

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
SPECIES — RATE (lb./acre)
TALL FESCUE — 60
KOBÉ LESPEDEZA — 40

NURSE PLANTS:
BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:
BEST: AUG. 15 – SEPT. 15 POSSIBLE: AUG. 20 – OCT. 25
FALL: FEB. 15 – MAR. 21 LATE WINTER: FEB. 1 – APR. 15

FALL IS BEST FOR TALL FESCUE AND LATE WINTER FOR LESPEDEZAS. OVERSEEDING OF KOBÉ LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.

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 IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

RECOMMENDATIONS FOR GRASS-LINED CHANNELS

SEEDING MIXTURE
SPECIES — RATE (lb./acre)
TALL FESCUE — 200

NURSE PLANTS:
BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre SUDANGRASS OR 15 lb/acre GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:
BEST: AUG. 25 – OCT. POSSIBLE: FEB. – APR. 15

AVOID SEEDING FROM NOV. TO JAN. IF SEEDING MUST BE DONE AT THIS TIME, ADD 40 lb/acre RYE GRAIN AND USE A CHANNEL LINING THAT OFFERS MAXIMUM PROTECTION

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10–10–10 FERTILIZER

MULCH:
USE ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF THE CHANNELS AND DITCHES, AND STAPLE SECURELY. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 lb/acre GRAIN STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPES WHERE THEY CAN CLOG DRAINAGE DEVICES.

MAINTENANCE:
INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR. USE SOIL TESTS OR APPLY 150 lb/acre 10–10–10. MOW REGULARLY TO A HEIGHT OF 2–4 INCHES.

NOTE:
SEE NCDENR'S EROSION AND SEDIMENT CONTROL PLANNING DESIGN MANUAL SECTION 6.11 FOR ADDITIONAL PERMANENT SEEDING OPTIONS.

PERMANENT SEEDING SCHEDULE

NTS

- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW).
- CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDING AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE OR 3 TONS/ACRE IN CLAY SOILS
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPERPHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)ANCHOR – ASPHALT EMULSION AT 450 GAL./ACRE

SEEDBED PREPARATION

NTS

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE
SPECIES — RATE (lb./acre)
RYE (GRAIN) — 120
ANNUAL LESPEDEZA (KOBÉ IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS) — 50

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE

SEEDING DATES:
MOUNTAINS (ABOVE 2,500'): FEB. 15 – MAY 15
(BELOW 2,500'): 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.

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.

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

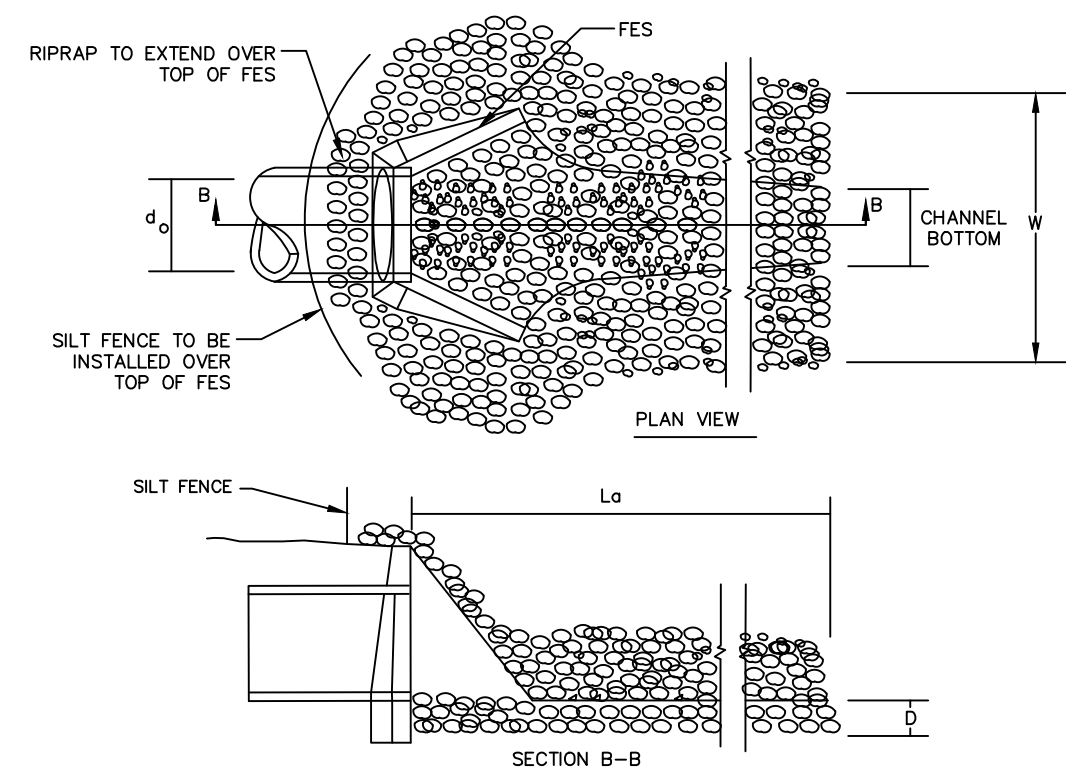
SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10–10–10 FERTILIZER

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:
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 lb/acre OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBÉ (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING SCHEDULE

NTS

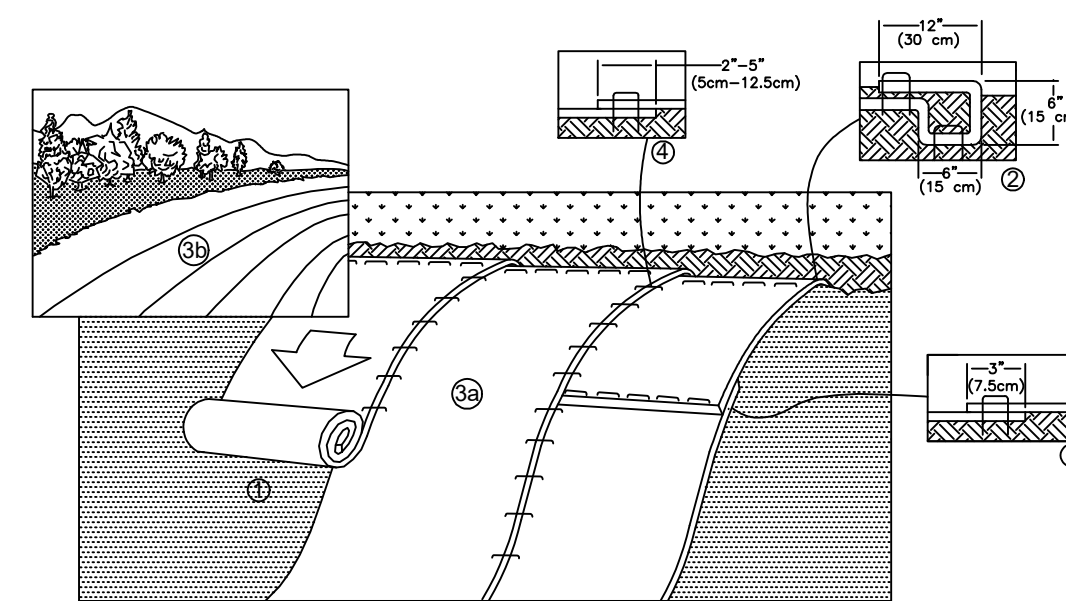


OUTLET NO.	Do (IN.)	Lo (FT.)	W (FT.)	DEPTH (IN.)	LINING CLASSIFICATION
HW-14-01	18	12.0	5.0	24	CLASS 1
HW-14-11	15	10.0	4.0	24	CLASS 1
HW-14-18	24	16.0	6.0	24	CLASS 1
CULVERT	42	28.0	11.0	24	CLASS 1

STONE CLASSIFICATIONS OF CLASS B REQUIRE A SUBLAYER OF FILTER FABRIC OR FS-2 FILTER STONE WITH A BEDDING THICKNESS OF 6".

RIPRAP OUTLET PROTECTION

NTS



TEMPORARY STABILIZATION FOR SLOPES

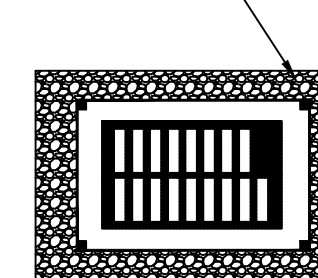
GREATER THAN 10 FEET

NTS

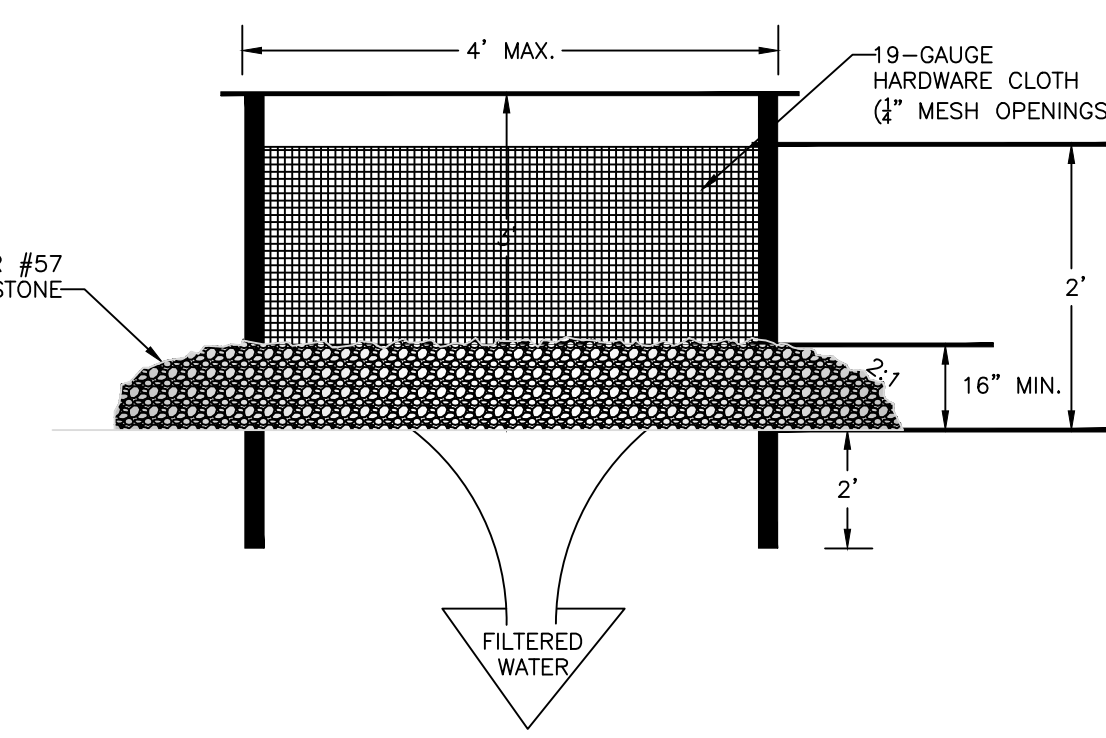
NOTES:

- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
- DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
- SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
- PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
- ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
- COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.

NC DOT #5 OR #57 WASHED STONE



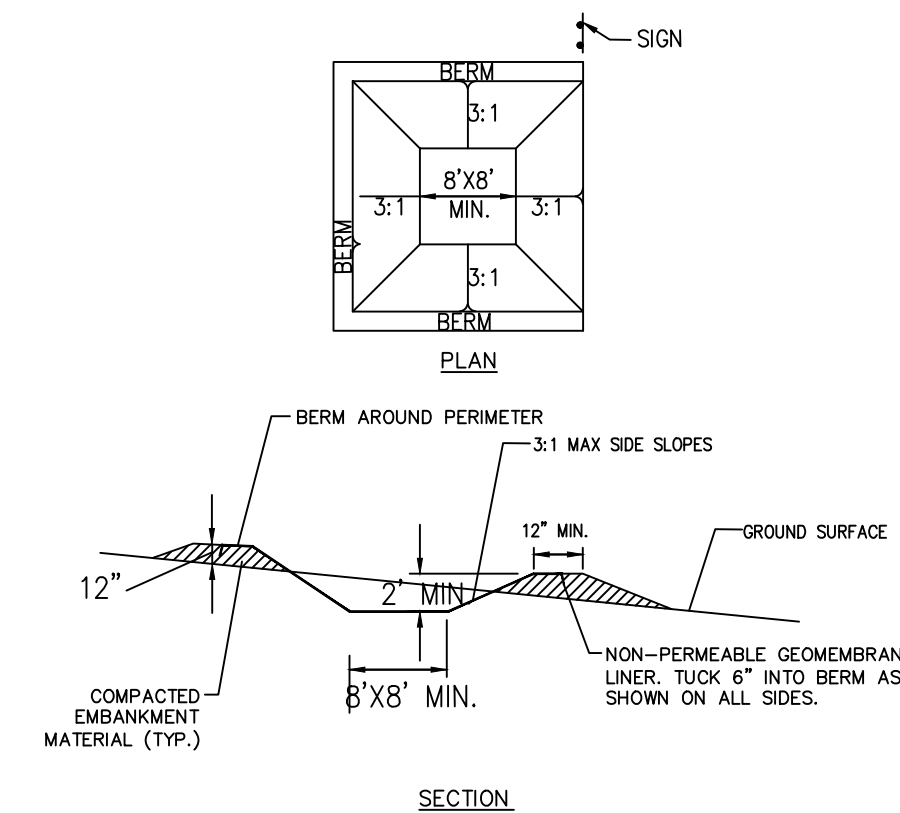
PLAN VIEW



CROSS SECTION

HARDWARE CLOTH & GRAVEL INLET PROTECTION

NTS



CONCRETE WASHOUT AREA INSTALLATION NOTES:

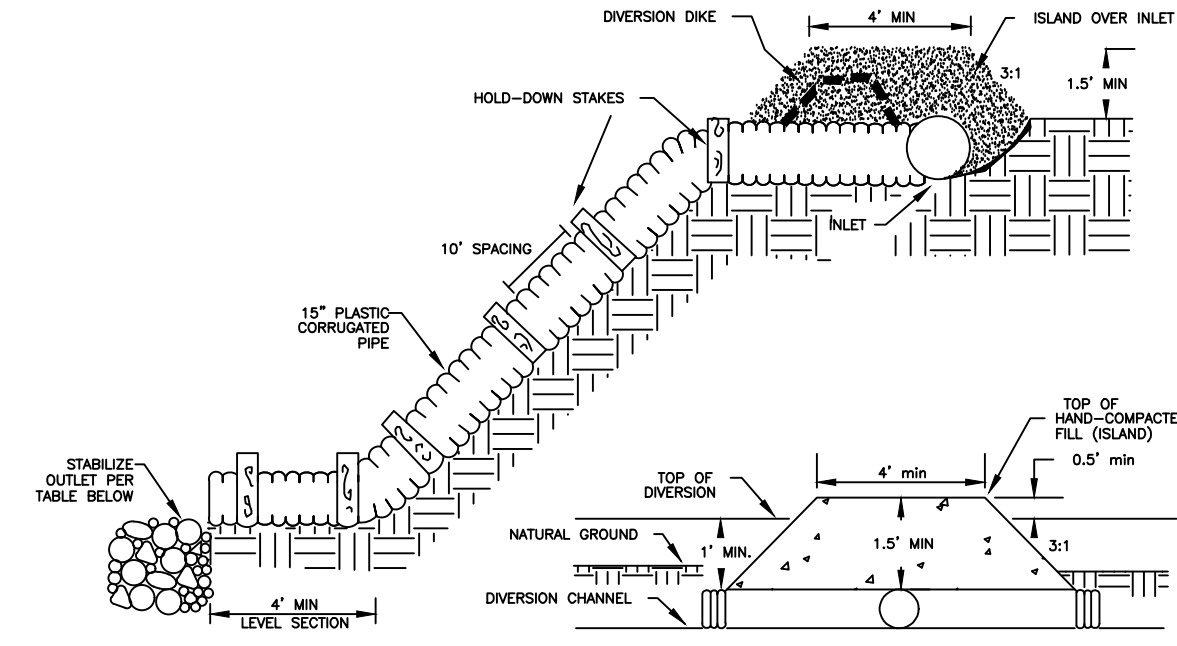
- SEE PLAN FOR LOCATION OF CONCRETE WASHOUT AREA. (TO BE PLACED A MINIMUM OF 50 FT FROM INLETS, BODIES OF WATER, AND DRAINAGEWAYS.)
- THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRIGS.
- EXCAVATED MATERIAL SHALL BE USED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES:

- THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
- AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED AND DISPOSED OF AT APPROVED WASTE SITE.
- AFTER REMOVAL OF CONCRETE WASHOUT AREA, SEED DISTURBED AREA.
- INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

CONCRETE WASHOUT AREA

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OUTLET PROTECTION SIZING

OUTLET SIZE	Lo (FT.)	W (FT.)	DEPTH (IN.)	LINING CLASSIFICATION
12"	6.0	3.0	22	CLASS B
15"	7.5	3.75	22	CLASS B
18"	9.0	4.5	22	CLASS B
24"	12.0	6.0	22	CLASS B

TEMPORARY SLOPE DRAIN

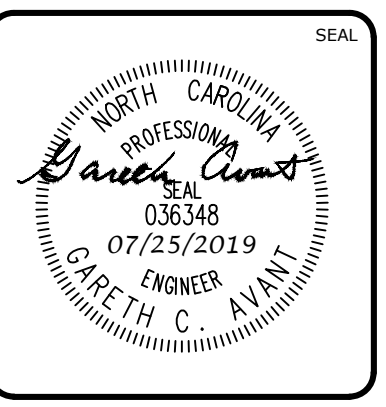
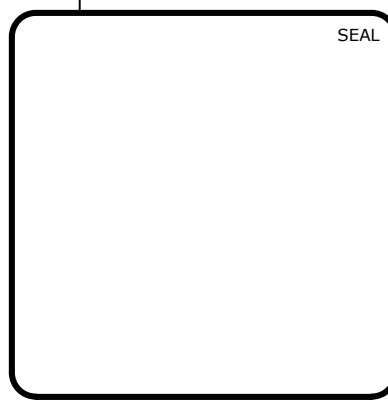
NTS

- COARSE AGGREGATE (2"–3" STONE) SHALL BE USED. PAD TO BE 100'L X 25'W X 6"D MIN. PLACE A MINIMUM OF 3" OF STONE IN A OUT SECTION TO HELP SECURE FILTER CLOTH.
- TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
- ENTRANCES SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
- MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOP DRESSING MAY BE NECESSARY. 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.
- TEMPORARY PADS MUST BE LOCATED ON EACH SIDE OF ADJOINING ROADWAY.

TEMPORARY CONSTRUCTION ENTRANCE

NTS

REV. NO.	DESCRIPTIONS	DATE
3	REVISIONS PER NCDOT COMMENTS	2019.07.25
2	REVISIONS PER CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION CONTROL COMMENTS	2019.06.05
1	INITIAL SUBMITTAL	2019.05.09



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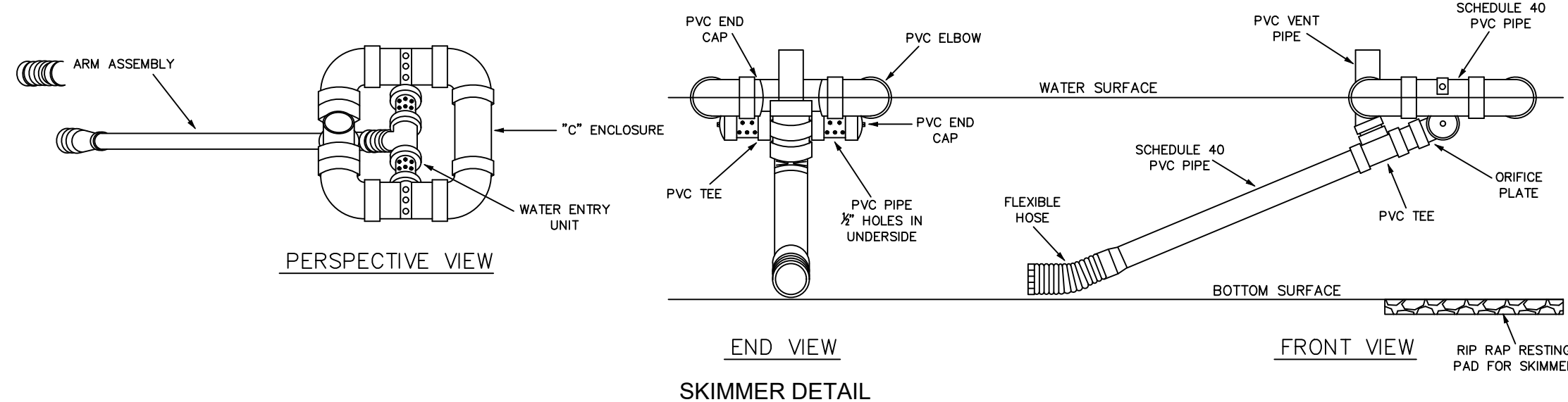
**BRIAR CHAPEL
PHASE 14
CHATHAM COUNTY, NORTH CAROLINA**
**EROSION AND SEDIMENTATION CONTROL
DETAILS**

DATE: MAY 9, 2019
MCE PROJ. #: 02735-0239
DRAWN: DCR
DESIGNED: DCR
CHECKED: GCA
PROJ. MGR.: CHS

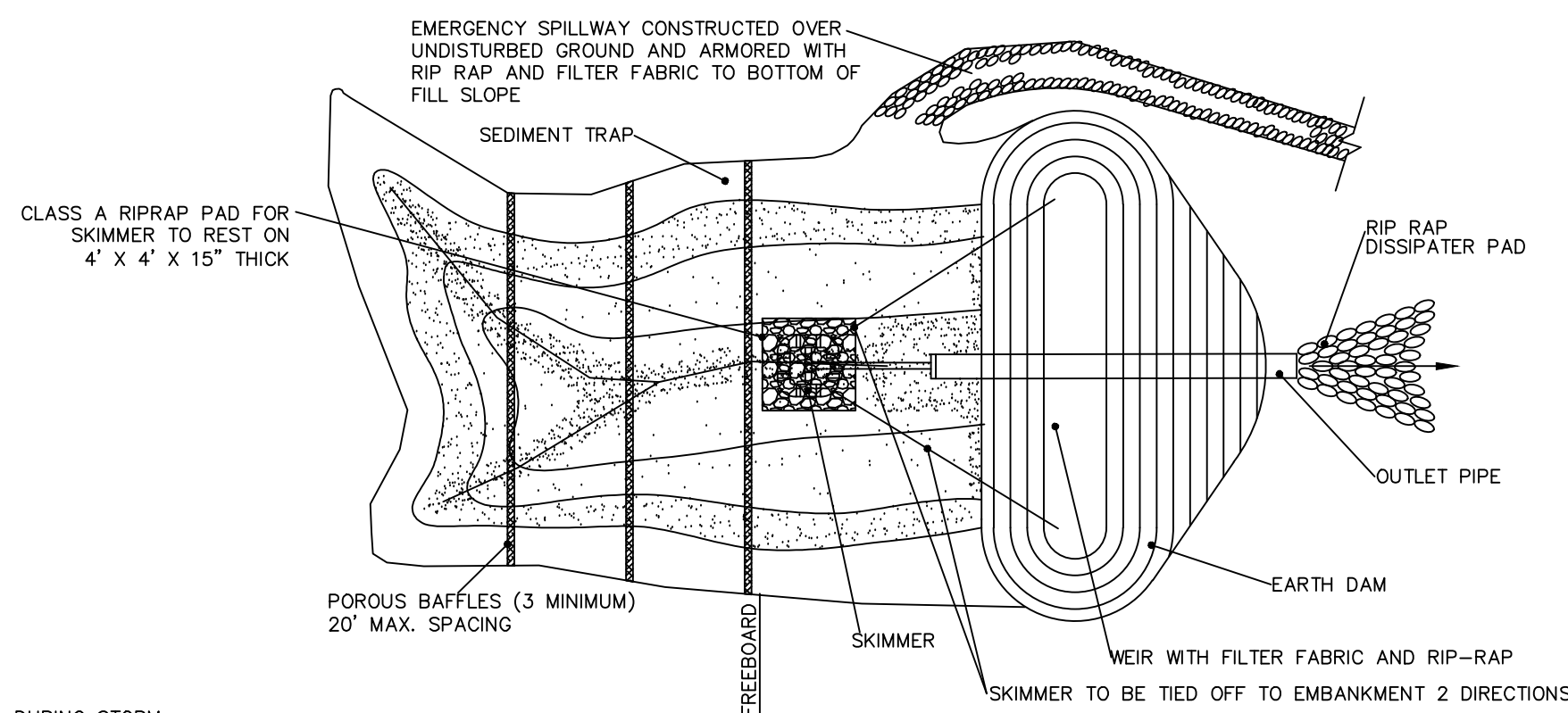
SCALE: HORIZONTAL: N/A
VERTICAL: N/A

HBC FILE NUMBER: D1.X
DRAWING NUMBER: D1.1

STATUS: FINAL DRAWINGS RELEASED FOR CONSTRUCTION
REVISION: 3



SKIMMER DETAIL
PLAN VIEW

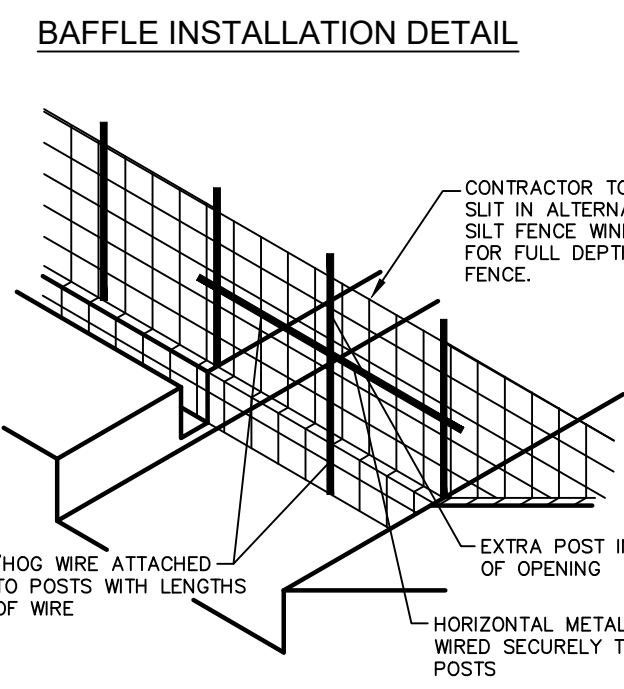


CROSS SECTION
TEMPORARY SKIMMER SEDIMENT BASIN
NTS

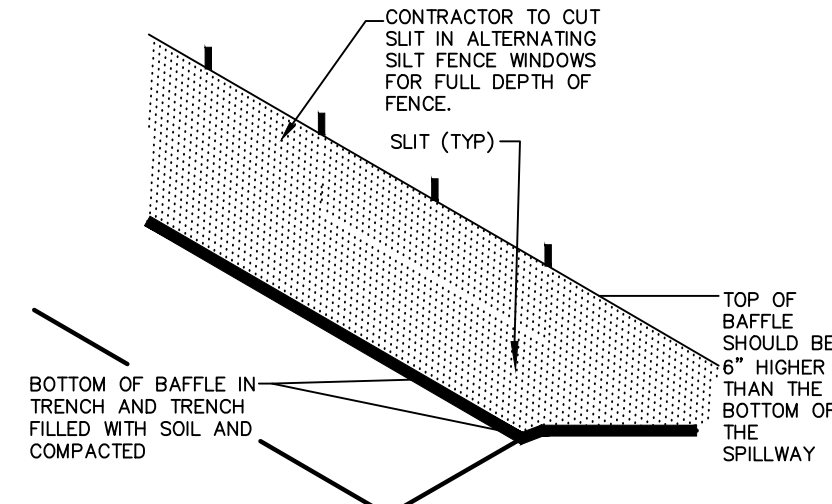
- NOTES:
1. ANY EXISTING SKIMMER SEDIMENT BASINS PREVIOUSLY APPROVED SHALL MAINTAINED PER THEIR ORIGINAL DIMENSIONS AND IN ACCORDANCE WITH THIS DETAIL.

BASIN #	DISTURBED AREA (ac)	TOTAL DRAINAGE AREA (ac)	REQUIRED STORAGE	REQUIRED SURFACE AREA	MINIMUM DEPTH	BOTTOM ELEVATION	TOP WIDTH	TOP LENGTH	PROVIDED STORAGE	PROVIDED SURFACE AREA	STORAGE/ SPILLWAY ELEVATION	SPILLWAY WIDTH	TOP OF DAM ELEVATION	SKIMMER SIZE	SKIMMER ORIFICE DIAMETER
STAGE 1 & 2															
BMP #45	8.58	8.58	30,890 CF	15,270 SF	3.0'	411.0'	PER PLAN	PER PLAN	48,967 CF	17,838 SF	414.0'	22.0'	489.25'	4.0"	3.6"
BMP #46	5.43	5.43	19,550 CF	9,660 SF	3.0'	445.0'	PER PLAN	PER PLAN	41,530 CF	16,132 SF	448.0'	22.0'	497.0'	4.0"	3.3"

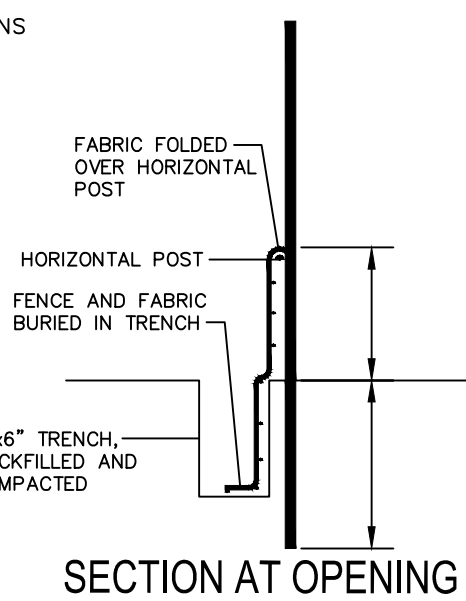
- *SKIMMER SHALL ATTACH TO PERMANENT RISER AT THE LOW FLOW ORIFICE ELEVATION ON BMP #45 AND BMP #46.
 **CONTRACTOR SHALL PLUG THE LOW FLOW AND SECONDARY ORIFICES OF BMP #41 AND THE LOW FLOW ORIFICE OF BMP #42 THROUGH STAGE 2 EROSION CONTROL.



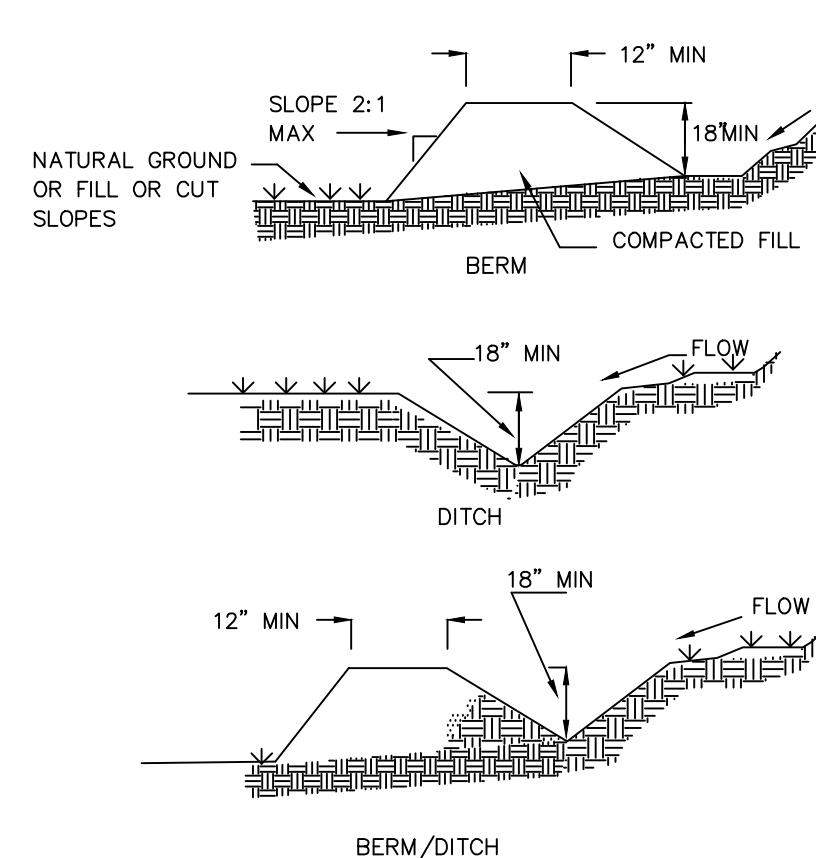
BAFFLE INSTALLATION - STEP 1



BAFFLE INSTALLATION - STEP 2



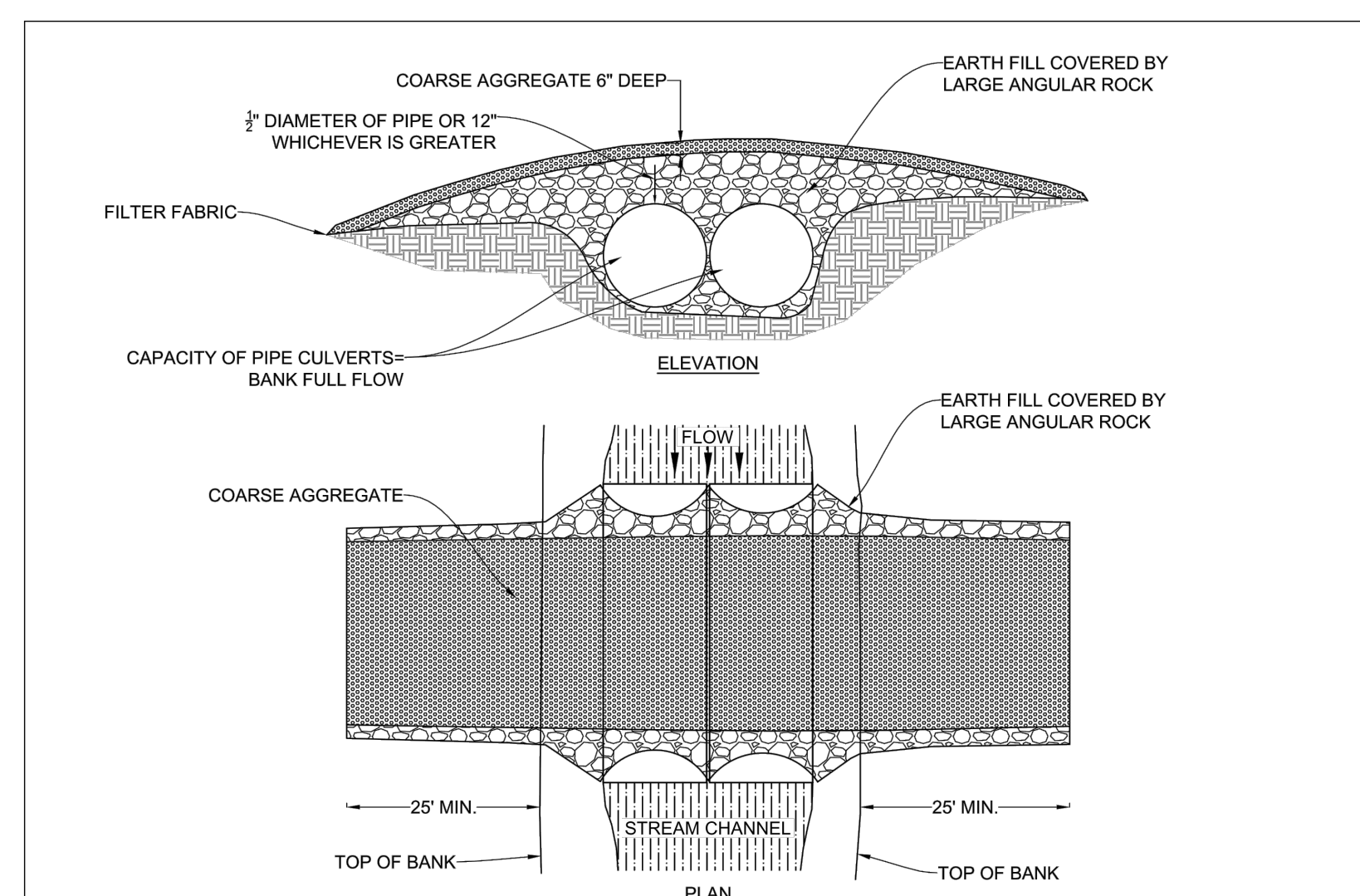
- NOTES:
1. DRIVE STEEL FENCE POST AT LEAST 18" INTO SOLID GROUND
 2. WOOD POSTS ARE NOT ACCEPTABLE
- USE STAPLES 1" APART TO ATTACH FABRIC TO "HOG WIRE"
 BAFFLE SPACED AS PER APPROVED PLAN.



TEMPORARY DIVERSION/CLEAN WATER DIVERSION DITCH
NTS

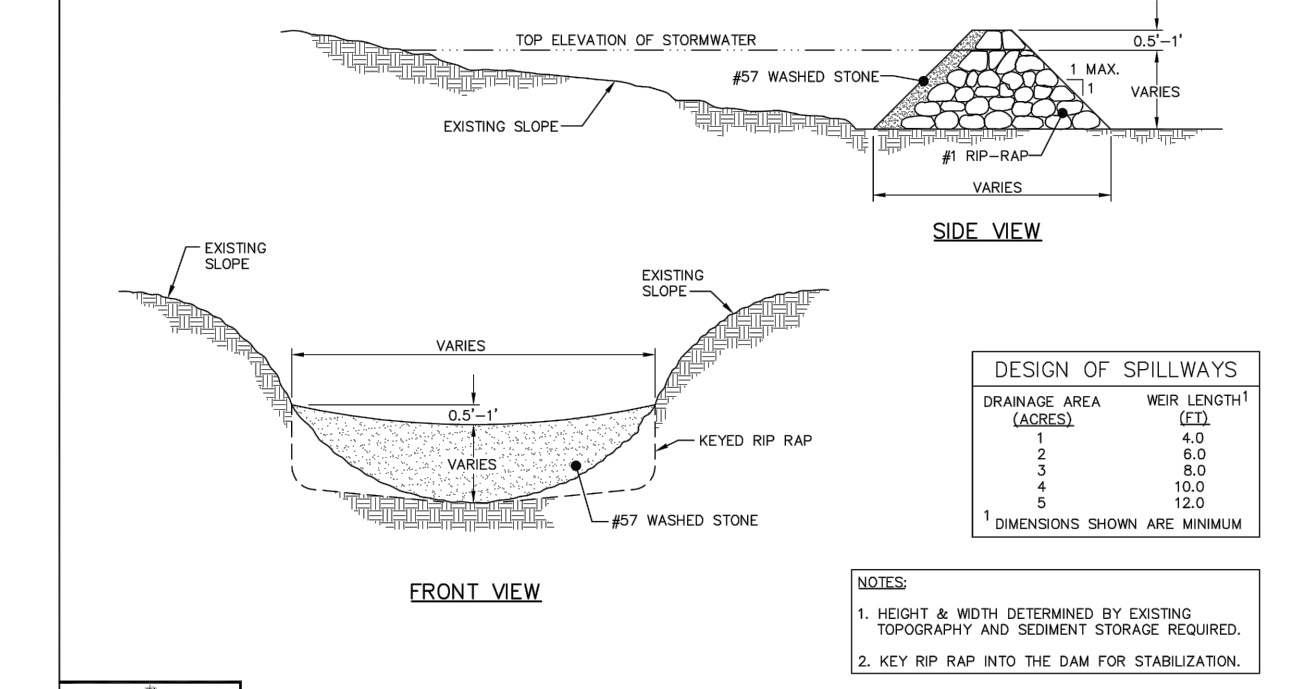
TDD #	TOTAL LENGTH	SLOPE (%)	LINER	RECEIVING SLOPE DRAIN SIZE (IN.)
STAGE 1 DIVERSIONS				
1	610'	3.3	SYNTHETIC MAT	24
2	118'	8.5	STRAW W/NET	24
3	103'	6.8	SC250	(2) 24
4	122'	7.4	RIPRAP	(2) 24
5	516'	7.0	RIPRAP	(2) 24
6	277'	7.2	SC250	24
7	398'	3.8	SYNTHETIC MAT	24
8	181'	4.4	STRAW W/NET	24
9	149'	5.4	STRAW W/NET	24
STAGE 2 DIVERSIONS				
10	215'	15.8	RIPRAP	24

TEMPORARY DIVERSION DITCHES



TEMPORARY STREAM CROSSING

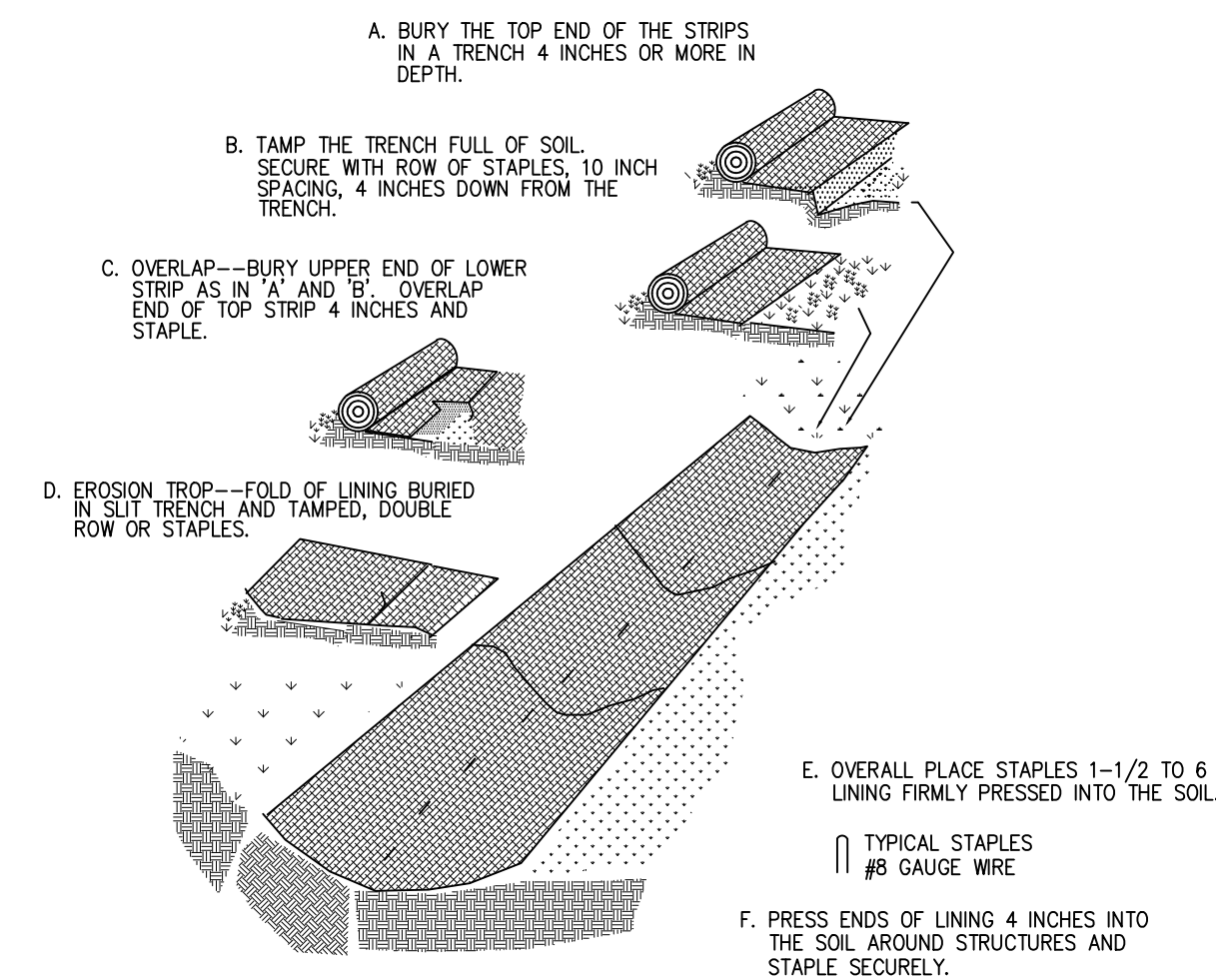
STD. NO.
400.11
SHEET 2 OF 2



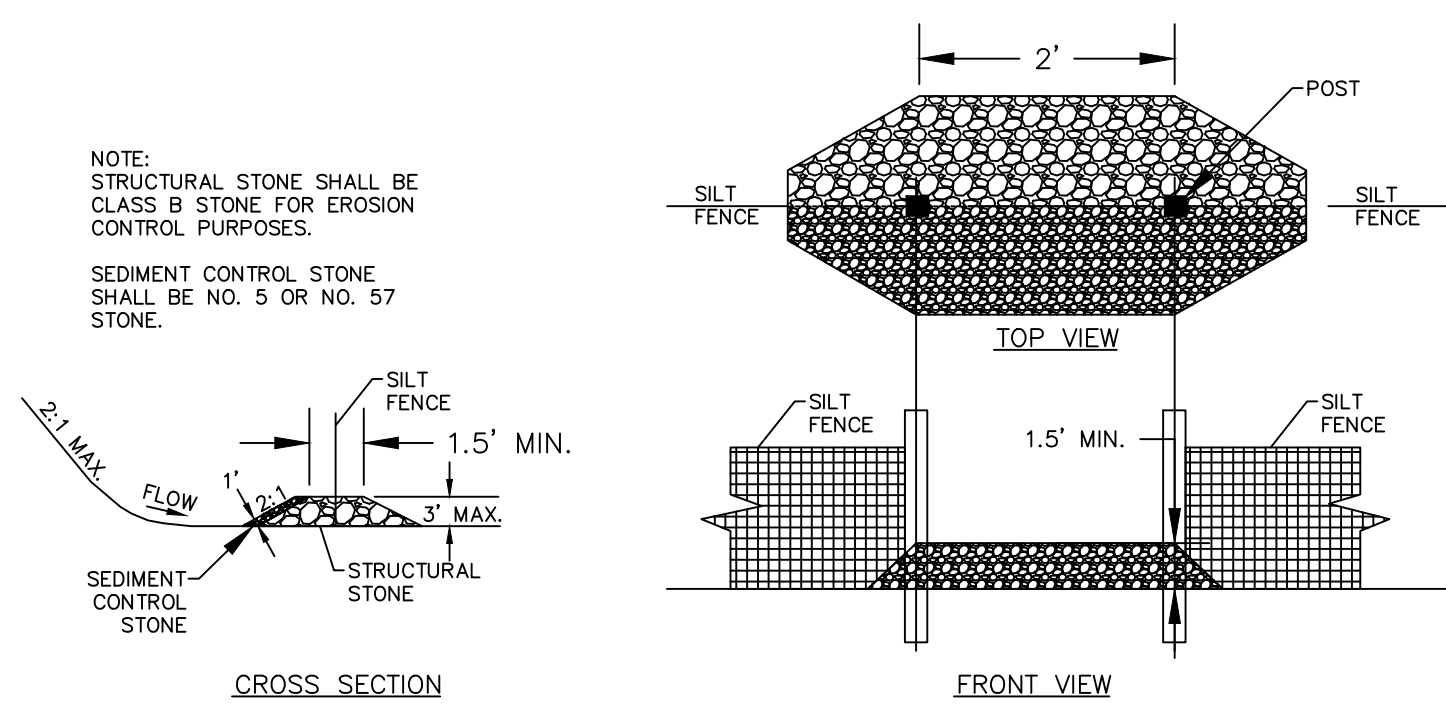
STANDARD ROCK CHECK DAM

REVISION NUMBER
388440
SHEET 1 of 1

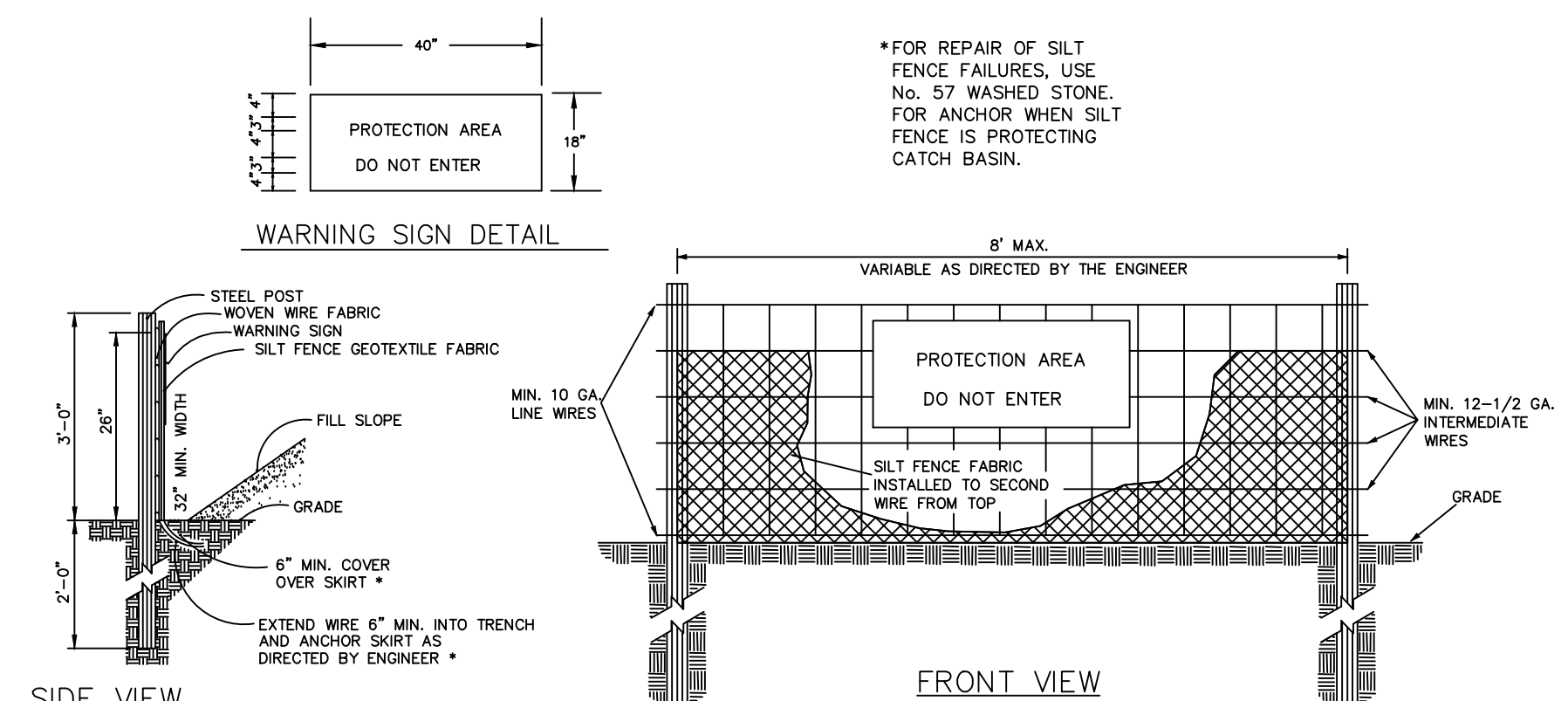
SWALE #	TOTAL LENGTH	LINER
PERMANENT SWALES		
1	102	STRAW W/NET
2	97	STRAW W/NET
3	112	STRAW W/NET
4	193	SYNTHETIC MAT
5	330	SYNTHETIC MAT
6	320	SYNTHETIC MAT



LINER INSTALLATION IN PERMANENT SWALES/DITCHES
NTS



SILT FENCE OUTLET
NTS



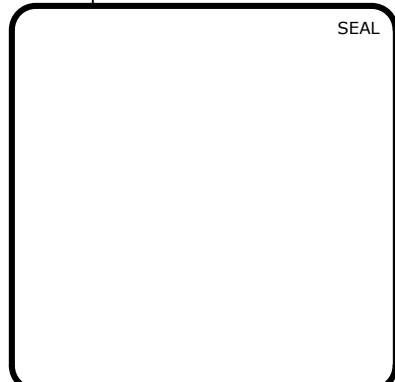
COMBINATION SILT/TREE PROTECTION FENCE
NTS

- NOTES:
1. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
 2. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
 3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
 4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
 5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
 6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
 7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
 8. ADDITIONAL SIGNS MAY BE REQUIRED BY CHATHAM COUNTY BASED ON ACTUAL FIELD CONDITIONS.
 9. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
 10. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
 11. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
 12. SEE NCDENR PRACTICE & SPECIFICATIONS MANUAL SEDIMENTS FENCE SECTION FOR CONDITIONS WHERE PRACTICE APPLIES AND DESIGN CRITERIA.

DOUBLE ROW SILT FENCE:

1. DOUBLE ROW SILT FENCE LOCATIONS CALLED OUT ON PLANS.
2. ALL DOUBLE ROW SILT FENCE SHALL BE PLACED A MINIMUM OF 6 FEET APART AND SHALL BE STABILIZED WITHIN THE TWO ROWS.
3. ALL DOUBLE ROW SILT FENCE MUST START AT THE BOTTOM OF THE SLOPE AND MUST NOT CONTINUE UP SLOPE.
4. DOUBLE ROW SILT FENCE AT STREAM CROSSING MAY BE PLACED AT 2-3' APART IN WHERE SPACE IS LIMITED DUE TO LIMITING STREAM IMPACTS. AREA WITHIN ROWS MUST BE STABILIZED.

REV. NO.	DESCRIPTIONS	DATE
3	REVISIONS PER NCDOT COMMENTS	2019.07.25
2	REVISIONS PER CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION CONTROL COMMENTS	2019.06.05
1	INITIAL SUBMITTAL	2019.05.09



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**BRIAR CHAPEL
 PHASE 14
 CHATHAM COUNTY, NORTH CAROLINA**
**EROSION AND SEDIMENTATION CONTROL
 DETAILS**

DATE: MAY 9, 2019	SCALE: D1.X	HBC FILE NUMBER: D1.2
MCE PROJ. # 02735-0239	HORIZONTAL: N/A	DRAWING NUMBER: D1.2
DRAWN: DCR	VERTICAL: N/A	
DESIGNED: DCR		
CHECKED: GCA		
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS RELEASED FOR CONSTRUCTION	REVISION: 3	

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCGO1 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 NCGO1 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.

Temporary and Permanent Groundcover*

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2013)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 60' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

*For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

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 Roll-on 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

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.



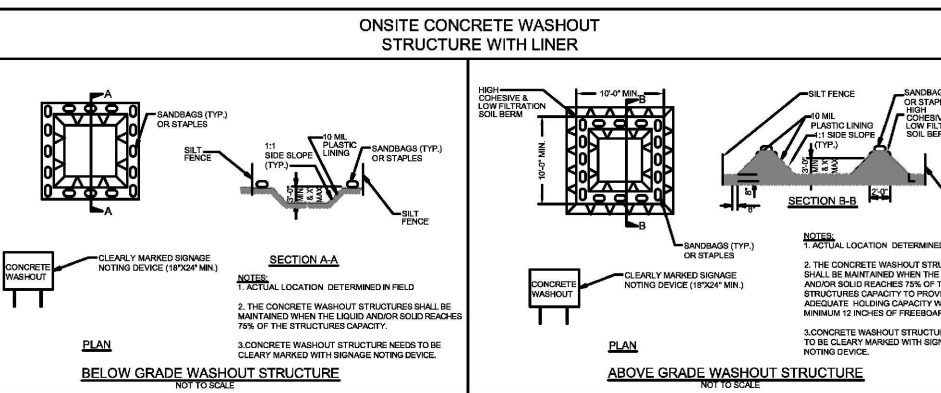
- EQUIPMENT AND VEHICLE MAINTENANCE**
- Maintain vehicles and equipment to prevent discharge of fluids.
 - Provide drip pans under any stored equipment.
 - Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
 - Collect all spent fluids, store in separate containers 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 of waste containers on site to manage the quantity of waste produced.
 - 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. 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.
 - Dispose waste off-site at an approved disposal facility.

- 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/strengthen, 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 and 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 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 lakes, 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.

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 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 [40 CFR 122.41]:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekdays or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended 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&S Measures	At least once per 7 calendar days and within 24 hours of a rain event > 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. Corrective actions taken, and 7. Date of actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 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. Actions taken to correct/prevent sedimentation, and 7. Date of actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the perimeter of the site, 2. Date of actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or within 24 hours of a rain event > 1.0 inch in 24 hours (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 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. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.

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



PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING
1. E&S Plan Documentation
The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&S Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S Plan.	Initial and date each E&S Measure on a copy of the approved E&S Plan or complete, date and sign an inspection report that lists each E&S Measure shown on the approved E&S Plan. This documentation is required upon the initial installation of the E&S Measures or if the E&S Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S 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&S Plan.	Initial and date a copy of the approved E&S 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&S Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S Measures.	Initial and date a copy of the approved E&S Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation
In addition to the E&S Plan documents above, the following items shall be kept on the site and available for agency 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:

- This general permit as well as the certificate of coverage, after it is received.
- Records of inspections made during the previous 30 days. 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.
- All data used to complete the Notice of Intent and other 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

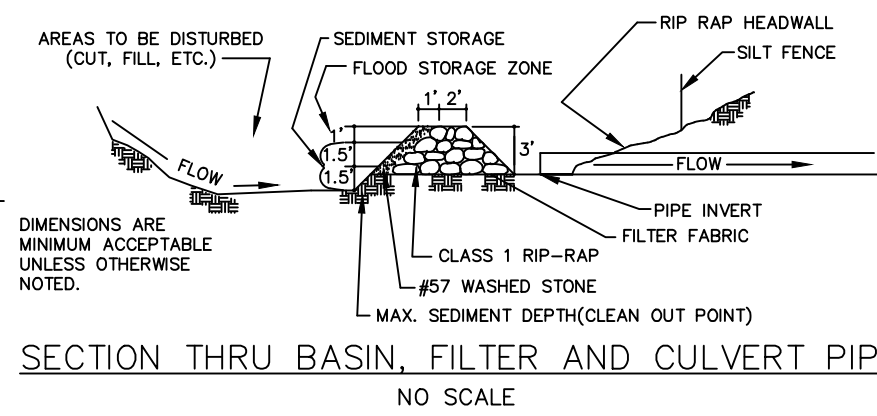
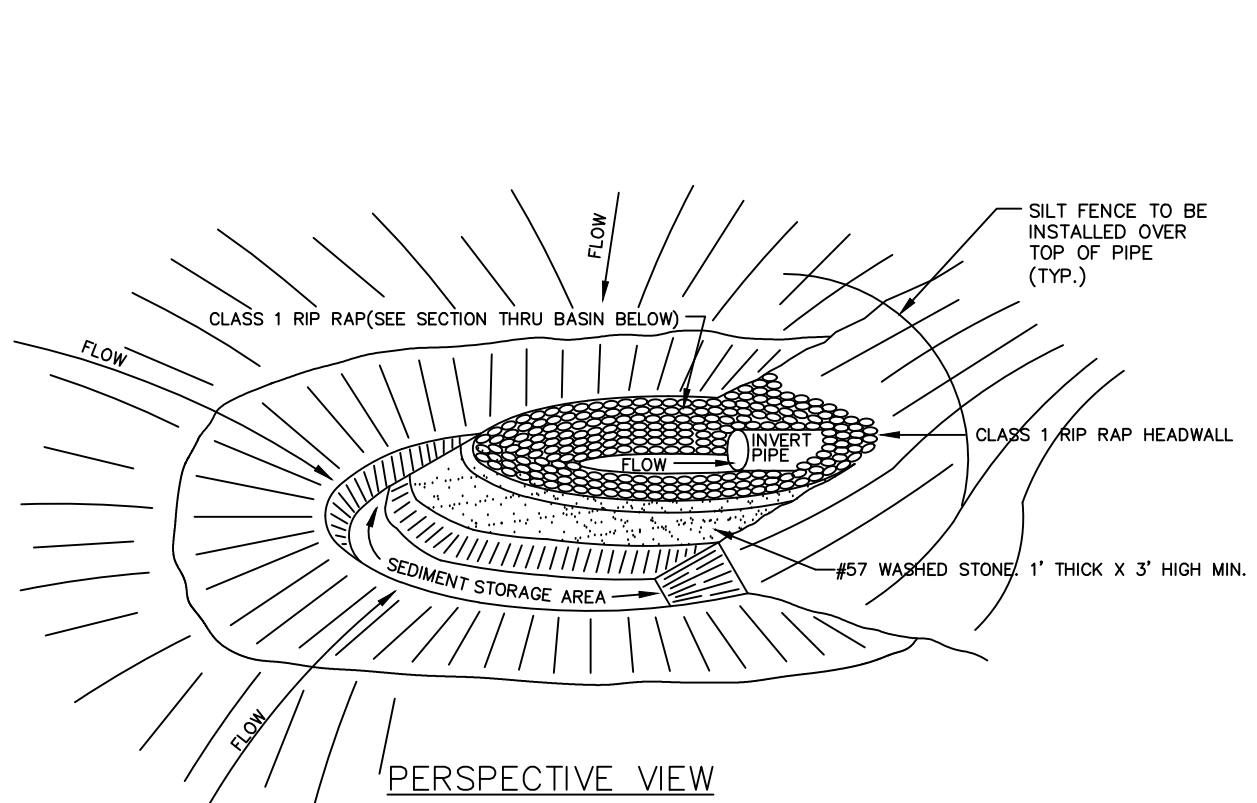
Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> • Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and 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 <i>NC 303(d)</i> 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 and 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. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the spill.
(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(j)(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 recurrence of the noncompliance [40 CFR 122.41(j)(6)]. • Division staff may waive the requirement for a written report on a case-by-case basis.

NCGO1 GROUND STABILIZATION AND MATERIALS HANDLING

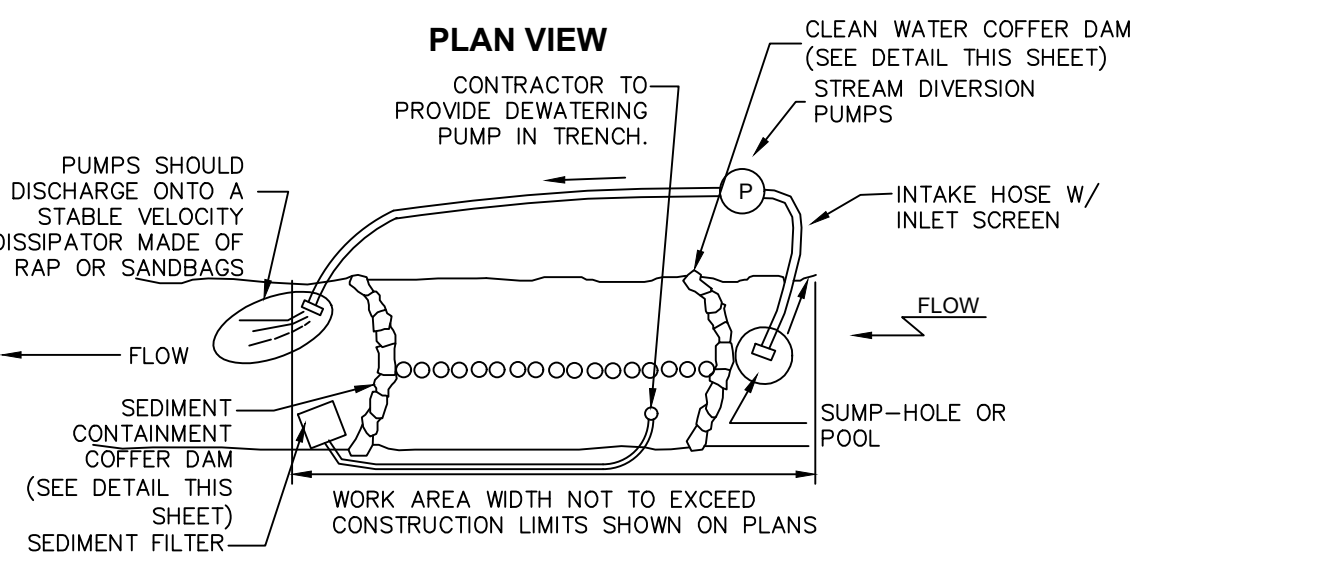
EFFECTIVE: 03/01/19

NCGO1 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 03/01/19



ARC FILTER INLET PROTECTION
NTS



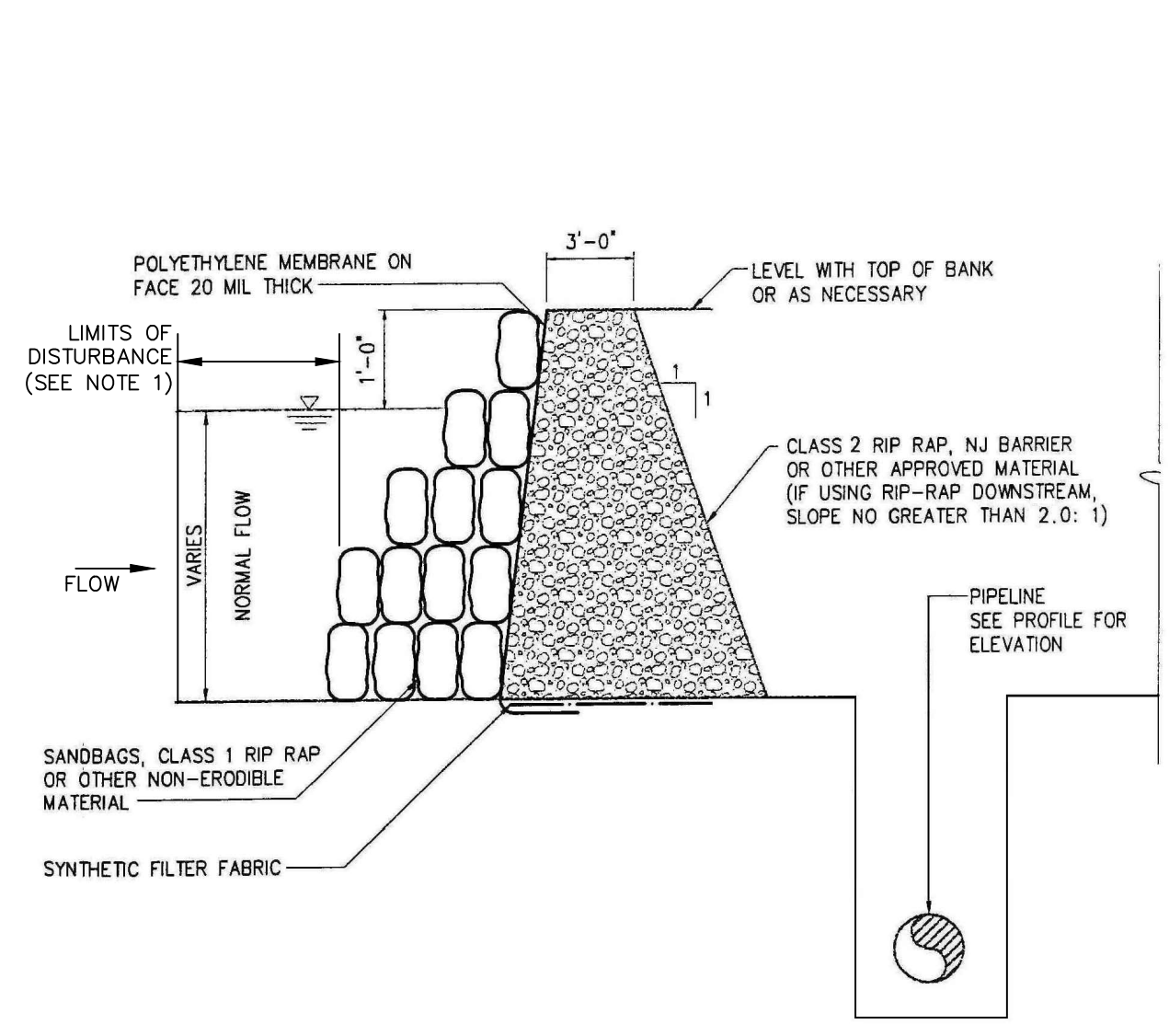
PUMP-AROUND PRACTICE:
TEMPORARY MEASURE FOR DEWATERING STREAM CROSSING SITES.

DESCRIPTION:
THE WORK SHOULD CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING PUMPS TO ENSURE ADEQUATE CAPACITY TO KEEP FLOW FROM ENTERING WORK AREA.

IMPLEMENTATION SEQUENCE:
SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES, AND ASSOCIATED CONSTRUCTION SHOULD BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL).

- INSTALL SCOUR HOLE AND FILTER BAGS WHERE SHOWN ON PLANS.
- COFFER DAMS SHOULD BE SITUATED AT THE ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND WATER ON THE UPSIDE OF THE DAM AREA SHOULD BE PUMPED AROUND THE WORK AREA.
- THE PUMP SHOULD DISCHARGE INTO THE FILTER BAGS AND SCOUR HOLES.
- WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A TEMPORARY WOOD CHIP DEWATERING BASIN, FILTER BAG OR OTHER APPROVED SEDIMENT FILTERING MEASURE.
- AFTER THE CULVERT IS INSTALLED AND THE SLOPES HAVE BEEN STABILIZED, THE PUMP INTAKE HOSES, SCOUR HOLES AND FILTER BAGS SHOULD BE REMOVED AND THEN THE COFFER DAMS SHOULD BE REMOVED.
- A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A COFFER DAM AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHOULD DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STREAM PUMP AROUND.

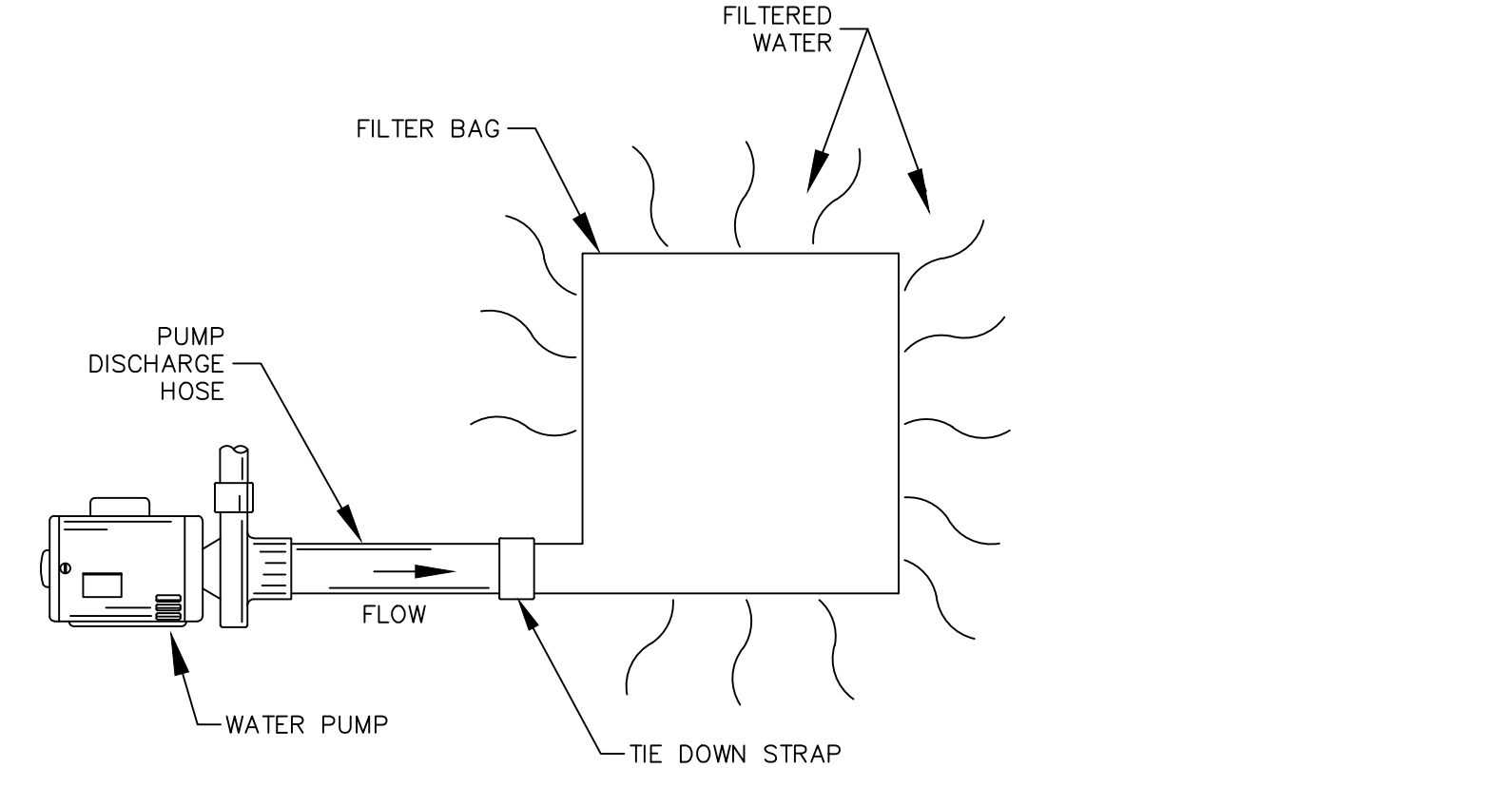
TEMPORARY PUMP AROUND DETAIL
NTS



NOTES:

- CONTRACTOR SHALL INSTALL COFFER DAMS WITH ENOUGH SEPARATION FROM THE PROJECT CONSTRUCTION LIMITS OF DISTURBANCE TO PLACE PUMP INTAKE AND DISCHARGE HOSES, DISSIPATORS AND FILTER BAGS SHOULD BE REMOVED AND THEN THE COFFER DAMS SHOULD BE REMOVED.
- TEMPORARY PRE-FABRICATED COFFER DAMS SUCH AS PORT-A-DAM AND OTHERS MAY BE USED IN SUBSTITUTION TO THE SANDBAG/RIP-RAP DAM WITH PRIOR APPROVAL BY THE OWNER AND ENGINEER.

TEMPORARY COFFER DAM DETAIL
NTS



INSTALLATION AND MAINTENANCE GUIDELINES

INSERT DISCHARGE HOSE FROM PUMP INTO FILTER BAG A MINIMUM OF SIX INCHES (6") AND TIGHTLY SECURE WITH THE ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED. IF USING OPTIONAL ABSORBENTS, PLACE ABSORBENT BOOM INTO THE FILTER BAG. CLIP ABSORBENT BOOM TO TETHER PROVIDED INSIDE THE UNIT.

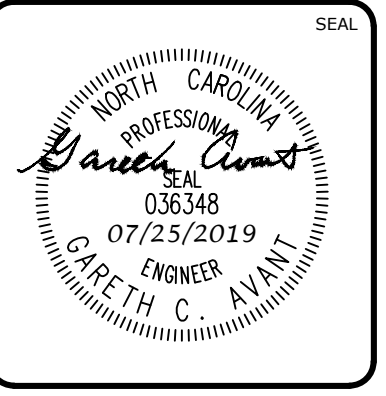
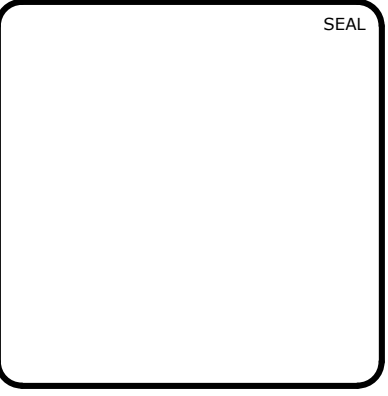
MAINTENANCE: REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE. IF USING OPTIONAL OIL ABSORBENTS, REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.

NOTES:

- LAY DOWN PLASTIC ON GROUND IN AREA WHERE BAG WILL SIT AND DISCHARGE PATH.
- PLACE BAG ON LEVEL GRAVEL PAD TO ENSURE MAXIMUM DRAINAGE AND ALLOW EQUIPMENT TO PICK UP TO HAUL OFF.
- PROP BAG UP AT SLIGHT ANGLE SO WATER DISCHARGES TOWARD RIVER AND DOES NOT CREATE A POOL WHEN DRAINING.
- WHEN INSTALLING NEW BAG MOVE LOCATION OVER AS NOT TO KILL GRASS AND PLANTINGS.
- CONTRACTOR TO RETURN AREA TO EXISTING CONDITIONS AFTER BAGS ARE NO LONGER NEEDED.

FILTER BAG DETAIL
NTS

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
3	REVISIONS PER NCDOT COMMENTS	2019.07.25
2	REVISIONS PER CHATHAM COUNTY SOIL EROSION AND SEDIMENTATION CONTROL COMMENTS	2019.06.05
1	INITIAL SUBMITTAL	2019.05.09



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BRIAR CHAPEL PHASE 14
CHATHAM COUNTY, NORTH CAROLINA
EROSION AND SEDIMENTATION CONTROL DETAILS

DATE: MAY 9, 2019	SCALE: HORIZONTAL: N/A, VERTICAL: N/A	HBC FILE NUMBER: D1.X
MCE PROJ. #: 02735-0239	DRAWN: DCR	DRAWING NUMBER: D1.3
DESIGNED: DCR	CHECKED: GCA	
PROJ. MGR.: CHS		
STATUS: FINAL DRAWINGS RELEASED FOR CONSTRUCTION		REVISION: 3