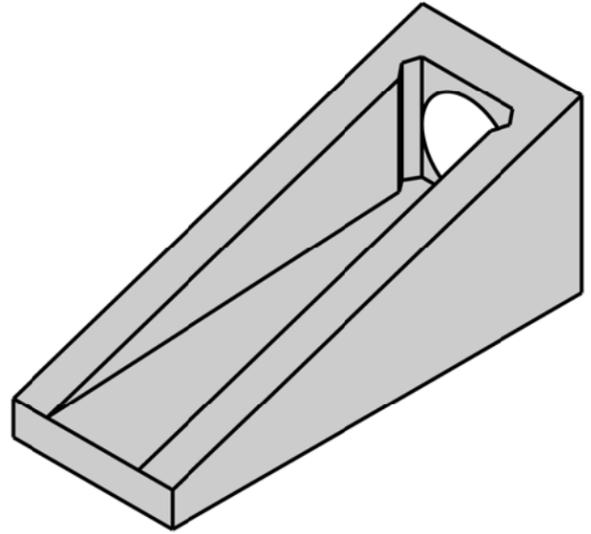
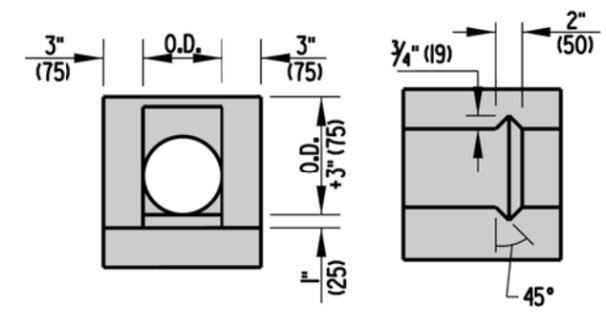


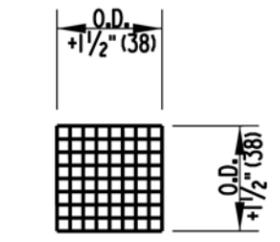
SECTION VIEW



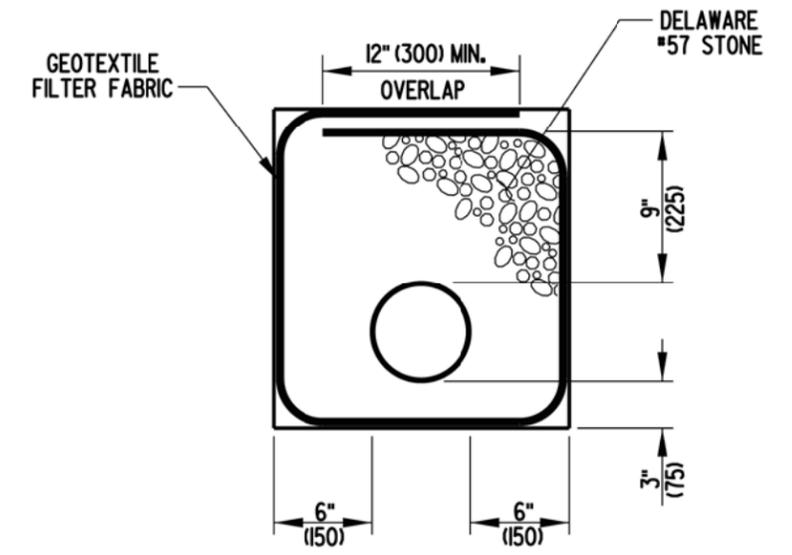
**ISOMETRIC VIEW
UNDERDRAIN OUTLET**



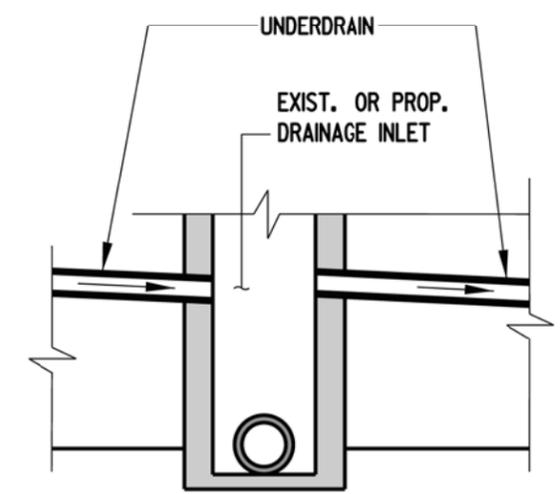
**FRONT VIEW
TOP VIEW
SLOTTED HEADWALL DETAIL**



**FRONT VIEW
RODENT SCREEN**



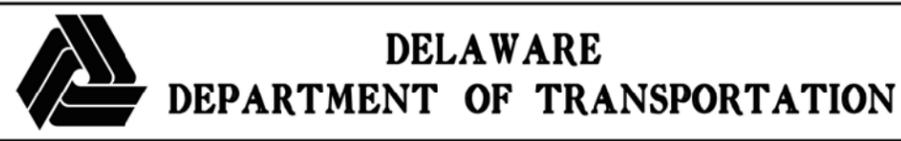
SECTION



ELEVATION

PERFORATED PIPE UNDERDRAIN

- NOTES:**
- 1). THE PERFORATED PIPE UNDERDRAIN SHALL BE LOCATED AS SHOWN ON THE TYPICAL SECTIONS OF THE CONSTRUCTION PLANS.
 - 2). GEOTEXTILE FILTER FABRIC SHALL BE PLACED ENTIRELY OVER THE TOP OF UNDERDRAIN TRENCH AND LAPPED AS SHOWN.
 - 3). SLOPE OF UNDERDRAINS SHALL MATCH ROADWAY GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - 4). OUTLET PIPE CONFIGURATIONS SHALL USE 45 DEGREE ELBOWS OR SHALL USE STRAIGHT PIPE WITH A MINIMUM RADIUS OF 3' (900) TO DIRECT UNDERDRAIN PIPE INTO SIDE OF DRAINAGE INLET OR TO POSITIVE GRADE. PIPE SHALL ALSO BE NON-PERFORATED AND HAVE A SMOOTH INTERIOR.
 - 5). RODENT SCREEN SHALL SNUGLY FIT THE PROVIDED SLOT WITH THE SCREEN LIP FITTING TIGHT TO THE BOTTOM FLOW LINE.
 - 6). A 4' (1200) FLEXIBLE DELINEATOR SHALL BE FURNISHED AND INSTALLED AT THE DIRECTION OF THE ENGINEER TO MARK THE LOCATION OF THE CONCRETE HEADWALL.
 - 7). WHEN TWO LINES OF PIPE UNDERDRAIN DRAIN TO A LOW POINT, EACH PIPE MUST HAVE ITS OWN OUTLET.
 - 8). PERFORATED PIPE UNDERDRAIN SHALL NOT BE PLACED UNDER GUARDRAIL IN ORDER TO AVOID PUNCTURING.



PERFORATED PIPE UNDERDRAIN DETAIL			
STANDARD NO.	D-9 (2008)	SHT.	1 OF 1

APPROVED	<i>[Signature]</i> CHIEF ENGINEER	11/18/08 DATE
RECOMMENDED	<i>[Signature]</i> DESIGN ENGINEER	11/17/08 DATE