

UTILITY NOTES

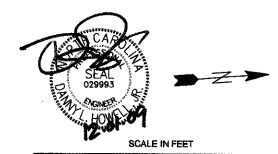
SANITARY SEWER:
 BACKWATER VALVES SHALL BE PROVIDED FOR ALL UNITS WITH FINAL FLOOR ELEVATIONS OF BUILDINGS LESS THAN 1' ABOVE MANHOLE.
 MINIMUM COVER OF 3" TO BE PROVIDED FOR ALL COLLECTION LINES 4" AND LARGER IN NON-TRAFFIC AREAS. IF LESS THAN 3" DUCTILE IRON PIPE SHALL BE REQUIRED IN CLASS 1 BEDDING.
 MINIMUM COVER OF 4" TO BE PROVIDED FOR ALL COLLECTION LINES 4" AND LARGER IN NON-TRAFFIC AREAS. IF LESS THAN 4" DUCTILE IRON PIPE SHALL BE REQUIRED IN CLASS 1 BEDDING (MINIMUM COVER SHALL BE NO LESS THAN 3").
 MINIMUM SLOPE FOR 4" AND 6" SANITARY SEWER COLLECTION LINES SHALL BE NO LESS THAN 1.04% WITH CLEAN-OUTS EVERY 75 LINEAL FEET.
 MAINTAIN 24" VERTICAL SEPARATION FROM STORM SEWER OR SPECIFY DUCTILE IRON PIPE FOR SANITARY SEWER. ALSO MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION FROM WATER MAINS OR SPECIFY DUCTILE IRON PIPE FOR SANITARY SEWER. IF WATER MAIN PASSES UNDER SANITARY SEWER, BOTH WATER AND SEWER SHALL BE DUCTILE IRON PIPE FOR 10' EACH SIDE OF CROSSING.
 IF SANITARY AND STORM SEWERS CROSS WITH LESS THAN 24" VERTICAL SEPARATION, A CONCRETE CURB OF ALLOWABLE FILL SHALL BE INSTALLED TO THE SPRINGLINE OF BOTH PIPES. THE CURB SHALL BE THE FULL WIDTH OF THE PIPE TRENCH, WITH A MINIMUM OF 12" BEYOND THE OUTSIDE EDGES OF THE LARGER PIPE. THE LOWER PIPE SHALL BE HAVE 1" THICK COMPRESSIBLE JOINT MATERIAL BETWEEN THE CURB AND THE PIPE. THE MINIMUM VERTICAL PIPE SEPARATION WITH A CRADLE IS 6".
CLEARANCES:
 CLEAN-OUTS IN TRAFFIC AREAS SHALL BE TRAFFIC BEARING ACCORDING TO TOWN OF CARY DETAILS.
UTILITIES:
 MINIMUM COVER OF 4" TO BE PROVIDED, WHEN WATER LINES ARE INSTALLED ALONG A ROADWAY THEY SHALL BE INSTALLED AT A SUFFICIENT DEPTH TO MAINTAIN 4' OF COVER TO THE SUBGRADE OF ANY FUTURE ROAD IMPROVEMENTS.
 MAINTAIN 12" VERTICAL SEPARATION FROM STORM SEWER. ALSO MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION FROM SANITARY SEWER MAINS. IF WATER MAIN PASSES UNDER SANITARY SEWER, BOTH WATER AND SEWER SHALL BE DUCTILE IRON PIPE FOR 10' EACH SIDE OF CROSSING.
 PRESSURE REDUCING VALVES SHALL BE PROVIDED IF PRESSURE IS IN EXCESS OF 80 PSI.
GENERAL:
 ALL WATER AND SEWER MAINS WITHIN PUBLIC EASEMENTS AND RIGHTS-OF-WAY TO BE OWNED, OPERATED, AND MAINTAINED BY THE TOWN OF CARY.
 ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF CARY AND THE STATE OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
 ALL SERVICE TAPS TO EXISTING TOC-MAINTAINED WATER OR SEWER LINES ARE ALLOWED ONLY AFTER OBTAINING A SEPARATE PERMIT THROUGH THE INSPECTIONS AND PERMITS DEPARTMENT (86P). PERMIT APPLICATIONS MAY BE OBTAINED FROM APP (919-468-4362) OR ONLINE AT [HTTP://WWW.TOWNOFCARY.ORG/DEPTS/DSDEPT/PERM/FORM246.PDF](http://www.townofcary.org/depts/dsdept/perm/FORM246.pdf)
 ALL UNDERGROUND UTILITIES ARE APPROXIMATELY LOCATED. ACTUAL LOCATION AND DEPTH TO BE CONFIRMED IN THE FIELD BY CONTRACTOR PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCY.
 BEFORE STARTING ANY CONSTRUCTION OF IMPROVEMENTS WITHIN ANY TOWN OR NCDOT STREET OR HIGHWAY RIGHT-OF-WAY, THE FOLLOWING PROCEDURES SHOULD BE UNDERSTAND:
 TOWN RIGHT-OF-WAY - CONTACT LOCAL AUTHORITIES TRAFFIC ENGINEERING DEPT. FOR INFORMATION ON DETOURS, OPEN CUTTING OF STREETS OR FOR ANY CONSTRUCTION WITHIN RIGHT-OF-WAY.
 NCDOT RIGHT-OF-WAY - CONTACT PROJECT ENGINEERS AND OBTAIN ALL SEWER MAINS. IF WATER MAIN PASSES UNDER SANITARY SEWER, BOTH WATER AND SEWER SHALL BE DUCTILE IRON PIPE FOR 10' EACH SIDE OF CROSSING. PROVISIONS, KEEP COPIES ON CONSTRUCTION SITE. ALSO CONTACT NCDOT DISTRICT OFFICE 24 HOURS IN ADVANCE BEFORE PLACING CURB AND OUTER).

STORM SCHEDULE

10-Year Design Storm									
Inlet No.	Inlet No. On	Rim Up	Invert On	Invert	Pipe Length (ft)	Pipe Dia (in)	Material	Pipe Slope (%)	
RSR11	E10	367.70	348.34	347.90	44	15	rcp	1.00	
A19	Y18	357.33	354.33	353.82	51.00	9	pvc	1.00	
Y18	MHUB 7	357.90	353.72	352.96	76.11	16	rcp	1.01	
MHUB 7	C13	358.00	352.88	351.27	167.14	15	rcp	1.01	
A19	CO 5	358.80	355.60	354.60	70.40	9	pvc	1.42	
CO 5	C14	357.80	354.80	353.60	84.36	9	pvc	1.06	
C14	C12	356.90	353.40	352.88	41.73	15	rcp	1.01	
C13	C12	356.90	351.17	351.15	4.00	18	rcp	1.00	
C12	FES 1	356.90	351.03	350.87	16.00	18	rcp	1.00	

09-MU-00109-SP-041 APPROVED TOWN OF CARY

Approved by: TC Date: 12/04/2009
 Planning: MSL Date: 11/16/2010
 Engineering: SS Date: 11/16/2010



SCALE IN FEET
 0 15 30 60 90 120

BNK

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

1500 HUNTERS LANE, SUITE 200, RALEIGH, NC 27607
 3319 HERITAGE TRADE DRIVE, SUITE 201, WAKE FOREST, NC 27787
 TEL: (919) 851-9989 (RALEIGH) (919) 770-1582 (WAKE FOREST)
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 CERTIFICATION NUMBERS: NCBELS (C-1110), NCBELA (C-0267)

NO.	DATE	DESCRIPTION	REVISIONS
1	10/26/09	PER T.O.C. COMMENTS	BY: JAB
2	11/16/10	PER T.O.C. COMMENTS	BY: JAB
3	10/26/09	PER T.O.C. COMMENTS	BY: JAB

UTILITY PLAN

SCALE: 1" = 30'

CAROLINA LEGACY

125/151 QUARRYSTONE CIRCLE

TOWN OF CARY, WAKE COUNTY, NORTH CAROLINA

DATE	DRAWN BY	CHECKED BY
08-12-2009	DR	DR

SHEET C2.1

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NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION