

DI-7, 7A, 7B

In the event the invert of the outfall pipe is higher than the bottom of the structure, the invert of the structure shall be sloped with cement mortar to prevent standing or ponding of water in the structure.

PLAN (COVER REMOVED)

SECTION (COVER REMOVED)

Steps are to be provided when H is 4'-0" or greater. For step details see Std. ST-1.

Concrete Cover (For details see sheet 2 of 2)

3" diameter weep hole with 1/4" mesh or galvanized steel wire, minimum wire dia. 0.03 inch, number 4 mesh hardware cloth anchored firmly to outside of structure.

4" depth aggregate = 60, #7B, or 8 x 6" width.

CAST IN PLACE FOR USE WITH 12" TO 42" PIPES

Pipe Size	12"	15"	18"	24"	30"	36"	42"
Minimum Depth	2'-0"	2'-3 1/4"	2'-6 1/2"	3'-0"	3'-7 1/2"	4'-2"	4'-6 1/2"
Cu. Yds. Conc.	0.947	1.045	1.143	1.339	1.535	1.731	1.927

Increment per foot of additional depth (H) = 0.362 cu. yds. (1.250 m³) (0.400 cu. m) (142 ft³)

Reinforcing concrete footing may be precast or cast in place. Two lifting hooks of fabricator design to be provided in precast footing.

RECOMMENDED MINIMUM HEIGHT CHART

PIPE SIZE	CONC.	CONC. METAL
12"	2'-0"	2'-0"
15"	2'-3 1/4"	2'-3"
18"	2'-6 1/2"	2'-11"
24"	3'-0"	3'-2"
30"	3'-7 1/2"	3'-5"
36"	4'-2"	4'-2"
42"	4'-6 1/2"	4'-11"

GENERAL NOTES

DI-7 - No gutter
DI-7A - Single gutter when drop inlet is on a grade.
DI-7B - Double gutter when drop inlet is in a sag between two grades.

The type of inlet detailed herein to be constructed will be at the option of the contractor.

When specified on plans the invert is to be sloped in accordance with Std. IS-1.

For details of concrete cover, collar and grate, and method of placing approach gutter see sheet 2 of 2.

Increases shown are for inlets without pipes. Pipe displacements must be deducted to obtain true quantities.

Paved ditches are to be transitioned to meet inlet gutter as shown in SRS PG-4. Safety Slabs are to be provided at 8' minimum and 12' maximum vertical intervals and are to be spaced so as not to conflict with openings for pipes as directed by the Engineer.

PRECAST

For details of Precast DI-7 not shown hereon see Precast Unit Assembly Diagram, page 103.01, Precast General Notes, page 103.02 and Applicable Precast Base, Riser and Top Details, pages 103.07 thru 103.12. See revision note page 104.21.

SPECIFICATION REFERENCE

241
503

STANDARD MEDIAN DROP INLET

VIRGINIA DEPARTMENT OF TRANSPORTATION

Sheet 1 of 2

104.22

NOTE: ALL DI-7 DROP INLETS SHALL BE INSTALLED WITH A TYPE III GRATE

DI-7, 7A, 7B

DETAILS OF CONCRETE COVER AND GRATE

Grate A is to be used when inlet is located in median or other areas not normally subject to traffic.
Grate B is to be used when inlet is located on shoulders or other areas subject to traffic.

For details of Load Carrying Grate (Grate B) see T-DI-7 sheet 103.07. See revision note page 104.21.

2" diameter Bar # 10.68 lbs./ft. or No. 14 Billet Steel Bar # 7.65 lbs./ft. (ASTM, A615, Grade 60)

PLAN VIEW

SECTION A-A (GRATE A SHOWN)

SECTION B-B

Alternate methods of anchoring angle iron will be acceptable if approved by the Engineer.
Grate and collar are to be galvanized.
Concrete cover may be precast or cast in place.
Concrete to be Class A3 if cast in place, 4000 PSI if precast.

APPROXIMATE QUANTITIES

Grate Type	Maximum Dimension	Minimum Dimension
A	1"	3"
B	1"	3"

CONCRETE TO BE CLASS A3

APPROXIMATE QUANTITY

0.241 Cu. Yds. Concrete (FOR ONE CURTAIN WALL - MEASURED FROM BOTTOM OF GUTTER)

*** Curtain wall to be located at the ends of the paved ditch sections of the DI-7A & DI-7B that are not abutted by other drainage.

DETAILS OF GUTTER AND METHOD OF PLACEMENT

DI-7 - No Gutters
DI-7A - Gutter in one direction
DI-7B - Gutter in both directions

Joints between gutter and concrete cover are to be dowelled with #4x8" smooth rods @ approx. 12" c/c to prevent settlement.

In lieu of dowels a 2"x4" notch may be provided.

See Standard T-DI-3.4 alternate design.

APPROXIMATE QUANTITIES

DI-7 - None
DI-7A - 1.21 Cu. Yds. Class A3 Concrete
DI-7B - 2.148 Cu. Yds. Class A3 Concrete

± Variable - 2:1 or flatter
± Ditch grade must be adjusted to meet difference in elevation (See Longitudinal Section).

If depth (D) becomes less than 4" length of wings are to be extended as directed by the Engineer.

Gutter grade adjusted to meet inlet elevation.

Back-up berm to be provided as directed by the Engineer (DI-7A only).

Normal median ditch grade

10:1 or flatter

SPECIFICATION REFERENCE

241
503

STANDARD MEDIAN DROP INLET FOR USE WITH 12" TO 42" PIPES

VIRGINIA DEPARTMENT OF TRANSPORTATION

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DI-11B

In the event the invert of the outfall pipe is higher than the bottom of the structure, the invert of the structure shall be sloped with cement mortar to prevent standing or ponding of water in the structure.

PLAN

SECTION A-A

COLLAR DETAIL

SECTION B-B

SECTION C-C

SECTION D-D

4x8" Smooth Dowels @ approx. 12" c/c to be placed in all areas adjacent to abutting concrete to prevent settlement.
In lieu of dowels a 2"x4" notch may be provided. See Standard T-DI-3.4 alternate design.

When specified on plans the invert is to be sloped in accordance with Standard Plan IS-1.

Note: See Std. DI-11 Isometric View for details of Berm Flow Barrier. See revision note page 104.27.

This item may be precast or cast in place, use 4000 PSI Concrete if precast, Class A3 Concrete if cast-in-place.

SPECIFICATION REFERENCE

233
502

STANDARD SLOTTED DITCH DROP INLET WITH 2:1 FLUME

12"-36" PIPE, MAX. DEPTH (H) 8'

VIRGINIA DEPARTMENT OF TRANSPORTATION

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NOTE: DI-11B TO BE CONSTRUCTED ON A 3:1 SLOPE

DI-7, 7A, 7B

SECTION B-B

SECTION C-C

DETAIL A

ALTERNATE DETAIL A

SECTION A-A

APPROXIMATE QUANTITIES

4.091 Cu. Yds. Class A3 Concrete
60 Lbs. Reinforcing Steel

Increment per foot of depth (H) = 0.362 Cu. Yds.

1.112 Cu. Yds. Concrete to be added when double gutter is required.

See Std. DI-7, DI-7A, 7B for details and dimensions not shown hereon.

SPECIFICATION REFERENCE

502

STANDARD DI-7, 7A OR 7B WITH FLUME CONNECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

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104.23A