GENERAL NOTES:

1. Install underdrain pipe that is either 4" smooth or 5" corrugated tubing unless otherwise shown in the Plans. The size to be furnished will be based on the nominal internal diameter of a pipe with a smooth interior wall. Except when prohibited by the Plans, the special provisions or this standard, pipe with a corrugated interior wall may be provided based on the following size equivalency.

   4" smooth interior equivalent to 5" corrugated interior
   5" smooth interior equivalent to 6" corrugated interior
   6" smooth interior equivalent to 8" corrugated interior
   8" smooth interior equivalent to 10" corrugated interior

2. Fine aggregate is quartz sand meeting the requirements of Specifications 902-4.

3. Coarse aggregate is gravel or stone meeting the requirements of Specification 901-2 or 901-3. The gradation is in accordance with Specifications 901, Grades 4, 467, 5, 56 or 57 stone unless otherwise shown restricted in the Plans.

4. Install Underdrain Type I, II, III and V in accordance with Specification 440.

5. Install Type D-3 geotextile in accordance with Specifications 514. The internal geotextile of Type V underdrain has a permittivity of 0.7 /sec. and an AOS of #40 sieve.

6. When Type I is used, use a geotextile sock in accordance with Specification 948.

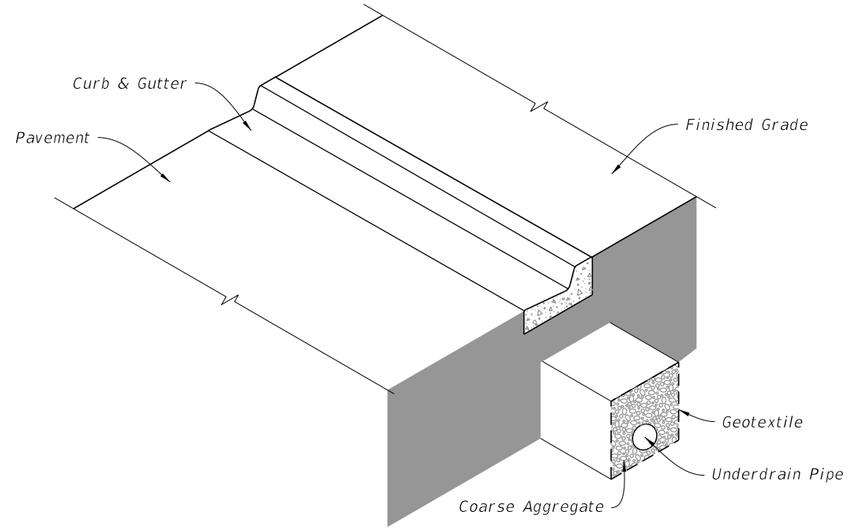
7. See Index 120-002 for the standard location of Type I, II, and III underdrain. The location of Type V underdrain and nonstandard locations of Type I, II, and III underdrain will be as detailed in the plans.

8. Install geotextile joints with a overlap a minimum of 1'. Install the internal geotextile of Type V underdrain with an overlap into the coarse aggregate or the fine aggregate a minimum of 1'.

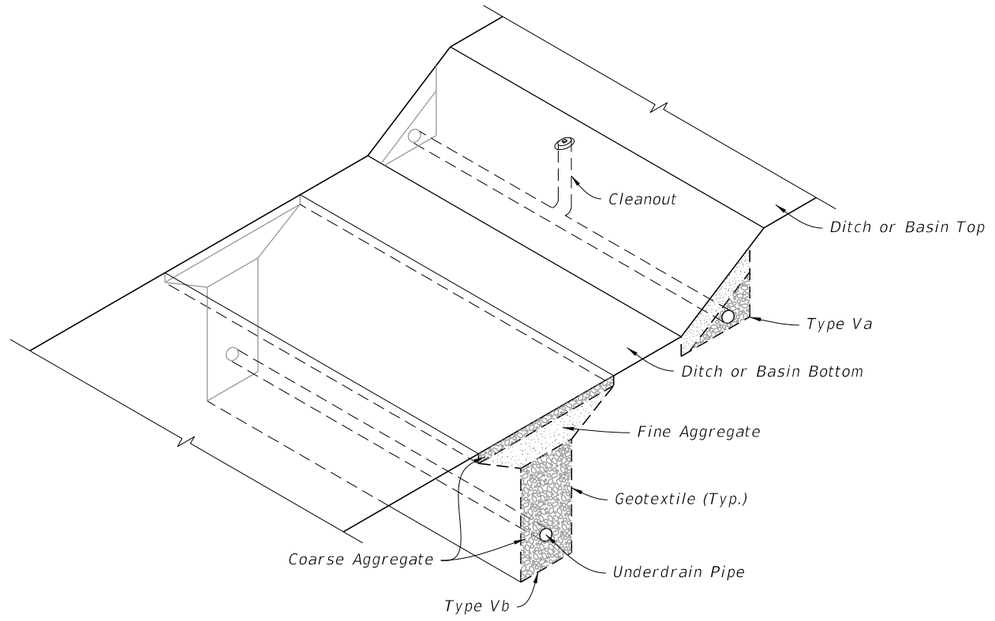
9. Use nonperforated pipes for underdrain outlet and make all bends using ⅛ (45 deg.) elbows. Construct 90 deg. bends with two ⅛ elbows separated by at least 1' of straight pipe. Outlet pipes stubbed into inlets or other drainage structures must be a minimum 6" above the structure flow line. Install concrete aprons, hardware cloth, and sod for outlet pipes discharging to grassed areas as shown in Index 446-001 for Edgedrain Outlets.

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type I, II, and III Underdrains
3	Type Va, Vb, and Cleanout



UNDERDRAIN TYPE I, II, AND III ASSEMBLY
(Type II Shown, Others Similar)



UNDERDRAIN TYPE Va AND Vb ASSEMBLY

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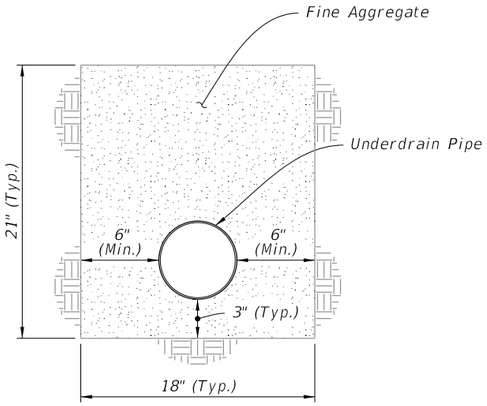
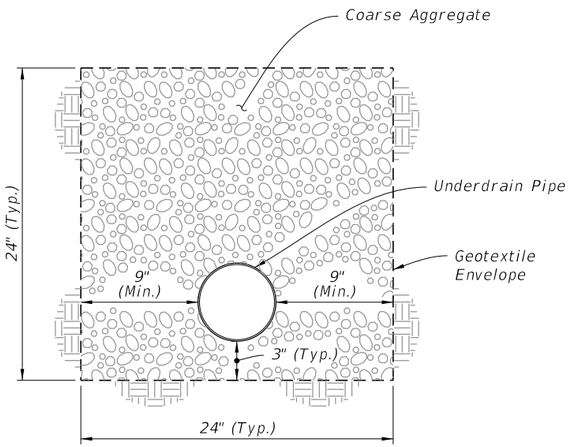


TYPE I



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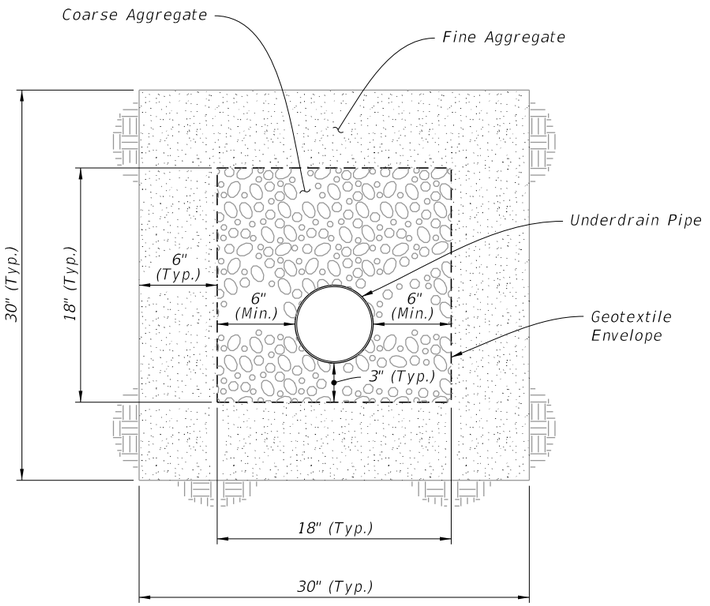

TYPE III

TYPE I, II, AND III

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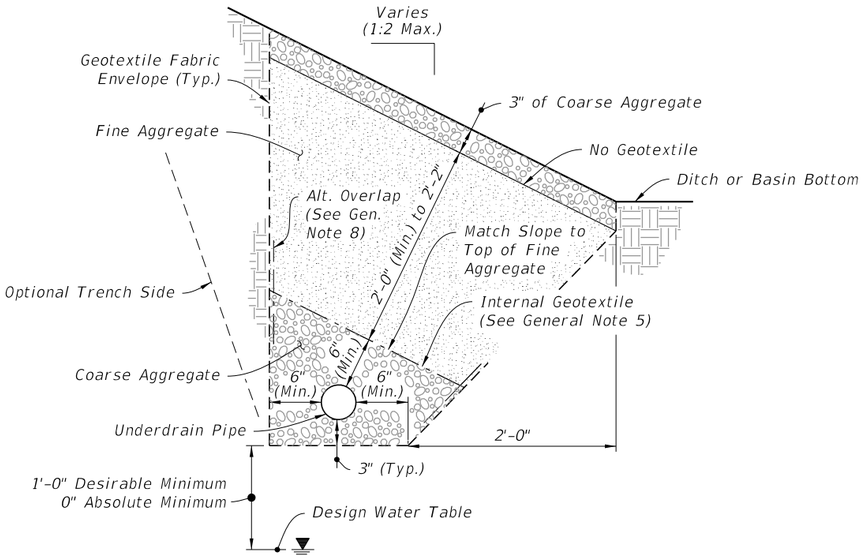
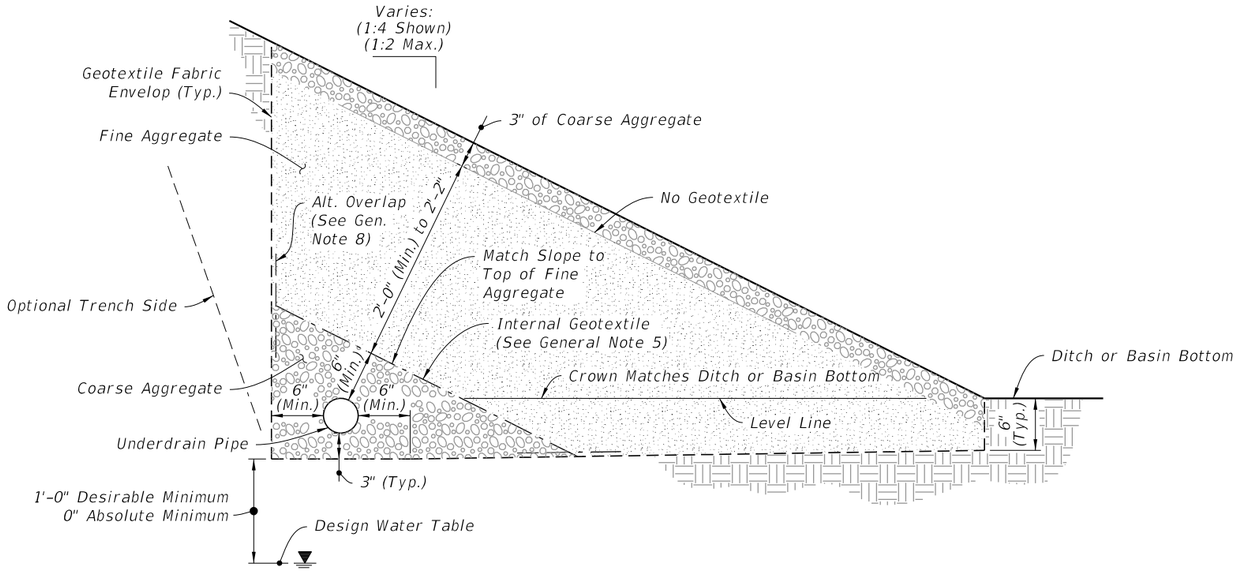
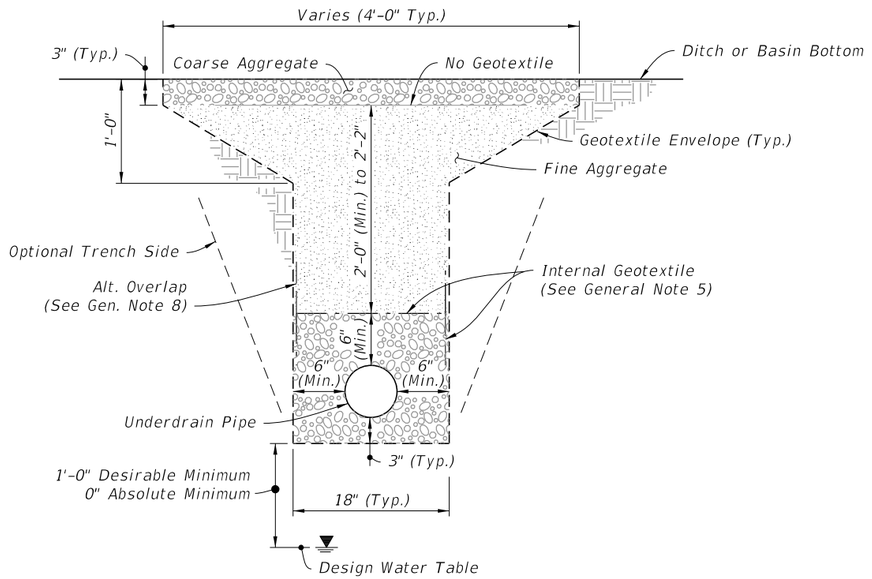


LOWER LIMITS

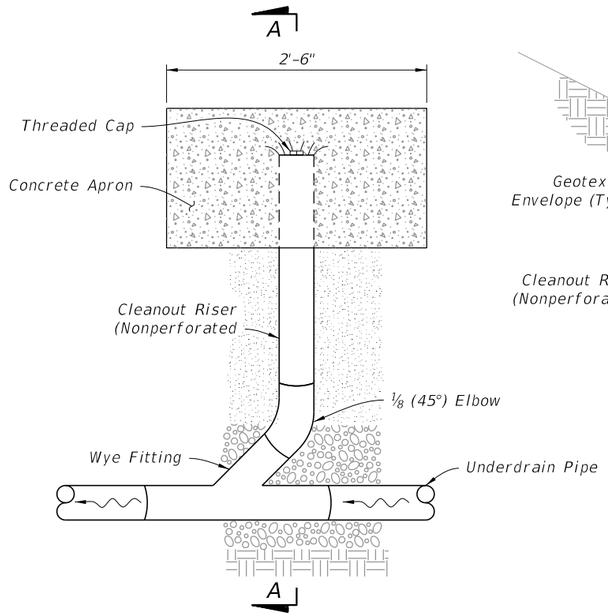


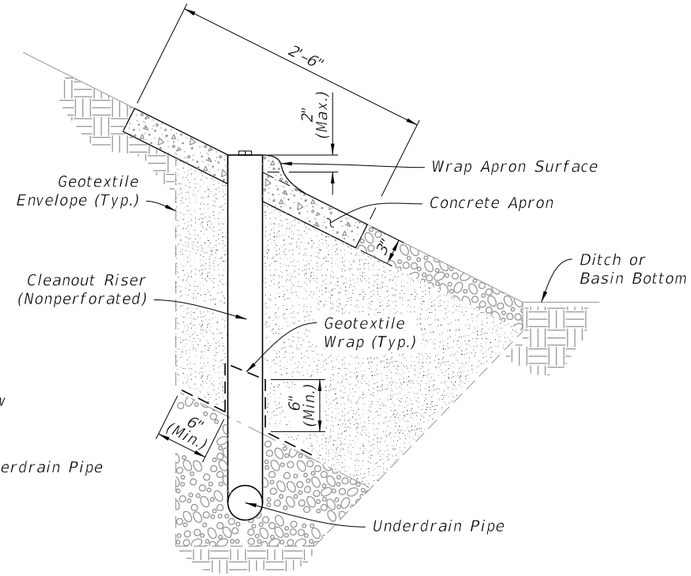
UPPER LIMITS

TYPE Va



TYPE Vb





SECTION A-A

TYPE V CLEANOUT

TYPE Va, Vb, AND CLEANOUT

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