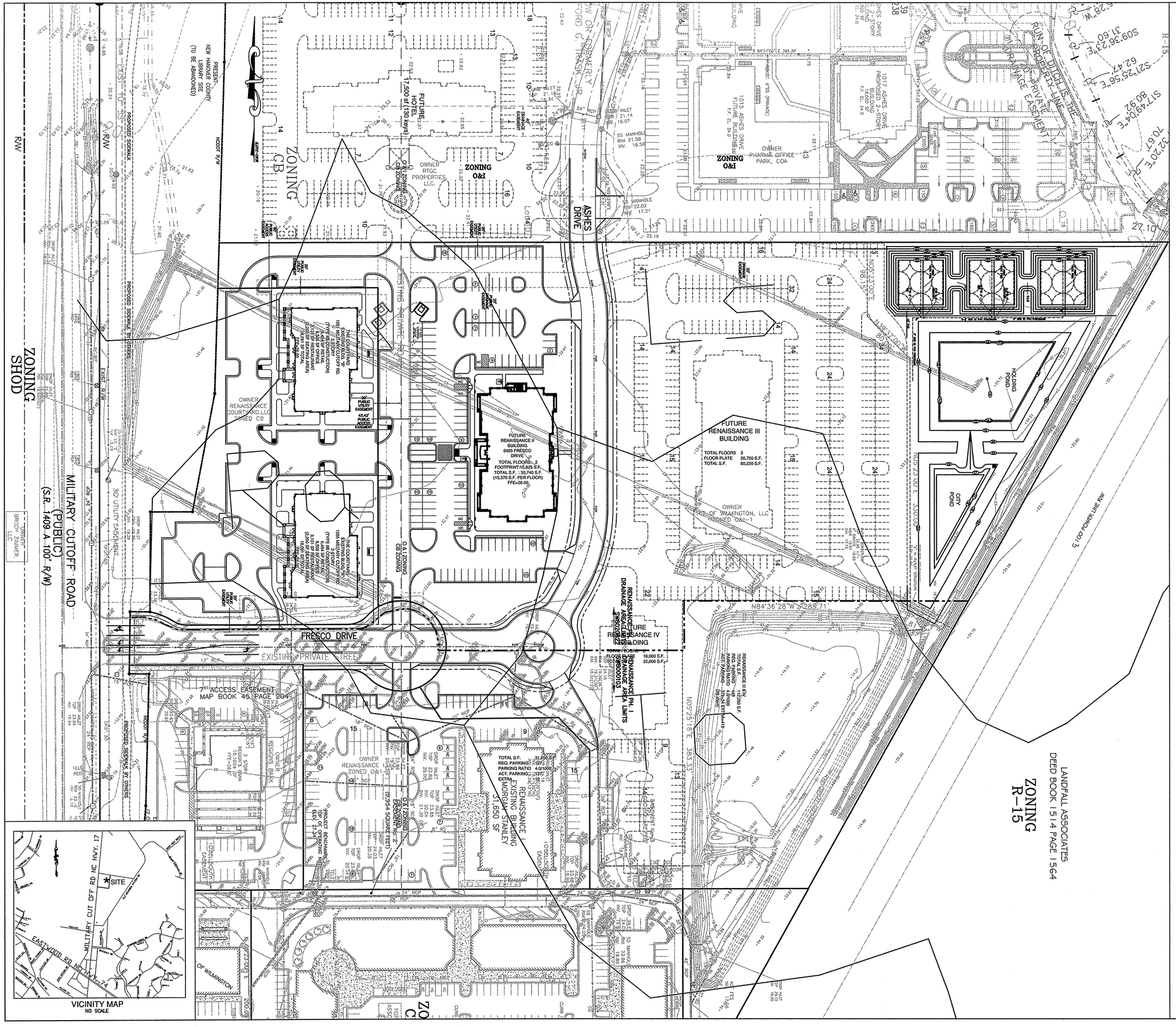

SITE DATA TABLE

USE:	OFFICE
SITE AREA:	3.15 ACRES (137,426 SF)
ACCESS EASEMENT WITHIN SITE:	.80 ACRES (34,718 SF)
PARCEL ID#:	R05100-003-065-000
MAP ID#:	315706.49.8929.000
DISTURBED AREA:	
ZONING:	O & I-1
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS: (REQUIRED)	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 10' CORNER SIDE SETBACK: 20' REAR SETBACKS: 20'
BUILDING SETBACKS: (PROPOSED)	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 187'± CORNER SIDE SETBACK: 110'± REAR SETBACKS: 130'±
MAX. BUILDING LOT COVERAGE:	40%
PROPOSED BUILDING LOT COVERAGE:	11%
MAX. BUILDING HEIGHT:	45'
BUILDING CONSTRUCTION TYPE:	IIB
BUILDING	
BUILDING HEIGHT:	43' (2 STORY)
BUILDING SQUARE FOOTAGE:	30,740 SF TOTAL (15,370 PER FLOOR)
PARKING REQ'D: OFFICE	200/SF MAX, 300/SF MIN.
TOTAL PARKING REQ'D:	154 MAX/102 MIN. REQUIRED
PROPOSED PARKING PROV'D:	146 (INCLUDES 5 HC)
PROPOSED IMPERVIOUS AREA:	
BUILDING:	15,825 SF (ROOF AREA)
ASPHALT, CURB & GUTTER	51,678 SF
SIDEWALK:	4,150 SF
TOTAL:	71,653 SF
EXISTING IMPERVIOUS AREA WITHIN ACCESS EASEMENT:	25,000 SF
TOTAL IMPERVIOUS AREA:	96,653 SF
% SITE IMPERVIOUS AREA:	70%
AREA WITHIN NEW R/W:	46,000 SF
IMPERVIOUS AREA WITHIN NEW R/W:	38,635 SF

LANDSCAPING:

FOUNDATION PLANTINGS (12%):	
FRONT: 45' X 156' X .12 = 842 SF REQD.	876 SF PROVIDED
SIDE (2): 45' X 104' X .12 = 562 SF REQD.	570 (2) SF PROVIDED
REAR: 45' X 156' X .12 = 842 SF REQD.	946 SF PROVIDED
TOTAL REQUIRED=2,808 SF TOTAL PROVIDED=2,962 SF	
LANDSCAPING REQ'D INTERIOR:	
ASPHALT, CONCRETE CURB & GUTTER	51,678 SF
14% REQUIRED (14%) X (51,678) = 7,235 SF	7,300 SF PROVIDED
STREETYARD LANDSCAPING:	
PRIMARY: PROPOSED PUBLIC R/W FRESCO DR. 18' MULTIPLYER (241'-24) X 18' = 3,906 SF	3,918 SF PROVIDED
SECONDARY: ASHES DR. 9' MULTIPLYER (451'-48') X 9' = 3,627 SF	3,763 SF PROVIDED

SITE DATA TABLE - EXISTING RENNAISSANCE I, PHASE I

USE:	OFFICE
SITE AREA:	2.16 ACRES
DISTURBED AREA:	
ZONING:	O & I-1 AND CB
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS: (EXISTING)	FRONT: 230' SIDE: 33' NORTH, 11' SOUTH REAR: 45'
BUILDING HEIGHT:	32' (2 STORY)
BUILDING SQUARE FOOTAGE:	31,650 SF (15,825 SF EACH FLOOR)
PARKING REQ'D: O & I ZONE PARKING GROUP (OFFICE):	200/SF MAX, 300/SF MIN. 158 MAX/105 MIN. REQUIRED
PROPOSED PARKING PROV'D:	137 REGULAR (6 ARE HC)
IMPERVIOUS AREA-PHI DRAINAGE AREA:	
EXISTING BUILDING:	15,825 SF (ROOF AREA)
EXISTING ASPHALT/CURB & GUTTER	68,950 SF
EXISTING SIDEWALKS/CONCRETE PADS	6,850 SF
TOTAL EXISTING IMPERVIOUS AREA:	91,625 SF TOTAL
STREETYARD LANDSCAPING: (331-24) X 18 = 5,526 SF REQUIRED	5,526 SF PROVIDED
INTERIOR LANDSCAPE PROVIDED:	1,976 SF PROVIDED

SITE INVENTORY MAP DATA

PREPARER:	NORRIS, KUSKE & TUNSTALL ENGINEERS
SOIL TYPE:	Ro, Ls, To
MILITARY CUT-OFF RD:	SHOD
100 YEAR FLOOD BOUNDARY:	OUTSIDE 100 YEAR FLOOD BOUNDARY
FLOOD ZONE:	THIS SITE IS LOCATED IN ZONE "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 370168 0085 E, DATED: 3 SEPT. 1992.
CONSERVATION OVERLAY DISTRICT:	NONE WITHIN SITE
HISTORICAL SITE:	NONE
CEMETARY:	NONE
FORESTED AREA:	VARIOUS (OAK, GUM, TULIP) SEE PLAN
WETLANDS:	NONE WITHIN SITE
ENDANGERED SPECIES/HABITAT:	NONE REPORTED

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

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INVENTORY PLAN
RENAISSANCE PARK-RENAISSANCE II BUILDING
6925 FRESCO DRIVE
WILMINGTON, NORTH CAROLINA

OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

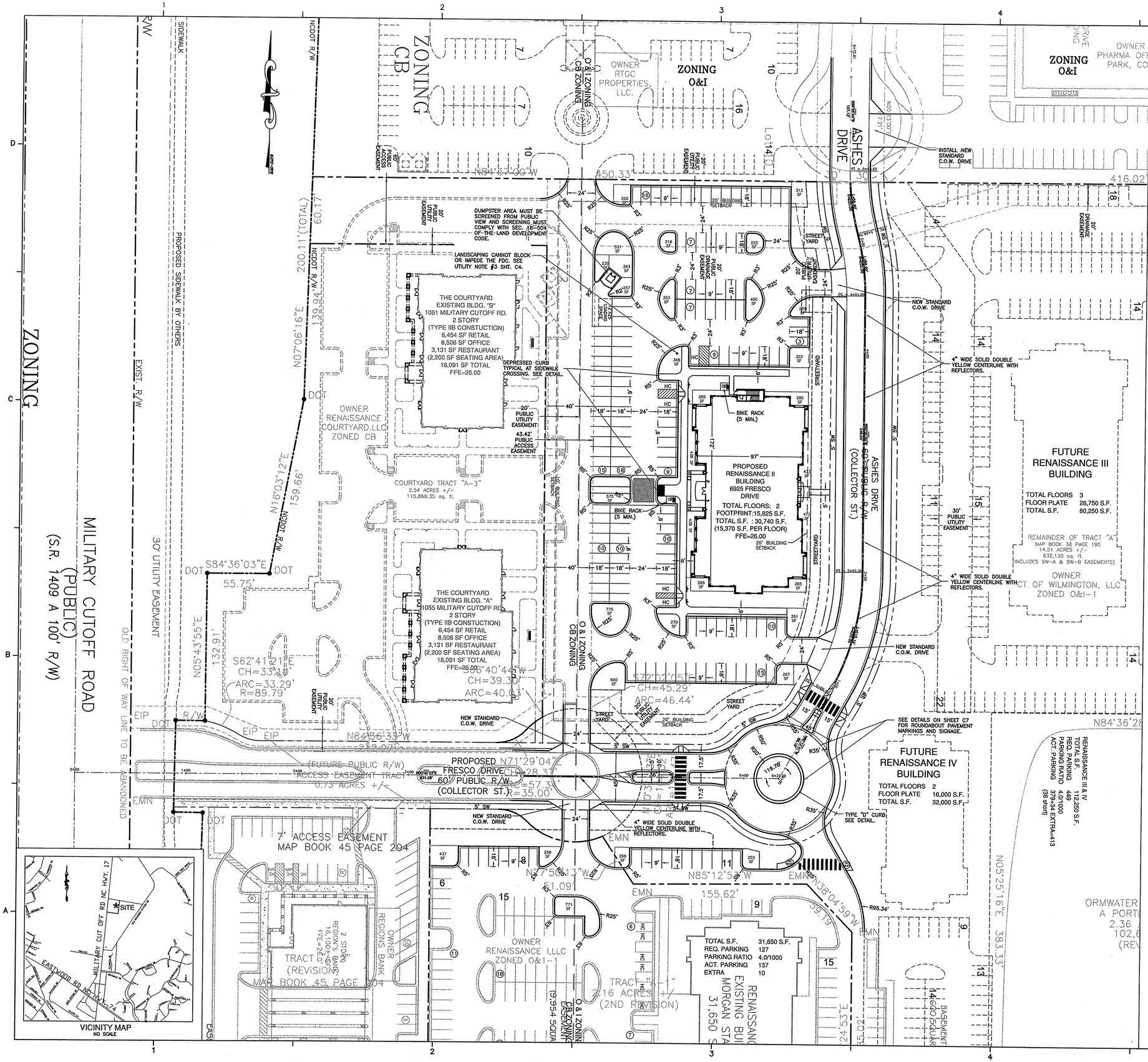
NORRIS, KUSKE & TUNSTALL
CONSULTING ENGINEERS, INC.
902 MARKET STREET
WILMINGTON, NC, 28401
PHONE (910) 343-9653
FAX (910) 343-9604
office@nkteng.com

07024

DES. JST
CKD: JPN
DRWN: NKS
DATE: 3/7/07

NORTH CAROLINA PROFESSIONAL SEAL 19811 ENGINEER JOHN S. TUNSTALL

C0



SITE DATA TABLE

USE:	PROFESSIONAL OFFICE
SITE AREA:	3.16 ACRES (137,626 SF)
ACCESS EASEMENT WITHIN SITE:	.80 ACRES (34,718 SF)
PARCEL ID#:	R05100-003-065-000
MAP ID#:	315706.49.8929.000
DISTURBED AREA:	4.48 ACRES
ZONING:	O & I-1
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS: (REQUIRED)	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 130' CORNER SIDE SETBACK: 20' REAR SETBACKS: 20'
BUILDING SETBACKS: (PROPOSED)	FRONT SETBACK: 136' INTERIOR SIDE SETBACK: 187'± CORNER SIDE SETBACK: 110'± REAR SETBACKS: 187'±
MAX. BUILDING LOT COVERAGE:	40%
PROPOSED BUILDING LOT COVERAGE:	11%
MAX. BUILDING HEIGHT:	45'
BUILDING CONSTRUCTION TYPE:	IIB
BUILDING MATERIAL:	BRICK, CALCIUM SILICATE MASONRY UNITS, HARD COAT STUCCO AT PARAPET
BUILDING	
BUILDING HEIGHT:	43' (2 STORY)
BUILDING SQUARE FOOTAGE:	30,740 SF TOTAL (15,370 PER FLOOR)
PARKING REQ'D: OFFICE	200/SF MAX, 300/SF MIN.
TOTAL PARKING REQ'D:	154 MAX/102 MIN. REQUIRED
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TOTAL:	71,653 SF
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LANDSCAPING:	
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SIDE (2): 45' X 104' X .12 = 562 SF REQD.	570 (2) SF PROVIDED
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SECONDARY: ASHES DR. 9' MULTIPLYER (451'-48') X 9' = 3,627 SF	3,763 SF PROVIDED

SITE DATA TABLE - EXISTING RENNNAISSANCE I, PHASE I

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CAMA LAND USE:	RESOURCE PROTECTION
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BUILDING SQUARE FOOTAGE:	31,650 SF (15,825 SF EACH FLOOR)
PARKING REQ'D: O & I ZONE	
PARKING GROUP (OFFICE):	200/SF MAX, 300/SF MIN. 158 MAX/105 MIN. REQUIRED
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EXISTING BUILDING:	15,825 SF (ROOF AREA)
EXISTING ASPHALT/CURB & GUTTER	68,950 SF
EXISTING SIDEWALKS/CONCRETE PADS	6,850 SF
TOTAL EXISTING IMPERVIOUS AREA:	91,625 SF TOTAL
STREETYARD LANDSCAPING: (331-24) X 18 = 5,526 SF REQUIRED	5,526 SF PROVIDED
INTERIOR LANDSCAPE PROVIDED:	1,976 SF PROVIDED

CITY OF WILMINGTON STANDARD NOTES:

1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
2. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
3. ALL PAVEMENT MARKINGS IN PUBLIC RIGHT-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
4. ONCE STREETS ARE OPEN TO TRAFFIC, THE DEVELOPER SHALL CONTACT TRAFFIC ENGINEERING (RICHIE BROWN) TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAMES SIGNS. PROPOSED STREET NAMES MUST BE APROVED PRIOR TO INSTALLATION OF STREET NAMES SIGNS.
5. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
6. CONTACT DON BENNETT WITH TRAFFIC ENGINEERING AT 341-4696 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING AT 341-4696 FOURTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
7. ANY BROKEN OR MISSING SIDEWALK PANELS AND CURBING WILL BE REPLACED.
8. CONTACT KAREN DIXON AT 341-7893 TO DISCUSS STREET LIGHTING OPTIONS.
9. THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
10. ALL SITE LIGHTING SHALL BE LOCATED AND INSTALLED SO AS NOT TO SHINE DIRECTLY ONTO ADJACENT PREMISES. UNRESTRICTED LIGHTING IS LIMITED TO A HEIGHT OF TEN (10) FEET AND 90 DEGREE CUTOFF LIGHTING IS LIMITED TO FIFTEEN (15) FEET.
11. MECHANICAL EQUIPMENT AND TRASH RECEPTACLES WILL BE SCREENED BY AN EIGHT (8) FEET HIGH OPAQUE FENCE.
12. PROJECT SHALL COMPLY WITH CITY OF WILMINGTON CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
13. IF THE CONTRACTOR DESIRES CITY WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
14. ANY IRRIGATION SYSTEM SUPPLIED BY CITY WATER SHALL COMPLY WITH THE CITY CROSS CONNECTION CONTROL REGULATIONS. CALL 343-3910 FOR INFORMATION.
15. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CITY WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
16. WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
17. WATER AND SEWER SERVICE CANNOT BE ACTIVED ON NEW MAINS UNTIL ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY PUBLIC WATER SUPPLY SECITON OF NCDENR AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY OF NCDENR.
18. A LANDSCAPE PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE C.O.W. TRAFFIC ENGINEERING AND PARKS AND RECREATION DEPT. FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT. PLAN SHALL BE PER SD 15-17.

SCALE: 1" = 40'

0 40 80 120

RENAISSANCE II OFFICE BUILDING

6925 FRESCO DRIVE
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NORTH CAROLINA PROFESSIONAL SEAL 19866 ENGINEER JOHN S. TUNSTALL

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(910) 256-7704

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
⚠ REVISION 1 ISSUED FOR CONSTRUCTION

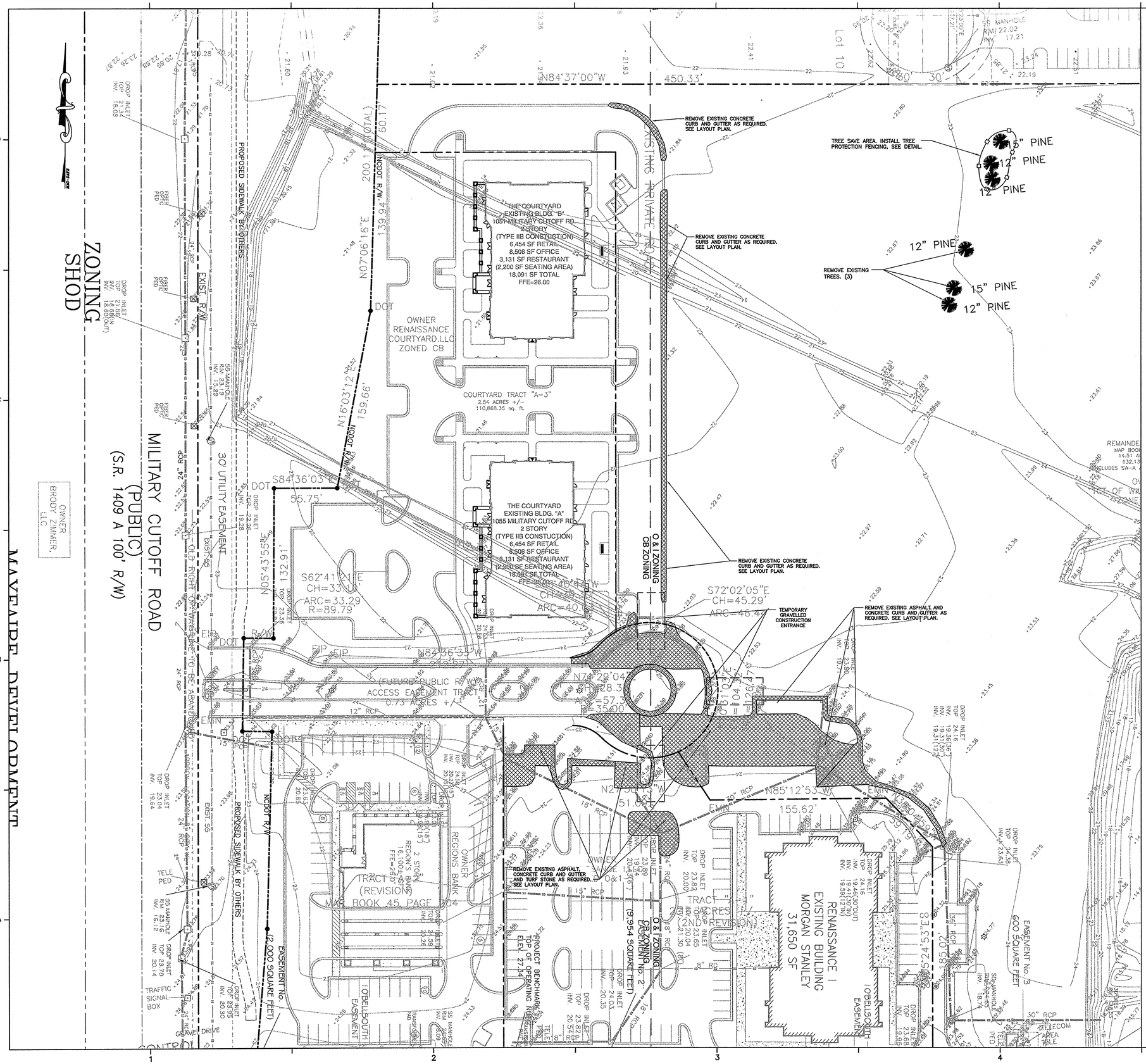
PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

LAYOUT PLAN

C1

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN



DEMOLITION NOTES

1. THE DEMOLITION WORK LIMITS SHOWN ARE APPROXIMATE. THE SITE WORK CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING AND FIELD DETERMINING THE EXACT DEMOLITION LIMITS. QUESTIONS DURING BIDDING SHALL BE DIRECTED TO THE OWNER'S / DEVELOPER'S GENERAL CONTRACTOR. REMOVE THE EXISTING SITE FEATURES WITHIN THE DEMOLITION WORK LIMITS. SAWCUT, REMOVE, REPAIR, PATCH, REPLACE AND ABANDON AS REQUIRED THE EXISTING CONCRETE CURB AND GUTTER, EXISTING CONCRETE, EXISTING ASPHALT PAVEMENT, EXISTING SITE FEATURES AND EXISTING UTILITIES AS REQUIRED WITHIN THE DEMOLITION LIMITS. REPAIR AND PATCH THE AREA WITH NEW ASPHALT PAVEMENT UP TO THE EXISTING ADJACENT ASPHALT PAVEMENT GRADE. INSTALL THE NEW ASPHALT PAVEMENT AND NEW 24" CONCRETE CURB AND GUTTER FOR POSITIVE DRAINAGE. THE GENERAL CONTRACTOR, SITE WORK CONTRACTOR AND LANDSCAPE CONTRACTOR SHALL COORDINATE THE DEMOLITION WORK, REPAIR WORK AND REMOVAL, STORAGE AND REPLACEMENT OF THE EXISTING LANDSCAPING PRIOR TO BEGINNING ANY DEMOLITION OR CONSTRUCTION ACTIVITIES.

2. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.

3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE SITE GRADES PRIOR TO BEGINNING CONSTRUCTION. CONTACT THE ENGINEER FOR DIRECTION AS REQUIRED DURING CONSTRUCTION.

4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT.

5. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST GENERATED BY THE WORK, INCLUDING BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, SITE VEHICULAR TRAFFIC AND RELATED OPERATIONS.

6. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND IDENTIFYING ALL EXISTING UTILITIES. ANY UTILITIES ENCOUNTERED THAT HAVE NOT BEEN IDENTIFIED NEED TO BE BROUGHT TO THE ATTENTION OF THE OWNER.

7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DISCONNECTING AND ABANDONING ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES UNLESS OTHERWISE NOTED. ALL EXISTING UTILITIES AND ASSOCIATED PIPING, ETC. NOT IN USE ON THE SITE SHALL BE PROPERLY ABANDONED AND REMOVED AS REQUIRED. COORDINATE WITH THE OWNER.

8. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING UTILITIES THAT REMAIN IN SERVICE OR ARE WITHIN THE PUBLIC RIGHT OF WAY DURING DEMOLITION.

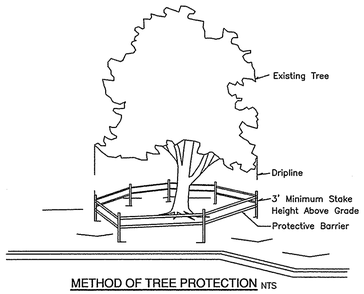
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REMOVAL OR RELOCATION OF ANY EXISTING UTILITY POLES / GUY LINES AND LIGHT POLES WITH THE OWNER AND THE APPLICABLE UTILITY COMPANY AS REQUIRED.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A TRAFFIC CONTROL PLAN AND DEVICES DURING CONSTRUCTION WORK IN ACCORDANCE WITH THE MUTCD, NCDOT AND CITY OF WILMINGTON STANDARDS.

11. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS AND SLOPES ON AND OFF SITE IN ACCORDANCE WITH THE EROSION CONTROL MEASURES SPECIFIED ON THE PLANS AND IN THE SPECIFICATIONS. IN ADDITION TO THE EROSION CONTROL MEASURES SPECIFIED, THE CONTRACTOR SHALL INSTALL EROSION CONTROL BLANKETS /TURF REINFORCEMENT MATS IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AS REQUIRED WHERE NORMAL SEED / SOD STABILIZATION IS UNSUCCESSFUL. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHO IS RESPONSIBLE FOR PROVIDING THE PERMANENT STABILIZATION MEASURES AND THE TYPE OF PERMANENT MEASURES PRIOR TO BEGINNING DEMOLITION AND CONSTRUCTION. THE PERMANENT STABILIZATION MEASURES SHALL BE IN PLACE AND ACCEPTABLE TO THE OWNERS REPRESENTATIVE AND ENGINEER PRIOR TO PROJECT CLOSEOUT. COORDINATE INSPECTION WITH THE OWNER AND ENGINEER PRIOR TO PROJECT CLOSEOUT.

CITY OF WILMINGTON TREE PROTECTION NOTES:

1. REGULATED AND SIGNIFICANT TREES IN THE STREET YARD [18-456(c)] AND ANY TREES IN ANY REQUIRED BUFFERS [18-456(d)] ARE REQUIRED TO BE RETAINED.
2. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS. [18-457(b)]
3. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS. [18-457(d)]
4. PROTECTIVE FENCING IS TO BE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. [18-458]
5. ANY TREES AND / OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHTOUT CONSTUCTION TO INSURE THAT NO CLEARING AND GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS. [18-458]
6. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED. [18-458]



METHOD OF TREE PROTECTION NTS

CLEARLY mark the trees to be saved prior to construction and erect a protective barrier at the dripline.

Dripline—The area of soil directly beneath the tree extending out to the tips of the outermost branches.

LEGEND

PROPERTY LINE	
TO BE REMOVED	

SCALE: 1" = 40'

0 40 80 120

RENAISSANCE II OFFICE BUILDING

6925 FRESCO DRIVE
WILMINGTON, N.C.

NORRIS, KUSKE & TUNSTALL
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902 MARKET STREET
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NORTH CAROLINA PROFESSIONAL SEAL 19851 ENGINEER JOHN S. TUNSTALL

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

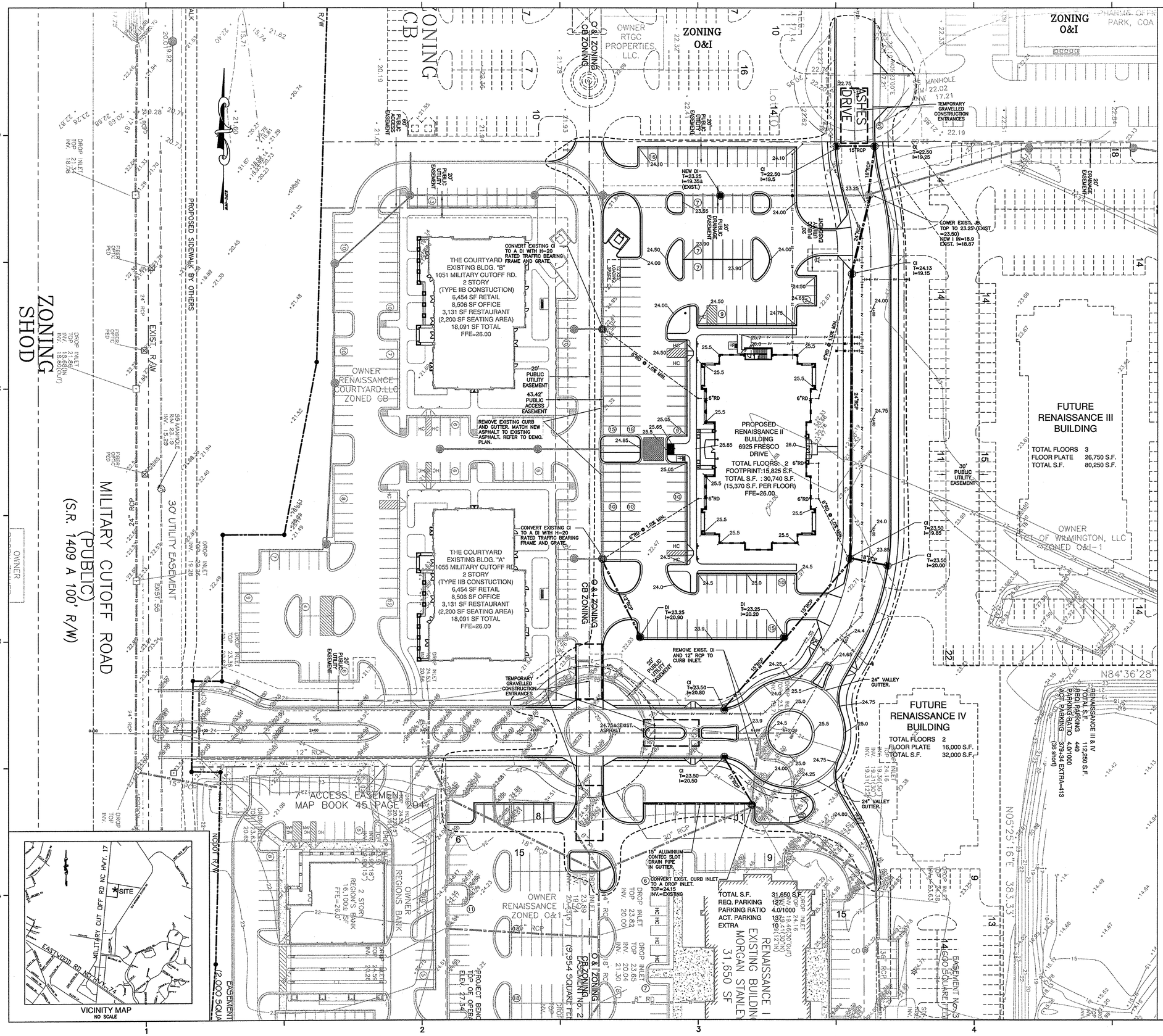
PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

EXISTING SITE CONDITIONS AND DEMOLITION PLAN

C2

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN



LEGEND

PROPERTY LINE	
EXISTING SPOT ELEVATION	22.84
EXISTING CONTOUR	20
DISTURBED AREA	
PROPOSED CONTOUR	36
PROPOSED FINISH GRADE SPOT ELEVATION	23.5
STORMDRAIN PIPE	15"RCP
TEMPORARY SILT FENCE	TSF
EROSION CONTROL AROUND INLETS	
PROPOSED SANITARY SEWER	SS
PROPOSED WATER LINE	

SCALE: 1" = 40'

0 40 80 120

RENAISSANCE II OFFICE BUILDING

6925 FRESCO DRIVE
WILMINGTON, N.C.

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

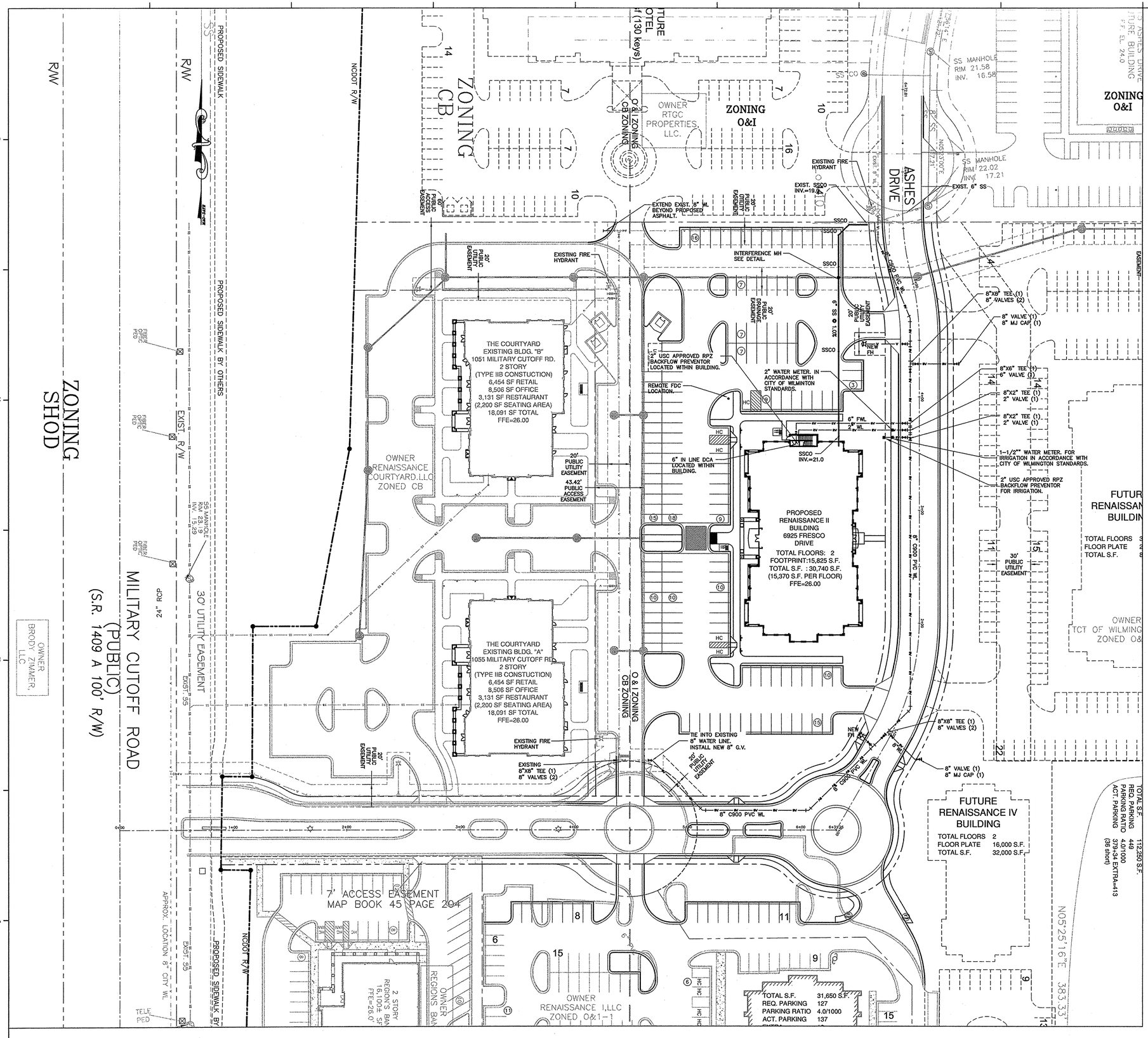
PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

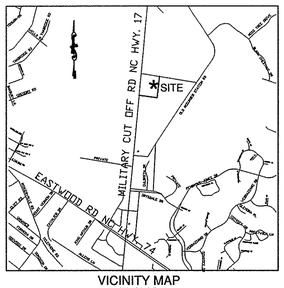
GRADING DRAINAGE AND EROSION CONTROL

C3

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN





VICINITY MAP
NO SCALE

WATER DEMAND: 5,000 GPD
SEWER DEMAND: 5,000 GPD

NOTES:

1. THE CONTRACTOR IS REPONSIBLE FOR FIELD VERIFYING THE EXISTING SITE ELEVATIONS AND INVERTS PRIOR TO BEGINNING CONSTRUCTION. CONTACT THE ENGINEER FOR DIRECTION AS REQUIRED DURING CONSTRUCTION.

2. EXISTING BOUNDARY, TOPOGRAPHIC AND TREE SURVEY INFORMATION FROM SURVEY BY ARNOLD CARSON, PLS, AND PROVIDED BY THE OWNER.

3. MAINTAIN A MIN. 10' HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION BETWEEN THE WATERLINES AND SANITARY SEWER LINES AND SERVICES. ALL WATERLINES AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SHALL HAVE A MINIMUM OF 36" COVER. ALL SEWERLINES AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE NEW HANOVER COUNTY STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THAT ADEQUATE FALL IS AVAILABLE FROM THE BUILDING TO THE EXISTING SANITARY SEWER PRIOR TO BEGINNING ANY DEMOLITION OR CONSTRUCTION.

4. MAINTAIN A 5' MINIMUM HORIZONTAL SEPARATION AND A 1' MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED OR EXISTING STORM DRAIN AND THE PROPOSED OR EXISTING WATER LINE OR SEWER LINE.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONTACTING NCDOT FOR THE REQUIRED INSPECTIONS ON WORK WITHIN THE NCDOT RIGHT-OF-WAY.

6. PROJECT SHALL COMPLY WITH CITY OF WILMINGTON CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.

7. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CITY WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.

8. WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.

9. BACKFLOW DEVICES: COMMERCIAL SHALL USE A USC APPROVED WATTS 909 REDUCED PRESSURE ZONE BACKFLOW PREVENTOR OR APPROVED EQUAL. FIRE LINE SHALL USE AN INDOOR INLINE USC APPROVED DOUBLE CHECK VALVE ASSEMBLY.

UTILITY NOTES FOR FIRE HYDRANTS

1. FIRE HYDRANTS MUST BE WITHIN 150' OF THE FIRE DEPARTMENT CONNECTION.

2. THE FIRE DEPARTMENT CONNECTION MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.

3. LANDSCAPING CANNOT BLOCK OR IMPEDE THE FIRE DEPARTMENT CONNECTIONS OR FIRE HYDRANTS. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT CONNECTION AND THE FIRE HYDRANT.

4. FIRE HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.

5. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.

6. THE CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.

7. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.

LEGEND

PROPERTY LINE	
PROPOSED WATERLINE	—v—v—v—
PROPOSED SANITARY SEWER	

SCALE: 1" = 40'

0 40 80 120

RENAISSANCE II OFFICE BUILDING

6925 FRESCO DRIVE
WILMINGTON, N.C.

NORRIS, KUSKE & TUNSTALL
CONSULTING ENGINEERS, INC.
902 MARKET STREET
WILMINGTON, NC, 28401
PHONE (910) 343-9653
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LS3P BONEY

LS3P ASSOCIATES LTD.
2528 INDEPENDENCE BLVD. SUITE 200
WILMINGTON, NORTH CAROLINA 28412
TEL. 910.790.9901 FAX 910.790.3111
WWW.LS3P.COM

NORTH CAROLINA PROFESSIONAL SEAL 19021 ENGINEER JOHN S. TUNSTALL

OWNER:
TCT OF WILMINGTON, LLC
1123 MILITARY CUTOFF RD.
WILMINGTON, N.C. 28405
(910) 256-7704

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

UTILITY PLAN

C4

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

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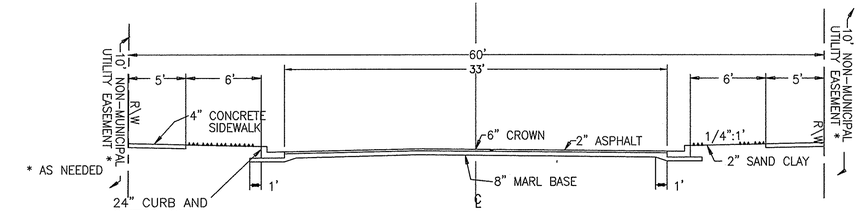
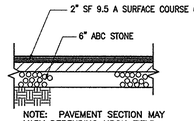


STREET SECTION DETAIL

NTS

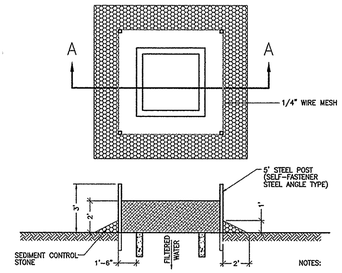
NOTE: BOTH SIDES SYMMETRICAL



NOTE: PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

ON SITE PAVEMENT SECTION

NTS



NOTES:

1. SEDIMENT CONTROL STONE SHALL BE #5 OR #57 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON "SEDIMENT CONTROL STONE."
2. WIRE MESH SHALL BE HARDWARE CLOTH 19 GAGE MIN. AND SHALL HAVE 1/4" MESH OPENINGS.

SECTION A–A

MULTI–DIRECTIONAL FLOW

INLET PROTECTION

NTS

TEMPORARY/PERMANENT

GRASS SPECIFICATION

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS.
2. RE–TILL ENTIRE AREA TO A 3 INCH DEPTH.
3. REMOVE ROCKS, ROOTS AND OTHER OBSTRUCTIONS LEAVING SURFACES SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY AND MIX WITH SOIL.
   LIME: 45 LBS. PER 1000 S.F.
   (NACONESIN GRASS) 90 LBS. PER 1000 S.F.
   FERTILIZER: 17 LBS. PER 1000 S.F.
5. CONTINUE TILLAGE UNTIL A WELL PULVERIZED, FIRM, UNIFORM SEED BED IS PREPARED 4–5 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY.
   2 – 3 LBS PER 1000 S.F. (SEE MIXTURE BELOW)
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
   GRAIN STRAW or HAY AT 75 TO 100 LBS PER 1000 S.F.
   WOOD CHIPS AT 500 LBS. PER 1000 S.F.
   JUTE & MESH AS PER MANUFACTURER
8. ASPHALT FOR ANCHORING MULCH SHALL BE TYPE SS–1 EMULSION AND APPLIED AT A RATE OF 1000 GAL. PER ACRE FOR SLOPE STABILIZATION, AND 150 GAL. PER TON OF STRAW FOR ANCHORING STRAW.
9. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEED WITHIN THE PLANTING SEASON, IF POSSIBLE. IF GRASS STAND SHOULD BE OVER 80% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
10. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE, TREATMENT, AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
11. SEED FOR TEMPORARY AND PERMANENT APPLICATIONS SHALL BE:

20%	CARPET GRASS
24%	BERMUDA GRASS
20%	TURF FESCUE
10%	CREEPING RED FESCUE
24%	ANNUAL RYE GRASS

*BERMUDA SEED SHALL BE HULLED FOR WARM WEATHER PLANTING. PURITY OF SEED SHALL BE A MIN. OF 98% AND GERMINATION SHALL BE A MIN. OF 85%.

ALL DISTURBED AREA SHALL BE SEEDED WITHIN 15 DAYS OF THE COMPLETION OF GRADING.
CONSULT CONSERVATION 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 SCHEDULES MAY BE POSSIBLE.

SITE WORK NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD CONSTRUCTION CONDITIONS.

2. CONTRACTOR SHALL COORDINATE WORK WITHIN NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.

3. CLEARING AND GRUBBING: REMOVE ALL TREES AS REQUIRED UNLESS OTHERWISE NOTED TO REMAIN, STUMPS, ROOTS, SHRUBBERY, ASPHALT, CONCRETE, STRUCTURES, BURIED UTILITIES, STORAGE TANKS, ETC. WITHIN LIMITS OF CONSTRUCTION.

4. STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.

5. MUCKING: REMOVE ANY SOFT, ORGANIC SILT MATERIALS AND EXISTING BURIED CONSTRUCTION DEBRIS AS REQUIRED AND FILL TO SUBGRADE ELEVATIONS WITH A CLEAN SELECT–FILL COMPACTED AS SPECIFIED.

6. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES.

7. BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS.

8. FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL, SHOULD BE PROOFROLLED. THE TOP 8" OF SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. ANY AREA WHICH PUMPS OR RUTS EXCESSIVELY SHOULD BE UNDERCUT AND REPLACED WITH A CLEAN, SILTY OR CLAYEY SAND HAVING A UNIFIED SOIL CLASSIFICATION OF SP, SM, OR SC. FILL MATERIAL 5" OUTSIDE OF BUILDING AREAS SHALL THEN BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 95 % OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D–698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIALS WITHIN BUILDING AREAS TO A LINE OUTSIDE THE BUILDING AREAS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D–698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED IN 6 INCH LAYERS TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IN AREAS WHERE NO STRUCTURAL FILL IS TO BE PLACED THE UPPER 12 INCHES OF IN–PLACE SUBGRADE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IF THE MATERIAL IS TOO DRY TO COMPACT TO THE REQUIRED DENSITY EACH LAYER SHALL BE WETTED IN ACCORDANCE WITH COMPACTION REQUIREMENTS. IF THE MATERIAL IS TOO WET TO SECURE PROPER COMPACTION, IT SHALL BE HARROWED REPEATEDLY OR OTHERWISE AERATED WITH SUITABLE EQUIPMENT UNTIL OPTIMUM MOISTURE CONTENT IS OBTAINED. FILL SHALL BE PLACED IN SUCH A MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

9. LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.

11. EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY ARNOLD CARSON, R.L.S. AND PROVIDED BY OWNER.

12. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.

13. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.

14. ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.

15. WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.

16. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.

17. SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

18. CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.

19. REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.

20. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYD, FS TT–P–115, TYPE III, FACTORY MIXED, QUICK DRYING, NON–BLEEDING.

21. REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE AND WATER LINES.

22. SEE SHEETS PLUMBING SHEETS FOR LOCATION AND INVERTS OF CONDENSATE AND ROOF DRAINS. THE GENERAL CONTRACTOR IS RESPONSIBLE TO CONNECT THESE LINES TO THE UNDERGROUND DOWNSPOUT DRAIN AT THE REQUIRED DEPTH TO DRAIN. ALL UNDERGROUND DOWNSPOUT DRAINS SHALL HAVE A MINIMUM SLOPE OF 1% AND BE SCH 40 PVC PIPE.

23. THE FINISHED GROUND ELEVATION AT THE BUILDING PERIMETER SHALL BE A MINIMUM OF 6 INCHES BELOW THE BUILDING FINISH FLOOR ELEVATION EXCEPT AT ENTRANCES AND ENTRANCE TRANSITIONS.

EROSION CONTROL NOTES AND MAINTENANCE PLAN:

1. INSTALL EROSION CONTROL MEASURES BEFORE BEGINNING CONSTRUCTION OR AS SOON THEREAFTER AS POSSIBLE. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF–PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.

2. MAINTAIN THE GRAVEL CONSTRUCTION ENTRANCES IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION ENTRANCES ON A DAILY BASIS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL NO. 4 STONE. ANY OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS SHALL BE REMOVED IMMEDIATELY.

3. INSTALL EROSION CONTROL MEASURES AROUND THE DROP INLETS AS SHOWN ON THE PLANS TO TRAP SILT DURING CONSTRUCTION. INSPECT THE EROSION CONTROL AROUND THE INLETS AFTER EACH RAIN AND MAKE REPAIRS IMMEDIATELY. REMOVE SEDIMENT WHEN IT BECOMES 0.50' DEEP TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE AND APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE DROP INLETS.

4. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 0.5 FT DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE STAKES WILL BE SPACED 6 FEET APART UNLESS A WIRE BACKING IS USED WITH 8 FOOT STAKE SPACING.

5. INSPECT TEMPORARY SEDIMENT TRAPS / CHECK DAMS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE THE 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 THE 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 RIPRAP DISPLACED FROM THE SPILLWAY MUCH BE REPLACED IMMEDIATELY. AFTER ALL SEDIMENT–PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.

6. NO CUT OR FILL SLOPES SHALL EXCEED A SIDE SLOPE OF 1 VERTICAL TO 3 HORIZONTAL UNLESS OTHERWISE SPECIFIED ON THE PLAN. ALL SLOPES SHALL BE SEEDED AND STABILIZED WITHIN 15 DAYS.

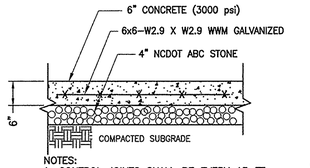
7. THE STORMWATER PONDS WILL ACT AS SEDIMENT BASINS AND WILL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT REACHES 2.0 FT. BELOW THE TOP OF THE RISER. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY.

8. ALL DISTURBED AREAS SHALL BE SEEDED WITHIN 15 DAYS OF DISTURBANCE. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS DENSE VEGETATIVE COVER.

9. MORE STRINGENT MEASURES SHALL BE USED TO HALT EROSION IF THOSE SHOWN ON THIS PLAN ARE NOT EFFECTIVE.

10. ALL EROSION SHALL BE CONTROLLED INCLUDING SIDE SLOPES BEFORE THE PROJECT IS COMPLETED.

11. REMOVE TEMPORARY MEASURES UPON COMPLETION OF PROJECT. ALL PERMANENT MEASURES WILL BE WELL ESTABLISHED BEFORE PROJECT CLOSE–OUT.

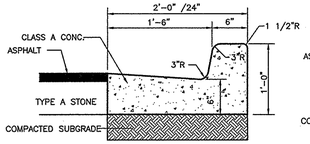


NOTES:

1. CONTROL JOINTS SHALL BE EVERY 15 FT. (MAX.) AND EXPANSION JOINTS SHALL BE EVERY 50 FT. (MAX).
2. PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. THE PAVING CONTRACTOR SHALL COORDINATE WITH OWNER REPRESENTATIVE AND GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

HEAVY DUTY CONCRETE PAVEMENT SECTION

NTS

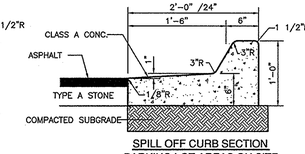


FLOW LINE CURB SECTION

PARKING LOT AREAS ON SITE

NTS

NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.

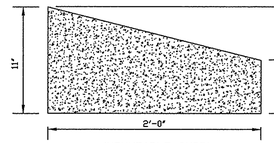


SPILL OFF CURB SECTION

PARKING LOT AREAS ON SITE

NTS

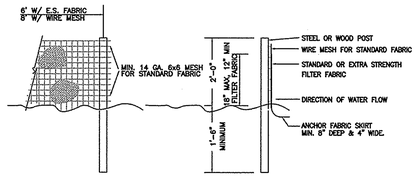
NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.



(MOUNTABLE CURB)

STANDARD CURB SECTION TYPE "D"

SD 7–02

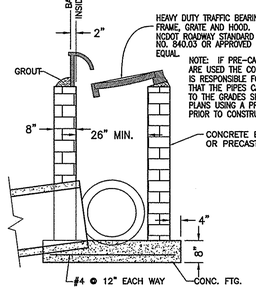


NOTES:

1. STN. FENCE FABRIC SHALL BE MIN. OF 30" IN WIDTH WITH 30 LB/IN TENSILE STRENGTH FOR STANDARD FABRIC AND 50 LB/IN FOR EXTRA STRENGTH.
2. FABRIC SHALL BE CONTINUOUS LENGTH. IF JOINTS ARE NECESSARY, LAP FABRIC POST TO POST.
3. STEEL POST SHALL BE MIN 4' IN HEIGHT AND BE OF THE SELF–FASTENER STEEL ANGLE TYPE.
4. WOOD POST SHALL BE A MIN. OF 4' IN HEIGHT AND 4" IN DIAMETER. FABRIC SHALL BE FASTENED TO WOODEN POST WITH NOT LESS THAN #9 WIRE STAPLE 1" LONG OR TIE WIRES.

TEMPORARY SILT FENCE

NTS



NOTE: IF PRE–CAST BOXES ARE USED THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT THE PIPES CAN BE INSTALLED TO THE GRADES SHOWN ON THE PLANS USING A PRECAST BOX PRIOR TO CONSTRUCTION.

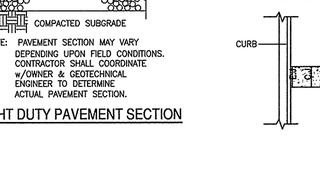
MUST COMPLY WITH CITY OF WILMINGTON STANDARDS

TYPICAL CATCH BASIN

24" CURB AND GUTTER NTS

IF CURB HEIGHT IS 6", THEN:
"B1" – @ 1:10 MAXIMUM SLOPE, SIDE FLARE "A" IS 60" MINIMUM.
"B2" – @ 1:12 MAXIMUM SLOPE, SIDE FLARE "A" IS 72" MINIMUM.

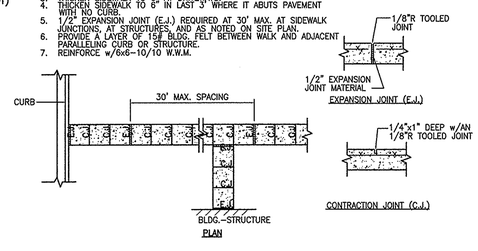
PLAN



NOTE: PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

LIGHT DUTY PAVEMENT SECTION

NTS.



PLAN

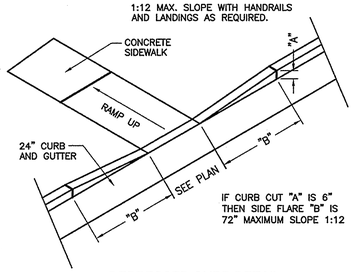
SIDEWALK JOINT DETAILS

NTS

RAMP NOTE:

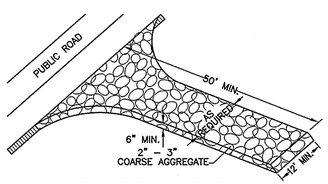
1:20 MAX. SLOPE W/O HANDRAILS AND LANDINGS.

1:12 MAX. SLOPE WITH HANDRAILS AND LANDINGS AS REQUIRED.



DEPRESSED CURB DETAIL

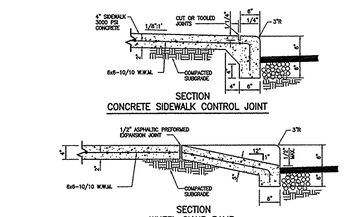
NTS



TEMPORARY GRAVELLED

CONSTRUCTION ENTRANCE

NTS



SECTION

CONCRETE SIDEWALK CONTROL JOINT

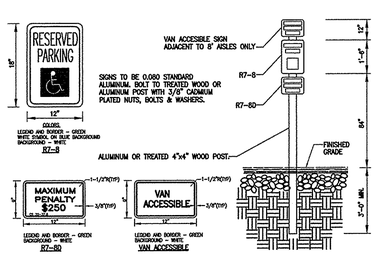
SECTION

WHEEL CHAIR RAMP

TYPICAL SIDEWALK AND

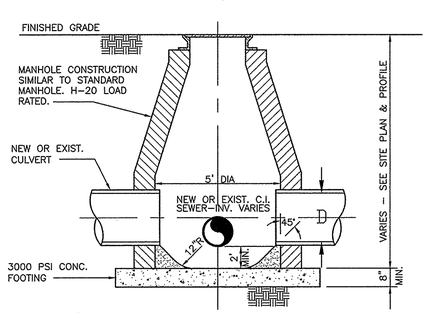
WHEEL CHAIR RAMP DETAIL

NTS



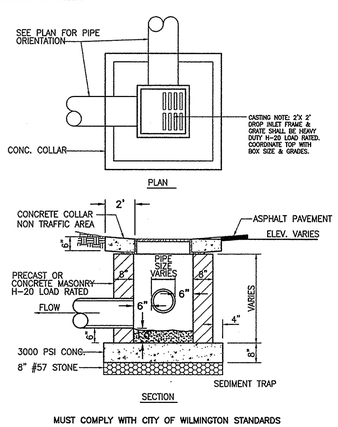
TYPICAL HANDICAPPED SIGN DETAIL

NTS



INTERFERENCE MANHOLE

NTS

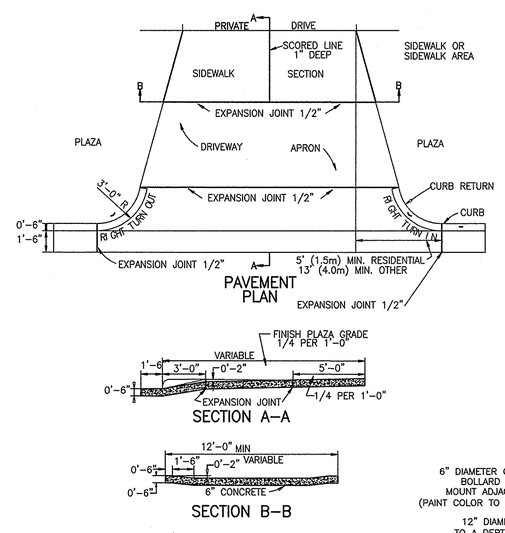


SECTION

MUST COMPLY WITH CITY OF WILMINGTON STANDARDS

DROP INLET DETAIL

NTS



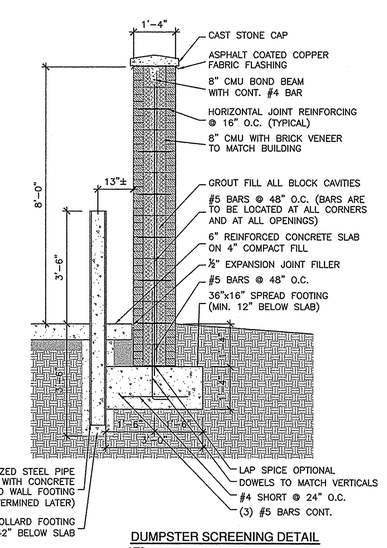
PAVEMENT PLAN

SECTION A–A

SECTION B–B

STANDARD DRIVEWAY DETAIL

NTS



DUMPSTER SCREENING DETAIL

NTS

RENAISSANCE II OFFICE BUILDING

6925 FRESCO DRIVE
WILMINGTON, N.C.

NORRIS, KUSKE & TUNSTALL
CONSULTING ENGINEERS, INC.

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

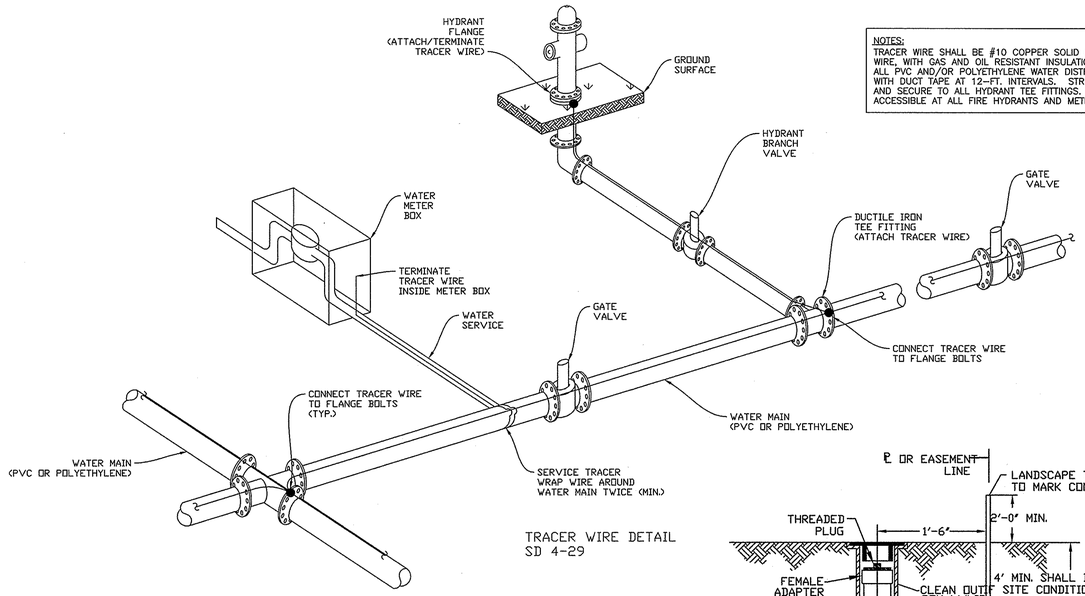
PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

NOTES AND DETAILS

C5

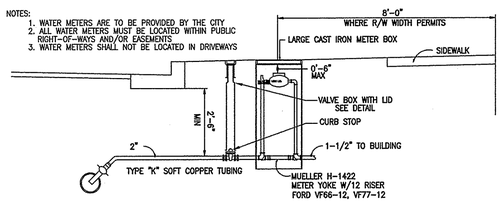
NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN



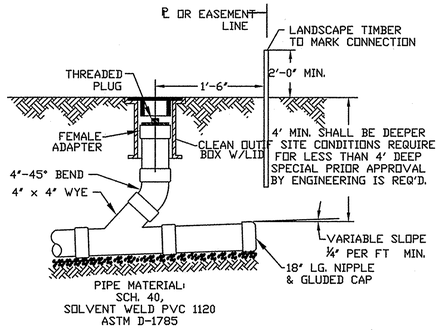
NOTES:
TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE, WITH GAS AND OIL RESISTANT INSULATION, STRAPPED TO ALL PVC AND/OR POLYETHYLENE WATER DISTRIBUTION PIPING WITH DUCT TAPE AT 12-FT. INTERVALS. STRIP INSULATION AND SECURE TO ALL HYDRANT TEE FITTINGS. WIRE SHALL BE ACCESSIBLE AT ALL FIRE HYDRANTS AND METER BOXES.

TRACER WIRE DETAIL
SD 4-29

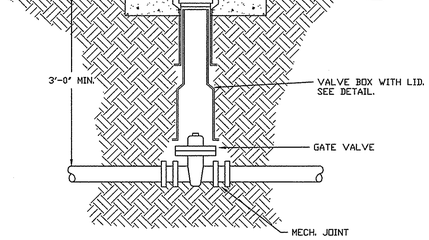


NOTES:
1. WATER METERS ARE TO BE PROVIDED BY THE CITY
2. ALL WATER METERS MUST BE LOCATED WITHIN PUBLIC RIGHT-OF-WAYS AND/OR EASEMENTS
3. WATER METERS SHALL NOT BE LOCATED IN DRIVEWAYS

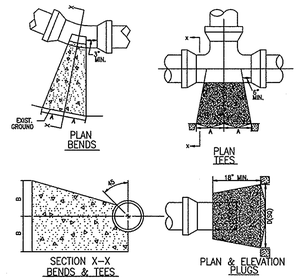
2" WATER SERVICE TAP AND 2" METER



SERVICE CONNECTION & CLEAN-OUT
NOT TO SCALE



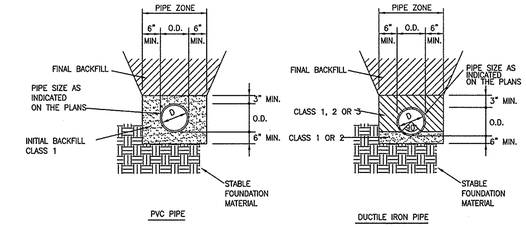
STANDARD GATE VALVE
SD 4-15
NOT TO SCALE



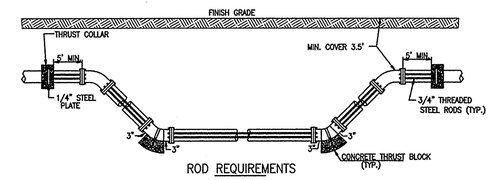
SIZE	90° BENDS		45° BENDS		22 1/2° BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A	B	C	D
6"	18"	10"	9"	10"	6"	8"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	16"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

NOTE: Based on 1.5 x working pressure of 100 PSI plus AWWA Water Hammer.
All bearing surfaces to be carried to undisturbed ground.

STANDARD THRUST BLOCK FOR WATER MAINS
NTS



PIPE BEDDING DETAILS

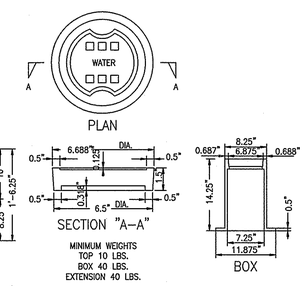


ROD REQUIREMENTS

SIZE OF 45 DEGREE BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	2
16"	30,779	4
20"	48,091	6
24"	69,252	8

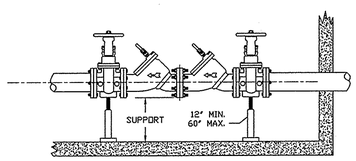
GENERAL NOTES:
1. ONCE INSTALLED AND TIGHT, THE STEEL RODS AND BOLTS SHALL BE COATED WITH 2 COATS OF BITUMINOUS BASE PAINT.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. TYPICAL MIN. CLEARANCE BETWEEN CONCRETE AND END OF BOLT MUST BE 3".
4. APPROVED OFFSETS CAN BE USED IN THIS APPLICATION.

STANDARD VERTICAL BEND
NTS

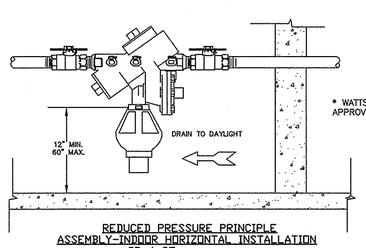


NOTE:
1. VALVE BOX LID NOT FOR USE IN ROADWAY LOCATIONS. HEAVY DUTY LID REQUIRED.
2. CASTINGS LOCATED OUTSIDE PAVED AREAS SHALL HAVE A 2' X 2' X 6" CONCRETE COLLAR.

WATER VALVE CASTING FOR NON-TRAFFIC AREAS.
NTS



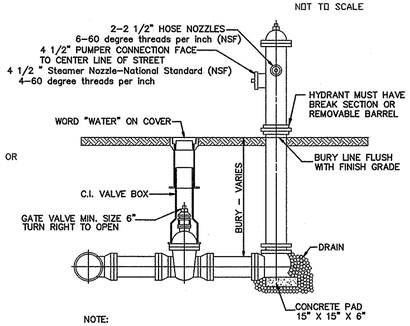
DOUBLE CHECK VALVE ASSEMBLY INSTALLATION
SD 4-23
DIRECTION OF FLOW
INDOOR INSTALLATION



* WATTS 909 RPZ OR APPROVED EQUAL.

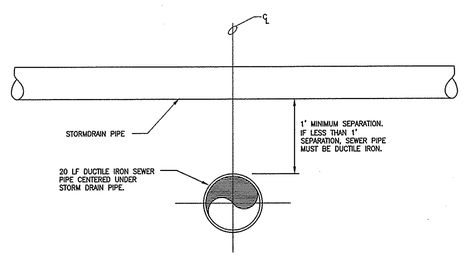
REDUCED PRESSURE PRINCIPLE ASSEMBLY-INDOOR HORIZONTAL INSTALLATION
SD 4-25

BACK-FLOW ASSEMBLY INSTALLATION GUIDELINES
1. THE BACK FLOW ASSEMBLY SHOULD BE AS CLOSE TO THE WATER METER AS POSSIBLE. IN ALL CASES IT SHALL BE BEFORE THE FIRST WATER SERVICE.
2. THE DOUBLE CHECKVALVE AND REDUCED PRESSURE ASSEMBLIES SHALL BE INSTALLED AT LEAST 12 INCHESE ABOVE THE FINISH GRADE, FLOOD LEVEL OR FLOOR.
3. PRESSURE VACUUM BREAKER ASSEMBLIES SHALL BE INSTALLED AT LEAST 12 INCHES ABOVE THE HIGHEST WATER OUTLET. WHEN INSTALLING A PVB ON AN IRRIGATION SYSTEM CONSIDER THE PLACEMENT OF SPRINKLER HEADS ON HILLS AND SLOPES. PVB SHALL NOT BE INSTALLED AT A LOWER LEVEL THAN THE HIGHEST OUTLET.
4. THE MAXIMUM INSTALLATION HEIGHT OF A BACKFLOW ASSEMBLY INDOORS IS THIRTY-SIX INCHES, OUTDOORS SIXTY INCHES.
5. AN ENCLOSURE SHALL BE PROVIDED THAT PROTECTS THE ASSEMBLY FROM THEFT, VANDALISM, TAMPERING, WEATHER AND FROST.
6. IN THE FLOOR, UNDERGROUND AND VAULT INSTALLATIONS ARE PROHIBITED.
7. THERE SHALL BE 24 INCHES CLEARANCE ON ALL SIDES OF THE ASSEMBLY.
8. ELECTRICAL EQUIPMENT, OUTLETS AND BREAKER BOXES SHALL NOT BE LOCATED BENEATH THE ASSEMBLY.
9. ONLY ASSEMBLIES APPROVED BY THE USC FOUNDATION FOR CROSS-CONNECTION CONTROL OR ASSE SHALL BE ACCEPTED.
10. THE TYPE OF ASSEMBLY SHALL BE APPROPRIATE FOR THE HAZARD AS IDENTIFIED BY THE CROSS-CONNECTION CONTROL OFFICE.
11. PRIOR TO INSTALLING ASSEMBLIES INDOORS IT IS RECOMMENDED THAT THE CROSS-CONNECTION CONTROL OFFICE BE CONTACTED FOR ADDITIONAL INFORMATION.
12. WATER METERS WILL NOT BE SET UNTIL THE CITY HAS INSPECTED AND APPROVED THE BACK-FLOW ASSEMBLY AND ITS INSTALLATION.

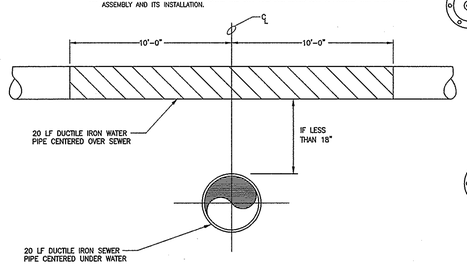


NOTE:
1-SEE SD 4-02 FOR JOINT RESTRAINT REQUIRED
2-DUCTILE IRON PIPE REQUIRED ON ALL HYDRANT BRANCH LINES
3-HYDRANTS SHALL BE:
KENNEDY GUARDIAN; MUELLER CENTURION; AMERICAN DARLING MARL 73; OR APPROVED EQUAL

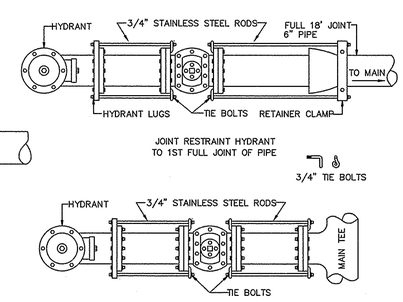
GUIDELINES FOR STANDARD HYDRANT
SD 4-01



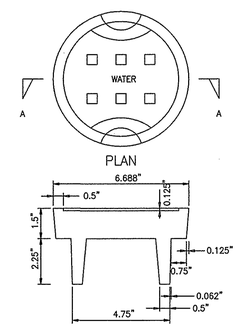
SANITARY SEWER AND STORMDRAIN INTERSECTION
N.T.S.



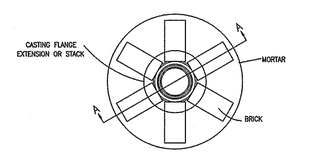
WATER & SANITARY SEWER INTERSECTION
N.T.S.

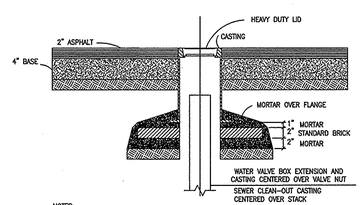


GUIDELINES FOR HYDRANT JOINT RESTRAINT
SD 4-02



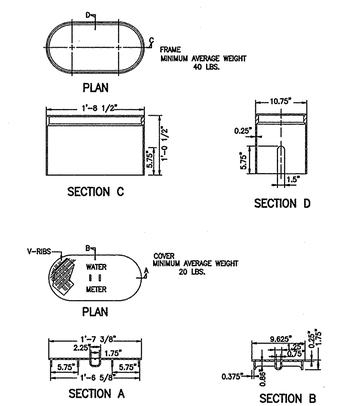
GRE WVC 6HD CAST IRON OR EQUAL
HEAVY DUTY VALVE BOX LID
NTS
(TRAFFIC AREAS)



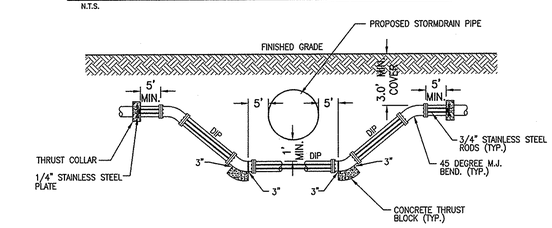


NOTES:
*THIS INSTALLATION REQUIRED WHEN VALVE BOXES AND CLEAN-OUTS ARE LOCATED IN PRESENT OR FUTURE PAVED AREAS.
*PRIOR TO SETTING CASTINGS, NEW INSTALLATIONS WILL REQUIRE 95% COMPACTION OR BACKFILL IN 6" LIFTS.

VALVE BOX AND CLEAN-OUT CASTING BASES
NTS



WATER METER BOX
NTS



TYPICAL STOMDRAIN PIPE CROSSING WATERMAIN
NTS

RENAISSANCE II OFFICE BUILDING
6925 FRESCO DRIVE
WILMINGTON, N.C.

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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

NOTES AND DETAILS

C6

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-06

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES

CONTINUOUS LINES

EDGE LINE — YELLOW OR WHITE — 4"/6"*

TURN LANE LINE — WHITE — 4"/6"*

CENTER LINE — YELLOW — 4"/6"*

GORE LINE — WHITE — 8"/12"*

DIAGONAL LINE — YELLOW OR WHITE — 8"

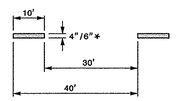
CROSSWALK LINE — WHITE — 8"/24"*

R/R LINE — WHITE — 16"

STOP OR TRANSVERSE BAR — WHITE — 24"

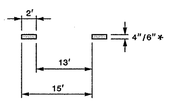
SKIP LINES

10' SKIP LINES
YELLOW OR WHITE



MINI-SKIP LINES

2' MINI-SKIP LINES
YELLOW OR WHITE



* GENERAL NOTES

1- WHERE TWO WIDTHS ARE INDICATED, THE FIRST WIDTH APPLIES TO A "NORMAL" WIDTH LINE, THE SECOND WIDTH APPLIES TO A "WIDE" LINE.

2- "WIDE" LINES ARE REQUIRED WHEN DESIGNATED IN THE PLANS, OR WHEN DIRECTED BY THE ENGINEER. REFER TO PAVEMENT MARKING GUIDELINES.

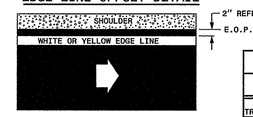
SHEET 1 OF 2
1205.01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

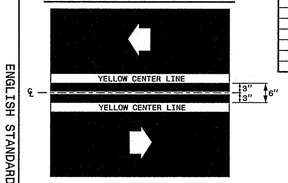
7-06

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
OFFSETS

EDGE LINE OFFSET DETAIL



CENTER LINE OFFSET DETAIL



LANE LINE OFFSET DETAIL

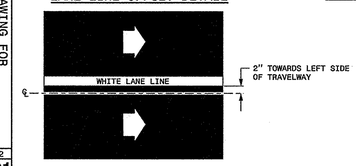


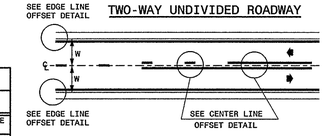
TABLE 1

EDGE LINE OFFSETS FOR 2-LANE, 2-WAY ROADWAYS WITH UN-PAVED SHOULDERS

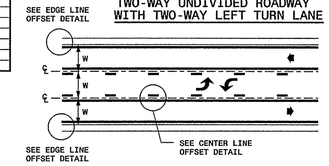
WIDTH (W) OF TRAVEL PAVEMENT	MAX. EDGE LINE OFFSET FROM E.O.P.	MINIMUM LANE WIDTH
15' - 18'	2"	8' - 9'
19'	4"	9'
20'	6"	9.5'
21'	8"	10'
22'	10"	10'
23'	10"	10.5'
24'	1'	11'
26'	2'	11'
28'	2'	12'
30'	3'	12'
32'	4'	12'

LEGEND
W = WIDTH OF TRAVEL LANE
DIRECTION OF TRAFFIC FLOW

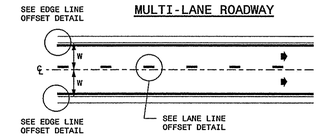
TWO-WAY UNDIVIDED ROADWAY



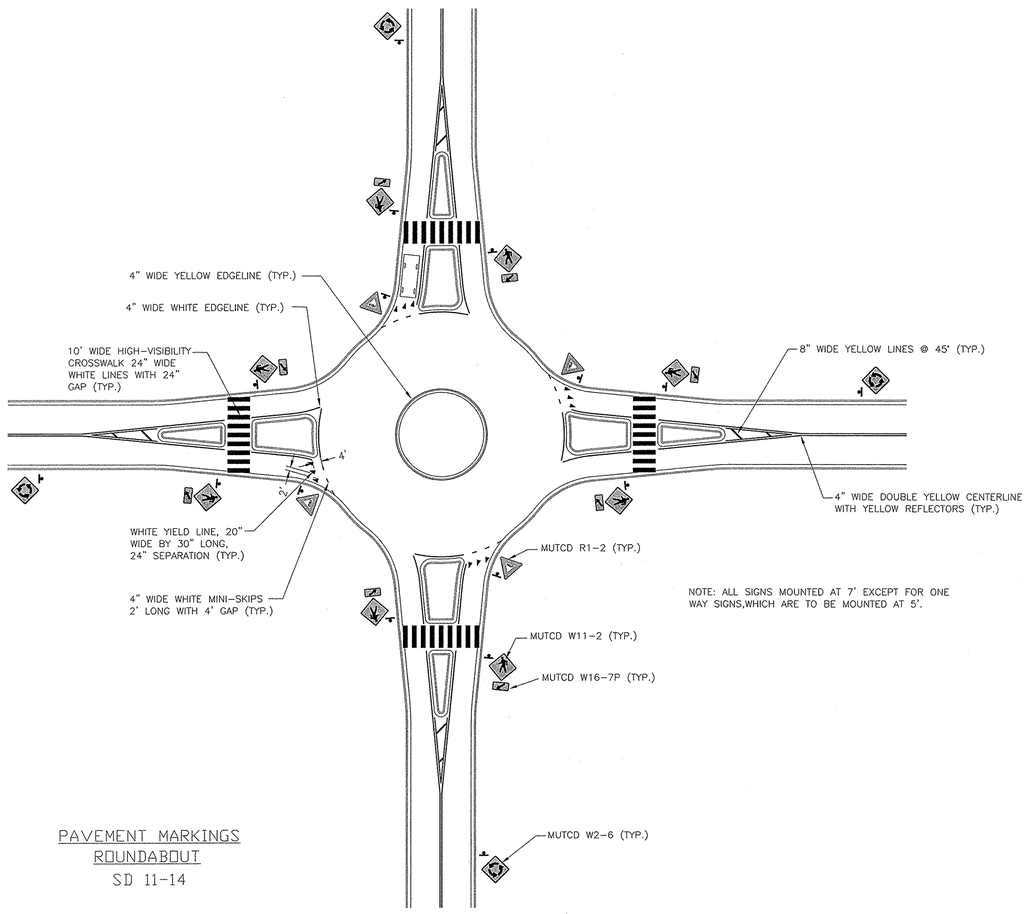
TWO-WAY UNDIVIDED ROADWAY WITH TWO-WAY LEFT TURN LANE



MULTI-LANE ROADWAY

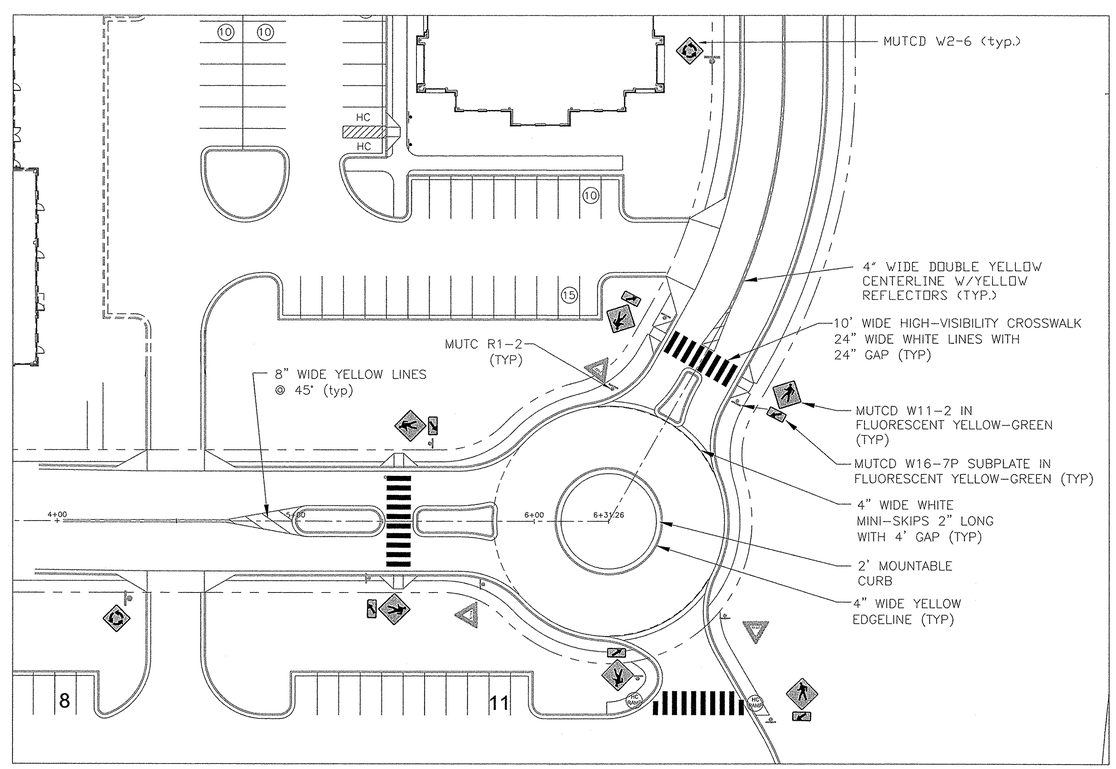


SHEET 2 OF 2
1205.01



NOTE: ALL SIGNS MOUNTED AT 7' EXCEPT FOR ONE WAY SIGNS,WHICH ARE TO BE MOUNTED AT 5'.

PAVEMENT MARKINGS
ROUNDABOUT
SD 11-14



PAVEMENT MARKINGS
ROUNDABOUT

NOTE: ALL SIGNS MOUNTED AT 7' EXCEPT FOR ONE WAY SIGNS, WHICH ARE TO BE MOUNTED AT 5'

RENAISSANCE II OFFICE BUILDING
6925 FRESCO DRIVE
WILMINGTON, N.C.

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NORTH CAROLINA PROFESSIONAL SEAL 19851 ENGINEER JOHN S. TUNSTALL 05/31/07

OWNER:
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1123 MILITARY CUTOFF RD.
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REVISIONS:
03/27/07 ISSUED FOR BUILDING PERMIT
1 REVISION 1 ISSUED FOR CONSTRUCTION

PROJECT: 7102-061840
DATE: 05/14/07
DRAWN BY: NKS
CHECKED BY: JST

NOTES AND DETAILS

C7

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

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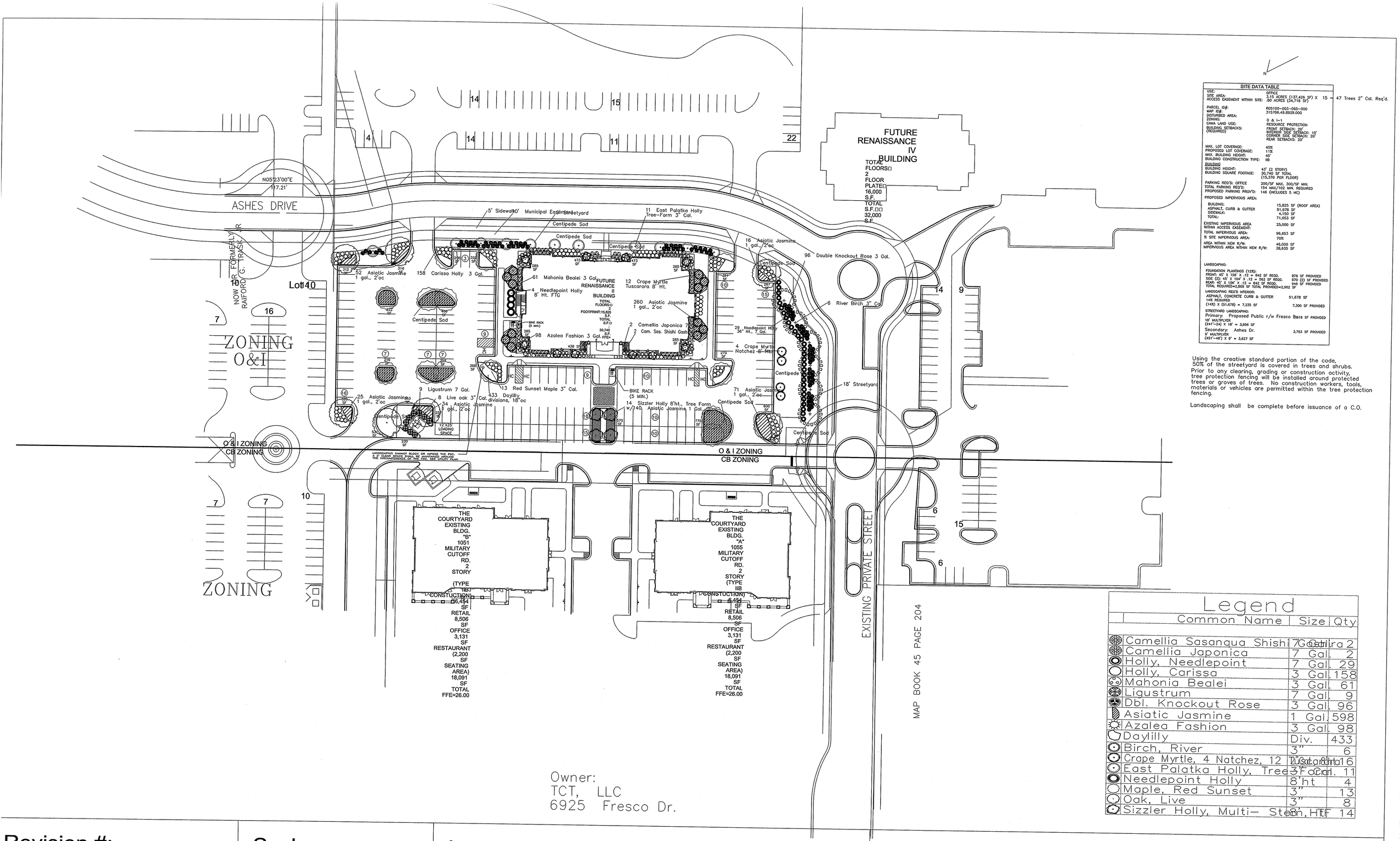

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SITE DATA TABLE

USE:	OFFICE
SITE AREA:	3.15 ACRES (137,426 SF) X 15 = 47 Trees 2" Cal. Req'd.
ACCESS EASEMENT WITHIN SITE:	.50 ACRES (24,718 SF)
PARCEL ID#:	R05100-003-065-000
MAP ID#:	315706.49.8929.000
DISTURBED AREA:	
ZONING:	O & I-1
CAMA LAND USE:	RESOURCE PROTECTION
BUILDING SETBACKS: (REQUIRED)	FRONT SETBACK: 20' INTERIOR SIDE SETBACK: 10' CORNER SIDE SETBACK: 20' REAR SETBACKS: 20'
MAX. LOT COVERAGE:	40%
PROPOSED LOT COVERAGE:	11%
MAX. BUILDING HEIGHT:	45'
BUILDING CONSTRUCTION TYPE:	IIB
BUILDING:	
BUILDING HEIGHT:	43' (2 STORY)
BUILDING SQUARE FOOTAGE:	30,740 SF TOTAL (15,370 PER FLOOR)
PARKING REQ'D: OFFICE	200/SF MAX, 300/SF MIN.
TOTAL PARKING REQ'D:	154 MAX/102 MIN. REQUIRED
PROPOSED PARKING PROV'D:	146 (INCLUDES 5 HC)
PROPOSED IMPERVIOUS AREA:	
BUILDING:	15,825 SF (ROOF AREA)
ASPHALT, CURB & GUTTER	51,678 SF
SIDEWALK:	4,150 SF
TOTAL:	71,653 SF
EXISTING IMPERVIOUS AREA WITHIN ACCESS EASEMENT:	25,000 SF
TOTAL IMPERVIOUS AREA:	96,653 SF
% SITE IMPERVIOUS AREA:	70%
AREA WITHIN NEW R/W:	46,000 SF
IMPERVIOUS AREA WITHIN NEW R/W:	38,635 SF
LANDSCAPING:	
FOUNDATION PLANTINGS (12%):	
FRONT: 45' X 156' X .12 = 842 SF REQD.	876 SF PROVIDED
SIDE (2): 45' X 104' X .12 = 562 SF REQD.	570 (2) SF PROVIDED
REAR: 45' X 156' X .12 = 842 SF REQD.	946 SF PROVIDED
TOTAL REQUIRED=2,866 SF TOTAL PROVIDED=2,962 SF	
LANDSCAPING REQ'D INTERIOR:	
ASPHALT, CONCRETE CURB & GUTTER	51,678 SF
14% REQUIRED (14%) X (51,678) = 7,235 SF	7,300 SF PROVIDED
STREETYARD LANDSCAPING:	
Primary: Proposed Public r/w Fresco 18' MULTIPLYER (241'-24) X 18' = 3,906 SF	3,918 SF PROVIDED
Secondary: Ashes Dr. 9' MULTIPLYER (451'-48') X 9' = 3,627 SF	3,763 SF PROVIDED

Using the creative standard portion of the code, 50% of the streetyard is covered in trees and shrubs. Prior to any clearing, grading or construction activity, tree protection fencing will be installed around protected trees or groves of trees. No construction workers, tools, materials or vehicles are permitted within the tree protection fencing.

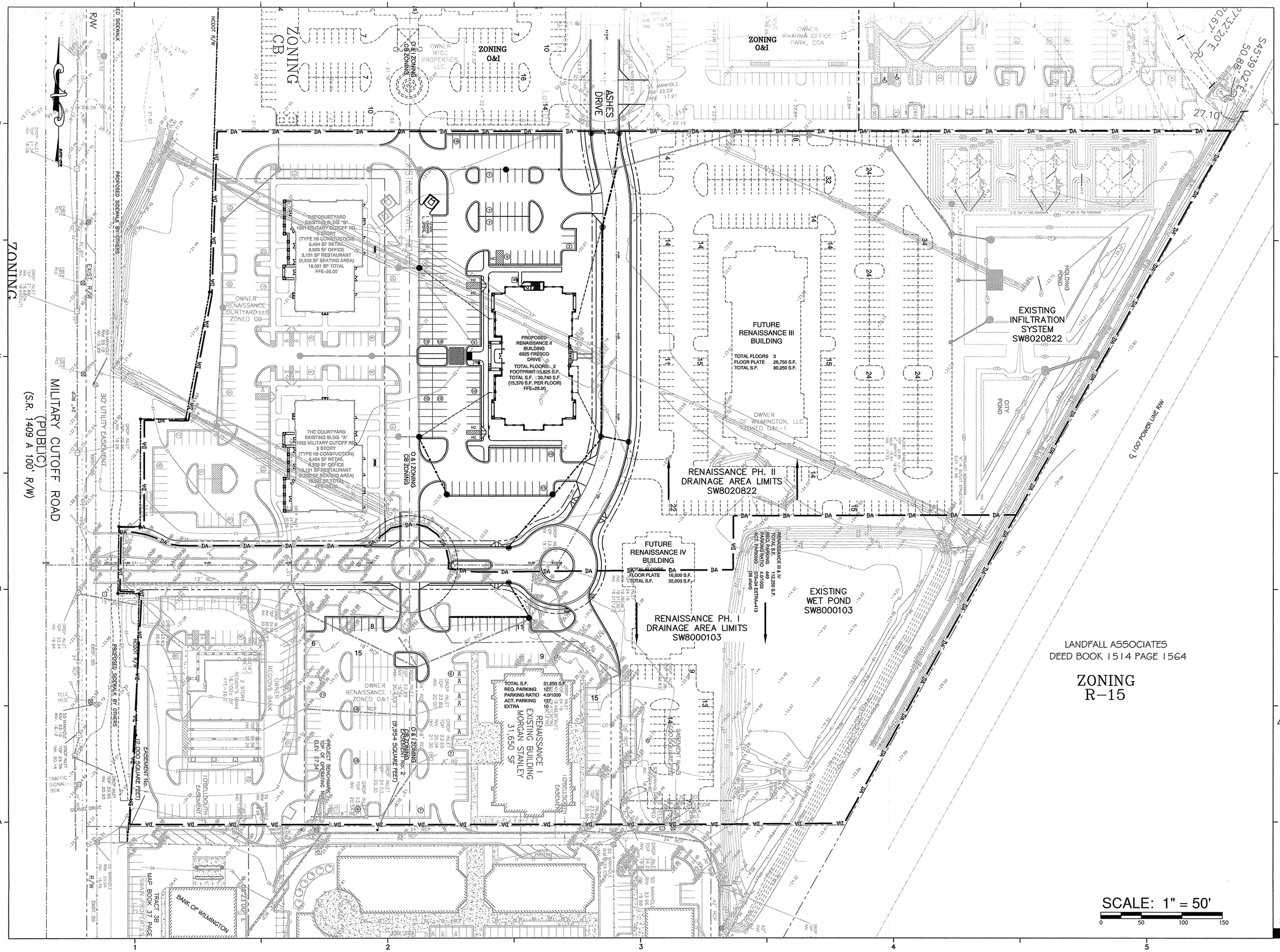
Landscaping shall be complete before issuance of a C.O.

Legend

Common Name	Size	Qty
Camellia Sasanqua Shishi Gashira	7 Gal.	2
Camellia Japonica	7 Gal.	2
Holly, Needlepoint	7 Gal.	29
Holly, Carissa	3 Gal.	158
Mahonia Bealei	3 Gal.	61
Ligustrum	7 Gal.	9
Dbl. Knockout Rose	3 Gal.	96
Asiatic Jasmine	1 Gal.	598
Azalea Fashion	3 Gal.	98
Daylilly	Div.	433
Birch, River	3"	6
Crape Myrtle, 4 Natchez, 12 Tuscarora	8' Ht.	16
East Palatka Holly, Tree Form	3" Cal.	11
Needlepoint Holly	8'ht	4
Maple, Red Sunset	3"	13
Oak, Live	3"	8
Sizzler Holly, Multi-Stem, Tree Form	8'	14

Revision #:	Scale:	Landscape Plan:	Landscape Design by:James Freeman - NCLC #408
Date: 3/19/2007	—	Renaissance II	Freeman Landscape, Inc.

07024



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1 REVISION 1 ISSUED FOR CONSTRUCTION

PROJECT: 7102-061840
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DRAINAGE AREA

D1

NKT. #07024

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

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