

MURPHY YELLE ASSOCIATES REGISTERED LAND SURVEYORS 6308 J. RICHARD DRIVE RALEIGH, NC 27612 (919) 787-7873

**CAPACITY & VELOCITY TABLE**

Open Channel Flow for Circular Cross Section  
 Manning's n value = .015 Pipe diameter (in) = 30 Pipe slope (ft/ft) = .0200  
 Discharge (cfs) Velocity (ft/s) Depth (ft) Perimeter (ft) Friction Loss (ft/100 ft)

44.0	12.00	1.43	3.28	4.70	2.28	1.92
------	-------	------	------	------	------	------

Open Channel Flow for Trapezoidal Cross Section  
 Bottom width (ft) = 10.00 Side slope (H:V) = 1:2 Channel slope (ft/ft) = .0200 Manning's n value = .037  
 Discharge (cfs) Velocity (ft/s) Depth (ft) Area (sq ft) Wetted Perimeter (ft) Friction Loss (ft/100 ft)

44.0	4.50	0.41	9.27	22.21	22.15	1.19
------	------	------	------	-------	-------	------

BASED ON WAKE COUNTY PANEL 175, FLOOD PROFILE 154-P, BASIN 18, STREAM 14, SECTION A, TABLE 2: BASE FLOOD (100-YR) EL = 288' BASE WITH SURCHARGE EL = 289'

**NOTE -**  
 THIS PLAN IS PHASED. OWNERS DESIRE TO GRADE EACH PHASE SEPARATELY OR COMBINED. OWNER WILL INSTALL ONLY THE DEVICES REQUIRED FOR THE DISTURBED PHASE.  
 IF PHASED, CONTRACTOR SHALL PROVIDE BERM ALONG PHASE LINE TO ENSURE ALL SILTY WATER IS CHANNLED INTO A FILTER BASIN.  
 CONTRACTOR SHALL USE EXISTING CONSTRUCTION ENTRANCE AT WEST SIDE OF CUL-DE-SAC. ABSOLUTELY NO ACCESS TO SITE FROM EXISTING PAVEMENT.

**FILTER BASIN 1**  
 DETAIL 4.03  
 DENURED AREA = 5.8 AC  
 CAPACITY = 1800 CU.FT. \* 5.8 = 10,440  
 SIZE = 50' x 52' x 4'

**DIVERSION DITCH (TYP)**  
 DETAIL 4.07  
 MAINTAIN 1/4" GRADE TO BASIN

PERMISSION TO ENCRACH TO BE GRANTED BY COUNTY OF WAKE

HIGH POINT IN DIVERSION DITCH

**FILTER BASIN 2**  
 DETAIL 4.03  
 DENURED AREA = 4.7 AC  
 CAPACITY = 4.7 x 1800 = 8,460 CU.FT.  
 SIZE = 46' x 45' x 4'

DISSIPATOR PAD - DETAIL W-1  
 8' W x 24' L - CLASS II RIP-RAP

ALONG PROPERTY LINE PROVIDE TRAPEZOIDAL SWALE  
 BASE = 10' SLOPE = 10:1  
 SLOPE = 0.5% Q = 42.2  
 VELOCITY = 2.3 FPS

DIVERSION DITCH DETAIL 4.07

LIMITS OF GRADING COVERED BY THIS PLAN

**RUNOFF CALCS** Q=CIA  
 C=0.90 (assumes developed site)  
 I<sub>a</sub> = 7.5" hour (T<sub>c</sub> = 5 min)  
 BASIN 1 = 5.8 x 0.9 x 7.5 = 39.2 cfs  
 BASIN 2 = 4.7 x 0.9 x 7.5 = 31.7 cfs  
 FES 1 = FLOW @ 25'

FROM	AREA	CFS
AERIAL CENTER 3000	2.6	20.9
ROADWAY	0.5	6.0
OFFSITE	3.0	22.9
<b>TOTAL CFS</b>		<b>49.8</b>

**CONSTRUCTION SEQUENCE**

1. Obtain grading permit.
2. Install gravel construction pad, temporary diversions, silt fencing, sediment basins or other approved measures as shown on the approved plan. Clear only as necessary to install these devices.
3. Call 467-0476 for onsite inspection by Environmental Inspector and obtain Certificate of Compliance.
4. Begin clearing and grubbing. Maintain devices as needed. Rough grade site.
5. Install storm sewer (if shown) and protect inlets with silt fencing, sediment traps or other approved measures as shown on the plan. Begin constructing buildings, etc.
6. Stabilize site as areas are brought up to finish grade with vegetation, paving, ditch linings, etc.
7. When construction is complete and all areas are stabilized completely, call for inspection by Environmental Inspector.
8. If site is approved, remove temporary diversions, silt fencing, sediment basins, etc., and seed out or pave any resulting bare areas. All remaining permanent erosion control devices (such as velocity dissipators) should be installed now.
9. When vegetation has become established, call for final site inspection by Environmental Inspector.
10. Obtain a Certificate of Completion.

**AERIAL CENTER EXECUTIVE PARK  
 SEDIMENTATION CONTROL PLAN  
 FOR  
 TRACT L, PORTION OF TRACT H  
 CARY NORTH CAROLINA  
 OCTOBER 1988 SCALE 1" = 60'**



REVISED 7/11/89 - REROUTED STORM WATER EAST OF PROPOSED ROAD.