TIMING

EROSION CONSTRUCTION SEQUENCE

1. The developer or its appointed representatives will assume responsibility for installation and maintenance of all soil erosion control measures during construction. The installation of the soil erosion control measures will be completed in phases, as follows:

A. Prior to any grading or earthwork:
A-1 Silt fence and diversions to be installed as shown on swppp plans.
A-2 Install construction entrance(S) as shown on swppp plans.
A-3 Install inlet protection on existing catch basins and inlet devices.

B. Prior to rough grading:
B-1 Install sediment basins and/or detention basins with temporary basin outlet filter.
B-2 Check dams to be placed in ditch as shown on the grading plan.

C. After rough grading, installation of street & site paving, storm sewer and catch basins:
C-1 All disturbed areas shall be temporarily or permanently seeded and/or mulchod, excepting building pad area.
C-2 Catch basins to be covered with sediment filters as indicated on the plans.

D. After completion of all construction, removal of any debris, stockpiles, excess material and equipment, cleanup of site and seeding and mulching is well established to prevent runoff.
D-1 Remove all silt fences and check dams.
D-2 Repair and seed any area affected by the removal of temporary erosion control devices.
D-3 Remove all temporary erosion control devices.

2. Care will be taken not to disturb any existing natural vegetation not involved in the construction process, whenever possible.

3. Timely inspections of the erosion control measures will be made every 7 days, and/or after any rainfall of at least ½" in a 24 hour period.

INSPECTION SCHEDULE

1. DIVERSION AND STRUCTURAL MEASURES - will be inspected at seven (7) day intervals or after every rain storm producing runoff.

2. SEDIMENT BASINS AND PONDS - will be checked after each major phase of the development for sediment accumulation.

3. VEGETATIVE PLANTINGS - Spring plantings will be checked during summer or early fall.

4. REPAIRS - Any erosion control measures, structural measures, or other related items in need of repair will be made within seven (7) days.

5. MOWING - drainageways, ditches and other areas that support a designed flow of water will be mowed regularly to maintain that flow.

6. FERTILIZATION - Seeded areas where the seed has not produced a good cover will be inspected and fertilized as necessary.

TEMPORARY MODIFICATIONS TO STORMWATER BASINS USED FOR SEDIMENT CONTROL DURING CONSTRUCTION

1. The stormwater basin shall be constructed and all temporary sediment control modifications shall be operational before upslope land disturbance begins.

2. The basin shall be stabilized immediately following its construction. In no case shall the embankment or emergency spillway remain bare for more than 7 Days.

3. During site construction, sediment shall be removed when the sediment has filled one-half the basin's original depth or as indicated on the plans.

4. Final removal - temporary structures or modifications used for sediment control during construction shall be removed only after the upstream drainage area is stabilized or as indicated in the plans. Dewatering and removal shall not cause sediment to be discharged.

5. Sediment shall be removed as needed to achieve the design depth and dimensions of the permanent basin.

SEEDING

Specifications for Temporary Seeding

Temporary Seeding Species Selection

Seeding Dates	Species	Lb./1,000 ft.²	Per Acre
March 1 to August 15	Oats	3	4 bushel
Tall Fescue	1	40 lb.	
Annual Ryegrass	1	40 lb.	
Perennial Ryegrass	1	40 lb.	
Tall Fescue	1	40 lb.	
Annual Ryegrass	1	40 lb.	
August 16 to November 1	Rye	3	2 bushel
Tall Fescue	1	40 lb.	
Annual Ryegrass	1	40 lb.	
	Wheat	3	2 bushel
Tall Fescue	1	40 lb.	
Annual Ryegrass	1	40 lb.	
Perennial Ryegrass	1	2 bushel	
Tall Fescue	1	40 lb.	
Annual Ryegrass	1	40 lb.	
November 1 to Spring Seeding	Use mulch only, sodding practices or dormant seeding		

Note: Other approved seed species may be substituted.

1. 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.

2. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 45 days or more. These idle areas shall be seeded as soon as possible after grading or shall be seeded within 7 days. Several applications of temporary seeding are necessary on typical construction projects.

3. The seedbed shall be pulverized and loose to ensure the success of establishing vegetation. However, temporary seeding shall not be postponed if ideal seedbed preparation is not possible.

4. Soil Amendments -- Applications of temporary vegetation shall establish adequate stands of vegetation which may require the use of soil amendments. Soil tests shall be taken on the site to predict the need for lime and fertilizer.

5. Seeding method -- Seed shall be applied uniformly with a cyclone seeder, 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.

MULCHING TEMPORARY SEEDING

1. Applications of temporary seeding shall include mulch which shall be applied during or immediately after seeding. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization.

2. Materials:

-- Straw -- If straw is used, it shall be unrotted small grain straw applied at the rate of 2 tons/acre or 90 lb./1,000 sq. ft. (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. Bales of straw in each section.

-- Hydroseeders -- If wood cellulose fiber is used, it shall be used a 2,000 lb./ac. Or 46 lb./1,000 sq. ft.

-- Other -- Other acceptable mulches include mulch mattings applied according to manufacturer's recommendations or wood chips applied at 6 tons/ac.

3. Straw mulch shall be anchored immediately to minimize loss by wind or water. Anchoring Methods:

-- Mechanical -- A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 in.

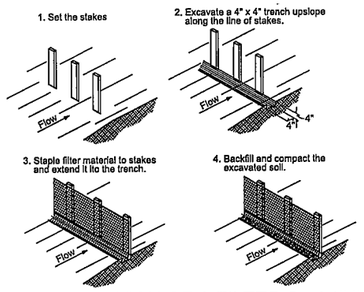
-- Mulch Nettings -- Nettings shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentration runoff and on critical slopes.

-- Asphalt Emulsion -- Asphalt shall be applied as recommended by the manufacturer or at the rate of 160 gal./ac.

-- Synthetic Binders -- Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equal may be used at rates recommended by the manufacturer.

-- Wood-Cellulose Fiber -- Wood-cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The woodcellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal.

SILT FENCE AND DIVERSIONS



CONSTRUCTION OF A FILTER BARRIER (SILT FENCE)

NOT TO SCALE

SILT FENCE NOTES

1. Silt fence shall be constructed before upslope land disturbance begins.

2. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions which may carry small concentrated flows to the silt fence are dissipated along its length.

3. To prevent water ponded by the silt fence from flowing around the ends, each end shall be constructed upslope so that the ends are at a higher elevation.

4. Where possible, silt fence shall be placed on the flattest area available.

5. Where possible, vegetation shall be preserved for 5 ft. (Or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.

6. The height of the silt fence shall be a minimum of 16 in. Above the original ground surface.

7. The silt fence shall be placed in a trench cut a minimum of 6 in. Deep. The trench shall be cut with a trencher, cable laying machine, or other suitable device which will ensure an adequately uniform trench depth.

8. The silt fence shall be placed with the stakes on the downslope side of the geotextile and so that 8 in. of cloth are below the ground surface. Excess material shall lay on the bottom of the 6-in.-Deep trench. The trench shall be backfilled and compacted.

9. Seams between section of silt fence shall be overlapped with the end stakes of each section wrapped together before driving into the ground.

10. Maintenance - silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under or around the ends, or in any other way becomes a concentrated flow, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.

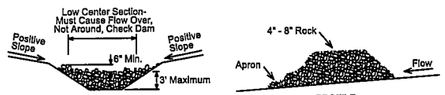
Criteria for silt fence materials

1. Fence posts - the length shall be a minimum of 32 in. long. Wood posts will be 2-by-2-in. hardwood of sound quality. The maximum spacing between posts shall be 10 ft.

2. Silt fence fabric shall be odot type c geotextile fabric or as described by The chart below:

Fabric Properties	
Minimum Tensile Strength	120 lbs.
Maximum Elongation at 60 lbs	50%
Minimum Puncture Strength	50 lbs.
Minimum Tear Strength	40 lbs.
Minimum Burst Strength	200 psi
Apparent Opening Size	≤0.84mm
Minimum Permitivity	$1x10^{-2}$ sec^{-1}
Ultraviolet Exposure Strength Retention	70%

CHECK DAM



CROSS SECTION PROFILE

1. The check dam shall be constructed of 4-8-in.-Diameter stone, placed so that it completely covers the width of the channel.

2. The top of the check dam shall be constructed so that the center is approximately 6 in. lower than the outer edges, so water will flow across the center and not around the ends.

3. The maximum height of the check dam at the center of the weir shall not exceed 3 ft.

4. Spacing between dams shall be as shown in the plans.

Check Dam Spacing

Dam Height (ft.)	Channel Slope < 5%	5-10%	10-15%	15-20%
1	65 FT.	30 FT.	20 FT.	15 FT.
2	130 FT.	65 FT.	40 FT.	30 FT.
3	200 FT.	100 FT.	65 FT.	50 FT.

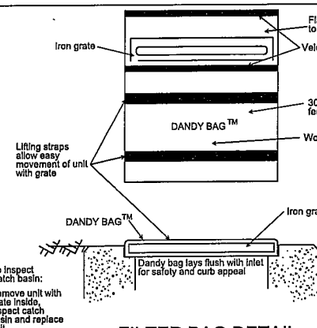
SEDIMENTATION & EROSION CONTROL LEGEND

[1] - INDICATES YARD INLET SEDIMENT FILTER FOR PROTECTION.

[2] - INDICATES TEMPORARY CHECK DAM

—— SF —— - SILT FENCE

INLET PROTECTION



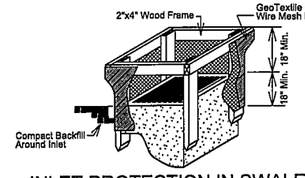
FILTER BAG DETAIL

MINIMUM AVERAGE FABRIC VALUES

Properties	Test Method	Test Values
Grab Tensile Strength 5lbs) (warp/fill)	ASTM D 4632	350/260
Grab Elongation (%) (warp/fill)	ASTM D 4632	27/15
Trapezoid Tear (lbs) (warp/fill)	ASTM D 4533	100/80
Puncture (lbs)	ASTM D 4833	130
Mullen Burst (psi)	ASTM D 3786	515
Ultra-Violet Resistance (% @ 500 hrs.)	ASTM D 4355	90%
Apparent Opening Size (U.S. sieve size)	ASTM D 4751	30
Permitivity (/sec)	ASTM D 4491	1.10
Permeability k (cm/sec)	ASTM D 4491	.05
Open Area (%)	CSE 92215 66	11%
Mass per Unit Area (oz./SY)	ASTM D 5261	5.0
Water Flow Rate (gpm/sf)	ASTM D 4491	110

INSTALLATION:
Stand grate on end. Place Dandy Bag over grate. Roll grate over so that open end is up. Pull up slack. Tuck flap in. Press velcro strips together. Be sure end of grate is completely covered by flap or Dandy Bag will not work properly. Holding handles, carefully place Dandy Bag with grate inserted into catch basin frame.

MAINTENANCE
With a stiff bristle broom or square point shovel remove silt & other debris off surface after each event. Remove fine material from inside envelope as needed.



INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS [2]

1. Inlet protection shall be constructed either before upslope land disturbance begins or before the storm drain becomes operational.

2. The earth around the inlet shall be excavated completely to a depth at least 18 in.

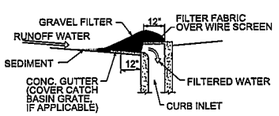
3. The wooden frame shall be constructed of 2-by-4-in. construction-grade lumber. The 2-by-4-in. posts shall be driven 1 ft. into the ground at four corners of the inlet and the top portion of 2-by-4-in. frame assembled using the overlap joint shown. The top of the frame shall be at least 6 in. below adjacent roads if ponded water would pose a safety hazard to traffic.

4. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.

5. Geotextile shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 in. below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened to the same post.

6. Backfill shall be placed around the inlet in compacted 6-in. Layers until the earth is even with notch elevation on ends and top elevation on sides.

7. A compacted earth dike or a check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression and if runoff bypassing the inlet will not flow to a settling pond. The top of earth dikes shall be at least 6 in. higher than the top of the frame.



GRAVEL CURB INLET SEDIMENT FILTER

1. Filter fabric, meeting O.D.O.T. Spec. 712.09, Type "c", shall be placed over the curb inlet opening so that at least 12" of fabric, wire mesh and gravel extend across the inlet cover and at least 12" of fabric extends across the concrete gutter (past the grate, if applicable) from the inlet opening, as per detail.

2. Stone shall be piled against the fabric so as to anchor it against the gutter and inlet cover and to cover the fabric completely. O.D.O.T. No. 2 Coarse aggregate shall be used.

3. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30" And 4' longer than the throat length of the inlet, 2' on each side. The filter fabric and gravel shall entirely cover the wire mesh.

4. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the block, cleaned and replaced.

SPECIFIC APPLICATION

This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas.

SMALL LOT BUILDING SITES

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 (Annual rye, oats, etc.) And/or mulch shall be applied to areas, such as stockpiles, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 14 days or more.

3. Stockpiles excavated from basements shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched.

4. Silt fence shall control sheet flow runoff from the building lot. It shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as inlet protection and sediment traps shall also be used as needed to control sediment runoff.

5. Construction vehicle access shall be limited to one route, to the greatest extent practical. The access shall be gravel or crushed rock applied to the driveway area.

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.

SEDIMENTATION, EROSION CONTROL, SEEDING, MULCHING & FERTILIZING NOTES

1. Sediment and erosion control facilities shall be installed and maintained in accordance with the latest edition of "rainwater and land development" handbook as prepared by the ohio department of natural resources division of soil and water conservation.

2. All disturbed areas shall be temporarily or permanently seeded and mulched or permanently sodded immediately upon completion of or significant suspension of grading or excavation operations. Vegetative stabilization must be accomplished within 7 days on portions of a site planned to be idle for more then 45 days.

3. When temporary erosion control measures become ineffective due to clogging or erosion they shall be maintained or repaired and replaced as directed by the developer, Ohio EPA or the city/county engineer.

4. All required runoff control facilities shall be in place prior to commencing any construction.

5. The developer is responsible for obtaining a npdes storm water general permit from the Ohio Environmental Protection Agency (OEPA) for this site including notice of intent (NOI) prior to construction and notice of termination (NOT) when construction is complete.

6. The developer or its appointed representative shall make inspections of the sedimentation and erosion control devices, materials and procedures used on this site and shall provide notes and documentation of these inspections upon request of (OEPA) or the city/county engineer. These inspections shall be made weekly or within 24 hours after a ½" or greater rain storm.

7. The developer or its appointed representative is responsible for the implementation, maintenance and repair of the sedimentation and erosion control devices, materials and procedures for this site.

NON-SEDIMENT POLLUTION CONTROL

1. Construction personnel, including subcontractors who may use or handle hazardous or toxic materials, shall be made aware of the following general guidelines:

Disposal and Handling of Hazardous and Other Construction Waste

DO:
- Prevent spills
- Use products up
- Follow label directions for disposal
- Remove lids from empty bottles and cans when disposing in trash
- Recycle wastes whenever possible

DON'T
- Don't pour into waterways, storm drains or onto the ground
- Don't pour down the sink, floor drain or septic tanks
- Don't bury chemicals or containers
- Don't burn chemicals or containers
- Don't mix chemicals together

2. Containers shall be provided for collection of all waste material including construction debris, trash, petroleum products and any hazardous materials to be used on-site. All waste material shall be disposed of at facilities approved for that material.

3. No waste materials shall be buried on-site. Site personnel, including sub- contractors shall be notified that no construction-related materials are to be buried on-site.

4. Mixing, pumping, transferring or otherwise handling construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.

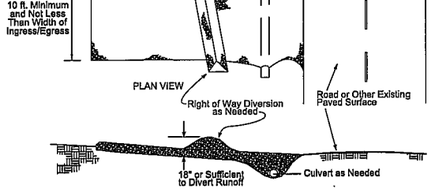
5. Equipment fueling and maintenance, oil changing, etc., Shall be performed away from watercourses, ditches or storm drains, in an area designated for that purpose. The designated area shall be equipped for recycling oil and catching spills.

6. Concrete wash water shall not be allowed to flow to streams, ditches, storm drains, or any other water conveyance. A sump or pit shall be constructed if needed to contain concrete wash water.

7. If hazardous substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto the soil, the soil should be dug up and disposed of with the trash at a licensed sanitary landfill (not a construction/demolition debris landfill). Spills on pavement shall be absorbed with sawdust or kitty litter and disposed of with the trash at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. Contact Ohio EPA (1-800-282-9378).

8. Spills of 25 gal. or more of petroleum products shall be reported to Ohio EPA (1-800-282-9378), the local fire department, and the local emergency planning committee within 30 min. of the discovery of the release.

CONSTRUCTION ENTRANCE



1. Stone size - two-inch stone shall be used, or recycled concrete equivalent.

2. Length - the construction entrance shall be as long as required to stabilize high traffic areas but not less than 50 ft. (Except on single residence lot where a 30-ft. minimum length applies).

3. Thickness - the stone layer shall be at least 6 in. thick.

4. Width - the entrance shall be at least 10 ft. wide, but not less than the full width at points where ingress or egress occurs.

5. Bedding - a geotextile shall be placed over the entire area prior to placing stone. It shall have a grab tensile strength of at least 200 lb. and a mullen burst strength of at least 190 lb.

6. Culvert - a pipe or culvert shall be constructed under the entrance if needed to prevent surface water flowing across the entrance from being directed out onto paved surfaces.

7. Water bar - a water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.

8. Maintenance - top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.

9. Construction entrance shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.

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STATE OF OHIO
CHRISTOPHER W. SCHAEFFER
45982
REGISTERED
PROFESSIONAL ENGINEER

PROPOSED BANKING CENTER AND OFFICES FOR:
KENWOOD BRANCH
MONTGOMERY ROAD
CINCINNATI, OH 45236

first financial

REVISIONS / SUBMISSIONS

NO.	DESCRIPTION	DATE

SCHAEFFER ENGINEERING
ENGINEERS
4230-G Lyons Road
Dayton, Ohio 45449
Tel: (937) 434-8164

EROSION CONTROL NOTES & DETAILS

Drawn By: K4
Scale: AS NOTED
Job No.:

CO5