

Table 60-6 Soil Amendment Rates

Soil Amendment Material	Application Rate (Lb per Acre)	
Fertilizer	Nitrogen (N)	30
	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 culti-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 & Oats	2 ² 30 ²	3/15 - 5/31

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

²Pure live seed (PLS)

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	d100	T (in)	L (ft)	Rock Size (in) d50	d100	T (in)	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

Table 60-5 Soil Stabilization Schedule

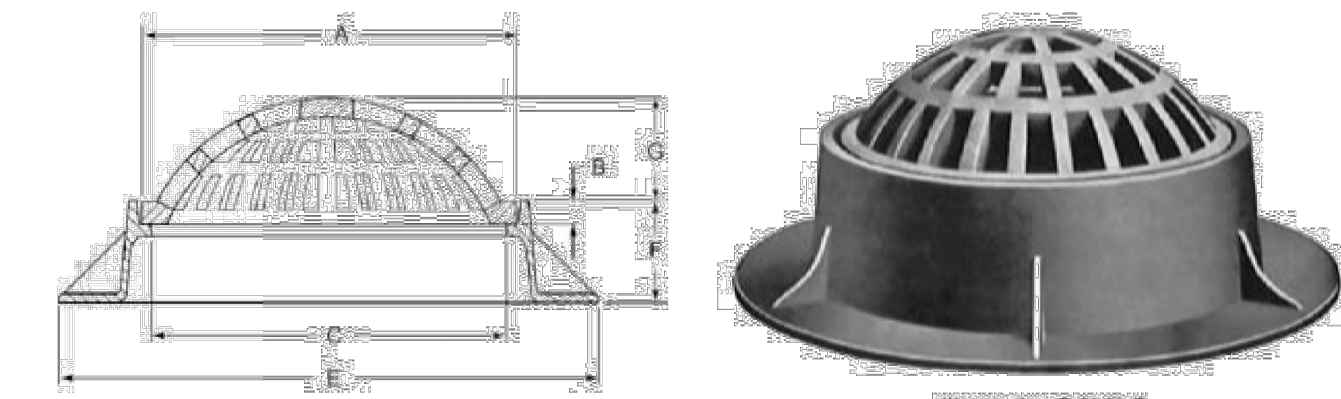
Soil Disturbance Activity or Condition	Required Stabilization Time
Soil disturbance has ceased in areas greater than 2,000 square feet.	14 days
After construction of dikes, swales, diversions, and other concentrated flow areas	5 days
When slopes are steeper than 3 horizontal to 1 vertical	7 days
When 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"

Inlet Frames & Grates

R-2560-D5



CATALOG NUMBER	GRATE TYPE	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER	EQ. PERIMETER
R-2560-A	Grate	12	11	18	4	3.14	R-1791-A		
R-2560-B	Grate	12	11	18	4	3.14	R-1791-B		
R-2560-C1	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-C2	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-D	Grate	22	1-1/2	20	26	3	4 1/2	R-1410	
R-2560-D1	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-D2	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-D3	Grate	22	1-1/2	20	26	3	4 1/2	R-1410	
R-2560-D4	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-D5	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-E	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-F	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-G	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-H	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-I	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-J	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-K	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-L	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-M	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-N	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-O	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-P	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-Q	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-R	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-S	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-T	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-U	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-V	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-W	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-X	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-Y	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	
R-2560-Z	Grate	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690	

Dimensions in inches	A	B	C	E	F	G	Frame/Lid
R-2560-A	12	11	18	4	3.14		R-1791-A
R-2560-B	12	11	18	4	3.14		R-1791-B
R-2560-C1	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-C2	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-D	22	1-1/2	20	26	3	4 1/2	R-1410
R-2560-D1	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-D2	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-D3	22	1-1/2	20	26	3	4 1/2	R-1410
R-2560-D4	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-D5	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-E	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-F	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-G	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-H	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-I	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-J	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-K	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-L	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-M	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-N	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-O	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-P	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-Q	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-R	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-S	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-T	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-U	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-V	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-W	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-X	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-Y	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-Z	22	1-1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690

Catalog Number	A	B	C	E	F
R-2560-D5	22-3/4	1-1/2			

All dimensions are listed in inches unless otherwise noted.

ORIFICE CALCULATIONS:
 $Q = 0.6 * A * \sqrt{RT(2gh)}$
 $A = 1.00 \text{ SQ. FT.}$
 $g = 32.2 \text{ FEET/SEC/SEC}$
 $h = 1.0 \text{ FEET}$
 $Q = 4.8 \text{ CFS}$

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 DETAILS

CITY OF O'FALLON APPROVED 01/25/16 PERMIT NUMBER 2015-2-005 DCSD APPROVED 11/30/15 APPROVED 12/30/15