

Permits: 410-313-2455  
Inspections: 410-313-1810  
Automated Line: 410-313-3800

Howard County Building/Fire Permit Application  
Department of Inspections, Licenses & Permits  
3430 Court House Drive  
Ellicott City, MD 21043

Permit Number:

B15004871

Building Address: 18323 Chelsea Knolls Drive  
Mt. Airy MD 21771  
Suite/Apt. # \_\_\_\_\_ SDP/WP/BA #: F-07-072  
Census Tract: \_\_\_\_\_ Subdivision: Chelsea Knolls  
Section: \_\_\_\_\_ Area: \_\_\_\_\_ Lot: 4  
Tax Map: 12 Parcel: 78 Grid: 5  
Zoning: RC-DEO Map Coordinates: \_\_\_\_\_ Lot Size: \_\_\_\_\_

Existing Use: Vacant Lot  
Proposed Use: New - Single Family  
Estimated Construction Cost: \$250,000  
Description of Work: Model Ellington w/Mom Rm, 3 Car Garage  
& Bonus Rm. 2 story full basement  
12R, 4FB, 1HB and 3Garage (4 bdrm) w/  
optional fireplace and deck

Occupant or Tenant: Ryan Homes  
Was tenant space previously occupied? ☐ Yes ☒ No

Contact Name: Daren Snyder  
Address: 9720 Patuxent Woods Drive  
City: Columbia State: MD Zip Code: 21046  
Phone: 410.796.0980 Fax: \_\_\_\_\_  
Email: dsnyder@nvrinc.com

Property Owner's Name: Ryan Homes  
Address: 9720 Patuxent Woods Drive  
City: Columbia State: MD Zip Code: 21046  
Home Phone: \_\_\_\_\_ Work Phone: 410.796.0980  
Applicant's Name & Mailing Address, (if other, than stated herein): \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Contractor Company: Ryan Homes  
Contact Person: Daren Snyder  
Address: 9720 Patuxent Woods Drive  
City: Columbia State: MD Zip Code: 21046  
License No.: 56  
Phone: 410.796.0980 Fax: 410.796.7094  
Email: dsnyder@nvrinc.com

Engineer/Architect Company: Fisher, Collins, & Carter  
Responsible Design Prof.: Stephanie Tuite  
Address: 10272 Baltimore National Pike  
City: Ellicott City State: MD Zip Code: 21042  
Phone: 410.461.2855 Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

#### BUILDING DESCRIPTION - COMMERCIAL

Building Characteristics	Utilities
Height:	Water Supply
No. of stories:	<input type="checkbox"/> Public
Gross area, sq. ft./floor:	<input type="checkbox"/> Private
	Sewage Disposal
Area of construction (sq. ft.):	<input type="checkbox"/> Public
	<input type="checkbox"/> Private
Use group:	Electric: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Gas: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Heating System
Construction type:	<input type="checkbox"/> Electric <input type="checkbox"/> Oil
<input type="checkbox"/> Reinforced Concrete	<input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane Gas
<input type="checkbox"/> Structural Steel	
<input type="checkbox"/> Masonry	Sprinkler System:
<input type="checkbox"/> Wood Frame	<input type="checkbox"/> N/A
<input type="checkbox"/> State Certified Modular	<input type="checkbox"/> Full
Roadside Tree Project Permit	<input type="checkbox"/> Partial
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Other Suppression
Roadside Tree Project Permit#	No. of Heads:

#### BUILDING DESCRIPTION - RESIDENTIAL

Building Characteristics	Utilities
<input checked="" type="checkbox"/> SF Dwelling <input type="checkbox"/> SF Townhse	Water Supply
Depth Width	<input type="checkbox"/> Public
1 <sup>st</sup> floor: 70 54	<input checked="" type="checkbox"/> Private
2 <sup>nd</sup> floor: 60 54	Sewage Disposal
Basement: 60 54	<input type="checkbox"/> Public
<input checked="" type="checkbox"/> Finished Basement	<input checked="" type="checkbox"/> Private
<input type="checkbox"/> Unfinished Basement	Electric: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Crawl Space	Gas: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Slab on Grade	Heating System
No. of Bedrooms: 4	<input type="checkbox"/> Electric
Multi-family Dwelling	<input type="checkbox"/> Oil
No. of efficiency units:	<input type="checkbox"/> Natural Gas
No. of 1 BR units:	<input checked="" type="checkbox"/> Propane Gas
No. of 2 BR units:	
No. of 3 BR units:	
Other Structure:	
Dimensions:	
Footings:	Roadside Tree Project Permit
Roof:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> State Certified Modular	Roadside Tree Project Permit#
<input type="checkbox"/> Manufactured Home	

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES AS FOLLOWS: (1) THAT HE/SHE IS AUTHORIZED TO MAKE THIS APPLICATION; (2) THAT THE INFORMATION IS CORRECT; (3) THAT HE/SHE WILL COMPLY WITH ALL REGULATIONS OF HOWARD COUNTY WHICH ARE APPLICABLE THERETO; (4) THAT HE/SHE WILL PERFORM NO WORK ON THE ABOVE REFERENCED PROPERTY NOT SPECIFICALLY DESCRIBED IN THIS APPLICATION; (5) THAT HE/SHE GRANTS COUNTY OFFICIALS THE RIGHT TO ENTER ONTO THIS PROPERTY FOR THE PURPOSE OF INSPECTING THE WORK PERMITTED AND POSTING NOTICES.

Applicant's Signature

dsnyder@nvrinc.com

Email Address

Cost Manager

Title/Company

Daren Snyder

Print Name

Date

NOV 04 2015

LICENSES & PERMITS  
DIVISION

015000073

Checks Payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY  
\*\*PLEASE WRITE NEATLY & LEGIBLY\*\*

#### FOR OFFICE USE ONLY

AGENCY	DATE	SIGNATURE OF APPROVAL
<input checked="" type="checkbox"/> State Highways		
<input checked="" type="checkbox"/> Building Officials		
<input checked="" type="checkbox"/> PSZA (Zoning)	11-4-15	Matthew Mason Sachs
<input checked="" type="checkbox"/> PSZA (Engineering)		
<input checked="" type="checkbox"/> Health	12/14/15	R. Bricker
<input checked="" type="checkbox"/> Fire Protection		

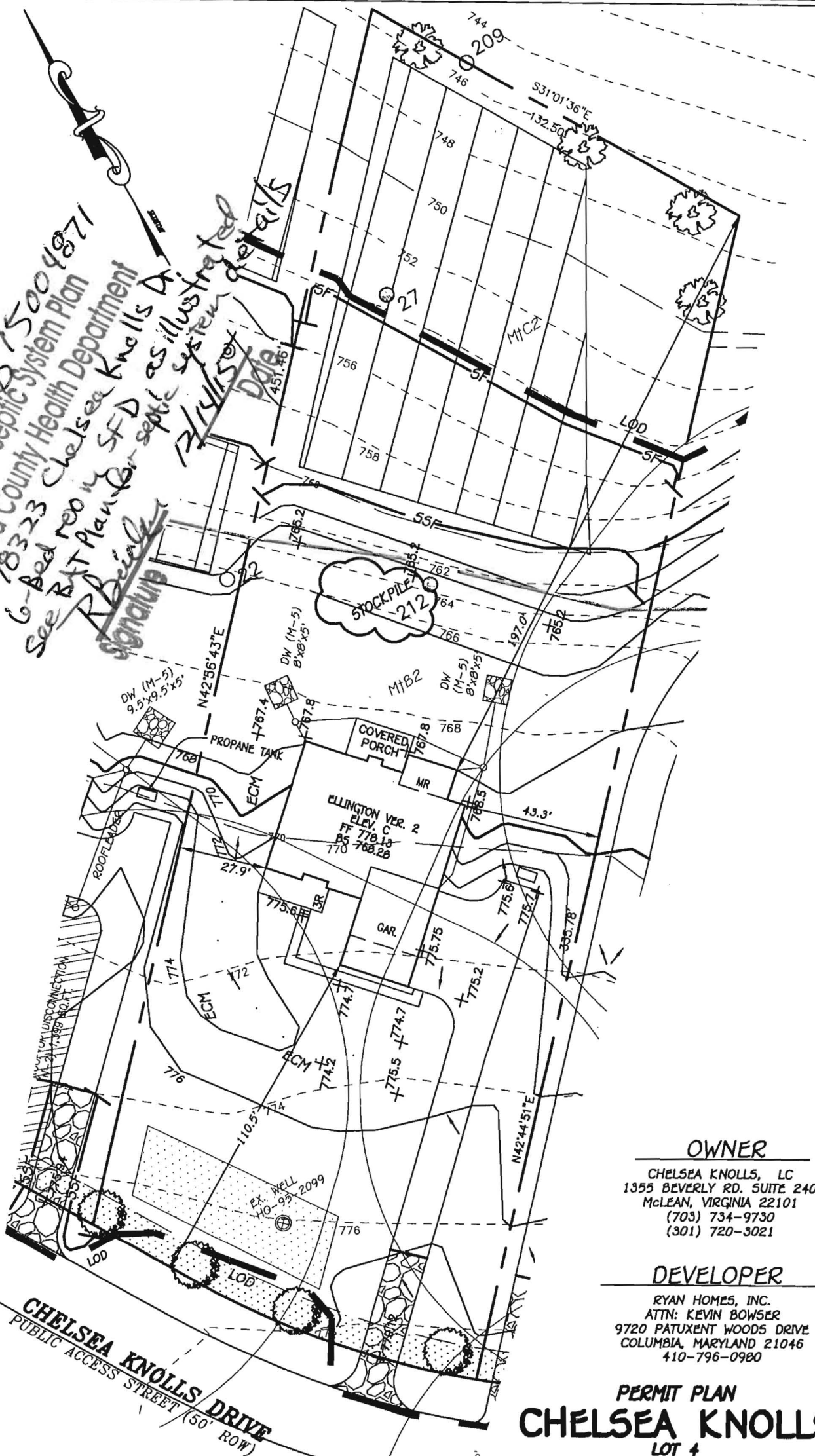
Is Sediment Control approval required for issuance? ☒ Yes ☐ No  
☐ CONTINGENCY CONSTRUCTION START  
☐ ONE STOP SHOP

DPZ SETBACK INFORMATION	
Front:	50 110
Rear:	30
Side:	10 27/43
Side St:	
All minimum setbacks met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is Entrance Permit Required?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Historic District?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Lot Coverage for New Town Zone:	
SDP/Red-line approval date:	

Filing Fee	\$ 100.00
Permit Fee	\$
Tech Fee	\$
Excise Tax	\$
PSFS	\$
Guaranty Fund	\$ 50.00
Add'l per Fee	\$
Total Fees	\$
Sub-Total Paid	\$
Balance Due	\$

Distribution of Copies: White: Building Officials Green: PSZA, Zoning Yellow: PSZA, Engineering Pink: Health Gold: SHA  
T:\Operations\Updated Forms\New building app 11.10.2010.docx

Approved Septic System Plan  
 15004871  
 18323 Chelsea Knolls Dr  
 See BAT Plan in SFD as illustrated  
 R. Decker  
 12/14/15  
 Date



#### OWNER

CHELSEA KNOLLS, LC  
 1355 BEVERLY RD. SUITE 240  
 MCLEAN, VIRGINIA 22101  
 (703) 734-9730  
 (301) 720-3021

#### DEVELOPER

RYAN HOMES, INC.  
 ATTN: KEVIN BOWSER  
 9720 PATUXENT WOODS DRIVE  
 COLUMBIA, MARYLAND 21046  
 410-796-0980

### PERMIT PLAN CHELSEA KNOLLS

LOT 4  
 18323 CHELSEA KNOLLS DRIVE

ZONING: RC-DEO  
 TAX MAP No. 12 GRID No. 5 PARCEL No. 78  
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40'  
 DATE: OCTOBER, 2015

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELKLOTT CITY, MARYLAND 21042  
 (410) 461-2855



# Building Permit Application

Howard County Maryland  
Department of Inspections, Licenses and Permits  
3430 Court House Drive  
Permits: 410-313-2455  
www.howardcountymd.gov

Date Received: \_\_\_\_\_

Permit No.: 1316000329

Building Address: 18323 Cuckoo Lane D  
City: MD State: MD Zip Code: 21771  
Suite/Apt. #: \_\_\_\_\_ SDP/WP/BA #: \_\_\_\_\_  
Census Tract: \_\_\_\_\_ Subdivision: 18323 Cuckoo Lane D  
Section: \_\_\_\_\_ Area: \_\_\_\_\_ Lot: 4  
Tax Map: 12 Parcel: 78 Grid: 5  
Zoning: \_\_\_\_\_ Map Coordinates: \_\_\_\_\_ Lot Size: 11'x8'  
Existing Use: SDP  
Proposed Use: SDP w/ private town  
Estimated Construction Cost: \$ 10000  
Description of Work: 1000 sq. ft. addition to existing private town  
Occupant or Tenant: \_\_\_\_\_  
Was tenant space previously occupied? ☐ Yes ☐ No  
Contact Name: \_\_\_\_\_  
Address: 18323 Cuckoo Lane D  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Property Owner's Name: 18323 Cuckoo Lane D  
Address: 18323 Cuckoo Lane D  
City: MD State: MD Zip Code: 21771  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_  
Applicant's Name & Mailing Address, (If other than stated herein)  
Applicant's Name: Jerome L. Jones  
Address: 18323 Cuckoo Lane D  
City: MD State: MD Zip Code: 21771  
Phone: 442-746-5001 Fax: \_\_\_\_\_  
Email: \_\_\_\_\_  
Contractor Company: \_\_\_\_\_  
Contact Person: Jerome L. Jones  
Address: 18323 Cuckoo Lane D  
City: MD State: MD Zip Code: 21771  
License No.: 131215  
Phone: 442-746-5001 Fax: \_\_\_\_\_  
Email: \_\_\_\_\_  
Engineer/Architect Company: \_\_\_\_\_  
Responsible Design Prof.: \_\_\_\_\_  
Address: 18323 Cuckoo Lane D  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Commercial Building Characteristics	Residential Building Characteristics
Height:	<input type="checkbox"/> SF Dwelling <input type="checkbox"/> SF Townhouse
No. of stories:	<b>Depth</b> <b>Width</b>
Gross area, sq. ft./floor:	1 <sup>st</sup> floor:
	2 <sup>nd</sup> floor:
Area of construction (sq. ft.):	Basement:
	<input type="checkbox"/> Finished Basement
Use group:	<input type="checkbox"/> Unfinished Basement
	<input type="checkbox"/> Crawl Space
<b>Construction type:</b>	<input type="checkbox"/> Slab on Grade
<input type="checkbox"/> Reinforced Concrete	No. of Bedrooms:
<input type="checkbox"/> Structural Steel	<b>Multi-family Dwelling</b>
<input type="checkbox"/> Masonry	No. of efficiency units:
<input type="checkbox"/> Wood Frame	No. of 1 BR units:
<input type="checkbox"/> State Certified Modular	No. of 2 BR units:
	No. of 3 BR units:
	Other Structure:
	Dimensions:
<b>Roadside Tree Project Permit</b>	Footings:
<input type="checkbox"/> Yes <input type="checkbox"/> No	Roof:
<b>Roadside Tree Project Permit #</b>	<input type="checkbox"/> State Certified Modular
	<input type="checkbox"/> Manufactured Home

Utilities
<b>Water Supply</b>
<input type="checkbox"/> Public
<input type="checkbox"/> Private
<b>Sewage Disposal</b>
<input type="checkbox"/> Public
<input type="checkbox"/> Private
Electric: <input type="checkbox"/> Yes <input type="checkbox"/> No
Gas: <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Heating System</b>
<input type="checkbox"/> Electric <input type="checkbox"/> Oil
<input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane Gas
<input type="checkbox"/> Other:
<b>Sprinkler System:</b>
<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Grading Permit Number:</b>
<b>Building Shell Permit Number:</b>

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES AS FOLLOWS: (1) THAT HE/SHE IS AUTHORIZED TO MAKE THIS APPLICATION; (2) THAT THE INFORMATION IS CORRECT; (3) THAT HE/SHE WILL COMPLY WITH ALL REGULATIONS OF HOWARD COUNTY WHICH ARE APPLICABLE THERETO; (4) THAT HE/SHE WILL PERFORM NO WORK ON THE ABOVE-REFERENCED PROPERTY NOT SPECIFICALLY DESCRIBED IN THIS APPLICATION; (5) THAT HE/SHE GRANTS COUNTY OFFICIALS THE RIGHT TO ENTER ONTO THIS PROPERTY FOR THE PURPOSE OF INSPECTING THE WORK PERMITTED AND POSTING NOTICES.

Applicant's Signature: Jerome L. Jones Print Name: Jerome L. Jones  
Email Address: jerome.l.jones@howardcountymd.gov Date: 1/27/16  
Title/Company: Owner

Checks Payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

\*\*PLEASE WRITE NEATLY & LEGIBLY\*\*

-FOR OFFICE USE ONLY-

AGENCY	DATE	SIGNATURE OF APPROVAL
State Highways		
Building Officials		
PSZA ( Zoning )		
PSZA ( Engineering )		
Health		
Is Sediment Control approval required for issuance? <input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> CONTINGENCY CONSTRUCTION START		

DPZ SETBACK INFORMATION

Front: \_\_\_\_\_

Rear: \_\_\_\_\_

Side: \_\_\_\_\_

Side St.: \_\_\_\_\_

All minimum setbacks met? ☐ Yes ☐ No

Is Entrance Permit Required? ☐ Yes ☐ No

Historic District? ☐ Yes ☐ No

Lot Coverage for New Town Zone: \_\_\_\_\_

SDP/Red-line approval date: \_\_\_\_\_

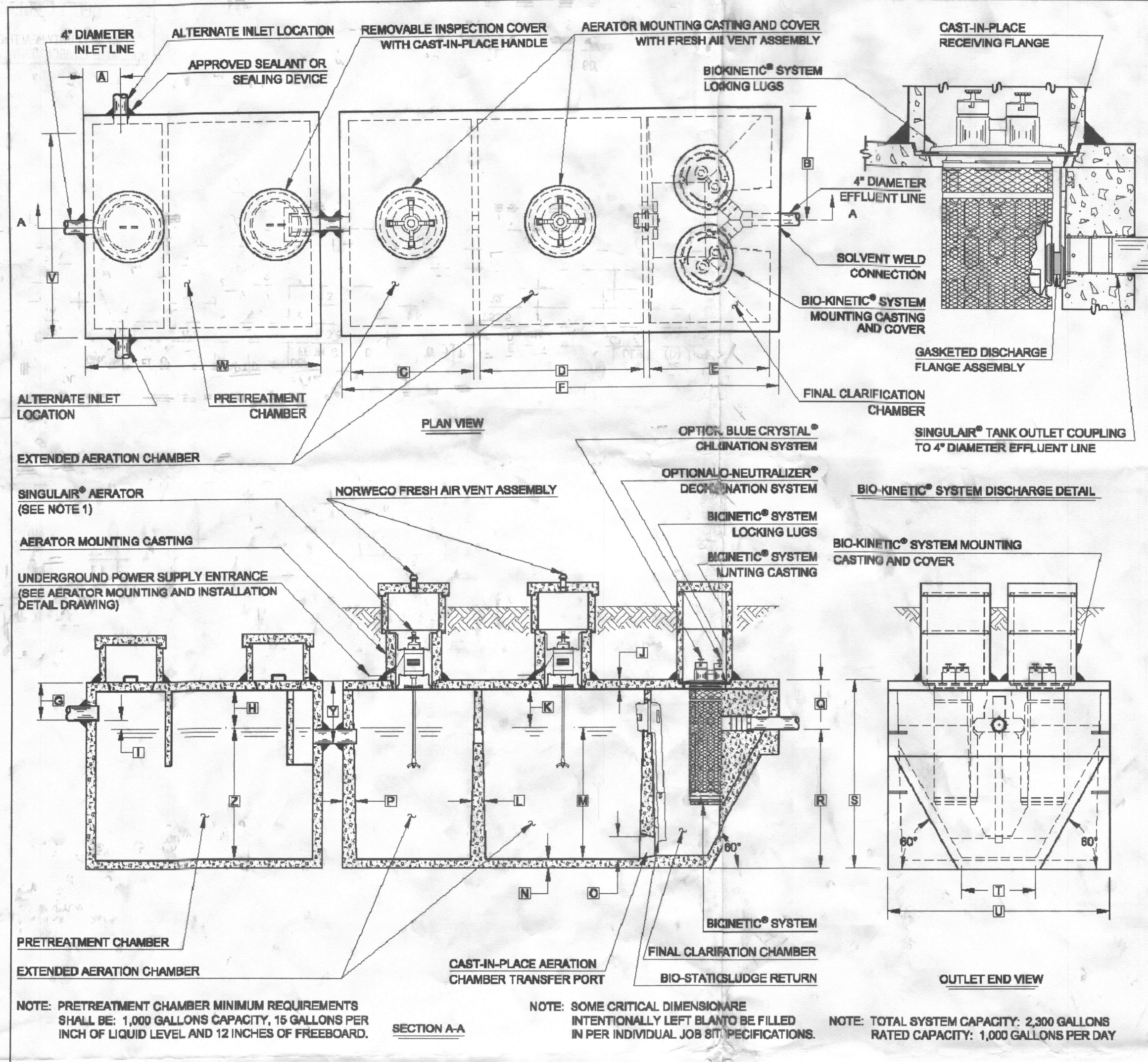
Filing Fee	\$
Permit Fee	\$
Tech Fee	\$
Excise Tax	\$
PSFS	\$
Guaranty Fund	\$
Add'l per Fee	\$
Total Fees	\$
Sub-Total Paid	\$
Balance Due	\$
Check	#

Distribution of Copies: White: Building Officials Green: PSZA,Zoning Yellow: PSZA,Engineering Pink: Health Gold: SHA



FISHER COLLINS & CARTER, INC.





**GENERAL NOTES:**

- SINGULAR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
- FALL THROUGH SINGULAR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.
- TANK REINFORCED PER ACI STD. 318.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL, LICENSED SINGULAR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

**PROJECT ENGINEER'S APPROVAL:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.  
DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION:**  
I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.  
DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_

**CRITICAL DIMENSIONS**

A	1'-0"	N	0'-3"
B	5'-0"	O	0'-3"
C	5'-0"	P	0'-3"
D	4'-5"	Q	1'-6"
E	3'-7"	R	3'-0"
F	12'-2"	S	0'-0"
G	1'-0"	T	2'-0"
H	1'-0"	U	0'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	1'-6"
M	3'-6"	Z	

**NOTE:** PRETREATMENT CHAMBER MINIMUM REQUIREMENTS SHALL BE: 1,000 GALLONS CAPACITY, 15 GALLONS PER INCH OF LIQUID LEVEL AND 12 INCHES OF FREEBOARD.

**NOTE:** SOME CRITICAL DIMENSIONS ARE INTENTIONALLY LEFT BLANK TO BE FILLED IN PER INDIVIDUAL JOB SITE SPECIFICATIONS.

**NOTE:** TOTAL SYSTEM CAPACITY: 2,300 GALLONS  
RATED CAPACITY: 1,000 GALLONS PER DAY

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM COVER OVER THE BAT SHALL BE 3 FEET.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
- ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- AN AGREEMENT AND EASEMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER 15565, FOLIO 081.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- SURFACE RUNOFF SHALL BE DIRECTED AROUND THE BAT TANK.

**SEPTIC SYSTEM ELEVATIONS**

FTE = 778.13  
SSE = 768.21  
INV. OUT OF BUSE = 764.07  
PROP. GROUND AT C/O = 767.3  
INV. INTO C/O = 762.51  
INV. OUT OF FO = 762.41  
EX/PROP. GROUND AT C/O = 761.1  
INV. INTO C/O = 758.39  
INV. OUT OF FO = 758.29  
EX. GROUND / BAT TANK = 761.25  
TOP OF BAT TANK = 758.93  
COVER OVER BAT TANK = 2.32 FT  
INVERT INTO BAT TANK = 757.93  
INVERT OUT C BAT TANK = 757.60  
EX. GROUND / PUMP TANK = 761.25  
TOP OF PUMP TANK = 758.25  
COVER OVER PUMP TANK = 3 FT  
INVERT INTO PUMP TANK = 757.50  
INVERT OUT C PUMP TANK = 758.42

**SEPTIC SYSTEM DESIGN**

6 BEDROOM HOUSE  
LOADING RATE = 900 GPD  
APPLICATION RATE = 0.8  
EFFECTIVE SIDEWALL BEGINS AT 4 FEET  
TRENCH DEPTH = 5.0 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 1 FOOT  
SF OF DRAINFIELD = 900 GPD / 0.8 = 1125 SF  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+2(1)) = 0.83  
TRENCH LENGTH = 1125 SF x 0.83 / 3 = 312.5 FEET (USE 313.25 FEET)  
TRENCH SPACING = 2D+W = (2(1) + 3) = 5 USE 10'

**LOW PRESSURE DOSING SYSTEM - INITIAL INSTALLATION**

TRENCH	GROUND ELEV.	PIPE INVERT ELEV.	TRENCH LENGTH (FT)	LATERAL PIPE LENGTH (FT)	PERFORATION DIAMETER (IN)	HEAD (FT)	PERFORATION FLOW RATE (GPM)	PERFORATION SPACING (FT)	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)
1A1	758.5	754.5	44.75	42.27	5/16	2	1.63	4.97		14.67
1A2	758.5	754.5	44.75	42.27	5/16	2	1.63	4.97		14.67
1B1	757.2	753.2	44.75	41.56	5/16	3.3	2.09	6.39		14.63
1B2	757.2	753.2	44.75	41.56	5/16	3.3	2.09	6.39		14.63
1C1	755.6	751.6	44.75	42.27	5/16	2	1.63	4.97		14.67
1C2	755.6	751.6	44.75	42.27	5/16	2	1.63	4.97		14.67
1D	754.0	750.0	44.75	41.56	5/16	3.6	2.18	6.39		15.26
TOTAL TRENCH FLOWRATE										88.5

**TRENCH DESIGN**

TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	PIPE INVERT ELEV.	DEPTH TO STONE FROM GROUND (FT)	DEPTH OF TRENCH (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH (FT)	EFFECTIVE DEPTH (D)	WIDTH OF TRENCHES (W)	TRENCH SPACING
1A1	758.5	758.0	754.5	3.5'	1.5'	753.5	4.0'	1.0	3.0'	10'
1A2	758.5	758.0	754.5	3.5'	1.5'	753.5	4.0'	1.0	3.0'	10'
1B1	757.2	753.7	753.2	3.5'	1.5'	752.2	4.0'	1.0	3.0'	10'
1B2	757.2	753.7	753.2	3.5'	1.5'	752.2	4.0'	1.0	3.0'	10'
1C1	755.6	752.1	751.6	3.5'	1.5'	750.6	4.0'	1.0	3.0'	10'
1C2	755.6	752.1	751.6	3.5'	1.5'	750.6	4.0'	1.0	3.0'	10'
1D	754.0	750.5	750.0	3.5'	1.5'	749.0	4.0'	1.0	3.0'	10'

**FRICITION LOSS IN 3" PIPE FITTINGS:**

4 1/8" HB = 42 EQUIVALENT FEET OF PIPE  
6 TEE/CROSS x 17 FEET PER FITTING = 102 EQUIVALENT FEET OF PIPE  
1 UNION x 4 FEET PER FITTING = 4 EQUIVALENT FEET OF PIPE  
3 ELBOWS x 12 FEET PER FITTING = 36 EQUIVALENT FEET OF PIPE  
TOTAL EQUIVALENT FEET OF PIPE = 184 FT

**TOTAL LINEAR FEET OF 3" SCH. 40 PVC = 66 LF + 184 LF = 250 LF**

**DYNAMIC HEAD**  
250 LF X 1.68 FT PER 100 LF OF PIPE = 4.20 FT OF FRICTION HEAD  
DISTAL HEAD = 2.00 FT  
VERTICAL FROM PUMP OFF TO DISCHARGE = 3.82 FT OF STATIC HEAD  
VERTICAL FROM DISCHARGE TO TRENCH = 0 FT  
TOTAL DYNAMIC HEAD = 10.02 FT

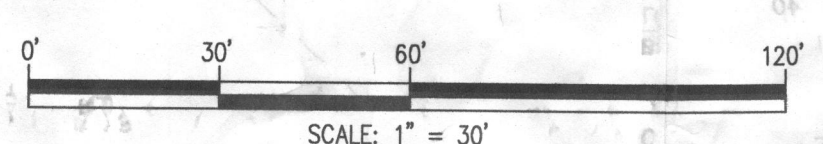
**PIPE VOLUMES**  
66 LF (3" SCH. 40 PIPE) X 38.4 GALLONS PER 100 LF = 25.3 GALLONS  
293.7 LF (1.5" SCH. 40 PIPE) X 10.6 GALLONS PER 100 LF = 31.1 GALLONS

**MINIMUM DOSE**  
MINIMUM DOSE = (S X LATERAL PIPE VOLUME) + (FORCE MAIN & MANIFOLD)  
= (5 X 31.1) + (25.3)  
= 180.8 GALLONS

180.8 GALLONS IS MORE THAN 1/6 DESIGN FLOW (900/6=150)  
USE 265.5 GALLON DOSE (180.8 GALLON MINIMUM)  
(RUN TIME = 3 MIN (88.5 GPM X 3 = 265.5 GALLON DOSE))

**PUMP NEEDS TO HANDLE 88.5 GPM AT 10.02 FT OF HEAD**  
USE 0.5 HP (ME50 PUMP)

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10377 BALTIMORE NATIONAL PARK  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2855



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2016.

*Hydramic Inc 12/19/15*  
Signature of Professional Engineer DATE



**OWNER**  
CHELSEA KNOLLS, LC  
1355 BEVERLY RD, SUITE 240  
MCLEAN, VIRGINIA 22101  
(703) 734-9730  
(301) 720-3021

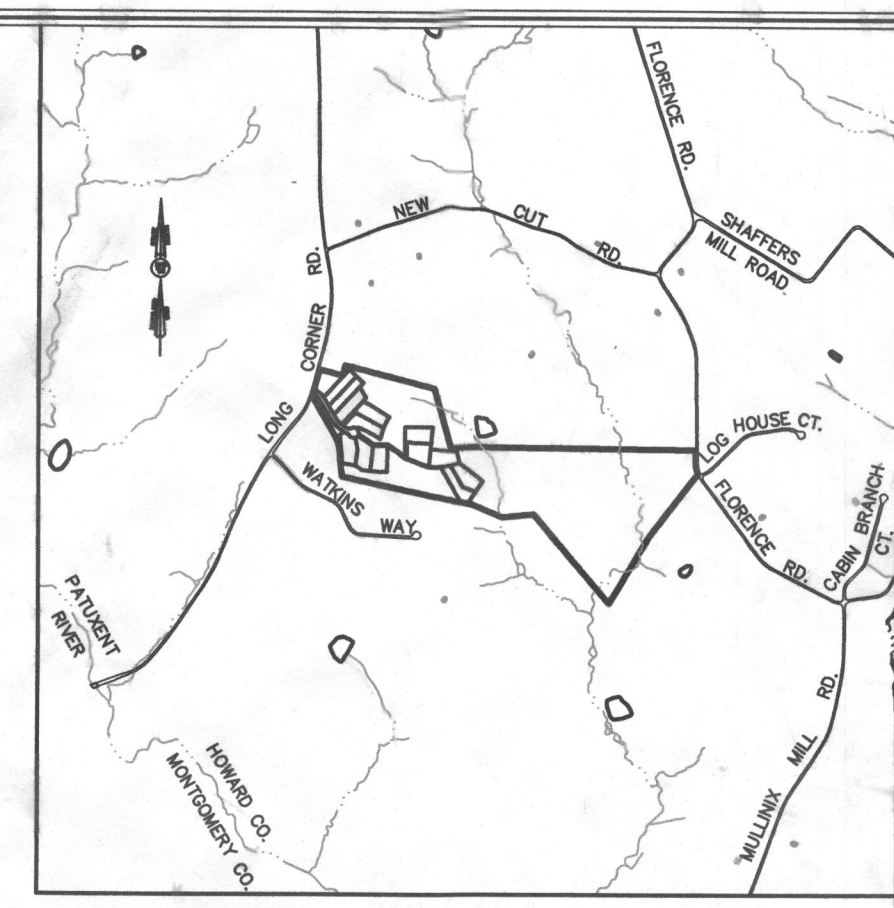
**DEVELOPER**  
RYAN HOMES, INC.  
ATTN: KEVIN BOWSER  
9720 PATUXENT WOODS DRIVE  
COLUMBIA, MARYLAND 21046  
410-796-0980

**BAT SITE PLAN**  
**LOT 4**  
**CHELSEA KNOLLS**  
18323 CHELSEA KNOLLS DRIVE

ZONING: RC-DEO  
TAX MAP No. 12 GRID No. 5 PARCEL No. 78  
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: NOVEMBER, 2015  
SHEET 1 OF 2

**LEGEND**

SYMBOL	DESCRIPTION
(---)	EXISTING CONTOUR 2' INTERVAL
(---)	PROPOSED CONTOUR 2' INTERVAL
(x362.5)	SPOT ELEVATION
(O)	EXISTING WELL
(T)	EXISTING STREET TREES FROM F-12-072
(T)	EXISTING PERIMETER TREES FROM F-12-072



**VICINITY MAP**  
SCALE: 1" = 2000'  
HO. CO. MD. ADC MAP 7, GRID D8

**BENCH MARKS**  
STA 081A ELEV. 786.421  
N. 603,004.896  
E. 1,333,265.9  
STA 081A ELEV. 714.263  
N. 602,649.523  
E. 1,271,163.330

- GENERAL NOTES**
- SUBJECT PROPERTY ZONED: RC-DEO
  - TOTAL AREA OF PROPERTY: 50,000 SQ.FT. OR 1.15 AC.
  - SEPTIC EASEMENT SUBJECT TO HOWARD COUNTY HEALTH DEPARTMENT REVIEW.
  - CONTRACTOR/BUILDER TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
  - BOUNDARY OF LOT BASED ON PLAT #2017.
  - TOPOGRAPHY SHOWN HEREON TAKEN FROM F-07-072 WHICH IS BASED ON FIELD RUN TOPOGRAPHIC SURVEY CONDUCTED BY MILDENBERG, BOENDER & ASSOCIATES, INC. IN SEPTEMBER, 2001. TOPOGRAPHY IN NON-DEVELOPED AREAS IS BASED ON HOWARD COUNTY 200 SCALE TOPOGRAPHY.
  - NO WETLANDS EXIST ON THIS LOT.

Approved Septic System Plan  
Howard County Health Department  
Norweco INTLP-800  
#1 Monarch 1500-gal Pump Tank  
w/ 1/2" ME50 Pump or equiv.  
*Signature* 12/14/2015  
B15004871 Date

**NOTE**  
THE EXISTING WELL SHOWN ON THIS PLAN, TAG NO. HO #95-2099 HAS BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC., PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.

**SOILS LEGEND**

SOIL	NAME	CLASS
MIB2	Mt. Airy channely loam, 3 to 8 percent slopes, moderately eroded	A
MC2	Mt. Airy channely loam, 8 to 15 percent slopes, moderately eroded	A

**PLAN VIEW**  
SCALE: 1"=30'



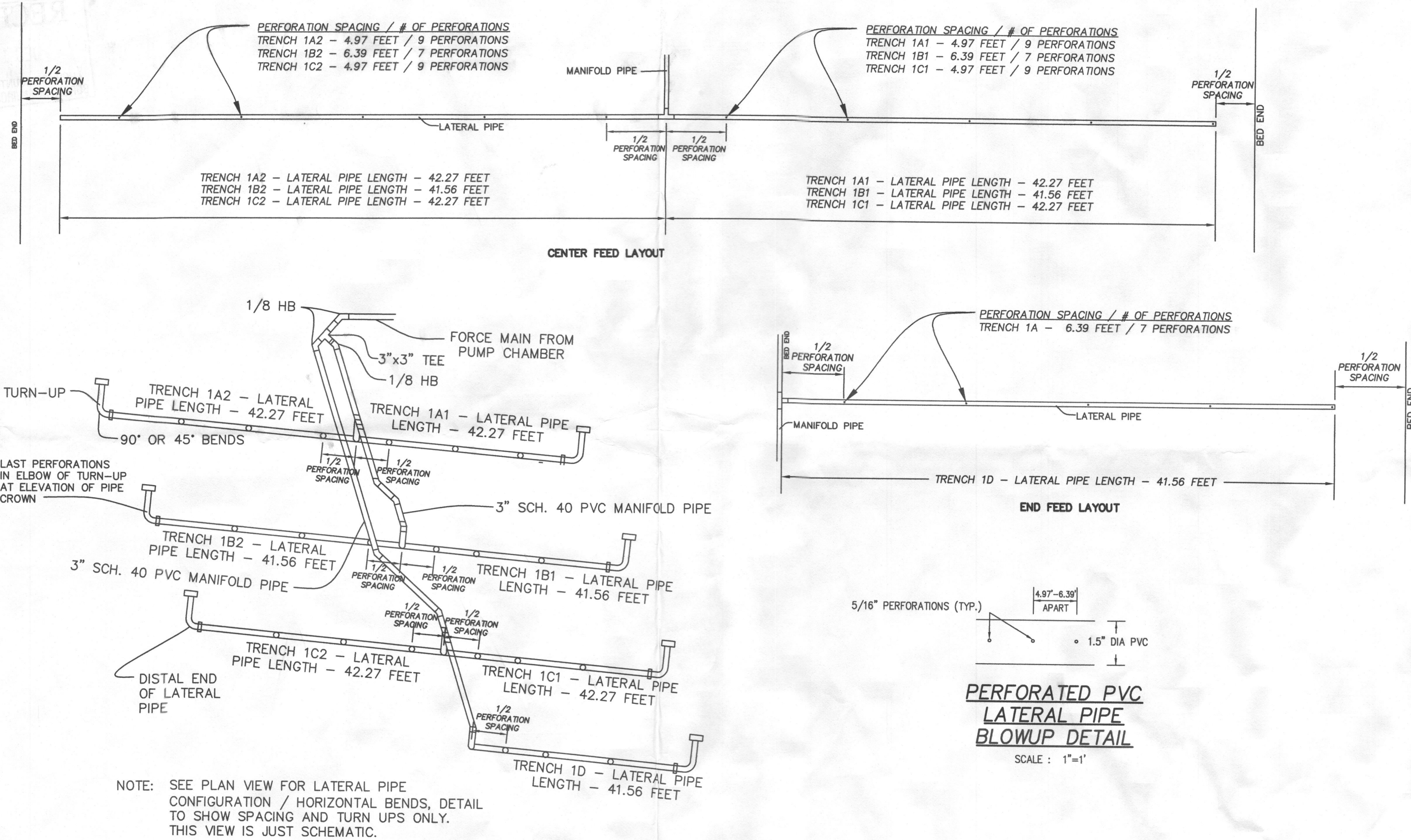


FIGURE 4.1 CENTER FEED MANIFOLD DISTRIBUTION NETWORK

NOTE: PLACE AN OBSERVATION PIPE IN THE GRAVEL BED AT THE DISTAL END OF EACH TRENCH SEGMENT.

## ME SERIES EFFLUENT PUMPS

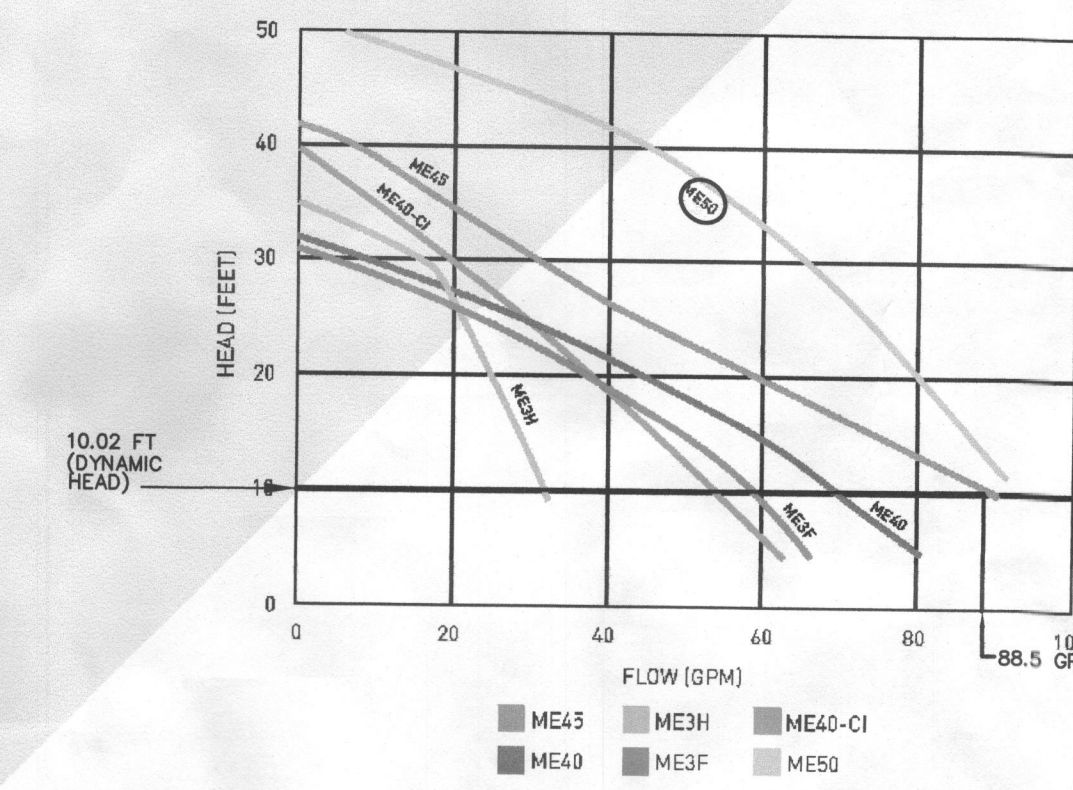
Trust The Pump Experts.

Myers has a market leading portfolio of horsepower and pump curve combinations, delivered with distinctive service.

### Features

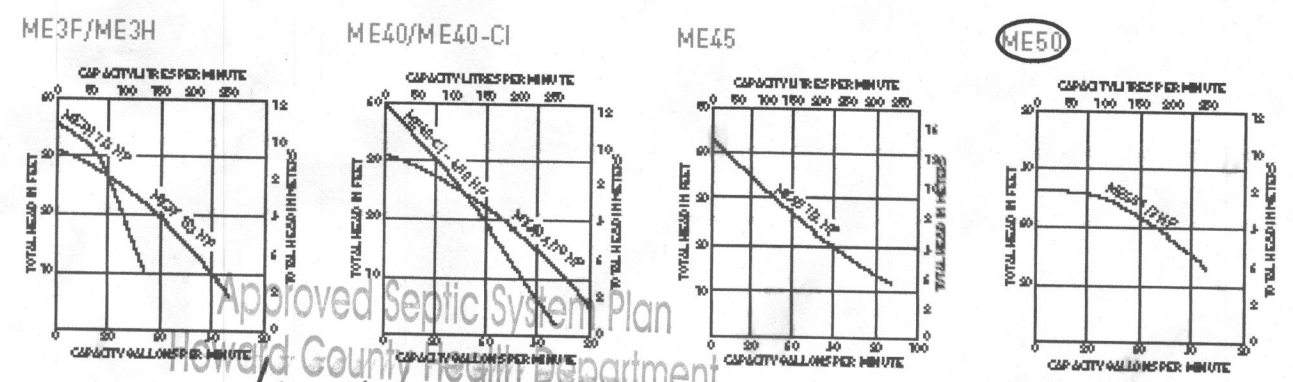
- RELIABLE AND TOUGH**
  - Rugged, oil-cooled motor provides continuous bearing lubrication and maximizes heat dissipation
- EXTENDED SERVICE**
  - Lubricated ball bearings and shaft seal for longer service life
- MOTOR PROTECTION**
  - Long-life carbon/ceramic seal protects motor against water leakage
- THERMAL OVERLOAD**
  - Heat sensor overload protection with automatic reset when motor cools to safe operating temperature
- NO DRILLING REQUIRED**
  - Anti-airlock hole in base reduces added labor
- EASY SERVICEABILITY**
  - Pump, intake screen volute base, switch and power cord are serviceable

### Family Curve

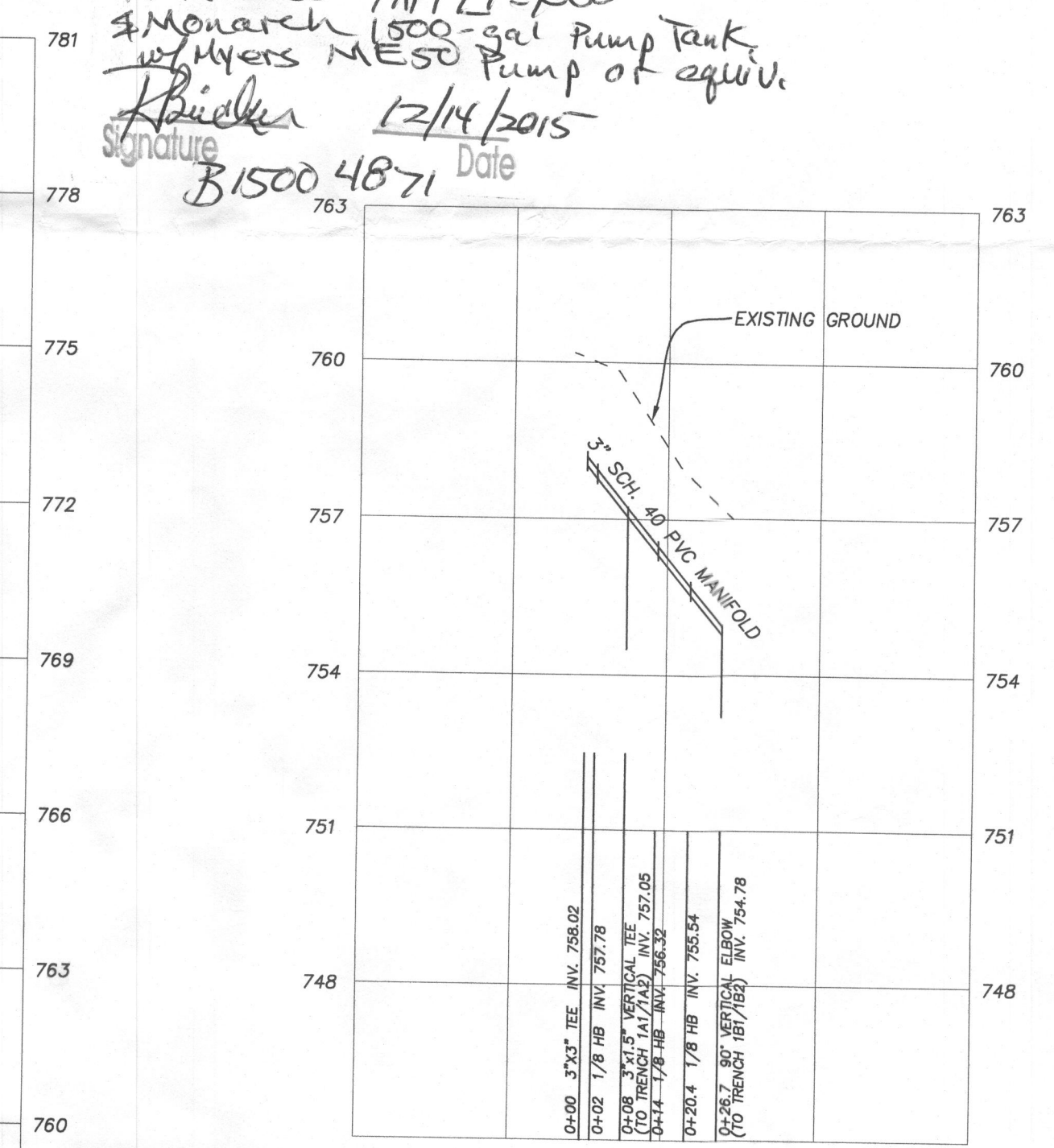
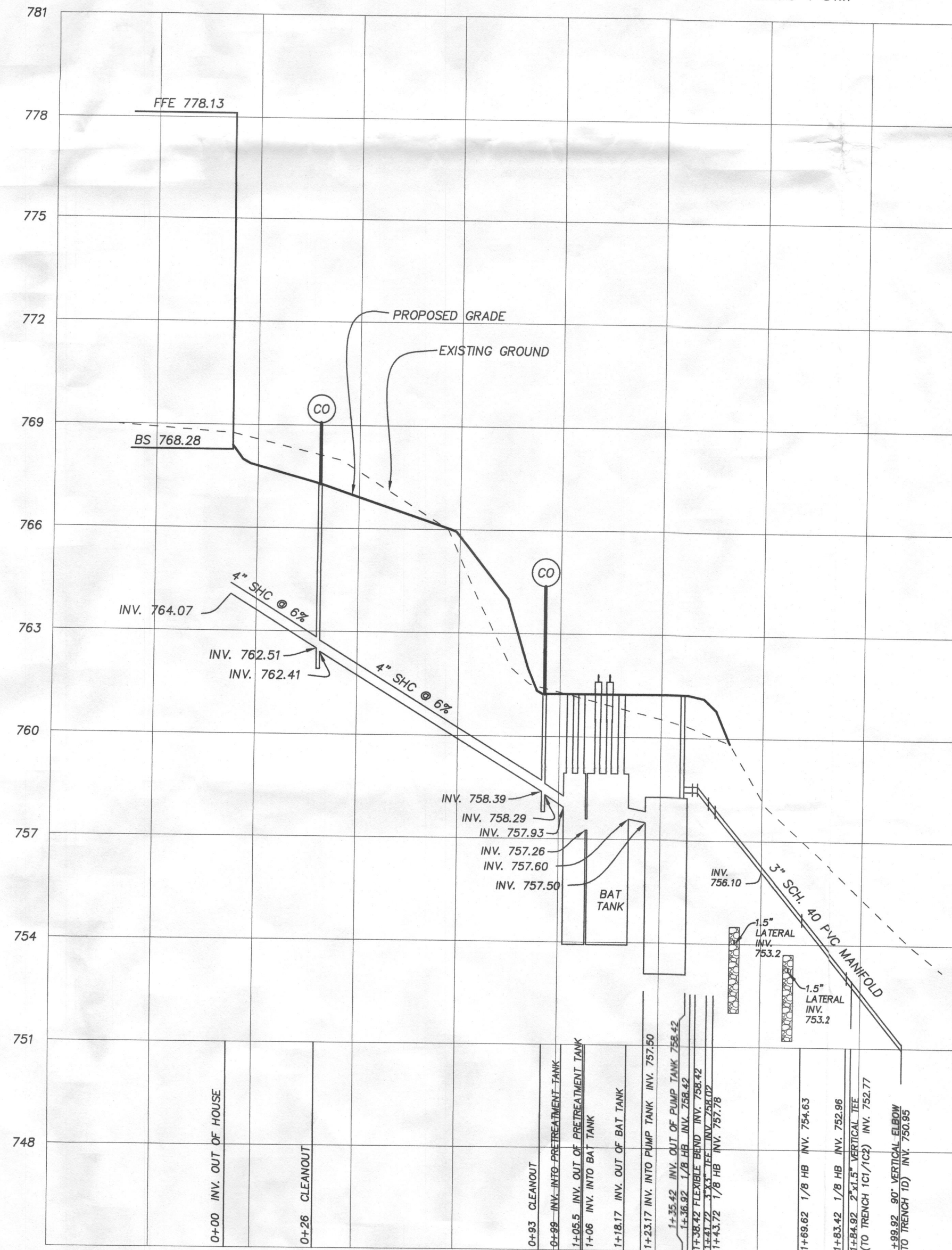


### Specifications

	ME30/ME35	ME40	ME40-CI	ME45	ME50
Capacity	ME30: 36 GPM (136 LPM) ME35: 45 GPM (169 LPM)	60 GPM (227 LPM)	60 GPM (227 LPM)	97 GPM (367 LPM)	120 GPM (454 LPM)
Static Head	ME30: 36' (10.7 m) ME35: 31' (9.5 m)	22' (6.7 m)	40' (12 m)	44' (13.4 m)	55' (16.8 m)
Operation	Automatic or manual	Automatic or manual	Automatic or manual	Automatic or manual	Automatic or manual
Solids Handling	3/4" (19 mm)	3/4" (19 mm)	3/4" (19 mm)	3/4" (19 mm)	3/4" (19 mm)
Liquids Handling	Domestic effluent and drain water	Domestic effluent and drain water	Domestic effluent and drain water	Domestic effluent and drain water	Domestic effluent and drain water
Liquid Temp	Intermittent up to 140°F (60°C) Continuous up to 140°F (60°C)	Intermittent up to 140°F (60°C) Continuous up to 140°F (60°C)	Intermittent up to 140°F (60°C) Continuous up to 140°F (60°C)	Intermittent up to 140°F (60°C) Continuous up to 140°F (60°C)	Intermittent up to 140°F (60°C) Continuous up to 140°F (60°C)
Motor Electrical Data	1/2 HP, 1550 RPM, 115V, 12A, 16, 60Hz, 2300/5A, 16, 60Hz	1/2 HP, 1550 RPM, 115V, 12A, 16, 60Hz, 2300/5A, 16, 60Hz	1/2 HP, 1550 RPM, 115V, 12A, 16, 60Hz, 2300/5A, 16, 60Hz	1/2 HP, 1550 RPM, 115V, 12A, 16, 60Hz, 2300/5A, 16, 60Hz	1/2 HP, 1550 RPM, 115V, 12A, 16, 60Hz, 2300/5A, 16, 60Hz
Acceptable pH Range	6-9	6-9	6-9	6-9	6-9
Shaft Seal	Carbon and ceramic mechanical seal	Carbon and ceramic mechanical seal	Carbon and ceramic mechanical seal	Carbon and ceramic mechanical seal	Carbon and ceramic mechanical seal
Housing/Volute	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron
Volute Base	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron
Impeller	Fiberglass-reinforced Nylon	Cast iron	Cast iron	Cast iron	Cast iron
Exterior Handwrm	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Power Cord	20', 14/2, SJTW	20', 14/2, SJTW	20', 14/2, SJTW	20', 14/2, SJTW	10'
Discharge, NPT	1-1/2" (38.1 mm)	1-1/2" (38.1 mm)	2" (50.8 mm)	2" (50.8 mm)	2" (50.8 mm)



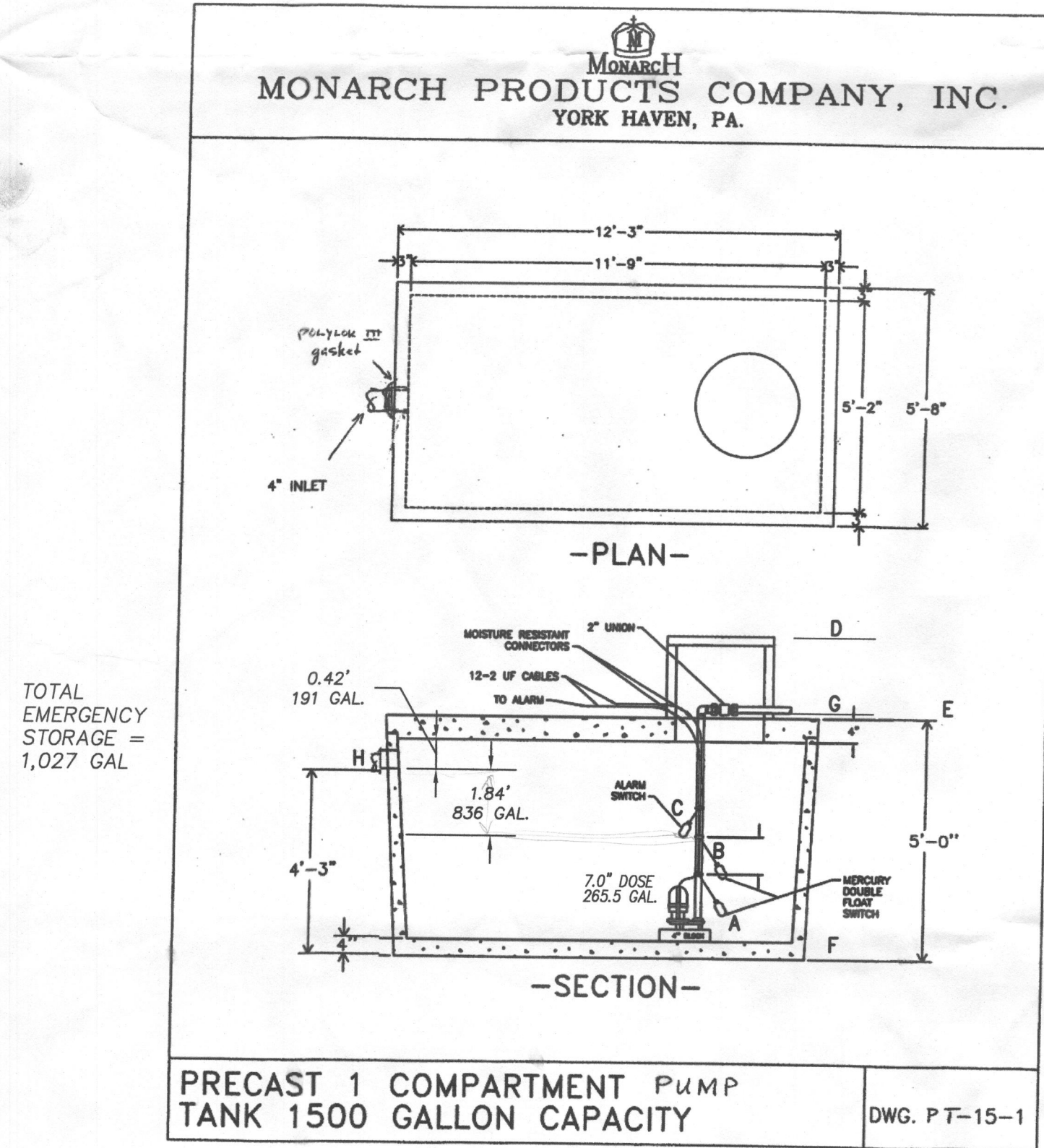
NOTE: USE A ME50 PUMP



SEPTIC PROFILES  
HORIZONTAL SCALE: 1"=30'  
VERTICAL SCALE: 1"=3'

BAT SITE PLAN  
LOT 4  
**CHELSEA KNOLLS**  
18323 CHELSEA KNOLLS DRIVE

ZONING: RC-DEO  
TAX MAP No. 12 GRID No. 5 PARCEL No. 78  
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: FEBRUARY, 2015  
SHEET 2 OF 2



**PUMP ALARMS / INFORMATION**  
A PUMP OFF : 754.60  
B PUMP ON : 755.18  
C HIGH WATER ALARM : 755.68  
D TOP OF ACCESS COVER : 761.25  
E TOP OF TANK : 758.25  
F BOTTOM OF TANK : 753.27  
G DISCHARGE OUT OF TANK : 758.42  
H INVERT INTO TANK : 757.52

NOTE: SEPTIC SYSTEM ALARM WILL BE ON A CIRCUIT SEPARATE FROM ANY OTHER SEPTIC SYSTEM COMPONENTS OR ALARMS.

### PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2016.

*Signature* *Date 12/9/15*  
Signature of Professional Engineer DATE



**OWNER**  
CHELSEA KNOLLS, LC  
1355 BEVERLY RD. SUITE 240  
MCLEAN, VIRGINIA 22101  
(703) 734-9730  
(301) 720-3021

**DEVELOPER**  
RYAN HOMES, INC.  
ATTN: KEVIN BOWSER  
9720 PATUXENT WOODS DRIVE  
COLUMBIA, MARYLAND 21046  
410-796-0980

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2855