PRELIMINARY PLANS FOR:

LOCKWOOD VILLAGE APARTMENTS

CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

LOCKWOOD SITE DATA TABLE
NEW HANOVER COUNTY PROPERTY IDENTIFICATION NUMBERS:
PID # R07100-003-066-000
PID # R07100-003-384-000
PID # R07100-003-065-000

PROJECT NAME:LOCKWOOD VILLAGE APARTMENTS
SITE ADDRESS:4900 S. COLLEGE ROAD, WILMINGTON, NC 28412 -2202
EXISTING ZONING: R15
PROPOSED ZONING: MF-M (CONDITIONAL USE)
EXISTING USE: SINGLE FAMILY
PROPOSED USE: APARTMENTS (MULTI-FAMILY)
TOTAL EXISTING ACREAGE: ±4.44 AC
PROPOSED PROPERTY ACREAGE: ±4.44 AC
PROPOSED RIGHT OF WAY ACREAGE: 0.00 AC
PROPOSED TOTAL ACREAGE: ±4.44 AC
TOTAL PARKING REQUIRED: 115 SPACES (2/2 BDRM UNIT + 1.5/ 1 BDRM UNIT +1 OFFICE SPACE)
TOTAL PARKING PROVIDED: 117 SPACES (INCL. 6 H/C SPACES)
OPEN SPACE PROVIDED: 41.9% OF TOTAL SITE (1.86 AC)
TOTAL DISTURBED AREA: ±4.44 AC

BUILDING
PROPOSED BUILDING USE: MULTI-FAMILY DEVELOPMENT
TOTAL NUMBER OF APARTMENT BUILDINGS: 5
OFFICE/ COMMUNITY BUILDING: 1
NUMBER OF 1 BEDROOM UNITS: 12
NUMBER OF 2 BEDROOM UNITS: 48
TOTAL NUMBER OF UNITS: 60
TOTAL BUILDING AREA: EXISTING = 3,210 SF, PROPOSED = 62,776 SF
BUILDING HEIGHT: EXISTING = 15 LF, PROPOSED = 34 LF

BUILDING TYPES
TYPE 1= OFFICE/ COMMUNITY BLDG
TYPE 2= 12- 2 BEDROOM UNITS
TYPE 3= 6-1 BEDROOM UNITS & 6-2 BEDROOM UNITS

DISTRIBUTION
TYPE 1= BLDG 1
TYPE 2= BLDG 2,4,6
TYPE 3= BLDG 3,5

IMPERVIOUS SURFACE
EXISTING = 0.142 AC.
PROPOSED = 2.15 AC.

SITE AMENITIES
EXTERIOR:
- (1) PLAYGROUND/ TOT LOT
- (1) COVERED PICNIC AREA W/ (3) TABLES
- (4) GRILLS
- (4) SITTING AREAS WITH BENCHES
- (1) GAZEBO
- (4) BIKE RACKS

COMMUNITY BLDG:
- DINING AREA
- WET BAR & REFRIGERATOR
- GAME/ CRAFT AREA
- READING AREA- LIBRARY
- TV & SITTING AREA
- LAUNDRY AREA
- RESIDENT COMPUTER CENTER
- SCREENED PORCH W/ ROCKING CHAIRS
- COVERED MAIL KIOSK

VICINITY MAP
(NOT TO SCALE)

GENERAL NOTES
1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
2. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
3. NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVED ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
4. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
5. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
6. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
7. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
8. CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
9. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
10. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
11. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
12. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
13. TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
14. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
15. ANY BROKEN OR MISSING SIDEWALK PANELS WILL BE REPLACED.
16. CONTACT KAREN DIXON AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
17. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
18. PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-343-3910 FOR INFORMATION.
19. IF THE CONTRACTOR DESIRES (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
20. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 919-343-3910 FOR INFORMATION.
21. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
22. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
23. CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES, AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
24. CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
25. UNDERGROUND FIRE LINE(S) MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0696.
26. NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SITE DISTANCE.
27. CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING.

INDEX TO PLANS

C-0.0	COVER SHEET
S-1.0	BOUNDARY & TOPOGRAPHIC SURVEY
C-1.0	SITE PLAN
C-2.0	UTILITY PLAN
1	SANITARY SEWER PLAN/PROFILE
C-3.0	GRADING & DRAINAGE PLAN
C-4.0	EROSION CONTROL PLAN
S-2.0	TREE LOCATION SURVEY
L-1.0	LANDSCAPE PLAN
D-1.0	DETAILS
SS-1	CFPU SEWER DETAIL
2	CFPU SEWER DETAIL
WSD-1	CFPU WATER DETAIL
2	CFPU WATER DETAIL

b. **Owner's/Developer's Certification**

"I/We hereby certify that any clearing, grading, construction or development, or all of these, will be done pursuant to this plan and that the applicable Stormwater Management conditions and requirements of the City of Wilmington, the State of North Carolina and the Federal Government and its agencies are hereby made part of this plan."

Signature:_____
Printed Name and Title:_____
Date:_____

a. **Designers Certification**

"I hereby certify that this plan has been prepared in accordance with the latest Wilmington Standards and Specifications for Storm Water Management and Chapter 20 of the Code of Ordinances of the City of Wilmington."

Signature:
Printed Name and Title:_____
Date:_____ Registration Number: _____

FOR REVIEW ONLY-
NOT FOR CONSTRUCTION

PLAN IS SUBJECT TO REVISIONS DURING THE CONSTRUCTION APPROVAL PROCESS

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NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	8/12/2013

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 19431 ENGINEERING THOMAS M. NORRIS 10-08-13

S&N SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR :
SNW, LLP
972 TRINITY ROAD
RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION #: C-1875
PROJECT ENGINEER:
STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER:
BRIAN A. JONES
PROJECT SURVEYOR:

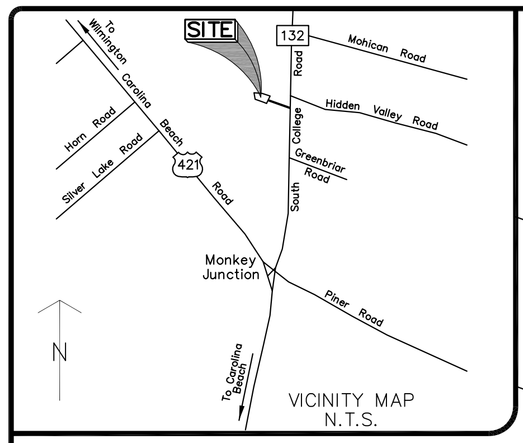
LOCKWOOD VILLAGE APTS
CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS
COVER SHEET

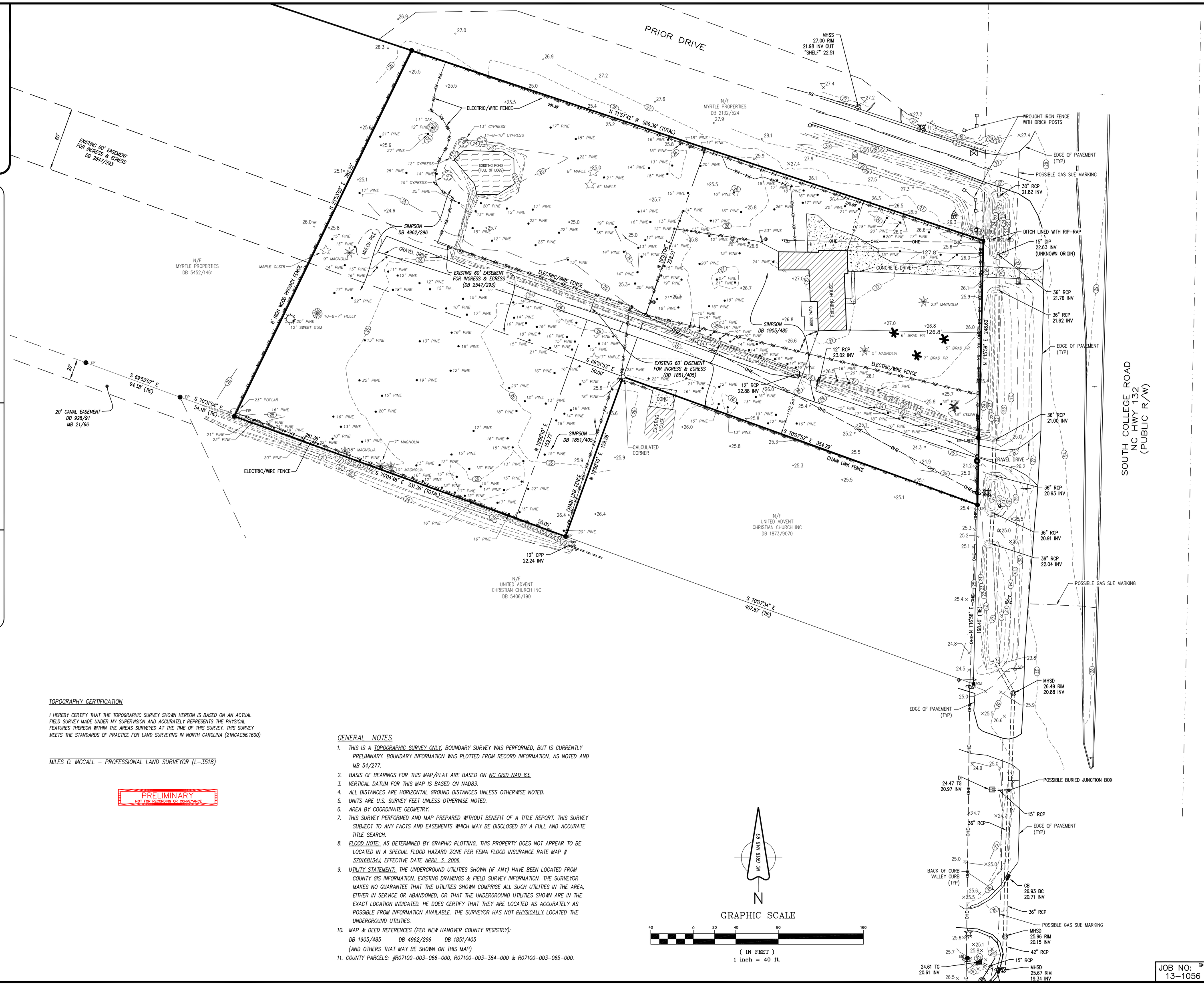
DRAWING
SHEET
C-0.0

PROJECT NUMBER
732-11

F:\701 - 750 Projects\732-11 Simpson Property (SNW)\Sketch Plan\732-11 C0000.dwg Oct 08, 2013 - 5:33pm BY: Will



VICINITY MAP
N.T.S.



SYMBOL LEGEND:

- EIP EXISTING IRON *PIPE / *ROD
- RBS REBAR SET
- ECM EXISTING CONCRETE MONUMENT
- EXISTING RIGHT-OF-WAY MONUMENT
- NCGS EXISTING NCGS MONUMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- IRRIGATION CONTROL VALVE
- WATER MANHOLE
- WELL (AS NOTED)
- AIR RELEASE VALVE
- BLOW-OFF VALVE
- STORM DRAIN MANHOLE
- CATCH BASIN
- DROP / YARD INLET
- FLARED END SECTION
- SEWER MANHOLE
- SEWER CLEAN-OUT
- UTILITY POLE
- GUY WIRE ANCHOR
- ELECTRIC PEDESTAL
- ELECTRIC METER
- LIGHT / LIGHT POLE
- ELECTRIC MANHOLE
- FIBER OPTIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE / VAULT
- GAS METER
- GAS VALVE
- GAS MARKER
- MAIL BOX
- SIGN
- BOLLARD
- UTILITY MANHOLE
- BORE HOLE LOCATION
- +34.3 GROUND SHOT ELEVATION

LINETYPE LEGEND:

- SURVEYED LINES (BOUNDARY)
- LINES NOT SURVEYED (ADJOINERS)
- RIGHT-OF-WAY
- FENCE
- STORM PIPE
- OVERHEAD ELECTRIC
- MINOR CONTOUR WITH ELEVATION
- MAJOR CONTOUR WITH ELEVATION
- RIPRAP

ABBREVIATIONS:

EIP	EXISTING IRON PIPE	MHSD	STORM DRAIN MANHOLE
EIR	EXISTING IRON ROD	N/F	NOW OR FORMERLY
RBS	REBAR SET	MB	MAP BOOK / CABINET
MON	MONUMENT	DB	DEED BOOK
NCGS	NORTH CAROLINA GEODETIC SURVEY	PG	PAGE
INV	INVERT	BLDG	BUILDING
ELEV	ELEVATION	EL.	ELEVATION
MHSS	SEWER MANHOLE	[E]	EXISTING
RCP	REINFORCED CONCRETE PIPE		

TOPOGRAPHY CERTIFICATION

I HEREBY CERTIFY THAT THE TOPOGRAPHIC SURVEY SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE PHYSICAL FEATURES THEREON WITHIN THE AREAS SURVEYED AT THE TIME OF THIS SURVEY. THIS SURVEY MEETS THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21NCAC56.1600)

MILES O. MCCALL – PROFESSIONAL LAND SURVEYOR (L-3518)

PRELIMINARY
NOT FOR RECORDING OR CONVEYANCE

GENERAL NOTES

1. THIS IS A TOPOGRAPHIC SURVEY ONLY. BOUNDARY SURVEY WAS PERFORMED, BUT IS CURRENTLY PRELIMINARY. BOUNDARY INFORMATION WAS PLOTTED FROM RECORD INFORMATION, AS NOTED AND MB 54/277.
2. BASIS OF BEARINGS FOR THIS MAP/PLAT ARE BASED ON NC GRID NAD 83.
3. VERTICAL DATUM FOR THIS MAP IS BASED ON NAD83.
4. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
6. AREA BY COORDINATE GEOMETRY.
7. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
8. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD ZONE PER FEMA FLOOD INSURANCE RATE MAP # 3701681341 EFFECTIVE DATE APRIL 3, 2006.
9. UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN (IF ANY) HAVE BEEN LOCATED FROM COUNTY GIS INFORMATION, EXISTING DRAWINGS & FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
10. MAP & DEED REFERENCES (PER NEW HANOVER COUNTY REGISTRY):
    DB 1905/485 DB 4962/296 DB 1851/405
    (AND OTHERS THAT MAY BE SHOWN ON THIS MAP)
11. COUNTY PARCELS: #R07100-003-066-000, R07100-003-384-000 & R07100-003-065-000.

JOB NO: 13-1056
©2013

Sheet No.	Designer	Scale	Drawn By	Date	Checked By	Job No.
1 of 1		1" = 40'	EJB	8/26/13	ACS	13-1056

No.	Revision	Date	By

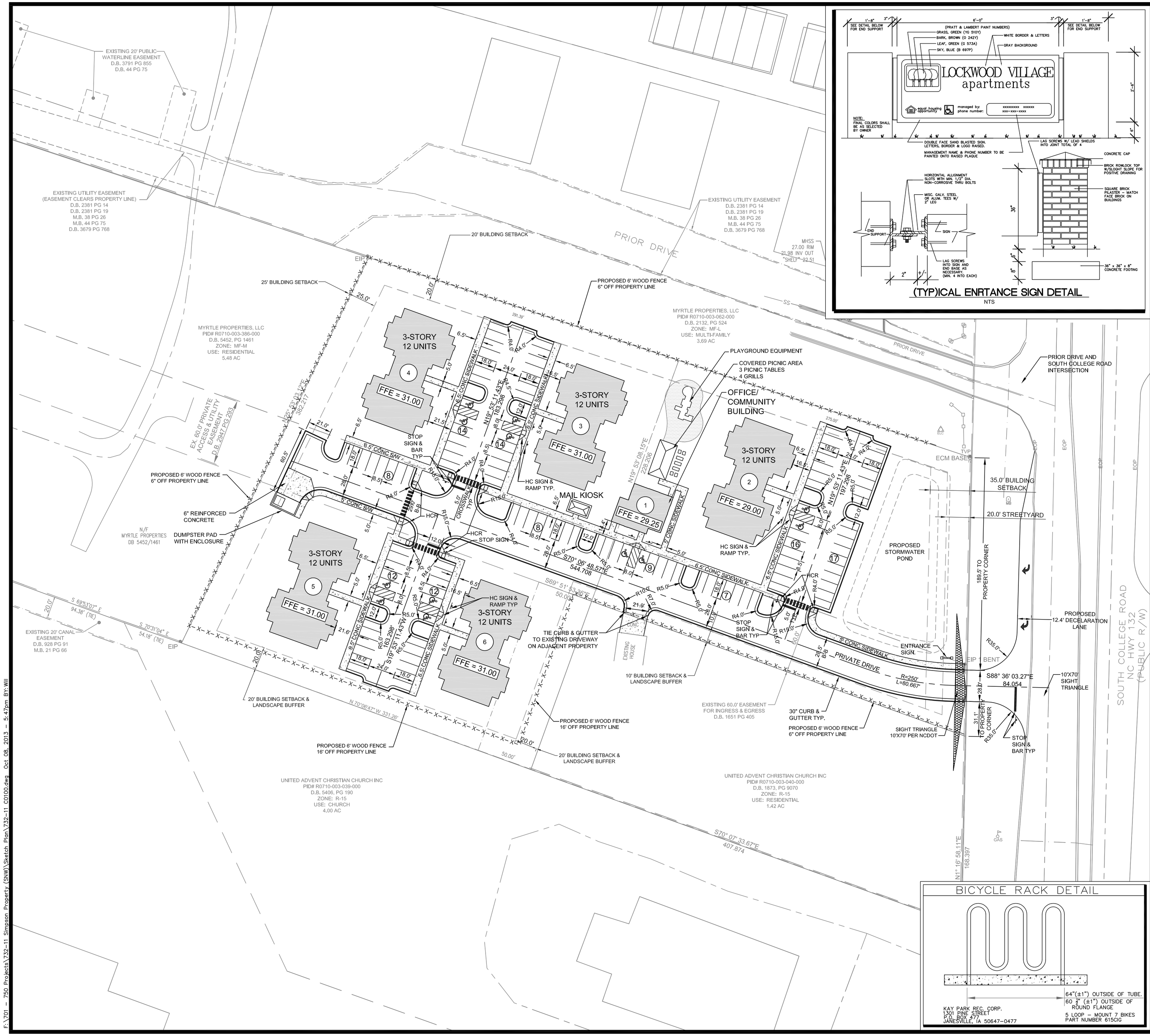
PREPARED FOR:
SNW, LLP
972 TRINITY ROAD
RALEIGH, NC 27607

TOPOGRAPHIC SURVEY

LOCKWOOD VILLAGE

Masonboro Township New Hanover County North Carolina

ATLANTIC COAST SURVEY, PLLC
P-0822
PO Box 12588 Wilmington, NC 28405
(910) 292-4889 www.atlanticcoastsurvey.com



GENERAL NOTES

1.) BOUNDARY AND TOPOGRAPHIC DATA TAKEN FROM DIGITAL FILE FROM ATLANTIC COAST SURVEY, PLLC DATED 09/05/13 TREE SURVEY PROVIDED BY ATLANTIC COAST SURVEY, PLLC DATED 01/13/12.

2.) THIS SITE DOES NOT CONTAIN 100 OR 500 YEAR FLOODPLAIN PER FIRM MAP NO. 3720313400J PANEL 3134, EFFECTIVE DATE APRIL 3, 2006, TAKEN FROM NCFLOODMAPS.COM

3.) THE SITE DOES NOT CONTAIN WETLANDS OR JURISDICTIONAL FEATURES PER SITE INVESTIGATION BY LAND MANAGEMENT GROUP IN AUGUST 2011 AND CONFERENCE BY USACE AND NCDWQ IN SEPTEMBER 2011.

4.) THE CONTRACTOR SHALL CONTACT " NORTH CAROLINA ONE CALL" AT 800-632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.

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WET BAR & REFRIGERATOR
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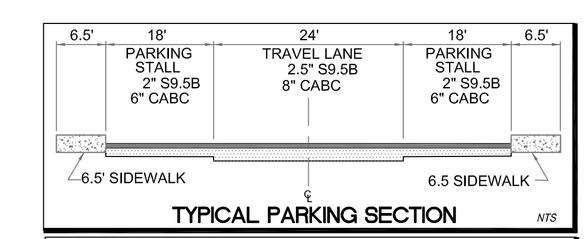

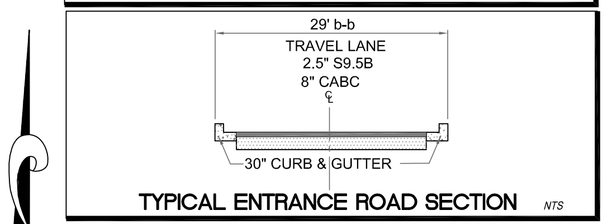

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GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

FOR REVIEW ONLY-
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PLAN IS SUBJECT TO REVISIONS DURING THE CONSTRUCTION APPROVAL PROCESS

NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	8/12/2013

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 19431 ENGINEER THOMAS L. NORRIS 10-08-13

S&N
SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR :
SNW, LLP
4700 TRINITY ROAD
RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION #: C-1875
PROJECT ENGINEER:
STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER:
RYAN M. TOWNES
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS
SITE PLAN

DRAWING
SHEET
C-1.0

PROJECT NUMBER
732-11

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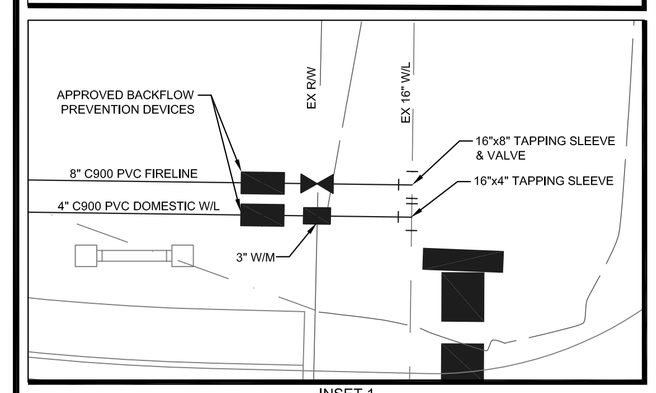
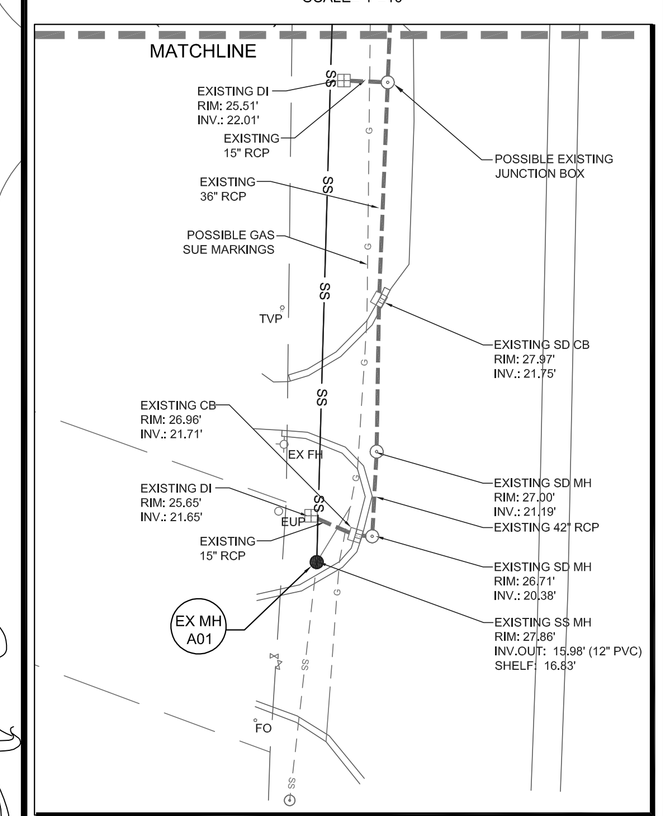


INSET 1
SCALE= 1"=10'



INSET 2
SCALE= 1"=40'

GENERAL NOTES

1.) BOUNDARY AND A PORTION OF TOPOGRAPHIC DATA TAKEN FROM DIGITAL FILE FROM ATLANTIC COAST SURVEY, PLLC DATED 01/13/12. TREE SURVEY PROVIDED BY ATLANTIC COAST SURVEY, PLLC DATED 01/13/12. A PORTION OF TOPOGRAPHIC DATA IS TAKEN FROM NEW HANOVER COUNTY GIS ON 9/01/1.

2.) THIS SITE DOES NOT CONTAIN 100 OR 500 YEAR FLOODPLAIN PER FIRM MAP NO. 3720313400J PANEL 3134, EFFECTIVE DATE APRIL 3, 2006. TAKEN FROM NCFLOODMAPS.COM

3.) THE SITE DOES NOT CONTAIN WETLANDS OR JURISDICTIONAL FEATURES PER SITE INVESTIGATION BY LAND MANAGEMENT GROUP IN AUGUST 2011 AND CONFERENCE BY USACE AND NCDWQ IN SEPTEMBER 2011.

4.) THE CONTRACTOR SHALL CONTACT " NORTH CAROLINA ONE CALL" AT 800-632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.

5.) EXISTING CONDITIONS AND UTILITIES SHOWN ARE BASED ON INFORMATION PROVIDED BY NEW HANOVER COUNTY GIS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DESCREPANCIES. CONFLICTS INVOLVING PUBLIC WATER, SANITARY SEWER, AND STORM DRAINAGE CONSTRUCTION SHALL BE RESOLVED TO THE SATISFACTION OF THE CITY OF WILMINGTON.

6.) THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING SOIL CONDITIONS ON SITE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY UNSUITABLE MATERIAL UPON FIRST CONTACT.

PROPOSED SEWER FLOW:

60 UNITS	@ 240 GPD/UNIT	=	14,400 GPD
OFFICE BUILDING @ 100 GPD		=	100 GPD
TOTAL PROPOSED FLOW:		=	14,500 GPD

PROPOSED WATER FLOW:

60 UNITS	@ 400 GPD/UNIT	=	24,000 GPD
OFFICE BUILDING @ 150 GPD		=	150 GPD
TOTAL PROPOSED FLOW:		=	24,150 GPD

UTILITY NOTES

1.) EXISTING WELL LOCATION UNKNOWN. CONTRACTOR TO LOCATE AND CAP PER PUBLIC WATER SUPPLY STANDARDS.

2.) EXISTING SEPTIC FIELD LOCATION UNKNOWN. CONTRACTOR TO LOCATE AND REMOVE.

3.) WATER AND SANITARY SEWER PROVIDED BY CAPE FEAR PUBLIC UTILITY AUTHORITY.

4.) CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE 48 HOURS PRIOR TO ANY CONSTRUCTION.

5.) ALL CONSTRUCTION & MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.

6.) ALL WATER AND SEWER LINES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NC PLUMBING CODE.

7.) SANITARY SEWER SHALL BE PRIVATE UPSTREAM OF MH A03.

NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	8/12/2013

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19431 STEPHANE L. NORRIS 9-13-13

SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR : SNN, LLP 3701 WRIGHT ROAD RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION # C-1875
PROJECT ENGINEER: STEPHANE L. NORRIS, P.E.
PROJECT CADD DESIGNER: ROBERT A. WEST
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

PRELIMINARY PLANS
UTILITY & DRAINAGE PLAN

DRAWING / SHEET
C-2.0

PROJECT NUMBER
732-11

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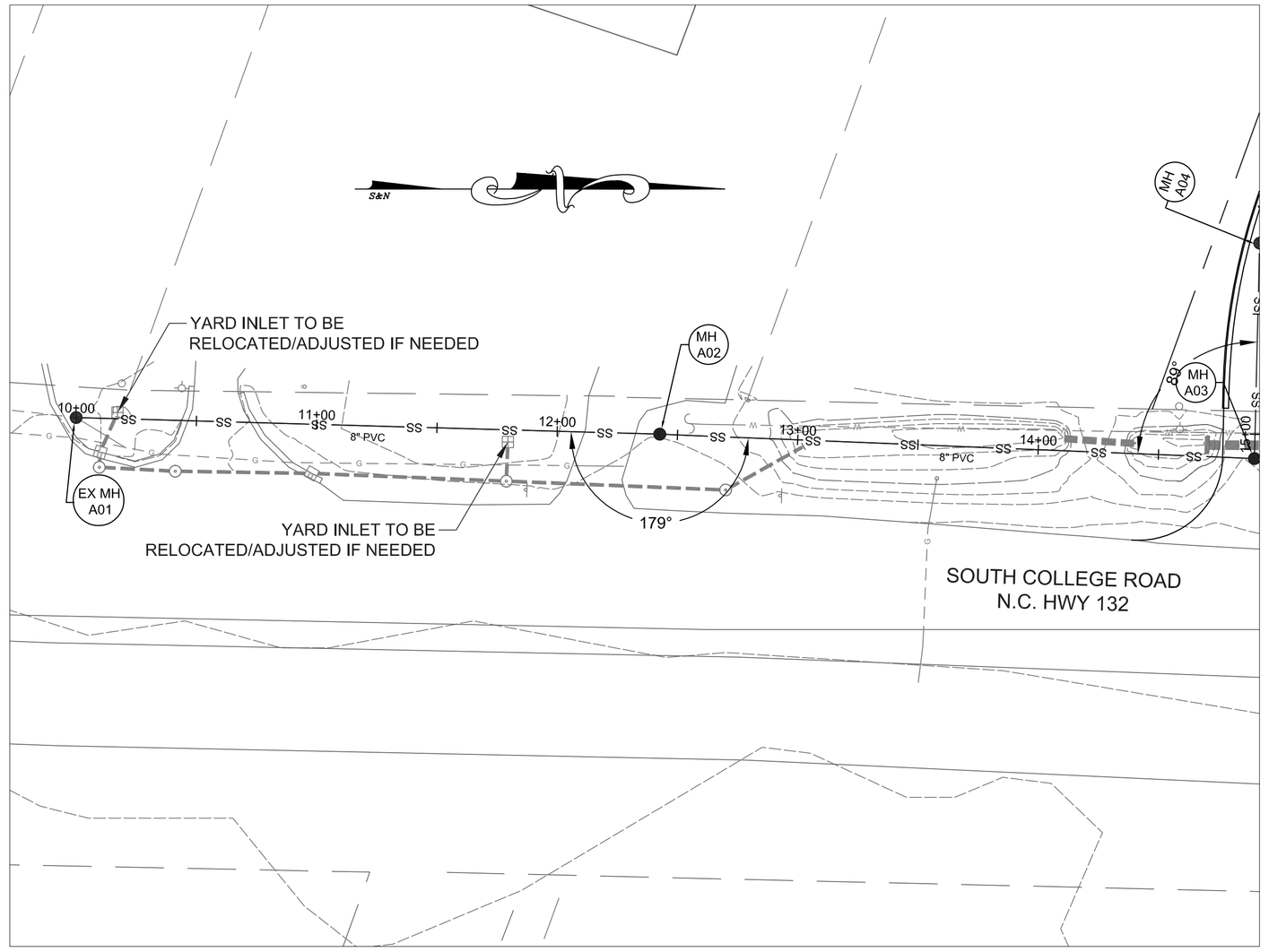
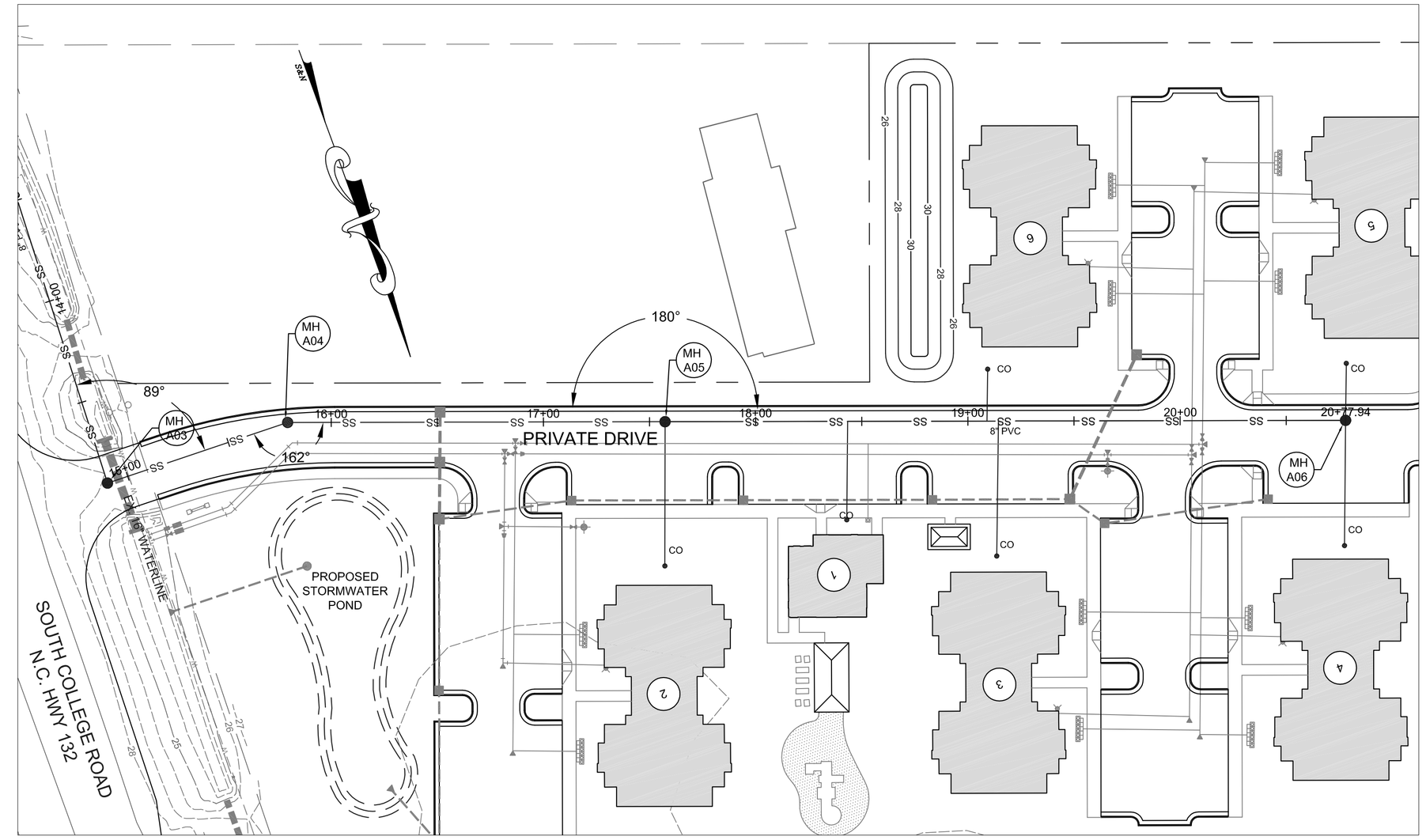
F:\701 - 750 Projects\732-11 Simpson Property (SNW)\Sketch Plan\732-11 C0200.dwg Sep 13, 2013 - 10:59am BY:BrianD



SEWER (OUTFALL) - PLAN VIEW



SEWER (ROADWAY) - PLAN VIEW

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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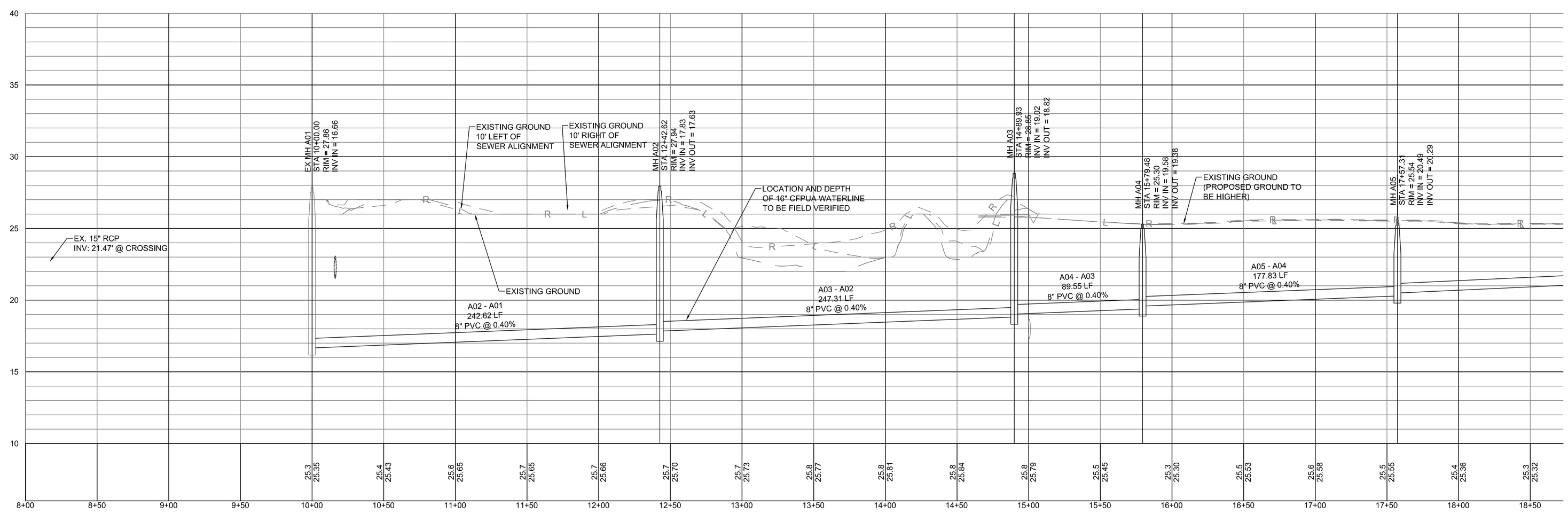

SEWER (OUTFALL & ROADWAY) - PROFILE VIEW

NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	9/13/2013

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 19310 THOMAS C. NORRIS 9-13-13

S&N SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR : SNW, LLP 972 TRINITY ROAD RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION #: C-1875
PROJECT ENGINEER: STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER: BRIAN W. DOWNS
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

PRELIMINARY UTILITY PLANS
SANITARY SEWER PLAN / PROFILE

DRAWING SHEET
C-2.1

PROJECT NUMBER
732-11

F:\701 - 750 Projects\732-11 Simpson Property (SNW)\Sketch Plan\732-11 C0201.dwg Sep 13, 2013 - 10:58am BY:BrianD

Line	To Line	Line Length	Incr. Area	Total Area	Runoff Coeff.	Incr C x A	Tota IC x A	Inlet Time	Time Conc	Rainfall nt	Total Runoff	Additional Flow	Total Flow	Capacity Full	Velocity	Pipe Size	Pipe Slope	Inv Elev Dn	Inv Elev Up	HGLDn	HGL Up	Grnd/Rim Dn	Grnd/RimUp	Line ID
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	Outfall	35.00	0.35	2.84	0.72	0.25	1.93	5.00	8.40	6.60	12.71	0.00	12.71	16.22	4.08	24.00	0.51	23.00	23.18	25.00	25.10	26.00	28.50	CB 2 - F
2	1	148.98	0.50	2.49	0.70	0.35	1.68	5.00	7.70	6.70	11.25	0.00	11.25	15.94	3.66	24.00	0.50	23.28	24.02	25.52	25.84	28.50	28.50	CB 3 - C
3	2	97.50	0.30	1.60	0.71	0.21	1.14	5.00	7.10	6.80	7.79	0.00	7.79	15.87	2.55	24.00	0.49	24.12	24.60	26.29	26.39	28.50	29.30	CB 4 - C
4	3	81.92	0.52	0.75	0.70	0.36	0.52	5.00	5.90	7.00	3.65	0.00	3.65	16.00	2.58	24.00	0.50	24.70	25.11	26.56	25.78	29.30	29.90	CB 5 - C
5	4	78.00	0.23	0.23	0.67	0.15	0.15	5.00	5.00	7.20	1.11	0.00	1.11	5.35	2.50	12.00	2.26	25.21	26.97	25.99	27.41	29.90	30.00	CB 6 - C
6	2	70.00	0.39	0.39	0.48	0.19	0.19	5.00	5.00	7.20	1.35	0.00	1.35	6.27	2.62	12.00	3.10	24.12	26.29	26.34	26.78	28.50	29.00	YI 8 - CE
7	3	118.00	0.55	0.55	0.75	0.41	0.41	5.00	5.00	7.20	2.98	0.00	2.98	7.18	3.35	15.00	1.24	25.21	26.67	26.50	27.36	29.30	30.00	CB 7 - C
1	Outfall	34.41	0.15	0.30	0.95	0.14	0.29	5.00	5.30	7.20	2.04	0.00	2.04	4.78	2.60	12.00	1.80	23.50	24.12	25.00	25.11	25.00	28.10	CB 10 - I
2	1	23.79	0.15	0.15	0.95	0.14	0.14	5.00	5.00	7.20	1.03	0.00	1.03	4.62	2.86	12.00	1.68	24.70	25.10	25.22	25.53	28.10	28.10	CB 11 - (

GENERAL NOTES

1.) BOUNDARY AND TOPOGRAPHIC DATA TAKEN FROM DIGITAL FILE FROM ATLANTIC COAST SURVEY, PLLC DATED 09/05/13 TREE SURVEY PROVIDED BY ATLANTIC COAST SURVEY, PLLC DATED 01/13/12.

2.) THIS SITE DOES NOT CONTAIN 100 OR 500 YEAR FLOODPLAIN PER FIRM MAP NO. 3720313400J PANEL 3134, EFFECTIVE DATE APRIL 3, 2006, TAKEN FROM NCFLOODMAPS.COM

3.) THE SITE DOES NOT CONTAIN WETLANDS OR JURISDICTIONAL FEATURES PER SITE INVESTIGATION BY LAND MANAGEMENT GROUP IN AUGUST 2011 AND CONFERENCE BY USACE AND NCDWQ IN SEPTEMBER 2011.

4.) THE CONTRACTOR SHALL CONTACT " NORTH CAROLINA ONE CALL" AT 800-632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.

5.) EXISTING CONDITIONS AND UTILITIES SHOWN ARE BASED ON INFORMATION PROVIDED BY NEW HANOVER COUNTY GIS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DESCREPANCIES, CONFLICTS INVOLVING PUBLIC WATER, SANITARY SEWER, AND STORM DRAINAGE CONSTRUCTION SHALL BE RESOLVED TO THE SATISFACTION OF THE CITY OF WILMINGTON.

6.) THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING SOIL CONDITIONS ON SITE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY UNSUITABLE MATERIAL UPON FIRST CONTACT.

PROPOSED SEWER FLOW:

60 UNITS @ 240 GPD/UNIT = 14,400 GPD
OFFICE BUILDING @ 100 GPD = 100 GPD

TOTAL PROPOSED FLOW: = 14,500 GPD

PROPOSED WATER FLOW:

60 UNITS @ 400 GPD/UNIT = 24,000 GPD
OFFICE BUILDING @ 150 GPD = 150 GPD

TOTAL PROPOSED FLOW: = 24,150 GPD

UTILITY NOTES

1.) EXISTING WELL LOCATION UNKNOWN. CONTRACTOR TO LOCATE AND CAP PER PUBLIC WATER SUPPLY STANDARDS.

2.) EXISTING SEPTIC FIELD LOCATION UNKNOWN. CONTRACTOR TO LOCATE AND REMOVE.

3.) WATER AND SANITARY SEWER PROVIDED BY CAPE FEAR PUBLIC UTILITY AUTHORITY.

4.) CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE 48 HOURS PRIOR TO ANY CONSTRUCTION.

5.) ALL CONSTRUCTION & MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.

6.) ALL WATER AND SEWER LINES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NC PLUMBING CODE.

7.) SANITARY SEWER SHALL BE PRIVATE UPSTREAM OF MH A03.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

INSET 2
SCALE= 1"=40'

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NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	8/12/2013

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 19431 ENGINEER STEPHANIE L. NORRIS 10-08-13

S&N
SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR :
SNW, LLP
972 TRINITY ROAD
RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION # C-1875
PROJECT ENGINEER:
STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER:
BRIAN M. WORK
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

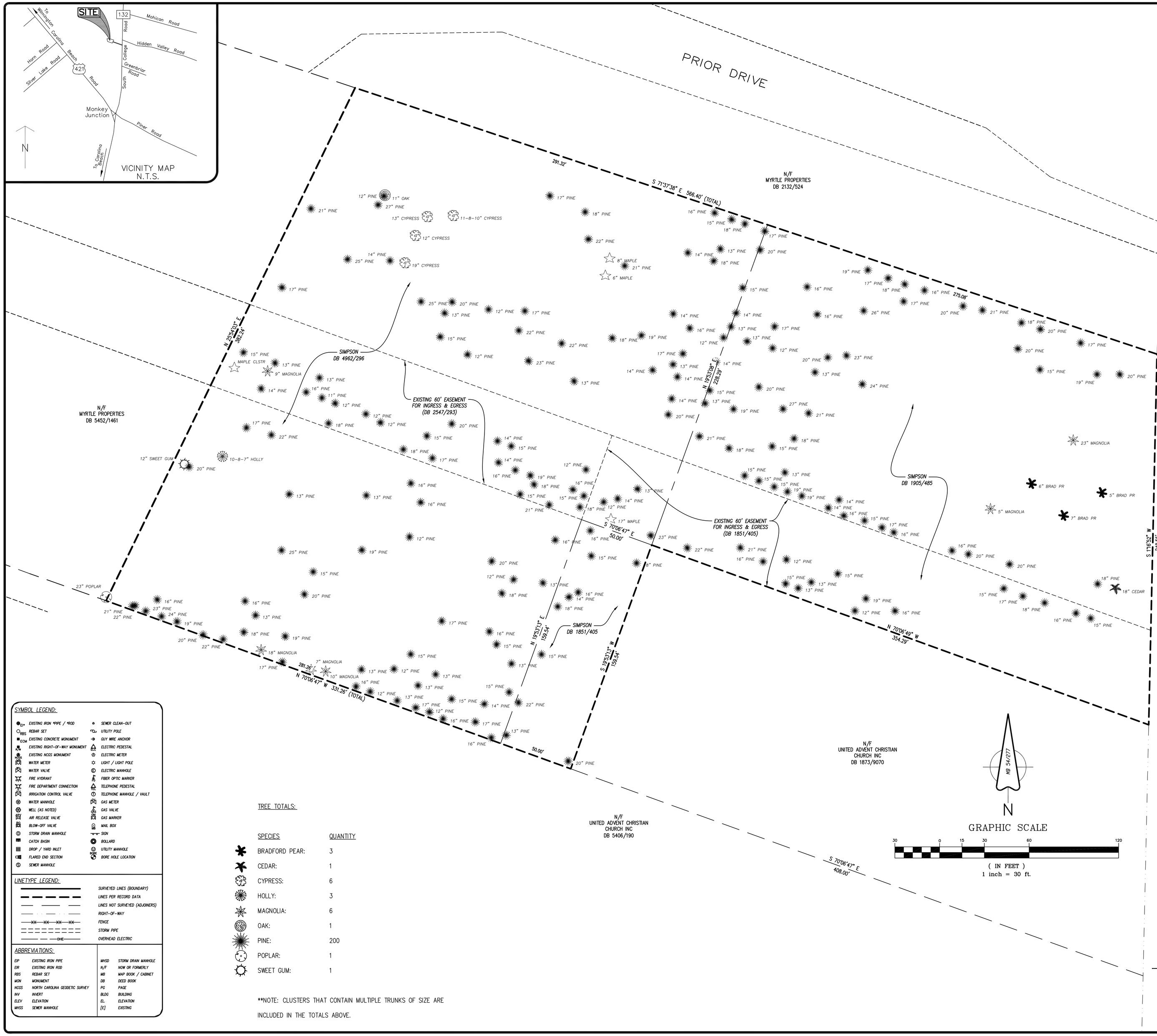
CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS
GRADING & DRAINAGE PLAN

DRAWING
SHEET
C-3.0

PROJECT NUMBER
732-11

F:\701 - 750 Projects\732-11 Simpson Property (SNW)\Sketch Plan\732-11 C0300.dwg Oct 08, 2013 - 6:39pm BY: Will



GENERAL NOTES

1. THIS IS A TREE LOCATION SURVEY ONLY. NO BOUNDARY SURVEY WAS PERFORMED. BOUNDARY INFORMATION WAS PLOTTED FROM RECORD INFORMATION, AS NOTED AND ROTATED TO MB 54/277.
2. BASIS OF BEARINGS FOR THIS MAP/PLAT ARE BASED ON MB 54/277
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
4. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
5. AREA BY COORDINATE GEOMETRY.
6. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
7. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD ZONE PER FEMA FLOOD INSURANCE RATE MAP # 370168134J, EFFECTIVE DATE APRIL 3, 2006.
8. UTILITY STATEMENT: NO UTILITIES, ABOVE OR BELOW GROUND WERE RESEARCHED, SEARCHED FOR, OR LOCATED FOR THIS SURVEY. THIS IF FOR TREE LOCATION ONLY.
9. MAP & DEED REFERENCES (PER NEW HANOVER COUNTY REGISTRY):
   DB 1905/485 DB 4962/296 DB 1851/405
   (AND OTHERS THAT MAY BE SHOWN ON THIS MAP)

SYMBOL LEGEND:

- EXISTING IRON 4"PIPE / 4"ROD
- REBAR SET
- EXISTING CONCRETE MONUMENT
- EXISTING RIGHT-OF-WAY MONUMENT
- EXISTING NCGS MONUMENT
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- IRRIGATION CONTROL VALVE
- WATER MANHOLE
- WELL (AS NOTED)
- AIR RELEASE VALVE
- BLOW-OFF VALVE
- STORM DRAIN MANHOLE
- CATCH BASIN
- DROP / YARD INLET
- FLARED END SECTION
- SEWER MANHOLE
- SEWER CLEAN-OUT
- UTILITY POLE
- GUY WIRE ANCHOR
- ELECTRIC PEDESTAL
- ELECTRIC METER
- LIGHT / LIGHT POLE
- ELECTRIC MANHOLE
- FIBER OPTIC MARKER
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE / VAULT
- GAS METER
- GAS VALVE
- GAS MARKER
- MAIL BOX
- SIGN
- BOLLARD
- UTILITY MANHOLE
- BORE HOLE LOCATION

LINETYPE LEGEND:

- SURVEYED LINES (BOUNDARY)
- LINES PER RECORD DATA
- LINES NOT SURVEYED (ADJOINERS)
- RIGHT-OF-WAY
- FENCE
- STORM PIPE
- OVERHEAD ELECTRIC

ABBREVIATIONS:

EIP	EXISTING IRON PIPE	MHSD	STORM DRAIN MANHOLE
EIR	EXISTING IRON ROD	N/F	NOW OR FORMERLY
RBS	REBAR SET	MB	MAP BOOK / CABINET
MON	MONUMENT	DB	DEED BOOK
NCGS	NORTH CAROLINA GEODETIC SURVEY	PG	PAGE
INV	INVERT	BLDG	BUILDING
ELEV	ELEVATION	EL.	ELEVATION
MHSS	SEWER MANHOLE	(E)	EXISTING

TREE TOTALS:

SPECIES	QUANTITY
BRADFORD PEAR:	3
CEDAR:	1
CYPRESS:	6
HOLLY:	3
MAGNOLIA:	6
OAK:	1
PINE:	200
POPLAR:	1
SWEET GUM:	1

**NOTE: CLUSTERS THAT CONTAIN MULTIPLE TRUNKS OF SIZE ARE INCLUDED IN THE TOTALS ABOVE.

CERTIFICATE OF ACCURACY & MAPPING

I, THE UNDERSIGNED, CERTIFY THAT THIS SURVEY WAS DRAWN UNDER MY SUPERVISION ((DEED DESCRIPTION RECORDED IN BOOK ___AS___, PAGE ___NOTED___); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION AS LABELED; THAT THE RATIO OF PRECISION, AS CALCULATED, IS 1:10,000+; AND THAT THIS SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (TITLE 21, CH. 56, SEC. 1600). WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS ___13th___ DAY OF ___JANUARY___, 20 12.

1/13/12

JOSEPH A. ROMEO – PROFESSIONAL LAND SURVEYOR (L-4937)

NORTH CAROLINA PROFESSIONAL SEAL L-4937 LAND SURVEYOR JOSEPH A. ROMEO

Sheet No.	Scale	Designer	Drawn By	Checked By
1 of 1	AS NOTED		J. Romeo	ACS
	Date 1/11/2012			
	Job No. 11-1068			

No.	Revision	Date	By

PREPARED FOR:
SNW, LLP
972 TRINITY ROAD
RALEIGH, NC 27607

TREE LOCATION SURVEY

SIMPSON PROPERTIES

Masonboro Township New Hanover County North Carolina

ATLANTIC COAST SURVEY, PLLC
P-0822
PO Box 12588 Wilmington, NC 28405
(910) 443-0080 www.atlanticcoastsurvey.com

PLANT LIST

Note: Quantities are for confirmation of Contractor's count only, and are not guarantee
B&B=Balled and Burlapped, CON=Container stock, BR=Bare Root

Key	Botanical Name	Common Name	Minumum Ht.	Spr.	Cal.	Root
AC	Abelia chinensis	Chinese Abelia	24"	24"	-	Cont.
AR	Acer rubrum "Red Sunset"	Red Sunset Maple	8'-10'	4'	2"	B&B
JM	Acer palmatum 'Atropurpureum	Red Japanese Maple	6'	4'	2"	B&B
BM	Berberis x mentorensis	Mentor Barberry	24"	24"	-	Cont.
CC	Cercis canadensis 'Forest Pansy'	Forest Pansy Redbud	8'	4'	2"	B&B
ICC	Ilex cornuta 'Carissa'	Carissa Holly	24"	24"	-	Cont.
ICH	Ilex crenata 'Helleri'	Helleri Holly	18"	24"	-	Cont.
ID	Ilex decidua	Possumhaw	24"	24"	-	Cont.
IG	Ilex glabra 'Compacta'	Compact Inkberry Holly	18"	18"	-	Cont.
LO	Lavandula officinalis	Lavender	12"	-	-	Cont.
MC	Myrica cerifera	Wax Myrtle	36"	24"	-	Cont.
QR	Quercus rubrum	Red Oak	8'-10'	4'	2"	B&B
UP	Ulmus parvofolia 'Drake'	Drake Elm	8'-10'	4'	2"	B&B
VL	Viburnum lantana 'Mohican'	Mohican Viburnum	24"	24"	-	Cont.

GENERAL NOTES

1.) BOUNDARY AND A PORTION OF TOPOGRAPHIC DATA TAKEN FROM DIGITAL FILE FROM ATLANTIC COAST SURVEY, PLLC DATED 01/13/12. TREE SURVEY PROVIDED BY ATLANTIC COAST SURVEY, PLLC DATED 01/13/12. A PORTION OF TOPOGRAPHIC DATA IS TAKEN FROM NEW HANOVER COUNTY GIS ON 9/01/1.

2.) THIS SITE DOES NOT CONTAIN 100 OR 500 YEAR FLOODPLAIN PER FIRM MAP NO. 3720313400J PANEL 3134. EFFECTIVE DATE APRIL 3, 2006. TAKEN FROM NCFLOODMAPS.COM

3.) THE SITE DOES NOT CONTAIN WETLANDS OR JURISDICTIONAL FEATURES PER SITE INVESTIGATION BY LAND MANAGEMENT GROUP IN AUGUST 2011 AND CONFERENCE BY USACE AND NCDWQ IN SEPTEMBER 2011.

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6.) THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING SOIL CONDITIONS ON SITE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY UNSUITABLE MATERIAL UPON FIRST CONTACT.

LANDSCAPE NOTES

1. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES AND SHALL MEET ALL STANDARDS AS STATED IN THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK," AMERICAN NURSERY & LANDSCAPE ASSOCIATION. ALL SPECIFICATIONS, GENERAL CONDITIONS, GENERAL AND CONSTRUCTION NOTES APPLY.
2. LOCATE ALL UTILITIES PRIOR TO DIGGING. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES INCURRED BYHIS WORK.
3. PLANT LIST QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN THE EVENT OF QUANTITY DISCREPANCIES, THE DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER OR LANDSCAPE DESIGNER.
5. ALL ROPE AND TWINE SHALL BE REMOVED FROM THE TOP OF THE ROOT BALL. BASKET WIRES AND BURLAP SHALL BE REMOVED FROM THE TOP HALF OF THE ROOT BALL ON TREES AND LARGE SHRUBS. SYNTHETIC BURLAP SHALL BE REMOVED FROM ROOT BALLS PRIOR TO BACKFILLING.
6. TREE STAKING SHALL BE PERFORMED WITHIN TWO (2) DAYS OF PLANTING.
7. ALL PLANT MATERIALS SHALL BE INSTALLED WITH THE TOPS OF THE BALLS ABOVE EXISTING GRADE, AS INDICATED IN THE DETAILS. ALL BEDS AND TREE SAUCERS SHALL BE RAISED, GRADED TO PROVIDE ADEQUATE DRAINAGE AND MULCHED WITH 3" TO 4" OF PINESTRAW, UNLESS OTHERWISE SPECIFIED.
8. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

Landscape Requirements

Street Yard - South College Road

Required - 271 LF - 35' (drives) = 236 LF
236 x 12 = 2,832 SF
Trees 1 Tree per 600 SF = 5 Trees Required

Shrubs 6 Shrubs per 600 SF = 30 Shrubs Required

Buffer Yards - (Combination with Fencing Option)

North PL - 567 LF - ZONE MF TO MF - NO BUFFER REQUIRED

South PL - 357 LF - 40' (Streetyard) = 337 LF
Trees 1 Tree per 30LF = 12 Trees Required

Shrubs 6' Solid Opaque Screen
Double Row - 36" Ht. @ Time of Planting

South PL - 331 LF - 40' (Rear Buffer) = 311 LF
Trees 1 Tree per 30LF = 11 Trees Required

Shrubs 6' Solid Opaque Screen
Double Row - 36" Ht. @ Time of Planting

East PL - 160 LF
Trees 1 Tree per 30LF = 6 Trees Required

Shrubs 6' Solid Opaque Screen
Double Row - 36" Ht. @ Time of Planting

West PL - 383 LF - ZONE MF TO MF - NO BUFFER REQUIRED

Parking Lot - (20% Shading Required)

Trees: 7,434 SF/2,000 = 4 Trees Req'd

Shrubs: 7,434 SF/500 . = 15 Shrubs Req'd

Foundation - (12% of Building Face SF)

Apartment Building = 3,240 SF x 12% = 389 SF Planted Area Required per Unit

Community Building = 450 SF x 12% = 54 SF Planted Area Required

Stormwater - Groupings every 100 LF

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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

FOR REVIEW ONLY-
NOT FOR CONSTRUCTION

PLAN IS SUBJECT TO REVISIONS DURING THE CONSTRUCTION APPROVAL PROCESS

NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	8/12/2013

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 19431 LANDSCAPE ARCHITECTURE THOMAS M. SPAULDING 10-08-13

S&N
SPAULDING & NORRIS, PA
Design Consultants
972 Trinity Road
Raleigh, North Carolina 27607
Phone (919) 854-7990 Fax (919) 854-7925

PREPARED FOR :
SNW, LLP
972 TRINITY ROAD
RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION # C-1875
PROJECT ENGINEER:
STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER:
RONALD A. PORTER
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

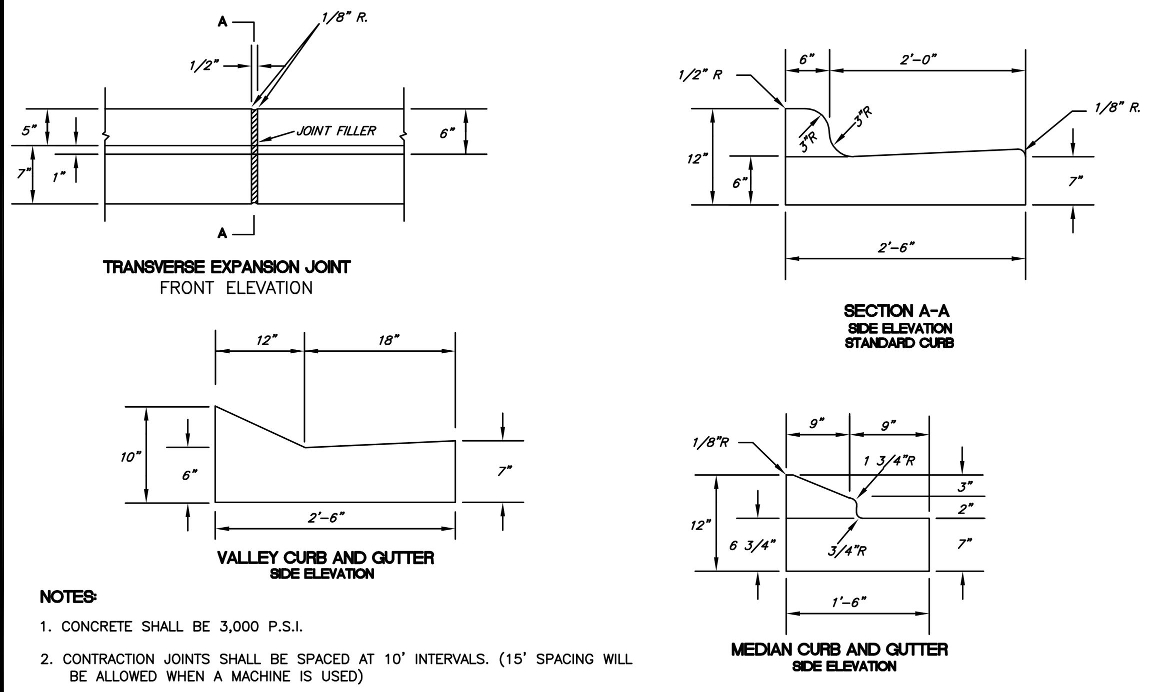
CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS
LANDSCAPE PLAN

DRAWING
SHEET
L-1.0

PROJECT NUMBER
732-11

F:\701 - 750 Projects\732-11 Simpson Property (SNW)\Sketch Plan\732-11 L0100.dwg Oct 08, 2013 - 5:41pm BY:Will



NOTES:

1. CONCRETE SHALL BE 3,000 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS. (15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED)
3. REMOVAL OF ANY PORTION OF CURB AND GUTTER SHALL REQUIRE FULL REMOVAL AND REPLACEMENT SO THAT NO LONGITUDINAL SEAMS ARE CREATED.
4. MAINTAIN 50' MAX. BETWEEN JOINTS OR AT ALL RIGID OBJECTS.

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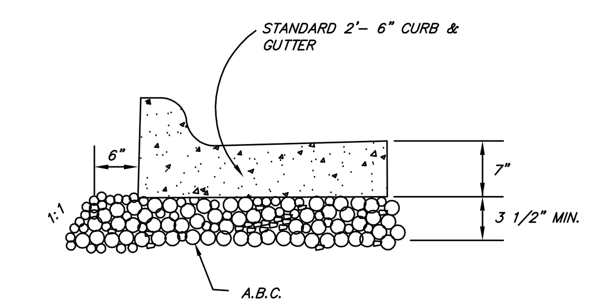
STANDARD CONCRETE CURB AND GUTTER

STANDARD DETAIL NUMBER: HS321	
DATE	REVISIONS
2/8/10	



NOTES:

1. STONE IS REQUIRED UNDER ALL TYPES OF CURB AND GUTTER ON STREETS
2. STONE IS NOT REQUIRED ON PARKING LOTS

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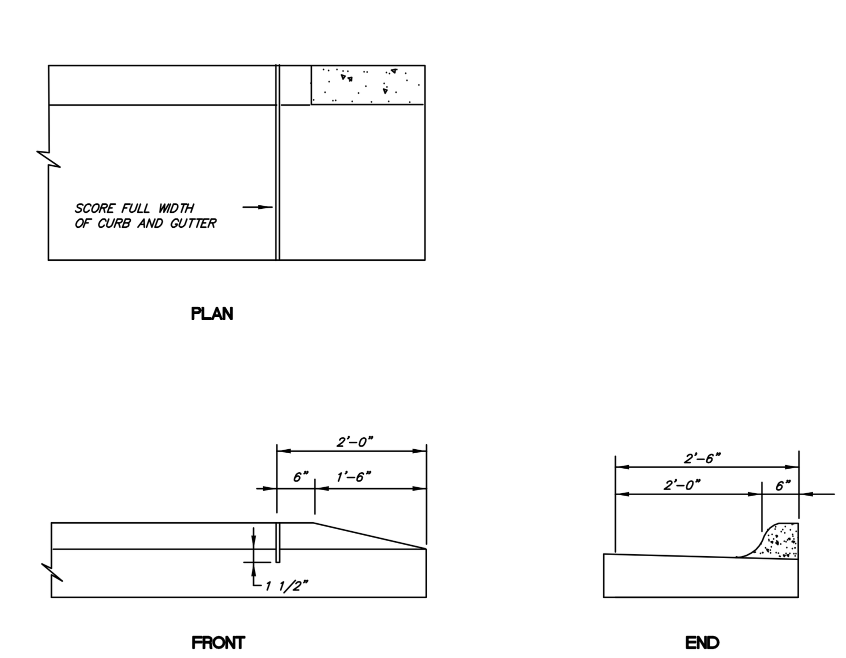
A.B.C. UNDER CURB AND GUTTER

STANDARD DETAIL NUMBER: HS322	
DATE	REVISIONS
2/8/10	



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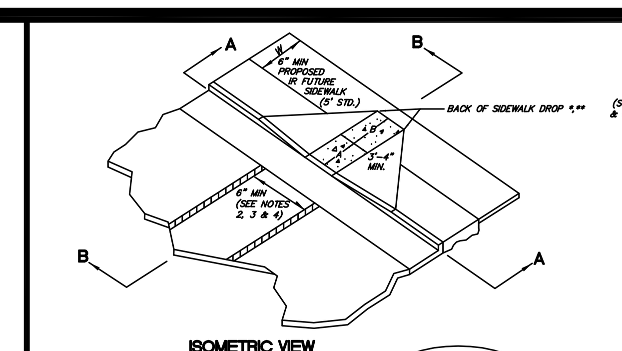
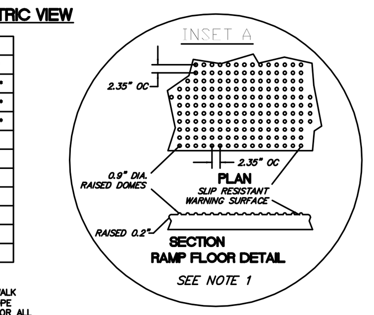
STANDARD METHOD OF ENDING CURB AND GUTTER

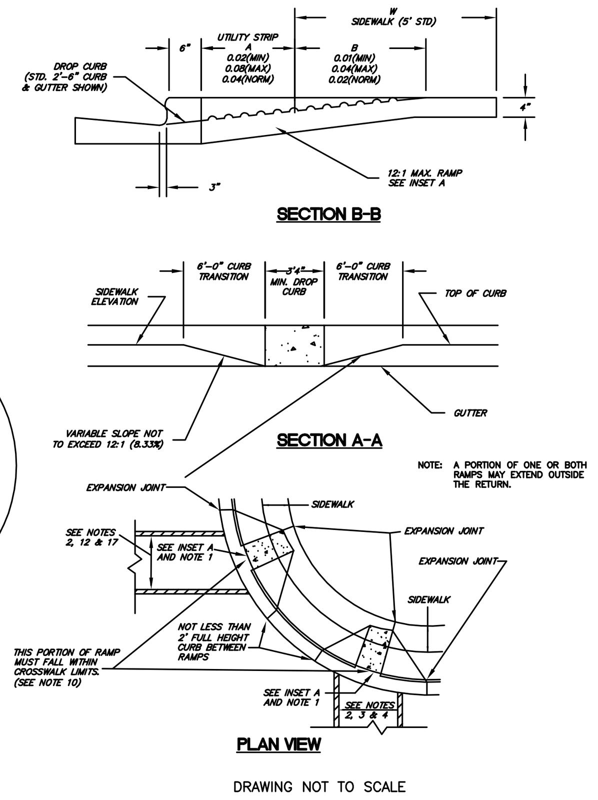
STANDARD DETAIL NUMBER: HS323	
DATE	REVISIONS
2/8/10	



W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X−(A+9)
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04



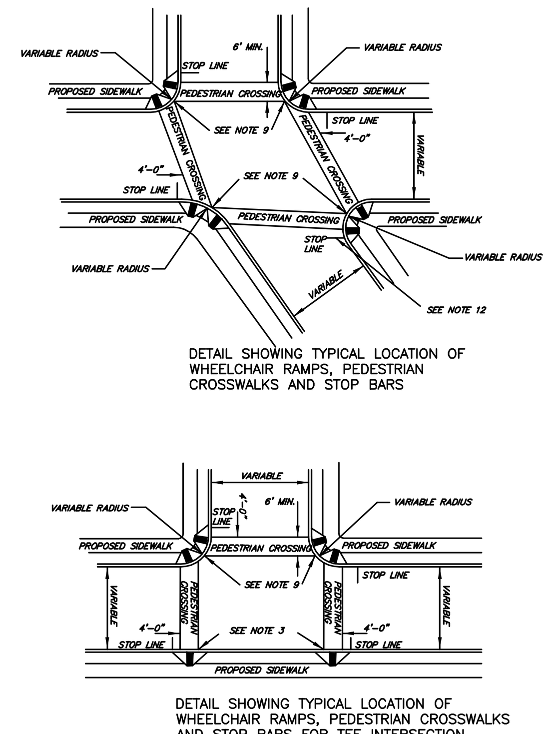


NOTES:
1. THE WALKING SURFACE SHALL BE SLOPE RESISTANT. DETECTABLE WARNING DOMES SHALL COVER THE FULL WIDTH AND DEPTH OF THE RAMP FLOOR. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9". A HEIGHT OF 0.2" AND CENTER-TO-CENTER SPACING OF NOMINAL 2.35". THE RAMP SHALL BE BLACK IN COLOR.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY: MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. THE INSIDE PEDESTRIAN CROSSWALK LINES SHALL BE SET NO CLOSER IN THE INTERSECTION THAN WOULD BE ESTABLISHED BY BISECTING THE INTERSECTION RADII. (SEE NOTE 14)
4. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

DRAWING NOT TO SCALE

STANDARD WHEELCHAIR RAMP

STANDARD DETAIL NUMBER: HS331	
DATE	REVISIONS
2/8/10	



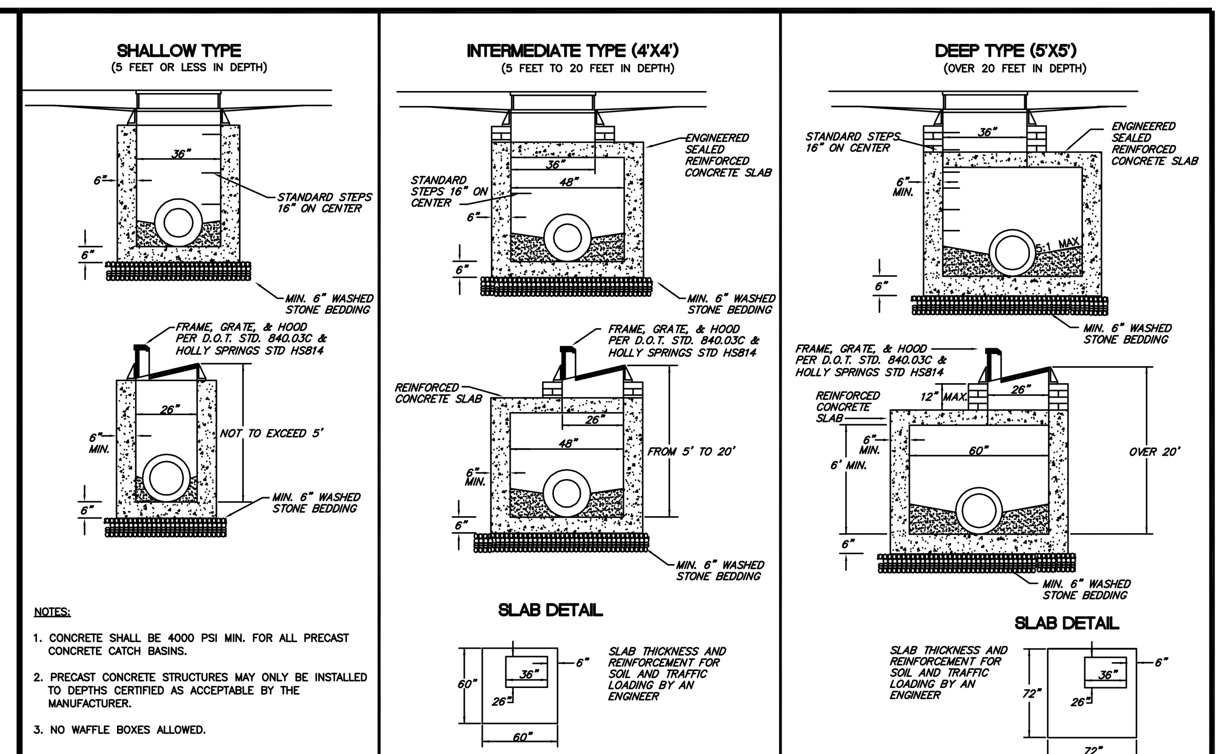
NOTES:

1. THE WALKING SURFACE SHALL BE SLOPE RESISTANT. DETECTABLE WARNING DOMES SHALL COVER THE FULL WIDTH AND DEPTH OF THE RAMP FLOOR. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9". A HEIGHT OF 0.2" AND CENTER-TO-CENTER SPACING OF NOMINAL 2.35". THE RAMP SHALL BE BLACK IN COLOR.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY: MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. NORTH CAROLINA GENERAL STATUE 136-44 44 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEEL CHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.
IN ADDITION SECTION 228 OF THE 1973 FEDERAL AND HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR FUTURE DATE
THE AMERICANS WITH DISABILITY ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES, COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH TITLE 111 OF THE ADA, BECOMING EFFECTIVE ON JANUARY 26, 1992
4. WHEELCHAIR RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. WHEELCHAIR RAMPS SHALL BE LOCATED AS INDICATED IN THESE DETAILS. HOWEVER, THE LOCATION MAY BE ADJUSTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS ETC. AFFECT PLACEMENT. AT ALL LOCATIONS, NOT LESS THAN 2 FEET OF FULL HEIGHT CURB SHALL BE PLACED BETWEEN THE RAMPS.
5. NO SLOPE ON THE WHEELCHAIR RAMP SHALL EXCEED 1"/1' (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. IN NO CASE SHALL THE WIDTH OF THE WHEELCHAIR RAMP BE LESS THAN 40" (3'-4"). HOWEVER, WIDTH MAY EXCEED 40".
7. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
8. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB.
9. THE INSIDE PEDESTRIAN CROSSWALK LINES SHALL BE SET NO CLOSER IN THE INTERSECTION THAN WOULD BE ESTABLISHED BY BISECTING THE INTERSECTION RADII. (SEE NOTE 14)
10. THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SHALL BE COORDINATED SO THAT THE BEGINNING OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
11. THE MINIMUM WIDTH OF THE PEDESTRIAN CROSSWALK SHALL BE 6 FEET. A CROSSWALK WIDTH OF 10' OR GREATER IS DESIRABLE.
12. STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
13. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
14. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

DRAWING NOT TO SCALE

STANDARD WHEELCHAIR RAMP

STANDARD DETAIL NUMBER: HS332	
DATE	REVISIONS
2/8/10	



NOTES:

1. CONCRETE SHALL BE 4000 PSI MIN. FOR ALL PRECAST CONCRETE CATCH BASINS.
2. PRECAST CONCRETE STRUCTURES MAY ONLY BE INSTALLED TO DEPTHS CERTIFIED AS ACCEPTABLE BY THE MANUFACTURER.
3. NO WAFFLE BOXES ALLOWED.

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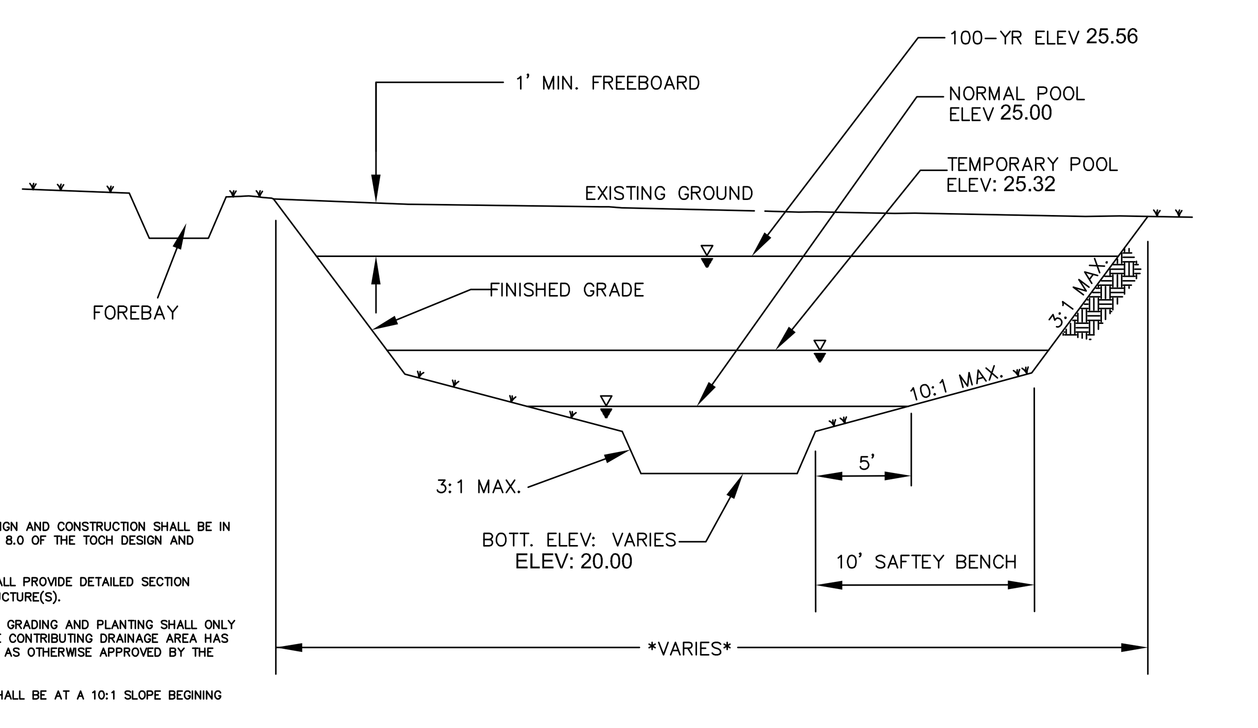
PRECAST CONCRETE CATCH BASINS

STANDARD DETAIL NUMBER: HS805	
DATE	REVISIONS
7/24/09	



GENERAL NOTES:
1. ALL ASPECTS OF DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 8.0 OF THE TOCH DESIGN AND CONSTRUCTION STANDARDS.
2. DESIGN ENGINEER SHALL PROVIDE DETAILED SECTION THROUGH THE OUTLET STRUCTURE(S).
3. FINAL WET DETENTION GRADING AND PLANTING SHALL ONLY BE ESTABLISHED AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN FULLY STABILIZED OR AS OTHERWISE APPROVED BY THE TOWN ENGINEER.
4. 10' SAFTEY BENCH SHALL BE AT A 10:1 SLOPE BEGINING 0.5' ABOVE NORMAL POOL.
5. FOREBAY AND OUTLET STRUCTURE NOT SHOWN.
6. PLANTINGS, INCLUDING AQUATIC VEGITATION, SHALL BE IN ACCORDANCE WITH TOCH AND NCDENR REQUIREMENTS.

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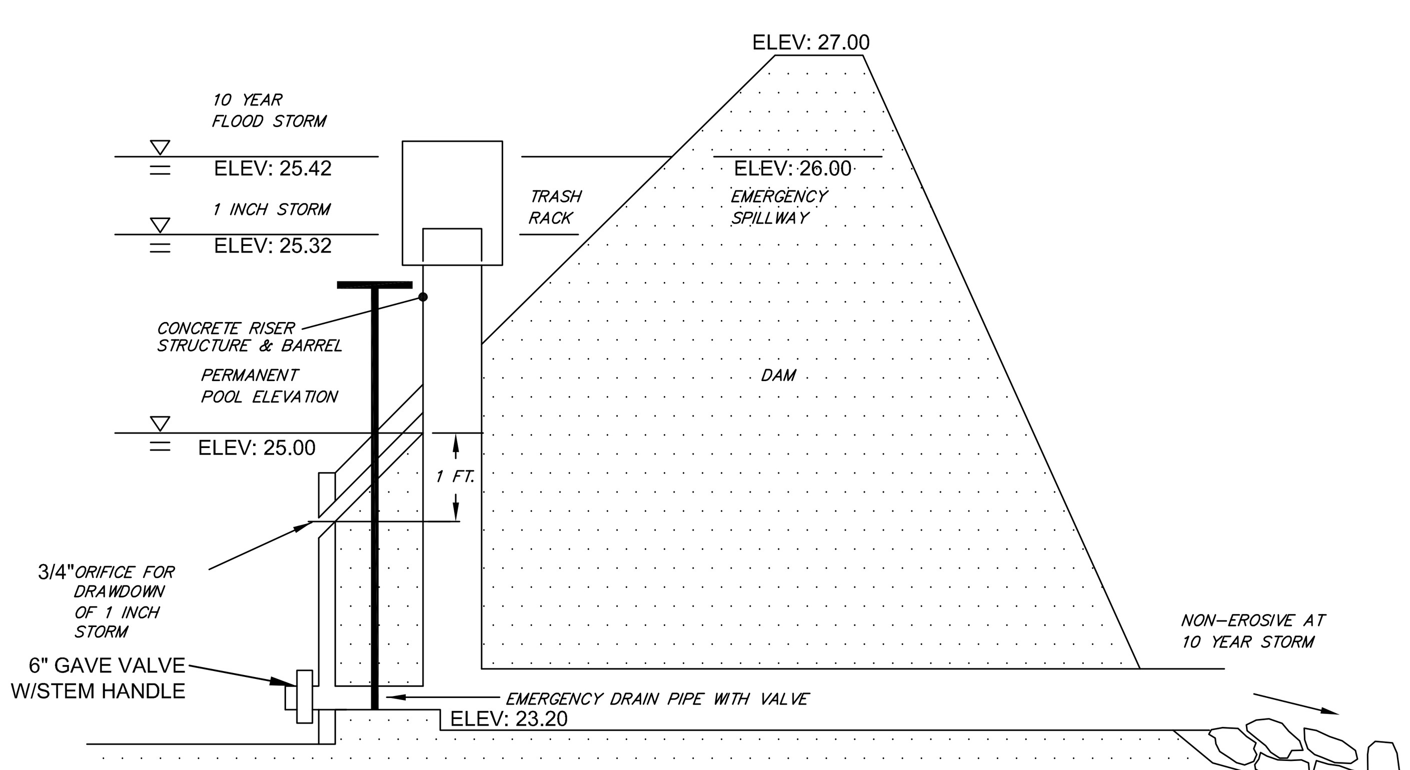
FOR REFERENCE ONLY – DESIGN ENGINEER SHALL PROVIDE PROJECT SPECIFIC TYPICAL SECTIONS AND DETAILS ON PLANS

TYPICAL WET DETENTION BASIN SECTION

TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HS811	
DATE	REVISIONS
7/24/09	

FIGURE 1



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WET DETENTION BASIN

TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HS820	
DATE	REVISIONS
3/15/10	

ANTI-FLOATATION DEVICE CALCULATIONS

RISER WIDTH = 3.54 FT RISER LENGTH = 3.54 WALL THICKNESS = 0.33 FT RISER DEPTH = 3 FT	BASE VOLUME = 50.63 CF RISER INNER VOLUME = 37.60 CF RISER CONCRETE VOLUME = 15.33 CF TOTAL BUOYANT FORCE = 6,461.21
RISER INSIDE VOLUME = 37.59 CF RISER CONCRETE VOLUME = 15.32 CF TOTAL BUOYANT FORCE = 3302	BASE WEIGHT = 7,593.75 LBS RISER WEIGHT = 2,298.78 LBS TOTAL RESISTING FORCE = 9,892.53
CONCRETE WEIGHT = 2,298.78 LBS	FACTOR OF SAFETY = 1.53
DESIRED FACTOR OF SAFETY = 1.5	BASE WIDTH = 4.5 FT BASE LENGTH = 4.5 FT BASE DEPTH = 2.5 FT
TOTAL WEIGHT REQUIRED = 4932.31 LBS ADDITIONAL WEIGHT REQUIRED = 2,654.53 VOLUME OF ADDITIONAL CONCRETE = 47.07 CF	

FOR REVIEW ONLY-
NOT FOR CONSTRUCTION

PLAN IS SUBJECT TO REVISIONS DURING THE CONSTRUCTION APPROVAL PROCESS

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NO.	REVISION	DATE
1.	PER CFPUA COMMENTS	2/27/2012
2.	PER CFPUA COMMENTS	3/13/2012
3.	PER REVISED BLDG. FOOTPRINT	1/18/2013
4.	PER CFPUA COMMENTS	9/13/2013

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19351 THOMAS S. SPAULDING 10-08-13

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RALEIGH, NC 27607
DATE : 1-18-12
S&N FIRM CERTIFICATION #: C-1875
PROJECT ENGINEER:
STEPHANIE L. NORRIS, P.E.
PROJECT CADD DESIGNER:
BRIAN W. DOWNS
PROJECT SURVEYOR:

LOCKWOOD VILLAGE APTS

CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS
DETAIL SHEET

DRAWING SHEET
D-1.0

PROJECT NUMBER
732-11

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