SUDAS Erosion and Sediment Control Design Manual

ISWEP requested the following additions or revisions to the SUDAS Design Standards.

1. **Update 7E-3 – Filter Berms:** Get rid of compost technology and add slash(tree) and soil berms.

   Eliminate Section Completely. Add slash (mulch) to Section 7E-8 and change name to Diversion Berms. Berms." Please review and comment on the markup.

2. **Update 7E-7 – Updates to Check Dams in Channels** – MNDOT no longer uses ditch checks. Use a RECP overlap method

   - Rock check dams are still a very viable, effective and widely used tool.
   - Minnesota Pollution Control Agency still uses check dams as of 5/2019 for erosion control in channels. They have multiple varieties (like SUDAS). They did add in "Erosion Control Blanket Pillow Checks"

     MNDOT Standard Plate 5-297-405 (updated January 2020 (Sheet 3 ditch checks - includes rock ditch checks).
   - Section has been revised to include pillow checks. Please review markup and provide comments.

3. **Update 7E-8 – Diversions:** There are earthen and newer materials used

   Added slash (mulch) and gave overall update. Change name to Diversion Berms. With these revisions, recommend elimination of Section 7E-3.

4. **Update 7E-12 & 7E-13 – Sediment Basins and Traps:** Add in open weave filter fabric or floatation curtains used to enhance filtration and clarification – now used across the U.S. Also can create a sediment trap on the street using RECP and sandbags for weight and check dams.

   - We are not seeing situations where flotation curtains are being used within sediment basins/traps. Flotation curtains are typically used in open waters to contain sediment plumes from work near/on the shore or bank. Considering how shallow most sediment traps/basins can be, the flotation curtain would extend nearly to the bottom of the basin/trap. Floatation silt curtains are included within SUDAS as a standard practice (7E-29)

     Perhaps reference was intended to be to a flotation skimmer. If so, this practice is already included within this section but could be emphasized within the specifications if that was the intent – will need to be cautions as these devices are proprietary.
   - We are not able to find information on the use of filter fabric for sediment basins. Assuming this is intended to be wrapped around the riser section to filter runoff. Could not be used in conjunction with skimmer and would need to be careful to select product that would not plug easily.
   - On-street sediment trap using RECP and sandbags: We currently have an inlet protection section (7E-20) which includes similar practices (e.g. filter sock/wattles at intakes). Are these

the types of devices you are requesting or something else. Haven't seen this used so need some clarification.

- No changes to the current Sediment Basin section are proposed at this time
- Minor, unrelated changes were made to the Sediment Trap section.

Additional committee input on desired changes is requested.

5. **Update 7E-14 – Silt Fence:** Clarify J-hook spacing, sometimes it says 600 ft and in other places 200 ft.

   The only location found that references 600 feet is within the specifications. There is an allowance made to increase the max length of an individual run to 600 feet if the adjacent slope is 5% or less. Installations with slopes this flat would not typically see significant ponding behind the silt fence so there is less risk of failure. (Minnesota PCA allows 600' runs).

   This same note was added to this section of the design manual for consistency.

6. **Update 7E-15 – Stabilized Construction Entrances:** Change entrances to exit, add some of the reusable pads.

   Changed name to "Exit". Added information on shaker rack systems.

7. **Update 7E-17 – Mulching:** It has language on the 14/21 day soil protection requirements that were changed in 2018 to 0/14

   Correction was made as requested.

8. **Update 7E-21 – Flow Transition Mats:** Newer technologies, flexible and concrete mats

   Which technologies are being used besides the Scourstop type transition mat?

   - Flexamat is a good product. We are finding many potential uses for it but it's primary drawback has been cost. This may be a good product to include within SUDAS; however, it doesn't have any real competition and its use is still somewhat specialized.
   - The Flexamat website and their support staff provide good design guidance for various types of installations; however, with these newer types of products, we have found that the manufacturer's design guidance changes frequently.
   - Also, it would be beyond the scope of SUDAS to cover all of the applications Flexamat is marketed for (bridge abutments, channels, drivable surfaces, landfills, levee protection, outlet protection (5 different options), pipeline protection, stream and riverbank armoring, shoreline armoring, slope protection, spillways).

   Requesting committee input on the application of Flexamat prior to including in SUDAS.

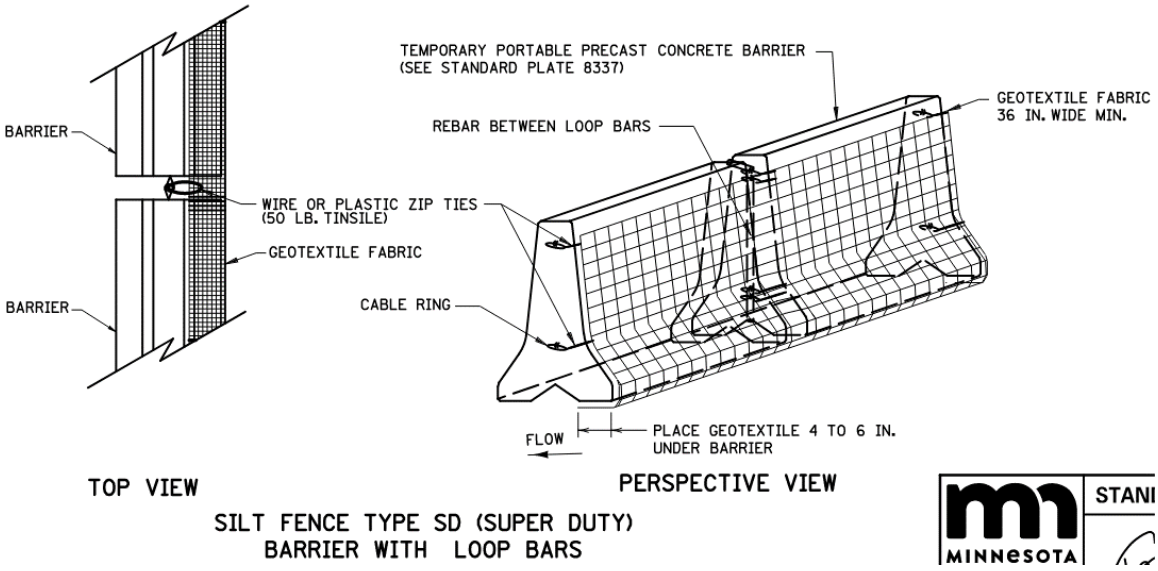
   We do not recommend inclusion of articulated concrete blocks as their design is too specialized and requires coordination with the manufacturers.

9. **Add Weighted Tarps:**

The application of weighted tarps for construction site erosion and sediment control seems to be limited. We have not found much information regarding stockpile cover products intended for construction site erosion control. Most of the products available appear to be custom made covers intended for agricultural stockpiles, compost facilities, aggregate producers, etc. where a recurring stockpile would have a somewhat consistent geometry allowing the use of a reusable cover. Few agencies have design information regarding the use of weighted tarps. Considering this, we don't recommend developing a stand-alone section of SUDAS for weighted tarps, rather some guidance on weighted tarps was added within the new Stockpile Management section.

10. **Fabric-Wrapped Jersey Barriers:**

This is not a commonly used practice and seems to be a carry-over from times prior to machine sliced silt fence when failures of trenched silt fence with wood stakes were frequent. This practice may still have use in special applications but doesn't seem to have widespread application on the typical construction site. Traffic barriers are costly to rent and transport and this installation is cumbersome to set up. Unless users are seeing the need for these types of installations on a regular basis, we do not recommend their inclusion in the SUDAS standards or specifications.



11. **Stockpile Protection**

A stockpile protection section was developed for committee review.

12. **Good Housekeeping Measures:** Add practices beside concrete washout such as wet saw and dry saw concrete cutting, paint, mortar and other washout, spec plant BMPs, etc. as required in GP#2.

Do these practices belong in the SUDAS design manual? Designers have no control over these activities and contractors are not bound to follow anything within the Design Manual. These practices could be included in the construction specifications, but contractors are already bound

to follow the requirements of GP#2, so repeating them within the specifications seems to be redundant.

Committee should discuss this topic prior to including within SUDAS.

13. **Preservation of green space and trees:** Use of snow fence or silt fence to delineate
14. **Buffer:** Add 50’ buffer near waterways and add redundant BMPs when working near water-sediment control and erosion control

    A new section for greenspace preservation and buffer areas was developed for committee review.