



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: 4/27/16 **ONSITE SEWAGE DISPOSAL SYSTEM** P 558100
 APPROVAL DATE: 6/19/16 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 1836 Florence Road
 SUBDIVISION: Kogan Trust LOT: 18 TAX ID: 05-595461
 CONTRACTOR: South Carroll Backhoe EMAIL: scbackhoe@comcast.net
 CONTRACTOR ADDRESS: 4410 Salem Bottom Road PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Peter Emmerich EMAIL: _____
 OWNER ADDRESS: 1107 Collindale Ave, Mount Airy, MD 21771 PHONE: 301-524-4306

BAT UNIT MODEL: Norweco PUMP SIZE: _____ PUMP TANK CAPACITY: 750

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: _____ DATE RECORDED: _____

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 4 APPLICATION RATE: 1.2
8 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>125</u>	INLET DEPTH: <u>3.5'</u>
	TRENCH WIDTH: <u>32'</u>	MAXIMUM BOTTOM DEPTH: <u>8</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>5.5</u>

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

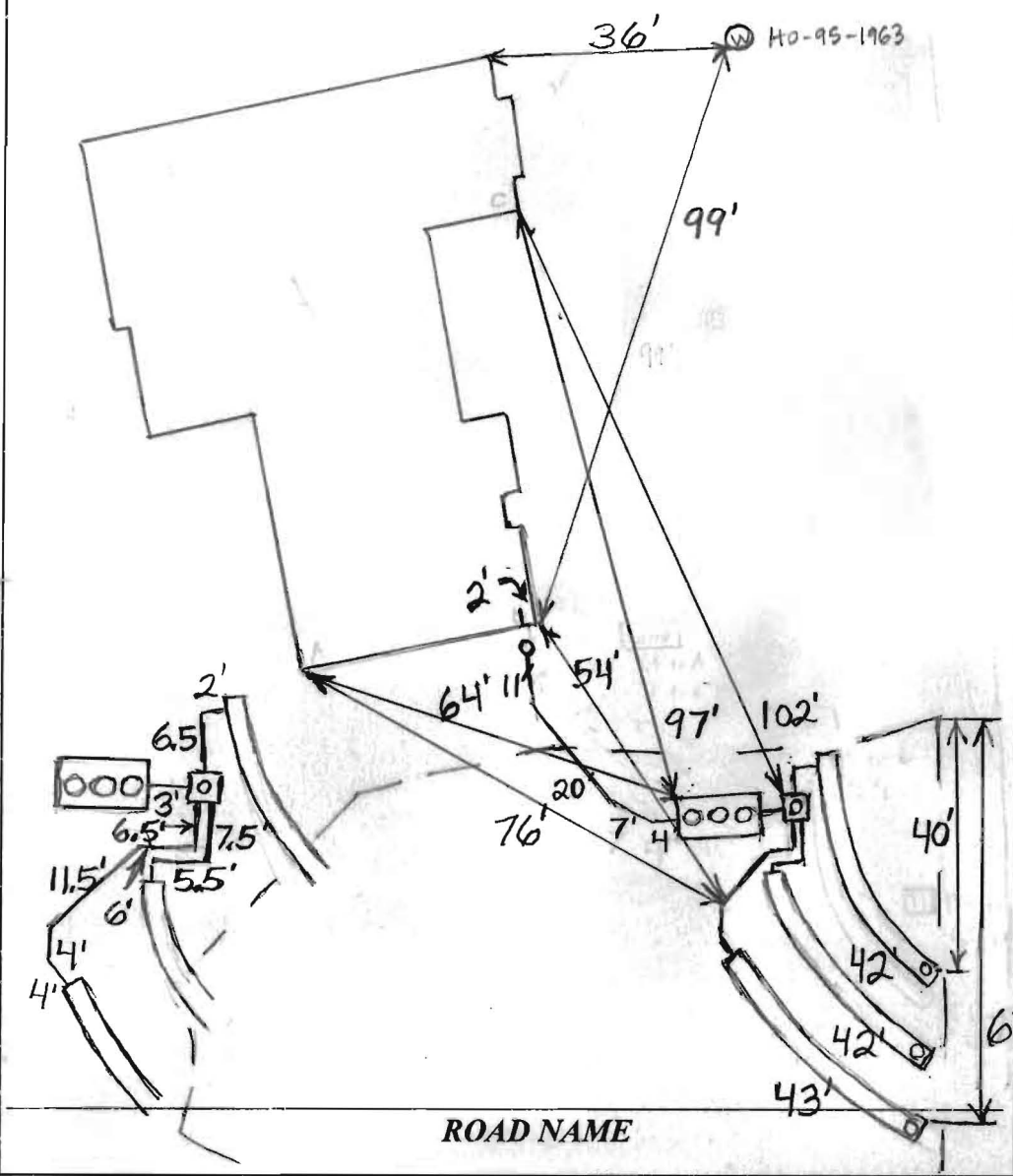
NOTES: Install 3x42' trenches on contour:

ISSUED BY: Dana Bernard ISSUE DATE: 4/27/16 EXPIRATION DATE: 4/27/16

- 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 16001272
- 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



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
2'	3.5'	8'
NUMBER OF TRENCHES		3
TOTAL LENGTH		127'
ABSORPTION AREA		318
DISTRIBUTION BOX LEVEL		Levelers
DISTRIBUTION BOX BAFFLE		Yes
DISTRIBUTION BOX PORT		Yes

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	Yes
MANUFACTURER	BACKTRIVER/NORWEG
CAPACITY	1300 GAL
SEAM LOC	Top
TANK LID DEPTH	1.5-2'
BAFFLES	No
BAFFLE FILTER	N/A
MANHOLE LOC	Front, Middle & Rear
6" PORT LOC	None
WATERTIGHT TEST	No
SLOTTED	N/A
DATE ON LID	3-4-16

PUMP/SEPTIC TANK LEVEL	
MANUFACTURER	
CAPACITY	
SEAM LOC	
TANK LID DEPTH	
BAFFLES	
BAFFLE FILTER	
MANHOLE LOC	
6" PORT LOC	
WATERTIGHT TEST	
SLOTTED	
DATE ON LID	

PRE-CONSTRUCTION:

5/13/16 Met South Carroll on site for layout. All SDA + tank stakes present. Laid out 3 x 42' on contour in the eastern portion of the SDA. Some fill (few inches) in the northern part of the easement - South Carroll will scratch off prior to trench install and adjust trench starts to be on contour if necessary. (SC)

INSTALLATION:

5/18/16 Tank set and house connection ^{not} made. S. Carroll digging TI. Only a couple of inches of fill were in part of SDA - trenches same as laid out. [4" pipe laid to house] Using transit while digging. Changed inlet to 3.5' b/c couldn't make fall to 3'. 2' wide, 8' to bottom. TI inlet is 3.9". (SC) 5/19/2016 System mostly complete. Need house connection and BAT certification from Norweco representative. (PB) 5/23/2016 Received BAT certification. (PB)

FINAL INSPECTOR *[Signature]* DATE OF APPROVAL 7-15-16

Back River Pre-Cast, LLC

PO BOX 329
Glyndon, MD 21071
Phone # 410-833-3394
Fax # 410-833-4116

Letter of Certification

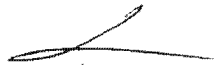
This is to certify that the Norweco Singlair TNT 600 GPD Septic Tank installed at 1836 Florence Rd., Mt. Airy, MD 21771 on May 17, 2016 was installed according to the manufacture's specifications.

Installer: Mark Seal

Property Owner: Peter Emmerich

Permit #

THIS CERTIFICATION IS FOR INSTALLATION ONLY. THE 5-YEAR OPERATIONS & MAINTENANCE AGREEMENT FROM DATE OF INSTALLATION WILL ONLY GO INTO EFFECT AFTER BACK RIVER PRE-CAST, LLC RECEIVES FINAL AND FULL PAYMENT FOR THE SYSTEM.

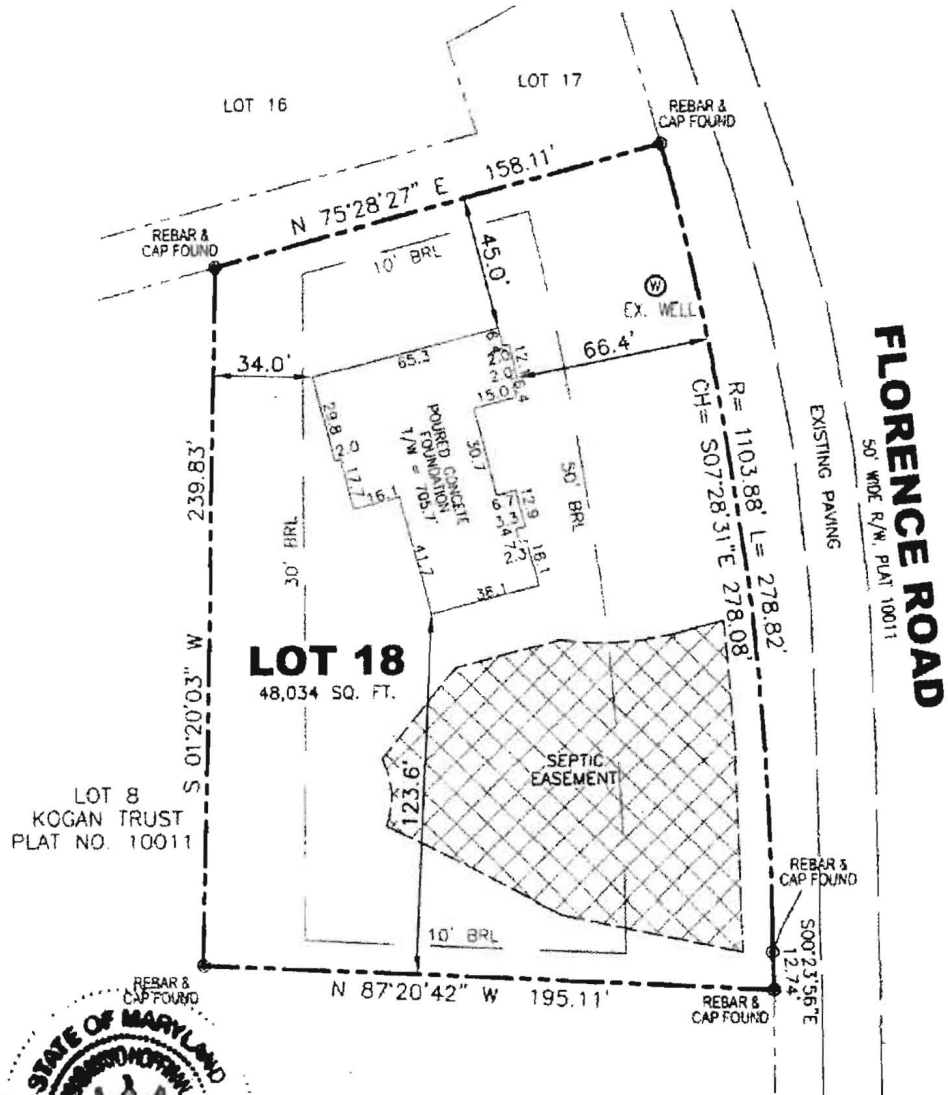


MATTHEW GECKLE

Vice-President

THIS WALL CHECK DRAWING CONTAINS A HORIZONTAL TOLERANCE IN ACCURACY OF 0.1' AND A VERTICAL TOLERANCE IN ACCURACY OF 0.2'

4/29/16 - Wall check
okay - H.O.



I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF THAT THE IMPROVEMENTS ARE LOCATED AS SHOWN AND THERE ARE NO ENCROACHMENTS EXCEPT AS SHOWN.

Thomas M. Hoffmann 2-12-16
THOMAS M. HOFFMANN, PROPERTY LINE SURVEYOR #267 DATE

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. 267 EXPIRATION DATE JULY 28, 2016.

SCALE 1" = 30'	DATE 02/11/2016	ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS - SURVEYORS - PLANNERS 8407 MAIN STREET ELLICOTT CITY, MARYLAND 21043 TEL: 410-461-7666 FAX: 410-461-8961	WALL CHECK DRAWING 1836 FLORENCE ROAD LOT 18 KOGAN TRUST PROPERTY PLAT NO. 22370 ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DRAWN BY B.D.A.	CHECKED BY T.M.H.		
PLAT NUMBER 22369-22371	JOB NUMBER 04-28.04		

Bernard, Dana

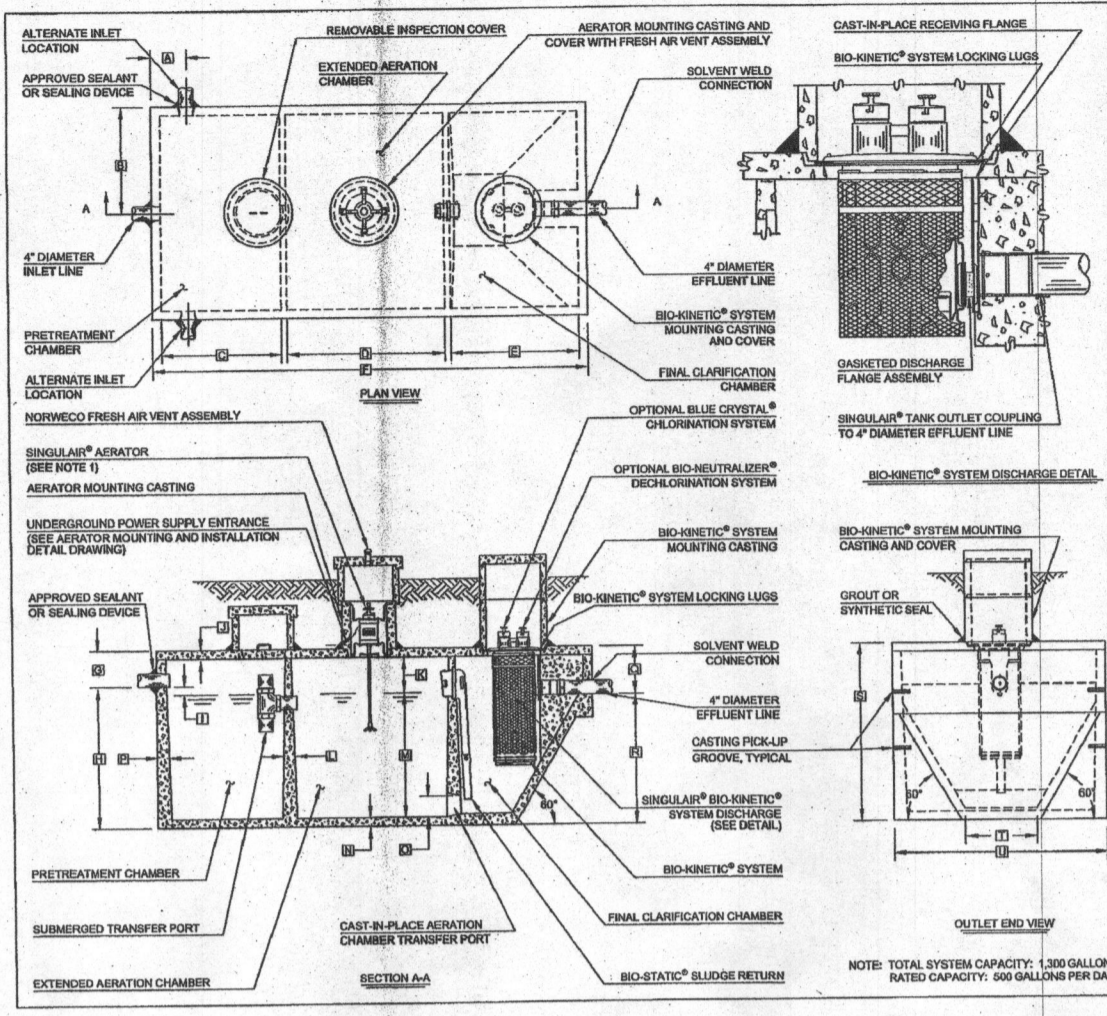
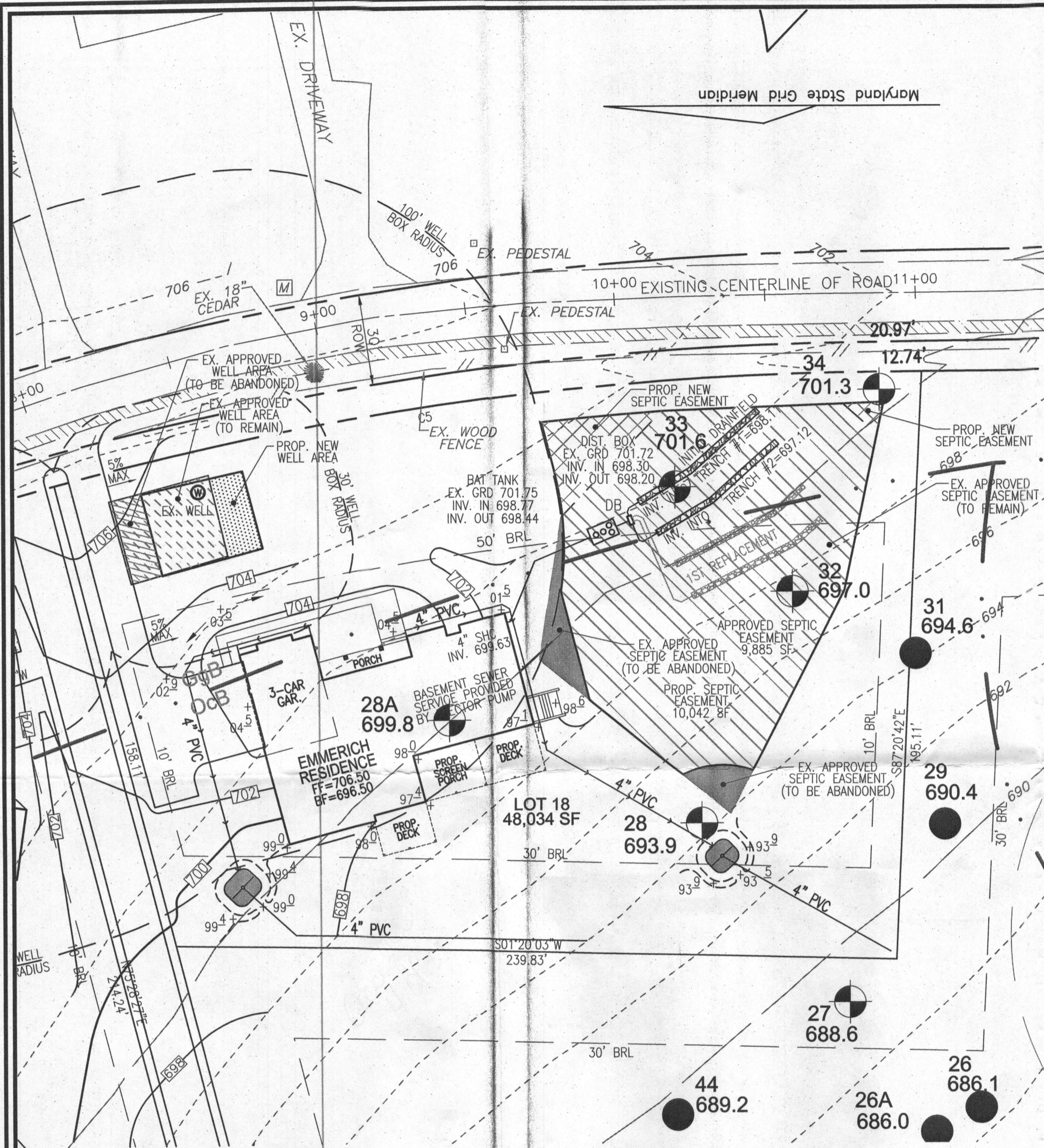
From: Bernard, Dana
Sent: Wednesday, June 10, 2015 2:28 PM
To: 'rvogel@vogeleng.com'
Subject: Kogan Trust Lot#18

Mr. Vogel,

The building plan and the BAT plan does not match the percolation certification plan you submitted . I do not have the new percolation certification you are proposing. The latest version of your percolation certification plan located in our files is from 2010. On the BAT plan you must show the initial septic installment and the 2nd replacement installment. Do you have a copy of the new one?

Thanks
Dana

Old Copy



GENERAL NOTES:

- BIOMETRIC AERATOR AS TESTED AND ACCEPTED BY NSF. OPERATING AS SHOWN ON 15 MINUTES OFF.
- FALL THROUGH SINGLE AIR PLANT FROM INLET TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST CONCRETE SHALL BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIOMETRIC SYSTEM MOUNTING CASTING TO GRADE.
- TANK REINFORCED PER ACI STD. 318-05.
- REINFORCE CONCRETE OR RISER WITHIN IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL LICENSED SINGLELINE DISTRIBUTION FOR ELECTRICAL REQUIREMENTS.

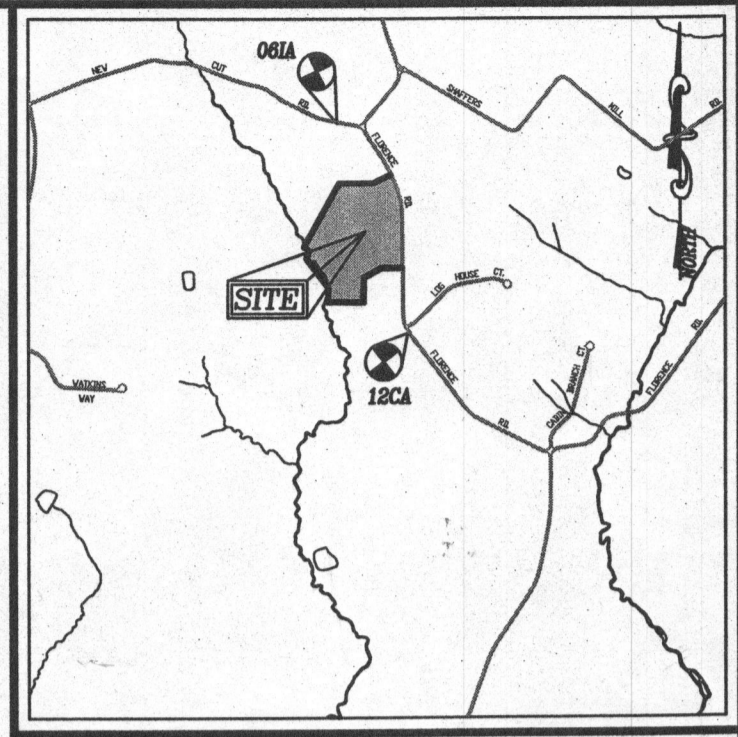
PROJECT ENGINEER'S APPROVAL:
 I HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

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

CRITICAL DIMENSIONS

1/4"	1/4"
1/2"	1/2"
3/4"	3/4"
1"	1"
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1 1/2"	1 1/2"
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34"	34"
34 1/4"	34 1/4"
34 1/2"	34 1/2"
34 3/4"	34 3/4"

NOTE: TOTAL SYSTEM CAPACITY: 1,300 GALLONS
 RATED CAPACITY: 500 GALLONS PER DAY



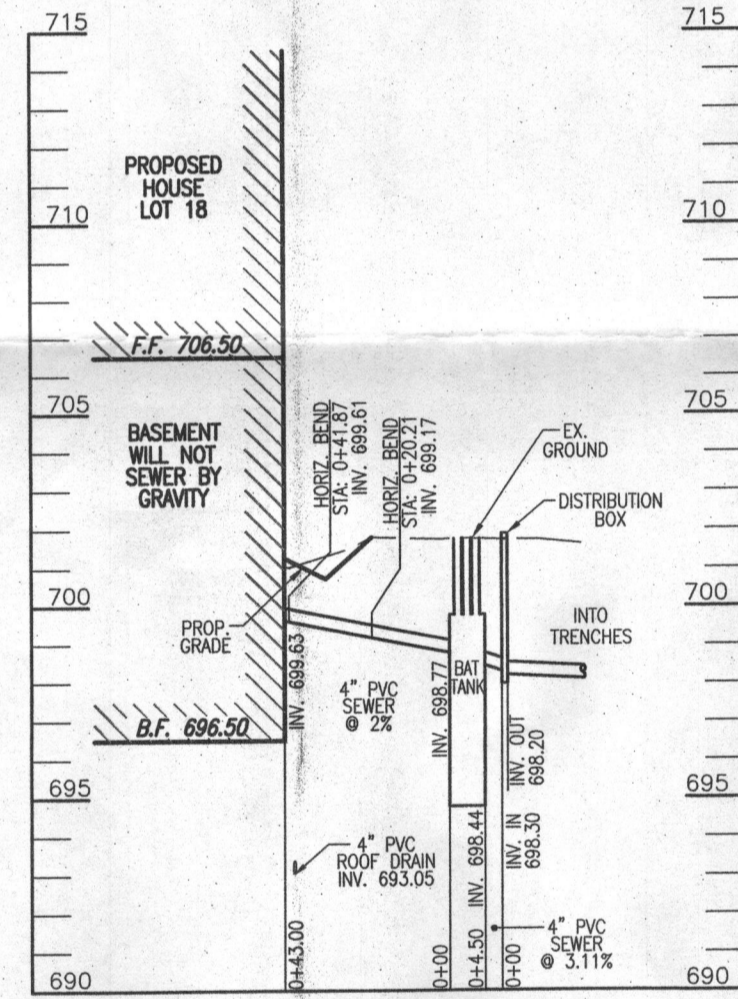
VICINITY MAP
 SCALE: 1"=2000'

LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- RIGHT-OF-WAY
- BOUNDARY
- ADJACENT BOUNDARY
- PASSED PERC. TEST
- FAILED PERC. TEST
- EXISTING WELL FIELD LOCATED
- EXISTING APPROVED WELL BOX AREA (TO REMAIN)
- EXISTING APPROVED WELL BOX AREA (TO BE ABANDONED)
- PROPOSED NEW WELL BOX AREA
- EXISTING APPROVED SEPTIC EASEMENT (TO REMAIN)
- EXISTING APPROVED SEPTIC EASEMENT (TO BE ABANDONED)
- PROPOSED NEW SEPTIC EASEMENT

OWNER

PETER T. EMMERICH
 KAREN O. EMMERICH
 11284 COUNTRY CLUB ROAD
 NEW MARKET, MD 21174
 (301) 524-4306



BAT SYSTEM PROFILE
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'

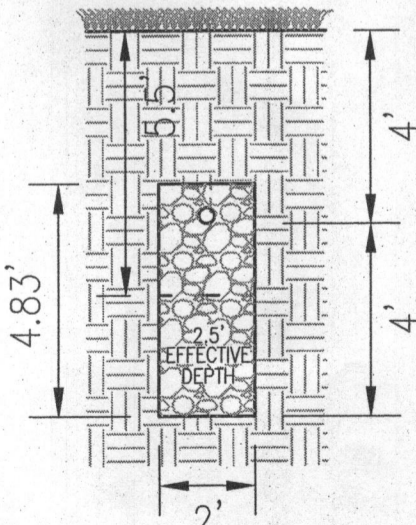
GENERAL NOTES:

- 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 DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
- NO BLOWER IS REQUIRED. THE NORWECO WASTEWATER TREATMENT SYSTEM HAS AN AERATOR MOUNTED IN THE TANK.
- 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.
- ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.

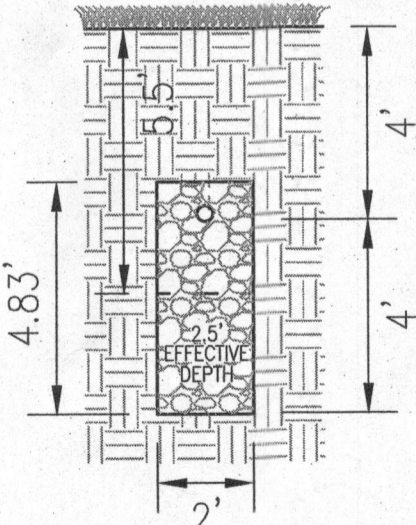
SYSTEM CALCULATIONS:

INITIAL SYSTEM:
 3 BEDROOMS AT 450gpd / 1.2 ABSORPTION RATE = 375 SQ. FT.
 375 SQ. FT. / 2 (TRENCH WIDTH) x .50 (SIDEWALL REDUCTION) = 94 LINEAR FEET
 2 TRENCHES (12' ON CENTER) OF 50 FEET IN LENGTH ARE PROVIDED WITH THE INITIAL SYSTEM.

1ST REPLACEMENT SYSTEM:
 3 BEDROOMS AT 450gpd / 1.2 ABSORPTION RATE = 375 SQ. FT.
 375 SQ. FT. / 2 (TRENCH WIDTH) x .50 (SIDEWALL REDUCTION) = 94 LINEAR FEET
 2 TRENCHES (12' ON CENTER) OF 50 FEET IN LENGTH WOULD BE PROVIDED WITH THE 1ST REPLACEMENT SYSTEM.



INITIAL SYSTEM TRENCH DETAIL
 SCALE: 1"=4'



1ST REPLACEMENT TRENCH DETAIL
 SCALE: 1"=4'

TRENCH INFO.				
TRENCH	TRENCH LENGTH	INV. INTO TRENCH	INV. BOTTOM OF TRENCH	EXISTING GRADE
1	50'	698.11	694.11	702.11
2	50'	697.12	693.12	701.12

THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS EASEMENT ARE RESTRICTED. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

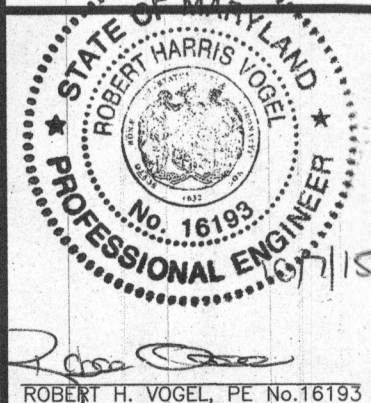
SITE PLAN FOR BAT INSTALLATION

KOGAN TRUST - LOT 18
 1836 FLORENCE ROAD
 MT. AIRY, MD 21771

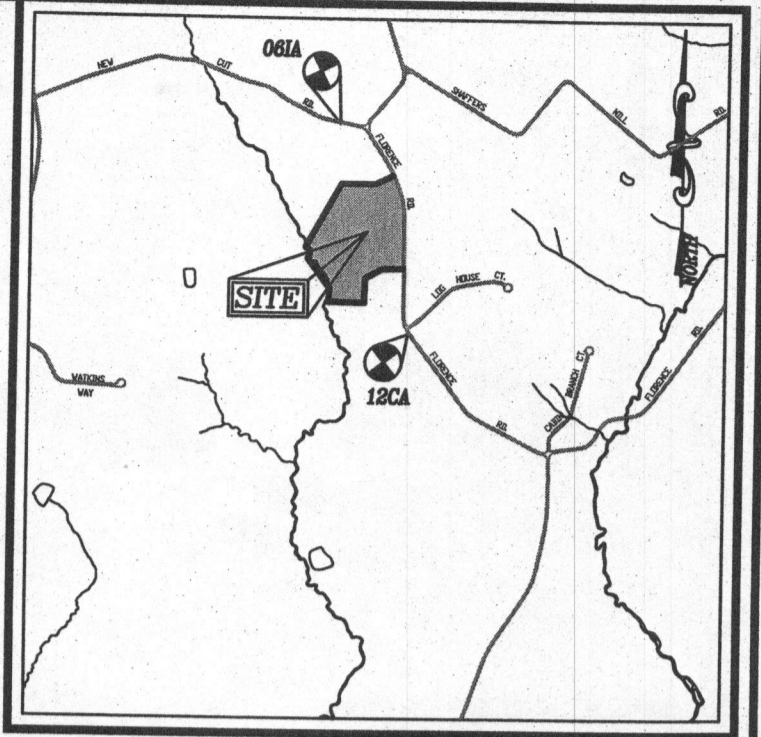
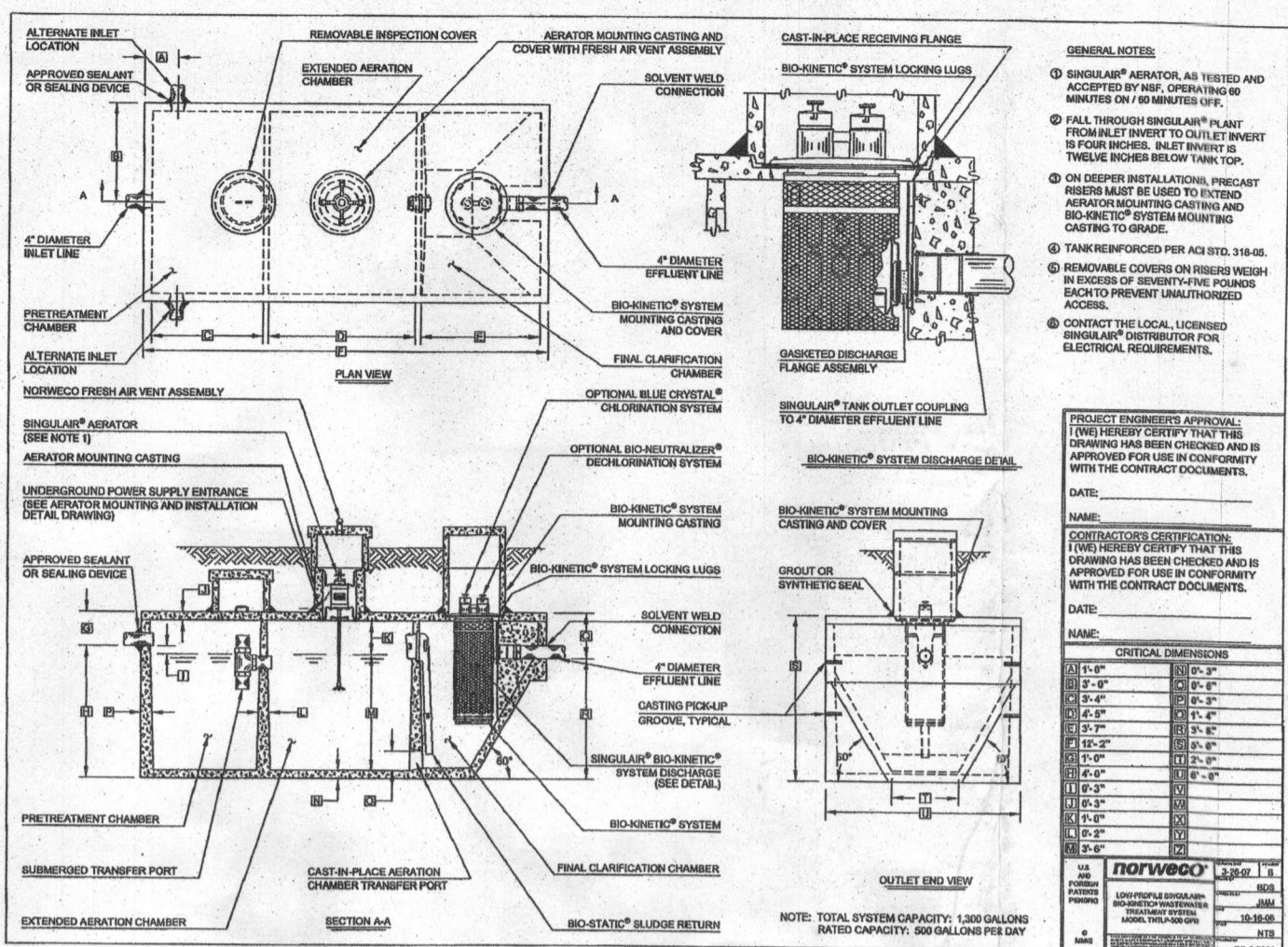
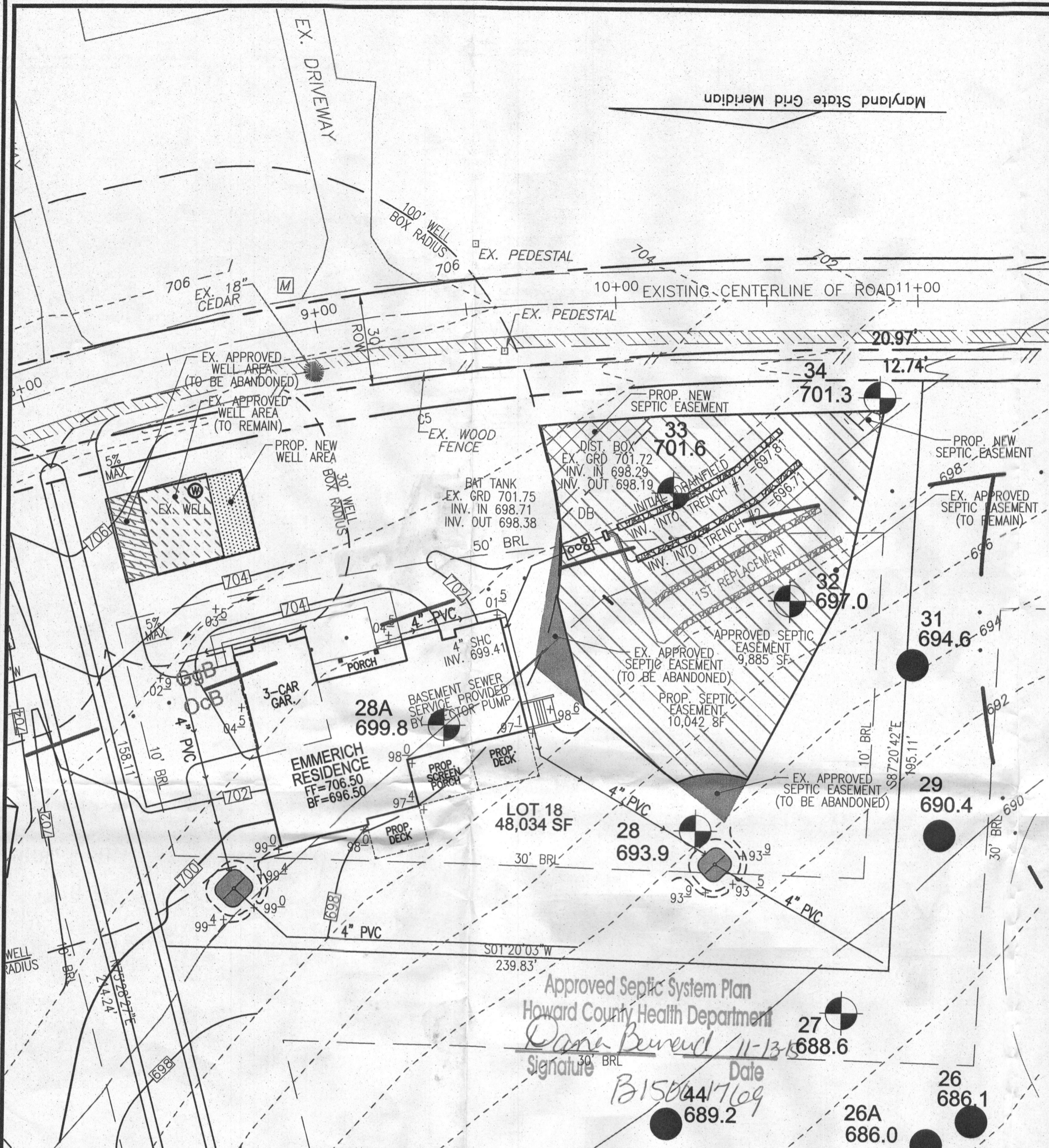
TAX MAP: 06 BLOCK: 23
 4TH ELECTION DISTRICT

PARCEL: 247
 ZONED: RC-DEO
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961



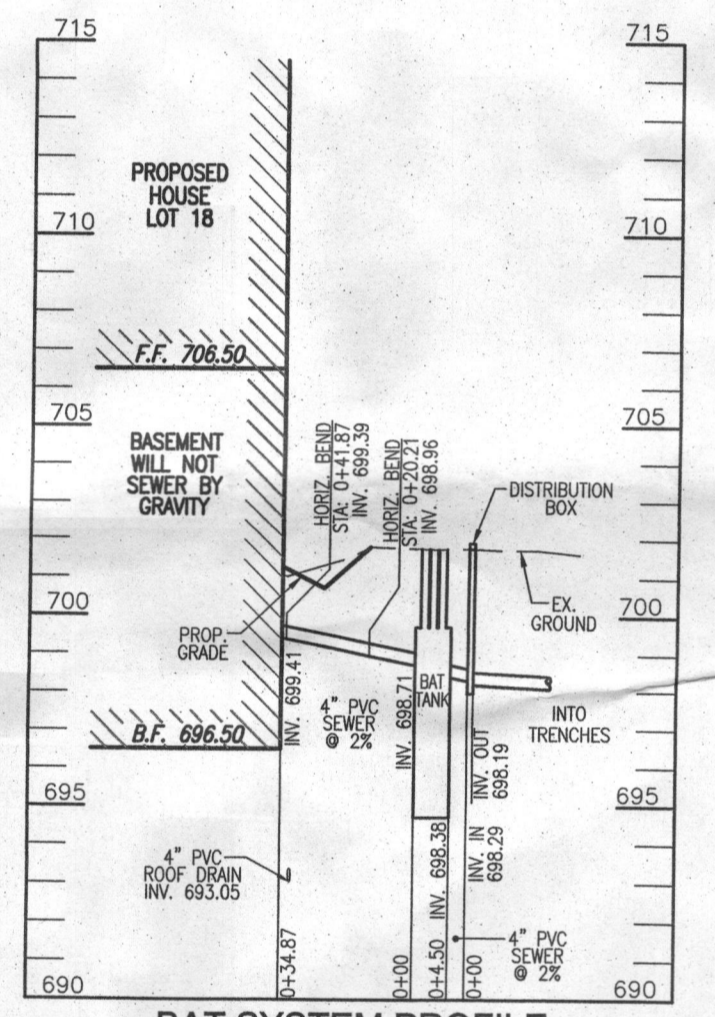
DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: APRIL 2015
 SCALE: 1"=30'
 W.O. NO.: 04-28



VICINITY MAP
SCALE: 1"=2000'

LEGEND

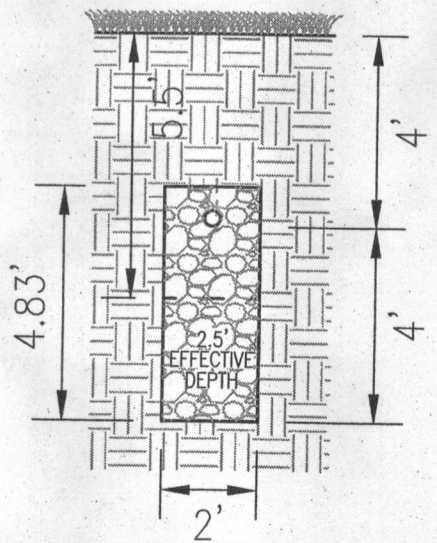
- EXISTING 2' CONTOUR: --- 382 ---
- EXISTING 10' CONTOUR: --- 380 ---
- RIGHT-OF-WAY: --- ---
- BOUNDARY: --- ---
- ADJACENT BOUNDARY: --- ---
- PASSED PERC. TEST: (Symbol)
- FAILED PERC. TEST: (Symbol)
- EXISTING WELL FIELD LOCATED: (Symbol)
- EXISTING APPROVED WELL BOX AREA (TO REMAIN): (Hatched)
- EXISTING APPROVED WELL BOX AREA (TO BE ABANDONED): (Hatched)
- PROPOSED NEW WELL BOX AREA: (Hatched)
- EXISTING APPROVED SEPTIC EASEMENT (TO REMAIN): (Hatched)
- EXISTING APPROVED SEPTIC EASEMENT (TO BE ABANDONED): (Hatched)
- PROPOSED NEW SEPTIC EASEMENT: (Hatched)



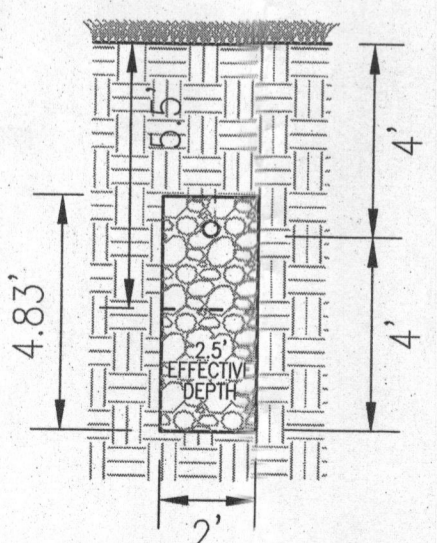
BAT SYSTEM PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

TRENCH INFO.

TRENCH	TRENCH LENGTH	INV. INTO TRENCH	BOTTOM OF TRENCH	EXISTING GRADE
1	63'	697.81	693.81	701.81
2	63'	696.71	692.71	700.71



INITIAL SYSTEM TRENCH DETAIL
SCALE: 1"=4'



1ST REPLACEMENT TRENCH DETAIL
SCALE: 1"=4'

- GENERAL NOTES:**
1. 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.
 2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
 3. NO BLOWER IS REQUIRED. THE NORWECO WASTEWATER TREATMENT SYSTEM HAS AN AERATOR MOUNTED IN THE TANK.
 4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
 5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
 6. 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.
 7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
 9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.

- SYSTEM CALCULATIONS:**
- INITIAL SYSTEM:**
4 BEDROOMS AT 600gpd / 1.2 ABSORPTION RATE = 500 SQ. FT.
500 SQ. FT. / 2 (TRENCH WIDTH) x .50 (SIDEWALL REDUCTION) = 125 LINEAR FEET
2 TRENCHES (12' ON CENTER) OF 63 FEET IN LENGTH ARE PROVIDED WITH THE INITIAL SYSTEM.
- 1ST REPLACEMENT SYSTEM:**
4 BEDROOMS AT 600gpd / 1.2 ABSORPTION RATE = 500 SQ. FT.
500 SQ. FT. / 2 (TRENCH WIDTH) x .50 (SIDEWALL REDUCTION) = 125 LINEAR FEET
2 TRENCHES (12' ON CENTER) OF 63 FEET IN LENGTH WOULD BE PROVIDED WITH THE 1ST REPLACEMENT SYSTEM.

Approved Septic System Plan
Howard County Health Department
Dana Berard 11-13-10
Signature Date
B15044/109
688.6
689.2
26A 686.0
26 686.1
27 688.6
28 693.9
28A 699.8
31 694.6
32 697.0
33 701.6

SITE PLAN FOR BAT INSTALLATION

KOGAN TRUST - LOT 18
1836 FLORENCE ROAD
MT. AIRY, MD 21771

TAX MAP: 06 BLOCK: 23
4TH ELECTION DISTRICT

PARCEL: 247
ZONED: RC-DEO
HOWARD COUNTY, MARYLAND

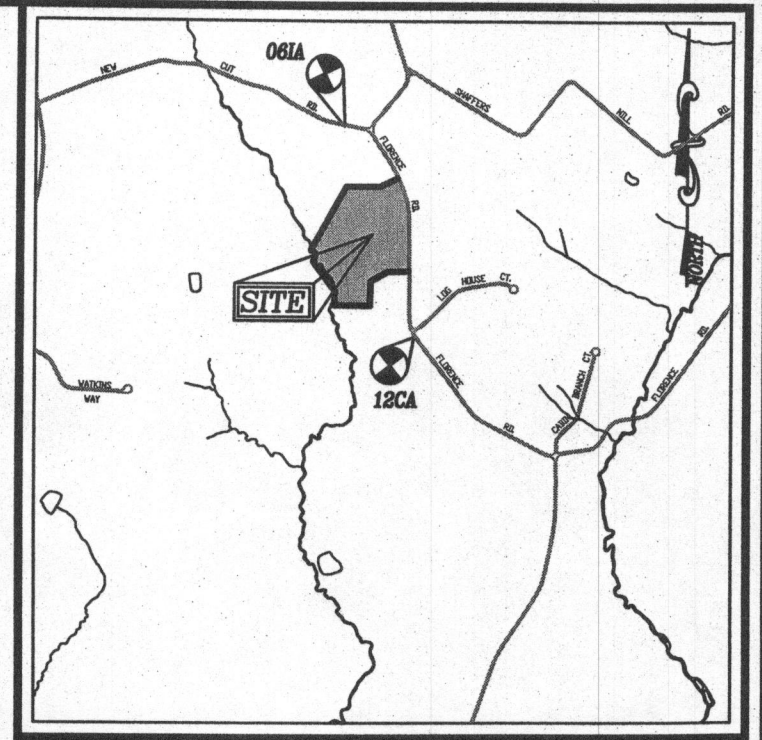
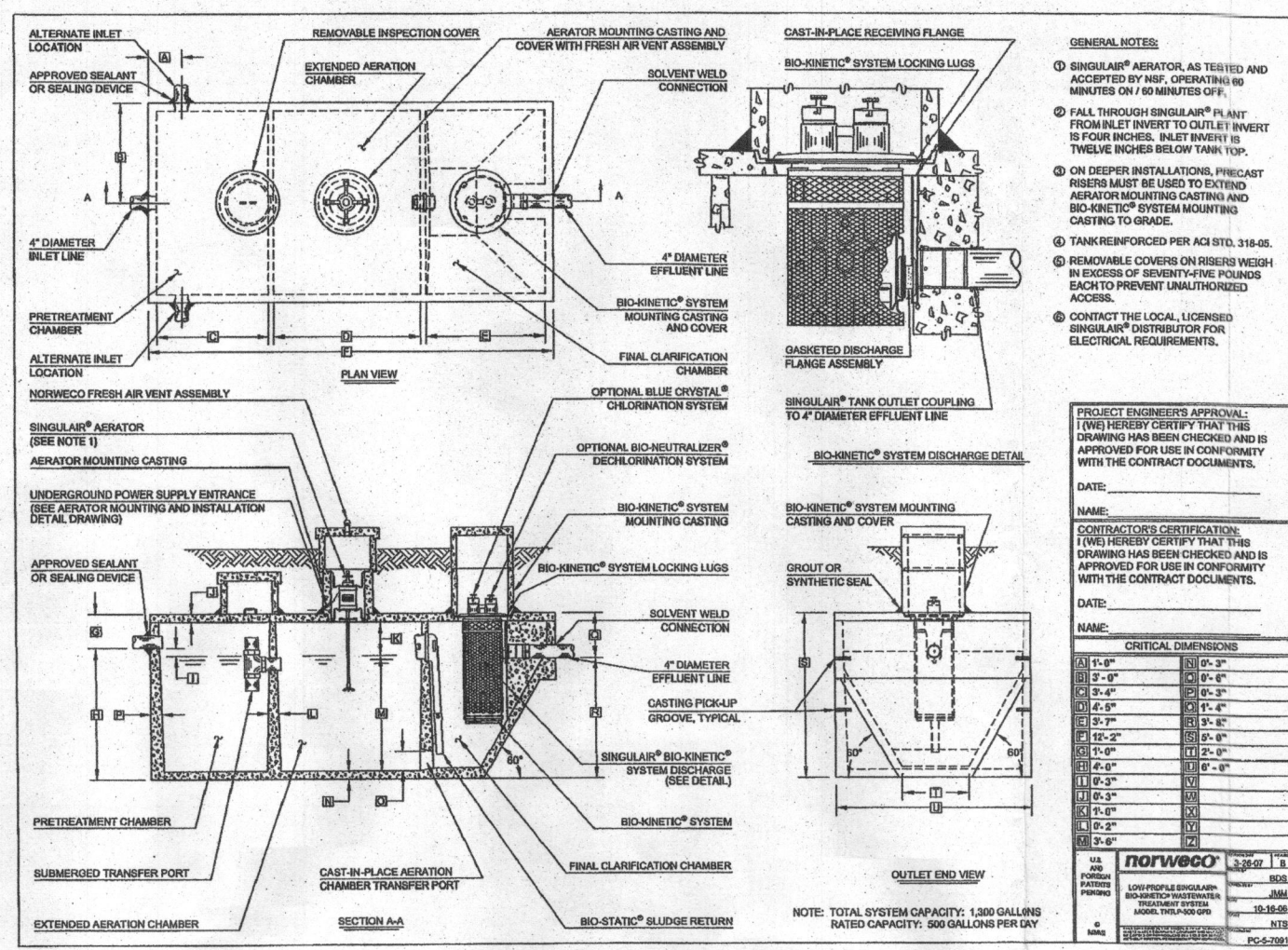
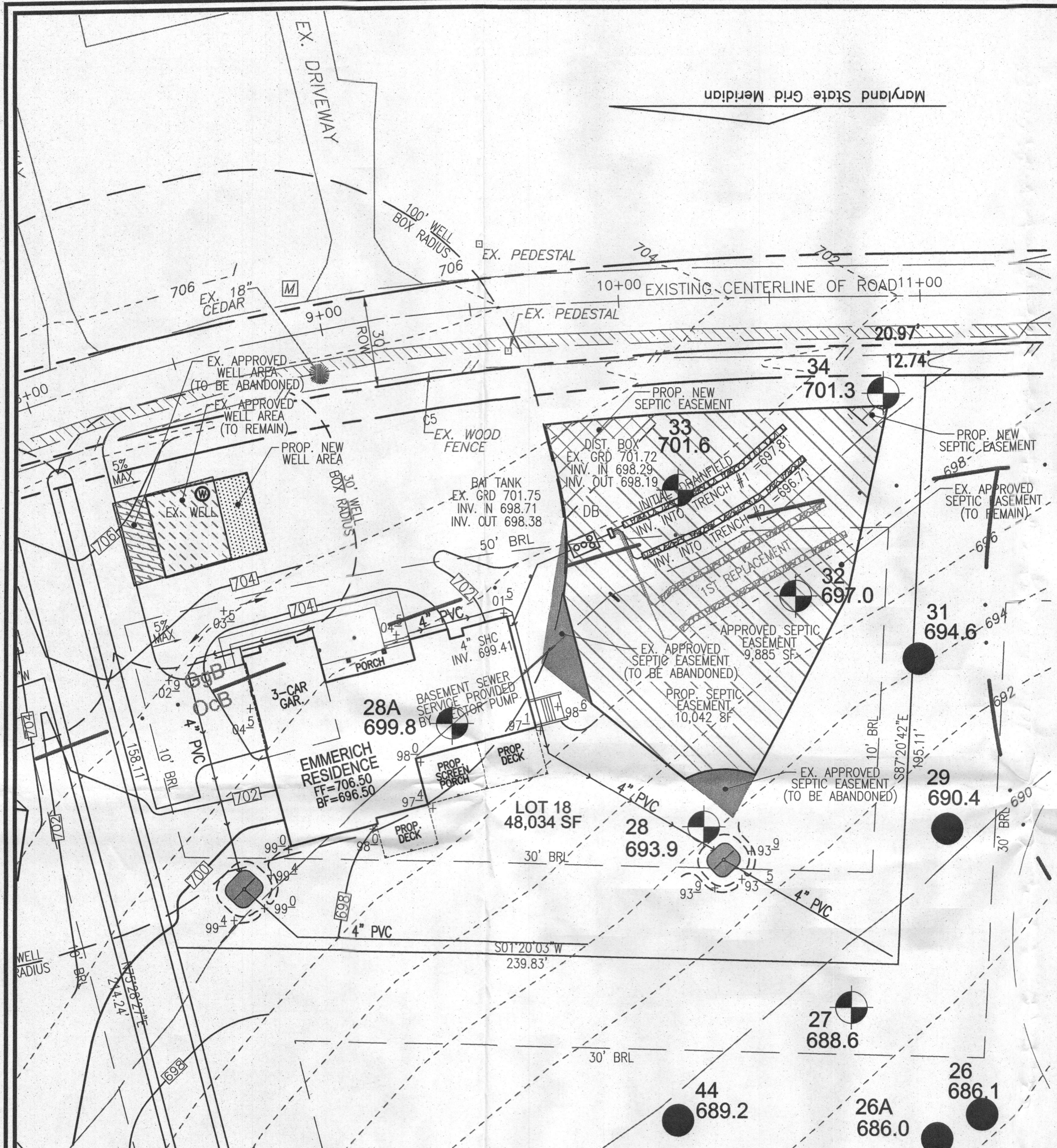
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: OCTOBER 2015
SCALE: 1"=30'
W.O. NO.: 04-28

STATE OF MARYLAND
ROBERT HARRIS VOGEL
PROFESSIONAL ENGINEER
No. 16193

THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS EASEMENT ARE RESTRICTED. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

1 SHEET OF 1

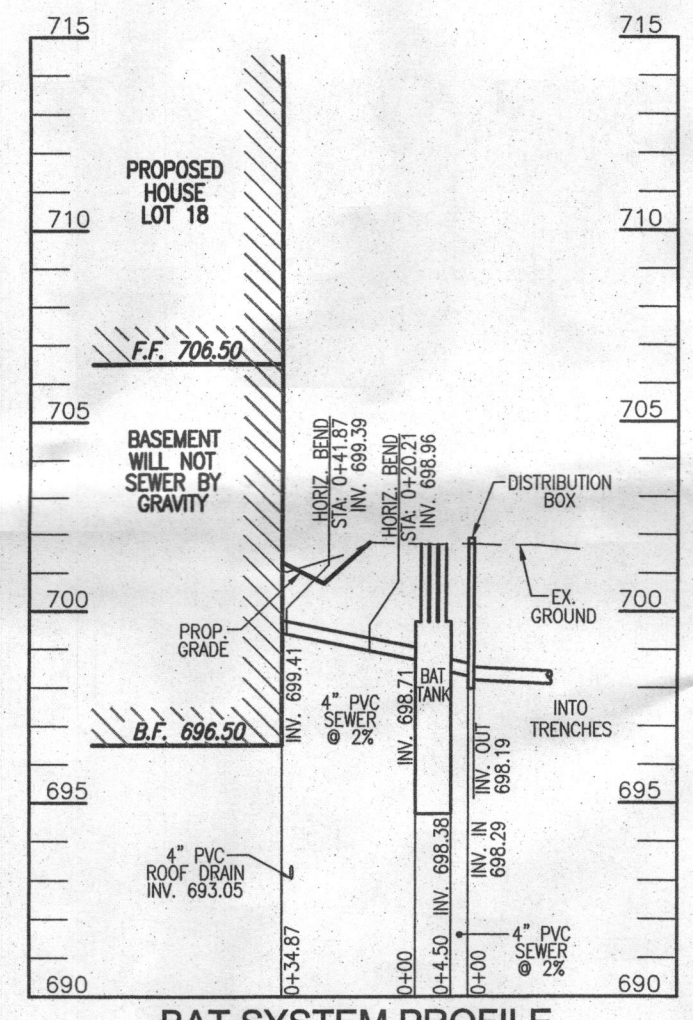


VICINITY MAP
SCALE: 1"=2000'

LEGEND

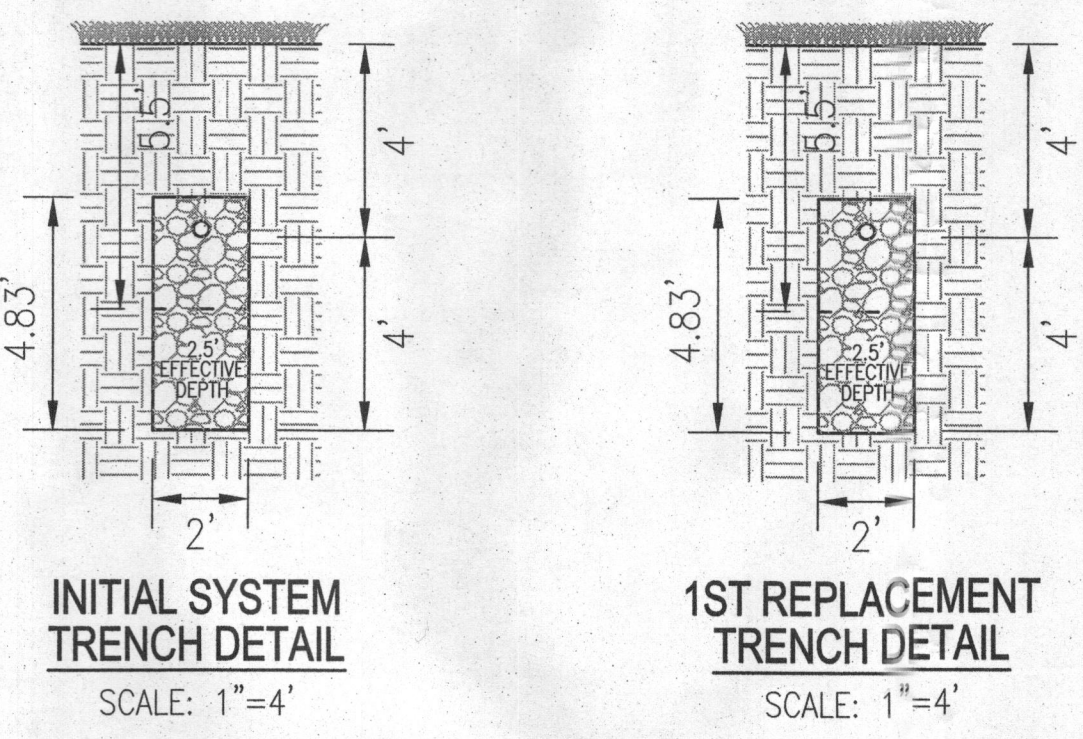
- EXISTING 2' CONTOUR ——— 382
- EXISTING 10' CONTOUR ——— 380
- RIGHT-OF-WAY ———
- BOUNDARY ———
- ADJACENT BOUNDARY ———
- PASSED PERC. TEST
- FAILED PERC. TEST
- EXISTING WELL FIELD LOCATED
- EXISTING APPROVED WELL BOX AREA (TO REMAIN)
- EXISTING APPROVED WELL BOX AREA (TO BE ABANDONED)
- PROPOSED NEW WELL BOX AREA
- EXISTING APPROVED SEPTIC EASEMENT (TO REMAIN)
- EXISTING APPROVED SEPTIC EASEMENT (TO BE ABANDONED)
- PROPOSED NEW SEPTIC EASEMENT

OWNER
PETER T. EMMERICH
KAREN O. EMMERICH
11284 COUNTRY CLUB ROAD
NEW MARKET, MD 21174
(301) 524-4306



BAT SYSTEM PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

TRENCH INFO.			
TRENCH	TRENCH LENGTH	INV. INTO BOTTOM OF TRENCH	EXISTING GRADE
1	63'	697.81	693.81
2	63'	696.71	692.71



INITIAL SYSTEM TRENCH DETAIL
SCALE: 1"=4'

1ST REPLACEMENT TRENCH DETAIL
SCALE: 1"=4'

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GENERAL NOTES:

1. 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.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
3. NO BLOWER IS REQUIRED. THE NORWECO WASTEWATER TREATMENT SYSTEM HAS AN AERATOR MOUNTED IN THE TANK.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. 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.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.

SYSTEM CALCULATIONS:

INITIAL SYSTEM:
4 BEDROOMS AT 600gpd / 1.2 ABSORPTION RATE = 500 SQ. FT.
500 SQ. FT. / 2 (TRENCH WIDTH) x .50 (SIDEWALL REDUCTION) = 125 LINEAR FEET
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1836 FLORENCE ROAD
MT. AIRY, MD 21771

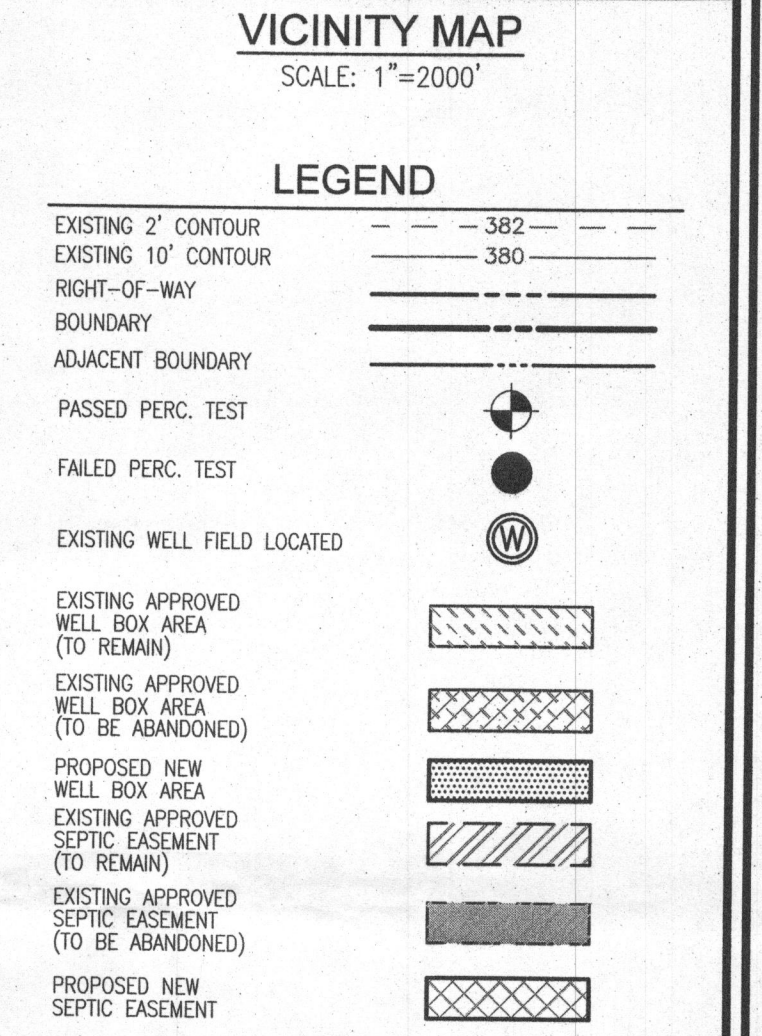
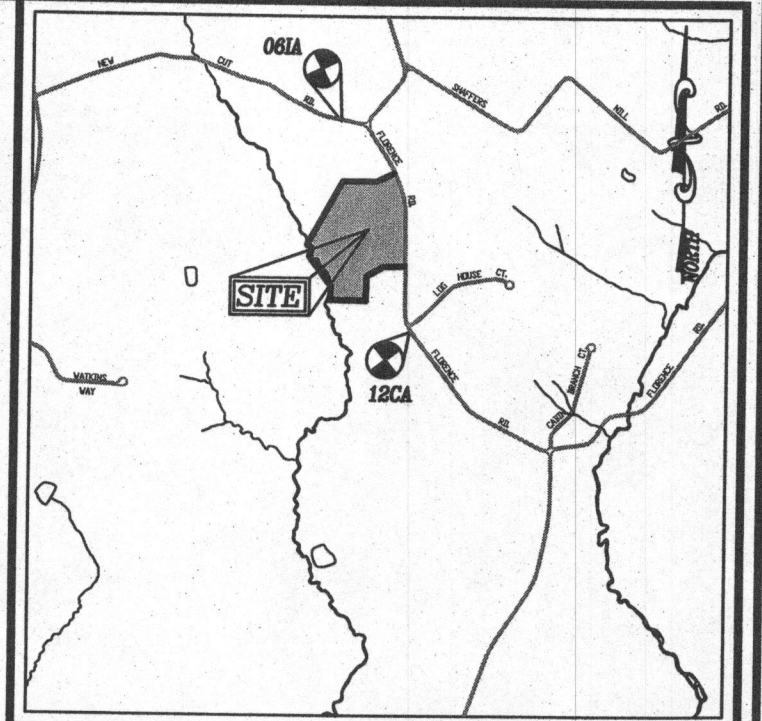
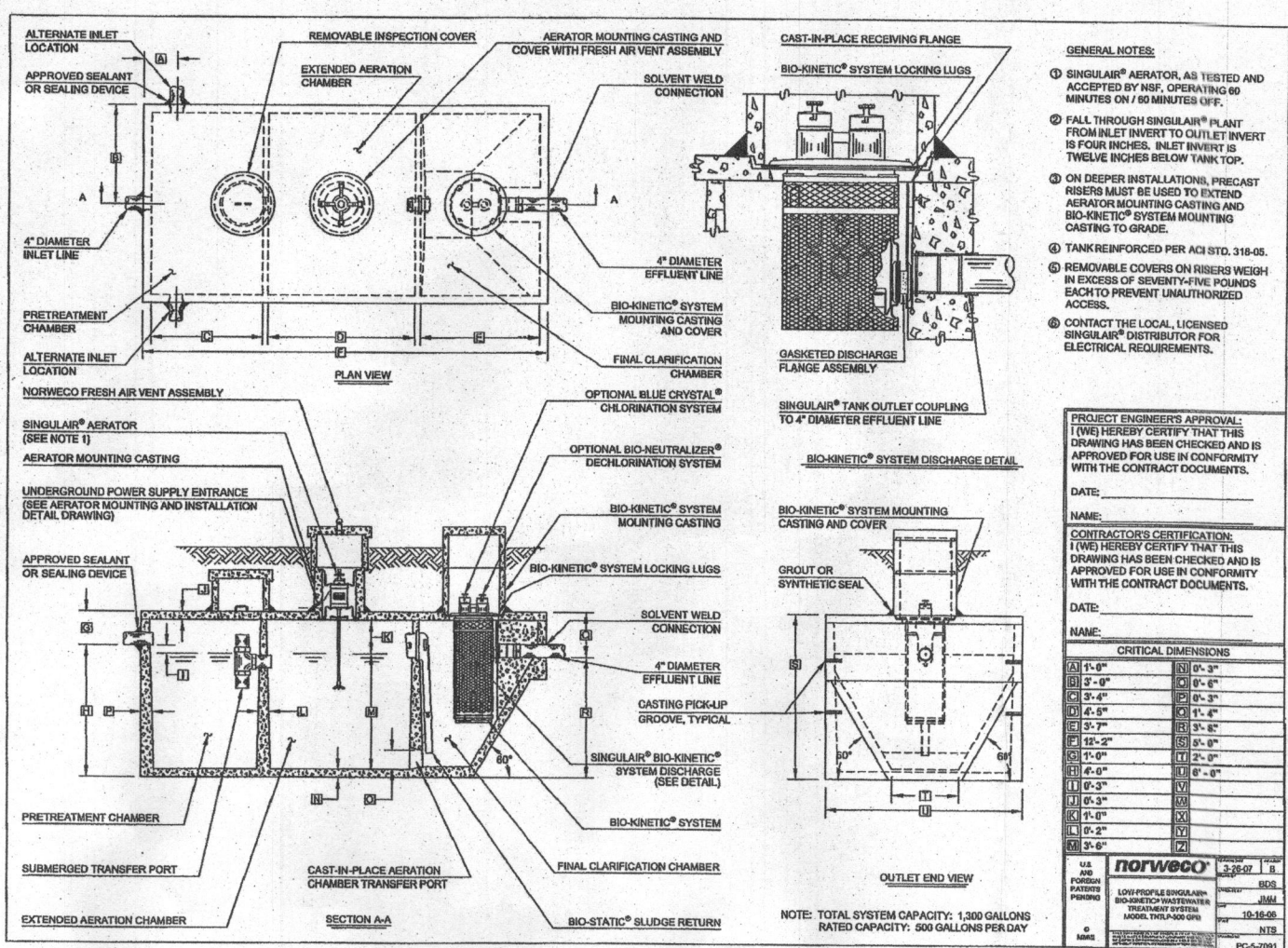
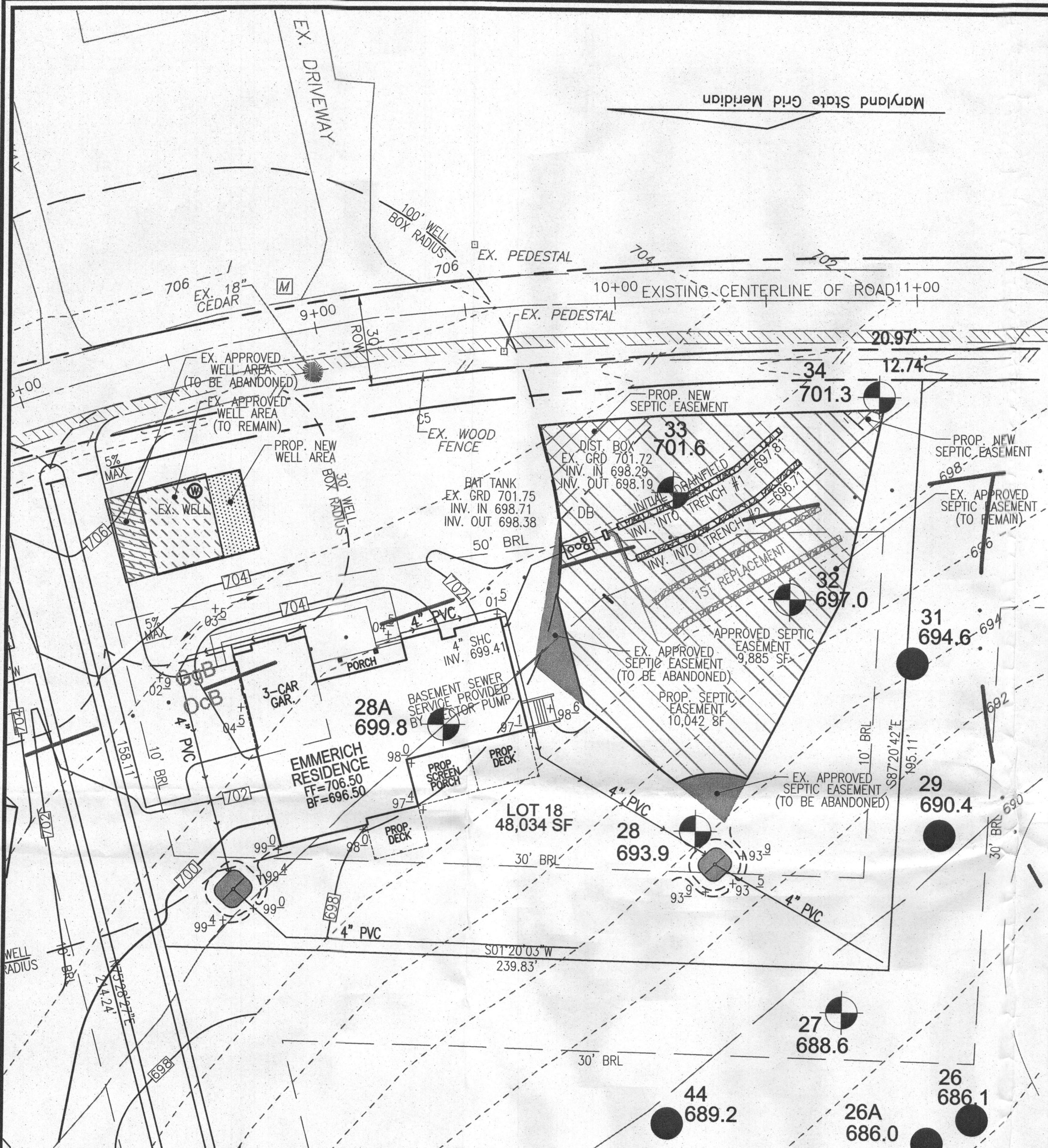
TAX MAP: 06 BLOCK: 23
4TH ELECTION DISTRICT

PARCEL: 247
ZONED: RC-DEO
HOWARD COUNTY, MARYLAND

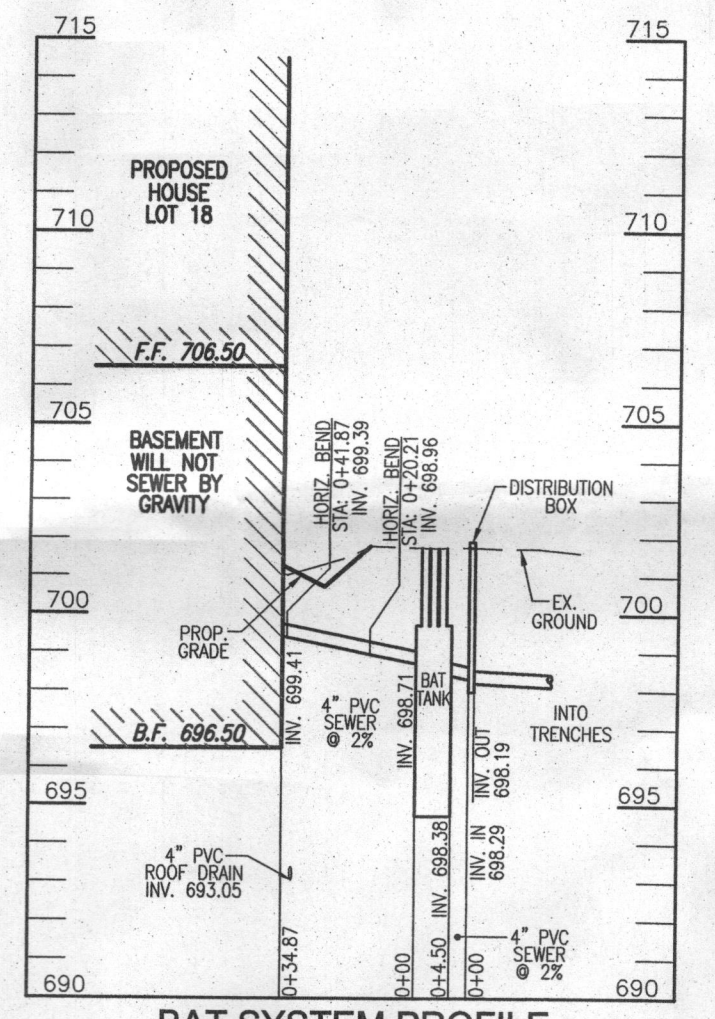
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DESIGN BY: _____ RHV
DRAWN BY: _____ JMR
CHECKED BY: _____ RHV
DATE: _____ OCTOBER 2015
SCALE: _____ 1"=30'
W.O. NO.: _____ 04-28

1 SHEET OF 1



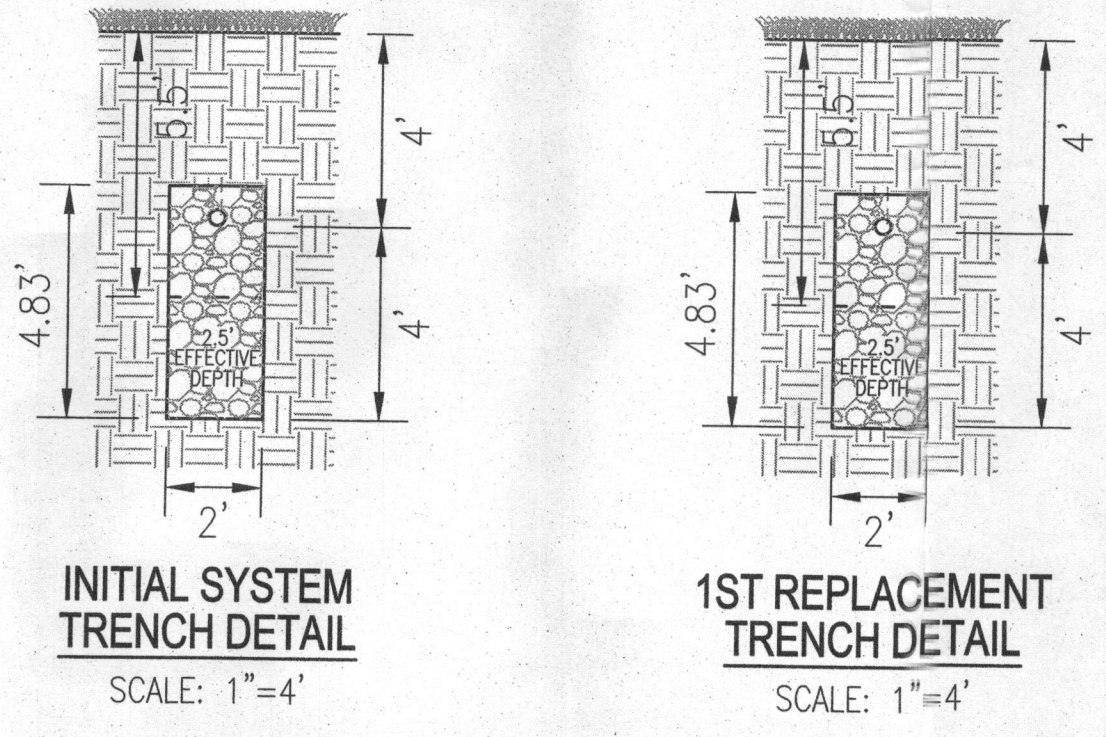
OWNER
 PETER T. EMMERICH
 KAREN O. EMMERICH
 11284 COUNTRY CLUB ROAD
 NEW MARKET, MD 21174
 (301) 524-4306



BAT SYSTEM PROFILE
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'

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SITE PLAN FOR BAT INSTALLATION

KOGAN TRUST - LOT 18
 1836 FLORENCE ROAD
 MT. AIRY, MD 21771

TAX MAP: 06 BLOCK: 23
 4TH ELECTION DISTRICT

PARCEL: 247
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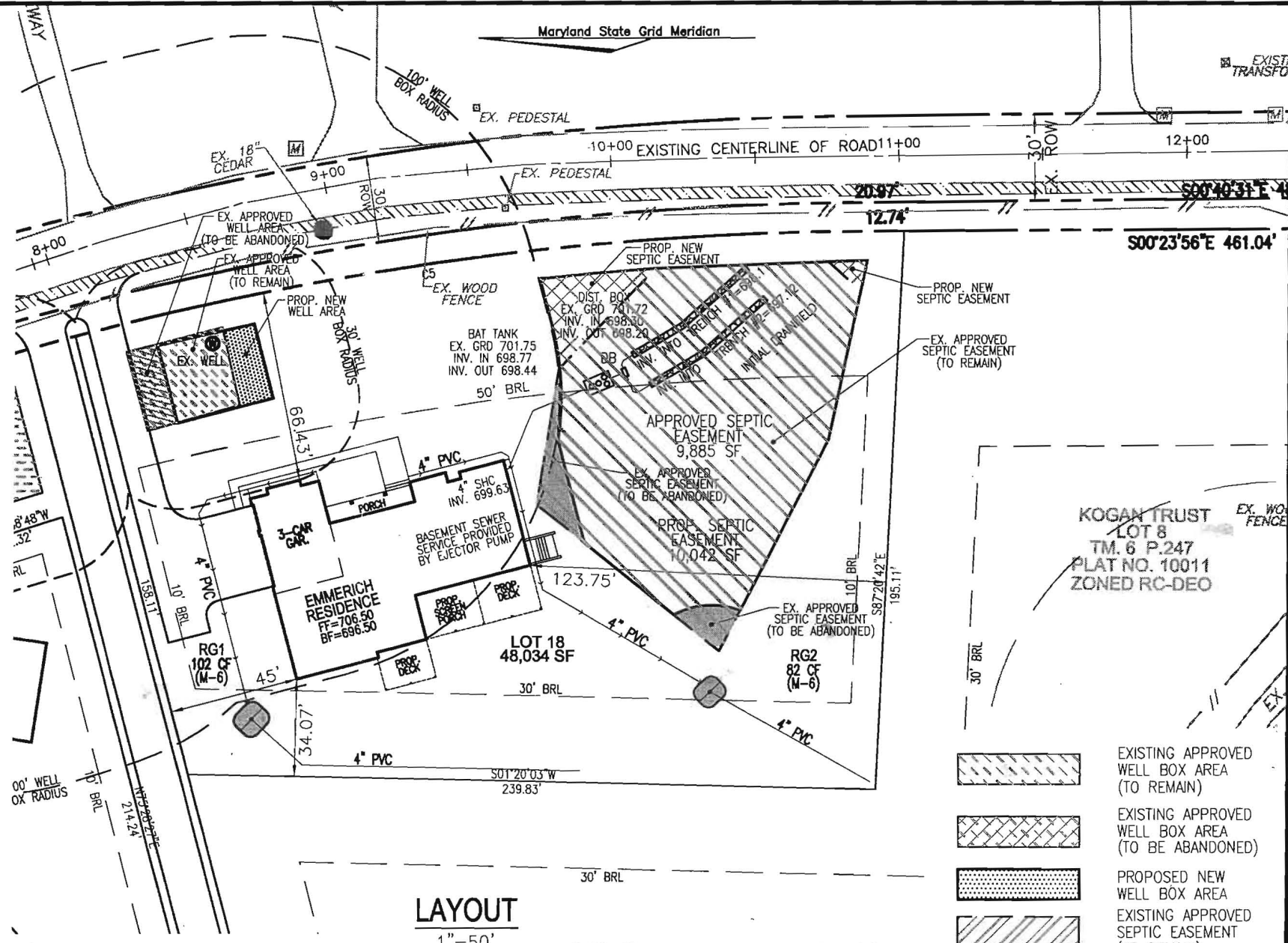
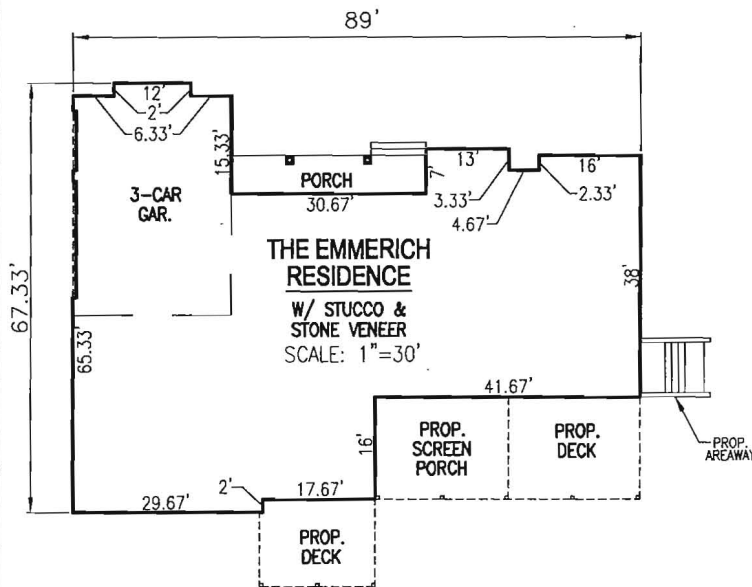
STATE OF MARYLAND
 ROBERT H. VOGEL
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1 SHEET OF 1

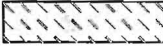


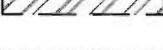
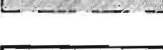
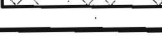
BUILDING OF LOT 18 FLOOR AREAS:
 BASEMENT FLOOR AREA: _____
 MAIN FLOOR AREA: _____
 BEDROOMS: _____

NOTE: STORMWATER MANAGEMENT (WQv AND Rev) IS PROVIDED BY RAIN GARDENS AND GRASS CHANNELS. AS APPROVED BY SP-06-020 CPv IS NOT REQUIRED FOR THIS PROJECT. ALL STORMWATER MANAGEMENT CONTROLS ARE TO BE PRIVATELY MAINTAINED.

BUILDING PERMIT NO. _____



KOGAN TRUST
 LOT 8
 TM. 6 P.247
 PLAT NO. 10011
 ZONED RC-DEO

-  EXISTING APPROVED WELL BOX AREA (TO REMAIN)
-  EXISTING APPROVED WELL BOX AREA (TO BE ABANDONED)
-  PROPOSED NEW WELL BOX AREA
-  EXISTING APPROVED SEPTIC EASEMENT (TO REMAIN)
-  EXISTING APPROVED SEPTIC EASEMENT (TO BE ABANDONED)
-  PROPOSED NEW SEPTIC EASEMENT

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SCALE: AS SHOWN
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: APRIL 2015
 PROJECT #: 04-28
 SHEET #: 1 OF 4

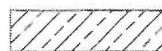





PLOT PLAN
KOGAN TRUST
LOT 18
REF: F-08-103
 TAX MAP 06 PARCEL 247
 BLOCK 23
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

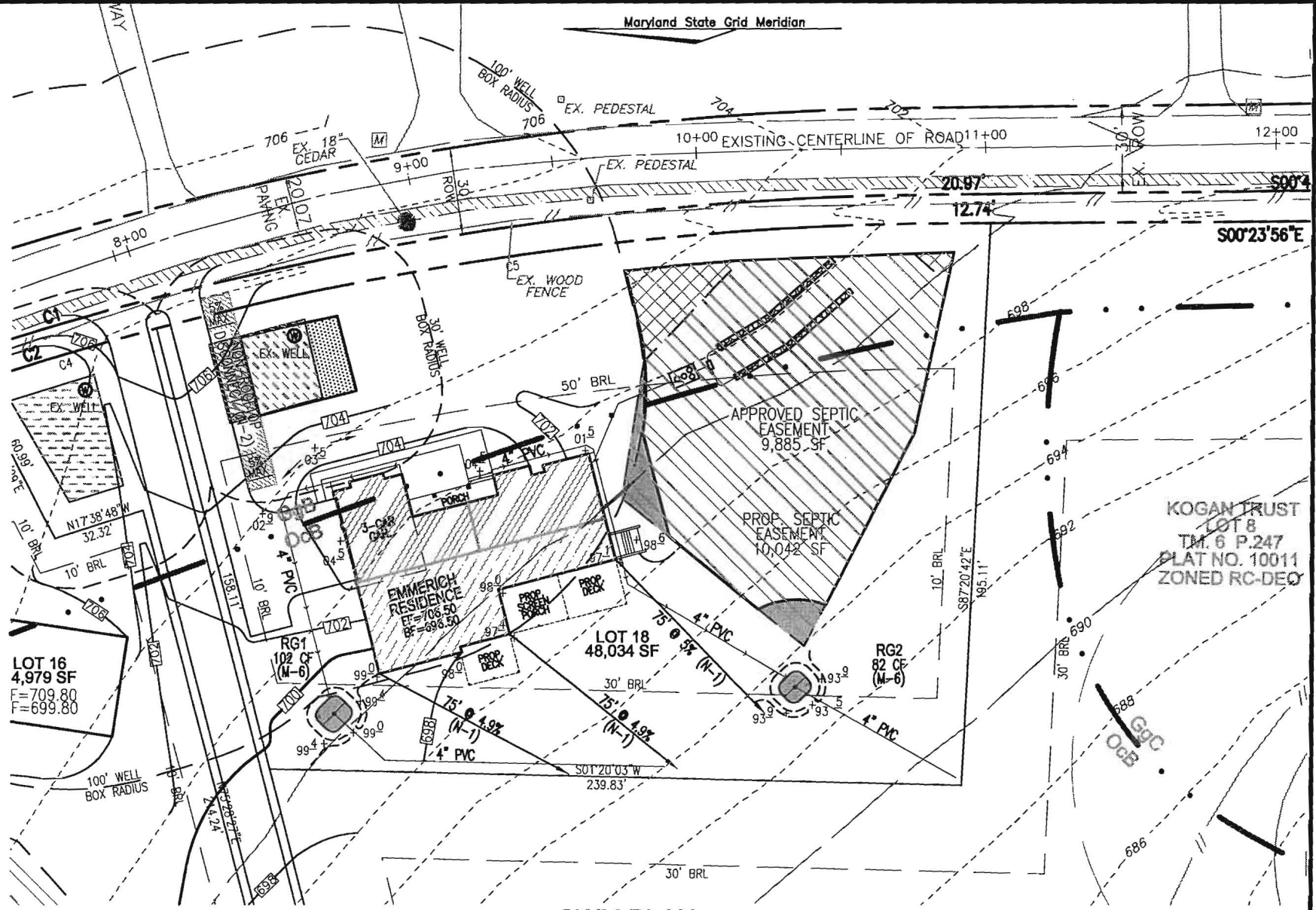
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

LAYOUT
 1"=50'

OWNER
 PETER T. EMMERICH
 KAREN O. EMMERICH
 11284 COUNTRY CLUB ROAD
 NEW MARKET, MD 21174
 (301) 524-4306

ADDRESS
 1836 FLORENCE ROAD
 MT. AIRY, MD 21771
 F-08-103

-  NON-ROOFTOP DISCONNECT (N-2)
-  PROPOSED MICRO-BIORETENTION FACILITY (M-6)
-  DRAINAGE AREA TO MICRO-BIORETENTION (M-6)
-  DRAINAGE AREA TO ROOFTOP DISCONNECT (N-1)
-  ROOF TOP DISCONNECT (N-1)
-  ROOF DRAIN TO MICRO-BIORETENTION



SWM PLAN
1"=50'

SCALE: AS SHOWN
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: APRIL 2015
 PROJECT #: 04-28
 SHEET#: 3 OF 4

PLOT PLAN
KOGAN TRUST
LOT 18
REF: F-08-103
 TAX MAP 06 PARCEL 247
 BLOCK 23
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Appendix B.4. Construction Specifications for Environmental Site Design Practices

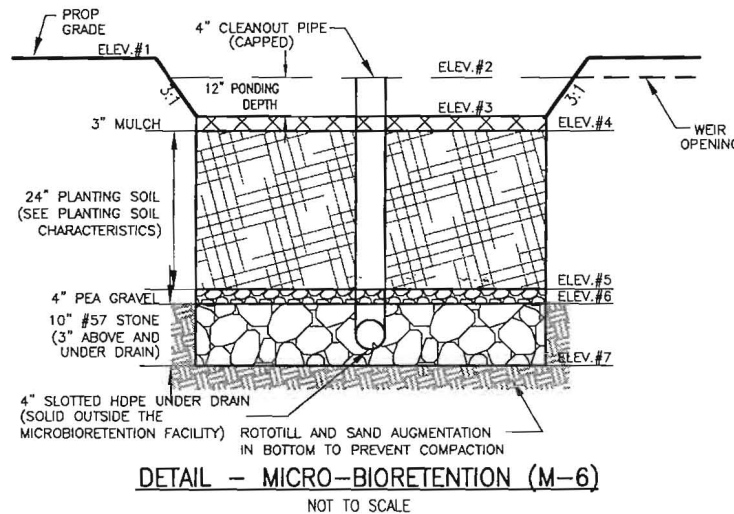
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; $f'_c = 3500$ psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

OPERATION AND MAINTENANCE SCHEDULE FOR LANSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

MICRO-BIORETENTION FACILITY ELEVATIONS (M-6)

LOT #	FACILITY	1	2	3	4	5	6	7	4" INV.	4" INV. OUTFALL	FACILITY SIZE
LOT 18	MBR-1 (M-6)	699.40	699.00	698.00	697.75	695.75	695.42	694.59	694.84	694.00	102 CF
LOT 18	MBR-2 (M-6)	693.90	693.50	692.50	692.25	690.25	689.92	689.09	689.34	689.14	82 CF



MBR-1
 ROOFTOP = 1,173 SF
 $Pe = 1" \quad Rv = 0.95$
 $ESDV = A(Pe)(Rv)/12 =$
 $ESDV = 1,173 \text{ SF}(1")(0.95)/12 = 93 \text{ CF}$

MBR-2
 ROOFTOP = 976 SF
 $Pe = 1" \quad Rv = 0.95$
 $ESDV = A(Pe)(Rv)/12 =$
 $ESDV = 976 \text{ SF}(1")(0.95)/12 = 77 \text{ CF}$

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PLOT PLAN
KOGAN TRUST
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