

Table 60-6 Soil Amendment Rates

Soil Amendment Material	Application Rate (Lb per Acre)	
Fertilizer	Nitrogen (N)	30 ¹
	Phosphate (P ₂ O ₅)	90 ¹
	Potash (K ₂ O)	90 ¹
Lime	1,000 ²	

¹Increase the rate by 25% for slopes steeper than 5:1.
²Rate is in effective neutralizing material (ENM) units.

Table 60-9 Mulching Materials

Material	Rate	Requirements	Installation/Uses
Straw	1.5-2.5 tons/ac (3-4 tons, if roller punched)	Dry, unchopped, unweathered; free of weed seeds & rot.	Spread by machine 1.5-2.5 inches deep; must be tacked or tied down.
Compost Blanket	1" thick	Double the application rate for embankments	Follow manufacturer's application method.
Wood fiber, wood cellulose, paper	1-2 tons/ac	Double the application rate in critical areas	Use with power mulcher or hydroseeder; may be used to tack straw on steep slopes. Cannot be used in hot dry weather.

Table 60-7 Temporary Fall Seeding

Plant Species	Rate ¹ (lb/acre)	Seeding Times
Side-Oats	65	8/16 - 9/30
Winter Rye	50	8/01 - 10/15
Winter Wheat	60	8/01 - 10/15
Orchard Grass	120	8/01 - 10/15
Perennial Ryegrass	80	8/01 - 10/15
Tall fescue, Smooth Brome	80	8/01 - 10/15
K-31 Fescue	120	9/01 - 11/15
Ladino Clover	2 ²	8/15 - 9/15
Crimson Clover	6 ²	8/15 - 9/15
Orchard Grass and Oats or Rye	15 ² 40 ²	8/15 - 9/15

¹If using aerial seeding or other broadcast method to apply seed without rolling or tuck-packing, increase seeding rates by 50 percent.

²Pure live seed (PLS)

Table 60-8 Temporary Spring Seeding

Plant Species	Rate ¹ (lb/acre)	Seeding Dates
Winter Rye	50	3/15 - 5/31
Spring Oats	65	3/15 - 5/31
Annual Ryegrass	4 ²	3/15 - 6/15
Sudangrass	16 ²	4/15 - 6/15
K-31 Fescue	30 ²	3/15 - 5/31
Red Clover	2 ²	3/15 - 5/31
& Oats	30 ²	3/15 - 5/31

¹If using aerial seeding or other broadcast method to apply seed without rolling or tuck-packing, increase seeding rates by 50 percent.

²Pure live seed (PLS)

Table 60-5 Soil Stabilization Schedule

Soil Disturbance Activity or Condition	Required Stabilization Time
Soil disturbance has ceased in areas greater than 2,000 square feet.	14 days
After construction of dikes, swales, diversions, and other concentrated flow areas	5 days
When slopes are steeper than 3 horizontal to 1 vertical	7 days
When slopes are greater than 3% and longer than 150 feet.	14 days
Perimeter controls around soil stockpiles.	End of workday
Stabilization or covering of inactive stockpiles.	30 days
When land disturbance is completed, permanent soil stabilization must be installed.	30 days

PERMANENT SEEDING SPECIFICATIONS SHALL CONFORM TO NRCS CONSERVATION PRACTICE STANDARD & SPECIFICATIONS FOR SEEDING.

CODE 340 "COVER CROP"
 CODE 342 "CRITICAL AREA PLANTING"
 CODE 484 "MULCHING"
 CODE 590 "NUTRIENT MANAGEMENT"
 CODE 723 "VEGETATION ESTABLISHMENT, HERBACIOUS SEEDING"

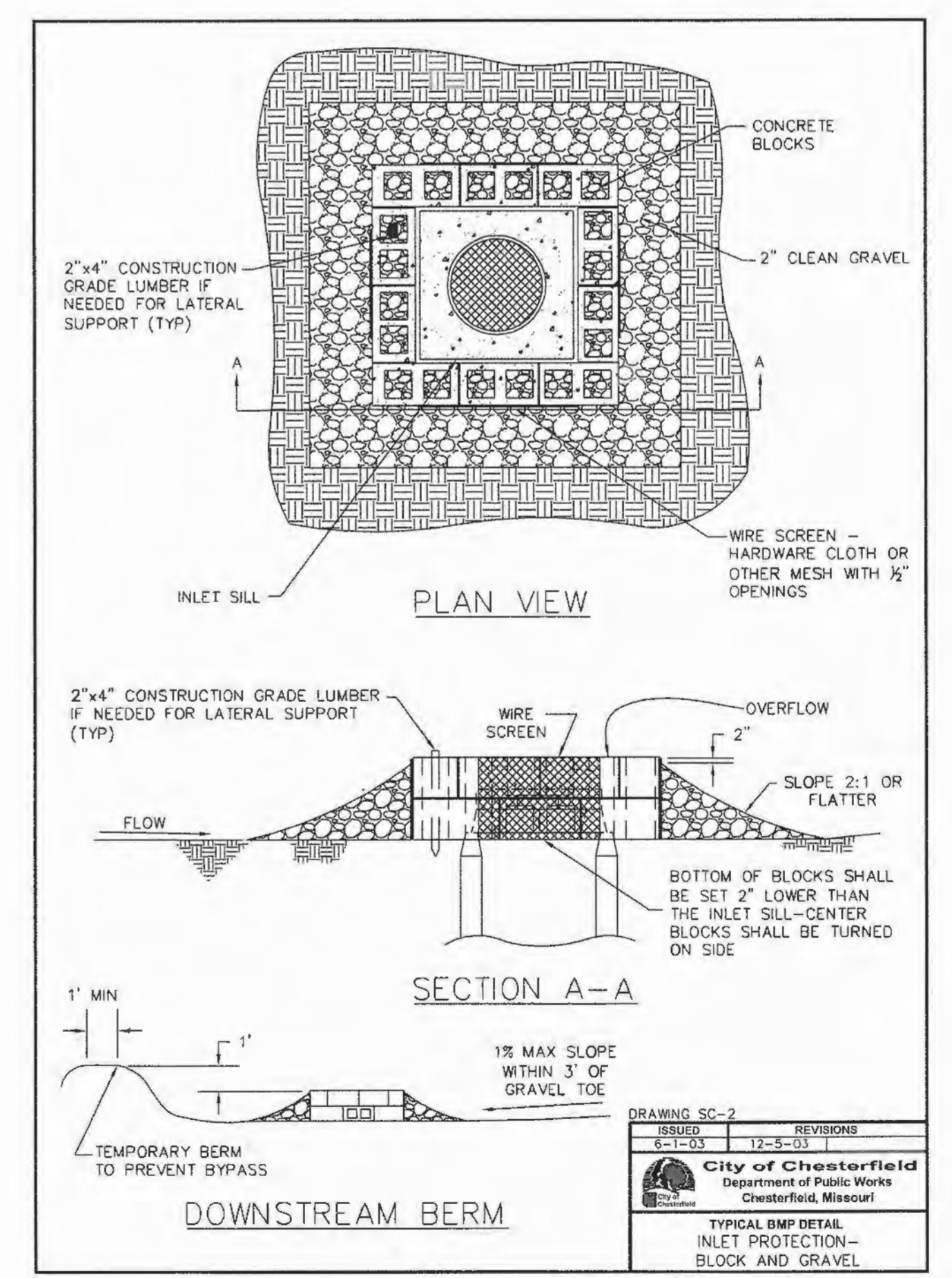
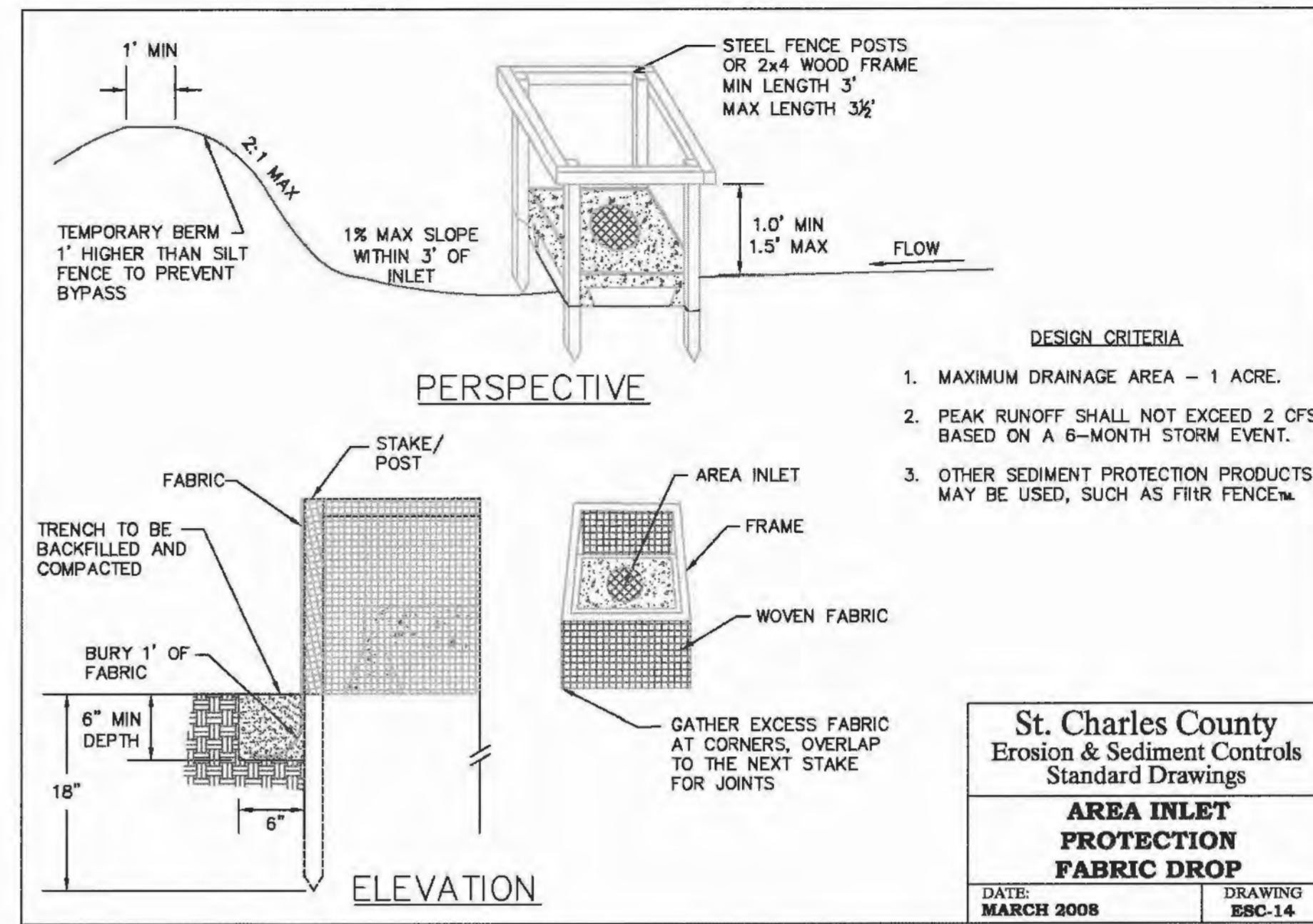
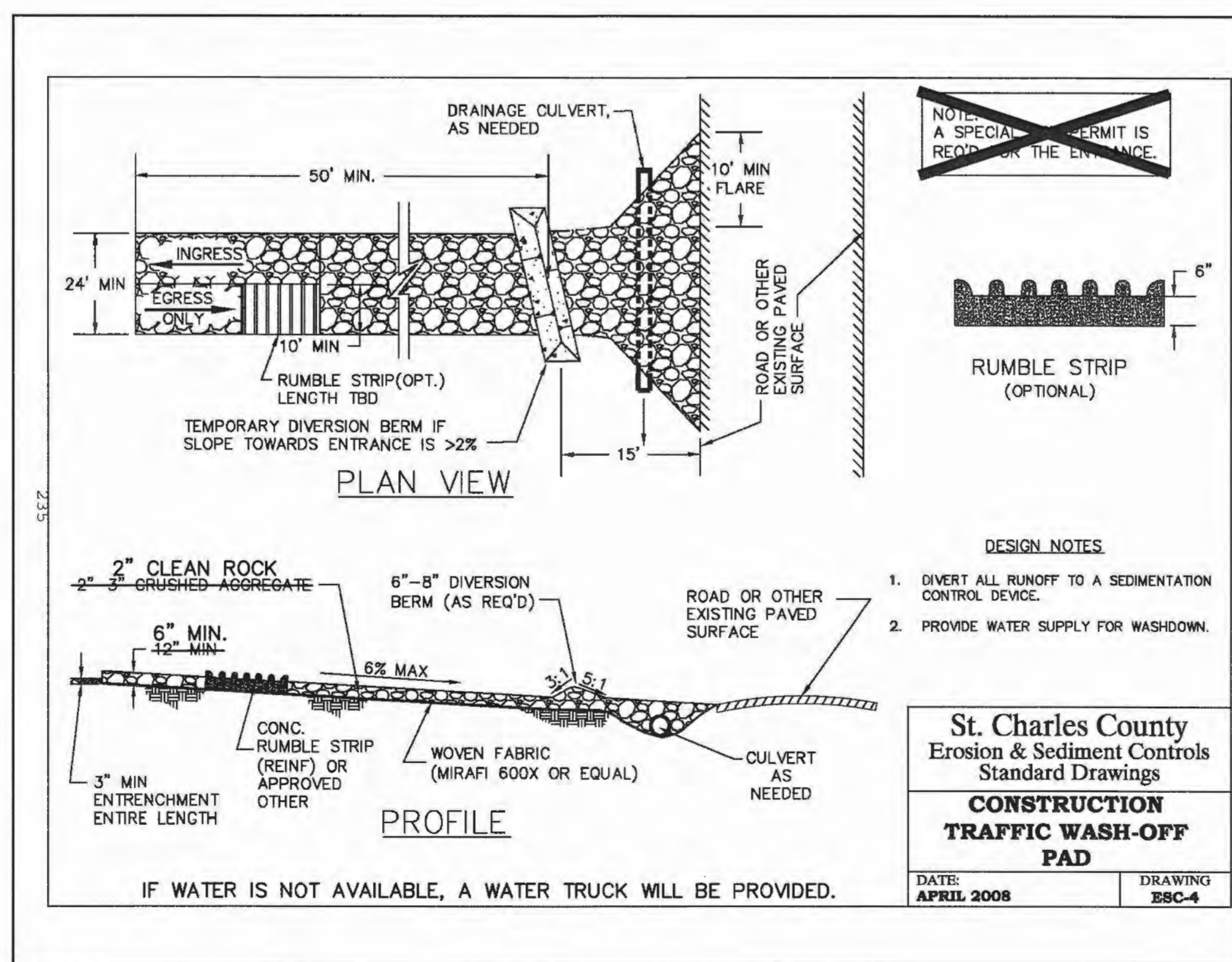
Saint Charles County, Missouri Design Criteria

Table 60-19 Riprap Outlet Dimensions

Pipe Dia. (in)	Velocity ≤ 5 fps				Velocity ≤ 10 fps			
	Rock Size (in) d50	Rock Size (in) d100	Blanket T (in)	Blanket L (ft)	Rock Size (in) d50	Rock Size (in) d100	Blanket T (in)	Blanket L (ft)
12	5	9	15	12	5	9	15	16
15	5	9	15	14	5	9	15	18
18-24	5	9	15	16	9	14	24	20
27-30	5	9	15	18	9	14	24	22
36-42	9	14	24	22	12	18	27	26
48-54	9	14	24	26	12	18	27	30
60-66	12	18	27	34	15	24	30	38
72-84	15	24	30	42	15	24	30	46
96	18	27	30	50	18	27	30	54

For improved channel discharges, the velocity and flow depth will be used.
 For non-circular discharges, the engineer will calculate a circular pipe equivalent.

Where: d₅₀ = median stone size (50% stones equal or smaller size)
 d₁₀₀ = largest stone size (100% stones equal or smaller size)
 T = blanket thickness
 L = length of blanket



PROJECT TITLE
MUIRFIELD MANOR
 PRS No. 13033.MCHO.00R

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ENGINEER'S AUTHENTICATION
 THE RESPONSIBILITY FOR PROFESSIONAL ENGINEERING LIABILITY ON THIS PROJECT IS HEREBY LIMITED TO THE SET OF PLANS AUTHENTICATED BY THE SEAL, SIGNATURE, AND DATE HEREUNDER ATTACHED. RESPONSIBILITY IS DISCLAIMED FOR ALL OTHER ENGINEERING PLANS PROVIDED IN THIS PROJECT AND SPECIFICALLY EXCLUDES REVISIONS AFTER THIS DATE UNLESS REPERMITTED.
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