

Erosion control shall consist of temporary control measures as detailed on the plans or ordered by the governing agency during the life of the contract to control soil erosion and Sedimentation through use of erosion control best management practices (BMP's).

Sediment control shall be accomplished by seeding and mulching all disturbed areas immediately upon completion of excavation or fill and finish grading in accordance with specifications of the ODNr Rainwater and Land Development Manual.

Temporary erosion and sediment control items, the location and size of which are detailed on the plans, shall be installed by the contractor prior to commencement of any clearing or earthwork operations. Conditions that develop during construction that were not foreseen during design stage; that require additional or modified temporary or permanent BMP's shall be approved by the design engineer and reflected on the revised Water Management and Sediment Control Plan.

Erosion and sediment controls shall be implemented as the first step of grading and within 7 days from the start of grubbing. Upon completion of construction, seeding and mulching shall immediately follow to aid in the stabilization and minimize erosion and sediment. All erosion and sediment controls shall continue to function until disturbed areas are re-stabilized.

Other erosion and sediment control items may be necessary due to environmental conditions and may be required at the discretion of the City of Willowick or its representatives.

Site stabilization either permanent or temporary must follow the requirements as applicable on the following tables:

Area requiring permanent stabilization	Time frame to apply erosion control
Any area that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any area within 50 ft. Of a stream and at final grade	Within two days of reaching final grade
Any other areas at final grade	Within seven days of reaching final grade within that area

Area requiring temporary stabilization	Time frame to apply erosion control
Any disturbed areas within 50 ft. of a stream and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 14 days
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 ft. Of stream	Within seven days of the most recent disturbance within the area
	For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s)
Disturbed areas that will be idle over winter	Prior to November 1 straw mulch 2 to 3 bales per 1000 sq.ft. and or 2 tons per acre.

Note: Where vegetative techniques may cause structural instability or are otherwise unattainable, alternative stabilization techniques must be employed.

Temporary Seeding Species Selection			
Seeding Dates	Species	Lb/1,000 ft	Per Ac.
March 1 to August 15	Oats	3	128 lb
	Tall Fesue	1	40 lb
	Annual Ryegrass	1	40 lb
	Perennial Ryegrass	1	40 lb
	Tall Fesue	1	40 lb
	Annual Ryegrass	1	40 lb
August 16 to November 1	Rye	3	112 lb
	Tall Fesue	1	40 lb
	Annual Ryegrass	1	40 lb
	Wheat	3	120 lb
	Tall Fesue	1	40 lb
	Annual Ryegrass	1	40 lb
	Perennial Ryegrass	1	40 lb
	Tall Fesue	1	40 lb
November 1 to Spring Seeding	Annual Ryegrass	1	40 lb
	Perennial Ryegrass	1	40 lb
	Tall Fesue	1	40 lb

Note: Other approved seed species may be substituted

Seeding areas shall be inspected and where the seed has not produced 80% cover shall be reseeded as necessary by the contractor. Areas shall be stabilized with mulch when conditions prohibit seeding.

Straw mulching shall be applied at a rate 2-3 standard 45 lb. Bales per 1000 sq.ft. of disturbed area or 2 tons per acre. All hydroseeding must be straw mulched according to the above specifications unless it is watered weekly.

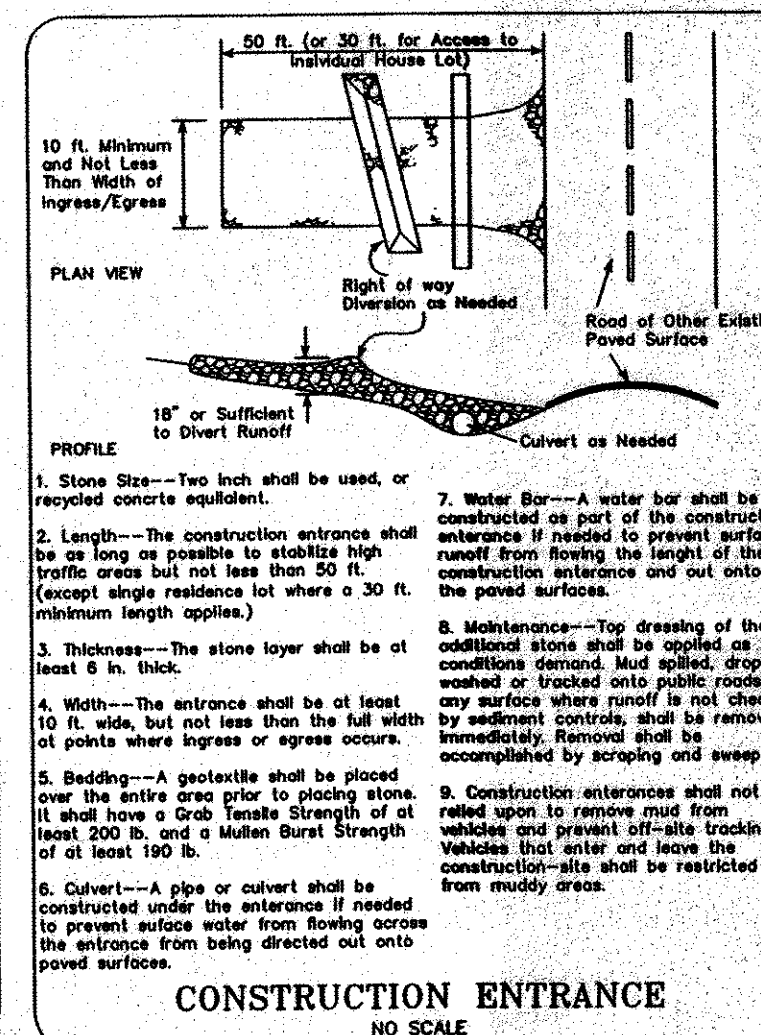
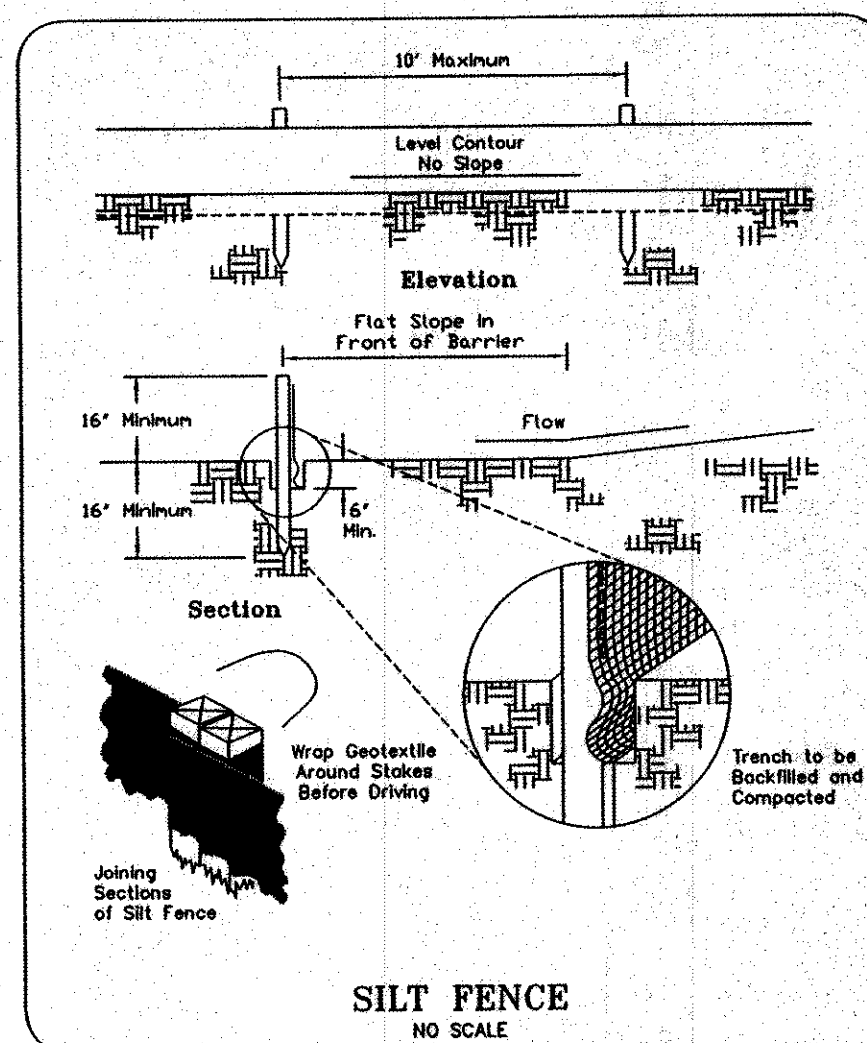
All detention ponds, retention ponds, water quality structures, sediment ponds, sediment traps, earthen diversions or embankments shall be seeded and mulched within 7 days of completed construction.

Disturbed areas that will remain inactive for a period of 21 days or longer shall be stabilized with seeding and mulching or other appropriate means, within seven day after earth moving ceases. Permanent soils stabilization shall be installed within seven days after final grading is reached on any portion of the site.

Stabilize areas within fifty (50) feet of any wetland or stream, within two (2) days on all inactive disturbed areas that will remain inactive for fourteen (14) days or longer.

Permanent Seeding			
Seed Mix	Seeding Rate		Notes
	lb/ac	lb/1,000 ft	
General Use			
Creeping Red Fescue	20-40	1/2-1	
Domestic Ryegrass	10-20	1/4-1/2	
Kentucky Bluegrass	10-20	1/4-1/2	
Tall Fescue	40	1	
Dwarf Fescue	40	1	
Steep Banks or Cut Slopes			
Tall Fescue	40	1	
Crown Vetch	10	1/4	Do not seed later than August
Tall Fescue	20	1/2	
Flat Pea	20	1/2	Do not seed later than August
Tall Fescue	20	1/2	
Road Ditches and Swales			
Tall Fescue	40	1	
Dwarf Fescue	90	2 1/4	
Kentucky Bluegrass	5		
Lawns			
Kentucky Bluegrass	60	1 1/2	
Perennial Ryegrass	60	1 1/2	
Kentucky Bluegrass	60	1 1/4	For shaded areas
Creeping Red Fescue	60	1 1/4	

Note: Other approved seed species may be substituted.



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1. Preexisting vegetation shall be retained on idle portions of the building lot for as long as construction operations allow. Clearing shall be done so only active working areas are bare.
2. Temporary seed and/or mulch shall be applied to areas, such as stockpiles and rough grading, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 21 days or more.
3. Stockpiles created from basements and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.
4. Silt fence and other sediment barriers shall control sheet flow runoff from the building lot. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working conditions.
5. Construction vehicle access shall be limited to one route, to the greatest extent practical. The access shall be gravel or crushed rock underlain with geotextile.
6. Mud tracked onto the street or sediment settled around curb inlet protection shall be removed daily or as needed to prevent it from accumulating. It shall be removed by shovelling and scraping and shall NOT be washed off paved surfaces or into storm drains. Sediment removed shall be placed where it will not be subject to erosion or concentrated runoff.
7. Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction site.
8. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 21 days or greater. These idle areas shall be seeded within 7 days after grading.
9. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
10. Soil Amendments—Temporary vegetation seeding rates shall establish adequate stands of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
11. Seeding Method—Seed shall be applied uniformly with a cyclone spreader, drill, cultipacker seeder, or hydroseeder. When feasible, seed that has been broadcast shall be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used, the seed and fertilizer will be mixed on-site and the seeding shall be done immediately and without interruption.