

**PART 7  
STANDARD SPECIFICATIONS  
FOR EROSION CONTROL**

**CITY OF ONALASKA, WISCONSIN**

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## SECTION 701: EROSION CONTROL

### 701.1 GENERAL

#### 701.1.1 DESCRIPTION

This work shall consist of furnishing, installing, maintaining, removing and disposing of water pollution and erosion control items in accordance with these Specifications and as shown in the plans or as designated by the City's Erosion Control Inspector. Erosion control items shall include but not be limited to erosion control mats, bale checks or dikes, fences, screens, blankets, and other miscellaneous erosion control devices

### 701.2 MATERIALS

#### 701.2.1 ACRONYMS

Interpret acronyms used throughout this section as follows:

**PAL** The Wisconsin Department of Transportation's erosion control product acceptability list. The contractor may obtain a copy of the PAL and the prequalification procedure for products not on the PAL from the Wisconsin Department of Transportation.

**ECRM** Class I, II, and IIIA erosion control revegetative mats.

**TRM** Class III B, C, and D turf reinforcement mats.

#### 701.2.2 PRODUCT ACCEPTABILITY

Furnish products of the class, type, and subject to the seasonal limitations the PAL designates. Before installing a PAL product, submit to the Erosion Control Inspector a written copy of the manufacturer's specifications for installing that product on slopes, channels, shorelines, high wind locations, and next to live traffic lanes as acceptable to the contract installation. Install PAL products conforming to those manufacturer's specifications.

Provide samples of products as requested by the Erosion Control Inspector.

#### 701.2.3 EROSION MAT

Furnish erosion mat products from the PAL.

The PAL identifies prequalified erosion mat products by class and type. Use the required class and type of erosion mat the plans show or the Erosion Control Inspector specifies. The contractor may furnish any prequalified erosion mat product of the class and type the plans show or that the Erosion Control Inspector specifies.

If using jute fabric for an erosion mat, use a woven fabric of a uniform open weave of single jute yarn. Use a jute yarn of loosely twisted construction with an average twist of not less than 1 ½ turns per one inch. Ensure the average size of the warp and weft yarns are approximately the same. Furnish the woven fabric in rolled strips. Submit a certificate of compliance certifying that the jute fabric erosion mat conforms to the following:

- Is a minimum 48 inches wide with a tolerance of minus one inch.
- Has 78 warp ends, +/- one for each 48 inches of width. Has 45 weft yarns, +/- 2, per linear yard of length.
- Weighs 92 pounds per 100 square yards +/- 10 percent, measured under average atmospheric conditions
- Is non-toxic to vegetation.

**701.2.4 STAPLES**

Furnish U-shaped staples, made of No. 11 or larger diameter steel wire, or other engineer-approved material, are one to 2 inches wide, and not less than 6 inches long for firm soils and not less than 12 inches for loose soils. The contractor may use anchors the staple gun manufacturer recommends, either lighter gage staples or equivalent, for engineer-approved staple gun systems.

**701.2.5 BALES**

For bales, use straw, hay, or other engineer-approved material, in good condition, of the dimensions the plans show.

**701.2.6 STAKES**

Furnish wood or metal stakes of the dimensions the plans show.

**701.2.7 SILT FENCE**

**701.2.7.1 GEOTEXTILE FABRIC**

Furnish one of the following geotextile fabrics: woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. For non-woven fabric the contractor may use needle punched, heat bonded, resin bonded, or combinations of all 3. Submit a certificate of compliance certifying that the geotextile conforms to the following:

| <b>Test Requirement</b>   | <b>Method</b> | <b>Value<sup>(1)</sup></b> |
|---|---------------|----------------------------|
| Min. grab tensile strength (machine direction)                        | ASTM D 4632   | 120 lb                     |
| Min. grab tensile strength (cross machine direction)                  | ASTM D 4632   | 100 lb                     |
| Max. apparent opening size (equivalent standard sieve)                | ASTM D 4751   | No. 30                     |
| Min. Permittivity   | ASTM D 4491   | 0.05 s <sup>-1</sup>       |
| Min. ultraviolet stability (strength retained at 500 hrs of exposure) | ASTM D 4355   | 70%                        |

<sup>(1)</sup>All numerical values represent minimum or maximum average roll values. Average test results from all rolls in a lot must conform the tabulated values.

**701.2.7.2 FENCE SUPPORT SYSTEM**

Conform to plan requirements.

**701.2.8 SILT SCREEN**

Furnish fabric and submit a certificate of compliance certifying that the fabric conforms to the following:

- Thickness .15 mils
- Minimum grab tensile strength 120 lb
- Minimum equivalent opening No. 170 sieve

Heat seal or sew all fabric seams

For floatation, use an 8-inch diameter solid expanded polystyrene log, or engineer-approved equal, with a buoyancy of approximately 20 pounds per foot. Do not use polystyrene beads or chips.

For the main load line, use 5/16 inch cable. For ballast, use a ¼ inch chain.

**701.2.9 SAND BAGS**

Furnish bags made of canvas, burlap, nylon, or other engineer-approved material filled with concrete sand or other engineer-approved granular material.

**701.2.10 POLYETHYLENE SHEETING**

Furnish 6 mil or thicker polyethylene sheeting conforming to ASTM D 4397.

**701.2.11 TURBIDITY BARRIERS**

Furnish barrier made of coated impervious fabric capable of containing all sediment at the location placed. It shall have a cable, with a 5/16 inch or larger diameter, capable of supporting the barrier at the required height above the water. It shall have a self-contained ballast that weighs at least 0.7 pound per foot. The ballast may be either chain or flexible cable. Barrier ends shall have grommets to lace together adjoining sections. For anchor posts use one of the following: steel fence posts, steel pipes, or steel channels.

Submit a certificate of compliance certifying that the turbidity barrier fabric conforms to the following:

| Test Requirement   | Method      | Value <sup>(1)</sup>    |
|--|-------------|-------------------------|
| Min. grab tensile strength   | ASTM D 4632 | 200 lb                  |
| Min. puncture strength   | ASTM D 4833 | 90 lb                   |
| Max. permeability  | ASTM D 4491 | 1x10 <sup>-7</sup> cm/s |
| Min. ultraviolet stability<br>(strength retained at 500 hrs of exposure) | ASTM D 4355 | 70%                     |

<sup>(1)</sup>All numerical values represent minimum or maximum average roll values. Average test results from all rolls in a lot must conform the tabulated values.

**701.2.12 SOIL STABILIZER**

Soil stabilizer type A is one of the following: a cementitious soil binder added to wood cellulose fiber mulch, or a bonded fiber matrix. Soil stabilizer type B is a polyacrylimide.

Furnish soil stabilizer products from the PAL.

### **701.2.13 INLET PROTECTION**

Use a type FF geotextile fabric conforming to Section 645.2.1 of the WisDOT Standard Specifications except use a woven polypropylene fabric. Furnish type FF geotextile fabrics, or bags manufactured from type FF geotextile fabrics, from the PAL.

## **701.3 CONSTRUCTION**

### **701.3.1 GENERAL**

Deliver 25 percent of the plan quantity of erosion mat, erosion bales, silt fence, or manufactured alternative materials for temporary ditch checks, to the project site before construction begins unless the City Erosion Control Inspector directs otherwise. Deliver the balance required, based on actual site conditions, and determined by consulting with the Erosion Control Inspector, in time to install each material as the contract specifies.

Ensure that erosion control products selected from the PAL are properly installed and maintained to remain in place and functioning as the contract specifies.

All sediment control measures shall be adjusted to meet field conditions at the time of construction and installed prior to any grading or disturbance of existing surface material.

### **701.3.2 EROSION MAT**

Furnish and install protective covering mats or soil retention mats for erosion control on prepared planting areas of slopes, ditches, channels, or shorelines, at locations the plans show or the Erosion Control Inspector directs. Conform to the seasonal limitations designated in the PAL for photodegradable products.

Install as manufacturer specifies except as follows:

- 1) Do not use single roll materials less than 6 feet wide in channels.
- 2) Entrench mats approximately 3 inches deep along the edge facing traffic for all installations within 5 feet of active traffic lanes.
- 3) Overlap mats by 3 inches or less and anchor with anchoring devices selected from the PAL for all mats the PAL designates as urban.
- 4) Cover TRMs immediately after installation with materials from the PAL as follows:
  - i. On slopes use either an ECRM or a type A soil stabilizer. If using a soil stabilizer, apply at the manufacturer's recommended rate unless the contract or Erosion Control Inspector specifies otherwise.
  - ii. In channels use an ECRM of a class and type the PAL allows for channel applications.
- 5) Remove all stones, clods, roots, sticks, or other foreign materials that prevent the mat from bearing completely on the surface before placing the mat.
- 6) Reseed any seeded areas damaged or destroyed during placement of the erosion mat as specified for the original seeding.

- 7) Dispose of all surplus excavation or materials, and all stones, clods, or other foreign material removed in preparing for placing the mat.
- 8) Apply water uniformly after placing the mat over a seeded area to sufficiently moisten the seedbed to a depth of 2 inches and in a manner that precludes washing or erosion.
- 9) Maintain the erosion mat and repair any damaged areas until the work is accepted.
- 10) The contractor shall not overlap type A urban erosion mat with type B urban or other type erosion mat.

### **701.3.3 EROSION BALES**

Furnish bales of straw, hay, or other suitable baled material to form erosion control structures other than ditch checks. Install at locations the plans show or as the Erosion Control Inspector directs.

Maintain the bales as required including removing and disposing of sediment deposits. Remove erosion bales after slopes and ditches are stable and turf develops enough to make future erosion unlikely. The Erosion Control Inspector will determine when the contractor meets these criteria satisfactorily. The contractor may use bales as mulch. Dispose of bales not used as mulch in a manner acceptable to the Erosion Control Inspector. Reshape ditches; fill sumps and trenches; dispose of excess eroded material; and topsoil, fertilize, and seed the affected area.

### **701.3.4 SILT FENCE**

#### **701.3.4.1 INSTALLATION AND REMOVAL**

Erect the silt fence before starting a construction operation that might cause sedimentation or siltation at the site of the proposed silt fence.

If possible, construct the silt fence in an arc or horseshoe shape with its ends pointing up slope. Construct the silt fence to the dimensions, and according to the details the plans show. Remove silt fences, as the Erosion Control Inspector determines, after stabilizing the slopes and ditches and developing the turf to the extent that future erosion is unlikely. Clean up and restore the surface after removal. The contractor owns all materials remaining after removal and is responsible for their disposal off City right-of-way.

#### **701.3.4.2 INSPECTION AND MAINTENANCE**

Inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfall. Correct any deficiencies immediately. Additionally, review the locations for silt fences and filter barriers in areas that construction activity changed the earth contour and drainage runoff on a daily basis to ensure that the silt fences are properly and effectively located. If deficiencies exist, install additional silt fences as the Erosion Control Inspector directs or approves.

Remove the sediment deposits when the build up exceeds approximately ½ the volume capacity of the silt fence. The Erosion Control Inspector may order the contractor to remove deposits if the Erosion Control Inspector determines that deposits exceed ½ the volume capacity of the silt fence. The contractor shall dress, to the existing grade, sediment deposits remaining in place after the silt fence is no longer required, this includes topsoiling, fertilizing, and seeding the affected area.

### **701.3.5 SILT SCREEN**

Install the silt screen to prevent drift shoreward or downstream. Securely attach the floatation log to the fabric in both the horizontal and vertical direction.

Attach the 5/16 inch cable at the floatation members and extend along the entire length of each section of silt screen. Seal a ¼ inch chain in the lower hem for ballast.

Use connectors to join the main load line and ballast chain to carry all tensile pressure. Join the fabric for its entire height with grommets and lacing rope.

Ensure the silt screen extends from the water surface for a maximum 10 foot depth.

Install anchorages or stakes on both shore and stream side to maintain stability. Use a post with deadman or engineer-approved equal for shore anchors. Ensure stream anchors are of sufficient size, type, and strength to stabilize the barrier beyond the construction area.

Buoy anchors to prevent pulling the barrier under water. Use Donforth-type anchors in sandy bottom and heavy kedge type or mushroom anchors on mud bottoms.

Maintain the barrier throughout construction operations.

After completing the work, remove the barrier in a manner that prevents siltation of the river.

### **701.3.6 CLEANING SEDIMENT BASINS**

Clean sediment basins when the Erosion Control Inspector determines the sediment has accumulated to an extent that impairs the effectiveness of the sedimentation basin.

Dispose of the surplus material according to City of Onalaska Specifications.

### **701.3.7 MOBILIZATIONS FOR EROSION CONTROL**

Move personnel, equipment, and materials to the project site for constructing erosion control items at the stages the contract indicates or the Erosion Control Inspector directs.

Submit for approval an ECIP (Erosion Control Implementation Plan) for accomplishing temporary and permanent erosion control work. There shall be no deviations from approved staging without the Erosion Control Inspector's approval. Mobilize with sufficient personnel, equipment, supplies, and incidentals, within 72 hours of the Erosion Control Inspector's approval.

### **701.3.8 MOBILIZATIONS EMERGENCY EROSION CONTROL**

Move personnel, equipment, and materials to the project site to install temporary erosion control items on an emergency basis as the Erosion Control Inspector directs.

Mobilize with sufficient personnel, equipment, materials, and incidentals on the job site within 8 hours of the Erosion Control Inspector's order to install temporary erosion control items on an emergency basis.

An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of erosion control items and mobilizations the ECIP includes. Under this definition, an emergency mobilization requires immediate action to move necessary

personnel, equipment, and materials to the emergency site followed by immediate installation of temporary erosion control measures.

Unless the Erosion Control Inspector directs otherwise, replenish stockpiled material delivered as specified for plan quantities and subsequently used for emergency erosion control to the pre-emergency totals of these stockpiles.

#### **701.3.9 POLYETHYLENE SHEETING**

Install polyethylene sheeting at locations the plans show or as the Erosion Control Inspector directs.

Secure the sheeting from wind and water dislocation. Before placing, remove stones, roots, sticks, and other materials that interfere with sheeting bearing completely on the soil. Overlap adjacent sheets a minimum of 3 feet in the direction of flow; and seal the edges with waterproof tape or other engineer-approved method. Patch damaged areas with sheeting overlapped a minimum of 3 feet and seal the joints with waterproof tape or other engineer-approved method. Maintain the sheeting and make satisfactory repairs of damaged areas.

Upon completing the work, remove the polyethylene sheeting. The contractor shall assume ownership of all removed material.

#### **701.3.10 TURBIDITY BARRIERS**

Install turbidity barriers at locations the plans show or as the Erosion Control Inspector directs.

Place all barriers, before beginning adjacent construction, in a manner that causes minimum disturbance of the streambed and banks. Extend the barrier into the stream banks far enough to preclude washing out or erosion around the ends. Drive posts securely into the streambed at 10 foot intervals along the line of the barrier installation. Fasten the barrier to the posts and securely anchor the barrier load lines at the barrier ends and at 10 foot intervals between the barrier ends, unless the Erosion Control Inspector directs otherwise. Provide additional anchoring if necessary to maintain the barrier location during construction operations. Install sand bags as the plans show to anchor the barrier to the streambed. The Erosion Control Inspector may require additional sand bags to ensure adequate performance. The contractor, as required by permit, shall provide and anchor both danger buoys and navigational markers.

Maintain the integrity of the barrier as necessary to contain erosion from adjacent construction operations. Promptly correct all deficiencies. Barrier maintenance includes removing and disposing of accumulations of soil and other detrimental material.

Remove the barrier after completing the adjacent work. Delay removal until removing and disposing of the accumulated soils and other suspended materials, and all suspended materials settle. Minimize disturbing the streambed and banks during removal operations.

If the Erosion Control Inspector approves, the contractor may substitute sheet pile installed as part of their construction operation for all or part of the turbidity barrier the plans show.

### **701.3.11 SOIL STABILIZER**

#### **701.3.11.1 GENERAL**

Provide soil stabilizer as a soil bonding agent to prevent or minimize erosion. Install on exposed soil surfaces of temporary or permanent slopes as the plans show or as the Erosion Control Inspector directs.

#### **701.3.11.2 SOIL STABILIZER TYPE A**

Apply soil stabilizer with conventional hydraulic seeding equipment. Ensure the surrounding surfaces, structures, signs, trees, and shrubs are not over-sprayed. The Erosion Control Inspector will not accept the work until the contractor satisfactorily cleans over-sprayed surfaces. Provide a finished application 3/16 inch to 1/4 inch thick.

For permanent slope applications, sow seed separately, before applying the soil stabilizer to ensure that the seed has direct contact with the soil.

#### **701.3.11.3 SOIL STABILIZER TYPE B**

Apply soil stabilizer with conventional hydraulic seeding equipment or by dry spreading. Apply the material at the manufacturer's recommended rate unless the Erosion Control Inspector directs otherwise.

For permanent slope applications, apply an engineer-approved mulch when applying the soil stabilizer or after applying it to protect the seed.

### **701.3.12 INLET PROTECTION**

Furnish, install, maintain, and remove type FF geotextile fabric, and fabric hold down and support systems for inlet protection where the plans show or the Erosion Control Inspector directs. The contractor may provide manufactured alternatives selected from the PAL.

For type A inlet protection, install around field inlets until establishing permanent soil stabilization; and around pavement inlets before placing curb, gutter, or curb & gutter.

For type B inlet protection, install on curb, gutter, curb & gutter, and pavement inlets after placing the surrounding pavement surfaces.

For type C inlet protection, use a wooden 2 x 4, wrapped and secured in type FF geotextile fabric, installed in front of the curb head as the plans show. The wood shall not block the entire opening of the curb box.

For type D inlet protection, the contractor may make the bag from type FF geotextile fabric or choose a manufactured type FF bag from the PAL. Ensure that the device is designed to fit the size and shape of the inlet. At a minimum, inspect and maintain after every precipitation event.

### **701.3.13 TEMPORARY DITCH CHECKS**

Provide suitable ditch check materials, installed and maintained at locations the plans show or as the Erosion Control Inspector directs.

Construct the temporary ditch checks using a double row of erosion bales or a manufactured alternative from the PAL. Place temporary ditch checks across ditches at locations the plans show or as the Erosion Control Inspector directs immediately after shaping the ditches or slopes. Excavate upstream sumps as the Erosion Control Inspector directs.

Remove sediment deposits when the build-up exceeds approximately ½ the erosion bale structures volume capacity. The Erosion Control Inspector may order the contractor to remove deposits if the Erosion Control Inspector determines that sediment deposits exceed ½ the erosion bale structures volume capacity. Dispose of excess sediment as the Erosion Control Inspector directs.

Remove ditch checks after the slopes and ditches are stable and the turf develops enough to make future erosion unlikely. The Erosion Control Inspector will determine when the contractor meets these criteria. The contractor may use bales as mulch. Dispose of bales not used as mulch in a manner acceptable to the Erosion Control Inspector. Reshape the ditch; fill sumps and trenches; dispose of excess eroded material; and topsoil, fertilize, and seed the affected area.

#### **701.3.14 CULVERT PIPE DITCH CHECKS**

Install sand bag ditch checks the plans show or as the engineer directs immediately after installing new culverts. Place sand bags on the inlet end of the culvert only. Maintain the sand bags in place until slopes and ditches are stable and turf develops enough to make future erosion unlikely. Remove and dispose of the used sand bags. Remove accumulated sediment or spread it to form a surface suitable for seeding.

### **701.4 MEASUREMENT**

#### **701.4.1 GENERAL**

##### **701.4.1.1 BORROW SITES AND MATERIAL DISPOSAL SITES**

The City will measure work acceptability completed under selected bid items placed on borrow sites and material disposal sites if the City Engineer requests that work and that work is consistent with the ECIP. The City will measure only the following bid items:

|                        |                   |
|------------------------|-------------------|
| Erosion Mat            | Mulching          |
| Erosion Bales          | Seeding           |
| Temporary Ditch Checks | Temporary Seeding |
| Silt Fence             | Fertilizer        |

#### **701.4.2 SAND BAGS**

The City will not measure sand bags. Sand bags are incidental to the bid items that use sand bags.

#### **701.4.3 SILT FENCE MAINTENANCE**

The City will not measure silt fence maintenance. Silt fence maintenance shall be incidental to related bid items.

#### **701.4.4 CLEANING SEDIMENT BASINS**

The City will not measure cleaning sediment basins. Cleaning sediment basins shall be incidental to related bid items.

#### **701.4.5 MOBILIZATIONS EROSION CONTROL**

The City will not measure mobilizations erosion control or mobilizations emergency erosion control. Mobilizations erosion control and mobilizations emergency erosion control shall be incidental to related bid items.

**701.4.6 EROSION MAT**

The City will measure the Erosion Mat bid items by the square yard acceptably completed. The City will not make allowance for portions of the mat that must be entrenched in the soil for any end or junction slot, or required overlaps.

**701.4.7 EROSION BALES**

The City will measure Erosion Bales as each individual bale acceptably completed.

**701.4.8 SILT FENCE**

The City will measure Silt Fence by the linear foot acceptably completed. The City will measure along the base of the fence, center-to-center of end post, for each section of fence.

**701.4.9 SILT SCREEN**

The City will measure Silt Screen by the linear foot acceptably completed.

**701.4.10 POLYETHYLENE SHEETING**

The City will measure Polyethylene Sheeting by the square yard acceptably completed.

**701.4.11 TURBIDITY BARRIERS**

The City will measure Turbidity Barrier by the square yard acceptably completed. The City will make no allowance for portions of the turbidity barrier considered as part of the anchorages, required overlaps, or having a bottom flap greater than 48 inches.

If the contractor substitutes sheet pile for turbidity barrier as allowed, the City will measure that turbidity barrier as the plan quantity in square yards of material replaced.

**701.4.12 SOIL STABILIZER**

The City will measure Soil Stabilizer bid items by the acre acceptably completed within the limits the contract designates or as the City Engineer directs.

**701.4.13 INLET PROTECTION**

The City will measure Inlet Protection bid items as each individual location and type acceptably completed.

**701.4.14 TEMPORARY DITCH CHECKS**

The City will measure Temporary Ditch Checks by the linear foot acceptably completed. If using erosion bales, the City will only measure the length across the ditch, not the length of each row of bales. The City will not measure ditch checks constructed with a single row of bales.

**701.4.15 CULVERT PIPE DITCH CHECKS**

The City will measure Culvert Pipe Ditch Checks as each individual location acceptably completed

## 701.5 PAYMENT

### 701.5.1 GENERAL

The City will pay for measured quantities at the contract unit price under the following bid items:

| <u>Description</u>         | <u>Unit</u> |
|----------------------------|-------------|
| Erosion Bales              | EACH        |
| Silt Fence                 | LF          |
| Silt Screen                | LF          |
| Erosion Mat (class) (type) | SY          |
| Polyethylene Sheeting      | SY          |
| Turbidity Barriers         | SY          |
| Soil Stabilizer (type)     | ACRE        |
| Inlet Protection (type)    | EACH        |
| Temporary Ditch Checks     | LF          |
| Culvert Pipe Ditch Checks  | EACH        |

The City will pay for measured quantities at the contract unit price under selected bid items placed on borrow sites and material disposal sites if the City Engineer requests that work and that work is consistent with the ECIP. The City will pay for only the following bid items using the methods described in their respective payment subsections:

|                        |                       |
|------------------------|-----------------------|
| Erosion Mat            | Mulching              |
| Erosion Bales          | Seeding               |
| Temporary Ditch Checks | Temporary Seeding     |
| Silt Fence             | Fertilizer Type A & B |

### 701.5.2 EROSION MAT

Payment for the Erosion mat bid items is full compensation for providing, protecting, and storing erosion mat materials on the project; for placing and anchoring the mat, including staples; for preparing the seeded areas; for installing end and junction slots; for repairing and reseeding damaged areas; for providing and applying water; and for disposing of all surplus and waste materials.

The City will pay separately for covering class III types B, C, and D mats with an ECRM under the applicable Erosion Mat bid item, or with type A soil stabilizer under the Soil Stabilizer Type A bid item.

### 701.5.3 EROSION BALES

Payment for Erosion Bales is full compensation for providing, protecting, and storing erosion bales on the project; for placing all materials, including stakes; for anchoring the bales; for all excavating, including trenches and sumps; for removing excess sediment during construction; for removing and disposing of the bales and all waste and surplus materials, including eroded materials; and for shaping and restoring ditches.

The City will pay separately for any required topsoiling, fertilizing, or seeding under the applicable bid item.

#### **701.5.4 SILT FENCE**

Payment for Silt Fence is full compensation for providing, protecting, and storing silt fence on the project; for erecting fence, including all excavating, placing posts, backfilling, and attaching geotextile fabric; maintaining fence throughout the project; and for removing the fence at project completion.

#### **701.5.5 SILT SCREEN**

Payment for Silt Screen is full compensation for providing, assembling, erecting, maintaining, and removing the silt screen barrier.

#### **701.5.6 POLYETHYLENE SHEETING**

Payment for Polyethylene Sheeting is full compensation for furnishing and delivering the polyethylene sheeting to the project site; for storing on the project; for installing the sheeting; for all excavating and backfilling; for securing the sheeting and sealing the edges of the sheeting; and for removing and disposing of the sheeting and surplus materials.

#### **701.5.7 TURBIDITY BARRIERS**

Payment for Turbidity Barriers is full compensation for furnishing, assembling, installing, maintaining, and removing the turbidity barrier; and for sandbags, buoys, navigational markers, anchors, and anchor ropes.

If the contractor substitutes sheet pile for turbidity barrier as allowed, the City will pay for the plan quantity of turbidity barrier replaced.

#### **701.5.8 SOIL STABILIZER**

Payment for the Soil Stabilizer bid items is full compensation for furnishing, mixing and applying soil stabilizer.

#### **701.5.9 INLET PROTECTION**

Payment for the Inlet Protection bid items is full compensation for furnishing, transporting, and installing all materials; and for maintaining and removing the inlet protection devices.

#### **701.5.10 TEMPORARY DITCH CHECKS**

Payment for Temporary Ditch Checks is full compensation for providing, protecting, and storing ditch check materials on the project; for installing and removing ditch checks at project completion or as the Erosion Control Inspector directs; for repairing and reseeding damaged areas; and for disposing of all surplus and waste material.

The City will not pay for installing ditch checks if constructed of a single row of erosion bales.

#### **701.5.11 CULVERT PIPE DITCH CHECKS**

Payment for Culvert Pipe Ditch Checks is full compensation for furnishing and installing sand bags; for all excavating; for removing and disposing of sand bags and all waste, surplus, or eroded materials, and for shaping and restoring the area.

**END OF SECTION**