

CHAPTER 290 EROSION CONTROL

	Table
290-1	Definitions
290-1.5	Applicability of Maximum Extent Possible
290-2	Intent
290-3	Design Criteria, Standards and Specifications
290-5	Maintenance of Control Measures
290-7	Control of Erosion and Pollutants
290-9	Control Plan for Building and Site Development
290-11	Control Plan for Certain Right-of- Way and Public Utility Easements Projects
290-13	Inspection
290-14	Public Service Corporations and Cooperative Associations
290-15	Enforcement
290-17	Appeals

290-1. Definitions. In this chapter:

1. AGRICULTURAL LAND USE means use of land for planting, growing, cultivating and harvesting of crops for human or livestock consumption and pasturing or yarding of livestock.

2. BEST MANAGEMENT PRACTICE (BMP) means structural or non-structural measures which are temporary or permanent measures, methods, procedures and devices employed to avoid or minimize soil, sediment and pollutant movement, or to manage storm water runoff, onto or off a site, developed in consultation with the Wisconsin department of natural resources.

3. COMMERCIAL LAND USE means use of land in whole or in part as a place of resort, assemblage, trade, traffic, occupancy, or use by the public.

4. CONSTRUCTION SITE means an area upon which one or more land disturbing construction activities occurs, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land disturbing construction activities may be taking place at different times on different schedules but under one plan. A long-range planning document that describes separate construction projects, such as a 20-year transportation improvement plan, is not a common plan of development.

5. CONSTRUCTION SITE CONTROL MEASURE means a control measure used to meet the requirements of s. 290-7-2.

6. CONTROL MEASURE means a practice or combination of practices to control erosion and attendant pollution.

7. CONTROL PLAN means a written description or drawing with the number, locations, sizes and other pertinent information of control measures designed to meet the requirements of this chapter submitted by the applicant for review and approval by the department of city development in case of private property or by the department of public works in case of a public right-of-way.

8. EROSION means the detachment and movement of soil, sediment or rock fragments by water, wind, ice or gravity.

9. ILLICIT DISCHARGE means any discharge to the drainage system which is not composed entirely of storm water unless a permit has been obtained from the appropriate regulatory agency. This includes, but is not limited to, activities related to spills, dumping and disposal of any substance or material.

10. LAND DISTURBING CONSTRUCTION ACTIVITY means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result in runoff and lead to an increase in soil erosion and movement of sediment into waters of the state. Land disturbing construction activities include clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

11. LAND USER means any person operating, leasing, renting or having made other arrangements with the landowner by which the landowner authorizes use of his or her land.

12. LANDOWNER means any person holding title to or having an interest in land.

13. MAINTENANCE means the upkeep by the applicant, or subsequent landowner or land user during the period of land disturbance and land development of the site or any portion thereof, in a manner to ensure adequate performance and to prevent nuisance conditions.

290-1.5 Erosion Control

14. MAXIMUM EXTENT PRACTICABLE means the highest level of performance that is achievable but is not equivalent to a performance standard specified in this chapter, as determined in accordance with s. 290-1.5.

15. PUBLIC RIGHT-OF-WAY AND PUBLIC UTILITY EASEMENTS means lands platted, dedicated or used for streets, alleys, county parkways, pedestrian ways and drainage channels, and easements granted for drainage purposes, sewers, water main and city underground or overhead cable.

16. RUNOFF means the rainfall, snowmelt, dewatering or irrigation of water flowing over the ground surface.

17. SET OF ONE YEAR DESIGN STORMS means the following rain intensities and rain volumes or corresponding values specific to the community for storms that occur approximately once per year:

Average Storm Duration (hours)	Rain Intensity (inches/hour)	Total Rain (inches)
0.5	1.8	0.9
1	1.1	1.1
2	0.7	1.3
3	0.5	1.5
6	0.3	1.7
12	0.2	2.0
24	0.1	2.3

18. SITE means the entire area included in the legal description of the land on which the land disturbing construction activity is proposed in the permit application. This includes all work in the public right-of-way.

290-1.5. Applicability of Maximum Extent Possible. Maximum extent practicable applies when a person who is subject to a performance standard of this chapter demonstrates that a performance standard is not achievable and that a lower level of performance is appropriate. In making the assertion that a performance standard is not achievable and that a level of performance different from the performance standard is the maximum extent practicable, the responsible party shall take into account the best available technology, cost effectiveness, geographic features and other competing interests such as protection of public safety and welfare, protection of endangered and threatened resources and preservation of historic properties.

290-2. Intent. It is the intent of this chapter to prevent site materials, construction residue or illicit discharges from entering any portion of the storm sewer system and watercourses. This applies to construction grading and excavation in or adjacent to any public way, watercourse or storm drainage facility.

290-3. Design, Criteria, Standards and Specifications. Each project shall have an individual control plan. All control measures shall comply with this chapter and shall be based on any of the following:

1. Design guidance and technical standards identified or developed by the Wisconsin department of natural resources under subch. V of ch. NR 151, Wis. Adm. Code.

2. Soil loss prediction tools, such as the Universal Soil Loss Equation (USLE) and revised versions of the USLE (RUSLE and RUSLE2), when using an appropriate rainfall or runoff factor (R factor), or an appropriate design storm and precipitation distribution, and when considering the geographic location of the site and the period of disturbance. In relation to soil loss prediction tools in which the R factor has been developed to estimate annual soil erosion, averaged over extended time periods, it is permissible to modify the R factor to estimate monthly and single-storm erosion.

3. Technical standards and methods approved by the city.

290-5. Maintenance of Control Measures. To meet the requirements of this chapter the applicant or subsequent landowner shall:

1. Inspect the construction control measures after each rain of 0.5 inches or more and at least once each week and make needed repairs.

2. Allow the department of neighborhood services to enter the site for the purpose of inspecting compliance with the control plan or for performing any work necessary to bring the site into compliance with the plan.

3. Keep a copy of the control plan on the site.

4. Send record of inspection and repairs to the appropriate city department as defined in the erosion control permit.

290-7. Control of Erosion and Pollutants.

1. **APPLICABILITY.** This section applies to the following sites of land disturbing construction activities and storage of erodible material:

a. Those requiring a subdivision plat approval or the construction of houses or commercial, industrial or institutional buildings on lots of approved subdivision plats.

b. Those requiring a certified survey approval or the construction of houses or commercial, industrial or institutional buildings on lots of approved certified surveys.

c. Those involving grading, removal of protective ground cover or vegetation, excavation, land filling or other land disturbing activity affecting a surface area of 4,000 square feet or more.

d. Those involving excavation, filling or storage, or a combination of excavation and filling of storage affecting 100 cubic yards or more of dirt, sand or other excavation or fill material.

e. Those involving street, highway, road or bridge construction, enlargement, relocation or reconstruction.

f. Those involving the laying, repairing, replacing or enlarging of an underground pipe or facility on private property or in the public right-of-way for a distance of 300 feet or more.

g. Those involving demolition, razing or major repair of any building where soil could be exposed to wind and rain.

2. **REQUIREMENTS.** The following requirements shall be met at all sites described in sub. 1 to the maximum extent practicable.

a. **Dewatering.** Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upslope chambers, hydro-cyclons, swirl concentrators or other appropriate controls designed and used to remove particles of 100 microns or greater for the highest dewatering pumping rate. If the water is demonstrated to have no particles greater than 100 microns during dewatering operations, then no control is needed before discharge, except as determined by the department. Water may not be discharged in a manner that causes erosion of the site or receiving channels. This includes truck washout or disposal of spent water.

b. **Disposal.** All waste and unused building materials, including but not limited to garbage, debris, cleaning wastes wastewater, toxic materials, or hazardous materials, shall be properly disposed and not allowed to be carried by runoff into a receiving channel or storm sewer system.

c. **Tracking.** Each site shall have graveled roads, access drives and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed immediately by street cleaning, other than flushing.

d. **Drain Inlet Protection.** All storm drain inlets shall be protected with a straw bale, frame with filter fabric or equivalent barrier meeting accepted design criteria, standards and specifications.

e. **Site Erosion Control.** The following criteria apply to land development or land disturbing activities that result in runoff leaving the site:

e-1. Channelized runoff from adjacent areas passing through the site shall be diverted around disturbed areas, if practical. Otherwise, the channel shall be protected as described in subd. 5. Sheetflow runoff from adjacent areas greater than 10,000 square feet in area shall be diverted around disturbed areas unless shown to have resultant runoff velocities of less than 0.5 feet per second across the disturbed area for the set of one year design storms. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.

e-2. All activities on the site shall be conducted in a logical sequence to minimize the area of bare soil exposed at any one time.

e-3. All disturbed ground left inactive for 10 or more days shall be stabilized by seeding or sodding, or by mulching or covering, or other equivalent control measure. Seeding and sodding may only be used from May 1 to September 15 of any year.

e-4. Erosion and sediment control practices shall be used to prevent or reduce all of the following:

e-4-a. The discharge of sediment from disturbed areas into adjacent waters of the state.

e-4-b. The discharge of sediment from drainage ways that flow off the site.

290-9 Erosion Control

e-4-c. The transport by runoff waters of the state of chemicals, cement and other building compounds and materials on the construction site during the construction period. However, projects that require the placement of these materials in waters of the state, such as constructing bridge footings or BMP installations, are not prohibited by this subdivision.

e-4-d. The discharge of sediment from erosive flows at outlets and in downstream channels.

e-4-e. The transport by runoff into waters of the state of untreated wash water from vehicle and wheel washing.

e-5. For sites with more than one acre disturbed, in addition to the erosion and sediment control practices described elsewhere in this subsection, the following erosion and sediment control practices shall be employed:

e-5-a. BMPs that, by design, discharge no more than 5 tons per acre per year, or to the maximum extent practicable, of the sediment load carried in runoff from initial grading to final stabilization.

e-5-b. No person shall be required to employ more BMPs than are needed to meet a performance standard of this paragraph in order to comply with maximum extent practicable. Erosion and sediment control BMPs may be combined to meet the requirements of this paragraph. Credit may be given toward meeting the sediment performance standard of this paragraph for limiting the duration or area, or both, of land disturbing construction activity, or for other appropriate mechanisms.

e-5-c. Notwithstanding subpar. a, if BMPs cannot be designed and implemented to meet the sediment performance standard, the erosion and sediment control plan shall include a written, site-specific explanation of why the sediment performance standard cannot be met and how the sediment load will be reduced to the maximum extent practicable.

e-6. Any soil or dirt storage piles containing more than 10 cubic yards of material should not be located with a downslope drainage length of less than 25 feet to a roadway or drainage channel. If remaining for more than 7 days, they shall be stabilized by mulching, vegetative cover, tarps or other means. Erosion from piles which will be in existence for less than 7 days shall be controlled by placing straw bales or filter fence barriers around the pile. In-street

utility repair or construction soil or dirt storage piles located closer than 25 feet of a roadway or drainage channel must be covered with tarps or suitable alternative control if exposed for more than 7 days, and the storm drain inlets must be protected with straw bale or other appropriate filtering barriers.

e-7. Within the public right-of-way no erodible materials shall be located within 100 feet of any unprotected storm drain inlet.

e-8. The city shall be notified 3 working days before any land disturbing activities are commenced.

e-9. The city shall be notified when erosion control measures are in place.

f. Native Vegetation. The land development or land disturbing activity shall preserve, to the maximum extent possible, grasses, forbs, trees, shrubs, wildflowers and aquatic plants that are native to Wisconsin, as well as any oldfield successions of native and non-native plants.

3. IMPLEMENTATION. The BMPs used to comply with this section shall be implemented as follows:

a. Erosion and sediment control practices shall be constructed or installed before land disturbing activities begin.

b. Erosion and sediment control practices shall be maintained until final stabilization.

c. Final stabilization activity shall commence when land disturbing activities cease and final grade has been reached on any portion of the site.

d. Temporary stabilization activity shall commence when land disturbing activities have temporarily ceased and will not resume for a period exceeding 14 calendar days.

e. BMPs that are no longer necessary for erosion and sediment control shall be removed by the responsible party.

290-9. Control Plan for Building and Site Development. No landowner or land user may commence a land disturbing construction activity subject to this chapter without receiving prior approval of a control plan for the site and a permit from the department, except as provided in s. 290-11. At least one landowner or land user controlling or using the site and desiring to undertake a land disturbing construction activity subject to this chapter shall submit an application

for a permit and a control plan and pay an application fee to the department. By submitting an application, the applicant is authorizing the department to enter the site to obtain information required for the review of the control plan.

1. ACTIVITIES COVERING ONE ACRE OR MORE. The control plan for land disturbing construction activities covering one acre or more shall consist of:

a. A map of existing site conditions on a scale of at least one inch equals 100 feet showing the site and immediately adjacent areas:

a-1. Site boundaries and adjacent lands which accurately identify site location.

a-2. Lakes, streams, wetlands, channels, ditches and other watercourses on and immediately adjacent to the site.

a-3. One hundred year floodplains, flood fringes and floodways.

a-4. Location of the predominant soil types, minimization of soil compaction and preservation of topsoil.

a-5. Vegetative cover, including the location of any grasses, forbs, trees, shrubs, wildflowers and aquatic plants that are native to Wisconsin, as well as any oldfield successions of native and non-native plants, that will be preserved or destroyed in conjunction with the land-disturbing activity.

a-6. Location and dimensions of stormwater drainage systems and natural drainage patterns on and immediately adjacent to the site.

a-7. Locations and dimensions of utilities, structures, roads, highways and paving.

a-8. Site topography at a contour interval not to exceed 5 feet.

b. A plan of final site conditions on the same scale as the existing site map showing the site changes.

c. A site construction plan including:

c-1. Locations and dimensions of all proposed land disturbing construction activities, temporary soil or dirt stockpiles and construction site management control measures necessary to meet the requirements of this chapter.

c-2. Schedule of anticipated starting and completion date of each land disturbing construction activity including the installation of construction site control measures needed to meet the requirements of this chapter.

c-3. Provisions for maintenance of the construction site control measures during construction.

c-4. Minimization of land disturbing construction activity on slopes of 20 percent or more.

c-5. Maintenance of existing vegetation, especially adjacent to surface waters whenever possible.

c-6. Development of spill prevention and response procedures.

d. Calculation to show the compliance with the performance standard in s. 290-7-2-e-5-a.

2. ACTIVITIES COVERING LESS THAN ONE ACRE. For land disturbing construction activities covering less than one acre, an erosion control plan statement with simple map shall be submitted to briefly describe the site and erosion controls, including the site development schedule, that will be used to meet the requirements of this chapter.

3. REVIEW. Within 15 days of receipt of the application, control plan, or control plan statement and fee, the department of city development shall review the application and control plan to determine if the requirements of this chapter are met. The department of city development shall approve the plan, inform the applicant and issue a permit. If the conditions are not met, the department of city development shall inform the applicant in writing and may either require needed information or disapprove the plan. Within 10 days of receipt of needed information, the department of city development shall again determine if the plan meets the requirements of this chapter. If the plan is disapproved, the department of city development shall inform the applicant in writing of the reasons for the disapproval.

4. PERMITS. Duration. a. Permits shall be valid for a period of 180 days, or the length of the building permit or other construction authorizations, whichever is longer, from the date of issuance. The department of city development may extend the period one or more times for up to an additional 180 days. The department of city development may require additional control measures as a condition of the extension if they are necessary to meet the requirements of this chapter.

b. Erosion Control Performance Deposit.

b-1. Requirement. As a condition of approval and issuance of the permit, the department of city development shall require the owner or contractor responsible for erosion

290-11 Erosion Control

control measures at the site to provide an erosion control performance deposit to guarantee a good-faith execution of the approved control plan and associated permits. The deposit shall be in the form of an irrevocable letter of credit, bond or certified check conditioned that the owner or responsible contractor will perform and sufficiently complete all work engaged in as a result of being granted a permit and guarantee that the applicant will perform in accordance with this chapter. The erosion control performance deposit shall be released or returned when the erosion control permit is closed by the inspector.

b-2. Form. An irrevocable letter of credit shall be prepared in a form and manner acceptable to the office of the city attorney.

b-3. Amount. The amount of the letter of credit, bond or certified check shall be calculated at the rate of \$0.50 per square foot of disturbed area.

b-4. Waiver. On a site where a one- or 2-family residence is being constructed or demolished, the commissioner of city development may waive the requirement for an irrevocable letter of credit, bond or certified check.

b-5. Term of Deposit. Whenever the deposit is submitted in the form of a bond or letter of credit, such instrument shall be in effect for one year. If the associated construction project remains incomplete at the time of expiration of the bond or letter of credit, the permit holder shall submit a bond or letter of credit which has been extended for another one-year period.

c. Permit Conditions: All permits shall require the permittee to:

c-1. Notify the department 3 business days prior to commencing any land disturbing construction activity.

c-2. Notify the department of the schedule of installation and completion of the control measures.

c-3. Obtain permission in writing from the department of city development prior to modifying the control plan.

c-4. Install all control measures as identified in the approved control plan prior to commencing any land disturbing construction activity.

c-5. Maintain all road drainage systems, stormwater drainage systems, control measures and other facilities identified in the control plan.

c-6. Repair any siltation or erosion damage to adjoining surfaces and drainageways resulting from land disturbing construction activities.

d. Recovery of Costs. Any other necessary erosion control measure not specified under sub. 1 shall be determined by the commissioner of neighborhood services or the commissioner of public works. If the actual cost of implementing an erosion control plan exceeds the amount deposited in the irrevocable letter of credit, the department shall recover the additional cost from the prime contractor by initiating within 30 days of completion of the erosion control measure a court action to recover from such person an amount sufficient to compensate the city for the expense and labor in making such repairs or providing such utilities or fuel services as well as associated administrative costs. Administrative costs shall be deemed to be no less than \$50 per hour per inspector field hour incurred pursuant to actions under this section.

290-11. Control Plan for Certain Right-of-Way and Public Utility Easements Projects.

Land disturbing construction activities involving streets, alleys, highways, bridges, or an underground pipe, cable or facility may not commence construction without an approved erosion control plan and a permit issued by the department of public works. The permit shall be subject to ch. 115.

1. EROSION CONTROL PLAN. The erosion control plan shall be detailed enough to describe those activities necessary to comply with the requirements of this chapter and must include a statement describing the erosion control measures to be undertaken, whether or not there will be materials stockpiled and, if so, where, a construction schedule, and a simple site map of the construction.

a. Public works contracts. The erosion control plan required by this chapter for contracts awarded by the department of public works, with the exception of non-erodable stockpiles, shall be developed by the contractor. The control plan shall be submitted to the city engineer and approved prior to start of construction.

b. Other work. For construction work by private contractors within the public right-of-way or public utility easement, the erosion control plan shall be submitted to the department of public works as part of the permit process. Within 10 working days after receipt, the department shall have reviewed the plan to determine if the requirements of this chapter have been met. The department shall either approve the plan and issue the permit, if all requirements are met, or notify the applicant, in writing, with the reasons for the disapproval of the erosion control plan and what must be done to correct it. Within 7 working days after resubmittal, the department shall either approve the plan or again notify the applicant, repeating the approval process.

2. PERMIT DURATION. The permit shall be valid for a period of 90 days for excavation work or 180 days, or as determined by the public works contract for occupancy of the right-of-way.

3. IRREVOCABLE LETTER OF CREDIT, BOND OR CERTIFIED CHECK. As a condition of approval and issuance of the permit, the department of public works shall require the prime contractor or owner to deposit an irrevocable letter of credit, bond or certified check to guarantee a good faith effort of the approved control plan and any permits. The irrevocable letter of credit, bond or certified check shall be conditioned that the applicant will perform and sufficiently complete all work engaged in as a result of being granted a permit and guarantee that the applicant will perform in accordance with this chapter. The form of the irrevocable letter of credit shall be prepared by the department of public works and approved as to form and execution by the office of the city attorney. The certified check required shall be based on the schedule provided for under s. 290-9-4-b.

4. AMENDMENTS. All amendments to the control plan shall be approved by the appropriate city department prior to installation.

290-13. Inspection. 1. The department shall inspect site development, building construction sites and building services not let to public works contract, at least once each month while the permit is active to ensure compliance with the control plan. If land disturbing construction activities are being carried out without a permit, the department shall enter the land pursuant to s. 66.0119, Wis. Stats.

2. The department of public works shall inspect construction work for which it has issued permits to ensure compliance with the erosion control plan at least once each month while the permit is active.

290-14. Public Service Corporations and Cooperative Associations. The requirements of ss. 290-9-4-b and 290-11-3 shall not apply to public service corporations, Milwaukee county, the Milwaukee metropolitan sewerage district or to cooperative associations organized under ch. 185, Wis. Stats., to render or furnish telecommunications service, gas, light, heat or power, but such corporations shall secure a permit from the proper officials for erosion control on a highway or private property and shall be liable for all injuries to person or property thereby.

290-15. Enforcement. 1. BUILDING, SITE DEVELOPMENT AND SERVICES NOT LET TO PUBLIC WORKS CONTRACT. a. The department may issue an order to correct violations or a stop-work order or both if any land disturbing construction activity regulated under this chapter is being undertaken without a permit or in violation of the conditions of the permit.

b. If the prime contractor or owner does not cease the activity or comply with the permit conditions within 24 hours or as specified by the department, the department may revoke the permit.

c. If the prime contractor or owner does not cease the activity within 24 hours or as specified by the department, the department may request the city attorney to obtain a cease and desist order.

d. The department may retract the stop-work order or the revocation.

e. After the time for compliance on the stop-work order or order to correct violations notice has passed, the department may issue a notice of intent to the prime contractor or owner of the department's intent to perform work necessary to comply with this chapter. The department may go on the land and commence the work after 3 days from mailing or serving the notice of intent.

f. The department may issue a citation with or without prior order for any violation of this chapter as provided in s. 200-19-2.

g. Any person violating this chapter shall be subject to penalty pursuant to s. 200-19-2.

290-17 Erosions Control

2. RIGHT-OF-WAY AND PUBLIC UTILITY EASEMENTS; PUBLIC WORKS CONTRACT. a. The department of public works may order construction halted if:

a-1. The activity regulated under this chapter is undertaken without a permit.

a-2. The control plan is not being implemented in good faith.

a-3. The conditions of the permit are not being met.

b. After the department of public works notifies the offender of noncompliance, it may take whatever steps are necessary to enforce the plan, including, but not limited to, having the permittee make corrections, using its own forces, or engaging other contractors. The cost of such work shall be charged to the permittee and collectable as provided in chs. 79, 115 and 116 or the contract specifications.

3. RECOVERY OF COSTS. If the actual costs of implementing an erosion control plan exceeds the amount deposited in the irrevocable letter of credit, the department shall recover the additional cost from the prime contractor or owner by initiating within 30 days a court action to recover from such person an amount sufficient to compensate the city for the expense and labor in making such repairs or providing such utilities or fuel services as well as associated administrative costs. Administrative costs shall be deemed to be no less than \$50 per hour per inspector field hour incurred pursuant to actions under this section.

290-17. Appeals. Appeals not covered by s. 200-17 may be submitted to the administrative review appeals board as provided in s. 320-11.

**LEGISLATIVE HISTORY
CHAPTER 290**

Abbreviations:

am = amended
cr = created

ra = renumbered and amended
rc = repealed and recreated

rn = renumbered
rp = repealed

<u>Section</u>	<u>Action</u>	<u>File</u>	<u>Passed</u>	<u>Effective</u>
Ch. 290	cr	86-2037	3/29/88	7/14/88
290-1	rc	021113	2/11/2003	2/28/2003
290-1-3	rp	160166	7/6/2016	7/23/2016
290-1-4	rn to 290-1-3	160166	7/6/2016	7/23/2016
290-1-4	cr	160166	7/6/2016	7/23/2016
290-1-5	am	980963	12/18/98	1/1/99
290-1-8	am	901764	3/26/91	4/12/91
290-1-10	rc	160166	7/6/2016	7/23/2016
290-1-11	rp	160166	7/6/2016	7/23/2016
290-1-12	rn to 290-1-11	160166	7/6/2016	7/23/2016
290-1-13	rn to 290-1-12	160166	7/6/2016	7/23/2016
290-1-14	rn to 290-1-13	160166	7/6/2016	7/23/2016
290-1-14	cr	160166	7/6/2016	7/23/2016
290-1-18	am	160166	7/6/2016	7/23/2016
290-1.5	cr	160166	7/6/2016	7/23/2016
290-2	cr	021113	2/11/2003	2/28/2003
290-3	rc	021113	2/11/2003	2/28/2003
290-3	rc	160166	7/6/2016	7/23/2016
290-5	rc	021113	2/11/2003	2/28/2003
290-7-1-0	rc	021113	2/11/2003	2/28/2003
290-7-1-0	am	160166	7/6/2016	7/23/2016
290-7-1-d	rc	021113	2/11/2003	2/28/2003
290-7-1-f	rc	021113	2/11/2003	2/28/2003
290-7-1-g	cr	901764	3/26/91	4/12/91
290-7-1-g	rc	021113	2/11/2003	2/28/2003
290-7-2-0	am	160166	7/6/2016	7/23/2016
290-7-2-a	rc	021113	2/11/2003	2/28/2003
290-7-2-c	am	010348	7/17/2001	8/3/2001
290-7-2-d	rc	021113	2/11/2003	2/28/2003
290-7-2-e-0	rc	021113	2/11/2003	2/28/2003
290-7-2-e-1	am	880468	6/28/88	7/16/88
290-7-2-e-1	am	160166	7/6/2016	7/23/2016
290-7-2-e-3	rc	021113	2/11/2003	2/28/2003
290-7-2-e-4	rc	021113	2/11/2003	2/28/2003
290-7-2-e-4	rc	160166	7/6/2016	7/23/2016
290-7-2-e-5	rc	021113	2/11/2003	2/28/2003
290-7-2-e-5	rc	160166	7/6/2016	7/23/2016
290-7-2-e-6	am	160166	7/6/2016	7/23/2016
290-7-2-e-7	cr	021113	2/11/2003	2/28/2003
290-7-2-e-8	cr	021113	2/11/2003	2/28/2003
290-7-2-e-9	cr	021113	2/11/2003	2/28/2003
290-7-2-f	cr	080195	7/30/2008	8/16/2008
290-7-3	cr	160166	7/6/2016	7/23/2016
290-7-4	rn to 290-7-2-e-6	021113	2/11/2003	2/28/2003
290-9-0	am	980963	12/18/98	1/1/99
290-9-0	am	120914	11/8/2012	1/1/2013
290-9-0	am	160166	7/6/2016	7/23/2016

290—(HISTORY) Erosion Control

290-9-1-0	am	080195	7/30/2008	8/16/2008
290-9-1-0	am	160166	7/6/2016	7/23/2016
290-9-1-a-2	am	021113	2/11/2003	2/28/2003
290-9-1-a-4	am	160166	7/6/2016	7/23/2016
290-9-1-a-5	am	080195	7/30/2008	8/16/2008
290-9-1-c-1	am	160166	7/6/2016	7/23/2016
290-9-1-c-2	am	160166	7/6/2016	7/23/2016
290-9-1-c-4	cr	160166	7/6/2016	7/23/2016
290-9-1-c-5	cr	160166	7/6/2016	7/23/2016
290-9-1-c-6	cr	160166	7/6/2016	7/23/2016
290-9-1-d	cr	160166	7/6/2016	7/23/2016
290-9-2	am	160166	7/6/2016	7/23/2016
290-9-3	am	980963	12/18/98	1/1/99
290-9-4-a	am	980963	12/18/98	1/1/99
290-9-4-b	rc	901764	3/26/91	4/12/91
290-9-4-b	rc	050386	7/26/2005	8/12/2005
290-9-4-b-0	am	912281	7/28/92	8/14/92
290-9-4-b-0	am	980963	12/18/98	1/1/99
290-9-4-b-1	rc	021113	2/11/2003	2/28/2003
290-9-4-b-2	rc	021113	2/11/2003	2/28/2003
290-9-4-b-3	rc	021113	2/11/2003	2/28/2003
290-9-4-b-4	rc	021113	2/11/2003	2/28/2003
290-9-4-b-5	rc	021113	2/11/2003	2/28/2003
290-9-4-b-6	rc	021113	2/11/2003	2/28/2003
290-9-4-b-7	rc	021113	2/11/2003	2/28/2003
290-9-4-b-8	rc	021113	2/11/2003	2/28/2003
290-9-4-b-9	rc	021113	2/11/2003	2/28/2003
290-9-4-b-10	rc	021113	2/11/2003	2/28/2003
290-9-4-b-11	rc	021113	2/11/2003	2/28/2003
290-9-4-b-12	rc	021113	2/11/2003	2/28/2003
290-9-4-b-13	rc	021113	2/11/2003	2/28/2003
290-9-4-b-14	rc	021113	2/11/2003	2/28/2003
290-9-4-c	rc	021113	2/11/2003	2/28/2003
290-9-4-c-1	am	160166	7/6/2016	7/23/2016
290-9-4-c-3	am	980963	12/18/98	1/1/99
290-9-4-c-4	am	160166	7/6/2016	7/23/2016
290-9-4-c-6	am	160166	7/6/2016	7/23/2016
290-9-4-c-8	am	980963	12/18/98	1/1/99
290-9-4-d	cr	901764	3/26/91	4/12/91
290-9-4-d	am	980963	12/18/98	1/1/99
290-11-0	am	881465	11/18/88	12/9/88
290-11-0	am	160166	7/6/2016	7/23/2016
290-11-1-a	rc	021113	2/11/2003	2/28/2003
290-11-1-b	am	160166	7/6/2016	7/23/2016
290-11-2	rc	021113	2/11/2003	2/28/2003
290-11-3	cr	901764	3/26/91	4/12/91
290-11-3	am	912281	7/28/92	8/14/92
290-11-3	rc	021113	2/11/2003	2/28/2003
290-11-4	cr	021113	2/11/2003	2/28/2003
290-13	rc	021113	2/11/2003	2/28/2003
290-13-1	am	980963	12/18/98	1/1/99
290-13-1	am	001458	2/27/2001	3/16/2001
290-13-1	am	160166	7/6/2016	7/23/2016

Erosion Control 290—(HISTORY)

290-14	cr	901764	3/26/91	4/12/91
290-14	am	921114	11/20/92	12/11/92
290-15-1	rc	901764	3/26/91	4/12/91
290-15-1-a	am	921114	11/20/92	12/11/92
290-15-1-a	am	980963	12/18/98	1/1/99
290-15-1-a	am	160166	7/6/2016	7/23/2016
290-15-1-d	am	872605	5/17/88	7/14/88
290-15-1-e	am	921114	11/20/92	12/11/92
290-15-1-f	cr	910262	11/5/91	11/22/91
290-15-1-f	am	920519	7/28/92	8/14/92
290-15-1-g	cr	920519	7/28/92	8/14/92
290-15-2-b	am	881465	11/18/88	12/9/88
290-15-2-b	am	980963	12/18/98	1/1/99
290-15-3	cr	901764	3/26/91	4/12/91
290-17	am	881930	3/7/89	3/25/89

290--Erosion Control

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