

**ALAMANCE
AGGREGATES, LLC**
Mr. Chad Threatt, VP

Snow Camp Mine

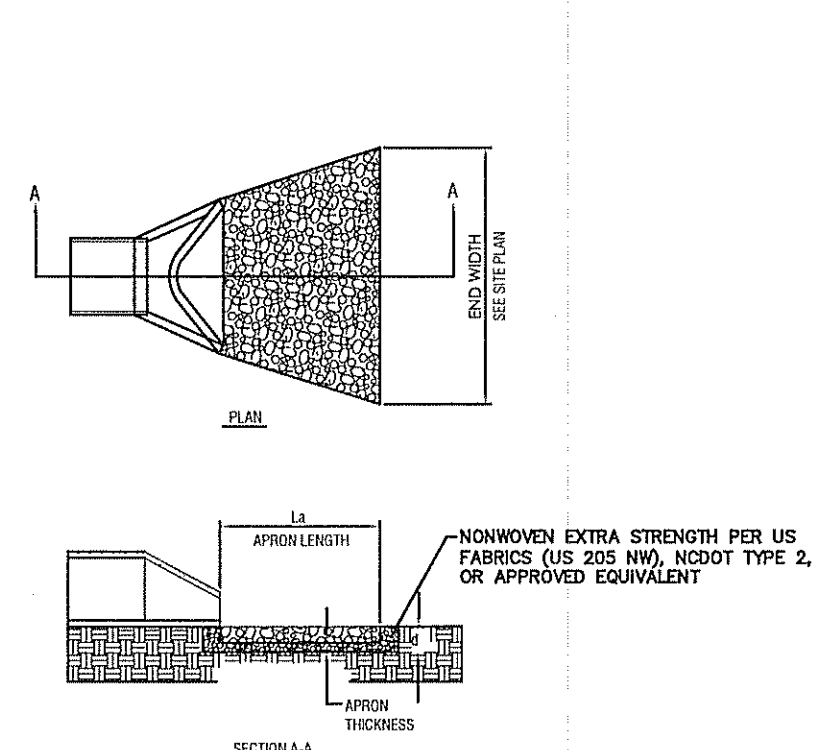
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**EROSION AND
SEDIMENT CONTROL
DETAILS**

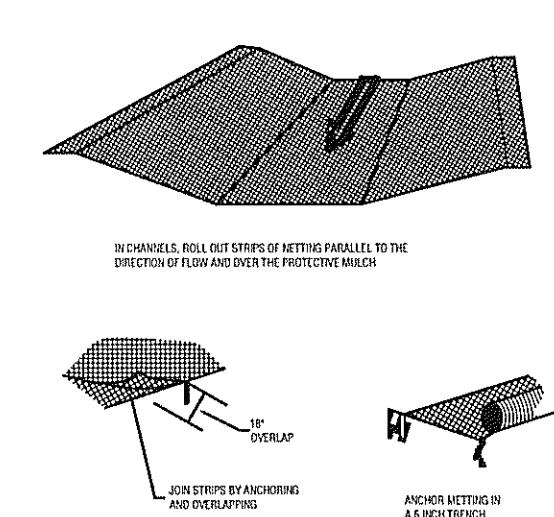


10 TEMPORARY CONSTRUCTION ENTRANCE

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- CONSTRUCTION SPECIFICATIONS:**
1. CLEAR THE ENTRANCE AND FOOT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBSTRUCTIVE MATERIAL, AND PROPERLY GRADE IT.
 2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
 3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
 4. USE NONWOVEN FIBROUS-FIBERED FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO BEING ON OR NEAR WATER TABLE.
- MAINTENANCE:**
- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSINGS WITH 2-INCH STONE. AFTER EACH INSTANTIAL, INSPECT ANY STRUCTURE USED TO SUPPORT SEDIMENT AND CLEAN IT AS NECESSARY. IMMEDIATELY REMOVE ALL OBSTRUCTIVE MATERIAL, SPILLED, WASHED OR TRACKED ONTO PUBLIC HIGHWAYS.

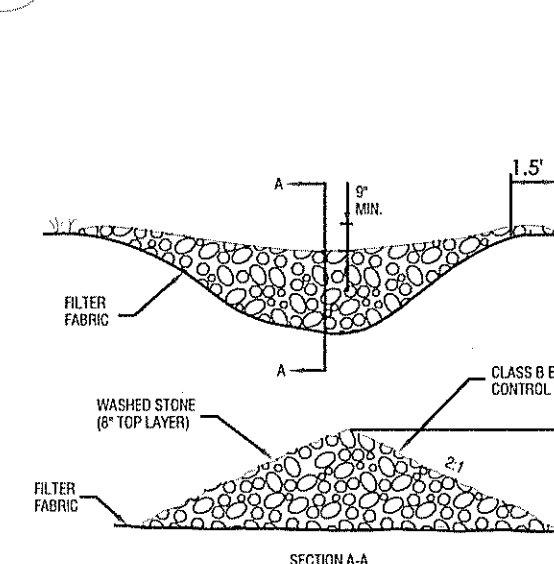


INSTALLATION OF NETTING AND MATTING:

- PRODUCTS DESIGNED TO CONTROL EROSION SHOULD BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ANY TYPE OF BLANKET-TYPE PRODUCT USED AS A PROTECTIVE MULCH SHOULD PROVIDE COVER BY AT LEAST 90% OF THE SURFACE WHEN IT IS APPLIED.
1. APPLY LIME, FERTILIZER AND SEED BEFORE LAYING THE NET OR MAT.
 2. IF OPEN WARE NETTING IS USED, LIME MAY BE INCORPORATED BEFORE INSTALLING THE NET AND FERTILIZER AND SEED APPLIED TO AFTERWARDS.
 3. START LAYING THE NET FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL IT DOWN THE SLOPE. ALLOW NETTING TO LAY LOOSELY ON THE SOIL, BUT WITHOUT WHIRLS AND HOT SPOTS.
 4. TO SECURE THE NET, UNROLL THE UPPER END FIRST OR THINNING LINES LESS THAN 12-INCHES DEEP. COVER WITH SOIL AND TAMP DOWN AS DESCRIBED IN THIS DETAIL. STAKE THE NET EVERY 12 INCHES ACROSS THE TOP END AND EVERY 6 FEET AROUND THE ENDS AND BOTTOM. WHERE 5' STRIPS OF NET ARE LADDED BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES STRIPS TOGETHER. EACH STRIP OF NETTING SHOULD BE STARTED DOWN THE CENTER EVERY 3 FT. DO NOT STRETCH THE NET WHEN APPLYING STAPLES.
- INSPECTIONS:**
- INSPECT ALL MULCHES PERIODICALLY AND AFTER RAINFALLS TO CHECK FOR HILL EROSION, DISLOCATION, OR PLAIN. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MULCH. IF WASHOUT OCCURS, REPAIR BY SOILING, RESEED, AND REINSTALL MULCH. CONTINUE INSPECTIONS UNTIL VEGETATION IS FULLY ESTABLISHED.

8 CHANNEL PROTECTION

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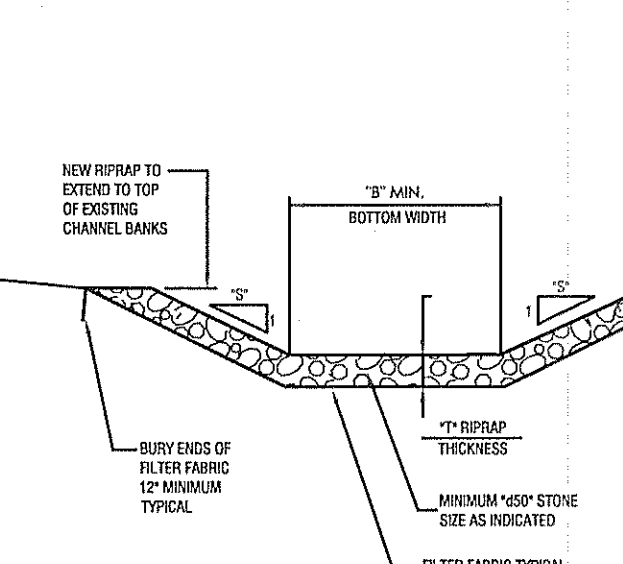
- CONSTRUCTION SPECIFICATIONS:**
1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
 2. KEEP THE CENTER STONE SECTION AT LEAST 8-INCHES BELOW NATURAL, UNDOED LEVEL WHERE THE DAM ADJUSTS THE CHANNEL BANKS.
 3. EXTEND STONE AT LEAST 1.5 FT. BEYOND THE DROP BANKS TO KEEP OVERFLOW WATER FROM UNDERCUTTING THE DAM AS IT ENTERS THE CHANNEL.
 4. SET SPACERS BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOP ELEVATION OF THE UPPER DAM.
 5. PROTECT THE CHANNEL DOWNSTREAM FROM THE LOWEST CHECK DAM. CONSIDERING THAT WATER WILL FLOW OVER AND AROUND THE DAM.
 6. MAKE SURE THAT THE CHANNEL HEADS ABOVE THE NEXT UPSTREAM DAM REMAIN.
 7. ASSURE THAT CHANNEL APPURTENANCES, SUCH AS CULVERT ENTRIES BELOW CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
- MAINTENANCE:**
1. INSPECT CHECK DAMS AND CHANNELS FOR DAMAGE AFTER EACH RAINFALL EVENT.
 2. INVESTIGATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND PROCEED FROM DAMS DOWNSTREAM TO THE ENDS OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, RECALL A PROTECTIVE RIP RAP LINER IN THAT PORTION OF THE CHANNEL.
 3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL. VEGETATION ALONG THE CHANNEL TO GROW THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARROING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN WEIGHT AND CROSS SECTION.

4 TEMPORARY GRAVEL CHECK DAM

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7 RIP RAP OUTLET PROTECTION

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- SUBGRADE PREPARATION:** PREPARE THE SUBGRADE FOR RIP RAP AND FILTER TO THE REQUIRED LINES AND DIMENSIONS INDICATED ON THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED NATURAL OR OVERLIE. DISPRESSIONS WITH RIP RAP. REMOVE BRUSH, TREES, STUMPS AND OTHER OBSTRUCTIVE MATERIAL. CUT THE SUBGRADE SURFACE TO A SLOPE THAT THE ENDS OF EACH OF THE RIP RAP WILL BE AT THE ELEVATION OF THE SURROUNDING AREA. CHANNELS SHOULD BE DESIGNATED TO ALLOW PLACEMENT OF THE RIP RAP IN A MANNER SUCH THAT THE PROPOSED CROSS SECTION AND GRADE OF THE RIP RAP MEET DESIGN SPECIFICATIONS.
- SYNTHETIC FILTER FABRIC:** PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED SUBGRADE. OVERLAP THE EDGES BY AT LEAST 12 INCHES AND SPACE AND 4 INCHES ON TOP OF THE OVERLAP. BURRY THE UPPER END AND COVER BACKS OF THE CULVERTS WITH A MINIMUM OF 12 INCHES OF GRAVEL. TAKE CARE NOT TO DAMAGE THE CLOTH WHEN PLACED RIP RAP. IF DAMAGE OCCURS, REMOVE THE RIP RAP AND REPAIR THE SHEET BY ADDING ANOTHER LAYER OF FILTER MATERIAL. WITH A MINIMUM OVERLAP OF 12 INCHES AROUND THE DAMAGED AREA. IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.
- GRAVEL:** LARGE STONES ARE USED ON MACHINE PLACEMENT OF 4-INCH LAYER OF THE GRAVEL OR SAND MAY BE NEEDED TO PROTECT THE FILTER CLOTH.
- STONE PLACEMENT:** PLACEMENT OF RIP RAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER FABRIC. PLACE RIP RAP SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOID. THE DESIRED DISTRIBUTION OF STONES THROUGH THE DAMS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLED CARROING DURING TRAIL PLACEMENT. PREPARE RIP RAP TO BE ACCURATELY LAYERED WITH A MINIMUM OVERLAP OF 12 INCHES THROUGH COURSES OR OTHER METHODS THAT CAUSE SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISRUPT THE UNDERLYING BASE OF FILTER FABRIC WITH PLACING OF STONES.
- THE FINISHED DAM SHOULD BE FREE OF HOLES OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF STONE SIZES TO PREVENT A RELATIVELY SMOOTH LOWER SURFACE. THE FINISHED GRADE OF THE RIP RAP SHOULD BE AT LEAST 2 INCHES ABOVE THE UNDISTURBED GRADE. NO OVERLAP OR PROTRUSION OF RIP RAP SHOULD BE APPARENT WHICH WOULD WEAR STREAM FLOWS.**

3 RIP RAP CHANNEL PROTECTION

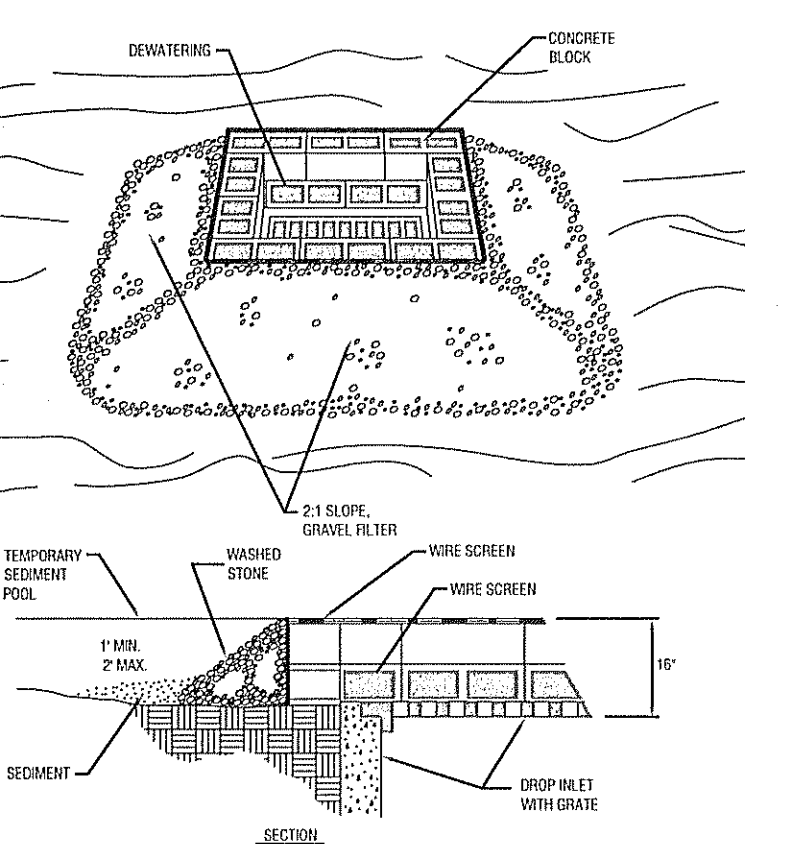
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SEEDING
SOIL AND VEGETATION

PER NC WILDLIFE REQUEST, OVER SEED DISTURBED AREA WITH A MIXTURE OF RED CLOVER, GREENPOND RED FESCUE, AND A GRASS SUCH AS PINE, OAT OR WHEAT. THE SEEDING MIXTURE, SEEDING RATE, AND SOIL PREPARATION IS TO BE DETERMINED BY AN ENVIRONMENTAL PROFESSIONAL AND SUBMITTED PRIOR TO APPLICATION.

9 PERMANENT SEEDING SCHEDULE

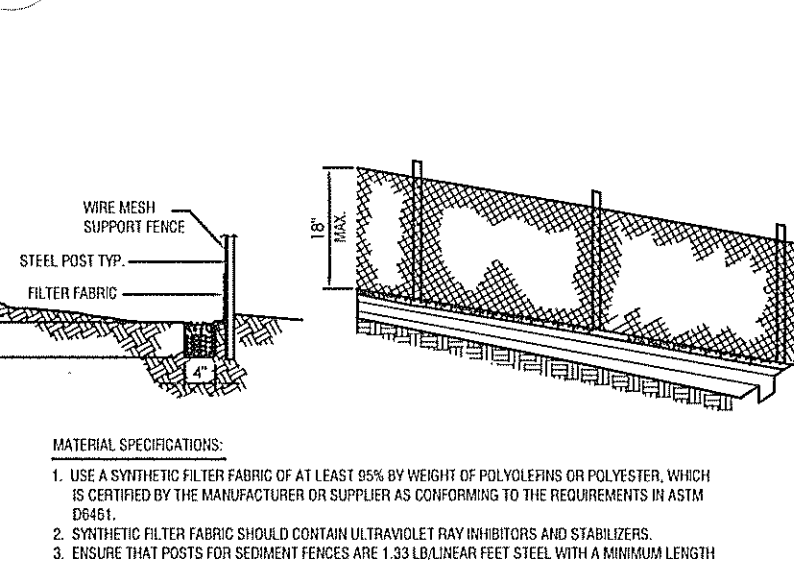
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- CONSTRUCTION SPECIFICATIONS:**
1. LAY DOWN BLOCK ON EACH SIDE OF THE STRUCTURE OUTLET SIZE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE INCAUTED AT LEAST 2 INCHES BELOW THE CREST OF THE STRUCTURE. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STRUCTURE. PROVIDE LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NECESSARY, ONE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2" x 4" WOOD STUCC THROUGH BLOCK OPENINGS.
 2. CHANNEL WITH HARBORING CULVERT OR COMPARABLE WIRE MESH WITH 2" x 4" OPENINGS OVER ALL BLOCK OPENINGS TO PREVENT FLOW THROUGH BLOCK OPENINGS.
 3. USE CLEAN SAND 1/2" TO 2" IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK TO A 1/2" SLOPE OF FLAT TO PROTECT FROM WASHOUT. DO NOT WASH OR BURN TO RECOMMEND.
- MAINTENANCE:**
1. INSPECT THE BARREN AFTER EACH RAIN AND MAKE REPAIRS AS NEEDED.
 2. REPLACE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSIDIARY RAINS.
 3. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL AND EITHER SALVAGE OR DISPOSAL OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN GRASS AND COMPOST IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE MILEY.

6 TEMPORARY BLOCK AND GRAVEL DROP INLET PROTECTION

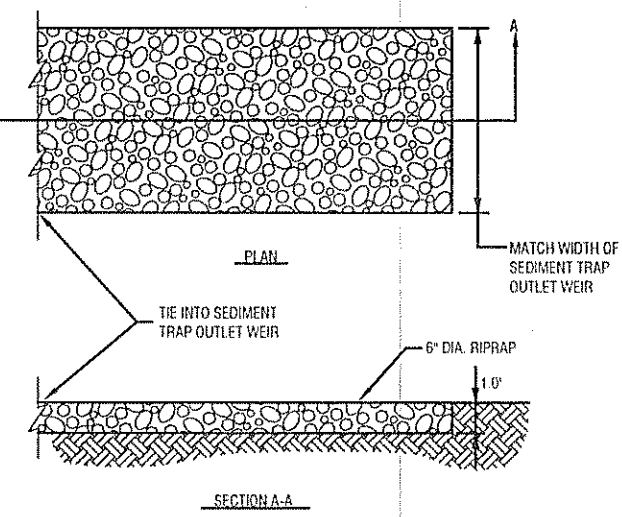
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- MATERIAL SPECIFICATIONS:**
1. USE SYNTHETIC FILTER FABRIC OF AT LEAST 60% BY HEIGHT OF POLYETHYLENE OR POLYPROPYLENE WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D6878.
 2. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY ABSORBERS AND STABILIZERS.
 3. INSURE THAT POSTS FOR SEDIMENT FENCES ARE 1 1/2" DIAMETER STEEL WITH A MINIMUM LENGTH OF 4 FEET. TAKE CARE THAT STEEL POSTS HAVE PROTECTION TO PROTECT THE FABRIC.
 4. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14-GAUGE AND A MINIMUM SPACING OF 6 INCHES.
- CONSTRUCTION SPECIFICATIONS:**
1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC.
 2. INSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 16 INCHES ABOVE THE GROUND SURFACE. FENCE SHOULD BE APPROXIMATELY 1/2" ABOVE SURFACE TO CAUSE FAILURE OF THE STRUCTURE.
 3. CONSTRUCT THE FILTER FABRIC FROM A CONTRACTOR HOLE CUT TO THE LENGTH OF THE BARRIER TO HOLD JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY LATCH THE FILTER CLOTH ON TO A SUPPORT POST WITH OVERLAP TO THE NEXT POST.
 4. SUPPORT STANDARD STRENGTH FILTER FABRIC WITH ANCHOR AND EXTERIOR DECORATIVE TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1/2" WIRE. EXTEND THE WIRE THROUGH SUPPORT TO THE BOTTOM OF THE TRENCH.
 5. WHERE A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MINIMUM OF 4 FEET APART. STEEL SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND TO A MINIMUM OF 18 INCHES. WIRE MESH SUPPORT FABRIC SHOULD BE SECURELY TIGHTENED TIGHTLY BY HAND OR MEANS.
 6. EXTEND THE WIRE FABRIC WITH 6 FT POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FABRIC. THE WIRE FILTER FABRIC DIRECTLY TO POSTS.
 7. EXCAVATE A TRENCH APPROXIMATELY 6 INCHES WIDE AND 4 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIERS.
 8. BACKFILL THE TRENCH WITH COMPACTED SOIL PLACED OVER THE FILTER FABRIC.
 9. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.
- MAINTENANCE:**
1. SURVEY SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, REAR, DISCOMPOSE OR BECOME OBSTRUCTIVE, REPLACE IT PROMPTLY. REPLACE WITH WIRE OR CLOTH.
 2. REMOVE SEDIMENT DEPOSITIONS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANING. REMOVE ALL OBSTRUCTIVE MATERIAL AND INSTANTLY REPAIR DAMAGE TO BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

2 TEMPORARY SEDIMENT FENCE

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CONSTRUCTION SPECIFICATIONS:

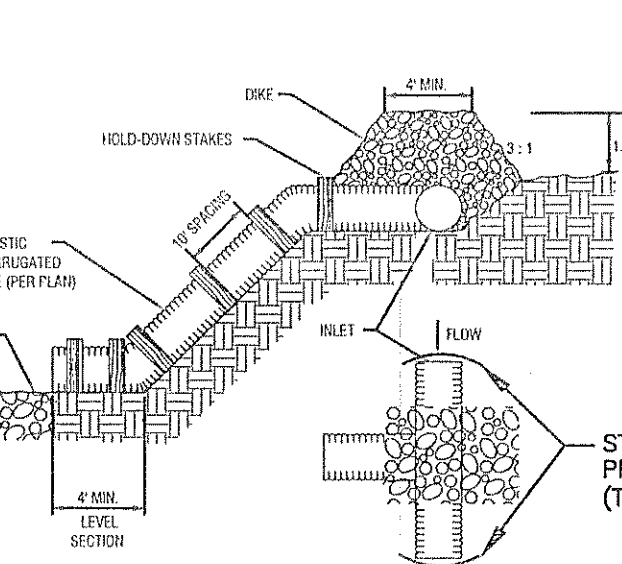
1. ENSURE THAT THE SUBGRADE FOR THE RIP RAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE OR UNDISTURBED SOIL MAY ALSO BE FIELDED BY INCREASING THE RIP RAP THICKNESS.
2. RIP RAP MAY BE PLACED BY EQUIPMENT.
3. THE MINIMUM THICKNESS OF THE RIP RAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIMENSION.
4. RIP RAP MAY BE HELD TOGETHER BY USING GALVANIZED STAPLES. IT SHOULD BE HARD, ANGIULAR, HEAVY WEATHER-RESISTANT AND WELL GRADED.
5. CONDUCT THE RIP RAP ON ZERO GRADE WITH AN OVERLAP AT THE END. MAKE THE TOP OF THE RIP RAP AT THE DOWNSTREAM END LEVEL WITH THE PROTECTIVE AREA ON SLOPE Y LOW T.
6. ASSURE THAT THE RIP RAP IS PROPERLY LAPPED WITH THE REINFORCING STEEL AND PREVENTABLE STRUT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT THE CONTOUR, PLACE IT IN THE UPPER SECTION OF THE DAM.
7. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL UNDISTURBED AREAS WITH VEGETATION.

MAINTENANCE:

REPAIR RIP RAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION OCCURRED BELOW THE RIP RAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLOOSED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

5 TEMPORARY SEDIMENT TRAP RIP RAP OUTLET PROTECTION

CS01



CONSTRUCTION SPECIFICATIONS:

1. PLACE SLOPE ERANS ON UNSTABILIZED SOIL OR WELL-COMPACTED FILL AT LOCATIONS AND ELEVATIONS SHOWN ON THE PLANS.
2. SLOPE THE TOP OF THE SLOPE FROM THE TRENCH TO THE TOPOGRAPHY OUTLET.
3. HAND TAMP THE SOIL, LINER AND AROUND THE EXTERIOR SIDE OF THE RIP RAP TO INTERLOCK STONES.
4. CHECK THAT THE RIP RAP IS LAPPED AT THE TOP OF THE SLOPE WITH MINIMUM OVERLAP OF 1.5 FT. (1/4" TOP WIDTH AND 3" SIDE SLAPES).
5. INSURE THAT ALL SLOPE UPPER CONTOURS ARE UNALTERED.
6. INSURE THAT ALL FILL MATERIAL IS WELL-COMPACTED. REGULARLY FORTIFY THE IMPACTED SECTION OF THE ERAN WITH GALVANIZED OR STAKES SPACED NO MORE THAN 6 FEET APART.
7. EXTEND THE GRAN BENEATH THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.
8. TEST THE TESTED COMPACTED ONE INCHES NO LESS THAN 4 FEET ABOVE THE TOP OF THE RIP RAP AT EVERY POINT.
9. IMMEDIATELY STABILIZE ALL UNDISTURBED AREAS FOLLOWING CONSTRUCTION.

MAINTENANCE:

INSPECT THE SLOPE DAMS AND SUPPORTS DURING AFTER EACH RAINY PERIOD AND IMMEDIATELY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED, HAND-CARRY REPAIRS MAY BE REQUIRED, OR REPAIRS COMPLETED PROMPTLY, AND ALL UNDISTURBED AREAS SHOULD BE APPROPRIATELY.

1 TEMPORARY SLOPE DRAIN

CS01