



Natural Resources Conservation Service
210 Walnut Street, Room 693
Des Moines, IA 50309-2180

April 26, 2012

IOWA BULLETIN NO. IA210-12-2

SUBJECT: ENG – GUIDANCE ON LATERAL EFFECT FOR MAINTENANCE OR
REPLACEMENT OF TILE LINES

PURPOSE. To notify all offices of guidance to be used until new Iowa Amendment is finalized.

EXPIRATION DATE. September 30, 2013

The attached Interim Guidance, Maintenance or Replacement of Subsurface Drains, addresses the issue of replacing clay or concrete tile near wetlands with appropriate size pipe and shall be used until a new Iowa Amendment to the National Food Security Act Manual (NFSAM) is finalized. This Interim Guidance does not replace the need for appropriate scope and effect analysis.

Guidance on lateral effect analysis is presently contained in NFSAM Part 516, IA516.25 (Amendment IA11, January 1991).

However, Amendment IA11 is out of date and will be replaced in the near future. Other tools are available for scope and effect analysis of drainage systems. Please consult with your Area Engineer or Bruce Atherton, Agricultural Engineer, Ankeny, when scope and effect analysis of a drainage system affecting a wetland is required.

NFSAM Iowa Amendment 3, March 2009, containing IA516.12, Allowable Maintenance Actions, remains in effect.

/s/Jon Hubbert, Acting
Richard Sims
State Conservationist

Attachment

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Interim Guidance Maintenance or Replacement of Subsurface Drains

Maintenance and/or replacement of subsurface drains have been and will continue to be significant activities throughout Iowa. This typically involves replacing old clay or concrete tile with new corrugated plastic pipe (CPP), often called tubing. Since CPP has a higher roughness coefficient (“n” value) than clay or concrete tile, using the same diameter CPP as the clay or concrete tile being replaced will result in a capacity ranging from 76% to 87% of the original for 4”-12” tile, a reduction in capacity that may be unacceptable to the producer.

A rule of thumb that has been used when replacing clay or concrete tile is to use the next larger diameter of CPP; e.g., replacing a 6” clay tile line with 8” CPP. This results in capacities ranging from 124% to 187% of the original 4”–12” tile. In situations where wetlands are involved, this increased capacity may exceed the “scope and effect” of the original drainage system and result in ineligibility for USDA program benefits. (See National Food Security Act Manual, Part 516, Subpart B, 516.12, Fifth Edition, November 2010). With the availability of small diameter dual-wall (smooth interior) plastic drain pipe, in most cases it is no longer necessary to use a larger diameter single-wall plastic pipe for replacement in order to avoid a reduction in system capacity. Using dual-wall plastic drain pipe with the same diameter as clay or concrete tile will provide capacities ranging from 108% to 110% of the original pipe. This small increase is unlikely to substantially affect the performance of the drainage system.

Subsurface drains provide two functions: lateral drainage and conducting collected flow to an outlet. Lateral drains collect excess water from the adjacent land and have no surface intakes or connection with other drains except to a main line or an outlet. Drainage mains and submains provide the outlet for laterals and surface intakes and conduct the collected water to an outlet.

When replacing or performing maintenance on existing drainage systems that affect land labeled wetland (W), farmed wetland (FW) or farmed wetland pasture (FWP), the following guidance shall be followed:

1. For lateral drains, lateral spacing and depth are the important criteria. Laterals should be replaced with the same diameter pipe as the original tile. New laterals should be placed at the same depth, grade, and spacing as the original drain line. As much as possible, replacement drains should be placed within 5 feet laterally from the existing drains, but no closer to a wetland boundary. The old drain shall be rendered inoperable.
2. For drainage mains and submains, the pipe diameter and grade are the important criteria. Existing drains should be replaced with the same diameter pipe (tile) at the same depth and grade as the original tile line. As much as possible, replacement drains should be

placed within 5 feet laterally from the existing drains, but no closer to a wetland boundary. The old drain shall be rendered inoperable.

3. In all situations, if 5” clay or concrete tile is being replaced and 5” dual wall pipe is not available, 6” CPP may be used for the replacement. If practicable, the grade on the new CPP should be adjusted to provide equivalent capacity compared with the original tile.
4. In the case of very shallow tile, to satisfy strength requirements, the replacement pipe may be placed at the depth required to meet the minimum cover requirements specified by the product manufacturer or NRCS Conservation Practice Standard 606, Subsurface Drain. When replacement pipe is placed deeper than the original drain, an analysis should be performed to determine if there are other measures that could be taken to insure that the scope and effect of the system is not changed; for example, the drain could be installed farther from the wetland boundary or the spacing could be increased.
5. If the producer wants to use a larger pipe diameter than the original drain, an analysis must be provided to show that the original capacity or scope and effect of the drainage system is maintained.