

Environmental Services - Water Quality
Onsite Wastewater Scan Data Entry Form

PERMIT #: 0043391

PIN #: 0771134444

OP DATE: 08/11/2009

SYSTEM USE:
☒ House
☐ Mobile Home
☐ Business
☐ Other

SEWAGE TYPE:
☒ Domestic
☐ Industrial

PUMP/SIPHON?:
☒ Yes
☐ No

PRESSURE MANIFOLD:
☒ Yes
☐ No

SYSTEM TYPE:
☐ I
☐ II
☒ III
☐ IV
☐ V
☐ VI
☐ Other

SUB TYPE:
☐ A
☒ B
☐ C
☐ D
☐ E
☐ F
☐ G

NBR BEDROOMS:
☐ 1
☐ 2
☐ 3
☒ 4
☐ 5
☐ 6
☐ Other

MAINT. SCHEDULE:
☐ Yes
☒ No

CERT. OPERATOR
☐ Yes
☒ No

GT	ST	PT	SIZE
☐	☐		750
☐	☐	☐	900
☐	☐	☐	1,000
☐	☒	☒	1,200
☐	☐	☐	1,500
☐	☐	☐	1,800
☐	☐	☐	2,100
☐	☐	☐	2,500
☐	☐	☐	3,000
☐	☐	☐	4,000
☐	☐	☐	5,000
☐	☐	☐	8,000
☐	☐	☐	10,000
☐	☐	☐	Other
☒		☐	None/NA GT or PT

DRAINFIELD SIZE(SQ. FT.)

01290

DRAIN TYPE:
☐ Stone
☒ EZ Flow
☐ Infiltrator
☐ Biodiffuser
☐ Cultec
☐ Drip
☐ Hancor
☐ Large Dia. Pipe
☐ Multi-Pipe
☐ Other

MAX DEPTH (IN.):
☐ 12 in. or less
☐ 18 in. or less
☒ 24 in. or less
☐ 26 in. or less
☐ 28 in. or less
☐ 30 in. or less
☐ 32 in. or less
☐ 36 in. or less
☐ Other

STONE DEPTH (IN.):
☐ 8 in. or less
☒ 12 in. or less
☐ 18 in. or less
☐ 24 in. or less
☐ Other

TRENCHES:
☒ Individual
☐ Bed

TRENCH WIDTH (IN.):
☐ 12 in. or less
☐ 18 in.
☐ 24 in.
☒ 36 in.
☐ 6 ft. or less
☐ 9 ft. or less
☐ Other

ES Copy

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WELL AND SEWAGE SITE LOCATION PERMIT
NO PERMIT(S) FOR CONSTRUCTION, LOCATION OR RELOCATION ACTIVITY SHALL BE ISSUED
UNTIL AN AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION HAS BEEN ISSUED

PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/ OR IF SITE IS ALTERED OR INTENDED USE CHANGED

PERMIT#: D043391 STATUS: A
PIN: 0771.03 13 4444 000
TOWNSHIP: 18 SWIFT CREEK
APPLICANT: UPTON & CO. INC.

APP. DATE: 01/06/2009
TAX MAP: 0
JURISDICTION: WC

BLDG. PERMIT#: 0091380
RECORDED: Y ORIG. PERMIT#:
ZONING: R40W SW DEVICE: N S#:

PO BOX 4974
CARY, NC 27519
(919) 854-7777

USE: HD USE: 101 ONE-FAMILY HOUSE
EXIST USE:

LTAR: 0.30 0.30 BEDROOMS: 4 BASEMENT: N #EMPLOYEES: 0 FOUNDATION DRAIN: Y

SITE: ADDRESS: 3513 EILLA BLUFFS CT

SUBDIVISION: HOLLY BLUFFS LOT: 2 ACRES: 1.13 EASEMENT: N LOC: SYS:

DIRECTION: TRYON RD TO HOLLY SPRINGS RD EILLA BLUFFS CT IS
ON LT BEFORE PENNY RD

IMPROVEMENT PERMIT

TANK SIZE: 1200 gal. PUMP Tank: 1200 gal. SQ FT: 1290 INNOVATIVE MAX DEPTH LINE: 24 in.
WASTEWATER: INDIVIDUAL SEWAGE: DOMESTIC TYPE SYSTEM: III G PUMP: Y P/M: Y
DAILY FLOW: 480 gal/day DESIGN FEE REQ?: Y PAID?: Y WATER: INDIVIDUAL

COMMENTS:

IP ISSUED? Y DATE: 02/03/2009 BY: (TAH)

Travis Howard

PHONE#: 369-5974

AUTHORIZATION FOR WASTEWATER/WATER SYSTEM CONSTRUCTION

VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE

AUTHORIZATION CONDITIONS:

Contractors shall install system on contours, see attached site plan for wastewater system design and well location. No underground utilities, water lines or sprinkler systems may be located in the original system or repair areas. A septic tank filter with a riser for access is required. The wastewater system shall not be covered or placed into use until inspected by the Wake County Department of Environmental Services and an Operation Permit issued. An Accepted Status System may be used in place of conventional system, if it can be placed in the permitted/authorized trench footprint (except reduction in line length and/or number as allowed for in approval) and the installation is in accordance with the accepted system approval, without unauthorized product alteration. If permit required use of an Accepted Status System, substitution with another accepted status system may be made, as long as no changes are necessary in the location of each nitrification line (including any increase in line length), trench depth or effluent distribution method. If changes are necessary, prior approval by this office is required before system installation. **OTHER CONDITIONS:**

ACCEPTED STATUS SYSTEM REDUCTION HAS BEEN TAKEN FOR THE DESIGN OF INITIAL AND REPAIR SYSTEMS. PLEASE SEE DESIGN PLAN BY CCSC (APPROVED 02-09-09 BY BSM) FOR INSTALLATION INFORMATION. THE INITIAL SYSTEM IS A VARIED LENGTH LINE PRESSURE MANIFOLD WITH 24 INCH TRENCH BOTTOMS. WHEN INSTALLING DRAINLINES, PLEASE MAINTAIN ALL REQUIRED SETBACKS. THE REPAIR SYSTEM IS A VARIED LENGTH PRESSURE MANIFOLD WITH 24 INCH TRENCH BOTTOMS. WHEN CLEARING AREA FOR INITIAL SYSTEM, DO NOT DISTURB OR REMOVE ANY SOIL FROM EITHER THE INITIAL OR REPAIR AREA. A NEMA4X CONTROL PANEL WITH TWO BREAKERS, TWO POWER SUPPLIES, ELAPSED TIME METER, AND CYCLE COUNTER IS REQUIRED. INSTALL TRENCHES ON CONTOUR AND > OR = 9FT ON CENTER. PLEASE CALL ENVIRONMENTAL SERVICES IF ANY QUESTIONS OR PROBLEMS ARISE.

TANK SIZE: 1200 gal. PUMP TANK: 1200 gal. SQ FT: 1290 INNOVATIVE MAX DEPTH LINE: 24 in.
MAINT: N OPER: N L/O: P TRENCH#: 6 LENGTH: 430 ft. WIDTH: 36 in. DESIGNER: CCSC, PLLC
SUBFIELDS: 1 DESIGN HEAD PRESSURE: 2 DESIGN FLOW: 39.90 gal/min DOSE VOLUME: 210 gal.

CA ISSUED? Y DATE: 02/09/2009 BY: (BSM)

Burt Smith

PHONE#: 856-7463

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES WELL AND SEWAGE SITE LOCATION PERMIT
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 UNTIL AN AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION HAS BEEN ISSUED
PERMIT VOID IF NOT IN COMPLIANCE WITH ZONING REGULATIONS AND/ OR IF SITE IS ALTERED OR INTENDED USE CHANGED

PERMIT#: D043391 STATUS: A APP. DATE: 01/06/2009 BLDG. PERMIT#: 0091380
 PIN: 0771.03 13 4444 000 TAX MAP: 0 RECORDED: Y ORIG. PERMIT#:
 TOWNSHIP: 18 SWIFT CREEK JURISDICTION: WC ZONING: R40W SW DEVICE: N S#:
 APPLICANT: UPTON & CO. INC.
 PO BOX 4974
 CARY, NC 27519
 (919) 854 - 7777
 USE: HD USE: 101 ONE-FAMILY HOUSE
 EXIST USE:
 LTAR: 0.30 0.30 BEDROOMS: 4 BASEMENT: N #EMPLOYEES: 0
 SITE: ADDRESS: 3513 EILLA BLUFFS CT
 SUBDIVISION: HOLLY BLUFFS LOT: 2 ACRES: 1.13 EASEMENT: N LOC: SYS:
 DIRECTION: TRYON RD TO HOLLY SPRINGS RD EILLA BLUFFS CT IS
 ON LT BEFORE PENNY RD

Well System: WATER: INDIVIDUAL - TYPE:

WELL LOG INFORMATION: DEPTH: 185 CASING DEPTH: 144 YIELD: 30 STATIC LEVEL: 80
 WELL CONTRACTOR: REG.# 631 PUMP CONTRACTOR: REG.# 875
 Construction Compliance GROUT APPROVED ☒ DATE 9/25/09 EHS 12/18/09
 WELLHEAD APPROVED ☒ DATE 8/31/09 EHS 12/18/09
 SYSTEM FINALIZED ☒ DATE 8/11/09 EHS 12/18/09

COMMENTS: NEW WELL PERMIT. WELL MUST BE PLACED AS DESIGNED ON PLAN. MUST MAINTAIN AT LEAST 100FT TO ANY PART OF THE INITIAL SYSTEM. MUST MAINTAIN AT LEAST 85FT TO REPAIR SYSTEM & 40FT TO HOUSE FOUNDATION. IF SITE LOCATION IS QUESTIONED, CONTACT WCDSES TO RESITE WELL LOCATION BEFORE ATTEMPTING TO INSTALL WELL. ALL WATER SAMPLING MUST BE COMPLETED AND APPROVED BEFORE OPERATIONS PERMIT CAN BE ISSUED (ASSUMING SEPTIC PERMIT HAS BEEN COMPLETED AND APPROVED).

Operation Permit

DESIGN FLOW: 39.90 gal./min. ACTUAL FLOW: _____ INNOVATIVE LETTER: R
 INSTALLED BY: Jay Adcock INSTALLATION APPROVED BY: Woodward
 PROPRIETARY SYSTEM: _____ FILTER NO: _____
 COMMENTS: _____
 OPERATIONS PERMIT ISSUED? YES OP DATE: 8/11/09 BY: Woodward

This permit is based in part on information provided by the homeowner or his/her representative in the application submitted for this permit. The Environmental Health Specialist is not responsible for false or misleading information contained in the application. The Environmental Health Specialist is also not responsible for concealed conditions on the property or for statements in this report that may have resulted from false or misleading statements provided to him in the application. Neither Wake County nor the Environmental Health Specialist warrants that the septic tank system will continue to function satisfactorily in the future or that the water supply will remain potable.

As Built Information:

Date: _____ Benchmark: _____ Rod reading: _____ Distance to Structure: _____
 ST: _____ gals ID#: _____ D.O.M.: _____ Elev.: _____ Distance to Well: _____
 PT: _____ gals ID#: _____ D.O.M.: _____ Elev.: _____
 D-box/FD/PM elev.: _____ Supply Line: _____ ft. Pump/Control Panel: _____
 Line 1: _____ Date: _____ Line 6: _____ Date: _____
 Line 2: _____ Date: _____ Line 7: _____ Date: _____
 Line 3: _____ Date: _____ Line 8: _____ Date: _____
 Line 4: _____ Date: _____ Line 9: _____ Date: _____
 Line 5: _____ Date: _____ Line 10: _____ Date: _____
 Distance to P/L: _____ Notes: _____

CA Site Plan Part B
 PIN# 0771.03134444
 043391
 Holly Bluffs lot 2

*See CA Site Plan Part A + Design
 Plan (Approved 2/9-09 by BSM)
 for additional info.

Holly Bluffs
 Lot #2
 4-Bedroom Layout
 Upton Custom Homes

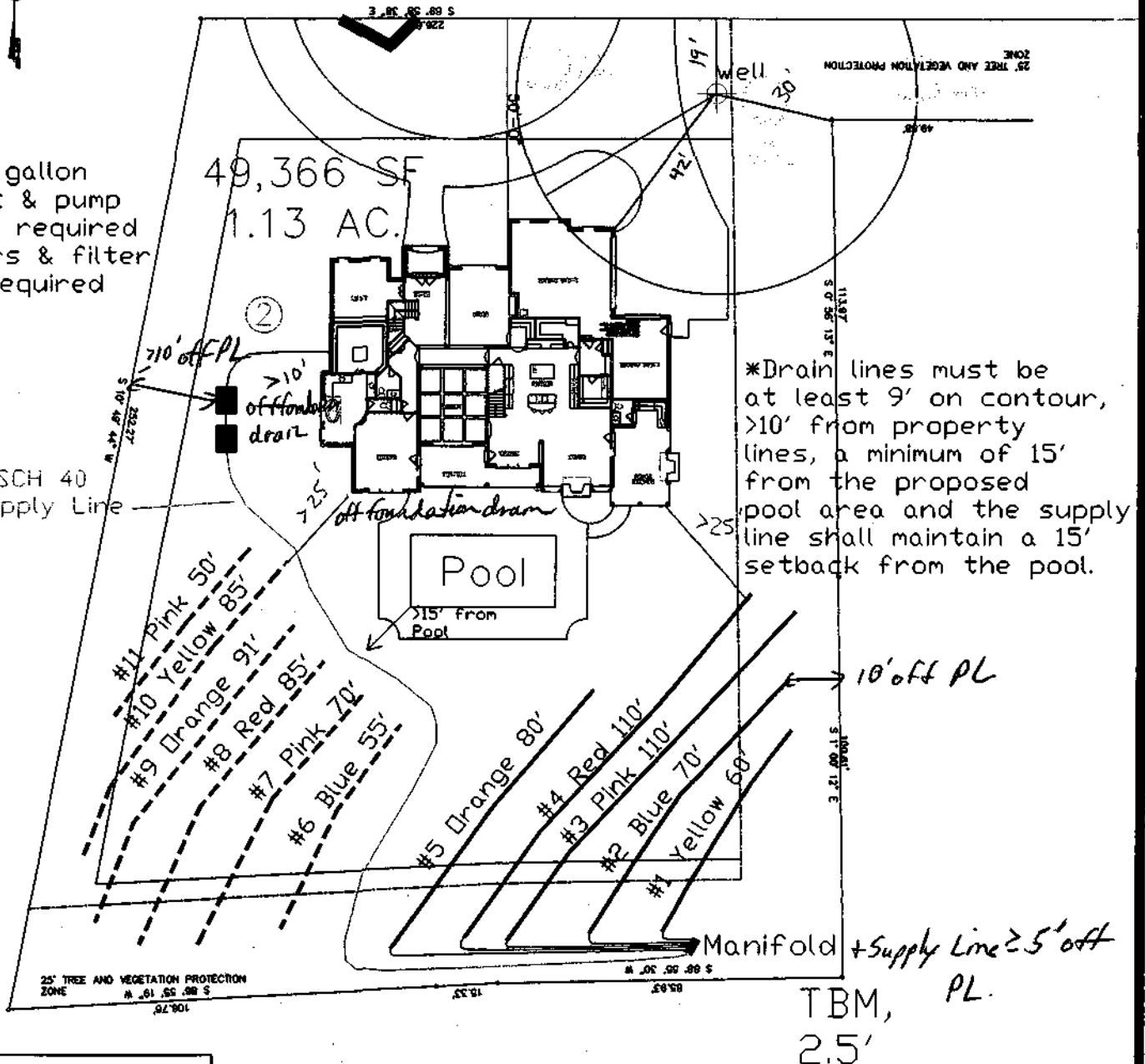
ELLA BLUFFS COURT
 45' R/W

*1200 gallon
 septic & pump
 tanks required
 *Risers & filter
 are required

49,366 SF
 1.13 AC.

*Drain lines must be
 at least 9' on contour,
 >10' from property
 lines, a minimum of 15'
 from the proposed
 pool area and the supply
 line shall maintain a 15'
 setback from the pool.

240' SCH 40
 2" Supply Line



*System: Pressure Manifold
 Accepted Status System
 EZ-Flow
 0.3 Soil LTAR
 24" Trench Bottom
 Lines: 1-6, (430')
 *Repair: Pressure Manifold
 Accepted Status System
 EZ-Flow
 0.3 Soil LTAR
 24" Trench Bottom
 Lines: 6-11, (436')

GRAPHIC SCALE
 1" = 40'



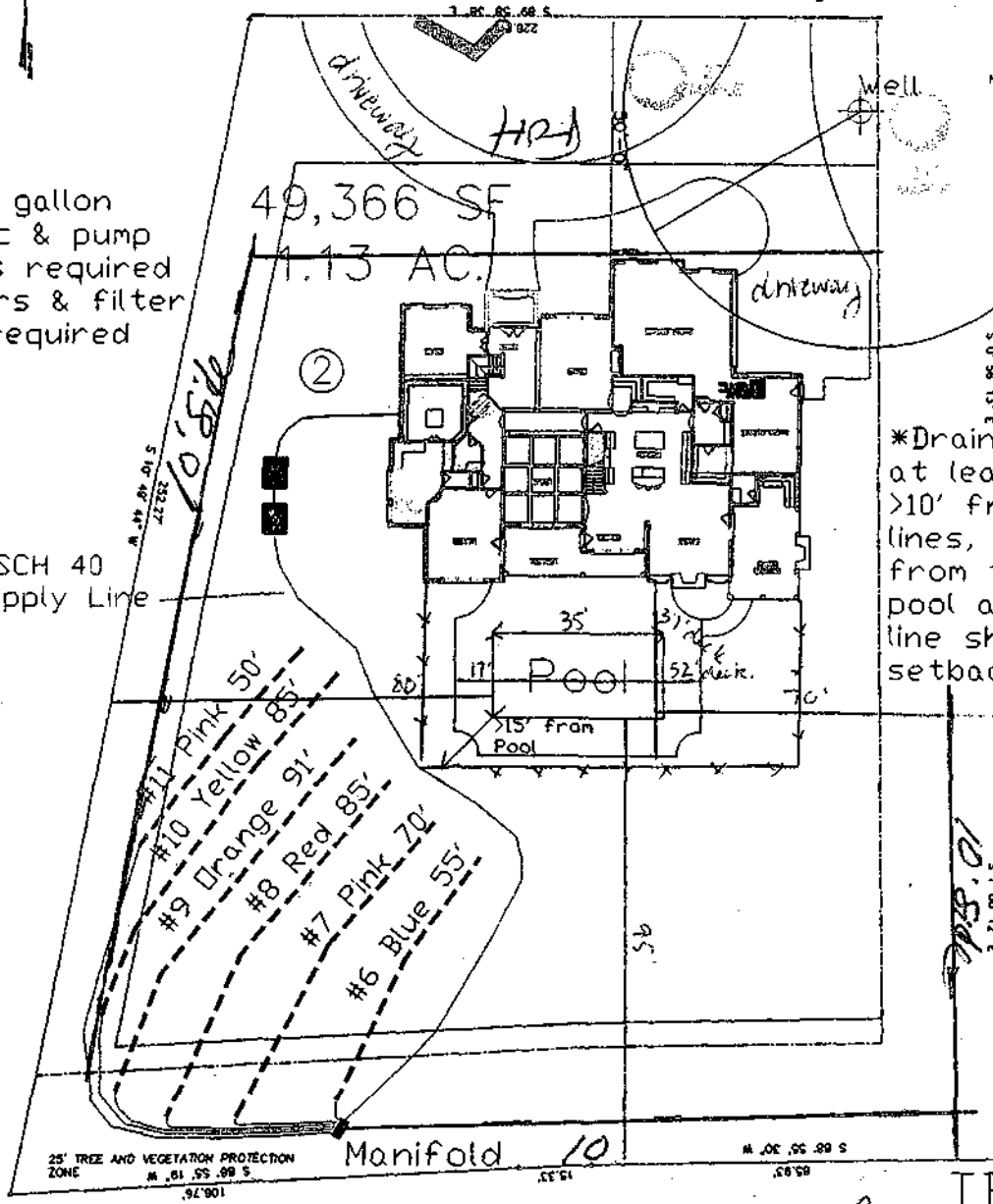
Central Carolina
 Soil Consulting
 919-784-9449
 Project # 287

P-40W R/M

Holly Bluffs	Approve	☒	Date	5/20/09
Lot #2	Revise		Use	351-A
4-Bedroom Layout	Reject		MBL	
Upton Custom Homes	Front	FDH	Rear	10'
ELLA BLUFFS COURT	Side	10'	Corner	
45' R/W				

3513 Ella Bluffs Comments:

*1200 gallon
septic & pump
tanks required
*Risers & filter
are required



pool: 420
595sf

concrete patio: 1171sf

*Drain lines must be
at least 9' on contour,
>10' from property
lines, a minimum of 15'
from the proposed
pool area and the supply
line shall maintain a 15'
setback from the pool.

Permit # 077-03134444
I certify that the location of planned or existing structures are accurately shown. I understand failure to locate structures in accordance with this plot plan may require the resignation of structure(s) regardless degree of completion. I hereby grant permission to Municipal/City Representatives the right of entry to make evaluations of inspections upon this property.

Signature of Owner or Authorized Agent

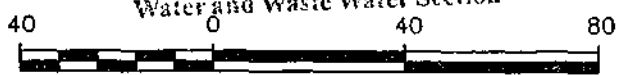
Permit # 0092353
MISD: 9,000

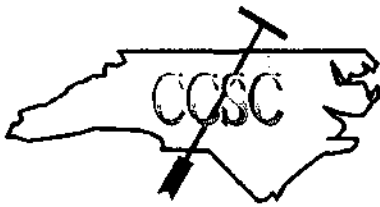
Site plan approved as shown for Pool TBM
Any changes to site plan voids approval. All setbacks apply for septic systems and wells, regarding any pools, decks, additions and/or accessory structures. Applicant is responsible for protecting all portions of the septic system, repair area and wells from damage during construction. Adhere to all Local and State Rules.

GRAPHIC SCALE
Approved by [Signature]
Wake County Department of Environmental Services
Water and Waste Water Section

Date 5-20-09
Central Carolina
Soil Consulting
919-784-9449
Project # 287

*Repair: Pressure Manifold
Accepted Status System
EZ-Flow
0.3 Soil LTAR
24" Trench Bottom
Lines: 6-11, (436')





ES Copy

Central Carolina Soil Consulting, PLLC

4024 Barrett Drive, Suite 201

Raleigh, NC 27609

919-784-9449

Enclosed is a Pressure Manifold design for Upton Custom Homes
for a 4-bedroom house with a daily flow of 480 gallons/day.
The site is located on Lot 2 in Holly Bluffs Subdivision.

Design Specifications & Calculations	1-4
Site plan & layout	5-6
Septic Tank Diagram	7
Pump Tank Diagram	8
Hydraulic Profile	9
Manifold Specifications	10
Pump Specifications	11-12
Control Panel Specifications	13-14
Electric Box Specifications	15

☐ APPROVED
☒ APPROVED AS NOTED
☐ DISAPPROVED

Review of this document has been made only for
conformance with the design concept of the project
and approval or approval as noted shall not relieve
the designer and/or contractor from responsibility
for any errors therein or for furnishing the materials,
and equipment of proper dimension, size, quantity,
quality and all performance characteristics to meet
the requirements and intent of the contract documents.

Design – Jason Hall
January 27, 2009
Project # 287 (b)

WAKE COUNTY DEPARTMENT OF
ENVIRONMENTAL SERVICES

Date 2-9-09 By Brett A. Mac

Upton Custom Homes.
480 gal/day Pressure Manifold Waste Water System
Holly Bluffs Lot #2

Summary of calculations and materials required for installation.

Design Flow:	480gal/day (4 bedroom house)
Soil LTAR:	0.3 gal/day/ft2
Total lateral length:	430' of Innovative Product (EZ-FLOW)
Number of Pressure Manifolds:	1
Manifold #1:	4" SCH 80 PVC, 48" minimum length
Supply line:	2" sch 40 PVC at 240'
Trench Depth:	24"
Trench Width:	3'
Gate Valves:	1 in pressure manifold, 1 in pump tank
Check Valves:	1 in pump tank
Septic Tank:	1200 gallon with effluent filter
Pump Tank:	1200 gallon
Control Panel & Floats:	SJE Rhombus 112 panel and floats or county approved equivalent.
Pump:	ME 50 or equivalent rated at 40 gpm with 40' of head
Drawdown:	~10", based on 21 gal/inch for pump tank

Calculations

Supply Line Volume:	41.76 gallons
Pump Run Time:	5.25 minutes
Dosing Volume:	210 gallons (75% of system dosed)
Elevation Head:	17.8'
Pressure Head:	2'
Friction Head:	10.97'
Total Dynamic Head:	39.90'

Holly Bluffs

Lot 2

4-Bedroom Home (480 gal./day)

<u>LINE #</u>	<u>COLOR</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>ELEVATION</u>	<u>LINE LENGTH</u>	<u>Design Length</u>
TBM		2.5		100.0		<u>in field</u>	<u>installation</u>
INST. 1			102.5				
1	Yellow			4.7	97.8	66	60
2	Blue			5.1	97.4	80	80
3	Pink			5.6	96.9	110	110
4	Red			6.1	96.4	110	110
5	Orange			6.6	95.9	75	70
6	Blue			8.6	93.9	55	55
7	Pink			9.4	93.1	73	70
8	Red			10.9	91.6	87	85
9	Orange			11.9	90.6	91	91
10	Yellow			13.0	89.5	85	85
11	Pink			14.1	88.4	50	50
					Total	882	866

	<u>System</u>	<u>Repair</u>
	Lines 1-5	Lines 2-6
System Type	Accepted Status System EZ-FLOW	Accepted Status System EZ-FLOW
Suggested Soil LTAR (gal/day/ft2)	0.30	0.30
System Installation LTAR	0.28	0.275
Total Line Length	430	436
Square Footage	1290	1308
Proposed Trench Bottom	24"	24"
Distribution Method	Pressure Manifold	Pressure Manifold
Notes:	TBM is the top of back corner EIP	

Central Carolina Sol Consulting

PRESSURE MANIFOLD DESIGN

Name: Upton Custom Homes

P.I.N. #:

D#:

Address:

Subdiv: Holly Bluffs

Lot#: 2

of BDR: 4 Daily Flow: 480 gal/day L.T.A.R.: 0.30 gal/day/sq.ft

Septic Tank: 1200 gals Pump Tank: 1200 gals Sq. Foot: 1290 Stone Depth:

Number of Taps: 5 Length of Trenches: 430 ft(See Tap Chart for Details)

Depth of Trenches: 24 in Manifold Length: 48 in

Manifold Diameter: 4in sch 80pvc Tap Configuration: 6 in spacing side(s) of manifold

Supply Line: length: 240 ft Diameter: 2 in sch 40pvc

Friction Loss + Fitting Loss: 10.97 ft(supply line length + 70' for fittings in pump tank)

Design Head: 2 ft Elevation Head: 17.80 ft

Total Head: 30.77 ft Pump to Deliver: 39.90 gals/min at 30.77 ft head

Dosing Volume: 210 gals,

Drawdown: 210 gals divided by 21 gals/in = 10.0 inches

Simplex Control Panel required; elapsed time meter and cycle counter required; Floats to be determined by type of pump tank used. A septic tank filter, or equal is required.

Possible pumps: Hydromatic: Goulds: Myers: ME 50 or equal
Zoeller: Other:

TAP CHART

Bench Mark	2.5	is = 100.00	set at				Design Head:	2	
Pump tank elev.		16.5	86.00	Pump elev.	81.00		Manifold elev.	98.80	
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
1	Yellow	4.7	97.80	60	1/2in SCH 80	5.48	65.92	180	0.366
2	Blue	5.1	97.40	80	1/2in SCH 40	7.11	85.53	240	0.356
3	Pink	5.6	96.90	110	3/4in SCH 80	10.1	121.50	330	0.368
4	Red	6.1	96.40	110	3/4in SCH 80	10.1	121.50	330	0.368
5	Orange	6.6	95.90	70	1/2in SCH 40	7.11	85.53	210	0.407

	total	feet =	430	gal/min =	39.9	LTAR =	0.30
% of Dose Vol.	75		Des. Flow	480		(ltar + 5%)	0.32
Dose Volume	210		Pump Run=	12.03		(ltar W/ INOV)	0.40
Dose Pump Time	5.25		Tank Gal/IN	21		(ltar + 5%)	0.42
Drawdown in Inches	10.0		Elev. Head	17.80			
Supply Line Length	240						
Comments:							