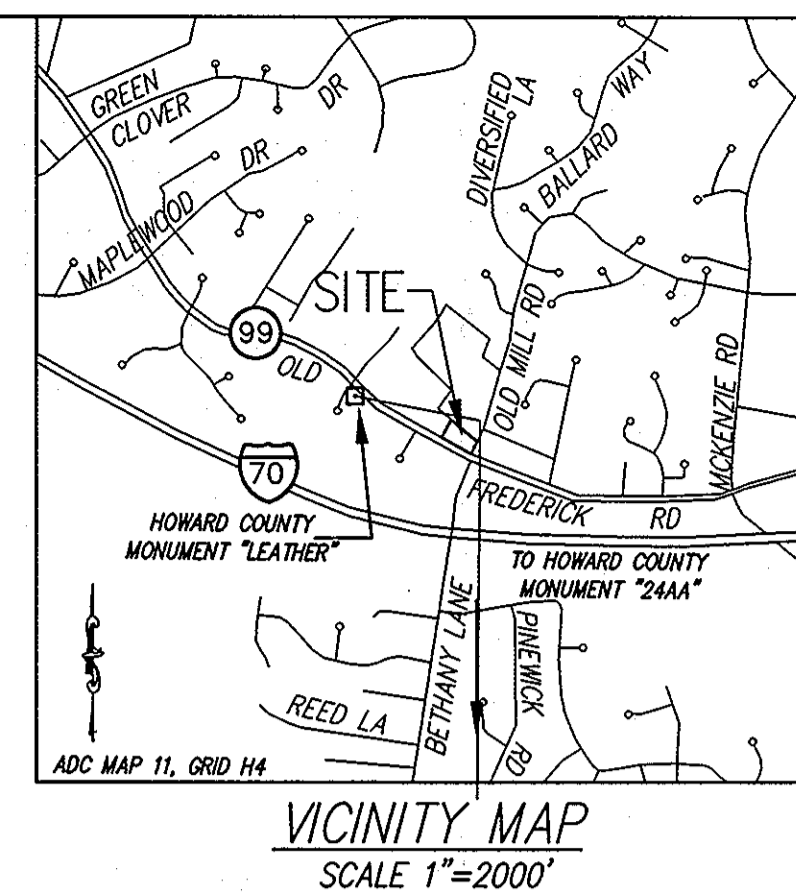


SHEET INDEX	
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN
3	TYPICAL SECTION & DETAILS
4	DRAINAGE AREA MAP

ENVIRONMENTAL CONCEPT PLAN HARBIN PROPERTY PRODUCE STAND

LOT 2 OF THE HARBIN PROPERTY MINOR SUBDIVISION 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND



LEGEND

---200---	MAJOR CONTOUR
---100---	MINOR CONTOUR
TRAV #102	TRAVERSE POINT
---	EXISTING TREE LINE
○	EXISTING DECIDUOUS TREE
⊗	EXISTING EVERGREEN TREE
⊙	EXISTING STUMP
---	PROPERTY LINE
---	ADJOINING PROPERTY LINE
---	FENCE
---	BUILDING
---	CURB & GUTTER
---	SIDEWALK
---	SIGN
---OC---	OVERHEAD ELECTRIC LINE
⊙	ELECTRIC MANHOLE
⊙	ELECTRIC POLE
---	TREE
---	SEWER LINE
⊙	SEWER MANHOLE
---	WATER LINE
⊗	WATER VALVE
⊗	WATER METER
⊗	FIRE HYDRANT
---	GAS LINE
⊗	GAS METER
---	STORM DRAIN
⊙	STORM DRAIN MANHOLE
---	SEASONAL DISPLAY AREA
---	PARKING AREA
---	SIDEWALK
---	STABILIZED CONSTRUCTION ENTRANCE
---	SUPER SILT FENCE
---	SILT FENCE
---	LIMIT OF DISTURBANCE
---	EROSION CONTROL MATTING

DESIGN NARRATIVE

The Site is a rectangular shaped property located in the northwest quadrant of the Old Frederick Road and Old Mill Road/Bethany Lane intersection. The site is Lot 2 of the Harbin Property Minor Subdivision, with a total area of 1.2951 acres. Old Frederick Road defines the southern boundary of the property. Old Mill Road defines the eastern boundary. Lot 3 of the Harbin Property Minor Subdivision is to the west of the site, and Lot 1 (Existing Age restricted residential development - Hebron Manor) is to the north.

As per the supporting documents of the Harbin Property Minor Subdivision, this site contains no forests, wetlands, wetland buffers, streams, stream buffers, or floodplain. The site slopes gently to moderately (average of 3%) from the southwest corner (elevation 480+) down to the northeast corner (el. 470). The western and northern part of the site is covered by lawn and scattered trees. The middle portion of the site contains many scattered trees. The eastern portion of the site is mainly covered by areas of asphalt, an area of gravel & macadam mixture, and areas of gravel. The site is improved with the buildings and display areas of an existing Produce Stand, and the areas of impervious coverage are mainly used for parking and display areas.

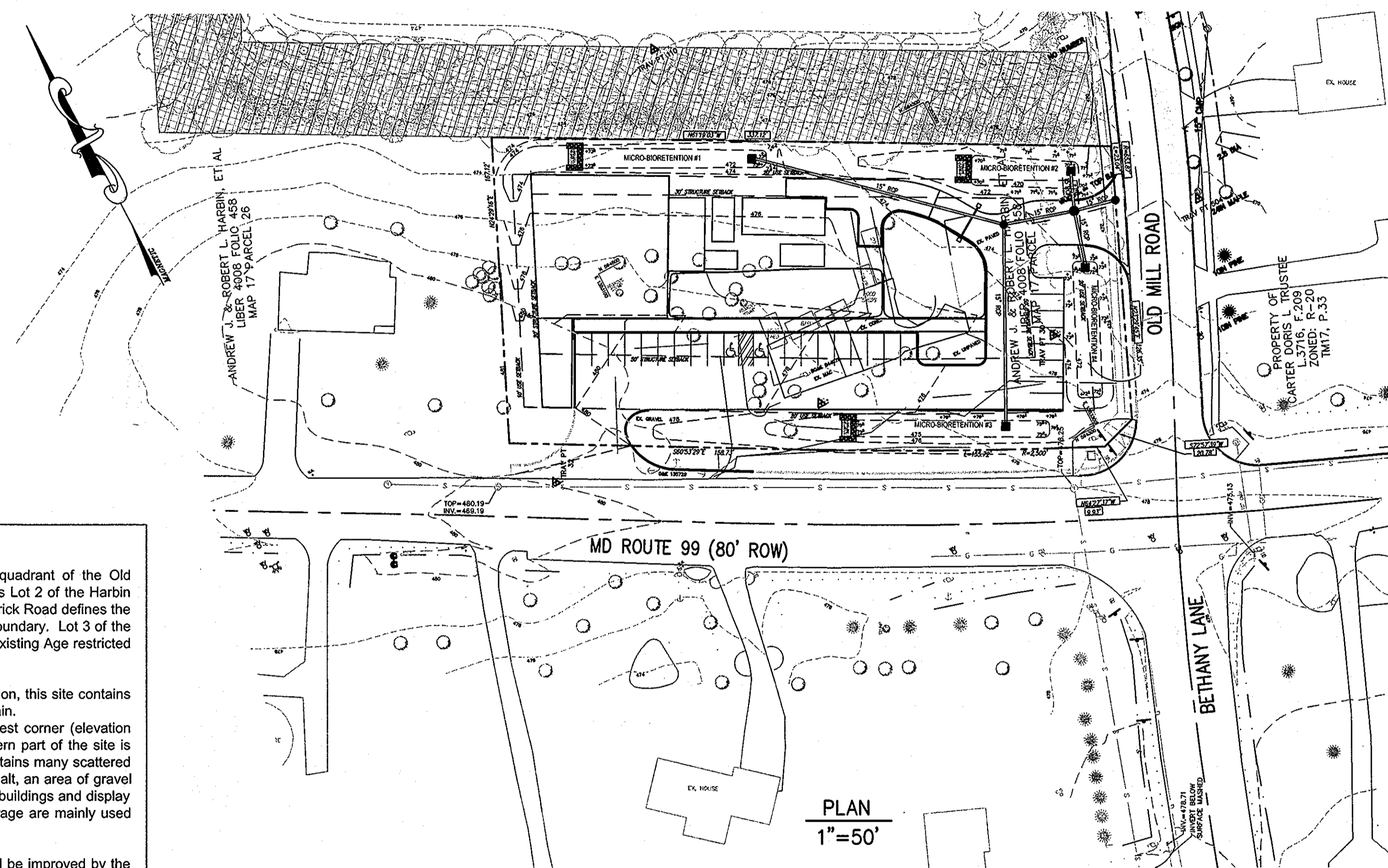
The site's entire road frontages of Old Mill and Old Frederick Roads will be improved by the developer of Hebron Manor Age Restricted development. The improvements will consist of curb and gutter, sidewalk, and storm drain. Presently, the Old Mill frontage is partly improved with a macadam driveway, and the Old Frederick frontage is improved with asphalt along approximately 200' of its eastern portion.

In proposed conditions, a 28 space parking area with drive aisles, two driveway access areas, a paved service area, sidewalks, increased building coverage, and impervious sales and display areas are proposed. In proposed conditions, approximately 23,700 sf of surface (42%) area is green (including SWMF), and approximately 32,600 sf (58%) is in impervious cover. Four micro-bioretenion facilities are proposed as shown on the plans to provide ESD to MEP for the entire area of proposed impervious cover.

Site Planning: The proposed improvements are in areas that are currently both impervious and pervious. The activity areas have been designed in the middle of the site with SWMF facilities designed on the perimeters using surface run-off to directly charge the facilities. The facilities will accommodate landscaping which will serve evapo-transpiration, moisture take-up, and impurities filtration. Parking is located as close to the access streets as possible, minimizing driveway paving. The design and location of improvements ensures that surface run-off drains linearly into swm facilities, and run-off from buildings will also sheet drain without concentration into swm facilities. Furthermore, the outside perimeter of the parking lot is designed as an open-section so that run-off sheet flows without concentration into swm facilities.

Minimization of Impervious Area: The conceptual design has proposed no more impervious cover than can be treated on-site with ESD to the MEP practices. The amount of impervious cover is the least amount which can safely serve the public.

There is no increase in drainage area due to proposed improvements. Total drainage area at the study point in the proposed conditions is 1.2951 acres.



SITE ANALYSIS DATA CHART

TOTAL AREA:	1.2951 AC.
OPEN SPACE AREA:	0.8962 AC.
IMPERVIOUS AREA:	0.3989 AC.
EXISTING ZONING:	R-20
MAXIMUM BUILDING HEIGHT:	34'
STRUCTURE SETBACK FROM PUBLIC STREET:	50'
STRUCTURE SETBACK FROM RESIDENTIAL:	30' REAR, 10' SIDE
USE SETBACK FOR PARKING:	20'
PROPOSED PRINCIPLE USES FOR SITE AND STRUCTURES:	PRODUCE STAND
HOURS OF OPERATION:	7 DAYS A WEEK
MARCH THROUGH NOVEMBER:	9 AM - 8 PM
DECEMBER:	9 AM - 10 PM
JANUARY AND FEBRUARY:	CLOSED
MAXIMUM NUMBER OF EMPLOYEES:	6
NEIGHBORING COMMUNITIES:	OLD MILL OVERLOOK HEBRON MANOR

	PROPOSED	EXISTING
BARN (WOOD)	576 SF	162 SF
COOLER (ALUMINUM)	900 SF	368 SF
SHEDS (WOOD)	180 SF	346 SF
FUTURE BUILDING (WOOD)	800 SF	-
(FOOD PREP BUILDING W/ EMPLOYEE RESTROOM)		
TOTAL BUILDING AREA	2,456 SF	
SALES & DISPLAY AREA	2,970 SF	
SEASONAL DISPLAY AREA 1	7,215 SF	
SEASONAL DISPLAY AREA 2	2,720 SF	
TOTAL DISPLAY AREA	12,905 SF	
PARKING SPACES	28 SPACES *	25 SPACES

* PARKING TABULATION		
PARKING REQUIRED:	26 SPACES	
STRUCTURE:	15 SPACES	
2,456 SF (6 SPACES/1,000 SF)		
DISPLAY AREAS:	13 SPACES	
12,905 SF (1 SPACE/1,000 SF)		
PARKING PROVIDED:	28 SPACES	

PROPOSED STRUCTURE CHART		
TYPE OF STRUCTURE	EXTERIOR MATERIAL	HEIGHT
BARN	WOOD	12'
COOLERS	ALUMINUM	8'
SHEDS	WOOD	10'
FUTURE PREP BUILDING W/ EMPLOYEE RESTROOM	WOOD	14'

NOTES

- SEE COUNTY REFERENCE FILES: F-06-002, WP-05-130, WP-05-140, BA-04-049C, SDP-05-117, ZB-1073M, & BA-11-004C.
- THERE ARE NO HISTORIC STRUCTURES OR HISTORIC NATURAL FEATURES ON THE SITE.
- LIGHTING: ALL SITE LIGHTING WILL CONFORM TO SECTION 134 OF HOWARD COUNTY ZONING REGULATIONS & CHAPTER 5, SECTION 5.5 OF HOWARD COUNTY DESIGN MANUAL. ADDITIONALLY, IN ACCORDANCE WITH THE CONDITIONAL USE (BA-11-004C), NO POLE LIGHTING SHALL BE INSTALLED. ALL PARKING LOT FIXTURES WILL BE SHIELDED TO DIRECT LIGHT AWAY FROM ADJACENT PROPERTIES AND PUBLIC STREET RIGHTS-OF-WAYS. ALL SITE LIGHTING WILL BE LOW INTENSITY LIGHTING AND NOT POLE MOUNTED.
- THE SERVICE DRIVE AISLE WILL BE SCREENED BY LANDSCAPING OR WOOD FENCING OR BOTH.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT WAS SATISFIED WITH SDP-05-117.
- THE TOTAL PROPOSED DISTURBED AREA = 1.30 AC.
- THERE ARE NO WETLANDS OR WETLAND BUFFERS ON THIS SITE.
- THERE ARE NO FLOODPLAINS OR FLOODPLAIN BUFFERS ON THIS SITE.
- THERE ARE NO FORESTS ON THIS SITE.
- THERE ARE NO STEEP SLOPES OF 15% AND GREATER ON THIS SITE.
- THERE ARE NO ERODIBLE SOILS ON THIS SITE OR IN THE PROJECT AREA.
- THE AREA WITHIN THE LIMIT OF DISTURBANCE IS 1.30 AC.
- EXISTING GREEN OPEN AREA OF THE SITE IS 36,170 SF (64%).
- EXISTING IMPERVIOUS AREA OF THE SITE IS 20,130 SF (36%).
- PROPOSED GREEN OPEN AREA OF THE SITE IS 23,700 SF (42%).
- PROPOSED IMPERVIOUS AREA OF THE SITE IS 57,054 SF (±100%).
- NATURAL RESOURCES HAVE BEEN FIELD VERIFIED.

OWNER:

Robert Harbin, Jr. &
Kimberly Taylor
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Phone: 410-465-6185

PETITIONER:

Michael & Kimberly Taylor
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Phone: 410-465-6185
email: mikeandkimt@comcast.net

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. 31042, EXPIRATION DATE: 02/18/13



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PHONE: (301) 306-3091
FAX: (301) 306-3092

CONTACT: SANJAY B. PATEL PHONE: 301-306-3091 x121

PROJECT

**HARBIN PROPERTY
PRODUCE STAND
LOT 2 OF THE HARBIN PROPERTY MINOR SUBDIVISION
TITLE SHEET**

2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
ZONING R-20, TAX MAP 17, GRIDS 8 & 14, PARCEL 27, DEED REF: 4008/458 & 782/706

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 8/2/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 8/2/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

PROJECT NO.

2006149.06

SCALE:

1" = 50'

DATE:

07/19/12

DRAWN BY:

JRP

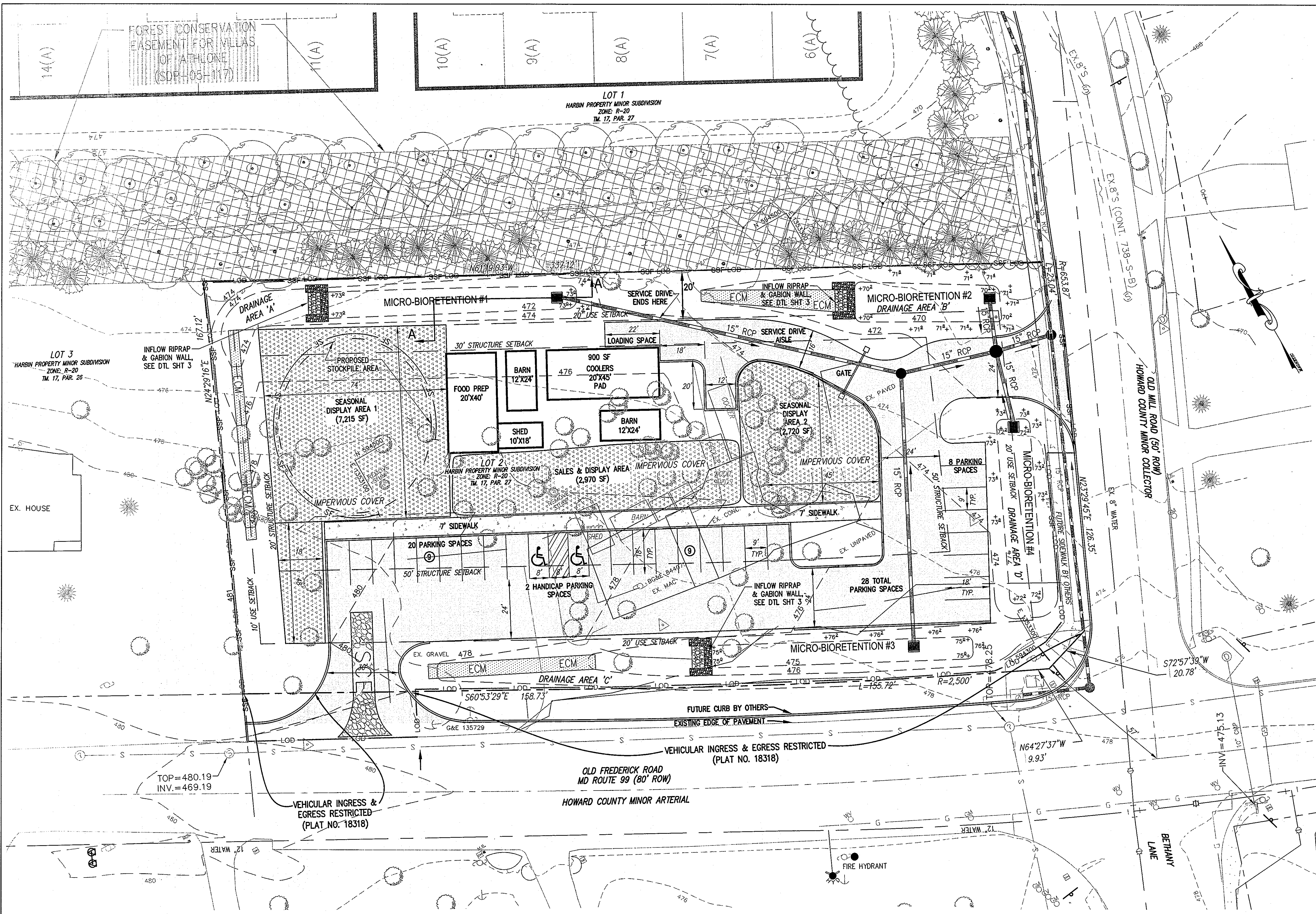
CHECKED BY:

SBP

SHEET:

1 OF 4

ECP-12-036



SUMMARY OF SWM MEASURES

Better Site Design Technique	Site
Using Narrower, shorter streets, rights-of-way, and sidewalks	Achieved by minimizing driveway widths, reducing driveway lengths to the minimum, and minimizing internal sidewalks. A suggestion to decrease the width of parking lot drive aisles from the minimum required was discouraged by existing regulations.
Cul-de-Sacs	N.A.
Open Vegetated channels	An open vegetated channel is designed along the western perimeter of the development. This channel will convey runoff from an impervious surface to a micro-bioretenion ESD facility.
Parking ratio, parking codes, parking lots, and structured parking	# of parking stalls proposed is the minimum necessary for the business, and only two spaces more than a regulatory minimum. Suggestions that stall width and length be decreased were discouraged by existing regulations.
Parking lot runoff	Parking lots are designed to drain in sheet flow fashion without concentration (linearly) into proposed swm facilities directly at their edges. The ESD-SWM facilities are designed within setback areas and within relaxed setback areas. Parking lots will be landscaped, as will the SWM facilities.
Open Space	Requirement achieved along site perimeters in setback areas. As a commercial development with regulated setbacks, open space minimums are achieved by conformance with the bulk zoning regulations.
Setbacks and Frontages	No setbacks or frontage requirements are compromised in the site plan. Setbacks are relaxed and increased along the eastern and northeastern boundaries to accommodate ESD to the MEP practices.
Driveways	Held to minimum necessary for commercial use. Long driveways without parking loading are avoided.
Rooftop runoff	N.A.
Buffer Systems	N.A.
Tree Conservation	Achieved, by saving existing trees of value. Forest Conservation is not applicable, because the site's forest conservation obligation was met through the Harbin Property Minor Subdivision. Use of Native plants will dominate the proposed landscaping.
Conservation Incentives	N.A.

- Green Roof: N.A.
- Permeable Pavements: This option was evaluated for the site. Permeable pavement, including grasscrete and pervious concrete, was considered for the proposed parking stalls and outdoor sales and display areas. This option was rejected due to 1) the safety of customers in high heels or other non-accommodating footwear was considered compromised by such pavement, and 2) long-term maintenance of pervious pavement is deemed problematic, and thus permeable pavements were not considered a practicable option.
- Reinforced Turf: reinforced turf is not a practical application to this project, as the use is commercial in nature with foot and automobile traffic too intense for proper maintenance of the turf.
- Microscale Practices: The following microscale practices were evaluated:
 - Micro-Bioretenion - This option has been chosen as the dominant ESD to the MEP technique for this site due to soils infiltration characteristics, and adequate water volume treatment for the extent of the impervious surface, i.e. - efficiency. Landscaping is also required at the site's perimeters per County regulations, and the landscaping will be a part of the micro-bioretenion facilities. Four micro-Bioretenion facilities are provided.
 - Rainwater Harvesting - There are no proposed large buildings to make harvesting feasible. The small amount of roof runoff is designed to flow to the proposed swm facilities, which will promote better recharge than rain barrels or other intervening capture devices. Thus, rainwater harvesting was not considered to be a practicable alternative.
 - Submerged Gravel Wetlands - The overall drainage area is too small to maintain saturated wetland conditions and thus is not considered practicable.
 - Landscape Infiltration - This option is not practical because of type B/D soils in the zones for filtration applications.
 - Infiltration Berms - This site is too small without sufficient open space for a practical application of infiltration berms. Additionally, the presence of type B/D soils presents obstacles to proper infiltration.
 - Dry Wells - This option is not practical for sheet flowing parking lots and impervious areas, as there is no concentration of flow. Roof surfaces are too small to capture in dry wells, and adequate infiltration of some soils is questionable.
 - Rain Gardens - Since micro-bioretenion is being provided this additional provision was not considered practical.
 - Swales - A swale is provided along the western perimeter of the developed areas.
 - Enhanced Filters - This option is not practical because of Type B/D soils.
 - Bio-Swales - This option is inefficient - there is not enough space to create the volume necessary to sufficiently treat the site.

DRAINAGE AREAS

SUMMARY TABLE					
MICRO-BIO FACILITY	AREA (AC.)	IMP. AREA (AC.)	RCN	REQUIRED ESD (CF.)	PROVIDED ESD (CF.)
1	0.39	0.22	90	1066	1070
2	0.31	0.18	90	870	870
3	0.32	0.18	90	872	872
4	0.24	0.17	93	809	814

SOILS NOTE

ALL UNDERLYING SOIL ON THIS SITE IS GLENELG-URBAN LAND COMPLEX, 0% - 8% SLOPES. MAP SYMBOL IS GHB.
SOURCE: CURRENT HOWARD COUNTY, MD SOIL SURVEY

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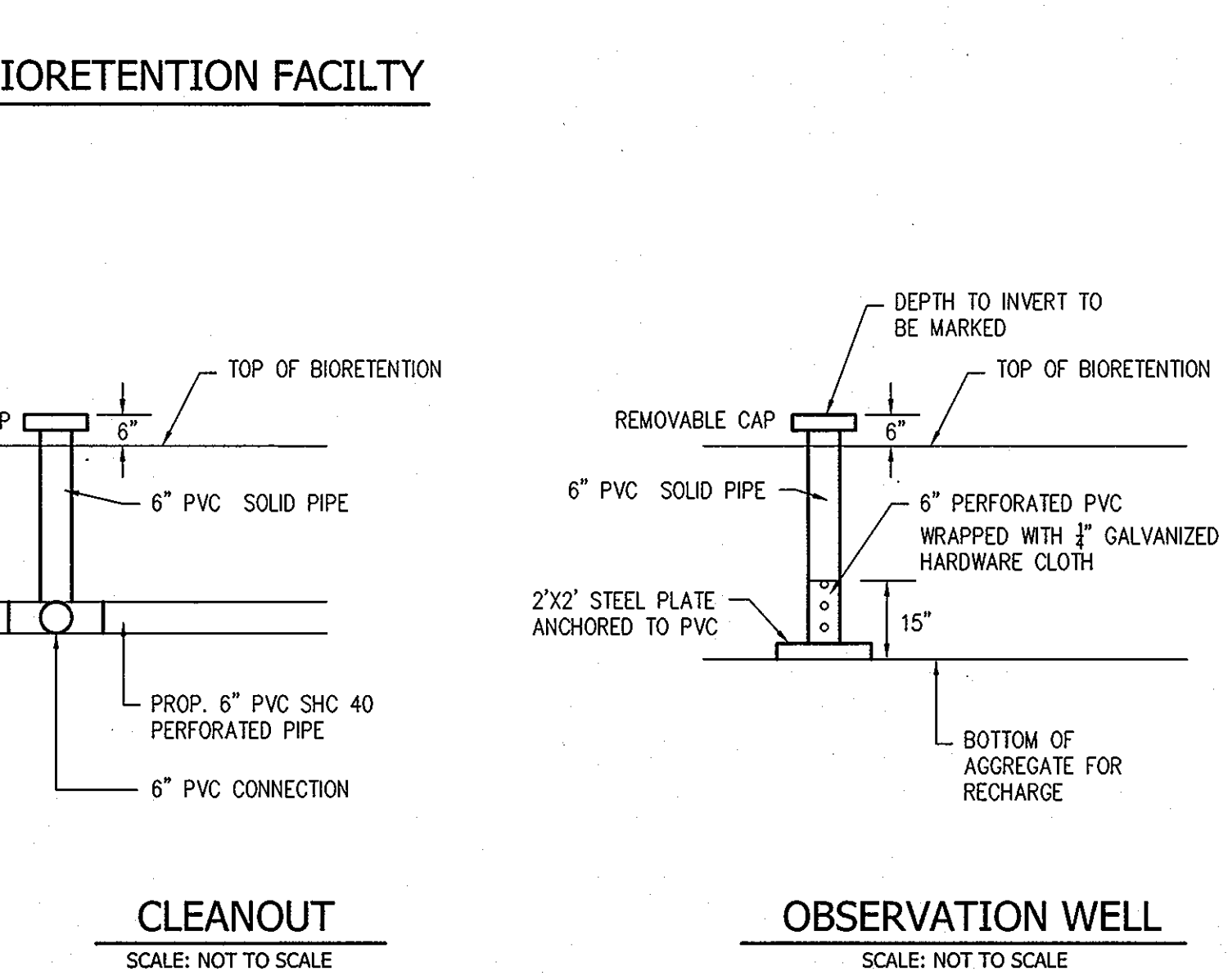
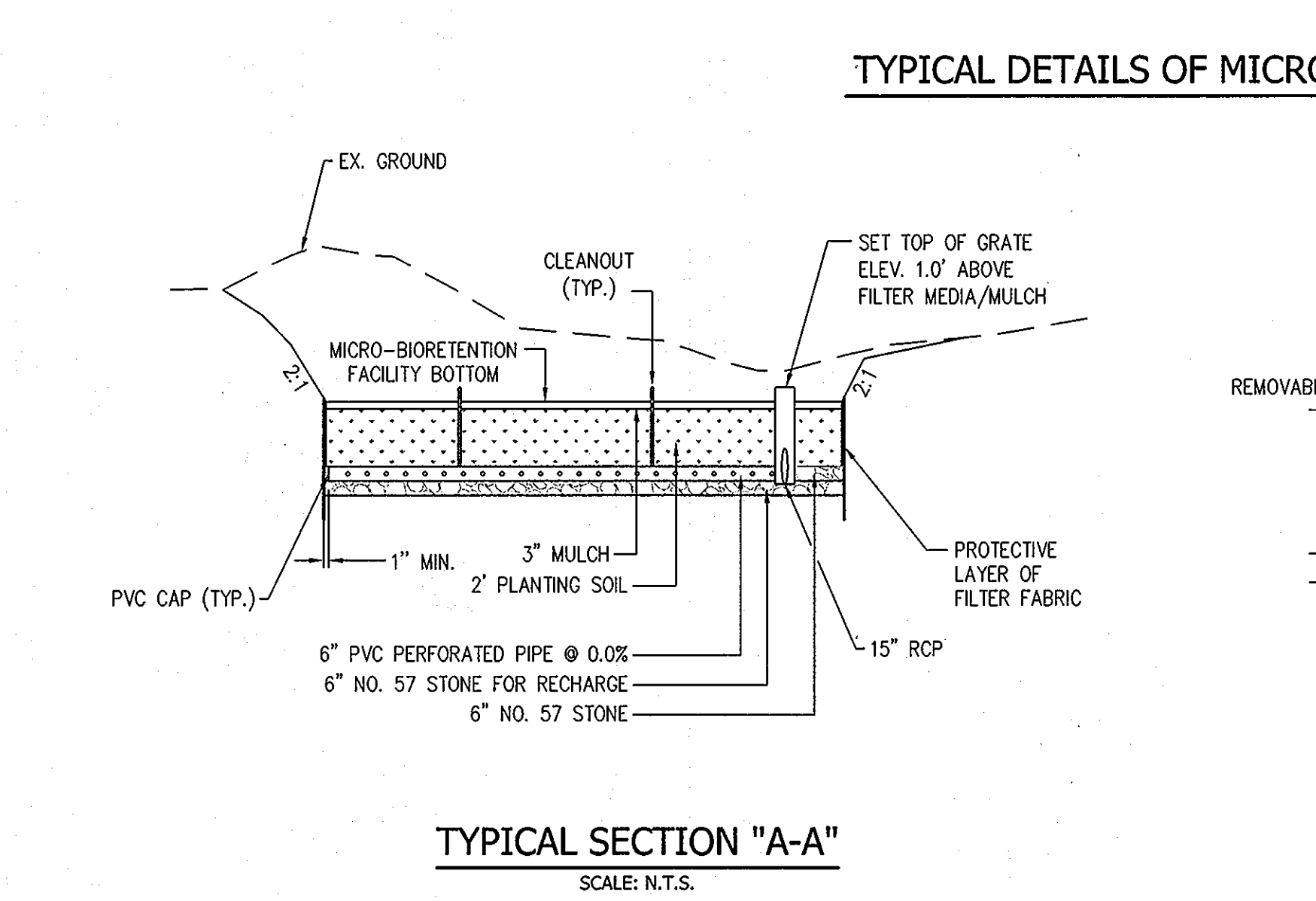
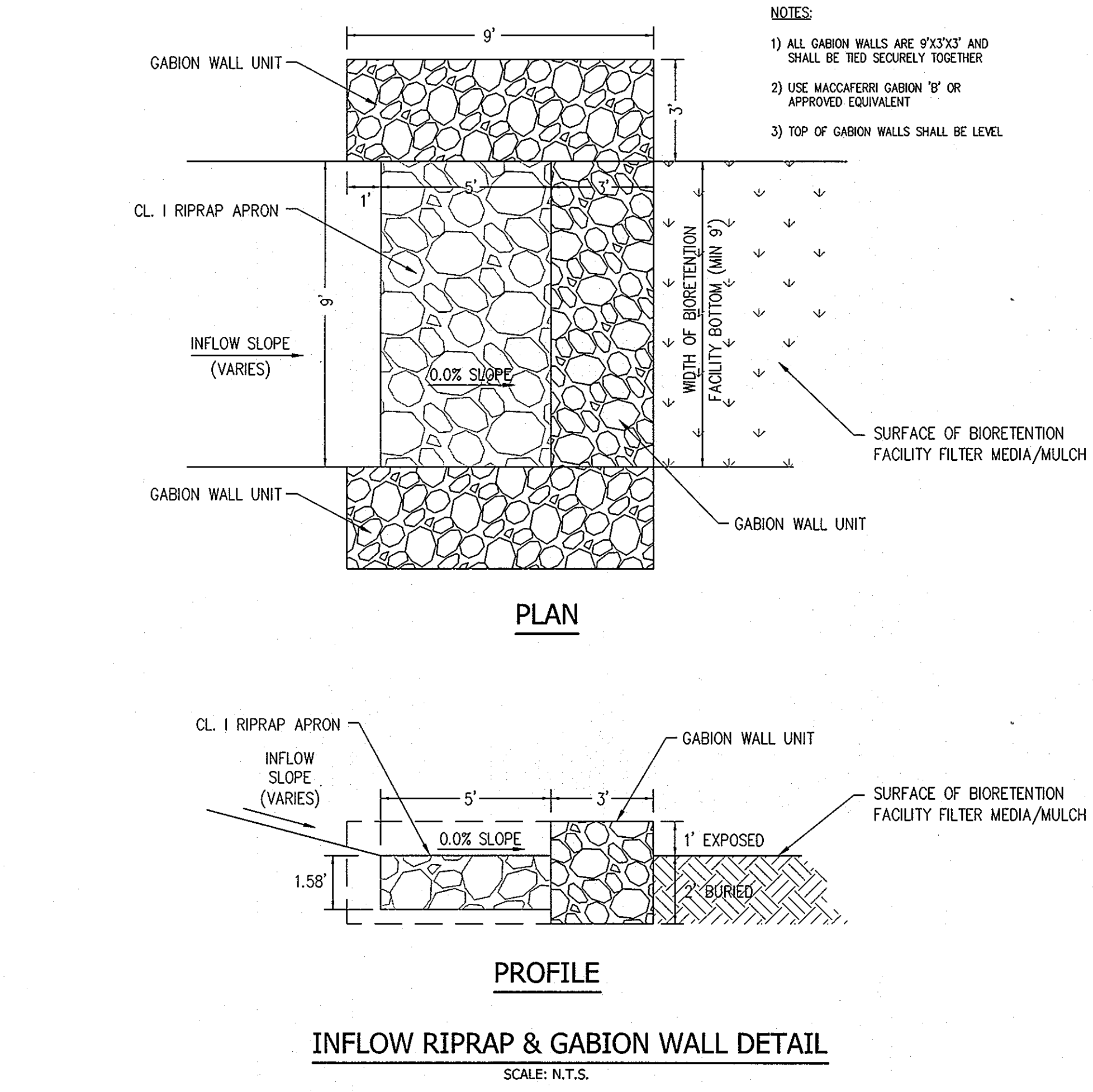
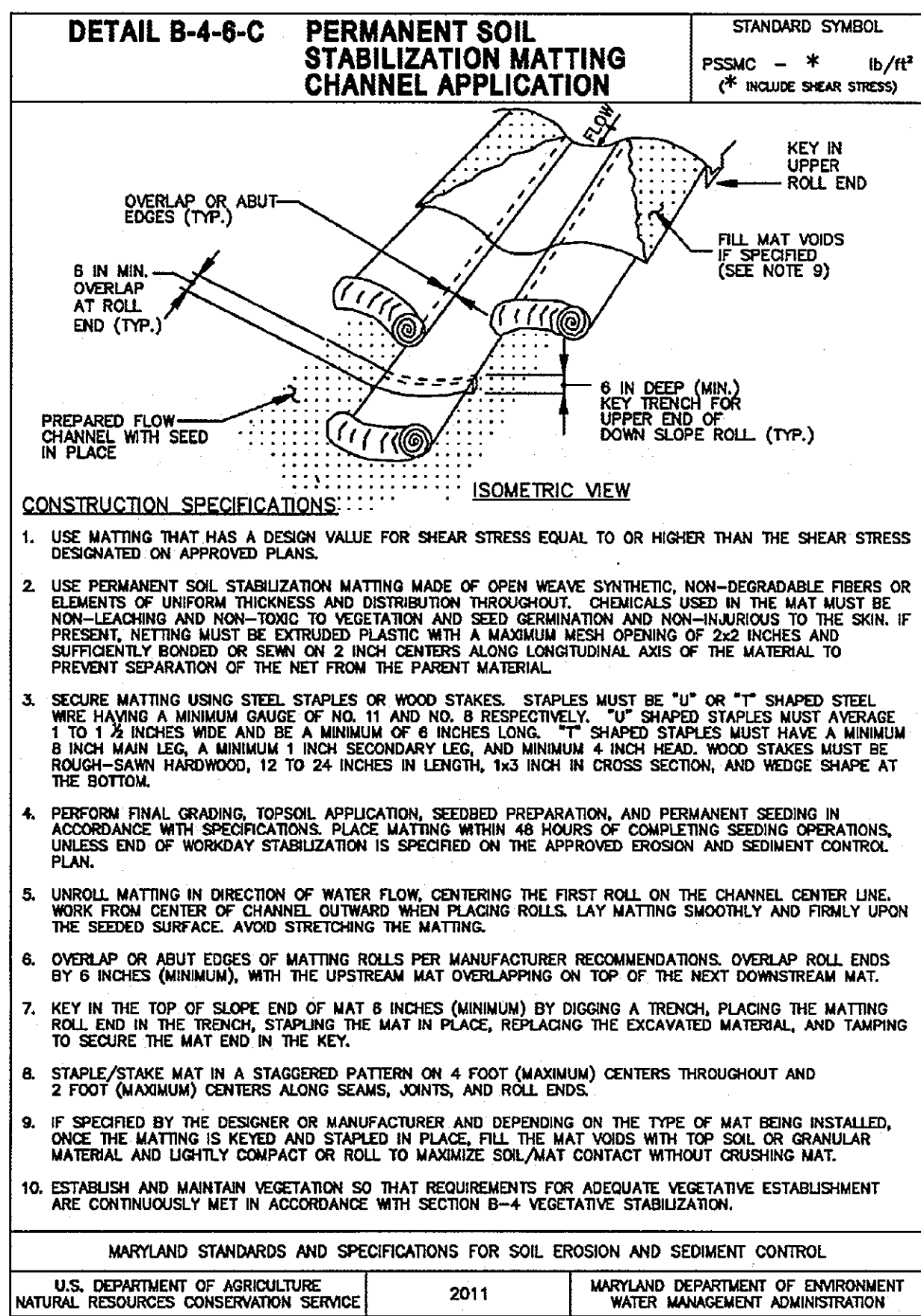
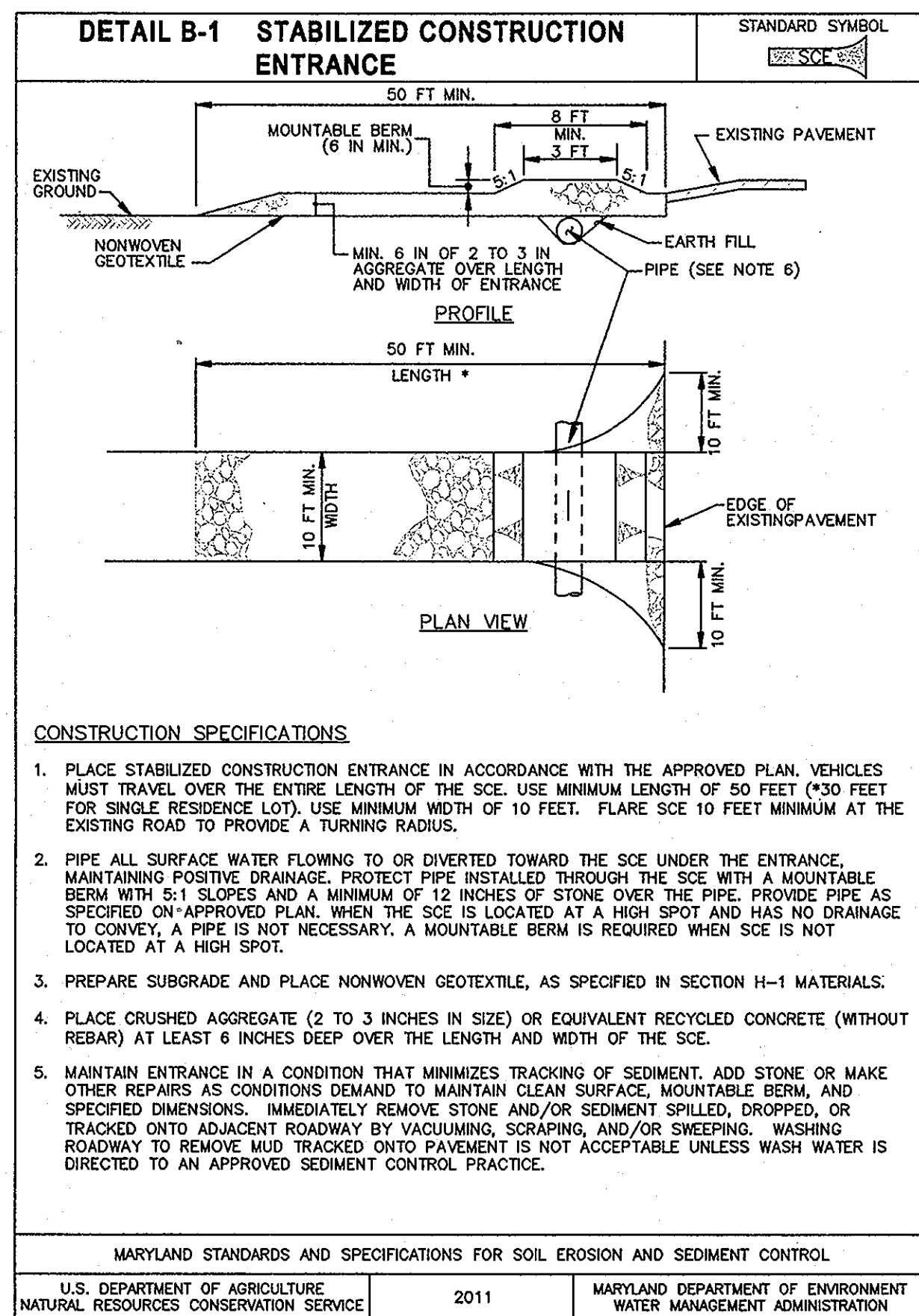
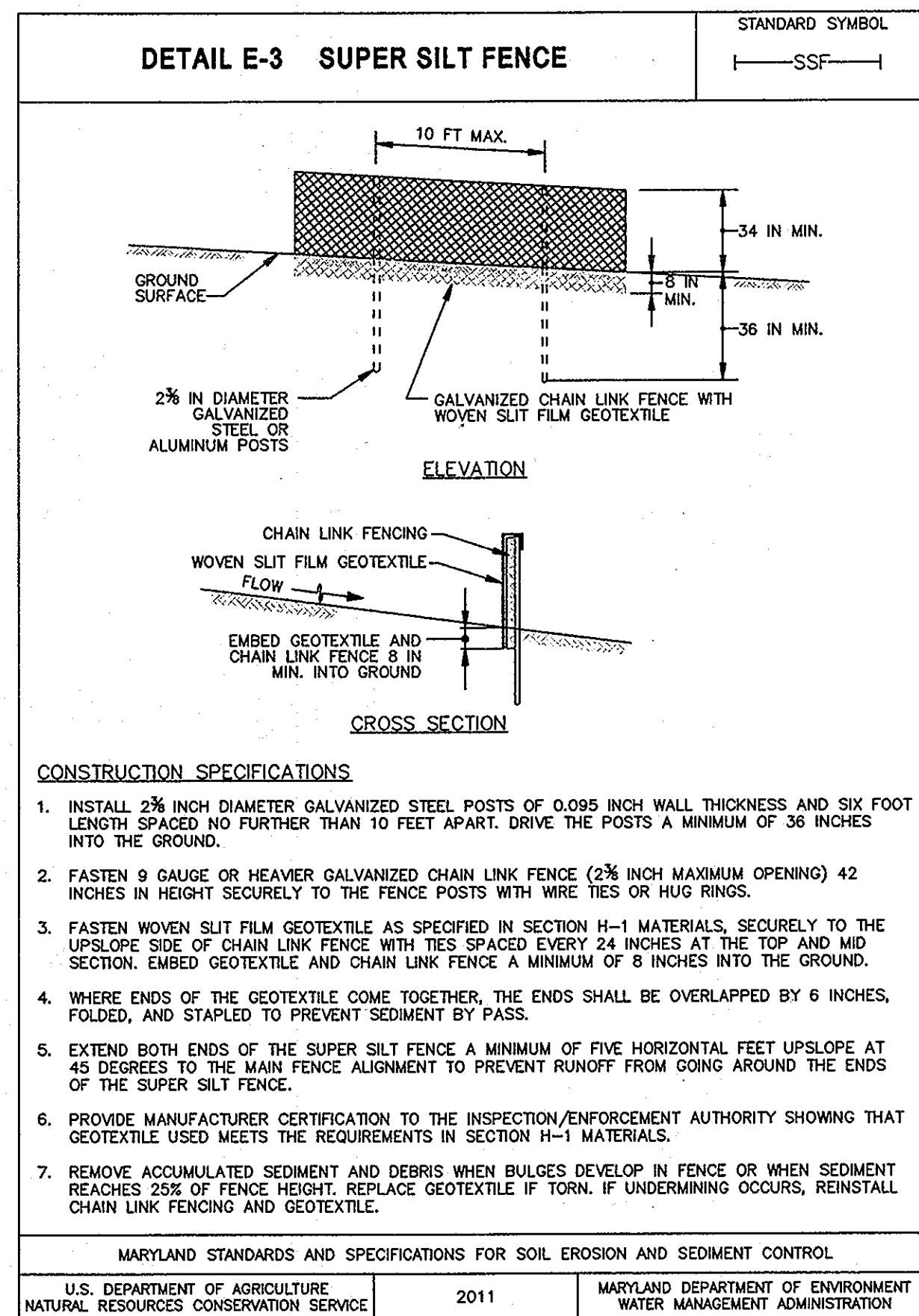
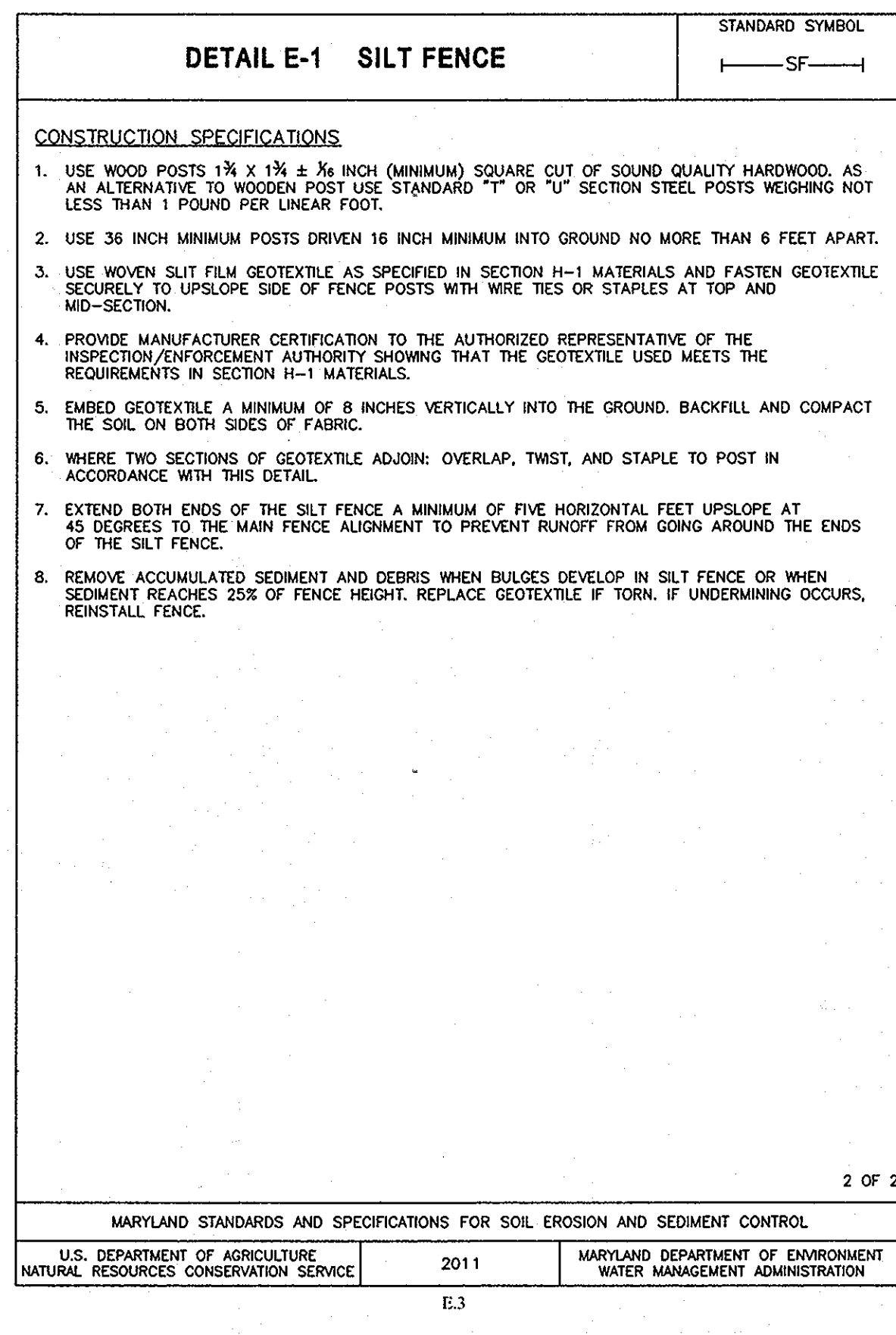
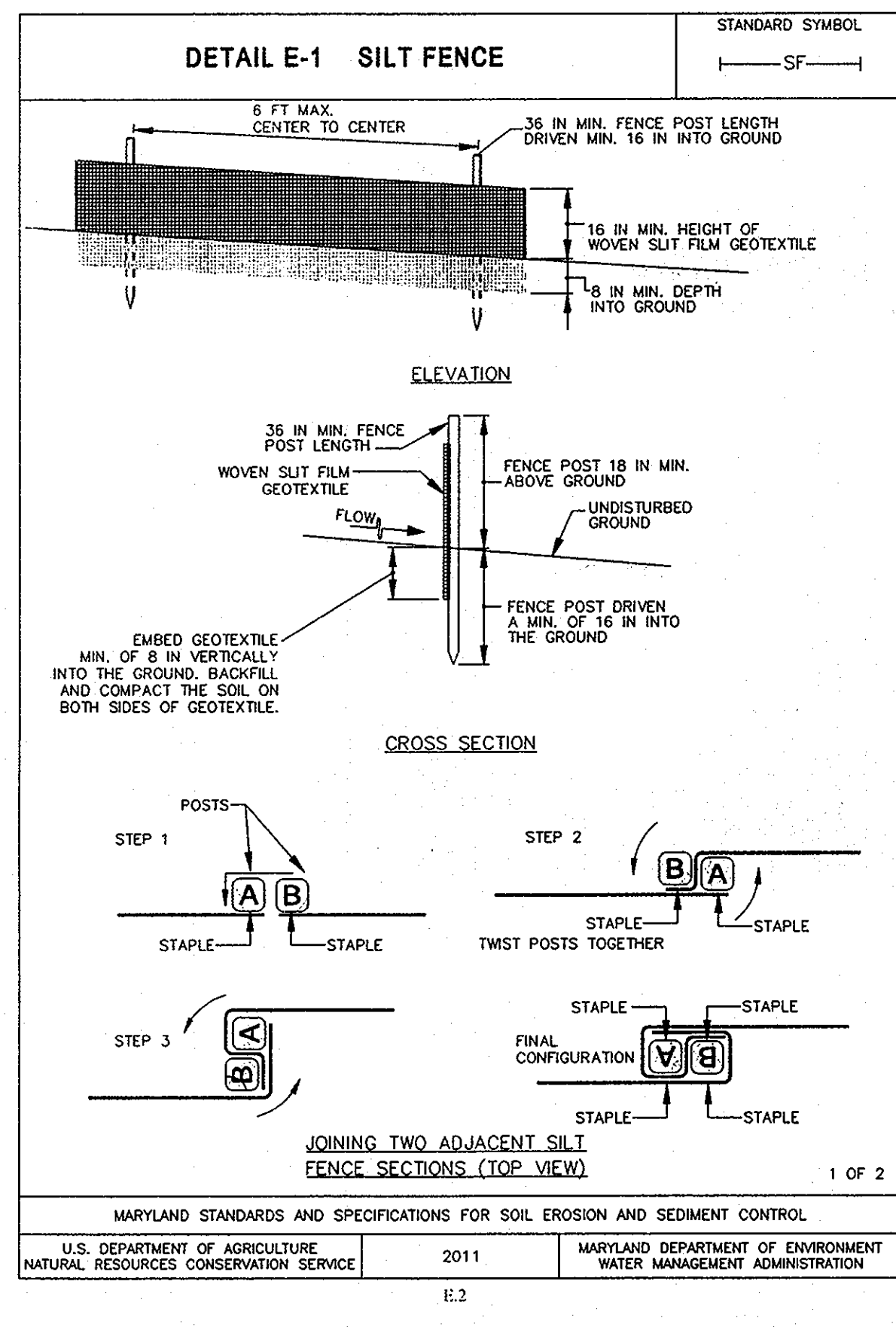
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CONTACT: SANJAY B. PATEL PHONE: 301-306-3091 x121

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 2/7/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE
[Signature] 2/6/12
CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

PROJECT: **HARBIN PROPERTY PRODUCE STAND LOT 2 OF THE HARBIN PROPERTY MINOR SUBDIVISION ENVIRONMENTAL CONCEPT PLAN**
2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
ZONING R-20, TAX MAP 17, GRIDS 8 & 14, PARCEL 27, DEED REF: 4008/458 & 782/706

PROJECT NO. 2006149.06
SCALE: 1"=20'
DATE: 07/19/12
DRAWN BY: JRP
CHECKED BY: SSP
SHEET: 2 OF 4



OWNER:
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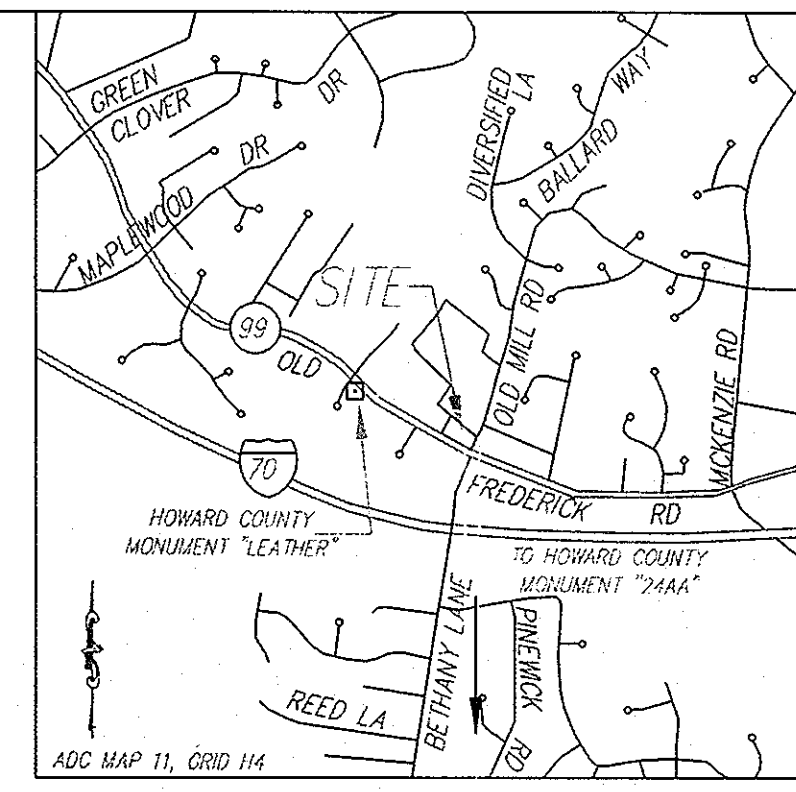
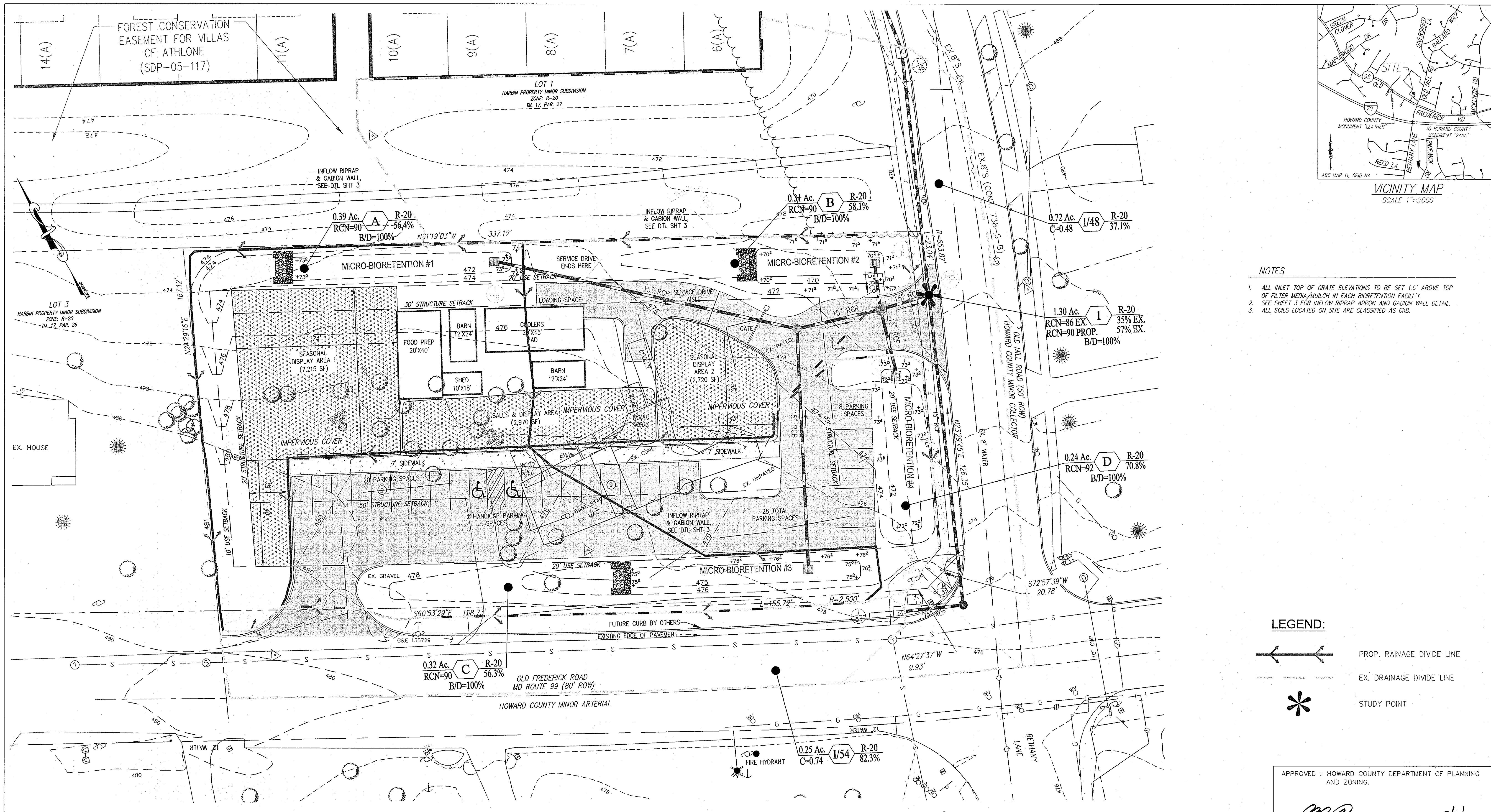
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SANJAY PATEL, P.E.

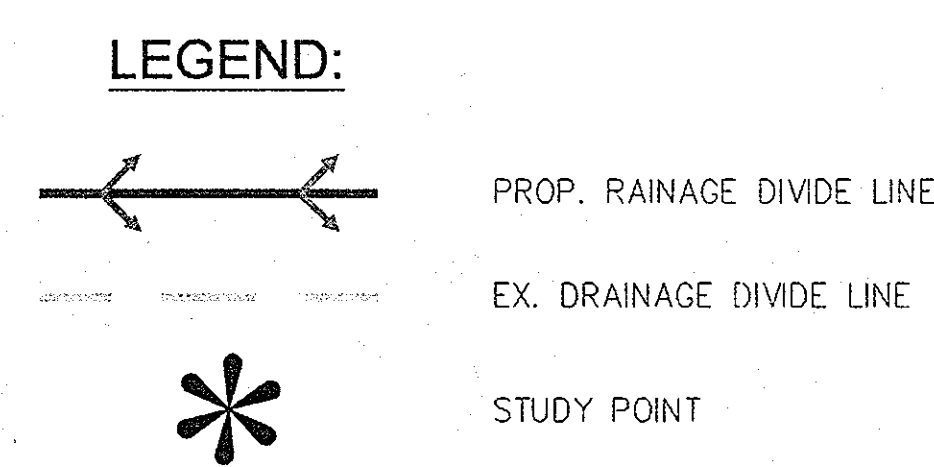
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.		
<i>[Signature]</i>	07/12	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
<i>[Signature]</i>	8/6/12	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
DATE	NO.	REVISION
PROJECT	HARBIN PROPERTY PRODUCE STAND	
	LOT 2 OF THE HARBIN PROPERTY MINOR SUBDIVISION	
	TYPICAL SECTION & DETAILS	
	2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	
	ZONING R-20, TAX MAP 17, GRIDS 8 & 14, PARCEL 27, DEED REF: 4008/458 & 782/706	
PROJECT NO.	2006149.06	
SCALE:	AS SHOWN	
DATE:	07/19/12	
DRAWN BY:	JRP	
CHECKED BY:	SBP	
SHEET:	3 OF 4	



- NOTES**
1. ALL INLET TOP OF GRATE ELEVATIONS TO BE SET 1.0' ABOVE TOP OF FILTER MEDIA/MULCH IN EACH BIORETENTION FACILITY.
 2. SEE SHEET 3 FOR INFLOW RIPRAP APRON AND GABION WALL DETAIL.
 3. ALL SOILS LOCATED ON SITE ARE CLASSIFIED AS GH.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 8/7/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/6/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

STUDY POINT # 1

CONDITION	AREA (AC.)	IMP. AREA (AC.)	% OF IMP. AREA	RCN	TC (HRS.)	Q1 (CFS)	Q10 (CFS)	Q100 (CFS)
EXISTING	1.30	0.46	35%	86	0.1 (ASSUMED)	2.55	6.55	9.94
PROPOSED	1.30	0.75	58%	90	0.1 (ASSUMED)	3.05	7.08	10.42

BIORETENTION DIMENSIONS

#1	10'x107'x1'	1070 sf
#2	15'x58'x1'	870 sf
#3	8'x109'x1'	872 sf
#4	11'x74'x1'	814 sf

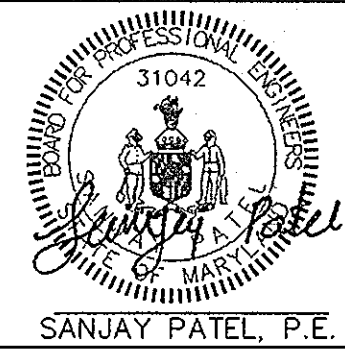
PREDOMINANT SOIL TYPES

Soil Name	Symbol	Hydrologic Group	Remarks
GhB	Glennel-Urban land complex	B/D	0 to 8 percent slope

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PROJECT: HARBIN PROPERTY PRODUCE STAND LOT 2 OF THE HARBIN PROPERTY MINOR SUBDIVISION DRAINAGE AREA MAP

2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 ZONING R-20, TAX MAP 17, GRIDS 8 & 14, PARCEL 27, DEED REF: 4006/468 & 782/706

PROJECT NO. 2006149.06
 SCALE: 1"=20'
 DATE: 07/19/12
 DRAWN BY: JRP
 CHECKED BY: SPJ
 SHEET: 4 OF 4