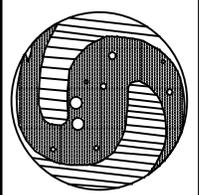
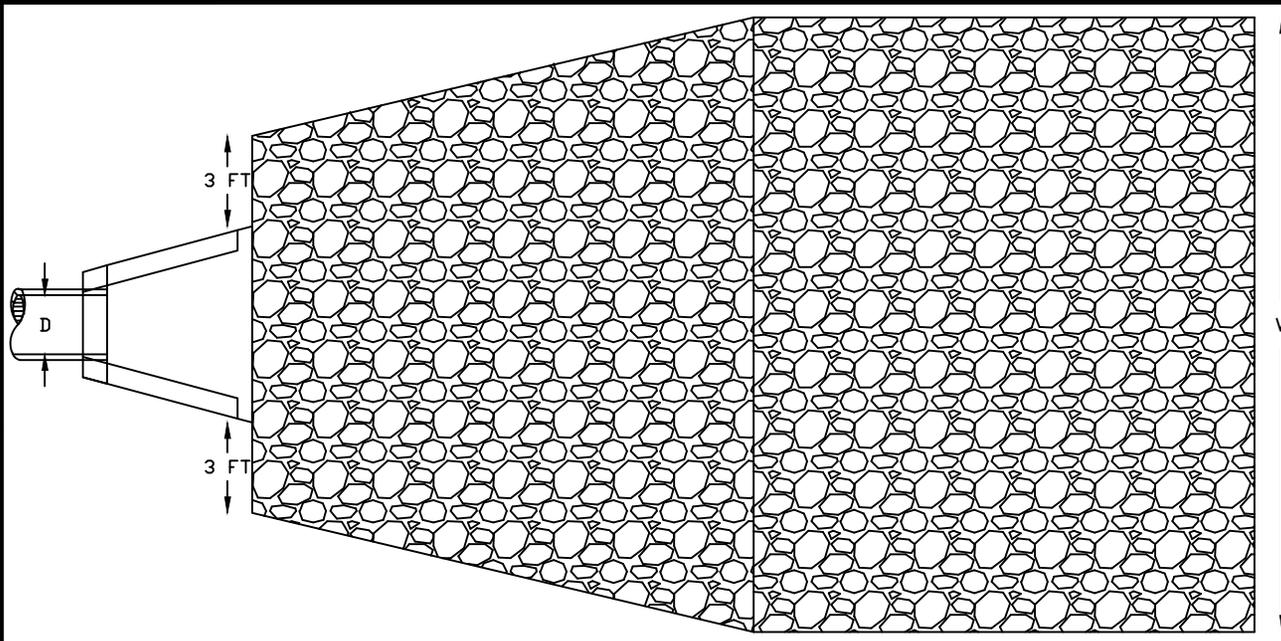


REVISION	BY	DATE

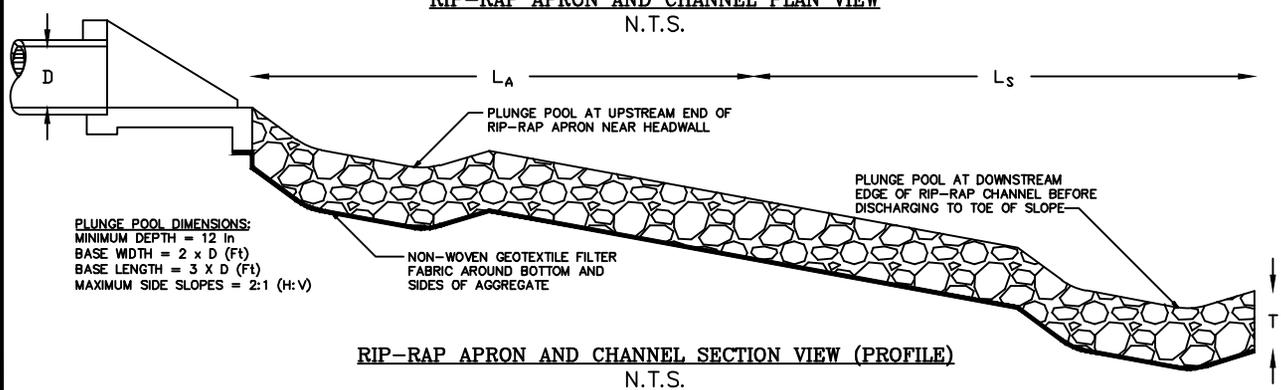


SANITATION DISTRICT NO. 1
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DATE: June 2019
 STANDARD DRAWING NO: STM-22

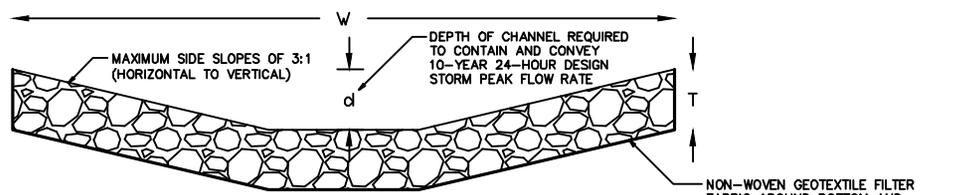


RIP-RAP APRON AND CHANNEL PLAN VIEW
 N.T.S.



RIP-RAP APRON AND CHANNEL SECTION VIEW (PROFILE)
 N.T.S.

PLUNGE POOL DIMENSIONS:
 MINIMUM DEPTH = 12 in
 BASE WIDTH = 2 x D (Ft)
 BASE LENGTH = 3 x D (Ft)
 MAXIMUM SIDE SLOPES = 2:1 (H:V)



RIP-RAP APRON AND CHANNEL SECTION VIEW (CROSS SECTION)
 N.T.S.

OUTLET EROSION PROTECTION ON STEEP SLOPES

(STM-22)
 N.T.S.

NOTE: THIS DETAIL APPLIES WHEN THE STORM SEWER OUTLET PIPE DISCHARGES ON A SLOPE OF GREATER THAN OR EQUAL TO 10 PERCENT (5.7 FEET HORIZONTAL TO 1 FOOT VERTICAL)

- D (Ft) = PIPE DIAMETER
- LA (Ft) = REFER TO TABLE ON SD1 STANDARD DETAIL STM-21
- LS (Ft) = ADDITIONAL CHANNEL LENGTH UNTIL REACHING TOE OF SLOPE (VARIABLE)
- W (Ft) = LA + D (Ft)
- T (In) = 2.0 x D50 (In)
- d (Ft) = CHANNEL DEPTH

- NOTES:
1. FLOW RATES FOR DESIGN SHALL BE BASED ON THE 10-YEAR 24-HOUR DESIGN STORM PEAK FLOW RATE.
 2. OUTLET EROSION PROTECTION IN THE FORM OF A RIP-RAP APRON SHALL REMAIN STRAIGHT THROUGHOUT ITS ENTIRE LENGTH.
 3. ENSURE THAT RIP-RAP CONSISTS OF A WELL-GRADED MIXTURE OF STONE. LARGER STONE SHOULD BE PREDOMINATE, WITH SUFFICIENT SMALLER SIZES TO FILL THE VOIDS BETWEEN THE STONES. RIP-RAP SHALL BE ANGULAR IN SHAPE, NOT ROUNDED.
 4. THE DIAMETER OF THE LARGEST STONE SIZE SHALL BE NO GREATER THAN 1.5 TIMES THE D50 SIZE.
 5. THE MINIMUM THICKNESS OF RIP-RAP SHALL BE 2.0 TIMES THE D50 SIZE.
 6. A NON-WOVEN GEOTEXTILE FILTER FABRIC SHALL BE INSTALLED AROUND THE BOTTOM AND SIDES OF THE RIP-RAP TO PREVENT EROSION.

DRAFT