

PROJECT INFORMATION

Project Description

This project will consist of a new 2,968 square foot township hall, a new 3,840 square foot maintenance facility, as well as new paved parking and driveway areas, and sidewalk. Future plans for this site include expansions of the township hall totaling 3,872 square feet, expansions of the maintenance facility totaling 1,920 square feet, and a 1,800 square foot sand and soil shed. The storm water management design of this site accounts for all proposed and future construction.

Impervious Surface Tabulation

Table with 2 columns: Category, Value. Rows: Existing Impervious Area (0.00 acres), Proposed Impervious Area (1.06 acres), Net Impervious Area Increase (1.06 acres).

Permanent Site Drainage

Site drainage will be routed to a new storm water pond via new sheet drainage and swales to be constructed on site. The pond will be provided with a permanent volume (dead storage) equal to or exceeding 1,800 cubic feet per acre draining to the ponds, and a water quality volume equal to 1/2' of the impervious area draining to the pond (see table below). The ponds will be provided with a submerged skimmer structure outlet for rate control and control of floatables prior to discharge off site. The outlet will be sized such that the discharge of the water quality volume will not exceed 5.66 cfs per acre of pond surface area. A plunge pool will also be provided at the pond outlet to reduce downstream erosion.

WEST SIDE

Table with 3 columns: Sediment Pond Data*, Required, Provided. Rows: Permanent Storage Volume, Water Quality Volume, Discharge Rate, Bottom of Pond, Normal Water Level, Top of Pond.

* Volumes and discharge rates were calculated using HydroCad software. These calculations are on file at the Engineer's office and can be provided upon request.

Receiving Surface Waters

The following surface waters could receive storm water runoff from this project, and are within 1 mile of the project site:

Table with 6 columns: Surface Water, Type of Surface Water, Impaired Water?, Special Water?, USEPA Approved TMDL for Impaired Water?, Comments. Rows: Wetland, Sprink Creek.

SEDIMENT AND OTHER POLLUTANTS

This SWPPP has been designed mainly to provide erosion and sediment control of naturally occurring soils of this site (ie: sands, loams, and clays). Although this SWPPP does address pollution prevention of other man-made materials, it is assumed that these materials will consist of debris from existing structures and pavements to be demolished, or debris and chemicals (ie: fuels, new paints, etc.) resulting from new construction.

There are no known solid wastes or hazardous materials buried below grade at this site. If such wastes or hazard materials are discovered during construction, the SWPPP Coordinator (described below) will be responsible for notifying the Engineer. This SWPPP will then be revised to address the presence and disposal of these additional pollutants

EROSION PREVENTION AND SEDIMENT CONTROL RESPONSIBILITIES

SWPPP Design Engineer and Qualifications

Table with 2 columns: Design Engineer, Training Course, Training Course, Training Entity, Instructor, Dates of Training Course, Total Training Hours. Row: Brian J. Schultz, PE, Design of SWPPP, University of Minnesota, John Chapman, November 13-14, 2007, 12.

* Design of SWPPP is a certification course offered by the University of Minnesota. The Engineer's certification for Design of SWPPP is current, and will expire May 31, 2011. Certification documentation is on file at the Engineer's office and a copy can be provided upon request.

SWPPP Coordinator and Qualifications

The Contractor shall provide an individual who shall serve as the SWPPP Coordinator for this project. The SWPPP coordinator shall oversee the implementation of this SWPPP, as well as the necessary inspections (described below) of erosion prevention and sediment control BMPs. The SWPPP Coordinator shall also oversee the installation, maintenance, and repair of the BMPs to be completed in accordance with this SWPPP. The SWPPP Coordinator shall be responsible for the items listed above during the period from the start of the project to the establishment of final stabilization. During this period, the SWPPP Coordinator, or their assigned, qualified (see below) representative shall be available for an on-site inspection within 72 hours upon request by the MPCA.

It shall be the Contractor's responsibility to complete the table below, which will identify the SWPPP Coordinator and that person's qualifications. This person shall acknowledge that he/she has been assigned to serve as SWPPP Coordinator and will be overseeing the items listed in this section, by providing their signature in the space below. Please note that this SWPPP will not be considered complete if the table below is not filled in.

Table with 2 columns: SWPPP Coordinator, Company Name, Office Phone #, Cell Phone #, Training Course, Training Entity, Instructor, Dates of Training Course, Total Training Hours.

I, _____ hereby (Printed Name) acknowledge that I will be serving as SWPPP Coordinator for this project and will be responsible for overseeing the items identified in this section. (Signature) (Date)

The SWPPP Coordinator may assign other personnel to supervise or perform the duties listed above. However, in completing the duties listed above, at least one person shall be trained in erosion prevention and sediment control as related to that particular part of the SWPPP.

If the SWPPP Coordinator chooses to delegate some of the duties and responsibilities listed above to other personnel, a list of the personnel, as well as their qualifications, shall be kept with and shall become part of this SWPPP. The qualifications shall be documented in a manner similar to the table shown above. A copy of this list shall be provided to the Engineer.

Once the project has been completed and accepted by the Owner, and Final Stabilization has been established and a Notice of Termination submitted to the MPCA, the Owner assume responsibility for the long term maintenance of the storm water management system.

BMP INSPECTIONS

Inspection Frequency

The SWPPP Coordinator shall inspect, or designate someone else who is qualified to inspect (see above), the construction site erosion prevention and sediment control BMPs per the following time frames:

- 1). Once every 7 days
2). Within 24 hours of a rain event (1/2" or greater over 24 hours)

Inspections shall be conducted per the time frames listed above with the following exceptions:

- 1). Where parts of the construction site have permanent cover, but work remains on other parts of the site, inspections of areas with permanent cover may be reduced to once per month
2). Where construction sites have permanent cover on all exposed soil areas and no construction activity is occurring anywhere on the site, the site must be inspected for a period of 12 months (inspections may be suspended during frozen ground conditions). Following the 12th month of permanent cover with no construction activity, inspections may be terminated until construction activity is once again initiated or sooner if notified in writing by the MPCA.
3). Where work has been suspended due to frozen ground conditions, the required inspections and maintenance schedule must begin within 24 hours after runoff occurs at the site or prior to resuming construction, whichever occurs first.

Inspection Records

The SWPPP Coordinator shall maintain inspection records, which shall include the following:

- 1). Date and time of inspections
2). Name of person(s) conducting inspections
3). Findings of inspections, including recommendations for corrective actions
4). Corrective actions taken (including dates, times, and party completing maintenance activities)
5). Date and amount of any rainfall events greater than 1/2" in 24 hours
a). It is recommended that the Contractor install a rain gauge at the construction site.
6). Documentation of any changes to the SWPPP made during construction
a). If the SWPPP coordinator observes that a BMP fails on a regular basis and believes that it is ineffective, it shall be his/her responsibility to notify the Engineer of such deficiencies. The Engineer may then amend the SWPPP (see "Amending the SWPPP")

Note: Copies of all inspection records shall be submitted to the Engineer.

AMENDING THE SWPPP

During the construction of this project it may become necessary to amend this SWPPP. Should the responsibility of installing, inspecting and maintaining the erosion and sediment control devices and techniques described in this SWPPP be transferred from the current Contractor to another Contractor, or from the current Contractor to the Owner, this SWPPP shall be updated accordingly. The Owner will also be required to complete an "Permit Modification Form".

Should it be determined, during construction, by the SWPPP Coordinator, Engineer, or Regulatory Officials that deficiencies in this SWPPP exist, or if significant changes are made to the design/scope of this project that impact erosion prevention and sediment control, the Engineer shall be notified immediately. The Engineer will then review potential deficiencies and/or significant changes to project design/scope, and make necessary changes to the SWPPP.

After changes are made to the SWPPP, the Engineer will issue the necessary documentation, reflecting the changes, to the owner and to the SWPPP Coordinator. The SWPPP Coordinator shall be responsible to make sure that this documentation is added to the on-site SWPPP copy and that the changes described in the documentation is implemented on-site.

EROSION PREVENTION AND SEDIMENT CONTROL BMPs

Standards and References

Materials and construction methods of all BMPs included in this SWPPP shall be as per the Minnesota Department of Transportation (MNDOT) Standard Specifications for Construction, latest edition. The Contractor and SWPPP Coordinator shall obtain a current copy of MNDOT's Standard Specifications for Construction and familiarize themselves with the specification sections applicable to this SWPPP, as there are several BMPs that specifically reference these sections.

The Contractor and SWPPP Coordinator shall be expected to be familiar with the applicable MNDOT specification sections during construction. No additional compensation will be paid to the Contractor for additional work due to unfamiliarity with these specification sections.

Undisturbed Areas

If shown on the plan, the Contractor shall delineate areas that are not to be disturbed on the site. This may be done with flags, stakes, signs, silt fence, etc., and shall be completed prior to the start of any grading operations. Regardless of the delineation method the Contractor chooses to use, the Contractor must communicate to his/her personnel and subcontractors that these areas are not to be disturbed and construction equipment (including trucks and personal vehicles) shall not be allowed in these areas.

Temporary and Permanent Stabilization

All exposed soil areas (including stockpiles) shall be provided with temporary or permanent cover within 14 days of construction activity temporarily or permanently ceasing in that portion of the site. Temporary or permanent drainage ditches or swales, which drain off-site or to a surface water, and are within 200 lineal feet of the property line or surface water shall be provided within 24 hours of construction.

Temporary Cover:

If the Contractor chooses to halt grading operations in a portion of the site (or the whole site) for a period exceeding 14 days, and grading operations (rough or finish grading) in the affected areas has not yet been completed, temporary cover shall be placed. Affected areas consisting of drainage ditches or swales connected to, and within, 200 lineal feet of a property line or surface water shall be provided with temporary cover within 24 hours of connection. Depending on the Contractor's schedule, the temporary cover shall consist of one of the following BMPs:

- 1). Disanchored Mulch
a). Disanchored mulch may be used in an area of the site (or the whole site) if the Contractor is halting grading operations for a period that is relatively short, but exceeds 14 days.
b). The mulch shall be Type 3 per MNDOT Spec. 3882
c). An adequate quantity of mulch shall be evenly distributed to achieve 90% coverage of the exposed soils.
d). Mulch shall be placed as per MNDOT 2575.3F.
e). All mulch shall be disc anchored as per MNDOT 2575.3G. Prior to the placement and disanchoring of the mulch, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B.
f). Any areas that are exposed as a result of wind action after the initial mulch placement shall be provided with additional mulch to maintain 90% coverage.
2). Temporary Seeding with Mulch
a). Temporary seeding with mulch may be used in areas of the site (or the whole site) if the Contractor is halting grading operations for a period that is relatively long. Although mulch still needs to be applied as described above, once the temporary seeding/turf is established, the mulch will no longer need to be maintained. The temporary seeding/turf will require very little maintenance.
b). Prior to the sowing of temporary seed, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B1.
c). Contractor shall utilize Seed Mixes 100, 110, or 130 per MNDOT Spec. 3876 for temporary seeding.
d). Temporary seeding shall be sown per MNDOT Spec. 2575.3D.
e). Once temporary seeding has been sown, mulch shall be placed over the area as described above.

Permanent Cover:

Upon completion of finish grading and/or placement of topsoil, all exposed areas shall be provided with permanent cover within 14 days. This includes areas designated for impervious surfacing (ie: buildings, pavements/gravel bases, sidewalks, etc.). Where the construction schedule will not allow for the placement of the permanent impervious surfacing within 14 days of the completion of finish grading, temporary cover shall be provided in these areas, as described above, until the permanent impervious surfacing can be constructed. Affected areas consisting of drainage ditches or swales connected to, and within, 200 lineal feet of a property line or surface water, shall be provided with permanent cover within 24 hours of connection.

Areas designated for permanent turf establishment shall be provided with one or more of the following BMPs (see plan):

- 1). Permanent Seeding with Mulch
a). Unless otherwise noted on the plans, all areas designated for turf establishment shall be provided with permanent seeding.
b). In addition to the plan included as part of this SWPPP, the Contractor shall verify if a Landscaping Plan has been included in the plans by the Architect. If a Landscape Architect has specified higher quality permanent cover (ie: sod, hydroseeding, etc.), the Contractor shall provide this permanent cover in lieu of the permanent seeding specified in this SWPPP.
c). Prior to the sowing of permanent seed, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B1.
d). Contractor shall utilize Seed Mix 260 per MNDOT Spec. 3876 for permanent seeding.
e). Permanent seeding shall be sown per MNDOT Spec. 2575.3D.
f). Once permanent seeding has been sown, mulch shall be placed over the area as described above (under Temporary Cover), unless noted otherwise.
2). Erosion Control Blanket
a). Erosion control blanket shall be placed in areas as shown on the plan included in this SWPPP. These areas shall still be provided with permanent seeding, as described above, beneath the erosion control blanket.
b). Erosion control blanket shall meet the requirements indicated in MNDOT Spec. 3885. See plan for category(s) of erosion control blanket.
c). Erosion control blanket shall be installed as per MNDOT Spec. 2575.3J2.
d). Erosion control blanket specified in drainage ditches and swales connected to, and within 200 lineal feet, of a property line or surface water shall be installed within 24 hours of the completion of finish grading (including permanent seeding).
3). Riprap
a). Riprap shall be placed in areas as shown on the plan included in this SWPPP.
b). All riprap shall be underlain with Type 4 geotextile fabric. The fabric shall meet the requirements of MNDOT Spec. 3733 and shall be installed as per MNDOT Spec. 2511.3B2.
c). Riprap materials shall meet the requirements of MNDOT Spec. 3601, and shall be Class 3, unless noted otherwise on the plans.
d). Riprap shall be considered "Random Riprap" and shall be placed as per MNDOT Spec. 2511.
e). Although it is permitted for the riprap to be placed with machinery, it will be necessary for the Contractor to hand place some of the riprap in order to provide a dense, well-keyed layer of stones with the least practical quantity of void space.
f). The minimum thickness of the riprap shall be 18 inches, unless otherwise noted on the plans.
g). Riprap designated at the end of pipe outlets shall be placed within 24 hours of installation of the pipe outlet end section.
h). Riprap specified in drainage ditches and swales connected to, and within 200 lineal feet, of a property line or surface water shall be installed within 24 hours of the completion of finish grading.

Sediment Control

The following sediment control BMPs shall be implemented as part of this project:

- 1). Silt Fence
a). Silt fence shall be installed at the locations shown on the plan included in this SWPPP.
b). Silt fence shall be machine sliced and materials shall meet the requirements of MNDOT Spec. 3886.
c). Silt fence shall be installed as per MNDOT Spec. 2573.3C1.
d). Silt fence shall be installed prior to any upgradient grading operations, and shall remain in place and maintained adequately until upgradient areas achieve Final Stabilization (see below)

- e). Silt fence shall be repaired or replaced if damaged during, or after, rain events, or if accumulated sediment on the upstream side of the fence reaches 1/3 of the height of the fence. Repair or replacement of silt fence shall be completed within 24 hours of discovery.
f). Portions of silt fence may be removed to accommodate short-term activities, such as vehicle passage. Short-term activities shall be completed as quickly as possible, and new silt fence installed immediately after completion of the short-term activity. If rainfall is imminent or forecasted in the near future, new silt shall be installed regardless of if the short term activity has been completed or not. The Contractor is advised to schedule short term activities during dry weather as much as practicable. No additional compensation will be paid due to additional silt fence associated with short-term activities.
g). Temporary soil stockpiles shall be placed on the site in areas upgradient from silt fence. Where the Contractor chooses to place temporary soil stockpiles outside designated silt fenced areas, the stockpiles shall be surrounded by additional silt fence. Under no circumstances shall temporary soil stockpiles be placed over surface waters, curb and gutter, catch basins, culvert inlets or outlets, or ditches.

- 2). Catch Basin Protection
a). WIMCO Road Drain protection devices, as manufactured by WIMCO, shall be used for catch basin protection on this project. WIMCO can be contacted at (952) 233-3055, and their web page is www.roadtrain.com.
b). "Road Drain Top Slab" devices shall be installed at all catch basin locations immediately after placement of the catch basin structures. "Road Drain Top Slab" devices shall remain in place and be adequately maintained until permanent surfacing is constructed (ie: curb and gutter, pavements, and/or gravel surfacing). In areas designated for turf establishment, "Road Drain Top Slab" devices shall remain in place until Final Stabilization of all upgradient areas is established.
c). Upon construction of the permanent surfacing, the "Road Drain Top Slab" devices shall be replaced with the WIMCO product specified on the plans. The WIMCO devices shall remain in place until Final Stabilization of all upgradient areas has been established.
d). The contractor shall install and maintain the catch basin protection devices as per the manufacturer's instructions and specifications.
3). Culvert Inlet Protection
a). Culvert inlet protection shall be provided at all culvert inlet locations immediately after construction of the culvert. See plan included in this SWPPP for culvert inlet locations.
b). Culvert inlet protection shall consist of geotextile fabric wrapped around, and completely covering the inlet end section. The geotextile fabric shall be the same fabric used in silt fence applications and meet the requirements of MNDOT Spec. 3886.
c). The culvert inlet protection shall remain in place and adequately maintained until Final Stabilization of all upgradient areas has been established.
d). Culvert inlet protection shall be repaired or replaced if damaged during, or after, rain events, or if accumulated sediment reaches 1/2 of the diameter of the culvert pipe. Repair or replacement of culvert inlet protection shall be completed within 24 hours of discovery.
4). Temporary Rock Construction Entrance
a). Temporary rock construction entrances shall be installed at the locations shown on the plan included in this SWPPP. See detail for temporary rock entrance design.
b). If the Contractor chooses to access the site from locations other than where temporary rock entrances are specified on the plans, additional temporary rock entrances shall be placed at these locations, as well.
c). Temporary rock entrance shall be constructed prior to the start of grading operations, and shall remain in place and be adequately maintained until Final Stabilization has been established.
d). Temporary rock entrances shall be maintained in such a manner that the entrances prevent sediment tracking onto adjacent streets. If a temporary rock entrance is found to be ineffective, it shall be replaced or improved within 24 hours of discovery.
e). The Contractor has the option to place Type 4 geotextile fabric beneath the temporary rock entrance. The fabric may extend the life of the entrance as it will reduce rock "spilling" into the underlying soils. If the Contractor chooses to use fabric, it should meet the requirements of MNDOT Spec. 3733 and shall be installed as per MNDOT Spec. 2511.3B2.
f). If sediment tracking from the site is discovered on adjacent streets, the sediment shall be removed with a street sweeper or other approved method within 24 hours of discovery. This sediment may be returned and graded over exposed areas of the site, or disposed of off site per MPCA requirements.
5). Filter Logs
a). Filter logs shall be installed at the locations shown on the plan included in this SWPPP.
b). Filter logs shall consist of Type Wood Fiber bionolls and meet the requirements of MNDOT Spec. 3897.
c). Filter logs shall be installed as per MNDOT Spec. 2573.3J.
d). Filter logs shall be installed immediately after placement of erosion control blanket.
e). Filter logs shall remain in place for the life of the project, and shall be allowed to degrade naturally.

Dewatering

If dewatering of sandy subsoils is required for this project, the pump discharge shall be treated prior to discharge off-site or into a surface water. Treatment of discharge shall be achieved with the use of a "Dandy Dewatering Bag" as manufactured by Dandy Products, Inc. Dandy Products, Inc. can be contacted at (877) 307-0141, and their web page is www.dandyproducts.com. The "Dandy Dewatering Bag" shall be installed, utilized, and maintained per the manufacturer's instructions and specifications.

Once dewatering water has been treated, it may be discharged off-site or to a surface water. The discharge shall be visually checked to ensure that it is relatively clean and not visibly different from any receiving waters. If discharge is noticeably "dirty", the Engineer shall be contacted as additional treatment methods may be necessary.

Adequate erosion control shall be provided at the point of discharge if it is located in an area with exposed soils or established turf. This erosion control may consist of temporarily placed rip rap, or other approved energy dissipation measures. The type of erosion control measure shall be at the Contractor's discretion, depending on the location of the dewatering discharge and the unique site characteristics. The erosion control measures shall be effective and shall be maintained adequately such that no erosion occurs at the point of discharge.

Pollution Prevention Management

Solid waste accumulated during construction, including collected sediment, construction materials, floating debris, construction debris, paper, plastics, and other solid wastes will be disposed of in accordance with MPCA disposal requirements.

Hazardous materials, including petroleum products, paint, and other hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks, and other discharge. Storage areas will be provided to protect the hazardous materials from vandalism, and shall be clearly marked. Hazardous materials shall be stored and disposed of in accordance with MPCA requirements.

External washing and maintenance of construction equipment and vehicles will be limited to a defined area of the site, which shall be at the discretion of the Contractor. The Contractor shall mark this area of the site with signs and/or other appropriate devices, and shall communicate to his/her personnel and subcontractors that external washing shall be limited to only this area of the site. Runoff from external washing shall be contained in a device similar to a concrete washout (see below), where it will be prevented from infiltrating into the underlying soils. Collected runoff shall be disposed of in accordance with MPCA requirements. No engine degreasing is allowed on-site.

Liquid and solid wastes generated by concrete washout operations shall be collected in a leak-proof containment facility or impermeable liner. The Contractor shall construct a concrete washout area per the detail included in this SWPPP, or an equivalent device approved by the Engineer. The location of the concrete washout area shall be at the discretion of the Contractor. The Contractor shall mark the concrete washout area with signs and/or other appropriate devices, and shall communicate to his/her personnel and subcontractors that concrete washout operations shall be limited to only this area of the site. Concrete washout wastes shall be disposed of in accordance with MPCA requirements.

FINAL STABILIZATION

Final Stabilization shall be considered established once the following requirements have been achieved:

- 1). All soil disturbing activities of the site have been completed and all previously exposed soil areas of the site designated for turf establishment have uniform permanent perennial vegetative cover with a density of 70% over the entire affected area. All impervious surfacing (ie: buildings, pavements/gravel bases, sidewalks, etc) have been constructed.
2). All permanent storm water treatment BMPs have been constructed per plan and are functioning properly. All accumulated sediment has been removed from all storm water conveyance systems and storm water treatment BMPs.
3). All temporary synthetic and structural erosion prevention and sediment control BMPs (ie: silt fence, catch basin protection devices, etc.) have been removed from the site. Temporary BMPs designed to decompose in place (ie: filter logs, erosion control blanket, etc.) may remain in place.

ADDITIONAL COMMENTS

The Contractor is solely responsible for the cleanup of any wetlands, rivers, streams, lakes, reservoir, other waters of the State (as defined by the MPCA's General Storm Water Permit), ground or roadway surfaces or other property damaged by construction activity related to this project.

Besides the NPDES permit (MPCA General Storm Water Permit), the Contractor shall also obtain all other necessary local government permits related to erosion and sediment control, if applicable (ie: Watershed District, County Soil and Water Conservation District, MNDOT, etc.).

This SWPPP is intended to provide a plan for addressing the erosion prevention and storm water management issues associated with this project. It is to be used in conjunction with the project plans, specifications, and the MPCA General Storm Water Permit. In addition to the SWPPP, the Owner, Contractor, and SWPPP Coordinator shall familiarize themselves with the actual requirements indicated in the MPCA General Storm Water Permit itself and are responsible for compliance with the permit's terms, requirements, and conditions. The Engineer can provide a copy of the permit upon request.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Engineer under the laws of the state of Minnesota.
Brian J. Schultz, PE
Date: 02/03/2010 License No.: 48129

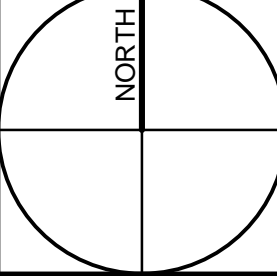
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STORM WATER POLLUTION PREVENTION PLAN-NOTES