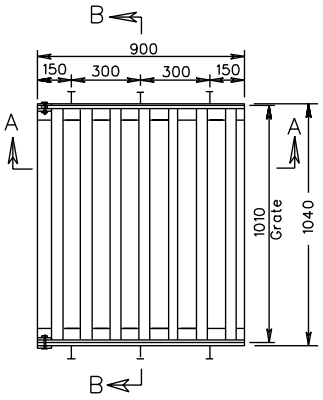
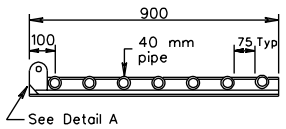
REVISED ON 12/99 REVISED ON 11/02 REVISED ON 3/03

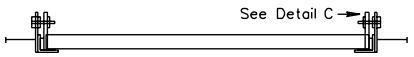
SWM-1



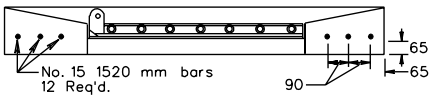

PLAN VIEW



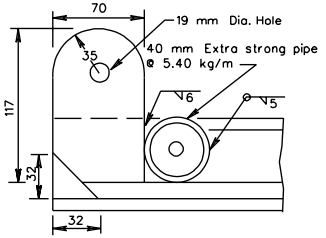

SECTION A-A




SECTION B-B




COVER DETAIL




DETAIL A
(In-side)

NOTES:

Grate and Collar are to be galvanized after fabrication. Cost of this Grate and Collar are to be included in the price bid for Stormwater Management Drainage Structure.

Structure may be precast or cast in place.
For details not shown see St'd. DI-7.

Weep holles shall not be provided.
Any lift holes shall be plugged.

Steps are to be provided when height of structure is 1200 mm or greater above invert of Outlet Pipe.

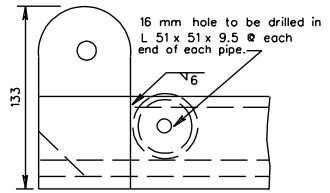
For step details see St'd. ST-1

For details on metal plate and debris rack see St'd. SWM-DR.

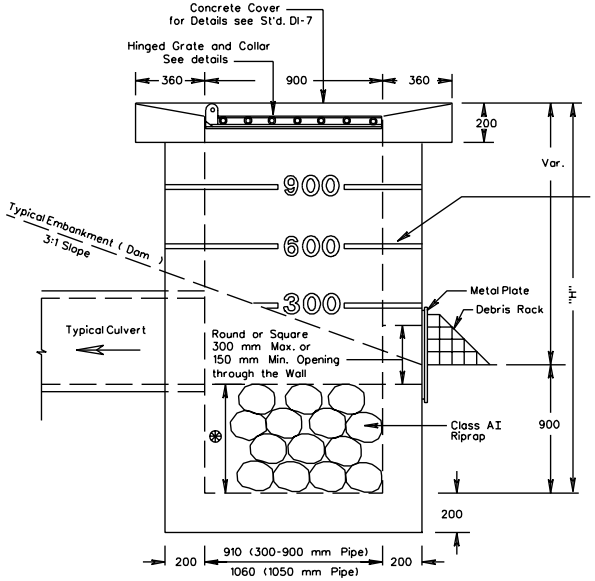
CAST IN PLACE
Class 20 Concrete to be used.
Maximum depth (H) to be 4.0 m

| Pipe Size | 300 | 375 | 450 | 600 | 750 | 900 | 1050 |
|---|---|---|---|---|---|---|---|
| Minimum Depth H | 1500 | 1606 | 1689 | 1854 | 2019 | 2184 | 2350 |
| Cu. Meters Conc. | 1.55 | 1.63 | 1.63 | 1.85 | 2 | 2.15 | 2.41 |

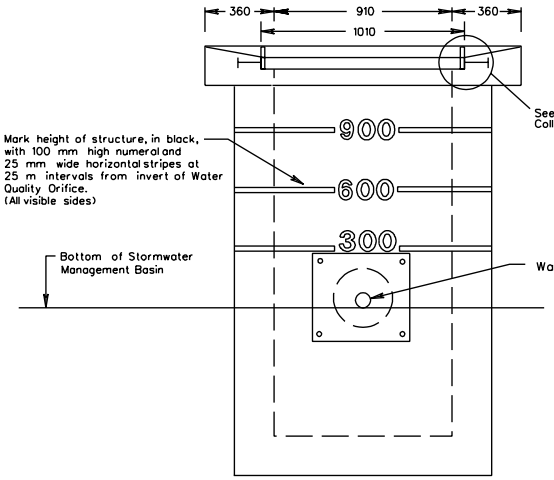
Increment per meter of additional depth "H" -.91 m (300-900 mm pipe)
+1.03 m (1050 mm pipe)




DETAIL A
(Out-side)

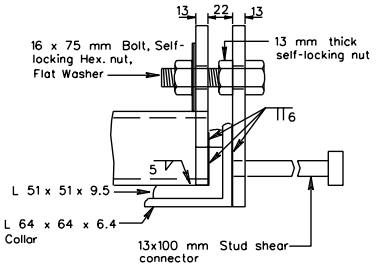



SIDE VIEW
SWM DRAINAGE STRUCTURE




⊛ Class AI riprap to be used to fill SWM Drainage Structure to invert of outlet pipe.

FRONT VIEW
( Debris Rack not shown )




DETAIL C

| SPECIFICATION REFERENCE |
|---|
| 302 |

# STORMWATER MANAGEMENT DRAINAGE STRUCTURE (SWM-1)

VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

116-01

REVISED ON 12/99 REVISED ON 11/02 REVISED ON 3/03

SWM-RP

CAST IN PLACE

| Pipe Size | 300 | 375 | 450 | 600 | 750 | 900 | Increment Per Meter of Additional Depth (H) |
|---|---|---|---|---|---|---|---|
| Minimum Depth H | 1300 | 1400 | 1500 | 1625 | 1800 | 1950 | |
| Riser Diameter (D) | ⁎ Cu. Meters Concrete | | | | | | |
| 900 | 1.16 | 1.21 | 1.27 | 1.38 | 1.48 | 1.59 | .62 |
| 1050 | 1.36 | 1.43 | 1.49 | 1.61 | 1.73 | 1.85 | .75 |
| 1200 | 1.58 | 1.65 | 1.71 | 1.85 | 1.99 | 2.13 | .84 |
| 1350 | 1.80 | 1.88 | 1.95 | 2.10 | 2.56 | 2.41 | .93 |
| 1500 | 2.03 | 2.11 | 2.20 | 2.37 | 2.54 | 2.70 | 1.02 |

⁎ Quantities shown are for structures without pipes.
Pipe displacements must be deducted to obtain true quantities.
Concrete to be Class 20.

"J" dimension not to exceed 900 mm without approval of VDOT's Hydraulic Engineer.

NOTES:

Structure may be precast or cast in place.

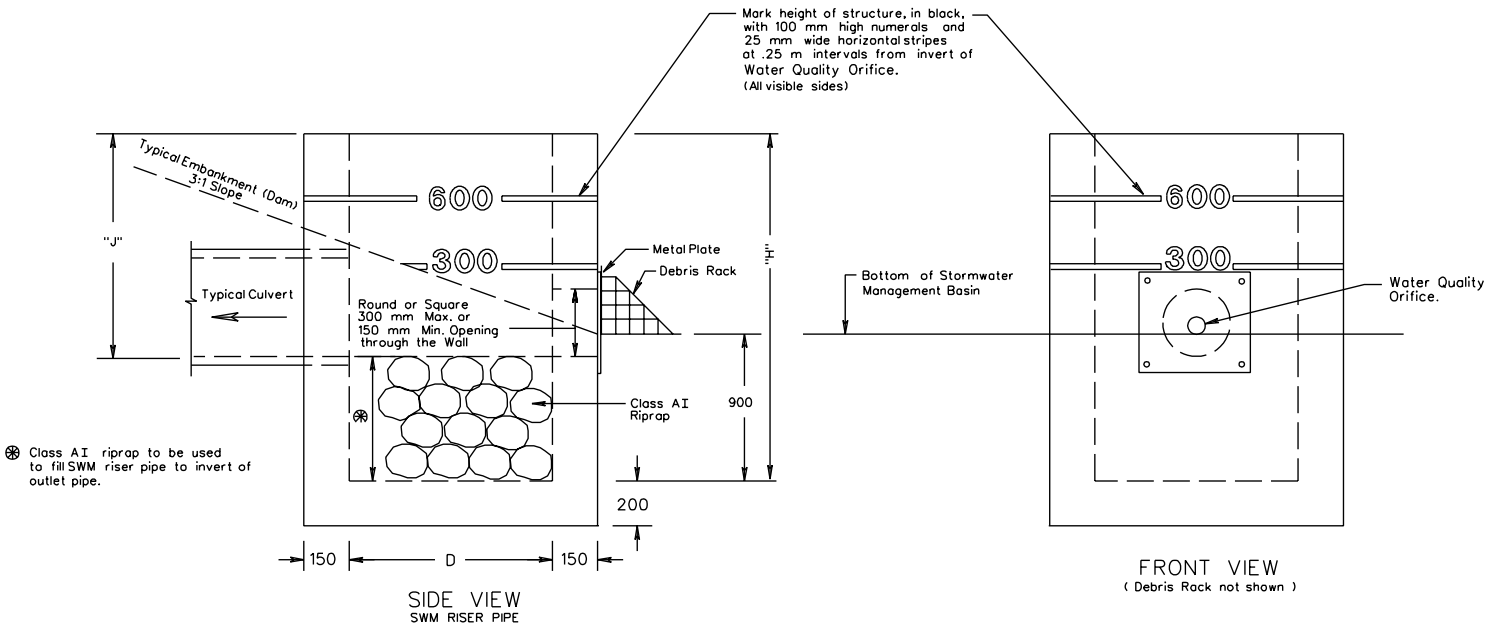
For precast details see Standard Base Unit Sheet in the Road and Bridge Standards.

Weep holes shall not be provided.
Any lift holes shall be plugged.

For details on metal plate and debris rack see St'd SWM-DR.

Steps are to be provided when height of structure is 1200 mm or greater above invert of Outlet Pipe.

For step details see St'd. ST-1.




Sheet 2 of 4

# STORMWATER MANAGEMENT RISER PIPE

VIRGINIA DEPARTMENT OF TRANSPORTATION

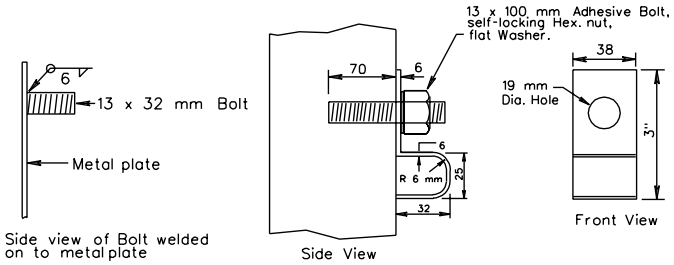
SPECIFICATION REFERENCE

302

116-02 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

REVISED ON 11/02 REVISED ON 3/03

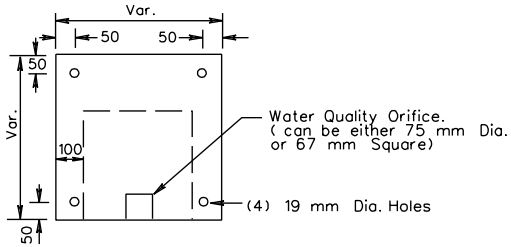
SWM-DR

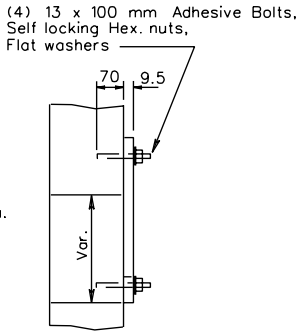



DEBRIS RACK HOLDER

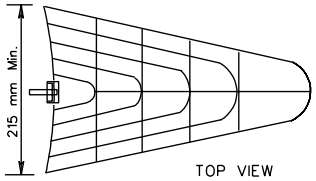
The location of the Debris Rack Holder may be adjusted for variable conditions.
When the holder bolt is located on the Metal Plate the 13 mm Dia. bolt length is to be shortened to 32 mm and welded to the plate.
Debris Rack Holder and all hardware is to be galvanized.

Purpose of this unit is to allow debris to float above debris rack and to minimize clogging of the water quality orifice.
○ Unit to be constructed of welded 10 mm Dia. Bars. -Not Galvanized
** To be attached with hinge as shown or approved by the Engineer. Contractor may substitute comparable design as approved by the Engineer.
Cost to be included in price bid for SWM Riser Pipe, SWM Dam or SWM Drainage Structure

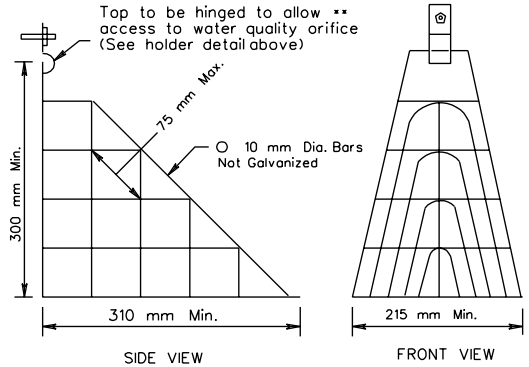



SWM DAM METAL PLATE DETAIL
(Not Galvanized)

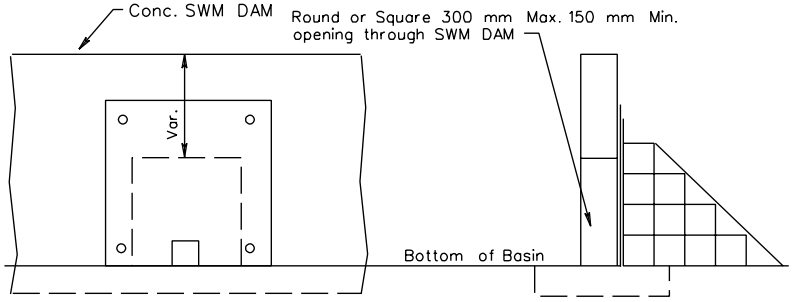



TOP VIEW




SIDE VIEW FRONT VIEW

DETAIL FOR DEBRIS RACK
(For Water Quality Orifice)




DETAIL FOR METAL PLATE AND WATER QUALITY ORIFICE

SIDE VIEW OF SWM DAM WITH DEBRIS RACK

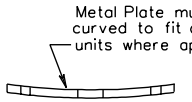
TYPICAL SWM DAM

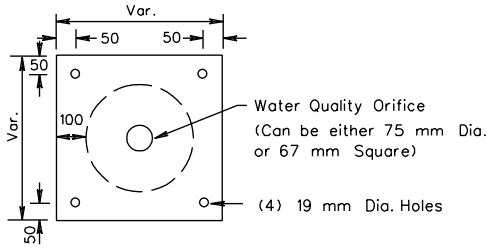
Sheet 3 of 4

| SPECIFICATION REFERENCE | STORMWATER MANAGEMENT (SWM) DETAILS | |
|---|---|---|
| 302 | DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE (For SWM Drainage Structures, SWM Riser Pipes and SWM Dams) | |
| | VIRGINIA DEPARTMENT OF TRANSPORTATION | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS — 116.03 |

REVISED ON 12/99 REVISED ON 11/02 REVISED ON 3/03

SWM-DR



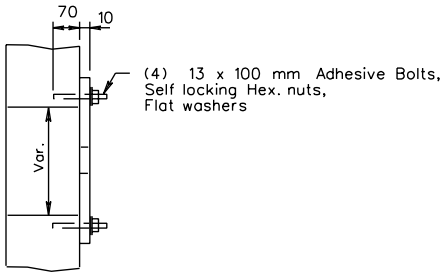

RISER METAL PLATE DETAIL
(Not Galvanized)

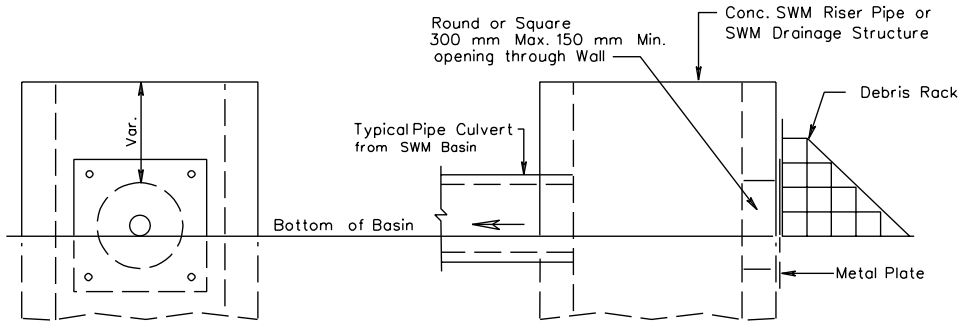
NOTES:

To provide the required water quality orifice, all Stormwater Management (SWM) basins shall be constructed with the following:

1. For SWM Drainage Structures, SWM Dams or SWM Riser Pipes of Concrete, an opening shall be provided in the concrete wall: 300 mm max. or 150 mm min. and shall be covered with the 10 mm metal plate.
2. Debris Rack shall be attached to SWM Drainage Structure, SWM Dam or SWM Riser Pipe to cover water quality orifice.

For Details of SWM Drainage Structure see St'd. SWM-1




DETAIL FOR METAL PLATE AND
75 mm WATER QUALITY ORIFICE

SIDE VIEW WITH DEBRIS RACK

TYPICAL SWM DRAINAGE STRUCTURE OR SWM RISER PIPE

Sheet 4 of 4

# STORMWATER MANAGEMENT (SWM) DETAILS

DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE
(For SWM Drainage Structures, SWM Riser Pipes and SWM Dams)

SPECIFICATION REFERENCE

302

116.04 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION