

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: 2/21/19 **ONSITE SEWAGE DISPOSAL SYSTEM** P 564767
 APPROVAL DATE: 5/14/19 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 13815 Mill Creek Court
 SUBDIVISION: Crawford Subdivision LOT: 22 TAX ID: _____
 CONTRACTOR: South Carroll Backhoe EMAIL: sbackhoe@comcast.com
 CONTRACTOR ADDRESS: 4410 Salem Bottom Road, Westminster, MD 21157 PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: NVR INC. EMAIL: _____
 OWNER ADDRESS: 9720 Patuxent Woods Drive, Columbia, MD 21046 PHONE: 410-379-5956

BAT UNIT MODEL: Hoot 600 BNR PUMP SIZE: _____ PUMP TANK CAPACITY: _____

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 3/5/19 DATE RECORDED: 3/5/19

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

TRENCHES:	LINEAR FEET REQUIRED: <u>80.1</u>	INLET DEPTH: <u>2</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>12</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>3.5</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: BAT and LPD design

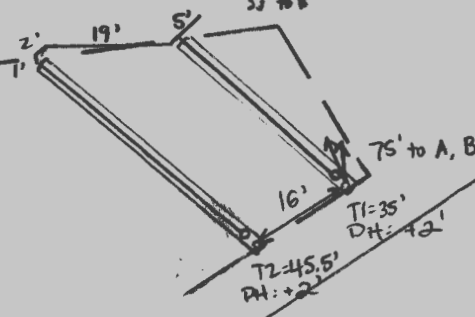
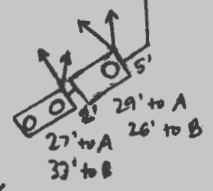
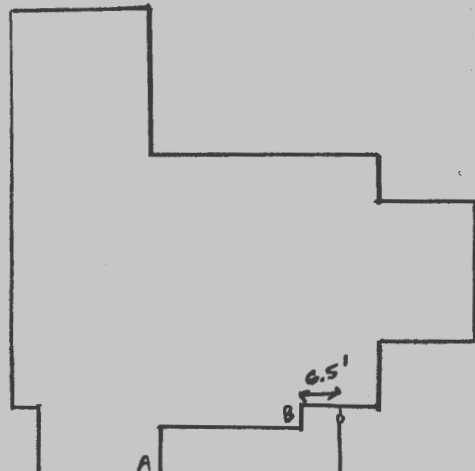
ISSUED BY: Jeff Williams ISSUE DATE: 3/5/19 EXPIRATION DATE: 3/5/20

- 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 19000391
- 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

1" ≈ 30'



ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH	INLET	BOTTOM
3'	2'	8'
NUMBER OF TRENCHES		2
TOTAL LENGTH		80.5'
ABSORPTION AREA		241.5' + SIDEWALL
DISTRIBUTION BOX LEVEL		---
DISTRIBUTION BOX BAFFLE		---
DISTRIBUTION BOX PORT		---

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL	YES
MANUFACTURER	MAYER BROS/HOOT
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	2-2.5'
BAFFLES	YES
BAFFLE FILTER	NO
MANHOLE LOC	FRONT
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	---

PUMP/SEPTIC TANK LEVEL

SEPTIC TANK LEVEL	YES
MANUFACTURER	MAYER BROS/HOOT
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	2-2.5'
BAFFLES	NO
BAFFLE FILTER	NO
MANHOLE LOC	FRONT + REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	1-28-19 (stamp)

Pump:

PRE-CONSTRUCTION:

3/6/19 Met S. Carroll on site for layout. SDA corners, trenches, + tanks staked. Shot elevations at trench ends, only 4" difference. Sewer line uncared at house, pipe will be 36" at Hoot tank and tank will have ± 2' of cover. (SC)

INSTALLATION:

3/7/19 First tank set, on site while pump tank was set. No obvious cracks on bottom or sides of tank. House connection made and pipe run from house to tank. (SC) 3/11/19 T1 dug and has stones. S. Carroll adding stone to T2. 3' wide, 8' bottom, 2-2.5' to inlet. (SC) 3/12/19 S Carroll found a leak in 2nd tank outlet compartment. Need to replace tank. Holes drilled in laterals, OK to cover. (SC) 4/2/19 leaking tank removed, on site while new tank was set. Tank had bedded w/ stone, no obvious cracks on sides. Need pump + alarm test, BAT startup certification, and turf boxes at lateral turnups. (SC) 5/9/2019 TWO OUTSIDE CIRCUITS FOR BAT AND PUMP TANK. DISTAL HEAD PRESSURE > 2' AT LATERALS. BOTH ALARMS WORK. AWAITING START UP LETTER. (SC) → Received (SC)

FINAL INSPECTOR

[Signature]

DATE OF APPROVAL

5/14/19



MAYER BROS., INC.

Precast Concrete Products

6264 Race Rd. Elkridge, MD 21075

Letter of Satisfaction Hoot System Installation

Address of Property: 13815 Mill Creek Rd.
Highland, MD. 20777

Date of Final Inspection: 5/9/19

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,

Name of Inspector
Mayer Bros., Inc.

PH: 410-796-1434

WBE

FX: 410-796-1438

www.mayerbrosprecast.com

Grease Interceptors, Grease Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,
Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Slabs, Curb Heads, Curb Bumpers,
Custom Precast Products



MAYER BROS., INC.
Precast Concrete Products
6264 Race Rd. Elkridge, MD 21075

April 2, 2019

RE: Production dates of tanks

To whom it may concern;

Mayer Bros ships tanks after a minimum 7 day cure period. This insures minimum strength requirements are met. We will date tanks with the production dates. Additional paperwork is always available in our office.

Specifically, the 2 modified pump chambers for lots 20 and 22 at Mill creek were initially produced on 1/28/19 and 2/15/19. Today we plan on shipping the 1/28/19 tank.

Please contact me with any further questions.

Nancy J Mayer

Nancy J. Mayer
President
Mayer Bros., Inc.

PH: 410-796-1434
FX: 410-796-1438

WBE

info@mayerprecast.com
www.mayerprecast.com

Grease Interceptors, HOOT Aerobic Treatment Units, Septic Tanks, Holding Tanks, Bench Barrier, Water Meter Vaults,
Sectional Valve Units, Top Slabs, Curb Heads, Curb Bumpers, Custom Precast Products



GLW

PLANNING | ENGINEERING | SURVEYING

3909 NATIONAL DR. SUITE 250
BURTONSVILLE, MD 20866
301-421-4024 | FAX: 301-421-4186
WWW.GLWPA.COM

LETTER OF TRANSMITTAL

TO: Bureau of Environmental Health
8930 Stanford Blvd.
Columbia, MD 21045

ATTN: _____

DATE	10-11-2018	JOB NO.	17071
PROJECT	Crawford Subdivision		
	Lot 22 (13815 Mill Creek Ct.)		

- WE ARE SENDING THE FOLLOWING ITEMS:**
- MYLARS
 - PRINTS
 - COPY OF LETTER
 - APPLICATIONS
 - COMPUTATIONS
 - ATTACHED
 - COST ESTIMATES
 - OTHER _____
 - UNDER SEPARATE COVER
 - DESCRIPTIONS
 - GRADE SHEETS
 - MAIL
 - OVERNIGHT
 - GLW COURIER
 - COURIER
 - OTHER _____

COPIES	DATE	PAGES	DESCRIPTION
3		1 of 1	BAT Site Plan for Crawford Subdivision - Lot 22 (13815 Mill Creek Ct.)

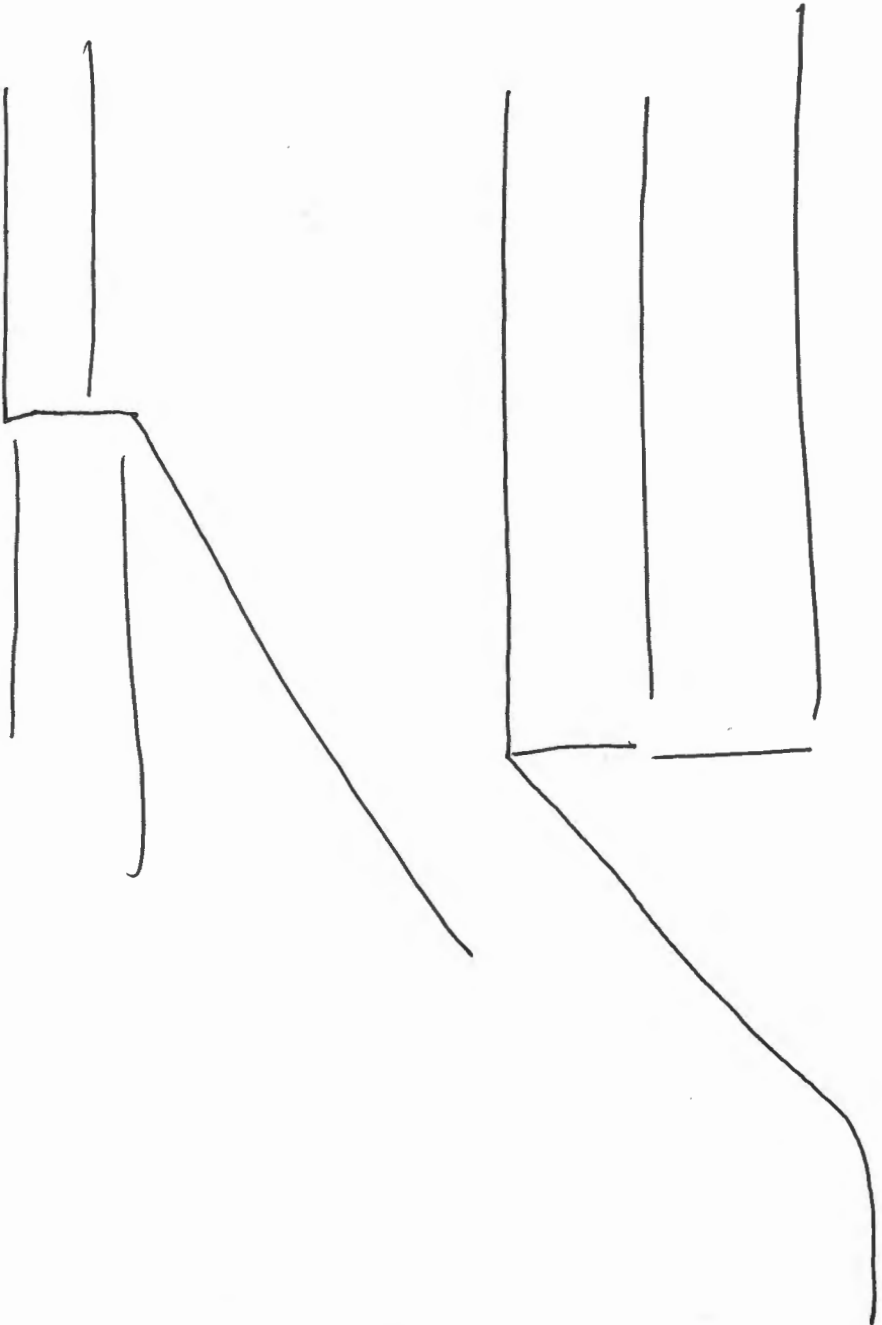
- THESE ARE TRANSMITTED as checked below:**
- FOR APPROVAL
 - FOR YOUR USE
 - FOR REVIEW & COMMENT
 - PER YOUR REQUEST
 - SIGN & RETURN
 - AS SUBMITTED TO _____
 - AS REQUESTED BY _____
 - _____

REMARKS: _____

COPY TO: _____

SIGNED: Kristy Pierce
Kristy Pierce

If enclosures are not as noted, kindly notify us at once.



RECEIVED
OCT 12 2018
HOWARD COUNTY HEALTH DEPT
FOOD PROTECTION PROGRAM

Added a note to the typical trench detail "make sure holes in bends & fittings are not covered during assembly"

3. We need to add an observation pipe at the end of your trench. Please show in trench detail on OSDS. The observation pipes are shown in the typical trench detail. We added a turf box to detail.

4. Also we need to show the friction head loss for the union disconnect. This "coupling" is accounted for in the LPD Distribution System Calculations (highlighted on attached 11x17)

5. Please recalculate and make sure all calculations are correct. Updated spreadsheets.

6. Please state the time dose setup for the pump tank. This number (6 doses at 125 gallon/dose) is shown in the Pump Chamber Volume Calculations (highlighted on the attached 11x17)

Lot #22

1. The pipe invert on your septic trench detail should be at 2 feet. We are recommending using 2 feet to obtain the most efficient design. Please make any calculation adjustments needed. Revised pipe invert to 2 feet. Updated Trench Detail, LPD Calculations, Profile & Plan accordingly.

2. We need to add an observation pipe at the end of your trench. Please show in trench detail on OSDS. The observation pipes are shown in the typical trench detail. We added a turf box to detail.

3. Also we need to show the friction head loss for the union disconnect. This "coupling" is accounted for in the LPD Distribution System Calculations (highlighted on attached 11x17)

4. Please recalculate and make sure all calculations are correct in the low pressure distribution system calculations. Updated spreadsheets.

5. Please state the time dose setup for the pump tank. This number (6 doses at 125 gallon/dose) is shown in the Pump Chamber Volume Calculations (highlighted on the attached 11x17)

If you have any questions don't hesitate to email me.

Thanks

Dana



Kristy Pierce <kpierce@glwpa.com>

Crawford Subdivision (Mill Creek Court)

Kristy Pierce <kpierce@glwpa.com>
To: Kristy Pierce <kpierce@glwpa.com>

Tue, Dec 4, 2018 at 10:31 AM

----- Forwarded message -----

From: **Bernard, Dana** <dbernard@howardcountymd.gov>
Date: Mon, Dec 3, 2018 at 12:22 PM
Subject: RE: Crawford Subdivision (Mill Creek Court)
To: Kristy Pierce <kpierce@glwpa.com>

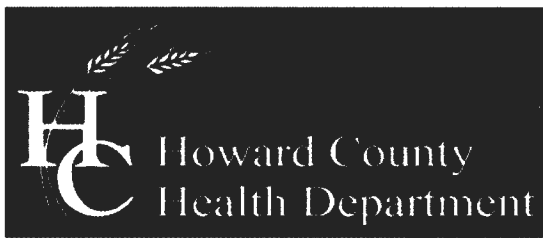
Hello Kristy everything looks good. However, we have a few minor changes on your OSDS plans. They must be revised and resubmitted for review. Your building permits will not receive building permit approval until the OSDS plans have been approved. I will list them in order of lot.

Lot #19

1. The pipe invert on your septic trench detail should be at 2 feet. We are recommending using 2 feet to obtain the most efficient design. Please make calculation adjustments needed. Revised pipe invert to 2 feet. Updated Trench Detail, LPD Calculations, Profile & Plan accordingly.
2. There is a 45 degree bend at the end of your trench. Please show the perforations at this point in the trench detail. We don't want the perforation to be covered by the connection of the two pipes. Added a note to the typical trench detail "make sure holes in bends & fittings are not covered during assembly"
3. We need to add an observation pipe at the end of your trench. Please show in trench detail on OSDS. The observation pipes are shown in the typical trench detail. We added a turf box to detail.
4. Also we need to show the friction head loss for the union disconnect. This "coupling" is accounted for in the LPD Distribution System Calculations (highlighted on attached 11x17)
5. Please recalculate and make sure calculations are correct. Updated spreadsheets.
6. Please state the time dose setup for the pump tank . This number (6 doses at 125 gallon/dose) is shown in the Pump Chamber Volume Calculations (highlighted on the attached 11x17)

Lot #21

1. The pipe invert on your septic trench detail should be at 2 feet. We are recommending using 2 feet to obtain the most efficient design. Please make calculation adjustments needed. Revised pipe invert to 2 feet. Updated Trench Detail, LPD Calculations, Profile & Plan accordingly.
2. There is a 45 degree bend at the end of your trench. Please show the perforations at this point in the trench detail. We don't want the perforation to be covered by the connection of the two pipes.



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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TDD 410-313-2323 | Toll Free 1-866-313-6300

www.hchealth.org

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

SEWAGE DISPOSAL SYSTEM SPECIFICATIONS WORKSHEET

Address: _____

Subdivision: Crawford and O'keefe Lot: 22

Initial system: Application rate: 1.2 Effective area beginning depth: 3.5 Bottom maximum depth: 8
1st Replacement: Application rate: 1.2 Effective area beginning depth: 3 Bottom maximum depth: 8
2nd Replacement: Application rate: 1.2 Effective area beginning depth: 3.5 Bottom maximum depth: 8

Design Flow = 150 gallons per day per bedroom

Design flow ÷ application rate = square footage of drainfield required

Linear length of trench required = drainfield square footage x sidewall reduction percentage ÷ trench width

Sidewall reduction credit formula:

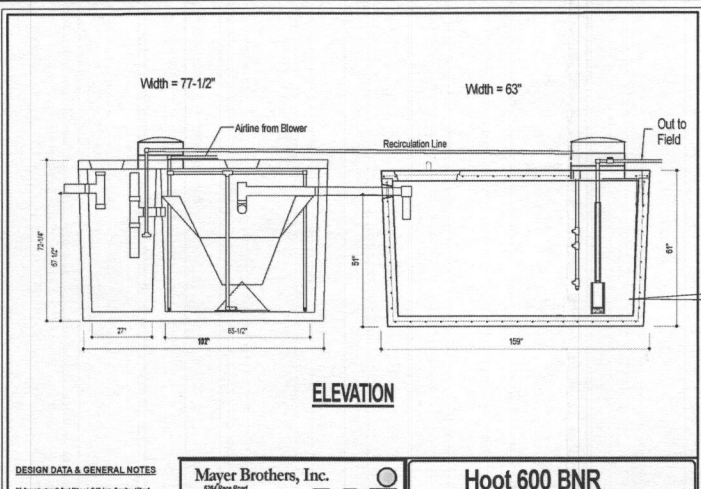
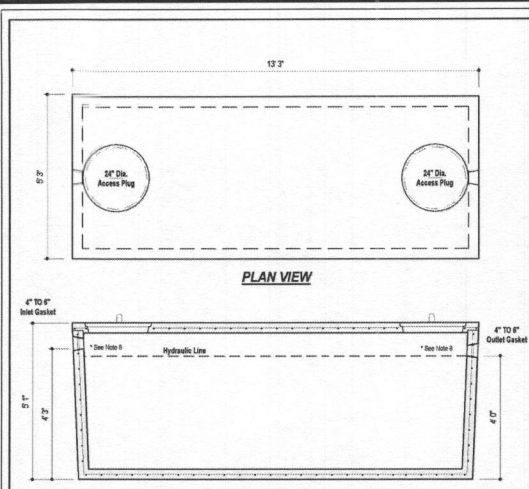
(W + 2) / (W + 1 + 2D) x 100 = Percent of length of standard trench where W=trench width and D= depth between effective area beginning depth and trench bottom.

Standard design requirements:

- Trenches must be located to provide room for 3 systems in the disposal area
All trenches must be equal length unless low pressure dosed
All trenches must be on contour
Minimum trench spacing: 10' for all trenches utilizing sidewall reduction credit. Additional spacing may be necessary for any trench using over 3.5' of effective sidewall. In those cases, the spacing formula is 2D + W up to a maximum spacing of 18'.
Minimum trench spacing for trenches with no sidewall credit (bottom area only) is 6' for a 2' wide trench and 9' for a 3' wide trench (spacing is measured edge to edge)
Maximum trench length is 100'
Maximum pipe depth is 4'

Additional requirements:

Approved: Dana Bernard Date: 2-20-2018



LPD PUMP TANK NO SCALE

PUMP CHAMBER FLOAT SWITCH INFORMATION:

- ALARM HIGH WATER LEVEL @ 23.0'
- PUMP-ON WATER LEVEL @ 21.75'
- PUMP-OFF @ 18'

NOTES:

- SWITCH WATER LEVELS ARE MEASURED FROM THE BOTTOM 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 1/4" SIPHON BREAKER HOLE @ THE TOP END OF THE DISCHARGE PIPE INSIDE THE TANK IF THE INVERT OF THE LOWEST SDA LATERAL IS BELOW THE PUMP TANK INVERT OUT.
- USE A UNION DISCONNECT TO FACILITATE PUMP REPLACEMENT.

DESIGN DATA & GENERAL NOTES

1. Concrete strength 7000 p.s.i. @ 28 days. Density = 150 p.c.f.

2. Cement - Portland Type III per ASTM C 150-05.

3. Admixtures & plasticizers per ASTM C 260-06 & C 494-02.

4. Reinforcing per ASTM A618, Min. 1-1/2" cover.

5. Top slab coated with butyl pipe mastic.

6. 1/2" wall, base, & top thickness.

7. Max 3' of cover.

8. Depending on use of tank, Inlet & Outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

DESIGN DATA & GENERAL NOTES

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7. Max 3' of cover.

8. Depending on use of tank, Inlet & Outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

Rectangular Trapezoidal Pump Chamber Volume Calculations (MBI 1500 Gal. Tank)

Ht. Height (inside dimension from bottom of chamber to top seam)	53.0 in.
W. Top Width (inside dimension)	55.0 in.
L. Top Length (inside dimension)	151.0 in.
B. Bottom Width (inside dimension)	56.5 in.
Bottom Length (inside dimension)	147.3 in.
Chamber Bottom Area (a x b)	7436.1 sq. in.
Height from bottom of chamber to inlet level (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)	367461 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	25.00 in.
Chamber width at alarm level (Ca)	52.00 in.
Chamber length at alarm level (Da)	149.02 in.
Chamber Sectional Area at alarm level (Ca x Da)	7748.8 sq. in.
Water volume at alarm level (Va)	190958 cu. in.
Reserved Capacity provided at alarm setting (Vi-Va)	176503 cu. in. 764 gal.
Back check reserved capacity ((Si-Sa)/Ci) * Di + (Ci*Ca) * (Di+Da) * Ci * Di	176503 cu. in. 764 gal.
Alarm High water level (from bottom of pump chamber)	25.00 in.
Pump on water level (O, from bottom of pump chamber)	21.75 in.
Chamber width at this level (Co)	52.35 in.
Chamber length at this level (Do)	148.79 in.
Chamber Sectional Area at this level (Co x Do)	7788.61 sq. in.
Water volume (Vo) to switch pump on	185559 cu. in. 717 gal.
Pump off water level (F, from bottom of pump chamber)	18.00 in.
Chamber width at this level (Cf)	52.03 in.
Chamber length at this level (Df)	148.52 in.
Chamber Sectional Area at this level (Cf x Df)	7727.43 sq. in.
Water volume (Vf) to switch pump off	184666 cu. in. 691 gal.
Volume between on-off switches: ((O-F)/Cf) * (Co*Do + Co*Cf) * (Do+Df) * Cf * Df	29093 cu. in. 125.9 gal.
Back Check dosing volume switch setting: Vo-Vf	29093 cu. in. 125.9 gal.

Hoot 600 BNR BAT Tank Elevations - Lot 22

Top of tank high finished grade	475.70
Top of tank elevation	473.10
Delta (cover above tank, 3' max.)	2.60 ft.
Outside bottom of BAT tank elevation	467.32
Invert in	471.87
Invert out	471.70

MBI 1500 Gal. Pump Tank Elevations - Lot 22

Top of tank high finished grade	475.40
Top of tank elevation	472.40
Delta (cover above tank, 3' max.)	3.00 ft.
Outside bottom of tank	467.32
Bottom of chamber elevation	467.65
Invert in	471.57
Bottom of Pump (set on 6" block)	468.15

ZOELLER PUMP COMPANY

TECHNICAL DATA SHEET DOSE-MATE SERIES Models 151, 152, 153 Effluent Pumps

PRODUCT SPECIFICATIONS

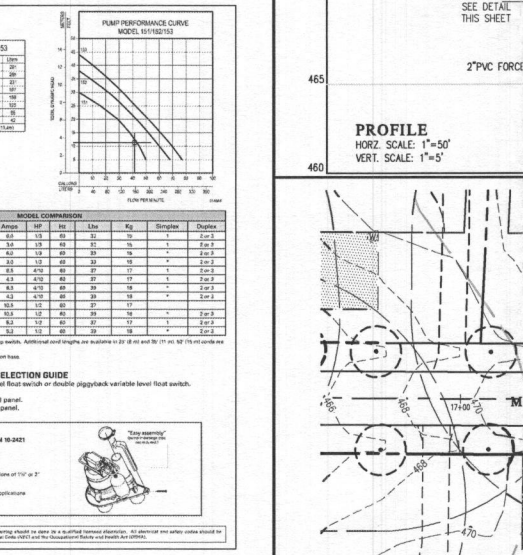
MODEL 151	MODEL 152	MODEL 153	
Flow Rate (GPM)	1.5	2.0	3.0
Head (ft)	15	15	15
Power (W)	15	20	30
Dimensions (L x W x H)	10.5 x 10.5 x 10.5	10.5 x 10.5 x 10.5	10.5 x 10.5 x 10.5

PUMP SELECTION

1. For automatic, use single programmable variable level float switch or double programmable variable level float switch.

2. See FM712 for correct model of automatic control panel.

3. See FM717 for correct model of duplex control panel.



LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

PER MDE BASIC LPD DESIGN - Draft Version 1 - Date July 3, 2014

ADDRESS: 13815 Mill Creek Court
SUBDIVISION: Crawford (Mill Creek)
DATE: December 2018

Design Flow: 750 gpd
Pump Off Elevation: 469.15
Inv. Out of Pump Tank: 472.40
Pump Bottom Elevation: 468.15

Number of Manifolds: 1
Type: End-Feed

Manifold 1
Trench 1 Elev: 473.2 Length: 35.0
Trench 2 Elev: 473.0 Length: 45.4

0.2" Elev. Range, Single Manifold OK

Manifold	Trench	Flow Rate (gpm)	Head (ft)	Hole Diam. (in)	Hole Flow Rate (gpm)	Hole Spacing (ft)	Number of Holes	Trench Length (ft)	Lateral Length (ft)	Flow per LF Trench (gpm)	Gal. per LF Trench	Lateral Diam. (in)	Type	
1	1	35	End	473.2	2.0	5/16	1.63	3.18	11	17.91	31.82	1.530	1.5	SCH 40
	2	45.4	End	473.0	2.2	5/16	1.71	3.24	14	23.91	42.16	1.574	1.5	SCH 40

Min. System Discharge Rate: 41.8 gpm

Manifold Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857

Force Main Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857

Minimum Dose: 125.0 gal (Vol. in FM, Min. 5x Lat. = 45.9 gal. < 1/5 Design Flow = 750/5 = 125 gal.)

Calculate Total Design Head

1. Friction Loss in FM & Manifold:	1.2 ft
Friction Loss from Fittings:	77 ft
Static Head:	2.0 ft
Min. Distal (discharge) head:	2 ft
TDH:	11.0 ft

Note #1: The minimum dose is the greater value of either 1/5 the Design Flow or (5 x lateral volume) - one volume the manifold + one volume of the force main.

CRAWFORD SUBDIVISION (Mill Creek)

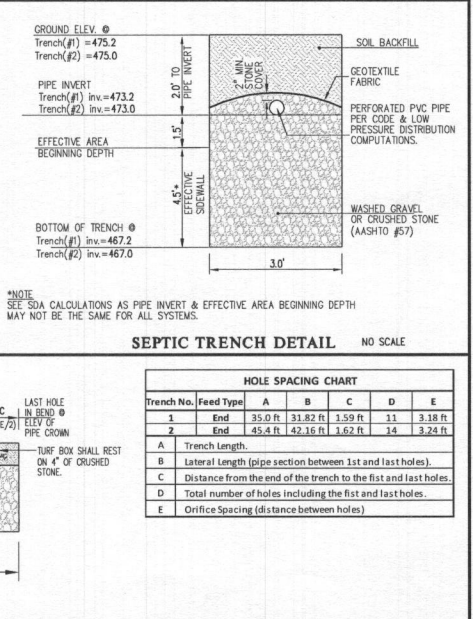
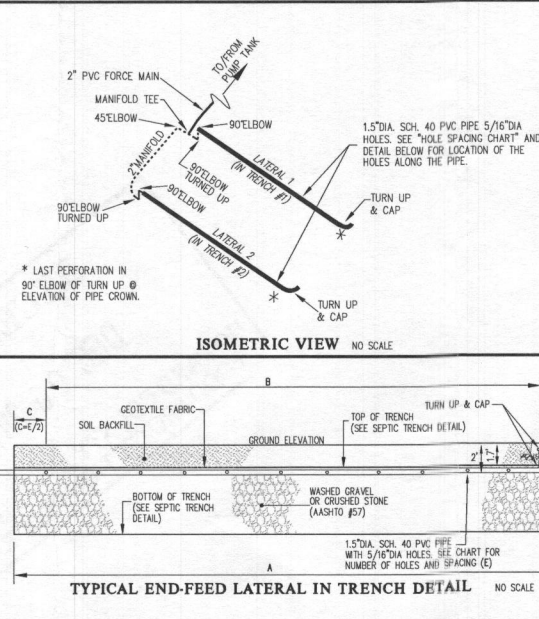
SDA Trench Size Calculations (Lot 22)

System Input Information	Initial System	Replacement System No. 1	Replacement System No. 2
Application Rate	1.2	1.2	1.2
Effective area beginning depth	3.5	3.0	3.5
Effective area maximum bottom depth	8.0	8.0	8.0
Number of Bedrooms	5	5	5
Design Flow at 150 gal./day/bedroom	750	750	750
Absorption Trench Calculations	LPD	LPD	LPD
Drainfield area required (Design flow/application rate)	625 s.f.	625 s.f.	625 s.f.
Effluent pipe depth to invert	2.0	2.0	2.0
Effective sidewall depth "D"	4.5	5.0	4.5
Trench Width "W" (2 or 3 feet)	3.0	3.0	3.0
Side Wall Reduction Percent	38.46%	35.71%	38.46%
Linear feet of trench required = (drainfield area x sidewall reduction)/W	80.1	74.4	80.1

Trench Layout Information

Approximate length available on contour & not exceeding 300-ft	100	100	100
Number of trenches to use	2	2	4
Min. length (linear feet)	40.1	37.3	20.1
Total (linear feet)	80.2	74.6	80.4
Minimum Trench Spacing:	12.0	13.0	12.0

Minimum Trench Spacing: For trenches with no sidewall credit the spacing is 6' for a 2' wide trench and 9' for a 3' wide trench (measured edge to edge). All trenches utilizing sidewall reduction credit must be spaced a min. of 30' for effective sidewall not over 3.5'. If > 3.5', then spacing formula is: 20*W up to a maximum of 35'.



NOTES:

- 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 EARTH COVER OVER THE TANK(S) IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
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- THE HEALTH DEPARTMENT REQUIRE DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- THE WELL TAG # 17-0119 HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
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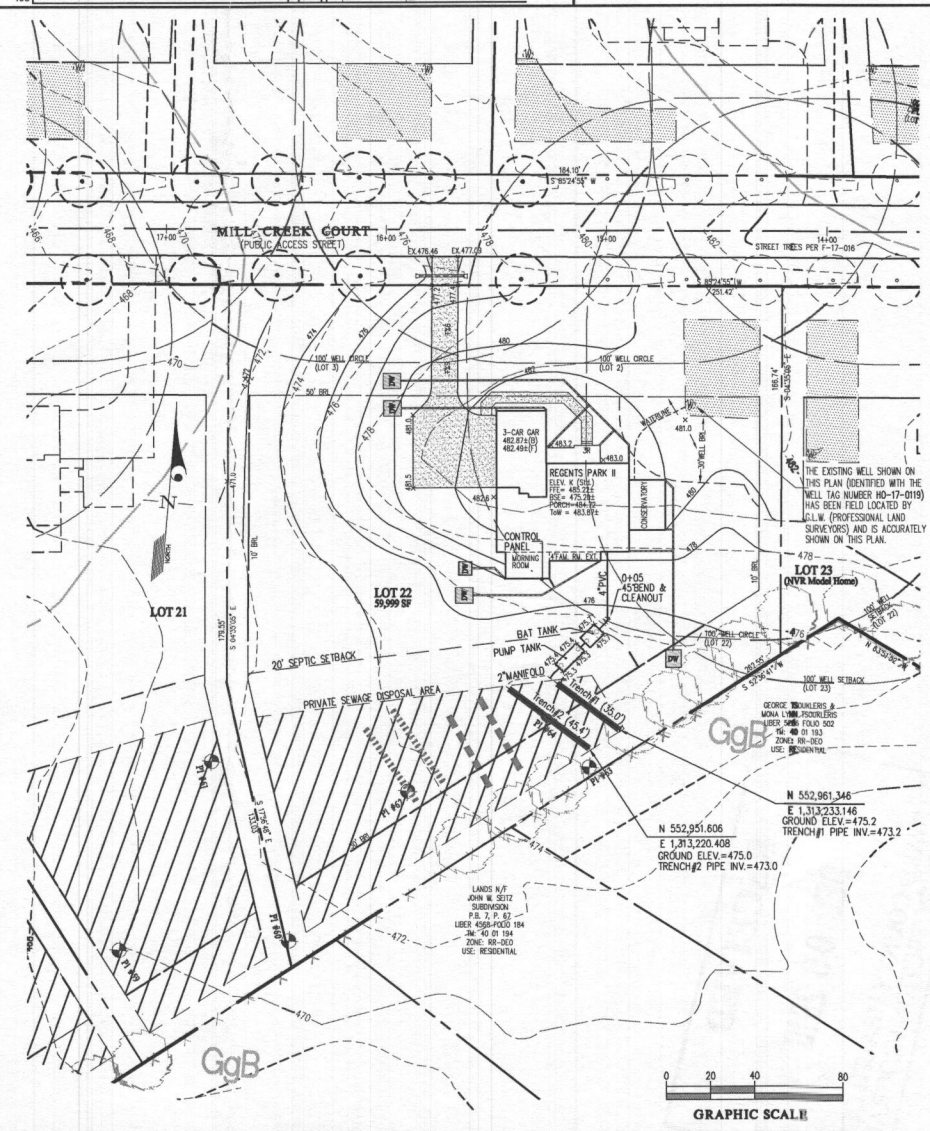
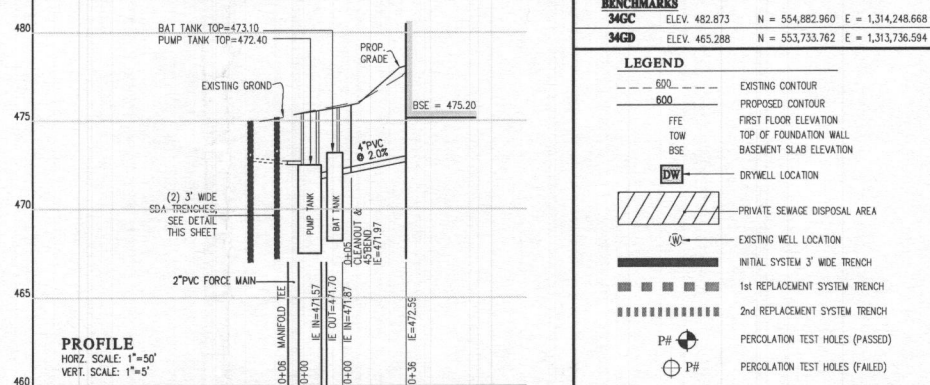
VICINITY MAP
SCALE: 1" = 2,000'

BENCHMARKS

346C	ELEV. 482.873	N = 554,882,960	E = 1,314,248,668
346D	ELEV. 465.288	N = 553,733,762	E = 1,313,736,594

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- F1E FIRST FLOOR ELEVATION
- TOW TOP OF FOUNDATION WALL
- BSE BASEMENT SLAB ELEVATION
- DW DRYWELL LOCATION
- EXISTING WELL LOCATION
- INITIAL SYSTEM 3' WIDE TRENCH
- 1st REPLACEMENT SYSTEM TRENCH
- 2nd REPLACEMENT SYSTEM TRENCH
- PERCOLATION TEST HOLES (PASSED)
- PERCOLATION TEST HOLES (FAILED)



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PLANNING | ENGINEERING | SURVEYING

3600 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM
PHONE: 301-421-4024 | BALT: 410-880-1820 | DC/VA: 301-889-2524 | FAX: 301-421-4188

DESIGNED BY: MBT

DRAWN BY: KLP

CHECKED BY: CXG

DATE: _____

REVISION: _____

BY: _____

APPR: _____

PREPARED FOR:

NVR INC.
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-9956

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975

EXPIRATION DATE: MAY 26, 2020

SITE PLAN FOR BAT INSTALLATION

CRAWFORD SUBDIVISION
LOT 22 (13815 MILL CREEK COURT)
PLAT NO. 24600-24607

ELECTION DISTRICT No. 5

SCALE: 1"=40'

ZONING: RR-DEO

G. L. W. FILE No. 17071

DATE: DEC. 2018

TAX MAP - GRID: 34&39-19&6

SHEET: 1 OF 1

HOWARD COUNTY, MARYLAND

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

The Thomas Dorsey Building
9250 Bendix Road
Columbia, MD 21045
410-313-5850

=====
LR - Agreement Recording Fee

1x 20.00 20.00
Name: aghera
Ref: 91
13815 Mill Creek Ct

=====
LR - Agreement Surcharge

1x 40.00 40.00

=====
SubTotal:

Total: 60.00

60.00

=====
CRD-Credit

Credit Card Confirmation : 013052 60.00

03/05/2019 13:42

CC13-SB

#11744736/496/109

***** DUPLICATE #001 *****

03/05/2019 13:43

CC13-SB

Thank you for visiting us today



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

Twitter: HowardCoHealthDep

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 25 day of ^{March} 2019, among Dhaval Aghera
NVR, Inc., 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 13815 Mill
Creek Court, Clarksville, MD 21029, in the Election District of Howard
County, Maryland, and the deed to same is recorded or shall be recorded among the Land
Records of Howard County, Maryland in Liber Folio Plat #

WHEREAS, The Lot 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
January 1, 2013. The pre-treatment device being installed is Hart 600.

NOW, THEREFORE, the parties hereto agree as follows:

A. Owner hereby grants to the County the right to enter upon the Lot at any reasonable time 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 to
develop accurate and thorough test results.

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 Lot 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 Lot that the system shall require

maintenance or other attention. Upon taking title to the Lot, 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 and sealed this agreement on the date indicated above.

Bert Rifon 3/5/2019
Howard County Health Department

[Signature] 2/27/19

Owner #1 Signature Date

Owner#2 Signature Date

NVR, INC
Owner #1 Print Name

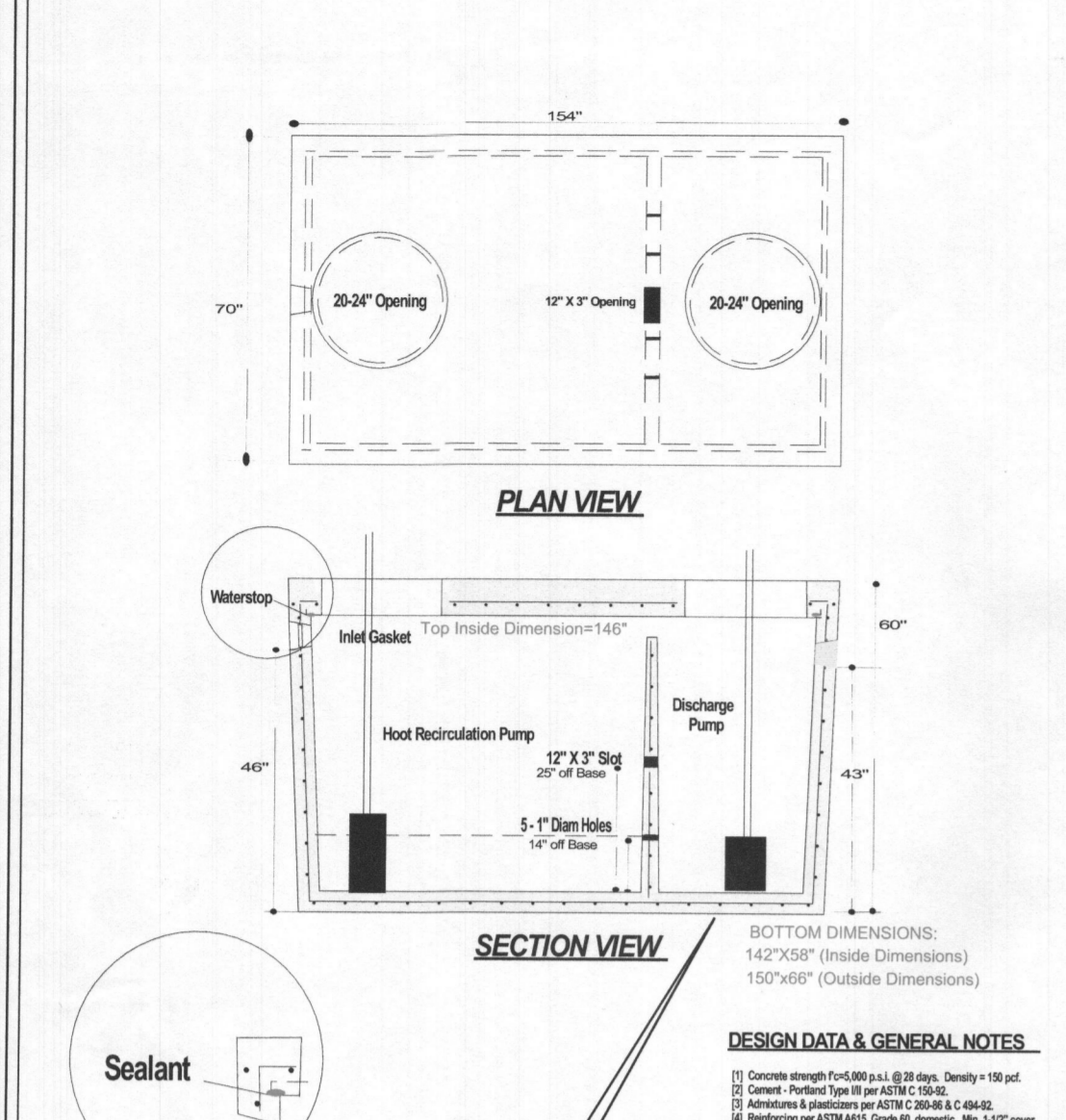
Owner #2 Print Name

Dhaval
Buyer #1 Signature Date

[Signature]
Buyer #2 Signature Date

Dhaval Aghera
Buyer #1 Print Name

Nirali Marvaniya
Buyer #2 Print Name



1500 Gal Top-Tight Tank
Set up as Hoot pump chamber

DESIGN DATA & GENERAL NOTES:
1. Cover depth 1'-0" (18" dia. 1/2" thick, 1/2" thick)
2. Cover: Perforated Type 10 per ASTM F 2386
3. Inlet: Perforated Type 10 per ASTM F 2386
4. Discharge: Perforated Type 10 per ASTM F 2386
5. Material: 304 Stainless Steel
6. Finish: Polished
7. Weight: 150 lbs (approx)
8. Dimensions: 1500 Gal (1500 x 1500 x 1500)

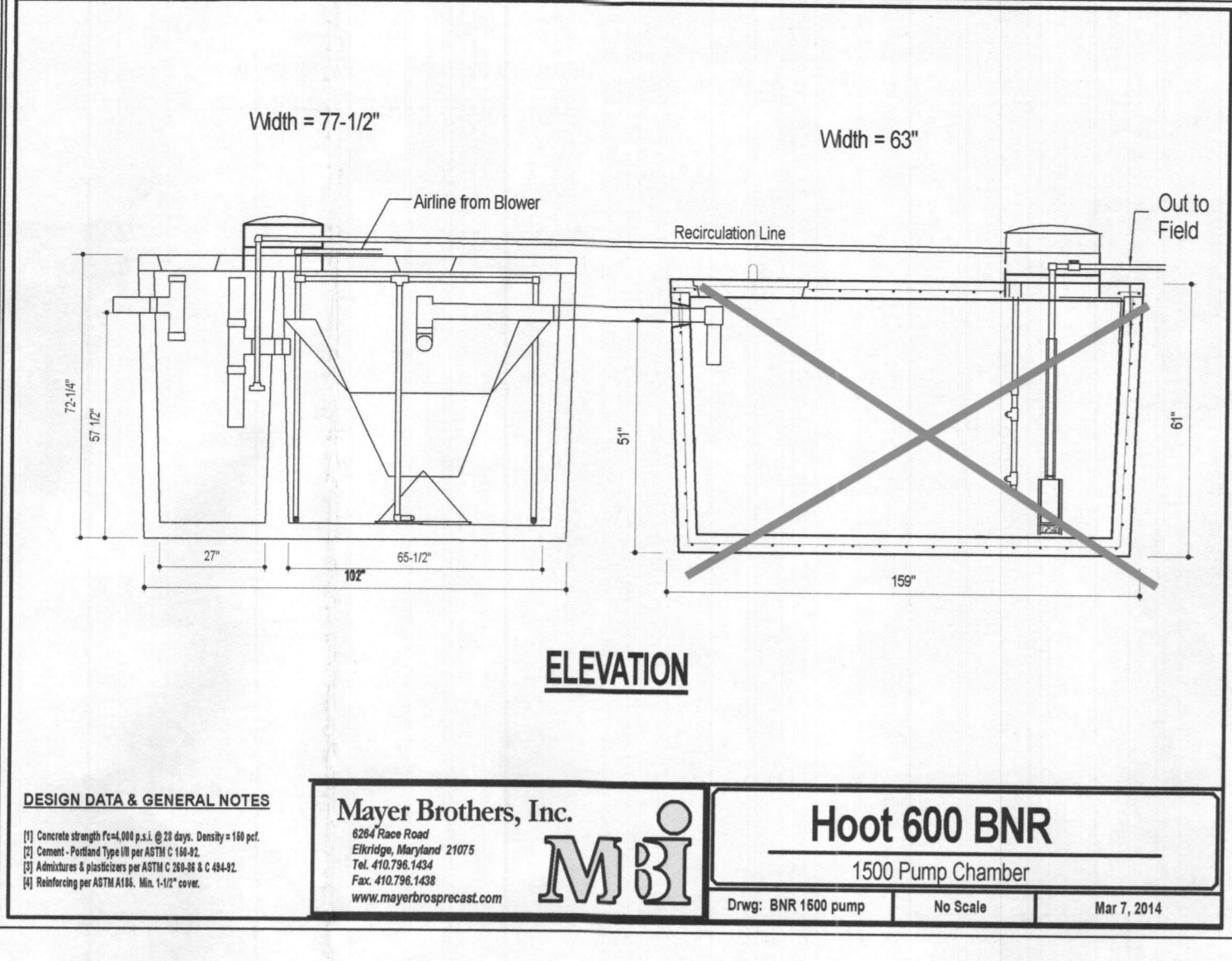
- PUMP CHAMBER FLOAT SWITCH INFORMATION:**
- ALARM HIGH WATER LEVEL @ 21.5'
 - PUMP-ON WATER LEVEL @ 19.5'
 - PUMP-OFF @ 16'
- NOTES:**
- SWITCH WATER LEVELS ARE MEASURED FROM THE BOTTOM OF THE TANK CHAMBER.
 - TANK SHALL BE INSTALLED SO THAT THE BOTTOM OF THE CHAMBER IS ABSOLUTELY LEVEL.
 - SWITCH LEVELS ARE CALCULATED FOR THE TANK CHAMBER DIMENSIONS SHOWN. IF A CHAMBER DIMENSION CHANGES, THEN THE SWITCH WATER LEVEL MUST BE RECALCULATED.
 - PROVIDE A 1/4" SIPHON BREAKER HOLE @ THE TOP BEND OF THE DISCHARGE PIPE INSIDE THE TANK IF THE INVERT OF THE LOWEST SDA LATERAL IS BELOW THE PUMP TANK INVERT OUT.
 - USE A UNION DISCONNECT TO FACILITATE PUMP REPLACEMENT.

Hoot 600 BNR BAT Tank Elevations - Lot 22

Top of tank high finished grade	475.70
Top of tank elevation	473.10
Delta (cover above tank, 3" max.)	2.60 ft.
Outside bottom of BAT tank elevation	467.08
Invert in	471.87
Invert out	471.70

MBI 1500 Gal. Tight-Top Pump Tank Elevations - Lot 22

Top of tank high finished grade	475.40
Top of tank elevation	472.40
Delta (cover above tank, 3" max.)	3.00 ft.
Outside bottom of tank	467.40
Bottom of chamber elevation	467.73
Invert in	471.23
Bottom of Pump (set on 6" block)	468.23



DESIGN DATA & GENERAL NOTES:

Mayer Brothers, Inc.
Elliott, Maryland 21035
Tel: 410.796.1434
Fax: 410.796.1438
www.mayerbrothers.com

Hoot 600 BNR
1500 Pump Chamber

Drawn: BNR 1500 pump No Scale Mar 7, 2014

Tight-Top Trapezoidal Pump Chamber Volume Calculations (MBI 1500 Gal. Tank)

H: Height (inside dimension from bottom of chamber to top seam) 50.0 in.
W: Top Width (inside dimension) 62.0 in.
L: Top Length (inside dimension) 146.0 in.
a: Bottom Width (inside dimension) 58.0 in.
b: Bottom Length (inside dimension) 142.0 in.

Chamber Bottom Area (a x b) 8236.0 sq. in.
Height from bottom of chamber to inlet level (Si) 42.0 in.
Chamber width at inlet level (Ci) 61.36 in.
Chamber length at inlet level (Di) 145.36 in.
Chamber Sectional Area at inlet level (Ci x Di) 8919.3 sq. in.
Chamber Volume at inlet level (Vi) 360182 cu. in. 1599 gal.

Float Switch Setting Parameters & Volume Calculations

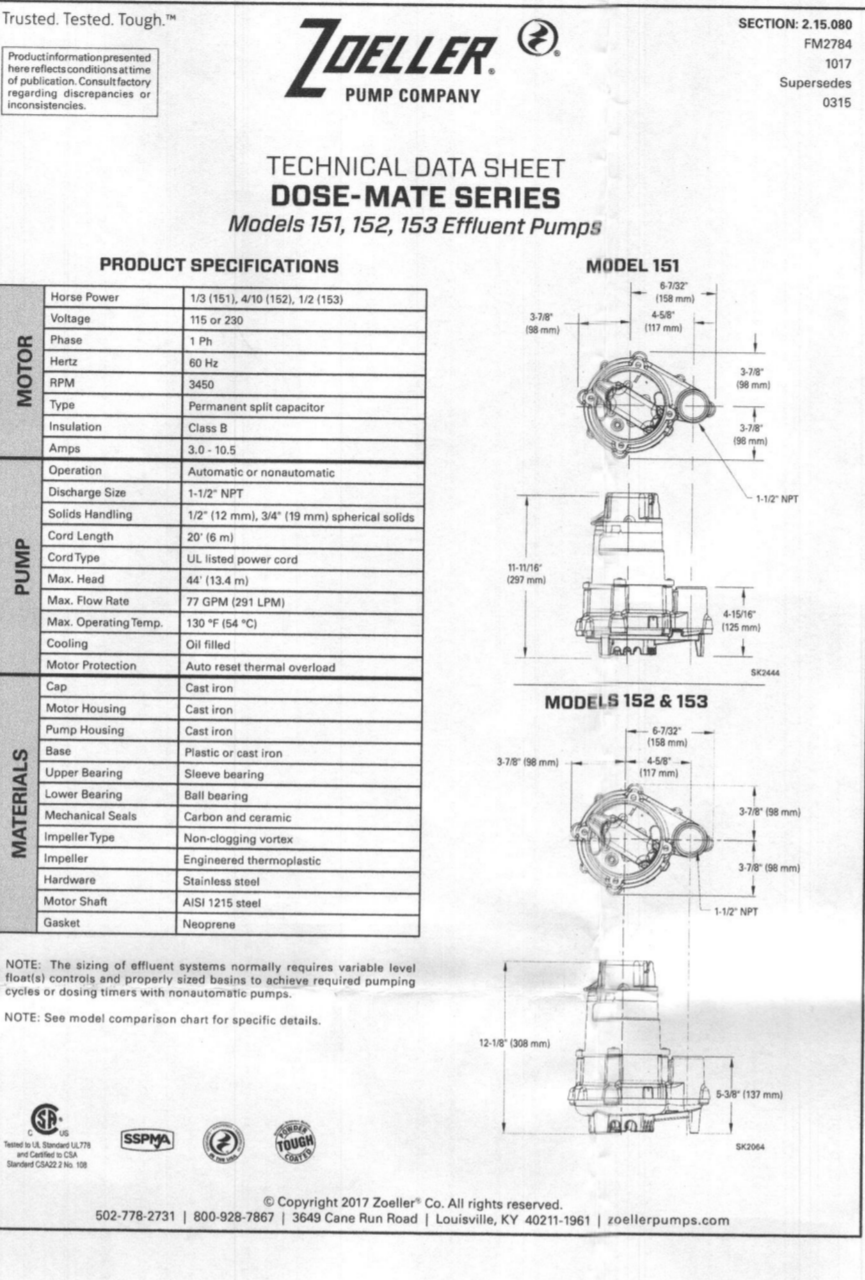
Design flow per day (min. reserved capacity to set alarm level) 6 doses at 750 gal./dose
Dosing frequency per day & volume per dose 125.0 gal./dose

Water level (Sa) to switch on alarm 21.50 in.
Chamber width at alarm level (Ca) 59.72 in.
Chamber length at alarm level (Ca) 143.72 in.
Chamber Sectional Area at alarm level (Ca x Da) 8583.0 sq. in.
Water volume at alarm level (Va) 190793 cu. in. 783 gal.
Reserved capacity provided at alarm setting (Vi-Va) 179389 cu. in. 777 gal.
Back check reserved capacity: ((Si-Sa)/G)*(Ci*Di) + (Ci+Ca)*(Di+Da)+Ca*Da 179389 cu. in. 777 gal.

Alarm High water level (from bottom of pump chamber) 21.50 in.
Pump on water level (O, from bottom of pump chamber) 19.50 in.
Pump off water level (F, from bottom of pump chamber) 16.00 in.

Chamber width at this level (Co) 59.56 in.
Chamber length at this level (Do) 143.56 in.
Chamber Sectional Area at this level (Co x Do) 8550.43 sq. in.
Water volume (Vo) to switch pumps on 179389 cu. in. 777 gal.

Chamber width at this level (Cf) 143.28 in.
Chamber length at this level (Df) 143.28 in.
Chamber Sectional Area at this level (Cf x Df) 8493.64 sq. in.
Water volume (Vf) to switch pump off: 133833 cu. in. 579 gal.
Back check dosing volume switch setting: Vo-Vf 29827 cu. in. 129 gal.



TOTAL DYNAMIC HEAD FLOW PER MINUTE

Model	151	152	153
Flow (GPM)	1.0	1.0	1.0
Head (ft)	100	100	100
Power (HP)	1.0	1.0	1.0

PUMP PERFORMANCE CURVE MODEL 151/152/153

PUMP SELECTED: MODEL 151

SELECTION GUIDE:

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch.
- Refer to FM717.
- See FM720 for correct model of simplex control panel.
- See FM712 for correct model of duplex control panel.

LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

ADDRESS: 13815 Mill Creek Court
SUBDIVISION: Crawford (Mill Creek)
DATE: March 22, 2019

Design Flow: 750 gpd
Pump Off Elevation: 469.07
Inv. Out of Pump Tank: 472.40
Pump Bottom Elevation: 468.23

Manifold 1 Type: End-Feed

Trench 1	Elev: 473.2	Length: 35.0
Trench 2	Elev: 473.0	Length: 45.4

0.2" Elev. Range, Single Manifold OK

Manifold Length	27 ft	Type: SCH 40
Holz-Force Main Length	11.4 ft	Type: SCH 40

Manifold

Trench	Length (ft)	Flow (gpm)	Hole Dia. (in)	Hole Flow Rate (gpm)	Number of Holes	Trench Flow Rate (gpm)	Lateral Length (ft)	Flow (gpm) per LF	Gal. per LF Trench	Lateral Dia. (in)	Type			
1	35	End	473.2	2.0	5/16	1.63	3.18	11	17.91	31.82	0.512	1.530	1.5	SCH 40
2	45.4	End	473.0	2.2	5/16	1.71	3.24	14	23.91	42.16	0.527	1.574	1.5	SCH 40

Min. System Discharge Rate: 41.8 gpm

Manifold Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857
Force Main Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857
Minimum Dose: 125.0 gal (Vol. in FM, Man, Sx Lat. = 45.9 gal. < 1/6 Design Flow = 750/6 = 125 gal.)

Calculate Total Design Head

1. Friction Loss in FM & Manifold:	1.2 ft		
Friction Loss from Fittings:	51 ft x 2.857 = 1.5 ft		
No. Type Equ. Length	No. Type Equ. Length		
5 90 Deg. Std. Ell	7.0	0 Gate Valve	1.3
45 Deg. Std. Ell	4.0	0 Globe Valve	55
1 90 Deg. Side Tee	10.0	0 Angle Valve	28
1 Run of Tee	2.0		
Friction Loss from Laterals:	1.5 ft		
2. Static Head:	4.3 ft		
3. Min. Distal (discharge) head	2 ft		
TDH =	10.3 ft		

Note #1: The minimum dose is the greater value of either 1/6 the Design Flow or (S x lateral volume) ÷ one volume of the manifold + one volume of the force main.

CRAWFORD SUBDIVISION (Mill Creek)

SDA Trench Size Calculations (Lot 22)

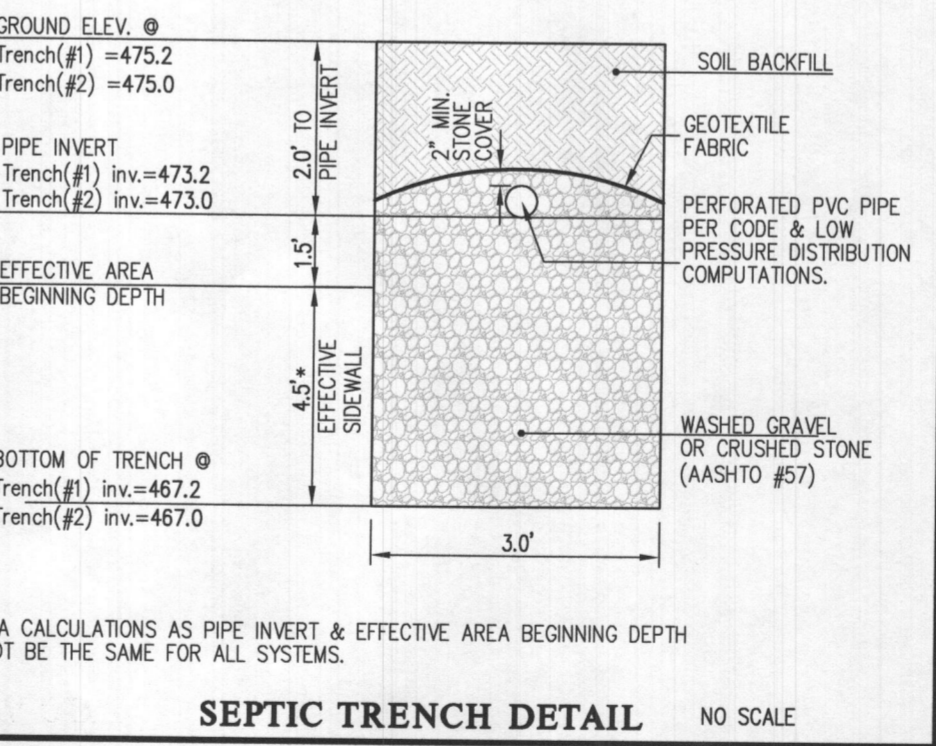
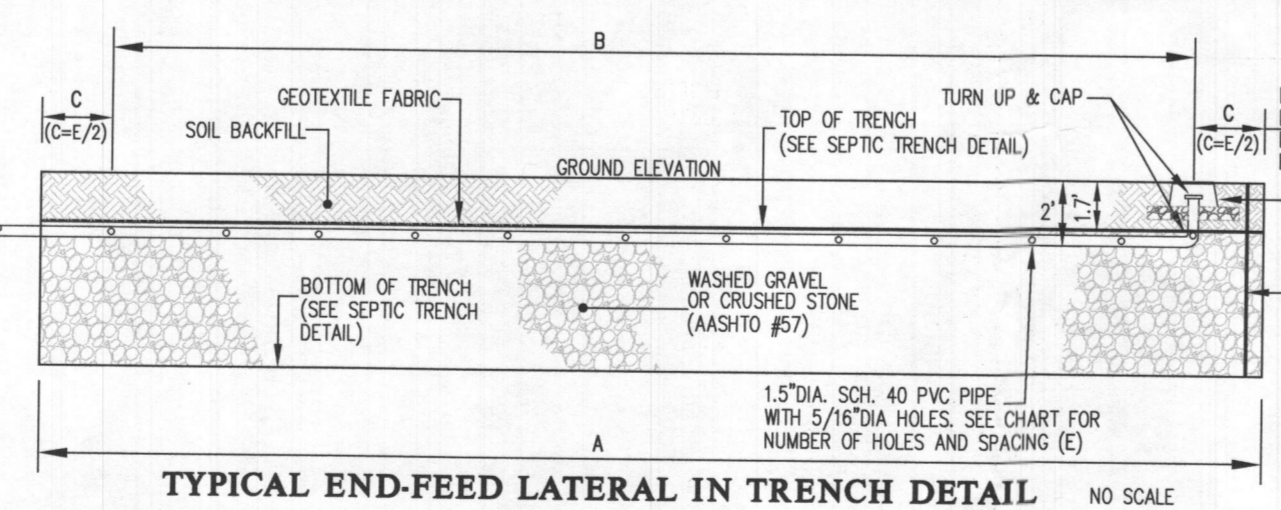
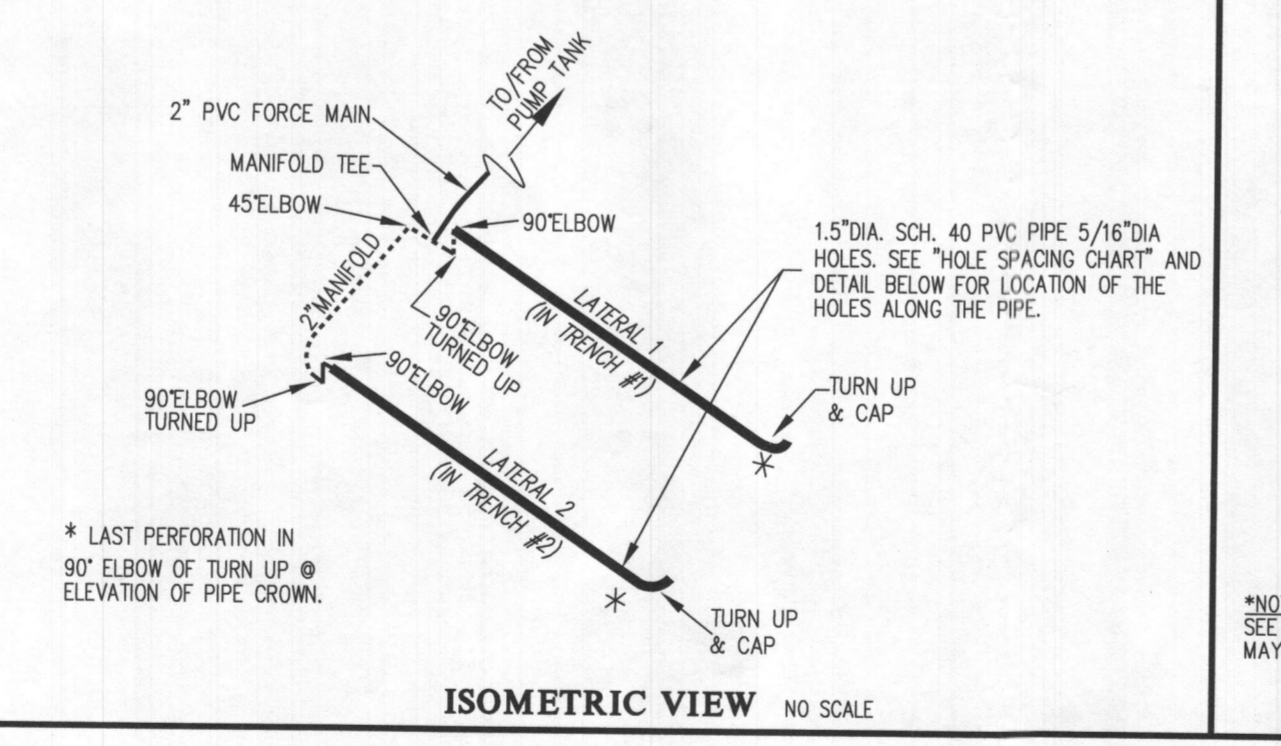
System Input Information	Initial System	Replacem't System No.1	Replacem't System No.2
Application Rate	1.2	1.2	1.2
Effective area beginning depth	3.5	3.0	3.5
Effective area maximum bottom depth	8.0	8.0	8.0
Number of Bedrooms	5	5	5
Design flow at 150 gal./day/bedroom	750	750	750

Absorption Trench Calculations

Effluent pipe application rate	LPD	LPD	LPD
Effluent pipe depth to invert	625 s.f.	625 s.f.	625 s.f.
Depth between the effective beginning depth or pipe depth (whichever is deeper) and maximum trench bottom.	2.0	2.0	2.0
Effective sidewall depth "D"	4.5	5.0	4.5
Side-slope Reduction Percent	38.46%	35.71%	38.46%
Linear feet of trench required	80.1	74.4	80.1

Trench Layout Information

Number of trenches to use	2	2	4
Total (linear feet)	80.2	74.6	80.4
Minimum Trench Spacing:	12.0	13.0	12.0

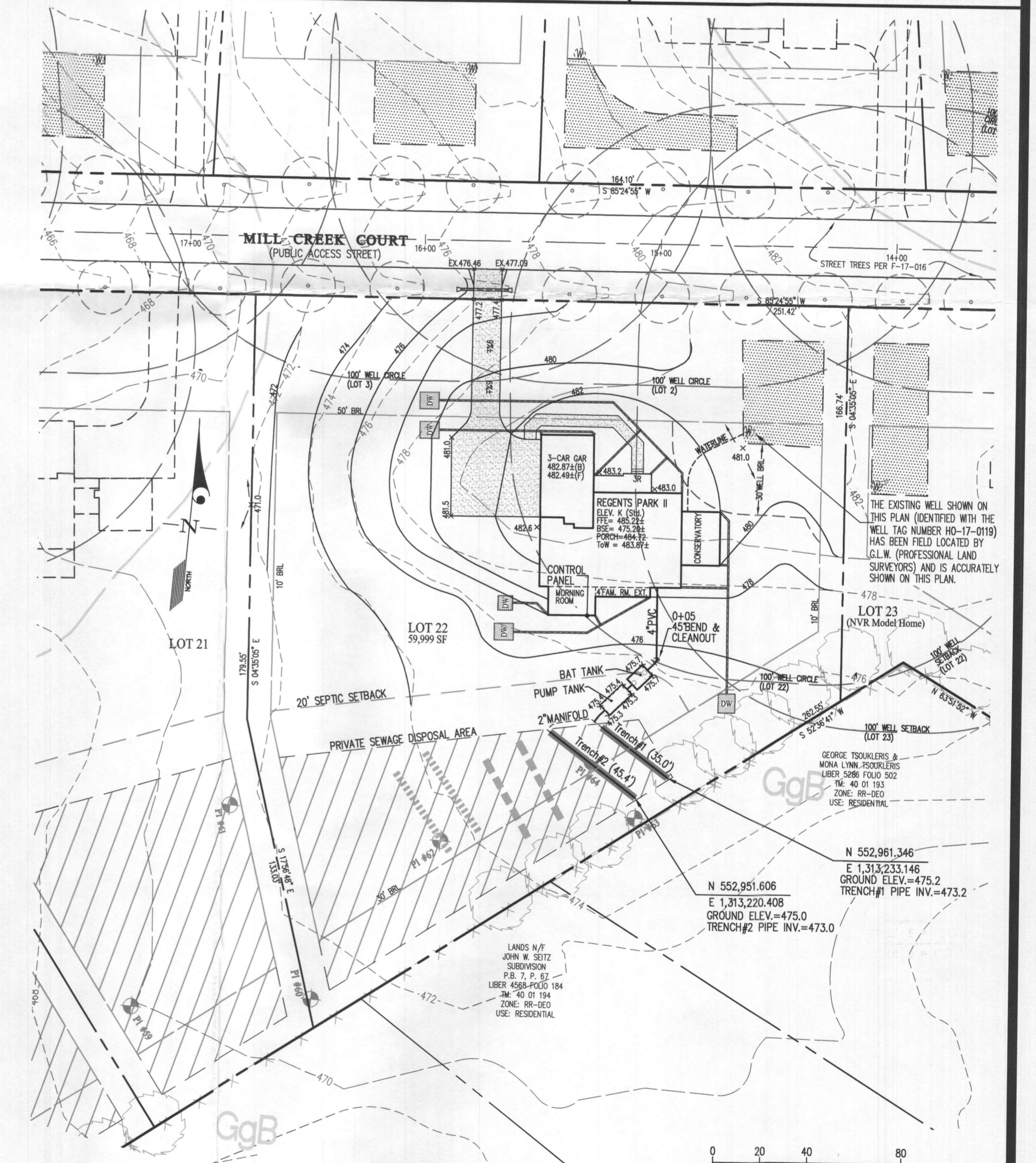
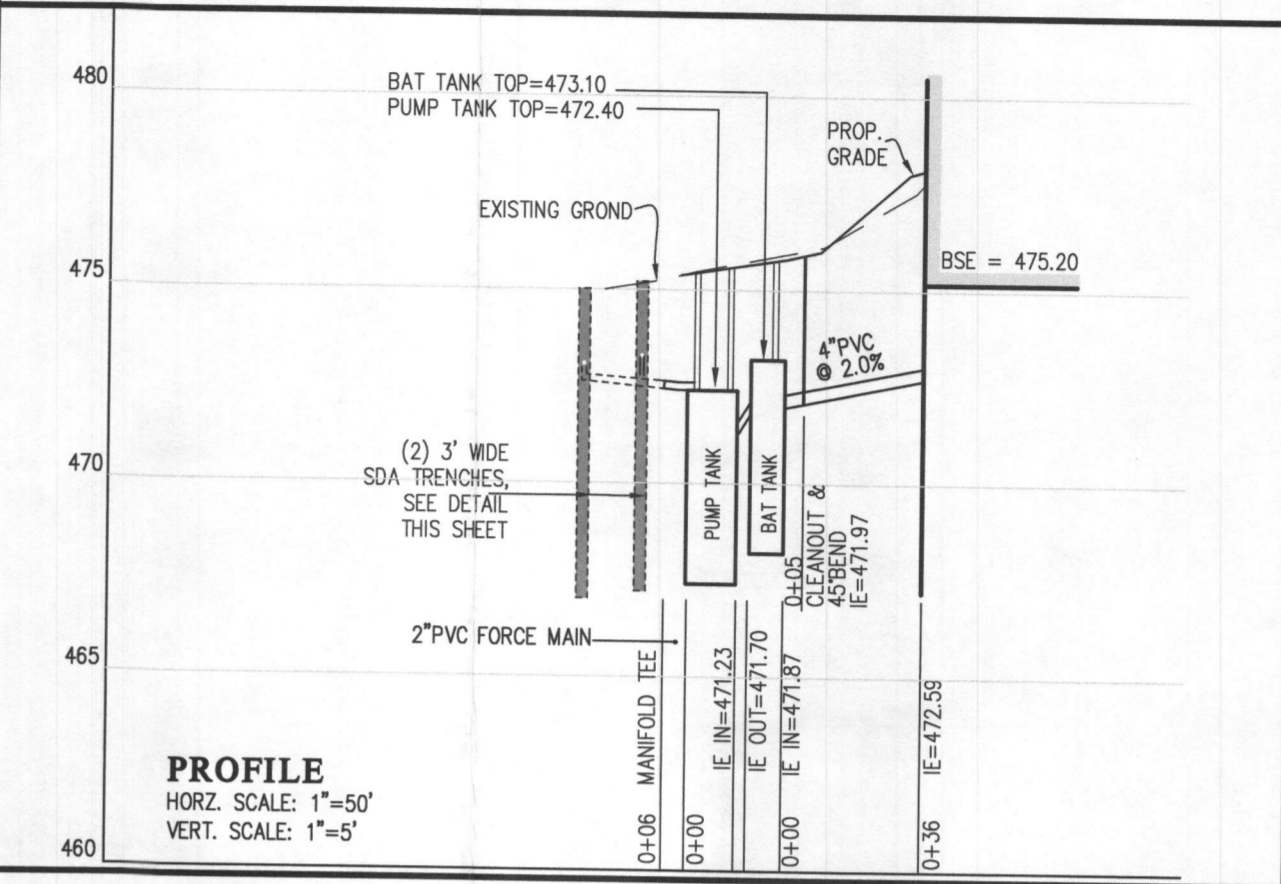
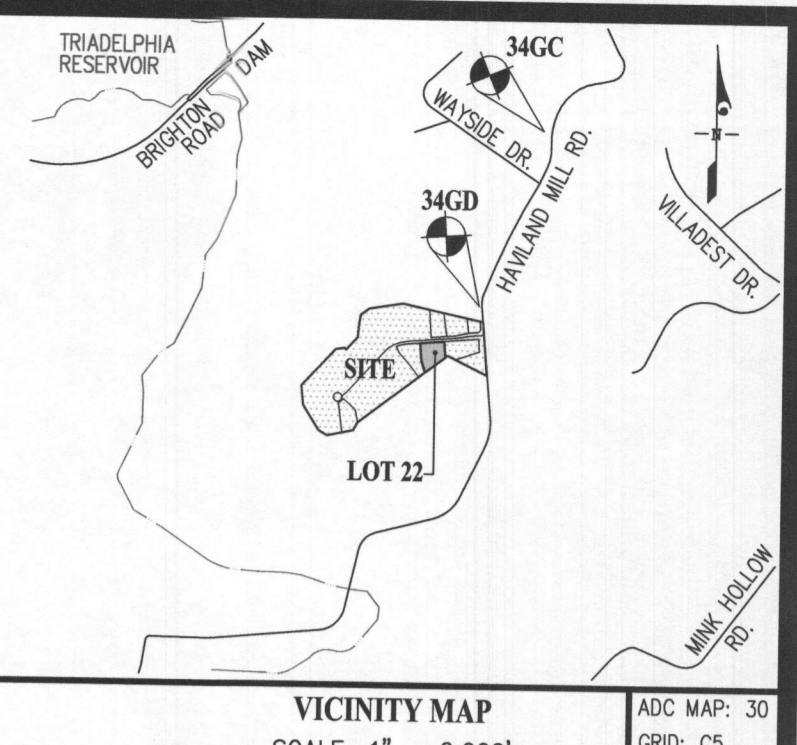


HOLE SPACING CHART

Trench No.	Feed Type	A	B	C	D	E
1	End	35.0 ft	31.82 ft	1.59 ft	11	3.18 ft
2	End	45.4 ft	42.16 ft	1.62 ft	14	3.24 ft

Legend:
A Trench Length.
B Lateral Length (pipe section between 1st and last holes).
C Distance from the end of the trench to the first and last holes.
D Total number of holes including the first and last holes.
E Orifice Spacing (distance between holes).

- NOTES:**
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 - 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.



GLW
PLANNING | ENGINEERING | SURVEYING

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PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4188

DESIGNED BY: MBT
DRAWN BY: KLP
CHECKED BY: CKC

DATE	REVISION	BY	APP'R.

PREPARED FOR:
NVR INC.
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-5956

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12875.

EXPIRATION DATE: MAY 28, 2020

3/27/19

SITE PLAN FOR BAT INSTALLATION

CRAWFORD SUBDIVISION
LOT 22 (13815 MILL CREEK COURT)
PLAT NO. 24600-24607

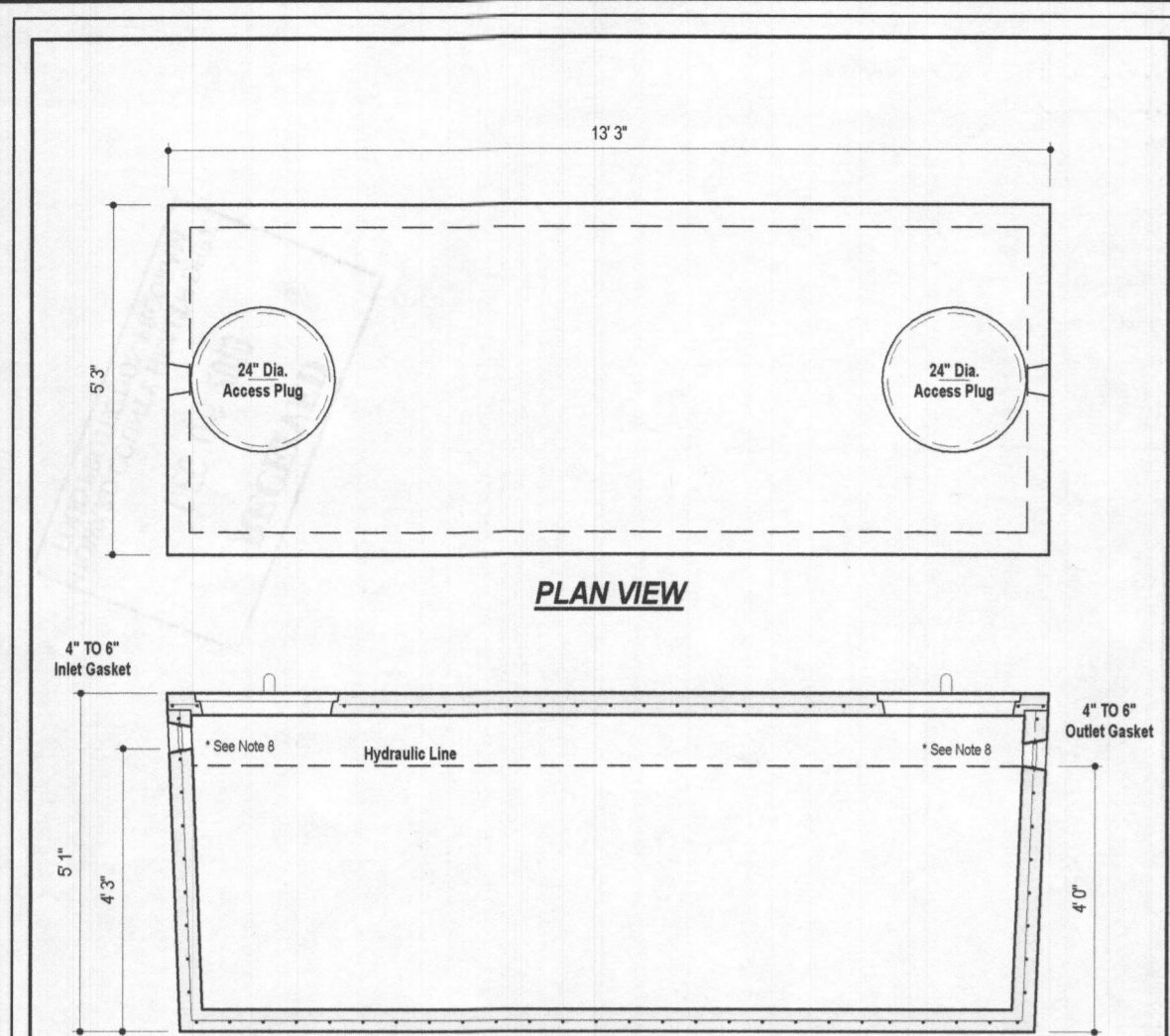
SCALE: 1"=40'
ZONING: RR-DEO
DATE: MAR. 2019

G. L. W. FILE NO. 17071
TAX MAP - GRID: 34&39-19&6
SHEET: 1 OF 1

HOWARD COUNTY, MARYLAND

GRAPHIC SCALE

0 20 40 80



DESIGN DATA & GENERAL NOTES

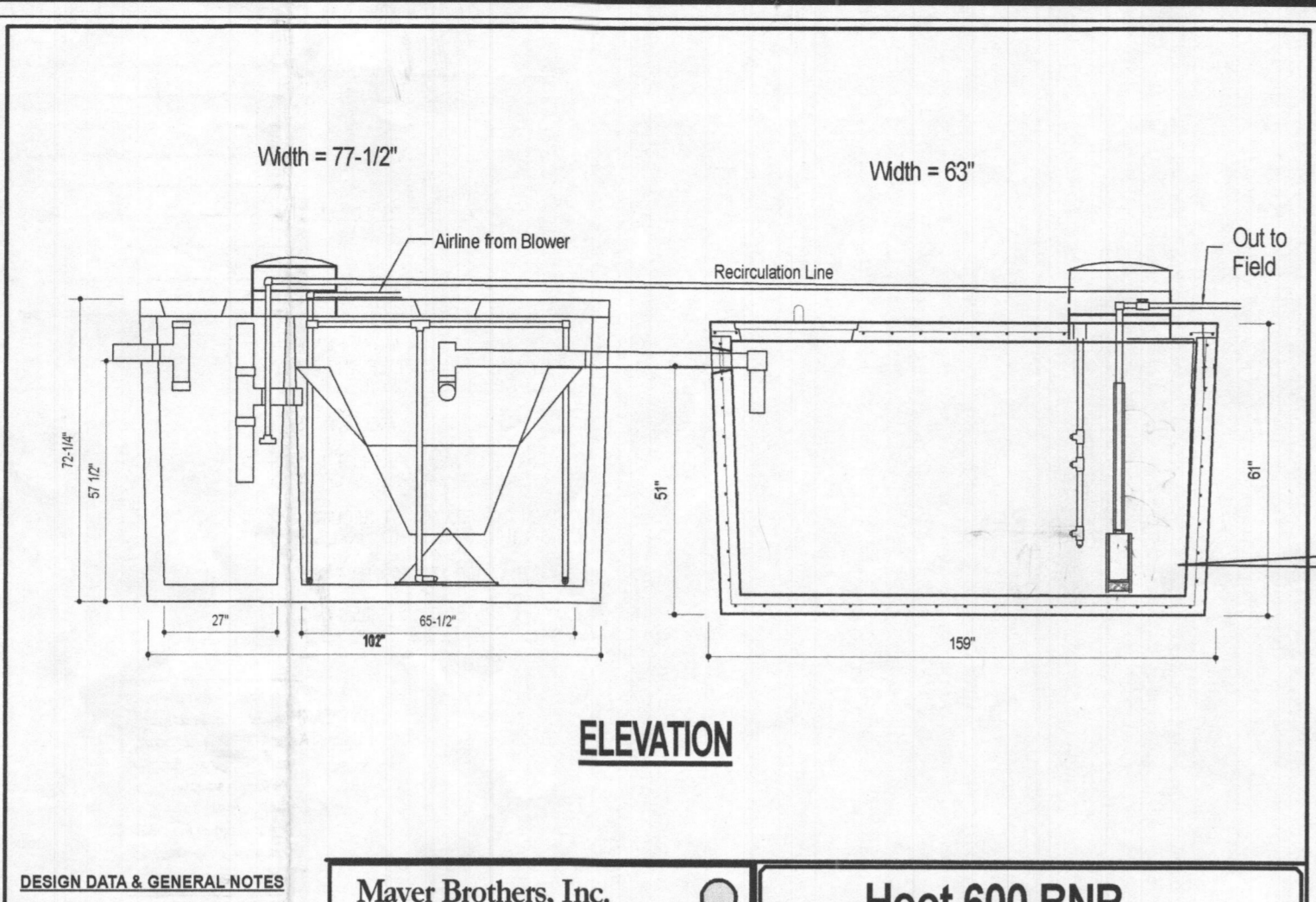
- Concrete strength f'c=4,000 p.s.i. @ 28 days. Density = 150 pcf.
- Reinforcing steel per ASTM A603, Grade 60.
- Admixtures & plasticizers per ASTM C 260 & C 494-02.
- Reinforcing per ASTM A185. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 2" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

1,500 GALLON SEPTIC/PUMP TANK 1-Compartment
NON-Traffic MAX 3 ft OF COVER

Dep. No. 1500-1C No Scale Aug. 11, 2008

Mayer Bros., Inc. 6264 Rice Road, Elkridge, Maryland 21025, Tel. 410.736.1424, Fax. 410.736.1428



Mayer Brothers, Inc. 6264 Rice Road, Elkridge, Maryland 21025, Tel. 410.736.1424, Fax. 410.736.1428

Hoot 600 BNR 1500 Pump Chamber

Drawg: BNR1800 pump No Scale Mar 7, 2014

Rectangular Trapezoidal Pump Chamber Volume Calculations (MBI 1500 Gal. Tank)

H: Height (inside dimension from bottom of chamber to top seam)	53.0 in.
W: Top Width (inside dimension)	55.0 in.
L: Top Length (inside dimension)	151.0 in.
a: Bottom Width (inside dimension)	50.5 in.
b: Bottom Length (inside dimension)	147.3 in.
Chamber Bottom Area (a x b)	7436.1 sq. in.
Water volume at inlet level (V1)	47.0 in.
Chamber width at inlet level (C1)	54.49 in.
Chamber length at inlet level (D1)	150.58 in.
Chamber Sectional Area at inlet level (C1 x D1)	8204.9 sq. in.
Chamber Volume at inlet level (V1)	36746.1 cu. in.
Water volume at alarm level (Va)	25.00 in.
Chamber width at alarm level (Ca)	52.62 in.
Chamber length at alarm level (Da)	149.02 in.
Chamber Sectional Area at alarm level (Ca x Da)	7841.8 sq. in.
Water volume at alarm level (Va)	19095.8 cu. in.
Reserved Capacity provided at alarm setting (V1-Va)	17650.3 cu. in.
Back check reserved capacity: ((S1-Sa)/6)*(C1*Di)+(C1*Ca)*(Di+Da)+Ca*Da	17650.3 cu. in.
Alarm High Water Level (from bottom of pump chamber)	25.00 in.
Pump on water level (O, from bottom of pump chamber)	21.75 in.
Chamber width at this level (Co)	52.35 in.
Chamber length at this level (Do)	148.79 in.
Chamber Sectional Area at this level (Co x Do)	7788.61 sq. in.
Water volume (Vo) to switch on pump	18559.9 cu. in.
Pump off water level (F, from bottom of pump chamber)	18.00 in.
Chamber width at this level (Cf)	52.03 in.
Chamber length at this level (Df)	148.52 in.
Chamber Sectional Area at this level (Cf x Df)	7727.43 sq. in.
Water volume (Vf) to switch pump off	13646.6 cu. in.
Volums between on-off switches: ((O-F)/6)*(Co*Do)+(Co*F)*(Do+O)+Cf*F	2909.8 cu. in.
Back Check dosing volume switch setting: Vo-Vf	2909.8 cu. in.

Hoot 600 BNR BAT Tank Elevations - Lot 22

Top of tank high finished grade	475.70
Top of tank elevation	473.10
Delta (cover above tank, 3" max.)	2.60 ft.
Outside bottom of BAT tank elevation	467.08
Invert in	471.87
Invert out	471.70

MBI 1500 Gal. Pump Tank Elevations - Lot 22

Top of tank high finished grade	475.40
Top of tank elevation	472.40
Delta (cover above tank, 3" max.)	3.00 ft.
Outside bottom of tank	467.32
Bottom of chamber elevation	467.65
Invert in	471.57
Bottom of Pump (set on 6" block)	468.15

LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

Per MDE BASIC LPD DESIGN - Draft Version 1 - Date July 3, 2014

ADDRESS: 13815 Mill Creek Court
SUBDIVISION: Crawford (Mill Creek)
DATE: December 2018

Design Flow: 750 gpd
Pump Off Elevation: 469.15
Inv. Out of Pump Tank: 472.40
Pump Bottom Elevation: 468.15

Number of Manifolds: 1
Type: End-Feed

Manifold 1
Trench 1 Elev: 473.2 Length: 35.0
Trench 2 Elev: 473.0 Length: 45.4

0.2' Elev. Range, Single Manifold OK

Trench	From	To	Flow Rate (gpm)	Hole Spacing (ft)	No. of Holes	Trench Length (ft)	Lateral Length (ft)	Flow per LF Trench (gpm)	Flow per LF Lateral (gpm)	Lateral Diam. (in.)	Type			
1	35	End	473.2	2.0	5/16	1.63	3.18	11	17.91	31.82	1.530	1.5	SCH 40	
2	45.4	End	473.0	2.2	5/16	1.71	3.24	14	23.91	42.16	0.527	1.574	1.5	SCH 40

Min. System Discharge Rate: 41.8 gpm

Manifold Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857

Force Main Diam. 2.0 in Vel. 4.3 fps Friction Loss (Table 4.4) 2.857

Minimum Dose: 125.0 gal (Vol. in FM, Min. Sr. Lat. = 45.9 gal. < 1/6 Design Flow = 750/6 = 125 gal)

Calculate Total Design Head

1. Friction Loss in FM & Mfnld: 51 ft X 2.857 = 145.6 ft

Friction Loss from Fittings:

No.	Type	Equ. Length	No.	Type	Equ. Length
5	90 Deg. Std. El.	7.0	0	Gate Valve	1.3
1	45 Deg. Std. El.	4.0		Globe Valve	55
1	90 Deg. Side Tee	10.0		Angle Valve	28
1	Coupling or Str.				
1	Run of Tee	2.0			

Friction Loss from Laterals:

2. Static Head: 4.05 ft

3. Min. Distal (discharge) head: 2 ft

TDH: 102.2 ft

Note #1: The minimum dose is the greater value of either 1/6 the Design Flow or ((S x lateral volume) - one volume the manifold + one volume of the force main)

CRAWFORD SUBDIVISION (Mill Creek)

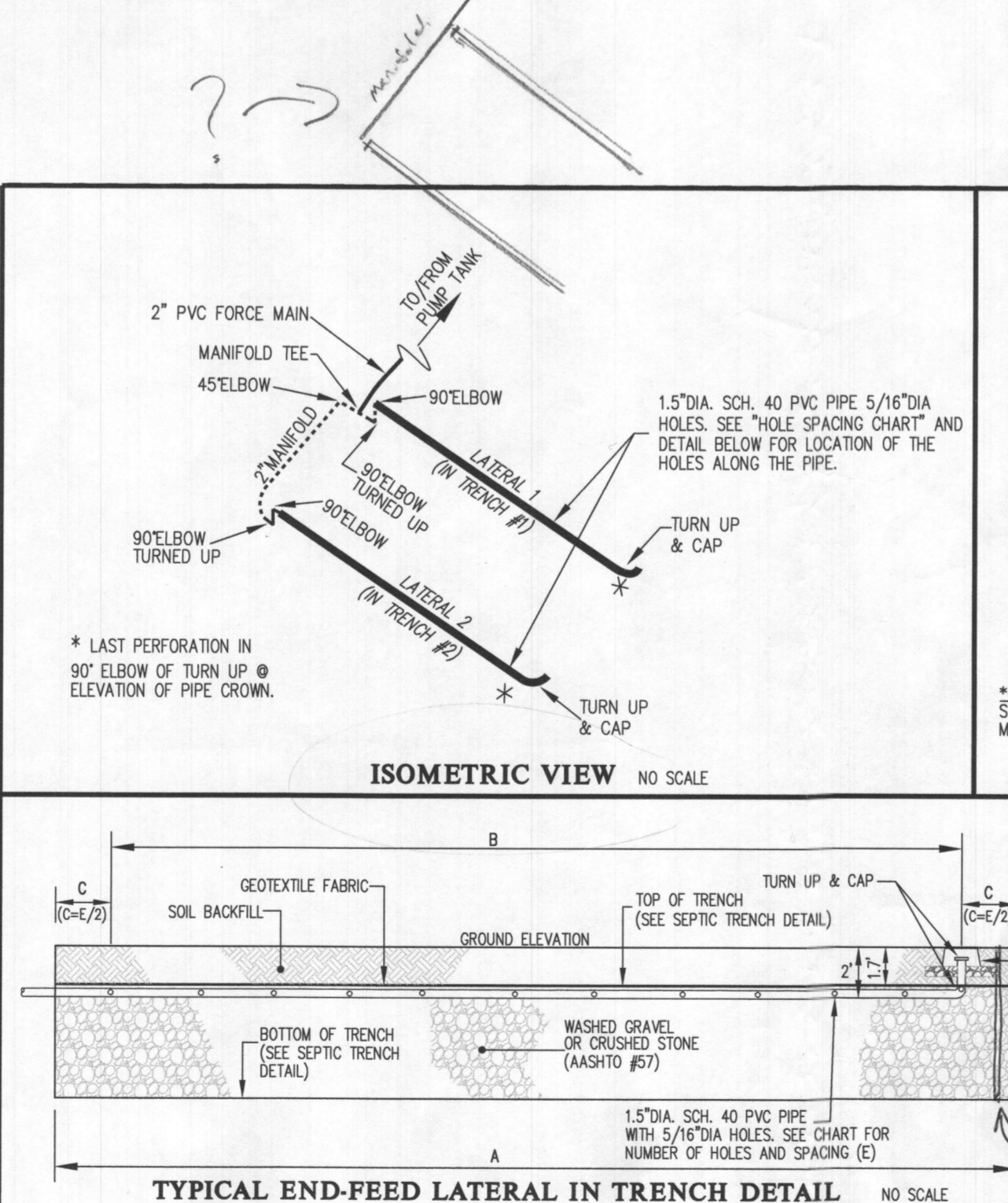
SDA Trench Size Calculations (Lot 22)

System Input Information	Initial System	Replaces System No. 1	Replaces System No. 2
Application Rate	1.2	1.2	1.2
Effective area beginning depth	3.5	3.0	3.5
Effective area maximum bottom depth	8.0	8.0	8.0
Number of Bedrooms	5	5	5
Design flow at 150 gal./bedroom	750	750	750
Drainfield area required (Design flow/application rate)	625 s.f.	625 s.f.	625 s.f.
Effluent pipe depth to invert	2.0	2.0	2.0
Effective sidewall depth "D"	4.5	5.0	4.5
Trench Width "W" (2 or 3 feet)	3.0	3.0	3.0
SideWall Reduction Percent	38.46%	35.71%	38.46%
Linear feet of trench required (drainfield area x sidewall reduction)/W	80.1	74.4	80.1

Trench Layout Information

Total (linear feet)	2	2	4
Minimum Trench Spacing:	80.2	74.6	80.4
12.0	13.0	12.0	

For trenches with no sidewall credit the spacing is 6' for a 2' wide trench and 9' for a 3' wide trench (measured edge to edge). All trenches utilizing sidewall reduction credit must be spaced a min. of 30' for effective sidewall not over 3.5'. If >3.5', then spacing formula is 2D+W up to a maximum of 18'.



SEPTIC TRENCH DETAIL

GROUND ELEV. @ Trench #1 = 475.2
Trench #2 = 475.0

PIPE INVERT Trench #1 inv.=473.2
Trench #2 inv.=473.0

EFFECTIVE AREA BEGINNING DEPTH

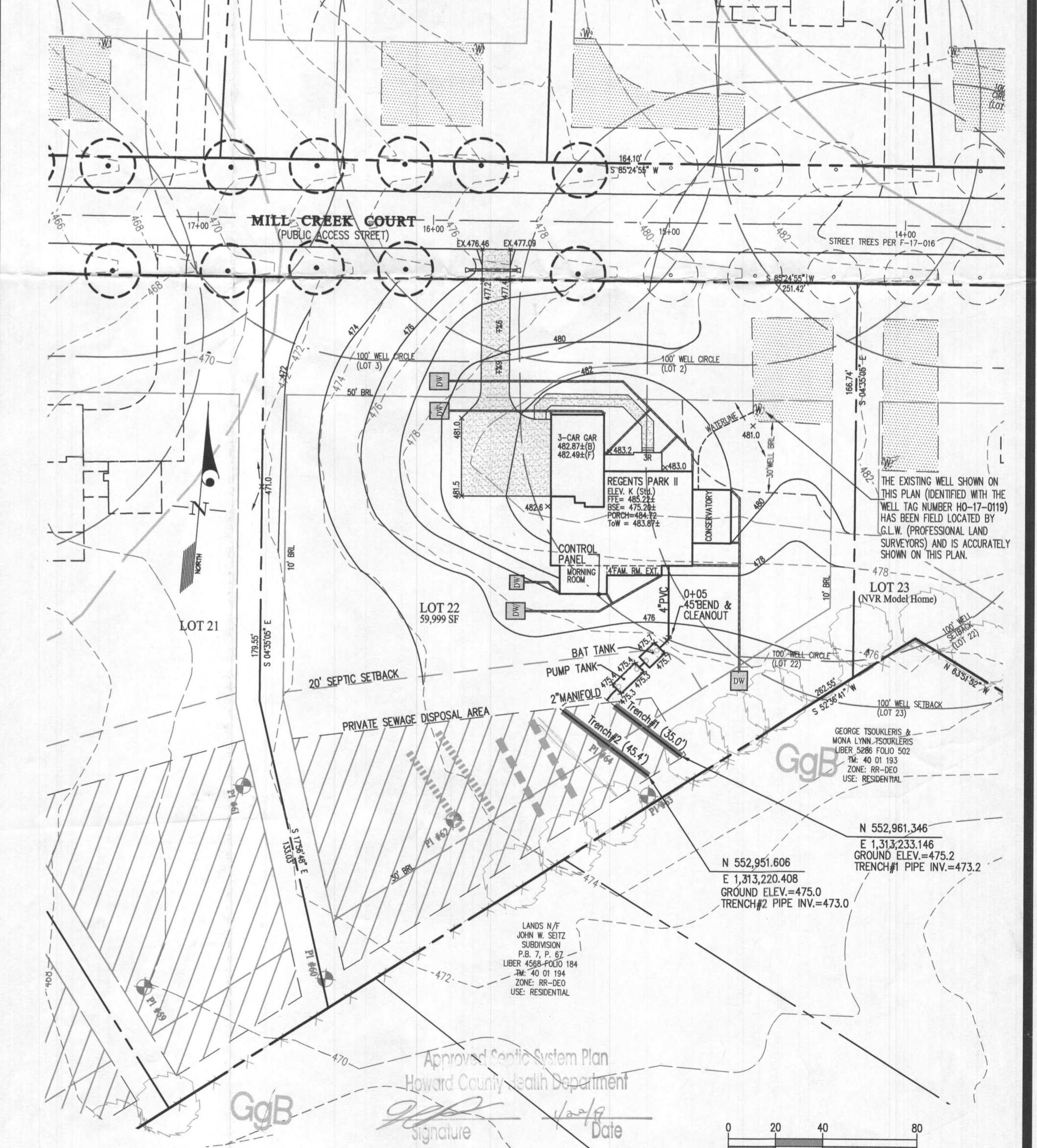
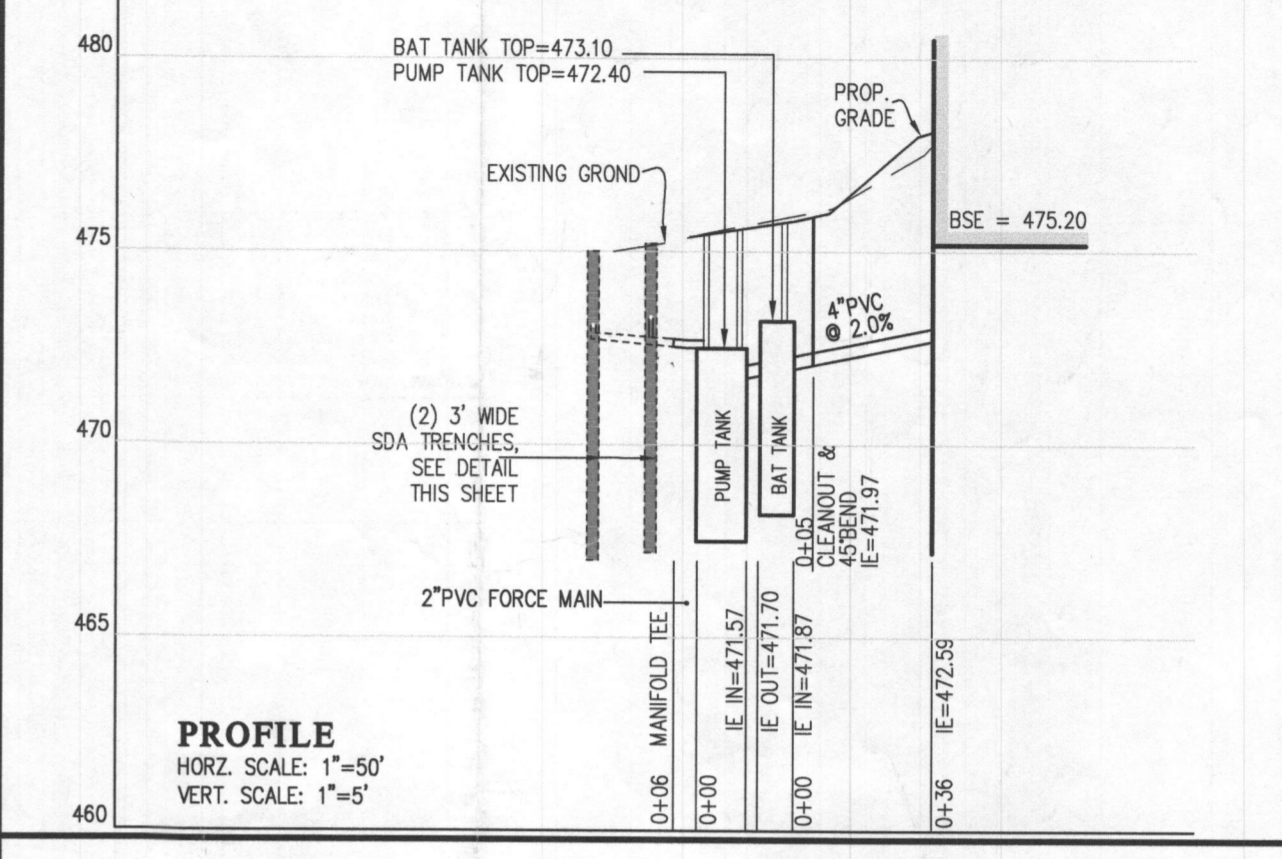
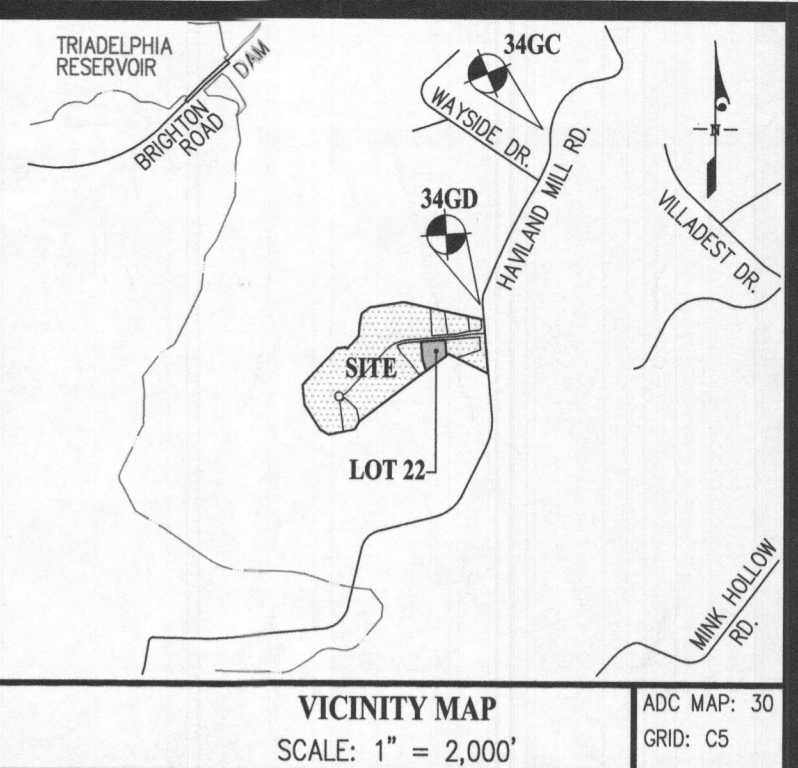
BOTTOM OF TRENCH @ Trench #1 inv.=467.2
Trench #2 inv.=467.0

NOTE: SEE SDA CALCULATIONS AS PIPE INVERT & EFFECTIVE AREA BEGINNING DEPTH MAY NOT BE THE SAME FOR ALL SYSTEMS.

HOLE SPACING CHART						
Trench No.	Feed Type	A	B	C	D	
1	End	35.0 ft	31.82 ft	1.59 ft	11	3.18 ft
2	End	45.4 ft	42.16 ft	1.62 ft	14	3.24 ft

A Trench Length.
B Lateral Length (pipe section between 1st and last holes).
C Distance from the end of the trench to the first and last holes.
D Total number of holes including the first and last holes.
E Orifice Spacing (distance between holes)

- NOTES:**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS OF 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 EARTH COVER OVER THE TANK(S) IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
 - THE BLOWER MAY NOT BE LOCATED MORE THAN 1/2 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
 - THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 - THE BAT SYSTEM 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.
 - ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 - AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
 - THE HEALTH DEPARTMENT REQUIRE DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
 - THE WELL TAG # 17-0119 HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
 - 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.



GLW PLANNING | ENGINEERING | SURVEYING

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PHONE: 301-421-4024 | BALT.: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

DESIGNED BY: MBT
DRAWN BY: KLP
CHECKED BY: CKG

DATE	REVISION	BY	APP'R.

PREPARED FOR:
NVR INC.
9720 PATUVENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-5956

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 28972, EXPIRATION DATE: MAY 26, 2020

12/5/18

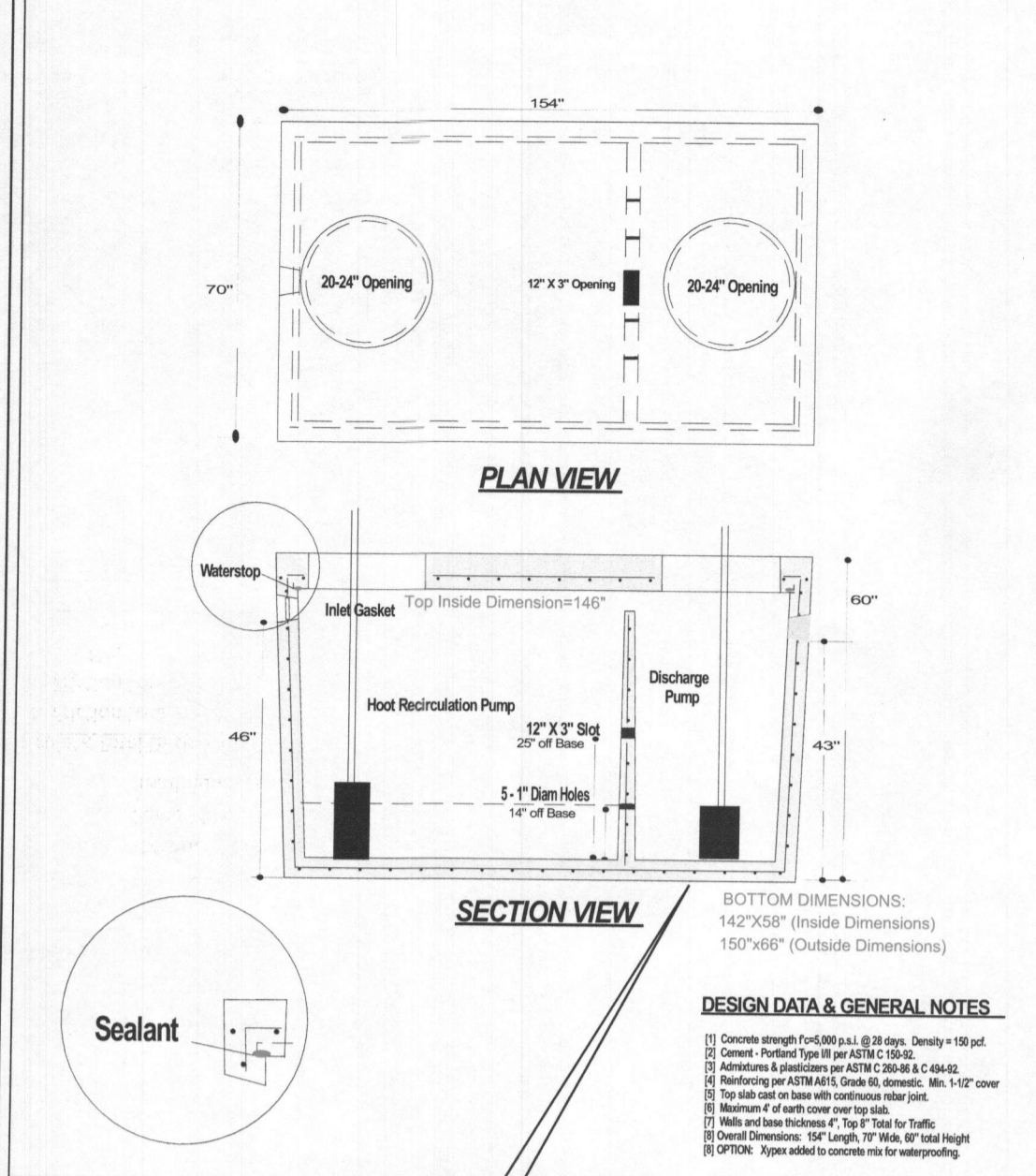
SITE PLAN FOR BAT INSTALLATION

CRAWFORD SUBDIVISION
LOT 22 (13815 MILL CREEK COURT)
PLAT No. 24600-24607

ELECTION DISTRICT No. 5

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=40'	RR-DEO	17071
DATE	TAX MAP - GRID	SHEET
DEC. 2018	34&39-19&6	1 OF 1



1500 Gal. Top-Tight Tank
Set up as Hoot pump chamber

DESIGN DATA & GENERAL NOTES:
 1. Concrete strength: 4000 psi (28 day)
 2. Concrete cover: 2 inches
 3. Reinforcement: #4 bars @ 18 inches on center
 4. Maximum slab thickness: 12 inches
 5. Top slab: 4 inches with continuous edge joint
 6. Minimum of 1/4 inch steel reinforcement
 7. Maximum of 1/4 inch steel reinforcement
 8. Ground clearance: 10 feet
 9. 1/2 inch steel reinforcement
 10. 1/2 inch steel reinforcement

PUMP CHAMBER FLOAT SWITCH INFORMATION:

- ALARM HIGH WATER LEVEL @ 21.5'
- PUMP-ON WATER LEVEL @ 19.5'
- PUMP-OFF @ 16'

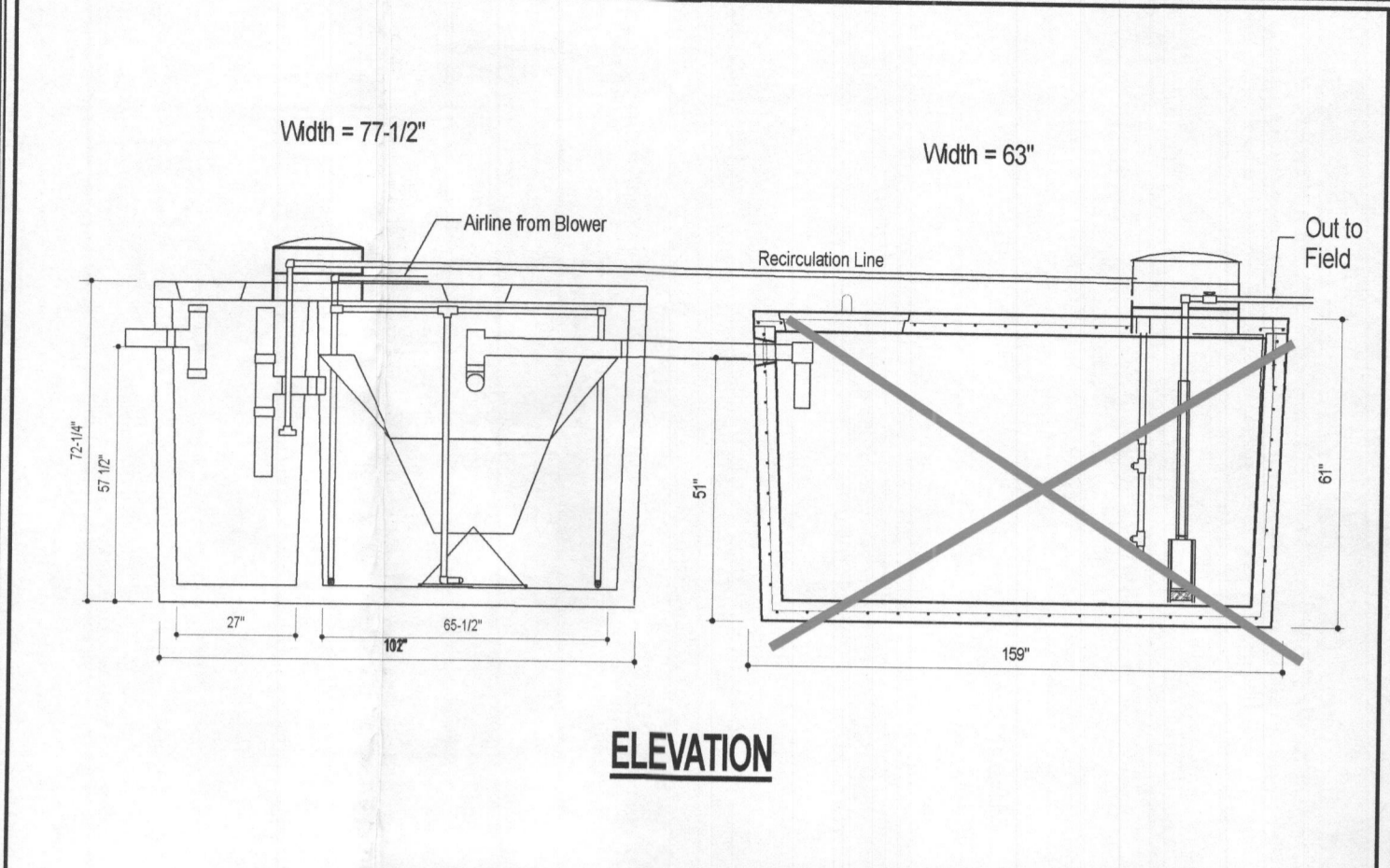
NOTES:
 1. SWITCH WATER LEVELS ARE MEASURED FROM THE BOTTOM OF THE TANK CHAMBER.
 2. TANK SHALL BE INSTALLED SO THAT THE BOTTOM OF THE CHAMBER IS ABSOLUTELY LEVEL.
 3. SWITCH LEVELS ARE CALCULATED FOR THE TANK CHAMBER DIMENSIONS SHOWN. IF A CHAMBER DIMENSION CHANGES, THEN THE SWITCH WATER LEVELS MUST BE RECALCULATED.
 4. PROVIDE A 1/4" SIPHON BREAKER HOLE @ THE TOP END OF THE DISCHARGE PIPE INSIDE THE TANK IF THE INVERT OF THE LOWEST SDA LATERAL IS BELOW THE PUMP TANK INVERT OUT.
 5. USE A UNION DISCONNECT TO FACILITATE PUMP REPLACEMENT.

Hoot 600 BNR BAT Tank Elevations - Lot 22

Top of tank high finished grade	475.70
Top of tank elevation	473.10
Delta (cover above tank, 3" max.)	2.60 ft.
Outside bottom of BAT tank elevation	467.08
Invert in	471.87
Invert out	471.70

MBI 1500 Gal. Tight-Top Pump Tank Elevations - Lot 22

Top of tank high finished grade	475.40
Top of tank elevation	472.40
Delta (cover above tank, 3" max.)	3.00 ft.
Outside bottom of tank	467.40
Bottom of chamber elevation	467.73
Invert in	471.23
Bottom of Pump (set on 6" block)	468.23



Hoot 600 BNR
1500 Pump Chamber

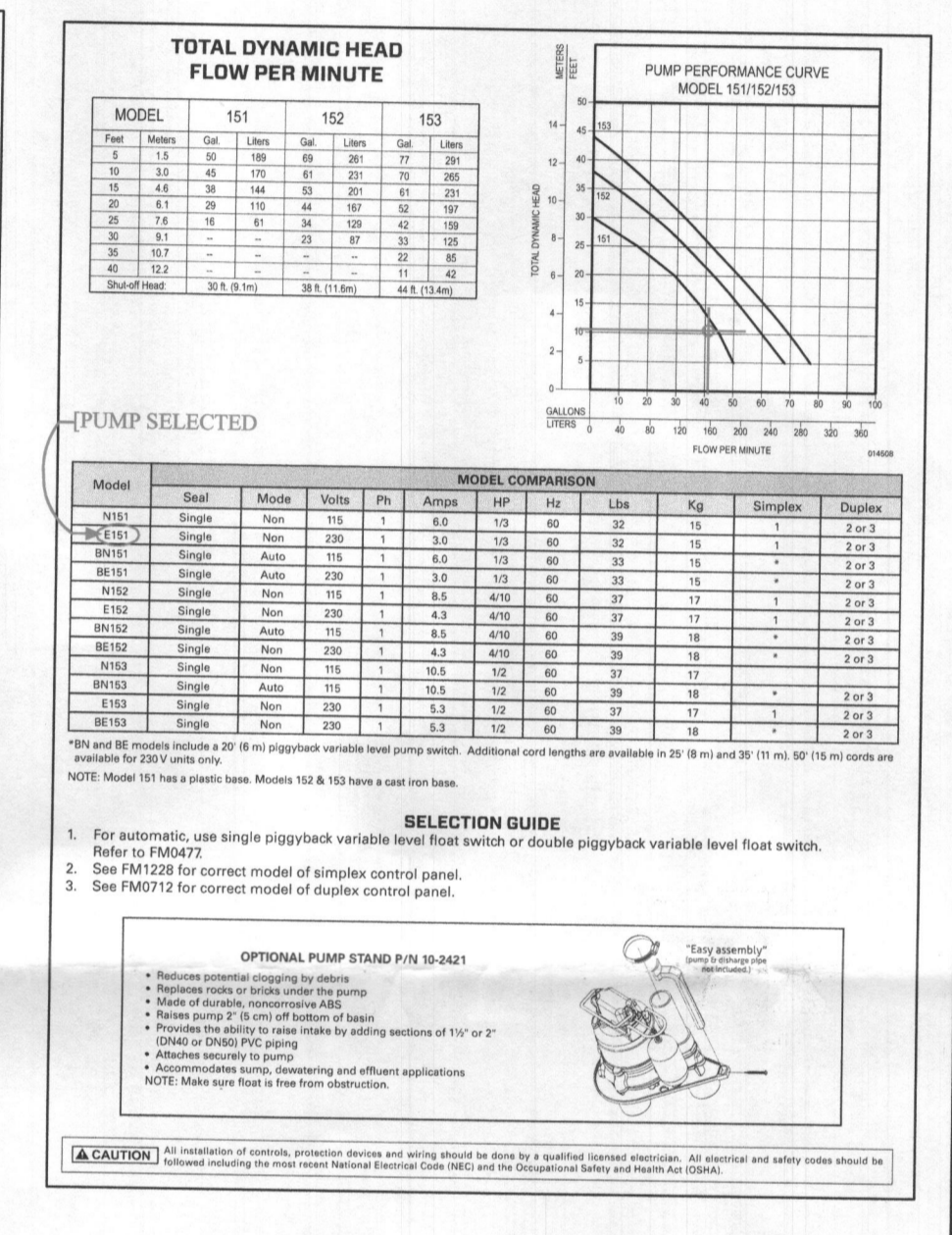
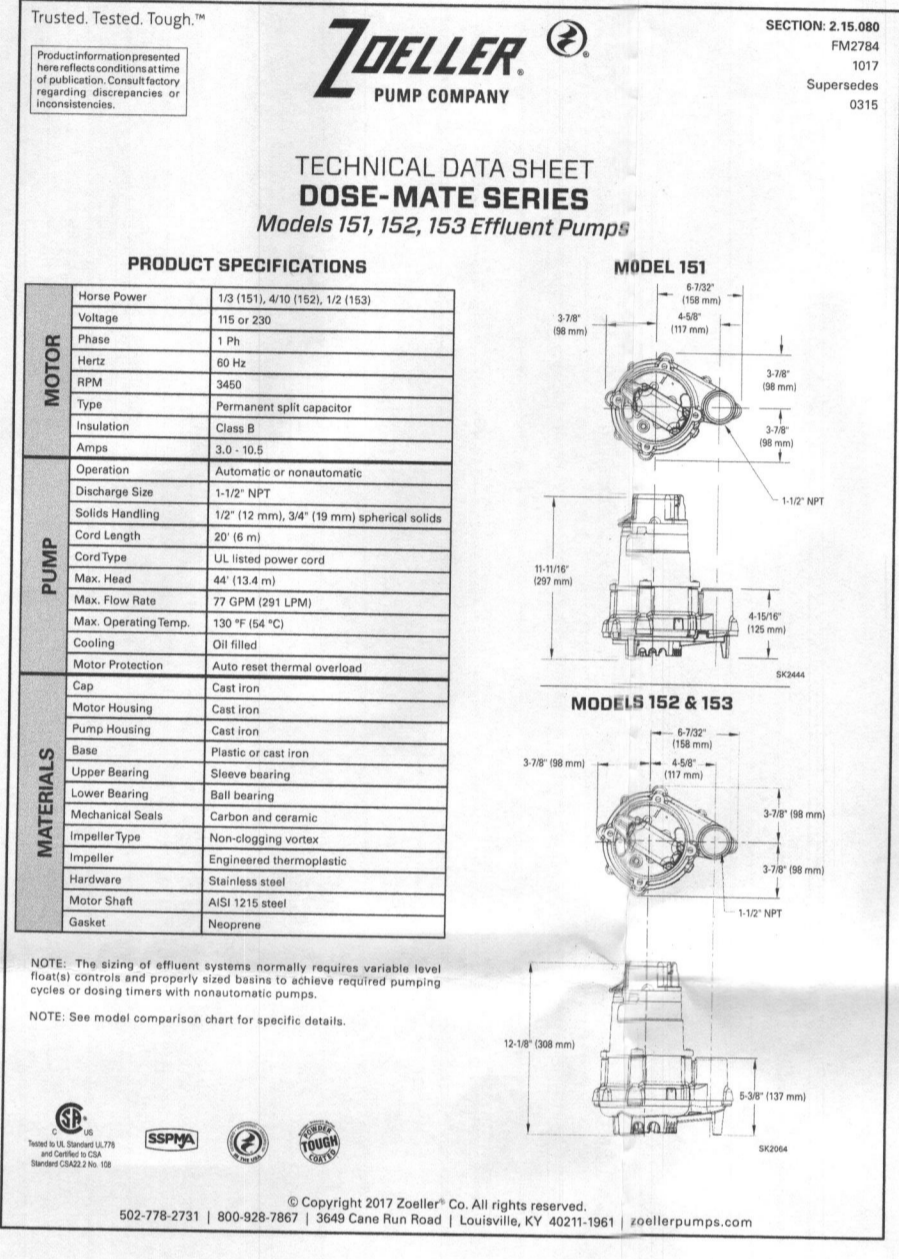
DESIGN DATA & GENERAL NOTES:
 1. Concrete strength: 4000 psi (28 day)
 2. Concrete cover: 2 inches
 3. Reinforcement: #4 bars @ 18 inches on center
 4. Maximum slab thickness: 12 inches
 5. Top slab: 4 inches with continuous edge joint
 6. Minimum of 1/4 inch steel reinforcement
 7. Maximum of 1/4 inch steel reinforcement
 8. Ground clearance: 10 feet
 9. 1/2 inch steel reinforcement
 10. 1/2 inch steel reinforcement

Tight-Top Trapezoidal Pump Chamber Volume Calculations (MBI 1500 Gal. Tank)

H: Height (inside dimension from bottom of chamber to top seam)	50.0 in.
W: Top Width (inside dimension)	62.0 in.
L: Top Length (inside dimension)	146.0 in.
a: Bottom Width (inside dimension)	58.0 in.
b: Bottom Length (inside dimension)	142.0 in.
Chamber Bottom Area (a x b)	8236.0 sq. in.
Height from bottom of chamber to inlet level (Si)	42.0 in.
Chamber width at inlet level (Ci)	61.36 in.
Chamber length at inlet level (Di)	145.36 in.
Chamber Sectional Area at inlet level (Ci x Di)	8919.3 sq. in.
Chamber Volume at inlet level (Vi)	360182 cu. in. = 1559 gal.

Float Switch Setting Parameters & Volume Calculations

Design Flow per day (min. reserved capacity to set alarm level)	6 doses at 750 gal/dose
Dosing frequency per day & volume per dose	6 doses at 125.0 gal/dose
Water level (Sa) to switch on alarm	21.50 in.
Chamber width at alarm level (Ca)	180793 cu. in.
Chamber length at alarm level (Da)	143.72 in.
Chamber Sectional Area at alarm level (Ca x Da)	8588.0 sq. in.
Water volume at alarm level (Va)	179389 cu. in.
Reserved Capacity provided at alarm setting (Vi-Va)	179389 cu. in.
Back check reserved capacity: ((Si-Sa)/6) * (Ci*Di) + (Ci*Ca) * (Di+Da) + Ca*Da	777 gal.
Alarm High Water Level (from bottom of pump chamber)	21.50 in.
Pump on water level (O, from bottom of pump chamber)	19.50 in.
Chamber width at this level (Co)	59.56 in.
Chamber length at this level (Do)	143.56 in.
Chamber Sectional Area at this level (Co x Do)	8550.43 sq. in.
Water volume (Vo) to switch pump on:	163660 cu. in.
Pump off water level (F, from bottom of pump chamber)	16.00 in.
Chamber width at this level (Cf)	59.28 in.
Chamber length at this level (Df)	143.28 in.
Chamber Sectional Area at this level (Cf x Df)	8493.64 sq. in.
Water volume (Vf) to switch pump off:	133833 cu. in.
Volume between on-off switches: (O-F)/6 * (Co*Do) + (Co* Cf) * (Do+Df) + Cf*Df	29827 cu. in.
Back Check dosing volume switch setting: Vo-Vf	29827 cu. in.



LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS
Per MDE BASIC LPD DESIGN - Draft Version 1 - Date July 3, 2014

ADDRESS: 13815 Mill Creek Court
SUBDIVISION: Crawford (Mill Creek)
DATE: March 22, 2019

Design Flow: 750 gpd
Pump Off Elevation: 469.07
In. Out of Pump Tank: 472.40
Pump Bottom Elevation: 468.23

Number of Manifolds: 1

Manifold 1 Type: End-Feed

Trench 1	Elev: 473.2	Length: 35.0
Trench 2	Elev: 473.0	Length: 45.4

0.2' Elev. Range, Single Manifold OK

Manifold Length: 27 ft Type: SCH 40
Holtz Force Main Length: 11.4 ft Type: SCH 40

Manifold	Trench Length (ft)	Feed	Pipe Inv. Elev. (ft)	Head (ft)	Hole Diam. (in)	Hole Flow Rate (gpm)	Hole Spacing (ft)	Number of Holes	Trench Flow Rate (gpm)	Lateral Length (ft)	Flow per LF Trench (gpm)	Cal. per LF Trench (in ³)	Lateral Diam. (in)	Type
1	35	End	473.2	2.0	5/16	1.63	3.18	11	17.91	31.82	0.512	1.530	1.5	SCH 40
2	45.4	End	473.0	2.2	5/16	1.71	3.24	14	23.91	42.16	0.527	1.574	1.5	SCH 40

Min. System Discharge Rate: 41.8 gpm

Manifold Diam. 2.0 in Vel. 4.3 fpm Friction Loss (Table 4.4) 2.857
Force Main Diam. 2.0 in Vel. 4.3 fpm Friction Loss (Table 4.4) 2.857
Minimum Dose: 125.0 gal (Vol. in FM, Mon. 5x Lat. + 45.9 gal. < 1/6 Design Flow = 750/6 = 125 gal.)

Calculate Total Design Head

1. Friction Loss in FM & Manifold: 51 ft x 2.857 = 145.8 ft

Friction Loss from Fittings: 7.0 ft

No.	Type	Equ. Length	No.	Type	Equ. Length
5	90 Deg. Std El	7.0	0	Gate Valve	1.3
1	45 Deg. Std El	4.0	0	Globe Valve	55
1	90 Deg. Side Tee	10.0	0	Angle Valve	28
1	Coupling or str.	0	0	0	0
1	Run of Tee	2.0	0	0	0

Friction Loss from Laterals: 1.5 ft

2. Static Head: 4.13 ft

3. Min. Distal (discharge) head: 2 ft

TDH: 10.3 ft

Note #1: The minimum dose is the greater value of either 1/6 the Design Flow or (5 lateral volume) one volume the manifold - one volume of the force main

CRAWFORD SUBDIVISION (Mill Creek)
SDA Trench Size Calculations (Lot 22)

System Input Information

Application Rate	Initial System No. 1	Replacement System No. 2	System No. 2
1.2	1.2	1.2	1.2

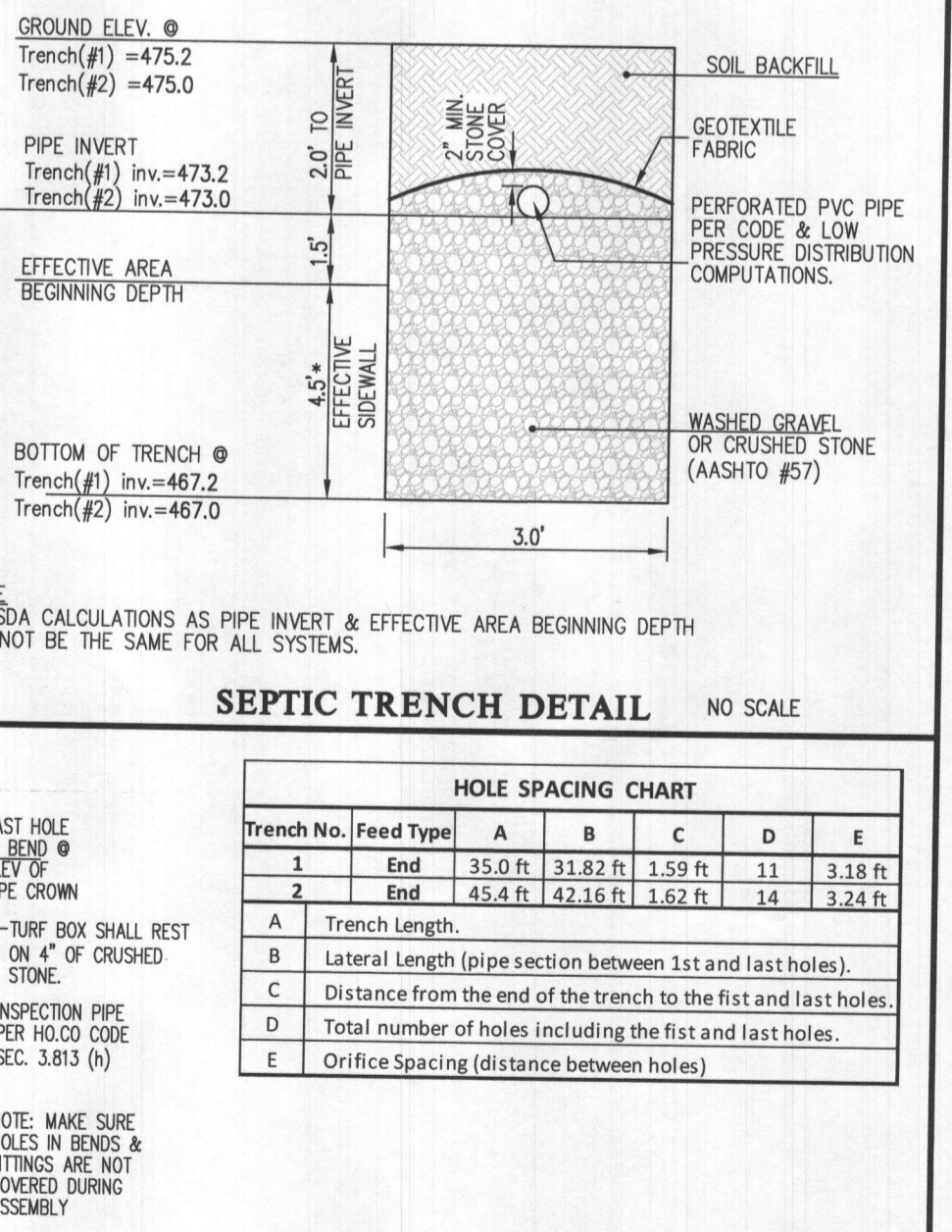
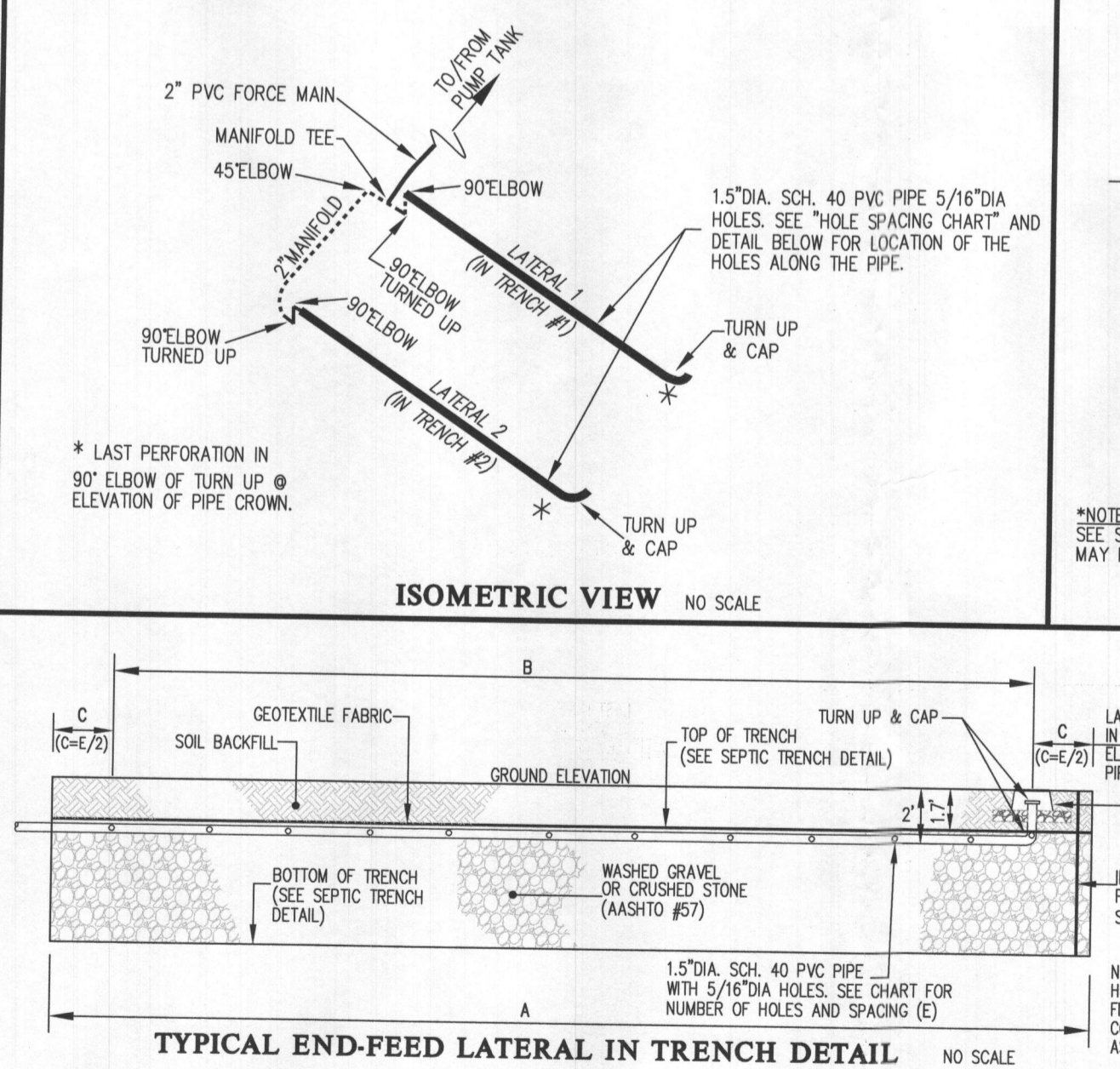
Effective area beginning depth: 3.5, 3.0, 3.5
Effective areamaximum bottom depth: 8.0, 8.0, 8.0
Number of Bedrooms: 5, 5, 5
Design flow at 150 gal./day/bedroom: 750, 750, 750

Absorption Trench Calculations

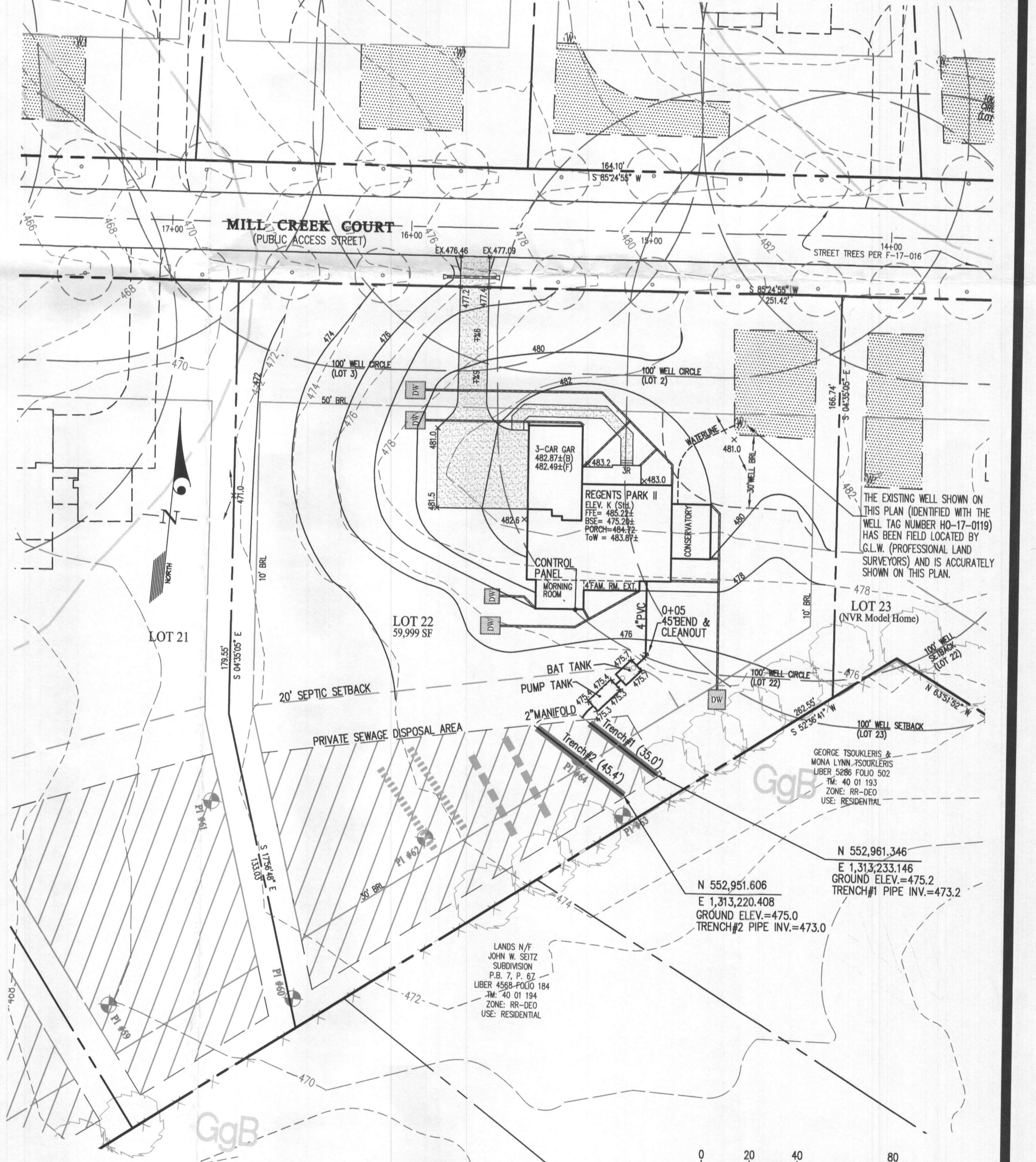
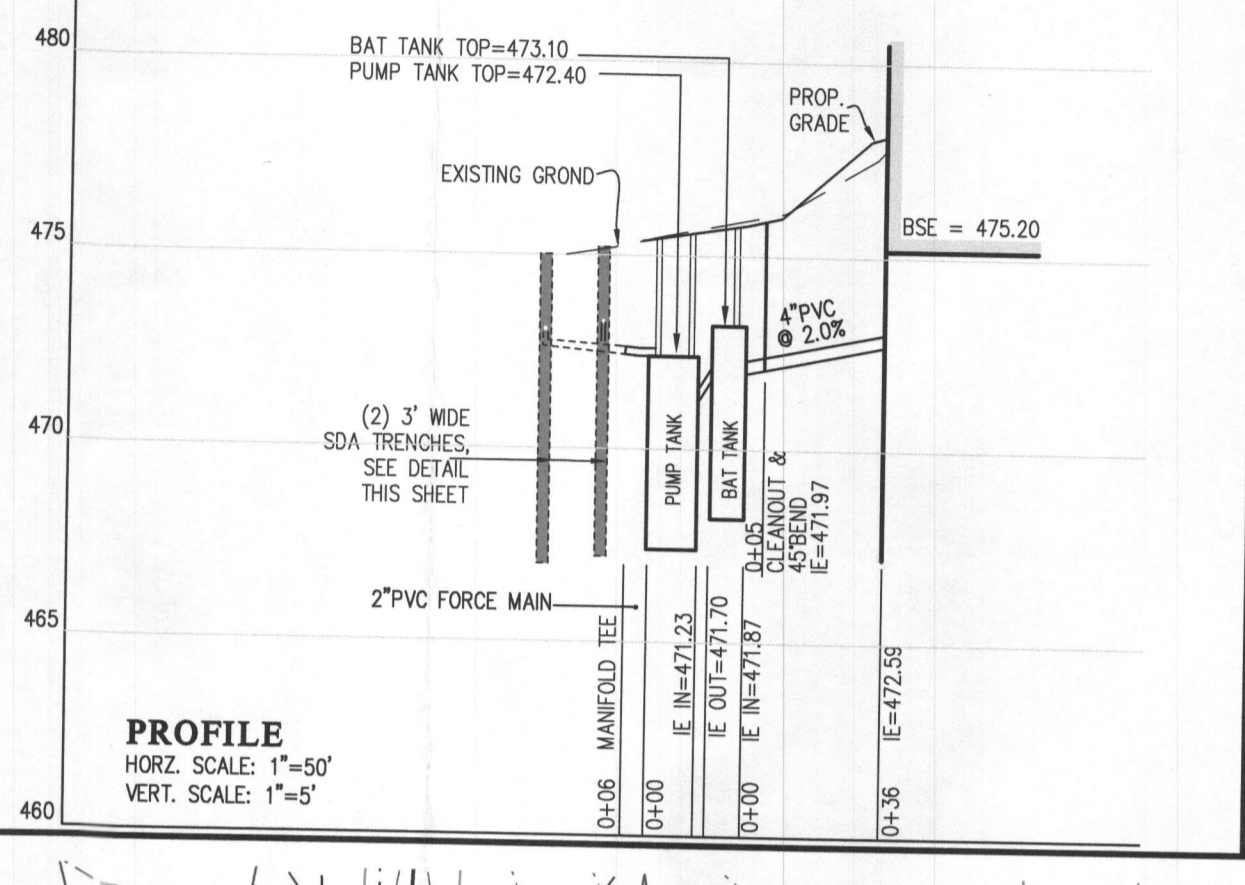
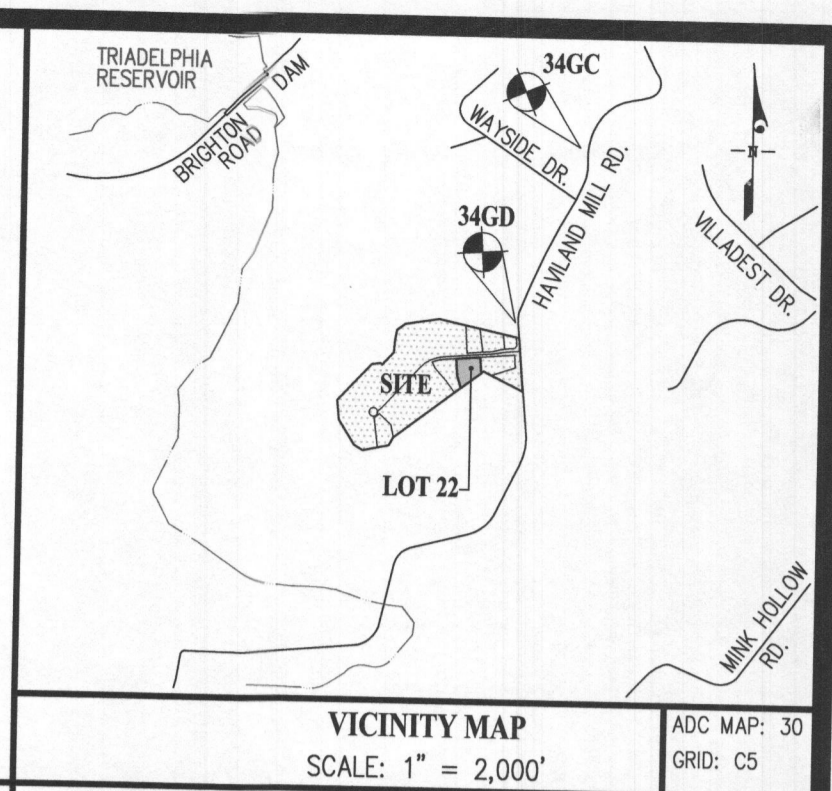
Drainfield area required (Design flow/application rate)	625 s.f.	625 s.f.	625 s.f.
Effluent pipe depth to invert (Cannot exceed 2' if LPO. Cannot exceed 4' if conventional. Field run top to 1-ft interval is required if depth is less than 2')	2.0	2.0	2.0
Effective sidewall depth "D" (Depth between the effective beginning depth or pipe depth (which ever is deeper) and maximum trench bottom.)	4.5	5.0	4.5
Side wall Reduction Percent	38.46%	35.71%	38.46%
Linear feet of trench required (Drainfield area x sidewall reduction/W)	80.1	74.4	80.1

Trench Layout Information

Number of trenches to use	2	2	4
Total (linear feet)	80.2	74.6	80.4
Minimum Trench Spacing: (For trenches with no sidewall credit the spacing is 6' for a 2' wide trench and 9' for a 3' wide trench (measured edge to edge). All trenches utilizing sidewall reduction credit must be spaced a min. of 10' for effective sidewall not over 3.5'. If >3.5', then spacing formula is 2D+W up to a maximum of 10')	12.0	13.0	12.0



- NOTES:**
- 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 EARTH COVER OVER THE TANK(S) IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
 - THE BLOWER MAY NOT BE LOCATED MORE THAN 1/2 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
 - THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 - THE BAT SYSTEM 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.
 - ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 - AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
 - THE HEALTH DEPARTMENT REQUIRE DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
 - THE WELL TAG # 17-0119 HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
 - ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS LOCATED HAVE BEEN SHOWN.



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PLANNING [ENGINEERING] SURVEYING

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PHONE: 301-421-4024 | BAL: 410-880-1820 | DCVA: 301-989-2524 | FAX: 301-421-4186

DESIGNED BY: MBT
DRAWN BY: KLP
CHECKED BY: CKG

DATE	REVISION	BY	APPR.

PREPARED FOR:
NVR INC.
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-5956

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12875
EXPIRATION DATE: MAY 26, 2020

3/27/19

CRAWFORD SUBDIVISION
LOT 22 (13815 MILL CREEK COURT)
PLAT No. 24600-24607

ELECTION DISTRICT No. 5
HOWARD COUNTY, MARYLAND

SCALE: 1" = 40'

ZONING: RR-DEO

G. L. W. FILE No. 17071

DATE: MAR. 2019

TAX MAP - GRID: 34&39-19&6

SHEET: 1 OF 1

Wolf, Kevin

From: Nancy Mayer <mbi1959@yahoo.com>
Sent: Tuesday, March 19, 2019 3:26 PM
To: Wolf, Kevin
Cc: sharon@mayerprecast.com
Subject: RE: Hoot holding tanks

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Kevin,
I will do my best to reach the engineer tomorrow. I will be teaching the MOWPA O/M class at the HO Co utilities building, so I will reach out when I can

Thank you,

Nancy Mayer
President
Mayer Bros.,Inc.
410-796-1434

On Tue, 3/19/19, Wolf, Kevin <KWolf@howardcountymd.gov> wrote:

Subject: RE: Hoot holding tanks
To: "Sharon King" <sharon@mayerprecast.com>
Cc: "Nancy Mayer (mbi1959@yahoo.com)" <mbi1959@yahoo.com>
Date: Tuesday, March 19, 2019, 1:47 PM

Nancy,
We have reviewed this proposal for the Mill Creek leaking pump tank. Unfortunately we cannot approve this design you have submitted. The 2 compartment setup with the 1" holes in the lower part of it does not give us a better solution. However, if you can submit this to the builders engineer and have them redline the current BAT site plan with this new tank along with their stamped seal of approval, we will accept it.

Kevin

-----Original Message-----

From: Sharon King <sharon@mayerprecast.com>

Sent: Monday, March 18, 2019 11:09 AM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: Nancy Mayer (mbi1959@yahoo.com) <mbi1959@yahoo.com>
Subject: RE: Hoot holding tanks

[Note: This email originated

mastic seam. We used to do this with WSSC grease interceptors and it actually caused more problems than it prevented by "floating the lids" and unsealing what was sealed. The mastic has NO memory and cannot be resealed without completely removing and resealing the lid. We make a new style of tank for high water areas where the top is poured ON the tank and the top cannot be floated off. They are primarily for the WSSC interceptors and the Queen Anne County Sewer extension. I would like to replace the 2 pump chambers going into Mill Creek with these style tanks.

The drawings

are attached along with our standard one compartment pump chamber. (You have already approved the standard Step tank for a septic tank). I would propose we use a 2 compartment tank so we can set the bottom flow through at 14" so we will always protect our pump in the first chamber, and the last chamber for the outlet distribution pump. I like this better than worrying if floats are set correctly.

We have a traffic Step tank

available that we can replace the leaking tank with, and next week we would like to use a regular Step tank for the unit that is not installed yet.

Will you approve these substitutions? Please call with any questions.

Thank you,

Nancy Mayer
President
Mayer Bros.,Inc.

410-796-1434

--- On Wed, 3/13/19, Sharon King <sharon@mayerprecast.com>
wrote:

> From: Sharon
King <sharon@mayerprecast.com>
> Subject: Cut sheets
>
To: "Nancy Mayer (mbi1959@yahoo.com)"
<mbi1959@yahoo.com>
> Date: Wednesday, March 13, 2019, 10:27 AM > > > > > > > > Respectfully, > > Sharon King > Mayer
Bros., Inc.
> 410-796-1434
> Sharon@mayerprecast.com
>
>
>
>
>

from outside of the organization. Please only click on links or attachments if you know the sender.]

Hi Kevin,
Please take a look at this drawing. The job is waiting for your approval.
Should you
have questions, please give Nancy a call.
Thanks,

Respectfully,

Sharon King
Mayer Bros.,
Inc.
410-796-1434
Sharon@mayerprecast.com

-----Original
Message-----
From: Wolf, Kevin [mailto:KWolf@howardcountymd.gov]
Sent: Monday, March 18, 2019 10:19 AM
To: Nancy Mayer
Cc: scbackhoe@comcast.net;
Sharon King
Subject: RE: Hoot holding
tanks

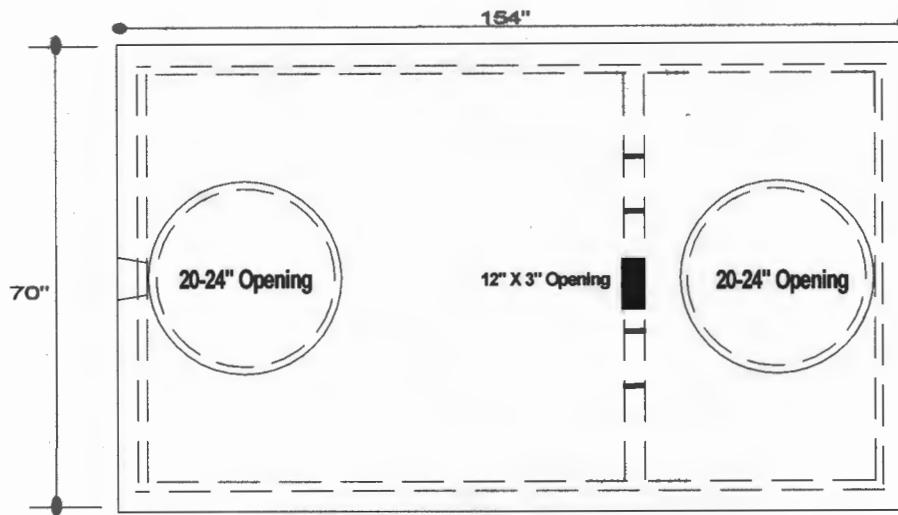
Nancy,
I tried calling you Friday. For the current Mill Creek project, I am a little confused as to the 2 compartment pump tank you are referring to. You say the flow through can be set at 14" are you talking about the slot in the partition? Can you send me an exact drawing of what you are proposing for this project?

Kevin

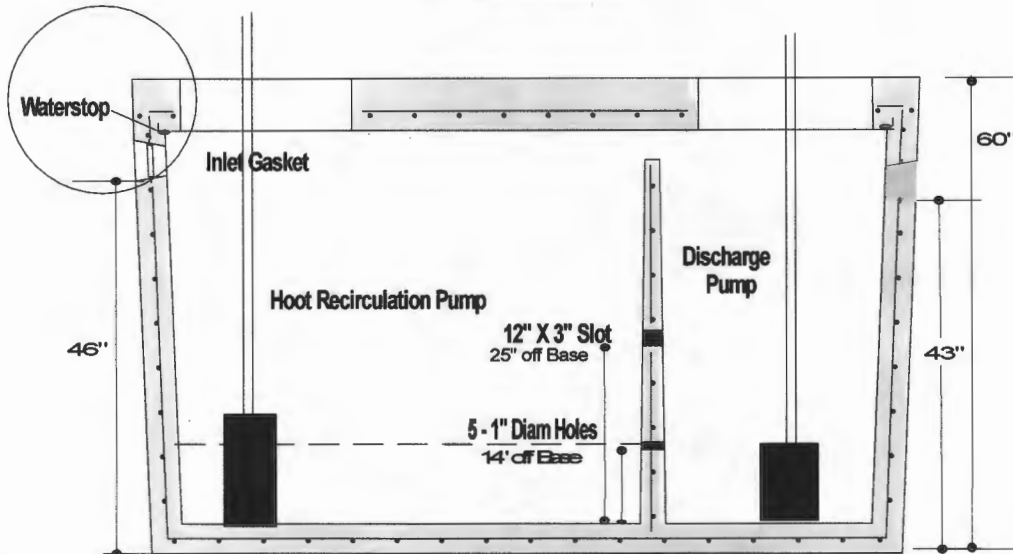
-----Original Message-----
From: Nancy Mayer <mbi1959@yahoo.com>
Sent: Wednesday, March 13, 2019 11:14 AM
To: Wolf, Kevin <KWolf@howardcountymd.gov>
Cc: scbackhoe@comcast.net;
sharon@mayerprecast.com
Subject: Hoot holding tanks

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

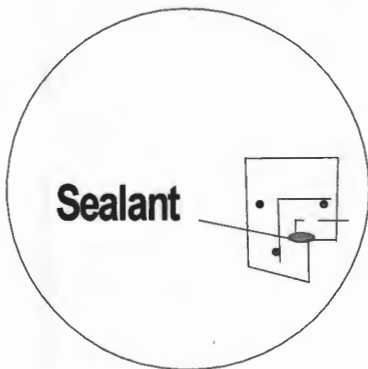
Kevin,
I'd
like to turn a problem into an opportunity. It appears we have a problem with a tank out at Millcreek with a leaking pump chamber. Ken from South Carroll said he was told he would have to water test the replacement tank above the



PLAN VIEW



SECTION VIEW



DESIGN DATA & GENERAL NOTES

- [1] Concrete strength $f'c=5,000$ p.s.i. @ 28 days. Density = 150 pcf.
- [2] Cement - Portland Type I/II per ASTM C 150-92.
- [3] Admixtures & plasticizers per ASTM C 260-86 & C 494-92.
- [4] Reinforcing per ASTM A615, Grade 60, domestic. Min. 1-1/2" cover
- [5] Top slab cast on base with continuous rebar joint.
- [6] Maximum 4' of earth cover over top slab.
- [7] Walls and base thickness 4", Top 8" Total for Traffic
- [8] Overall Dimensions: 154" Length, 70" Wide, 60" total Height
- [8] OPTION: Xypex added to concrete mix for waterproofing.

MBI
Mayer Bros., Inc.

6264 Race Road
Elkridge, Maryland 21075
Tel. 410.796.1434
Fax. 410.796.1438

www.mayerprecast.com

1500 Gal Top-Tight Tank
Set up as Hoot pump chamber

Dwg. No. 1500TT Septic

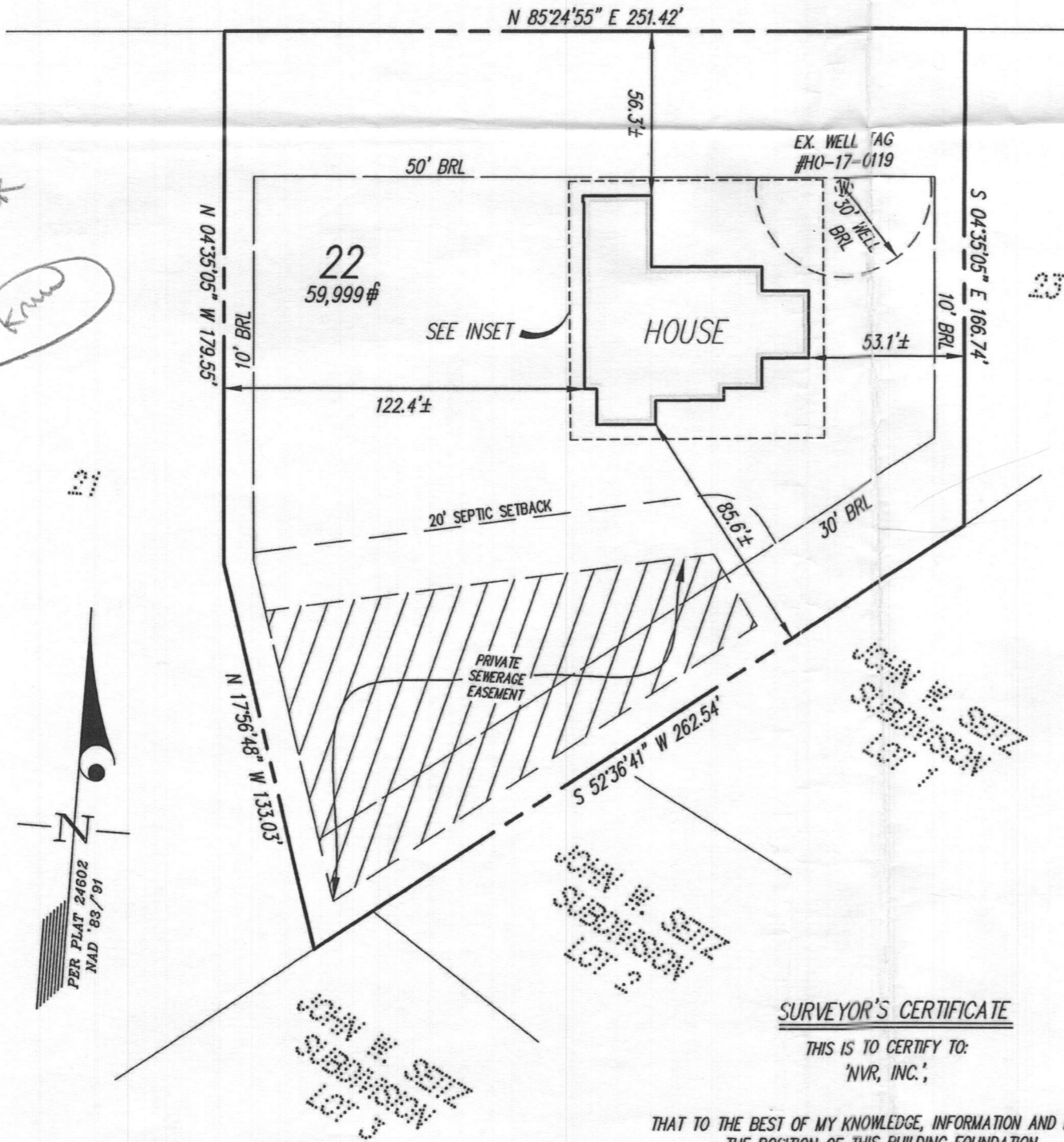
No Scale

March 18, 2019

S:\Survey Drawings\WALLCHECK\MILL CREEK-17071\WCK-22.dwg, 1/31/2019 11:03:55 AM, morgamb, 5501_SURVEY (COLOR).pc3, 1:1

MILL CREEK COURT
(PUBLIC ACCESS STREET)

2/21/19
Wall Check
Approved
-Kraw



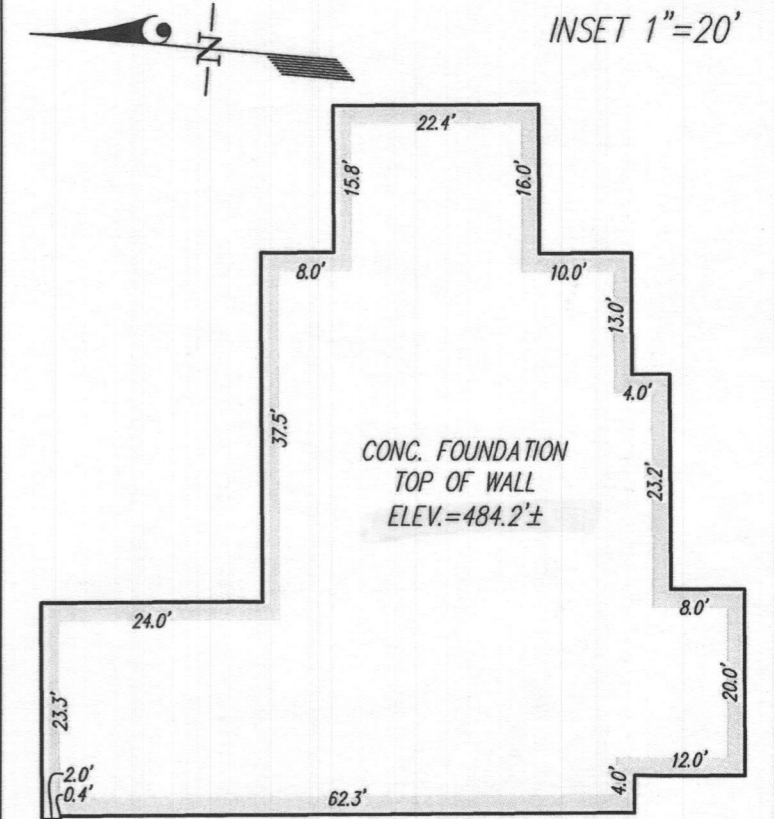
NOTES:

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 24027C0140D, EFFECTIVE DATE NOVEMBER 6, 2013.

BUILDING SETBACKS (B.R.L.'S) SHOWN HEREON PER PLOT PLAN.

SETBACK DISTANCES SHOWN HEREON ARE TO THE OUTERMOST FACE OF THE FOUNDATION WALLS AND HAVE AN ACCURACY OF ± 0.1' FOOT.



SURVEYOR'S CERTIFICATE

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

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

[Signature] 1/31/2019
For Gutschick, Little and Weber, P.A. :
Thomas C. O'Connor, Jr.,
Professional Land Surveyor, No. 10954 (EXP. DATE: 07/03/2020)

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

WALLCHECK
(SPECIAL PURPOSE SURVEY)

CRAWFORD SUBDIVISION
LOT 22
13815 MILL CREEK COURT

HOWARD COUNTY, MARYLAND

DATE OF LATEST FIELD WORK: 1/30/2019

G.L.W. FILE No. 17071

REFERENCE: PLAT No.: 24602

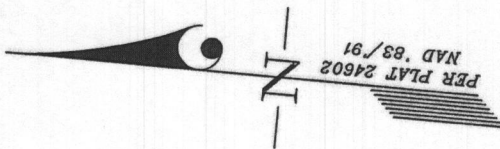
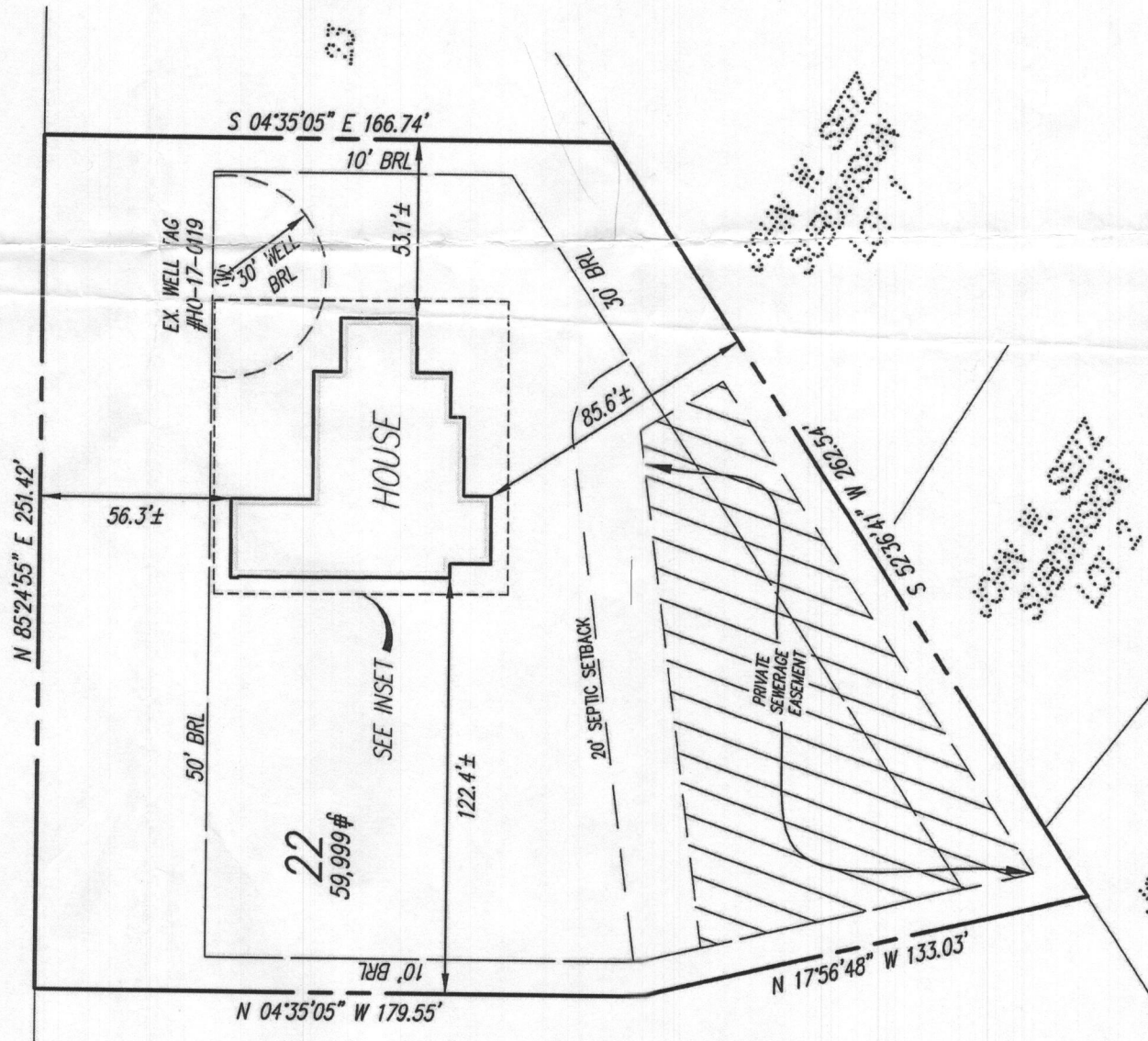
SCALE: 1"=50'



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

2/21/19
Wally Creek
-known
approved

MILL CREEK COURT
(PUBLIC ACCESS STREET)



LOT 2
SUBDIVISION
NVR, INC.

LOT 2
SUBDIVISION
NVR, INC.

SURVEYOR'S CERTIFICATE

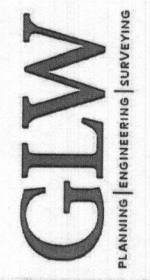
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NVR, INC.;

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

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

PREPARED FOR:
 NVR, INC.
 9720 PATUXENT
 WOODS DRIVE
 COLUMBIA, MD 21046

DES. _____
 DRN. MAB _____
 CHK. _____



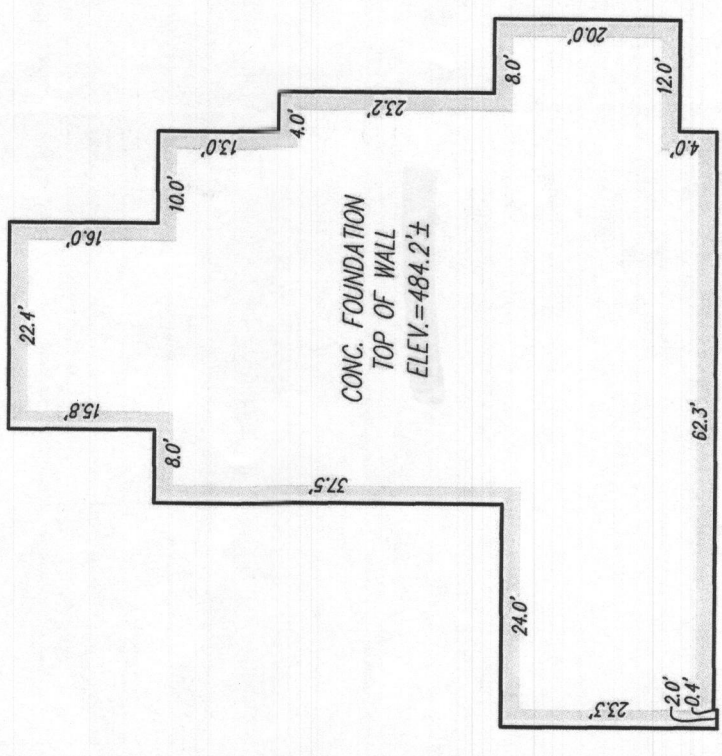
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