BEFORE THE DANE COUNTY BOARD OF ADJUSTMENT

Appeal 3727
Appeal of Zoning Administrator's determination regarding wetland use violations at Maier Farms LLC

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BRIEF OF DANE COUNTY ZONING ADMINISTRATOR

Maier Farms Real Estate LLC (Maier) is appealing a notice of non-compliance issued by the Zoning Administrator. The Notice states a wetland zoning violation exists on their property located at 7119 Schumacher Road in Section 21 of the Town of Vienna. A determination was made that by installing drain tiling and a pump in a wetland Maier is conducting prohibited uses in a wetland and is therefore in violation of the ordinance and must take corrective action.

Maier was first informed of the violation in a letter dated March 6, 2024 (Exhibit 1). The alleged violation was that the installation of drain tile and a pump in the wetland was a prohibited use. The letter provided two options to bring the property into compliance, 1) removing the illegal use, or 2) rezone the property out of wetland.

In response to the notice of violation, Jeff Kraemer (Heartland Ecological Group), Maier's wetland delineator, stated in an e-mail dated March 12, 2024 (Exhibit 2) that, "the project is compliant with Chap. 11.07 2(c) which allows for tiling within areas subject to inland wetland zoning to the "…extent necessary to maintain the level of drainage required to continue the existing agricultural use"".

In response to Maier's position that the use was permitted, Dane County Zoning requested a written description of pre-existing agricultural drainage systems being maintained or repaired, a description of the pre-existing agricultural use, and an explanation of how the installed tiling was determined to be the minimum level of drainage required to continue the agricultural use.

A response to the request was received from Mr. Kraemer by email on March 15, 2024 (Exhibits 2 & 3). Zoning staff reviewed the submission and responded with a notice of non-compliance dated March 20, 2024. Maier appeals the Zoning Administrator's determination contained within the March 20, 2024 notice (Exhibit 4) that a wetland violation exists on the property.

Analysis

Dane County Code of Ordinances section 11.07 (Exhibit 5) lists permitted uses within inland-wetlands that are not subject to the issuance of a shoreland zoning permit. The section creates two categories of uses, (1) those carried out without filling, flooding, draining, dredging, ditching, tiling or excavating, and (2) those that may include filling, flooding, draining, dredging, ditching, tiling or excavating.

Included as a permitted use in the second category is *"Ditching, tiling, dredging, excavating or filling done to maintain or repair existing agricultural drainage systems only to the extent necessary to maintain the level of drainage required to continue the existing agricultural use and only where permissible under section 30.20, Wisconsin Statutes. This includes the minimum filling necessary for disposal of dredged spoil adjacent to the drainage system, provided that the dredged spoil is placed on existing spoil banks where possible and such filling is permissible under chapter 30, Wisconsin Statutes"*.

In January of 2024 Maier placed approximately 75 new drain tile laterals, each connected to a new drain tile main within the wetland on their property (Exhibit 6). The main outlets to a sump, also located within the wetland, where a pump was installed. The purpose of the pump was to discharge water from the sump to the right-of-way of Schumacher Road where the water would then drain by gravity through a culvert under the road and to the east.

In order to determine if the development was in compliance with 11.07(2)(c), each part of the described use was broken down:

First, it was reviewed if the action carried out was *ditching, tiling, dredging, excavating or filling*. Clearly the installation of lateral and main tiling was *tiling*. While it may have involved *dredging* and *excavating,* the installation of a sump and pump is not clearly listed as a permitted action under the use.

The installation of the pump and its discharge into the right-of-way represents a substantial alteration of the wetland's hydrology. This new feature is not a permissible maintenance or repair activity and constitutes a separate violation of the ordinance.

Second, the ordinance requires that the action carried out be done to *maintain or repair*. Under 11.015(25) maintenance and repair "includes such activities as interior remodeling, painting, decorating, paneling, plumbing, insulation, and replacement of windows, doors, wiring, siding, roofing and other nonstructural components; and the repair of cracks in foundations, sidewalks, walkways and the application of waterproof coatings to foundations." While these actions are typical actions related to a structure (which is where additional references to this definition are applicable in the ordinance), in the application of ditching, tiling, dredging, excavating, or filling, this definition was found to be out of context. Due to the context, the plain dictionary meaning of both maintain and repair was reviewed. Oxford defines maintain as:

- cause or enable (a condition or state of affairs) to continue.
- keep (something) at the same level or rate.
- keep (a building, machine, or road) in good condition or in working order by checking or repairing it regularly.

And defines repair as:

- fix or mend (a thing suffering from damage or a fault).

Within the context of the use, these definitions provided a plain meaning within the scope and context of the regulation. Moreover, the ordinance's use of these terms together, *maintenance and repair*, should be interpreted consistent with established regulatory practice. While the current DNR guidance is presented in a streamlined format, a previous fact sheet (Exhibit 7) provided more detailed criterial for drain tile maintenance and repair, emphasizing the 'in-kind' nature of permissible work. The fact sheet describes that in-kind meant that allowed activities were limited to replacing tile with the same grade, depth, diameter, and type while also precluding excavation and backfilling for new features like pumps or connections. Maier's response states, "The drain tile plan was developed to maintain the level of drainage required to continue the existing agriculture use of the property…" While that could be interpreted to satisfy the definition of maintain, their response did not support that the drain tile plan satisfied established regulatory meaning of *maintenance and repair.* The issuance of the Notice of Non-Compliance by DNR (Exhibit 8) supports that the regulatory interpretation of 'in-kind' work remains applicable. The ACOE provides further support for this interpretation in a memo (Exhibit 9) address ditch maintenance. While focused on ditches, the memo's definition of maintenance (specifically, the emphasis on maintaining 'the same approximate capacity and as-built configuration') provides a useful framework for understanding the concept of maintenance within the context of drainage systems generally. We acknowledge that this memo is in the context of ditches and not tiling, but the local regulation is applicable to both as a component of an agricultural drainage system.

Third, the ordinance requires that the action carried out to maintain and repair *existing agricultural drainage systems*. The ordinance does not define drainage systems, so the plain use rule and harmonizing was utilized is interpreting the provision. Oxford defines drainage as "the means of removing surplus water or liquid waste; a system of drains" and a system as "a set of things working together as parts of a mechanism or an interconnecting network." The combined definitions are interpreted to define a drainage system as a process of objects with an input of surplus water and an output of that water through a network to another location. The ordinance requires that this system be existing and of an agricultural use. Maier makes claim that because they have a Natural Resource Conservation Service (NRCS) determination of "prior converted cropland" that an agricultural drainage system must exist, but because they have only owned the land for a short period of time they do not know the details of the pre-existing system. Maier provided no evidence of components of an existing system, or defined any process of interconnected parts showing the extent of such an existing system being in place.

NRCS provides wetland determinations for purposes of compliance with the Food Security Act of 1985, as amended, which requires agricultural commodity producers to abide by certain conditions on any land owned or farmed that is considered a wetland if those producers are participating in programs supported by the United States Department of Agriculture, Farm Service Agency, or NRCS. These determinations and other field services may be used to identify and confirm exemptions to the requirements of the Act in the administration of the Federal programs by these agencies. The determinations made by NRCS are not intended to be valid for identifying the extent of local regulations. The authority of Dane County to regulate inland-wetland zoning is established in Wisconsin State Statute 33.455 (Exhibit 10) under the powers of the Dane County Lakes and Watershed Commission. The Food Security Act of 1985, as amended, does not contain exemptions or in any way abrogate the County's authority.

The NRCS determination of "Prior-converted cropland" simply means that the production of an agricultural commodity would not have been possible in the wetland, unless prior to December 23, 1985 it had been drained, dredged, filled, leveled, or otherwise manipulated (including the removal of woody vegetation or any activity that results in impairing or reducing the flow and circulation of water) for the purpose of or to have the effect of making possible the production of an agricultural commodity without further application of the manipulations. The NRCS determination that the area is a "prior converted cropland" only requires that a wetland was manipulated prior to December 23, 1985 for the purpose of producing an agricultural commodity (crops). The NRCS determination does NOT require the area to have a drain tile system, it only had to be manipulated and cropped. Furthermore, the actions taken in January 2024 must be considered further application of manipulations of the wetland, and negate the appellants use of the determination in their appeal.

With the ordinance limiting actions of maintenance and repair to existing systems, and not having any evidence of what parts or entirety of an existing agricultural drainage system those actions were being applied to makes it impossible to definitively interpret the actions as a permitted use. Given the ambiguity of applying the ordinance with such missing details of the system, the purpose of the inland-wetland district was reviewed. 11.06(1) (Exhibit 11) states, "This ordinance is adopted to maintain safe and healthful conditions, to prevent water pollution, to protect fish spawning grounds and wildlife habitat, to preserve shore cover and natural beauty, to conserve inland-wetland areas occurring throughout the unincorporated areas of Dane County, and to control building and development in wetlands whenever possible. When development is permitted in a wetland, the development should occur in a manner consistent with state and federal law that minimizes adverse impacts upon the wetland." The placing of drain tile and a pump in a wetland constitutes development in a wetland, and therefore if that development is permitted is must minimize adverse impacts to the wetland. A wetland is defined as those areas where:

1. Water is at, near or above the land surface
2. That water is present long enough to be capable of supporting aquatic or hydrophytic vegetation, and
3. There are soils indicative of wet conditions.

These three conditions that define a wetland make a triangle, and if any one of the legs of that triangle are removed the area fails to be a wetland. The removal of "surplus" water from near the land surface, by use of tiling and a drain pump has the effect of eliminating the wetland and eliminating a wetland is the maximum adverse impact to the wetland rather than minimum.

Maier's claim that the new tile constitutes maintenance and repair of an existing system is not supported by the evidence. As noted above, 'maintenance' implies working on something already in place. Installing a completely new system, as occurred here, does not meet this definition. Furthermore, the topography of the site suggests that a functional gravity-fed drainage system, without a pump, would be impractical (Exhibit 12). The evidence provided fails to prove the existence of a tile system, but only indicates manipulation of the wetland for agricultural purposes. They also provide that the work was necessary to maintain an existing level of drainage, however they have provided no evidence to support this claim.

Fourth, the use requires that the actions to maintain and repair are "*only to the extent necessary to maintain the level of drainage required to continue the existing agricultural use".* Maier provides an analysis of aerial imagery (Exhibit 3) spanning 85 years, showing that 82% of those years imagery shows cultivation. They provide that the drain tile plan implemented in January 2024 was developed to maintain the level of drainage required to continue the agricultural activity, but provide no data or additional details on the plan other than aerial imagery showing uncropped fields 18% of the years. Without additional detail and supporting evidence, it is possible that historically the level of cultivation was limited to low water years. More crucially, there is no aerial photo evidence of a pre-existing tile system on the property. A comparison with a tiled field at McCarthy County Park (Exhibit 13) demonstrates the characteristic signatures of tile drainage in aerial imagery. The absence of such signatures on Maier's property, until after the new tile was installed, strongly indicates that no such system existed previously.

Drain tile systems are typically designed to allow some degree of crop yield even in moderately wet years, with the understanding that extremely wet periods may preclude cropping (Exhibit 14). Lateral spacing is a key design parameter, determined by factors like soil type and drain depth, to achieve the desired 'lateral effect' (the area from which wetland hydrology is effectively removed) (Exhibit 15). Maier's lateral spacing of approximately 20 feet is significantly more intense than the spacing observed in other comparable tiled fields on similar soils (Exhibit 16 & 17) (e.g., Former Treinen/Cherokee Marsh drain tile at 60 feet; Duerst farm tile spacing ranging from 40-55 feet). These comparable systems, with wider spacing, have demonstrated the ability to maintain partial to complete cultivation even in very wet years such as 2010 and 2017. The unusually close lateral spacing of the Maier tile plan suggests that it is designed to provide a level of drainage beyond what is necessary to maintain the existing agricultural use. It effectively constitutes a new or expanded drainage system, not simply maintenance or repair of an existing one.

Finally, the use requires that actions must be *permissible under section 30.20, Wisconsin Statutes*. At the time of the request there was an outstanding Notice of Non-Compliance (Exhibit 8) issued to Maier from the Wisconsin Department of Natural Resources starting the development failed to comply with Wisconsin Statutes and corrective action was required.

The development that occurred in January 2024 did not appear to involve dredged materials being placed within a wetland, which is the final language included in the described use, so no analysis was required in this interpretation.

<u>Jurisdictional argument raised after initial appeal</u>

After filing the administrative appeal application, Maier provided an argument to Dane County Corporation Counsel which contends that the Zoning Administrator lacks jurisdiction to determine a wetland use violation on the basis that Wisconsin Statutes prohibit counties from regulating non-federal wetlands. Given that this argument was not presented until well after the appeal application, we do not believe it to be properly before the Board of Adjustment for consideration of this appeal of a determination of the Zoning Administrator.

If the Board decides to hear such an argument, we would request additional time to provide a complete response, however we do provide that the argument misconstrues the roles of the Zoning Administrator, the Board of Adjustment, and the applicable legal framework. The Appellant's argument rests on a fundamental misunderstanding of the distinct roles of ordinance enforcement and statutory interpretation. The Zoning Administrator's authority derives from and is limited to the interpretation and enforcement of county ordinances, not state statutes. The Zoning Administrator's role is to determine whether a property is in compliance with local zoning regulations. They do not, and indeed cannot, make determinations of law regarding the interpretation or application of state statutes.

The violation in this case pertains to a breach of the county wetland zoning ordinance. This ordinance, duly enacted by the County, establish specific regulations regarding development and land use within designated wetland areas. The Zoning Administrator's action was confined to assessing whether Maier's activities violated these local regulations. The Zoning Administrator did not, and does not, purport to interpret or apply state wetland statutes. The Zoning Administrator must stay within the County ordinances as written.

The Appellant's argument about state statutes limiting county regulation of non-federal wetlands is irrelevant to the Zoning Administrator's jurisdiction to enforce county ordinances.

Even if the Appellant's interpretation of state law were correct (which is not conceded), it would not negate the County's authority to enforce its own local ordinances. A challenge to the validity of the ordinance itself based on state law would be a separate legal action, distinct from the Zoning Administrator's enforcement action.

Upon appeal, the Board of Adjustment steps into the shoes of the Zoning Administrator. The Board's review is limited to determining whether the Zoning Administrator's decision to enforce the county ordinance was correct. The Board of Adjustment, like the Zoning Administrator, does not have the authority to interpret or apply state statutes. The Board's purview is strictly confined to the application of local ordinances. Therefore, the Board of Adjustment, in hearing this appeal, is similarly restricted to considering whether the Zoning Administrator correctly applied the county's wetland ordinance to the facts of this case.

In summary, the Appellant's argument conflates the distinct functions of ordinance enforcement and statutory interpretation. The Zoning Administrator's action, and now the Board of Adjustment's review, pertains solely to the application of county ordinances. The Appellant's claims regarding state statutes are misplaced in this context. The relevant question before the Board is not the interpretation of state law, but whether the Zoning Administrator correctly determined that the Appellant's activities violated a duly enacted county ordinance.

Timeline

- January 24, 2024 Stop work order issued by Dane County Land and Water Resources
- February 13, 2024 Notice of Non-Compliance issued by Wisconsin Department of Natural Resources
- February 20, 2024 Onsite meeting with Maier, WI DNR, LWRD, DC Zoning
- March 6, 2024 Notice of Violation issued by DC Zoning
- March 12, 2024 Maier responses to zoning violation stating compliance with 11.07(2)(c)
- March 12, 2024 Zoning requests additional information supporting compliance with 11.07(2)(c)
- March 15, 2024 Maier provides requested response
- March 20, 2024 Zoning issues determination of non-compliance with 11.07(2)(c)
- April 16, 2024, Maier filed a petition to rezone out of wetland.
- June 18, 2024 Public hearing for petition 12058 by the Zoning and Land Regulation Committee (ZLR)
- July 9, 2024 Work meeting of the ZLR. ZLR recommended the petition for denial.
- July 18, 2024 County Board final action on petition 12058 to deny the request for rezone out of wetland.
- July 19, 2024 Maier appeals determination of Zoning Administrator of March 20, 2024.
- August 22, 2024 Board of Adjustment action to suspend rules to hear an untimely appeal

Summary

The response provided from Maier failed to satisfy the ordinance sufficiently to determine the development was a permitted use. This determination was based on the following:

1. Installing a pump and using that pump to drain a wetland is not included as a permitted action in 11.07(2)(c).

2. The sump and pump did not exist prior to the development and therefore would be impossible to maintain or repair them as components of an agricultural drainage system.
3. There is no detailed record of a drainage system, and therefore it is impossible to determine if a proposed use conforms to the ordinance other than to evaluate it against the purpose of the ordinance.
4. The drainage plan fails to provide details as to the historic or proposed extent of drainage or how the proposed plan maintains the existing level of drainage.
5. The system installed in January of 2024 failed to comply with 11.07(2)(c).

Based on the review the Zoning Administrator found that Maier's actions were prohibited uses in an inland-wetland under 11.09.

Finding of Fact

I respectfully request that the Dane County Board of Adjustment make the following Findings of Fact:

1. The Maier property contains a field delineated wetland as documented in the Heartland Ecological Group wetland determination dated March 5, 2024.
2. A drain tile system including an outlet (sump crock with pump) was installed by Skalitzky Drainage on the Maier property in the wetland area. (Exhibit 6).
3. The Wisconsin Department of Natural Resources (DNR) issued a violation letter to Pat Maier and Joe Skalitzky for the installation of a drain tile system within a wetland area near 7119 Schumacher Road. (Exhibit 8).
4. The installation of tiling within the wetland did not satisfy the requirements of 11.07(2)(c).
5. The installation of a sump and pump did not satisfy the requirements of 11.07(2)(c).
6. The NRCS determination of "Prior-converted cropland" means a converted wetland where the conversion occurred prior to December 23, 1985, an agricultural commodity had been produced at least once before December 23, 1985, and as of December 23, 1985, the converted wetland did not support woody vegetation and did not meet the hydrologic criteria for farmed wetland.
7. If land was wetland, farmed wetland, or farmed-wetland pasture and was neither highly erodible land nor highly erodible cropland and if production of an agricultural commodity would not have been possible on said land, the NRCS defines a converted wetland as a wetland that has been drained, dredged, filled, leveled, or otherwise manipulated (including the removal of woody vegetation or any activity that results in impairing or reducing the flow and circulation of water) for the purpose of or to have the effect of making possible the production of an agricultural commodity without further application of the manipulations.
8. The NRCS determination that the area is a "prior converted cropland" only requires that a wetland was manipulated prior to December 23, 1985 for the purpose of producing an agricultural commodity (crops). The NRCS determination does NOT require the area to have a drain tile system, it only had to be manipulated and cropped.
9. It is not practical that a pre-existing drain tile system was installed due fact that the topography does not provide an outlet, there is no evidence of ditching or a past installation of a sump crock. (Exhibit 12 & 14).
10. An existing agricultural drainage system did not exist prior to January 2024 within Maier's wetland.

Conclusion

With the aforementioned evidence, I respectfully request that the Dane County Board of Adjustment make the following conclusions:

1. Maier Farms hired Skalitzky Drainage to install a drain tile system on the property located at 7119 Schumacher Road.
2. The drain tile system was installed without obtaining the necessary approvals from Dane County Zoning Division and Dane County Land and Water Resources.
3. Insufficient evidence was presented and it is not practical that the land had an existing drain tile system due to the absence of a natural outfall (water to naturally to exit the site).

4. The Dane County Zoning Administrator made a correct determination that the drain tile system installed on the property located at 7119 Schumacher Road is in violation of Section 11.09 of the Dane County Code of Ordinances as noted in the determination of non-compliance letter dated March 20, 2024.
5. Maier Farms shall take corrective actions to correct the violation as required by the Dane County Zoning Division and the Dane County Land and Water Resources.

EXHIBIT 1

Dane County Planning & Development
Zoning Division

March 6, 2024

MAIER FARM REAL ESTATE LLC
7085 SCHUMACHER RD
WAUNAKEE WI 53597

JOE SKALITZKY
SKALITZKY DRAINAGE, LLC
W8593 MICHEL LN
WATERLOO WI 53594

RE: Wetland Zoning Violations occurring near 7119 Schumacher Rd, Section 21, Town of Vienna
Parcel # 0909-212-8500-7 & 0909-212-8140-0

The Zoning Division of the Dane County Planning and Development Department is bringing attention that you, or persons acting on your behalf, had conducted prohibited activities within mapped wetland on your property in the southwest quadrant of the intersection of County Highway V and Schumacher Road.

A site inspection/meeting was held on February 20, 2024. It was observed that tiling had been installed in a field containing a mapped wetland and wetland indicators and a pump had been installed below ground in a low spot area containing wetland indicators adjacent to the Schumacher Road right-of-way.

Under Dane County Code of Ordinance section 11.09, any use not listed in sections 11.07 and 11.08 is prohibited. In addition, for purposes of wetland zoning, lands containing wetland indicators must be further evaluated prior to development, including the installation of tiling and pumping equipment. The installation of a pump and draining of a wetland is not a permitted use listed in sections 11.07 and 11.08.

This letter serves as notice that your property is in violation of the ordinance for a prohibited use within an inland-wetland.

You are hereby instructed to remove and cease all prohibited land uses on your property, or rezone the wetland or portion of the wetland by amendment of the Dane County Code of Ordinances in accordance with section 11.10. All corrective action shall comply with a Wisconsin Department of Natural Resources approved restoration plan as requested in their Notice of Non-Compliance dated February 12, 2024. Any land disturbing activity within a wetland or within 75 feet of a wetland also requires a shoreland erosion control permit from Dane County Land and Water Resources.

When corrected, please contact the Zoning Department at (608) 266-4266 so that the corrections can be verified.

If steps towards compliance are not pursued, further enforcement actions will commence including citations and a summons and complaint filed in Dane County Circuit Court.

Your cooperation is appreciated in this matter.

Sincerely,

Hans Hilbert
Assistant Zoning Administrator

County of Dane
608-266-4993
hilbert.hans@countyofdane.com

CC:
Allen Ramminger & Brian Cunningham, Wisconsin Department of Natural Resources
Jeremy Balousek & Jess Starks, Dane County Land and Water Resources

EXHIBIT

2

From: Jeffrey Kraemer
To: Hilbert, Hans
Cc: Buck Sweeney (csweeney@axley.com); Patrick Maier; Cunningham, Brian J - DNR; Lane, Roger
Subject: FW: Maier Farm Wetland Boundary Determination
Date: Friday, March 15, 2024 7:08:24 PM
Attachments: image004.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png
AerialPhotos_MaierFarmsr.pdf
NRCSWetland_MaierFarms.pdf

Hans –

Below is a summary in response to your questions.

Pre-Existing Agricultural Use

In the attached historical aerial photos, the agricultural use of the subject field is as follows:

1937: entirely farmed in row crop
1955: entirely farmed in row crop
1968: entirely farmed in row crop
1974: entirely farmed in row crop
1976: entirely farmed in row crop
1979: entirely farmed in row crop
1982: entirely farmed in row crop
1983: entirely farmed in row crop
1984: entirely farmed in row crop, except a small wet area limited to the southern portion of the field.
1985: entirely farmed in row crop
1994: entirely farmed in row crop, except for flooded area in southern portion of field, northeastern portion of field has wet signatures but is farmed. Proceeding year was exceptionally wet year.
1995: entirely farmed in row crop, wet signature in isolated area at southern portion of field but still farmed.
1996: entirely farmed in row crop, wet signature in isolated area at southern portion of field but still farmed.
1997: entirely farmed in row crop
1998: entirely farmed in row crop, small isolated wet signature in area at southern portion of field but still farmed.
1999: entirely farmed in row crop, small isolated wet signature in area at southern portion of field but still farmed.

2000: entirely farmed in row crop, small isolated wet signature in area at southern portion of field but still farmed.
2001: entirely farmed in row crop, small isolated wet signature in area at southern portion of field but still farmed.
2002: entirely farmed in row crop
2003: entirely farmed in row crop
2004: entirely farmed in row crop, small isolated wet signature in area at southern portion of field but still farmed.
2005: entirely farmed in row crop
2006: entirely farmed in row crop
2008: field is substantially flooded, to approximate extent of current delineated wetland. This was a significant flood year for this area and does not represent normal conditions.
2010: field is substantially flooded, to approximate extent of current delineated wetland. This was a significant flood year for this area and does not represent normal conditions. Flooding was extensive since 2008 with significant rainfall in 2010. Farming in the delineated wetland area had ceased during these long term floods.
2013: almost entirely farmed in row crop, inundation and saturated soils present in area at southern portion of field consist with the WWI mapped wetland. 2013 was another wetter than normal year and the fields still hadn't recovered from 2008/2010 flooding.
2015: entirely farmed in row crop, except for small isolated wet area at southern portion of field.
2017: field outside of delineated wetland is farmed in row crop. Field is inundated in southern pocket consisted with WWI mapped wetland, north/northeast portion of recently delineated wetland has wet signatures and is not farmed.
2018: field outside of delineated wetland is farmed in row crop. Field is inundated in southern pocket consisted with WWI mapped wetland, north/northeast portion of recently delineated wetland has wet signatures and is not farmed.
2020: field outside of delineated wetland is farmed in row crop. Field is inundated in southern pocket consisted with WWI mapped wetland, north/northeast portion of recently delineated wetland has wet signatures and is not farmed.
2022: field outside of delineated wetland is farmed in row crop. Field is inundated in southern pocket consisted with WWI mapped wetland, north/northeast portion of recently delineated wetland has wet signatures and is not farmed.

Of the 31 years of aerial photographic record reviewed, we can summarize the following agricultural use of the subject fields and wetland areas:

- 4 of 31 years were exceptionally wet periods (1994/2008/2010/2013) and many upland fields in the adjacent area flooded for long periods of time. Therefore, data is summarized based on 27 of 31 years.
- 52% of years the entire subject field was farmed with row crops and no wet signatures were present.

- 82% of years the entire subject field was farmed with row crops with some years exhibiting a small isolated wet signature in the southern portion of the field, however the area was still farmed.
- Most years that portions of the field that exhibited wet signatures and were not farmed occurred during wetter than normal climatic conditions.

Pre-Existing Agricultural Drainage Systems

The NRCS Certified Wetland Determination previously provided designated the subject field as Prior Converted Cropland (PCC). PCC "*As defined by NRCS pursuant to the Food Security Act at 7 CFR 12.2: a converted wetland where the conversion occurred prior to December 23, 1985, an agricultural commodity had been produced at least once before December 23, 1985, and as of December 23, 1985, the converted wetland did not support woody vegetation and did not meet the hydrologic criteria for a farmed wetland*" and "*As defined by the Corps and EPA pursuant to the Clean Water Act at 33 CFR 328.3(c)(9) and the Navigable Waters Protection Rule (NWPR; 85 FR 22339): any area that prior to December 23, 1985, was drained or otherwise manipulated for the purpose, or having the effect, of making production of an agricultural product possible. EPA and the Corps will recognize designations of prior converted cropland made by the Secretary of Agriculture"*. Therefore, the NRCS has established that a wetland has been converted to an agricultural field capable of producing commodity prior to at least 1985, which would require "pre-existing agricultural drainage systems". Unfortunately, the current landowner did not own the land prior to the time it was converted cropland (dating back prior to 1937) and does not have any information on the details of the pre-existing drainage system. The lack of maintenance to the system, particularly impacted by to the pressure on the system from long-term wetter than normal climatic conditions over the last decade or more has led to a failed drainage condition and redevelopment of wetlands.

How the tiling that was installed was determined to be the minimum level of drainage required to continue the agricultural use?

The drain tile plan was developed to maintain the level of drainage required to continue the existing agriculture use of the property that have been consistently cropped since at least the beginning of the aerial photographic records of 1937. As summarized previously, the subject agricultural field has been cropped 82% of the aerial photographic years evaluated over an 85 year time frame.

Thanks

Jeff Kraemer

Heartland Ecological Group, Inc.
Office: 608-490-2450 Ext. 2
Cell: 608-575-5783
www.heartlandecological.com

From: Hilbert, Hans <hilbert.hans@countyofdane.com>
Sent: Tuesday, March 12, 2024 3:25 PM
To: Jeffrey Kraemer <jeff@heartlandecological.com>
Cc: Buck Sweeney (csweeney@axley.com) <csweeney@axley.com>; Patrick Maier <maierfarms.patrick@hotmail.com>; Cunningham, Brian J - DNR <brian.cunningham@wisconsin.gov>; Lane, Roger <lane.roger@countyofdane.com>
Subject: RE: Maier Farm Wetland Boundary Determination

Jeff,

Please provide a written description of pre-existing agricultural drainage systems that are being maintained or repaired, a description of the pre-existing agricultural use, and an explanation of how the tiling that was installed was determined to be the minimum level of drainage required to continue the agricultural use. Once your provide that I will review the plan with the Zoning Administrator for a determination if the proposed use is in compliance with 11.07.

Thanks,

Hans

From: Jeffrey Kraemer <jeff@heartlandecological.com>
Sent: Tuesday, March 12, 2024 14:55
To: Hilbert, Hans <hilbert.hans@countyofdane.com>
Cc: Buck Sweeney (csweeney@axley.com) <csweeney@axley.com>; Patrick Maier <maierfarms.patrick@hotmail.com>; Cunningham, Brian J - DNR <brian.cunningham@wisconsin.gov>
Subject: FW: Maier Farm Wetland Boundary Determination

Hans –

Maier Farms has been in coordination with the WDNR to resolve the alleged wetland compliance concerns. Heartland established the current wetland boundary in the area of concern relative to the main drain tile line and lateral connections. The wetland delineation confirms that the excavation/filling activities were completed outside of the wetland, with the exception of the pump system and a short length of main tile line extending to the pump. The Department agrees with Maiers plan to remove the pump from the wetland and install it on the south side of the

wetland boundary. A small drainage swale will be excavated from the new pump location to the culvert under Schumacher Road. The swale will be constructed without discharging any fill or dredged material into the wetland.

Below is a link to the wetland boundary determination documents. Attached is the proposed remediation plan.

MaierFarm_WetlandMap_031124r.pdf

In addition, I have attached the NRCS certified wetland determination map, which confirms the subject wetland area is identified as Prior Converted Cropland and Non-Wetland. I believe based on this determination, the project is compliant with Chapt. 11.07 2(c) which allows for tiling within areas subject to inland wetland zoning to the "… extent necessary to maintain the level of drainage required to continue the existing agricultural use"… The NRCS Certified Wetland Map demonstrates that the subject agricultural field has been regularly row cropped in its entirety and the recent drainage improvements resulted in continuing the existing agricultural use.

Mr. Maiers is prepared to completed the proposed remediation plan as soon as next week if approved by Dane County. DNR has approved this plan (see below).

Thanks,

Jeff Kraemer

Heartland Ecological Group, Inc.
Office: 608-490-2450 Ext. 2
Cell: 608-575-5783
www.heartlandecological.com

From: Cunningham, Brian J - DNR <brian.cunningham@wisconsin.gov>
Sent: Tuesday, March 12, 2024 9:04 AM
To: Jeffrey Kraemer <jeff@heartlandecological.com>
Cc: Buck Sweeney (csweeney@axley.com) <csweeney@axley.com>; Patrick Maier <maierfarms.patrick@hotmail.com>; Ramminger, Allen J - DNR <Allen.Ramminger@wisconsin.gov>
Subject: RE: Maier Farm Wetland Boundary Determination

Good morning Jeff,

The data looks good, just submit a timeline with the restoration plan so the Department can approve the plan. Let me know if you have any questions. Thanks for all your help.

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Brian J. Cunningham, CFM
Southwest Waterways Field Supervisor
Waterways Program/External Services Division
Wisconsin Department of Natural Resources
Cell Phone: 608-220-5633
brian.cunningham@wisconsin.gov

dnr.wi.gov

From: Jeffrey Kraemer <jeff@heartlandecological.com>
Sent: Monday, March 11, 2024 4:49 PM
To: Cunningham, Brian J - DNR <brian.cunningham@wisconsin.gov>
Cc: Buck Sweeney (csweeney@axley.com) <csweeney@axley.com>; Patrick Maier <maierfarms.patrick@hotmail.com>
Subject: Maier Farm Wetland Boundary Determination

Brian –

As discussed, below is a link to the data and mapping related to the delineation of the southern wetland boundary at the Maier Farm. We believe that this mapping confirms that the majority of the tile installation work related to the connections of the laterals to the main tiles was completed outside of the wetland.

MaierFarm_WetlandMap_031124r.pdf

I have attached a proposed plan to relocate the pump and housing outside of the wetland boundary to the south, as well as the small segment of main tile line connecting to the pump. A small swale will be excavated from the relocated pump to the culvert that drains under Schumacher Road. The swale will be constructed without discharging fill or dredge material into the wetland area, either temporarily or permanently.

Let me know if you have any questions.

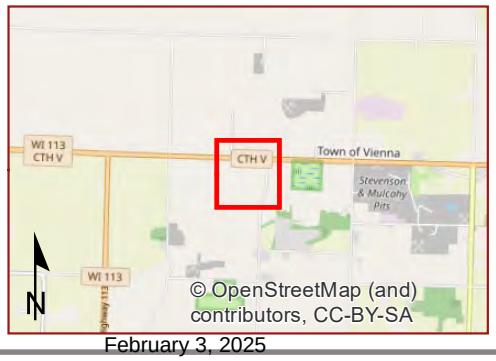
Thanks

Jeff Kraemer
Principal Scientist

Heartland Ecological Group, Inc.
506 Springdale Street
Mount Horeb, WI 53572
Office: 608-490-2450 Ext. 2
Cell: 608-575-5783
jeff@heartlandecological.com
www.heartlandecological.com

EXHIBIT

3



Study Area (45.19 ac)

0 175 350
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 1937 Orthophoto

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

1937 Orthophoto
Data: WI St. Cart. Office 5/29/2020

NW 1/4 sec. 21 T9N, R9 E (Vienna)
1955 Photo

N

0 400 800
Feet

1968 Dane County Aerial Imagery

May 29, 2020

0 250 500 1,000 Feet

Dane County Mask

Dane County Mask

Parcels

N

1974 Dane County Aerial Imagery

May 29, 2020

0 250 500 1,000 Feet

Dane County Mask

Dane County Mask

Parcels

N

1976 Dane County Aerial Imagery

May 29, 2020

0 250 500 1,000 Feet

Dane County Mask

Dane County Mask

Parcels

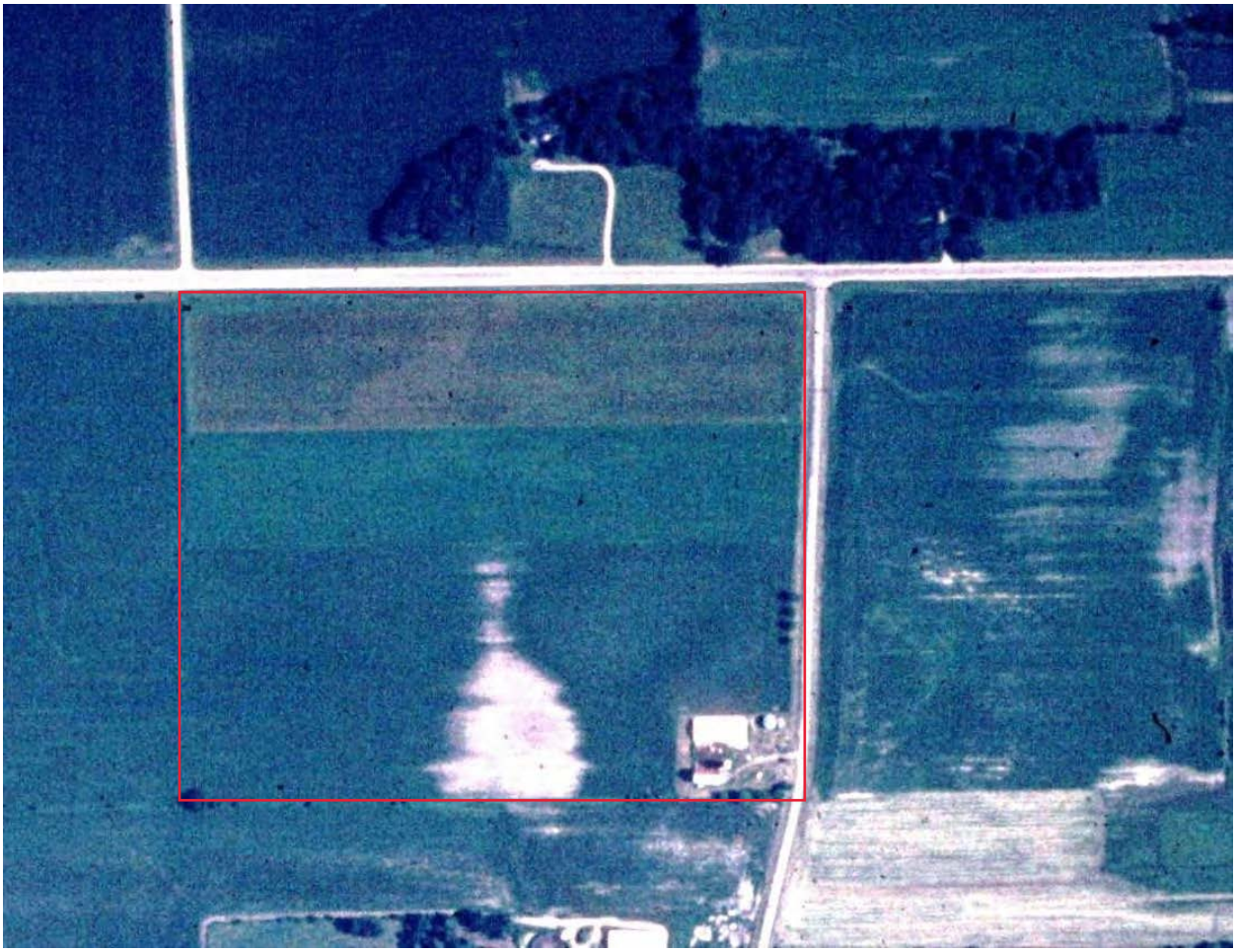
N

1979 FSA Slide

1982 FSA Slide

1983 FSA Slide

1984 FSA Slide



1985 FSA Slide

1994 FSA Slide

1995 FSA Slide

1996 FSA Slide

1997 FSA Slide

1998 FSA Slide

1999 FSA Slide

2000 FSA Slide

2001 FSA Slide

2002 FSA Slide

2003 FSA Slide

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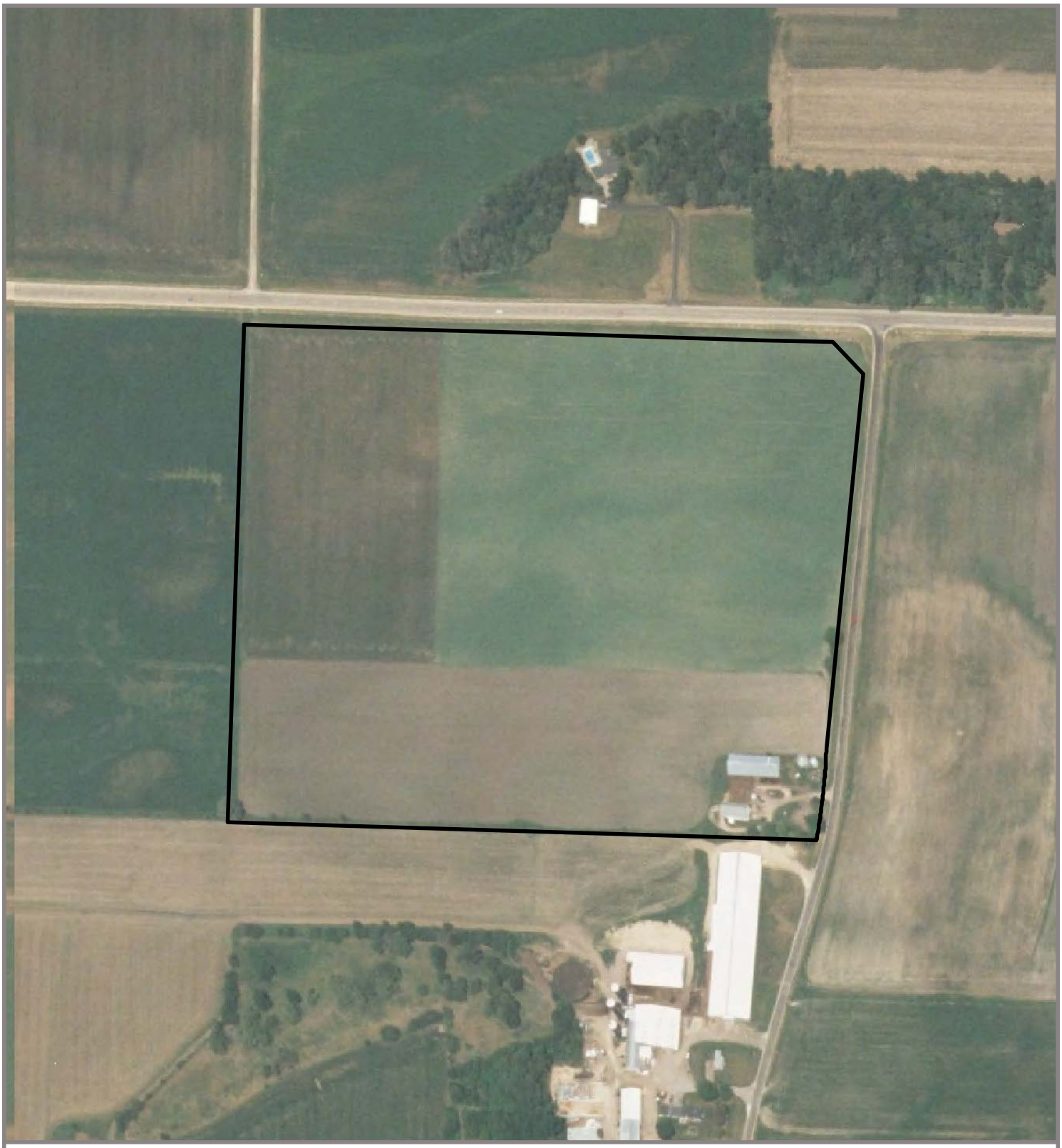
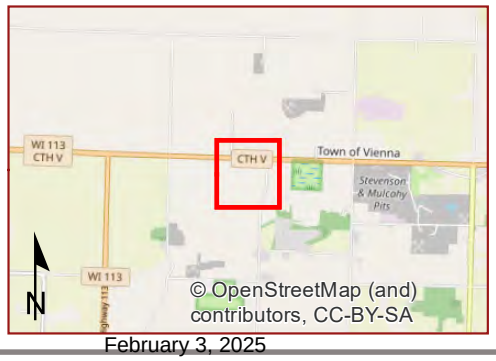
Appendix: 2004-07-15 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2004 NAIP
Data: USDA *5/29/2020*





Study Area (45.19 ac)

0 175 350
Ft

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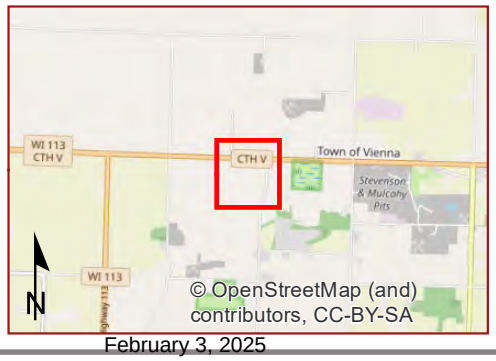
Appendix: 2005-07-08 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2005 NAIP
Data: USDA *5/29/2020*



Study Area (45.19 ac)

0 175 350
Ft

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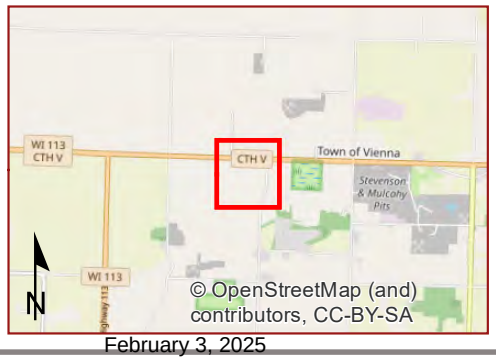
Appendix: 2006-07-15
NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2006 NAIP
Data: USDA *5/29/2020*



Study Area (45.19 ac)

0 175 350
Ft

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Appendix: 2008-07-09 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2008 NAIP
Data: USDA *5/29/2020*

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Appendix: 2010-07-02 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2010 NAIP
Data: USDA *5/29/2020*

Study Area (45.19 ac)

0 175 350
Ft

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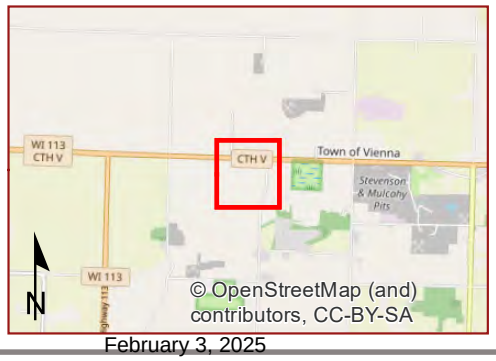
Appendix: 2013-07-04 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2013 NAIP
Data: USDA *5/29/2020*



Study Area (45.19 ac)

0 175 350
Ft

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Appendix: 2015-10-11
NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2015 NAIP
Data: USDA *5/29/2020*

NW 1/4 sec. 21 T9N, R9 E (Vienna)
2017 Photo

N

0 400 800
Feet

Heartland ECOLOGICAL GROUP INC

Appendix: 2017-09-03 NAIP Aerial Imagery

Maier Farms
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co, WI

2017 NAIP
Data: USDA *5/29/2020*

Study Area (44.95 ac)

0 250 Ft

Heartland
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Appendix: 2018-10-04
NAIP Aerial Imagery

Maier Farm
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co

2018 NAIP
USDA

Figure Created: 2/26/2024

Study Area (44.95 ac)

0 250 Ft

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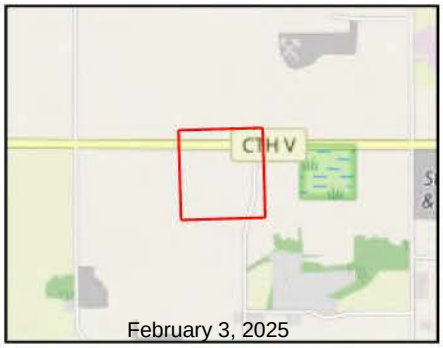
Appendix: 2020-08-30
NAIP Aerial Imagery

Maier Farm
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co

2020 NAIP
USDA

Figure Created: 2/26/2024



Study Area (44.95 ac)

0 250 Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2022-06-26
NAIP Aerial Imagery

Maier Farm
Project #20200322
T9N, R9E, S21
T Vienna, Dane Co

2020 NAIP
USDA

Figure Created: 2/26/2024

Dane County Planning & Devel
Zoning Division

EXHIBIT
4

March 20, 2024

MAIER FARM REAL ESTATE LLC
7085 SCHUMACHER RD
WAUNAKEE WI 53597

RE: Wetland Use Violation

Dear Mr. Maier,

This letter serves as a determination by Dane County Zoning that the installation of drain tile and pump within a delineated wetland on your property does not meet the criteria of a permitted wetland use under Dane County Code of Ordinances (DCCO) Section 11.07(2)(c) and is therefore prohibited under 11.09. The use described in 11.07(2)(c) allows the maintenance and repair of existing agricultural drainage systems such as existing ditches and drain tiling. Maintenance and repair within this context is also limited to ditching, tiling, dredging, excavating or filling and does not encompass the installation of a pump or other equipment or structures.

Your justification for the project as maintenance and repair centered on the property's designation as 'prior converted cropland' by the NRCS, implying the existence of a historical agricultural drainage system. However, your arguments raise concerns:

- The assumption of a pre-existing system solely based on the land's classification is insufficient.
- Lack of knowledge about the system due to past ownership does not excuse unauthorized wetland modification.
- No evidence of existing ditches or drain tile was presented.

While increased and more frequent rain events may have impacted historical drainage patterns, installing entirely new tiling and a pump goes beyond mere repair or maintenance of a pre-existing system as defined under 11.07(2)(c). Repair and maintenance are limited to activities that uphold the existing level of drainage for continued agricultural use, not the creation of new systems to maintain historical practices. As a result, your actions constitute a wetland zoning violation for a prohibited use in a wetland under DCCO 11.09.

Your options for compliance with Dane County wetland zoning regulations are:

1. Eliminate the prohibited wetland use by removing the drain tiling and pump from the wetland.
2. Effectively rezone the tiled land out of the wetland zoning district by following the procedure established in DCCO 11.10.

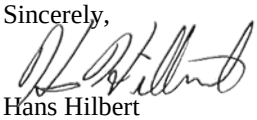
Removal of the drain tile and pump will require an erosion control permit from Dane County Land and Water Resources for any ground disturbing activity within or within 75 feet of the wetland. In addition, all corrective actions will need to be part of a restoration plan approved by the Wisconsin Department of Natural Resources as requested in their Notice of Non-Compliance dated February 12, 2024.

Please let me know if you need any assistance in developing a plan of action leading to compliance or would like more information on the requirements of rezoning land out of wetland.

If steps towards compliance are not pursued, further enforcement actions will commence including citations and a summons and complaint filed in Dane County Circuit Court.

Any person aggrieved by any decision of the zoning administrator or other administrative officer, may appeal that decision to the Dane County Board of Adjustment by following the procedures in DCCO 10.101(9) within 30 days of the determination date.

Sincerely,



Hans Hilbert
Assistant Zoning Administrator
County of Dane
608-266-4993
hilbert.hans@countyofdane.com

EXHIBIT

5

When an apparent ›etween the shoreland or :t shown on the official maps and actual field conditions at the time the maps were adopted, the zoning administrator shall contact the appropriate field office of the department of natural resources to determine if the shoreland-wetland district as mapped is in error. If the department of natural resources staff concur with the zoning administrator that a particular area was incorrectly mapped either as a wetland or a non-wetland, the zoning administrator shall have the authority to immediately grant or deny a land use permit in accordance with the regulations applicable to the correct zoning district.

(4) In order to correct wetland mapping errors shown on the official zoning map, the zoning administrator shall initiate a shoreland-wetland or inland-wetland map amendment within a reasonable period of time.

(5) *Setback from wetlands*. **(a)** The minimum setback for all buildings and structures from shoreland- or inland-wetlands two acres or larger in area shall be as described in s. 11.03(2)(a)2. Exceptions under ss. 11.03(2)(b) and (c) do not apply to setbacks from non-navigable wetlands in the shoreland and inland wetland districts.

(b) Setbacks are not required for shoreland- or inland-wetlands smaller than two acres in area.

[**History**: (2) am., (3) renum. as (4), and (5) and (3) recreated, OA 16, 1991-92, pub. 02/18/92; (1) - (5) am., Sub. 2 to OA 21, 1993-94, pub. 09/30/94; (3) rep., Sub. 1 to OA 47, 1993-94, pub. 03/22/95; 11.06 am., OA 7, 2003-04, pub. 12/03/03; (4) and (5) renum. as (3) and (4), respectively, and a new (5) cr., Sub. 1 to OA 15, 2004-05, pub. 06/23/05; (3) am., OA 24, 2006-07, pub. 12/29/06, eff. 01/01/07; 11.06 am., OA 4, 2012-13, pub. 07/23/12.]

11.07 PERMITTED USES IN THE SHORE-LAND-WETLAND AND INLAND-WETLAND DISTRICTS. The following uses shall be allowed, subject to general shoreland and inland zoning regulations in sections 11.01 through 11.05 of this ordinance, the provisions of chapters 30, 31 and 33 of the Wisconsin Statutes, and the provisions of other state and federal laws, if applicable:

(1) Activities and uses which do not require the issuance of a shoreland zoning permit, said uses must be carried out without filling, flooding, draining, dredging, ditching, tiling or excavating:

(a) Hiking, fishing, trapping, hunting, swimming and boating;

(b) The harvesting of wild crops, such as marsh hay, ferns, moss, wild rice, berries, tree fruits and tree seeds, in a manner that is not injurious to the natural reproduction of such crops;

(c) The practice of silviculture, including the planting, thinning and harvesting of timber;

(d) The pasturing of livestock;

(e) The cultivation of agricultural crops; and

(f) The construction and maintenance of duck blinds.

(2) Uses which do not require the issuance of a shoreland zoning permit and which may involve filling, flooding, draining, dredging, ditching, tiling or excavating to the extent specifically provided below:

(a) Temporary water level stabilization measures, in the practice of silviculture, which are necessary to alleviate abnormally wet or dry conditions that would have an adverse impact on the conduct of silvicultural activities if not corrected;

(b) Flooding, dike and dam construction and ditching for the purpose of growing and harvesting cranberries;

(c) Ditching, tiling, dredging, excavating or filling done to maintain or repair existing agricultural drainage systems only to the extent necessary to maintain the level of drainage required to continue the existing agricultural use and only where permissible under section 30.20, Wisconsin Statutes. This includes the minimum filling necessary for disposal of dredged spoil adjacent to the drainage system, provided that the dredged spoil is placed on existing spoil banks where possible and such filling is permissible under chapter 30, Wisconsin Statutes;

(d) Limited excavating and filling necessary for the construction and maintenance of fences for the pasturing of livestock;

(e) Limited excavating and filling necessary for the construction and maintenance of piers, docks and walkways built on pilings; and

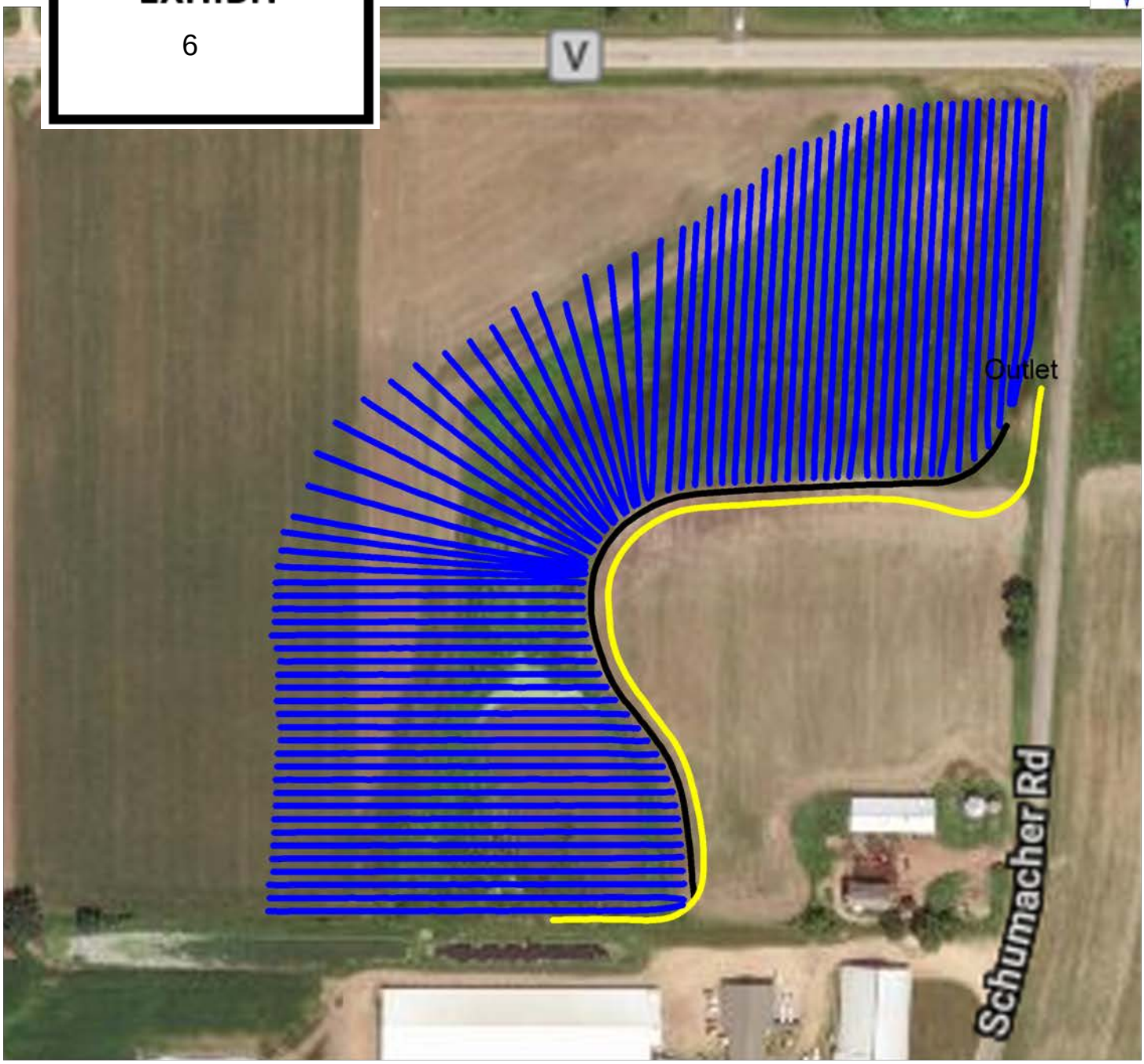
(f) Limited excavating and filling necessary for the maintenance, repair, replacement or reconstruction of existing town and county highways and bridges.

[**History**: intro. par. am., Sub. 2 to OA 21, 1993-94, pub. 09/30/94; (1) and (2) am., OA 4, 2012-13, pub. 07/23/12.]

11.08 USES WHICH ARE ALLOWED IN THE SHORELAND-WETLAND AND INLAND-WETLAND DISTRICTS SUBJECT TO THE ISSUANCE OF A SHORELAND ZONING PERMIT. (1) The construction and maintenance of roads which are necessary to conduct silvi-cultural activities or are necessary for agricultural cultivation, provided that:

EXHIBIT

6



0 300 600

feet

EXHIBIT
7

Installing Drain Tile: *Knowing the Reg*

Knowing the rules helps plan projects to save cost, time, and headache

Knowing your wetland boundary

If you are outside of a mapped wetland or area with wetland indicators, and do not see wetland indicators on site, you can assume that the area is upland. Visit https://dnr.wi.gov/topic/surfacewater/swdv/ for the online wetland indicator map. If your project is within a mapped wetland or wetland indicator area, options are available determine the wetland boundary including:

1. Contact your local NRCS department to determine if NRCS delineations are available for your area.
2. DNR's wetland identification service is a lower cost option to approximate a wetland boundary for smaller tiling projects. Visit https://dnr.wi.gov/topic/Wetlands/identification.html for more information.
3. Private wetland delineators may be able to provide you a general wetland boundary using a simplified screening method or can provide an exact wetland boundary through an official wetland delineation.

State Wetland Regulations:

Like the Army Corp of Engineers, state law regulates the discharge of fill in a wetland (s. 281.36, Wis. Stat.). This means that activities, like tile installation, that occur in upland areas do not require state permitting. DNR permitting may be needed if:

- Excavation, backfilling, grading, scraping or other earth moving techniques occurs in a wetland;
- Cross connections and other supporting structures that require backfilling or excavation is placed in a wetland;
- Soil, dredged material or fill is sidecast or temporarily stockpiled in a wetland area; or
- Stumps are uprooted in a wetland.

It is important to contact Army Corp of Engineers and NRCS when completing a tiling project to ensure that the project also complies with applicable federal regulations.

What is NOT regulated:

Several agricultural activities are exempt from state permitting requiments. These include:

1. Repair or replacement of existing tile that is the same grade, depth, diameter, and type (solid, perforated tile);
2. Vegetation cutting that does not result in stockpiling woody vegetation in a wetland or uprooting trees; AND
3. Normal farming activities including plowing, tilling and harvesting.

Planning Your Drainage System:

With this information in mind, here are ways to design your tiling projects to comply with state laws and avoid the permitting process:

1. Install new tile using a vibratory plow or knifing in tile lines only;
2. Do not place connections, vents, inlets, lifts, or pumps in wetland areas; and
3. Make sure that the installation is done to minimally disturb the soil and does not require stump removal.

If these best management practices do not work for you, permitting may be required or an artificial or nonfederal wetland exemption request may be appropriate. To determine if a permit or permitting exemption is appropriate visit dnr.wi.gov, keyword "wetland disturbance". Please be aware that advanced notification is required to confirm eligibility for an artificial or nonfederal wetland exemption prior to initiating your project. Your project may also be regulated by other county, state or federal regulations so it is important to contact your local county conservation, NRCS, and Army Corp of Engineers to discuss your project. DNR staff are also happy to discuss your project. Visit dnr.wi.gov, keywords "waterway contacts" for your local water management specialist contact informaiton.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg, WI 53711-5397

Tony Evers, Governor
Adam Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

EXHIBIT
8

February 12th, 2024

ENF-SC-2024-13-00350

Subject: Notice of Non-Compliance on (parcel numbers 090921285007 and 090921281400) located in the NW NW T9N R9E Section 21, owned by Maier Farms, in Dane County.

Pat Maier
7085 Schumacher Rd
Waunakee, WI 53597
Email: gbuildit@yahoo.com
Phone: 608-843-4516

Joe Slalitzky
W8593 Michel Lane,
Waterloo, WI 53594
email:skaldrainage@gmail.com
Phone: 920-988-3286

Dear Mr. Maier and Mr. Skalitzky:

The Department of Natural Resources (Department) is bringing attention that you, or persons acting on your behalf, had conducted wetland fill and wetland disturbance activities near 7119 Schumacher Road, DeForest, WI 53532 on January 24-25, 2024. These activities were in the NW NW T09N R09E S21 Town of Vienna, Dane County. The Department has contacted Mr. Pat Maier and Joe Skalitzky regarding the tiling and the fill activities placed in regulated wetlands and hydric soils. A Stop work order was issued by Jess Starks from Dane County on January 24, 2024. Skalitzky Drainage has stopped work only after the WDNR came on January 25th to the site verbally tell Skalitzky Drainage to stop work. The Stop work information was also verbally communicated to Pat and Scott Maier. This wetland fill activity needed Department approval. To date, the wetland restoration has not taken place.

Next Steps: Restoration plan submitted and approved by March 4, 2024.
-All tiling including main, submain, or laterals in hydric soils and mapped wetland areas need to be removed.
-Pump next to Schumacher Road needs to be dismantled and removed.
-Connection at storm water outfall needs to be dismantled and restored.
-A written restoration plan needs to be approved by Al Ramminger to include revegetation in non-cropped areas. All work needs to be completed by of the issuance of this Notice of Non-Compliance letter.
-Seeding can take place on frozen ground as a frost seeding. A maintenance plan needs to be incorporated in the restoration plan.

-Timeline of work and responsibilities for each party listed above to restore the wetlands.

-Please contact Allen Ramminger for approvals of the wetland restoration plan prior to the removal of the tiling, pump and connection of the pipe from the storm water outfall to be completed no later than March 18, 2024.

Allen.ramminger@wisconsin.gov at 608-228-4067
Allen Ramminger – WI DNR
3911 Fish Hatchery Road
Fitchburg, WI 53711

The Department asks for a voluntary restoration of the landscape to implement the restoration plan by March 18, 2024 of the issuance of this letter. Your prompt attention in this matter is greatly appreciated. If these deadlines are not met, the Department has the options to utilize secondary enforcement actions as necessary. We look forward to hearing from you soon.

Sincerely,

Allen Ramminger
Water Management Specialist

CC:
Vienna Town Clerk clerk@viennawi.gov
Brian Cunningham, Waterway and Wetland Field Supervisor
Scott Maier – Co-owner
Ryan Caputo – Dane County warden
Jason Tuggle – Urban Erosion Control Analyst
Hans Hilbert – Dane County Zoning
ACOE – Army Corp of Engineers
Jess Starks – Dane County

EXHIBIT

9

JOINT MEMORANDUM TO THE FIELD BETWEEN THE U.S. DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY CONCERNING EXEMPT CONSTRUCTION OR MAINTENANCE OF IRRIGATION DITCHES AND EXEMPT MAINTENANCE OF DRAINAGE DITCHES UNDER SECTION 404 OF THE CLEAN WATER ACT

I. INTRODUCTION

The U.S. Army Corps of Engineers ("Corps") and the U.S. Environmental Protection Agency ("EPA") (together, "the agencies"), implement Section 404 of the Clean Water Act ("CWA").[1] Section 404 of the CWA regulates the discharge of dredged or fill material into the navigable waters, which the CWA defines as "waters of the United States, including the territorial seas." 33 U.S.C. 1344 and 1362. The agencies are signing this memorandum to provide a clear, consistent approach regarding the application of the exemptions from regulation under Section 404(f)(1)(C) of the CWA for the construction or maintenance of irrigation ditches and for the maintenance of drainage ditches ("ditch exemptions").

This memorandum supersedes previous Corps Regulatory Guidance Letter ("RGL") 07-02, which superseded RGL 87-07. In an effort to provide greater clarity, this memorandum defines the following terms for purposes of implementing the ditch exemptions: "irrigation ditch," "drainage ditch," "construction," and "maintenance." This memorandum also provides a framework for determining the applicability of the ditch exemptions and the "recapture provision" in CWA Section 404(f)(2).

The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.

II. BACKGROUND

a. Under Section 404(f)(1)(C) of the CWA (*see also* 33 CFR 323.4(a)(3) and 40 CFR 232.3(c)(3)), discharges of dredged or fill material for the purpose of construction or maintenance of jurisdictional irrigation ditches, or the maintenance (but not construction) of jurisdictional drainage ditches, are not prohibited by or otherwise subject to regulation under Section 404 of the CWA (*i.e.*, these activities are exempt from the need to obtain a Section 404 permit).

[1] In a 1979 opinion, the U.S. Attorney General Benjamin R. Civiletti determined that EPA has the ultimate responsibility for interpreting the CWA Section 404(f) exemptions. *See* 43 Op. Att'y Gen. 197 (Sept. 5, 1979), https://www.epa.gov/cwa-404/1979-civiletti-memorandum-under-cwa-section-404f. Attorney General Civiletti stated that it is the EPA Administrator who has general responsibility under the Act (33 U.S.C. 1251(d)), and who has general authority to prescribe regulations (33 U.S.C. 1361(a)).

b. Section 404(f)(2) of the CWA states that "[a]ny discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section." This is commonly referred to as the "recapture provision"; see paragraph c of this section for the regulations implementing this provision.

c. Under 33 CFR 323.4(c) and 40 CFR 232.3(b), exemptions under 33 CFR 323.4(a)(1)-(6) and 40 CFR 232.3(c)(1)-(6) do not apply if the discharge into a water of the United States "is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernable alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration."

III. DEFINITIONS

a. On April 21, 2020, the agencies promulgated a definition of the term "ditch," to mean "a constructed or excavated channel used to convey water." 85 FR 22250. The agencies believe that a clear definition of this term is useful in the context of the ditch exemptions independent of the regulatory text defining "waters of the United States," and therefore this same definition is hereby adopted for the purpose of this memorandum. However, when referred to in this memorandum, the term "ditch" specifically refers to irrigation and drainage ditches.

b. The agencies' regulations define "discharge of dredged material" and "discharge of fill material." *See* 33 CFR 323.2(d) and (f), and 40 CFR 232.2.

c. The agencies' regulations define "waters of the United States." *See* 33 CFR 328.3 and 40 CFR 120.2. It has been the agencies' longstanding practice that certain ditches generally are not considered waters of the United States. However, certain ditches may be a water of the United States, such as certain ditches constructed in or through a jurisdictional water, including a jurisdictional wetland.

d. For the purposes of this memorandum, "irrigation ditch" is defined as a ditch (as defined in paragraph III.a above) that either conveys water to an ultimate irrigation use or place of use ("irrigation water"), or that moves and/or conveys irrigation water (*e.g.*, "run-off" from irrigation) away from irrigated lands ("irrigation return flows").

e. For the purposes of this memorandum, "drainage ditch" is defined as a ditch (as defined in paragraph III.a above) where increasing drainage of a particular land area or infrastructure is at least part of the designed purpose. This includes the following ditch use categories: agricultural, transportation (*e.g.*, roadside, railroad), mosquito abatement, and stormwater management.

f. For the purposes of this memorandum, "related structure" is defined as a structure which is appurtenant to, and functionally related to, an irrigation ditch. Examples of such related structures include, but are not limited to: siphons, pipes, pumps or pump systems, grade control structures, headgates, wingwalls, weirs, diversion structures, and such other facilities. The key to whether a structure is a "related structure" and potentially covered by the irrigation ditch exemption is whether the structure affects the ability (*e.g.*, capacity, design velocities) of the ditch to convey water as designed.

g. For the purposes of this memorandum, "maintenance" is defined as the activity undertaken to preserve or restore the original designed purpose and approximate capacity of the original, as-built configuration of a ditch. Maintenance includes a repair to an existing structure or feature to keep the ditch in its existing state or proper condition, or to preserve it from failure or decline.

h. For the purposes of this memorandum, "construction" is defined as new work, or work that results in a relocation, an extension, or an expansion of an existing ditch and/or related structure. In general, the construction of an irrigation ditch must be intended to primarily serve an irrigation purpose in order for the construction activity to be exempt.

IV. GUIDANCE FOR APPLYING THE DITCH EXEMPTIONS

General Guidance. To determine whether one of the ditch exemptions applies, the following steps should be analyzed:

a. Step 1 is to determine whether the proposed activity will occur in waters of the United States. The agencies' regulations and associated preamble language, guidance documents, and technical manuals may be used to make this determination. If the proposed activity will not occur in waters of the United States, the proposed activity is not prohibited by nor regulated under Section 404 of the CWA.

b. Step 2 is to determine whether the proposed activity involves a discharge of dredged and/or fill material. As noted in paragraph III.b above, the agencies' regulations define these terms. If no discharge of dredged and/or fill material will occur, the proposed activity is not prohibited by nor regulated under Section 404 of the CWA.

c. Step 3 is to determine whether the proposed activity involves an "irrigation ditch" or a "drainage ditch" according to the definitions in Section III of this memorandum. The following clarifications may assist in making this determination:

- Irrigation Ditches:
    - Related structures, as defined in paragraph III.f above, are included in the scope of the irrigation ditch exemption.
    - If a ditch carries only irrigation water, irrigation return flows, and/or overland flow (precipitation and/or snowmelt) to and/or from an irrigated area, that ditch would be considered an irrigation ditch, not a drainage ditch.
    - A ditch that diverts water from a waterbody (*e.g.*, stream, lake, or reservoir) for irrigation purposes is an irrigation ditch and does not become a drainage ditch even if a substantial portion of the flow into or volume of the waterbody is diverted by the irrigation ditch.
- Drainage Ditches:
    - Where a ditch would have the effect of draining wetlands (other than wetlands established due to the presence of irrigation water), the ditch would be considered a drainage ditch, not an irrigation ditch, even if used for irrigation.

d. Step 4 is to determine whether the proposed activity is "maintenance," which is exempt for irrigation and drainage ditches, or "construction," which is exempt for irrigation ditches only.[2] The following clarifications may assist in making this determination:

[2] In many cases, accurate historical records are not available to determine the "as-built" specifications of the original ditch and/or related structures. In these cases, agency staff should work closely with the project proponent to establish an appropriate maintenance depth and/or reference an appropriate structure design to restore the ditch's original designed

- Maintenance (for both irrigation and drainage ditches):
    - Removal of material, including vegetation, from an existing ditch such as by dredging or recontouring in accordance with the historical design and purpose of the ditch, qualifies as maintenance. However, the ditch must not be deepened such that it would drain additional areas compared to the original design.
    - Minor changes to the cross-section of the ditch to conform with current engineering standards (*e.g.*, where more graduated side-slopes result in greater stability) qualify as maintenance, so long as those modifications of the ditch will not result in the drainage, degradation, or destruction of additional jurisdictional waters.
    - Replacement or repair of existing related structure(s) qualify as maintenance as long as the original purpose of the structure is not changed and original approximate capacity of the irrigation ditch or related structures are not increased. Activities related to structures that were not designed to contribute to the original purpose and capacity of the ditch are not covered by the maintenance portion of the irrigation ditch exemption or the drainage ditch exemption. There may, however, be circumstances where a drainage ditch includes associated structures which may be evaluated on a case-by-case basis as to whether the maintenance of such structures is exempt.
- Construction (for irrigation ditches only):
    - Relocation of existing ditches or tributaries, and converting existing ditches into pipes, qualifies as construction. However, these actions should be analyzed in Step 5, below, to determine whether they would be subject to the recapture provision.
- Maintenance (for irrigation and drainage ditches) and/or Construction (for irrigation ditches only) Depending on the Site-specific Circumstances:
    - Sidecasting, for purposes of this memorandum, is the casting of dredged or excavated material to the side of or near the ditch being constructed or maintained. Sidecasting of any dredged material for the purpose of construction or maintenance of jurisdictional irrigation ditches, or the maintenance (but not construction) of jurisdictional drainage ditches, into jurisdictional wetlands or other waters of the United States is exempt. However, these actions should be analyzed in Step 5, below, to determine whether the sidecasting would be subject to the recapture provision.
    - Armoring, lining, and/or piping repair activities qualify as maintenance only where a previously armored, lined, or piped section is being repaired and all work occurs within the footprint of the previous work. All new lining of ditches, where the ditch had not previously been lined, is considered construction.
    - Temporary discharges of fill material in waters of the United States that would be used to facilitate the completion of the exempt ditch maintenance and ditch construction activities described above, such as the placement of temporary cofferdams for erosion and sediment control purposes, are also exempt under Section 404(f)(1)(C) of the CWA, provided the temporary fills are not recaptured under Step 5, below, and provided the temporary fills are removed from waters of the United States in their entirety upon completion of the ditch maintenance or ditch construction activity.

purpose and approximate capacity, while meeting the spirit of the exemption and ensuring adequate protection of aquatic resources. In situations where the potential applicability of the exemption under CWA Section 404(f)(1)(C) to a proposed activity has been raised to the District, and where the District cannot make a determination due to a lack of pertinent factual information, the District should request additional documentation or supporting evidence from the project proponent or inform the proponent that the activity may not qualify for the exemption.

e. Step 5 is to determine applicability of the "recapture provision." CWA Section 404(f)(2) sets forth a two-part test, and both parts must be met to "recapture" an activity (*i.e.*, to bring the activity within the scope of regulation under CWA Section 404, such that a permit would be required).

Part 1: Is the discharge incidental to a proposed activity where the purpose of the activity is to convert an area of the waters of the United States into a use to which it was not previously subject? This is also known as the "change in use" test. The following clarifications may assist in making this determination:

- Construction of an irrigation ditch that cuts through (or across) a jurisdictional waterbody, including wetlands, may be a change in use of the waterbody because the footprint of the ditch and any structure(s) within the jurisdictional water(s) may convert that portion of the waterbody from a non-irrigation use to an irrigation use.
- Conversion of a jurisdictional wetland to a non-wetland is a change in use. However, the development of wetland characteristics in a ditch does not establish a new use for the ditch. The recapture provision would not apply to the maintenance activities of ditches which have developed wetland characteristics even if sediment and vegetation removal occurs to eliminate obstructions to flow.[3]
- Construction of dikes, drainage ditches, or other works or structures used to effect conversion of a wetland from silvicultural to agricultural use (such as by draining the wetland) is a change in use (33 CFR 323.4(c) and 40 CFR 232.3(b)).
- The fill of the former area of existing jurisdictional ditches or tributaries associated with relocation of such waters or converting existing jurisdictional ditches into pipes, is a change in use (*i.e.*, from jurisdictional waters to dry land or to non-jurisdictional waters).

Part 2: If Part 1 of the test is met, will the proposed activity impair the flow or circulation of waters of the United States or reduce the reach of such waters? This determination should be made on a case-by-case basis,[4] and the following clarifications may assist in making this determination:

- The agencies' regulations implementing CWA Section 404(f) (*i.e.*, 33 CFR 323.4(c) and 40 CFR 232.3(b)) specify that "(w)here the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration." The project proponent should provide information to the agencies regarding why this presumption is not met if they request an exemption determination by the agencies.
- A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States (33 CFR 323.4(c) and 40 CFR 232.3(b)). An example of this could be "thin-spreading" dredged material into jurisdictional wetlands. Case-specific information should be considered to determine if such alterations to flow or circulation would rise to the level of impairment.

[3] In certain circumstances, the accumulation of sediment over time may be so extensive that the ditch is no longer capable of being used to convey water, or the intended purpose of the ditch as a drainage resource has been abandoned. The removal of sediment and vegetation in such cases may be considered construction instead of maintenance, depending on the factual circumstances, and may require a permit, assuming the feature is, or the activity at issue is performed in, an otherwise jurisdictional water. When accumulation of sediment or debris occurs in response to a flood, storm, hurricane or similar event or series of events, the maintenance designed to restore such ditches to their original capacity should fall within the scope of the CWA Section 404(f) permit exemption. The maintenance activities performed to restore the ditch, however, must not expand the ditch beyond the contours of the ditch that existed before the event or events occurred.

[4] Because the CWA Section 404(f)(1) exemption for maintenance of irrigation or drainage ditches applies only to maintenance activities that would maintain existing capacity and functionality (not to construction activities), it is unlikely that the recapture provision in CWA Section 404(f)(2) would apply to ditch maintenance activities as defined above.

- A proposed activity for the purpose of construction or maintenance of a ditch that has the effect of substantially increasing or decreasing water levels in a nearby jurisdictional wetland or other jurisdictional water would be an alteration of the flow and circulation of said water(s), and should be analyzed to determine whether that alteration rises to the level of impairment.
- Construction of an irrigation ditch which converts a jurisdictional ditch into a pipe is a change in use of waters of the United States, and by definition also a reduction in their reach, within the meaning of CWA Section 404(f)(2).
- Certain construction or maintenance activities in a ditch have the potential to sever the hydrologic connection of waters of the United States and/or to sever adjacency between a jurisdictional wetland and another water of the United States. Ditch maintenance or construction activities having such an effect would reduce the reach of waters of the United States, and therefore may meet the second part of the recapture provision test. However, if a project proponent is able to demonstrate that hydrologic connectivity is maintained between the waters that would otherwise be severed, such as through the use of a culvert, flood or tide gate, pump, or similar artificial feature, or through the intentional breaches of levees or similar features, the reach of waters of the United States may not be reduced by the activity, although it may result in an impairment of flow or circulation.

V. CONCLUSION

When an activity has been determined in the first four steps of Section IV above to involve discharges of dredged or fill material into waters of the United States, the discharges are for the purpose of construction or maintenance of irrigation ditches or the maintenance (but not construction) of drainage ditches, and the elements of the recapture provision are not satisfied, then the activity is exempt from regulation under Section 404 of the CWA.

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Date: 2020.07.24 09:03:52 -05'00'

R.D. JAMES
Assistant Secretary of the Army
(Civil Works)

DAVID ROSS
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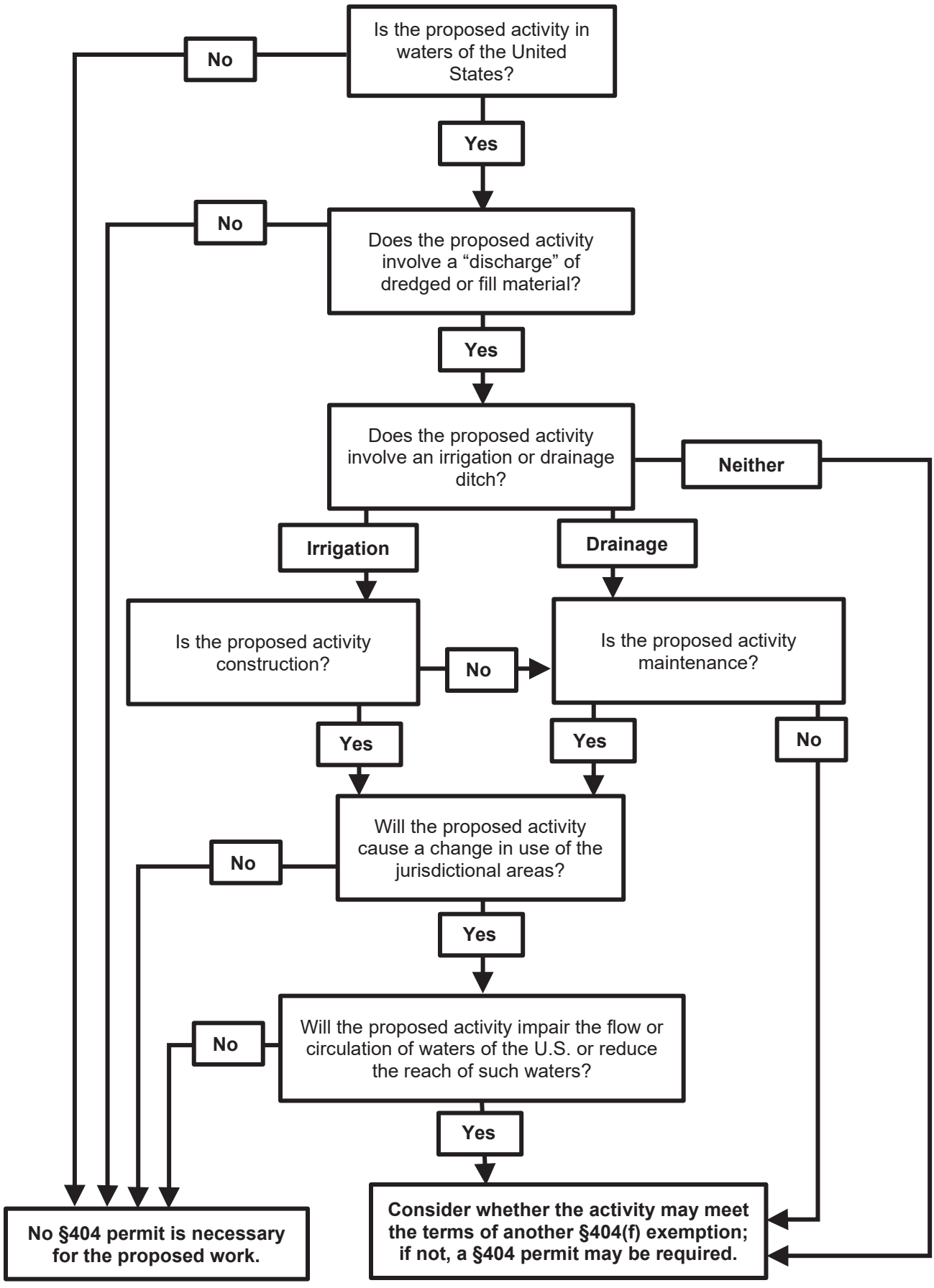
Date: 2020.07.24 16:39:41 -04'00'

DAVID P. ROSS
Assistant Administrator, Office of Water
Environmental Protection Agency

FLOW CHART ATTACHMENT TO THE JOINT MEMORANDUM TO THE FIELD BETWEEN ARMY AND EPA CONCERNING SECTION 404(f)(1)(C) OF THE CLEAN WATER ACT



nual or of a special meeting. Delinquent special charges shall be governed by s. 66.0627 (4).

History: 1973 c. 301; 1975 c. 197; 1977 c. 391; 1983 a. 27 s. 2202 (45); 1989 a. 159; 1991 a. 316; 1993 a. 167; 1997 a. 35; 1999 a. 150 s. 672; 2001 a. 30; 2003 a. 275; 2011 a. 32; 2023 a. 62.

33.33 Merger, attachment, detachment. (1) MERGER. Any district may be merged with a contiguous district by resolution passed by a four-fifths vote of all the members of each board of commissioners. At the next annual or special meeting, whichever occurs first, the electors and property owners shall vote on whether to ratify the merger. If a majority of the electors and property owners present and voting in each district endorse the merger, it takes effect. Following ratification, the boards of commissioners of merging districts shall act jointly until the next annual or special meeting whichever occurs first, at which time the board of the merged district shall be conformed to the requirements specified in s. 33.28. The governing body of the county, town, village or city having the largest portion by valuation within the district shall make the appointments under s. 33.28 (2).

(2) ATTACHMENT. Contiguous territory may be attached to a district upon petition by the owner or motion of the commissioners.

(a) *Petition.* A petition by an owner, directed to the district and requesting attachment, may be accepted by majority vote of the commissioners, upon which the attachment shall become effective.

(b) *Motion.* If the commissioners by motion initiate attachment proceedings, they shall notify the owners of the territory contemplated for attachment and the county board. The county board shall schedule a hearing on the motion, using the procedure of s. 33.26 as far as is applicable. Following the hearing, the board shall make a finding on the necessity of attachment of territory, using the standards of s. 33.26 (3), and shall declare the territory to be either attached or not. Appeals of the board's decision shall be taken under s. 33.26 (7).

(3) DETACHMENT. Territory may be detached from the district following petition of the owner or motion of the commissioners. Proposals for detachment shall be considered by the commissioners, and territory may be detached upon a finding that such territory is not benefited by continued inclusion in the district. Appeals of the commissioners' decision may be taken under s. 33.26 (7).

History: 1973 c. 301; 1975 c. 197; 1981 c. 20; 1989 a. 159; 2003 a. 275.

It is not always necessary for the petitioner in a detachment proceeding to prove that there has been a change in circumstances since the district was created. The finding of benefit to property required under s. 33.26 (3) in forming a district is not the same as the finding that the property is not benefited as required under s. 33.33 (3) to detach a property form the district. The s. 33.26 (3) finding is general and predictive. Section 33.33 (3) requires an individualized evaluation of property under present circumstances. Donaldson v. Board of Commissioners of Rock-Koshkonong Lake District, 2004 WI 67, 272 Wis. 2d 146, 680 N.W.2d 762, 01-3396.

Although not specified, the right to review under sub. (3) is by statutory certiorari. Donaldson v. Board of Commissioners of Rock-Koshkonong Lake District, 2004 WI 67, 272 Wis. 2d 146, 680 N.W.2d 762, 01-3396.

33.35 Dissolution of districts. A petition to dissolve an existing district created under this chapter may not be considered at an annual meeting of the district unless an elector within the district or a property owner within the district notifies the district board of commissioners in writing at least 90 days before the annual meeting that the elector or property owner intends to petition for dissolution at that annual meeting. The notice of the annual meeting must include a statement that a petition to dissolve the district will be considered. The district may be dissolved upon a two-thirds vote of the electors and property owners present at the annual meeting. The county board shall by order dissolve the district following receipt of the petition if the county board finds that one or more of the standards 33.26 (3) are not met. The c tioned upon proper petition t of a receiver to administer the supervision of the court and ney general shall represent th dissolution proceeding where

History: 1973 c. 301; 1989 a. 159

EXHIBIT

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33.36 Alteration of dist that contains an entire district is incorporated as a city or village, consolidated with a city or village or annexed to a city or village, the district shall survive and shall be subject to s. 33.23.

(2) Whenever any territory containing less than an entire district is incorporated as a city or village, consolidated with a city or village or is annexed to a city or village, the district shall survive, and the district shall continue to operate under this chapter, subject to the following modifications:

(a) The district shall exercise only those powers granted under this chapter. Sanitary district powers shall not be exercised unless consent for such exercise is obtained in advance from the governing body of the city or village.

(b) The governing body of the city, village or town having the largest portion by valuation of the district within its jurisdiction shall make the appointment under s. 33.28.

(c) Ownership of any water or sewerage system shall be determined according to s. 60.79 (2) (d).

History: 1975 c. 197; 1983 a. 532 s. 36; 1989 a. 159.

33.37 Districts in more than one county. (1) Where the proposed district is in more than one county, the county board of the county within which the largest portion, by valuation, of the proposed district lies shall have jurisdiction under ss. 33.24 to 33.28.

(2) The county within which the largest portion, by valuation, of a district lies shall have jurisdiction on motions for attachment under s. 33.33 (2) (b) and on petitions for dissolution under s. 33.35.

History: 1977 c. 391.

SUBCHAPTER V

DANE COUNTY LAKES AND WATERSHED COMMISSION

33.41 Definitions. In this subchapter:

(1) "Board of commissioners" means the board of commissioners of the Dane County Lakes and Watershed Commission.

(1m) "Commission" means the Dane County Lakes and Watershed Commission created under s. 33.42.

(2) "County" means Dane County.

(3) "County board" means the county board of the county.

(5g) "Municipality" means any city, village or town.

History: 1989 a. 324.

33.42 Creation. There is created a Dane County Lakes and Watershed Commission as part of county government. The board of commissioners shall govern the commission.

History: 1989 a. 324.

33.44 Board of commissioners; composition. (1) The board of commissioners shall consist of the following persons, all of whom shall be residents of the county:

(a) The county executive of the county or his or her designee.

(b) The mayor of the city of Madison or his or her designee.

(c) Two members who are supervisors on the county board

and who represent supervisory districts located entirely outside the city of Madison.

(d) Two members who are supervisors on the county board and who represent supervisory districts located entirely within the city of Madison.

(dm) One member who is a member of the Yahara Lakes Association.

(e) 1. Except as provided in subd. 2., one member who is not a supervisor on the county board, who resides in the city of Madison and whose name is on a list of at least 2 nominees submitted to the county executive by the mayor of the city of Madison.

2. If the list of nominees required under this paragraph is not submitted at least 60 days before the term of the member appointed under this paragraph expires or at least 60 days before the county executive must fill a vacancy under this paragraph, the county executive shall appoint a member who is not a supervisor on the county board and who resides in the city of Madison.

(f) 1. Except as provided in subds. 2. and 3., one member who is not a supervisor on the county board, who resides outside the city of Madison and whose name is on a list of at least 2 nominees submitted to the county executive by the Dane County Towns Association.

2. For terms subsequent to the initial term, the person appointed under this paragraph must reside outside the city of Madison and the person's name must be on a list of at least 2 nominees submitted to the county executive by the Dane County Towns Association. Unless the person has served continuously as the member appointed under this paragraph for all previous terms, including the initial term, the person may not be a supervisor on the county board.

3. If the list of nominees required under this paragraph is not submitted at least 60 days before the term of the member appointed under this paragraph expires or at least 60 days before the county executive must fill a vacancy under this paragraph, the county executive shall appoint a member who resides outside the city of Madison and who either has served continuously as the member appointed under this paragraph for all previous terms, including the initial term, or who is not a supervisor on the county board.

(g) 1. Except as provided in subds. 2. and 3., one member who is not a supervisor on the county board, whose name is on a list of at least 2 nominees submitted to the county executive by a majority of the chief executives of the villages and cities, except the city of Madison, that are located at least partially in the county, and who is a resident of such a village or city.

2. For terms subsequent to the initial term, the person appointed under this paragraph must not be a supervisor on the county board. Unless the person has served continuously as the member appointed under this paragraph for all previous terms, including the initial term, the name of the person must be on a list submitted to the county executive by a majority of the chief executives of the villages and cities, except the city of Madison, that are located at least partially in the county, and the person must be a resident of such a village or city.

3. If the list of nominees, when required under this paragraph, is not submitted at least 60 days before the term of the member appointed under this paragraph expires or at least 60 days before the county executive must fill a vacancy under this paragraph, the county executive shall appoint a member who is not a supervisor on the county board and who either has served continuously as the member appointed under this paragraph for all previous terms, including the initial term, or who is a resident of a village or city, except the city of Madison, that is located at least partially within the county.

(2) The county executive shall appoint the members listed under sub. (1) (c) to (g) subject to confirmation by the county board.

(2g) In making the appointments under sub. (1) (c) and (d), the county executive shall appoint persons who will represent the diverse interests of the urban and rural communities in improving the water quality and the scenic and environmental value of the county surface waters and groundwaters.

(2m) The term of a member appointed under sub. (1) (c) to (g) begins on the 3rd Tuesday in April of the year in which the member is appointed and ends on the 3rd Tuesday in April in the 3rd year following the year in which the member is appointed.

(3) Six commissioners shall constitute a quorum for the transaction of business.

(5) Commissioners shall be paid actual and necessary expenses incurred while conducting business of the commission and shall be paid the same per diem as members of county board committees.

(6) (a) If a commissioner appointed under sub. (1) (c) or (d) is not reelected to be a supervisor on the county board during his or her term on the commission, he or she may continue to serve on the commission until the position is filled as provided in par. (b).

(b) Vacancies occurring during the term of any commissioner appointed under sub. (1) (c) to (g) shall be filled within 90 days in the manner provided in s. 17.27 (1n). A commissioner appointed to fill a vacancy may be reappointed for subsequent full terms.

(7) The board of commissioners shall meet at least quarterly, and at other times on the call of the chairperson or on the petition of 6 of the members.

(8) Any action by the board of commissioners requires the affirmative vote of the majority of members present and voting.

(9) The board of commissioners shall elect a chairperson, vice chairperson and secretary from its members each year, and these officers shall have the following duties:

(a) The chairperson shall preside at all meetings and all public hearings held by the board of commissioners.

(b) The vice chairperson shall preside at any meeting or any public hearing held by the board of commissioners at which the chairperson is unable to preside.

(c) The secretary shall keep minutes of all meetings of the board of commissioners and hearings held by it.

History: 1989 a. 324; 1999 a. 9; 2001 a. 103.

33.445 Board of commissioners; duties. (1) The board of commissioners shall initiate and coordinate surveys and research projects for the purpose of gathering data relating to the surface waters and groundwaters of the county.

(2) The board of commissioners shall maintain a liaison with agencies of the federal, state and local governments and other organizations that are involved in programs or projects designed to protect, rehabilitate and manage water resources.

(3) The board of commissioners shall develop a public information and education program on issues related to the surface waters and groundwaters of the county.

History: 1989 a. 324; 2003 a. 33.

33.45 Board of commissioners; powers. (1) The board of commissioners may develop and implement plans, projects or programs to do any or all of the following:

(a) Improve the water quality and the scenic, economic and environmental value of the surface waters and the groundwaters of the county.

(b) Protect or enhance the recreational use of the navigable waters of the county.

(c) Coordinate and integrate, for efficient and effective cost management, any county programs or projects for the waters of the county that relate to any of the following:

1. Surface water and groundwater quality.

2. The recreational use of and public access to navigable waters.

3. Water safety and boating regulations.

4. Algae and aquatic plant management.

(d) Reduce soil erosion and bring cropland soil erosion loss into conformance with s. 92.025.

(2) The board of commissioners may develop and propose to the county board programs or projects to make improvements to the navigable waters in the county including, but not limited to, constructing and maintaining public boat launching facilities, maintaining park or other open natural areas adjacent to the navigable waters, implementing shoreline maintenance requests, maintaining and improving locks and dredging waterways.

(3) The board of commissioners may create advisory committees as it considers necessary to apprise the board of commissioners of the information necessary to implement its duties and powers. The advisory committees may include, but are not limited to, representatives of the following: fishing groups; farmers; businesses; riparian and other real property owners; industry groups; public bodies; sailing clubs; boating clubs; environmentalists; scientists; conservationists; hunters; and water skiing, diving and other sports clubs.

(4) The board of commissioners may promulgate any rules necessary to implement the duties and powers granted to the board of commissioners.

History: 1989 a. 324.

33.455 Regulation proposed by board of commissioners. (1) ORDINANCES AND LOCAL REGULATIONS. The board of commissioners may propose to the county board the adoption, modification or rescission of any ordinance or local regulation relating to boating, recreation or safety upon the navigable waters of the county.

(2) MINIMUM STANDARDS. The board of commissioners may propose to the county board minimum standards for local regulations and ordinances for municipalities and the county to protect and rehabilitate the water quality of the surface waters and groundwaters of the county that relate to any of the following:

(a) The environmental control of land surfaces, which includes, but is not limited to, one or more of the following:

1. Erosion control.

2. Construction site control.

3. Zoning of shorelands, wetlands and floodplains.

4. Subdivision of land under ch. 236.

5. Environmental control of agricultural land.

6. Other conservation programs or projects that relate to the environmental control of land surfaces.

(b) The maintenance of property owned or maintained by a municipality, including public ways and shorelands.

(3) ADOPTION BY COUNTY BOARD. (a) Subject to the requirements under s. 281.33 (3m), the county board may adopt a minimum standard, an ordinance or a local regulation, or a modification to or rescission of an ordinance or a local regulation, as proposed by the board of commissioners under sub. (1) or (2).

(b) Notwithstanding s. 30.77 (3) (a), an ordinance, local regulation or minimum standard as adopted by the county board under this section shall apply to the county and to any municipality partially or totally within the county and shall supersede any less restrictive and conflicting provision of a minimum standard, ordinance or local regulation adopted by a municipality.

History: 1989 a. 324; 2013 a. 20.

33.457 Implementation plan. (1) The board of commissioners shall develop an implementation plan, with the advice of the Dane County Regional Planning Commission, and shall submit the plan to the presiding officers of each house of the legislature, the chairperson of the county board and the county executive of the county by July 1, 1992.

(2) The implementation plan shall include all of the following:

(a) Minimum standards for shoreland, floodplain and wetland zoning ordinances to control polluting activities.

(b) Storm drainage system plans that incorporate water quality protection measures to the maximum extent feasible.

(c) Minimum standards in urban areas for street sweeping, salt usage reduction, shoreline maintenance and leaf collection.

(d) Plans for bringing cropland soil erosion loss into conformance with the standards in s. 92.025.

(e) Barnyard and feedlot runoff and waste management control plans.

(f) Minimum standards for construction site erosion control ordinances. Minimum standards under this paragraph that are applicable to activities regulated under s. 281.33 (3) shall strictly conform with applicable uniform statewide standards established under s. 281.33 (3).

(g) Standards for algae and aquatic plant management.

(h) Proposals to finance the effectuation of the implementation plan.

(3) The implementation plan may include recommendations for any of the following:

(a) Dredging and maintenance of navigability of waterways.

(b) Operation of navigation locks and control of water levels and flow.

(c) Maintenance, protection and improvement of shorelines, banks and beds of navigable waters.

(cm) Protection of banks of nonnavigable streams, wetlands, groundwater recharge areas and other areas significant to environmental quality.

(d) Access to shoreline recreational areas and facilities.

(e) Water safety, navigational and boating regulations.

(f) Research activities and feasibility studies.

(4) Within 3 months after the implementation plan is developed and submitted under sub. (1), the department and the designated planning agency under s. 281.51 that covers the county shall evaluate the implementation plan to determine whether it is consistent with the criteria for water quality planning under s. 281.51 and whether the plan is adequate to:

(a) Protect and rehabilitate the water quality of the surface waters and the groundwaters of the county.

(b) Protect and enhance the recreational use of the navigable waters of the county.

(c) Increase water and boating safety on the navigable waters of the county.

History: 1989 a. 324; 1995 a. 227; 1997 a. 252; 2013 a. 20.

33.46 Budget proposals. (1) PROCEDURES. (a) Annually, the board of commissioners shall prepare a proposed budget for the commission's activities for plans, programs or projects under this subchapter as follows:

1. The budget shall list all anticipated revenue from all sources during the ensuing year and shall list all proposed appropriations for each activity and reserve account for the ensuing

year. The budget shall also show actual revenues and expenditures for the preceding year, if applicable, actual revenue and expenditures for the current year and estimated revenues and expenditures for the balance of the current year. The budget shall also show for informational purposes by fund all anticipated unexpended or unappropriated balances and all surpluses.

2. A summary of the budget, a notice of the place where a copy of the budget is located for public inspection and a notice of the time and place for a public hearing on the budget shall be published as a class 1 notice under ch. 985 in the county at least 15 days before the public hearing.

3. The summary required under subd. 2. shall include all of the following for the proposed budget, for the budget in effect and for the budget of the preceding year, if applicable:

a. All expenditures, by major expenditure category.

b. All revenues by major revenue source.

c. Any financing source and use not included under subd. 3. a. and b.

d. All beginning and year-end fund balances.

(b) Not less than 15 days after the publication of the summary of the budget and of the notices required under par. (a) 2., the board of commissioners shall hold a public hearing at the time and place specified in the notice. At the hearing, any resident or taxpayer of the county shall have the opportunity to be heard on the proposed budget. The budget hearing may be adjourned from time to time. At the hearing, the board of commissioners may adopt changes to the budget.

(c) After the public hearing, the board of commissioners shall submit the proposed budget to the county for incorporation in the county's budget to be subject to any review procedures that apply to the county budget under ss. 59.60 and 65.90.

(2) TAXES; SPECIAL ASSESSMENTS; SPECIAL CHARGES; FEES. As part of the commission's budget, the board of commissioners may propose that the county board levy or impose any of the following:

(a) A tax upon all taxable real property in the county for the costs of operation of the commission for each fiscal year.

(b) Special assessments or special charges under s. 33.47.

(c) Fees that the county is empowered to charge under ss. 30.77 (3) (e), 33.475 and 59.54 (2).

History: 1989 a. 324; 1995 a. 201.

33.47 Special assessments and special charges. (1) The county board may levy special assessments or special charges to implement programs or projects undertaken under this subchapter as an exercise of the county's police power.

(1m) The county board shall determine the boundaries of any area within which any special assessment or special charge will be levied.

(2) The county board shall determine the total amount of any special assessment or special charge to be levied.

(3) The board of commissioners shall make a recommendation to the county board regarding the manner in which any special assessment or a special charge to be levied will be apportioned to real property that is benefited within the area determined under sub. (1m).

(4) The county board shall apportion any special assessment or special charge it levies to real property within the county on a reasonable basis.

(5) Any special assessment or special charge levied shall be in accordance with ss. 66.0627 and 66.0703 to the extent that those sections are applicable to and not in conflict with this subsection.

(6) The county board may allow annual installment payments of special assessments, but not to exceed 10 in number.

(7) Real property located in the county that is owned by any county or a municipality is subject to special assessments and special charges. The procedure for collecting special assessments under s. 33.32 (3) (b) shall apply to collections of special assessments and special charges under this subsection.

(8) Outstanding unpaid assessments on privately owned real property shall be paid in full by any public body, including the state, that purchases the real property.

History: 1989 a. 324; 1999 a. 150.

33.475 Boating fees. Notwithstanding the prohibition in s. 30.77 (1) against ordinances and local regulations that exclude any boat from the free use of the waters of the state, and in addition to the powers granted the county under ss. 30.77 (3) (e) and 59.54 (2), the county may charge boat operators reasonable fees for the costs of providing other recreational boating services not specified in ss. 30.77 (3) (e) and 59.54 (2).

History: 1989 a. 324; 1993 a. 167; 1995 a. 201.

The delegation of authority to local governments to collect boater fees for miscellaneous "recreational boating services" under ss. 30.77 (3) (e) 1. c. and 33.475 is unconstitutional. 79 Atty. Gen. 185.

33.48 Continued expenditure level by county and municipalities. The county or a municipality within the county may not reduce in any fiscal year its expenditures relating to environmental control of land surfaces below the expenditures it made in the fiscal year ending in 1990 if the county or the municipality makes the expenditures for the purposes of protecting or rehabilitating the quality of the surface waters and the groundwaters of the county. These expenditures include, but are not limited to, spending for erosion control, for construction site control, for environmental control of agricultural land and for conservation programs or projects but do not include extraordinary or nonrecurring expenses for these purposes.

History: 1989 a. 324.

SUBCHAPTER VI

SOUTHEASTERN WISCONSIN FOX RIVER COMMISSION

33.53 Definitions. In this subchapter:

(1) "Board of commissioners" means the board of commissioners of the commission.

(2) "Commission" means the Southeastern Wisconsin Fox River Commission created under s. 33.54.

(3) "Commissioner" means a member of the board of commissioners.

(5) "County board" means the county board of a river county.

(6) "Municipality" means any city, village or town.

(6m) "River county" means Kenosha County, Racine County or Waukesha County or any county in the Illinois Fox River basin that is designated by the commission under s. 33.57 (5).

(7) "River municipality" means any of the following municipalities that is located in a river county:

(a) The city of Waukesha.

(b) The town of Waukesha.

(c) The village of Waterford.

(d) The town of Waterford.

(e) The village of Big Bend.

(f) The town of Vernon.

(g) The town of Mukwonago.

EXHIBIT

11

elopment bears the established grade at opography within five . The director of the Department of Land and Water Resources may require detailed site grading plans of existing and proposed conditions to be submitted before commencement of land disturbing activities.

b. Existing drainage ways and drainage easements along property lines shall be maintained including, but not limited to, natural watercourses and stormwater management areas shown on subdivision plats and certified survey maps.

c. Development in Floodplain Districts requiring fill to comply with chapter 17 is exempt from this subsection.

d. Upon written application, the director of the Department of Land and Water Resources may authorize exceptions resulting in changes to the existing topography at and within five (5) feet of any property line that would promote the purposes stated in this ordinance. An exception authorized under this subsection may not direct additional stormwater runoff toward adjacent properties. Proposed exceptions may include, but are not limited to, retaining walls, berms and other structures, and other changes to existing grade at and within five (5) feet of a property line. The director of the Department of Land and Water Resources may require the submittal of detailed site grading plans of existing and proposed conditions including, but not limited to, detailed topographical information of the subject and adjoining properties, before land disturbing activities commence.

(b) In addition, where in the opinion of the director additional protections are needed, the director may require creation of no-disturbance zones where land disturbing activity is prohibited in order to protect sensitive or highly erodible areas.

(c) *Plan or permit amendments*. Any proposed modifications to approved plans, construction schedules or alterations to accepted sequencing of land disturbing site activities shall be approved by the director prior to implementation. A maximum of five permit revisions may be allowed.

(d) *Permit transfers*. Transfers of interest in real estate subject to a shoreland erosion control permit shall comply with the requirements of s. 14.49(6).

(e) *Timeframe and Expiration:*

1. Erosion control plan timetables and construction schedules must begin within one year of the date the permit application is filed.

2. All permit applications shall expire upon the earlier of:

a. one year from the date the applicant is notified of an application deficiency, if the applicant has not submitted additional information to adequately address the deficiency within the year, or

b. three years from the date of application.

3. Erosion control permits shall expire:

a. upon the stabilization date included in the approved plan and included in the analysis provided to meet the requirements of 14.50(3)(a)2.

b. a maximum of three years after the permit is issued.

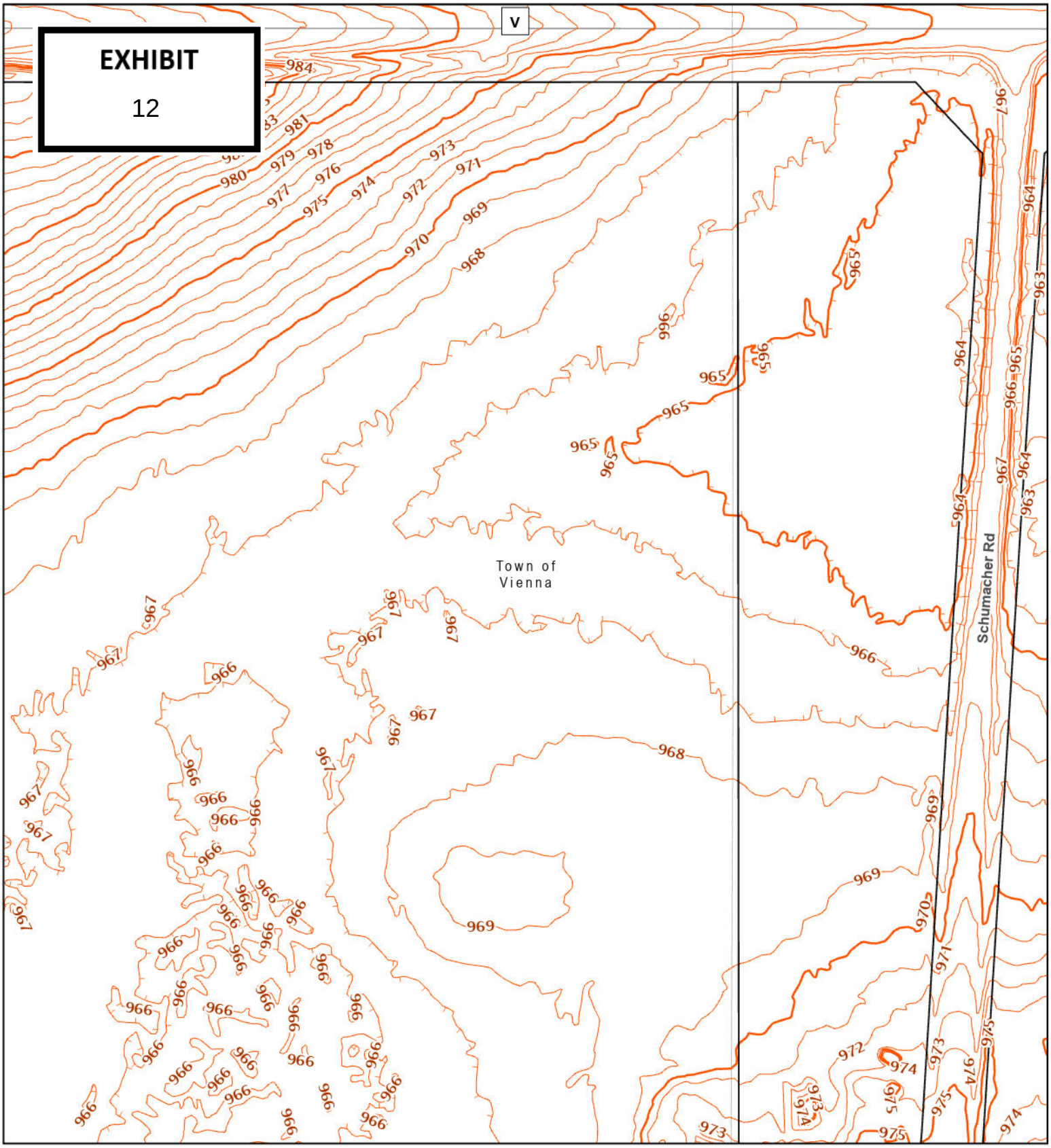
[**History**: (2)(c) am., OA 32, 1996-97, pub. 03/20/97; s. 11.05 am., OA 19, 1998-99, pub. 02/17/99; 11.05 am., OA 12, 2005-06, pub. 11/11/05; am., OA 24, 2006-07, pub. 12/29/06, eff. 01/01/07; (2) and (4)(b)3. am., OA 39, 2008-09, pub. 06/08/09; (5)(a)13. cr., OA 17, 2009-10, pub. 11/19/09; 11.05 am., OA 4, 2012-13, pub. 07/23/12; (3)(b) and (5)(c) am., (5)(e) cr., OA 5, 2013-14, pub. 07/02/13.]

11.06 SHORELAND-WETLAND AND INLAND-WETLAND DISTRICTS. (1) *Purpose*. This ordinance is adopted to maintain safe and healthful conditions, to prevent water pollution, to protect fish spawning grounds and wildlife habitat, to preserve shore cover and natural beauty, to conserve inland-wetland areas occurring throughout the unincorporated areas of Dane County, and to control building and development in wetlands whenever possible. When development is permitted in a wetland, the development should occur in a manner consistent with state and federal law that minimizes adverse impacts upon the wetland.

(2) *Designation*. **(a)** The shoreland-wetland district shall include all shorelands which are designated as wetlands on the most current Wisconsin Wetland Inventory Maps applicable to Dane County.

(b) The inland-wetland district shall include all non-shoreland wetlands, as shown on the Wisconsin Wetland Inventory Maps, which are located in the unincorporated territory of Dane County.

(c) The Wisconsin Wetland Inventory Maps are incorporated herein by reference and are on file in the office of the Dane County Zoning Administrator. Wetlands that extend across the corporate limits of an adjacent municipality or across the shoreland boundary shall be included in the appropriate wetland district.



1-foot Contours (2017)

EXHIBIT
13

The Basics of Agricultural Tile Drainage

EXHIBIT
14

Basic Engineering Principals 2

John Panuska PhD, PE

Natural Resources Extension Specialist
Biological Systems Engineering Department
UW Madison

ASABE Tile Drain Standards

Design Standard

ASAE EP480 MAR1998 (R2008)
Design of Subsurface Drains in Humid Areas

ASABE

American Society of
Agricultural and Biological Engineers

STANDARD

ASABE is a professional and technical organization, of members worldwide, who are dedicated to advancement of engineering applicable to agricultural, food, and biological systems. ASABE Standards are consensus documents developed and adopted by the American Society of Agricultural and Biological Engineers to meet standardization needs within the scope of the Society; principally agricultural field equipment, farmstead equipment, structures, soil and water resource management, turf and landscape equipment, forest engineering, food and process engineering, electric power applications, plant and animal environment, and waste management.

NOTE: ASABE Standards, Engineering Practices, and Data are informational and advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. The ASABE assumes no responsibility for results attributable to the application of ASABE Standards, Engineering Practices, and Data. Conformity does not ensure compliance with applicable ordinances, laws and regulations. Prospective users are responsible for protecting themselves against liability for infringement of patents.

ASABE Standards, Engineering Practices, and Data initially approved prior to the society name change in July of 2005 are designated as "ASAE", regardless of the revision approval date. Newly developed Standards, Engineering Practices and Data approved after July of 2005 are designated as "ASABE".

Standards designated as "ANSI" are American National Standards as are all ISO adoptions published by ASABE. Adoption as an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by ASABE.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

CAUTION NOTICE: ASABE and ANSI standards may be revised or withdrawn at any time. Additionally, procedures of ASABE require that action be taken periodically to reaffirm, revise, or withdraw each standard.

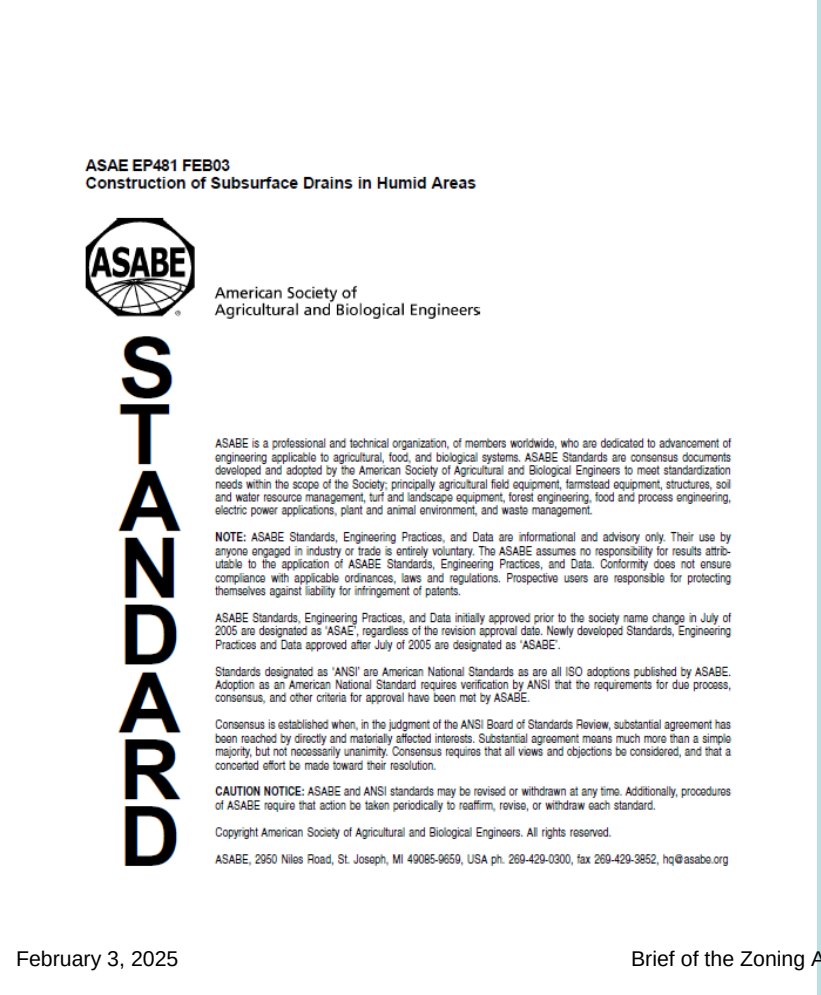
ASABE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA, phone 269-429-0300, fax 269-429-3852, hq@asabe.org

ASAE EP480 MAR1998 (R2008)

Design of subsurface Drains in Humid Climates

ASABE Tile Drain Standards

Construction Standard



ASAE EP481 FEB03
Construction of Subsurface Drains in Humid Areas

ASABE

American Society of
Agricultural and Biological Engineers

STANDARD

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ASAE EP481 FEB03

Construction of subsurface Drains in Humid Areas

Drain Design Procedure

I. Determine if and where an adequate outlet can be installed!

II. Estimate hydraulic conductivity (K) based on soil type.

III. Select drainage coefficient (Dc) based on crop and soil type.

Drain Design Procedure

IV. Select suitable depth for drains
- Typical range 3 to 6 ft.
- Cover greater than 2.5 ft
- Depth / spacing balance to minimize cost

V. Determine spacing
- Use soil textural table guidelines
- Use NRCS Web calculator.

Drain Design Procedure

VI. Size laterals and mains to accommodate the design flow.

- Maintain minimum velocity to clean pipe. (0.5 ft / s - No silt; 1.4 ft / sec - w/silt)
- Match pipe size to design flow. (telescoping the size of main)
- Properly design outlet.

Design Challenges

- ✓ The design process results in a design for a 2 to 5 year event, controlling larger events too costly.
- ✓ Every soil will be different and crop type matters.
- ✓ Costs/benefits will vary from year to year.
- ✓ Climate trends are unpredictable.

Drain Tile Installation Equipment

Tractor Backhoe

Tile Plow

Chain Trencher

Wheel Trencher

Drain Tile Materials

Clay Tile (organic soils)

Concrete Tile (mineral soils)

Drain Pipe Materials
- Polyethylene Plastic -

Single wall corrugated

Dual wall (smooth wall)

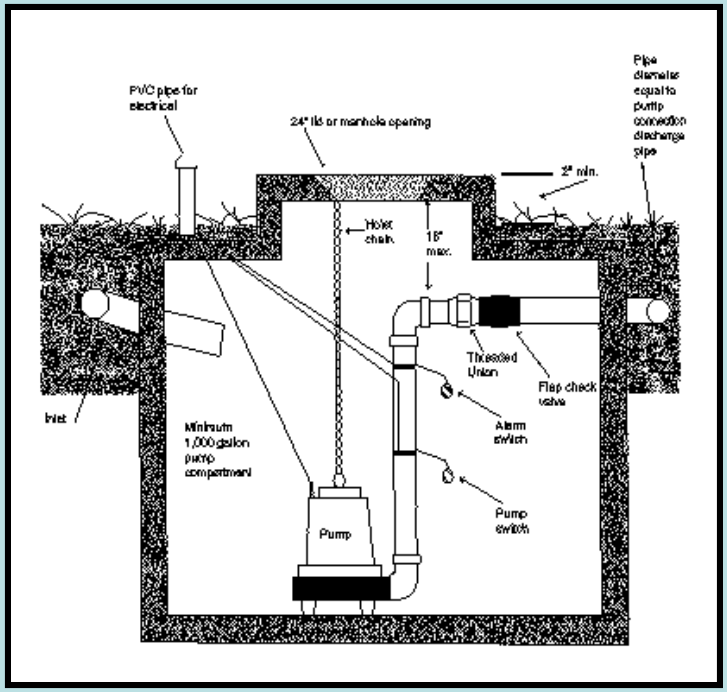
Water enters the pipe through slots in wall

I. The Drain Outlet

- ✓ MUST have sufficient grade for gravity flow !
  < set preliminary grade>
  - If not, a pump station will be necessary.
- ✓ Receiving water must have adequate capacity.
- ✓ Provide guards to keep animals out.

- ✓ Daylight outlet pipe
  1 ft above base flow
  in receiving channel

Drainage Pump Stations



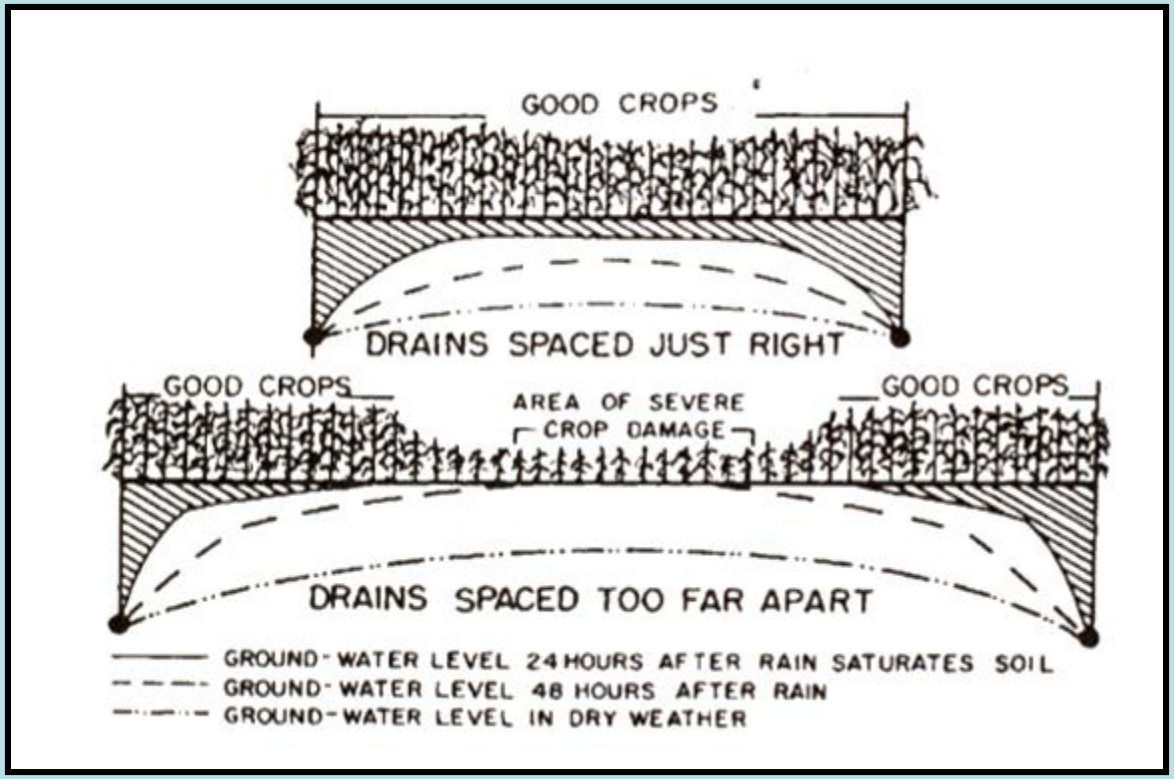
When you don't have the fall to use gravity ….

II. Determine K_{sat} for Soil

- ✓ Use web soil survey for site in question.
- ✓ Conduct site specific soil survey (test pit).
- ✓ Use values base on soil texture.
- ✓ Ask local experts (county staff, NRCS, drainage contractors).

III. Proper Lateral Depth and Spacing

Drain spacing, water table depth and crop response



Drain depth and spacing integrate the water removal rate (Dc) and soil permeability *(K)*

Drain Depth / Spacing - Equation

$$DC = \frac{(8 * K_2 * d * h)}{L^2} + \frac{(4 * K_1 * h^2)}{L^2}$$

Hooghoudt Equation, 1940

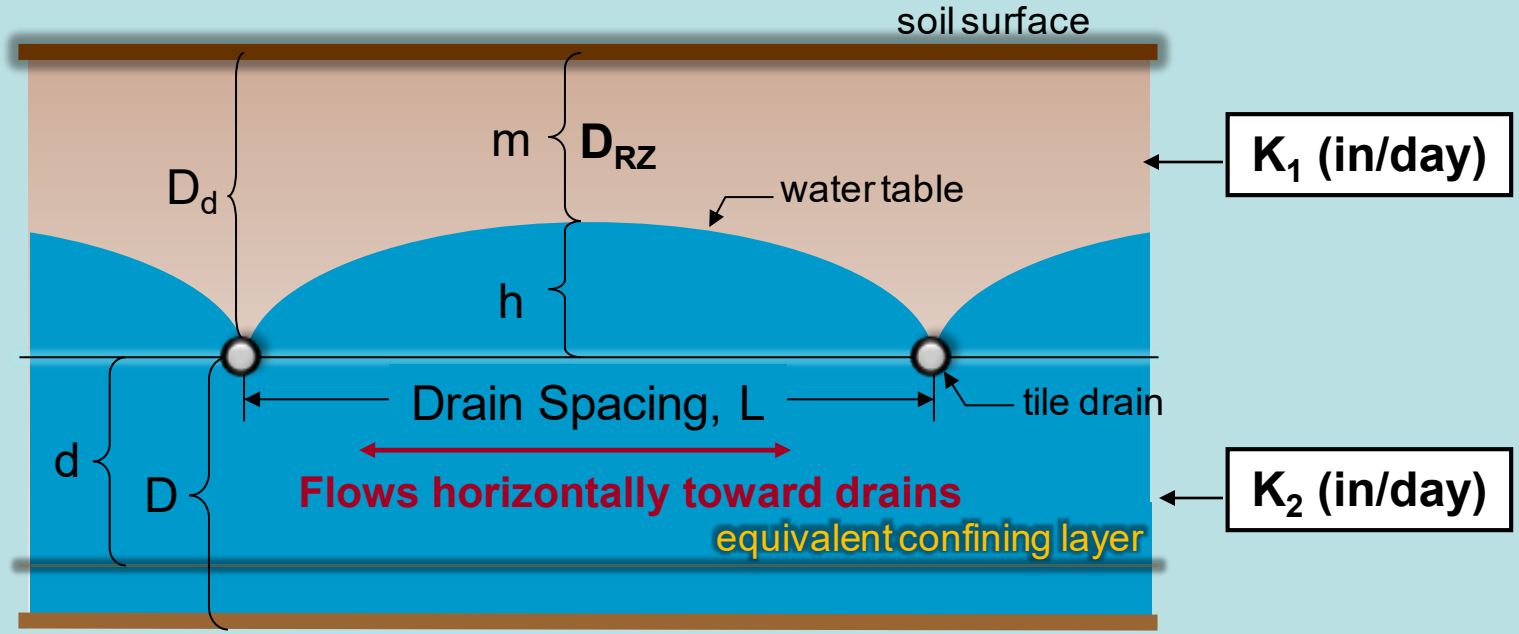
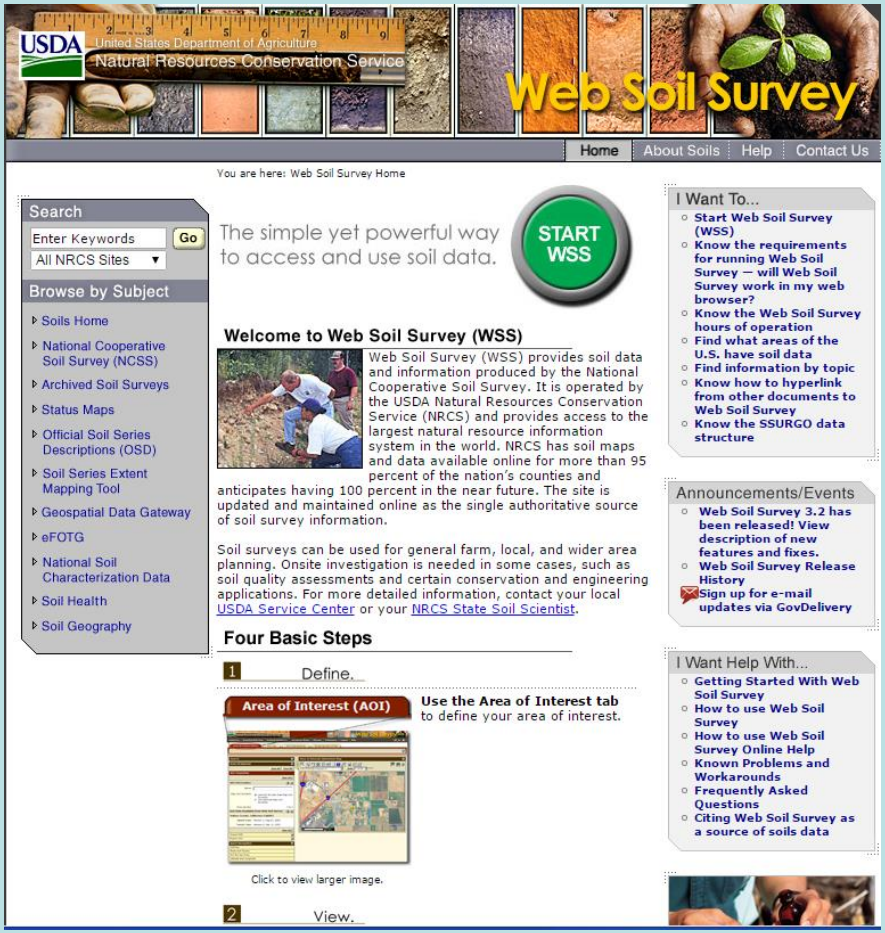


Image from Gary Sands – U of MN

Determination of Soil K



The WSS can calculate a depth weighted K value

Tables — Saturated Hydraulic Conductivity (Ksat) — Summary By Map Unit

Summary by Map Unit — Brown County, Wisconsin (WI009)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
KhB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	2.0931	0.1	86.6%
McA	Manawa silty clay loam, 0 to 3 percent slopes	1.1856	0.0	13.4%
Totals for Area of Interest			**0.1**	**100.0%**

Description — Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options — Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Fastest

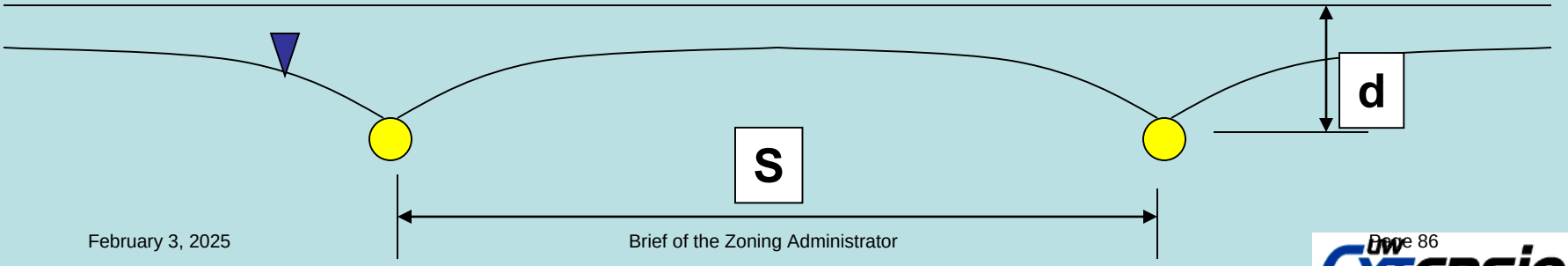
Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

https://websoilsurvey.sc.egov.usda.gov/

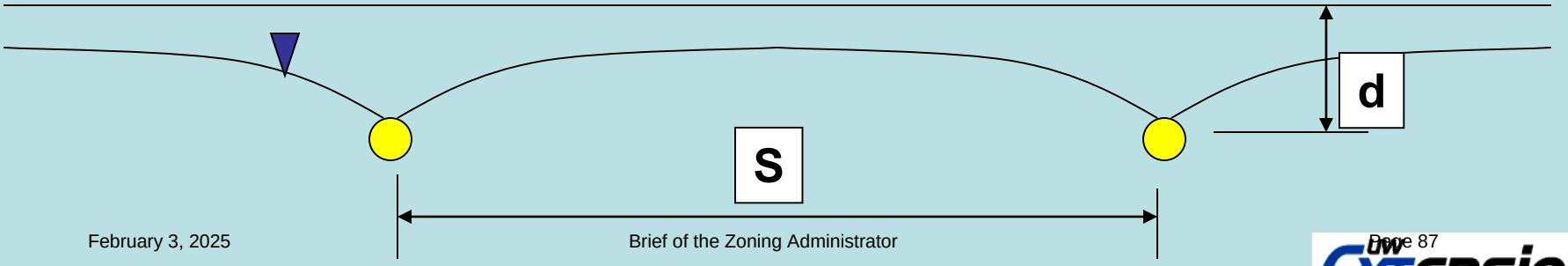
Lateral Depth and Spacing

The goal is to maintain as consistent a Dc value across the field as possible.



Lateral Depth and Spacing

- ✓ A relationship exists between depth and spacing of drains.
- ✓ For soils of uniform permeability, the deeper the drains, the wider the spacing (within limits).
- ✓ Higher permeability soils can have greater spacing
- ✓ Need to provide adequate root depth above the saturated zone.



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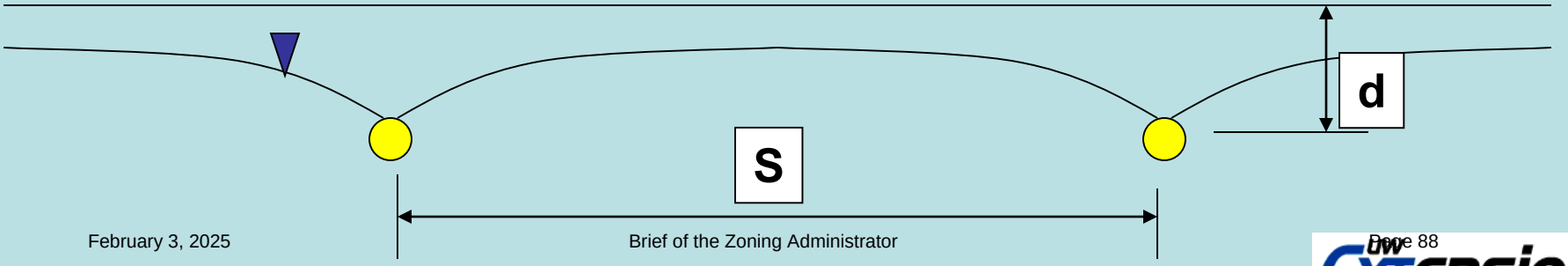

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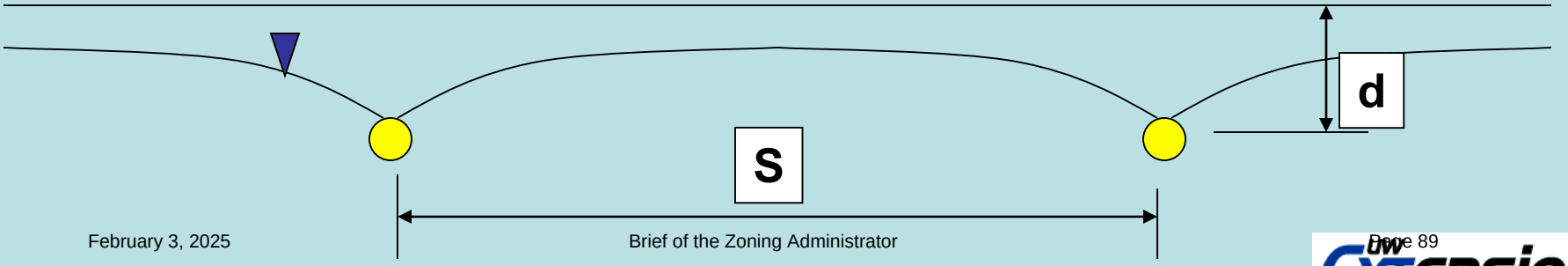

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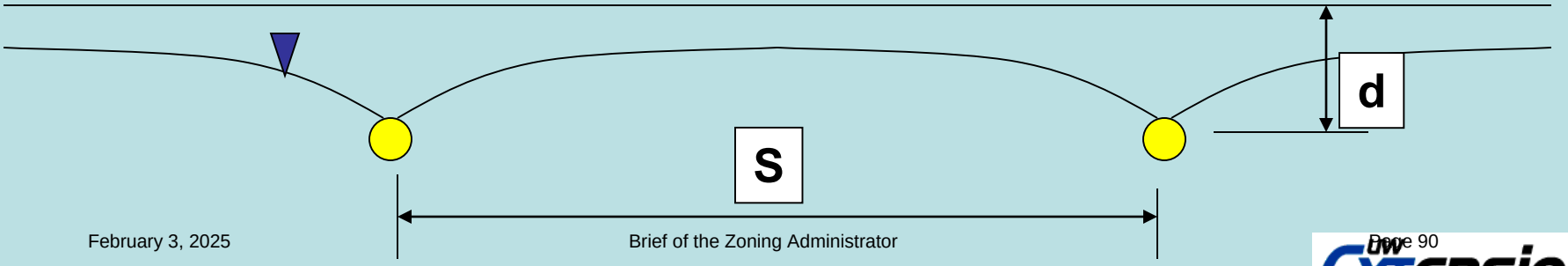


Lateral Depth and Spacing

Varies with soil permeability, crop and soil, kind of management practices crop, extent of surface drainage.

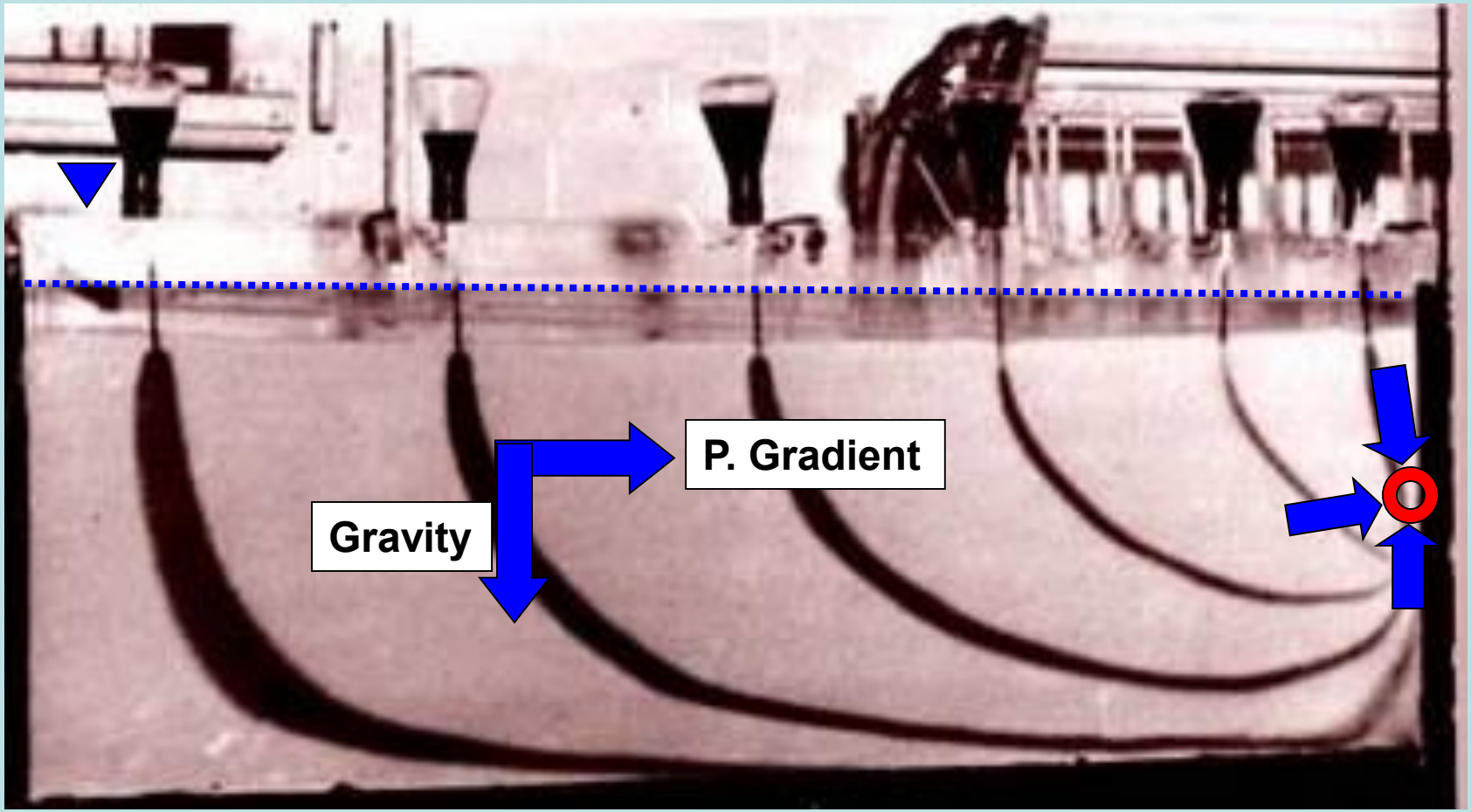
Typical drain depth range = 3 to 6 ft.

Typical spacing = 30 to 100 ft.

Depth / spacing balance to minimize cost.

Minimum cover greater than 2.5 ft.

Flow Though Porous Media



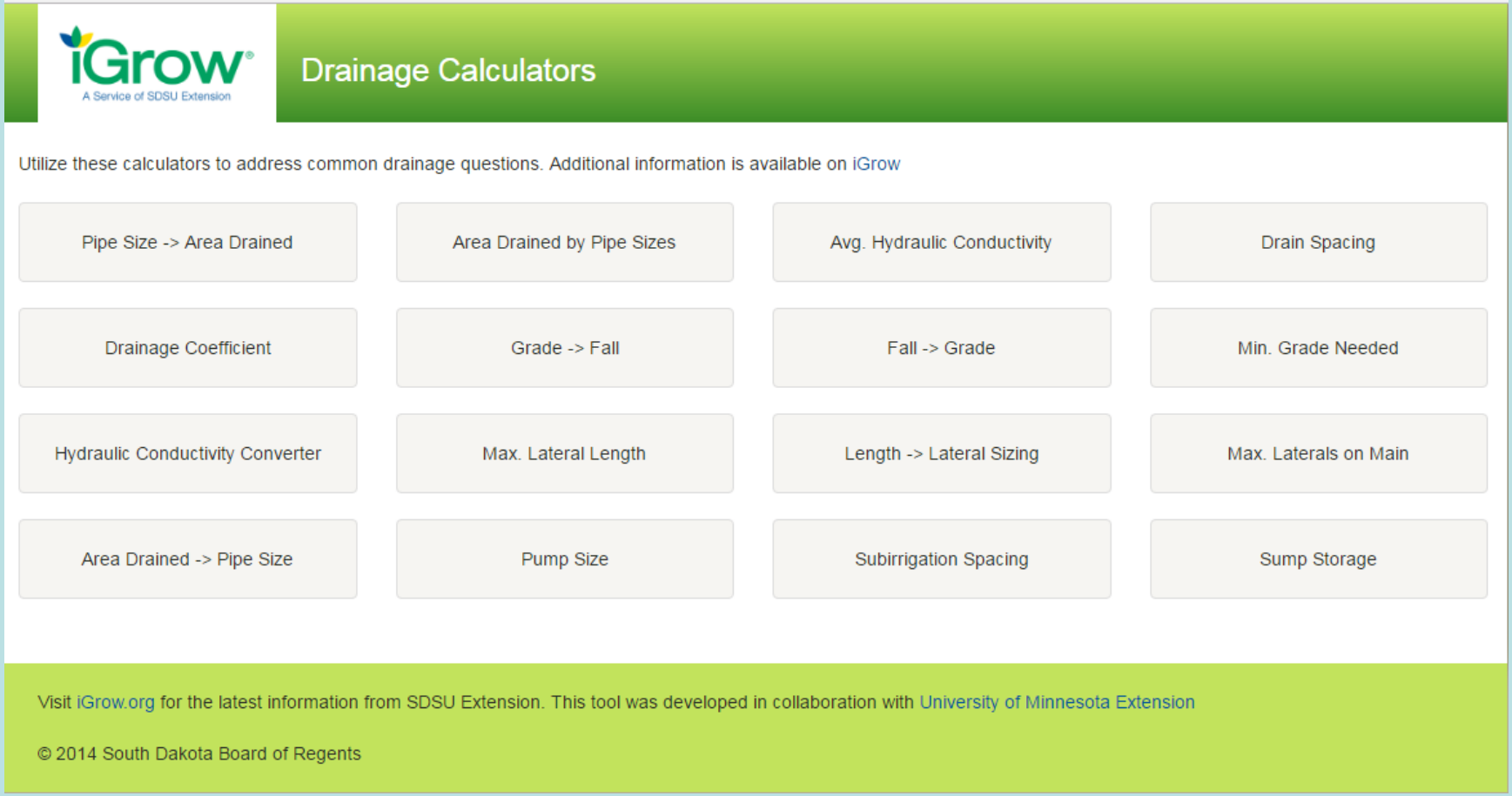
From Gary Sands – U of MN

Drain Depth / Spacing - Table

Varies with soil permeability, crop and soil management practices, kind of crop, extent of surface drainage.

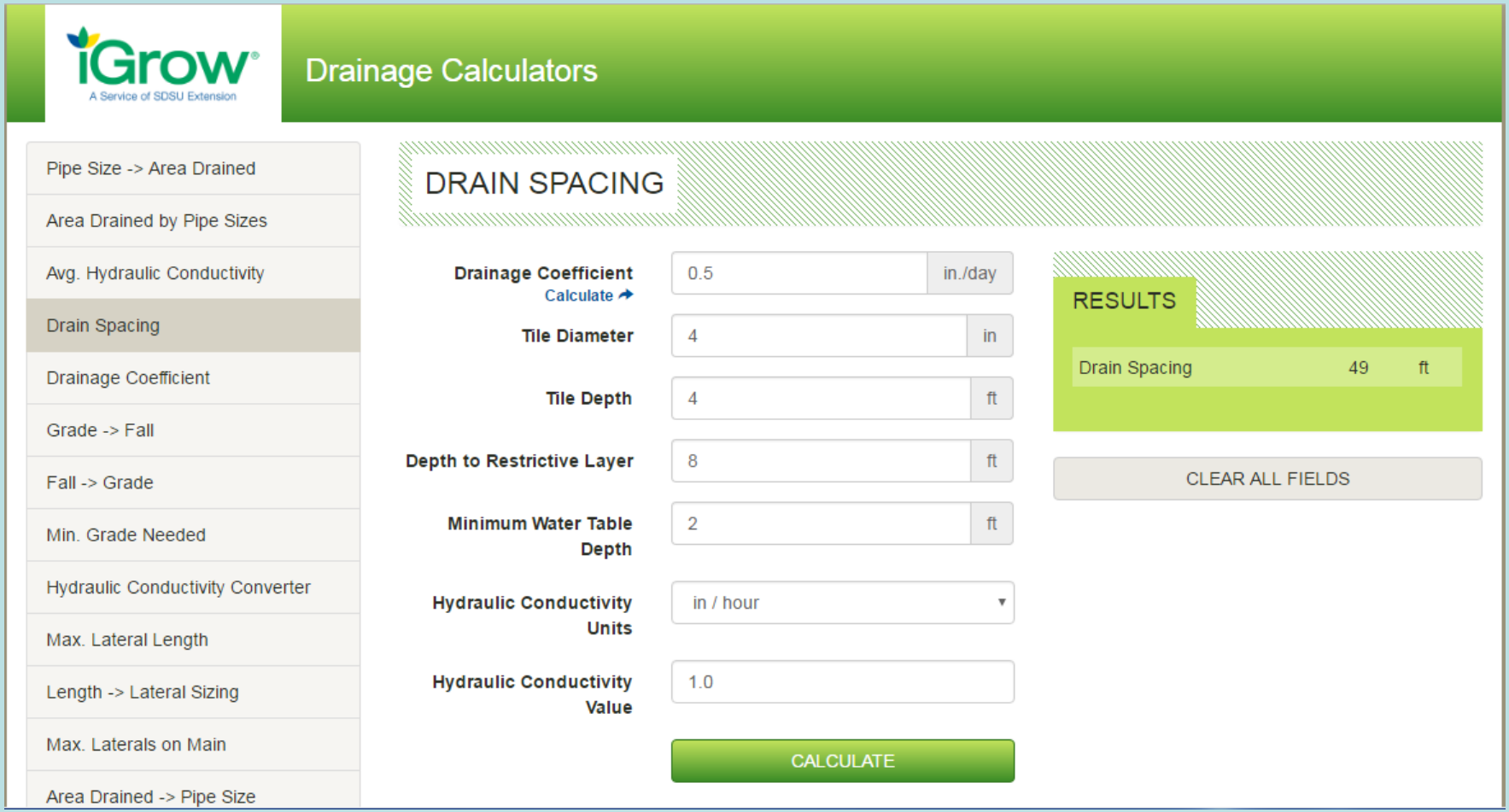
Soil Texture	Spacing (ft)	Depth (ft)
Clay	30 – 50	3.0 – 3.6
Clay Loam	39 – 69	3.0 – 3.6
Average Loam	59 – 98	3.6 – 4.0
Fine Sandy Loam	98 – 120	4.0 – 4.6
Sandy Loam	98 – 197	4.0 – 5.0
Peat and Muck	98 – 295	4.0 – 5.0
Irrigated Soils	148 - 590	4.0 – 9.8

Depth / Spacing - Calculator



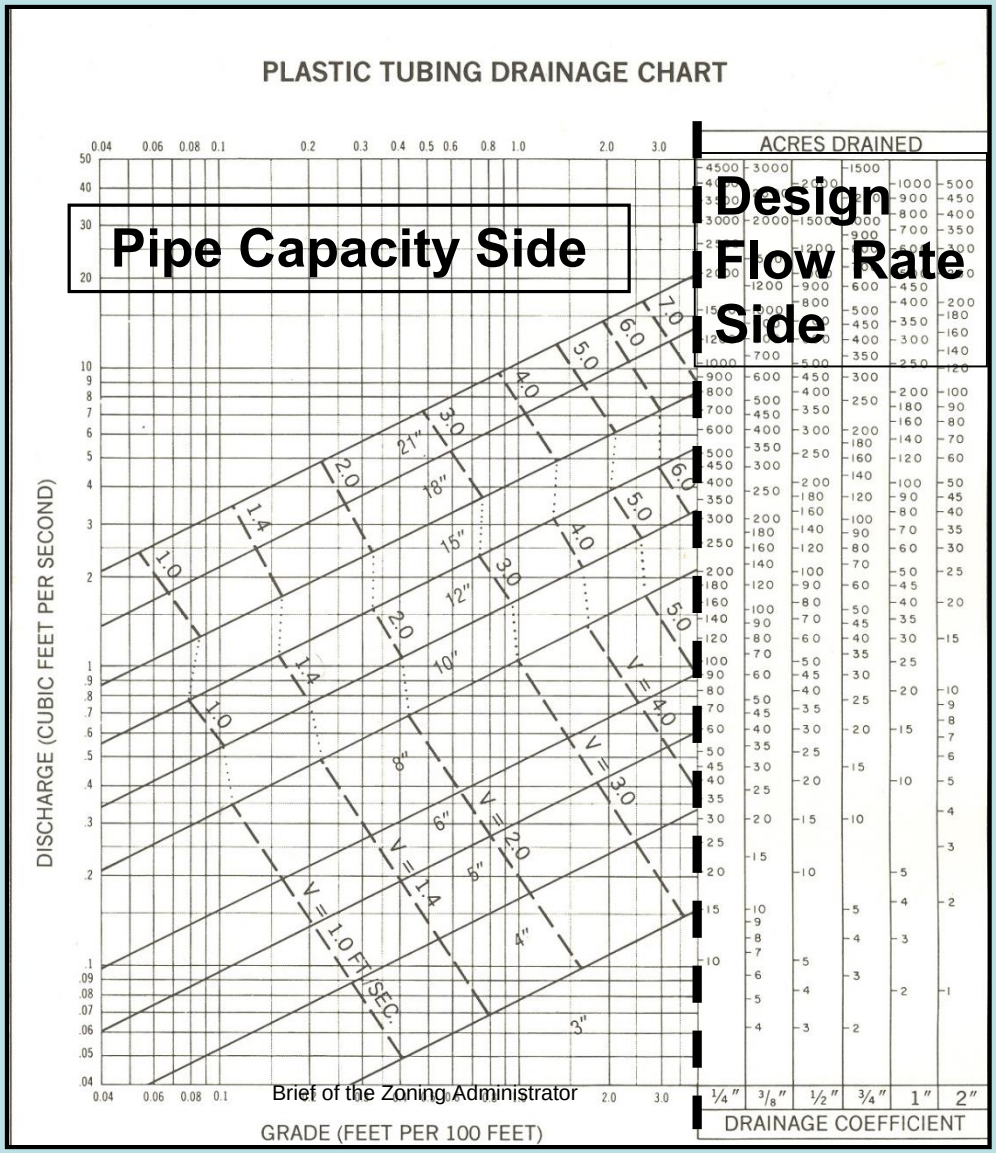
http://www.igrowdrainage.org/

Depth / Spacing - Calculator



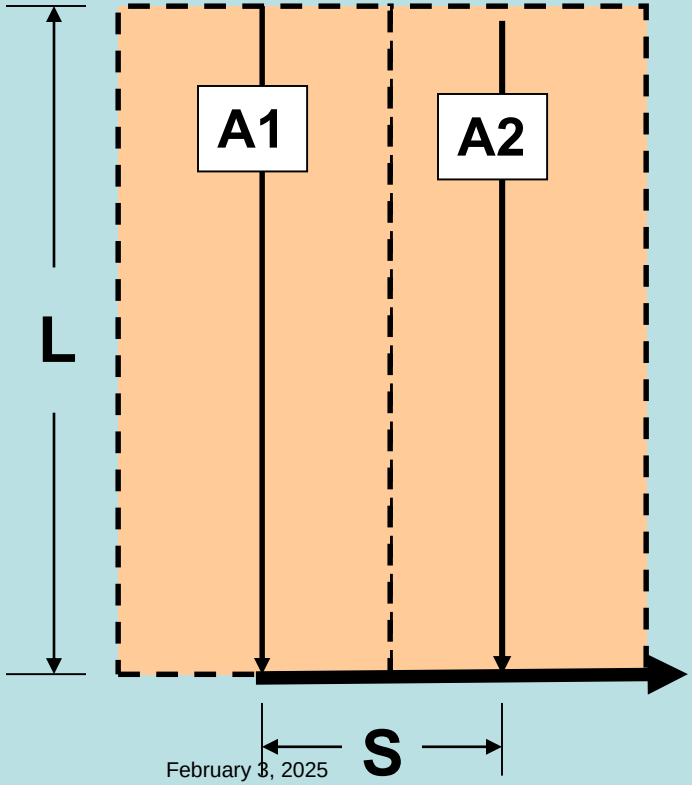
Engineering Design Aids

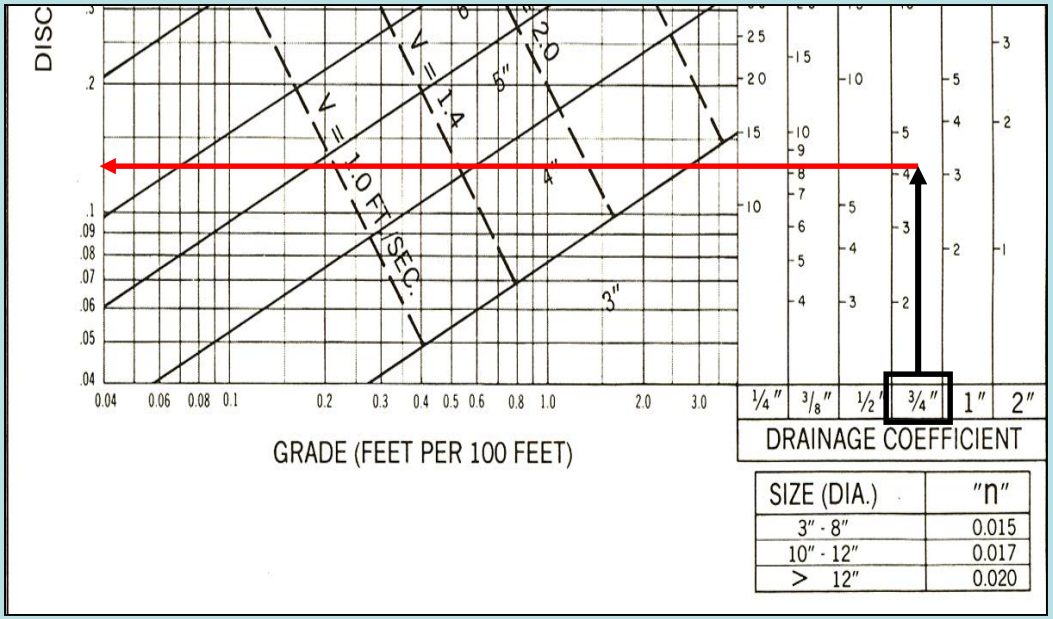
- Tubing Drainage Chart -



Flow into Laterals

Area drained = L x S; L = 1,500 ft; S = 61 ft;
A_T = (1,500 x 122) / 43,560 = 4.2 ac; Dc = ¾ in.





0.14 cubic feet / second = 63 gpm

VI. Pipe Hydraulic Capacity

Dc (in/day) x Area (ac) = Flow rate (ac • in/day)

(ac • in/day) / 23.8 = Flow rate (ft^3/sec)

Manning's equation for gravity pipe flow

$$\text{Pipe capacity (cfs)} = \frac{0.4631}{n} \times D^{2.667} \times S^{1/2}$$

D = pipe diameter (ft) and S = pipe slope (ft/ft)

n = .009 smooth interior pipe
.015 3" to 8" sizes
.017 9" to 12"
.020 > 12"

Pipe Capacity

Read pipe flow capacity for pipe size from the scale on the left.

See your drainage design chart.

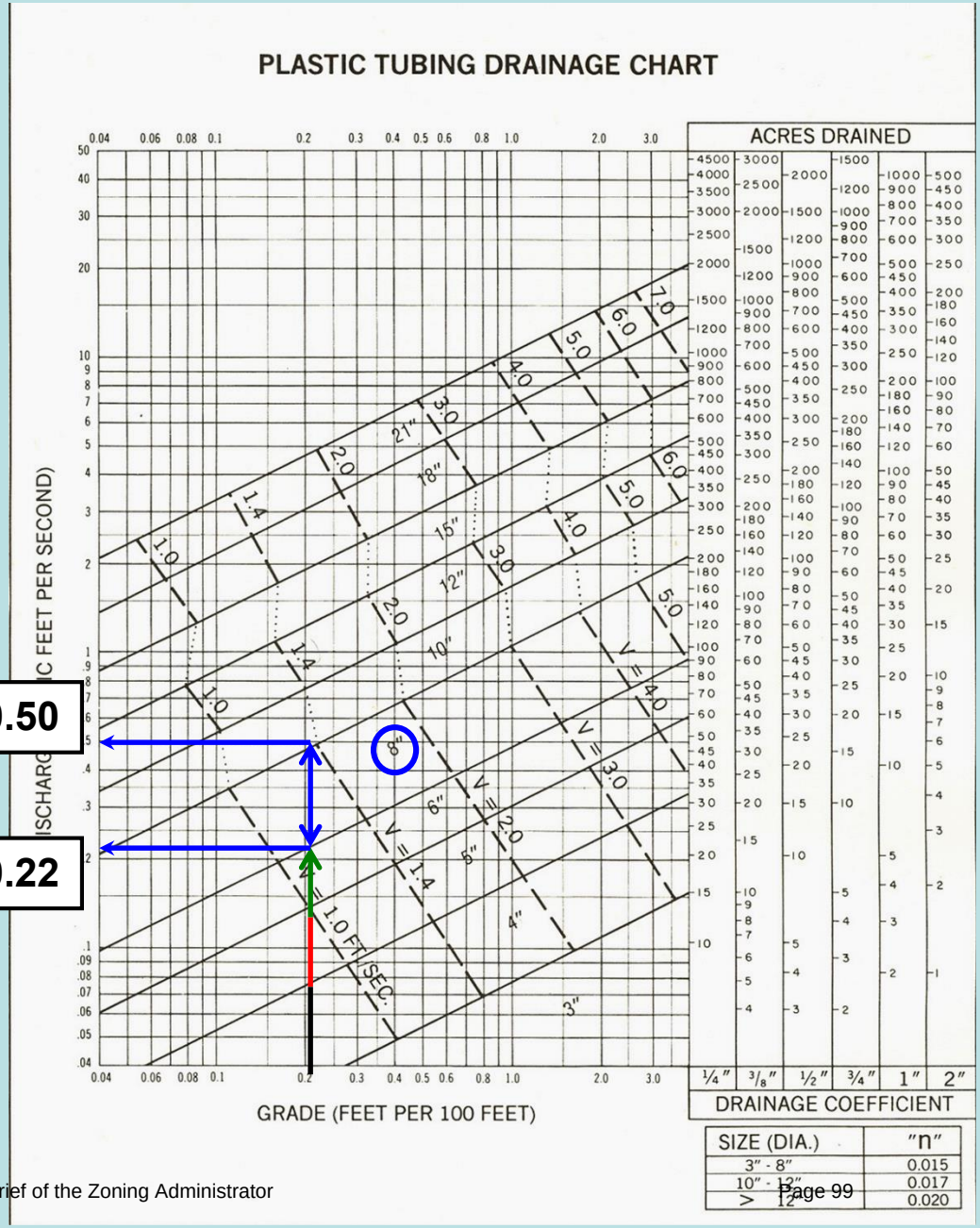
---

8 in diameter pipe @ 0.22 %

= 0.22 to 0.50 cfs
= 99 to 220 gpm

---

cfs x 448.83 = gpm



Example: Drain Size

Determine the diameter of corrugated plastic tubing and the slope needed to drain a 4.3 ac area with a drainage coefficient is ¾ inch.

Pipe Flow Capacity

For Dc = 3/4 in / day

Area = 4.3 ac

Requires:

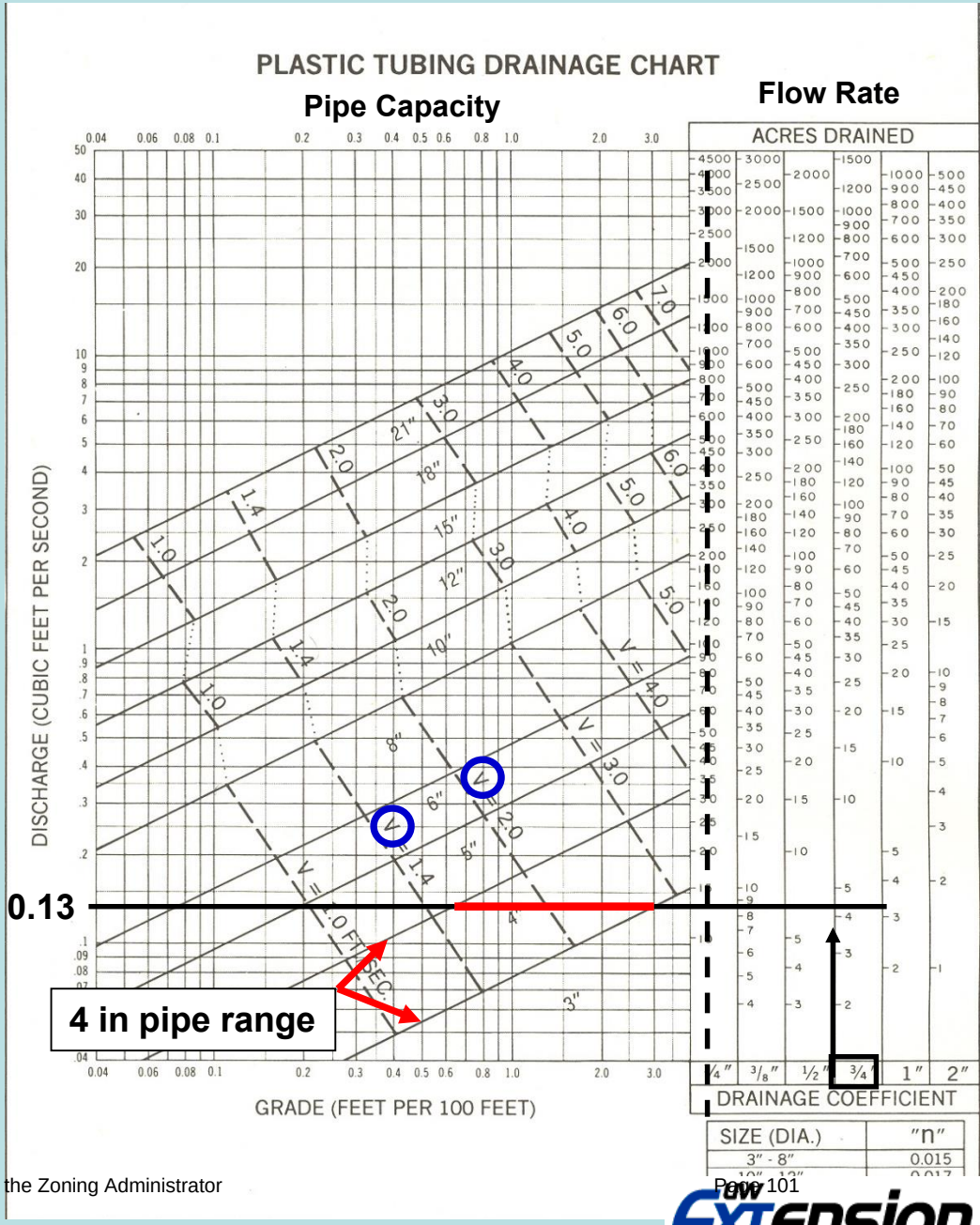
4 in diameter line

Q = 0.13 cfs

Slope range = 0.64 - 3.0 %

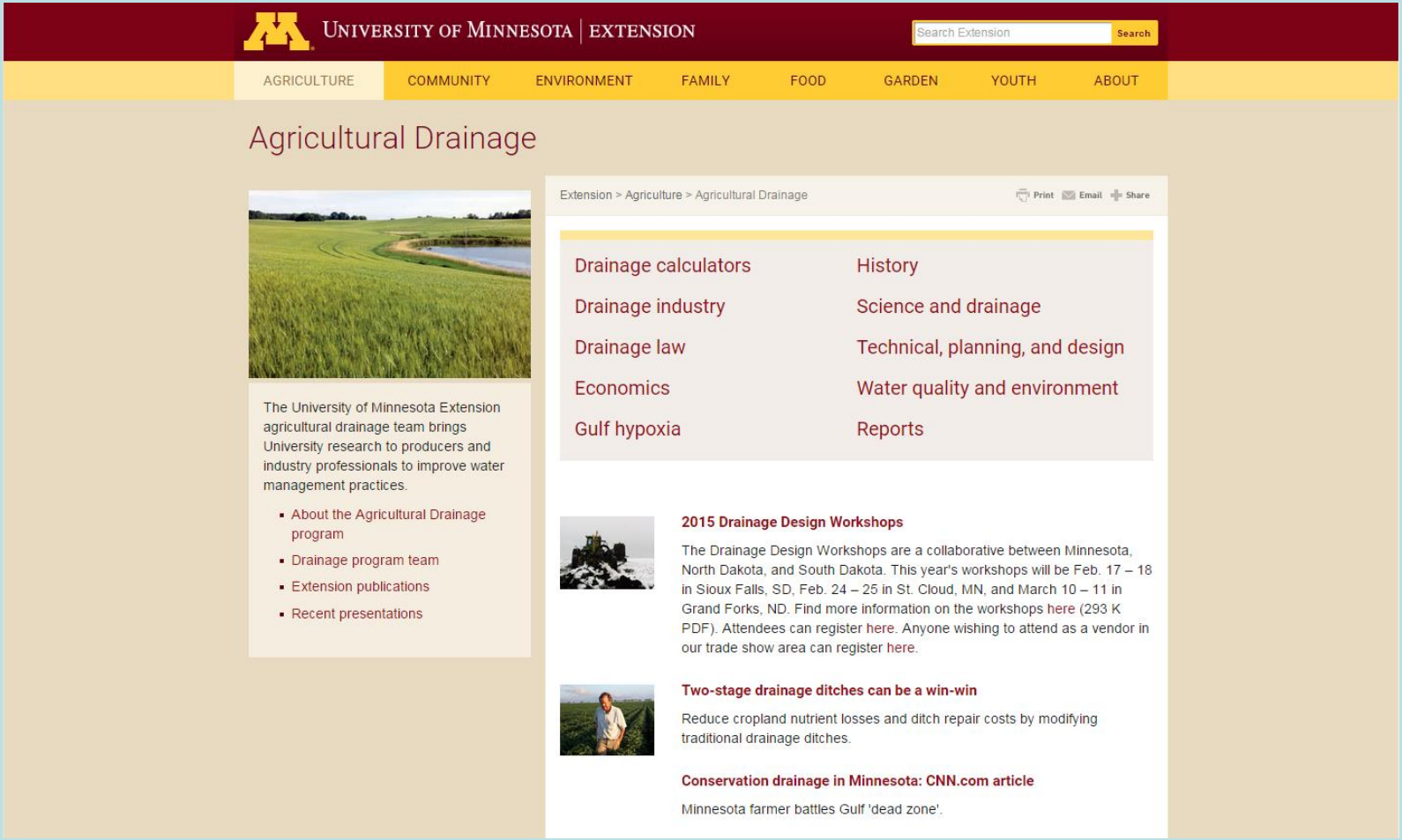
Velocity range
= 1.6 – 2.8 ft/sec

Use across different scales to telescope the pipe size



Drainage Resources

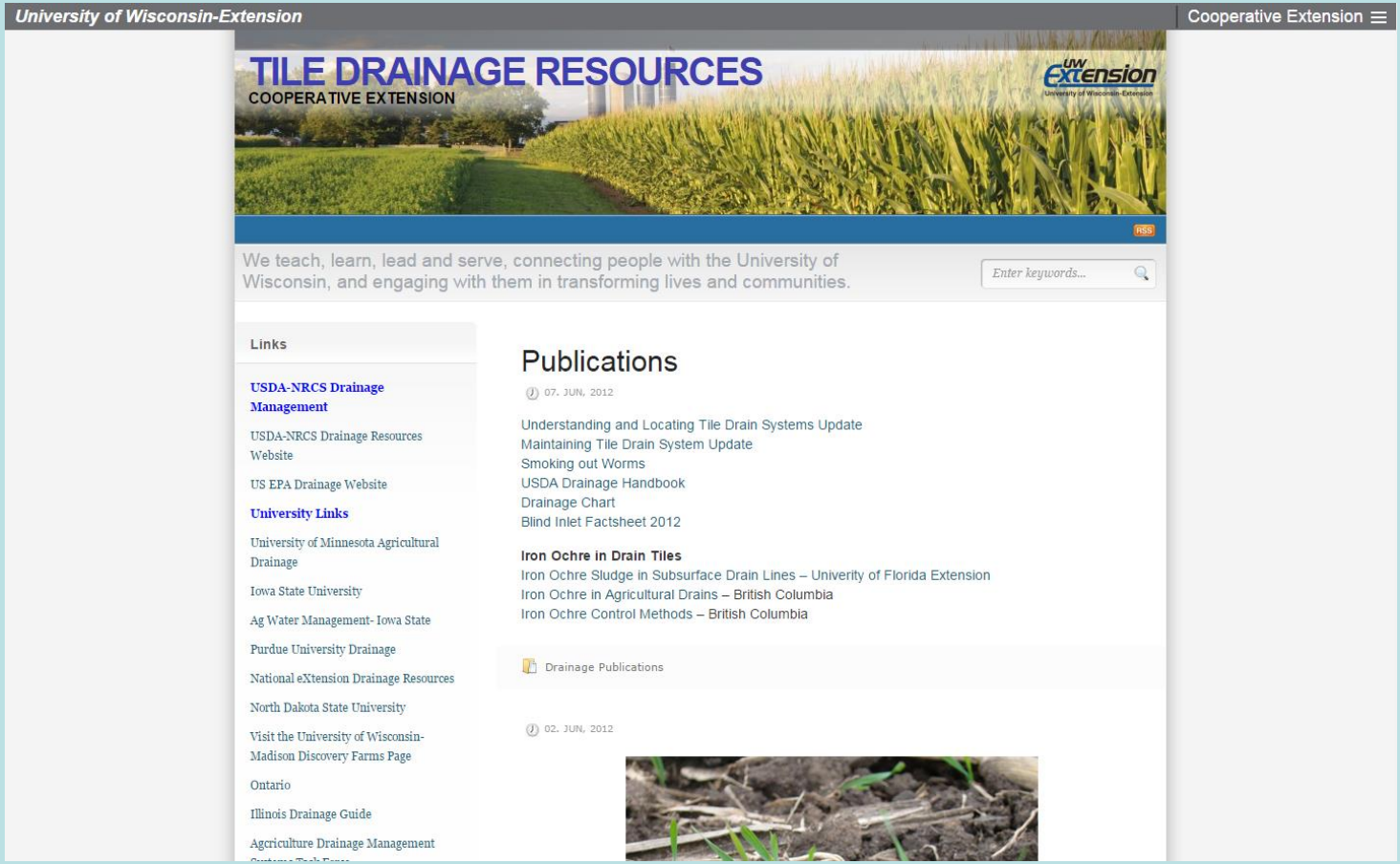
www.extension.umn.edu/agriculture/water/



From Gary Sands U of MN

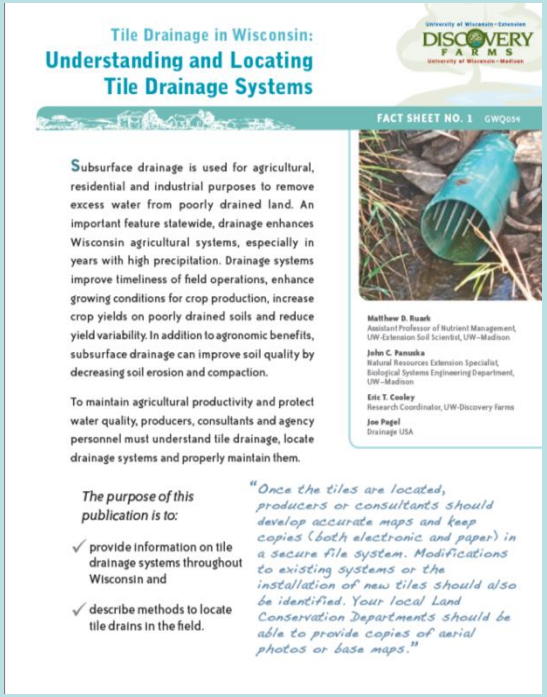
Drainage Resources

http://fyi.uwex.edu/drainage/



Drainage Resources

Learningstore.uwex.edu/



Tile Drainage in Wisconsin:
Understanding and Locating Tile Drainage Systems

FACT SHEET NO. 1 GWQ054

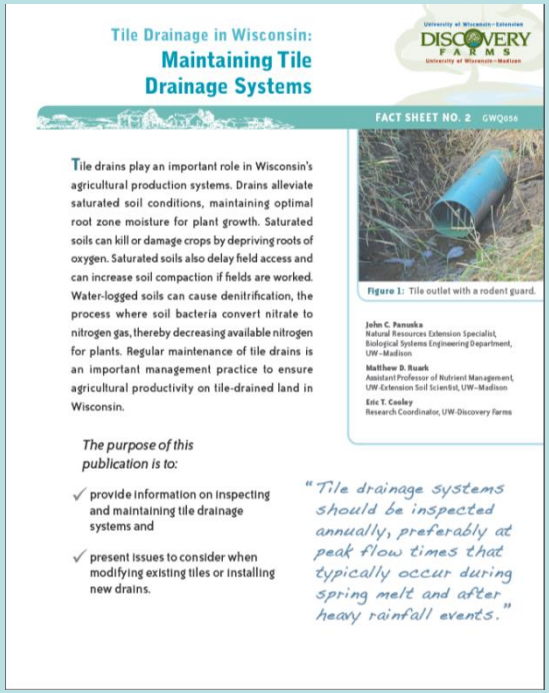
Subsurface drainage is used for agricultural, residential and industrial purposes to remove excess water from poorly drained land. An important feature statewide, drainage enhances Wisconsin agricultural systems, especially in years with high precipitation. Drainage systems improve timeliness of field operations, enhance growing conditions for crop production, increase crop yields on poorly drained soils and reduce yield variability. In addition to agronomic benefits, subsurface drainage can improve soil quality by decreasing soil erosion and compaction.

To maintain agricultural productivity and protect water quality, producers, consultants and agency personnel must understand tile drainage, locate drainage systems and properly maintain them.

The purpose of this publication is to:

- ✓ provide information on tile drainage systems throughout Wisconsin and
- ✓ describe methods to locate tile drains in the field.

"Once the tiles are located, producers or consultants should develop accurate maps and keep copies (both electronic and paper) in a secure file system. Modifications to existing systems or the installation of new tiles should also be identified. Your local Land Conservation Departments should be able to provide copies of aerial photos or base maps."



Tile Drainage in Wisconsin:
Maintaining Tile Drainage Systems

FACT SHEET NO. 2 GWQ056

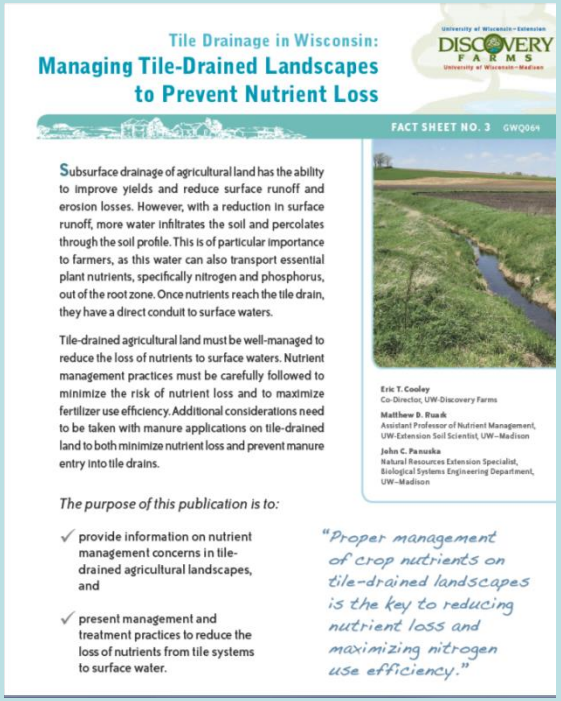
Tile drains play an important role in Wisconsin's agricultural production systems. Drains alleviate saturated soil conditions, maintaining optimal root zone moisture for plant growth. Saturated soils can kill or damage crops by depriving roots of oxygen. Saturated soils also delay field access and can increase soil compaction if fields are worked. Water-logged soils can cause denitrification, the process where soil bacteria convert nitrate to nitrogen gas, thereby decreasing available nitrogen for plants. Regular maintenance of tile drains is an important management practice to ensure agricultural productivity on tile-drained land in Wisconsin.

Figure 1: Tile outlet with a rodent guard.

The purpose of this publication is to:

- ✓ provide information on inspecting and maintaining tile drainage systems and
- ✓ present issues to consider when modifying existing tiles or installing new drains.

"Tile drainage systems should be inspected annually, preferably at peak flow times that typically occur during spring melt and after heavy rainfall events."



Tile Drainage in Wisconsin:
Managing Tile-Drained Landscapes to Prevent Nutrient Loss

FACT SHEET NO. 3 GWQ069

Subsurface drainage of agricultural land has the ability to improve yields and reduce surface runoff and erosion losses. However, with a reduction in surface runoff, more water infiltrates the soil and percolates through the soil profile. This is of particular importance to farmers, as this water can also transport essential plant nutrients, specifically nitrogen and phosphorus, out of the root zone. Once nutrients reach the tile drain, they have a direct conduit to surface waters.

Tile-drained agricultural land must be well-managed to reduce the loss of nutrients to surface waters. Nutrient management practices must be carefully followed to minimize the risk of nutrient loss and to maximize fertilizer use efficiency. Additional considerations need to be taken with manure applications on tile-drained land to both minimize nutrient loss and prevent manure entry into tile drains.

The purpose of this publication is to:

- ✓ provide information on nutrient management concerns in tile-drained agricultural landscapes, and
- ✓ present management and treatment practices to reduce the loss of nutrients from tile systems to surface water.

"Proper management of crop nutrients on tile-drained landscapes is the key to reducing nutrient loss and maximizing nitrogen use efficiency."

Pipe Size and Grades

- ✓ Desirable minimum working grade is 0.2 %
- ✓ Typical minimum pipe size is 3” - 4” in humid regions and 5”- 6” for organic soils.
- ✓ Minimum grade sufficient to maintain 0.5 ft /sec (1.4 ft / sec with sand and silt in flow).

Pipe Size and Grades

- Design Boundary Conditions -

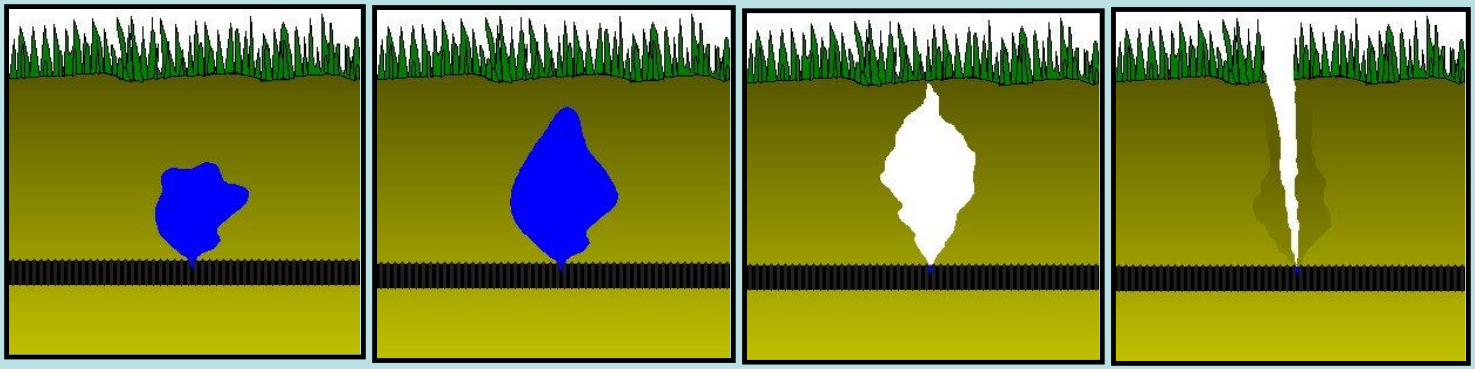
- ✓ Very high velocities can cause “sink holes” when soil is actually pulled into the tile line.
- ✓ “Blowouts” can occur when lines become pressurized.

Soil Texture	Max. Velocity ft/sec
Sand & sandy loam	3.5
Silt & silt Loam	5.0
Silty clay loam	6.0
Clay & Clay loam	7.0
Course sand or gravel	9.0

- ✓ Watch out for steep-to-flat grade changes and overloading mains …. Blowouts !

Tile Line Blowouts

Time



During storm event

After storm event

Photos from: Eric Cooley, UW Discovery Farms

Sub-surface Water Management

- ✓ **Reduces the total water export.**
- ✓ **Annual nitrate load reductions ~ 15 to 75%.**
- ✓ **There are still a number of unknowns about performance, research is on-going.**
- ✓ **Requires on-going management.**

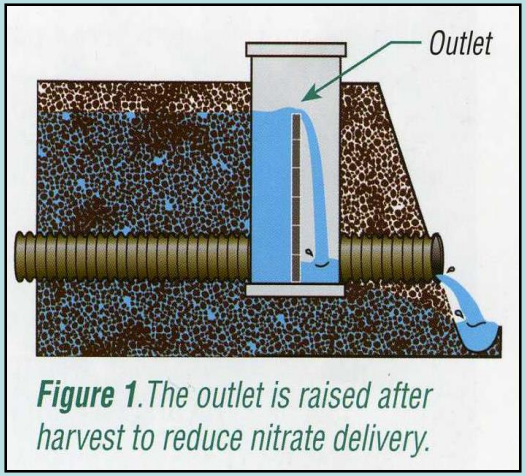


Figure 1. *The outlet is raised after harvest to reduce nitrate delivery.*

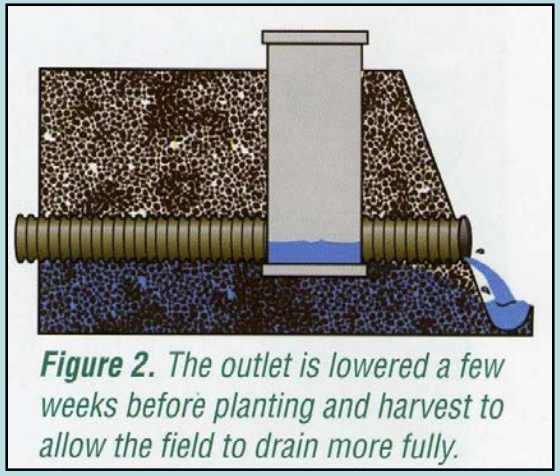


Figure 2. *The outlet is lowered a few weeks before planting and harvest to allow the field to drain more fully.*

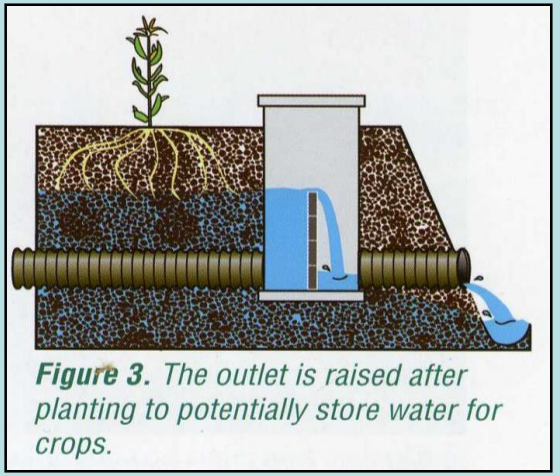


Figure 3. *The outlet is raised after planting to potentially store water for crops.*

Source: Drainage Water Management for the Midwest, Purdue Extension Service, http://www.ces.purdue.edu/new

Drainage System Cost

- Approximate ! -

Drainage system installation costs can vary ***significantly*** based on terrain, soils, outlet availability, etc.

Rough Range

~ $800 - 1,000 / ac

QUESTIONS ? ? ?

NRCS Estimate of Lateral Effect[1] for Constructed Drainage Features in Agricultural Fields for use in Wetland Determinations under the USDA Farm I

EXHIBIT 15

Dane County, Wisconsin

Mapunit Symbol	Mapunit Name	Component Name	%	LE Distance (Ft.)[1] for Given Effective Drain Depth[2]			
				2 Ft	3 Ft	4 Ft	5 Ft

1. Limitations: The Lateral Effect (LE) distances in this table do not apply for any of the following conditions (Scope and Effect JAA Level 3 is required for analysis of these conditions): (a) Ponding could occur on the site; (b) There is a potential for encirclement or interception by the drain; (c) The lateral effect distance is given as "N/A"; (d) The effective drain depth is > 5 feet
2. The Effective Drain (Ditch or Tile) Depth is the elevation difference (depth) between the ground surface at the approximate lateral effect distance and the "normal" water surface in the drain, or bottom of the drain if there is no "permanent" water.

Ad	Adrian muck	Adrian	100	**90**	**164**	**226**	**286**
AsB	Ashdale silt loam, 2 to 6 percent slopes	Ashdale	100	**49**	**60**	**N/A**	**N/A**
BbA	Batavia silt loam, gravelly substratum, 0 to 2 percent slopes	Batavia	100	**39**	**181**	**283**	**382**
BbB	Batavia silt loam, gravelly substratum, 2 to 6 percent slopes	Batavia	100	**39**	**181**	**283**	**382**
BoB	Boyer sandy loam, 2 to 6 percent slopes	Boyer	100	**169**	**283**	**378**	**472**
BrA	Brems loamy sand	Brems	100	**123**	**195**	**255**	**314**
ChB	Chaseburg silt loam, 2 to 6 percent slopes	Chaseburg	100	**55**	**85**	**110**	**134**
Co	Colwood silt loam	Colwood	100	**45**	**68**	**87**	**106**
DeA	Dells silt loam, 0 to 3 percent slopes	Dells	100	**118**	**215**	**294**	**373**
DfA	Del Rey silt loam, 0 to 3 percent slopes	Del Rey	100	**33**	**49**	**61**	**73**
DkA	Dickinson sandy loam, 0 to 2 percent slopes	Dickinson	100	**72**	**133**	**183**	**232**
DkB	Dickinson sandy loam, 2 to 6 percent slopes	Dickinson	100	**74**	**134**	**184**	**233**
DmA	Dickinson loamy fine sand, sandy variant, 1 to 4 percent slopes	Dickinson variant	100	**126**	**202**	**267**	**329**
DnB	Dodge silt loam, 2 to 6 percent slopes	Dodge	100	**47**	**71**	**91**	**110**
DsB	Dresden silt loam, 2 to 6 percent slopes	Dresden	100	**102**	**201**	**281**	**361**
EfB	Elburn silt loam, 1 to 4 percent slopes	Elburn	100	**57**	**79**	**98**	**115**
EgA	Elburn silt loam, gravelly substratum, 0 to 3 percent slopes	Elburn	100	**68**	**144**	**204**	**263**
Ev	Elvers silt loam	Elvers	100	**72**	**112**	**146**	**178**
Gn	Granby loamy sand	Granby	100	**129**	**208**	**273**	**337**
GsA	Grays silt loam, 0 to 2 percent slopes	Grays	100	**52**	**76**	**96**	**114**
GsB	Grays silt loam, 2 to 6 percent slopes	Grays	100	**55**	**83**	**107**	**129**
GwB	Griswold loam, 2 to 6 percent slopes	Griswold	100	**75**	**121**	**160**	**198**

NRCS Estimate of Lateral Effect[1] for Constructed Drainage Features in Agricultural Fields for use in Wetland Determinations under the USDA Farm Bill

Dane County, Wisconsin

Mapunit Symbol	Mapunit Name	Component Name	%	LE Distance (Ft.)[1] for Given Effective Drain Depth[2]			
				2 Ft	3 Ft	4 Ft	5 Ft
HaA	Hayfield silt loam, 0 to 3 percent slopes	Hayfield	100	**151**	**275**	**378**	**479**
Ho	Houghton muck	Houghton	100	**61**	**95**	**123**	**150**
HuA	Huntsville silt loam, 0 to 2 percent slopes	Huntsville	100	**70**	**107**	**137**	**167**
HuB	Huntsville silt loam, 2 to 6 percent slopes	Huntsville	100	**70**	**107**	**137**	**167**
KcB	Kickapoo fine sandy loam, 2 to 6 percent slopes	Kickapoo	100	**53**	**79**	**101**	**123**
KdB	Kidder loam, 2 to 6 percent slopes	Kidder	100	**78**	**137**	**186**	**235**
KeA	Kegonsa silt loam, 0 to 2 percent slopes	Kegonsa	100	**137**	**263**	**366**	**467**
KeB	Kegonsa silt loam, 2 to 6 percent slopes	Kegonsa	100	**137**	**263**	**366**	**467**
Mc	Marshan silt loam	Marshan	100	**159**	**277**	**375**	**472**
MdB	McHenry silt loam, 2 to 6 percent slopes	McHenry	100	**80**	**122**	**157**	**190**
MeA	Meridian loam, 0 to 2 percent slopes	Meridian	100	**94**	**170**	**233**	**295**
MeB	Meridian loam, 2 to 6 percent slopes	Meridian	100	**94**	**170**	**233**	**295**
MoA	Montgomery silty clay loam, 0 to 3 percent slopes	Montgomery	100	**28**	**43**	**55**	**68**
Or	Orion silt loam	Orion	100	**70**	**109**	**141**	**173**
Os	Orion silt loam, wet	Orion variant	100	**62**	**93**	**118**	**142**
Ot	Otter silt loam	Otter	100	**68**	**100**	**126**	**150**
Pa	Palms muck	Palms	100	**52**	**169**	**252**	**335**
PeB	Pecatonica silt loam, 2 to 6 percent slopes	Pecatonica	100	**66**	**109**	**145**	**181**
PfB	Plainfield sand, 1 to 6 percent slopes	Plainfield	100	**139**	**221**	**290**	**356**
PnA	Plano silt loam, 0 to 2 percent slopes	Plano	100	**58**	**87**	**111**	**133**
PnB	Plano silt loam, 2 to 6 percent slopes	Plano	100	**58**	**87**	**111**	**133**
PoA	Plano silt loam, gravelly substratum, 0 to 2 percent slopes	Plano	100	**41**	**220**	**345**	**467**
PoB	Plano silt loam, gravelly substratum, 2 to 6 percent slopes	Plano	100	**41**	**220**	**345**	**467**
PrB	Port Byron silt loam, 2 to 6 percent slopes	Port Byron	100	**68**	**102**	**130**	**157**
RaA	Radford silt loam, 0 to 3 percent slopes	Radford	100	**44**	**67**	**85**	**104**

NRCS Estimate of Lateral Effect[1] for Constructed Drainage Features in Agricultural Fields for use in Wetland Determinations under the USDA Farm Bill

Dane County, Wisconsin

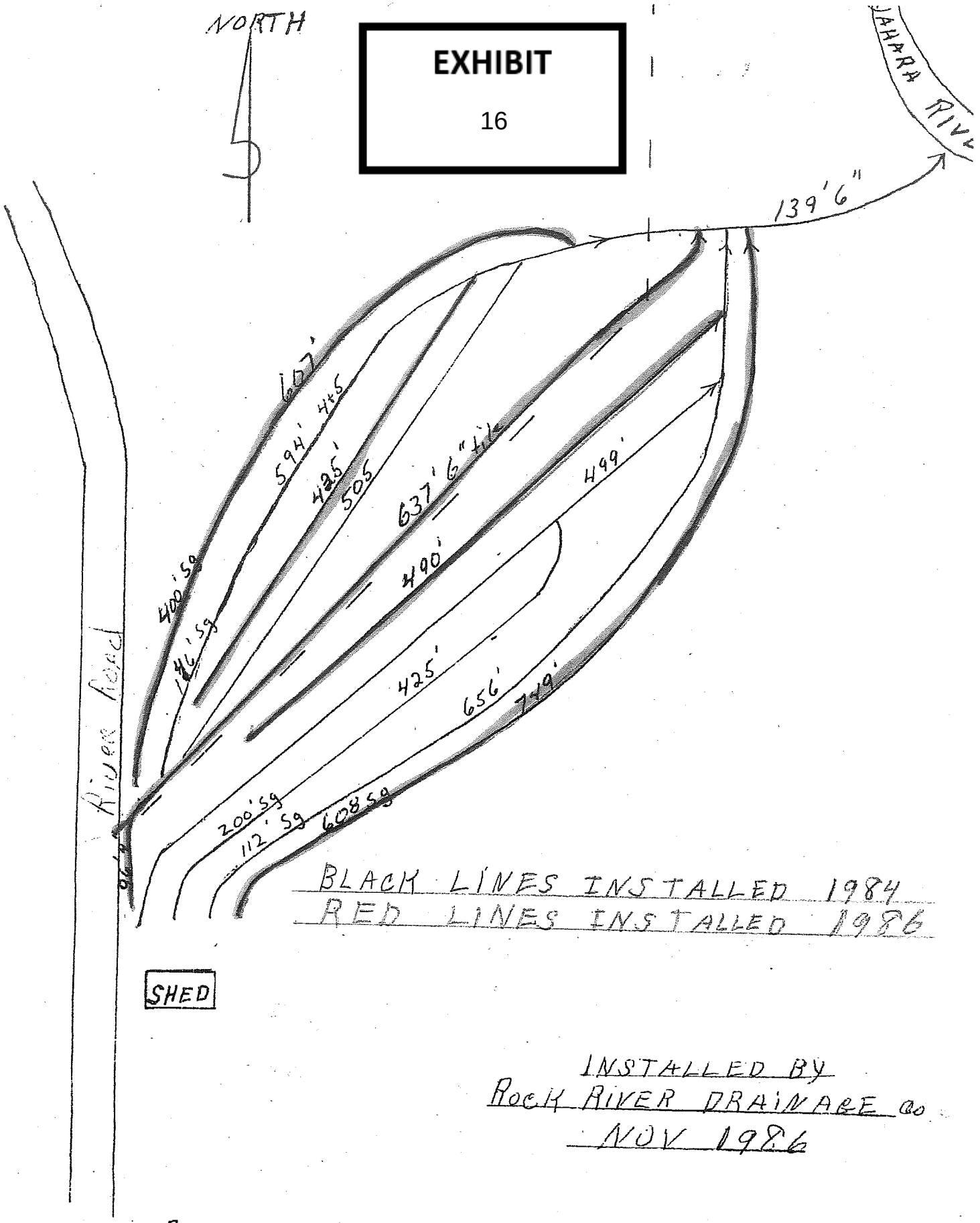
Mapunit Symbol	Mapunit Name	Component Name	%	LE Distance (Ft.)[1] for Given Effective Drain Depth[2]			
				2 Ft	3 Ft	4 Ft	5 Ft
RnB	Ringwood silt loam, 2 to 6 percent slopes	Ringwood	100	**70**	**106**	**136**	**165**
SaA	Sable silty clay loam, 0 to 3 percent slopes	Sable	100	**50**	**77**	**99**	**120**
ScA	St. Charles silt loam, 0 to 2 percent slopes	St. Charles	100	**50**	**81**	**107**	**133**
ScB	St. Charles silt loam, 2 to 6 percent slopes	St. Charles	100	**50**	**76**	**97**	**118**
SeB	Salter sandy loam, 2 to 6 percent slopes	Salter	100	**66**	**93**	**115**	**135**
SfA	Salter silt loam, 0 to 2 percent slopes	Salter	100	**84**	**119**	**148**	**175**
SfB2	Salter silt loam, 2 to 6 percent slopes, eroded	Salter	100	**84**	**119**	**148**	**175**
ShA	Salter sandy loam, wet variant, 0 to 3 percent slopes	Salter variant	100	**54**	**75**	**92**	**108**
SmB	Seaton silt loam, 2 to 6 percent slopes	Seaton	100	**59**	**94**	**123**	**152**
SpB	Spinks and Plainfield loamy sands, 2 to 6 percent slopes	Plainfield	50	**156**	**252**	**332**	**410**
SpB	Spinks and Plainfield loamy sands, 2 to 6 percent slopes	Spinks	50	**105**	**174**	**232**	**288**
TrB	Troxel silt loam, 1 to 3 percent slopes	Troxel	100	**62**	**90**	**112**	**131**
VrB	Virgil silt loam, 1 to 4 percent slopes	Virgil	100	**52**	**74**	**91**	**106**
VwA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Virgil	100	**51**	**100**	**151**	**201**
Wa	Wacousta silty clay loam	Wacousta	100	**52**	**80**	**103**	**125**
WrB	Warsaw silt loam, 2 to 6 percent slopes	Warsaw	100	**136**	**243**	**332**	**420**
Wt	Watseka loamy sand	Watseka	100	**118**	**189**	**248**	**305**
WvB	Westville silt loam, 2 to 6 percent slopes	Westville	100	**44**	**79**	**113**	**147**

1. Limitations: The Lateral Effect (LE) distances in this table do not apply for any of the following conditions (Scope and Effect JAA Level 3 is required for analysis of these conditions): (a) Ponding could occur on the site; (b) There is a potential for encirclement or interception by the drain; (c) The lateral effect distance is given as "N/A"; (d) The effective drain depth is > 5 feet

2. The Effective Drain (Ditch or Tile) Depth is the elevation difference (depth) between the ground surface at the approximate lateral effect distance and the "normal" water surface in the drain, or bottom of the drain if there is no "permanent" water.

EXHIBIT

16

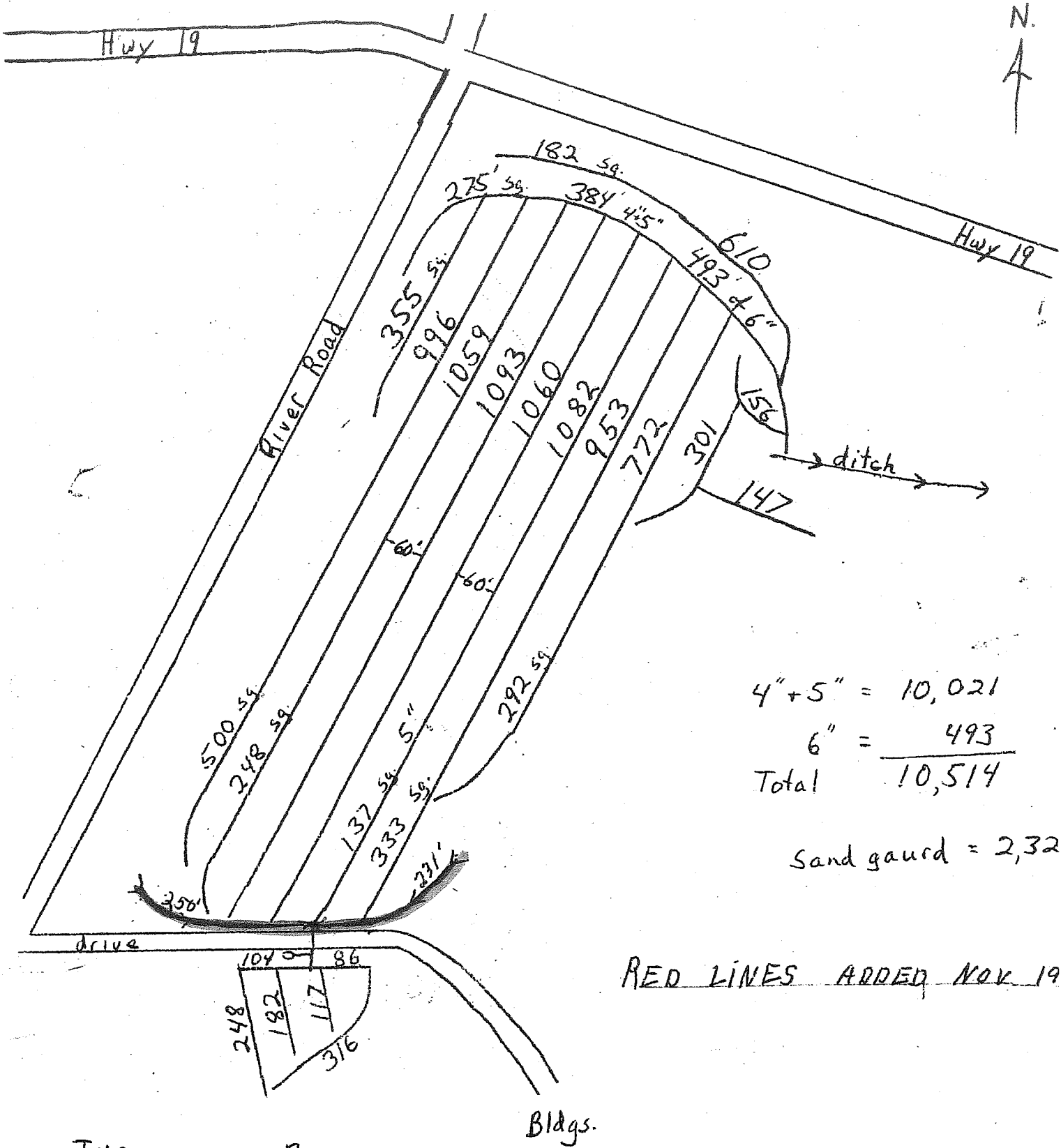


BLACK LINES INSTALLED 1984
RED LINES INSTALLED 1986

INSTALLED BY
ROCK RIVER DRAINAGE CO
NOV 1986

SCALE 1"=100'

Ed Buhler



4" + 5" = 10,021

6" = 493

Total 10,514

Sand gaurd = 2,32

RED LINES ADDED NOV 19

INSTALLED By

ROCK RIVER DRAINAGE Co.

OCTORER 1984

Scale 1" = 200' (Appro

Hidden River Rd

~~Hidden River~~ Riverside Road

KARTECHNER BROTHERS LLC.
FARM DRAINAGE
920-324-2874
WAUPUN, WI

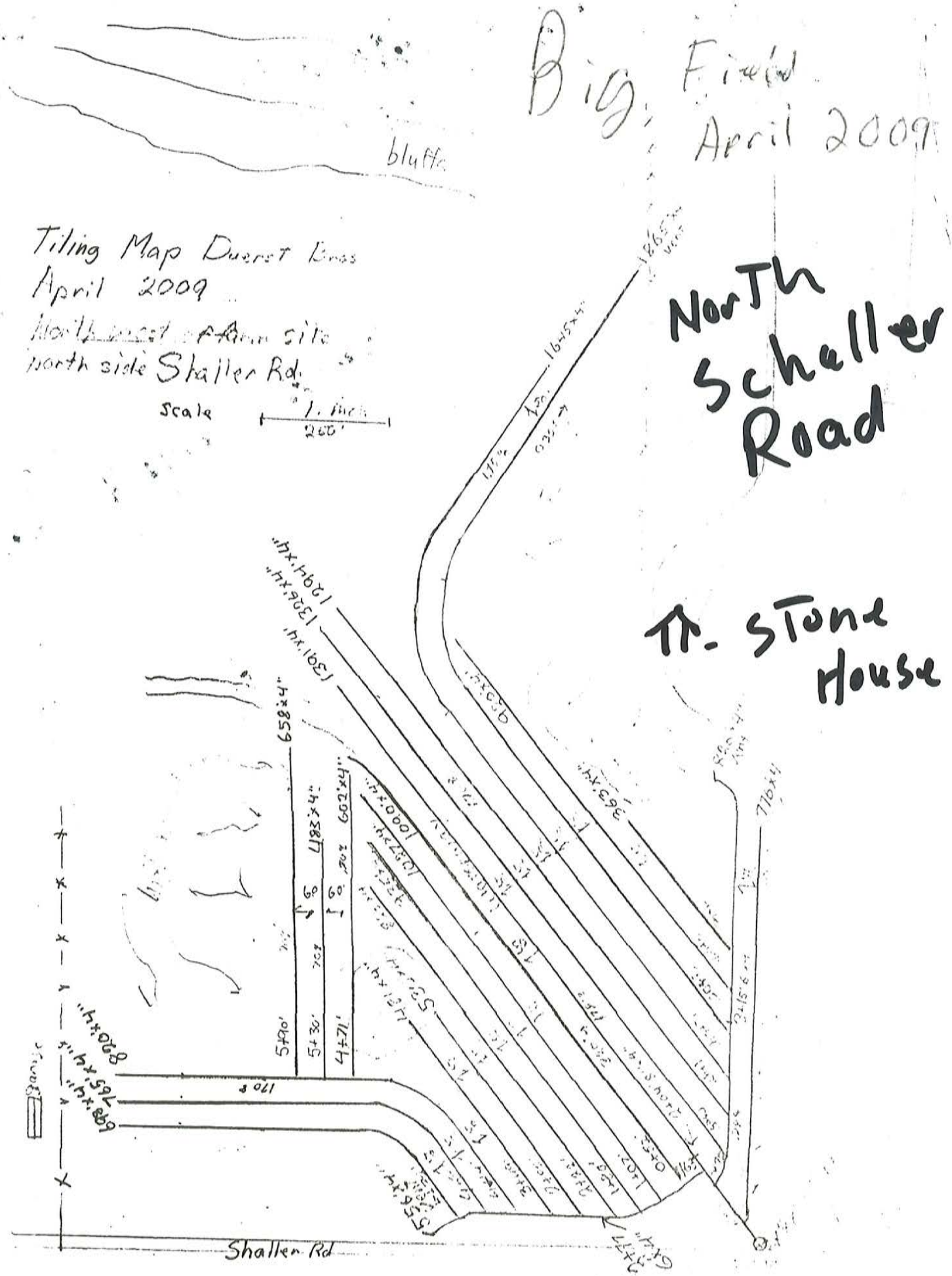
Client: Duerst, Mike Tom
Farm: Riverside Rd
Field: Hidden River
Name: Hidden River Rd
Date: Installed 12/14/18

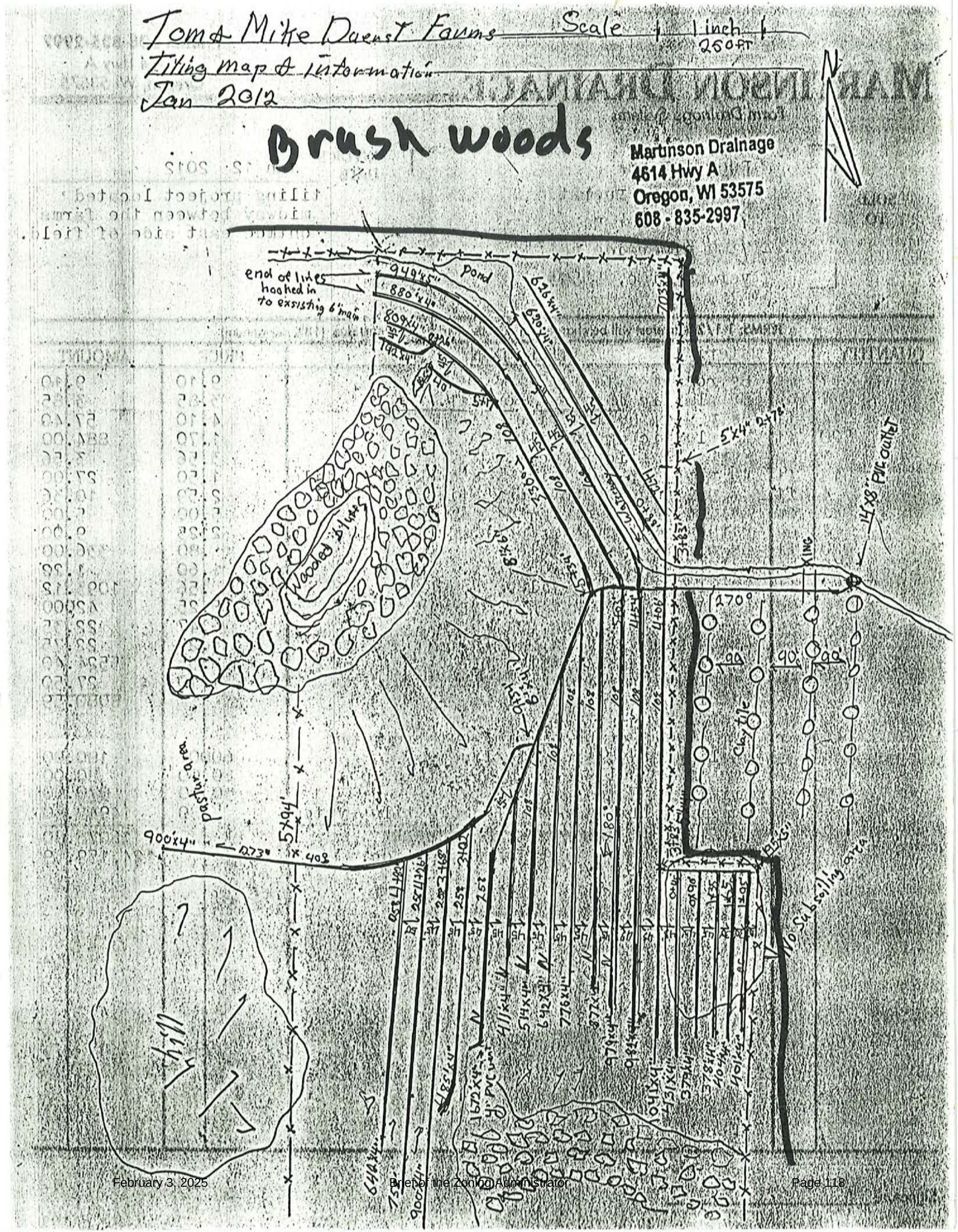
0 0.13 0.25
miles

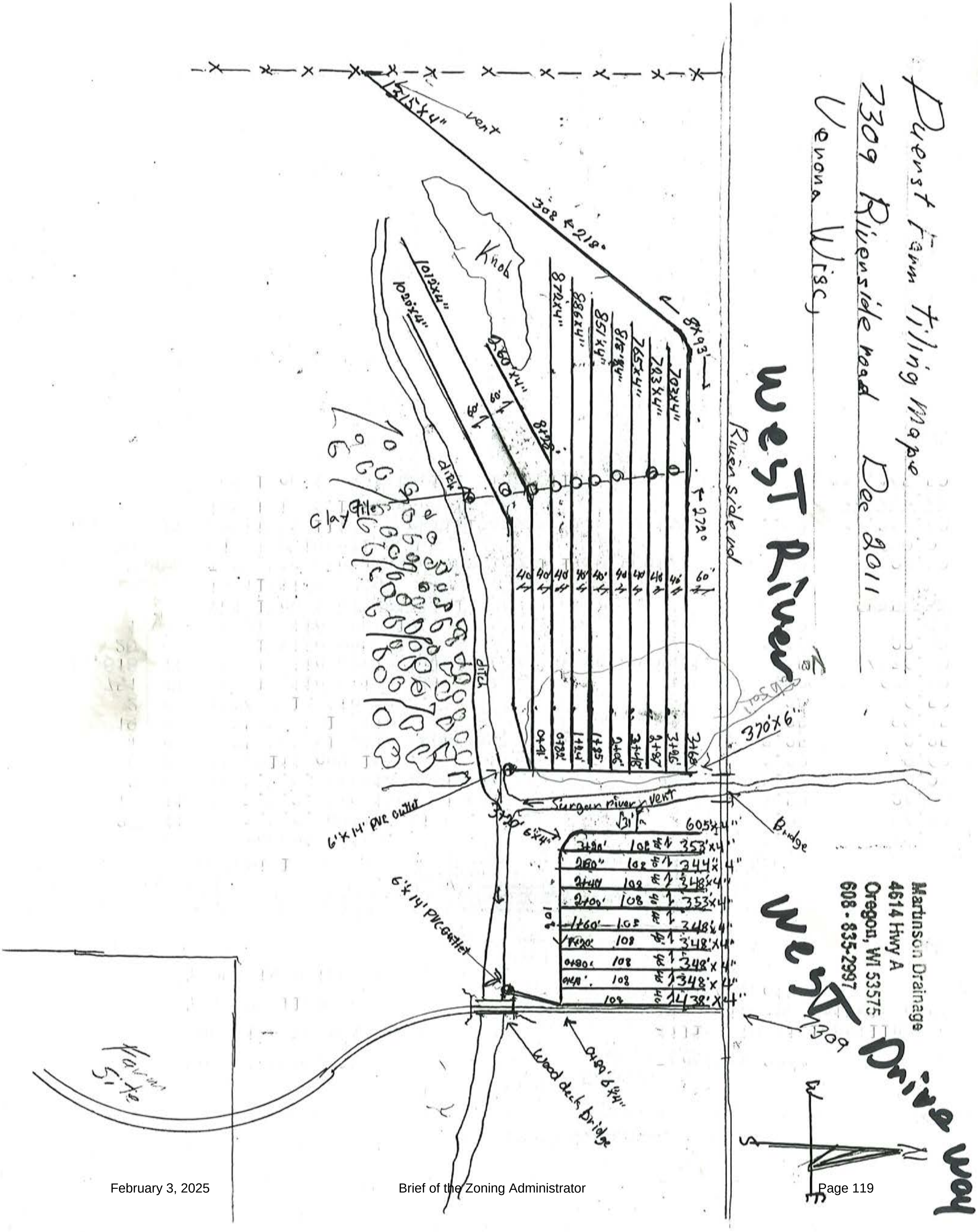
4"	28546.32 ft
6"	2213.05 ft
6" with Stone	499.71 ft
8"	698.46 ft

EXHIBIT

17


Big Field
April 2009
bluffs
Tiling Map Duerst Bros
April 2009
North side Shaller Rd.
Scale 1 inch = 200'
North Schaller Road
Tr. Stone House
Shaller Rd


Tom & Mike Duerst Farms
Scale 1 inch 250 FT
Tiling map & information
Jan 2012
Brush woods
Martinson Drainage
4614 Hwy A
Oregon, WI 53575
608 - 835-2997
end of lines hooked in to exsisting 6" main
pond
Wooded
pasture area
Clay tile
No Subsoiling area
hill
PVC outlet


Puerst farm Tiling Maps
7309 Riverside road Dec 2011
Verona Wisc
West River
Riverside rd
Knob
Clay Tiles
ditch
vent
Sturgeon River
Bridge
6'x14' PVC outlet
Wood deck bridge
Martinson Drainage
4614 Hwy A
Oregon, WI 53575
608-835-2997
West Drive way
Farm Site

Phone: 608-835-2997
4614 Hwy A
Oregon, WI 53575

MARTINSON DRAINAGE

Farm Drainage Systems

SOLD TO
Duerst Farms
Tom&Mike Duerst
7313 Shaller Rd
7309 Rivsrside Rd

INVOICE DATE December 2011

tiling in fields along riverside rdformerly owed by ther mother.

TERMS: 1 1/2 % interest will be charged on all bills after 30 days past due. (18% per annum)

QUANTITY		DESCRIPTION	PRICE	AMOUNT
		material		
3	ea	6" rodent gates.	6.10	18.30
28	ft	6" P.V.C. outlet pipes.	3.00	84.00
16	ft	4" P.V.C. breather pipes.	1.50	24.00
2	ea	4" P.V.C. breather pipe caps.	5.00	10.00
6	ea	6" split couplers.	1.60	9.60
1	ea	6"X5"X4" plastic reducer.	2.25	2.25
19	ea	6"X5"X4" plastic tees.	5.25	99.75
2	aa	4"X4" plastic tees.	3.25	6.50
751	ft	6" plastic drian tile.	.80	600.80
13,818	ft	4" plastic drain tile. (37') used on vent.	.35	4836.30
20	ea	4" plstiic end plugs.	1.10	22.00
1	ea	6" plastic end plug.	1.60	1.60
		total cost of material		5715.10
		instlation		
2	hrs	IHC 3514 backhoe loader installing vent.	60.00	120.00
20	ea	digging junctions.	30.00	600.00
14,638	ft	eng:installing:backfill drain tile system.	.80	11,710.40
		total installtion cost.		12,430.40
		Total cost of material &installation.		$18,145.50

Signature

Duerst Farms
Tile Lines

Scale 1 inch = 200'

Revised 2007

Martinson Drainage
4614 Hwy A
Oregon, WI 53575
608 - 835-2997

Total Acres: 20.27
Total Tile Length: 20,570 ft
Added on 2004 9,904 ft
Added on 2007 11,453
2 Added on 2008 5,733

10 lines
3,097 feet

22 lines
17,473 feet

NOTE!
Tile lines cross over protection line

Rock

Windmill

Steep Hill Wooded

Phone: 608-835-2997
4614 Hwy A
Oregon, WI 53575

MARTINSON DRAINAGE

Farm Drainage Systems

SOLD TO

Duerst Farms
Tom and Mike
7313 Shaller rd
7309 Riverside rd
Verona Wisc, 53593

INVOICE DATE Nov 22 2008

tiling in feild north of farm site tile system 1 &2 addig in tile lines.

TERMS: 1 1/2 % interest will be charged on all bills after 30 days past due. (18% per annum)

QUANTITY		material DESCRIPTION	PRICE	AMOUNT
6	ea	5"X4" plastic tees.	5.00	30.00
6	ea	4"X4 plastic tees.	4.00	24.00
3	ea	4" plastic internal couplers.	1.50	4.50
380	ea	4" sand guard filter material.	.15	57.00
5735	ft	4" plastic drain tile.	.31	1777.85
14	ea	4" plastic end plugs,	1.10	15.40
		total cost of material		1908.75
		insallation		
14	ea	digging juctions.	28.00	392.00
5735	ft	insalling drain tile system.	.82	4702.70
		total cost of installation.		5094.79
		Total cost of material&installation.		$7003.45
12/4/08		Ch#0020607263 paytech		7003 45

Signature _____