

GENERAL NOTES

Existing Zoning: R-20 per the 02/02/04 Comprehensive Zoning Plan per the Comp Lite Zoning Regulation amendments effective 7/25/06.

1. Dead Reference: 302/284 & 302/286/4187/261
2. Plot Reference: N/A
3. Gross Area of Tract: 7.782 Ac.
4. Area of 100 Year Floodplain: 0 Ac.
5. Area of Steep Slopes: 0.417 Ac. (ON-SITE)
6. Net Area of Tract: 7.365 Ac.
7. Number of Proposed Lots/Parcels: 12 + 4 Open Space Lots
8. Area of Proposed Lots/Parcels:
 - a) Buildable Lots: 3.376 Ac.
 - b) Open Space Lots: 3.471 Ac. (Total) 3.347 Ac. (Credited) (44%)
 - c) Minimum open space required is 3.113 Ac. (40%)
 - d) Area of proposed public roads: 0.935 Ac.
9. Land dedicated to Howard County, Maryland, for purposes of a public road 0.935 acres.
10. This project is in conformance with the latest Howard County Standards unless waivers have been approved.
11. The existing topography shown hereon was field run by DDC, Inc in November, 2007.
12. Landscaping for this development and landscaping surety is provided as part of the Developer Agreement, at final plan stage, in accordance with the latest edition of the Howard County Landscape Manual.
13. The coordinates shown hereon are based upon the Howard County Geodetic Control, which is based upon the Maryland State Coordinate System. Howard County Monument No 46FB (1/2" diameter steel rebar with ridges) and DDC Point No. 99 were used for this project.
14. This property is within the Metropolitan District.
15. Stormwater management for this development will be provided by the following means: Recharge volume (REV) will be via rooftop impervious disconnection (borne by way of rain gardens), non-roof impervious disconnection and sheet flow to buffer credits, as well as a 6" deep stone recharge trench in sand filter #1. The Water Quality (WQV) will be provided through 2 sand filters, the stormwater credits and the natural area conservation credit. Channel protection volume (CPV) will not be required because the proposed condition 1-year storm is less than 2 cfs at each design point. Overbank flood protection volume is not required. Extreme flood protection volume will be addressed by proving that the 100-year storm will adequately convey through the three existing pipes that pass under the noise wall. The sand filter facilities are to be privately owned and maintained by the HOA. If the building footprints on the lots utilizing rain gardens (lots 2-4, 11, 12 & 14) exceeds 2,000 sq. ft., additional stormwater management measures will be required.
16. Existing utilities shown hereon are based on field surveys and record drawings.
17. There is no floodplain onsite, there are steep slopes, streams and buffers onsite.
18. Non-Tidal wetlands shown hereon are based on a field investigation prepared by McCarthy & Associates, Inc. dated May, 2005.
19. Traffic study was provided under S-06-004.
20. The geotechnical study for this project was prepared by Hillis-Carnes dated November, 2007.
21. Project Background information:
 - a) Subdivision Name: MD & VA MILK PRODUCERS SOUTH
 - b) Tax Map/Block/Parcel: 46 & 47 / 12 & 1 / 985 & P/O 2
 - c) Zoning: R-20
 - d) Election District: 6th
 - e) Total (Gross) Tract Area: 7.782 ac.
 - f) Number of Proposed Lots/Parcels: 12 + 4 Open Space Lots
 - g) Applicable Department of Planning & Zoning File No.: S-06-004, P-08-007
 - h) Preliminary Plan approval date: 9/3/08

22. There are no existing dwellings or structures on the site.
23. The proposed road will be public.
24. BRL denotes the Building Restriction Line.
25. Sediment and erosion control measures are provided on the final plan in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
26. Street trees are provided on the access place in accordance with Section 16.124 of the Howard County Subdivision Regulations.
27. On-site sidewalks are provided in accordance with Section 16.134 of the Howard County Subdivision Regulations.
28. There are no historic structures or cemeteries located on the subject property.
29. No grading, removal of vegetative cover or trees, paving and new structures shall be permitted within the wetlands, stream or their required buffers, flood plain and forest conservation easement unless otherwise specified approved by the Department of Planning and Zoning.
30. All construction shall be in accordance with the latest standards and specifications of Howard County plus FEMA standards and specifications. Contact the District 7 Utility Section 48 hours prior to any work performed at 301-624-8115.
31. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 318-1860 at least (5) working days prior to the start of work.
32. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
33. Traffic control devices, markings and signage shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD).
34. All sign posts used for traffic control signs in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (4" gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge) 3' long. A galvanized steel pole cap shall be mounted on top of each post.
35. Street light placement and the type of fixtures and poles shall be in accordance with the Howard County Design Manual, Volume III (2006), Section 5.5.A. A minimum spacing of 20-feet shall be maintained between any street light and any tree.
36. Water is public. Contract #24-4570-D.
37. Sewer is public. Contract #24-4570-D.
38. Provide sidewalk ramps at all intersections with truncated dome pad per current ADA standards.
39. This plan has been prepared in accordance with the provisions of Section 16.124 of the Ho. Co. Code. Financial surety for the required landscaping in the amount of \$21,450.00 must be posted as part of the Developer's Agreement (47 shade trees, 49 evergreen trees).
40. A total of 1.7612 acres of forest retention and 0.0822 acres of reforestation are proposed under this plan. As such, the retention surety amount for the retention acreage is \$15,342.00 (\$9,200/a.f.) and the approximate, required surety amount for the on-site reforestation is \$1,785.00 (\$20,500/a.f.). The total amount of required forest conservation surety is \$17,127.00. No surety is required for reforestation requirements to be fulfilled through the purchase of 1.218 acres of credit in the Maple Ridge forest conservation bank. (0.9111)
41. Reservation of Public Utility and Forest Conservation Easements: Developer reserves unto itself, its successors and assigns, all easements shown on this plan for water, sewer, storm drainage, other public utilities and forest conservation (designated as "Forest Conservation Area"), located in, on, over and through lots 1 through 15, any conveyances of the aforesaid lots/parcels shall be subject to the easements herein reserved, whether or not expressly stated in the deed(s) conveying said lot(s)/parcels. Developer shall execute and deliver deeds for the easements herein reserved to Howard County with a metes and bounds description of the forest conservation area. Upon completion of the public utilities and their acceptance by Howard County, and in the case of the forest conservation easement(s), upon completion of the forest conservation area, the developer and the County, and the release of developer's surety posted with said agreement, the County shall accept the easements and record the deed(s) of easement in the Land Records of Howard County.
42. The structural design for the headwalls on Milkshake Drive was performed by Hillis-Carnes dated March 2009.
43. Per e-mail documentation from Ron Lepson dated May 11, 2009, the County will accept a public road crossing the BGE property without a fee simple right-of-way.

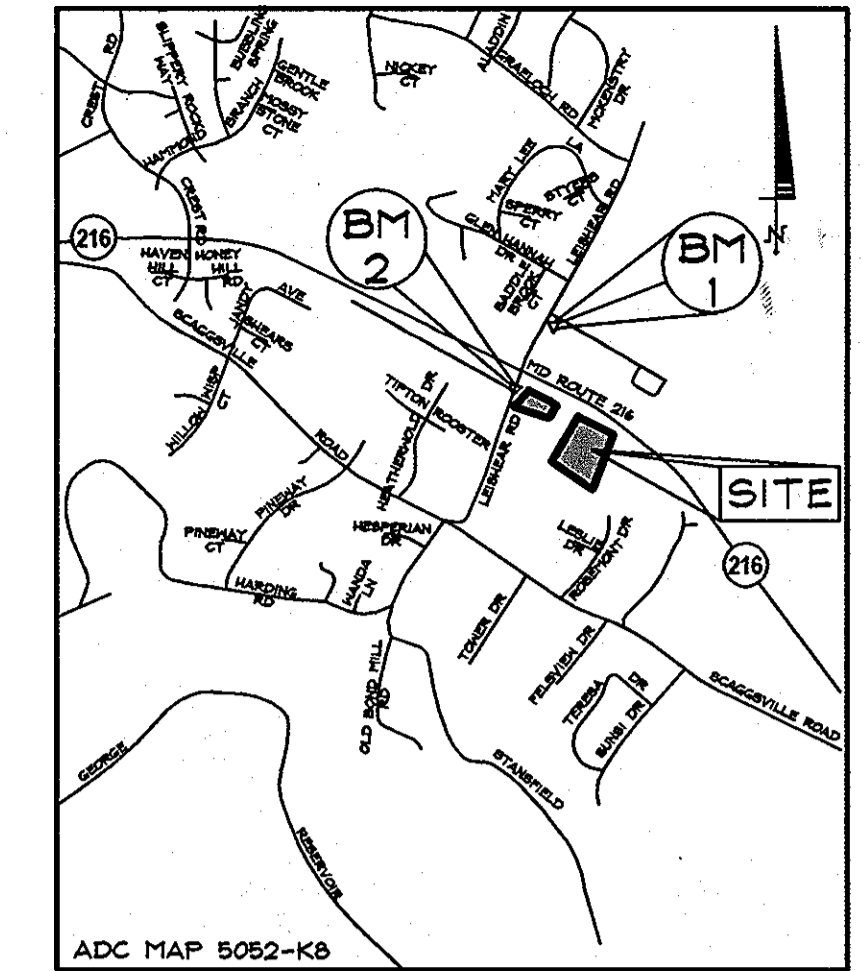
MD & VA MILK PRODUCERS SOUTH

TAX MAP 46, GRID 12, PARCEL 985 & TAX MAP 47, GRID 1, p/o PARCEL 2

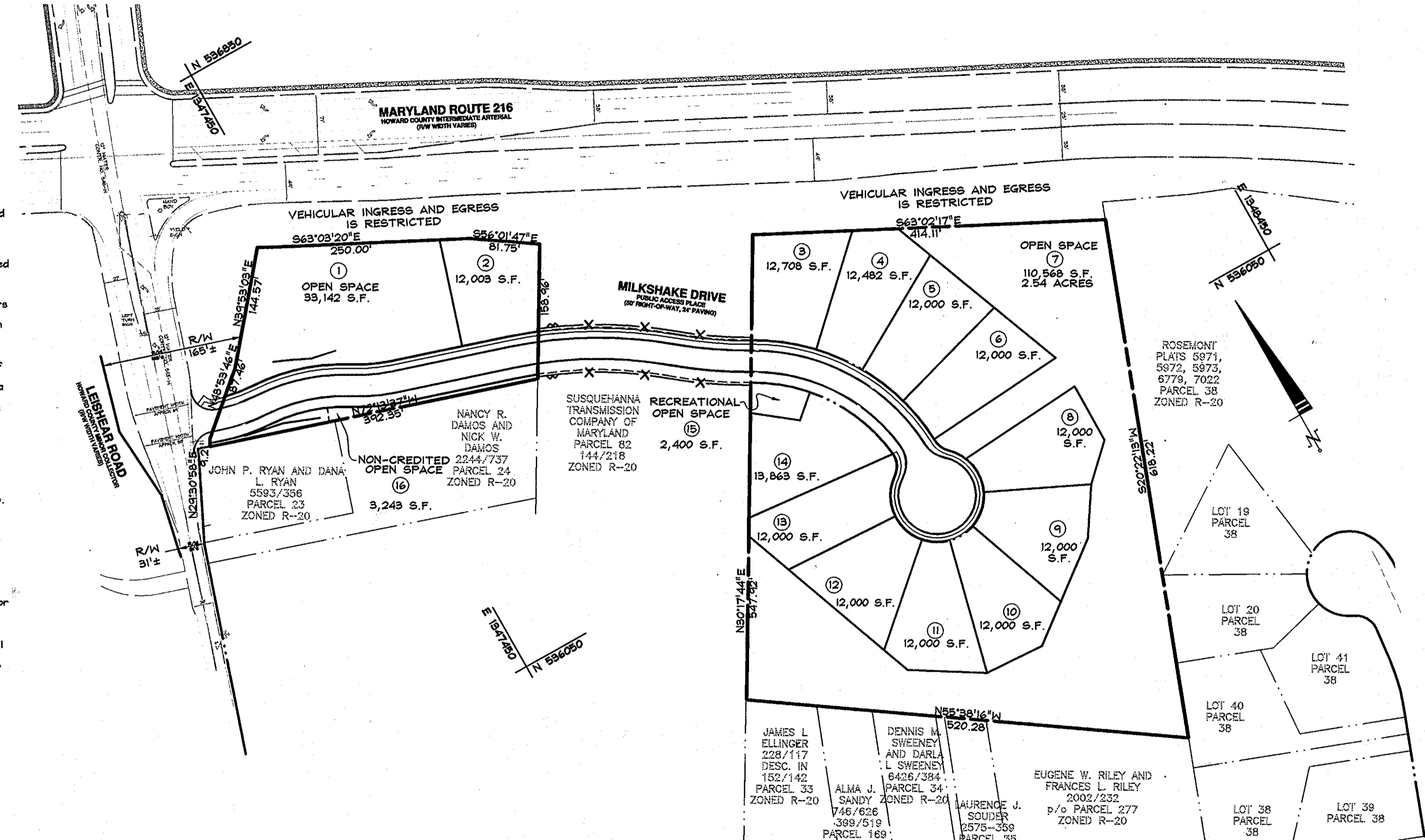
6TH ELECTION DISTRICT HOWARD COUNTY, MD

BENCHMARK DESCRIPTION

BENCHMARK #1	N. 537149.819
E. 134746.969	
B.M. 46FB (CONCRETE MONUMENT)	ELEV. 317.324
BENCHMARK #2	N. 536597.4034
E. 1347214.5476	
B.M. DDC POINT #99 (1/2" STEEL REBAR)	ELEV. 332.04



VICINITY MAP: SCALE: 1"=2000'



LOCATION MAP SCALE: 1"=100'

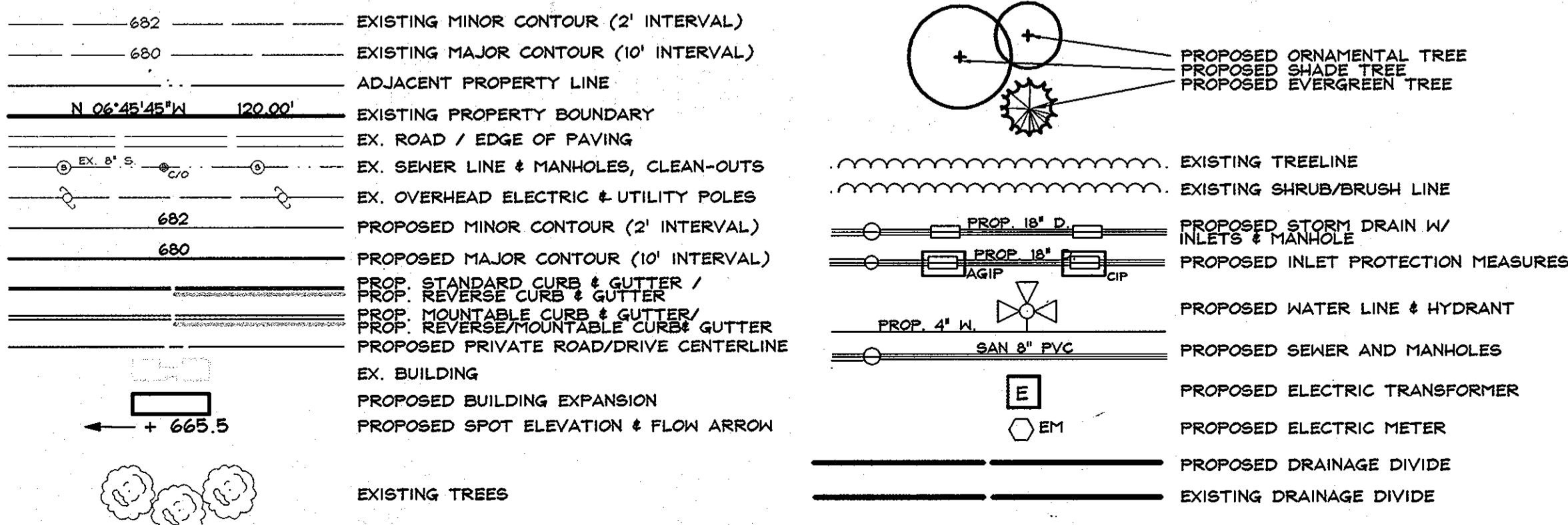
DRAWING LIST	
SHEET #	DESCRIPTION
1	COVER SHEET
2	ROAD PLAN & PROFILE
3	TRAFFIC CONTROL & STRIPING PLAN
4	GRADING, SEDIMENT & EROSION CONTROL PLAN
5	GRADING, SEDIMENT & EROSION CONTROL PLAN- INTERIM COND.
6	STORM DRAIN PROFILES
7	STORM DRAIN DRAINAGE AREA AND SOILS MAP
8	SEDIMENT AND EROSION CONTROL WATERWAY CROSSING PLAN, DETAILS
9	SEDIMENT & EROSION CONTROL NOTES
10	SEDIMENT & EROSION CONTROL DETAILS
11	STORMWATER MANAGEMENT NOTES & DETAILS
12	STORMWATER MANAGEMENT NOTES & DETAILS
13	STORMWATER MANAGEMENT SOIL BORING LOGS
14	FOREST CONSERVATION PLAN
15	FOREST CONSERVATION PLAN
16	LANDSCAPING AND STREET TREE PLAN
17	LANDSCAPE NOTES, DETAILS & SWM/WATER QUALITY PLANTING
18	SITE PLAN, CULVERT AND HEADWALL PLAN
19	HEADWALL ELEVATIONS AND FOOTING PLAN
20	UPSTREAM HEADWALL PLAN AND ELEVATION
21	DOWNSTREAM HEADWALL PLAN AND ELEVATION
22	HEADWALL TYPICAL SECTION AND CONSTRUCTION DETAIL
23	DOWNSTREAM HEADWALL BEAM REINFORCEMENT DETAIL
24	UPSTREAM HEADWALL BEAM REINFORCEMENT DETAIL
25	SOIL BORING LOGS

DATA SOURCES:
BOUNDARY AND TOPO SHOW HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WETLANDS SHOWN PER S-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.

Site Analysis Data Chart

1. General Site Data
 - a. Present Zoning: R-20
 - b. Applicable DPZ File Reference: S-06-004, P-08-007
 - c. Proposed Use of Site or Structure(s): 12 SFD RESIDENTIAL
 - d. Proposed Water and Sewer Systems: Public
2. Area Tabulation
 - a. Total Area of Site 7.782 Ac.
 1. Parcel 985: 1.598 Ac. ±
 2. Parcel P/O 2: 6.184 Ac. ±
 - b. Approximate Area of 100 Year Floodplain: 0 Ac.
 - c. Approximate Area of Steep Slopes (25% or Greater): 0.417 Ac.
 - d. Net Area of Site 7.365 Ac.
 - e. Area of Proposed Building Lots: 3.376 Ac.
 - f. Area of Proposed Open Space Lots: 3.471 Ac.
 - g. Area of Bulk Parcels: 0 Ac.
 - h. Area of Proposed Public Roads: 0.935 Ac.
3. Unit/Lot Tabulation
 - a. Total Number of Residential Units/Lots Allowed for Project by Right:
 1. 2 Dwelling Units Per Acre (7.324 x 2 = 14 Dwelling Units)
 2. Total Number of Residential Units/Lots Proposed on this Submission:
 1. Parcel 985 = 1 Unit
 2. Parcel P/O 2 = 11 Units
 - b. Density of Project Per Gross Acre: 1.54 units/acre
 - c. Total number of Open Space lots proposed: 4
 - d. Total Number of Non-Buildable Bulk Parcels Proposed: 0
 - e. Total Number of Lots/Parcels Proposed: 12
4. Open Space Tabulation
 - a. Open Space Required - 40% (7.782 x 40% = 3.113 Ac.)
 - b. Open Space Provided - 44% (3.347 Ac. (Credited))
 - c. Recreation Open Space Required: 2,400 s.f. (12 Lots x 200 s.f.)
 - d. Recreation Open Space Provided: 2,400 s.f. (Open Space Lot 15)

DRAWING LEGEND



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 DATE: 4-12-10
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 DATE: 5/3/10
 CHIEF, DIVISION OF LAND DEVELOPMENT

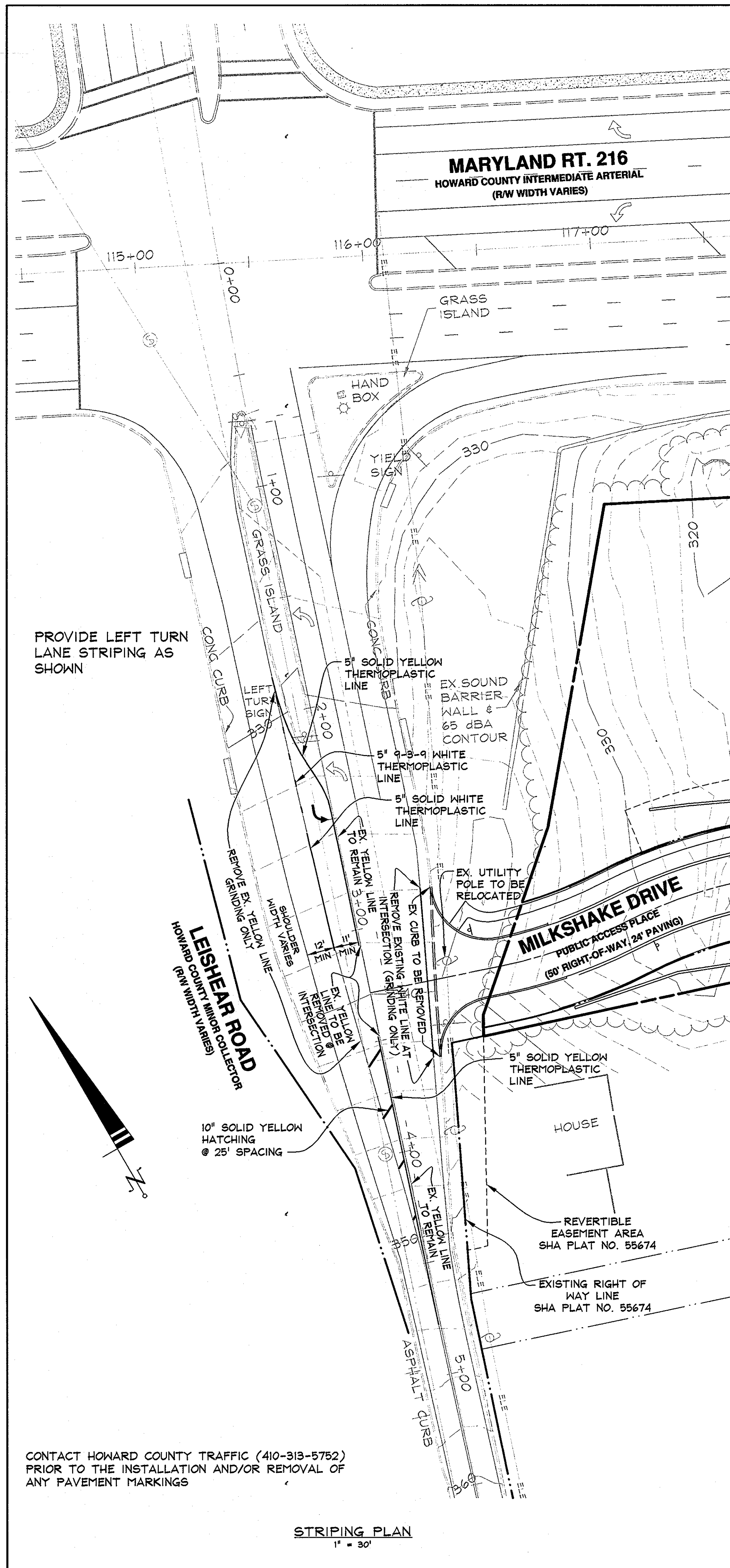
APPROVED: DATE: 4/21/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

3/22/10
 DATE

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. 25420, Expiration Date: 2-20-10

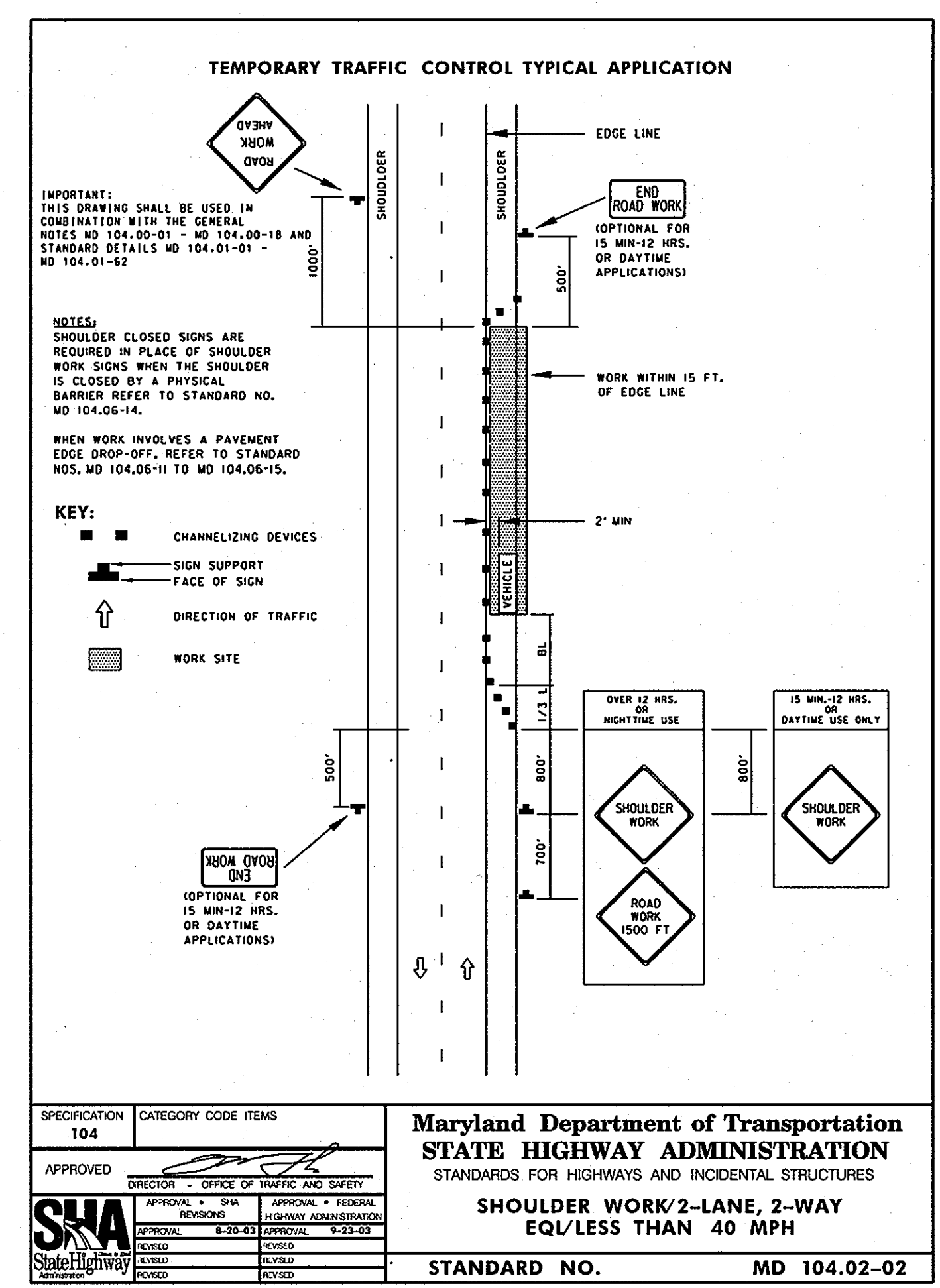
MARK R. THAYER P.E. 25420

MD & VA MILK PRODUCERS SOUTH				
COVER SHEET				
6TH ELECTION DISTRICT HOWARD COUNTY				
REVISIONS				
NO.	DESCRIPTION OF CHANGES	DRN	REV	DATE
CO. FILE #	F-09-061	DES. BY:	JCO	
TAX ACC. #	06-414435	DRN. BY:	SDS	
TAX MAP:	46 & 47	CHK. BY:	JCO	
BLOCK / GRID:	12 & 1	DATE:	3/22/10	
PARCEL #:	985 & P/O 2	DDC JOB#:	07106.3	
ZONE / USE:	R-20	SHEET NUMBER:		
DWG. SCALE:	AS SHOWN			



CONTACT HOWARD COUNTY TRAFFIC (410-313-5752) PRIOR TO THE INSTALLATION AND/OR REMOVAL OF ANY PAVEMENT MARKINGS

STRIPING PLAN
1" = 30'



SPECIFICATION 104 CATEGORY CODE ITEMS

APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

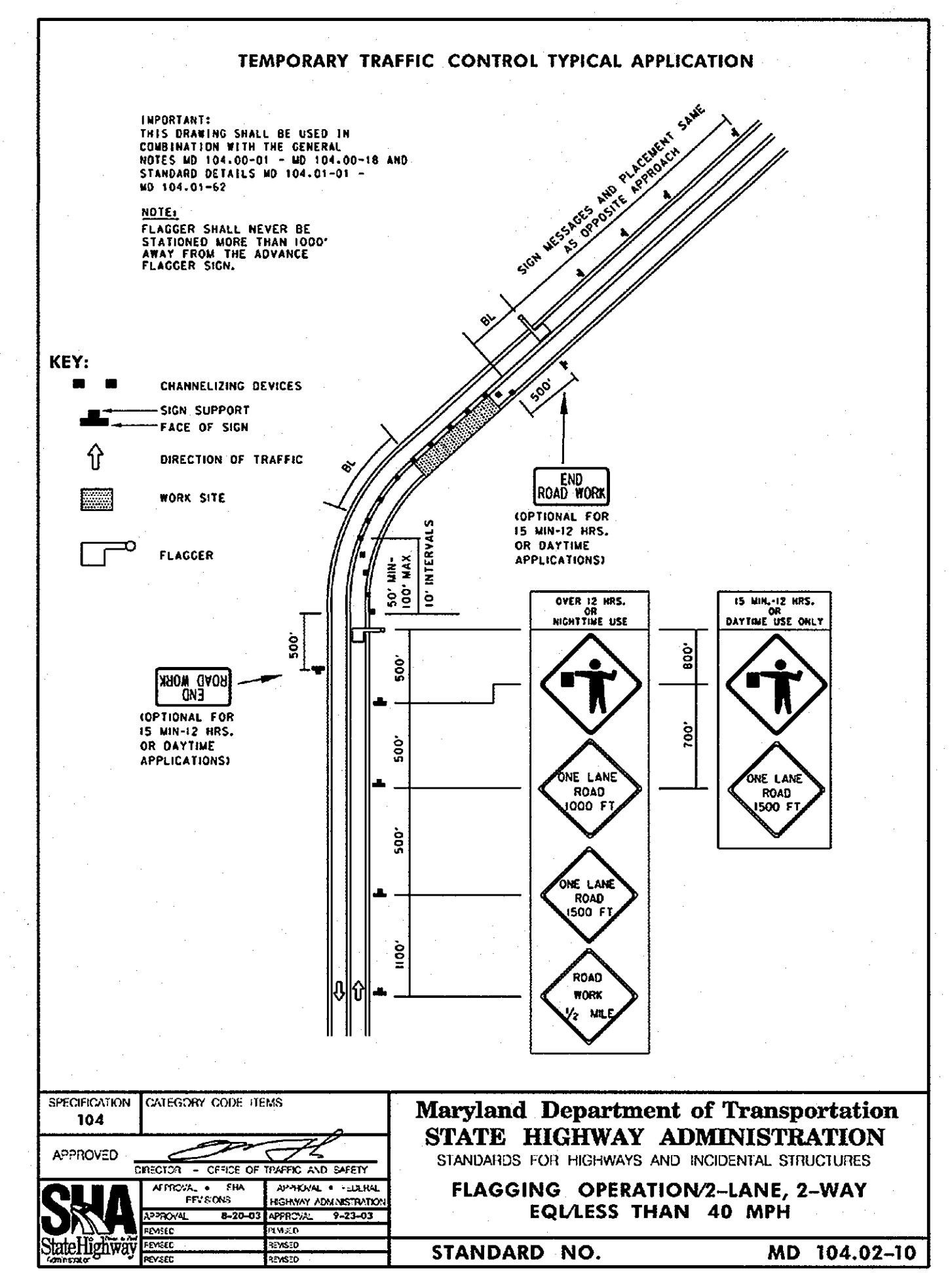
APPROVAL - SHA REGIONAL: [Signature] APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: [Signature]

DATE: 4-12-10

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/2-LANE, 2-WAY
EQ/LESS THAN 40 MPH

STANDARD NO. MD 104.02-02



SPECIFICATION 104 CATEGORY CODE ITEMS

APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL - SHA REGIONAL: [Signature] APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: [Signature]

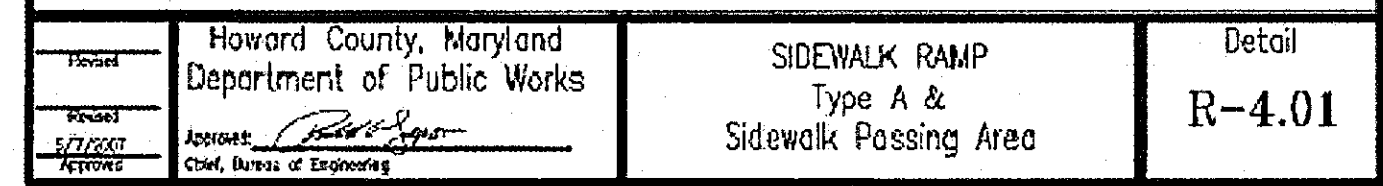
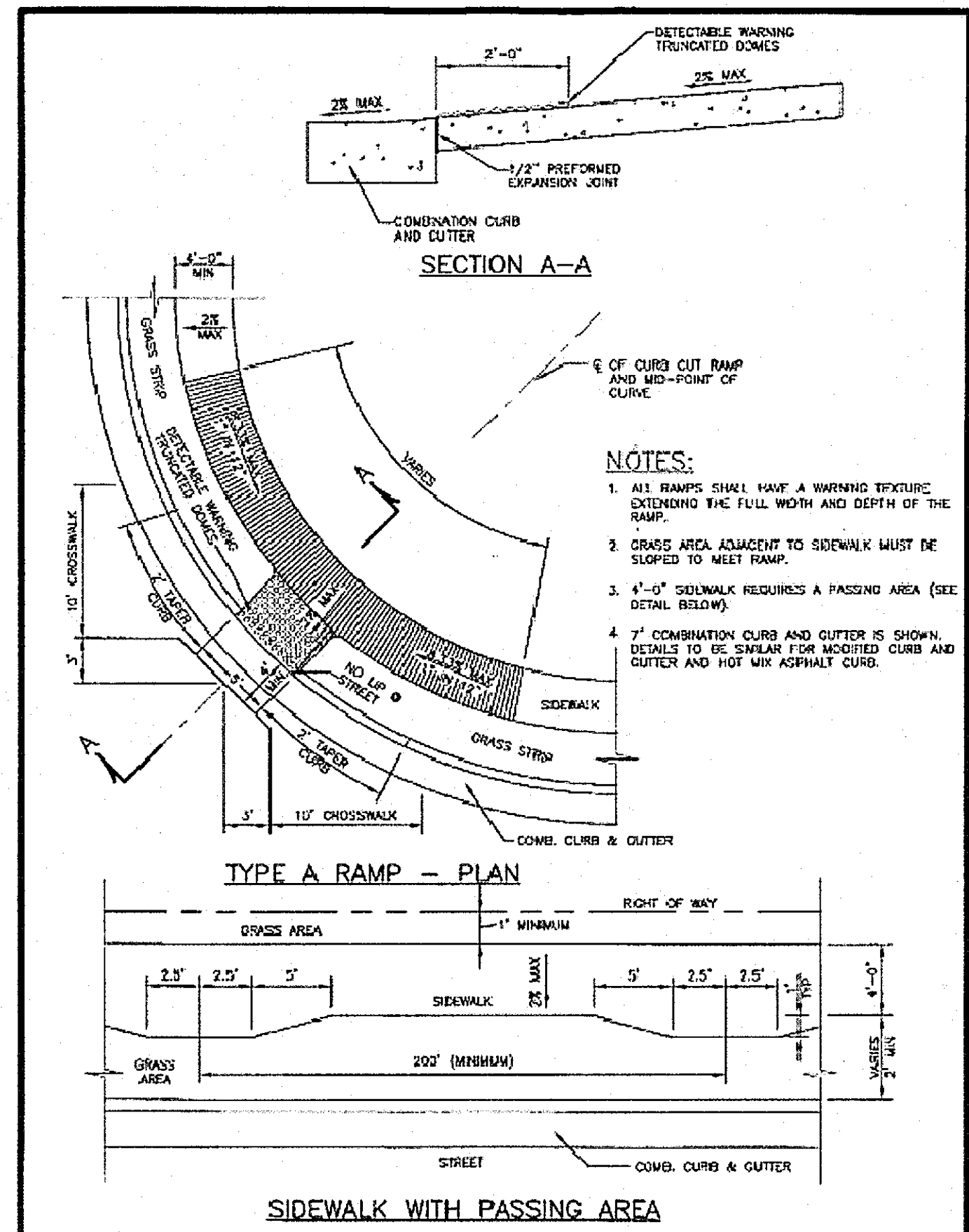
DATE: 4-12-10

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

FLAGGER OPERATION/2-LANE, 2-WAY
EQ/LESS THAN 40 MPH

STANDARD NO. MD 104.02-10

TRAFFIC CONTROL DETAILS
NOT TO SCALE



Howards County, Maryland
Department of Public Works

Site: [Signature] Chief, Bureau of Highways

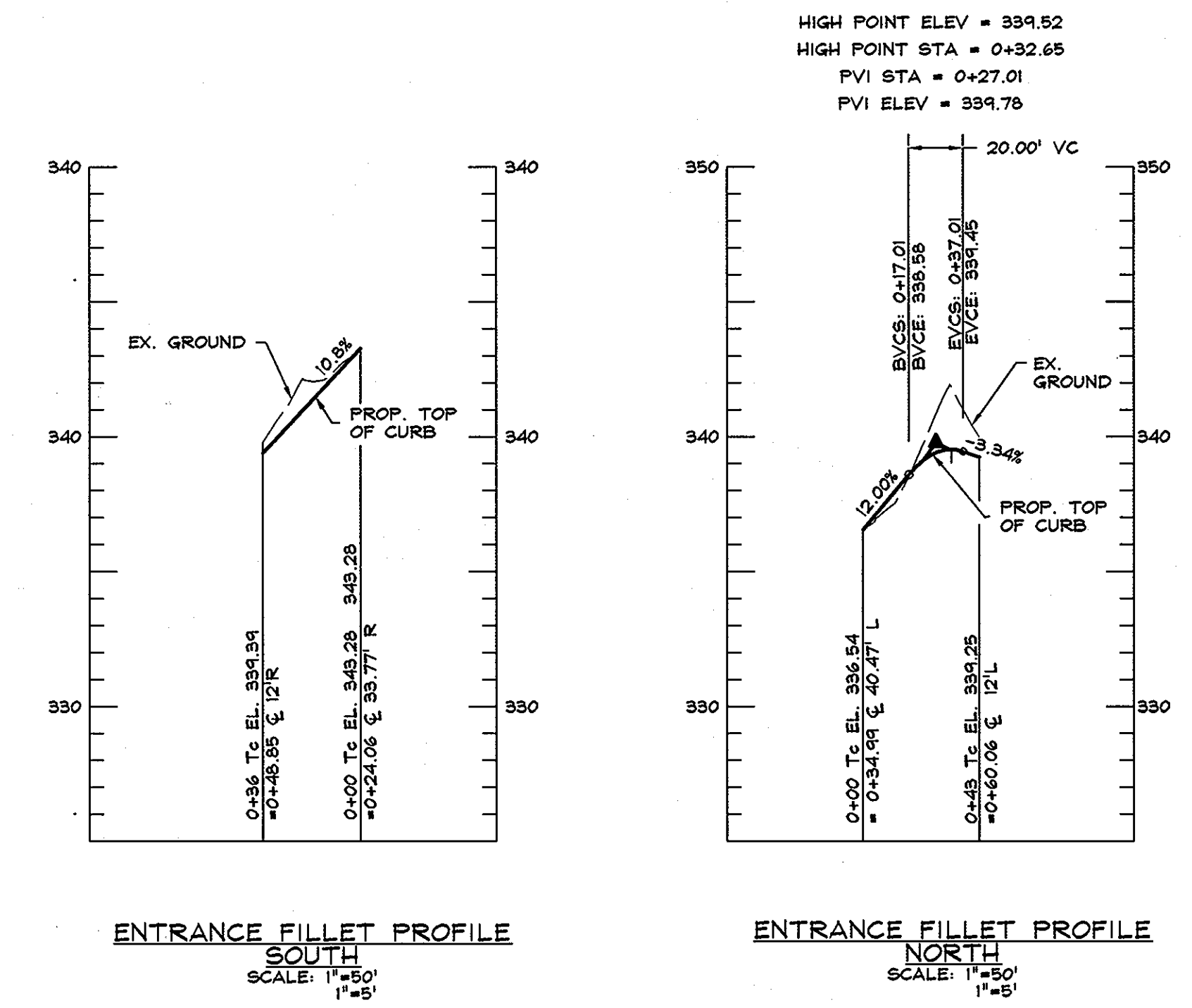
DATE: 4-12-10

Howards County, Maryland
Department of Planning and Zoning

Site: [Signature] Chief, Development Engineering Division

DATE: 4/22/10

Detail R-4.01



DATA SOURCES:
BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WETLANDS SHOWN PER 8-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2006.

DeMario
DESIGN CONSULTANTS
ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
192 East Main Street Westminister, MD 21157
Phone: (410) 386-0560 Fax: (410) 386-0564
http://www.demariodesign.us eMail: ddc@demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARBUTI WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897

SITE ADDRESS:
LEISHAR RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH

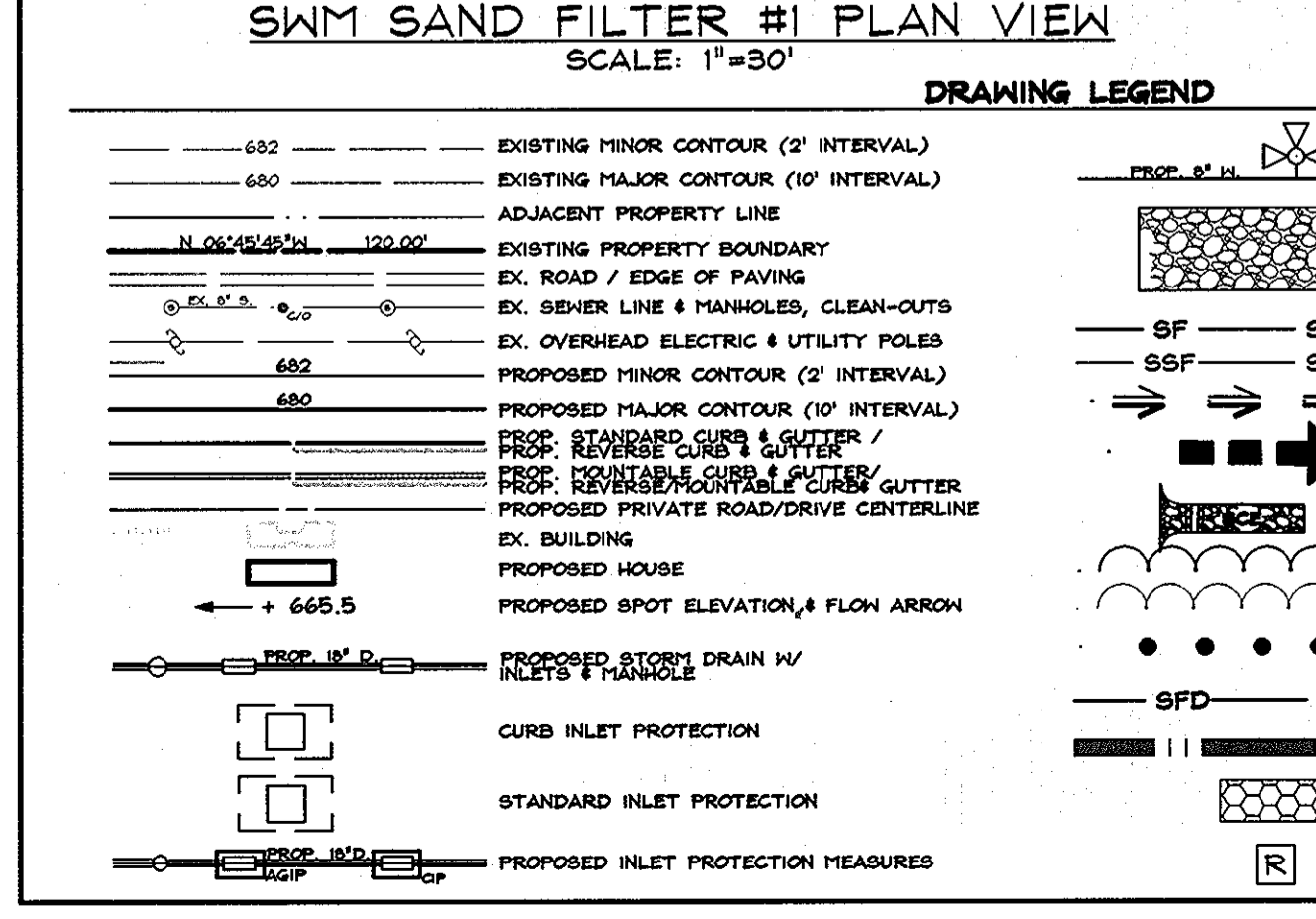
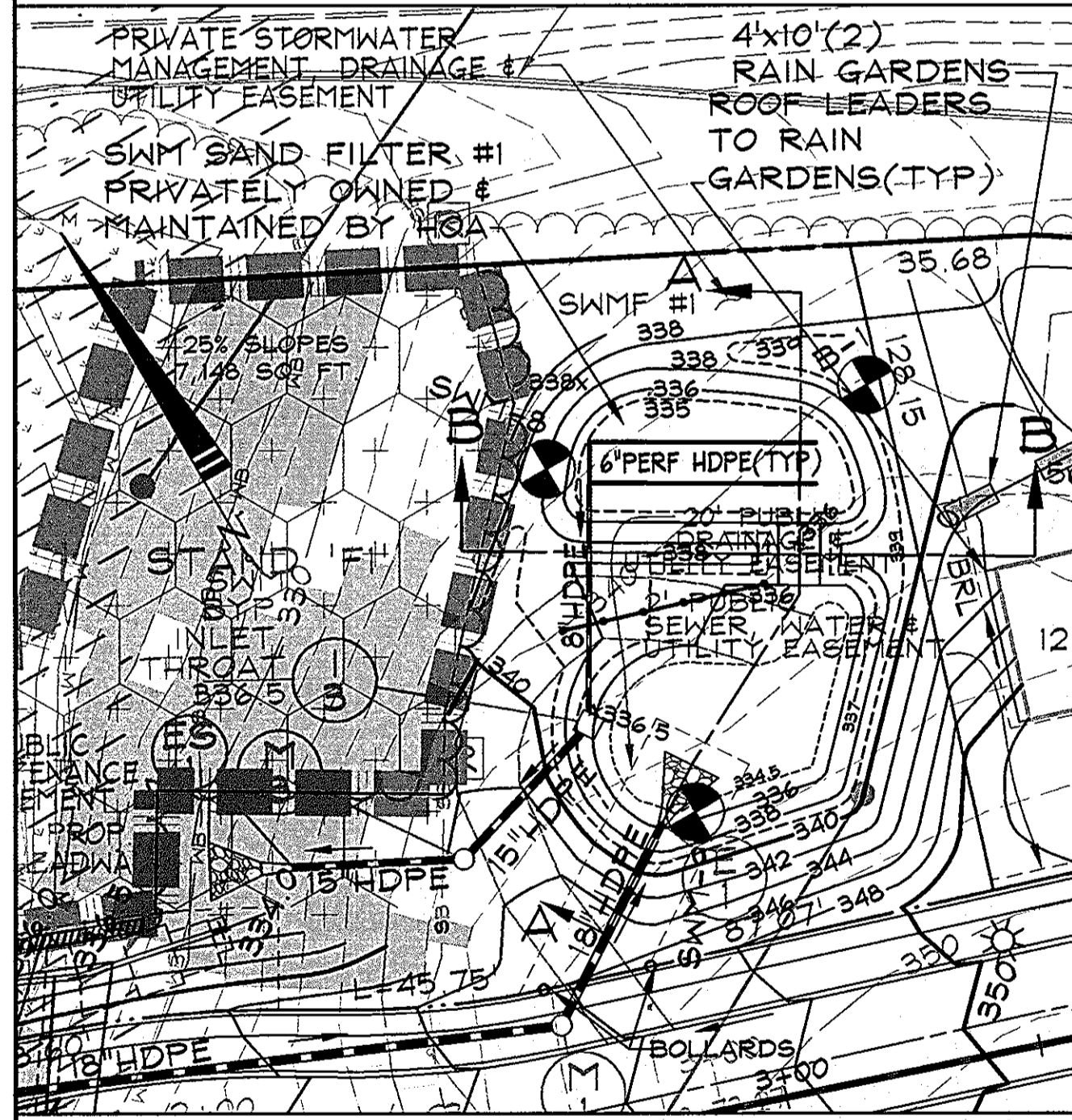
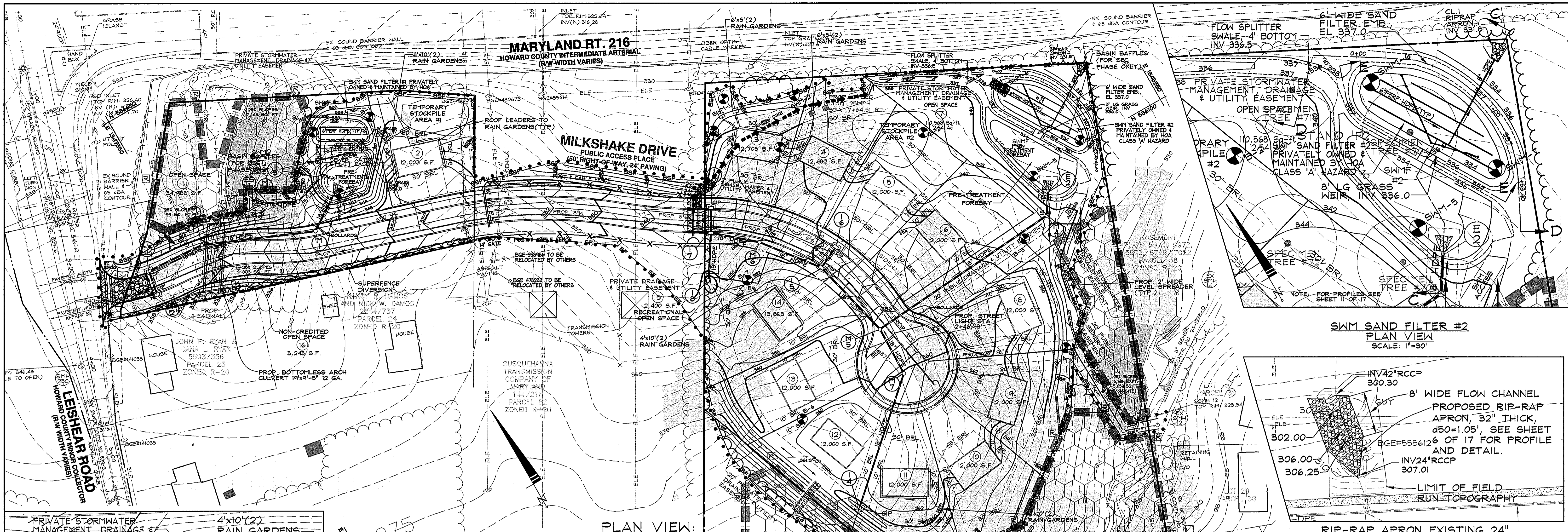
TRAFFIC CONTROL & STRIPING PLAN

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE # F-09-061	DES. BY: JCO/LJC
TAX ACC. #: 06-414435	DRN. BY: SDS
TAX MAP: 46 & 47	CHK. BY: JCO
BLOCK / GRID: 12 & 1	DATE: 3/22/10
PARCEL #: 985 & P/O 2	DDC JOB#: 07106.3
ZONE / USE: R-20	SHEET NUMBER:
DWG. SCALE: 1"=50'	3 of 25

F-09-061



NOTE:
SEE SHEET 11 OF 25 FOR SAND FILTER SECTIONS.

Construction Period Protection Program for The Milk Producers Property - South (F-09-061)
Prepared by Demario Design Consultants, Inc., March, 2009

Delineation of The Limit of Disturbance (LOD)

The General Contractor shall stake the Limit of Disturbance (LOD) prior to installation of tree protection measures. In any locations where Super Silt Fence or other sediment and erosion control measures sufficient to protect the critical root zones of trees have been installed, no tree protection fence shall be necessary. In areas where insufficient protection for the root zones of trees to be preserved throughout construction, tree protection fencing that complies with the details contained on the Final Forest Conservation Plan shall be installed. Tree protection fences will serve three primary goals, (1) to keep crowds and branching structure clear from contact by equipment materials and activities, (2) to preserve roots and soil condition in an intact and non-compacted state and, (3) to identify the Tree Protection Zone in which no disturbance is permitted and activities are restricted, unless otherwise approved by the landscape architect or an ISA Certified arborist or licensed forester. Removal of tree protection fence, even temporarily to allow deliveries, is prohibited.

Forest Edge Treatment

The contractor shall employ the services of an ISA Certified arborist and/or professional forester to ascertain the condition of trees that will, in the case of forest clearing or selective clearing and supplemental planting, establish a new forest edge. Trees shall be evaluated for susceptibility to windthrow and branches that may present a direct impediment to construction activities or hazards to health safety and welfare shall be removed with care. Exotic or invasive species located near the forest edge shall be removed by mechanical means where possible or treated with approved herbicides.

Any trees inadvertently damaged through construction shall be treated as if survival is expected. If it is determined that any part of a tree is in an unsafe or dangerous condition, then that part of the tree shall be removed. If the entire tree is affected, it shall be removed in its entirety. If the hazardous condition is questionable, the contractor shall acquire the services of an ISA Certified arborist or professional forester who shall inspect the tree and certify that the condition of the tree is not a hazard and is not expected to be a hazard in the foreseeable future. Trees damaged by the contractor that must be removed shall be replaced by the contractor at no additional expense to the owner. In order to protect trees, super silt fence shall be provided in any area where the LOD comes within 50' of any environmental feature (including wetlands, slopes 25%+, stream buffer, floodplain, etc.) or an approved forest conservation easement area.

Protective Signage

Protective signs shall be installed around the perimeter of retention easements and afforestation and reforestation planting areas. Signs shall comply with the details included on the Final Forest Conservation Plan with respect to spacing, height, and content. Signs shall be mounted on metal posts of an approximate height of 5' above finished grade and shall be maintained in perpetuity. SIGNS MAY NOT BE ATTACHED TO TREES UNDER ANY CONDITION.

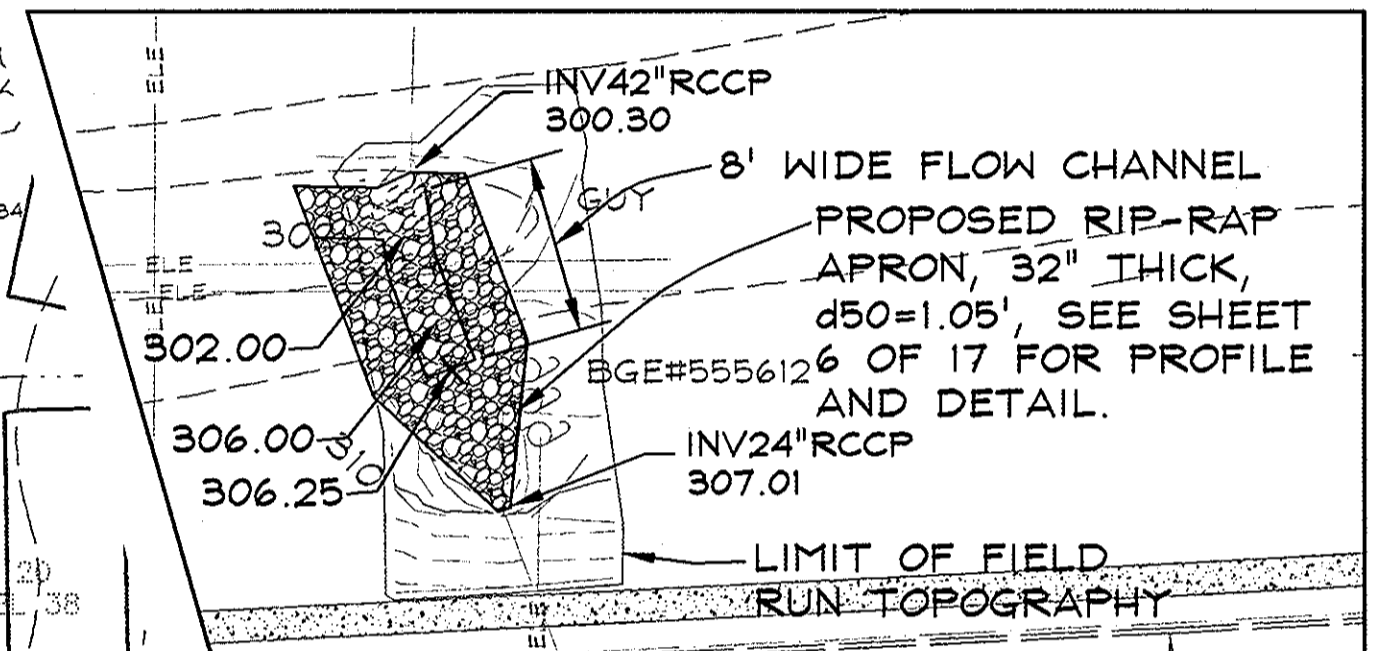
Materials and Vehicle Storage

The storage, disposal or placement of construction materials and operating or storing construction machinery, or driving or parking of vehicles in the Tree Protection Zone is strictly prohibited unless otherwise approved by the Landscape Architect or an ISA Certified Arborist or professional forester. The use of tree trunks as backstops, which supports, anchorages, temporary power poles, sign posts or other functions is also strictly prohibited. Cutting of tree roots in or near the Tree Protection Zone for utility trenching, foundation digging, placement of curbs and trenches or other miscellaneous excavations should be preceded by root pruning conducted with a sharp saw that cuts roots cleanly, to sound wood, flush with the trench or excavation site.

Construction vehicle wash-out operations shall not be conducted where water from this work can drain into a forest retention easement or a designated afforestation or reforestation planting area. No grading work shall be conducted that temporarily conducts excessive drainage into a forest retention easement or a designated afforestation or reforestation planting area.

PLAN VIEW:
SCALE: 1"=50'

SWM SAND FILTER #2 PLAN VIEW
SCALE: 1"=30'



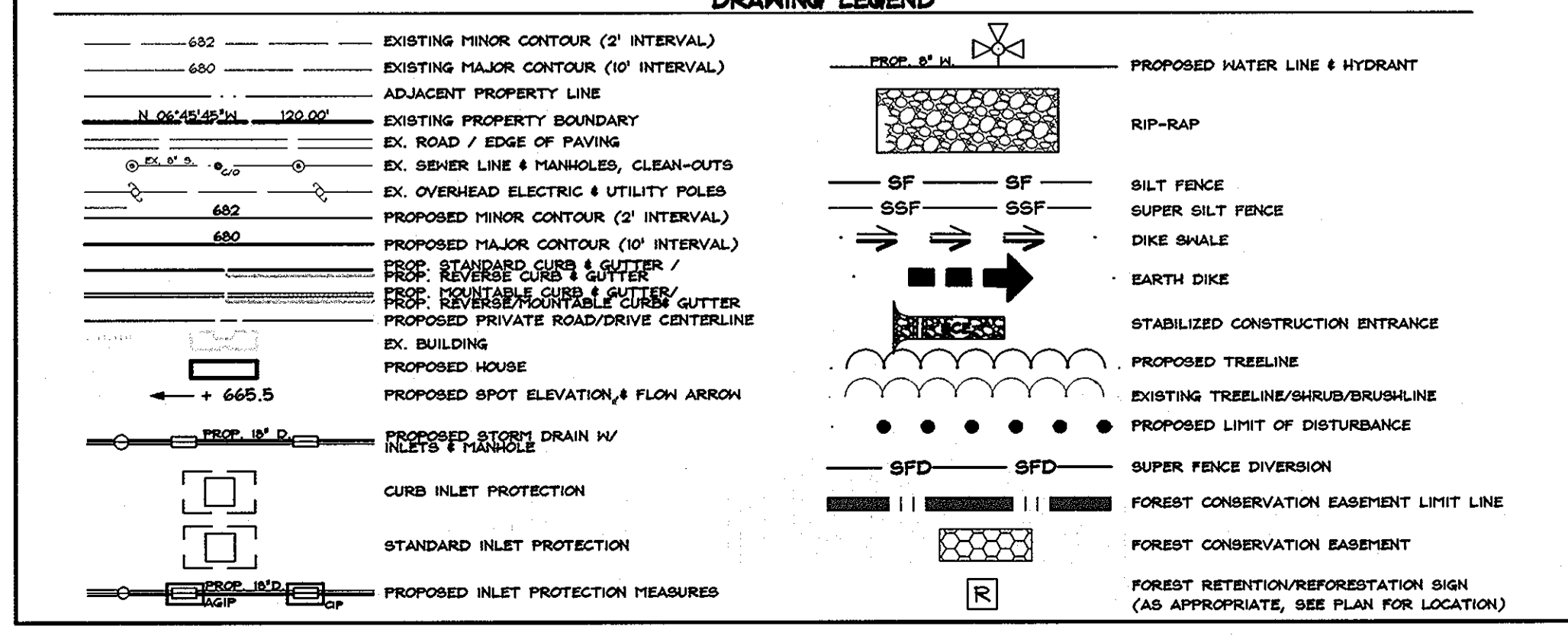
RIP-RAP APRON EXISTING 24" TO EXISTING 42" PIPE
SCALE: 1"=30'

STORMWATER MANAGEMENT SUMMARY TABLE

ELEMENT	FACILITY #1	FACILITY #2
STRUCTURE TYPE	SAND FILTER W/ PRE-TREATMENT FOREBAY	SAND FILTER W/ PRE-TREATMENT FOREBAY
OWNERSHIP	PRIVATE - HOA	PRIVATE - HOA
DRAINAGE AREA TO FACILITY	0.37 Ac	6.34 Ac
WATERSHED	PATUXENT RIVER	PATUXENT RIVER
STREAM USE	I-P	I-P
WATER SHED #	02-13-11	02-13-11
DESIGN POINT	DP #2	DP #2
WATER QUALITY REQUIRED (Ac-ft)	0.036	0.073*
WATER QUALITY PROVIDED (Ac-ft)	0.036	0.073*
WATER QUALITY METHOD	SAND FILTER	VARIOUS CREDITS**
RECHARGE REQUIRED** (Ac)	0.37	SEE SF #1
RECHARGE PROVIDED** (Ac)	0.37	SEE SF #1
RECHARGE METHOD	VARIOUS CREDITS; STONE RECHARGE	VARIOUS CREDITS; STONE RECHARGE
CHANNEL PROTECTION REQUIRED (Cov)(Ac-ft)	N/A	N/A
OVERBANK FLOOD PROTECTION (Qp)	N/A	N/A
FLOOD PROTECTION (Qp)	N/A	N/A

* SPM CREDITS REDUCED THE AMOUNT OF REQUIRED HWQ TO TREAT IN SAND FILTER. SEE TR-55* FOR SPECIFIC AMOUNTS CREDITED.
** TREATED VIA X AREA METHOD

NOTE: - STOCK PILING WILL BE PERMITTED ON THIS SITE.
- FOR INTERIM SEDIMENT CONTROL GRADING, SEE SHEET 5
- FOR WATERWAY CROSSING DETAILS SEE SHEET 8.



ENGINEER
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

3/24/10
DATE

BY THE DEVELOPER:
I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

3/26/10
DATE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
4/12/10
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
4/30/10
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
4/27/10
DATE

3/22/10
DATE

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. 25420, Expiration Date: 7/25/10.

MARK R. THAYER
P.E. 25420

DeMario
DESIGN CONSULTANTS
ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
192 East Main Street
Westminster, MD 21157
Phone: (410) 386-0560
Fax: (410) 386-0564
http://www.demariodesign.us
eMail: dcd@demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARBUTI
WHITFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897

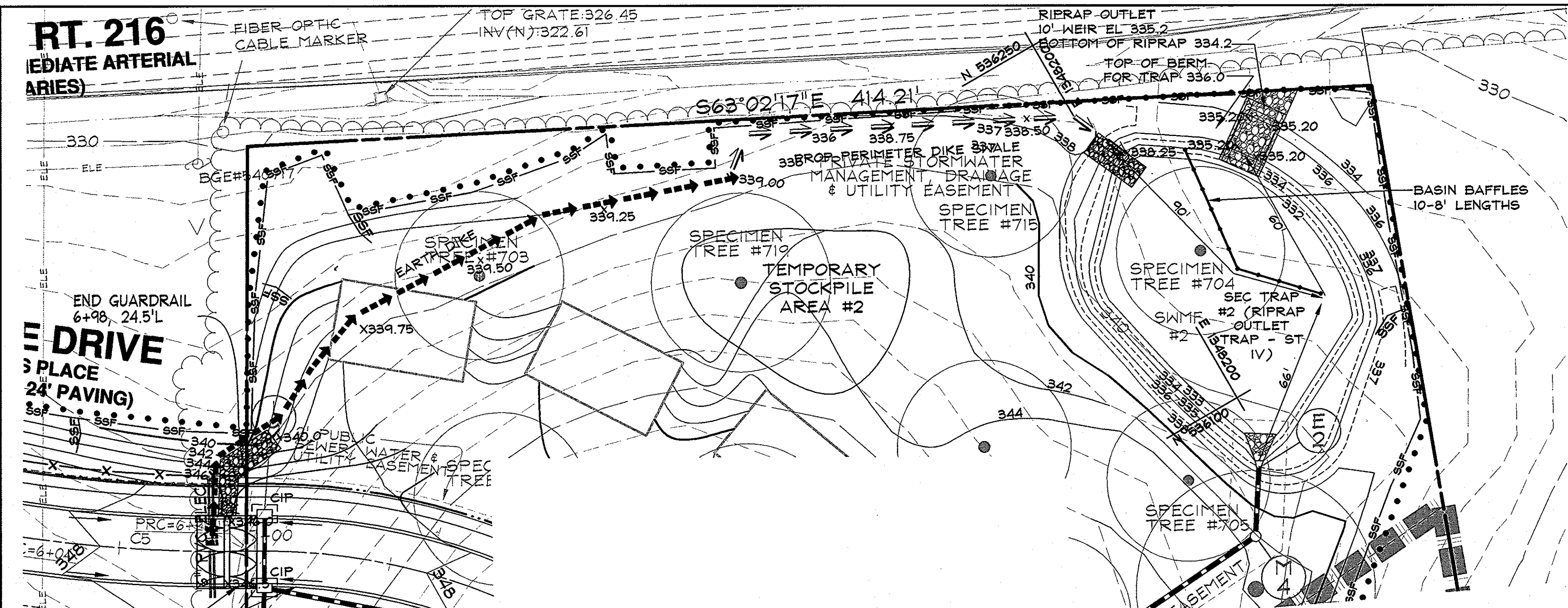
SITE ADDRESS:
LEISHAER RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
GRADING, SEDIMENT & EROSION CONTROL PLAN

6TH ELECTION DISTRICT **HOWARD COUNTY**

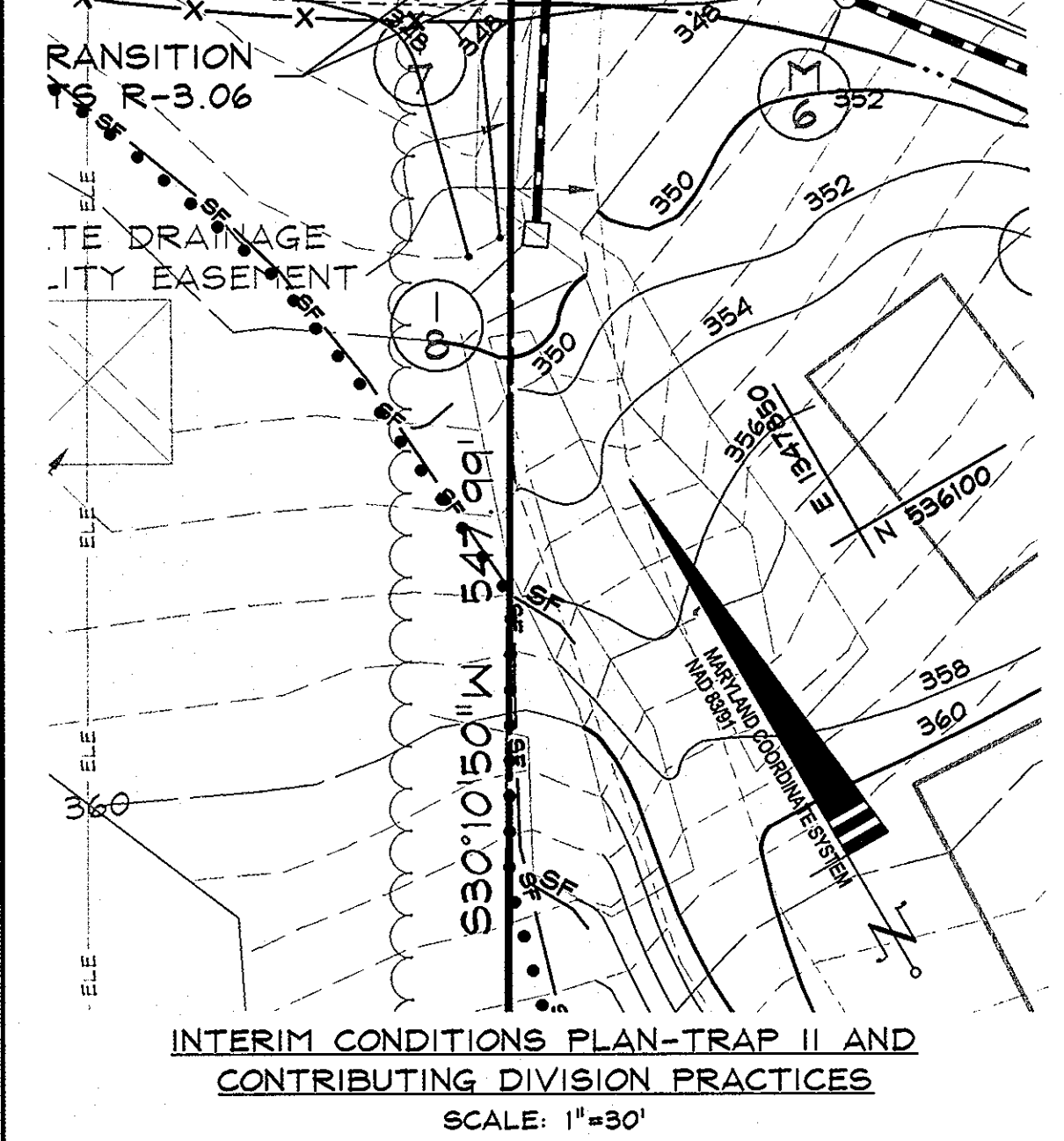
NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #	F-09-061	DES. BY:	JCO	
TAX ACC. #	06-414435	DRN. BY:	SDS/TPM	
TAX MAP:	46 & 47	CHK. BY:	JCOMRT	
BLOCK / GRID:	12 & 1	DATE:	3/22/10	
PARCEL #:	985 & P/O 2	DDC JOB#:	07106.3	
ZONE / USE:	R-20	SHEET NUMBER:		
DWG. SCALE:	AS SHOWN			

4 of 25
F-09-061

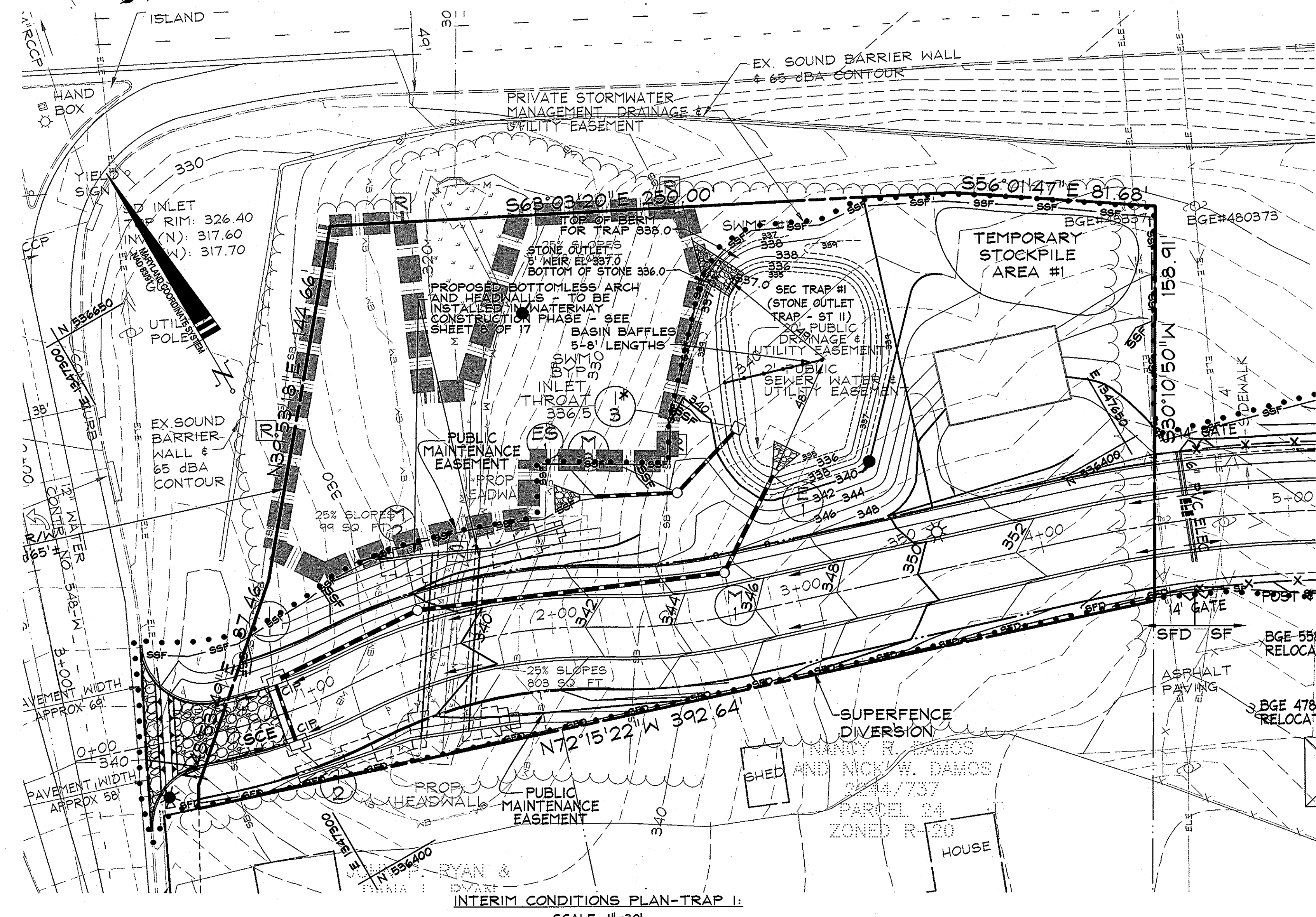
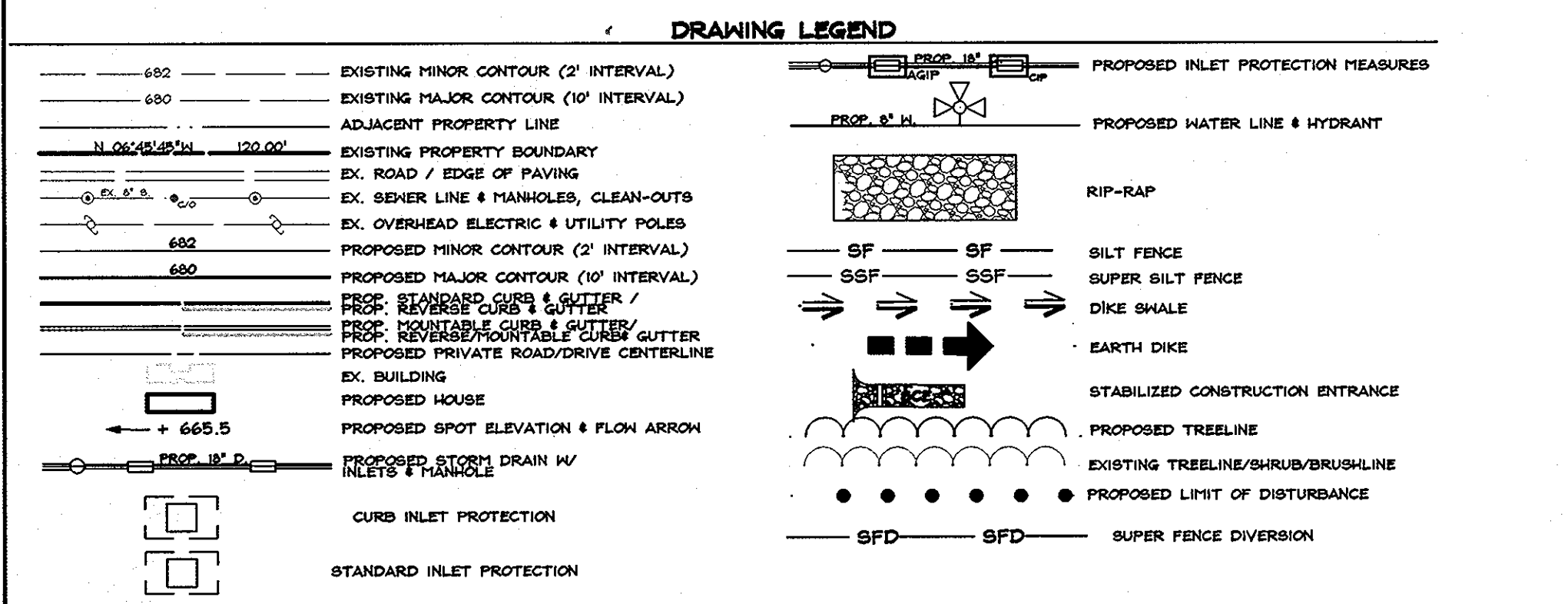


TRAP #2 TABLE		
TRAP TYPE	ST IV	
EXISTING DRAINAGE AREA: ACRES	0.77	
INTERIM DRAINAGE AREA: ACRES	6.26	
PROPOSED DRAINAGE AREA: ACRES	6.62	
STORAGE REQUIRED (CUBIC FEET):	CO	5,769
	WET	11,538
	DRY	11,538
STORAGE PROVIDED (CUBIC FEET):	CO	6,649
	WET	11,759
	DRY	12,348
TOTAL	24,107	
EXISTING GROUND ELEVATION	337.00	
TOP EMBANKMENT ELEVATION	336.00	
WEIR CREST ELEVATION	335.20	
DRY STORAGE ELEVATION	335.20	
WET STORAGE ELEVATION	333.70	
CLEANOUT ELEVATION	333.00	
BOTTOM ELEVATION	332.00	
OUTLET LENGTH	25	
OUTLET WIDTH	10	
BOTTOM DIMENSION	48x72	
TRAP SIDE SLOPES	2:1	
TRAP DEPTH	C/O	1.0
	WET	1.7
DRY	3.2	
BARREL DIAMETER	N/A	
RISER DIMENSIONS (PER SIDE)	N/A	
WET STORAGE ZONE ELEVATION	332.0-333.7	
DRY STORAGE ZONE ELEVATION	333.7-336.2	

TRAP #1 TABLE		
TRAP TYPE	ST-II	
EXISTING DRAINAGE AREA: ACRES	0.44	
INTERIM DRAINAGE AREA: ACRES	0.30	
PROPOSED DRAINAGE AREA: ACRES	1.02	
STORAGE REQUIRED (CUBIC FEET):	CO	918
	WET	1,836
	DRY	1,836
STORAGE PROVIDED (CUBIC FEET):	CO	1,880
	WET	3,912
	DRY	9,375
TOTAL	19,197	
EXISTING GROUND ELEVATION	340.00	
TOP EMBANKMENT ELEVATION	339.00	
WEIR CREST ELEVATION	337.00	
DRY STORAGE ELEVATION	337.00	
WET STORAGE ELEVATION	336.00	
CLEANOUT ELEVATION	335.50	
BOTTOM ELEVATION	335.00	
DEPTH OF CHANNEL (C)	N/A	
OUTLET WIDTH (B)	N/A	
BOTTOM DIMENSION	75x50	
TRAP SIDE SLOPES	2:1	
TRAP DEPTH	C/O	0.5
	WET	1.0
DRY	2.0	
BARREL DIAMETER	N/A	
RISER DIMENSIONS (PER SIDE)	N/A	
WET STORAGE ZONE ELEVATION	336.0-336.0	
DRY STORAGE ZONE ELEVATION	336.0-337.0	



NOTES:
 -STOCK PILING WILL BE PERMITTED ON THIS SITE.
 -BEFORE ANY WORK IS TO BE DONE EAST OF MILKSHAKE DRIVE STA. 2+75, THE STREAM CROSSING SHALL BE ESTABLISHED. SEE SHEET B FOR WATERWAY CROSSING PLAN AND DETAILS.



INTERIM CONDITIONS PLAN-TRAP I: SCALE: 1"=30'

ENGINEER: [Signature] 3/29/10 DATE

BY THE DEVELOPER: [Signature] 3/26/10 DATE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. DATE: 4/12/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE: 5/3/10

APPROVED: [Signature] DATE: 4/12/10

Professional Certification: [Signature] DATE: 3/22/10

DATA SOURCES:
 BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WETLANDS SHOWN PER S-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.

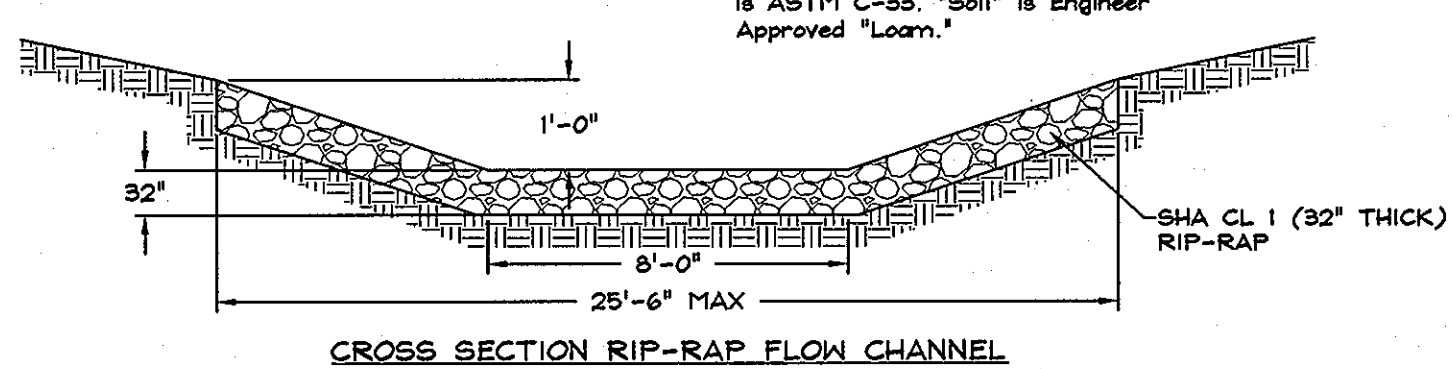
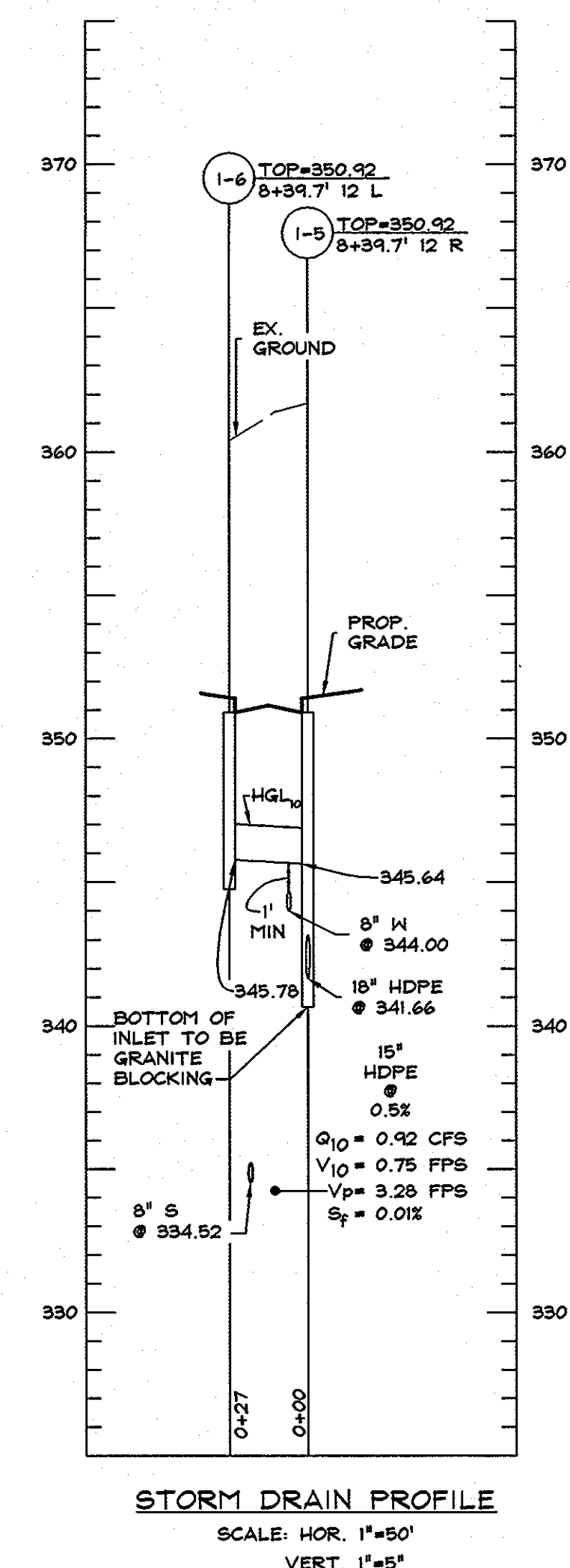
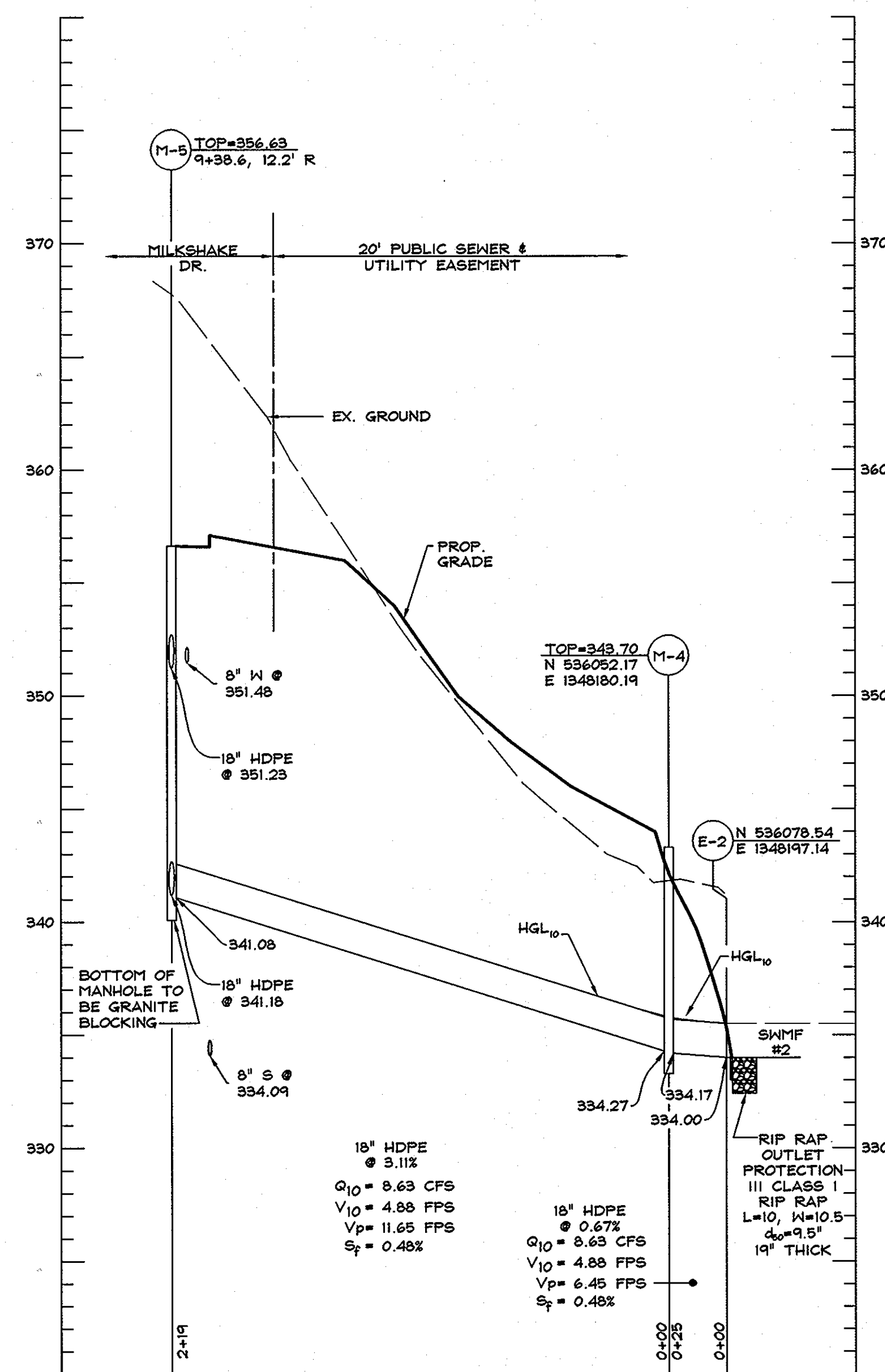
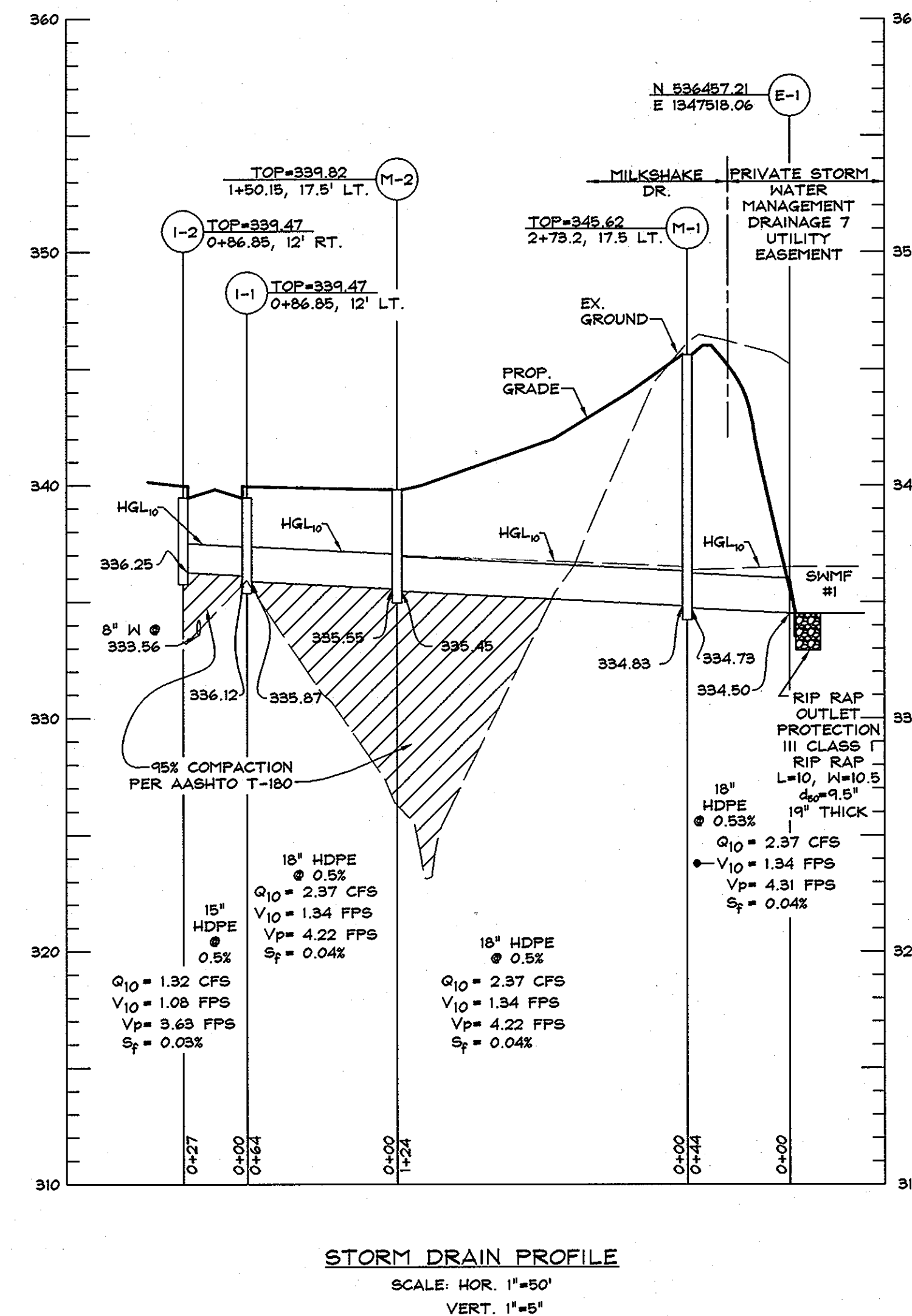
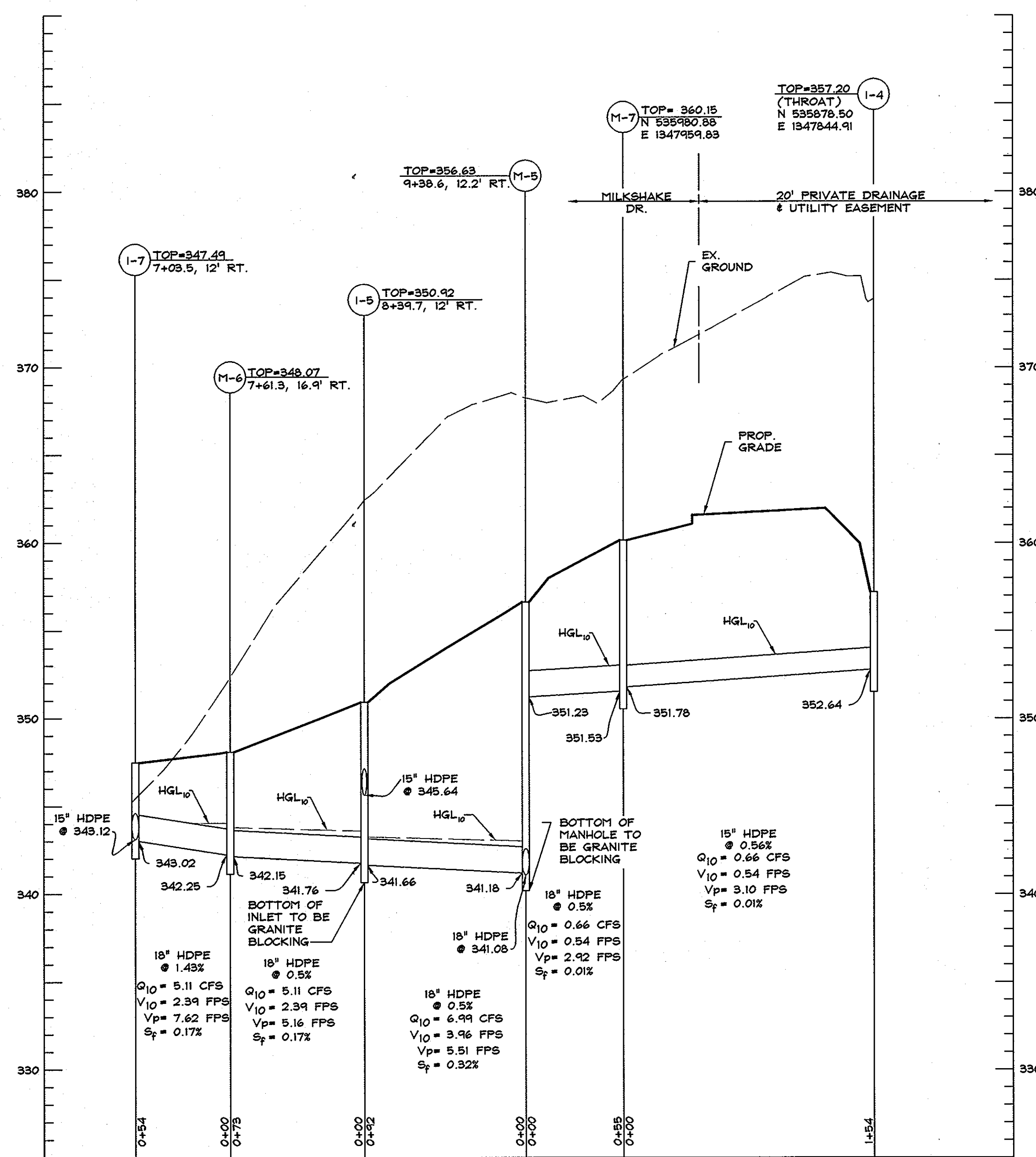
DeMario
 DESIGN CONSULTANTS
 ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
 192 East Main Street Westminister, MD 21157
 Phone: (410) 386-0660 Fax: (410) 386-0564
 http://www.demariodesign.us eMail: ddc@demariodesign.us

OWNER/DEVELOPER:
 MD & VA MILK PRODUCERS ASSN. INC.
 C/O THOMAS BARBUTI
 WHITEFORD, TAYLOR & PRESTON LLP
 7 ST. PAUL STREET BALTIMORE, MD 21202
 410-931-7897

SITE ADDRESS:
 LEISHEAR RD @ MD RTE. 216
 LAUREL, MD 20723

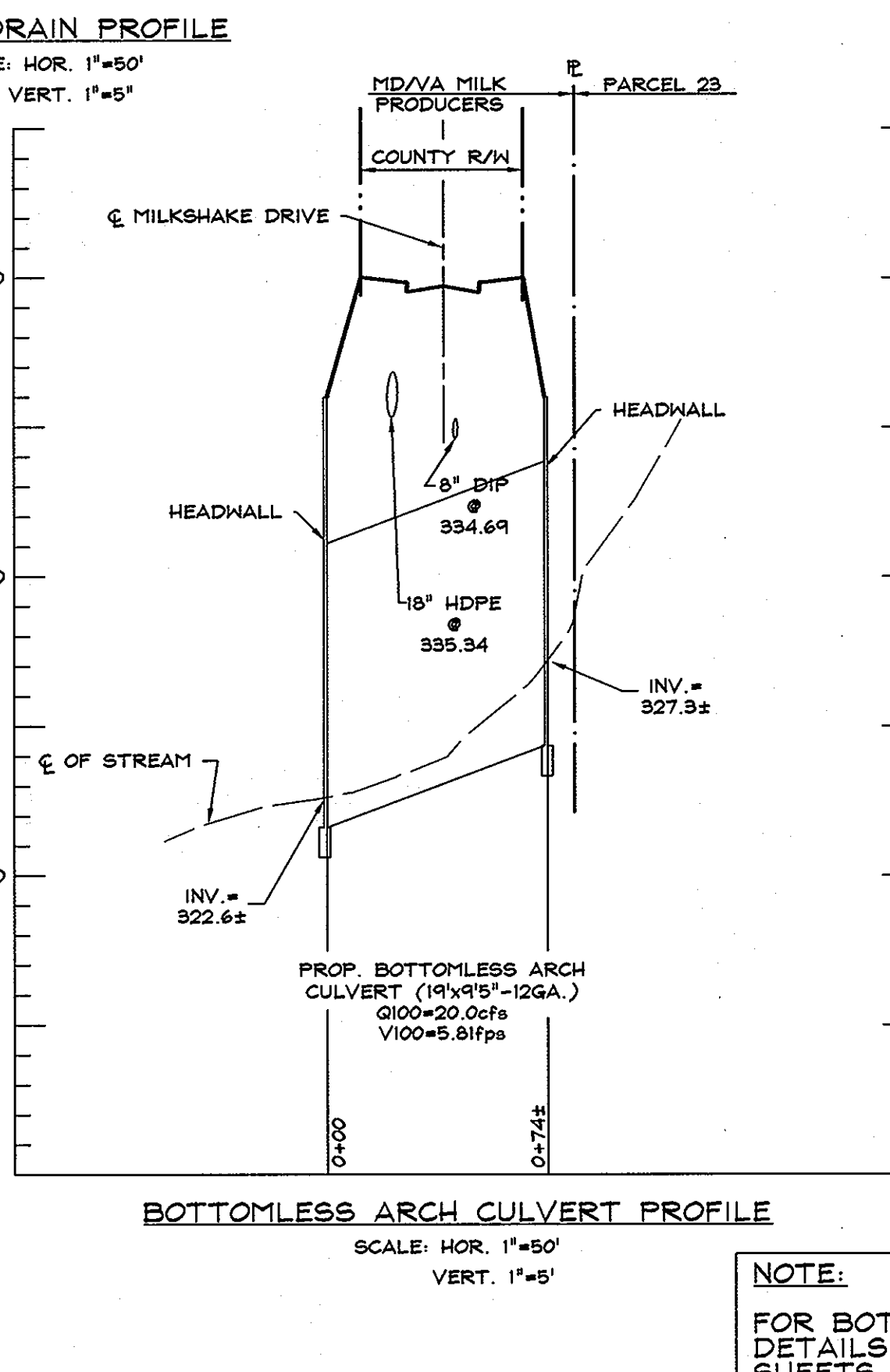
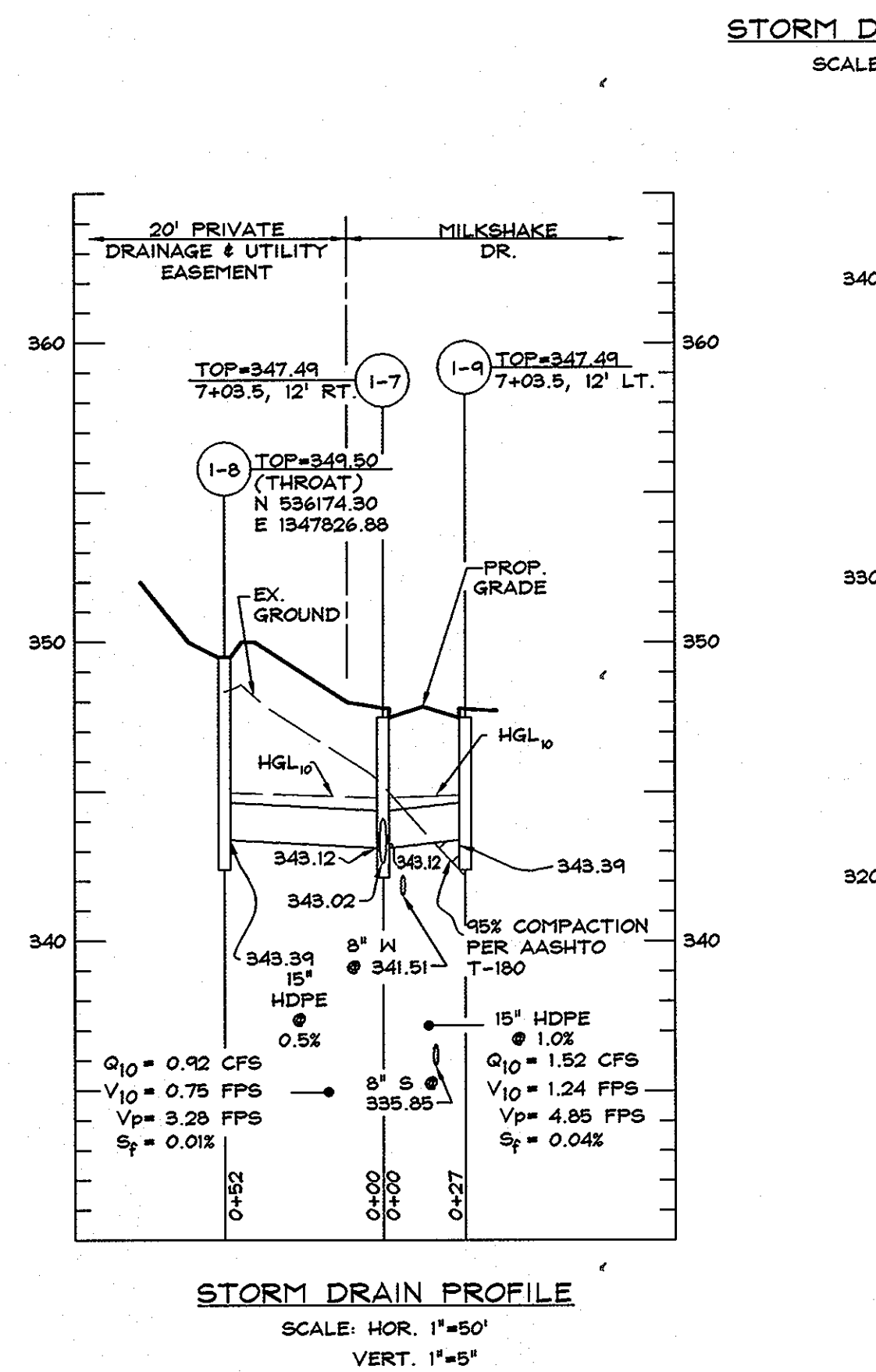
MD & VA MILK PRODUCERS SOUTH
 GRADING, SEDIMENT & EROSION CONTROL PLAN
 INTERIM CONDITIONS

6TH ELECTION DISTRICT		HOWARD COUNTY	
NO.	DESCRIPTION OF CHANGES	DRN.	REV. DATE
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BLOCK / GRID:	12 & 1	DATE:	3/22/10
PARCEL #:	985 & P/O 2	DDC JOB#:	07106.3
ZONE / USE:	R-20	SHEET NUMBER:	
DWG. SCALE:	AS SHOWN		5 of 25



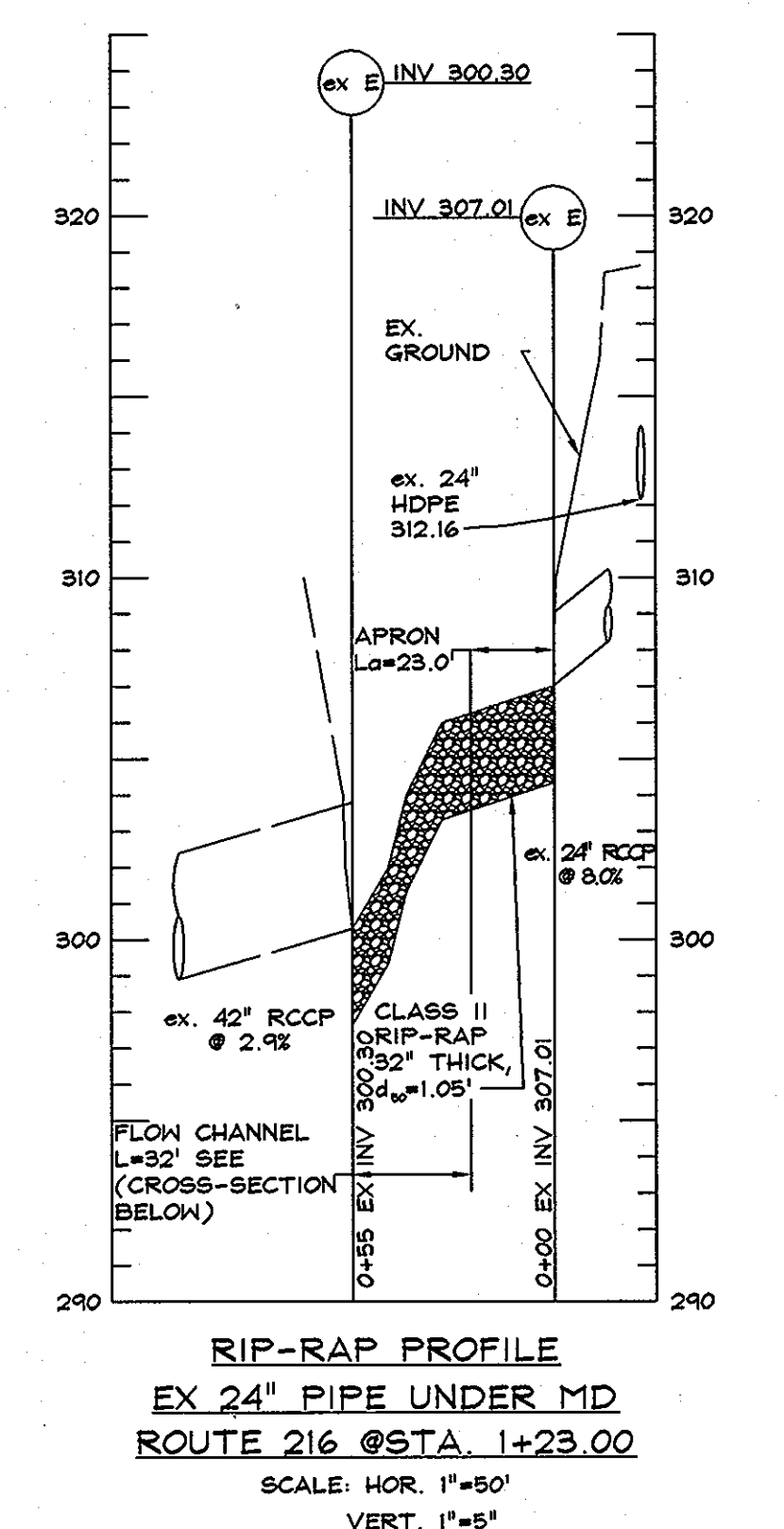
STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	DETAIL	INV. IN	INV. OUT	TOP	LOCATION
M-1	STANDARD PRECAST MANHOLE	G-5.12	334.83	334.73	345.62	2+73.2, 17.5' LT.
M-2	STANDARD PRECAST MANHOLE	G-5.12	335.55	335.45	339.82	1+50.15, 17.5' LT.
M-3	STANDARD PRECAST MANHOLE	G-5.12	331.38	331.28	343.34	N 536472.37 E 1347844.23
M-4	STANDARD PRECAST MANHOLE	G-5.12	332.98	332.88	343.30	N 536052.17 E 1348180.19
M-5	STANDARD PRECAST MANHOLE	G-5.12	351.23/341.18	341.08	356.63	9+38.6, 12.2' RT.
M-6	STANDARD PRECAST MANHOLE	G-5.12	342.25	342.15	348.07	7+61.3, 16.9' RT.
M-7	STANDARD PRECAST MANHOLE	G-5.12	351.78	351.53	360.15	N 535980.88 E 1347959.83
E-1	TYPE-C END WALL	D-5.21	334.50	334.50	336.75	N 536489.16 E 1347521.00
E-2	TYPE-C END WALL	D-5.21	334.00	334.00	336.25	N 536073.49 E 1348193.84
E-3	TYPE-C END WALL	D-5.21	329.63	-	339.50	N 536440.52 E 1347398.67
ES-1	CONCRETE END SECTION	D-5.51	331.12	-	-	N 536495.58 E 1347439.23
I-1	PRECAST A-10	D-4.03	336.12	335.87	339.47	0+86.85, 12' LT
I-2	PRECAST A-10	D-4.03	N/A	336.25	339.47	0+86.85, 12' RT
I-3	TYPE-D INLET	D-4.10	332.19	330.54	335.50	N 536482.86 E 13477518.24
I-4	OPEN END GRATE-DOUBLE OPENING	D-4.36	N/A	352.64	357.20	N 535878.50 E 1347844.91
I-5	PRECAST A-10	D-4.03	345.64/341.78	341.66	350.92	8+39.7, 12' RT
I-6	PRECAST A-10	D-4.03	N/A	345.78	350.92	8+39.7, 12' LT
I-7	PRECAST A-10	D-4.03	343.12/343.12	343.02	347.49	7+03.5, 12' RT
I-8	OPEN END GRATE-DOUBLE OPENING	D-4.36	N/A	343.39	348.50	N 536174.30 E 1347826.88
I-9	PRECAST A-10	D-4.03	N/A	343.39	347.49	7+03.5, 12' LT



FOR PROFILE OF I-3 TO ES-1 SEE SWM PROFILES SHEET 11 OF 25

NOTE:
FOR BOTTOMLESS ARCH CULVERT DETAILS AND SPECIFICATIONS, SEE SHEETS 18 OF 25 THRU 25 OF 25.



PIPE SCHEDULE

TYPE	LENGTH
15" HDPE	287'
18" HDPE	750'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. DATE: 4-12-10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE: 5/3/10

APPROVED: CHIEF, DEVELOPMENT ENGINEERS DIVISION. DATE: 4/7/10

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. 25420, Expiration Date: 7-23-10.

MARK R. THAYER, P.E. 25420

DATA SOURCES:
BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WETLANDS SHOWN PER 3-65-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2006.

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MD & VA MILK PRODUCERS SOUTH STORM DRAIN PROFILES

6TH ELECTION DISTRICT HOWARD COUNTY

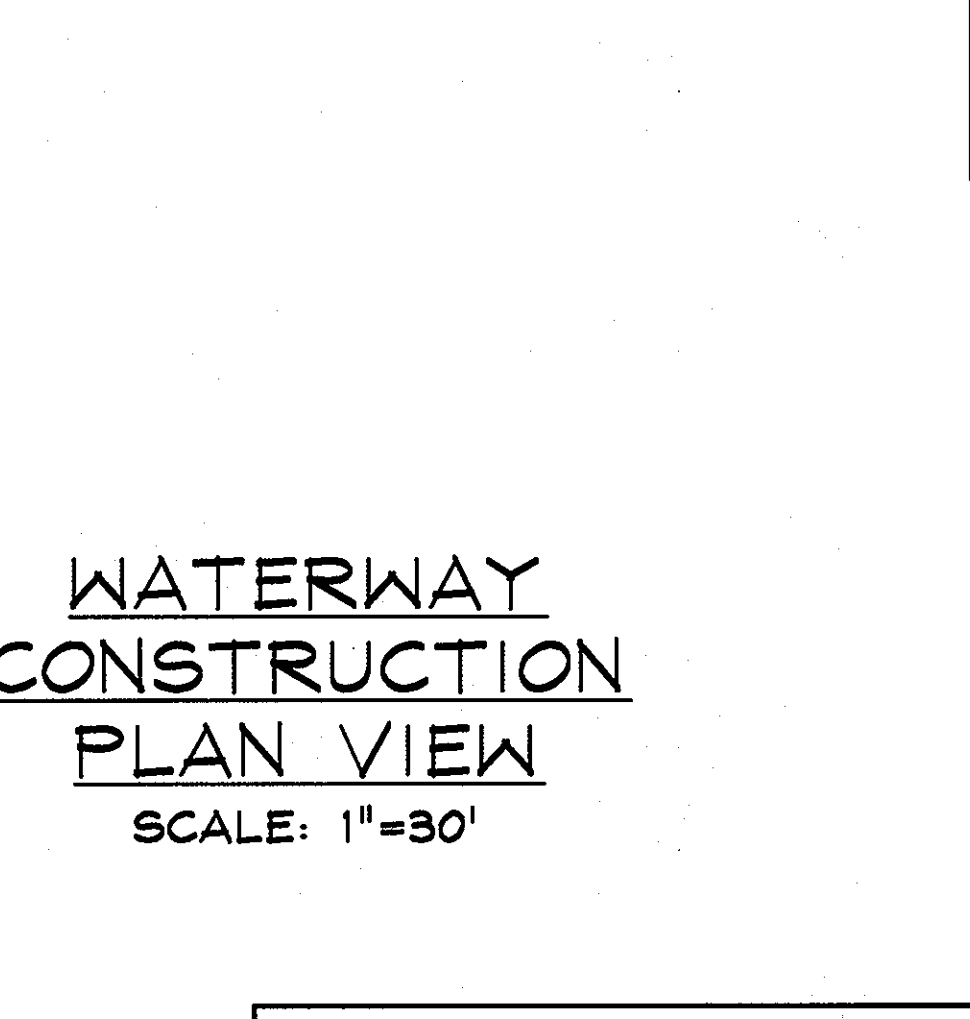
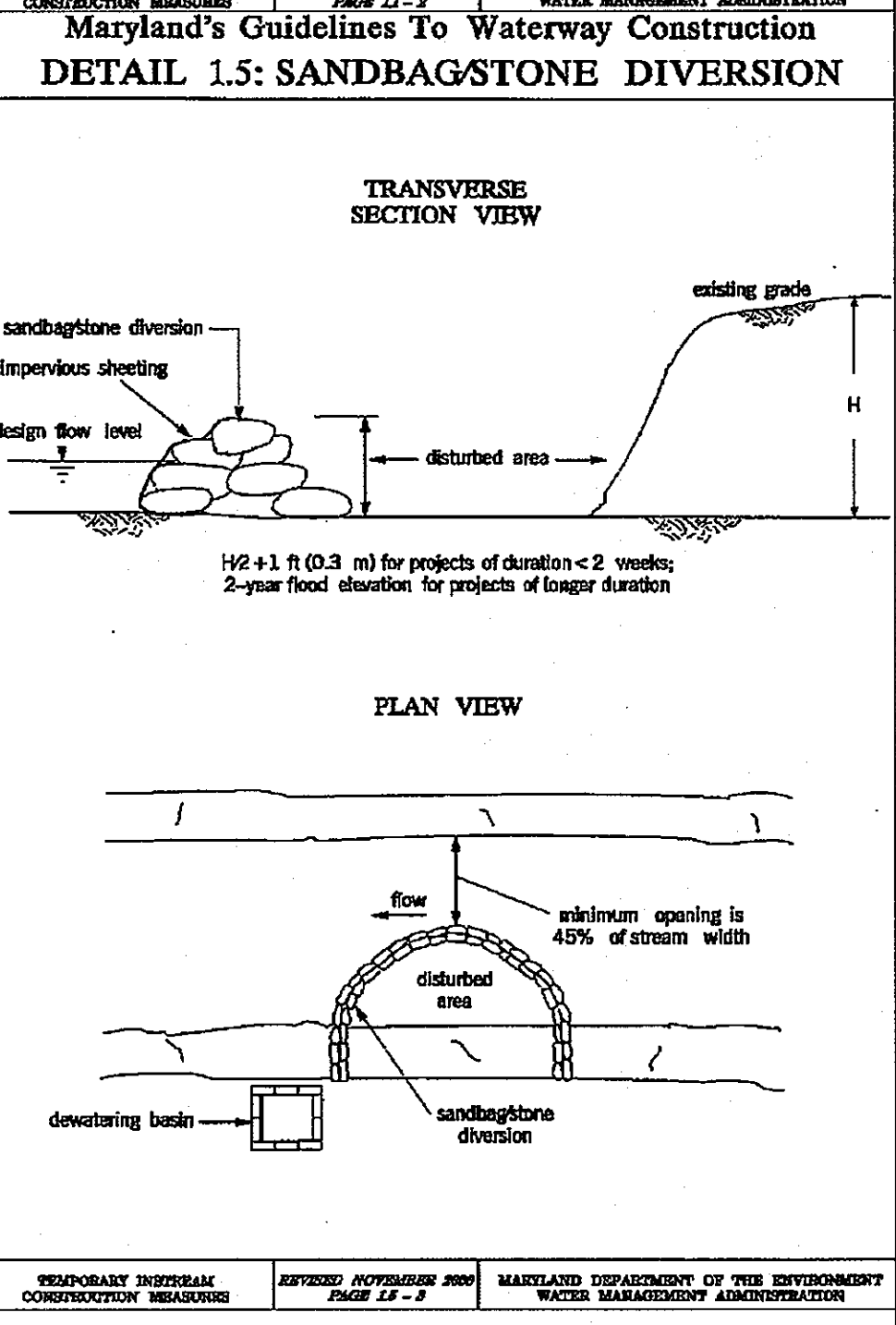
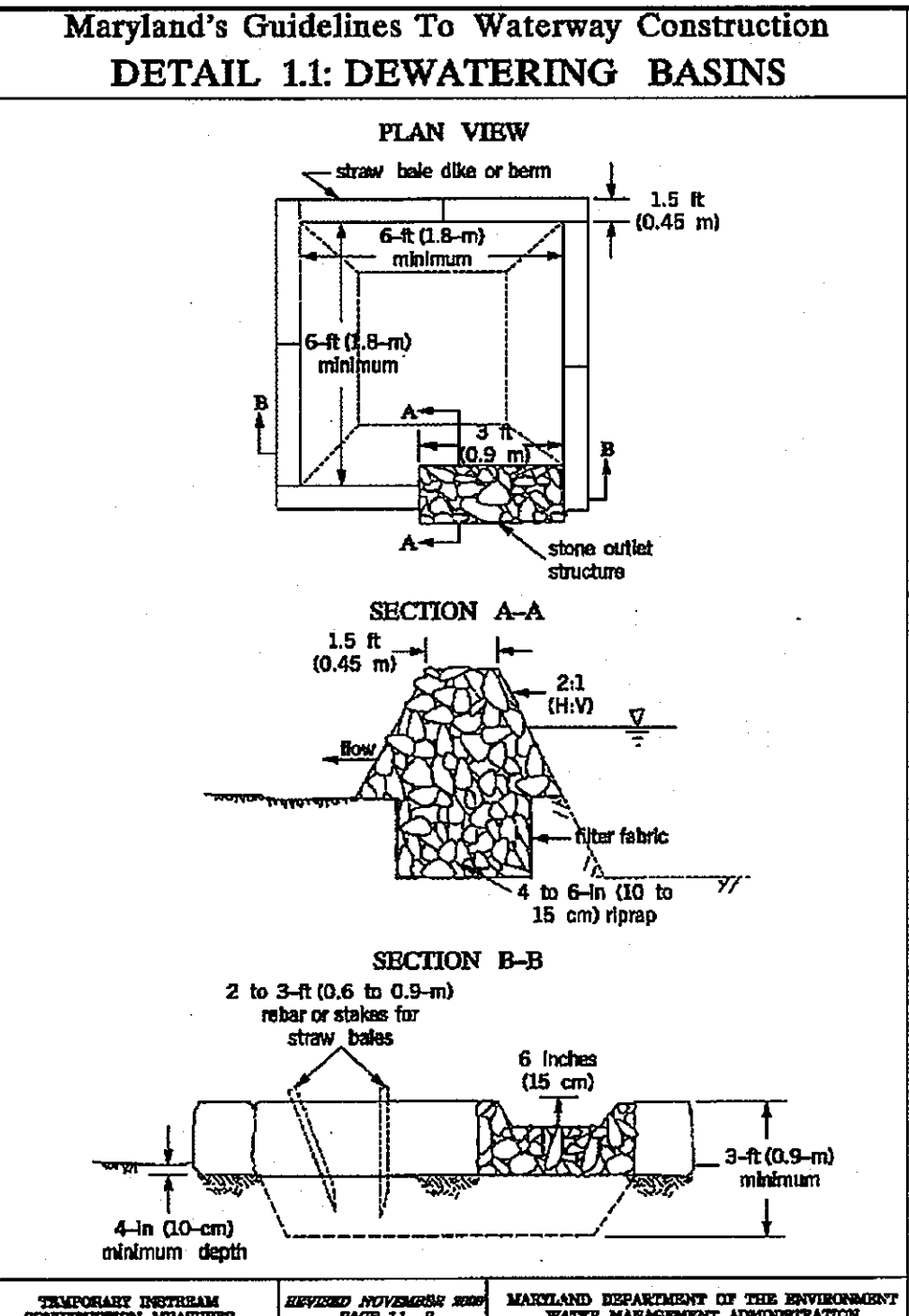
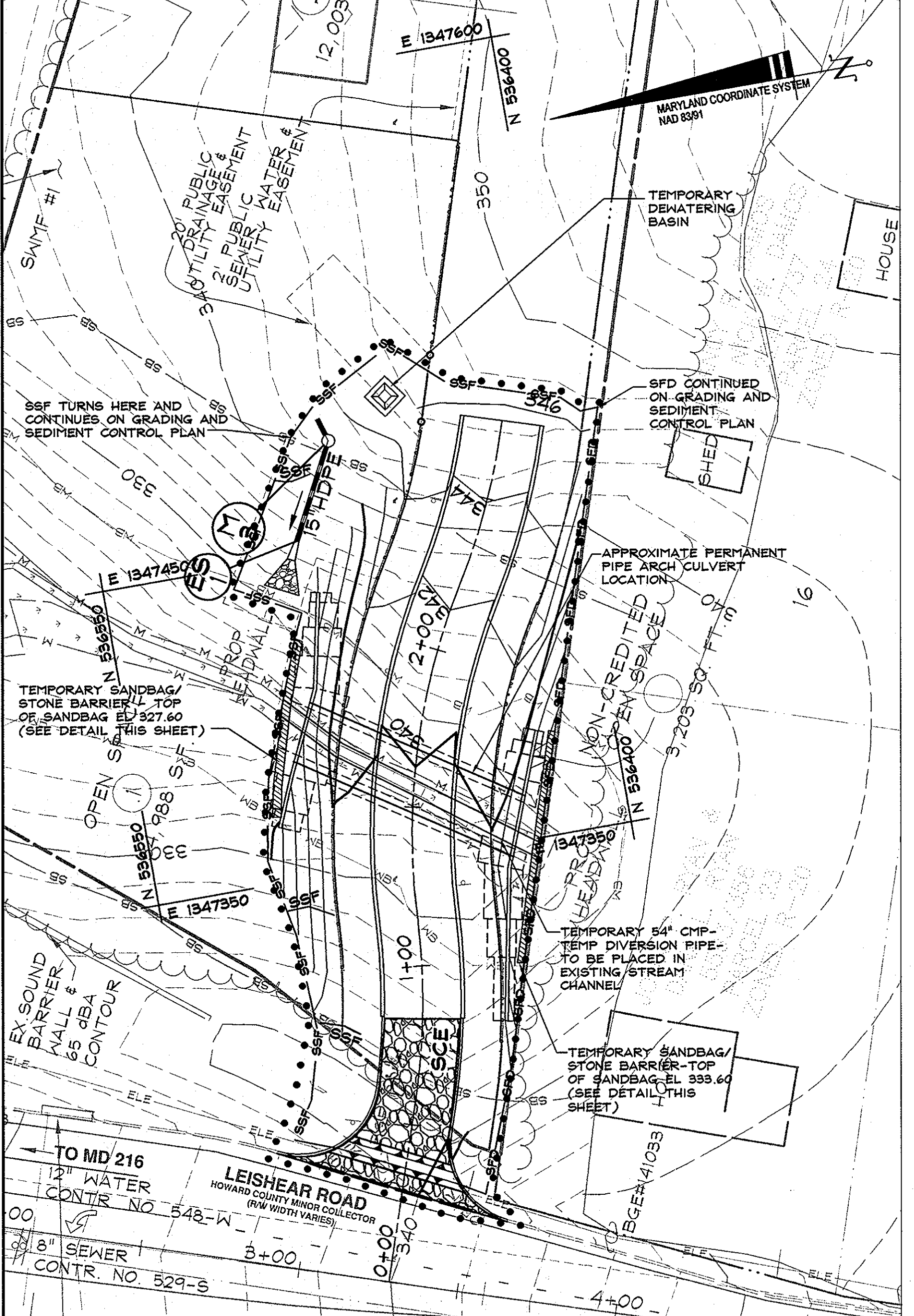
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DWG. SCALE:	AS SHOWN			

6 of 25
F-09-061

- SEQUENCE OF CONSTRUCTION FOR WATERWAY CONSTRUCTION PHASE**
- 1) NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSING AND PERMITS (410) 313-2255, AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
 - 2) NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, INSPECTION AND COMPLIANCE DIVISION (410) 537-5310 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
 - 3) INSTALL STABILIZED CONSTRUCTION ENTRANCE (SEE PLAN AND SEC DETAIL SHEET).
 - 4) WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB PROPOSED WILKINSON DRIVE UP TO STA 1+50 AND STABILIZE.
 - 5) INSTALL DEWATERING BASIN AND ESTABLISH PUMP-OUT APPARATUS.
 - 6) PLACE THE DIVERSION PIPE.
 - 7) INSTALL BOTH BARRIERS, WITH THE UPSTREAM ONE BEING CONSTRUCTED FIRST. THE UPSTREAM BARRIER SHALL CONSIST OF A FORD BETWEEN IT AND ROAD CENTERLINE FOR TEMPORARY ACCESS (SEE "TEMPORARY ACCESS CULVERT" DETAIL # SPECIFICATIONS). SEE "STREAM CROSSING NOTE" ON PLAN FOR TIME FRAME.
 - 8) WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, INSTALL SUPER-SPAN PIPE ARCH, RETAINING WALLS AND BACKFILL.
 - a. BEGIN INSTALLING RETAINING WALLS AND ROAD BETWEEN PERMANENT PIPE ARCH AND STATION 2+75.
 - b. INSTALL PIPE ARCH FOOTINGS AND ARCH ITSELF. THE UPSTREAM TEMPORARY BARRIER SHALL REMAIN INTACT AND FUNCTIONAL. FILL USED TO CONSTRUCT ACCESS FORD SHALL BE REMOVED BACK TO EXISTING GRADE BETWEEN ARCH FOOTINGS.
 - c. CONSTRUCT RETAINING WALLS AND ARCH AT THE PIPE ARCH. THE FILL IS ALWAYS THE SAME ELEVATION ON BOTH SIDES OF ARCH AT ANY GIVEN TIME DURING FILL OPERATION.
 - d. ONCE PIPE ARCH, RETAINING WALLS AND ROAD ARE FULLY INSTALLED UP TO STATION 2+75, STABILIZE ALL DISTURBED AREAS.
 - 9) DEWATER THE AREA BETWEEN BARRIERS AND MUCK OUT ANY SEDIMENT.
 - 10) CONTACT THE SEDIMENT CONTROL INSPECTOR TO INSPECT THE STREAM DIVERSION AREA.
 - 11) ONCE THE INSPECTOR HAS GIVEN APPROVAL TO DO SO, REMOVE THE STREAM DIVERSION. REMOVE THE UPSTREAM BARRIER AND DEWATERING BASIN, IN THAT ORDER. STABILIZE ALL DISTURBED AREAS IMMEDIATELY.
 - 12) SET THE SFT FENCE TO THE EAST ENDS OF THE RETAINING WALLS AND CONTINUE WITH CONSTRUCTION OF THE REMAINDER OF THE SITE, INCLUDING ASSOCIATED SEDIMENT AND EROSION CONTROL FEATURES.

DISTURBED AREA:
19,502.71 sq-ft
0.45 Ac

STREAM CROSSING NOTE:
THE STREAM DIVERSION SHALL TAKE NO LONGER THAN TWO MONTHS BETWEEN INSTALLATION AND REMOVAL.



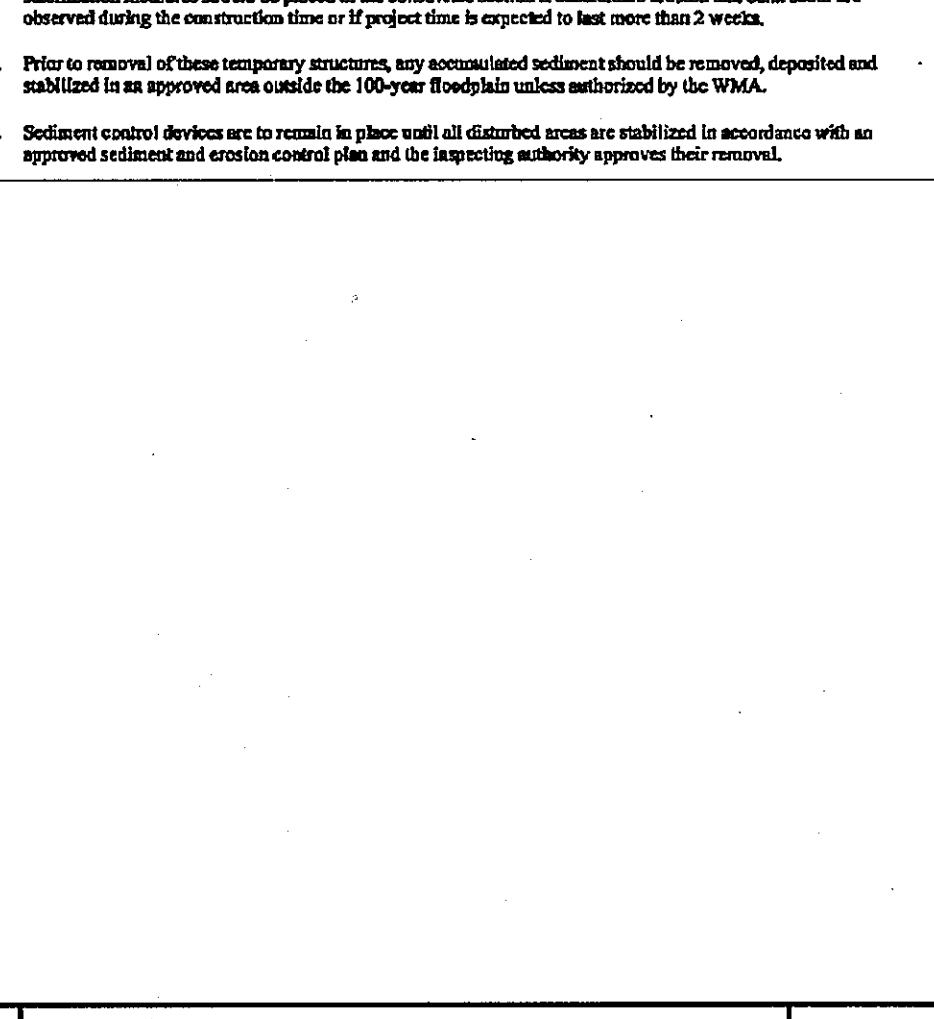
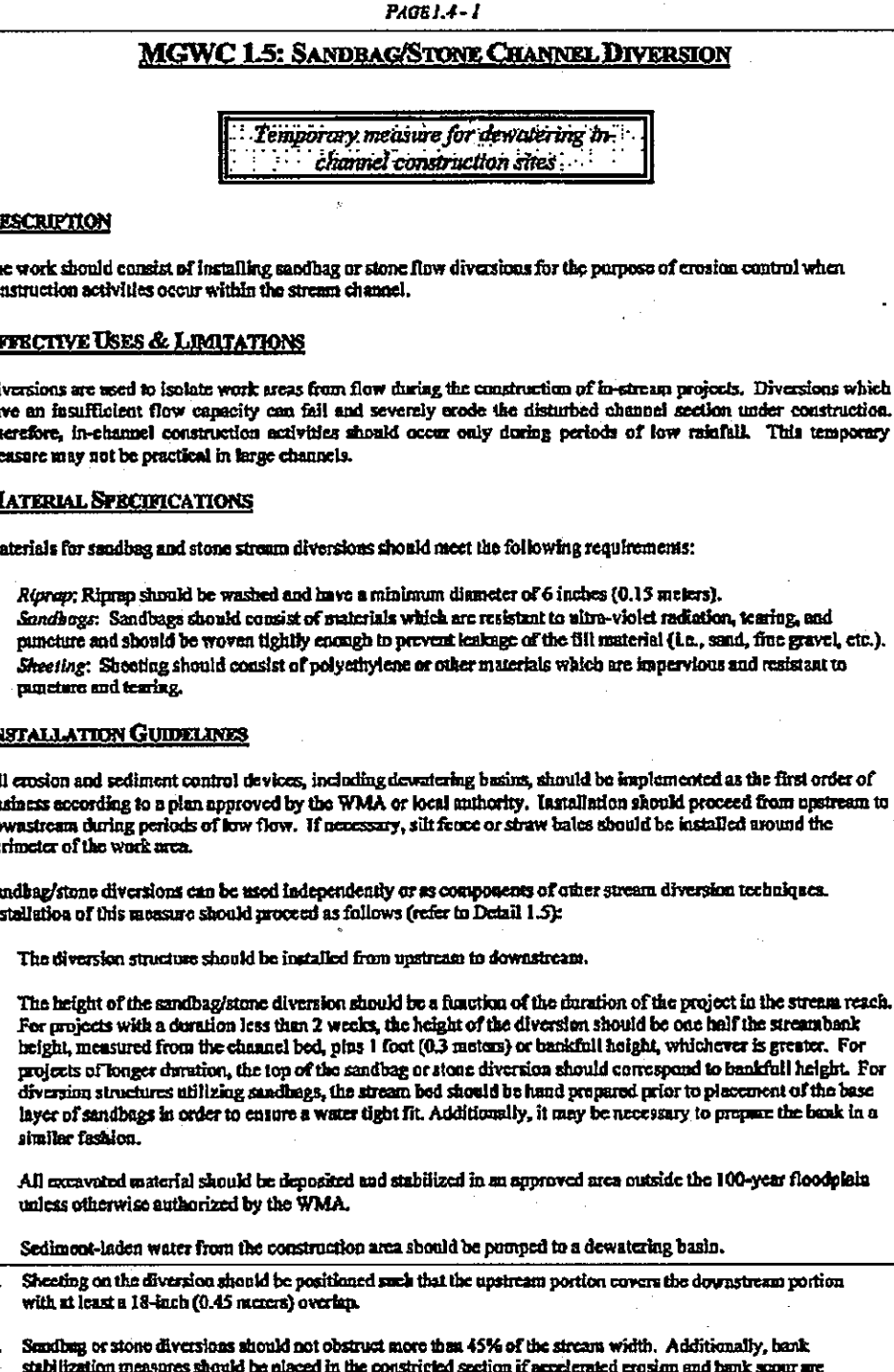
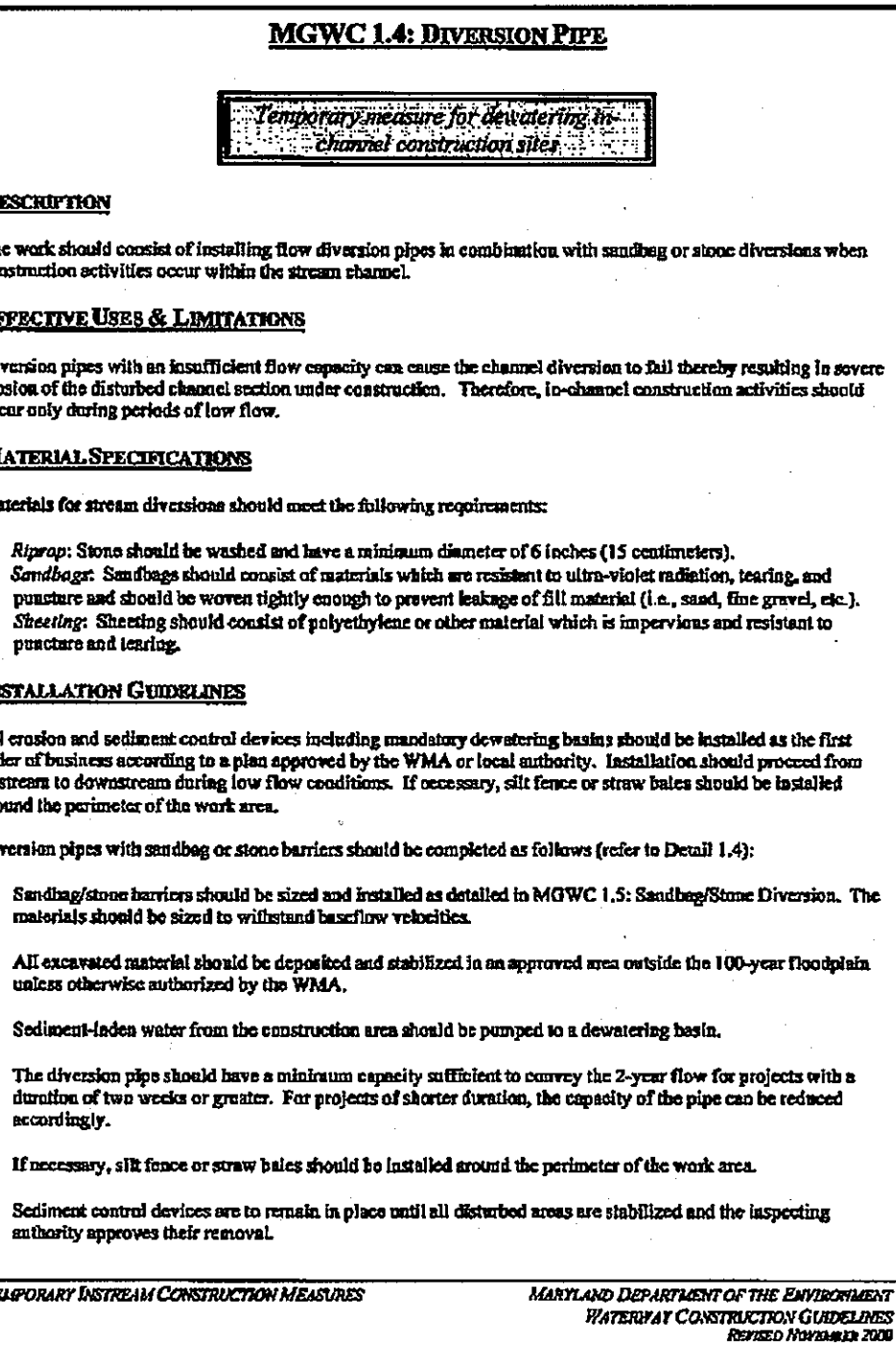
ENGINEER:
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE DEVELOPER:
I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
DATE: 4/22/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
DATE: 5/13/10

APPROVED: HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL AND ZONING.
DATE: 4/22/10



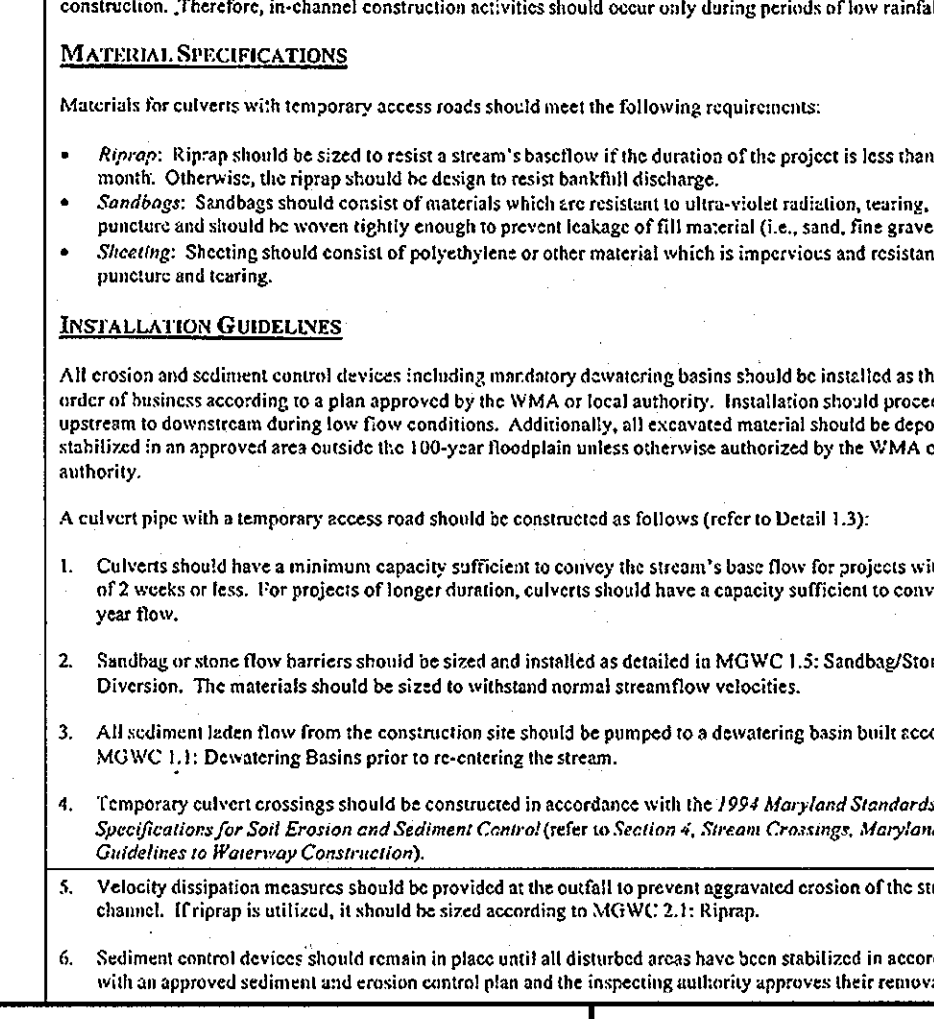
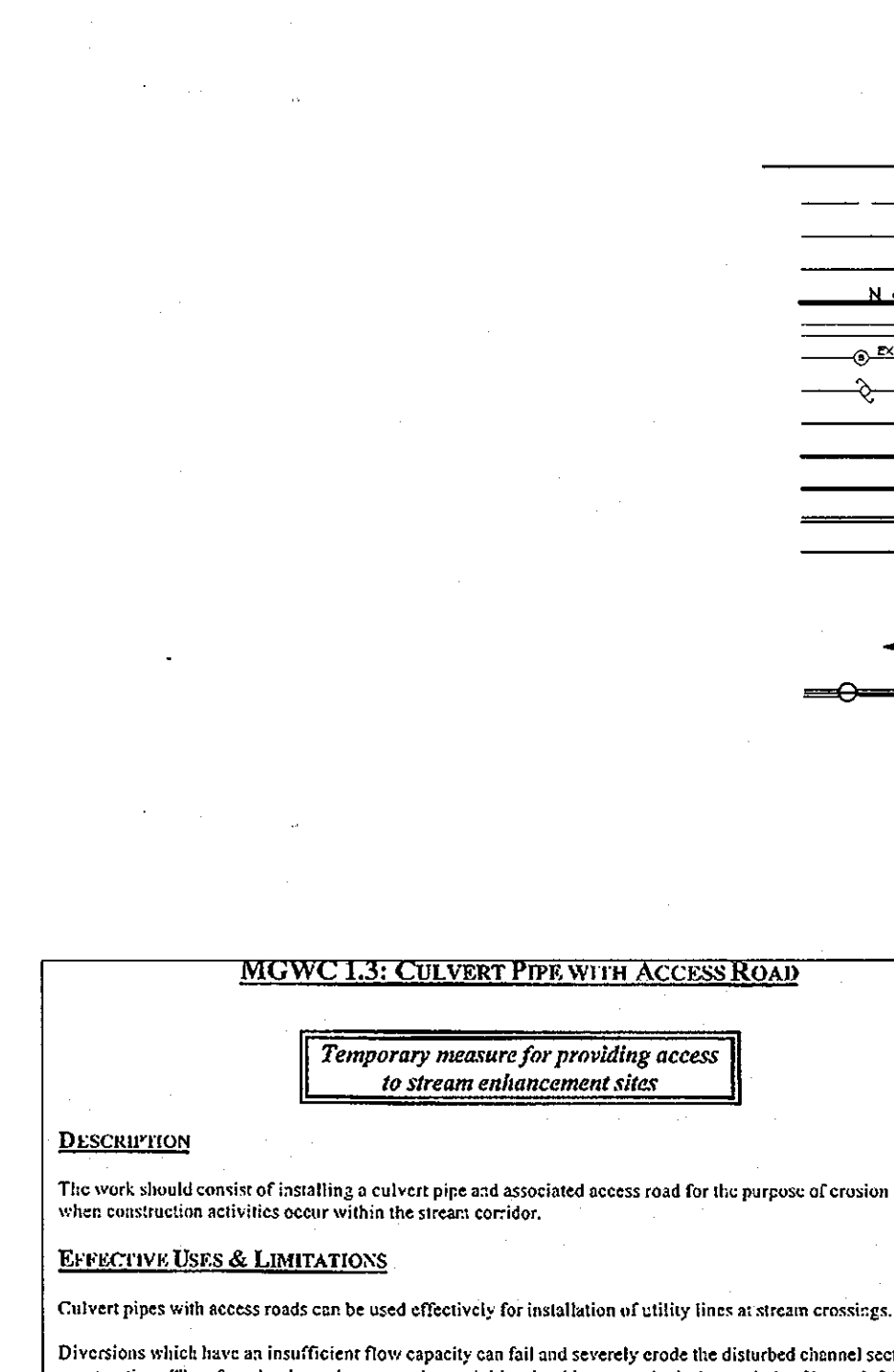
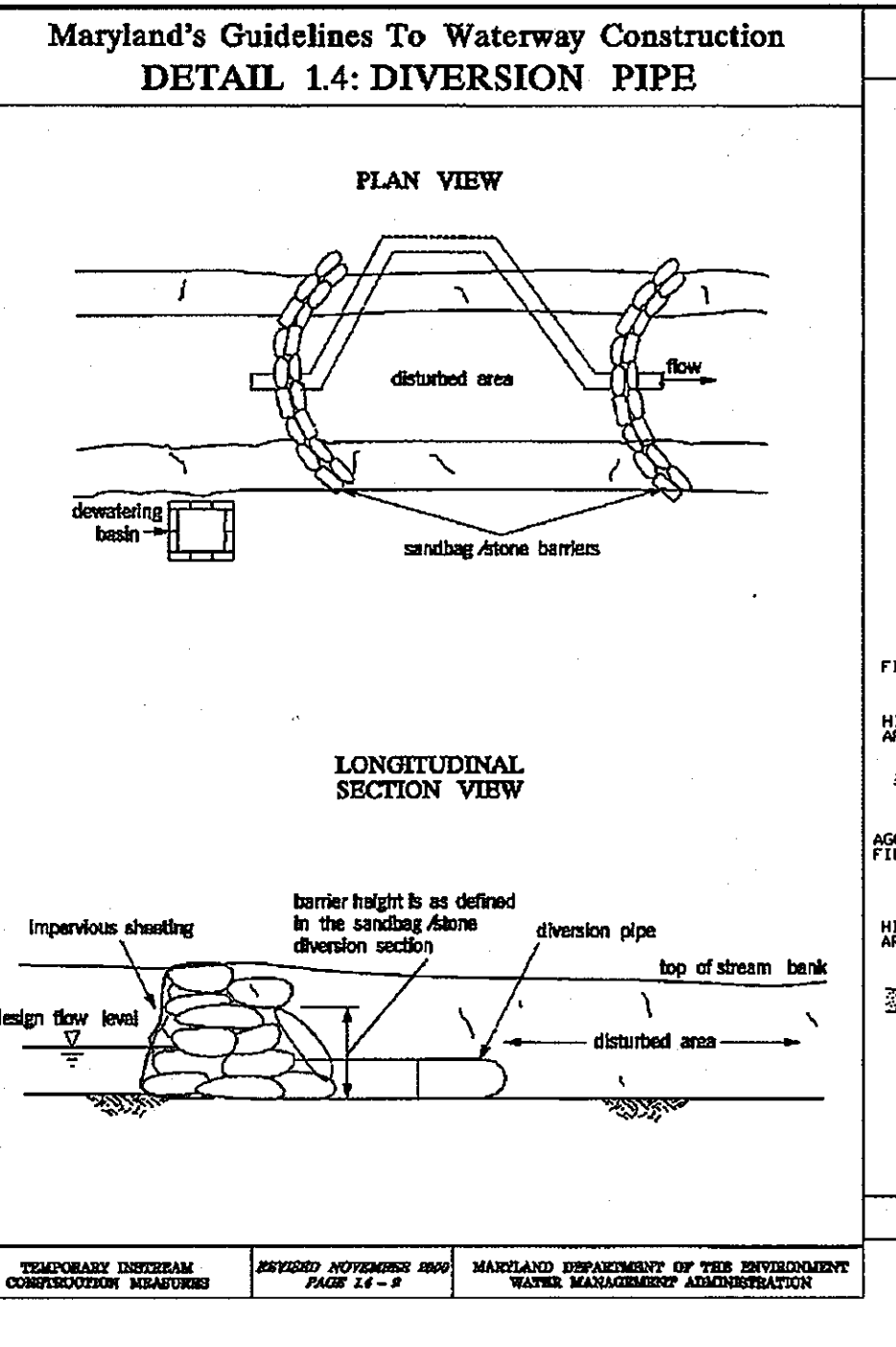
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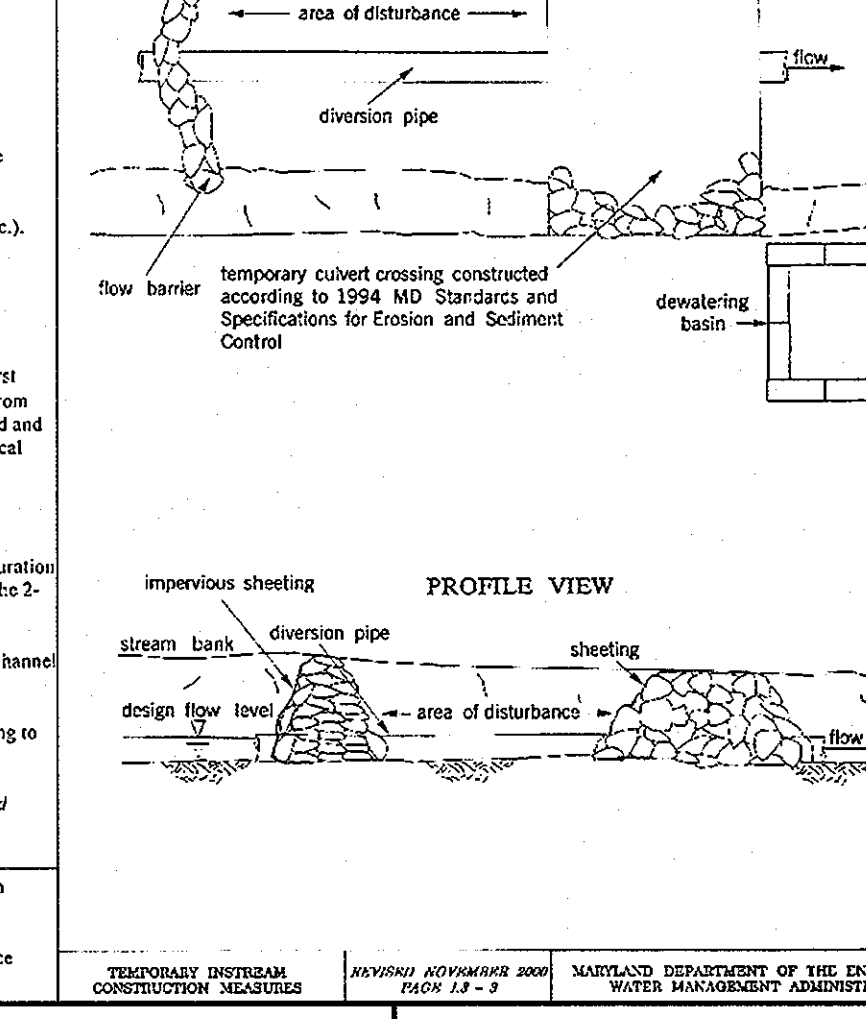
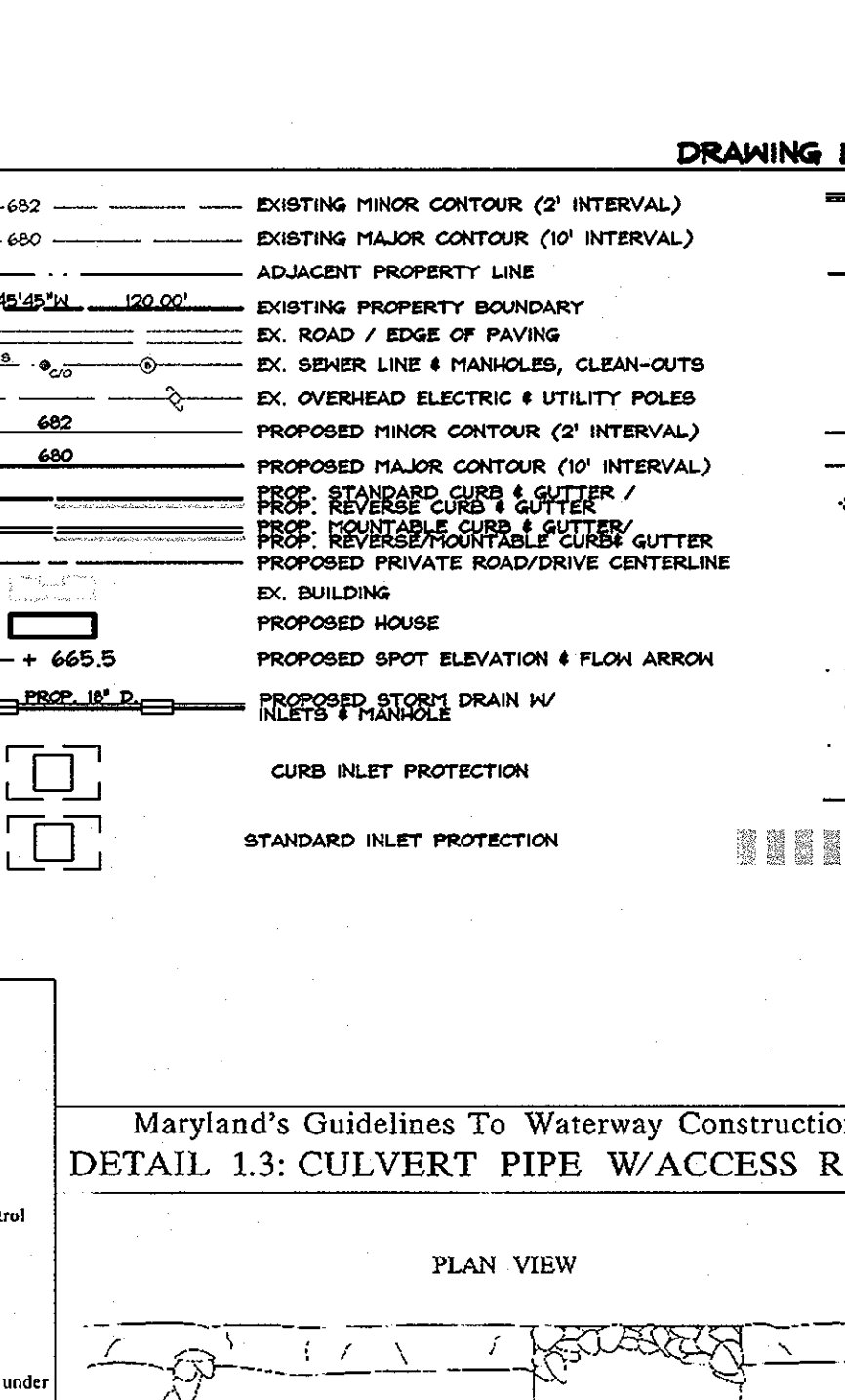
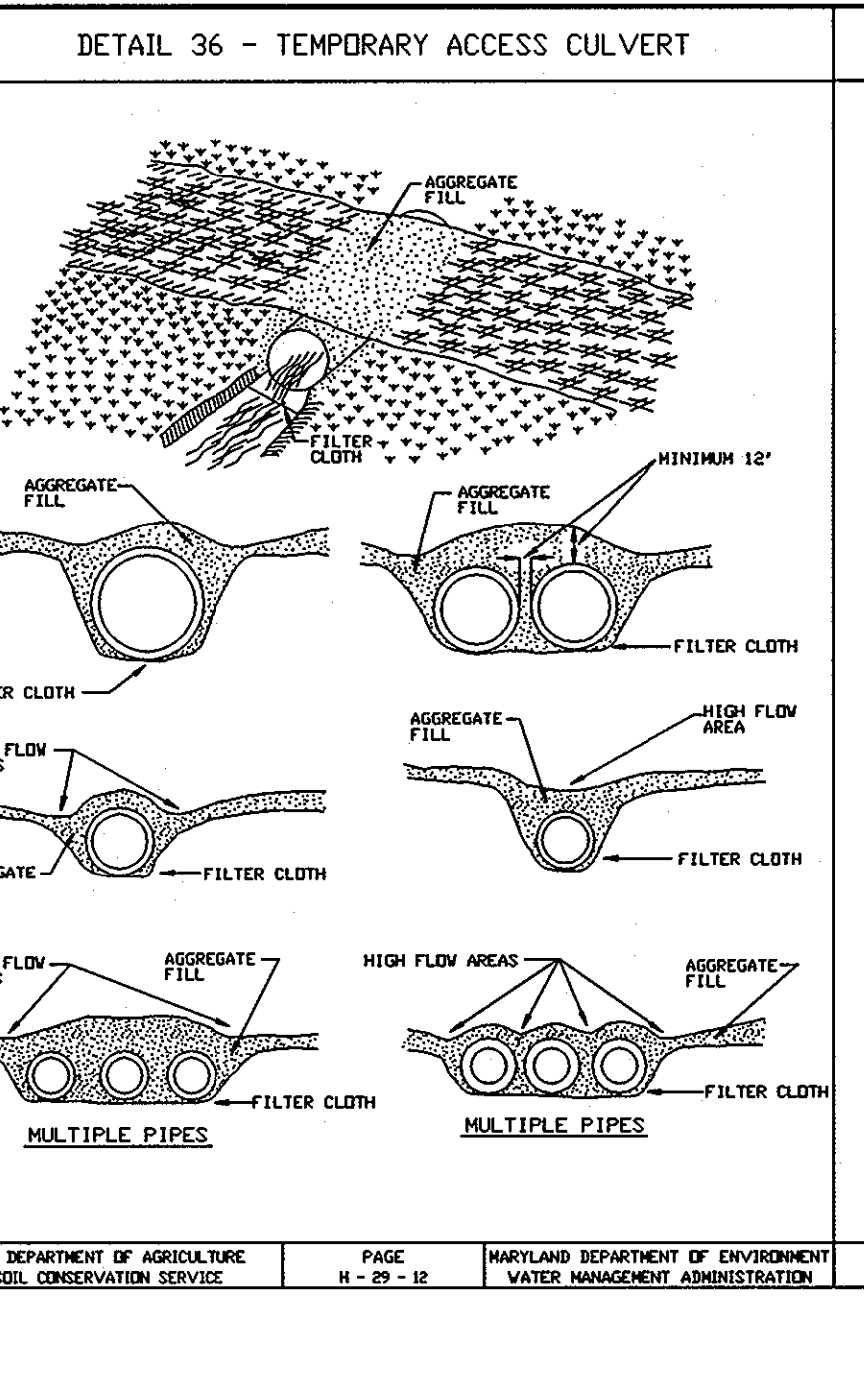
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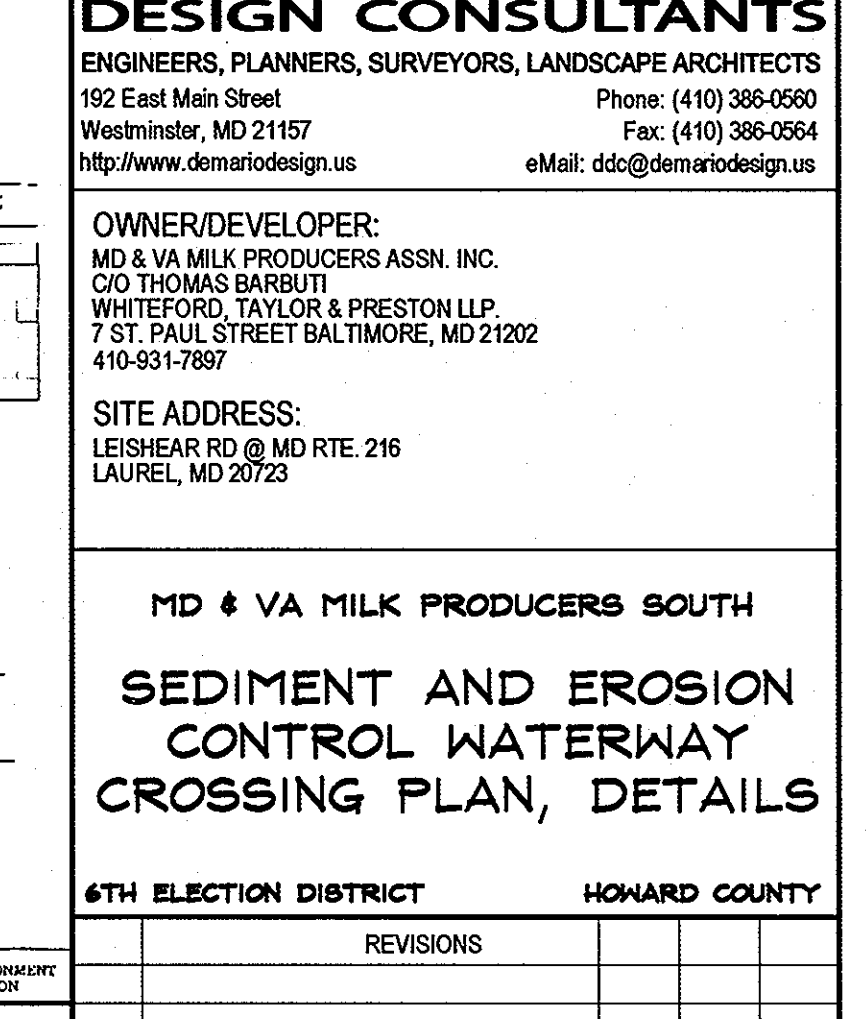
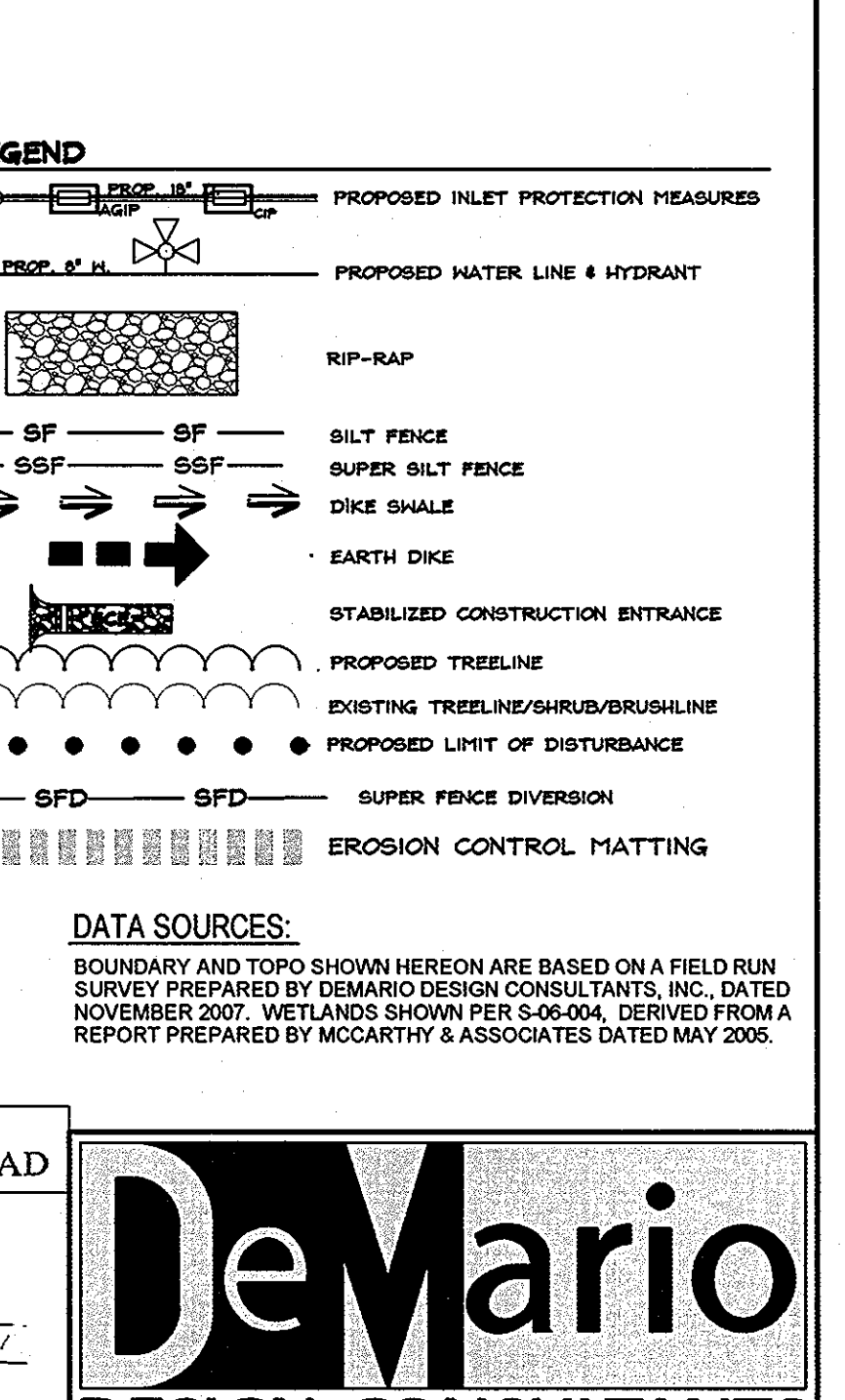
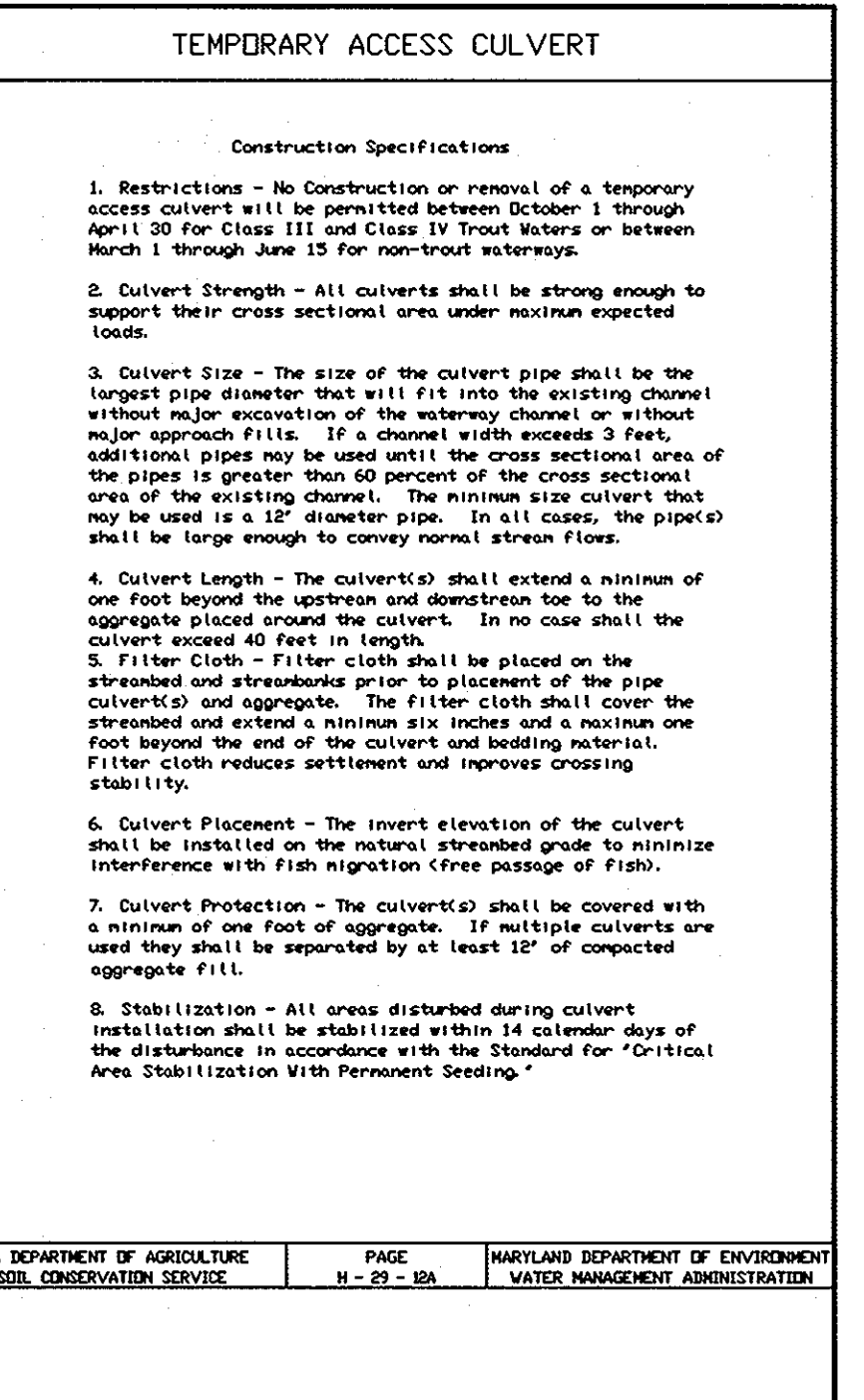
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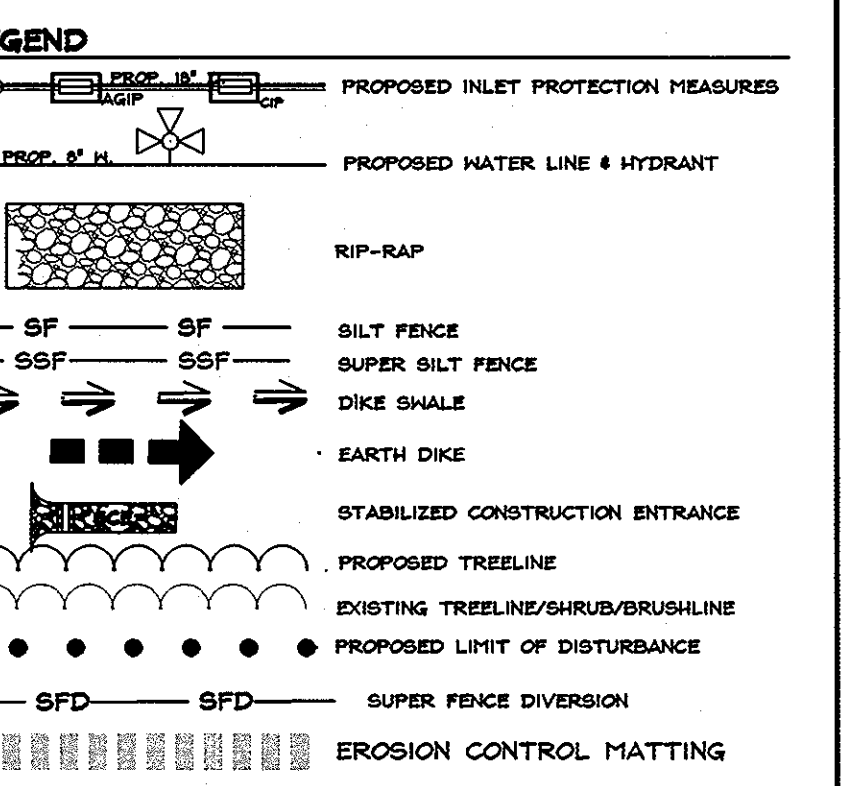
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I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
DATE: 4-22-10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
DATE: 5/13/10

APPROVED: HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL AND ZONING.
DATE: 4/22/10



DATA SOURCES:
BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WETLANDS SHOWN PER S-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.

Demario DESIGN CONSULTANTS
ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
192 East Main Street
Westminster, MD 21157
http://www.demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARBUTI
WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897

SITE ADDRESS:
LEISHAR RD @ MD RTE 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
SEDIMENT AND EROSION CONTROL WATERWAY CROSSING PLAN, DETAILS

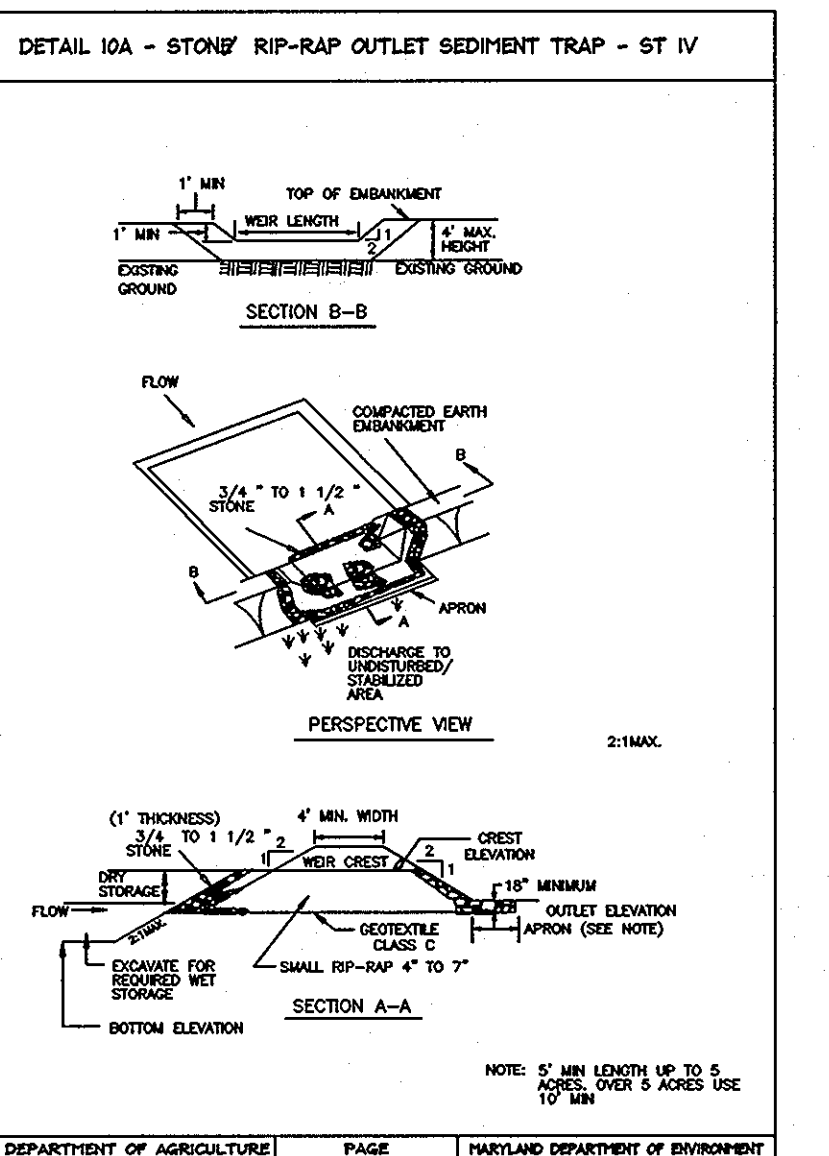
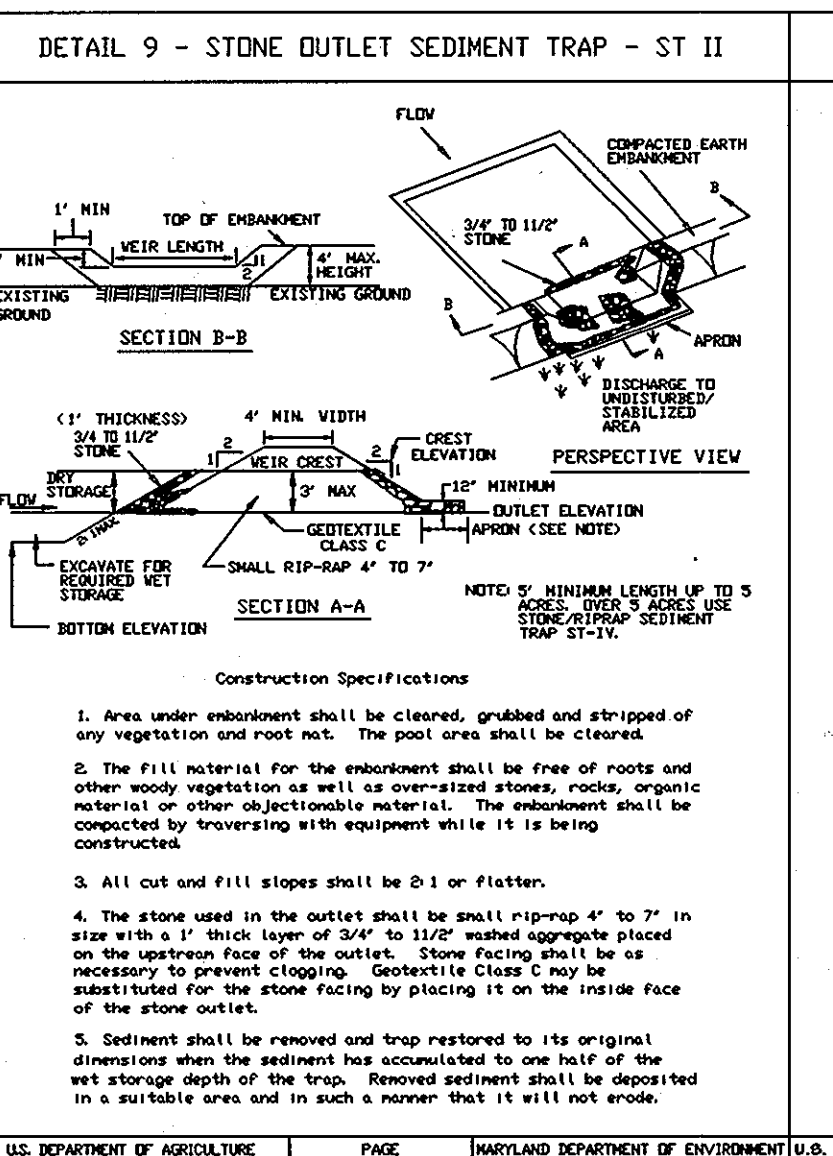
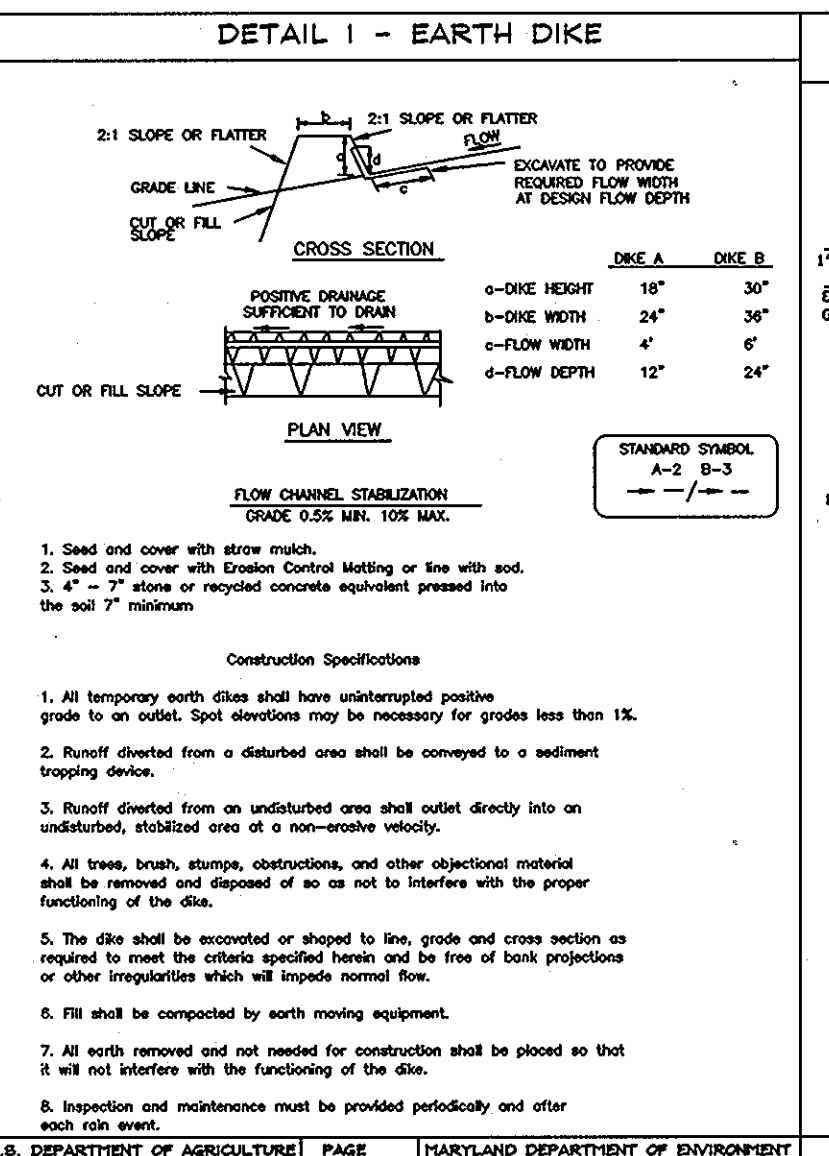
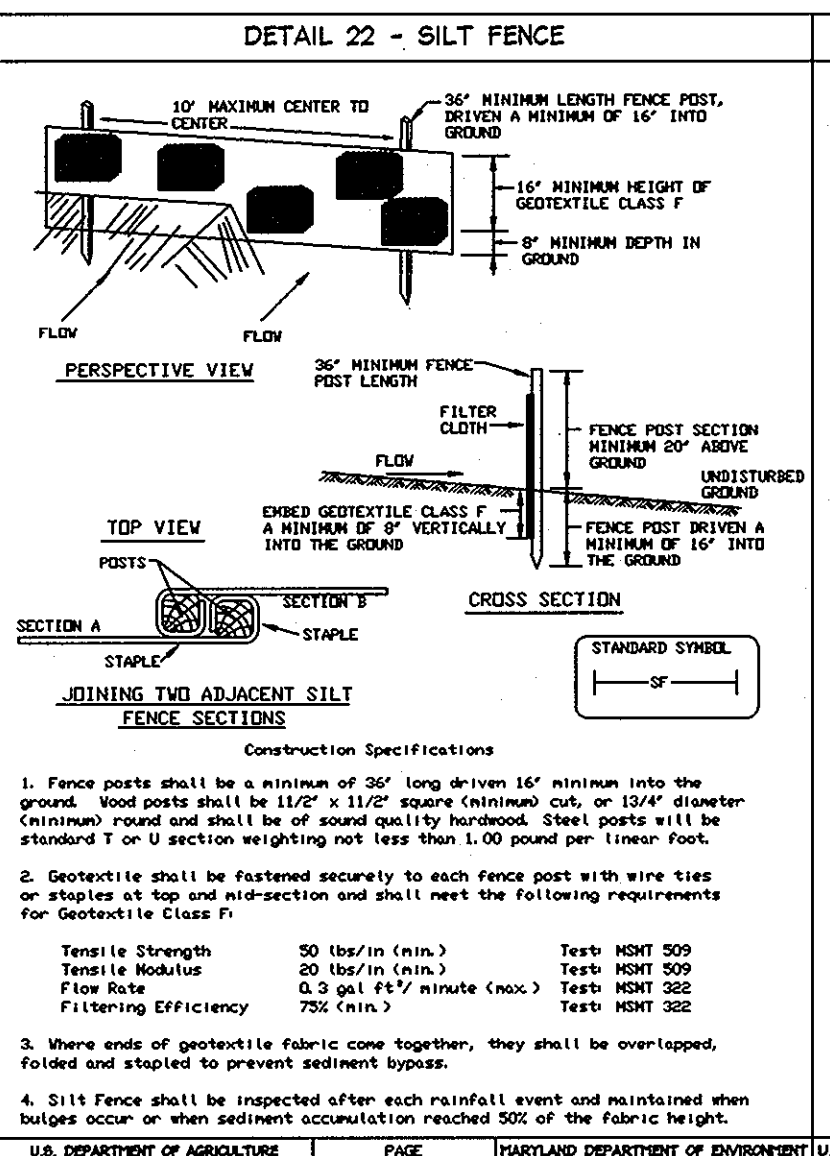
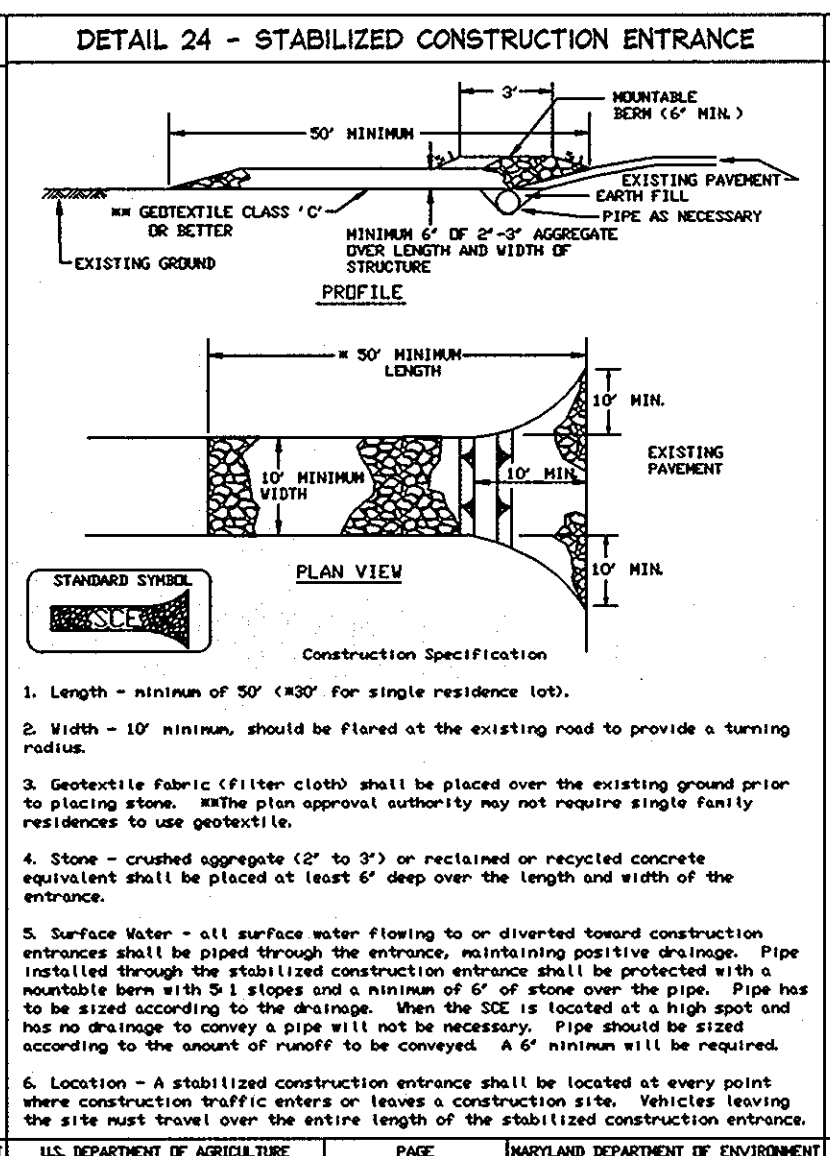
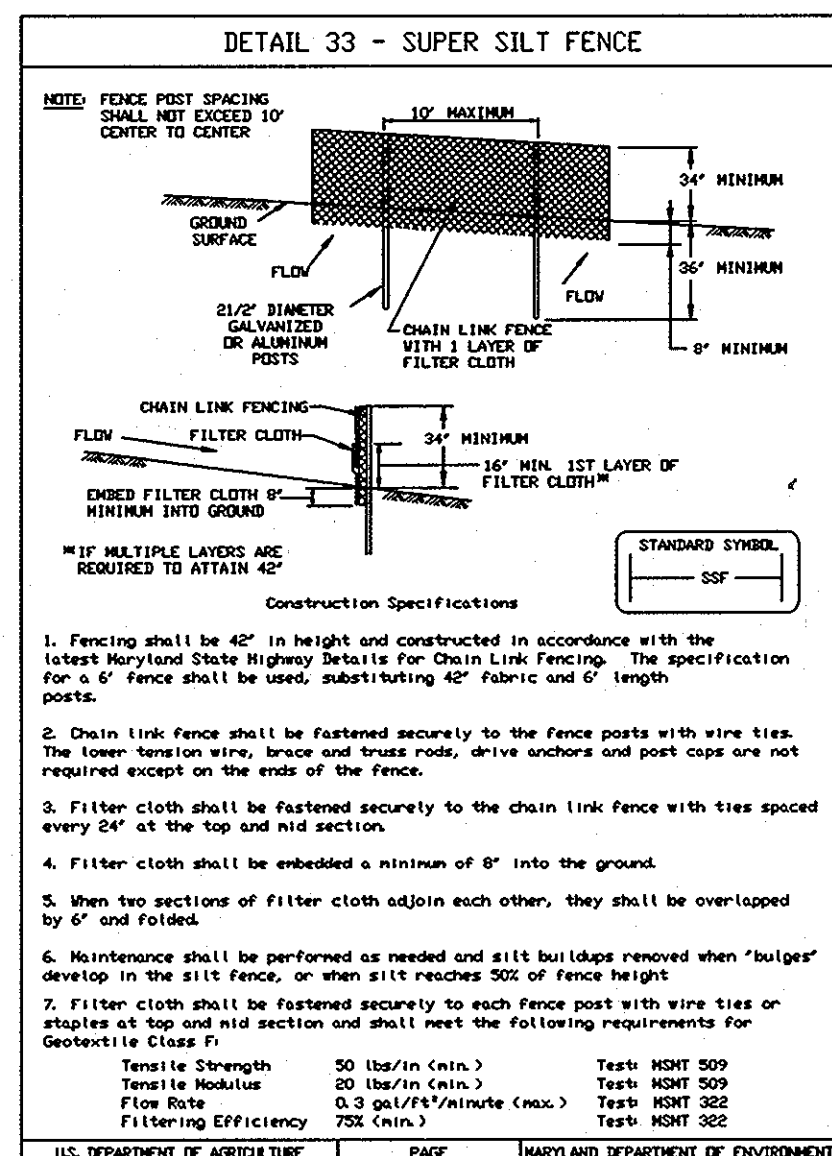
6TH ELECTION DISTRICT **HOWARD COUNTY**

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE # F-09-061	DES. BY: JCO			
TAX ACC. # 06-414435	DRN. BY: TFM			
TAX MAP: 46 & 47	CHK. BY: JCO / MRT			
BLOCK / GRID: 12 & 1	DATE: 3/22/10			
PARCEL #: 985 & P/O 2	DC JOB#: 07106.3			
ZONE / USE: R-20	SHEET NUMBER:			
DWG. SCALE: AS SHOWN	8 of 25			

3/22/10
DATE

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. 25420, Expiration Date: 7-30-10.

MARK R. THAYER
P.E. 25420

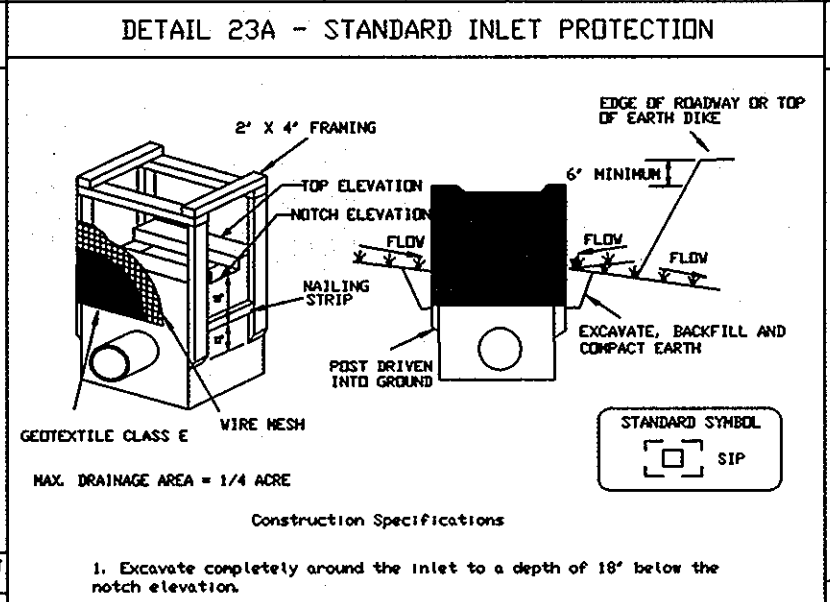


SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 1:1	100 feet	500 feet
50 - 60%	2:1 - 1:1	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION PAGE C-9-18



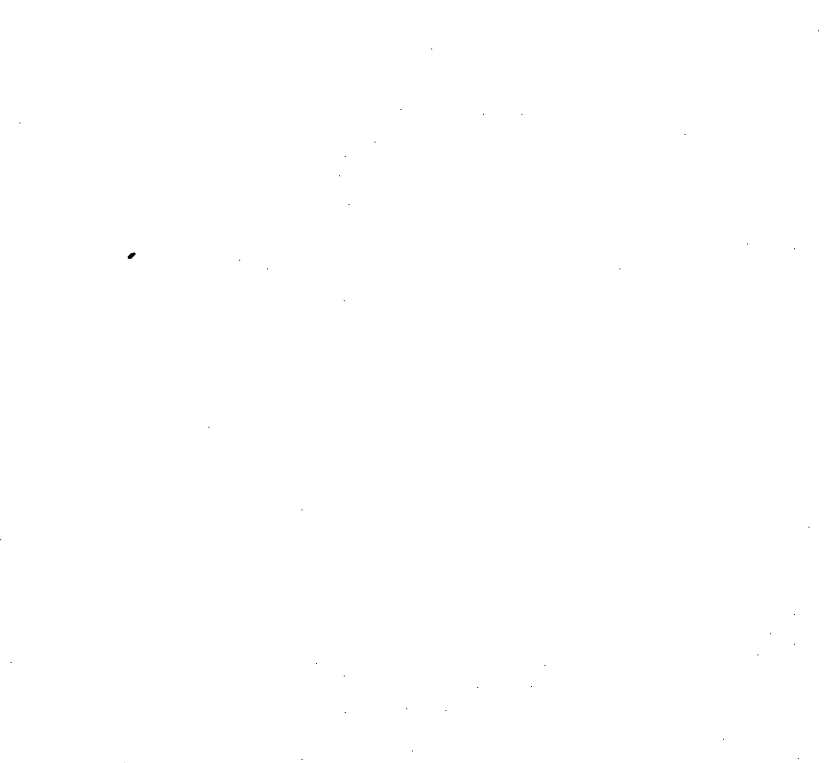
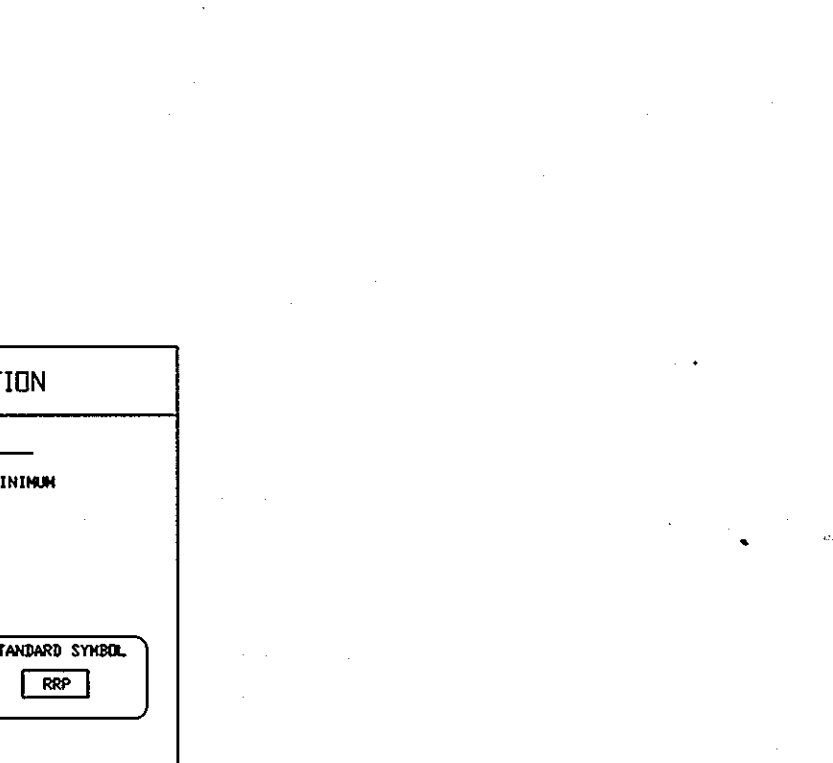
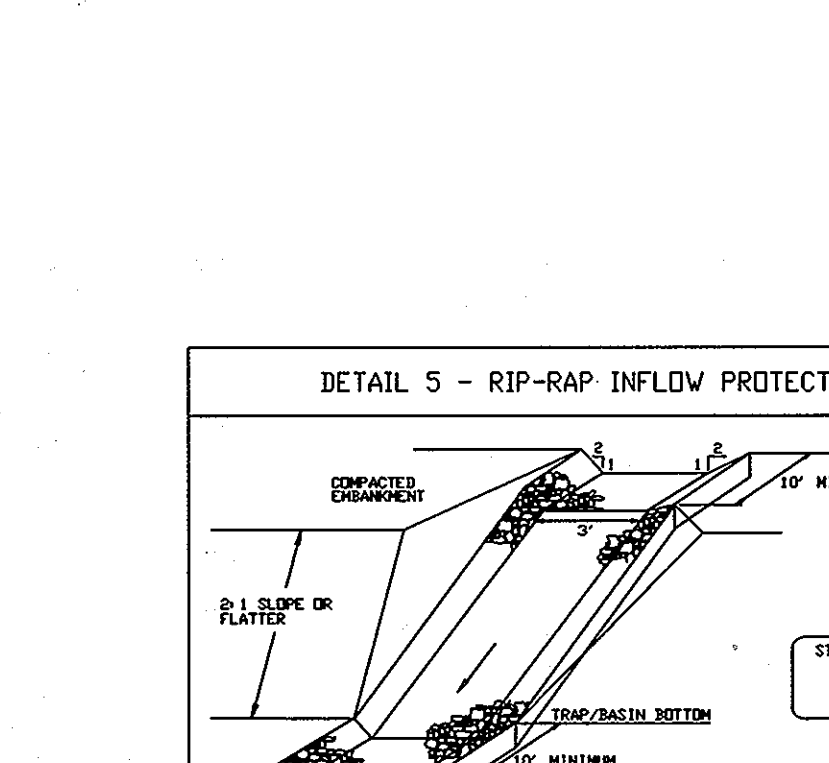
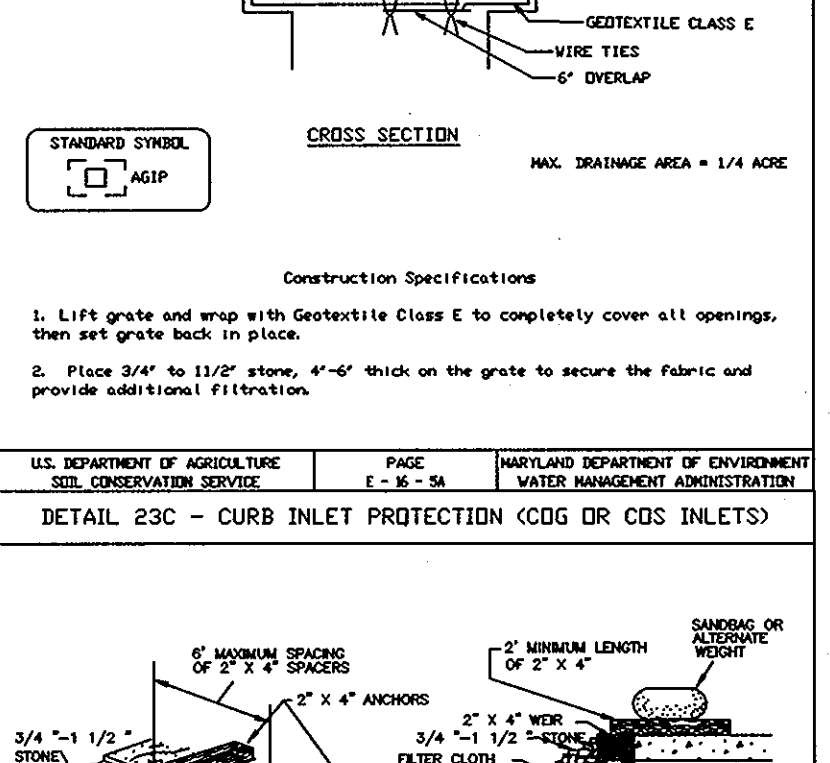
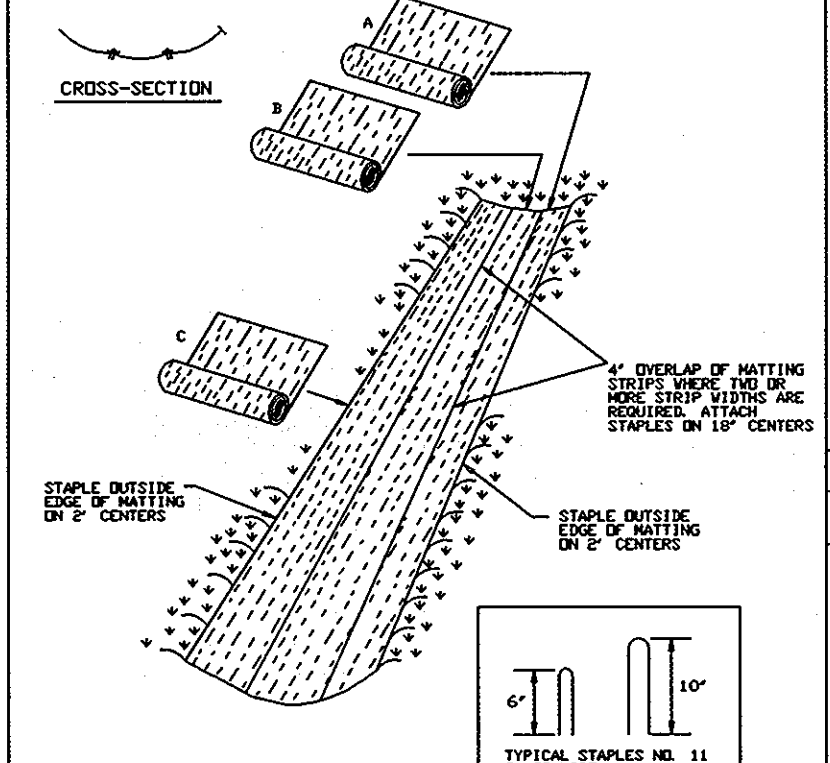
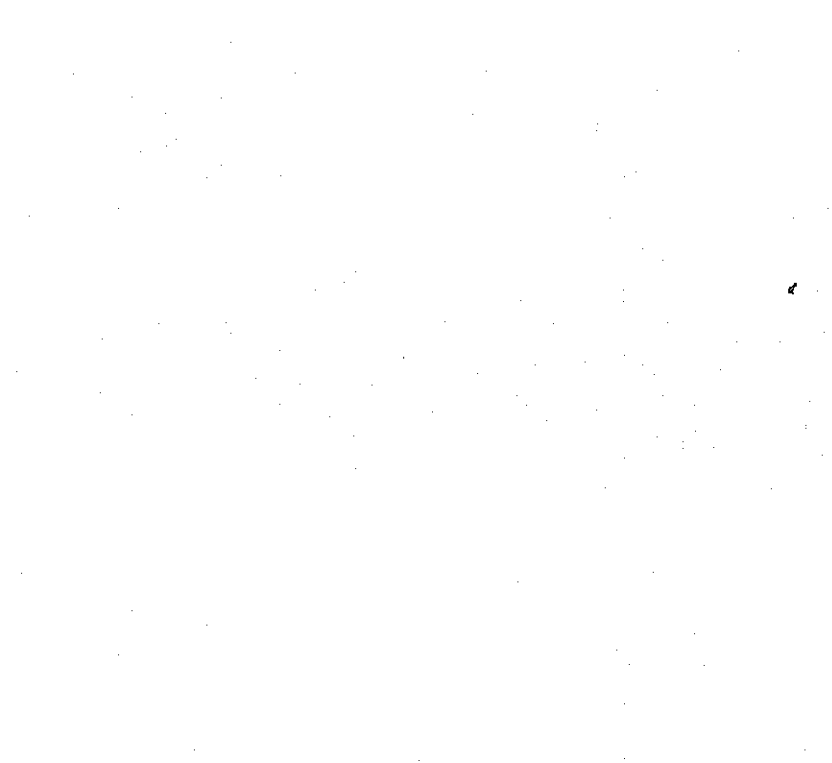
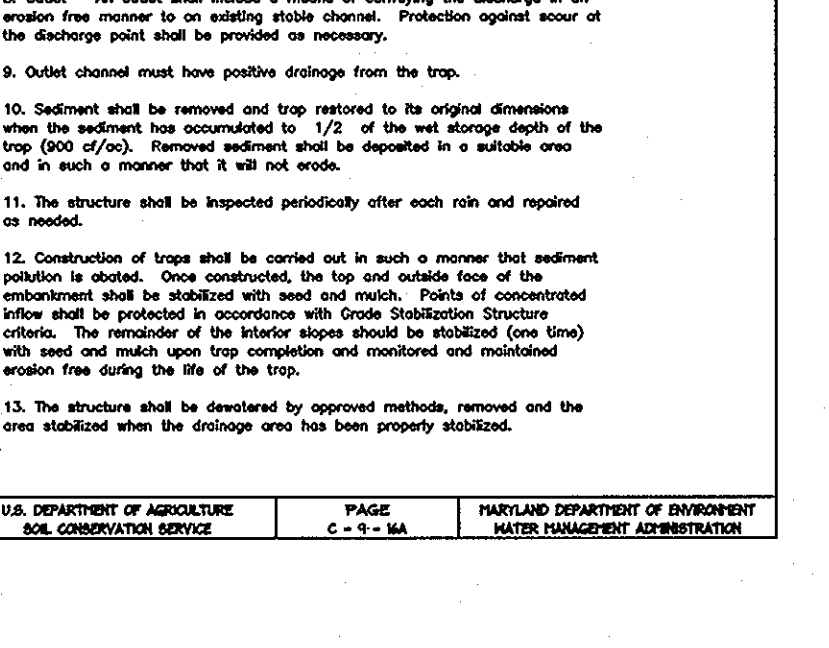
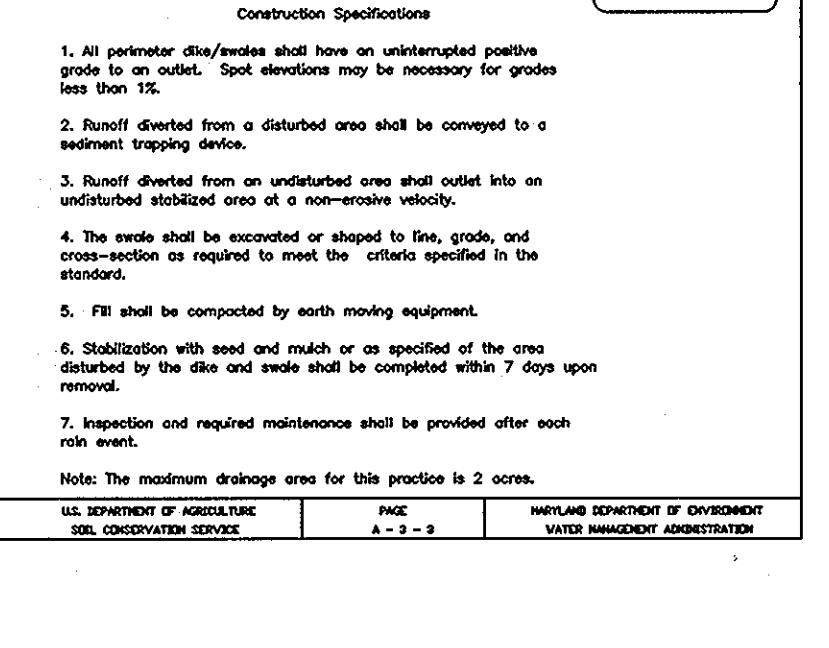
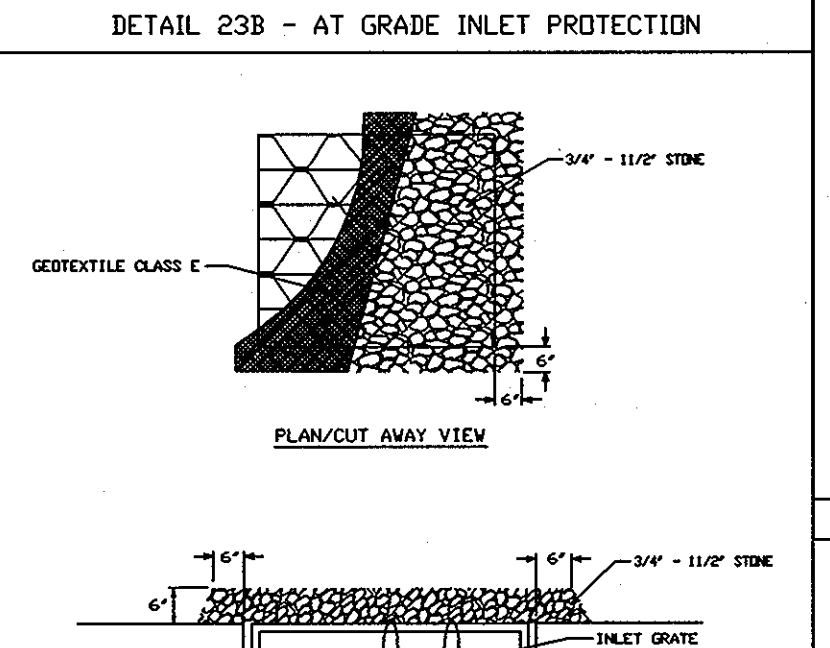
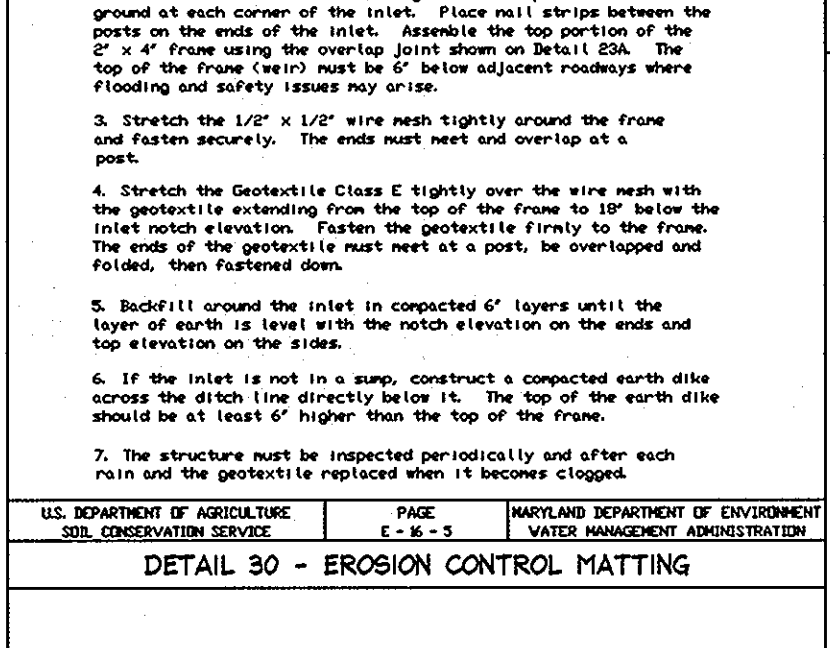
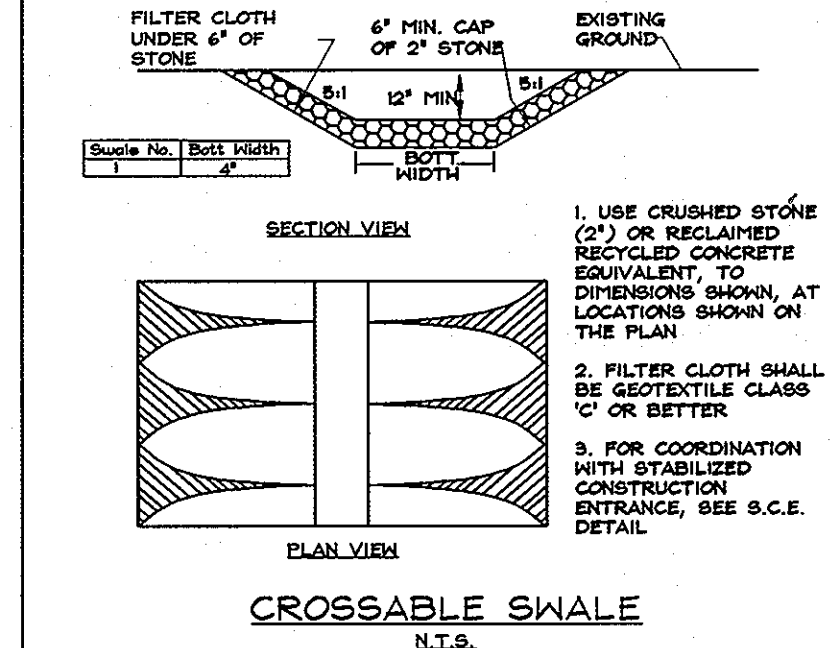
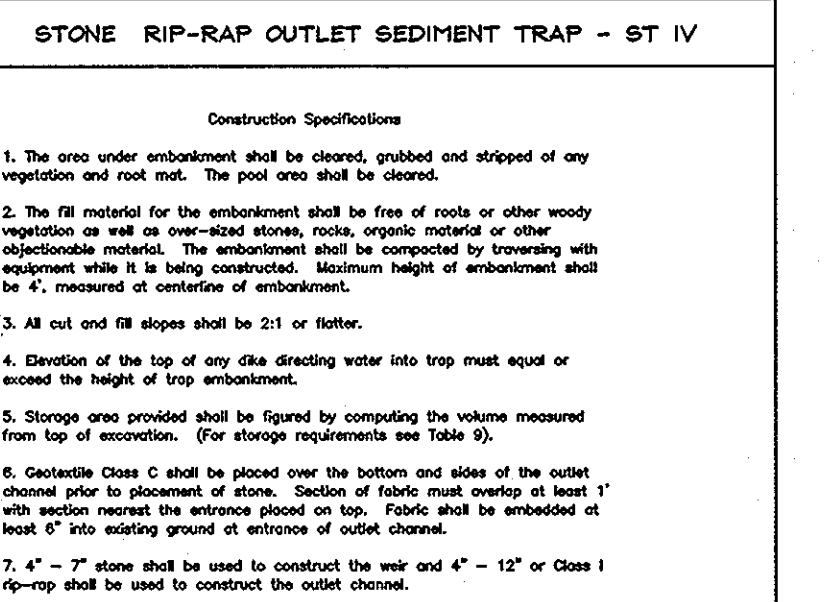
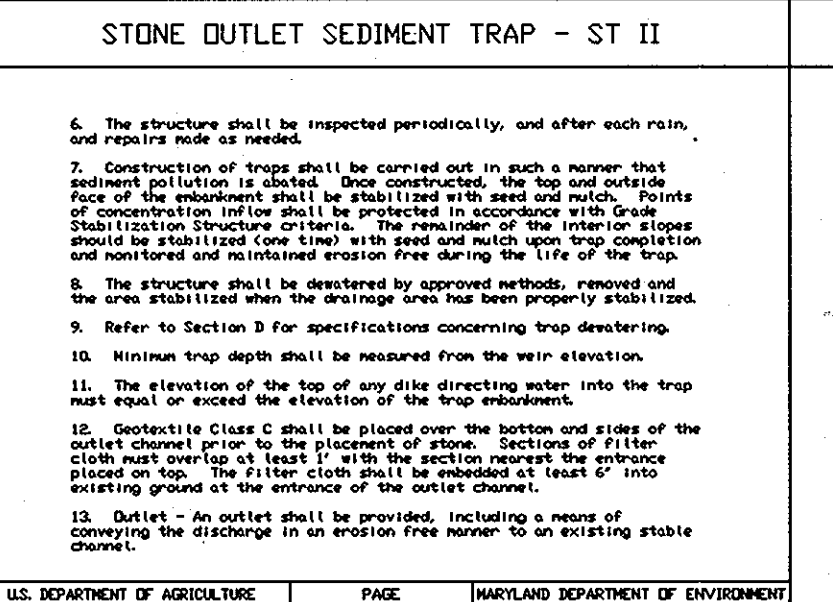
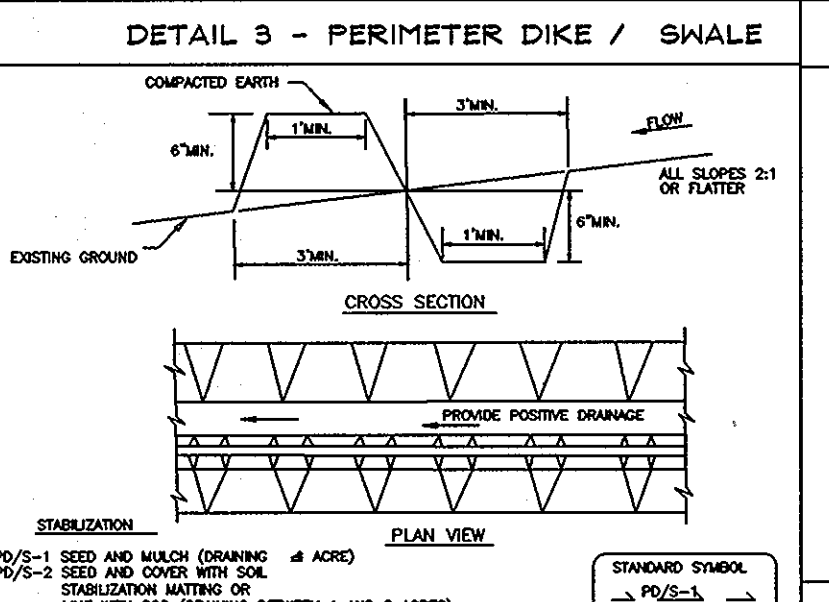
SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil class 0) silt fence length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION PAGE C-9-18



BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

Kevin K. O'Neil 3/26/10
SIGNATURE OF THE DEVELOPER DATE

ENGINEER:
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

John K. Roberts 3/29/10
SIGNATURE OF THE ENGINEER DATE

EROSION CONTROL MATTING

Construction Specifications

1. Rein the matting by placing the top edge of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples spaced 4' down slope from the trench. Spacing between staples is 4'.
2. Staple the 4' overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip. 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the 2" x 4" mat strip by a shingle fashion. Reinforce the overlap with a double row of staples spaced 4' down slope from the trench. Spacing between staples is 4'.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

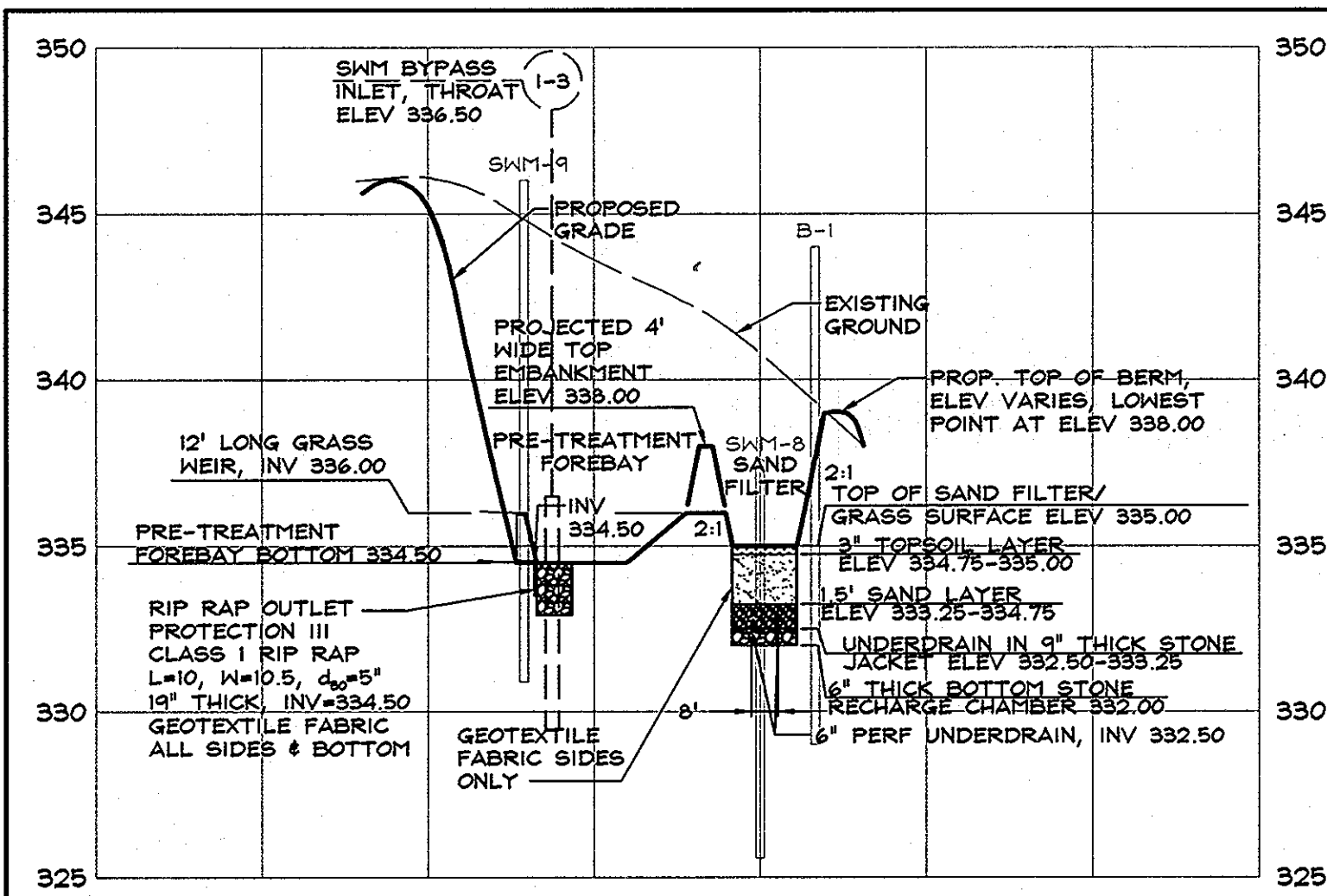
Note: If flow will enter from the edge of the matting then the area affected by the flow must be kept-in.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION PAGE C-9-22

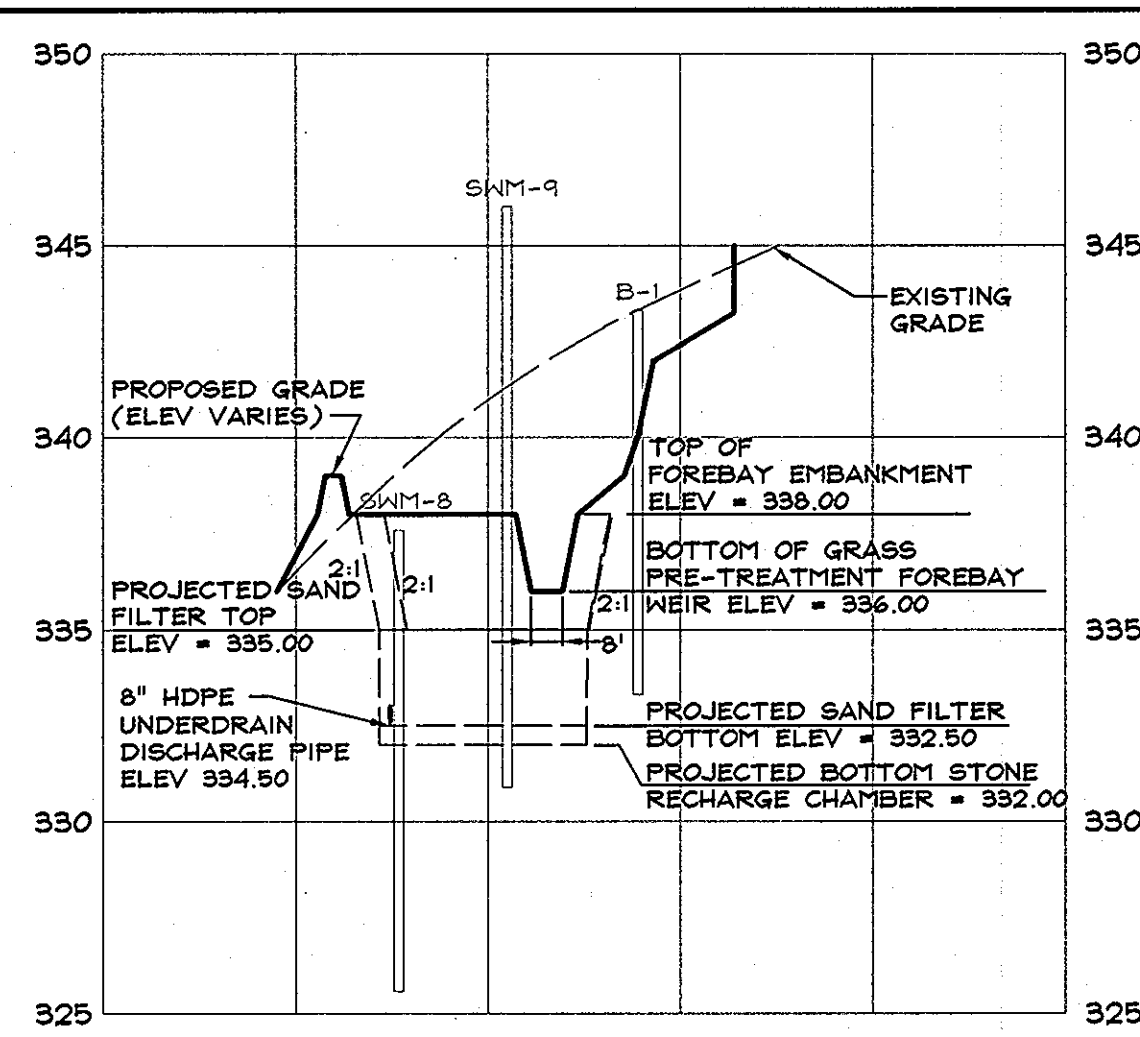
DETAIL 23C - CURB INLET PROTECTION (CDG OR CRS INLETS)

Construction Specifications

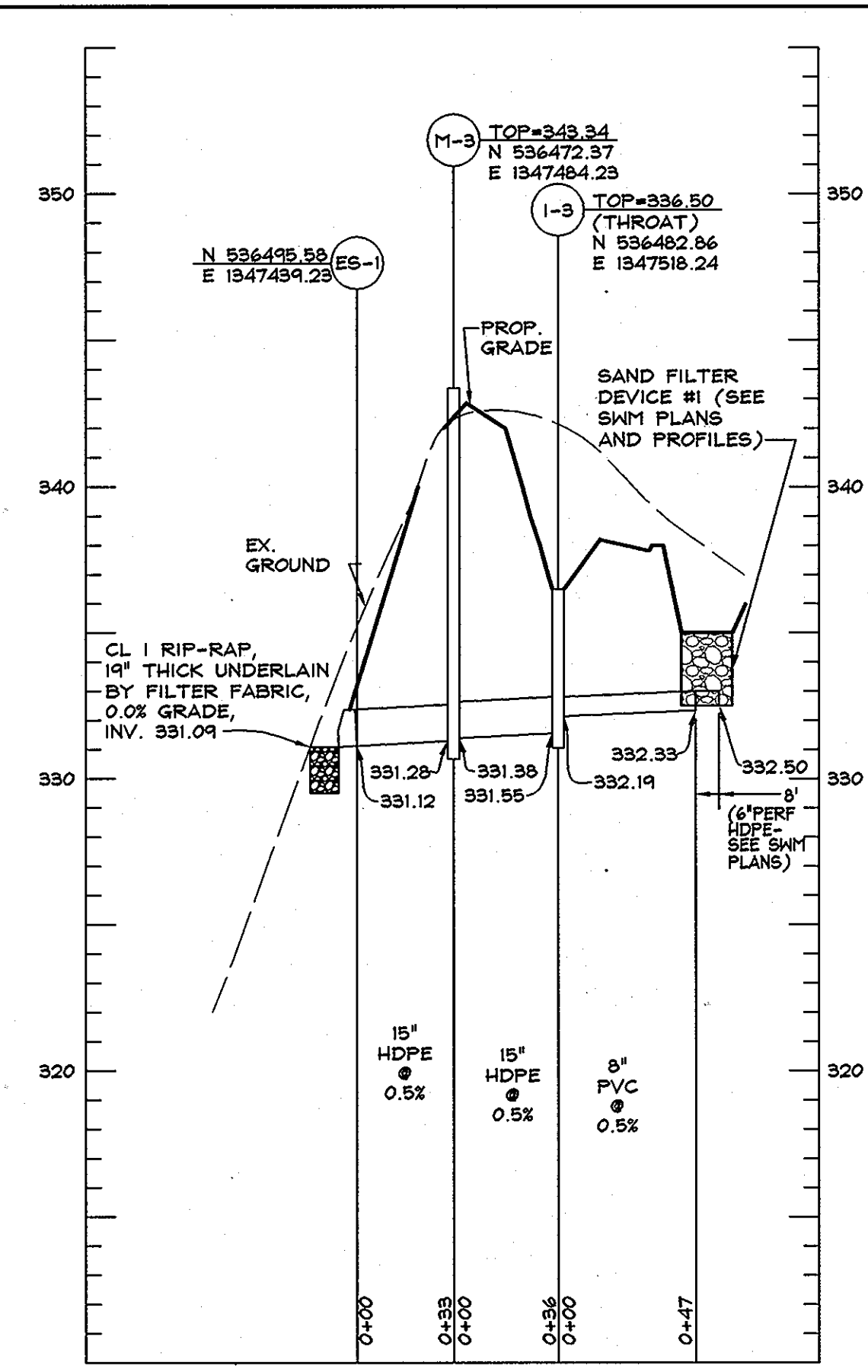
1. Abosh a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" wire (measuring throat length plus 2") as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh and securely attach it to the 2" x 4" wire.
3. Secure the 2" x 4" wire to a 2" long vertical support to be located between the wire and the inlet face (max. 4" apart).
4. Place the assembly against the inlet throat and not (minimum 2" length of 2" x 4" to the top of the mat at upper location). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or concrete weight.
5. The assembly shall be placed so that the anchors are a minimum 1' beyond both ends of the grate opening.
6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place stone 3/4" x 1 1/2" stone over the wire mesh and geotextile fabric so as to prevent water from entering the inlet under or around the geotextile.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assume that storm flow does not bypass the inlet by installing a temporary curb or parapet dike to direct the flow to the inlet.



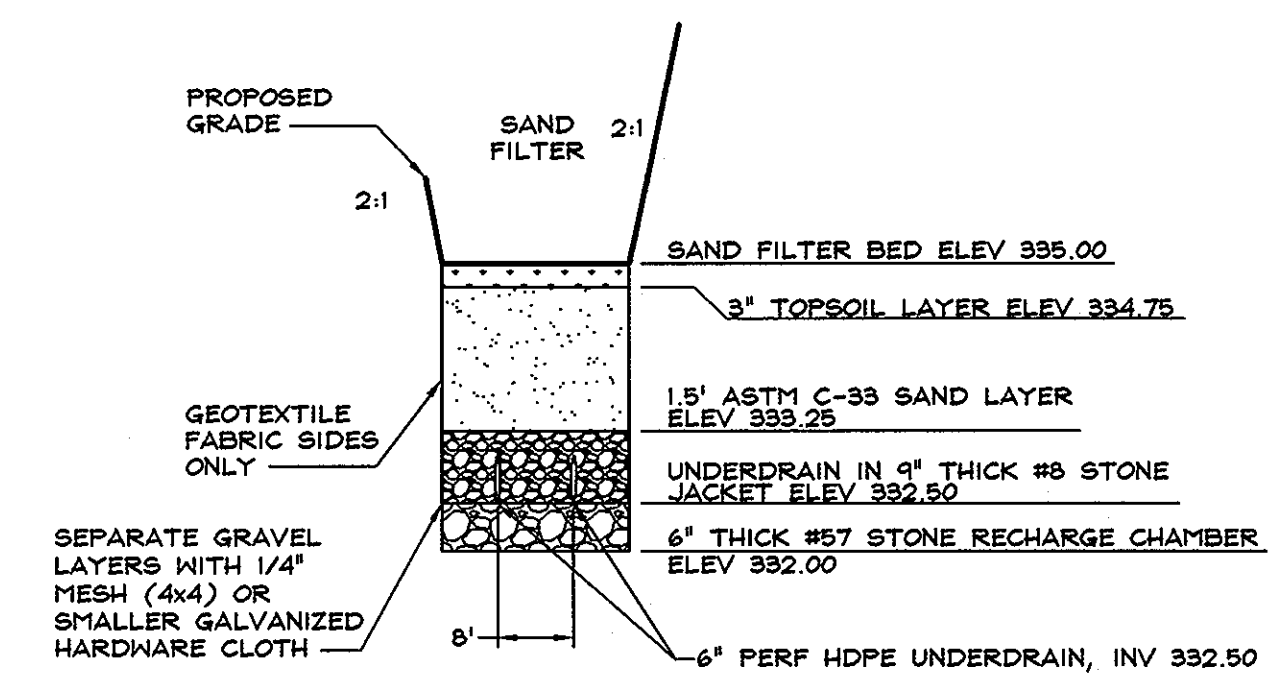
SECTION A-A
THROUGH FOREBAY
SAND FILTER FACILITY #1
SCALE: HORI. 1"=50'
VERT. 1"=5'



SECTION B-B
ALONG TOP OF FOREBAY EMBANKMENT
SAND FILTER FACILITY #1
SCALE: HORI. 1"=50'
VERT. 1"=5'

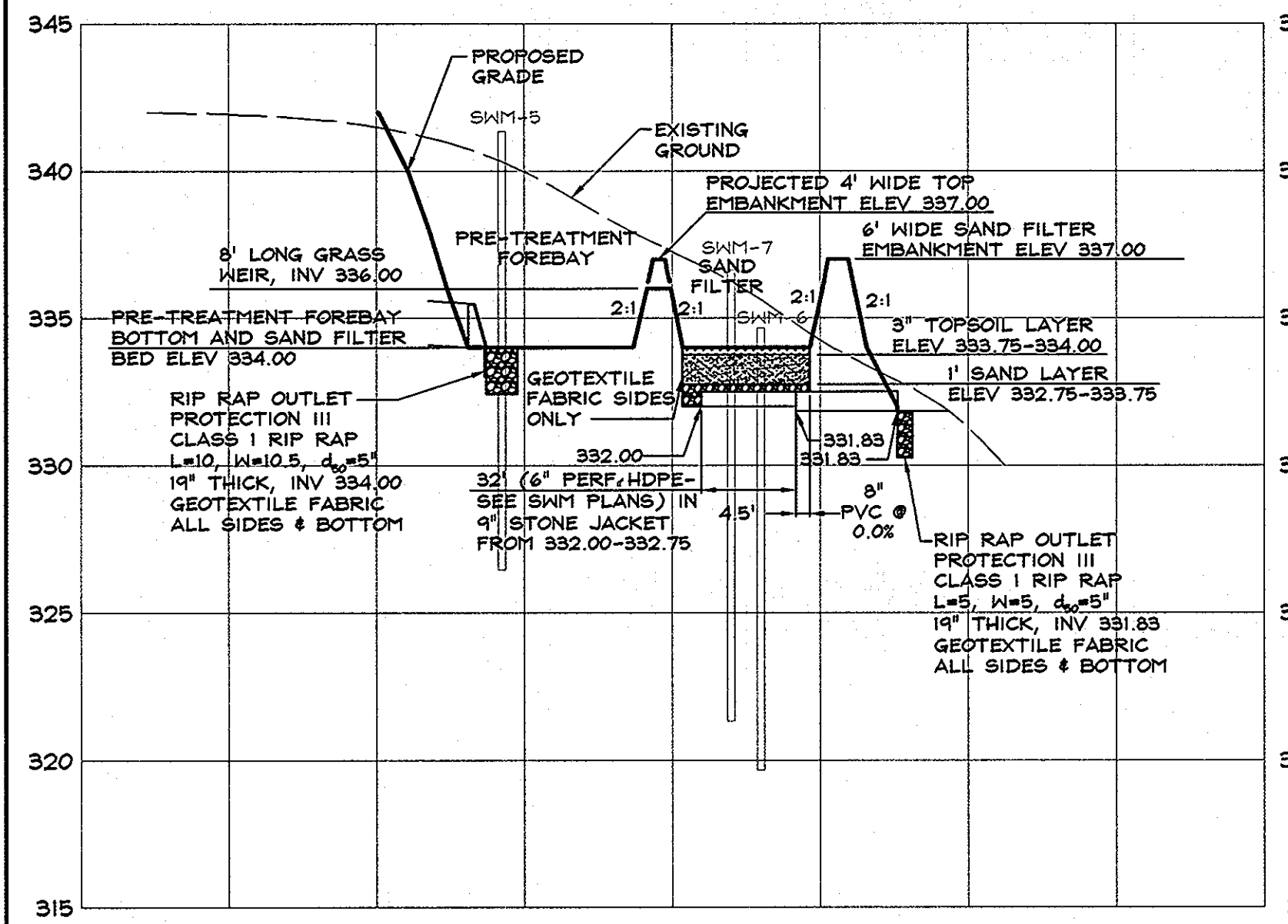


STORM DRAIN PROFILE
SCALE: HORI. 1"=50'
VERT. 1"=5'

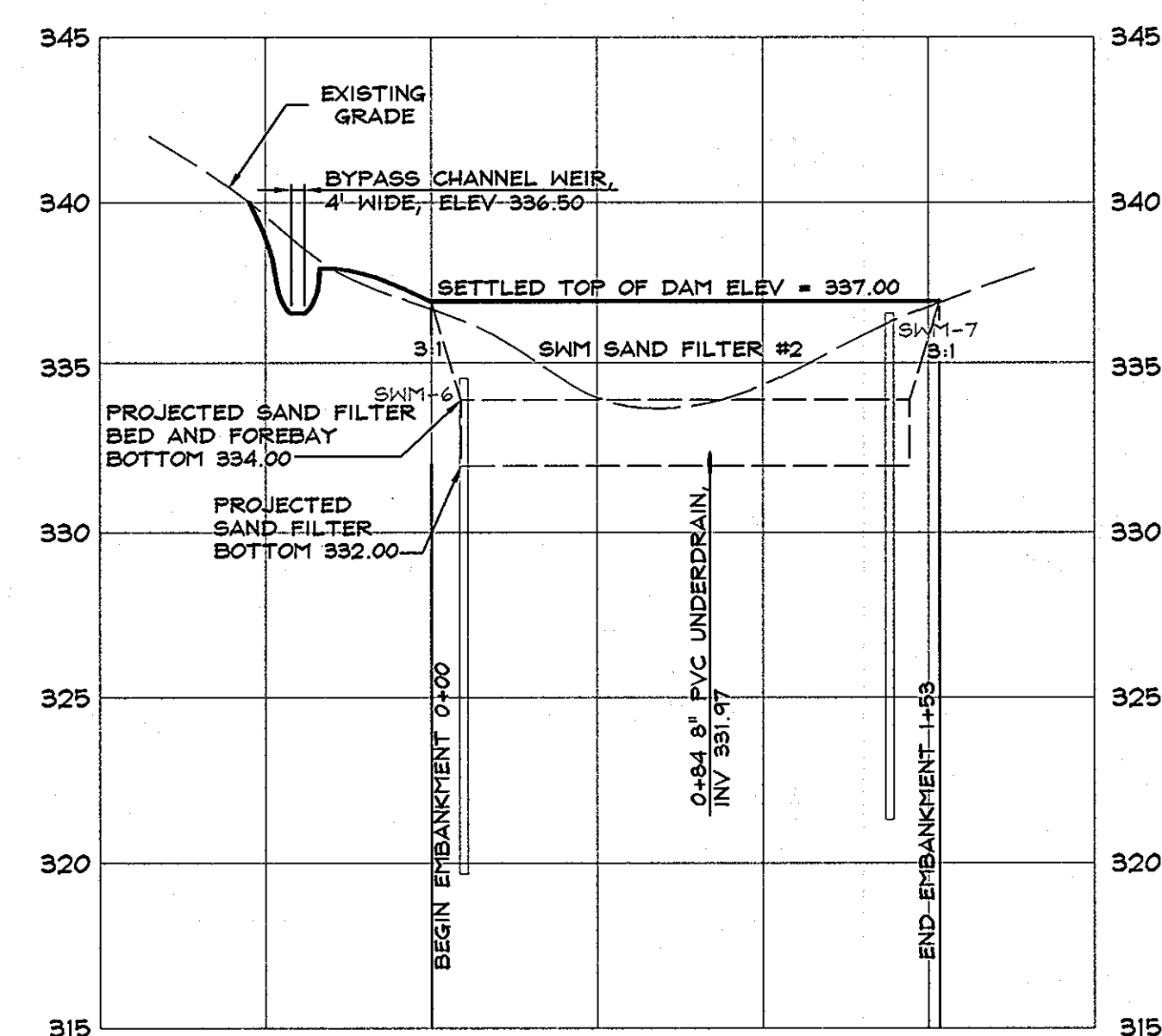


TYPICAL DETAIL
SAND FILTER FACILITY #1
SCALE: HORI. 1"=20'
VERT. 1"=2'

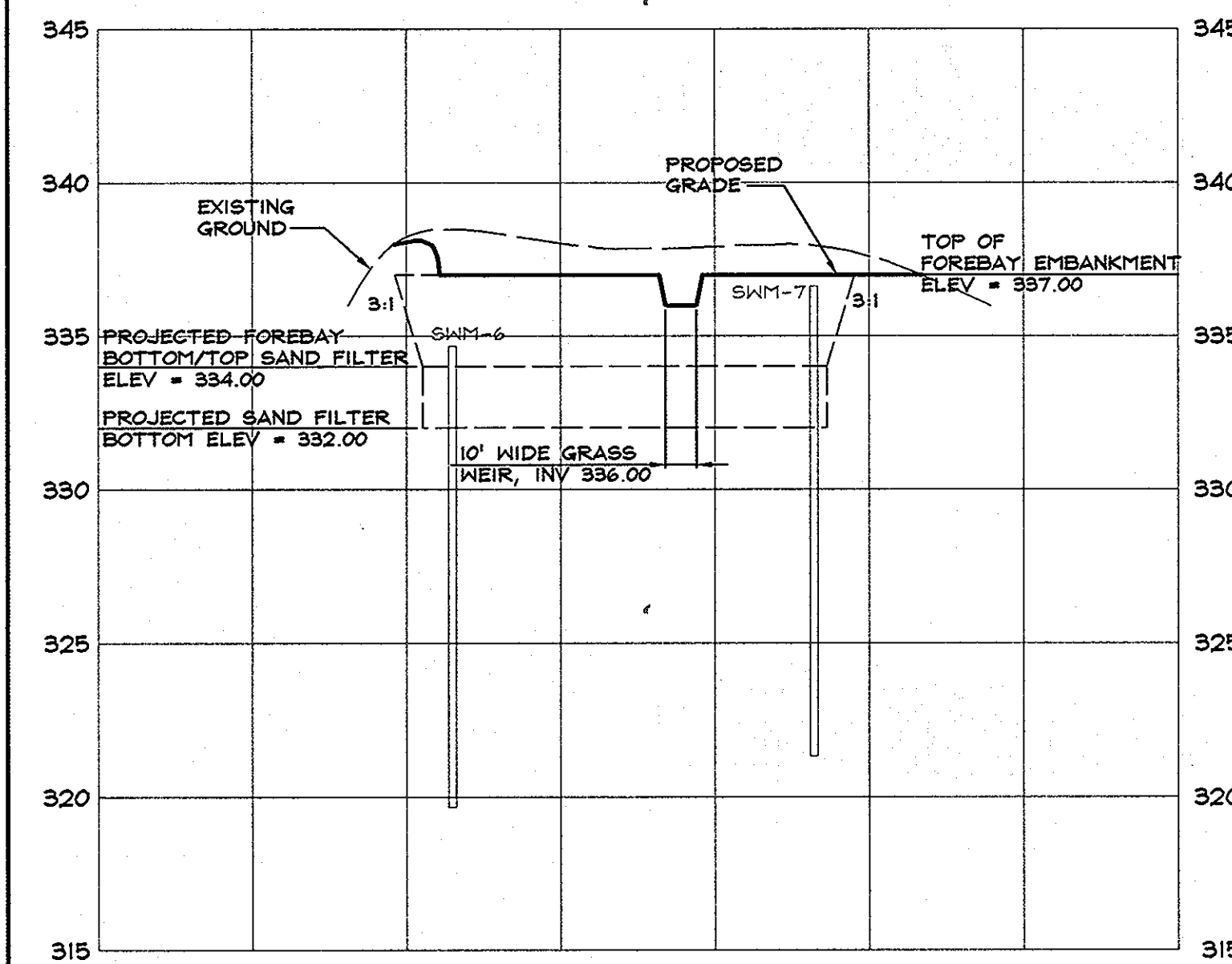
NOTE:
FOR STORMWATER MANAGEMENT
CONSTRUCTION SPECIFICATIONS
SEE SHEET 11 OF 25.



SECTION C-C
THROUGH SAND FILTER FACILITY #2
SCALE: HORI. 1"=50'
VERT. 1"=5'

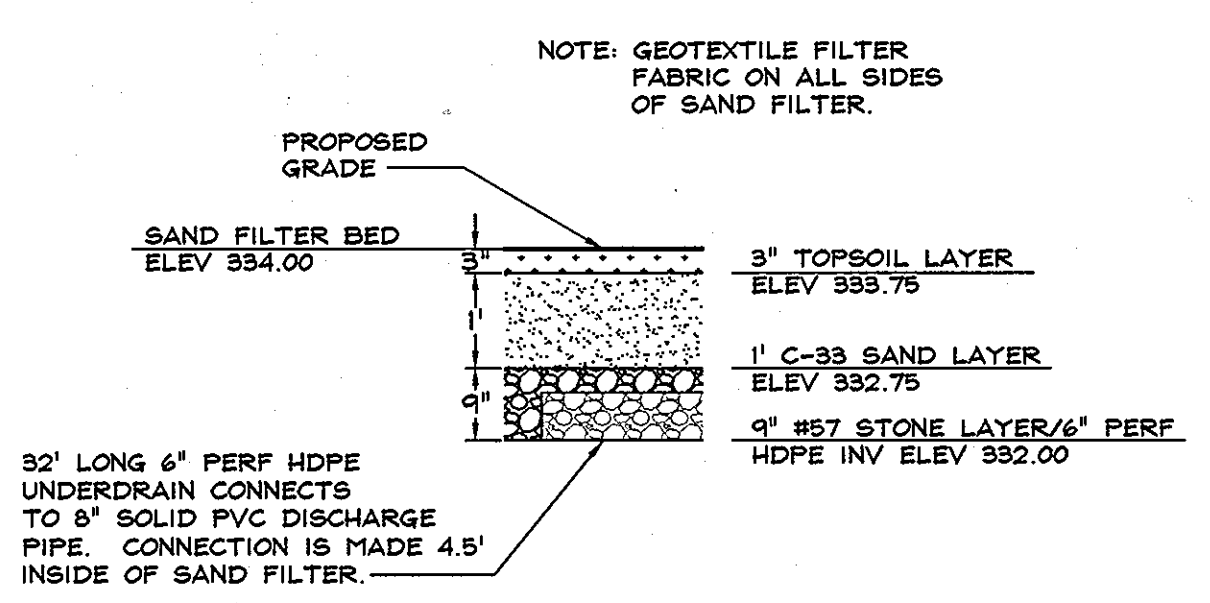


SECTION D-D
ALONG TOP OF EMBANKMENT
SAND FILTER FACILITY #2
SCALE: HORI. 1"=50'
VERT. 1"=5'



SECTION E-E
ALONG TOP OF FOREBAY EMBANKMENT
SAND FILTER FACILITY #2
SCALE: HORI. 1"=50'
VERT. 1"=5'

NOTE:
FOR STORMWATER
MANAGEMENT PLAN VIEWS
SEE SHEET 4 OF 25



TYPICAL DETAIL
SAND FILTER FACILITY #2
SCALE: HORI. 1"=20'
VERT. 1"=2'

DATA SOURCES:
BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC. DATED NOVEMBER 2007. WETLANDS SHOWN PER S-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.



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SITE ADDRESS:
LEISHAR RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
STORMWATER
MANAGEMENT
PROFILES

6TH ELECTION DISTRICT HOWARD COUNTY

REVISIONS			
NO.	DESCRIPTION OF CHANGES	DRN.	REV. DATE

CO. FILE # F-09-061	DES. BY: JCO
TAX ACC. # 06-414435	DRN. BY: SDS,CTS
TAX MAP: 46 & 47	CHK. BY: JCO
BLOCK / GRID: 12 & 1	DATE: 3/22/10
PARCEL # 985 & P/O 2	DDC JOB# 07106.3
ZONE / USE: R-20	SHEET NUMBER:
DWG. SCALE: AS SHOWN	11 of 25

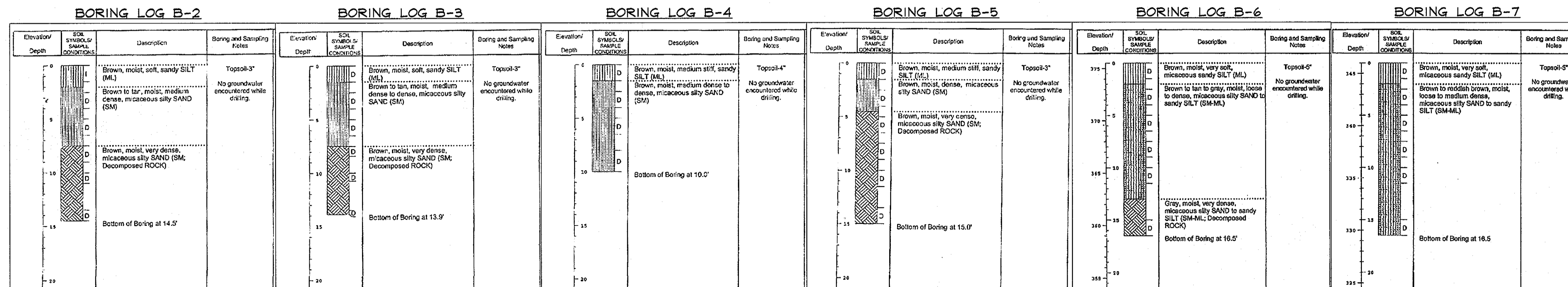
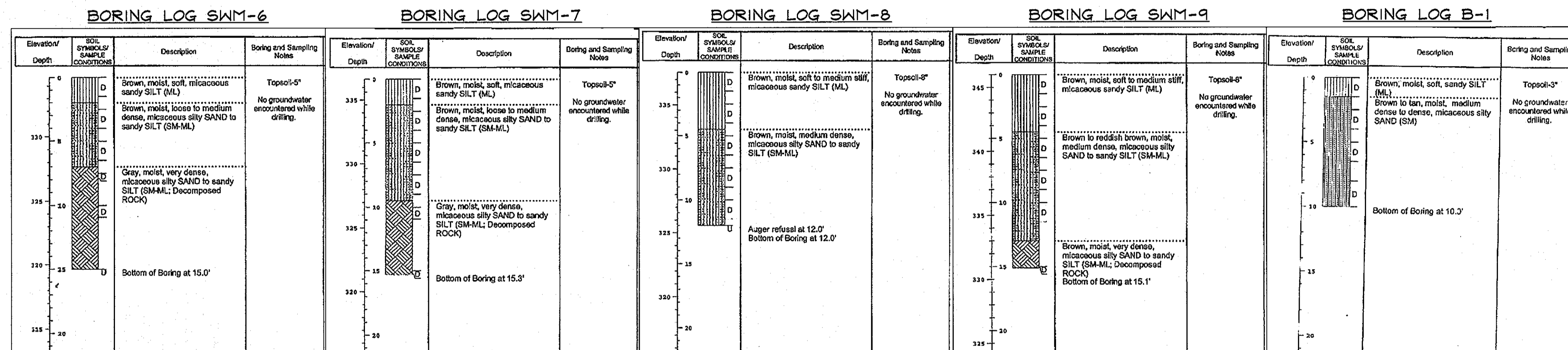
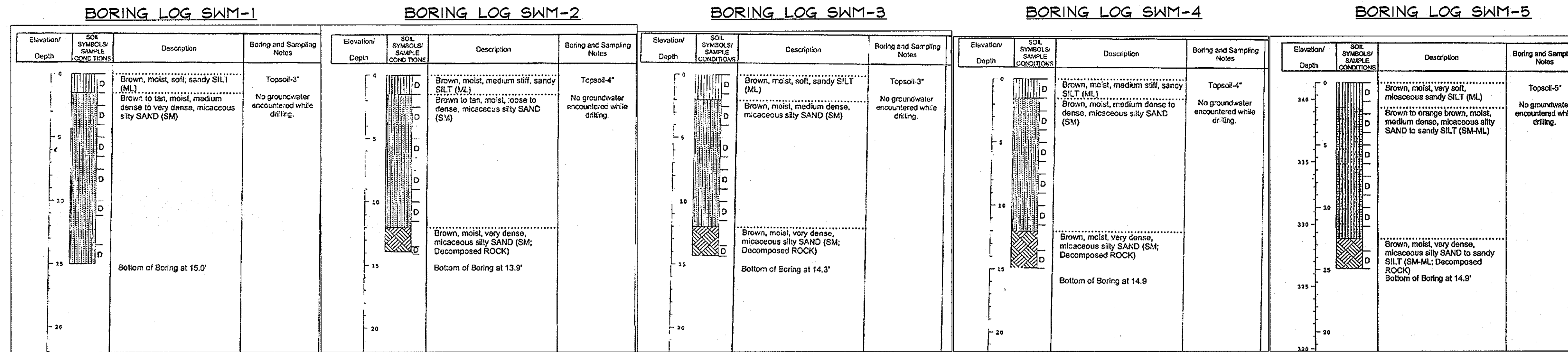
ENGINEER
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[Signature] 3/29/10
SIGNATURE OF THE ENGINEER DATE

BY THE DEVELOPER:
I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.
[Signature] 3/26/10
SIGNATURE OF THE DEVELOPER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature]
HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 4-12-10
CHIEF, BUREAU OF HIGHWAYS DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 4/2/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[Signature] 4/2/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

3/22/10
DATE
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. 25420, Expiration Date: 7-20-10.
[Signature]
MARK R. THAYER
P.E. 25420



DATA SOURCES:
 BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC., DATED NOVEMBER 2007. WELLANDS SHOWN PER S-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.

DeMario
DESIGN CONSULTANTS
 ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
 192 East Main Street Phone: (410) 386-0560
 Westminster, MD 21157 Fax: (410) 386-0564
 http://www.demariodesign.us eMail: ddc@demariodesign.us

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SITE ADDRESS:
 LEISHAR RD @ MD RTE. 216
 LAUREL, MD 20723

**MD & VA MILK PRODUCERS SOUTH
 STORMWATER
 MANAGEMENT SOIL
 BORING LOGS**

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 [Signature] 4-12-10 DATE
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 [Signature] 5/3/10 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 4/22/10 DATE
 CHIEF, DEVELOPMENT ENGINEERS DIVISION

3/22/10 DATE
 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. 25420, Expiration Date: 7-30-10.

MARK R. THAYER
 P.E. 25420

CO. FILE #: F-09-061
 TAX ACC. #: 06-414435
 TAX MAP: 46 & 47
 BLOCK / GRID: 12 & 1
 PARCEL #: 985 & P/O 2
 ZONE / USE: R-20
 DWG. SCALE: N/A

DES. BY: MRT
 DRN. BY: SDS
 CHK. BY: MRT
 DATE: 3/22/10
 DDC JOB#: 07106.3
 SHEET NUMBER:
 13 of 25

Delineation of The Limit Of Disturbance (LOD)

The General Contractor shall take the Limit of Disturbance (LOD) prior to installation of tree protection measures. In any locations where Super Silt Fence or other Sediment and Erosion Control measures sufficient to protect the critical root zones of trees have been installed, no tree protection fence shall be necessary. In areas where insufficient protection for the root zones of trees to be preserved throughout construction, tree protection fencing that complies with the details contained on the Final Forest Conservation Plan shall be installed. Tree protection fence will serve three primary goals, (1) to keep grounds and branching structure clear from contact by equipment materials and activities, (2) to preserve roots and soil condition in an intact and non-compacted state and; (3) to identify the Tree Protection Zone in which no soil disturbance is permitted and activities are restricted, unless otherwise approved by the landscape architect or an ISA Certified arborist or licensed forester. Removal of tree protection fence, even temporarily to allow deliveries, is prohibited.

Forest Edge Treatment

The contractor shall employ the services of an ISA Certified arborist and/or professional forester to ascertain the condition of trees that will, in the case of forest clearing or selective clearing and supplemental planting, establish a new forest edge. Trees shall be evaluated for susceptibility to windthrow and branches that may present a direct impediment to construction activities or hazards to health safety and welfare shall be removed with care. Exotic or invasive species located near the forest edge shall be removed by mechanical means where possible or treated with approved herbicides.

Any trees inadvertently damaged during construction shall be treated as if survival is expected. If it is determined that any part of a tree is in an unsafe or dangerous condition, then that part of the tree shall be removed. If the entire tree is affected, it shall be removed in its entirety. If the hazardous condition is questionable, the contractor shall acquire the services of an ISA Certified Arborist or professional forester who shall inspect the tree and certify that the condition of the tree is not a hazard and is not expected to be a hazard in the foreseeable future. Trees damaged by the contractor that must be removed shall be replaced by the contractor at no additional expense to the owner. In order to protect trees, super silt fence shall be provided in any area where the LOD comes within 50' of any environmental feature (including wetlands, slopes 25%+, stream buffer, floodplain, etc.) or an approved forest conservation easement area.

Protective Signage

Protective signs shall be installed around the perimeter of retention easements and afforestation and reforestation planting areas. Signs shall comply with the details included on the Final Forest Conservation Plan with respect to spacing, height, content. Signs shall be approximately 5' above finished grade and shall be maintained in perpetuity. SIGNS MAY NOT BE ATTACHED TO TREES UNDER ANY CONDITION.

Materials and Vehicle Storage

The storage, disposal or placement of construction materials and operating or storing construction machinery, or driving or parking of vehicles in the Tree Protection Zone is strictly prohibited unless otherwise approved by the Landscape Architect or an ISA Certified Arborist or professional forester. The use of tree trunks as backstops, which supports, tripods, temporary power poles, sign posts or other functions is also strictly prohibited. Cutting of tree roots in or near the Tree Protection Zone for utility trenching, foundation digging, placement of curbs and trenches or other miscellaneous excavations shall be preceded by root pruning conducted with a sharp saw that cuts cleanly, to sound wood, flush with the trench or excavation site.

Construction vehicle wash-out operations shall not be conducted where water from this work can drain into a forest retention easement or a designated afforestation or reforestation planting area. No grading work shall be conducted that temporarily conducts excessive drainage into a forest retention easement or a designated afforestation or reforestation planting area.

Activities Permitted within the Tree Protection Zone

The following activities may be conducted within the Tree Protection Zone in an effort to restore or enhance suitability for forest habitat:

- * Mulch may be spread within the Tree Protection Zone to a four to six inch depth, leaving the trunks of existing trees clear of mulch. Mulch shall be unpainted, untreated shredded wood or other material approved by the Landscape Architect or an ISA Certified Arborist or professional forester.
- * Aeration, fertilization or applications of mycorrhizae or other beneficial practices may be conducted within the Tree Protection Zone. Fertilization and mycorrhizal treatments shall be preceded by a soils analysis by a soils lab certified to perform such work. Natural amendments such as organic mulch, leaf mold or compost tea are preferred sources of fertilization.
- * Irrigation is the single most important treatment for trees within the Tree Protection Zone. The Contractor should designate an irrigation schedule to wet in the Tree Protection Zone to the depth of the root zone and replace that water once it is depleted. Light, frequent irrigation should be avoided.
- * In periods of extended drought, wind or grading, trunks, limbs and foliage should be sprayed with water to remove accumulated construction dust.
- * The removal of exotic or invasive plant material is a high priority within the tree protection zone. Invasive material should be removed by mechanical means where possible. Herbicides may be used where they will not negatively affect adjacent plant material.
- * Selective pruning or thinning to remove dead or diseased plant material.
- * Planting in stream wetland buffers should be preceded by the correction of any existing erosion problems and the use of chemical fertilizers and herbicides should be minimized or eliminated.

Qualified Professional

The Contractor shall retain the services of an ISA Certified Arborist or professional forester for monitoring the Tree Protection Zone, performing any necessary construction period management, stress reduction, watering or other corrective activities during construction and during Post Construction (Guarantee Period) Management.

Timing of Afforestation and Reforestation Planting

Planting shall occur between September 15 and May 31, plant materials shall not be installed while ground is frozen. Planting of Proposed Forest Conservation Easement 'D' shall be delayed until the planting season after grading for the proposed public street is completed. All other easements have sufficient separation from construction activities to allow for planting, when possible, between the dates indicated above.

Certification of Completion

At the end of the construction period, the landscape architect, ISA Certified Arborist or professional forester retained by the Contractor shall convey to the Howard County Department of Planning and Zoning a certification that all forest retention areas have been preserved, all afforestation and reforestation plantings have been installed as required by the forest conservation plan, and that all protection measures required for the post construction period have been put in place. A sample certification can be found in Appendix J of the Howard County Forest Conservation Manual.

Post Construction (Guarantee Period) Management Program

The Contractor shall be responsible for the following post-construction activities for the full length of the Guarantee Period (minimum of 2 growing seasons per the Howard County Forest Conservation Manual):

- * Regular mowing of afforestation and reforestation planting areas shall be conducted through the Guarantee Period to suppress growth of weeds and reduce habitat for mice, voles or other rodents that prey on newly planted trees. Mowing equipment shall have pneumatic tires and shall not be of sufficient size to cause excessive soil compaction.
- * Maintaining on site measures including fences and signs to prevent undesirable intrusion into the Tree Protection Zone.
- * Periodic inspection for continued compliance with this Construction Period Maintenance Program.
- * Education of new occupants of the development to avoid activities that could destroy or degrade protected forest resources.
- * Periodic thinning, watering, fertilizing or other measures to ensure survival and growth in the Tree Protection Zone and/or afforestation or reforestation planting areas.
- * Removal and replacement of dead afforestation and reforestation planting such that a 75% survival rating is achieved by the end of the second growing season.
- * Removal and/or control of competing or exotic vegetation.
- * Final inspection and certification that the survival rates have been met at the end of the Post Construction Management Period.

ACCEPTED FOR THE PROVISION OF THE SERVICES DETAILED ABOVE

NAME _____ DATE _____

COMPANY NAME _____

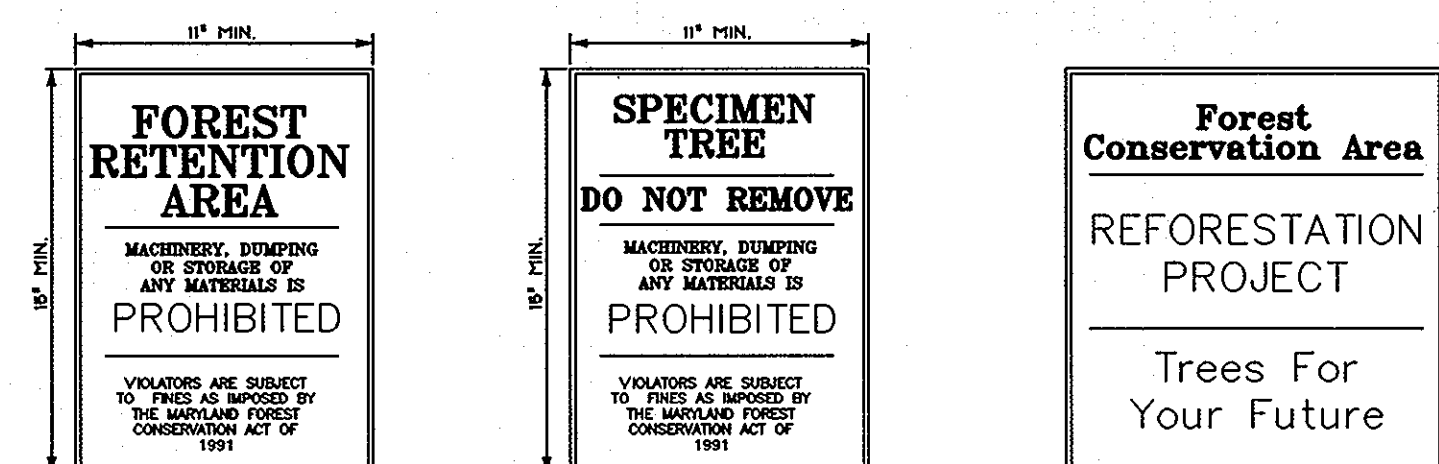
COMPANY ADDRESS _____

PHONE _____

FOREST CONSERVATION EASEMENT 'B'

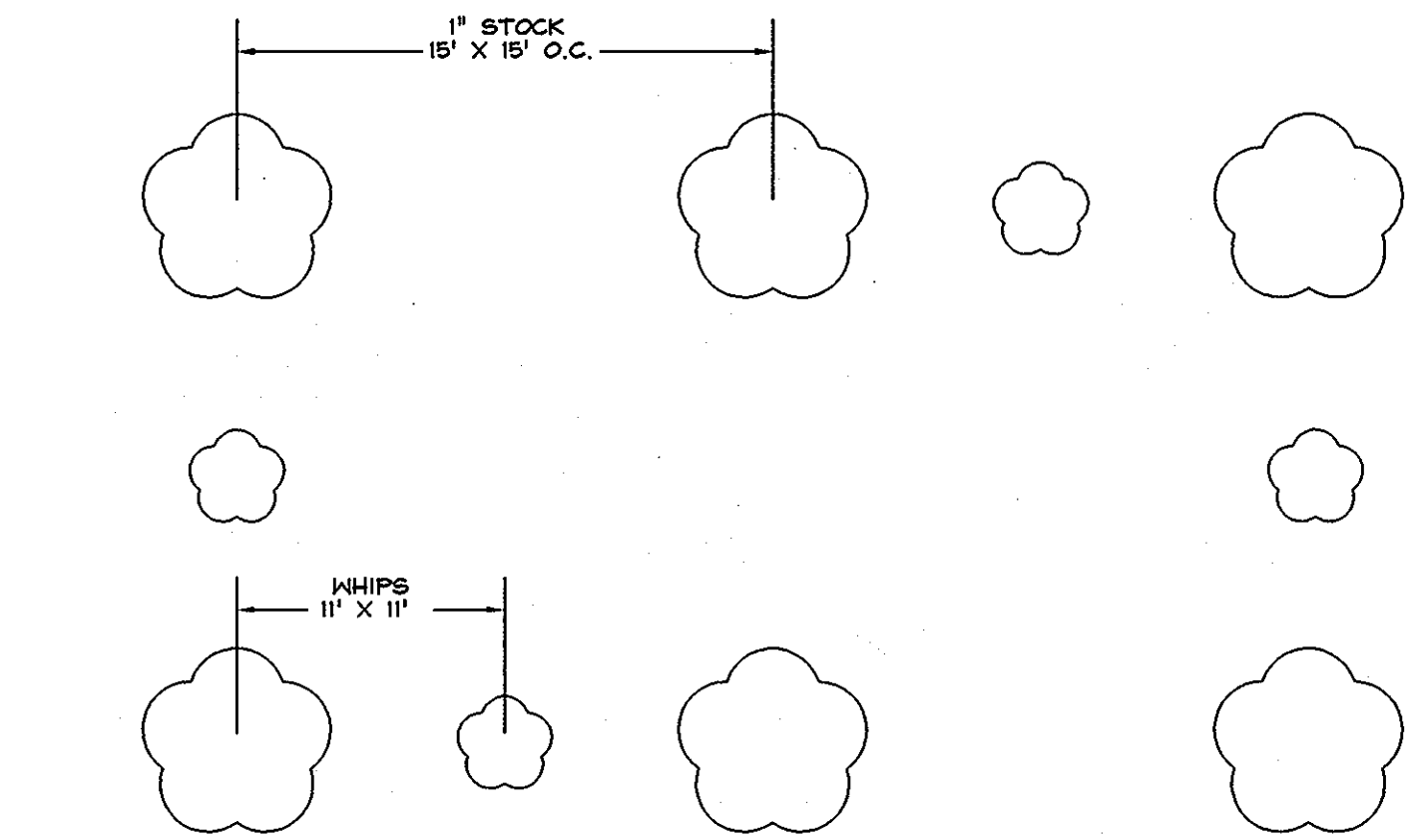
OF 1" STOCK TO BE PLANTED (17) ACREAGE TO BE PLANTED (0.082±)

COMMON NAME	SPECIES	SIZE	SPACING	QUANTITY	TOLERANCE	REMARKS
TULIP POPLAR	LIRIODENDRON TULIPIFERA	1" CAL. 8'-10' HT.	15' O.C.	3	I	FACU
SASSAFRAS	SASSAFRAS ALBIDUM	1" CAL. 6'-8' HT.	15' O.C.	2	I	FACU
BLACK GUM	NYSSA SYLVATICA	1" CAL. 8'-10' HT.	15' O.C.	3	T	FACU
BLACK CHERRY	PRUNUS SEROTINA	1" CAL. 8'-10' HT.	15' O.C.	2	MT	FACU
RED OAK	QUERCUS RUBRA	1" CAL. 8'-10' HT.	15' O.C.	3	T	FACU
REDBUD	CERCIS CANADENSIS	1" CAL. 6'-8' HT.	15' O.C.	2	T	FACU
WHITE PINE	PINUS STROBUS	1" CAL. 4'-6' HT.	15' O.C.	2	MT	FACU



NOTES: SIGNS TO BE PLACED ON METAL POSTS 1/2" ABOVE FINISH GRADE. PLACE SIGNS EVERY 100' AROUND PERIMETER OF RETENTION AREA. SIGNS MAY NOT BE ATTACHED TO TREES.

RETENTION, REFORESTATION, & AFFORESTATION PROTECTION SIGN DETAILS
N.T.S.



LEGEND:

O.C. - ON CENTER

LARGE TREE - OVERSTORY

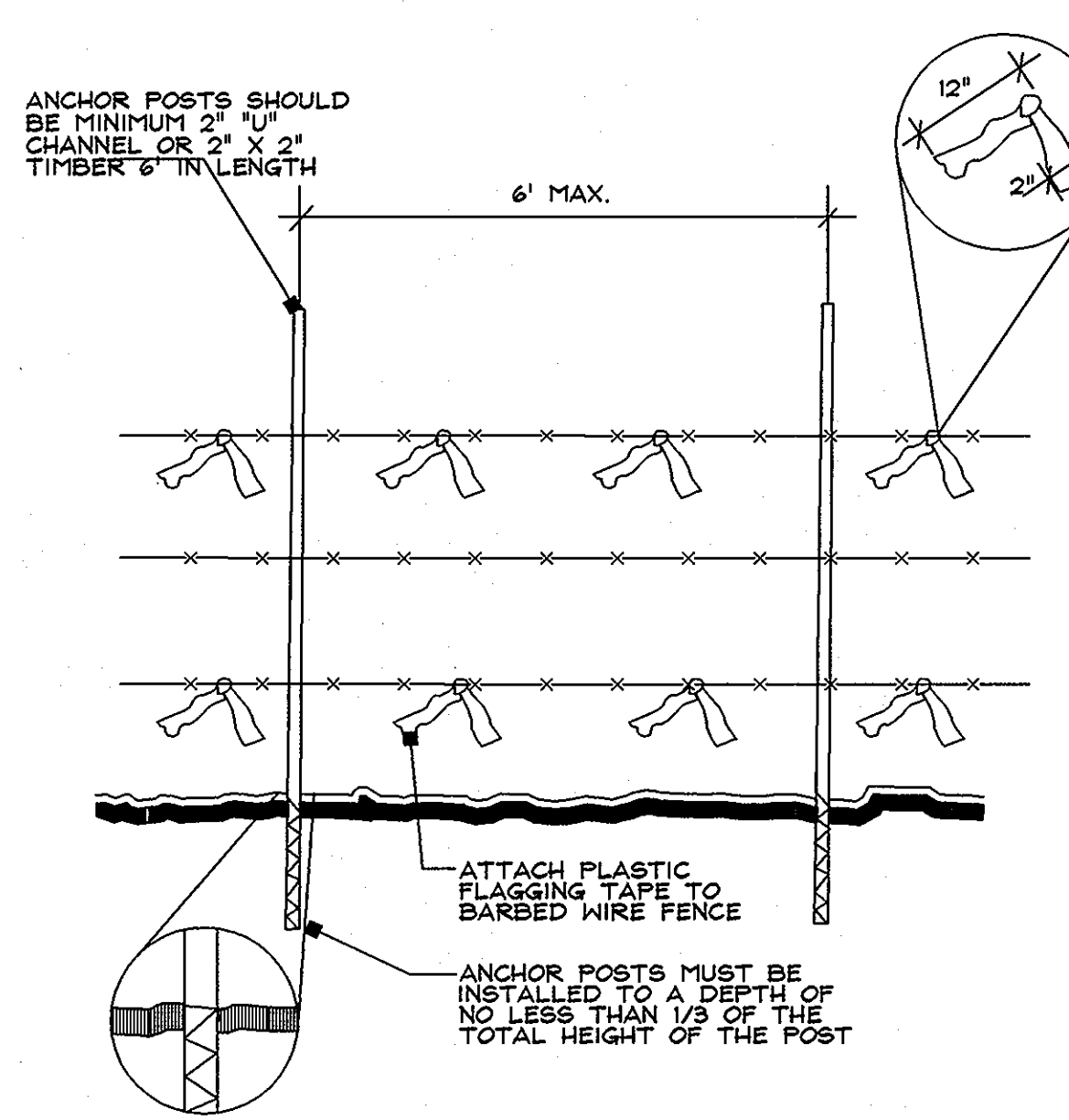
SMALL TREE - UNDERSTORY

PLANTING DESIGN

N.T.S.

PLANTING NOTES:

- 1) TREES WILL BE MULCHED WITH 2"-4" MULCH OVER THE ROOT AREA. AVOID DIRECT CONTACT WITH THE TRUNK.
- 2) HARDWOOD WHIPS NO LESS THAN 2" IN HEIGHT AND AVERAGING 24" IN HEIGHT WILL BE USED.
- 3) WATERING AND FERTILIZING WILL BE PERFORMED ON AN AS NEEDED BASIS.
- 4) PLANTING OF UNDERSTORY TREES SHALL BE IN AN EVEN, RANDOM DISTRIBUTION.



NOTES:

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. BARBED WIRE SHOULD BE SECURELY ATTACHED TO POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION.
7. PROTECTIVE SIGNAGE IS ALSO RECOMMENDED.

BARB WIRE TREE PROTECTION FENCE

N.T.S.

DATA SOURCES:

BOUNDARY AND TOPO SHOWN HEREON ARE BASED ON A FIELD RUN SURVEY PREPARED BY DEMARIO DESIGN CONSULTANTS, INC. DATED NOVEMBER 2007. WETLANDS SHOWN PER 5-06-004, DERIVED FROM A REPORT PREPARED BY MCCARTHY & ASSOCIATES DATED MAY 2005.

DeMario
DESIGN CONSULTANTS
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http://www.demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARBUT
WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897
SITE ADDRESS:
LEISHEAR RD @ MD RTE. 216
LAUREL, MD 20723

**MD & VA MILK PRODUCERS SOUTH
FOREST
CONSERVATION PLAN**

6TH ELECTION DISTRICT HOWARD COUNTY

REVISIONS

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE # F-09-061	DES. BY: AJS
TAX ACC. # 06-414435	DRN. BY: AJS
TAX MAP: 46 & 47	CHK. BY: AJS
BLOCK / GRID: 12 & 1	DATE: 3/22/10
PARCEL #: 985 & P/O 2	DDC JOB#: 07106.3
ZONE / USE: R-20	SHEET NUMBER:
DWG. SCALE: 1"=50'	15 of 25

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

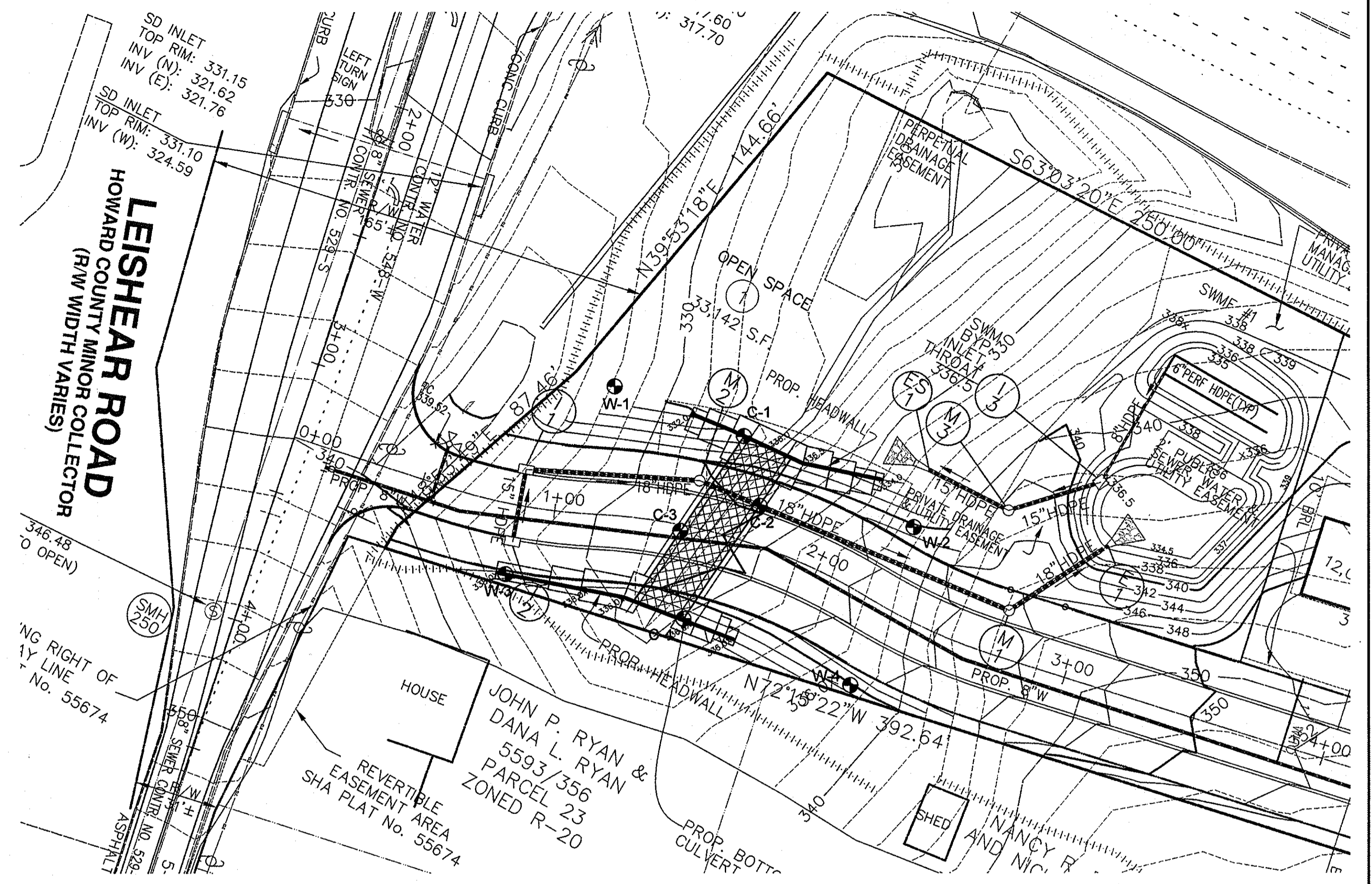
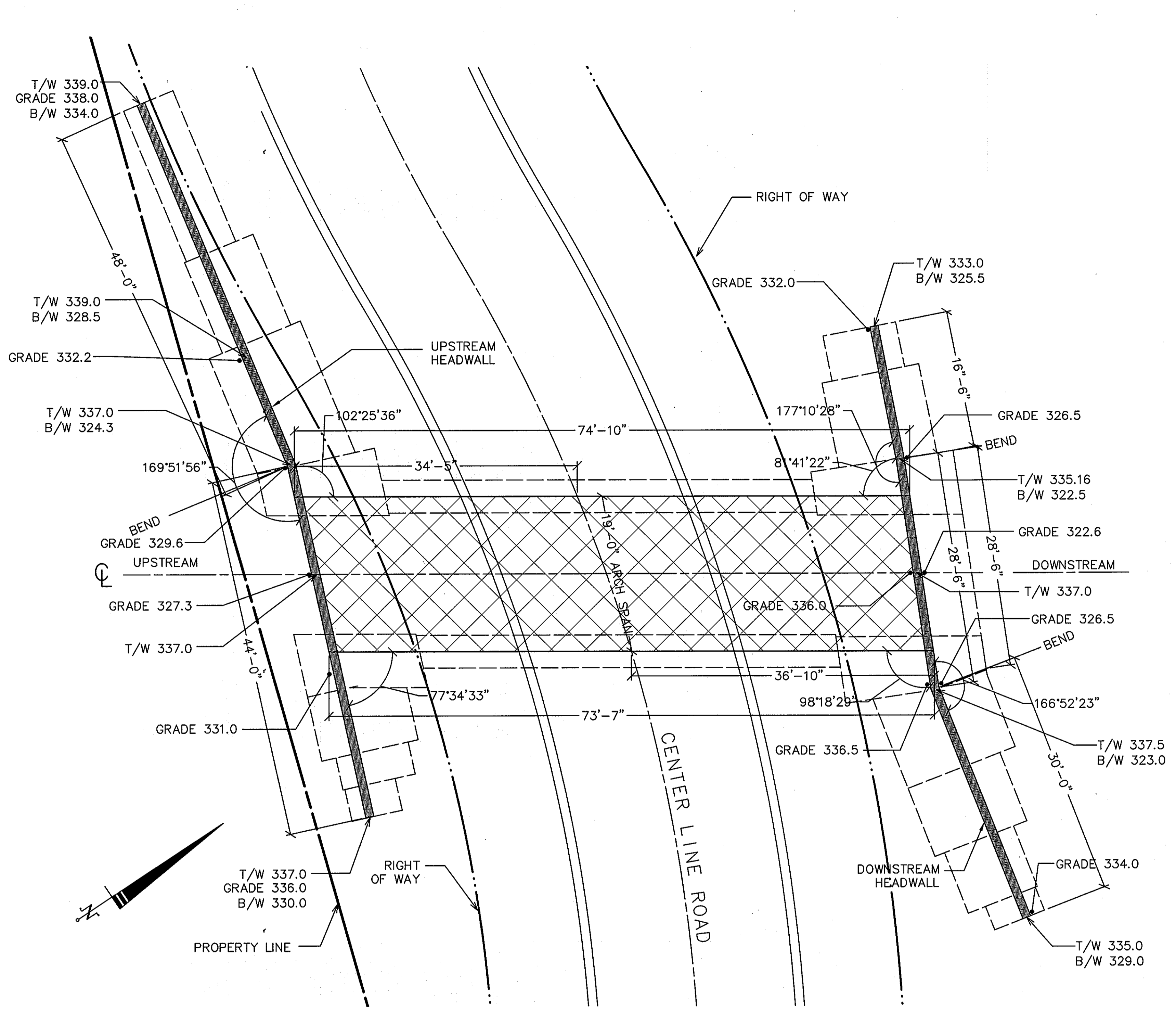
Michael J. M...
CHIEF, BUREAU OF HIGHWAYS
DATE: 4-12-10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Kurt S...
CHIEF DIVISION OF LAND DEVELOPMENT
DATE: 5/3/10
Andrew J. Stine
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 4/27/10

3/22/10
DATE

ANDREW J. STINE
LANDSCAPE ARCHITECT NO. 3222



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192 East Main Street Westminister, MD 21157
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http://www.demariodesign.us eMail: ddc@demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARLUT
WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-951-7897

SITE ADDRESS:
LEISHEAR RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
SITE PLAN AND CULVERT AND HEADWALL PLAN

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD (410) 850-4788 Fax: (410) 890-4098

6TH ELECTION DISTRICT	HOWARD COUNTY			
REVISIONS				
NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE

CO. FILE #: F-09-061	DES. BY: PR
TAX ACC. #: 06-414435	DRN. BY: AM
BLOCK / GRID: 12 & 1	CHK. BY: JJC
DATE: 03-22-10	
PARCEL #: 985 & P/O 2	HCEA JOB#: 07651-B
ZONE / USE: R-20	SHEET NUMBER:
DWG. SCALE: AS SHOWN	18 of 25

ENGINEER
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

[Signature] 3/29/10
SIGNATURE OF THE ENGINEER DATE

BY THE DEVELOPER:
I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL. AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

[Signature] 3/26/10
SIGNATURE OF THE DEVELOPER DATE

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

[Signature]
HOWARD SCD DATE

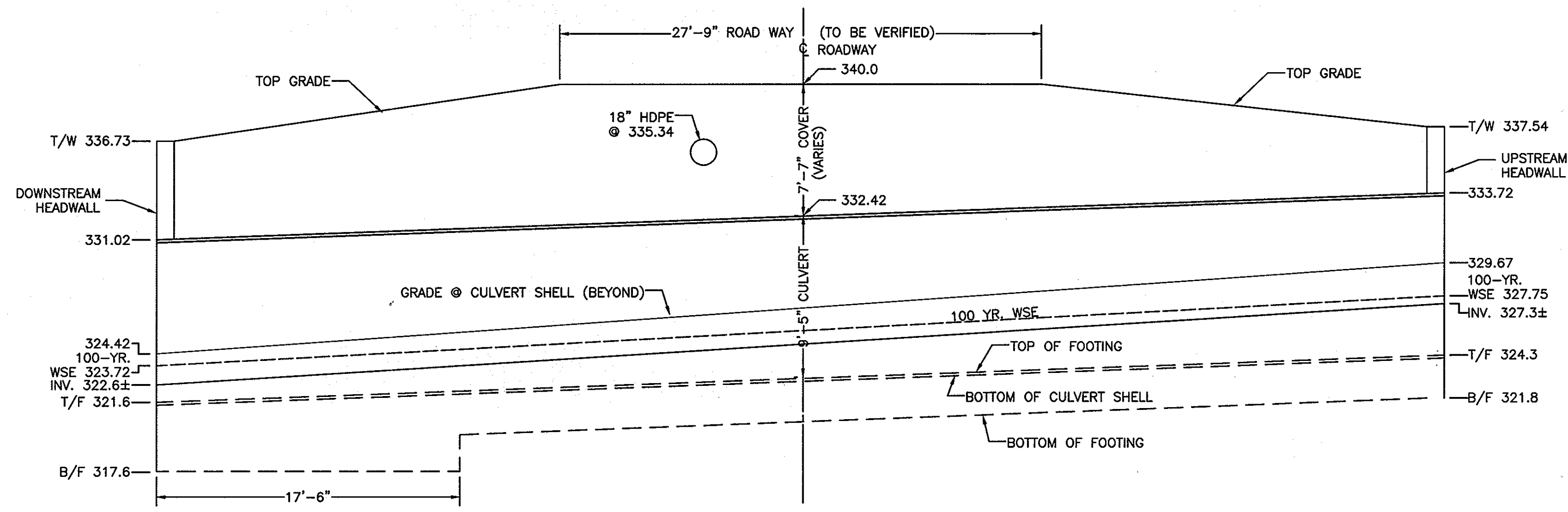
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 4-12-10
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 5/3/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

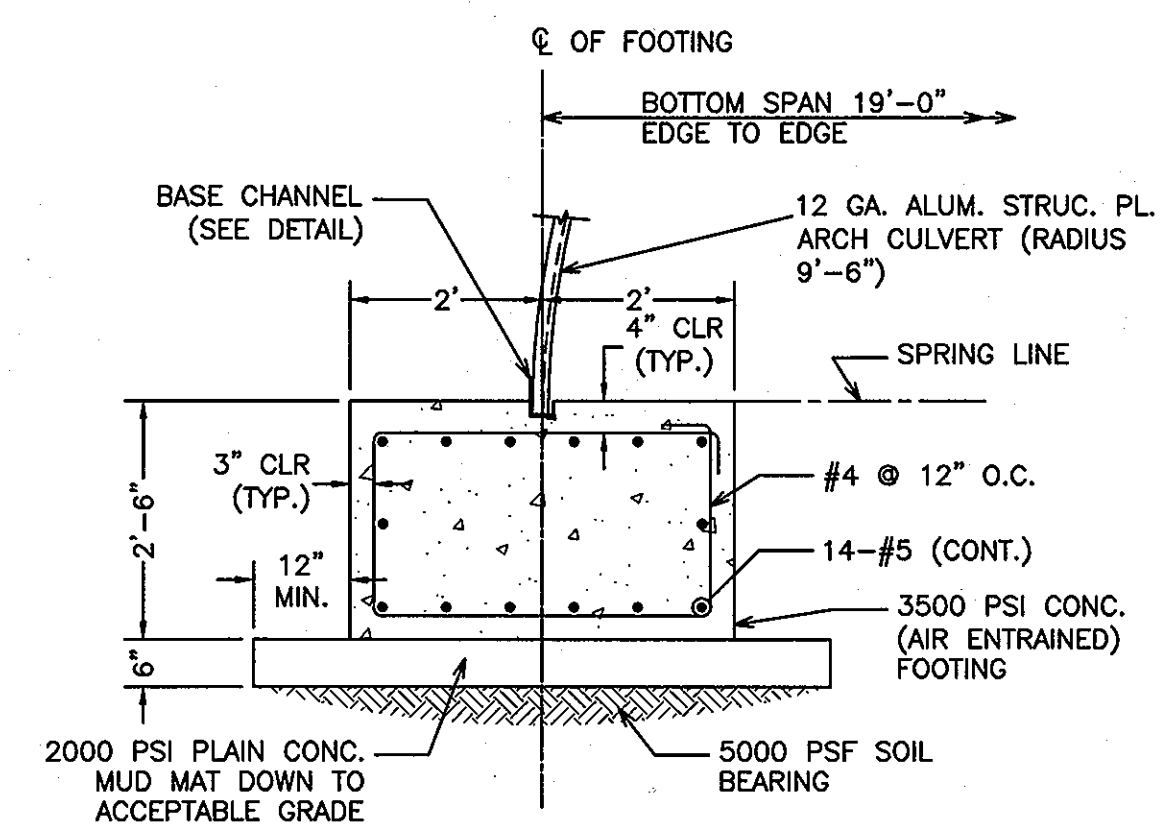
[Signature] 4/27/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

03-22-10
DATE
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. 9454. Expiration Date: 09-09-11.

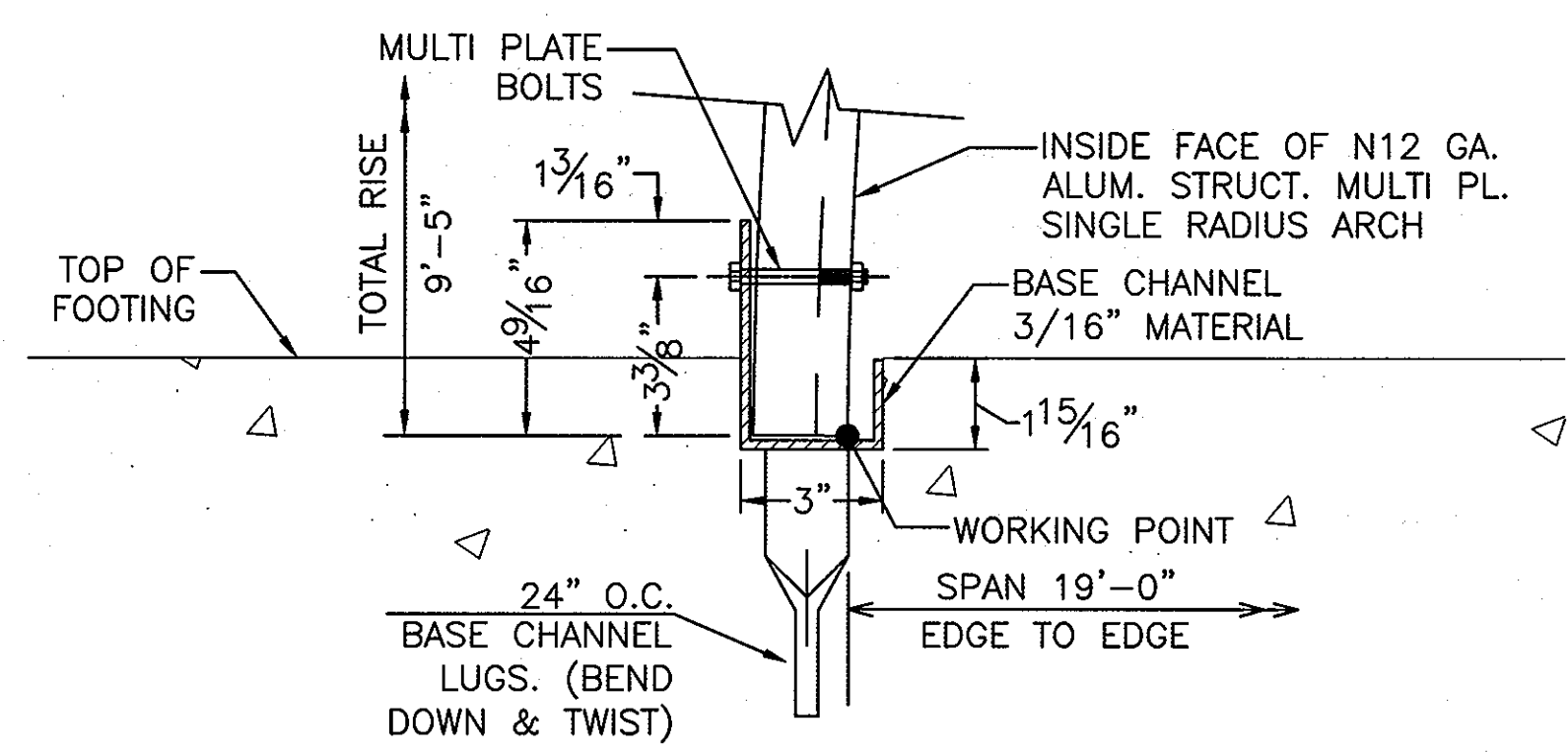
[Signature]
JYOTIN CHOKSEY P.E. 9454



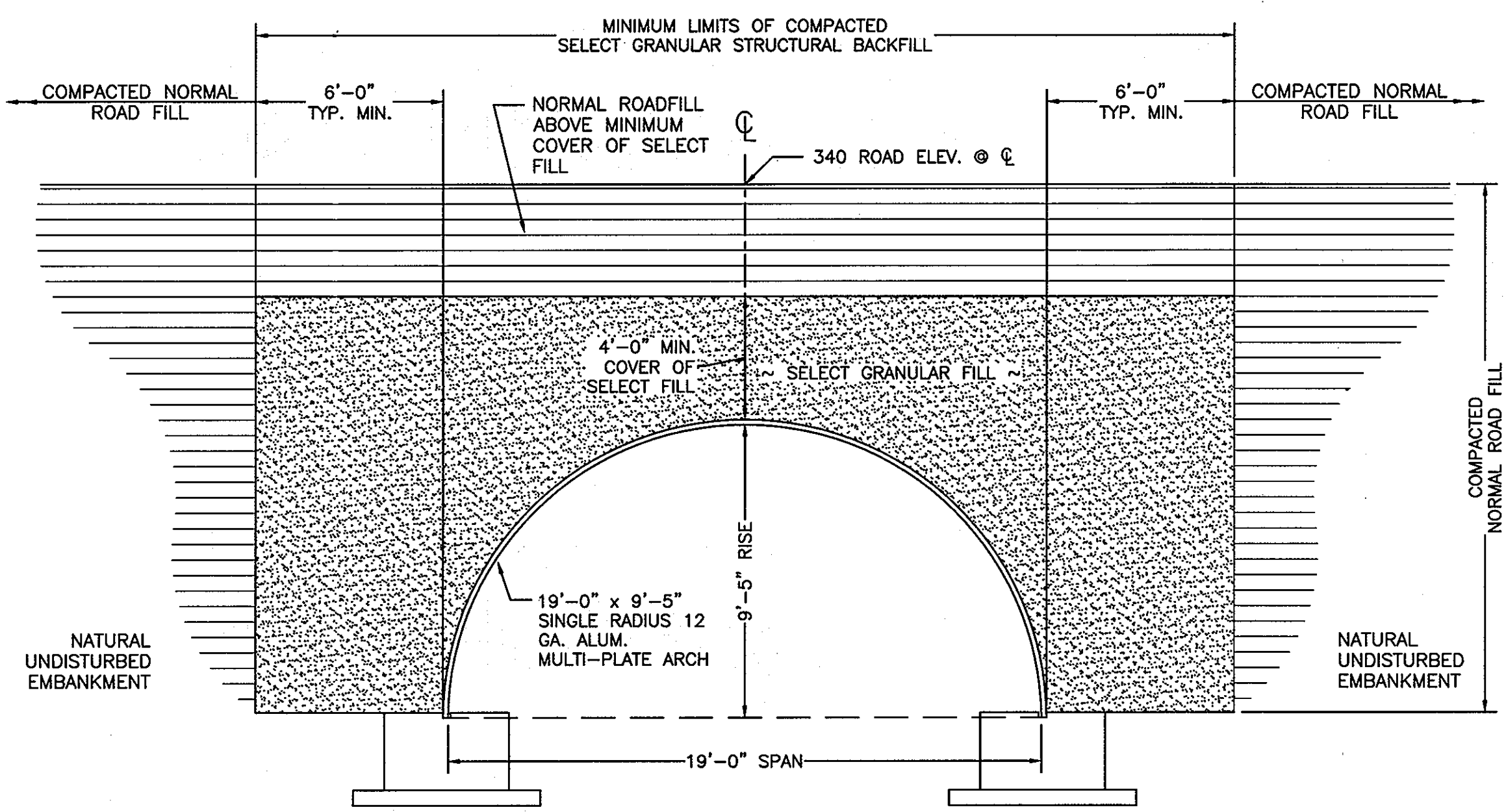
CULVERT LONGITUDINAL SECTION B-B @ CENTERLINE
3/16" = 1'-0"



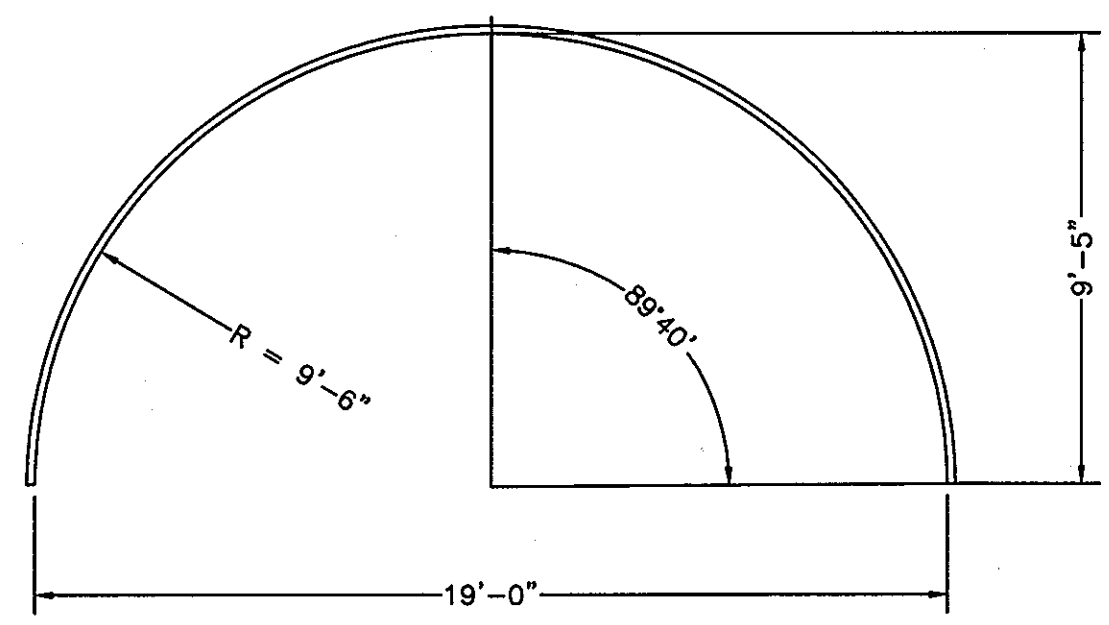
CULVERT FOOTING DETAIL
1/2" = 1'-0"



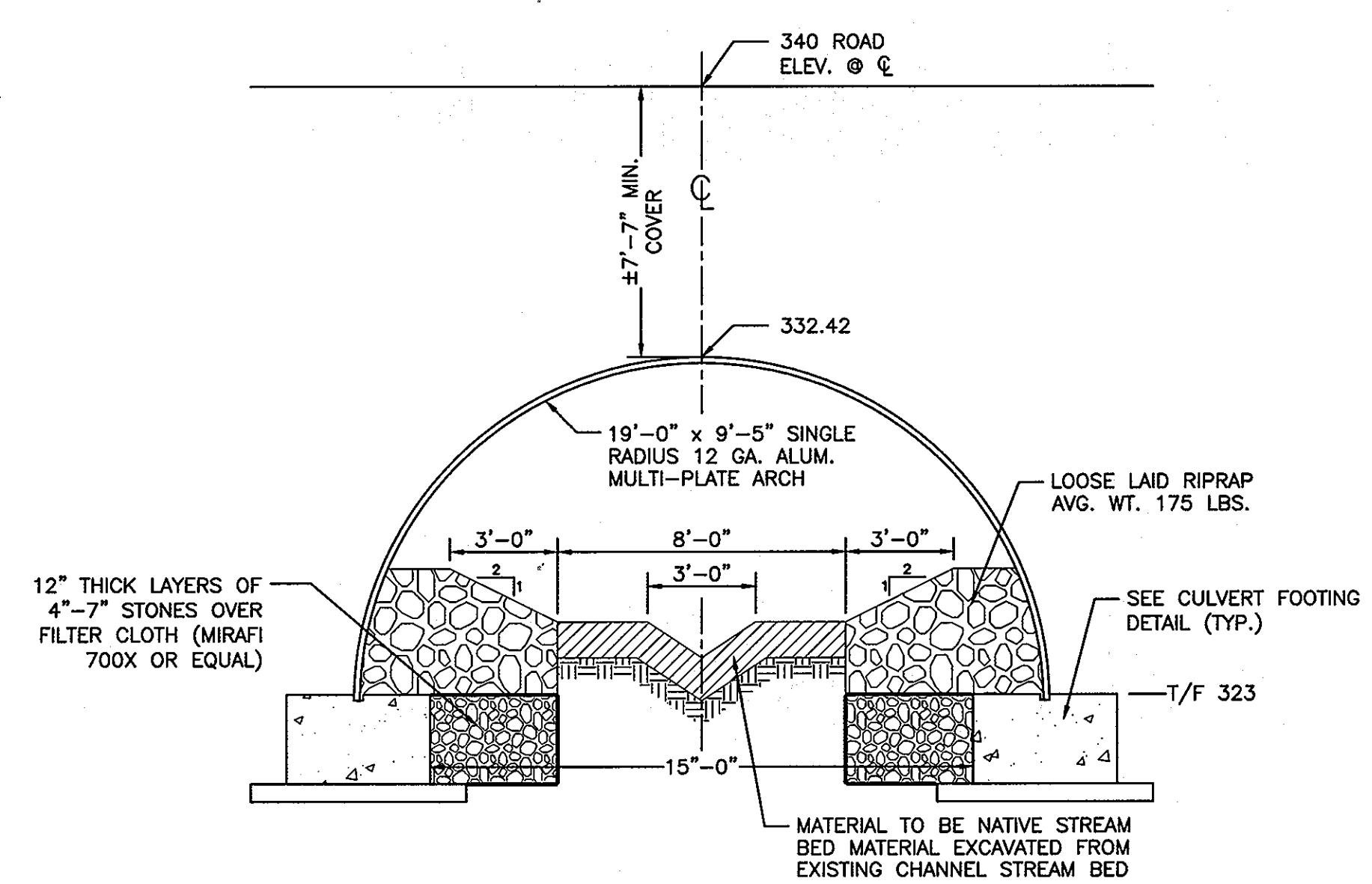
BASE CHANNEL DETAIL
3" = 1'-0"



CULVERT BACKFILL DETAIL
1/4" = 1'-0"



MULTI-PLATE ARCH DETAIL
1/4" = 1'-0"



CULVERT SECTION AT C ROADWAY
1/4" = 1'-0"

SPECIFICATION ALUMINUM STRUCTURAL PLATE

Scope: This specification covers the manufacture and installation of the aluminum structural plate structure detailed in the plans.

Material: The aluminum structural plate structure shall consist of plates and appurtenant items as shown on the plans and shall conform to the requirements of AASHTO M 219 and ASTM B 746. The corrugated plate (and ribs if required) shall be curved and bolt hole punched at the plant. Plate thickness and rib spacings shall be as indicated on the plans. All manufacturing processes including corrugating, punching, curving and galvanizing shall be performed within the United States using raw materials made in the United States.

Assembly: The structure shall be assembled in accordance with the shop drawings provided by the manufacturer and per the manufacturer's recommendations. Bolts shall be tightened using an applied torque of between 100 and 150 ft.-lbs.

Installation: The structure shall be installed in accordance with the plans and specifications, the manufacturer's recommendations, and the AASHTO Standard Specifications for Highway Bridges, Section 26 (Division II).

Backfill: See structural backfill notes.

Note: Construction loads that exceed highway load limits are not allowed on the structure without approval from the Engineer.

MATERIAL

A granular type of material shall be used around and over the structure. This select structural backfill material shall conform to one of the following classifications of soil from AASHTO Specification M-145, as modified in the following table for A-1, A-2 & A-3.

GROUP CLASSIFICATION	A-1	A-2	A-3
Sieve Analysis, Percent Passing:			
No. 10 (2.00 mm)	—	—	—
No. 40 (0.425 mm)	50 Max.	—	51 Max.
No. 200 (0.075 mm)	25 Max.	35 Max.	10 Max.
Characteristics of Fraction			
Passing No. 40 (0.425 mm)			
Liquid Limits	—	40 Max.	—
Plasticity Index	6 Max.	10 Max.	Non Plastic
Usual Types of Significant Constituent Materials	Stone Fragments, Gravel and Sand	Gravel or Sand with Silt or Clay	Sand
Adapted from AASHTO M-145			

ADDITIONAL REQUIREMENTS

- Materials must be dense graded (open graded or gap graded materials are not allowed).
- On site mixing or blending to achieve specified gradation is not allowed, unless these materials are regularly tested and certified by a geotechnical engineer as meeting the specified gradation.

BACKFILL ENVELOPE LIMITS

The backfill envelope limits are per Arch manufacturer's details.

BACKFILL PLACEMENT

Before backfilling, the erected structure shall meet the tolerance and symmetry requirements of AASHTO and the manufacturer.

Approved backfill material shall be placed in horizontal, uniform lifts not exceeding 8 inches in thickness, before compaction, and shall be brought up uniformly on both sides of the structure. Each layer of backfill shall be compacted to a relative density of not less than 90%, modified proctor per AASHTO Test Method No. T-180. Field density tests of compacted backfill will be made at regular intervals during backfill.

Compaction equipment or methods that produce horizontal or vertical earth pressures which cause excessive distortion or damage to structures shall not be used.

Contractors should plan to have a D4 (approximately 20,000 lbs.) or similar weight tracked dozer to place and grade backfill immediately alongside and above the structure until minimum cover level is reached. Lightweight vibratory plate or roller type compaction equipment must be used to compact the backfill in these zones. Use of heavier equipment and/or rubber tired equipment such as scrapers, graders and front

HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098

DeMario
DESIGN CONSULTANTS

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http://www.demariodesign.us eMail: ddo@demariodesign.us

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARBUT
WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897

SITE ADDRESS:
LEISHARD RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
HEADWALL ELEVATIONS AND FOOTING PLANS

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #:	F-09-061	DES. BY:	PR	
TAX ACC. #:	06-414435	DRN. BY:	AM	
TAX MAP:	46 & 47	CHK. BY:	JJC	
BLOCK / GRID:	12 & 1	DATE:	03-22-10	
PARCEL #:	985 & P/O 2	HCEA JOB#:	07651-B	
ZONE / USE:	R-20	SHEET NUMBER:		
DWG. SCALE:	AS SHOWN			

ENGINEER
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

[Signature]
SIGNATURE OF THE ENGINEER DATE 3/29/10

BY THE DEVELOPER:
I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

[Signature]
SIGNATURE OF THE DEVELOPER DATE 3/26/10

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

[Signature]
HOWARD SCD DATE

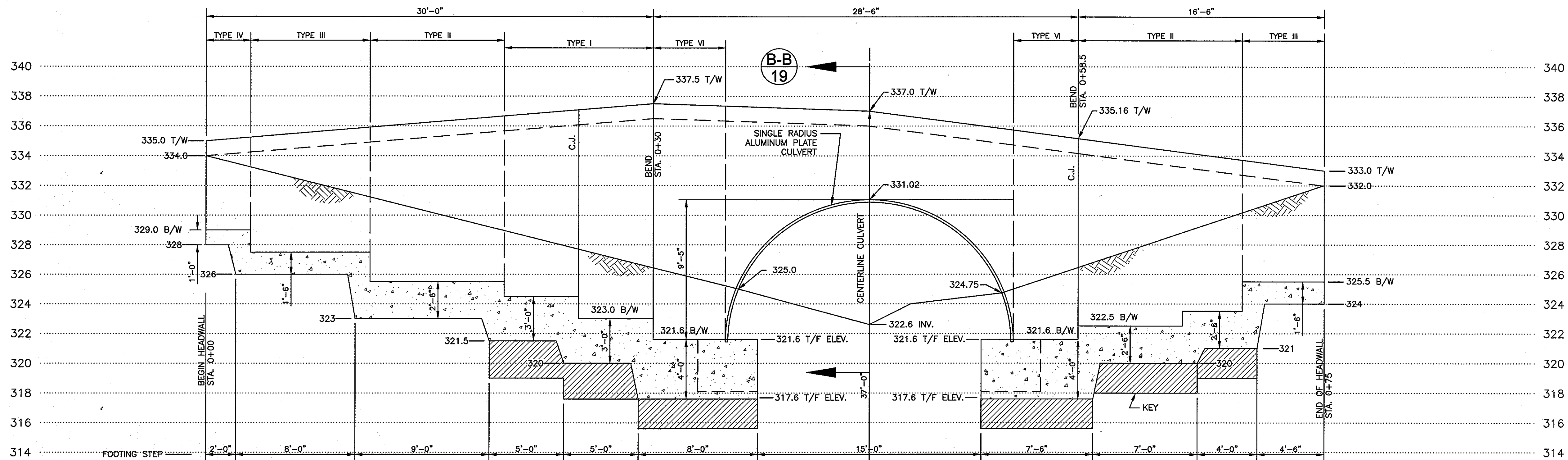
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
4-12-10
[Signature]
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
5/3/10
[Signature]
CHIEF DIVISION OF LAND DEVELOPMENT DATE

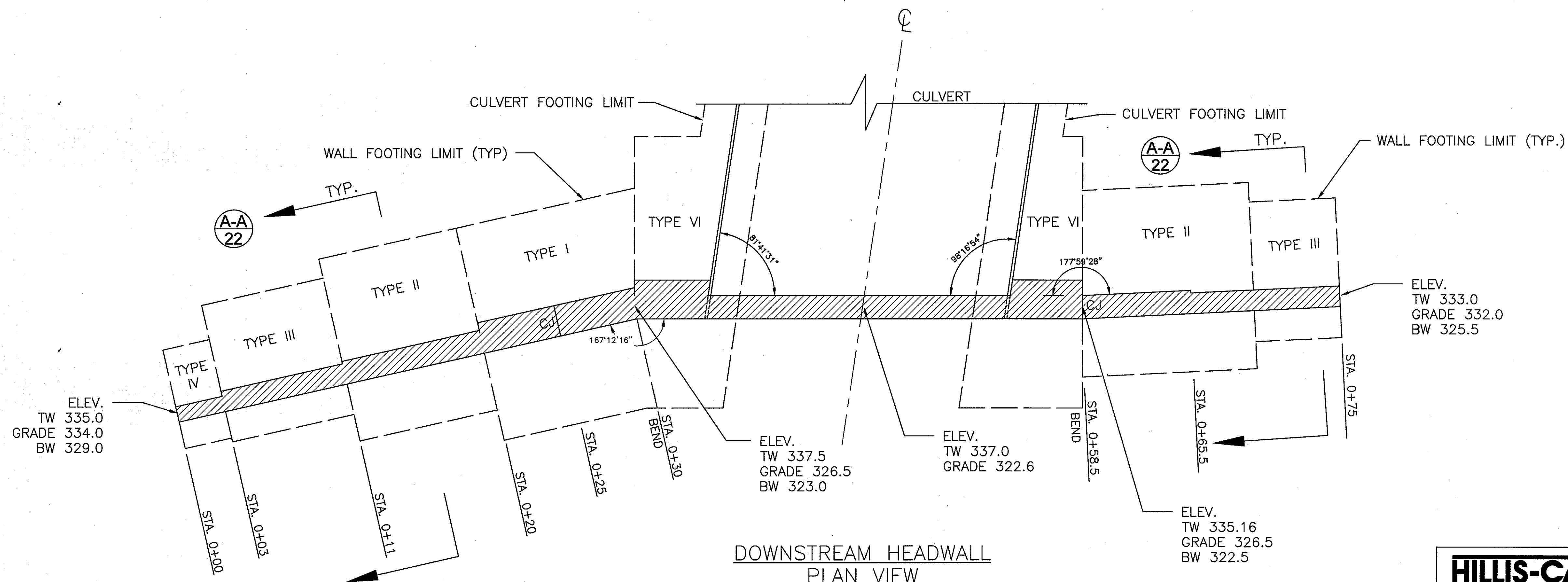
4/27/10
[Signature]
CHIEF, DEVELOPMENT ENGINEERS DIVISION DATE

03-22-10
DATE
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. 9654, Expiration Date: 09-09-11.

[Signature]
3/24/10
JYOTIN CHOKSEY P.E. 9454



DOWNSTREAM HEADWALL
ELEVATION VIEW
SCALE: 1/4" = 1'-0"



DOWNSTREAM HEADWALL
PLAN VIEW
SCALE: 1/4" = 1'-0"



DESIGN CONSULTANTS
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192 East Main Street Phone: (410) 386-0560
Westminster, MD 21157 Fax: (410) 386-0564
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410-931-7897

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LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
DOWNSTREAM HEADWALL
PLAN AND ELEVATION

6TH ELECTION DISTRICT HOWARD COUNTY

NO.	DESCRIPTION OF CHANGES	DRN.	REV.	DATE
CO. FILE #:	F-09-061	DES. BY:	PR	
TAX ACC. #:	06-414435	DRN. BY:	HM	
TAX MAP:	46 & 47	CHK. BY:	JJC	
BLOCK / GRID:	12 & 1	DATE:	03-22-10	
PARCEL #:	985 & P/O 2	HCEA JOB#:	07651-B	
ZONE / USE:	R-20	SHEET NUMBER:		
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[Signature]
SIGNATURE OF THE ENGINEER
3/24/10
DATE

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[Signature]
SIGNATURE OF THE DEVELOPER
3/26/10
DATE

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[Signature]
HOWARD SCD
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 4-12-10
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

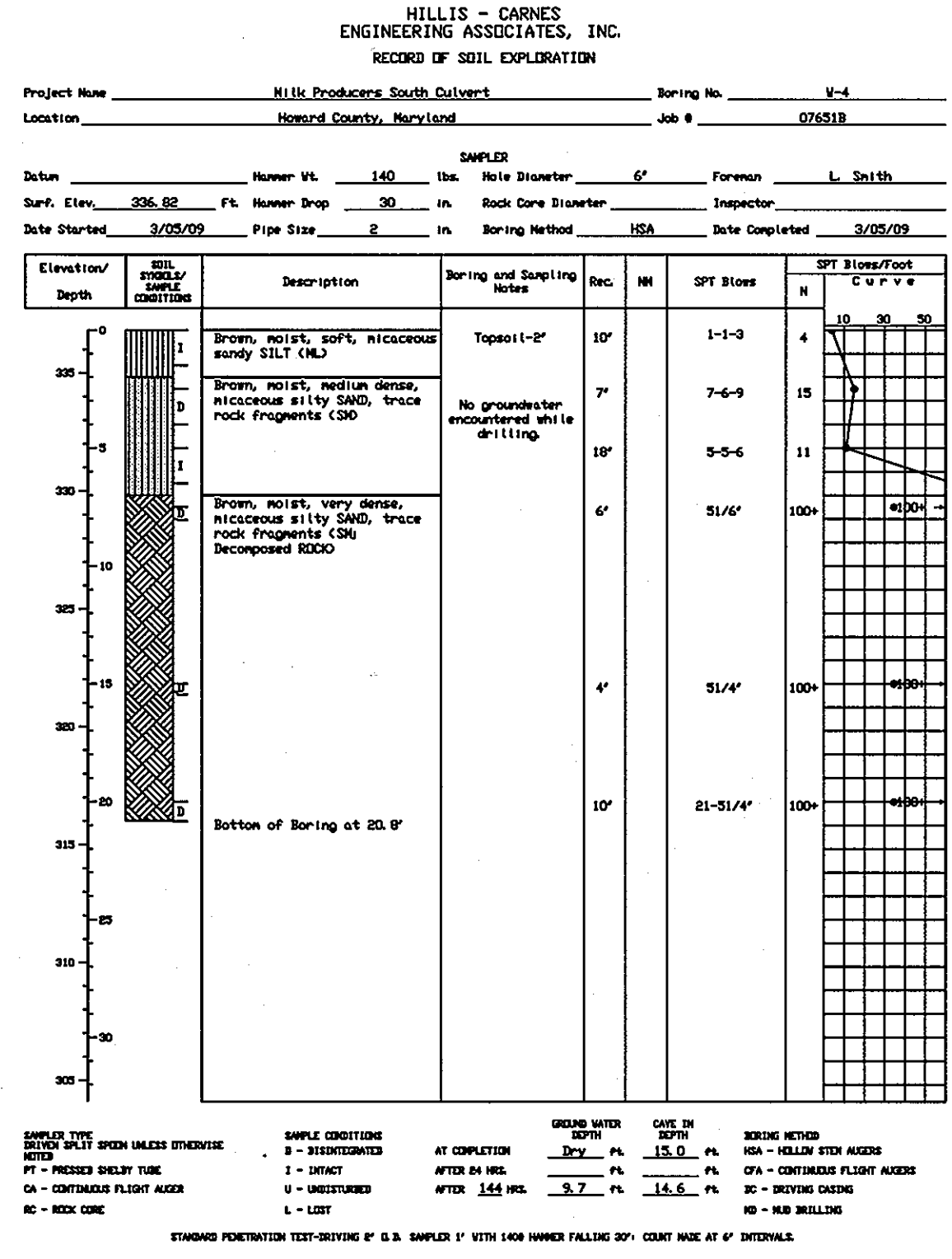
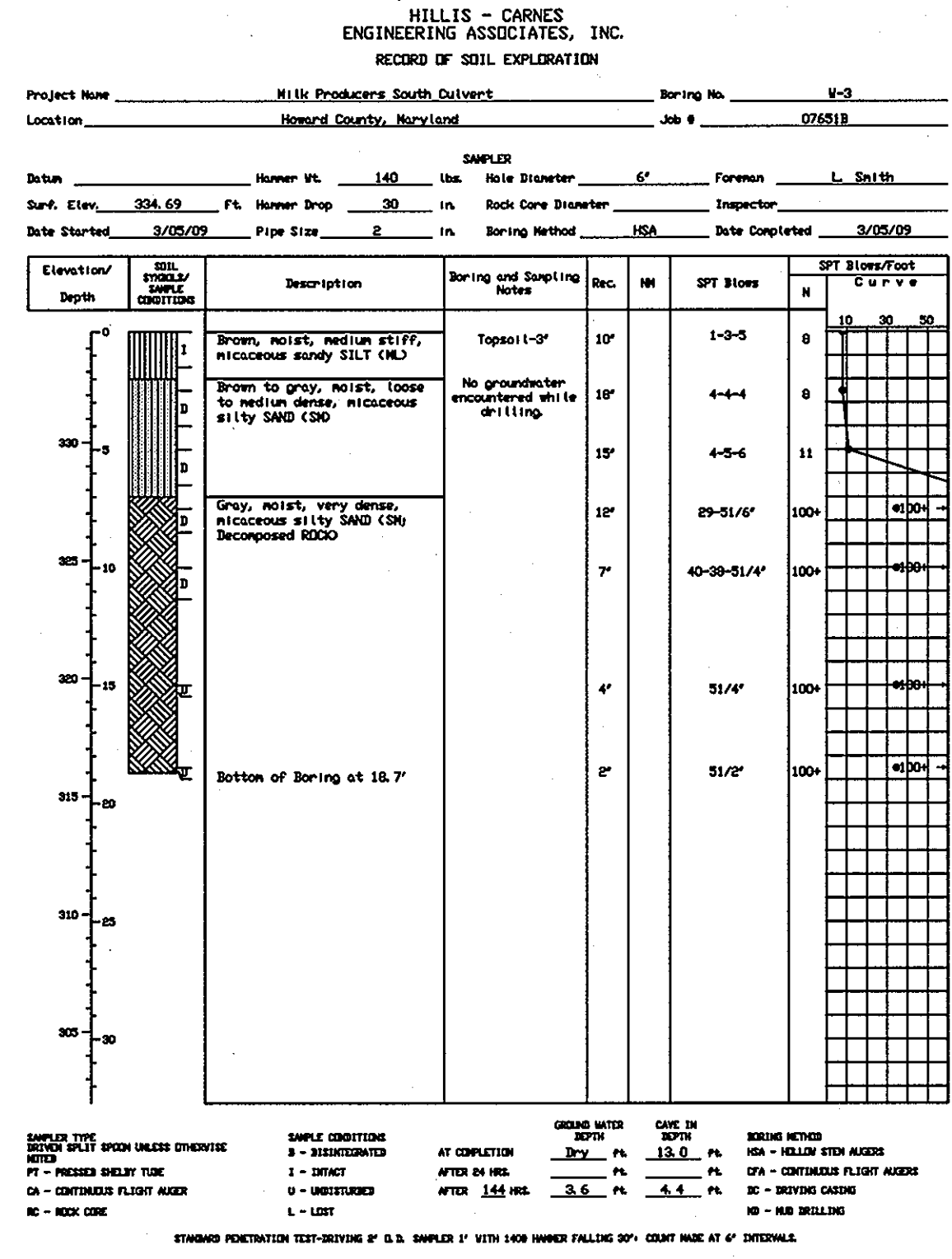
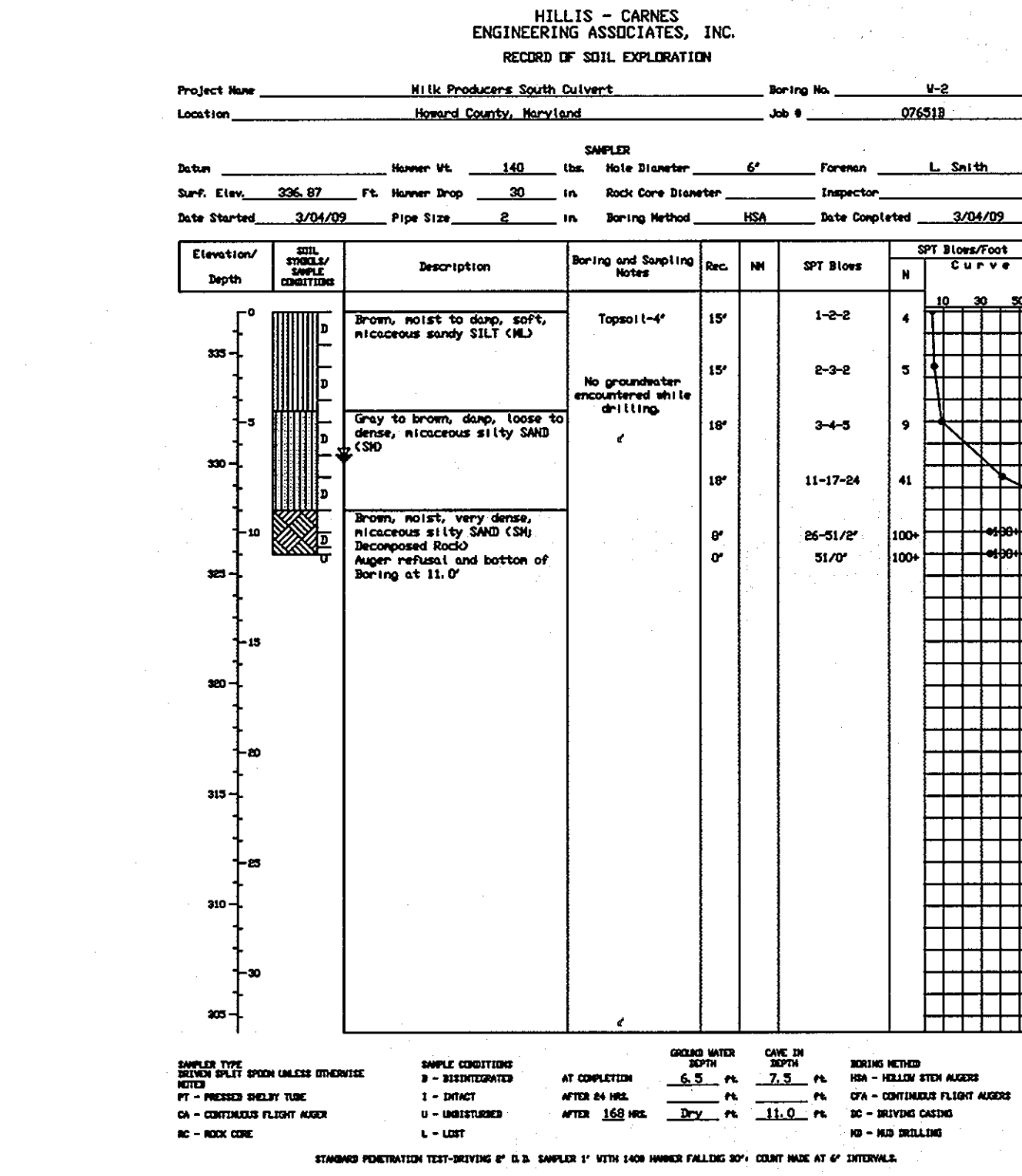
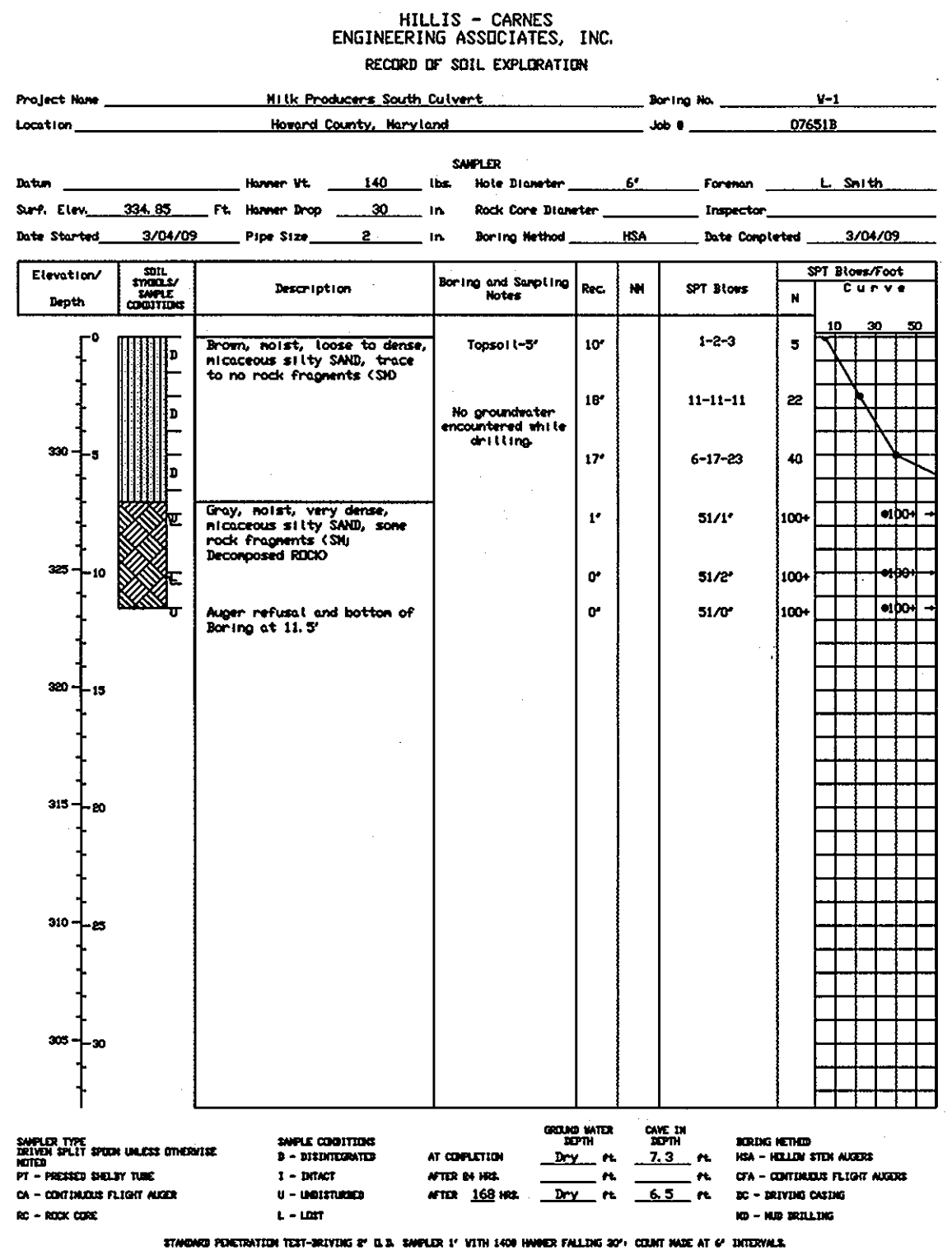
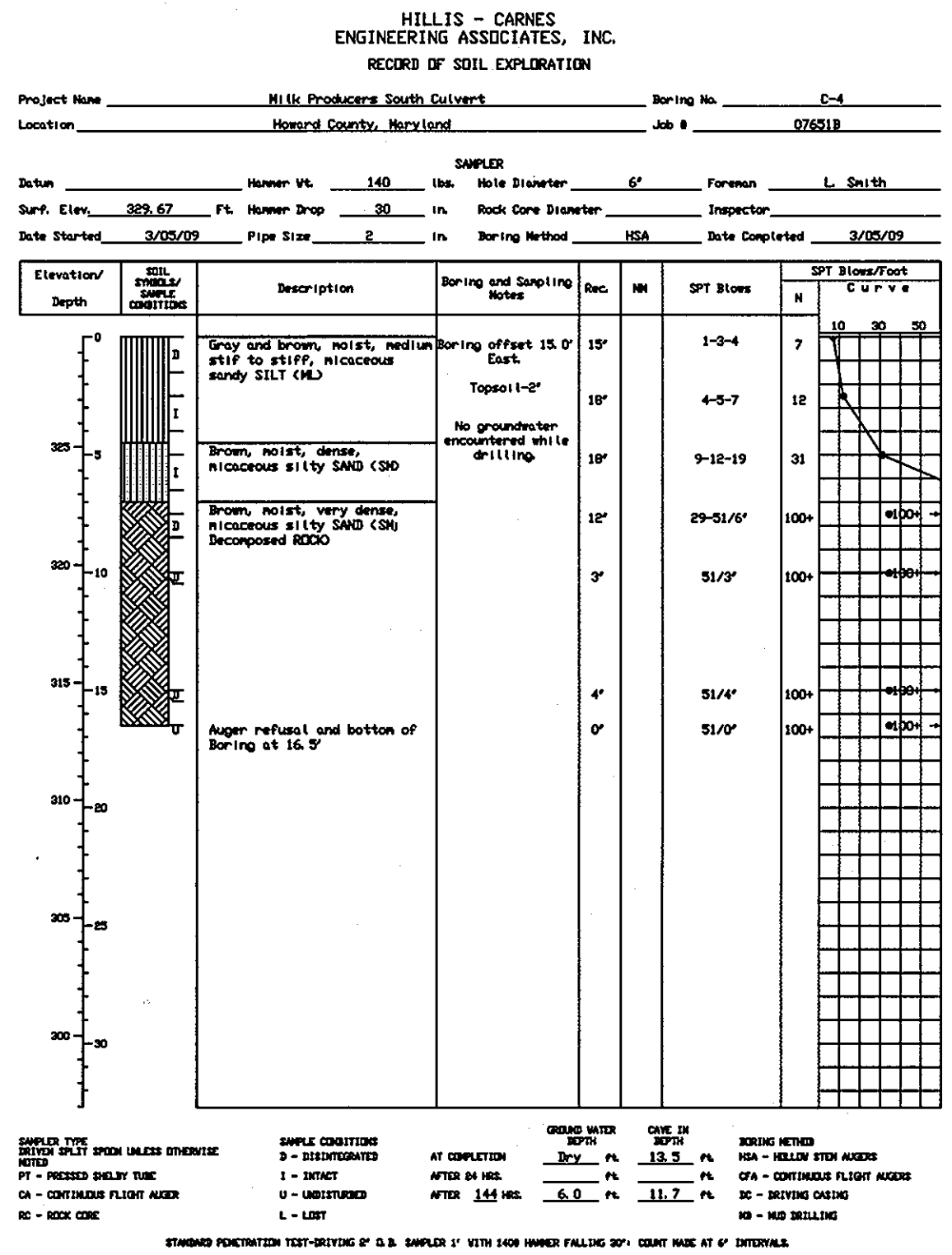
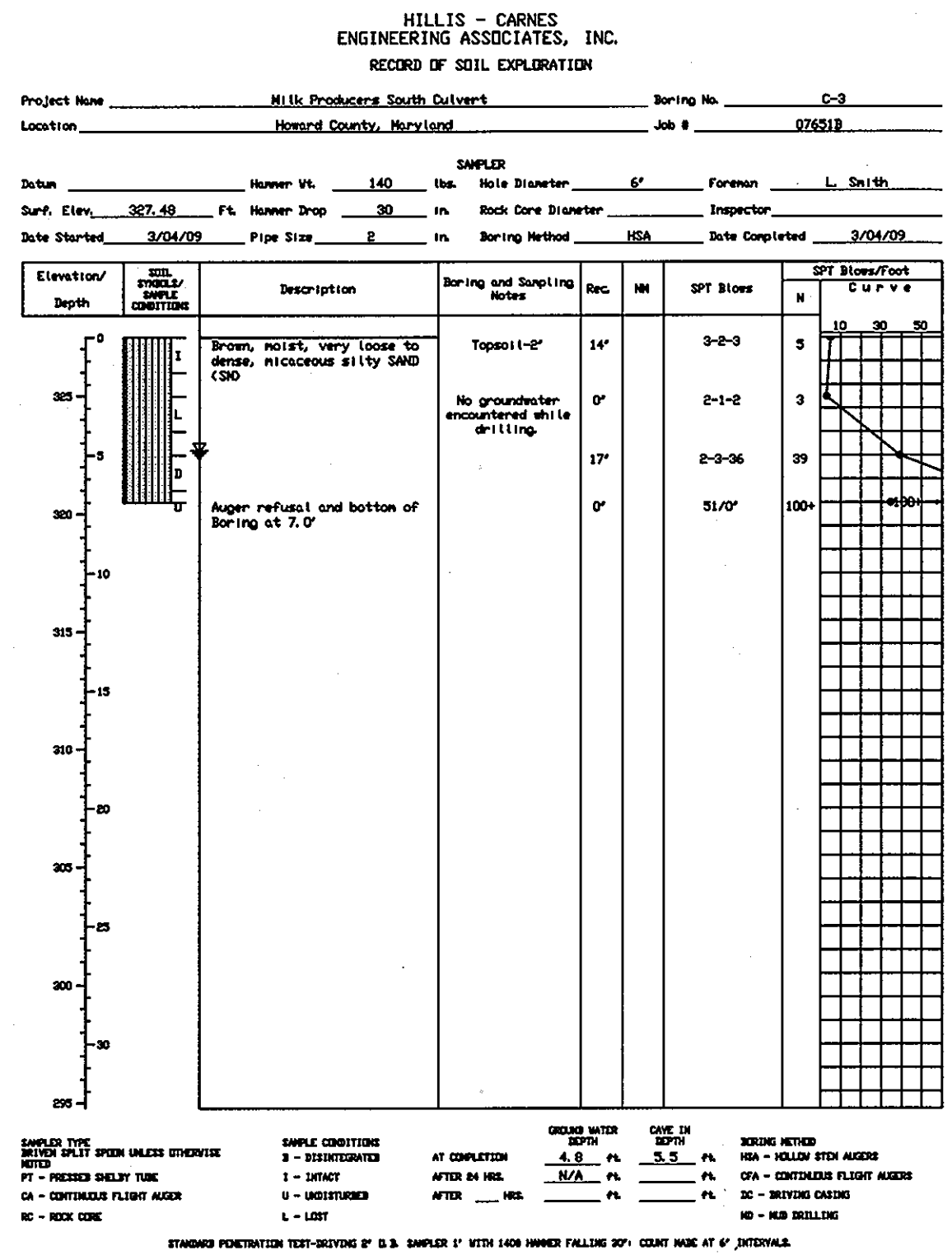
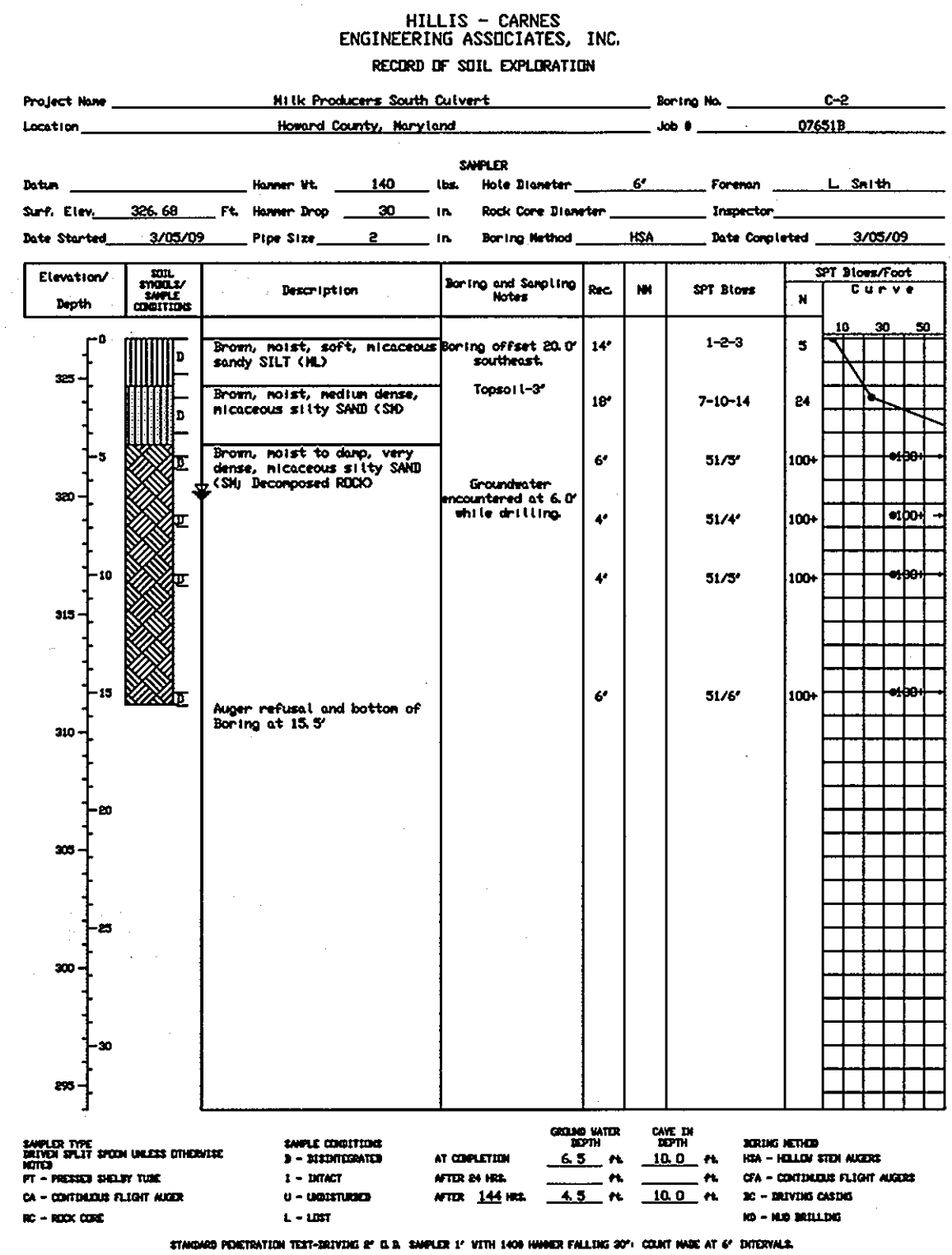
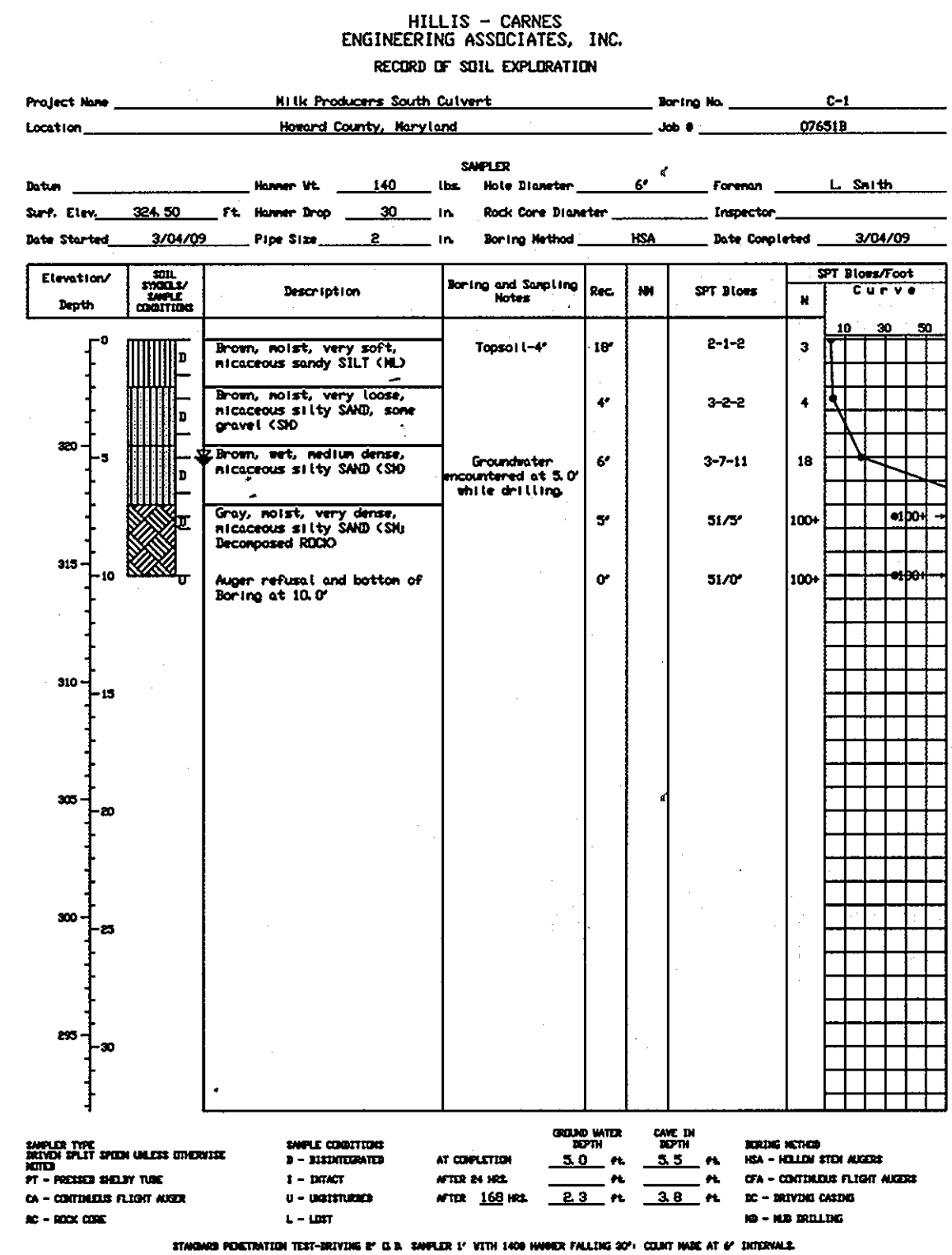
[Signature] 5/3/10
CHIEF DIVISION OF LAND DEVELOPMENT
DATE

[Signature] 4/21/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

03-22-10
DATE

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. 9454, Expiration Date: 09-09-11.

[Signature]
JYOTIN CHOKSEY
P.E. 9454



NOTE: FOR SOIL BORING LOCATIONS SEE SITE PLAN, SHEET 18 OF 25

DeMario
DESIGN CONSULTANTS
ENGINEERS, PLANNERS, SURVEYORS, LANDSCAPE ARCHITECTS
192 East Main Street Westminister, MD 21157
Phone: (410) 386-0560 Fax: (410) 386-0564
http://www.demariodesign.com eMail: dde@demariodesign.com

OWNER/DEVELOPER:
MD & VA MILK PRODUCERS ASSN. INC.
C/O THOMAS BARLUTI
WHITEFORD, TAYLOR & PRESTON LLP
7 ST. PAUL STREET BALTIMORE, MD 21202
410-931-7897

SITE ADDRESS:
LEISHARD RD @ MD RTE. 216
LAUREL, MD 20723

MD & VA MILK PRODUCERS SOUTH
SOIL BORING LOGS

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410)880-4098

6TH ELECTION DISTRICT		HOWARD COUNTY	
REVISIONS			
NO.	DESCRIPTION OF CHANGES	DRN.	REV. DATE
CO. FILE #:	F-09-061	DES. BY:	PR
TAX ACC. #:	06-414435	DRN. BY:	AM
TAX MAP:	46 & 47	CHK. BY:	JJC
BLOCK / GRID:	12 & 1	DATE:	03-22-10
PARCEL #:	985 & P/O 2	HCEA JOB#:	07651-B
ZONE / USE:	R-20	SHEET NUMBER:	
DWG. SCALE:	AS SHOWN		25 of 25

ENGINEER
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

[Signature] 3/29/10
SIGNATURE OF THE ENGINEER DATE

BY THE DEVELOPER:
I ME CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENTAL 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.

[Signature] 3/26/10
SIGNATURE OF THE DEVELOPER DATE

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

[Signature]
HOWARD SCD DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 4-12-10
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 5/3/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/27/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE: 03-22-10
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. 9454, Expiration Date: 09-09-11.

[Signature]
JYOTIN CHOKSEY P.E. 9454