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CASE #09-T- 0073 NOI; AGRICULTURE COMMENTS AND RECOMMENDATIONS

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**To:** Jaclyn A. Brillong, Secretary; NYS Department of Public Service, Albany

**From:** Michael Saviola, NYS Department of Agriculture & Markets, Mt. Morris *MS*

**Date:** Feb 6, 2009

**Subject:** **Case 09-T-0073 Chesapeake Appalachia, L.L.C., "SF-503 16" Upgrade and Compressor Stations" NOI; Towns of Varick & Fayette; Seneca County; agriculture comments.**

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The Department of Agriculture and Markets (Ag & Mkts) has conducted a review of the NOI for Case 09-T-0073 submitted by Chesapeake Appalachia, i.e., the SF-503 16" Upgrade and Compressor Stations. On October 22, 2008, and prior to the filing of the NOI, Ag & Markets conducted a field review of the proposed pipeline located in active agricultural land. This review is based upon the visual field observations, together with John Strub of the NYS Department of Public Service (DPS), representatives of Chesapeake, and a review of the NOI document prepared and submitted to the NYS Public Service Commission (PSC) by Chesapeake.

Based on the site review, the proposed pipeline route crosses approximately 8.61 miles of active agricultural land, largely comprised of forage crops (corn & hay) and permanent pasture. In addition, one booster site and one compressor site are proposed as part of this NOI. According to the USDA- Web *Soil Survey of Seneca County, N Y. (Version 6, Dec 11, 2006)*, the soil types along the proposed pipeline route are of glacial origin and drainage classes range from poorly to well drained.

A proposed booster site is located in a reclaimed woodland area currently utilized as unimproved pasture on the Carl Nolt farm in the Town of Fayette. Based on conditions observed during the site visit, Department staff classified the land use as non-agricultural. Although the land use is not classified as agricultural, topsoil from the proposed booster station should be stripped and stockpiled and secured for future use by the farmer. The final footprint for the proposed booster site will be approximately 110-feet by 200-feet (0.5 acre).

Off Right-of-Way (ROW) access to the proposed booster site is via Disinger Road and follows existing hedgerows bordering active agricultural fields. According to the USDA- Web *Soil Survey* soil Schoharie silt loam soil is the primary soil type in the vicinity of the proposed off ROW access road. This is a moderately well drained soil with a 7-inch thick topsoil (or A-Horizon) layer. Prior to off ROW access road construction, the topsoil layer on the designated route will be "full-width stripped" down to a depth of 9-inches (actual topsoil thickness to be determined by Department staff in the field) and stockpiled and

secured for future use by others. Topsoil removal shall include the removal of an additional two-inches of soil into the subsoil layer, or "B-Horizon" in order to assure that all of the topsoil is being captured. Topsoil removal thicknesses shall be determined in the field by the Agricultural Monitor in consultation with Department staff. The off ROW access road shall be constructed of select fill over geotextile.

Prior to pipeline installation, the topsoil layer on designated active agricultural portions of the proposed pipeline route will be "full-width stripped" two-inches into the first visible color change in the soil profile (actual topsoil thickness to be determined in the field) and stockpiled along the edge of the right of way in accordance with NYS Ag & Markets Guidelines for Pipeline Right-of-Way Construction Projects<sup>1</sup>. Burial depths in designated active agricultural lands shall be a minimum of 48 inches. Appendix 7G (a) of the NOI (Map of an area used for commercial farm purposes and review of the proposed depth of cover by the farmland operator) indicates a minimum of 40-inches of cover in agricultural fields. In accordance with Department *Guidelines*, in cropland, hayland and improved pasture a minimum depth of 48-inches of cover is required; except where a new pipeline is located parallel and adjacent to an older existing pipeline that was buried with less than 40-inches of cover. If such a situation occurs a minimum depth of 40-inches of cover will be required. In unimproved grazing areas and land permanently devoted to pasture, a minimum depth of 36-inches of cover will be required.

Soils present in the hay fields immediately west of the proposed booster station site where the 12-inch influent and 8-inch effluent pipelines are proposed are Dunkirk silt loam and Schoharie silt loam. These are well drained and moderately well drained soils respectively. Topsoil thickness in the Schoharie soil is listed as 9-inches.

Soil types south of the existing CHK Schaffer Metersite and tie-in point along the proposed route of the CHK 12-inch influent pipeline are Angola and Darien silt loams. Both soils are somewhat poorly drained. Shallow depth to bedrock is likely to be an issue in the Angola silt loam soils. Specifically, from the tie-in point south for approximately 1,000-feet to the proposed CHK Nolt Compressor Station. The Soil Survey indicates the presence of "paralithic", or a weathered layer of bedrock at a depth ranging from 20- to 40-inches. South of the proposed CHK Nolt Compressor station, both Darien and Angola silt loam soils are both present, as is Honeoye silt loam in the vicinity of the "Pagano 1" well pad. Honeoye silt loam is classified as a well-drained loamy till soil. Topsoil thickness is approximately 8-inches.

The (CHK 12-inch influent) pipeline route makes a 90 degree turn to the east from the Pagano 1 well pad and crosses a large corn field to a wooded (non-ag) area and stream. Soil types in this field include Honeoye, Angola, and Appleton silt loam (somewhat poorly drained soil). Six-inch diameter "in-trench" drain tile will be required in this span and should tie into the existing outlet observed by staff during the field review of the project (see subsurface drain tile requirements below).

East of State Route 96, the proposed pipeline route enters a permanent pasture area fenced with hi-tensile wire. Temporary fencing and the exclusion of livestock will be required during construction. This field is comprised of Angola, Appleton and Honeoye silt loams. Due to the soil characteristics, in-trench drain tile will be required. In addition, based on field observations, staff determined that a bentonite trench breaker will be required to be installed at the eastern-most end of the fenced pasture. The top of breaker should not be closer than two feet from the restored surface. Trench water collected in the in-trench subsurface drain tile will be alleviated by installing approximately 600-feet of subsurface drain tile

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<sup>1</sup> **Pipeline Right-of-Way Construction Projects: Agricultural Mitigation Through The Stages of Project Planning, Construction/ Restoration And Follow-Up Monitoring.** New York State Department of Agriculture & Markets, Division of Agricultural Protection & Development Services. Albany, New York. Revised 11-97.

routed in a northeasterly direction and outletted into an existing farm ditch in the hedgerow (exact locations to be determined by staff in the field).

East of the hedgerow, the pipeline enters an active agricultural field owned by Mark Lott. According to the *Soil Survey*, soils in this field are comprised of Angola and Dunkirk silt loam in the western half of the field and "Alluvial Land" and Collamer silt loam in the eastern half of the field to the 12-inch above ground riser at Yost Road. "Alluvial land" is poorly drained and is frequently ponded and flooded. Collamer silt loam has a restrictive layer of lithic (solid) bedrock at 40- to 60-inches. Due to the nearly flat topography (0 to 2% slopes) of this field, in-trench drain tile is not recommended, however, staff recommends that the landowner be consulted to determine the presence of existing subsurface drain tile (if any) to tie into during pipeline construction.

The pipeline continues southward from the proposed 12-inch riser and crosses an active agricultural field owned by Richard MacGill. This field is comprised of Schoharie and Dunkirk silt loams. A portion of this field south of the wooded parcel owned by Gregory Peet is comprised of alluvial soil. No in-trench subsurface tile was agreed upon in this location at the time of the field visit, but because the pipeline ROW route has changed to a cross-slope position, interceptor drain lines should be installed to eliminate potential hillside seeps and waterboils (wet spots).

The pipeline crosses Yost Road near the Christler Road intersection. Several small pastures are located in this area of proposed pipeline route and are comprised mostly of Dunkirk silt loam. The corn field owned by Glen Zimmerman is comprised largely of Dunkirk silt loam. The ROW route follows Silver creek for ½ the portion of the field where alluvial soils are present. The southern ½ of this corn field is comprised of Varick silty clay loam. This soil is classified as a poorly drained loamy till. In addition paralithic (weathered) bedrock is present at a depth of 20- to 40-inches. Alluvial soil comprises the majority of the corn field east of the Zimmerman farmstead. Niagara and Dunkirk silt loams are the predominate soil types as the pipeline ROW moves further away (southwest) from Silver Creek. According to the Soil Survey, Niagara silt loam is a somewhat poorly drained soil derived from silty and clayey glaciolacustrine deposits.

The agricultural lands along the proposed ROW south of Yellow Tavern Road owned by D-J's Farms, Inc. are comprised of Schoharie silty clay loam and Dunkirk silt loam which are classified as well drained glaciolacustrine soils. Angola silt loam is the primary soil type near where the proposed pipeline crosses back over Yost to the west to an existing riser on (ag) lands owned by Eugene C. Poormon. The pipeline ROW parallels Yost Road on the Poormon property for approximately ½ mile. Angola and Cazenovia silt loams are the predominant soil types. Cazenovia silt loam is classified as a moderately well drained loamy till with an 8-inch thick topsoil (A-Horizon) layer.

Agricultural soils present on the Wilmer Fox property are Cazenovia and Niagara silt loams. According to the *Soil Survey*, there is a small 1.9 acre inclusion of Arkport loamy fine sand along the proposed ROW on the Wilmer Fox property. This soil is classified as a well-drained fine sand. Madalin and Odessa silty clay loam soils are present where the ROW crosses Yost Road on to the Murray property. According to the *Soil Survey*, this is a poorly drained soil susceptible to frequent ponding. Based on this limitation, subsurface drainage will likely be necessary in this location.

The pipeline ROW from Zwick Road south to Poormon Road is comprised almost entirely of Angola and Aurora silt loam. According to the *Soil Survey*, weathered bedrock is present from 20- to 40-inches beneath the soil surface in Aurora silt loam soils. This soil type may likely be encountered immediately adjacent to where the ROW runs behind the homes near the intersection of Yost and Leader Roads.

A drainage ditch is present at the CHK existing B. Murray pipeline. Full bentonite breakers are strongly recommended on the upgradient and downgradient ends where the proposed pipeline crosses this drainage ditch. A second drainage ditch was identified in the farm field owned by Jeffrey Trout. Portions of the proposed pipeline that cross these ditches identified throughout the proposed pipeline route will either be Horizontally Directionally Drilled (HDD), or conventionally bored in accordance with the Environmental Management and Construction Standards and Practices Plan (EM&CS&P). In absence of utilizing one of these two methods, and it is determined that the pipeline installation will be "open cut", pipe installation will be conducted in accordance with the construction detail for "Diversion Terrace Repair" (Attachment A) and "Diversion Terrace Protection and Mat" (Attachment B). Burial depth beneath each drainage ditch shall be 60" (48" in all other active ag lands).

Varick silty clay loam soils are directly south of the Howard Poormon farm. According to the Soil Survey, weathered bedrock is present at a depth ranging from 20- to 40-inches. Soil types between the Poormon farmstead and the Melvin Kurtz farm include Aurora silt loam and Darien-Danley-Cazenovia silt loams. Both are classified as poorly drained soil and the Aurora silt loam had weathered bedrock at 2- to 40-inches. Staff observed what appeared to be exposed drain tile outlets in the field next to the Melvin Kurtz farm. The Department recommends that the agricultural inspector coordinate closely with the landowner to determine known tile locations. Repair of existing subsurface drain lines will be conducted in accordance with *Department Guidelines*.

South of State Route 336 to the tie-in point, soil types along the ROW are Darien-Danley-Cazenovia silt loams and Ilion silty clay loam. Ilion silty clay loam is classified as a poorly drained loamy till and is susceptible to frequent ponding. Subsurface drain tile will be required to alleviate extended seasonal wetness. The exact placement of the tile and outlet location will be determined by Department field staff during construction.

Because of the likely potential for encountering bedrock during construction, on agricultural land, ripped or excavated bedrock, boulders and concentrations of excavated stone or rock materials should not be returned to the excavation or trenches any closer than 24-inches from the exposed (subsoil) work surface of the stripped portion of right-of-way. The remainder of the backfill should be limited to suitable subsoil material, backfilled up to the top of the exposed work surface. Excess waste rock/stone materials should be removed from active agricultural areas.

Because of the poor drainage characteristics in some agricultural soils which comprise this project it will be necessary to install an "in-trench" subsurface drain lines in the pipe trench. Drain tile outlet locations not specified above will be determined during the pre-construction site walk. The need for additional subsurface drainage (if any) along the agricultural portion of the proposed pipeline will be determined in the field in consultation with a Department (NYS DAM) representative during construction and will be monitored for a two year period following restoration.

In accordance with Department Guidelines, new subsurface drain lines shall be AASHTO M252 single wall drain line or equivalent and shall be installed in accordance with the applicable USDA-Natural Resources Conservation Service (NRCS) Conservation Practice Standard for "Subsurface Drain" (608). F405 may not be used in agricultural lands for this drain tile application. Tile outlets shall be constructed of Schedule 80 PVC and steel animal guards should be installed far enough in the pipe to allow it to swivel up and let debris pass without exposing the animal guard beyond the pipe outlet. A "splash rock" should be installed beneath the pipe outlet to dissipate the erosive forces of the discharge water from the drain tile and to prevent additional scouring from occurring beneath the outlet. Installation of substandard materials may warrant the removal and replacement with the required materials identified

above. Department field staff should be notified when existing subsurface drain lines are first encountered during construction and also be notified in advance to witness drain tile repair activities.

During the restoration phase of the project when soil moisture conditions permit (mid May or as determined by NYSDAM staff through Atterberg field testing), the subsoil will be decompacted to a minimum depth of 18" using a subsoiler, and rocks greater than 4-inches in diameter, uplifted to the surface as a result of the deep shattering will be "picked" from the right of way prior to topsoil replacement. Soil compaction shall be tested using an appropriate soil penetrometer other soil compaction measuring device. Soil compaction results obtained within the affected area will be compared with those obtained from the adjacent unaffected portion of the farm field or soil unit. Where representative soil density of the affected area exceeds the representative density of the unaffected areas, additional shattering of the soil profile will be performed using the appropriate equipment. Seeding, fertilizing and liming will follow Department's Recommendations<sup>2</sup>.

Copies of this memo are being distributed to the parties identified below. It is requested that Chesapeake provide copies of this memo to the contractual in-field agricultural/environmental monitoring staff.

Thank you for the opportunity to provide comments on the NOI for the proposed SF-503 16" Upgrade and Compressor Stations (PSC Case # 09-T-0073). Please do not hesitate to contact me at (585) 658-9854 if there are any questions.

MJS/ms

Att.

cc: Eric Haskins, Chesapeake Energy  
James Grey, Chesapeake Energy  
John Strub, DPS, Albany  
Phil Griswold, Seneca County Soil & Water Conservation District  
Matthew Brower, NYS Dept. of Ag. & Mkts., Albany

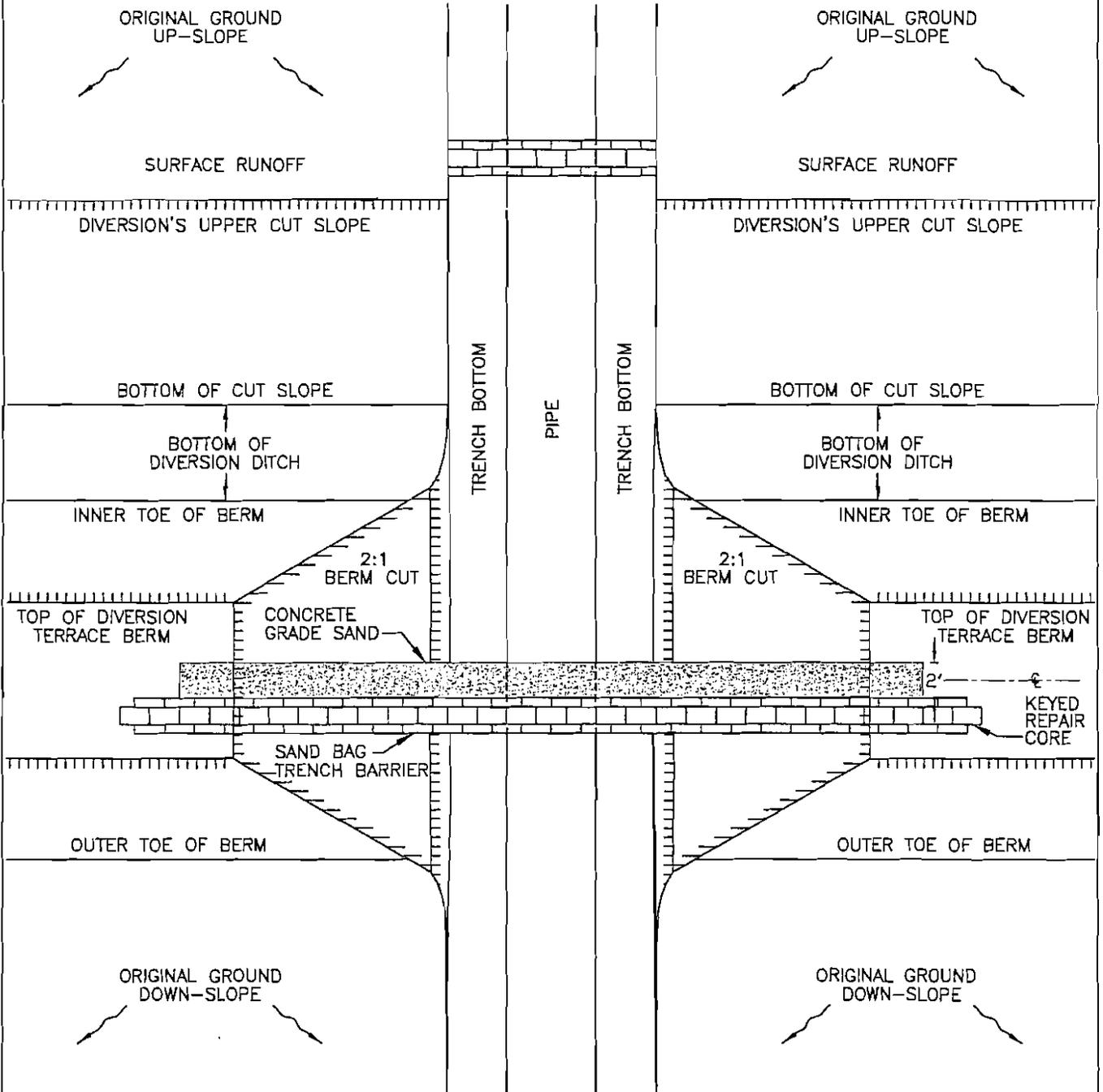
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<sup>2</sup> **New York State Farmlands: Seeding, Fertilizing and Lime Recommendations for Gas Pipeline Right-of-Way Restoration In Farmlands.** NYS Dept. of Agriculture & Markets, Division of Agricultural Protection & Development Services. Albany, New York. Revised 6-15-2005.

# **ATTACHMENT - A**

## **DIVERSION TERRACE REPAIR**

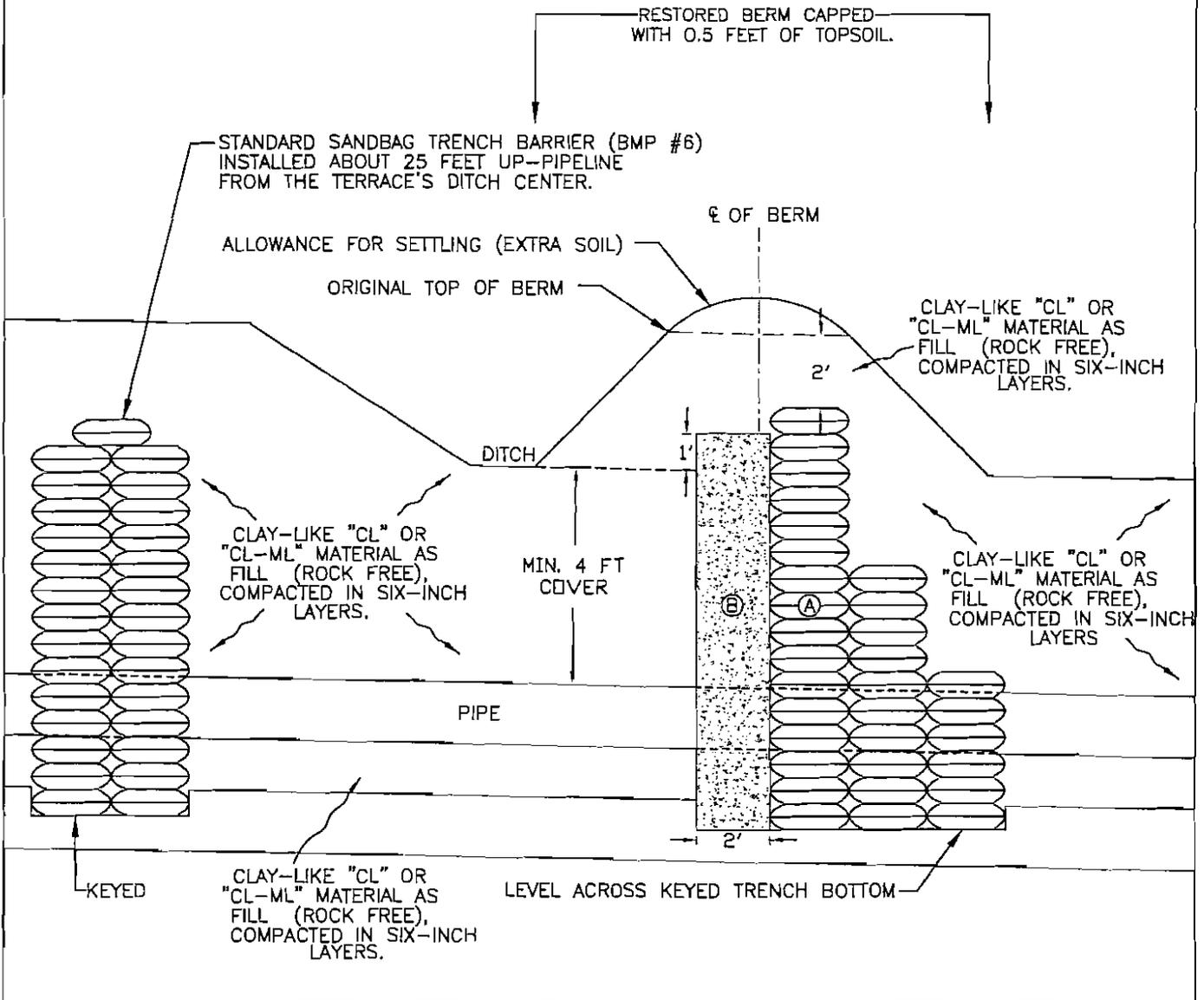
TOP VIEW OF CORE SECTION REPAIR OF DIVERSION TERRACE BERM  
PRIOR TO THE RECONSTRUCTION OF THE BREACH



NOTE: KEYED-BACK CORE REPAIR  
ORIGINAL BERM TEN FEET NOMINAL  
BEYOND THE 2:1 BERM CUT

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DIVERSION TERRACE REPAIR - VERTICAL SIDE VIEW



**NOTES:**

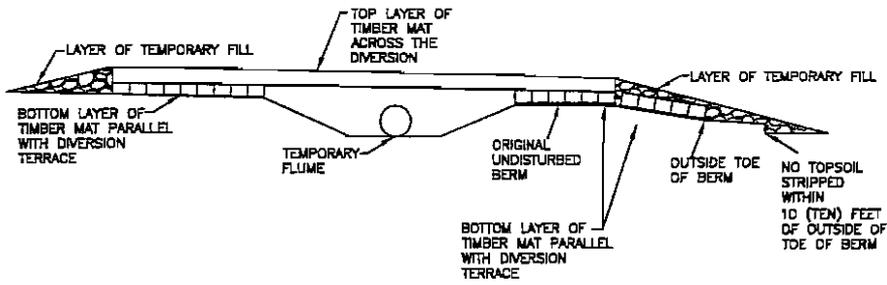
1. ALL CLAY-LIKE "CL" OR "CL-ML" MATERIAL USED FOR DIVERSION TERRACE RE-ENGINEERED REPAIR / RECONSTRUCTION WILL BE VERIFIED BY THE INSPECTOR TO ENSURE THE MATERIAL IS ROCK-FREE (NO STONES / ROCKS LARGER THAN 3-4 INCHES), AND DOES NOT CONTAIN ANY TOPSOIL NOR OTHER ORGANIC MATERIALS (E.G.: CLUMPS OF SOD, TREE AND BRUSH ROOTS). THE CLAY-LIKE "CL" OR "CL-ML" MATERIAL SHALL BE COMPACTED AT ALL AREAS IN SIX-INCH LIFTS WHEN THE MATERIAL IS MOIST; NOT WET NOR DRY. THE MAJORITY OF COMPACTION SHALL BE ACHIEVED INSIDE THE TRENCH ZONE, WITH A VIBRATORY JUMPER COMPACTOR; AND MAY INCLUDE FINAL SURFACE COMPACTION OF BERM WITH SHEEPSFOOT ROLLER.
- (A) SANDBAG TRENCH BARRIER SNUGLY EMPLACED WITH 3 BAGS ACROSS THE BOTTOM WIDTH AS WELL AS AROUND THE PIPE AND OTHER LOWER LAYERS TO MID-LEVEL; 2 BAGS WIDTH ABOVE MID-LEVEL; AND 1 BAG WIDTH ACROSS UPPER SECTION.
- (B) CONCRETE-GRADE SAND APPLIED IN<sup>o</sup> SIX-INCH LIFTS, EACH LIFT COMPACTED WITH A VIBRATORY JUMPER-COMPACTOR (E.G. WACKER WITH AN 8" X 10" COMPACTOR PAD). MINIMUM WIDTH OF THE SAND COLUMN IS TWO (2) FEET ACROSS FOR ENTIRE HEIGHT (BOTTOM TO TOP). THE SAND MATERIAL SHOULD BE COMPACTED WHEN MOIST BUT NOT WHEN DRY NOR WET.

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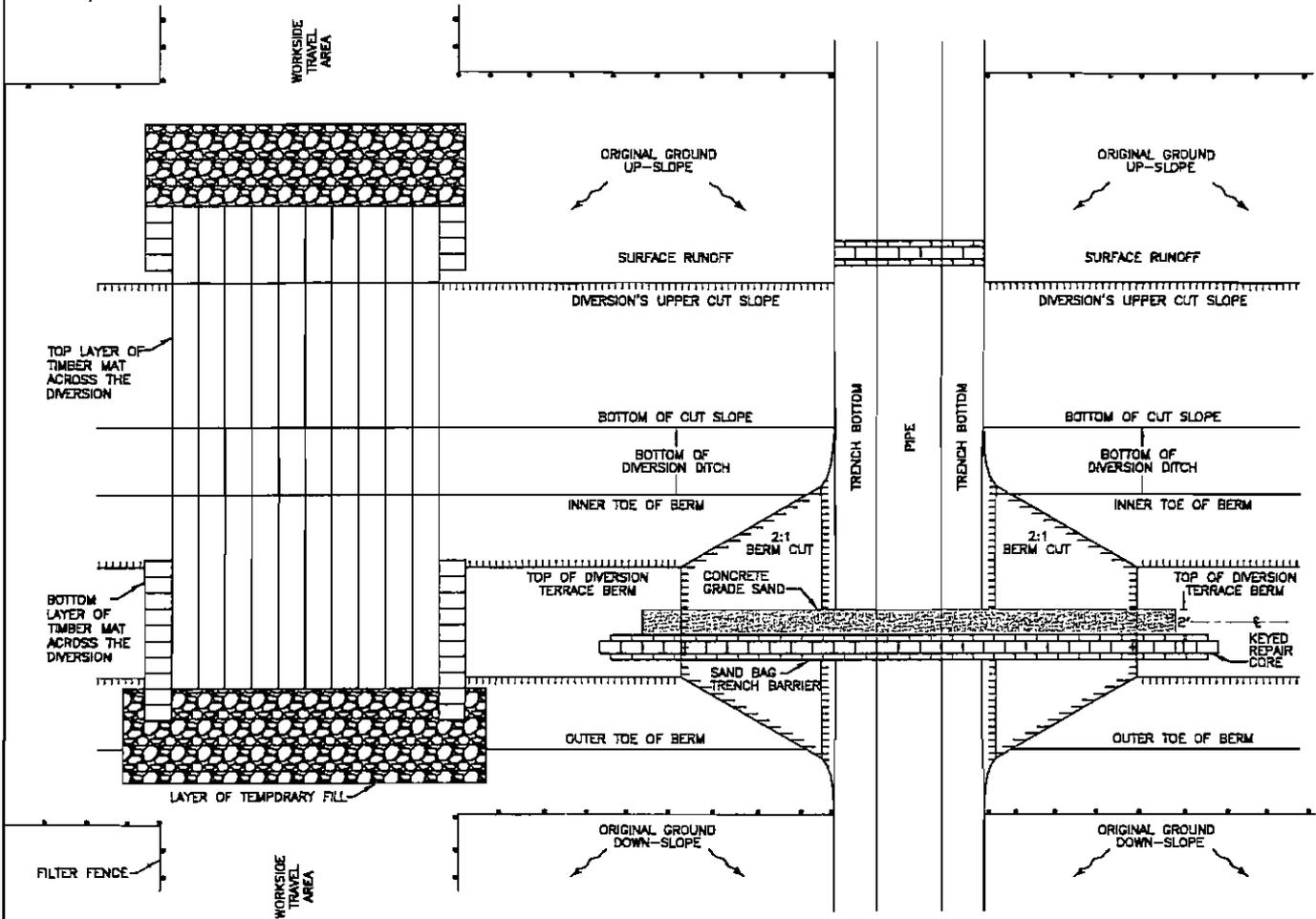
# **ATTACHMENT - B**

## **DIVERSION TERRACE PROTECTION AND MAT**

DIVERSION TERRACE TIMBER MAT BRIDGE SIDE VIEW



TOP VIEW OF DEIVERSION BERM REPAIR AND TIMBER MAT BRIDGE



NOTES:

1. THE ONLY PORTION OF DIVERSION TO BE DISTURBED IS THE PIPELINE TRENCH AND THE 2:1 BERM CUT, DURING CONSTRUCTION; AND THE BERM'S KEYED-IN REPAIR CORE DURING THE RECONSTRUCTION OF THE DIVERSION TERRACE.
2. ALL OTHER ORIGINAL FEATURES OF THE DIVERSION TERRACE ARE PROTECTED THROUGHOUT THE RIGHT OF WAYS CONSTRUCTION AND RESTORATION STAGES OF WORK AND ACCESS BT TEMPORARY FILL LAYERS AND TIMBER BRIDGING.
3. A TEMPORARY FLUME WILL BE MAINTAINED UNTIL THE DIVERSION TERRACE IS FULLY RECONSTRUCTED.
4. FILTER FENCE WILL BE INSTALLED AT THE UPSLOPE AND DOWNSLOPE SIDES OF THE DIVERSION BERM (AT THE LIMITS OF THE TOPSOIL STRIPPING) TI LIMIT ACCESS AND DISTURBANCE.

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DIVERSION TERRACE PROTECTION AND MAT

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