

Bureau of Environmental Health
 8930 Stanford Boulevard, Columbia, MD 21045
 Main: 410-313-2640 | Fax: 410-313-2648
 TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
 Facebook: www.facebook.com/hocohealth

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

RECEIPT DATE: 10/23/18

ONSITE SEWAGE DISPOSAL SYSTEM

P 564043

APPROVAL DATE: 06/24/2019

PERMIT: CONSTRUCTION

A _____

PROPERTY ADDRESS: 11811 Chapel Estates Drive

SUBDIVISION: Chapel Rise

LOT: 2

TAX ID: _____

CONTRACTOR: HATFIELD'S EQUIPMENT

EMAIL: _____

CONTRACTOR ADDRESS: PO Box 519 ANNAPOLIS JUNCTION

PHONE: 3018546172

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Nisha Patel

EMAIL: _____

OWNER ADDRESS: 12029 Floating Clouds Path, Clarksville, MD 21029

PHONE: _____

BAT UNIT MODEL: Norweco

Meyers
ME 150

PUMP SIZE: 1.5hp

PUMP TANK CAPACITY: 1500

OPERATION & MAINTENANCE AGREEMENT

DATE SIGNED: 4/23/10

DATE RECORDED: 4/24/10

DISTRIBUTION SYSTEM: GRAVITY

PRESSURE DOSED

BEDROOMS: 5

APPLICATION RATE: 1.2

TRENCHES:
 LINEAR FEET REQUIRED: 104
 TRENCH WIDTH: 3
 MINIMUM SPACE BETWEEN TRENCHES: 10

INLET DEPTH: 3
 MAXIMUM BOTTOM DEPTH: 6
 EFFECTIVE AREA BEGINNING DEPTH: 3

LOCATION: **PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**

NOTES:
 Install 3 trenches per BAT plan

ISSUED BY: Jeff Williams

ISSUE DATE: 10/23/18

EXPIRATION DATE: 10/23/19

- 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 18004828
- NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.

CALL 410-313-1771 TO SCHEDULE INSPECTIONS.

NOT TO SCALE

SEE DIAGRAM ON
P.02

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH INLET BOTTOM

3' 3' 6'

NUMBER OF TRENCHES 3

TOTAL LENGTH 108 ft

ABSORPTION AREA 324 ft²

DISTRIBUTION BOX LEVEL N/A (LPD)

DISTRIBUTION BOX BAFFLE N/A

DISTRIBUTION BOX PORT N/A

SEPTIC TANK DATA

SEPTIC TANK I LEVEL

MANUFACTURER BACKRIVER

CAPACITY GAL

SEAM LOC TOP

TANK LID DEPTH 3'

BAFFLES OUTLET

BAFFLE FILTER OUTLET

MANHOLE LOC FRONT/BACK

6" PORT LOC N/A

WATERTIGHT TEST

SLOTTED YES

DATE ON LID 09/07/2014

PUMP/SEPTIC TANK II LEVEL

MANUFACTURER BABYLON

CAPACITY 1500 GAL

SEAM LOC TOP

TANK LID DEPTH 3'

BAFFLES N/A

BAFFLE FILTER -

MANHOLE LOC FRONT/BACK

6" PORT LOC N/A

WATERTIGHT TEST N/A

SLOTTED N/A

DATE ON LID 10/12/2018

PRE-CONSTRUCTION:

12/11/2018 SDA WAS CLEARED AND DAMAGED. TRENCH CONTOUR WAS UNDETERMINABLE DUE TO HEAVY RAINS AND HEAVY MACHINERY DISTURBANCE. CONTRACTOR TO START AT MARKED MANIFOLD AND USE LASER LEVEL TO KEEP TRENCH CONSTRUCTION LEVEL AND ON RELATIVE CONTOUR. PERC NOTES OK - DUG TO 14' (d).

INSTALLATION:

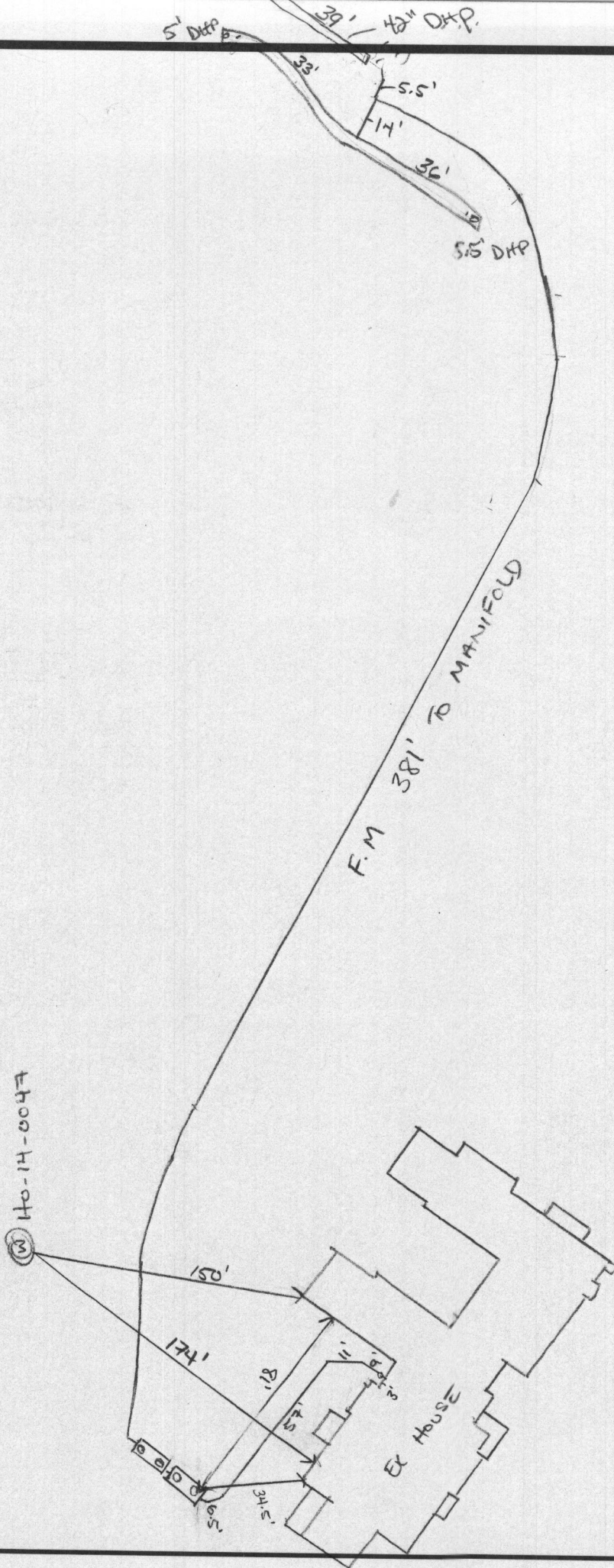
12/19/2018 TANKS SET, SHC INSTALLED AND CONNECTED TO TANK TANKS HAVE TRAFFIC BEARING LID. TANKS OUTFITTED WITH CONCRETE RISERS. (d) 12/20/2018 INSTALLED FIRST LEG OF FORCE MAIN FROM TANK TOWARD SDA. (d) 12/26/2018 INSTALLED TRENCHES, INSPECTED LATERAL BORE HOLES. FORCE MAIN COMPLETE, REINSPECT PUMP AND ALARM. (d) 6/24/2019 TANK NOW HAS 4" COVER, CONTRACTOR CONFIRMS TB TANK SEP P/A BREAKERS OUTSIDE. DISTAL HEAD PRESSURE OK. MARKED ON AS BUILT. START UP RECEIVED. (d)

FINAL INSPECTOR

DATE OF APPROVAL

06/24/2019

NOT TO SCALE



- * SLEEVED UNDER DRIVE WAY.
- * SLEEVED W/LINE



BACK RIVER PRE-CAST, LLC
 PO BOX 329
 GLYNDON, MD 21071
 PH# 410-833-3394

NORWECO CERTIFICATION

PROPERTY OWNER: NISHA PATEL	INSTALLATION COMPANY: HATFIELD
ADDRESS: 11811 CHAPEL ESTATES DR.	CERTIFIED INSTALLER: TODD TRACEY
CITY, ZIPCODE & COUNTY: CLARKSVILLE, 21029, HOWARD	PERMIT#
SIZE OF SYSTEM INSTALLED:	DATE INSTALLED: 12-14-18
600 GPD CONCRETE	START-UP DATE: 06-21-19
NUMBER OF BEDROOMS:	DATE OF FINAL INSPECTION:
TYPE OF INSTALLATION: NEW CONSTRUCTION	DATE OF ELECTRICAL INSPECTION:
ELECTRICAL WIRING PER ELECTRICAL INSTRUCTIONS: YES	TANK LEVEL: YES
HT. OF CONTROL PANEL ABOVE FINAL GRADE: 30"	BURIAL DEPTH OF TANK: 55"
SYSTEM WIRED ON A 15-AMP DEDICATED CIRCUIT WITH STD. BREAKER: YES	RISERS 4" - 6" ABOVE GRADE: NO
LENGTH(S) OF UF WIRE PAST LAST AERATION RISER(S): 60"	VENTED LID(S) ON AERATION CHAMBER(S): YES
FEMALE PLUG(S) WIRED TO UF WIRE: YES	ANY GROUND SETTLING AROUND TANK:
CONDUIT(S) ENTERING AERATION RISER MADE WITH A WATERTIGHT CONNECTION: YES	NO
IS THE INSIDE OF THE CONDUIT ENTERING THE CONTROL PANEL(S) AND AERATION RISER(S) SEALED WITH DUCT SEAL: YES	

ON 2ND PAGE MAKE A ROUGH SKETCH OF THE HOUSE ,WHERE THE SYSTEM IS LOCATED, WHERE THE CONTROL PANEL IS LOCATED , WHERE THE FRONT OF THE IS AND DIRECTIONS TO THE PROPERTY.

DIRECTIONS CAN START A FEW STREETS AWAY

EXAMPLE: RT. X LEFT ONTO XX STREET RIGHT ONTO PRIVATE DRIVEWAY 5TH HOUSE OF THE LEFT.

I certify that the Norweco Singulair TNT Wastewater Treatment System was installed according to the manufacture's specifications.

Matthew Geckle

June 21, 2019

Signature of BRP Representative

Vice-President

Date

Pre ~ Long June
Post ~ 22 6 248



BACK RIVER PRE-CAST, LLC
 PO BOX 329
 GLYNDON, MD 21071
 PH# 410-833-3394

NORWECO CERTIFICATION

PROPERTY OWNER: NISHA PATEL	INSTALLATION COMPANY: HATFIELD
ADDRESS: 11811 CHAPEL ESTATES DR.	CERTIFIED INSTALLER: TODD TRACEY
CITY, ZIPCODE & COUNTY: CLARKSVILLE, 21029, HOWARD	PERMIT#
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Matthew Geckle

June 21, 2019

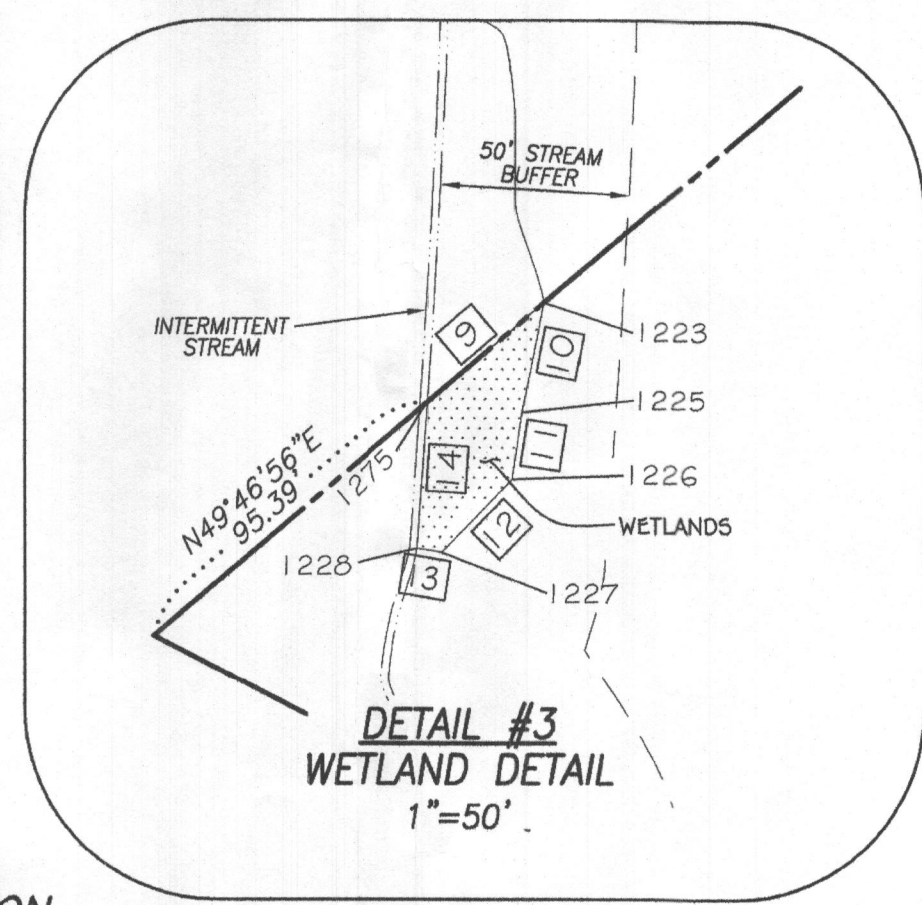
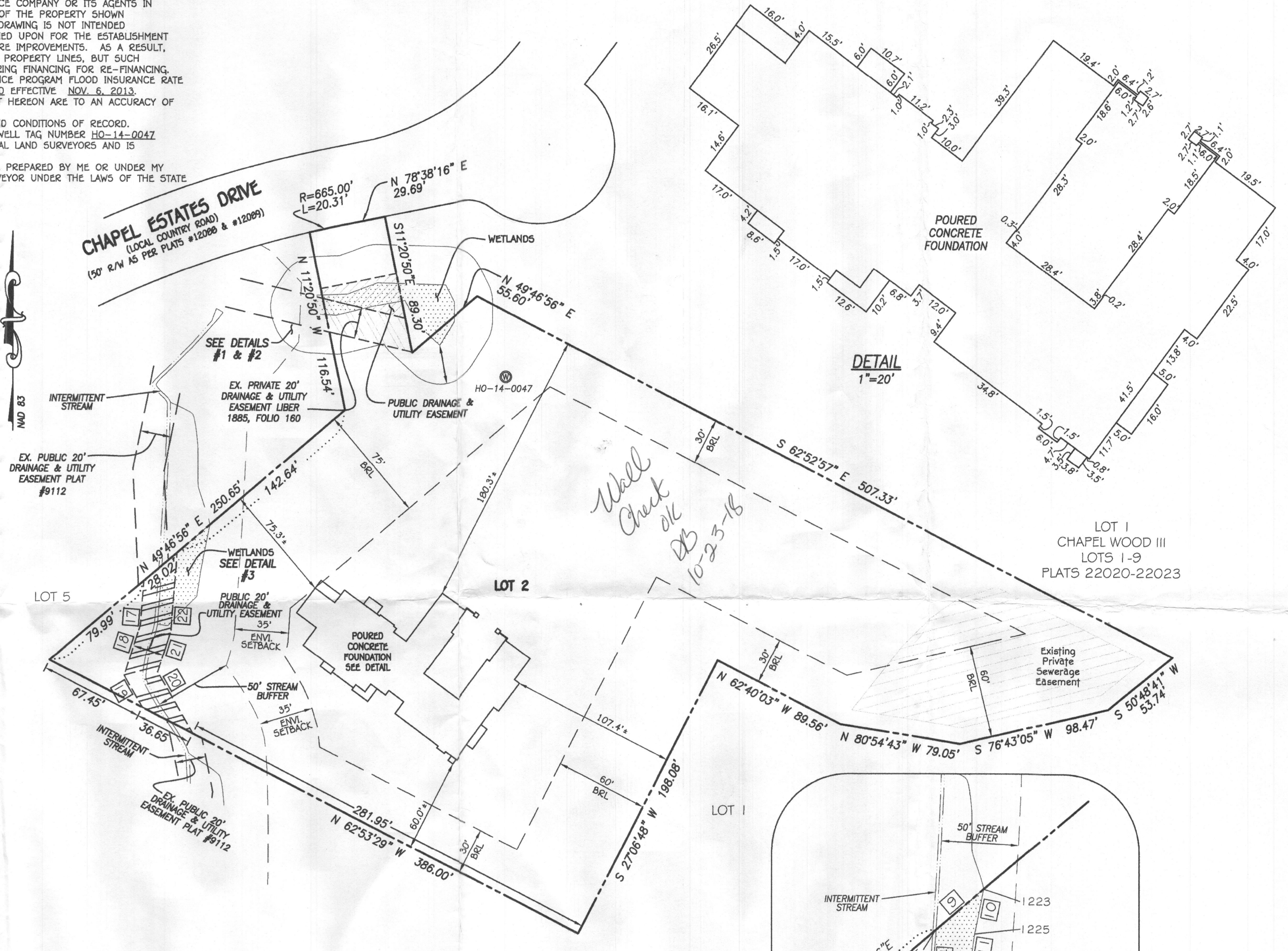
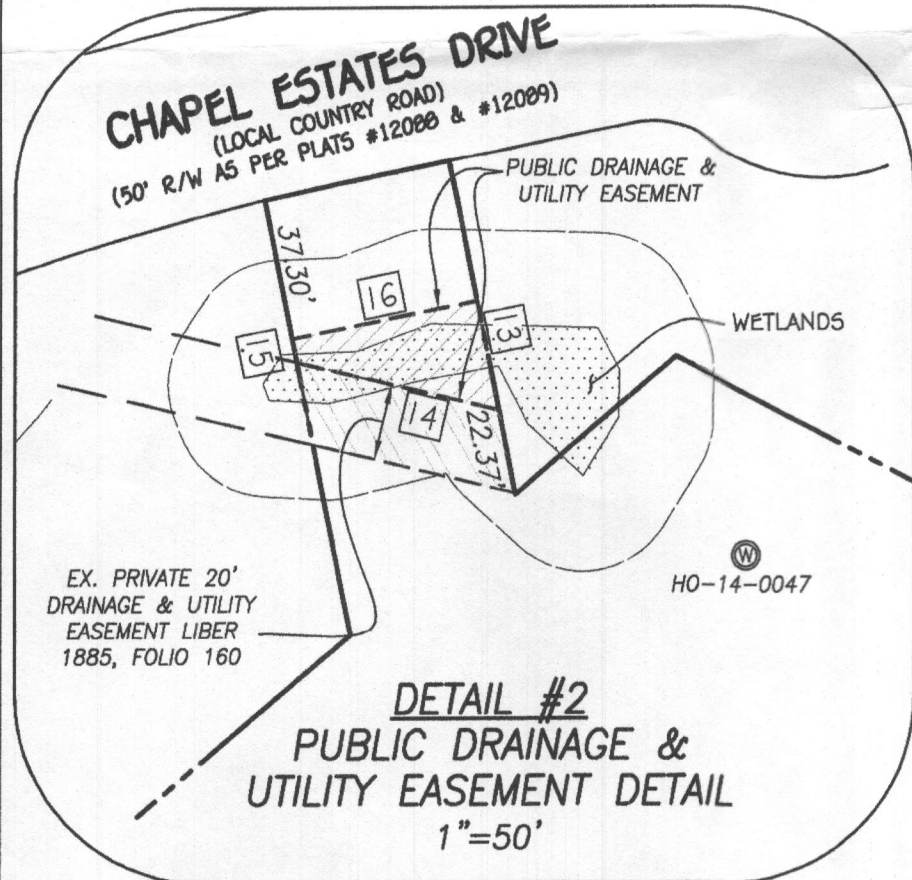
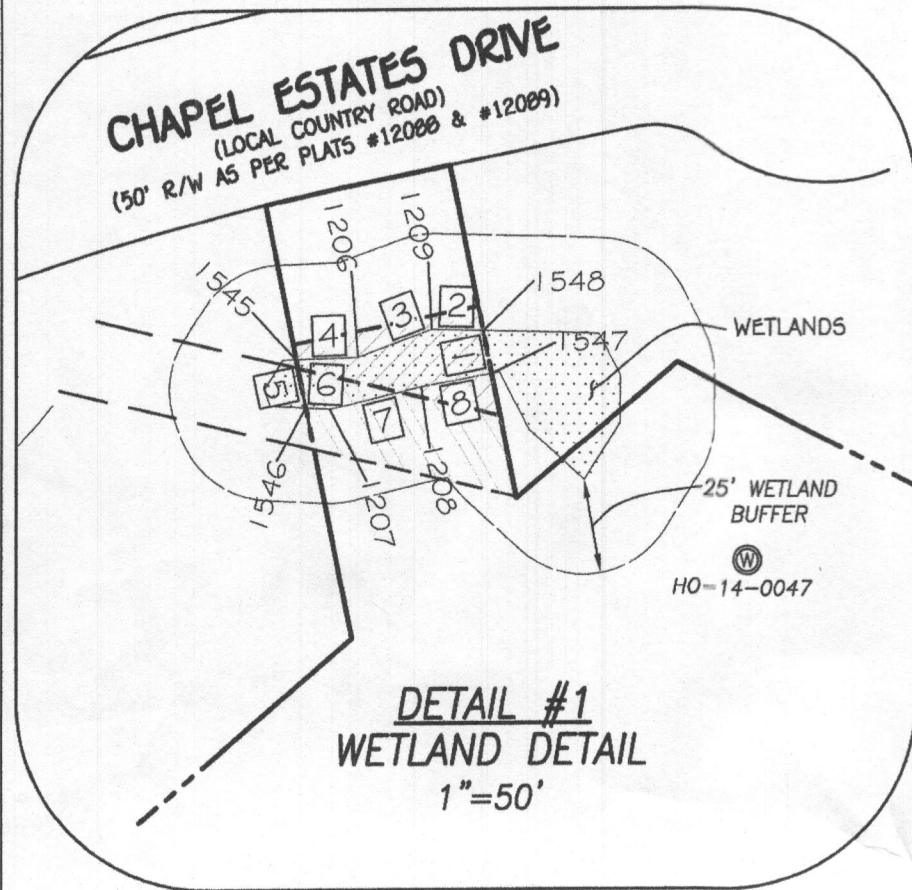
Signature of BRP Representative

Vice-President

Date

GENERAL NOTES:

- 1) THIS LOCATION DRAWING IS PREPARED FOR THE BENEFIT OF THE CLIENT SIGNING THE HOUSE LOCATION SURVEY APPROVAL FORM INsofar AS IT IS REQUIRED BY A LENDER OR TITLE INSURANCE COMPANY OR ITS AGENTS IN CONNECTION WITH THE CONTEMPLATED TRANSFER, FINANCING OR REFINANCING OF THE PROPERTY SHOWN HEREON. UNLESS INDICATED AS BEING A BOUNDARY SURVEY, THIS LOCATION DRAWING IS NOT INTENDED FOR USE IN THE ESTABLISHMENT OF PROPERTY LINES AND IS NOT TO BE RELIED UPON FOR THE ESTABLISHMENT OR LOCATIONS OF FENCES, GARAGES, BUILDINGS OR OTHER EXISTING OR FUTURE IMPROVEMENTS. AS A RESULT, THIS LOCATION DRAWING DOES NOT PROVIDE FOR ACCURATE IDENTIFICATION OF PROPERTY LINES, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING FOR RE-FINANCING.
- 2) SUBJECT PROPERTY IS SHOWN IN ZONE X ON THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP OF HOWARD COUNTY, MARYLAND, COMMUNITY PANEL No. 24027C0135-D EFFECTIVE NOV. 6, 2013.
- 3) THE OFFSETS FROM BUILDING LINE TO PROPERTY LINE AS SHOWN ON THE PLAT HEREON ARE TO AN ACCURACY OF PLUS OR MINUS 0.2'
- 4) NO TITLE REPORT FURNISHED. SUBJECT TO ALL EASEMENTS, RIGHTS OF WAY AND CONDITIONS OF RECORD.
- 5) THE EXISTING WELL(S) SHOWN ON THIS PLAN (IDENTIFIED WITH THE ATTACHED WELL TAG NUMBER HO-14-0047 HAS BEEN FIELD LOCATED BY FISHER, COLLINS AND CARTER, INC. PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.
- 6) PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE, AND THAT I AM A DULY LICENSED PROPERTY LINE SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 339, EXPIRATION DATE 10/04/20.
- 7) BUILDING PERMIT # (B-18000473)



WETLANDS LINE TABLE			WETLANDS COORDINATES			WETLANDS COORDINATES			PUBLIC DRAINAGE & UTILITY EASEMENT LINE TABLE		
LINE	BEARING	DISTANCE	POINT	NORTHING	EASTING	POINT	NORTHING	EASTING	LINE	BEARING	DISTANCE
1	N 11°20'50" W	11.47'	1206	570498.184	1333637.948	1223	570349.783	1333548.710	17	S 04°14'25" W	29.23'
2	N 88°28'05" W	13.51'	1207	570484.521	1333630.550	1225	570320.886	1333542.301	18	S 17°47'37" W	34.52'
3	S 69°47'14" W	20.94'	1208	570490.366	1333654.786	1226	570303.344	1333540.301	19	N 29°49'20" W	23.46'
4	S 88°01'11" W	16.36'	1209	570505.417	1333657.594	1227	570284.117	1333521.632	20	S 29°49'20" E	45.36'
5	N 11°20'50" W	12.98'	1545	570497.619	1333621.603	1228	570285.121	1333515.083	21	N 17°47'37" E	28.08'
6	S 86°41'26" E	6.41'	1546	570484.890	1333624.164	1275	570323.673	1333517.833	22	S 04°14'25" W	51.23'
7	S 76°26'22" W	24.93'	1547	570493.807	1333673.361						
8	N 79°30'23" E	18.89'	1548	570505.056	1333671.104						
9	N 49°46'56" E	40.44'									
10	N 11°21'59" E	29.48'									
11	S 08°25'49" W	17.73'									
12	S 44°09'23" W	26.80'									
13	S 81°16'57" E	6.63'									
14	N 04°04'44" E	38.65'									

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2895

#11811 CHAPEL ESTATES DRIVE
 TOP OF FOUNDATION ELEVATION = 371.9'

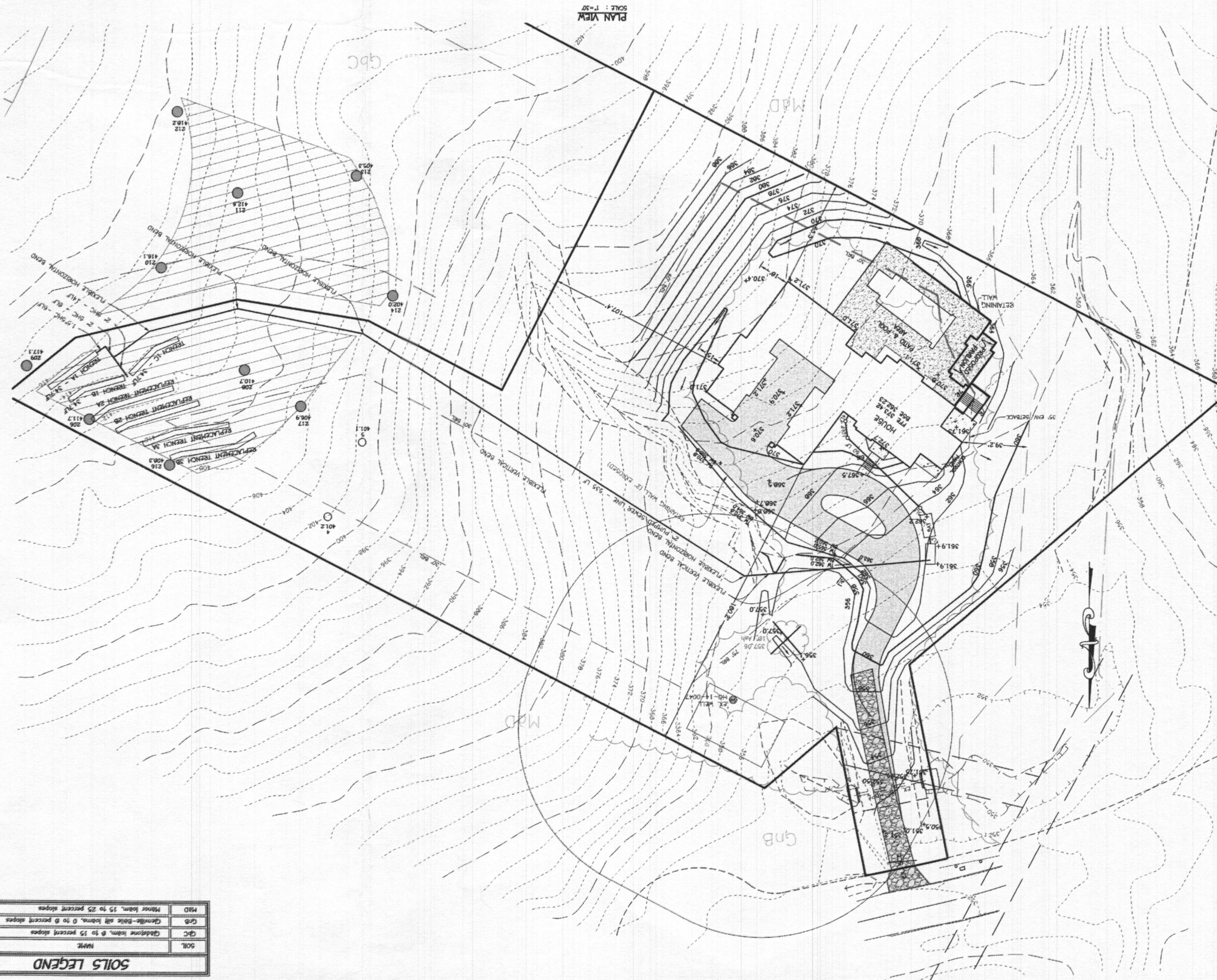
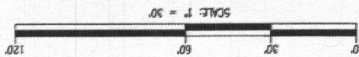
Mark L. Rober 10/10/18
 PROPERTY LINE SURVEYOR
 REG. #339



HOUSE LOCATION DRAWING

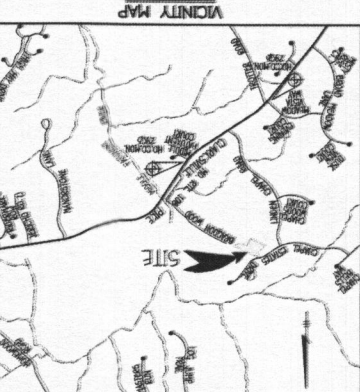
FOUNDATION LOCATION: 6/20/18
 FINAL LOCATION: _____
 BOUNDARY SURVEY: _____
 SCALE: 1"=50'
 DATE: REVISED 10/10/18
 DRAWN BY: MD
 CHECKED BY: MLR
 PROJECT No.: 12060-6001

LOT 2
 BALAKIRSKY PROPERTY
 LOTS 1 & 2
 PLAT NO. 23207
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



- GENERAL NOTES**
- SUBJECT PROPERTY ZONING: RC-250
 - TOTAL AREA OF PROPERTY: 3.20 AC.
 - UNIT OF DISTANCE: 64,227 SQ.FT. OR 1.47 ACRES.
 - CONSTRUCTION/INSTALL TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
 - BOUNDARY OF LOT BASED ON PLAT #23207.
 - TOPOGRAPHY SHOWN HEREON BASED ON FIELD RUN TOPOGRAPHIC SURVEY CONDUCTED BY FISHER, COLLINS & CARTER, INC. IN JULY, 2017. TOPOGRAPHY IS REPRESENTED BY HORIZONTAL CONTOUR SCALE 200 SCALE TOPOGRAPHY.
 - WETLANDS EXIST ON THIS LOT AND HAVE BEEN SHOWN BASED ON F-14-118. PLANS SUBJECT TO WAGNAR APPROVAL ON APRIL 2, 2019 TO ALLOW SWAPAGE OF SPECIAL USES. SEEING LOTS 1 & 2 TO BE LOCATED WITHIN WETLAND FROM THE PERMANENT WATER SUPPLY ON NEIGHBORING PARCELS OFF OF CHAPEL WOODS DRIVE.

- BENCH MARKS**
- IF 2009 DATA NOT AVAILABLE
 - MARKETS
 - 1,333,285.9
 - LOC. OF CORNER OF NEIGHOR WOOD WAY
 - LOC. OF CORNER OF ROUTE 100
 - A BENCH MARK INTERSECTION OF ROUTE 100 & WOOD WOOD DRIVE
 - LOC. 100 & WOOD WOOD WAY
 - WETLAND INTERSECTION CORNER

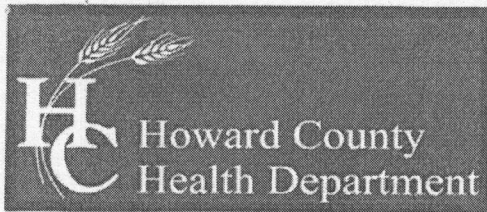


LEGEND

SYMBOL	DESCRIPTION
--- 340 ---	EXISTING CONTOUR 2' INTERVAL
--- 340 ---	EXISTING CONTOUR 10' INTERVAL
--- 342 ---	EXISTING CONTOUR 2' INTERVAL
--- 340 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STRAIN
X	EXISTING FENCE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	PROPOSED CONTOUR 2' INTERVAL
X 029.14	SPOT ELEVATION
---	PROPOSED PAVING
---	EXISTING TIE/LINE
---	PROPOSED SEPTIC LINE
---	PROPOSED RETAINING WALL
---	PROPOSED CONCRETE / PAVO
○ 217	PROPOSED PERC HOLE
○ 5	PROPOSED PERC HOLE
---	PROPOSED SWAP

SOILS LEGEND

CLASS	NAME
GbC	Chalkstone loam, 0 to 15 percent slopes
GbB	Granite-dike sil loam, 0 to 6 percent slopes
B	Minor loam, 15 to 25 percent slopes



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

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www.hchealth.org

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

Agreement	
Recording Fee	20.00
Name: patel	
Prof: 45	
LR - Agreement	
Surcharge	40.00
SubTotal:	60.00
Total:	60.00
04/24/2010 09:24	
CC13-LH	
#10233956 CC0503 -	
Howard Co	
Columbia/CC05.03.00 -	
Register 08	

OPERATION AND MAINTENANCE AGREEMENT FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this 23 day of APRIL, among Nisha Patel, 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 11811 Chapel Estates Drive, in the 5th 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 17664 Folio 88.

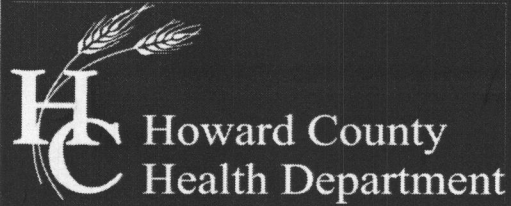
WHEREAS, The Lot is suitable for the installation of a conventional on-site sewage disposal system with an advanced pre-treatment system, utilizing best available technology to perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07, effective January 1, 2013.

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

20
10
HT

45



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](https://twitter.com/HowardCoHealthDep)

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

MEMORANDUM

TO: Fisher, Collins & Carter, Inc.
10272 Baltimore National Pike
Ellicott City, MD 21042

FROM: Robert Freemon *RF*
Well & Septic Program

RE: Balakirsky Property, Lot 2
11811 Chapel Estates Drive
Clarksville, MD 21029
"BAT/LPD Plan Comments"

DATE: 5/17/2018

After review of the BAT/LPD plan here are my comments.

- Figure 4.1 on page 3 does not correlate with the changes made to the manifold distribution network shown on page 1. Please make sure all details on all pages of the plan correspond with one another. It makes it very confusing to have different designs shown on the same plan that do not correlate with one another.
- The 75° bend in the septic line coming out of the house is not acceptable. Severe bends in the septic line prior to the septic tank increase the risk for clogging. Adding a cleanout only allows observation into the septic pipe. It does not reduce the increased clogging risk created by the severe bend.
- The elevation shown for the top of the pump tank on page 2 does not correspond with the elevation listed on page 1. Please make sure all details on all pages of the plan correspond with one another.
- Add the symbol identifying the stream to the ledger.

Freemon, Robert

From: Freemon, Robert
Sent: Thursday, May 17, 2018 12:22 PM
To: 'Stephanie Tuite'
Cc: 'nishapatel2000@gmail.com'; 'Ron Tash'; 'Jim Greenfield'; Williams, Jeffrey
Subject: 11811 Chapel Rise
Attachments: 11811 Chapel Estates SPC4.pdf; 20180515155603560.pdf

Stephanie,

Attached are my comments for 11811 Chapel Estates Drive. Please make sure all changes are reflected on all the appropriate pages. I have CC'd Jim Greenfield upon his request along with all parties on the building permit to keep everyone on the same page. If you have any questions let me know.

Robert "Spencer" Freemon

Howard County Health Department

8930 Stanford Blvd. Columbia, MD 21045

Bureau of Environmental Health

Well and Septic Program

Phone: 410-313-6357

Email: rfreemon@howardcountymd.gov

Website: <https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic>



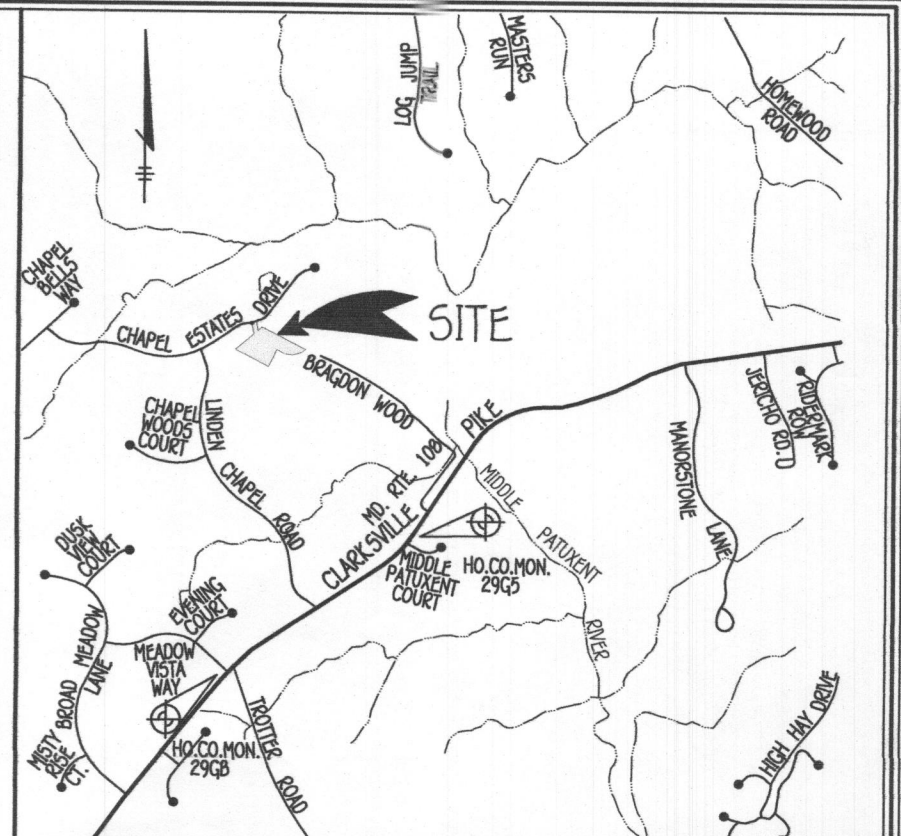
SOILS LEGEND

SOIL	NAME	CLASS
GBC	Gladstone loam, 8 to 15 percent slopes	B
GnB	Glenville-Balle silt loams, 0 to 8 percent slopes	C
MAD	Manor loam, 15 to 25 percent slopes	B

- ### GENERAL NOTES
- SUBJECT PROPERTY ZONED: RC-DEO
 - TOTAL AREA OF PROPERTY: 3.20 AC.
 - LIMIT OF DISTURBANCE: 64,227 SQ.FT. OR 1.47 ACRES.
 - CONTRACTOR/BUILDER TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
 - BOUNDARY OF LOT BASED ON PLAT #23207.
 - TOPOGRAPHY SHOWN HEREON BASED ON FIELD RUN TOPOGRAPHIC SURVEY CONDUCTED BY FISHER, COLLINS & CARTER, INC. IN JULY, 2017. TOPOGRAPHY IS SUPPLEMENTED BY HOWARD COUNTY 200 SCALE TOPOGRAPHY.
 - WETLANDS EXIST ON THIS LOT AND HAVE BEEN SHOWN BASED ON F-14-119. PLAN SUBJECT TO VARIANCE APPROVED ON APRIL 2, 2013 TO ALLOW SEWAGE DISPOSAL SYSTEMS SERVING LOTS 1 & 2 TO BE LOCATED UPGRADIENT FROM THE PRIVATE WATER SUPPLY ON NEIGHBORING PARCELS OFF OF CHAPEL WOODS DRIVE.

LEGEND

SYMBOL	DESCRIPTION
--- 342 ---	EXISTING CONTOUR 2' INTERVAL
--- 340 ---	EXISTING CONTOUR 10' INTERVAL
X	EXISTING FENCE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
--- 342 ---	PROPOSED CONTOUR 2' INTERVAL
--- 340 ---	PROPOSED CONTOUR 10' INTERVAL
x 329.14	SPOT ELEVATION
---	PROPOSED PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	B.R.L. BUILDING RESTRICTION LINE
---	PROPOSED SEPTIC LINE
---	PROPOSED RETAINING WALL
---	PROPOSED CONCRETE / PATIO
○ 217	PASSED PERC HOLE
○ 5	FAILED PERC HOLE
---	PROPOSED RIPRAP



VICINITY MAP
SCALE: 1" = 2000'
HO. CO. MD. ADC MAP 4934, GRID C3

BENCH MARKS

T.P. 29GB ELEV. 456.00
N. 566,826.1
E. 1,333,265.9
LOC. SW CORNER OF MEADOW VISTA WAY & TROTTER RD. NEAR INTERSECTION OF RTE. 108 & MEADOW VISTA WAY

T.P. 29GB ELEV. 367.40
N. 566,341.2
E. 1,335,392.5
LOC. SE SIDE OF ROUTE 108 NEAR INTERSECTION OF RTE. 108 & MIDDLE PATUXENT COURT

BAT 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 COVER OVER THE BAT SHALL BE 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
- ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- THE WELL (TAG # HO-14-0047) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
- ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND 200 FEET DOWNGRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT 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. AN AGREEMENT AND ASSESSMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER 18144, FOLIO 182.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- SURFACE RUNOFF SHALL BE DIRECTED AROUND THE BAT TANK.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 50 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.

SEPTIC SYSTEM ELEVATIONS

FFE = 373.19
BSE = 362.00
INV. OUT OF HOUSE = 359.50
PROP GROUND AT CLEANOUT = 370.5
INVERT INTO CLEANOUT = 359.20
INVERT OUT OF CLEANOUT = 359.10
PROP GROUND AT CLEANOUT = 364.8
INVERT INTO CLEANOUT = 356.47
INVERT OUT OF CLEANOUT = 356.37
PROP GROUND AT BAT TANK = 362.2
TOP OF BAT TANK = 359.27
COVER OVER BAT TANK = 2.9 FT
INVERT INTO BAT TANK = 358.27
INVERT OUT OF BAT TANK = 357.94
PROP GROUND AT PUMP TANK = 361.9
TOP OF PUMP TANK = 356.96
COVER OVER PUMP TANK = 3 FEET
INVERT INTO PUMP TANK = 357.86
INVERT OUT OF PUMP TANK = 360.50

SEPTIC SYSTEM DESIGN

5 BEDROOM HOUSE
LOADING RATE = 750 GPD
APPLICATION RATE = 1.2
EFFECTIVE SIDEWALL BEGINS AT 3.0 FEET
TRENCH DEPTH = 6 FEET
TRENCH WIDTH (W) = 3 FEET
EFFECTIVE DEPTH (D) = 3 FEET
SF OF DRAINFIELD = 750 GPD / 1.2 = 625 SF
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D) = (3+2)/(3+1+(2x3)) = 0.5
TRENCH LENGTH = 625 SF x 0.5 / 3 = 104.17 FEET (USE 104 FEET)
TRENCH SPACING = 2D+W = (2x3) + 3 = 9 USE 10'

TRENCH DESIGN

TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	PIPE INVERT ELEV.	DEPTH TO STONE FROM GROUND	DEPTH OF STONE TO TRENCH ELEV.	EFFECTIVE DEPTH STARTS AT	EFFECTIVE DEPTH (D)	TRENCH DEPTH	TRENCH WIDTH (W)	TRENCH SPACING
1A	415.8	413.3	412.8	2.5 FT	3.5 FT	409.8	3 FT	3 FT	6 FT	3 FT 10 FT
1B	413.8	411.3	410.8	2.5 FT	3.5 FT	407.8	3 FT	3 FT	6 FT	3 FT 10 FT
1C	413.8	411.3	410.8	2.5 FT	3.5 FT	407.8	3 FT	3 FT	6 FT	3 FT 10 FT

LOW PRESSURE DOSING SYSTEM - INITIAL INSTALLATION

TRENCH	GROUND ELEV.	PIPE INVERT ELEV.	TRENCH LENGTH (FT)	LATERAL PIPE LENGTH (FT)	PERFORATION DIAMETER (IN)	HEAD (FT)	PERFORATION FLOW RATE (GPM)	PERFORATION SPACINGS (FT)	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)
1A	415.8	412.8	34.7	32.23	5/16	2	1.63	4.96	7	11.41
1B	413.8	410.8	34.7	31.23	5/16	4	2.30	6.94	5	11.50
1C	413.8	410.8	34.7	31.23	5/16	4	2.30	6.94	5	11.50
TOTAL TRENCH FLOW RATE										34.41

FRICION LOSS IN 3" PIPE FITTINGS:
 1/8 HB x 4 FEET PER FITTING = 32 EQUIVALENT FEET OF PIPE
 1 TEE/CROSS x 11 FEET PER FITTING = 11 EQUIVALENT FEET OF PIPE
 1 UNION x 2 FEET PER FITTING = 2 EQUIVALENT FEET OF PIPE
 3 ELBOWS x 9 FEET PER FITTING = 27 EQUIVALENT FEET OF PIPE
 TOTAL EQUIVALENT FEET OF PIPE = 72 FT

TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 543 LF + 72 LF = 615 LF

DYNAMIC HEAD
 615 LF x 2.50 FT PER 100 LF OF PIPE = 15.38 FT OF FRICTION HEAD
 DISTAL HEAD = 2.00 FT
 VERTICAL FROM PUMP OFF TO DISCHARGE = 6.55 FT OF STATIC HEAD
 VERTICAL FROM DISCHARGE TO HIGHEST ELEV OF MAIN = 52.30 FT
 TOTAL DYNAMIC HEAD = 75.93 FT

PIPE VOLUMES
 543 LF (2" SCH. 40 PIPE) x 17.4 GALLONS PER 100 LF = 94.5 GALLONS
 94.7 LF (1.5" SCH. 40 PIPE) x 10.6 GALLONS PER 100 LF = 10.0 GALLONS

MINIMUM DOSE = (5 x LATERAL PIPE VOLUME) + (FORCE MAIN & MANIFOLD)
 = (5 x 10.0) + (95)
 = 145 GALLONS

145 GALLONS IS MORE THAN 1/6 DESIGN FLOW (750/6=125)
 USE 172 GALLON DOSE (145 GALLON MINIMUM)
 RUN TIME = 5 MIN (34.4 GPM x 5 = 172 GALLON DOSE)

PUMP NEEDS TO HANDLE 34.4 GPM AT 75.9 FT OF HEAD
 USE 1.5 HP (ME150 PUMP)

PLAN VIEW
SCALE: 1" = 30'

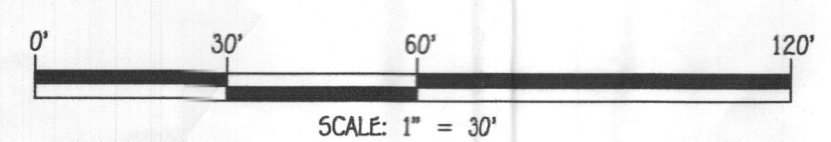
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36386, EXPIRATION DATE: 01/12/2020.

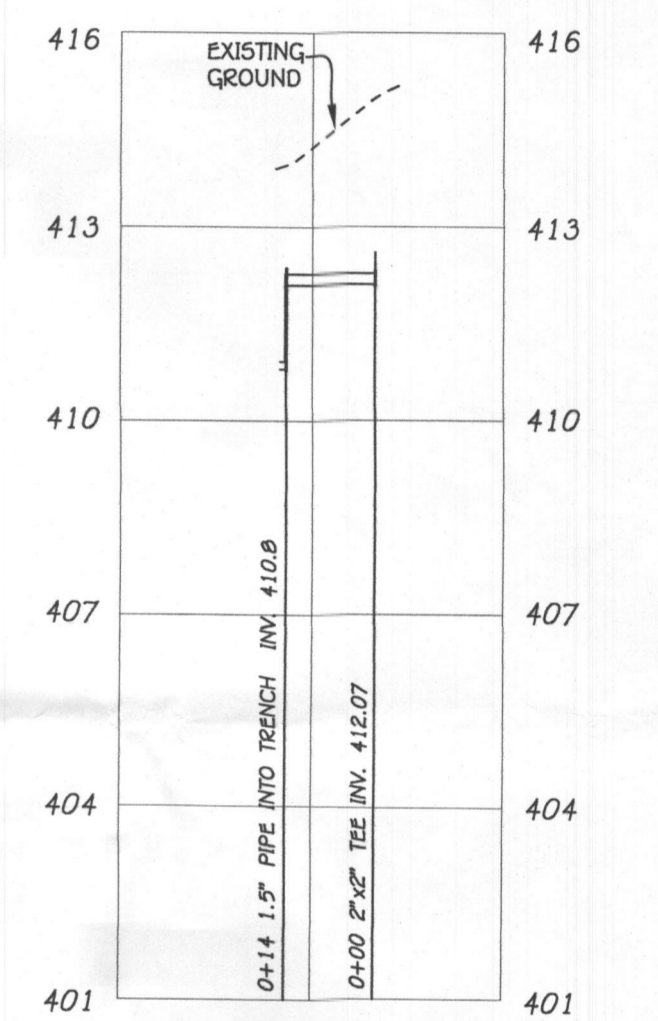
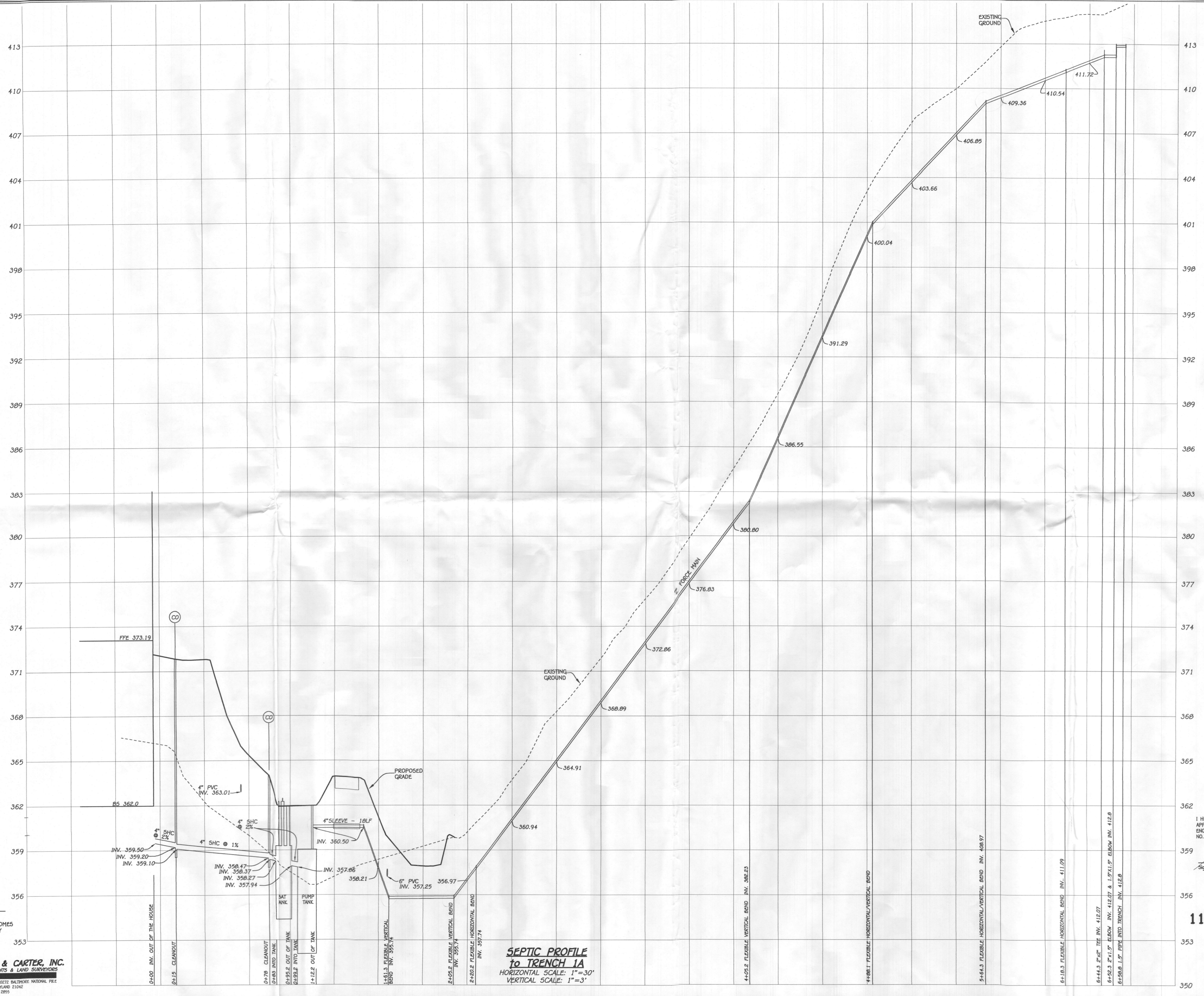
Signature 5/8/19
 Signature of Professional Engineer DATE



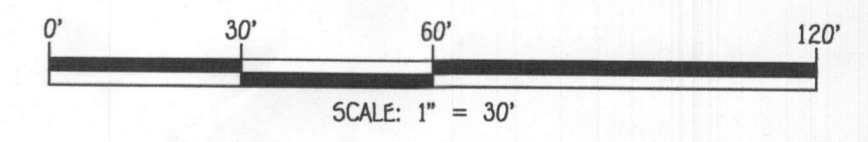
OWNER
 NISHA PATEL
 C/O GREENFIELD FAMILY HOMES
 6420 AUTUMN SKY WAY
 COLUMBIA, MD 21044
 (443) 324-4732

BAT SITE PLAN
11811 CHAPEL ESTATES DRIVE
 BALAKIRSKY PROPERTY, LOT 2
 PLAT #23207
 ZONING: RC-DEO
 TAX MAP No. 29 GRID No. 14 PARCEL No. 42
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2018
 SHEET 1 OF 3





SEPTIC PROFILE to TRENCHES 1B & 1C
 HORIZONTAL SCALE: 1"=30'
 VERTICAL SCALE: 1"=3'



OWNER
 NISHA PATEL
 C/O GREENFIELD FAMILY HOMES
 6420 AUTUMN SKY WAY
 COLUMBIA, MD 21044
 (443) 324-4732

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL Pk.
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2995

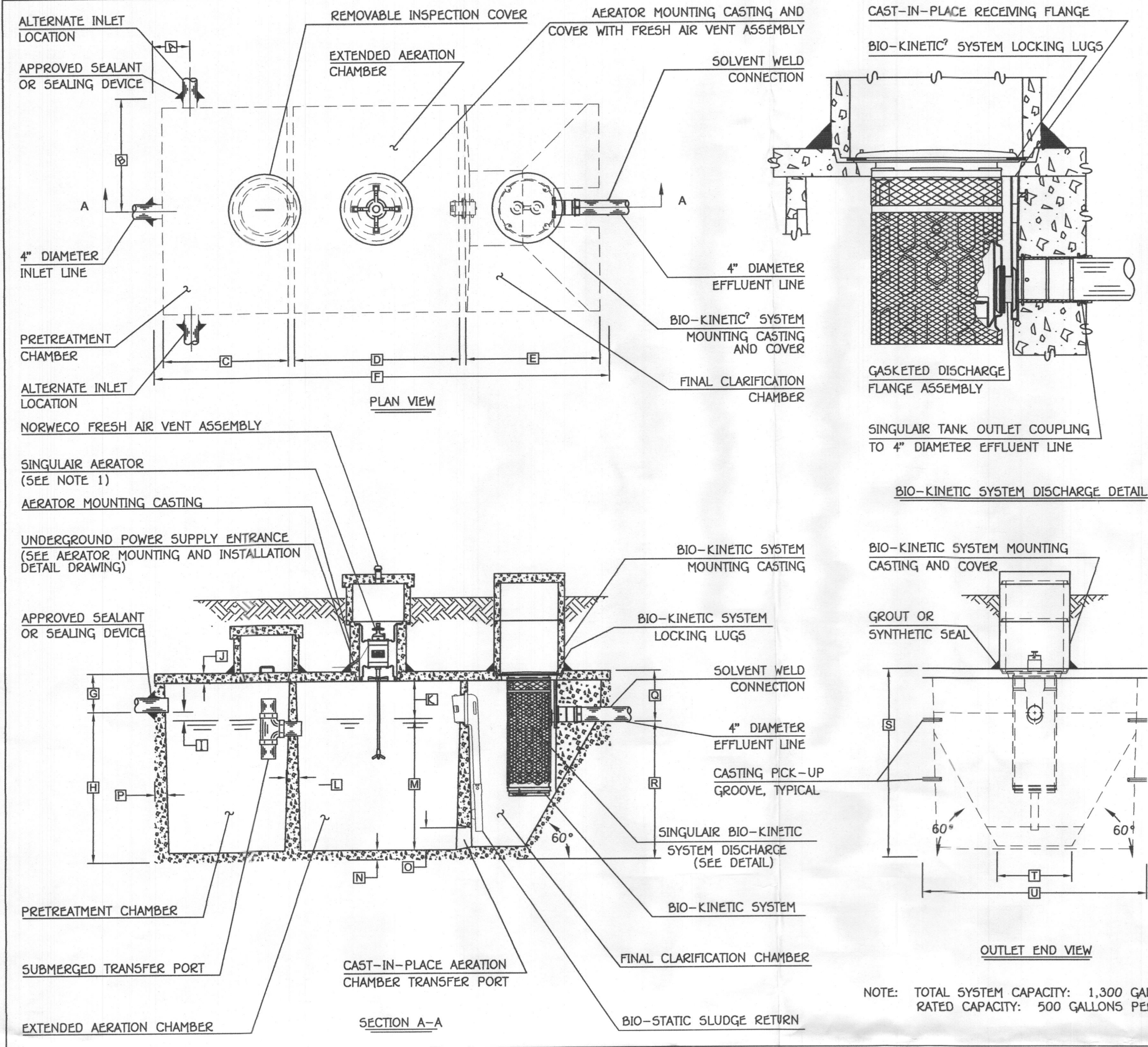
SEPTIC PROFILE to TRENCH 1A
 HORIZONTAL SCALE: 1"=30'
 VERTICAL SCALE: 1"=3'

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Stephanie J. Putter
 Signature of Professional Engineer DATE



BAT PROFILE
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 BALAKIRSKY PROPERTY, LOT 2
 PLAT #23207
 ZONING: RC-DEO
 TAX MAP No. 29 GRID No. 14 PARCEL No. 42
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2018
 SHEET 2 OF 3



GENERAL NOTES:

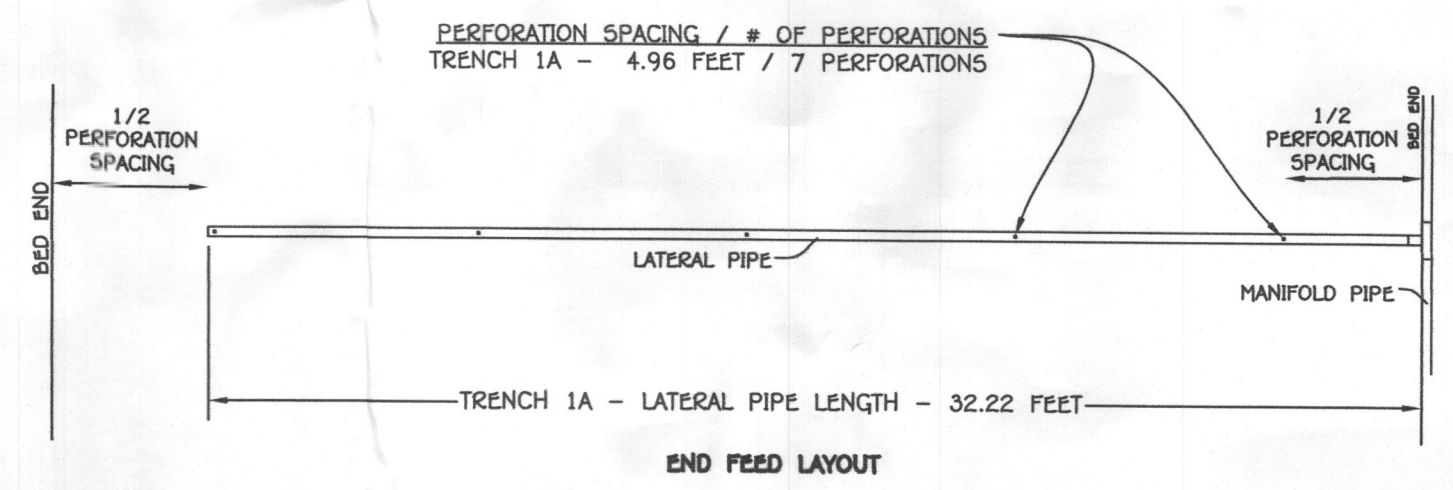
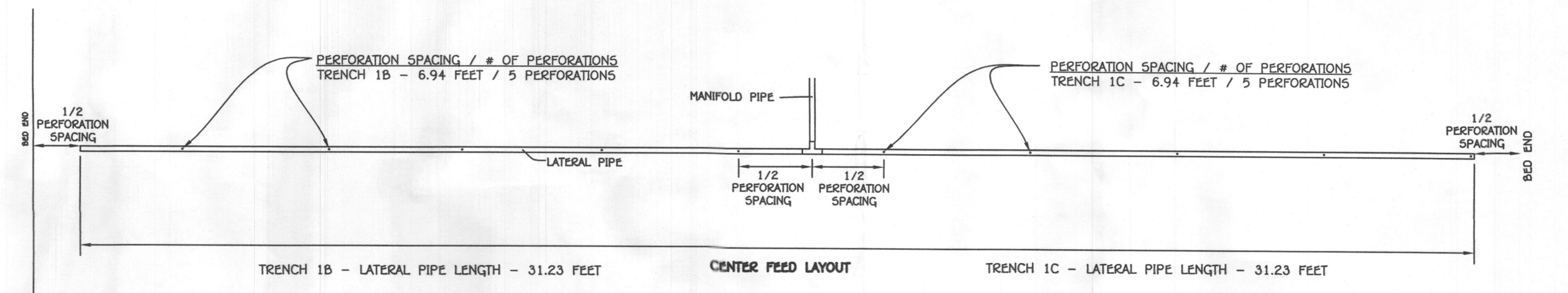
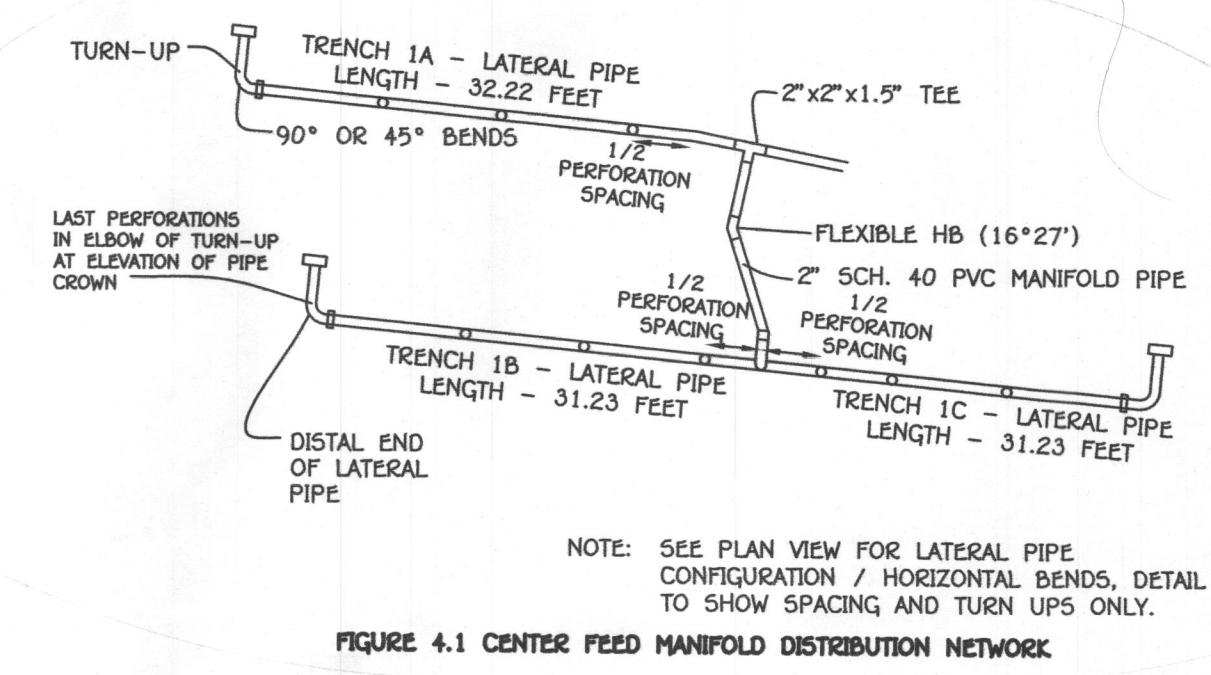
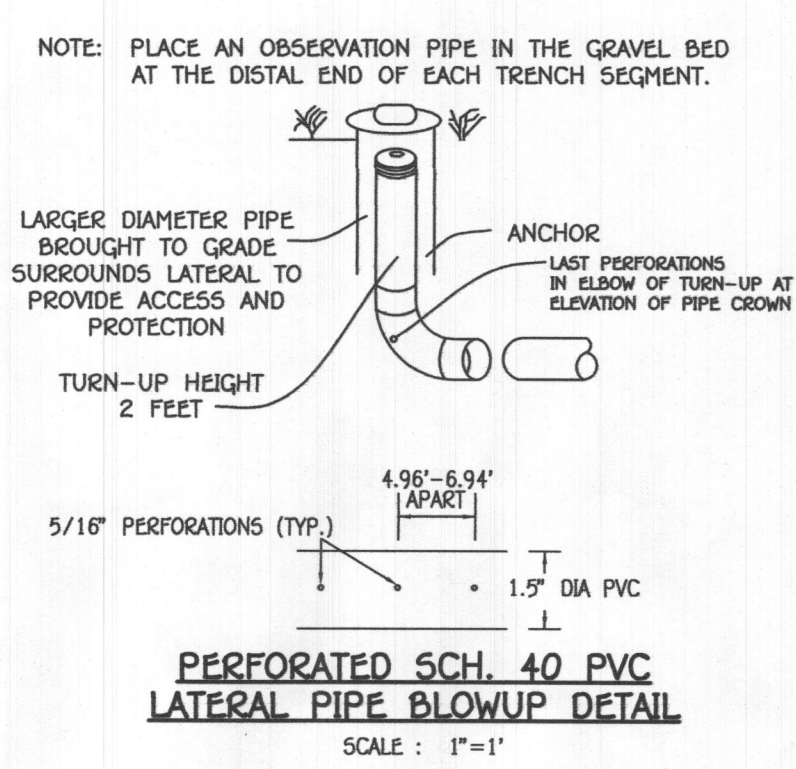
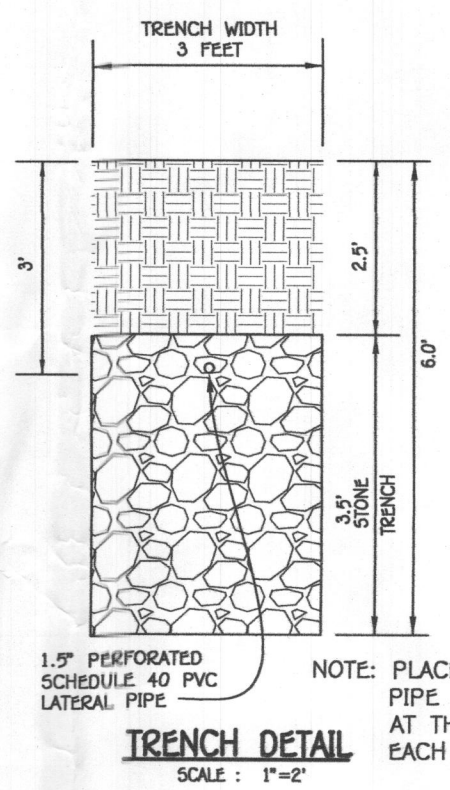
- SINGULAR AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 60 MINUTES OFF.
- FALL THROUGH SINGULAR PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC SYSTEM MOUNTING CASTING TO GRADE.
- TANK REINFORCED PER ACI STD. 318-05.
- REMOVABLE COVERS ON RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL LICENSED SINGULAR DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

PROJECT ENGINEER'S APPROVAL:
 I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

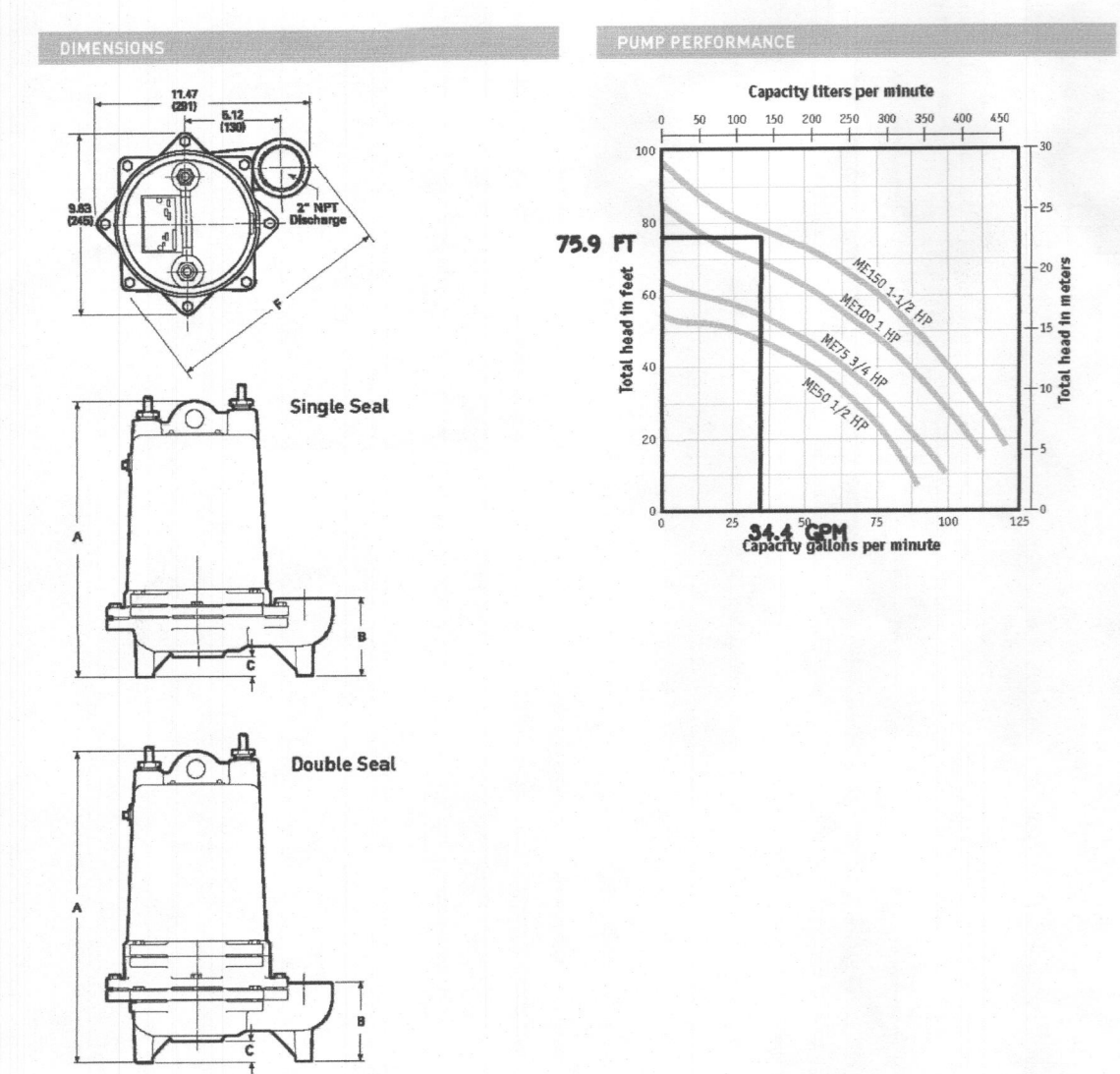
CONTRACTOR'S CERTIFICATION:
 I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

CRITICAL DIMENSIONS			
A	1'-0"	N	0'-3"
B	3'-0"	O	0'-6"
C	3'-4"	P	0'-3"
D	4'-5"	Q	1'-4"
E	3'-7"	R	3'-8"
F	12'-2"	S	5'-0"
G	1'-0"	T	2'-0"
H	4'-0"	U	6'-0"
I	0'-3"	V	
J	0'-3"	W	
K	1'-0"	X	
L	0'-2"	Y	
M	3'-6"	Z	

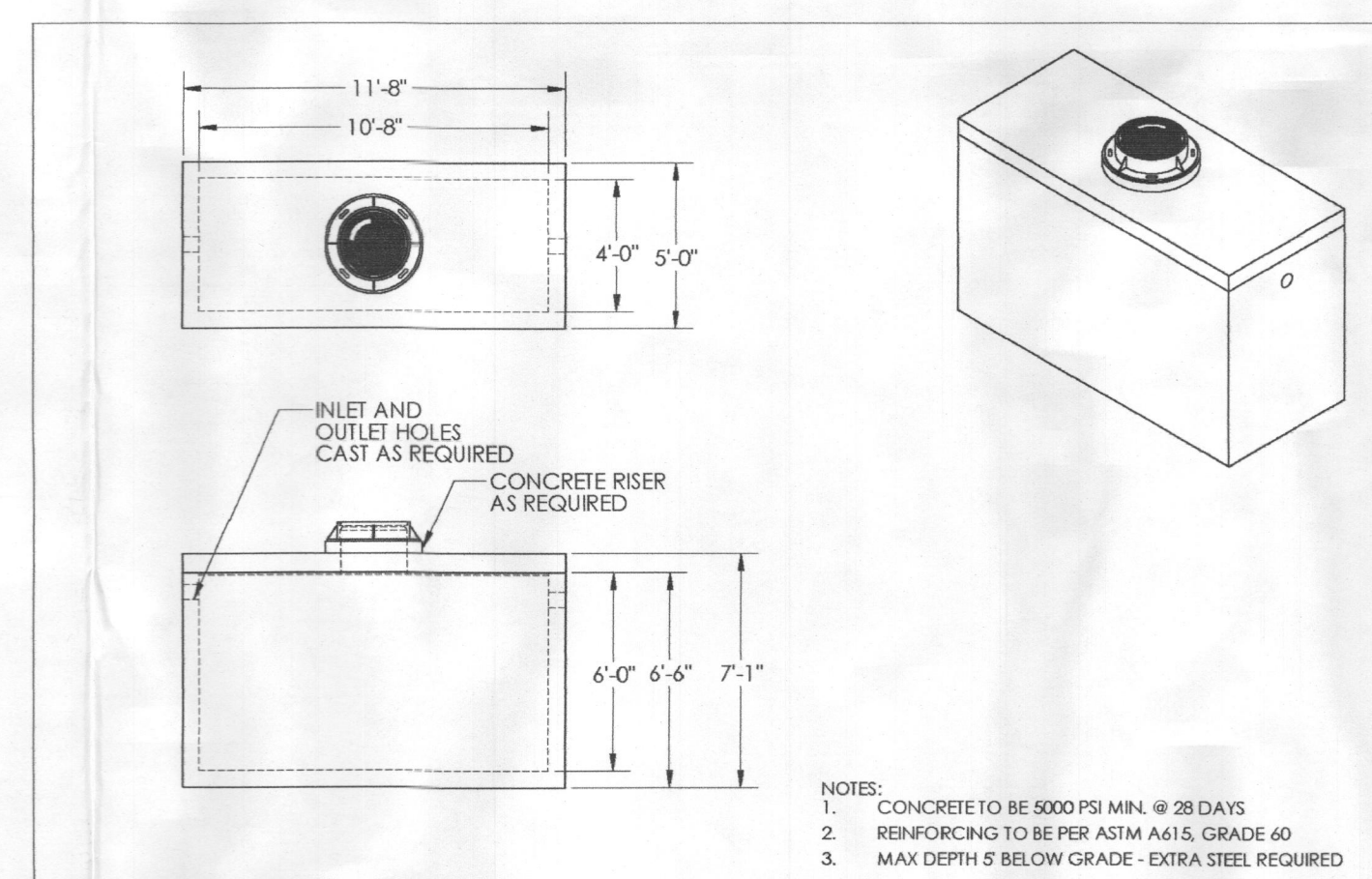
norweco
 U.S. AND FOREIGN PATENTS PENDING
 LOW-PROFILE SINGULAR-BIO-KINETIC WASTEWATER TREATMENT SYSTEM
 MODEL TNYLP-800 GPD
 © MMVI
 PC-5-7091



EFFLUENT PUMPS
MYERS ME SERIES

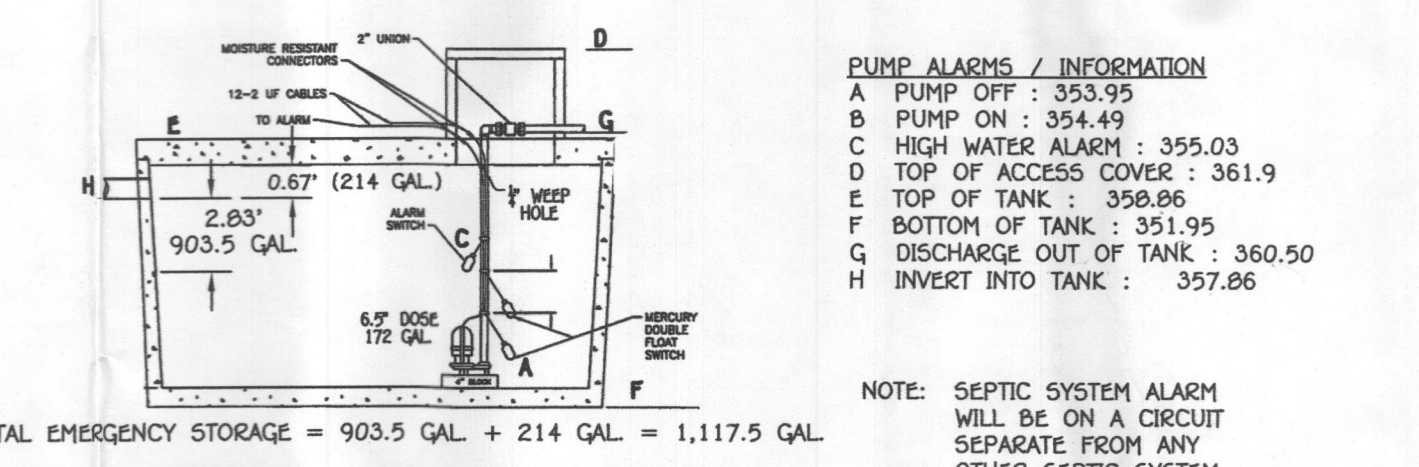


Catalog Number	A	B	C	F
ME50S	15.8 (407)	4.89 (124)	1.03 (26)	12.13 (308)
ME50	15.8 (407)	4.89 (124)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	18.8 (477)	4.8 (122)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.8 (477)	4.8 (122)	1.06 (27)	12.5 (318)



MONARCH PRODUCTS COMPANY, INC.
 YORK HAVEN, PA.
 717-938-8303
 www.MonarchProducts.net

1500 GAL PUMP TANK
 TOTAL STRUCTURE WEIGHT: 24020 lbs

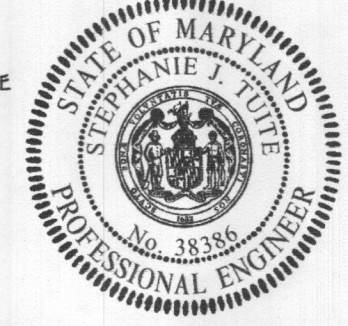


TOTAL EMERGENCY STORAGE = 903.5 GAL + 214 GAL = 1,117.5 GAL
 NOTE: THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.

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Nisha Patel 5/8/19
 Signature Of Professional Engineer DATE



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