

FREQUENTLY ASKED QUESTIONS

Introduction

The following list of frequently asked questions about drainage and related issues is presented for reference. It should not be considered totally conclusive. Additional advice and investigation may be warranted in specific circumstances.

Tile Lines—Installation

For construction and maintenance activities, should drainage improvements such as tile connections be placed on private property or public right-of-way?

If the modifications will primarily benefit an adjacent property owner, future ownership and maintenance will probably be that owner's responsibility. In those instances, location on private property is recommended even if the public agency is obligated for initial cost of the improvement.

What references are available for designing tile systems and connections?

The Iowa Drainage Guide (Special Report 13, Cooperative Extension Service, Iowa State University, March, 1997) is an excellent reference. The Natural Resources Conservation Service (NRCS) provides valuable advice. NRCS assistance may add credibility to any modifications of existing tile lines. The NRCS web site is www.ia.nrcs.usda.gov.

For a construction or maintenance project, can a landowner hire a contractor to make necessary revisions to a tile system with reimbursement by the road agency?

Yes, and in some instances this may be advantageous for all parties. A concise agreement with the property owner must be negotiated prior to any

work associated with reimbursement. However, the landowner's contractor must ensure that his or her work will not hamper the construction schedule or contract administration.

What are agency/private property owner responsibilities for tile installation and/or maintenance, whether in a drainage district or not?

The courts have generally found that higher land owners have the right to discharge water upon lower land, whether it is surface water or from a natural watercourse, either open or tiled. However, a landowner may not substitute a tile drain for an open ditch if drainage from adjoining lands is rendered less efficient.

General principles pertaining to surface water drainage are equally applicable to drainage of underground water collected by tiling. So the responsibilities of lower land owners for maintenance of tile lines would be similar to those described earlier for open ditches.

In a drainage district, maintenance responsibilities are undertaken by the Board of Supervisors or district trustees.

When designing crossroad pipes for tile extensions, what dimension should the pipes be?

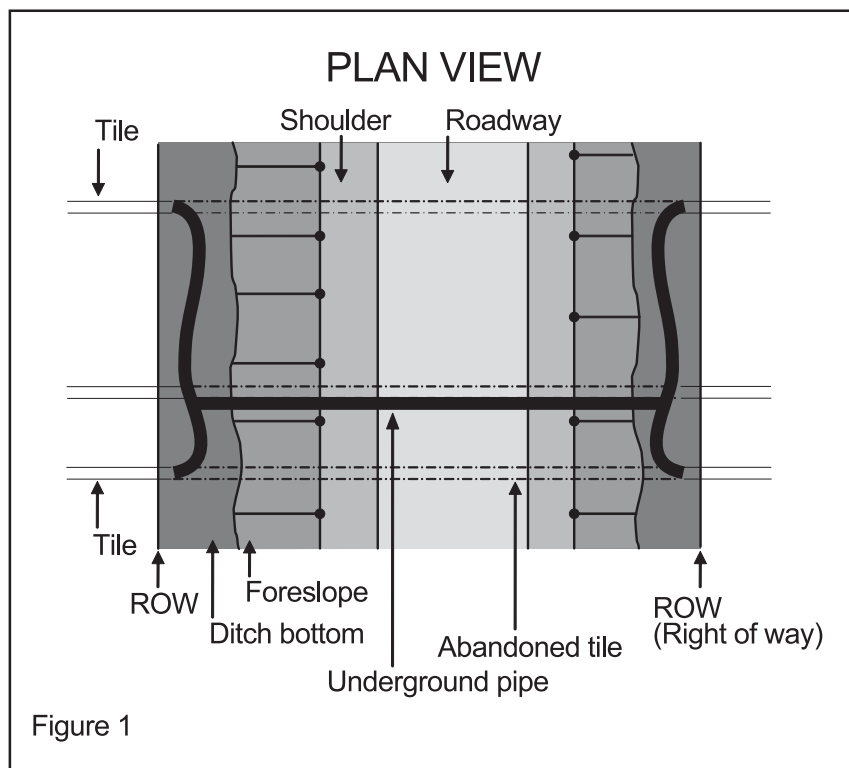
See the Iowa Drainage Guide for design guidance. Allow extra capacity in anticipation of possible future changes in land use. If possible, avoid inverted siphons because of their propensity for siltation and resultant maintenance.

What steps can be taken to reduce potential future maintenance for tile crossings of public roads?

Access tees can be installed at the ROW line to permit inspection of tile, identification of standing water and siltation, and performance of needed cleaning. This may be especially important for paved roads where open cutting for maintenance is costly. Agencies may also want to consider requiring encasement pipes for tile crossings of major roads.

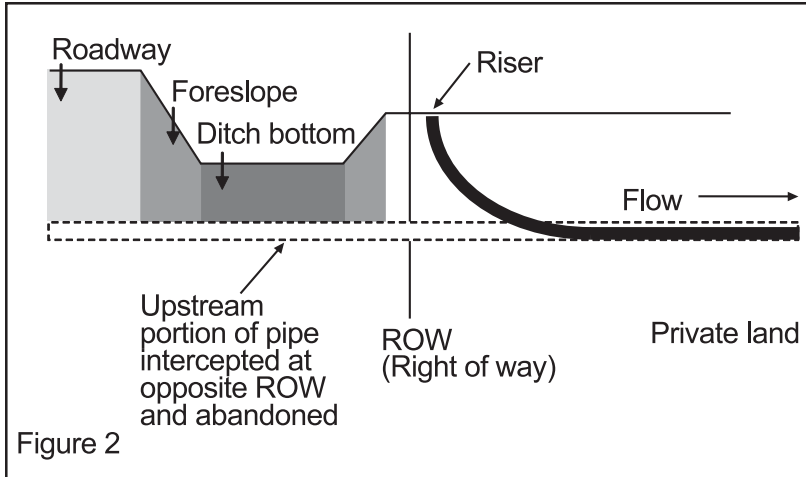
If several small, closely spaced tiles are encountered, can these be combined into a single larger pipe to cross the roadway?

Yes, but it may be difficult to properly redistribute tile flow at the outlet of the combined pipe, especially if the upstream pipes have differing heads driving the flow. Design a junction box with a weir for each outlet tile. If the junction box is constructed level, proper redistribution of flow among the outlet tiles should result. See Figure 1.



What is a “riser” and how is it used?

A riser is an upstream termination of a tile line to allow for inspection and cleaning. Risers are often installed when a tile line is severed due to roadway construction. Incoming drainage from the upstream tile may be outlet into an open ditch or intercepted by a lateral line. The down stream tile is terminated

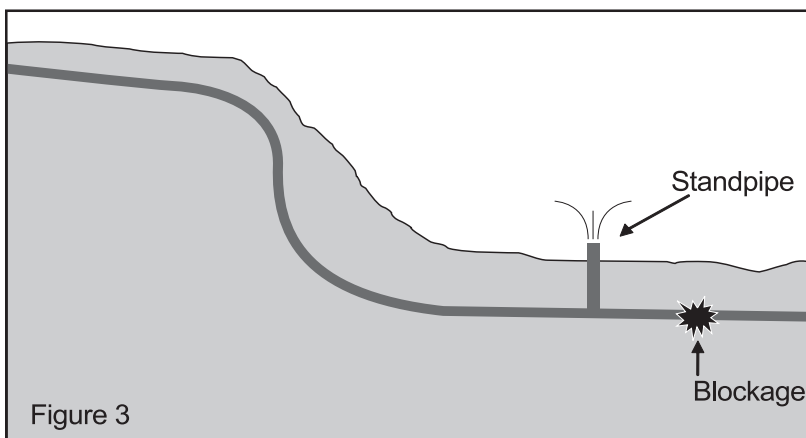


at the right-of-way line with a riser, as shown in Figure 2. (A cap prevents debris or animal intrusion.)

What is a “standpipe” and how is it used?

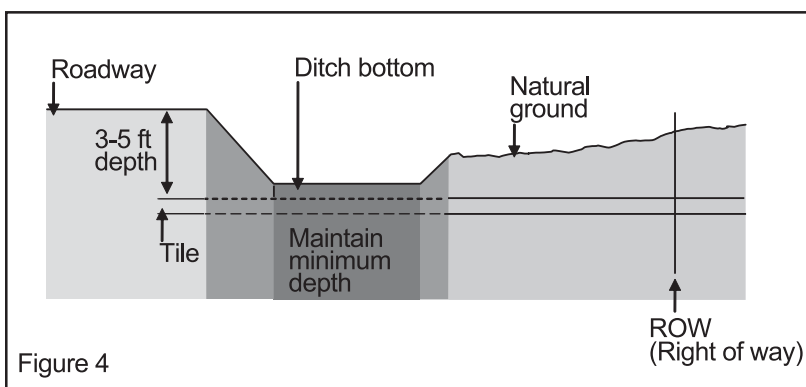
A standpipe is a vertically installed pipe from a tile line to the ground surface (Figure 3). In case of a downstream blockage, standpipes allow water in the tile an outlet to the surface.

Sometimes the term “standpipe” actually refers to a “riser” (see above). (A screen at the standpipe inlet retards debris and animal intrusion.)



What is the required depth for a tile line? What steps are available if the road ditch elevation does not provide that much cover?

A depth of 3 to 5 feet is recommended by the Iowa Drainage Guide. If a minimum cover is not available, a lateral pipe below the ditch bottom to a suitable outlet might be feasible. See Figure 4.



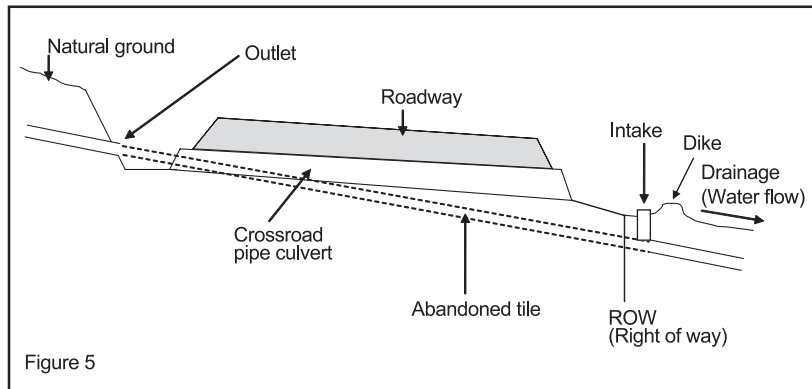
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When should a tile line be made to outlet into a road ditch?

This action is not recommended in most situations because a poorly draining ditch and possible future maintenance may result. A minimum of one foot of fall should be available at the outlet. It may be necessary to provide a lateral drain to accommodate the tile flow.

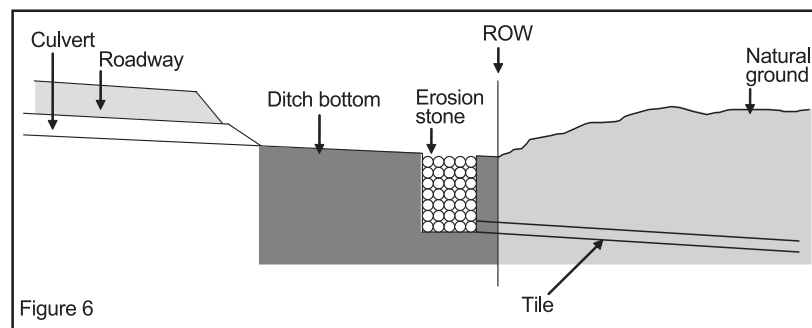
How can surface drainage be inlet to an existing downstream tile?

Drainage in an open ditch can be conveyed into a downstream tile by an intake, preferably installed on private property and supplemented with a dike to prevent surface drainage from flowing onto the adjacent field. Stone sumps and beehive intakes used for this purpose may become clogged with silt or debris and become a maintenance issue. See Figures 5 and 6.



If an agency constructs a drainage improvement, can part of the cost be assessed to benefited adjacent lands?

Generally no, except by mutual agreement. However Iowa Code sections 468.335-345 provide for the establishment of a "highway drainage district" wherein a procedure is described to identify benefited lands for proposed highway drainage improvements and determine the relative benefits.



Tile Lines—Maintenance

Who is responsible for maintenance of a tile system after modification?

On private property, the landowner would assume maintenance for all parts of the system. Within an established drainage district, the governing board would assume maintenance responsibilities. Within public right-of-way, the controlling agency is generally responsible for maintenance.

What is an agency's responsibility for continuing tile lines across public right-of-way, both inside and outside an established drainage district?

Iowa Code Section 468.622 requires a highway agency to accept responsibility for the initial cost and maintenance of tile or ditch extensions across the right-of-way. This section allows a property owner the right to enter on public right-of-way to connect a drain or ditch to existing drains or ditches along or across the highway. However, only "natural" drainage is required to be accepted by the public agency. Property owners cannot increase the volume of flow if that would cause damages downstream, and the direction of flow cannot be changed.

It is not the agency's authority or responsibility to determine whether or not downstream damages might occur from this action. The duty to prove damages is that of the downstream owner, and mitigation of those damages is the responsibility of the upstream owner.

If within a drainage district, the project engineer designing the drainage improvement must provide specifications. If outside a drainage district, the highway right-of-way must be restored to acceptable conditions, and the agency engineer's

specifications must be followed in making the connection.

Property owners may also request a public agency to install culverts or tiles under roads to drain property. Cost for these improvements is paid by the public agency. Usually a formal process is followed to accomplish this work, unless an informal agreement can be reached. See Code Section 468—Subchapter V for description of individual drainage rights.

What are agency responsibilities for maintenance of parallel tile lines in roadway right of way?

Although Iowa Code section 468.622 requires a highway agency to accept responsibility for the initial cost and maintenance of tile or ditch extensions across the right of way, the code does not address those responsibilities when related to parallel tile lines. Since most parallel tile lines were installed many years ago, maintenance is the major issue to be addressed. Several situations could be considered:

Is the required maintenance the result of an improvement to the roadway? If so, that maintenance could be the responsibility of the road agency.

If deterioration has occurred naturally and the tile line is within a drainage district, maintenance costs could be the responsibility of the district. The road agency would have been assessed for the initial installation costs.

If the line is not in a drainage district, the road agency may have responsibility for some maintenance costs, as described in Iowa Code Section 468.622, but not necessarily for the entire reach of

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the parallel tile line. Perhaps out-letting to an open ditch would be possible, or a direct crossing could be installed to replace the parallel line. However a direct crossing could be costly where existing buried utility lines and paved roadway are involved.

A road agency should address these situations in a written policy, if possible. As allowed in 468.622, agency-derived specifications must be followed when extending tile or ditches across public right-of-way. In all such situations, the agency should base the final decision on what is best for the road and general public.

Can a road agency block tile lines that cross the right-of-way?

No. Any tile lines or ditches must be extended to provide a suitable outlet, across the roadway if necessary, and the cost of that work must be borne by the agency. See discussion of Iowa Code Section 468.622 in the legal section of this manual.

May a road agency choose to outlet a tile line into a ditch in lieu of extending the tile under a road?

Yes. Iowa Code 468.621 allows this option. However, some agencies have established policies to continue subsurface drainage in tiles if preferred by the downstream landowner. Tile lines can be made to outlet in a right-of-way ditch if the flow is conveyed to an established waterway before returning to private property. Take care, however, that natural drainage patterns are not violated by this action.

Landowner Rights and Responsibilities

What rights do upstream and downstream landowners have regarding drainage?

In general, the Iowa Code and courts have held that upstream landowners may outlet drainage onto downstream property, and downstream owners must accept all natural drainage within certain limitations. Refer to additional discussion of dominant (upstream) and servient (downstream) rights in the article “Drainage Easements and Agreements” in this manual.

If a property owner obstructs drainage, willfully or not, what are possible recourses for upstream owners?

Courts have held that landowners have a duty to keep ditches on their property running openly and free from obstruction. Furthermore, blockage that unreasonably obstructs a time honored flowage system from upstream land is an enjoined nuisance. Upstream owners may seek an injunction from the courts to require a downstream owner to remove an obstruction, but it must be shown that substantial damages, real or potential, will result if action is not taken. In a drainage district, willful obstruction of a ditch, drain, or watercourse is considered a serious misdemeanor and the governing body has authority to repair the obstruction after due notice to the person or persons who caused the blockage. Refer to Iowa Code Chapter 468 for details.

Do “water rights” exist for property owners? Can alleged well damage due to groundwater draw-down be assessed to activities by others?

An owner has the right to “reasonable” use of property. In the case of subsurface water, an owner can utilize that resource for the benefit of agriculture, manufacturing, irrigation, etc., pursuant to the reasonable use of the property even if that interferes with underground waters of neighbors. However, the definition of “reasonable” may vary from case to case. Highway construction that includes a deep excavation that may adversely affect underground water to the detriment of adjacent owners might not be considered “reasonable.”

Also refer to Iowa Code Section 455B.281 and Iowa Administrative Code [567] Chapter 54 for information about compensation for well interference.

Public Agency Obligations

What obligations do transportation agencies have to downstream property owners if road construction concentrates flow from an existing waterway into a culvert?

Agencies may not change either the volume of flow or the manner of discharge so that it causes injury to a downstream landowner. An upstream owner may place additional water on the downstream property if that action does not cause substantial damage. However, an agency or upstream owner may be responsible for any damages to downstream property caused by siltation, erosion due to increased flow, or loss of use of property.

What are the responsibilities of a public agency or developer if their activities cause downstream erosion or siltation on private property?

Riparian landowners are required to exercise ordinary care in the use of property so as not to cause damage to neighboring lands. If actions by an upstream owner cause a substantial increase in volume or change in the method of drainage, and these changes result in actual damages such as a deposit of silt, a downstream owner is entitled to relief.

A public agency should not make improvements to roads or structures that would accommodate unlawful or diversionary acts by upstream owners or developers.

Often a city may be asked to mitigate excess runoff concentration that might occur as a result of development. Several design techniques, called “low impact development,” have evolved recently to specifically address erosion problems. Advice on these and other mitigation options are available from the NRCS.

Refer to Iowa Code Section 468 for legal responsibilities in drainage districts.

Are counties responsible for removing silt from right-of-way ditches? If so, can they assess part of the cost to property owners?

The Iowa Code and courts have consistently ruled that maintenance of ditches in the right-of-way is the responsibility of the agency having jurisdiction. This would apply to removal of silt that might be obstructing drainage. However, if the source of silting is readily identifiable and accumulation is causing an obstruction, agencies can seek to have the condition abated through the courts. The most

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advisable action would be to seek an agreement to address the situation with the property owner(s).

Another option would be to contact the NRCS for assistance and advice. A soil loss complaint can be filed with that agency.

What are the obligations of private property owners and public agencies regarding the diversion of drainage from the natural path? Is it necessary to maintain historic diversions?

Numerous court rulings have addressed this issue, generally finding that natural drainage cannot be diverted by one landowner to the damage of others, including decreased land value. (Two court decisions of note are *Sheker v. Machovec*, 1908 and *Kaufmann v. Lenker*, 1914.) Owners of higher land may not collect and discharge water onto lower land in such a manner as to cause a streambed to be formed. Highway authorities cannot turn surface water from the natural channel to the injury of adjacent landowners. Openings must be placed in roadway embankments to permit surface water to continue in natural paths. However, some exceptions to diversion rules can be made if substantial damages do not result.

Iowa Code Section 306.27 describes allowable diversions of drainage by governmental agencies as part of certain roadway improvements. If damage results from the improvements, compensation may be due.

Following an uncontested period of 10 years, historic diversions may become “natural drainage ways” by prescription. However, prescriptive rights apply only to private ownership.

Is a public agency responsible to make drainage improvements to accommodate increased flow

from upstream land improvements? How about providing and maintaining an outlet for formerly un-drained land? Are downstream owners required to provide an outlet for ditches and/or tile constructed to drain low-lying land?

The state and counties are liable for the costs of extending drainage improvements through roadways to achieve suitable outlets, which might include freely discharging a tile drain to the surface. Cities are not required to pay for crossings, but they cannot deny the extension to a suitable outlet. Included in these responsibilities is the obligation to provide an outlet for un-drained lands. However, downstream landowners are not required to provide an outlet for ditches, but they must responsibly maintain existing ditches and cannot obstruct drainage.

Iowa Code Sections 468.600–618 describe procedures that enable upstream owners to construct drains across downstream property to a suitable outlet. This is commonly accomplished through establishment of a drainage district. When an existing drainage district facility is available as an outlet, Iowa Code sections 468.63–64 and 468.141 offer the option of establishing a sub-drainage district to accomplish this.

What are an agency’s responsibilities for maintaining cattle passes?

According to Iowa Code Section 320, maintenance responsibilities for cattle passes (cattleways) are primarily the property owner’s. Following contact and negotiation with owners, if these structures are no longer needed, agencies should consider backfilling to eliminate a roadside hazard for motorists. However, cattle passes may also serve as drainage structures. In such cases, a smaller

diameter pipe could be inserted into the larger structure prior to backfilling.

Iowa Code Chapter 320 describes the responsibilities of agencies and property owners in the installation and maintenance of cattle passes. Right-of-way agreements for highway improvements may also stipulate specific conditions.

Drainage Records

What sources of records are available for reference on drainage construction and maintenance issues, such as locating existing tiles?

County recorders maintain a record of private drain tile installations that have been filed voluntarily by landowners. County auditors maintain drainage district plans and records, and these plans may show private tile locations. Individual drainage districts may maintain records as well. Local NRCS offices also have some records, especially for tile lines installed with federal assistance over the past several years. In addition, local tile contractors often keep records of tile installations for landowners' information and to facilitate possible future modifications.

Spills, Untreated Discharge

What liability does a road agency assume if a roadway crash results in a hazardous material release into a private ditch or tile system?

In general, the courts and Iowa Code hold the company or person who caused the spill to be liable. Agency legal staff and the Department of Natural Resources should be contacted to assure

that clean up from a hazardous spill is handled by the responsible party.

If untreated discharge from a sanitary (septic) system is encountered in the right-of-way, what is the best course of action?

When discovered, an active sanitary outlet on public right-of-way should be documented and reported to the local sanitation official or DNR for action. Iowa Code Section 455B.186 prohibits the disposal of inadequately treated sewage into any water of the state, including right-of-way ditches. Consult local ordinances and polices for additional restrictions.

What course of action is recommended to address runoff from animal feedlots onto downstream property?

A property owner who has suffered damages from manure waste runoff from a neighboring feed lot can bring action for abatement of a temporary nuisance and seek injunctive relief and damages.

Iowa Code Section 459.309 addresses minimum requirements for manure control and Sections 459.310 and 459.311 describe minimum distance requirements from water sources.

Entering Private Property

Can a public agency enter on private property to restore outlet flow? If so, what is the recommended process?

Condemnation measures may be undertaken for maintenance and construction of roadways (Iowa Code Section 306.19). Persons in charge of improvement or maintenance work on any highway may enter upon adjoining lands for the purpose of

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removing natural channel obstructions that impede the flow of water (Iowa Code Section 314.7). However, prior to exercising such a right, consultation with proper legal authorities is recommended.

In a drainage district, the board of supervisors has authority to do whatever is necessary to restore a drainage improvement to the original capacity or efficiency (Iowa Code Sections 468.126 and 468.138). Iowa Code Section 314.9 also allows entry on private property after due notice for certain roadway construction-related activities.

Drainage Districts

How are assessments for drainage districts determined?

In general, property assessments are based on a calculated percentage of benefit for each 40 acres or less of land. The benefit relates to the value of the agricultural use as a result of the drainage improvements. Poorly draining land would receive more benefit than well drained property. Other factors can also be considered, such as proximity to the ditch or tile constructed and distance from the outlet. Payment of drainage district assessments are generally made with property taxes. Several sections in Iowa Code Chapter 468 describe assessment procedures for drainage districts, including the following:

- Section 468.25, assessment of damages in the establishment of a district
- Section 468.41, assessments for lateral ditches
- Section 468.48, notice of increase assessments
- Section 468.126, repairs
- Section 468.184, assessments in levees districts
- Section 468.586, assessment of costs in urban areas

The Iowa DOT Maintenance Division's instructional memorandum describes drainage district assessments on primary highways.

Is drainage district membership included on abstracts for property?

No, drainage district membership, whether private or public, is not usually included on abstracts for property.

Wetlands, Wildlife

What procedures are required to restore a wetland within an established drainage district?

No specific procedures for establishing or restoring a wetland within a drainage district are known to exist. However this action has been undertaken in some areas, with drainage district boards generally requiring notification, an engineering plan, and a possible public meeting/hearing to review. An example of a resolution for establishment of a wetland in a Greene County drainage district is included in the appendix. Also, the Iowa Drainage District Association has developed a template agreement for use by its members when considering requests to establish wetlands within a drainage district.

Can an agency or property owner remove a beaver dam that is obstructing drainage?

If possible, property owners should seek approval of the conservation officer prior to removing a beaver dam because wild animals are owned by the state (Iowa Code Section 481.2) and the local officer in charge is the county conservation officer. However, a den, lodge, or house of a fur bearing animal may be destroyed to protect property

without written permission of the conservation officer (Iowa Code Section 481.90). This authority is further described in Code Section 481A.87.

A beaver dam that obstructs drainage in an established drainage district can be removed on order from the district's governing board.

If a beaver dam is in an established wetland site, a permit from the U.S. Corps of Engineers may be needed prior to disturbance.

Sources

Corpus Juris Secundum: Complete Restatement of the Entire American Law as Developed by All Reported Cases. Waters Section 193, page 451. 1936.

"Field Tile Issues in Highway Construction." Iowa DOT, Ames, Iowa.

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Model Drainage Manual 1991. American Association of State Highway and Transportation Officials, Washington, D.C., 1991.