LEGEND

H = MAXIMUM ALLOWABLE HEIGHT OF COVER OVER THE TOP OF THE PIPE, EXCLUDING PAVEMENT THICKNESS.

FILL HEIGHTS ARE BASED ON AASHTO M304 POLYVINYL CHLORIDE (PVC) PIPE WITH OUTER, RIBBED WALL AND SMOOTH INNER WALL, AND ON AASHTO T180 MINIMUM RELATIVE COMPACTION OF 95% OR 90%.

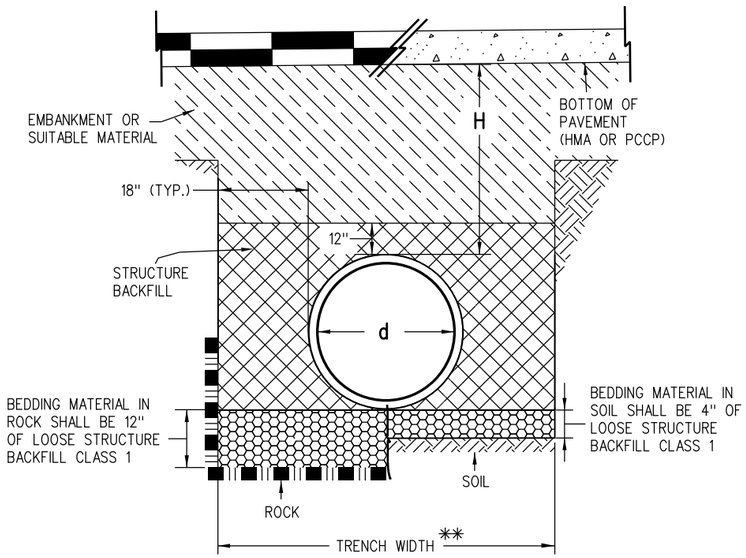
FILL HEIGHTS, FOR INSTALLATION WITH HIGH WATER TABLE, REQUIRE A SPECIAL DESIGN. THE MAXIMUM HEIGHT IN HIGHWATER LOCATIONS SHOULD BE 15 FEET OR BASED ON AASHTO LRFD DESIGN SPECIFICATIONS.

THE MINIMUM COVER SHALL BE AS SHOWN ON THESE TABLES OR CONFORM TO AASHTO REQUIREMENTS, WHICHEVER IS GREATER. THE MINIMUM COVER FOR PIPE IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT: HMA OR PCCP.

THE MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE SUBGRADE DURING CONSTRUCTION. THE MINIMUM COVER IS BASED ON DUAL AXLE LOADS UP TO 50,000 POUNDS.

L_1 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 624.

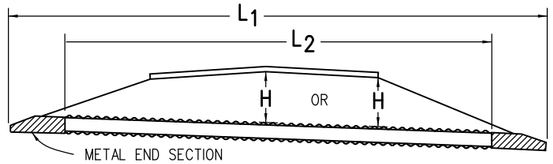
L_2 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 603.



INSTALLATION OF PIPE

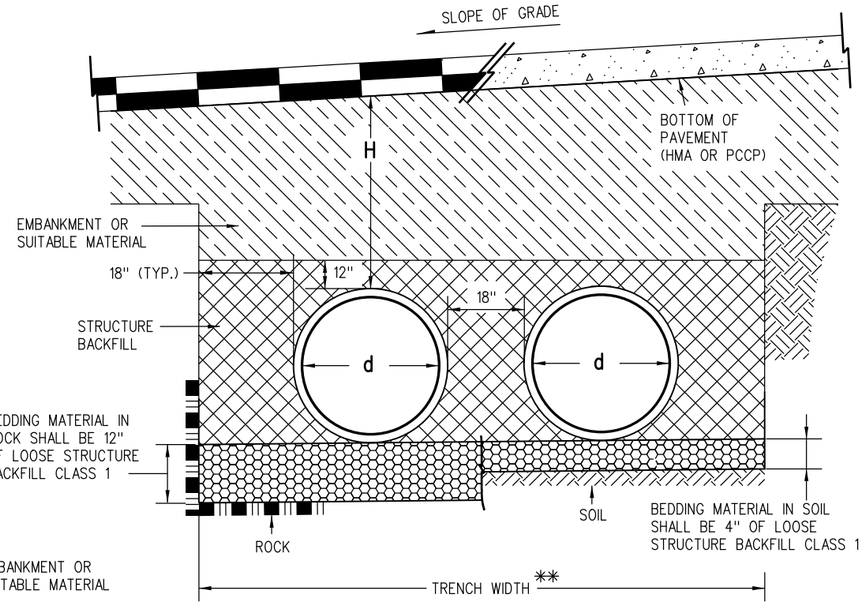
GENERAL NOTES

1. ALL PIPES SHALL MEET THE REQUIREMENTS OF AASHTO M304 FOR POLYVINYL CHLORIDE (PVC) PROFILE WALL DRAIN PIPE WITH 46 PSI WALL STIFFNESS PER ASTM F949.
2. FOR PIPES WITH DIAMETERS OF 15 INCHES OR LESS, SOLID WALL PVC PIPES MEETING AASHTO M278 MAY BE USED.
3. WHEN A PIPE IS TO BE EXTENDED, THE SAME PIPE MATERIAL AND SIZE AS IN THE ORIGINAL INSTALLATION SHALL BE USED.
4. MINIMUM COVER SHALL BE PROVIDED DURING CONSTRUCTION TO PROTECT THE PIPE FROM DAMAGE.
5. WHEN INSTALLING A GUARDRAIL OR A SIGN POST DIRECTLY ABOVE A PIPE, THE POST'S BOTTOM MUST BE AT LEAST 1 FOOT ABOVE THE TOP OF THE PIPE. THE HOLE FOR THE POST SHALL BE DRILLED INTO THE SOIL.
6. STRUCTURE BACKFILL MATERIAL SHALL BE CLASS 1.
7. FOR PIPES 24 INCHES OR LESS IN DIAMETER, H MIN. MAY BE REDUCED TO ONE FOOT FOR LOW VOLUME APPROACH ROADS NOT ON STATE HIGHWAYS.



NOTE: USE THE H THAT IS GREATER FOR MAXIMUM ALLOWABLE FILL HEIGHT.

PIPE WITH END SECTIONS

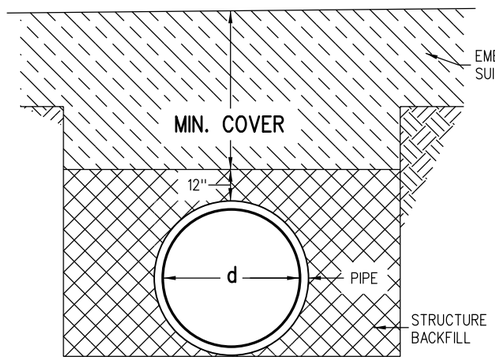


INSTALLATION OF MULTIPLE PIPES

** TRENCH WIDTH ASSUMES STABLE IN-SITU SIDE WALL

PIPE DIAMETER, d (IN.)	H MINIMUM HEIGHT OF COVER (FT.)	H MAXIMUM HEIGHT OF COVER (FT.)	
		95% COMPACTION	90% COMPACTION
12	2	65	55
15	2	59	51
18	2	63	53
21	2	58	49
24	2	58	49
30	2	56	47
36	2	56	47

MINIMUM AND MAXIMUM COVER



CONSTRUCTION MINIMUM COVER FOR PIPE

NOMINAL PIPE DIAMETER (IN.)	MINIMUM COVER (IN.) FOR INDICATED AXLE LOADS (KIPS)			
	18.0-50.0	50.0-75.0	75.0-110.0	110.0-150.0
24 - 36	24.0	30.0	36.0	36.0

AASHTO MINIMUM COVER FOR CONSTRUCTION LOADS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DLM		Date:	Comments
Last Modification Date: 10/02/14 Initials: LTA	R-X	1/07/13	Edited Legend and General Notes.
Full Path: www.coloradodot.info/business/designsupport	R-X		
Drawing File Name: 603050101.dgn	R-X		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	R-X		

Colorado Department of Transportation
4201 East Arkansas Avenue
CDOT HQ, 4th Floor
Denver, CO 80222
Phone: 303-757-9021 FAX: 303-757-9868
Division of Project Support DLM/LTA

POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304)

Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.
M-603-5
Sheet No. 1 of 1