

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 4 METERS WIDE BY 15 METERS LONG. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARDS A CONSTRUCTION ENTRANCE SHALL BE PIPED UNDER THE STONE. PIPES SHALL BE APPROPRIATELY SIZED FOR THE CONTRIBUTING AREA, HOWEVER, NO PIPES SMALLER THAN 150mm DIAMETER SHALL BE USED.

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

THE CONTRACTOR SHALL 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. IN AREAS OF EXPOSED LEDGE, STONE CHECK DAMS SHALL 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.

AFTER GRUBBING OPERATIONS, ALL AREAS OF EXPOSED SOILS SHALL BE TEMPORARILY STABILIZED WITH SEEDING & MULCHING, 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 DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

AFTER PERIMETER CONTROLS ARE IN PLACE, AND PRIOR TO GRADING OPERATIONS, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY ONSITE SEDIMENT TRAPS WHERE NECESSARY OR AS DIRECTED BY THE ENGINEER. DISTURBED AREAS SHALL BE GRADED TO DRAIN TOWARDS SEDIMENT TRAP WHERE POSSIBLE.

ANY MATERIAL STOCKPILES, INCLUDING BUT NOT LIMITED TO, GRUBBING MATERIAL, SAND BORROW, EARTH BORROW, GRANULAR BORROW, TOPSOIL, 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 AND ANY WASTE DISPOSAL AREAS WILL HAVE TWO INSTALLATIONS OF SILT FENCE, 600 mm APART AROUND THE BASE OF EACH STOCKPILE. SEEDING AND MULCHING SHALL BE PERFORMED IMMEDIATELY AFTER FINAL GRADING. REMOVAL OF THE SILT FENCES AROUND THE WASTE AREAS SHALL BE PERFORMED ONLY AFTER APPROVAL FROM THE RESIDENT ENGINEER IS OBTAINED.

**INFORMATION REQUIRED BY THE CONTRACTOR**

MUCH OF THE INFORMATION SHOWN ON THE EROSION CONTROL PLANS AND DESCRIBED IN THIS NARRATIVE IS GENERAL IN NATURE. MORE SITE SPECIFIC INFORMATION IS NOT YET AVAILABLE AS A CONTRACTOR HAS NOT YET BEEN SELECTED. THE FOLLOWING LIST OUTLINES THE SPECIFIC INFORMATION THAT IS NOT INCLUDED IN THE EROSION CONTROL PLANS AND DESCRIBED IN THIS NARRATIVE:

1. THE LOCATION OF ALL STABILIZED CONSTRUCTION ENTRANCES.
2. THE LOCATION OF STOCK PILES, STAGING AND DISPOSAL AREAS.
3. THE NAME, TITLE, QUALIFICATIONS, AND CONTACT INFORMATION FOR THE ON-SITE COORDINATOR
4. THE PROPOSED DATES ASSOCIATED WITH PROJECT MILESTONES INDICATED ON THE SEQUENCE CONSISTENT WITH THE PROJECT CFM SCHEDULE.
5. ANY PROPOSED MODIFICATIONS OR ADDITIONS REQUIRED TO THESE EROSION AND SEDIMENT CONTROL PLANS.

**MAINTENANCE PLAN FOR EROSION AND SEDIMENT CONTROLS**

THE FOLLOWING MAINTENANCE REQUIREMENTS WILL BE MET 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 EROSION CONTROL MEASURES. THE INSPECTOR WILL BE FAMILIAR WITH THE PLANS, EROSION AND SEDIMENT CONTROL PROCEDURES, AND 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 13mm (1/2") 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, AND A DESCRIPTION OF THE EROSION AND SEDIMENT CONTROL MEASURES REVIEWED. ALSO INCLUDED WILL BE THE EFFECTIVENESS OF THE EROSION CONTROL MEASURE, ANY DEFICIENCIES AND CORRECTIVE ACTION TO BE UNDERTAKEN.

3. THE PLAN PREPARER WILL BE AVAILABLE FOR ON-SITE CONSULTATION WITH THE ENGINEER WITHIN TWENTY FOUR HOURS OF A 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 OR STONE CHECK DAMS THAT ARE 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, OR SIGNIFICANT RAINFALL IS EXPECTED.
  - C. ALL SEDIMENT REMOVED WILL BE DEPOSITED IN AN UPLAND PORTION OF THE PROJECT SITE OR DEPOSITED 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 OR AS DIRECTED BY THE ENGINEER UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE.
6. BOTH TEMPORARY AND PERMANENT SEEDING AND 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 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 DEPOSITED OFF-SITE IN THE DESIGNATED PROJECT WASTE SITE.
8. TEMPORARY CONSTRUCTION ACCESSES WILL BE MONITORED EACH SITE VISIT.
9. ALL TEMPORARY EROSION CONTROL DEVICES WILL STAY IN PLACE UNTIL FINAL GRASS GROWTH HAS BEEN ESTABLISHED AND COMPLETE STABILIZATION OF THE AREA 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 AND MULCH.
11. REMOVAL OF SILT FENCE SHALL COMMENCE ONLY AFTER ALL UPSLOPE AREAS ARE STABILIZED AND WELL ESTABLISHED, AND THE RESIDENT ENGINEER HAS APPROVED THE REMOVAL.
12. REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES. REGRADE ANY AREAS IF NECESSARY. TREAT ALL REGRADED AREAS WITH STRAW MATTING OR SEED AND MULCH. ESTABLISH ANY FINAL EROSION CONTROL DEVICES AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

**SEDIMENT SETTLING BASIN SIZING CRITERIA**

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH / WIDTH = 2:1			
Q (gpm)	Q (m <sup>3</sup> /s)	(ft <sup>2</sup> )	(m <sup>2</sup> )	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

PROJECT NAME:	U.S. 5 OVER LULLS BROOK		
PROJECT NUMBER:			
FILE NAME:	ZF204EC.XLS	PLOT DATE:	7/29/2004
PROJECT LEADER:	J. MIECZKOWSKI	DRAWN BY:	A. DUGON
DESIGNED BY:	A. DUGON/L. DOLPHIN	CHECKED:	L. DOLPHIN
EROSION CONTROL NARRATIVE		SHEET	25 OF 86