



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

MEMORANDUM TO: Project Engineers
Project Design Engineers

FROM: G. R. Perfetti, P.E.
State Bridge Design Engineer

DATE: July 12, 2004

SUBJECT: BRIDGE DRAINAGE SYSTEM

Figure 12-20 has been revised and is attached for your use. The bridge drainage system has been changed so that there is no longer a need to use tee joints. This change has been made due to the high cost of these joints.

In order to increase flow rate and reduce congestion at the connections, the PVC pipe directly below the bridge deck will now have a 45-degree bend as shown in Fig.12-20.

Pipe hangers are to be placed near pipe connections in accordance with "Detail A" to ensure the stability of the drainage system.

This policy is effective with the September 2004 letting. The Design Manual will be revised at a later date.

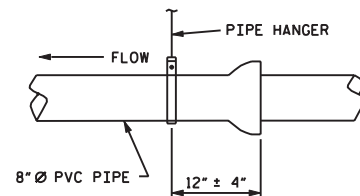
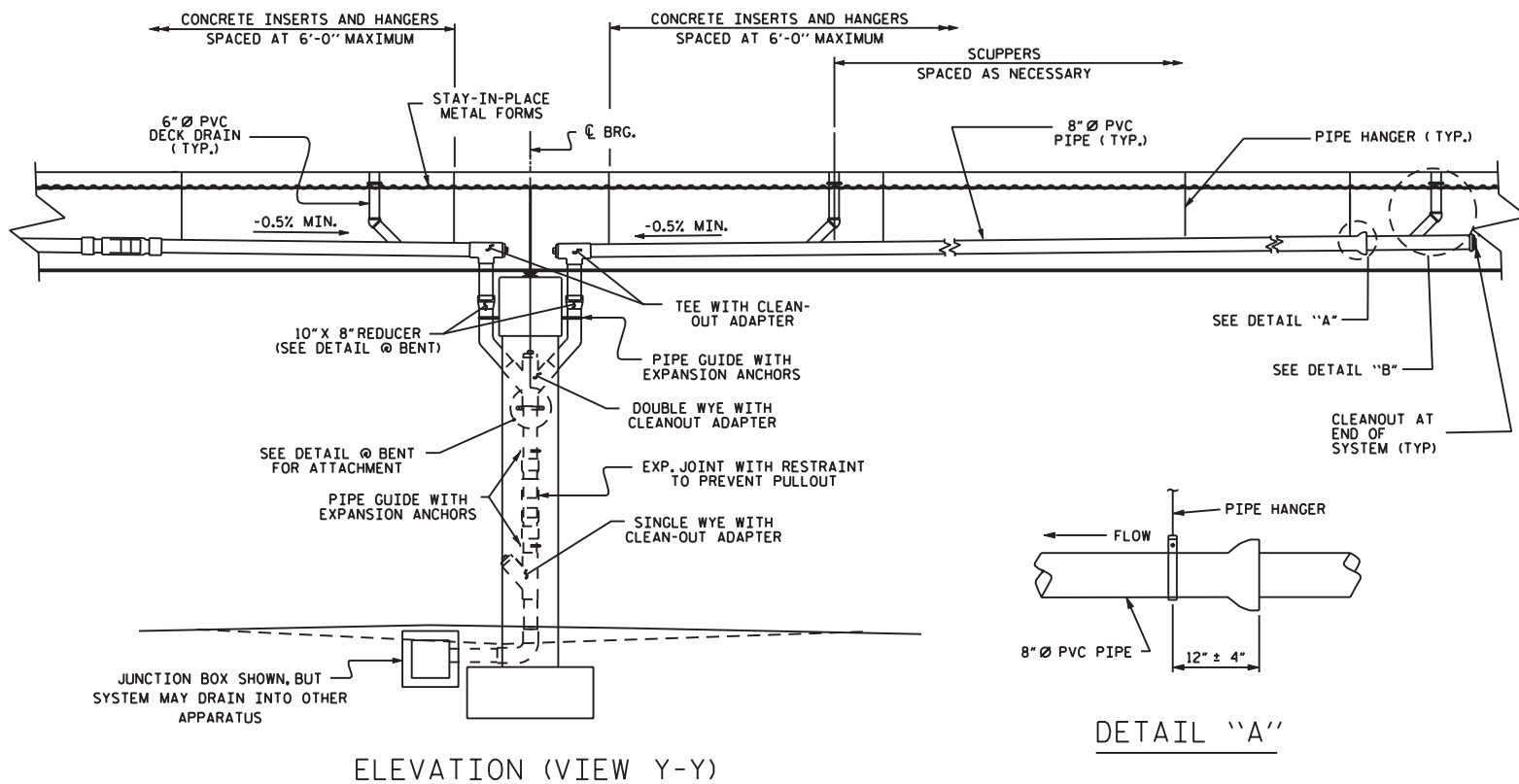
GRP/SD

Attachments

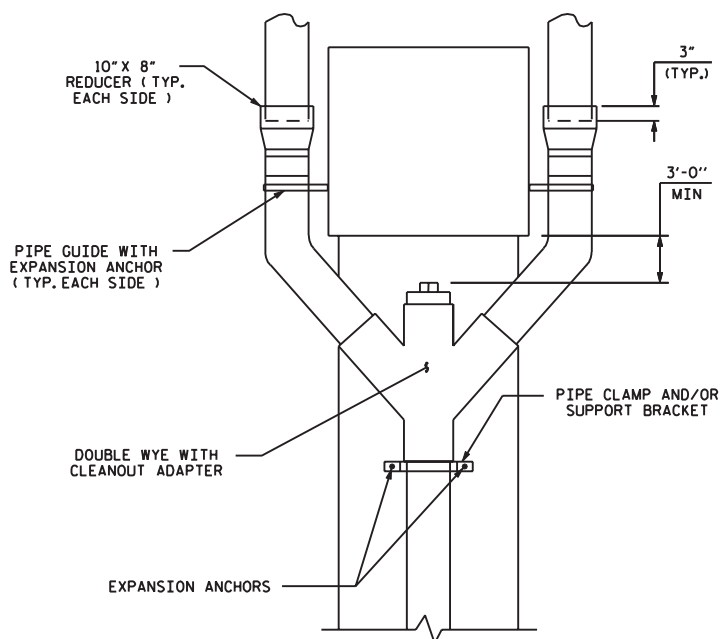
[Fig 12-20 \(English\)](#)

[Fig 12-20 \(Metric\)](#)

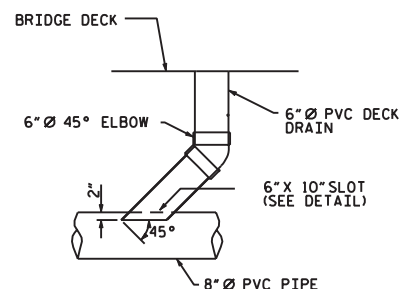
Cc: T. Drda, FHWA, with attachments
R. V. Keith, P.E., with attachments
R. A. Raynor, P.E., with attachments
R. Hancock, P.E., with attachments
J. Emerson, P.E., with attachments



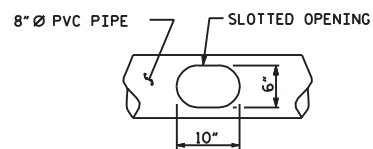
DETAIL "A"



DETAIL @ BENT



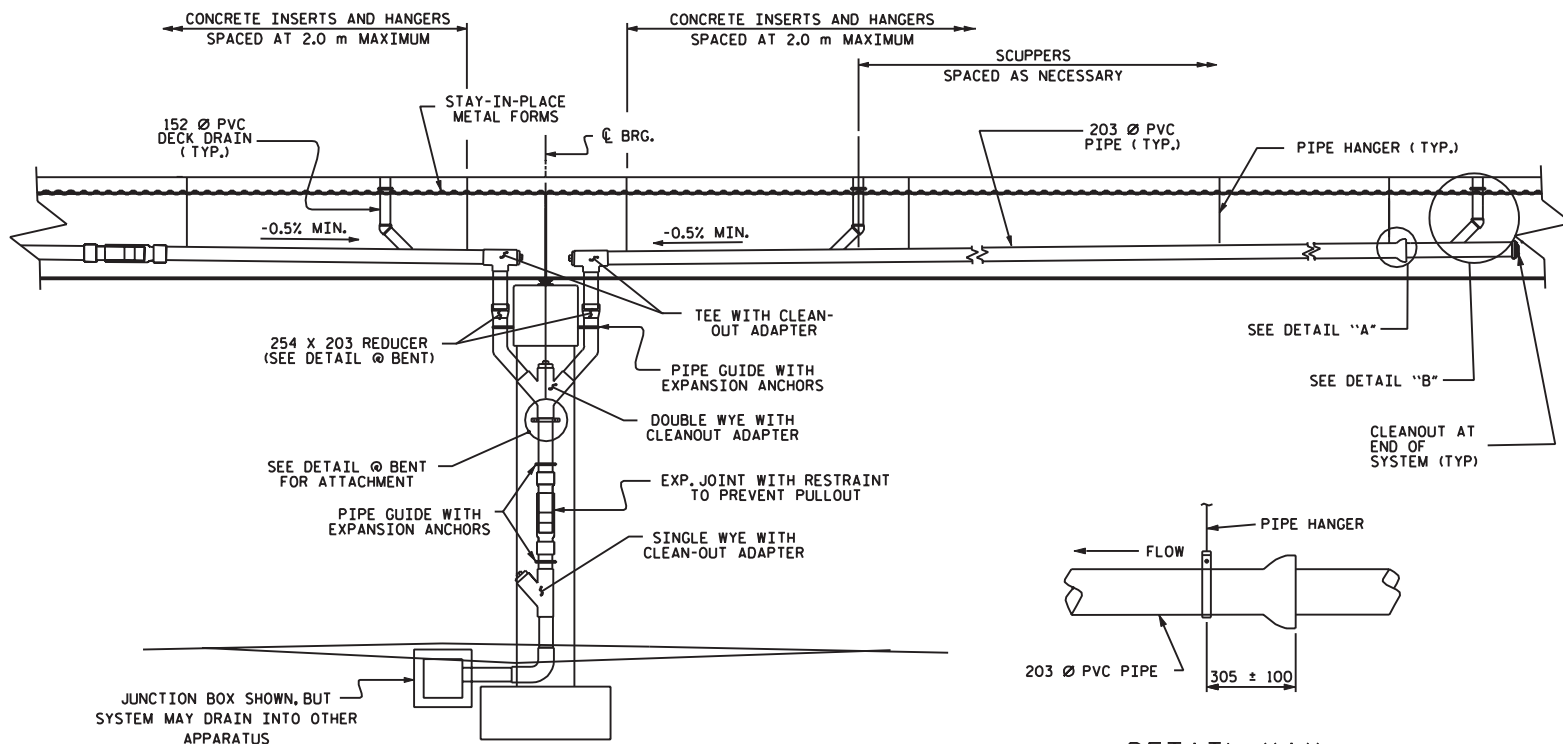
DETAIL "B"



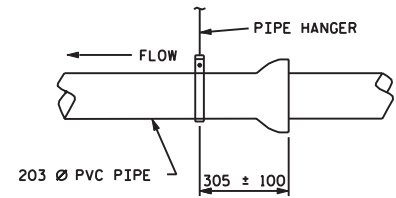
SLOT DETAIL

STRUCTURE DRAINAGE SYSTEM DETAILS

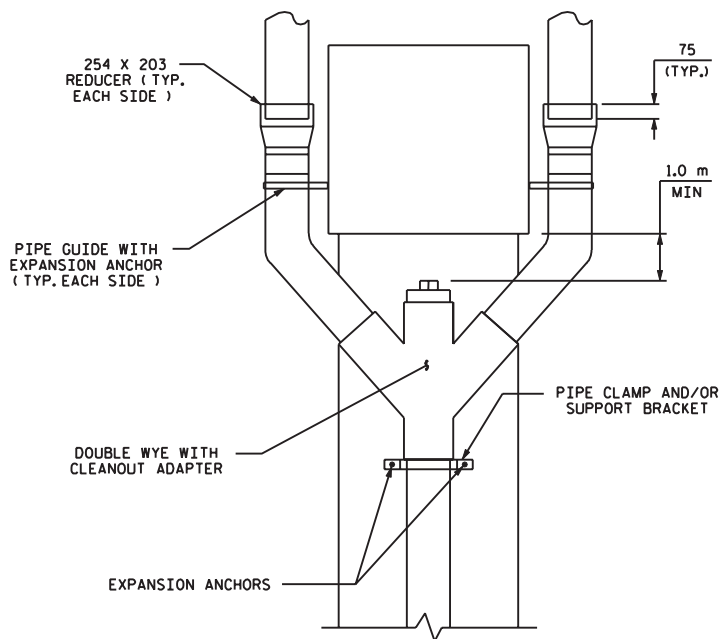
FIGURE 12 - 20



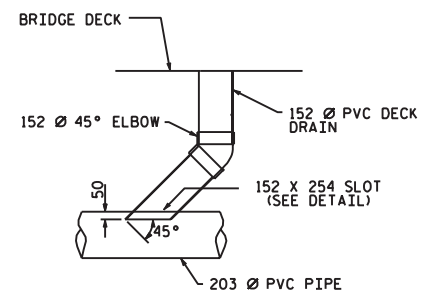
ELEVATION (VIEW Y-Y)



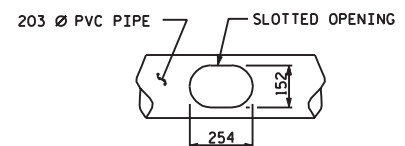
DETAIL "A"



DETAIL @ BENT



DETAIL "B"



SLOT DETAIL

STRUCTURE DRAINAGE SYSTEM DETAILS

FIGURE 12 - 20