

## **Design Scene Part 2 – Plan Conventions**

Chapter 13 Erosion Control and Turf Establishment

7/29/2021

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## Chapter 13 Erosion Control and Turf Establishment

### Rolled Erosion Prevention Products (REPP)

MnDOT projects are now using a new standard specification 3885 for Rolled Erosion Prevention Products (REPP). This new specification is published in the 2020 Standard Specifications Book.

The REPP specification revisions updates categories to better align with usage patterns and updates product criteria and testing requirements. The new specification also eliminates plastic from any temporary products to prevent entangling wildlife and mowing equipment and reduce plastic and microplastic pollution. Plastics are still allowed for use in permanent products such as Turf Reinforcement Mats and Flexible Geogrid Mats. The revisions were made with input from manufacturers, vendors, contractors, interagency partners, and MnDOT staff. The result is an optimization of effectiveness, practicality, and environmental concerns. During this product category transition the Office of Environmental Stewardship is ready to assist in answering questions and reviews of design plans.

The following links to the Rolled Erosion Prevention Products webpage with more information including a REPP Decision Matrix and Comparison Table (2018 to 2020) <http://www.dot.state.mn.us/environment/erosion/rolled-erosion-prevention-products.html>

### Common Categories of REPP

The two most common categories of REPP will continue as follows:

- Category 20, a 2-sided straw blanket, replaces Category 3 (straw) for use on 3:1 and flatter slopes and in low gradient ditches.
- Category 25, a 2-sided wood fiber blanket, replaces Category 3 (wood fiber) for use in most ditches, steeper slopes, and over poor clay, silt and sandy soil areas where longer service life is necessary to provide erosion prevention until native perennial plants fully establish.

Also, a reminder that, when using Turf Reinforcement Mat (TRM), the seeding rate is doubled with half of the seed installed under the TRM and half placed on the surface typically as injected compost or hydroseed. Anchoring of TRMs is a critical part of the design and installation. Make sure to consult with the manufacturer's recommendations for anchoring methods and in challenging conditions where there are unconsolidated soils and/or wet soil conditions, make sure the anchor spacing and depth are suitable for the site conditions. Consult with MnDOT Office of Environmental Stewardship with any questions regarding TRM anchoring.

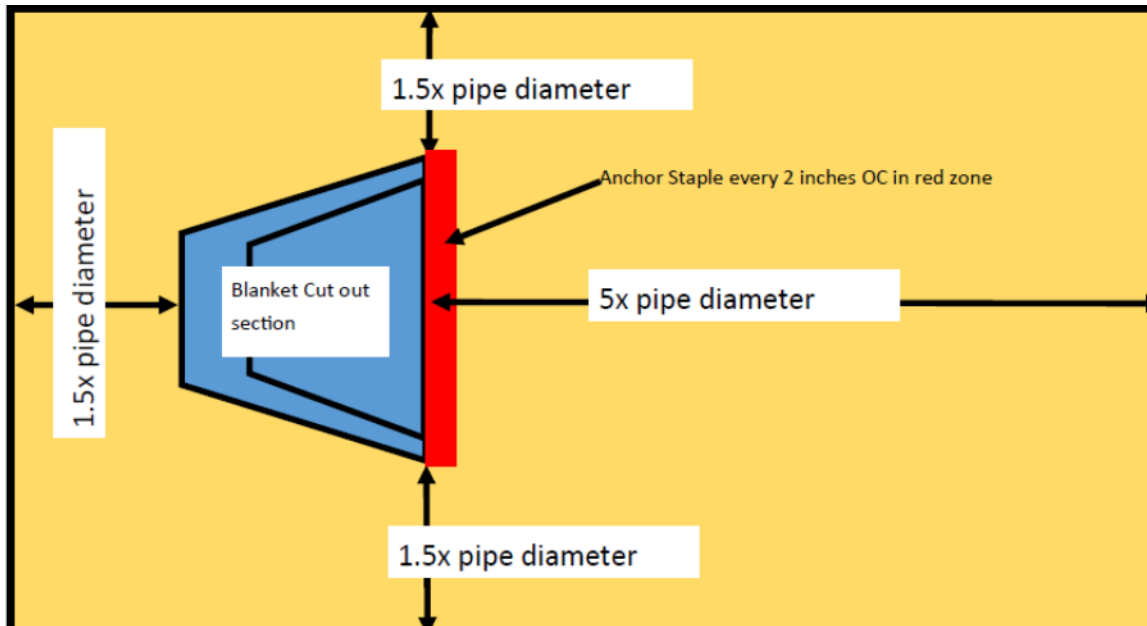
### Redundant Perimeter Control

One of the most frequent problems identified by MPCA inspectors is a failure to show two lines of perimeter control whenever we are working within 50' of a surface water (or within 100' of a special water). Please make sure your plans show redundant perimeter controls when work will take place within these buffer zones.

The two lines of perimeter control need to be at least 5' apart. It is recommended to use silt fence on the uphill side and sediment control log on the downhill side. There are a few exceptions to the rule, described in permit item 9.17. The exceptions aren't perfectly straightforward, so contact Environmental Services if you have any questions.

## Culvert End Energy Stabilization

All culvert outfall ends require some form of energy stabilization and is critically important on safety aprons. Not every culvert end needs riprap, and in some circumstances, the flared end is sufficient. See Standard Plans detail below for culvert end stabilization quantities. Culvert end stabilization is paid by separate pay items for rip rap (cubic yard), seeding (acre), geotextile and REPP (square yard). A general rule of thumb for estimating quantities for culvert end stabilization is to include 1.5x pipe diameter of material at the top and sides of the culvert and 5x the pipe diameter at the culvert end.



## Seed Mixes

MnDOT has set a sustainability goal of using native seed mixes for 75% of permanent seeding.

Native vegetation is better adapted to local conditions and better at providing the critical roadside functions of safety, soil stabilization, stormwater treatment, and weed prevention. It is also more resilient to increasing weather extremes and provides additional benefits such as attractive roadsides and pollinator habitat. A recent agreement between MnDOT and the US Fish and Wildlife Service further reinforces the need to use native seed mixes in construction plans.

Use native seed mixes on ditch bottoms, back slopes, and stormwater treatment areas. Specify non-native seed mixes in areas that will be mowed multiple times per year, such as inslopes, medians, and boulevards.

Include mowing and weed spraying pay items to give construction staff the tools to improve the establishment of native seed mixes. Refer to the district Vegetation Establishment Recommendations for details. These can be found on the MnDOT Erosion Control - Vegetation web page.

## Erosion Control Supervisor

The MnDOT specification 2573 includes a construction requirement for an Erosion Control Supervisor who is responsible for day to day compliance with the NPDES Construction Stormwater Permit. Erosion Control Supervisor will be required on all MNDOT Projects when there are vegetation or soil disturbing activities and when working in public waters. Method of payment for the erosion control supervisor is highlighted in the following table:

Description of Project	Method of Payment
Less than one (1) acre land disturbance with minimal to moderate risk of impacts to resource waters. Duration of project 1 construction season. (examples include projects more than 100 feet from public waters, culvert extensions, ADA, Signalization	Incidental
One (1) acre or more of land disturbance with minimal to moderate risk of impacts to resource waters. Duration of project 1 construction season. (Examples include landscape projects, mill and overlay projects, turn lanes, etc.)	Incidental
Less than one (1) acre land disturbance with high risk of Impacts to resource waters. Duration of project 1 to two construction seasons (Examples include culvert replacements in streams, work on river/stream banks and shorelines, bridge work over public waters, etc.)	Lump Sum
One (1) acre or more of land disturbance with high risk of impacts to resource waters. Duration of project 1 or more construction seasons. (Examples include culvert replacements in streams, work on river/stream banks and shorelines, grading/surfacing, etc.)	Lump Sum
One (1) acre or more of land disturbance with low risk of impact to resource waters. Duration of project 1 to two construction seasons. (Examples include grading/surfacing in rural areas and no public water crossings)	Incidental/lump sum (Designers Discretion)

## Environmental Management Plan

The Environmental Management Plan or “green sheets” tracks environmental commitments. The plan location will be directly before the SWPPP narrative.

See memo below for details:

## Internal Memo

**Date:** 1/4/2021

**To:** ADE’s Program Delivery

**From:** Mark Gieseke, Assistant Commissioner, Engineering Services Division

Jay Hietpas, Assistant Commissioner, Operations Division

## RE: Tracking Environmental Commitments

Meeting the environmental commitments that we make during project development greatly affects our credibility and trustworthiness. In the past, some of these commitments have slipped. Thanks to you and the Office of Environmental Stewardship (OES), over the past eight months, we have taken steps to fix this problem.

Each of you has committed to putting additional emphasis on tracking environmental commitments. The goal is to track environmental commitment on all MnDOT-led projects by December 31, 2025 (equivalent to an increase of about 20% each calendar year), using an environmental management plan. Furthermore, each of you has identified the format you will use (e.g., greensheets). Previously, it was agreed that commitments “constructed by the contractor”, including measures to avoid impacts, will be listed in construction plans so they can be enforceable.

The Office of Construction and Innovative Contracting (OCIC), OES and some of your staff are working with Tim Swanson on how/where to locate commitments within construction plans for consistency and to decrease the chances of commitments being missed. In addition, OES has created an on-going “user group”, with representation from each district to share knowledge and continue to refine the formats being used.

Maintaining credibility is not just an essential goal in itself, but also allows for much better relationships with our customers, regulators, etc. We are asking District Engineers and Program Delivery Assistant District Engineers to continue to ensure their project managers meet this goal. Representatives from Operations, OCIC and OES will make sure this message is shared with PCMG and OMG. This memo will also be listed in the Design Scene.

If you have any questions or need help, please contact Kevin Kosobud and/or Ken Graeve.