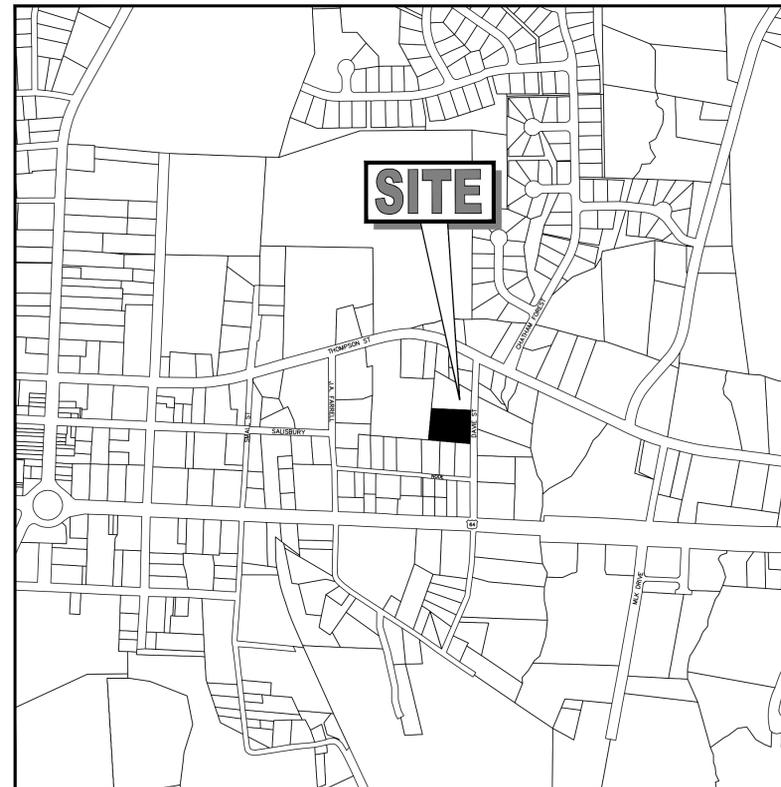


# CONSTRUCTION PLANS

## FOR

# DAVIE STREET COTTAGES

CONTACT INFORMATION	
DEVELOPER/OWNER	ORANGE DEVELOPMENT GROUP, LLC 73 HALEY MEADOW DRIVE MONCLOIRE, NC 27558 MIKE DASHER MIKE.DASHER@ORANGECOMMUNITIES.COM 919.530.9511
CIVIL ENGINEER	BOHLER ENGINEERING 4011 WESTCHASE BLVD., SUITE 290 RALEIGH, NC 27607 CONTACT: LANDON LOVELACE, PE, NCLID, LEED AP LLOVELACE@BOHLERENG.COM PHONE: (919) 578-9000 FAX: (919) 703-2665
ARCHITECT	HOBBS ARCHITECTS 480 HILLSBORO STREET, SUITE 400 PITTSBORO, NC 27312 G. TAYLOR HOBBS, III, AIA, LEED AP 919.545.2004
SURVEYOR	VAN R. FINCH - LAND SURVEYS, P.A. 109 HILLSBORO ST. PITTSBORO, NC 27312 VAN R. FINCH, PLS VANRFINCH@MINDSPRING.COM



LOCATION MAP

N.T.S

SHEET INDEX	
SHEET TITLE	SHEET NUMBER
COVER SHEET	C-0.0
EXISTING CONDITIONS PLAN	C-1.0
SITE PLAN	C-2.0
GRADING AND DRAINAGE PLAN	C-3.0
UTILITY PLAN	C-4.0
EROSION AND SEDIMENT CONTROL PLAN PHASE I	C-5.0
EROSION AND SEDIMENT CONTROL PLAN PHASE II	C-5.1
BMP PLAN	C-6.0
GRADING, DRAINAGE, AND EROSION CONTROL DETAILS	C-7.0
UTILITY DETAILS	C-7.1
LANDSCAPE PLAN	L-1.0
LANDSCAPE NOTES AND DETAILS	L-1.1

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SOUTH FLORIDA

REVISIONS			
REV	DATE	COMMENT	BY
1	5/13/15	TOWN OF PITTSBORO COMMENTS	AWA
2	7/02/15	TOWN OF PITTSBORO COMMENTS	MAR
3	8/01/15	TOWN OF PITTSBORO COMMENTS	MAR

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APPROVED FOR CONSTRUCTION

PROJECT No.:	NCR142045
DRAWN BY:	MAR
CHECKED BY:	LML
DATE:	04/20/15
SCALE:	AS NOTED
CAD I.D.:	MAR

CONSTRUCTION PLANS

FOR  
DAVIE STREET COTTAGES

LOCATION OF SITE  
PITTSBORO, NC

**BOHLER**  
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4011 WESTCHASE BLVD., SUITE 290  
RALEIGH, NC 27607  
Phone: (919) 578-9000  
Fax: (919) 703-2665  
NC@BohlerEng.com

LANDON M. LOVELACE  
REGISTERED PROFESSIONAL ENGINEER  
04/02/2015

SHEET TITLE:

COVER SHEET

SHEET NUMBER:  
C-0.0

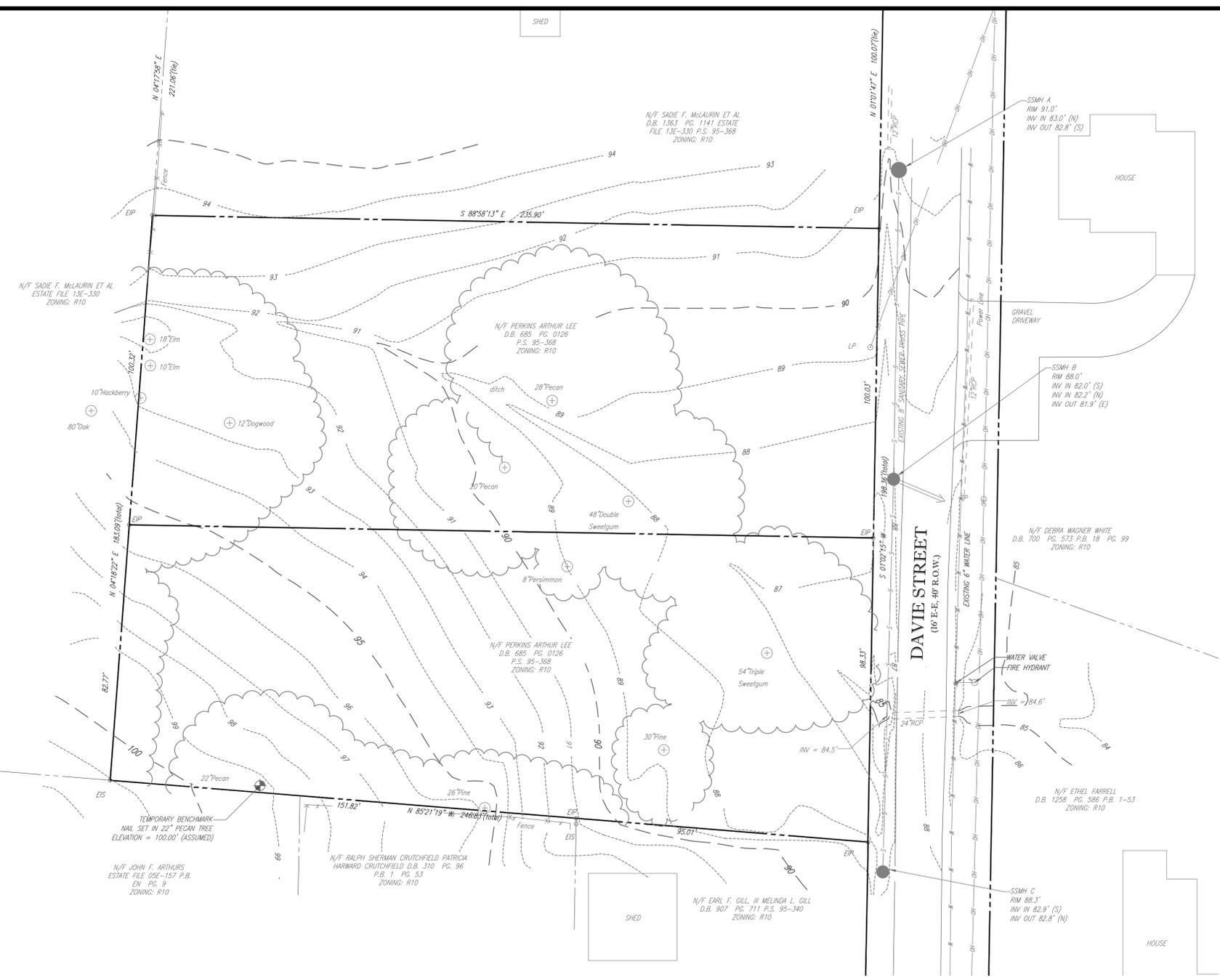
SITE DATA	
Address:	95 AND 113 DAVIE STREET
PIN #:	9741-97-68604 AND 9741-97-7594
Site Area: (ac.)	1.06
Zoning:	R10, POCKET NEIGHBORHOOD (PN)
FEMA FLOODPLAIN	ZONE X, 3710974100J, FEB. 2 2007
Existing # of Lots:	2
Proposed # of Lots:	9
Allowable Minimum Lot Size: (sf)	2,000
Proposed Minimum Lot Size: (sf)	2,463
Average Lot Size: (sf)	2,719
Setbacks:	
FY:	8'
SY:	5' MIN. (12' MIN. BETWEEN BUILDINGS)
RY:	8'
Parking:	
Required # of Spaces:	(.75 SPACES * 3 BEDROOM) * 8 UNIT(S) = 18 (.75 SPACES * 1 BEDROOM) * 1 UNIT(S) = 1
Proposed # of Spaces:	20 SPACES
Open Space:	
Common Required:	500 SF/LOT * 8 LOTS = 4,000 SF
Common Proposed:	7,710 SF
Private Required:	200 SF/LOT
Private Proposed:	200 SF/LOT
Infrastructure Quantities:	
6" Potable Waterline: (lf)	252
8" Public Sanitary Sewer: (lf)	102
6" Private Sanitary Sewer: (lf)	361
Average Sewer Flow: (gpd)	3,060 (9 SERVICES * 340 GPD/UNIT)
Built Upon Area:	
Streets / Parking Lot: (ac.)	0.22
Sidewalks: (ac.)	0.05
Lots (Max 1,200 sf per lot): (ac.)	0.25
Total: (ac.)	0.52
Total Percent BUA: (ac.)*	49%

PREPARED BY

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NC@BohlerEng.com

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

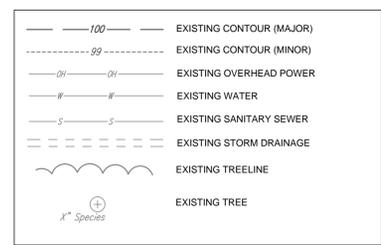


**GENERAL NOTES**

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF PITTSBORO STANDARDS AND SPECIFICATIONS, AS WELL AS ANY OTHER APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.
2. THE BOUNDARY AND TOPOGRAPHIC INFORMATION ARE BASED ON FIELD SURVEY PERFORMED BY VAN R. FINCH - LAND SURVEYS, P.A. ON JANUARY 23, 2015. ELEVATIONS ARE BASED ON A BENCHMARK NAIL SET IN 22" PECAN TREE SHOWN ON THIS SHEET. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
3. THERE ARE NO WETLANDS OR BUFFERED FEATURES ON SITE PER LETTER BY PIEDMONT ENVIRONMENTAL DATED NOVEMBER 14, 2014. THERE IS NO FEMA FLOODPLAIN CONTAINED ON THIS SITE PER FIRM PANEL 370420974100J, EFFECTIVE FEBRUARY 2, 2007.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING, AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO BEGINNING DEMOLITION, EXCAVATION, OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
5. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL IN PLACE SUB-SURFACE UTILITY INFORMATION INCLUDING HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
6. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL PERMITS, INSPECTIONS, CERTIFICATIONS, AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT ARE OBTAINED.
8. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREFOR SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO CONSTRUCTION. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY INFRASTRUCTURE REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OR ASSOCIATED WORK.
10. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

**TOTAL SITE AREA = 1.06 AC.**

**LEGEND**



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**CONSTRUCTION PLANS**

FOR  
**DAVIE STREET COTTAGES**

LOCATION OF SITE  
 PITTSBORO, NC

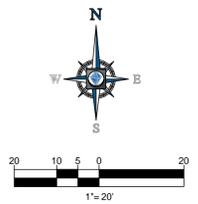
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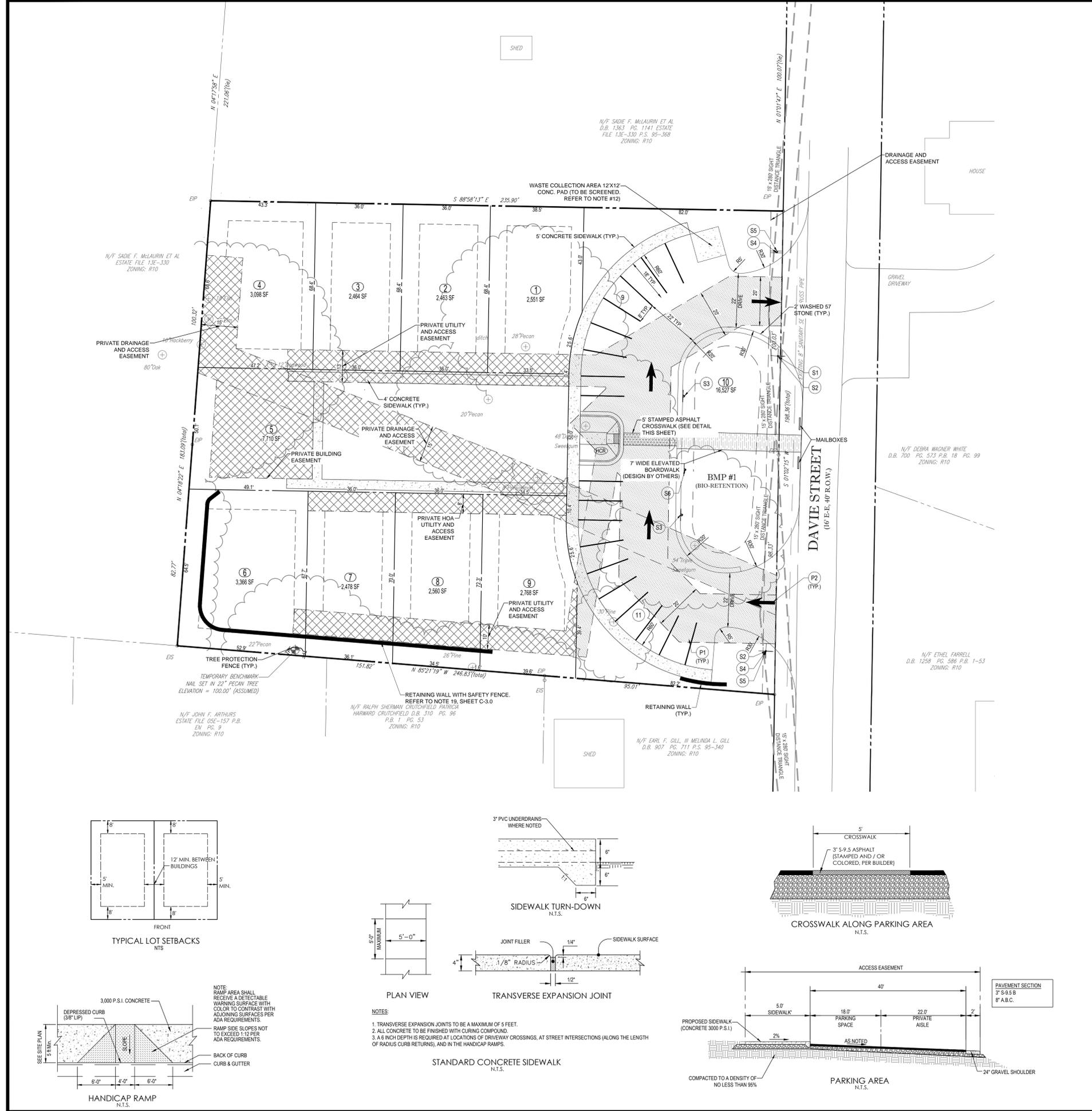
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 Fax: (919) 703-2665  
 NC@BohlerEng.com



SHEET TITLE:  
**EXISTING CONDITIONS PLAN**

SHEET NUMBER:  
**C-1.0**





**SITE LAYOUT NOTES**

1. REFER TO GENERAL NOTES ON SHEET C-100.
2. SETBACKS ARE SHOWN IN ACCORDANCE WITH THE APPROVED TOWN OF PITTSBORO STANDARDS. REFER TO TOWN OF PITTSBORO ORDINANCE FOR PORCHES, DECKS, GARAGES, ETC.
3. UTILITY AND PIPELINE EASEMENTS SHALL BE RECORDED AS PART OF THE SUBDIVISION PLAT AFTER CONSTRUCTION IS COMPLETED.
4. ALL PAVEMENT MARKING AND STREET SIGNAGE SHALL BE IN ACCORDANCE WITH THE MUTCD. ALL SPECIALTY STREET SIGNS AND POSTS SHALL BE SUBMITTED TO THE TOWN OF PITTSBORO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
5. COMMON OPEN SPACE WILL BE RECORDED AS LOTS ARE RECORDED AND SHALL BE MAINTAINED BY THE NEIGHBORHOOD HOMEOWNERS ASSOCIATION.
6. ALL SIGHT DISTANCE TRIANGLES ARE IN ACCORDANCE WITH AASHTO STANDARDS.
7. ALL TRASH AND RECYCLING SHALL BE HANDLED AT THE WASTE COLLECTION AREA WITH SERVICE PROVIDED BY WASTE INDUSTRIES. DUMPSTERS' RECYCLING SHALL BE SCREENED FROM VIEW BY A STRUCTURAL ENCLOSURE. CONCRETE PAD SHALL BE 4" THICK, 4000 PSI CONCRETE WITH EXPANSION JOINTS SPACED NO MORE THAN 15' APART.
8. A PRIVATE LANDSCAPE FEATURE SHALL BE PROVIDED FOR EACH LOT WITHIN THE P.O.S. AREA. REFER TO C-2-0 FOR DETAILS.
9. EACH LOT SHALL HAVE A WALKWAY FROM THE MAIN SIDEWALK. MATERIAL FOR THE PATH MAY VARY FROM LOT TO LOT AND MAY INCLUDE PAVERS, FLAGSTONE, OR EQUIVALENT.
10. SITE LIGHTING FOR PARKING & COMMON AREAS SHALL BE COORDINATED WITH DUKE-PROGRESS. POWER SHALL BE BROUGHT TO THE SITE FROM EXISTING POLES AND SHALL BE UNDERGROUND WITHIN THE SITE. ALL POWER STRUCTURES SHALL BE SCREENED WITH PLANTINGS IN ACCORDANCE WITH PITTSBORO REQUIREMENTS.
11. ONE COVERED PARKING SPACE PER UNIT WILL BE PROVIDED IN THE PARKING AREA.
12. ARCHITECTURAL PLANS FOR ALL THE SITE STRUCTURES INCLUDING THE COVERED PARKING, MAILBOXES, SHELTER, WASTE COLLECTION AREA, FENCING, RETAINING WALLS, RAILINGS, AND BARRIERS SHALL BE PROVIDED AT TIME OF BUILDING PERMIT SUBMITTAL.
13. ALL SITE AMENITIES, INCLUDING SIGNAGE, SITE STRUCTURES (AS MENTIONED ABOVE), AND LANDSCAPED FEATURES, SHALL BE DESIGNED IN A COHESIVE MANNER USING SIMILAR COLORS, MATERIALS, AND THEMES.
14. THE HOA SHALL RESERVE FUNDS IN ESCROW FOR THE MAINTENANCE OF ALL SITE IMPROVEMENTS INCLUDING THE STAMPED ASPHALT, PRIVATE UTILITIES, STORMWATER PIPES AND BMP, RETAINING WALLS, SIDEWALKS, STREETS AND PARKING LOT, BUT NOT INCLUDING PUBLIC PORTIONS OF WATER AND SEWER. THE OWNER MUST AGREE TO THAT AMOUNT PRIOR TO PLAN APPROVAL.
15. SCREENING SHALL BE PROVIDED ON THE NORTH, WEST, AND SOUTH PERIMETER OF THE SITE FROM ADJACENT OWNERS BY FENCING OR EVERGREEN PLANTINGS. REFER TO L-1.0 FOR DETAILS.
16. LOT 10 SHALL BE DEDICATED OPEN SPACE. LOT 5 SHALL BE DEDICATED COMMON OPEN SPACE AND THE PRIVATE BUILDING EASEMENT REPRESENTS THE MAXIMUM BUILDING ENVELOPE FOR THE CONSTRUCTION OF A COMMUNITY BUILDING.

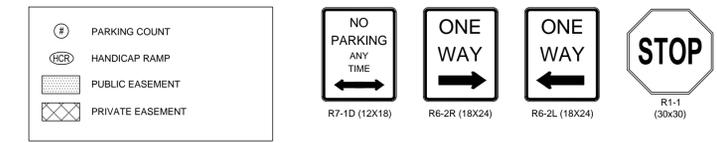
**PAVEMENT MARKING AND SIGNAGE NOTES**

1. ALL SIGNAGE INSTALLED SHALL CONFORM TO STANDARDS SET FORTH BY THE LATEST PUBLISHED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STANDARD CONSTRUCTION DRAWINGS, AND THE TOWN OF PITTSBORO STANDARDS.
2. SIGNAGE MATERIAL SHALL CONFORM TO MUTCD COLOR AND REFLECTIVITY STANDARDS AND SHALL AT A MINIMUM BE ENGINEERING GRADE REFLECTIVE MATERIAL, EXCEPT STOP SIGNS. STOP SIGNS SHALL BE CONSTRUCTED OF HI-INTENSITY GRADE MATERIAL ON A 30-INCH OCTAGONAL STOP SIGN BLANK.
3. ALL SIGNS, EXCEPT STREET MARKERS, SHALL BE MOUNTED IN A MANNER THAT THE BOTTOM OF THE SIGN IS A MINIMUM OF 7-FEET ABOVE GROUND LEVEL. STREET MARKER SIGNS SHALL BE MOUNTED OVER THE TOP OF STOP SIGNS.
4. GROUND MOUNTED SIGN POSTS USED TO INSTALL STREET SIGNAGE SHALL BE 12-FEET LONG AND CONSTRUCTED OF 14 GAUGE GALVANIZED STEEL "U" CHANNEL POSTS OR TWO INCH (2-IN) GALVANIZED SQUARE STEEL TUBING. ALTERNATE SIGN POSTS MAY BE PROPOSED TO BETTER MATCH SITE FEATURES.
5. GROUND MOUNTED SIGN POSTS SHALL BE DRIVEN TO A MINIMUM OF 30-INCHES BELOW GROUND LEVEL. ALL POSTS SHALL BE PLUMBED AND LEVELLED AS THE POST IS INSTALLED.
6. PAVEMENT MARKINGS MUST BE MADE OF A THERMOPLASTIC MATERIAL AND ADHERE TO SECTION 1200 OF THE NCDOT ROADWAY STANDARD DRAWINGS, 2002 EDITION.

**EASEMENT NOTES**

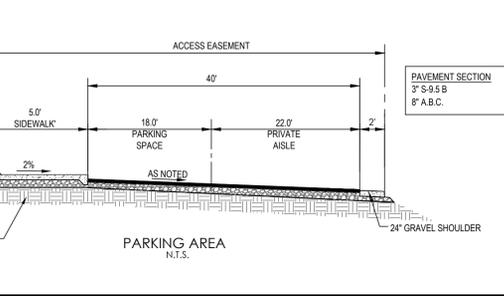
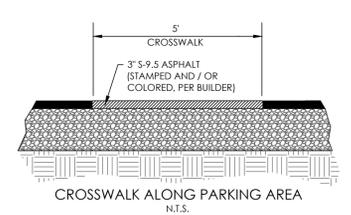
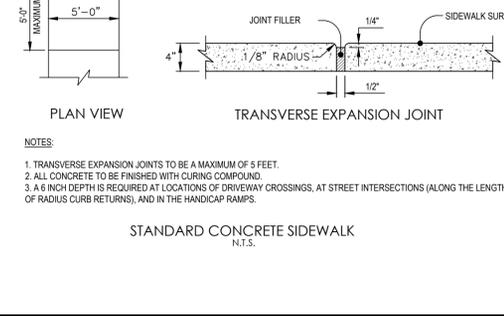
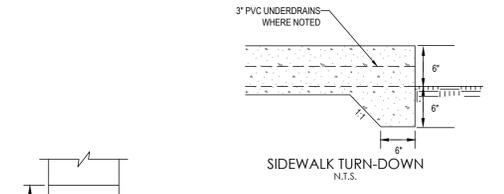
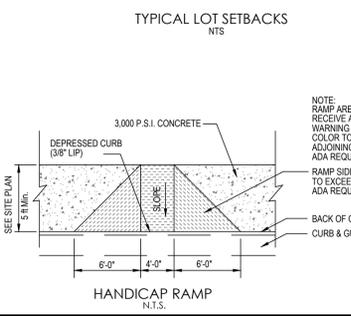
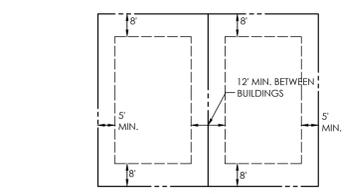
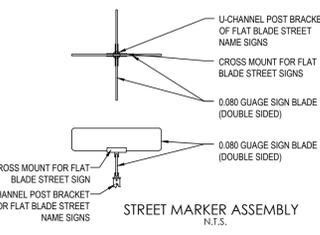
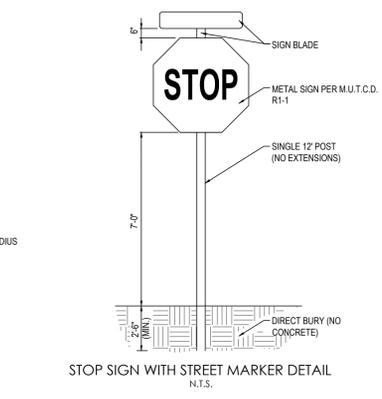
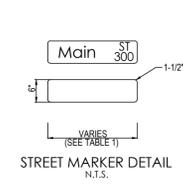
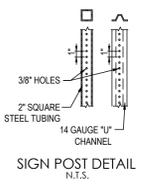
1. THIS PLAN SHOWS LIMITS AND USES OF PROPOSED EASEMENTS. FINAL LABELS AND DESCRIPTIONS SHALL BE PROVIDED BY A P.L.S. AT TIME OF PLAT.
2. PUBLIC EASEMENTS ENCOMPASS ACCESS TO ALL PUBLIC UTILITIES, DRAINAGE SYSTEMS, PRIVATE BMPs, AND ASSOCIATED RETAINING WALLS. EASEMENTS SHALL ALLOW TOWN STAFF AND/OR APPOINTED THIRD PARTIES, INCLUDING BUT NOT LIMITED TO PRIVATE CONTRACTORS, TO ACCESS, ASSESS, REPAIR, AND MAINTAIN FACILITIES AS NEEDED. PUBLIC EASEMENTS MAY SHARE CORRIDORS WITH OVERHEAD POWER. EASEMENTS MAY VARY IN WIDTH.
3. PRIVATE HOA EASEMENTS ENCOMPASS ACCESS TO ALL PRIVATE UTILITIES, DRAINAGE SYSTEMS, BMPs, AND RETAINING WALLS. EASEMENTS SHALL ALLOW HOA STAFF AND/OR APPOINTED THIRD PARTIES, INCLUDING BUT NOT LIMITED TO PRIVATE CONTRACTORS, TO ACCESS, ASSESS, REPAIR, AND MAINTAIN FACILITIES AS NEEDED. EASEMENTS MAY VARY IN WIDTH.

**LEGEND**



**SIGNAGE AND MARKING LEGEND**

SYMBOL	SIGN	MUTCD #	DIMENSIONS
(S1)	STOP SIGN	R1-1	30" x 30"
(S2)	STREET MARKER	D-3-1	VARIES
(R7-1D)	NO PARKING	R7-1D	12" x 18"
(R6-2R)	ONE WAY (RIGHT)	R6-2R	18" x 24"
(R6-2L)	ONE WAY (LEFT)	R6-2L	18" x 24"
(S6)	ENVIRONMENTAL PLACARD	SEE DETAIL ON SHEET C-6.0	
(P1)	WHITE STRIPE	4"	18'
(P2)	STRAIGHT ARROW	-	9.5'



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**REVISIONS**

REV	DATE	COMMENT	BY
1	5/13/15	TOWN OF PITTSBORO COMMENTS	AWA
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APPROVED FOR CONSTRUCTION

PROJECT No.: NCR142045  
 DRAWN BY: MAR LML  
 CHECKED BY: LML  
 DATE: 04/27/2015  
 SCALE:  
 CAD I.D.: MAR

PROJECT: CONSTRUCTION PLANS

FOR DAVIE STREET COTTAGES

LOCATION OF SITE PITTSBORO, NC

**BOHLER ENGINEERING NC, PLLC**

4011 WESTCHASE BLVD., SUITE 290  
 RALEIGH, NC 27607  
 Phone: (919) 578-9000  
 Fax: (919) 703-2665  
 NC@BohlerEng.com

Professional Engineer Seal for Jeffrey J. Bohler, License No. 10022, State of North Carolina, expires 02/02/2015.

SHEET TITLE: SITE PLAN

SHEET NUMBER: C-2.0

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FOR  
**DAVIE STREET COTTAGES**

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 PITTSBORO, NC

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 Fax: (919) 703-2665  
 NC@BohlerEng.com

PROFESSIONAL ENGINEER  
 JOHN BOHLER  
 04/02/2015

SHEET TITLE:  
**GRADING AND DRAINAGE PLAN**

SHEET NUMBER:  
**C-3.0**

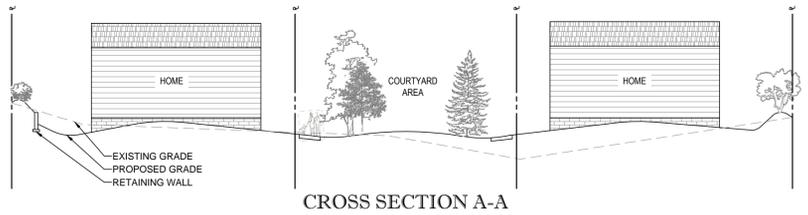
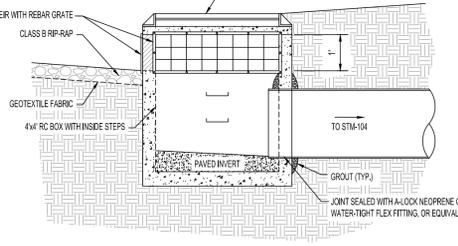
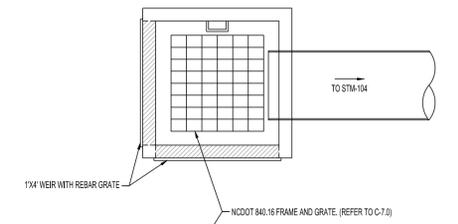
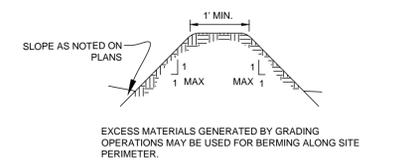
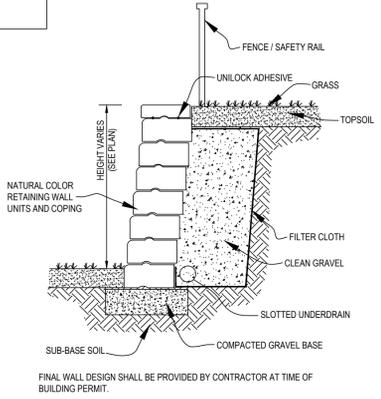
**GRADING & DRAINAGE NOTES**

- REFER TO GENERAL NOTES ON SHEET C-1.0
- ALL ELEVATIONS ARE IN REFERENCE TO THE BENCHMARK SET IN THE 22' PECAN TREE NOTED ON THE PLAN WITH AN ELEVATION OF 100.00'.
- ALL FILL SHALL BE COMPACTED IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL ENGINEER, BUT SHALL BE A MINIMUM OF 95% UNDER PAVEMENT AREAS AND 92% UNDER ALL OTHER AREAS EXCEPT THE BMP. REFER TO SHEET C-6.0 FOR BMP DETAILS.
- ALL PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN INCLUDING ROADWAYS, DRIVES, AND SIDEWALKS ARE FINISHED ELEVATIONS. REFER TO PAVEMENT CROSS SECTION DATA TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS TO BE CONSTRUCTED.
- REFER TO THE DRAINAGE SUMMARY FOR PIPE MATERIALS AND STRUCTURE TYPES.
- ALL CATCH BASINS SHALL BE STAMPED WITH "DRAINS TO RIVER" IN 3/4" HIGH LETTERING.
- STORMWATER DISCHARGES INTO AN UNNAMED TRIBUTARY OF ROBESON CREEK (JORDAN LAKE WATERSHED, HAW RIVER SUB-BASIN). THIS PROJECT IS CONSIDERED HIGH DENSITY BY NCDWQ (~24% IMPERVIOUS); WATERSHED PROTECTION IS PROVIDED THROUGH THE USE OF 1 ON-SITE BIORETENTION FACILITY.
- THE PROJECT WILL MEET ALL REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER CONTROL STRUCTURES AS OUTLINED IN NORTH CAROLINA DWQ STORMWATER BEST MANAGEMENT PRACTICES MANUAL.
- NO LOT SHALL BE BUILT UPON MORE THAN 60%. EACH LOT IS ALLOWED A MAXIMUM OF 1,200 SF OF IMPERVIOUS SURFACE INCLUDING ROOFS, WALKS, AND PATIOS. A NOTE TO THIS EFFECT SHALL BE ADDED TO THE FINAL PLAT AND MAXIMUM IMPERVIOUS AREA PROPOSED FOR EACH INDIVIDUAL LOT SHALL BE ON EVERY LOT PLAN AND VERIFIED AT THE TIME OF BUILDING PERMIT.
- THE BMP SHALL BE LOCATED IN COMMON OPEN SPACE AND HAVE AN ACCESS AND MAINTENANCE EASEMENT LOCATED AROUND IT. AN OPERATIONS AND MAINTENANCE MANUAL AND MAINTENANCE AGREEMENT SHALL BE IN PLACE FOR THE BMP.
- TO MINIMIZE DAMAGE TO EXISTING TREES LOCATED NEAR THE INTERIOR EDGE OF CONSTRUCTION AREAS, THE CONTRACTOR SHALL CUT TRENCHES, A MINIMUM OF TWO FEET DEEP, ALONG THE LIMITS OF DISTURBANCE IN ORDER TO CUT, RATHER THAN TEAR, EXISTING ROOTS.
- FINAL RETAINING WALL DESIGN AND DRAWINGS SHALL BE PROVIDED BY CONTRACTOR AT TIME OF BUILDING PERMIT AND SHALL BE PREPARED BY A NORTH CAROLINA PROFESSIONAL ENGINEER. OWNER SHALL APPROVE ALL MATERIALS BEFORE CONSTRUCTION. RAILINGS SHALL BE PROVIDED AT THE TOP OF ALL WALLS THAT EXCEED 30" IN HEIGHT AND SHALL MEET ALL OTHER STATE OF NORTH CAROLINA BUILDING CODES.
- EXCESS TOPSOIL MAY BE WASTED IN BERMING THROUGHOUT SITE. REFER TO DETAIL ON THIS SHEET.
- ALL RIP-RAP DISSIPATORS OR PLUNGE POOLS SHALL BE UNDERLINED WITH A 6-8 OZ NON-WOVEN GEOTEXTILE FABRIC.
- CONTRACTOR SHALL ENSURE THAT ALL AREAS SHEET FLOW OVER SIDEWALK TO PARKING AREA.
- CONTRACTOR SHALL PERFORM OPEN CUTS TO PAVEMENT IN DAVIE STREET TO NECESSARY WIDTH TO PERFORM UTILITY WORK. OPEN CUTS SHALL BE BACKFILLED AT 97% COMPACTION BEFORE BEING REPAVED.
- AT TIME OF INDIVIDUAL LOT GRADING, CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM FOUNDATIONS AND THAT ALL LOT DRAINAGE SHEET FLOWS TO PARKING AREA.
- THE EXISTING CULVERT IN DAVIE STREET IS IN A REVERSE FLOW CONDITION. THE INSTALLATION OF THE NEW CULVERT AND PLUNGE POOL IS PROPOSED FOR SITE IMPROVEMENTS AS WELL AS ALLEVIATING EXISTING DRAINAGE ISSUES.
- FENCING SHALL BE PROVIDED AT THE TOP OF WALLS THAT EXCEED 30" IN HEIGHT. THE FENCE SHALL BE DESIGNED WITH INTERMEDIATE ELEMENTS SPACE NO FURTHER THAN 4" APART.
- MINIMUM FFE FOR ANY PRIVATE LOTS SHALL BE 30" ABOVE FINISHED GRADE.

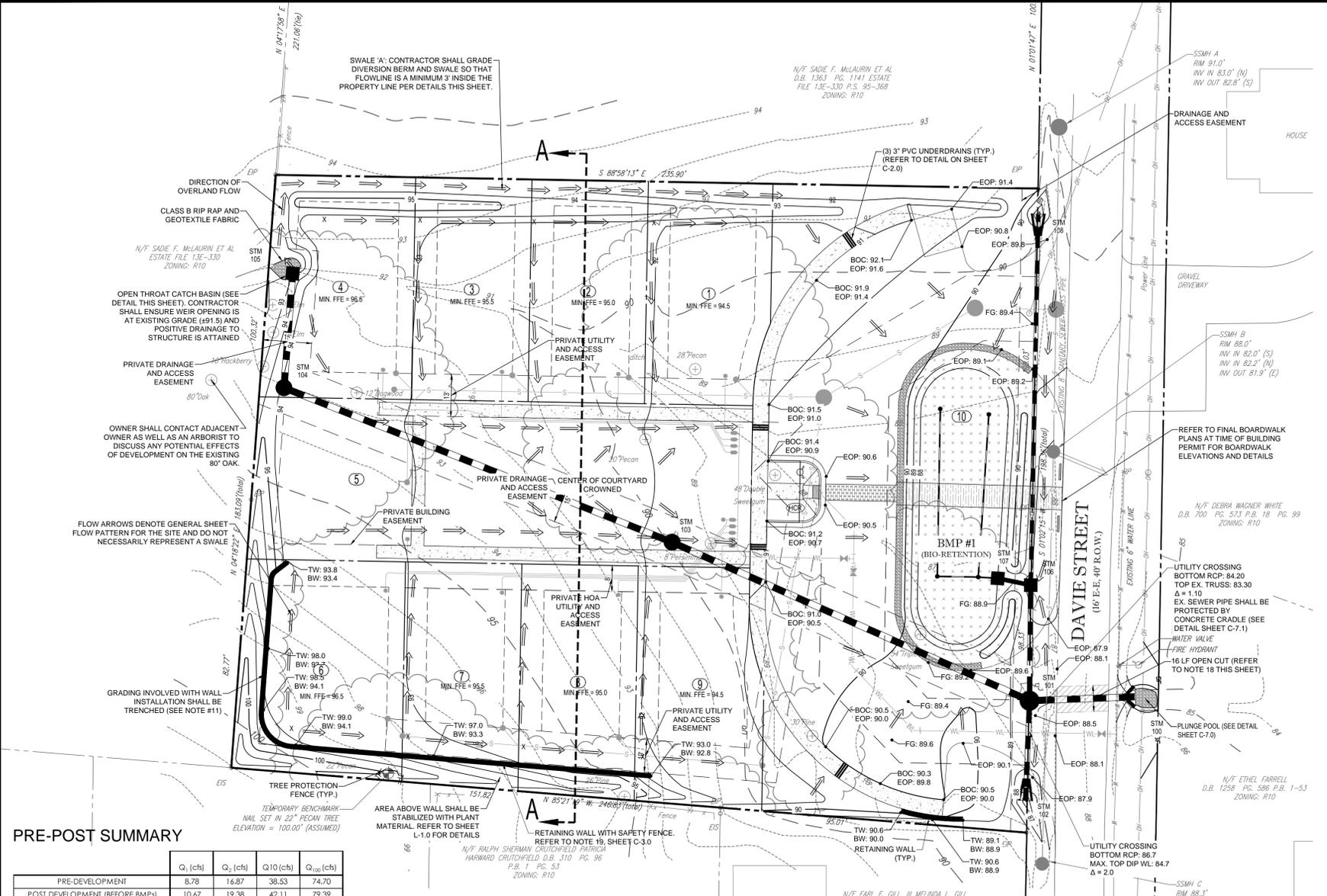
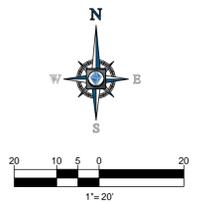
**TOTAL BUILT UPON AREA: 0.52 AC = 49 %**

**LEGEND**

- XXX--- EXISTING CONTOUR (MAJOR)
- - - - - EXISTING CONTOUR (MINOR)
- XXX--- PROPOSED LIMITS OF DISTURBANCE
- TFP--- PROPOSED TREE PROTECTION FENCE
- SF PROPOSED SILT FENCE
- XXX--- PROPOSED CONTOUR (MAJOR)
- - - - - PROPOSED CONTOUR (MINOR)
- >--- SURFACE DRAINAGE DIRECTION
- XX.X--- PROPOSED SPOT ELEVATION



THIS SECTION IS AN APPROXIMATE INTERPRETATION OF THE PROPOSED SITE GRADING AND IS NOT TO SCALE. IT IS INTENDED TO HELP VISUALIZE THE PROJECT GRADING UPON COMPLETION. ARCHITECTURE IS NOT INDICATIVE OF ACTUAL PRODUCT.



**PRE-POST SUMMARY**

	Q <sub>1</sub> (cfs)	Q <sub>2</sub> (cfs)	Q <sub>10</sub> (cfs)	Q <sub>100</sub> (cfs)
PRE-DEVELOPMENT	8.78	16.87	38.53	74.70
POST DEVELOPMENT (BEFORE BMPs)	10.67	19.38	42.11	79.39
POST DEVELOPMENT (AFTER BMPs)	8.73	16.36	41.52	78.63

Notes:  
 Attenuation is provided in one (1) bio-retention facilities and meets the overall pre-post requirement of the 1-year, 24-hour storm for the entire site. The 2, 10, and 100-year storms are shown for reference purposes only.  
 Flows based on SCS method using a type II distribution for the Raleigh-Durham area.  
 Rainfall<sub>1</sub> = 2.80 in.  
 Rainfall<sub>2</sub> = 3.60 in.  
 Rainfall<sub>10</sub> = 5.38 in.  
 Rainfall<sub>100</sub> = 8.00 in.

**DRAINAGE SUMMARY**

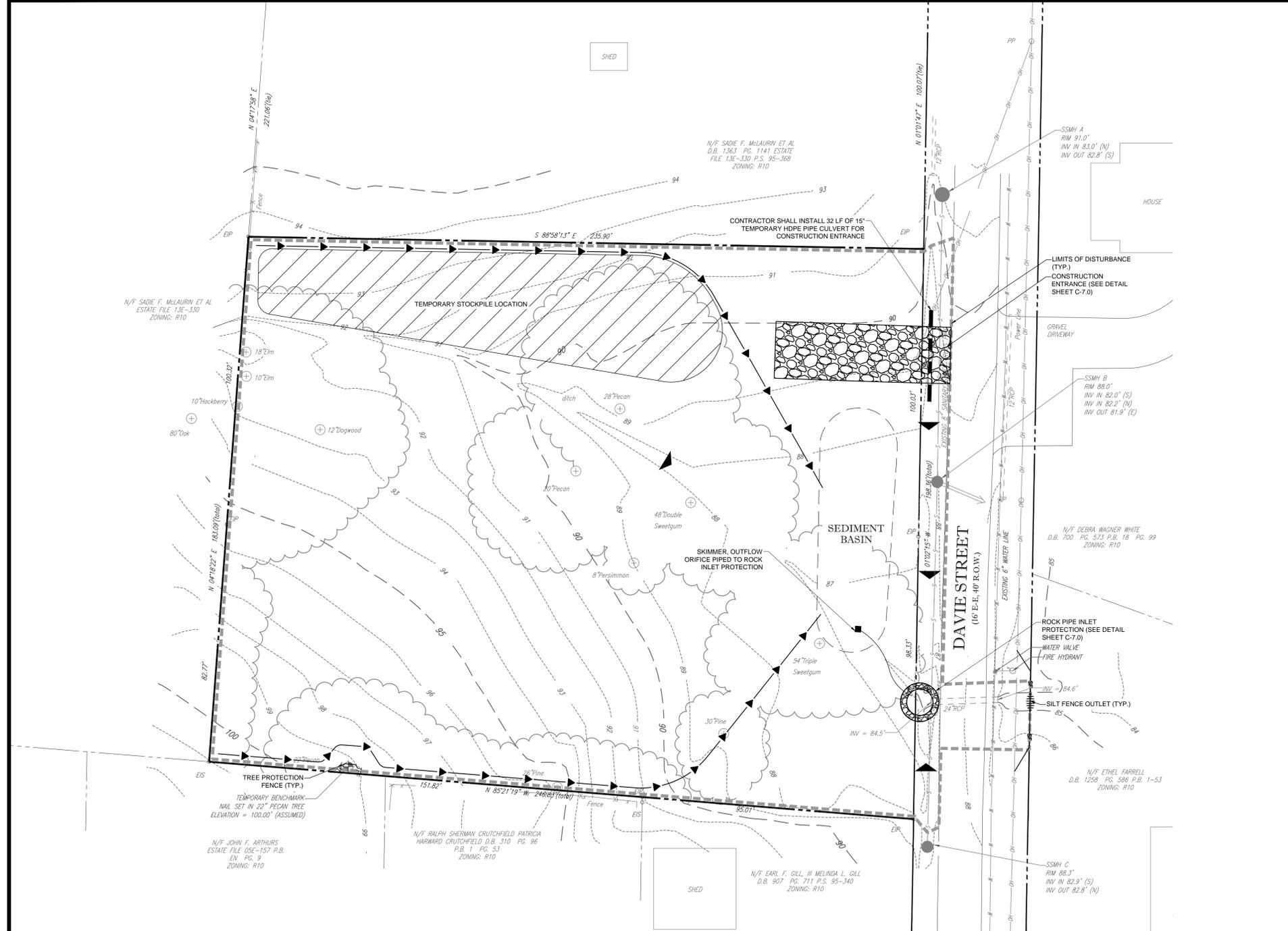
Upstream Structure	Downstream Structure	Upstream Inlet C	10-Year Upstream Intensity (in/hr)	Upstream Inlet Area (acres)	Pipe Diameter (in)	Material	Pipe Length (ft)	Capacity (Full Flow) (ft <sup>3</sup> /s)	10-Year Total Pipe Flow (ft <sup>3</sup> /s)	Slope (1/ft)	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Structure	Elevation (Rim) (ft)	Inlet Type	
108	106	0.45	7.16	1.82	15	RCP	114.4	6.3	5.9	0.0100	86.60	85.50	108	N/A	FLARED END SECTION	
107	1	106	(N/A)	7.16	(N/A)	15	RCP	10.5	8.9	0.1	0.0190	85.40	85.20	107	88.67	BMP RISER
106	101	0.60	7.05	0.40	18	RCP	35.6	7.9	7.6	0.0060	85.20	85.00	106	87.70	NCDOT 840.14 (GRATE 840.16)	
105	2	104	0.45	7.16	6.23	24	RCP	35.3	30.7	20.2	0.0180	90.00	89.35	105	94.00	CUSTOM WER BOX (GRATE 840.16)
104	103	(N/A)	7.15	(N/A)	24	RCP	129.1	26.0	20.2	0.0130	89.15	87.45	104	93.98	NCDOT 840.31 (4" MANHOLE)	
103	3	101	(N/A)	7.05	(N/A)	24	RCP	120.9	32.9	20.0	0.0210	87.25	84.70	103	91.90	NCDOT 840.31 (4" MANHOLE)
102	101	0.45	7.16	2.28	18	CLASS IV RCP	30.8	13.4	7.4	0.0160	85.50	85.00	102	N/A	FLARED END SECTION	
101	100	(N/A)	6.99	(N/A)	24	CLASS IV RCP	32.7	41.5	34.7	0.0340	84.50	83.40	101	88.60	NCDOT 840.31 (5" MANHOLE)	
													100		NCDOT 838.80 (ENDWALL)	

Notes:  
 This system has been designed to capture and convey the 25-year storm. Refer to Stormwater Management Report.

- Refer to Stormwater Management Report for BMP design and routing calculations.
- Inlet area reflects actual off-site drainage area to the weir box, assuming no storage in the existing off-site pond. Refer to Stormwater Management Report for routing of existing pond and sizing of bypass system.
- Upstream structure to be fitted with watertight manhole cover.

Pipe sizing shown in this table is based on 10-yr storm intensities shown in this table.  
 Intensity shown in this table is based on a time of concentration (T<sub>c</sub>) of 5 minutes.  
 NCDOT 840.31 rim elev. is center of MH  
 NCDOT 840.16 rim elev is @ top of grate.



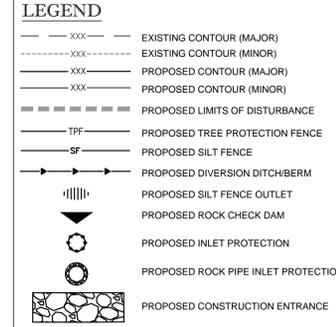


**SEDIMENT BASIN SUMMARY**

BASIN	BASIN TYPE	DRAINAGE AREA (ac.)	Q25 (cfs)	BASIN DIMENSIONS			VOLUME		AREA		SKIMMER SIZE	ORIFICE SIZE
				DEPTH (FT)	LENGTH (FT)	WIDTH (FT)	PROP. (CF)	REQ'D (CF)	PROP. (SF)	REQ'D (SF)		
SB #1	SKIMMER	0.92	3.8	3	80	26	9076	3329	2044	1515	1.5"	1.20"

NOTES:  
 -Ls 8.19 IN/HR  
 -C 0.50

- BASIN BOTTOM @ 84.7, DAM @ 87.7
- REQUIRED SURFACE AREA BASED ON 400 SF PER CFS Q25
- REQUIRED VOLUME BASED ON 3600 CF/ACRE OF DRAINAGE AREA
- VOLUMES SHOWN ARE FOR SEDIMENT STORAGE ZONE
- FLOOD STORAGE ZONE IS ONE FOOT ABOVE SEDIMENT STORAGE ZONE
- ORIFICE SIZED FOR 72 HOUR DRAW DOWN
- EROSION CONTROL INSPECTOR CAN REQUIRE ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY.



**EROSION CONTROL NOTES**

1. REFER TO GENERAL NOTES SHEET C-1.0
2. A PRE-CONSTRUCTION MEETING IS REQUIRED FOR THIS PROJECT. A REPRESENTATIVE FROM DENR-DLO, TOWN OF PITTSBORO ENGINEERING, TOWN OF PITTSBORO PUBLIC UTILITIES, THE OWNER, AND PROJECT ENGINEER SHALL BE IN ATTENDANCE.
 

TOWN OF PITTSBORO ENGINEERING	FRED ROYAL, PE	919.542.2063
TOWN OF PITTSBORO PUBLIC WORKS	JOHN POTEAT	919.542.2530
CHATHAM COUNTY	RACHEL THORN	919.545.8343
ENGINEER (BOHLER ENGINEERING)	LANDON LOVELAKE, PE	919.244.0494
OWNER (ORANGE DEVELOPMENT GROUP)	MIKE DASHER	919.530.9511
3. EROSION CONTROL MEASURES SHALL BE MAINTAINED DURING THE ENTIRE LIFE OF THE PROJECT.
4. CONTRACTOR SHALL CONDUCT GRADING OPERATIONS IN A MANNER THAT ENSURES NO SEDIMENT IS ALLOWED OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT NO SEDIMENT IS ALLOWED OFF-SITE. IF ADDITIONAL MEASURES ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY TO DISCUSS DESIGN MODIFICATIONS.
5. ALL STREETS ADJACENT TO AND IN FRONT OF THE PROJECT SHALL BE KEPT CLEAN AT ALL TIMES OR A WASH STATION MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
6. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AND BERMS TO ENSURE ALL RUN-OFF IS DIRECTED TO AN EROSION CONTROL MEASURE AT ALL TIMES.
7. ALL TEMPORARY AND PERMANENT GROUND COVER SHALL BE ESTABLISHED PER THE UPDATED NCDWQ REQUIREMENTS ON THIS SHEET.
8. ALL CATCH BASINS, YARD INLETS, AND PIPE INLETS SHALL HAVE INLET PROTECTION PER DETAILS ON C-7.0, UNLESS NOTED OTHERWISE.
9. TOPSOIL SHALL BE STRIPPED AND STOCKPILED AND MAY BE USED FOR BERMING ALONG ENTRANCE ROAD OR PLACED IN NON STRUCTURAL FILL AREAS. ANY STOCKPILE AREAS SHALL BE PROTECTED ON THE DOWNSTREAM SIDE WITH SILT FENCE.
10. ANY CUT OR FILL SLOPE THAT IS 2:1 OR GREATER SHALL BE STABILIZED WITH PERMANENT SLOPE DETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES. SLOPES GREATER THAN 3:1 SHALL NOT BE STABILIZED WITH TURF GRASS BUT MUST BE STABILIZED WITH VEGETATIONS THAT REQUIRES MINIMAL MAINTENANCE SUCH AS WEEPING LOVE GRASS, RED FESCUE OR OTHER APPROVED VARIETY.
11. IF EROSION OCCURS IN DIVERSIONS, DIVERSION DITCHES SHALL BE PROTECTED WITH A SUITABLE LINER SUCH AS NAG S75 OR EQUIVALENT.
12. SINCE NO PERIMETER TREE PROTECTION FENCE IS REQUIRED, CONTRACTOR SHALL STAKE THE LIMITS OF DISTURBANCE EVERY 20' AROUND SITE PERIMETER TO ENSURE NO OFFSITE GRADING OCCURS.
13. TREES SHALL BE REMOVED FULLY, INCLUDING ALL ROOT MATERIALS. CONTRACTOR SHALL COORDINATE WITH OWNER TO RETAIN AND STORE LUMBER FROM TREES ON SITE TO BE FOR CONSTRUCTION OF FUTURE SITE AMENITIES.
14. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL MEASURES TO PROTECT THE SITE.

**CONSTRUCTION SEQUENCE**

1. OBTAIN GRADING PERMIT.
2. INSTALL TREE PROTECTION FENCE, SILT FENCE, CONSTRUCTION ENTRANCE, AND HORSESHOE CHECK DAM AROUND EXISTING 24" CULVERT UNDER DAVIE STREET, CLEARING ONLY AS NECESSARY TO INSTALL THESE MEASURES. ONCE INSTALLED, REQUEST A PRE-CONSTRUCTION MEETING AND INSPECTION.
3. INSTALL REMAINDER OF EROSION CONTROL MEASURES PER THESE PLANS WITH THE PERIMETER CONTROLS COMING FIRST AND THEN THE SEDIMENT BASIN. REFER TO SEDIMENT BASIN SUMMARY FOR BOTTOM OF BASIN ELEVATIONS, AS IT DIFFERS FROM THE FINAL BOTTOM ELEVATION OF THE BIO-RETENTION AREA.
4. OBTAIN A CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY A CHATHAM COUNTY EROSION CONTROL OFFICER.
5. BEGIN FULL CLEARING AND GRUBBING, MAINTAINING ALL MEASURES AS REQUIRED. PROCEED WITH SITE GRADING AND STABILIZE AS AREAS ARE BROUGHT TO GRADE.
6. ONCE THE SITE IS BROUGHT TO GRADE TO A POINT WHERE ALL RUN-OFF CAN BE DIVERTED TO THE SEDIMENT BASIN, PROCEED WITH THE REPLACEMENT OF THE EXISTING CULVERT UNDER DAVIE STREET, LEAVING THE HORSESHOE CHECK DAM IN PLACE DURING THESE OPERATIONS.
7. INSTALL REMAINDER OF INFRASTRUCTURE AND UTILITIES AS SHOWN ON THESE PLANS.
8. CLEAN OUT SEDIMENT BASIN WHEN HALF-FULL.
9. SEED AND MULCH DENUDED AREAS PER STABILITY TIME FRAMES NOTED ON THIS SHEET.
10. MAINTAIN EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
11. ONCE ALL UPSTREAM AREAS ARE STABILIZED, OBTAIN LETTER FROM CHATHAM COUNTY RELEASING THE EROSION CONTROL PERMIT AND THEN CONSTRUCT THE BIO-RETENTION AREA TO THE SPECIFICATIONS SHOWN ON SHEET C-6.0.
12. REQUEST AND OBTAIN FINAL APPROVAL BY EROSION CONTROL OFFICER.
13. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES AND STABILIZE FINAL AREAS.

**SEEDBED PREPARATION**

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF THEY OCCUR. AFTER ALL ROUGH GRADING IS COMPLETED, TILL SOIL AREAS TO BE SEEDBED AND PLANTED TO A DEPTH OF FIVE INCHES.
2. REMOVE ALL LOOSE ROCKS, ROOTS, DIRT CLODS, AND OTHER OBSTRUCTIONS LEAVING GROUND SURFACE SMOOTH AND UNIFORM.
3. TO PREPARE UNIFORM SEEDBED, INCORPORATE AGRICULTURAL LIME FERTILIZER AND SUPERPHOSPHATE INTO SOIL AREAS TO BE VEGETATED. DISK NUTRIENTS INTO SOIL UNTIL WELL PULVERIZED.
4. SEED ON PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK. APPLY TEMPORARY SEEDING TO SOIL STOCKPILE AREAS THAT WILL BE DISTURBED WITHIN 30 DAYS. APPLY PERMANENT SEEDING TO WHERE FINISH GRADES ARE ESTABLISHED.
5. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR WITH LIQUID ASPHALT AT 400 GAL/ACRE OR EMULSIFIED ASPHALT AT 300 GAL/ACRE.
6. MULCH ALL SEEDBED AREAS WITH SMALL GRAIN STRAW AT 90 LBS/1000 SF AND SPREAD UNIFORMLY. GROUND SURFACE SHOULD BE VISIBLE TO ALLOW SUNLIGHT PENETRATION.
7. MULCH AROUND SHRUBBERY AND TREES WITH TRIPLE SHREDDED HARDWOOD TO A DEPTH OF 3 INCHES.
8. AFTER WORK IS COMPLETED AND AREAS ARE STABILIZED, CALL EROSION CONTROL OFFICER FOR SITE INSPECTION AND RECEIVE CERTIFICATE OF COMPLETION. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES, INSTALL RIP-RAP, AND SEED AND MULCH ANY REMAINING BARE AREAS.

SITE AREA DESCRIPTION	STABILIZATION TIMEFRAMES	
	STABILIZATION	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
HIGH QUALITY WATER(HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

TOTAL DISTURBED AREA = 1.10 AC

**BOHLER ENGINEERING NC, PLLC**

REGISTERED PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 LICENSE NO. 10007

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 RICHMOND, VA  
 NEW YORK, NY  
 NEW JERSEY  
 SOUTH CAROLINA  
 SOUTH FLORIDA

**REVISIONS**

REV	DATE	COMMENT	BY
1	5/13/15	TOWN OF PITTSBORO COMMENTS	AWA
2	7/02/15	TOWN OF PITTSBORO COMMENTS	MAR
3	8/01/15	TOWN OF PITTSBORO COMMENTS	MAR

**811**

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 ALWAYS CALL 811  
 BEFORE YOU DIG

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APPROVED FOR CONSTRUCTION

PROJECT No.:	NCR142045
DRAWN BY:	MAR
CHECKED BY:	LML
DATE:	04/7/2015
SCALE:	
CAD I.D.:	MAR

PROJECT: **CONSTRUCTION PLANS**

FOR **DAVIE STREET COTTAGES**

LOCATION OF SITE: **PITTSBORO, NC**

**BOHLER ENGINEERING NC, PLLC**

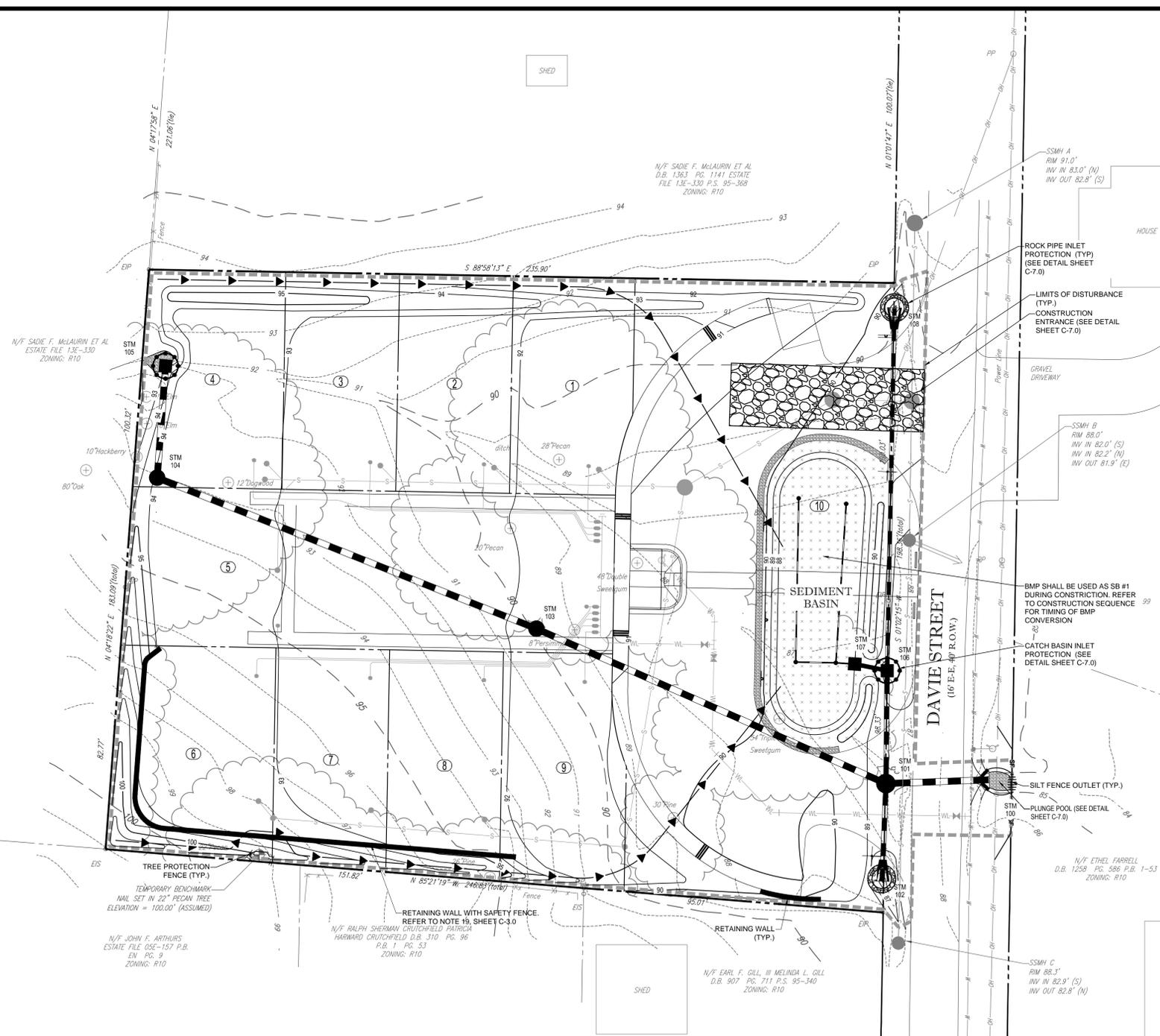
4011 WESTCHASE BLVD., SUITE 290  
 RALEIGH, NC 27607  
 Phone: (919) 578-9000  
 Fax: (919) 703-2665  
 NC@BohlerEng.com

Professional Engineer Seal for Landon Lovelake, PE, License No. 10007, State of North Carolina, dated 04/02/2015.

SHEET TITLE: **EROSION AND SEDIMENT CONTROL PLAN PHASE I**

SHEET NUMBER: **C-5.0**

REFER TO SHEET C-5.0 FOR SEDIMENT BASIN  
SUMMARY, EROSION CONTROL NOTES AND  
CONSTRUCTION SEQUENCE



**BOHLER**  
ENGINEERING, P.L.L.C.

STATE OF NORTH CAROLINA  
REGISTERED PROFESSIONAL ENGINEER  
NO. 40212

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SOUTH CAROLINA  
FLORIDA

REVISIONS

REV	DATE	COMMENT	BY
1	5/13/15	TOWN OF PITTSBORO COMMENTS	AWA
2	7/02/15	TOWN OF PITTSBORO COMMENTS	MAR
3	8/01/15	TOWN OF PITTSBORO COMMENTS	MAR

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CONSTRUCTION

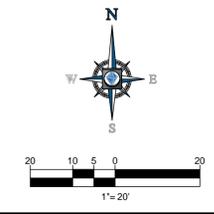
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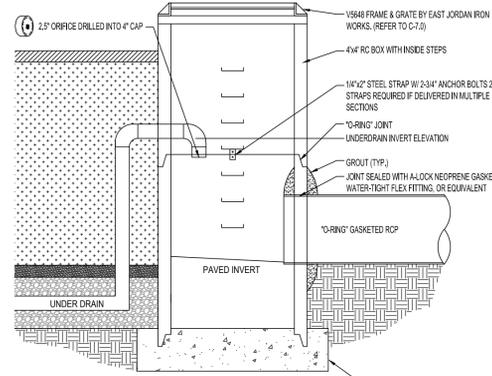
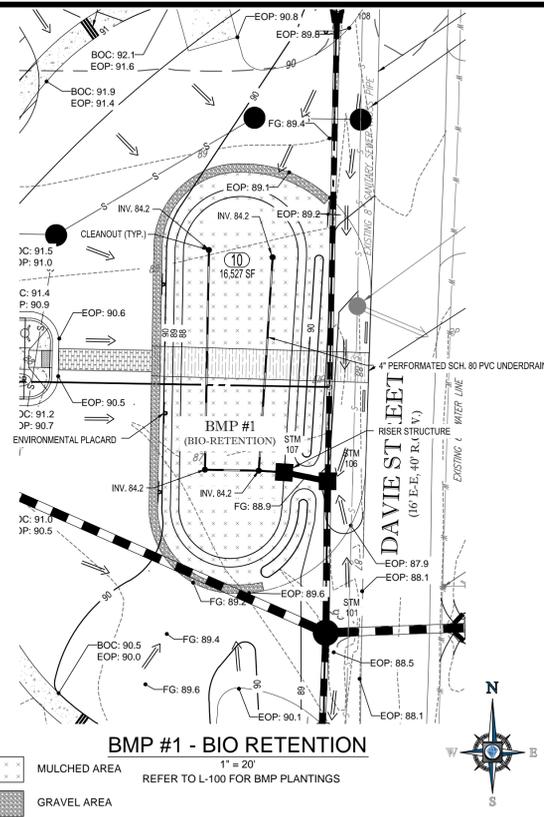
PROJECT:  
**CONSTRUCTION  
PLANS**  
FOR  
**DAVIE STREET  
COTTAGES**  
LOCATION OF SITE  
PITTSBORO, NC

**BOHLER**  
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NORTH CAROLINA  
REGISTERED PROFESSIONAL ENGINEER  
DON M. LOVELL  
04/02/2015

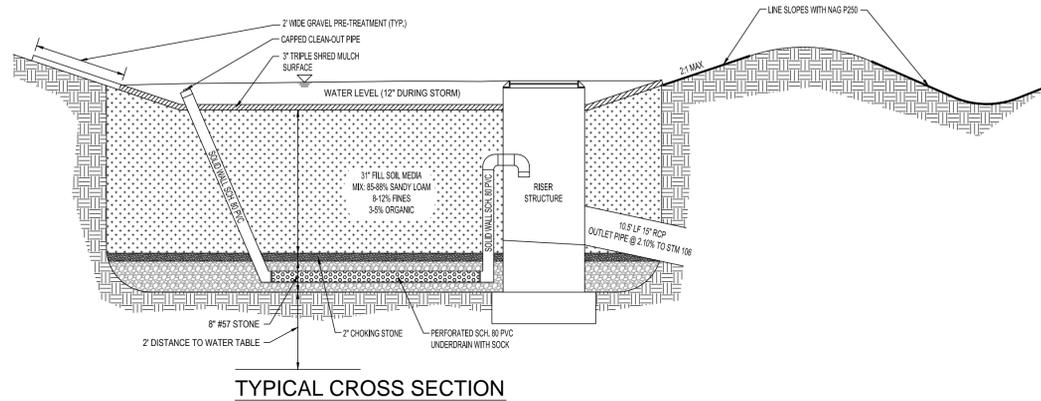
SHEET TITLE:  
**EROSION AND  
SEDIMENT  
CONTROL PLAN  
PHASE II**  
SHEET NUMBER:  
**C-5.1**





	DIMENSIONS	ELEV.
TOP OF DAM (SEE PLAN VIEW)		89.10
EMERGENCY SPILLWAY	10' WIDE	88.90
TOP OF RISER (TOP OF FRAME)	4' x 4'	88.67
TOP OF MULCH (TRIPLE SHRED)	3' DEEP	87.67
TOP OF SOIL MIX	31\"/>	

REFER TO SHEET C-5.0 FOR SEDIMENT BASIN SUMMARY, EROSION CONTROL NOTES AND CONSTRUCTION SEQUENCE



### BMP NOTES

1. REFER TO GENERAL NOTES ON SHEET C-1.0
2. REFER TO DAM EMBANKMENT AND SEED BED PREPARATION NOTES ON THIS SHEET.
3. REFER TO CONSTRUCTION SEQUENCE ON SHEET C-5.0 FOR TIMING OF BMP CONVERSION.
5. NO PLANTINGS OF ANY SORT SHALL BE PERMITTED WITHIN 5' OF THE RISER STRUCTURE.
6. A PE CERTIFICATION WILL BE REQUIRED AT TIME OF BMP AS-BUILT.

### BIORETENTION BACKFILLING SEQUENCE

1. UNDERCUT BIORETENTION AREA TO NECESSARY DEPTH (SEE BIORETENTION AREA CROSS SECTION).
2. PLACE 4\"/>

### BIORETENTION COMPACTION NOTICE

1. CONTRACTOR SHALL MINIMIZE THE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, CONTRACTOR SHALL USE EXCAVATION HOES TO REMOVE THE ORIGINAL SOIL. IF THE BIORETENTION AREA IS EXCAVATED USING A LOADER, THE CONTRACTOR SHALL USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. COMPACTION AT THE BASE OF THE BIORETENTION AREA CAN BE ALLEVIATED BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL RIPPERS, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGH THE 12\"/>

### BIORETENTION MATERIAL SPECIFICATIONS

1. THE GRAVEL LAYER SHALL MEET THE STANDARDS SET FORTH IN ASSHTO-M-43. THE GRAVEL SHALL BE A POORLY GRADED MATERIALS WITH AN AVERAGE DIAMETER OF 0.25\"/>

### BIORETENTION PLANTING SOIL MIX

1. THE PLANTING SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN ONE-HALF INCH IN DIAMETER. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, JOHNSON GRASS, QUACK GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADA THISTLE, OR OTHER NOXIOUS WEEDS.

2. THE CONTRACTOR SHALL PROVIDED A BIORETENTION SOIL MIX USING THE TWO COMPONENTS LISTED BELOW THAT WILL MEET THE ASTM STANDARDS AS FOLLOWS:

- A. SANDY LOAM TOPSOIL - 35%
  - B. COARSE SAND - 65%
  - C. PERMEABILITY - 2\"/>
- NOTES:
- CLAY PERCENTAGE SHALL NOT EXCEED 8%
  - SILT PERCENTAGE SHALL NOT EXCEED 12%
  - SILT AND CLAY PERCENTAGE SHALL NOT EXCEED 12%
  - PHOSPHOROUS INDEX SHALL BE BETWEEN 10 AND 30

3. THE CONTRACTOR SHALL TEST THE PLANTING SOIL PRIOR TO PLACEMENT TO ENSURE THE FOLLOWING CRITERIA ARE MET:

- A. pH RANGE - 5.5 TO 6.5
- B. ORGANIC MATTER - 1.5% TO 5%
- C. MAGNESIUM - 35 LB/AC
- D. PHOSPHOROUS P205 - 100 LB/AC
- E. POTASSIUM K20 - 85 LB/AC
- F. SOLUBLE SALTS NOT TO EXCEED 500 PPM

4. THE FOLLOWING TEST FREQUENCIES SHALL APPLY TO THE ABOVE SOIL CONSTITUENTS: ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST PER 200 CUBIC YARDS. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHOROUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED BIORETENTION SOIL. SHOULD THE pH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
5. IN-SITU PERMEABILITY TESTING MUST BE PERFORMED AFTER INSTALL. BMP WILL NOT BE ACCEPTED WITH A PERMEABILITY OF LESS THAN 2\"/>

### DAM EMBANKMENT NOTES

1. CONTROLLED FILL AS SPECIFIED BY THE GEOTECHNICAL ENGINEER. IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 3- FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2- FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF 1\"/>

### SEED BED PREPARATION

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ENTIRE AREA, THEN RIP TO 6 INCHES DEEP.
2. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER DEBRIS LEAVING SURFACES SMOOTH AND UNIFORM.
3. APPLY LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL AT THE FOLLOWING RATES:  
 LIME: 2 TONS/ACRE  
 FERTILIZER (10-10-10): 0.5 TONS/ACRE  
 SUPERPHOSPHATE (20%): 0.25 TONS/ACRE  
 MULCH (SMALL GRAIN STRAW): 2 TONS/ACRE  
 TACK (ASPHALT EMULSION): 300 GAL/ACRE
4. CONTINUE TILLING UNTIL A WELL-PULVERIZED, FIRM, UNIFORM SEED BED IS PREPARED 4-6 INCHES DEEP.
5. SEED FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTI-PACK AFTER SEEDING.
6. MULCH AND TACK IMMEDIATELY AFTER SEEDING.
7. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS WITHIN PLANTING SEASON, IF POSSIBLE.

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF PITTSBORO STANDARDS AND SPECIFICATIONS IN PLACE AT TIME OF PLAN APPROVAL

**BOHLER ENGINEERING NC, PLLC**

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REGISTERED PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 LICENSE NO. 38812

REV	DATE	COMMENT	BY
1	5/13/15	TOWN OF PITTSBORO COMMENTS	AWA
2	7/02/15	TOWN OF PITTSBORO COMMENTS	MAR
3	8/01/15	TOWN OF PITTSBORO COMMENTS	MAR

**811**

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 BEFORE YOU DIG  
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APPROVED FOR CONSTRUCTION

PROJECT No.:	NCR142045
DRAWN BY:	MAR
CHECKED BY:	LML
DATE:	04/7/2015
SCALE:	
CAD I.D.:	MAR

PROJECT:  
**CONSTRUCTION PLANS**  
 FOR  
**DAVIE STREET COTTAGES**  
 LOCATION OF SITE  
 PITTSBORO, NC

**BOHLER ENGINEERING NC, PLLC**  
 NCBELS P-1132  
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Professional Engineer Seal for Don M. Lovell, License No. 38812, State of North Carolina, dated 07/02/2015.

SHEET TITLE:  
**BMP PLAN**  
 SHEET NUMBER:  
**C-6.0**







