

PRELIMINARY
NOT FOR CONSTRUCTION

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

Alamance County Mine

NO.	DATE:	DESCRIPTION:

PROJECT NUMBER: 2180544

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REVIEWED BY: PAS

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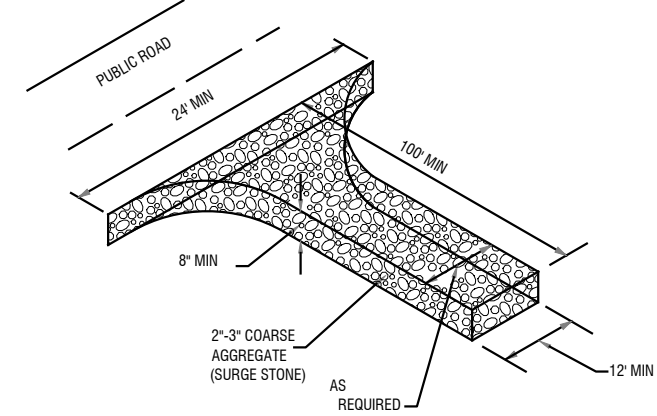
DATE: 5/8/19

DRAWING NAME:

**EROSION AND
SEDIMENT CONTROL
DETAILS**

DRAWING NUMBER:

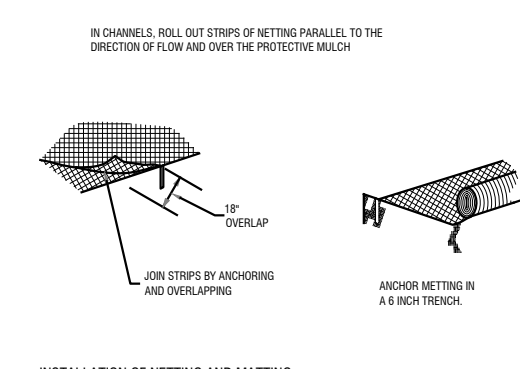
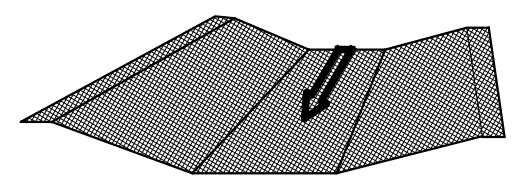
C501



- CONSTRUCTION SPECIFICATIONS:**
- CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBSTRUCTIONAL MATERIAL AND PROPOSED EROSION.
 - PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
 - PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
 - USE NONWOVEN GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEDS OR HIGH 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 DRESSING WITH 2 INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURES USED TO HOLD SEDIMENT AND LIFT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBSTRUCTIONAL MATERIAL, SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

10 TEMPORARY CONSTRUCTION ENTRANCE
C501

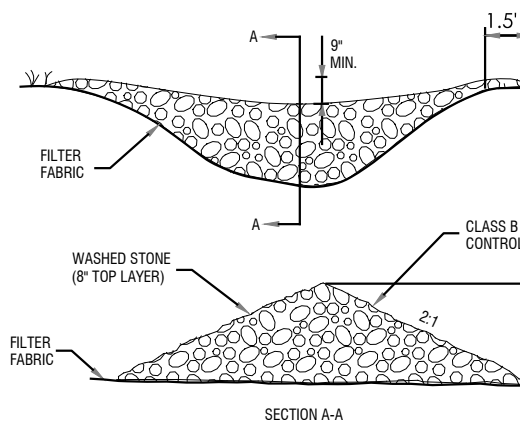


INSTALLATION OF NETTING AND MATTING:
PRODUCTS DESIGNED TO CONTROL EROSION SHOULD BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ANY MAT OF BLANKET-TYPE PRODUCT USED AS A PROTECTIVE MULCH SHOULD PROVIDE COVER OF AT LEAST 30% OF THE SURFACE WHERE IT IS APPLIED.

- APPLY LIME, FERTILIZER AND SEEDS BEFORE LAYING THE NET OR MAT. IF OPEN HEAVY NETTING IS USED, LIME MAY BE INCORPORATED BEFORE INSTALLING THE NET AND FERTILIZER AND SEED SHOULD BE APPLIED AFTERWARD.
- START LAYING THE NET FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL IT DOWN THE GRADE. ALLOW NETTING TO LAY LOOSELY ON THE SOIL BUT WITHOUT WRINKLES OR BUBBLES.
- TO SECURE THE NET, BURY THE UPSLOPE END IN A SLOT OR TRENCH NO LESS THAN 3 INCHES DEEP. COVER WITH MULCH. AND TAMP FIRMLY AS SHOWN IN THIS DETAIL. STAPLE THE NET EVERY 12-INCHES ACROSS THE TOP END AND AN EVERY 3 FEET ALONG THE SIDES AND BOTTOM. WHERE 2 STRIPS OF NET ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES STAPLED TOGETHER. EACH STRIP OF NETTING SHOULD ALSO BE STAPLED DOWN THE CENTER, EVERY 4 FT. DO NOT STRETCH THE NET WHEN APPLYING STAPLES.

MAINTENANCE:
INSPECT ALL MULCHES PERIODICALLY, AND AFTER RAINFALLS TO CHECK FOR EROSION, DISLOCATION, OR FAILURE. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MULCH. IF WASHOUT OCCURS, REPAIR THE SLOPE GRADE, RESEED, AND REINSTALL MULCH. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.

8 CHANNEL PROTECTION
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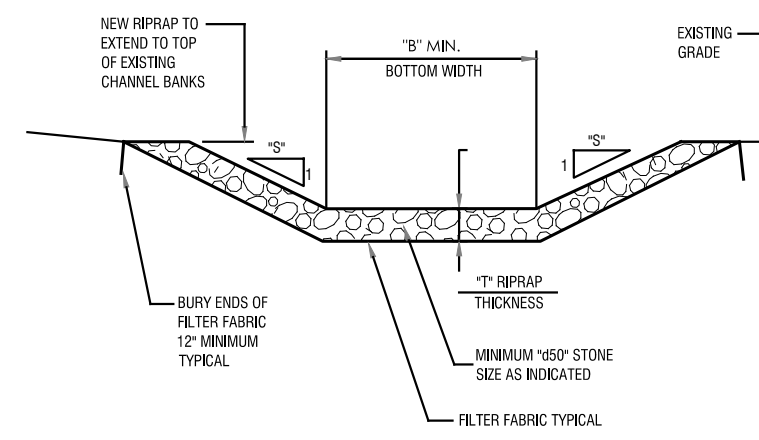


- CONSTRUCTION SPECIFICATIONS:**
- PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
 - KEEP THE CENTER STONE SECTION AT LEAST 6 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
 - EXTEND STONE AT LEAST 1.5 FT BEYOND THE OUTH BANKS TO KEEP OVERFLOW WATER FROM UNDERCUTTING THE DAM AS IT RE-ENTERS THE CHANNEL.
 - SET SPACING BETWEEN DAMS TO EQUAL THE SLOPE OF THE UPLIFE DAM.
 - PROTECT THE CHANNEL DOWNSTREAM FROM THE LOWEST CHECK DAM, CONSIDERING THAT WATER WILL FLOW OVER AND AROUND THE DAM.
 - MAKE SURE THAT THE CHANNEL REACHES THE MOST UPSTREAM DAM IS STABLE.
 - ENSURE THAT CHANNEL APPURTENANCES, SUCH AS CULVERT ENTRANCES 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. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM FLOWING AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL 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. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARVING SECTIONS OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN WEIGHT AND CROSS SECTION.

4 TEMPORARY GRAVEL CHECK DAM
C501

7 RIP RAP OUTLET PROTECTION
C501



SUBGRADE PREPARATION: PREPARE THE SUBGRADE FOR RIP RAP AND FILTER TO THE REQUIRED LINES AND GRADES INDICATED ON THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY APPROPRIATE TO THAT OF THE SURROUNDING UNDISTURBED MATERIAL OR COVERED DEPRESSIONS WITH RIP RAP. REMOVE BRUSH, TREES, TRIMPS AND OTHER OBSTRUCTIONAL MATERIAL. CUT THE SUBGRADE SUFFICIENTLY DEEP THAT THE FINISHED GRADE OF THE RIP RAP WILL BE AT THE ELEVATION OF THE SURROUNDING AREA. CHANNELS SHOULD BE EXCAVATED SUFFICIENTLY TO ALLOW PLACEMENT OF THE RIP RAP IN A MANNER SUCH THAT THE FINISHED HIGHEST DIMENSIONS AND GRADE OF THE RIP RAP MEET DESIGN SPECIFICATIONS.

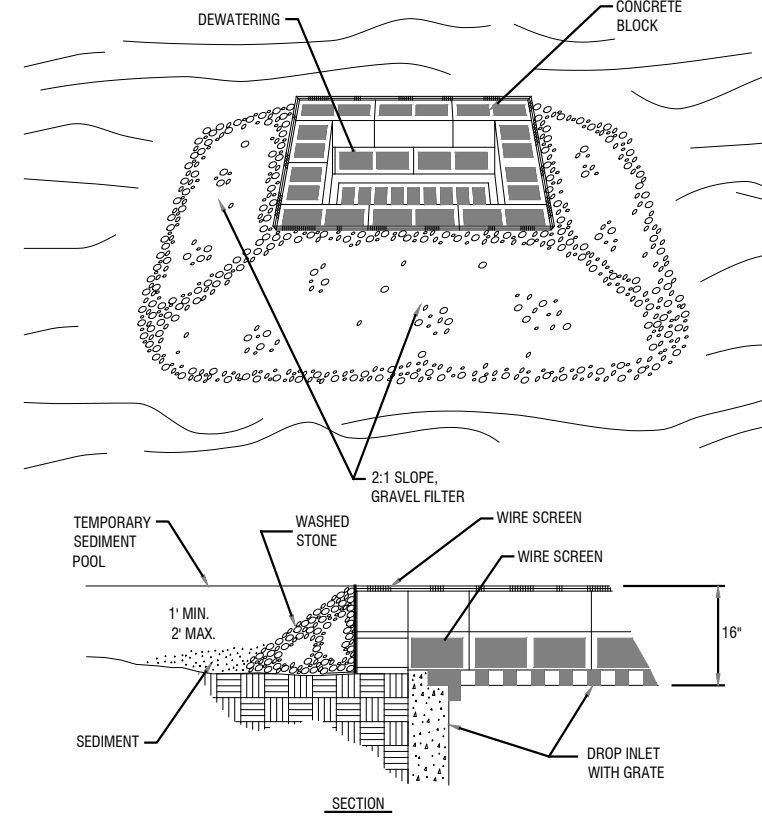
SYNTHETIC FILTER FABRIC: PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED SUBGRADE. OVERLAP THE EDGES BY AT LEAST 12 INCHES AND SPACE ANCHOR PINS EVERY 3 FEET ALONG THE OVERLAP. BURY THE UPPER AND LOWER EDGES OF THE FABRIC IN A MINIMUM OF 10 INCHES OF SOIL. TAKE CARE NOT TO DAMAGE THE FABRIC WHEN PLACING RIP RAP. IF DAMAGE OCCURS, REMOVE THE RIP RAP AND REPAIR THE FABRIC WITH 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.

WHERE LARGE STONES ARE USED OR MACHINE PLACEMENT IS DIFFICULT, A 4-INCH LAYER OF FINE GRAVEL OR SAND MAY BE NEEDED TO PROTECT THE FILTER FABRIC.

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 THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLING DUMPING DURING FINAL PLACEMENT. PLACE RIP RAP TO FULL THICKNESS IN ONE DIRECTION. DO NOT PLACE RIP RAP IN CURVES THROUGH CHUTES OR OTHER METHODS THAT CAUSE SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISLODGE THE UNDERLYING BASE OF FILTER FABRIC WHEN PLACING THE STONES.

3 RIP RAP CHANNEL PROTECTION
AS01

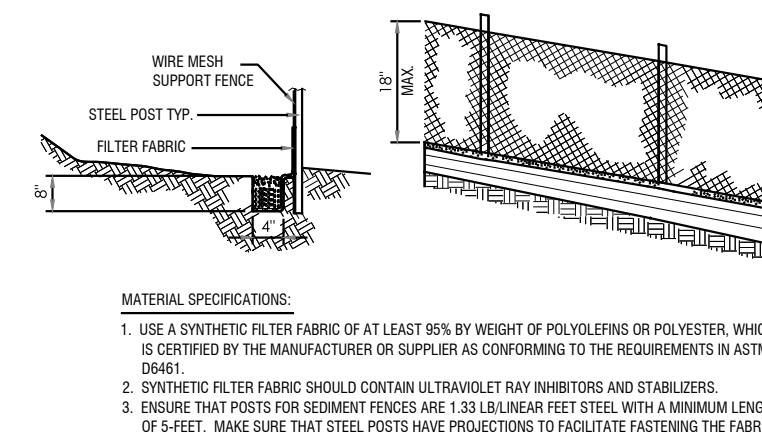
9 PERMANENT SEEDING SCHEDULE
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- CONSTRUCTION SPECIFICATIONS:**
- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 12 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUT WHEN OVERFLOW OCCURS. IF NEEDED, GET LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2" x 4" WOOD STUDS THROUGH BLOCK OPENINGS.
 - GENERALLY FIT TOGETHER BLOCKS WITH COMPRESSIBLE WIRE MESH WITH 1/2" x 1/2" HOLES IN DIAMETER, PLACED 1/2" BELOW THE TOP OF THE BLOCK. ON A 2% SLOPE, PLACE AND SMOOTH TO AN EVEN GRADE. DOT #31 WASHED STONE IS RECOMMENDED.
 - USE CLEAN GRAVEL, 1/2" TO 3/4" IN DIAMETER, PLACED 1/2" BELOW THE TOP OF THE BLOCK. ON A 2% SLOPE, PLACE AND SMOOTH TO AN EVEN GRADE. DOT #31 WASHED STONE IS RECOMMENDED.

MAINTENANCE:
1. INSPECT THE BARRIER AFTER EACH RAIN AND MAKE REPAIRS AS NEEDED.
2. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
3. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

6 TEMPORARY BLOCK AND GRAVEL DROP INLET PROTECTION
C501

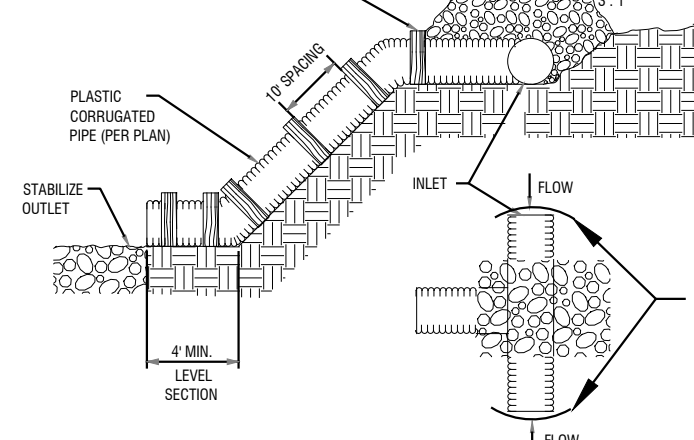


- CONSTRUCTION SPECIFICATIONS:**
- CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
 - ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 18 INCHES ABOVE THE GROUND SURFACE AND OTHER FEATURES MAY IMPROVE VOLUMES OF WATER PERPENDICULAR TO CAUSE FAILURE OF THE STRUCTURE.
 - CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER FABRIC TO THE SUPPORT POST WITH RIVETS OR NUTS.
 - SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1/2" WIRE. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH.
 - WHEN 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 FENCE MATERIAL SHALL BE AGRICULTURAL QUALITY 1/4 GAUGE ANNEALED STEEL WIRE WITH A 4" x 4" MAX. SPACING PATTERN.
 - EXTRA STRENGTH FILTER FABRIC WITH 6 FT POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. THE WIRE OF THE FILTER FABRIC DIRECTLY TO POSTS.
 - EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE PROPOSED LINE OF THE POSTS AND UPSLOPE FROM THE BARRIER.
 - BACKFILL THE TRENCH WITH COMPACTED SOIL PLACED OVER THE FILTER FABRIC.
 - DO NOT ATTACH FILTER FABRIC TO CROSSLING TREES.

MAINTENANCE:
1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DISCONNECT OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REPLACE RIP RAP EVERY 90 DAYS.
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 NOT UNDERMINE THE FENCE DURING CLEANOUT. REMOVE ALL TRENCH MATERIALS AND UNSTABILIZED SEDIMENT DEPOSITIONS. BRING THE AREA TO GRADE AND STABILIZE THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY ESTABLISHED.

2 TEMPORARY SEDIMENT FENCE
C501

5 TEMPORARY SEDIMENT TRAP RIP RAP OUTLET PROTECTION
C501



- CONSTRUCTION SPECIFICATIONS:**
- A COMMON FAILURE OF SLOPE DRAINS IS CAUSED BY WATER SATURATING THE SOIL AND SEEPING ALONG THE PIPE. THIS CREATES VOID FROM CONSOLIDATION AND PILING AND CAUSES WASHOUT. PROPER BACKFILLING AROUND AND UNDER THE PIPE 'MANHOLES' WITH STABLE SOIL MATERIAL AND HAND COMPACTION IN 6-INCH LIFTS TO ACHIEVE FIRM CONTACT BETWEEN THE PIPE AND THE SOIL AT ALL POINTS WILL ELIMINATE THIS TYPE OF FAILURE.
 - PLACE SLOPE DRAIN IN UNDISTURBED SOIL OR WELL-COMPACTED FILL AT LOCATIONS AND ELEVATIONS SHOWN ON THE PLANS.
 - SLOPELY SLOPE THE SECTION OF PIPE UNDER THE DRAIN TOWARD ITS OUTLET.
 - HAND TAMP THE SOIL UNDER AND AROUND THE ENTRANCE SECTION IN LIFTS NOT TO EXCEED 6 INCHES.
 - EXTEND THE DRAIN BEYOND THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.
 - ENSURE THAT ALL SLOPE DRAIN CONNECTIONS ARE WATER-TIGHT.
 - ENSURE THAT ALL FILL MATERIAL IS WELL-COMPACTED. SECURELY FASTEN THE EXPOSED SECTION OF THE DRAIN WITH GROMMETS OR STAPLES SPACED NO MORE THAN 18-INCH APART.
 - EXTEND THE DRAIN BEYOND THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.
 - SAVE THE SETTLED, COMPACTED DRAIN HOLES LESS THAN 1-FEET ABOVE THE TOP OF THE PIPE AT EVERY POINT.
 - IMMEDIATELY STABILIZE ALL DISTURBED AREAS FOLLOWING CONSTRUCTION.

MAINTENANCE:
INSPECT THE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL AND PROMPTLY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED, TEMPORARY MEASURES MAY BE REMOVED. MATERIALS DEPOSITED AS PROPERLY, AND ALL DISTURBED AREAS STABILIZED APPROPRIATELY.

1 TEMPORARY SLOPE DRAIN
C501