Notes – SESC and EHS General
Updated 6/27/25 by A&E Civil

SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE

IN ACCORDANCE WITH RULE 1709 PROMULGATED UNDER THE AUTHORITY OF PART 91, SOIL EROSION AND SEDIMENTATION CONTROL, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994PA 451, AS AMENDED, AND IN ADDITION TO THE INFORMATION IN THE PROJECT PLANS AND SPECIFICATIONS,THE FOLLOWING GENERAL CONDITIONS APPLY TO THE EARTH CHANGE AUTHORIZED BY THIS DOCUMENT:

1. DESIGN, CONSTRUCT, AND COMPLETE THE EARTH CHANGE IN A MANNER THAT LIMITS THE EXPOSED AREA OF DISTURBED LAND FOR THE SHORTEST PERIOD OF TIME.

2. REMOVE SEDIMENT CAUSED BY ACCELERATED SOIL EROSION FROM RUNOFF WATER BEFORE IT LEAVES THE SITE OF THE EARTH CHANGE.

3. TEMPORARY OR PERMANENT CONTROL MEASURES SHALL BE DESIGNED AND INSTALLED TO CONVEY WATER AROUND, THROUGH OR FROM THE EARTH CHANGE AT A NON-EROSIVE VELOCITY.

4. INSTALL TEMPORARY SOIL AND SEDIMENTATION CONTROL MEASURES BEFORE OR UPON COMMENCEMENT OF THE EARTH CHANGE ACTIVITY AND MAINTAIN THE MEASURES ON A DAILY BASIS. REMOVE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. (STABILIZED MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING OR COVERING OF SOIL TO ENSURE RESISTANCE TO SOIL EROSION, SLIDING OR OTHER EARTH MOVEMENT.)

5. COMPLETE PERMANENT SOIL EROSION CONTROL MEASURES FOR THE EARTH CHANGE WITHIN FIVE (5) CALENDAR DAYS AFTER FINAL GRADING OR UPON COMPLETION OF FINAL EARTH CHANGE. IF IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE THE EARTH CHANGE, THEN MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND STABILIZED.

6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING LANDSCAPING DURING THE WARRANTY PERIOD. AFTER THE WARRANTY HAS EXPIRED, THE PERMANENT SESC MEASURES WILL BE MAINTAINED BY U-M FACILITIES & OPERATIONS GROUNDS SERVICES AND THE U-M FACILITIES & OPERATIONS UTILITIES SERVICES AS APPROPRIATE. THE GROUNDS MANAGER WILL BE RESPONSIBLE FOR MAINTENANCE OF ANY PERMANENT LANDSCAPING SESC MEASURES. THE WATER UTILITIES SYSTEMS MANAGER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ANY SESC MEASURES THAT ARE PART OF THE WATER DRAINAGE SYSTEM PIPING.

SOIL EROSION AND SEDIMENTATION CONTROL MAINTENANCE NOTES

1. INSTALL TEMPORARY INLET FILTERS AT ALL ADJACENT AND DOWN-GRADIENT STORM WATER INLETS, CATCH BASINS AND MANHOLES THAT MAY BE IMPACTED. CATCH BASIN INLET FILTERS SHALL BE MAINTAINED CLEAN AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF A FILTER HAS HOLES OR IS INUNDATED WITH SEDIMENT, THE FILTER WILL REQUIRE REPLACEMENT.

2. INSTALL AN ANTI-TRACKING PAD AT THE SITE ENTRY AND EXIT(S), THE ANTI-TRACKING PAD SHOULD BE CONSTRUCTED OF GEOTEXTILE FABRIC WITH LIMESTONE OVER IT.

3. SILT FENCE SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF REPAIR OR REPLACEMENT IS NECESSARY, IT SHALL BE PERFORMED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. MAINTENANCE INCLUDES THE REMOVING OF BUILT-UP SEDIMENT ACCUMULATES TO ½ THE HEIGHT OF THE FENCE. CONTRACTOR SHALL REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. ADDITIONALLY, THE CONTRACTOR SHALL REINSTALL ANY PORTION OF THE FENCING DAMAGED BY CONSTRUCTION MACHINERY.

4. PLACE STOCKPILES AND OTHER SPOIL PILES AWAY FROM THE DRAINAGE SYSTEM TO MINIMIZE SEDIMENT TRANSPORT. IF THE STOCKPILE AND/OR SPOIL PILE MUST REMAIN ON-SITE OVERNIGHT, OR IF THE WEATHER CONDITIONS INDICATE THE CHANCE FOR PRECIPITATION, A) COVER THE PILE WITH WATER REPELLENT MATERIAL TO PREVENT EROSION AND/OR B) INSTALL SILT FENCING AROUND THE BASE OF THE PILE TO PREVENT TRANSPORT OF SEDIMENT TO THE STORM WATER SYSTEM, OR APPLY OTHER CONTROL METHODS APPROPRIATE TO THE SIDE. CONTROL MEASURES TO GUARD AGAINST WIND EROSION MUST ALSO BE EMPLOYED, SUCH AS WETTING OR COVERING THE STOCKPILES. KEEP AS FEW STOCKPILES AS POSSIBLE DURING THE COURSE OF THE PROJECT.

5. THROUGHOUT THE CONSTRUCTION PERIOD, ALL MUD/SILT TRACKED ONTO EXISTING ROADS FROM THE SITE DUE TO CONSTRUCTION SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR.

6. SEEDING OR OTHER STABILIZATION SHALL BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF.

7. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL ON THE SITE THROUGHOUT THE DURATION OF THE CONSTRUCTION PROCESS.

8. WEEKLY INSPECTIONS BY A UNIVERSITY SESC TRAINED CERTIFIED STORM WATER MANAGEMENT OPERATOR AS WELL AS PERIODIC INSPECTION WITHIN 24 HOURS OF A SIGNIFICANT RAIN EVENT WILL OCCUR. THESE INSPECTIONS MAY RESULT IN RECOMMENDATIONS FOR ROUTINE MAINTENANCE OF THE SOIL EROSION CONTROL DEVICES, AS WELL AS ADDITIONAL CONTROLS.

GENERAL NOTES

1. DURING WORK ACTIVITIES IF SUSPECT CONTAMINATED SOIL, GROUNDWATER, OR OTHER UNKOWN MATERIAL IS ENCOUNTERED CONTACT YOUR UNIVERSITY OF MICHIGAN CONSTRUCTION MANAGEMENT REPRESENTATIVE AND THE U-M OCCUPATIONAL SAFETY & ENVIRONMENTAL HEALTH DEPARTMENT (763-6973) IMMEDIATELY. SUSPECT CONTAMINATED SOIL MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, STAINING, UNUSUAL COLORING, AND/OR CONTAIN MAN-MADE DEBRIS. SUSPECT CONTAMINATED GROUNDWATER MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, UNUSUAL COLORING, AND/OR SHEEN. IMMEDIATELY CEASE ALL EXCAVATION, DEWATERING, TRANSPORT, OR DISTURBANCE OF THE SUSPECT MATERIAL UNTIL GIVEN DIRECTION BY THE U-M CONSTRUCTION MANAGEMENT REPRESENTATIVE.

2. MANAGEMENT AND DISPOSAL OF REGULATED WASTE MATERIALS. CONTRACTOR SHALL COORDINATE WITH EHS-HAZARDOUS MATERIALS MANAGEMENT (HMM) PROGRAM AT (753-4568) FOR THE REMOVAL OF ALL REGULATED WASTE MATERIALS. REGULATED WASTE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO: USED CHEMICAL PRODUCTS, PAINTS, SOLVENTS, ADHESIVES, OILS, GREASES, CLEANERS, DEGREASERS, CONTAMINATED OR OILY RAGS, GLYCOLS, HEAT TRANSFER FLUIDS, AND BOILER CHEMICALS. A REPRESENTATIVE FROM THE EHS-HMM PROGRAM SHALL SIGN ALL WASTE DISPOSAL MANIFESTS FOR REGULATED WASTES. WASTE MATERIALS SHALL BE STAGED FOR PICK UP IN AREAS THAT ARE EASILY ACCESSIBLE TO EHS-HMM STAFF. WASTE CONTAINERS SHALL BE STORED ON A HARD SURFACE SUCH AS ASPHALT, CONCRETE, OR TILED FLOORING. ALL WASTE

CONTAINERS SHALL BE LABELED WITH EITHER A HAZARDOUS WASTE LABEL, OR A NON RCRA REGULATED WASTE LABEL AS APPROPRIATE. LABELS SHALL REMAIN VISIBLE, AND SHALL BE COMPLETED LEGIBLY. LABELS MAY BE OBTAINED BY CALLING EHS-HMM PROGRAM OFFICE. ALL CONTAINERS SHALL BE TIGHTLY CLOSED WHEN NOT ACTIVELY BEING FILLED. CONTAINERS SHALL BE INSPECTED DAILY FOR LEAKS, CLOSURE, LABELING AND CONTAINER INTEGRITY. CONTRACTOR SHALL PROVIDE U OF M EHS WITH MATERIALS SAFETY DATA SHEETS FOR ALL CHEMICALS USED IN THE PROJECT. CONTRACTOR SHALL CLEAN UP ALL SPILLS IMMEDIATELY. FOR SPILLS

3. CONCRETE, ASPHALT & SAWCUTTING WORK

UM PROJECTS SHALL NOT DISCHARGE TO THE SURFACE WATERS OF THE STATE ANY WASTEWATER GENERATED FROM CUTTING, GRINDING, DRILLING, OR HYDRODEMOLITION OF CONCRETE, INCLUDING ASPHALT WITHOUT AUTHORIZATION UNDER AN NPDES WASTEWATER DISCHARGE PERMIT.

THE FOLLOWING REQUIREMENTS APPLY:

- ***DISCHARGE*** OF WATER, DUST, OR DEBRIS FROM CONCRETE AND ASPHALT WORK TO STORM OR SANITARY SYSTEMS ***IS PROHIBITED***.
- STORM DRAINS MUST BE PROTECTED FROM DUST AND DEBRIS.
- ANY WATER USED DURING CONCRETE AND ASPHALT WORK (INCLUDING SWEEPING AND SAW-CUTTING) MUST BE CONTAINED AND COLLECTED FOR PROPER DISPOSAL. SUGGESTED CONTROLS INCLUDE WET VACUUM, OR ABSORBENTS.
- GOOD HOUSEKEEPING PRACTICES MUST BE EMPLOYED AT THE JOBSITE. MINIMIZE DUST.
- PROJECTS SHALL NOT DISCHARGE TO THE SURFACE WATERS OF THE STATE ANY WASTEWATER GENERATED FROM CUTTING, GRINDING, DRILLING, HYDRO-DEMOLITION OF CONCRETE WITHOUT AUTHORIZATION UNDER A NPDES WASTEWATER DISCHARGE PERMIT.

4. CONCRETE AND GROUT WASHOUT

A. DO NOT DISCHARGE CONCRETE/GROUT WASHOUT INTO STORM DRAINS, CATCH BASINS OR TO THE SANITARY SEWER SYSTEM. PERFORM WASHING OF CONCRETE TRUCKS IN DESIGNATED AREAS OR AN APPROVED OFFSITE LOCATION.
    1. DESIGNATED AREAS SHOULD BE CLEARLY LABELED. THEY SHOULD BE IN A PIT TO PREVENT RUN-OFF OF WASTE WATER. PLACE DESIGNATED AREAS A MINIMUM OF 50 FEET FROM STORM DRAINS, BODIES OF WATER AND DITCHES. ALL DESIGNATED AREAS SHOULD BE LINED TO PREVENT SEEPAGE AND SHOULD HAVE A BARRIER.
    2. ALTERNATIVE TO A DESIGNATED AREA: PROVIDE A CONCRETE BOX. IF ONLY A SMALL OF CONCRETE WASHINGS IS TO OCCUR, ONE OPTION IS TO LINE A ROLL-OFF BOX. FOR VERY SMALL PROJECTS THIS COULD BE DONE WITH A DRUM.
B. ONCE CONCRETE WASHOUT HAS HARDENED, BREAK UP AND DISPOSE OF PROPERLY. DISPOSAL OF HARDENED CONCRETE/GROUT SHOULD OCCUR ON A REGULAR BASIS.
C. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES PROVIDED ONCE THE WASHOUT AREA IS 75% FULL.

5. FERTILIZER

USE ONLY PHOSPHORUS-FREE FERTILIZERS ON TURFGRASS. PHOSPHORUS MAY BE ADDED TO TURFGRASS ONLY IF SOILS ARE TESTED (A MINIMUM OF ONCE EVERY FOUR (4) YEARS) AND A NEED FOR PHOSPHORUS IS DEMONSTRATED. PHOSPHORUS FERTILIZERS SHALL BE APPLIED TO LANDS THAT PERMITTEE OWNS OR OPERATES

ONLY AS PRESCRIBED IN THE SOIL TEST RESULTS. PROVIDE EHS EP3 WITH SOIL TESTING RESULTS IF PHOSPHORUS IS PROPOSED FOR USE ON TURFGRASS. SEEDING OR OTHER STABILIZATION SHALL BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF.

6. DEWATERING

UNCONTAMINATED GROUNDWATER AND SURFACE WATER WHICH IS FREE OF SEDIMENT MAY BE DISCHARGED TO A STORM DRAIN. ALL DEWATERING OPERATIONS MUST USE A FILTER (DEWATERING) BAG CONNECTED TO THE END OF THE DISCHARGE PIPE. THE FINAL DISCHARGE MUST BE CLEAR (NO TURBIDITY) AND ON A CLEAN SURFACE (NOT ON EXPOSED SOILS) TO PREVENT THE DISCHARGE FROM PICKING UP SEDIMENT. THE STORM DRAIN INLET SHALL BE PROTECTED WITH FILTER FABRIC OR FILTER BAG. THE CONTRACTOR SHALL ENSURE ROUTINE INSPECTION AND MAINTENANCE OF THE PUMP HOSES & FILTER BAGS DAILY, REPLACE EQUIPMENT WHEN SIGNS OF DETERIORATION ARE EVIDENT AND/OR IF INSTRUCTED BY THE CONSTRUCTION SITE STORM OPERATOR. IF THERE ARE INDICATIONS OF POSSIBLE CONTAMINATION, OR IF THE WATER IS TURBID, IMMEDIATELY CEASE DISCHARGE AND CONTACT YOUR UNIVERSITY OF MICHIGAN CONSTRUCTION MANAGEMENT REPRESENTATIVE AND U-M OCCUPATIONAL SAFETY & ENVIRONMENTAL HEALTH DEPARTMENT (763-6973) FOR INSPECTION OF THE WATER AND DISPOSAL OPTIONS. POTENTIALLY CONTAMINATED GROUNDWATER MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, HAVE AN UNUSUAL COLOR, OR SHEEN.

7. CRUSHED CONCRETE

DUE TO THE POTENTIAL FOR LEACHATE FROM CRUSHED CONCRETE TO IMPACT SURFACE WATERS, AVOID WHERE FEASIBLE AND PRACTICAL THE USE OF CRUSHED CONCRETE ON SITE LOCATIONS WHERE THERE IS A POTENTIAL FOR RUNOFF TO ENTER STORM DRAINS AND WATERS OF THE STATE. EHS RECOMMENDS THE PROJECT UTILIZES CLEAN LIMESTONE (NO FINES) WHERE SURFACE WATERS MAY BE IMPACTED BY RUNOFF.

8. ASPHALT SEALANTS

U-M'S STORMWATER PERMIT REQUIRES THAT ALL U-M PROJECTS COMPLY WITH THE FOLLOWING: THE USE OF COAL TAR EMULSIONS TO SEAL ASPHALT SURFACES ***IS PROHIBITED***.

Notes to designer

1. HYDRODYNAMIC SEPARATORS, POROUS PAVEMENT, UNDERGROUND DETENTION SYSTEMS, ETC.

PER U-M'S STORMWATER PERMIT, ALL STRUCTURAL AND VEGETATIVE BEST MANAGEMENT PRACTICES (BMPS) INSTALLED AS A REQUIREMENT UNDER THE STORMWATER PERMIT SHALL INCLUDE A PLAN FOR MAINTAINING MAXIMUM DESIGN PERFORMANCE THROUGH LONG-TERM OPERATION AND MAINTENANCE (O&M). DESIGN/PROJECT MANAGERS ARE TO FORWARD THIS PLAN ONTO EHS FOR REVIEW

2. STORMWATER MANAGEMENT REQUIREMENTS – PROJECTS WITH EARTH DISTURBANCE

SITES DISTURBING 1 ACRE OR GREATER REQUIRE STORMWATER MANAGEMENT UNDER U-M'S STORMWATER PERMIT. THE (04/09) U-M NPDES PERMIT STATES THAT U-M MUST, ADDRESS POST-CONSTRUCTION STORMWATER RUNOFF FROM ALL NEW AND REDEVELOPED PROJECTS THAT DISTURB ONE (1) ACRE OR MORE, INCLUDING PROJECTS LESS THAN ONE (1) ACRE THAT ARE PART OF A LARGER COMMON PLAN OF DEVELOPMENT

OR SALE THAT WOULD DISTURB ONE (1) ACRE OR MORE. THE PROGRAM SHALL INCLUDE THE FOLLOWING GENERAL REQUIREMENTS:

- *A MINIMUM TREATMENT VOLUME STANDARD TO ADDRESS WATER QUALITY IMPACTS*
- *CHANNEL PROTECTION CRITERIA TO ADDRESS RESOURCE IMPAIRMENT RESULTING FROM FLOW VOLUMES AND RATES*
- *REFER TO THE EHS GUIDELINE – EP3-001 STORMWATER MANAGEMENT -- POST-CONSTRUCTION REQUIREMENTS FOUND AT THE FOLLOWING LINK FOR THE DETAILED CALCULATION AND DESIGN REQUIREMENTS: HTTP://WWW.EHS.UMICH.EDU/PDF/GUIDELINE/GUIDEPCSW.PDF*

NOTE TO DESIGNER: EHS REQUIRES THAT AN ENGINEERING PACKAGE BE PUT TOGETHER THAT DETAILS ALL OF THE CALCULATIONS AND ASSUMPTIONS REQUIRED TO MEET THE NPDES PERMIT REQUIREMENTS. PLEASE CLEARLY DOCUMENT WHAT BMP'S ARE REQUIRED BY THE PERMIT, AND WHAT IS BEING ELECTIVELY INSTALLED. THIS PACKAGE MUST BE REVIEWED AND APPROVED BY EHS. ONCE APPROVED, IT WILL NEED TO BE SIGNED AND PE STAMPED BY THE DESIGN ENGINEER PLEASE NOTE THE PACKAGE MUST ALSO CONTAIN O&M PROCEDURES AND SCHEDULE, DETAILS ON INSTALLED SYSTEMS, AND LOCATIONS OF THE STORMWATER CONTROLS SO WE CAN TRACK. PLEASE CONTACT JOHN KOSCO IN THE EHS DEPARTMENT WITH ANY QUESTIONS PERTAINING TO THE POST CONSTRUCTION STORMWATER MANAGEMENT REQUIREMENTS (734-615-6153 OR JKOSCO@UMICH.EDU).

IN ADDITION, ONCE THE PROJECT IS COMPLETE, A SECOND SIGNED AND STAMPED MEMO IS REQUIRED INDICATING THAT THE STORMWATER CONTROLS WERE INSTALLED AS DETAILED IN THE EHS APPROVED STORMWATER POST CONSTRUCTION ENGINEERING PACKAGE.

PLEASE NOTE THAT FOR THE U-M PERMIT, WE MUST RETAIN (INFILTRATE) THE NEW RUNOFF THAT A PROJECT MAY GENERATE. IN ORDER TO HELP DESIGN THE SYSTEM, INFILTRATION TESTING MUST BE PERFORMED IN AREAS WHERE THE PROJECT IS PROPOSING TO MITIGATE THE NEW RUNOFF. THE INFILTRATION TESTING MUST BE PERFORMED BY A FIRM WITH ADEQUATE EXPERIENCE IN THIS FIELD. ALSO, THE TESTING MUST BE PERFORMED AT THE PROPOSED BOTTOM ELEVATION OF THE PROPOSED INFILTRATION AREA, TO ENSURE THAT IT WILL WORK. THIS TESTING WILL HELP GUIDE THE DESIGN OF THE FOOTPRINT OF THE STORMWATER MANAGEMENT PRACTICE REQUIRED TO ENSURE INFILTRATION OF THE RETAINED VOLUME OCCURS WITHIN THE REQUIRED TIME FRAME (24-48HRS).