

Minor Erosion Control Site Development (Residential) (Ordinance NO. 024-06, 71.04, Required by IDNR MS4 Permit)

Erosion Control Site Plan is a required element to obtain a Minor Erosion Control Permit, which is a requisite to receiving a Building Permit. The following educational material is to assist you in constructing a proper Erosion Control Site Plan and to provide proper Best Management Practices (BMP's) to implement during construction to avoid potential fines and penalties.

Required Sediment Controls

- ✓ *Perimeter Controls*
- ✓ *Graveled Drive*
- ✓ *Concrete Washout Facility*
- ✓ *Debris Confinement*
- ✓ *Good Housekeeping*

Perimeter controls to pond up sediment runoff long enough prior to leaving the site to drop out the suspended soil particles. *The following perimeter controls were singled out since they are most commonly used on site.*

Silt Fence Installation Requirements

- Install parallel on the lower contours of site with the ends extending upward perpendicular to the slope a short distance, creating a J-Hook, thus containing and allowing water to pond behind fence;
- Entrench 6-8 inches deep;
- Stake every 3 ft unless in a high flow concentrated area, then the staking distance is every foot;
- When used as **ditch checks**, a combination with additional sediment controls (ex. straw/hay bales, 12"-18" compost/wood mulch socks, etc.) are to be placed in front up against the silt fence preventing undercutting activity from developing and to provide additional structural strength;
- Overlap connecting sections of silt fence leaving no gaps between the fences;
- Inspect once a week and after every .5 inches of rainfall. (Clean once the sediment buildup reaches half the silt fence height.) If maintenance and/or repairs are required, corrective actions shall be implemented within 24 hours.

Filter Sock Installation Requirements

- Composed of compost and wood mulch, **NO waddles shall be used as Perimeter Controls, unless pre-approved;**
- Stake every 3-4 ft unless located in a high flow area (waterway, ditch) then the staking distance is every foot in the concentrated areas;

- When used as perimeter control, 9", 12", or 18" filter sock shall be determined by the steepness of the slope.

Slope	Sock Size
7:1 <	9"
5:1-7:1	12"
3:1-4:1	16"-18"
Less	Double Layer 16"-18"

Gator Guard Installation Requirements

- The 6-inch flap shall be trench in a minimum of 6 inches. *(Covering the flap with dirt is not acceptable);*
- The ends of the section shall be positioned in a J-Hook fashion;
- The size of the roll shall be determined by the slope grade ratio. *(This product will not be allowed on any portion of the lot where the grade is steeper than and 5:1 slope.)*

Slope	Sock Size
9:1 or less	6"
5:1-7:1	9"

IMPORTANT additional measures may be needed if your site:

- is within 300 ft of a stream or wetland,
- is within 1000 ft of a lake,
- is steep (slopes 10% or more),
- receives runoff from 10,000 sq ft or more of adjacent land,
- has more than one acre of disturbed ground.

For more information on appropriate measures for these types of sites, please consult the City of Cedar Rapids Erosion Control sector of the Public Works Department at 319-286-5802, or Linn county Soil and Water Conservation District at 319-377-5960.

Gravel Drive used by all vehicles to limit/eliminate tracking off sediment from the site.

Gravel Drive Requirements

- Use rock that is 2 inches or greater in size;
- Make sure it extends a minimum of 20 ft in from the curb/street (if possible).

Concrete Washout Facility to obtain the confinement of concrete residue since it has a pH of 12 (higher than ammonia).

Concrete Washout Requirements

- Must be located within the lot's perimeter controls, on level ground, and is accessible from a hard surface.

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Concrete Washout Requirements (Cont.)

- Can be constructed from 12-18 inch filter sock in a double layer ring fashion with a plastic lining;
- If using a concrete Bag, it must be staked and tied up;
- Inspect once a week and after every .5 inches of rainfall. (Clean once the control is half full of sediment). If maintenance and/or repairs are required, corrective action(s) shall be implemented within 24 hours.

Debris Confinement: To prevent debris from finding its way into storm inlets, constricting/obstructing storm sewer lines and/or from blowing onto adjacent properties:

- Install a trash container(s) on site;
- Can be comprise of trash bins, trash cans, dumpster, etc. (Anything smaller than a bin or dumpster, must have lids and be tied and staked down.)

Good Housekeeping: Maintain/replace damaged sediment controls, and cleanup any sediment that has been carried off-site by vehicles and/or storm water runoff.

Inlet Protection Devices

- **Inlet protection** will not be required as long as sediment controls have been properly placed, maintained, and are performing acceptably *(preventing sediment from leaving the site.)* However, habitual violators will be required by the city to install inlet protection.

Required Erosion Controls

- ✓ *Preservation Controls*
- ✓ *Stockpile*
- ✓ *Limit Time*
- ✓ *Temp Seeding*
- ✓ *Permanent Seeding or Sodding*

Preservation: Preserve existing trees and grass where possible preventing erosion from developing.

Preservation of Existing Vegetation

- If possible, preserve existing vegetation, which occasionally can be used if dimensions are adequate (see Sediment Control List on back side) as a runoff buffer, perimeter barrier, etc.;
- For the preservation of trees, install snow or plastic mesh fence as a perimeter barrier beneath the ends of the outer branches to prevent damage caused by grading activity, stockpiles, and Park vehicles/equipment.

Stockpiles need to be positioned away from any roads, ditches, storm sewer inlets, waterways, ponds, streams, and rivers.

Stockpiles Requirements

- Salvage and stockpile 3 inches of topsoil if the lot is going to be sodded, or 4 inches if the lot is going to be seeded;
- Stockpile the topsoil separately from the subsoil stockpile;
- Cannot be located near any downslope street, driveway, street/road, ditch, waterway, basin, stream, pond, lake, and or wetland. (If this cannot be achieved, depending on the situation, additional sediment controls will need to be installed or the stock pile will have to be removed from site.);
- In certain situations, sediment controls may need to be installed around its perimeter depending on the lot's grade and the location of the stockpile;
- If stockpiles are inactive for more than 14 days, temp seeding and mulching practices need to be implemented.

Vegetation Stabilization Requirements

Limit the Time to a 2-day time frame between sediment control removal *(for final grading purposes)* and implementing sodding or seeding practices on site.

Temp Seed disturbed areas that will be inactive for more than 14 days.

SEED	Lbs/ACRE	SEEDING DATE
OATS	120	March 1 - May 15
Winter Rye/Wheat	120	Sept 20 - Nov 1
Millet	40	May 15 - Aug 15

Permanent Seeding and Mulching Requirements

IMPORTANT: A soil sample will be obtained during final inspection to verify topsoil requirements have been met on all lots located within residential developments that had attained a NPDES General Permit #2 after January 1, 2013. (A City Official will provide this information and document it on the backside of the Minor Erosion Control Permit Application.)

- 4 inches of topsoil is required on site, or 2 inches of compost tilled in at a depth of 6 inches can be used as a substitute;
- Perimeter controls are required on site until a 70% vegetated coverage has been established;
- Mulch with straw (70-90 lbs or two bales per 1000 sq ft)

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- Use a crimper (or an equivalent) to anchor the straw 2 inches into the soil;
- Slope(s) 3:1 or greater shall require wood excelsior mat (or a matting equivalent to it) to be installed instead of straw matting or loose straw mulch;
- Wood excelsior mat or a matting equivalent to it is required to be installed throughout all drainage ways;
- Gently water every day, or every other day, until grass appears to be 2 inches, at which time less watering practices are required.

Permanent Seed

SEED	SEEDING DATE	Lbs/ACRE
100% Kentucky Bluegrass	3/1 - 6/1 8/15 - 9/15	1-1.5 lbs/1000 sq ft 45-65 lbs/acre
20% Perennial Rye 80% Bluegrass	-	2-2.5 lbs/1000 sq ft 85-110 lbs/acre
50% Perennial Rye 50% Bluegrass	-	3-3.5 lbs/1000 sq ft 130-150 lbs/acre
50% Fine Fescue 50% Bluegrass	-	2.5-3 lbs/1000 sq ft 110-130 lbs/acre
100% Fine Fescue	-	3-4 lbs/1000 sq ft 130-175 lbs/acre

If construction is completed after September 15, seeding or sodding may be delayed. Implementing temporary seeding and mulching is required. Sediment controls (silt fences, filter sock, etc.) must be maintained until a 70% or greater perennial coverage is established.

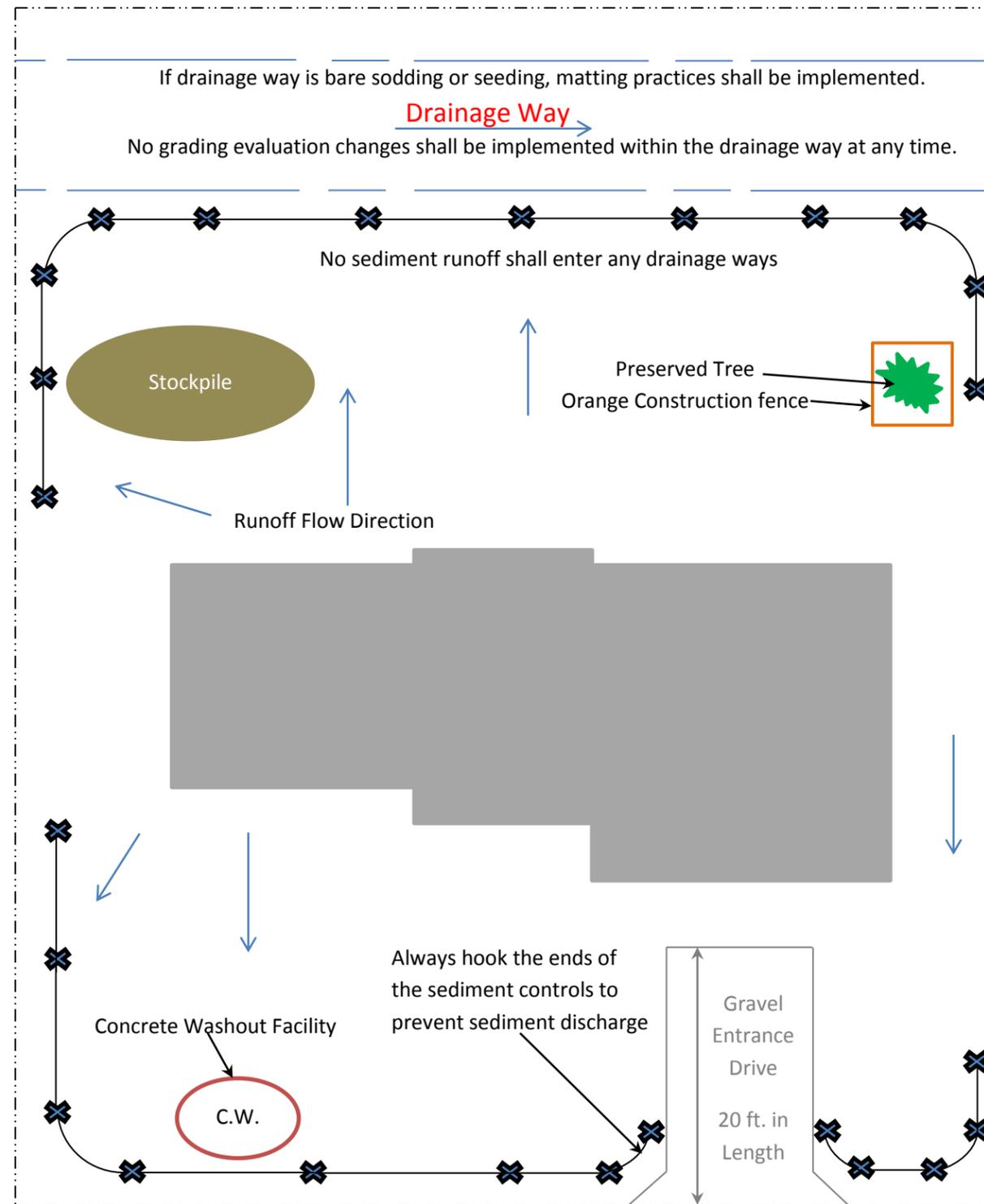
Sodding

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- **DO NOT** remove any sediment controls until sodding
- Apply a minimum of 3 inches of topsoil over the disturbed area, or 2 inches of compost tilled in at a depth of 6 inches can be used as a substitute;
- Lightly water the soil to a damp, moist condition;
- Lay sod. Tamp or roll lightly;
- When installing sod on slopes, work from the bottom up, and securely peg each piece down.

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SAMPLE OF A EROSION CONTROL SITE PLAN



NOTE:

- 1.) If a lot or disturbed areas will be inactive for more than 14 days, the area must be temp seeded and mulched during that time.
- 2.) A minimum of 70% vegetation must be attained prior to the issuing of the Final CO.

Legend

- Preservation Control
- Sediment Controls
- Stockpile
- Concrete Washout Facility
- Runoff Flow Direction Indicator
- Lot Perimeter
- Label Gravel Entrance Drive (20ft Minimum)

Additional Erosion Control Practices

Port-A-Johns

- Located on a level area within the perimeter controls;
- Use 1.5 ft stake (minimum) to secure into place;
- **Do not locate on or near storm sewer inlets.**

Confine work activity to the immediate construction area, and park all vehicles on the road/street.

Adjacent Undeveloped Lots The builder shall be responsible for implementing corrective actions for any damages to adjacent lots that occurred during construction. (This Includes establishing a 70% vegetative perennial coverage)

List of Acceptable Sediment Controls

Perimeter Controls

- Compost/Filter Berm (3'W Base, 1'W Top, 1'H);
- Vegetative Buffer Strip, 20-30 foot wide and a minimum of 6 inches in height (on slopes of less than 6%);
- Wattles (on slopes less than 6%) **and must be pre-approved by a City Official.**

Temporary Ditch/Waterway Sediment Controls

- Rock Checks (rock needs to be 5 inches or wider) can be used to reduce runoff velocity and but not as a sediment control;
- Silt Fence ditch checks are only allowed with the combination of straw/hay bales or compost berms, and positioned in front up against the silt fence ditch check;
- 18-inch Filter Sock;
- Compost Berms (3'W Base, 1'W Top, 1.5'-2'H) with combination of silt fence. The berm shall be placed in front up against the silt fence;
- Triangular Silt Dikes.