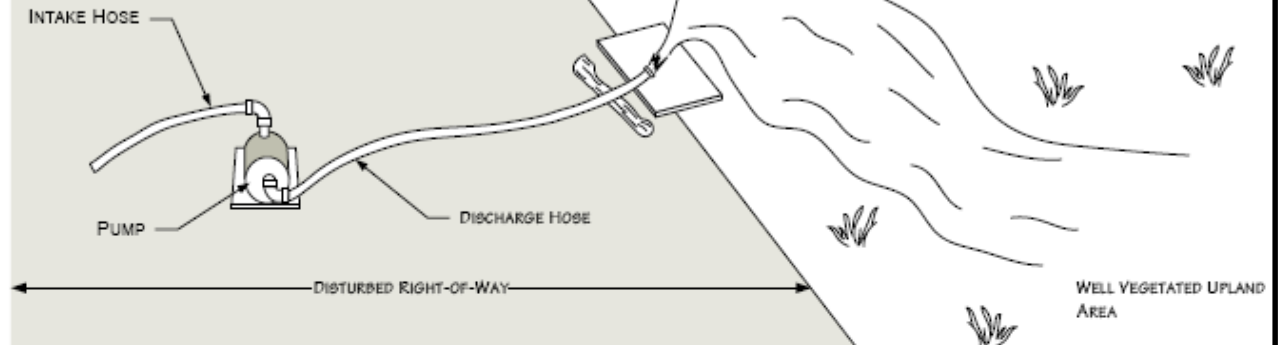
**Figure 6.2.6 –Typical Rock Flume Bridge**

Dore Crude Oil Loop Pipeline  
 McKenzie County

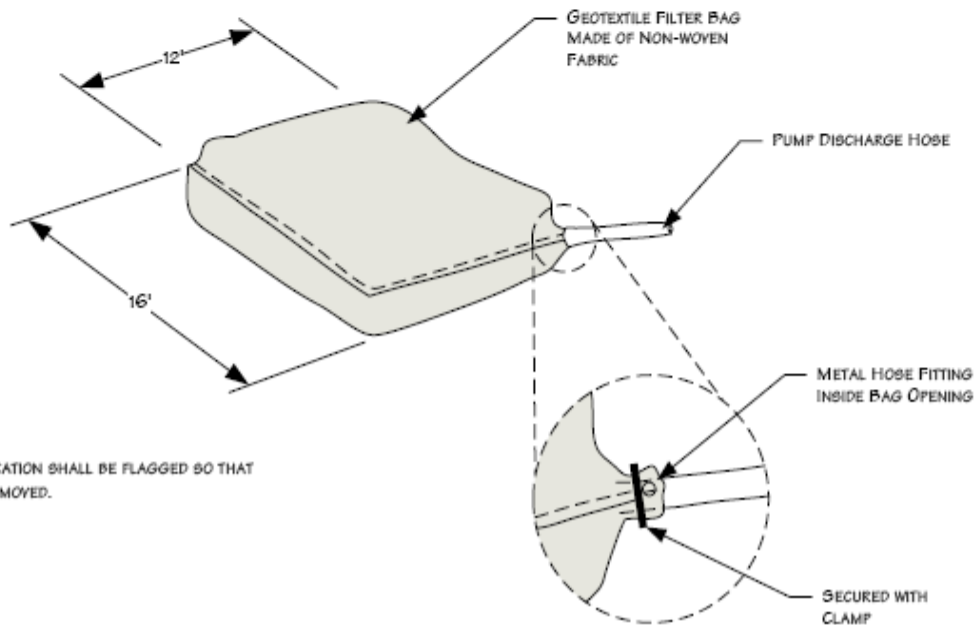
## DEWATERING DISCHARGE IN WELL VEGETATED UPLANDS

### 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:

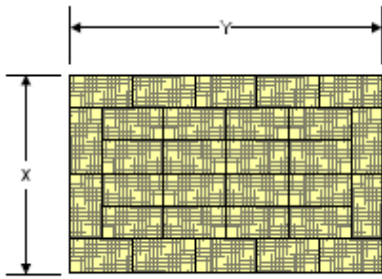
1. FILTER BAG LOCATION SHALL BE FLAGGED SO THAT BAG CAN BE REMOVED.



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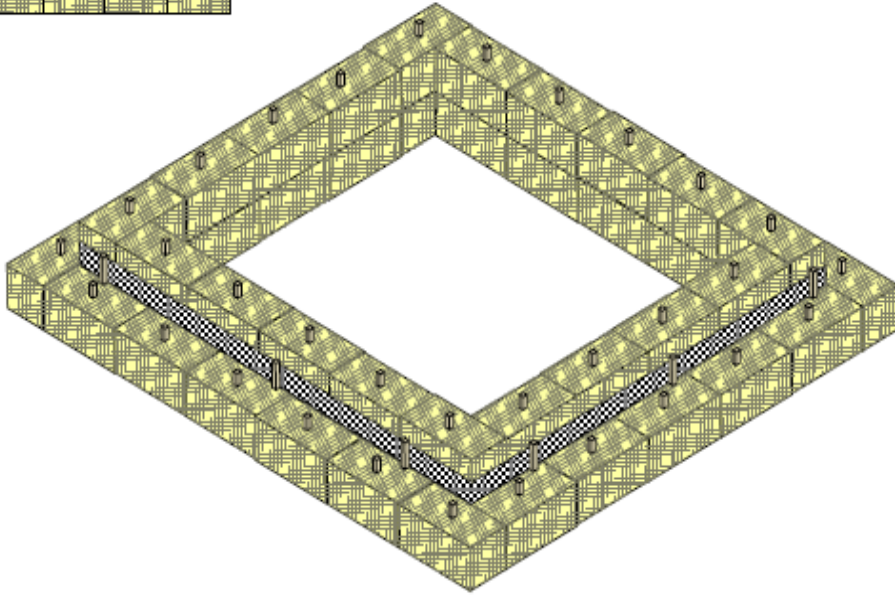
**Figure 6.2.7– Typical Dewatering Measures**

Dore Crude Oil Loop Pipeline  
 McKenzie County

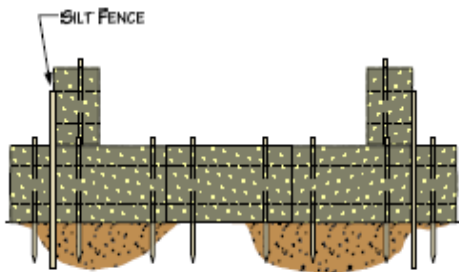


**NOTES**

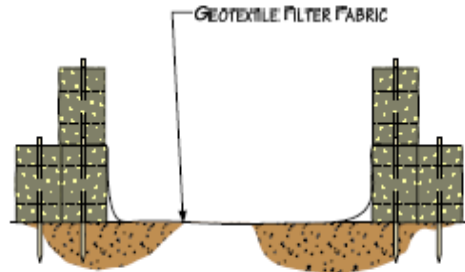
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFIED BELOW.
2. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES (OPTION 1), LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.



PERSPECTIVE VIEW



OPTION 1



OPTION 2

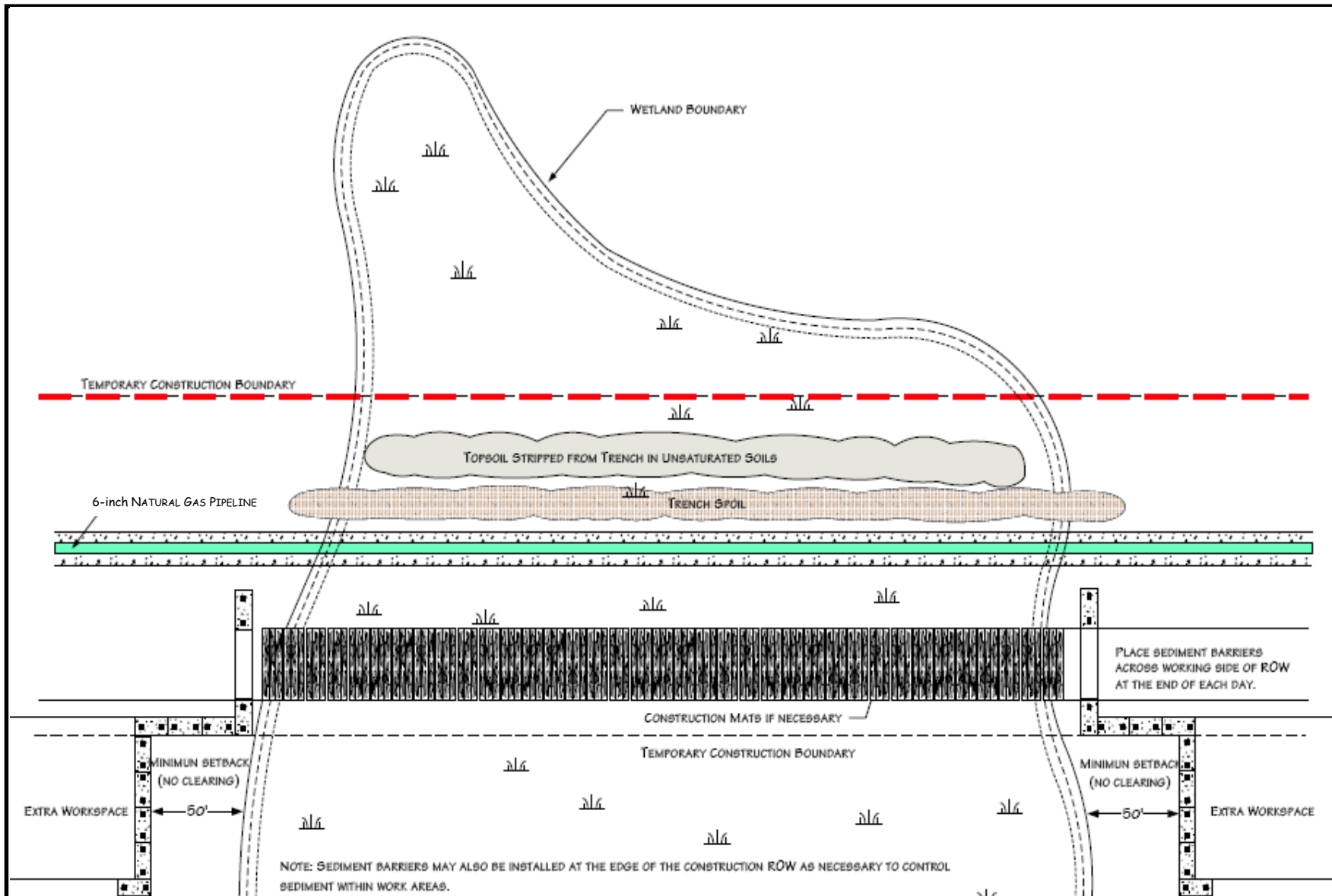
| MINIMUM<br>SUMP DIMENSIONS (FEET) |    | MAXIMUM<br>PUMPING RATE<br>GALLONS PER MINUTE |
|-----------------------------------|----|---|
| X                                 | Y  |   |
| 10                                | 20 | 300   |
| 15                                | 20 | 350   |
| 20         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



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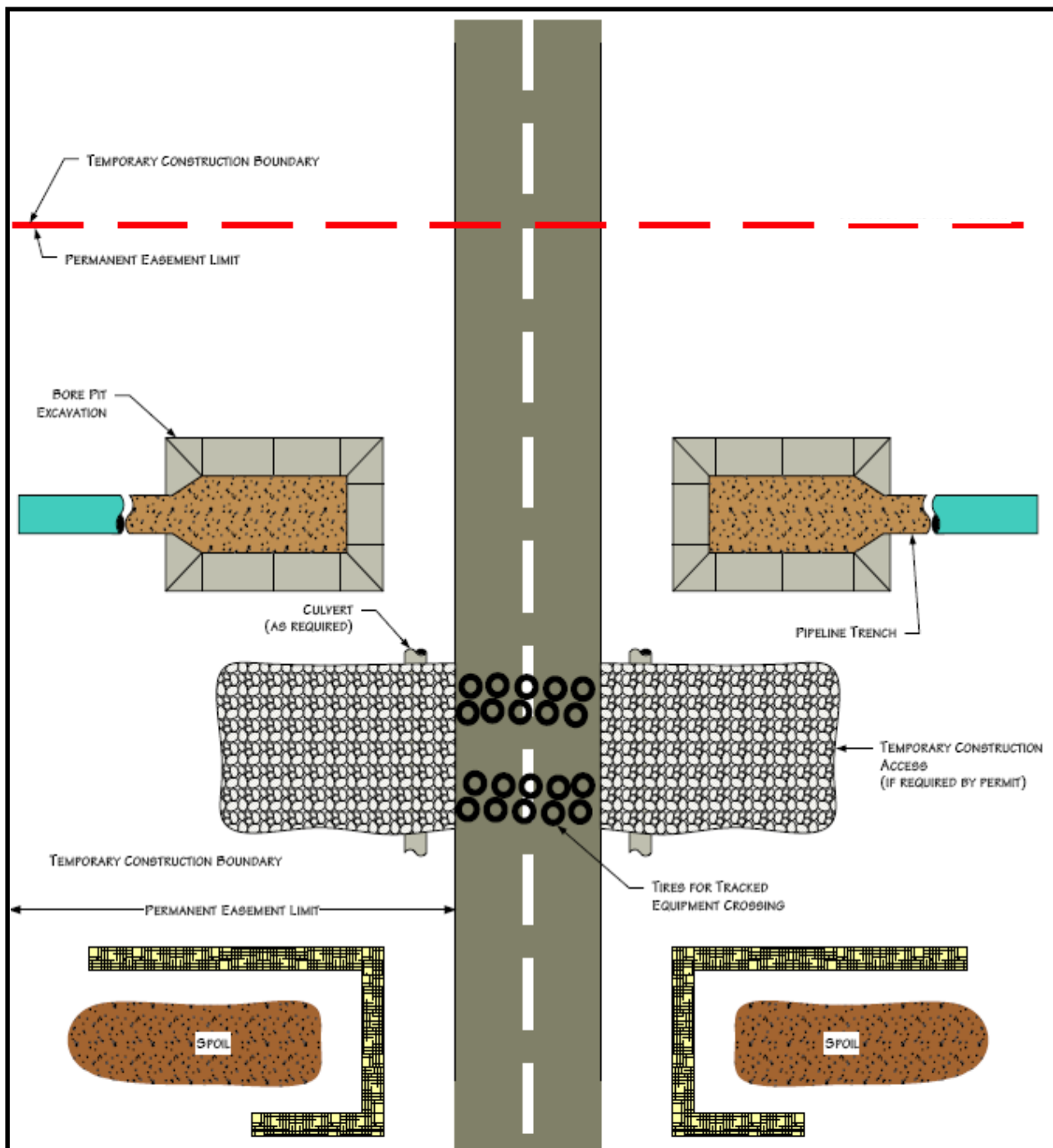
**Figure 6.2.8 Typical Straw-Bale Dewatering Structure**

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 McKenzie County



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**Figure 6.3.1 – Typical Wetland Crossing Method**  
 Dore Crude Oil Loop Pipeline  
 McKenzie County



PLAN VIEW

NOTES

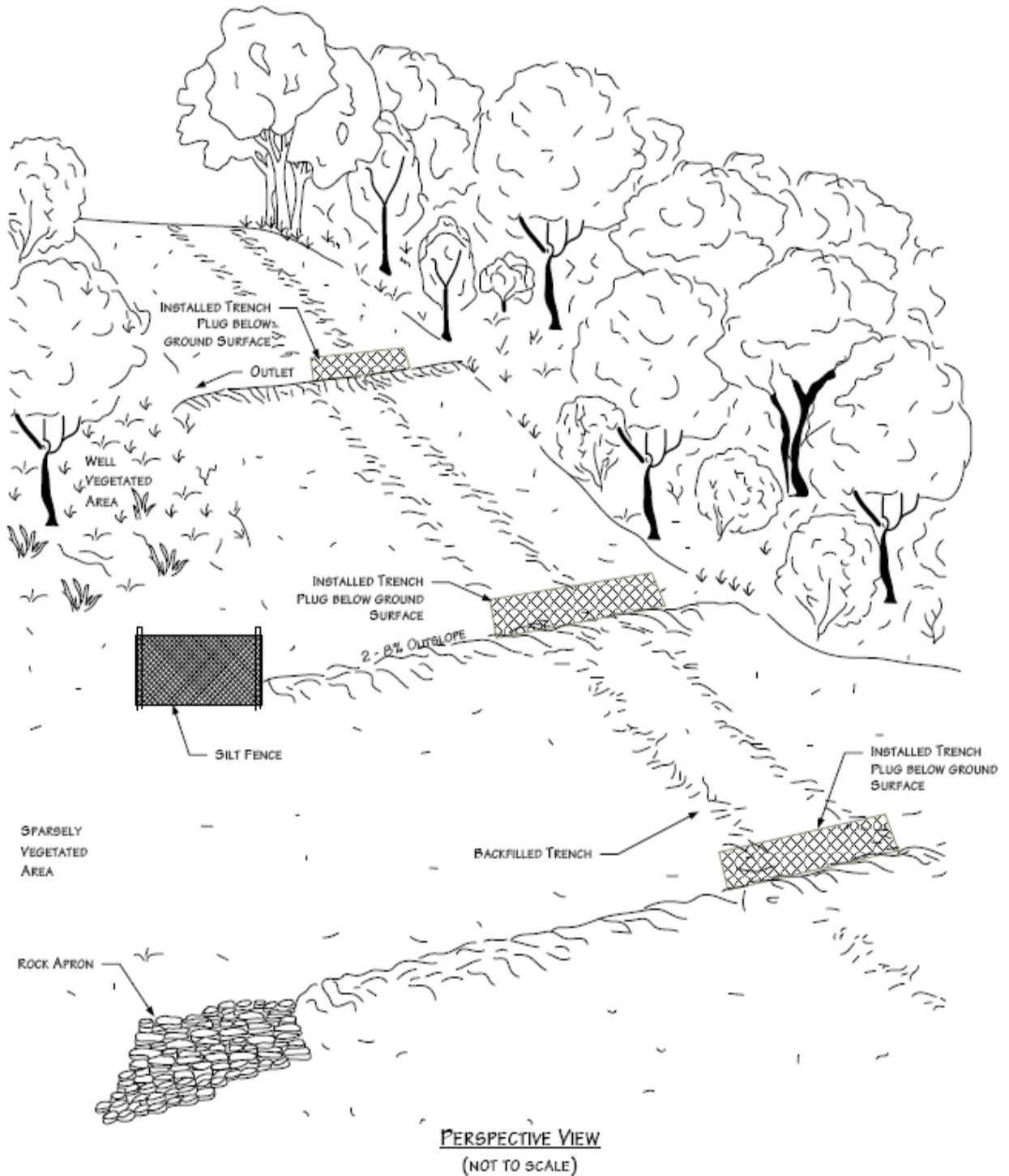
1. PROCEDURES SHOWN IN THIS DRAWING APPLY TO IMPROVED ROADS.
2. ROADS MUST BE CLEANED AFTER EQUIPMENT CROSSES AND DIRT PLACED IN SPOIL CONTAINMENT AREAS.
3. TEMPORARY ACCESS MATERIALS MUST BE REMOVED UPON PROJECT COMPLETION.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS OR PERMITS.
5. CONSTRUCTION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



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**Figure 6.4.1 Typical Improved Road Crossing-Directional Bore Method**

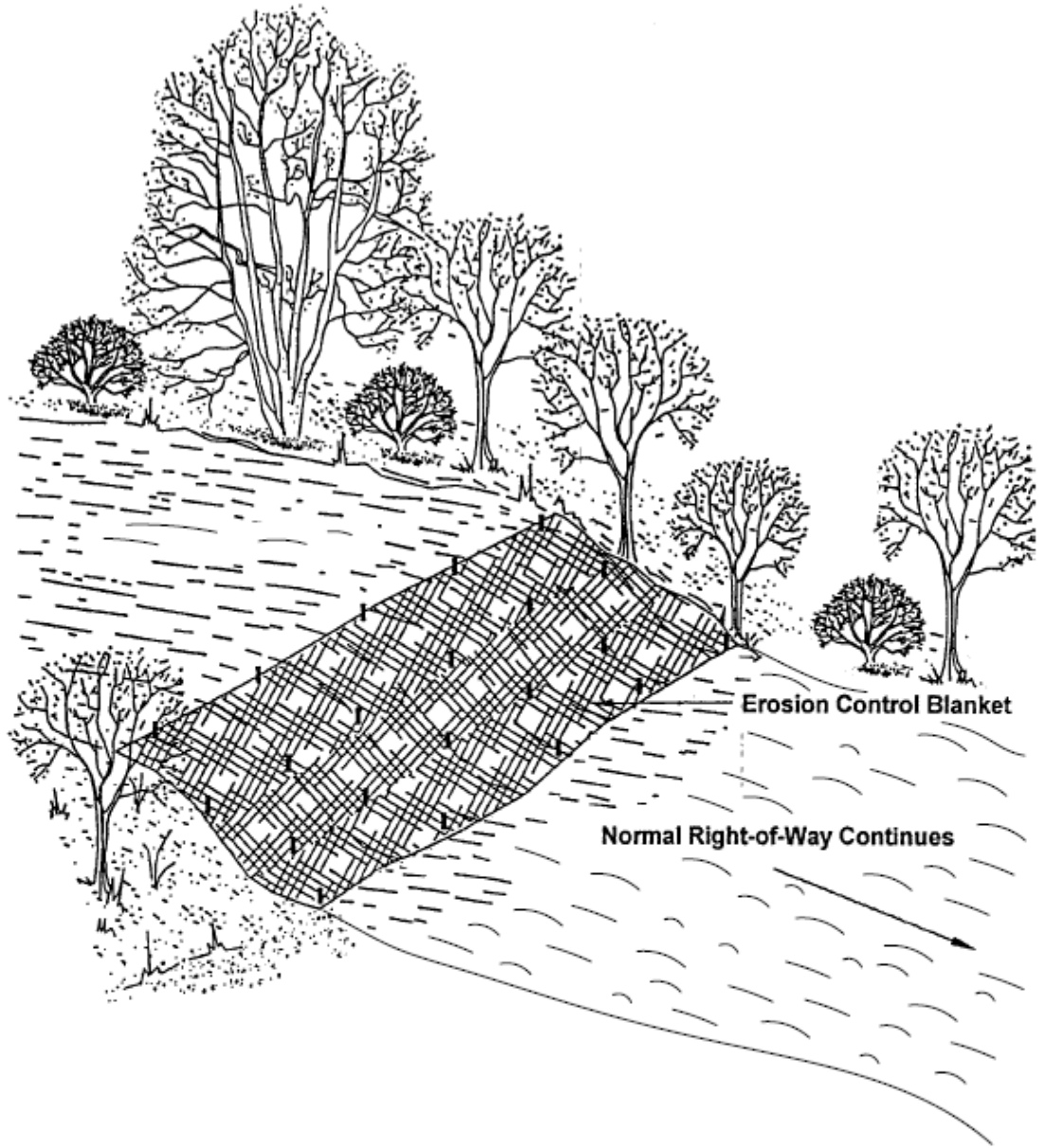
Dore Crude Oil Loop Pipeline  
 McKenzie County



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**Figure 6.7.1 – Permanent Slope Breakers  
 Perspective View**

Dore Crude Oil Loop Pipeline  
 McKenzie County



**NOTES**

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

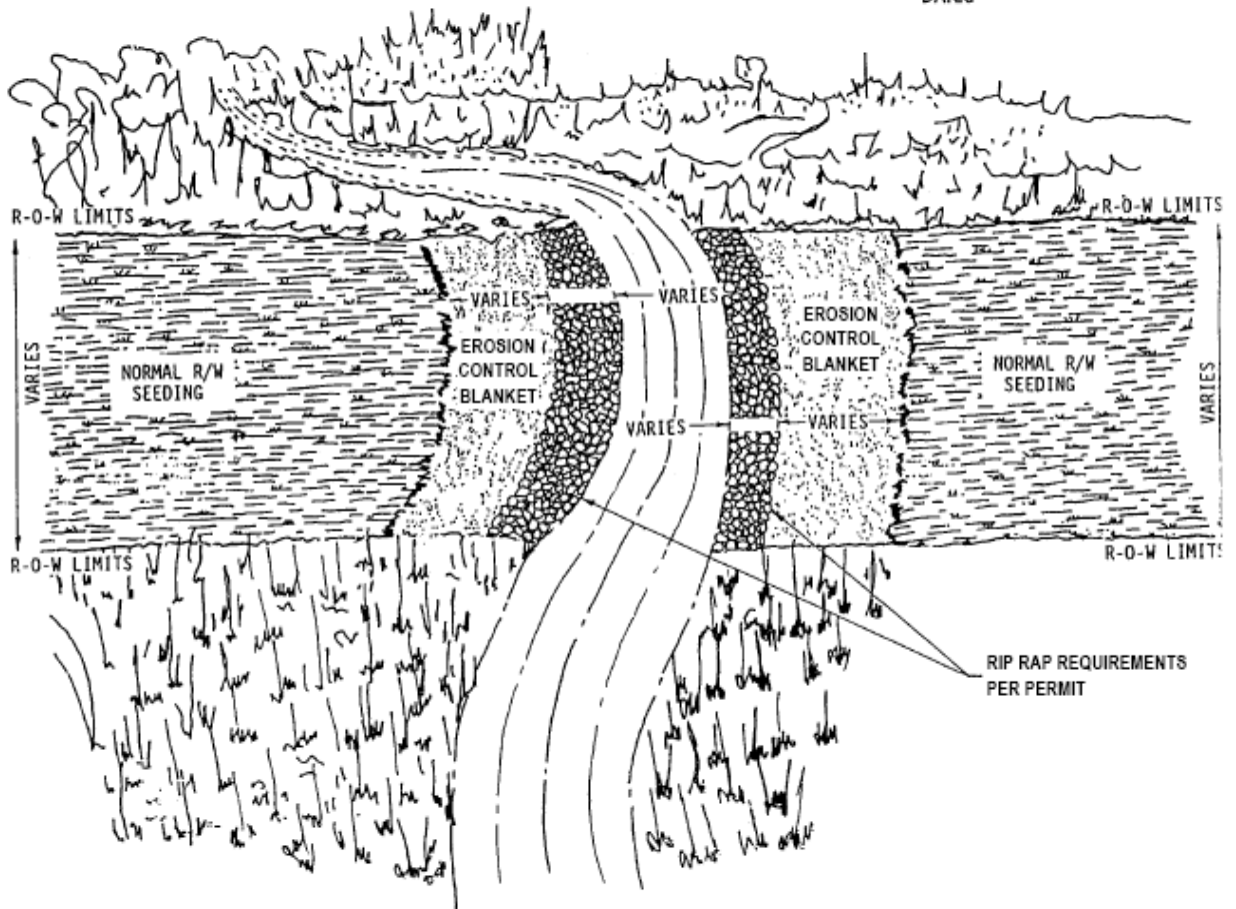


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**Figure 6.7.2 – Erosion Control Blanket  
 Steep Slopes (>30%)**

Dore Crude Oil Loop Pipeline  
 McKenzie County

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 6.7.3 – Typical Final Stream Bank Stabilization-Rip Rap & Erosion Control**

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 McKenzie County