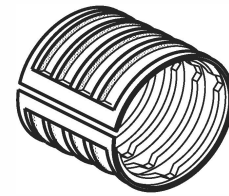
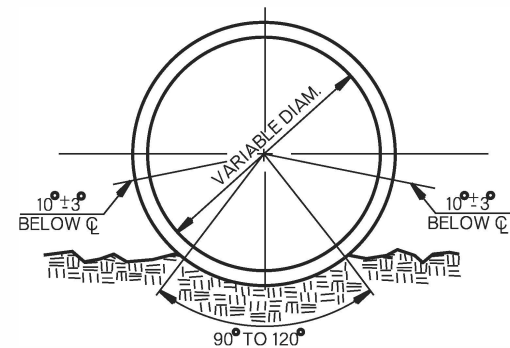
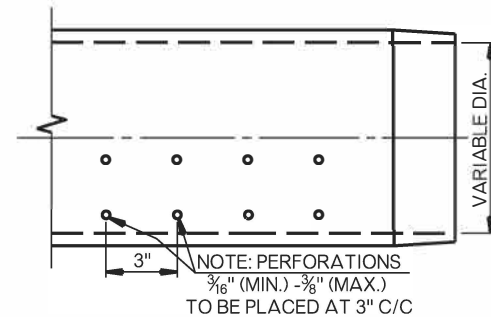


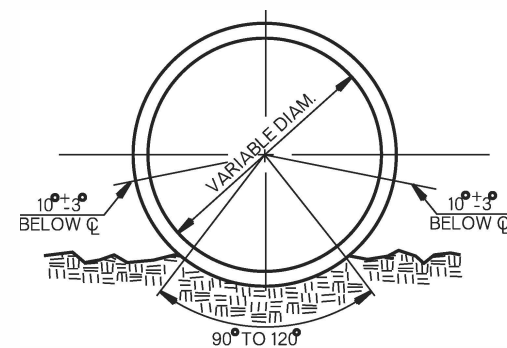
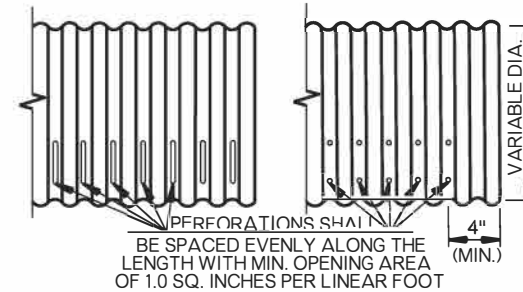
TYPICAL COUPLING FOR
PVC PIPE UNDERDRAIN
1/4 SECTION REMOVED



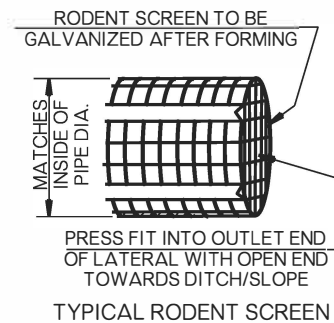
TYPICAL CORRUGATED COUPLING
OR AN APPROVED EQUAL



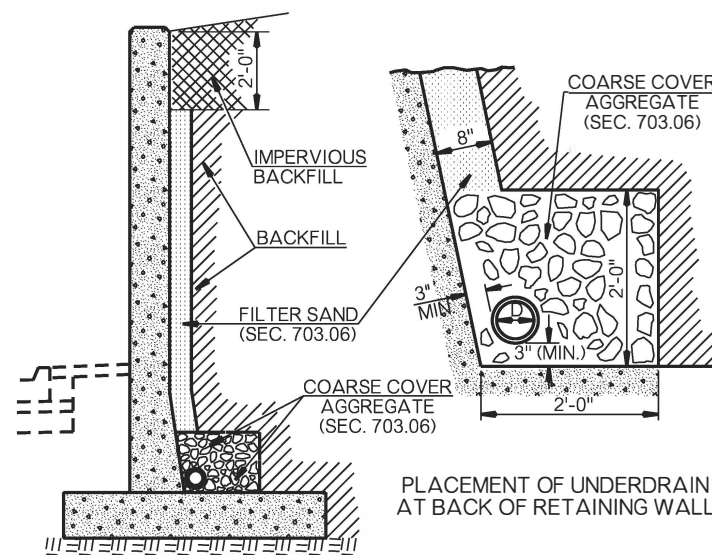
POLYVINYL (PVC) PIPE UNDERDRAIN



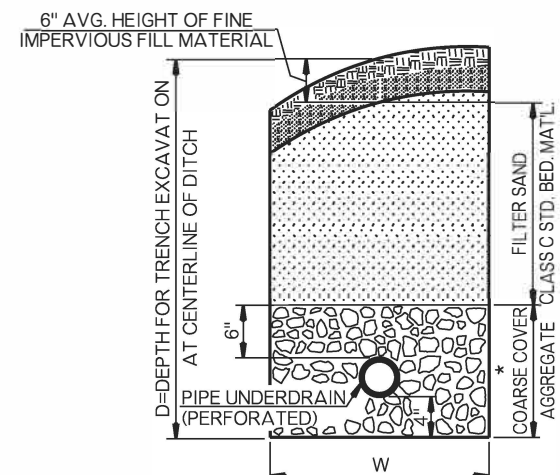
CORRUGATED POLYETHYLENE PIPE UNDERDRAIN



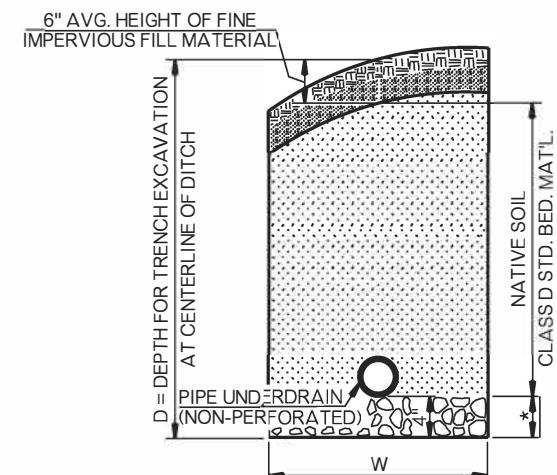
TYPICAL RODENT SCREEN



PLACEMENT OF UNDERDRAIN
AT BACK OF RETAINING WALL



DETAIL
TRENCH EXCAVATION
PERFORATED PIPE
UNDERDRAIN INSTALLATIONS
* PIPE UNDERDRAIN COVER MATERIAL



DETAIL
TRENCH EXCAVATION
NON-PERFORATED PIPE
UNDERDRAIN INSTALLATIONS
* PIPE UNDERDRAIN COVER MATERIAL

INSTALLATION TECHNIQUE: (12" DIAMETER OR SMALLER)

PERFORATED PIPE UNDERDRAIN, WHEN INSTALLED IN A TRENCH, SHALL BE BEDDED ON 4" OF COARSE COVER AGGREGATE. THE INSTALLED PIPE SHALL THEN BE CAREFULLY BACKFILLED WITH THE REMAINING COARSE COVER AGGREGATE TO 6" ABOVE THE TOP OF THE PIPE. FILTER SAND SHALL BE INSTALLED TO APPROXIMATELY 6" BELOW THE ORIGINAL NATURAL GROUND AS APPROVED BY THE ENGINEER. THE COARSE COVER AGGREGATE AND FILTER SAND SHALL BE PAID FOR AS PIPE UNDERDRAIN COVER MATERIAL AND SHALL CONFORM TO SEC. 703.06 OF THE SPECIFICATIONS.

NON-PERFORATED PIPE UNDERDRAIN, WHEN INSTALLED IN A TRENCH, SHALL BE BEDDED IN A 4" LAYER CONSISTING OF COARSE AGGREGATE COVER MATERIAL OR A 50-50 MIX OF COARSE AGGREGATE COVER MATERIAL AND FILTER SAND. THIS LAYER OF COVER MATERIAL SHALL CONFORM TO SEC. 703.06, AND SHALL BE PAID FOR AS PIPE UNDERDRAIN COVER MATERIAL. THE REMAINING BACKFILL MAY BE NATIVE SOIL REMOVED IN THE TRENCHING OPERATION. FILTER SAND OR BACKFILLED ACCORDING TO THE ENGINEER. COST TO BE INCLUDED IN OTHER ITEMS OF WORK. SEE GENERAL NOTE NUMBERS 5 & 6.

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
- THE EXTENT, LOCATION AND DEPTH OF DRAINS MAY BE ADJUSTED BY THE ENGINEER TO SUIT CONDITIONS FOUND DURING CONSTRUCTION.
- COST OF ALL FITTINGS TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PIPE UNDERDRAIN.
- FOR PIPE UNDERDRAIN OF UP TO 12" IN DIAMETER, W = 24" WITHOUT SHEETING AND SHORING. W = 36" WHEN SHEETING AND SHORING IS USED. SEE ROADWAY STANDARD SPI-5 FOR SHEETING & SHORING NOTES.
- FOR PIPE UNDERDRAIN LARGER THAN 12" IN DIAMETER, SEE ROADWAY STANDARD SPI-5 FOR ADDITIONAL TRENCH EXCAVATION DETAILS.
- NON-PERFORATED UNDERDRAIN PIPES, LARGER THAN 12", SHALL BE TREATED AS PIPE CONDUITS: I.E., PAY ITEMS SHALL CONSIST OF TRENCH EXCAVATION AND BEDDING MATERIAL. SEE STANDARD SPB-2.
- MATERIALS SHOWN HERE ARE TYPICAL ONLY AND ARE NOT THE ONLY CHOICE FOR SUBSURFACE DRAINAGE PURPOSES.
- OUTLET OPENING SHALL HAVE INSTALLED A REMOVABLE RODENT SCREEN HAVING A WIRE MESH DESIGN & 0.23" TO 0.50" (NOM.) SQUARE OPENINGS. SCREEN MATERIAL MAY BE STAINLESS STEEL OR GALVANIZED WITH WIRE THICKNESS OF BETWEEN 0.023" & 0.038", AFTER SHAPING AND FABRICATION. RODENT SCREEN DESIGN SHALL BE APPROVED BY THE ENGINEER.
- THE FINAL SECTION OF THE OUTLET LATERAL CONDUIT SHALL BE NON-PERFORATED, SCHEDULE 40 OR TYPE S HIGH DENSITY POLYETHYLENE AND A MINIMUM 20'-0" IN LENGTH, INCLUDING COUPLINGS.
- FOR DETAILS OF OUTLET LATERAL HEADWALL, SEE ROADWAY STANDARD PED-4.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
613 (H)	■ PERFORATED PIPE UNDERDRAIN ROUND	LF
613 (I)	■ NON-PERFORATED PIPE UNDERDRAIN RND.	LF
613 (Q)	OUTLET LATERAL HEADWALL	EA
613 (T)	STANDARD BEDDING MATERIAL, CLASS C	CY
613 (U)	PIPE UNDERDRAIN COVER MATERIAL	CY
613 (V)	TRENCH EXCAVATION	CY

■ DIMENSION TO BE SPECIFIED IN INCHES

APPROVED BY
ROADWAY ENGINEER:  DATE: 6/30/22
ROADWAY DESIGN DIVISION STANDARD



OKLAHOMA
Transportation

PIPE UNDERDRAIN INSTALLATION

2019 SPECIFICATIONS

PUD-4 1

R-65