6.10

TEMPORARY SEEDING

(TS)

Definition Planting rapid-growing annual grasses, small grains, or legumes to provide initial, temporary cover for erosion control on disturbed areas.

Purpose To temporarily stabilize denuded areas that will not be brought to final grade for a period of more than 21 calendar days.

Temporary seeding controls runoff and erosion until permanent vegetation or other erosion control measures can be established. In addition, it provides residue for soil protection and seedbed preparation, and reduces problems of mud and dust production from bare soil surfaces during construction.

Conditions Where Practice Applies On any cleared, unvegetated, or sparsely vegetated soil surface where vegetative cover is needed for less than 1 year. Applications of this practice include diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles.

Planning Considerations Annual plants, which sprout and grow rapidly and survive for only one season, are suitable for establishing initial or temporary vegetative cover. Temporary seeding preserves the integrity of earthen sediment control structures such as dikes, diversions, and the banks of dams and sediment basins. It can also reduce the amount of maintenance associated with these devices. For example, the frequency of sediment basin cleanouts will be reduced if watershed areas, outside the active construction zone, are stabilized.

Proper seedbed preparation, selection of appropriate species, and use of quality seed are as important in this Practice as in Practice 6.11, *Permanent Seeding*. Failure to follow established guidelines and recommendations carefully may result in an inadequate or short-lived stand of vegetation that will not control erosion.

Temporary seeding provides protection for no more than 1 year, during which time permanent stabilization should be initiated.

Specifications Complete grading before preparing seedbeds, and install all necessary erosion control practices such as, dikes, waterways, and basins. Minimize steep slopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, loosen them to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

SEEDBED PREPARATION
Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose, and uniform. Where hydroseeding methods are used, the surface may be left with a more irregular surface of large clods and stones.

Liming—Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 1/2 tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

Fertilizer—Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

Surface roughening—If recent tillage operations have resulted in a loose surface, additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding (Practice 6.03, *Surface Roughening*).

PLANT SELECTION
Select an appropriate species or species mixture from Table 6.10a for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

In the Mountains, December and January seedings have poor chances of success. When it is necessary to plant at these times, use recommendations for fall and a securely tacked mulch.

SEEDING
Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Tables 6.10a-6.10c. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution.

Small grains should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

MULCHING
The use of an appropriate mulch will help ensure establishment under normal conditions, and is essential to seeding success under harsh site conditions (Practice 6.14, *Mulching*). Harsh site conditions include:

- seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use),
- slopes steeper than 3:1,
- excessively hot or dry weather,
- adverse soils (shallow, rocky, or high in clay or sand), and
- areas receiving concentrated flow.

If the area to be mulched is subject to concentrated waterflow, as in channels, anchor mulch with netting (Practice 6.14, *Mulching*).

Maintenance Reseed and mulch areas where seedling emergence is poor, or where erosion occurs, as soon as possible. Do not mow. Protect from traffic as much as possible.

References *Site Preparation*
6.03, Surface Roughening
6.04, Topsoiling

Surface Stabilization
6.11, Permanent Seeding
6.14, Mulching

Appendix
8.02, Vegetation Tables

Table 6.10a Temporary Seeding Recommendations for Late Winter and Early Spring

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10b Temporary Seeding Recommendations for Summer

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10c Temporary Seeding Recommendations for Fall

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

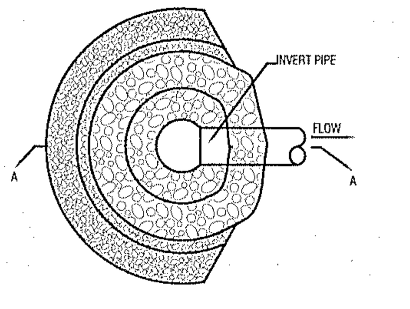
Soil amendments
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

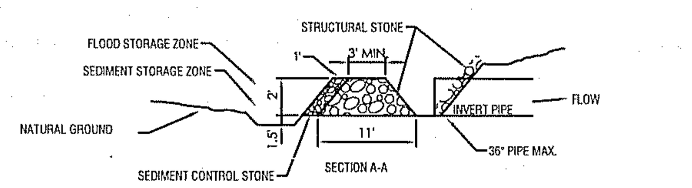
Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

4 TEMPORARY SEEDING DETAIL
C502

NOTES:
1. STRUCTURAL STONE SHALL BE CLASS B STONE.
2. SEDIMENT CONTROL STONE SHALL BE NO. 5 OR NO. 57 STONE.
3. DIMENSIONS ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.





5 STANDARD ROCK PIPE INLET PROTECTION
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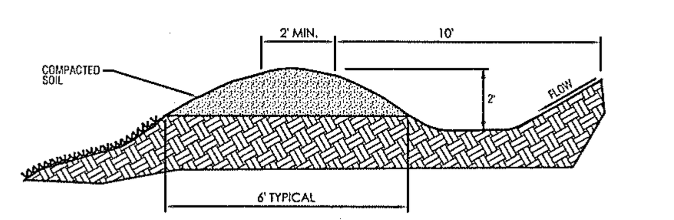


CONSTRUCTION SPECIFICATIONS:
1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THEN 30 WORKING DAYS.

MAINTENANCE:
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

3 TEMPORARY DIVERSION DITCH
C502

DEFINITION: POROUS BARRIERS INSTALLED INSIDE A TEMPORARY SEDIMENT TRAP, SKIMMER BASIN, OR SEDIMENT BASIN TO REDUCE THE VELOCITY AND TURBULENCE OF THE WATER FLOWING THROUGH THE MEASURE, AND TO FACILITATE THE SETTLING OF SEDIMENT FROM THE WATER BEFORE DISCHARGE.

PURPOSE: SEDIMENT TRAPS AND BASINS ARE DESIGNED TO TEMPORARILY POOL RUNOFF WATER TO ALLOW SEDIMENT TO SETTLE BEFORE THE WATER IS DISCHARGED. UNFORTUNATELY, THEY ARE USUALLY NOT VERY EFFICIENT DUE TO HIGH TURBULENCE AND "SHORT-CIRCUITING" FLOWS WHICH TAKE RUNOFF QUICKLY TO THE OUTLET WITH LITTLE INTERACTION WITH MOST OF THE BASIN. POROUS BAFFLES IMPROVE THE RATE OF SEDIMENT RETENTION BY DISTRIBUTING THE FLOW AND REDUCING TURBULENCE. THIS PROCESS CAN IMPROVE SEDIMENT RETENTION.

CONDITIONS WHERE PRACTICE APPLIES: THIS PRACTICE SHOULD BE USED IN ANY TEMPORARY SEDIMENT TRAP, SKIMMER BASIN, OR TEMPORARY SEDIMENT BASIN.

PLANNING CONSIDERATIONS: POROUS BAFFLES EFFECTIVELY SPREAD THE FLOW ACROSS THE ENTIRE WIDTH OF A SEDIMENT BASIN OR TRAP. WATER FLOWS THROUGH THE BAFFLE MATERIAL, BUT IS SLOWED SUFFICIENTLY TO BACK UP THE FLOW, CAUSING IT TO SPREAD ACROSS THE ENTIRE WIDTH OF THE BAFFLE. SPREADING THE FLOW IN THIS MANNER UTILIZES THE FULL CROSS SECTION OF THE BASIN, WHICH IN TURN REDUCES FLOW RATES OR VELOCITY AS MUCH AS POSSIBLE. IN ADDITION, THE TURBULENCE IS ALSO GREATLY REDUCED. THIS COMBINATION INCREASES SEDIMENT DEPOSITION AND RETENTION AND ALSO DECREASES THE PARTICLE SIZE OF SEDIMENT CAPTURED. THE INSTALLATION SHOULD BE SIMILAR TO A SEDIMENT FENCE. THE FABRIC SHOULD BE 700 G/M² COIR EROSION BLANKET OR EQUAL. A SUPPORT WIRE ACROSS THE TOP WILL HELP PREVENT EXCESSIVE SAGGING IF THE MATERIAL IS ATTACHED TO IT WITH APPROPRIATE TIES.

DESIGN CRITERIA: THE TEMPORARY SEDIMENT TRAP OR TEMPORARY SEDIMENT BASIN SHOULD BE SIZED USING THE APPROPRIATE DESIGN CRITERIA. THE PERCENT OF SURFACE AREA FOR EACH SECTION OF THE BAFFLE IS AS FOLLOWS:
* INLET ZONE – 25%
* FIRST CELL – 25%
* SECOND CELL – 25%
* OUTLET ZONE – 25%

BAFFLE SPACING IN FUTURE PERMANENT STORMWATER BASINS IS BEYOND FOREBAY. BE SURE TO CONSTRUCT BAFFLES UP THE SIDES OF THE TRAP OR BASIN BANKS SO WATER DOES NOT FLOW AROUND THE STRUCTURES. MOST OF THE SEDIMENT WILL BE CAPTURED IN THE INLET ZONE. SMALLER PARTICLE SIZE SEDIMENTS ARE CAPTURED IN THE LATTER CELLS. BE SURE TO MAINTAIN ACCESS TO THE TRAP FOR MAINTENANCE AND SEDIMENT REMOVAL. THE DESIGN LIFE OF THE FABRIC IS 6–12 MONTHS, BUT MAY NEED TO BE REPLACED MORE OFTEN IF DAMAGED OR CLOGGED.

CONSTRUCTION SPECIFICATIONS:
MATERIALS
1. USE MATTING MADE OF 100% COCONUT FIBER (COIR) TWINE WOVEN INTO HIGH STRENGTH MATRIX WITH THE PROPERTIES SHOWN IN THE TABLE BELOW.
2. STAPLES SHOULD BE MADE OF 0.125 INCH DIAMETER NEW STEEL WIRE FORMED INTO A 'U' SHAPE NOT LESS THAN 12 INCHES IN LENGTH WITH A THROAT OF 1 INCH IN WIDTH. THE STAPLES ANCHOR THE POROUS BAFFLES INTO THE SIDES AND BOTTOM OF THE BASIN.
3. ENSURE THAT STEEL POSTS FOR POROUS BAFFLES ARE OF A SUFFICIENT HEIGHT TO SUPPORT BAFFLES AT DESIRED HEIGHT. POSTS SHOULD BE APPROXIMATELY 1–3/8" WIDE MEASURED PARALLEL TO THE FENCE, AND HAVE A MINIMUM WEIGHT OF 1.25 LB/LINEAR FT. THE POSTS MUST BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14.0 SQUARE INCHES AND BE OF THE SELF–FASTENER ANGLE STEEL TYPE TO HAVE A MEANS OF RETAINING WIRE AND COIR FIBER MAT IN THE DESIRED POSITION WITHOUT DISPLACEMENT.
4. USE 9–GAUGE HIGH TENSION WIRE FOR SUPPORT WIRE.

COIR FIBER BAFFLE MATERIAL PROPERTY REQUIREMENTS	
THICKNESS	0.30 IN. MINIMUM
TENSILE STRENGTH (WET)	900X680 LB/FT MINIMUM
ELONGATION (WET)	69% X 34% MAXIMUM
LOW VELOCITY	10–12 FT/SEC
WEIGHT	20 OZ/SY (680 G/M²) MINIMUM
MINIMUM WIDTH	6.5 FEET
OPEN AREA	50% MAXIMUM

CONSTRUCTION
1. GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FROM TO BACK AND SIDE TO SIDE.
2. INSTALL THE COIR FIBER BAFFLES IMMEDIATELY UPON EXCAVATION OF THE BASINS.
3. INSTALL POSTS ACROSS THE WIDTH OF THE SEDIMENT TRAP (PRACTICE 6.62, SEDIMENT FENCE)
4. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES AND SPACED A MAXIMUM OF 4 FEET APART. THE TOP OF THE FABRIC SHOULD BE A MINIMUM OF 6 INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE A MINIMUM OF 2 INCHES LOWER THAN THE TOP OF THE EARTHEN EMBANKMENT.
5. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
6. ATTACH A 9 GAUGE HIGH TENSION WIRE STRAND TO THE STEEL POSTS AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION WITH PLASTIC TIES OR WIRE FASTENERS TO PREVENT SAGGING. IF THE TEMPORARY SEDIMENT BASIN WILL BE CONVERTED TO A PERMANENT STORMWATER BASIN OF A GREATER DEPTH, THE BAFFLE HEIGHT SHOULD BE BASED ON THE POLL DEPTH DURING USE A TEMPORARY SEDIMENT BASIN.
7. EXTEND 9 GAUGE MNIMUM HIGH TENSION WIRE STRAND O SIDE OF BASIN OR INSTALL STEEL T–POSTS TO ANCHOR BAFFLE TO SIDE OF BASIN AND SECURE TO VERTICAL END POSTS.
8. DRAPE THE COIR FIBER MAT OVER THE WIRE STRAND MOUNTED AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION. SECURE THE COIR FIBER MAT TO THE WIRE STRAND WITH PLASTIC TIES OR WIRE FASTENERS. ANCHOR THE MATTING TO THE SIDES AND FLOOR OF THE BASIN WITH 12 INCHES WIRE STAPLES, APPROXIMATELY 1 FT APART, ALONG THE BOTTOM AND SIDE SLOPES OF THE BASIN.
9. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN
10. ADJUSTMENTS MAY BE REQUIRED IN THE STAPLING REQUIREMENTS TO FIT INDIVIDUAL SITE CONDITIONS.

MAINTENANCE: INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BE SURE TO MAINTAIN ACCESS TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

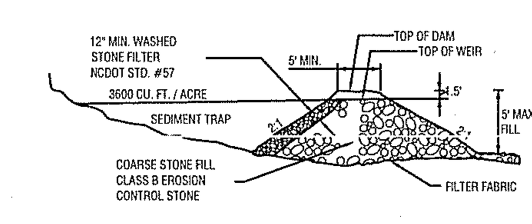
8 POROUS BAFFLES
C502

CONSTRUCTION SPECIFICATIONS

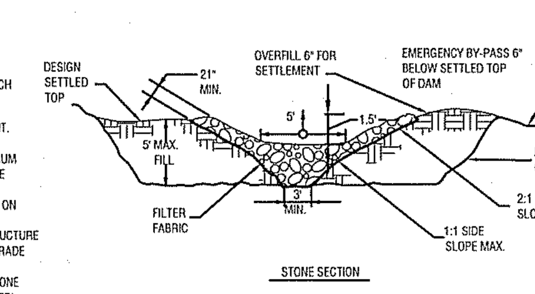
1. CLEAR, GRUB AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9-INCHES AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6-INCHES TO ALLOW FOR SETTLEMENT.
3. CONSTRUCT THE OUTLET SECTION IN THE EMBANKMENT. PROTECT THE CONNECTION BETWEEN THE RIPRAP AND THE SOIL FROM PIPING BY USING FILTER FABRIC OR A KEYWAY CUTOFF TRENCH BETWEEN THE RIPRAP STRUCTURE AND THE SOIL.
   a. PLACE THE FILTER FABRIC BETWEEN THE RIPRAP AND SOIL. EXTEND THE FABRIC ACROSS THE SPILLWAY FOUNDATION AND SIDES TO THE TOP OF THE DAM;

   OR

   b. EXCAVATE A KEYWAY TRENCH ALONG THE CENTERLINE OF THE SPILLWAY FOUNDATON EXTENDING UP THE SIDES TO THE HEIGHT OF THE DAM. THE TRENCH SHOULD BE AT LEAST 2-FEET DEEP AND 2-FEET WIDE WITH 1:1 SIDE SLOPES.
4. CLEAR THE POND AREA BELOW THE ELEVATION OF THE CREST OF THE EMBANKMENT.
5. ALL CUT ANDFILL SLOPES SHOULD BE 2:1 OR FLATTER.
6. ENSURE THAT THE STONE (DRAINAGE) SECTION OF THE EMBANKMENT HAS A MINIMUM BOTTOM WIDTH OF 3-FEET AND MAXIMUM SIDE SLOPES OF 1:1 THAT EXTEND TO THE BOTTOM OF THE SPILLWAY SECTION.
7. CONSTRUCT THE MINIMUM FINISHED STONE SPILLWAY BOTTOM WIDTH, AS SHOWN ON THE PLANS, WITH 2:1 SIDE SLOPES EXTENDING TO THE TOP OF THE OVER FILLED EMBANKMENT. KEEP THE THICKNESS OF THE SIDES OF THE SPILLWAY OUTLET STRUCTURE AT A MINIMUM OF 21-INCHES. THE WEIR MUST BE LEVEL AND CONSTRUCTED TO GRADE TO ASSURE DESIGN CAPACITY.
8. MATERIAL USED IN THE STONE SECTION SHOULD BE WELL-GRADED MIXTURE OF STONE WITH A d50 SIZE OF 9-INCHES (CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14-INCHES. THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY WEATHER-RESISTANT.
9. ENSURE THAT THE STONE SPILLWAY OUTLET SECTION EXTENDS DOWNSTREAM PAST THE TOE OF THE EMBANKMENT UNTIL STABLE CONDITIONS ARE REACHED AND OUTLET VELOCITY IS ACCEPTABLE FOR THE RECEIVING STREAM. KEEP THE EDGES OF THE STONE OUTLET SECTION FLUSH WITH THE SURROUNDING GROUND AND SHAPE THE CENTER TO CONFINE THE OUTFLOW STREAM (REFERENCES: OUTLET PROTECTION).
10. DIRECT EMERGENCY BYPASS TO NATURAL, STABLE AREAS. LOCATE BYPASS OUTLETS SO THAT FLOW WILL NOT DAMAGE THE EMBANKMENT.
11. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).
12. SHOW THE DISTANCE FROM THE TOP OF THE SPILLWAY TO THE SEDIMENT CLEANOUT LEVEL (ONE-HALF THE DESIGN DEPTH) ON THE PLANS AND MARK IT IN THE FIELD.



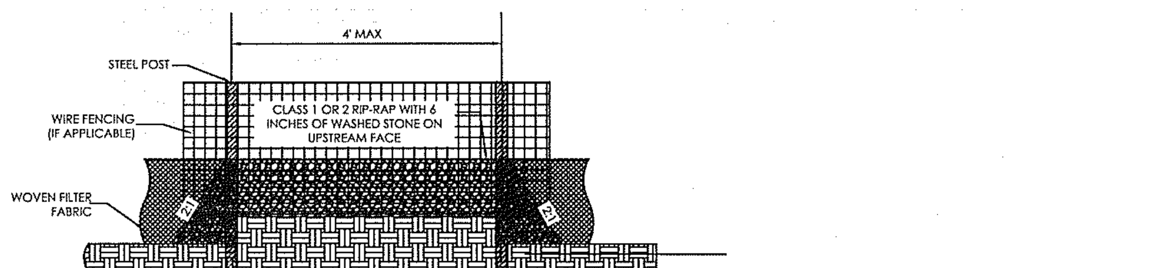
CROSS SECTION



STONE SECTION

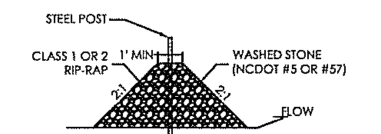
MAINTENANCE
1. INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.
2. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FT. BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.
3. AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY (REFERENCES: SURFACE STABILIZATION).

2 TEMPORARY SEDIMENT TRAP
C502

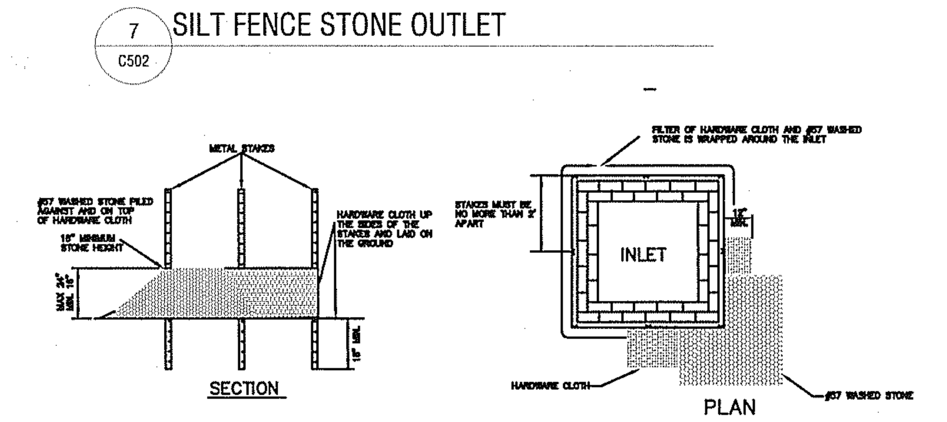


GENERAL NOTES:
1. SEDIMENT FILTER OUTLET SHALL BE 16 INCHES HIGH BUT NO TALLER THAN 18 INCHES
2. CLASS 1 OR 2 RIP-RAP SHALL BE USED AND COVERED WITH 6 INCHES OF NCDOT #5 OR #57 WASHED STONE ON THE UPSLOPE SIDE.
3. POSTS SHALL BE NO MORE THAN 4 FEET APART.
4. SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.
5. ONE ACRE MAXIMUM DRAINAGE AREA PER OUTLET.

MAINTENANCE NOTES:
1. FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.



7 SILT FENCE STONE OUTLET
C502



6 #57 WASHED STONE & WIRE INLET PROTECTION
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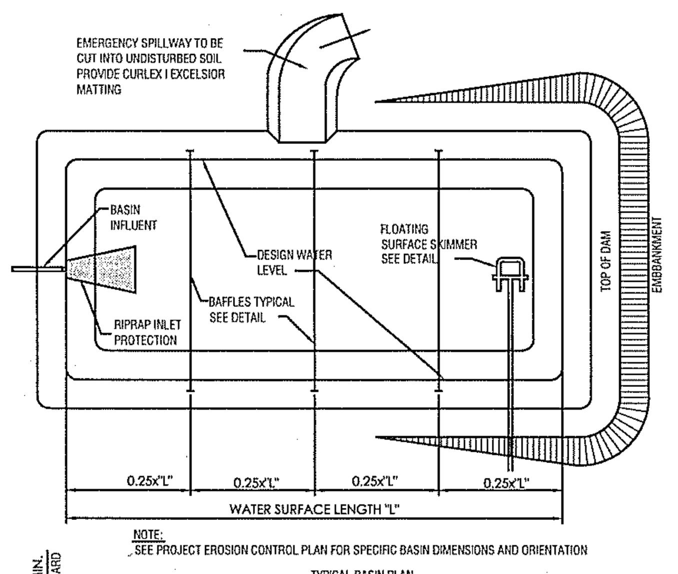
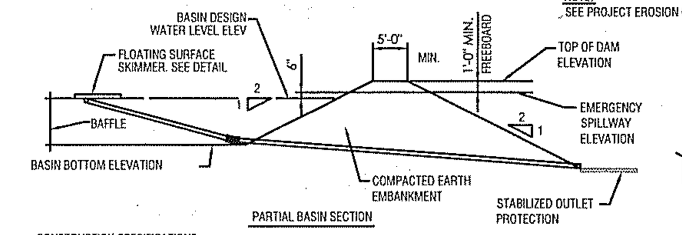
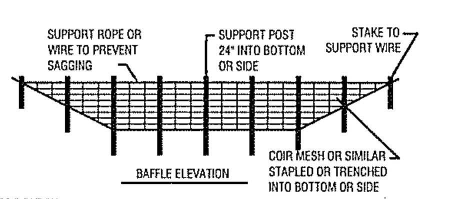


NOTE:
SEE PROJECT EROSION CONTROL PLAN FOR SPECIFIC BASIN DIMENSIONS AND ORIENTATION

TYPICAL BASIN PLAN



PARTIAL BASIN SECTION



BAFFLE ELEVATION

CONSTRUCTION SPECIFICATIONS

1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED.
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.
3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR BLOCK.
4. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES.
   PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
5. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURERS INSTRUCTIONS, OR AS DESIGNED.
6. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
7. EARTHEN SPILLWAYS - INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SPILLWAY. THE PILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8-INCH STAPLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTION(S) SHOULD OVERLAP THE LOWER SECTION(S) SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS.
8. INLETS - DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY.
9. EROSION CONTROL - CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION.
10. INSTALL POROUS BAFFLES AS INDICATED IN SEDIMENT BASIN BAFFLE DETAIL.
11. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.

MAINTENANCE

INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.

IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.

IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.

FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

CONSTRUCTION SPECIFICATION

1. GRADE THE BASIN SO THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
2. INSTALL POST ACROSS THE WIDTH OF THE SEDIMENT TRAP (PRACTICE 6.62, SEDIMENT FENCE)
3. STEEL POST SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES,SPACED A MAXIMUM OF 4 FEET APART, AND INSTALLED UP THE SIDES OF THE BASIN AS WELL. THE TOP OF THE FABRIC SHOULD BE 6 INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.
4. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE AND THE OUTLET POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
5. WHEN USING POST, ADD A SUPPORT WIRE OR ROPE ACROSS THE TOP OF THE MEASURE TO PREVENT SAGGING.
6. WRAP POROUS MATERIAL, LIKE JUTE BACKED BY COIR MATERIAL, OVER THE TOP WIRE. THE FABRIC SHOULD HAVE FIVE TO TEN PERCENT OPENINGS IN THE WEAVE. ATTACH FABRIC TO A ROPE AND A SUPPORT STRUCTURE WITH ZIP TIES, WIRE, OR STAPLES.
7. THE BOTTOM AND SIDES OF THE FABRIC SHOULD BE ANCHORED IN A TRENCH OR PINNED WITH 8-INCH EROSION CONTROL MATTING STAPLES.
8. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.

MAINTENANCE

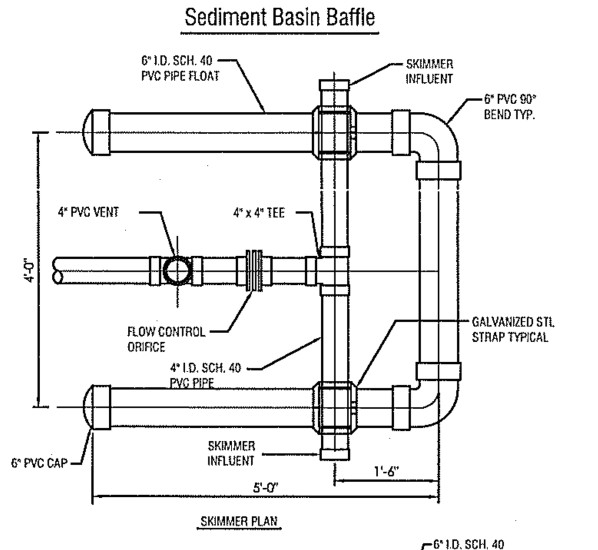
INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

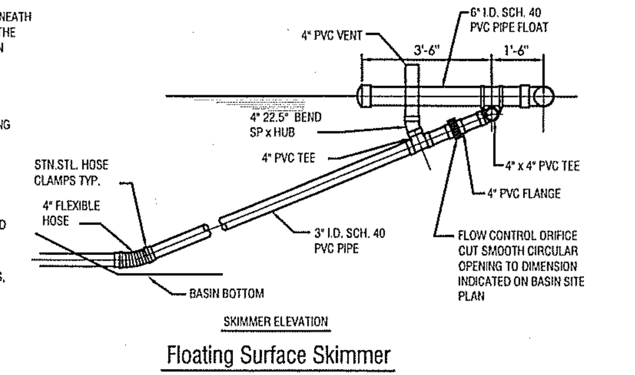
REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES.

AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

Sediment Basin Baffle



SKIMMER PLAN



SKIMMER ELEVATION

Floating Surface Skimmer

1 SEDIMENT BASIN AND SKIMMER
C502

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1/24/2020

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ALAMANCE AGGREGATES, LLC

Mr. Chad Threatt, VP

Snow Camp Mine

NO:	DATE:	DESCRIPTION:
1	1/20/20	ADDITIONAL STREAM INFO - ALAM. AGG. & LAND QUALITY COMMENTS

REVISIONS

PROJECT NUMBER: 2190335

DRAWN BY: KCG/ATC

REVIEWED BY: PAS

ISSUED FOR: CONSTRUCTION

DATE: 1/23/20

DRAWING NAME:

EROSION AND SEDIMENT CONTROL DETAILS

DRAWING NUMBER:

C502

Date & Time: 1/23/2020 8:07 PM By: Garton, Kevin
Path: Y:\2190335-Snow Camp Mine\CAD\Civil\Civil3d\DWG\Detail Sheets.dwg