Storm Water Pollution Prevention Plan

Lee's Summit Towne Centre - Lot 1

520 NE Town Centre Dr. Lee's Summit,
Missouri 64064

Prepared for George J. Shaw Construction

1601 Bellefontaine Ave.
Kansas City, Missouri 64127

2022

Prepared by:

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Table of Contents

Lee's Summit Towne Centre - Lot 1
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

SITE DESCRIPTION

This project, Lee's Summit Towne Centre - Lot 1 , is located at 520 NE Town Centre Dr. Lee's Summit, Missouri 64064.This project consists of a new single-story building with associated parking and a mega storage faciilty with internal drives and respective storm sewer system and detention. Development will take place on approximately 11.53 acres on a 11.61 acre parcel, with the site generally sloping from W-E. The project activities will include construction of private drives, parking lots, new building construction and associated utility installation. The existing runoff coefficient (C) for the site is 0.3. The proposed runoff coefficient (C) for the site is 0.51. 10136-Sibley-Urban land complex, 2 to 5 percent slopes, and 30080-

OWNER INFORMATION

Owner Name: WHD Management LLC
Owner Address 520 NE Town Centre Dr. Lee's Summit, Missouri 64064

SEQUENCE OF MAJOR EVENTS

The order of activities will be as follows:

1. Install perimeter silt fence, construction entrances, & inlet protection.
2. Clear and grub areas to be disturbed.
3. Demolition: Building, utilities, pavement, etc.
4. Rough grade site.
5. Utility installation.
6. Finish grade site.
7. Building construction.
8. Construct concrete curbs, entrances, sidewalks, & asphalt pavement.
9. Stabilize site (seeding & landscaping).
10. Remove erosion control BMP's.

RESPONSIBLE PARTIES:

Individual/Company:	Phone Number:	Service Provided:
George J. Shaw Construction	(816) 231-8200	General Contractor Erosion Control Contractor/Inspector SWPPP Revisions/Maintenance Stabilization

RECEIVING WATERS:

The entire site drains to a tributary to Little Blue River, Missouri River . Project is not located within the jurisdiction of an MS-4. The receiving water is not on the 303(d) list. No pollutants need to be addressed. This specific project or general construction activity is not identified on 303(d) list or associated assumptions and allocations identified in the TMDL for the discharge. There are no additional controls implemented.

ATTAINMENT OF WATER QUALITY STANDARDS AFTER AUTHORIZATION

a. The permittee must select, install, implement, and maintain BMPs at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained below, the SWPPP developed, implemented, and updated to be considered as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any applicable water quality standard.

b. At any time after authorization, the Department may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:

   i. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

   ii. Cease discharges of pollutants from construction activity and submit an individual permit application

I understand and agree to follow the above text regarding the attainment of water quality standards after authorization. Yes ☑ No ☐

STORMWATER CONTROLS

Initial Site Stabilization, Erosion, and Sediment Controls and Best Management Practices

a. Initial Site Stabilization: Site will only be initially disturbed as necessary to construct pre-clearing BMPs. Less than one acre of land should be disturbed in the process.

b. Erosion and Sediment Controls: BMPs include temporary construction entrances, perimeter/interior silt fence, inlet / outlet protection, native vegetation swales and bioretention cell storm systems.

c. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the operator will replace or modify the control for site situations: Yes ☑ No ☐

d. Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: Yes ☑ No ☐

e. Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced to 50%: Yes ☑ No ☐

f. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: Yes ☑ No ☐

g. Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: Yes ☑ No ☐

Any potential off-site storage areas used by the permitted project will be determined by Contractor and will be protected by silt fencing or other appropriate BMPs.

Stabilization Practices

a. Description and Schedule: After initial BMP installation (perimeter silt fence, entrances, inlet/outlet protection), the site will be cleared, grubbed, and graded. All BMPs will be maintained throughout remainder of the project and site stabilization.

b. Buffer Areas: All proposed grading activities at least twenty-five (25) feet from any named or unnamed streams. Grading activities are also at least fifty (50) feet from any established TMDL water bodies, streams listed on the 303 (d)-list, Extraordinary Resource Waters, Ecologically Sensitive Water bodies and Natural and Scenic Waterways. Yes ☑ No ☐

c. Stabilization Records: A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan. (see below) Yes ☑ No ☐

WORK TRACKING (ATTACH ADDITIONAL SHEETS IF NEEDED)			
Major Grading Activity	Description	Date Begun	Date Complete
Construct. Activity Cessation	Description	Date Begun	Date Complete
Stabilization Measure(s)	Description	Date Begun	Date Complete

d. Stabilization Schedule: Except as provided below, stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other **soil activities** have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period of 14 calendar days. Initial stabilization activities must be completed within 14 days after soil disturbing activities cease.

i. Stabilization of disturbed areas is not required if the intended function of a specific area of the site necessitates that it remain disturbed. Such areas include stockpiles of soil materials intended for a use that prohibits introduction of vegetation, mulch or other foreign materials into the soil, areas reserved for landscaping, including sod application, that prohibits the introduction of vegetation, mulch or other foreign materials prior to placement of final landscaping features, dirt tracks, courts and other amenities designed or otherwise intended to remain unstabilized, and disturbed floors and banks below the anticipated pool elevation of ponds and basins. Appropriate sediment control measures shall be provided below all such areas where the intended function necessitates that the area remain disturbed.

ii. Where **construction activity** on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.

iii. Disturbed areas that exhibit ice, frozen soil conditions, or have a consistent snow cover extending across 70% or more of the area should be considered to be temporarily stabilized until thawing occurs across the affected area. Stabilization of such iced, frozen, or snow covered areas must be completed within 14 days following the first subsequent inspection that finds the affected area thawed and no longer stabilized due to ice, frozen soil conditions, or snow cover.

Erosion Control Practices

☑	Silt Fence	☑	Seeding/mulching
☑	Sediment Basin	☑	Temporary construction entrance
☐	Straw bales	☐	Ditch checks
☑	Inlet Protection	☐	Other:

Structural Practices

Structural control locations are illustrated in the construction plan. Structural controls that will be used during construction activities include:

a. **Earth Stockpiles:** Filter fabric fences or straw bales around temporary earth stockpiles while they are in

b. **Strom Sewer Inlets:** Straw bales or filter fabric fence around storm sewer inlets until all disturbed areas surrounding the inlets are stabilized.

c. **Trench Excavation:** Trench excavation spoils not immediately hauled off will be backfilled into the trenches in a continuous operation. Excavated material required for backfilling will be placed next to the trenches, but no closer than half the depth of the trench, for safety reasons.

Other Controls

a. Solid materials, including building materials, shall be prevented from being discharged to Waters of the State: Yes ☑ No ☐

b. Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of:

A stabilized construction entrance and exit	☑
Vehicle tire washing	☑
Other controls, describe	☐

Contractor will be responsible for cleanup of all offsite sediment created by this project.

c. Temporary Sanitary Facilities: All sanitary waste will be collected for the portable units a minimum of twice per week by a licensed sanitary waste management contractor, as required by local regulation.

d. Concrete Waste Area Provided:

Yes	☑
No	☐
N/A	☐

e. Fuel Storage Areas: Fuel tanks will be placed in bermed areas if kept onsite. Truck Washing shall only occur on the Temporary Construction Entrances

Non-Stormwater Discharges

a. The following allowable non-stormwater discharges comingled with stormwater are present or anticipated at the site:

☐	Fire-fighting activities;	☑	Routine external building wash down which does not use detergents, etc.;
☑	Fire hydrant flushings;	☑	Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents, etc. are not used;
☑	Water used to wash vehicles (where detergents, etc. are not used) or to control dust	☐	Uncontaminated air conditioning, compressor condensate;
☑	Potable water sources including uncontaminated waterline flushings;	☐	Uncontaminated springs, excavation dewatering and groundwater;
☑	Landscape Irrigation;	☐	Foundation or footing drains where flows are not contaminated with process materials such as solvents

b. All non-storm water discharges will be directed to appropriate sediment control devices (silt fence, etc.) to minimize the sediment discharged from the site. Yes ☑ No ☐

Post Construction Stormwater Management

Describe measures installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed: permanent detention basin and native vegeatation preserved and established

Applicable State or Local Programs

The SWPPP will be updated as necessary to reflect any revisions to applicable federal, state, or local requirements that affect the stormwater controls implemented at the site. Yes ☑ No ☐

Inspections

a. Inspection frequency:

☐ Every 7 calendar days or

☑ At least once every 14 calendar days and within 24 hours of the end of storm event 0.5" or greater (a rain gauge must be maintained on-site)

b. Inspections: Completed inspection forms will be kept within the SWPPP

☑ Inspection forms, included, will be used

c. Inspection records will be retained as part of the SWPPP for at least three years from the date of termination.

☑

Erosion and Sediment Control inspection and Maintenance Practices

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls. The stormwater pollution prevention plan controls and measures contained, indicated and outlined herein are based on accepted standards and good engineering practice. Erosion control measures shall be installed in accordance with the plan details, State and Local standards, and quality construction practice.

- Pollution prevention measures constructed on the site shall be inspected and a report shall be written by a qualified representative of the property once every fourteen (14) calendar days and within 24 hours of a rainfall event measuring 0.5 inches or greater, or consecutive rain events totaling 0.5 inches with the first event being less than 0.5 inches. Inspection and reporting at this rate shall continue until final stabilization is completed and henceforth at a monthly interval until a Notice of Termination is accepted by the appropriate authority. A copy of the report form to be filled out is attached.
- For inactive project sites where the soil disturbing construction activities have permanently ceased and final stabilization activities have been completed and documented but vegetative density does not meet the final stabilization criteria, inspections are not required in response to rain events. However, these areas should still be inspected every 14 days.
- Rainfall totals may be determined from local weather station reports of daily rainfall totals such as the 1200 GMT end-of-day totals available through the National Weather Service, from regularly scheduled on-site rain gauges monitoring performed and recorded each work day by project personnel.
- The site will be disturbed only as necessary and phased as needed to minimize effects.
- Disturbed project areas that are under frozen soil conditions or covered in ice or consistent snow cover extending across 70% or more of the area shall be considered as temporarily stabilized and noted on the inspection report. The thawing of these areas shall be noted during the first subsequent inspection when iced, frozen, or snow covered conditions are no longer present.
- All measures will be maintained in good working order; if a repair is necessary, it will be completed within 7 days unless infeasible. The inspector shall promptly notify the site contractors responsible for operation and maintenance of BMPs of deficiencies. If correction is infeasible, the report shall document why and provide a specific time frame for completing all needed maintenance.
- Built-up sediment will be removed from silt fence and inlet protection when it has reached one-third the height of the structure.
- Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Construction Entrances shall be cleaned, turned over, or rock excavated and replaced when the rock becomes clogged with silt. Under no circumstances are soils to be permitted to be tracked off-site.
- Disturbed areas shall be stabilized with mulch or similarly effective soil stabilization BMP's immediately after soil disturbing activities have permanently ceased or temporarily ceased and will not resume for a period exceeding 14 days. Initial stabilization activities are to be completed within 14 days.
- Locations where stormwater runoff leaves the site shall be inspected for evidence of erosion or sediment deposition. Once a portion of the project area meets the final stabilization criteria specified in this permit, no further inspection of that final stabilized portion is required provided that the area is identified in the SWPPP as having obtained final stabilization. However, the permittee shall remain responsible to correct any conditions within such areas that are identified as contributing to the discharge of sediment or other pollutants from the project site.
- If weather or site conditions render access to an portion of the site to be unsafe or infeasible for inspection activities, the inspection report shall document the reason why access is unsafe or infeasible. Weather and site conditions shall then be monitored and recorded daily until access for inspection activities is determined to be safe and feasible. Inspection of the affected area shall then be performed by the end of the next day after determining that access is safe and feasible.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- Personnel selected by the site superindendent for inspection and maintenance responsibilities will receive training from the site superintendent. They will be trained by the superintendent in all the inspection and maintenance practices necessary for assessing effectiveness and keeping the erosion and sediment controls used onsite in good working order.

Employee Training

The Contractor shall train personnel who are responsible for implementing activities identified in the SWPPP on the components and goals of the SWPPP and the requirements of the general permit. This includes contractors and subcontractors. Training will be given by a knowledgeable and qualified trainer. Formal training shall be at the start of construction and monthly thereafter, with pertinent discussions and training opportunities about the SWPPP and issues/changes as necessary between training sessions. Records of formal training shall be maintained within the SWPPP. Training records that are maintained electronically (i.e. database, etc.) do not need to be maintained within the SWPPP but must be accessible upon request.
***Formal training classes given by Universities or other third-party organizations are not required but recommended for qualified trainers; the Contractor is responsible for the content of the training being adequate for personnel to implement the requirements of the SWPPP.

Inventory for Pollution Prevention Plan

The following materials or substances are expected to be present onsite during construction:

☐	Fertilizer	☐	Petroleum Based Products
☐	Cleaning Solvents	☑	Masonry Block
☑	Tar	☑	Wood
☑	Concrete	☑	Metal Studs
☑	Paints	☐	Detergents
☐	Roofing Shingles	☐	Other:

SPILL PREVENTION

Material Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

Good Housekeeping:

An effort will be made to store only enough material required to do the job. All materials stored on site will be stored in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not possible, the materials will be covered with polyethylene or polypropylene sheeting to protect them from the elements. Products will be kept in their original containers with the original manufacture's label affixed to each container. Substances will not be mixed with one another unless the manufacturer recommends this. Whenever possible, all of a product will be used prior to disposal of the container. Manufacturer's recommendations for proper use of disposal will be followed. The site superintendent will inspect the site daily to ensure proper use and disposal of materials on site. Any excavated earth that will not be used for fill material and all demolished pavement will be hauled off site immediately and will be disposed of properly.

Waste Materials:

All trash and construction debris from this site will be hauled to an approved landfill. No construction waste material will be buried or burnt on the site. All personnel will receive instructions regarding the correct procedure for waste disposal. Notices describing these practices will be posted in the construction office. The site superintendent will be responsible for seeing that these procedures are followed. Employee waste and other loose materials will be collected so as to prevent the release of floatables during runoff events.

Hazardous Products:

No hazardous waste is expected to be generated or encountered in this project. In the event that hazardous waste is encountered, all hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. The site superintendent will be responsible for seeing that these practices are followed.

These practices are used to reduce the risks associated with hazardous materials. Products will be kept in original containers unless they are not re-sealable. Original labels and material safety data sheets will be retained; they contain important product information.

Sanitary Waste:

Portable sanitary units will be provided for all workers throughout the life of the project. A licensed sanitary waste management contractor will regularly collect all sanitary waste from the portable units.

SPILL PREVENTION (Continued)

Product Specific Practices

The following product specific practices will be followed onsite:

Petroleum Products:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

Concrete:

Concrete is considered to be a water contaminant and, therefore, is subject to the standards mentioned above. It is illegal to dispose of concrete in any waters of the state or to place, cause, or permit concrete to be placed in a location where it is reasonably certain to cause pollution to any water of the state.

Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be poured into the storm sewer system but will be properly deposed of according to manufacturer's instruction or state and local regulations.

Fertilizers:

Fertilizers used will be applied only in minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed or other appropriate enclosure. The contents of any partially used bags of fertilizers will be transferred to a sealable plastic bin to avoid spills.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of the plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials may include but not be limited to brooms, dust pans, maps, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of size.
- The spill prevention plan will be adjusted to include measures to this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and cleanup measures will also be included.
- The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The name of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.

POLLUTION PREVENTION PLAN CERTIFICATION

Attainment of Water Quality Standards After Authorization

a. The permittee must select, install, implement, and maintain BMPs at the construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, the SWPPP developed, implemented, and updated to be considered as stringent as necessary to ensure that the discharges do not cause or contribute to an excursion above any applicable water quality standard.

b. At any time after authorization, the Department may determine that the storm water discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:

i. Develop a supplemental BMP action plan describing SWPPP modifications to address

ii. Cease discharges of pollutants from construction activity and submit an individual permit

I understand and agree to follow the above text regarding the attainment of water quality standards after authorization and I

Signed: _____ Name: _____

Owner

Date: _____

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Representative:	For:	Responsible for:
_____ Name	George J. Shaw Construction	Earthwork Contractor Erosion Control Contractor
_____ Signature	1601 Bellefontaine Ave. Kansas City, Missouri 64127	Erosion Control Inspector SWPPP Maintenance Stabilization
_____ Date		

Erosion Control Examples and Descriptions

1. Temporary Berms

A temporary berm is a temporary ridge of compacted soil, with or without a shallow ditch constructed at the top of fill slopes or transverse to center line on fills. The purpose of these ridges is to divert storm runoff from small areas away from steep slopes and direct this water to temporary outlets where the water can be discharged with minimum erosion. These ridges are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed and/or slopes are stabilized. They are also used to transverse to grade to divert runoff to stabilized slope drains.

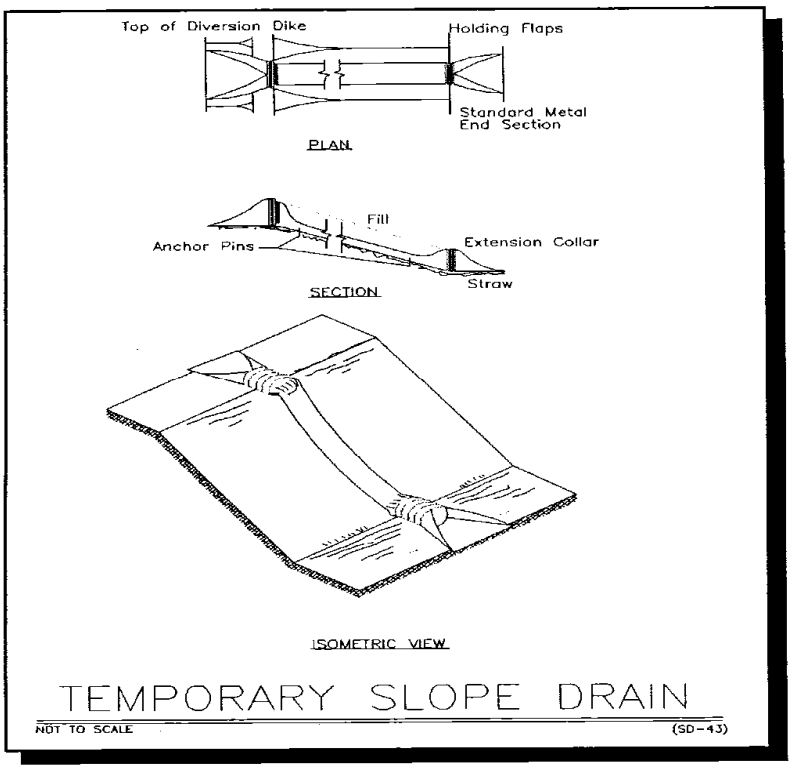
Temporary berms will be used at the end of each day's operation on embankments, as well as when embankment operations are shut down over the winter season.

Temporary berms must drain to a compacted outlet at a slope drain. The top width of these berms may be wider and the side slopes flatter on transverse berms to allow equipment to pass over these berms with minimal disruption.

2. Temporary Slope Drains

A temporary slope drain is used to carry water down slopes to reduce erosion and consists of stone, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, or flexible rubber pipe. Temporary slope drains are required to carry water flowing from cut sections down the fill slopes prior to the time permanent facilities are installed. Temporary slopes drains are required on fill slopes at approximately 500-foot intervals or as directed by the engineer.

All temporary slope drains will be adequately anchored to the slope to prevent disruption by the force of the water flowing in these drains. The inlet end will be properly constructed to channel water into the temporary drain. The outlet ends will have some means of dissipating the energy of the water to reduce erosion downstream. Unless otherwise specified, all temporary slope drains will be removed when no longer necessary and the site will be restored to match the surroundings.



Erosion Control Examples and Descriptions

3. Ditch Checks

There are three types of ditch checks that can be used – rock, straw bale, and silt fence.

Rock ditch checks shall be placed according to the plans. They shall be checked for sediment accumulation after each significant rainfall. Sediment shall be removed when it reaches one-half of the original height or before. Sediment removal will include removal and disposition in a location where it will not erode into construction areas or water courses. Regular inspections shall be made to ensure that the center of the check is lower than the edges. Erosion caused by high flows around the edges of the check shall be corrected immediately.

For straw bale ditch checks, sediment deposits shall be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Sediment removal will include removal and disposition in a location where it will not erode into construction areas or water courses.

For silt fence ditch checks, sediment deposits shall be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Sediment removal will include removal and disposition in a location where it will not erode into construction or water courses.

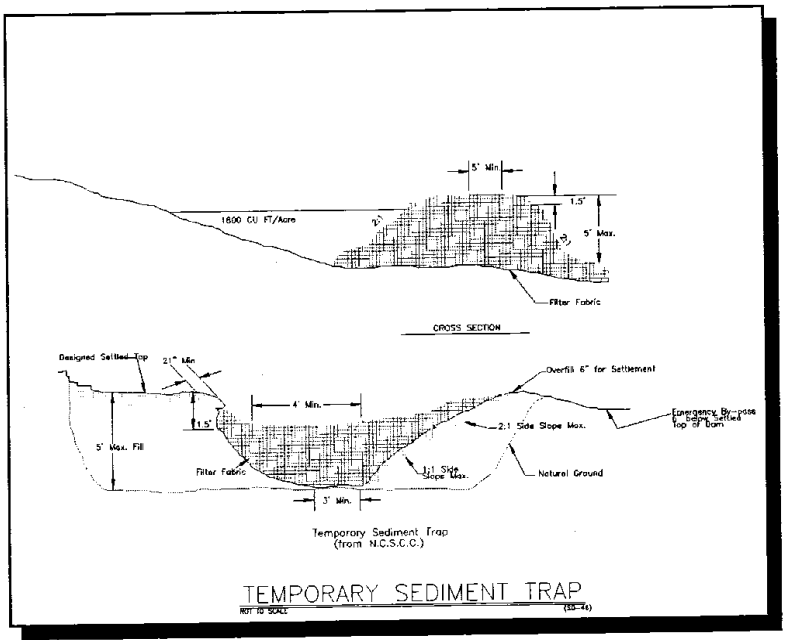
4. Sediment Basin

A sediment basin is an excavated or dammed storage area with rock riprap placed in inlet and outlet areas with defined side slopes. Sediment basins are constructed to trap and store sediment from erodible areas in order to protect properties and streams channels below the installation from excessive siltation . These structures trap and store sediment that occurs in spite of temporary erosion control measures

A sediment basin is required for each drainage area with 10 or more areas disturbed at one time. The area where a sediment basin is to be constructed shall be cleared of vegetation to enable removal of sediment. The inlets of these sediment basins shall be constructed with a wide cross section and minimum grade to prevent turbulence and allow deposition of the soil particles. When the depth of sediment reaches 1/3 of the depth of the structure in any part of the pool, all accumulation shall be removed. Discharges from the basin shall not cause scouring of the receiving area.

Sediment basins shall normally remain in service until all disturbed areas draining into the structure have been satisfactorily stabilized, when use of temporary sediment basins is to be discontinued, all excavations are to be backfilled and properly compacted, fill materials removed, and the existing ground restored to its natural or intended conditions.

Removed accumulated sediment and excavated material removed during construction of the sediment basin shall be disposed of in locations where sediment will not again erode into the construction areas or into natural waterways.



Erosion Control Examples and Descriptions

5. Temporary Seeding And Mulching

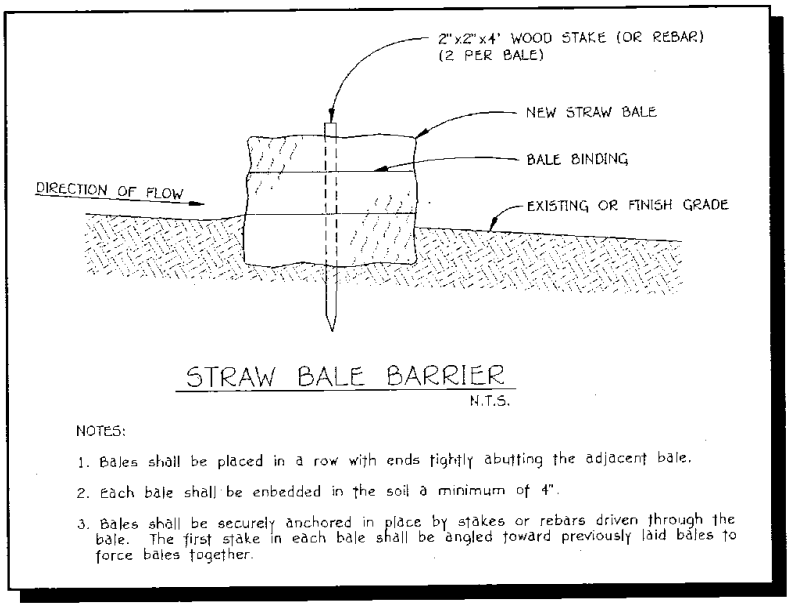
This work shall consist of preparing and fertilizing a seedbed, furnishing and sowing of seed, and mulching. The purpose of temporary seeding and mulching is to produce a quick ground cover to reduce erosion in disturbed areas that are expected to be redisturbed at a later date.

Seeding and /or mulching will be a continuous operation on all cut and fill slopes, waste sites, and borrow pits during the construction process. All disturbed areas shall be seeded and mulched to eliminate erosion except in those exceptions listed in Stabilization Practices part d. Seeding and/or mulching shall be done as soon as possible after completion of the earthwork, not to exceed 14 days.

6. Straw Bales

Bales of straw can be used as a means of controlling pollution and erosion. The straw bales obstruct the flow of water allowing deposition of sediment and/or diversion of water.

This method is typically used at the bottom of embankment slopes to divert runoff from sheet flow and trap sediment, as a ditch check in small ditches and drainage areas, and on the lower side of the cleared areas to catch sediment from sheet flow. When used to trap sediment or divert runoff, the bales must be braced from behind, when used a ditch check, embedment is required. Straw bales are most effective in areas where there is overland flow (runoff that flows over the surface of the ground as a thin, even layer). It is not effective in areas where there is a large volume runoff.



Erosion Control Examples and Descriptions

7. Silt Fence

Use of a silt fence consists of furnishing, installing, maintaining, and removing a geotextile barrier fence designed to remove suspended particles from water passing through the fence. Materials used for silt fences must meet certain requirements.

There are several construction requirements for silt fences. Fence construction shall be adequate to handle the stress from hydraulic and sediment loading. Geotextile at the bottom of the fence shall be buried. The trench shall be backfilled and the soil compacted over the geotextile. The geotextile shall be spliced together as indicated on the standard drawings.

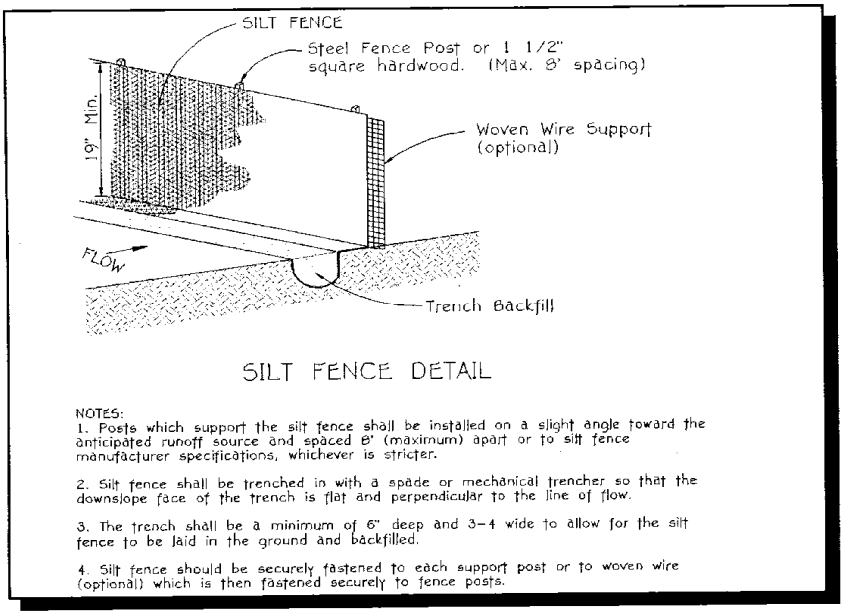
Post spacing shall not exceed 8 feet for wire support fence installations or 5 feet for self-supported installations. Posts shall be driven a minimum of 24 inches into the ground. Where rock is encountered, posts shall be installed in a manor approved by the engineer.
Closer spacing, greater embedment depth and/or wider posts shall be used as necessary in low areas and soft or swampy ground to ensure adequate resistance to applied loads.

When support fence is used, the mesh shall be fastened securely to the up-slope side of the post. The mesh shall extend into the trench a minimum of 2 inches and extend a maximum of 36 inches above the original ground surface. When self-supported fence is used, the geotextile shall be securely fastened to fence posts.

The integrity of silt fences must be maintained for as long as they are necessary to contain sediment runoff. All temporary silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected. In addition, a daily review of the location of silt fences should be made in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness, where deficiencies exist, additional silt fences shall be installed as approved or directed by the engineer.

Sediment deposits shall be removed and disposed of when the deposit approaches one-half the height of the fence or sooner. If required by heavy sediment loading, a second silt fence shall be installed as directed by the engineer.

The silt fence shall remain in place until the engineer directs that it be removed. Upon removal, the contractor shall remove and dispose of any excess silt accumulations, grade and dress the area to the satisfaction of the engineer, and establish vegetation on all bare a[illegible]



SILT FENCE DETAIL

NOTES:
1. Posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source and spaced 8' (maximum) apart or to silt fence manufacturer specifications, whichever is stricter.

2. Silt fence shall be trenched in with a spade or mechanical trencher so that the downslope face of the trench is flat and perpendicular to the line of flow.

3. The trench shall be a minimum of 6" deep and 3-4 wide to allow for the silt fence to be laid in the ground and backfilled.

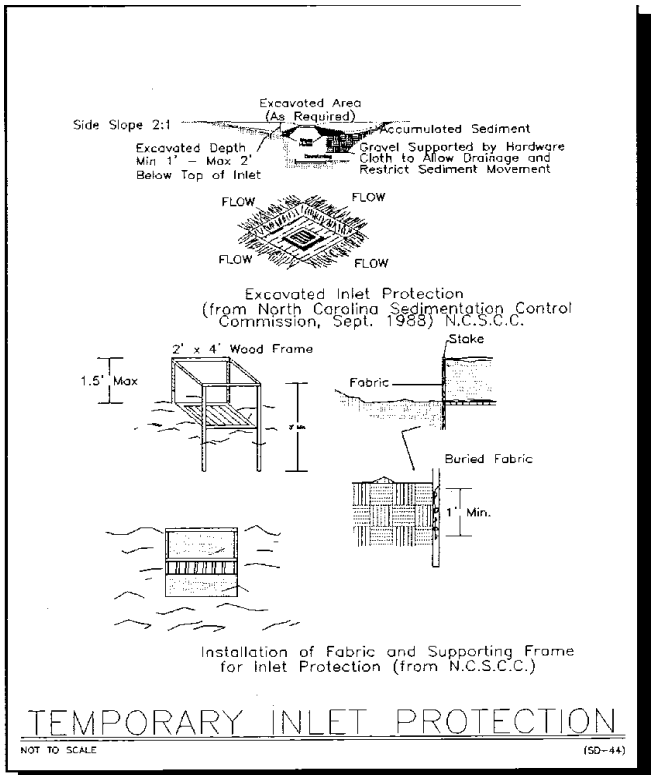
4. Silt fence should be securely fastened to each support post or to woven wire (optional) which is then fastened securely to fence posts.

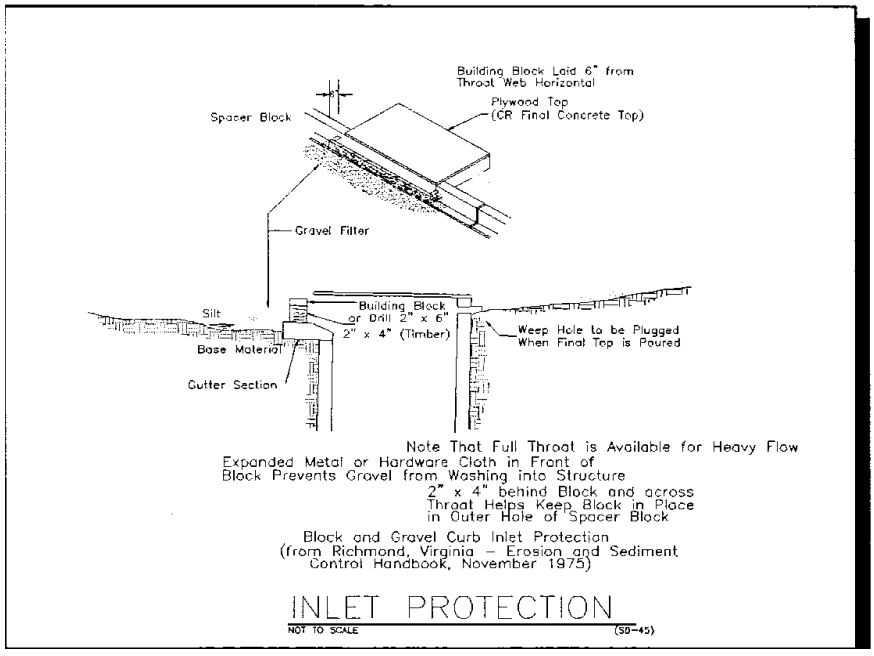
Erosion Control Examples and Descriptions

8. Temporary Pipe

A temporary pipe is a conduit used temporary to carry water under a haul road, silt fence, etc. It is used to convey normal and expected high flows at temporary stream crossings, preventing the contractor's equipment from coming in direct with the water when crossing active streams or intermittent streams created during heavy rainfalls.

All temporary pipe shall be installed in the same manner as permanent pipe is installed on the project to assure that the water does not cause erosion around the pipe. Material to backfill the pipe should be placed in six inch lifts and mechanically compacted, although a compaction test is not required.





Lee's Summit Towne Centre - Lot 1 INSPECTION LOG			
Date of Inspection	**Scheduled or Rainfall Event?**	**Rainfall Since Last Report**	**Inspector**

Lee's Summit Towne Centre - Lot 1 TRAINING LOG		
Date	**Trainer**	**Items Covered**

Lee's Summit Towne Centre - Lot 1
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM A
TO BE COMPLETED EVERY 14 DAYS AND WITHIN 24 HOURS OF
A RAINFALL EVENT OF 0.5 INCHES OR MORE
INPECTION FORM B TO BE COMPLETED WITH THIS FORM

Inspector Name: _____ Date of Inspection: _____

Inspector Title: _____

Date of Last Rainfall: _____ Duration of Rainfall: _____

Days since last rain event: _____ days Rainfall since last rain event: _____ inches

Description of any discharges during inspection: _____

Location of discharges of sediment/other pollutant (specify pollutant & location): _____

_____

Locations in need of additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Occurring Now (y/n)?	Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Date	Maintenance Date	Maintenance to be Performed By

Changes required to the SWPPP (Form C Required): _____

Reasons for changes: _____

SWPPP changes completed (date): _____

"I certify under penalty of law that this document and all attachments such as Inspection Forms were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____ Date: _____

Name and Title: _____

Lee's Summit Towne Centre - Lot 1
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM B
(EROSION CONTROL/MATERIAL STORAGE)
TO BE COMPLETED EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF
A RAINFALL EVENT OF 0.5 INCHES OR MORE
TO BE COMPLETED AND INCLUDED WITH FORM A

Date and Time: _____

Weather: _____

Name and Title: _____

Inspector Qualification: _____

Weather since last report: _____

Rain? _____ Depth? _____ Duration? _____

Signature of Responsible or Cognizant Official:_____

Stabilized Construction Entrances

Does much sediment get tracked on the roads?	Is the entrance clean or is it filled with sediment?	Does all traffic use the entrance to leave the site?

Maintenance Required for Stabilized Construction Entrance(S):

_____

_____

To be perfomed by: _____ On or before: _____

Silt Fencing

Depth of Sediment?	Condition of Fence?	Any evidence of overtopping?	Condition of downstream channel?

Maintenance Required for Silt Fencing:

_____

_____

To be perfomed by: _____ On or before: _____

Native Vegetaion Swale/Bioretention Swale

Depth of Sediment?	Condition of Embankments?	Condition of Overflow Weir?	Condition of Downstream Channel?
A			
B			
C			
D			
E			

Mainenance Required Vegetation Swale/Bioretention Cell:

_____

_____

To be perfomed by: _____ On or before: _____

Note: If site inspections identify measures that are not operating. Any delay in the replacement or maintenance of measures beyond seven (7) calendar days shall be documented in the SWPPP with sufficient detail as to explain the reason for delay.

Lee's Summit Towne Centre - Lot 1

STORM WATER POLLUTION PREVENTION PLAN C (SWPPP MODIFICATION)

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____
_____
_____
_____

REASONS FOR CHANGES:

_____
_____
_____
_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Responsible or Cognizant Official: _____ Date: _____

Name and Title: _____

If existing erosion control measures need to be modified or if additional measures are necessary for any reason, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event, the situation must be documented in the SWPPP and alternative BMP's implemented as soon as possible.