

SWPPP NOTES

- SITE OWNER: M PROPERTY SERVICES, LLC
- SITE ADDRESS: ????? TECHNOLOGY DRIVE
- REFER TO IMPROVEMENT PLANS FOR PERTINENT SITE MAP INFO.
- REFER TO IMPROVEMENT PLANS FOR PERTINENT TOPOGRAPHICAL INFO.
- RUNOFF COEFFICIENTS: UNDEVELOPED - 0.28
DEVELOPED - 0.55
- TOTAL LAND ESTIMATED TO BE DISTURBED - APPROXIMATELY 1.64 ACRES
- REFER TO SWPP PLAN FOR LOCATION OF ACCESS TO CONSTRUCTION SITE.
- DESCRIPTION OF B.M.P.'S TO CONTROL EROSION AND SEDIMENTATION (INTERIM AND PERMANENT STABILIZATION PRACTICES)
 - FOR DETAILED DESCRIPTION OF EACH BMP REQUIRED ON THE SITE SEE THIS SHEET.
 - CONTRACTOR SHALL ESTABLISH PERIMETER SILTATION CONTROL PRIOR TO ANY CONSTRUCTION ACTIVITIES. AREAS REQUIRING MINOR CLEARING &/OR GRADING PRIOR TO INSTALLATION OF SILTATION CONTROL SHALL BE COMPLETED IN A TIMELY MANNER AND SILTATION CONTROL ESTABLISHED IMMEDIATELY FOLLOWING.
 - TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE THE ACCESS AREAS INTERSECT WITH PUBLIC ACCESS WAYS. DURING MUDDY CONDITIONS, DRIVERS OF VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING THE ROADWAY. WHERE SEDIMENT IS TRANSPORTED ONTO PUBLIC ACCESS WAYS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROAD BY SHOVELING OR SWEEPING. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
 - UPON COMMENCEMENT OF INITIAL CLEARING AND GRUBBING OPERATIONS, AS WELL AS FUTURE GRADING OPERATIONS, TOPSOIL MUST BE STRIPPED FROM GRADED AREAS AND STOCKPILED FOR IN FINAL GRADING AND / OR EXCESS REMOVAL. THE STOCKPILES WILL BE KEPT ON SITE BUT MUST STAY CLEAR OF ALL CONSTRUCTION ACTIVITY. THE STOCKPILE MUST BE STABILIZED WITH TEMPORARY VEGETATION, OR COVERED AT THE END OF EACH WORKDAY, OR PERIMETER CONTROLS MUST BE IN PLACE TO PREVENT SOIL LOSS AND SEDIMENT TRANSPORT FROM THE STOCKPILE ITSELF UNTIL NEEDED.
 - TEMPORARY ROADS SHALL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE. SLOPES SHALL NOT EXCEED 10 PERCENT SLOPE.
 - CONTRACTOR SHALL CLEAR AND GRUB THOSE AREAS OF THE SITE SCHEDULED FOR CONSTRUCTION. AREAS NOT SCHEDULED FOR IMMEDIATE CONSTRUCTION SHALL NOT BE CLEARED OF ESTABLISHED VEGETATION UNTIL REQUIRED. REMAINDER OF SITE SHALL BE GRADED, AS REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SILTATION CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
 - STORM DRAINS SHALL BE INSTALLED AS EARLY AS POSSIBLE, PROVIDED THE INSTALLATION DOES NOT CONFLICT WITH OTHER CONSTRUCTION ACTIVITIES. INLET PROTECTION SHALL BE PLACED AROUND EACH INLET, IMMEDIATELY, UPON COMPLETION OF CONSTRUCTION OF EACH INLET. INLETS MAY BE UTILIZED FOR STORM WATER CONTROL DURING CONSTRUCTION, WITH THE SILT FENCE AND EROSION CONTROL MEASURES IN PLACE.
 - IF SEEDING OR ANOTHER VEGETATIVE EROSION CONTROL METHOD IS USED, IT SHALL BECOME ESTABLISHED WITHIN TWO WEEKS OR THE SITE SHALL BE RE-SEEDING OR A NON-VEGETATIVE OPTION EMPLOYED.
 - TECHNIQUES SHALL BE EMPLOYED TO ENSURE STABILIZATION ON STEEP SLOPES AND IN DRAINAGE WAYS.
 - THE ENTIRE SITE MUST BE STABILIZED, USING HEAVY MULCH LAYER OR ANOTHER METHOD THAT DOES NOT REQUIRE GERMINATION TO CONTROL EROSION, AT THE CLOSE OF THE CONSTRUCTION SEASON. REFER TO TABLE 2 FOR MULCHING RATES.
 - TECHNIQUES SHALL BE EMPLOYED TO PREVENT THE BLOWING OF DUST OR SEDIMENT FROM THE SITE.
 - TECHNIQUES SHALL BE EMPLOYED TO DIVERT UNPLANTED RUNOFF PAST DISTURBED SLOPES
 - ALL PROPOSED TURF AREAS, ONCE CONSTRUCTED TO FINAL GRADE SHALL BE SEEDED/SODDED WITHIN FIVE DAYS AFTER FINAL GRADING OF THE SITE WHERE SHOWN ON THE PLAN. SHOULD WEATHER CAUSE DELAYS IN EARTHWORK OPERATIONS, ADDITIONAL SILTATION CONTROL MEASURES MAY BE REQUIRED.
 - ANY DISTURBED AREAS WHICH WILL REMAIN UNWORKED FOR FIVE DAYS OR MORE SHALL BE STABILIZED WITH SEEDING AND MULCHING PER SPECIFICATIONS WITHIN FIVE DAYS. IF SEASONAL CONDITIONS PROHIBIT SEEDING, MULCHING OR MATTING SHALL BE USED.
 - SETTLING BASINS, SEDIMENT TRAPS, OR TANKS AND PERIMETER CONTROLS AS REQUIRED.
 - SETTLING BASINS SHALL BE PROVIDED FOR EACH DRAINAGE AREA WITHIN 10 OR MORE ACRES DISTURBED AT ONE TIME AND SHALL BE SIZED TO CONTAIN 0.5 INCH OF SEDIMENT FROM THE DRAINAGE AREA AND BE ABLE TO CONTAIN A 2-HOUR, 24-HOUR STORM. IF THE PROVISION OF A BASIN OF THIS SIZE IS IMPRACTICAL, OTHER SIMILARLY EFFECTIVE BEST MANAGEMENT PRACTICES (BMP), AS EVALUATED AND SPECIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE UTILIZED.
 - WHEN REQUIRED, SETTLING BASINS SHALL BE DESIGNED IN A MANNER THAT ALLOWS ADAPTATION TO PROVIDE LONG-TERM STORM WATER MANAGEMENT, AS REQUIRED BY THE ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL GUIDELINES HAVING ENFORCEMENT AUTHORITY AND RESPONSIBILITIES.
 - SETTLING BASINS SHALL HAVE STABILIZED SPILLWAYS TO MINIMIZE THE POTENTIAL FOR EROSION OF THE SPILLWAY OR BASIN EMBANKMENT.
 - PROTECTION FOR ADJACENT PROPERTIES BY THE USE OF VEGETATED BUFFER STRIP IN COMBINATION WITH PERIMETER CONTROLS.
 - SEDIMENTATION CONTROLS SHALL ONLY BE REMOVED AFTER THE SITE IS COMPLETELY STABILIZED, VEGETATION IS WELL ESTABLISHED, AND ALL PAVEMENT AREAS ARE INSTALLED.
- DESCRIPTION OF B.M.P.'S TO PREVENT POTENTIAL POLLUTANTS (CONSTRUCTION WASTES, TOXIC OR HAZARDOUS SUBSTANCES, PETROLEUM PRODUCTS, PESTICIDES, HERBICIDES, SITE LITTER, SANITARY WASTES, ETC.)
 - SOLID NON-HAZARDOUS CONSTRUCTION WASTE - DISPOSE OF IN TRASH DUMPSTERS OR APPROVED EQUIVALENT IN A LOCATION APPROVED BY THE OWNER. POTENTIALLY SOLUBLE OR LEACHABLE SOLID WASTE SHALL BE STORED OFF THE GROUND AND IN COVERED LEAK-PROOF CONTAINERS. SOLID WASTE SHALL BE STORED OFF THE GROUND AND IN COVERED LEAK-PROOF CONTAINERS. SOLID WASTE SHALL BE PROPERLY DISPOSED OF OFF-SITE ON A REGULAR BASIS.
 - HAZARDOUS WASTE - HAZARDOUS WASTE SHALL BE SEGREGATED FROM NON-HAZARDOUS CONSTRUCTION SITE DEBRIS. LIQUID OR SEMI-LIQUID HAZARDOUS WASTE SHALL BE STORED IN APPROPRIATE CONTAINERS (CLOSED DRUMS OR SIMILAR) AND SHALL BE KEPT UNDER COVER. GRANULAR, SOLUBLE, OR LEACHABLE HAZARDOUS WASTE MATERIALS SHALL BE STORED OFF THE GROUND AND IN COVERED LEAK-PROOF CONTAINERS. THE OWNER SHALL PROPERLY APPROVE ANY HAZARDOUS WASTE STORAGE AREA LOCATIONS.
 - HAZARDOUS WASTE SHALL BE PROPERLY DISPOSED OF OFF-SITE ON A REGULAR BASIS BY A REPUTABLE, LICENSED HAZARDOUS WASTE HAULER.
 - IT IS NOT THE INTENT OF THIS SWPPP TO SUPERSEDE OR REPLACE NORMAL SITE ASSESSMENT AND REMEDIATION PROCEDURES CONCERNING HAZARDOUS MATERIALS. SIGNIFICANT SPILLS AND/OR CONTAMINATION WARRANT AN IMMEDIATE RESPONSE BY TRAINED PROFESSIONALS. SUSPECTED JOB SITE CONTAMINATION SHOULD IMMEDIATELY BE REPORTED TO REGULATORY AUTHORITIES AND PROTECTIVE MEASURES TAKEN.
 - FRESH CONCRETE WASTE AND CONCRETE EQUIPMENT WASH DOWNS SHALL BE CONTAINED AND SHALL BE STORED AWAY FROM DRAINAGE DITCHES, SWALES AND DRAINAGE STRUCTURES. WHERE APPROPRIATE, CONTAINMENT BERMS SHALL BE PLACED AROUND WASTE STORAGE AREAS.
 - ON-SITE FUELING FACILITIES ARE REQUIRED TO ADHERE TO ALL APPLICABLE FEDERAL AND STATE REGULATIONS CONCERNING STORAGE AND DISPENSERS.
 - PROVISIONS SHALL BE MADE SO THAT A SUFFICIENT NUMBER OF TEMPORARY TOILET FACILITIES ARE AVAILABLE TO SERVE THE NUMBER OF WORKERS ON-SITE.
 - PROVISIONS SHALL BE MADE FOR LITTER CONTROL.
- DESCRIPTION OF B.M.P.'S TO REMAIN AFTER CONSTRUCTION
 - STORM DRAINS - THE DEVELOPMENT WILL BE SERVED BY A STORM WATER SYSTEM CONSISTING OF PIPE AND INLETS. ANY STORM DRAINAGE SYSTEM DESIGNATED AS "PRIVATE" SHALL BE OPERATED AND MAINTAINED BY THE OWNER. ANY STORM DRAINAGE SYSTEM DESIGNATED AS "PUBLIC" SHALL BE MAINTAINED BY THE CITY OF O'FALLON MO. WATER AND SEWER DEPARTMENT.
 - TURF AREAS - TURF AREAS SHALL BE MAINTAINED TO INSURE SITE AREAS REMAIN STABILIZED UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
 - PAVED AREAS AND WALKWAYS - AREAS SUBJECT TO FOOT AND VEHICLE TRAFFIC SHALL BE PAVED AND KEPT IN GOOD REPAIR FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.
- CONTRACTOR TO COORDINATE WITH THE CITY AND DEVELOPER FOR OFF STREET PARKING AREA.
- HAUL ROUTE OF EXCESS SPOILS TO BE DETERMINED BY SITE CONTRACTOR.
- REFER TO B.M.P.'S DESCRIPTIONS (#9, #10, #11) AND THE SWPP PLAN TO REFERENCE ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED FOR THIS SITE.
- REFER TO SEEDING RATES/MIXTURES TABLE 1.
- PLANNED RESPONSE TO LOSS OF CONTAINED SEDIMENT:

B.M.P.'S SHALL BE REPAIRED AND/OR REPLACED IMMEDIATELY, AS REQUIRED, TO STABILIZE SITE AND CONTAIN SEDIMENT LADEN RUNOFF. OFFSITE AREAS SHALL BE REVEINED FOR EXTENT OF IMPACT FROM B.M.P. FAILURE. PERMIT HOLDER SHALL BE REQUIRED TO PROVIDE DOCUMENTATION OF THE B.M.P. MEASURES, INSTALLED AND SCHEDULED MAINTENANCE, AND REPAIRS.

CONTRACTORS ON-SITE WILL BE EDUCATED ON THE RESPONSE TO ANY SPILLS ON THE SITE. UPON DISCOVERY OF THE SOURCE OF THE SPILL, IT IS TO BE IMMEDIATELY STOPPED BY ANY MEANS NECESSARY AND ANY CONTAMINATED SOIL SHALL BE DISPOSED OF OFFSITE AT A REQUIRED AND LICENSED CONTAMINATION SITE. THE RESPONSIBILITY FOR ENFORCING THESE CLEANUPS IS HELD BY THE ONSITE SUPERINTENDENT. ALL GENERAL CONTRACTORS WILL BE UNDER WRITTEN AGREEMENT TO ABIDE BY THESE REGULATIONS. RESPONSE MUST INCLUDE DOCUMENTATION OF ACTIONS AND MANDATORY REPORTING TO PUBLIC WORKS.
- PERMIT HOLDER
 - PERMIT HOLDER SHALL NOTIFY ALL CONTRACTORS AND OTHER ENTITIES (INCLUDING UTILITY CREWS, CITY EMPLOYEES, OR THEIR AGENTS) THAT WILL PERFORM WORK AT THE SITE, OF THE EXISTENCE OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND WHAT ACTIONS OR PRECAUTIONS SHALL BE TAKEN WHILE ON SITE TO MINIMIZE THE POTENTIAL FOR EROSION AND THE POTENTIAL FOR DAMAGING ANY BEST MANAGEMENT PRACTICES (BMP'S).
 - PERMIT HOLDER SHALL DETERMINE THE NEED FOR AND ESTABLISH TRAINING PROGRAMS TO ENSURE THAT ALL SITE WORKERS HAVE BEEN TRAINED, AT A MINIMUM, IN EROSION CONTROL, MATERIAL HANDLING AND STORAGE, AND HOUSEKEEPING.
 - PROVIDE COPIES OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) TO ALL PARTIES WHO ARE RESPONSIBLE FOR INSTALLATION, OPERATION, OR MAINTENANCE FOR ANY BEST MANAGEMENT PRACTICES (BMP'S).
 - MAINTAIN A CURRENT COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON THE SITE AT ALL TIMES.
- PRIOR TO ANY MAJOR LAND DISTURBANCE ACTIVITY, A LAND DISTURBANCE PERMIT FROM THE STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES, WILL BE REQUIRED.
- ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN.
- SEE CITY OF O'FALLON MO EROSION CONTROL DETAIL FOR DESCRIPTION OF SILT FENCE BMP.
- CONTRACTOR SHALL KEEP SILT FROM ENTERING INTO THE STORM SEWER SYSTEM AND ALL KEEP WATER FROM PONDING ON THE PAVEMENT THAT IS PART OF THE VEHICLE OR PEDESTRIAN TRAVEL WAY. INLET PROTECTION SHALL ONLY BE USED AS NECESSARY TO KEEP SILT FROM ENTERING INTO THE STORM SEWER SYSTEM.

TABLE 1: VEGETATION/SEEDING RATES AND MIXTURES

SEEDING REQUIREMENTS		Dates for Seeding											
Permanent Seeding		Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Tall Fescue													
Smooth Brome													
Fescue & Brome													
Fescue, Rye & Bluegrass	A	A	O	O	O	P	P	O	O	P	P	A	

Temporary Seeding		Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Rye or Sudan	A	A	O	O	O	O	O	O	O	O	O	A	A
Oats		A	O	O	O	O	O	O	O	O			

O = Optimum seeding dates
A = Acceptable seeding dates
P = Permitted seeding dates with reseeding 2 months later - Initially use 50% of seed and 75% of fertilizer. Reseed with additional 75% seed and remaining fertilizer.

Minimum Fertilizer and Seeding Rates		
Permanent Seeding*	Pounds per acre	Pounds Per 1000 sq. ft.
Tall Fescue	300	7.0
Smooth Brome	200	4.6
Mixture #1	250	5.7
Mixture #2	210	4.8

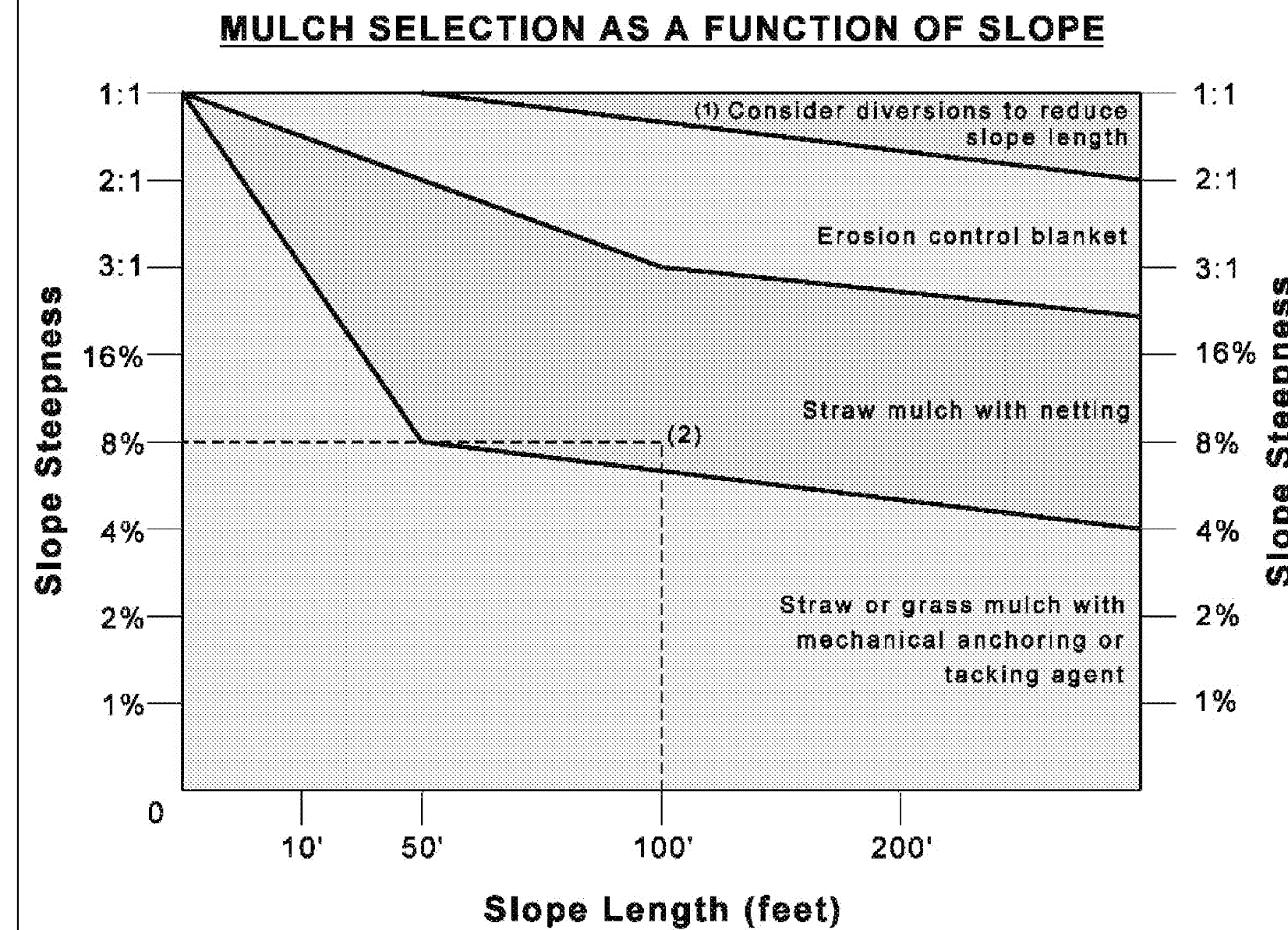
Mixture #1 = Tall Fescue @ 150 pounds per acre and Brome @ 100 pounds per acre.
Mixture #2 = Tall Fescue @ 100 pounds per acre, Perennial Rye grass @ 100 pounds per acre; and Kentucky Blue grass @ 10 pounds per acre.
* = Seeding rate for slopes in excess of 20% (5:1), shall be 10 pounds per 1000 sq. ft.

Temporary Seeding	Pounds per acre	Pounds Per 1000 sq. ft.
Rye or Sudan	150	3.5
Oats	200	2.5

Fertilizer	Permanent Seeding (pounds per acre)	Temporary Seeding (pounds per acre)
Nitrogen	45	30
Phosphate	65	30
Potassium	65	30
Lime - ENM	600	600

ENM = Effective neutralizing material per State evaluation of quarried rock.

TABLE 2: MULCH SCHEDULE



- For slopes steeper than 1:1, consider building a diversion above slope to divert water.
- Example: An 8% slope, 100 feet long, requires straw mulch with netting

GENERAL MULCH RECOMMENDATIONS TO PROTECT FROM SPLASH AND SHEET FLOW

Material	Rate Per Acre	Requirements	Notes
Straw	2 to 2.5 tons	Dry, unchopped unweathered; avoid weeds	Spread by hand or machine; must be tacked or tied down
Wood Fiber or Wood Cellulose	0.5 to 1 ton		Use with hydro seeder; may be used to tack straw. Do not use in hot, dry weather.
Wood Chips	5 to 8 tons	Air dry. Add nitrogen fertilizer at 12 lb per ton	Apply with blower, chip handler, or by hand. Not for fine turf areas.
Bark	35 cu. yds.	Air dry, shredded, or hammermilled; or chips	Apply with mulch blower, chip handler or by hand. Do not use asphalt tack.

Dandy® Bag

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

- Stand the grate on end
- Place the Dandy Bag® over the grate
- Roll the grate over so that the open end is up
- Pull up the slack
- Tuck the flap in
- Press the velcro strips together
- Be sure that the end of the grate is completely covered by the flap or the Dandy Bag® will not work properly
- 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 manner 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.

DANDY PRODUCTS, INC.
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PLAN VIEW

ELEVATION

JOINING SECTIONS OF SILT FENCE

SECTION

SILT FENCE
TYPICAL BMP DETAIL
REVISION DATE: January 15, 2004
DRAWING SC-8

PLAN VIEW

PROFILE

CONSTRUCTION ENTRANCE
TYPICAL BMP DETAIL
REVISION DATE: July 1, 2004
DRAWING TC-1

USER: Kevin Oberknecht TAB: SWPPP_2
 DATE: July 19, 2016 - 10:46:43 AM
 DRAWING: S:\085\Jobs\2016\16-0063\CADD\C-Plan\SWPPP\06-0063.dwg

DEVELOPER/OWNER:
M PROPERTY SERVICES, LLC
1001 BOARDWALK SPRINGS PLACE, STE. 10
O'FALLON, MO 63368
636-961-9337

CITY COMMENTS
DATE: 07/19/2016
NO REVISION DESCRIPTION

SEAL:

SHOPPES AT WINGHAVEN
THE PET DOCTOR/YUPPY PUPPY

TECHNOLOGY DRIVE
O'FALLON, MO 63368

SWPP NOTES

COLE
DESIGN/CALC BY: B.S.J.
DRAWN BY: R.J.G.
CHECKED BY: E.M.
DRAWING SCALE: NOT TO SCALE
DATE: 06/02/2016
Job Number: 16-0063
Sheet Number: C7.2