

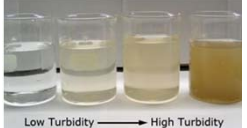


# Commercial Sites & Subdivisions

**McMAHON** ENGINEERS ARCHITECTS  
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May 11, 2011

## Control the discharge of pollutants from construction sites through:

- Site Planning
- Erosion Controls
- Sediment Controls
- Pollution Prevention



- Performance Standards
- Technical Standards
- Guidance Documents

## Site Planning: Protect Sensitive Areas




**Streams, Rivers, Lakes, Wetlands, Endangered Species, Archaeological, Steep Slopes**



**Soil Compaction**

## Site Planning: Sequencing & Schedule




**Minimize Size & Duration Of Soil Disturbance**

February 2003							March 2003						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	9	10	11	12	13	14	15
16	17	18	19	20	21	22	16	17	18	19	20	21	22
23	24	25	26	27	28		23	24	25	26	27	28	29
							30	31					

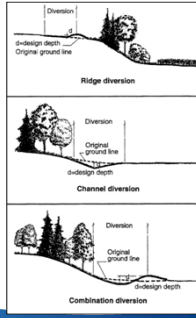
June 2003							July 2003						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	6	7	8	9	10	11	12
8	9	10	11	12	13	14	13	14	15	16	17	18	19
15	16	17	18	19	20	21	20	21	22	23	24	25	26
22	23	24	25	26	27	28	27	28	29	30	31		
29	30												

October 2003							November 2003						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	7
2	3	4	5	6	7	8	8	9	10	11	12	13	14
9	10	11	12	13	14	15	15	16	17	18	19	20	21
16	17	18	19	20	21	22	16	17	18	19	20	21	22
23	24	25	26	27	28	29	23	24	25	26	27	28	29
30	31						30	31					

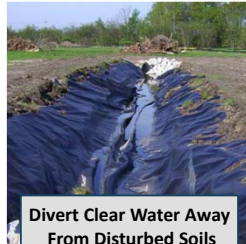
## Site Planning: Sequencing & Phasing




**Divert Clear Water Away From Disturbed Soils (Seed & Erosion Mat)**



## Site Planning: Sequencing & Phasing



**Divert Clear Water Away From Disturbed Soils (Temporary Plastic Liner)**



**Failure of Clear Water Diversion (material or construction technique?)**

### Site Planning: Sequencing & Phasing

Roof Downspouts

Divert Clear Water Away From Disturbed Soils

### Site Planning: Tracking Pad

May Need a Longer Tracking Pad

### Site Planning: Tire Washing

Tracking Pad May Not Be Enough

May Need a Tire Washing Station

### Erosion Control: Soil Stabilization

Hydro-Mulching

Seed & Polymer

Seed & Erosion Mat

Seed & Mulching

### Erosion Control: Slope Stabilization

Seed & Erosion Mat Steep Slope (duration)

Seed & Mulch Flat Slope

### Erosion Control: Slope Stabilization

Seeding Only

Seeding & Mulching

Seeding & Erosion Mat

### Erosion Control: Slope Stabilization



Improper Anchoring of Erosion Mat along Steep Slope

### Erosion Control: Channel Protection



Channel Erosion Mat (duration of use, flow velocity, installation, maintenance)

### Erosion Control: Non-Erosive Discharge



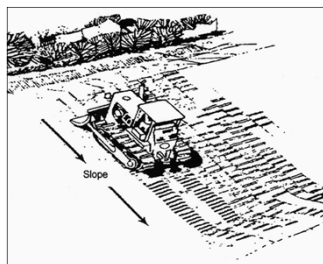
Storm Sewers, Culverts, Dewatering, etc.

### Sediment Control: Surface Roughening



### Sediment Control: Surface Roughening

- Direction of track imprint is important
- Track imprints act as mini check dams



### Sediment Control: Silt Fence



### Sediment Control: Silt Fence



Repair Damage at End Of Each Work Day



Improper Joint Gap

### Sediment Control: Silt Fence



Good Install



Joint Wrap



Support Cord

### Sediment Control: Inlet Protection



### Sediment Control: Ditch Check



Drainage Area Less than 1 Acre

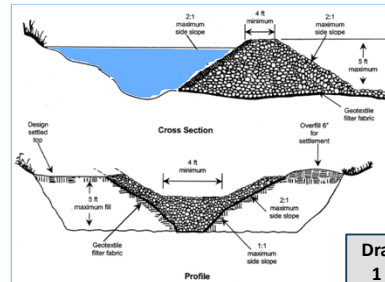
### Sediment Control: Ditch Check



Improper Installations



### Sediment Control: Sediment Trap



Drainage Area 1 to 5 Acres

### Sediment Control: Sediment Trap



Outlet Failure



Outlet 3 to 6-Inch Clear Washed Stone

### Sediment Control: Sediment Basin



Drainage Area More than 5 Acres

### Sediment Control: Dewatering



Dewatering Bag

### Sediment Control: Dewatering



Sediment Trap or Basin (polymers to enhance settling?)



Vegetated Buffer

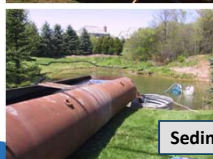
### Sediment Control: Dewatering



Cartridge Filter



Sediment Tank



### Pollution Control: Concrete Wash Out



## Pollution Control: Spills, Materials, Wastes



## Questions

