PIPE IN TRENCH

The bedding material for rigid pipe in soil shall be 3 in. of loose structure backfill (Class 1 or 2). Bedding is not required for flexible pipe in soil. Bedding material for rigid or flexible pipe in rock shall be 12 in. of loose structure backfill, Class 1.

CIRCULAR PIPE IN FILL

1'-6" (EACH SIDE)

ARCH OR ELLIPTICAL PIPE IN FILL

CONCRETE BOX CULVERT

Drop Inlets and Division Boxes

EXCAVATION AND BACKFILL FOR STRUCTURES

GENERAL NOTES

1. Excavation and backfill patterns different from those indicated on these sheets will be shown elsewhere on the plans.

2. Excavation for channel change or channel improvement will be either unclassified excavation or muck excavation and will be noted on the plans. Excavation from the channel flowline to the depth required for the new structure and incidental channel excavation will be paid for as structure excavation.

3. Structure footings which are located in rock shall be poured out to undisturbed rock without forming in conformance with subsection 601.09(b).

4. Structural plate culverts shall be constructed as shown on the plans.

5. Bc equals the inside diameter of a pipe and Be equals the outside diameter of a pipe. For thin walled pipes it is assumed that Bc = Be.

6. Approximate structure excavation and backfill quantities up to 1 ft. over the pipe will be shown on the plans, for information only.

COLORADO DEPARTMENT OF TRANSPORTATION

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Project Development Branch JBG

EXCAVATION AND BACKFILL FOR STRUCTURES

STANDARD PLAN NO.

M-206-1

Standard Sheet No. 1 of 2

Computer File Information

Creation Date: 07/31/19
Designer Initials: JBK
Detailer Initials: LT A
CAD Ver: MicroStation V7. Scale Not to Scale. Units: English
Issued by the Project Development Branch: July 31, 2019

Sheet Revisions

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LIMITS OF MEASUREMENT FOR STRUCTURE EXCAVATION

**Ba** = INSIDE DIAMETER OR RISE OF PIPE

**Be** = OUTSIDE DIAMETER OR RISE OF PIPE

\[ \frac{\alpha}{3} \times (B_a + 3') \]

\[ \frac{\alpha}{3} \times B_e \]

- FOR STRUCTURAL PLATE PIPE CULVERTS

\[ \frac{\alpha}{3} \times B_e + 8' \]

- FOR RIGID PIPE CULVERTS

\[ \frac{\alpha}{3} \times B_e + 3' \]

FOR FLEXIBLE PIPE CULVERTS

\[ \frac{\alpha}{3} \times B_e \]

**W** = OUTSIDE WIDTH OF STRUCTURE

\[ W + 3' \]

**W** = OUTSIDE WIDTH OF BOX

\[ W + 3' \]

**I** = LENGTH OF STRUCTURE PLUS PROFILE

**F.L. DITCH**

**FINISHED SURFACE OR GRADING PLANE**

**ORIGINAL GROUND**

**BOTTOM OF TRENCH**

**STRUCTURE BACKFILL, CLASS 1**

**FINISHED SURFACE OR GRADING PLANE**

**FINISHED SURFACE OR GRADING PLANE**

**FINISHED SURFACE OR GRADING PLANE**

ANY ADDITIONAL EXCAVATION BEHIND THE LIMITS SHOWN SHALL BE FILLED WITH CLASS I BACKFILL MATERIAL.

THE ADDITIONAL EXCAVATION AND BACKFILL WILL NOT BE MEASURED AND PAID FOR.