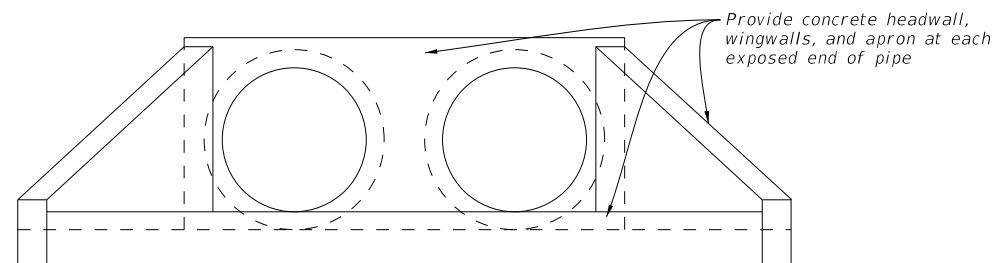


TRENCH AND BEDDING DIAGRAM



EXPOSED END OF PIPE PROTECTION

NOTE TO DESIGNER:
 Designer to specify type of pipe structural backfill and final backfill.
 Designer to specify limitations, including maximum fill depth, on use of approved products.
 Designer to include trench excavation protection as required.
 Designer to confirm filter fabric shown in "TRENCH AND BEDDING DIAGRAM" is required, or remove as necessary.

P.E. SEAL
 REQUIRED
PRELIMINARY
 SUBJECT TO REVISION

This document is released for informational purposes under the authority of
 XXX XXX
 P.E. XXXXX on XX/XX/XX.
 It is not to be used for regulatory approval, permit, bidding, or construction purposes.

Maximum Fill Depth	
Pipe Diameter (Inches)	Depth (Feet)
12	
18	
24	
30	
36	
42	
48	

Pipe Deduct From Fill	
Pipe Diameter (Inches)	Volume (CF/LF) (10)
12	0.95
18	2.09
24	3.65
30	5.76
36	8.21
42	10.80
48	13.90

Note: Maximum fill depth measured from top of pipe to top of finished grade or pavement.

- 1 Excavate to create vertical trench wall a minimum height extending 1' above the top of the pipe. The trench walls must be firm, stable material. If the trench walls slough or are unstable, widen or restore trench as directed.
- 2 When placing pipe in an embankment, limit trench depth to 2' above pipe to ensure uniformity in compaction above pipe, unless otherwise allowed. See Item 402, "Trench Excavation Protection."
- 3 Minimum bedding thickness is 4" on a stable foundation. If foundation contains large rocks, increase minimum bedding thickness to 6". Do not compact the bedding directly under the pipe as shown.
- 4 Ensure backfill completely fills the void between the bedding and the pipe in the haunch zone. Compact backfill into haunch and between corrugations.
- 5 Backfill above structural backfill may be other embankment as shown on the plans.
- 6 See specifications for minimum cover required when subject to heavy earth-moving equipment.
- 7 Provide a minimum total cover depth to accommodate pavement structure depth and 1'-0" minimum pipe structural backfill. Provide a minimum total depth of fill not less than 18" for pipe diameters up to 36". Provide a minimum total depth of fill not less than 24" for pipe diameters over 36".
- 8 See specifications for minimum trench width.
- 9 Perform mandrel testing in the presence of the Engineer prior to placing roadway surface.
- 10 Quantity to deduct for structural backfill measurement.

GENERAL NOTES:

When flowable fill is used for pipe structural backfill, submit a plan to restrain pipe or a plan to install fill in lifts to maintain pipe line and grade.
 Pipe installation in accordance with this drawing is for dry/dewatered installation.
 Payment for excavation, shaping, bedding, structural backfill, final backfill, and concrete end treatments will be in accordance with applicable bid items.
 See Thermoplastic Pipe Culverts and Drains Specification and DMS-4710 for pipe requirements not repeated here.
 Approval by the Engineer is required when performing mandrel testing sooner than 30 days after completion of final backfill.

		Bridge Division	
THERMOPLASTIC PIPE INSTALLATION			
(Not to be used as a standard)			
FILE: WD-TPI-22.dgn	DN:	CK:	DW: SMG
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