

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: 5-12-16 **ONSITE SEWAGE DISPOSAL SYSTEM** P 558713
 APPROVAL DATE: 8/12/16 **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 11977 Frederick Road
 SUBDIVISION: Mullin Property LOT: 2 TAX ID: _____
 CONTRACTOR: South Carroll Backhoe EMAIL: sbackhoe@comcast.net
 CONTRACTOR ADDRESS: 4410 Salem Bottom Road PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Henry Johnsen EMAIL: _____
 OWNER ADDRESS: 5689 Demmit Court PHONE: 301-466-1855

BAT UNIT MODEL: Singulair TNT 1000 PUMP SIZE: 0.3 PUMP TANK CAPACITY: 750

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 03/02/16 DATE RECORDED: 3/3/16

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 6 APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>236</u>	INLET DEPTH: <u>4</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>6.5</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4.5</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:

ISSUED BY: Hank Oswald ISSUE DATE: 5-12-16 EXPIRATION DATE: 5-12-17

- 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 DOWNGRAIENT 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 16002381
- 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.**

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 1000 GPD Septic Tank installed at 11977 Frederick Rd., Ellicott City, MD 21042 on July 8, 2016 was installed according to the manufacture's specifications.

Installer: Mark Seal

Property Owner: Henry Johnsen

Permit #

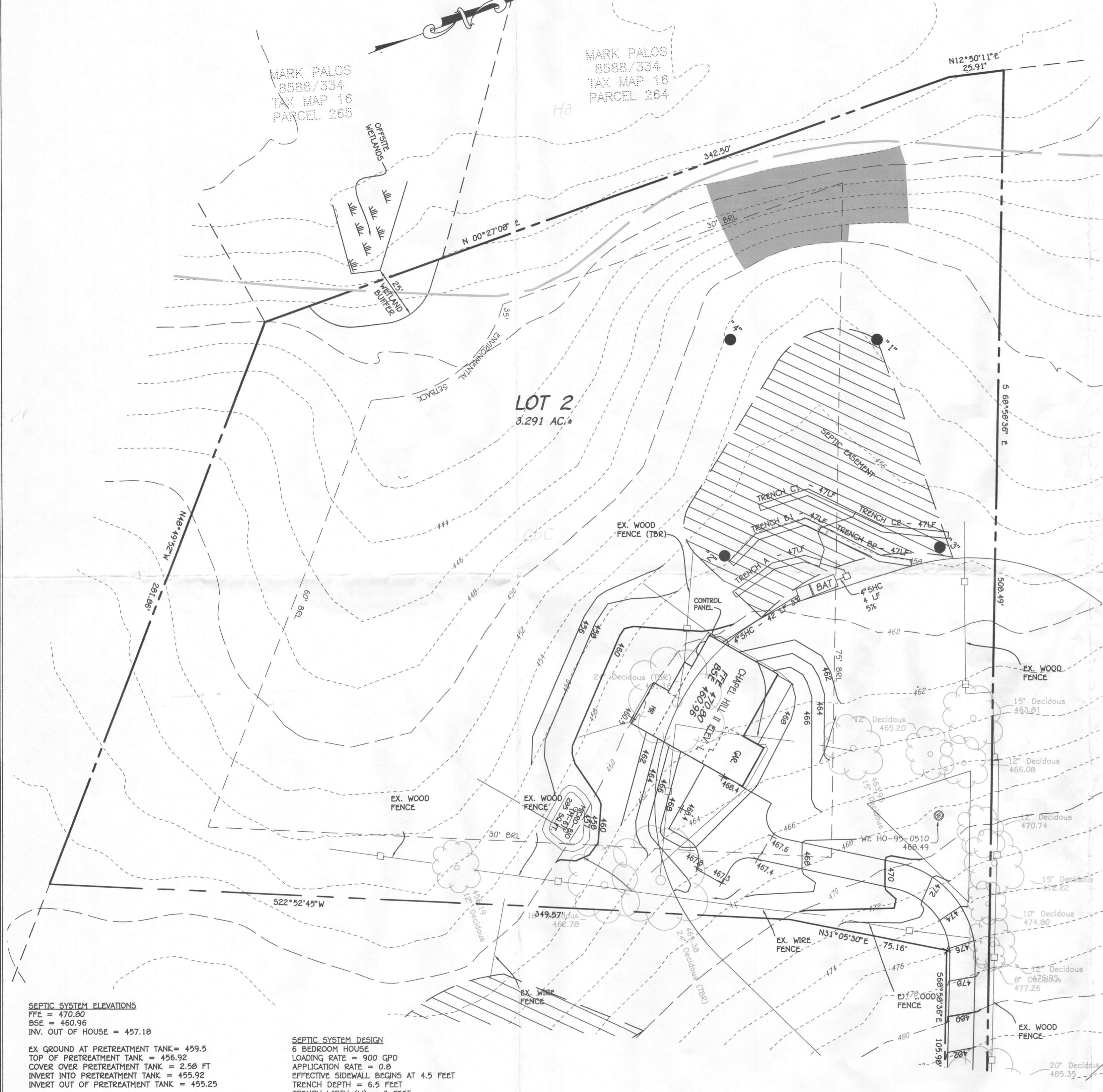
THIS CERTIFICATION IS FOR INSTALLATION ONLY. THE 5-YEAR OPERATIONS & MAINTENANCE AGREEMENT FROM DATE OF INSTALLATION WILL ONLY GO INTO EFFECT AFTER BACK RIVER PRE-CAST, LLC RECEIVES FINAL AND FULL PAYMENT FOR THE SYSTEM.



MATTHEW GECKLE

Vice-President

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - -	PROPOSED CONTOUR 2' INTERVAL
•	SPOT ELEVATION
○	EXISTING TREE
⊙	PASSED PERC HOLE
▲	25% OR GREATER SLOPES



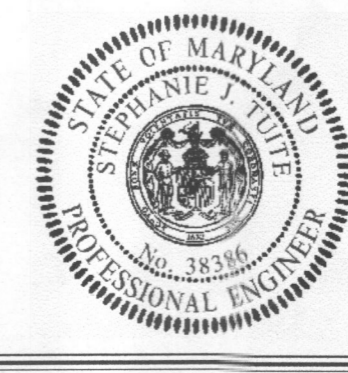
SEPTIC SYSTEM ELEVATIONS
 FFE = 470.80
 BSE = 460.96
 INV. OUT OF HOUSE = 457.18
 EX GROUND AT PRETREATMENT TANK = 459.5
 TOP OF PRETREATMENT TANK = 456.92
 COVER OVER PRETREATMENT TANK = 2.58 FT
 INVERT INTO PRETREATMENT TANK = 455.92
 INVERT OUT OF PRETREATMENT TANK = 455.25
 EX GROUND AT BAT TANK = 459.3
 TOP OF BAT TANK = 456.92
 COVER OVER BAT TANK = 2.38 FT
 INVERT INTO BAT TANK = 455.25
 INVERT OUT OF BAT TANK = 455.58

SEPTIC SYSTEM DESIGN
 6 BEDROOM HOUSE
 LOADING RATE = 900 GPD
 APPLICATION RATE = 0.8
 EFFECTIVE SIDEWALL BEGINS AT 4.5 FEET
 TRENCH DEPTH = 6.5 FEET
 TRENCH WIDTH (W) = 3 FEET
 EFFECTIVE DEPTH (D) = 2.0 FEET
 SF OF DRAINFIELD = 900 GPD / 0.8 = 1,125 SF
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH =
 $(W+2)/(W+1+2D) = (3+2)/(3+1+(2 \times 2)) = 0.625$
 TRENCH LENGTH = 1,125 SF x 0.625 / 3 = 234.38 FEET (USE 236 FT)
 TRENCH SPACING = 20+W = ((2x2) + 3) = 7 USE 10'

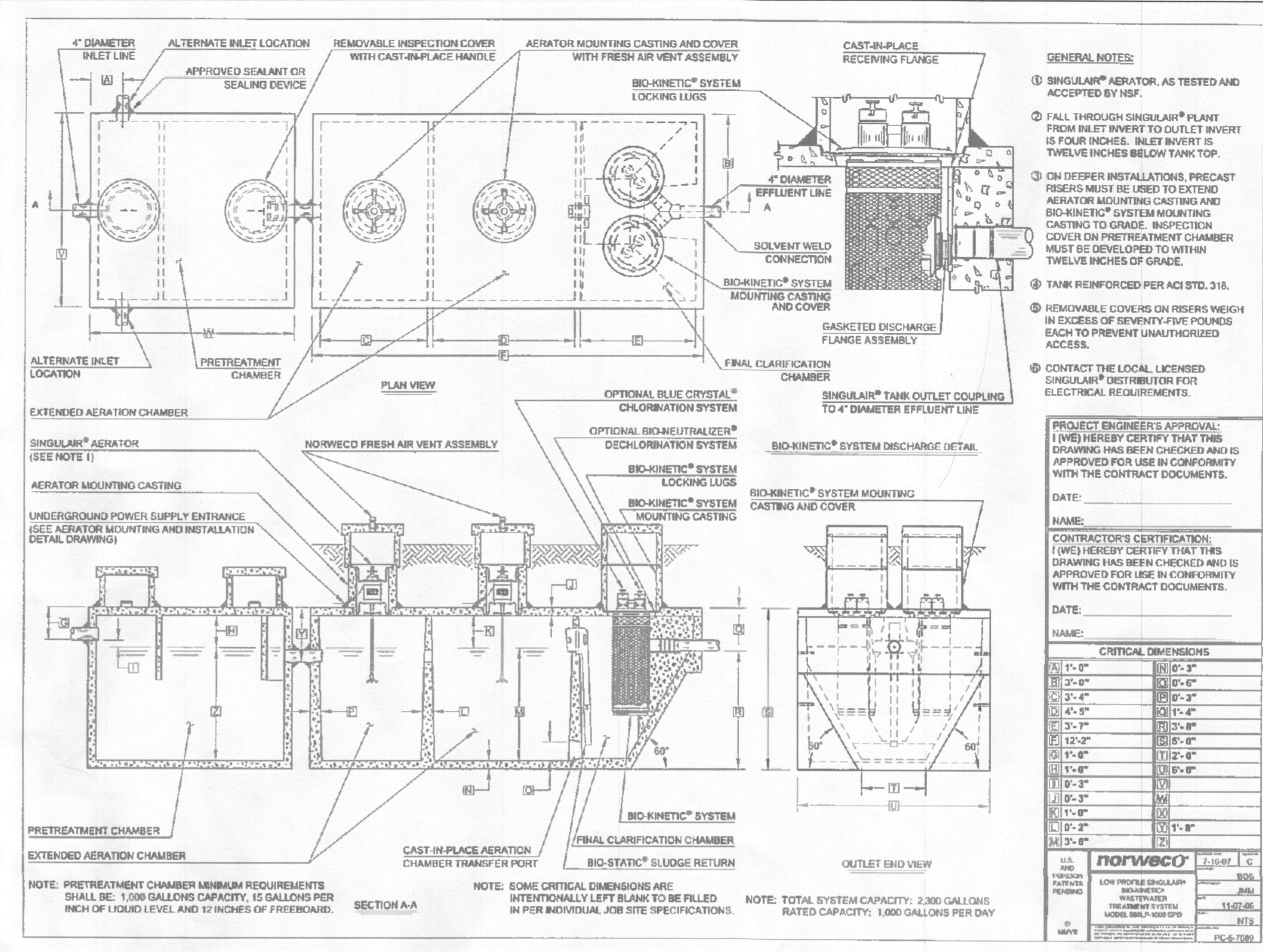
BAT NOTES

- 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.
- 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.
- ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- AN AGREEMENT AND ASSIGNMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER FOLIO
- 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.

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. 38386, EXPIRATION DATE: 01/12/2018.
 Signature: *Stephen J. Lint* DATE: 3/18/16
 Signature Of Professional Engineer



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



GENERAL NOTES:

- SINGULAR® AERATOR, AS TESTED AND ACCEPTED BY MDE.
- FALL THROUGH SINGULAR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DIFFER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.
- TANK REINFORCED PER ACI STD. 318.
- 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.

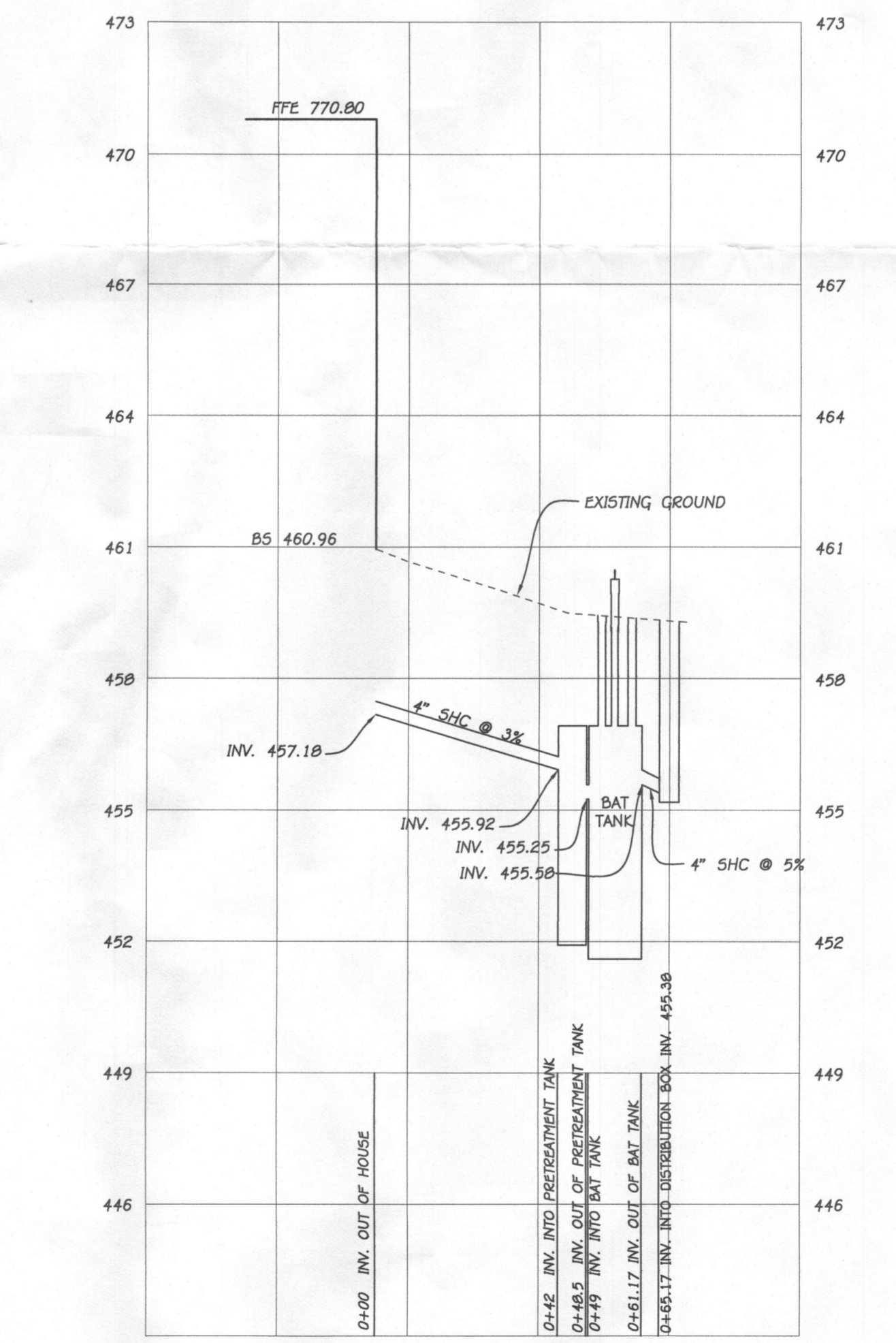
PROJECT ENGINEER'S APPROVAL:
 I (WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
 DATE: _____
 NAME: _____

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: _____

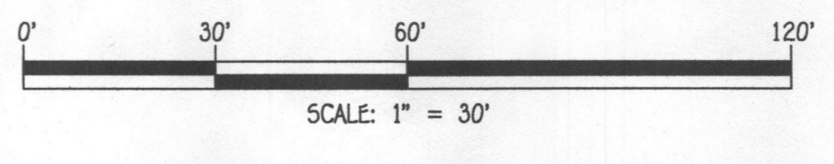
CRITICAL DIMENSIONS

NO.	DESCRIPTION	MIN.	MAX.
1	PRETREATMENT CHAMBER	11'-0"	11'-0"
2	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
3	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
4	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
5	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
6	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
7	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
8	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
9	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
10	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
11	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
12	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
13	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
14	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
15	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
16	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
17	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
18	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
19	EXTENDED AERATION CHAMBER	21'-0"	21'-0"
20	EXTENDED AERATION CHAMBER	21'-0"	21'-0"

NOTE: TOTAL SYSTEM CAPACITY: 2,300 GALLONS
 RATED CAPACITY: 1,000 GALLONS PER DAY



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



GENERAL NOTES

- SUBJECT PROPERTY ZONED: RR-DEO
- TOTAL AREA OF PROPERTY: 48,359 SQ. FT. OR 1.11 AC.
- CONTRACTOR/BUILDER TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
- BOUNDARY OF LOT BASED ON PLAT #18704 & 18705.
- TOPOGRAPHY SHOWN HEREON BASED ON FIELD RUN TOPOGRAPHIC SURVEY CONDUCTED BY FISHER, COLLINS & CARTER, INC. ON OR ABOUT NOVEMBER 11, 2015. TOPOGRAPHY IN NON-DEVELOPED AREAS IS BASED ON HOWARD COUNTY 200 SCALE TOPOGRAPHY. NO WETLANDS EXIST ON THIS LOT. THERE IS A WETLAND BUFFER FROM AN ADJOINING PROPERTY.

Approved Septic System Plan
 Howard County Health Department
 Hank Oswald 3/19/16
 Signature Date

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
GbB	Gladstone loam, 3 to 8 percent slopes	A	0.28
GbC	Gladstone loam, 8 to 15 percent slopes	A	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
Gob	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	0.43
Hb	Harboro-Codorus silt loams, 0 to 3 percent slopes	D	0.37

TRENCH DESIGN

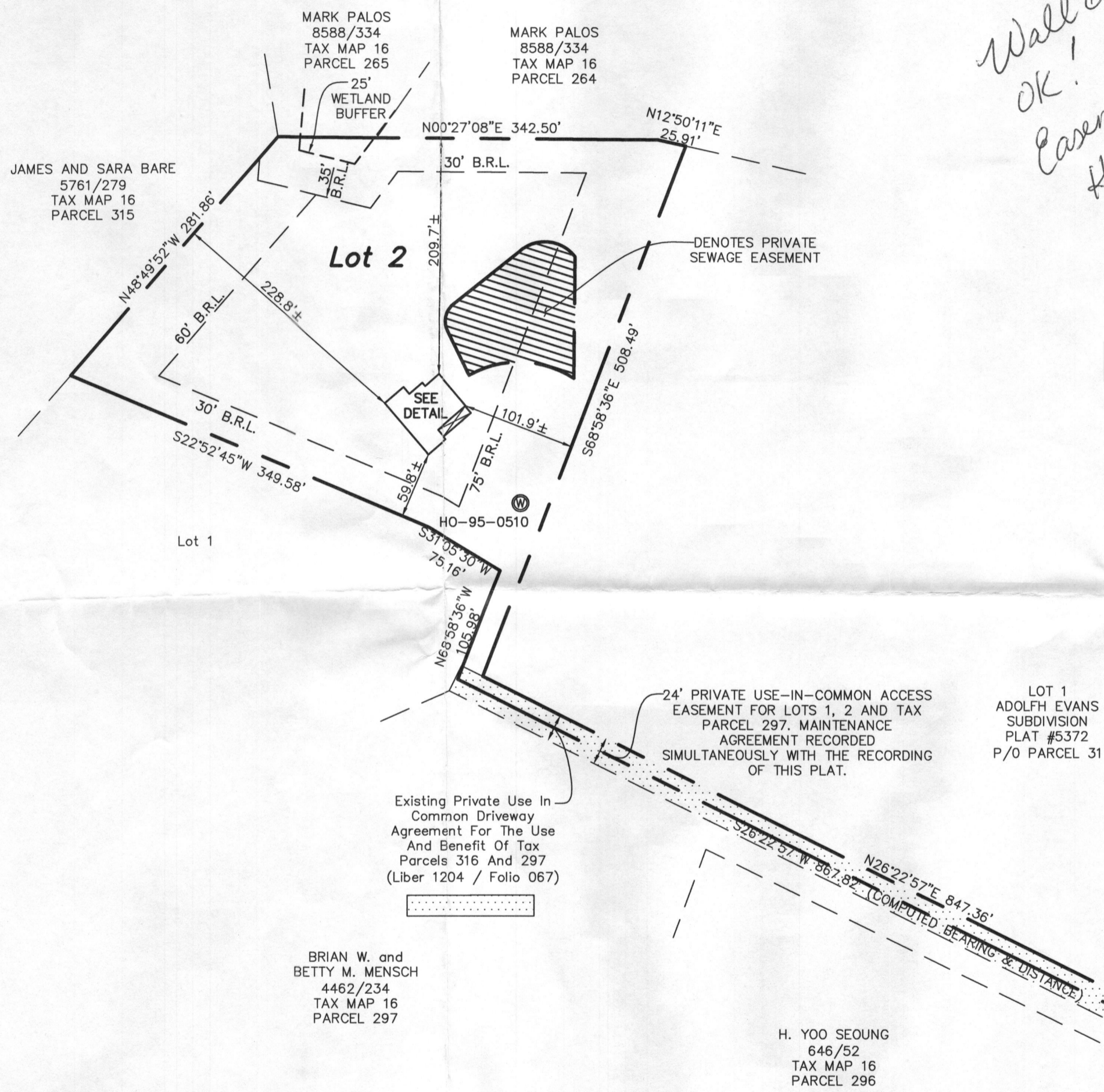
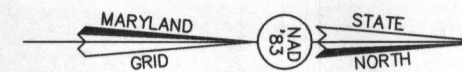
TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	PIPE INVERT ELEV.	DEPTH FROM GROUND TO STONE (FT)	DEPTH OF TRENCH (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH STARTS AT	EFFECTIVE DEPTH (D)	TOTAL DEPTH	WIDTH OF TRENCHES (W)	TRENCH SPACING
1A	459.1	456.6	455.1	3.5'	3.0'	452.6	4.5'	2.0'	6.5'	3.0'	10'
1B	458.1	454.6	454.1	3.5'	3.0'	451.6	4.5'	2.0'	6.5'	3.0'	10'
1B2	458.1	454.6	454.1	3.5'	3.0'	451.6	4.5'	2.0'	6.5'	3.0'	10'
1C1	457.4	453.9	453.4	3.5'	3.0'	450.9	4.5'	2.0'	6.5'	3.0'	10'
1C2	457.4	453.9	453.4	3.5'	3.0'	450.9	4.5'	2.0'	6.5'	3.0'	10'

BAT PLAN
MULLIN PROPERTY, LOT 2
 11977 FREDERICK ROAD
 TAX MAP #16 PARCEL #316
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 ZONED: RR-DEO
 SCALE: 1" = 30' DATE: FEBRUARY, 2016
 SHEET 1 OF 1

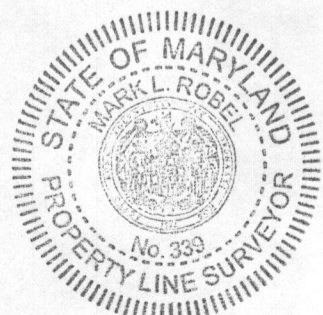
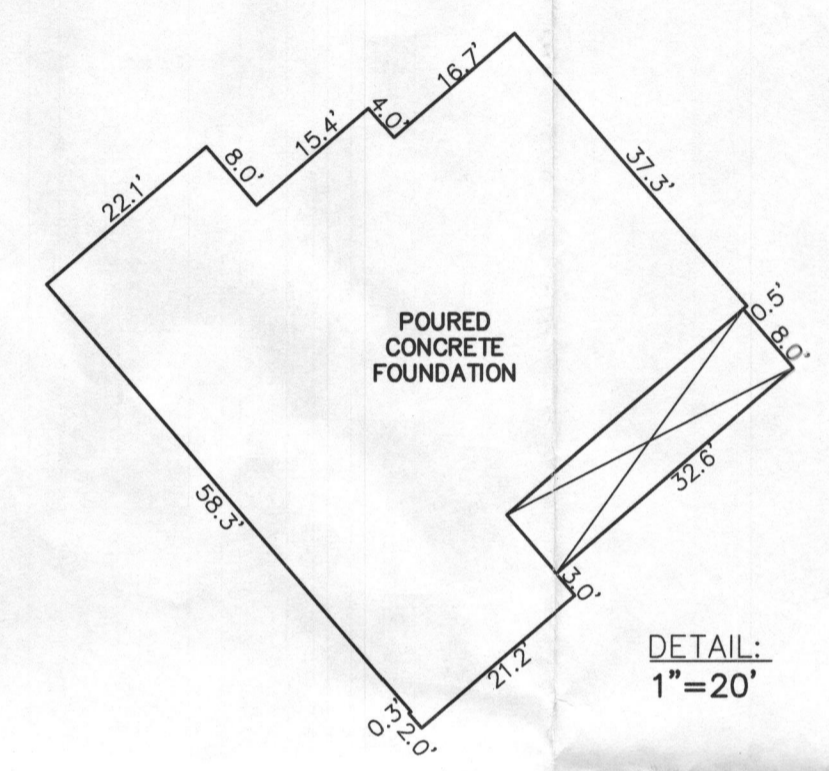
ONIR
 HENRY JOHNSON
 5695 DEWITT COURT
 MOUNT AIRY, MARYLAND 21771
 301-466-1895

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. 24027C0070D 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 1'(±)
- 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-95-0510 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 10/04/2016.
- 7) BUILDING PERMIT# B-16000369



*Wall check OK!
Easement and House appear to be slightly off
5-12-16*



Mark L. Robel
PROPERTY LINE SURVEYOR
REG. #339
DATE: 4/6/16

Frederick Road
Maryland Route No. 144
(Scenic Road ~ Minor Arterial)
(90' Right Of Way)

HOUSE LOCATION DRAWING

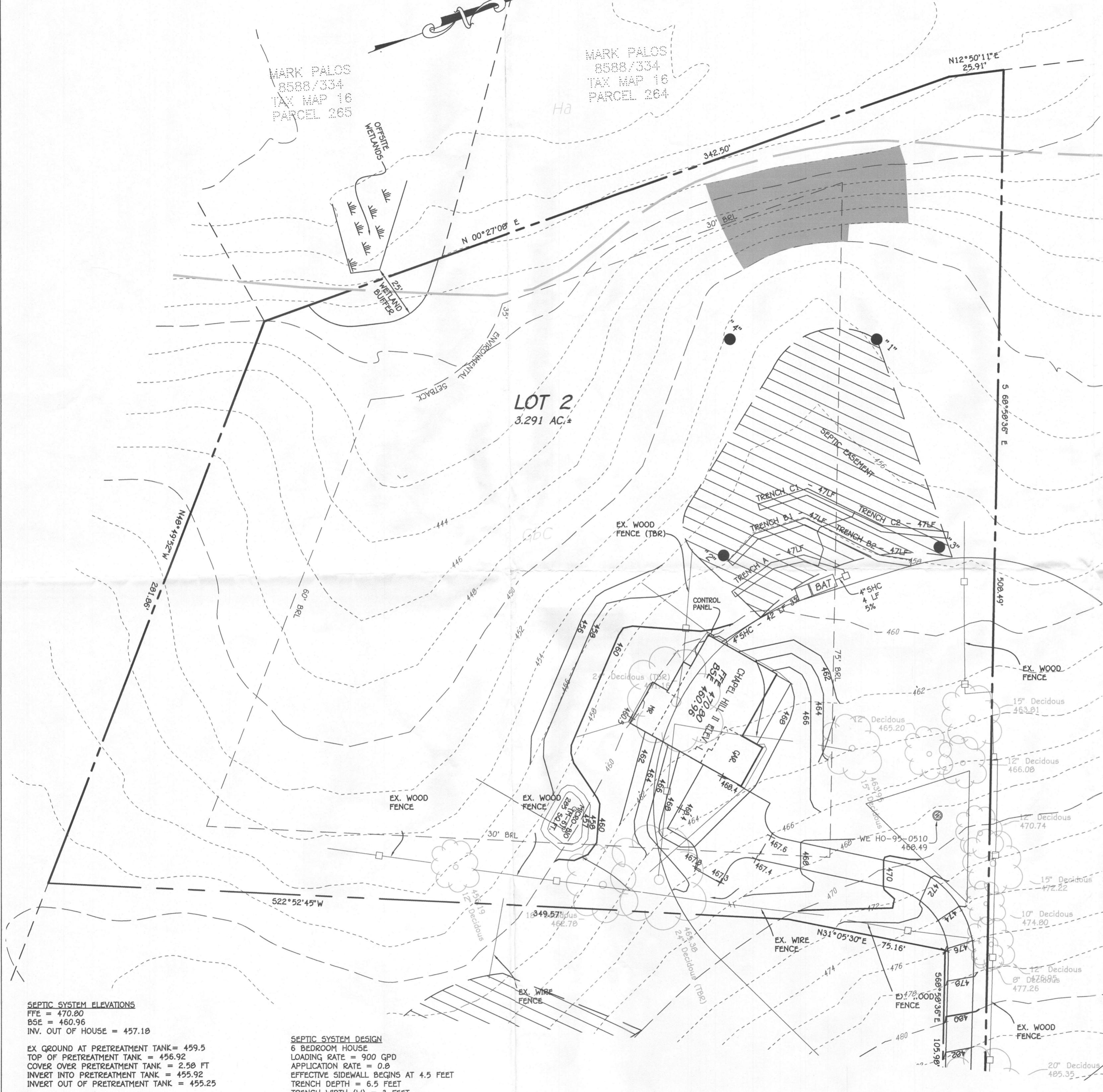
FOUNDATION LOCATION: 4/1/16
FINAL LOCATION: _____
BOUNDARY SURVEY: _____
SCALE: 1"=100'
DATE: 4/6/16
DRAWN BY: GAD
CHECKED BY: MLR
PROJECT No.: 30700-1001

LOT 2
MULLIN PROPERTY
LOTS 1 AND 2
PLATS #18704 THRU 18705
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#11977 FREDERICK ROAD
B.R.L. = BUILDING RESTRICTION LINE
TOP OF FOUNDATION ELEV. = 469.8'±

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - -	PROPOSED CONTOUR 2' INTERVAL
362.5	SPOT ELEVATION
(Tree symbol)	EXISTING TREE
(Circle with dot)	PASSED PERC HOLE
(Triangle)	25% OR GREATER SLOPES



SEPTIC SYSTEM ELEVATIONS
 FFE = 470.80
 SGE = 450.96
 INV. OUT OF HOUSE = 457.18

EX GROUND AT PRETREATMENT TANK = 459.5
 TOP OF PRETREATMENT TANK = 456.92
 COVER OVER PRETREATMENT TANK = 2.58 FT
 INVERT INTO PRETREATMENT TANK = 455.92
 INVERT OUT OF PRETREATMENT TANK = 455.25

EX GROUND AT BAT TANK = 459.3
 TOP OF BAT TANK = 456.92
 COVER OVER BAT TANK = 2.39 FT
 INVERT INTO BAT TANK = 455.25
 INVERT OUT OF BAT TANK = 455.58

SEPTIC SYSTEM DESIGN
 6 BEDROOM HOUSE
 LOADING RATE = 900 GPD
 APPLICATION RATE = 0.8
 EFFECTIVE SIDEWALL BEGINS AT 4.5 FEET
 TRENCH DEPTH = 6.5 FEET
 TRENCH WIDTH (W) = 3 FEET
 EFFECTIVE DEPTH (D) = 2.0 FEET
 SF OF DRAINFIELD = 900 GPD / 0.8 = 1,125 SF
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH =
 $(W+2)/(W+1+2D) = (3+2)/(3+1+(2*2)) = 0.625$
 TRENCH LENGTH = 1,125 SF x 0.625 / 3 = 234.38 FEET (USE 236 FT)
 TRENCH SPACING = 20+W = (2*2) + 3 = 7 USE 10'

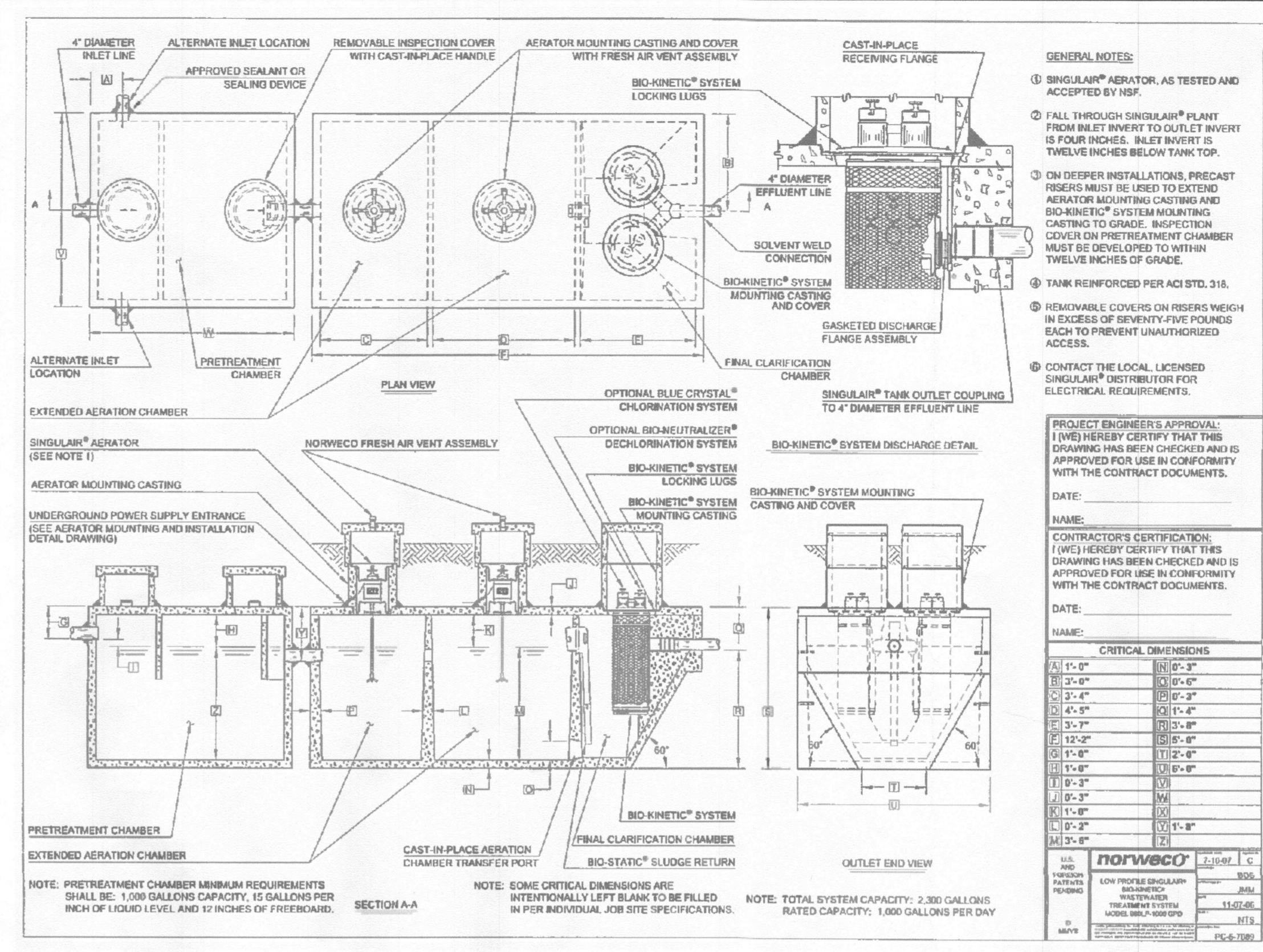
- BAT NOTES**
- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
 - THE MAXIMUM COVER OVER THE BAT SHALL BE 3 FEET.
 - THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED 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.
 - ANY ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
 - AN AGREEMENT AND EASEMENT HAS BEEN COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, LIBER # FOLIO
 - 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.

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. 38386, EXPIRATION DATE: 01/12/2018.

Stephanie Lutz 3/8/16
 Signature Of Professional Engineer DATE



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 GAITHERSBURG, MARYLAND 20878
 (410) 461-2895



- GENERAL NOTES:**
- SINGULAR® AERATOR, AS TESTED AND ACCEPTED BY MDE.
 - 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. INSPECTION COVERS ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.
 - TANK REINFORCED PER ACI STD. 318.
 - 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 CONFORMANCE 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 CONFORMANCE WITH THE CONTRACT DOCUMENTS.

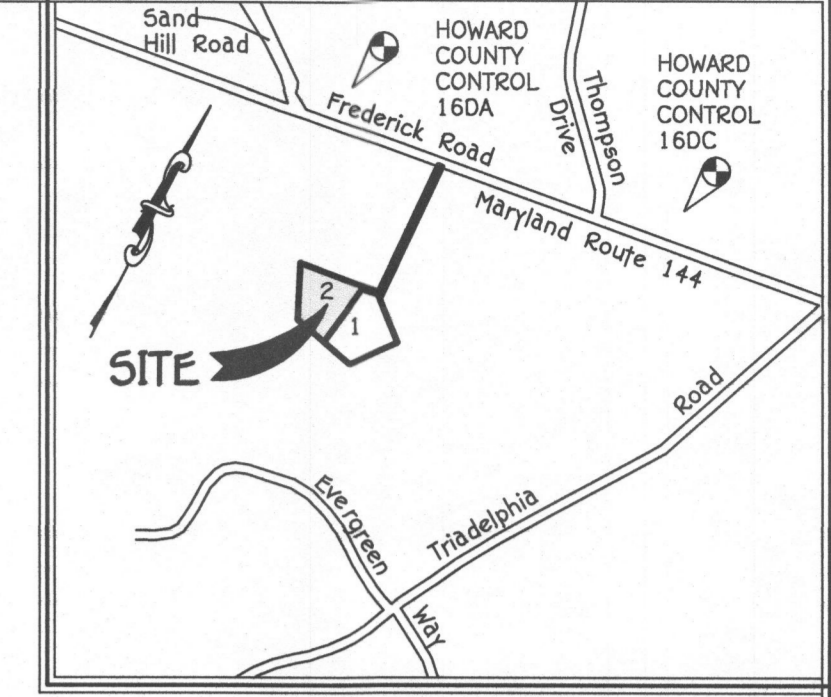
DATE: _____
 NAME: _____

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

NOTE: PRETREATMENT CHAMBER MINIMUM REQUIREMENTS SHALL BE: 1,000 GALLONS CAPACITY, 16 GALLONS PER INCH OF LIQUID LEVEL AND 12 INCHES OF FREEBOARD.

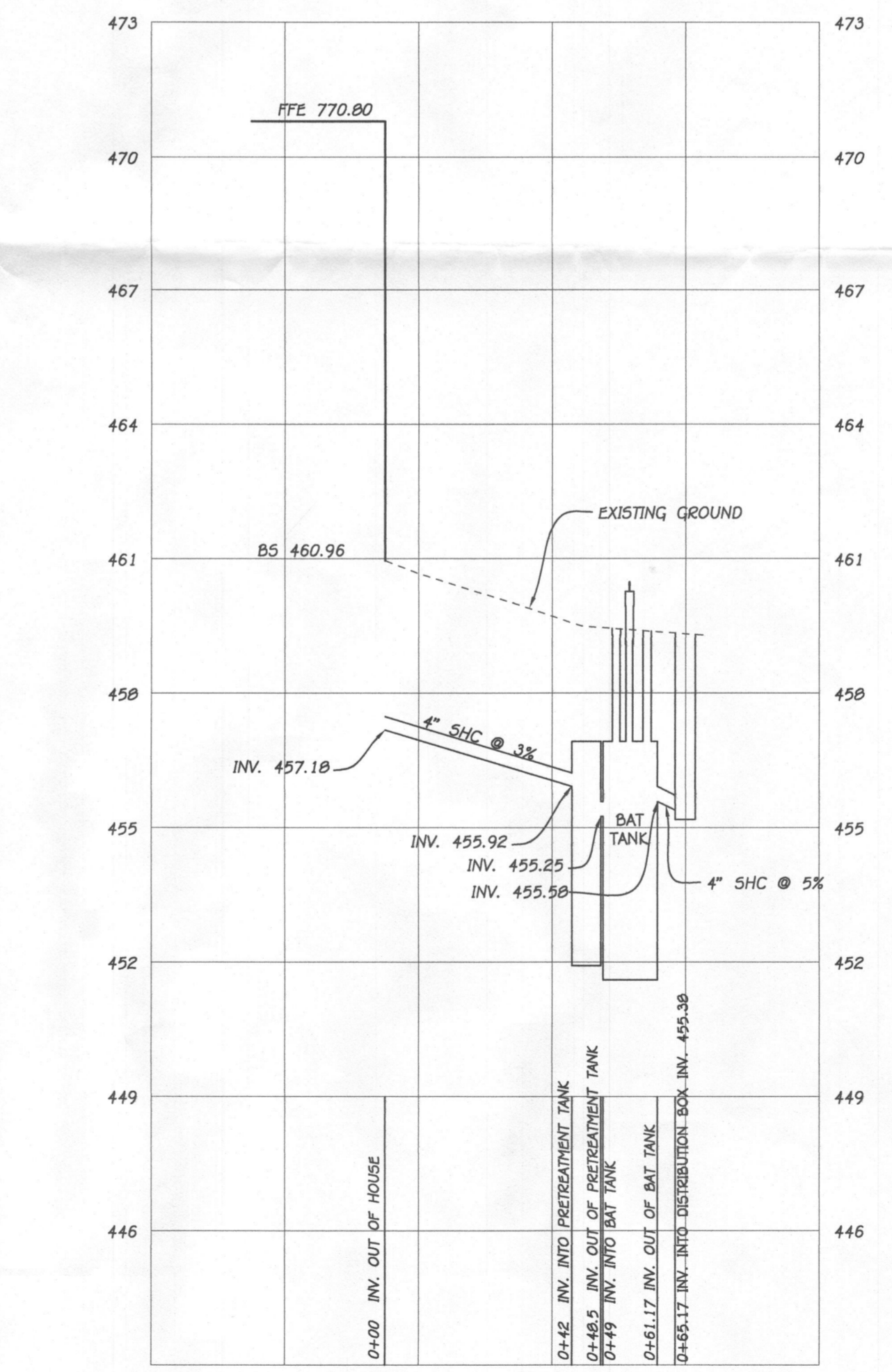
NOTE: SOME CRITICAL DIMENSIONS ARE INTENTIONALLY LEFT BLANK TO BE FILLED IN PER INDIVIDUAL JOB SITE SPECIFICATIONS.

NOTE: TOTAL SYSTEM CAPACITY: 2,300 GALLONS RATED CAPACITY; 1,000 GALLONS PER DAY

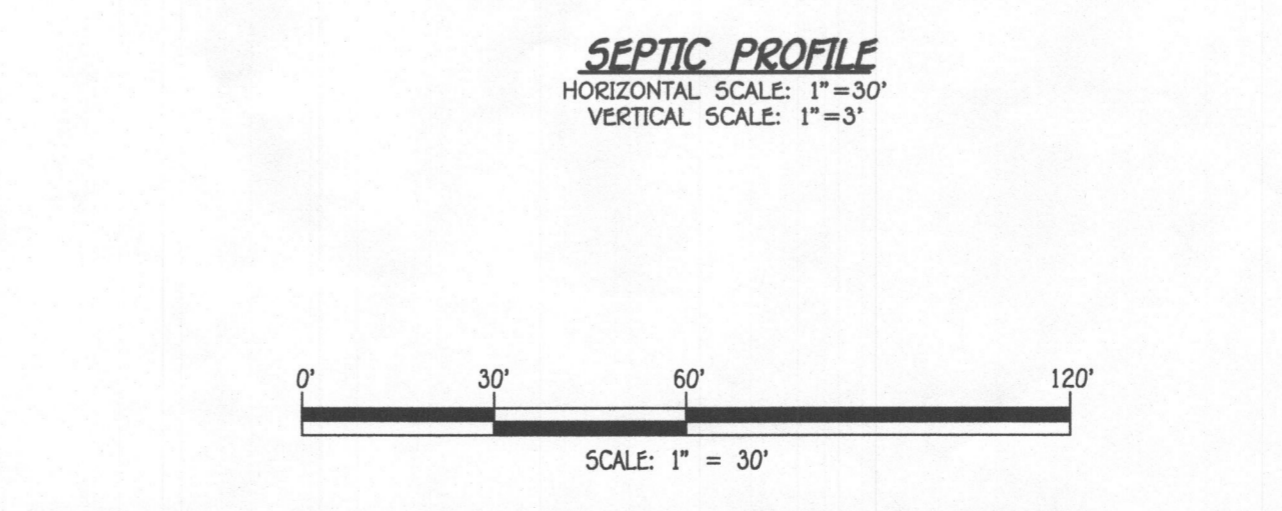


VICINITY MAP
 SCALE: 1" = 1200'

NOTE
 THE EXISTING WELL SHOWN ON THIS PLAN, TAG NO. HO #95-0510 HAS BEEN FIELD LOCATED BY FISHER, COLLINS & CARTER, INC., PROFESSIONAL LAND SURVEYORS AND IS ACCURATELY SHOWN.



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



- GENERAL NOTES**
- SUBJECT PROPERTY ZONED: RR-DEO
 - TOTAL AREA OF PROPERTY: 48,359 SQ.FT. OR 1.11 AC.
 - CONTRACTOR/BUILDER TO VERIFY ELEVATION IN THE FIELD BEFORE BEGINNING ANY CONSTRUCTION.
 - BOUNDARY OF LOT BASED ON PLAT #18704 & 18705.
 - TOPOGRAPHY SHOWN HEREON BASED ON FIELD RUN TOPOGRAPHIC SURVEY CONDUCTED BY FISHER, COLLINS & CARTER, INC. ON OR ABOUT NOVEMBER 11, 2015. TOPOGRAPHY IN NON-DEVELOPED AREAS IS BASED ON HOWARD COUNTY 200 SCALE TOPOGRAPHY.
 - NO WETLANDS EXIST ON THIS LOT. THERE IS A WETLAND BUFFER FROM AN ADJOINING PROPERTY.

Approved Septic System Plan
 Howard County Health Department
 Hank Oswald 3/10/16
 Signature Date

SOILS LEGEND

SOIL	NAME	CLASS	K FACTOR
GbB	Gladstone loam, 3 to 8 percent slopes	A	0.28
GbC	Gladstone loam, 8 to 15 percent slopes	A	0.28
GmB	Glenville silt loam, 3 to 8 percent slopes	C	0.43
GaB	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	0.43
Ha	Harboro-Codorus silt loams, 0 to 3 percent slopes	D	0.37

TRENCH DESIGN

TRENCH	GROUND ELEV.	TOP OF STONE ELEV.	PIPE INVERT ELEV.	DEPTH TO STONE FROM GROUND	DEPTH OF TRENCH (FT)	BOTTOM OF TRENCH ELEV.	EFFECTIVE DEPTH OF TRENCH (FT)	TOTAL DEPTH OF TRENCH (FT)	WIDTH OF TRENCHES (W)	TRENCH SPACING	
1A	459.1	456.6	455.1	3.5'	3.0'	452.6	4.5'	2.0'	6.5'	3.0'	10'
1B1	458.1	454.6	454.1	3.5'	3.0'	451.6	4.5'	2.0'	6.5'	3.0'	10'
1B2	458.1	454.6	454.1	3.5'	3.0'	451.6	4.5'	2.0'	6.5'	3.0'	10'
1C1	457.4	453.9	453.4	3.5'	3.0'	450.9	4.5'	2.0'	6.5'	3.0'	10'
1C2	457.4	453.9	453.4	3.5'	3.0'	450.9	4.5'	2.0'	6.5'	3.0'	10'

BAT PLAN
MULLIN PROPERTY, LOT 2
 11977 FREDERICK ROAD
 TAX MAP #16 PARCEL #316
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 ZONED: RR-DEO
 SCALE: 1" = 30' DATE: FEBRUARY, 2016
 SHEET 1 OF 1

ONIC
 HENRY JOHNSON
 5689 DEHMITT COURT
 MOUNT AIRY, MARYLAND 21771
 301-466-1855