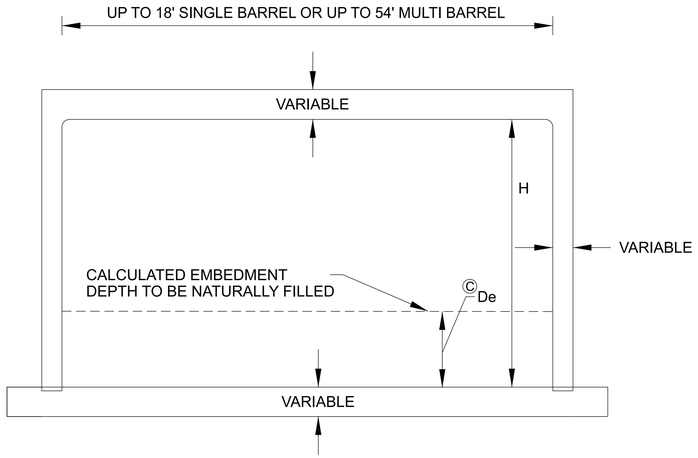
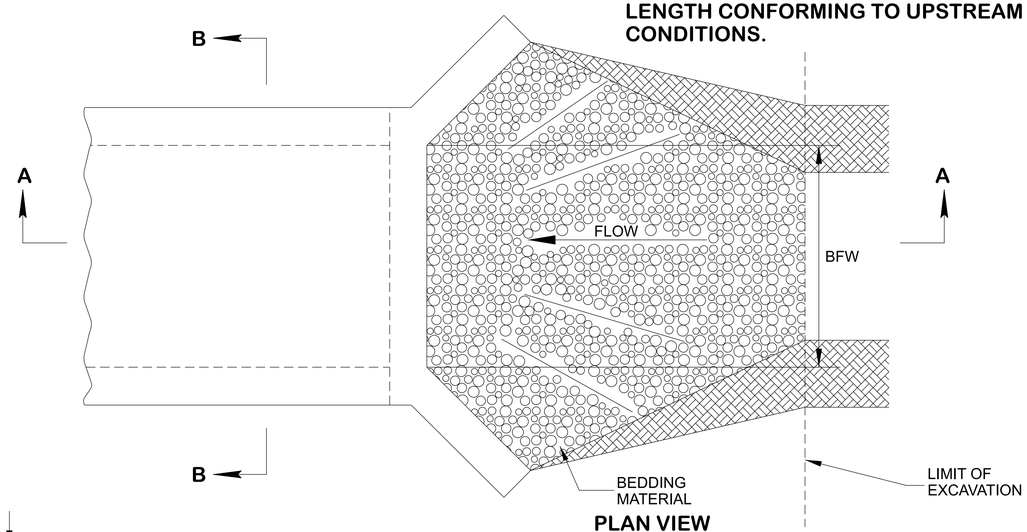
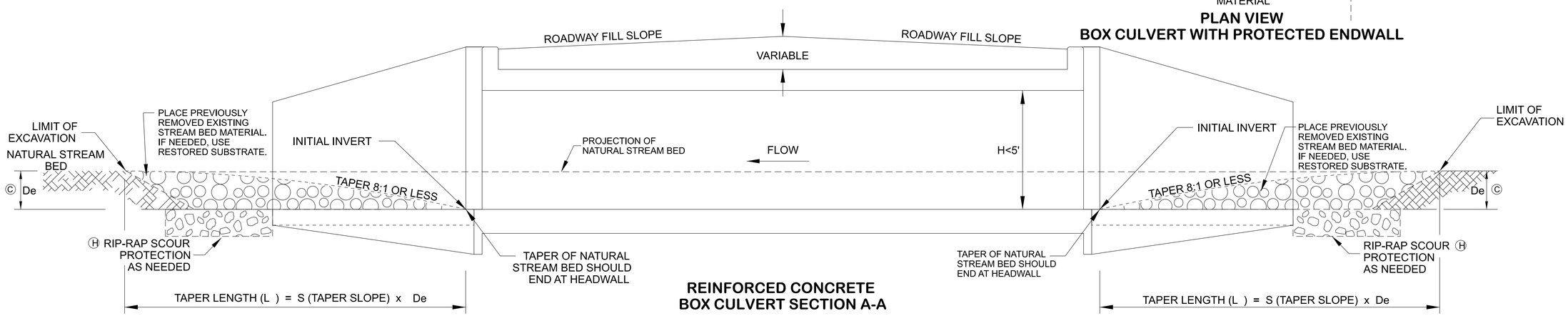


REINFORCED CONCRETE BOX CULVERT SECTION B-B

NOTE: BANKFULL WIDTH SHALL BE CARRIED THROUGH THE TRANSITION LENGTH CONFORMING TO UPSTREAM CONDITIONS.



PLAN VIEW
BOX CULVERT WITH PROTECTED ENDWALL



REINFORCED CONCRETE BOX CULVERT SECTION A-A

GENERAL NOTES

Ⓐ THIS DRAWING MAY BE USED FOR RECESSED BOX STRUCTURES WITH HEIGHTS 5' OR LESS.

Ⓑ SEE DRAINAGE MANUAL CHAPTER 12 FOR DETAILS REGARDING INSTALLATION.

Ⓒ TO ACHIEVE CORRECT RECESSMENT DEPTH, IT IS NECESSARY THAT CONTRACTOR SHALL INSTALL CULVERTS WITH INVERTS RECESSED TO A DEPTH "De" BELOW NATURAL STREAM BOTTOM. De = 2 x D50 OF THE NATURAL STREAM SUBSTRATE MATERIAL. THIS METHOD SHOULD ONLY APPLY TO BOX CULVERTS WITH A HEIGHT (H) OF LESS THAN 5'

Ⓓ THE DESIGNER SHALL USE HY-8, OR EQUIVALENT TDOT APPROVED SOFTWARE, AND FOLLOW THE PROCEDURE DETAILED IN TDOT DRAINAGE MANUAL CHAPTER 12 TO DETERMINE THE RECESSMENT DEPTH (De).

Ⓔ THE MATERIAL AND PLACEMENT OF NATURAL STREAM BED MATERIAL OR CHANNEL SUBSTRATE AND ALL INCIDENTALS INCLUDING THE PRACTICE OF LIMITING PERMEABILITY WILL BE PAID UNDER THE FOLLOWING ITEM NUMBERS,

203-20.01,	CHANNEL SUBSTRATE,	C.Y.
203-20.02,	NATURAL STREAMBED MATERIAL (REMOVAL-STORAGE-PLACEMENT),	C.Y.

Ⓕ DESIGNER SHOULD PROVIDE ADDITIONAL HYDRUALIC DATA ON CULVERT SECTIONS INCLUDING THE RECESSED OR EMBEDMENT DEPTH WITH THE PROPOSED INLET AND OUTLET INVERT ELEVATIONS, AOP DESIGN INFORMATION: BANK FULL WIDTH, AND VELOCITY. SEE DRAINAGE MANUAL SECTION 12.05 FOR DOCUMENTATION PROCEDURES.

Ⓖ IT IS DESIRED TO HAVE A 6" LAYER OF NATIVE STREAM BED MATERIAL. AT LOCATIONS WHERE USING NATIVE MATERIAL IS NOT POSSIBLE, REFER TO DRAINAGE MANUAL SECTION 12.04.

Ⓗ CROSSING SHOULD BE ANALYZED FOLLOWING SUBSTRATE RESTORATION GUIDANCE AS AN EMBEDDED STRUCTURE FOR SHEAR STRESS REQUIREMENTS. THE APPROPRIATE RIP-RAP CLASS FOR THE SHEAR STRESS SHOULD BE USED AT THE INLET AND OUTLET OF THE STRUCTURE FOR SCOUR PROTECTION.

MATERIAL SHOWN ARE ONLY A GRAPHICAL REPRESENTATION AND DO NOT DEPICT THE ACTUAL DEPTH OR QUANTITY OF MATERIALS TO APPROPRIATELY CONSTRUCT OR STABILIZE THE CHANNEL.

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

AOP DESIGN RECESSED BOX CULVERTS

04-16-2025 | D-AOP-2

NOT TO SCALE

$$$$SYTIME$$$$$$$
$$ $$DGNSPEC$$ $$