



TWIN VALLEY ROAD DRAINAGE IMPROVEMENTS PUBLIC INFORMATION MEETING – 1-31-12

This document is intended to:

- Summarize known drainage issues along Twin Valley Road;
- Present the Town's goals in formulating a solution to the drainage issues;
- Introduce the solutions proposed to address the drainage issues;
- Discuss the limitations of the proposed solutions and areas where additional information is needed and;
- Present the proposed timeline for implementing the final solution.

1. Known Drainage Issues

As discussed with local residents on June 21, 2011, there are three primary areas of concern:

- a. Address erosion in the roadside ditches and shoulders
- b. Contain drainage within the right-of-way where possible
- c. Eliminate drainage across the road surface for all storm events
- d. Alignment of driveway culverts and cross culverts is not optimal for conveying flow

2. Town Goals to Address the Drainage Issues

As a follow-up to meeting with local residents, the Town has completed a full topographic survey of the west / north Twin Valley Road ditchline (the ditch on the east side of Twin Valley is not perceived as an issue therefore it was omitted from the scope of the survey work) and analyzed the stormwater drainage in this area with a computer model of the watershed. Based on the topographic survey and drainage models the Town has formulated solutions to the issues. The goal is to address the problem areas and minimize disturbance of the steep banks along the right-of-way. This work will be performed using general funds (not assessed); therefore the cost-benefit must fit the scope of the project.

3. Solutions to the Known Drainage Issues

Preferred options for the proposed improvements have been included with this bulletin and are described below:

- a) Several of the driveway culverts along Twin Valley Road are partially or fully plugged. This condition can cause water to flow around the driveway and erode the shoulder material. Shoulder material fills the drainage ditch and eventually can clog the next culvert downhill. This issue will be addressed by replacing problematic driveway culverts and re-aligning them to better convey drainage within the ditch.
- b) The existing roadside ditches are too shallow to adequately convey runoff generated during larger storm events. This has been caused by a variety of erosion processes. We anticipate deepening the roadside ditches as much as possible without re-grading the steep banks along the right-of-way. The drainage capacity that can be gained by this approach varies because the road is not located in the center of the right-of-way and the right-of-way banks vary

considerably. However, in general the ditches can be deepened a minimum of 6 - 9 inches.

- c) Some driveways slope directly to the edge of pavement along Twin Valley Road and during heavy rainfall events deposit gravel on the roadway and/or cause erosion of the down-gradient shoulder material. The Town proposes to re-shape these areas so water discharges directly to the drainage swale rather than the roadway. Because several of these driveways are steep it may be preferable to install an asphalt apron (only within the right-of-way) to stabilize the end of the driveway.
- d) Erosive velocities in the roadside ditches cause sediment deposition on downstream lands and in down-gradient culverts. After re-grading the ditches an erosion control mat will be installed to alleviate scour and allow the establishment of vegetation in the bottom of the ditches. In addition rock gabion baskets will be installed where there is adequate room in the right-of-way to further reduce velocities in the swale. *[Gabion baskets are vinyl coated metal baskets filled with coarse (3-4" diameter) stone]*. Rip-rap will be placed where necessary at the existing culvert end sections to stabilize the entrance / discharge locations.
- e) The ditch on the west and south side Twin Valley Road from Black Earth Creek to Wayne Rounds' (Twin Valley Farms I, LLC) driveway will be re-graded to provide a safe overflow. The present ditch and culvert configuration discharges all the water in the west roadside ditch to the east side of the road and onto private property. During large storm events these culverts cannot carry the full amount of runoff and water flows across the road surface. The Town proposes to re-shape the ditch near Black Earth Creek to provide an overflow in large storm events. As part of the work two culverts that now discharge to the Horst Goerke property will be replaced and the downstream ends reinforced with rip-rap to stabilize the outlets and better disperse flow.

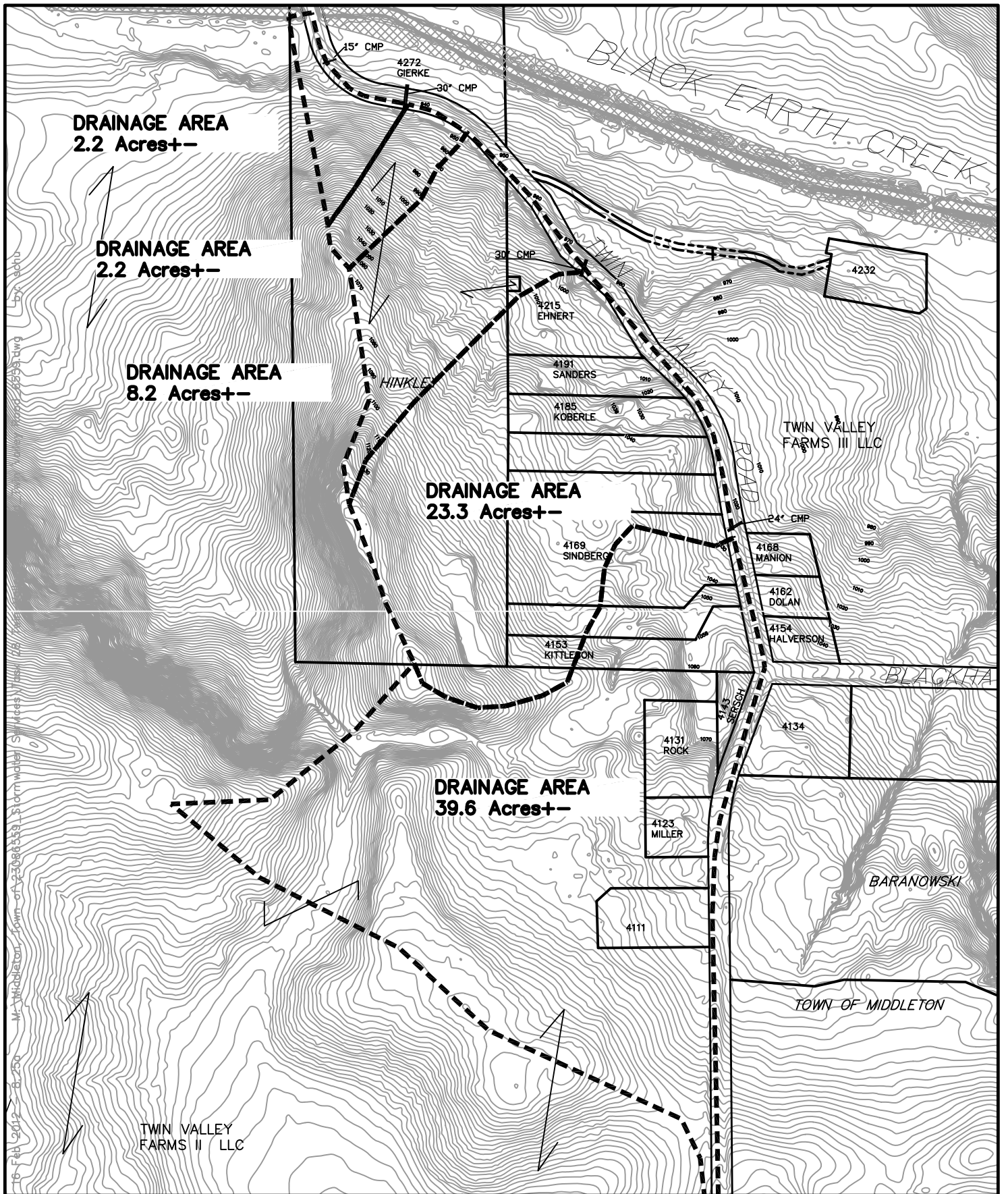
4. Limitations of the Proposed Solutions and Information Still Needed

- a. Due to the steep slopes in this area limited excavation and re-grading is proposed. This approach may not constrict drainage to the roadside ditch for all storm events. However, the improvements have been designed to reduce the frequency that water flows outside of the ditches.
- b. Due to the slope of the ditches and wooded nature of the road it may be difficult to establish vegetation in the ditches. It is likely that some amount of 're-work' may be needed during the next year before vegetation can be fully established. However, by matting the bottom of the ditches and hydroseeding the steeper bank areas the Town will attempt to minimize the potential for additional erosion and restore vegetation to the disturbed areas as quickly as possible.

5. Proposed Timeline and Required Approvals

Once we have obtained your feedback to our preferred options, we will present the plans to the Town Board. After they provide approval or direction to proceed we will complete detailed construction plans and put the project out to bid. We anticipate the following schedule:

- Town Board approval and determination of the preferred options 2/6/2012 or 2/20/2012
- Construction Plans Complete 2/10/2012 or 2/24/2012
- Bidding 3/1/2012 – 4/1/2012
- Construction 4/15/2012 – 6/15/2012



16 Feb 2012 B-250 M: Middleton Town - 23086559 - 3 farm water Services - 158 7500

vierbicher
planners | engineers | advisors



REEDSBURG - MADISON - PRAIRIE DU CHIEN
999 Fourier Drive, Suite 201 Madison, Wisconsin 53717
Phone: (608) 826-0532 Fax: (608) 826-0530

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