

4100601 Precast Concrete Box Culvert.
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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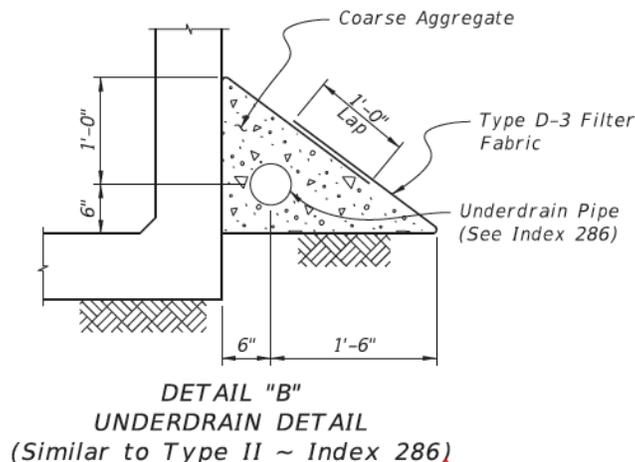
Comments: (11-12-11) Text: The problem statement on the Origination form states: Weep holes in box culverts are not always required by design; however the FDOT Specifications currently requires weep hole in all box culverts. This should probably be corrected since current specifications only require weep holes in culverts with a wall height in excess of 5'. The origination form does not indicate whether or not there is a corresponding change to the Plans Preparation Manual associated with this change. Since the proposed specification change will now require weep holes for culverts to be shown in the Plans, it is suggested to confirm that this requirement is also included in the PPM. It is suggested that the proposed last sentence of paragraph 1 of 410-6.1 not be implemented since the proposed changes to 400-6 will already require construction of the weep holes only when shown in the plans. Further, the plans (or a Standard Index) should provide all additional prescriptive elements (details) which are outlined in the current & proposed specifications, including but not limited to: • Symmetrically located weep holes. • Weep holes that are 3" in diameter & not more than 10' apart. • Weep holes that are not placed under areas of base or pavement. • Outlet ends of weep holes placed just above the ground line in front of abutments & retaining walls. • Weep holes on culverts that are placed approximately 6" above the interior floor slab. • Exterior openings of weep holes covered with galvanized mesh with a minimum of 2cf of clean, broken stone or gravel wrapped in Type D 3 filter fabric. Thus, the changes to 410-6.1 and the additional information proposed as 410-10.6 should not be needed.

Response:

The Problem Statement in the Origination Form is changed as follows:

Weep holes in box culverts are not always required by design; however the FDOT Specifications currently requires weep hole in all box culverts over 5 feet in height.

The comments regarding changes to the PPM and Design Standards were forwarded to the State Drainage Office for possible inclusion in the 2013 PPM and Design Standards. The new detail that will be shown on sheet 5 of Index 289 of the 2012 Design Standards is shown below.



12-2-11 From the State Specifications Office (HRP): Based on conversations with Andre, the proposed language describing weep holes in box culverts will not be implemented. There is no apparent need to provide weep holes in box culverts and the current requirements in Article 400-6 cause confusion in the field resulting in questions. If for some reason, a designer feels weep holes are needed then the details would be shown in the plans. A continuous underdrain will be required for box culverts to aid in drainage as shown above.

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Comments: (11-4-11) Comments from Ed Petersen of D5 Construction:<<>>With regards to the above subject, I have the following comments; Specification 4100601 and subsequently spec 4000200 410-10.6 Underdrain and Weep Holes: Provide a continuous underdrain in accordance with Design Standard Index No. 289. When weep holes are provided, cover the exterior opening of all weep holes with galvanized wire mesh and a minimum of 2 cubic feet of clean broken stone or gravel wrapped in Type D 3 filter fabric, to allow free drainage but prevent the fill from washing through. Comment: In lieu of the filter fabric being placed around the 2 cubic feet of stone or gravel, suggest placing a section of filter fabric directly over the wire mesh with a minimum of a 6 inch over lap. This would add addition assurance so that the fill would not filter between the wire mesh and filter fabric / stone as this method may not make a sufficient seal due to the angular aggregate.

Response:

Bridge Maintenance has advised previously not to do this, since filter fabric close to the surface promotes lichen and other vegetation growth on the fabric leading to clogging and potential damage upon cleaning.
