Howard County Health Department
Maura J. Rossman, M.D., Health Officer

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth

RECEIPT DATE: 10-6-20 **ONSITE SEWAGE DISPOSAL SYSTEM** P 572811

APPROVAL DATE: 12/15/2020 **PERMIT: CONSTRUCTION** A

PROPERTY ADDRESS: 12237 MAYAPPLE DRIVE, SYKESVILLE, MD 21784

SUBDIVISION: WALKER MEADOWS LOT: 31 TAX ID: 03-601589

CONTRACTOR: EMAIL: SCBACKHOE@COMCAST.NET

CONTRACTOR ADDRESS: 4410 SALEM BOTTOM ROAD, WESTMINSTER, MD 21157 PHONE: (410)596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: ☑ MDE ☑ MANUFACTURER: H.+

PROPERTY OWNER: NVR, INC. EMAIL: janastas@nvrinc.com

OWNER ADDRESS: 9720 PATUXENT WOODS DRIVE, COLUMBIA, MD 21046 PHONE: (410)379-5956

BAT UNIT MODEL: HOOT 600 BNR PUMP SIZE: 0.3 Hp PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 6/12/2020 DATE RECORDED: 6/12/2020

DISTRIBUTION SYSTEM: ☐ GRAVITY ☒ PRESSURE DOSED BEDROOMS: 5 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: 104	INLET DEPTH: 2.0
	TRENCH WIDTH: 3	MAXIMUM BOTTOM DEPTH: 5.0
	MINIMUM SPACE BETWEEN TRENCHES: 10	EFFECTIVE AREA BEGINNING DEPTH: 2.0
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	INSTALL AT LEAST CLEANOUT IN SHC USE ¼ " PERFORATIONS IN LATERALS. RECOMMENDED EFFLUENT PUMP (FOR LPD SYSTEM) IS WE-03L, OR EQUIVALENT. SYSTEM MUST PASS A PUMP AND ALARM TEST PRIOR TO ISSUE OF ICOP.	

ISSUED BY: R BRICKER ISSUE DATE: 10-30-20 EXPIRATION DATE: 10-30-21

NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION

NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING

NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.

NOTE: WATERTIGHT SEPTIC TANKS REQUIRED

NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL

NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS

NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM

☑ *ELECTRICAL PERMIT ISSUED* E 30004938

NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.

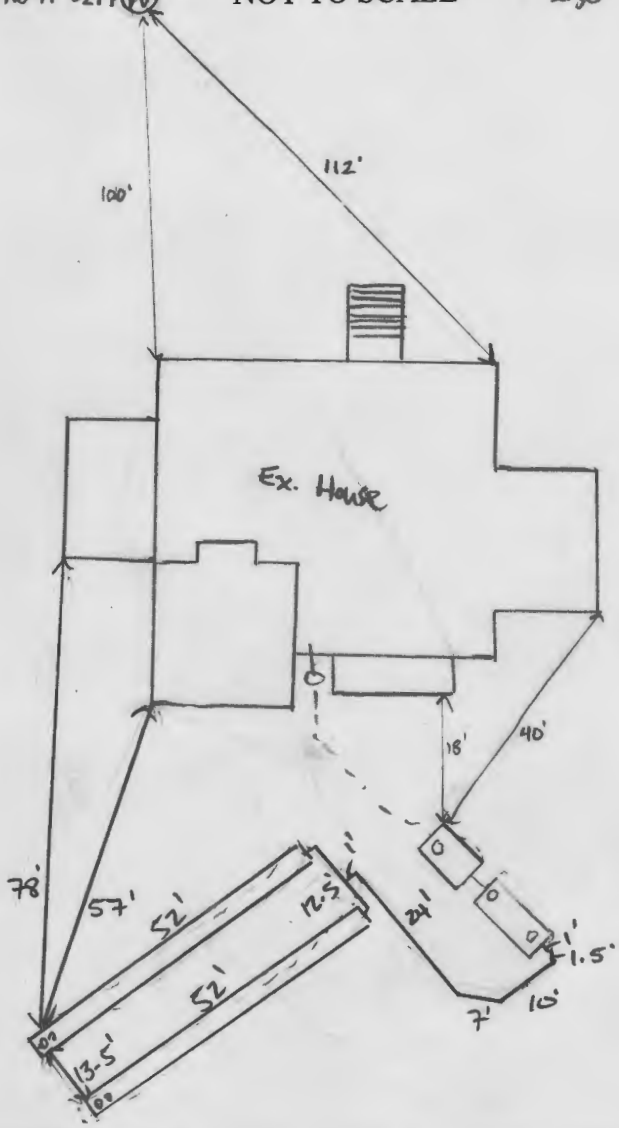
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

Ho-17-0277 (W) NOT TO SCALE 1" ≈ 30'



ROAD NAME
Mayapple Dr

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	2'	5'

NUMBER OF TRENCHES 2
TOTAL LENGTH 104 F
ABSORPTION AREA 312 SF + SIDE WALL
DISTRIBUTION BOX LEVEL – LPD –
DISTRIBUTION BOX BAFFLE –
DISTRIBUTION BOX PORT –

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL yes
MANUFACTURER Hoot 600 BWR
CAPACITY 600 GAL
SEAM LOC top
TANK LID DEPTH 2'
BAFFLES – back
BAFFLE FILTER –
MANHOLE LOC front
6" PORT LOC –
WATERTIGHT TEST –
SLOTTED –
DATE ON LID 11-13-20

PUMP/SEPTIC TANK LEVEL yes
MANUFACTURER Backriver
CAPACITY 1500 GAL
SEAM LOC top
TANK LID DEPTH 2'
BAFFLES front
BAFFLE FILTER –
MANHOLE LOC front + back
6" PORT LOC –
WATERTIGHT TEST –
SLOTTED –
DATE ON LID

PRE-CONSTRUCTION:
11/25/2020 Laid out 2 × 52' trenches according to plan Fall from house looks good - in addition there is a living sewer (ST)

INSTALLATION: 12/2/2020 BAT and pump tank set. (ST) 12/04/2020 TRENCHES, MANIFOLD, FM INSTALLED & 12/09/2020 SHC VERIFIED & 12/15/2020 Observed Septic pump, alarm and HOOT on separate breakers in basement. Alarms work - both located outside. Observed distal head pressure in both fumups. Observed aeration and recirculation in HOOT. (ST)

FINAL INSPECTOR Austin Thomas DATE OF APPROVAL 12/15/2020

HOWARD COUNTY HEALTH DEPARTMENT

Bureau of Environmental Health
8930 Stanford Blvd | Columbia, MD 21045
410.313.2640 - Voice/Relay
410.313.2648 - Fax
1.866.313.6300 - Toll Free

Maura J. Rossman, M.D., Health Officer

OPERATION AND MAINTENANCE AGREEMENT FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this ~~31~~ 13th day of ~~May~~ June, 2020, among NVHomes/Colin Bowers/ Nicelda Bowers, hereinafter collectively referred to as "Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at 12237 Mayapple Dr Marriottsville, MD 21104, in the 3 Election District of Howard County, Maryland, and the deed and subdivision plat of the property is recorded among the Land Records of Howard County, Maryland, Tax Map # 009, Block # _____, Parcel # 0066, Deed Reference # 24974-79 and Tax Account # 601589 ("the Property").

WHEREAS, The Property is suitable for the installation of a conventional on-site sewage disposal system with an advanced pre-treatment system, utilizing best available technology to perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07, effective November 24, 2016. The pre-treatment device being installed is Hoot 600.

NOW, THEREFORE, the parties hereto agree as follows:

A. Owner hereby grants to the County the right to enter upon the Property at any reasonable time with prior notice for access to the system to make periodic inspections and the Owner agrees to provide any information and data in Owner's possession reasonably requested and needed by the County.

B. Owner acknowledges and agrees that neither the County nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.

C. The Owner will devote reasonable care and effort to the operation and maintenance of the system in perpetuity or until a public sewer connection is made so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.

D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County with a private entity to operate and maintain on a regularly scheduled basis an approved advanced pre-treatment system. The owner shall supply a copy of the contract to the County when it is renewed or altered.

E. This agreement shall run with the land and upon Owner's taking title to the Property shall bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as long as

the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Property that the system shall require maintenance or other attention. Upon taking title to the Property, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

G. This agreement may be voided at any time at the discretion of the County.

H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed this agreement on the date indicated above.

Bert Nixon 6/17/2020
Howard County Health Department

6/1/2020
Owner #1 Signature Date

Owner#2 Signature Date

Jimmy Anastesio
Owner #1 Print Name

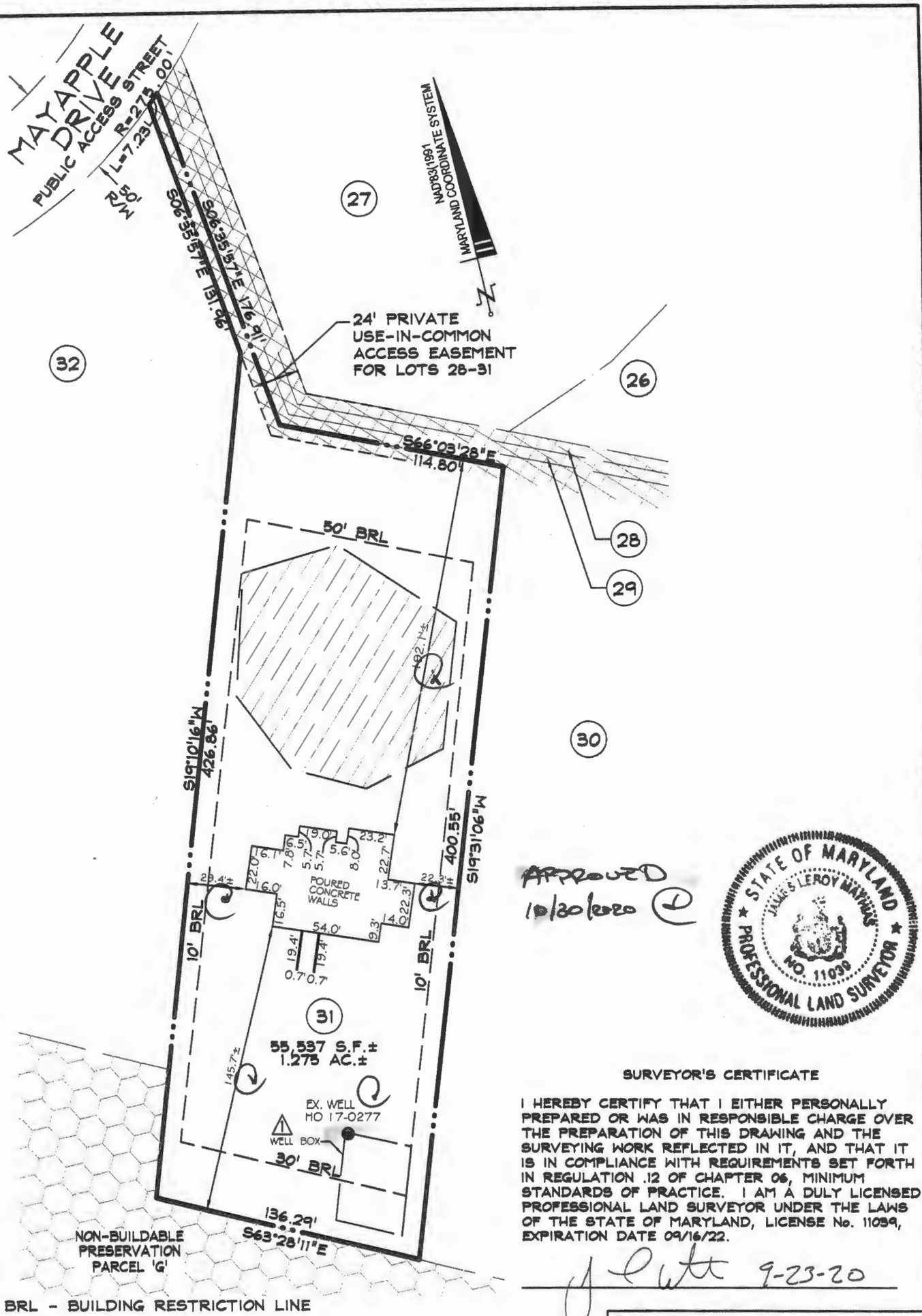
Owner #2 Print Name

DocuSigned by:
5/31/2020
FC95A3483C4B402...
Buyer #1 Signature Date

DocuSigned by:
Nicelda Bowers 5/31/2020
E3384F1EF248475...
Buyer #2 Signature Date

Colin Bowers
Buyer #1 Print Name

Nicelda Bowers
Buyer #2 Print Name



APPROVED
10/30/2020

STATE OF MARYLAND
JAMES LEROY MATHIAS
NO. 11039
PROFESSIONAL LAND SURVEYOR

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I EITHER PERSONALLY PREPARED OR WAS IN RESPONSIBLE CHARGE OVER THE PREPARATION OF THIS DRAWING AND THE SURVEYING WORK REFLECTED IN IT, AND THAT IT IS IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION .12 OF CHAPTER 06, MINIMUM STANDARDS OF PRACTICE. I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE No. 11039, EXPIRATION DATE 09/16/22.

9-23-20

BRL - BUILDING RESTRICTION LINE

PRIVATE SEWAGE DISPOSAL AREA

FOREST CONSERVATION EASEMENT

PRIVATE USE IN COMMON ACCESS EASEMENT

TOP OF WALL = 592.3

⚠ REVISION TO ADD WELL BOX 10/5/20

WALL CHECK
12237 MAYAPPLE DRIVE
LOT 31
WALKER MEADOWS
PLAT NO. 24977
3rd ELECTION DISTRICT HOWARD COUNTY, MD

DDC JOB#:	12064.3
DATE:	09/23/2020
SCALE:	1"=60'
DRN. BY:	CWJ
CHK. BY:	JLM

DDC inc
Development Design Consultants

Planners
Surveyors
Engineers
Landscape Architects

192 East Main Street
Westminster, MD 21157
410.386.0560
410.386.0564 (Fax)
DDC@DDCinc.us
www.DDCinc.us

SEPTIC SYSTEM/BEST AVAILABLE TECHNOLOGY (BAT) NOTES:

1. 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.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 10 FEET FROM THE TANK BASED ON THE MANUFACTURE'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. 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.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
10. THE WELL HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
11. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.

SEWAGE DISPOSAL SYSTEM DATA (5 BEDROOM):

1. INVERT @ FOUNDATION WALL: 584.7 (BASEMENT PUMP REQUIRED)
2. HOOT 600 BNR SYSTEM W/ 1,500 GALLON PUMP CHAMBER
   EX. GRADE OVER BAT TANK: 587.1
   PROP. GRADE OVER BAT TANK: 587.1
   INVERT: 584.0
   PUMP TANK
   EX GRADE OVER PUMP TANK: 586.5
   PROP GRADE OVER PUMP TANK: 586.5
3. INVERT: 583.7
4. TRENCH DESIGN (5 BDRM x 150 GPD/BDRM = 750 GPD)

   INITIAL, & 1ST REPLACEMENT SYSTEMS
   750 GPD / 1.2 GPD/SF (APP. RATE) = 625 SF
   USE 3' WIDE TRENCH W/ 36" OF EFFECTIVE DEPTH BELOW PIPE
   625 SF / 3' WIDTH = 208 LF x 0.50 = 104 LF MIN. TRENCH

   2nd INITIAL, & 1ST REPLACEMENT SYSTEMS
   750 GPD / 0.8 GPD/SF (APP. RATE) = 938 SF
   USE 3' WIDE TRENCH W/ 24" OF EFFECTIVE DEPTH BELOW PIPE
   938 SF / 3' WIDTH = 313 LF x 0.625 = 195 LF MIN. TRENCH

   USE 2 - 52' LONG TRENCHES FOR INITIAL SYSTEM
   USE 2 - 52' LONG TRENCHES FOR 1ST REPLACEMENT SYSTEM
   USE 2 - 98' LONG TRENCHES FOR 2ND REPLACEMENT SYSTEM

LOT 31 - RELATIVE DEPTHS	PIPE INVERT	EFFECTIVE AREA BEGINNING	MAXIMUM TRENCH BOTTOM
INITIAL SYSTEM (A)	2'	1.5'	5'
INITIAL SYSTEM (B)	2'	1.5'	5'
1ST REPLACEMENT (A)	2'	2.0'	5'
1ST REPLACEMENT (B)	2'	2.0'	5'
2ND REPLACEMENT (A)	2'	3.0'	5'
2ND REPLACEMENT (B)	2'	3.0'	5'

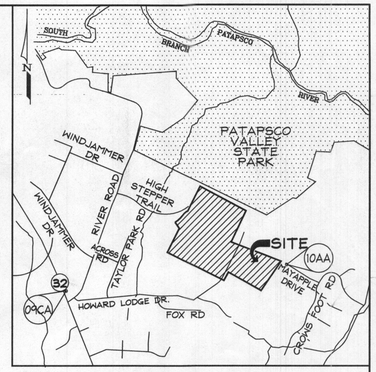
LOT 31 - APPROXIMATE ELEVATIONS	GROUND ELEVATION	INVERT ELEVATION	BOTTOM ELEVATION
INITIAL SYSTEM (A)	588.5	586.5	583.5
INITIAL SYSTEM (B)	587.5	585.5	582.5
1ST REPLACEMENT (A)	586.4	584.4	581.4
1ST REPLACEMENT (B)	585.7	583.7	580.7
2ND REPLACEMENT (A)	584.5	582.5	579.5
2ND REPLACEMENT (B)	583.5	581.5	578.5

BENCHMARK

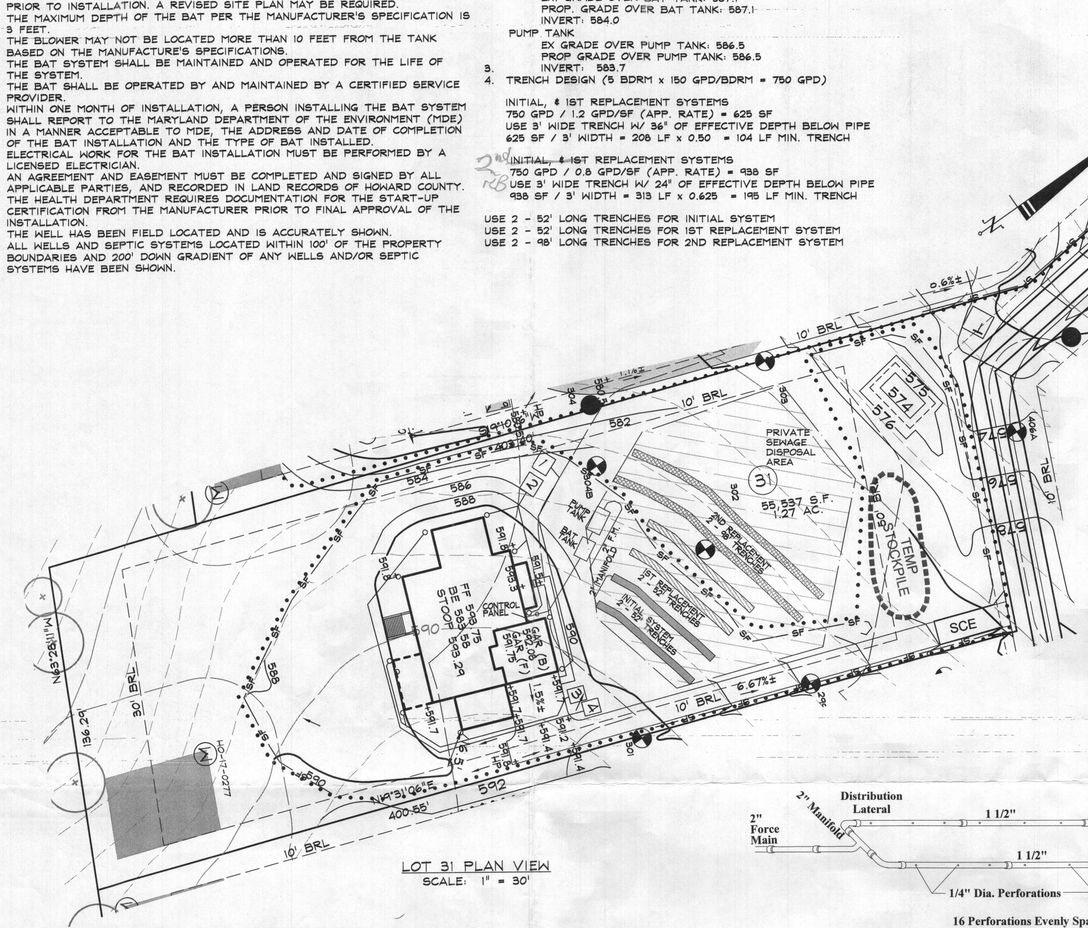
BENCHMARK 09CA
N. 609229.596
E. 1325501.308
B.M. 09CA - CONC MON
ELEV.N. 549.030

BENCHMARK 10AA
N. 609753.341
E. 1331668.810
B.M. 10AA - CONC MON
ELEV. 563.089

ADC MAP COORDINATES
MAP 5 GRID E9
N 39°20'00", E 76°57'30"



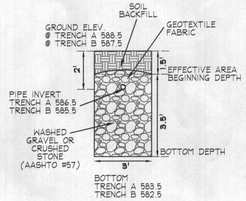
VICINITY MAP
SCALE: 1"=2000'



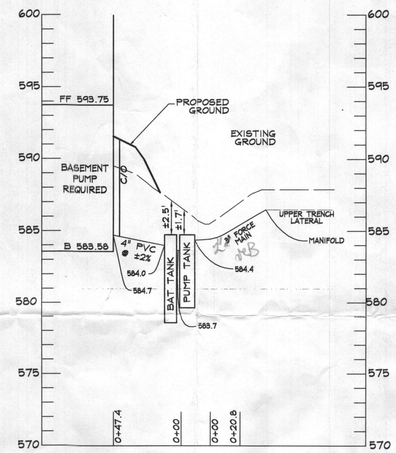
IF THE LOCATION OF THE OF THE STANDARD PROBE STAFF IN THE PUMP TANK IS MORE THAN 50' FROM THE CONTROL PANEL, A FLOAT TREE MUST BE INSTALLED TO CONTROL THE RECIRCULATION PUMP INSTEAD OF THE STANDARD PROBE STAFF. CALL MAYER BROS. IN ADVANCE TO ORDER PARTS AND DISCUSS.

IF LATERAL TURN-UPS ARE CUT OFF BELOW THE SOIL SURFACE THEY ARE NOT TO BE CUT OFF BEFORE A PRESSURE TEST IS CONDUCTED. CUT OFF TURN-UPS ARE TO BE PROTECTED BY A TIRE BOX WHICH IS SUPORTED BY BRICKS RESTING ON GRAVEL

LOT 31 - INITIAL SYSTEM LATERALS											
LATERAL	ELEV	VARIABLE HEAD	PERF. FLOW RATE	# PERF.	PERF. DIAMETER	LATERAL FLOW RATE	PERF. SPACING	LATERAL LENGTH	TRENCH LENGTH	1/2 PERF. SPACING	DIST FROM MANIFOLD TO 1ST PERF.
A	586.5	3.0	1.28	16	1/4	20.5	39.00"	50.5	52	1.50'	2.5'
B	585.5	4.0	1.47	14	1/4	20.6	44.5"	50.1	52	1.87'	2.87'
						41.1					



TRENCH
N.T.S.



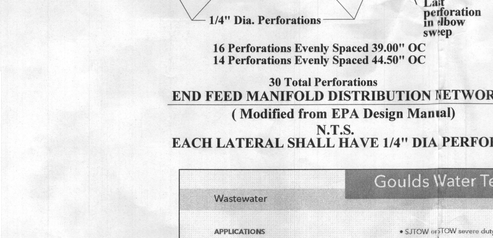
SEPTIC SYSTEM PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'

DRAWING LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- TRANSFORMER
- PERCOLATION TEST HOLE - PASS
- WELL BOX WITH EXISTING WELL
- SEWAGE DISPOSAL AREA
- DRY WELL
- WIDE GRASS SHOULDER
- TEMPORARY STOCKPILE

DATA SOURCES:

EX. BOUNDARY SHOWN PER BOUNDARY SURVEY BY SHANABERGER AND LANE DATED JUNE, 2014. TOPOGRAPHY SHOWN PER AERIAL PHOTOGRAMMETRY AND FIELD RUN TOPOGRAPHY DATED 5/2014. ADJACENT WELL AND SEPTIC INFORMATION APPROXIMATED FROM ADJACENT PLATS, HEALTH DEPARTMENT RECORDS AND FIELD OBSERVATION ON JUNE 25, 2012. EX. ENVIRONMENTAL INFORMATION SHOWN PER FIELD INVESTIGATION BY ECO-SCIENCE SOLUTIONS CONDUCTED ON OR ABOUT JUNE, 2014.



16 Perforations Evenly Spaced 39.00" OC
14 Perforations Evenly Spaced 44.50" OC

30 Total Perforations
END FEED MANIFOLD DISTRIBUTION NETWORK
(Modified from EPA Design Manual)
N.T.S.
EACH LATERAL SHALL HAVE 1/4" DIA PERFORATIONS

PUMP CHAMBER SPECIFICATIONS

	Pump chamber volume (available for storage) =	1500 gallons
	Pump chamber type (Enter "R" for rectangular or "C" for circular):	R
L -	Interior tank length/diameter =	153 inches
W -	Interior tank width/diameter =	63 inches
A -	Cross-sectional area : For "C", 3.142 X (1/2L)^2 For "R", L X W =	9639 sq. inches
H -	Interior tank height (height to inlet unless otherwise approved) =	48 inches
Vt -	Actual (usable) tank volume = A X H / 231cubic inches per gallon) =	2002.9 gallons
pR -	Pump riser height =	6 inches

DOSE INFORMATION/VOLUME CALCULATIONS

Vl -	Volume in laterals X 5 =	53.5 gallons
Vf -	Force main and manifold flow back volume =	6.83 gallons
Vc -	Volume of Force Main+ Manifold + 5x laterals =	60.33 gallons
	Elevation of inside bottom (floor) of pump chamber =	581.7 feet
	Pump height =	6 inches

FLOAT SETTINGS

	Pump off float setting (set so that pump remains submerged) =	22 inches
Eo -	Pump off float setting equates to an elevation of	583.53 feet
	Distance req'd. b/n on and off floats = (Vc X 231 cubic inches per gallon) / A =	2 inches
	Pump on float setting = off float setting + distance b/n on and off floats =	24 inches
Ha -	High water alarm setting = pump on float setting + 6 inches	30 inches

STORAGE/PUMP REQUIREMENTS

	Height of storage remaining above high water alarm = H - Ha =	18 inches
	which equates to	751.1 gallons
	Height of storage above high water alarm required for ONE DAY's storage =	18 inches
	Height of storage above high water alarm required for a HALF DAY's storage =	9 inches

[X] Configuration is acceptable with a single pump
[X] Configuration is acceptable with duplex pumps
[ ] Pump chamber does not provide adequate storage

SUMMARY	
Pump riser height	6 inches
Pump off float setting	22 inches
Pump on float setting	24 inches
High water alarm setting	30 inches

[X]

END MANIFOLD SPECIFICATIONS

Pipe Diameter=	2 inches
Distance between manifold and end of bed (12 inches suggested) =	12 inches
Number of lateral pairs =	2 laterals
Distance between laterals =	10 feet

Pipe sizes and diameters

	Pipe number (see chart below)	Type of pipe	Nominal size in inches	Actual inside diameter in inches	Volume per 100 feet in gallons	Total length in feet	Length of pipe which will flow back to pump chamber	Pipe volumes in gallons (for force main(s) and manifold, enter flow back volume only)
Laterals (select diameters from chart)	1	Sch 40	1.5	1.61	10.6	101	N/A	10.7
								0
Force main	1	Sch 40	2	2.067	17.4	21	21	3.7
Manifold	1	Sch 40	2	2.067	17.4	18	18	3.13

Check valve to be installed downstream from disconnect (Y or N) - generally not advised: N

Volume to be pumped per pump cycle based on pipe volume

Volume of laterals multiplied by 5 =	53.5 gallons
Volume of force main(s) plus manifold which will flow back between pump cycles =	6.83 gallons
Volume of laterals multiplied by 5 plus flow back =	60.33 gallons
Minimum Dose (at least 1/6 of design flow)	125 gallons

HEAD CALCULATIONS

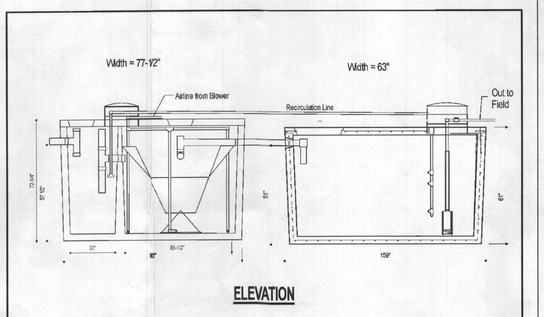
Relative elevation of manifold =	586.5 feet
Relative elevation of pump-off float =	583.5 feet
Hs - Static head = relative elevation of manifold - relative elevation of pump-off float =	3.0 feet
Hf - Friction head = due to friction in the pipe between the pump chamber and the laterals =	2.4 feet
**Friction head is calculated below	
Hd - Head required at distal end of laterals:	3.0 feet
Htd - Total dynamic head = Hs + Hf + Hd = lateral friction + operating head =	9.9 feet

Friction loss

	Di Nominal size in inches	Actual inside diameter in inches	Type of pipe	Length in feet (actual or equivalent)	Velocity of flow in feet per second	Friction loss per 100 ft.	Friction loss in feet
Force main	2	2.067	Sch.40	21	4.0		
Force main fittings		N/A	Sch.40	43			
Combined length				64		2.9	1.9
Manifold	2	2.067	Sch.40	18	4.0	2.9	0.5

Friction loss/100 feet = 0.002082 X 100 X (100/Hazen-Williams factor)^1.852 X ((Qp^1.852)/ Di^4.8655))

*This formula assumes a Hazen-Williams friction factor for PVC pipe of 150



ELEVATION

DESIGN DATA & GENERAL NOTES

Mayer Brothers, Inc.
3264 Rayen Road
Elkridge, Maryland 21075
Tel. 410.796.1424
Fax. 410.796.1428
www.mayerbrosprecast.com

Hoot 600 BNR
1500 Pump Chamber
Dwg: BNR 1500 pump | No Scale | Mar 7, 2014

Goulds Water Technology

Wastewater

APPLICATIONS

Specifically designed for the following uses:
- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump
- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

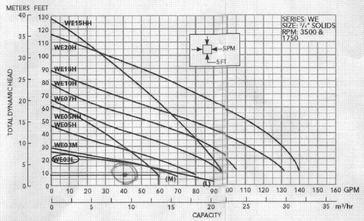
MOTORS
- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on ½ - 1½ HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):
- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ½ - 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

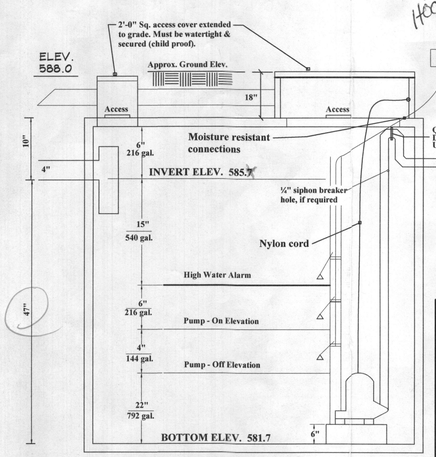
Three phase (60 Hz):
- Class 10 overload protection must be provided in separate/ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Designed for Continuous Operation; Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings:Upper and lower heavy duty ball bearing construction.
- Power Cable: Severe duty rated, oil and water resistant, Epoxy seal on motor and provides secondary moisture carrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengthsare available.
- O-ring: Aurex positive sealing against contaminants and oil leakage.

AGENCY LITINGS

Tested to UL 778 and CSA 22.2 108 Standards
Bynardian Standards Association File #LR38549



PAGE 2



NOTE: CONTRACTOR TO CONFIRM ELEVATIONS PRIOR TO PURCHASING PUMP.
151" x 55" INSIDE DIMENSIONS

TYPICAL PUMP CHAMBER DETAIL
N.T.S.

PUMP: GOULDS WE03L OR EQUIVALENT

Approved Septic System Plan
Howard County Health Department
HOOT BNR600 w/1500 gal Pump Tank
+ GOULDS WE03L Pump
P Buck 10/6/2020
Signature Date
for 5-Bedroom SFD

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. 21998 EXPIRATION DATE: 6/6/22

9/21/20
DATE

STATE OF MARYLAND
WILLIAM R. DEMARIO
21998
PROFESSIONAL ENGINEER

WILLIAM R. DEMARIO
PROFESSIONAL ENGINEER NO. 21998

DDC inc
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Development Design Consultants

OWNER:
ESC WALKER MEADOWS, L.C.
5074 DORSEY HALL DR., SUITE 205
ELLICOTT CITY, MD 21042
410-720-3021

DEVELOPER:
NV HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MD 21046
410-379-3391

SITE ADDRESS:
S/E RIVER ROAD
SYKESVILLE, MD 21784

WALKER MEADOWS
A RESUBDIVISION OF LOT 2 OF THE DIEHL PROPERTY (PLAT #6937)
LOTS 1-34 & BUILDABLE PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCEL B-K, NON-BUILDABLE BULK PARCELS L-M
12287 MAYAPPLE DRIVE

LOT 31 SITE PLAN FOR BAT INSTALLATION

5TH COUNCIL DISTRICT
3RD ELECTION DISTRICT
HOWARD COUNTY, MD

NO.	REVISIONS / DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: F-17-045	DES. BY: LJC
TAX ACC. #: 03-601577	DRN. BY: LJC
TAX MAP: 9	CHK. BY: WRD
BLOCK / GRID: 6	DATE: 9/21/20
PARCEL #: 66	DDC JOB#: 12064.3
ZONE / USE: RR-DEO	SHEET NUMBER: 1 of 1
DWG. SCALE: 1" = 30'	

F-17-045