

STORMWATER UPDATE

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EIT / EMT Training Upcoming Dates

KSU Salina CIT Program

<http://citksu.com>

June 15-16

Kansas Contractors Association

<http://www.kansascontractors.org/>

No classes scheduled

WPCMs are required to have completed both the EIT and the EMT courses within the 12 months prior to beginning work on a project or being designated as WPCM for a project.

All completed inspection reports must be submitted to the responsible Area Engineer and the contractor's WPCM within 24 hours of each inspection.

The Area Engineer must sign within 3 calendar days and submit to stormwaterinspection@ksdot.org

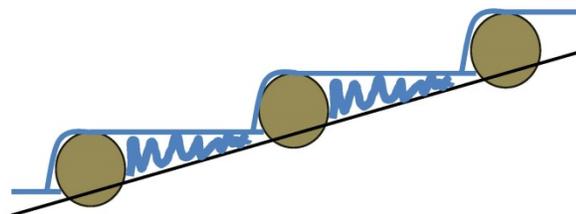
Failure to complete and submit inspection reports on time **will** result in penalties

Ditch Check 101

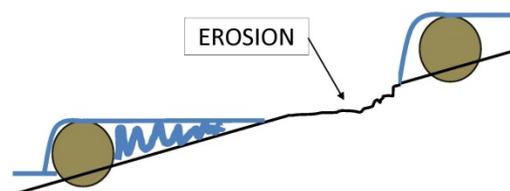
Proper construction and protection of roadside ditches is a key component to managing erosion on our projects. One approach that is often used for erosion and sediment control is the installation of ditch checks. Ditch checks can be constructed from a variety of materials such as biodegradable logs, silt fence or rock. Regardless of the material chosen they all function in a similar manner.

Ditch checks can provide effective sediment control during construction. Checks function as sediment traps when they pond water, allowing suspended particles to deposit upstream of the check where they can later be cleaned out. Materials such as many biodegradable logs and rock ditch checks also provide for some filtration and dewatering of the impounded water. Rock ditch checks also have an advantage in that they can be constructed to any size. This allows for significant storage volume and the ability to resist high flow rates. Materials which do not provide filtration, such as most common types of silt fence, require that the impounded water evaporate or infiltrate into the ground. This can be problematic, especially when multiple rainfall events occur in close succession.

Ditch checks are also commonly used for erosion control. Ditch checks theoretically reduce erosion by slowing down the water in the channel. Lower velocities reduce the available energy and the erosive potential of the flow. This velocity reduction is achieved when water ponded behind the check discharges into the pond created by the downstream check. As illustrated in the first sketch, the spacing of the checks is key to creating this scenario. Checks which do not discharge into a downstream pond do not effectively reduce the flow velocity and have little effect on observed erosion.



**DITCH CHECKS PROPERLY
SPACED FOR EROSION
CONTROL**



DITCH CHECKS TOO FAR APART

Ditch Check 101 (continued)

Even when ditch checks are properly spaced we can see failures due to undercutting of the check material. Water flowing through small channels under the check is often at a higher velocity than would normally be observed in the unobstructed channel. This can cause rapid erosion under the check and even limit the ability of the check to create the ponding necessary for upstream erosion control. We see this type of failure during our “classroom” demonstrations as well as in the field on our projects.

The ponded water necessary for erosion control can also create problems if the checks do not allow for filtration or dewatering of the area. In most of our ditches the objective is to establish vegetation which can be difficult if drainage is not maintained.

Using ditch checks as sediment control can be an effective strategy to minimize the discharge of eroded material, especially during active construction phases when stabilization is not feasible. Once the grading work is completed, the best strategy as always is to immediately stabilize with the appropriate erosion control BMPs. Temporary seeding and mulching in combination with ditch checks can in some cases be an adequate BMP choice for us, but we need to be aware of the limitations and the importance of correct check spacing and installation. These limitations of ditch checks as erosion control and the frustrations of repeated maintenance and repair often lead us to choose class 2 erosion control blanket as a preferred alternative.



Specs and Standards

We are currently in the process of reviewing and updating the standard drawings related to erosion and sediment control. In particular there will be changes made to the standards for ditch checks and for inlet protection in an effort to improve our standard practices.

While we are working on those updates, another change will be made to combine the mulching (temporary) and mulching (permanent) pay items into a single mulching item. This change has been requested by many of our contractors and field staff as a simplification of the mulching standards.



Annual Report

KDOT's 2015 Annual Report on Stormwater Compliance was published on March 30, 2016. The report details actions taken during the calendar year to improve statewide compliance with the KDHE general permit and the Consent Decree. The report was submitted to the EPA as required by the Consent Decree and is currently available on KDOT's Stormwater website (<http://www.ksdot.org/burconsmain/Connections/swppp.asp>).



Stormwater Update Online

This issue and all past issues of this quarterly bulletin are available online at KDOT's Stormwater website:

<http://www.ksdot.org/burconsmain/Connections/swppp.asp>

Contact Jason Van Nice (jasonv@ksdot.org) for questions, comments or suggestions for future content.