

**SOIL EROSION AND SEDIMENT POLLUTION CONTROL PLAN
FOR USE WITH OIL WELL DEVELOPMENT ON
Lot 9, Wells D-35, D-36, D-37, D41, D-42,
New Roads / Transmission Lines.**

For

Duhring Resource Company

The Project is in Sheffield Township, Warren County, Pennsylvania

1. General Information

Date: May 08, 2008

Landowner: Allegheny National Forest
29 Forest Service Drive
Bradford, PA 16701

Lease Owner: Duhring Resource Company
P.O. Box 726
Sheffield, PA 16347
(814)968-3337

Earthmoving

Contractor: To Be Determined

Plan Preparer: Hampson Surveying
4 Harmer Street, Box 14
Warren, PA 16365

Project Description: Duhring Resource Company is planning to develop five oil well locations, access roads, and to stone and existing road on the lands of the Allegheny National Forest, Lot 9 in Sheffield Township, Warren County, Pennsylvania. The disturbed area for the project will be kept to a minimum. Soil disturbances will occur while building a well locations and access roads. Wherever possible, existing roads and locations will be utilized to prevent earth disturbance.

Time Table: Locations and wells will be completed when weather conditions, earth moving crews, drilling schedules, and availability of drilling permits will allow operations.

increase

production. Equipment use is restricted for part of the year because of the seasonal high water table. The large stones on the surface interfere with harvesting and planting seedlings.

This soil has a limitation for most urban uses because of the seasonal high water table; the slope, in some places; the moderately slow permeability; and the very stony surface.

This soil is in capability subclass Vls and has a woodland ordination symbol of 2w.

4. Proposed Alterations to the Area

Oil well locations and minimal access roads as needed. Existing roads will be reclaimed whenever possible. Locations will be built using variations of the Sample Plans for a Single well included in the appendix. Roads and structures needed to support the roads should be built referencing the typical drawings in the Appendix as a reference.

5. Amount of Runoff

The amount of runoff from the project area depends on vegetation, soil type, and the area involved. Assuming a ten year storm, with minimal disturbance, and typical disturbed banks at a slope of 5:1, the Rational Equation for determining peak runoff rate calculates the runoff as being minimal.

If needed, culverts will be installed according to the specifications in the appendix. Culverts will also be installed at small intermittent channels that are concentrating runoff onto access roads.

Tables in the appendix show typical water bar and typical culvert installation.

6. Staging of Earthmoving Activities

This project should start sometime in the Summer of 2008. The activities to complete this project will be as follows:

1. Stabilization, if needed, of existing roads to the site.
2. Cutting of trees and shrubs to clear the location.
3. Removal and storage of topsoil from the location.
4. Digging a sump pit to collect all of the cuttings.

10. Reference

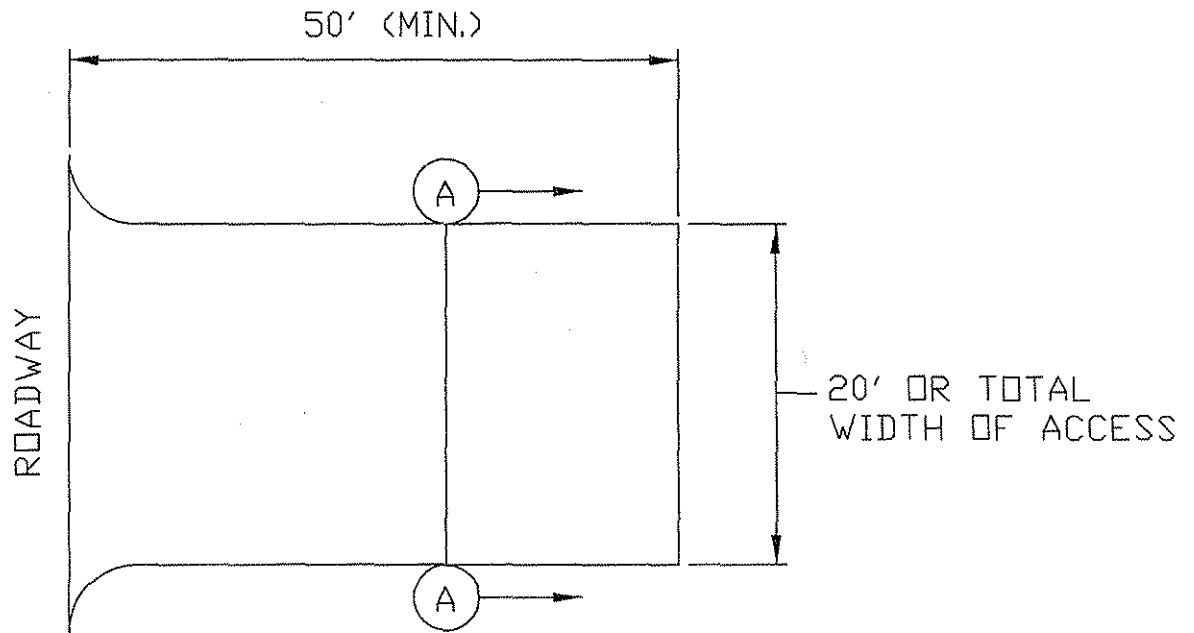
Oil and Gas Operators Manual, publication 550-0300-001, October 30, 2001

Soil Survey of Warren and Forest Counties, Pennsylvania, United States Department of Agriculture, Soil Conservation Service

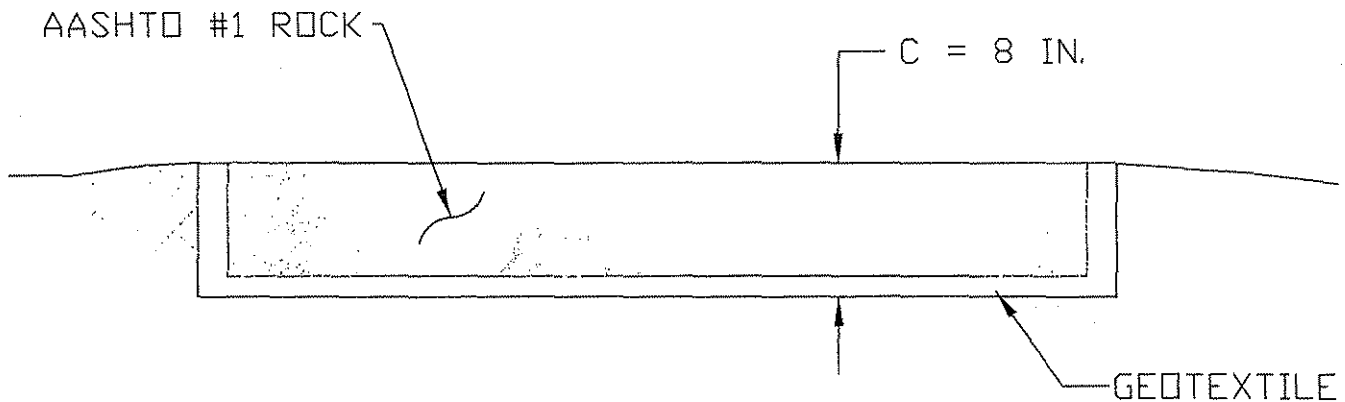
DEP Erosion and Sediment Pollution Control Program Manual, March 2000

DEP Underground Utility Line Construction, Typical Erosion and Sediment BMP's, August 1, 2001

STANDARD CONSTRUCTION DETAIL #16 Rock Construction Entrance



PLAN VIEW



SECTION A-A

MAINTENANCE: Rock Construction Entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. At the end of each construction day, all sediment deposited on paved roadways shall be removed and returned to the construction site.

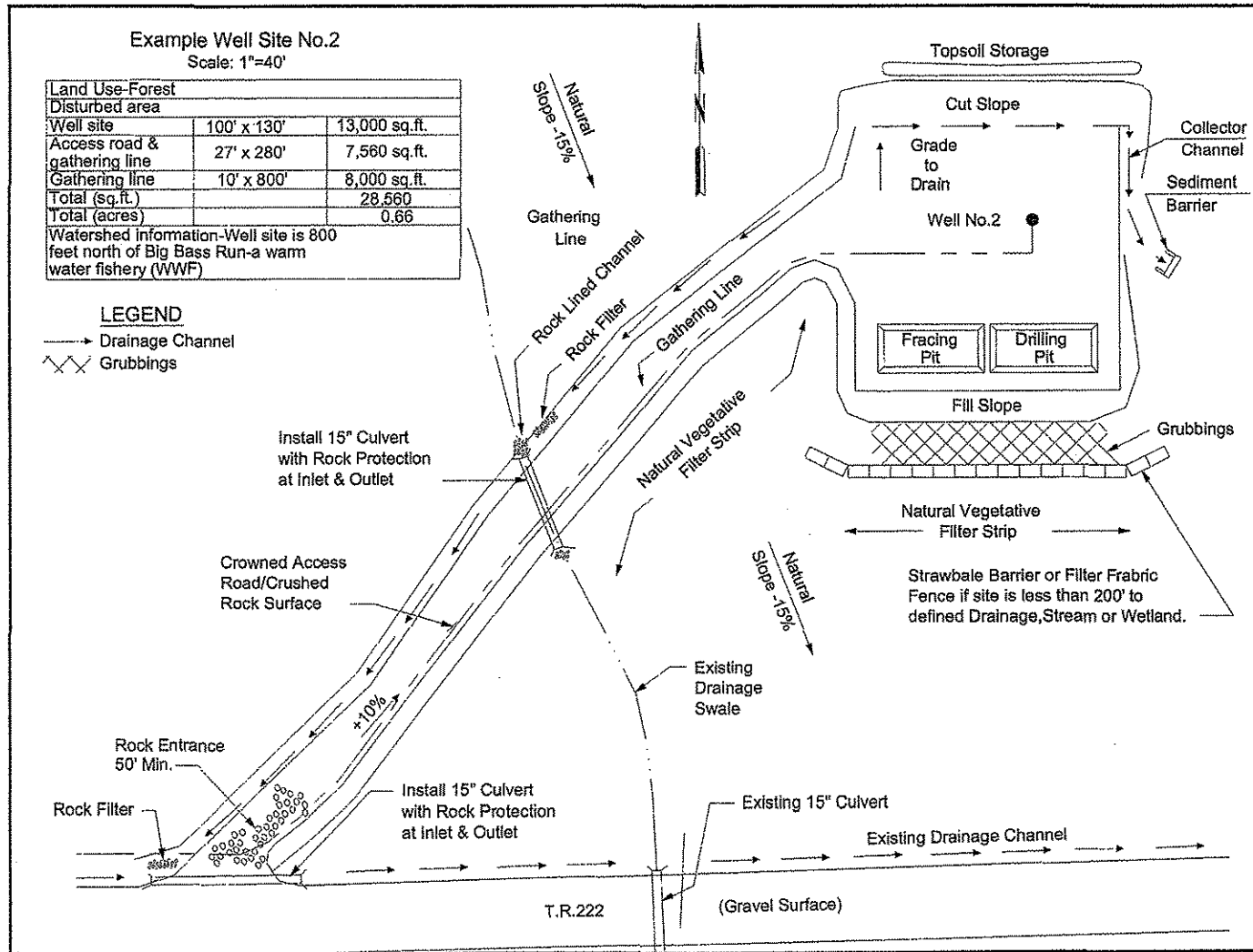


Figure 4-1 (b). Sample Plan for a Single Well

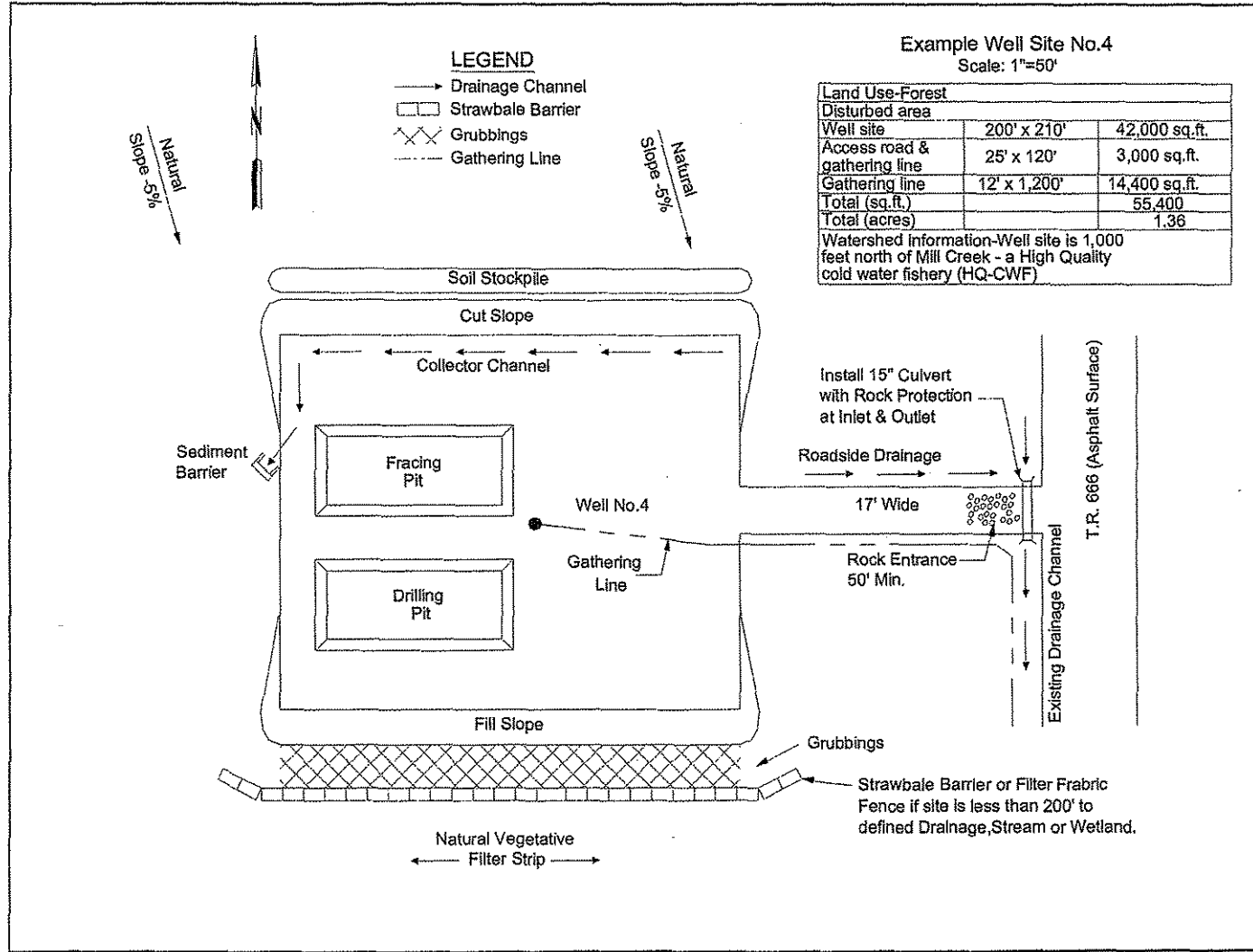


Figure 4-1(d). Sample Drawing for a Single Well

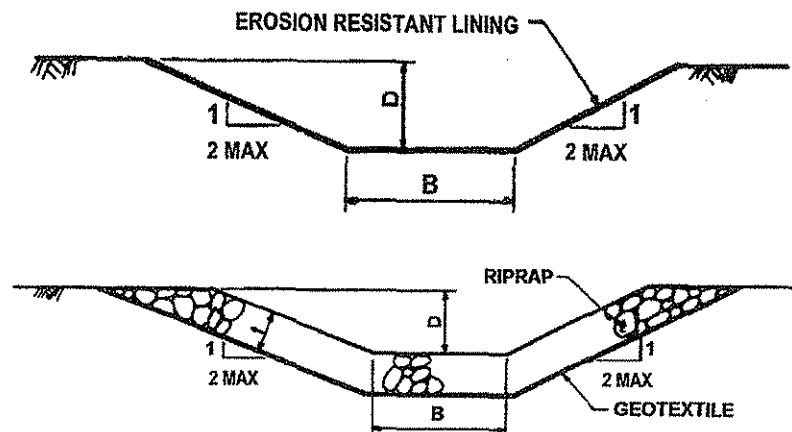


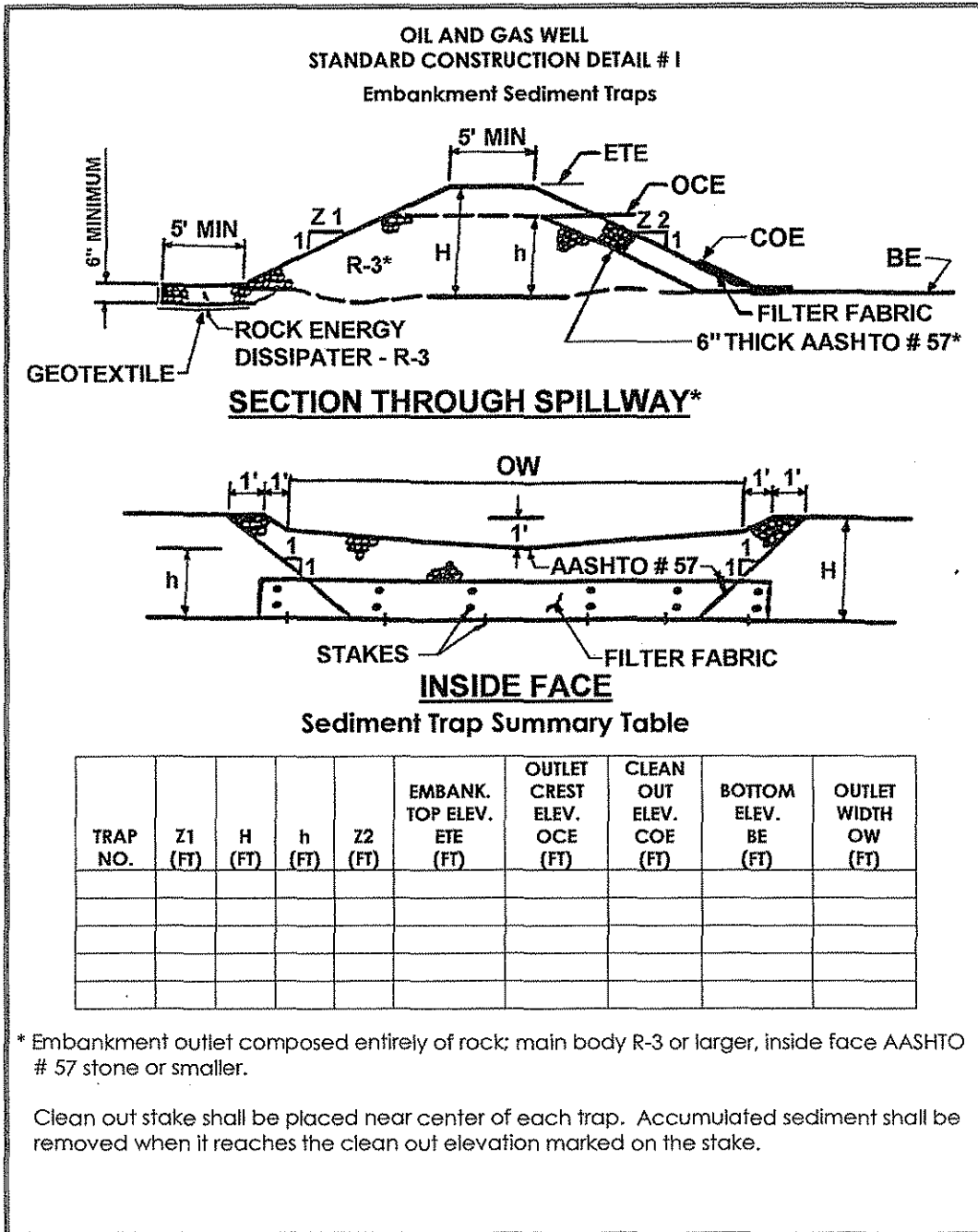
Figure 4-2. Typical Channel Cross Sections

9. **Diversion Channels and Collector Channels** - Diversion channels must be provided to collect runoff from upslope areas and divert the water around the well site. This diversion can be constructed by excavating a channel upslope of the well site, or by stockpiling the topsoil above the well site to form a berm to divert the runoff. The diversion should outlet to a level spreader or a vegetative filter strip. Another option is to install a channel at the base of the cut slope to collect the runoff before it runs onto the pad and into the drilling and fracing pits. This channel is also beneficial when springs or seeps are encountered in the cut slope. This channel should be stabilized and outlet to a level spreader or vegetative filter strip, a sediment trap or sedimentation basin.

Collector channels should be provided to collect runoff from the well site and fill slopes and convey it to a sediment trap, unless runoff from disturbed areas can be directed to the trap by some other means. These channels should be located below the disturbed areas and aligned so that positive drainage is provided to the sediment trap.

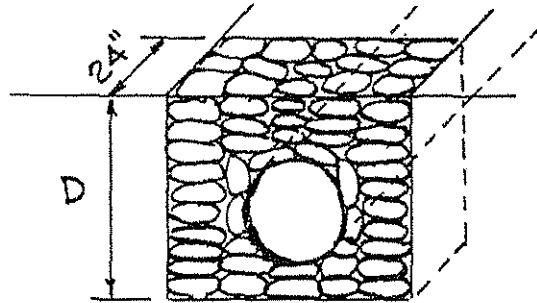
- a. Temporary channels should have sufficient capacity to convey 1.6 cfs/acre of contributing drainage area or the peak flow from a 2-year frequency storm event (2.25 cfs/acre or 5-year storm event in special protection watersheds).
- b. Permanent channels should be able to convey 2.75 cfs/acre or the peak flow from a 10-year storm.

Any channel remaining as part of site restoration must be lined with an erosion resistant lining.



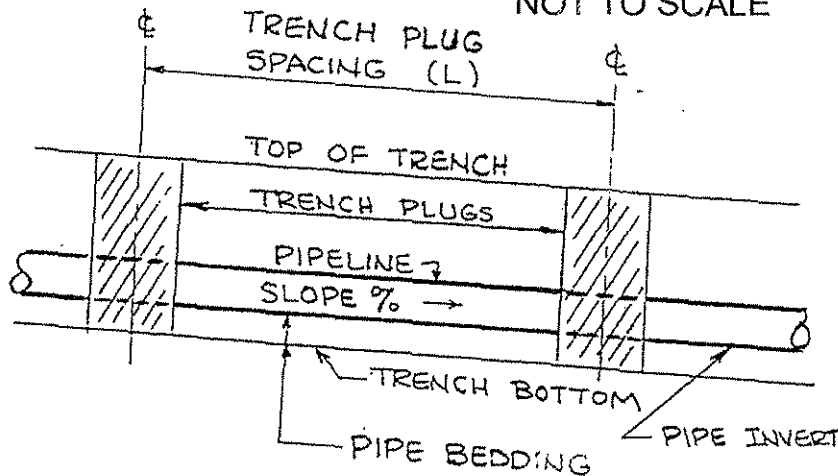
TRENCH BREAKERS / TRENCH PLUGS

TRENCH BREAKERS/TRENCH PLUGS SHOULD BE INSTALLED IN ALL UTILITY LINE TRENCHES PER TABLE 3. TABLE 3. INDICATES THE REQUIRED SPACING AND MATERIALS FOR THE TRENCH BREAKERS/TRENCH PLUGS.



D= TRENCH DEPTH TO BOTTOM OF TRENCH

SECTION VIEW
NOT TO SCALE



ELEVATION
NOT TO SCALE

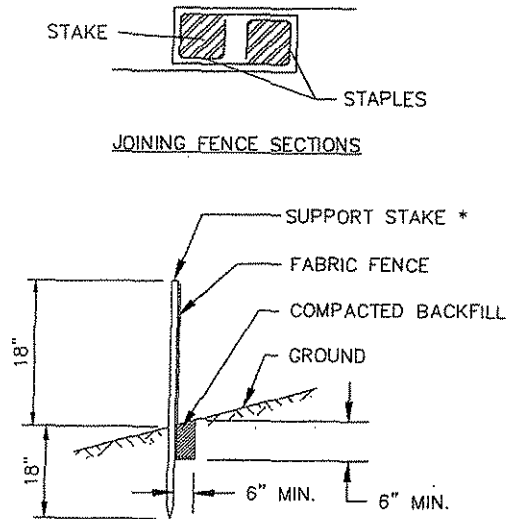
TABLE 3. REQUIRED SPACING AND MATERIALS FOR TRENCH BREAKERS/TRENCH PLUGS

TRENCH SLOPE	SPACING (L) IN FEET	PLUG MATERIAL
0-5%	*	*
5-15%	500	**EARTH FILLED SACKS
15-25%	300	**EARTH FILLED SACKS
25-35-%	200	**EARTH FILLED SACKS
35-100%	100	**EARTH FILLED SACKS
OVER 100%	50	CEMENT FILLED BAGS (WETTED)
OR		MORTARED STONE

* TRENCH BREAKERS/TRENCH PLUGS (EARTH FILLED SACKS) ARE REQUIRED AT ALL STREAM/RIVER/WATERBODY AND WETLAND CROSSINGS REGARDLESS OF TRENCH SLOPE.

** TO ENSURE PROPER TOPSOIL CONSERVATION, TOPSOIL SHOULD NOT

**OIL AND GAS WELL
STANDARD CONSTRUCTION DETAIL # III
Standard Filter Fabric Fence (18" High)**



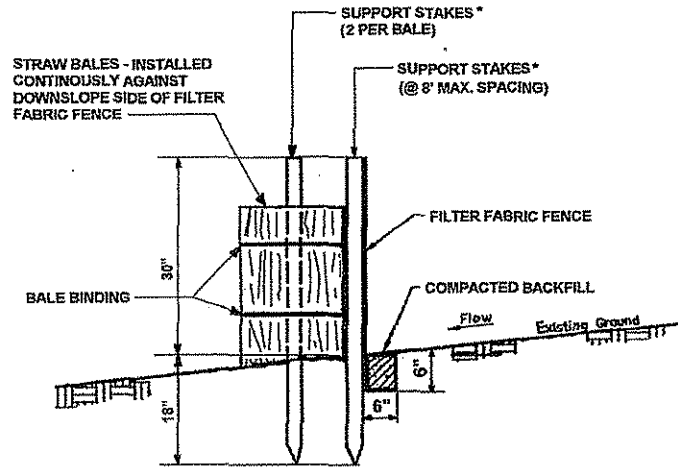
*Stakes spaced @ 8' maximum. Use 2"x 2" wood or equivalent steel stakes.

Filter Fabric Fence must be placed at level existing grade. Both ends of the barrier must be extended at least 8 feet up slope at 45 degrees to the main barrier alignment.

Sediment must be removed when accumulations reach 1/2 the above ground height of the fence.

Any section of Filter fabric fence which has been undermined or topped must be immediately replaced with a Rock Filter Outlet. See Standard Construction Detail # VII.

**OIL AND GAS WELL
STANDARD CONSTRUCTION DETAIL # V
Filter Fabric Fence Reinforced by Staked Straw Bales**



*USE 2" X 2" WOOD OR
EQUIVALENT STEEL STAKES.

Filter fabric fence must be installed at existing level grade. Both ends of each fence section must be extended at least 8 feet upslope at 45 degrees to the main fence alignment.

Sediment must be removed where accumulations reach 1/2 the above ground height of the fence.

Any fence section which has been undermined or topped must be immediately replaced with a rock filter outlet. See Standard Construction Detail # VII.

Figure 4-9a. Typical Culvert Installation

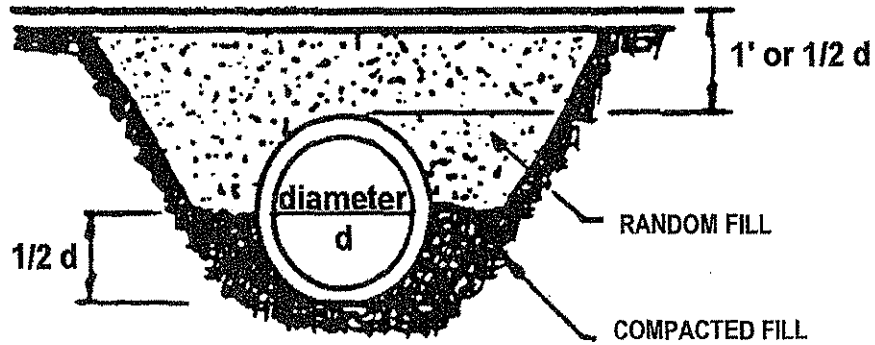


Figure 4-9b. Riprap Apron Outlet Protection

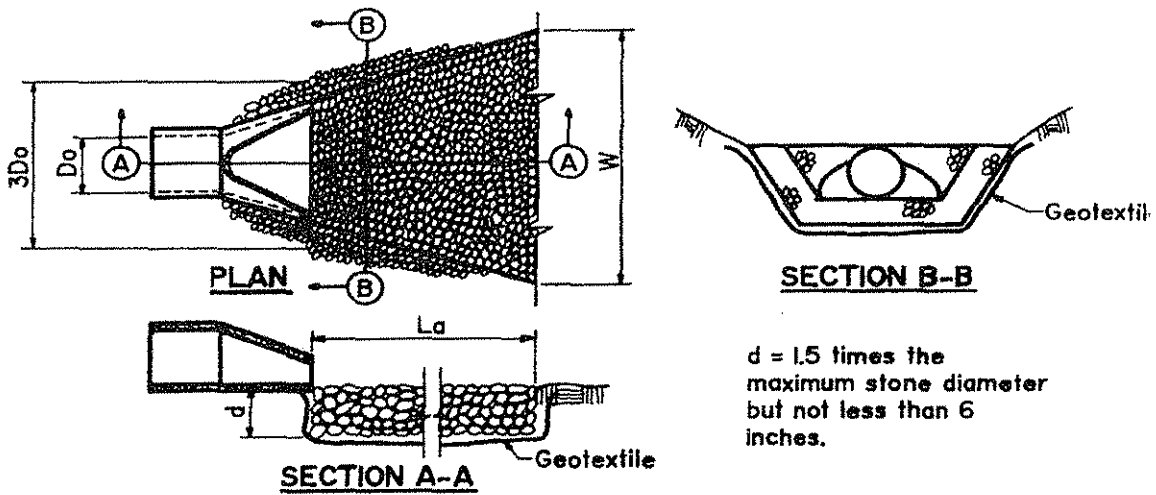
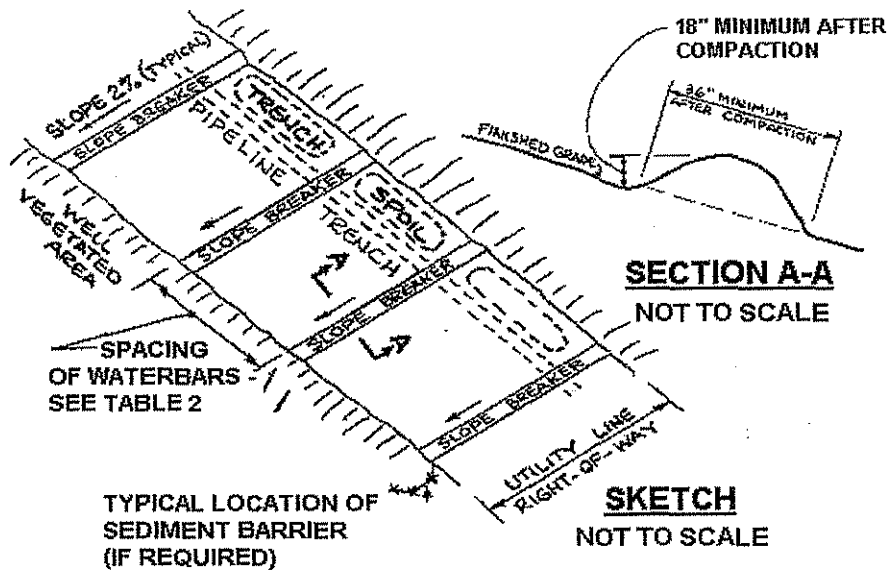


Table 4-6. Culvert Minimum Sizes and Spacing

ROAD GRADE S	CULVERT SPACING L	CULVERT SIZE (inches)					
		LENGTH OF SIDE HILL DRAINAGE (feet)					
		100-200	300	400	500	600	600+
2	500	12	15	15	15	15	18
3	400	12	15	15	15	15	18
4	350	12	15	15	15	15	18
5-6	300	12	12	15	15	15	18
7-8	250	12	12	12	15	15	15
9-11	200	12	12	12	12	15	15
12-13	150	12	12	12	12	12	15
14+	100	12	12	12	12	12	15

FIGURE 32
Waterbar Installation



Required Spacing for Permanent Waterbars	
Percent Slope	Spacing (FT)
< 5	*
5 - 15	150
15 - 30	100
> 30	50

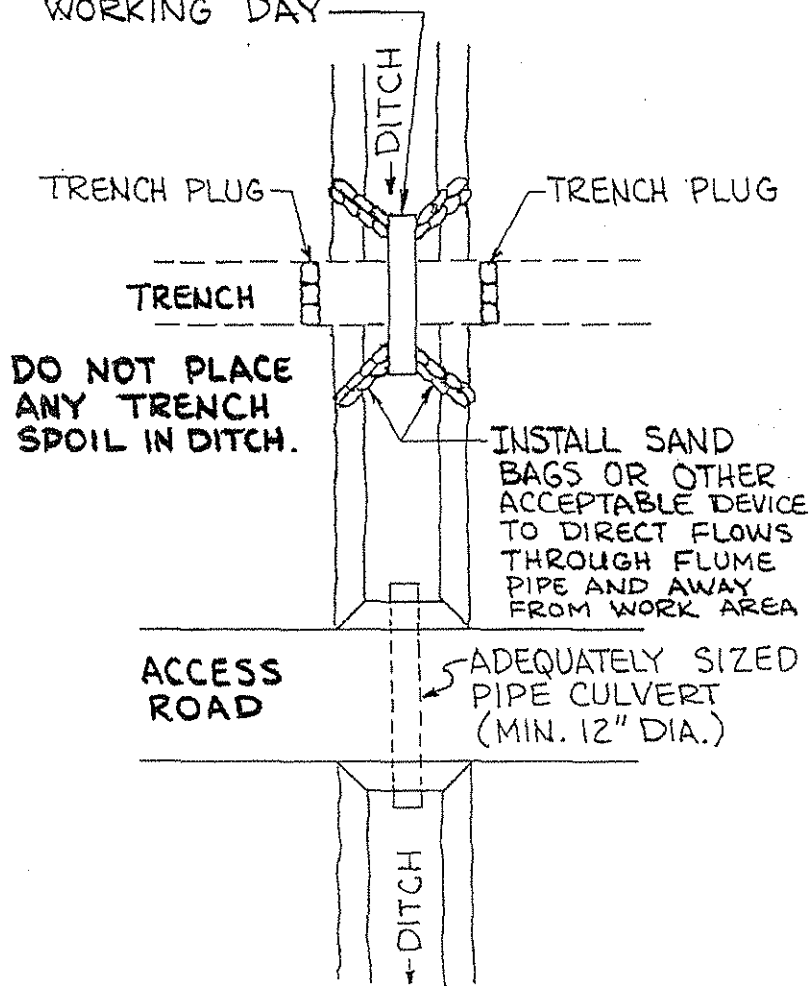
* Permanent waterbars are required at all stream, river, and other water-body crossings as well as upslope from roadway and railroad cut slopes. Otherwise not required.

Water bars (slope breakers, interceptor dikes) should be installed across the entire right-of-way on all slopes greater than 5%.

Waterbars should be constructed at a slope of 2% and discharge to a well-vegetated area. Waterbars should not discharge into an open trench. Waterbars should be oriented so that the discharge does not flow back onto the right-of-way. Obstructions, (e.g. straw bales, silt fence, rock filters, etc.) should not be placed in any waterbars. Where needed, they should be located below the discharge end of the waterbar.

SWALE/DITCH/CHANNEL/WATERWAY CROSSING

ADEQUATELY SIZED TEMPORARY PIPE CULVERT (MIN. 12" DIA.) REQUIRED FOR TRENCHES LEFT OPEN MORE THAN ONE WORKING DAY

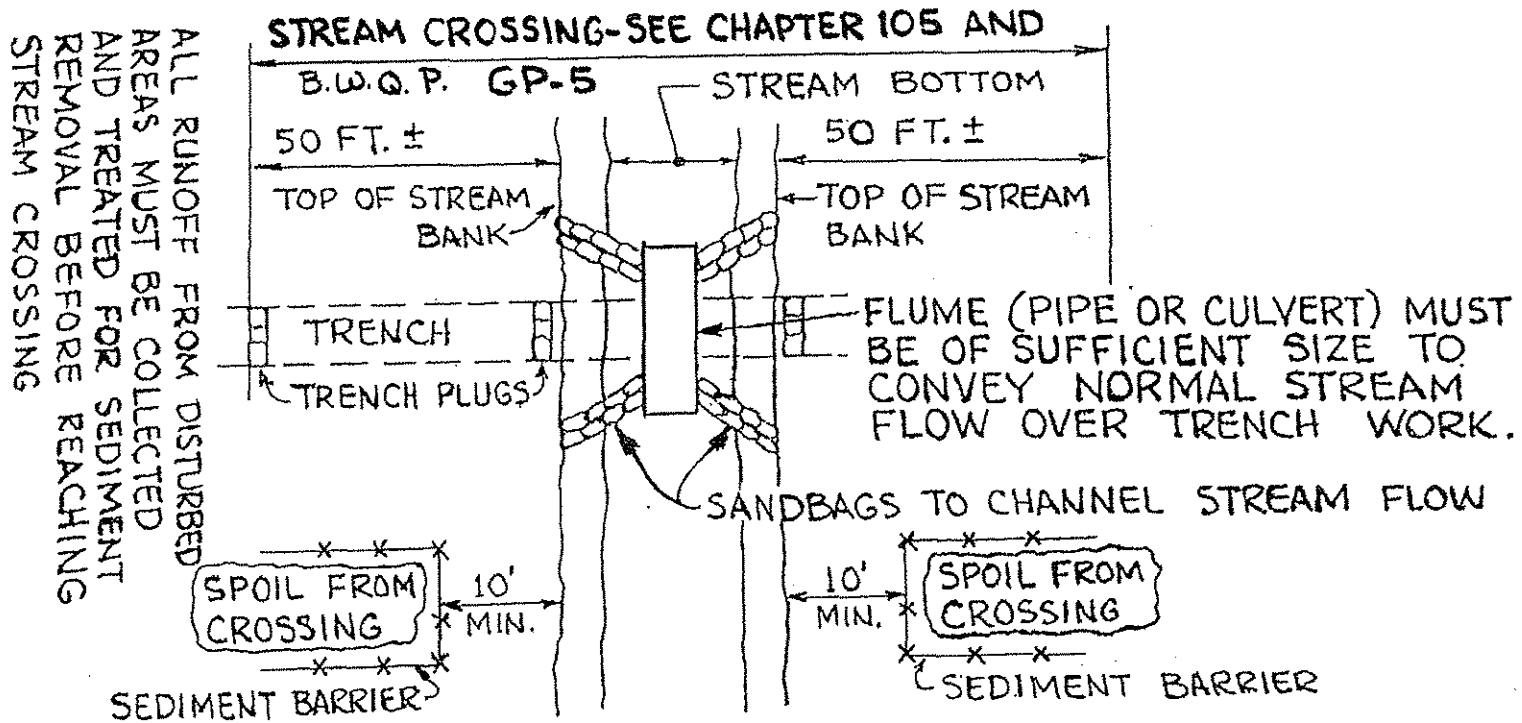


PLAN NOT TO SCALE

Adequately sized pipe culverts should be installed for access roads at all locations where access roads cross a swale/ditch/channel or waterway whether or not flowing water is encountered.

An adequately sized flume pipe or culvert properly "sand bagged" to direct flows through the flume pipe and away from the work area should be installed across the utility line trench at all locations where the trench crosses a swale/ditch/channel or waterway. Trench spoil should not be placed in any swale/ditch/channel or waterway. If flow exists in the swale/ditch/channel or waterway at the time of trenching, then the pipe flume or culvert properly "sand bagged" must be installed prior, to the trenching operation. If the swale/ditch/ channel or waterway is dry at the time of trenching, then the pipe flume or culvert and sandbags may be installed immediately after the trench is completed in that area. If the utility line trench IS excavated, the utility line installed and the trench backfilled on the same day, then a pipe flume or culvert is not needed providing that the swale/ditch/channel or waterway is dry and is reshaped and stabilized immediately.

22. UTILITY LINE STREAM CROSSING WITH PIPE FLUME



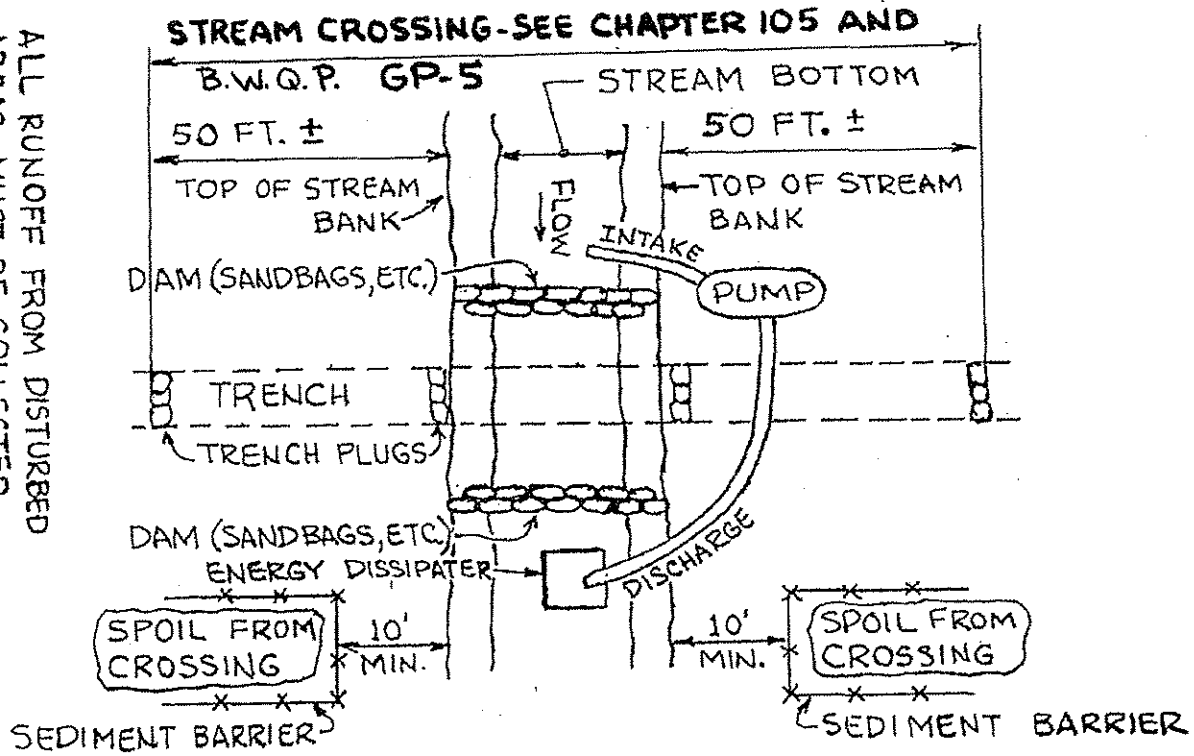
ALL RUNOFF FROM DISTURBED AREAS MUST BE COLLECTED AND TREATED FOR SEDIMENT REMOVAL BEFORE REACHING STREAM CROSSING

PLAN
NOT TO SCALE

23. UTILITY LINE STREAM CROSSING WITH DAM AND PUMPING

ALL RUNOFF FROM DISTURBED AREAS MUST BE COLLECTED AND TREATED FOR SEDIMENT REMOVAL BEFORE REACHING STREAM CROSSING

A STANDBY PUMP SHOULD BE AVAILABLE AT THE STREAM CROSSING SITE DURING PUMPING OPERATIONS.



PLAN
NOT TO SCALE

SEEDING

The Department recommends the use of the **Penn State Erosion Control & Conservation Plantings on Noncropland** Manual as a reference to use for selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. The publication is available from county Cooperative Extension Service offices. Specifications for these items may also be obtained from Penn DOT's Publication # 408, Section 804 or by contacting the applicable county conservation district. Upon selection of a reference, that reference must be used to provide all specifications for seeding, mulching, and soil amendments. Indicate the reference being used in the plan submittal.

Seeding rates are stated as pounds per acre (lb/A) of pure live seed (PLS). Pure Live Seed is the product of the percentage of pure seed times the percentage of germination divided by 100 (e.g. [85% pure seed × 72% germination] ÷ 100 = 61% PLS).

Actual Seeding Rates may be determined by dividing the PLS seeding rate by the %PLS shown on the seed tag, or calculated as shown above (e.g. for a PLS seeding rate of 12 lb/A from a seedlot with a PLS of 35%, the actual seeding rate is equal to $12 \div 0.35 = 34.3$ lb/A). If More Than One Species is used, indicate the application rate for each species.

The Department also recommends that soil testing be done prior to seeding and mulching to determine the proper soil amendments and application rates for the proposed seed mixture(s). Soil test kits are inexpensive and may be obtained from the county Cooperative Extension Service offices. When done properly, soil tests can actually save money that would otherwise be lost on improper soil amendments, unsuccessful seeding, and damage caused by erosion of unstabilized areas. In the absence of a soil test, soil amendments should be added at the rates specified by the selected seeding reference.

Site conditions such as soil limitations, steepness of slope, and proposed land use should be considered in selecting seed mixtures.

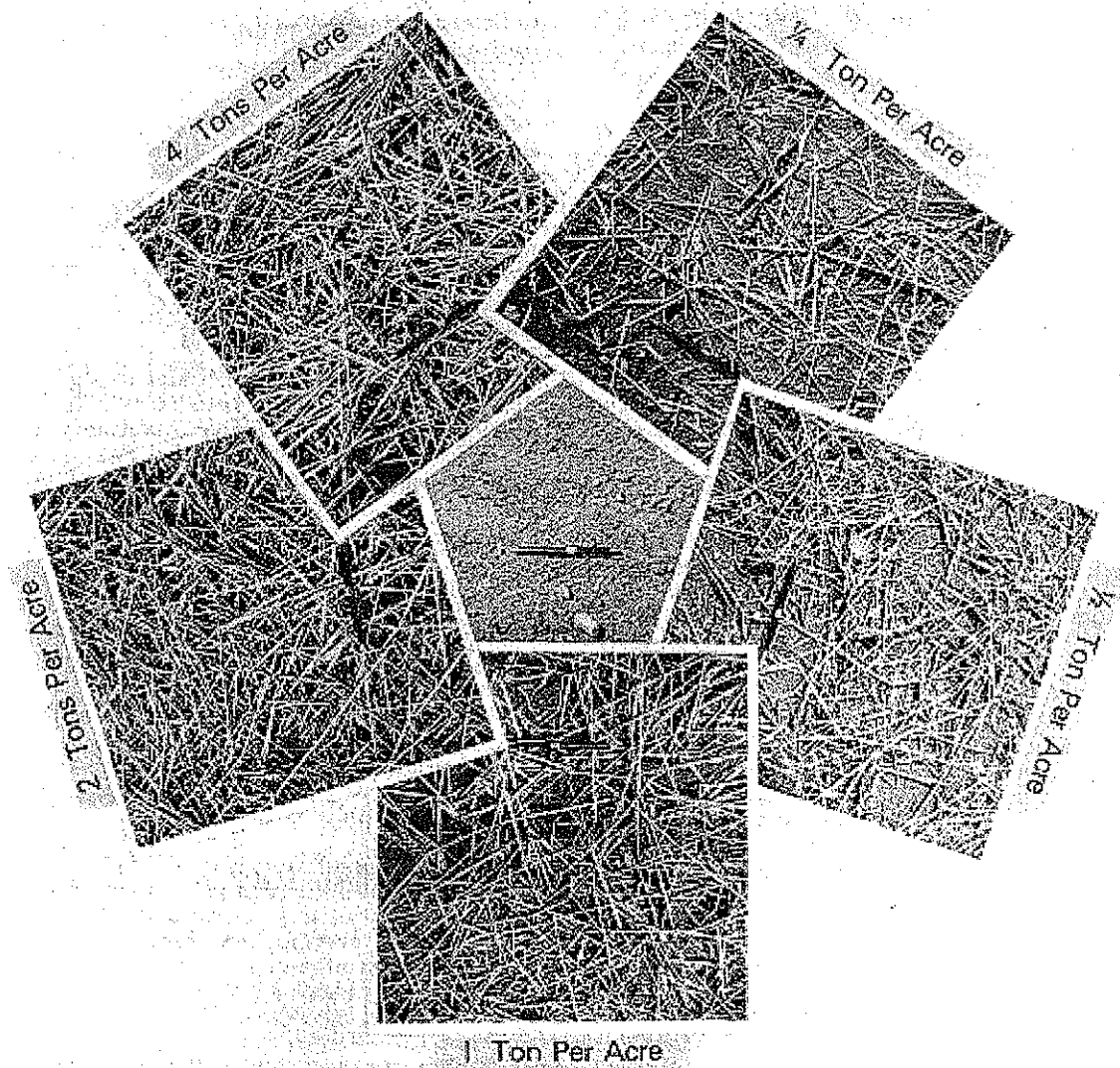
Tables contained in the county Soil Surveys published by the USDA Natural Resources Conservation Service provide valuable information regarding soil use limitations. Soils designated as "infertile", "wet", "droughty", "acid", etc. should be given special attention when selecting seed mixtures. Table 15 identifies plant species which are tolerant and intolerant of these soil conditions.

Wherever seeding is to be done on steep slopes ($\geq 3:1$), seed mixtures should be selected that are appropriate for steep slopes. Table 4 in the **Erosion Control & Conservation Plantings on Noncropland** and Table A (Section 804.2(b)) in Penn DOT's publication 408 identify seed mixtures suitable for steep slope conditions.

Other rates and mixtures will give similar results. Additional information on seeding and fertilizing may be obtained from the U.S. Department of Agriculture or the Soil Conservation Service.

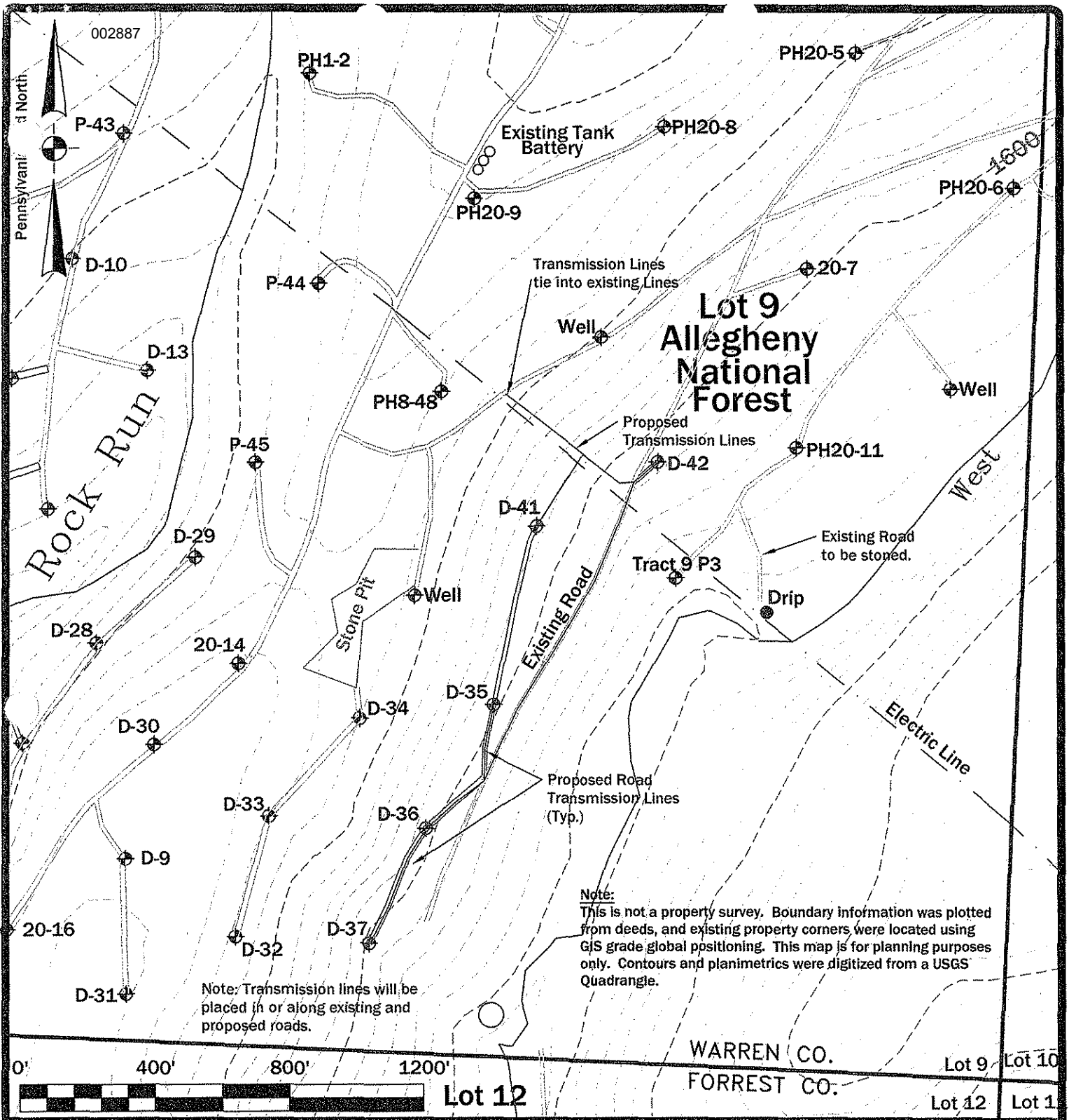
MULCHING - Mulches absorb rainfall impact, increase the rate of infiltration, reduce soil moisture loss due to evaporation, moderate soil temperatures, provide a suitable environment for germination, and protect the seedling from intense sunlight. All seeded areas should be mulched to minimize the potential for failure to establish an adequate vegetative cover. Mulching may also be used as a temporary stabilization of disturbed areas in non-germinating seasons.

FIGURE 19
Straw Mulch At Various Rates Of Application



Apply mulches at the rates shown in **Table 16**

Straw and hay mulch should be anchored immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil. This method is limited to slopes no steeper than 3:1. The machinery should be



Scale: 1" = 400'

Date: 05/08/08

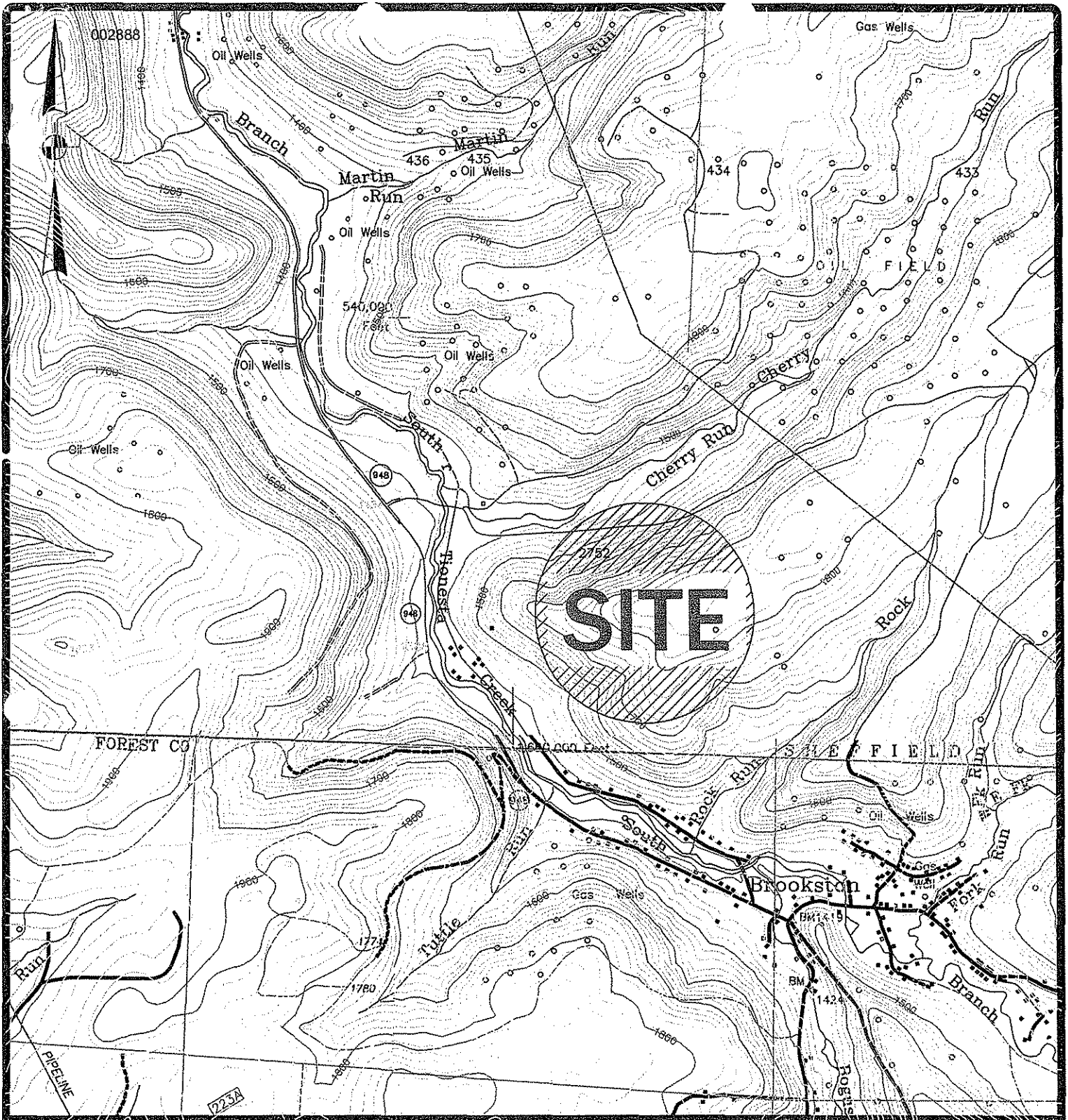


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 hampson@westpa.net

Exhibit – Site Plan
 for
 Duhring Resource Company
 Lot 9

Allegheny National Forest

Cherry Grove Township, Warren County
 Pennsylvania



Scale: 1" = 2000'

Date: 03/19/2007



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Exhibit-Location Map

for

Duhring Resource Company
 Cherry Run Area

Allegheny National Forest Wt.2752, Lot 8

Sheffield Township, Warren County

Pennsylvania