

# COLLETON CROSSING SUBDIVISION

## AIS SUBDIVISION - CONDITIONAL USE PERMIT TALLY HO TRAIL/REYNARD ROAD CARRBORO, NORTH CAROLINA

### DRAWING INDEX

SHEET	TITLE
S-1	COVER SHEET
S-2	EXISTING CONDITIONS & DEMOLITION PLAN
S-3	CONCEPT PLAN
S-4	CUP SITE PLAN
S-5	GRADING & EROSION CONTROL PLAN
S-6	GRADING & EROSION CONTROL PLAN
S-7	WATER QUALITY POND DETAILS
S-8	UTILITY & DRAINAGE SYSTEM PLAN
S-9	UTILITY & DRAINAGE SYSTEM PLAN
S-10	LANDSCAPE PLAN
S-11	CONSERVATION & RECREATION PLAN
S-12	PLAN/PROFILE: REYNARD ROAD EXT.: STA 10+00 TO STA 16+37.81
S-13	PLAN/PROFILE: MIDDLETON DRIVE: STA 10+00 TO STA 22+07.27
S-14	PLAN/PROFILE: COLLETON CIRCLE: STA 22+07.27 TO STA 31+00.17
S-15	PLAN/PROFILE: BACKALLEY WAY: STA 10+00 TO STA 15+75.93
S-16	SANITARY SEWER OUTFALL: STA 10+00.00 TO 1808.02
S-17	SITE DETAILS
S-18	SITE DETAILS
S-19	OWASA DETAILS
S-20	EROSION/STORMWATER DETAILS



VICINITY MAP  
NOT TO SCALE

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### MISCELLANEOUS NOTES (CONT'D.)

- \*AS-BUILT DRAWINGS FOR UTILITIES WILL BE PROVIDED PER THE PROVISIONS OF SECTION 15-248 OF THE TOWN OF CARRBORO LAND USE ORDINANCE.
- \*THE APPLICANT SHALL PROVIDE TO THE ZONING DIVISION, PRIOR TO THE RECORDATION OF THE FINAL PLAN FOR THE PROJECT OR BEFORE THE RELEASE OF A BOND IF SOME FEATURES ARE NOT YET IN PLACE AT THE TIME OF THE RECORDING OF THE FINAL PLAN, HYDRA AND DIGITAL AS-BUILTS FOR THE STORMWATER FEATURES OF THE PROJECT. DIGITAL AS-BUILTS SHALL BE IN DXF FORMAT AND SHALL INCLUDE A BASE MAP OF THE WHOLE PROJECT AND ALL SEPARATE PLAN SHEETS. AS-BUILT DXF FILES SHALL INCLUDE ALL LAYERS OR TABLES CONTAINING STORM DRAINAGE FEATURES. STORM DRAINAGE FEATURES SHALL BE CLEARLY DELINEATED IN A DATA TABLE. THE DATA WILL BE TIED TO HORIZONTAL CONTROLS.
- \*BUILDING HEIGHT IN THE RR DISTRICT IS LIMITED TO 35' PER SECTION 15-185 OF THE LUO.\*
- \*HOUSING DEEMED "AFFORDABLE" MUST COMPLY WITH THE PROVISIONS OF SECTION 15-54.1 AND 15-182.4 OF THE LUO.

### SITE DATA:

- EXISTING PARCEL ZONING: RR
- EXISTING PARCEL SIZE: 31.606 ACRES; 1,376,773 SF
- PIN#: 0870324095 & 0870420557
- TAX MAP: 230..28 AND 230..28A
- CURRENT LAND USE: WOODLAND AND OLD HOME SITE
- PROPOSED USE CATEGORY: 26.200, MAJOR SUBDIVISION; CONSISTING OF 1.111, SINGLE FAMILY HOMES
- TOTAL UNITS: 39
- AFFORDABLE UNITS: 6 (15.38%)  
REGULAR ZONING UNITS: 27  
BONUS UNITS: 6
- DENSITY CALCULATION:  
A) DEDUCTIONS:  
STEEP SLOPES: 14,952 SF x .8 = 11,962 SF;  
ROCK FORMATION: 2,170 SF x .9 = 1,953 SF;  
ELECTRIC TRANSMISSION: 126,784 SF x .76 = 95,073 SF;  
FLOODPLAIN: 4,880 SF x .5 = 2,440 SF;  
MODERATE SLOPES: 153,479 SF x .4 = 61,391 SF  
TOTAL DEDUCTIONS = 172,819 SF  
B) NET AREA = 1,203,954 SF  
C) REGULAR ZONING UNITS = 27.6389; SAY 27  
D) MAXIMUM ZONING UNITS = 41.5000; SAY 40
- AFFORDABLE LOTS FOR OPEN SPACE CREDIT:  
A) SINGLE FAMILY HOUSES ON LOTS 1, 26, 32, 33, 34 AND 35, TOTALING 12,250 SF.  
B) OPEN SPACE CREDIT= 2X 12,250 = 24,500 SF

### OPEN SPACE & RECREATION DATA:

- PROPOSED OPEN SPACE  
A) NOMINAL (40%) = 550,709 SF  
B) LESS AFFORDABLE = 24,500 SF  
C) NET REQUIRED = 526,209 SF (38.22%)  
D) PROVIDED (TOTAL)= 887,107 SF (64.43%)
- ALL OPEN SPACE IS PRIVATE, TO BE MAINTAINED BY THE COLLETON CROSSING HOME OWNERS ASSOCIATION. ALL RECREATION FACILITIES AND PLAY FIELD ARE PRIVATE TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.
- A) REQUIRED RECREATION POINTS = 39 x 10.39 = 405.21 (MINIMUM 41 POINTS FOR CHILDREN)  
B) PROVIDED = TOT LOT (7,417 SF), PLAYFIELD, WALKING TRAILS (2,785 LF)
- PLAYFIELD REQUIRED = 39 x 400 = 15,600 SF; PROVIDED = 21,816 SF  
(SEE SHEET S-11 FOR DETAILED RECREATION POINTS CALCULATIONS AND DATA)

### FIRE DEPARTMENT NOTES:

- NO FRAMING MAY BEGIN UNTIL FIRE HYDRANTS ARE OPERATIONAL.
- AN ALL-WEATHER 20' WIDE TRAVEL SURFACE MUST BE IN PLACE ON ROADWAY PRIOR TO RECEIVING FINAL FLAT APPROVAL OR ANY BUILDING PERMIT.
- ALL FIRE HYDRANTS SHALL BE IN OPERATION PRIOR TO ANY CONSTRUCTION FRAMING AND ACCESSIBLE AT ALL TIMES.
- THE 2-1/2 INCH DISCHARGE ON FIRE HYDRANTS SHALL BE AT LEAST 21.5 INCHES ABOVE FINAL GRADE.
- FIRE ACCESS ROAD MUST BE OF AN ALL-WEATHER SURFACE AND MAINTAINED DURING CONSTRUCTION. REQUIRE BASE PAVEMENT ASPHALT.
- NO BURNING IS ALLOWED ON PROPERTY. ALL BRUSH AND TRASH MUST BE HAULED FROM SITE OR MULCHED ON SITE.
- ANY BLASTING REQUIRES A BLASTING PERMIT FROM FIRE DEPARTMENT.
- THERE SHALL BE NO PARKING IN ALLEY. ALLEY MUST BE MARKED AS A FIRE LANE ACCORDING TO TOWN CODE.
- ANY PARKING ON STREET MUST MEET STREET WIDTH IN ACCORDANCE WITH TOWN CODE.
- J FIRE LANE STRIPING WILL BE COORDINATED WITH THE CARRBORO FIRE MARSHALL PRIOR TO THE ISSUANCE OF A CO, PER CHAPTER 12 OF THE CARRBORO TOWN CODE.
- K PER SECTION 15-301, PARKING IS NOT ALLOWED WITHIN 15' OF A FIRE HYDRANT.
- L TEMPORARY STREET SIGNS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION.

### SOLID WASTE COLLECTION NOTES:

- CONSTRUCTION WASTE:  
A) BY ORANGE COUNTY ORDINANCE, CLEAN WOOD WASTE, SCRAP METAL AND CORRUGATED CARDBOARD, ALL PRESENT IN CONSTRUCTION WASTE, MUST BE RECYCLED.  
B) BY ORANGE COUNTY ORDINANCE, ALL HAULERS OF CONSTRUCTION WASTE MUST BE PROPERLY LICENSED.  
C) PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON THE SITE THE APPLICANT WILL HOLD A PRE-DEMOLITION/PRE-CONSTRUCTION CONFERENCE WITH THE COUNTY'S SOLID WASTE STAFF. THIS MAY BE THE SAME MEETING HELD WITH OTHER DEVELOPMENT OFFICIALS.
- RESIDENTIAL COLLECTION:  
A) CONTAINERS SHALL BE PLACED ADJACENT TO THE STREET BY 7:30 AM ON COLLECTION DAY (BUT NOT BEFORE DARK ON DAY PRIOR TO COLLECTION).  
B) ALL HOUSEHOLD TRASH MUST BE PLACED INSIDE THE CONTAINER.  
C) PLACE CONTAINERS AT THE STREET WITH LID OPENING TOWARDS THE STREET.  
D) ALLOW 3 FEET OF CLEARANCE BETWEEN CONTAINER AND ANY OTHER ITEM, INCLUDING THE RECYCLING CONTAINER.

### MISCELLANEOUS NOTES:

- THERE ARE NO VERY RARE TREES ON THIS PARCEL.
- SUBJECT TRACT CONTAINS FEMA FLOODPLAIN, PER FLOOD INSURANCE RATE MAP 371097700J, DATED 2/2/2007. USE OF LAND WITHIN A FLOODWAY OR FLOODPLAIN IS SUBSTANTIALLY RESTRICTED BY CHAPTER 15 OF THE CARRBORO LAND USE ORDINANCE.
- ALL WATER AND SEWER EASEMENTS ARE PUBLIC FOR BENEFIT OF OWASA. STORM DRAINAGE EASEMENTS ADJACENT TO THE PUBLIC RIGHT-OF-WAY ARE PUBLIC FOR BENEFIT OF NCDOT MAINTENANCE OR TOWN OF CARRBORO. REMAINING STORM DRAINAGE EASEMENTS ARE PRIVATE. STORM EASEMENTS DESIGNATED AS PUBLIC ARE TO BE MAINTAINED BY THE TOWN OF CARRBORO.
- \*CAPS\* ISSUED BY CHAPEL HILL CARRBORO SCHOOL SYSTEM MUST BE AUTHORIZED BEFORE ANY BUILDING PERMITS ARE ISSUED.
- DEVELOPER/OWNER IS RESPONSIBLE FOR SCHEDULING AND COORDINATING AN ON-SITE PRE-CONSTRUCTION MEETING WITH ALL APPLICABLE APPROVING AGENCIES INCLUDING ORANGE COUNTY SOLID WASTE PRIOR TO ANY SITE DISTURBANCE. TREE PROTECTION FENCING MUST BE IN PLACE AT TIME OF MEETING.
- AT NO TIME SHALL CONSTRUCTION RELATED VEHICLES, EQUIPMENT, OR MATERIALS BE PLACED OR STORED WITHIN THE PUBLIC RIGHT-OF-WAY FOR EXISTING REYNARD RD. WITHOUT PRIOR APPROVAL FROM DAVID FOYTRESS, STREET SUPERINTENDENT, 919-7432.
- THE DEVELOPER/OWNER/CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROMPT REMOVAL OF ANY AND ALL MUD, SOILS, STONE AND/OR CONSTRUCTION RELATED MATERIALS DEPOSITED UPON THE SIDEWALK AND STREET SURFACES INCIDENTAL TO ON-SITE DEVELOPMENT ACTIVITIES AND DELIVERIES.
- PRIVATE STORM WATER EASEMENTS AND/OR SYSTEMS AND PRIVATE WATER QUALITY FACILITIES ARE NOT TOWN MAINTAINED AND ARE THE RESPONSIBILITY OF THE HOA OR PRIVATE PROPERTY OWNER. ALL DRAINAGE EASEMENTS DESIGNATED AS PRIVATE ARE TO BE MAINTAINED BY THE COLLETON CROSSING HOMEOWNER'S ASSOCIATION.  
ALL OBSTRUCTIONS, OR PLANTINGS THAT EXCEED 24" IN HEIGHT AT MATURE GROWTH, BRIDGES, SHEDS, FENCES OR OTHER OBSTRUCTIONS OR ALTERATIONS OF THE STORM EASEMENT OR STORM OR WATER QUALITY SYSTEM ARE PROHIBITED WITHOUT THE EXPRESS APPROVAL OF THE TOWN OF CARRBORO ZONING ADMINISTRATION.
- STORM DRAINAGE PIPES IN THE PUBLIC RIGHT-OF-WAY OR PRIVATE STORM DRAIN EASEMENTS SHALL BE REINFORCED CONCRETE WITH A MINIMUM DIAMETER OF 16 INCHES. PIPES UTILIZING OTHER MATERIALS WITH A SERVICE LIFE EQUAL TO OR GREATER THAN REINFORCED CONCRETE (AS DETERMINED BY AN INDEPENDENT TESTING AGENCY) MAY BE APPROVED BY THE TOWN ENGINEER.
- DEVELOPER IS RESPONSIBLE FOR FURNISHING AND PLACEMENT OF CROSSWALK MARKINGS IN ACCORDANCE WITH NCDOT SPECIFICATIONS FOR PAINTED PAVEMENT MARKINGS.
- ALL REQUIRED PUBLIC STREET LIGHTS SHALL BE CUT-OFF TYPE FIXTURES OR FIXTURES THAT DIRECT EMITTED LIGHT DOWNWARD AND ARE DEEMED AS BEING "DARK SKY FRIENDLY".
- STREET TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND MAY BE SHIFTED TO PROVIDE ADEQUATE ROOM FOR WATER AND SEWER SERVICES, AND UTILITY CONNECTIONS AND DRIVEWAY.
- DISCLOSURE SIGNS TO BE PROVIDED PER 15-83.1 AND .2 OF THE TOWN OF CARRBORO LAND USE ORDINANCE. THESE SIGNS ARE TEMPORARY, DESIGNED TO PROMOTE FULL DISCLOSURE TO FUTURE BUYERS OF PROPOSED LOTS.
- ALL SINGLE FAMILY HOMES TO BE PROVIDED WITH A PARKING PAD FOR TWO VEHICLES. SEE DETAIL SHEET S-18. ALL PARKING PADS WILL BE OUTSIDE THE STREET, ALLEY OR SIDEWALK AREA.

OPEN SPACE CALCULATIONS	EXISTING	PROPOSED TO BE IN RIGHT-OF-WAY	PROPOSED TO BE ON PRIVATE LOTS/ALLEYS	PROPOSED TO BE IN HOA OPEN SPACE
PRIMARY CONSERVATION - HARDWOODS (PC-H)	319,975 SF	18,920 SF	NONE	301,055 SF
PRIMARY CONSERVATION - FLOODPLAIN	4,880 SF	NONE	NONE	4,880 SF
PRIMARY CONSERVATION - SLOPES (OVER 25%)	14,952 SF	NONE	NONE	14,952 SF
PRIMARY CONSERVATION - STREAM BUFFER	194,419 SF	7,200 SF	NONE	187,219 SF
SUBTOTAL	534,226 SF	26,120 SF	NONE	508,106 SF
SECONDARY CONSERVATION - WOODLANDS (SC-W)	670,278 SF	114,433 SF	340,165 SF	215,680 SF
SECONDARY CONSERVATION - SLOPES MODERATE	88,690 SF	748 SF	NONE	87,942 SF
SECONDARY CONSERVATION - ROCK FORMATIONS	2,170 SF	NONE	NONE	2,170 SF
SUBTOTAL	761,138 SF	115,181 SF	340,165 SF	305,792 SF
UNCONSTRAINED AREAS	81,409 SF	8,200 SF	NONE	73,209 SF
TOTAL	1,376,773 SF	149,501 SF	340,165 SF	887,107 SF

TRACKING TABLE	
REVISION	DATE
1. PLAN REVIEW #1	9/25/2007
2.	
3.	
4.	

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ASSOCIATES



COVER SHEET  
COLLETON CROSSING  
AIS SUBDIVISION  
TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

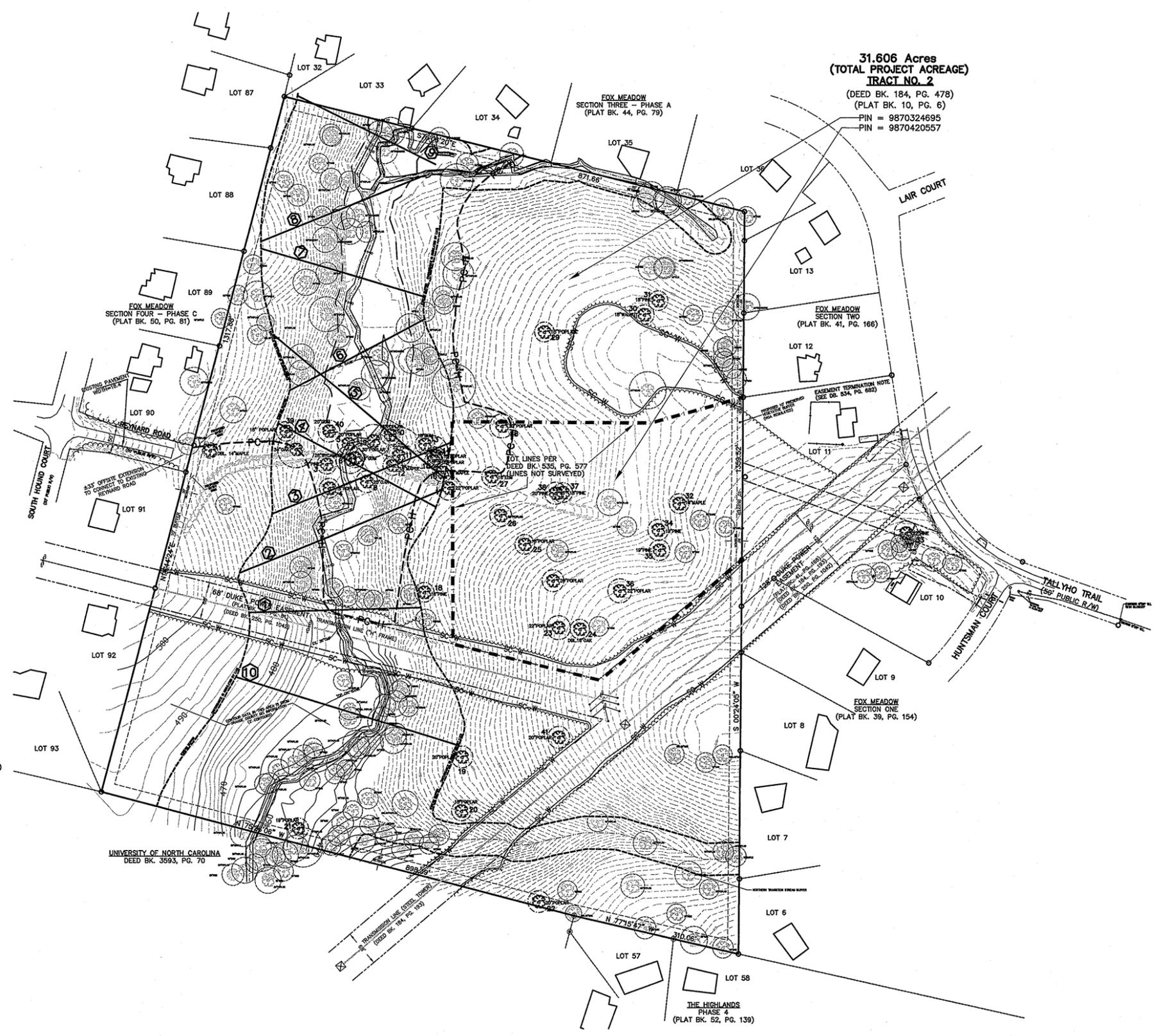
SCALE: NONE  
DRAWN BY: JWP  
CHECKED BY: JWP  
DATE: 03/20/2007  
PROJECT NO.: 510301.02  
DRAWING NO.: B01SP06  
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REVISIONS 1. 12/19/07: CUP COMMENTS 12/19/07  
2. 3/19/08: CUP REVIEW #2 COMMENTS  
3. 5/12/08: CUP REVIEW #3 COMMENTS  
4. 6/11/08: PER 5/14/08 MEETING WITH TOWN  
5. 8/15/08: CUP REVIEW #5 COMMENTS  
6. 9/29/08: CUP REVIEW #6 COMMENTS  
7. 10/23/08: CUP REVIEW #7 COMMENTS

SHEET S-1  
OF 20



VICINITY MAP  
NOT TO SCALE



**31.606 Acres  
(TOTAL PROJECT ACREAGE)  
TRACT NO. 2**  
(DEED BK. 184, PG. 478)  
(PLAT BK. 10, PG. 6)  
PIN = 9870324695  
PIN = 9870420557

**TREE REMOVAL CHART**

1. 14" DBL MAPLE
2. 34" OAK
3. 18" PINE
4. 18" POPLAR
5. 20" POPLAR
6. 26" SYCAMORE
7. 18" GUM
8. 20" OAK
9. 30" POPLAR
10. 18" POPLAR
11. 22" PINE
12. 18" MAPLE
13. 18" GUM
14. 18" POPLAR
15. 18" POPLAR
16. 18" MAPLE
17. 22" POPLAR
18. 18" PINE
19. 20" POPLAR
20. 18" POPLAR
21. 19" POPLAR
22. 20" Poplar
23. 22" Poplar
24. 18" DBL OAK
25. 18" POPLAR
26. 20" POPLAR
27. 18" ELM
28. 22" POPLAR
29. 18" POPLAR
30. 18" WALNUT
31. 18" PINE
32. 18" MAPLE
33. 22" PINE
34. 19" PINE
35. 19" PINE
36. 22" POPLAR
37. 18" PINE
38. 20" PINE
39. 18" POPLAR
40. 20" GUM
41. 20" POPLAR

- LEGEND:**
- EIP = EXISTING IRON PIPE
  - EIR = EXISTING IRON ROD
  - ⊕ = POWER POLE
  - ⊠ = ELECT. TOWER
  - 390 — = EXISTING ONE-FOOT CONTOUR
  - ⊗ = CROSS-SECTION USED TO CALCULATE CARRBORO PROTECTIVE BUFFER (15-268)

- LEGEND**
- EXISTING ROCK FORMATION
  - EXISTING MODERATE SLOPES (15% TO 25%) (SECONDARY)
  - EXISTING STEEP SLOPES (OVER 25%) (PRIMARY)
  - EXISTING ELECTRIC TRANSMISSION R/W
  - SPECIMEN TREE & ROOT ZONE (TO REMAIN)
  - TREE TO BE REMOVED
  - CARRBORO STREAM BUFFER
  - PC-SB PRIMARY CONSERVATION-STREAM BUFFER
  - PC-H PRIMARY CONSERVATION-HARDWOODS
  - SC-W SECONDARY CONSERVATION-WOODLANDS
  - EXISTING TREE LINE
  - PROPOSED CLEARING LIMIT
  - PROPOSED TREE FENCE
  - PROPOSED SILT FENCE



**NOTES:**  
1. EXISTING BUILDING LOCATIONS ARE APPROXIMATE LOCATIONS TAKEN FROM ORANGE COUNTY GIS DATA.  
2. TOPOGRAPHY IN SOUTHWEST CORNER TAKEN FROM ORANGE COUNTY GIS 2' CONTOUR DATA.

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**EXISTING CONDITIONS, DEMOLITION & TREE PROTECTION**  
COLLETON CROSSING  
AIS SUBDIVISION  
TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1" = 100'  
DRAWN BY: MOP  
CHECKED BY: PNP  
DATE: 03/20/2007  
PROJECT NO.: 510301  
DRAWING NO.: B801SP08  
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REVISIONS:  
1. 12/18/07: CUP COMMENTS 12/15/07  
2. 3/15/08: CUP REVIEW #2 COMMENTS  
3. 5/12/08: CUP REVIEW #3 AND COMMENTS  
4. 6/11/08: PER 5/14/08 MEETING WITH TOWN  
5. 8/25/08: CUP REVIEW #4 COMMENTS  
6. 9/29/08: CUP REVIEW #5 COMMENTS

SHEET 6-2  
OF 20



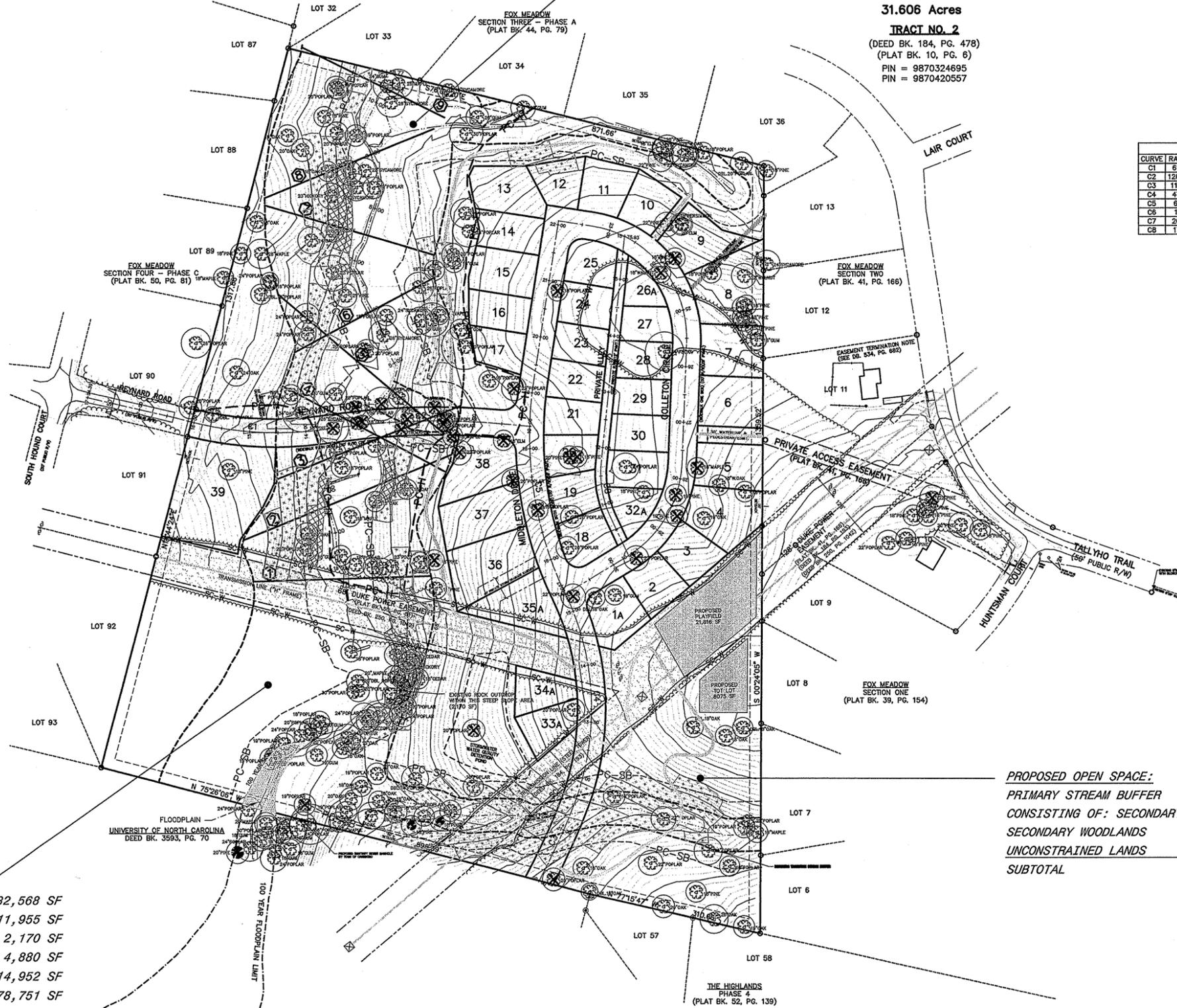
VICINITY MAP  
NOT TO SCALE

**PROPOSED OPEN SPACE:**  
 CONSISTING OF: PRIMARY-HARDWOOD = 268,487 SF  
 PRIMARY-STREAM BUFFER = 37,944 SF  
 SECONDARY WOODLANDS = 3,227 SF  
 SUBTOTAL = 309,658 SF

**31.606 Acres**  
**TRACT NO. 2**  
 (DEED BK. 184, PG. 478)  
 (PLAT BK. 10, PG. 6)  
 PIN = 9870324895  
 PIN = 9870420557

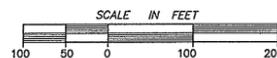
CURVE	RADIUS	LENGTH	CHORD DIR.	CHORD
C1	617.75	241.02	S86°06'29"E	239.50
C2	1264.43	278.86	S89°01'58"W	278.30
C3	1120.41	154.46	N24°29'23"E	154.34
C4	470.14	378.19	N02°30'17"W	368.08
C5	642.21	387.77	S08°15'07"E	381.91
C6	159.21	289.55	N39°17'53"W	264.81
C7	204.46	201.84	N30°38'19"E	193.74
C8	178.18	97.49	S09°35'19"E	96.28

- LEGEND**
- EXISTING ROCK FORMATION
  - EXISTING MODERATE SLOPES (15% TO 25%) (SECONDARY)
  - EXISTING STEEP SLOPES (OVER 25%) (PRIMARY)
  - EXISTING ELECTRIC TRANSMISSION R/W
  - FLOODPLAIN (PRIMARY)
  - SPECIMEN TREE & ROOT ZONE
  - CARRBORO STREAM BUFFER
  - PC-SB PRIMARY CONSERVATION-STREAM BUFFER
  - PC-H PRIMARY CONSERVATION-HARDWOODS
  - SC-W SECONDARY CONSERVATION-WOODLANDS
  - TREE TO BE REMOVED



**PROPOSED OPEN SPACE:**  
 CONSISTING OF: PRIMARY-HARDWOOD = 32,568 SF  
 PRIMARY-STREAM BUFFER = 111,955 SF  
 ROCK OUTCROP = 2,170 SF  
 PRIMARY-FLOODPLAIN = 4,880 SF  
 PRIMARY-STEEP SLOPES = 14,952 SF  
 SECONDARY-STEEP SLOPES = 78,751 SF  
 SECONDARY WOODLANDS = 126,706 SF  
 UNCONSTRAINED LAND = 34,607 SF  
 SUBTOTAL = 406,589 SF

**PROPOSED OPEN SPACE:**  
 PRIMARY STREAM BUFFER = 37,320 SF  
 CONSISTING OF: SECONDARY-STEEP SLOPES = 9,191 SF  
 SECONDARY WOODLANDS = 85,747 SF  
 UNCONSTRAINED LANDS = 38,602 SF  
 SUBTOTAL = 170,860 SF



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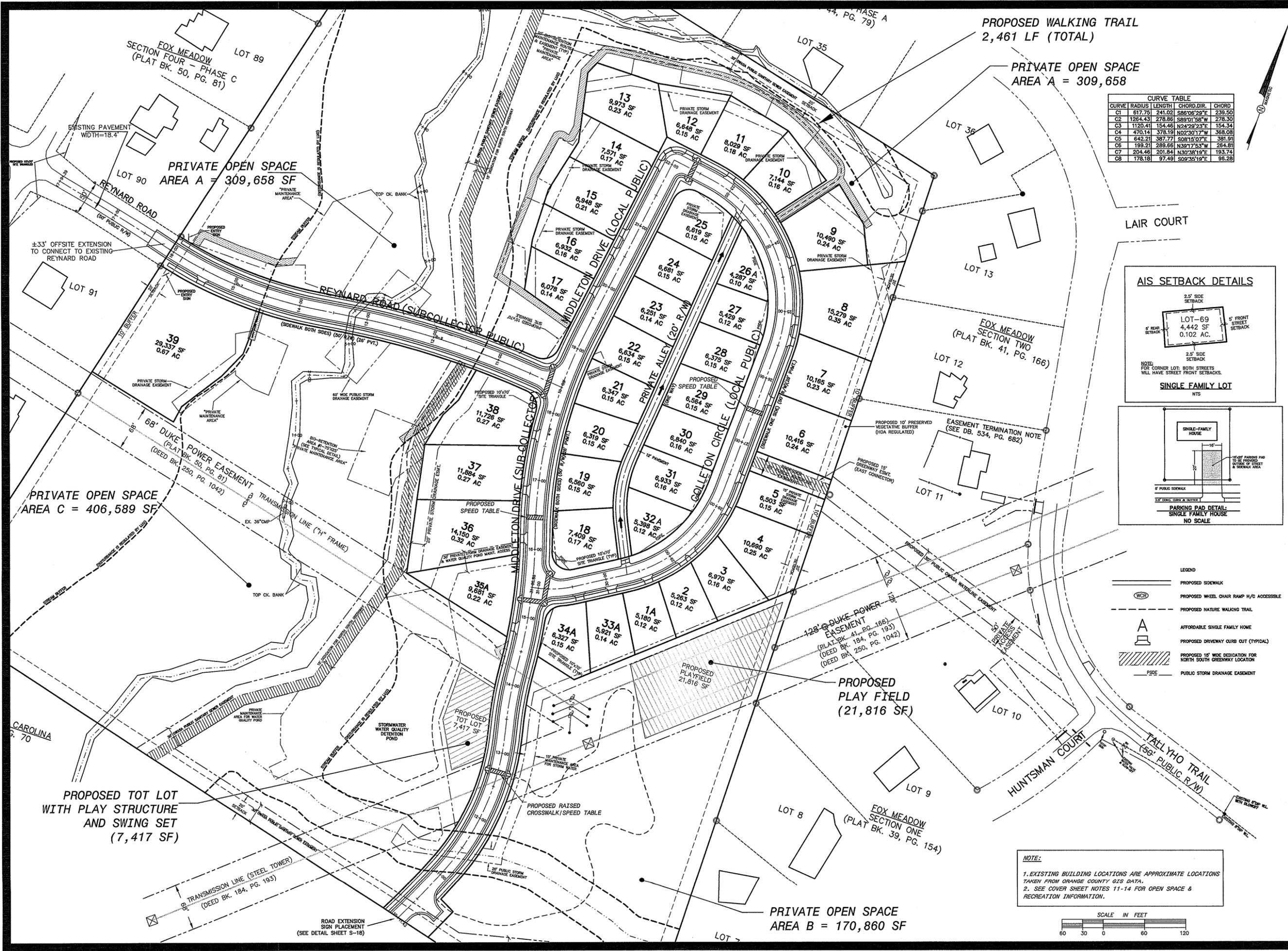


**CONCEPTUAL PRELIMINARY PLAN**  
 COLLETON CROSSING  
 AIS SUBDIVISION  
 TOWN OF CARRBORO  
 ORANGE COUNTY, N.C.

SCALE: 1" = 100'  
 DRAWN BY: MOP  
 CHECKED BY: PNP  
 DATE: 03/20/2007  
 PROJECT NO.: 510301  
 DRAWING NO.: B601SP05  
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REVISIONS	DATE	DESCRIPTION

SHEET 9-3  
 OF 20



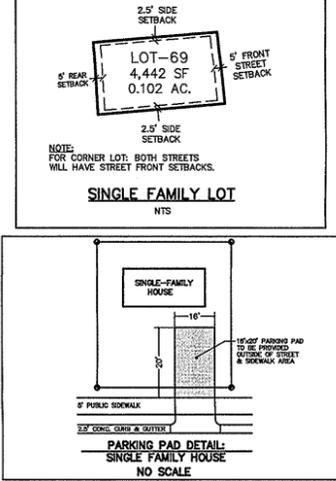
PROPOSED WALKING TRAIL  
2,461 LF (TOTAL)

PRIVATE OPEN SPACE  
AREA A = 309,658

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD DIR.	CHORD
C1	617.75	241.02	S88°06'29"E	239.50
C2	1264.43	278.86	S89°01'58"W	278.30
C3	1123.41	194.48	N24°23'23"E	154.34
C4	470.14	378.19	N02°30'17"W	368.08
C5	642.21	387.77	S08°15'07"E	381.91
C6	199.21	289.66	N39°17'53"W	264.81
C7	204.46	201.84	N30°38'19"E	193.74
C8	178.18	97.48	S09°35'19"E	96.28

**AIS SETBACK DETAILS**



- LEGEND
- PROPOSED SIDEWALK
  - PROPOSED WHEEL CHAIR RAMP / H/C ACCESSIBLE
  - PROPOSED NATURE WALKING TRAIL
  - AFFORDABLE SINGLE FAMILY HOME
  - PROPOSED DRIVEWAY CURB OUT (TYPICAL)
  - PROPOSED 15' WIDE DEDICATION FOR NORTH SOUTH GREENWAY LOCATION
  - PUBLIC STORM DRAINAGE EASEMENT

**NOTE:**  
1. EXISTING BUILDING LOCATIONS ARE APPROXIMATE LOCATIONS TAKEN FROM ORANGE COUNTY GIS DATA.  
2. SEE COVER SHEET NOTES 11-14 FOR OPEN SPACE & RECREATION INFORMATION.



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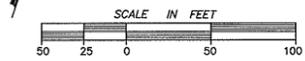
**CUP SITE PLAN**  
COLLETON CROSSING  
AIS SUBDIVISION  
TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=50'  
DRAWN BY: JRW  
CHECKED BY: PNP  
DATE: 3/20/2007  
PROJECT NO.: 510301  
DRAWING NO.: B801SP06  
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- REVISIONS
1. 12/19/07: CUP COMMENTS 12/19/07
  2. 1/09/08: RESIZE LOTS 1, 2 & 3.
  3. 3/18/08: CUP REVIEW #2 COMMENTS
  4. 5/12/08: CUP REVIEW #3 AND COMMENTS
  5. 6/11/08: PER 5/14/08 MEETING WITH TOWN
  6. 6/12/08: CUP REVIEW #5 COMMENTS
  7. 9/29/08: CUP REVIEW #6 COMMENTS
  8. 10/23/08: CUP REVIEW #7 COMMENTS

SHEET S-4  
OF 20

- EROSION CONTROL LEGEND**
- FES WITH LEVEL SPREADER RIP-RAP OUTLET
  - GRAVEL CONSTRUCTION ENTRANCE/EXIT
  - EXISTING 1' CONTOUR
  - PROPOSED GRADE CONTOUR
  - SPECIMEN TREE & ROOT ZONE
  - PROPOSED TREE PROTECTION FENCE
  - PROPOSED SILT FENCE
  - PROPOSED ROCK CHECK DAM
  - PROPOSED DIVERSION DIKE
  - PUBLIC STORM DRAINAGE EASEMENT
  - PRIVATE MAINTENANCE EASEMENT
  - PROPOSED BIO-RETENTION AREAS MAINTENANCE ROUTE & 10' ACCESS EASEMENT



- NOTES:**
- SEE DETAIL SHEETS S-17, S-18 AND S-20 FOR STORM, STREET AND EROSION DETAILS.
  - STREAM BUFFER DISTURBANCE IS REGULATED BY THE LUO.
  - EROSION CONTROL MEASURES TO BE PER ORANGE COUNTY SPECIFICATIONS.
  - SEE COVER PAGE NOTES 18-31 FOR VARIOUS CONSTRUCTION INFORMATION.
  - STREAM CHANNEL AND BANKS AT ENTRANCE AND EXIT OF PROPOSED BOX CULVERT ARE TO BE GRADED AS REQUIRED FOR NEW ALIGNMENT AND WING/END WALL CONSTRUCTION.
  - PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE WATER QUALITY AND DETENTION DEVICES SHALL BE CERTIFIED BY THE ENGINEER OF RECORD AS CONSTRUCTED PER THE APPROVED CONSTRUCTION PLANS, AND AS-BUILT CONSTRUCTION PLANS SHALL BE SUBMITTED TO THE TOWN.
  - ACCESS TO BIO-RETENTION AREAS FOR MAINTENANCE SHALL BE VIA THE OPEN SPACE CORRIDORS ON COLLETON CIRCLE. SEE PLAN & LEGEND FOR CLARIFICATION.
  - BIO-RETENTION BASINS TO BE CONSTRUCTED ONLY AFTER THE CONTRIBUTING DRAINAGE AREA IS "COMPLETELY" STABILIZED.
  - THE BIO-RETENTION BASIN OVERFLOW WEIR LOCATIONS SHOWN ARE PRELIMINARY ONLY, AND SHALL BE FIELD LOCATED AND ADJUSTED AS NEEDED TO BEST FIT THE FIELD CONDITIONS.
  - THE BIO-RETENTION BASINS MAY REQUIRE CORRECTIVE MEASURES DURING CONSTRUCTION IF WATER TABLE CONDITIONS ARE ENCOUNTERED. THE PROJECT ENGINEER AND SOILS CONSULTANT SHALL BE NOTIFIED IF THESE CONDITIONS ARE ENCOUNTERED.

**ENGINEERS  
PLANNERS  
SURVEYORS**

**PHILIP  
POST  
&  
ASSOCIATES**

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Chapel Hill, NC 27514  
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483-2600 850-9882

Greensboro, NC  
(336) 273-7771



**GRADING & EROSION CONTROL PLAN**

**COLLETON CROSSING  
AIS SUBDIVISION**

TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=50'

DRAWN BY: JRW

CHECKED BY: PNP

DATE: 3/20/2007

PROJECT NO. 510301

DRAWING NO. B001SP06

This drawing is the property of Philip Post and Associates, Inc. and shall not be used for any other project without the written consent of Philip Post and Associates, Inc. A professional seal is required for use on any drawing prepared by Philip Post and Associates, Inc. or its employees.

REVISIONS 1. 12/18/07: CIP COMMENTS 12/18/07

2. 3/18/08: CIP REVIEW #2 COMMENTS

3. 5/12/08: CIP REVIEW #3 AND COMMENTS

4. 6/11/08: PER 5/14/08 MEETING WITH TOWN

5. 6/18/08: CIP REVIEW #5 COMMENTS

6. 9/29/08: CIP REVIEW #6 COMMENTS

7. 10/12/08: ADD BIO-RETENTION OVERFLOW SPILLWAYS

8. 10/23/08: CIP REVIEW #7 COMMENTS

SHEET S-5

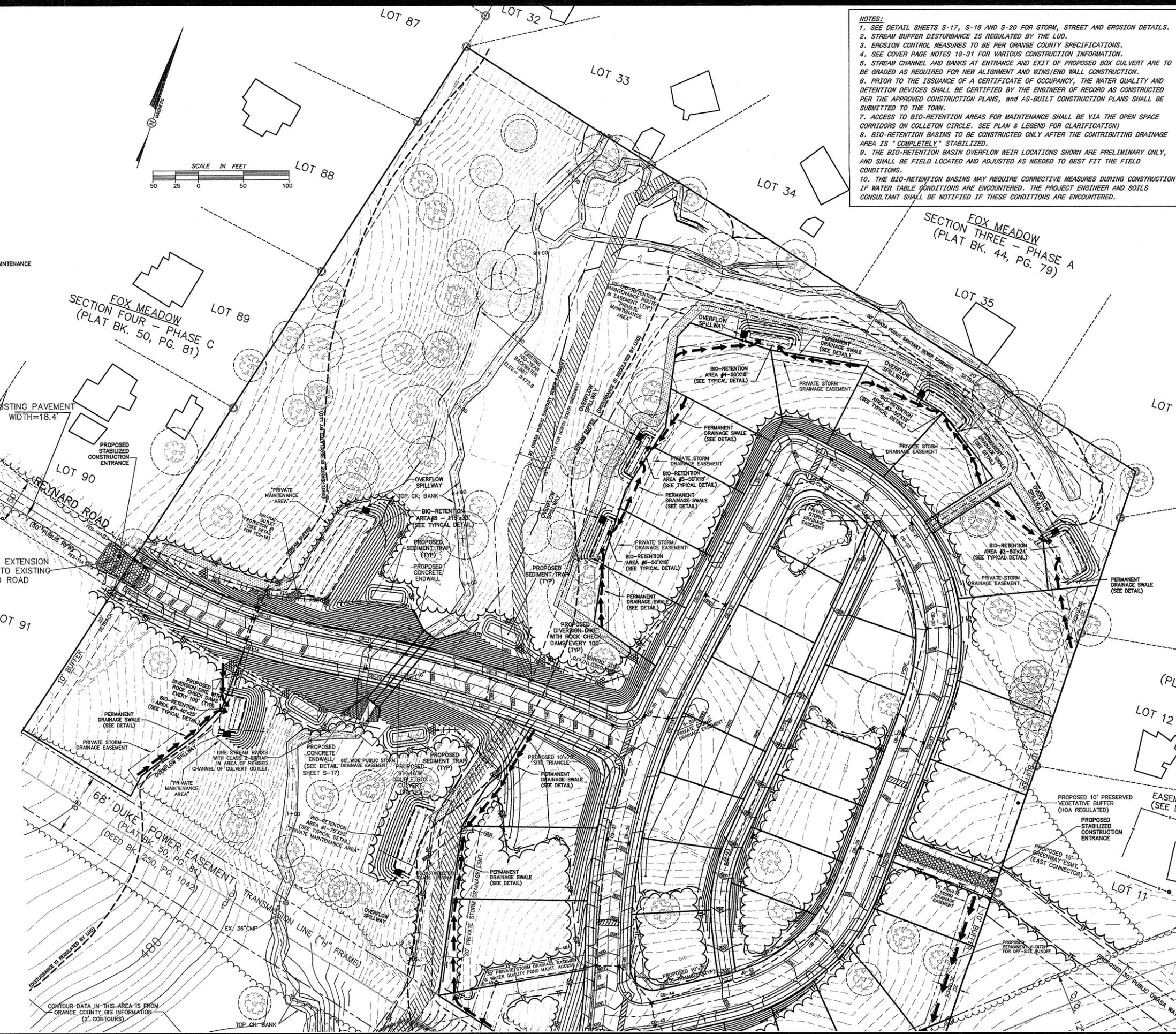
OF 20

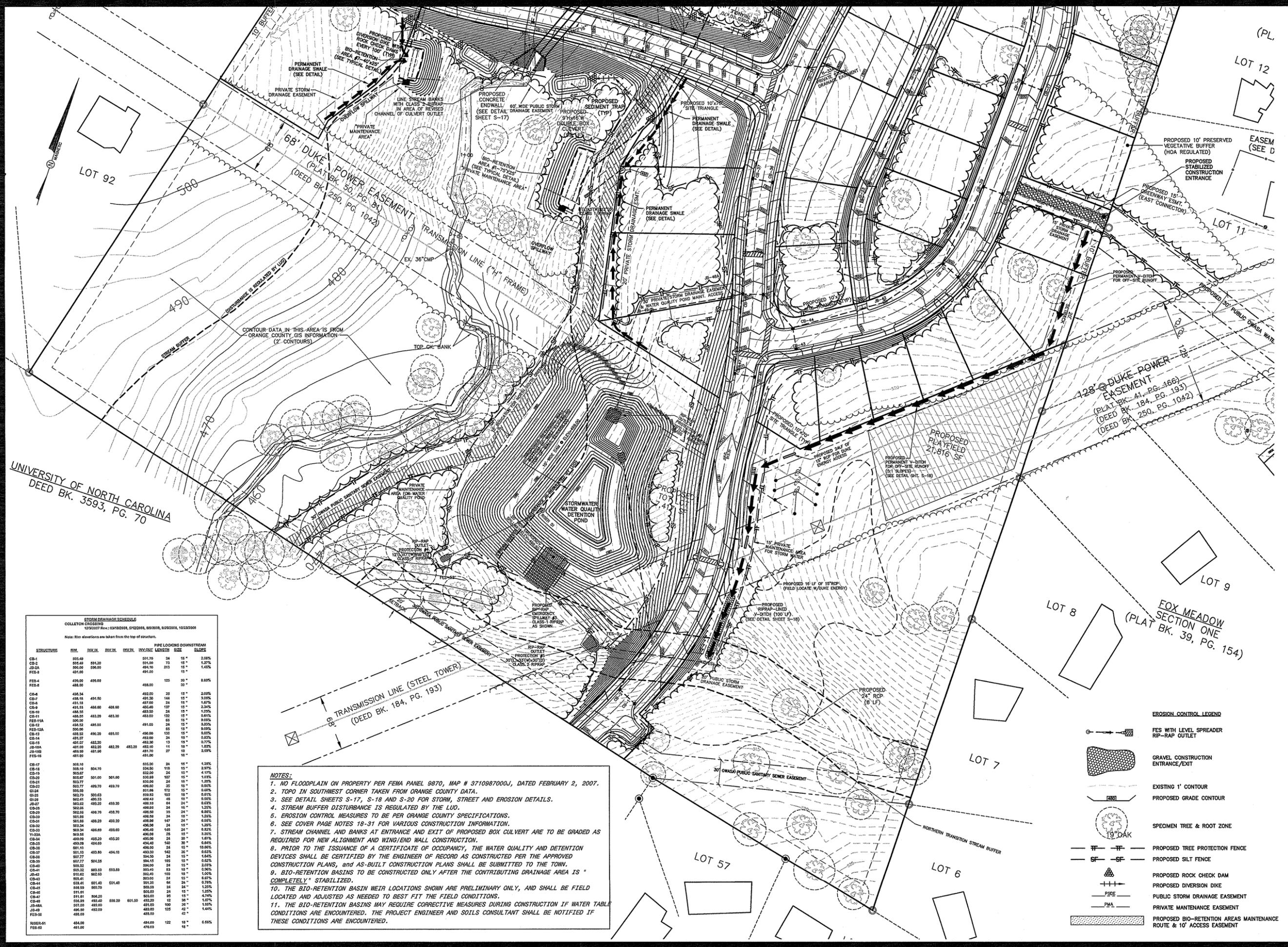
**STORM DRAINAGE SCHEDULES**

COLLETON CROSSING  
12/20/07 Rev. 01/18/08, 03/20/08, 05/20/08, 09/20/08, 10/23/08

Note: Rim elevations are taken from the top of structure.

STRUCTURE	INLET	OUTLET	INLET	OUTLET	PIPE LENGTH	DOWNSTREAM	UPSTREAM	GRADE
CB-1	505.00	505.00	511.75	511.75	34	15'	0.25%	
CB-2	505.00	501.50	511.00	511.00	75	15'	1.33%	
CB-3A	500.00	500.00	493.00	493.00	213	15'	1.40%	
FES-3	491.00		491.00					
FES-4	499.00	499.00	493.00	493.00	30	15'	0.80%	
FES-5	488.00		488.00					
CB-4	482.54	482.54	482.00	482.00	35	15'	2.00%	
CB-5	485.18	491.50	481.50	481.50	144	15'	1.20%	
CB-6	481.21	486.00	486.00	486.00	72	15'	1.67%	
CB-7	482.00		482.00		24	15'	1.25%	
CB-8	486.65	483.20	483.20	483.20	137	15'	0.81%	
CB-9	500.00		500.00		82	15'	0.90%	
FES-10A	488.52	489.00	481.00	481.00	36	15'	3.33%	
FES-10B	500.00		489.00	489.00	33	15'	0.90%	
CB-10	483.52	490.20	495.00	495.00	130	15'	0.60%	
CB-11	491.07	482.00	483.00	483.00	33	15'	0.90%	
CB-12	491.07	482.20	482.20	482.20	11	15'	1.82%	
CB-13	485.20	481.00	481.00	481.00	27	15'	2.25%	
FES-15	491.00		491.00					
CB-17	505.00	504.75	505.00	505.00	24	15'	1.25%	
CB-18	505.00	501.50	504.25	504.25	74	15'	1.71%	
CB-19	505.00	501.50	501.50	501.50	81	15'	1.60%	
CB-20	503.77	499.75	500.00	500.00	34	15'	1.55%	
CB-21	503.77	499.75	499.75	499.75	32	15'	1.63%	
CB-22	504.50	500.00	501.66	501.66	172	15'	0.85%	
CB-23	502.00	500.00	500.00	500.00	185	15'	0.81%	
CB-24	502.00	499.50	499.50	499.50	45	15'	1.00%	
CB-25	502.00	499.25	499.25	499.25	34	15'	1.35%	
CB-26	502.00	498.75	498.75	498.75	34	15'	1.35%	
CB-27	502.00	498.25	498.25	498.25	34	15'	1.35%	
CB-28	502.00	497.75	497.75	497.75	34	15'	1.35%	
CB-29	502.00	497.25	497.25	497.25	34	15'	1.35%	
CB-30	502.00	496.75	496.75	496.75	34	15'	1.35%	
CB-31	502.00	496.25	496.25	496.25	34	15'	1.35%	
CB-32	502.00	495.75	495.75	495.75	34	15'	1.35%	
CB-33	502.00	495.25	495.25	495.25	34	15'	1.35%	
CB-34	502.00	494.75	494.75	494.75	34	15'	1.35%	
CB-35	502.00	494.25	494.25	494.25	34	15'	1.35%	
CB-36	502.00	493.75	493.75	493.75	34	15'	1.35%	
CB-37	502.00	493.25	493.25	493.25	34	15'	1.35%	
CB-38	502.00	492.75	492.75	492.75	34	15'	1.35%	
CB-39	502.00	492.25	492.25	492.25	34	15'	1.35%	
CB-40	502.00	491.75	491.75	491.75	34	15'	1.35%	
CB-41	502.00	491.25	491.25	491.25	34	15'	1.35%	
CB-42	502.00	490.75	490.75	490.75	34	15'	1.35%	
CB-43	502.00	490.25	490.25	490.25	34	15'	1.35%	
CB-44	502.00	489.75	489.75	489.75	34	15'	1.35%	
CB-45	502.00	489.25	489.25	489.25	34	15'	1.35%	
CB-46	502.00	488.75	488.75	488.75	34	15'	1.35%	
CB-47	502.00	488.25	488.25	488.25	34	15'	1.35%	
CB-48	502.00	487.75	487.75	487.75	34	15'	1.35%	
CB-49	502.00	487.25	487.25	487.25	34	15'	1.35%	
CB-50	502.00	486.75	486.75	486.75	34	15'	1.35%	
CB-51	502.00	486.25	486.25	486.25	34	15'	1.35%	
CB-52	502.00	485.75	485.75	485.75	34	15'	1.35%	
CB-53	502.00	485.25	485.25	485.25	34	15'	1.35%	
CB-54	502.00	484.75	484.75	484.75	34	15'	1.35%	
CB-55	502.00	484.25	484.25	484.25	34	15'	1.35%	
CB-56	502.00	483.75	483.75	483.75	34	15'	1.35%	
CB-57	502.00	483.25	483.25	483.25	34	15'	1.35%	
CB-58	502.00	482.75	482.75	482.75	34	15'	1.35%	
CB-59	502.00	482.25	482.25	482.25	34	15'	1.35%	
CB-60	502.00	481.75	481.75	481.75	34	15'	1.35%	
CB-61	502.00	481.25	481.25	481.25	34	15'	1.35%	
CB-62	502.00	480.75	480.75	480.75	34	15'	1.35%	
CB-63	502.00	480.25	480.25	480.25	34	15'	1.35%	
CB-64	502.00	479.75	479.75	479.75	34	15'	1.35%	
CB-65	502.00	479.25	479.25	479.25	34	15'	1.35%	
CB-66	502.00	478.75	478.75	478.75	34	15'	1.35%	
CB-67	502.00	478.25	478.25	478.25	34	15'	1.35%	
CB-68	502.00	477.75	477.75	477.75	34	15'	1.35%	
CB-69	502.00	477.25	477.25	477.25	34	15'	1.35%	
CB-70	502.00	476.75	476.75	476.75	34	15'	1.35%	
CB-71	502.00	476.25	476.25	476.25	34	15'	1.35%	
CB-72	502.00	475.75	475.75	475.75	34	15'	1.35%	
CB-73	502.00	475.25	475.25	475.25	34	15'	1.35%	
CB-74	502.00	474.75	474.75	474.75	34	15'	1.35%	
CB-75	502.00	474.25	474.25	474.25	34	15'	1.35%	
CB-76	502.00	473.75	473.75	473.75	34	15'	1.35%	
CB-77	502.00	473.25	473.25	473.25	34	15'	1.35%	
CB-78	502.00	472.75	472.75	472.75	34	15'	1.35%	
CB-79	502.00	472.25	472.25	472.25	34	15'	1.35%	
CB-80	502.00	471.75	471.75	471.75	34	15'	1.35%	
CB-81	502.00	471.25	471.25	471.25	34	15'	1.35%	
CB-82	502.00	470.75	470.75	470.75	34	15'	1.35%	
CB-83	502.00	470.25	470.25	470.25	34	15'	1.35%	
CB-84	502.00	469.75	469.75	469.75	34	15'	1.35%	
CB-85	502.00	469.25	469.25	469.25	34	15'	1.35%	
CB-86	502.00	468.75	468.75	468.75	34	15'	1.35%	
CB-87	502.00	468.25	468.25	468.25	34	15'	1.35%	
CB-88	502.00	467.75	467.75	467.75	34	15'	1.35%	
CB-89	502.00	467.25	467.25	467.25	34	15'	1.35%	
CB-90	502.00	466.75	466.75	466.75	34	15'	1.35%	
CB-91	502.00	466.25	466.25	466.25	34	15'	1.35%	
CB-92	502.00	465.75	465.75	465.75	34	15'	1.35%	
CB-93	502.00	465.25	465.25	465.25	34	15'	1.35%	
CB-94	502.00	464.75	464.75	464.75	34	15'	1.35%	
CB-95	502.00	464.25	464.25	464.25	34	15'	1.35%	
CB-96	502.00	463.75	463.75	463.75	34	15'	1.35%	
CB-97	502.00	463.25	463.25	463.25	34	15'	1.35%	
CB-98	502.00	462.75	462.75	462.75	34	15'	1.35%	
CB-99	502.00	462.25	462.25	462.25	34	15'	1.35%	
CB-100	502.00	461.75	461.75	461.75	34	15'	1.35%	





UNIVERSITY OF NORTH CAROLINA  
DEED BK. 3593, PG. 70

128' DUKE POWER EASEMENT  
(PLAT BK. 41, PG. 166)  
(DEED BK. 184, PG. 193)  
(DEED BK. 250, PG. 1042)

FOX MEADOW SECTION ONE  
(PLAT BK. 39, PG. 154)

**STORM DRAINAGE SCHEDULE**  
COLLETON CROSSING  
12/20/07 Rev. 1: 03/18/2008, 04/22/2008, 05/03/08, 02/20/09, 10/23/2009

Note: Rim elevations are taken from the top of structure.

STRUCTURE	RIM	INVERT	INVERT	INVERT	INVERT	LENGTH	SIZE	SLOPE
CB-1	505.49	501.70	501.70	501.70	501.70	24	18"	2.08%
CB-2	505.49	501.20	501.20	501.20	501.20	75	18"	1.97%
CB-3	502.00	500.00	500.00	500.00	500.00	213	18"	1.45%
FES-3	491.00	491.00				15	30"	
FES-4	499.00	499.00				125	30"	0.05%
FES-5	488.00					35	30"	
CB-6	488.34	492.20	492.20	492.20	492.20	25	18"	2.00%
CB-7	488.18	491.50	491.50	491.50	491.50	144	18"	3.95%
CB-8	491.18	487.60	487.60	487.60	487.60	26	18"	1.87%
CB-9	491.18	486.60	486.60	486.60	486.60	137	18"	2.34%
CB-10	484.35	483.50	483.50	483.50	483.50	24	18"	1.29%
CB-11	486.35	483.00	483.00	483.00	483.00	192	18"	0.68%
FES-15A	500.00					65	18"	0.05%
CB-12	488.52	495.00	495.00	495.00	495.00	24	18"	3.95%
FES-15B	500.00					65	18"	0.05%
CB-13	488.52	490.20	490.20	490.20	490.20	150	18"	0.90%
CB-14	491.07	492.00	492.00	492.00	492.00	26	18"	0.82%
CB-15	491.07	482.30	482.30	482.30	482.30	13	18"	0.77%
CB-16A	491.00	482.30	482.30	482.30	482.30	11	18"	1.82%
CB-16B	481.50	481.00	481.00	481.00	481.00	27	18"	2.59%
FES-16	481.00					15	30"	
CB-17	508.16	504.70	504.70	504.70	504.70	24	18"	1.29%
CB-18	508.16	504.60	504.60	504.60	504.60	118	18"	2.97%
CB-19	505.67	502.00	502.00	502.00	502.00	24	18"	4.17%
CB-20	505.67	501.00	501.00	501.00	501.00	107	18"	1.03%
CB-21	503.77	500.00	500.00	500.00	500.00	24	18"	1.29%
CB-22	503.77	499.70	499.70	499.70	499.70	24	18"	1.29%
CB-23	505.50	501.86	501.86	501.86	501.86	172	18"	0.60%
CB-24	502.79	500.63	500.63	500.63	500.63	163	18"	0.61%
CB-25	502.79	499.33	499.33	499.33	499.33	48	18"	0.92%
CB-26	502.62	499.20	499.20	499.20	499.20	64	24"	0.92%
CB-27	502.62	498.70	498.70	498.70	498.70	24	18"	1.29%
CB-28	501.66	498.30	498.30	498.30	498.30	24	18"	1.29%
CB-29	501.66	498.20	498.20	498.20	498.20	147	24"	0.92%
CB-30	500.34	496.00	496.00	496.00	496.00	24	18"	1.29%
CB-31	500.34	496.00	496.00	496.00	496.00	24	18"	1.29%
CB-32	500.34	496.00	496.00	496.00	496.00	24	18"	1.29%
CB-33	500.34	496.00	496.00	496.00	496.00	24	18"	1.29%
CB-34	500.34	496.00	496.00	496.00	496.00	24	18"	1.29%
CB-35	499.09	494.60	494.60	494.60	494.60	140	30"	0.64%
CB-36	499.09	492.50	492.50	492.50	492.50	24	18"	1.81%
CB-37	501.10	493.80	493.80	493.80	493.80	142	30"	0.63%
CB-38	507.77	504.50	504.50	504.50	504.50	105	18"	0.62%
CB-39	507.77	504.50	504.50	504.50	504.50	105	18"	0.62%
CB-40	509.32	505.00	505.00	505.00	505.00	24	18"	2.09%
CB-41	509.32	503.60	503.60	503.60	503.60	63	18"	0.90%
CB-42	510.02	502.00	502.00	502.00	502.00	100	18"	1.00%
CB-43	509.41	502.00	502.00	502.00	502.00	24	18"	4.67%
CB-44	509.41	501.40	501.40	501.40	501.40	64	24"	0.78%
CB-45	508.09	500.70	500.70	500.70	500.70	24	18"	1.29%
CB-46	511.01	505.00	505.00	505.00	505.00	24	18"	1.29%
CB-47	511.01	504.20	504.20	504.20	504.20	24	18"	1.49%
CB-48	508.09	492.40	492.40	492.40	492.40	12	18"	1.97%
CB-49	507.00	492.00	492.00	492.00	492.00	100	30"	1.00%
CB-50	486.00	482.00	482.00	482.00	482.00	125	42"	1.40%
CB-51	486.00					42	42"	
R38R-01	484.00	484.00	484.00	484.00	484.00	122	18"	0.64%
FES-02	481.00					478.00	18"	

- NOTES:**
- NO FLOODPLAIN ON PROPERTY PER FEMA PANEL 9870, MAP # 3710987000J, DATED FEBRUARY 2, 2007.
  - TOPO IN SOUTHWEST CORNER TAKEN FROM ORANGE COUNTY DATA.
  - SEE DETAIL SHEETS S-17, S-18 AND S-20 FOR STORM, STREET AND EROSION DETAILS.
  - STREAM BUFFER DISTURBANCE IS REGULATED BY THE LUO.
  - EROSION CONTROL MEASURES TO BE PER ORANGE COUNTY SPECIFICATIONS.
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  - THE BIO-RETENTION BASINS MAY REQUIRE CORRECTIVE MEASURES DURING CONSTRUCTION IF WATER TABLE CONDITIONS ARE ENCOUNTERED. THE PROJECT ENGINEER AND SOILS CONSULTANT SHALL BE NOTIFIED IF THESE CONDITIONS ARE ENCOUNTERED.

- EROSION CONTROL LEGEND**
- FES WITH LEVEL SPREADER RIP-RAP OUTLET
  - GRAVEL CONSTRUCTION ENTRANCE/EXIT
  - EXISTING 1' CONTOUR
  - PROPOSED GRADE CONTOUR
  - SPECIMEN TREE & ROOT ZONE
  - PROPOSED TREE PROTECTION FENCE
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  - PUBLIC STORM DRAINAGE EASEMENT
  - PRIVATE DRAINAGE EASEMENT
  - PROPOSED BIO-RETENTION AREAS MAINTENANCE ROUTE & 10' ACCESS EASEMENT

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493-2600 850-9882

Greensboro, NC  
(336)723-7711



**GRADING & EROSION CONTROL PLAN**

COLLETON CROSSING  
AIS SUBDIVISION

TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=50'

DRAWN BY: JRV

CHECKED BY: PNP

DATE: 3/20/2007

PROJECT NO. 510301

DRAWING NO. 510301S05

This drawing is the property of Philip Post and Associates, Inc. It is to be used only for the project and site for which it was prepared and for no other purpose without the written consent of Philip Post & Associates, Inc.

REVISIONS 1. 12/18/07: CUP COMMENTS 12/15/07

2. 3/19/08: CUP REVIEW #2 COMMENTS

3. 5/12/08: CUP REVIEW #3 AND COMMENTS

4. 6/11/08: PER 5/14/08 MEETING WITH TOWN

5. 8/15/08: CUP REVIEW #4 COMMENTS

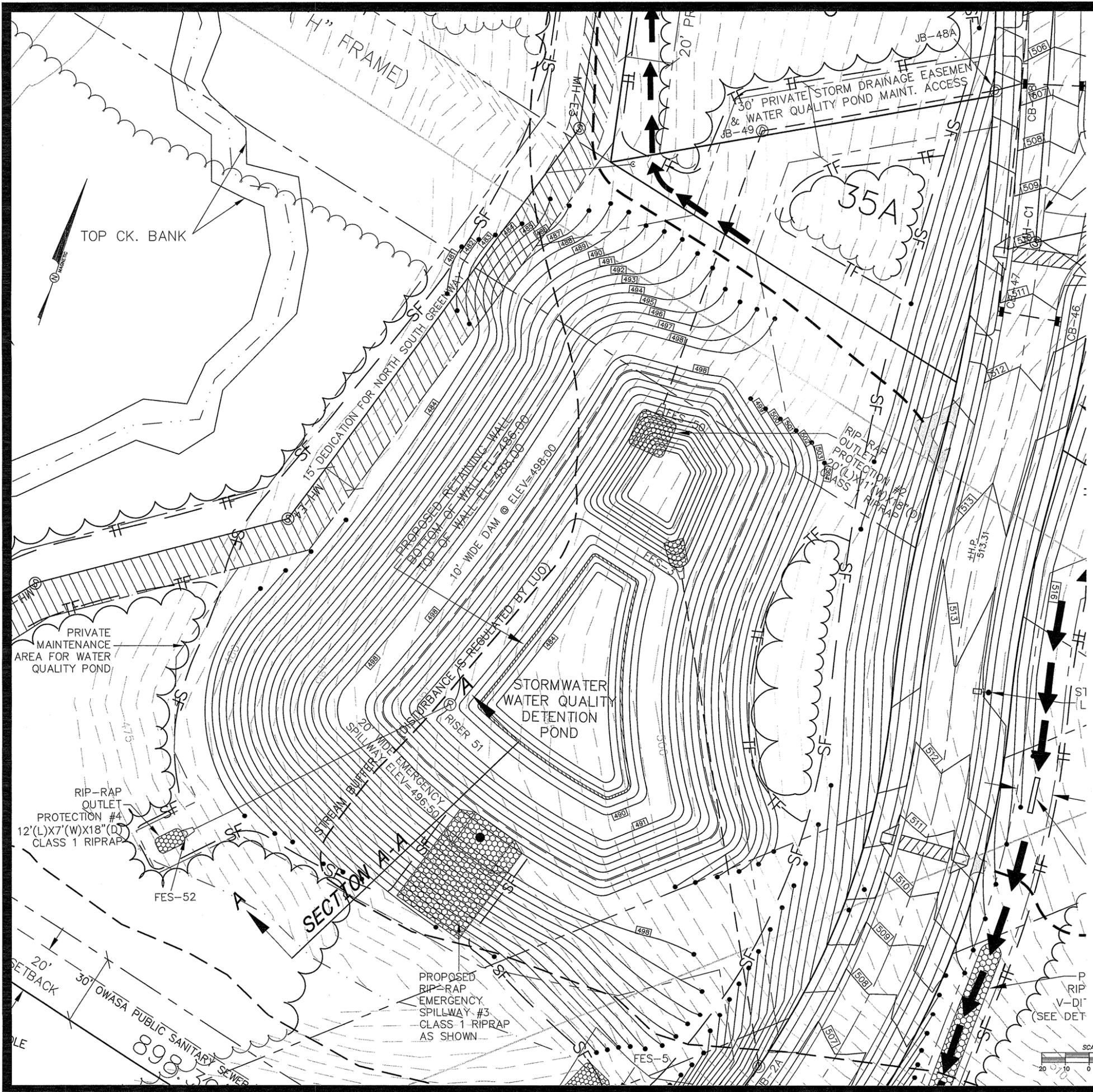
6. 8/27/08: DUKE ENERGY COMMENTS

7. 9/29/08: CUP REVIEW #5 COMMENTS

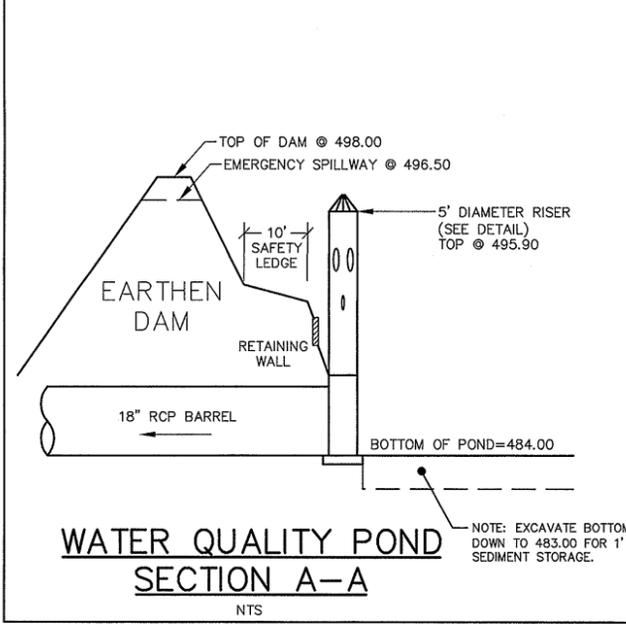
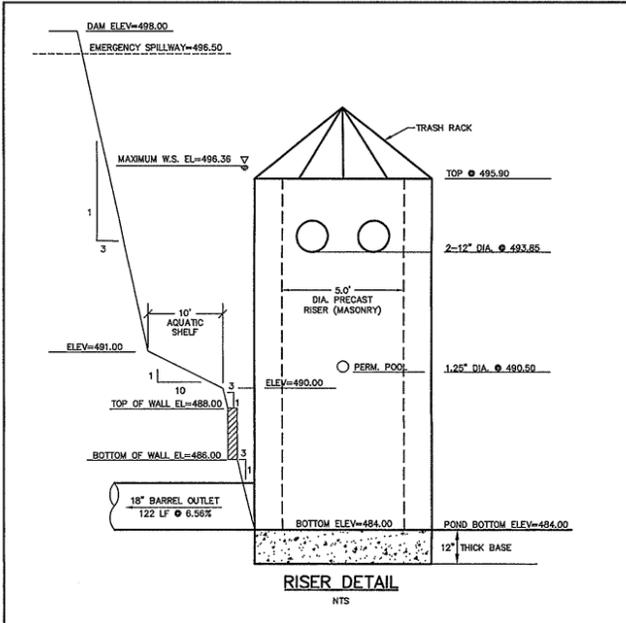
8. 10/23/08: CUP REVIEW #7 COMMENTS

SHEET S-6

OF 20



**NOTES:**  
 1. INTERIOR SLOPES & PERIMETER OF POND TO BE PLANTED WITH APPROPRIATE GRASSES & TREES/SHRUBS.  
 2. SEE DETAIL SHEETS S-18 & S-20 FOR ADDITIONAL INFORMATION.



ENGINEERS  
SURVEYORS  
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 495-2800 850-8662  
 Greensboro, NC  
 (336)273-7711

**PHILIP POST & ASSOCIATES**



**WATER QUALITY POND**

**COLLETON CROSSING**  
**AIS SUBDIVISION**

TOWN OF CARRBORO  
 ORANGE COUNTY, N.C.

SCALE 1"=20'  
 DRAWN BY: JRW  
 CHECKED BY: PJP  
 DATE: 3/20/2007  
 PROJECT NO.: 510301  
 DRAWING NO.: BDD1503B  
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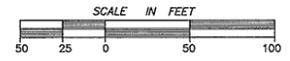
REVISIONS:  
 1. 12/18/07: CUP COMMENTS 12/15/07  
 2. 3/19/08: CUP REVIEW #2 COMMENTS  
 3. 5/12/08: CUP REVIEW #3 AND COMMENTS  
 4. 5/13/08: TOWN COMMENTS  
 5. 5/14/08: PER 5/14/08 MEETING WITH TOWN  
 6. 8/15/08: CUP REVIEW #4 COMMENTS  
 7. 9/23/08: CUP REVIEW #5 COMMENTS  
 8. 10/23/08: CUP REVIEW #7 COMMENTS

SHEET 5-7  
 OF 20

- EROSION CONTROL LEGEND**
- FES WITH LEVEL SPREADER RIP-RAP OUTLET
  - GRAVEL CONSTRUCTION ENTRANCE/EXIT
  - EXISTING 1' CONTOUR
  - PROPOSED GRADE CONTOUR
  - SPECIMEN TREE & ROOT ZONE
  - PROPOSED TREE PROTECTION FENCE
  - PROPOSED SILT FENCE
  - PROPOSED ROCK CHECK DAM
  - PROPOSED DIVERSION DIKE
  - PUBLIC STORM DRAINAGE EASEMENT



- LEGEND**
- 10" CP --- 10" CP --- 10" CP --- EXISTING DRAINAGE PIPE
  - 8" S.S. --- MH-C1 --- PROPOSED SANITARY SEWER LINE AND MANHOLE
  - 8" W.L. --- FH-2 --- PROPOSED WATER LINE & FIRE HYDRANT
  - 8" W.L. --- --- PROPOSED WATER LINE & SERVICE METER
  - FES-12 --- CI-4 --- PROPOSED STORM DRAINAGE SYSTEM
  - --- --- PROPOSED STREET LIGHT (8 EACH)



**Orange Water and Sewer Authority  
Project Documentation Check-list**

In addition to a Final Inspection approved by the OWASA Construction Inspector, the following documents must be received and approved by OWASA before acceptance of the project and the setting of markers. The following shall be submitted as a complete package to the OWASA Engineering Associates for Third Party Review. Partial submissions are considered incomplete. All non-compliant items will be returned.

- ✓ Engineer's Certification for DEH Public Water Supply Section permitted water extension - Submit original document to OWASA for submittal to NCDENR. Receipt of the DEH Public Water Supply Section Final Approval Letter is required before the permitted water system is placed into service. State requirement no exceptions.
- ✓ Engineer's Certification for DWO permitted sewer extension - Engineer must use the certification form attached to the sewer permit from NCDENR. Record Drawings are required to be submitted to NCDENR along with the Certification of Completion in the State of North Carolina. Both documents must be sealed by Engineers from the same Organization. Submit original document to OWASA along with the supporting documentation required by DWO. The permitted sewer system shall not be placed into service until the Engineer's Certification and Supporting Documentation have been submitted by OWASA to DWO. State requirement no exceptions.
- ✓ Assent Letter - Submit original document on OWASA standard form.
- ✓ Letter of Dedication - Submit original document on OWASA standard form.
- ✓ Record Drawings - Construction drawings shall be modified to reflect actual field installations. All DEH Public Water Supply Section permitted extensions and DWO permitted extensions shall be signed and sealed by a Licensed Professional Engineer in the State of North Carolina. Submit three copies of the record drawing for review by the OWASA Engineering Staff. Upon acceptance of the record drawing by OWASA a meter stamp will be requested by the OWASA Engineering Technicians. Please note that the meter is not a part of the initial submittal package.
- ✓ Digital Submissions - Water Feature Database (MS Access), Manhole Datasheet Database (MS Access), and Record Drawing (AutoCAD .dwg format). Contact the OWASA Engineering Technicians for information concerning this submittal.

- FIRE DEPARTMENT NOTES:**
- A) NO FRAMING MAY BEGIN UNTIL FIRE HYDRANTS ARE OPERATIONAL
  - B) AN ALL-WEATHER 20" WIDE TRAVEL SURFACE MUST BE IN PLACE ON ROADWAY PRIOR TO RECEIVING FINAL PLAT APPROVAL OR ANY BUILDING PERMIT
  - C) ALL FIRE HYDRANTS SHALL BE IN OPERATION PRIOR TO ANY CONSTRUCTION FRAMING AND ACCESSIBLE AT ALL TIMES
  - D) THE 2-1/2" DISCHARGE ON FIRE HYDRANTS SHALL BE AT LEAST 21" INCHES ABOVE FINAL GRADE
  - E) FIRE ACCESS ROAD MUST BE OF AN ALL-WEATHER SURFACE AND MAINTAINED DURING CONSTRUCTION. REQUIRE BASE PAVEMENT ASPHALT
  - F) NO BURNING IS ALLOWED ON PROPERTY. ALL BRUSH AND TRASH MUST BE HAULED FROM SITE OR MULCHED ON SITE.
  - G) ANY BLASTING REQUIRES A BLASTING PERMIT FROM FIRE DEPARTMENT
  - H) THERE SHALL BE NO PARKING IN ALLEY. ALLEY MUST BE MARKED AS A FIRE LANE ACCORDING TO TOWN CODE.
  - I) ANY PARKING ON STREET MUST MEET STREET WIDTH IN ACCORDANCE WITH TOWN CODE.

PROPOSED ITEM	PROPOSED #
FIRE HYDRANT	5
STREET LIGHT	8

**Orange Water and Sewer Authority  
Utility Notes for Colleton Crossing**

- 1 Standards and Specifications - All construction shall be in accordance with OWASA Standards and Specifications dated August, 2003, latest revised version.
- 2 Sewer Services - Each building connected to the sewer system shall be served by a separate building sewer of not less than 4" in diameter. Sewer services located within public right-of-way or OWASA sewer easements must be constructed of ductile iron pipe from the tap up to and including the first clean-out. Except for dead end manholes, all 4" inch sewer services must be tapped into the sewer main. All 6" services must be connected to a manhole.
- 3 OWASA Easements - No grading or encroachments are allowed within OWASA water or sewer easements. Proposed easements must have vehicular access for OWASA maintenance vehicles with slopes no greater than 4 to 1. Proposed plantings within OWASA easements must come from the OWASA Suggested Plantings for Water and Sewer Easements adopted by the Board of Directors. A landscape plan must be submitted to OWASA clearly showing the water and/or sewer line, its placement within the easement, proposed plantings from the approved list clearly labeled as such, and the distance from the water/sewer line. OWASA will only approve landscaping plans for its easements submitted in this manner. An approval letter will be given for landscaping plans that propose plantings that do not interfere with OWASA ability to operate and maintain its utilities in accordance with the rules and regulations of the State of North Carolina. Plan approval does not automatically give any approval to any landscaping plan that may be included in the plan set.
- 4 Chlorination Requirements - The Contractor shall be responsible for neutralization of chlorinated water at the point of discharge from the main being tested. This shall occur following chlorination to disinfect a main or any other time when elevated levels of chlorine could potentially be discharged into the environment by the Contractor. At the time the disinfection and purity testing procedures are discussed with the OWASA Construction Inspector, the procedure for chlorination will be covered. Absolutely no flushing, disinfection, or purity sampling is to take place without prior approval of a sampling plan by the OWASA Inspector.
- 5 Cross-Connection Control Ordinance - Backflow Prevention will be required in accordance with OWASA Cross-Connection Control Ordinance and Manual.

Date issued June 28, 2007

**ENGINEERS  
PLANNERS  
SURVEYORS**

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(336)273-7771

**PHILIP  
POST  
&  
ASSOCIATES**



**UTILITY & DRAINAGE PLAN**

**COLLETON CROSSING  
A/S SUBDIVISION**

TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=50'

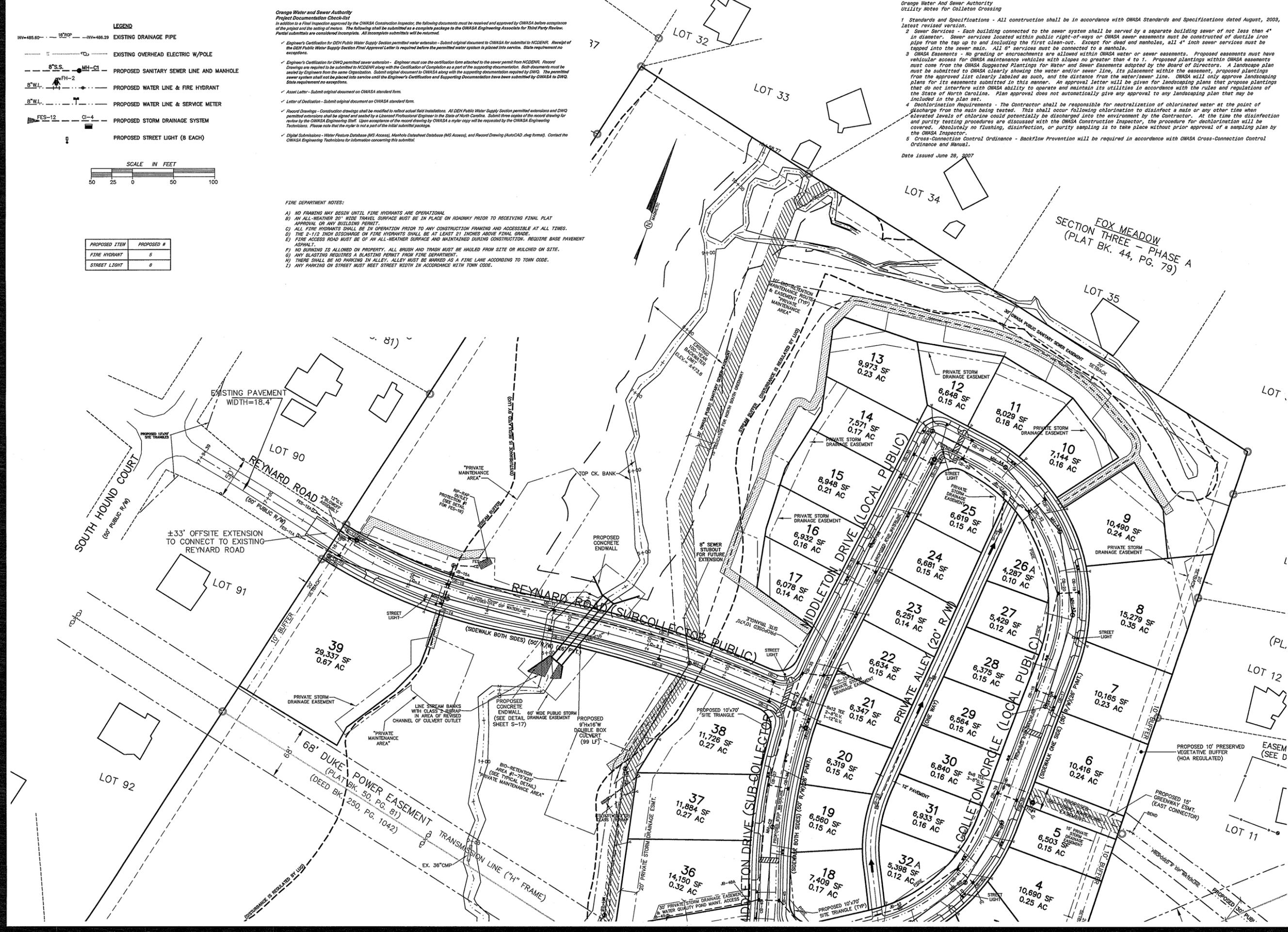
DRAWN BY: JRW  
CHECKED BY: PNP  
DATE: 3/20/2007  
PROJECT NO. 510301  
DRAWING NO. B801SP06

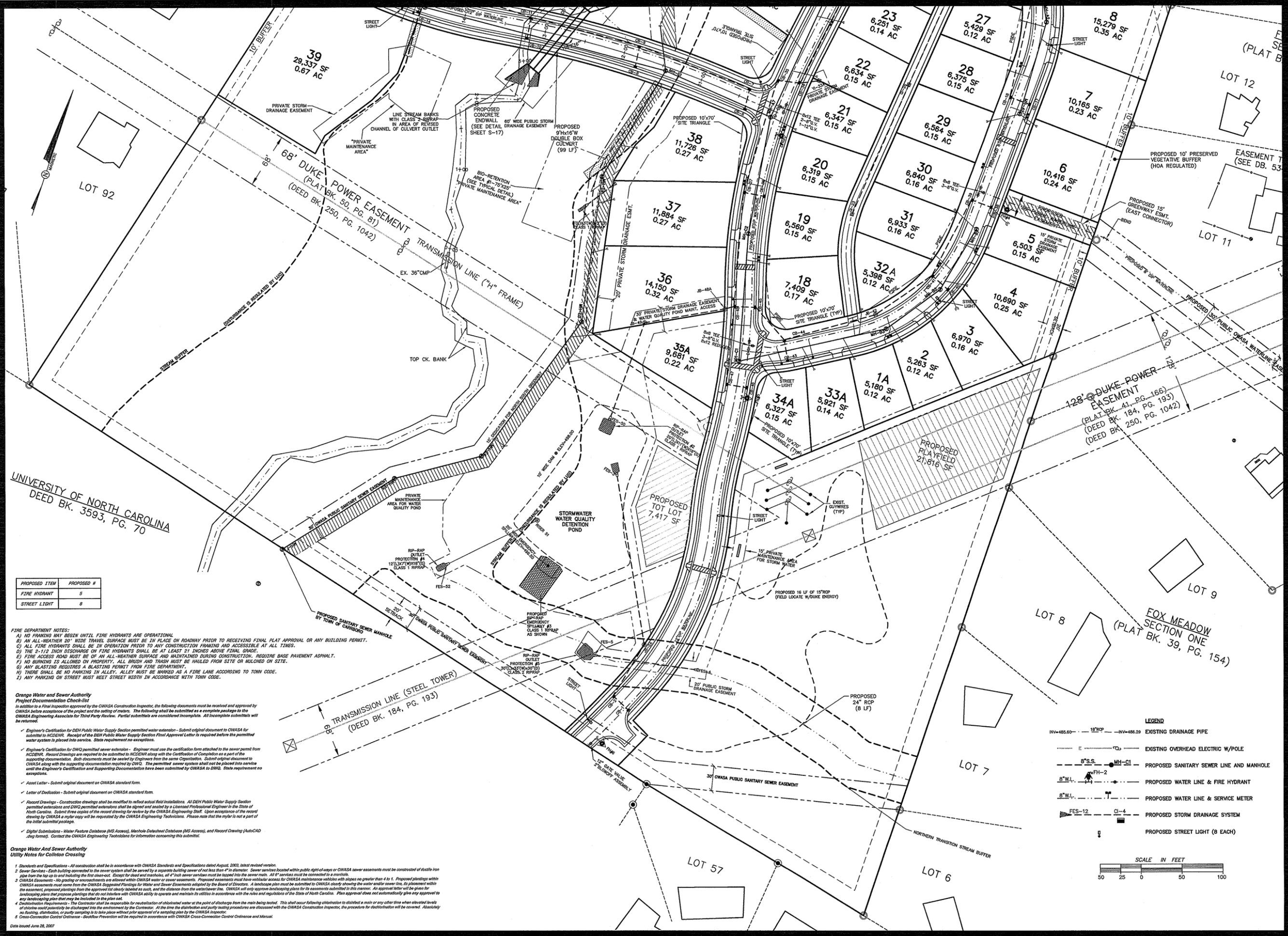
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REVISIONS:

1. 3/27/07: ADD 10' BUFFER
2. 12/18/07: CUP COMMENTS 12/5/07
3. 3/18/08: CUP REVIEW #2 COMMENTS
3. 5/12/08: CUP REVIEW #3 AND COMMENTS
4. 6/11/08: PER 5/14/08 MEETING WITH TOWN
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SHEET S-8  
OF 20



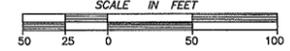
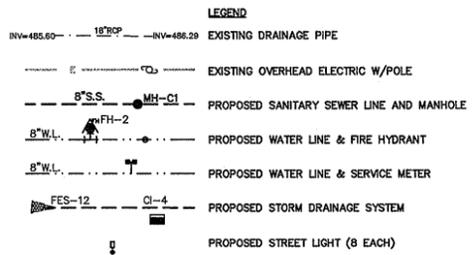


PROPOSED ITEM	PROPOSED #
FIRE HYDRANT	5
STREET LIGHT	8

- FIRE DEPARTMENT NOTES:**
- NO FRAMING MAY BEGIN UNTIL FIRE HYDRANTS ARE OPERATIONAL.
  - ALL ALL-WEATHER 20" WIDE TRAVEL SURFACE MUST BE IN PLACE ON ROADWAY PRIOR TO RECEIVING FINAL PLAT APPROVAL OR ANY BUILDING PERMIT.
  - ALL FIRE HYDRANTS SHALL BE IN OPERATION PRIOR TO ANY CONSTRUCTION FRAMING AND ACCESSIBLE AT ALL TIMES.
  - 2" 1/2 INCH DISCHARGE ON FIRE HYDRANTS SHALL BE AT LEAST 21 INCHES ABOVE FINAL GRADE.
  - FIRE ACCESS ROAD MUST BE OF AN ALL-WEATHER SURFACE AND MAINTAINED DURING CONSTRUCTION. REQUIRE BASE PAVEMENT ASPHALT.
  - NO BURNING IS ALLOWED ON PROPERTY. ALL BRUSH AND TRASH MUST BE HAULED FROM SITE OR MULCHED ON SITE.
  - ANY BLASTING REQUIRES A BLASTING PERMIT FROM FIRE DEPARTMENT.
  - THERE SHALL BE NO PARKING IN ALLEY. ALLEY MUST BE MARKED AS A FIRE LANE ACCORDING TO TOWN CODE.
  - ANY PARKING ON STREET MUST MEET STREET WIDTH IN ACCORDANCE WITH TOWN CODE.

- Orange Water and Sewer Authority  
Project Documentation Check-list**
- In addition to a final inspection approved by the OWASA Construction Inspector, the following documents must be received and approved by OWASA before acceptance of the project and the setting of meters. The following shall be submitted as a complete package to the OWASA Engineering Associates for Third Party Review. Partial submittals are considered incomplete. All incomplete submittals will be returned.
- Engineer's Certification for DEH Public Water Supply Section permitted water extension - Submit original document to OWASA for submittal to NCDENR. Receipt of the DEH Public Water Supply Section Final Approval Letter is required before the permitted water system is placed into service. State requirement no exceptions.
  - Engineer's Certification for DWQ permitted sewer extension - Engineer must use the certification form attached to the sewer permit from NCDENR. Record Drawings are required to be submitted to NCDENR along with the Certification of Completion as a part of the supporting documentation. Both documents must be sealed by Engineers from the same Corporation. Submit original document to OWASA along with the supporting documentation required by DWQ. The permitted sewer system shall not be placed into service until the Engineer's Certification and Supporting Documentation have been submitted by OWASA to DWQ. State requirement no exceptions.
  - Asset Letter - Submit original document on OWASA standard form.
  - Letter of Dedication - Submit original document on OWASA standard form.
  - Record Drawings - Construction drawings shall be modified to reflect actual field installations. All DEH Public Water Supply Section permitted extensions and DWQ permitted extensions shall be signed and sealed by a Licensed Professional Engineer in the State of North Carolina. Submit three copies of the record drawing for review by the OWASA Engineering Staff. Upon acceptance of the record drawing by OWASA a mylar copy will be requested by the OWASA Engineering Technicians. Please note that the mylar is not a part of the submittal package.
  - Digital Submittals - Water Feature Database (MS Access), Manhole Database (MS Access), and Record Drawing (AutoCAD dwg format). Contact the OWASA Engineering Technicians for information concerning this submittal.

- Orange Water and Sewer Authority  
Utility Notes for Colleton Crossing**
- Standards and Specifications - All construction shall be in accordance with OWASA Standards and Specifications dated August, 2003. Latest revised version.
  - Sewer Services - Each building connected to the sewer system shall be served by a separate building sewer of not less than 4" in diameter. Sewer services located within public right-of-ways or OWASA sewer easements must be constructed of ductile iron pipe from the top to and including the first manhole. Except for dead end mains, all 4" sewer services must be installed in a manhole.
  - OWASA Easements - No grading or encroachments are allowed within OWASA water or sewer easements. Proposed easements must have vehicular access for OWASA maintenance vehicles with slopes no greater than 4 to 1. Proposed plantings within the easements proposed shall be approved by OWASA and shall be clearly labeled as such, and the distance from the water/sewer line. OWASA will only approve landscaping plans for its easements submitted in this manner. An approval letter will be given for landscaping plans that propose plantings that do not interfere with OWASA ability to operate and maintain its utilities in accordance with the rules and regulations of the State of North Carolina. Plans approval does not automatically give any approval to any landscaping plans that may be included in the plan set.
  - Disinfection Requirements - The Contractor shall be responsible for neutralization of chlorinated water at the point of discharge from the main being tested. This shall occur following chlorination to disinfect a main or any other item when elevated levels of chlorine could potentially be discharged into the environment by the Contractor. At the time the disinfection and party testing procedures are discussed with the OWASA Construction Inspector, the procedure for disinfection will be covered. Absolutely no testing, chlorination or party testing is to take place without the approval of a staff person by the OWASA Inspector.
  - Cross-Connection Control Ordinance - Backflow Prevention will be required in accordance with OWASA Cross-Connection Control Ordinance and Manual.
- Date Issued June 28, 2007



ENGINEERS  
PLANNERS  
SURVEYORS

PHILIP  
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Greensboro, NC  
(336) 723-7771



**UTILITY & DRAINAGE PLAN**

**COLLETON CROSSING  
AIS SUBDIVISION**

ORANGE COUNTY, N.C.  
TOWN OF CARRBORO

SCALE: 1"=50'

DRAWN BY: JRW

CHECKED BY: PNP

DATE: 3/20/2007

PROJECT NO.: 510301

DRAWING NO.: BDU1SP06

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REVISIONS

- 3/27/2007: ADD 10' BUFFER
- 12/19/07: CUP COMMENTS 12/19/07
- 3/18/08: CUP REVIEW #2 COMMENTS
- 5/11/08: CUP REVIEW #3 AND COMMENTS
- 6/11/08: PER 5/14/08 MEETING WITH TOWN
- 8/5/08: CUP REVIEW #5 COMMENTS
- 8/27/08: DUKE ENERGY COMMENTS
- 9/29/08: CUP REVIEW #6 COMMENTS
- 10/23/08: CUP REVIEW #7 COMMENTS

SHEET S-9

OF 18



PRIVATE OPEN SPACE  
AREA A = 309,658 SF

PROPOSED WALKING TRAIL  
556 LF

PRIVATE OPEN SPACE  
AREA C = 406,589 SF

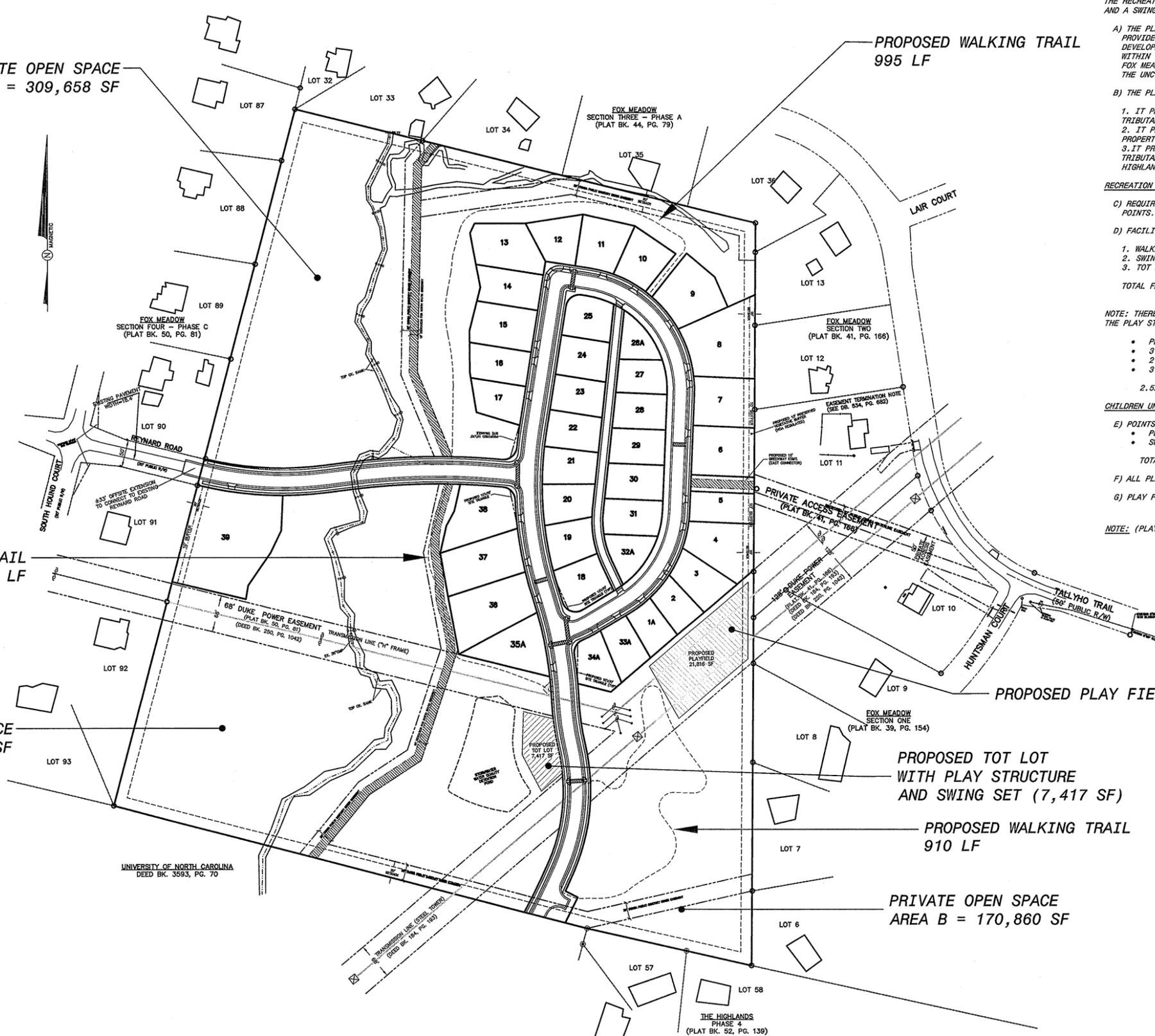
PROPOSED WALKING TRAIL  
995 LF

PROPOSED PLAY FIELD (21,816 SF)

PROPOSED TOT LOT  
WITH PLAY STRUCTURE  
AND SWING SET (7,417 SF)

PROPOSED WALKING TRAIL  
910 LF

PRIVATE OPEN SPACE  
AREA B = 170,860 SF



**RECREATION POINTS INFORMATION/CALCULATIONS:**

THE RECREATION AREA WILL CONSIST OF A PROPOSED TOT LOT WITH PLAY STRUCTURE AND A SWING SET AND A 2,461 LF WALKING TRAIL SYSTEM.

A) THE PLAN INCLUDES AN EXTENSIVE SYSTEM OF CONCRETE SIDEWALKS IN ORDER TO PROVIDE PEDESTRIAN CONNECTIVITY ALONG ALL THE PUBLIC STREETS IN THE DEVELOPMENT, SERVING THE RECREATION AREA AND THE VARIOUS ACTIVITY CENTERS WITHIN THE REC AREA, AND TWO (2) POINTS OF PEDESTRIAN CONNECTIVITY TO THE FOX MEADOW NEIGHBORHOOD AND ONE (1) POINT OF PEDESTRIAN CONNECTIVITY TO THE UNC-CAROLINA COMMONS TRACT TO THE SOUTH OF THIS SITE.

B) THE PLAN INCLUDES OPEN SPACE IN THREE (3) MAJOR AREAS:

1. IT PRESERVES HARDWOOD OPEN SPACE ALONG BOTH SIDES OF THE UNNAMED TRIBUTARY OF BOLIN CREEK GENERALLY NORTH OF REYNARD.
2. IT PRESERVES OPEN SPACE ALONG THE DRAINAGEWAY CLOSE TO THE NORTHERN PROPERTY LINE.
3. IT PRESERVES STEEP AND MODERATE SLOPE AREAS ON BOTH SIDES OF THE UNNAMED TRIBUTARY SOUTH OF REYNARD, AND A TRACT OF OPEN SPACE NORTH OF THE HIGHLANDS SITE.

RECREATION POINTS, WILL CONSIST OF:

C) REQUIRED POINTS: 39 SINGLE FAMILY X 10.39 = 405.21 POINTS, SAY 405 POINTS.

D) FACILITIES PROVIDED:

1. WALKING TRAIL = 2,461 LF X 4 FT X (0.016) = 157.50 POINTS.
  2. SWING SET = 750 SF (0.176) = 132.00 POINTS.
  3. TOT LOT PLAY STRUCTURE (\*SEE BELOW) 1978 SF (0.107) = 211.65 POINTS.
- TOTAL FACILITIES PROVIDED= 601.15

NOTE: THERE IS ONE SWING AND ONE PLAY STRUCTURE PROPOSED NEAR THE PLAYFIELD. THE PLAY STRUCTURE WILL HAVE APPARATUS AS FOLLOWS:

- PLAY STRUCTURE "C" PTS TOT PTS
  - 3 SLIDES .514 = 1.542
  - 2 PULL UP .33 = .066
  - 3 LADDERS .108 = 0.324
- 2.526 ÷ 8 = 0.107 PTS/SF COMP. VALUE

**CHILDREN UNDER 12**

E) POINTS PROVIDED FOR CHILDREN UNDER 12:

- PLAY STRUCTURE- 211.65
- SWING- 16.36

TOTAL PROVIDED: 228.01; % OF PTS PROVIDED- 228/406 = 46%

F) ALL PLAY EQUIPMENT WILL MEET OR EXCEED NATIONAL LIABILITY STANDARDS.

G) PLAY FIELDS: REQUIRED AREA = 15,600 S.F.  
PROVIDED AREA = 21,816 S.F.

NOTE: (PLAY STRUCTURE & SWING SET VALUES INCLUDE FALL ZONES.)

ENGINEERS  
PLANNERS  
SURVEYORS  
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&  
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Greensboro, NC  
(336)273-7771

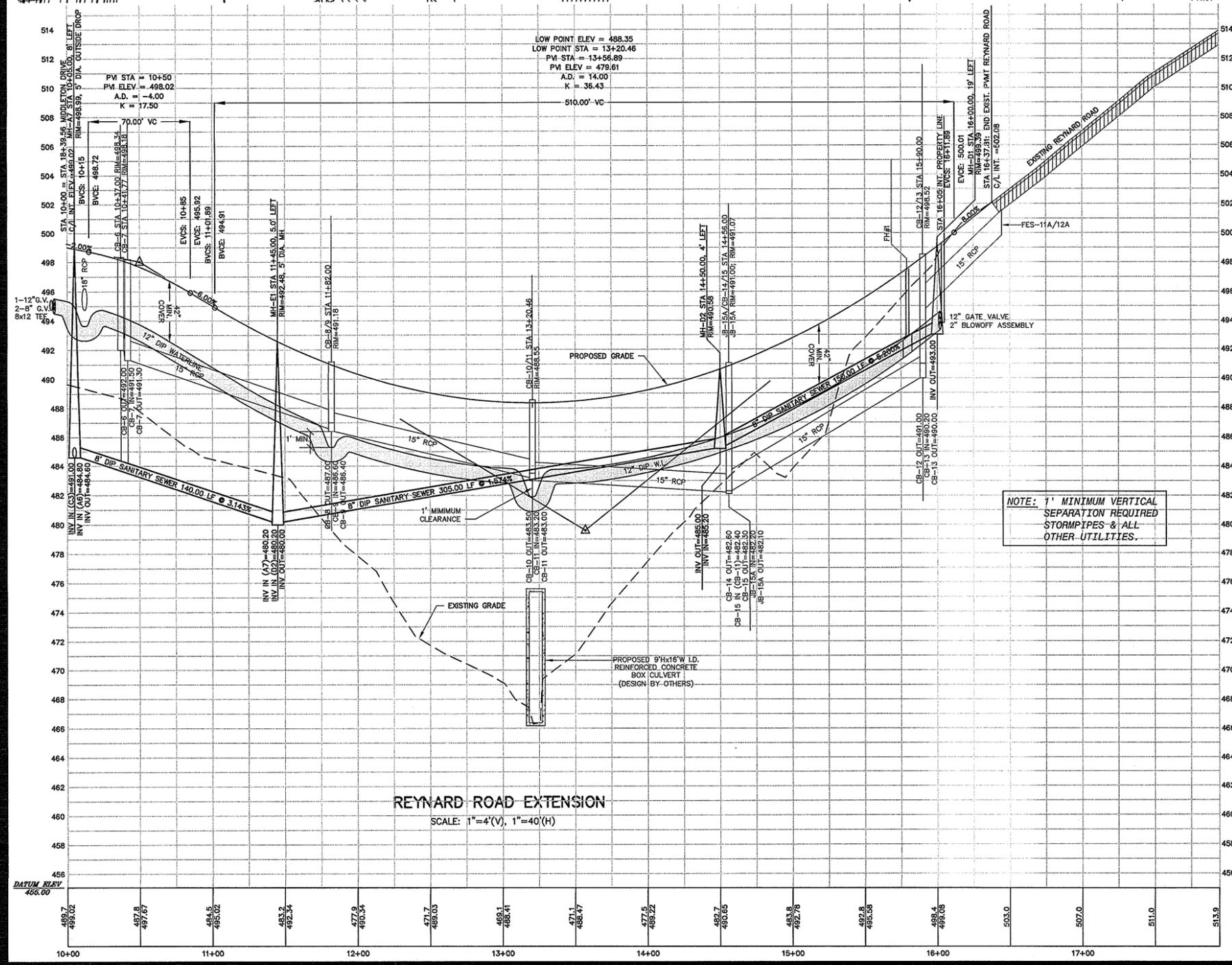
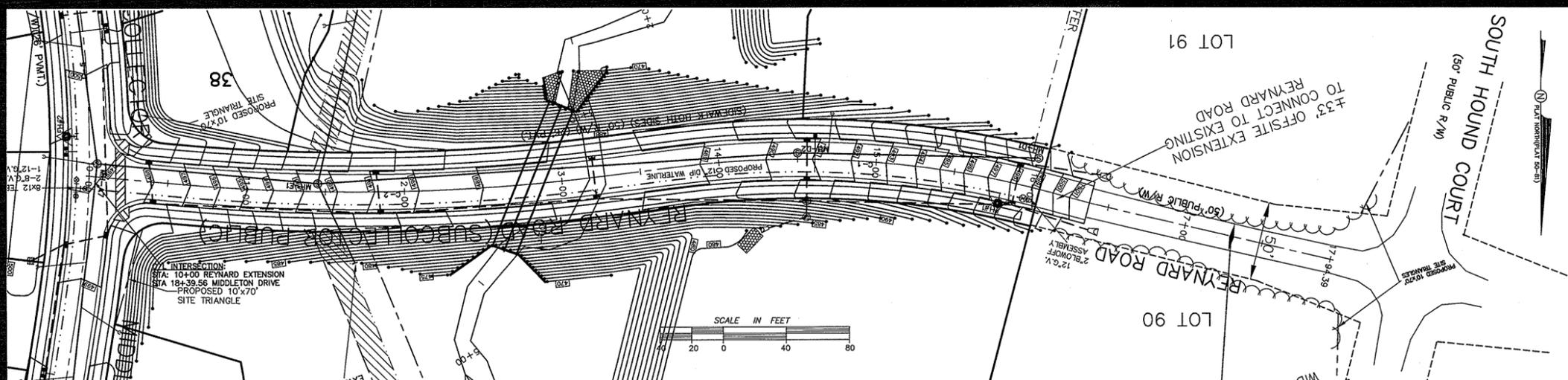


**CONSERVATION & RECREATION PLAN**  
COLLETON CROSSING  
AIS SUBDIVISION  
TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=100'  
DRAWN BY: JHP  
CHECKED BY: PNP  
DATE: 03/20/2007  
PROJECT NO.: 510301  
DRAWING NO.: B801SP06  
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REVISIONS 1. 12/19/07: CIP COMMENTS 12/19/07  
2. 3/18/08: CIP REVIEW #2 COMMENTS  
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SHEET S-11  
OF 20



**REYNARD ROAD EXTENSION**  
SCALE: 1"=4'(V), 1"=40'(H)

NOTE:  
EXISTING BUILDING LOCATIONS ARE APPROXIMATE  
LOCATIONS TAKEN FROM ORANGE COUNTY GIS DATA

ENGINEERS  
SURVEYORS

**PHILIP  
POST  
&  
ASSOCIATES**

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493-2600 • 850-9662  
822 North Elm Street  
Chapel Hill, NC 27401  
(919)275-1171

PROFESSIONAL SEAL  
TIMOTHY A. POST  
030517

**PLAN/PROFILE**

**REYNARD ROAD EXTENSION**  
STA 10+00 TO STA 16+37.81

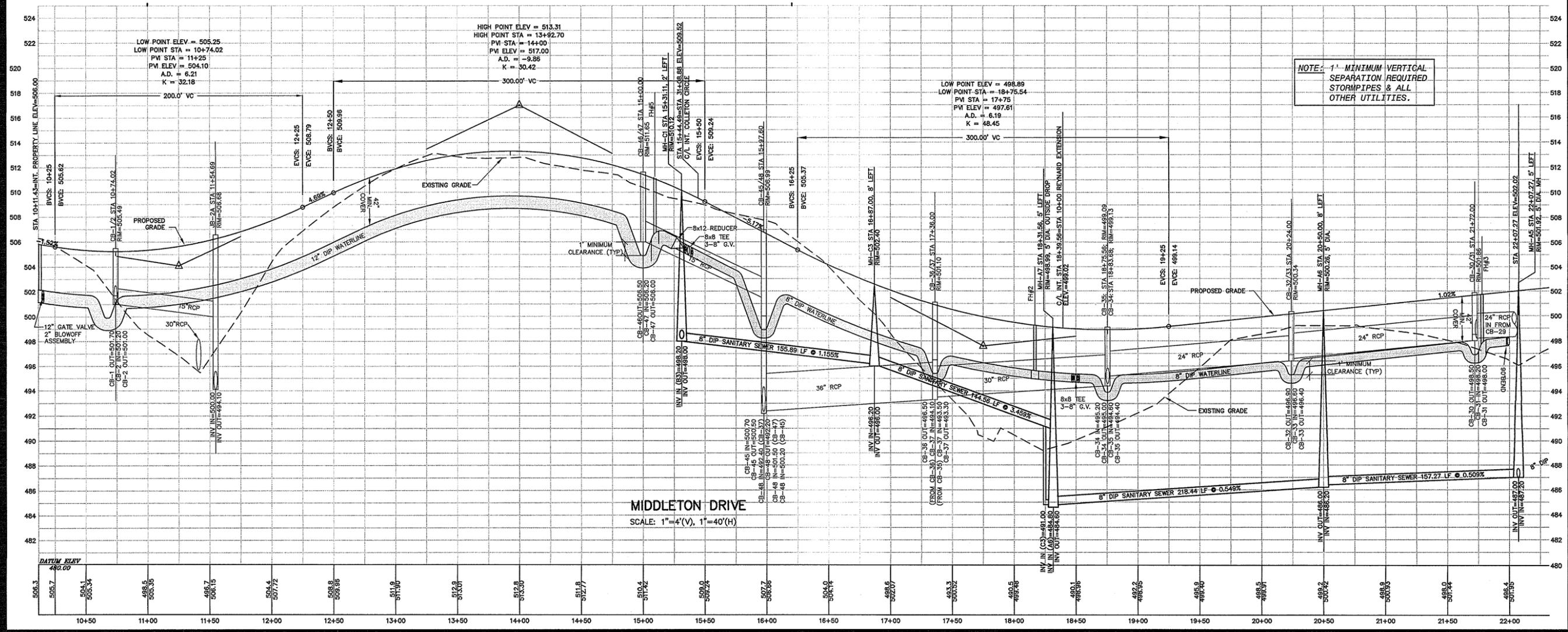
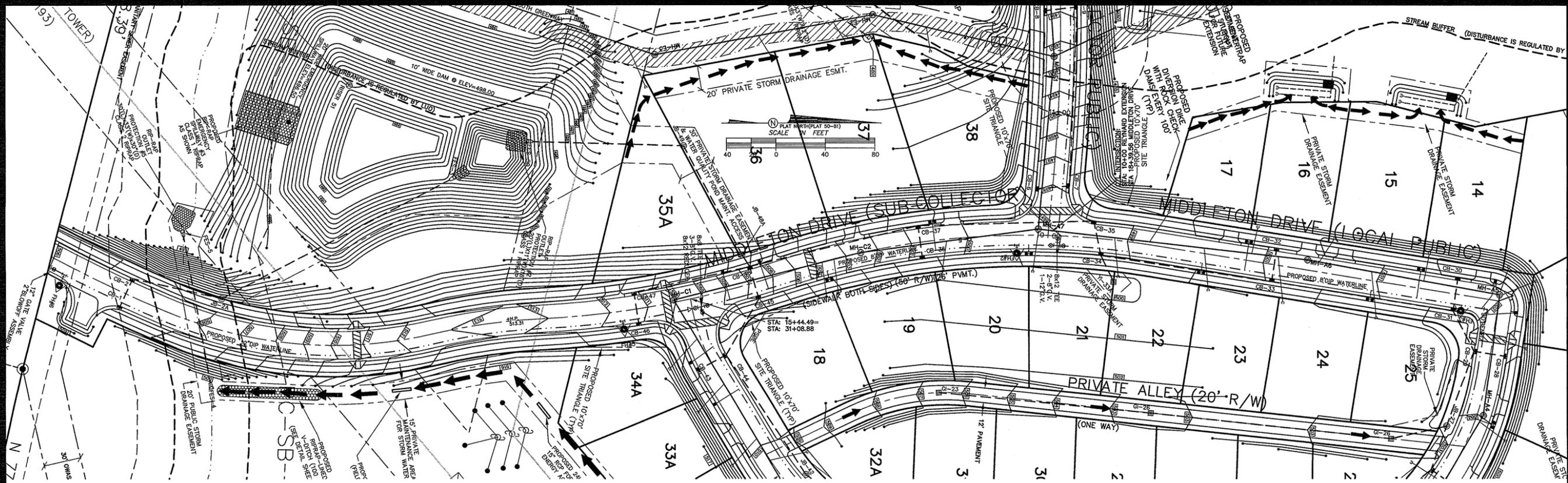
TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=4' (VERT), 1"=40' (HORIZ)

DRAWN BY: JRW  
CHECKED BY: EGD  
DATE: 03/20/2007  
PROJECT NO. 030301  
DRAWING NO. 8601SP05

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REVISIONS	DATE	BY	COMMENTS
1.	12/15/07	JRW	CIP COMMENTS 12/15/07
2.	3/7/08	JRW	CIP REVIEW #2 COMMENTS
3.	5/12/08	JRW	CIP REVIEW #3 AND COMMENTS
4.	6/11/08	JRW	PER 5/14/08 MEETING WITH TOWN
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6.	9/29/08	JRW	CIP REVIEW #6 COMMENTS
7.	10/23/08	JRW	CIP REVIEW #7 COMMENTS



ENGINEERS  
PLANNERS  
SURVEYORS

**PHILIP  
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&  
ASSOCIATES**

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Greensboro, NC 27401  
(919) 737-7771

**PLAN/PROFILE**

**MIDDLETON DRIVE**  
STA 10+11.43 TO STA 22+07.27

ORANGE COUNTY, N.C.  
TOWN OF CARROBORO

SCALE: 1"=4' (VERT), 1"=40' (HORIZ)

DRAWN BY: JRW  
CHECKED BY: EGO  
DATE: 03/20/2007  
PROJECT NO.: 510301  
DRAWING NO.: BBO/SE06

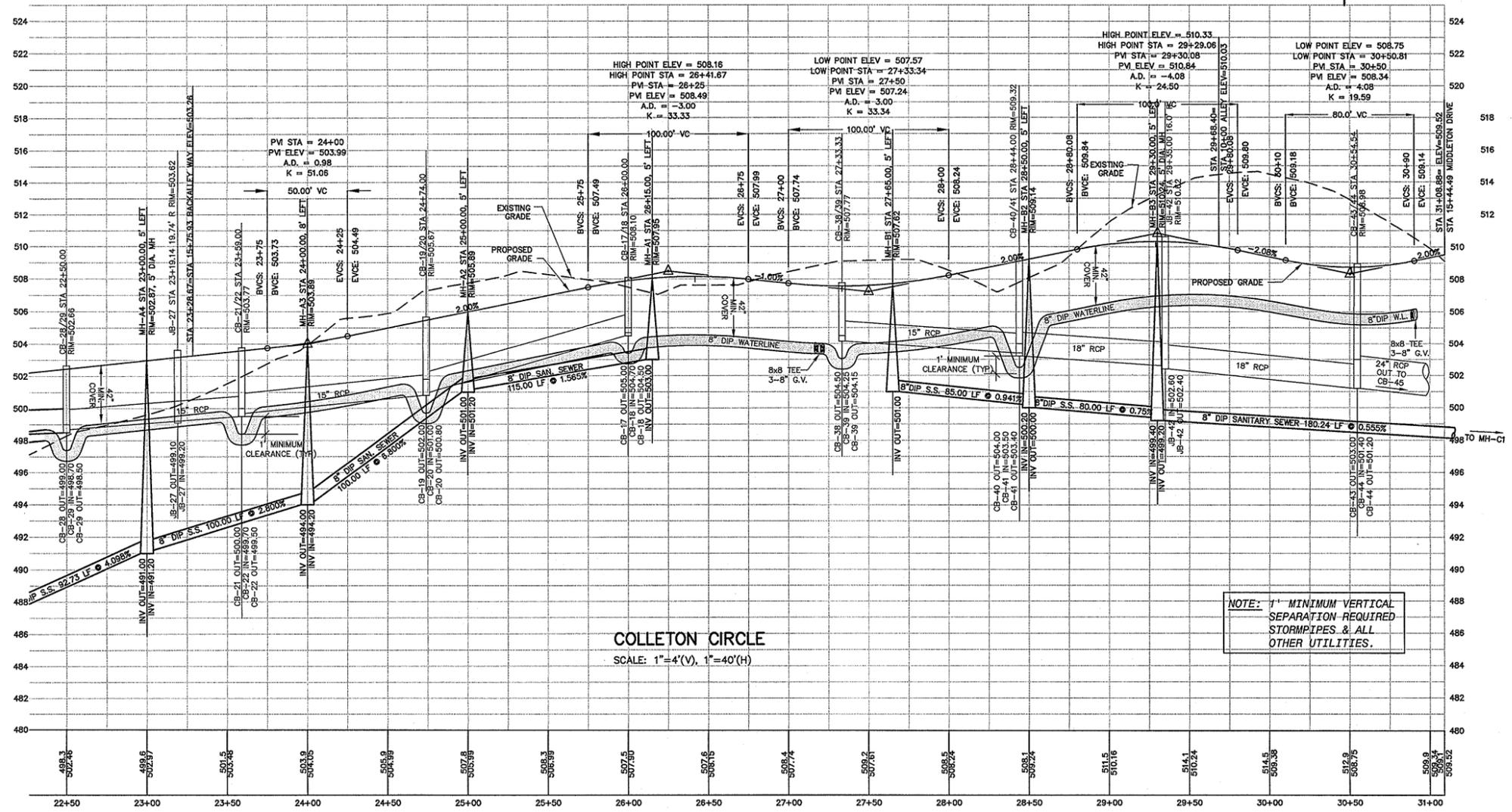
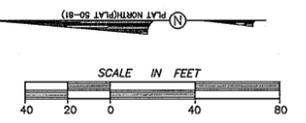
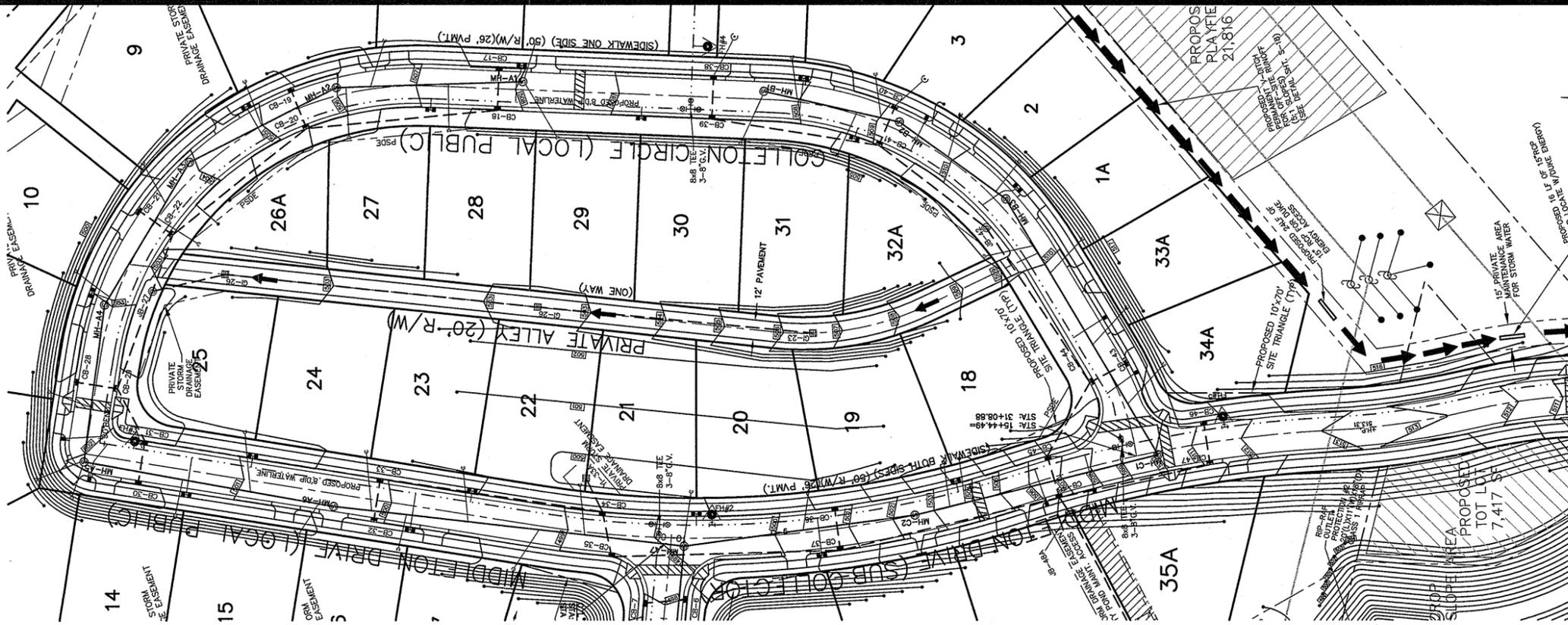
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REVISIONS

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5. 8/15/08: CIP REVIEW #5 COMMENTS
6. 9/29/08: CIP REVIEW #6 COMMENTS
7. 10/23/08: CIP REVIEW #7 COMMENTS

SHEET 9 OF 13

OF 26



COLLETON CIRCLE  
SCALE: 1"=4'(V), 1"=40'(H)

NOTE: 1" MINIMUM VERTICAL SEPARATION REQUIRED STORMPIPES & ALL OTHER UTILITIES.

ENGINEERS  
PLANNERS  
SURVEYORS  
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401 Providence Road  
Chapel Hill, NC 27514  
435-2800 • FAX-0662  
822 North Elm Street  
Greensboro, NC 27401  
(919)273-7711

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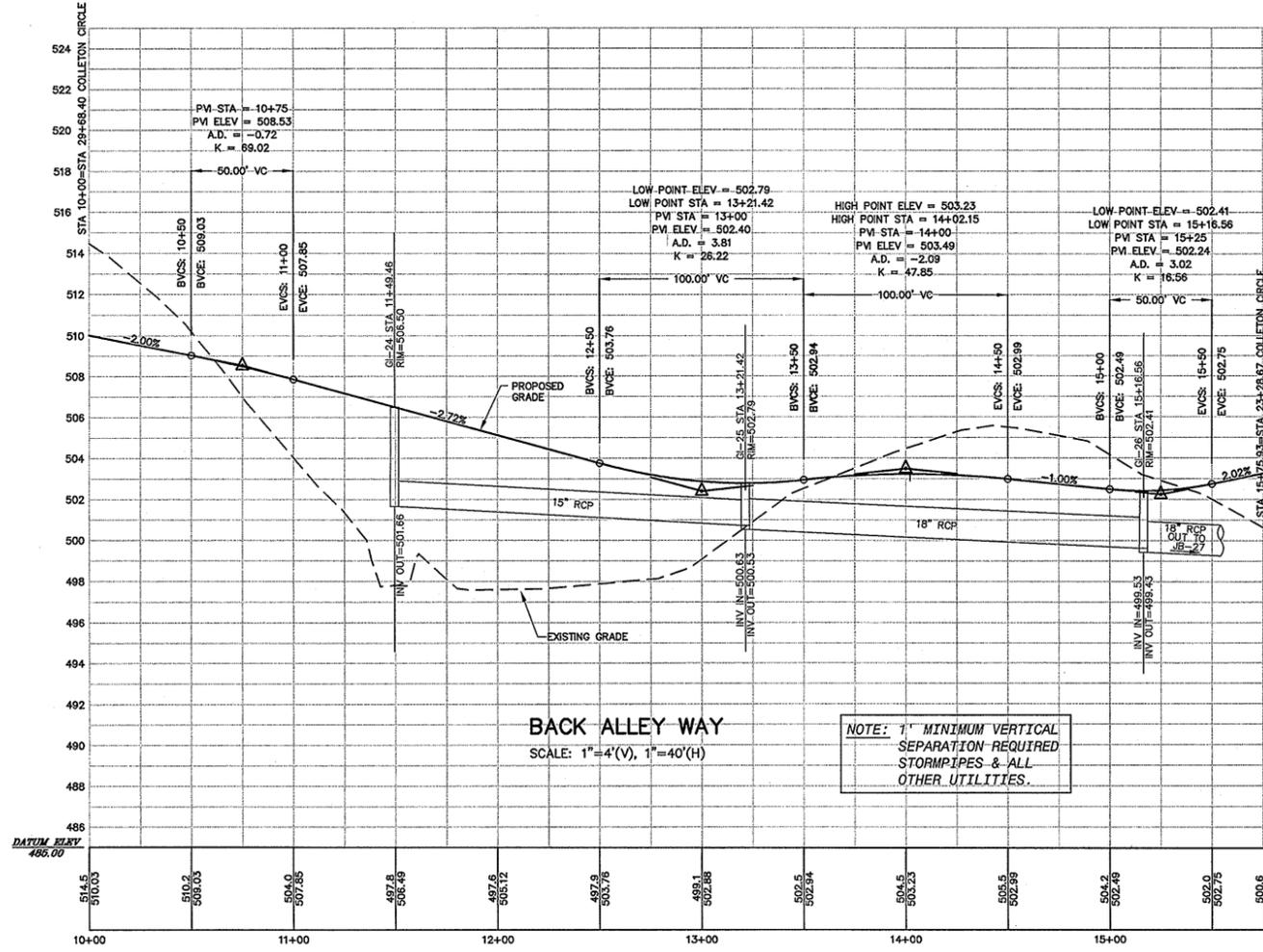
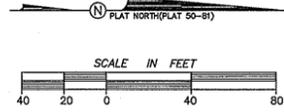
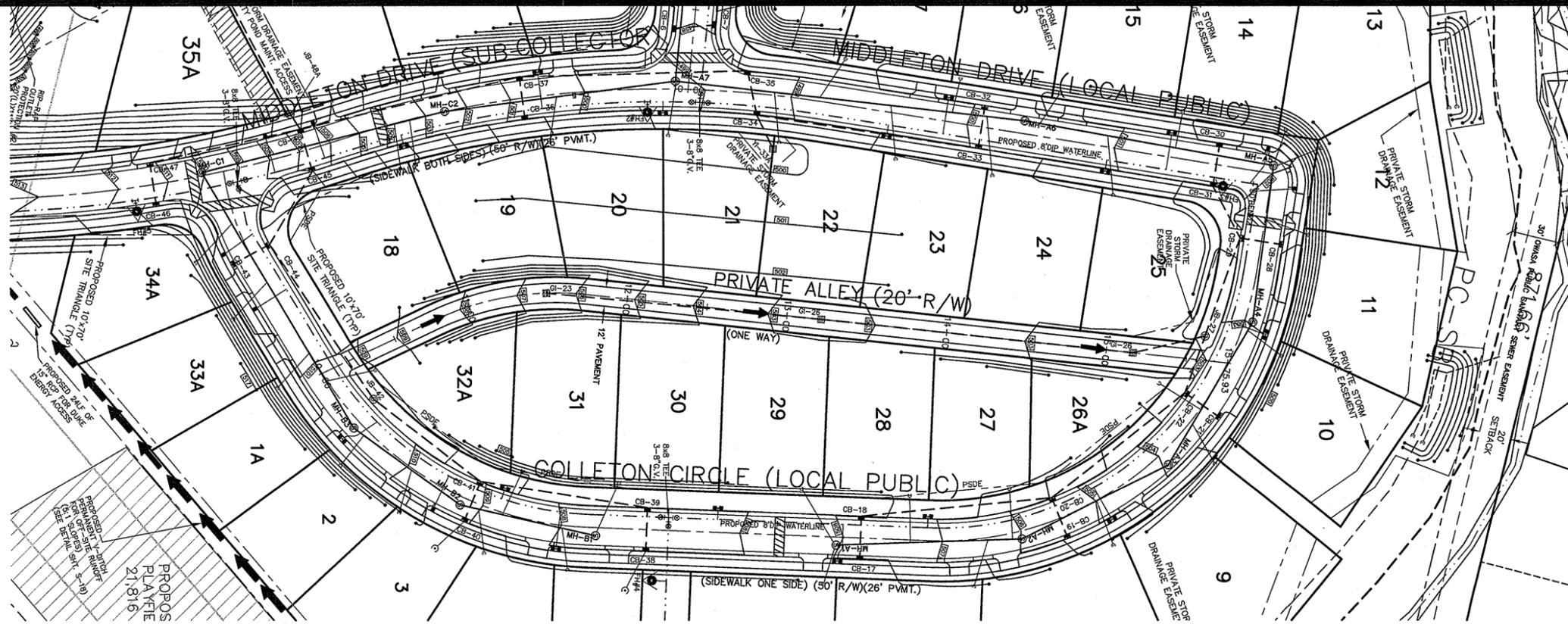


PLAN/PROFILE  
COLLETON CIRCLE  
STA 22+07.27 TO STA 31+08.88  
TOWN OF CARBORO  
ORANGE COUNTY, N.C.

SCALE: 1"=4' (VERT), 1"=40' (HORZ)  
DRAWN BY: JRW  
CHECKED BY: EGD  
DATE: 03/29/2007  
PROJECT NO.: 010301  
DRAWING NO.: B01SP06  
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REVISIONS  
1. 12/18/07: CUP COMMENTS 12/15/07  
2. 3/18/08: CUP REVIEW #2 COMMENTS  
3. 5/12/08: CUP REVIEW #3 AND COMMENTS  
4. 5/17/08: PER 5/14/08 MEETING WITH TOWN  
5. 5/17/08: CUP REVIEW #5 COMMENTS  
6. 5/29/08: CUP REVIEW #6 COMMENTS

SHEET 9-14  
OF 20



**BACK ALLEY WAY**  
SCALE: 1"=4'(V), 1"=40'(H)

**NOTE:** 1" MINIMUM VERTICAL SEPARATION REQUIRED STORMPIPES & ALL OTHER UTILITIES.

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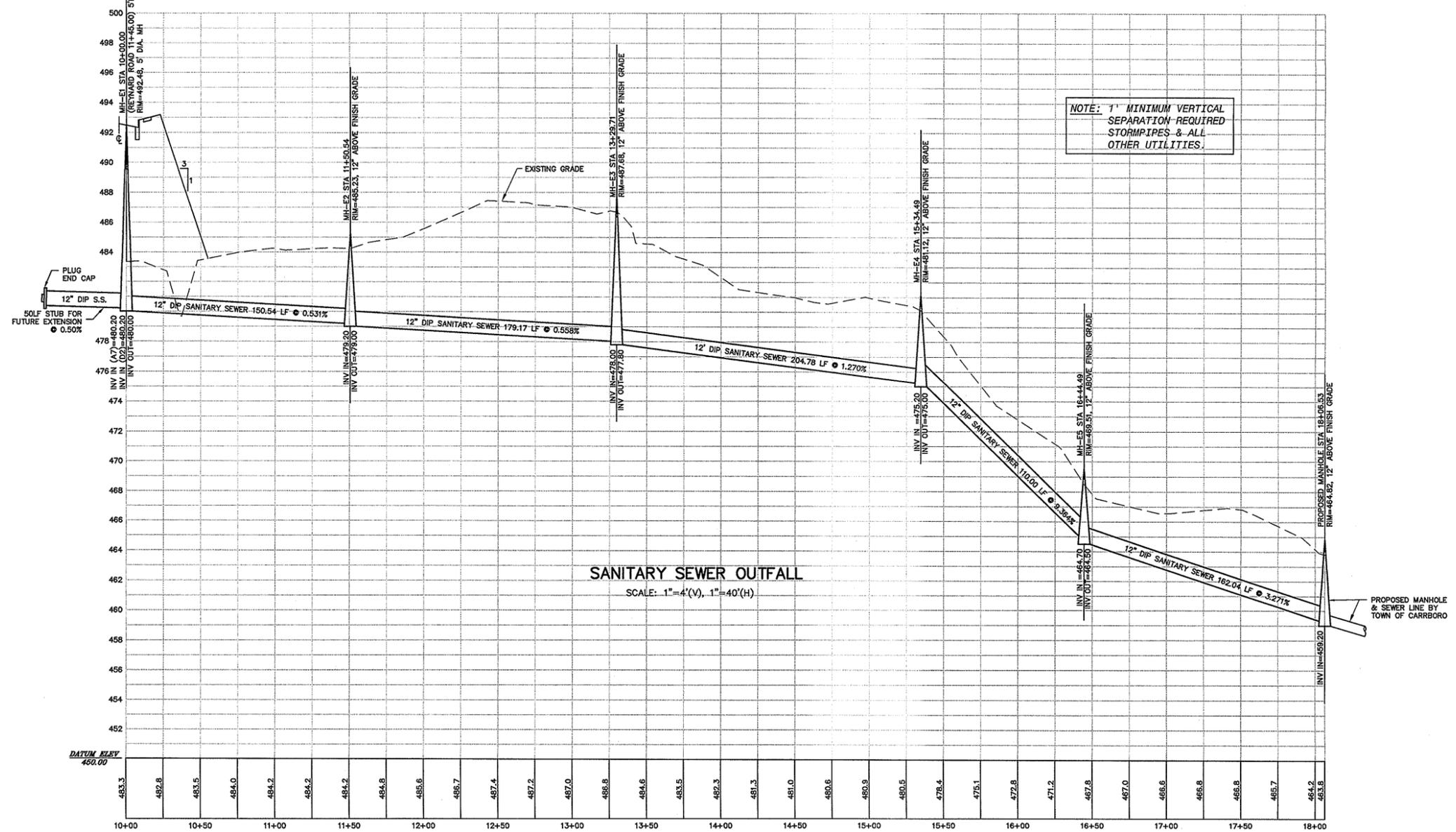
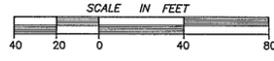
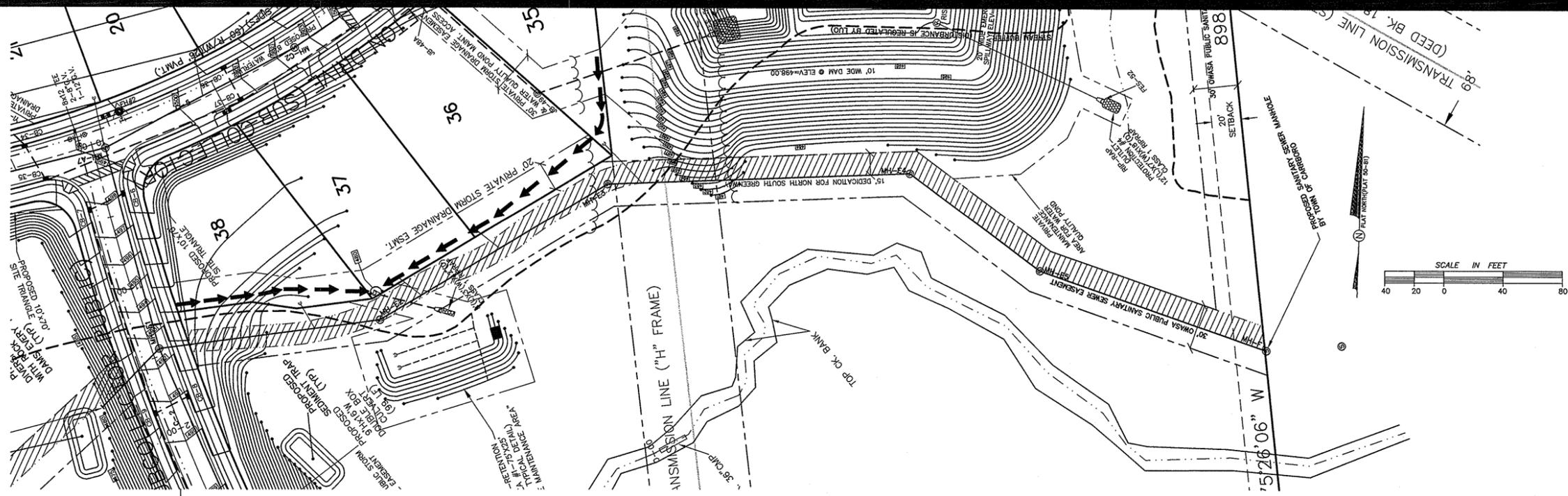


**PLAN/PROFILE**  
BACKALLEY WAY  
STA 10+00 TO STA 15+75.93  
ORANGE COUNTY, N.C.

SCALE: 1"=4' (VERT), 1"=40' (HORIZ)  
DRAWN BY: JRW  
CHECKED BY: ESD  
DATE: 03/20/2007  
PROJECT NO.: 510301  
DRAWING NO.: B801S005

REVISIONS  
1. 12/18/07: CUP COMMENTS 12/5/07  
2. 3/15/08: CUP REVIEW #2 COMMENTS  
3. 5/12/08: CUP REVIEW #3 AND COMMENTS  
4. 6/11/08: PER 5/14/08 MEETING WITH TOWN  
5. 8/5/08: CUP REVIEW #5 COMMENTS  
6. 9/29/08: CUP REVIEW #6 COMMENTS

SHEET 15  
OF 20



**PLAN/PROFILE**

**SANITARY SEWER OUTFALL**  
STA 10+00 TO STA 18+08.82

SCALE: 1"=4' (VERT), 1"=40' (HORIZ)  
DRAWN BY: JSW  
CHECKED BY: EGD  
DATE: 4/15/2007  
PROJECT NO.: 510301  
DRAWING NO.: BROSIS08

- REVISIONS:
1. 12/19/07: CUP COMMENTS 12/15/07
  2. 3/19/08: CUP REVIEW #2 COMMENTS
  3. 5/12/08: CUP REVIEW #3 AND COMMENTS
  4. 6/11/08: PER 5/14/08 MEETING WITH TOWN
  5. 8/5/08: CUP REVIEW #5 COMMENTS
  6. 9/29/08: CUP REVIEW #6 COMMENTS
  7. 10/25/08: CUP REVIEW #7 COMMENTS

ENGINEERS  
PLANNERS  
SURVEYORS

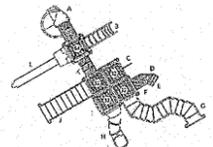
401 Providence Road  
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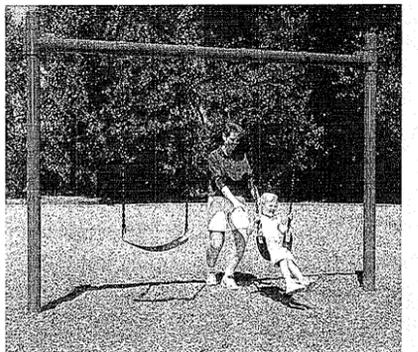
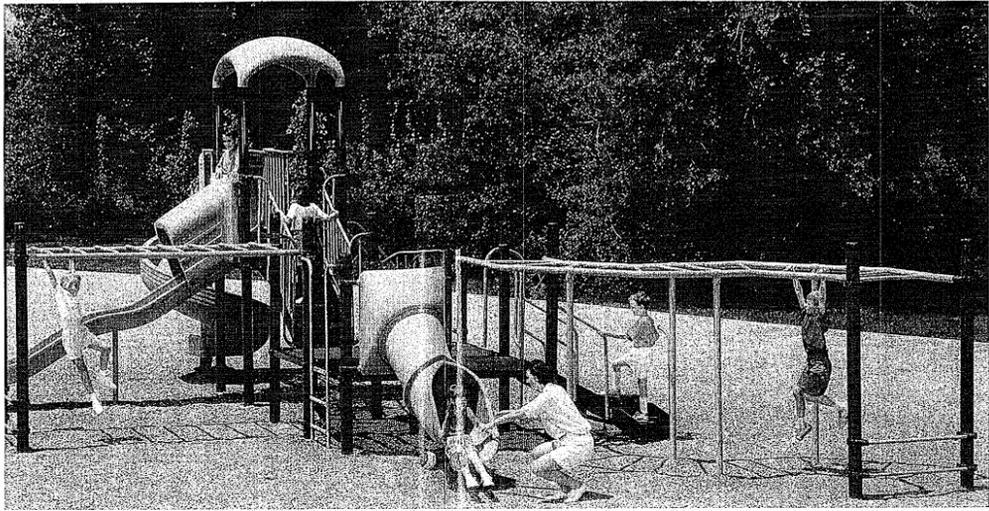


TOWN OF CARRBORO  
ORANGE COUNTY, N.C.

Fun and fitness come together in this fun play structure. The spiral and poly wire slides provide hours of fun, while a long climber, sliding pole and two types of horizontal ladders provide plenty of physical fitness. At transition star provides easy access to the poly wire slide deck above, and a spacious, single-level, four-point platform below - where kids will sit for fun or to rest. To accommodate children with disabilities, a transfer point has also been designed into this system.



- A Spiral Slide
- B Loco Climber
- C Sliding Pole
- D Barrier Post
- E Transfer Star
- F 4" x 4" Poly Wire
- G 2" Horizontal Ladder
- H 3" x 3" Tube Slide
- I Ring Ladder
- J Horizontal Ladder
- K Transition Star
- L Top View Slide



Overall Structure Size: 12' x 7'  
 Fall Zone: 25' x 30'  
 Weight: 235 lbs.  
 Price: \$1899.00

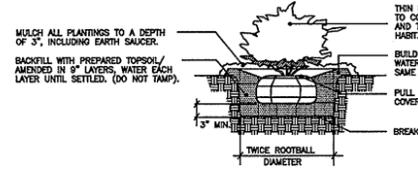
**PROPOSED PLAY STRUCTURE  
 TOT LOT  
 3 SLIDES  
 6 POLES, STAIRS, CLIMBER  
 2 HORIZONTAL LADDERS**

(SEE COVER SHEET AND RECREATION PLAN SHEET S-10 FOR RECREATION POINTS CALCULATIONS)

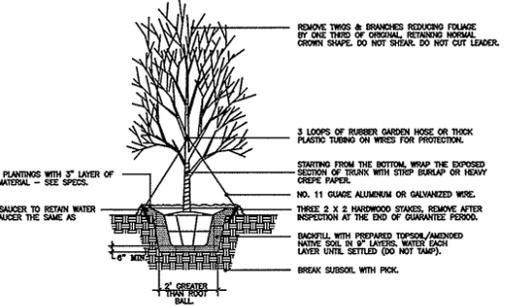
Always use an Shock Cover to close 5-Moats. Close 5-Moats completely. Never reuse 5-Moats that have been closed.

Notes: Chain 5-Moats, being heavy, strand mats, bolts, etc. should be checked frequently for signs of wear and condition. Regular maintenance is required. 5-Moats should be completely closed and checked regularly.

A resilient mat should be placed under and around all playground equipment.



**SPECIMEN SHRUB PLANTING DETAIL**  
 NOT TO SCALE



**SPECIMEN TREE PLANTING & STAKING DETAIL**  
 NOT TO SCALE

**GENERAL NOTES:**

1. PLANT LIST IS PROVIDED AS CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR INSTALLING QUANTITIES SHOWN ON PLAN.
2. ALL PLANT MATERIAL SHALL BE OF HIGHEST QUALITY AND SHALL CONFORM TO (MUN) STANDARDS FOR NURSERY STOCK, AREA 200.1. PLANTS ARE SUBJECT TO APPROVAL BY LANDSCAPE DESIGNER AT ANY TIME DURING INSTALLATION. TREES AND SHRUBS PLANTED IN GROUPS OF THREE OR MORE SHALL BE MATCHED IN HEIGHT, SPREAD AND FORM.
3. ALL SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE DESIGNER PRIOR TO INSTALLATION.
4. PLANT SPACING SHALL BE AS DIMENSIONED ON PLAN OR AS INDICATED IN PLANT LIST. ALL MAJOR TREE PLANTINGS AND BEES SHALL BE STAKED FOR APPROVAL BY LANDSCAPE DESIGNER PRIOR TO INSTALLATION. CONTRACTOR TO COORDINATE PARKING LOT TREE PLACEMENT WITH DRIVEWAY CUTS, LIGHTING, AND UTILITIES. PARKING LOT TREES SHALL BE SPACED UNIFORMLY, AS SHOWN ON PLAN.
5. ALL TREES, SHRUBS & GROUND COVER PLANTINGS SHALL RECEIVE THE FOLLOWING PREP:
  - A. LOOSELY COMPACTED SUB GRADE OF PLANTING AREA, REMOVE STONE MEASURING 1"-3" IN ANY DIMENSION AND REMOVE STICKS, RUBBER AND OTHER EXTRANEIOUS MATTER.
  - B. MIX 50% IMPORTED TOPSOIL AND 50% NATIVE SUBSOIL AT THE FOLLOWING DEPTHS TO CREATE BACK FILL SOIL.
 

AREA	DEPTH OF BACK FILL SOIL
GROUND COVER BEES	6" DEEP FOR THE ENTIRE BED
SHRUBS AND ANNUAL BEES	12" DEEP FOR THE ENTIRE BED
TREE PLANTINGS	12" DEEP BY 2.5X ROOT BALL DIAMETER
  - C. IMPORTED TOPSOIL SHALL CONSIST OF LOOSE, FRIABLE, SANDY TOPSOIL, FREE OF REFUSE, STUMPS, ROOTS, ROCKS, BRUSH, GRASS, WEEDS, AND OTHER MATERIAL WHICH WOULD BE DETERMINAL TO THE PROPER DEVELOPMENT OF VEGETATIVE GROWTH. CONTRACTOR SHALL FURNISH A COMPLETE SOIL ANALYSIS OF ALL TOPSOIL, WHETHER IMPORTED OR OBTAINED ON SITE, TO THE DESIGNER FOR APPROVAL. INCLUDE SOURCE OF TOPSOIL WITH ANALYSIS.
6. PRIOR TO PLACING BACK FILL SOIL IN PLANTING BED, THOROUGHLY MIX THE FOLLOWING SOIL AMENDMENTS INTO THE BACK FILL SOIL.
 

SOIL CONDITIONER	WELL ROTTED COMPOSTED PINE BARK MULCH WITH A MAXIMUM PARTICLE SIZE OF 1/4"
	4" DEEP OVER GROUND COVER BEES
	4" DEEP OVER SHRUB BEES
	4" DEEP OVER ANNUAL BEES
	MIX WITH BACK FILL SOIL FOR TREE PITS
	1 PART CONDITIONER 1 3 PARTS BACK FILL
7. ALL TREES AND SHRUBS SHALL RECEIVE 2" UNIFORM COVER WELLED PINE BARK MULCH, WELL COMPOSTED, LESS THAN 1" MOISTURE, AND CONTAINING NO CHEMICALS OR INHIBITORS HARMFUL TO PLANTS. MULCH PARTICLE SIZE SHALL BE LESS THAN 1". PINE BRANETS WILL BE REJECTED. GROUND COVER AND ANNUAL BEES SHALL RECEIVE 2" UNIFORM COVER. TREES SHALL BE PLACED IN 6"-8" DIAMETER MULCH BEGS, UNLESS OTHERWISE INDICATED ON PLAN.
8. ALL DISTURBED AREAS NOT PAVED, MELOD, SODDED, OR OTHERWISE COVERED BY CONSTRUCTION SHALL BE SEED TO PROVIDE UNIFORM COVER LANN.
9. ALL PLANT MATERIALS AND GRASS SHALL BE GUARANTEED AGAINST DEATH OR UNSATISFACTORY GROWTH FOR ONE YEAR AFTER DATE OF INSPECTION FOR SUBSTANTIAL COMPLETION AGAINST DEATH OR UNSATISFACTORY GROWTH. REPLACEMENT AND MATERIAL COST SHALL BE BORNE BY CONTRACTOR.

**GENERAL NOTES:**

1. CLEARING LIMITS SHALL BE PROTECTED WITH TREE PROTECTION FENCING PRIOR TO ANY CONSTRUCTION ACTIVITY, AS SHOWN. ALL CLEARING LIMITS THAT ARE NOT FENCED SHALL BE CLASSIFIED WITH A CONTIGUOUS STRAND OF SHORTER TAPE TO BE INSTALLED AND MAINTAINED BY THE CONTRACTOR UNTIL ALL INFRASTRUCTURE IS COMPLETE.
2. ANY TREE ROOTS EXPOSED BY CONSTRUCTION SHALL BE RECOVERED CLEANLY WITH A PRUNING TOOL.
3. DO NOT DISPOSE OF ANY CHEMICALS, PETROLEUM PRODUCTS, OR REMOVE SOIL OUTSIDE THE LIMIT OF WORK.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL UNDISBURSED UTILITIES AND SHALL BE RESPONSIBLE FOR REPAIRING DAMAGE TO ANY UTILITIES, AS A RESULT OF INSTALLING ANY LANDSCAPE MATERIALS.

**SEEDING NOTES:**

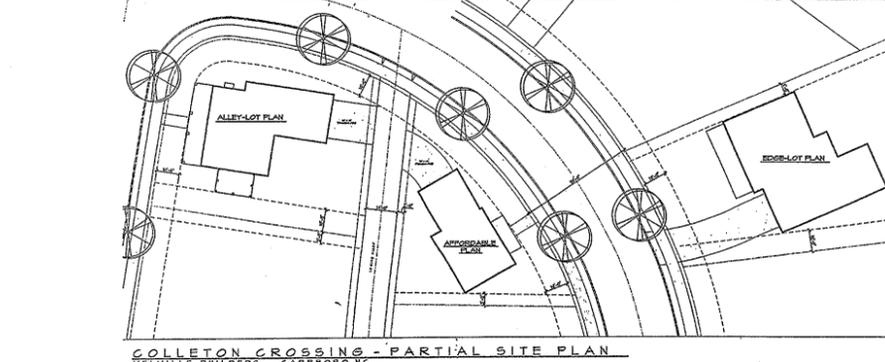
1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 8 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCKS, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL. (SEE BELOW)
5. CONTINUE TILLAGE UNTIL A WELL-FINISHED, FINE, REASONABLY UNIFORM SEEDING IS PREPARED 4 TO 6 INCHER DEEP.
6. SEED ON A FRESHLY PREPARED SEEDING AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANNUAL MULCH.
8. INSPECT ALL SEEDING AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS. IF STAND SHOULD BE OVER 60% DAMAGED, RE-ESTABLISH FOLLOWING ORIGINAL LINE, FERTILIZER AND SEEDING RATE.
9. LANDSCAPE CONTRACTOR SHALL SEED AREAS DESIGNATED ON LANDSCAPE SITE PLAN (SHEET L-1) WITH COMMON BERBERGRASS OR EQUIV. (KENTUCKY-31 IS UNACCEPTABLE).

**APPLY:**

SEED - 7 LBS/1,000 SF COMMON BERBERGRASS  
 AGRICULTURAL LIMESTONE - 100 LBS./1,000 SF (140 LBS./1,000 SF IN CLAY SOILS)  
 FERTILIZER - 25 LBS./1,000 SF - 10-10-10  
 SUPERPHOSPHATE - 10 LBS./1,000 SF - 20% ANALYSIS  
 MULCH - 100 LBS./1,000 SF - SMALL GRASS STRAW  
 (MULCH TO BE HELD IN PLACE BY CUTTING 21 WITH A STRAIGHT SET DISK OR COVERING IT WITH NETTING)

**LAWN MAINTENANCE:**

1. CONTRACTOR SHALL WATER AND MAINTAIN ALL LAWN AREA UNTIL AN ACCEPTABLE STAND OF GRASS HAS BEEN ESTABLISHED.
2. ONCE AN ACCEPTABLE STAND OF GRASS HAS BEEN ESTABLISHED, THE CONTRACTOR SHALL MAINTAIN ALL DAMAGED AREAS AND MAINTAIN THE LAWN AREA UNTIL THE GRASS REACHES A HEIGHT OF 4 INCHES TALL.
3. AT THE TIME THE GRASS REACHES A HEIGHT OF 4 INCHES TALL, THE CONTRACTOR SHALL MOW THE GRASS TO THE HEIGHT OF 2 INCHES AND TOW OVER THE LAWN MAINTENANCE TO THE OWNER.
4. AN ACCEPTABLE STAND OF GRASS SHALL BE 95% COVERAGE OR BETTER.



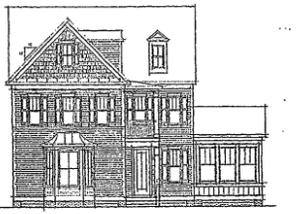
**COLLETON CROSSING - PARTIAL SITE PLAN**  
 MELVILLE BUILDERS - CARRBORO, NC



**AFFORDABLE-LOT ELEV. "A"**  
 COLLETON CROSSING - CARRBORO, NC



**AFFORDABLE-LOT ELEV. "B"**  
 COLLETON CROSSING - CARRBORO, NC



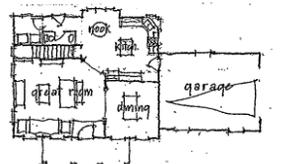
**ALLEY-LOT PLAN #2 - ELEV "A"**  
 COLLETON CROSSING - CARRBORO, NC



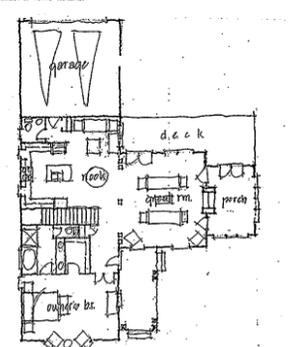
**ALLEY-LOT ELEVATION "A"**  
 COLLETON CROSSING - CARRBORO, NC



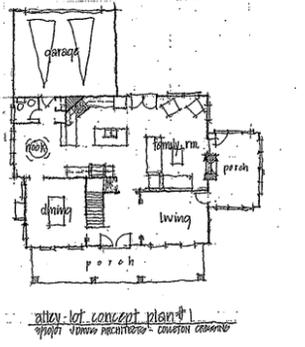
**EDGE-LOT ELEVATION "A"**  
 COLLETON CROSSING - CARRBORO, NC



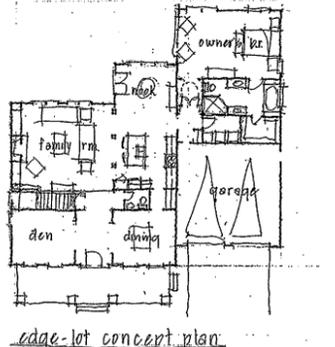
**affordable concept plan**  
 LITTLE ARCHITECTS



**alley-lot concept plan #1**  
 LITTLE ARCHITECTS - COLLETON CROSSING



**alley-lot concept plan #2**  
 LITTLE ARCHITECTS - COLLETON CROSSING



**edge-lot concept plan**

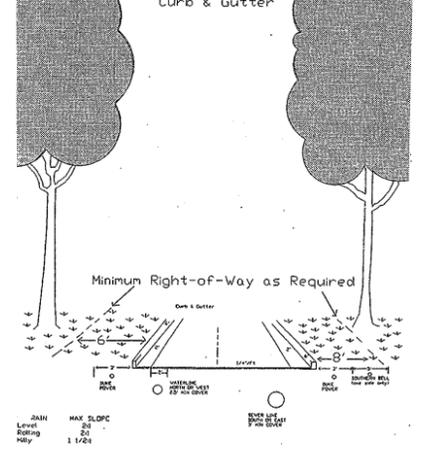
**LIGHTING SPECIFICATIONS**



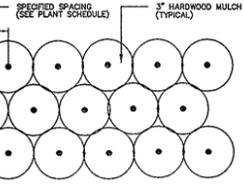
**CONSTRUCTION SIGN DETAIL**  
 NTS

**PROJECT NAME:**  
 DEVELOPER:  
 PROPERTY OWNER AND TELEPHONE NO.  
 CONTRACTOR:  
 CONTRACTOR NAME AND TELEPHONE NO.  
 REGULATORY AGENCY:  
 TOWN OF CHAPEL HILL PLANNING DEPT.  
 919-988-2728

**STANDARD DRAWING NO. 7  
 RESIDENTIAL STREET  
 Curb & Gutter**



**NOTE: THIS DETAIL SHOWS TYPICAL UTILITY LOCATIONS WITHIN THE STREET/RIGHT-OF-WAY. FINAL LOCATIONS FOR THIS PROJECT WILL BE DETERMINED DURING CONSTRUCTION PLAN DESIGN. SOME UTILITIES WILL BE BETWEEN THE SIDEWALK AND CURB, AND OTHERS WILL BE BEHIND THE SIDEWALK.**



**PLANT SPACING DETAIL**  
 NO SCALE

**ENGINEERS  
 PLANNERS  
 SURVEYORS**  
 401 Providence Rd., # 200  
 Raleigh, NC 27614  
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 493-2650 850-8882  
 Greensboro, NC  
 (336) 273-7711

**PHILIP  
 POST  
 &  
 ASSOCIATES**



**SITE DETAILS**  
**COLLETON CROSSING  
 SUBDIVISION**

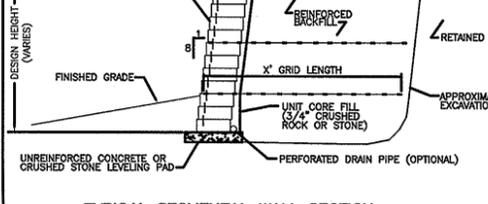
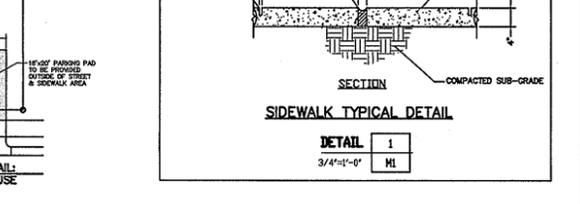
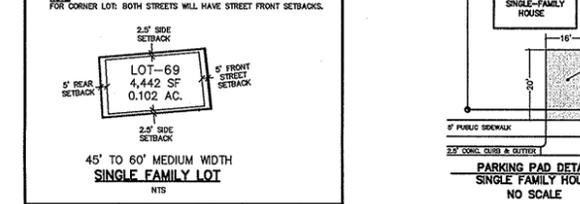
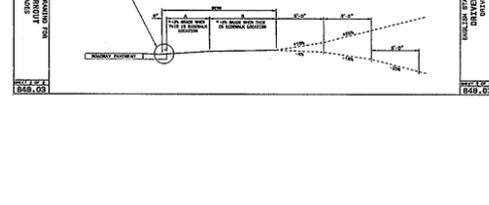
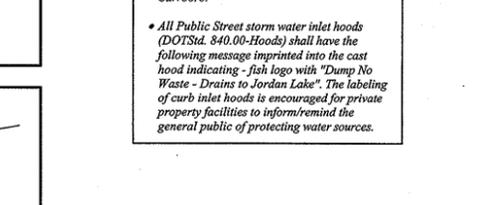
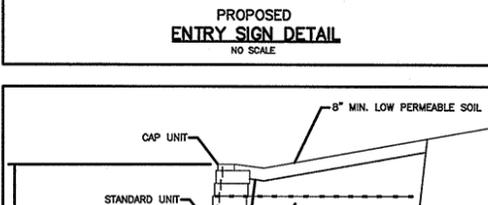
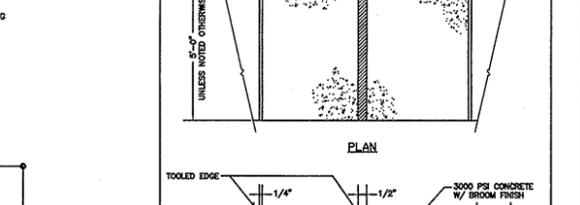
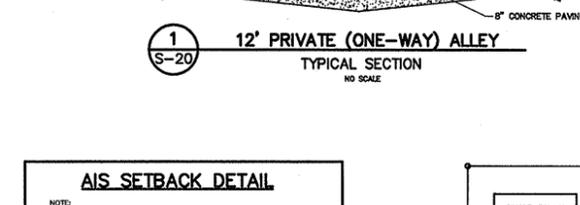
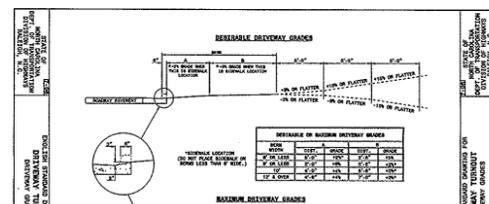
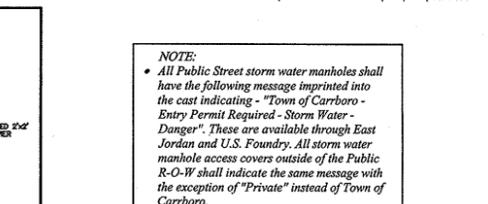
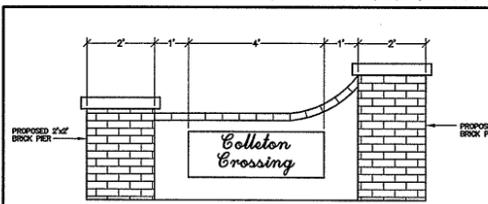
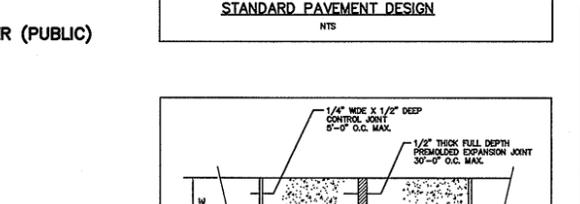
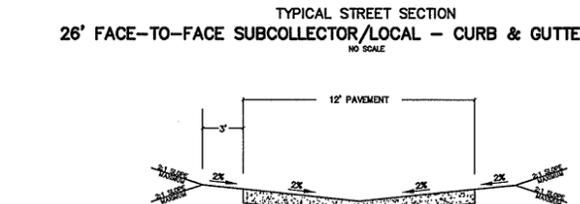
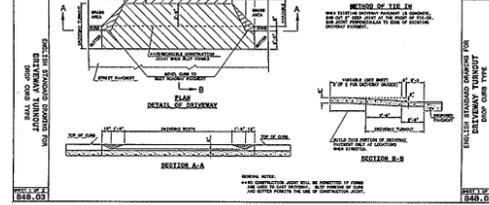
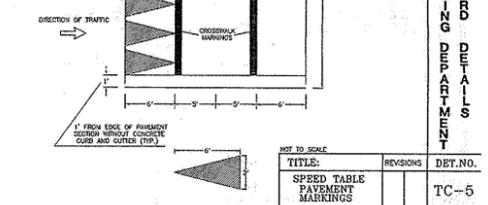
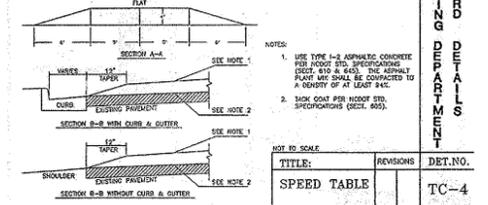
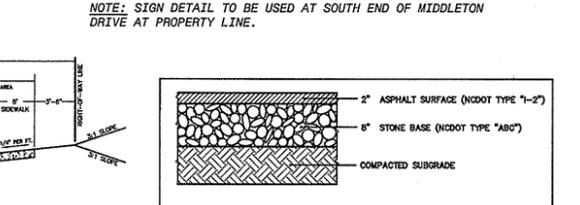
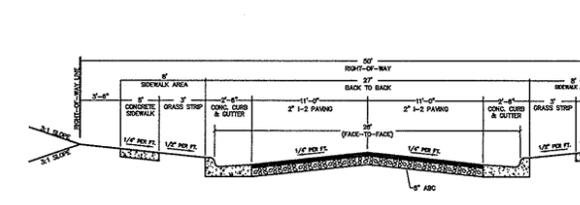
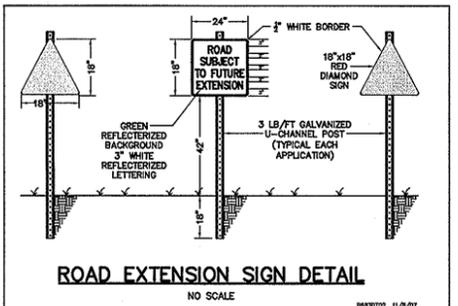
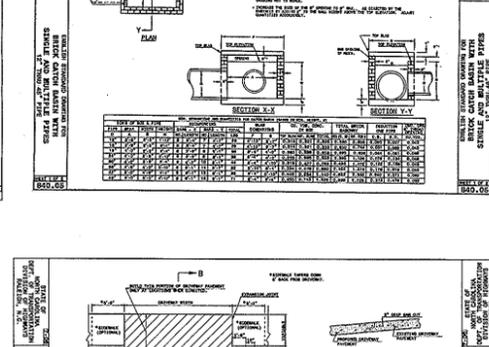
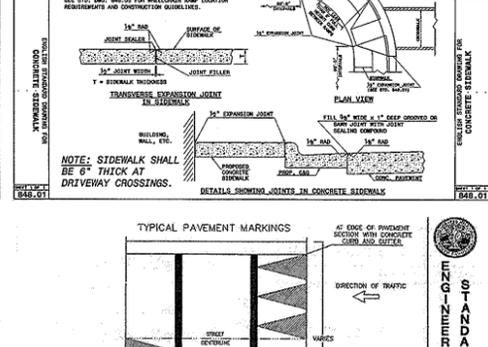
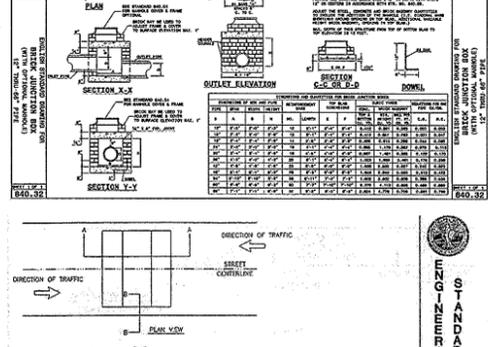
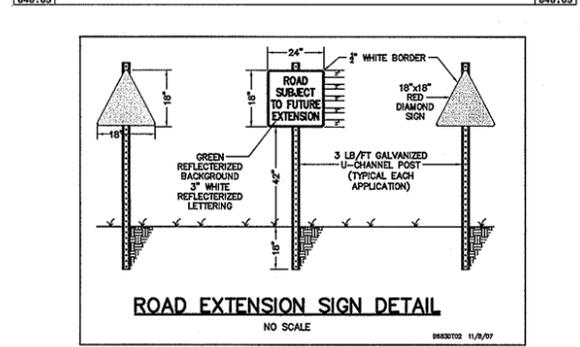
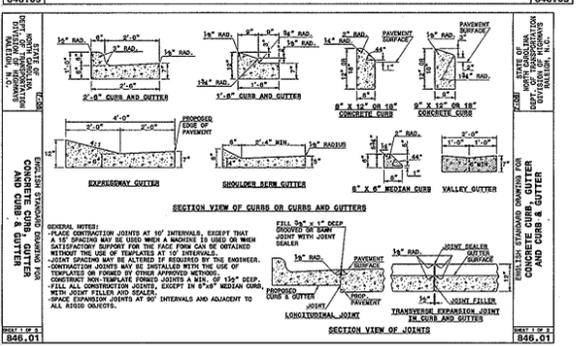
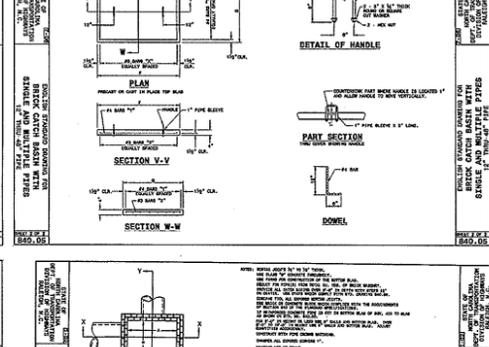
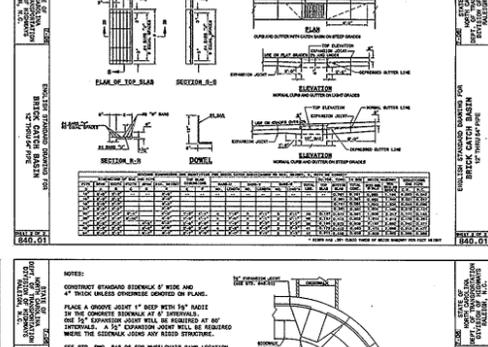
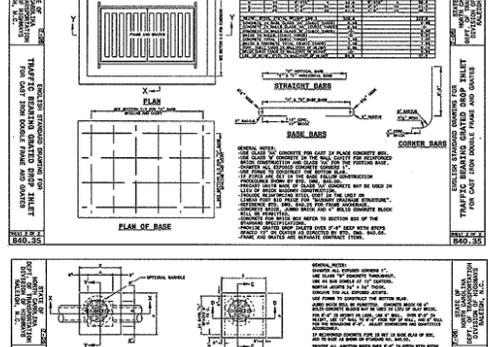
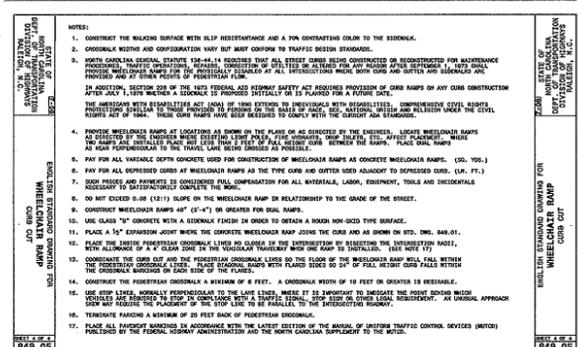
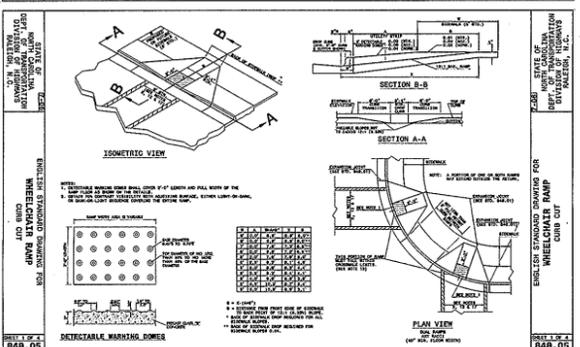
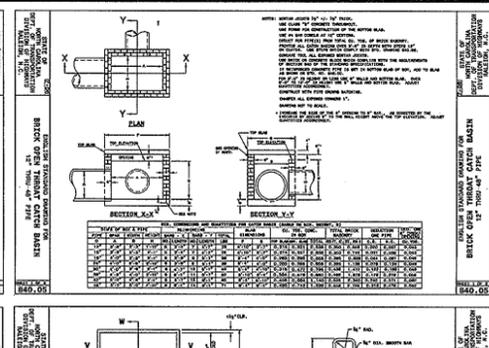
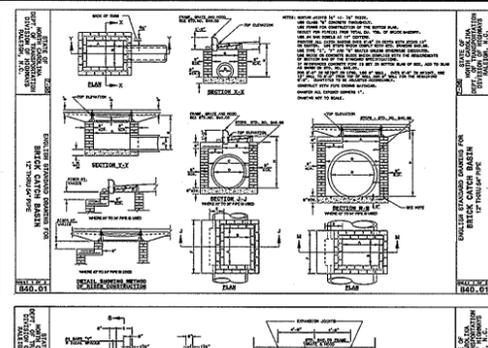
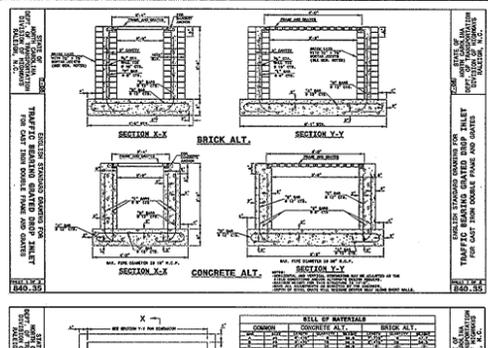
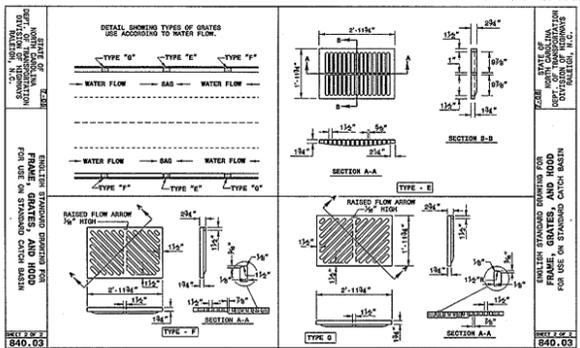
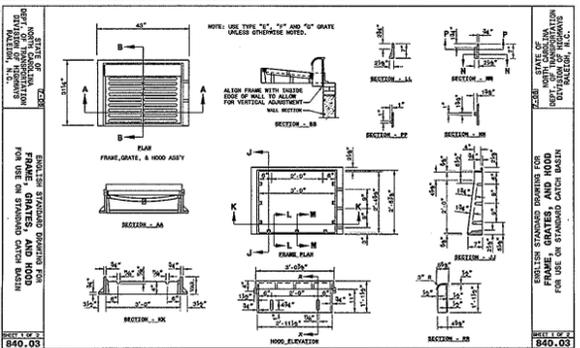
ORANGE COUNTY, N.C.  
 CHAPEL HILL

**SCALE: NONE**  
**DRAWN BY: JEW**  
**CHECKED BY: TAS**  
**DATE: 12/14/2007**  
**PROJECT NO. 510301**  
**DRAWING NO. B610101**

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**REVISIONS**

1. 3/16/2008: CUP REVIEW #2 COMMENTS
2. 3/19/08: CUP REVIEW #3 COMMENTS
3. 5/12/08: CUP REVIEW #3 COMMENTS
4. 6/17/08: PER 5/14/08 MEETING WITH TOWN
5. 8/5/08: CUP REVIEW #5 COMMENTS



PHILIP POST & ASSOCIATES

ENGINEERS PLANNERS SURVEYORS

401 Providence Rd. # 200  
Chapel Hill, NC 27614  
(919)929-1173  
493-2600 800-8662

CRENSHAW, NC  
(336)732-7711

ORANGE COUNTY, N.C.

CHAPEL HILL

SITE DETAILS

COLLETON CROSSING SUBDIVISION

SCALE: NONE

DRAWN BY: JRW

CHECKED BY: JAS

DATE: 12/15/2007

PROJECT NO.: 510301

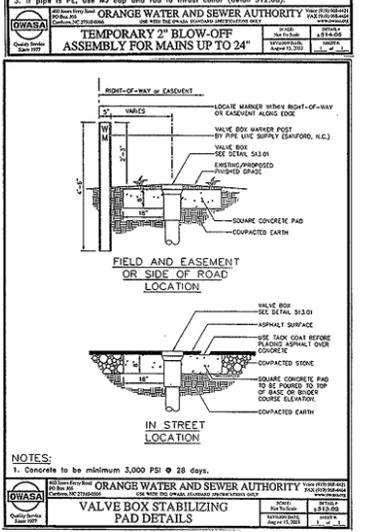
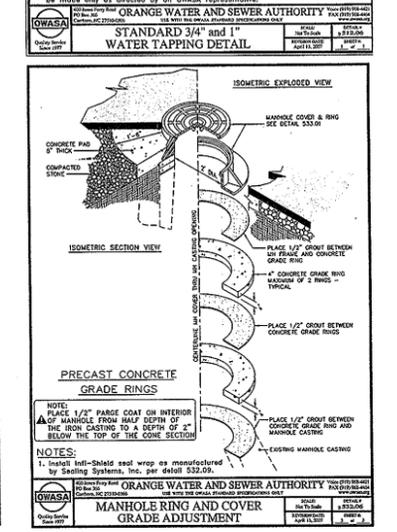
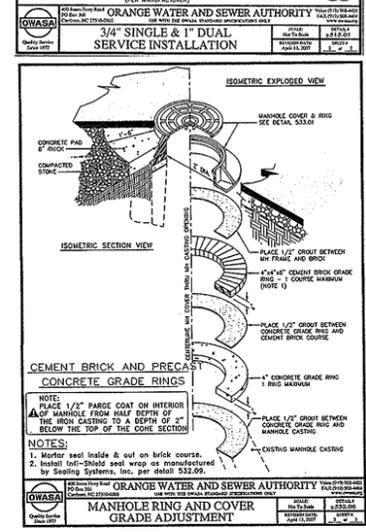
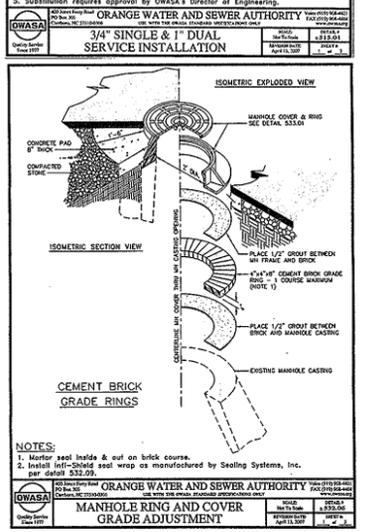
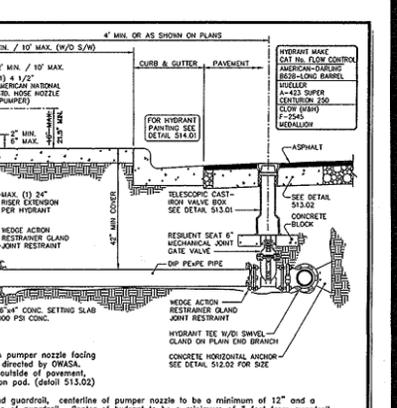
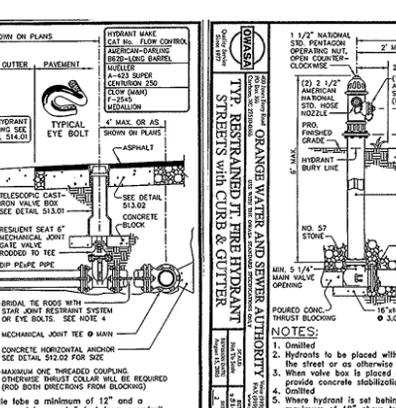
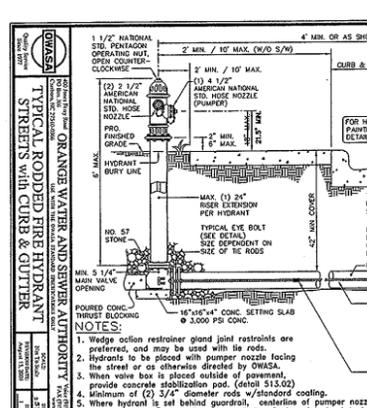
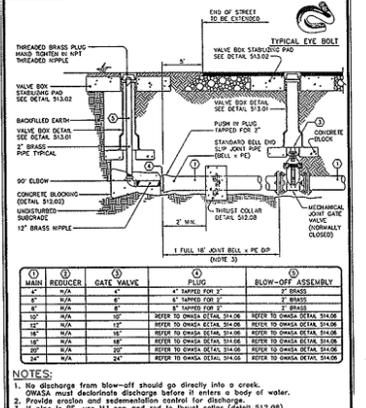
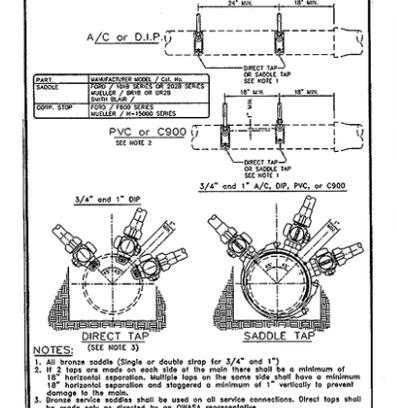
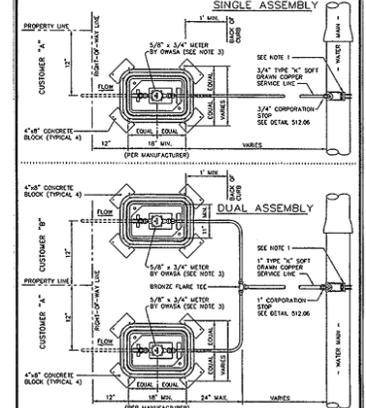
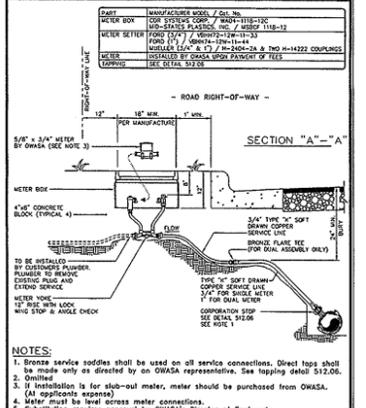
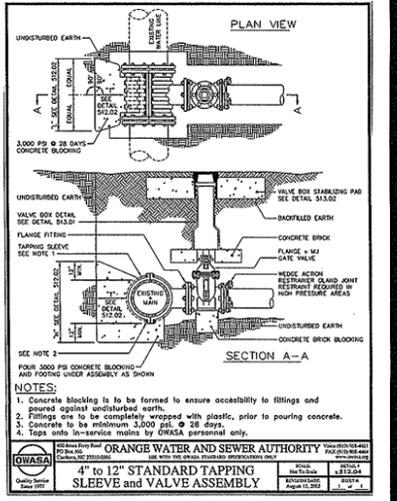
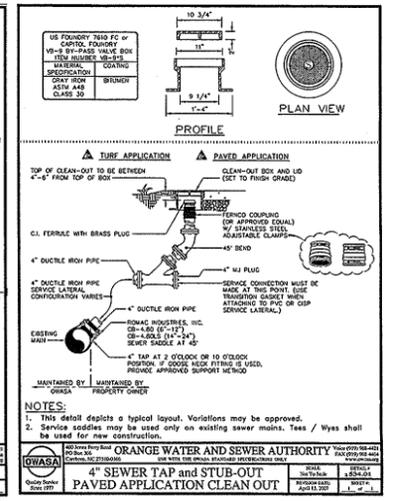
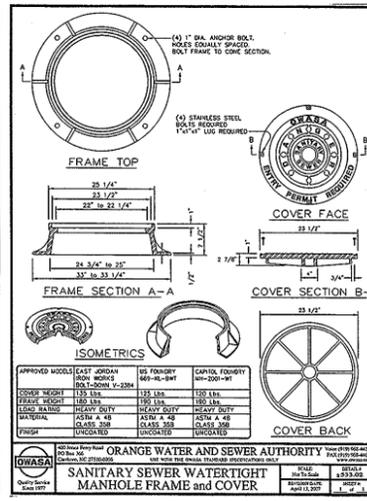
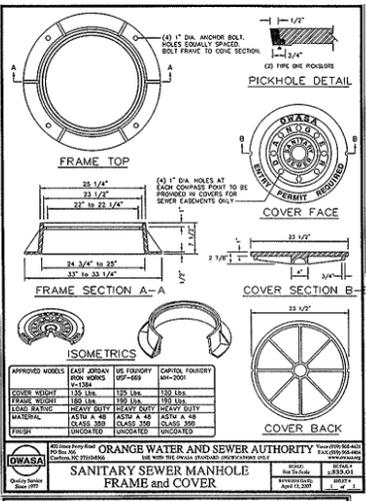
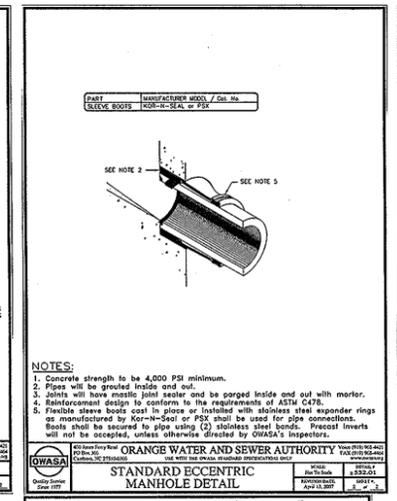
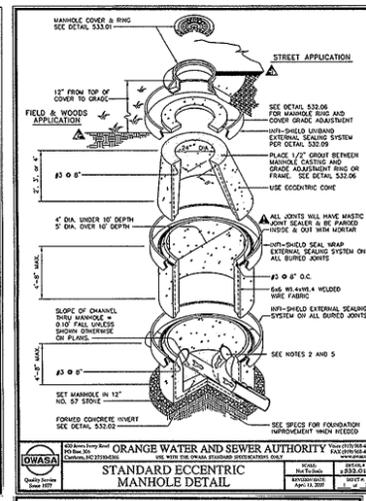
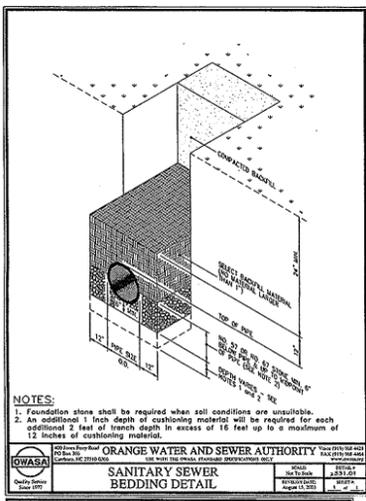
DRAWING NO.: B010101

REVISIONS:

- 1. 3/25/2008: CUP REVIEW #1 COMMENTS
- 2. 3/18/08: CUP REVIEW #2 COMMENTS
- 3. 5/12/08: CUP REVIEW #3 COMMENTS
- 4. 6/11/08: PER. 5/14/08 MEETING WITH TOWN
- 5. 8/5/08: CUP REVIEW #5 COMMENTS
- 6. 9/29/08: CUP REVIEW #6 COMMENTS

SHEET 8-18

OF 20



**PHILIP POST & ASSOCIATES**  
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 401 Providence Rd. # 200  
 Chapel Hill, NC 27514  
 (919) 929-1173  
 483-2800 850-8662  
 Greensboro, NC  
 (336) 773-7711



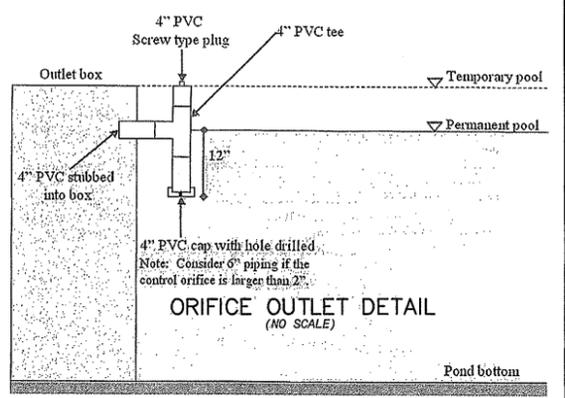
**OWASA**  
 ORANGE WATER AND SEWER AUTHORITY  
 1000 W. HARRIS ST.  
 CHAPEL HILL, NC 27514  
 (919) 929-1173  
 FAX (919) 929-1174

**OWASA DETAILS**  
 COLLETON CROSSING  
 SUBDIVISION  
 ORANGE COUNTY, N.C.  
 CHAPEL HILL

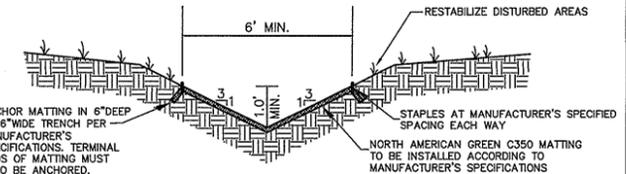
**SCALE NONE**  
 DRAWN BY JRW  
 CHECKED BY JAS  
 DATE 12/14/2007  
 PROJECT NO. 510301  
 DRAWING NO. BR010701

**REVISIONS:**  
 1. 3/19/2008: CUP REVIEW #2 COMMENTS  
 2. 3/19/08: CUP REVIEW #3 COMMENTS  
 3. 5/12/08: CUP REVIEW #4 COMMENTS  
 4. 8/21/08: FEB. 5/14/08 MEETING WITH TOWN  
 5. 8/29/08: CUP REVIEW #5 COMMENTS

Figure 10-4  
Typical Submerged Orifice Outlet Configuration

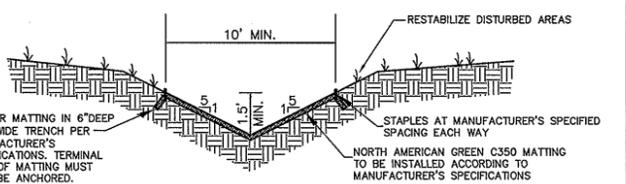


ORIFICE OUTLET DETAIL  
(NO SCALE)



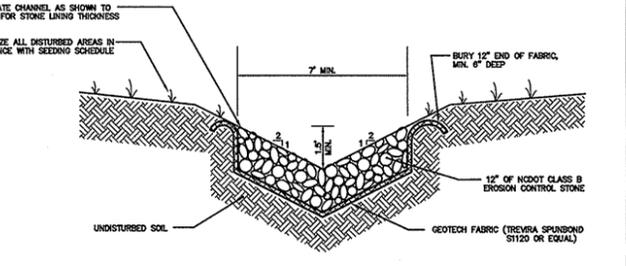
V-SHAPED GRASSED SWALE - LOTS 8 THRU 17; 35A THRU 38  
(DIVERSION SWALES FOR COLLECTION TO BIO-RETENTION AREAS)

DETAIL	1
NTS	20



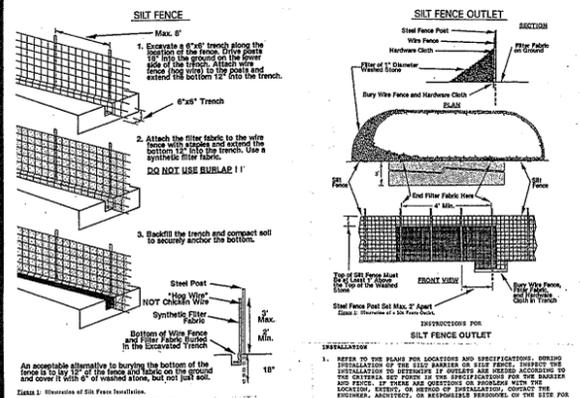
V-SHAPED GRASSED SWALE - LOTS 1 THRU 5  
(DIVERSION OF OFF-SITE CLEAN RUNOFF WATER)

DETAIL	2
NTS	20



V-SHAPED RIP-RAP SWALE - FROM LOTS 1 THRU 5  
(DIVERSION OF OFF-SITE CLEAN RUNOFF WATER)

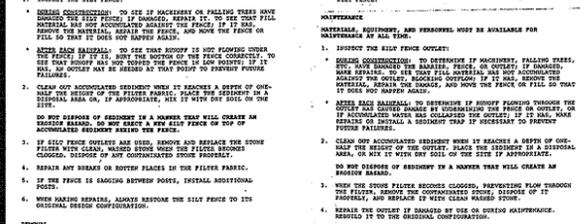
DETAIL	3
NTS	20



SILT FENCE

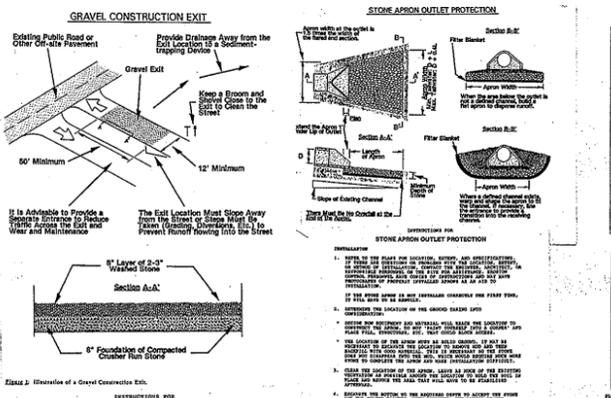
- Excavate a 6"x6" trench along the line of the fence. The trench should be 18" deep and 6" wide. The bottom of the trench should be compacted and covered with 2" of crushed stone.
  - Attach the fabric to the wire bottom 12" into the trench. Use a synthetic fiber or heavy-duty polypropylene fabric.
  - Backfill the trench and compact soil to secure the fabric in the trench.
- DO NOT USE BURLAP !!**
- An acceptable alternative to burying the bottom of the trench is to use a 6" diameter steel post. The post should be 18" long and 6" in diameter. The fabric should be attached to the post and the trench should be filled with compacted soil.
- INSTALLATION**
- REFER TO PLANS FOR LOCATION, SETBACK, AND SPECIFICATIONS. IF THERE ARE OBSTRUCTIONS TO THE LOCATION OF THE FENCE, CONTACT THE ENGINEER FOR AN ALTERNATE LOCATION. THE FENCE SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE FENCE SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.
  - IF THE SILT FENCE IS TO BE INSTALLED ON A SLOPE, THE FENCE SHOULD BE INSTALLED AT THE TOE OF THE SLOPE. THE FENCE SHOULD BE INSTALLED AT AN ANGLE TO THE SLOPE.
  - IF THE SILT FENCE IS TO BE INSTALLED ON A FLAT SURFACE, THE FENCE SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE FENCE SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.
  - IF THE SILT FENCE IS TO BE INSTALLED ON A SLOPE, THE FENCE SHOULD BE INSTALLED AT THE TOE OF THE SLOPE. THE FENCE SHOULD BE INSTALLED AT AN ANGLE TO THE SLOPE.
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TYPICAL FENCING FABRIC  
SEE NOTE #3.



TREE PROTECTION FENCE  
NOT TO SCALE

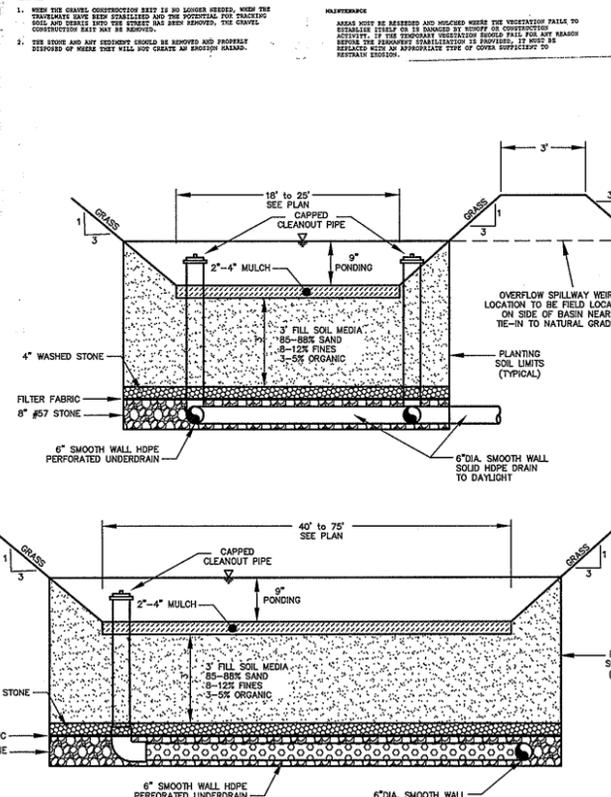
- PLACE CONTINUOUS RUN OF FENCE MATERIAL AS SHOWN ON PLANS.
- ATTACH AT 10' MAXIMUM INTERVALS TO 2x4 POSTS. DO NOT STAPLE TO TREES.
- FENCE MATERIAL SHALL BE "TENSAR" HIGH STRENGTH POLYPROPYLENE FABRIC BY TENSAR CORPORATION, MORGAN, GEORGIA, OR EQUAL BRIGHT ORANGE COLOR.
- AT 100' O.C., PLACE SIGNS IN ENGLISH AND SPANISH: NO TRESPASSING - ZONA PROHIBIDA DE PASAR - PROHIBIDO ENTRAR - ZONA PROHIBIDA PARA LOS ARBOLES
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE PROJECT MANAGER AND THE TOWN'S LANDSCAPE ARCHITECT BEFORE ANY SITE WORK BEGINS.
- ANY TREE ROOTS EXPOSED BY CONSTRUCTION SHALL BE SEVERED CLEANLY WITH A PRUNING TOOL.
- THE SOIL WITHIN THE PROTECTED AREA AROUND EXISTING TREES SHALL NOT BE DRIVEN UPON AFTER FENCE REMOVAL FOR THE PURPOSE OF INSTALLING LANDSCAPING.



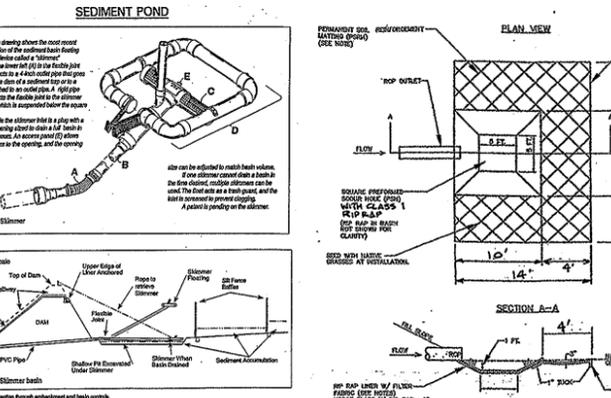
GRAVEL CONSTRUCTION EXIT

- REFER TO PLANS FOR LOCATION, SETBACK, AND SPECIFICATIONS. IF THERE ARE OBSTRUCTIONS TO THE LOCATION OF THE EXIT, CONTACT THE ENGINEER FOR AN ALTERNATE LOCATION. THE EXIT SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE EXIT SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.
- IF THE GRAVEL CONSTRUCTION EXIT IS TO BE INSTALLED ON A SLOPE, THE EXIT SHOULD BE INSTALLED AT THE TOE OF THE SLOPE. THE EXIT SHOULD BE INSTALLED AT AN ANGLE TO THE SLOPE.
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BIO-RETENTION CROSS-SECTIONS (TYPICAL)



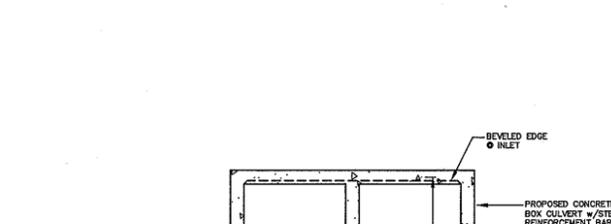
BIO-RETENTION CROSS-SECTIONS (TYPICAL)  
NTS



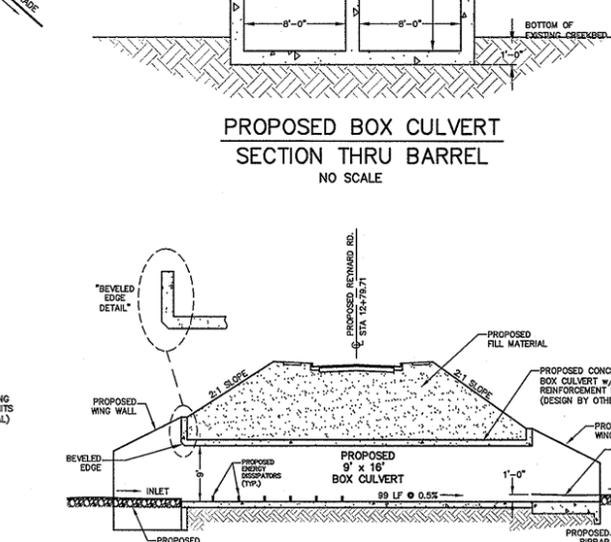
SEDIMENT POND

- REFER TO PLANS FOR LOCATION, SETBACK, AND SPECIFICATIONS. IF THERE ARE OBSTRUCTIONS TO THE LOCATION OF THE POND, CONTACT THE ENGINEER FOR AN ALTERNATE LOCATION. THE POND SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE POND SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.
- IF THE SEDIMENT POND IS TO BE INSTALLED ON A SLOPE, THE POND SHOULD BE INSTALLED AT THE TOE OF THE SLOPE. THE POND SHOULD BE INSTALLED AT AN ANGLE TO THE SLOPE.
- IF THE SEDIMENT POND IS TO BE INSTALLED ON A FLAT SURFACE, THE POND SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE POND SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.
- IF THE SEDIMENT POND IS TO BE INSTALLED ON A SLOPE, THE POND SHOULD BE INSTALLED AT THE TOE OF THE SLOPE. THE POND SHOULD BE INSTALLED AT AN ANGLE TO THE SLOPE.
- IF THE SEDIMENT POND IS TO BE INSTALLED ON A FLAT SURFACE, THE POND SHOULD BE INSTALLED AT THE END OF THE DISTURBED AREA OR AT THE POINT OF CHANGE OF DIRECTION. THE POND SHOULD BE INSTALLED AT AN ANGLE TO THE DISTURBED AREA.

PROPOSED BOX CULVERT SECTION THRU BARREL



PROPOSED BOX CULVERT SECTION THRU BARREL  
NO SCALE



PROPOSED BOX CULVERT PROFILE ELEVATION  
NO SCALE

ENGINEERS  
PLANNERS  
SURVEYORS

PHILIP  
POST  
&  
ASSOCIATES

ORANGE COUNTY, N.C.

401 Providence Rd., # 200  
Chapel Hill, NC 27514  
(919) 286-1722  
(919) 286-0662  
Greensboro, NC  
(336) 272-7711



EROSION/STORMWATER DETAILS

COLLETON CROSSING  
SUBDIVISION

SCALE AS NOTED  
DRAWN BY: JAW  
CHECKED BY: TJS  
DATE: 12/14/2007  
PROJECT NO.: 030301  
DRAWING NO.: 5103101

REVISIONS:  
1. 1/10/08: CUP REVIEW #1 COMMENTS  
2. 2/12/08: CUP REVIEW #2 COMMENTS  
3. 5/12/08: CUP REVIEW #3 COMMENTS  
4. 6/11/08: PER. 3/14/08 MEETING WITH TOWN  
5. 8/19/08: CUP REVIEW #4 COMMENTS  
6. 9/29/08: CUP REVIEW #5 COMMENTS

SHEET S-20  
OF 20

STAFF REPORT

TO: Board of Aldermen

DATE: November 6<sup>th</sup>, 2008

PROJECT: Colleton Crossing AIS

APPLICANT  
And OWNERS: MBI Development, LLC  
Chapel Hill, NC

PURPOSE: To acquire a Conditional Use Permit allowing a major subdivision of the property located at 8400 & 8420 Reynard Road.

EXISTING ZONING: Rural Residential (RR)

TAX MAP NUMBERS: 7.23.C..28 & 28A

LOCATION: 8400 & 8420 Reynard Road.

TRACT SIZE: 31.6 acres (combined).

EXISTING LAND USE: Vacant

PROPOSED LAND USE: 26.100, Major subdivision consisting of the following uses:  
1.111, single family detached

SURROUNDING  
LAND USES: North: RR , single-family residential.  
South: R-20, vacant.  
West: RR, single-family residential.  
East: RR, single-family residential.

ZONING HISTORY: RR since 1988

## ANALYSIS

### **Background, Concept Plan Development**

#### Background

MBI Development, LLC as represented Phil Post and Associates, has submitted an application for the construction of a 39 dwelling unit subdivision located at 8400 & 8420 Reynard Road (Attachment C). The Conditional Use Permit, if approved, would allow the creation of 39 single-family-detached lots with associated infrastructure, including publicly dedicated streets. The subject properties are zoned Rural Residential (RR). It contains 31.6 acres and is listed on the Orange County Tax Map as numbers 7.23.C..28 & 28A. For a vicinity map, see the cover sheet of Attachment A.

The existing condition of the site is vacant with stands of mixed woods. An unnamed tributary to Bolin Creek crosses the property from north to south within an associated Town of Carrboro regulatory stream buffer. There are no FEMA floodplains on site. A Duke Power transmission line forks on the southern end of the property within easements.

#### Concept Plan Development

Before formal plans were submitted, the applicant prepared a concept plan as required by Section 15-50 of the LUO. The conceptual design ordinance requires the designer to consider primary, secondary constraints, site context, and several other parameters prior to locating structures or lots. The resultant design presented herein is much informed by this process.

### **Density, Affordable Housing, Size-restricted Units**

#### Density, Affordable Housing

The overall permissible density on the site is calculated using the adjusted gross density provisions of Section 15-182.3 Of the LUO. This method reduces the amount of total density permitted based upon the amount of certain site features such as steep slopes, rock formations, and utility easements. For Colleton Crossing AIS, this adjustment reduced the *gross area* by about four acres, yielding an allowable base density of 27 units.

Using the Residential Density Bonus provisions of Section 15-182.4, the applicant is permitted to build up to 150 % of the base density for the zoning district. Utilizing this provision, the maximum permissible density allowed is 41 units. The applicant is using this provision for a proposed density of 39 units, 6 of which are *affordable*. Because of this, 15.4% of the project's housing stock is *affordable* as defined in the LUO. In total, the development's land density is about .8 acres per unit.

Section 15-182.4 requires that the applicant provide assurance that these units will remain affordable, for this reason we require the applicant to identify and define the terms by which this agreement will be honored. To meet the requirements of the LUO a condition must be placed on the permit specifying that the *continued* affordability of the units (located on lots 1, 26, 32, 33, 34, & 35) must be specified in the Homeowner's

Association documents. These documents must be approved by the Town Attorney prior to construction plan approval. Because of this the following condition is recommended:

- The continued affordability of the units (located on lots 1, 26, 32, 33, 34, & 35) must be ensured through working directly with Orange Community Housing & Land Trust, in accordance with LUO Section 15-182.4.

Because the applicant is seeking six bonus units a condition must be placed on the permit stating that a 'certificate of occupancy' may not be issued until such time as a corresponding affordable unit (located on lots 1, 26, 32, 33, 34, & 35) is constructed and offered for sale or rent for an amount consistent with the language found in Section 15-182.4 of the Town of Carrboro Land Use Ordinance as represented by the following condition:

- Certificates of Occupancy for each of the six (6) bonus 'market-rate' units may not be issued until such time as a corresponding affordable unit (located on lots 1, 26, 32, 33, 34, & 35) is constructed and offered for sale or rent for an amount consistent with the language found in Section 15-182.4 of the Town of Carrboro Land Use Ordinance. The six bonus units are to be identified on the plans prior to construction plan approval and shall be identified on the final plat.

The applicant has met with Orange Community Housing and Land Trust (OCHLT) to discuss provisions for ensuring the long-term affordability (99 years) of these units and reached an agreement (Attachment D). OCHLT is seeking subsidy money to support an affordable price for the six units. In the event that this subsidy money is not secured and/or OCHLT is unable to market the units at the price authorized by the LUO, the developer will assume responsibility for assuring long term affordability of the units.

Town staff realizes that the lot designations for affordable units are subject to change. In such an instance, the applicant will need to submit the proposed changes to the Zoning Division for review. Should the changes be insignificant and, should the lot designations maintain compliance with the ordinance, staff will authorize such changes via an *insignificant deviation*.

#### Size-Restricted Units

Per Section 15-188(j) a residential development that provides at least 85% of the maximum number of affordable units available under 15-182.4 is not subject to the size restriction requirements of 15-188. Colleton Crossing meets this threshold (6 affordable units out of 7 possible) and is exempt from providing size-restricted units.

**CONCLUSION** – The project meets all the requirements of the Land Use Ordinance pertaining to density, affordable housing density bonus and size-restricted units, subject to the conditions mentioned above.

## **Connectivity, Streets, Traffic Calming**

### **Connectivity**

In guiding Carrboro's growth, Town policy and ordinance supports the development of an interconnected matrix of public streets. Section 15-214 & 15-217 of the Land Use Ordinance (LUO) requires new subdivisions to tie into anticipated streets outside the development, thereby providing "connectivity" to the Town's public road system.

To this end, the Colleton Crossing AIS is extending Reynard road from the west; approximately 600 feet east to where it will tee with the proposed Middleton Drive. Middleton Drive stubs out to the southern property line. Please refer to the plans to assess the remaining public streets proposed (Attachment A).

### **Streets**

All proposed streets, except for Colleton Circle, are built according to the public street standards of Article XIV of the LUO. Colleton Circle is built to the *Subcollector* standard where only a *Local* standard is required. In order to mitigate the possible higher traffic speeds this could create, they've included mid-block, a traffic calming device (speed table). The engineer wishes to do this for reasons involving the subsurface stormwater and utility alignments. The LUO does not prohibit this. The applicant will offer the streets for public dedication.

An alley serves the back of lots 18-32 and will remain private.

### **Traffic Calming**

Two raised traffic calming speed tables are proposed; one on Colleton Circle and the other on the north end of Middleton Drive. An alternative to a speed table is a mid-block curb extension (also known as a "choker") which narrows the travel way for a short distance to accomplish the same purpose of slowing traffic. Staff would like the applicant to consider a choker for Middleton Drive and recommends the following condition.

- That, prior to construction plan approval, the applicant work with the Town Transportation planner to consider a traffic calming alternative to the speed table proposed for Middleton Drive, including but not limited to a mid-block curb extension (also known as a "choker").

Traffic calming on NCDOT roads (i.e. Reynard and Tallyho Trail) is currently not allowed.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to connectivity, streets, and traffic calming.

## **Traffic Analysis, Pedestrian/Bicycle Facilities, Transit, Parking**

### **Traffic Analysis**

A transportation impact statement was prepared by the applicant (Attachment E). By this, the proposed 39 lots are expected to generate 390 trips per day. Until further connectivity improvements are made with surrounding properties, these trips will be directed to Rogers

Road via Reynard Road and Tally Ho Drive. These existing two-lane roads were built to NCDOT's rural subdivision standard and in general can carry around 1,900 cars per lane, per hour. This is equivalent to about 19,000 vehicles per day. Capacity is further refined by the number and placement of intersections, driveway cuts, and signals. The NCDOT subdivision manual does not look at volumes or trips generated when classifying subdivision roads. NCDOT roads within the Town's jurisdiction will be accepted as Town streets should NCDOT bringing them up to Town standards.

Because a driveway permit is required for the connection to Reynard Road the following condition is recommended:

- That prior to construction plan approval, the applicant receive a driveway permit from NCDOT.

#### Pedestrian/Bicycle Facilities

All of the Colleton Crossing streets, except for Colleton Circle, have 5' wide sidewalks on both sides of the street. Sidewalks stub out to property lines for future continuation. Accessibility ramps and striped crosswalks are provided at all street crossings.

Note that the plans set have a minor outstanding comment regarding the sidewalk detail that is addressed by the following condition.

- That, prior to Construction Plan approval, the sidewalk detail on the detail sheet is labeled and specifies that sidewalk thickness shall increase to a minimum of 6" thick where all driveways cross the sidewalk.

The proposed public greenway alignment, required per Section 15-196, traverses the property, roughly south to north, following the OWASA easement, with a turn near lot 36 terminating the greenway at Middleton Drive. Town staff has determined that this alignment is undesirable and recommends that the greenway trail be realigned to go behind lots 36-38 and tee into Reynard Road. In order to do this, the trail will have to ramp relatively steeply for a short section to meet the road grade. Because of this the following condition is recommended:

- That, prior to construction plan approval, the proposed greenway alignment from the southern property line be realigned to follow the OWASA easement behind lots 36 -38 so as to tee in to Reynard Road.

This location of the trail is roughly consistent with the alignment shown on the Town's Parks and Recreation Master Plan.

To the north of Reynard Road, the applicant does not wish to construct a greenway because the private lots along the northern property line does not allow for the greenway's continuation. In lieu of this they are providing a greenway easement which will allow for this extension if feasible in the future.

The Town's Greenway Master Plan identifies this segment of greenway to be constructed to a "Type III" standard which is a greenway section 8' wide (minimum) surfaced with crushed stone or pit gravel. It is recommended that it not exceed 3% in slope. Since the proposed alignment features a steep segment in excess of 3% and since an unpaved greenway does not function well for bikes with narrow tires, staff recommends a "Type IV" trail standard be required per the following recommendation.

- That, in the construction plans the greenway trails be designed to meet or exceed the specifications identified in the AASHTO Guide for the Development of Bicycle Facilities, and that the proposed greenway be constructed to the Type IV AASHTO standard.

In addition to the greenway trail, a hiking trail system provides ample pedestrian linkage from the residential areas to the open space and greenway.

#### Transit

Chapel Hill Transit has been notified of the proposed subdivision. Service to this area in the near future is not anticipated.

#### Parking

Per section 15-291 of the LUO, single family units must provide parking on their respective lots sufficient to accommodate two cars. The applicant has placed a note to this effect on the plans; however, staff still recommends the following condition:

- That the single family home lots, when developed have sufficient room to conveniently park two cars on a paved driveway, off of the street, without blocking the sidewalk. Garages may not be counted toward this requirement. This parking will be shown on individual plot plans during the building permit stage.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to connectivity traffic analysis, pedestrian/bicycle facilities, transit, and parking, subject to the conditions mentioned above.

### **Tree Protection, Street Trees, Landscape Plans, Screening and Shading**

#### Tree Protection

Large trees as defined by the LUO have a diameter of 18 inches or greater and are to be retained whenever possible (15-316). Since the site is mainly wooded, the layout requires removal of 41 trees of this minimum size or greater. Tree protection fencing has been provided at the clearing limits and for those trees specifically retained. Note that trees retained on private lots are subject to removal during home construction. As required, the applicant has provided the attached tree removal justification letter (Attachment F).

#### Street Trees

Section 15-315 of the LUO provides guidelines for the planting and retention of trees adjacent-to and within street R/W's where an offer of dedication has been made to the Town. All of Colleton Crossing's 79 proposed street trees are located outside the public

R/W and exceed the provisions of Section 15-315 (which requires street trees be spaced an interval of at least one tree per 100 feet). However, the street trees are not *irregularly* spaced as required by this ordinance. Additionally, the landscape plan satisfies the Town policy requiring 1/3<sup>rd</sup> of all trees be evergreen. Because of this the following condition is recommended:

- That, prior to construction plan approval the proposed street tree planting layout be revised to meet the spacing requirements of Section 15-315 of the LUO and that 1/3<sup>rd</sup> of the proposed street trees be evergreen.

None of the proposed trees are listed as Invasive Plant Species (Appendix E-17).

Because existing trees may be preserved during the construction process staff recommends that the proposed layout be considered only as a possible scheme and that the street tree requirement be revised as needed so that it may be field adjusted as conditions warrant. For these reasons, the following condition is recommended:

- That flexibility be allowed in the execution of the street tree planting plan (subject to the approval of public works and the planning department), such that the combination of existing and proposed trees along all publicly dedicated streets in Colleton Crossing meet the street tree requirements of Section 15-315 of the Land Use Ordinance.

Also, the Colleton Crossing AIS features eight bioretention cells and one water quality pond. Each is planted with wetland plants appropriate to the application. Bioretention plantings need to be able to withstand periods of drought while the water quality ponds feature plants that can withstand prolonged inundation. These plantings are further reviewed by the Town Engineer during construction plan review.

#### Screening

This project requires Type C screens adjacent to public right-of-ways. A Type C screen is composed of intermittent visual obstructions from the ground to a height of at least twenty feet). The applicant has satisfied this screening requirement. Though not required, along the eastern property line adjacent to lots 4 -8, the plans show a 10' "preserved vegetative buffer" to help mitigate some of the visual impact of the project for the adjacent land owners. Currently there are no specifications for the planting of this buffer other than the existing vegetation is to be "undisturbed". Because of this the following condition is recommended:

- That an undisturbed vegetative buffer of existing (or enhanced) native plantings, ten feet in width, be maintained along the eastern (rear) property line of lots 4 through 8. This buffer shall be disclosed on the final plat and referenced in the Homeowner Association documents. A landowner may remove existing vegetation in the buffer if it is: a) a noxious weed, b) sick or c) presents a significant hazard. If other vegetation is removed that does not fit these categories, replacement is required with new native plantings equivalent to a Type B screen.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to tree protection, street trees, landscaping, screening, and shading subject to the aforementioned condition.

### **Drainage, Water Quality, Grading, Erosion Control and Phasing**

#### Drainage

Section 15-263 of the LUO establishes stormwater management criteria that must be met for any project requiring a CUP. In particular the applicant must meet stormwater runoff standards with respect to water quality and quantity and must demonstrate that the project will not cause upstream or downstream damages to other properties. To address these requirements, the applicant has conducted a drainage study and submitted the required “Truth in Drainage” statement (Attachment G). This statement discloses to the Board of Aldermen the potential stormwater impacts of the project.

The Town Engineer (Sungate Design Group) has reviewed these materials and is satisfied with the majority of the work therein. An outstanding issue, however, pertains to the precise mapping the 100 year flood plain and the precise sizing of the box culverts that will be used to bridge the creek. Both can be determined only by a flood study which involves a computer modeling exercise using the Army Corp of Engineers HEC-RAS software. Because of this staff recommends the following conditions:

- That, prior to Construction Plan approval, a HEC-RAS flood study shall be provided to analyze the 100 year flood with backwater analysis for both the existing and proposed conditions;
- That, prior to Construction Plan approval, the proposed box culvert design shall be sized to provide for a “no-rise” condition for the 100 year backwater (at the property line of the project), as compared to the preconstruction conditions shown in the results of the HEC-RAS flood study.
- That, prior to Construction Plan approval, all design and details of the proposed box culvert shall meet the requirements of the Carrboro Land Use Ordinance and the associated Storm Drainage Design Manual and be approved by the Town of Carrboro’s Engineering Consultant, Sungate Design Group. Any substantial design changes will require the approval of the Board of Aldermen (with possible public hearing) per the provisions of 15-64 of the LUO.

Because the crossings of drainages stand to impact “Waters of the United States” and jurisdictional wetlands, though there are no Army Corp wetlands mapped on the site, state and federal permits are required. Because of this the following condition is recommended:

- That all state and federal 401 and 404 permits be obtained prior to construction plan approval if necessary.

### Water Quality

Excess stormwater generated by the new impervious surfaces (roads, sidewalks, roofs, etc) is to be collected by a configuration of conveyances (i.e catch basins, swales, etc.). These direct water into bioretention cells and a water quality pond each designed to remove 85% of Total Suspended Solids from the first inch of a storm event. Please note that the bioretention areas are *not* designed to hold water for an extended period as compared to the pond, which is designed to *detain* water.

In addition, relative to the Town satisfying state requirements pertaining to the National Pollutant Discharge Elimination System (NPDES) Phase II permit, the following conditions are required on the permit:

- That the applicant shall provide to the Zoning Division, prior to the recordation of the final plat for the project or before the release of a bond if some features are not yet in place at the time of the recording of the final plat, Mylar and digital as-builts for the stormwater features of the project. Digital as-builts shall be in DXF format and shall include a base map of the whole project and all separate plan sheets. As-built DXF files shall include all layers or tables containing storm drainage features. Storm drainage features will be clearly delineated in a data table. The data will be tied to horizontal controls.
- That the developer shall include detailed stormwater system maintenance plan, specifying responsible entity and schedule. The plan shall include scheduled maintenance activities for each unit in the development, (including cisterns, bioretention areas, swales, check dams, and irrigation pond), performance evaluation protocol, and frequency of self-reporting requirements (including a proposed self-reporting form) on maintenance and performance. The plan and supporting documentation shall be submitted to Town engineer and Environmental Planner for approval prior to construction plan approval. Upon approval, the plans shall be included in the homeowners' association documentation.

Note that the plans set have a minor outstanding comment associated with the NPDES program that is addressed by the following condition.

- That, prior to Construction Plan approval, the applicant provide on the plans details and notes for the Town's required casting for curb inlet hoods and manhole covers. This is the "fish" logo combined with the "Dump No Waste – Drains to Jordan Lake" slogan.

### Grading

Installation of the Colleton Crossing AIS road and stormwater systems requires a substantial amount of clearing and grading. Section 15-261 of the LUO, requires that to the extent practicable, all developments shall conform to the natural contours of the land and major, natural drainage ways shall remain undisturbed. The project appears generally to satisfy these criteria.

Stream Buffers

Per the LUO and the adopted “Stream Buffers of the Northern Transition Area” map, three Protective Stream Buffers are located on the Colleton Crossing site. One, a slope based buffer, protects the Bolin Creek tributary and the other two, sixty foot (total width) buffers, protect its tributaries. The slope buffer uses a formula to increase the buffer width as slopes become steeper. Note that two minor mapped stream buffers were declassified in the early stages of this project by the Town Engineer as they were associated with a remnant dirt road and did not satisfy the Town’s definition of a “stream”.

Erosion Control

Substantial site disturbance increases the importance of the Erosion Control plan. The grading plan must be competently executed during construction in order for the stormwater system to function properly. The Colleton Crossing AIS is proposing a system sediment basins and silt fences to manage erosion during construction. The Erosion Control Plan has been reviewed by Orange County Erosion Control.

Construction Entrances

The project has two construction entrances, one, the major entrance, from Reynard Road, the other, the minor entrance, from the existing driveway easement off of Tallyho Trail. The applicant states that the minor entrance will be used to first access the site and install required tree/silt fence and erosion control required for clearing. It would then be used for the initial clearing and grading of the site while the culvert crossing is being built on the Reynard Rd. extension. Attached is a letter from the applicant’s attorney regarding the easement’s legal viability for this use (Attachment H).

Once the culvert is installed, Reynard Rd. would become the primary construction entrance, and the easement would only be secondary as needed for smaller construction vehicles, etc.).

Phasing

The project is not phased.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to Drainage, Grading and Erosion Control and Phasing subject to the aforementioned conditions.

**Utilities, Fire Safety, Lighting and Refuse Collection**Utilities

The waterline, is looped through the development mainly within the street R/W. It taps into the existing waterline on Tallyho Trail via an existing driveway easement to the east. The extension will be within a proposed OWASA easement. The lines stub-out to the western and southern property lines within the proposed rights of way. .

Sewer service will be continued from the existing sewer stub-out from the UNC property to the south.

The water and sewer plans have been reviewed by OWASA and meet with their general approval. OWASA will review the plans in greater detail during construction plan review. Regarding electric, gas, telephone and cable television utilities, the applicant has submitted letters by the respective providers indicating that they can serve the development. Per Section 15-246 of the LUO, the plans specify that all electric, gas, telephone, and cable television lines are to be located underground in accordance with the specifications and policies of the respective utility companies.

The Public Works Department prefers to receive written confirmation from the electrical utility prior to construction plan approval. Because of this, staff recommends the following condition.

- That the developer provide a written statement from the electrical utility stating that electric service can be provided to all locations shown on the construction plans prior to the approval of the construction plans;

#### Fire Safety

Twelve fire hydrants are proposed to serve the development. They are located within the public R/W and are spaced such that every building will be no more than 500 feet from a hydrant (Section 15-249). The plans meet this requirement.

Fire flow calculations and building-sprinkler design (as required) must be submitted and approved by the Town Engineer and Fire Department prior to construction plan approval. A condition to this effect shall be entered onto the permit.

- That fire flow calculations and building-sprinkler design (as required) must be submitted and approved by the Town Engineer and Town Fire Department prior to construction plan approval.

#### Emergency Access

The property can be accessed via the driveway easement to the east which connects the property to Tallyho Trail. This would prevent emergency vehicles from having to proceed along the entire length of Tallyho Trail, to Reynard Road in order to access the property. The easement has been researched by the applicant's attorney who has provided a letter stating (among other things) that it can be used for emergency access (Attachment H). Since this driveway is not mean to serve as the subdivision's primary or secondary entrance, staff recommends a collapsible bollard (or equivalent) be installed to prevent use. Further, it is the staff's recommendation that emergency access along this easement be curtailed once the Middletown Drive subcollector is extended to connect through the UNC property to the south. In light of this the following condition is recommended:

- That the existing driveway access easement that ties the property to Tallyho Trail to the east, serve as a temporary emergency access route and that, if necessary it is improved sufficiently to satisfy the emergency access needs of the Town of Carrboro Fire Department. Further, that a collapsible bollard (or equivalent) satisfactory to the Fire Department, be installed on the subject property at the beginning of the easement to prevent everyday use of this driveway. Use of this

driveway easement for emergency access will end once the Middletown Drive subcollector is continued and subsequently interconnected to an existing street to the south (via the UNC property identified on the Town's GIS system as 1500 Claymore Road).

### Lighting

On November 15<sup>th</sup>, 2005, the Board of Aldermen adopted a resolution allowing residents in Annexation Areas A & B to pursue and exemption from the street lighting policy per the following requirements:

1. A valid petition for exemption from the street lighting policy must be signed by 66% of the property owners with frontage on a particular street within a particular subdivision; and
2. Any street that elects not to receive lighting will receive lighting in the future if 66% of the property owners with frontage on that street or within that particular subdivision request it from the Town.

However, staff has determined that this policy only applies to existing subdivisions. For reference, see the attached minutes from this meeting (Attachment I).

As proposed, street lights are spaced evenly throughout the development. Street lights are not regulated by the Land Use Ordinance; instead, they fall under existing Town policy pertaining to public R/W's. Public Works reviews plans for compliance with this policy and finds the plans acceptable. The plans include notes that the new street lights are to be full cutoff fixtures compliant with the Town standard but include a detail for a decorative fixture. The Town will assume no additional costs associate with fixtures other than those equivalent to the Town standard. Because of this the following condition is recommended:

- That, if the applicant chooses street lighting fixtures that deviate from the Town standard, they willingly assume all costs above and beyond those associated with this standard. Furthermore, any such deviation will not be allowed without the expressed approval from the Town's Public Works Department.

### Refuse Collection

The project's waste arrangements have been reviewed by both Public Works and Orange County. The Town and County will provide trash and recycling collection services for the development while the County will be involved in managing construction waste.

The single family homes will utilize roll-out containers. Waste management during construction requires from the County an approved Solid Waste Management Plan as well as a permit.

**CONCLUSION** – The project meets all the requirements of the Land Use Ordinance pertaining to utilities, fire safety, lighting, and refuse collection, subject to the inclusion of the three aforementioned conditions regarding fire hydrants, fire flow and building sprinklers.

## **Open Space, Recreation**

### **Open Space**

Per the provisions of 15-198, every residential development is required to set aside at least 40% of the total area of the development in permanent open space. If the project is providing affordable housing, Section 15-182.4(c) allows the developer to make reductions in the open space requirement equal to twice the land area consumed by the affordable units, up to a maximum reduction of 4%. Because the Colleton Crossing AIS provides about 64% open space, it does not need to use this reduction.

Note that during the concept plan phase of the project, primary and secondary conservation areas as defined by 15-198 are identified and prioritized for protection prior to the locating of the building envelope. For this reason, the Bolin Creek tributary and its surrounding steep provide the largest area of contiguous open space for the proposal.

### **Recreation**

The proposed mix of single family homes and townhomes combine to require 405.21 recreation points, per Section 15-196 of the LUO. The applicant far exceeds this amount by providing hiking trails, a greenway trail, a play structure and a playfield area [as required by Section 15-198(d)]. The playfield is located within the Duke Power easement in the southeastern quadrant of the site; the topography of this location suggests that additional grading may be necessary to improve its suitability as a playfield. Duke Power must approve any such grading since it is within their easement.

As required per 15-196-f, 5% of the amenities must be suitable for children under the age of 12; the applicant exceeds this requirement with the proposed play structure.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to Open Space and Recreation.

## **Architectural Standards, CAPS,**

### **Architectural Standards**

Per the requirements of Section 15-177, subdivisions containing four or more units are required to demonstrate compliance to the architectural design guidelines contained therein. The applicant may choose from one of two design guidelines; 1) Vernacular Architectural Standards or, 2) Alternative Architectural Standards. The applicant has chosen the latter approach.

The Alternative Architectural Standards requires the subdivision address specific design goals with regards to landscape, site, context, and building design. The applicant has addressed this requirement by providing an illustrated narrative statement and typical elevations (Attachment J). Staff concludes that from the materials provided, that the provisions of this section have been addressed.

CAPS

Per Article IV, Part 4 of the LUO, the applicant must receive the required Certificate(s) of Adequacy of Public School Facilities (CAPS) from the Chapel Hill Carrboro City Schools District prior to construction plan approval. Because of this the following condition is recommended:

- That the applicant receive(s) CAPs from the Chapel Hill Carrboro City Schools District pursuant to Article IV, Part 4 of the Land Use Ordinance, prior to construction plan approval.

CONCLUSION – The project meets all the requirements of the Land Use Ordinance pertaining to Architectural Standards, CAPS and Courtesy Review.

MiscellaneousAdvisory Boards Courtesy Review

The project was brought before the Joint Advisory Board's on April 5<sup>th</sup>, 2007. Attached are the applicant's responses to each of the Board's that provided comment on the project (Planning Board, Environmental Advisory Board &, Transportation Advisory Board). The applicant's responses follow the recommendations in Courier typeface (Attachment K).

Advisory Board's Joint Review

The project was presented before the Joint Advisory Board's on November 6<sup>th</sup>, 2008 for formal review of the project. Their summary recommendations are forthcoming.

Subdivision and Street Names

Since the street name "Colleton" Circle sounds very much like the existing county street name "Collington" and because the street name "Middleton" is already in use in the county the following condition is recommended:

- That the street names of the subdivision are revised as necessary to meet the addressing requirements of the Town GIS specialist.

Citizen Letters

Various letters from neighbors and citizens regarding concerns about the project have been received throughout the review process. See Attachments L for reference.

Voluntary Annexation

The property has already been annexed.

Neighborhood Information Meeting

A Neighborhood Information Meeting was held in the Wexford Community building on March 26, 2007. Twenty two neighbors were in attendance. Traffic, Connector roads, density and, visual impacts were some of the matters discussed. An additional Neighborhood Information Meeting was held on November 19<sup>th</sup>, 2008.

### STAFF RECOMMENDATIONS:

Town staff recommends that the Board of Aldermen open the Colleton Crossing AIS Conditional Use Permit public hearing. Staff recommends that the Board consider the issuing the permit subject to the conditions below:

1. The continued affordability of the units (located on lots 1, 26, 32, 33, 34, & 35) must be ensured through working directly with Orange Community Housing & Land Trust, in accordance with LUO Section 15-182.4.
2. Certificates of Occupancy for each of the six (6) bonus 'market-rate' units may not be issued until such time as a corresponding affordable unit (located on lots 1, 26, 32, 33, 34, & 35) is constructed and offered for sale or rent for an amount consistent with the language found in Section 15-182.4 of the Town of Carrboro Land Use Ordinance. The six bonus units are to be identified on the plans prior to construction plan approval and shall be identified on the final plat.
3. That, prior to construction plan approval, the applicant work with the Town Transportation planner to consider a traffic calming alternative to the speed table proposed for Middleton Drive, including but not limited to a mid-block curb extension (also known as a "choker).
4. That prior to construction plan approval, the applicant receive a driveway permit from NCDOT.
5. That, prior to Construction Plan approval, the sidewalk detail on the detail sheet is labeled and specifies that sidewalk thickness shall increase to a minimum of 6" thick where all driveways cross the sidewalk.
6. That, prior to construction plan approval, the proposed greenway alignment from the southern property line be realigned to follow the OWASA easement behind lots 36 -38 so as to tee in to Reynard Road.
7. That, in the construction plans the greenway trails be designed to meet or exceed the specifications identified in the AASHTO Guide for the Development of Bicycle Facilities, and that the proposed greenway be constructed to the Type IV AASHTO standard.
8. That the single family home lots, when developed have sufficient room to conveniently park two cars on a paved driveway, off of the street, without blocking the sidewalk. Garages may not be counted toward this requirement. This parking will be shown on individual plot plans during the building permit stage.
9. That, prior to construction plan approval the proposed street tree planting layout be revised to meet the spacing requirements of Section 15-315 of the LUO and that 1/3<sup>rd</sup> of the proposed street trees be evergreen.
10. That flexibility be allowed in the execution of the street tree planting plan (subject to the approval of public works and the planning department), such that the combination of existing and proposed trees along all publicly dedicated streets in Colleton Crossing meet the street tree requirements of Section 15-315 of the Land Use Ordinance.
11. That a 10', undisturbed vegetative buffer of existing (or enhanced) native plantings be maintained along the eastern (rear) property line of lots 4 through 8. This buffer shall be disclosed on the final plat and referenced in the Homeowner Association documents. A landowner may remove existing vegetation in the buffer if it is: a) a

- noxious weed, b) sick or c) presents a significant hazard. If other vegetation is removed that does not fit these categories, replacement is required with new native plantings equivalent to a Type B screen.
12. That, prior to Construction Plan approval, a HEC-RAS flood study shall be provided to analyze the 100 year flood with backwater analysis for both the existing and proposed conditions;
  13. That, prior to Construction Plan approval, the proposed box culvert design shall be sized to provide for a “no-rise” condition for the 100 year backwater (at the property line of the project), as compared to the preconstruction conditions shown in the results of the HEC-RAS flood study.
  14. That, prior to Construction Plan approval, all design and details of the proposed box culvert shall meet the requirements of the Carrboro Land Use Ordinance and the associated Storm Drainage Design Manual and be approved by the Town of Carrboro’s Engineering Consultant, Sungate Design Group. Any substantial design changes will require the approval of the Board of Aldermen (with possible public hearing) per the provisions of 15-64 of the LUO.
  15. That all state and federal 401 and 404 permits be obtained prior to construction plan approval if necessary.
  16. That the applicant shall provide to the Zoning Division, prior to the recordation of the final plat for the project or before the release of a bond if some features are not yet in place at the time of the recording of the final plat, Mylar and digital as-builts for the stormwater features of the project. Digital as-builts shall be in DXF format and shall include a base map of the whole project and all separate plan sheets. As-built DXF files shall include all layers or tables containing storm drainage features. Storm drainage features will be clearly delineated in a data table. The data will be tied to horizontal controls.
  17. That the developer shall include detailed stormwater system maintenance plan, specifying responsible entity and schedule. The plan shall include scheduled maintenance activities for each unit in the development, (including cisterns, bioretention areas, swales, check dams, and irrigation pond), performance evaluation protocol, and frequency of self-reporting requirements (including a proposed self-reporting form) on maintenance and performance. The plan and supporting documentation shall be submitted to Town engineer and Environmental Planner for approval prior to construction plan approval. Upon approval, the plans shall be included in the homeowners’ association documentation.
  18. That, prior to Construction Plan approval, the applicant provide on the plans details and notes for the Town’s required casting for curb inlet hoods and manhole covers. This is the “fish” logo combined with the “Dump No Waste – Drains to Jordan Lake” slogan.
  19. That the developer provide a written statement from the electrical utility stating that electric service can be provided to all locations shown on the construction plans prior to the approval of the construction plans;
  20. That fire flow calculations and building-sprinkler design (as required) must be submitted and approved by the Town Engineer and Town Fire Department prior to construction plan approval.
  21. That the existing driveway access easement that ties the property to Tallyho Trail to the east, serve as a temporary emergency access route and that, if necessary it is

improved sufficiently to satisfy the emergency access needs of the Town of Carrboro Fire Department. Further, that a collapsible bollard (or equivalent) satisfactory to the Fire Department, be installed on the subject property at the beginning of the easement to prevent everyday use of this driveway. Use of this driveway easement for emergency access will end once the Middletown Drive subcollector is continued and subsequently interconnected to an existing street to the south (via the UNC property identified on the Town's GIS system as 1500 Claymore Road).

22. That, if the applicant chooses street lighting fixtures that deviate from the Town standard, they willingly assume all costs above and beyond those associated with this standard. Furthermore, any such deviation will not be allowed without the expressed approval from the Town's Public Works Department.
23. That the applicant receive(s) CAPs from the Chapel Hill Carrboro City Schools District pursuant to Article IV, Part 4 of the Land Use Ordinance, prior to construction plan approval.
24. That the street names of the subdivision are revised as necessary to meet the addressing requirements of the Town GIS specialist.

# TOWN OF CARRBORO

## LAND USE PERMIT APPLICATION



DATE: 3-14-07

FEE: \$ 2,170.00

APPLICANT: <u>MBI DEVELOPMENT, LLC</u>	OWNER: <u>MBI DEVELOPMENT, LLC</u>
ADDRESS: <u>PO BOX 2684</u>	ADDRESS: <u>PO BOX 2684</u>
CITY/STATE/ZIP: <u>CHAPARR HILL, NC 27515</u>	CITY/STATE/ZIP: <u>CHAPARR HILL, NC 27515</u>
TELEPHONE/FAX: PHONE: <u>967-0992</u> FAX: <u>968-8125</u>	TELEPHONE/FAX: PHONE: <u>SAME</u> FAX: <u></u>
LEGAL RELATIONSHIP OF APPLICANT TO PROPERTY OWNER: <u>SAME</u>	TAX MAP(S), BLOCK(S), LOT(S): <u>7.23 C, 28 &amp; 28A</u>
PROPERTY ADDRESS: <u>END OF REYNARD ST.</u>	PROPOSED LAND USE & USE CLASSIFICATION: <u>1.110 SINGLE FAMILY DETACHED</u>
PRESENT LAND USE & USE CLASSIFICATION: <u>ONE FORMER S/F RESIDENCE</u>	LOT AREA: <u>31.606</u> Acres <u>1,376,773</u> Square Feet
ZONING DISTRICT(S) AND AREA WITHIN EACH (including Overlay Districts): <u>RR (31.606 AC)</u>	
# OF BUILDINGS TO REMAIN: <u>NONE</u>	GROSS FLOOR AREA: <u>N/A</u> square feet
# OF BUILDINGS PROPOSED: <u>39 RESIDENTIAL SINGLE FAMILY LOTS</u>	GROSS FLOOR AREA (of proposed building or proposed addition): <u>N/A</u> square feet

NAME OF PROJECT/DEVELOPMENT: COLLETON CROSSING AIS SUBDIVISION - CUP APPLICATION

TYPE OF REQUEST	**INFORMATION REQUESTED (Refer to Attached Key)
SUBDIV. FINAL PLAT / EXEMPT PLAT	1, 18, 19, 21, 23, 31, 33, 34, 36
<input checked="" type="checkbox"/> CONDITIONAL USE PERMIT (CUP)	1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 34, 35, 36
CUP MODIFICATION	SAME AS CONDITIONAL USE PERMIT (CUP)
SPECIAL USE PERMIT (SUP)	1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 34, 35, 36
SUP MODIFICATION	SAME AS SPECIAL USE PERMIT (SUP)
ZONING PERMIT (Project)	1, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 29, 30, 32, 34, 35, 36
ZONING PERMIT (Building) Residential Infill & Additions	9, 10, 22, 24, 34, 36 (also see "Building Permit Review - Residences Only" checklist)
SIGN PERMIT	1, 10, 13, 14, 17, 20, 36
VARIANCE	4, 5, 10, 20, 29, 34, 36 Attachment A
APPEAL	4, 5, 36, Attachment B
SPECIAL EXCEPTION	1, 4, 5, 8, 10, 20, 35, Attachment C

APPLICANT: James B. McNeill DATE: 3/14/07  
 OWNER: James B. McNeill DATE: 3/14/07



October 30th, 2008

Mayor Mark Chilton and the Carrboro Aldermen  
Town of Carrboro  
301 West Main Street  
Carrboro, NC, 27510

**Board of Directors**

*Marceia Blake*  
President

*Gordon Merklein*  
Vice President

*Michael Hansen*  
Secretary

*Jim Tucker*  
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*Gary Giles*

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*Michael Nelson*

*Katherine Reynolds*

*Bruce Runberg*

*Mary Jean Seyda*

*Robert Dowling*  
Executive Director

**Funding Provided by:**

*Town of Chapel Hill*  
*Orange County*  
*Town of Carrboro*  
*Town of Hillsborough*

**PO Box 307**

**104 Jones Ferry Road**

**Suite C**

**Carrboro, NC 27510**

919.967.1545

Fax 919.968.4030

www.ochlt.org

Dear Mayor Chilton and Members of the Board of Aldermen:

I am pleased to report that Melville Builders is planning to work with the Land Trust to provide affordable homes in the proposed Colleton Crossing development. We have reviewed the concept for Colleton Crossing and believe the community will be very attractive to Land Trust homebuyers.

The Land Trust and Melville Builders have reached the following agreement regarding partnering to sell affordable homes in Colleton Crossing:

1. Melville Builders will build 6 affordable single family homes in Colleton Crossing. The homes will be a minimum of 1400 square feet in size and will have a minimum of 3 bedrooms and 2 and a half bathrooms.
2. Melville Builders will sell these homes to the Land Trust for a price of \$130,000 per unit.
3. Melville Builders will own the properties during the marketing period, until the Land Trust is able to close with income-eligible buyers.
4. The Land Trust will market the affordable homes, provide buyer education, and work with qualified buyers through the closing process. Melville Builders will pay the Land Trust a marketing fee of \$4,000 per unit when we close on each home with an income-eligible buyer.
5. Any of these homes that the Land Trust does not sell within twelve months after they receive their certificates of occupancy may be sold by Melville Builders under the terms of their permits and the Town's ordinance.

Please note that while \$130,000 is affordable to households at 80% of the Area Median Income, we will need an additional estimated \$20,000-\$25,000 in local subsidy for each unit in order to create an adequate affordability window to market these homes.

We appreciate the Board of Aldermen's continued commitment to affordable housing and the Land Trust. If you have any questions or comments about our initial agreement with Melville Builders, please call me at 967-1545 ext 305.

Sincerely,

Christine Westfall  
Operations Manager

CC: Robert Dowling, Steve Stewart, Jim and Sherry Melville, Melville Builders

Colleton Crossing  
Transportation Impact Statement

1. Traffic Impact

The proposed 39 lots of Colleton Crossing will generate 390 trips per day.

Initially, the 390 trips will be added to Reynard and Tally Ho Drive and thence onto Rogers Road.

With the Middleton Street stubout to UNC-Carolina Commons development, there is a future possibility of the 390 trips being split, using both Reynard/Tally Ho and UNC/Highlands Subdivision.

2. Reynard/Tally Ho are both public, NCDOT residential collector, well-maintained public streets, which are intended to connect "local residential roads and the thoroughfare system". The public streets within Colleton Crossing will be subcollector or local streets, 26' BB curb and gutter in a 50' public right of way.

3. The Colleton Crossing plans include extensive concrete public sidewalks along all proposed public streets.

Additionally, the recreation plan proposes a public walking trail running from the lots on the north end to the property line on the south end of the project, through or along natural open space areas, roughly parallel to the unnamed stream channel.

4. Currently, there is no transit service anywhere close to this site.



*Philip N. Post*  
4-16-2007

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PHILIP  
POST  
&  
ASSOCIATES

---

October 31, 2008  
#510301

Town of Carrboro  
Planning Department  
301 West Main Street  
Carrboro, NC 27510

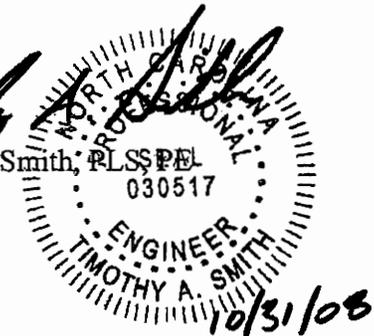
Re: Justification of tree removal for Colleton Crossing

To Whom it May Concern:

Colleton Crossing has a total of 155 located trees. Of that total, 41 trees will need to be removed for the construction of roads, storm water quality detention pond and OWASA right of way easement. Those 41 trees are 26% of the total located trees. The landscape requirements for the individual lots will require that a minimum of one 3 inch diameter native tree be planted on each of the 39 lots. Examples of these types of trees are pin oak, sugar maple and white fringe tree, however, the choice of trees will not be limited to these species.

Sincerely,

  
Timothy A. Smith, PLS, PE



ENGINEERS  
PLANNERS  
SURVEYORS

---

401 Providence Road  
P.O. Box 2134  
Chapel Hill, NC 27515-2134  
(919) 929-1173  
(919) 493-2600

April 25, 2007

Revised: December 21, 2007

April 01, 2008

May 13, 2008

August 06, 2008

September 26, 2008

510301

**TRUTH IN DRAINAGE STATEMENT**  
**COLLETON CROSSING SUBDIVISION**

The proposed Colleton crossing Subdivision is located at the east end of Reynard Road south of Tallyho Road. The property has an area of 31.606 acres and will be subdivided into 39 single family lots.

One large stream exists on the property along with a smaller tributary. The total drainage area for the creek at the property line is 451 acres. The property is also crossed by a Duke Power right-of-way. The creek is contained within a buffer and open space and will be crossed by an extension of the existing Reynard Road. The remainder of the buffer area will remain undisturbed except for minor encroachments with bio-retention areas. One detention basin will be created to manage stormwater runoff. The basin will be a wet detention pond with a 3.74' average depth and a forebay containing approximately 20% of the permanent pool volume. The outlet from this basin will be sized to provide detention up to and including the 25-year storm event to well below pre-construction runoff levels and reduce the 100-year event runoff. The basin will contain the runoff from the first 1" of rainfall in the contributing watershed and allow drawdown of that volume over 2.67 days to meet the LUO requirements. All areas not within the basin drainage area which will be disturbed will be treated for water quality by the use of eight bio-retention areas located to serve one or more untreated lots. All water quality features are designed in accordance with the latest edition of the NCDWQ 'Stormwater Best Management Practices Manual' dated July 2007 and revised September 2007.

In conclusion, the runoff quantity increase will be spread out so as not to impact any downstream properties or streams. Water quality and pollutant removal will be ensured by settling out pollutants in the 1" rainfall first flush. All runoff from areas within the subdivision which will be disturbed or made impervious will be routed through a water quality feature. This project, as designed, satisfies the "no Damage" provision set forth in the Town Ordinance Water Management Section 15-263a.

**NORTHEN BLUE, L.L.P.**  
A LIMITED LIABILITY PARTNERSHIP  
ATTORNEYS AT LAW  
THE EXCHANGE AT MEADOWMONT  
1414 RALEIGH ROAD  
SUITE 435  
CHAPEL HILL, NORTH CAROLINA 27517

JOHN A. NORTHEN  
J. WILLIAM BLUE, JR.  
DAVID M. ROOKS, III  
CHARLES H. THIBAUT  
CAROL J. HOLCOMB  
EMILY A. CURTO  
VICKI L. PARROTT  
STEPHANIE OSBORNE-RODGERS  
SAMANTHA H. CABE

MAILING ADDRESS:  
P.O. BOX 2208  
CHAPEL HILL, NC 27515-2208

TELEPHONE (919) 968-4441  
TELEFAX (919) 942-6603  
E-MAIL: [CHT@NBFIRM.COM](mailto:CHT@NBFIRM.COM)

April 11, 2007

Town Of Carrboro  
Planning Department

Re: Conditional Use Permit Application Presented By MBI Development Company, LLC  
For Colleton Crossing (31.606 acres, Tract No. 2, Plat Book 10, Page 6).

Dear Sir or Madam,

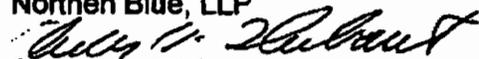
Our firm represents the applicant, MBI, with regard to the above-referenced application. We recently received a request from our clients' engineer, Philip Post, to provide the Town with an opinion concerning the existence of an easement to the property for the purpose of providing access and utilities to the subject property. To that end, we performed a title examination of the public records in Hillsborough, Orange County, NC.

A title examination of the subject property revealed the existence of a 50' easement from a public right of way (Tallyho Trail) to the subject property. The subject easement is shown in Plat Book 39, Page 154 and Plat Book 41, Page 166. Plat Book 39, Page 154 shows the easement as an apparent extension of Tallyho Trail (public). Plat Book 41, Page 166, identifies the easement as a "Pre-existing Access Easement". In addition, in the description of the size of the two lots upon which the easement is located (Lots 10 and 11, Section Two, Fox Meadow), it is stated that the lots contain "1.28 Ac. Excluding road RW" and "1.33 Ac. Exc. Road RW" (emphasis added). The easement is further described in Deed Book 482, Page 439.

Based on the results of my title examination of the public records and a review of Beechridge Development Company, LLC v. Laurence E. Dahners, et al, 350 N.C. 583, 516 S.E. 2d 592, it is my opinion that a court of law should support the finding that the easement in question can be used for a public waterline easement, a public emergency access easement and a private construction access easement.

Please let me know if you have any questions or comments concerning this opinion letter. I look forward to hearing from you soon.

Sincerely,  
Northen Blue, LLP

  
Charles H. Thibaut

WHEREAS, the applicant's mother will co-sign for the loan.

NOW THEREFORE THE CARRBORO MAYOR AND BOARD OF ALDERMEN RESOLVE:

Section 1. The applicant has met the requirements for the loan under the RLF Program and at the time of signing the loan documents, he will have in hand all necessary permits from the Zoning Division and Management Services Department to operate the business in the Town of Carrboro.

Section 2. The Town Manager is authorized to have the attorney's office prepare all necessary documents and issue a loan in the amount of \$18,000 at an interest rate of 8% for a term of six (6) years. The collateral for the loan will be a first security position on the business property and the personal signatures of the applicant and his mother, Mrs. Gloria Ramsey.

Section 3. This resolution shall become effective upon adoption.

The foregoing resolution having been submitted to a vote, received the following vote and was duly adopted this 15th day of November, 2005:

Ayes: Joal Hall Broun, Mark Chilton, Jacquelyn Gist, John Herrera, Diana McDuffee, Alex Zaffron, Michael Nelson

Noes: None

Absent or Excused: None

MOTION WAS MADE BY ALEX ZAFFRON AND SECONDED BY MARK CHILTON TO ADOPT THE ORDINANCE ENTITLED, "AN ORDINANCE AMENDING FY'2005-06 BUDGET ORDINANCE." VOTE: AFFIRMATIVE ALL

\*\*\*\*\*

**AMENDMENT TO THE TOWN'S STREET LIGHTING POLICY FOR NORTHEAST ANNEXATION AREAS A AND B**

Pursuant to the motion passed by the Board on January 25, 2005, staff has developed this procedure "to allow residents in Annexation Areas A & B the opportunity to decline installation of street lights." The town staff proposed an addendum to the official town street lighting policy that will apply *only* to these two newly annexed areas.

George Seiz, the town's Public Works Director, made the presentation.

Sharon Cook, a resident of Claymore Road, requested that a super majority be used for residents to opt out of street lights, and requested that unique constraints, such as 100+ year old trees, be considered before street lights are installed, and asked whether a street is a block or an entire street.

Charlie Buckner, a resident of Fox Meadow, stated that Tallyho Trail extends through two subdivisions and suggested that the residents of each subdivision should be allowed to decide whether to opt out of street lights.

Laura Van Sant, a resident of Raynard Road, suggested that the Town not require more than two-thirds of the residents to sign a petition to opt out of street lights.

The following resolution was introduced by Alderman Alex Zaffron and duly seconded by Alderman Mark Chilton.

A RESOLUTION APPROVING AN ADDENDUM  
TO THE TOWN'S STREET LIGHTING POLICY  
Resolution No. 41/2005-06

WHEREAS, the Carrboro Board of Aldermen seeks to provide ample opportunities for the public to consider modifications to existing policies; and

WHEREAS, the Board has specifically instructed staff to develop a way for the soon-to-be annexed areas north of Homestead Road and west of Rogers Road to decline street lighting; and

NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO:

Section 1. The Board of Aldermen approves the proposed addendum to the Town's Street Lighting Policy, and that:

- a. A valid petition for exemption from the street lighting policy must be signed by 66% of the property owners with frontage on a particular street within a particular subdivision; and
- b. Any street that elects not to receive lighting will receive lighting in the future if 66% of the property owners with frontage on that street or within that particular subdivision request it from the Town.

Section 2. The Board of Aldermen confirms that this addendum shall apply *only* to Northeast Annexation Areas A and B (with an effective annexation date of January 31, 2006).

Section 3. This resolution shall become effective upon adoption.

The foregoing resolution having been submitted to a vote, received the following vote and was duly adopted this 15th day of November, 2005:

Ayes: Joal Hall Broun, Mark Chilton, Jacquelyn Gist, John Herrera, Diana McDuffee, Alex Zaffron, Michael Nelson

Noes: None

Absent or Excused: None

\*\*\*\*\*

**APPOINTMENTS TO THE TRIANGLE TRANSIT AUTHORITY TASK FORCE**

The Board of Aldermen on October 11 endorsed the formation of a work group to address providing TTA service to downtown Carrboro. The town staff recommended that the Board of Aldermen identify a Board member to serve on the work group and adopt a resolution making the appointments.

The following resolution was introduced by Alderman Jacquelyn Gist and duly seconded by Alderman Joal Hall Broun.

A RESOLUTION MAKING APPOINTMENTS TO THE TTA WORK GROUP  
Resolution No. 45/2005-06

**COLLETON CROSSING NEIGHBORHOOD**

Carrboro, North Carolina

MBI Development, LLC

February 20, 2008

(Revised March 13, 2008)



The following guidelines outline the architectural standards within the proposed Colleton Crossing neighborhood, in accordance with Section 15-177 "Architectural Standards for Subdivisions Containing Four or More Single-Family Detached Residences" and the Alternative Architectural Standards (AAS).

**1. Landscape and Site:**

Approximately 64% of the site is set aside for open space and/or tree-preservation area. These areas include the environmentally sensitive western portion of the site with a natural creek, large trees and steeper slopes. This open space also acts as an approximately 400' wide buffer zone between the proposed project and the existing single-family houses on South Hound Ct. The proposed crossing at the extension of Reynard Rd is perpendicular to the centerline of the creek, to minimize impact on the creek buffer zone.

On the north side of the project, a buffer zone of at least 60' and up to 148' wide is planned between the project and existing homes along Tallyho Trail. As a part of the open space, Colleton Crossing will also provide 2,785 lf of paved walking trails.

The project is designed so that only one of the 39 lots (lot # 39) will allow any visibility of the house's rear façade from a public street. Screening, in the form of architecturally compatible fencing and/or landscaping material, will be provided for this lot. A variety of building massing, setbacks, porches, materials, etc. will provide highly articulated facades. Where front-loaded garages are required, garage doors will be set back a minimum of 12' from the front of the porch and at least 20' from the right-of-way in order to minimize the visual impact of the garage entries.

All streets will include sidewalks and street trees. Primary entries shall connect directly to the sidewalks with individual sidewalks, in the case of rear-loaded garages, or to driveways, in the case of front-loaded garages. Pedestrian connections to the open space pathways are also provided from the public sidewalks.

All exterior building lighting and street lighting shall be designed to minimize impact on neighbors and to direct lighting downward. Street lights shall be installed with full cut-off fixtures so as not to project light above the horizontal plane.

**2. Context:**

The lots in the center of the neighborhood (15 of the 39 lots) are alley-loaded, so that the garages will not be visible from the street. The plans for these lots will be 1-1/2 and 2 stories, with a variety of roof massings, including porches on the front and sides of the houses. Bungalow and four-square style houses will be horizontally proportioned, with broad, single-story porches, while the Charleston row houses and other 2-story plans will be more vertical. This, along with a palette of elements such as bay windows, dormers

and gable details (each in keeping with the historic style of the individual houses) will give variety and rhythm to the streetscape.

### **3. Building Design Elements:**

Each of the houses will incorporate a large entry porch (minimum of 6' deep), with design details appropriate to the style of the house, as a means of both designating the primary entrance to the house as well as extending the interior living spaces and providing a semi-public transitional space that allows for comfortable interaction with the sidewalk and street in front of the house.

Houses with wider facades are typically 1-1/2 story plans where the roof massing, porches, dormers, etc. provide visual interest and rhythm. 2-story plans have a more articulated massing, with generous offsets, bay windows, etc. When visible, garages and garage doors will be setback from the primary building façade to minimize their impact on the streetscape. In addition, an architectural element such as an arbor, shed roof or deep recess will further shade each door for reduced emphasis. Garage doors, when facing the street, will also have glass windows and incorporate carriage-style hardware or other design elements to enhance their appearance.

Facades on all houses will use trim and cornice details that are appropriate to the individual style of the house. Corner boards and door and window trim will be a minimum of 4" wide and porch columns will be a minimum of 10" wide, when square, or 12" diameter, when round. Eaves will contain bed or crown molding and frieze boards at least 6" wide. Window shutters will be sized to cover the window and will have a design appropriate to the style of the house (e.g. paneled, louvered or cottage-style).

Materials will include cementitious siding, such as Hardie-Board, for lapped siding, trim, etc. and brick or stone for exposed foundations. Porch roofs will typically be standing seam metal while main roofs will be architectural grade asphalt shingles. Finished floor heights will be a minimum of 30" above grade on the front elevations, so that porches are properly elevated above the sidewalks. Porches will be supported on brick or stone piers, with skirt walls of spaced wood or brick. No diagonal lattices will be used.

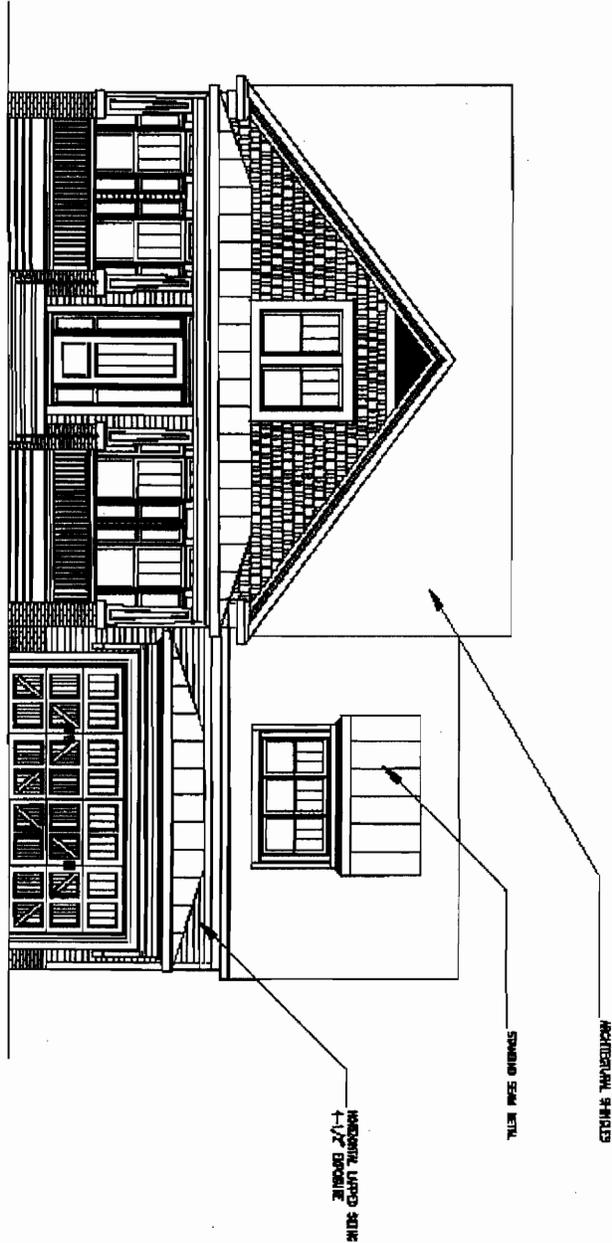
Fences, screen walls, trellises, arbors, etc. will be designed in a way that complements the style of the house that they belong to. Materials will be consistent with materials on the house.

Since the neighborhood has more than 15 lots, the architectural designs for Colleton Crossing houses will provide for *at least* nine (9) unique elevations in order to provide the level of variability required by the Architectural Standards.

### **4. Alternative Architectural Standards:**

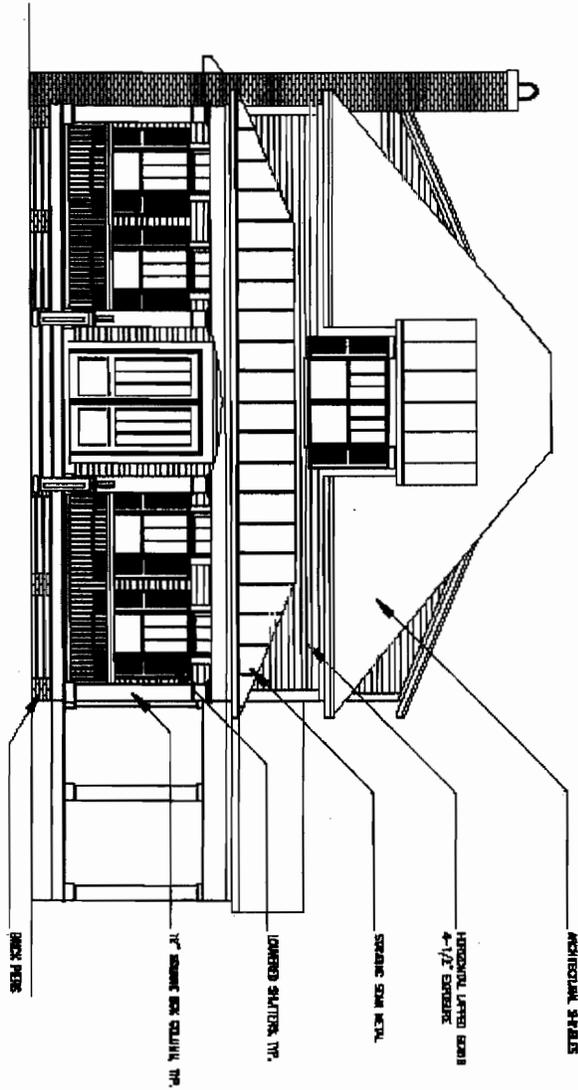
Colleton Crossing will be a thoughtfully designed neighborhood with individual houses designed to complement the others. Variations on the historic bungalow, four-square, two-story "I" house and Charleston Row house will respect the historic precedents of massing, proportions, materials and detailing, while responding to today's market demands for floor plan design.

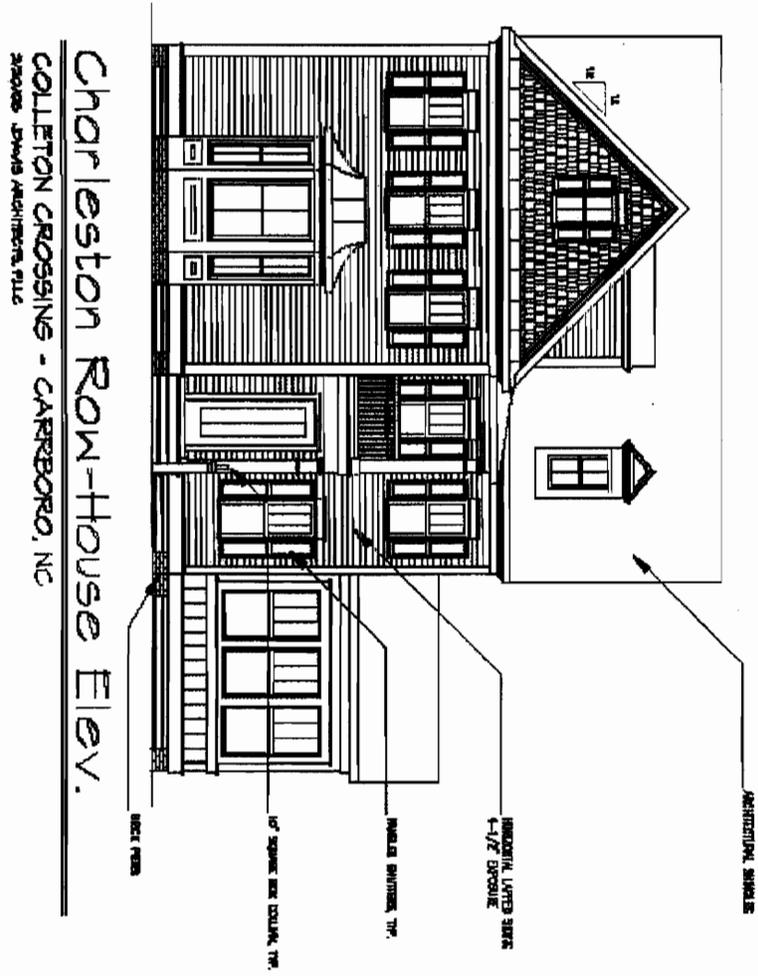
For more details on the proposed house designs, please see the attached elevations.



Bungalow Elevation  
COLLETON CROSSING - CARBORO, NC  
202008 - DAVIS ARCHITECTS, PLLC

Four-Square Elevation  
COLLETON CROSSING - CARBORO, NC  
2/20/2008 JDAV'S ARCHITECTURAL, PLLC

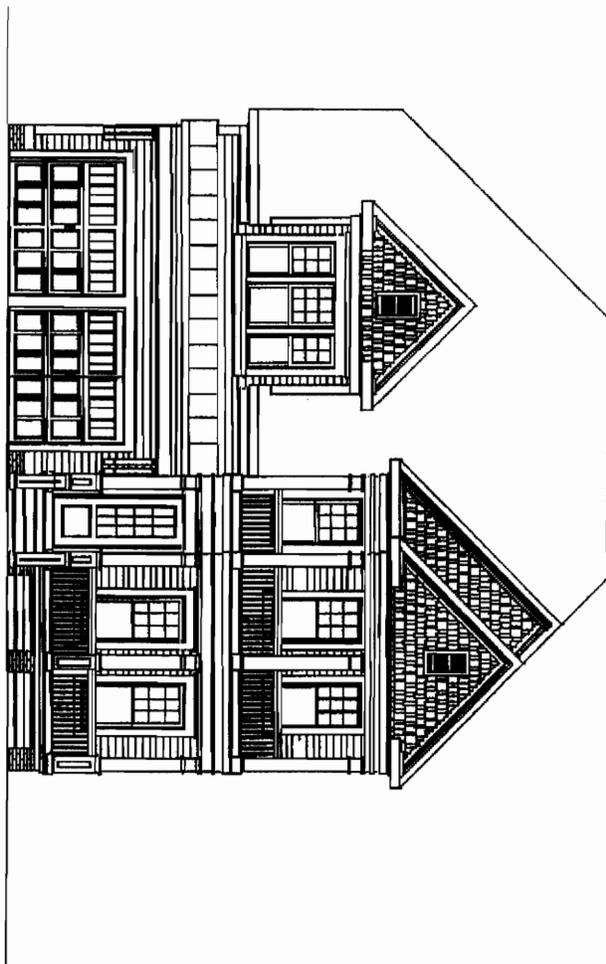






Two-Story Elevation

COLLETON CROSSING - CARBORO, NC  
202008 J.DAVIS ARCHITECTS, PLLC



Two-Story Edge-Lot Elevation  
COLLETON CROSSINGS - CARBORO, NC  
2/20/09 JAWYB ARCHITECTS, PLLC

Town of Carrboro  
Planning Department



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**MEMORANDUM**

Date: May 03, 2007  
To: MBI Development, LLC  
From: Environmental Advisory Board (EAB)  
Through: D. Will Autry, Environmental Planner  
Copy: Marty Roupe, Development Review Administrator  
Jeff Kleaveland, Planner/ Zoning Development Specialist  
Subject: Concept Plan Review Comments from 04/05/07 Joint Review

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On April 5, 2007, you presented the Colleton Crossing Subdivision for joint review at Town Hall. Based on your presentation, the EAB recommends the following:

1. This area cannot be developed to its maximum density with large, single family homes without permanently damaging or destroying the numerous environmental features on site. Either reduce the lot density or investigate alternate forms of housing such as co-housing which may allow your desired density but with a much smaller physical and environmental footprint.

*(The project development has been designed to conserve the environmental features of the creek and associated buffer, as well as additional buffer beyond that required for natural constraints. It also has conserved large tracts of open space and specimen trees. A total of 64% of the site is reserved in open space, and the density of the development has been placed in the most feasible area of the site.)*

2. Reduce the built upon footprint to keep all disturbances from home lots **and** associated stormwater management practices outside of the following primary conservation areas from the Town of Carrboro's natural constraints maps: streams and floodplains, required stream buffers (marked Carrboro and primary conservation in Colleton plans), steep slopes, and hardwoods. In particular, allow for a 100ft buffer between new home lots and the primary conservation areas associated with the stream and hardwoods to the north and the stream, steep slopes and hardwoods to the west, per Article IV., Section 15-50 (f) of the Land Use Ordinances (LUOs). This will allow room for stormwater management practices without disturbances to these primary conservation areas.

*(The site development layout was designed to preserve the natural constraints as required by the Ordinance. The lots are entirely out of the constraints areas, and the stormwater devices have also been designed to remain out of the stream buffers where possible.)*

3. Thoroughly investigate how existing low-lying septic fields to the north may be impacted by hydrologic changes due to construction and development. Again, if additional stormwater management practices are necessary between the planned home lots and the northern tributary, plan to leave space for them outside of the required stream buffers.

*(The hydrology of this area was investigated, and no impact will occur as a result of the proposed construction and development. Stormwater bio-retention areas are proposed for the new lots at this location, but are outside of the stream buffers.)*

4. Continue to pursue a road connection through the existing private easement on the east portion of the property. Consider trying to purchase one of the adjoining homes. This connection has the least environmental impact based on reduced land disturbance, eased congestion and distance traveled (i.e. reduced carbon emissions) to exit the development. If this fails, pursue a road connection to the south through the northeast portion of the UNC land to Claymore Road. This is the next best connection environmentally based on the types of land disturbed and distance traveled to exit the development. Cross the Bolin Creek tributary and connect to Reynard Road only as a last resort.

*(A second access through the easement on the east side of the property was thoroughly investigated and pursued, but resulted in not being viable. Legal restrictions on the easement prohibited the use as a road right-of-way. There were also constraints from NCDOT that made the connection with Tally-Ho at this location non-conforming to required standards. However, the location of the easement will be dedicated as an emergency access for fire and rescue vehicles. In an effort to improve the access and circulation of the road system for the development, the owner and engineer worked with the Town staff to develop a connection to the south through the UNC Commons project, linking to the Highlands Subdivision and Claymore road. This was accomplished, and the design of the two projects creates a link for a second access and traffic circulation to the south and east.)*

5. If you do end up crossing the Bolin Creek tributary to connect to Reynard Road, follow the design recommendations outlined in "Stream Restoration: A Natural Channel Design Handbook", Section 8.3 Stream Crossings, pgs 49-50. (This is put out by the North Carolina Stream Restoration Institute and can be downloaded in pdf format at the following website: [http://www.bae.ncsu.edu/programs/extension/wgg/sri/stream\\_rest\\_guidebook/sr\\_guidebook.pdf](http://www.bae.ncsu.edu/programs/extension/wgg/sri/stream_rest_guidebook/sr_guidebook.pdf).) If feasible, use a bridge or arch culvert to minimize floodplain restrictions. If a culvert must be used, use floodplain culverts.

*(A box culvert design is presently proposed for the crossing of the creek. A flood study is being conducted as part of this design, and alternatives in-lieu of the culvert will be considered during this process.)*

6. To minimize the fragmentation of open space and the negative environmental impacts of bringing sewer and other infrastructure across the tributary to Bolin Creek, remove lot 39 (unless that lot will be served with on-site wastewater treatment). Group all lots and associated infrastructure east of the tributary to Bolin Creek.

*(There will be no environmental impacts to bring utilities across the creek, as they will be located in fill/earth material in conjunction with the culvert design. On-site wastewater treatment for this lot would be more of an environmental concern, as has possibly been the case with some of the surrounding septic systems located in low lying drainage areas. To have this lot fully serviced by utilities is the smartest environmental choice.)*

7. Work with the NC Green Building Initiative and/or hire a LEED certified professional to use as many green building techniques as possible in your plans (for example: low impact design and development, resource efficiency, energy efficiency, water conservation, indoor environmental quality, homeowner education, etc.).

*(The developer of the project currently builds homes with the utmost regard to energy conservation and is implementing "green" building standards in that construction. His construction also meets the "Energy Star" standards and he is always looking for the newest technology in these areas. Rainwater harvesting for re-use is another example of the technology that has been used, and is proposed for this development as well.)*

8. Provide at least 50 feet of buffer in its natural, forested state between lots to the east in the existing neighborhood and any new home lots being built. To ensure that buffers remain in their natural state, designate them as jointly owned open space rather than including them in privately owned lots.

*(The lots that adjoin the properties to the east are larger and will allow for the preservation of more buffer area. Currently a 10 ft. preserved buffer is proposed for this location. In conjunction with addressing other concerns of the final design, this buffer will be increased if possible. There are no recreational features proposed that will adjoin existing owners. The proposed playfield adjoins the Duke Energy easement area, and all the lots in the development adjoin open space, with the exception of the lots to the east. We will continue to work to do all that is possible to lessen the impact to the neighbors at that location.)*

9. Plan for and show greenway connections on all future plans. Town of Carrboro Plans show a greenway along the length of the main Bolin Creek tributary that eventually connects to the Bolin Creek Greenway.

*(We have been working with the Town staff and advisory boards on the location and design of a proposed Geenway trail and/or easement through the project property.)*

Thank you for your cooperation.

---

D. Will Autry for  
Tom Cors, Chair

Date

**CARRBORO TRANSPORTATION  
ADVISORY BOARD  
MINUTES**

April 5, 2007

**BOARD MEMBERS PRESENT**

David Deming, Vice-Chair  
Heidi Perry, Chair  
John O'Leary  
Charlie Hileman  
Daniel Amoni  
Audrey De Nazelle

**STAFF PRESENT**

Kendal Brown

**ALDERMEN PRESENT**

**NOTE:** Prior to the TAB meeting there was a joint advisory board meeting during which the following projects were discussed: Melville AIS and Won Buddhism Temple – required concept plan.

**I. Call to Order**

Heidi Perry called the TAB meeting to order at approximately 8:45 p.m.

**II. Transmittal of Materials**

Members requested that select full-size plan sheets be sent via USPS, rather than reduced plans sent via email, as they were too difficult to read. Staff agreed to send paper plans to members henceforth.

**II. Melville AIS (formerly Colleton)**

The applicant's representative, Mr. Tim Smith was present. Ms. De Nazelle asked if a second access was possible, for example via Claymore. Ms. Perry noted that the vicinity map needed improvement. She stated that to reduce neighborhood future opposition, it was preferable to construct second access points at the time the development is built instead of at a later date. Members observed that a second access point would save over 1½ mile travel distance. Mr. Hileman questioned the proposed density on a substandard road and observed that the proposed density and type of housing were incompatible with the existing neighborhood. Mr. Smith stated that required buffers and environmental constraints resulted in the proposed development pattern, but overall density was not very different. Members commented the proposed traffic pattern with one access point was not adequate. Mr. Smith stated the developer was still working diligently to resolve the easement issue which currently prevented the second access. Ms. Perry recommended against approval until second access was proposed. Mr. Hileman noted a second access would benefit existing neighborhoods as well. Mr. O'Leary commented on the fire safety issue associated with one access. *(A second access through the easement on the east side of the property was thoroughly investigated and pursued, but resulted in not being viable. Legal restrictions on the easement prohibited the use as a road right-of-way. There were also constraints from NCDOT that made the connection with Tally-Ho at this location non-conforming to required standards. However, the location of the easement will be dedicated as an emergency access for fire and rescue vehicles. In an effort to*

*improve the access and circulation of the road system for the development, the owner and engineer worked with the Town staff to develop a connection to the south through the UNC Commons project, linking to the Highlands Subdivision and Claymore road. This was accomplished, and the design of the two projects creates a link for a second access and traffic circulation to the south and east.)*

**Preliminary recommendation:** The proposed plan should not be approved until/unless a second vehicular access is provided.

**Vote:** Passed unanimously 6-0 (Amoni, de Nazelle, Deming, Hileman, O'Leary, Perry).

Mr. Amoni asked about common areas. Mr. Smith showed the playfield and tot lot on the plans. Mr. Amoni observed that more could be done to promote community, such as provision of a common house or community garden, which would facilitate carpooling and less commuting for socializing. Mr. O'Leary felt the tot lot and playfield should be centrally located on the site rather than on the periphery. Mr. Hileman lamented that this plan represented maximum density with no sense of community. Mr. O'Leary found the traffic pattern troubling and cautioned against setting bad precedent. Mr. Smith agreed to convey the TAB's concerns about lack of connectivity. *(The tot-lot has been moved to be more accessible and within closer walking distance of the sidewalk system. The road system and connectivity has been improved with the design of a connection through the property to the south of the project.)*

### III. Won Buddhism Temple – Required Concept Plan

No representative was present. Mr. Hileman recommended reduction of parking space number from 33 to 29 because of traffic volume and speed on NC Highway 86 at this location. Ms. De Nazelle agreed that the plan should force different traffic behaviors, such as carpooling. Members discussed additional benefits of having fewer parking spaces and discussed the driveway surface type.

**Recommendation:** That the developer provide no more parking spaces than typically required by the Town for this use, and preferably fewer parking spaces. In addition, add covered bike rack(s) near the building entrance.

**VOTE:** Passed unanimously (Deming, Amoni, de Nazelle, Hileman, O'Leary, Perry).

### IV. Discussion

Members discussed other development projects and pros/cons of the current review/approval process. Mr. O'Leary wished that a qualitative approach would be taken by area developers in the design of projects, noting that new regulations could force it.

### V. NSAPIRC Public Forum

Observing that Mr. O'Leary's previous comment would be especially pertinent in such a forum, Ms. Perry encouraged members to attend the NSAPIRC public forum on April 21, 7:45 a.m. to noon, at the McDougle School cafeteria.

**Colleton Crossing – Draft Comments June 14, 2007final Mark-up**

The Planning Board wishes to convey to the developer our serious concerns about two very significant challenges property presents for development:

- Accessibility – the only legal access currently available is a long way in (1.1 miles) from Rogers Rd on a narrow road (Tally Ho Trail) through the Fox Meadow neighborhood;
- Environmental sensitivity – a considerable portion of the site is flood plain and stream buffer; accessing the site via Reynard Road off of Tally Ho Trail involves bridging a creek.

The Planning Board proposes the following approaches to mitigate what otherwise will be undesirable outcomes from intense residential development on this property:

**I. To mitigate access issues** we recommend the developers implement all of the following in order to reduce the length of the drive into the site, to reduce traffic through the existing neighborhood, and to avoid having to bridge the creek and cross an environmentally sensitive area:

- 1) Phase development and construction of the proposed 39 units thus:

A single route in will serve no more than 15 units

A second way in will serve up to an additional 24 units.

*(Development can be phased in conjunction with the construction of the road connection to the south. This will need to be coordinated with the construction of the UNC Commons project.)*

- 2) Seek alternatives to using Reynard Rd; the preferable outcome would be to avoid using Reynard altogether.

*(Alternatives have been investigated, and a connection and second access has been designed to connect through the property to the south. This will improve the flow of traffic through the property and also improve accessibility for the other existing neighborhoods. The connection of Reynard Road is a key factor in the overall street connectivity for the adjoining neighborhoods and for the area as a whole. In a master plan scheme, this will create the needed connectivity for a good road system.)*

- 3) If the Reynard Road access must be used, improve Tallyho Trail to address safety concerns and meet the Land Use Ordinance for Collector Roads.

*(With the connection of Reynard Road, the developer will survey the existing conditions of Tally-Ho Trail, and any damage to the road as a result of construction traffic shall*

**PLANNING BOARD**

*Colleton Crossing – final Comments*

be repaired to new conditions. Should that occur, the work done at those locations shall conform to Collector Road standards if possible.)

- 4) In addition, if the Reynard Rd. access must be used, consider using a bottomless culvert “pseudo bridge” as a **permanent** solution to crossing the creek.

*(A box culvert design is presently proposed for the crossing of the creek. A flood study is being conducted as part of this design, and alternatives in-lieu of the culvert will be considered during this process.)*

- 5) Utilize a development form that will offer significant reductions of trip generation by the project, including building smaller houses, building some portion of the homes with fewer bedrooms, and/or creating a neighborhood patterned on the “Co-Housing” form or a senior citizen oriented project. See II, #1 below for more details.

*(The project is consistent with the surrounding neighborhoods and within the guidelines of the Development Ordinance. An affordable component has also been included in the design, with six affordable dwellings designed for integration into the neighborhood.)*

- 6) Provide a paved sidewalk/trail/greenway route to an Arterial Road.

*(We have been working with the Town staff and advisory boards on the location and design of a proposed Greenway trail and/or easement through the project property.)*

- 7) Developer improve existing private access easement to all-weather surface for emergency vehicle access.

*(The existing private easement will be dedicated as an emergency access. The material of the easement shall be designed to support the weight of emergency vehicles. Because the easement will also be used for an OWASA waterline, and as a possible Greenway connector, a paved surface may not be the best solution for the multiple uses. We are also trying to minimize the amount of impervious surfaces created with the project.)*

**II. To mitigate environmental sensitivity issues, we recommend the developers implement the following:**

- 1) Utilize strategies to significantly reduce the development footprint, including
  - a. Minimal lot sizes

**PLANNING BOARD**  
*Colleton Crossing – final Comments*

- b. Mostly townhouse or multi-family condominium structures;
- c. Smaller houses on smaller floor plates – for example 1000 sq ft maximum plus single-car garage;
- d. Covenants must perpetually restrict building footprint to, say, 1500 sq ft, and total building area to, say, 3000 sq ft.;
- e. Using Arcadia and Pacifica “co-housing” as models cluster the homes as densely as possible in order to leave maximum undisturbed natural area;
- f. Consider developing a senior citizen “co-housing” project.

These strategies will help to minimize the amount of land that has to be cleared, reduce impervious surface, maximize conservation area and enhance energy efficiency. It will also help provide larger buffers to existing properties.

*(The proposed development footprint was derived as a result of many factors, including working with the Town staff to stay within the guidelines of the Ordinance. Also, the topography and environmental constraints of the property have led to concentrating the density on the east side of the creek, and the preservation of over 64% of open space. Also, the size of the lots, (7,000 sf) is in relative consistency with the surrounding neighborhoods, and the bigger lots that are proposed are adjoining the existing properties which will allow for larger buffers.)*

- 2) Utilize the following strategies to increase buffers between new and existing development:
  - a. Increase buffering for homes existing along the east side of the property by providing a minimum 50' planted Type A screen.
  - b. Ensure existing owners are screened from any recreational features as well.
  - c. Ideally, this buffer would be part of the common open space of the development (rather than private back yards). Reference the Carrboro Site Planning Process regarding conservation buffers.

*(As mentioned above, the larger lots that adjoin the properties to the east will allow for the preservation of more buffer area. Currently a 10 ft. preserved buffer is proposed for this location. In conjunction with addressing other concerns of the final design, this buffer will be increased if possible. There are no recreational features proposed that will adjoin existing owners. The proposed playfield adjoins the Duke Energy easement area, and all the lots in the development*

**PLANNING BOARD**

*Colleton Crossing – final Comments*

adjoin open space, with the exception of the lots to the east. We will continue to work to do all that is possible to lessen the impact to the neighbors at that location.)

- 3) Building smaller homes and homes with fewer bedrooms will help to reduce the “carbon footprint” of this development. We strongly recommend the developer utilize other strategies to increase the energy efficiency of the homes, particularly
  - a. solar orientation and window sizing & placement for passive heating & “daylighting;”
  - b. proper installation of maximal insulation;
  - c. a tight building envelope;
  - d. properly sized HVAC equipment and ductwork sealing;
  - e. highest efficiency plumbing & appliances;
  - f. install “dual” plumbing system to enable “greywater” re-use for flushing toilets and landscape watering.

*(The developer of the project currently builds homes with the utmost regard to energy conservation and is implementing “green” building standards. His construction also meets the “Energy Star” standards and he is always looking for the newest technology in these areas. Rainwater harvesting for re-use is another example of the technology that has been used, and is proposed for this development as well.)*

-end-

September 7, 2008

Phil Post and Associates  
401 Providence Road, Suite 200  
Chapel Hill, NC 27514

Dear Mr. Post,

My family lives at 1315 Tallyho Trail in the Fox Meadow subdivision of Carrboro. Our property, Lot #33, is adjacent to the proposed Colleton Crossing development (the former Cotton-Walker tract). It is bisected by a tributary of Bolin Creek, and lies both upstream and downhill from the proposed development.

At the public information meeting for Colleton Crossing in March of 2007, I expressed concerns about the impact that this development might have on the storm water runoff problem that exists on our property, and along the property line we share with Colleton Crossing. At the Joint Advisory Board meeting in April 2007, several of my neighbors and I made a presentation intended to make the developer and the town aware of these and other concerns pertaining to Colleton Crossing. We requested that the developer "thoroughly investigate the drainage issues" pertaining to this property. Our concerns were echoed by a memo from the Carrboro Environmental Advisory Board to the developer dated May 03, 2007.

The Fox Meadow subdivision was developed in the 1980s. When Tallyho Trail was built, several streams that drain into Bolin Creek were redirected into culverts which flow under the roadway. Some driveways in the subdivision cross the streams, and culverts provide drainage here as well.

Over time, adjacent properties have been developed and impervious surfaces have increased. Now, heavy rains can create runoff which the culverts cannot handle; the roadways act as dams, and the natural drainage becomes flooded behind them. When the rainfall is heavy enough, or when it lasts long enough, the water can rise behind the "dam" until it overflows. When this happens, a torrent of water is released onto the properties downstream.

I have attached a file containing photos that were taken Saturday, September 6. The flooding shown here was the result of very heavy rainfall of relatively short duration (for tropical systems). Had the system been moving more slowly, the impact could have been much more severe.

The Colleton plan being considered for a Conditional Use Permit locates home sites only 50 feet from primary conservation areas such as flood plains. It proposes to cross the tributary of Bolin Creek with a temporary culvert system, then to dig it all up and build a bridge. It locates its sole storm water runoff pond on the southwest side of the development, over the hill and downstream from the problems depicted in the attached photos. No such control is planned on our (northwest) side.

The Carrboro Land Use Ordinance states that house sites should be located “not closer than 100 feet from primary conservation areas” (15-50 f 2). It further states that streets avoid adverse impacts on primary and secondary conservation areas (15-50 f 3). It “protects all floodplains and steep slopes from clearing, grading, filling or construction” (15-50 g 1). And it specifies that development “will not injure the value of abutting property” (15-59 a 2).

To date, no one representing the developer has asked me to elaborate on the concerns that I first voiced over a year ago.

The flooding depicted here resulted from runoff that was not enhanced by the clearing of the Colleton tract. It was not exacerbated by a downstream culvert impeding flow. I ask that the developer take these problems seriously, and that the Town of Carrboro help insure that the development of Colleton Crossing does not make them worse.

Sincerely,

(signed)

Wayne Hodges

Connector Roads to Carolina Commons and Colleton Crossing  
From: Kay Hengeveld [hengevel@email.unc.edu]  
Sent: Friday, August 17, 2007 9:41 AM  
To: brounsj@mindspring.com; Roy M. Williford; Patricia J. McGuire;  
Mark\_Chilton@hotmail.com; jacquie@jacquiegist.com; Alex Zaffron; John  
Herrera (Forward to External); Randee Haven-O'Donnell; dan-coleman@nc.r;  
Martin Roupe; Jeff Kleaveland; Adena Messinger  
Cc: dutchh@mindspring.com  
Subject: Connector Roads to Carolina Commons and Colleton Crossing

Hello to you all,

Hope you are surviving both the heat and drought of this summer.

We are writing to you as a new residents of the Town of Carrboro through annexation, my husband and I, as residents of Fox Meadow, feel very strongly that there should be two (2) connector roads to Carolina Commons those being Claymore in the Highlands and Reynard in Fox Meadow.

It is our understanding that the Carrboro Land Use Ordinances require an essential second access point and to Colleton Crossing, Claymore is it.

We are sympathetic to the points made by the residents of the Highlands at the Joint Advisory Board (JAB) meeting on August 2, as they apply verbatim to our neighborhood. If Colleton Crossing is built, then both neighborhoods should share the traffic burden.

Thank you for your consideration of our concern.

If you reply, please do so to the email address: dutchh@mindspring.com

Sincerely,  
Kay and F. W. "Dutch Hengeveld  
1515 Tally Ho Trail  
Chapel Hill, NC 27516  
(919) 929-8138

**From:** Homer Foil [homerf@gmail.com]

**Sent:** Friday, August 17, 2007 2:51 PM

**To:** Jeff Kleaveland

**Subject:** My support of a connector road from Carolina Commons to Colleton Crossing

Mr. Kleaveland,

As a resident since 1992 of the Fox Meadow neighborhood, I want to express my strong support for planning board to approve the addition of a connector road from Carolina Commons to Colleton Crossing.

It is my opinion and that of many of the residents in Fox Meadow that without this second route of access (in addition to the Tallyho Trail - Reynard Rd. route), the safety of both vehicles and in particular pedestrians on Tallyho Trail would be highly jeopardized considering the width and curving nature of this road. Even with widening and addition of sidewalks (an unlikely addition the town would undertake), the volume of traffic for this route if it were the only access road to the Colleton property would be burdensome on residents' personal safety and could create a crisis if fire and emergency vehicles were unable to gain quick access to the inner reaches of Fox Meadow and Colleton as well.

Thanks for your attention and I'll be following the town planning board's discussions and decisions in the near future.

Sincerely

Homer Foil

8104 N Hound Ct

**From:** Calvert, Cathy [CCalvert@unch.unc.edu]  
**Sent:** Tuesday, August 14, 2007 3:23 PM  
**To:** Jeff Kleaveland  
**Subject:** Support for the Connector Road- Claymore to Colleton Crossing

**Importance:** High

Dear Jeff Kleaveland,

Please consider and grant this request to include a road connecting Claymore Road in The Highlands and Colleton Crossing which was formerly the Cotton/Walker Property in the UNC development of the tract south of Colleton Crossing. It is my understanding that the Carrboro Land Use Ordinances support this connecting road. This road through Claymore would also provide an essential second access point to Colleton Crossing. Though I am concerned about the environmental impact of the Colleton Crossing Development on many fronts, this road connection is a very big concern.

I understand that the Colleton Crossing Development is already in the approval process. I am also aware that the plan for Carolina Commons was revised at the request of the town planning staff to include a road connecting Claymore Road and the Colleton Crossing. Please support this connection. Without this Claymore extension through Carolina Commons all of the Colleton traffic would have one way in and one way out through the entire length of Fox Meadow. Presently we have trouble with the existing volume of traffic into and out of Fox Meadow because there is only one way in and out. Having been on this road, you are aware how narrow, winding and potentially dangerous it is. I am a frequent walker in the neighborhood and do not think it is in the best interests of the residents of Fox Meadow to increase the traffic by 10 cars not to mention a development such as Colleton Crossing.

We in Fox Meadow do understand the reasons the Highlands residents do not want this connector road, but both Fox Meadow and The Highlands should share the traffic burden. The community we belong to is called Carrboro, not The Highlands.

I am sending this email to you as a Carrboro resident from 1215 Tallyho Trail and also at the request of my elderly mother and father -in-law who live on 8205 Huntsman Court, Syd & Herb Kaplan.

Thank you, from me and my family.

Catherine Calvert  
1215 Tallyho Trail  
home: 933-2026  
work: 843-0278

To Sarah Williamson:

ATTACHMENT L-6

I am requesting that you distribute a copy of my comments to the Planning Board, Transportation Board,

and Environmental Advisory Board members, as well as in the public record, regarding using Claymore Road as a vehicle connection to accommodate the Colleton Crossing development.

My comments are as follows:

- (1) Claymore is not a major thoroughfare now; it is a small, narrow, neighborhood street that is filled already with children, dogs, and adults, not to mention the traffic from the homes in the Homestead development. How could it be considered appropriate to accommodate even MORE traffic?
- (2) A speed of anything over 15 miles an hour endangers the lives of children and adults who frequently walk the road and use it to attend schools. It is already hazardous now whenever that speed limit is exceeded; with even more traffic than it currently handles, which I am CERTAIN would not follow a 15-mile-an-hour speed limit, the probability of death by vehicle skyrockets.
- (3) The noise level from more traffic in the mornings and afternoons would increase substantially if more traffic is allowed.
- (4) I have NEVER seen a Carrboro police car in the Homestead neighborhood; who will patrol this road if it became a MAJOR thoroughfare?
- (5) There are no sidewalks on Claymore; where are people supposed to walk?
- (6) Planning a major development without forethought of a logical and safe plan of where traffic would be routed was extremely short-sighted and it is ridiculous that this issue is coming to the forefront now rather than during it's first conception.
- (7) I shudder at the number of traffic accidents this idea would create, and may I add with great fear & emotion, the number of injuries and deaths this idea would permit.

Please have the aforementioned members seriously ponder what I have written here. Thank you.

Best regards,  
Scott Justus, MT(ASCP)  
GlaxoSmithKline  
Sanders Center, Room 17.1168E  
RTP, N.C. 27709  
(919)483-5289: phone  
(919)313-0151: fax  
scott.s.justus@gsk.com

May 1, 2007

Planning Board Members,

We are residents of The Highlands and we are opposed to a road connecting the proposed Colleton Crossing development to The Highlands neighborhood. The additional traffic on Claymore road from the new development and other connected neighborhoods would be a significant detractor to the quality of life in our community. Our community roads are narrow without shoulders and sidewalks and are not adequate for additional vehicle traffic that a connection to Colleton Crossing would impose. In addition, we are fortunate that many people, including children, take advantage of our community by walking, running and biking on our streets. The additional car traffic would be a safety hazard as well as significantly take away from our neighborhood. We should be encouraging pedestrian traffic and not car traffic.

Please also take into consideration that our neighborhood suffers from the landfill smell, and will be subject to traffic from the poorly sited waste transfer station and multiple development projects in the works such as Homestead Twin Towns. Therefore it would be nice if we could keep our quiet streets from becoming a high traffic, dangerous thoroughfare which would further impact our quality of life. If there is a concern about intense residential development on this property and too much traffic for the single legal access currently available, then the logical thing would be to significantly limit the number of houses that are built. This would limit the damage to already established neighboring communities such as The Highlands. A larger lot size, similar to the adjacent communities, is appropriate for this area. Thank you for considering our comments.

Michael Adler  
Deborah Adler

Lydia,

As you know, several of us from Fox Meadow spoke at the Joint Advisory Board meeting on April 5 about the Colleton Crossings concept plan. Thanks for letting us know the Planning Board would like clarification about our request to limit the number of lots planned for the Colleton Crossings development, and about the need for a second connection into Colleton Crossings at the southeast corner of the property. Please forward this response to the Planning Board. This email is also copied to the Chairs of the Environmental Advisory Board and the Transportation Advisory Board.

We feel that the constraints on the property and the pertinent Land Use Ordinances (LUOs) should allow no more than fifteen lots in the development, and require a second connection directly into the new development. If the Town feels more than fifteen lots are justified, then we ask that construction on any additional lots be delayed until after a second connection into Colleton Crossings exists... The connectivity issues inextricably link this plan with the plan for the adjacent UNC development, as reflected in some of our comments.

We arrived at the figure of fifteen lots in two ways.

- First, we considered the space on the property required for environmental setbacks, storm water management, and buffers. LUO section 15-50 calls for house sites to be located not closer than 100 feet from primary conservation areas. As there are stream buffers, moderate slopes, and hardwood conservation areas over at least half of the property, this provision alone, strictly enforced, would leave very little buildable area. A reasonable buffer of 50 feet between the new development and existing residences will remove more of the buildable area.

One look at the elevation lines on the site map shows that rainwater on the eastern side of the development will flow into Fox Meadow lots, so added storm water controls may be needed in that area. In addition, the upcoming Jordan Lake rules may require additional storm water controls to accomplish mandated nitrogen and phosphorus reduction.

These physical constraints would leave room not for a loop, but for a single north-south road through Colleton Crossings, with room for about fifteen lots. As an alternative, a significantly smaller building footprint could be achieved by increasing density through co-housing or other means, though the higher number of dwelling units would worsen traffic problems, as described below.

- Second, we observed that both the NCDOT Minimum Construction Standards and the Carrboro Streets and Sidewalks ordinances highlight the mismatch between service demand and carrying capacity on Tallyho Trail and Reynard Road.

According to the NCDOT Minimum Construction Standards, Tallyho Trail and Reynard Road have the dimensions of "local residential" roads, with 18' pavement width. "Local residential" roads are intended to have no "collector" characteristics and to be less than 2500 feet long. Tallyho Trail is more than twice that length, and with the added traffic from Colleton Crossing, it will serve a collecting function between local residential roads and the thoroughfare system. These service demands would require that Tallyho Trail be constructed as a "residential collector" road, with wider pavement and shoulders.

Although Tallyho Trail and Reynard Road have not yet been annexed by Carrboro, their pavement width dimensions match what the town classifies as "minor" roads, intended to serve no more than nine dwelling units. Reynard Road already serves thirty-six homes and Tallyho Trail already serves one hundred forty homes in Fox Meadow, Highlands North, and Highlands Meadows. The planned homes in Colleton Crossings would make it seventy six and one hundred eighty, respectively. Until Carrboro annexes the roads in 2012 or later, the Town cannot help us construct traffic calming measures.

At the time that these roads were built, OWASA services were not available and not planned for the area. Even considering the less generous stream buffer and hardwood conservation area regulations in force at the time, the buildable land area could have supported no more than twelve to fifteen one-acre lots. The additional traffic from fifteen homes in Colleton Crossings would only worsen the disparity between traffic demand and road carrying capacity, and is the maximum that should be allowed.

We understand that there was some discussion of a future Tallyho Extension west to Lake Hogan Farms, that might serve as a second connection for Colleton Crossings. We believe, for a number of reasons, that such a connection should not be considered a viable alternative to a connection at the southeast corner of Colleton to Claymore Road.

- A Tallyho Trail extension would not satisfy the Carrboro connector roads policies as specified in LUO sections 15-214 and 15-217, which state that "streets shall connect with all surrounding streets to permit safe, convenient movement of traffic between residential neighborhoods and to facilitate access to neighborhoods by emergency and other service vehicles.", and "To the extent practicable, all streets shall be interconnected." Only a connection at Claymore Road would satisfy these requirements.

- An extension of Tallyho Trail, north of Colleton, would not enhance access to Carrboro and Chapel Hill to the south. A connection through Claymore Road would shorten the one-way trip from Colleton to Homestead Road by a mile or more.

- A Tallyho Trail extension would still leave Reynard Road as the only access to thirty-nine Colleton residents and thirty-one Fox Meadow residents, and so would violate NC Fire Code recommendations for multiple access to subdivisions of thirty or more houses. Also, a connection through Claymore would dramatically shorten the route between Colleton and the planned fire station.

- There are no plans for development near the Tallyho stubout. UNC's development plans, however, are proceeding in parallel with those of Colleton Crossings, and so present an opportunity to coordinate the construction of a connector road.

Marty Roupe has let UNC know that they must build the connector between Colleton Crossings and Claymore Road in order to comply with Carrboro LUOs. We hope that the Planning Board and the other advisory boards will also recommend in favor of enforcement of these rules, which are especially relevant and important in this circumstance. A connection through Claymore is reasonable, efficient, fair to all the neighborhoods involved, and satisfies the State and local ordinances.

We also hope that the advisory boards will recommend reducing the number of lots to fifteen and significantly reducing the built-upon footprint, to allow space for primary conservation setbacks, reasonable buffers, and adequate storm water controls, and to minimize the increase in demand on our undersized roads.

Best Regards,

Cammie Brantley  
Wayne Brantley  
Charlie Buckner  
Brian Kuhlman  
Laura Van Sant