



Illinois Department of Transportation

Memorandum

To: Studies and Plans Squads PPM 60-10
From: James M. Sullivan Revised By: Tim Brandenburg
Subject: Treatment of Existing Field Tile Systems
Date: December 22, 1998 Revision Date: December 6, 2006

PLAN PREPARATION MEMORANDUM 60-10

BACKGROUND

The proper treatment of field tile systems is critical to our relations with adjacent landowners, preservation of drainage, and subgrade support for our roadways. Section 611 of the Standard Specifications gives the basic guidelines for the work. Plan Preparation Memorandum 50-07 discusses Storm Sewer & Field Tile Responsibilities. However, many details of the work are not given and require attention to assure satisfactory and consistent treatment.

PROCEDURE

Location of Existing Field Tile

Location of existing field tile is often a problem left to Project Implementation. However, we may have resources available to guide our estimates of quantities. Field books from prior surveys or construction may be available in Surveys Unit or Project Implementation files or microfiche. The Final Inspection reports for many older jobs give the locations of added tiles, especially edge drains. Local residents and adjacent landowners can sometimes recall locations of existing tiles. Drainage Districts should have maps of their systems. Depending upon the importance and size of individual tiles, it may be worthwhile to have our Operations forces actually dig up critical locations or to hire a consultant to videotape the lines.

When to Include Field Tile Work in Plans

Field tile work is generally included with jobs requiring significant earthwork.

New construction or reconstruction jobs generally include extensive earthwork and major investments in new pavements. In order to assure maximum benefit of these major efforts, existing field tile systems should be located using exploration trench, and replaced where found within the right of way. However, any field tile in place by permit, or otherwise shown not to have prior rights should be treated as any other utility and adjusted or replaced at its owner's expense.

For other jobs on existing alignments which include reworking of ditches (more extensive than ditch cleaning), the field tile should be located using exploration trench. Inspection wells should be placed near the right of way line for all tiles located by the exploration trench. Existing tiles which do not meet current standards should be replaced under ditches and other earth surfaces. If the tiles crossing under the pavement are deteriorated, they should also be replaced. Any field tile in place by permit, or otherwise shown not to have prior rights should be treated as any other utility and adjusted or replaced at its owner's expense.

For jobs which include the replacement of across road culverts, exploration trench should be included to find any field tile crossings. If the field tile found in these investigations are not up to current standards, are deteriorated, or are in conflict with the proposed work, they should be replaced. On some cases, it may be necessary to reroute the crossing from underneath the culvert. However, any field tile in place by permit or otherwise shown not to have prior rights should be treated as any other utility and adjusted or replaced at its owner's expense.

Repair for replacement of other field tile may be included on other contracts where there are known deficiencies affecting either the subgrade support for our pavements or the drainage of our highways. This determination will be on a case-by-case basis consistent with the scope of work for each job considered, and in accordance with Plan Preparation memorandum 50-07.

Improvement, upsizing, or replacement for causes not listed above will be the responsibility of the Drainage District or other entity having jurisdiction of the tile.

Outletting in Ditch vs. Maintaining Closed System

In many cases the choice of outletting to our ditch or maintaining closed flow underground will be dictated by the relative grades of the tile and ditch. Whenever possible, underground water should be kept underground, and surface water should be kept on the surface.

Applicable Details and Special Provisions

District CADD Detail "61101011A - Field Tile Systems (Treatment of Existing)" is to be used when field tile work is anticipated on a contract. It should be used in conjunction with District Special Provision "Treatment of Existing Field Tile Systems." It is the District's intent to show and describe treatments that may be consistently used in this work.

Items of Note and Emphasis on the Detail and Special Provision

Pipe sizes from 4 inch through 8 inch are reintroduced, and allowed to be used both for Storm Sewer, special and Storm Sewer, Protected. Pay items for these sizes are included in the Coded Pay Items book.

Exploration Trench should be included to cover the areas of ditch work. There should be adequate length of exploration trench quantity to cover all new or re-cut ditch lengths along one side of the alignment, and additional allowance to find crossing tiles on the other side of the pavement (at least 100 ft. per drainage swale).

Junction chambers are described with reference to standard drawings. Wherever possible, these items should be used. Remember to use Trench Backfill in the same manner as for other storm sewers. A typical headwall outlet is shown. The designer and resident should remember to address ditch linings as appropriate. Where existing tiles are abandoned under pavements or paved shoulders, it may be necessary to fill the abandoned tile with grout. This is more likely if the tile is large (greater than 8 inch diameter), and/or in poor condition. If the tile is small, is sound, or is already packed full of sediment, the probability of its collapse or infiltration is smaller and poses less risk to undermining our paved areas. If visibility of the inspection wells is a concern, consideration can be given to placing a delineator post with orange painted top adjacent to the inspection well.

There should not be changes in pipe materials or sizes between structures or concrete collars. The entire run of pipe between collars and/or structure should be the higher designation (Storm Sewer (Protected taking precedence over Storm Sewer, Special) occurring in that run and of the highest type (based on depth of cover).

Token quantities should not be included in the plans. If sizes and locations of existing tile are known appropriate pay items should be included in the plans to locate, repair, and/or replace them. If the sizes and locations are now known, then adequate quantities of exploration trench should be included. Agreed unit prices for the various pay items will then be negotiated by Project Implementation.