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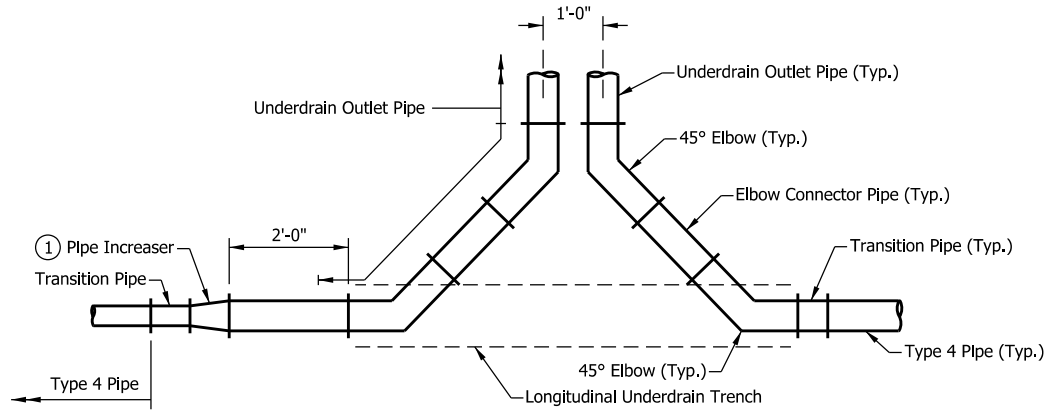
SHEET NO.	SUBJECT
1	Underdrain Drawing Index and General Notes
2	Underdrain Details
3	Underdrain Details
4	Outlet Protector, Type 1
5	Outlet Protector, Type 2
6	Outlet Protector, Type 3
7	Outlet Protector Rodent Screen

APPROXIMATE OUTLET PROTECTOR QUANTITIES

TYPE	CONCRETE, CLASS A (cys)	REINFORCING BARS (lb)	SODDING (sys)
1	0.8	29	4.9
2	0.6	25	4.0
3	0.3	22	3.2

INDIANA DEPARTMENT OF TRANSPORTATION

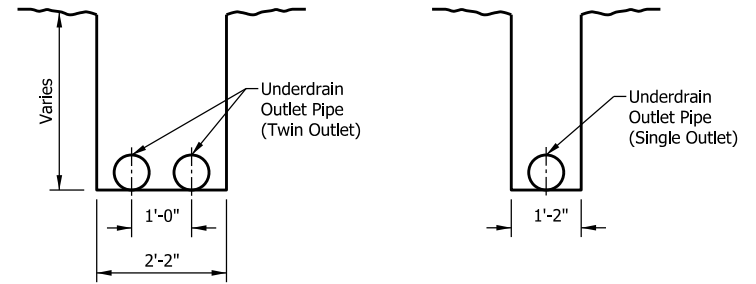
RPD 718-R-639d
INDEX



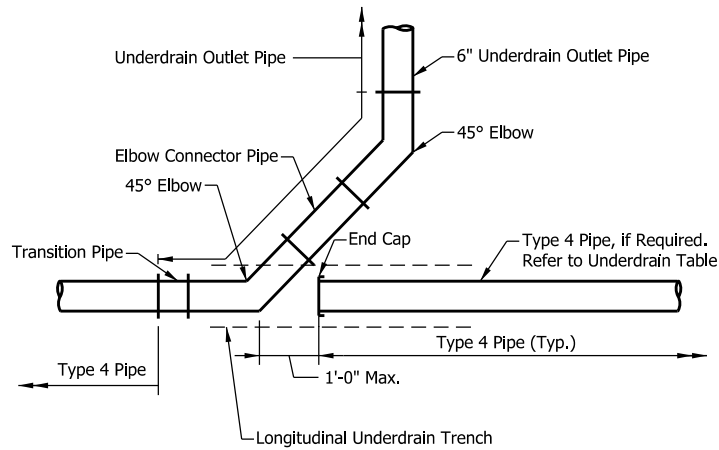
TWIN OUTLET DETAIL-PLAN VIEW

NOTE:

- ① If the underdrain pipe and the outlet pipe are of different sizes an increaser of the same material as the outlet pipe shall be installed 2 ft from the transition pipe and the 45° elbow.



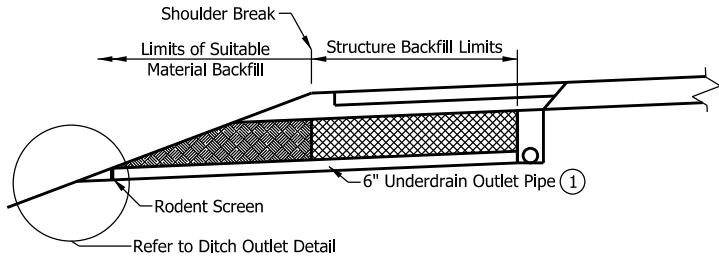
OUTLET TRENCH DETAILS



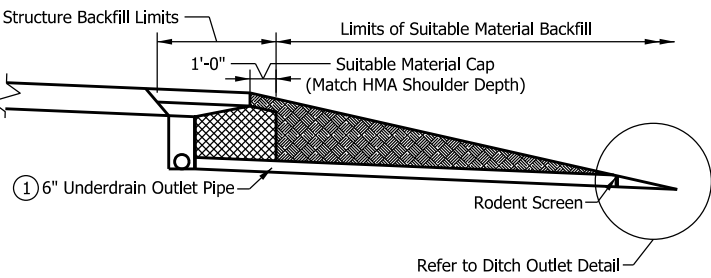
SINGLE OUTLET DETAIL-PLAN VIEW

INDIANA DEPARTMENT OF TRANSPORTATION

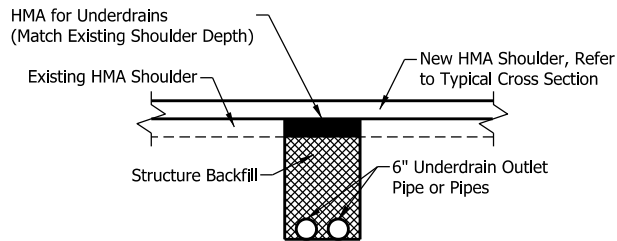
UNDERDRAIN DETAILS



OUTSIDE SHOULDER INSTALLATION



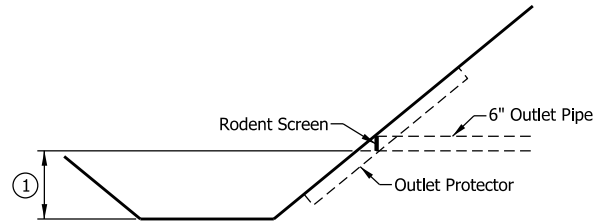
MEDIAN SHOULDER INSTALLATION



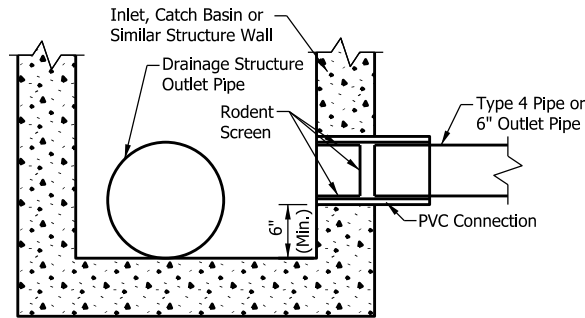
RETROFIT UNDERDRAIN OUTLET DETAIL (UNDER PAVED SHOULDER)

NOTE:

① If underdrain outlet pipe elevations are not shown on Underdrain Table, the minimum outlet pipe slope shall be 0.3%. The minimum freeboard between the outlet pipe outfall and the ditch line shall be 1'-0" for median ditches and 2'-0" for side ditches.



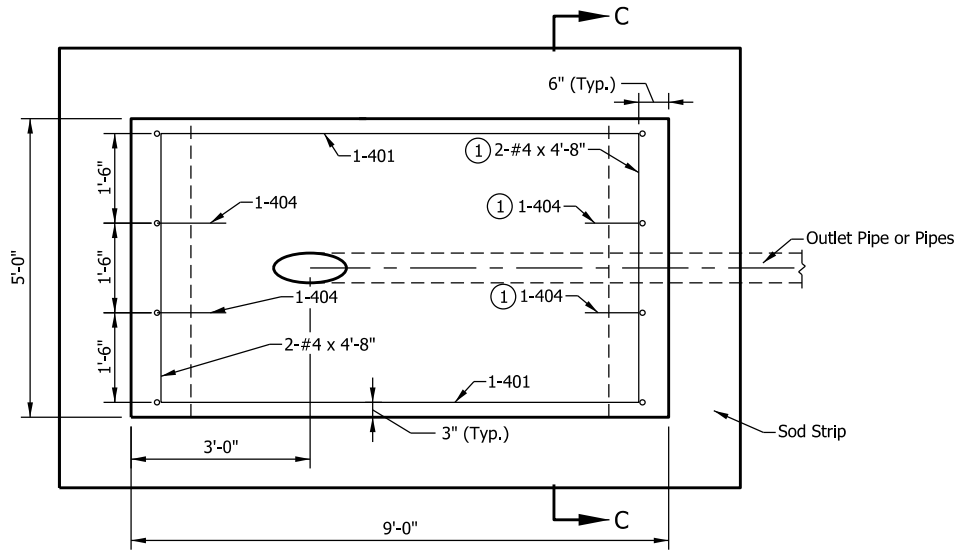
DITCH OUTLET DETAIL



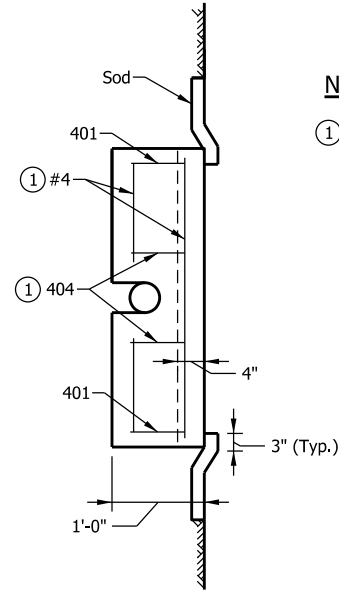
DRAINAGE STRUCTURE OUTLET DETAIL

INDIANA DEPARTMENT OF TRANSPORTATION

UNDERDRAIN DETAILS



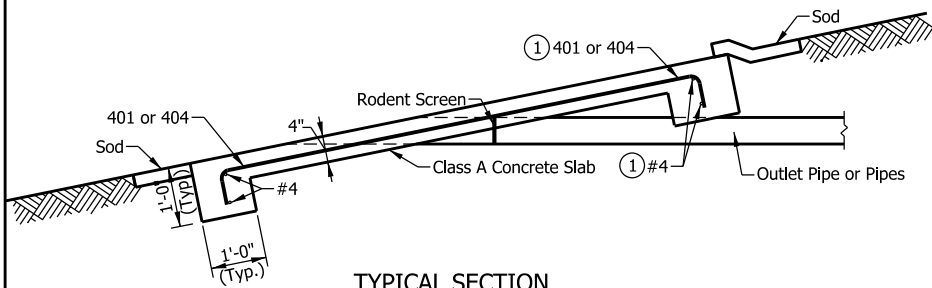
PLAN VIEW



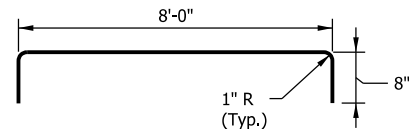
SECTION C-C

NOTE:

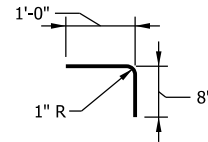
- ① The #4 transverse bars in the upslope lug may be field cut to accommodate the outlet pipe or pipes. The 404 bars in the upslope lug may be moved to accommodate the outlet pipe or pipes.



TYPICAL SECTION



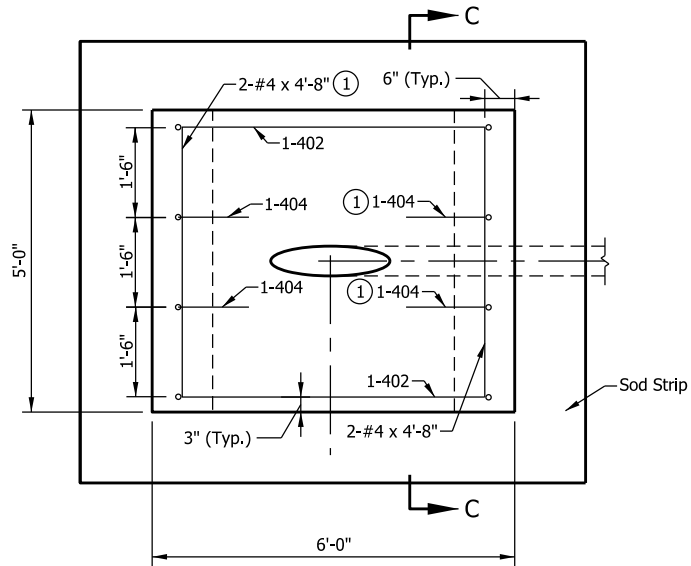
401 X 9'-4"



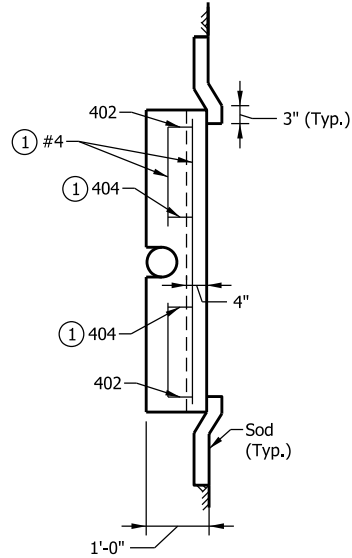
404 X 1'-8"

INDIANA DEPARTMENT OF TRANSPORTATION

OUTLET PROTECTOR, TYPE 1



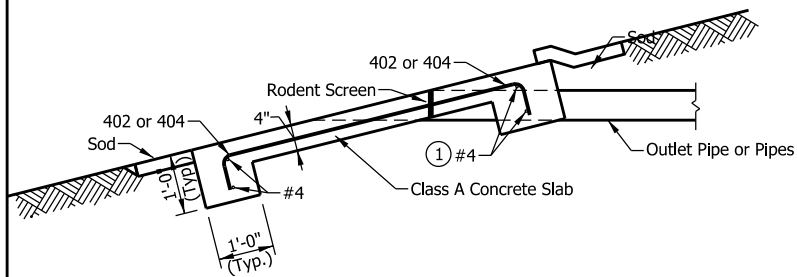
PLAN VIEW



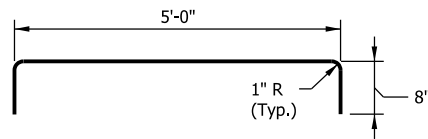
SECTION C-C

NOTE:

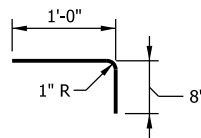
- ① The #4 transverse bars in the upslope lug may be field cut to accommodate the outlet pipe or pipes. The 404 bars in the upslope lug may be moved to accommodate the outlet pipe or pipes.



TYPICAL SECTION



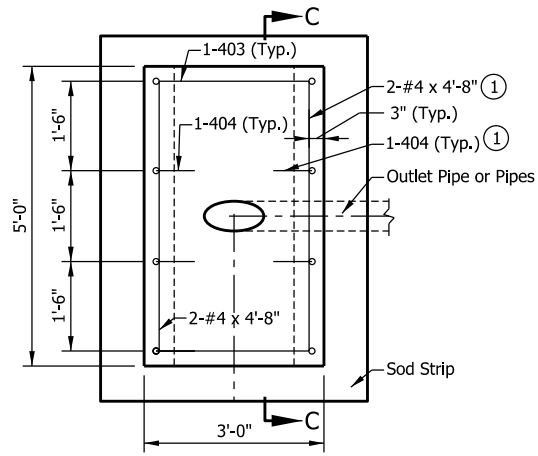
402 X 6'-4"



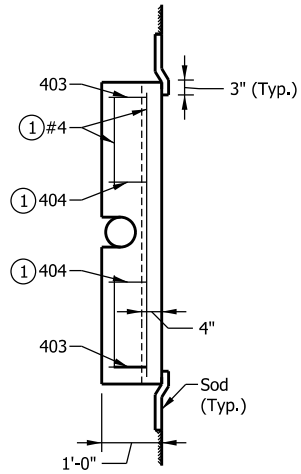
404 X 1'-8"

INDIANA DEPARTMENT OF TRANSPORTATION

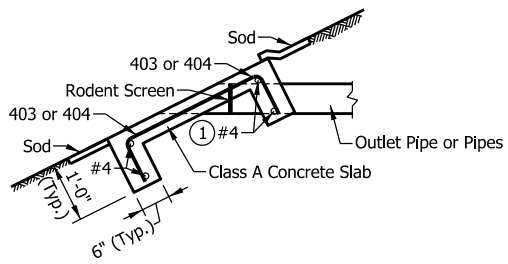
OUTLET PROTECTOR, TYPE 2



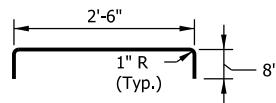
PLAN VIEW



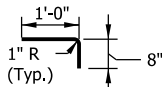
SECTION C-C



TYPICAL SECTION



403 x 3'-10"



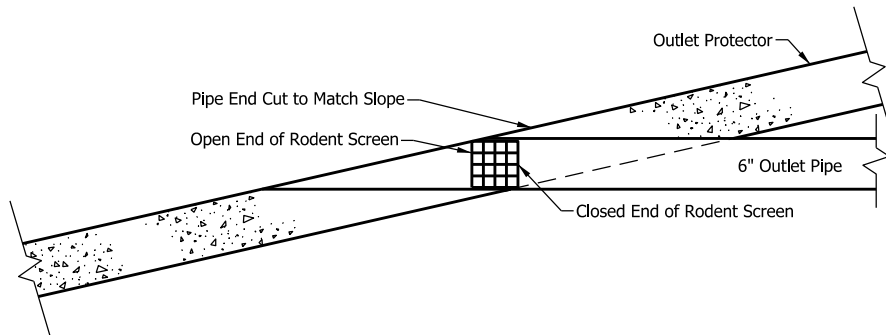
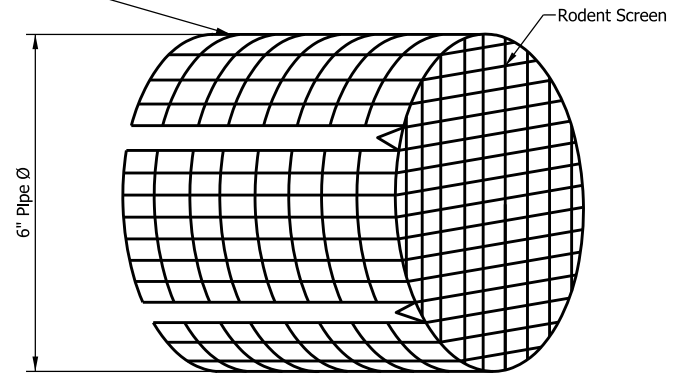
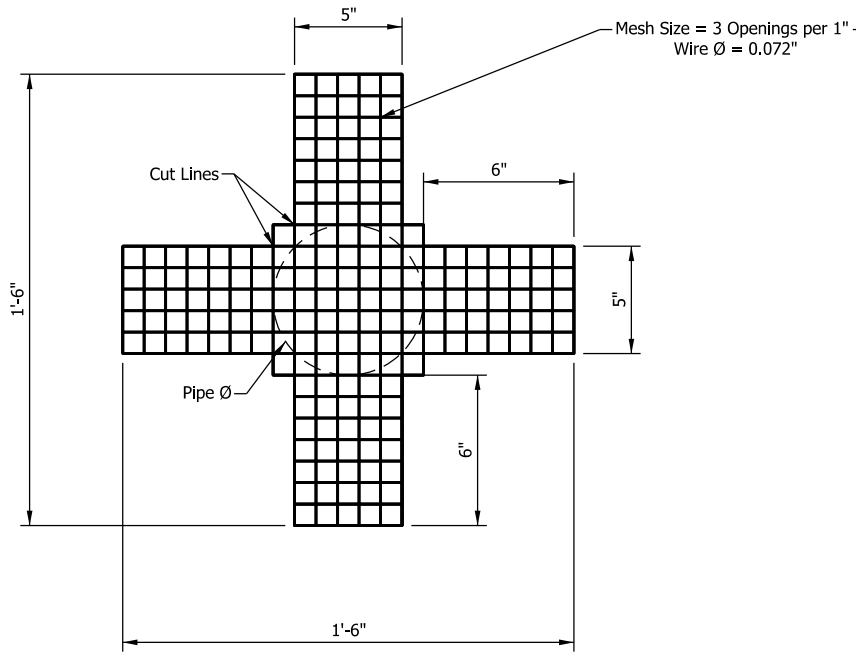
404 x 1'-8"

NOTE:

- ① The #4 transverse bars in the upslope lug may be field cut to accommodate the outlet pipe or pipes. The 404 bars in the upslope lug may be moved to accommodate the outlet pipe or pipes.

INDIANA DEPARTMENT OF TRANSPORTATION

OUTLET PROTECTOR, TYPE 3



INDIANA DEPARTMENT OF TRANSPORTATION

OUTLET PROTECTOR
RODENT SCREEN