

## DRAINAGE AT OVERHEADS

Railroad Companies have encountered maintenance problems at some of our overhead structures. In some cases, poor control of roadway drainage has resulted in erosion of fill slopes to the extent that ditches parallel to the tracks are blocked or debris is deposited on their tracks. At other locations, the roadway embankment has obstructed natural drainage so that a large volume of water moving parallel to the tracks is funnelled under the structure. In some instances this has eroded the ballast and left lengths of their track unsupported. Where embankments are constructed of fine sandy material, wind has caused sand drift to accumulate on and adjacent to tracks.

To alleviate these problems we have agreed to give special attention to drainage and erosion control at all overhead structures. Specific measures that should be considered are:

1. Provide a positive means to prevent drainage from bridge decks and approaches from running down earth slopes adjacent to railroad tracks. Open type railings should not be used unless a curb or dike is provided to prevent water flowing off the bridge deck onto the railroad tracks. The road plans should call for AC dikes abutting the ends of the railing or curb.
2. Place 8" perforated pipe and continuous permeable backfill material behind abutment as shown on page 6-21, *Bridge Design Details* manual. Detail 3-5, 8" PSP and Permeable Material, Standard Plan B0-3, shall be used when known water bearing material is present behind the abutment. Detail 3-1, Weep Hole and Previous Backfill, Standard Plan B0-3, shall be used when other drainage systems are not used. The pipe down drain should be carried down the slope approximately parallel to the track so that the discharge will not cause erosion near the track.
3. Keep the toe of approach fill far enough back of the track to permit drainage to flow parallel to the track. If large flows are anticipated consideration should be given to using concrete lined ditches.
4. Pave the ends of fill slopes in desert areas where fills are constructed of fine sandy material. The slope paving should extend back around the side slopes to the end of the wingwalls.
5. On projects where undercrossings or overcrossings are being slope paved for aesthetic reasons, slope pave directly under overhead structures. Details at the toe should be such that erosion will not occur at that location.



Philip C Warriner



Guy D. Mancanti

JGS:jgf

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