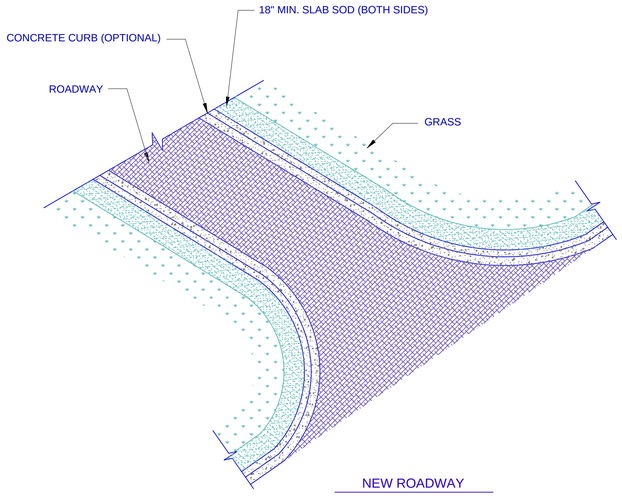
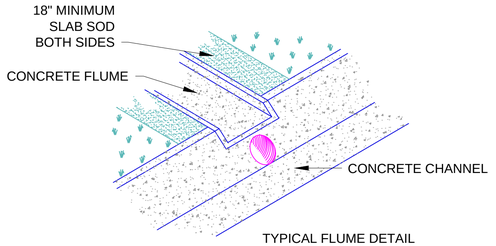
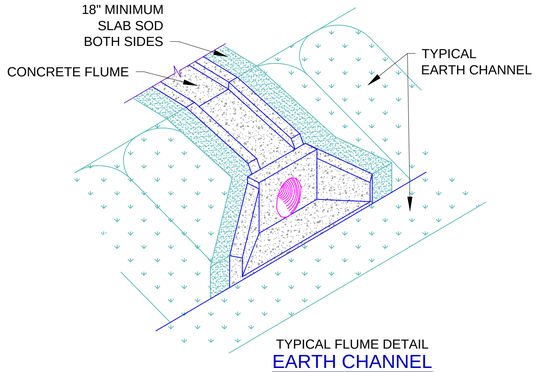


NEW ROADWAY

NEW ROADWAYS

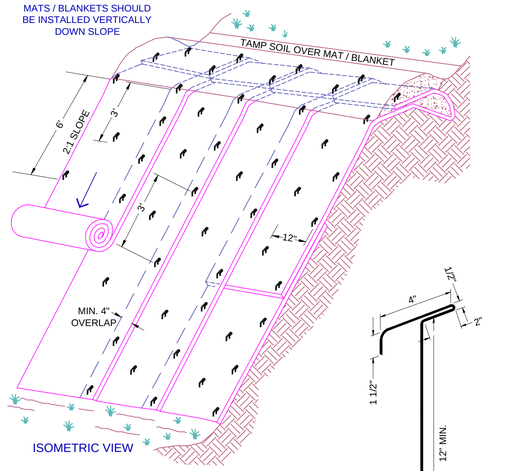


TYPICAL FLUME DETAIL
CONCRETE CHANNEL



TYPICAL FLUME DETAIL
EARTH CHANNEL

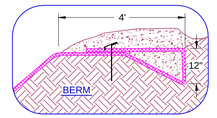
CONCRETE FLUME



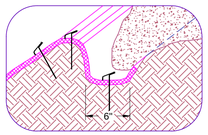
TYPICAL SLOPE
SOIL STABILIZATION

NOTES:

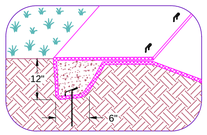
1. SLOPE SURFACE SHALL BE FREE OF ROCKS CLODS, STICKS AND GRASS. MATS / BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.



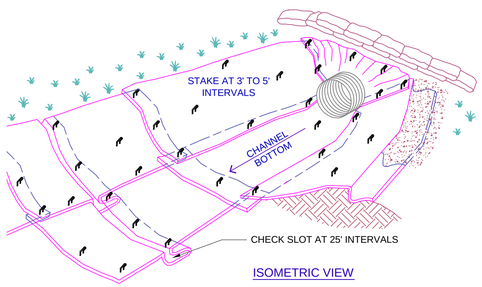
EROSION BLANKET / TURF REINFORCEMENT MAPS - SLOPE INSTALLATION



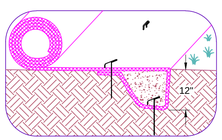
LONGITUDINAL ANCHOR TRENCH



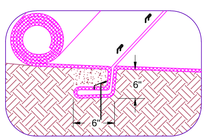
TERMINAL SLOPE AND CHANNEL
ANCHOR TRENCH



ISOMETRIC VIEW



INITIAL CHANNEL ANCHOR TRENCH



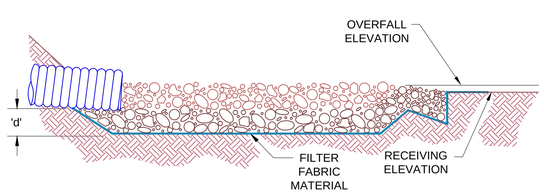
INTERMITTENT CHECK SLOT

NOTES:

1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURE'S SPECIFICATIONS.
2. STAKING OF STAPLING LAYOUT PER MANUFACTURES SPECIFICATIONS.

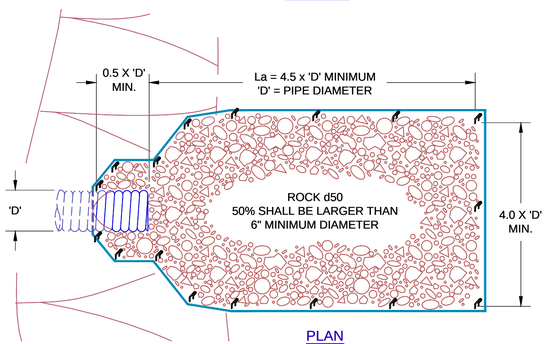
EROSION BLANKET / TURF REINFORCEMENT MAPS

CHANNEL INSTALLATION



THICKNESS ('d') = 1.5 x MAXIMUM DIAMETER - 6" MINIMUM

SECTION

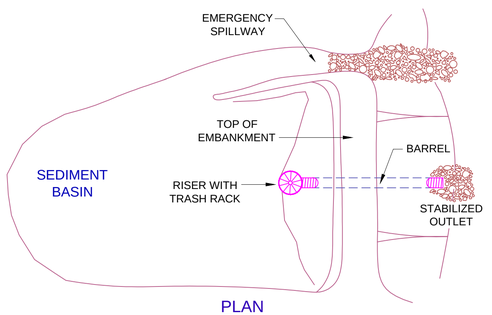


PLAN

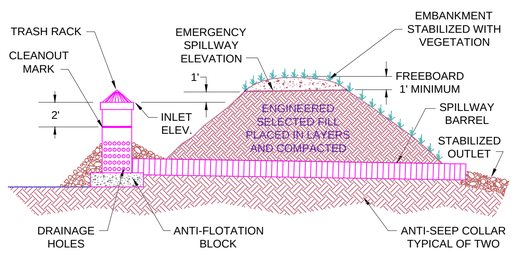
NOTES:

1. 'La' = LENGTH OF APRON. DISTANCE 'La' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE AT A ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC.

ENERGY DISSIPATER



PLAN

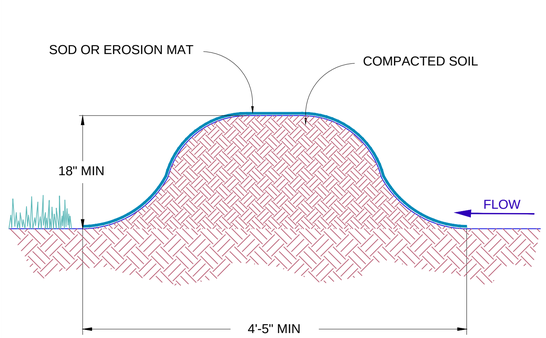


SECTION

NOTES:

1. THE TEMPORARY SEDIMENT BASIN, DESIGNED BY A QUALIFIED PROFESSIONAL, IS REQUIRED FOR DISTURBED AREAS GREATER THAN 5 ACRES WITHIN A DRAINAGE AREA LESS THAN 100 ACRES.
2. ACCUMULATED SEDIMENT SHALL BE CLEANED OUT WHEN BASIN REACHES APPROXIMATELY, 50% CAPACITY.
3. THE SEDIMENT BASIN WILL BE REMOVED WITHIN THREE YEARS.

TYPICAL SEDIMENT BASIN



TYPICAL EARTH DIKE

NOTES:

1. INSPECT AND REPAIR EARTH DIKE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. STABILIZE BERM WITH SOD OR EROSION BLANKETS.

TYPICAL EARTH DIKE

The City of Oklahoma City
Public Works Department
Engineering Division

APPROVED BY:
ERIC J. WENGER, P.E.
CITY ENGINEER
DATE: 03-28-13

DRAWN: VSC

DATE: 03-28-13

STORM WATER QUALITY
EROSION CONTROL DRAWINGS

Drawing Number
ERO-D3

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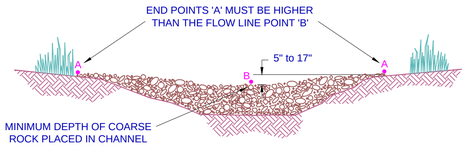
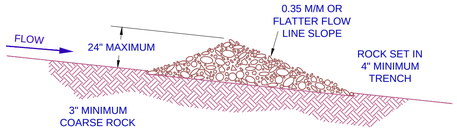
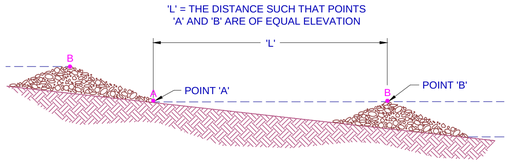


VIEW LOOKING UPSTREAM



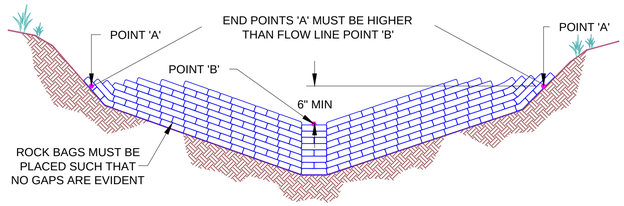
SIDE VIEW



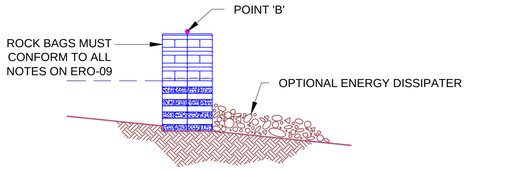
SPACING BETWEEN CHECK DAMS

D-50 OF ROCK (MM)	DOWNSTREAM FLOWLINE SLOPE OF STRUCTURE (M / M) 0.35	0.30	0.25	0.20	0.15	0.10 MAXIMUM WATER DEPTH OVER ROCK (MM)					
75	15	18	20	25	33	48
150	30	36	41	50	66	100

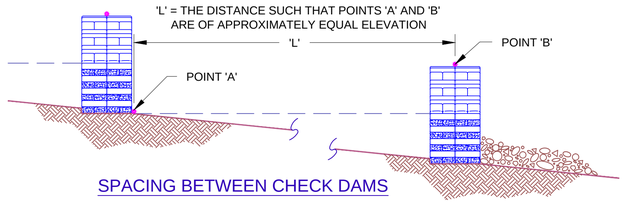
ROCK CHECK DAMS



VIEW LOOKING UPSTREAM

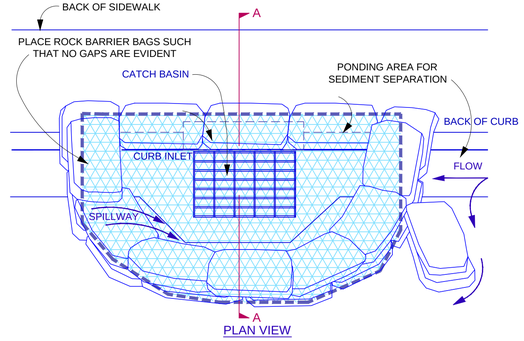


SIDE VIEW

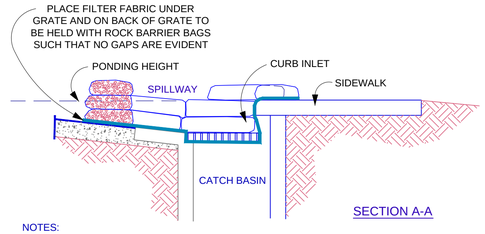


SPACING BETWEEN CHECK DAMS

ROCK BAG CHECK DAMS



PLAN VIEW

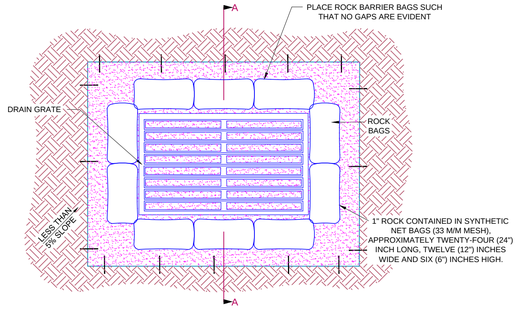


SECTION A-A

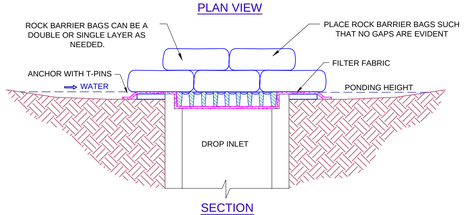
NOTES:

1. PLACE CURB TYPE ROCK BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BAGS OF WOVEN GEOTEXTILE FABRIC, FILLED WITH GRAVEL MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. LEAVE ONE SANDBAG GAP IN THE TOP ROW ON THE SIDE AWAY FROM FLOW, TO PROVIDE A SPILLWAY; OR IN THE CENTER IF PONDING IS NEEDED ON BOTH SIDES.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

ROCK BAG CURB INLET BARRIER



PLAN VIEW

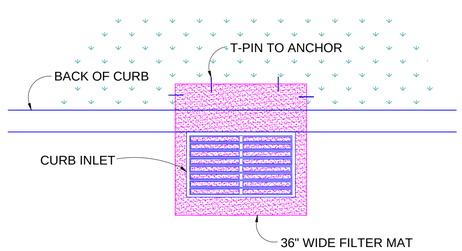


SECTION

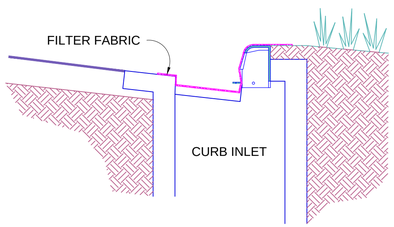
NOTE:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. USE T-PINS TO ANCHOR FIBER MAT INTO THE SOIL.
3. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
4. SIZE DISTRIBUTION OF UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
5. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
6. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM THE SYSTEM.
7. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
8. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN SIZE PARTICLES.
9. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

ROCK BAG / FILTER MAT DROP INLET SEDIMENT BARRIER



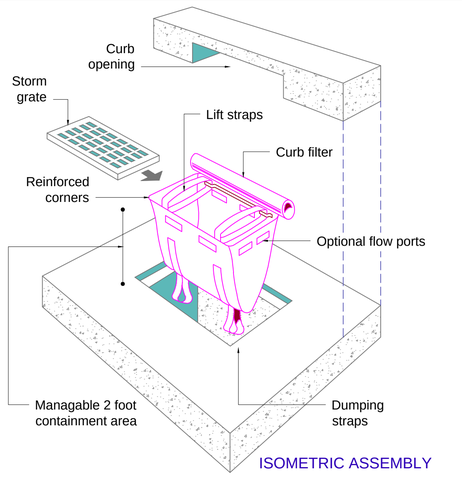
PLAN VIEW



NOTES:

1. USE FILTER MAT SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET, WITH MINIMAL NEED, WHERE WATER CAN FILTER AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB INLET FILTER MAT SEDIMENT BARRIER

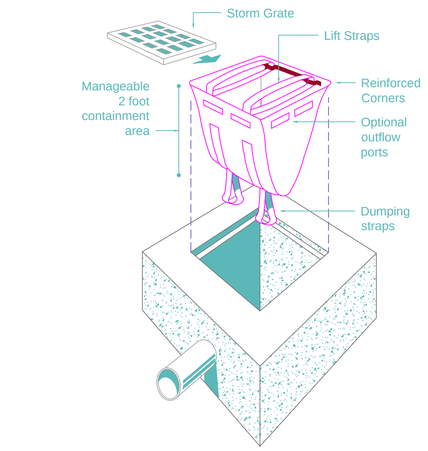


ISOMETRIC ASSEMBLY

NOTES:

1. Remove the grate from the catch basin.
2. Stand grate on end. Move the top lifting straps out of the way and place grate into the unit so that the grate is below the top straps and above the lower straps. The grate should be cradled between the upper and lower straps.
3. Holding the lifting straps, insert the grate into the inlet, being careful that the grate remains in place and being careful not to damage the unit.
4. Remove all accumulated sediment and debris from the vicinity of unit after each storm event.
5. After each storm event and at regular intervals, look into the unit. If the unit is more than 1/3 full of accumulated sediment, the unit must be emptied.
6. To empty the unit, using the lifting straps lift the unit out of the inlet and remove the grate. Transport the unit to an appropriate location for removal of contents. Holding the dumping straps on the bottom of the unit, turn the unit upside down, emptying the contents. Reinstall unit as above.

CURB INLET SEDIMENT BAG



ISOMETRIC ASSEMBLY

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6. To empty the unit, using the lifting straps lift the unit out of the inlet and remove the grate. Transport the unit to an appropriate location for removal of contents. Holding the dumping straps on the bottom of the unit, turn the unit upside down, emptying the contents. Reinstall unit as above.

DROP INLET SEDIMENT BAG

The City of Oklahoma City
Public Works Department
Engineering Division

APPROVED BY: ERIC J. WENGER, P.E.
CITY ENGINEER
DATE: 03-28-13

DRAWN: VSC

DATE: 03-28-13

STORM WATER QUALITY EROSION CONTROL DRAWINGS

Drawing Number
ERO-D2

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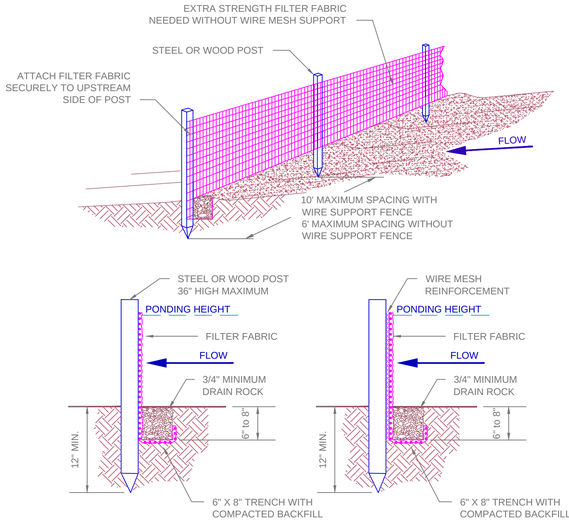


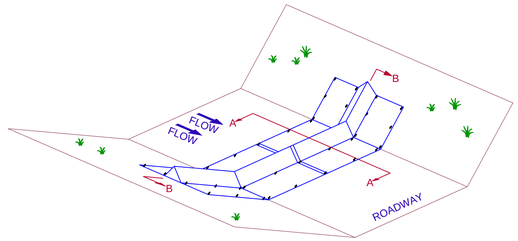
TRENCH DETAIL

WIRE BACK SILT FENCE

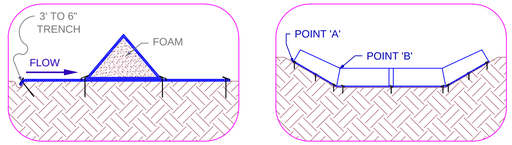
NOTES:

1. MUST BE INSTALLED PROPERLY TO AVOID NOTICE OF VIOLATION.
2. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE POUNDING EFFICIENCY.
3. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. ACCUMULATED SEDIMENT SHOULD BE REMOVED FROM THE FENCE BASE WHEN THE SEDIMENT REACHES ONE-THIRD TO ONE-HALF THE FENCE HEIGHT.
4. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

SILT FENCE



SILT DAM UNIT
CUT SECTION



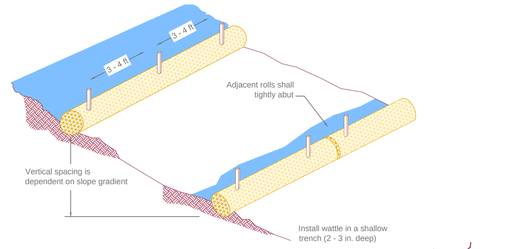
DETAIL A--A

DETAIL B--B

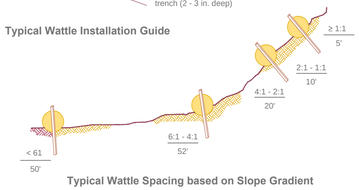
NOTES:

1. STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTERS OF THE 7' UNIT AS SHOWN IN DETAILS.
2. POINT 'A' MUST BE HIGHER THAN POINT 'B' TO ENSURE THAT THE WATER FLOWS OVER THE DAM AND NOT AROUND THE ENDS.

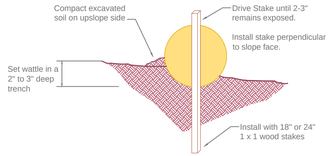
TRIANGULAR SILT DIKES



Typical Wattle Installation Guide



Typical Wattle Spacing based on Slope Gradient

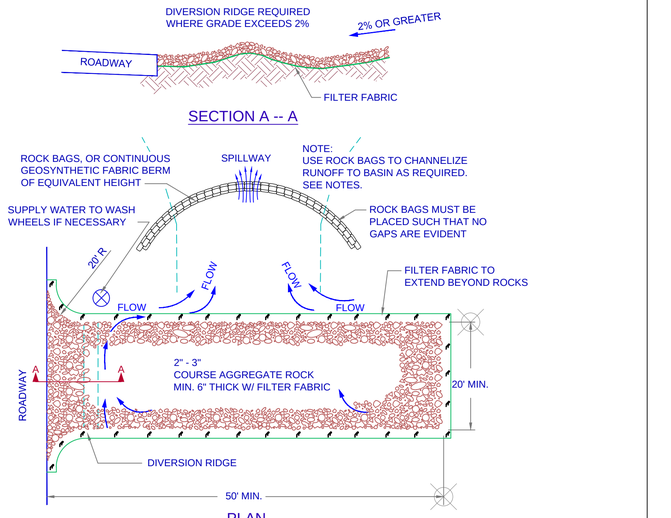


Enrichment Detail

NOTES:

1. Begin at the location where the wattle is to be installed by excavating a 2 - 3" deep x 9" wide trench along the contour of the slope. Excavated soil should be placed up-slope from the anchor trench.
2. Place the wattle in the trench so that it contours to the soil surface. Compact the soil from the excavated trench against the wattle on the uphill side. Adjacent wattles should tightly abut.
3. Secure the wattle with 18 - 24" stakes every 3 - 4' With a stake on each end. Stakes should be driven through the middle of the wattles leaving at least e - 3" of stake extending above, the wattle stakes should be driven perpendicular to slope face.

STRAW WATTLE INSTALLATION



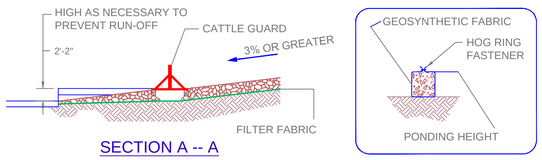
SECTION A -- A

PLAN

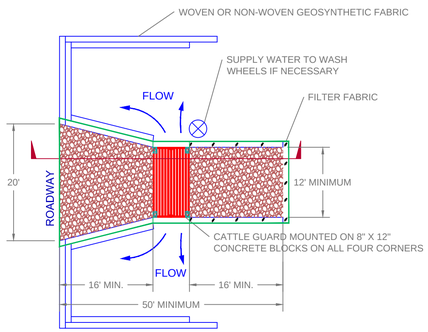
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. BAGS OF WOVEN GEOTEXTILE FABRIC, FILLED WITH GRAVEL MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.

TEMPORARY ROCK CONSTRUCTION ENTERANCE / EXIT



SECTION A -- A



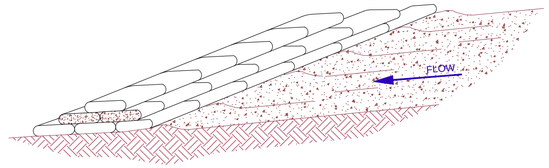
PLAN

NOTES:

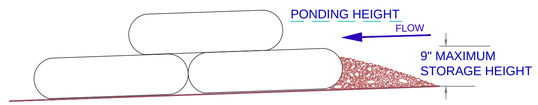
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE A MOUNTED CATTLE GUARD AND SEDIMENT PONDS TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

3 WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON THE CATTLE GUARD. FIRST WASH ONE SET OF TIRES THEN, MOVE FORWARD TO WASH THE SECOND SET OF TIRES. THE GUARD IS TO BE MOUNTED ON 8" X 12" CEMENT BLOCK ON AN AREA OF STABILIZED CRUSHED STONE WITH A DRAIN INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN ON BOTH SIDES.

TEMPORARY ROCK CONSTRUCTION ENTERANCE / EXIT - STEEP GRADES



SANDBAG BARRIER



ROCK BAG DETAIL

NOTES:

1. A 'REASONABLE' DESIGN SIZE PARTICLE MUST BE SELECTED.
2. SIZE DISTRIBUTION OR UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
3. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
4. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF THE SYSTEM.
5. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
6. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN PARTICLES.
7. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
8. ROCK BAG SILT BARRIER SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE POUNDING EFFICIENCY.
9. PLACE ROCK BAG SUCH THAT NO GAPS ARE EVIDENT.
10. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
11. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

ROCK BAG SILT FENCE

The City of Oklahoma City
Public Works Department
Engineering Division

APPROVED BY: ERIC J. WENGER, P.E.
CITY ENGINEER
DATE: 03-28-13

DRAWN: VSC

DATE: 03-28-13

STORM WATER QUALITY EROSION CONTROL DRAWINGS

Drawing Number

ERO-D1

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