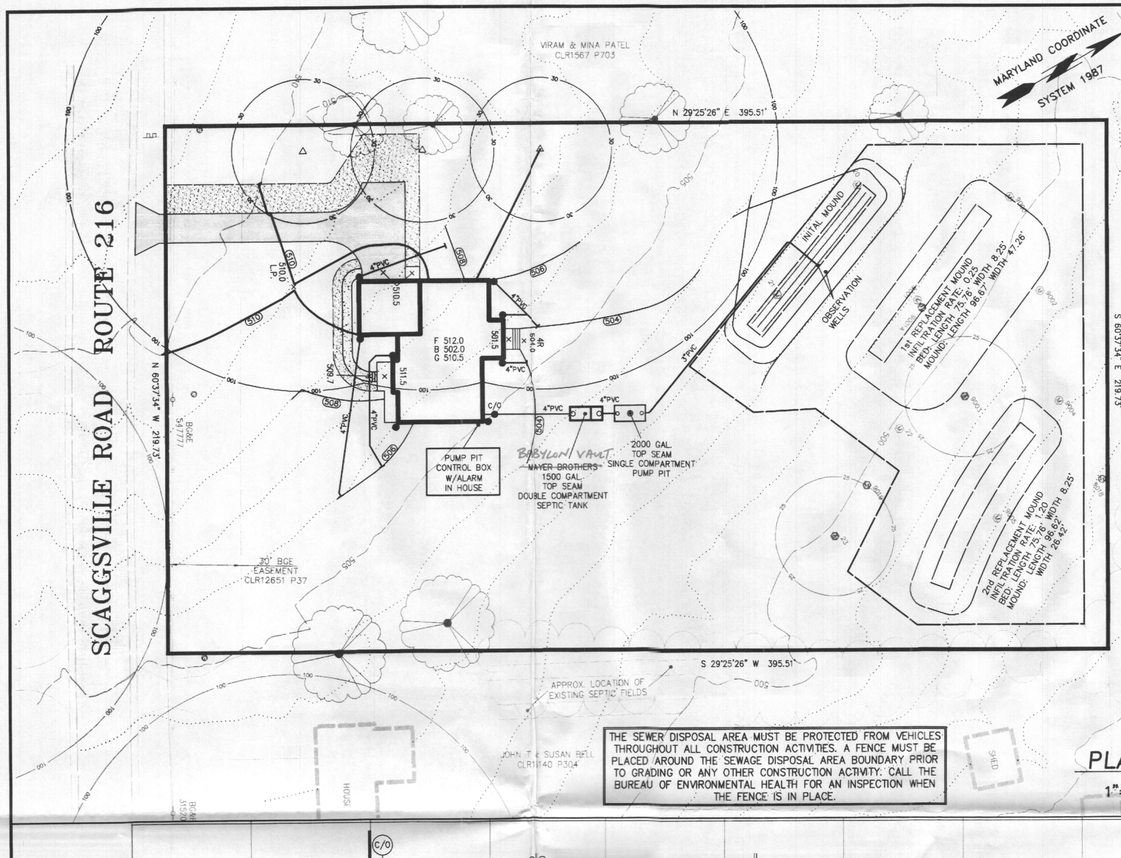


THE SEWER DISPOSAL AREA MUST BE PROTECTED FROM VEHICLES THROUGHOUT ALL CONSTRUCTION ACTIVITIES. A FENCE MUST BE PLACED AROUND THE SEWAGE DISPOSAL AREA BOUNDARY PRIOR TO GRADING OR ANY OTHER CONSTRUCTION ACTIVITY. CALL THE BUREAU OF ENVIRONMENTAL HEALTH FOR AN INSPECTION WHEN THE FENCE IS IN PLACE.

PLAN

1"=30'

PROFILE

SCALE: HOR 1'=30'
VERT 1'=3'

LEGEND

	Existing	Proposed
Edge of Rd / Feature separation / distance in feet		
Ind. Contours / Int. Contours		(410)
Lot Line / Plat Outline / Septic Area		
Bit. Conc. Pav.		
Clean Out, Sewer/Drain		
Structure		
Utility Pole		
Utility Pole w/Guy Wire		
Well		

ABBREVIATIONS

B	Basement floor elevation or Book	P	Page
CLR	County Land Record	PB	Plat Book
F	First floor elevation		
G	Garage floor elevation		

CONSTRUCTION SPECIFICATIONS

1. All piping to be schedule 40 PVC.
2. Supply line from pump to manifold to be 3 inches in diameter.
3. Manifold to be 3 inches in diameter.
4. Lateral to be 1 1/4 inches in diameter.
5. Lateral length, from manifold to distal end, to be 35.774 ft.
6. Lateral spacing to be 2.75 ft.
7. Space from lateral to bed edge to be 2.104 ft.
8. Each lateral to have 9 perforations 5/16 inches in diameter, with a space of 4.209 feet between perforations. The first perforation is to be 2.104 feet from the manifold. Perforation are to be in the bottom of each lateral (see detail).
9. The pump is to be of submersible construction, mounted 6 inches above the pumping station floor, capable of delivering 88.020 gpm at 12.214 ft. Total Dynamic Head
10. The supply line is to be installed with a uniform slope to assure complete drainage of effluent from the manifold and supply line following each pumping cycle.
11. Each pump cycle will remove approximately 130.758 gallons of effluent at the approximate rate of 88.020 gpm. Measurements shown on the drawing for pump-on, pump-off and alarm are based upon inside tank dimensions of 12.333 ft. long by 6.083 ft. wide.
12. The high level alarm is to be on a separate electrical circuit.
13. Sand is to have an effective size between 0.25 mm and 0.50 mm with a uniformity coefficient no greater than 3.5. A list of suppliers is available upon request from the Division of Residential Sanitation, Maryland Department of the Environment.
14. An event counter or elapsed time meter is required.
15. Septic tank to be top seam 2/3-1/3 double compartment tank manufactured by Moyer Brothers.
16. Pump pit tank to be top seam tank manufactured by Babylon Vault Co.
17. Washed river gravel aggregate shall be clean and free of fines and between 3/4 inch and 2 inches in diameter. LIMESTONE PRODUCTS ARE NOT TO BE USED.

CONSTRUCTION NOTES

SEPTIC TANK(S)

1. All tanks must be watertight and meet all horizontal separation distances specified in State and County regulations.
2. Tanks that are constructed with seams and joints must be above the high water table.
3. A 24-hour leakage test may be conducted to demonstrate water tightness prior to final construction approval.

PUMPING SYSTEM AND CONTROLS

1. The pump chamber must provide sufficient capacity to allow for storage of the dose and one day design flow between the high water alarm and the inlet of the first septic tank. It is also recommended that sufficient capacity be provided so that the pump can be set on a block and remain submerged at all times.
2. The pump chamber must be watertight, protected against buoyant forces and meet all horizontal seperation distances in State and County regulations.
3. Chambers that are constructed with seams and joints must be above the high water table.
4. A 24-hour leakage test may be conducted to demonstrate water tightness prior to final construction approval.
5. The pump shall be capable of delivering 88.020 g.p.m. at the design head.
6. The use of a three float system to control pump on, pump off and the high water alarm is recommended. The float system must be capable of delivering the specified dose.
7. The control box or panel should be located outside the chamber either in a waterproof enclosure or in building.
8. All electrical connections should be located outside the chamber.
9. The high water alarm must be wired on a seperate electrical circuit.
10. A flow meter or event counter and minute elapsed time meter are required to determine gallons pumped to the system.
11. A test of the pumping system and distribution network will be required prior to covering the system. The force main can be partially covered as long as all joints, elbows, tees, etc. are visible. The test will require sufficient water onsite to activate the pump through several pumping cycles. Provisions to protect the pumping system and distribution network from erosion and sedimentation should be made by the contractor.
12. The pump is to be made of submersible construction, mounted 6" above the pumping station floor.
13. The supply line is to be installed with a uniform slope to assure complete drainage of effluent form the manifold and supply line following each pumping cycle.

GENERAL NOTES

1. Current Tittle Reference:
   Owner: Kaushal V & Kanisha K Patel
   County Land Record 18449 Page 294
   Grantor: Stephen B Hughes
2. Subject Property Zoned: RR-DEO.
3. Total area of property: 86,903.67 sq.ft.
4. Septic easement subject to Howard County Health Department review.
5. Contractor/Builder to verify elevation in the field before beginning any construction.
6. The topography shown hereon was taken from data by Howard County and based on Bare Earth LIDAR Data U.S.Feet supplemented with field run data by DRS & Associates and is verified to accurately represent the relative changes on the subject property by DRS & Associates.
7. No wetlands currently exist on the property.
8. [ ] "This area designates a private sewage area as required by the Maryland Department of the Environment for individual sewage disposal. For lots created prior to March of 1972 it provides at least enough area to accommodate an initial an two replacement septic systems as required by the Howard County Health Department. Improvements of any nature in this area are restricted until public sewerage is available. This area shall become null and void upon connection to a public sewerage system. The county Health Officer shall have the authority to grant adjustments to the private sewage area. Recordation of a modified sewage area shall not be necessary."
9. Existing wells and/or sewerage easements within 100 feet of the property have been shown from the best available information.
10. "The existing well shown on this plan identified with the attached well tag number "HO-___-____" has been field located by DRS & Associates professional land surveyor and is accurately shown."
11. Any change to the locations or depths to any components must be approved by the engineer and the Howard County Health Department prior to instalation. A revised site plan may be required.
12. The maximum earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank.
13. Electrical work for the installation must be performed by a licensed electrician.
14. 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.

CONSTRUCTION PROCEDURES

GENERAL
Proper construction is extremely important if the sand mound is to function as designed. Installation of a sand mound system is prohibited when soils are frozen. Construction of the mound should not occur if the soil is too wet. Compaction and puddling of the soil in the location of the mound and downslope should be avoided. Soil is too wet for construction of the mound if a sample, taken anywhere within the upper eight inches, when rolled between the hands forms a wire. If the sample crumbles, the soil is dry enough for construction to proceed.

EQUIPMENT
The following special equipment is recommended:
1. A small track-type tractor with blade for placing and spreading the sand fill.
2. A cordless drill for drilling holes in the pipes on-site.
3. A moldboard or chisel plow for plowing the soil within the perimeter of the mound. A rototiller may be used on structureless soils with USDA sand textures.
4. A rod and level for determining bed elevations, slope on pipes, outlet elevation of septic tank, slope of site, etc.

MATERIALS
The following specifications are required:
1. Sand fill material must be approved by the local Approving Authority prior to hauling to the site. Submit a sample to the local Authority for analyses at least three weeks in advance of constuction or select a sand fill from the list of potential sand suppliers. If a sample is submitted for analyses a fee will be charged. Sand fill shall have a effective size between 0.25 mm and 0.5 mm with a uniformity coefficient of 3.5 or less. A copy of the receipt from the sand supplier showing the campany name, address, phone number, date and product name will be required.
2. Aggregate shall be clean aggregate free of fines and between 3/4 to 2 inches in diameter.
3. Geotextile fabric shall be a type approvec by the Approving Authority.
4. Cap material shall be soil relatively free of coarse fragments and preferably a clay loam or silt loam texture.
5. SAND DELIVERED TO THE SUUBJECT PROPERTY FOR THE PURPOSE OF CONSTRUCTING A SAND MOUND WILL BE SAMPLED BY THE LOCAL APPROVING AUTHORITY AND ANALYZED FOR COMPLIANCE WITH COMAR 26.04.02.05.U(4)(k)(i) SPECTIFICATIONS. THIS ANALYSIS MUST BE COMPLETED PRIOR TO PREPARATION OF THE SAND MOUND SITE FOR APPLICATION OF THE SAND. SAND DELIVERED TO THE SUBJECT PROPERTY THAT DOES NOT MEET SPECIFICATIONS OF COMAR 26.04.02.05U(4)(k)(i) IS TO BE REMOVED IMMEDIATELY.

TANK INSTALLATION AND SITE PREPARATION
1. Locate and rope-off the entire sewage disposal area to prevent damage to the area during other construction activity on the site. Vehicular traffic over the disposal area should be prohibited to avoid soil compaction.
2. Install septic tank(s) and pumping chamber(s) and pump as shown on the drawings. Call for inspection
3. Stake out the initial and recovery mound perimeters in their proper orientation as shown in the drawings. Reference stakes offset from the mound corner stakes are recommended. Locate the upslope edge of the absorption bed within the mound and determine the ground elevation at the highest location. Reference this elevation to a benchmark for future use. This is necessary to determine the bottom elevation of the absorption bed.
4. Excess vegetation should be cut and removed. Trees should be cut at ground level and stumps left in place.
5. Determine the location where the force main from the pumping chamber will connect to the distribution network manifold within the mound.
6. Install the force main from the pumping chamber to the proper location within the mound. Pipe should be laid with uniform slope back to the chamber so that it drains after dosing. Cut and stub off pipe one foot below existing grade within the proposed perimeter of the initial mound. Backfill trench and compact to prevent seepage along the trench.
7. Plow the soil within the perimeter of the mound to a depth of about eight inches, if the soil is not too wet. Moldboard or chisel plows may be used. Plowing should be done along the contour, throwing soil upslope. Use a two bottom or larger Moldboard plow. In wooded areas with stumps, roughening the surface to a depth of four to six inches with backhoe teeth may be satisfactory. However, all work should be done from the upslope or sided of the mound if at all possible. Rototilling may be used on soils with USDA textures of sand. After plowing, all foot and vehicular traffic shall be kept off the plowed area.

FILL PLACEMENT
1. Relocate and extend the force main several feet above the ground surface.
2. Place the approved sand fill material on the upslope edge(s) of the plowed area. Keep delivery trucks off the plowed area. Minimize traffic on the downslope side. Fill should be placed and spread immediately after plowing. Move the fill material into place using a small track-type tractor with a blade. Work from the end and upslope side. Always keep a minimum of six inches of material beneath the tracks of the tractor to minimize compaction of the natural soil. The fill material should be worked in this manner until the height of the fill reaches the elevation of the top of the absorption bed.
3. With the blade of the tractor, form the absorption bed. Hand level the bottom of the bed and check it for proper elevation. The bed should be level for proper functioning of the mound. Call for inspection.
4. Shape the sides of the sand fill to design slope (ie., 3:1 or flatter).

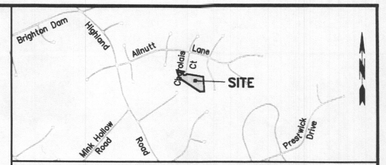
BED AND DISTRIBUTION NETWORK
1. Carefully place the coarse aggregate in the bed. Do not create ruts in the bottom of the bed. Level the aggregate to a minimum depth of six inches.
2. The distribution network is assembled in place setting the manifold to ensure draining the laterals between doses. The laterals should be laid level with the holes directed downward. Call for inspection. Test the pumping chamber and distribution network with clean water.
3. Place additional aggregate to a depth of at least two inches over the crown of the pipe.
4. Placed the approved geotextile fabric over the aggregate bed. The fabric may extend beyond the bed over the sand fill.

COVER MATERIAL
1. Place a finer textured soil material such as sandy clay loam, clay loam or silt loam on top of the fabric over the bed. The minimum depth of this cap shall be six inches at the outer edges of the bed and 12 inches along the center.
2. Place a minimum of six inches of good quality topsoil over the entire mound surface including the sideslopes. Call for final inspection.

VEGETATION
1. Fertilize, lime, seed and mulch the entire surface of the mound. Grass mixtures adopted to the area should be used.
2. Consult the county extension agent or Soil Conservation Service for recommendations.

CONSTRUCTION CHECKLIST

1.	Total mound width (ft) =	
2.	Total mound length (ft) =	
3.	Absorption bed length (ft) =	
4.	Absorption bed width (ft) =	
5.	Side slope setback =	
6.	Upslope setback =	
7.	Downslope setback =	
8.	End feed manifold =	
9.	Length of laterals from manifold =	
10.	Number of rows of laterals =	
11.	Total length of lateral pipe required for system =	
12.	Space between laterals =	
13.	Lateral diameter =	
14.	Perforation diameter =	
15.	Perforation spacing =	
16.	Number of perforations per lateral =	
17.	Space between first perforation and manifold =	
18.	Total length of manifold =	
19.	Reducers - type and number required =	
20.	Upslope sand fill depth (in) =	
21.	Downslope sand fill depth (in) =	
22.	Depth of clay cap and top soil along bed center =	
23.	Depth of clay cap and top soil along bed edges =	
24.	Depth of gravel absorption bed =	
25.	Diameter of force main =	
26.	Total length of force main =	
27.	Minimum flow or discharge rate for system (g.p.m.) =	
28.	Total dynamic head (TDH) =	
29.	Dose (gal.) =	



VICINITY MAP SCALE: 1"=2000'

SEPTIC TEST LEGEND

(W) Approved Sand Mound Perc
(M) Failed Sand Mound Perc
(S) Failed Standard Trench Perc

SEPTIC TEST RESULTS

TEST No.	TYPE TEST	COMMENTS		DATE
20	(W)	40min @ 17" OK to 42"+	rb	2013-05-22
21	(W)	27min @ 18" OK to 42"+	rb	2013-05-22
22	(W)	40min @ 16" OK to 45"+	rb	2013-05-22
23	(M)	Failed @ 19"	rb	2013-05-22
9000	(W)	64min @ 19" OK to 54"+	rb	2013-04-12
9001	(W)	40min @ 21" OK to 51"+	rb	2013-04-12
9001A	(S)	>60min @ 66"	rb	2013-04-12
9002	(W)	22.9min @ 20" OK to 48"+	rb	2013-04-12
9003	(M)	Failed @ 19"	rb	2013-04-12
9004	(W)	29min @ 18" OK to 48"+	rb	2013-04-12
9005	(W)	20min @ 21" OK to 48"+	rb	2013-04-12
9018	(M)	Failed, clay @ 24"	rb	2013-04-12
9019	(S)	Failed @ 80.5"	rb	2013-04-12

THIS IS TO CERTIFY THAT THE PERCOLATION TESTS ARE ACCURATELY SHOWN AS PERFORMED IN THE FIELD.

DANIEL R. STALEY L.S. 10735 — DATE 2019-04-29

INSPECTION CHECKLIST

I. Site Preparation — Date:
- A. Mound perimeter and absorption bed property staked out
- B. No compaction by heavy equipment:
  1. Within mound perimeter
  2. Downslope from mound
  3. Within sewage disposal area
- C. Vegetation cut and removed
- D. Trees, if present, cut off at ground level stumps left in place
- E. Soil plowed to suitable depth and perpendicular to slope
- F. Soil moisture level low enough to permit construction
- G. Soil not frozen
- H. Location of septic tank(s) and pumping station property staked out

II. Construction
- A. Septic Tank(s) — Date:
  1. Number of tanks
  2. Tank type and construction meet specifications (i.e., top seam, baffled, etc.)
  3. Capacity requirements met
  4. Proper installation
  5. Inlet and outlet pipes at proper elevations and sealed at tank walls
  6. Baffles and/or tees properly installed
  7. Effluent filter
  8. Tank water tightness checked
     a. Weep hole sealed if present
     b. 24-hour leakage test conducted if necessary
- B. Pump Chamber — Date:
  1. Design specifications met
  2. Six inch block present under pump
  3. Control panel meets specifications
  4. Event counter/elapsed time meter/flow meter installed
  5. Proper float elevations (on/off/alarm)
  6. Quick disconnect/siphon hole present (if required)
  7. Proper elevation of influent pipe
  8. Pipes through tank walls sealed
  9. Valves meet specifications
  10. Tanks joints above seasonal high water level
  11. Access provided
  12. One-day design flow storage capacity above high level alarm
  13. Force main diameter as specified
  14. High water alarm on separate circuit
- C. Sand Fill and Absorption Area — Date:
  1. Sand meets specifications
  2. Sand fill brought to proper elevation
  3. Sand fill covers basal area
  4. Absorption bed or trenches of proper dimensions
  5. Absorption bed or trenches level
  6. Six inches of suitable gravel between sand fill and distribution pipe.
- D. Distribution System — Date:
  1. Proper fittings used at joints
  2. Fittings adequately bonded
  3. Proper diameter of manifold
  4. Proper diameter of lateral piping
  5. Proper diameter of lateral perforations
  6. Proper spacing of lateral perforations
  7. Perforations oriented downward
  8. End perforation suitable (sleeved/in end cap/on turnup radius)
  9. 2" gravel to cover laterals
  10. Check of distribution systems under pressure
- E. Final Placement of Fill and Topsoil — Date:
  1. Geotextile fabric in place above gravel layer
  2. Tapered loam cap present:
     A. Twelve inch depth at center
     B. Six inch depth at edges
  3. Six inch topsoil cover:
     A. Present and graded
     B. Seeded/Sod
     C. Mulched
- F. Monitoring Appurtenances — Date:
  1. Observation ports:
     A. Proper location and number
     B. Installed to proper depth
  2. Lateral turn-ups in place (if required)
  3. Groundwater monitoring wells:
     A. Specified diameter
     B. Specified depth
     C. Screened in proper stratum
     D. Grouted
- G. Site Drainage (if required) — Date:
  1. Surface water diversion
  2. Curtain drain
  3. Vertical drain

III. Pumping System Test — Date:
1. Pump-on switch is operational
2. Pump-off Switch is operational
3. High level alarm switch is operational
4. Volume of drawdown corresponds with specified dose
5. System achieves specified pressure

IV. Comments:

D.R.S. & ASSOCIATES
LAND DESIGN CONSULTANTS
52 WINTERS STREET
WESTMINSTER, MARYLAND 21157
410-848-4060 410-876-6040
FAX 410-848-8818

REV.NO.	DATE	BY	DESCRIPTION
1	2018-12-26	DRS/ebp	PER HCHD 2019-02-22
2	2018-03-29	DRS/ebp	PER HCHD 2019-03-18
3	2019-01-21	DRS/drs	PER FIELD CHANGES

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Onsite Sewage Disposal System Design Plan

HUGHES PROPERTY
12350 SCAGGSVILLE ROAD FULTON
HOWARD COUNTY, MARYLAND 20759
MAP 40 BLOCK 18 PARCEL 121
Account Number 356695
ZONED RC-DEO COUNTY LAND RECORD 18449 Page 294
5TH ELECTION DISTRICT

OWNER
Kaushal V &
Kanisha K Patel
9512 B Washington Ave
Laurel, MD 20723

SHEET: 1 OF 2
DATE: 2019-01-25
SCALE: HOR: 1"=30'
VERT: 1"=3'
DWG. NO.: WS01-01

SEPTIC SYSTEM DESIGN DATA

VERSION 3.6

Wastewater Flows

● 1 Family Dwelling — Number of Bedrooms=	5.000	
Total Design Flow=Number of bedrooms*150 GPD	750.000	GPD

Septic Tank Design

Volume= 1.5x Design Flow	1125.000	Gal.
Use 1500 Gallon Tank	1500.000	GPD

Sand Mound Design

● Average Perc Rate=	40.000	Mins.
● Soil Infiltration Rate=	0.750	GPD/Ft.
● Sand Infiltration Rate= (COMAR 26.04.02.05O(1) ASTM C-33)	1.200	GPD/Ft.
● Up Bed Slope (UB_s)=	0.333	Ft./Ft.
● Down Bed Slope (DB_s)=	0.333	Ft./Ft.
● Ground Slope (Gd_s)=	0.038	Ft./Ft.
● Depth to High Water Table/Bedrock=	4.000	Ft.
● Absorption Bed Area=Design Flow/Sand Infiltration Rate=	625.000	Sq.Ft.
● Number of Lines=	3.000	
● Spacing between Lines=	2.750	Ft.
A) Bed Width=Number of lines*Spacing between Lines	8.250	Ft. (A)
B) Bed Length=Bed Area/A=	75.758	Ft. (B)
C) Upslope Sand Fill Depth=4.0Ft.-Depth to High Water Table= Use 1.0Ft. Minimum	1.000	Ft. (C)
D) Downslope Sand Fill Depth=A*DB_s+C=	1.314	Ft. (D)
E) Cap & Topsoil Depth @ Bed Center=	1.500	Ft. (E)
F) Cap & Topsoil Depth @ Bed Edge=	1.000	Ft. (F)
G) Bed Depth=	0.833	Ft. (G)
H) Sideslope setback= [(C+D/2)+G+E]*3=	10.469	Ft. (H)
I) Upslope Setback=(C+F+G)/(UB_s+Gd_s)=	7.636	Ft. (I)
J) Downslope Setback=(D+F+G)/(DB_s-Gd_s)=	10.666	Ft. (J)
K) Mound Width=A+I++J=	26.552	Ft. (K)
L) Mound Length =B+2H=	96.696	Ft. (L)
● Basal Area=Design Flow/Soil Infiltration Rate=	1000.000	Sq.Ft.
● Basal Area Provided:		
1. Level Sites=K*L		
2. Sloping Sites=(A+J)*B=	1433.038	Sq.Ft.
● Linear Loading Rate=Design Flow/Bed Length (B)	9.900	Gal./Ft.

Distribution Network Design

● Manifold Design:
1. Bed Length less than 53.33 Ft. use End Manifold
2. Bed Length Greater than 53.33 Ft. use Center Manifold
Bed Length B= 75.758 Ft. use Center Manifold

● Lateral Design:		
M) Number of Laterals per line=	2	(M)
N) Number of Perforations per Lateral: Center Manifold=(B/2)/4.5'(rounded to nearest whole number)=	9.000	(N)
O) Perforation Spacing=5/16" Perforation @ (B/2)/N=	4.209	Ft. (O)
P) Distance between Manifold and first perforation=O/2-.5'=	2.104	Ft. (P)
Q) Distance between end of Lateral and end of Bed=O/2	2.104	Ft. (Q)
R) Lateral Length:=((N-1)*O)+P=	35.774	Ft. (R)
S) Lateral Diameter=	1 1/4	In. (S)

LATERAL DIMENSIONS (PVC SCH.40)

LENGTH (ft.)	NOMINAL DIA. (in.)	INSIDE DIA. (in.)
Less then 23	1	1.049
between 23 and 36	1 1/4	1.380
between 36 and 47	1 1/2	1.610
between 47 and 50	2	2.067

Force Main Pipe Specifications

T) Manifold Diameter=	3.000	In. (T)
Schedule 40 PVC Inside Diameter=	3.068	In.

Dose Volume

● Length of 3"ForceMain & Manifold=	123.345	Ft.
● Total length of Laterals=Number of Lines*(M*R)	214.646	Ft.
● Volume of 3"ForceMain&Manifold=π*(D/2)/12]**length of forcemain & manifold*7.48gal/c.ft=	47.369	Gal.
● Volume of Laterals=π*(D/2)/12]**length of laterals*7.48=	16.678	Gal.
● Dose Volume=Greater of 5"Lateral Volume+Forcemain & Manifold Volume OR 1/6 Design Flow OR 100.00Gal. minimum Dose=	130.758	Gal.
Dose in Cubic Feet=(Dose Volume/7.48C.Ft.)=	17.480	C.Ft.

Pump Tank Design 2000 GAL.

499.92

U) Bottom of Pump Tank El. ~~495.753~~		Ft. (U)
6" Riser Block	0.500	Ft.
Bottom of Pump ~~496.25~~ El. ~~496.253~~		Ft.
15" Pump	1.250	Ft.
V) Pump Off ~~496.17~~ El. ~~497.503~~		Ft. (V)
Distance between Pump on & Pump off=Dose/area of Pump Tank	0.233	Ft.
W) Pump On ~~496.40~~ El. ~~497.736~~		Ft. (W)
Per MDE Pump on to High Water Alarm	0.500	Ft.
X) High Water Alarm ~~496.90~~ El. ~~498.236~~		Ft. (X)
W) One day storage above High Water Alarm (Design Flow/7.48gal.C.Ft.)/Area of Pump Tank	1.336	Ft.
~~498.24~~ Design Pump Tank Inlet El. El. ~~499.572~~		Ft.
Y) Actual Pump Tank Inlet Elev>Design Pump Tank Inlet Elev ~~498.50~~ El. ~~499.836~~		Ft. (Y)

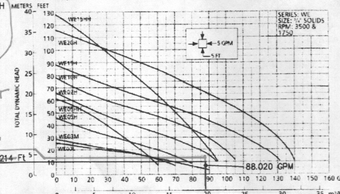
Pump Design

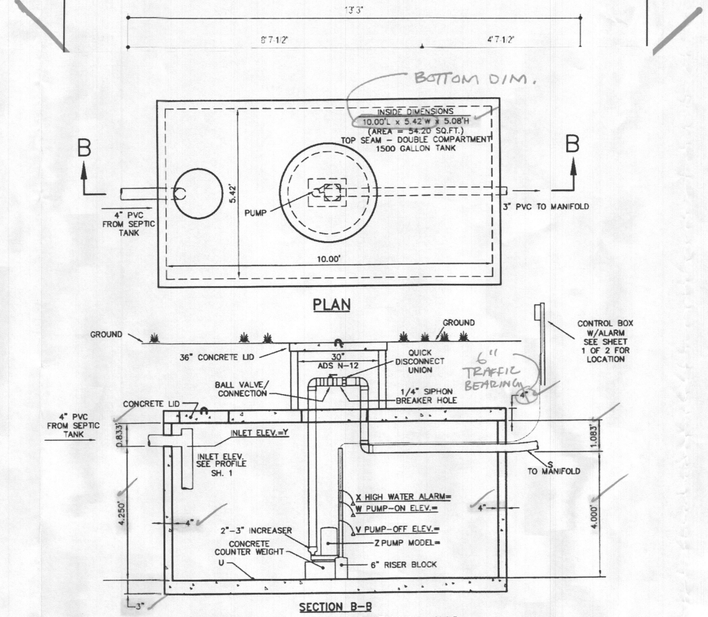
● Peak Flows=Number of lines*M*N*1.63GPM=	88.020	GPM
● Friction Loss: .5		
Length of 3"Forcemain & Manifold	123.220	Ft.
Equivalent feet per fitting		
1 -increaser (3"line) @ 3.0=	3.000	Ft.
5 -90° Bend (3" line) @ 10.0=	50.000	Ft.
0 -60° Bend (3" line) @ 8.0=	0.000	Ft.
0 -45° Bend (3" line) @ 6.0=	12.000	Ft.
1 -30° Bend (3" line) @ 4.5=	4.500	Ft.
1 -22 1/2° Bend (3" line) @ 3.0=	3.000	Ft.
0 -15° Bend (3" line) @ 2.0=	0.000	Ft.
0 -11 1/4° Bend (3" line) @ 1.5	0.000	Ft.
1 -Tee (3" line) @ 15.0=	15.000	Ft.
Total Length	210.720	Ft.
Friction Loss per 100.0Ft.	1.679	Ft.
● Head Loss:		
Pump Off Float= ~~496.17~~ El. ~~497.503~~		Ft.
Manifold= ~~6.401~~ El. ~~504.178~~		Ft.
Head Loss	~~6.675~~	Ft.
- Friction Loss	3.539	Ft.
Required Head for Peak Flow	2.000	Ft.
Dynamic Head ~~13.597~~	~~12.214~~	Ft.
Z) Goulds Submersible Effluent Pump		(Z)

Model WE0712H
Single Phase
H.P. 3/4
Amp 10.0
Volt 230V
R.P.M. 3500

MEETS REQUIREMENT

13.597'
12.214 FT



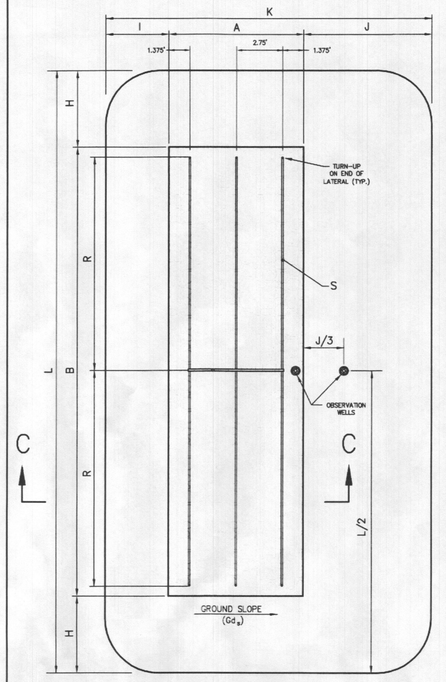


BABYLON VAULT COMPANY, INC.
1,500 GALLON PUMP TANK DETAIL

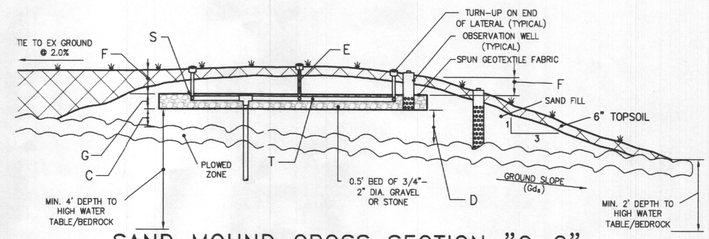
MB Mayer Bros., Inc.
6264 Race Road
Elkridge, Maryland 21075
Tel. 410.796.1434
Fax. 410.796.1438
www.mayerbrosprecast.com

1,500 GALLON TANK (Non-Traffic)
2-Compartment
Stock Item

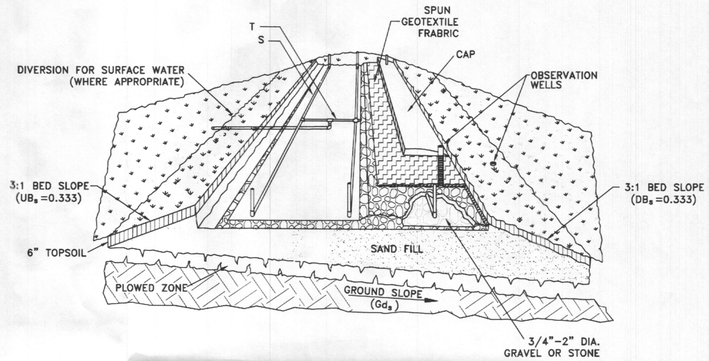
Dwg. No. 1500-2C	No Scale	Aug. 11, 2008

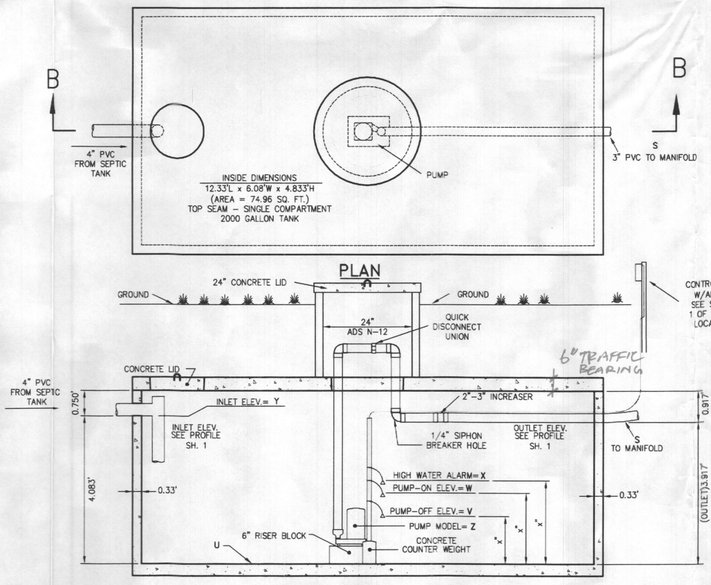


MOUND, BED & LATERAL LAYOUT
NO SCALE



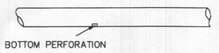
SAND MOUND CROSS SECTION "C-C"
NO SCALE



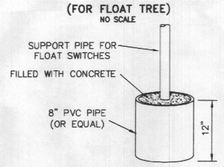


BABYLON VAULT COMPANY, INC.
PUMP TANK DETAIL
No Scale

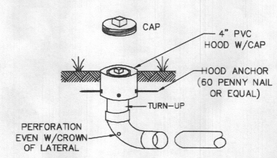
PERFORATION PLACEMENT
NO SCALE



CONCRETE COUNTER WEIGHT DETAIL (FOR FLOAT TREE)
NO SCALE

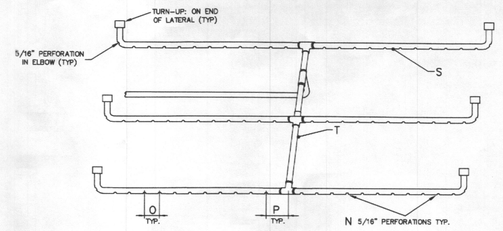


TURN-UP DETAIL



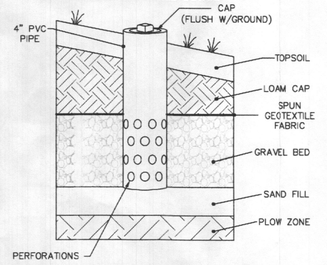
PLACEMENT OF THE END PERFORATION IN A DISTRIBUTION LATERAL
NO SCALE

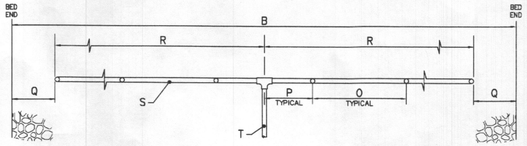
DETAIL SCHEMATIC OF A SAND MOUND
NO SCALE



CENTER MANIFOLD DISTRIBUTION NETWORK AND PERFORATION SPACING
NO SCALE

OBSERVATION WELL DETAIL





LATERAL PERFORATION SPACING
NO SCALE

D.R.S. & ASSOCIATES
LAND DESIGN CONSULTANTS
52 WINTERS STREET
WESTMINSTER, MARYLAND 21157
410-848-4060 410-876-6040
FAX 410-848-8818

REV.NO.	DATE	BY	DESCRIPTION
1	2018-02-26	DRS/ebp	PER HCHD 2019-02-22
2	2018-03-29	DRS/ebp	PER HCHD 2019-03-18
3	2019-09-27	DRS/LWS	PER FIELD CHANGES

Onsite Sewage Disposal System Design Plan

HUGHES PROPERTY
12350 SCAGGSVILLE ROAD FULTON
HOWARD COUNTY, MARYLAND 20759
MAP 40 BLOCK 18 PARCEL 121
Account Number 356695
ZONED RC-DEO COUNTY LAND RECORD 18449 Page 294
5TH ELECTION DISTRICT

OWNER
Kaushal V & Kanisha K Patel
9512 B Washington Ave
Laurel, MD 20723

SHEET:	2 OF 2
DATE:	2019-01-25
SCALE:	HOR: N/A VERT: N/A
DWG.:	WS01-02
CA. CO. FILE NO.:	

I:\CAD\03356\97395\WS01-01.DWG, Sh02Rev2, 2019-04-01 07:31:37 am, ebp