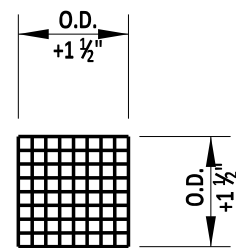
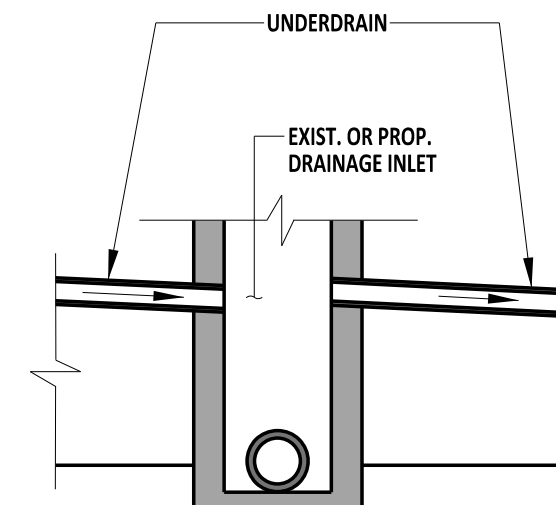


FRONT VIEW
TOP VIEW
SLOTTED HEADWALL DETAIL



FRONT VIEW
RODENT SCREEN



ELEVATION
PERFORATED PIPE UNDERDRAIN

- NOTES:**
- 1). INSTALL PERFORATED PIPE UNDERDRAINS AT LOCATIONS SHOWN ON THE TYPICAL SECTIONS OF THE CONSTRUCTION PLANS.
 - 2). PLACE GEOTEXTILE FILTER FABRIC ENTIRELY OVER THE TOP OF UNDERDRAIN TRENCH AND LAP AS SHOWN.
 - 3). MATCH THE SLOPE OF UNDERDRAINS TO THE ROADWAY GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - 4). TO DIRECT UNDERDRAIN PIPE INTO THE SIDE OF A DRAINAGE INLET OR TO POSITIVE OUTFALL GRADE, USE 45 DEGREE ELBOWS OR A STRAIGHT PIPE WITH A MINIMUM RADIUS OF 3'. AT THESE LOCATIONS, USE NON-PERFORATED PIPE WITH A SMOOTH INTERIOR.
 - 5). INSTALL RODENT SCREEN TO SNUGLY FIT THE PROVIDED SLOT WITH THE SCREEN LIP FITTING TIGHT TO THE BOTTOM FLOW LINE.
 - 6). INSTALL A DELINEATOR ADJACENT TO THE CONCRETE APRON OF THE UNDERDRAIN OUTFALL ON THE APPROACH SIDE OF TRAFFIC. INSTALL THE DELINEATOR ON A BREAKAWAY POST ASSEMBLY, EXTENDING 4' ABOVE GROUND ELEVATION, IN ACCORDANCE WITH STANDARD T-15 SHEET 1 OF 1. PERPENDICULAR TO THE TRAVEL LANE, INSTALL AN OM-2-2V BLUE REFLECTOR ON BOTH SIDES OF THE POST WITH HARDWARE COMPATIBLE WITH THE SIGN POST.
 - 7). WHEN TWO LINES OF PIPE UNDERDRAIN DRAIN TO A LOW POINT, PROVIDE AN OUTLET FOR EACH PIPE.
 - 8). DO NOT PLACE UNDERDRAIN PIPE UNDER GUARDRAIL IN ORDER TO AVOID PUNCTURING.



ENGINEERING SUPPORT
Paul Johnson
RECOMMENDED
DATE 09/01/2020

PERFORATED PIPE UNDERDRAIN
STANDARD NO. D-9 (2020)
SHT. 1 OF 1

REVIEWED
Mike Lee
DEPUTY DIRECTOR - DESIGN
DATE 09/01/2020
APPROVED
Sheryl
CHIEF ENGINEER
DATE 09/01/2020