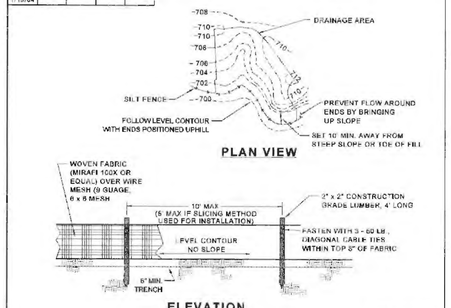
NEW	REVISIONS
1/15/04	



NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED.

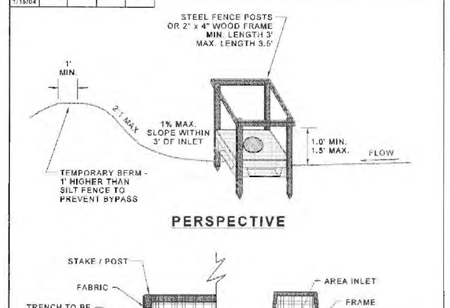
SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
SILT FENCE

REVISION DATE: January 15, 2004

DRAWING SC-8

NEW	REVISIONS
1/15/04	



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
INLET PROTECTION - FABRIC DROP

REVISION DATE: January 15, 2004

DRAWING SC-3

Dandy Bag® Plan Insert

The patented Dandy Bag® is designed for use with flat grates (including round) and mountable curbs to detain sediment-laden storm water. The suspended solids are allowed to settle out of the slowed flow prior to entering the Dandy Bag®.

Installation

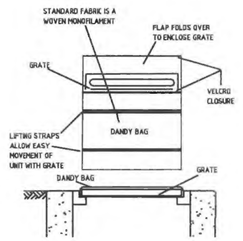
1. Stand the grate on end
2. Place the Dandy Bag® over the grate
3. Roll the grate over so that the open end is up
4. Pull up the slack
5. Tuck the flap in
6. Press the velcro strips together
7. Be sure that the end of the grate is completely covered by the flap or the Dandy Bag® will not work properly
8. Holding the handles, carefully place the Dandy Bag® with the grate inserted into the catch basin frame

Maintenance

To insure proper operation remove silt, sediment, and debris from the surface and the vicinity of the unit with a square point shovel or stiff bristle broom away from environmentally sensitive areas and waterways in summer satisfactory to the engineer/inspector. Remove fine material from inside Dandy Bag® as needed. Dispose of Dandy Bag® no longer in use at an appropriate recycling or solid waste facility.

Inlet Inspection

To inspect inlet, remove Dandy Bag® with grate inside, inspect catch basin and replace Dandy Bag back into grate frame.

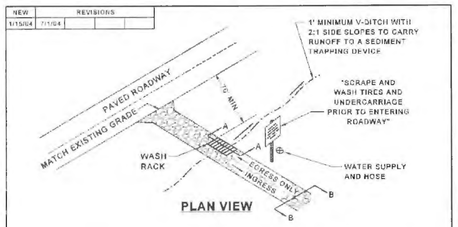


Ponding is likely if sediment is not removed regularly. The Dandy Bag® must never be used where overflow may endanger an exposed slope. The Dandy Bag® is not intended for any other use and should not be used for any other purpose.

DANDY PRODUCTS, INC.
2011 Harrisburg Pike, Suite R
Grove City, Ohio 43123

1-800-591-2284
(local) 614-875-2284
FAX: 614-875-6305
E-MAIL: dandy@dandyproducts.com
www.dandyproducts.com

NEW	REVISIONS
1/15/04	7/1/04



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
WASHDOWN STATION

REVISION DATE: July 1, 2004

DRAWING TC-4

SWPPP NOTES

1. Erosion and siltation control shall be installed prior to any grading and be maintained throughout the project until acceptance of the work by the owner and/or controlling regulatory agency and adequate vegetative growth insures no further erosion of the soil and work is acceptable to the owner and/or controlling regulatory agency.
2. At least once every two weeks and after every rainfall event of 0.25 inches or more, erosion and siltation control devices shall be inspected for damage and amount of sedimentation accumulated and corrective actions taken. Reports of these inspections and corrective actions shall be prepared and logged.
3. When clearing and/or grading operations are completed or suspended for more than 14 days, all necessary precautions shall be taken to retain soil materials on site. Protective measures may be required by the Director of Public Works/City Engineer such as permanent seeding, periodic wetting, mulching, or other suitable means.
4. If cut and fill operations occur during a season not favorable for immediate establishment of permanent ground cover, a fast germinating annual such as rye grasses or sudan grasses shall be utilized to retard erosion, if adequate storm water detention and erosion control devices have not been established.
5. All finished grades (areas no to be disturbed by future improvement) in excess of 20% (5:1) shall be mulched and tacked at the rate of 100 pounds per 1000 square feet when seeded.
6. Storm water pipes, outlets and channels shall be protected by silt barriers and kept free of waste and silt at all times prior to final surface stabilization and/or paving.
7. Siltation fences, check dams, sewer structures and gutter buddies shall be inspected periodically for damage and for the amount of sediment which has accumulated. Removal of sediment will be required when it reaches ½ the height of the siltation fence device. Removed sediment will be placed on excess cut areas.
8. Contractor shall schedule and conduct his work such that parking for construction workers is provided on either paved or gravel surfaces. Parking on private property or public streets will not be allowed.
9. All existing structures, sidewalks, concrete or asphalt surfaces, curbing, walls, sewers, fences, trees, shrubs, and debris noted for removal on the site shall be demolished, removed from the site, and properly disposed of all in a manner approved by the regulating governmental agencies. Contractor shall be responsible for contacting all utility companies affected or in the vicinity of proposed demolition.
10. Contractor shall preserve and protect all existing improvements and vegetation (which are not to be removed) within the project limits or adjacent thereto from damage as a result of his activities in the performance of work.
11. Contractor shall keep a surplus of erosion and siltation control devices for emergency repair in the approximate amount of 10% of total quantity onsite at all times.
12. Temporary siltation control measures (structural) shall be maintained until at least seventy-five (75) percent vegetative cover of area disturbed is established at a sufficient density to provide erosion control on the site, as determined by the City Engineer.
13. The developer must supply City Construction inspectors with all soil reports prior to and during site soil testing.
14. The City of O'Fallon engineering department must be notified at least forty-eight (48) hours prior to the commencement of any grading operations.
15. Erosion control shall be installed prior to the commencing of grading operations and be maintained throughout the project.
16. Equipment and vehicles shall be cleaned before entering public roadways so that no silt, mud, or debris shall be tracked onto the streets. A tractor with a blade, a broom tractor, and a street sweeper or a high pressure wash truck shall be available for the site at all times for the removal of mud from the streets.
17. When grading operations are completed, or suspended for more than fourteen (14) days, permanent grass must be established at sufficient density (at least seventy-five (75) percent vegetative cover) to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided.
18. All areas shall be seeded and mulched in a final form or sodded before final escrow is released.
19. The ground adjoining the development site shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Runoff water from developed areas (parking lots, paved sites, buildings, etc.) above the area to be developed shall be directed to diversion ditches, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted for a period not to exceed ninety (90) days with the approval of the City Engineer.
20. Any depositing of silts or mud off-site, on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O'Fallon and/or the affected property owners.
21. All erosion and sediment control systems shall be inspected and necessary corrections made within 24 hours of any rainstorm resulting in one-half inch of rain or more.
22. Grading contractor shall obtain all necessary state, county and local permits required for clearing and disposal of cleared materials. Burning will be allowed only if approved by the regulatory agencies.
23. The contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The contractor shall use whatever means necessary to control erosion and siltation including, but not limited to staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MODOT. The contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon and/or MODOT may at their option direct the contractor in his methods as deemed fit to protect property and improvements. Any depositing of silts or mud on new or existing pavement or new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MODOT.
24. Prior to submittal of his bid for the work, contractor shall visit and inspect the entire site for the purpose of familiarizing himself with the existing conditions of the site, the project limits, and the scope of work. No additional allowance will be made due to contractor's unfamiliarity with the project limits, existing site conditions, or the scope of work.
25. Contractor shall clear all trees and underbrush as required except as noted on this plan.
26. Existing 25' wide landscaped areas along the south and west limits of the property adjacent to residential properties shall not be disturbed.
27. All siltation control devices (silt fences and sedimentation basins) and their locations shall follow St. Charles County Soil and Water Conservation District Erosion and Sediment Control guidelines.

SILT FENCE

PHYSICAL DESCRIPTION:
A fence constructed of woven filter fabric and wire mesh stretched between posts and entrenched in the ground designed to pond stormwater runoff and cause sediment to settle out.
WHERE BMP IS TO BE INSTALLED:
Installed along slopes, at base of slopes, and around perimeter of site as final barrier to sediment being carried off site. Spacing of fence along slopes is relative to slope.
CONDITIONS FOR EFFECTIVE USE OF BMP:
Type of Flow: Sheet flow only
Contributing Slope Length: 50 foot maximum for 3:1 slopes
50 foot maximum for slopes between 3:1 and 10:1
100 foot maximum for slopes under 10%
WHEN BMP IS TO BE INSTALLED:
Prior to disturbance of natural vegetation and at intervals during construction of fill slopes
INSTALLATION/CONSTRUCTION PROCEDURES:
- ✓ Drive post fence line
- ✓ Dig trench to required dimensions in front of posts for fabric burial
- ✓ Attach wire mesh to posts
- ✓ Attach fabric to posts, allowing required length below ground level to run fabric along bottom of trench
- ✓ Backfill and compact soil in trench to protect and anchor fabric

Alternate Construction: Install fence by slicing it into ground with specialized equipment
Install posts at reduced spacing indicated on detail
O & M PROCEDURES:
- ✓ Inspect every week and after every storm
- ✓ Remove sediment buildup deeper than ½ the fence height or 12", whichever is less
- ✓ Replace torn or clogged fabric; repair loose fabric
- ✓ Repair unstable or broken posts
- ✓ Stabilize any areas susceptible to undermining
- ✓ Extend fence or add additional row(s) of fence if necessary to provide adequate protection

SITE CONDITIONS FOR REMOVAL:
After permanent vegetation of slope is established. Remove fence, regrade trench area and vegetate.
TYPICAL DETAIL: SC-8

INLET PROTECTION – FABRIC DROP

PHYSICAL DESCRIPTION
A woven fabric barrier braced around an area inlet designed to prevent sediment from entering the storm sewer. Shallow temporary ponding during and after rainfall should be expected.
WHERE BMP IS TO BE INSTALLED:
At inlets designed to drain a small gently sloping area with maximum grade of 5%. Overflow capacity is limited on standard area inlets.
CONDITIONS FOR EFFECTIVE USE OF BMP
Type of Flow: Shallow sheet flow
Contributing Area: Maximum of 2 cfs flowing to inlet
WHEN BMP IS TO BE INSTALLED:
Immediately after placement of inlet.
INSTALLATION/CONSTRUCTION PROCEDURES:
- ✓ Backfill, compact and uniformly grade area around inlet
- ✓ Construct downstream berm, if required. Rock bags or sand bags may be used to construct berm
- ✓ Drive posts or wood frame close to inlet sill so overflow will fall directly on the structure and not on unprotected soil
- ✓ Dig trench around inlet for fabric to be buried
- ✓ Cut required length of fabric from one roll to eliminate joints. Fasten fabric tightly around posts/frame to enhance stability
- ✓ Backfill and compact trench.

O & M PROCEDURES:
- ✓ Inspect every week and after every storm
- ✓ Remove trash accumulation and sediment once it reaches depth of 6" at inlet.
- ✓ Replace loose, torn or clogged fabric.
- ✓ Repair any erosion or settlement of temporary berm downstream of inlet.

SITE CONDITIONS FOR REMOVAL:
Remove after contributing drainage areas have been adequately stabilized. Restore area to grade and vegetate.
TYPICAL DETAIL: SC-3

NON-SEDIMENT POLLUTION CONTROL

PHYSICAL DESCRIPTION:
Control measures designed to prohibit chemicals, hazardous materials, solid waste and construction debris from polluting stormwater. Pollutants carried in solution or as surface films on runoff will be carried through most erosion control and sediment capture BMPs. Keeping substances like fuel, oil, asphalt, paint, solvents, fertilizer, soil additives, concrete wash water, solid waste and construction debris from polluting runoff can be accomplished to a large extent through good housekeeping on the site and following the manufacturer's recommendations for disposal.
WHERE BMP IS TO BE INSTALLED:
Collection, storage and fueling areas should be located onsite in an area that does not receive a substantial amount of runoff from upland areas and does not drain directly to lakes, creeks, streams, rivers, sewers, groundwater, wetlands, or road ditches.
CONDITIONS FOR EFFECTIVE USE OF BMP:
- Fuel areas and storage areas for hazardous materials shall be protected by berms or other means of catching leaks or spills

WHEN BMP IS TO BE INSTALLED:
- Immediately following installation of construction entrance and wash station

INSTALLATION/CONSTRUCTION PROCEDURES:
- Place waste receptacles near area of work
- Construct protective berm or other devices around fueling and hazardous materials storage areas
- Install appropriate signage
- Post guidelines for proper handling, storage and disposal of materials, and emergency spill cleanup on site

O & M PROCEDURES:
- Inspect activities on regular basis
- Inspect storage areas and control devices at least every two weeks and after every storm
- Make necessary corrections and repairs

SITE CONDITIONS FOR REMOVAL:
- Maintain practices until all construction on the site has been completed

TYPICAL DETAILS:
- General pollution prevention notes attached

POLLUTION PREVENTION PROCEDURES

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIAL
   DO: Prevent spills
   Use products up
   Follow label directions for disposal
   Remove lids from empty bottles and cans when disposing in trash
   Recycle wastes whenever possible
   DON'T: Don't pour waste into sewers or waterways on the ground
   Don't pour waste down the sink, floor drain or septic tanks
   Don't bury chemicals or containers, or dispose of them with construction debris
   Don't burn chemicals or containers
   Don't mix chemicals together
2. Containers shall be provided for collection of all waste material including construction debris, trash, petroleum products and any hazardous materials to be used onsite. All waste material shall be disposed of at facilities approved for that material.
3. No waste Materials shall be buried on-site.
4. Mixing, pumping, transferring or otherwise handling construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.
5. Equipment fueling and maintenance, oil changing, etc., shall be performed only in an area designated for that purpose. The designed area is equipped for recycling oil and catching spills.
6. Concrete wash water shall not be allowed to flow directly to storm sewers, streams, ditches, lakes, etc. without being treated. A sump or pit shall be constructed to contain concrete wash water.
7. If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto soil, the soil shall be dug up and disposed of at a licensed sanitary landfill (not a construction/demolition debris landfill). Spills on pavement shall be absorbed with sawdust, kitty litter or product designed for that purpose and disposed of at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. These materials will be removed from the site and recycled or disposed of in accordance with MoDNR requirements.
8. State law requires the party responsible for a petroleum product spill in excess of 50 gallons to report the spill to MoDNR (537-634-2436) as soon as practical after discovery. Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area, like a road ditch, that drains into one of the above.

WASHDOWN STATION

PHYSICAL DESCRIPTION:
An area located at construction entrances designed to wash sediment from the tires and undercarriage of exiting vehicles and prevent sediment from being tracked onto existing roadways.
WHERE BMP IS TO BE INSTALLED:
Across or immediately adjacent to exit paths from unpaved construction sites.
CONDITIONS FOR EFFECTIVE USE OF BMP:
Drainage: Down stream BMP sized to treat dirty runoff from washdown station
WHEN BMP IS TO BE INSTALLED:
First order of work, along with construction entrance, prior to vehicles or equipment accessing unpaved areas.
INSTALLATION/CONSTRUCTION PROCEDURES:
- ✓ Grade and compact area for drainage under washdown pad
- ✓ Install steel-ribbed plate on frame or other support to allow a 2" drain space
- ✓ Grade and vegetate downstream BMP (v-ditch shown on detail)
- ✓ Install water supply and hose
- ✓ Post sign in advance of station indicating that all exiting vehicles and equipment must use station prior to exiting site

O & M PROCEDURES:
- ✓ Remove sediment daily
- ✓ Repair settled areas
- ✓ Replace rock if necessary to maintain clean surface

SITE CONDITIONS FOR REMOVAL:
Remove when vehicles and equipment will no longer access unpaved areas
TYPICAL DETAIL: TC-4

VEGETATIVE ESTABLISHMENT

Seeding Rates:
Permanent:
Tall Fescue – 300 lbs./ac.
Smooth Brome – 200 lbs./ac.
combined: Fescue @ 150 lbs./ac. and Brome @ 100 lbs./ac.

Temporary:
Wheat or Rye – 150 lbs./ac. (3.5 lbs. per square foot)
Oats – 120 lbs./ac. (2.75 lbs. per square foot)

Seeding periods:
Fescue or Brome – March 1 to June 1
– August 1 to October 1
Wheat or Rye – March 15 to November 1
Oats – March 15 to September 15

Mulch rates: 100 lbs. per 1,000 sq/ feet (4,356 lbs. per acre)
Fertilizer rates: Nitrogen 45 lbs./ac.
Phosphate 65 lbs./ac.
Potassium 65 lbs./ac.
Lime 600 lbs./ac. ENM*

* ENM = effective neutralizing material as per State

The signed and sealed original of this drawing is on file at the offices of The Clayton Engineering Company, Inc. The signed and sealed original is the official document and shall take precedence over any digital version.

			BID SET

REVISIONS

POLLUTION PREVENTION DETAILS

SKILLED CARE EXPANSION

Highway N and Twin Chimneys Boulevard O'Fallon, Missouri 63366

Prepared for:

DELMAR GARDENS ENTERPRISES, INC.
14805 N. Outer 40
Chesterfield, MO 63017
636-733-7000

MICHAEL JAMES VELLOFF NUMBER E-2000161662 REGISTERED ENGINEER STATE OF MISSOURI

the clayton engineering company, inc.
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Designed	RKF
Drawn	RKF
Checked	MJV
Date	01/29/08
Project Number	00228.11
Sheet Number	C-9 of 10

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