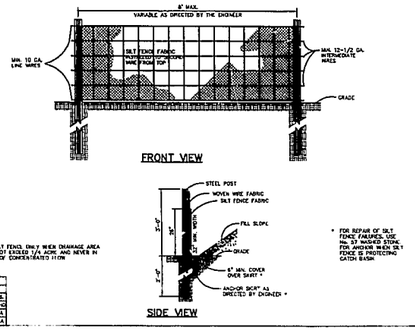
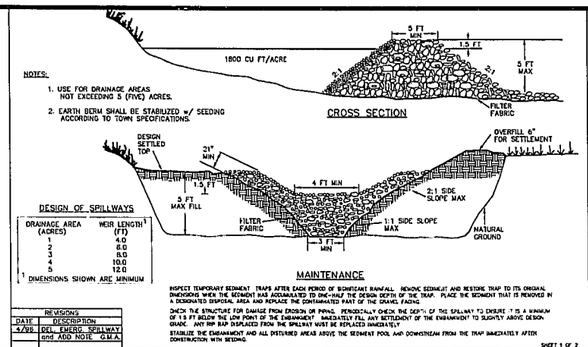


REVISIONS	
DATE	DESCRIPTION
10/86	NOTE ADDITION S.S.S.
12/88	DEL/PLAN NOTE & NEW MAC
1/93	NOTE ADDITION GMA
1/96	REVISE FENCE FABRIC GMA

STANDARD TEMPORARY SILT FENCE — STD. No. 4.01



DESIGN OF SPILLWAYS

DRAINAGE AREA (ACRES)	WEIR LENGTH[1] (FT)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

[1] DIMENSIONS SHOWN ARE MINIMUM

MAINTENANCE

INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN A DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

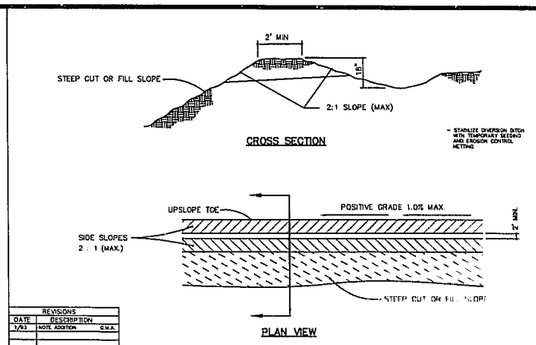
CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FT BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIP RAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.

STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION IS IN SECTION.

REVISIONS	
DATE	DESCRIPTION
4/96	DEL EMERG. SPILLWAY and ADD NOTE G.M.A.

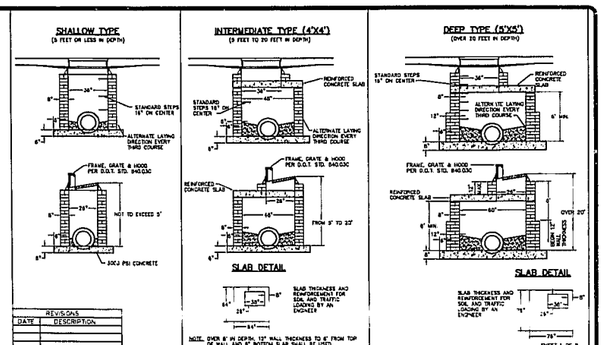
SHEET 1 OF 2

GRAVEL & RIP RAP FILTER BASIN — STD. No. 4.03



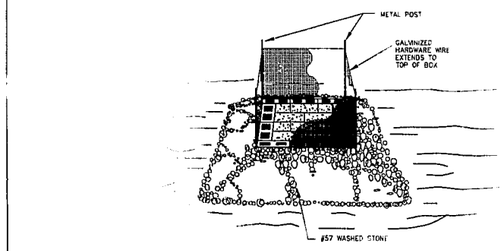
REVISIONS	
DATE	DESCRIPTION
7/93	NOTE ADDITION G.M.A.

DIVERSION DITCH — STD. No. 4.09



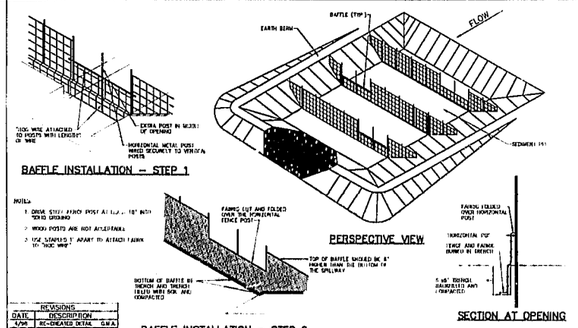
REVISIONS	
DATE	DESCRIPTION

CONCRETE BLOCK OR BRICK CATCH BASIN — STD. No. 8.03



REVISIONS	
DATE	DESCRIPTION

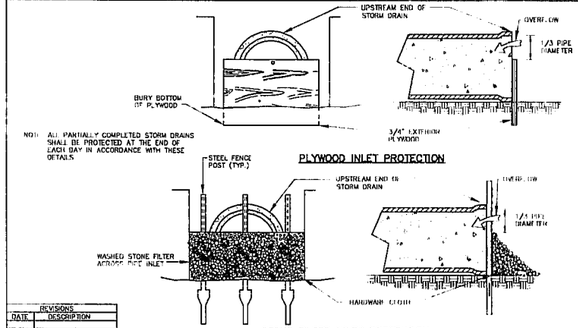
STANDARD CATCH BASIN/YARD INLET PROTECTION — STD. No. 4.14



REVISIONS	
DATE	DESCRIPTION
4/96	RE-ENGINEER DETAIL G.M.A.

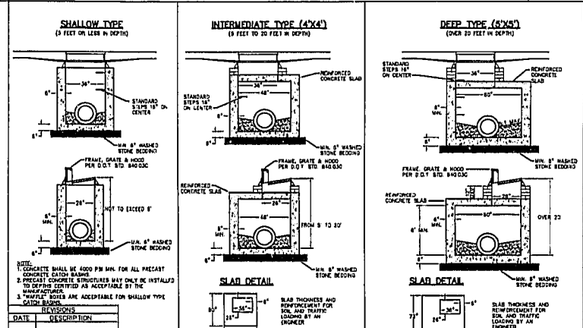
SHEET 2 OF 2

GRAVEL & RIP RAP FILTER BASIN — STD. No. 4.03



REVISIONS	
DATE	DESCRIPTION

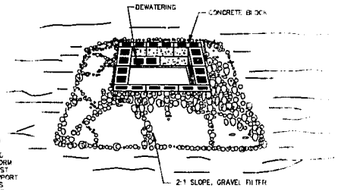
PIPE INLET PROTECTION (PLYWOOD AND STONE) — STD. No. 4.12



REVISIONS	
DATE	DESCRIPTION

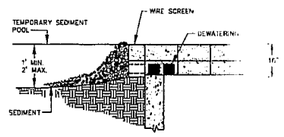
SHEET 2 OF 2

PRECAST CONCRETE CATCH BASIN — STD. No. 8.03



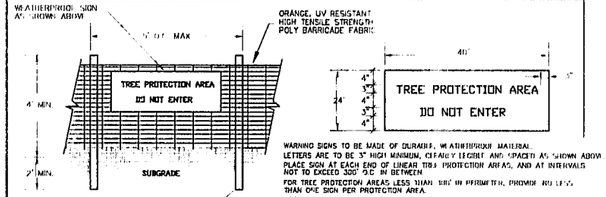
CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW FOR DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2 X 4 WOOD STUDS THROUGH BLOCK OPENINGS.
2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL, 3/4" TO 1/2" INCH IN DIAMETER, PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER. AN SMOOTH FIT TO AN EVEN GRADE. DIRTY OR WASHED STONE IS RECOMMENDED!



REVISIONS	
DATE	DESCRIPTION

BLOCK AND GRAVEL DROP INLET PROTECTION — STD. No. 4.13



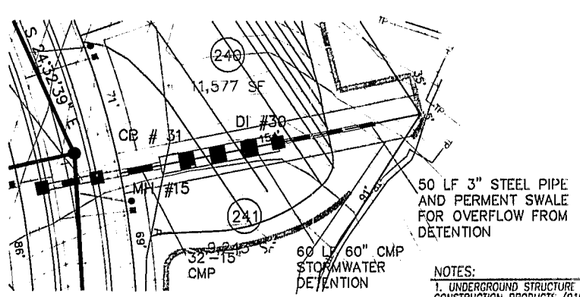
ALL TREES DESIGNATED TO REMAIN SHALL BE PROTECTED BY FENCING AS ILLUSTRATED

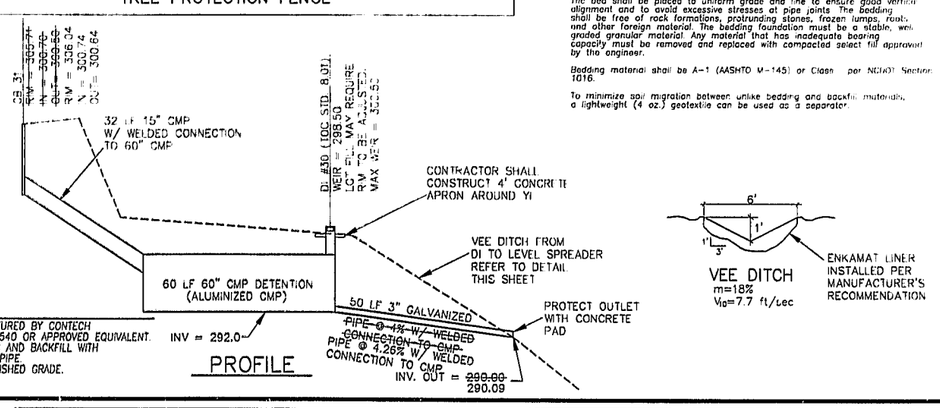
INSTALL TREE PROTECTION FENCE AND SIGNAGE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA AS SHOWN ON PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.

TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

TREE PROTECTION FENCE — STD No. 4.13





NOTES:
1. UNDERGROUND STRUCTURE MANUFACTURED BY CONTECH CONSTRUCTION PRODUCTS (919)-781-8540 OR APPROVED EQUIVALENT.
2. PROVIDE MINIMUM 6" STONE BEDDING AND BACKFILL WITH STONE UP TO THE SPRINGLINE OF THE PIPE.
3. PROVIDE 18" MINIMUM COVER TO FINISHED GRADE.
4. SPRINGLINE SHALL BE (OD/2).

DETENTION BASIN DETAILS

UNDERGROUND DETENTION SYSTEM - ALUMINUM PIPE

SPECIFICATIONS

MATERIALS
The 60" diameter pipe will be 14 Gage with 3"x1" corrugations. The pipe will be lockseam ALUMINUM and manufactured in accordance with AASHTO M-196. Pipe to have a minimum of two annular re rolled ends.

The 12" 30" diameter pipe will be 14 Gage with 2-2/3"x1/2" corrugations. The pipe will be lockseam ALUMINUM and manufactured in accordance with AASHTO M-196. Pipe to have a minimum of two annular re rolled ends.

BACKFILL
The fill material shall be free of rocks, frozen lumps or foreign matter that could cause hard spots in backfill, or that could decompose and create voids.

Backfill material shall be a well graded Class I, Class II, or Class III material per NCDOT Section 1016, Select Backfill Specification.

Highly plastic silts, highly plastic clays, organic silts, organic clays, and peats shall not be used as backfill.

Backfill shall be placed symmetrically on each side of the structure in six inch to eight-inch loose layers to one-foot above the top of the pipe. Each layer is to be compacted to the specified density (minimum 90%) as per the geotechnical engineer's standards before placing the next layer. Reference ASTM A798.

Retention/Detention backfill shall be A-1, A-2, or A-3 per AASHTO M 145 and Class I, Class II, or Class III per NCDOT Section 1016.

BEDDING
The bed shall be placed to uniform grade and line to ensure good vertical alignment and to avoid excessive stresses at pipe joints. The bedding shall be free of rock formations, protruding stones, frozen lumps, roots, and other foreign material. The bedding foundation must be a stable, well-graded granular material. Any material that has inadequate bearing capacity must be removed and replaced with compacted select fill approved by the engineer.

Bedding material shall be A-1 (AASHTO M-145) or Class per NCDOT Section 1016.

To minimize soil migration between unlike bedding and backfill materials, a lightweight (4 oz.) geotextile can be used as a separator.

SEEDBED PREPARATION

1) Chisel compacted areas and spread topsoil 3 inches deep over adverse soil conditions, if available.
2) Rip the entire area to 6 inches depth.
3) Remove all loose rock, roots and other obstructions leaving surfaces reasonably smooth and uniform.
4) Apply agricultural lime, fertilizer, and superphosphate uniformly and mix with soil (see below).
5) Continue tillage until a well-pulverized, firm, reasonably uniform seedbed is prepared 4 to 6 inches deep.
6) Seed a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
7) Mulch immediately after seeding and anchor mulch.
8) Inspect all seeded areas and make necessary repairs or reseedings within the planting season; if possible, if stand should be over 60% damaged, reestablish following original line, fertilizer and seeding rates.
9) Consult Conservation Inspector on maintenance treatment and fertilization after permanent cover is established.

* Apply: Agricultural Limestone - 2 Tons/Acre (3 Ton per Acre on clay soils)
Fertilizer - 1,000 lbs./acre - 10-10-10
Superphosphate - 500 lbs./acre - 20%
Mulch - 2 Tons/Acre - small grain straw
Anchor - Asphalt Emulsion @ 300 gal. acre

SEEDING SCHEDULE

SHOULDERS, SIDE DITCHES, SLOPES (max. 3:1)

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	300 lbs/acre
Nov 1 - Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
Mar 1 - Apr 15	Tall Fescue	300 lbs/acre
Apr 15 - June 30	Hulled Common Bermudagrass	60 lbs/acre
July 15 - Aug 15	Tall Fescue and	35 lbs/acre
	*** Browntop Millet	
	*** or Sorghum-Sudan Hybrids	

SLOPES (3:1 to 2:1)

Mar 1 - June 1	Serices Lespedeza (scarified)	50 lbs/acre
	and	
Mar 1 - Apr 15	ADD Tall Fescue	120 lbs/acre
	and	
Mar 1 - June 30	ADD Weeping Lovegrass	10 lbs/acre
	or	
Mar 1 - June 30	ADD Hulled Common Bermudagrass	25 lbs/acre
June 1 - Sep 1	*** Tall Fescue and	120 lbs/acre
	*** Browntop Millet	25 lbs/acre
	*** or Sorghum-Sudan Hybrids	30 lbs/acre
Sep 1 - Mar 1	Serices Lespedeza (unhulled-unscarified)	70 lbs/acre
	and Tall Fescue	120 lbs/acre
Nov 1 - Mar 1	ADD Abruzzi Rye	25 lbs/acre

Consult Erosion Control Engineer or Soil Conservation Service for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinationsare possible.

*** Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12 inches in height before mowing, otherwise fescue may be shaded out.

CONSTRUCTION SEQUENCE

1) Obtain Grading Permit.
2) Install all erosion control measures as shown
3) Obtain Certificate of Compliance through on-site inspection by Town Erosion Control Engineer.
4) Proceed with grading.
5) Clean sediment basins when half full.
6) Seed and mulch denuded area within 30 days after finished grades are established.
7) Maintain soil erosion control measures until permanent ground cover is established.
8) Request final approval by Town Erosion Control Engineer.
9) Remove soil erosion control measures and stabilize these areas.

NORTH CAROLINA PROFESSIONAL SEAL 16269 ENGINEER JAMES E. CANFIELD
7/2/02

WITHERS & RAVENEL Engineering & Surveying, Inc.
111 MacKenan Drive · Cary, N.C. 27511
919-469-3340 FAX 919-467-6008

Revisions			
No.	Description	Date	By

CARY PARK PARCEL SF-8a
CARY PARK P.U.D.

EROSION CONTROL AND STORM DRAINAGE DETAILS -- AS-BUILT

Designer	W&R	Scale	NTS
Drawn By	JRJ	Date	6/14/02
Checked By	JEC	Job No.	201135

CAD File SHT7.DWG
Sheet No 7 of .