EROSION & SEDIMENTATION CONTROL

A. POLLUTION PREVENTION AND GENERAL HOUSEKEEPING

1. MINIMIZATION OF EXPOSED SOIL AREAS: IN ORDER TO PROTECT DOWNGRADIENT AREAS AND BUFFERS, AND TO AVOID POTENTIAL EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, OR OTHER NATURAL RESOURCES, THE CONTRACTOR SHALL SEQUENCE AND PHASE EARTHWORKS OPERATIONS TO LIMIT THE AMOUNT OF SITE DISTURBANCE AND/OR EXPOSED SOIL TO ONLY THOSE AREAS NECESSARY TO EFFECTIVELY CONSTRUCT THE PROPOSED IMPROVEMENTS. TO THE EXTENT PRACTICABLE, THE CONTRACTOR SHALL RETAIN NATURAL COVER, AND PERMANENTLY STABILIZE COMPLETED AREAS AS SOON AS EARTHWORKS ARE COMPLETED. SOIL RESULTS IN FEWER EROSION CONTROLS TO INSTALL AND MAINTAIN. IF WORK WITHIN AN AREA IS NOT ANTICIPATED TO BEGIN WITHIN TWO WEEKS TIME, THE CONTRACTOR SHALL CONSIDER LEAVING THE AREA IN ITS NATURALLY EXISTING COVER.
2. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
3. GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
4. FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL FOR OPERATIONS DURING WET MONTHS. THE CONTRACTOR SHALL SWEEP ROADWAYS AS NEEDED AT LEAST ONCE A WEEK, AND PRIOR TO SIGNIFICANT STORM EVENTS TO AVOID TRACKING OF MUD OFF THE SITE. WHERE CHRONIC MUD TRACKING OCCURS, A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE PROVIDED. FOR OPERATIONS DURING DRY WEATHER, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, THE CONTRACTOR SHALL WET DOWN THE ACCESS ROADS WITH WATER ONCE A WEEK OR MORE FREQUENTLY, AS NEEDED.
5. DEBRIS AND OTHER MATERIALS: LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
6. NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

B. STRUCTURAL AND NON-STRUCTURAL MEASURES

1. SEDIMENT BARRIERS: PRIOR TO SOIL DISTURBANCE, THE CONTRACTOR SHALL PROPERLY INSTALL SEDIMENT BARRIERS ACROSS OR AT THE TOE OF A SLOPE AND AT THE DOWNGRADIENT EDGE OF ANY DISTURBED AREA. SEDIMENT BARRIERS SHALL BE INSTALLED IN LOCATIONS WHERE SEDIMENTATION MAY REDUCE THE CAPACITY OF STORMDRAIN SYSTEMS, UPSTREAM OF ADJACENT WETLANDS AND/OR WATERCOURSES, AND OTHER AREAS THAT MAY BE AFFECTED BY SEDIMENT. SEDIMENT BARRIERS SHALL NOT BE USED IN AREAS OF CONCENTRATED FLOWS. SEDIMENT BARRIERS MAY BE SILT FENCE OR BERM OF EROSION CONTROL MIX, OR OTHER APPROVED MATERIALS.
a. SILT FENCE: SILT FENCE IS GENERALLY A BETTER FILTER THAN HAY BALE BARRIERS. SILT FENCES CAN BE USED FOR 60 DAYS OR LONGER DEPENDING ON MANUFACTURER'S RECOMMENDATIONS. PROPER INSTALLATION OF SILT FENCE IS CRITICAL TO ITS FUNCTION (SEE DETAIL).
b. EROSION CONTROL MIX CAN BE BERMS. EROSION CONTROL MIX, ON THE PROJECT SITE, PROVIDES A SEDIMENT BARRIER. MIX SHALL CONSIST OF A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS FOR ORGANIC MATTER AND PARTICLE SIZE BY WEIGHT. SOLUBLE SALTS AND pH LEVELS. EROSION CONTROL MIX MUST BE FREE OF REFUSE, CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE EROSION CONTROL MIX BERM MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER.
c. CONTINUOUS CONTAINED BERMS (FILTER SOCK): A FILTER SOCK CAN BE INSTALLED. IN AREAS WHERE TRENCHING IS NOT FEASIBLE SUCH AS OVER FROZEN GROUND OR OVER PAVEMENT, A VEHICLE CAN EVEN PASS OVER IT.
d. INSPECTION AND MAINTENANCE OF SEDIMENT BARRIERS: SEDIMENT BARRIERS ARE EFFECTIVE ONLY IF INSTALLED AND MAINTAINED PROPERLY. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, THE CONTRACTOR SHALL EXTEND BARRIERS UPHILL OR REPLACE THEM WITH TEMPORARY CHECK DAMS. SEDIMENT BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR ENDS OF THE BARRIER, OR PROUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED. THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SEDIMENT BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPHILL OPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

2. TEMPORARY CHECK DAMS: MAY BE CONSTRUCTED OF EITHER STONE OR CONTAINED BERMS OF EROSION CONTROL MIX. TEMPORARY CHECK DAMS ALSO MAY TRAP SMALL AMOUNTS OF SEDIMENT BUT SHALL NOT BE USED IN PLACE OF SEDIMENT BARRIERS. THE DAM SHALL BE LEFT IN PLACE PERMANENTLY TO AVOID UNNECESSARY DISTURBANCE OF THE SOIL DURING REMOVAL IF IT IS NECESSARY TO REMOVE A STONE CHECK DAM FROM A GRASS-LINED CHANNEL, WHICH WILL BE MOWED. THE CONTRACTOR SHALL ENSURE THAT ALL STONES ARE REMOVED, INCLUDING ANY STONES WASHED DOWNSTREAM.
a. SIZING AND PLACEMENT: THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL BE 2 FEET. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTER EDGES. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM. CHECK DAMS SHALL BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH. STONE CHECK DAMS SHALL BE CONSTRUCTED OF 2 TO 3 INCH STONE. HAND OR MECHANICAL PLACEMENT IS NECESSARY TO PROPERLY INSTALL (SEE DETAIL). THE CONTRACTOR SHALL PROPERLY INSTALL CHECK DAMS TO AVOID UNDERCUTTING AND BYPASS OF THE FLOW AROUND THE ENDS OF THE CHECK DAMS.
b. INSPECTIONS AND MAINTENANCE: THE CONTRACTOR SHALL MAKE REGULAR INSPECTIONS TO ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES. EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM SHALL BE CORRECTED IMMEDIATELY. IF EVIDENCE OF SILTATION IN THE WATER IS APPARENT DOWNSTREAM FROM THE CHECK DAM, THE CHECK DAM SHALL BE INSPECTED AND ADJUSTED IMMEDIATELY. CHECK DAMS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH SIGNIFICANT RAINFALL. SEDIMENT MUST BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL HEIGHT OR BEFORE IF IT IS POSSIBLE. LEAVE THE DAM IN PLACE PERMANENTLY. THE STONE MAY BE SPREAD ALONG THE DITCH INVERT TO PROVIDE ADDITIONAL PROTECTION.

3. STABILIZED CONSTRUCTION ENTRANCE/EXIT: PRIOR TO THE START OF CONSTRUCTION, IF A STABILIZED CONSTRUCTION ENTRANCE IS NOT ALREADY AVAILABLE, THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE/EXIT AT THE POINT OF ACCESS TO THE EXISTING ROADWAY. THIS AREA SHALL CONSIST OF A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER CLOTH. THE CONTRACTOR SHALL MONITOR PAVEMENT EDGES TO FOR CRACKING OR RAVELING OF THE EXISTING PAVEMENT EDGE IN THE AREA OF ANY UNPROTECTED ENTRANCE. IF THE EXISTING PAVEMENT EDGE SHOWS SIGNS OF IMPACT, THEN THE STABILIZED CONSTRUCTION EXIT SHALL BE USED FOR ALL ENTERING AND EXITING CONSTRUCTION VEHICLES. WOVEN OR NONWOVEN GEOTEXTILE FABRIC SHALL BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. THE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL CONSIST OF A 10' WIDE (MINIMUM) BY 50' LONG (MINIMUM) 6" THICK PAD OF 2-3" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT. THE PAD SHALL EXTEND THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. WHEN THE STABILIZED PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. A NEW ENTRANCE SHALL BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD-TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

4. STORMDRAIN INLET PROTECTION: IS A SEDIMENT FILTER INSTALLED AROUND A STORM DRAIN DROP INLET OR CURB INLET TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. THE INLET PROTECTION DEVICE SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
a. MANUFACTURED SEDIMENT BARRIERS AND FILTERS: INCLUDE VARIOUS TYPES OF SYSTEMS SUCH AS THE 'SILT SACK' OR OTHER MANUFACTURED MATERIALS. THESE MEASURES ARE ACCEPTABLE AS LONG AS THEY ARE INSTALLED, USED AND MAINTAINED AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
b. INSPECTION AND MAINTENANCE OF STORMDRAIN INLET PROTECTION: THE STRUCTURES SHALL BE INSPECTED BEFORE AND AFTER EACH RAIN EVENT AND REPAIRED AS NEEDED. IF THE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE FILTER SHALL BE CLEANED AND REPLACED. SEDIMENT SHALL BE REMOVED AND THE STORMDRAIN SEDIMENT FILTER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. SEDIMENT FILTERS SHALL BE REMOVED AND THE AREA STABILIZED AFTER THE REMAINING DRAINAGE AREA HAS BEEN STABILIZED. THE CONTRACTOR SHALL CLEAN ALL CATCHBASINS AND STORMDRAIN INLETS AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED.

5. STORMWATER CHANNELS: DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE CONSTRUCTED AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING ON EACH SECTION CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN EITHER DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL. PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, OR A TEMPORARY LINING SHALL BE INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

6. TRENCH OR FOUNDATION DE-WATERING: ACCUMULATED WATER IN TRENCHES, FOUNDATIONS, PONDS, AND OTHER AREAS THAT RETAIN WATER AFTER EXCAVATION MUST BE CAREFULLY REMOVED TO AVOID DOWNSTREAM IMPACTS DUE TO THE HEAVILY SILTED WATER. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A SEDIMENTATION BASIN OR DEVICE SUCH AS A 'DIRT BAG' FILTER, OR EQUAL. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. THE CONTRACTOR SHALL USE A NON-WOVEN GEOTEXTILE SEDIMENT CONTROL BAG SUCH AS A 'DIRT BAG' OR EQUIVALENT IS A PREFERRED OPTION.

7. ADDITIONAL REQUIREMENTS: ADDITIONAL REQUIREMENTS MAY BE REQUIRED BY THE ENGINEER OR INSPECTOR AND SHALL BE APPLIED BY THE CONTRACTOR ON A SITE SPECIFIC BASIS AT NO ADDITIONAL COST.

C. STABILIZATON MEASURES

a. TEMPORARY STABILIZATION: THE CONTRACTOR SHALL STABILIZE ANY EXPOSED SOILS THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS WITH MULCH OR OTHER NON-ERODABLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

b. SOIL STOCKPILES: STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1000 SF. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. PLACEMENT OF ANY SOIL STOCKPILES WITHIN 100 FEET FROM ANY NATURAL RESOURCES SHALL BE AVOIDED.

c. NATURAL RESOURCES PROTECTION: ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED USING TEMPORARY MULCHING WITHIN 7 DAYS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA.

4. PERMANENT STABILIZATION: IF THE AREA HAS BEEN BROUGHT TO FINAL GRADE OR WILL NOT BE WORKED FOR MORE THAN ONE YEAR, THE CONTRACTOR SHALL PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR PAVER SUBBASE. IF USING VEGETATION FOR STABILIZATION, AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS. PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS AND SCHEDULE SODDING, PLANTING, AND SEEDING TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED. IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT THE CONTRACTOR SHALL RESEED AND MULCH THE AREAS. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
a. SEEDED AREAS: FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
b. SODDED AREAS: FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
c. PERMANENT MULCH: FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE MDEP APPROVED APPLICATION RATES AND LIMITATIONS.
d. RIPRAP: FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP.
e. PAVER AREAS: FOR PAVER AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED SUBBASE IS COMPLETED.
f. DITCHES, CHANNELS, AND BERMS: FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH A 90% COVER OF HEALTHY VEGETATION, WITH A WELL-GRADED RIPRAP LINING, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS, OR DOWN-CUTTING OF THE CHANNEL.

5. REMOVAL OF STABILIZATION MEASURES: WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED THE CONTRACTOR SHALL REMOVE ANY TEMPORARY SEDIMENT CONTROL MEASURES (SUCH AS SILT FENCE, ETC.). REMOVE ANY ACCUMULATED SEDIMENT AND STABILIZE THE AREA. SILT FENCE SHALL BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL TO AVOID ADDITIONAL SOIL DISTURBANCE.

D. TEMPORARY VEGETATION

THE FOLLOWING SHALL APPLY IN AREAS TO RECEIVE TEMPORARY SEEDING:
1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. INSTALL EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT BASINS AND GRASSED WATERWAYS TO PROTECT NEWLY SEEDED AREAS.
2. APPLY LIMESTONE AND FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 (N-P2O5-K2O) OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET). WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
3. SEEDING RATES AND DEPTHS SHALL BE AS SPECIFIED ON THE PLAN SET, OR AS IDENTIFIED IN THE SEEDING TABLE BELOW. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEEDING.
4. APPLY MULCH OVER SEEDED AREA.
5. TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).

TEMPORARY SEEDING TABLE

SEED	LB/AC.	SEEDING	DEPTH	SEEDING DATES	NOTES
WINTER RYE	112	(2 BU)	1-1.5 IN	8/15-10/1	GOOD FOR FALL SEEDING, SELECT HARDY SPECIES SUCH AS AROOSTOOK RYE.
OATS	80	(2.5 BU)	1-1.5 IN	4/1-7/1 (SPRING) 8/15-9/15 (FALL)	BEST FOR SPRING SEEDING. FALL SEEDING REQUIRES MULCH
ANNUAL RYEGRASS	40+0		.25 IN	4/1-7/1	GROWS QUICKLY BUT IS OF SHORT DURATION. USE WHERE APPEARANCE IS IMPORTANT. CAN BE USED THROUGHOUT GROWING SEASON. IF MULCHED.
SUDANGRASS	40	(1.0 BU)	0.5-1.0 IN	5/15-8/15	GOOD GROWTH DURING HOT SUMMER.
PERENNIAL RYEGRASS	40	(2.0 BU)	0.25 IN	8/15-9/15	GOOD COVER, LONGER LASTING THAN ANNUAL RYEGRASS. CAN BE USED THROUGHOUT GROWING SEASON. IF MULCHED.
TEMPORARY MULCH			1.0-1.4/1		REFER TO TEMPORARY MULCHING OR PERMANENT VEGETATION

E. TEMPORARY MULCHING

APPLY TEMPORARY MULCHING TO PROTECT THE EXPOSED SOIL SURFACE AND AID IN THE GROWTH OF VEGETATION.
1. IN SENSITIVE AREAS (WITHIN 100 FT OF STREAMS, WETLANDS AND IN LAKE WATERSHEDS) TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF EXPOSING SOIL OR PRIOR TO ANY STORM EVENT.
2. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS, DEPENDING ON SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE SENSITIVITY OF ADJACENT AREAS.
3. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.
4. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.
5. MULCH CAN BE USED IN CONJUNCTION WITH TREE, SHRUB, VINE, AND GROUND COVER PLANTINGS.
6. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% IN LATE FALL (PAST SEPTEMBER 15), AND OVER-WINTER (SEPTEMBER 15 - APRIL 15).
7. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON), IT SHOULD BE APPLIED TO A DEPTH OF FOUR INCHES (150-200 LBS. OF HAY PER 1000 SQ. FT OR DOUBLE STANDARD APPLICATION RATE). SEEDING CANNOT GENERALLY BE EXPECTED TO GROW UP THROUGH THIS DEPTH OF MULCH AND WILL BE SMOTHERED. IF VEGETATION IS DESIRED, THE MULCH WILL NEED TO BE REMOVED IN THE SPRINGTIME AND THE AREA RESEEDED AND MULCHED.
8. ALL MULCHES MUST BE INSPECTED PERIODICALLY. IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE-INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. INSPECTIONS SHALL TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED (95% SOIL SURFACE COVERED WITH GRASS).
9. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, MULCH MAY BE LEFT TO THE TENANT TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIRS AS NEEDED.
10. THE CHOICE OF MATERIALS FOR MULCHING WILL BE BASED ON SOIL AND SITE CONDITIONS, SEASON, AND ECONOMICS. RECOMMENDED MULCHES INCLUDE HAY AND STRAW OR EROSION CONTROL MIX.
11. HAY AND STRAW:
a. ORGANIC MULCHES INCLUDING HAY AND STRAW MUST BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS.
b. APPLICATION RATE SHALL BE 2 BALES (70-90 POUNDS) PER 1000 SQ FT OR 15 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90 % OF THE GROUND SURFACE. MULCH IS SUBJECT TO WIND BLOWING UNLESS KEPT MOIST OR ANCHORED.
c. ANCHORING METHODS INCLUDE NETTING OVER HAY WITH JUTE, WOOD FIBER OR PLASTIC NETTING ANCHORED TO THE SOIL SURFACE, STAPLE MATS ACCORDING TO MANUFACTURER'S RECOMMENDATION.
12. EROSION CONTROL MIX:
a. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
b. EROSION CONTROL MIX CONTAINS A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER.
c. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE MAINE DEP STANDARDS.
d. WHEN USED AS MULCH, A MINIMUM 4" THICK LAYER CAN BE USED AS A STAND-ALONE REINFORCEMENT:
1. ON SLOPES 2 HORIZONTAL TO 1 VERTICAL OR LESS.
2. ON FROZEN GROUND OR PAVEMENT AREAS.
3. AT THE EDGE OF GRAVEL PARKING AREAS AND AREAS UNDER CONSTRUCTION.
4. OTHER REINFORCEMENT BYPASS (I.E. REPAIRS) SHALL BE USED.
e. ON STEEPER SLOPES AND SLOPES WITH GROUNDWATER SEEPAGE AND AT LOW POINTS WITH CONCENTRATED FLOWS AND IN GULLIES:
13. THE MULCH MAY BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND. IT SHALL BE PLACED EVENLY AND MUST PROVIDE 100 % SOIL COVERAGE, WITH THE SOIL TOTALLY INVISIBLE.
a. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY, WITH ADDITIONAL EROSION CONTROL MIX PLACED ON TOP OF THE MULCH TO REACH THE RECOMMENDED THICKNESS. WHEN THE MIX IS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED OR INEFFECTIVE, IT MUST BE REPLACED OR REPAIRED. EROSION CONTROL MIX MULCH SHALL BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED. IF THE MULCH NEEDS TO BE REMOVED SPREAD IT OUT INTO THE LANDSCAPE.
13. SPRAY ON MULCHES:
a. IF USING SYNTHETIC SPRAY-ON EMULSIONS THAT ARE MIXED WITH WATER TO HOLD WOOD FIBER, HYDRO-MULCHES OR STRAW TO THE SOIL SURFACE, THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES, ESPECIALLY FOR STEEP SLOPES AND FULL APPLICATIONS.
b. AVOID APPLICATION DURING WINDY DAYS. A 24-HOUR CURING PERIOD AT A SOIL TEMPERATURE HIGHER THAN 45 DEGREES FAHRENHEIT IS OFTEN REQUIRED.
c. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR MAY BE SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS RECOMMENDED.
d. INCREASE SEE