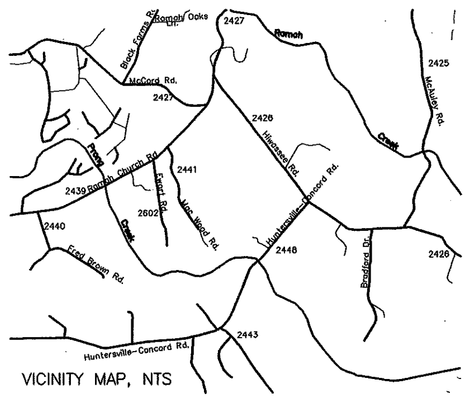


VICINITY MAP, NTS

NAME OF DEVELOPMENT – THE PAVILION
LOT 5
PIN 01924320
15336 PAVILION ESTATES DRIVE
HUNTERSVILLE, NORTH CAROLINA
WATERSHED – CLARKE
FEMA PANEL 3701580068E , OUTSIDE
ZONED R
OWNER OF RECORD – KEN WRENCH, AUGUSTA HOMES
CLIENT – AUGUSTA HOMES
LOT SIZE – 1.454 ACRES = 63354.43 SQUARE FEET

DESIGNATED TREE SAVE =	18,588.20 SF
(AT TIME OF PLAT RECORDING)	
CHANGES TO TREE SAVE AREA	
REMOVED FOR LID MEASURES =	3,737.82 SF
ADDED OVER SEPTIC REPAIR FIELD =	2,797.29 SF
ADDED IN YARD =	1,539.39 SF
NET GAIN =	598.86 SF

(NOTE: OWNER IS NOT REQUIRED TO ADD ADDITIONAL TREE SAVE AREA, ADDITIONAL AMENDMENTS REQUIRED SHOULD BE VERIFIED BY AN AS BUILT SURVEY, ALL CLEARING LIMITS SHALL BE CLEARLY MARKED PRIOR TO BEGINNING CLEARING AND OR CONSTRUCTION)

IMPERVIOUS AREA CALCULATION

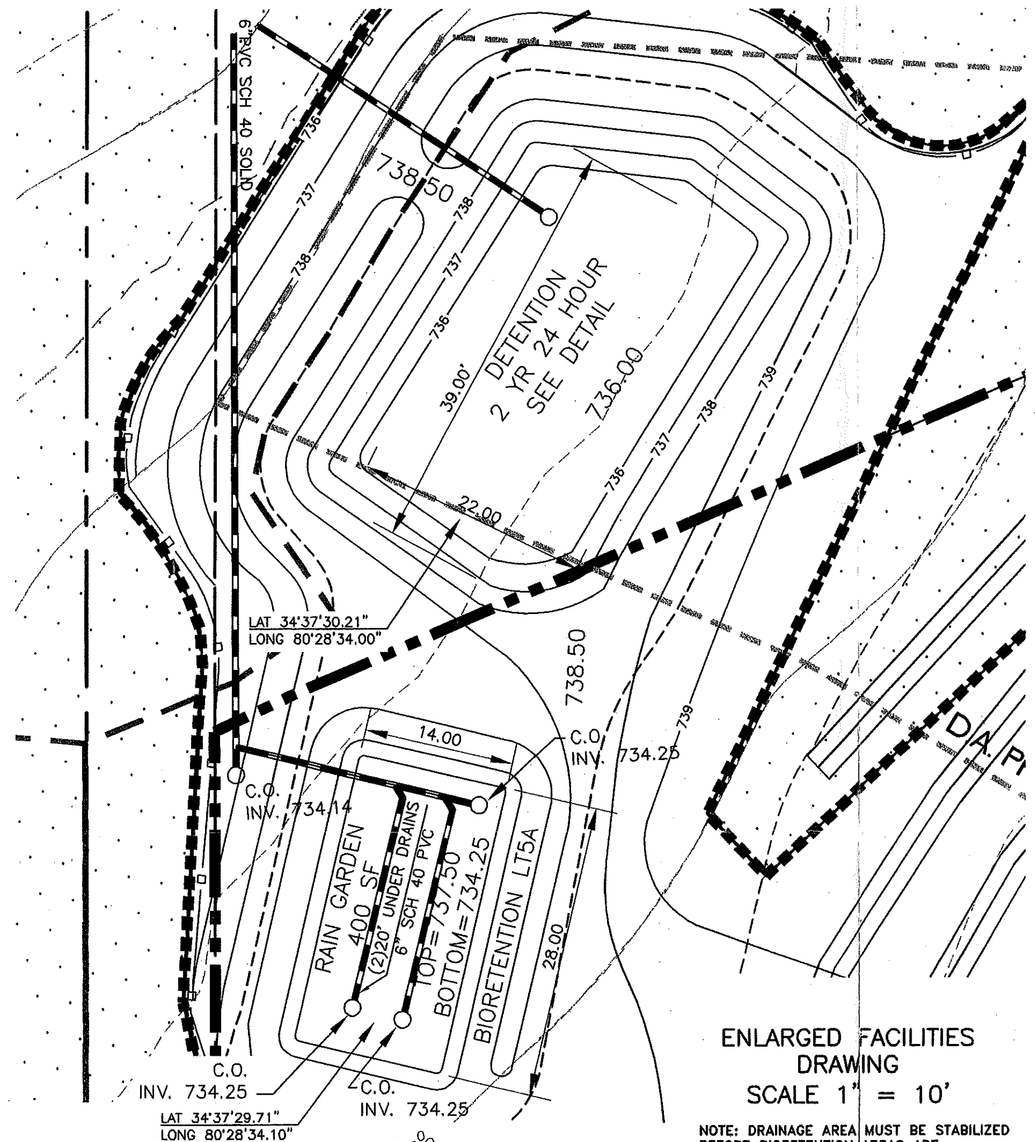
HOUSE	4,173.50 SF
PAVED DRIVEWAY	3,536.11 SF
PAVED SIDEWALK	272.13 SF
POOL AND PAVED DECK	1,500.00 SF
TOTAL IMPERVIOUS	9,481.74 SF
TOTAL PERCENT IMPERVIOUS	14.96% (WITH RESPECT TO
THE LOT ACREAGE)	
ACTUAL DRAINAGE AREA	1.14 ACRES

(CALCULATION FOR LID AND DETENTION PROVIDED UNDER SEPARATE COVER)

CONSTRUCTION SEQUENCE
1. OBTAIN REQUIRED APPROVALS AND PERMITS, HOLD ANY REQUIRED PRE CONSTRUCTION CONFERENCES
2. MARK CLEARING LIMITS
3. CLEAR MINIMUALLY FOR SILT FENCE INSTALLATION
4. INSTALL SILT FENCE AND DRIVE CULVERT AND CONSTRUCTION ENTRANCE
5. CLEAR AND GRUB SITE
6. LAYOUT AND CONSTRUCT HOME
7. FINISH REQUIRED SITE WORK
8. STABILIZE SITE
9. GRADE AND INSTALL DETENTION BASIN
10. GRADE AND INSTALL RAIN GARDEN

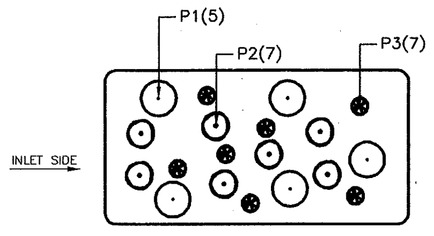
RAIN GARDEN 400 SF/43560 SF/1 AC = 0.009183X2000
= 18.36 EA = 19 EA

P1 (5 EA) ARONIA MELANOCARPA (BLACK CHOKEBERRY)
P2 (7 EA) CLETHRA ALNIFOLIA (SWEET PEPPERBUSH)
P3 (7 EA) SACCHARUM RAVENNAE (GIANT PLUMESKASS)
19 EA

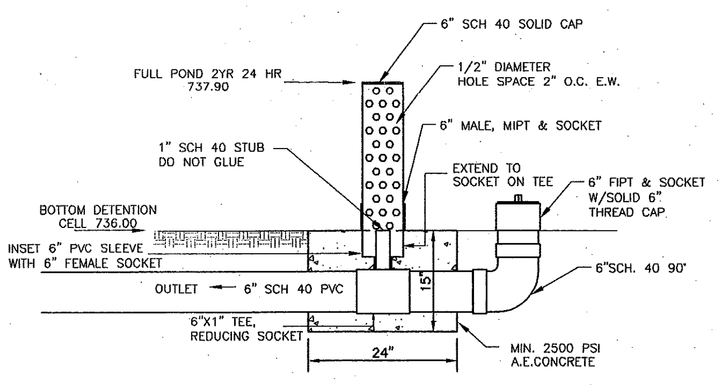


ENLARGED FACILITIES DRAWING
SCALE 1" = 10'

NOTE: DRAINAGE AREA MUST BE STABILIZED BEFORE BIORETENTION AREAS ARE COMPLETED



RAIN GARDEN PLANTINGS
NTS



DETENTION CELL OUTLET
NTS

NOTE:
1. OWNER/CLIENT RESERVES THE RIGHT TO MAKE LAYOUT CHANGES WITHIN THOSE ALLOWED BY THE ENGINEERING AND ZONING ORDINANCE OF HUNTERSVILLE, MECKLENBURG COUNTY, NORTH CAROLINA. INCREASE IN IMPERVIOUS AREA PROPOSED SHALL BE BROUGHT TO THE ATTENTION OF THE CERTIFYING ENGINEER SO LID MEASURES AND DETENTION FACILITIES CAN BE CHANGED BASED ON THE PROPOSED REVISIONS TO THE PLAN.
2. OWNER/CLIENT MUST COMPLY WITH APPLICABLE SECTIONS OF THE TOWN OF HUNTERSVILLE WATER QUALITY DESIGN MANUAL JULY 26, 2007 EDITION. IN ADDITION OWNER/CLIENT IS REQUIRED TO PROVIDE EASEMENT AND MAINTENANCE AGREEMENT TO SATISFY THE ABOVE REFERENCED MANUAL.
3. OWNER/CLIENT IS RESPONSIBLE FOR PERIODIC INSPECTION AND MAINTENANCE OF ALL MEASURES INSTALLED, WHEN REQUIRED BY THE ORDINANCE AND DESIGN MANUAL, QUALIFIED PROFESSIONALS SHALL BE RETAINED TO PROVIDE THE APPROPRIATE DOCUMENTATION.
4. OWNER/CLIENT SHALL BE RESPONSIBLE TO VERIFY THAT MEASURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLAN.

MAINTENANCE RESPONSIBILITIES
TOWN OF HUNTERSVILLE WATER QUALITY DESIGN MANUAL 7/26/2007 ED.
SECT. 8.5.2.

BMPS THAT ARE CONSTRUCTED ON PRIVATELY-OWNED LAND AND THAT ARE NOT WITHIN A PUBLIC EASEMENT SHALL BE MAINTAINED BY A HOMEOWNERS ASSOCIATION OR THE OWNER OF THE SUBJECT PROPERTY. BMPS THAT ARE CONSTRUCTED ON PUBLIC LAND WITHIN PUBLIC RIGHTS-OF-WAY, AND/OR WITHIN PUBLIC EASEMENTS SHALL BE MAINTAINED BY THE PUBLIC BODY WITH OWNERSHIP/JURISDICTION OF THE SUBJECT PROPERTY. THE FOLLOWING REQUIREMENTS SHALL BE MET FOR ALL BMPS THAT HAVE BEEN CONSTRUCTED ON PRIVATELY-OWNED PROPERTY AND NOT WITHIN A PUBLIC EASEMENT.

A. MAINTENANCE COVENANTS. PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT FOR ANY BUILDING WITHIN A PERMITTED DEVELOPMENT SERVED BY A BMP, THE APPLICANT OR OWNER OF THE BMP SHALL ESTABLISH A FORMAL MAINTENANCE COVENANT APPROVED BY THE MECKLENBURG COUNTY LAND USE AND ENVIRONMENTAL SERVICES AGENCY AND RECORDED IN THE OFFICE OF THE REGISTER OF DEEDS IN WHICH THE OWNER ACKNOWLEDGES THE DUTY OF THE OWNER AND ALL SUBSEQUENT OWNERS OF THE PROPERTY TO MAINTAIN THE BMP IN ACCORDANCE WITH THE TERMS OF THE COVENANT. A MAINTENANCE PLAN AND SCHEDULE SHALL BE INCLUDED AS PART OF THE COVENANT AS WELL AS A MECHANISM FOR FUNDING MAINTENANCE AND REPAIRS. THE MAINTENANCE COVENANT SHALL ALSO SPECIFY THE HOMEOWNERS ASSOCIATION OR SIMILAR LEGAL ENTITY HAS THE POWER TO COMPEL CONTRIBUTIONS FROM RESIDENTS OF A DEVELOPMENT TO COVER THEIR PROPORTIONATE SHARES OF A TYPICAL MAINTENANCE COVENANT. APPENDIX H CONTAINS AN EXAMPLE MAINTENANCE PLAN AND INSPECTION CHECKLISTS.
B. REQUIREMENTS FOR THE MAINTENANCE COVENANTS. BMPS SHALL BE INSPECTED AT A MINIMUM OF ANNUALLY BY A QUALIFIED PROFESSIONAL AS DESCRIBED IN THE MAINTENANCE COVENANT. THE PURPOSE OF THIS INSPECTION IS TO IDENTIFY MAINTENANCE AND REPAIR NEEDS TO ENSURE THE LONG-TERM FUNCTIONALITY OF THE BMP. ANY IDENTIFIED MAINTENANCE AND/OR REPAIR NEEDS SHALL BE ADDRESSED IN A TIMELY MANNER. THE INSPECTION AND MAINTENANCE REQUIREMENT MAY BE INCREASED AS DEEMED NECESSARY BY THE MECKLENBURG COUNTY WATER QUALITY PROGRAM (MCWQP) TO ENSURE PROPER FUNCTIONING OF THE BMP.
C. RECORDS OF INSTALLATION AND MAINTENANCE ACTIVITIES. PARTIES RESPONSIBLE FOR THE INSPECTION, OPERATION AND MAINTENANCE OF A BMP SHALL MAINTAIN RECORDS OF THE INSTALLATION OF ALL THE MAINTENANCE AND REPAIRS AND SHALL RETAIN THE RECORDS FOR THE LIFE OF THE BMP. AFTER INSPECTIONS AND MAINTENANCE HAVE BEEN PERFORMED, A COPY OF THE INSPECTION CHECKLIST (SEE APPENDIX H) SHALL BE FORWARDED BY THE OWNER TO MCWQP WITHIN TWO WEEKS OF THE INSPECTION. MCWQP STAFF WILL FILE SUBMITTED DATA BASE TO TRACK INSPECTIONS AND MAINTENANCE PERFORMED. ALL INSPECTION CHECKLISTS ARE TO BE MAILED TO 700 NORTH TRYON STREET, CHARLOTTE, NC 28202, ATTENTION: WATER QUALITY PROGRAM.

WATERING AND MAINTENANCE RESPONSIBILITIES DURING DIFFERENT PHASES OF A PROJECT SHALL GENERALLY BE DEFINED AS FOLLOWS, UNLESS CONTRACTUAL OBLIGATIONS REQUIRE OTHERWISE:
- CONSTRUCTION PHASE: DEVELOPER/BUILDER
- PROJECT ACCEPTANCE: BUILDER
- PROPERTY OWNERSHIP TRANSFER: BUILDER/PROPERTY OWNER
- WARRANTEE PHASE: PROPERTY OWNER
- OPERATION PHASE: PROPERTY OWNER/HOMEOWNERS ASSOCIATION

NOTES:
1. EXCAVATE THE RAIN GARDEN TO THE DESIGN DIMENSIONS.
2. PLACE NON-WOVEN FILTER FABRIC (MIRAFI 140 OR EQUAL FILTER FABRIC) ACROSS THE BOTTOM OF THE EXCAVATION IN LOCATIONS FOR UNDERDRAINS.
3. INSTALL UNDERDRAIN SYSTEM ON TOP OF THE FILTER FABRIC IN THE BOTTOM OF THE EXCAVATION. DOUBLE WALL HDPE CORRUGATED PLASTIC PIPE IS RECOMMENDED DUE TO ITS RIGIDITY AND LONG LIFE EXPECTANCY. OTHER PIPE MATERIALS MAY BE SUBSTITUTED AT THE DESIGNER'S DISCRETION AND WITH THE INSPECTOR'S APPROVAL.
4. INSTALL CLEANOUT STANDPIPES AND OUTLETS TO THE UNDERDRAIN. THE CLEANOUT STANDPIPES MUST BE LOCATED AT THE UPPER END OF THE STRUCTURE AND BE CAPPED ABOVE THE WATER LEVEL ELEVATION. THE CLEANOUTS SHOULD CONSIST OF RIGID NON-PERFORATED PVC PIPE, 6 INCHES IN DIAMETER.
5. PLACE #57 WASH STONE (GRAVEL) OVER THE UNDERDRAIN TO A DEPTH OF 12 INCHES AND WIDTH OF 4 FEET.
6. PLACE FILTER FABRIC OVER THE GRAVEL BED TO FULLY ENCLOSE IT ON THE TOP, BOTTOM AND SIDES.
7. BACKFILL WITH A SOIL MIXTURE CONTAINING 80% WHITE MORTAR SAND AND 20% ORGANIC MATERIAL (COMPOST, TOPSOIL) TO A DEPTH OF 2 TO 4 FEET (DEPENDING ON DESIGN) MEASURED FROM THE TOP OF THE STONE OVER THE UNDERDRAIN. SOIL MUST NOT BE INSTALLED UNTIL ALL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED AND APPROVED BY THE INSPECTOR. NOTE: SOIL MIXTURE MUST BE PLACED IN LIFTS OF 12 INCHES AND WATERED UNTIL WATER FLOWS OUT OF UNDERDRAIN BEFORE PLACING NEXT LAYER. NO HEAVY EQUIPMENT IS ALLOWED IN THE BASIN AREA.
8. INSTALL VEGETATION AS PER APPROVED PLANS.
9. PLACE MULCH ON TOP OF THE SOIL MIXTURE TO A DEPTH OF 3 INCHES.
10. STABILIZE THE SLOPES DRAINING TO THE RAIN GARDEN WITH GRASS SOD TO A MINIMUM WIDTH OF 14 FEET AND SURROUND THE STRUCTURE WITH SILT FENCE UNTIL DRAINAGE AREA IS FULLY VEGETATED TO PREVENT SEDIMENT FROM CONTAMINATING THE SOIL MIXTURE.
11. AN ENERGY DISPERSION DEVICE IS REQUIRED FOR CONCENTRATED FLOW ENTERING THE STRUCTURE.
12. REFER TO SECTION 4.1 OF THE MECKLENBURG COUNTY BMP DESIGN MANUAL FOR
13. SPECIFIC DESIGN CRITERIA FOR RAIN GARDENS/BIORETENTION SYSTEMS.

TYPICAL BIORETENTION 85% TSS REMOVAL

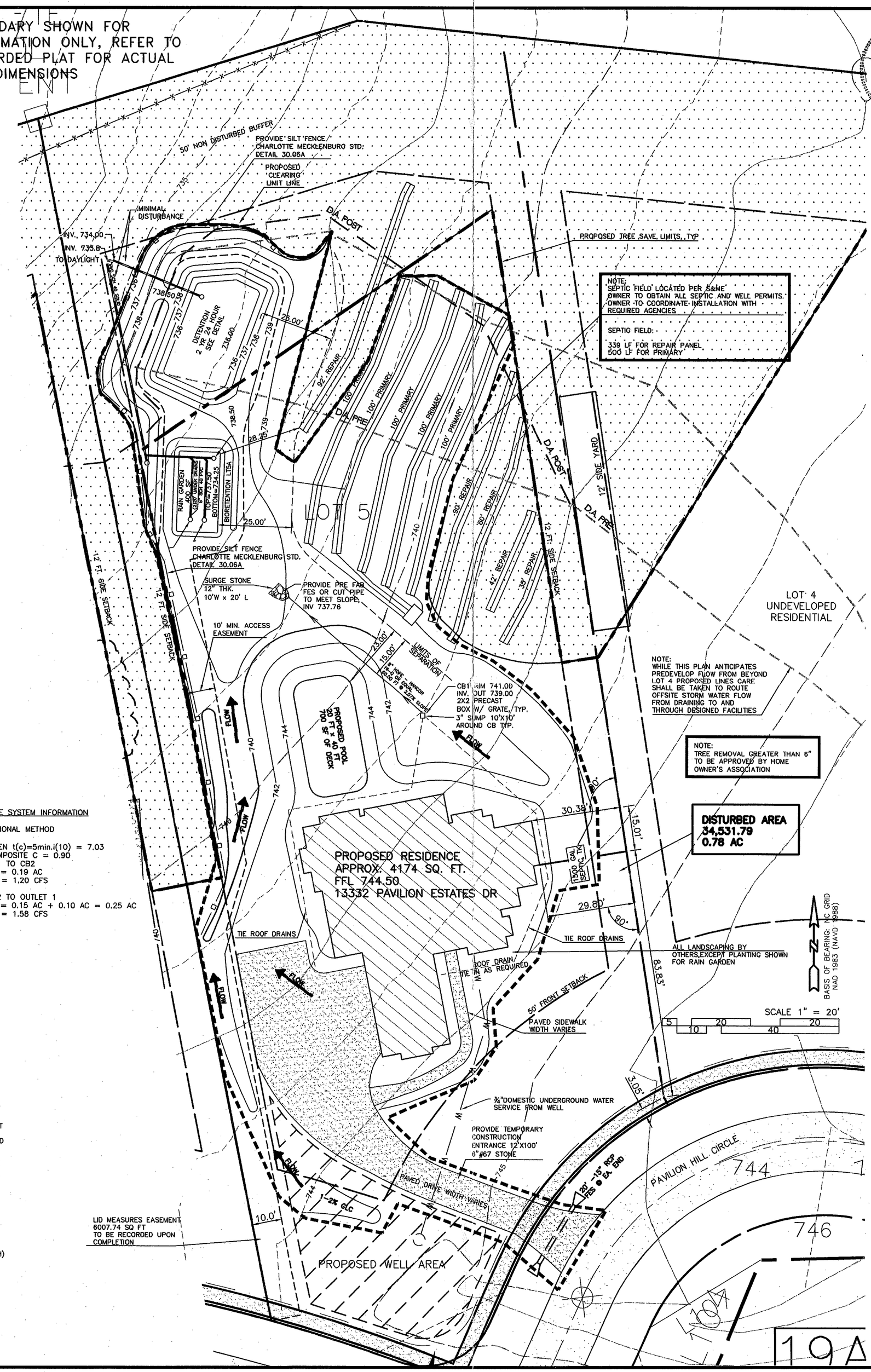
PIPE SYSTEM INFORMATION

RATIONAL METHOD

GIVEN t(c)=5min.i(10) = 7.03
COMPOSITE C = 0.90
CB1 TO CB2
DA = 0.19 AC
Q_{10} = 1.20 CFS

CB2 TO OUTLET 1
DA = 0.15 AC + 0.10 AC = 0.25 AC
Q_{10} = 1.58 CFS

BOUNDARY SHOWN FOR INFORMATION ONLY, REFER TO RECORDED PLAT FOR ACTUAL LOT DIMENSIONS



NORTH CAROLINA PROFESSIONAL SEAL 18163 ENGINEER DAVID F. REESE

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NO.	DATE:	INITIALS	REVISION
1	12/7/07	DFR	PRELIMINARY
2	6/13/08	DFR	REVISIONS PER MECKLENBURG COUNTY

PROJECT NUMBER: 070303.106
PROJECT MANAGER: DFR
DESIGNED BY: DFR
DRAWN BY:DFR
1" = 20', UNO
DATE: 12/10/07

LOT 5 PAVILION
RESIDENTIAL SITE PLAN - LID MEASURES
13332 PAVILION ESTATE DRIVE
TOM STEVENSON BUILDING CO. – MOORESVILLE, NC

C200

L:\Eng\070303_105 Lot 5 Pavilion\DWG\070303-105 base 010328.dwg, 6/16/2008 8:23:41 AM