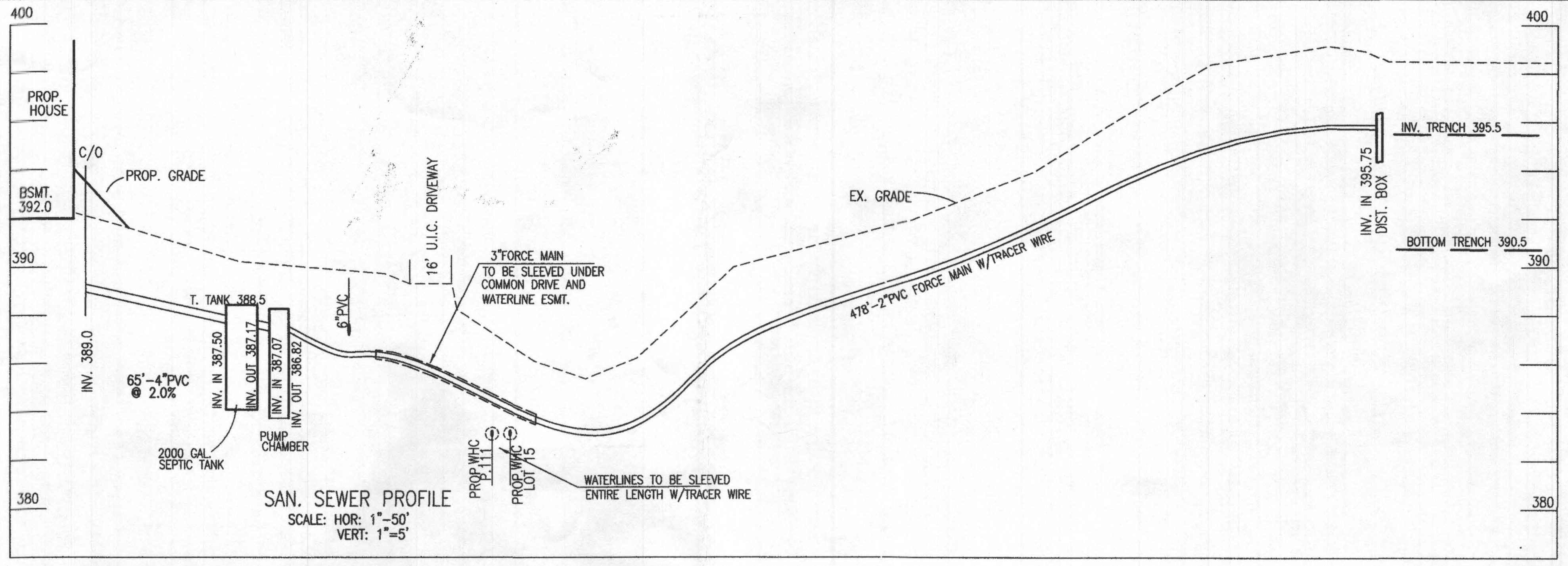
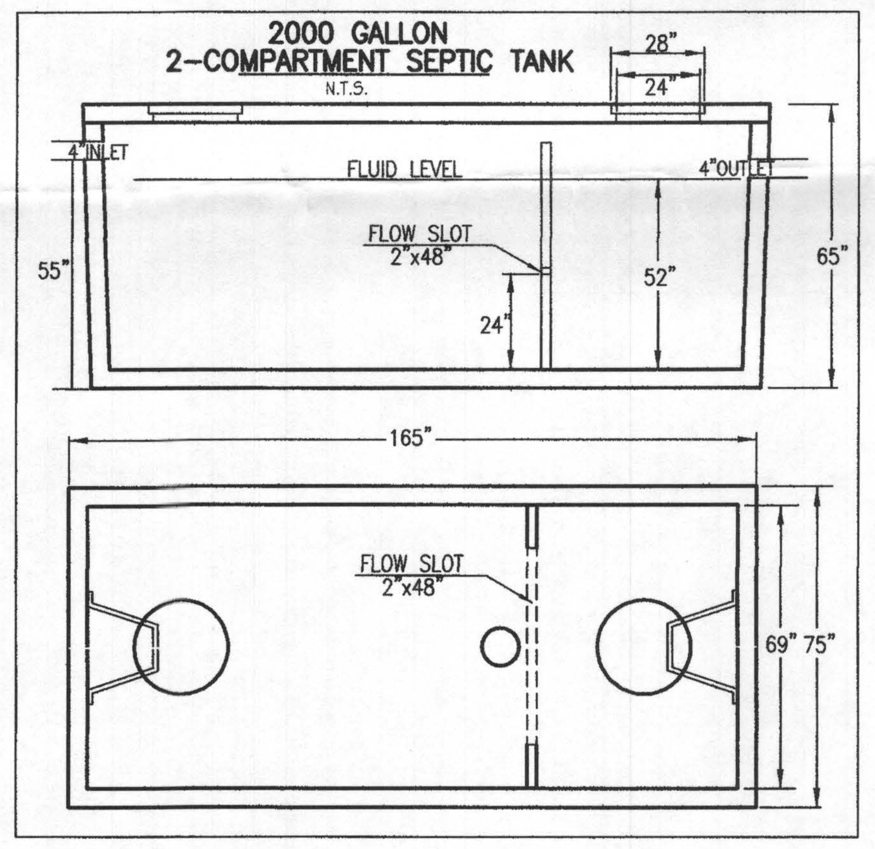
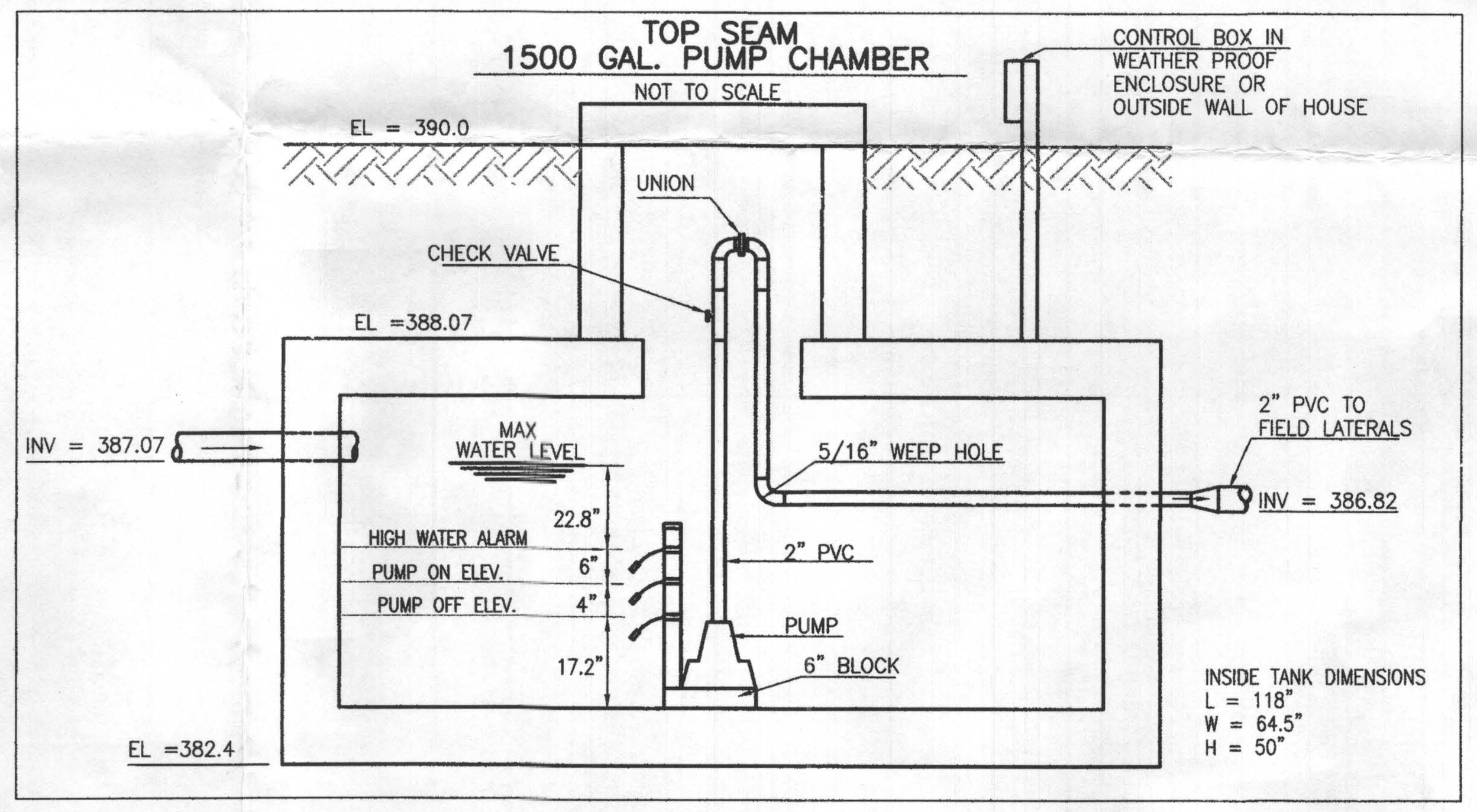
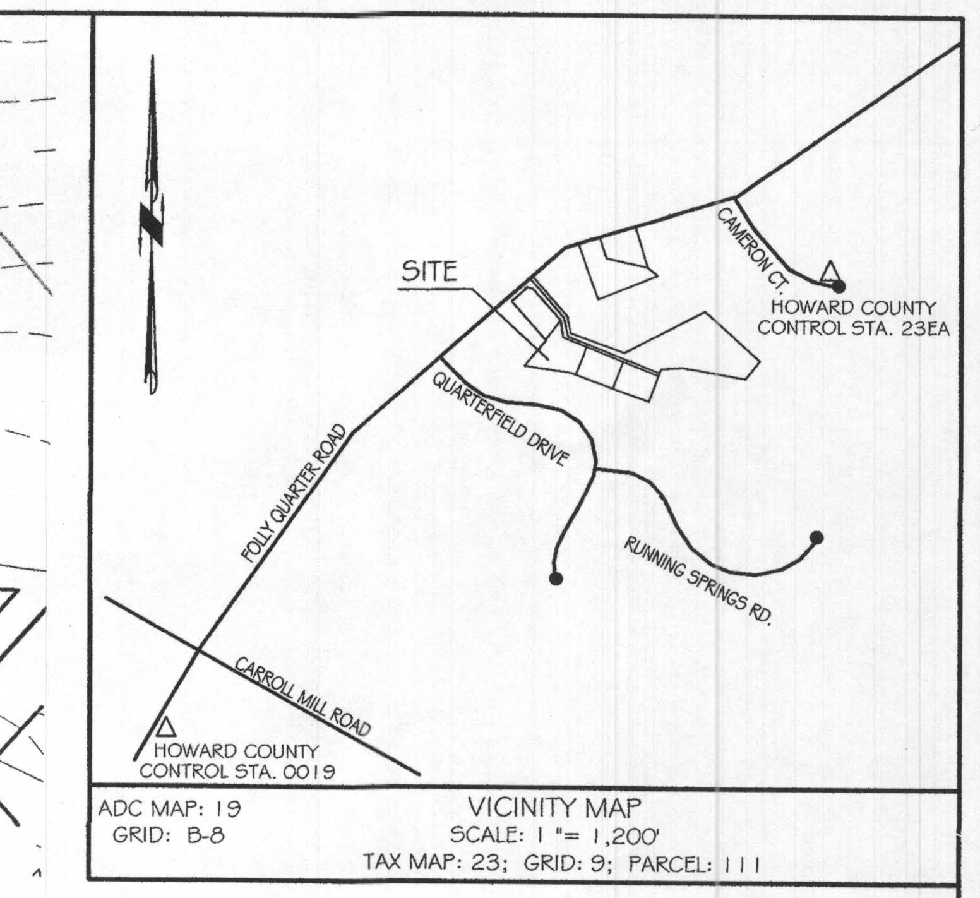
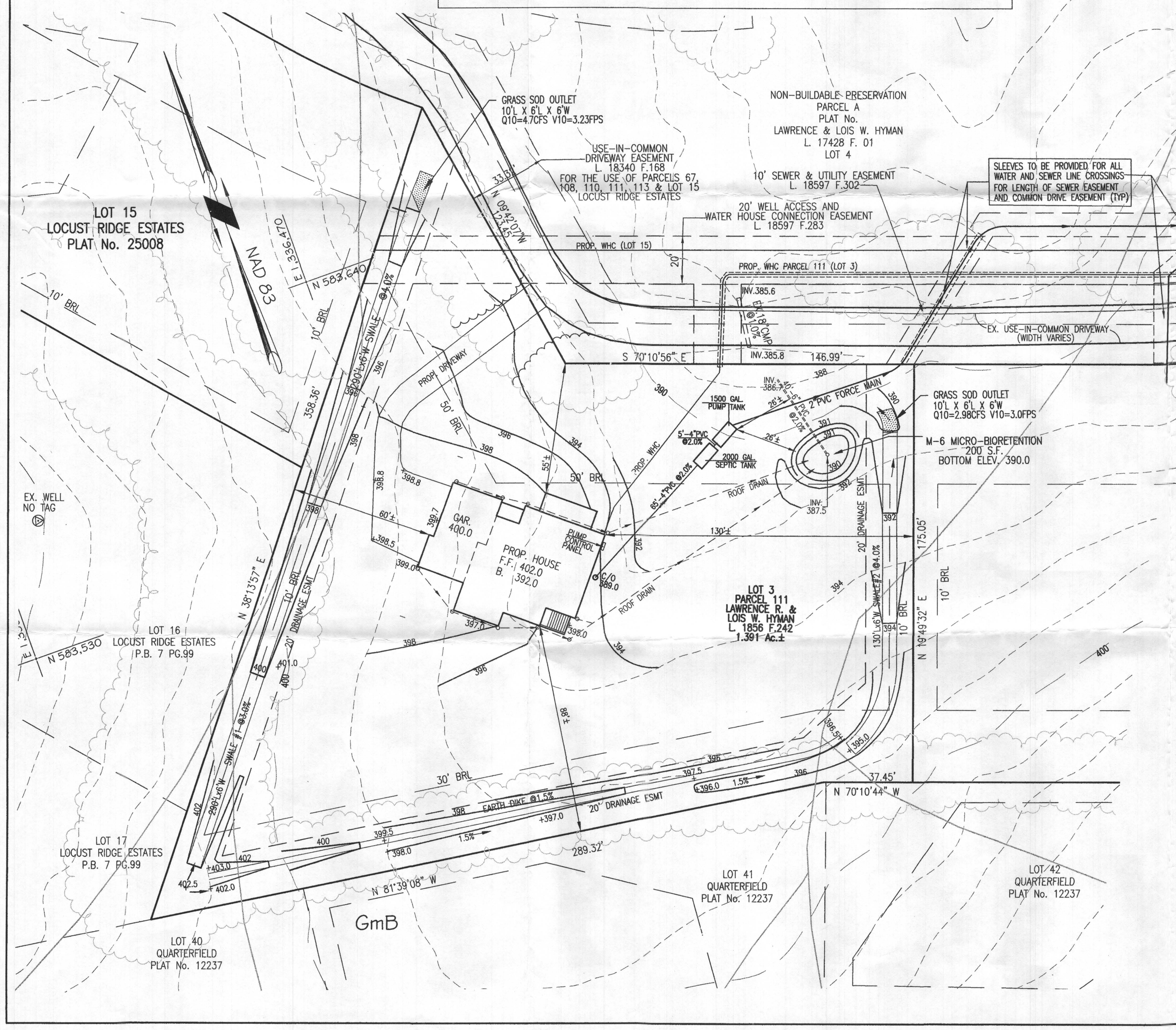








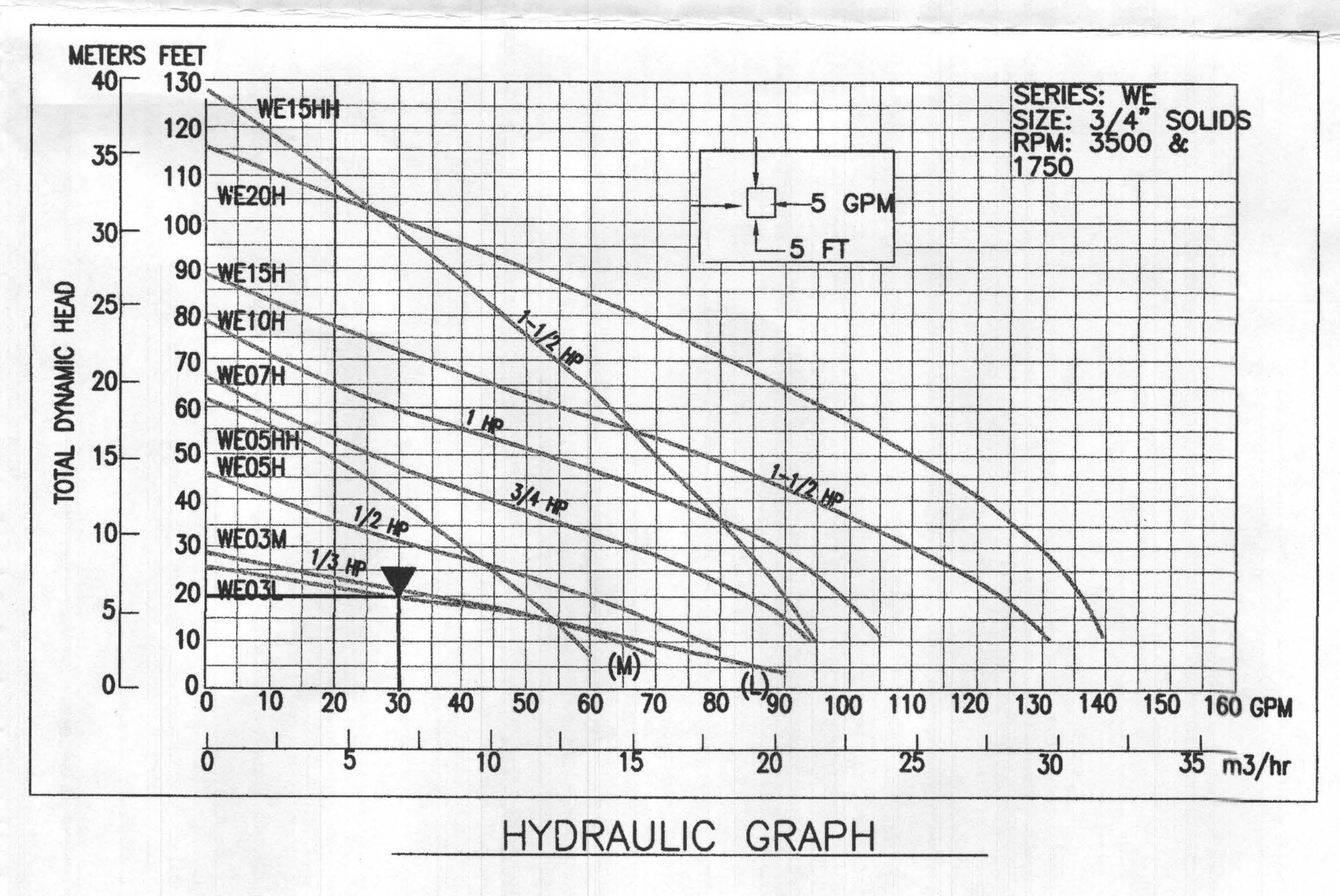


TOTAL DESIGN HEAD (TDH) COMPUTATION

STATIC HEAD (395.75–383.32)	12.43
FRICTION HEAD PIPE 1.54 x (478'+11.3')/100 FITTINGS = 7 DISCONNECT: = 3 BALL VALVE: =1.3	7.54
TOTAL DESIGN HEAD (TDH)	19.97

PUMP CHART

1500 GAL–1 CHAMBER TANK	
GOULDS WE–03M	
MAX. PUMP FLOW RATE = 30 GPM	
PIPE	= 2" PLASTIC
PIPE LENGTH	= 478 FEET
ELEV. DIFF.	= 12.4 FEET
TDH	= 19.97 FEET



GENERAL NOTES:

1. TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD88.
2. THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
3. ZONING DISTRICT: RC–DEO
4. LIMIT OF DISTURBANCE (LOD) = 29,750 SQ.FT.
5. THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.

SEPTIC SYSTEM TRENCH DESIGN

INITIAL NUMBER OF BEDROOMS = 5
APPLICATION RATE = 1.2 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 208 LF TRENCH
208 LF TRENCH X 0.42 REDUCTION CREDIT = 88 LF TRENCH
TRENCH T–1 EX. GRD=398.5 –INV. TRENCH=395.5 –B. TRENCH=390.5
TRENCH T–2 EX. GRD=398.5 –INV. TRENCH=395.5 –B. TRENCH=390.5

1st REPLACEMENT

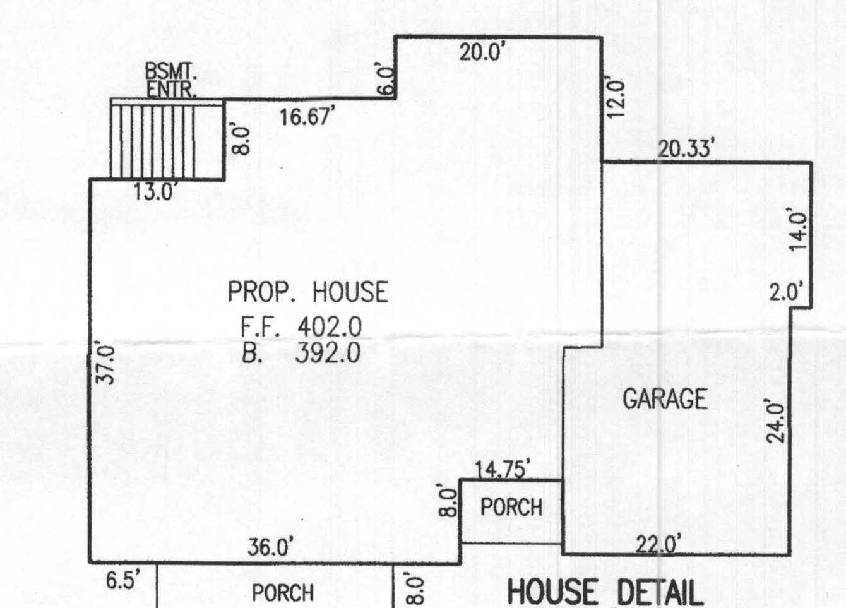
APPLICATION RATE = 1.2 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 1.2 GPD/sq.ft. = 625 sq.ft.
625 sq.ft. / 3 ft. WIDE TRENCH = 208 LF TRENCH
208 LF TRENCH X 0.42 REDUCTION CREDIT = 88 LF TRENCH
TRENCH 2–1 EX. GRD=397.5 –INV. TRENCH=394.5 –B. TRENCH=389.5
TRENCH 2–2 EX. GRD=396.5 –INV. TRENCH=393.5 –B. TRENCH=388.5

2nd REPLACEMENT

APPLICATION RATE = 0.8 GPD / sq.ft.
DESIGN FLOW: 150 GPD X 5 BEDROOMS = 750 GPD
750 GPD / 0.8 GPD/sq.ft. = 938 sq.ft.
938 sq.ft. / 3 ft. WIDE TRENCH = 313 LF TRENCH
313 LF TRENCH X 0.63 REDUCTION CREDIT = 197 LF TRENCH
TRENCH 3–1 EX. GRD=397.0 –INV. TRENCH=394.0 –B. TRENCH=389.0
TRENCH 3–2 EX. GRD=396.0 –INV. TRENCH=393.0 –B. TRENCH=588.0

SITE PLAN 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. MAXIMUM COVER OVER THE TANK IS 3 FEET. GREATER DEPTH WILL REQUIRE A HEAVY LOAD BEARING TANK.
3. ELECTRICAL WORK FOR THE INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
4. THE WELL (TAG #HO–95–2632) HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
5. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRAIDENT OF ANY WELLS AND OR SEPTIC SYSTEMS HAVE BEEN SHOWN.



HOUSE DETAIL
SCALE: 1"=20'

GP–19–102

DATE	REVISIONS
08/22/19	PER HD COMMENTS

ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
FOXLEIGH
HYMAN PROPERTY
L. 1856 F. 242
LOT 3
3687 FOLLY QUARTER ROAD

TAX MAP: 23	ELECTION DISTRICT: No. 3	SCALE: 1" = 30'
GRID NO: 9	HOWARD COUNTY, MARYLAND	DATE: AUGUST 2019
PARCEL NO: 111	EX. ZONING: RC-DEO	SHEET 1 OF 1

STATE OF MARYLAND · RONALD EDWARD THOMPSON · No. 18415 · PROFESSIONAL ENGINEER
8/22/2019

VANMAR
ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829–2890 (301) 831–5015 (410) 549–2751
Fax (301) 831–5603
vanmar.com

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B9–5821

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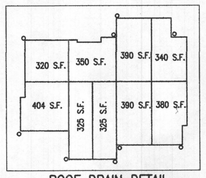
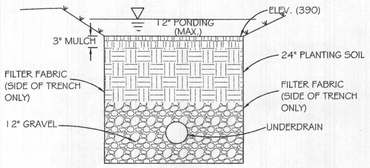
SWM TREATMENT SUMMARY					
PRACTICE	DRAINAGE AREA	IMPERVIOUS AREA TREATED	METHODOLOGY	VOLUME (ESDv) REQUIRED	VOLUME (ESDv) PROVIDED
M-6 MICRO-BIORETENTION	5,192 S.F.	5,192 S.F.	ESDv=Pe * Rv * A/12 where Pe=1.0" & Rv=0.95	411 c.f.	440 c.f.
			TOTAL ESDv PROVIDED		440 c.f.
			ESDv REQUIRED	411 c.f.	



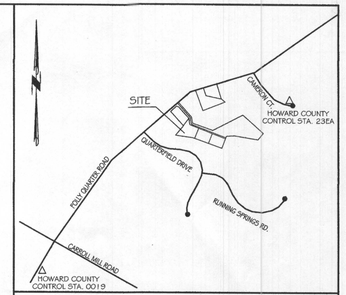
ROOF DRAIN DETAIL
SCALE: 1"=30'



TYPICAL SECTION FOR PROPOSED MICRO-BIO RETENTION FACILITIES
N.T.S.

LEGEND

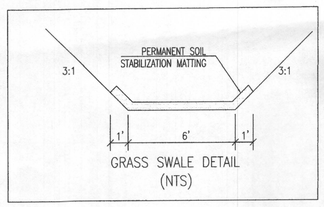
DIVERSION FENCE	DF——DF——DF
SILT FENCE	SF——SF——SF
LIMIT OF DISTURBANCE	LOD
PROPOSED HOUSE SITE:	
EXISTING TREELINE	
SOIL LINE	
STABILIZED CONSTRUCTION ENTRANCE	SCE



VICINITY MAP
SCALE: 1"= 1,200'
ADC MAP: 19
GRID: B-6
TAX MAP: 23, GRID: 9, PARCEL: 111

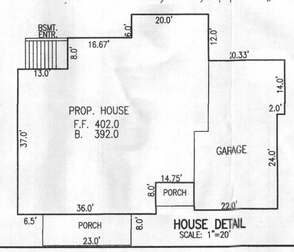
GENERAL NOTES:

1. TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY. SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD88.
2. THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
3. ZONING DISTRICT: RC-DEO
4. LIMIT OF DISTURBANCE (LOD) = 29,750 SQ.FT.
5. THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.
6. STORM WATER MANAGEMENT FOR THIS LOT IS PROVIDED BY M-6 MICRO BIO-RETENTION.



GRASS SWALE DETAIL
(NTS)

SOIL LEGEND			
MAP SYMBOL	MAPPING UNIT		HYDROLOGIC SOIL GROUP
GmB	GLENVILLE	3-8%	C
GgA	GLENELG LOAM	0-3%	B
GgB	GLENELG LOAM	3-8%	B
MaC	MANOR LOAM	8-15%	B



HOUSE DETAIL
SCALE: 1"=20'

0 30 60 90
SCALE: 1"=30'

OWNER
LAWRENCE R. & LOIS W. HYMAN
3681 FOLLY QUARTER ROAD
ELLICOTT CITY, MD. 21042

DEVELOPER:
CATONSVILLE HOMES
11175 STRATFIELD CT.
MARRIOTTSVILLE, MD. 21104
410-442-2211

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-18-19.

DATE	REVISIONS
7/17/19	SOIL CONS. COMMENTS
8/13/19	SOIL CONS. COMMENTS

STATE OF MARYLAND — RONALD E. THOMPSON — No. 18417 — PROFESSIONAL ENGINEER
8/22/2019

GP-19-102

PLOT PLAN AND SEDIMENT CONTROL PLAN
FOXLEIGH
HYMAN PROPERTY
L. 1856 F. 242
LOT 3
3687 FOLLY QUARTER ROAD

TAX MAP: 23 — ELECTION DISTRICT: No. 3 — SCALE: 1" = 30'
GRID NO: 9 — HOWARD COUNTY, MARYLAND — DATE: JUNE 2019
PARCEL NO: 111 — EX. ZONING: RC-DEO — SHEET 1 OF 3

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
Fax (301) 831-5603 vanmar.com

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DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — DATE 8/22/19

ENGINEER'S CERTIFICATE:

"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE 2011 MARYLAND STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

RONALD E. THOMPSON, P.E. — DATE 8/22/2019

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

Approved Septic System Plan
Howard County Health Department
4-Bedroom SFD
septic system designed for 5 bedrooms
8/29/2019
Signature — Date

REVISED
Date: 8/23/19
Comments: B19002055
REVISED SEPTIC

B9-5821

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Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms

1. Material Specifications

The allowable materials to be used in these practices are detailed in Table B.4.1.

Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.
The planting soil shall be tested and shall meet the following criteria:
Soil Component – Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
Organic Content – Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
Clay Content – Media shall have a clay content of less than 5%.
pH Range – Should be between 5.5 – 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.
When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

MAINTENANCE CRITERIA

1. The following items should be addressed to ensure proper maintenance and long-term performance of landscape infiltration:

2. Privately owned practices shall have a maintenance plan and shall be protected by easement, deed restriction, ordinance, or other legal measures preventing its neglect, adverse alteration, and removal.

3. During the first year of operation, inspection frequency should be after every major storm and poorly established areas revegetated.

4. Sediment accumulation on the surface of the facility should be removed and the top two to three inches of surface layer replaced as needed.

5. The top few inches of the planting soil should be removed and replaced when water ponds for more than 48 hours or there is algal growth on the surface of the facility.

6. If standing water persists after filter media has been maintained, the gravel, soil, and sand may need to be cleaned and/or replaced.

7. Occasional pruning and replacement of dead vegetation is necessary. If specific plants are not surviving, more appropriate species should be used. Watering may be required during prolonged dry periods.

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-

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 1 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 ¼-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.

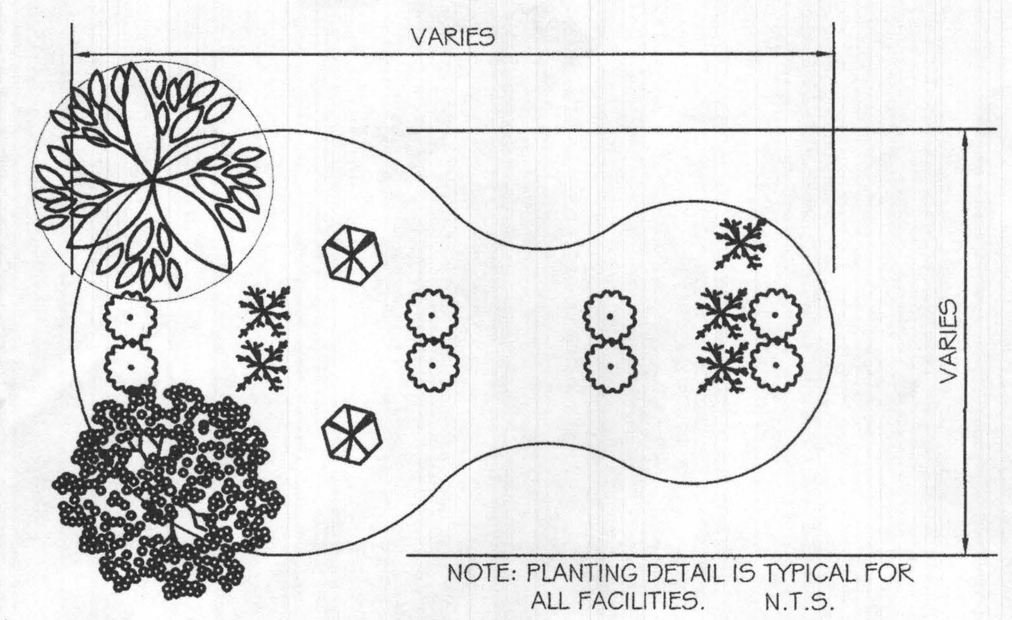
SOIL LEGEND

MAP SYMBOL	MAPPING UNIT		HYDROLOGIC SOIL GROUP
GmB	GLENVILLE	3-8%	C
GgA	GLENELG LOAM	0-3%	B
GgB	GLENELG LOAM	3-8%	B
MaC	MANOR LOAM	8-15%	B

SWM TREATMENT SUMMARY

PRACTICE	DRAINAGE AREA	IMPERVIOUS AREA TREATED	METHODOLOGY	VOLUME (ESDv) REQUIRED	VOLUME (ESDv) PROVIDED
M-6 MICRO-BIORETENTION	5,192 S.F.	5,192 S.F.	ESDv=Pe * Rv * A/12 where Pe=1.0" & Rv=0.95	411 c.f.	440 c.f.
			TOTAL ESDv PROVIDED		440 c.f.
			ESDv REQUIRED	411 c.f.	

LMICRO BIO-RETENTION PLANTING DETAIL



NOTE: PLANTING DETAIL IS TYPICAL FOR ALL FACILITIES. N.T.S.

M-6 MICRO BIO-RETENTION PLANT SIZING AND SPACING

PLANT SPACING

PERENNIALS - 12" ON CENTER FOR QUART SIZE
18" ON CENTER FOR GALLON SIZE
SHRUBS - 3'-4' ON CENTER FOR QUART / GALLON SIZE

PLANT SPECIES

PLANT SPECIES SHALL BE SELECTED FROM THE FOLLOWING CHART.

COMMONLY USED SPECIES FOR BIO-RETENTION AREAS

Shrubs	Herbaceous Species
Aesculus parivifiora Bottlebrush Buckeye	*Andropogon virginicus* Broomsedge
Cephalanthus occidentalis Buttonbush	*Eupatorium perpurea* Joe Pye Weed
Hamemelis virginiana Witch Hazel	*Scirpus pungens* Three Square Bulrush
Vaccinium corymbosum Highbush Blueberry	*Iris versicolor* Blue Flag
Ilex glabra Inkberry	*Lobelia cardinalis* Cardinal Flower
Ilex verticillata Winterberry	*Panicum virgatum* Switchgrass
Viburnum dentatum Arrowwood	*Dichanthelium scoparium* Broom Panic Grass
Lindera benzoin Spicebush	*Rudbeckia laciniata* Tall Coneflower
Myrica pennsylvanica Bayberry	*Scirpus cyperinus* Woolgrass
	Vernonia noveboracensis New York Ironweed

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD COUNTY SOIL CONSERVATION DISTRICT, AND/OR MDE."

DEVELOPER 8/22/19 DATE

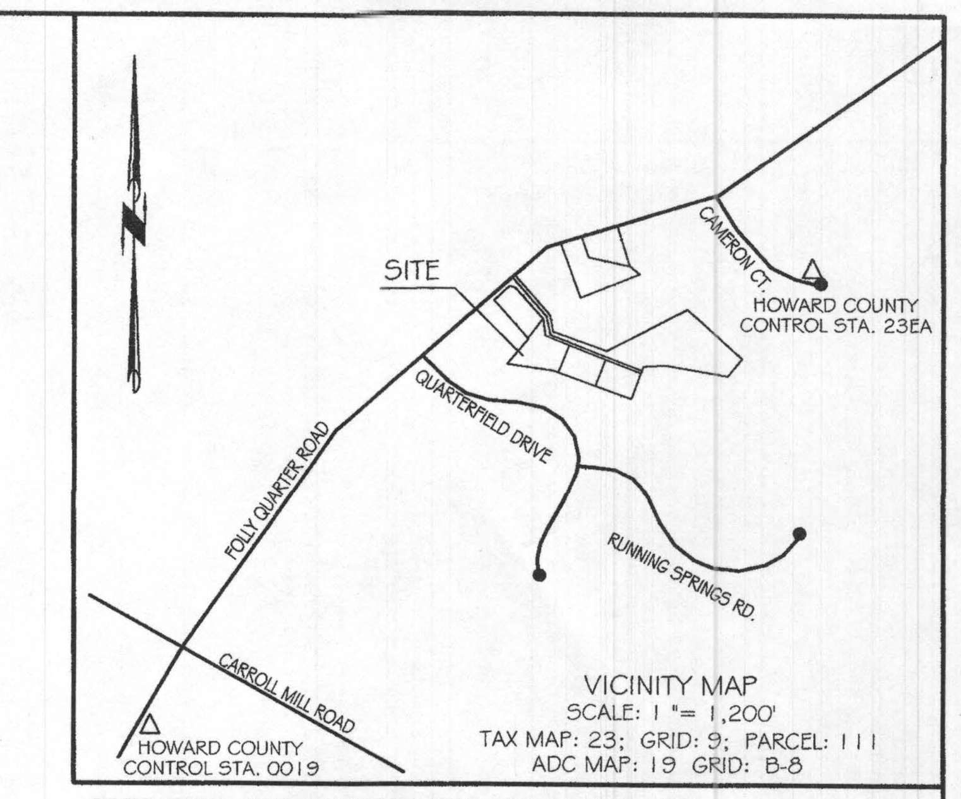
ENGINEER'S CERTIFICATE:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGN IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, AND THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

RONALD E. THOMPSON, P.E. 8/22/2019 DATE

THIS PLAN IS APPROVED FOR SOIL EROSION AND CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE



VICINITY MAP
SCALE: 1"= 1,200'
TAX MAP: 23; GRID: 9; PARCEL: 111
ADC MAP: 19 GRID: B-8

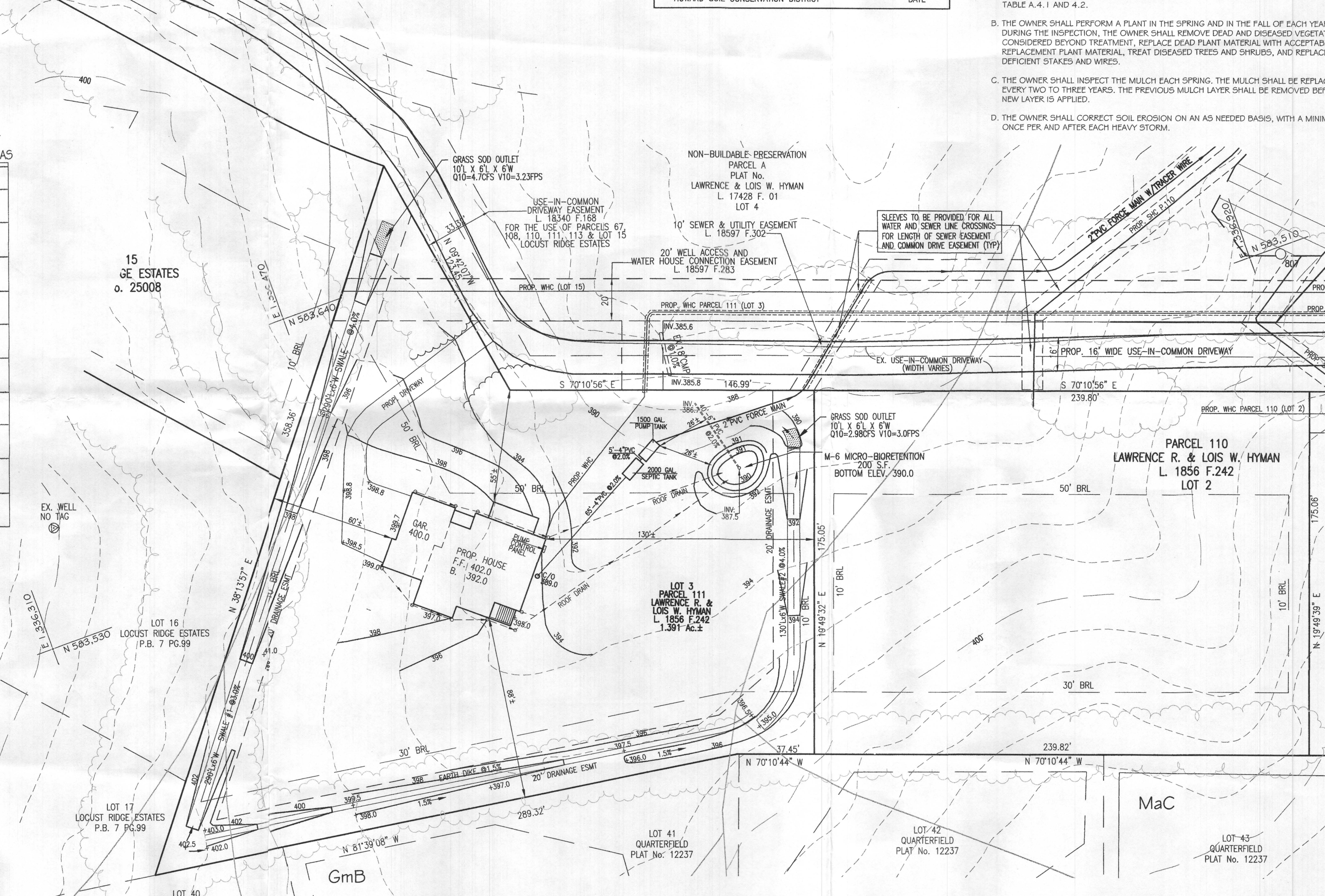
OPERATION AND MAINTENANCE SCHEDULE FOR MICRO BIO-RETENTION (M-6)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTAINANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH RELPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTAINANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTIBLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 4.2.

B. 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.

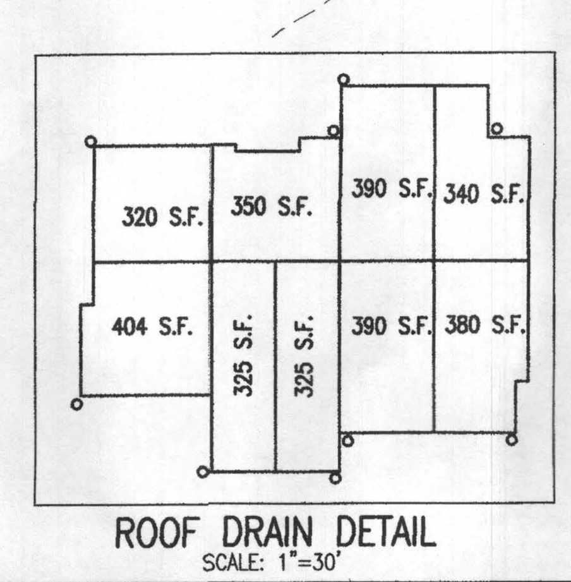
C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER AND AFTER EACH HEAVY STORM.

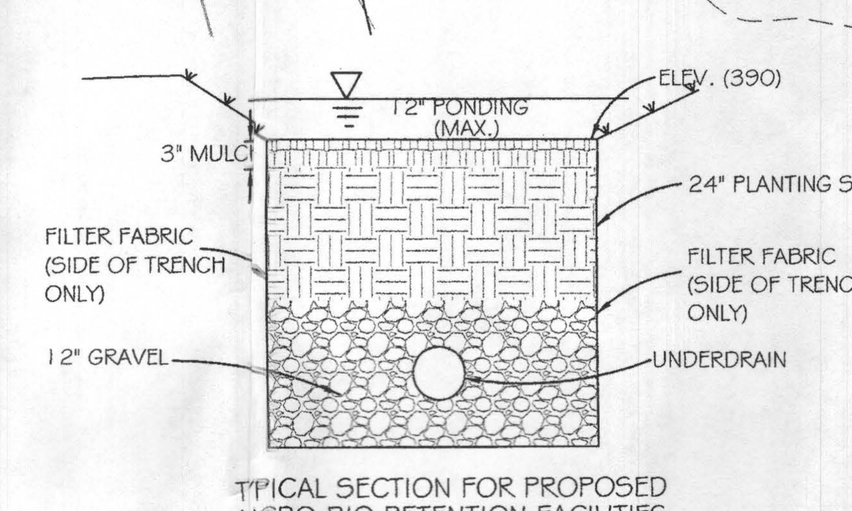


0 30 60 90
SCALE: 1"=30'

GP-19-102



ROOF DRAIN DETAIL
SCALE: 1"=30'



TYPICAL SECTION FOR PROPOSED MICRO-BIO RETENTION FACILITIES
N.T.S.

OWNER
LAWRENCE R. & LOIS W. HYMAN
3681 FOLLY QUARTER ROAD
ELLICOTT CITY, MD.21042

DEVELOPER:
CATONSVILLE HOMES
11175 STRATFIELD CT.
MARRIOTTSVILLE, MD. 21104
410-442-2211

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-18-19.

STATE OF MARYLAND RONALD EDWARD THOMPSON No. 18417 PROFESSIONAL ENGINEER 8/22/2019

DATE	REVISIONS

STORMWATER MANAGEMENT PLAN
FOXLEIGH
HYMAN PROPERTY
L. 1856 F. 242
LOT 3
3687 FOLLY QUARTER ROAD

TAX MAP: 23	ELECTION DISTRICT: No. 3	SCALE: 1" = 30'
GRID NO: 9	HOWARD COUNTY, MARYLAND	DATE: JUNE 2019
PARCEL NO: 111	EX. ZONING: RC-DEO	SHEET 3 OF 3

VANMAR ASSOCIATES, INC.
Engineers Surveyors Planners
310 South Main Street Mount Airy, Maryland 21771
(301) 829-2890 (301) 831-5015 (410) 549-2751
Fax (301) 831-5603
vanmar.com

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B9-5821

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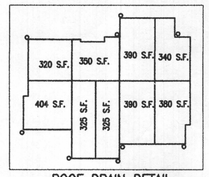
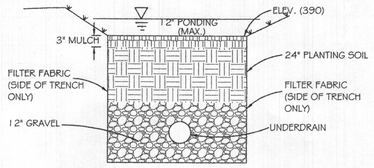
SWM TREATMENT SUMMARY					
PRACTICE	DRAINAGE AREA	IMPERVIOUS AREA TREATED	METHODOLOGY	VOLUME (ESDv) REQUIRED	VOLUME (ESDv) PROVIDED
M-6 MICRO-BIORETENTION	5,192 S.F.	5,192 S.F.	ESDv=Pe * Rv * A/12 where Pe=1.0" & Rv=0.95	411 c.f.	440 c.f.
			TOTAL ESDv PROVIDED		440 c.f.
			ESDv REQUIRED	411 c.f.	



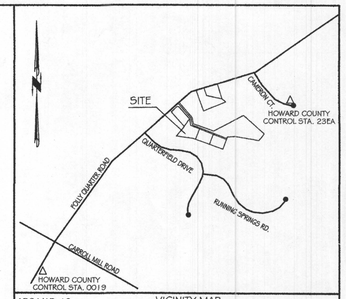
ROOF DRAIN DETAIL
SCALE: 1"=30'



TYPICAL SECTION FOR PROPOSED MICRO-BIO RETENTION FACILITIES
N.T.S.

LEGEND

DIVERSION FENCE	DF——DF——DF
SILT FENCE	SF——SF——SF
LIMIT OF DISTURBANCE	——LOD——
PROPOSED HOUSE SITE:	
EXISTING TREELINE	
SOIL LINE	
STABILIZED CONSTRUCTION ENTRANCE	SCE

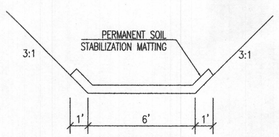


ADC MAP: 19
GRID: B-8

VICINITY MAP
SCALE: 1" = 1,200'
TAX MAP: 23; GRID: 9; PARCEL: 111

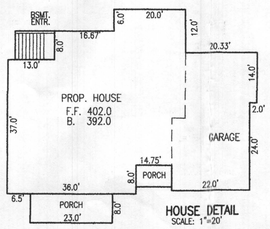
GENERAL NOTES:

1. TOPOGRAPHY & PLANIMETRIC FEATURES SHOWN HEREON TAKEN FROM COPYRIGHTED GIS DATA FROM HOWARD COUNTY, SUPPLEMENTED WITH FIELD LOCATIONS BY VANMAR ASSOCIATES, INC. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS NAVD88.
2. THE EXISTING WELLS SHOWN ON THIS PLAN HAVE BEEN FIELD LOCATED BY VANMAR ASSOCIATES OR TAKEN FROM AVAILABLE RECORDS AND ACCURATELY SHOWN.
3. ZONING DISTRICT: RC-DEO
4. LIMIT OF DISTURBANCE (LOD) = 29,750 SQ.FT.
5. THERE ARE NO STREAMS, PONDS, FLOODPLAINS OR WETLANDS ON THIS LOT.
6. STORM WATER MANAGEMENT FOR THIS LOT IS PROVIDED BY M-6 MICRO BIO-RETENTION.



GRASS SWALE DETAIL
(NTS)

SOIL LEGEND			
MAP SYMBOL	MAPPING UNIT		HYDROLOGIC SOIL GROUP
GmB	GLENVILLE	3-8%	C
GgA	GLENELG LOAM	0-3%	B
GgB	GLENELG LOAM	3-8%	B
MaC	MANOR LOAM	8-15%	B



HOUSE DETAIL
SCALE: 1"=20'

0 30 60 90
SCALE: 1"=30'

OWNER
LAWRENCE R. & LOIS W. HYMAN
3681 FOLLY QUARTER ROAD
ELLICOTT CITY, MD. 21042

DEVELOPER:
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410-442-2211

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licenced professional engineer under the laws of the State of Maryland, License No. 18417, Expiration Date: 9-16-19.

DATE	REVISIONS
11/04/19	PROPANE TANK LOCATION

STATE OF MARYLAND — RONALD EDWARD THOMPSON — No. 18417 — PROFESSIONAL ENGINEER

GP-19-102

PLOT PLAN AND SEDIMENT CONTROL PLAN
FOXLEIGH
HYMAN PROPERTY
L. 1856 F. 242
LOT 3
3687 FOLLY QUARTER ROAD

TAX MAP: 23
GRID NO: 9
PARCEL NO: 111

ELECTION DISTRICT: No. 3
HOWARD COUNTY, MARYLAND
EX. ZONING: RC-DEO

SCALE: 1" = 30'
DATE: JUNE 2019
SHEET 1 OF 3

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