



Howard County
Health Department

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

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

RECEIPT DATE: 10/22/19

ONSITE SEWAGE DISPOSAL SYSTEM

P 566416

APPROVAL DATE: 1/23/2020 *RM*

PERMIT: CONSTRUCTION

A _____

PROPERTY ADDRESS: 5050 GAITHER'S CHANCE DRIVE, CLARKSVILLE, MD 21029

SUBDIVISION: GAITHER'S CHANCE

LOT: 8

TAX ID: 05-598954

CONTRACTOR: SOUTH CARROLL BACKHOE

EMAIL: SCBACKHOE@COMCAST.NET

CONTRACTOR ADDRESS: 4410 SALEM BOTTOM ROAD, WESTMINSTER, MD 21157

PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:

MDE

MANUFACTURER:

PROPERTY OWNER: NV, INC.

EMAIL: ccagle@nvrinc.com

OWNER ADDRESS: 9720 PATUXENT WOODS DRIVE, COLUMBIA, MD 21046

PHONE: (410)379-5956

BAT UNIT MODEL: HOOT 600 BNR

PUMP SIZE: 0.5 Hp

PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT

DATE SIGNED: 11/7/19

DATE RECORDED: 11/7/19

DISTRIBUTION SYSTEM: GRAVITY

PRESSURE DOSED

BEDROOMS: 5

APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>104</u>	INLET DEPTH: <u>2.0</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>6.0</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.0</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:		

ISSUED BY: R BRICKER

ISSUE DATE: 10/22/19

EXPIRATION DATE: 10/22/20

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 19006241

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.

NOT TO SCALE

SEE ATTACHED
AS BUILT

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
<u>3'</u>	<u>2'</u>	<u>6"</u>
NUMBER OF TRENCHES		<u>2</u>
TOTAL LENGTH		<u>104'</u>
ABSORPTION AREA		<u>104' + sidewall</u>
DISTRIBUTION BOX LEVEL		<u>-</u>
DISTRIBUTION BOX BAFFLE		<u>-</u>
DISTRIBUTION BOX PORT		<u>-</u>

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL	<u>yes</u>
MANUFACTURER	<u>Mayer Bros.</u>
CAPACITY	<u>1000</u> GAL
SEAM LOC	<u>top</u>
TANK LID DEPTH	<u>3'</u>
BAFFLES	<u>6" Front 4" Back</u>
BAFFLE FILTER	<u>no</u>
MANHOLE LOC	<u>Front</u>
6" PORT LOC	<u>-</u>
WATERTIGHT TEST	<u>-</u>
SLOTTED	<u>-</u>
DATE ON LID	<u>NO DATE</u>

PUMP/SEPTIC TANK LEVEL

MANUFACTURER	<u>MAYER Bros</u>
CAPACITY	<u>1500</u> GAL
SEAM LOC	<u>TOP</u>
TANK LID DEPTH	<u>3'</u>
BAFFLES	<u>4" Front</u>
BAFFLE FILTER	<u>-</u>
MANHOLE LOC	<u>Front/Back</u>
6" PORT LOC	<u>-</u>
WATERTIGHT TEST	<u>-</u>
SLOTTED	<u>-</u>
DATE ON LID	<u>NO DATE</u>

PRE-CONSTRUCTION:

11/15/2019 TANK, SDA, TRENCHES STAKED. CONFIRMED CONTOUR;
DISTAL ENDS ~ 4" LOWER. OK TO PROCEED WITH INSTALL (+)
CONFIRMED INSTALL SPEC OF TRENCH AND LATERALS (+)

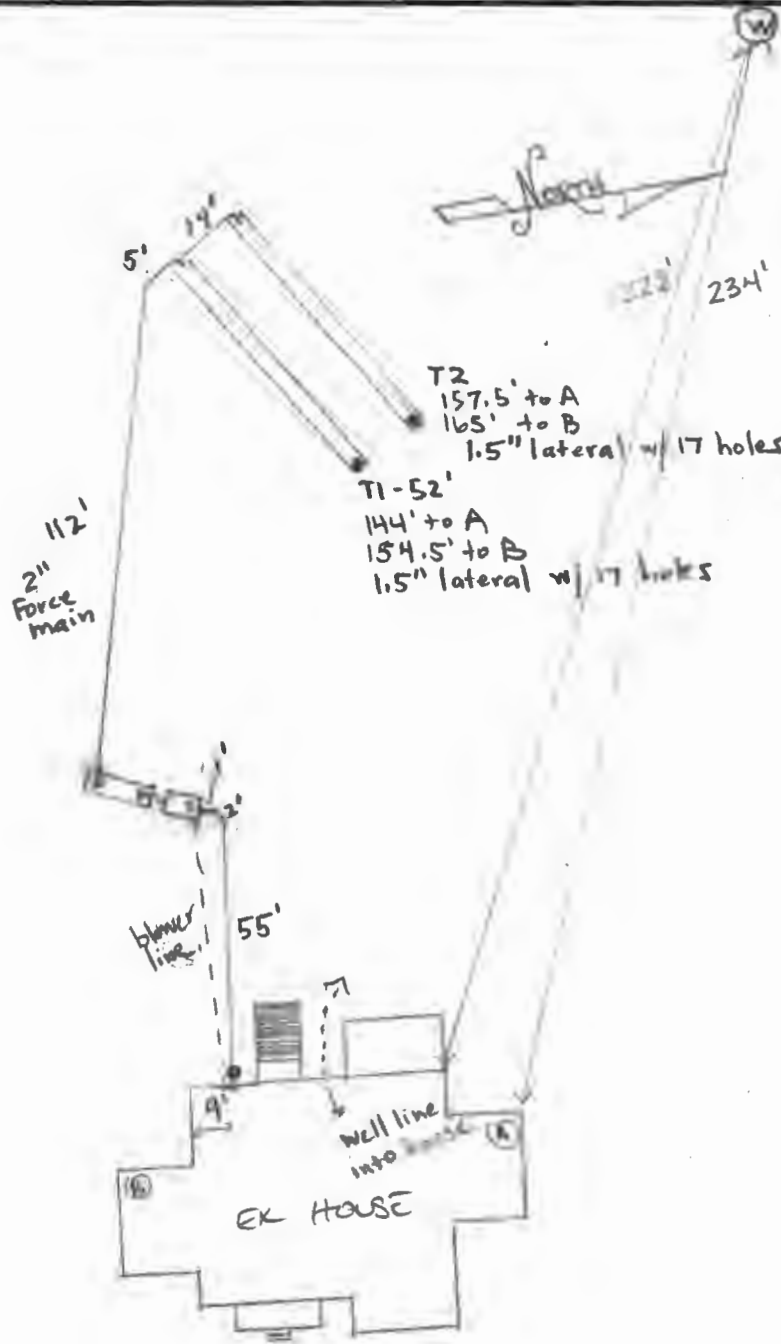
INSTALLATION:

11/18/2019 PUMP TANK SET AT INSPECTION. AWAITING HALF
HOOT. REINSPECT HOOT SETTING. (+) 11/21/19 - SHC made, system installed, both tanks
set and level, 2 trenches @ 52' each, 9' ETE, 3' wide, laterals look good 17 holes
observed w/ proper spacing, contractor stated that turf boxes will be handled
by the landscaping firm working on this development. Pump and alarm still required. (PR)
* Space between tanks filled w/ stone to prevent settling, 2" force main, 1.5" lateral, blower
line & recirculation line installed. (PR) 01/06/2020 SEPTIC CONTROLLER (R13) SEPTIC PUMP (R15)
HOOT (R12) POWER ALARM WORKS. DHP 72" - ~~RE~~ OVERFLOWING, CUTOFF OF
TURB UP. AWAITING START UP. HOOT NEEDS 30A BREAKER (+)

FINAL INSPECTOR

DATE OF APPROVAL

1/23/2020



NOT TO SCALE

5050 Gaithers Chase Dr.

Clerk of the Circuit Court for
Howard County
Land Records/Licensing

6095 Marshalee Drive
Suite 120
Elkridge, MD 21075
410-313-5850

=====
LR - Agreement Recording Fee
1x 20.00 20.00

Name: jain
Ref: 15

=====
LR - Agreement Surcharge
1x 40.00 40.00

=====
SubTotal: 60.00
Total: 60.00

=====
CRD-Credit 60.00
Credit Card Confirmation : 0654516

11/07/2019 10:24 CC13-YW
#12964365/494/109
~ Thank you for visiting us today ~



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 7th day of November, 2018, among NV Homes
Viney Seis, 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
5056 Cothens Choice Dr, Clarksville MD 21029, in the S 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 # 24, Block # ES, Parcel # A, Deed
Reference # 23698-702 and Tax Account # 05-598954 ("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 Nyman 11/7/2019
Howard County Health Department

Owner #1 Signature Date
NVR INC. (NVRhomes)
Owner #1 Print Name

Vinay Jain 9/27/19
Buyer #1 Signature Date

Vinay Jain
Buyer #1 Print Name

Owner #2 Signature Date

Owner #2 Print Name

Asha L. Tata 9/27/19
Buyer #2 Signature Date

Asha L. Tata
Buyer #2 Print Name



MAYER BROS., INC.

Precast Concrete Products

6264 Race Rd. Elbridge, MD 21075

Letter of Satisfaction Hoot System Installation

Address of Property: 5050 Gmithees Chance Dr.
Clackville, MO. 21029

Date of Final Inspection: 11/7/2020

Installer South Carroll Backhoe Service

Hoot Technician/Inspector: Mike Sample

I hereby certify that the Hoot system installed at the property listed above has been installed according to proper Hoot installation practices. I have also verified the startup of the system and it is in proper working order.

Sincerely,

M Michael Sample

Name of Inspector
Mayer Bros., Inc.

PH: 410-796-1434

FX: 410-796-1438

WBE
NPCA Certified Plant

mayerbro@comcast.net

www.mayerbrosprecast.com

Grass Interceptors, Grass Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,
Backflow Preventer, Water Meter Valves, Backflow Valve Valves, Top Sinks, Curb Sinks, Curb Bumpers, Facillary Basement Egress,
Sloped Walkways, Custom Precast Products

FILE INQUIRY NOTES

Marshall Property Subdivision

DATE

RESULTS OF REVIEW FOR FILE

(5027 Ten Oaks Road)

ANY LOT

Design Septic System

Distribution Trenches

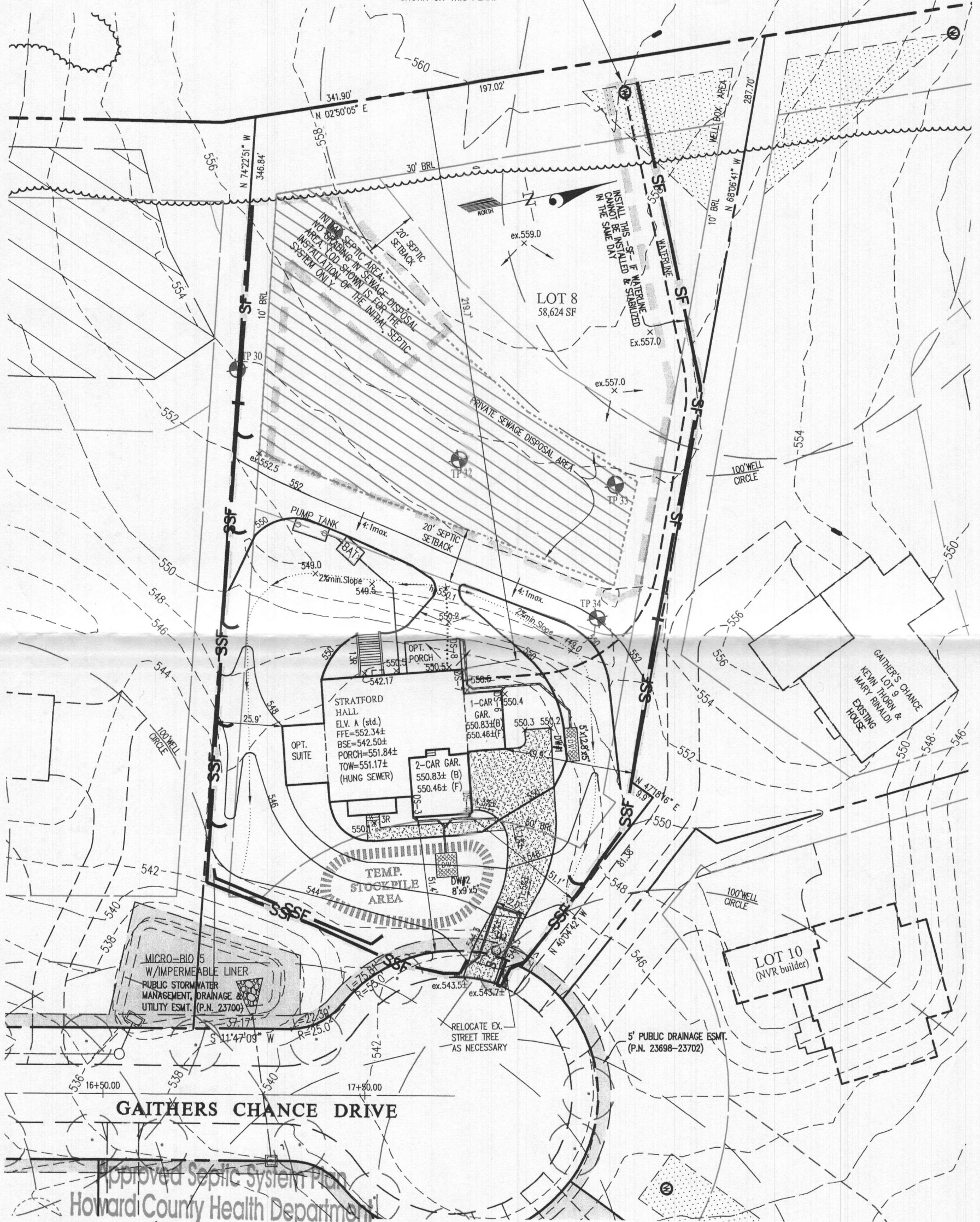
as shallow as possible

AND still have at least

3 drain fields in SDA.

req per Bert

THE EXISTING WELL SHOWN ON THIS PLAN (IDENTIFIED WITH THE WELL TAG NUMBER HO-15-0061) HAS BEEN FIELD LOCATED BY G.L.W. (PROFESSIONAL LAND SURVEYORS) AND IS ACCURATELY SHOWN ON THIS PLAN.

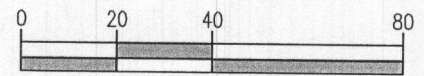


Approved Septic System Plan
Howard County Health Department

SFD having 5-bedroom Floor Plan
& Finished Basement w/ Full Bath
no bedroom in basement

Signature B19002724 Date 8/28/2019

NOTE: THE FRONT DOOR FOR LOT 8 FACES EAST.



GRAPHIC SCALE

BUILDING PERMIT PLOT PLAN

DES.
DRN.
CHK.

PREPARED FOR :
NVR INC.
9720 PATUXENTS WOODS DRIVE
COLUMBIA, MD 21045
PH: 410-379-5956

GAITHER'S CHANCE
LOT 8 (5050 GAITHERS CHANCE DR.)
Plat No. 23698-23702

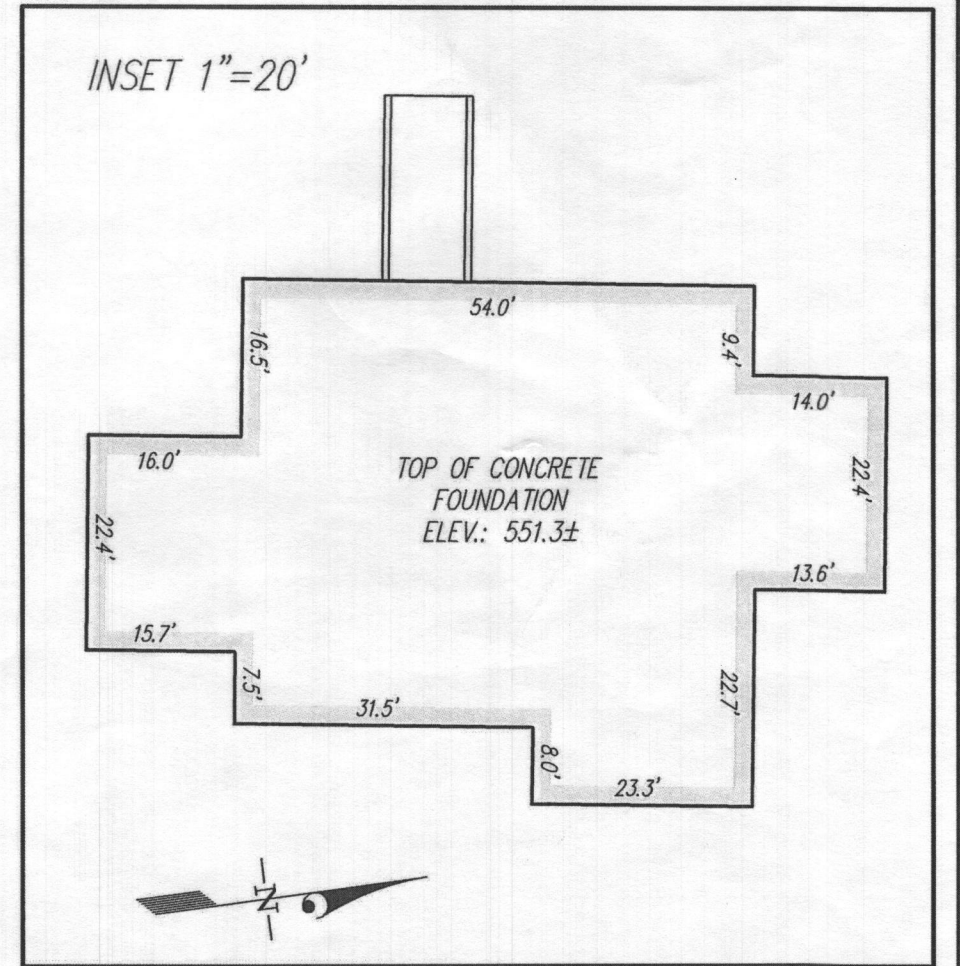
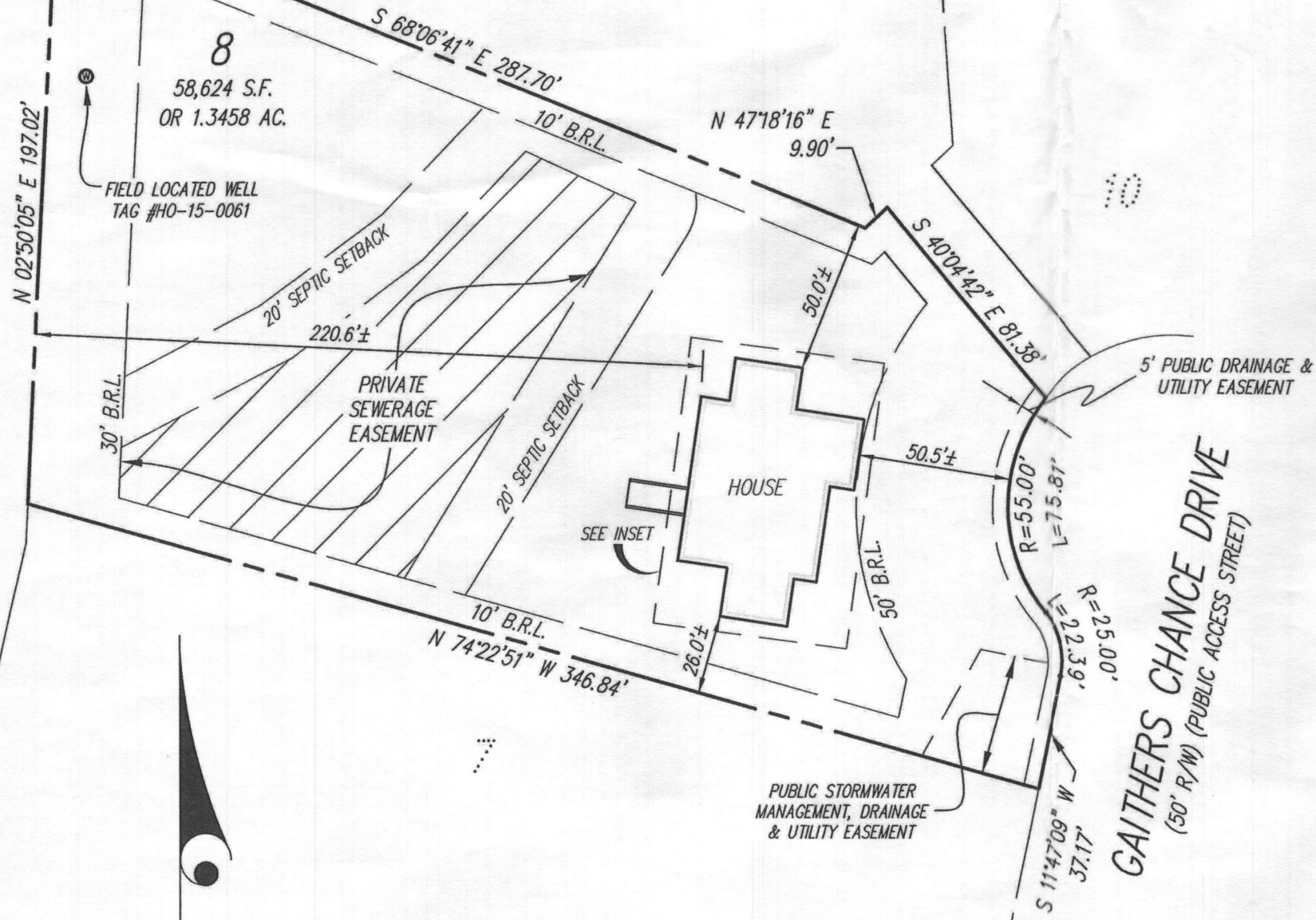
G. L. W. No.	13070
ZONING	RR-DEO
TAX MAP/GRID	28-8,9,14&15
DATE	AUG. 2019
SCALE	1"=40'
SHEET	1 OF 1



NOTES:
 THIS WALLCHECK WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHTS-OF-WAY, COVENANTS, AND RESTRICTIONS, ETC. OF RECORD, SOME OR ALL OF WHICH MAY OR MAY NOT BE SHOWN AND/OR REFERENCED HEREON. BEARINGS AND DISTANCES OF THE PROPERTY BOUNDARY LINES SHOWN HEREON ARE PER AVAILABLE RECORDS AND HAVE NOT BEEN FIELD VERIFIED. THIS IS NOT A "LOCATION DRAWING" AND IS NOT TO BE USED FOR SETTLEMENT PURPOSES.

THE PROPERTY SHOWN HEREON LIES WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, MAP NUMBER 24027C0130D, EFFECTIVE DATE NOVEMBER 6, 2013.

BUILDING SETBACKS (B.R.L.'S) SHOWN HEREON PER PLOT/SEDIMENT CONTROL PLAN. SETBACK DISTANCES SHOWN HEREON AS "±" HAVE AN ACCURACY OF ± 0.1 FOOT.



NAD '83 / 07
 PER PLAT 23701

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY TO:
 'NVR, INC.'

THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE POSITION OF THE ABOVE REFERENCED BUILDING FOUNDATION HAS BEEN ESTABLISHED BY ACCEPTED FIELD PRACTICES.

[Signature] 10/10/2019
 For Gutschick, Little and Weber, P.A. :
 Thomas C. O'Connor, Jr.,
 Professional Land Surveyor, No. 10954 (EXP. DATE: 07/03/2020)

10/22/19 - wall
 check okay.
 H.O.

THIS WALLCHECK IS VALID ONLY WITH AN ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE SURVEYOR.

WALLCHECK
 (SPECIAL PURPOSE SURVEY)

GAITHER'S CHANCE

LOT 8

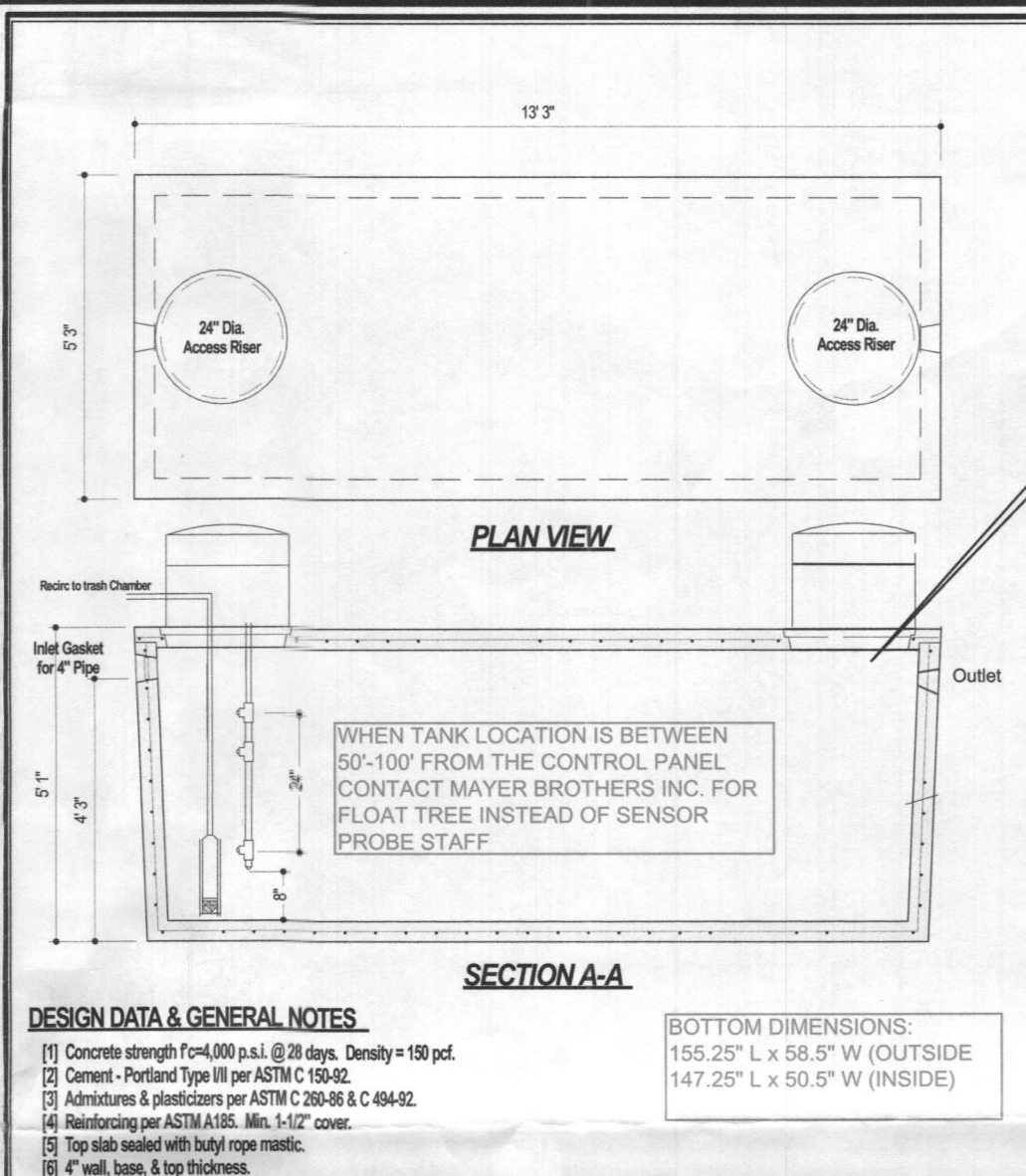
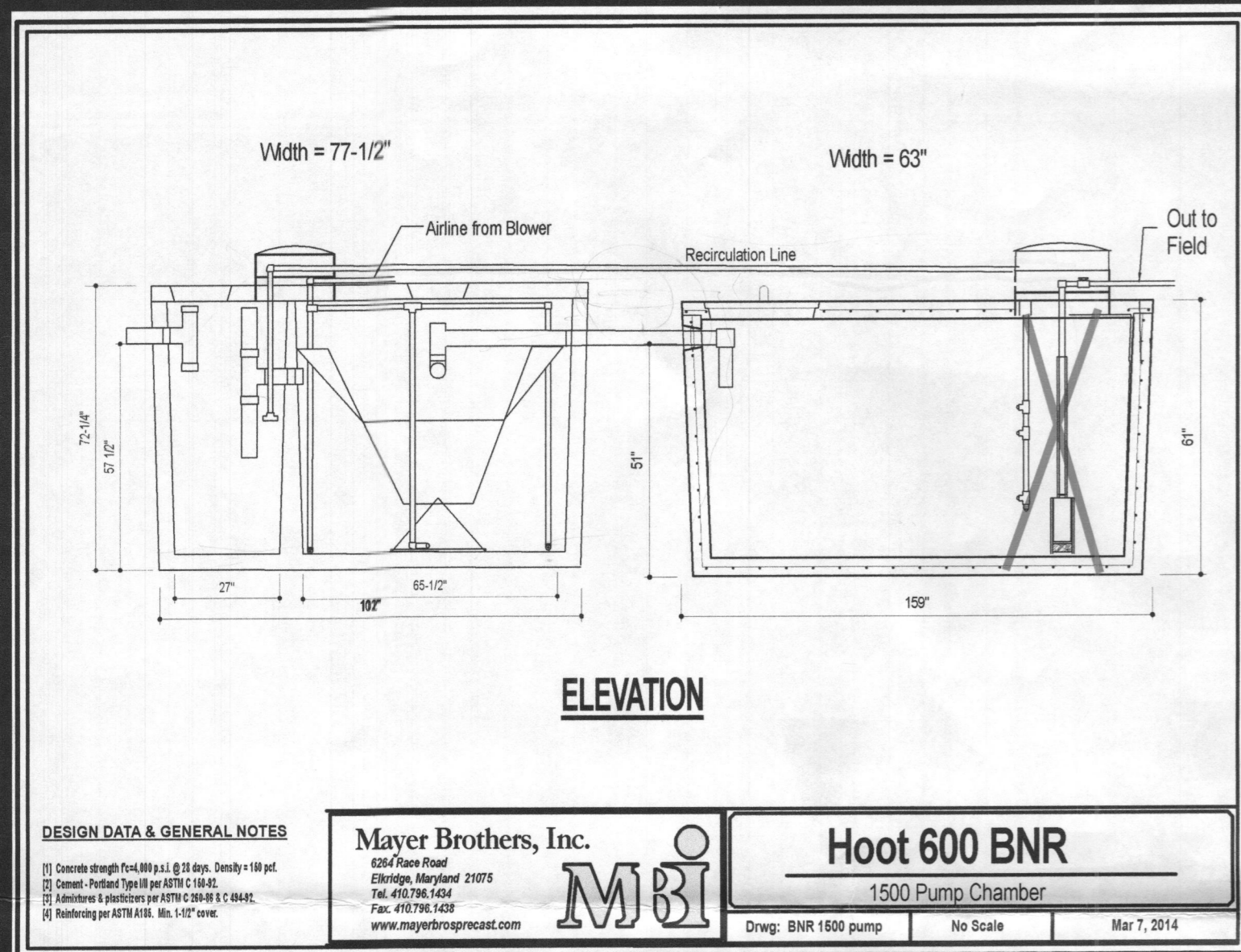
5050 GAITHERS CHANCE DRIVE

HOWARD COUNTY, MARYLAND

DATE OF LATEST FIELD WORK: 10/9/2019 G.L.W. FILE No. 18-065
 REFERENCE: PLAT BOOK: N/A PLAT No. 23701 SCALE: 1"=50'



DES.	PREPARED FOR: NVR, INC. 9720 PATUXENT WOODS DRIVE COLUMBIA, MD 21046
DRN. MAB	
CHK.	



LPD PUMP TANK NO SCALE

PUMP CHAMBER FLOAT SWITCH INFORMATION:

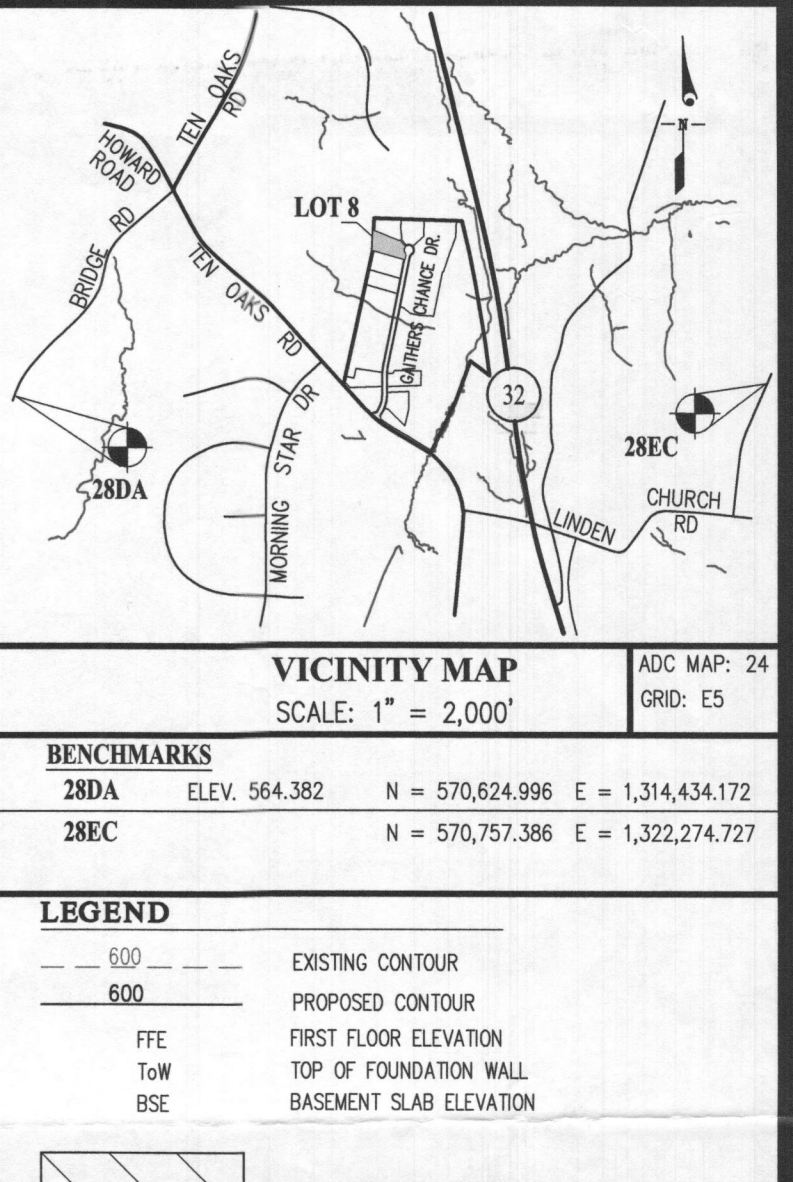
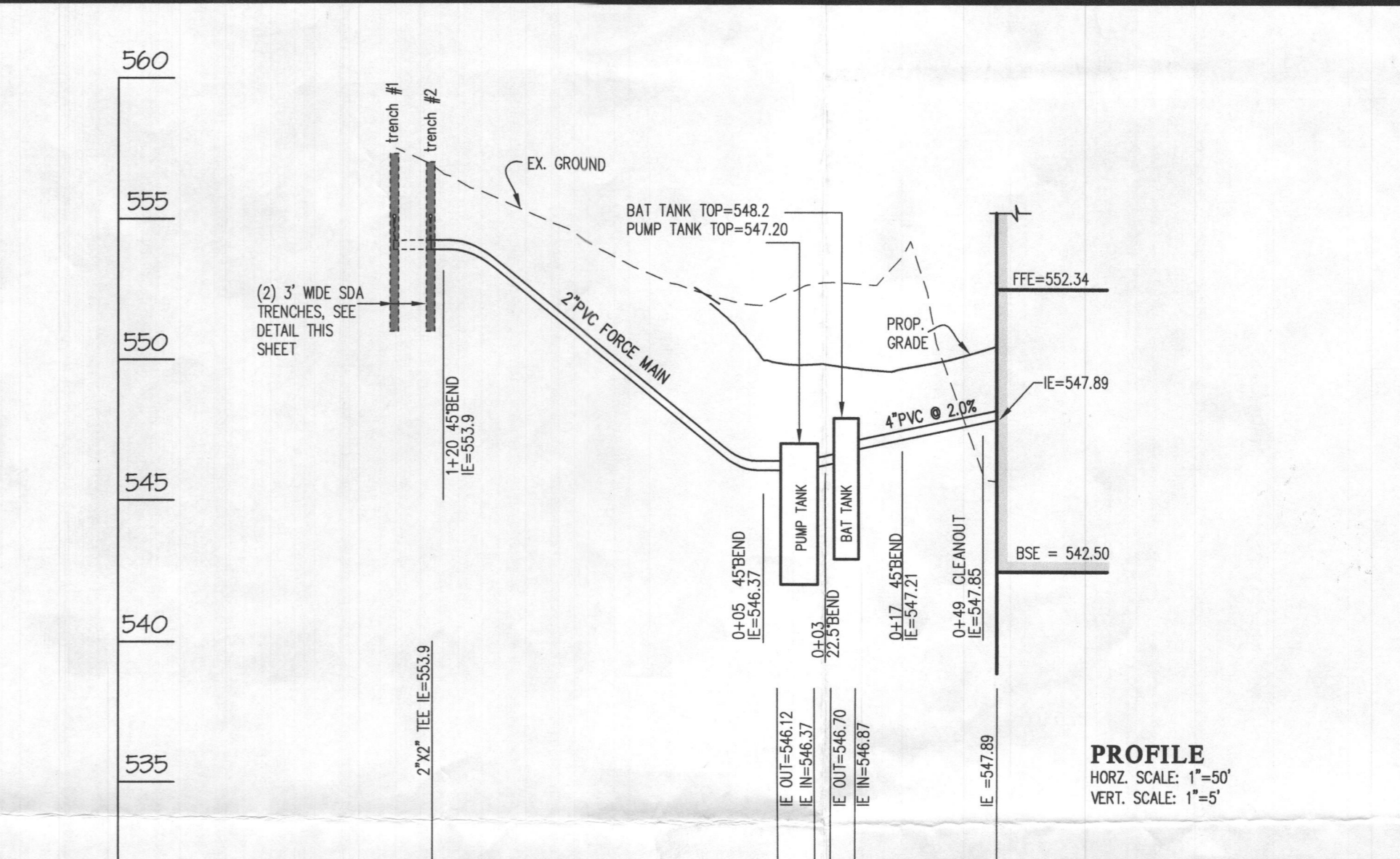
- ALARM HIGH WATER LEVEL @ 23.50'
- PUMP-ON WATER LEVEL @ 24.50'
- PUMP-OFF @ 20.75'

NOTES:

- SWITCH WATER LEVELS ARE MEASURED FROM THE BOTTOM (FLOOR) OF THE TANK CHAMBER.
- TANK SHALL BE INSTALLED SO THAT THE BOTTOM OF THE CHAMBER IS ABSOLUTELY LEVEL.
- SWITCH LEVELS ARE CALCULATED FOR THE TANK CHAMBER DIMENSIONS SHOWN. IF A CHAMBER DIMENSION CHANGES, THEN THE SWITCH WATER LEVEL MUST BE RECALCULATED.
- PROVIDE A 1" HOLE IN THE BOTTOM OF THE DISCHARGE PIPE.
- USE A UNION DISCONNECT TO FACILITATE PUMP REPLACEMENT.
- SET PUMP FOR LPD SYSTEM ON A 6" BLOCK.

High Finished Grade above tank	550.00
Top of tank elevation	548.10
Delta (cover above tank, 3" max.)	1.90 ft.
Outside bottom of BAT tank elevation	542.08
Invert in	546.87
Invert out	546.70

High Finished Grade above tank	550.00
Top of tank elevation	547.20
Delta (cover above tank, 3" max.)	2.80 ft.
Outside bottom of tank	542.12
Bottom of chamber elevation	542.45
Invert in	546.37
Invert out	546.12
Bottom of Pump (set on 6" block)	542.95
Bottom of chamber (floor) elevation	542.45
Top Seam (chamber ceiling) Elevation	546.87



DESIGN DATA & GENERAL NOTES

Mayer Brothers, Inc.
 6345 River Road
 Elkridge, Maryland 21029
 Tel: 410.786.1424
 Fax: 410.786.1428
 www.mayerbrothers.com

Hoot 600 BNR
 1500 Pump Chamber
 Draw: BNR 1600 pump No Scale Mar 7, 2014

DESIGN DATA & GENERAL NOTES

MBI
 6345 River Road
 Elkridge, Maryland 21029
 Tel: 410.786.1424
 Fax: 410.786.1428
 www.mayprecast.com

1,500 GALLON SEPTIC/PUMP TANK
 1-Compartment
 NON-TRAFFIC MAX 3 ft. OF COVER
 Dwg. No. 1500-1C No Scale Aug. 11, 2008

Rectangular Trapezoidal Pump Chamber Volume Calculations

H: Height (inside dimension from bottom of chamber to top seam/ceiling) 53.00 in.
 W: Top Width (inside dimension) 55.00 in.
 L: Top Length (inside dimension) 151.00 in.
 a: Bottom Width (inside dimension) 147.25 in.
 b: Bottom Length (inside dimension) 147.25 in.

Chamber Bottom Area (a x b) 7436.1 sq. in.
 Chamber Volume to top seam/ceiling (Vc) 41699.1 cu. in. 1805 gal.

Height from bottom of chamber to inlet invert (Si) 47.0 in.
 Chamber width at inlet level (Ci) 54.49 in.
 Chamber length at inlet level (Di) 150.58 in.
 Chamber Sectional Area at inlet level (Ci x Di) 8204.9 sq. in.
 Chamber Volume at inlet level (Vi) 36746.1 cu. in. 1591 gal.

Float Switch Setting Parameters & Volume Calculations

Design flow per day (min. reserved capacity to set alarm level) 750 gal.
 Dosing frequency per day & volume per dose 6 doses at 125.0 gal./dose

Water level (Sa) to switch on alarm 29.50 in.
 Chamber width at alarm level (Ca) 53.00 in.
 Chamber length at alarm level (Da) 149.34 in.
 Chamber Sectional Area at alarm level (Ca x Da) 7915.6 sq. in.
 Water volume at alarm level (Va) 22642.2 cu. in. 980 gal.

Reserved Capacity between alarm level and inlet invert level (Vr) 141049 cu. in. 611 gal.
 Additional capacity in the pump chamber above the inlet level to be utilized since the BAT tank outlet invert is 3.96 inches higher than the pump tank inlet elevation. The additional capacity provided above the pump tank inlet level is: 145 gal.

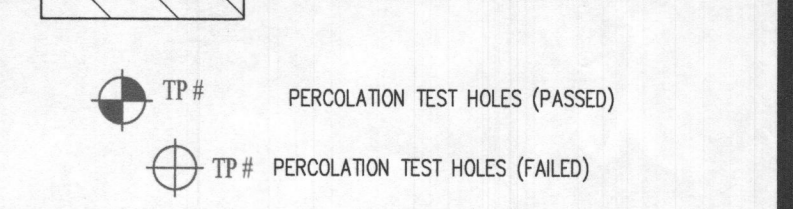
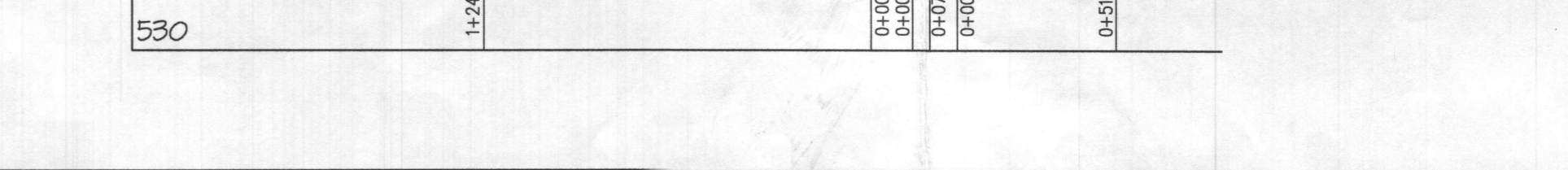
Total Reserved capacity available 174482 cu. in. 755 gal. (OK)

Alarm High Water Level (from bottom of pump chamber) 29.50 in.
 Pump on water level (O), from bottom of pump chamber 24.50 in.
 Chamber width at this level (Co) 52.58 in.
 Chamber length at this level (Do) 148.98 in.
 Chamber Sectional Area at this level (Co x Do) 7833.58 sq. in.
 Water volume (Vo) to switch pump on: 187039 cu. in. 810 gal.

Pump off water level (F), from bottom of pump chamber 20.75 in.
 Chamber width at this level (Cf) 52.26 in.
 Chamber length at this level (Df) 148.72 in.
 Chamber Sectional Area at this level (Cf x Df) 7772.28 sq. in.
 Water volume (Vf) to switch pump off: 157778 cu. in. 683 gal.

Volume between on-off switches: ((O-F)/6)*(Co*Do)+(Co*Cf)*(Df+O)*Cf*Di
 29261 cu. in. 127 gal.

Back Check dosing volume switch (in setting: Vb-W 29261 cu. in. 127 gal.



Goulds Water Technology

Wastewater

APPLICATIONS

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

1 1/2 HP and larger units have lead acid ends.

Three phase (60 Hz)

- Class F overload protection must be provided in separately enclosed starter unit.
- 4720V power cords all have lead acid 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.
- Class F insulation on 1-1 1/2 HP models.
- Class B insulation on 3-1 1/2 HP models.
- Class F insulation on 2 HP models.
- Class F insulation on 1 1/2 HP models.
- Class F insulation on 1 HP models.
- Class F insulation on 3/4 HP models.
- Class F insulation on 1/2 HP models.
- Class F insulation on 1/4 HP models.
- Class F insulation on 1/8 HP models.
- Class F insulation on 1/4 HP models.
- Class F insulation on 1/8 HP models.
- Class F insulation on 1/4 HP models.
- Class F insulation on 1/8 HP models.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on 3-1 1/2 HP models.
- Class F insulation on 2 HP models.
- Class F insulation on 1 1/2 HP models.
- Class F insulation on 1 HP models.
- Class F insulation on 3/4 HP models.
- Class F insulation on 1/2 HP models.
- Class F insulation on 1/4 HP models.
- Class F insulation on 1/8 HP models.

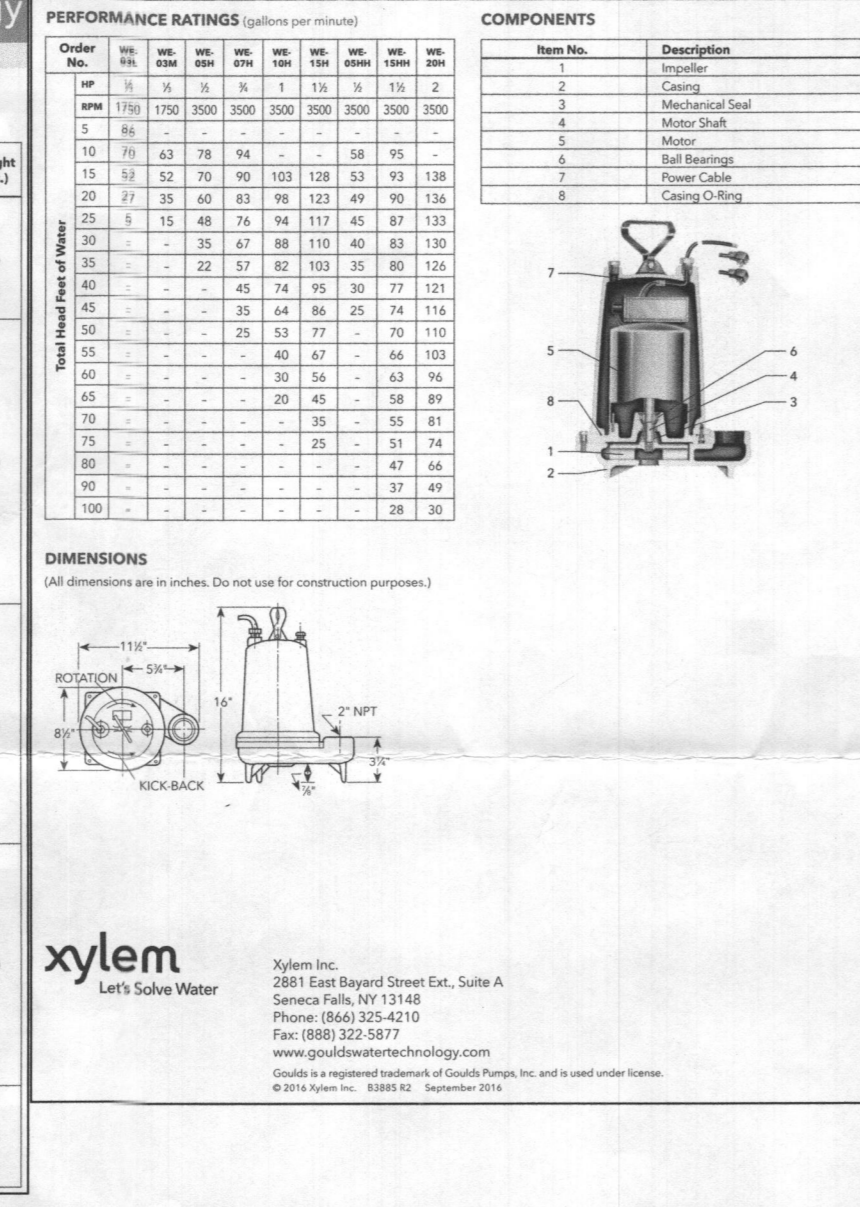
AGENCY LISTINGS

See Part Manual Notes

METERS FEET

PUMP SELECTED MODELS

Order No.	Phase	Volts	HP	Impeller Dia (in)	Max. Flow (GPM)	Max. Head (ft)	Max. Power (kW)	Weight (lbs)
1111	3	480	1.5	3.5	10.0	10.0	1.5	56
1112	3	480	2.0	4.0	15.0	15.0	2.0	56
1113	3	480	3.0	5.0	20.0	20.0	3.0	56
1114	3	480	4.0	6.0	25.0	25.0	4.0	56
1115	3	480	5.0	7.0	30.0	30.0	5.0	56
1116	3	480	6.0	8.0	35.0	35.0	6.0	56
1117	3	480	7.0	9.0	40.0	40.0	7.0	56
1118	3	480	8.0	10.0	45.0	45.0	8.0	56
1119	3	480	9.0	11.0	50.0	50.0	9.0	56
1120	3	480	10.0	12.0	55.0	55.0	10.0	56
1121	3	480	11.0	13.0	60.0	60.0	11.0	56
1122	3	480	12.0	14.0	65.0	65.0	12.0	56
1123	3	480	13.0	15.0	70.0	70.0	13.0	56
1124	3	480	14.0	16.0	75.0	75.0	14.0	56
1125	3	480	15.0	17.0	80.0	80.0	15.0	56
1126	3	480	16.0	18.0	85.0	85.0	16.0	56
1127	3	480	17.0	19.0	90.0	90.0	17.0	56
1128	3	480	18.0	20.0	95.0	95.0	18.0	56
1129	3	480	19.0	21.0	100.0	100.0	19.0	56
1130	3	480	20.0	22.0	105.0	105.0	20.0	56
1131	3	480	21.0	23.0	110.0	110.0	21.0	56
1132	3	480	22.0	24.0	115.0	115.0	22.0	56
1133	3	480	23.0	25.0	120.0	120.0	23.0	56
1134	3	480	24.0	26.0	125.0	125.0	24.0	56
1135	3	480	25.0	27.0	130.0	130.0	25.0	56
1136	3	480	26.0	28.0	135.0	135.0	26.0	56
1137	3	480	27.0	29.0	140.0	140.0	27.0	56
1138	3	480	28.0	30.0	145.0	145.0	28.0	56
1139	3	480	29.0	31.0	150.0	150.0	29.0	56
1140	3	480	30.0	32.0	155.0	155.0	30.0	56
1141	3	480	31.0	33.0	160.0	160.0	31.0	56
1142	3	480	32.0	34.0	165.0	165.0	32.0	56
1143	3	480	33.0	35.0	170.0	170.0	33.0	56
1144	3	480	34.0	36.0	175.0	175.0	34.0	56
1145	3	480	35.0	37.0	180.0	180.0	35.0	56
1146	3	480	36.0	38.0	185.0	185.0	36.0	56
1147	3	480	37.0	39.0	190.0	190.0	37.0	56
1148	3	480	38.0	40.0	195.0	195.0	38.0	56
1149	3	480	39.0	41.0	200.0	200.0	39.0	56
1150	3	480	40.0	42.0	205.0	205.0	40.0	56
1151	3	480	41.0	43.0	210.0	210.0	41.0	56
1152	3	480	42.0	44.0	215.0	215.0	42.0	56
1153	3	480	43.0	45.0	220.0	220.0	43.0	56
1154	3	480	44.0	46.0	225.0	225.0	44.0	56
1155	3	480	45.0	47.0	230.0	230.0	45.0	56
1156	3	480	46.0	48.0	235.0	235.0	46.0	56
1157	3	480	47.0	49.0	240.0	240.0	47.0	56
1158	3	480	48.0	50.0	245.0	245.0	48.0	56
1159	3	480	49.0	51.0	250.0	250.0	49.0	56
1160	3	480	50.0	52.0	255.0	255.0	50.0	56
1161	3	480	51.0	53.0	260.0	260.0	51.0	56
1162	3	480	52.0	54.0	265.0	265.0	52.0	56
1163	3	480	53.0	55.0	270.0	270.0	53.0	56
1164	3	480	54.0	56.0	275.0	275.0	54.0	56
1165	3	480	55.0	57.0	280.0	280.0	55.0	56
1166	3	480	56.0	58.0	285.0	285.0	56.0	56
1167	3	480	57.0	59.0	290.0	290.0	57.0	56
1168	3	480	58.0	60.0	295.0	295.0	58.0	56
1169	3	480	59.0	61.0	300.0	300.0	59.0	56
1170	3	480	60.0	62.0	305.0	305.0	60.0	56
1171	3	480	61.0	63.0	310.0	310.0	61.0	56
1172	3	480	62.0	64.0	315.0	315.0	62.0	56
1173	3	480	63.0	65.0	320.0	320.0	63.0	56
1174	3	480	64.0	66.0	325.0	325.0	64.0	56
1175	3	480	65.0	67.0	330.0	330.0	65.0	56
1176	3	480	66.0	68.0	335.0	335.0	66.0	56
1177	3	480	67.0	69.0	340.0	340.0	67.0	56
1178	3	480	68.0	70.0	345.0	345.0	68.0	56
1179	3	480	69.0	71.0	350.0	350.0	69.0	56
1180	3	480	70.0	72.0	355.0	355.0	70.0	56
1181	3	480	71.0	73.0	360.0	360.0	71.0	56
1182	3	480	72.0	74.0	365.0	365.0	72.0	56
1183	3	480	73.0	75.0	370.0	370.0	73.0	56
1184	3	480	74.0	76.0	375.0	375.0	74.0	56
1185	3	480	75.0	77.0	380.0	380.0	75.0	56
1186	3	480	76.0	78.0	385.0	385.0	76.0	56
1187	3	480	77.0	79.0	390.0	390.0	77.0	56
1188	3	480	78.0	80.0	395.0	395.0	78.0	56
1189	3	480	79.0	81.0	400.0	400.0	79.0	56
1190	3	480	80.0	82.0	405.0	405.0	80.0	56
1191	3	480	81.0	83.0	410.0	410.0	81.0	56
1192	3	480	82.0	84.0	415.0	415.0	82.0	56
1193	3	480	83.0	85.0	420.0	420.0	83.0	56
1194	3	480	84.0	86.0	425.0	425.0	84.0	56
1195	3	480	85.0	87.0	430.0	430.0	85.0	56
1196	3	480	86.0	88.0	435.0	435.0	86.0	56
1197	3	480	87.0	89.0	440.0	440.0	87.0	56
1198	3	480	88.0	90.0	445.0	445.0	88.0	56
1199	3	480	89.0	91.0	450.0	450.0	89.0	56
1200	3	480	90.0	92.0	455.0	455.0	90.0	56



LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

ADDRESS: 5050 Gaithers Chance Dr.
 SUBDIVISION: Gaithers Chance
 DATE: Aug 2019

Design Flow: 750 gpd
 Pump Off Elevation: 544.18
 Inv. Out of Pump Tank: 546.12
 Pump Bottom Elevation: 542.95

Number of Manifolds: 1
 Type: End-Feed

Manifold 1
 Type: End-Feed
 Trench 1 Elev: 555.0 Length: 52.25
 Trench 2 Elev: 555.0 Length: 52.25
 Total: 104.5

0' Elev. Range, Single Manifold OK
 Manifold Length 13 ft Type: SCH 40
 Force Main Length 124.0 ft Type: SCH 40

Trench	Length (ft)	Flow (gpm)	Hole Flow Rate (gpm)	Hole Spacing (ft)	Flow per LF (gpm)	Gal. per LF (gals)	Lateral Dia. (in)	Type						
1	52.25	End	555.0	3.0	1.8	1.28	3.07	17	21.70	50.71	0.415	1.196	1.5	SCH 40
2	52.25	End	555.0	3.0	1.4	1.28	3.07	17	21.70	50.71	0.415	1.196	1.5	SCH 40

Min. System Discharge Rate: 43.4 gpm
 Manifold Diam. 2.0 in Vel. 4.4 fps Friction Loss (Table 4.4) 3.061
 Force Main Diam. 2.0 in Vel. 4.4 fps Friction Loss (Table 4.4) 3.061
 Minimum Dose: 125.0 gal (Vol. in FM Man. 5x Lat = 77.6 gal + 1/6 Design Flow + 750/6 = 125 gal)

Calculate Total Design Head

- Friction Loss in FM & Mnfold: 4.3 ft
- Friction Loss from Fittings: 46 ft x 3.061 = 1.4 ft
- No. Type Equ. Length No. Type Equ. Length
- 2 90 Deg. Std Elv 7.0 Gate Valve 1.3
- 2 45 Deg. Std Elv 4.0 Gate Valve 55
- 2 90 Deg. Side Tee 10.0 Angle Valve 28
- 2 Coupling or Str.
- 2 Run of Tee 2.0 (1 union disconnect & 1 straight run of tee)

Friction Loss from Laterals: 2.93 ft
 2. Static Head: 10.82 ft
 3. Min. Distal (discharge) head 3 ft

TDH: 22.4 ft

Note: The minimum dose is the greater value of either L/E (the Design Flow or [5 x lateral volume]) or one volume the manifold + one volume of the force main

