

199—9.4(479,479B) Restoration of agricultural lands.**9.4(1) Topsoil separation and replacement.**

a. Removal. Topsoil removal and replacement in accordance with this rule is required for any open excavation associated with the construction of a pipeline unless otherwise provided in these rules. The actual depth of the topsoil, not to exceed 36 inches, will first be stripped from the area to be excavated above the pipeline and, to a maximum of 12 inches, from the adjacent subsoil storage area. Topsoil shall also be removed and replaced in accordance with these rules at any location where land slope or contour is significantly altered to facilitate construction. A pipeline company shall, upon a landowner's request, measure topsoil depth at selected locations before and after construction.

b. Soil storage. The topsoil and subsoil shall be segregated, stockpiled, and preserved separately during subsequent construction operations. The stored topsoil and subsoil shall have sufficient separation to prevent mixing during the storage period. Topsoil shall not be used to construct field entrances or drives, or be otherwise removed from the property, without the written consent of the landowner. Topsoil shall not be stored or stockpiled at locations that will be used as a traveled way by construction equipment without the written consent of the landowner.

c. Topsoil removal not required. Topsoil removal is not required where the pipeline is installed by plowing, jacking, boring, or other methods which do not require the opening of a trench. If provided for in a written agreement with the landowner, topsoil removal is not required if the pipeline can be installed in a trench with a top width of 18 inches or less.

d. Backfill. The topsoil shall be replaced so the upper portion of the pipeline excavation and the crowned surface, and the cover layer of the area used for subsoil storage, contain only the topsoil originally removed. The depth of the replaced topsoil shall conform as nearly as possible to the depth removed. Where excavations are made for road, stream, drainage ditch, or other crossings, the original depth of topsoil shall be replaced as nearly as possible.

9.4(2) Temporary and permanent repair of drain tile.

a. Pipeline clearance from drain tile. Where underground drain tile is encountered, the pipeline shall be installed in such a manner that the permanent tile repair can be installed with at least 12 inches of clearance from the pipeline.

b. Temporary repair. The following standards shall be used to determine if temporary repair of agricultural drainage tile lines encountered during pipeline construction is required.

(1) Any underground drain tile damaged, cut, or removed and found to be flowing or which subsequently begins to flow shall be temporarily repaired as soon as practicable, and the repair shall be maintained as necessary to allow for its proper function during construction of the pipeline. The temporary repairs shall be maintained in good condition until permanent repairs are made.

(2) If tile lines are dry and water is not flowing, temporary repairs are not required if the permanent repair is made within ten days of the time the damage occurred.

(3) Temporary repair is not required if the angle between the trench and the tile lines places the tile end points too far apart for temporary repair to be practical.

(4) If temporary repair of the line is not made, the upstream exposed tile line shall not be obstructed but shall nonetheless be screened or otherwise protected to prevent the entry of foreign materials and small animals into the tile line system, and the downstream tile line entrance shall be capped or filtered to prevent entry of mud or foreign material into the line if the water level rises in the trench.

c. Marking. Any underground drain tile damaged, cut, or removed shall be marked by placing a highly visible flag in the trench spoil bank directly over or opposite such tile. This marker shall not be removed until the tile has been permanently repaired and the repairs have been approved and accepted by the county inspector. If proper notice is given, construction shall not be delayed due to an inspector's failure to be present on the site.

d. Permanent repairs. Tile disturbed or damaged by pipeline construction shall be repaired to its original or better condition. Permanent repairs shall be completed as soon as is practical after the pipeline is installed in the trench and prior to backfilling of the trench over the tile line. Permanent repair and replacement of damaged drain tile shall be performed in accordance with the following requirements:

(1) All damaged, broken, or cracked tile shall be removed.

- (2) Only unobstructed tile shall be used for replacement.
- (3) The tile furnished for replacement purposes shall be of a quality, size and flow capacity at least equal to that of the tile being replaced.
- (4) Tile shall be replaced so that its original gradient and alignment are restored, except where relocation or rerouting is required for angled crossings. Tile lines at a sharp angle to the trench shall be repaired in the manner shown on Drawing No. IUB PL-1 at the end of this chapter.
- (5) The replaced tile shall be firmly supported to prevent loss of gradient or alignment due to soil settlement. The method used shall be comparable to that shown on Drawing No. IUB PL-1 at the end of this chapter.
- (6) Before completing permanent tile repairs, all tile lines shall be examined visually, by probing, or by other appropriate means on both sides of the trench within any work area to check for tile that might have been damaged by construction equipment. If tile lines are found to be damaged, they must be repaired to operate as well after construction as before construction began.
 - e. Inspection.* Prior to backfilling of the applicable trench area, each permanent tile repair shall be inspected for compliance by the county inspector. If proper notice is given, construction shall not be delayed due to an inspector's failure to be present on the site.
 - f. Backfilling.* The backfill surrounding the permanently repaired drain tile shall be completed at the time of the repair and in a manner that ensures that any further backfilling will not damage or misalign the repaired section of the tile line. The backfill shall be inspected for compliance by the county inspector. If proper notice is given, construction shall not be delayed due to an inspector's failure to be present on the site.
 - g. Subsurface drainage.* Subsequent to pipeline construction and permanent repair, if it becomes apparent the tile line in the area disturbed by construction is not functioning correctly or that the land adjacent to the pipeline is not draining properly, which can reasonably be attributed to the pipeline construction, the pipeline company shall make further repairs or install additional tile as necessary to restore subsurface drainage.

9.4(3) Removal of rocks and debris from the right-of-way.

- a. Removal.* The topsoil, when backfilled, and the easement area shall be free of all rock larger than three inches in average diameter not native to the topsoil prior to excavation. Where rocks over three inches in size are present, their size and frequency shall be similar to adjacent soil not disturbed by construction. The top 24 inches of the trench backfill shall not contain rocks in any greater concentration or size than exist in the adjacent natural soils. Consolidated rock removed by blasting or mechanical means shall not be placed in the backfill above the natural bedrock profile or above the frost line. In addition, the pipeline company shall examine areas adjacent to the easement and along access roads and shall remove any large rocks or debris which may have rolled or blown from the right-of-way or fallen from vehicles.
- b. Disposal.* Rock which cannot remain in or be used as backfill shall be disposed of at locations and in a manner mutually satisfactory to the company and the landowner. Soil from which excess rock has been removed may be used for backfill. All debris attributable to the pipeline construction and related activities shall be removed and disposed of properly. For the purposes of this rule, debris shall include spilled oil, grease, fuel, or other petroleum or chemical products. Such products and any contaminated soil shall be removed for proper disposal or treated by appropriate in situ remediation.

9.4(4) Restoration after soil compaction and rutting.

- a. Agricultural restoration.* Agricultural land, including off right-of-way access roads traversed by heavy construction equipment that will be removed, shall be deep tilled to alleviate soil compaction upon completion of construction on the property. If the topsoil was removed from the area to be tilled, the tillage shall precede replacement of the topsoil. At least three passes with the deep tillage equipment shall be made. Tillage shall be at least 18 inches deep in land used for crop production and 12 inches deep on other lands and shall be performed under soil moisture conditions which permit effective working of the soil. Upon agreement, this tillage may be performed by the landowners or tenants using their own equipment.

b. Rutted land restoration. Rutted land shall be graded and tilled until restored as near as practical to its preconstruction condition. On land from which topsoil was removed, the rutting shall be remedied before the topsoil is replaced.

9.4(5) Restoration of terraces, waterways, and other erosion control structures. Existing soil conservation practices and structures damaged by the construction of a pipeline shall be restored to the elevation and grade existing prior to the time of pipeline construction. Any drain lines or flow diversion devices impacted by pipeline construction shall be repaired or modified as needed. Soil used to repair embankments intended to retain water shall be well compacted. Disturbed vegetation shall be reestablished, including a cover crop when appropriate. Restoration of terraces shall be in accordance with Drawing No. IUB PL-2 at the end of this chapter. Such restoration shall be inspected for compliance by the county inspector. If proper notice is given, construction shall not be delayed due to an inspector's failure to be present on the site.

9.4(6) Revegetation of untilled land.

a. Crop production. Agricultural land not in row crop or small grain production at the time of construction, including hay ground and land in conservation or set-aside programs, shall be reseeded, including use of a cover crop when appropriate, following completion of deep tillage and replacement of the topsoil. The seed mix used shall restore the original or a comparable ground cover unless otherwise requested by the landowner. If the land is to be placed in crop production the following year, paragraph "b" below shall apply.

b. Delayed crop production. Agricultural land used for row crop or small grain production which will not be planted in that calendar year due to the pipeline construction shall be seeded with an appropriate cover crop following replacement of the topsoil and completion of deep tillage. However, cover crop seeding may be delayed if construction is completed too late in the year for a cover crop to become established and in such instances is not required if the landowner or tenant proposes to till the land the following year. The landowner may request ground cover where the construction is completed too late in the year for a cover crop to become established to prevent soil erosion.

9.4(7) Future installation of drain tile or soil conservation structures.

a. Future drain tile. At locations where the proposed installation of underground drain tile is made known in writing to the company prior to the securing of an easement on the property and has been defined by a qualified technician, the pipeline shall be installed at a depth which will permit proper clearance between the pipeline and the proposed tile installation. The pipeline company shall consult with the landowner concerning the landowner's plans for future drain tile installation.

b. Future practices and structures. At locations where the proposed installation of soil conservation practices and structures is made known in writing to the company prior to the securing of an easement on the property and has been defined by a qualified technician, the pipeline shall be installed at a depth which will allow for future installation of such soil conservation practices and structures and retain the integrity of the pipeline. The pipeline company shall consult with the landowner concerning the landowner's plans for future installation of soil conservation practices and structures.

9.4(8) Restoration of land slope and contour. Upon completion of construction, the slope, contour, grade, and drainage pattern of the disturbed area shall be restored as nearly as possible to its preconstruction condition. However, the trench may be crowned to allow for anticipated settlement of the backfill. Excessive or insufficient settlement of the trench area, which visibly affects land contour or undesirably alters surface drainage, shall be remediated by means such as regrading and, if necessary, import of appropriate fill material. Disturbed areas in which erosion causes formation of rills or channels, or areas of heavy sediment deposition, shall be regraded as needed. On steep slopes, methods such as sediment barriers, slope breakers, or mulching shall be used as necessary to control erosion until vegetation can be reestablished.

9.4(9) Restoration of areas used for field entrances and temporary roads. Upon completion of construction and land restoration, field entrances or temporary roads built as part of the construction project shall be removed and the land made suitable for return to its previous use. Areas affected shall be regraded as required by subrule 9.4(8) and deep tilled as required by subrule 9.4(4). If by agreement

or at landowner request, and subject to any necessary approval by local public road authorities, a field entrance or road is to be left in place, it shall be left in a graded and serviceable condition.

9.4(10) *Construction in wet conditions.* Construction in wet soil conditions shall not commence or continue at times when or locations where the passage of heavy construction equipment may cause rutting to the extent that the topsoil and subsoil are mixed, or underground drainage structures may be damaged. To facilitate construction in soft soils, the pipeline company may elect to remove and stockpile the topsoil from the traveled way, install mats or padding, or use other methods acceptable to the county inspector. Topsoil removal, storage, and replacement shall comply with subrule 9.4(1).