

801 – GENERAL EROSION CONTROL ELEMENTS

- 801.1 Conformance with Chapter 33 of Municipal Code
All erosion and sediment control for Public Works construction shall conform to the requirements of Chapter 33 of the Municipal Code of the Village.
- 801.2 Scope of Work
This work shall consist of providing all labor, equipment, materials, supervision, tools, supplies, and incidentals required to control and minimize dust, soil erosion and discharge of sediment from the construction site to adjacent lands, streams, roadways, and underground public utilities, as specified on the plans, or as directed by the Engineer.
- 801.3 Dust Control
The Contractor shall implement a dust control program that is satisfactory to the Engineer. The Contractor shall submit a plan of action for dust control to the Engineer at the preconstruction meeting. The Contractor shall pay close attention to dust control while work is being performed.

The Contractor shall sweep roadways adjacent to the work area daily, if necessary, of any soil, gravel, or other materials washed or tracked onto the adjacent roadways by construction operations.
- 801.4 Plans
The contractor shall be solely responsible for minimizing soil erosion and sediment transfer on the project during construction.

If erosion and sediment control plans are not included in the Contract Documents, the Contractor shall install those features needed to control and minimize soil erosion and sediment transfer on the project during construction.
- 801.5 Materials
All erosion control devices shall conform with the requirements set forth in the Wisconsin Construction Site Best Management Practice Handbook, latest edition.
- 801.6 Installation
All erosion control devices shall be installed prior to any work taking place. Erosion Control devices shall be installed in conformance with the requirements set forth in the Wisconsin Construction Site Best Management Practice Handbook, latest edition.
- 801.7 Maintenance
The Contractor shall inspect all erosion and sediment control facilities to assure that they are functioning as designed and that sediment has not caused a failure or accumulated in excess of fifty (50) percent of the available storage of the facilities. Should a failure or over burdening of the facilities occur, the Contractor shall immediately make repairs or replacement of the device(s).

Erosion control devices shall be inspected within 24 hours after each rainfall or daily during periods of prolonged rainfall. The contractor shall repair or replace erosion control devices immediately upon determination of a deficiency or failure.

The Contractor shall be responsible for any discharge from the site due to lack of maintenance or other causes. The Contractor shall immediately clean up any material discharged from the site and make repairs or restore the area.

801.8

Removal

The contractor shall remove all erosion control devices after the construction site has been fully restored as described in the contract documents.

802 - EROSION AND SEDIMENT CONTROL DEVICES

802.1

Erosion Mat

The work under this section shall consist of furnishing, placing and maintaining a layer of open weave jute fabric or wood fiber blanket or fiber glass roving and asphalt on seeded areas of the project site to control erosion at locations designated on the plans or in the Contract Documents or as directed by the Engineer.

The erosion mat shall be staked using non-metallic stakes in accordance with the requirements of Section 700 of these specifications.

The Contractor shall maintain the erosion mat and make satisfactory repairs of any areas damaged by erosion, traffic, fires, or other causes until acceptance of the work.

802.2

Silt Fence

The work under this section shall consist of furnishing, installing, maintaining, and removing and disposing of silt fence as designated on the plans or in the Contract Documents, or as required by the Engineer.

Material for silt fence shall meet the following minimum requirements as set for in the Wisconsin Construction Site Best Management Practice Handbook.

- a. Grab Strength: 100 lb. Minimum in any principal direction (ASTM D-1682)
- b. Mullen Burst: Minimum 200 psi (ASTM D-3786)
- c. Equivalent Opening Size:
Between 50 and 140 for soils with more than 15% by weight passing a No. 200 sieve.

Between 20 and 50 for soils with less than 15% by weight passing a No. 200 sieve.
- d. Water flow rate of 10 gal/min/ft² at 50 mm constant head as determined by multiplying permitting in Sec -1 (as determined by ASTM D-4491) by a conversion factor of 74.
- e. Ultraviolet radiation stability of 90%.
- f. Fabric with support netting shall be reinforced with an industrial polypropylene netting with a ¾ inch spacing or equivalent. A heavy duty nylon top support cord or equivalent is required.

Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall periods. Any required repairs or sediment removal shall be done immediately.

802.3

Straw Bale Barrier

The work under this section shall consist of furnishing, installing, maintaining, and removing and disposing of straw bale barriers as designated on the plans or in the Contract Documents or as directed by the Engineer.

Straw bale barriers shall not be used for more than three (3) months without replacement of all bales.

Close attention shall be paid to the repair of damaged bales, end runs, and undercuts beneath bales.

Necessary repairs to barriers or replacement of bales shall be made by the Contractor promptly.

Sediment deposits shall be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

Straw bale barriers shall be anchored by at least two (2) stakes driven through the bale and a minimum of eight (8) inches into the ground. The first stake shall be driven towards the previously anchored bale to help create a tight fit.

802.4

Sediment Trap

The work under this section shall consist of constructing a small, temporary basin to detain sediment-laden runoff from disturbed areas not greater than five (5) acres. The purpose of the sediment trap is to give sufficient time to allow for the majority of the sediment to settle out.

The useful life of sediment traps is 18 months or less.

The sediment trap shall be designed and constructed to meet the requirements set forth in the Wisconsin Construction Site Best Management Practice Handbook, latest edition.

802.5

Sediment Basin

The work under this section shall consist of constructing a small temporary basin to detain sediment-laden runoff from disturbed areas not greater than 150 acres. The purpose of the sediment basin is to give sufficient time to allow for the majority of the sediment to settle out.

The useful life of sediment basin is 18 months or less.

The sediment basin shall be designed and constructed to meet the requirements set forth in the Wisconsin Construction Site Best Management Practice Handbook, latest edition.

802.6

Inlet Grate Protection

The work under this section shall consist of protecting catch basins and/or inlets in places where it is not necessary or not practical in the judgement of the engineer to provide inlet protection as described above.

The contractor shall provide erosion control at catch basins and/or inlets by installing a suitable amount of filter fabric so that the filter fabric extends a minimum of six (6) inches past the flange line and sides of the catch basin and/or inlet and to a minimum of twelve (12) inches beyond the top of curb and as directed by the Engineer. The contractor shall remove the catch basin and/or inlet grate, lay the filter fabric on the opening and replace the grate on top of the filter fabric. The contractor shall toe all loose edges of the filter fabric into the surrounding ground.

Sediment deposits shall be removed after each storm event or when sediment reaches a maximum depth of one (1) inch. The contractor shall remove all sediment deposited in the storm sewer.

Additional protection shall be provided in areas where the street grade is four (4) percent or greater to reduce velocities and prevent sediment from bypassing the inlet

grate protection. Said protection shall consist of installing gravel filled nylon bags, each containing one-half (1/2) cubic foot of material. The bags shall be placed in the gutter section butting against the face of the curb with the long dimension of the bag perpendicular to the centerline of the roadway at a maximum of 75 foot intervals. If the roadway is open to traffic, a barricade with flashers shall be placed at each bag. Sediment deposits shall be removed after each storm event or when sediment reaches a maximum depth of three (3) inches.

802.7

Stabilized Construction Entrance (Tracking Pad)

The work under this section shall consist of constructing a tracking pad of aggregate underlaid with filter cloth. The tracking pad shall be located where traffic enters or leaves the construction site to or from a public right-of-way, street, alley, or parking area and shall be as designated on the plans or in the Contract Documents or as required by the Engineer.

The words "stabilized construction entrance" and "tracking pad" shall mean the same thing.

The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

A stabilized construction entrance shall be used at all points of construction ingress and egress.

Access points to construction sites shall be restricted by use of Type III barricades, silt fencing, or safety fencing. An opening shall be left across the width of the tracking pad for access. In addition, Type III barricades, silt fencing, or safety fencing shall be placed along both sides of the tracking pad to a point at least 15 feet from the barricades at the entrance.

The contractor shall immediately remove any sediment tracked onto village roadways.

802.7.1

Tracking Pad Materials

The stone for the tracking pad shall be composed of either two to three (2" to 3") inch clean rounded stone or of clean, tough, durable, fractured stone from bedrock limestone, dolomite, or granite, having at least one fractured face, and meeting the following gradation requirements:

<u>Sieve Size</u>	<u>Percentage Passing by Weight</u>
3 1/2 inch	100%
1 1/2 inch	0 to 15%
3/4 inch	0 to 5%

The filter cloth shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew, rot resistant, and conform to the properties of the following table:

<u>Fabric Properties</u>	<u>Type 1</u>	<u>Type 2</u>	<u>Test Method</u>
Grab Tensile Strength (lbs)	200	220	ASTM D1682

Elongation at Failure (%)	50	60	ASTM D1682
Mullen Brust Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 (modified)
Equivalent Opening Size	40-80	40-80	US Std Sieve CW-02215
Aggregate Depth (in)	6	10	---

TYPE 1 FABRIC: for light duty tracking pads that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

TYPE 2 FABRIC: heavy duty tracking pads with only rough grading, and where most travel would be multi-axle vehicles. Trevira Spunbond 1135, Mirafi 600X, or equivalent.

TYPE 3 FABRIC: Fabrics not meeting the Type 1 or Type 2 specifications may be used only when design procedures and supporting documentation are supplied to the engineer to determine aggregate depth and fabric strength.

802.7.2

Tracking Pad Construction

Tracking pads shall be a minimum of six (6) inches in depth.

Tracking pads shall be a minimum of ten(10) feet wide but not less than the full width of the location where ingress or egress occurs. The maximum width shall be thirty (30) feet.

Tracking pads shall be a minimum of fifty (50) feet in length (except on a single residence lot where a 30 foot minimum would apply).

Filter Cloth – Shall be placed over the entire area that will be covered with aggregate. Filter cloth will not be required on a single family residence lot.

A pipe shall be installed to transport surface water under the entrance. If providing a pipe for such purposes is impossible, a mountable berm with 5:1 slopes will be permitted as an alternate.

802.7.3

Maintenance and Removal of Tracking Pad

The tracking pad shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way shall be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate which drains into a approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

The Contractor shall daily remove all accumulated materials tracked off site. On Fridays, before leaving projects for an extended period, and also prior to all recognized

holidays, the Contractor shall clean all sediments which have accumulated on the travel way outside the construction site by sweeping the area to the satisfaction of the Engineer.

Upon completion of the work causing the need for a tracking pad, or immediately prior to placing of gravel road base, the contractor shall remove the tracking pad and associated items and restore the area. Traffic control shall be maintained in conformance with Section 900 of these standard specifications.

Inlet protection shall be designated and constructed to meet the requirements set forth in the Wisconsin Construction Site best Management Practice Handbook, the latest edition.

- END OF SECTION 800 -