

WATER SERVICES
 WATER SERVICES FROM MAIN TO METER SHALL BE 3/4" TYPE K SOFT COPPER TUBING (ASTM B88).
 3/4" METER BOXES SHALL BE CAST IRON AND CONSIST OF A COMPLETE UNIT FOR SETTING A 5/8" X 3/4" WATER METER. METER STOPS SHALL BE O-RING SEALED AND HAVE AN INLET ANGLE 60° AS MANUFACTURED BY FORD (YL-2211-233) OR APPROVED EQUAL WITH LOCKING LID.
 METERS SHALL BE INSTALLED BY THE TOWN OF CARY UTILITIES DEPARTMENT.

SANITARY SEWER SERVICES
 SANITARY SEWER SERVICES SHALL BE 4" CAST IRON ABS, OR PVC PER TOWN OF CARY STANDARD. SERVICES SHALL BE PERPENDICULAR FROM THE SEWER MAIN TO THE STREET RIGHT-OF-WAY OR EDGE OF EASEMENT.
 SERVICE CONNECTIONS TO EXISTING SEWER MAINS SHALL BE INSTALLED BY THE TOWN OF CARY UTILITIES DEPARTMENT.
 SERVICE LINES WITH A COVER OF 8" OR GREATER SHALL REQUIRE CLASS 1 BEDDING PER TOWN OF CARY STANDARDS.

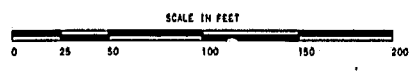
GENERAL NOTES
 SANITARY SEWER BACKFLOW PREVENTORS SHALL BE PROVIDED FOR ALL UNITS WITH FINAL FLOOR ELEVATIONS OF BUILDINGS LESS THAN 1' ABOVE MANHOLE (LOCATE ON PRIVATE SIDE OF CLEANOUT).
 MINIMUM GROUND COVER OF 3" SHALL BE PROVIDED FOR ALL SANITARY SEWER COLLECTION LINES 4" AND LARGER IN NONTRAFFIC AREAS.
 MINIMUM COVER OF 4" FROM SUB-BASE IN TRAFFIC AREAS SHALL BE PROVIDED FOR ALL COLLECTOR LINES 4" AND LARGER. IF MINIMUM COVER IS LESS THAN 4", DUCTILE IRON PIPE SHALL BE REQUIRED IN CLASS 1 BEDDING (MINIMUM COVER SHALL BE 2" LESS THAN 3/2").
 MINIMUM SLOPE FOR 4" SANITARY SEWER COLLECTION LINES SHALL BE NO LESS THAN 1/4" WITH CLEANOUTS EVERY 50 LINEAL FEET.
 MINIMUM SLOPE FOR 6" SANITARY SEWER COLLECTION LINES SHALL BE NO LESS THAN 0.6% WITH CLEANOUTS EVERY 100 LINEAL FEET.
 MAINTAIN 12" VERTICAL SEPARATION FROM STORM SEWER OR SPECIFY FERROUS PIPE FOR SANITARY SEWER. ALSO MAINTAIN 10" HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION FROM WATER MAINS OR SPECIFY FERROUS PIPE FOR SANITARY SEWER.
 WATER MAINS SHALL BE INSTALLED AT A DEPTH WITH A MINIMUM COVER OF 3" WITH 18" VERTICAL CLEARANCE MINIMUM FROM OTHER UNDERGROUND UTILITIES AND 10" HORIZONTAL CLEARANCE FROM ALL OTHER UTILITIES.
 PRESSURE REDUCING VALVE SHALL BE PROVIDED IF PRESSURE IS IN EXCESS OF 80 PSI (PRESSURE REDUCERS FOR WATER SERVICES SHALL BE ON PRIVATE SIDE OF WATER METER).
 GENERAL: ALL WATER AND SEWER MAINS WITHIN PUBLIC EASEMENTS AND RIGHTS-OF-WAY SHALL BE OWNED, OPERATED, AND MAINTAINED BY THE PUBLIC AUTHORITY.
 ALL UNDERGROUND UTILITIES ARE APPROXIMATELY LOCATED. ACTUAL LOCATION AND DEPTH SHALL BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION.

STORM SEWER (RCP) SHALL BE CONSTRUCTED TO THE FOLLOWING CLASSES:
 COVER LESS THAN 10' CLASS C OR D BEDDING, CLASS II WALLS
 COVER 10' TO 15' CLASS B BEDDING, CLASS III WALLS
 COVER GREATER THAN 15' CLASS B BEDDING, CLASS IV WALLS

PRIOR TO BEGINNING ANY CONSTRUCTION OF IMPROVEMENTS WITHIN ANY CITY OR NCDOT STREET OR HIGHWAY RIGHT-OF-WAY, THE FOLLOWING PROCEDURES SHALL BE UNDERTAKEN:
 CITY RIGHT-OF-WAY: CONTACT LOCAL AUTHORITIES TRAFFIC ENGINEERING DEPARTMENT FOR INFO ON DETOURS, OPEN-CUTTING OF STREETS, OR FOR ANY CONSTRUCTION WITHIN RIGHT-OF-WAY.
 NCDOT RIGHT-OF-WAY: CONTACT PROJECT ENGINEER(S) AND OBTAIN ALL PERMITS AND ENCROACHMENTS (KEEP COPIES ON CONSTRUCTION SITE). ALSO CONTACT NCDOT DISTRICT OFFICE 24 HOURS IN ADVANCE PRIOR TO PLACING CURB AND GUTTER.

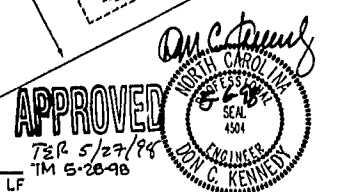
DRIVEWAY: APPROVAL NO. _____ DATE _____
 ENCROACHMENT FORM 16.1 (2-PARTY UTILITY) APPROVAL NO. _____ DATE _____
 ENCROACHMENT FORM 16.1A (2-PARTY NON-UTILITY) APPROVAL NO. _____ DATE _____
 ENCROACHMENT FORM 16.1B (STORM AND WIDENING) APPROVAL NO. _____ DATE _____
 ENCROACHMENT FORM 16.6 (3-PARTY UTILITY) APPROVAL NO. _____ DATE _____

ESTIMATED SEWER FLOW
 19.01 AC IN LOTS x 30% BUILDING COVERAGE = 247,247 SF
 247,200 SF x 0.12 GPD/SF = 29,670 GPD



SCHEDULE OF IMPROVEMENTS

LINEAR FEET OF STREETS	825 LF
LINEAR FEET OF SIDEWALK	1375 LF
LINEAR FEET OF SANITARY SEWER MAINS	1115 LF
LINEAR FEET OF WATER MAINS	1033 LF



BASS, NIXON, & KENNEDY, INC., CONSULTING ENGINEERS
 7416 CHAPEL HILL ROAD, RALEIGH, N. C. 27607
 919-851-4422

UTILITY PLAN
 SCALE: 1" = 50'

NO.	DATE	NO.	DATE	REVISIONS
1	8/25/97	5	5/4/98	
2	9/18/97			
3	10/24/97			
4	4/9/98			

CENTREWEST SOUTH
CARY, WAKE COUNTY, NORTH CAROLINA

SHEET
C20-
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NOT PERMITTED FOR CONSTRUCTION