SPECIFICATIONS

FOR

EROSION AND SEDIMENT CONTROL

CITY OF MAPLE GROVE, MINNESOTA

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April 2015

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1. GENERAL

All storm water management/erosion control measures and controlling erosion/establishing vegetation measures shall be in accordance with MnDOT 2573 and 2575, respectively, Erosion Control Plans and Specifications, Storm Water Pollution Prevention Plan and any applicable permit requirements.

2. SILT FENCE

Silt fence shall be of the type and kind as indicated in the Contract and shall be constructed in accordance with MnDOT 3886 and City Standard Plates. Silt fence shall be installed on the contour (vs. up and down a hill) and constructed so that flow cannot bypass the ends (J-hook) Standard Plate Eros-3. Continuous silt fence segments shall not exceed 600-ft. All silt fence shall be inspected and maintained to preserve its effectiveness in accordance with the requirements of the Storm Water Pollution Prevention Plan. No additional compensation shall be made for repairs.

3. INLET PROTECTION

Storm drain inlet protection shall be done in accordance with the applicable MnDOT Standard Specifications and the following:

Storm drain inlet protection shall consist of the Best Management Practices and devices for preventing sedimentation from entering the underground drainage systems. Storm drain inlet protection applies to manholes, catch basins, curb inlets, and other drop type inlets constructed for the ingress of surface water runoff into underground drainage systems. Storm drain inlet protection as described in this Special Provision does not include practices to protect culverts.

The Contractor must protect all storm drain inlets with sediment capture devices prior to soil disturbing activities that may result in sediment

laden storm water runoff entering the inlet. The Contractor shall provide effective storm drain inlet protection over the life of the Contract until all surfaces with potential for discharging sediment to an inlet have been paved or stabilized. As the Contractor's operations change, the storm drain inlet Best Management Practice for sediment control must be modified by the Contractor to ensure proper effectiveness for sediment capture.

The Contractor is responsible for preventing or minimizing the potential for unsafe conditions, flooding, or siltation problems. For example, devices must be regularly cleaned out and emergency overflow must be an integral part of the device to reduce the flooding potential; and devices must be placed such that driving hazards or obstructions are not created.

The Contractor shall clean, remove sediment, or replace storm drain inlet protection devices on a routine basis such that the devices are fully functional for the next rainstorm event. Removal and disposal of trapped sediment in inlet protection devices shall be incidental to the Project. Sediment deposited in and/or plugging drainage systems is the responsibility of the Contractor and shall be removed at no expense to the Owner

a. MATERIALS

i. ROCK LOG

All aggregate shall be washed before placed in a rock bag. Rock shall be supplied in accordance with MnDOT 3137.2 Class D with a gradation in accordance with Table 3137-4 CA-00 through CA-50. The casing material for the rock shall be between 1.22 m and 3 m [4 feet and 10 feet] in length and between 100 mm [4 inches] and 150 mm [6 inches] in diameter when filled with rock. The casing material shall have a minimum grab tensile strength of 60 kg [130 pounds] and a minimum Mullen Burst Strength of 1200 kPa [175 psi].

ii. COMPOST LOG

Shall consist of a blend of 30-40% weed free compost as per MnDOT 3890 Grade 2 and 60-70% partially decomposed wood chips. The compost/wood blend material shall pass a 50 mm [2 inch] sieve with a minimum

of 70% retained on the 10 mm [3/8 inch] sieve, in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification. The compost/wood chip blend shall be pneumatically shot into a geotextile cylindrical bag. The geotextile bag shall consist of a knitted material with openings of 10 mm [3/8 inch] and contain the compost/wood chip material while not limiting water infiltration. The encased compost shall form a cylindrical log that is a maximum of 55 m [180 feet] and approximately 200 mm [8 inches] in diameter.

iii. SEDIMENT CONTROL INLET HAT

Sediment control inlet hats shall be a polyethylene hat-like structure covering the inlet with small weep holes on the side providing a filtering function of the storm water runoff and a large opening above the weep holes for emergency overflow.

iv. SILT FENCE RING AND ROCK LOG OR ROCK FILTER BERM COMBINATION

Silt fence shall meet the requirements of MnDOT 3886 Type Hand Installed (HI). Silt fence shall be placed in a circular configuration around the inlet to form a minimum 1.5 m [5 feet] diameter zone of protection. Rock logs, as described above, shall line the outside toe of the silt fence. Rock Filter berms shall consist of 3882 Type 9 Mulch.

v. POP-UP HEAD

Pop-up head inlet protection shall form a solid steel plate over the inlet casting or solid steel box that fits inside a grate assembly with the exception of a center cylindrical drain tube riser. The tube riser shall be fully extended when providing drainage functions and have holes that provide filtering capabilities. The tube riser shall be covered with a removable knit type geotextile that provides additional sediment filtering capabilities. The tube riser shall be able to be pushed down flat to the steel plate to allow construction vehicles to drive over it, facilitate cleanout, or to shut off drainage to the inlet.

vi. FILTER BAG INSERT

Filter bag with Frame inserts shall consist of a replaceable reinforced filter bag suspended from a retainer ring, or frame that fits within a grate frame. The filter bag shall be constructed of a polypropylene filter geotextile fabric with a minimum weight of 222 g/m^2 [4 ounces per square yard], a minimum flow rate of 5908 L/minute/m^2 [145 gallons per minute per square foot], a minimum permittivity of 2 per second, and designed for a minimum silt and debris capacity of 0.57 m^3 [2 square foot]. The filter bag shall be reinforced with an outer polyester mesh fabric with a minimum weight of 222 g/m^2 [4 ounces per square yard]. The filter bag shall be suspended from a galvanized steel ring or frame, conforming to ASTM-A36 utilizing a stainless steel band and locking clamp. The frame shall be designed with an overflow feature to prevent any ponding between scheduled cleanings and replacement of the filter bag. Overflow capacity shall be at a minimum equal to the design flow capacity of the structure's grate opening.

vii. Wimco

The Road Drain-Curb & Gutter model consists of a reusable, open topped receptacle that sets inside the storm sewer grate. An incorporated rear deflector plate is connected to the receptacle directing the water into the basin for filtration.

viii. OTHER

Devices approved by the Department's Erosion Control Engineering Unit and on file on the web under the Materials Engineering Section's Approved Products List can be furnished as meeting this specification requirement

The Contractor shall clean, remove sediment or replace control devices upon completion of the Contract work unless otherwise specified in the Contract or directed by the Engineer. All removed materials become the property of the Contractor.

The Contractor shall spread accumulated sediment to form a suitable surface for turf establishment or dispose of the sediment off of the Right of Way in accordance with MnDOT 2104.3D. The Contractor shall shape the area to permit natural drainage. All work shall be done to the satisfaction of the Engineer.

4. STABILIZED CONSTRUCTION EXIT

The rock used for gravel pads should be 3-inch size such as MnDOT CA-15 or CA-25 coarse aggregate. The aggregate should be placed in a layer at least 6 inches thick.

The rock entrance should be at least 75 feet long; however, longer entrances may be required to achieve adequate cleaning.

A filter fabric may be needed under the rock to prevent migration of mud from the underlying soil into the stone.

5. STREET SWEEPING

Tracking of dirt onto public roads during hauling and general day-to-day construction operations will require periodic cleaning of these roadways. Scraping and vacuum assisted sweeping or a combination may be required. Power brooms or "sidewinder" type devices are not acceptable for cleaning of the roadway.

For the duration of the project, a gravel construction entrance shall be maintained at the entrance/exit to adjacent roadways to minimize the tracking of dirt outside of the project limits. The gravel shall be obtained from the existing roadway base/bituminous reclamation areas. The length of the gravel construction entrance shall be a minimum of 50-ft for the full width of the roadway.

Any sediment tracked onto City streets or onto streets that drain into storm sewer systems shall be kept clean by the Contractor; sediment shall be removed within 12 hours of verbal or written notification. If the Contractor fails to remove all of the tracked sediment from streets the Owner shall remove any sediment at the Contractor's expense.

6. SURFACE ROUGHENING

a. CUT SLOPE APPLICATIONS FOR AREAS WHICH WILL NOT BE MOWED

Cut slopes with a gradient steeper than 4:1 shall be stair-step graded or grooved.

Stair-step grading may be carried out on any material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.

The ratio of the vertical cut distance to the horizontal distance shall be less than 1:1 and the horizontal portion of the "step" shall slope toward the vertical wall.

Individual vertical cuts shall not be more than 30 inches on soft soil materials and not more than 40 inches in rock materials.

Grooving consists of using machinery to create a series of ridges and depressions which run perpendicular to the slope (on the contour). Grooves may be made with any appropriate implement which can be safety operated on the slope and which will not cause undue compaction. Suggested implements include discs, tillers, spring harrows, and the teeth on a front-end loader bucket. Such grooves shall not be less than 3 inches deep nor further than 15 inches apart.

b. CUTS, FILLS, AND GRADED AREAS WHICH WILL BE MOWED

Mowed slopes should not be steeper than 4:1. Excessive roughness is undesirable where mowing is planned.

These areas may be roughened with shallow grooves such as remain after tilling, disking, harrowing, raking, or use of a cultipacker-seeder. The final pass of any such tillage implement shall be on the contour (perpendicular to the slope.)

Grooves formed by such implements shall be not less than one inch deep and not further than 12 inches apart.

Fill slopes which are left rough as constructed may be smoothed with a dragline or pick-chain to facilitate mowing.

If at any point the contractor is unable to produce a 4:1 slope he may need to install a retaining wall at this location with no extra compensation. It will be the contractor's reasonability to minimize any retaining walls on the project.

c. ROUGHENING WITH TRACKED MACHINERY

Roughening with tracked machinery on clayey soils is not recommended unless no alternatives are available. Undue compaction of surface soil results from this practice. Sandy soils do not compact severely, and may be tracked. In no case is tracking as effective as the other roughening methods described.

When tracking is the chosen surface roughening technique, it shall be done by operating tracked machinery up and down the slope to leave horizontal depressions in the soil. As few passes of the machinery should be made as possible to minimize compaction.

d. SEEDING

Roughened areas shall be seeded and mulched as soon as possible to obtain optimum seed germination and seedling growth.

7. SITE REQUIREMENTS

a. The Contractor must plan for and implement appropriate construction phasing vegetative buffer strips, horizontal slope grading, and other construction practices to minimize erosion. All areas not to be disturbed shall be marked (e.g. with flags, stakes, signs, silt fence etc.) on the project site before any work begins.

b. All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased and no later than seven (7) days after construction activity in that portion of the site has temporarily or permanently ceased when discharge points on the project is within one mile of a special or impaired water and flows to that special or impaired water.

c. All slopes greater than a 4:1 will require a retaining wall until the contractor is able to produce a 4:1 slope and be acceptable by the Owner.

d. Additional BMPs together with enhanced runoff controls are required for discharges to special waters and impaired waters. The BMPs identified for each special or impaired water are required for those areas of the project draining to a discharge point on the project that is within one mile of a special or impaired water and flows to that water. The additional BMPs are identified in Appendix A of the NPDES Construction General Permit.

e. The Contractor must stabilize the normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, within 200 lineal feet from the property edge, or from the point of discharge into any surface water. Stabilization of the last 200 lineal feet must be completed within 24-hours after connecting to a surface water or property edge.

f. Pipe outlets must have temporary or permanent energy dissipation before connecting to surface water.

g. When possible, all slopes must be graded in such a fashion so that tracking marks made from heavy equipment are perpendicular to the slope.

h. All areas disturbed during construction must be restored as detailed in these requirements. The type of permanent restoration shall be clearly shown on the plans including but not limited to sod, seed, impervious cover and structures. A minimum of 6 inches of topsoil must be installed prior to permanent restoration. Areas in which the top soil has been placed and finish graded or areas that have been disturbed and other grading or site building construction operations are not actively underway must be temporary or permanently restored as set forth in the following requirements:

i. Areas with slopes that are less than 4:1 must be seeded and mulched within 14 days of the area not being actively worked.
ii. Areas with slopes that area greater or equal to 4:1 must be seeded and erosion control blanket placed within 14 days of the area not being actively worked.
iii. All seeded area must be either mulched and disc anchored, hydro- mulched, or covered by erosion control blanket to reduced erosion and protects the seed.
iv. Temporary or permanent mulch must be disc anchored and applied at a uniform rate of 2 tons per acre and have 90% coverage.
v. If the disturbed area will be re-disturbed within a six month period, temporary vegetative cover shall be required consisting of an approved seed mixture and application rate.
vi. If the disturbed area will not be re-disturbed within a six month period, permanent vegetative cover shall be required consisting of an approved seed mixture and application rate.
vii. All areas that will not have maintenance done such as mowing as part of the final design shall be permanently restored using an approved seed mixture and application rate.
viii. Restoration of disturbed wetland areas shall be accomplished using an approved seed mixture and application rate.

i. All erosion control measures must be maintained for the duration of the project until final stabilization has been achieved. If construction operations or natural events damage or interfere with any erosion control measures, they shall be restored to serve their intended function.

j. Additional erosion control measures shall be added as necessary to effectively protect the natural resources of the Owner. The temporary and permanent erosion control plans shall be revised as needed based on current site conditions and to comply with all applicable requirements.

8. SEDIMENT CONTROL PRACTICES

a. Sediment control practices must be established on all down gradient perimeters before any up-gradient land disturbing activities begin. These practices must remain in place until final stabilization has been achieved.

b. If down gradient treatment system is overloaded additional up gradient sediment control practices must be installed to eliminate overloading. The SWPPP must be amended to identify the additional practices.

c. All storm drain inlets must be protected by approved BMPs during construction until all potential sources for discharge have been stabilized. These devices must be maintained until final stabilization is achieved. Inlet protection may be removed if a specific safety concern (street flooding/freezing) has been identified.

d. Temporary stockpiles must have silt fence or other effective sediment controls on the down gradient side of the stockpile and shall not be placed at least 25 feet from any road, wetland, protected water, drainage channel, or stormwater inlets. Stockpile left for more than 14 days must be stabilized with mulch, vegetation, tarps or other approved means.

e. Vehicle tracking of sediment from project shall be minimized by approved BMPs. These shall be installed and maintained at the Owner approved entrances. Individual lots shall each be required to install and maintained entrances throughout the construction building until a paved driveway is install.

f. Sediment that has washed or tracked from site by motor vehicles or equipment shall be cleaned from paved surfaces throughout the duration of construction. This work shall be considered incidental to the project.

g. Silt fence or other approved sediment control devices must be installed in all areas as shown on the SWPPP and as directed by the Engineer.

h. Silt fence or other approved sediment control devices shall be required along the entire curb line, except for approved opening where construction entrance will be installed or drainage flows away from curb. This device must be maintained until final stabilization is achieved. Ditch checks shall be required in ditch bottoms. Spacing for the check must be as followed:[***Height in feet*** (of the sediment device used)] ***X 100 / Slope Gradient***

i. Dust control measures, such as application of water must be performed periodically due to weather, construction activity, and/or as directed by the Owner.

j. Flows from diversion channels or pipes (temporary or permanent) must be routed to sedimentation basins or appropriate energy dissipaters to prevent the transport of sediment to outflow or lateral conveyors and to prevent erosion and sediment buildup when runoff flows into the conveyors.

k. All sediment control measures shall be used and maintained for the duration of the project until final. If construction operations or natural events damage or interfere with any erosion control measures, they must be restored to serve their intended function.

l. Additional sediment control measures shall be added as necessary to effectively protect the natural resources of the Owner. The temporary and permanent erosion control plans shall be revised as needed based on current site conditions and to comply with all applicable requirements.

9. TEMPORARY SEDIMENT BASINS

A temporary sediment basin (or permanent) shall be provided when ten (10) or more acres of disturbed soil drain to a common location prior to the runoff leaving the site or entering surface waters. The Contractor is also

encouraged, but not required to install temporary sediment basins in areas with steep slope or highly erodible soils even if the area is less than ten (10) acres and it drains to one common area. The basins shall be designed and constructed according to the following requirements:

a. The basins must provide storage below the outlet pipe for a calculated volume of runoff from a 2-year, 24-hour storm from each acre drained to the basin, except that in no case shall the basin provide less than 1,800 cubic feet of storage below the outlet pipe from each acre drained to the basin.

b. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage below the outlet pipe per acre drained to the basin shall be provided where attainable until final stabilization of the site.

c. Temporary basin outlets will be designed to prevent short-circuiting and the discharge of floating debris. The basin must be designed with the ability to allow complete basin drawdown (e.g., perforated riser pipe wrapped with filter fabric and covered with crushed gravel, pumps or other means) for maintenance activities, and provide a stabilized emergency overflow to prevent failure of pond integrity. Energy dissipation must be provided for the basin outlet.

d. Temporary (or permanent) basins must be constructed and made operational concurrent with the start of soil disturbance that is up gradient of the area and contributes runoff to the pond.

e. Where the temporary sediment basin is not attainable due to site limitations, equivalent sediment controls such as smaller sediment basins, and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures are required for all down slope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions. In determining whether installing a sediment basin is attainable, the Contractor must consider public safety and may consider factors such as site soils, slope, and available area on site. This determination must be documented in the SWPPP.

f. The Contractor shall maintain the sedimentation basins and will remain functional until an acceptable vegetative cover is restored to the site, resulting in a pre-development level rate of erosion. The city will not issue building permits for lots containing sediment basins until they have been removed or relocated based on the projects restoration progress.

g. Basins designed to be used for permanent stormwater management shall be brought back to their original design contours prior to acceptance by the Owner.

10. DEWATERING AND BASIN DRAINING

a. If water cannot be discharged into a sedimentation basin before entering a surface water it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners. The Contractor must make sure discharge points are appropriately protected from erosion and scour. The discharge must be dispersed over riprap, sand bags, plastic sheeting or other acceptable energy dissipation measures. Adequate sediment control measures are required for discharging water that contains suspended soils.

b. All water from dewatering or basin draining must discharge in a manner that does not cause nuisance conditions, erosion in receiving channels, on down slope properties, or inundation in wetlands causing significant adverse impact to wetlands.

11. INSPECTIONS AND MAINTENANCE

a. The Contractor shall be responsible for inspecting and maintenance of the BMPs.
b. The Contractor must routinely inspect the construction project once every seven (7) days during active construction and within 24-hours of a rainfall event of 0.5 inches or greater in 24-hours.

c. All inspections and maintenance conducted during construction must be recorded in writing and must be retained with the SWPPP. Records of each inspection and maintenance activity shall include:

   i. Date and time of inspection.
   ii. Name of person(s) conducting the inspections.
   iii. Findings of inspections, including recommendations for corrective actions.
   iv. Corrective actions taken (including dates, times, and the party completing the maintenance activities).
   v. Date and amount of all rainfall events 0.5 inches or greater in 24-hours.
   vi. Documentation of changes made to SWPPP.

d. Parts of the construction site that have achieved final stabilization, but work continues on other parts of the site, inspections of the stabilized areas can be reduced to once a month. If work has been suspended due to frozen ground conditions, the required inspections and maintenance must take place as soon as runoff occurs or prior to resuming construction, which ever happens first.

e. All erosion and sediment BMPs shall be inspected to ensure integrity and effectiveness. All nonfunctional BMPs shall be repaired, replaced or supplemented with a functional BMP. The Contractor shall investigate and comply with the following inspection and maintenance requirements.

f. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/2 of the height of the fence. These repairs shall be made within 24-hours of discovery, or as soon as field conditions allow access.

g. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72-hours of discovery, or as soon as field conditions allow access.

h. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion. The Contractor shall remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, and re-stabilize the areas where sediment removal results in exposed soil. The removal and stabilization shall take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The Contractor shall use all reasonable efforts to obtain access. If precluded, removal and stabilization shall take place within seven (7) calendar days of obtaining access. The Contractor is responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work.

i. Construction site vehicle exit locations shall be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment shall be removed from all off-site paved surfaces, within 24-hours of discovery, or if applicable, within a shorter time.

j. The Contractor is responsible for the operation and maintenance of temporary and permanent water quality management BMPs, as well as all erosion prevention and sediment control BMPs, for the duration of the construction work at the site. The Contractor is responsible until another Contractor has assumed control over all areas of the site that have not been finally stabilized or the site has undergone final stabilization, and a NOT has been submitted to the MPCA.

k. If sediment escapes the construction site, off-site accumulations of sediment shall be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

l. All infiltration areas shall be inspected to ensure that no sediment from ongoing construction activities is reaching the infiltration area and these areas are protected from compaction due to construction equipment driving across the infiltration area.

12. POLLUTION MANAGEMENT MEASURES/CONSTRUCTION SITE WASTE CONTROL

a. The Contractor must implement the following pollution prevention management measures on the site:
   i. Solid Waste – Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements.
   ii. Hazardous Materials such as oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge. Restricted access to storage areas shall be provided to prevent vandalism. Storage and disposal of hazardous waste shall be in compliance with MPCA regulations.
   iii. External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff shall be contained and waste properly disposed of. No engine degreasing is allowed on site.
   iv. The Owner prohibits discharges of any material other than stormwater, and discharges from dewatering or basin draining activities. Prohibited discharges include but are not limited to vehicle and equipment washing, maintenance spills, wash water, and discharges of oil and other hazardous substances.
   v. The Contractor must comply with all other pollution prevention/good housekeeping requirements of the MPCA NPDES Construction General Permit.

13. FINAL STABILIZATION

The Contractor must ensure final stabilization of the project. Final stabilization can be achieved in one of the following ways:

a. All soil disturbing activities at the site have been completed and all soils will be stabilized by a uniform perennial vegetative cover with a density of at least 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions and;

i. All drainage ditches, constructed to drain water from the site after construction is complete, must be stabilized to preclude erosion; and

ii. All temporary synthetic, and structural erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization; and

iii. The Contractor must clean out all sediment from conveyances and from temporary sedimentation basins that are to be used as permanent water quality management basins. Sediment must be stabilized to prevent it from washing back into the basin, conveyances or drainage ways discharging off-site or to surface waters. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

b. For residential construction only, final stabilization has been achieved when:

i. Temporary erosion protection and down gradient perimeter control for individual lots has been completed and the residence has been transferred to the homeowner.

14. ENFORCEMENT

This section imposes the obligation of an applicant to perform their duties in an honest, diligent, and cooperative manner.

The following section describes the Owner's authority and the mechanisms for enforcing Permit provisions on construction sites within the boundaries of the Owner's MS4 jurisdiction.

a. Compliance Requirements

Compliance with stormwater permits and laws on construction projects within the Owner's MS4 must be enforced according to these Enforcement Response Procedures.

Applicants are to comply with the State's NPDES CGP, Owner, and Watershed permits for regulated construction projects, including the obligation to file a NOI and obtain authorization under the State CGP for each construction project or site. The applicant shall also file a NOT

for each construction project or site, either terminating their responsibility if final stabilization has been achieved, or transferring it to another owner for completion.

b. Construction Enforcement

When stormwater BMP's are non-compliant and are identified by the Owner enforcement actions will be taken promptly but no later than 48 hours following identification of the non-compliance. The Owner will take appropriate sanctions against the applicant based on the nature and severity of the situation. Non-compliances will be classified as minor or major violation. Major violations are generally those acts or omissions that lead to a discharge of pollutants to stormwater. Minor violations are generally instances of non-compliance that do not directly result in such a discharge. Serious discharges or an imminent threat of discharge on a project may require an immediate escalation to a higher level of enforcement. The level of enforcement response will depend upon several factors:

i. Severity of the violation: the duration, quality, and quantity of pollutants, and effect on public safety and the environment.
ii. The violator's knowledge (either negligent or intentional) of the regulations being violated.
iii. A history of violations and /or enforcement actions individual or contractor.
iv. The potential deterrent value of the enforcement action.

The Owner will use the following progressive enforcement policy, escalating the response when an applicant fails to respond in a timely manner. If the Owner identifies a deficiency in the implementation of the approved SWPPP or amendments and the deficiency is not corrected immediately or by a date requested by the Owner, the project is in non-compliance. The recommended sequence of enforcement actions are detailed below.

i. Verbal Warning

This action is a verbal exchange between an inspector or the resident engineer and the Contractor. The information exchanged will be documented by the inspector. Typically, no letter is written if the problem is corrected immediately and the inspector or resident engineer observes the corrective action and deems it appropriate. If the violation is not addressed within

the time frame specified, a $1,000 per day fine may be assessed to the Contractor.

ii. Written Warning

A warning letter may be issued if the non-compliance continues for 7 days after the verbal warning is issued, if the non-compliance cannot be corrected while the inspector is on site, or if the non-compliance is a significant violation. The warning letter will document the reasons why the discharge is illegal and provide deadline for compliance. Based on the type and severity of the non-compliance, the period between the verbal and written warnings may not wait the full 7 days. Compliance is required within 7 days to avoid additional enforcement actions; however, if the situation warrants, shorter or longer deadlines maybe permissible.

iii. Stop Work Order

If the verbal and written warnings do not result in corrective action by the documented deadline, the Owner may stop work (full or partial shutdown) at the construction site. Upon successful corrective action in response to a stop work order and upon approval by the Owner, work may begin at the site.

iv. Temporary Suspension of Work

If immediate action is required due to an imminent threat of discharge or if the contractor does not respond to the warning letter with in the required time frame, the Owner may temporarily suspend work on the project until the corrective action has been completed.

v. Require Corrective Action

The Owner may require the permit holder to undertake corrective or remedial action to address any release or threatened release or discharge of the hazardous substance, pollutant or contaminant, water, wastewater, or stormwater.

15. MEASUREMENT AND PAYMENT

Measurement and payment for the following items will be considered compensation in full for all work necessary to complete the preparation, installation, maintenance, sediment removal, repairs and removal of the installed item (if necessary) of the items specified in project manual.

a. Silt Fence

Measurement will be per lineal foot for the type specified in the proposal. Half of the quantity will be paid upon installation with the remaining half being paid upon removal.

b. Inlet Protection

Measurement will be per each inlet structure regardless of type unless separate bid items are provided. Half of the quantity will be paid upon installation with the remaining half being paid upon removal.

c. Stabilized Construction Exit

Measurement will be per each location as shown on the drawings or as approved by the Owner.

d. Temporary Seeding and Mulch

Temporary seeding and Mulching of the site and stockpiles will be considered incidental unless otherwise described in the special provisions.

e. Dust Control

Dust control shall be considered incidental unless a specific bid item is provided.

f. Bio Rolls

Measurement will be per lineal foot for the each type specified in the proposal.

g. Erosion Control Blanket

Measurement will be per square yard for the type specified in the proposal. Payment shall include topsoil, seed and fertilizer as specified.

h. Seeding

Measurement will be per acres seeded and shall include preparation of the surface and all incidental items associated with the work. Payment for seeding will not be made until 30 days after the seeding has taken place.

i. Mulch

Measurement will be per ton for each type specified in the proposal.

j. Seed and Fertilizer

Measurement will be per pound for each mix and type specified at the given rate (lbs/acre).

k. Sod

Measurement will be per square yard installed in place. Payment shall include furnishing and installing 6" of topsoil.

l. Street Sweeping

Measurement will be per hour for sweeping required prior to the installation of the bituminous wear course. All other sweeping throughout the project shall be considered incidental unless otherwise specified in the special provisions.

[END EROSION & SEDIMENT CONTROL]