

**Dakota Access Pipeline**  
**Draft Stormwater Pollution Prevention Plan**

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## **Appendices**

- Appendix A Best Management Practices Figures
- Appendix B Spill Prevention Containment and Countermeasures Plan
- Appendix C Inspection Forms and Instructions

## **1.0 INTRODUCTION**

Dakota Access, LLC (COMPANY) will implement this Stormwater Pollution Prevention Plan (SWPPP) during construction of the Dakota Access Pipeline (DAPL) Project (Project) in South Dakota, Iowa, and Illinois. The primary purpose of the SWPPP is to minimize the impacts of stormwater runoff during Project construction activities through the implementation of Best Management Practices (BMP).

### **1.1 RESPONSIBILITY FOR IMPLEMENTATION**

The Construction Manager is responsible for implementation of the SWPPP. As stated in the construction contract or as otherwise agreed, the Contractor may be responsible for all or part of the implementation of the SWPPP. Where Environmental Inspectors (EI) or Chief Inspectors (CI) are utilized, they will fulfill the responsibilities as described herein. If neither an EI nor CI is utilized for the Project, those responsibilities will be assumed by the Construction Manager (CM) or a designee.

## **2.0 SITE DESCRIPTION**

### **2.1 PROJECT NAME, LOCATION, AND PURPOSE**

Project Name: Dakota Access Pipeline (DAPL) Project

Project Purpose: Dakota Access's primary objective for the proposed Project is to allow for transport of approximately 400,000 BPD of crude oil between Stanley, ND and Patoka, IL. The crude oil transported will provide supplemental crude oil supply for markets in the United States. In addition, the proposed Project will open railroad transport for other products produced locally that otherwise would not be accessible to other markets.

Project Location: The DAPL Project consists of a Supply Line and a Mainline Transmission Pipeline for transmission of crude oil. The Gathering System commences at Stanley, North Dakota and ends at Johnson Corner, North Dakota. There are six proposed tank facilities along the Supply System, namely Stanley, Ramberg, Epping, Trenton, Watford City, and Johnson Corner. At each tank facility there will also be metering, pumping, and pigging facilities. The Mainline Transmission Pipeline begins at Johnson Corner, North Dakota and ends southeast of the proposed Illinois Patoka Custody Transfer and Metering Station.

There will be mainline valve sites on both sides of major water body and major highway crossings and other high consequence areas as necessary for isolation in the event of emergency shutdown. In addition to the mainline valves, multiple pump stations and one custody transfer metering station will also be installed along the Mainline Transmission Pipeline. Launcher and Receiver traps will also be installed along the Mainline Transmission Pipeline.



## **2.2 NATURE OF THE CONSTRUCTION ACTIVITY**

Dakota Access proposes to install the new pipeline within a variable-width construction right-of-way. Actual workspace width will depend on site engineering and available workspace constraints. In general, the pipeline will be constructed using an approximate 150-foot-wide construction right-of-way, which includes a new proposed 50-foot-wide permanent easement and 100-foot-wide temporary easement. The temporary easement will be allowed to revert to its original land use following construction.

## **2.3 SEQUENCE OF MAJOR SOIL-DISTURBING EVENTS**

To minimize impacts, construction will be expedited as practical to reduce the time soils are exposed. The following represents a typical sequence of major soil-disturbing events during the Project.

- Installation of stabilized construction entrances and surface water (including wetlands) protection BMPs.
- Wetland and waterbody boundaries and buffers will be marked and maintained until ground disturbing activities are completed. A 15-foot buffer will be maintained where practicable, except in non-flowing streams and during the period of trenching, pipe laying, and backfilling within flowing streams.
- Clearing of the Project Right-Of-Way area as necessary. This may include clearing of brush and trees to create right-of-way needed for temporary workspace, soil storage, construction activities, and areas needed for access to particular construction sites within the Project area. Raw timber and slash to support equipment crossing of wetlands will not be utilized.
- Installation of additional BMPs for erosion and stormwater management, as needed; including temporary bridges and mats where necessary to prevent heavily silt-laden trench water from reaching any wetland or waterbody directly or indirectly.
- Pipe stringing, bending, welding, and testing.
- Excavation of ditch (trackhoes or similar equipment will be used to excavate the ditch to the required depth).
- Installation of pipe in ditch.
- Tie-ins of the sections of pipeline which will be welded together in the ditch.
- Backfilling the ditch line (excavated soil will be used to cover the pipe).

- Hydrostatic testing of the pipeline as necessary.
- Removal of temporary erosion/sediment controls when other construction activity is completed, temporary controls are replaced by permanent controls and/or final stabilization is achieved.

### **3.0 CONTROLS**

This section describes controls used to prevent or control stormwater pollution. The COMPANY BMPs are based on the current best accepted practices endorsed by the American Gas Association, Gas Research Institute, Association of Pipeline Contractors, EPA, and USACE. Appendix A contains diagrams showing typical installation of BMPs.

The Project's EI is responsible for determining the schedule and placement of BMPs. This plan will be updated by the Contractor, EI, and/or CI to identify the location and schedule of planned or installed controls as the need for these controls is determined.

When used from this point forward in this Plan, "EI" will refer to the responsible person, whether it is the EI, CI, Health, Safety and Environmental (HSE) Coordinator, or Project Manager or other responsible person.

The following represents a typical sequence of major soil-disturbing events during the Project and the control measures that will be implemented.

- Clearing of the Project area as necessary. This may include clearing of brush and trees in the right-of-way, in areas adjacent to the right-of-way needed for soil storage, and/or in areas needed for access to particular construction sites within the Project area. The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to any soil-disturbing activities, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.
- Excavation of ditch (trackhoes or similar equipment will be used to excavate the ditch to the required depth). The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to excavation activities, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.
- Backfilling the ditch line (excavated soil will be used to cover the pipe). The Project's EI will implement such measures as temporary slope breakers, silt fencing, and hay/straw bales prior to backfilling, and will install additional BMPs for erosion and stormwater management, as needed based on existing site conditions.



- Performing cleanup and stabilization. This phase will begin after backfilling and will continue throughout the remainder of the Project's construction. This phase will include minor grading to level small areas, and revegetation. Project areas to be stabilized by vegetation will be seeded and mulched.
- The Project's EI will remove temporary erosion/sediment controls when other construction activity is completed and final stabilization is achieved.

### **3.1 EROSION AND SEDIMENT CONTROLS**

#### **3.1.1 Short- and Long-Term Goals and Criteria (as applicable)**

- (a) The construction phase erosion and sediment controls are designed to retain sediment on-site to the greatest extent practicable.
- (b) Control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates that a control has been installed and/or used inappropriately and/or incorrectly, the control shall be replaced and/or modified as needed.
- (c) If sediment escapes the Project area, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impact (e.g., fugitive sediment in street could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).
- (d) Sediment must be removed from sediment traps when capacity has been reduced by 50 percent.
- (e) Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

#### **3.1.2 Temporary Erosion Control Measures**

The following temporary erosion and sediment controls will be utilized as necessary:

Temporary Slope Breakers: Temporary slope breakers (water bars/terraces) will be installed as necessary (at the EI's discretion) diagonally across the right-of-way on slopes to control erosion by reducing and shortening the velocity, length and concentration of runoff according to the figures provided in Appendix A. These breakers will divert water to a well-vegetated area. If a vegetated area is not available, erosion control barriers will be installed to filter the runoff at the outlet of the slope breakers and off of the construction right-of-way. Silt fence, hay/straw bales, or sandbags may be used in place of temporary slope breakers at the discretion of the EI.

Natural vegetation acts as an effective filter medium for silt removal from surface runoff. Its use as a sediment barrier results in less disturbance to the land than other methods. In areas where natural vegetation is not present or does not constitute a suitable barrier, temporary sediment and/or erosion control barriers will be installed. Temporary sediment barriers, typically hay/straw bale filters or silt fences, dissipate the energy of flowing water to allow settlement of sediment from surface water runoff.

Silt Fence/Hay/Straw Bales: Silt fences and hay/straw bales will be installed in accordance with figures provided in Appendix A. Sediment barriers will be placed around delineated wetlands and waterbodies within the right-of-way during times of construction, regardless of the presence of flowing or standing water. The silt fences and/or hay/straw bales will be installed as necessary to prevent erosion and sediment laden runoff from stormwater discharges. These measures will remain in place until permanent revegetation measures have reached a minimum of 70 percent cover as compared to similar cover in an adjacent area that is undisturbed by construction. Noxious weeds within the revegetated area will not exceed the comparable percent cover to that of adjacent undisturbed areas.

For open waterbodies, floating sediment curtains will be used in place of straw bales and silt fences in waterbodies with no or low water flow when the depth of the non-flowing water exceeds the height of straw bales and the silt fencing. The floating sediment curtains will be placed along the edge of each side of the construction right-of-way to ensure sediment containment.

Silt fence and hay bale structures are also used to control erosion and sedimentation for hydrostatic test water discharges. Bale filters are effective for small rills that can be spanned by one or two bales. Bales are constructed of hay (or straw) that is securely bound to form a berm, which is held in place by two stakes driven through each bale. The first stake is driven at an angle toward the previously positioned bale, and the second stake is driven perpendicular to ground surface. The bindings of the bales will be horizontal. Filter fabric fences (silt fences) perform the same function as hay bale berms, but have the advantage of ease of installation, versatility, and light weight.

A silt fence is a geotextile fabric with fence posts spaced no more than 10 feet apart. Both silt fences and hay/straw bales will be installed according to the manufacturer's instructions where site conditions allow. Otherwise, the silt fence will be imbedded in the ground a minimum of 6 inches. Where two sections are joined, they will be overlapped a minimum of 6 inches. Accumulated sediment will be removed regularly and the silt fencing inspected to ensure the bottom of the silt fence remains imbedded in the ground. A sufficient stockpile of silt fence will be maintained on-site for emergency use.

Hay bales may be left in place. These barriers are required after the initial disturbance of the soil and are typically installed at the following locations:



- At the outlet of a temporary slope breaker when vegetation is not enough to control erosion.
- Along banks of waterbodies between the graded right-of-way and the waterbody after clearing.
- Downslope of any stockpiled soil in the vicinity of waterbodies and wetlands.
- At the base of slopes adjacent to road crossings where vegetation has been disturbed.
- At sideslope and downslope boundaries of the construction where runoff is not otherwise directed by temporary slope breakers.
- In the right-of-way at boundaries between wetlands and adjacent disturbed upland areas to prevent flow of sediment into the wetland where runoff is not otherwise directed by a temporary slope breaker
- At the edge of the right-of-way to prevent siltation of ponds, wetlands, or other waterbodies adjacent to the downslope of the right-of-way or as necessary to contain spoil and sediment within the right-of-way.
- For hydrostatic test water discharges, the water should be released directly into the silt fence/hay bale structures in conjunction with other approved velocity dissipating devices.

Temporary Trench Plugs: Temporary trench plugs prevent water diversion from waterbodies or drainage tiles into upland portions of the pipeline trench during construction and prevent silt-laden stormwater from flowing down the trench into waterbodies. The EI or CI will determine the need for and spacing of trench plugs. Otherwise, the Contractor will install hard trench plugs (undisturbed soil) on either side of waterbody crossings or drain tiles. Topsoil will not be used for trench plugs.

Temporary Spoil Storage: Waterbody crossing spoil, including upland spoil from crossing of streams up to 30 feet in width, will be stored in the construction right-of-way at least 10 feet from the water's edge or in additional temporary workspace areas. Temporary in-stream spoil storage in streams larger than 30 feet in width will be performed in accordance to any required federal permit and any federal or state statutes, rules and standards.

### **3.1.3 Stabilization Practices**

The stabilization measures of the pipeline right-of-way incorporate permanent erosion and sedimentation measures. However, in the event that final restoration cannot be implemented immediately post-construction, temporary erosion and sedimentation control measures will be employed as specified by the Contractor until the weather is suitable for final cleanup.



For pipeline construction in areas with sloping terrain, COMPANY will use permanent trench plugs for soil stabilization.

### **3.1.3.1 Upland Areas**

#### **Temporary Stabilization:**

- Temporary stabilization measures will be initiated as soon as practicable in portions of the right-of-way where construction activities have temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day is precluded by weather, stabilization measures will be initiated as soon as machinery is able to access the right-of-way. If activities resume within 21 days from when the activities ceased, stabilization measures do not have to be initiated by the 14th day following cessation of the activity. These guidelines are based on National Pollutant Discharge Elimination System (NPDES) requirements and may be modified based on state-specific PDES regulations.
- In the event that construction is completed more than 30 days before the seeding season for perennial vegetation, areas adjacent to waterbodies will be mulched with 3 tons/acre of straw, or its equivalent, to a minimum of 100 feet on either side of the waterbody. These guidelines are based on NPDES requirements and may be modified based on state-specific PDES regulations.
- Temporary sediment barriers may be removed from an area when that area is successfully revegetated (i.e., if the right-of-way surface condition is similar to adjacent undisturbed lands). These guidelines are based on NPDES requirements and may be modified based on state-specific PDES regulations.

#### **Permanent Stabilization:**

- Erosion and sedimentation control practices (installation of structures, revegetation, and maintenance practices) will be implemented to minimize the potential for soil erosion or sedimentation of streams and to restore the right-of-way and any other disturbed areas. Final grading will be completed within 10 days of construction completion (including the installation of permanent erosion control measures in the areas of steep slopes only), weather permitting. Construction debris will be removed from the right-of-way and the right-of-way will be graded so that the soil is left in proper condition for planting.
- The disturbed right-of-way will be graded to preconstruction contours, as practical, with a small crown of soil left over the ditch to compensate for settling, as approved by the CM, EI, and/or CI. Openings will be left in the completed crown to restore lateral surface drainage to preconstruction patterns.
- Where topsoil has been segregated, the topsoil will be spread back along the right-of-

way in an even layer.

- Fences that were cut and replaced by gaps during construction will be repaired to at least their equivalent state during preconstruction activities.
- Permanent slope breakers will be constructed after final grading and prior to seeding in accordance with the applicable regulations to replace temporary barriers at pedestrian, trail, road, waterbody, and wetland crossings.

### **3.1.3.2 Revegetation and Seeding**

Seed, fertilizer, and agricultural lime application will be accomplished at the following rates and mixtures unless otherwise instructed by applicable permits or land managing agency requirements:

- Seed Mixture: Seed mixes have been developed through consultation with local Natural Resources Conservation Offices
- Fertilizer: 5-19-19 at a rate of 300 pounds per acre, but could vary based on landowner/site-specific conditions.
- Agricultural Lime: at a rate of 2,000 pounds per acre, but could vary based on landowner/site-specific conditions.
- Final revegetation standards that will be used by COMPANY for stabilization of the right-of-way will be determined through discussions with the individual state and local agencies and through the permit process.
- The right-of-way will be seeded after final grading in accordance with recommended seeding dates, weather and soil conditions permitting.
- Turf, ornamental shrubs, and other landscaping materials will be restored in accordance with landowner agreements. Selection is based on adaptation of plants to the soils and climate, ease of establishment, suitability for specific use, longevity or ability to re-seed, maintenance required, aesthetic values, and landowner agreement. Personnel familiar with local horticultural and turf establishment practices must perform the restoration work.
- Where broadcast or hydro seeding is to be done, the seedbed will be prepared as necessary to ensure sites for seeds to lodge and germinate.
- Where hand broadcast seeding is used, the seed will be applied at one-half the rate in each of two separate passes.



- The seedbed will be prepared to a depth of 3 to 4 inches using appropriate equipment to provide a firm, smooth seedbed that is free of debris.
- The Project area should be seeded as deemed appropriate by the CM and/or EI. If seeding cannot be done soon after final grading, temporary erosion and sediment controls will be used and seeding of permanent cover will be done at the beginning of the next seeding season. Meanwhile, temporary stabilization measures will be implemented as appropriate.
- Slopes steeper than 3:1 will be seeded immediately after final grading in accordance with recommended seeding dates, weather permitting.
- Seed will be purchased in accordance with the Pure Live Seed (PLS) specifications for seed mixes and used within 12 months of testing.
- Legume seed will be treated with an inoculant specific to the species. The manufacturer's recommended inoculant rates will be used.
- The seed will be uniformly applied and covered 0.5 to 1 inch deep, depending on seed size. A seed drill equipped with cultipacker is preferred, but broadcast or hydro seeding can be used at double the recommended seeding rates. Where broadcast seeding is used, the seedbed will be firmed with a cultipacker, roller, or similar method after seeding.
- Other alternative seed mixes specifically requested by the landowner or land-managing agency may be used.
- Areas that are seeded after the recommended seeding date should be mulched if permitted.

#### **3.1.3.3 Wetland Restoration**

- COMPANY's approach to wetland mitigation and restoration involves a combination of impact minimization during construction, substrate and hydrology restoration, and vegetation establishment involving successful natural processes as a key component.
- The construction workspace for the Project will be designed to limit impacts to wetlands.
- During the restoration phase, segregated topsoil will be replaced over the trench line and wetland contours and drainage patterns will be restored to approximate original condition. Surface rocks and boulders that had been windrowed during the construction phase will be distributed in a natural pre-construction configuration in the temporary work

areas. Following restoration of the substrate, wetlands will typically be seeded with annual ryegrass or other seed mixture as directed by regulatory agencies.

#### **3.1.3.4 Riparian Areas**

Riparian areas are defined as "on or pertaining to the bank of a natural course of water" (stream, pond, lake, or wetland). The EPA defines "riparian areas" as areas adjacent to streams and lakes where the high water table creates distinct soil and vegetative characteristics from the adjacent uplands.

- Following installation of the pipeline, stream banks and riparian areas will be re-contoured and stabilized. Banks will typically be stabilized with an herbaceous mixture and erosion control fabric such as jute netting. Rock riprap may be used to stabilize particularly erosive or unstable areas at the recommendation/approval of the state agencies and by the USACE.

#### **3.1.4 Other Surface Applications**

Other surface applications will be applied as outlined below unless otherwise instructed by applicable permits or land managing agency requirements:

- (a) Mulch: After seeding, mulch may be applied as determined necessary by the EI at a rate of approximately 2 tons/acre on the entire right-of-way except on wetlands, lawns, agricultural crop areas, and areas where hydro-mulch is used. Mulching before seeding may be done if construction or restoration activity is interrupted for an extended period, such as when seeding cannot be completed due to seeding period restrictions. Except for site-specific locations that may be identified during construction, mulch before seeding if final cleanup (including final grading and installation of permanent erosion controls in the areas of steep slopes) is not completed in an area within approximately 10 days after construction completion.

If mulching occurs before seeding, the Contractor shall increase mulch application on slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre. Up to 1 ton/acre of wood chips may be added to mulch if areas are top-dressed with 11 pounds/acre available nitrogen (at least 50 percent of which is slow release).

If a mulch blower is used, the strands will not be shredded to less than 8 inches in length to allow anchoring. The mulch will be anchored immediately after placement to minimize loss by wind and water. When anchoring by mechanical means, the Contractor shall use a mulch-anchoring tool to properly crimp the mulch to a depth of 2 to 3 inches.

When anchoring with liquid mulch binders, the Contractor shall use the rates recommended by the manufacturer. The Contractor shall not use liquid mulch binders



within 100 feet of wetlands or waterbodies.

- (b) **Matting/Netting:** Matting or netting consists of jute, wood excelsior, or similar materials, and will be installed by the Contractor to anchor mulch and stabilize the surface of the soil during the critical period of vegetative establishment, where directed by the EI.

Matting or netting will be applied to critical, sensitive areas (e.g., steep slopes, banks of waterbodies, bar ditches) as specified by the EI. On waterbody banks, the matting or netting will be installed at the time of the final bank re-contouring. In the event that erosion control fabric is not readily available, COMPANY will temporarily use mulch anchored via crimping (or some other means) or hydro mulch until the erosion control fabric material becomes available. Matting or netting will be anchored with pegs or staples as recommended by the manufacturer.

### **3.2 STORMWATER MANAGEMENT**

Stormwater management will be conducted through stormwater flow attenuation, velocity dissipation devices, and water filtration. COMPANY's construction procedures describe the criteria for placement and use of stormwater control methods/devices. The EI will have the authority to determine the location of these controls.

If herbicides or pesticides are to be used for vegetation maintenance, the applications of those substances will be in accordance with applicable landowner and land management or state agency specifications. COMPANY will not use herbicides or pesticides in or within 100 feet of any waterbody except as specified by the appropriate land management or state agency.

### **3.3 OTHER CONTROLS**

#### **3.3.1 Waste Materials**

- (a) Trash, litter, and debris will be collected for off-site disposal; it will not be discarded along the right-of-way. Refuse will be disposed of according to state and local regulations.
- (b) Solid waste that contains (or at any time contained) oil, grease, solvents, or other petroleum products, falls within the scope of the oil and hazardous substances control, cleanup and disposal procedures of COMPANY's Spill Prevention Control and Countermeasures (SPCC) plan. This material shall be segregated for handling and disposal as hazardous waste under the provisions of the plan.

#### **3.3.2 Offsite Vehicle Tracking**

- (a) A stabilized construction entrance will be used, if appropriate, to reduce vehicle tracking of soil and sediments. Access to the right-of-way will normally be from existing public



roads. Attempts will be made to locate roadway crossings/access points to ensure that safe and accessible conditions exist throughout the construction phase. Use of 50-foot-long crushed stone or mat access pads, sweeping, culvert installation, and other forms of rutting protection may be used subject to local permit conditions. Periodic sweeping and scraping will remove sediment tracked onto public roads. If crushed stone access pads are used in active agricultural areas, the stone will be placed on a synthetic fabric to facilitate later removal.

- (b) The stabilized construction entrances will be installed before clearing and grading. Once other construction activities permanently cease in an area, that area will be stabilized by reseeding and/or mulching as needed. Once revegetation has been judged successful, temporary erosion/sediment control structures will be removed.

#### **4.0 MAINTENANCE**

Erosion and sediment control measures and other protective measures identified in this SWPPP must be maintained in effective operating condition. If site inspections required by Section 5 of this SWPPP identify erosion control devices that are not operating properly, maintenance shall be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of erosion controls. If maintenance prior to the next anticipated storm event is impractical, maintenance must be scheduled and accomplished as soon as practicable. Temporary sediment barriers will remain in place until permanent revegetation measures have been judged successful.

#### **5.0 INSPECTIONS**

The EI will inspect disturbed areas of the Project area that have not been finally stabilized (including areas used for storage of materials that are exposed to precipitation, staging areas, temporary contractor yards, access roads, structural control measures, and locations where vehicles enter or exit the site). The Project area should be considered stabilized when construction activity ceases and a uniform vegetative cover (see below) has been established.

Areas that are not revegetated should be considered to have achieved final stabilization when they have a permanent cover that will prevent erosion of soil by wind or water. At that time, activity under this plan, including inspections, will cease. Inspections shall be conducted as follows and/or in accordance with the applicable National or State-Specific Pollution Discharge Elimination System guidelines:

- Conduct **daily inspections and following any storm event of 0.5 inch of precipitation or greater**, except those portions of the site that have been finally or temporarily stabilized, for which inspections will be conducted at least weekly.

Inspections should continue until disturbed areas are completely stabilized (for areas to be revegetated, this means that perennial vegetation cover has reached a uniform cover of at least 70 percent of the preconstruction cover).

- **Inspect control measures** daily in areas of active construction or equipment operation and on a weekly basis in areas with no construction. Inspect within 24 hours of the end of a storm event that is 0.5 inch of rainfall or greater. Control measures will be maintained in good working order; if repair is necessary, it should be initiated within 24 hours of report.
- **Inspect disturbed areas** for evidence of or potential for pollutants entering the drainage system. Sediment from silt fences should be removed regularly and the fence inspected to ensure that the bottom of the fence remains imbedded in ground. Damaged hay/straw bales will be replaced with new bales as necessary.
- **Inspect material storage areas** where materials are exposed to precipitation for evidence of potential for pollutants entering the drainage system.
- **Inspect vehicle entrances** for evidence of off-site sediment tracking.
- **Inspect discharge points**, if accessible, to determine if erosion control measures are effective in preventing significant impacts to receiving waters. If these points are inaccessible, inspectors should inspect nearby downstream locations.
- **Inspect vegetation** after the first and second growing season after seeding to determine the success of revegetation. Wetland revegetation is considered successful if at least 80 percent of the total cover is native species and the level of diversity of the native species present after construction is at least 50 percent of the level originally found in the wetland. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands.
- **Complete an inspection report of each inspection.** Inspection forms and form instructions provided in Appendix C provide additional guidance.

See Section 7 for additional detail on requirements for construction activity and inspection documentation and record keeping.

## **6.0 PLAN MODIFICATION**

This plan may need to be modified and/or updated based on information and experience gathered during actual construction activities (e.g., include or modify BMPs designed to correct problems, etc.). If changes to the design, construction, or maintenance that can have significant



effect on the potential for discharging pollutants in stormwater at the site occur, this plan should be modified accordingly by the Contractor, EI, and/or CI. In addition, if the plan proves to be ineffective in controlling pollutants, any necessary modifications to the application of the practices presented in this plan should be made by the Contractor, EI, and/or CI in order to prevent the discharge of pollutants into stormwater.

## **7.0 REQUIRED REPORTS, DOCUMENTATION, AND RECORDKEEPING**

### **7.1 RECORDS RETENTION**

All -related documents will be retained as part of the SWPPP for at least three years from the date that the site is finally stabilized as required by COMPANY's document retention policies. The following documentation will be kept on file at the construction site:

- A copy of this SWPPP and referenced attachment(s)
- Inspection reports
- Log of construction and BMP installation/maintenance activities and/or construction alignment sheets/construction plans showing the placement of BMPs.

### **7.2 INSPECTION REPORTS**

A separate report will be developed for each inspection. Inspection reports will identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report will contain a certification that the facility is in compliance with this SWPPP. In addition, inspection reports should:

- Summarize the scope of the inspection.
- Provide the name(s), title(s), and qualifications of personnel making the inspection.
- Indicate the date(s) of the inspection.
- Provide weather information and a description of any discharges occurring at the time of the inspection.
- Provide weather information for the period since the last inspection (or since commencement of construction activity if first inspection), including:
  - A best-estimate of the beginning of each storm event
  - Duration of each storm event
  - Approximate amount of rainfall for each storm event (in inches)

- If any discharges occurred
- Indicate the location(s) of discharges of sediment or other pollutants from the site.
- Indicate the location(s) of BMPs that need to be maintained.
- Indicate the location(s) of BMPs that failed to operate as designed or proved inadequate for that particular location and plans for correction of the problem (including implementation dates of corrective action).
- Indicate location(s) where additional BMPs are needed that did not exist at the time of inspection.

### **7.3 LOG OF CONSTRUCTION AND BMP INSTALLATION AND MAINTENANCE ACTIVITIES**

In addition to inspection and maintenance reports, keep a record of construction activity on the site with this SWPPP. In particular, keep record of the following:

- The dates when major grading activities occur in a particular area.
- The date when construction activities cease in an area, temporarily or permanently.
- The date when an area is stabilized, temporarily or permanently.
- Erosion control maintenance activities.

## **8.0 SWPPP CERTIFICATION**

### **8.1 COMPANY'S CERTIFICATION**

I certify under penalty of law that this document and its appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Print  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

## 8.2 CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Print  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Print  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

I certify under penalty of law that I understand the terms and conditions of the governing PDES permit that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Print  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_





**APPENDIX A**  
**BEST MANAGEMENT PRACTICES FIGURES**

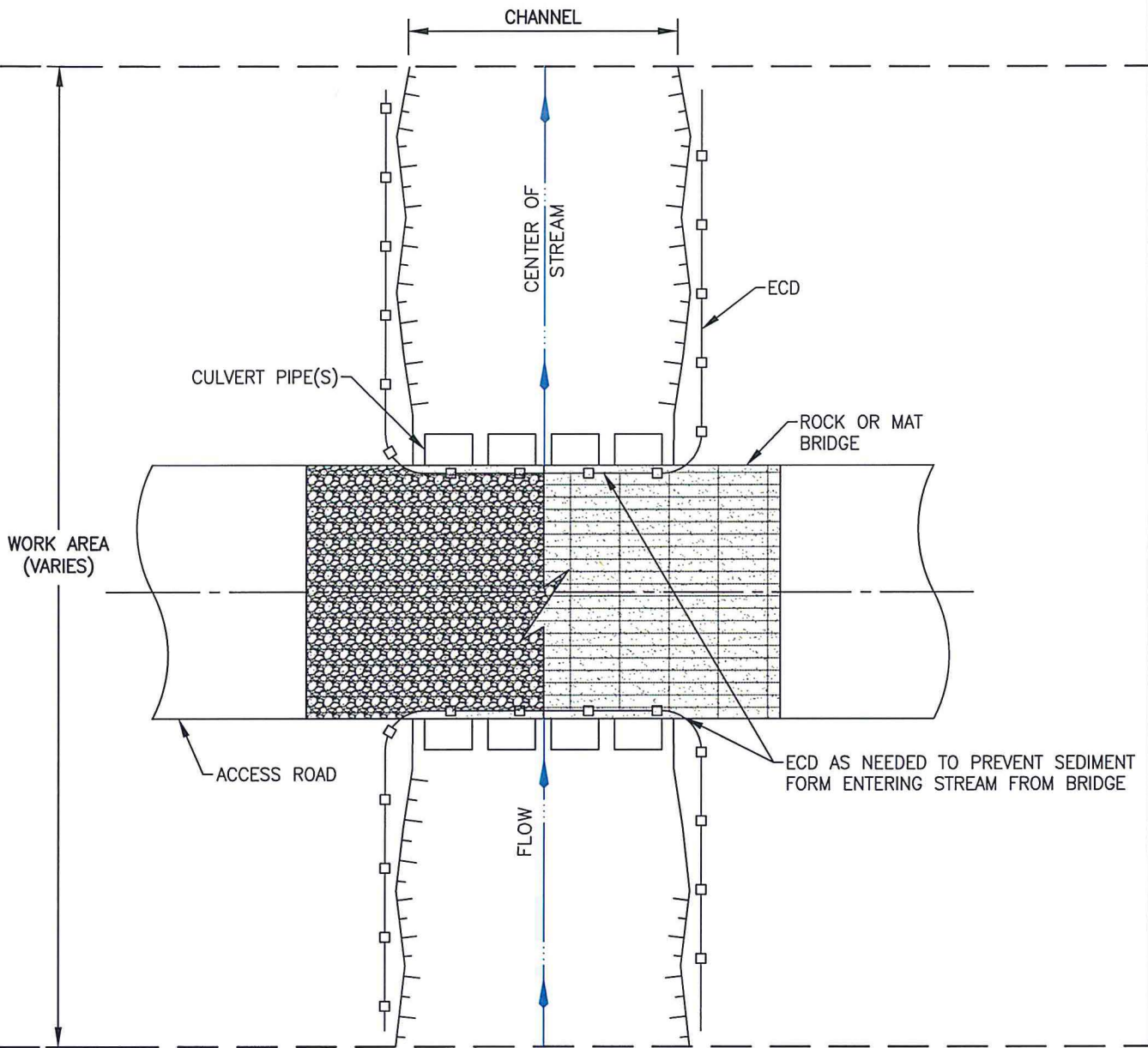
**SHEET  
NUMBER**

**SHEET TITLE**

P12-0-IA	DRAWING INDEX
P12-01-IA	ROCK OR MAT BRIDGE WITH CULVERTS
P12-02-IA	EROSION CONTROL STRAW BALE SEDIMENT BARRIER
P12-05-IA	WOVEN WIRE & BARBED WIRE FENCE REPLACEMENT FENCE DETAIL
P12-06-IA	PROPOSED PIPELINE TEMPORARY FLUME CROSSING
P12-06 A-IA	PROPOSED PIPELINE DAM AND PUMP CROSSING
P12-07-IA	STRAW BALE FILTER
P12-08-IA	EROSION CONTROL STRAW BALE SEDIMENT BARRIER
P12-09-IA	EROSION CONTROL RIPRAP AT WATERBODY BANKS
P12-10-IA	TEMPORARY SLOPE BREAKERS SLOPE DIRECTION WITH SLOPE
P12-11-IA	SILT FENCE
P12-12-IA	EROSION CONTROL SILT FENCE SEDIMENT BARRIER
P12-13-IA	EROSION CONTROL STRAW BALE AND SILT FENCE
P12-16-IA	WATERBODY CROSSING HORIZONTAL DIRECTIONAL DRILL
P12-18-IA	WATERBODY BRIDGE FLEXIFLOAT TYPE (FF)
P12-19-IA	WATERBODY BRIDGE TIMBER MAT (TM)
P12-22-IA	PAVED ROAD CROSSING CONTROL DETAILS
P12-25-IA	PERMANENT WATER BARS OR TERRACES
P12-26-IA	PERMANENT TRENCH BREAKERS
P12-27-IA	SILT REINFORCED FENCE INSTALLATION
P12-29-IA	ENERGY DISSIPATOR
P12-31-IA	SPLASH PUP FOR TEST WATER DISCHARGE
P12-32-IA	GEOTEXTILE FILTER BAG FOR DEWATERING
P12-33-IA	STRAW BALE DEWATERING STRUCTURE (LARGE VOLUME)
P12-34-IA	SOIL CONTAINMENT BERM FOR WATERBODY TRENCH SPOIL
P12-35-IA	SLOPE BREAKER
P12-36-IA	SLOPE BREAKER
P12-38-IA	CLEARSPAN BRIDGE WITH RAILCAR
P12-54-IA	AGRICULTURAL- FULL TOP SOIL SEGREGATION W/DRAIN TILES
P12-55-IA	UPLAND CONSTRUCTION FULL TOP SOIL SEGREGATION
P12-56-IA	UPLAND CONSTRUCTION DITCH LINE ONLY TOP SOIL SEGREGATION
P12-57-IA	HEAVILY FORESTED LANDS, WETLANDS AND UPLAND
P12-58-IA	SCRUB SHRUB SATURATED WETLANDS
P12-59-IA	EROSION CONTROL BLANKET INSTALLATION DETAILS

				 <b>DAKOTA ACCESS, LLC</b>			
				<b>TYPICAL DRAWING INDEX</b>			
0	01/13/18	MR	ISSUED FOR USE	RAL			
REV.	DATE	BY	DESCRIPTION	CHK.			
PROJECT NO.							
 <b>WOOD GROUP MUSTANG, INC.</b>					DRAWN BY: JEG      DATE: 12/06/14      DWG. NO.		
PROJECT NO: 10395700					CHECKED BY: JEG      DATE: 12/06/14		
					SCALE: N.T.S.      APP.:		
					<b>P12-0-IA</b>		
					REV. <b>0</b>		

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**NOTE:**

1. USE AS MANY CULVERT PIPE(S) AS REQUIRED TO ENSURE NORMAL STREAM FLOW IS NOT OBSTRUCTED BY ROCK OR MAT BRIDGE.

**ECD:**

EROSION CONTROL DEVICE  
(SILT FENCE, STRAW BALES OR SANDBAGS).

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



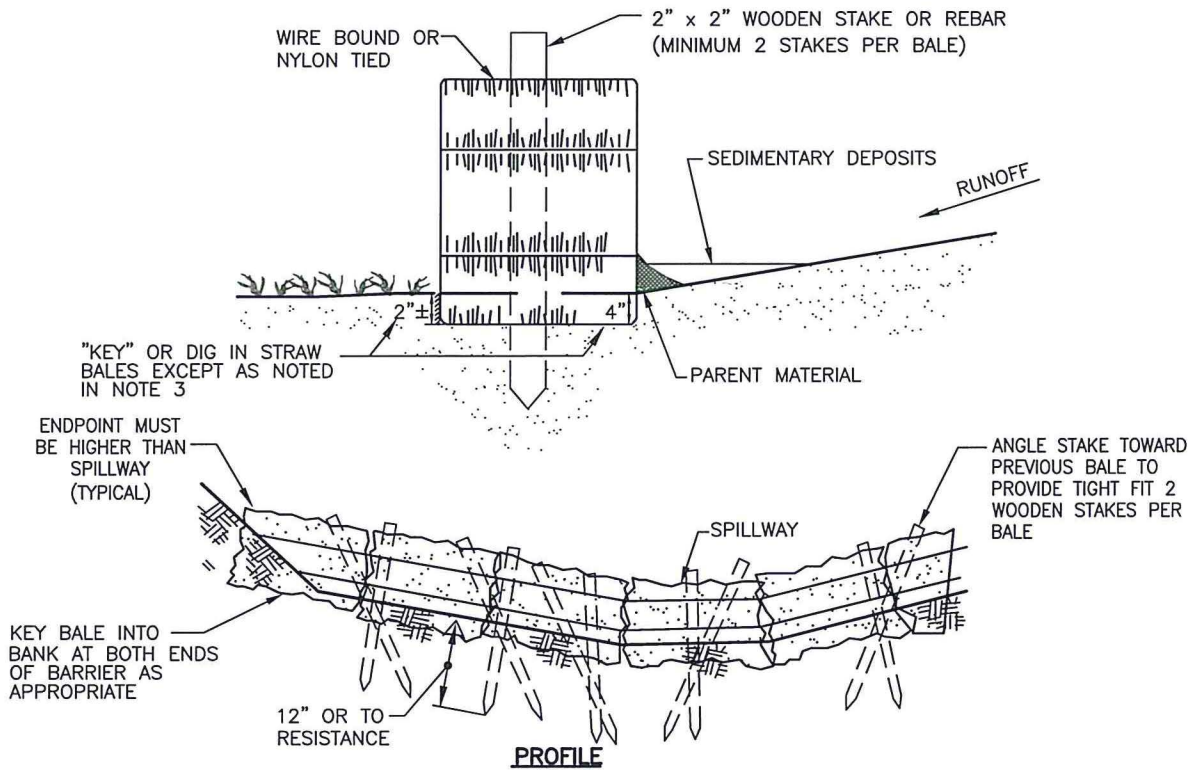
DAKOTA ACCESS, LLC

**TYPICAL  
ROCK OR MAT BRIDGE  
WITH CULVERTS**

DRAWN BY: JEG	DATE: 12/06/14	DWG. NO.	REV.
CHECKED BY: JEG	DATE: 12/06/14	<b>P12-01-1A</b>	<b>0</b>
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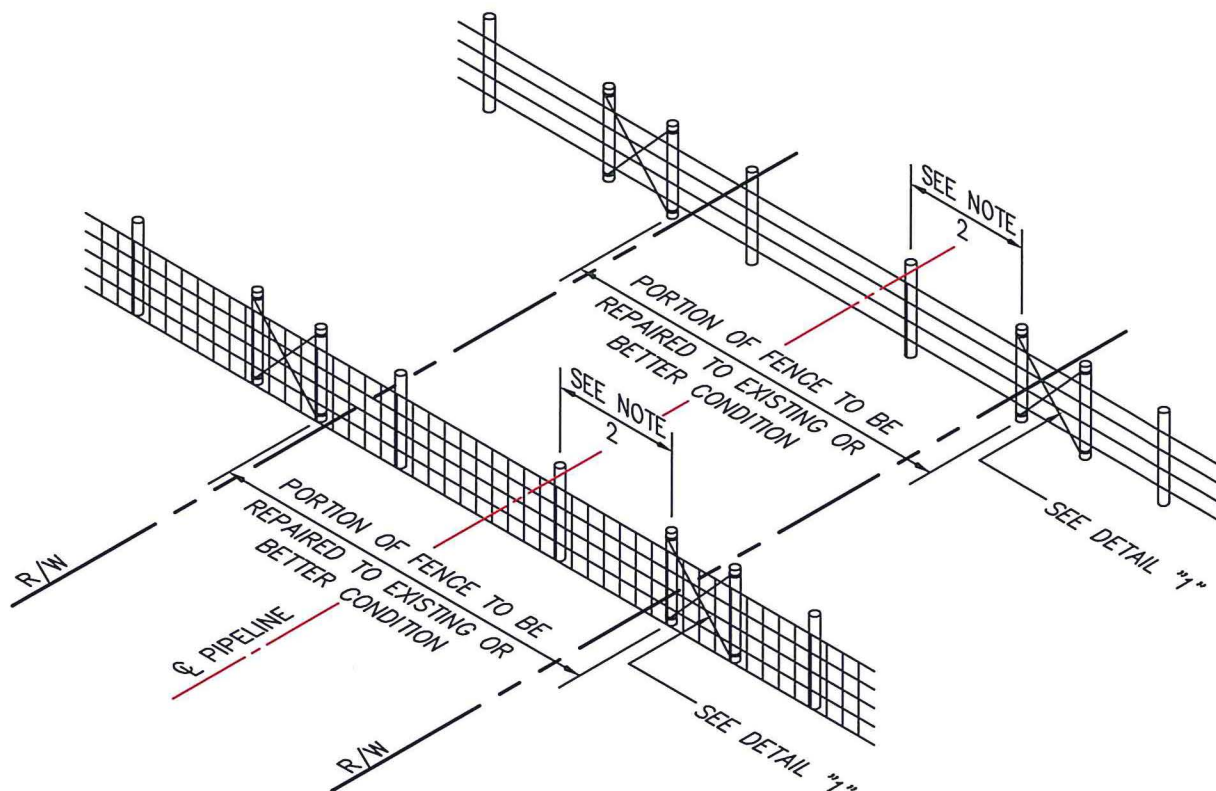
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#### NOTES:

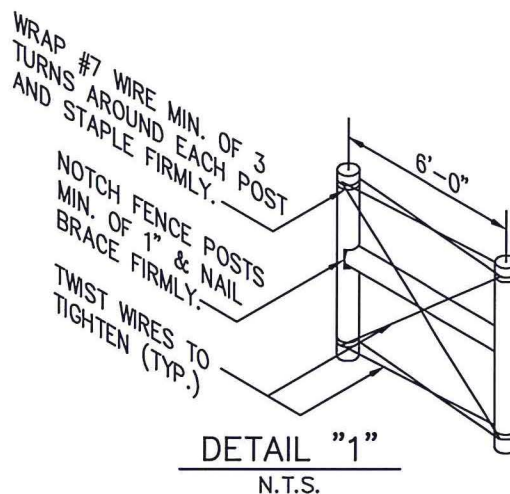
- STRAW BALE SEDIMENT BARRIERS MAY BE INSTALLED AT THE FOLLOWING LOCATIONS:
  - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND STREAMS;
  - THE DOWNSLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE-MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY;
  - BETWEEN TOPSOIL/SPOIL STOCKPILES AND STREAMS OR WETLANDS AS NEEDED;
  - ALONG R.O.W. BOUNDARIES IN WETLAND CONSTRUCTION;
  - ACROSS CONSTRUCTION R.O.W. AT ALL WATERBODY CROSSINGS;
  - AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN;
  - AS DIRECTED BY THE INSPECTOR.
- STRAW BALE SEDIMENT BARRIERS SHALL CONSIST OF A ROW OF STRAW BALES, PLACED ON THE FIBER-CUT EDGE (TIES NOT IN CONTACT WITH THE GROUND). BALES SHALL BE TIGHTLY ABUTTED TO ONE ANOTHER. THE BARRIER SHALL BE ONE BALE HIGH. ONLY CERTIFIED "NOXIOUS WEED-FREE" STRAW SHALL BE USED.
- ENTRENCH ("KEY") STRAW BALES INTO THE GROUND TO A DEPTH OF 2" EXCEPT IN FROZEN, SATURATED, OR EXTREMELY ROCKY SOILS. PLACE PARENT MATERIAL ON UPSTREAM SIDE OF STRAW BALES TO PREVENT UNDERMINING.
- WALK ON STRAW BALES TO INSURE ADEQUATE BALE-TO-SOIL CONTACT.
- ANCHOR STRAW BALES SECURELY IN PLACE WITH TWO WOODEN OR STEEL REBAR STAKES DRIVEN THROUGH THE TOPS OF THE BALES. THE STAKES SHALL PENETRATE THE GROUND A DISTANCE OF 12" UNLESS ROCK OR AN IMPERMEABLE LAYER IS ENCOUNTERED:
  - THE FIRST, CENTER AND END BALES OF THE BARRIER SHALL HAVE STAKES DRIVEN VERTICALLY THROUGH THE BALE;
  - BALES, OTHER THAN THOSE LOCATED AT THE ENDS OR CENTER OF THE BARRIER, SHALL HAVE THE FIRST STAKE DRIVEN THROUGH THE TOP OF THE BALE AT AN ANGLE SO THAT THE STAKE PASSES THROUGH THE PREVIOUSLY PLACED BALE, IN ORDER TO PROVIDE TIGHT CONTACT BETWEEN BALES. THE SECOND STAKE SHALL BE DRIVEN VERTICALLY THROUGH THE TOP OF THE BALE.

				 DAKOTA ACCESS, LLC			
				TYPICAL			
				EROSION CONTROL			
				STRAW BALE SEDIMENT BARRIER			
0	01/13/16	MR	ISSUED FOR USE	RAL	DRAWN BY: DAH		DATE: 08/05/14
REV.	DATE	BY	DESCRIPTION	CHK.	CHECKED BY: DAH		DATE: 08/05/14
PROJECT NO.				SCALE: N.T.S.		APP.:	
 <b>WOOD GROUP MUSTANG, INC.</b> PROJECT NO: 10395700				DWG. NO.		REV.	
				P12-02-IA		0	



#### NOTES:

1. ALL NEW FENCE POSTS MUST EXTEND A MINIMUM OF 3' BELOW GRADE & HAVE A HEIGHT EQUAL TO EXISTING POSTS.
2. POST TO BE A MAXIMUM OF 10' CENTER TO CENTER.
3. POST AT EACH END OF REPAIRED SECTION TO BE H BRACED TO THE ADJOINING POSTS.
4. ALL FENCES SHALL BE REPAIRED WITH NEW WIRE OF LIKE MESH AS EXISTING FENCE, OR WIRE MATCHING EXISTING GAUGE AND SPECIFICATIONS & OF THE SAME NUMBER OF STRANDS & NUMBER OF WIRES EXISTING ON THE FENCE PRIOR TO CONSTRUCTION OF THE PIPELINE.
5. ALL POST ON PERMANENT RIGHT OF WAY TO BE PAINTED PER COMPANY PAINTING SPECIFICATIONS.
6. RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL CONDITION
7. CATTLE AND LIVESTOCK MAY BE MOVED TO ANOTHER PASTURE OR TEMPORARY FENCED AREA DURING RESTORATION PERIOD PER LAND OWNERS AGREEMENT.
8. INSTALL 16' GATE PER DAPL SPECIFICATION UNLESS LAND OWNER AGREEMENT STATES OTHERWISE.
9. REMOVE TEMPORARY WOODEN H-BRACES AFTER PERMANENT METAL H-BRACES ARE INSTALLED.



0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



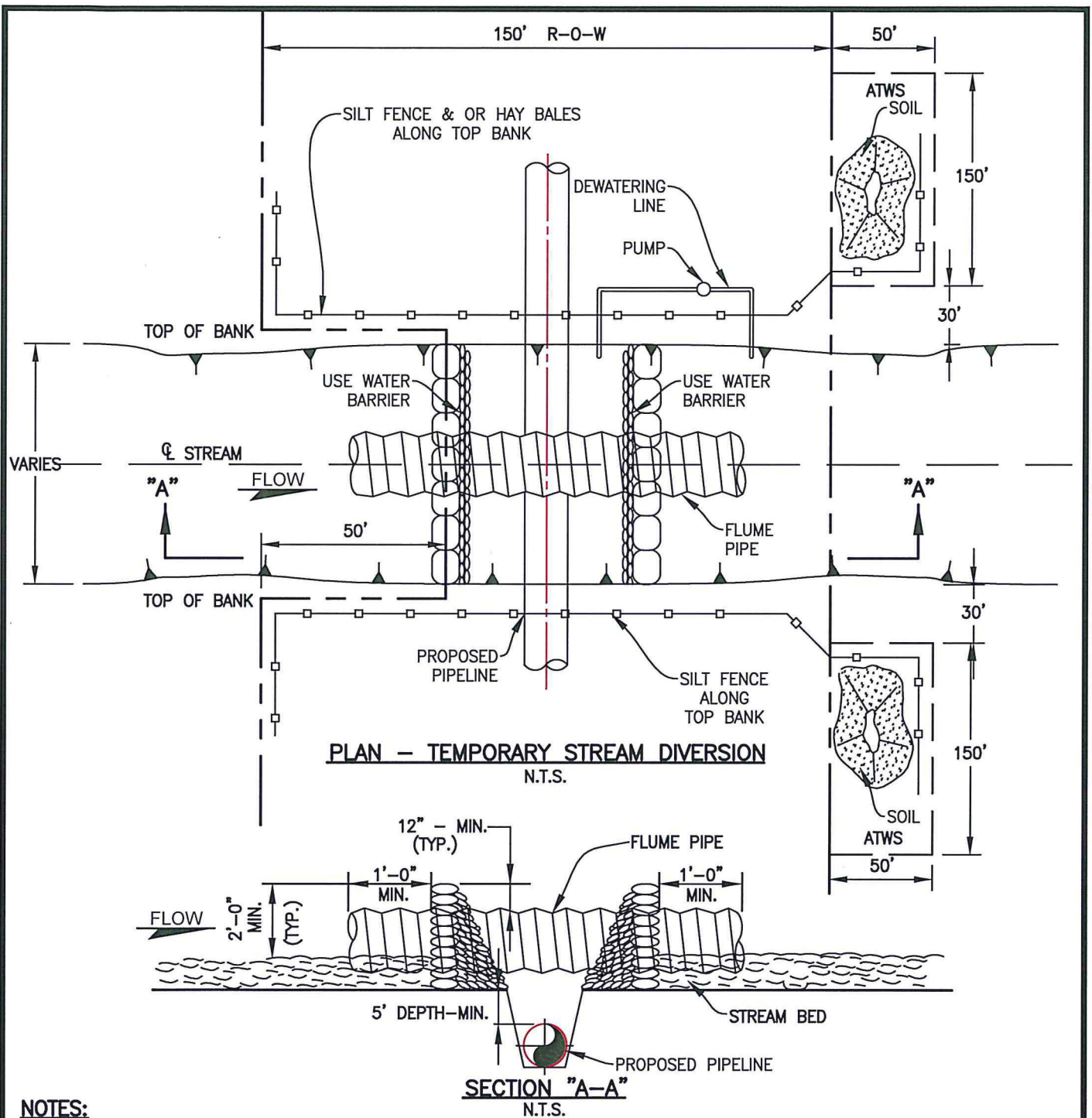
DAKOTA ACCESS, LLC

#### TYPICAL WOVEN WIRE & BARBED WIRE FENCE REPLACEMENT FENCE DETAIL

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CHECKED BY: DAH	DATE: 08/07/14	P12-05-IA	0
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**NOTES:**

1. CONTRACTOR SHALL MAINTAIN STREAM FLOW AT ALL TIMES.
2. ALL WATER BARRIERS SHALL BE REMOVED AFTER INSTALLATION OF CROSSING AND STREAM BED AND BANKS SHALL BE RESTORED TO ORIGINAL SHAPE AND ELEVATION.
3. SIZE OF FLUME PIPE MUST BE SUFFICIENT FOR FLOW.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700

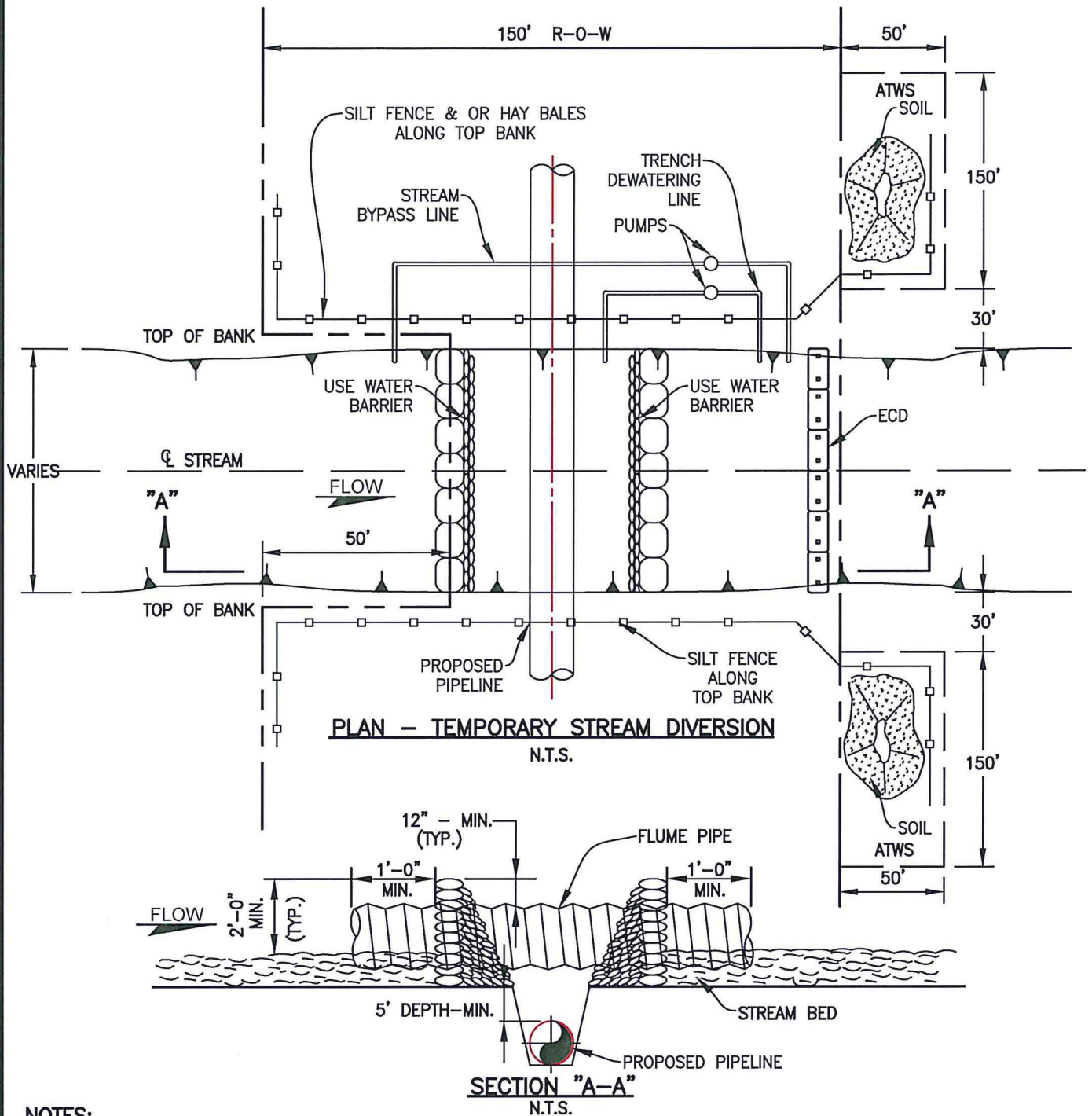


DAKOTA ACCESS, LLC

**TYPICAL  
PROPOSED PIPELINE  
TEMPORARY FLUME CROSSING**

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CHECKED BY: DAH	DATE: 08/07/14	P12-06-IA	0
SCALE: N.T.S.	APP.:		

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**NOTES:**

1. CONTRACTOR SHALL MAINTAIN STREAM FLOW AT ALL TIMES.
2. ALL WATER BARRIERS SHALL BE REMOVED AFTER INSTALLATION OF CROSSING AND STREAM BED AND BANKS SHALL BE RESTORED TO ORIGINAL SHAPE AND ELEVATION.
3. SIZE OF PUMPS & STREAM BYPASS LINE MUST BE SUFFICIENT FOR FLOW.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700

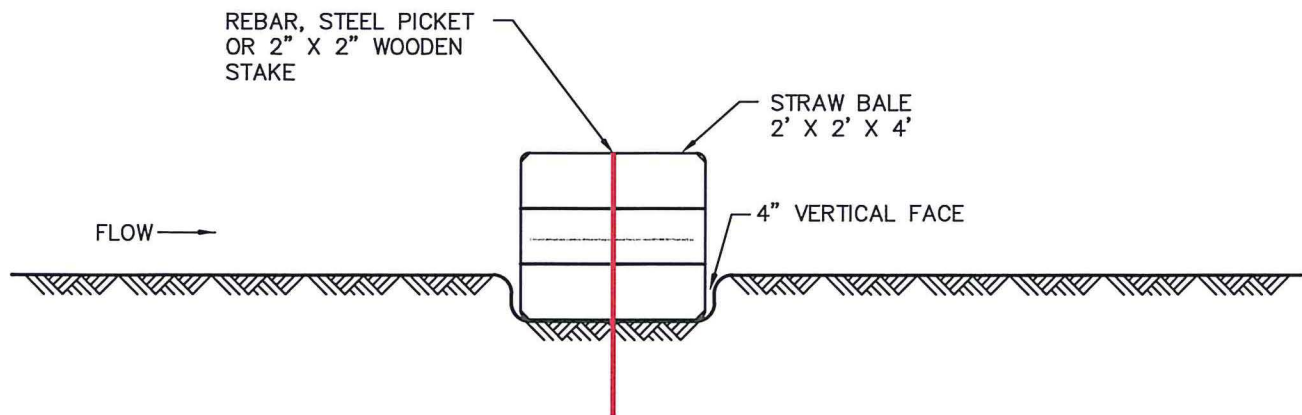


DAKOTA ACCESS, LLC

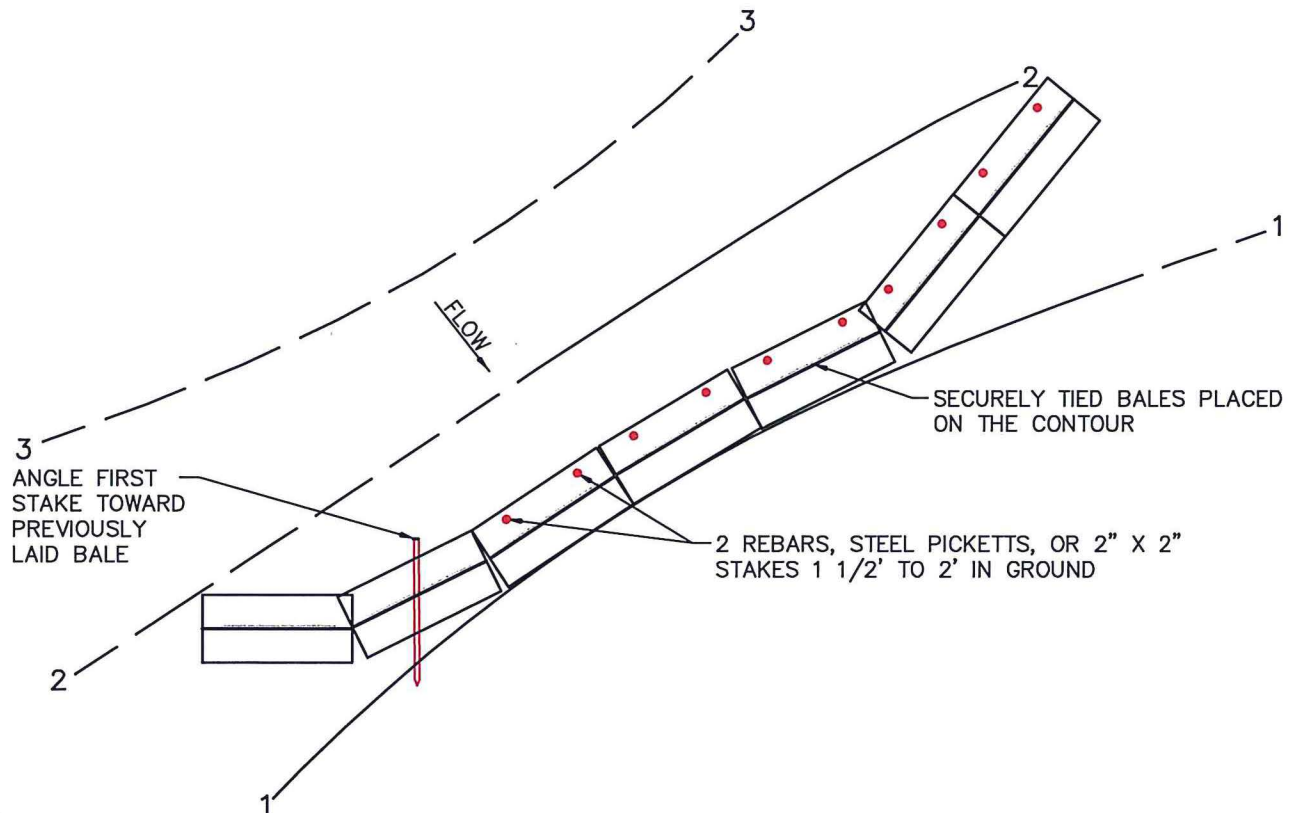
**TYPICAL  
PROPOSED PIPELINE  
DAM AND PUMP CROSSING**

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CHECKED BY: DAH	DATE: 08/07/14	P12-06 A-IA	0
SCALE: N.T.S.	APP.:		





**EMBEDDING DETAIL**



**NOTE:**

1. ALL CONTROL DEVICES SIMILAR TO SILT FENCE OR FIBER ROLLS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



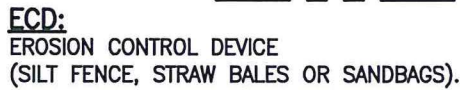
DAKOTA ACCESS, LLC

**TYPICAL  
STRAW BALE FILTER**

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|      |          |    |                |      |
| O    | 01/13/16 | MR | ISSUED FOR USE | RAL  |
| REV. | DATE     | BY | DESCRIPTION    | CHK. |

PROJECT NO: 10395700

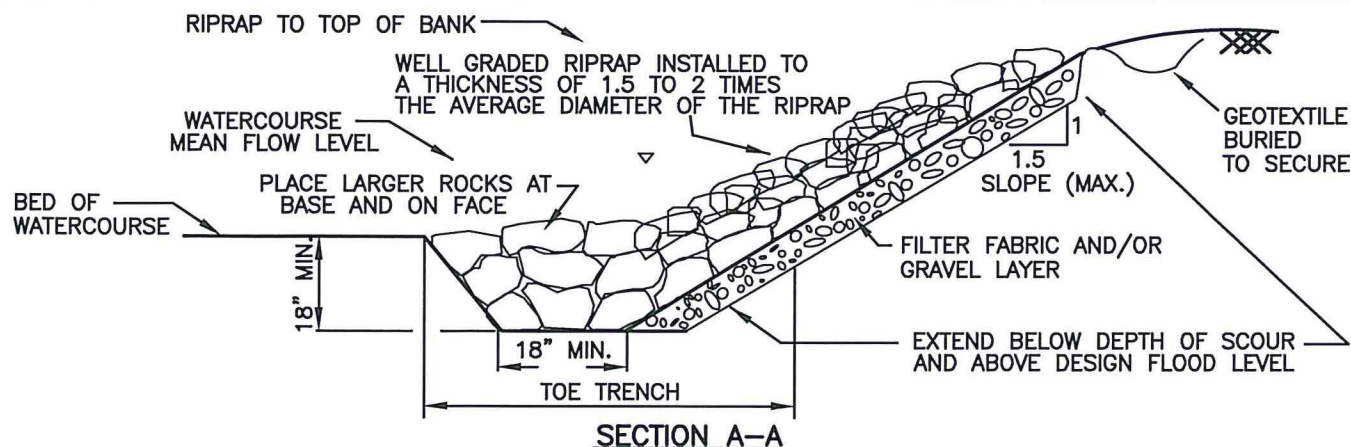


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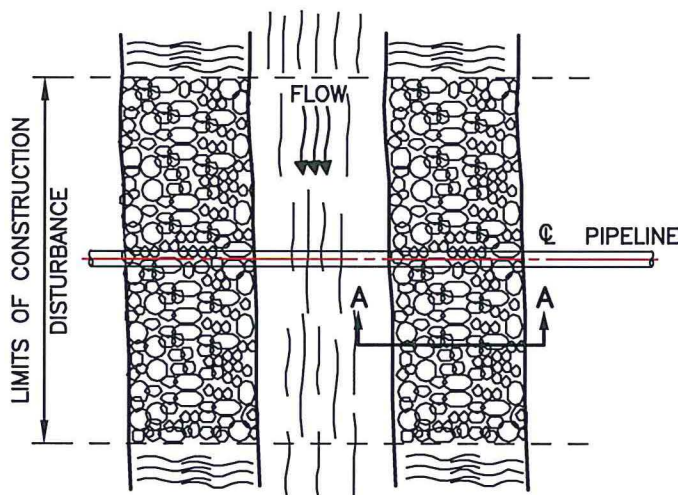
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SECTION A-A



PLAN VIEW

Grade I		Grade II		Grade III	
Size (inches)	Percent Smaller	Size (inches)	Percent Smaller	Size (inches)	Percent Smaller
20	100	28	100	36	100
18	70-90	22	30-80	29	55-85
15	40-60	16	20-50	24	35-50
10	0-10	10	0-5	10	10-15
6	0-2	6	0-2	6	0-2

### NOTES:

1. STREAM BANK RIPRAP STRUCTURES SHALL CONSIST OF A LAYER OF STONE UNDERLAIN WITH APPROVED GEOTEXTILE FILTER FABRIC OR A GRAVEL FILTER BLANKET DESIGNED TO PROTECT AND STABILIZE AREAS PRONE TO EROSION.
2. GRAVEL FILTER BLANKET SHALL MEET THE FOLLOWING SPECIFICATIONS:
  - HAVE A PERMEABILITY GREATER THAN THAT OF THE SUBGRADE SOIL;
  - IF A WELL-GRADED GRAVEL OR SAND-GRAVEL LAYER IS USED, THE LAYER SHALL BE A MINIMUM OF 6" THICK AND SPREAD IN A UNIFORM LAYER OVER THE SUBGRADE;
  - IF WATER TURBULENCE COULD RESULT IN EROSION OF BANK MATERIAL BETWEEN LARGE ROCKS (AS DETERMINED BY THE REPRESENTATIVE ENVIRONMENTAL INSPECTOR), A GEOTEXTILE FILTER FABRIC SHALL BE USED BETWEEN THE GRAVEL LAYER AND THE RIPRAP.
3. THE GEOTEXTILE FILTER FABRIC SHALL BE PERMATAX 4000 SERIES OR AN APPROVED EQUIVALENT MEETING THE FOLLOWING SPECIFICATIONS:
  - (A) BE COMMERCIAL QUALITY NONWOVEN FABRIC DESIGNED FOR RIPRAP UNDERLAYMENT;
  - (B) BE A MINIMUM OF 20 MILS IN THICKNESS;
  - (C) HAVE A GRAB STRENGTH BETWEEN 90 TO 120 POUNDS;
  - (D) HAVE A GREATER THAN 4% OPEN AREA (U.S. STANDARD SIEVE NUMBER 100 (0.15 MM.);
  - (E) HAVE A DENSITY OF 8 oz. PER SQUARE YARD.
4. THE USE OF RIPRAP SHALL BE LIMITED TO AREAS WHERE FLOWING CONDITIONS PREVENT EFFECTIVE VEGETATIVE STABILIZATION TECHNIQUES.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

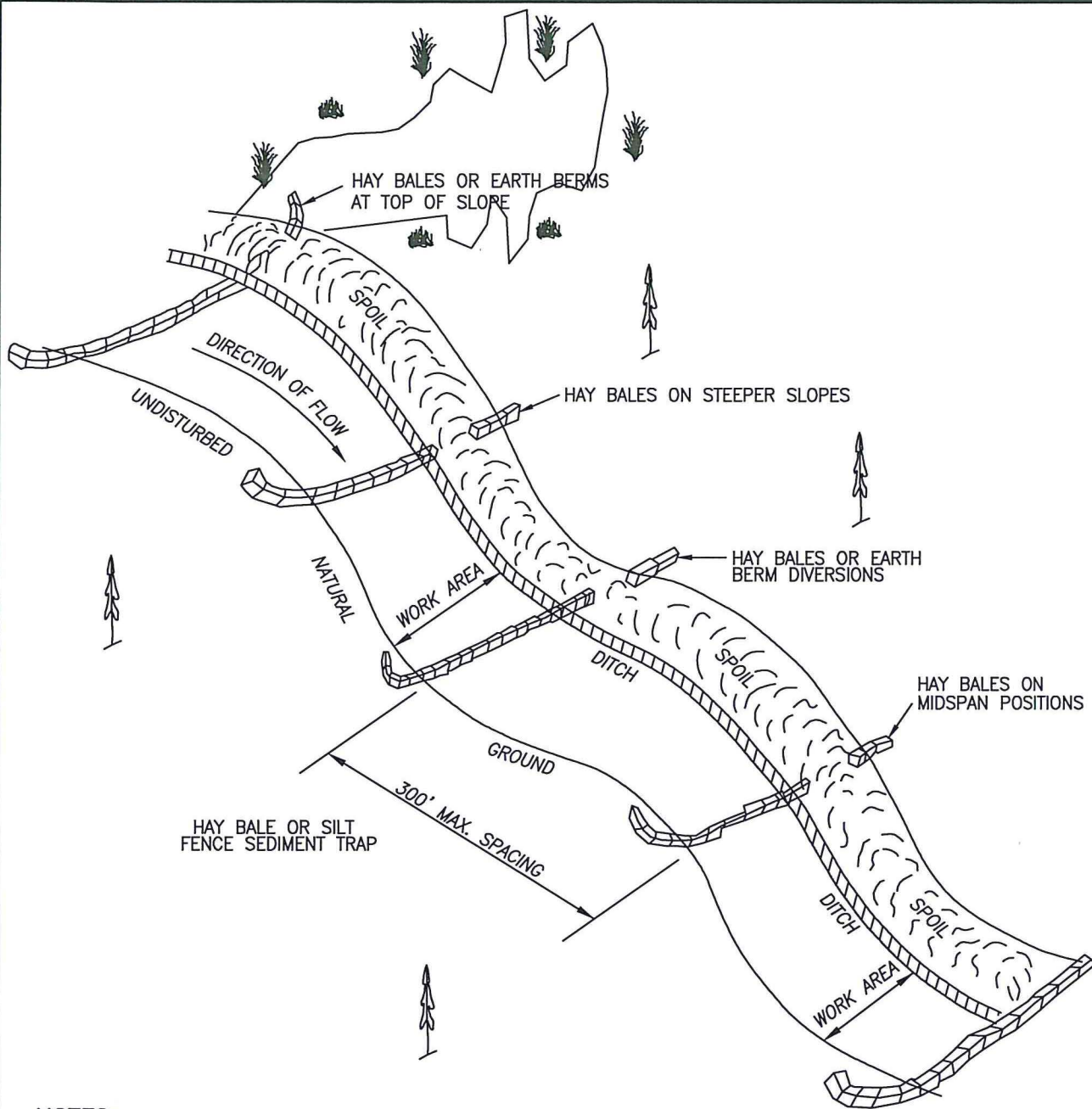
PROJECT NO: 10395700



DAKOTA ACCESS, LLC

### TYPICAL EROSION CONTROL RIPRAP AT WATERBODY BANKS

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO.	REV.
CHECKED BY: DAH	DATE: 08/07/14	P12-09-IA	0
SCALE: N.T.S.	APP.:		



**NOTES:**

1. OUTLET INTO AREAS STABILIZED BY EXISTING VEGETATION OR INSTALL STAKED HAY/STRAW BALES/SILT FENCE.
2. TOPSOIL MAY NOT BE USED FOR SLOPE BREAKERS.

DEGREES	SPACING
5-15	300 ft. MAX.
15-30	200 ft. MAX.
> 30	100 ft. MAX.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



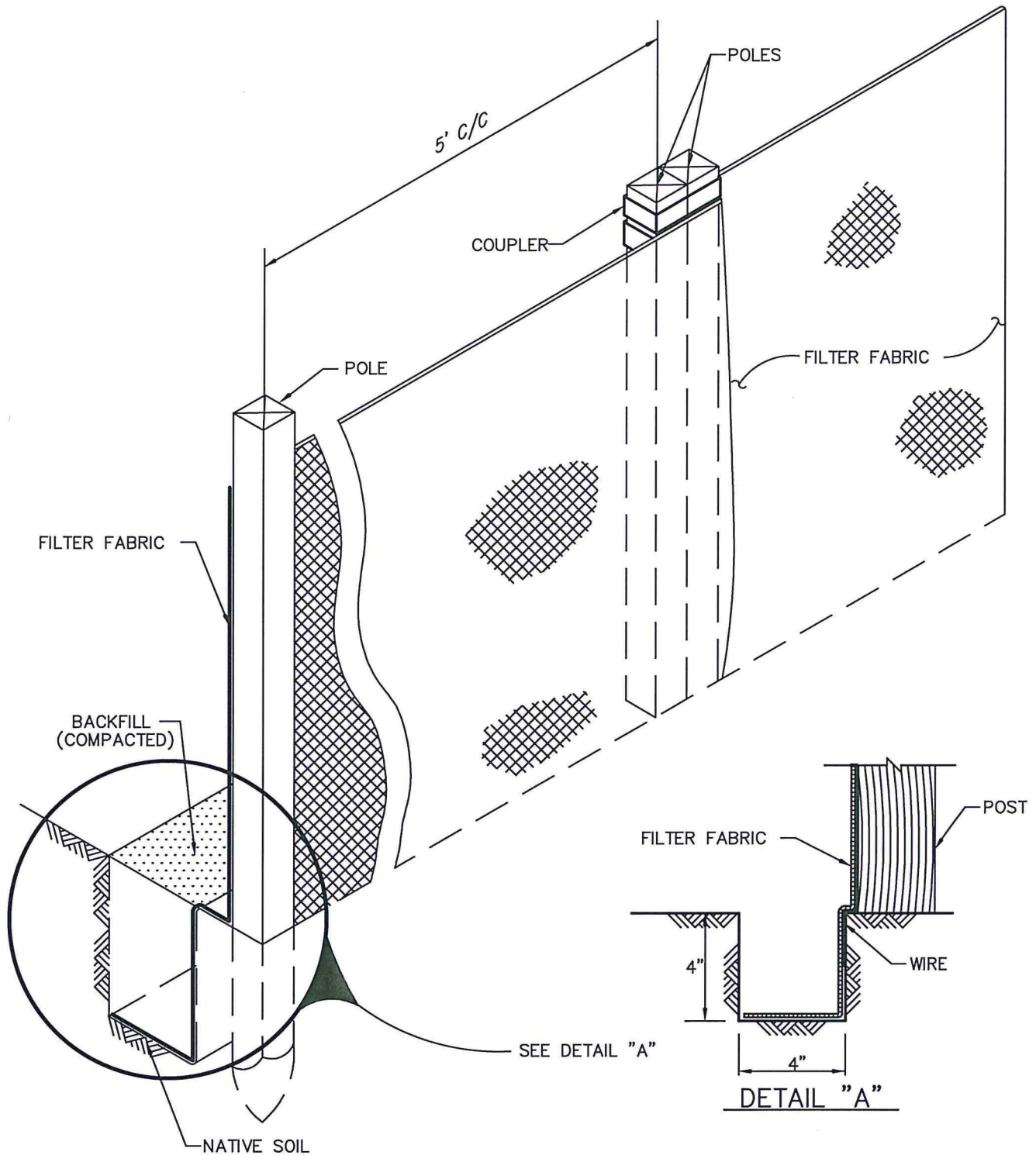
DAKOTA ACCESS, LLC

**TYPICAL  
TEMPORARY SLOPE BREAKERS  
SLOPE DIRECTION WITH SLOPE**

DRAWN BY: DAH	DATE: 08/07/14	DWG. NO.	REV.
CHECKED BY: DAH	DATE: 08/07/14	P12-10-1A	0
SCALE: N.T.S.	APP.:		



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REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700

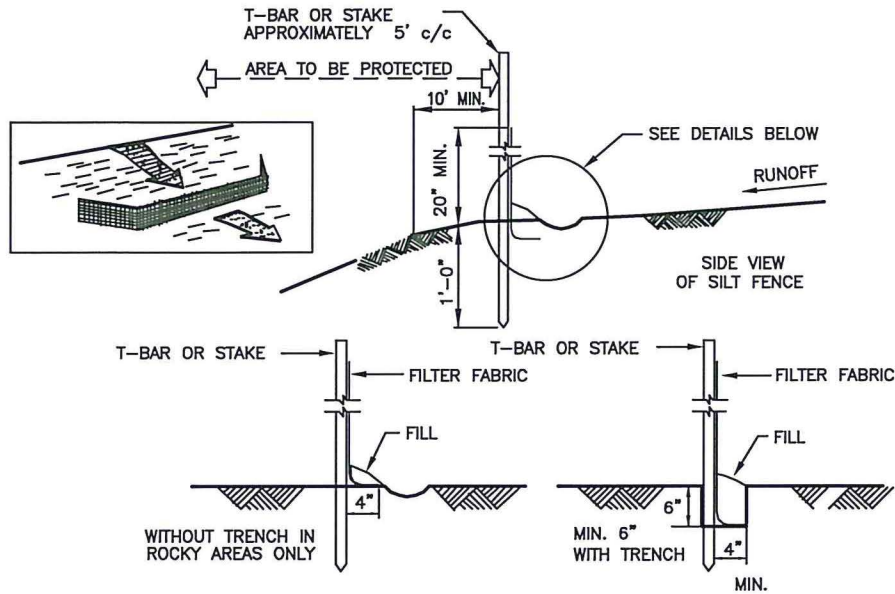


DAKOTA ACCESS, LLC

## TYPICAL SILT FENCE



DRAWN BY: DAH	DATE: 08/07/14	DWG. NO.	REV.
CHECKED BY: DAH	DATE: 08/07/14	P12-11-1A	0
SCALE: N.T.S.	APP.:		

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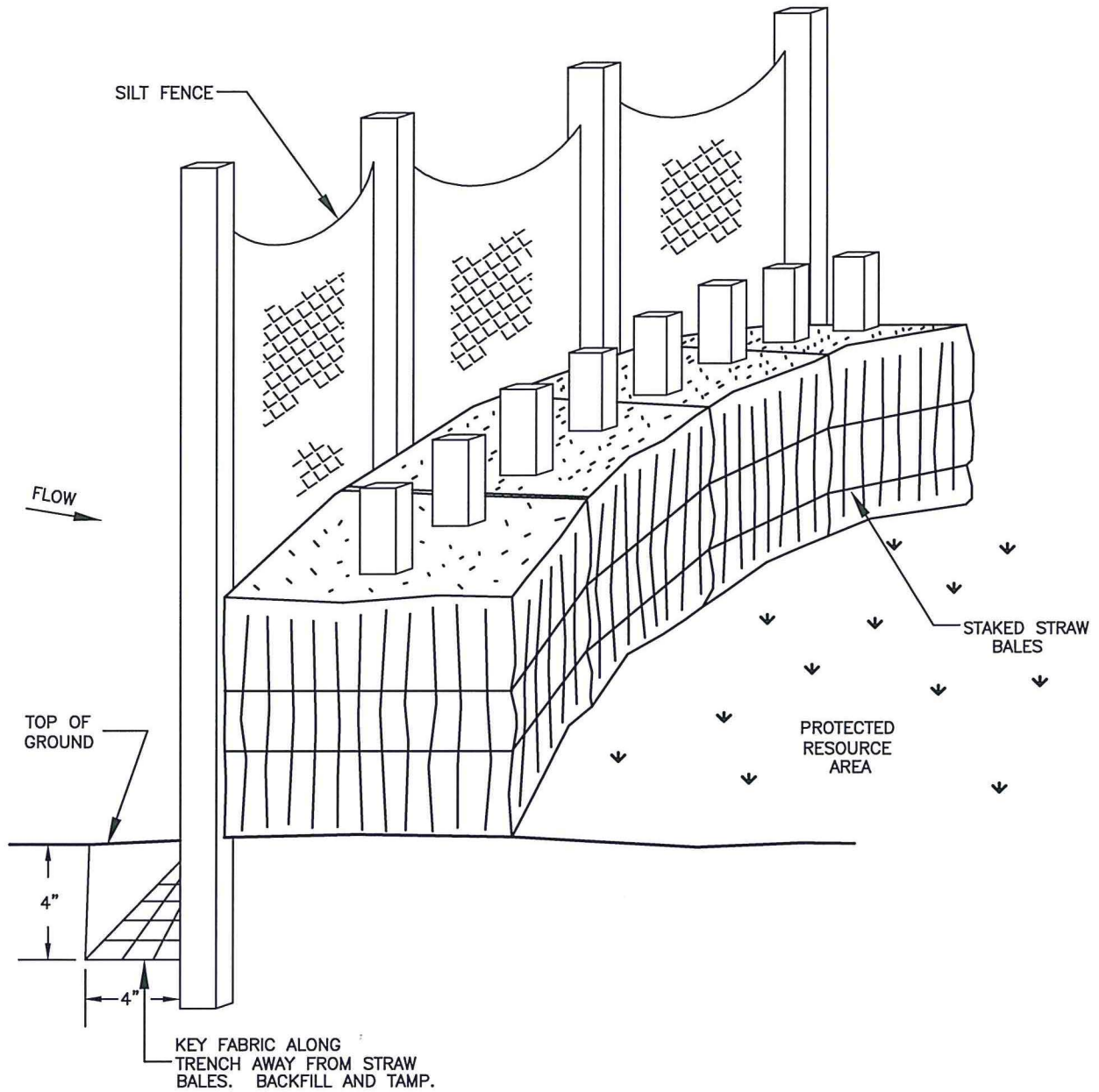
**NOTE:**

1. GENERALLY WHEN A LONG SEDIMENT BARRIER IS REQUIRED, SILT FENCE WILL BE UTILIZED RATHER THAN STRAW BALES AT:
  - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND PERENNIAL AND INTERMITTENT STREAMS.
  - THE DOWN SLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY.
  - ALONG R.O.W. BOUNDARIES OF WETLAND CONSTRUCTION.
  - ACROSS CONSTRUCTION R.O.W. AT ALL WATERBODY CROSSINGS.
  - AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN.
  - AS DIRECTED BY THE INSPECTOR.
2. THE SILT FENCE SHALL BE CONSTRUCTED AS FOLLOWS:
  - FABRIC USED FOR THE SILT FENCE SHALL BE A "STANDARD STRENGTH" GEOTEXTILE, SUCH AS MIRAFI 100X OR AN APPROVED EQUIVALENT.
  - THE FABRIC SHALL BE CUT FROM A CONTINUOUS FABRIC ROLL.
  - THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36".
  - SPLICES SHALL ONLY BE DONE AT POSTS AND SHALL CONSIST OF A MINIMUM OF 6" OF OVERLAP WITH BOTH ENDS SECURED TO THE POST.
  - POSTS SHALL BE POSITIONED A MAXIMUM OF 5' APART.
  - POSTS SHALL CONSIST OF 2"x2" WOODEN STAKES OF SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 12" INTO THE GROUND.
  - FABRIC SHALL BE STAPLED OR WIRED TO POSTS A MAXIMUM OF EVERY 9".
3. THE SILT FENCE SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR AS FOLLOWS:
  - A TRENCH, 4" WIDE AND 6" DEEP, SHALL BE EXCAVATED ALONG THE CONTOUR. THE POST SHALL BE DRIVEN INTO THE BOTTOM OF THE TRENCH ON THE DOWNSTREAM SIDE OF THE FILTER FABRIC. THE TRENCH SHALL BE BACK FILLED AND COMPACTED, ENSURING 6" OF FENCE IS BURIED WITHIN THE TRENCH.
  - IN AREAS WHERE THE TERRAIN IS TOO ROCKY FOR TRENCHING, A 4" GROUND FLAP WITH ROCK FILL TO HOLD IT IN PLACE SHALL BE USED.
4. ALL CONTROL DEVICES SIMILAR TO SILT FENCE OR FIBER ROLLS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

				 DAKOTA ACCESS, LLC					
				TYPICAL					
				EROSION CONTROL					
				SILT FENCE SEDIMENT BARRIER					
0	01/13/16	MR	ISSUED FOR USE	RAL	DRAWN BY: DAH		DATE: 08/07/14	DWG. NO.	REV.
REV.	DATE	BY	DESCRIPTION	CHK.	CHECKED BY: DAH		DATE: 08/07/14	P12-12-1A	0
PROJECT NO.					SCALE: N.T.S.		APP.:		
 WOOD GROUP MUSTANG, INC.									
PROJECT NO: 10395700									



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1. WHERE EXTREMELY ERODIBLE SOIL CONDITIONS EXIST AND AT THE DIRECTION OF THE INSPECTOR, A COMBINED STRAW BALE AND SILT FENCE SEDIMENT CONTROL BARRIER SHALL BE INSTALLED.
2. ALL CONTROL DEVICES SIMILAR TO SILT FENCE OR FIBER ROLLS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



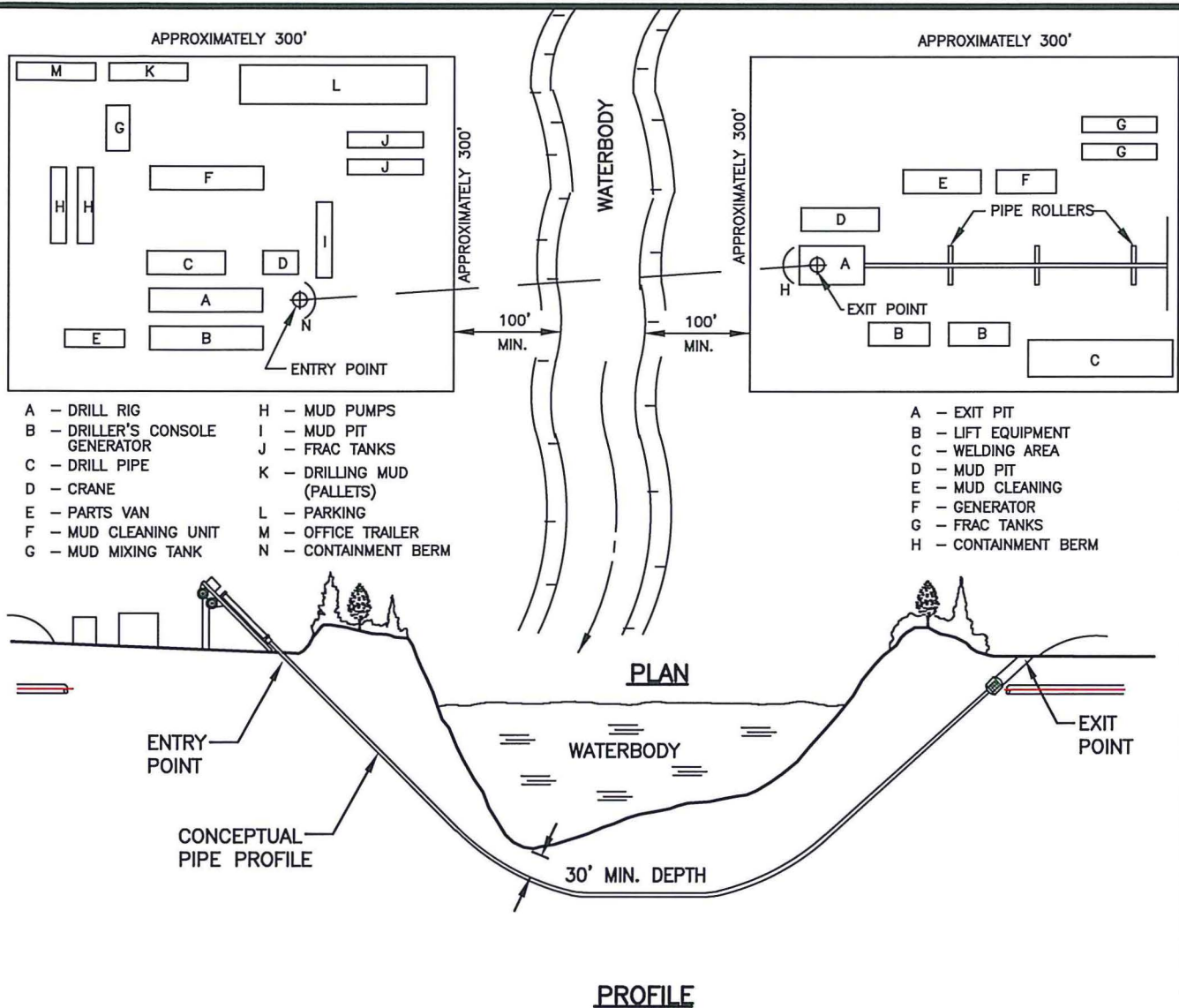
DAKOTA ACCESS, LLC

TYPICAL  
EROSION CONTROL  
STRAW BALE AND SILT FENCE

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# **NOTES:**

1. SET UP DRILLING EQUIPMENT A MINIMUM OF 300 FEET FROM THE EDGE OF THE WATERCOURSE. DO NOT CLEAR OR GRADE WITHIN THE 100 FOOT ZONE.
2. DO NOT ALLOW THE USE OF ANY ADDITIVES TO THE DRILLING MUD WITHOUT THE APPROVAL OF THE APPROPRIATE REGULATORY AUTHORITIES AND CLIENTS REPRESENTATIVE.
3. INSTALL SUITABLE DRILLING MUD TANKS OR SUMPS TO PREVENT CONTAMINATION OF WATERCOURSE.
4. INSTALL BERMS DOWNSLOPE FROM THE DRILL ENTRY AND ANTICIPATED EXIT POINTS TO CONTAIN ANY RELEASE OF DRILLING MUD.
5. DISPOSE OF DRILLING MUD IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AUTHORITY REQUIREMENTS.

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PROJECT NO: 10395700



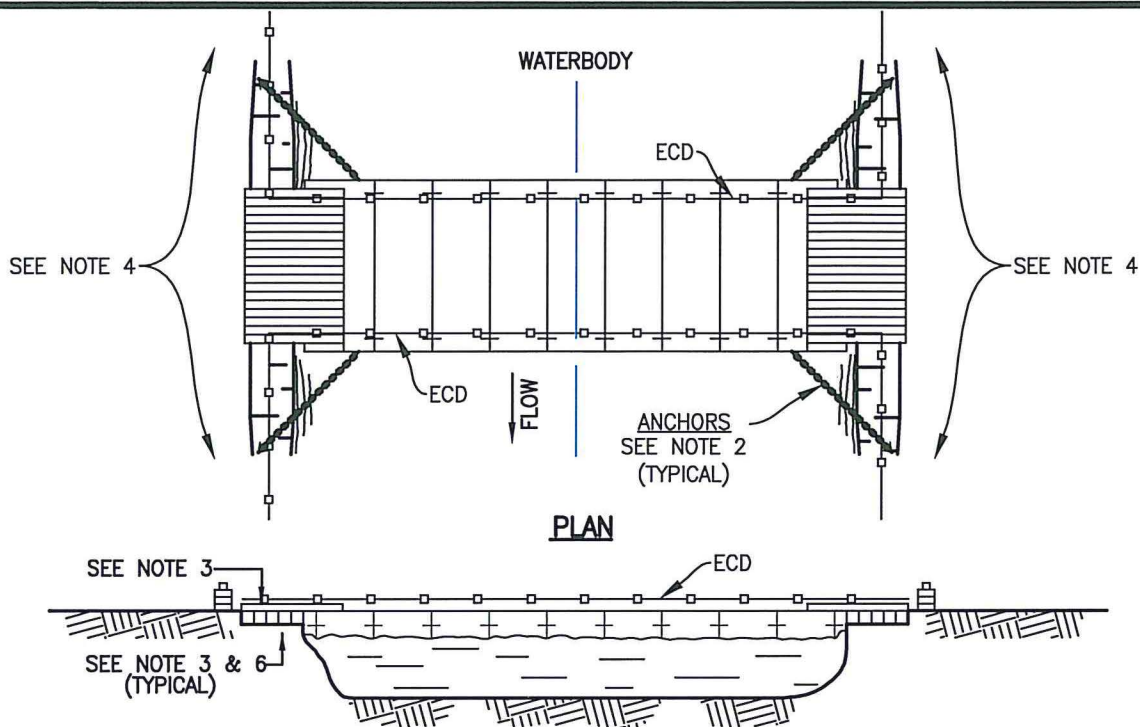
DAKOTA ACCESS, LLC

TYPICAL

## **WATERBODY CROSSING HORIZONTAL DIRECTIONAL DRILL**

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**ECD:**  
EROSION CONTROL DEVICE  
(SILT FENCE, STRAW BALES OR SANDBAGS).

### PROFILE

### NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON WIDE, CROSSINGS.
2. BRIDGE SHALL BE ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN ROCK MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FORM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. ENVIRONMENTAL CONTROL DEVICES (SILT FENCE, STRAW BALES OR SANDBAGS) MAY BE USED INTERCHANGEABLY.
5. REMOVE FLOATING BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF A ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.
8. ALL CONTROL DEVICES SIMILAR TO SILT FENCE OR FIBER ROLLS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

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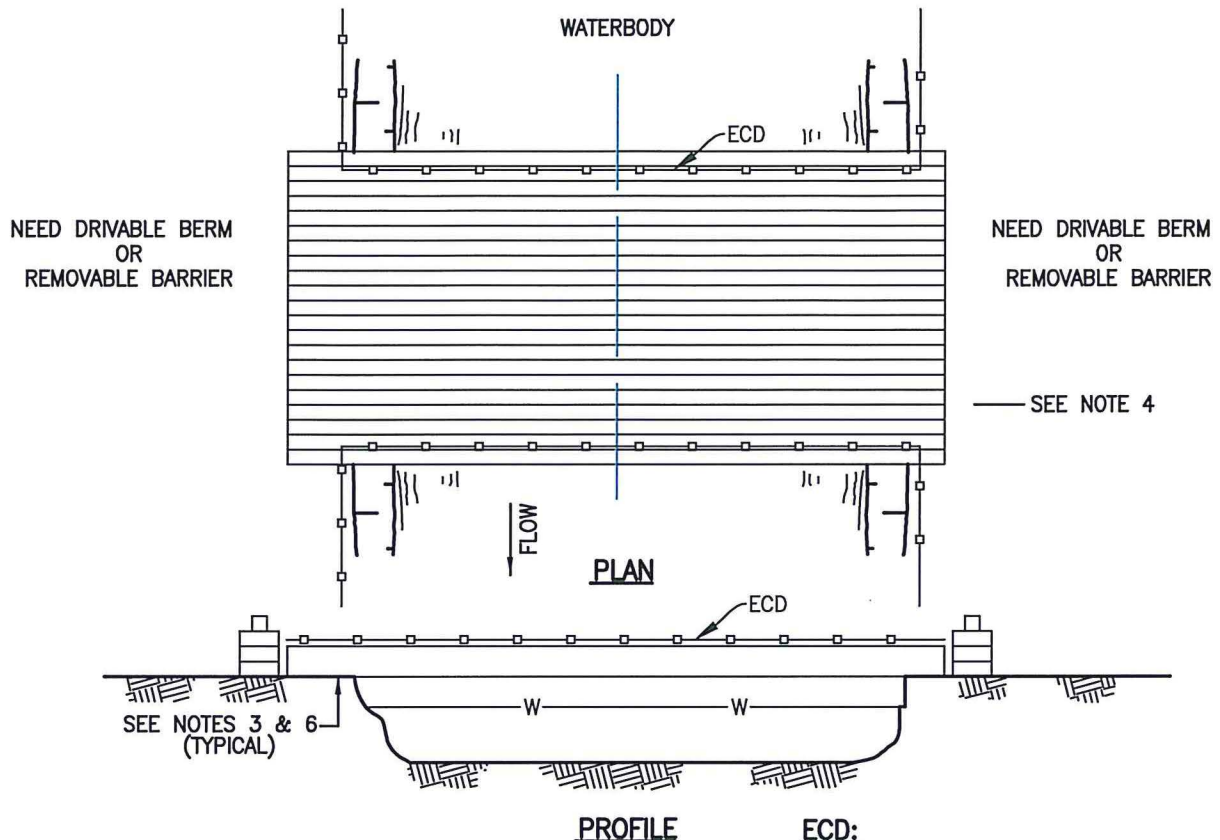
TYPICAL

### WATERBODY BRIDGE FLEXIFLOAT TYPE (FF)

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#### NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON NARROW CROSSINGS, LESS THAN 20 FEET WIDE WITH APPROPRIATE BANK CONFIGURATION. MULTIPLE MATS MAY BE LAYERED FOR HEAVIER EQUIPMENT CROSSINGS.
2. BRIDGE SHALL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE FOR USE. IF TIMBER MATS ARE NOT REMOVED ANCHOR WITH CABLE TO PREVENT FLOATING DOWNSTREAM DURING HIGH WATER EVENT.
3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN ROCK MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE INCLUDING REMOVAL OF DIRT FROM DECK DURING OPERATION.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FORM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, STRAW BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.
5. REMOVE TIMBER MATS AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF A ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

**ECD:**  
EROSION CONTROL DEVICE  
(SILT FENCE, STRAW BALES OR SANDBAGS).

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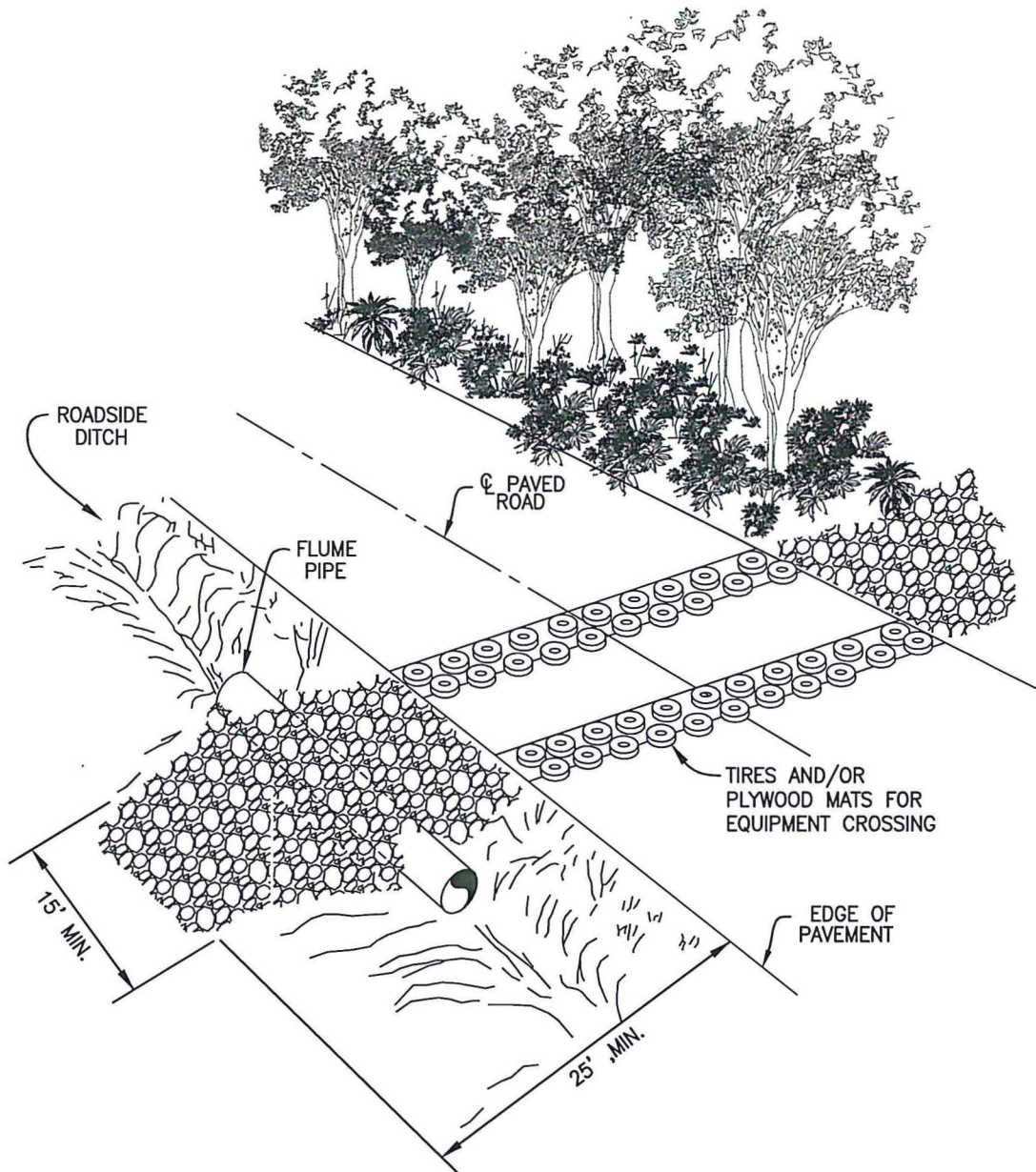
TYPICAL

### WATERBODY BRIDGE TIMBER MAT (TM)

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## TYPICAL PAVED ROAD CROSSING CONTROL DETAILS



### NOTE:

1. CRUSHED STONE OR MATS (WITH FABRIC MAT IN AGRICULTURAL AREAS) TO CONSTRUCTED FOR ENTRANCE AND EXIT OF VEHICLES AND EQUIPMENT.
2. ALL VEHICLES SHALL TRAVEL ON ACCESS RAMP WHEN ENTERING OR EXITING THE RIGHT-OF-WAY.
3. STREETS TO BE CLEANED AT THE END OF EACH DAY AS REQUIRED.
4. FLAGGER TO BE PRESENT WHILE TIRES IN ROAD.
5. TIRES ARE TO BE MOVED OUT-OF-WAY AFTER TRACK VEHICLES CROSS.

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**WOOD GROUP MUSTANG, INC.**

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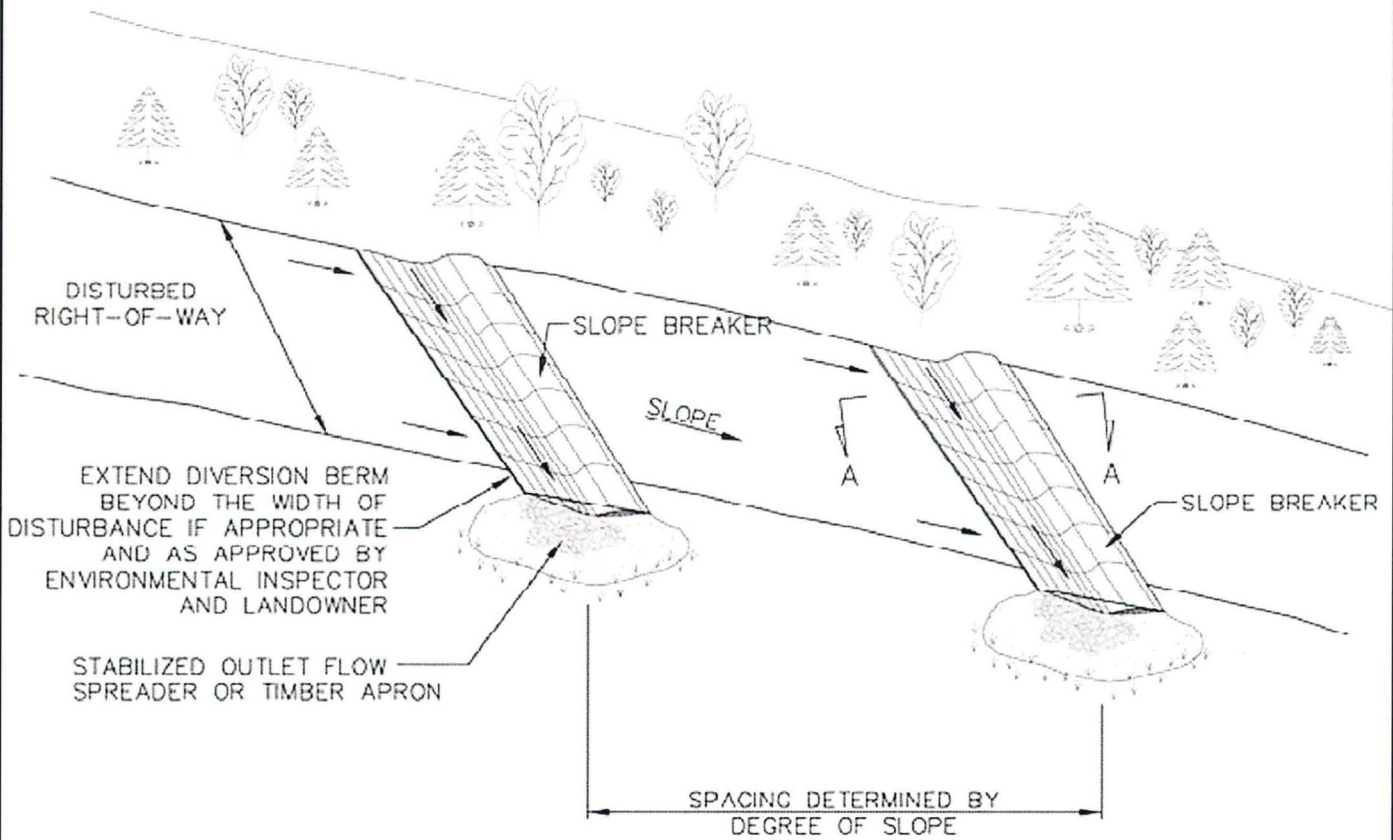
DAKOTA ACCESS, LLC

TYPICAL

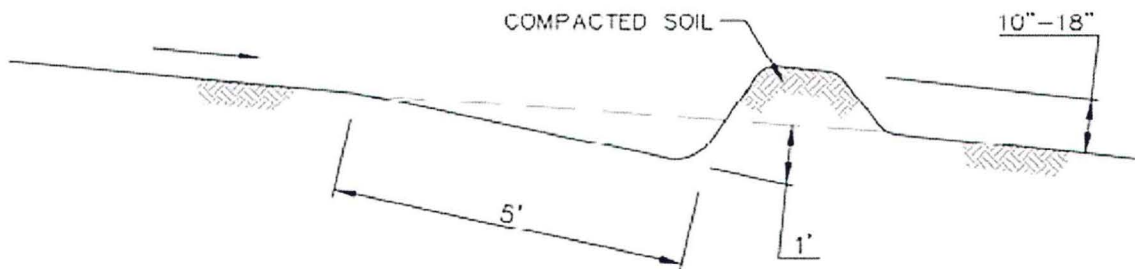
## PAVED ROAD CROSSING CONTROL DETAILS

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PLAN



NOTES:

1. PERMANENT SLOPE BREAKERS TO PROVIDE POSITIVE DRAINAGE TO A STABILIZED OUTLET.
2. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY THE PROJECT AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.
3. THE CONTRACTOR SHALL INSTALL TEMPORARY AND PERMANENT SLOPE BREAKERS ON SLOPES GREATER THAN APPROXIMATELY 5% ON ALL DISTURBED LANDS AT THE FOLLOWING RECOMMENDED SPACING:

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PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



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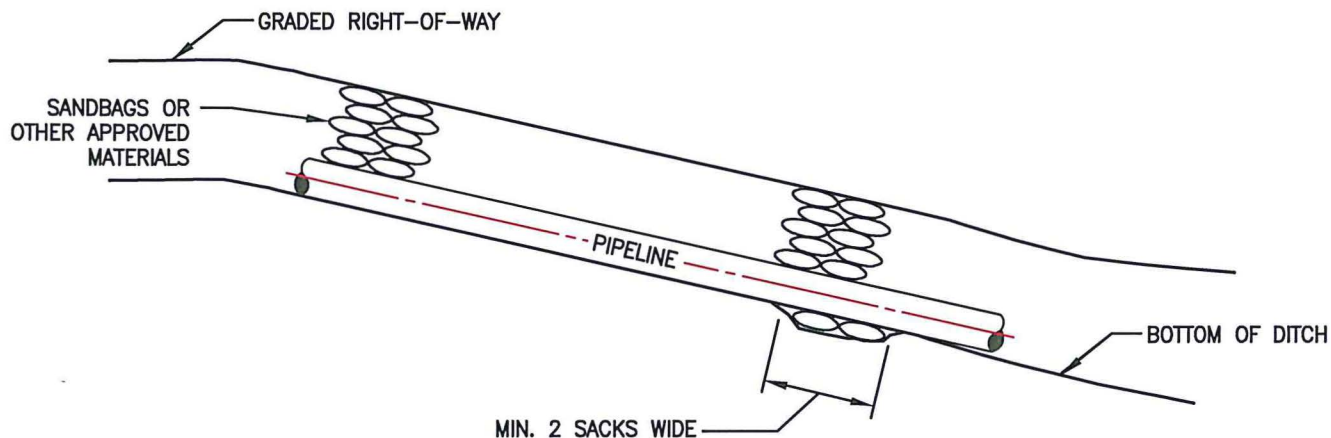
TYPICAL

**PERMANENT WATER BARS OR TERRACES**

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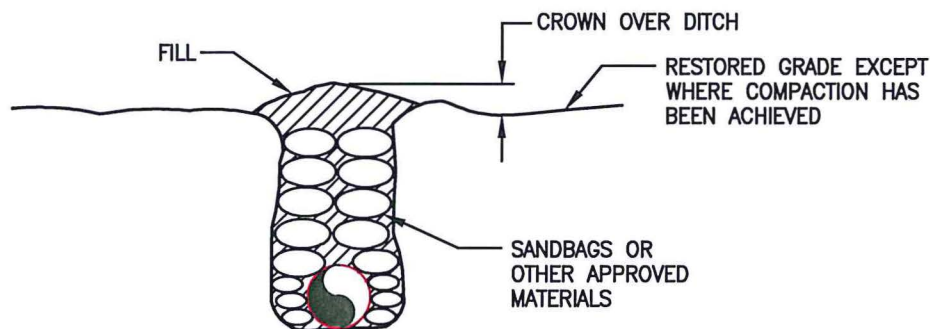


### SIDE VIEW CROSS SECTION



DEGREES	SPACING
5-15	300 ft. MAX.
15-30	200 ft. MAX.
> 30	100 ft. MAX.

### END VIEW CROSS SECTION



### NOTES:

1. CONSTRUCT ON SLOPING TERRAIN, AT BASE OF SLOPES ADJACENT TO WATERBODIES, AND AT BOTH SIDES OF WETLAND AND WATERBODY CROSSINGS.
2. PRIOR TO LOWERING IN PIPE REMOVE ALL DECOMPOSABLE MATERIAL AND LARGE ROCKS.
3. BREAKERS MAY BE COMPOSED OF SANDBAG OR OTHER APPROVED MATERIALS.
4. MINIMUM 12 INCHES COVER OVER SANDBAGS OR OTHER APPROVED MATERIALS IN ALL CASES.

0	01/13/16	MR	ISSUED FOR USE	RAL
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PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



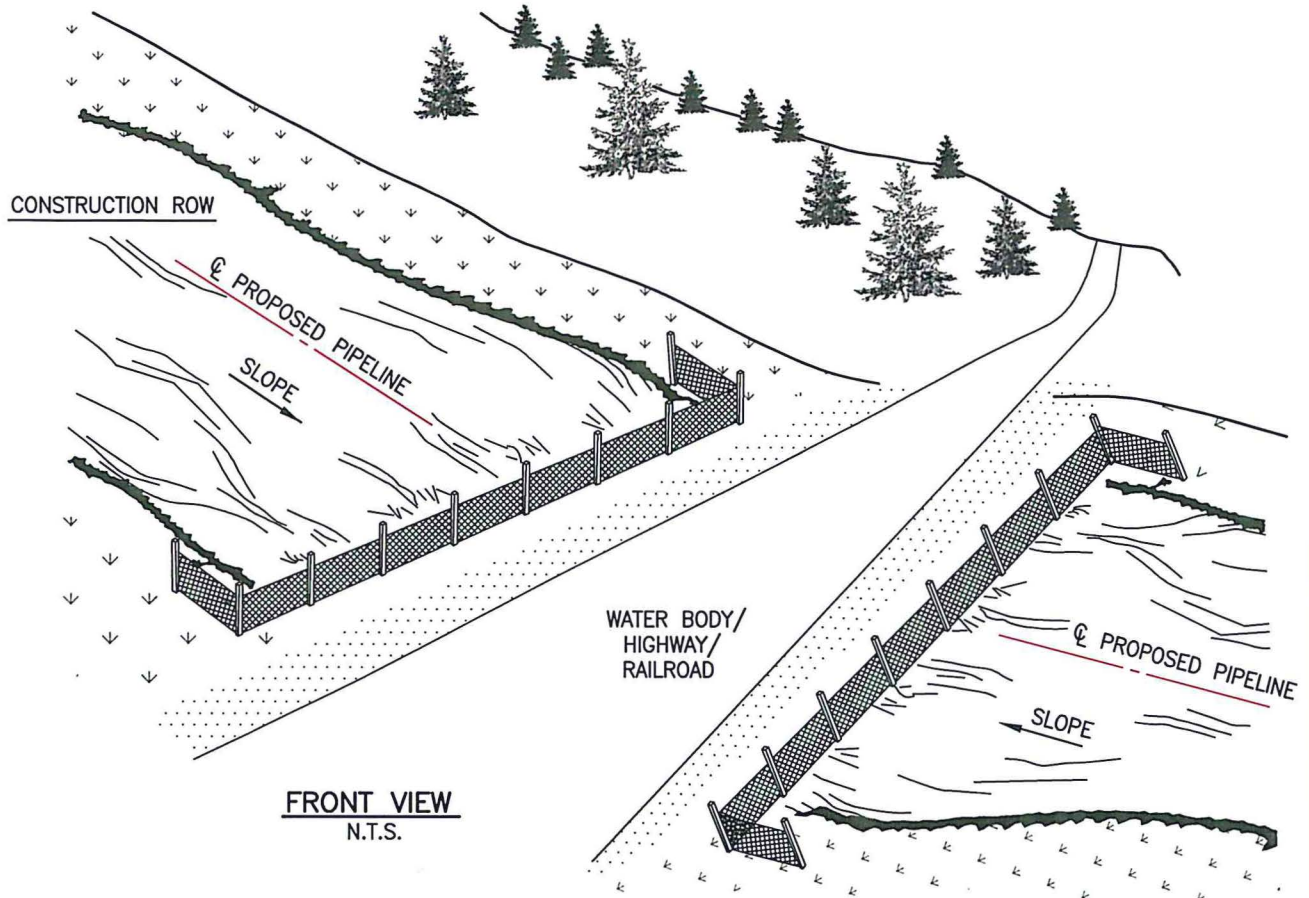
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### TYPICAL PERMANENT TRENCH BREAKERS

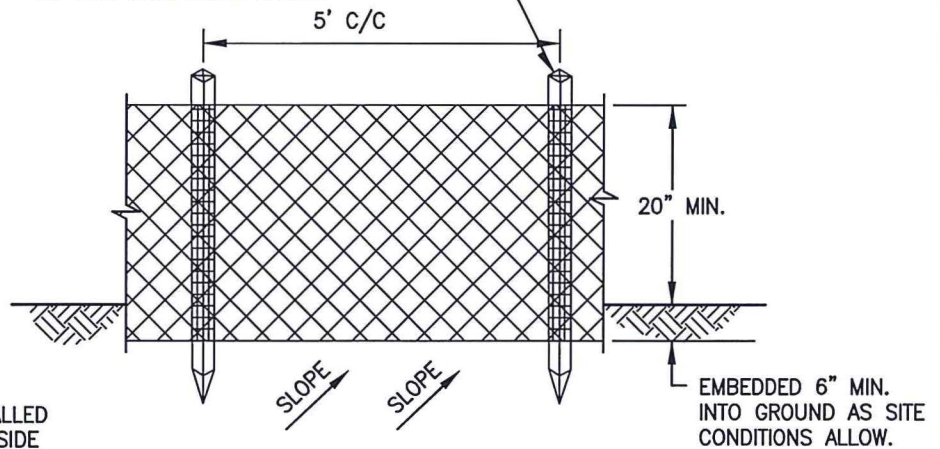
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34" x 2" x 2" MIN. REINFORCED FENCE  
POSTS DRIVEN MIN. 16" INTO GROUND  
AS SITE CONDITIONS ALLOW.



**NOTE:**

1. REINFORCED FENCE SHOULD BE INSTALLED SO POSTS ARE ON THE DOWNSLOPE SIDE OF THE FABRIC.

0	01/13/16	MR	ISSUED FOR USE	RAL
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PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

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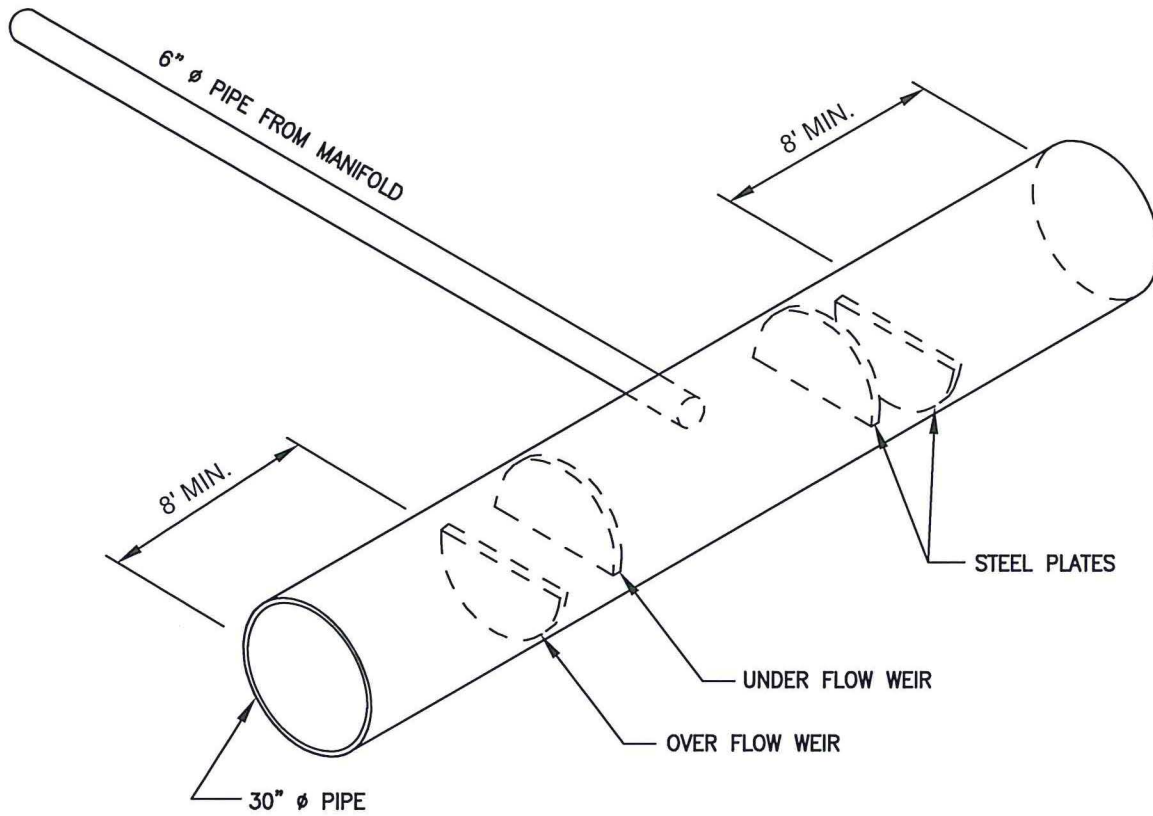
DAKOTA ACCESS, LLC

TYPICAL

**SILT REINFORCED FENCE INSTALLATION**

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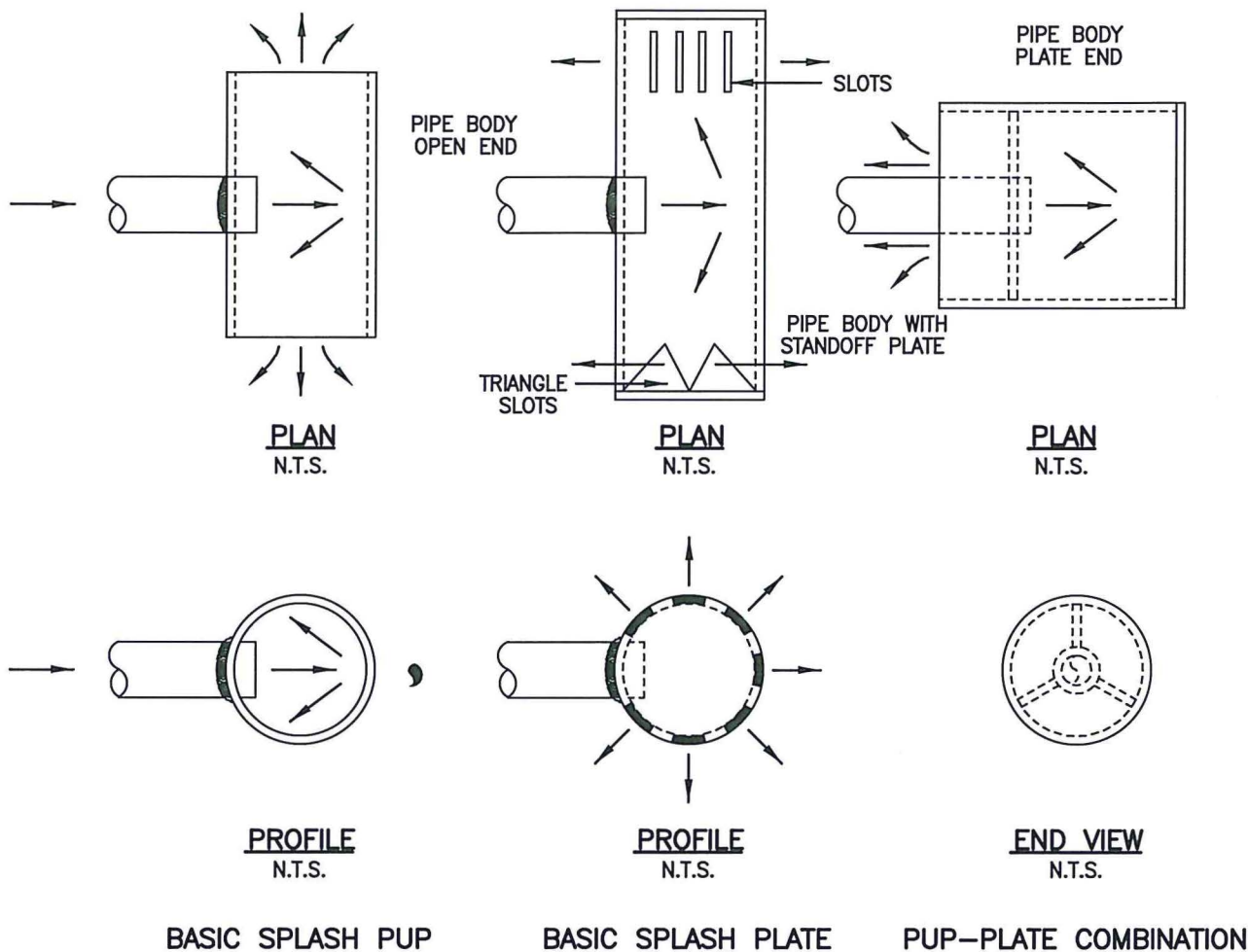
**NOTE:**

1. ENERGY DISSIPATOR TO BE ANCHORED BY CONTRACTOR

TYPICAL ENERGY DISSIPATOR MUST BE USED IN CONJUNCTION W/FILTER (AS APPROPRIATE)


				 DAKOTA ACCESS, LLC			
				TYPICAL			
				ENERGY DISSIPATOR			
0	01/13/16	MR	ISSUED FOR USE	RAL	DRAWN BY: DAH		DATE: 08/21/14
REV.	DATE	BY	DESCRIPTION	CHK.	CHECKED BY: DAH		DATE: 08/21/14
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 WOOD GROUP MUSTANG, INC.				DWG. NO.		REV.	
PROJECT NO: 10395700				P12-29-IA		0	





### NOTES:

1. AN ENERGY DISSIPATER SHALL BE UTILIZED WHENEVER WATER DISCHARGE VELOCITIES MAY CAUSE EROSION.
2. THE DESIGN AND EFFECTIVENESS OF THE ENERGY DISSIPATER IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.
3. ENERGY DISSIPATERS ARE UTILIZED IN CONJUNCTION WITH A DEWATERING STRUCTURE SUCH AS A SETTLING BASIN OR HAY BALES WITH A SILT FENCE.

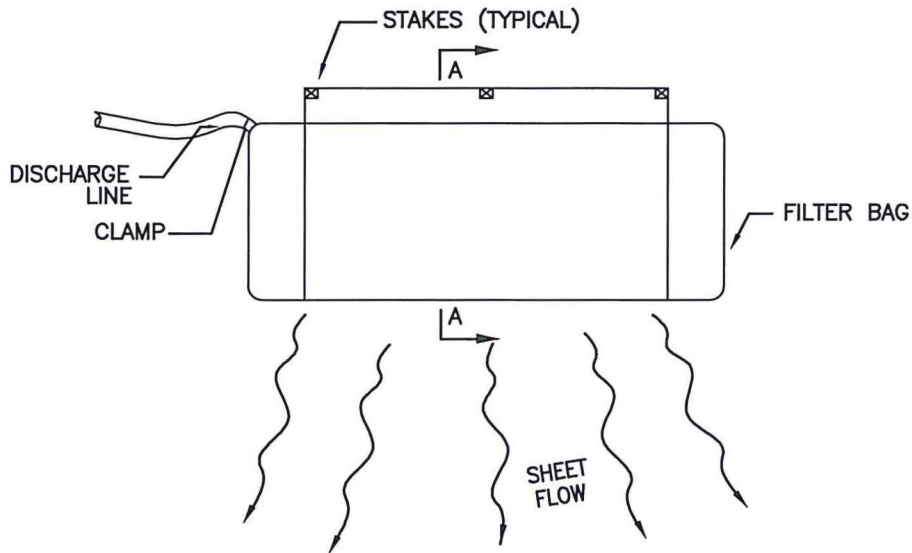
					 DAKOTA ACCESS, LLC	
					TYPICAL	
					SPLASH PUP FOR TEST WATER DISCHARGE	
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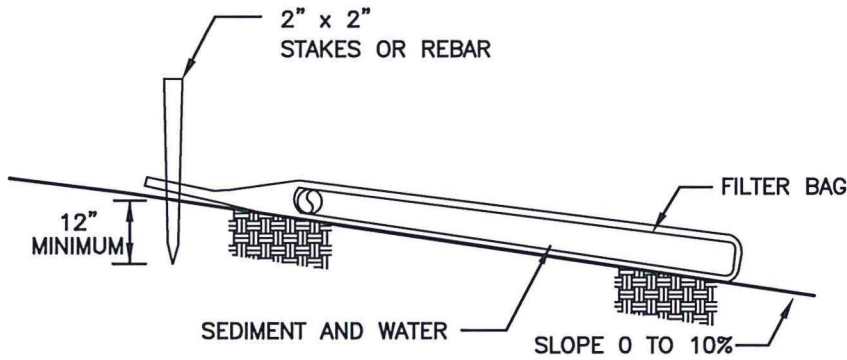
**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700

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**PLAN**



**SECTION "A-A"**

**NOTES:**

1. INSTALL A DEWATERING GEOTEXTILE FILTER BAG AS DIRECTED BY THE INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATERBODIES OR WETLANDS.
2. DISCHARGE SITE SHALL BE WELL VEGETATED AND THE TOPOGRAPHY OF THE SITE SUCH THAT WATER WILL FLOW AWAY FROM ANY WORK AREAS. THE AREA DOWN SLOPE FROM THE DEWATERING SITE MUST BE REASONABLY PLANE OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.
3. TO ATTACH THE DISCHARGE HOSE, CUT A CORNER OF THE BAG, INSERT DISCHARGE HOSE, AND SECURE THE HOSE TO THE BAG WITH BAND CLAMPS.
4. A SINGLE FILTER BAG SHOULD NOT BE USED FOR FLOWS GREATER THAN 600 GALLONS PER MINUTE.
5. REPLACE FILTER BAG BEFORE IT IS COMPLETELY FILLED WITH SEDIMENT. MONITOR DISCHARGE TO AVOID OVER PRESSURING DUE TO PLUGGING, WHICH MAY RESULT IN RUPTURE.
6. DISPOSE OF USED EMPTIED FILTER BAG AT A PIPELINE DESIGNATED FACILITY.

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PROJECT NO.



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PROJECT NO: 10395700



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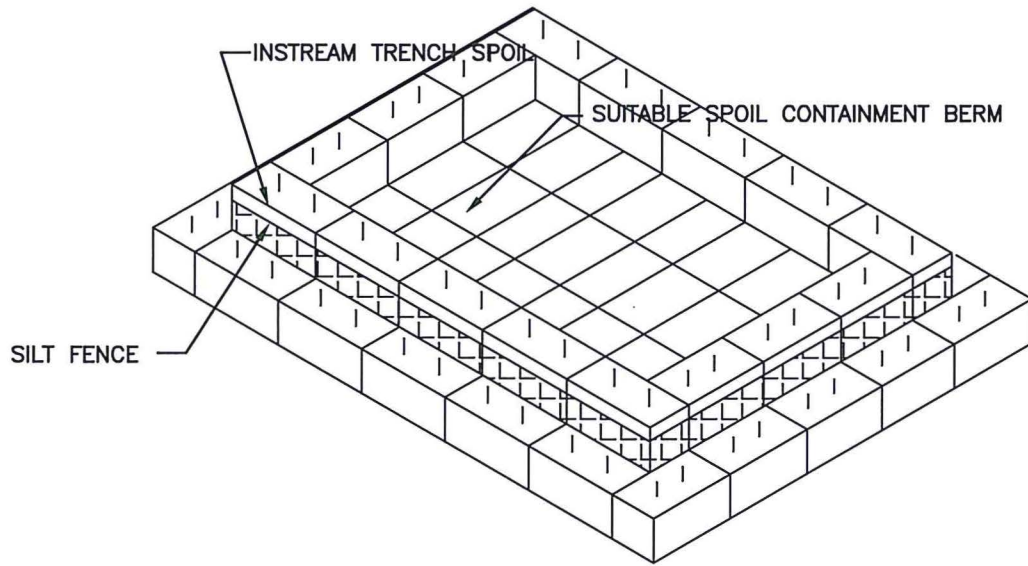
TYPICAL

**GEOTEXTILE FILTER BAG FOR DEWATERING**

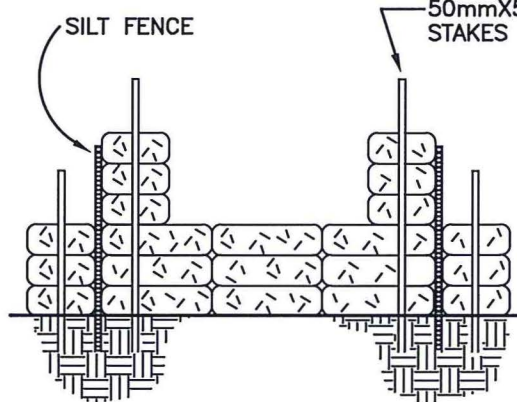
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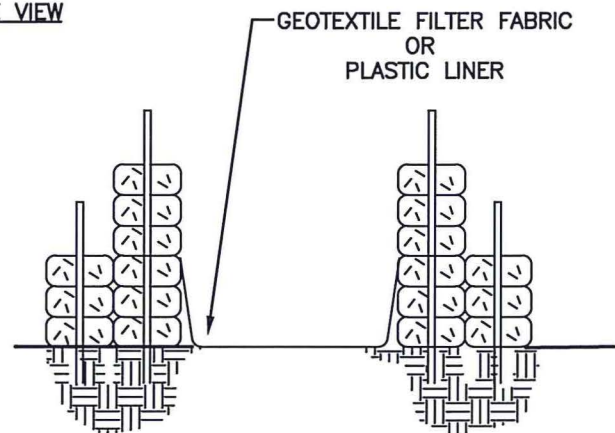
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**PERSPECTIVE VIEW**



**OPTION 1**



**OPTION 2**

**NOTES:**

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHEREVER IT IS NECESSARY AND AS DIRECTED BY THE INSPECTOR TO PREVENT THE FLOW OF SILT LADEN WATER INTO WATERBODIES OR WETLANDS.
2. DISCHARGE SITE SHALL BE WELL VEGETATED AND THE TOPOGRAPHY OF THE SITE SUCH THAT WATER WILL FLOW AWAY FROM ANY WORK AREAS. THE AREA DOWN SLOPE FROM THE DEWATERING SITE MUST BE REASONABLY PLANE OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.
3. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES, IN AREAS OF HIGHLY ERODIBLE SOILS, LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC OR PLASTIC SHEETING.
4. THE DIMENSIONS OF THE STRUCTURE SHALL BE DETERMINED IN THE FIELD BASED UPON SITE CONDITIONS.
5. DISCHARGE RATES SHALL BE SUCH THAT WATER WILL NOT OVERFLOW THE TOP OF THE STRUCTURE.
6. INSTALL AN ENERGY DISSIPATOR IF THE DISCHARGE VELOCITY IS ERODING THE SOIL.

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PROJECT NO.



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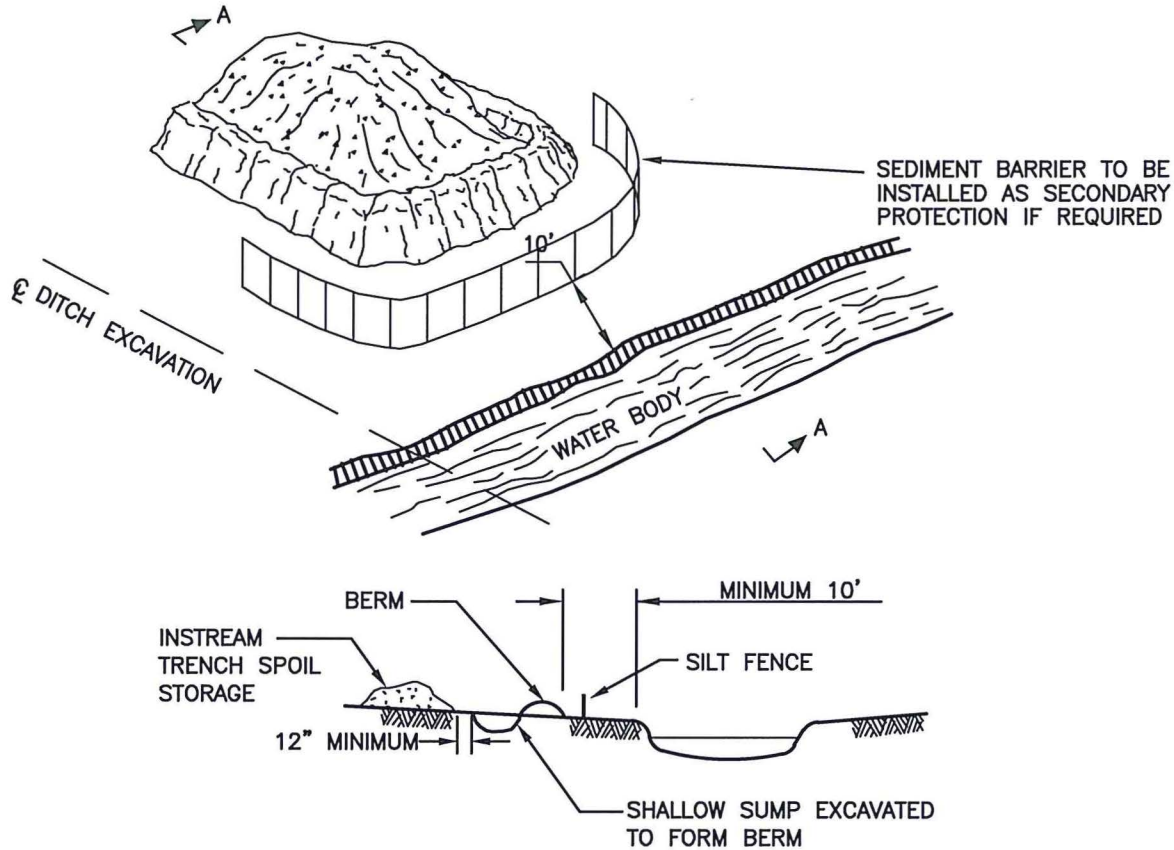
PROJECT NO: 10395700



DAKOTA ACCESS, LLC

**TYPICAL  
STRAW BALE DEWATERING STRUCTURE  
(LARGE VOLUME)**



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**SECTION A-A**

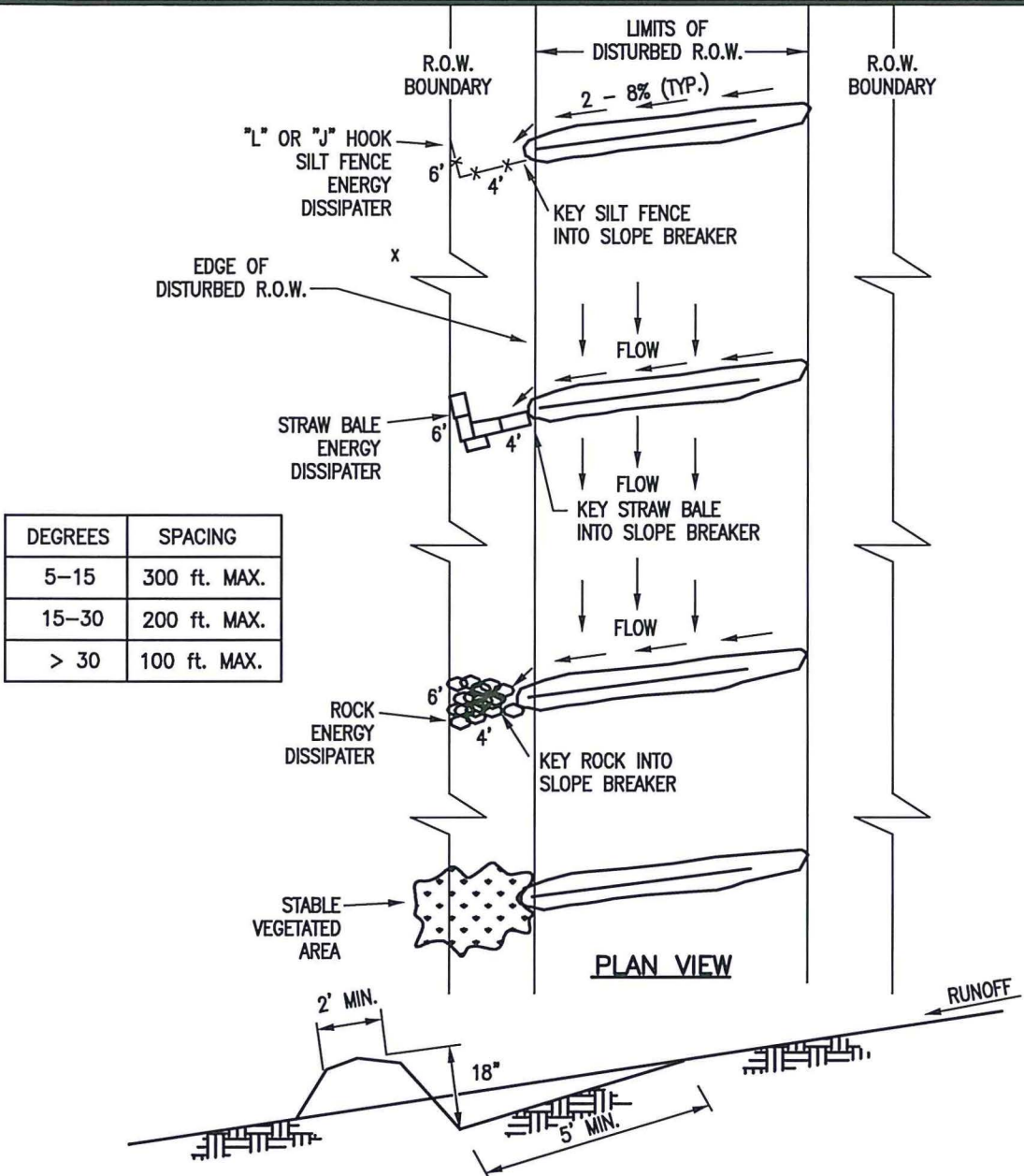
**NOTES:**

1. SOIL CONTAINMENT BERMS ARE TO BE USED WHERE INSTREAM TRENCH SPOIL COULD REENTER THE WATERCOURSE DIRECTLY OR INDIRECTLY AND WITH SIMULTANEOUS UTILIZATION OF SEDIMENT BARRIERS, IF REQUIRED.
2. IF SOIL CONTAINMENT BERMS ARE USED IN AGRICUTURAL AREAS, TOPSOIL MUST BE STRIPPED PRIOR TO CONSTRUCTION OF BERM AND PLACEMENT OF SPOIL.
3. MATERIAL USED FOR THE CONTAINMENT BERM SHOULD BE A MINIMUM OF 10 FEET FROM THE WATERS EDGE. IT SHOULD BE KEPT TO A HEIGHT WHICH REMAINS STABLE DURING THE CONSTRUCTION PERIOD.
4. CARE SHOULD BE TAKEN THAT THE SPOIL PILE DOES NOT OVERTOP THE CONTAINMENT BERM.
5. THE CONTAINMENT BERM SHOULD BE DISMANTLED AND THE SITE RESTORED TO THE ORIGINAL CONDITION UPON COMPLETION OF THE WATER CROSSING.
6. WHERE POSSIBLE, RIPARIAN VEGETATION SHALL BE LEFT IN PLACE.
7. STAGED MOVEMENT OF INSTREAM SPOIL MAY BE REQUIRED IF QUANTITIES ARE EXCESSIVE.
8. CARE AND ATTENTION MUST BE TAKEN TO ENSURE SPOIL CONTAINMENT BERMS ARE MAINTAINED.
9. FULL CONSIDERATION FOR OVERALL SLOPE STABILITY IS REQUIRED WHEN SELECTING A SPOIL CONTAINMENT LOCATION.

				 DAKOTA ACCESS, LLC						
0	01/13/16	MR	ISSUED FOR USE	RAL	<b>TYPICAL SOIL CONTAINMENT BERN FOR WATERBODY TRENCH SPOIL</b>					
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PROJECT NO.					DRAWN BY: DAH			DATE: 08/26/14	DWG. NO.	REV.
 <b>WOOD GROUP MUSTANG, INC.</b> PROJECT NO: 10395700					CHECKED BY: DAH		DATE: 08/26/14	<b>P12-34-1A</b>	<b>0</b>	
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DEGREES	SPACING
5-15	300 ft. MAX.
15-30	200 ft. MAX.
> 30	100 ft. MAX.

NOTES:

SLOPE BREAKER CROSS SECTION DETAIL

1. SLOPE BREAKERS SHALL BE CONSTRUCTED OF COMPACTED NATIVE SOIL AND INSTALLED AT LOCATIONS AS REQUIRED BY SECTION C1260 OF CONSTRUCTION STANDARDS OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
  2. SLOPE BREAKERS SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS DIRECTED BY THE COMPANY'S REPRESENTATIVE TO DIRECT THE WATER OFF THE R.O.W..
  3. SLOPE BREAKERS SHALL BE CONSTRUCTED AT A 2-8% GRADIENT ACROSS THE SLOPE.
  4. THE SLOPE BREAKERS SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER). THE TROUGH WILL BE A MINIMUM OF 5' WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.
- \*SEE DWG. #CST-P-1260-A220.2 FOR ADDITIONAL INFORMATION.

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PROJECT NO.



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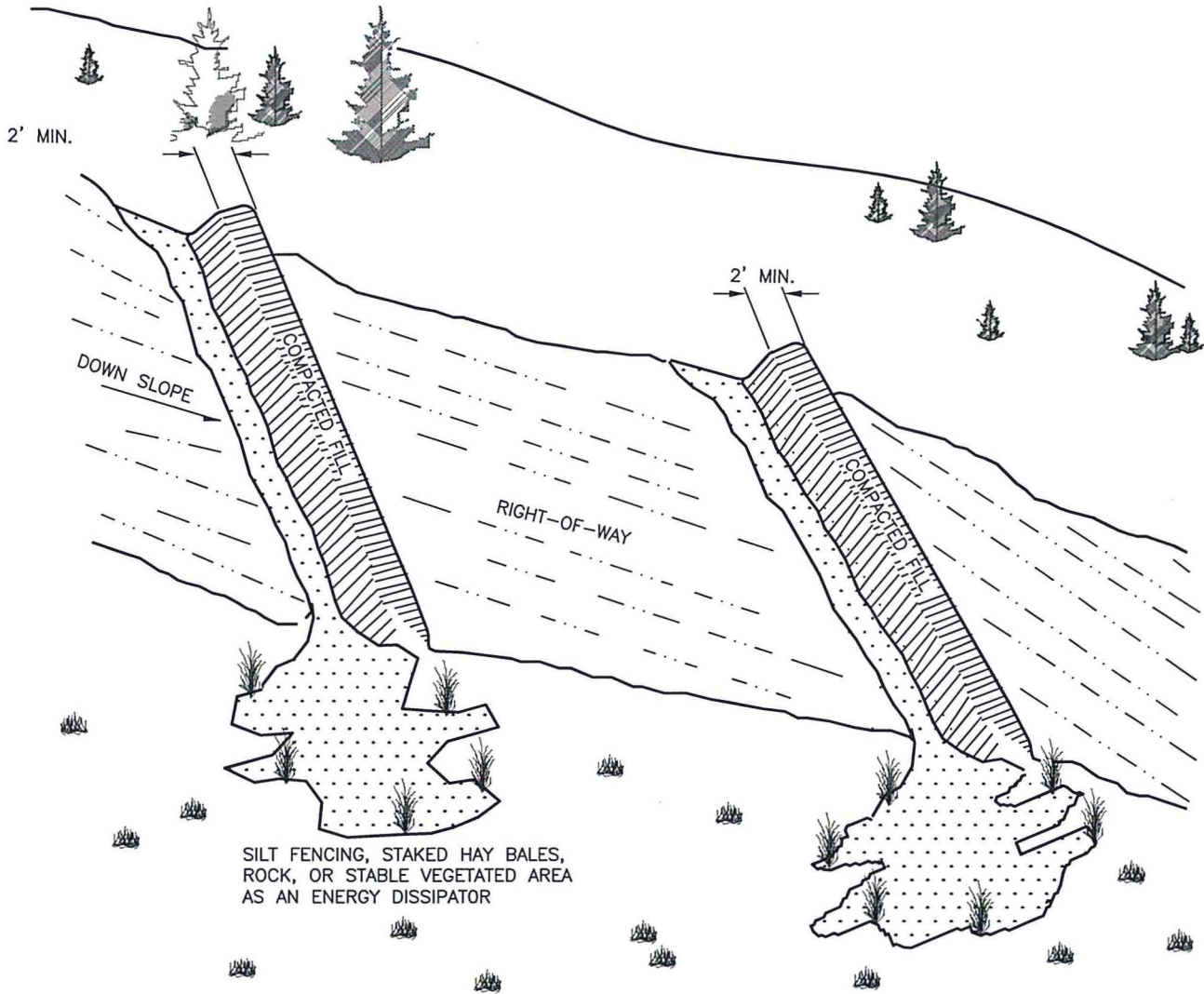


DAKOTA ACCESS, LLC

TYPICAL  
SLOPE BREAKER

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### NOTES:

1. SLOPE BREAKERS SHALL BE CONSTRUCTED AND INSTALLED AT LOCATIONS AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. SLOPE BREAKER SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO DIRECT THE WATER OFF THE R.O.W.
3. THE SLOPE BREAKERS SHALL BE 500mm DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER). THE TROUGH WILL BE A MINIMUM OF 2m WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.
4. THE OUTLET OF THE SLOPE BREAKER MUST FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED R.O.W. INTO A STABLE, WELL VEGETATED AREA OR INTO AN ENERGY DISSIPATOR.
5. WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION R.O.W. TO DIRECT RUNOFF INTO STABLE, WELL VEGETATED AREAS, THESE LOCATIONS MUST BE APPROVED BY THE ENVIRONMENTAL INSPECTOR.

0	01/13/16	MR	ISSUED FOR USE	RAL
REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO.



**WOOD GROUP MUSTANG, INC.**

PROJECT NO: 10395700



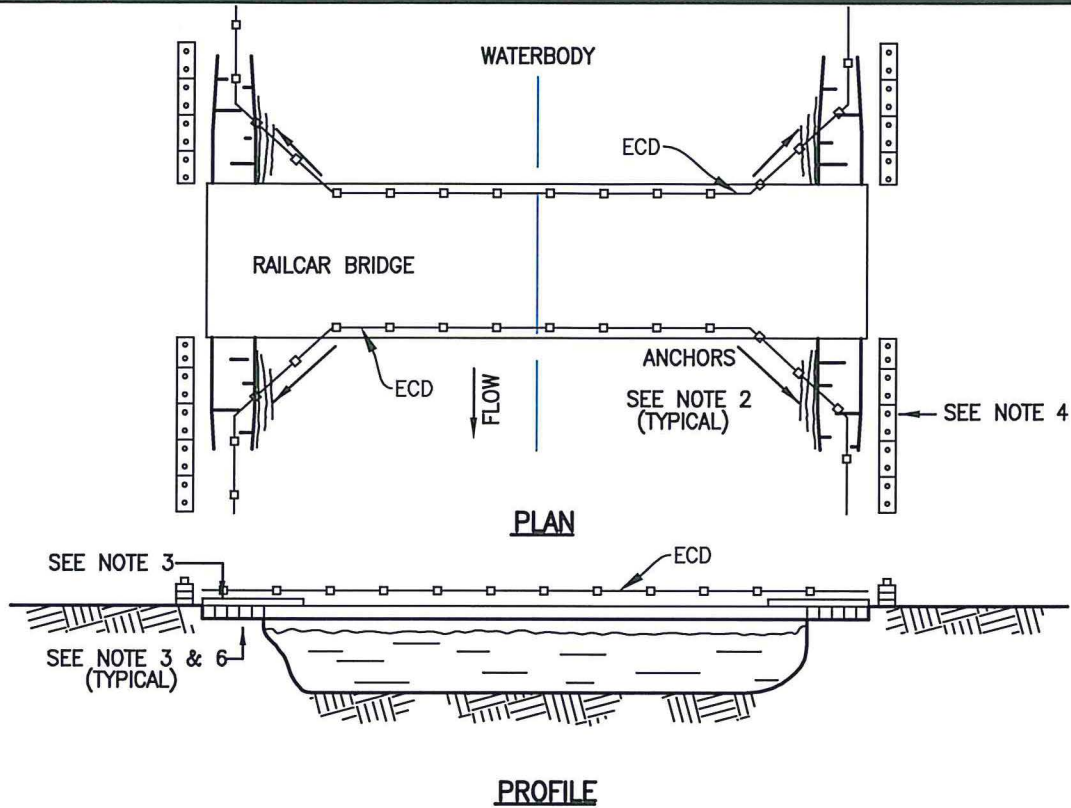
DAKOTA ACCESS, LLC

### TYPICAL SLOPE BREAKER

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SCALE: N.T.S.	APP.:		



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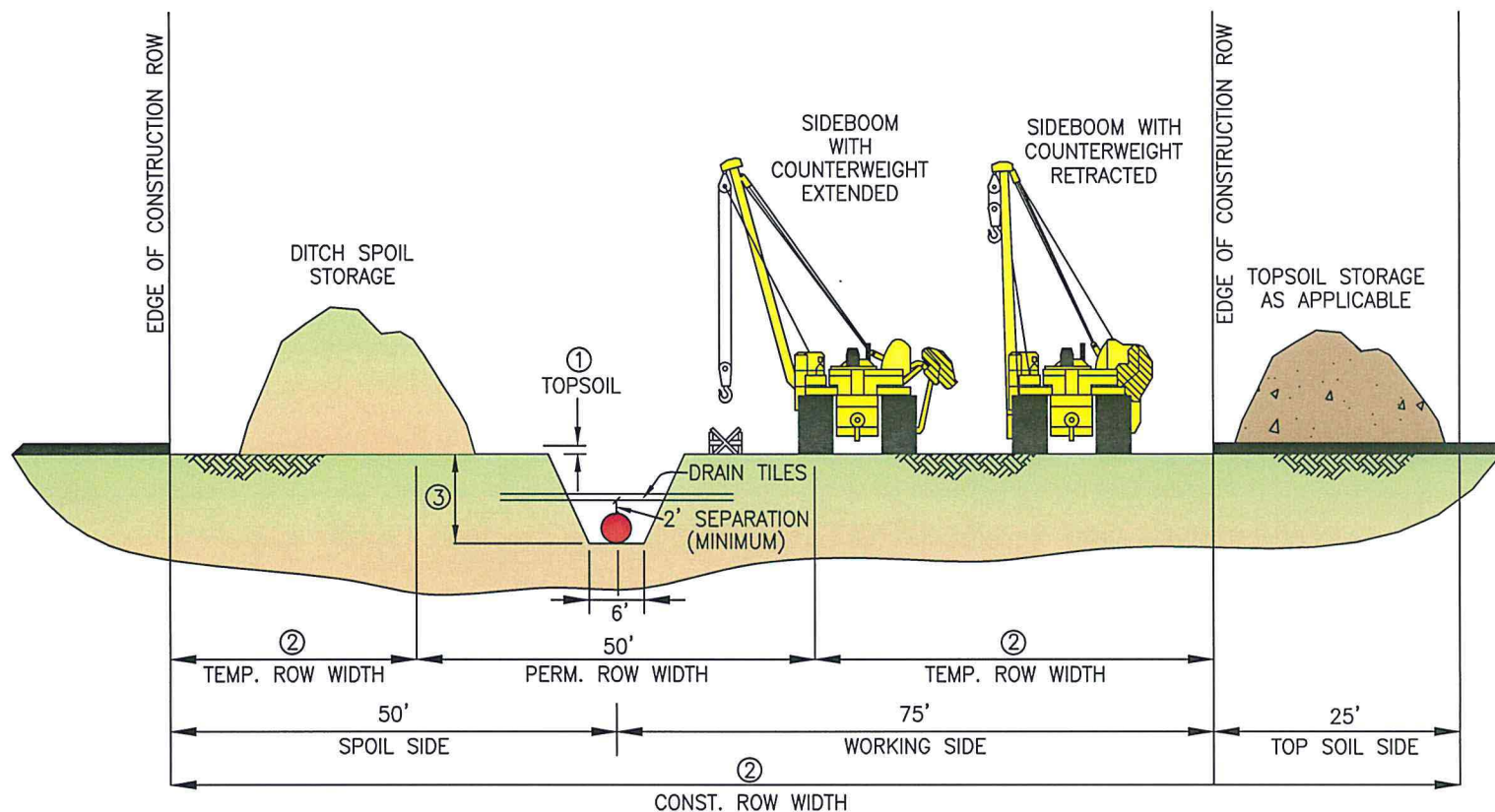
#### ECD:

EROSION CONTROL DEVICE  
(SILT FENCE, STRAW BALES OR SANDBAGS).

#### NOTES:

- BRIDGE SHALL BE ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
- IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN ROCK MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE.
- CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FORM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. ENVIRONMENTAL CONTROL DEVICES (SILT FENCE, STRAW BALES OR SANDBAGS) MAY BE USED INTERCHANGEABLY.
- REMOVE BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
- DISPOSE OF A ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
- RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

				 DAKOTA ACCESS, LLC			
				TYPICAL			
				CLEARSPAN BRIDGE WITH RAILCAR			
0	01/13/16	MR	ISSUED FOR USE	RAL	DRAWN BY: DAH		DATE: 08/29/14
REV.	DATE	BY	DESCRIPTION	CHK.	CHECKED BY: DAH		DATE: 08/29/14
PROJECT NO.				SCALE: N.T.S.		APP.:	
 <b>WOOD GROUP MUSTANG, INC.</b> PROJECT NO: 10395700				DWG. NO.		REV.	
				P12-38-1A		0	



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

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PROJECT NO. 10395700



WOOD GROUP MUSTANG, INC.

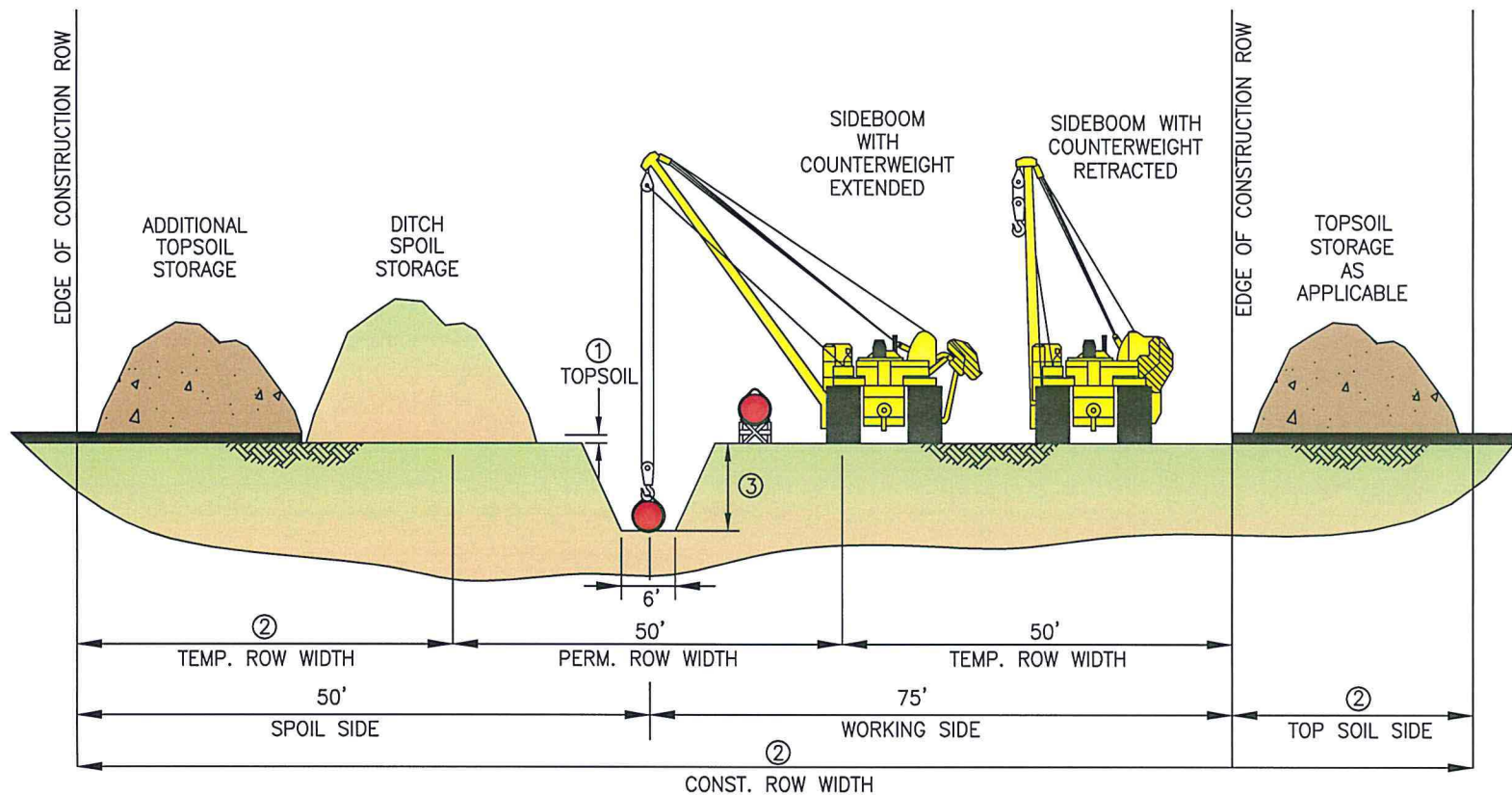


DAKOTA ACCESS, LLC

TYPICAL RIGHT-OF-WAY CONFIGURATION  
AGRICULTURAL- FULL TOP SOIL SEGREGATION W/DRAIN TILES

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NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

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PROJECT NO. 10395700



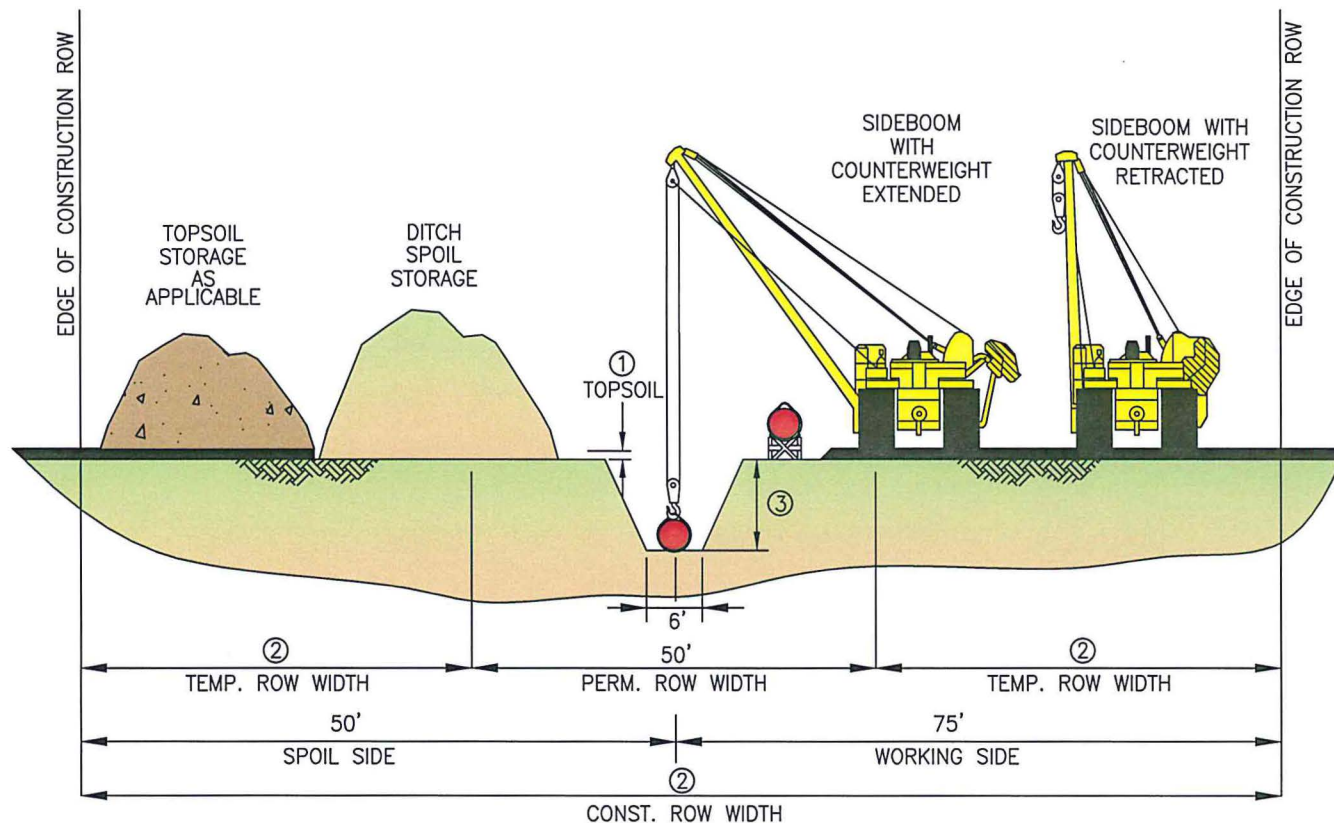
WOOD GROUP MUSTANG, INC.



DAKOTA ACCESS, LLC

TYPICAL RIGHT-OF-WAY CONFIGURATION  
UPLAND CONSTRUCTION FULL TOP SOIL SEGREGATION

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NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

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REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO. 10395700



WOOD GROUP MUSTANG, INC.

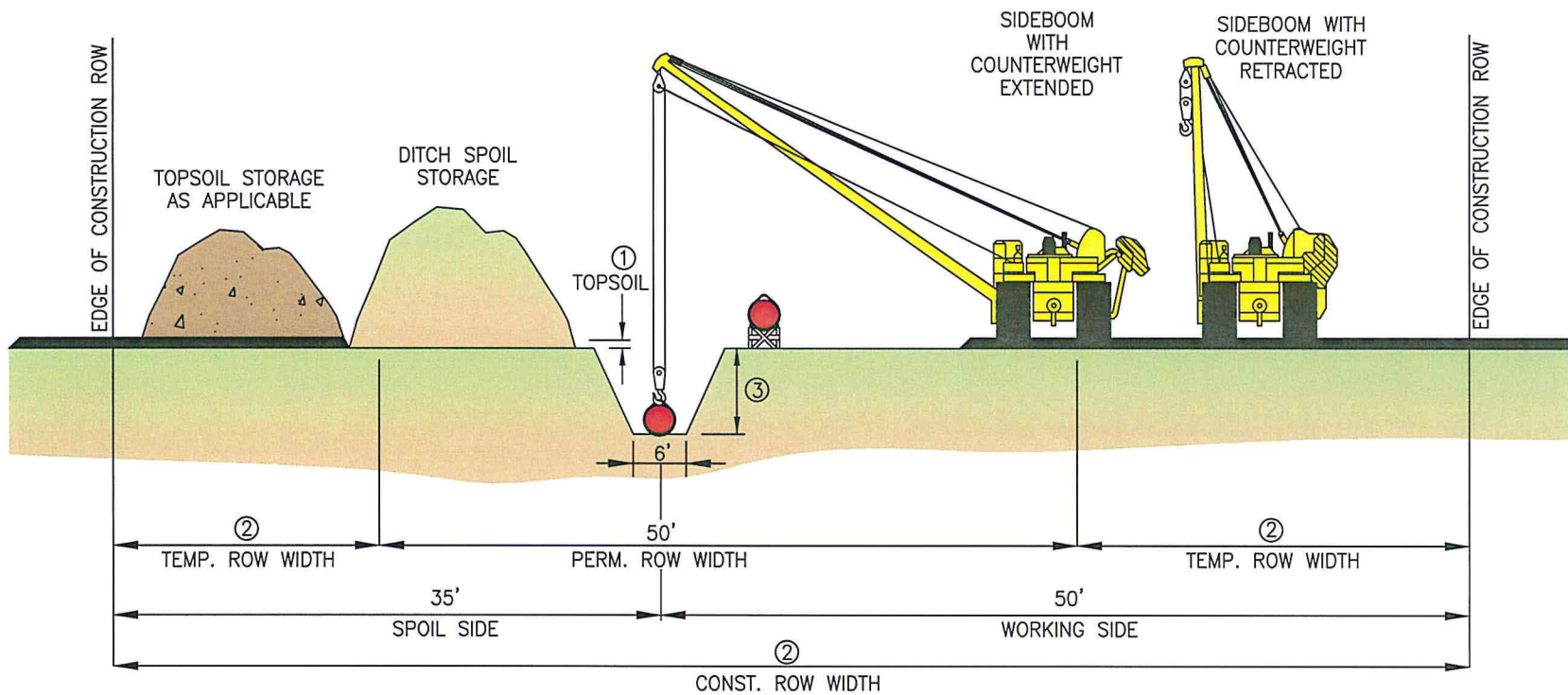


DAKOTA ACCESS, LLC

TYPICAL RIGHT-OF-WAY CONFIGURATION  
UPLAND CONSTRUCTION DITCH LINE ONLY TOP SOIL SEGREGATION

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NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE-SPECIFIC CONDITIONS; MAX 12" INCHES, MIN-ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

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REV.	DATE	BY	DESCRIPTION	CHK.

PROJECT NO. 10395700



WOOD GROUP MUSTANG, INC.



DAKOTA ACCESS, LLC

TYPICAL RIGHT-OF-WAY CONFIGURATION  
HEAVILY FORESTED LANDS, WETLANDS AND UPLAND

DRAWN BY: JWH

DATE: 09/15/14

DWG. NO.

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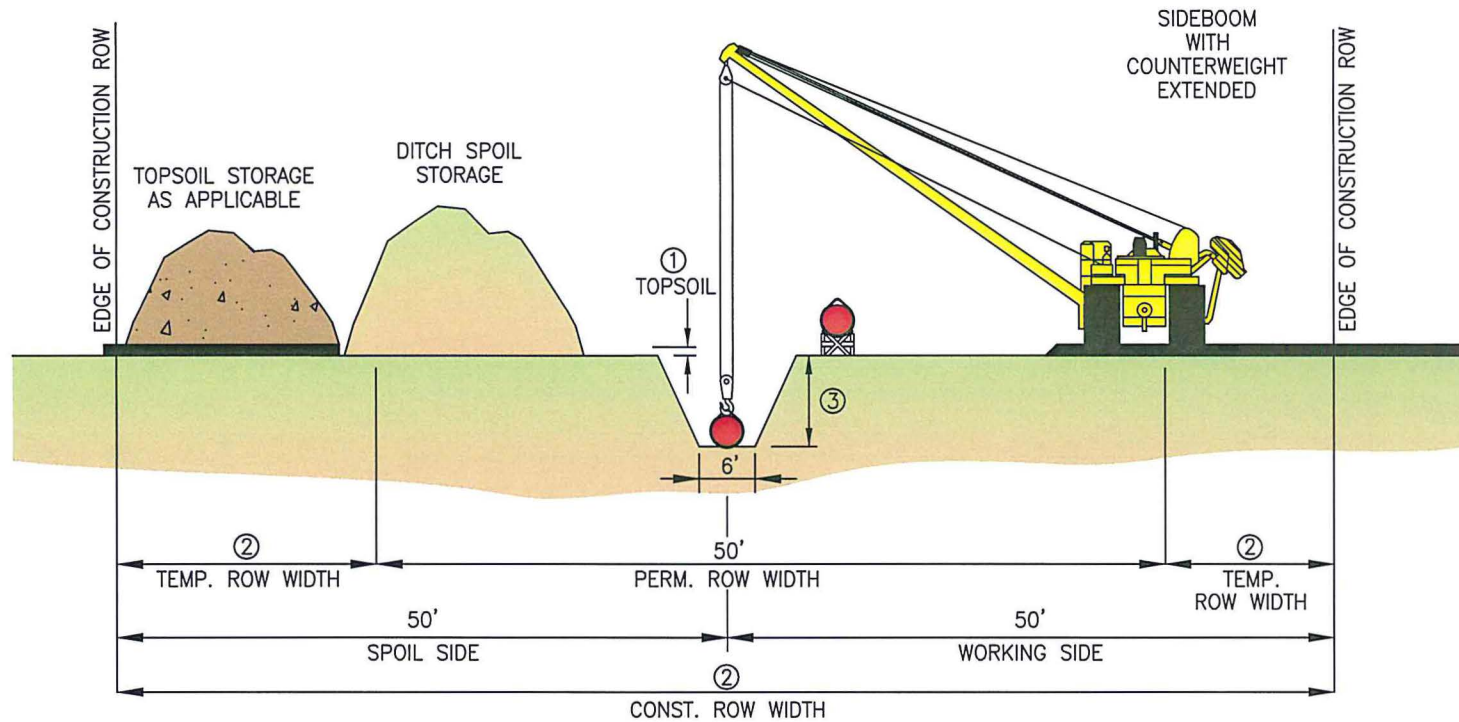
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P12-57-IA

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SCALE: N.T.S.

APP.:



NOTES:

- ① DEPTH OF TOP SOIL SEGREGATED BASED UPON SITE--SPECIFIC CONDITIONS; MAX 18" INCHES, MIN--ACTUAL DEPTH OF TOP SOIL.
- ② ACTUAL WIDTH OF ROW WILL VARY DEPENDING UPON DEPTH OF TOP SOIL TO BE SEGREGATED.
- ③ DEPTH OF COVER BASED UPON LANDOWNER OR STATE SPECIFIC REQUIREMENTS.

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PROJECT NO. 10395700



WOOD GROUP MUSTANG, INC.

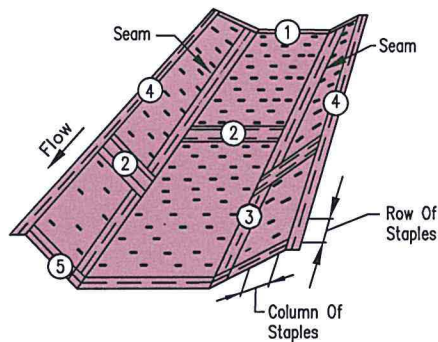


DAKOTA ACCESS, LLC

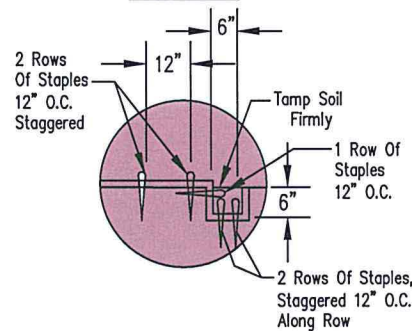
TYPICAL RIGHT-OF-WAY CONFIGURATION  
SCRUB SHRUB SATURATED WETLANDS

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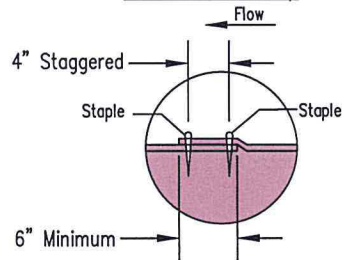




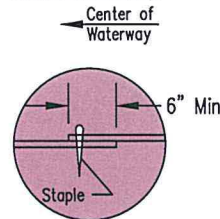
**DETAIL 1**  
**Anchor Trench**



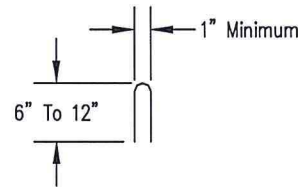
**DETAIL 2**  
**Blanket Roll End Overlap**



**DETAIL 3**  
**Blanket Side Overlap**



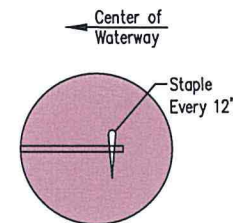
**STAPLE DETAIL**



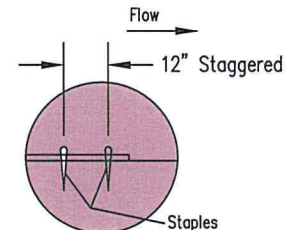
**NOTES:**

- The erosion control blanket consists of a machine produced mat of specified material. The product must meet the minimum requirements specified in Table 1, below. Ensure that the product is new and unused, and is furnished in rolls. Alternative materials may be used upon approval by the designer.
- Prepare soil prior to installing erosion control blanket, including seeding, fertilizing, and lime application.
- The erosion control blanket is to be placed in firm contact with the soil and not be allowed to bridge over surface irregularities. The blanket can not be stretched.
- Install the erosion control blanket according to manufacturer's instructions. If no manufacturer's instructions are available, install the blanket as follows:
  - Use "U" shaped staples, 0.12 in diameter wire or greater (#11 gauge). See Staple Detail for dimensions.
  - Bury upstream end of blanket in a trench 6 inch wide by 6 inch deep and stapled in staggered rows across the width as shown in Detail 1.
  - For joining ends of rolls, overlap end of upslope blanket a minimum of 6 inches over downslope blanket (shingle style). Use a double row of staggered staples 4 inches apart, as shown in Detail 2.
  - Overlap blankets on side slopes a minimum 6 inches over the blanket below (shingle style). Staple overlap at 12 inch intervals. See Detail 3.
  - Staple the outer edge along sides of the blanket every 12 inches. See Detail 4.
  - Staples are to be placed alternately in columns (in the direction of the waterway) 2 feet apart and in rows (across the waterway) 3 feet apart, throughout the area covered by erosion blanket.
  - Downstream (terminal) end of blanket are to be stapled with a double row of staggered staples 12 inches apart. See Detail 5.
- Start laying the blankets by rolling center blanket in the direction of flow, centered on the centerline of waterway. No overlap of blankets at the center of the waterway.

**DETAIL 4**  
**Blanket Side Edge**



**DETAIL 5**  
**Terminal End**



Not To Scale

**TABLE 1. MINIMUM REQUIREMENTS FOR EROSION CONTROL BLANKET**

(See Note 1)	Coconut Blanket	Wood Fiber Blanket	
Type of Fiber	100% coconut fibers	100% curled wood fibers	
Weight, lbs/sq. yd.	0.50	0.63	
Life Expectancy			
Fiber Length	N/A	80% of fibers > 6 in.	
Fiber Dimensions	N/A	0.021 in. x 0.042 in.	
Netting	Cover Top and bottom of blanket with a max. 5/8" x 5/8" opening size netting, bound to the mat on max. 1.5" centers.	Cover Top and bottom of blanket with a max. 5/8" x 5/8" opening size netting	
Netting Required ? <input type="checkbox"/> Yes <input type="checkbox"/> No			

0	01/13/16	MR	ISSUED FOR USE	RAL
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PROJECT NO. 10395700



**WOOD GROUP MUSTANG, INC.**



DAKOTA ACCESS, LLC

**TYPICAL**  
**EROSION CONTROL BLANKET INSTALLATION DETAILS**

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## **APPENDIX B**

### **SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN**



**Dakota Access Pipeline**  
**Draft Spill Prevention, Containment, and**  
**Countermeasures Plan**

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APPENDIX G - TYPICAL PETROLEUM STORAGE AND HANDLING VOLUMES ON A  
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APPENDIX H - EMERGENCY RESPONSE CONTRACTORS; DISPOSAL AND TREATMENT  
FACILITIES

## **1.0 INTRODUCTION**

Dakota Access has developed this Spill Prevention, Containment, and Countermeasures (SPCC) Plan for the Dakota Access Dakota Access Pipeline Project (Project) to provide preventative and mitigative measures to minimize the environmental impact associated with inadvertent spills or releases of fuel, lubricant, or hazardous materials during construction of the Project. These measures will be implemented by the construction contractor or Dakota Access inspection staff (unless otherwise indicated) during construction of the Project. Each construction contractor (Contractor) on the Project will be required to prepare a job- specific SPCC Plan which will be submitted to Dakota Access prior to commencement of construction.

## **2.0 PLANNING AND PREVENTION**

Dakota Access requires its Contractors to implement proper planning and preventive measures to minimize the likelihood of spills, and to quickly and successfully clean up a spill, should one occur. Dakota Access has developed this SPCC Plan to set forth minimum standards for handling and storing regulated substances and for cleaning up spills. Potential sources of construction-related spills include storage tank leaks, machinery and equipment failure, and fuel handling and transfer accidents. The Contractor will be responsible for implementing, at a minimum, the following planning and prevention measures.

### **2.1 ROLES AND RESPONSIBILITIES**

#### **2.1.1 Spill Coordinator**

- A Spill Coordinator shall be designated and employed by the Contractor, subject to approval by Dakota Access.
- The Spill Coordinator shall mobilize on-site personnel, equipment, and materials for containment and/or cleanup commensurate with the extent of the spill.
- The Spill Coordinator shall assist the appropriate Emergency Response Contractor (Appendix H) and monitor containment activities to ensure that the actions are consistent with the requirements of this SPCC Plan.
- The Spill Coordinator and/or Chief Environmental Inspector or the Field Construction Manager, in consultation with appropriate agencies, shall determine when it is necessary to evacuate spill sites to safeguard human health.
- The Spill Coordinator shall notify the Environmental Manager and Chief Environmental Inspector immediately of any spill.
- The Spill Coordinator will assist the Chief Environmental Inspector in completion of a

spill report form.

- The Spill Coordinator will identify available Emergency Response Contractors, who are subject to Dakota Access approval.
- The Spill Coordinator should not contact an agency regarding a spill without authorization from the Environmental Manager and/or Chief Environmental Inspector.

#### **2.1.2 Environmental Manager**

- The “Environmental Manager” referred to in this SPCC Plan will be a designated Dakota Access employee or a third-party Designee.
- The Environmental Manager will have a Chief Inspector located at the construction sites. The Chief Inspector may act on the behalf of the Environmental Manager on certain issues that will be defined before construction is started.
- The Chief Inspector will monitor the Contractor's compliance with the provisions of this SPCC Plan.
- All “reportable spills” must be reported immediately to the Construction Manager, Environmental Manager, and Chief Inspector (“reportable spills” will be defined by state-specific guidelines. See Appendix C). The Chief Inspector, with assistance from the Spill Coordinator, is responsible for completing a Spill Report Form (Appendix A) within 24 hours of the occurrence of a reportable spill.
- The Spill Coordinator and/or Environmental Manager or the Project Manager, in consultation with appropriate agencies, shall determine when it is necessary to evacuate spill sites to safeguard human health.
- The Environmental Manager will promptly report spills to the appropriate federal, state, and local agencies as required and coordinate with these agencies regarding contacting additional parties or agencies.

#### **2.1.3 Field Construction Manager**

- The “Field Construction Manager” referred to in this SPCC Plan will be the Chief Inspector, a designated Dakota Access employee, or a third-party designee who is responsible for the management of construction activities on this Project (representing the Construction Manager for Dakota Access).
- The Field Construction Manager is the initial point of contact of the Spill Coordinator when a spill occurs, and determines the containment measures that may be



required.

- The Field Construction Manager is responsible for documenting the general information regarding any spills such as work stoppages, injuries, fires, and the extent of exposure to workers on the site.
- The Field Construction Manager is responsible for coordinating any emergency response services that may be required such as the Fire Department, the Sheriff Department, or for contacting Emergency Response Contractors.

#### **2.1.4 Authorized Personnel**

- Authorized Personnel are representatives of the Contractor who are designated to handle fuel, lubricants, or other regulated substances.
- Authorized Personnel shall be familiar with the requirements of the SPCC Plan and the consequences of non-compliance.

#### **2.1.5 Construction Superintendent**

The Contractor's Construction Superintendent or representative must immediately notify the Environmental Manager and Chief Inspector of any spill of a petroleum product or hazardous liquid, regardless of volume.

#### **2.1.6 Construction Personnel**

- Construction Personnel are representatives of the Contractor involved with installation of the Project.
- Construction Personnel shall notify the Construction Superintendent or Spill Coordinator immediately of any spill of a petroleum product or hazardous liquid, regardless of volume.

#### **2.1.7 Responsibility of Administration**

The Contractor is responsible for the administration of its SPCC Plan.

### **3.0 GENERAL BEST MANAGEMENT PRACTICES**

#### **3.1 TYPICAL FUELS, LUBRICANTS AND HAZARDOUS MATERIALS**

The table in Appendix G identifies fuels, lubricants and coolants generally present on pipeline construction spreads and identifies typical total volumes, storage, and transportation methods. Contractors will have appropriate Material Safety Data Sheets (MSDS) on-site as required by the Occupational Safety and Health Administration (OSHA).

## **3.2 PREVENTIVE ACTIONS**

The following preventive actions and procedures will be accomplished prior to construction.

### **3.2.1 Storage, Refueling, and Lubrication Areas**

Contractors will designate and establish storage, refueling, and lubrication areas prior to construction which will minimize the environmental and safety impacts associated with inadvertent releases of fuel, lubricants, or hazardous substances, as per the following guidelines.

- Refueling and storing potentially hazardous materials will not occur within a 150-foot radius of any private wells or within a 400-foot radius of any municipal or community water supply wells.
- Storage of fuel, lubricants, or hazardous materials within 100 feet of perennial waterbodies, wetland boundaries, or within a municipal watershed will not be conducted.
- No hazardous or potentially hazardous materials, other than essential equipment fuel (e.g., gasoline and diesel fuel) or standard lubricants (e.g., engine oils and grease) will be transported into the right-of-way or construction area without Environmental Manager coordination and approval.
- All petroleum products used by the Contractor necessary for fueling and maintenance of construction equipment shall be stored at a well-maintained and supervised location. Diesel fuel, gasoline, and lubricating oils shall be stored in bermed and lined containment structures or other approved fabricated containment reservoirs.
- All vehicle maintenance waste (oils and lubricants) shall be collected in proper containers within the designated storage, refueling, and lubrication areas. Vehicle washing will be conducted in an area that will ensure that none of the wash water enters any waterbody or wetland. All vehicle wastes will be properly disposed of at facilities permitted to receive hydrocarbon vehicle waste.

### **3.2.2 Special Refueling Activities**

When unique conditions require refueling within 100 feet of the banks of a waterbody, a wetland boundary, or within any municipal watersheds, this activity must be approved in advance by the Environmental Inspector following a review that no reasonable alternatives exist and incorporation of any necessary additional emergency response measures. At a minimum, the review will consider the environmental risks of relocating equipment to an authorized refuel/lubrication area verses risks involved with refuel/lubrication in-place. Additional emergency response measures include availability absorbent materials or other secondary spill containment materials for immediate application prior to commencing refueling activities.

### **3.2.3 Contingency Supplies**

Each construction crew shall have on-hand sufficient supplies of absorbent materials, barrier material, and DOT-approved containers to allow for rapid containment and recovery of any potential spill.

### **3.2.4 Waste Removal**

Standing procedures and individual responsibilities regarding excavation, transport, and off-site disposal of any soil material contaminated by a spill will be established prior to construction.

### **3.3 NOTIFICATIONS**

Whenever any spill of a hazardous or potentially hazardous substance occurs, the Environmental Manager will be notified. The Environmental Manager will help direct further response actions in accordance with EPA guidelines and assist throughout the cleanup and disposal of wastes.

### **3.4 HAZARDOUS MATERIALS SPILL RESPONSE TRAINING**

The Contractor shall instruct construction personnel in the operation and maintenance of equipment to prevent an accidental discharge or spill of fuel, oil, and lubricants. Personnel shall also be made aware of the pollution control laws, rules, and regulations applicable to their work.

A spill prevention briefing shall be scheduled and conducted by the Contractor prior to the initiation of construction to assure adequate understanding of this SPCC Plan. The topics to be addressed at the briefing shall include the following:

- SPCC Plan contents;
- Possible equipment failure and malfunction;
- Precautionary measures;
- Standard operating procedures in case of a spill;
- Equipment, materials, and supplies to be maintained by the Contractor and made available for cleanup of a spill.

### **3.5 CONTRACTOR'S WASTE DISPOSAL**

All wastes generated during construction shall be stored at the Contractor's Field Warehouse, or other approved collection site, in DOT-approved containers.

### **3.6 MITIGATION ACTIONS**

The following guidelines specify the procedures used to control a release, notify appropriate officials, clean up waste, and document corrective actions.



### **3.6.1 Control of Spills or Releases**

Controlling spills and releases shall be accomplished by stopping or segregating the source of the release, using the required stockpiled materials to contain the spill and, if warranted, stopping operations within the affected areas.

### **3.6.2 Notifications**

The Contractor shall first notify the Environmental Manager and Chief Inspector of any spill. If the spill is of a reportable quantity, the Environmental Manager shall notify the required agencies, and, if the situation warrants, the Field Construction Manager shall notify the appropriate local police, fire department, and/or area residents. The landowner will be notified if a spill of hazardous materials occurs of one pint or more. The Contractor shall have designated employees on-call 24-hours-per-day for notification of the emergency response companies referenced in Appendix H.

### **3.6.3 Cleanup and Disposal Actions**

The Contractor's Spill Coordinator will direct cleanup of all releases. Contaminated soils, absorbent materials, and other waste generated by the spill/release will be placed in DOT-approved storage/shipping containers (see Appendix E). The containers will be labeled indicating the contents and placed in a designated accumulation point for disposal. Depending on the type of waste generated, the containers shall be transported and disposed of in accordance with appropriate EPA disposal criteria by permitted transporters and disposers.

In the event that a fuel spill occurs within a controlled containment dike, in lieu of a pump/valve drainage system, the Contractor shall immediately engage a certified vacuum cleanup service in the vicinity.

Arrangements shall be made for spill cleanup vacuum services within various vicinities. These companies will be on-call 24-hours-per-day to provide emergency cleanup services, as required by the Contractor.

### **3.6.4 Records**

The Contractor shall maintain written records of all actions taken during the course of a spill event.

## **4.0 SPILL PROCEDURE**

### **4.1 REPORTABLE QUANTITY SPILLS**

Unless otherwise directed, the reporting, disposal, and pre-cleanup sampling requirements in this section apply to all spills of reportable quantities (Appendix C).

## 4.2 IMMEDIATE SPILL RESPONSE ACTIONS

The Contractor shall implement this SPCC Plan using the following steps in response to a spill of hazardous materials:

### Immediate Safeguards

- Evacuate the area of personnel, if warranted.
- Stop operation of affected equipment/area, if warranted.
- Turn off utilities to the area, if necessary.
- Cordon the area to prevent entry of unnecessary personnel or equipment. Establish a single point of ingress and egress to control access to the spill area.
- Take whatever steps possible to eliminate the source of the leak or spill (e.g., shut off valves, upright containers, stop pumps).
- Accumulate as much information as possible as to the nature and size of the spill.
- Use the Construction Spill Report Form (see Appendix A) for the type of information required.

### Spill Event Log Establishment

Documentation of all spill-related activities will include the following information in the log:

- Time and date of initial notification of spill and approximate time the spill occurred.
- Start and completion time of all key activities.
- A detailed description of all activities undertaken and identification of personnel accomplishing these activities.
- Note time of all correspondence, personnel involved with the correspondence, and nature of the correspondence.
- The log shall be maintained until initial actions to clean up the spill are complete (approximately 24 hours, unless conditions extend the response to the emergency).

### Notifications

- All notifications shall be accomplished at the direction of the Spill Coordinator or Construction Director.

- Notify the Environmental Manager of any spill and provide the necessary information by using the Construction Spill Report Form (Appendix A).
- Make other Contractor and Company and agency notifications per the SPCC Plan, or as instructed by the Environmental Manager and Section 4.3, Reporting Requirements, of this Plan.
- Notify local police, fire department or hazardous material units, if assistance is necessary.
  - Notify local residents, if necessary.
  - The landowner will be notified if a spill of hazardous materials occurs of one pint or more.

#### Spill Control

For spills on land or pavement:

- Plug all storm drains the spill may gain access to.
- Construct terrace dam or ditch to stop the spill's flow.
- Scatter hay, straw, sand, absorbent pads, or other similar materials to absorb the spill.
- If free-standing fluid is present, actions can be taken to skim fluids and place into DOT-approved containers.

For spills on water:

- Ensure that all possible efforts are made to limit the migration of the surface spill until properly equipped cleanup teams can arrive.
- Create a back current to limit out-flow of material.
- Use absorbent floats and/or booms, if available.
- Create shoreline earth berms to prevent spill from reaching surface waters. Use skimmers, pumps or available absorbent materials to remove spill from water, should spill breach berms.

#### Area Spill Cleanup

- Follow site cleanup and decontamination requirements which are provided in this SPCC Plan.



- Remove cleanup debris from spill area. Basic guidance is provided in Section 4.4, Disposal of Cleanup Debris and Materials.

#### Spill Materials Disposal

All spill material shall be disposed of in accordance with EPA Regulations. General guidance is provided in Section 4.6, Cleanup Requirements.

### **4.3 REPORTING REQUIREMENTS**

The following reporting requirements by the Contractor are required in addition to applicable reporting requirements under the Clean Water Act (CWA), Toxic Substances Control Act (TSCA), or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and other documents which establish the SPCC reporting requirements.

Notify the Environmental Manager and Chief Inspector in the event of any leaks or spills. Use the Construction Spill Report Form (see Appendix A) for providing necessary information. The Chief Inspector will provide guidance based on the potential impact of the spill.

### **4.4 DISPOSAL OF CLEANUP DEBRIS AND MATERIALS**

All contaminated soils, solvents, rags, and other materials resulting from the cleanup actions will be properly stored, labeled, and disposed of in accordance with the appropriate EPA regulations. Some general guidance follows:

- Soils and/or other contaminated materials shall be placed in DOT-approved sealed containers.
- Containers shall be labeled with required waste label(s), dated, and inventoried.
- Containers may be stored at the construction site in the identified staging areas for up to 90 days.
- All containers shall be disposed of in accordance with EPA Regulations using permitted transporters and permitted disposal facilities.
- All hazardous waste containers shall be properly manifested prior to departure from the construction area. The Contractor and Dakota Access will maintain all manifest records with the Project file for at least three years after the containers were shipped for disposal.

#### **4.5 DETERMINATION OF SPILL BOUNDARIES IN THE ABSENCE OF VISIBLE TRACES**

For spills where there are insufficient visible traces, yet there is evidence of a leak or spill, the boundaries of the spill shall be determined using a statistically based sampling scheme. The Environmental Manager will provide sampling assistance.

#### **4.6 CLEANUP REQUIREMENTS**

##### **4.6.1 General Requirements:**

- All soil within the spill area (i.e., visible traces of soil and a buffer of one lateral foot around the visible traces) must be excavated.
- All excavation material shall be disposed of as mentioned in Section 4.4, Disposal of Cleanup Debris and Materials, and the appropriate EPA Regulations.
- All cleanup soil and wastes shall be collected in DOT-approved containers. See Appendix E for a listing of approved containers.
- Appendix D contains guidance on how to manage the area used to temporarily store waste containers.
- Appendix F contains guidance on inspection procedures for stored waste containers required by EPA Regulations.
- The ground shall be restored to its original configuration by back-filling with clean soil.
- Cleanup requirements of a spill area shall be completed within 48 hours after notification or knowledge of the spill.

##### **4.6.2 Effect of Emergency or Adverse Weather**

Completion of cleanup may be delayed beyond 48 hours in case of circumstances including, but not limited to:

- Civil emergency;
- Adverse weather conditions;
- Lack of access to the site;
- Emergency operating conditions.
- The occurrence of a spill on a weekend or after-hours. Overtime costs are not acceptable reasons to delay response.

- Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergencies, have left insufficient visible traces, a statistically based sampling scheme to determine the spill boundaries will be developed and implemented.

#### **4.7 RECORDS**

All records that document spill events and corrective actions taken will be maintained in the project files for three years from the date the corrective actions were completed. Documentation and certification of area decontamination shall be conducted upon completion of and during all cleanup operations. The records and certifications shall be completed, as follows:

- Identification of the source of the spill (e.g., type of equipment or container).
- Estimated or actual date and time of the spill occurrence.
- The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather, the nature and duration of the delay).
- A brief description of the spill location.
- Pre-cleanup sampling data used to establish the spill boundaries if required due to insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.
- A brief description of the solid surfaces cleaned and of the wash/rinse method used.
- Approximate depth of soil excavation and the amount of soil removed.
- A certification statement signed by the Construction Director, Spill Coordinator, and the Environmental Manager stating the cleanup requirements have been met and the information contained in the record is true to the best of his/her knowledge.
- The estimated cost of pre- or post-cleanup and sampling by man-hours, dollars, or both.

#### **4.8 RESPONSIBILITY FOR PROCEDURE**

Address any questions to the Dakota Access Environmental Manager (name and address to be announced).



**APPENDIX A**  
**CONSTRUCTION SPILL REPORT FORM**

Date of Spill: \_\_\_\_\_ Date of Spill Discovery: \_\_\_\_\_  
Time of Spill: \_\_\_\_\_ Time of Spill Discovery: \_\_\_\_\_  
Location Name: \_\_\_\_\_ Region: \_\_\_\_\_  
Name and Title of Discoverer: \_\_\_\_\_  
Type of material spilled and manufacturer's name: \_\_\_\_\_  
Legal Description of spill location: \_\_\_\_\_  
Directions from nearest community: \_\_\_\_\_  
Estimated volume of spill: \_\_\_\_\_ Estimated Material Recovered: \_\_\_\_\_  
Weather Conditions: \_\_\_\_\_  
Topography and surface conditions of spill site: \_\_\_\_\_  
Spill medium (pavement, sandy soil, water, etc.): \_\_\_\_\_  
Proximity of spill to surface waters: \_\_\_\_\_  
Did the spill reach a waterbody? \_\_\_\_\_ Yes \_\_\_\_\_ No  
If so, was a sheen present? \_\_\_\_\_ Yes \_\_\_\_\_ No  
Describe the causes and circumstances resulting in the spill: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Describe the extent of observed contamination, both horizontal and vertical (i.e., spill-stained soil in a 5-foot radius to a depth of 1 inch): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Describe immediate spill control and/or cleanup methods used and implementation schedule: \_\_\_\_\_  
\_\_\_\_\_  
Current status of cleanup actions: \_\_\_\_\_  
\_\_\_\_\_  
Name/Company/Address/Phone Number for the following:  
Construction Superintendent: \_\_\_\_\_  
\_\_\_\_\_  
Spill Coordinator: \_\_\_\_\_  
\_\_\_\_\_  
Environmental Manager: \_\_\_\_\_  
\_\_\_\_\_  
Person Who Reported the Spill: \_\_\_\_\_  
\_\_\_\_\_  
Environmental Inspector: \_\_\_\_\_  
\_\_\_\_\_  
Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_

*Spill Coordinator must complete this for any spill, regardless of size, and submit the form to the Dakota Access Environmental Manager and Chief Environmental Inspector within 24 hours of the occurrence.*

## **APPENDIX B**

### **REPORTABLE QUANTITIES**

#### **PURPOSE:**

This procedure identifies reportable quantities for releases of oil or hazardous substances in accordance with the CERCLA of 1980, the CWA, the Oil Pollution Act of 1990 (OPA 90) and the TSCA.

#### **RESPONSIBILITY FOR ADMINISTRATION:**

Contractor's Spill Coordinator is responsible for administration of this procedure.

#### **GENERAL:**

- I. Reportable quantity is the quantity of a release which requires notification of an agency.
- II. Any amount of oil spill into navigable waters is reportable. Oil spills onto land may be required to be reported, depending upon quantity spilled and state regulations. Refer to Appendix C.
- III. Appendix C lists Reportable Quantities (RQs) specified by the EPA.
- IV. RQs for Toxic Hazardous Wastes are based on the toxic contaminant. The RQ means the quantity of the waste, not the quantity of the toxic contaminant. If toxic waste has two or more contaminants, the RQ is based on the lowest RQ for those contaminants.

#### **PROCEDURES:**

- I. If oil is discharged into or upon the navigable waters of the United States, or adjoining shorelines:
  - A. Report the spill to the National Response Center (800) 424-8802.
  - B. Submit a written report within 60 days to the EPA Regional Administrator and the state agency, if the project has discharged quantities of oil into or upon the navigable waters of the United States or adjoining shorelines, which:
    1. Is more than 1,000 gallons of oil in a single spill event; or
    2. Is in harmful quantities as defined by 40 CFR Part 110, Oil Pollution Prevention regulations, in two spill events occurring within a twelve month period. Harmful quantity includes a film or sheen or discoloration of the surface of the water of adjoining shorelines or a sludge or emulsion deposited beneath the surface of the water or upon adjoining shorelines.
  - C. The report to the EPA Regional Administrator and the state agency will include:
    1. Name of facility;

2. Name(s) of the owner or operator of the facility;
3. Location of the facility;
4. Date and year of initial facility operation;
5. Maximum storage or handling capacity of the facility and normal daily throughput;
6. Description of facility, including maps, flow diagrams and topographical maps;
7. A complete copy of the SPCC Plan with amendments;
8. The cause of the spill, including a failure analysis of the system or subsystem in which the failure occurred;
9. The corrective actions and/or countermeasures taken, including description of equipment repairs and replacements;
10. Additional preventive measures taken or contemplated to minimize the possibility of recurrence; and,
11. Any additional information the EPA Regional Administrator may require pertinent to the SPCC Plan or spill event.

II. If a hazardous waste or hazardous substance has been released into the environment in quantities equal to or in excess of reportable quantities listed in 40 CFR 302, the NRC must be notified.

A. Contact the required agencies with the pertinent spill information.

B. Provide verbal notification of the following information:

1. Name and telephone number of reporter;
2. Name and address of facility;
3. Type of substance discharged;
4. Quantity of substance discharged;
5. Location of discharge;
6. Actions the person reporting the discharge proposes to take to contain, cleanup and remove the substances, if any; and,



7. Any other information concerning the discharge which may be requested by the Agency at the time of notification.

### III.

- A. If a hazardous waste, hazardous substance or extremely hazardous substance has been released in quantities equal to or in excess of reportable quantities the State Emergency Planning Commission and Local Emergency Planning Committee must be notified. Contact the required agencies with the pertinent spill information as soon as possible.
- B. Submit a written report on the incident to the appropriate state and local agency. The report will include the following:
  1. Name, address and telephone number of the owner or operator;
  2. Name, address and telephone number of the facility;
  3. Date, time and type of incident;
  4. Name and quantity of material(s) involved;
  5. The extent of injuries, if any;
  6. An assessment of actual or potential hazards to human health or the environment, where this is applicable;
  7. Assessment of the scope and magnitude of the spill;
  8. Description of the immediate actions that have been taken and the estimated quantity and disposition of recovered material that resulted from the incident; and,
  9. Provide an implementation schedule for undertaking suggested measures to eliminate the spill.

Spill incident reports will be maintained in the project files for a minimum period of three years.

## **APPENDIX C**

### **STATE REQUIREMENTS**

These guidelines are intended to help the Environmental Manager determine what is a reportable spill. In addition to the guidelines listed below, any substantial natural gas release which could cause an agency to initiate an unneeded emergency response should be considered reportable. The Environmental Manager and Spill Coordinator shall maintain a copy of federal reportable quantities (RQs) established under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). A complete list of CERCLA-regulated hazardous substances and associated RQs are listed in Table 302.4 in 40 CFR § 302.4. This list can also be found online at: <http://www.epa.gov/ceppo/pubs/title3.pdf>.

#### **State Specific Reporting Requirements**

The state-specific reporting requirements will be determined during the development of the project and upon identification of hazardous materials which might be present within the proposed areas of construction. The requirements will include any initial and follow-up reporting requirements and any additional Regulatory Agencies which need notification in the event of a release.

## **APPENDIX D**

### **HANDLING CONTAINERS AND DRUMS**

#### **PURPOSE:**

This procedure provides general requirements for the design of areas used to store containers and drums, in accordance with EPA regulations 40 CFR Part 112 and 40 CFR Part 265.170.

#### **RESPONSIBILITY FOR ADMINISTRATION:**

The Contractor's Spill Coordinator will be responsible for this procedure.

#### **GENERAL:**

- I. This procedure covers container and drum storage areas storing oils and petroleum distillates and non-permitted Hazardous Waste container and drum storage areas.
- II. It is not necessary to permit Hazardous Waste container and storage areas if the waste is stored for less than 90 days. Secondary containment is not required for non-permitted Hazardous Waste container and drum storage areas.

#### **PROCEDURE:**

- I. All containers and drums must be stored to avoid contact with the ground and standing water and protected to prevent rupture or leakage and to facilitate inspection.
- II. The areas with containers and drums in which oil and petroleum distillate are stored and have the potential to be spilled off site must be designed to contain spills and releases. Appropriate secondary containment may include dikes, berms or retaining walls sufficiently impermeable (10-5 centimeters per second) to contain spill oils.
- III. The following applies to hazardous waste containers and drums:
  - A. Containers and drums holding ignitable or reactive Hazardous Waste must be stored at least 50 feet from the property line of boundary. Follow manufacturers' instructions regarding appropriate storage of product containers and drums.
  - B. Hazardous Waste containers and drums must be separated and protected from incompatible materials by means of dike, berm, retaining wall or other approved means. Incompatible materials are wastes which, when mixed, can produce effects which are harmful to human health and the environment, such as (1) heat and pressure, (2) fire or explosion, (3) violent reaction, (4) toxic fumes or, (5) flammable fumes.
  - C. Hazardous Waste containers and drums must be inspected weekly. That inspection shall be documented, as per requirements listed in Appendix F.
- IV. The Contractor shall comply with all rules for Hazardous Waste Generators for satellite



accumulation under 40 CFR 262.24(c)(1)(ii):

- A. Mark each container with the words "Hazardous Waste."
  - B. Containers must be in good condition and kept closed except when adding or emptying waste. In addition, containers must not contain waste that is incompatible with the containers.
- V. Conditionally Exempt Small Quantity Generators and Small Quantity Generators of Hazardous Waste must comply with the following:
- A. Meet all conditions outlined in Procedure Section II.
  - B. Mark each drum or container with the words "Hazardous Waste."
  - C. Label each drum or container with the date it is first used and the date it is last used.

**RECORDS:**

Storage area inspection records must be kept with the project files for a minimum period of three (3) years.

**RESPONSIBILITY FOR PROCEDURE:**

Address any questions to the Environmental Manager (Name and address to be announced.)

## APPENDIX E

### DOT-APPROVED CONTAINERS

#### **PURPOSE:**

This procedure provides a listing of containers which have been approved by the EPA for storage of contaminated materials or wastes. These drums may be ordered from drum suppliers by specification number:

- I. Specification 5 - steel barrel or drum with removable head:
  - A. Body seams welded;
  - B. Chime (reinforced rim) reinforced;
  - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
  - D. Marked "DOT-5."
- II. Specification 5B - steel barrel or drum with removable head:
  - A. Body seams welded;
  - B. Chime (reinforced rim) reinforced;
  - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
  - D. Marked "DOT-5B."
- III. Specification 6D Overpack; cylindrical steel overpack, straight sided, for inside plastic container. Specification 6D Overpack must be used with the specification 2S or 2SL plastic container.
- IV. Specification 2S - polyethylene container:
  - A. No removable heads;
  - B. Constructed with new polyethylene resin;
  - C. Marked "DOT-2S;"
  - D. Must fit snugly in overpack container (Spec. 6D).
- V. Specification 2SL - molded or thermoformed polyethylene container:
  - A. No removable heads;
  - B. Constructed with new polyethylene resin;
  - C. Marked "DOT-2SL;"
  - D. Must fit snugly in overpack container (Spec. 6D).
- VI. Specification 17C - single trip container, steel drum:
  - A. Removable heads are authorized;
  - B. Crowned head;
  - C. Heads closed by 12 gauge bolted ring with drop forged lugs;
  - D. Marked "DOT-17C."

## **APPENDIX F**

### **INSPECTION OF WASTE DRUMS AND CONTAINERS**

#### **PURPOSE:**

This procedure outlines inspection requirements for waste drums and containers as required by Federal Regulations 40 CFR 262 - 265 and 40 CFR 761.

#### **RESPONSIBILITY:**

The Contractor's Spill Coordinator is responsible for implementation of this procedure.

#### **GENERAL:**

- I. Drums and containers used to store hazardous substances and wastes shall be inspected for leaks, malfunctions, deterioration, operator errors and discharges which may lead to a release into the environment or a threat to human health.
- II. If problems are discovered during the inspection, remedial action shall be taken immediately. The action taken will be noted on the inspection report form.

#### **PROCEDURE:**

- I. Each waste drum and container shall be inspected and records maintained on a Waste Container Inspection Form. Inspection records shall include the date and time of the inspection, the name of the inspector, observations and the date and nature of any problems, repairs and remedial action.
  - A. Waste drum and container storage areas shall be inspected weekly for the following:
    1. Leaking containers, deterioration of containers and deterioration of the spill containment system.
    2. Drums and containers shall be properly labeled and dated.
    3. Drums and containers shall be stored on pallets or drum racks.
  - B. If a drum or container is leaking, the incident shall be recorded on the inspection form and immediately cleaned up according to the SPCC Plan.

#### **RECORDS:**

- I. Inspection records shall be maintained in the project files for three (3) years from the date of inspection.
- II. A report of the remedial action taken for leaks shall be prepared and kept with either the original inspection forms, inspection log or in the records of the project. These records shall be maintained for three (3) years with the project files.



## RESPONSIBILITY FOR PROCEDURE:

Address any questions to the Company Environmental Manager (Name and address to be announced.)

[illegible]

**APPENDIX G**  
**TYPICAL PETROLEUM STORAGE AND HANDLING VOLUMES ON CONSTRUCTION**  
**SPREAD**

	Fluids	Typical Amounts	Storage	Typical Transport Mode
Fuels	Diesel	6,000-12,000 Gallons	1-3 Tanks or Tankers stored at Contractor locations	1-3 Fuel Trucks, 1-3 "Fuel Skids"
	Military Aviation Kerosene <sup>1</sup>	6,000-12,000 Gallons		
	Kerosene <sup>1</sup>	6,000-12,000 Gallons	5 gallon cans, 100 gallon storage in pickups, etc.	
	Gasoline	5,000 Gallons		
Lubricant	Engine Oil	< 500 Gallons	Bulk Storage or Retail Packaging at Contractor Yard Warehouse	1-3 "Grease" Trucks
	Transmission/ Drive Train Oil	< 500 Gallons		
	Hydraulic Oil	< 500 Gallons		
	Gear Oil	< 500 Gallons		
	Lubricating Grease	20-30 cases of 24 cans per case		
Coolants	Ethylene Glycol	100 Gallons		
	Propylene Glycol	100 Gallons		

## **APPENDIX H**

### **EMERGENCY RESPONSE CONTRACTORS; DISPOSAL AND TREATMENT FACILITIES**

The Contractor must dispose of all wastes according to applicable state and local requirements. A listing of potential Emergency Spill Response Contractors and waste disposal facilities is provided below. This list was developed from state-wide databases. This list represents firms operating at the time the data base was produced. These firms are not necessarily endorsed by Dakota Access. The Contractor is responsible for verifying if a contractor or facility is currently operating under appropriate permits or licenses. Selection of an Emergency Response Contractor or disposal facility is subject to approval by Dakota Access. The Contractor is responsible for ensuring wastes are disposed of properly.

Spill Response Contractors located along the proposed route will be determined during project planning.



**APPENDIX C**  
**INSPECTION FORMS AND INSTRUCTIONS**

**PROJECT**  
**STORM WATER POLLUTION PREVENTION PLAN**  
**INSPECTION AND MAINTENANCE REPORT**

Signature of Inspector: \_\_\_\_\_

Printed Name of Inspector: \_\_\_\_\_

Title of Inspector: \_\_\_\_\_

Qualifications of Inspector: \_\_\_\_\_

Date: \_\_\_\_\_

Current Weather Information: \_\_\_\_\_

Weather Information Since Last Inspection:

Beginning Date/Time of Last

Storm Event: \_\_\_\_\_

Duration of Last Storm Event: \_\_\_\_\_

Amount of Rainfall: \_\_\_\_\_ Inches

Discharges Since Last

Inspection/Storm Event: \_\_\_\_\_

NOTE: Inspection documents are to be maintained for a minimum of 3 years.

PROJECT  
STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT

**Earth Dikes/Berms**

Is the dike stabilized? \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

Is there evidence of washout or over-topping? \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

If water is present in the drainage ports, does it:

- Have a sheen on it? \_\_\_\_\_
- Have an acceptable TDS? \_\_\_\_\_
- Show excessive turbidity? \_\_\_\_\_

Maintenance required for Earthen Dike: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

To be performed by: \_\_\_\_\_ On or before: \_\_\_\_\_

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.



PROJECT  
STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT

**Roads and Locations Where Vehicles Enter or Exit the Construction Site**

Are sediment traps or barriers along road construction zones preventing runoff into adjacent wetlands, lakes, etc.? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

At locations where construction equipment exits onto paved roads, are the existing best management practices successfully minimizing off site tracking of sediments? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Maintenance Required: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

To be performed by: \_\_\_\_\_ On or before: \_\_\_\_\_

\_\_\_\_\_

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

PROJECT  
STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT

**Straw Bale and Filter Fence Barriers**

Do the barriers have tears or holes in them? \_\_\_\_\_

Are there any missing barriers? \_\_\_\_\_

Are the barriers properly aligned? \_\_\_\_\_

Where sediment has reached one-third the height of the barrier, has it been removed? \_\_\_\_\_

Have straw bales with excessive sediment saturation been replaced? \_\_\_\_\_

Maintenance required for barriers: \_\_\_\_\_

\_\_\_\_\_

To be performed by: \_\_\_\_\_ On or before: \_\_\_\_\_

**SWPPP Upgrades:**

If any deficiencies in pollution control structures or procedures were identified above, have those deficiencies been corrected and the Storm Water Management Plan modified, if appropriate? Explain.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

**PROJECT**  
**STORM WATER POLLUTION PREVENTION PLAN**  
**INSPECTION AND MAINTENANCE REPORT**

**General**

Have there been any uncontrolled releases of mud or muddy water or measurable quantities of sediment found off site? \_\_\_\_\_ Yes \_\_\_\_\_ No

If Yes, describe measures taken to clean up fugitive sediment: \_\_\_\_\_

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If Yes, describe measures taken to prevent a future occurrence: \_\_\_\_\_

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**PROJECT**  
**STORM WATER POLLUTION PREVENTION PLAN**  
**INSPECTION AND MAINTENANCE REPORT**

Location	Diversion Structure	Sediment Trap	Date Excavated	Date Filled	Date Dressed	Signs of Erosion	Stabilized ?	Ground Covered?	Date of Inspection

**NOTE:** If signs of erosion become apparent, stabilize by backfilling and leveling and use of mulch, sod, seeding, or other means of preventing further erosion.

Date: \_\_\_\_\_

Inspector's Name (Print and Initial) \_\_\_\_\_

PROJECT  
STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT

**Maintenance required for:**

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To be performed by: \_\_\_\_\_ On or before: \_\_\_\_\_

NOTE: Modifications to control measures **must** be made no more than 7 days after the inspection.

NOTE: Inspection documents are to be retained for a minimum of 3 years.

NOTE: Check flowline trenches for the following:

Settlement below natural grade

Washouts of spoil along excavated trenches

Muddy/contaminated rainwater

Placement of spoil upslope of trench