

MAINTENANCE PLAN FOR EROSION PREVENTION AND SEDIMENT CONTROLS

THE FOLLOWING MAINTENANCE SCHEDULE WILL BE FOLLOWED THROUGHOUT THE DURATION OF THE PROJECT.

1. AN ASSIGNED INDIVIDUAL WHO IS NOT PERMANENTLY ASSOCIATED WITH THE DAY-TO-DAY OPERATIONS OF THE PROJECT SHALL DO MONITORING OF THE CONSTRUCTION SITE. THE INSPECTOR WILL BE FAMILIAR WITH THIS PLAN AND WITH EROSION & SEDIMENT CONTROL PROCEDURES AND WITH ROAD AND BRIDGE CONSTRUCTION TECHNIQUES. SITE INSPECTIONS WILL BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS, AND AFTER EACH RAIN EVENT OF MORE THAN 1/8" (13MM) IN A TWENTY FOUR HOUR PERIOD.
2. A COPY OF THE MONITORING REPORT PREPARED BY THE SITE REVIEWER SHALL BE GIVEN TO THE RESIDENT ENGINEER AFTER EACH SITE VISIT. THE REPORT WILL BE A WRITTEN REPORT STATING THE DATE OF THE REVIEW, A DESCRIPTION OF THE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES REVIEWED. ALSO INCLUDED WILL BE THE EFFECTIVENESS OF THE EROSION PREVENTION / CONTROL MEASURES, ANY DEFICIENCIES, AND CORRECTIVE ACTIONS TO BE UNDERTAKEN.
3. THE PLAN PREPARER WILL BE AVAILABLE FOR ON-SITE CONSULTATIONS WITH THE RESIDENT ENGINEER WITHIN TWENTY FOUR HOURS OF THE REQUEST.
4. ALL SILT FENCES AND STONE CHECK DAMS WILL BE INSPECTED EACH SITE VISIT BY THE DESIGNATED INSPECTOR, AS DESCRIBED BELOW;
 - A. THESE CONTROLS WILL BE MAINTAINED IN GOOD CONDITION. ANY SILT FENCE OF STONE CHECK DAM THAT IS INEFFECTIVE WILL BE REPAIRED OR REPLACED IMMEDIATELY.
 - B. SEDIMENT DEPOSITS WILL BE REMOVED WHEN THEY REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL DEVICE.
 - C. ALL SEDIMENTS REMOVED WILL BE DEPOSITED IN AN UPLAND PORTION OF THE PROJECT SITE, OR DISPOSED OFF-SITE IN THE DESIGNATED PROJECT WASTE SITE.
5. ALL SLOPES WILL BE CHECKED EACH SITE VISIT AND ANY ERODED AREAS WILL BE IMMEDIATELY REPAIRED. TEMPORARY STABILIZATION METHODS WILL BE USED AS NECESSARY UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE.
6. BOTH TEMPORARY & PERMANENT SEEDING & MULCHING WILL BE CHECKED EACH SITE VISIT FOR VEGETATIVE GROWTH. ANY AREAS REQUIRING RE-VEGETATION WILL BE REPAIRED IMMEDIATELY.
7. DRAINAGE STRUCTURES WILL BE CLEANED AS NECESSARY TO REMOVE ANY SEDIMENT BUILDUP IN THE SUMP OF THE STRUCTURES OR AT THE INLET OF THE STRUCTURE.
 - A. ANY INLET CONTROL FOUND TO BE INEFFECTIVE WILL BE REPLACED AS NECESSARY AND WILL BE DONE IMMEDIATELY.
 - B. ALL SEDIMENTS REMOVED WILL BE DEPOSITED IN AN UPLAND PORTION OF THE PROJECT SITE, OR DISPOSED OFF-SITE IN THE DESIGNATED PROJECT WASTE SITE.
8. TEMPORARY CONSTRUCTION ACCESSSES WILL BE MONITORED EACH SITE VISIT.
 - A. ANY CONTROL FOUND TO BE INEFFECTIVE WILL BE PROMPTLY REPLACED.
9. ALL TEMPORARY EROSION CONTROL DEVICES WILL STAY IN PLACE UNTIL FINAL GRASS GROWTH HAS BEEN ESTABLISHED AND COMPLETE STABILIZATION OF THE AREAS HAS OCCURRED.
10. ONCE STABILIZATION HAS OCCURRED, ALL TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED AND ALL DISTURBED AREAS WILL BE STABILIZED WITH STRAW MATTING AND/OR SEED & MULCH.

SPECIFIC GUIDELINES

PERIMETER EROSION CONTROLS

PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE PROJECT DEMARCATION FENCING SHALL BE PLACED ALONG THE PERIMETER OF THE PROJECT AS SHOWN ON THE EROSION CONTROL PLANS. THE INSTALLATION OF THE DEMARCATION FENCING WILL BE PERFORMED SUCH THAT NO VEGETATION ON THE OUTSIDE OF THE FENCING IS DISTURBED.

PRIOR TO ANY CONSTRUCTION OR STAGING, THE CONTRACTOR WILL INSTALL STABILIZED CONSTRUCTION ENTRANCES LEADING TO STAGING AREAS AND THE PROJECT SITE TO PREVENT THE TRACKING OF SILTS AND SEDIMENTS OFFSITE. COARSE STONE FILL OVER FILTER FABRIC SHOULD BE UTILIZED WHERE AN ALREADY ESTABLISHED STABLE ENTRANCE DOES NOT EXIST. THE CRUSHED STONE PRODUCT USED FOR THE CONSTRUCTION OF THE STABILIZED CONSTRUCTION ENTRANCES SHALL BE MONITORED FOR SEDIMENT ACCUMULATION AND REPLACED AS NECESSARY AS DIRECTED BY THE RESIDENT ENGINEER. STABILIZED CONSTRUCTION ENTRANCES SHALL ALSO BE ESTABLISHED AND MAINTAINED AT ALL OFFSITE WASTE AND BORROW AREAS. THE MINIMUM SIZE OF A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 14 FEET WIDE BY 50 FEET LONG.

AFTER THE CLEARING OF TREES AND SHRUBS, BUT PRIOR TO ANY GRUBBING AND EXCAVATION, CONSTRUCT PERIMETER CONTROLS TO ENSURE THAT ANY DISTURBED SEDIMENT DOES NOT LEAVE THE SITE. SEDIMENT TRAPS/BASINS, WHERE WATER HAS BEEN ADEQUATELY TREATED, MAY BE DIRECTED TO NEARBY UNDISTURBED STREAMS OR SWALES.

INSTALL PERIMETER SILT FENCE IN AREAS OF PROPOSED WORK AS SHOWN ON THE PLANS PRIOR TO GRUBBING AND FILLING ACTIVITIES. IN AREAS OF HIGH EXPOSURE, IT MAY BE NECESSARY TO DOUBLE UP PROTECTION WITH ADDITIONAL SILT FENCING OR PLACEMENT OF HAY BALES BEHIND THE SILT FENCING. IN AREAS OF EXPOSED LEDGE, STONE CHECK DAMS WILL BE UTILIZED.

DURING GRUBBING OPERATIONS, STONE CHECK DAM BARRIERS SHALL BE INSTALLED AT ANY OBVIOUS CONCENTRATED FLOW DISCHARGE POINTS, OR AS DIRECTED BY THE RESIDENT ENGINEER.

ALL AREAS OF EXPOSED SOILS AFTER THE GRUBBING ACTIVITY SHALL BE TEMPORARILY STABILIZED WITH MULCHING & SEEDING, EROSION MATTING, OR STRAW MATTING AS SOON AS PRACTICABLE AND BEFORE ANY PREDICTED RAINFALL EVENT. THESE TEMPORARY EROSION CONTROL MEASURES CAN BE PLACED IN ANY COMBINATION IN AREAS OF POTENTIAL EROSION AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

AFTER PERIMETER CONTROLS ARE IN PLACE, AND PRIOR TO GRADING OPERATIONS, CONSTRUCT TEMPORARY ONSITE SEDIMENT TRAPS WHERE NECESSARY. GRADE DISTURBED AREAS TO DRAIN TOWARDS SEDIMENT TRAP WHERE POSSIBLE.

ALL MATERIAL STOCKPILES, INCLUDING BUT NOT LIMITED TO, GRUBBING MATERIAL, SAND BORROW, EARTH BORROW, GRANULAR BORROW, TOPSOIL, SUBBASE, AND ANY EXCAVATED WASTE PILES SHALL BE MULCHED AND SHALL ALSO HAVE SILT FENCE INSTALLED AROUND THE BASE OF THE STOCKPILE.

ANY OFF-SITE AREAS WHERE BORROW OR EXCAVATED MATERIALS WILL BE STOCKPILED WILL HAVE A DOUBLE INSTALLATIONS OF SILT FENCE AROUND THE BASE OF EACH STOCKPILE. WASTE DISPOSAL SITES WILL ALSO HAVE A DOUBLE INSTALLATION OF SILT FENCE AROUND THE BASE OF EACH STOCKPILE, AND IMMEDIATELY AFTER FINAL GRADING, SHALL BE SEEDED AND MULCHED. REMOVAL OF THE SILT FENCES AROUND THE WASTE AREAS SHALL BE PERFORMED ONLY AFTER APPROVAL BY THE RESIDENT ENGINEER.

TEMPORARY DETOUR EROSION CONTROLS

ON PARTIALLY COMPLETED FILL & CUT SLOPES, ALL EXPOSED SOILS WILL BE STABILIZED WITH STRAW MATTING AT THE END OF EACH WORKING DAY. ONCE THE DETOUR FILL SLOPES ARE COMPLETED, THE ENTIRE DETOUR, INCLUDING ALL FILL AND CUT SLOPES (EXCEPT THE PAVED SURFACES), SHALL BE ENTIRELY COVERED WITH STRAW MATTING. TO PREVENT WATER FROM BECOMING CONCENTRATED ALONG THE TEMPORARY SHEETING, THE SHEETING WILL BE CUT TO ALLOW RUNOFF TO FLOW FREELY OVER THE SHEETING. STONE FILL MAY NEED TO BE PLACED AT THE BASE OF THE SHEETING TO ENSURE EROSION DOES NOT OCCUR. NO ROADWAY RUNOFF WILL BE ALLOWED TO BE CHANNLED DIRECTLY INTO THE FIRST BRANCH OR THE WHITE RIVER WITHOUT BEING TREATED FOR SEDIMENT.

BRIDGE EROSION CONTROLS

NEW SLOPES STEEPER THAN 50% (1-2 SLOPE) WILL BE CONSTRUCTED WITH STONE FILL FOR SLOPE STABILIZATION AS THE EMBANKMENT CONSTRUCTION PROGRESSES.

THE NEW SUBSTRUCTURES WILL BE CONSTRUCTED IN THE DRY. ALL WATER PUMPED FROM SUBSTRUCTURE AND OTHER EXCAVATION AREAS WILL BE PUMPED TO EITHER A DIRT BAG SILT CONTAINMENT DEVICE, A HAY BALE FABRIC LINED SEDIMENT SETTLEMENT STRUCTURE, OR AN EXCAVATED SEDIMENT BASIN. THE FIRST PUMPING OF THE EXCAVATIONS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH THE HIGHEST SEDIMENT LOAD. IT MAY BE NECESSARY TO CONSTRUCT ADDITIONAL SETTLING STRUCTURES, OR TO CONTROL THE RATE OF DRAWDOWN OF THE EXCAVATIONS.

AFTER COMPLETION OF THE SUBSTRUCTURES, ALL COLLECTED SEDIMENTS SHOULD BE REMOVED FROM THE SETTLING STRUCTURES AND THE GROUND SHAPED TO ITS FINAL GRADE AND SLOPE. DISPOSE OF THE COLLECTED SEDIMENTS IN AN UPLAND PORTION OF THE PROJECT, OR IN A MANNER APPROVED BY THE RESIDENT ENGINEER THAT WILL NOT RESULT IN SEDIMENTS OR POLLUTANTS ENTERING THE STREAM.

ROADWAY EROSION CONTROLS

NEW DRAINAGE CULVERTS THAT ARE BEING CONSTRUCTED IN THE SAME LOCATION AS EXISTING CULVERTS SHALL BE ISOLATED FROM THE NEW WORK BY MEANS OF DAMMING AND PUMPING INTO A SETTLING BASIN, OR BY INSTALLING A TEMPORARY PIPE OF SUFFICIENT SIZE TO HANDLE EXPECTED FLOWS.

STONE FILL FOR CHANNEL AND SLOPE STABILIZATION AT THE OUTLET ENDS OF CULVERTS IS TO BE PLACED PRIOR TO INSTALLATION OF THE CULVERTS. ALL WORK ON NEW CULVERTS SHOULD PROCEED FROM THE OUTLET TOWARDS THE INLET. SILT FENCE AND/OR CRUSHED STONE CHECK DAMS ARE TO BE INSTALLED ON UNDISTURBED GROUND AND DOWNSTREAM OF THE STONE FILL PADS AT OUTLETS. STONE FILL FOR DITCH STABILIZATION SHALL BE PLACED DURING THE SAME WORKING DAY THAT THE DITCH EXCAVATION WAS PERFORMED, UNLESS DIRECTED OTHERWISE BY THE RESIDENT ENGINEER.

ON ANY PARTIALLY COMPLETED PERMANENT CUT AND FILL SLOPES, ALL EXPOSED SOILS WILL BE STABILIZED WITH STRAW MATTING OR SEEDED AND MULCHED. IN AREAS OF CONCENTRATED RUNOFF ABOVE NEWLY CONSTRUCTED FILL SLOPES, FLEXIBLE SLOPE PIPES OR OTHER APPROVED DIVERSION METHODS WILL BE USED TO TRANSPORT RUNOFF DOWN THE FILL SLOPES TO SEDIMENT TRAPS OR SETTLING BASINS.

ANY NEW FILL SLOPES THAT ARE DESIGNED WITH STONE FILL BLANKETS FOR SLOPE STABILIZATION SHALL BE CONSTRUCTED WITH THE STONE FILL BEING PLACED AS THE FILL SLOPE EMBANKMENT CONSTRUCTION PROGRESSES.

THE SUBBASE MATERIAL SHOULD BE PLACED AS SOON AS THE SUBGRADE HAS REACHED ITS FINAL GRADE AND SLOPE. THE TEMPORARY TRAVELING SURFACE WILL BE GRADED TO PROMOTE SHEET FLOW OFF THE SURFACE ONTO SLOPES, OR FLOWS WILL BE DIRECTED TO COLLECTION AREAS AND SHALL BE TRANSPORTED DOWN THE FILL SLOPES TO SEDIMENT TRAPS OR SETTLING BASINS.

ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED FOLLOWING FINAL GRADING ACTIVITIES. ALL AREAS THAT ARE GRADED OUTSIDE OF THE GROWING SEASON SHALL BE TREATED WITH SLOPE STABILIZATION UNTIL SEEDING & MULCHING CAN BE PERFORMED.

DETOUR REMOVAL & FINAL EROSION CONTROLS

REMOVE TEMPORARY DETOUR FILL MATERIAL TO ORIGINAL GROUND.

ON ANY PARTIALLY REMOVED TEMPORARY FILL SLOPES, ALL EXPOSED SOIL WILL BE STABILIZED AT THE END OF EACH WORK DAY.

AS THE TEMPORARY DETOUR FILLS ARE REMOVED, ALL EXPOSED SOIL SURFACES WILL BE STABILIZED WITH STRAW MATTING AND/OR SEED & MULCH.

THE CHANNEL STONE FILL SLOPES WILL BE COMPLETED, AND GRUBBING MATERIAL WILL BE APPLIED TO STONE FILLED AREAS AROUND EACH ABUTMENT. THE GRUBBING MATERIAL SHALL NOT BE PLACED BENEATH THE NEW STRUCTURE OR BELOW THE ORDINARY HIGH WATER ELEVATION. REFER TO THE HYDRAULICS INFORMATION ON THE PRELIMINARY INFORMATION SHEET.

THE NEWLY PLACED GRUBBING MATERIAL SHALL BE STABILIZED WITH STRAW MATTING AND/OR SEED & MULCH AS DIRECTED BY THE RESIDENT ENGINEER.

REMOVAL OF SILT FENCE SHALL COMMENCE ONLY AFTER ALL UPSLOPE AREAS ARE STABILIZED AND WELL ESTABLISHED, AND THE RESIDENT ENGINEERS HAS APPROVED THE REMOVAL.

REMOVAL OF PERIMETER SILT FENCES AND SEDIMENT TRAPS ONLY AFTER ANY TOE-OF-FILL DITCHES HAVE STABILIZED AND VEGETATION IS WELL ESTABLISHED.

REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES, REGRADE ANY AREAS IF NECESSARY, TREAT ALL REGRADED AREAS WITH STRAW MATTING AND/OR MULCH & SEED, AND ESTABLISHMENT OF ANY FINAL EROSION CONTROL DEVICES AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

SEDIMENT SETTLING BASIN SIZING CRITERIA

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH 2:1 WIDTH			
Q (gpm)	Q (M3/s)	(ft ²)	(m ²)	L (ft)	W (ft)	L (m)	W (m)
50	0.0032	595	55	35.0	17.0	10.6	5.3
100	0.0063	1200	111	49.0	24.5	15.0	7.5
150	0.0095	1776	165	59.6	29.8	18.2	9.1
200	0.0126	2368	220	68.8	34.4	21.0	10.5
250	0.0158	2970	276	77.0	38.5	23.4	11.7
300	0.0189	3560	330	84.4	42.2	25.8	12.9
350	0.0221	4155	386	91.2	45.6	27.8	13.9

<h1>EROSION CONTROL NARRATIVE</h1>		SURVEYED BY	N/A	DATE	N/A
		DRAWN BY	TUS	DATE	6/96
		SQUAD LEADER	JAW		
		DESIGN FILE NO.	91298		
IPARM		DATE			
FILE		PLOTTED			
PROJ. NAME	ROYALTON				
PROJ. NO.	BRS 0147(5)S				
SHEET	28C	OF	76	SHEETS	