



IN: 166.53'
OUT: 164.05'

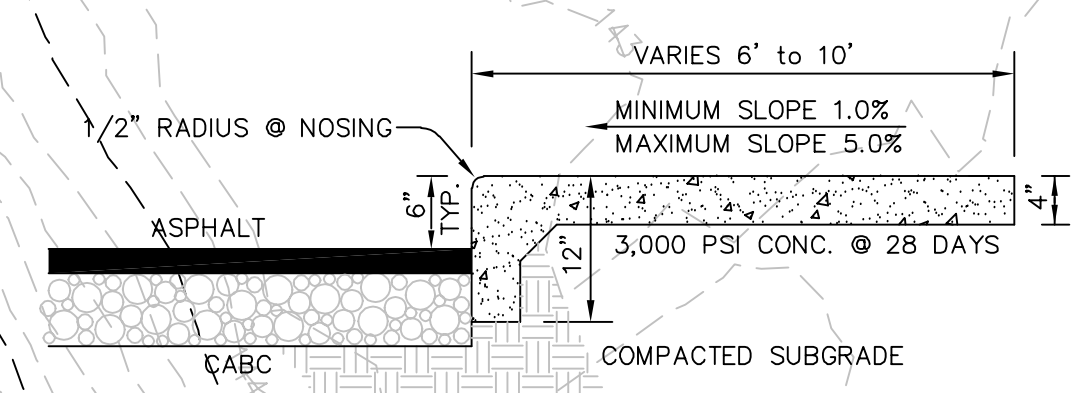
30" RCP
OUT: 182.4'

EX. S.S. M.H.
RIM: 185.50'
IN: 177.52'
OUT: 174.90'

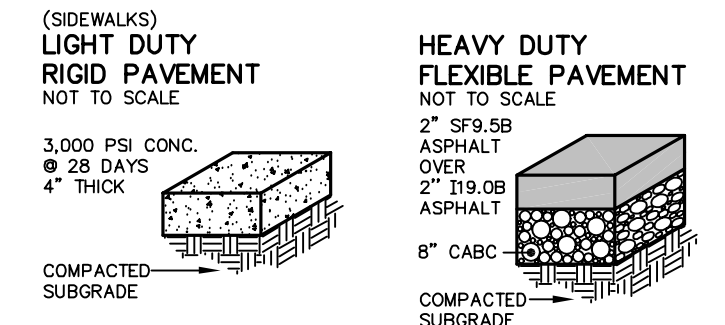
N/F
MID ATLANTIC WAREHOUSE & STORAGE, LLC
PIN: 380117000234
PARID: 033992
DB 2083 PG 349

N/F
TOWN OF NASHVILLE
PIN: 380117005333
PARID: 033993
DB 2426 PG 762
PB 35 PG 132
8.16 ACRES +/-

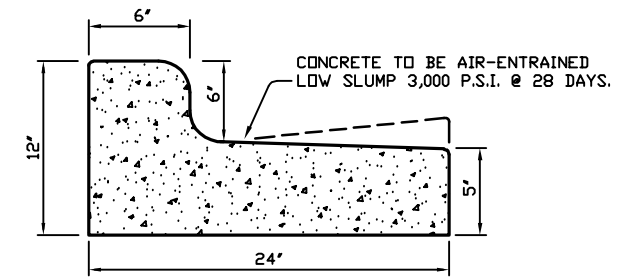
40,000 S.F.
FFE 189.00



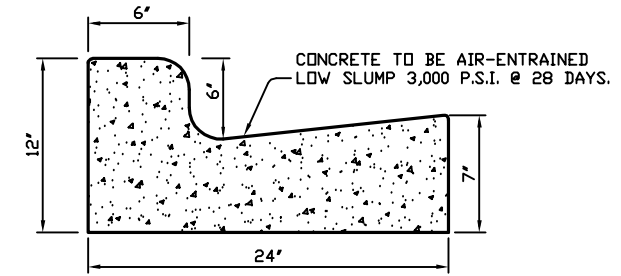
TURNDOWN SIDEWALK DETAIL
NOT TO SCALE



HEAVY DUTY FLEXIBLE PAVEMENT
NOT TO SCALE
LIGHT DUTY FLEXIBLE PAVEMENT
NOT TO SCALE

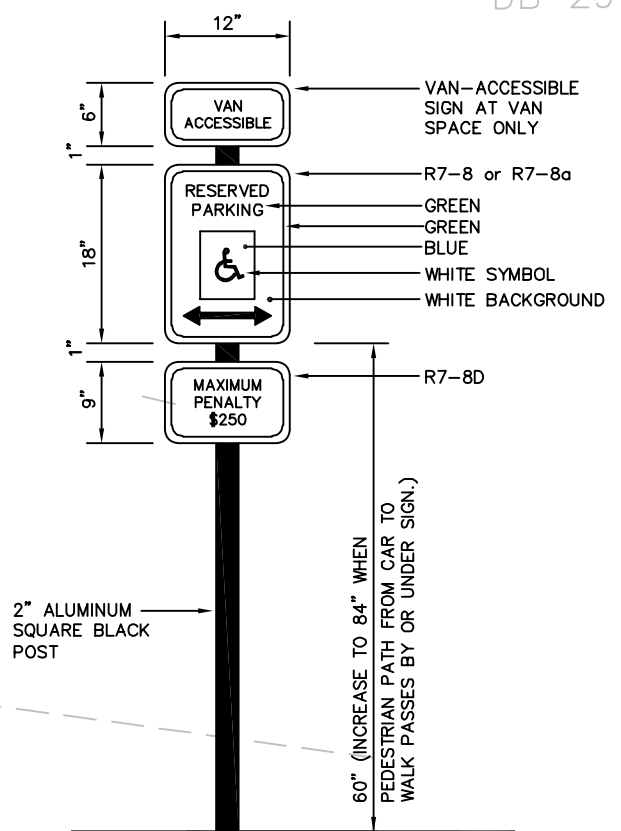


SPILL LIP



STANDARD 24" CURB and GUTTER
NOT TO SCALE

N/F
TOWN OF NASHVILLE
PIN: 380005199864
PARID: 005851
DB 2915 PG 623

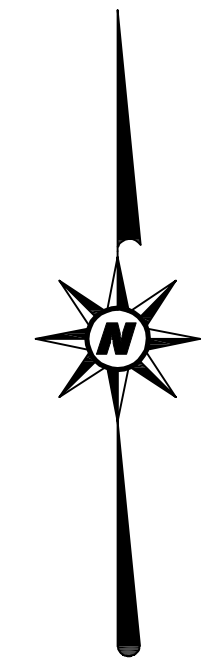


R7-8 HANDICAP SIGN

N/F
FARMER
PIN: 380117009182
PARID: 002880
DB 2147 PG 1

N/F
WARD
PIN: 380117009083
PARID: 003852
DB 2960 PG 76

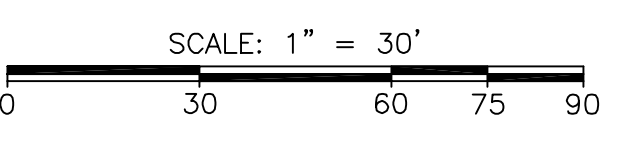
N/F
COLLINS
PIN: 380005099984
PARID: 002472
DB 1164 PG 543



CURB INLET
RIM: 188.44'
IN: 183.55'
OUT: 183.14'

SSMH
RIM: 189.08
IN: 180.77'
OUT: 180.73'
RIM: 190.32'
OUT: 181.92'

STORM MANHOLE
RIM: 192.93'
BOTTOM: 184.87'
RECESSED BOX,
UNKNOWN
INFORMATION



MANY ARE THE PLANS IN A PERSONS HEART, BUT IT IS THE LORD'S PURPOSE THAT PREVAILS. PROVERBS 19:21

STOCKS ENGINEERING
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BLN-C-1874

NASHVILLE INDUSTRIAL SHELL #1
NASHVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 19843
ENGINEER
MICHAEL STOCKS
Michael Stocks
10/32/2023

SITE and UTILITY PLAN

REVISIONS

FILE NO. 2021-089
HORZ. SCALE: 1"=30'
VERT. SCALE: NONE

CE-02

EROSION AND SEDIMENTATION CONTROL NARRATIVE

PROJECT DESCRIPTION
The purpose of this project is to clear and grub the lots. The project is owned by the Town of Nashville. The site is currently undeveloped. Approximately 11.37 acres will be disturbed during construction.

The project is scheduled to begin construction in Winter 2021 with project completion and final stabilization by Spring 2022. The erosion and sediment control program for this project will include the installation of a suitable construction entrance, silt fence, outlet protection, inlet protection, skimmer sediment basin, temporary and permanent seeding of the site.

ADJACENT PROPERTY
The adjacent property is Industrial to the west, Agricultural and Residential properties to the east, and undeveloped to the north.

SOILS
The soil at this site is a sandy clay.

EROSION AND SEDIMENT CONTROL MEASURES
All vegetative and structural erosion and sediment control practices shall be constructed and maintained by the contractor according to these plans and specifications and the minimum standards of the Dept. of Environmental Management, Land Quality Section and Johnston County. The contractor shall also follow any additional requirements as outlined by the Project Engineer.

- Structural Practices**
1. Vehicle wheels shall be clean when leaving the site to prevent the tracking of mud on paved roads.
 2. Construction Road Stabilization: Construction traffic shall be limited to stabilized areas. At a minimum, a temporary gravel construction entrance shall be provided as shown on this drawing.
 3. Silt Fence: Silt fences shall be provided where shown and as needed on the site plan. These barriers shall be used to contain sediment.
 4. Rip Rap/Gravel Filter Sediment Basins: Construct basin to the shape and dimensions shown in the details. The basin is to be placed below the existing ditch flow line by 2' with the berm built above as dimensioned.

- Management Strategies**
1. Perimeter measures are to be installed prior to grubbing or grading.
 2. Tail Ditches shall be stabilized immediately following their construction. As an alternate, rock check dams may be provided at their outlets and/or the terminal downstream end of disturbance until ground cover is implemented.
 3. Stockpile and/or waste areas must be maintained within the limits of the areas protected by the proposed measures and otherwise temporarily seeded if to be left stockpiled over 15 calendar days.
 4. Construction shall be planned so that grading operations can begin and end as quickly as possible.
 5. Silt Fences shall also be installed prior to or as a first step in construction.
 6. The Contractor shall be responsible for the installation and maintenance of all erosion and sediment control practices.

Vegetative Ground Cover
Immediately following grading, all areas shall receive either permanent or temporary seeding, as applicable, as follows:

Site Area Description:	Stabilization Time Frame:	Stabilization Time Frame Exceptions:
Perimeter dikes, swales, ditches & slopes.	7 Days	None
High Quality Water (HOW) Zones.	7 Days	None
Slope steeper than 3:1	7 Days	If slopes are 10' or less in length & are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter.	14 Days	7 Days for slopes greater than 50 feet in length.
All other areas with slopes flatter than 4:1	14 Days	None (Except for perimeters and HOW Zones)

PERMANENT SEEDING SPECIFICATIONS

SEEDING MIXTURE	RATE (LB/ACRE)
SPECIES TALL FESCUE PREMIUM BERMUDA	200 60

NURSE PLANTS
BETWEEN APR. 15 AND AUG. 15, ADD 10 LB/ACRE GERMAN MILLET OR 15 LB/ACRE SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15 ADD 25 LB/ACRE RYE (GRAIN).

SEEDING DATES

	BEST	POSSIBLE
EARLY SPRING:	FEB. 15-MAR. 20	FEB. 15-APR. 30
FALL:	SEPT. 1-SEPT. 30	SEPT. 1-OCT. 31

SOIL AMENDMENTS
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST. IF SANDY SOILS APPLY AGRICULTURAL GRADE LIME AT A RATE OF 2 TONS/ACRE. IF CLAY SOILS APPLY AGRICULTURAL GRADE LIME AT 3 TONS/ACRE. IF SOIL TEST IS NOT AVAILABLE APPLY 1,000 LBS/ACRE OF 10-10-10 FERTILIZER.
MULCH
APPLY 4,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT AT 400 GALLONS/ACRE, OR NETTING, OR ROVING.

MAINTENANCE
IF GROWTH IS LESS THAN FULLY ADEQUATE, REFERTILIZE, ACCORDING TO SOIL TESTS OR TOPDRESS WITH 500 LB/ACRE 10-10-10 FERTILIZER. MOW AS NEEDED. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

- Maintenance**
1. Reseed and mulch bare spots larger than 9 square feet (limited to 5% maximum of site area).
 2. Maintain all seeded areas until vegetation is acceptable.
 3. If growth is not established by final project inspection, continue specified attention until the stand is acceptable.
 4. Correct and repair all undue settling and erosion within 1 year after final inspection.
 5. Remove from the site, all erosion control structures after complete stabilization at end of construction period.
 6. Remove silt from sediment pits and from behind check dams when silt is within half depth of the pit or spillway. Dispose of in an area where silt cannot re-enter pit / trap.

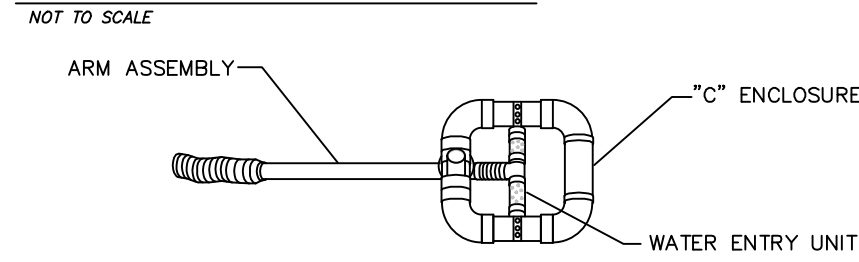
Calculations
The practice utilized for the proposed site did require formal calculations. Calculations have been provided.

CONSTRUCTION SEQUENCE

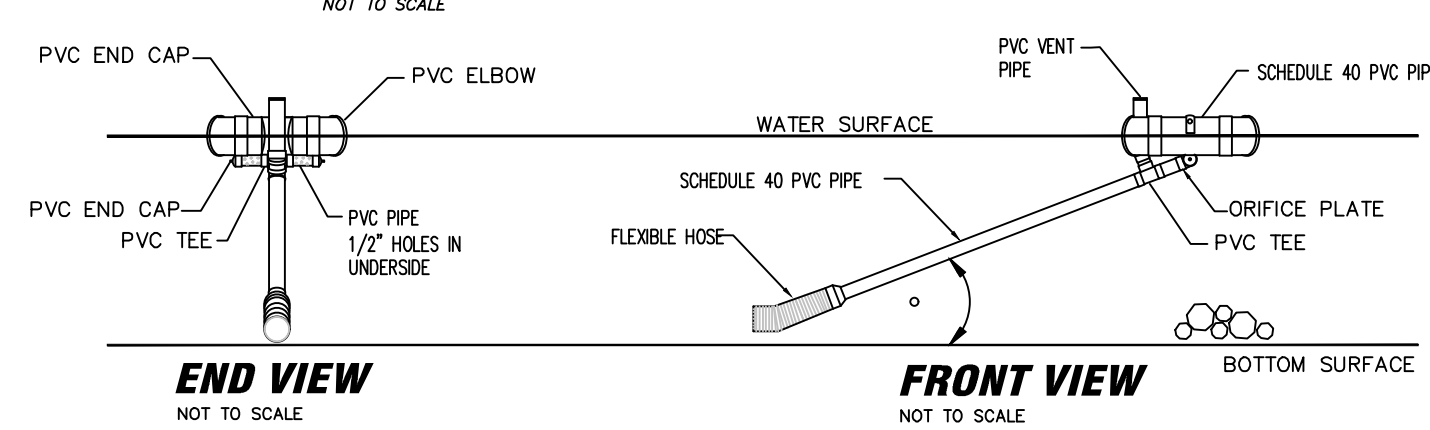
1. Erosion and Sediment Control (E&SC) permit and a Certificate of Coverage (COC) must be obtained before any land disturbing activities (including timbering and demolition) occur. Retain a copy of the approved erosion control plan and permit onsite in a permit box that is accessible at all times for inspections. Contact DEMLR Raleigh Regional Office 48 hours prior to commencing the land disturbing activity. The contact number is (919)-791-4200.
2. A Pre-construction conference is to be scheduled with DEMLR Raleigh Regional Office 919-791-4200, at least 48 hours prior to commencing land disturbing activity.
3. Construct the construction entrance as shown on the plans. Maintain the construction entrance daily to ensure that mud and silt will not be tracked onto paved surfaces. If mud is tracked onto any paved surface, it is to be removed immediately.
4. Construct all perimeter erosion control measures to contain sediment on-site. Construct the silt fence, inlet protection, temporary diversion and sediment basins as shown. Permanently seed all areas that will not be disturbed during construction. Ditches will be lined to the top of the bank. All Cut and Fill slopes will be tracked.
5. Begin clearing, grubbing, and topsoil stripping and stripping of topsoil.
6. Seed, straw, and tack all areas that are graded to their final disposition.
7. Maintain erosion control measures daily and reseed disturbed areas as needed.
8. Inspect all erosion control devices weekly and after each rainfall event. Repair as needed.
9. After the site is completely stabilized and the Project Engineer has certified completion and stabilization, contact DEMLR Raleigh Regional Office @ 919-791-4200 for approval to remove all temporary erosion control devices.
10. Permanently Seed/Sod all disturbed areas.
11. Dewatering of the project is to be done through the a silt bag with floating intake that is constantly monitored when in use.
12. When the project is complete, the permittee shall contact DEMLR to close out the E&SC Plan.

OWNER:
TOWN OF NASHVILLE
499 S BARNES STREET
NASHVILLE, N.C. 27856
CONTACT: RANDY LANSING
PHONE: (252) 459-4511

SKIMMER SEDIMENT BASIN

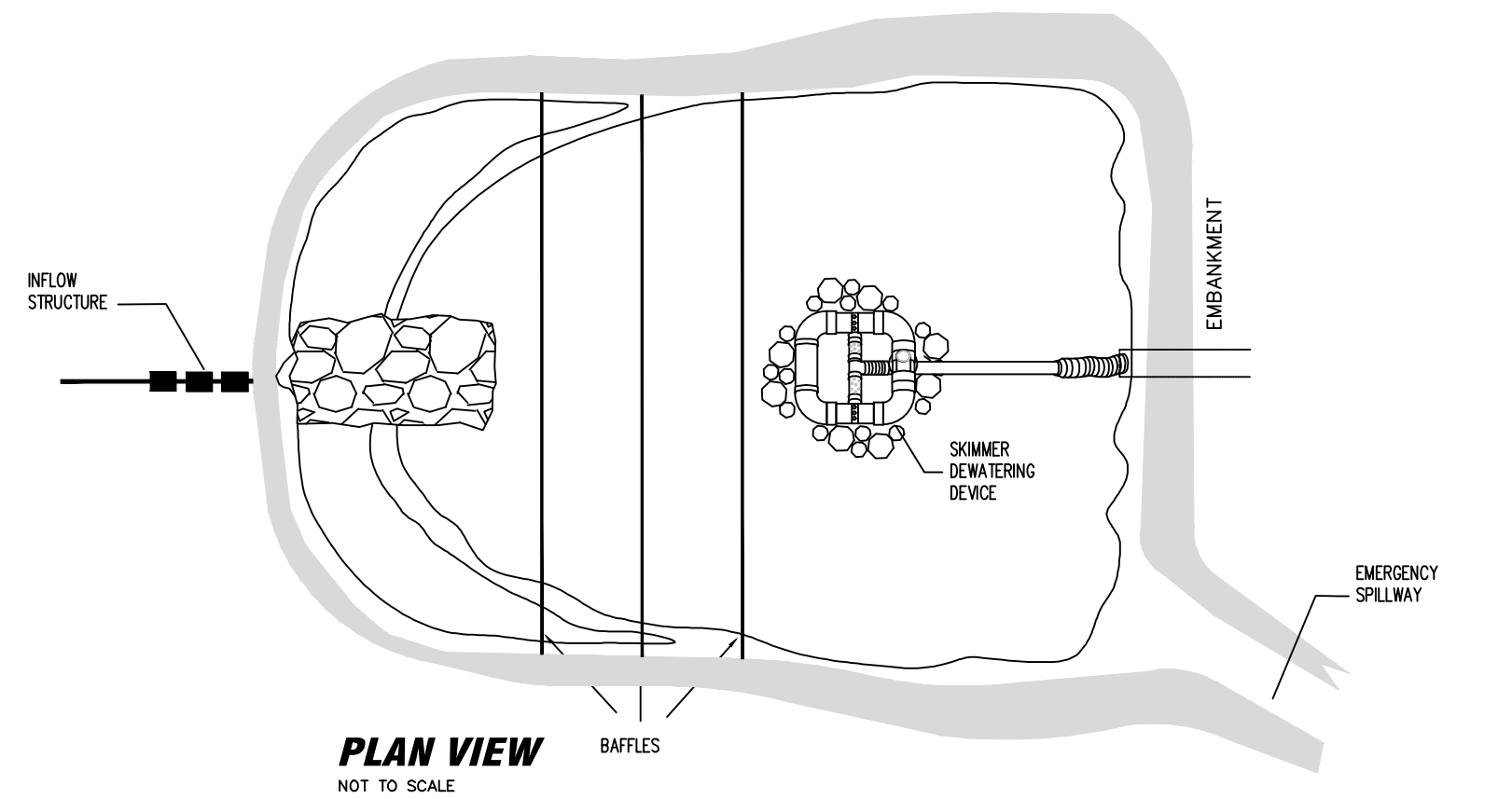


PERSPECTIVE VIEW

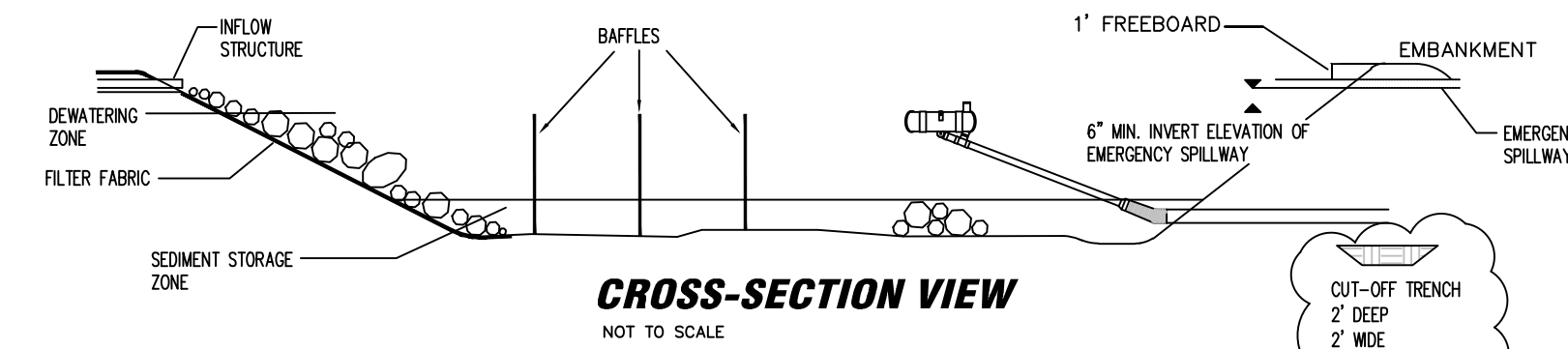


END VIEW

FRONT VIEW



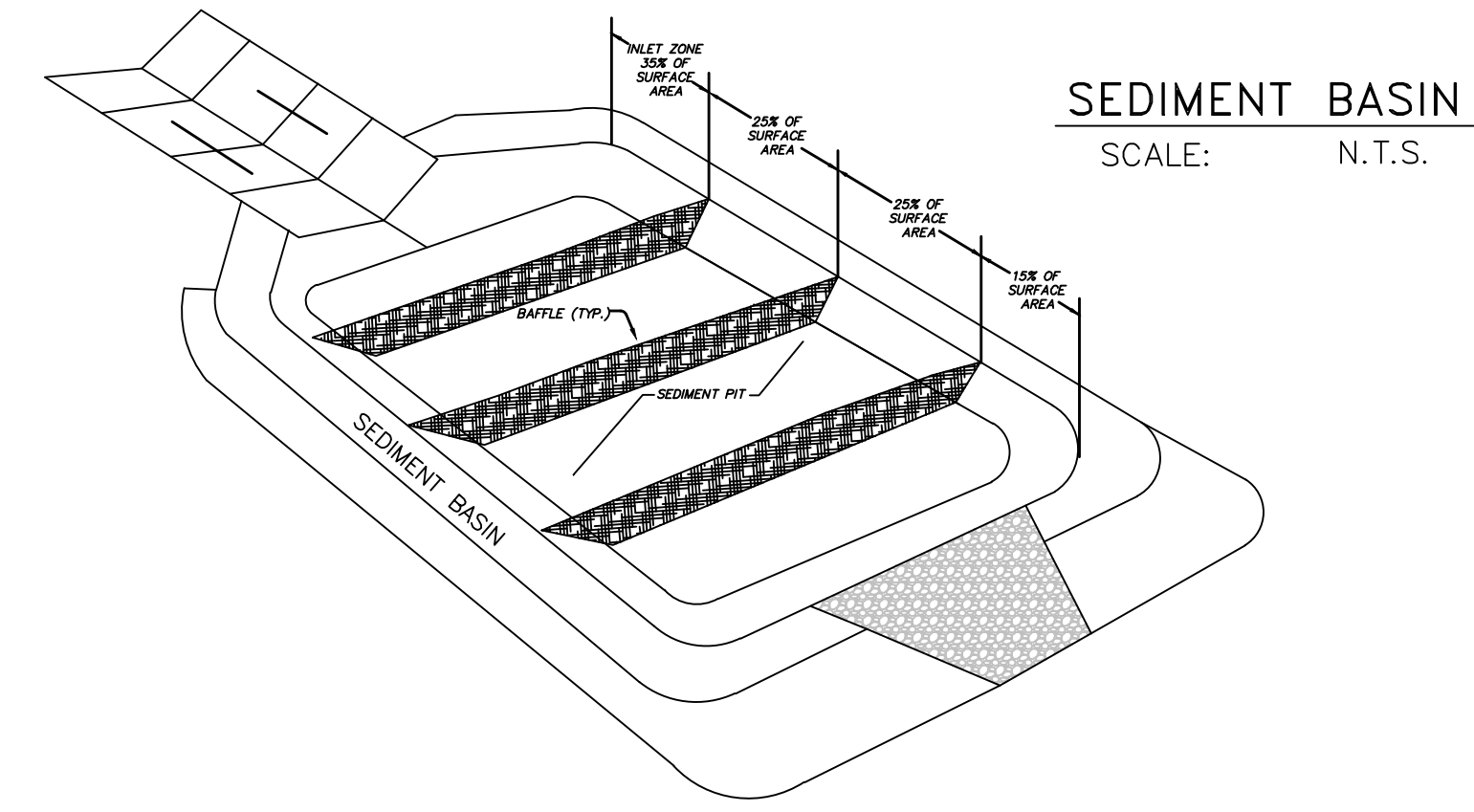
PLAN VIEW



CROSS-SECTION VIEW

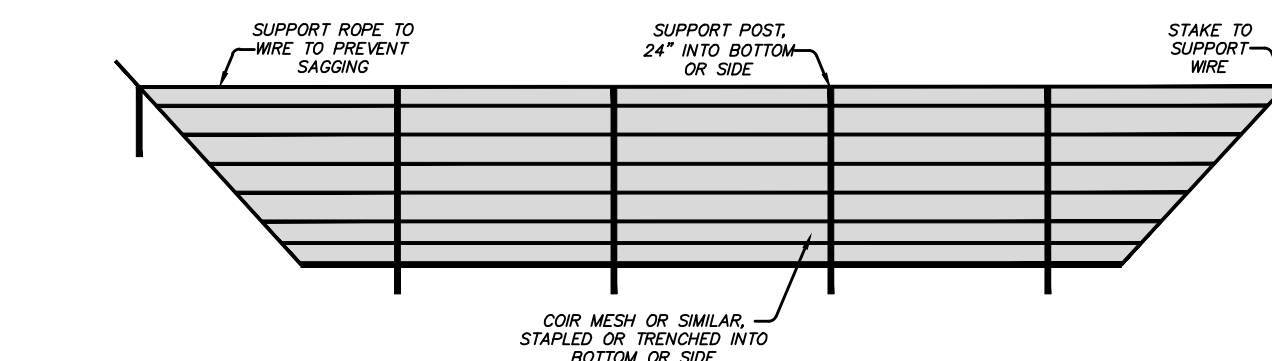
GENERAL NOTES:

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.
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
Excavate a keyway trench along the centerline of the spillway foundation extending up the sides to the height of the dam. The trench should be at least 2 ft. deep and 2 ft. wide with 1:1 side slopes.
4. Clear the pond area below the elevation of the crest of the spillway to facilitate sediment cleanout.
5. All cut and fill slopes should be 2:1 or flatter.
6. Ensure that the stone (drainage) section of the embankment has a minimum bottom width of 3 ft. and a 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 a well-graded mixture of stone with a d 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.



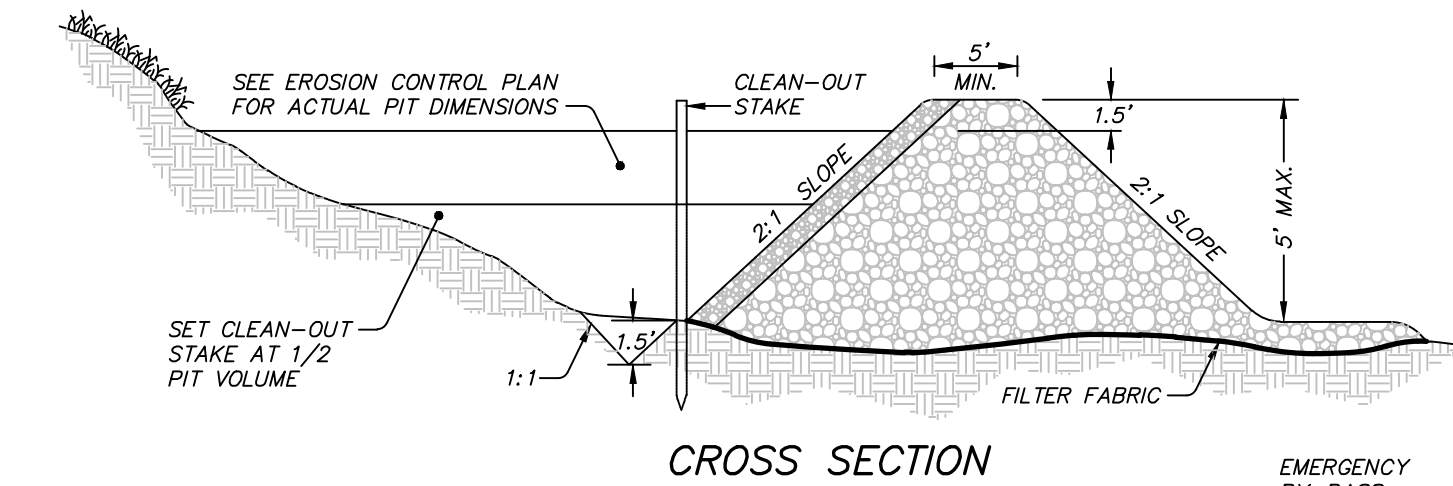
SEDIMENT BASIN

SCALE: N.T.S.

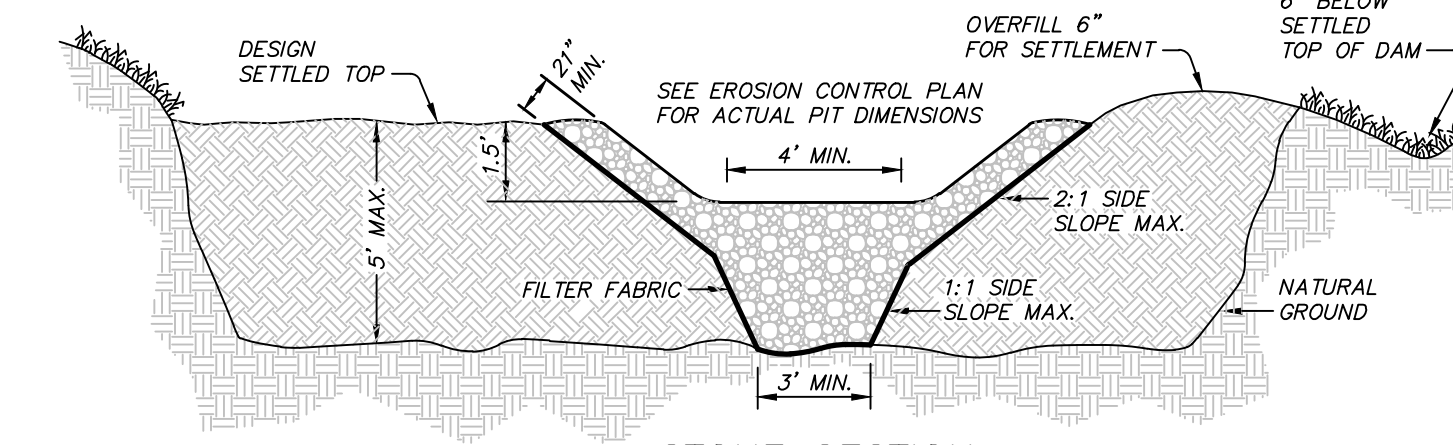


SED BASIN BAFFLES

SCALE: N.T.S.



CROSS SECTION



STONE SECTION

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 coil. 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.

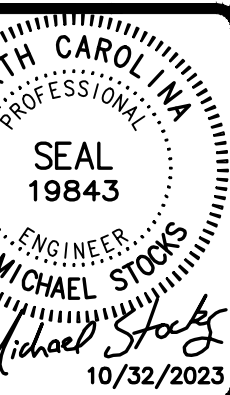
If the skimmer is clogged with trash and there is water in the basin, usually jerking on the rope will make the skimmer bob up and down and dislodge the debris and restore flow. If this does not work, pull the skimmer over to the side of the basin and remove the debris. Also check the orifice inside 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.

NASHVILLE INDUSTRIAL SHELL #1
NASHVILLE, NORTH CAROLINA



EROSION DETAILS

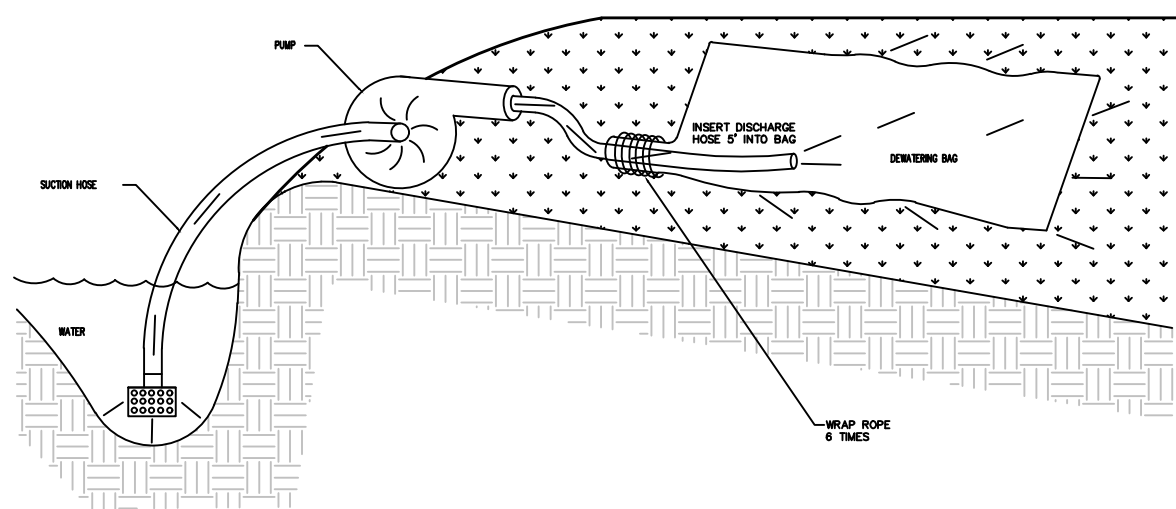
REVISIONS

FILE NO. 2021-089
HORZ. SCALE: 1"=30'
VERT. SCALE: NONE

D-01

STOCKS ENGINEERING
P.O. BOX 1108
801 EAST WASHINGTON STREET
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PHONE: (252) 459-8196
WWW.STOCKSENGINEERING.COM

BLN-C-1874



Installation and Use:

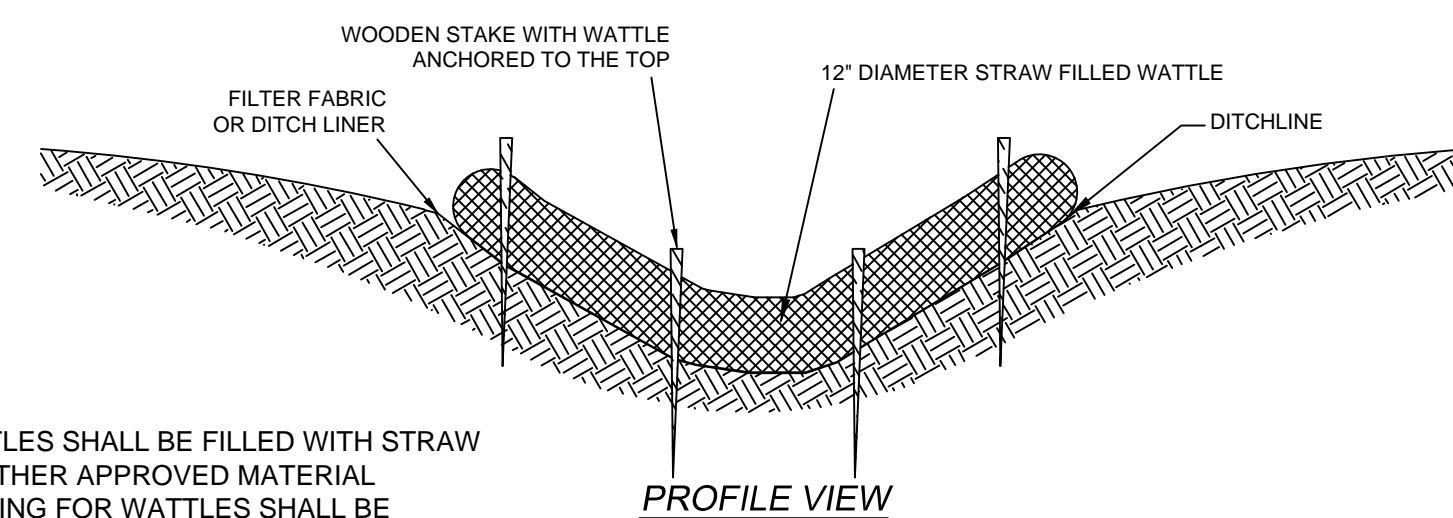
1. Place Dewatering Bag on the ground or on a trailer over a relatively level, stabilized area.
2. Insert discharge pipe a minimum of 5ft. inside dewatering bag and secure with a rope wrapped 6 times around the snout over a 6 inch width of the bag.
3. Replace Dewatering Bag when half full of sediment or when the sediment has reduced the flow rate of the pump discharge to an impractical amount.

Maintenance and Disposal:

1. Remove and dispose of accumulated sediment away from waterways or environmentally sensitive areas. Slit open Sediment Bag and remove accumulated sediment. Dispose of bag at an appropriate recycling or solid waste facility. OR; as directed by engineer or inspector.

DEWATERING BAG

SCALE: N.T.S.



NOTES:

1. WATTLES SHALL BE FILLED WITH STRAW OR OTHER APPROVED MATERIAL. SPACING FOR WATTLES SHALL BE DETERMINED BY THE SITE ENGINEER.
2. WATTLES MAY BE USED FOR PROTECTION OF CATCH BASINS AND DROP INLETS WITH APPROVAL BY THE ENGINEER.

NCDOT WATTLE

NOT TO SCALE

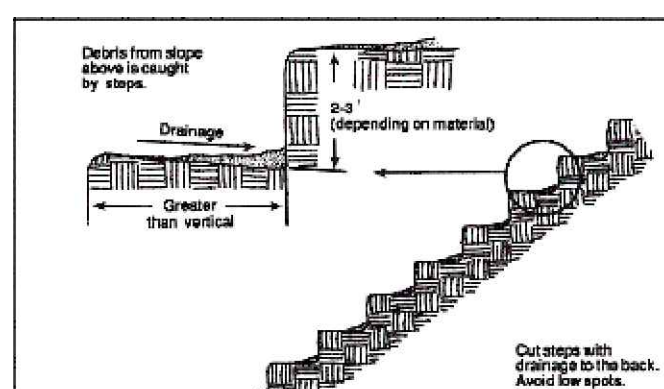
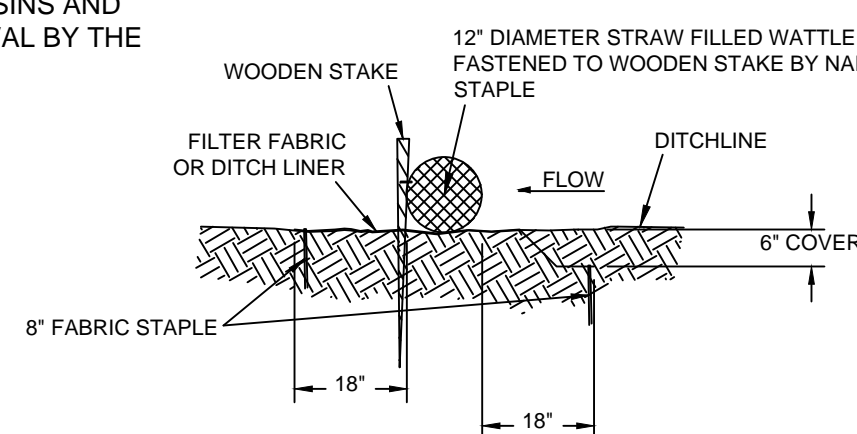


Figure 6.10a Slope tracking and steps (modified from Va. DMRC)

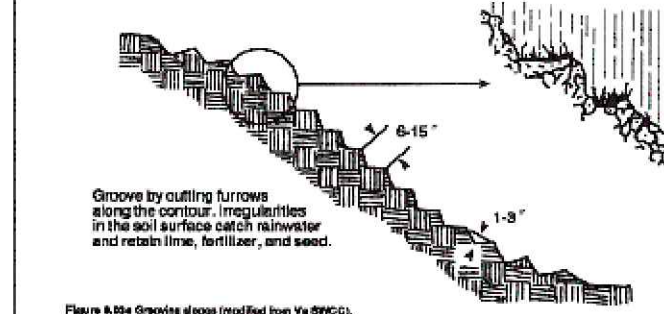
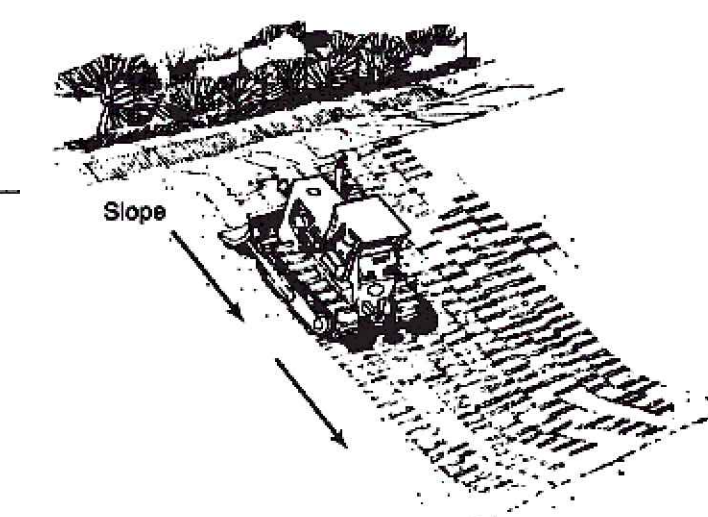


Figure 6.10b Grading detail (modified from Va. DMRC)



CONSTRUCTION SPECIFICATIONS:

- Fill Slope**
1. Star-step grade or groove cut slopes with a gradient steeper than 3:1. Grooving uses machinery to create a series of ridges and depressions that run across the slope (as the contour). Groove using any appropriate implement that can be safely operated on the slope, such as disks, flippers, spring hoes, or the teeth on a front-end loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.
 2. Use star-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to star-step grading.
 3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal portion of the 'step' in toward the vertical wall.
 4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.

Cut Slope

1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

MAINTENANCE:

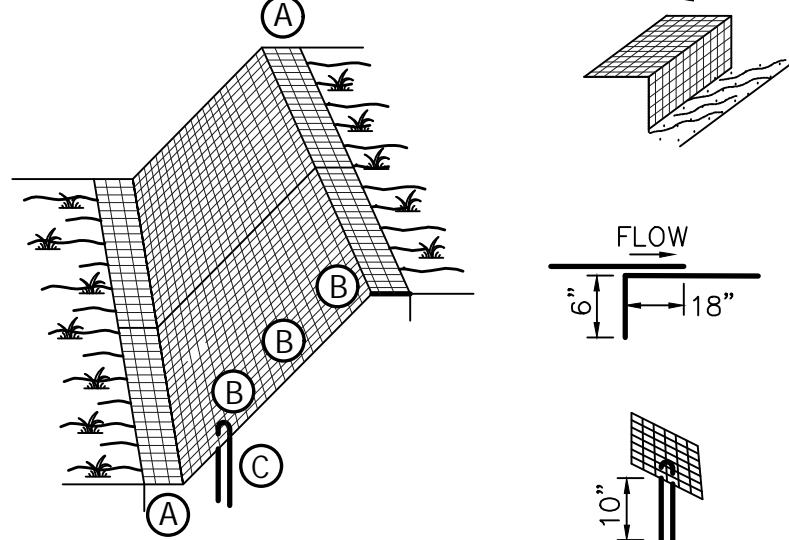
Periodically check the seeded slopes for rills and washes. Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.

SLOPE TRACKING

SCALE: N.T.S.

EXCELSIOR MATTING

NOT TO SCALE



- (A) TURNDOWN NETTING
MINIMUM BURY 6" AND STAPLE EVERY 1 FT, JUST BELOW ANCHOR SLOT.
- (B) OVERLAP NETTING
MINIMUM OVERLAP 18" AND STAPLING EVERY 1 FT THROUGH BOTH LAYERS.
- (C) TYPICAL STAPLE
USE #6 GAUGE WIRE

GENERAL NOTES:

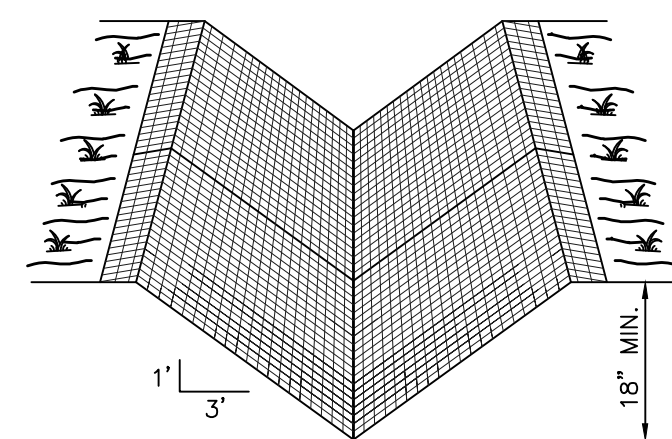
1. APPLY SEED, AND TACK WITH RS OR CRS LIQUID EMULSIFIED ASPHALT AT A RATE EQUAL TO 10 GAL. PER 1000 S.F. COVER W/EXCELSIOR MATTING.
2. STAPLE EVERY 24" ALONG PERIMETER EDGES AND OVERLAPS. STAPLE EVERY 36" TO 48" RANDOMLY TO SECURE NETTING.
3. ROLL OUT NETTING IN THE DIRECTION OF WATER FLOW. DO NOT STRETCH.
4. TYPE NAG 0575 OR EQUAL.

Maintenance

1. Inspect Rolled Erosion Control Products at least weekly and after each significant (1/2 inch or greater) rain fall event repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and the eroded area protected.
5. Monitor and repair the RECP as necessary until ground cover is established.

DRAINAGE CHANNEL

NOT TO SCALE

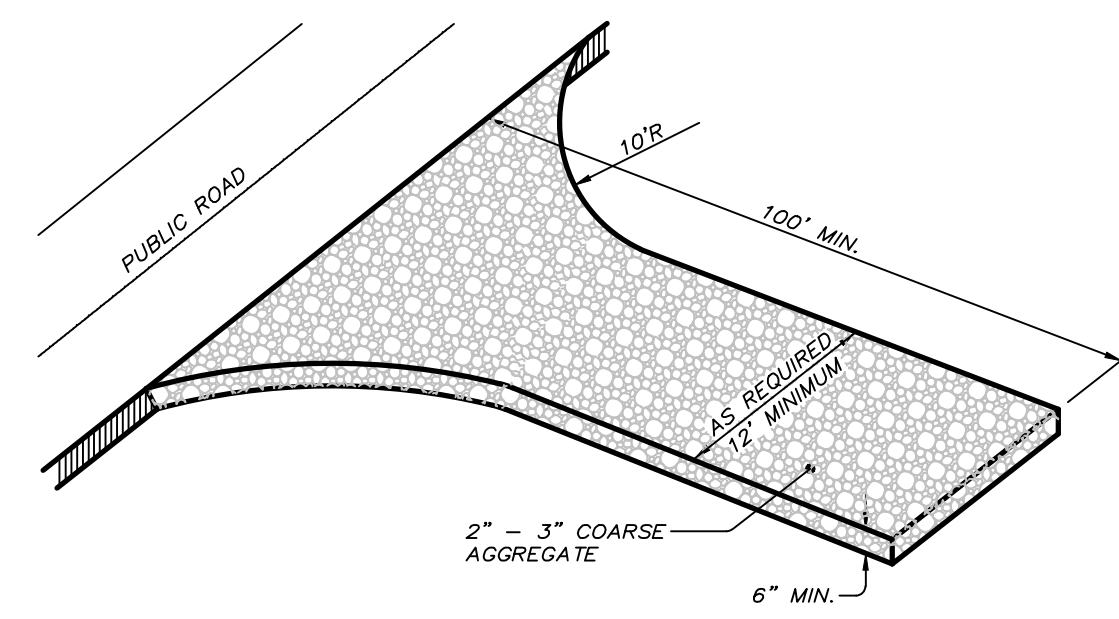


GENERAL NOTES:

1. SIDE SLOPES TO BE 3:1 OR GREATER.
2. DEPTH TO BE 18" MINIMUM. SEE GRADING PLAN FOR INDIVIDUAL CHANNEL SLOPE AND DEPTH SPECIFICATIONS.
3. AFTER INSTALLING, APPLY SEED, AND TACK WITH RS OR CRS LIQUID EMULSIFIED ASPHALT AT A RATE EQUAL TO 10 GAL. PER 1000 S.F. COVER W/EXCELSIOR MATTING. SEE EXCELSIOR MATTING DETAIL.

CONSTRUCTION ENTRANCE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

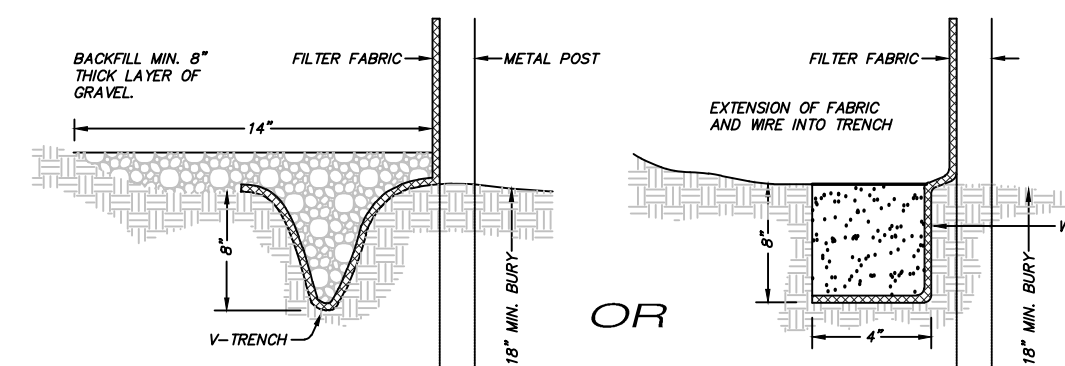
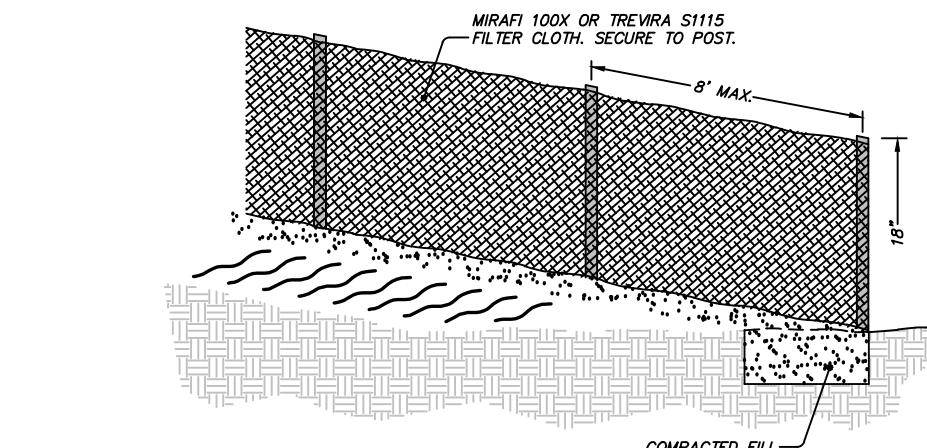
1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE 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 TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

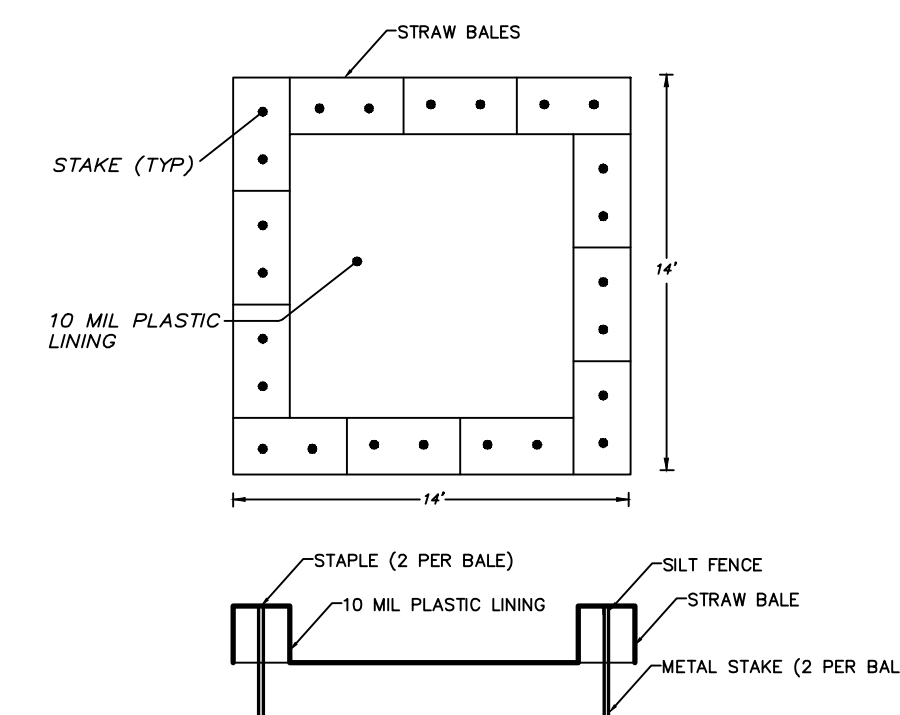
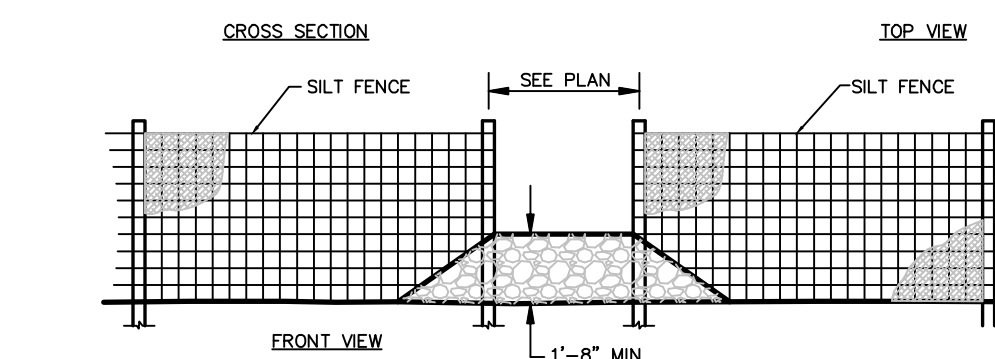
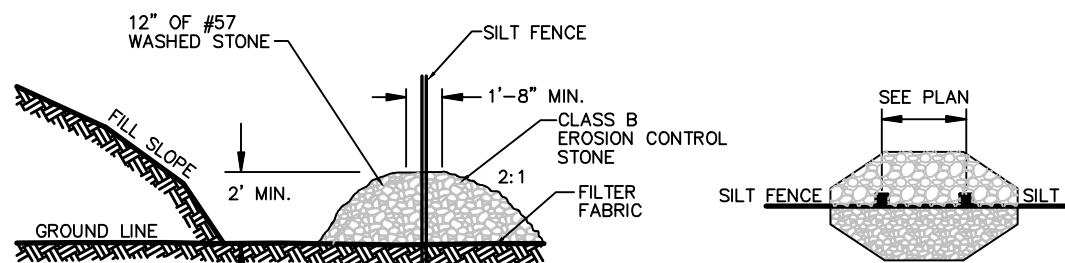
SILT FENCE

NOT TO SCALE



SILT FENCE OUTLET

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. CONCRETE WASHOUT SIGN SHALL BE INSTALLED NO FURTHER THAN 25' FROM THE FACILITY AND SHALL BE VISIBLE TO ALL CONSTRUCTION TRAFFIC.
2. POLYETHYLENE SHEETING SHALL BE 10 MILS FREE OF HOLES, TEARS, OR LEAKS.

MAINTENANCE:

FACILITY SHALL NOT BE FILLED MORE THAN 12" FROM THE TOP BEFORE DISPOSING OF CONCRETE. CONCRETE SHALL BE DISPOSED OF IN THE SAME MANNER AS OTHER NON-HAZARDOUS MATERIALS FROM THE SITE OR MAY BE BROKEN UP AND USED AS FILL IN NON-STRUCTURAL AREAS.

CONCRETE TRUCK WASHOUT

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE)
3. 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 CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH TO GRADE. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT, THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE:

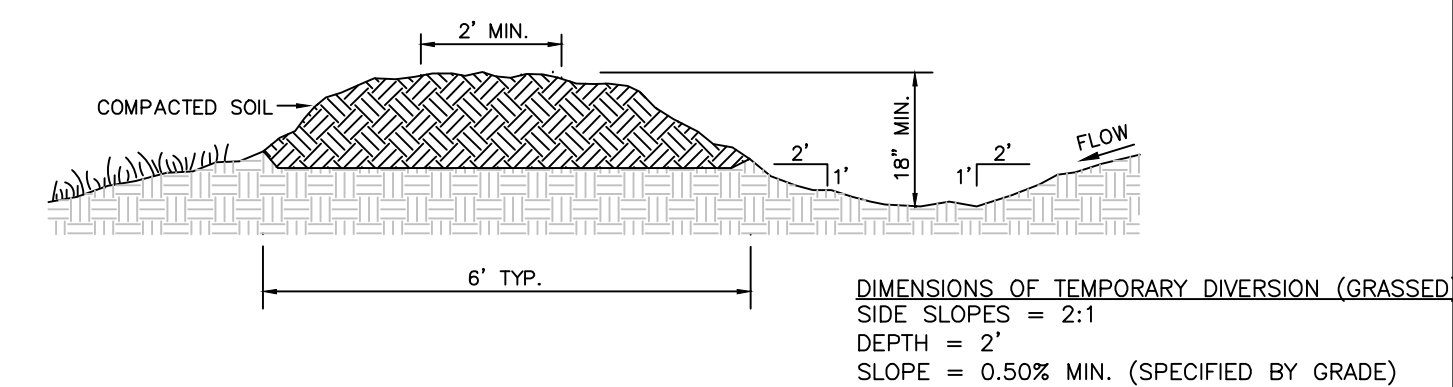
INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

CONSTRUCTION SPECS:

1. CLEAR & GRUB THE AREA AROUND THE SILT FENCE OUTLET AND PROPERLY DISPOSE OF DEBRIS.
2. PLACE GRAVEL TO THE SPECIFIC GRADE AS SHOWN PIER THE DETAIL.
3. PROPERLY OVERLAP STONE BEYOND EDGES OF SILT FENCE OPENING.

MAINTENANCE:

INSPECT OUTLETS WEEKLY AND AFTER EACH RAIN EVENT. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR AS NEEDED. CAREFULLY CHECK OUTLETS FOR EROSION AND REPAIR IMMEDIATELY. ENSURE THERE IS NO SCOURING APPARENT DOWNSTREAM OF OUTLET. IMMEDIATELY STABILIZE ANY AREAS THAT NEED REPAIR.



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 THAN 30 WORKING DAYS.

MAINTENANCE:

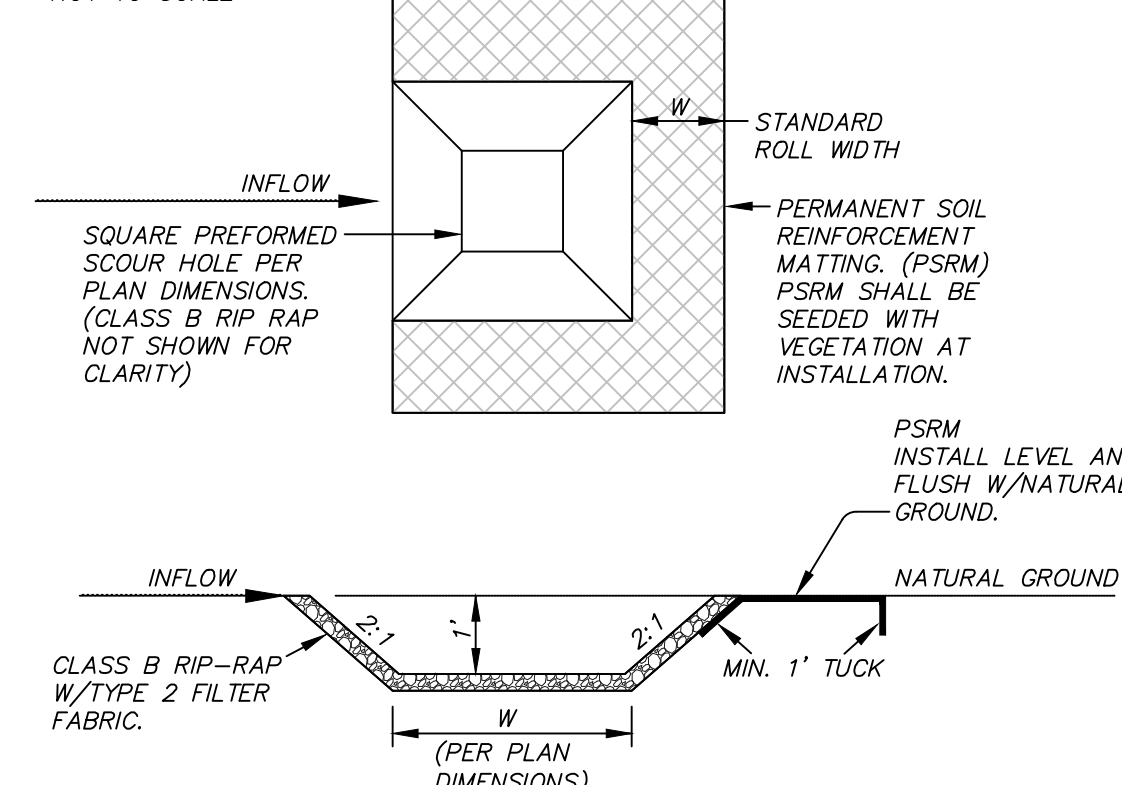
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH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

TEMPORARY DIVERSION

NOT TO SCALE

PRE-FORMED SCOUR HOLE DETAIL

NOT TO SCALE



PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- (a) This General Permit as well as the Certificate of Coverage, after it is received.
- (b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- (c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (d) Anticipated bypasses and unanticipated bypasses.
- (e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- (a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- (b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- (c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- (d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- (f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

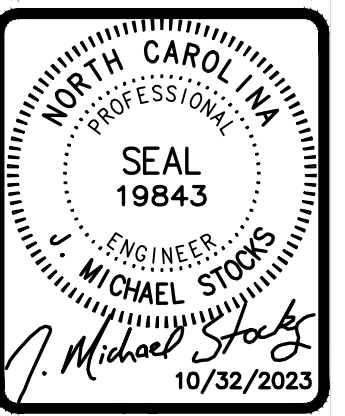
NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19



BLN-C-1874

NASHVILLE INDUSTRIAL SHELL #1
NASHVILLE, NORTH CAROLINA



NCG01
DETAILS

REVISIONS

FILE NO.: 2021-089
HORZ. SCALE: 1"=30'
VERT. SCALE: NONE

D-03

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Rolled erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

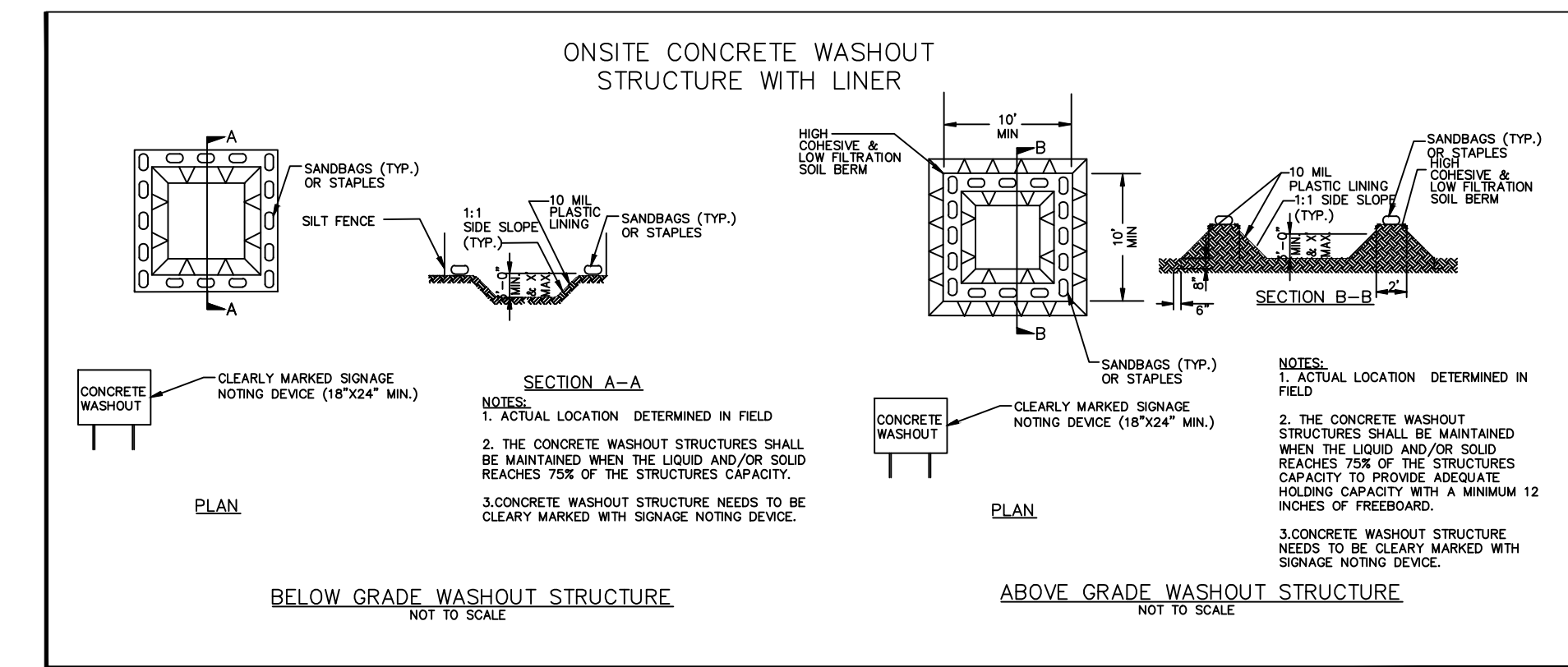
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

Asphalt Paving

- The Contractor or Subcontractor performing the paving operation will be responsible for performing the following:

A. Surface Tolerance

Surface tolerance requirements for smoothness must be checked in the presence of an Inspector using a "Rolling Straightedge" for checking surface tolerance. A variation of more than 1/8" in 10 feet will be considered unacceptable and must be corrected in an acceptable manner which will also meet Item (B and H) below.

B. Surface Texture

Care shall be taken to insure that a smooth dense texture is achieved with no segregation, tearing, cracking, etc. Areas discovered which are not uniform in appearance and texture shall be reheated and rerolled, replaced, or if required by the Engineer, resurfaced at no additional cost to the Owner. Seams and edges shall be straight, true, and smooth.

C. Plant Tickets

To verify depth for payment, plant tickets shall be submitted to the Engineer.

D. Payment of Asphalt

No payment for paving will be made until the surface texture and smoothness has been inspected, satisfactorily repaired, if necessary, and approved by the Engineer and the Owner.

E. Paving Subcontractors

The General Contractor in charge of the Paving Contractor shall be responsible for assuring that his paving Contractor has read these requirements if paving is to be subcontracted. Failure to inform a Subcontractor does not relieve the Prime Contractor of these requirements.

F. Paving Condition

No paving of asphalt shall take place until the Utility Contractor and the Paving Contractor have mutually agreed that all valve boxes and manholes have been set to finished grade and that it is the Paving Contractor's responsibility to make minor adjustments prior to paving, as applicable.

G. Asphalt Specifications

Asphalt and CABC shall meet the NCDOT "Standard Specifications for Roads and Structures", latest revision. Asphalt mix and placement shall meet Division 6 of the State Specifications. CABC shall meet Section 520 of the State Specifications and graded in accordance with Table 520-1. Placement and compaction shall meet Section 520.

H. Asphalt Patching

Asphalt Patching WILL NOT BE ALLOWED. In the event that Asphalt is unsatisfactory to Engineer, the contractor shall mill entire section of asphalt and resurface a minimum depth of one and one-half inch and at minimum length of one hundred feet for the entire width of section in question. This area is to be determined by field inspection with the contractor and/or sub contractor and the Engineer present.

Grading Notes

- Site Contractor to inform Building Contractor to verify finished grade at building before digging footings. Some portions of the building foundation wall may, of necessity, need to retain building pad fill to allow exterior grades to be dropped. In this case, step footings may be necessary to achieve the desired grade variations.
- New finished contours shown are top of future paving in areas to receive pavement and top of topsoil in areas to be seeded.
- Areas outside of the parking lot perimeters shall receive 4 inches of topsoil. This topsoil to be placed and leveled by the Contractor.
- Dimensions on buildings are for grading purposes only and are not to be used to lay-off footings. See Architectural Plans.
- Contractor shall notify and cooperate with all utility companies or firms having facilities on or adjacent to the site before disturbing, altering, removing, relocating, adjusting or connecting to said facilities. Contractor shall raise or lower tops of existing manholes, as required, to match finished grades.
- All catch basin grate and frames are to be Vulcan or approved equal. Verify that dimension heights on castings are not exceeded in critical areas before ordering substitute castings!
- All areas not covered by building or paving are to be seeded and mulched.
- Unusable excavated materials and all waste resulting from clearing and grubbing and demolition shall be disposed of off-site by Contractor.
- All excavator is undisturbed and shall include all materials encountered.
- Before any machine work is done, Contractor shall stake out and mark the items established by the Site Plan. Control points shall be preserved at all times during the course of the project. Lack of proper working points and grade stakes may require cessation of operations until such points and grades have been placed to the Owner's satisfaction.
- Contractor to ensure all portions of the site have positive drainage. This must be verified prior to paving or pouring concrete.
- Refer to soils report for directions on earthwork and subgrade preparation, if available.

Concrete Notes

- All construction, placing, pouring and curing concrete is to conform to the latest edition of ACI 318.
- All reinforcing steel is to be cold cut and bent.
- Portland cement concrete shall have a minimum 28 day compressive strength of 4,000 PSI.
- Do not use chloride in any concrete which has reinforcing steel or wire fabric.
- Reinforcing steel shall meet ASTM A-615, Grade 60. Welded wire fabric shall meet ASTM A-185. The wire shall conform to ASTM A-82.
- Lap welded wire fabric a minimum of one mesh. Lap all bars a minimum of 24". Alternate adjacent bar splices a minimum of 48".
- Use only approved chairs with sand plates to support reinforcing on grade.
- All crossings of reinforcement are to be tied. Supports for reinforcing to hold bars against movement during pour and finish operation. Supports for reinforcing bars to be a minimum of 48 inches apart.
- Concrete shall be only plant-mixed, transit-mixed or ready-mixed concrete. The time elapsing from mixing to placing the concrete shall not exceed ninety (90) minutes.
- Concrete shall not be deposited on frozen subgrade and shall not be poured when the air temperature for the succeeding 24-hour period is less than 32 degrees F.
- All concrete when placed in forms shall have a temperature between 50 degrees F and 90 degrees F and shall be maintained at a temperature of not less than 50 degrees for at least 72 hours for normal concrete and 24 hours for high early strength concrete.
- Do not place fresh concrete during summer on a dry subgrade. Moisture subgrade before placing concrete.
- Subgrade is to be firm, free of water and/or silt and undisturbed or compacted properly. Consult Engineer if soft or yielding subgrade is encountered for improvement directions. If ground water is entering subgrade, consult Engineer for instructions.
- Areas of concrete to be removed shall be saw cut before removing. The saw cut shall provide a smooth, straight edge approximately two (2) inches deep before breaking away the adjacent concrete.
- Immediately after the forms have been removed and all honeycombed areas are repaired, backfill to prevent underwash.
- Brooming of the concrete surface shall be done transverse to the direction of traffic for all pedestrian areas.
- Joint spacing shall be no less than 8-feet. Where existing sidewalks are being widened, transverse joints shall be located so as to line up with existing joints in the adjacent existing sidewalk. Grooved joints shall not be sealed. Seal all others.
- Concrete Sub shall be responsible for all score joints and expansion joints. A preliminary score joint pattern and expansion joint pattern shall be submitted to the project engineer for review prior to pouring concrete.
- Expansion joints shall be one-half (1/2) inch in width and shall be placed between all rigid objects at a distance of no more than thirty (30) feet apart and shall extend the full depth of the concrete with the top of the filler one-half (1/2) inch below the finished surface.
- The edges of the curb/sidewalk shall be finished with an approved edging tool one-half (1/2) inch radius. Joints shall be similarly finished immediately after templates have been removed.
- Saw control joints as soon as fresh concrete will retain coarse aggregate against the sawing action.
- Contractor SHALL NOT POUR any concrete before forms are inspected by the project engineer and/or the architect. Any concrete that has not been approved by the engineer and/or owner will be the responsibility of the contractor.

Concrete Testing Requirements

Initial Test

The initial test (from first ready-mix truck) is to be taken after the second yard is dispatched from the mixer and is to consist of the following:

- One slump test
- Pull, prepare and store 3 cylinders on-site for 24 hours.
- Temperature

Subsequent Tests

After the above tests are pulled from the initial truck, every 5th truck thereafter is to be tested in the same manner as noted above.

Asphalt Testing Requirements

Compaction: Testing for asphalt density is to follow NCDOT "Standard Specifications for Roads and Structures", Section 609-9, "Field Compaction Quality Management," latest revision.
Thickness: The minimum frequency of coring for thickness testing shall be on the basis of test sections consisting of not more than 1500 linear feet of lay down width, exclusive of intersections and irregular areas. The test sample is to be a 6-inch core sample. The sample is to be numbered and logged for identification purposes.
Contractor's Quality Control System:

Follow NCDOT "Standard Specifications for Roads and Structures", Section 609-5, "Contractor's Quality Control System," latest revision:

Mixture and Job Mix Formula Adjustments:

Follow NCDOT "Standard Specifications for Roads and Structures", Section 609-4, "Field Verification of Mixture and Job Mix Formula Adjustments", latest revision.

General: All other applicable sections of Section 609 of the NCDOT "Standard Specifications for Roads and Structures" shall apply relating to Quality Control Plan, mix design, control limits, corrective action, equipment and measurement.

Testing Cost: Contractor is responsible for cost of testing asphalt and concrete.

Parking, Street or Building Subgrade Preparation

A. Subgrade on Precompacted Original Soil

- Remove all the topsoil and all questionable organic soil and extend a minimum of four (4) feet beyond the outside edge of the pavement.
- Precompact the exposed grade with a vibratory roller weighing a minimum of ten (10) tons (static load) or equal to stabilize the initial settlement of the top strata of the soil. The stability of the subgrade will be considered adequate when the total settlement after the last four (4) complete passes by the vibratory roller does not exceed 1/8". Any area that settles excessively and fails to stabilize under continued rolling should be further undercut and replaced with properly compacted select granular fill.

B. Subgrade on Certified Compacted Fill

- Prepare the site following the same procedures as outlined in Items 1 and 2 above.
- Using the same compaction equipment as outlined above, compact new fill soil in +/- 8-inch layers to a minimum 98-percent of the maximum dry density at its optimum moisture content in accordance with the Standard Proctor Method, ASTM Standard D 698-78 and field controlled in accordance with ASTM Standard D 2167-84, or equal. The top one (1) foot of the prepared fill subgrade should be compacted to 100-percent of the maximum dry density using the Standard Proctor Method.
- The end of the fill should be terminated at the minimum slope of two (2) horizontal to one (1) vertical measured from three (3) feet beyond the outside edge of the pavement to the toe of the fill. The fill soil is to be select granular soil weighing a minimum of 110 pcf at its optimum moisture content.

Drainage Notes

- Boxes may be reinforced masonry, masonry, precast concrete or cast-in-place reinforced concrete.
- The maximum height of an un-reinforced masonry drainage structure with 8-inch walls shall be limited to 8-foot from invert of the outlet pipe to the top of the casting. Depths greater than 8-feet shall have walls 12-inches thick. Basins over 12-feet in total depth shall be designed by a NC Professional Engineer. Four-inch walls are not allowed on drainage structures.
- Steps are to be provided on all basins deeper than 42".
- Steps are to be PS1-PF as manufactured by M. A. Industries or an approved equal. Locate on non-pipe walls.
- Mortar in masonry boxes is to be type M.
- Clay brick structures are not allowed.
- Concrete building brick is to meet ASTM C-55, Grade N, and Type 1.
- All iron castings are to be drilled and lagged to the drainage structure. The drainage structure as well is to be drilled.
- All cast-in-place or precast concrete drainage structures located in paved areas accessible to truck loadings to be designed to meet AASHTO HS 20-44 loading. See manufacturer's details for wall, top and bottom thickness.
- All catch basins grates and frames are to be Vulcan or approved equal. Verify dimensions heights on castings are not exceeded in critical areas before ordering castings!
- All concrete pipe is to be ASTM C-76, Class III with ram-nek.
- All frames and grates shall receive a bituminous coating.

