

**PUMP CAPACITY CALCULATIONS**

DOSE = 150 gpm  
 2" PVC MAIN f = 3.98' / 100'

FORCE MAIN VOLUME:  
 FORCE MAIN (2") 261.2 X 17.4 GAL/100 LF. = 45.5 GALS.

PUMP CHAMBER:  
 ONE DAY DOSE = 1,200 GALLONS

TDH: (FITTINGS)

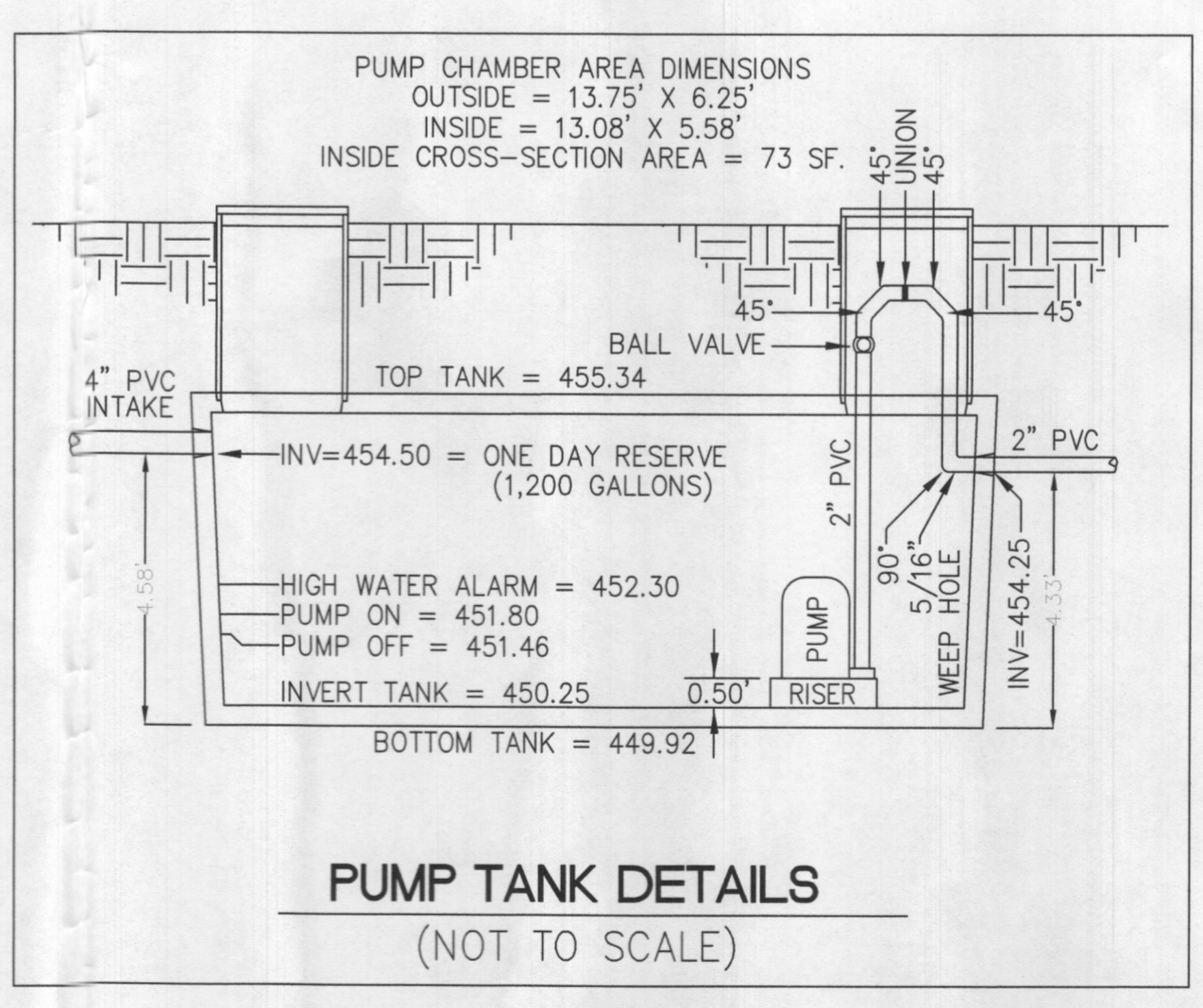
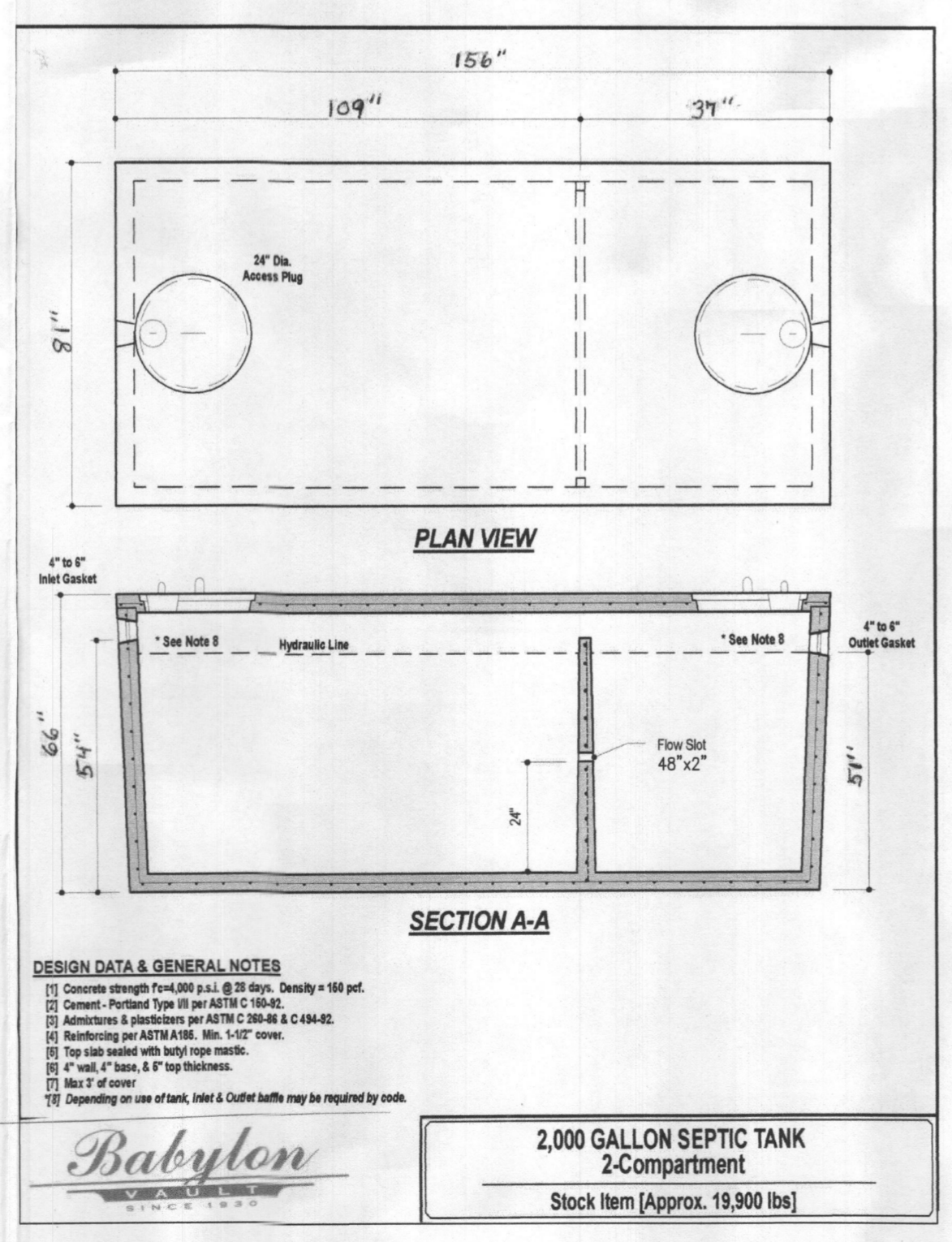
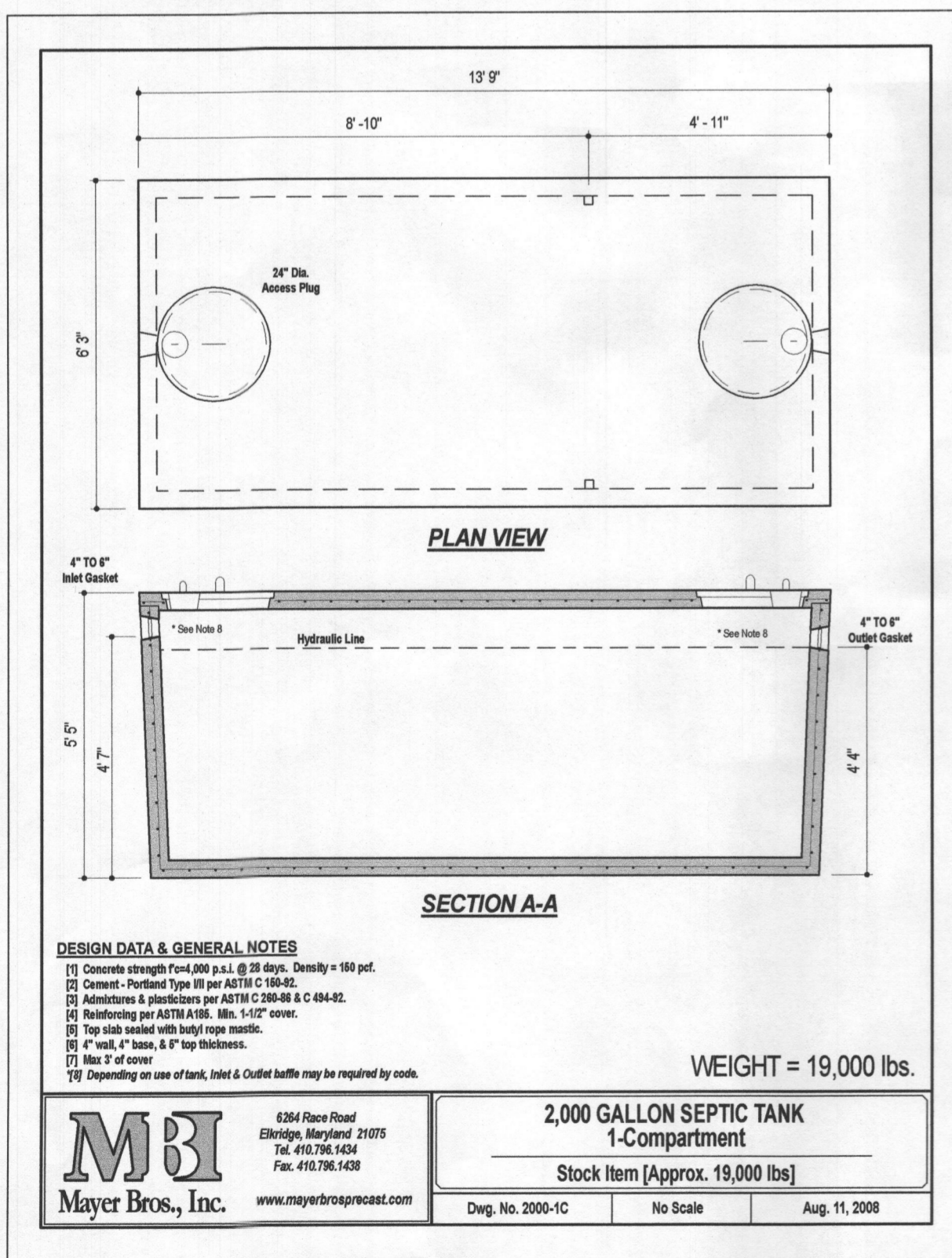
DISCONNECT :	1 X 2.0	= 2.0
45° :	6 X 4.0	= 24.0
90° :	1 X 10.0	= 10.0
		TOTAL = 36.0

FRICITION:  
 MAIN + FITTINGS = 261.2 + 36.0 = 297.2  
 297.2 ( 3.98/100 ) = 11.83

STATIC:  
 (INVERT IN, DISTRIBUTION BOX - PUMP OFF) 470.80 - 451.46 = 19.34

TDH (TOTAL DYNAMIC HEAD) (11.83 + 19.34) = 31.17 @ 150 GPM  
 RT (PUMP RUN TIME) (2.5-3 MINUTES @ 75 GPM)

USE GOULDS PUMP MODEL (WE07H)



**NOTES:**

- 1- ANY CHANGES TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- 2- THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- 3- THE EXISTING WELL (TAG # HO-18-0100 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- 4- ALL EXISTING 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 ON THIS PLAN.
- 5- THE TOPOGRAPHY SHOWN ON THIS PLAT IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- 6- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- 7- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT ARE AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- 8 -TRACER TAPE SHALL BE INSTALLED ALONG THE PROPOSED WATER TAP LINE AND THE SEPTIC LINE.
- 9- BOTH SEPTIC AND PUMP TANKS MUST BE WATER TIGHT TESTED AT THE TIME OF INSTALLATION.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE

**DESIGN DATA & GENERAL NOTES**

- 1) Concrete strength F<sub>ck</sub> 4000 p.s.i. @ 28 days. Density = 150 pcf.
- 2) Cement - Portland Type III per ASTM C 150-02.
- 3) Admixtures & plasticizers per ASTM C 260-08 & C 494-02.
- 4) Reinforcing per ASTM A601. Min. 1/2" cover.
- 5) Top slab finished with heavy grade finish.
- 6) 4" wall, 4" base, & 8" top thickness.
- 7) Min. 2" of cover.
- 8) Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 19,000 lbs.

**Mayer Bros, Inc.**  
 6354 Race Road  
 Elkridge, Maryland 21075  
 Tel. 410.796.1438  
 Fax. 410.796.1438  
 www.mayerbrospne.com

2,000 GALLON SEPTIC TANK  
 1-Compartment  
 Stock Item [Approx. 19,000 lbs]  
 Dup. No. 2000-1C No Scale Aug. 11, 2008

**DESIGN DATA & GENERAL NOTES**

- 1) Concrete strength F<sub>ck</sub> 4000 p.s.i. @ 28 days. Density = 150 pcf.
- 2) Cement - Portland Type III per ASTM C 150-02.
- 3) Admixtures & plasticizers per ASTM C 260-08 & C 494-02.
- 4) Reinforcing per ASTM A601. Min. 1/2" cover.
- 5) Top slab finished with heavy grade finish.
- 6) 4" wall, 4" base, & 8" top thickness.
- 7) Min. 2" of cover.
- 8) Depending on use of tank, inlet & outlet baffles may be required by code.

**Babylon**

2,000 GALLON SEPTIC TANK  
 2-Compartment  
 Stock Item [Approx. 19,900 lbs]

PLAN PREPARED BY:  
**NJR & ASSOCIATES**  
 Land Surveying and Planning  
 2770 STATE ROUTE 32  
 WEST FRIENDSHIP, MD 21794  
 TEL: (240) 508-3200

**PROFESSIONAL CERTIFICATION:**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2021.

September 17, 2020  
 DATE

**DEVELOPER**  
 CARUSO HOMES  
 2120 BALDWIN AVENUE, Ste 200  
 CROFTON, MD 21114  
 (301) 261-0277

**OWNER**  
 PAUL & ROSAMEE WOLF  
 7020 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MD 21046  
 (214) 587-2423

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
**ALLNUT FARM ESTATES, SECTION-4**  
**LOTS 15**  
 PLAT No. 4623  
 13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
 TAX MAP 34, GRID 15, PARCEL 375  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'  
 JOB NO.: 3534  
 DATE: AUGUST 8, 2019 SHEET: 2 OF 2

**A-INITIAL SEPTIC SYSTEM CALCULATIONS**

DRAINFIELD AREA: 6 BEDROOMS AT 900 gpd / 0.8 ABSORPTION RATE=1,125 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} \times \frac{DEPTH}{4} = \frac{2+2}{2} \times \frac{4}{4} = 11$   
 LENGTH OF TRENCHES:  $\frac{1125 \text{ SQ. FT.} \times 0.36}{2} = 202.5 \text{ LINEAR FEET}$   
 3 TRENCHES OF 68 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**B-FIRST REPLACEMENT SEPTIC SYSTEM CALCULATIONS**

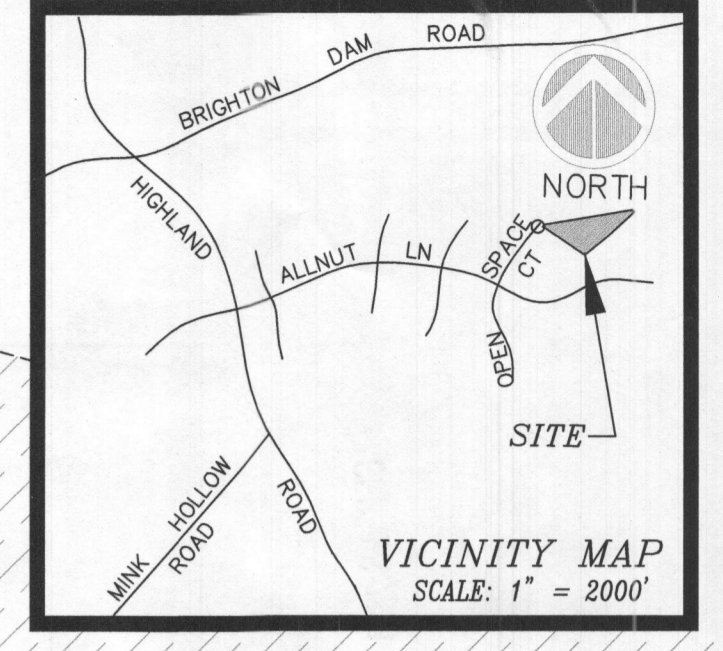
DRAINFIELD AREA: 6 BEDROOMS AT 900 gpd / 0.6 ABSORPTION RATE=1,500 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} \times \frac{DEPTH}{4} = \frac{2+2}{2} \times \frac{4}{4} = 11$   
 LENGTH OF TRENCHES:  $\frac{1500 \text{ SQ. FT.} \times 0.36}{2} = 270 \text{ LINEAR FEET}$   
 6 TRENCHES OF 45 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**C-SECOND REPLACEMENT SEPTIC SYSTEM CALCULATIONS**

DRAINFIELD AREA: 6 BEDROOMS AT 900 gpd / 1.2 ABSORPTION RATE=750 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} \times \frac{DEPTH}{4} = \frac{2+2}{2} \times \frac{4}{4} = 11$   
 LENGTH OF TRENCHES:  $\frac{750 \text{ SQ. FT.} \times 0.44}{2} = 165 \text{ LINEAR FEET}$   
 3 TRENCHES OF 55 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**SEDIMENT TRAP #1 (ST-11)**

EXISTING DRAINAGE AREA 1.89 AC±  
 PROPOSED DRAINAGE AREA 1.89 AC±  
 TOTAL STORAGE REQUIRED 8,570 CF  
 WET STORAGE PROVIDED 4,285 CF  
 WET STORAGE REQUIRED 4,285 CF  
 DRY STORAGE PROVIDED 4,285 CF  
 DRY STORAGE REQUIRED 4,285 CF  
 EXISTING GROUND AT OUTLET 453.0  
 TRAP BOTTOM ELEVATION 453.0  
 TRAP BOTTOM DIMENSIONS 59.2' X 29.2'  
 SIDE SLOPES 3:1  
 EMBANKMENT TOP WIDTH 4.0'  
 WEIR CREST ELEVATION 456.4  
 WEIR LENGTH 8.0'  
 OUTLET PROTECTION LENGTH 11.0'



**LEGEND:**

- EX. WATER WELL
- EX. TELEPHONE PEDESTAL
- ◇ EX. STREET SIGN
- EX. TELEPHONE PEDESTAL
- EX. DECIDUOUS TREE
- EX. EVERGREEN TREE
- EX. DECORATIVE BUSH
- PROPOSED WELL
- + (55.5) PROP. SPOT ELEVATION
- (56) EX. CONTOUR
- (56) PROP. CONTOUR
- TR DENOTES "TO REMAIN"
- SSF PROP. SUPER SILT FENCE
- SF PROP. SILT FENCE
- LOD PROP. LIMIT OF DISTURBANCE
- DD PROP. DRAINAGE DIVIDE
- EX. EDGE WOODED AREA
- SB 100' STREAM BANK BUFFER LINE
- PROP. DRAINAGE AREA LIMITS
- ▨ EX. PRIVATE SEPTIC RESERVE AREA
- ▨ EX. 100 YEAR FLOODPLAIN
- B-3 SOIL BORING LOCATION
- TR DENOTES "TO REMAIN"
- TBR DENOTES "TO BE REMOVED"

**NOTES:**

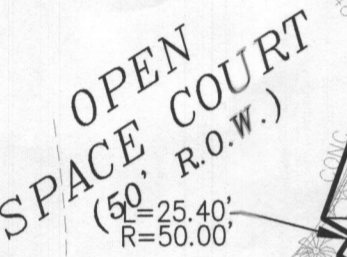
- 1- ANY CHANGES TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- 2- THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- 3- THE EXISTING WELL (TAG # HO-18-0100 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- 4- ALL EXISTING 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 ON THIS PLAN.
- 5- THE TOPOGRAPHY SHOWN ON THIS PLAN IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- 6- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- 7- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT ARE AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- 8- TRACER TAPE SHALL BE INSTALLED ALONG THE PROPOSED WATER TAP LINE AND THE SEPTIC LINE.
- 9- BOTH SEPTIC AND PUMP TANKS MUST BE WATER TIGHT TESTED AT THE TIME OF INSTALLATION.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.  
 HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE

GRAPHIC SCALE 1"=30'

**GENERAL NOTES:**

1. ZONING: RR-DEO
2. PROPOSED SEWER - PRIVATE; PROPOSED WATER - PRIVATE.
3. THE PLAN IS BASED ON A FIELD RUN BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED BY NJR & ASSOCIATES IN FEBRUARY OF 2019.
4. THERE IS NO FLOODPLAIN ON SITE.
5. THERE ARE NO WETLANDS, STREAMS AND THEIR BUFFERS ON SITE.
6. THERE ARE NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES ON SITE.
7. TOTAL AREA WITHIN LOD = 64,473 SQ.FT.
8. WATERSHED = MIDDLE PATUXENT
9. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 ATLEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
10. CONTRACTOR TO MAINTAIN POSITIVE SLOPE AWAY FROM THE FOUNDATION OF THE HOUSE.



**TRENCH INFO, INITIAL SYSTEM**

TRENCH	TRENCH LENGTH	EX. TOP OF TRENCH	TOP OF GRAVEL	INV. INTO TRENCH	BOTTOM OF TRENCH
A-1	90'	472.8±	471.8	470.3	464.8
A-2	90'	471.5±	470.5	469.0	463.5
A-3	90'	470.2±	469.2	467.7	462.2

**SOIL TABLE**

SYMBOL	NAME/DESCRIPTION	TYPE	HYDROLIC
GbB	Gladstone loam, 3 to 8% slope	A	No
GbC	Gladstone loam, 8 to 15% slope	A	No
GmB	Glenville silt loam, 3 to 8% slope	C/D	Yes
Co	Codorus and Harbor silt loam 0 to 3% slope	C	Yes

**MISS-UTILITY NOTE:**

1. CONTACT MISS-UTILITY 72 HOURS BEFORE ANY TRENCHING, (800) 257 - 7777.

PLAN PREPARED BY:  
**NJR & ASSOCIATES**  
 Land Surveying and Planning  
 2770 STATE ROUTE 32  
 WEST FRIENDSHIP, MD 21794  
 TEL: (240) 508-3200

**PROFESSIONAL CERTIFICATION:**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE # 11049, EXPIRATION DATE: 2/10/2021.

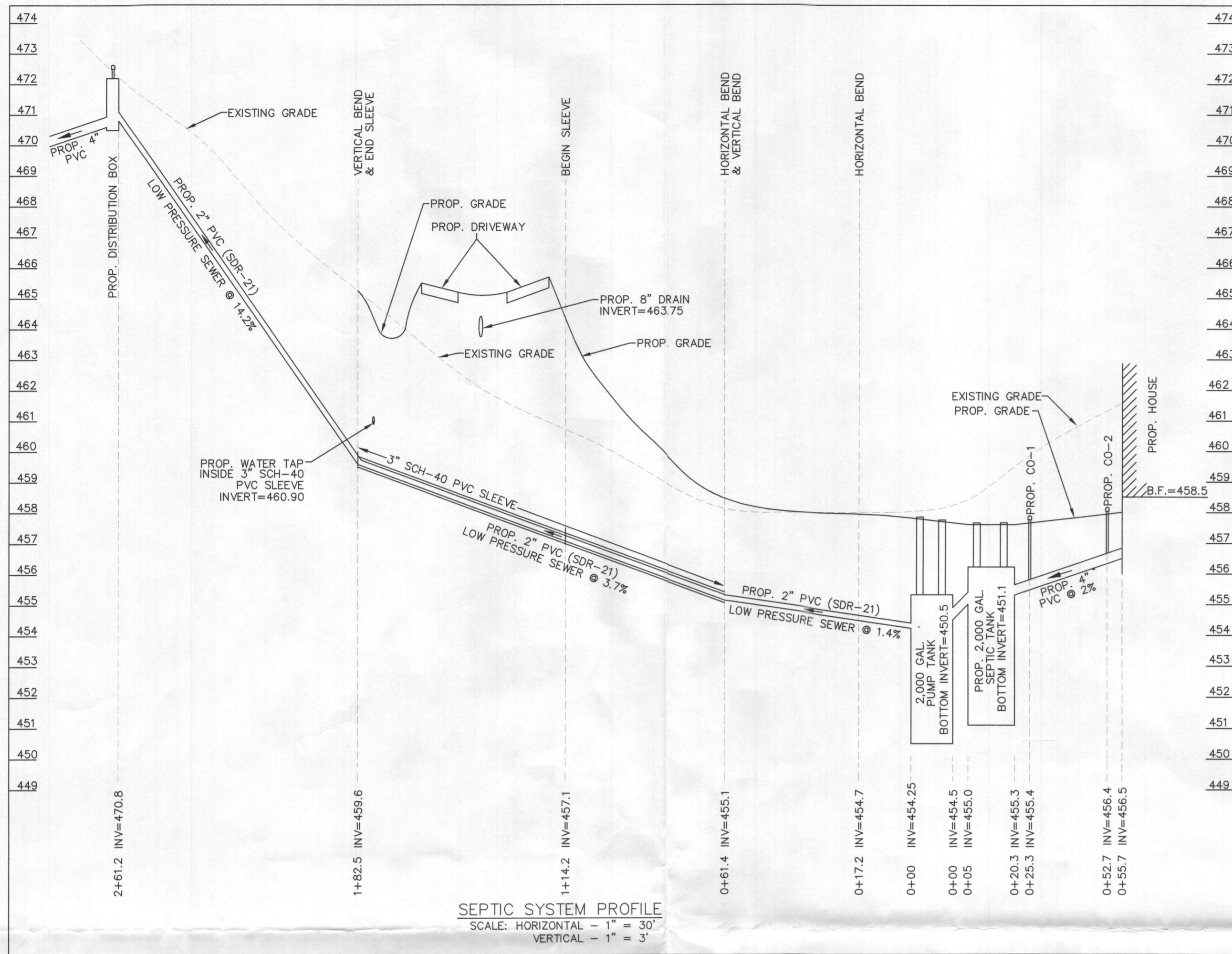
September 17, 2020  
 DATE

**DEVELOPER:**  
 CARUSO HOMES  
 2120 BALDWIN AVENUE, Ste 200  
 CROFTON, MD 21114  
 (301) 261-0277

**OWNER:**  
 PAUL & ROSAMEE WOLF  
 7020 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MD 21046  
 (214) 587-2423

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
**ALLNUT FARM ESTATES, SECTION-4**  
**LOTS 15**  
 PLAT No. 4623  
 13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
 TAX MAP 34, GRID 15, PARCEL 375  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30' JOB NO.: 3534 DATE: AUGUST 8, 2019 SHEET: 1 OF 2



### Goulds Water Technology

**Wastewater**

**APPLICATIONS**  
Specifically designed for the following uses:  
• Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems.

**SPECIFICATIONS**  
**Pump**  
• Solids handling capabilities: 1/2" maximum.  
• Discharge size: 2" NPT.  
• Capacities: up to 140 GPM.  
• Total heads: up to 128 feet TDH.  
• Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.  
• See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

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

**Single phase (60 Hz):**  
• Capacitor start motors for maximum starting torque.  
• Built-in overload with automatic reset.

• SJTOW or STOW severe duty oil and water resistant power cords.  
• 1/2 - 1 HP models have NEMA three prong grounding plugs.  
• 1 1/2 HP and larger units have bare lead cord ends.

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

**AGENCY LISTINGS**  
Tested to UL 778 and CSA 22.2 108 Standards  
By Canadian Standards Association File #1235549

**PUMP CAPACITY CALCULATIONS**

DOSE = 150 gpm  
2" PVC MAIN f = 3.98' / 100'

**FORCE MAIN VOLUME:**  
FORCE MAIN (2") 281.2 X 17.4 GAL/100 LF. = 45.5 GALS.

**PUMP CHAMBER:**  
ONE DAY DOSE = 1,200 GALLONS

**TDH (FITTINGS)**

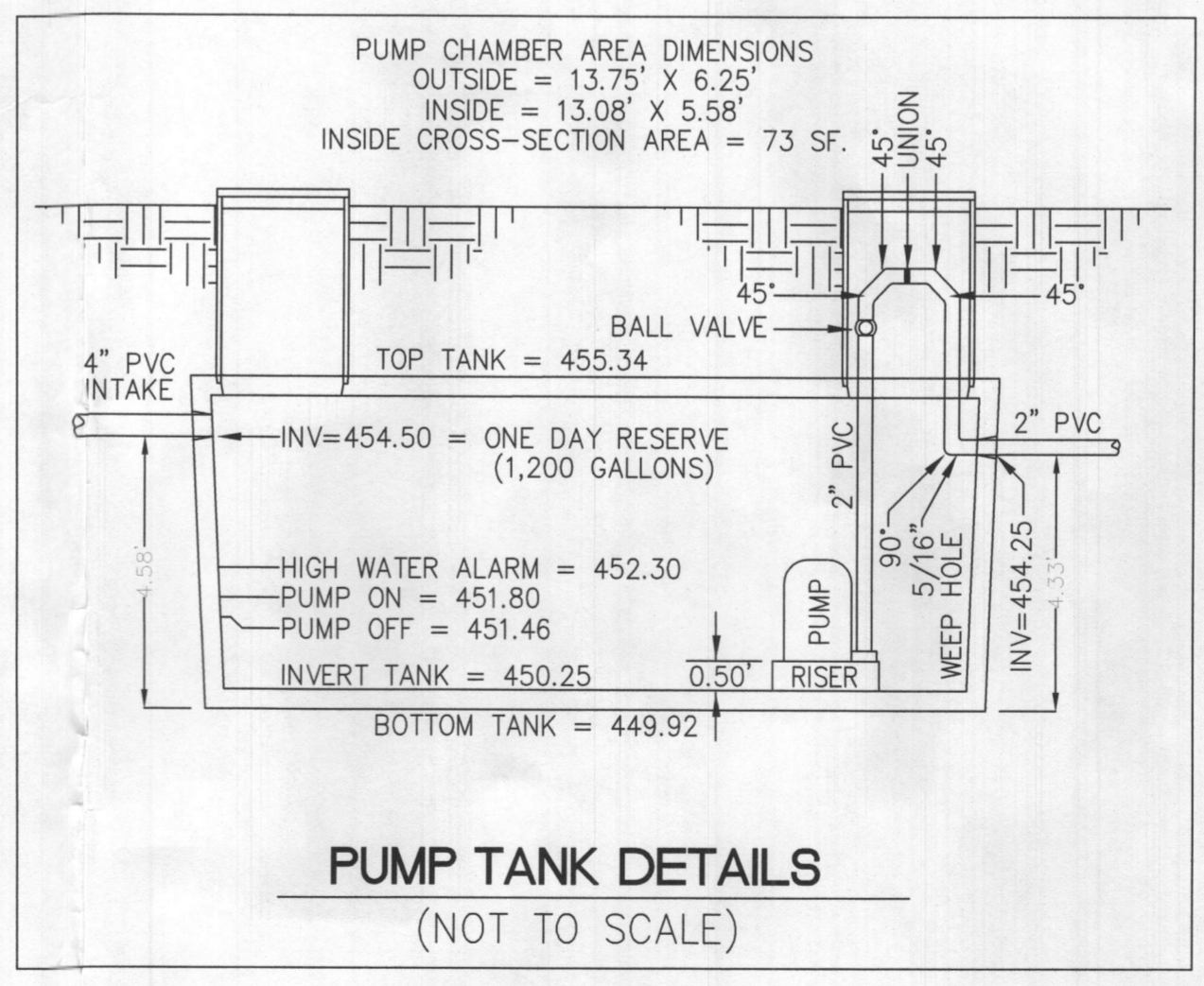
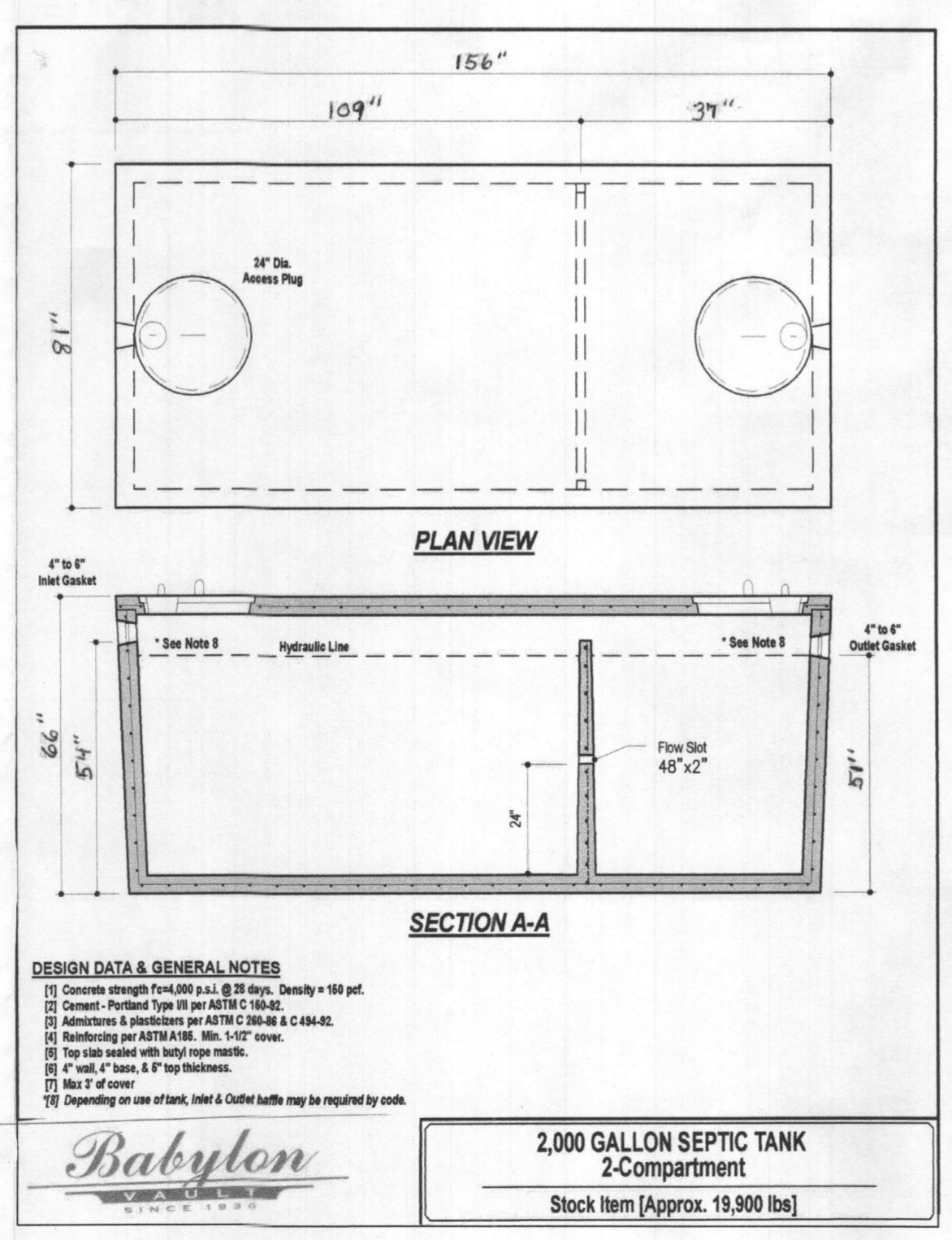
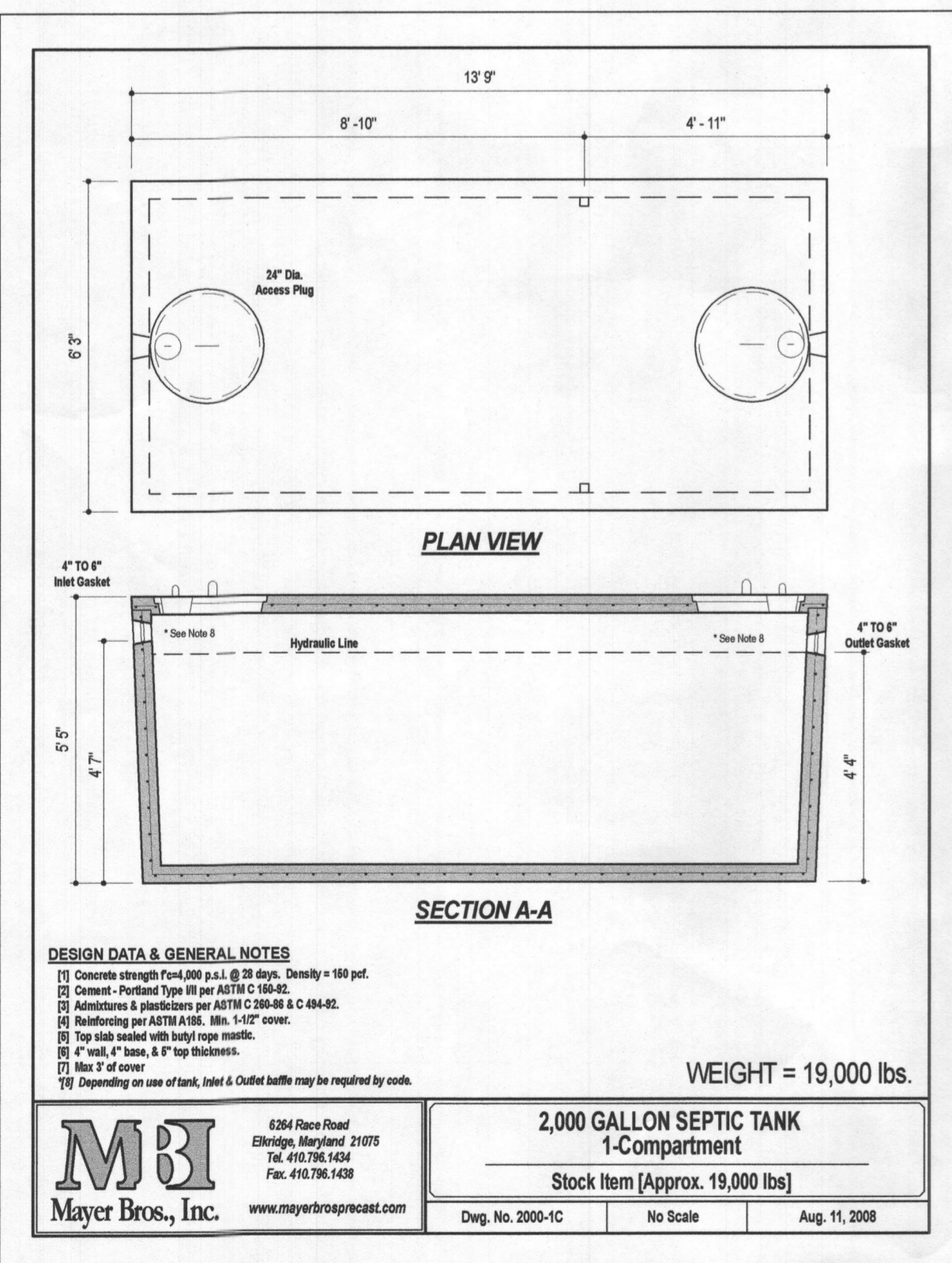
DISCONNECT :	1 X 2.0	= 2.0
45° :	6 X 4.0	= 24.0
90° :	1 X 10.0	= 10.0
		<b>TOTAL = 36.0</b>

**FRICITION:**  
MAIN + FITTINGS = 261.2 + 36.0 = 297.2  
297.2 ( 3.98/100 ) = 11.83

**STATIC:**  
(INVERT IN DISTRIBUTION BOX - PUMP OFF) 470.80 - 451.46 = 19.34

**TDH (TOTAL DYNAMIC HEAD)** (11.83 + 19.34) = 31.17 @ 150 GPM  
**RT (PUMP RUN TIME)** (2.5-3 MINUTES @ 75 GPM)

USE GOULDS PUMP MODEL (WE07H)



**NOTES:**

- ANY CHANGES 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 IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- THE EXISTING WELL (TAG # HO-18-0100 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- ALL EXISTING 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 ON THIS PLAN.
- THE TOPOGRAPHY SHOWN ON THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT ARE AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- TRACER TAPE SHALL BE INSTALLED ALONG THE PROPOSED WATER TAP LINE AND THE SEPTIC LINE.
- BOTH SEPTIC AND PUMP TANKS MUST BE WATER TIGHT TESTED AT THE TIME OF INSTALLATION.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE

**DESIGN DATA & GENERAL NOTES**

- Concrete strength F<sub>cm</sub> 4000 p.s.i., @ 28 Days, Density = 145 pcf.
- Reinforcing steel per ASTM A601.
- Accessories & fasteners per ASTM A307 and A307B.
- Reinforcing per ASTM A601, Min. 1/2" cover.
- Top slab finished with level type finish.
- 4" wall, 4" base, 4" top thickness.
- Min. 1" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

**WEIGHT = 19,000 lbs.**

**Mayer Bros, Inc.**  
4364 Rice Road  
Elkridge, Maryland 21075  
Tel. 410.796.1434  
Fax. 410.796.1438  
www.mayerbros.com

**DESIGN DATA & GENERAL NOTES**

- Concrete strength F<sub>cm</sub> 4000 p.s.i., @ 28 Days, Density = 145 pcf.
- Reinforcing steel per ASTM A601.
- Accessories & fasteners per ASTM A307 and A307B.
- Reinforcing per ASTM A601, Min. 1/2" cover.
- Top slab finished with level type finish.
- 4" wall, 4" base, 4" top thickness.
- Min. 1" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

**WEIGHT = 19,900 lbs.**

**Babylon**  
SINCE 1970

PLAN PREPARED BY:

**NJR & ASSOCIATES**  
Land Surveying and Planning  
2770 STATE ROUTE 32  
WEST FRIENDSHIP, MD 21794  
TEL: (240) 508-3200

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2021.

September 17, 2020  
DATE

**DEVELOPER**  
CARUSO HOMES  
2120 BALDWIN AVENUE, Ste 200  
CROFTON, MD 21114  
(301) 261-0277

**OWNER**  
PAUL & ROSAMEE WOLF  
7020 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MD 21046  
(214) 587-2423

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
**ALLNUT FARM ESTATES, SECTION-4**  
**LOTS 15**  
PLAT No. 4623  
13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
TAX MAP 34, GRID 15, PARCEL 375  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'  
JOB NO.: 3534  
DATE: AUGUST 8, 2019  
SHEET: 2 OF 2

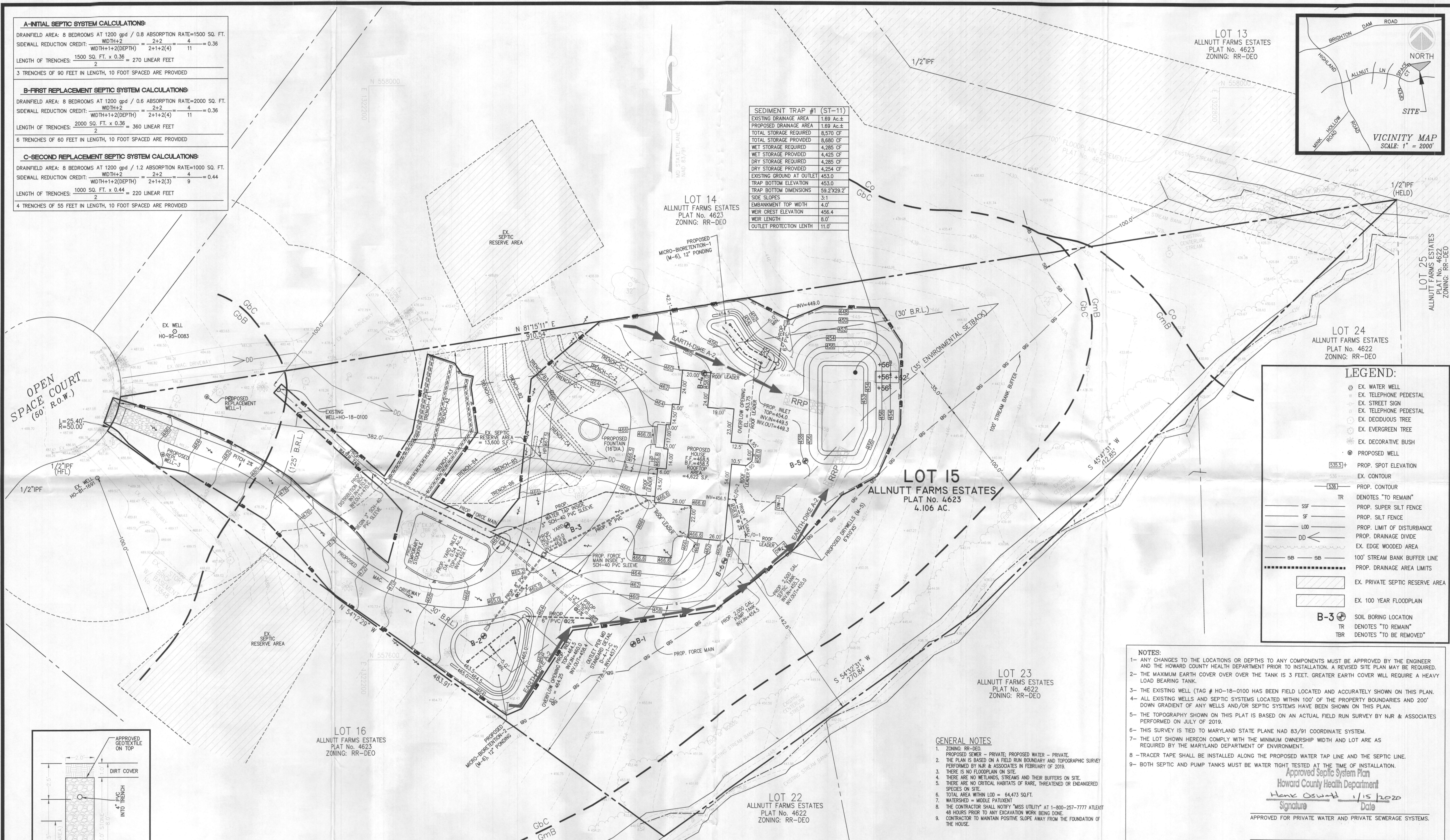
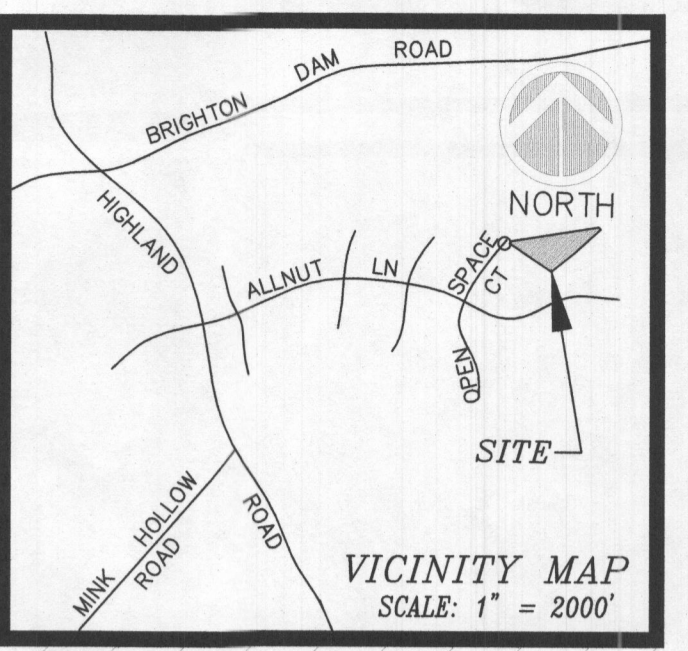
**A-INITIAL SEPTIC SYSTEM CALCULATIONS:**  
 DRAINFIELD AREA: 8 BEDROOMS AT 1200 gpd / 0.8 ABSORPTION RATE=1500 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} = \frac{2+2}{2} = 2$      $\frac{2+1+2(4)}{11} = 0.36$   
 LENGTH OF TRENCHES:  $\frac{1500 \text{ SQ. FT.} \times 0.36}{2} = 270 \text{ LINEAR FEET}$   
 3 TRENCHES OF 90 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**B-FIRST REPLACEMENT SEPTIC SYSTEM CALCULATIONS:**  
 DRAINFIELD AREA: 8 BEDROOMS AT 1200 gpd / 0.6 ABSORPTION RATE=2000 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} = \frac{2+2}{2} = 2$      $\frac{2+1+2(4)}{11} = 0.36$   
 LENGTH OF TRENCHES:  $\frac{2000 \text{ SQ. FT.} \times 0.36}{2} = 360 \text{ LINEAR FEET}$   
 6 TRENCHES OF 60 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**C-SECOND REPLACEMENT SEPTIC SYSTEM CALCULATIONS:**  
 DRAINFIELD AREA: 8 BEDROOMS AT 1200 gpd / 1.2 ABSORPTION RATE=1000 SQ. FT.  
 SIDEWALL REDUCTION CREDIT:  $\frac{WIDTH+2}{2} = \frac{2+2}{2} = 2$      $\frac{2+1+2(3)}{9} = 0.44$   
 LENGTH OF TRENCHES:  $\frac{1000 \text{ SQ. FT.} \times 0.44}{2} = 220 \text{ LINEAR FEET}$   
 4 TRENCHES OF 55 FEET IN LENGTH, 10 FOOT SPACED ARE PROVIDED

**SEDIMENT TRAP #1 (ST-11)**

EXISTING DRAINAGE AREA	1.69 Ac.±
PROPOSED DRAINAGE AREA	1.69 Ac.±
TOTAL STORAGE REQUIRED	8,570 CF
TOTAL STORAGE PROVIDED	8,680 CF
WET STORAGE REQUIRED	4,285 CF
WET STORAGE PROVIDED	4,425 CF
DRY STORAGE REQUIRED	4,285 CF
DRY STORAGE PROVIDED	4,254 CF
EXISTING GROUND AT OUTLET	453.0
TRAP BOTTOM ELEVATION	453.0
TRAP BOTTOM DIMENSIONS	59.2'X29.2'
SIDE SLOPES	3:1
EMBANKMENT TOP WIDTH	4.0'
WEIR CREST ELEVATION	456.4
WEIR LENGTH	8.0'
OUTLET PROTECTION LENGTH	11.0'



**LEGEND:**

- ⊙ EX. WATER WELL
- ⊙ EX. TELEPHONE PEDESTAL
- ⊙ EX. STREET SIGN
- ⊙ EX. TELEPHONE PEDESTAL
- ⊙ EX. DECIDUOUS TREE
- ⊙ EX. EVERGREEN TREE
- ⊙ EX. DECORATIVE BUSH
- ⊙ PROPOSED WELL
- 535.5+ PROP. SPOT ELEVATION
- 536- EX. CONTOUR
- TR PROP. CONTOUR
- TR DENOTES "TO REMAIN"
- SSF PROP. SUPER SILT FENCE
- SF PROP. SILT FENCE
- LD PROP. LIMIT OF DISTURBANCE
- DD PROP. DRAINAGE DIVIDE
- EX. EDGE WOODED AREA
- SB 100' STREAM BANK BUFFER LINE
- PROP. DRAINAGE AREA LIMITS
- EX. PRIVATE SEPTIC RESERVE AREA
- EX. 100 YEAR FLOODPLAIN
- B-3 ⊙ SOIL BORING LOCATION
- TR DENOTES "TO REMAIN"
- TBR DENOTES "TO BE REMOVED"

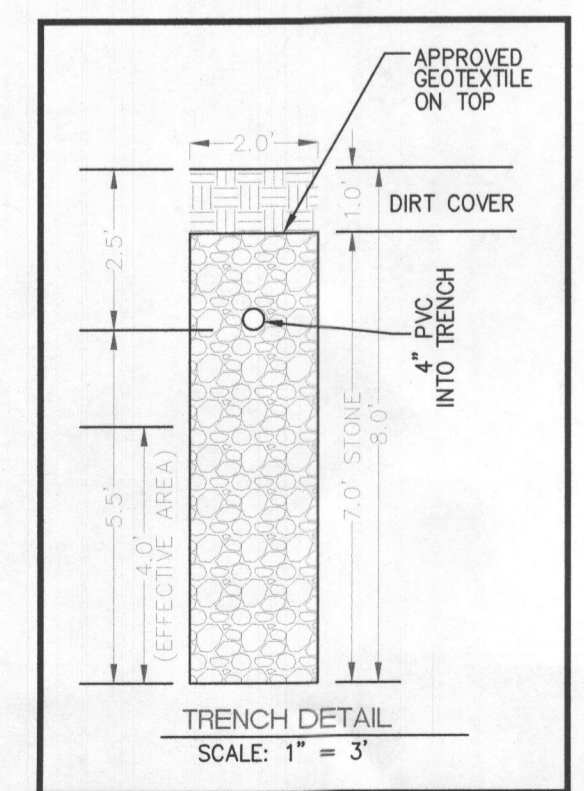
**NOTES:**

- ANY CHANGES 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 IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- THE EXISTING WELL (TAG # HO-18-0100 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- ALL EXISTING 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 ON THIS PLAN.
- THE TOPOGRAPHY SHOWN ON THIS PLAN IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT ARE AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- TRACER TAPE SHALL BE INSTALLED ALONG THE PROPOSED WATER TAP LINE AND THE SEPTIC LINE.
- BOTH SEPTIC AND PUMP TANKS MUST BE WATER TIGHT TESTED AT THE TIME OF INSTALLATION.

**GENERAL NOTES:**

- ZONING: RR-DEO
- PROPOSED SEWER - PRIVATE; PROPOSED WATER - PRIVATE
- THE PLAN IS BASED ON A FIELD RUN BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED BY NJR & ASSOCIATES IN FEBRUARY OF 2019.
- THERE IS NO FLOODPLAIN ON SITE.
- THERE ARE NO WETLANDS, STREAMS AND THEIR BUFFERS ON SITE.
- THERE ARE NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES ON SITE.
- TOTAL AREA WITHIN LOD = 64,473 SQ.FT.
- WATERSHED = MIDDLE PATENT
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 ATLEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- CONTRACTOR TO MAINTAIN POSITIVE SLOPE AWAY FROM THE FOUNDATION OF THE HOUSE.

Approved Septic System Plan  
 Howard County Health Department  
 Howie Oswald 1/15/2020  
 Signature Date  
 APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.  
 HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE



**TRENCH INFO, INITIAL SYSTEM**

TRENCH	TRENCH LENGTH	EX. TOP OF GROUND	TOP OF GRAVEL	INV. INTO TRENCH	BOTTOM OF TRENCH
A-1	90'	472.8±	471.8	470.3	464.8
A-2	90'	471.5±	470.5	469.0	463.5
A-3	90'	470.2±	469.2	467.7	462.2

**SOIL TABLE**

SYMBOL	NAME/DESCRIPTION	TYPE	HYDROLIC
GbB	Gladstone loam, 3 to 8% slope	A	No
GbC	Gladstone loam, 8 to 15% slope	A	No
GmB	Glenville silt loam, 3 to 8% slope	C/D	Yes
Co	Codorus and Hatboro silt loam 0 to 3% slope	C	Yes

**MISS-UTILITY NOTE:**  
 1. CONTACT MISS-UTILITY 72 HOURS BEFORE ANY TRENCHING.  
 (800) 257 - 7777.

PLAN PREPARED BY:  
**NJR & ASSOCIATES**  
 Land Surveying and Planning  
 2770 STATE ROUTE 32  
 WEST FRIENDSHIP, MD 21194  
 TEL: (240) 508-3200

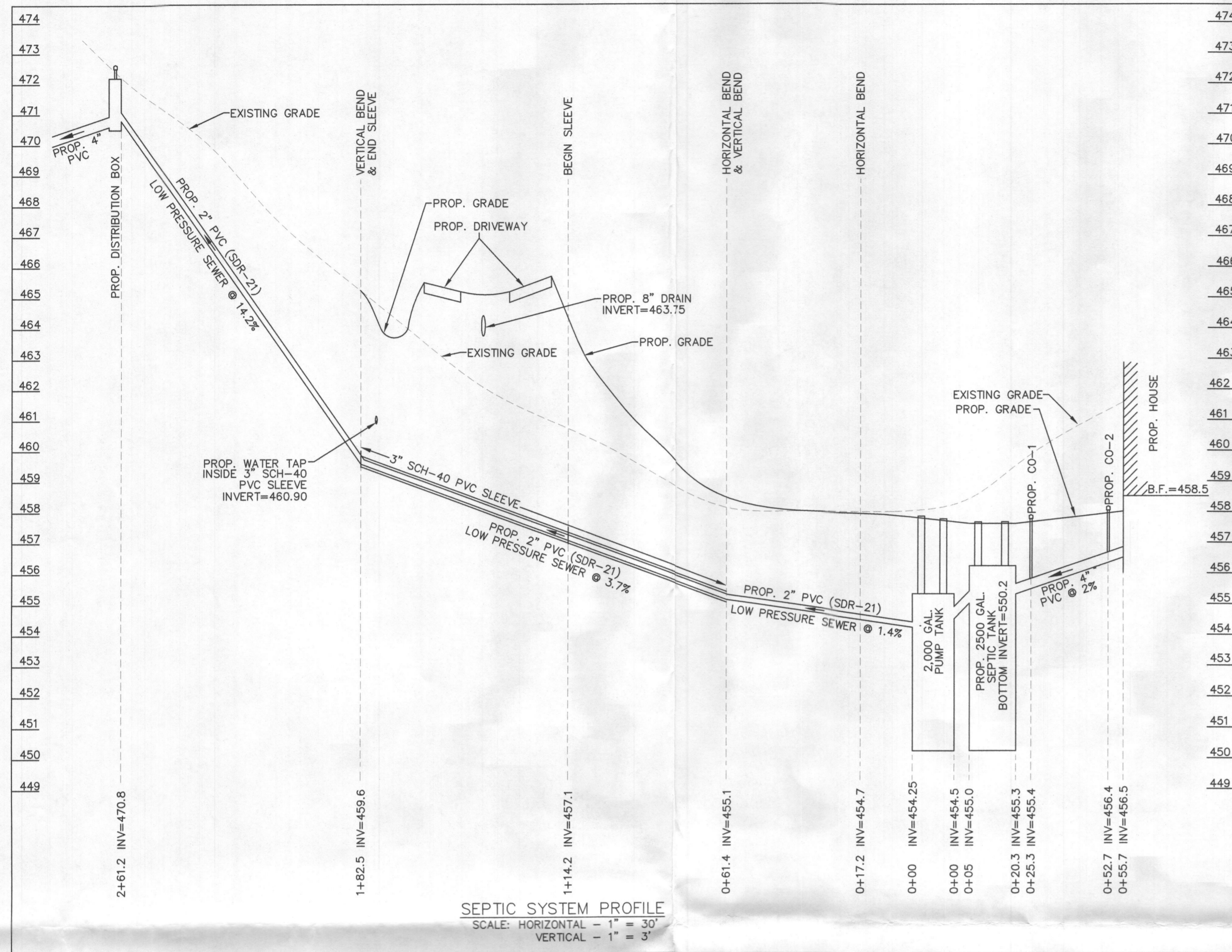
**PROFESSIONAL CERTIFICATION:**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2021.  
 January 7, 2020  
 DATE

**DEVELOPER:**  
 CARUSO HOMES  
 2120 BALDWIN AVENUE, Ste 200  
 CROFTON, MD 21114  
 (301) 261-0277

**OWNER:**  
 PAUL & ROSAMEE WOLF  
 7020 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MD 21046  
 (214) 587-2425

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
**ALLNUT FARM ESTATES, SECTION-4**  
**LOTS 15**  
 PLAT No. 4623  
 13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
 TAX MAP 34, GRID 15, PARCEL 375  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'    JOB NO.: 3534    DATE: AUGUST 8, 2019    SHEET: 1 OF 2



### Goulds Water Technology

**Wastewater**

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

**SPECIFICATIONS**  
**Pump**  
• Solids handling capabilities: 3/4" maximum.  
• Discharge size: 2" NPT.  
• Capacities: up to 140 GPM.  
• Total heads: up to 128 feet TDH.  
• Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.  
• See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

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

**Single phase (60 Hz):**  
• Capacitor start motors for maximum starting torque.  
• Built-in overload with automatic reset.

• SJ/TOW or STOW severe duty oil and water resistant power cords.  
• 1/2 - 1 HP models have NEMA three prong grounding plugs.  
• 1 1/2 HP and larger units have bare lead cord ends.

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

**AGENCY LISTINGS**  
Tested to UL 778 and CSA 22.2 108 Standards  
By Canadian Standards Association File #R32549

#### PUMP CAPACITY CALCULATIONS

DOSE = 150 g  
2" PVC MAIN f = 3.98' / 100'

**FORCE MAIN VOLUME:**  
FORCE MAIN (2") 261.2 X 17.4 GAL/100 L.F. = 45.5 GALS.

**PUMP CHAMBER:**  
ONE DAY DOSE = 1,200 GALLONS

**TDH: (FITTINGS)**

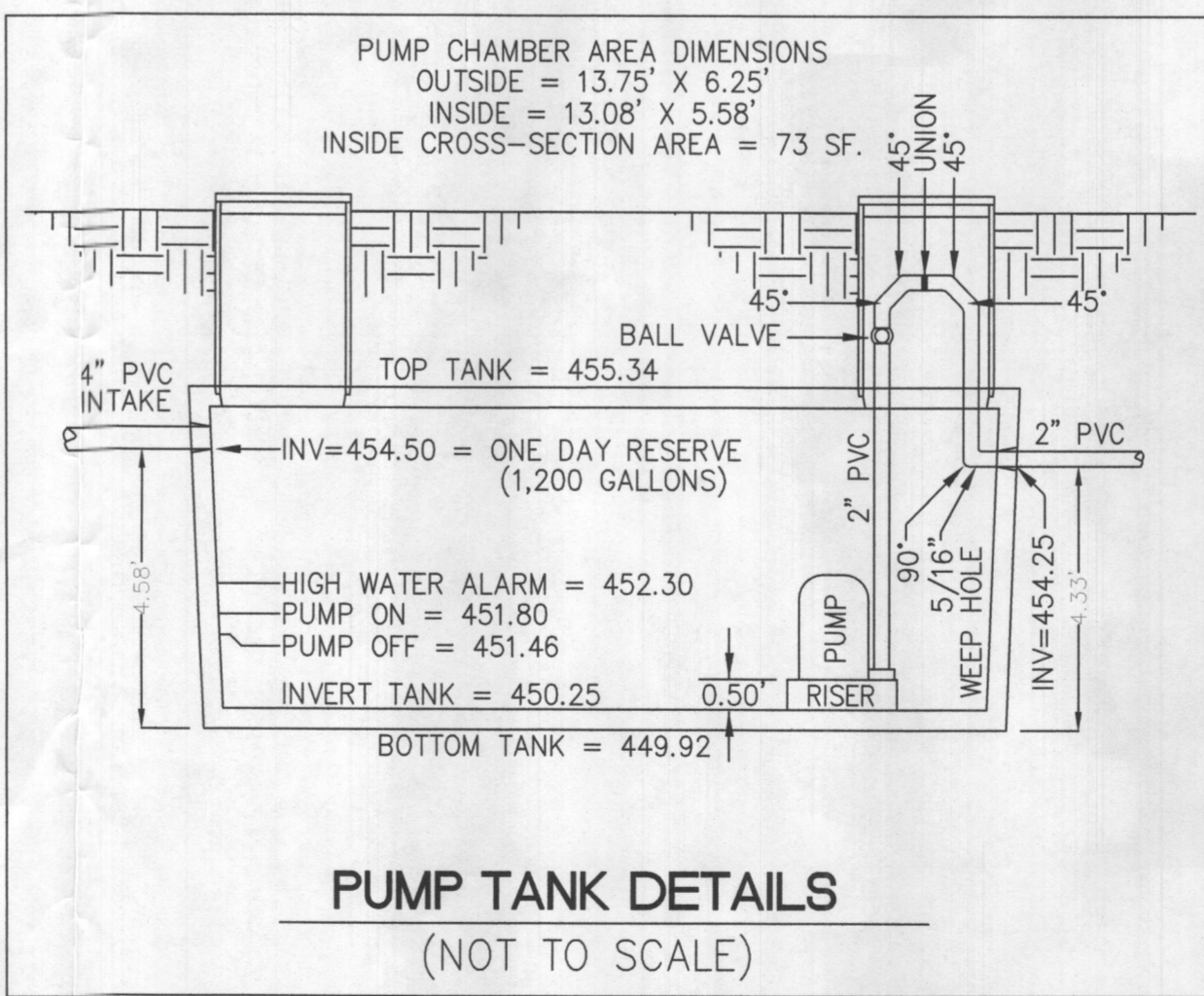
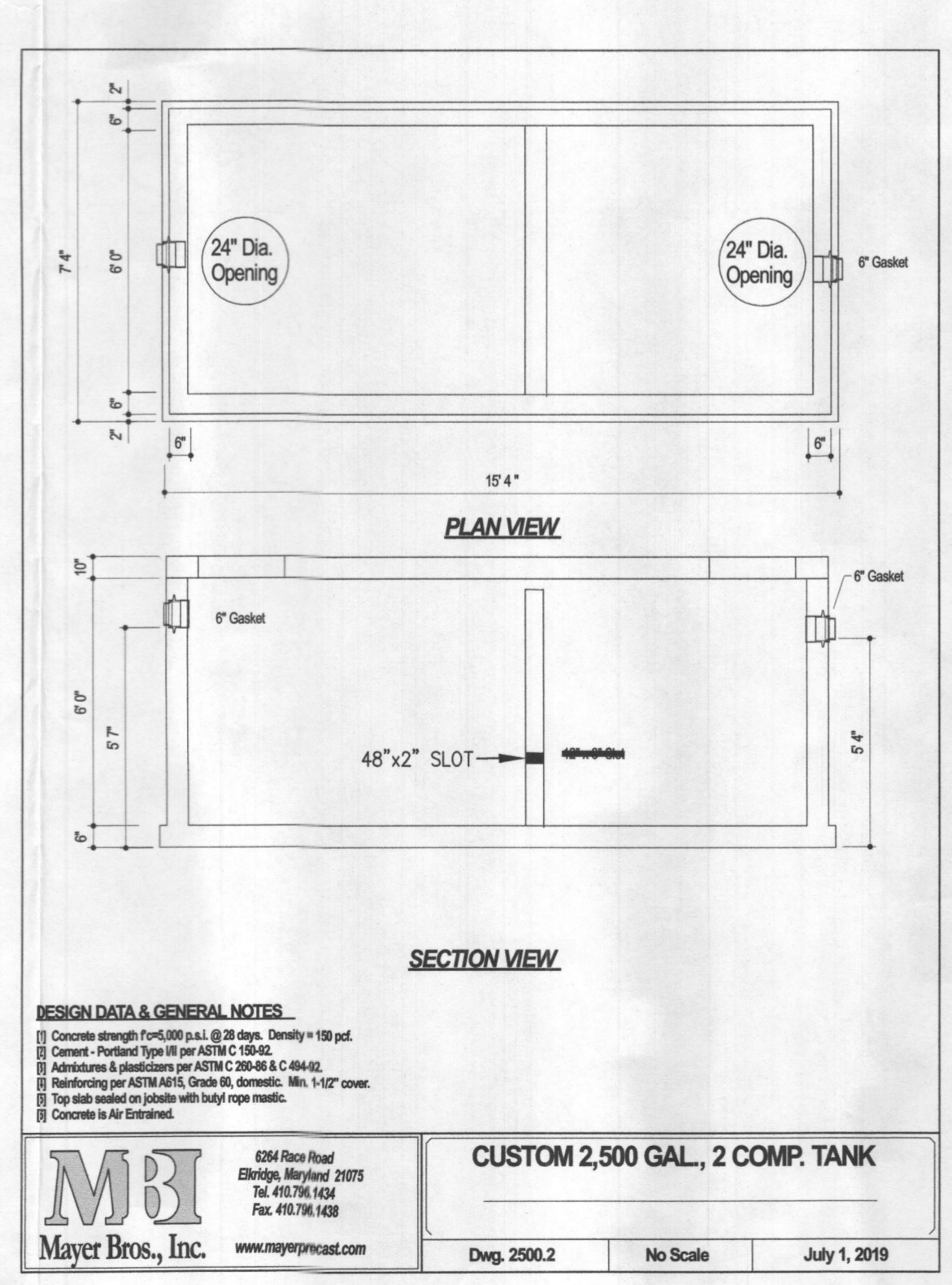
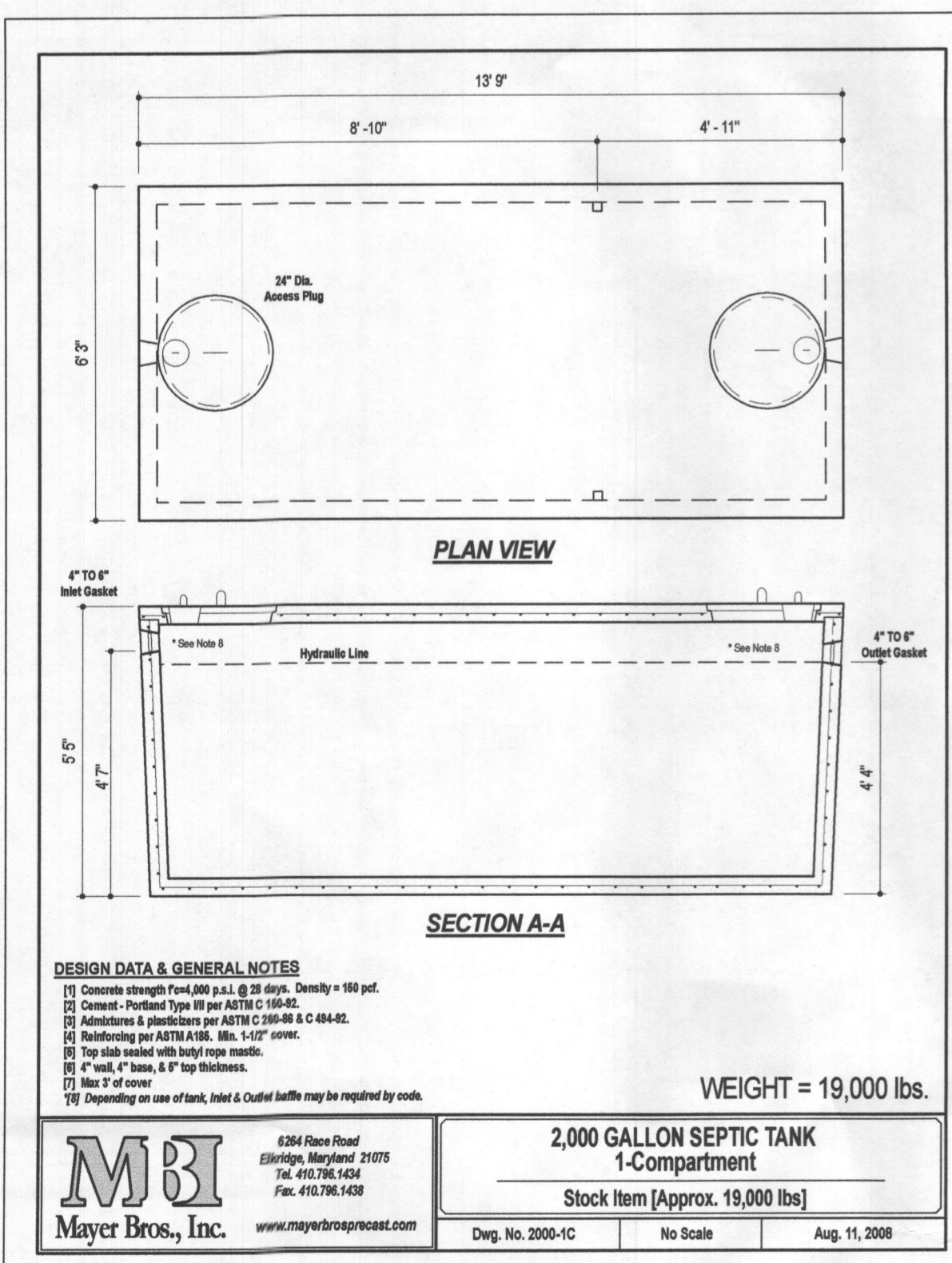
DISCONNECT :	1 X 2.0	= 2.0
45° :	6 X 4.0	= 24.0
90° :	1 X 10.0	= 10.0
<b>TOTAL</b>		<b>= 36.0</b>

**FRICTION:**  
MAIN + FITTINGS = 261.2 + 36.0 = 297.2  
297.2 ( 3.98/100 ) = 11.83

**STATIC:**  
(INVERT IN, DISTRIBUTION BOX - PUMP OFF) 470.80 - 451.46 = 19.34

**TDH (TOTAL DYNAMIC HEAD)** (11.83 + 19.34) = 31.17  
**RT (PUMP RUN TIME)** (2.5-3 MINUTES @ 75 GPM)

USE GOULDS PUMP MODEL (WE07H)



**NOTES:**

- ANY CHANGES 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 IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- THE EXISTING WELL (TAG # HO-18-0100 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- ALL EXISTING 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 ON THIS PLAN.
- THE TOPOGRAPHY SHOWN ON THIS PLAN IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT ARE AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- TRACER TAPE SHALL BE INSTALLED ALONG THE PROPOSED WATER TAP LINE AND THE SEPTIC LINE.
- BOTH SEPTIC AND PUMP TANKS MUST BE WATER TIGHT TESTED AT THE TIME OF INSTALLATION.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE

PLAN PREPARED BY: **NJR & ASSOCIATES**  
Land Surveying and Planning  
2770 STATE ROUTE 32  
WEST FRIENDSHIP, MD 21794  
TEL: (240) 508-3200

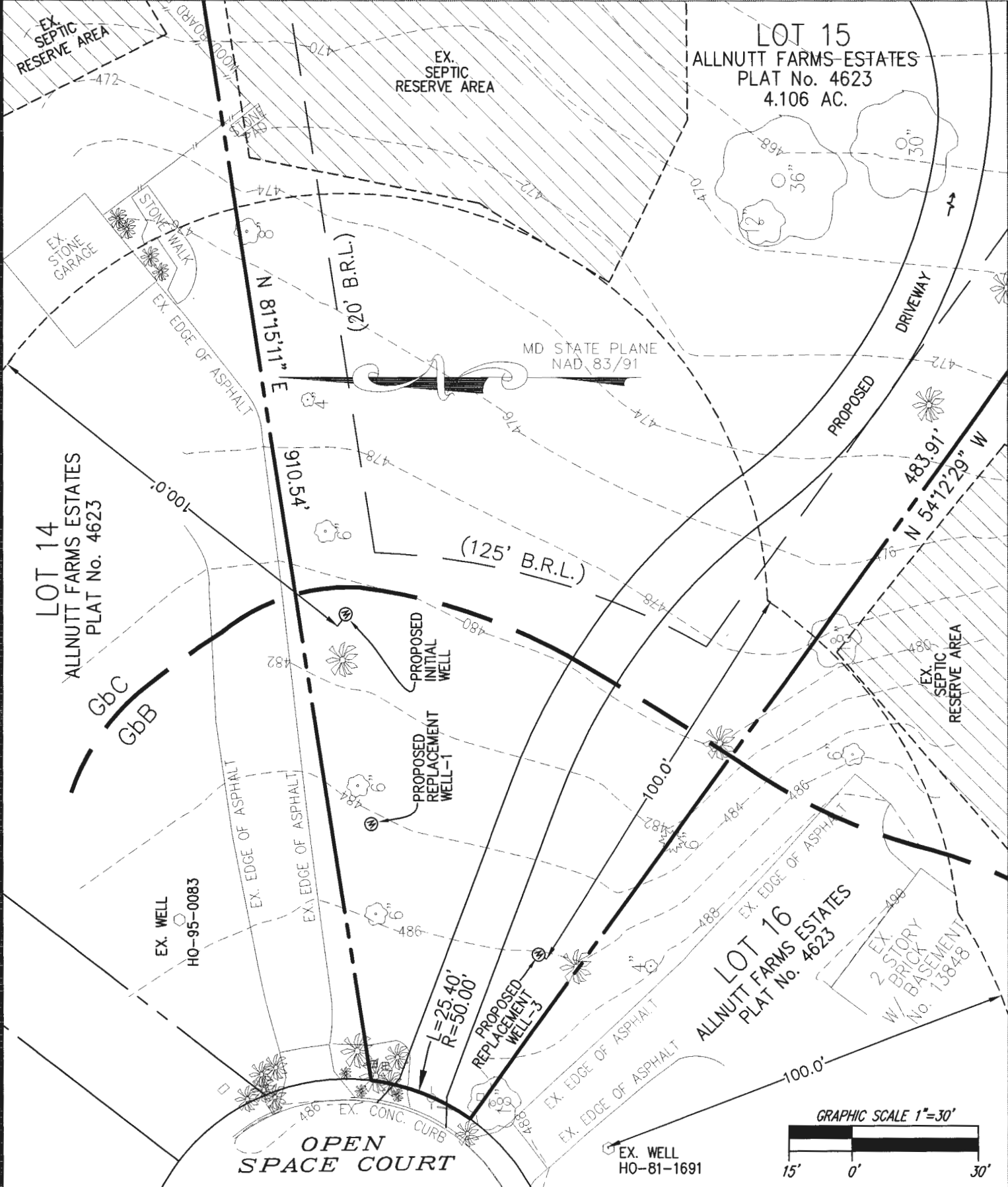
**PROFESSIONAL CERTIFICATION:**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2021.

DEVELOPER: CARUSO HOMES  
2120 BALDWIN AVENUE, Ste 200  
CROFTON, MD 21114  
(301) 261-0277

OWNER: PAUL & ROSAMEE WOLF  
7020 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MD 21046  
(214) 587-2423

ON-SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN  
ALLNUT FARM ESTATES, SECTION-4  
LOTS 15  
PLAT No. 4623  
13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
TAX MAP 34, GRID 15, PARCEL 375  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'    JOB NO.: 3534    DATE: AUGUST 8, 2019    SHEET: 2 OF 2

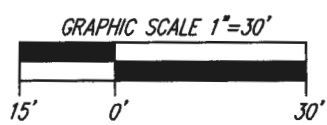


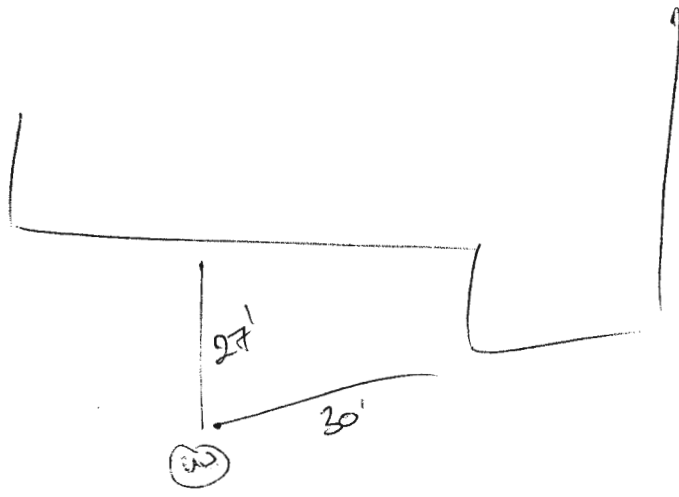
**WELL STAKEOUT EXHIBIT**  
**ALLNUT FARM ESTATES, SECTION-5**  
**LOTS 15**  
**PLAT No. 4623**  
**OPEN SPACE COURT, HIGHLAND, MD 20777**  
**TAX MAP 34, GRID 15, PARCEL 375**  
**5TH ELECTION DISTRICT**  
**HOWARD COUNTY, MARYLAND**

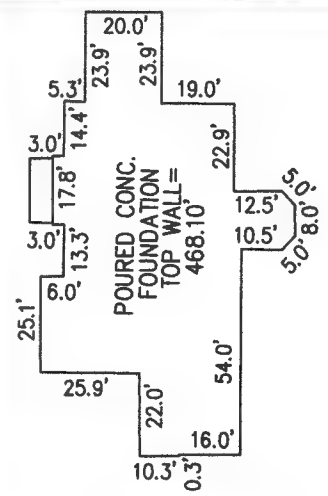
DESIGNED BY: NJ  
 CHECKED BY: WR  
 SCALE: 1" = 30'  
 DATE: JULY 30, 2019  
 PROJECT No. 3534  
 SHEET: 1 OF 1

PREPARED BY:  


**NJR & ASSOCIATES, LLC.**  
**LAND SURVEYING AND PLANNING**  
 2770 STATE ROUTE 32  
 WEST FRIENDSHIP, MD 21794  
 TEL: (240) 508-3200







INSET SCALE: 1" = 50'



MARCH 5, 2020

LOT 13  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

LOT 25  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 24  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 23  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 22  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

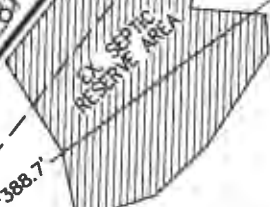
LOT 14  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

LOT 15  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

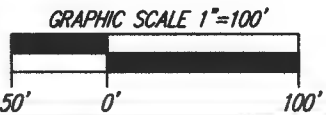
LOT 16  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

Approved  
06/19/2020  
001997

EXISTING  
WELL - HQ-18-0100



POURED CONC.  
FOUNDATION  
TOP WALL =  
468.10'  
(SEE INSET  
FOR DETAILS)

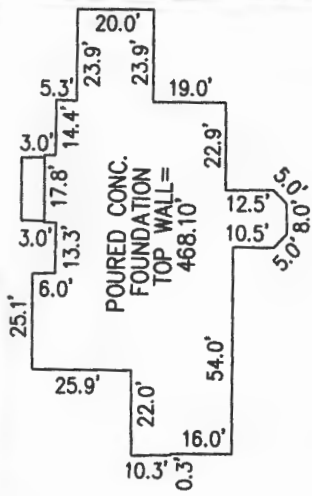


WALL CHECK SURVEY  
**LOT 15**  
ALLNUTT FARMS ESTATES  
PLAT No. 4623  
13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
TAX MAP 34, GRID 15, PARCEL 375  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DESIGNED BY: NJ  
CHECKED BY: MR  
SCALE: 1" = 100'  
DATE: FEBRUARY 28, 2020  
PROJECT No. 3534  
SHEET: 1 OF 1



**NJR & ASSOCIATES, LLC.**  
LAND SURVEYING AND PLANNING  
2770 STATE ROUTE 32  
WEST FRIENDSHIP, MD 21794  
TEL: (240) 508-3200



INSET SCALE: 1" = 50'

LOT 13  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

LOT 25  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 24  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 23  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 22  
ALLNUTT FARMS ESTATES  
PLAT No. 4622

LOT 14  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

LOT 15  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

LOT 16  
ALLNUTT FARMS ESTATES  
PLAT No. 4623

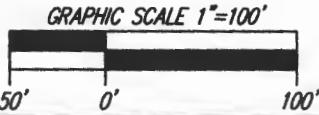
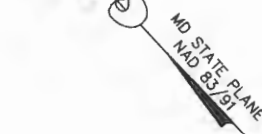
POURED CONC.  
FOUNDATION  
TOP WALL =  
468.10'  
(SEE INSET  
FOR DETAILS)

APPROVED  
06/29/2020  
000997

EXISTING  
WELL HO-18-0100




OPEN SPACE  
COURT  
(50' R.O.W.)



WALL CHECK SURVEY  
**LOT 15**  
ALLNUTT FARMS ESTATES  
PLAT No. 4623  
13488 OPEN SPACE COURT, HIGHLAND, MD 20777  
TAX MAP 34, GRID 15, PARCEL 375  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DESIGNED BY: NJ  
CHECKED BY: MR  
SCALE: 1" = 100'  
DATE: FEBRUARY 28, 2020  
PROJECT No. 3534  
SHEET: 1 OF 1

PREPARED BY:  **NJR & ASSOCIATES, LLC.**  
LAND SURVEYING AND PLANNING  
2770 STATE ROUTE 32  
WEST FRIENDSHIP, MD 21794  
TEL: (240) 508-3200

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, January 09, 2020 8:26 AM  
**To:** roshannj@aol.com  
**Cc:** gphillips@mred.us  
**Subject:** RE: OSDS Plan Comments\_13488 Open Space Court

Hello Roshann:

It doesn't look like you made any changes per my last set of comments (see below). Did you mean to send in the plan without changes?

Thanks,

Hank

**From:** Oswald, Hank  
**Sent:** Tuesday, January 07, 2020 7:51 AM  
**To:** roshannj@aol.com  
**Cc:** gphillips@mred.us  
**Subject:** RE: OSDS Plan Comments\_13488 Open Space Court

Hello Roshann:

I see just a couple of things on plan.

- 1.) Dose does not equal 45.5, but instead represents the volume in the FM. If you want to keep the data in the pump capacity calculations, change title to Force Main Volume = 45.5.
- 2.) 2 in. Force main should probably be in a 3-inch sleeve (not 6 in.).
- 3.) Compare friction loss in fittings with the sand mound manual chart (see attachment).

Please let me know when the plans have been dropped off.

Thanks,

Hank

**From:** [roshannj@aol.com](mailto:roshannj@aol.com) <[roshannj@aol.com](mailto:roshannj@aol.com)>  
**Sent:** Thursday, December 26, 2019 2:59 PM  
**To:** Oswald, Hank <[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)>  
**Cc:** [gphillips@mred.us](mailto:gphillips@mred.us)  
**Subject:** Re: OSDS Plan Comments\_13488 Open Space Court

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

Good afternoon Mr. Oswald,

Can you please look through the Pump Capacity Calculations on sheet 2 of the revised attached OSDS plan? I found conflicting friction numbers for the 2" fittings and would like to make sure that the numbers used are adequate before we re submit for review.

Thank you  
Najib Roshan, LS  
NJR & Associates, LLC  
2770 Route 32  
West Friendship, MD 21794  
PH (240) 508-3200  
[roshannj@aol.com](mailto:roshannj@aol.com)

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

From: Oswald, Hank <[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)>  
To: 'roshannj@aol.com' <[roshannj@aol.com](mailto:roshannj@aol.com)>  
Cc: 'gphillips@mred.us' <[gphillips@mred.us](mailto:gphillips@mred.us)>  
Sent: Thu, Dec 5, 2019 2:50 pm  
Subject: OSDS Plan Comments\_13488 Open Space Court

Hello Roshann:

Attached, please find OSDS Plan comments for 13488 Open Space Court. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



**CONFIDENTIALITY NOTICE**

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Tuesday, January 07, 2020 7:51 AM  
**To:** roshannj@aol.com  
**Cc:** gphillips@mred.us  
**Subject:** RE: OSDS Plan Comments\_13488 Open Space Court  
**Attachments:** Friction loss table.pdf

Hello Roshann:

I see just a couple of things on plan.

- 1.) Dose does not equal 45.5, but instead represents the volume in the FM. If you want to keep the data in the pump capacity calculations, change title to Force Main Volume = 45.5.
- 2.) 2 in. Force main should probably be in a 3-inch sleeve (not 6 in.).
- 3.) Compare friction loss in fittings with the sand mound manual chart (see attachment).

Please let me know when the plans have been dropped off.

Thanks,

Hank

**From:** roshannj@aol.com <roshannj@aol.com>  
**Sent:** Thursday, December 26, 2019 2:59 PM  
**To:** Oswald, Hank <hoswald@howardcountymd.gov>  
**Cc:** gphillips@mred.us  
**Subject:** Re: OSDS Plan Comments\_13488 Open Space Court

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

Good afternoon Mr. Oswald,

Can you please look through the Pump Capacity Calculations on sheet 2 of the revised attached OSDS plan? I found conflicting friction numbers for the 2" fittings and would like to make sure that the numbers used are adequate before we re submit for review.

Thank you  
Najib Roshan, LS  
NJR & Associates, LLC  
2770 Route 32  
West Friendship, MD 21794  
PH (240) 508-3200  
[roshannj@aol.com](mailto:roshannj@aol.com)

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

From: Oswald, Hank <[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)>  
To: 'roshannj@aol.com' <[roshannj@aol.com](mailto:roshannj@aol.com)>

Cc: 'gphillips@mred.us' <gphillips@mred.us>  
Sent: Thu, Dec 5, 2019 2:50 pm  
Subject: OSDS Plan Comments\_13488 Open Space Court

Hello Roshann:

Attached, please find OSDS Plan comments for 13488 Open Space Court. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



**CONFIDENTIALITY NOTICE**

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

**MEMORANDUM**

**TO:** NJR & Associates  
2770 Route 32  
West Friendship, MD 21794

**FROM:** Hank Oswald, L.E.H.S.  
Well & Septic Program

**RE:** OSDS Plan  
Open Space Court, Lot 15  
Allnut Farm Estates

**Date:** December 5, 2019

---

The following comments pertain to the review of the OSDS Plan for **Open Space Court, Lot 15** received on December 3, 2019:

- 1.) Page # 2 – Note # 4 well tag # is incorrect.
- 2.) Page #2 - Notes #8 & #9 do not apply to this plan.
- 3.) A 4 in. water line sleeve is shown on page #1, but a 3 in. sleeve is stated in the profile on page #2.
- 4.) Change the terminology in the pump capacity calculations on page #2:
  - a.) The term “Minimum system discharge rate” is incorrect. Instead use the term “Dose”. Considering the # of bedrooms for this project, it should be about 150 gallons, 150 (Recommended Dose) – 45.5 (vol. in 2 in. FM) = 104.5. 104.5 gallons will make it to the d-box after the force main is charged. It doesn't have to be 200 gallons as previously stated since this isn't an LPD design.
  - b.) Dose as you have shown in the calculations does not = volume in the force main (FM) which should be  $261.2 \times 17.4/100 = 45.5$ . However, this volume should be considered when figuring out a proper dose to the d-box/trenches.
  - c.) Re-check # of fittings and the friction loss #s for a 2 in. force main.
- 5.) Since FM was reduced from 3in. to 2 in., the friction should be 3.98 (not 1.73). TDH is about 31.76.
- 6.) Add note to plan that both tanks must be water tight tested at time of installation.
- 7.) Add the address to the plan.

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, December 05, 2019 2:51 PM  
**To:** 'roshannj@aol.com'  
**Cc:** 'gphillips@mred.us'  
**Subject:** OSDS Plan Comments\_13488 Open Space Court  
**Attachments:** OSDS Memo\_NJR\_Allnut Estates Lot 15\_12.5.2019.pdf

Hello Roshann:

Attached, please find OSDS Plan comments for 13488 Open Space Court. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

## Oswald, Hank

---

**From:** Nancy Mayer <mbi1959@yahoo.com>  
**Sent:** Thursday, December 05, 2019 11:37 AM  
**To:** Oswald, Hank  
**Subject:** Re: Tank Question

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

Hank,  
We've made a number of 2500 gal, doing another right now for a SHA job. They are made custom with panels, typically walls are thicker than 4". Most precasters only have standard forms up to 2000 gal. The biggest we ever did was a 10,000 gal out at the Middle school on Rt 99 and 32 years ago.....  
I guess the engineer wanted a larger holding capacity for sludge and scum for that big of a house.

Let me know if you need any more info.

Nancy Mayer Minahan  
President  
Mayer Bros.,Inc. / OSIS LLC  
410-796-1434

On Thursday, December 5, 2019, 11:12:36 AM EST, Oswald, Hank <hoswald@howardcountymd.gov> wrote:

Hi Nancy:

I am currently reviewing a septic plan for an 8-bedroom residence. The engineer is proposing a "custom" 2500-gallon septic tank and 2000-gallon pump tank (Both MBI tanks). I just wanted to confirm these tank specs with you (see attachments). I've never heard of a 2500-gallon septic tank. How is this tank made? The pump tank seems to have just enough emergency storage for an 8 BR residence (1200 plus gallons).

Any feedback would be greatly appreciated.

Respectfully,

Hank

Hank Oswald

Licensed Environmental Health Specialist

Howard County Health Department

Bureau of Environmental Health

Well & Septic Program

8930 Stanford Boulevard

Columbia, MD 21045

410.313.1786 (Office)

[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



#### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

---

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

**MEMORANDUM**

**TO:** NJR & Associates  
2770 Route 32  
West Friendship, MD 21794

**FROM:** Hank Oswald, L.E.H.S.  
Well & Septic Program

**RE:** OSDS Plan  
Open Space Court, Lot 15  
Allnut Farm Estates

**Date:** November 19, 2019

---

The following comments pertain to the review of the OSDS Plan for **Open Space Court, Lot 15**

- 1.) Note# 4 - well tag # is incorrect.
- 2.) Notes #8 & #9 - do not apply to this plan.
- 3.) Label the 2000-gallon tank as Pump Tank on page #2.
- 4.) A steel sleeve isn't typically used by septic contractors. Instead show a 6 in. PVC sleeve.
- 5.) Distal head doesn't apply here, because the liquid openly discharges into d-box.
- 6.) Minimum dose is 1/6<sup>th</sup> design flow or 200 gallons.
- 7.) Change force main from 3 in. to 2 in.
- 8.) Use pump WEO7H
- 9.) Add pump run (RT) time to page #2. RT should be around 2.5 minutes @ 75 gallons/min. In general, pumps should run for about 2.5 to 3 mins.

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Tuesday, November 19, 2019 1:49 PM  
**To:** 'roshannj@aol.com'  
**Cc:** 'gphillips@mred.us'  
**Subject:** OSDS Plan Review Comments\_Allnut Farms Estate Lot 15  
**Attachments:** OSDS Memo\_NJR\_Allnut Estates Lot 15\_2019.pdf

Hello Mr. Roshann:

Attached, please find OSDS Plan review comments for Allnut Farms Estate, Lot 15. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Monday, September 16, 2019 9:25 AM  
**To:** 'roshannj@aol.com'  
**Cc:** 'gphillips@mred.us'  
**Subject:** OSDS Plan\_Open Space Court\_Lot 15  
**Attachments:** OSDS Design Plan Requirements\_Updated 5.31.17.pdf; OSDS Memo\_NJR\_Allnut Estates Lot 15\_2019.pdf

Hello Mr. Roshann:

Good morning. Attached, please find memo containing comments to the review of the OSDS Plan for Open Space Court, Lot 15. You will also find a copy of our OSDS design plan requirements.

Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)



### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

---

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

**MEMORANDUM**

**TO:** NJR & Associates  
2770 Route 32  
West Friendship, MD 21794

**FROM:** Hank Oswald, L.E.H.S.  
Well & Septic Program

**RE:** OSDS Plan  
Open Space Court, Lot 15  
Allnut Farm Estates

**Date:** September 16, 2019

---

The following comments pertain to the review of the OSDS Plan for **Open Space Court, Lot 15**

- ✓ 1.) Show cross section and details for pump tank.
- ✓ 2.) Show pump specs.
- ✓ 3.) Show pump curve.
- ✓ 4.) Show Design Head Calculations (static head/friction head).
- ✓ 5.) Show septic profile to d-box.
- ✓ 6.) Show sleeve on well line starting 10 feet from SDA and ending at the house due to proximity of well line to SDA and yard inlet, and because it travels beneath both driveways.
- ✓ 7.) Show sleeve on septic line starting on the house side of driveway and ending just past the yard inlet.
- 8.) Show cross section detail of the intersection of the well line, septic line and inlet. Maintain 12-inch separation between well line (on top) and the septic line (on bottom).
- ✓ 9.) Add note to install tracer tape on both well and septic lines.
- 10.) Please see attached OSDS Plan design requirements for more information.

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, June 27, 2019 2:43 PM  
**To:** 'roshannj@aol.com'  
**Cc:** 'gphillips@mred.us'  
**Subject:** Perc Test Results\_13488 Open Space Court\_Allnut Farm Estates Lot 15  
**Attachments:** Perc Test Report\_Open Space Court\_6.27.19.pdf; perc test field notes (2).pdf

Hello All:

Attached, please find results for two additional perc test holes for 13488 Open Space Court, Allnut Farms Estates, Lot 15.

Thanks,

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)

### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.



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

---

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

June 27, 2019

To: (NJR & Associates) (Gregory Phillips of MREB)

Re: Percolation Test Report

Percolation tests were conducted at 13488 Open Space Court in Highland (Tax Map 34, Grid 15, Parcel 375, Lot 15) on June 27, 2019. Tests and/or profile descriptions were documented for 2 additional locations (Test Hole 7 & 8). Both test holes passed.

All percolation tests conducted were standard tests, measuring rate of fall for a pre-wet period followed by measurement and recordation of the time required for the water level to drop 1 inch. Areas that may be included in the septic reserve area are represented by test locations having satisfactory soil condition. The area must be at least 10,000 square feet and large enough to accommodate 3 systems for the planned residence.

The next step in the process is to have an engineer submit a percolation certification plan to confirm the design of the septic disposal area.

Should you have any questions regarding this evaluation, please contact me. I may be reached at (410) 313-1786 or by email [hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)

Respectfully,

*Hank Oswald*

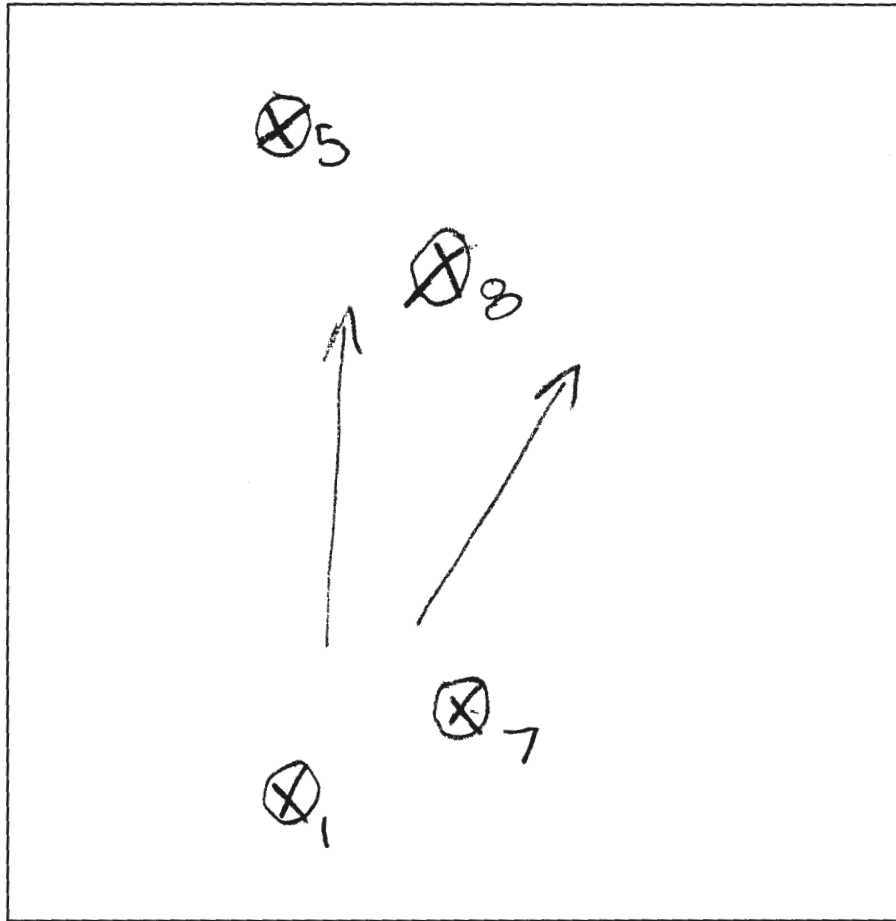
Hank Oswald, L.E.H.S  
Bureau of Environmental Health  
Well & Septic Program

Attachment: Percolation Test Field Notes & Septic Specs

① 565456

7  
 4.0' - Red Br scl  
 yel br sl  
 7' - yel tan sl  
 vf  
 12' - dry

8  
 21' - br scl  
 yel br sl  
 4' - yltan to  
 by yel sl  
 2'-5" rock  
 12'



DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
6/27/19	7	4' / 12'	10:26	10:30	TOP	Lang	F
6/27/19	↳	5' / 12'	11:07	11:12	11:21	9	P
6/27/19	8	1.9' / 12'	10:04	10:07	10:10	3	P

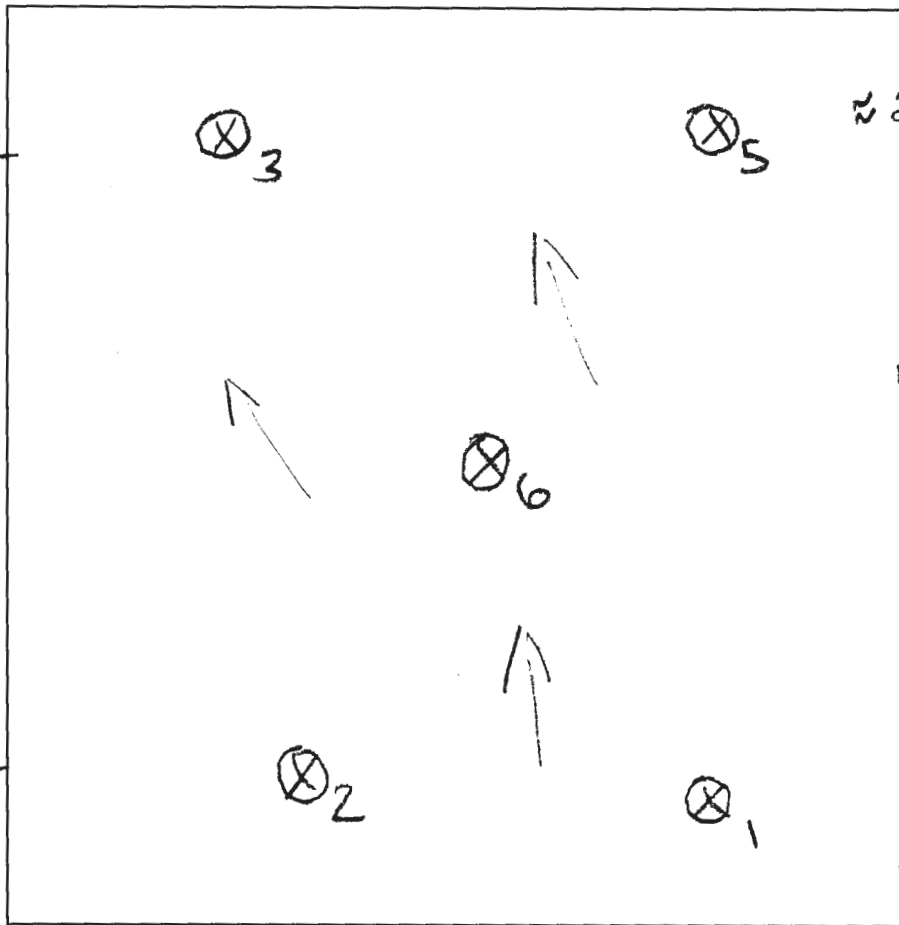
REMARKS \_\_\_\_\_  
 SANITARIAN H Oswald BACKHOE Jim Reese Ent. OTHERS \_\_\_\_\_  
 TEST HOLES USED IN SDA \_\_\_\_\_ AVG. PERC TIME \_\_\_\_\_ SQ. FT/BR \_\_\_\_\_  
 TRENCH WIDTH \_\_\_\_\_ INLET DEPTH \_\_\_\_\_ MAX. BOT DEPTH \_\_\_\_\_ EFFECTIVE SW \_\_\_\_\_

565456

1  
br scl sbk  
5% gravel / stone  
4.8  
dark  
yel-br  
sl  
w/ mica  
12' - dry

2  
br scl sbk  
2-5% gravel / stone  
3.2  
yel. tan  
sl  
w/ mica  
11' - more compact @ this depth pl  
12' - dry

3  
br scl  
sbk  
2'  
yel br  
sl sbk  
4.8  
yel tan  
sl pl  
2% gravel  
12.4 - dry



5  
br scl  
sbk  
2.5  
yel br  
sl  
w/ mica  
fine to med roots  
4.5  
yel  
tan sl  
pl  
12' - dry

6  
br scl  
sbk  
2'  
yel sl  
w/ mica  
sbk  
2.5  
yel  
tan  
sl  
12' - dry

Open Space Court

DATE	TEST #	DEPTH	START	BREAK 1" DROP	STOP 2" DROP	TIME OF 2ND INCH	P/F/H
5/22/19	1	5.3/12'	10:49	10:56	11:08	12	P
5/22/19	2	4'/12'	11:12	11:14	11:16	2	P
5/22/19	3	3'/12.5'	10:12	10:14	10:19	5	P
5/22/19	5	3.1/12'	9:17	—	9:18	<1	F
5/22/19	5	↳ repair	9:24	9:25	9:26	1	F
5/22/19	5	5'/12'	9:44	9:45	9:46	1	F
5/22/19	5	↳ repair	10:17	10:19	10:21	2	P
5/22/19	6	2.3/12'	9:35	10:19	—	>30	F
5/22/19	6	3'/12'	10:28	10:50	11:20	30	P

REMARKS Per test holes weren't properly stated / #  
 SANITARIAN H. Oswald BACKHOE Jim w/ OTHERS G. Phillips w/MREB  
 TEST HOLES USED IN SDA REK ENT AVG. PERC TIME \_\_\_\_\_ SQ. FT/BR \_\_\_\_\_  
 TRENCH WIDTH \_\_\_\_\_ INLET DEPTH \_\_\_\_\_ MAX. BOT DEPTH \_\_\_\_\_ EFFECTIVE SW \_\_\_\_\_

---

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

May 23, 2019

To: (NJR & Associates) (Gregory Phillips of MREB)

Re: Percolation Test Report

Percolation tests were conducted at 13488 Open Space Court in Highland (Tax Map 34, Grid 15, Parcel 375, Lot 15) on May 22, 2019. Tests and/or profile descriptions were documented for 5 locations. All 5 test holes passed.

All percolation tests conducted were standard tests, measuring rate of fall for a pre-wet period followed by measurement and recordation of the time required for the water level to drop 1 inch. Areas that may be included in the septic reserve area are represented by test locations having satisfactory soil condition. The area must be at least 10,000 square feet and large enough to accommodate 3 systems for the planned residence.

The next step in the process is to have an engineer submit a percolation certification plan to confirm the design of the septic disposal area.

Should you have any questions regarding this evaluation, please contact me. I may be reached at (410) 313-1786 or by email [hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)

Respectfully,

*Hank Oswald*

Hank Oswald, L.E.H.S  
Bureau of Environmental Health  
Well & Septic Program

Attachment: Percolation Test Field Notes & Septic Specs

## Oswald, Hank

---

**From:** Oswald, Hank  
**Sent:** Thursday, May 23, 2019 9:20 AM  
**To:** 'gphillips@mred.us'; 'roshannj@aol.com'  
**Subject:** Perc Test Results\_13488 Open Space Court\_Allnut Farms Estates Lot 15  
**Attachments:** septic specs (1).pdf; field notes.pdf; Perc Test Report\_Allnut Farms Estates\_Lot 15.pdf; PERC CERT Memo\_NJR\_2019.pdf; Percolation & Plan Requirements For Developed Lots.pdf

To All:

Attached, you will find the perc test results along supporting documents for 13488 Open Space Court, Allnut Farms Estates, Lot 15. Should you have any questions, please don't hesitate to ask.

Hank

Hank Oswald  
Licensed Environmental Health Specialist  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
[hoswald@howardcountymd.gov](mailto:hoswald@howardcountymd.gov)

### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.