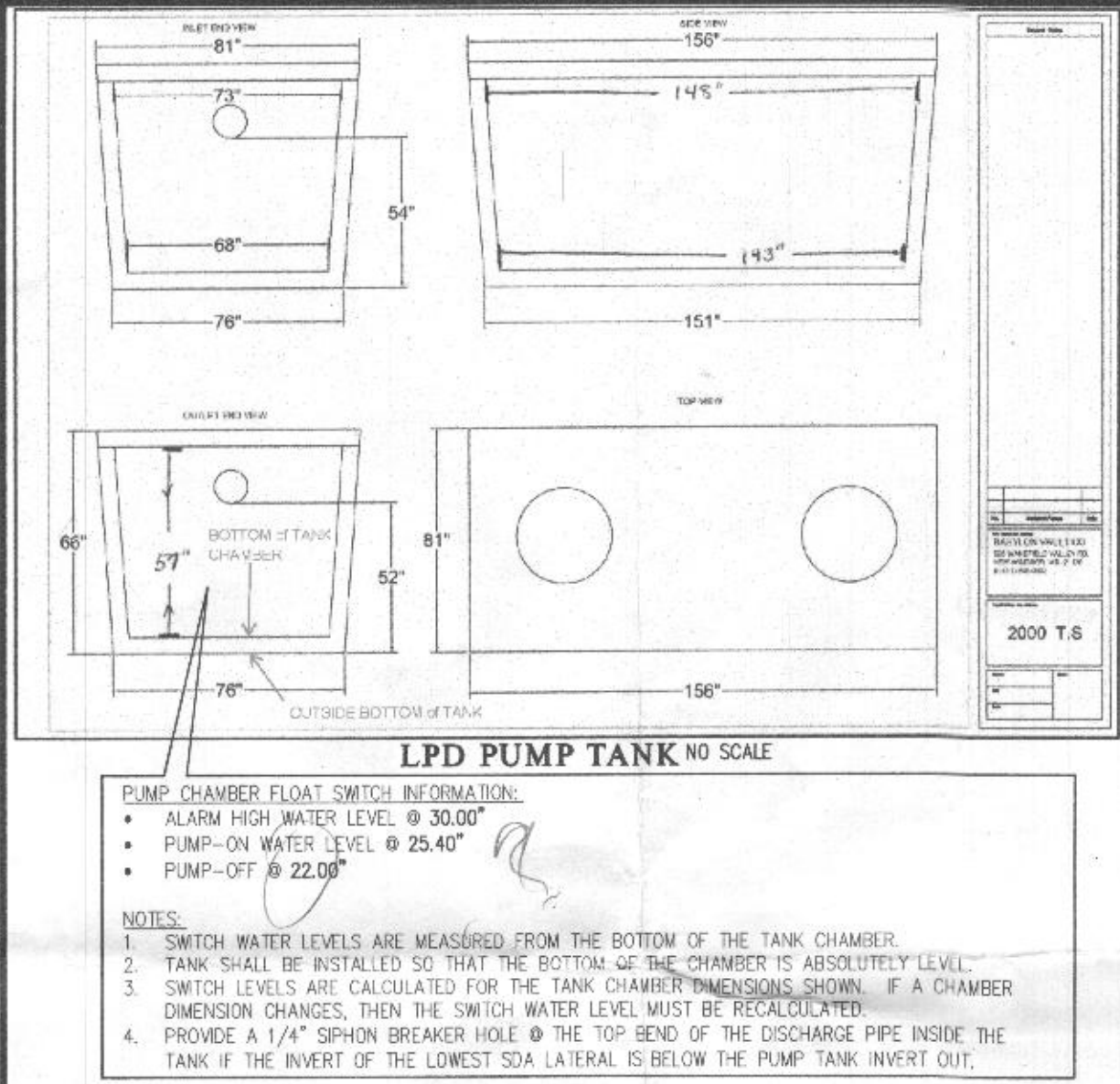


Wastewater

Models

Order No.	Part No.	Part Name	Material	Qty	Unit Price	Total Price	Notes
001	001	001	001	001	001	001	
002	002	002	002	002	002	002	
003	003	003	003	003	003	003	
004	004	004	004	004	004	004	
005	005	005	005	005	005	005	
006	006	006	006	006	006	006	
007	007	007	007	007	007	007	
008	008	008	008	008	008	008	
009	009	009	009	009	009	009	
010	010	010	010	010	010	010	
011	011	011	011	011	011	011	
012	012	012	012	012	012	012	
013	013	013	013	013	013	013	
014	014	014	014	014	014	014	
015	015	015	015	015	015	015	
016	016	016	016	016	016	016	
017	017	017	017	017	017	017	
018	018	018	018	018	018	018	
019	019	019	019	019	019	019	
020	020	020	020	020	020	020	
021	021	021	021	021	021	021	
022	022	022	022	022	022	022	
023	023	023	023	023	023	023	
024	024	024	024	024	024	024	
025	025	025	025	025	025	025	
026	026	026	026	026	026	026	
027	027	027	027	027	027	027	
028	028	028	028	028	028	028	
029	029	029	029	029	029	029	
030	030	030	030	030	030	030	
031	031	031	031	031	031	031	
032	032	032	032	032	032	032	
033	033	033	033	033	033	033	
034	034	034	034	034	034	034	
035	035	035	035	035	035	035	
036	036	036	036	036	036	036	
037	037	037	037	037	037	037	
038	038	038	038	038	038	038	
039	039	039	039	039	039	039	
040	040	040	040	040	040	040	
041	041	041	041	041	041	041	
042	042	042	042	042	042	042	
043	043	043	043	043	043	043	
044	044	044	044	044	044	044	
045	045	045	045	045	045	045	
046	046	046	046	046	046	046	
047	047	047	047	047	047	047	
048	048	048	048	048	048	048	
049	049	049	049	049	049	049	
050	050	050	050	050	050	050	
051	051	051	051	051	051	051	
052	052	052	052	052	052	052	
053	053	053	053	053	053	053	
054	054	054	054	054	054	054	
055	055	055	055	055	055	055	
056	056	056	056	056	056	056	
057	057	057	057	057	057	057	
058	058	058	058	058	058	058	
059	059	059	059	059	059	059	
060	060	060	060	060	060	060	
061	061	061	061	061	061	061	
062	062	062	062	062	062	062	
063	063	063	063	063	063	063	
064	064	064	064	064	064	064	
065	065	065	065	065	065	065	
066	066	066	066	066	066	066	
067	067	067	067	067	067	067	
068	068	068	068	068	068	068	
069	069	069	069	069	069	069	
070	070	070	070	070	070	070	
071	071	071	071	071	071	071	
072	072	072	072	072	072	072	
073	073	073	073	073	073	073	
074	074	074	074	074	074	074	
075	075	075	075	075	075	075	
076	076	076	076	076	076	076	
077	077	077	077	077	077	077	
078	078	078	078	078	078	078	
079	079	079	079	079	079	079	
080	080	080	080	080	080	080	
081	081	081	081	081	081	081	
082	082	082	082	082	082	082	
083	083	083	083	083	083	083	
084	084	084	084	084	084	084	
085	085	085	085	085	085	085	
086	086	086	086	086	086	086	
087	087	087	087	087	087	087	
088	088	088	088	088	088	088	
089	089	089	089	089	089	089	
090	090	090	090	090	090	090	
091	091	091	091	091	091	091	
092	092	092	092	092	092	092	
093	093	093	093	093	093	093	
094	094	094	094	094	094	094	
095	095	095	095	095	095	095	
096	096	096	096	096	096	096	
097	097	097	097	097	097	097	
098	098	098	098	098	098	098	
099	099	099	099	099	099	099	
100	100	100	100	100	100	100	

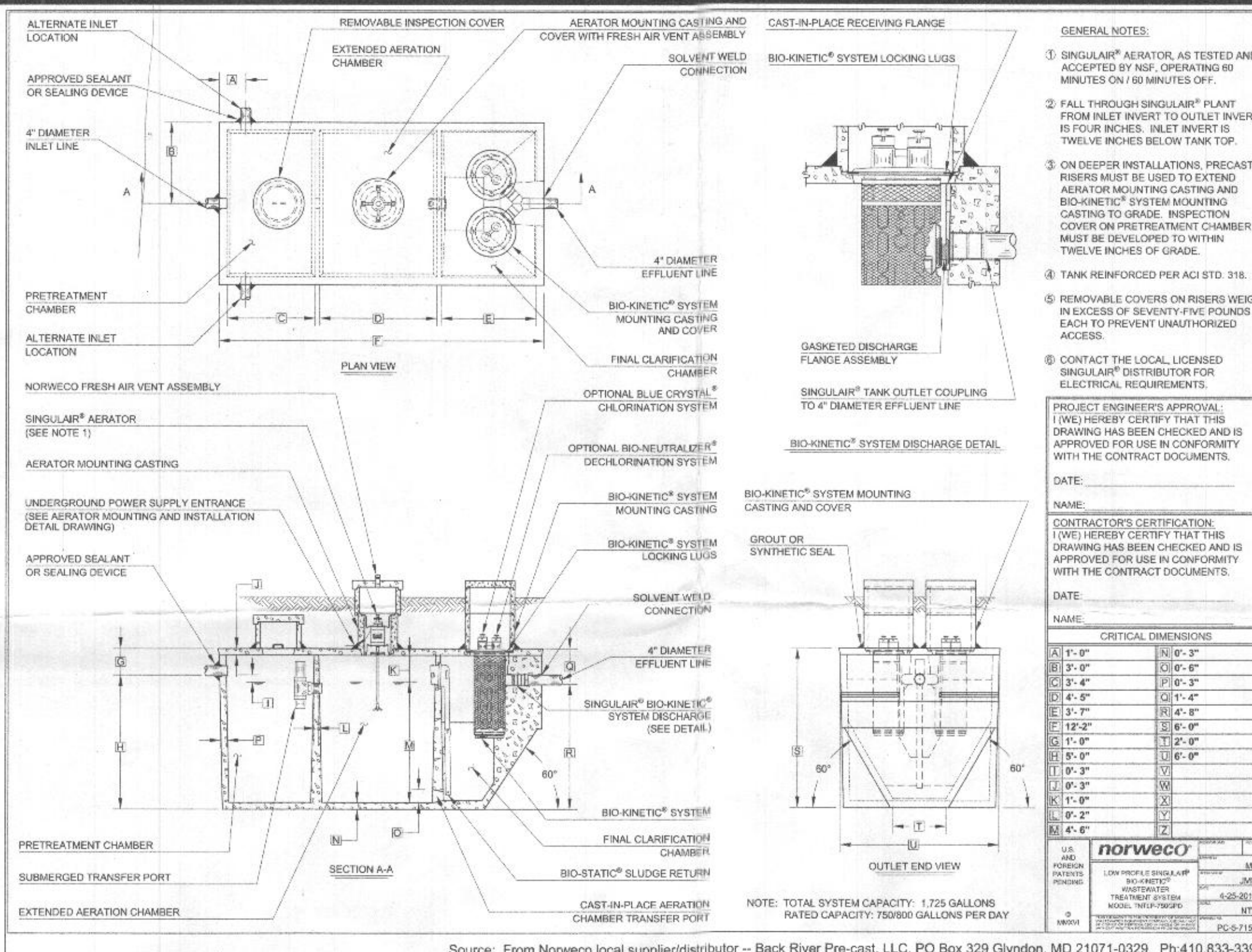


Rectangular Trapezoidal Pump Chamber Volume Calculations (Babylon Vault 2000 T.S)

H: Height (inside dimension from bottom of chamber to top seal)	57.0 in.
W: Top Width (inside dimension)	73.0 in.
L: Top Length (inside dimension)	148.0 in.
a: Bottom Width (inside dimension)	68.0 in.
b: Bottom Length (inside dimension)	141.0 in.
Chamber Bottom Area (a x b)	9724.0 sq. in.
Height from bottom of chamber to inlet level (Si)	50.0 in.
Chamber width at inlet level (Ci)	72.39 in.
Chamber length at inlet level (Di)	147.39 in.
Chamber Sectional Area at inlet level (Ci x Di)	10668.7 sq. in.
Chamber Volume at inlet level (Vi)	509657 cu. in.
	2206 gal.

Float Switch Setting Parameters & Volume Calculations

Design Flow per day (min. reserved capacity to set alarm level)	6 doses at 150 gal./dose	900 gal.
Dosing frequency per day & volume per dose	30,000 in.	
Water level (Sa) to switch on alarm	70.63 in.	
Chamber width at alarm level (Ca)	145.63 in.	
Chamber length at alarm level (Da)	10286.2 sq. in.	
Chamber Sectional Area at alarm level (Ca x Da)	300118 cu. in.	1299 gal.
Water volume at alarm level (Va)	209538 sq. in.	907 gal.
Reserved Capacity provided at alarm setting (Vi - Va)	209538 sq. in.	907 gal.
Back check reserved capacity : ((Si - Sa)/6) * (Ci * Di) + (Ci * Ca) * (Di + Da) + Ca * Da	30,000 in.	
Alarm High water level (from bottom of pump chamber)	25,400 in.	
Pump on water level (O) from bottom of pump chamber	70.23 in.	
Chamber width at this level (Co)	145.23 in.	
Chamber length at this level (Do)	10199.09 sq. in.	
Chamber Sectional Area at this level (Co x Do)	253002 cu. in.	1035 gal.
Water volume (Vo) to switch pump on	22,900 in.	
Pump off water level (F) from bottom of pump chamber	69.93 in.	
Chamber width at this level (Cf)	144.93 in.	
Chamber length at this level (Df)	10134.92 sq. in.	
Chamber Sectional Area at this level (Cf x Df)	218434 cu. in.	946 gal.
Water volume (Vf) to switch pump off	34568 cu. in.	150 gal.
Volume between on off switches: ((O - F)/6) * (Co * Do) + (Co * Cf) * (Do + Df) + Cf * Df	34568 cu. in.	150 gal.
Back Check dosing volume switch setting: Vo - Vf	34568 cu. in.	150 gal.



Gaither's Chance Lot-7

System Input Information

Application Rate	1.2	1.2	1.2
Effective area beginning depth	3.0	3.0	3.0
Effective area maximum bottom depth	5.5	5.5	5.5
Number of Bedrooms	6	6	6
Design flow at 150 gal./day/bedroom	900	900	900

Absorption Trench Calculations

Drainfield area required (Design flow/application rate)	750 s.f.	750 s.f.	750 s.f.
Effluent pipe depth to invert (cannot exceed 4\"/>			

LOW PRESSURE DISTRIBUTION SYSTEM CALCULATIONS

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

ADDRESS: 5046 Gaithers Chance Drive

SUBDIVISION: Gaither's Chance

DATE: October, 2017

LOT: 7

Design Flow: 900 gpd

Pump Off Elevation: 538.07

Inv. Out of Pump Tank: 540.15

Pump Bottom Elevation: 536.73

Number of Manifolds: 1

Manifold 1 Type: End-Feed

Lateral	Elev.	Length	Flow
1	551.0	89.5	89.5
2	550.0	89.5	89.5

1" Elev. Range, Single Manifold OK

Trench	Elev (ft) Head	Orifice Diam.	Orifice Flow Rate	Orifice Spacing	Number of Orifices	Trench Length	Lateral Diam.	Type	
1	551.0	2	5/16	1.63	5.35	13	21.17	66.83	1.5 SCH 40
2	550.0	3	5/16	1.99	6.32	11	21.94	66.34	1.5 SCH 40

Min. System Discharge Rate: 43.1 gpm

Manifold Diam. 2.0 in Vel. 4.4 fps Friction Loss (Table 4.4) 3.024

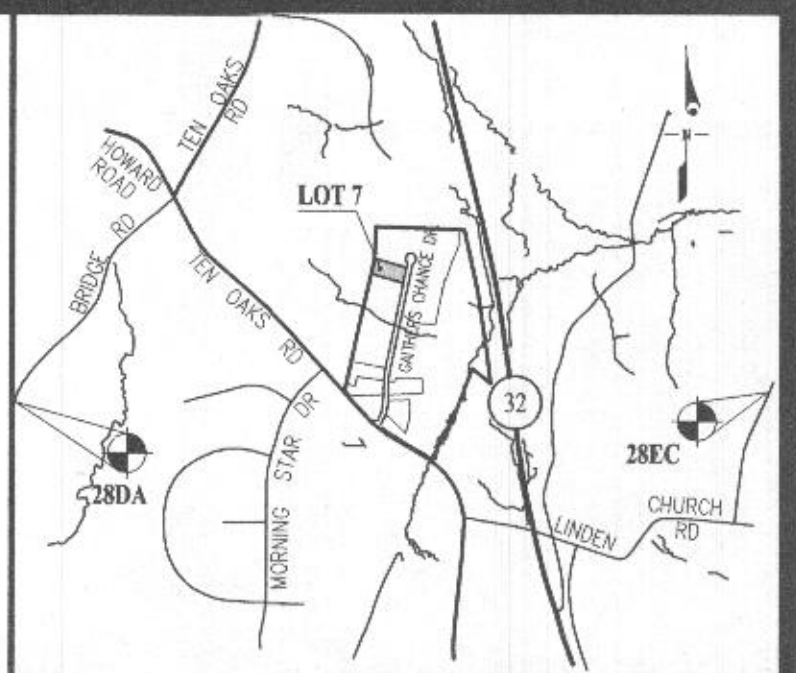
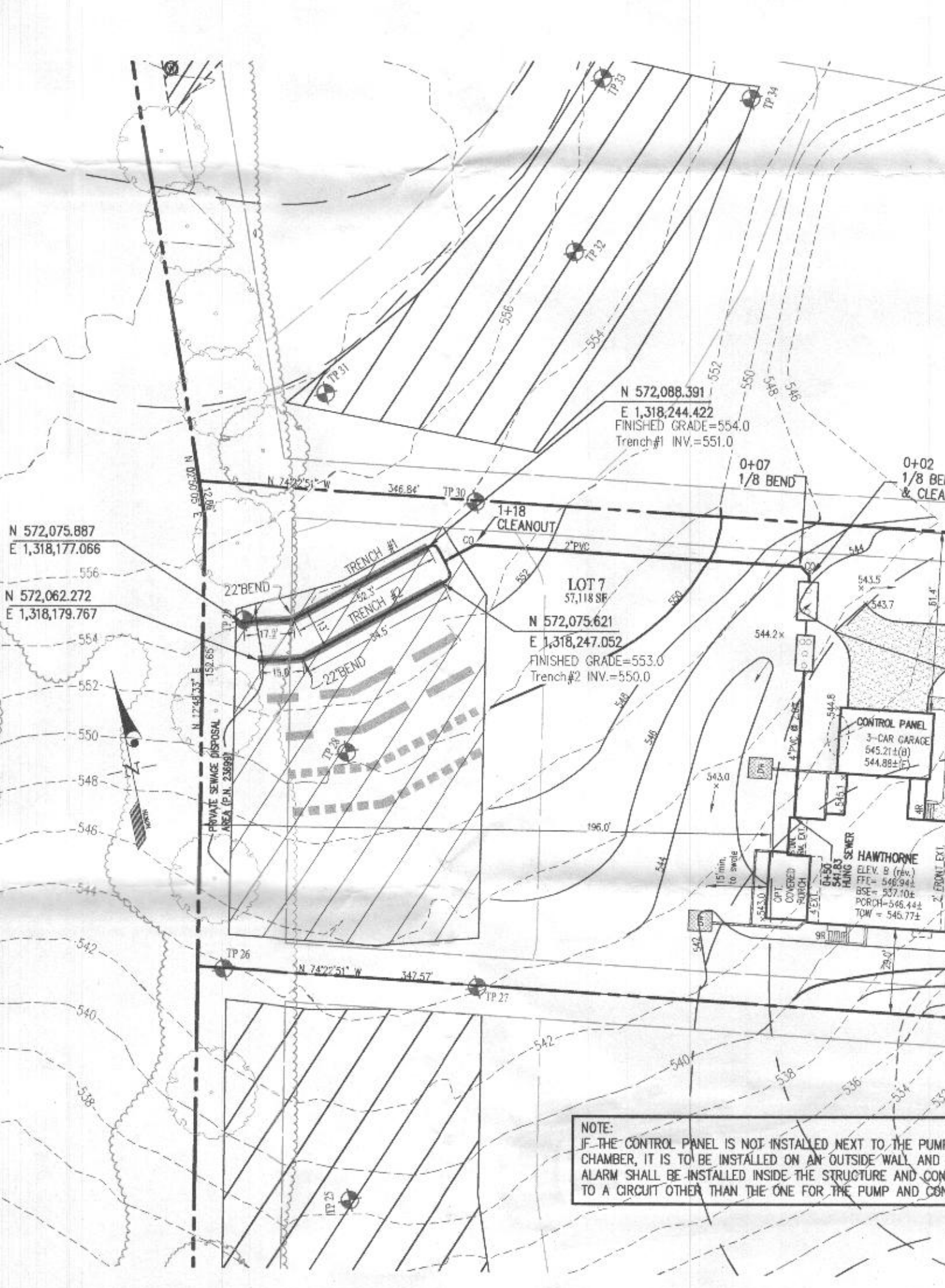
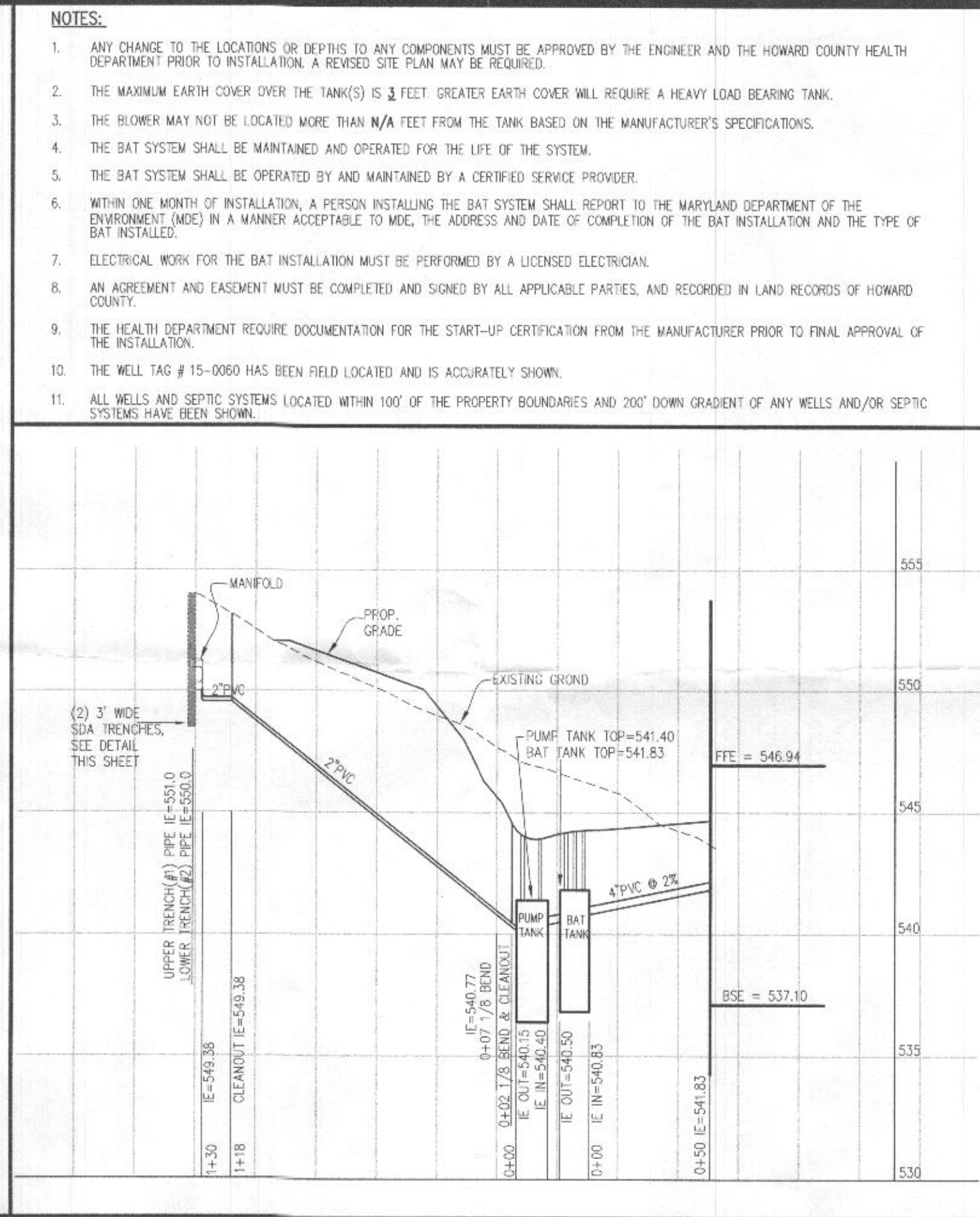
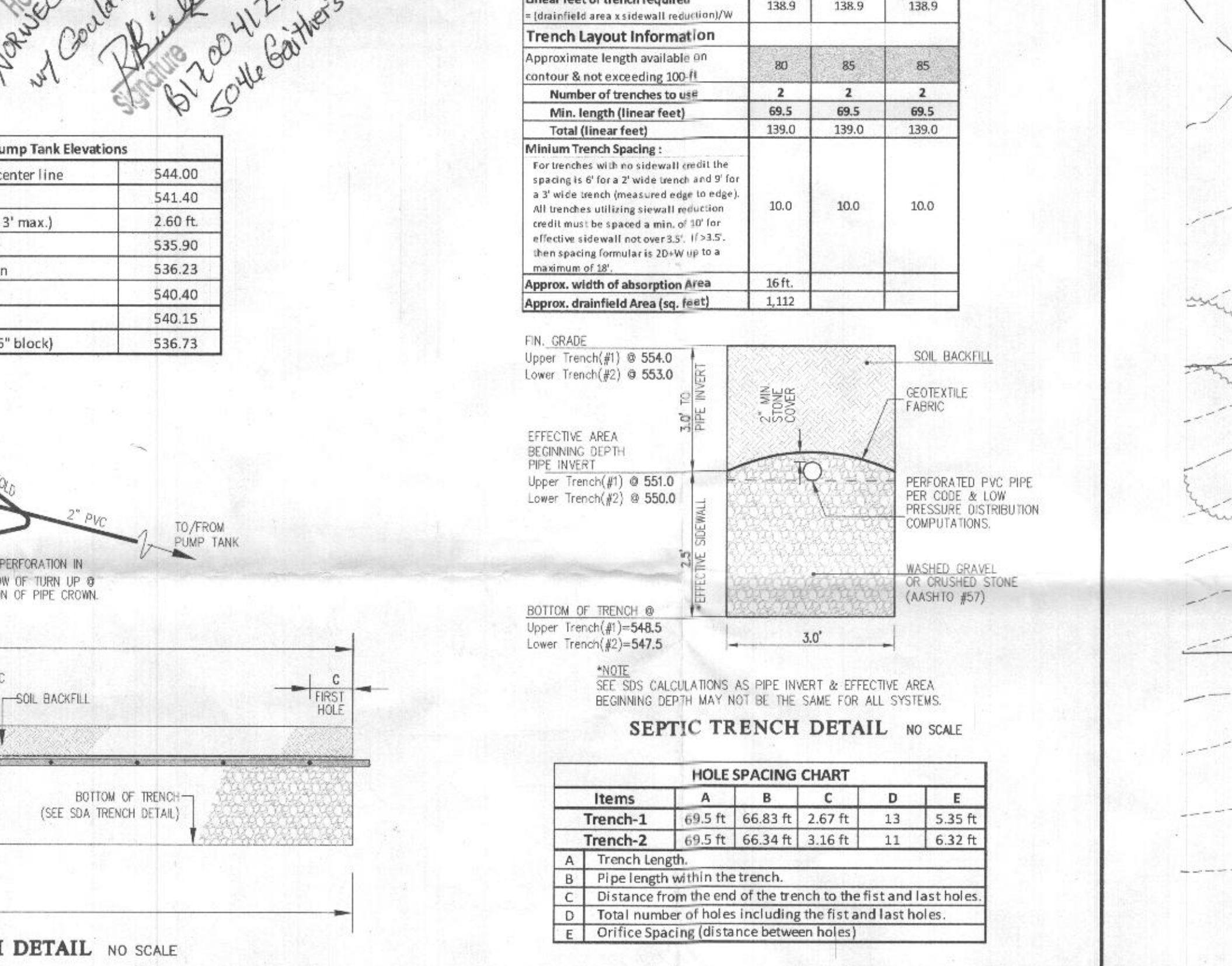
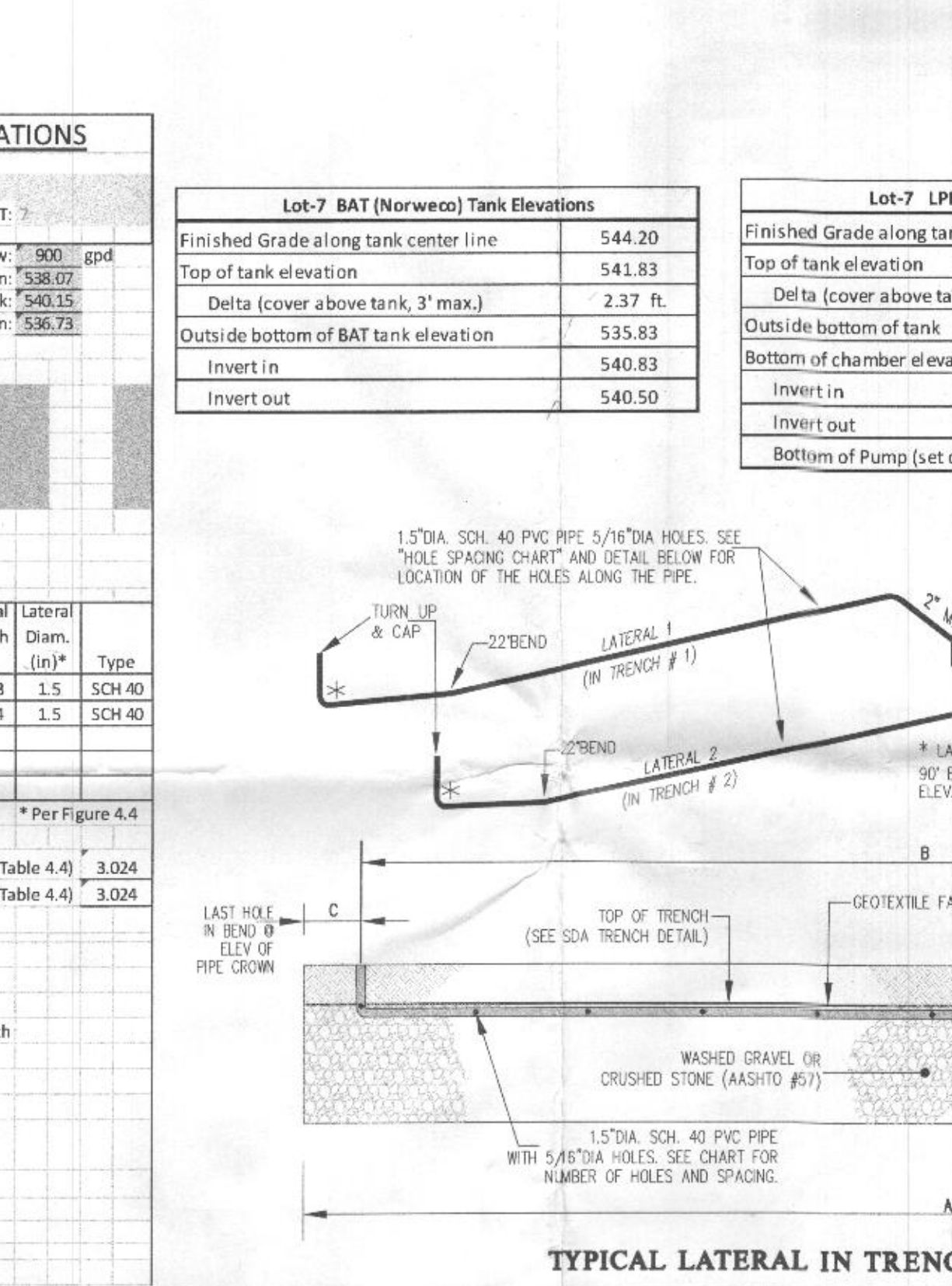
Force Main Diam. 2.0 in Vel. 4.4 fps Friction Loss (Table 4.4) 3.024

Minimum Dose: 150.0 gal

Calculate Total Design Head

- Friction Loss in Foremain: 4.0 ft
- Friction Loss from Fittings: 21 ft X 3.024 = 63.5 ft
- Friction Loss from Laterals: 1.5 ft
- Static Head: 12.93 ft
- Min. Distal (discharge) head: 2 ft

TDH: 21.1 ft



BENCHMARKS

28DA	ELEV. 564.362	N = 570,624.996	E = 1,314,434.172
28EC		N = 570,757.386	E = 1,322,274.727

LEGEND

- 500 EXISTING CONTOUR
- 600 PROPOSED CONTOUR
- FFE FIRST FLOOR ELEVATION
- TGF TOP OF FOUNDATION WALL
- BSE BASEMENT SLAB ELEVATION
- SEPTIC DISPOSAL AREA
- INITIAL SYSTEM 3' WIDE TRENCH
- FIRST REPLACEMENT SYSTEM 3' WIDE TRENCH
- SECOND REPLACEMENT SYSTEM 3' WIDE TRENCH
- TP # PERCOLATION TEST HOLES (PASSED)
- TP # PERCOLATION TEST HOLES (FAILED)

GLWGUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS

3609 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK

BURTONSVILLE, MARYLAND 20866

TEL: 301-421-4024 BALTIMORE: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:

MB GAITHER'S CHANCE, LLC

1686 E. GUIDE DRIVE

ROCKVILLE, MARYLAND 20850

PH: 301-762-9511

ATTN: MARC QUINT

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, 2018

12/1/17