

DETENTION CALCULATION SUMMARY

Description	Rational Method Storm Event (cfs)			
	Q1 Storm	Q2 Storm	Q3 Storm	Q10 Storm
Pre-R-40 Discharge	2.37	4.53	5.16	5.68
Post Discharge	6.52	8.31	9.49	10.42
Attenuation Required	4.15	3.78	4.31	4.74
Discharge Into BMP	6.58	8.38	9.58	10.81
Discharge Out of BMP	0.03	0.04	0.04	0.04
Attenuation Provided	6.55	8.34	9.54	10.47
Comments	OK	OK	OK	OK

Description	SCS Method Storm Event (cfs)			
	Q1 Storm	Q2 Storm	Q3 Storm	Q10 Storm
Pre-R-40 Discharge	6.87	11.56	16.63	20.18
Post Discharge	9.91	12.81	17.91	21.47
Attenuation Required	3.04	1.25	1.28	1.29
Discharge Into BMP	7.43	9.99	12.81	15.17
Discharge Out of BMP	4.36	7.16	10.93	11.93
Attenuation Provided	3.08	2.23	1.88	3.84
Comments	OK	OK	OK	OK

The proposed attenuation provided by the wetpond provides enough stormwater attenuation so that the Q1 post-developed discharge does not exceed the pre-developed discharge, and the Q2, Q3 and Q10 post-developed discharge does not exceed the R-40 zoning discharge.

GRADING NOTES

- THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION PRIOR TO THE CERTIFICATE OF OCCUPANCY (CO) IS SECURED. THE FENCE SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION.
- ALL STORM DRAIN FRAMES GRATES & HOODS SHALL BE STAMPED WITH "BRANS TO INVERT IN ACCORDANCE WITH TOWN OF CARY STANDARDS"
- CUT AND FILL SLOPE THAT IS (2:1) OR GREATER SHALL BE STABILIZED WITH PERMANENT SLOPE RETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES. SLOPES GREATER THAN THREE TO ONE (3:1) SHALL NOT BE STABILIZED WITH TURF GRASS BUT MUST BE STABILIZED WITH VEGETATION THAT REQUIRES MINIMAL MAINTENANCE, KEEPING LONG GRASS, RED FESCUE OR OTHER APPROVED VARIETY. (CHAPTER 7, PART 2, SECTION 4, (G) LDO).
- A GRADING PERMIT WILL NOT BE ISSUED UNTIL THE TOWN OF CARY HAS RECEIVED NOTIFICATION FROM THE ECOSYSTEM ENHANCEMENT PROGRAM THAT A RECEIPT HAS BEEN ISSUED TO THE DEVELOPER AND THE LOCAL GOVERNMENT STATING THE NITROGEN BUY DOWN HAS BEEN COMPLETED.
- THE PROJECT WILL MEET ALL OF THE REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER CONTROL STRUCTURES AS OUTLINED IN THE TOWN OF CARY LAND DEVELOPMENT ORDINANCE, (CHAPTER 4, PART 4.6, LDO).
- AS OF JULY OF 2007 UNDER NPDES REQUIREMENTS THE TOWN OF CARY REQUIRES THAT PROJECTS THAT HAVE IMPERVIOUS SURFACES OVER 2% & MEET PERCENT TOTAL SUSPENDED SOLID (TSS) PROTECTION. A WETPOD WITH 90% TSS REMOVAL EFFICIENCY HAS BEEN PROVIDED TO SATISFY THIS REQUIREMENT.

WATERSHED: CROATREE CREEK

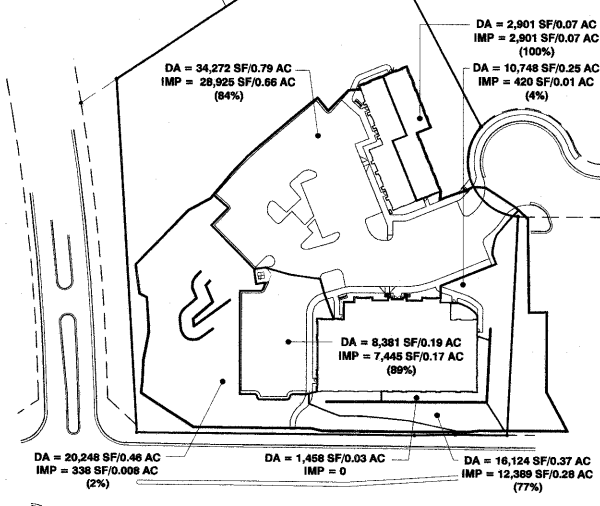
STORM SCHEDULE

10-Year Design Storm									
Inlet No.	Inlet No. Up	Rim Up	Invert	Invert	Pipe Length (ft)	Pipe Dia (in)	Material	Pipe Slope (%)	Pipe Slope (ft)
RISER 11	EW 10	361.70	348.34	347.90	44	15	rcp	1	
A19	Y18	367.33	354.33	353.80	51.00	9	rcp	1.00	
Y18	MH.V.B 7	367.50	363.72	362.85	76.11	15	rcp	1.01	
MH.V.B 7	CI 3	369.60	362.85	361.27	157.14	15	rcp	1.01	
A15	CO 5	368.00	365.60	364.80	70.40	9	rcp	1.42	
CO 5	CI 4	367.00	364.60	363.60	94.39	9	rcp	1.06	
CI 4	CI 3	366.00	363.40	362.98	41.73	15	rcp	1.01	
CI 3	CI 2	365.00	361.17	361.13	4.00	18	rcp	1.00	
CI 2	FES 1	366.90	361.03	360.87	16.00	18	rcp	1.00	

RIP-RAP APRON SCHEDULE

Structure	d ₅₀ (ft)	Velocity (fps)	Length (ft)	Width (ft)	Depth (ft)	Type	d ₅₀
FES #1	1.50	6.3	9	5	22	Class #1	6" - 19"
EW #10	1.25	8.0	7.5	4	22	Class #1	6" - 19"

*Note: Apron sizing based on NYDOT Chart



DRAINAGE AREA MAP

1" = 60'

09-MU-001/09-SP-041
APPROVED
TOWN OF CARY

Approved by: TC Date: 12/15/2009
Planning: KAH Date: 1/5/2010
Engineering: SS Date: 1/6/2010



SCALE IN FEET

NO FEMA MAPPED FLOODPLAINS EXIST ON THIS SITE

BANK

BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
1610 CHAPEL HILL ROAD, SUITE 201, WAKE FOREST, NC 27787
919-770-1882 (WAKE FOREST)
919-770-1882 (WAKE FOREST)
CERTIFICATION NUMBERS: NCSELS (C-0110), NCELA (C-0687)

NO.	DATE	DESCRIPTION	BY
1	10-01-09	PER T.O.C. COMMENTS	JKH
2	11-04-09	PER T.O.C. COMMENTS	JKH
3	12-15-09	PER T.O.C. COMMENTS	JKH
4	01-15-10	PER T.O.C. COMMENTS	JKH

CAROLINA LEGACY
125/151 QUARRYSTONE CIRCLE
TOWN OF CARY, WAKE COUNTY, NORTH CAROLINA

GRADING AND DRAINAGE PLAN
SCALE: 1" = 30'

SHEET C3.1
6 OF 14

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION