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9050 ROUTE 40 RETAIL CENTER

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN

- GENERAL NOTES**
- THE SUBJECT PROPERTIES ARE ZONED B-2 AND R-20 IN ACCORDANCE WITH COMPLETE REZONING PLAN OF 2/02/04.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST (FIVE) 5 WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK AND RECEIVE CONFORMANCE THAT ALL UTILITIES HAVE BEEN MARKED BEFORE PROCEEDING WITH SITE WORK.
 - ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
 - THE CONTOURS SHOWN HEREON HAVE BEEN TAKEN FROM FIELD RUN TOPOGRAPHIC SURVEYS AT 2' INTERVAL, PREPARED BY FREDERICK WARD ASSOCIATES, INC. DATED MARCH AND MAY 2003, AND SUPPLEMENTED WITH THE TOPOGRAPHY FIELD RUN BY BENCHMARK ENGINEERING, INC. DATED NOVEMBER 2004.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NOS. 248A AND 24CA WERE USED FOR THIS PROJECT.
 - BOUNDARY SURVEY FOR WAS PERFORMED BY FREDERICK WARD ASSOCIATES, INC. ON OR ABOUT MARCH, 2003 FOR PARCEL 96 AND JANUARY, 2004 FOR PARCEL 38.
 - WATER AND SEWER FOR THIS SUBDIVISION IS PUBLIC AND LOCATED WITHIN THE PATAPSCO DRAINAGE AREA. SEWER CONTRACT No. 32-S, WATER CONTRACT No. 11-W.
 - THERE ARE NO WETLANDS OR FLOODPLAIN WITHIN THE AREA OF THIS SUBMISSION.
 - GEOTECHNICAL REPORT WAS PREPARED BY HILLS-CARNES ENGINEERING ASSOCIATES, INC. DATED JANUARY, 2005.
 - EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND FIELD LOCATIONS BY BENCHMARK ENGINEERING INC., DATED NOVEMBER 2004.
 - UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
 - CONTRACTOR SHALL ADJUST ALL UTILITIES, RIM ELEVATIONS AND INVERT ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
 - ALL EXTERIOR LIGHTING SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (1992), SECTION 134 OF THE ZONING REGULATIONS AND AS SHOWN ON THESE PLANS.
 - ALL HANDICAP RAMP SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STD. DETAIL R4.01 AND ALL CURRENT ADA REQUIREMENTS.
 - THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY LEE CUNNINGHAM AND ASSOCIATES, DATED DECEMBER, 2004.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - FINANCIAL SURETY FOR PERIMETER LANDSCAPING, INTERNAL PARKING AND STORM WATER MANAGEMENT FOR 58 SHADE TREES, 38 EVERGREENS AND 78 SHRUBS SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PROJECT IN THE AMOUNT OF \$25,440.00.
 - THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
 - STORMWATER MANAGEMENT FOR THIS SITE IS BEING PROVIDED BY A FACILITY PRIVATELY OWNED BY THE HOENES'S AND JOINTLY MAINTAINED AS DESCRIBED IN THE DEVELOPER'S AGREEMENT BY EMICON LLC, AND THE HOENES'S. THE FACILITY INCLUDES A DRY DETENTION POND, A BIORETENTION FACILITY AND A FOREBAY/PRETREATMENT POND.
 - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
 - CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
 - ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
 - TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERY LOCATIONS ON-SITE.
 - PLANS FOR THE IMPROVEMENTS TO BALTIMORE NATIONAL PIKE (US ROUTE 40) AND ACCESS PERMIT APPLICATION HAVE BEEN SUBMITTED TO MSHA SIMULTANEOUSLY WITH THIS SUBMISSION.
 - WAIVER PETITION (WP-06-51) TO SECTION 16.120(B)(4)(v) WAS APPROVED ON DECEMBER 23, 2005 REGARDING THE R-20 BEING ENCUMBERED BY ACCESS EASEMENTS FOR STORMWATER MANAGEMENT.
 - A DESIGN MANUAL WAIVER REQUEST TO DMV 1, CHAPTER 5, SECTION 5.2.5.F TO ALLOW FOR MEASURED ON-SITE IMPERVIOUS AND PERMEABLE AREA TO BE UTILIZED WHEN COMPUTING RCN AND SUBSEQUENT HYDROLOGIC COMPUTATIONS & REQUIREMENTS.
 - THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 3.04 ACRES OF A THE OBLIGATION IS BEING MET BY THE RETENTION OF 6.08 ACRES (2:1) OF EXISTING FOREST ON THE LAFON PROPERTY PLAT REFERENCE NO. RE-06-06 (S2). SURETY SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$52,968.96 WITH THIS PLAN. **SEE PLATS 18549-S1**

Water Quality Facility Summary

Facility	Type	Storage Volume	
		WQv	Rev
WQv #1	Req.	0.2153 AC-FT	0.049 AC-FT
	Prov.	0.2153 AC-FT	0.049 AC-FT

Note: The ground water recharge and water quality control are address fully with the bio-retention facility and stone chamber. The requirements for drainage area 1 and 2 have been addressed within the Bio-retention and stone chamber facility.

Channel Protection Facility Summary

Facility	Type	Storage Volume/Elevations	
		Req.	Cpv
SWM #1	Dry Detention	0.2884 AC-FT	
	Prov.	0.2884 AC-FT / @ 378.85'	

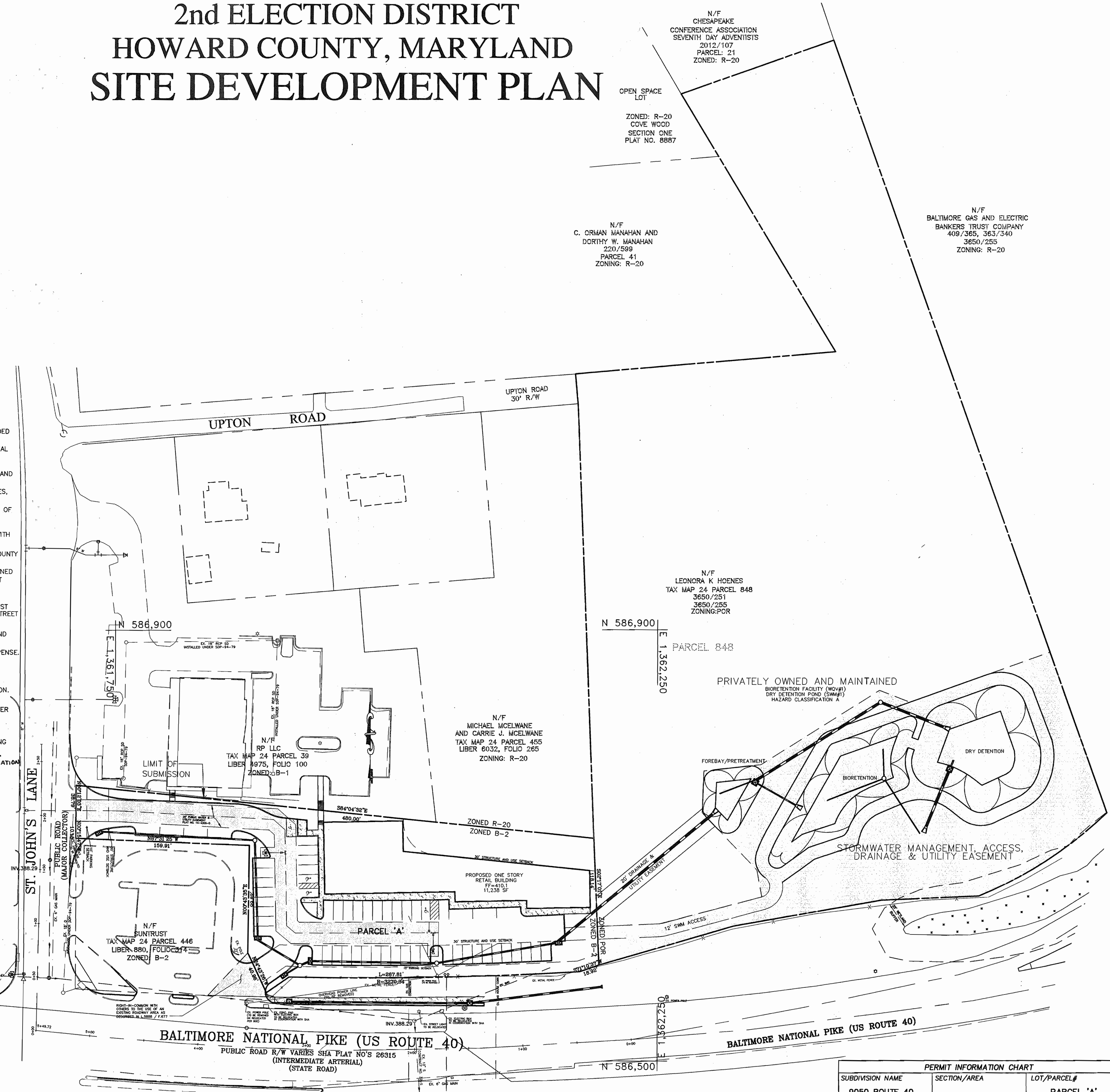
SWM #1	Water Surface Elevation in Facility	Pre-developed Discharge (cfs)		Post-developed Discharge (cfs)		
		1-Year Storm	10-Year Storm	100-Year Storm	1-Year Storm	10-Year Storm
1	378.93'	0.81	6.73	0.41	2.15	13.48
10	381.15'	0.81	6.73	0.41	2.15	13.48
100	382.02'	0.81	6.73	0.41	2.15	13.48

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mark D. Weger
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/28/06

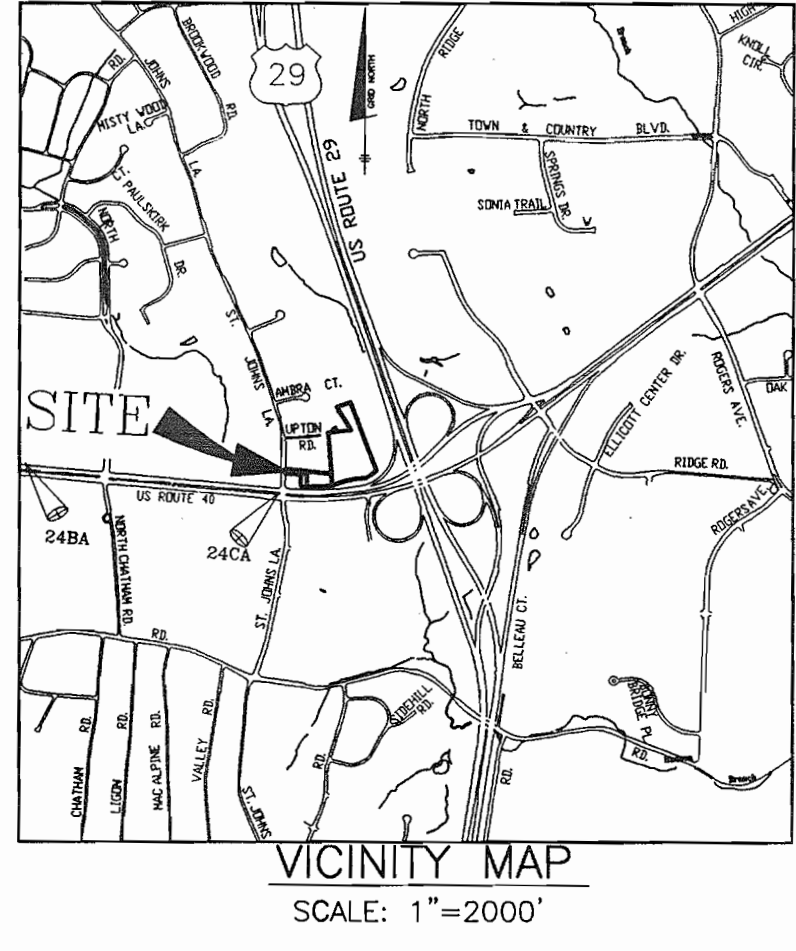
Mark D. Weger
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9/28/06

Mark D. Weger
 DIRECTOR
 DATE: 9/28/06



BENCH MARKS NAD '83

HO. CO. 248A	ELEV. 385.69
STAMPED DISC ON CONCRETE MONUMENT BEING IN A 4' CONCRETE WALK, EAST OF A JERRY'S SUB SIGN AND 36.5' SE OF A CURB PI	
N 586,783.244	E 1,359,211.66
HO. CO. 24CA	ELEV. 398.34
STAMPED DISC ON CONCRETE MONUMENT BEING 7' WEST OF THE NOSE OF THE ISLAND AT THE WEST SIDE OF THE INTERSECTION OF ST. JOHNS LANE AND RTE-40 AND 23.4' WEST OF A GAS COVER AND 20.4' NW OF A GAS COVER	
N 586,506.180	E 1,361,634.29



SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1 SUB 1

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.2024 AC-FT	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0457 AC-FT	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	0.2884 AC-FT	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	EX. Of = 13.42CFS DEV. Of = 12.62CFS	PROVIDED IN THE DRY DETENTION FACILITY.

SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1 SUB 2

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0061 AC-FT	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0016 AC-FT	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.

SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0068 AC-FT	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0018 AC-FT	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.

SITE ANALYSIS DATA CHART

A.) TOTAL PROJECT AREA:	PARCEL A = 1.23 AC.± (PARCELS 38 AND 96)
	PARCEL 848 = 5.65 AC.±
	TOTAL 6.88 AC.± (PARCEL 848, 38 AND 96)
B.) AREA OF PLAN SUBMISSION:	3.42 AC.±
C.) LIMIT OF DISTURBANCE AREA:	3.18 AC.±
D.) PRESENT ZONING:	B-2 AND R-20
E.) PROPOSED USES FOR SITE AND STRUCTURES:	ONE STORY RETAIL BUILDING AND SWM
F.) SQUARE FOOT AREA:	11,238.4 SF
G.) NUMBER OF PARKING SPACES REQUIRED BY HOWARD COUNTY ZONING REGULATIONS (PER SECTION 133.D OF THE ZONING REGULATIONS AT 5 PARKING SPACES PER 1,000 SF OF BUILDING):	52 SPACES
H.) NUMBER OF PARKING SPACES PROVIDED ON SITE (INCLUDING 3 HANDICAPPED PARKING SPACES):	55 SPACES
I.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAN:	N/A
J.) TOTAL NUMBER OF UNITS PROPOSED ON SUBMISSION:	N/A
K.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE:	N/A
L.) BUILDING COVERAGE OF SITE:	15%
M.) APPLICABLE DPZ FILE REFERENCES:	F-05-156 (PLAT NO. 18152), WP-06-51, TO ALLOW SWM ON PAR. 848; APP'D 12/23/05. RE-06-06 (S2)
N.) ANY OTHER INFORMATION WHICH MAY BE RELEVANT:	N/A

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 www.bei-civilengineering.com

Donald Mason
8/11/06

OWNER PARCEL 'A'	EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	PROJECT: 9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797	LOCATION: TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: TITLE SHEET		DATE: SEPTEMBER, 2005 APRIL, 2006
Design: DAM Draft: MAN Check: DAM		PROJECT NO. 1794 SCALE: 1"=50' DRAWING 1 OF 17

PERMIT INFORMATION CHART

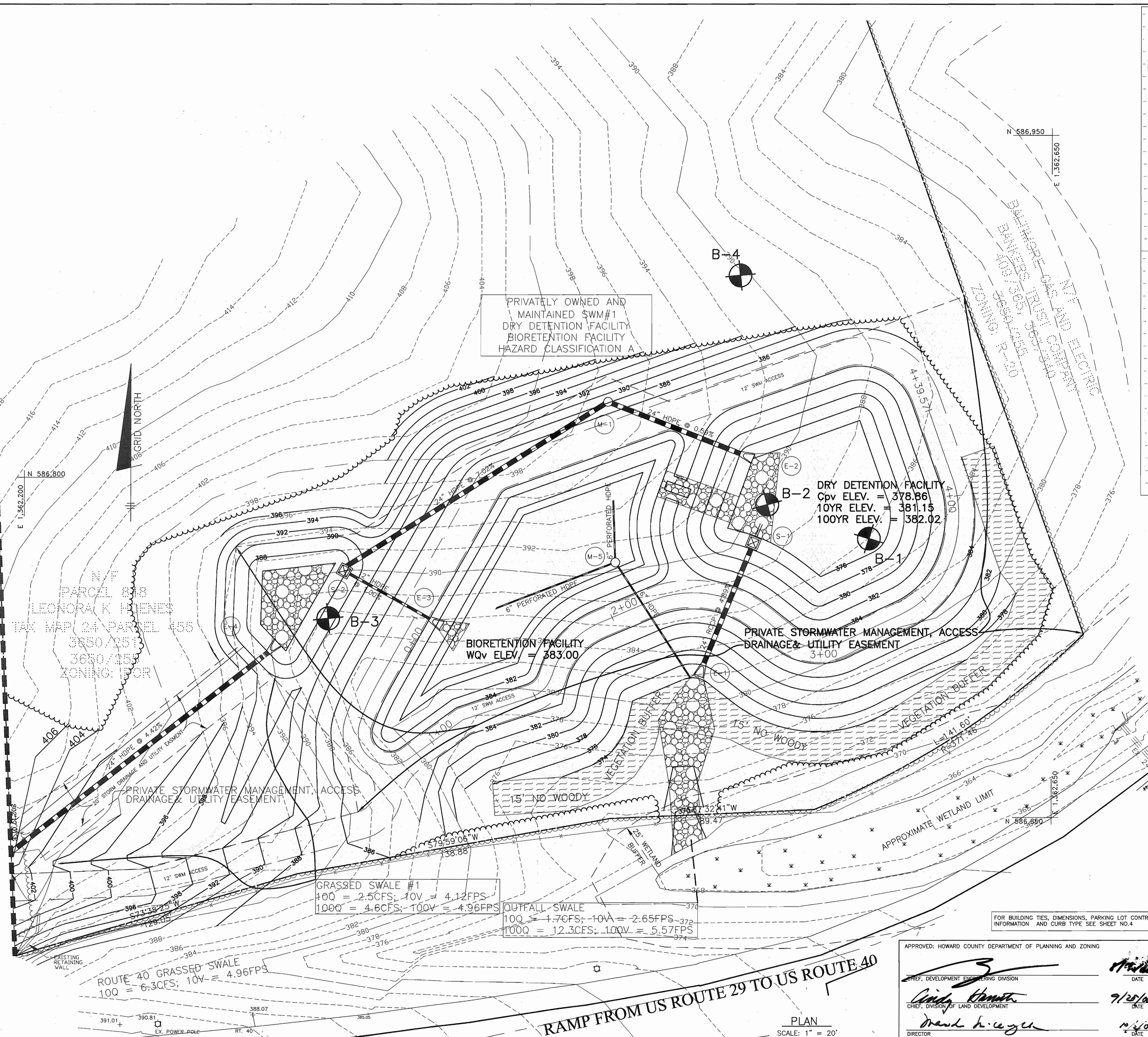
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL#
9050 ROUTE 40 RETAIL CENTER		PARCEL 'A' PARCEL 848
PLAT No.	GRID No.	ZONE
18152	5	B-2
18549-S1		24
WATER CODE	SEWER CODE	ELEC. DIST.
11-W/133-W	32-S	2ND
GENUS		
6021.00		

ADDRESS CHART

BUILDING	STREET ADDRESS
1	9050 BALTIMORE NATIONAL PIKE

PLAN
SCALE: 1" = 50'

MATCHLINE SEE SHEET 2 OF 17



HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION		HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION	
Project Name	Location	Project Name	Location
9050 ROUTE 40 RETAIL CENTER	ELLICOTT CITY, MD	9050 ROUTE 40 RETAIL CENTER	ELLICOTT CITY, MD
Sheet No. 01	Sheet No. 02	Sheet No. 03	Sheet No. 04
Date: 9/25/06	Date: 9/25/06	Date: 9/25/06	Date: 9/25/06
Drill Log	Drill Log	Drill Log	Drill Log
Drill Log	Drill Log	Drill Log	Drill Log
Drill Log	Drill Log	Drill Log	Drill Log
Drill Log	Drill Log	Drill Log	Drill Log

LEGEND

- EXISTING CONTOURS: ---
- PROPOSED CONTOURS: - - -
- EXISTING WOODS LINE: [Symbol]
- PROPOSED WOODS LINE: [Symbol]
- EXISTING STRUCTURE: [Symbol]
- PROPOSED STRUCTURE: [Symbol]
- EX. 25% OR GREATER SLOPES: [Symbol]
- PRIVATE SWM, ACCESS, DRAINAGE & UTILITY EASEMENT: [Symbol]
- PRIVATE DRAINAGE & UTILITY EASEMENT: [Symbol]

NO.	DATE	REVISION

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
www.bel-civilengineering.com

Donald Mason
Professional Engineer
8/1/06

OWNER PARCEL 'A'
EMICON, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K. HOENES
15115 CARRS MILL ROAD
WOODBINE, MD 21797

PROJECT:
9050 ROUTE 40 RETAIL CENTER
ONE STORY RETAIL BUILDING NO. 1
PARCEL 'A' AND PARCEL 848

LOCATION:
TAX MAP 24 - GRID 5
PARCEL 38, 96 AND PARCEL 848
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
SITE DEVELOPMENT AND GRADING PLAN

DATE: SEPTEMBER, 2005
APRIL, 2006

PROJECT NO. 1794

SCALE: AS SHOWN DRAWING 3 OF 17

Design: MAN Draft: MAN Check: DAM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

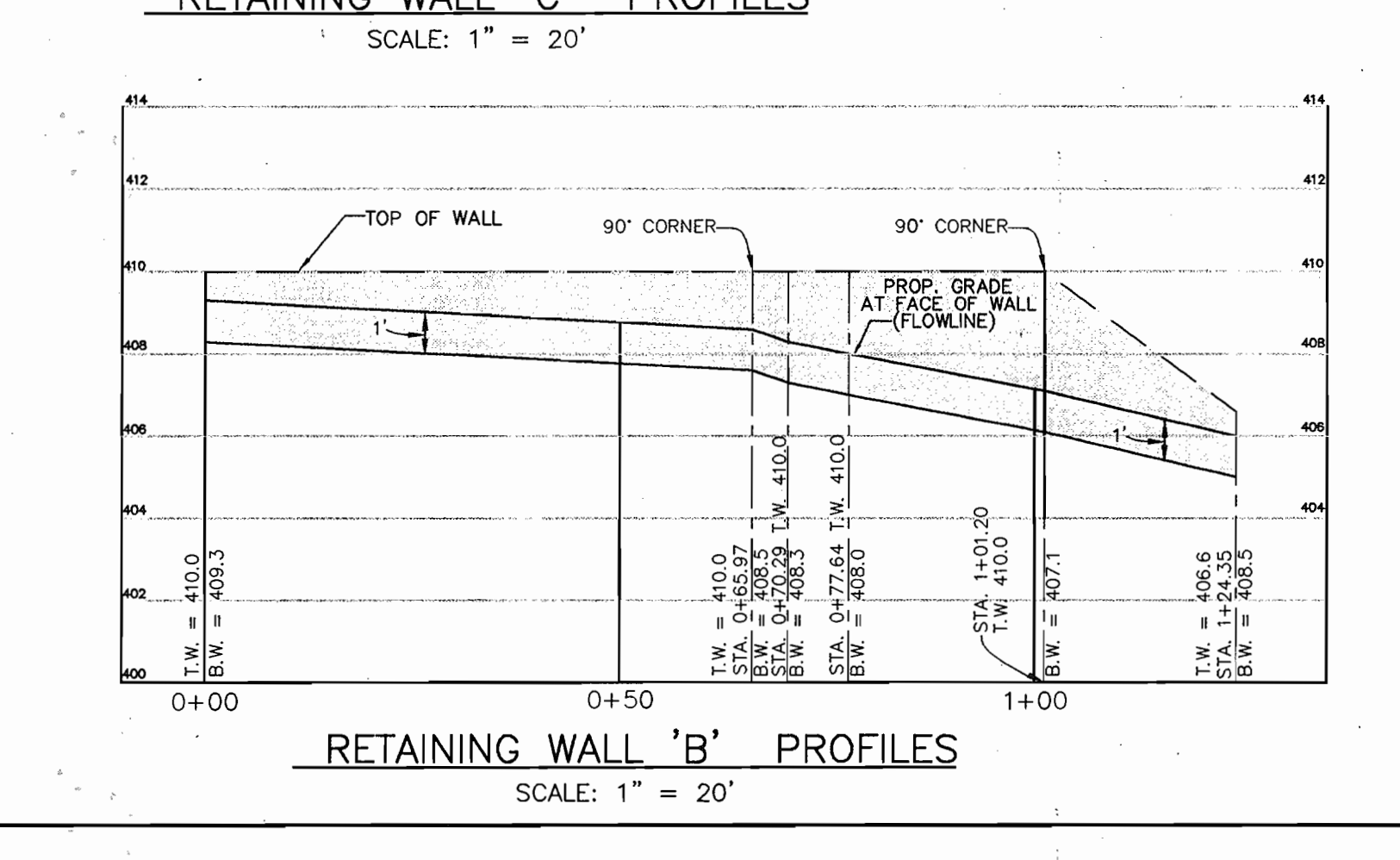
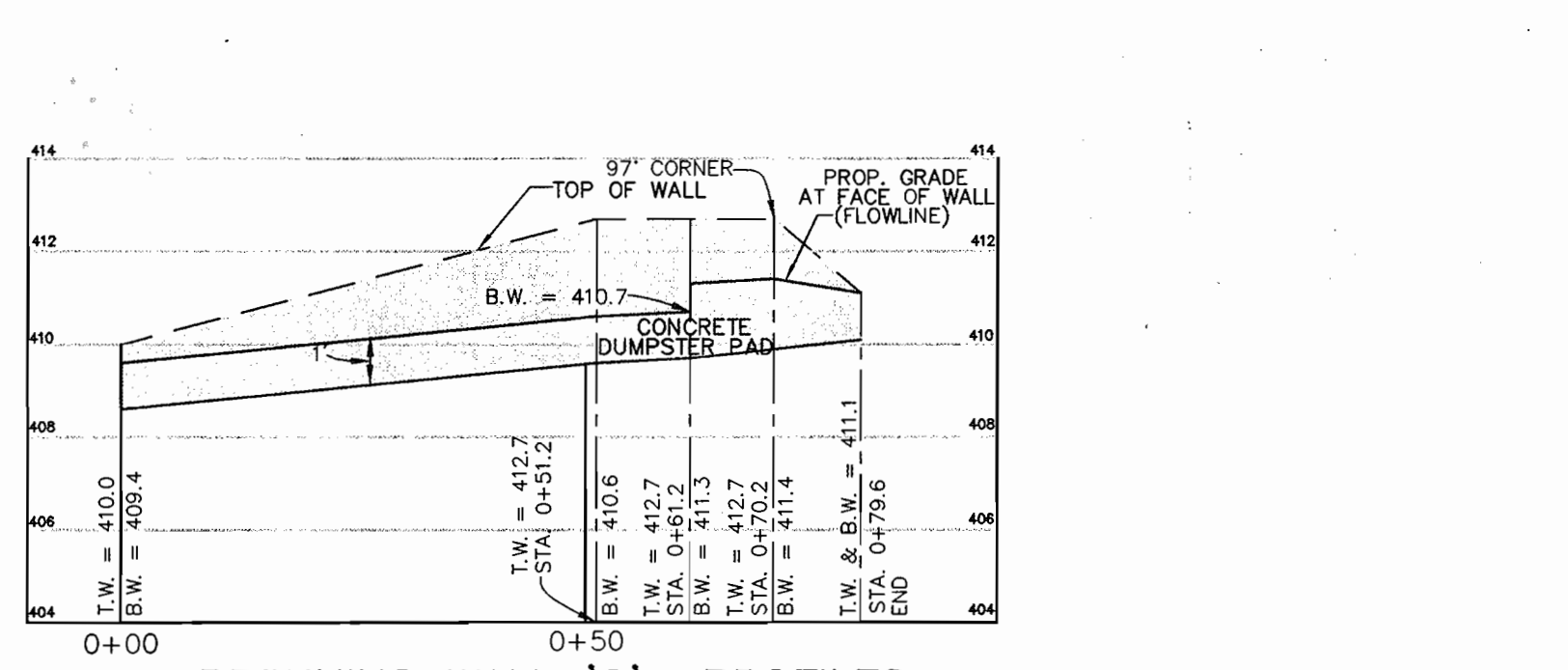
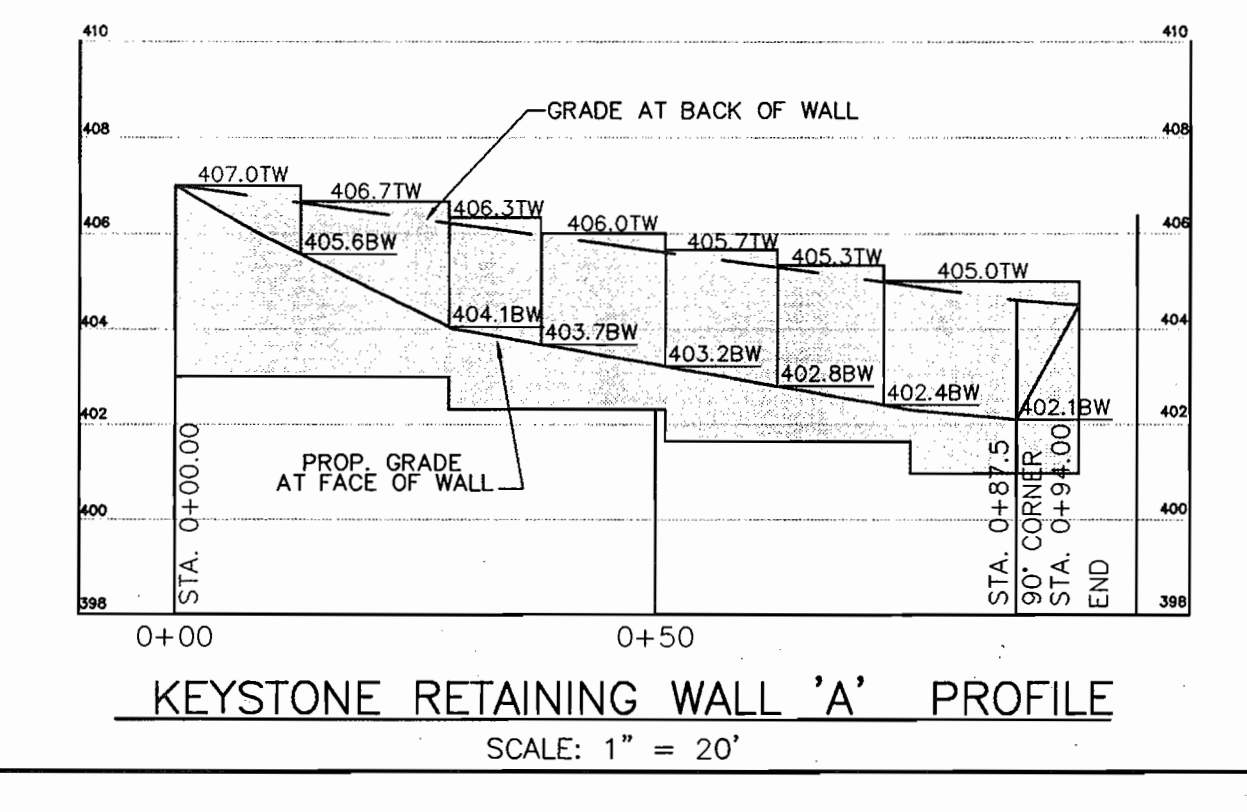
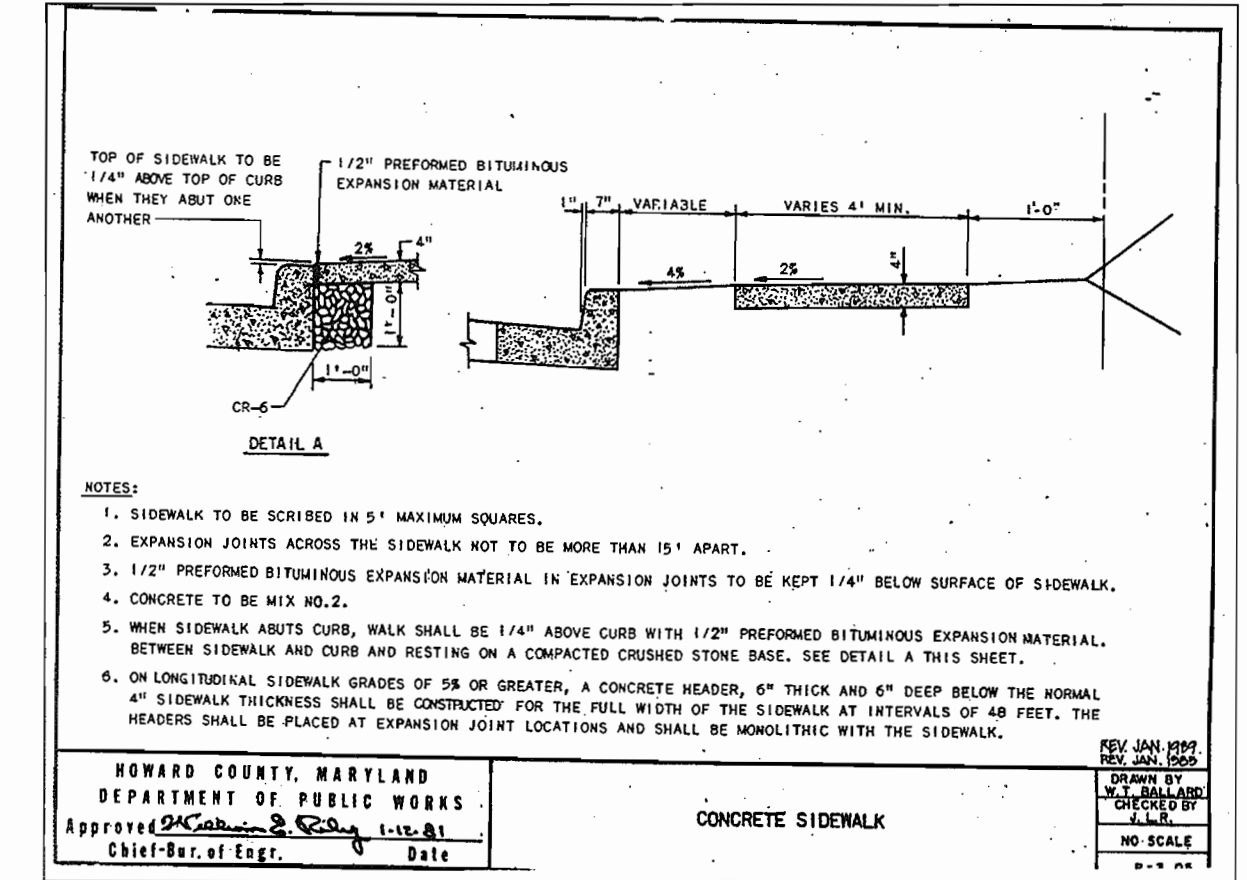
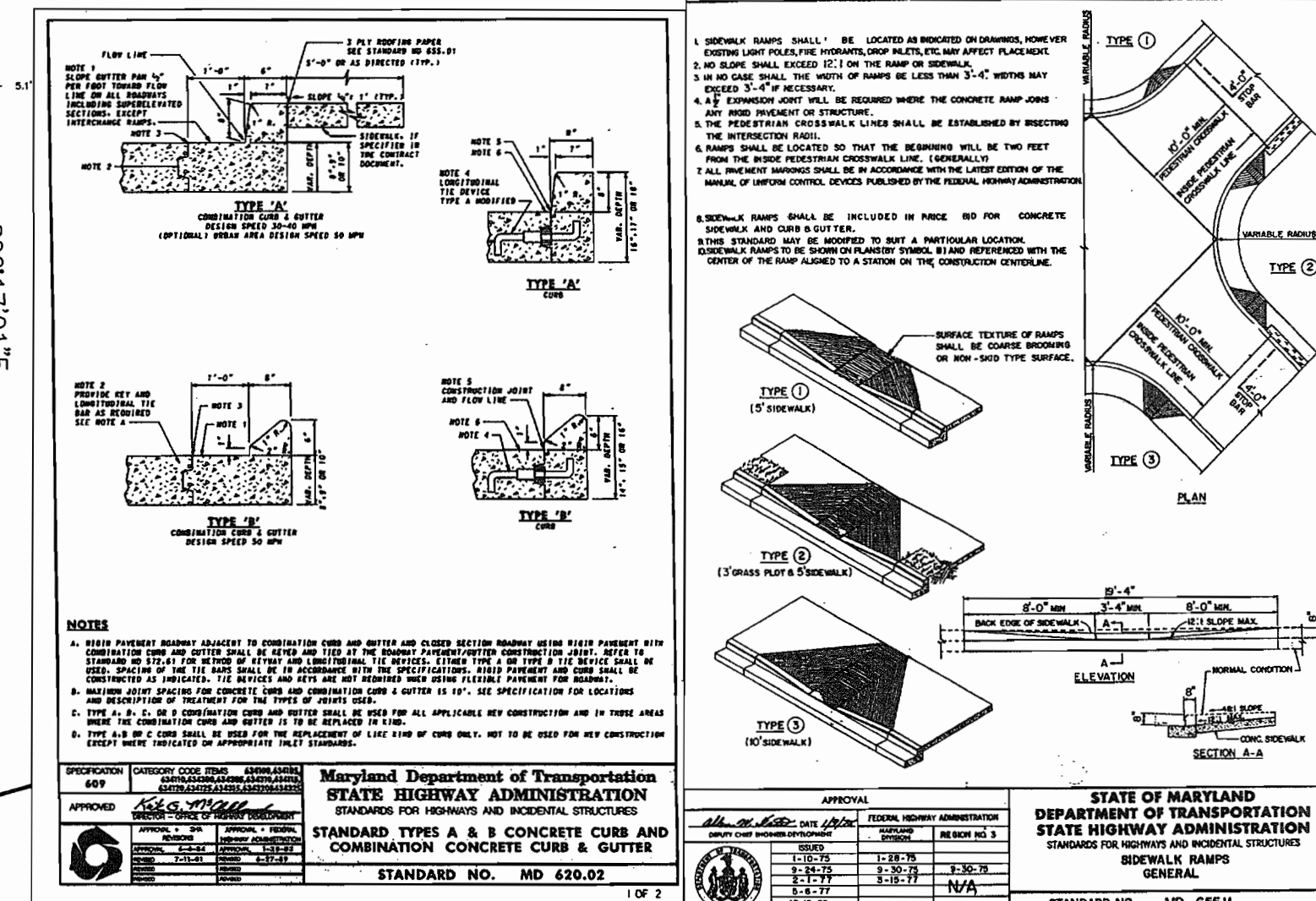
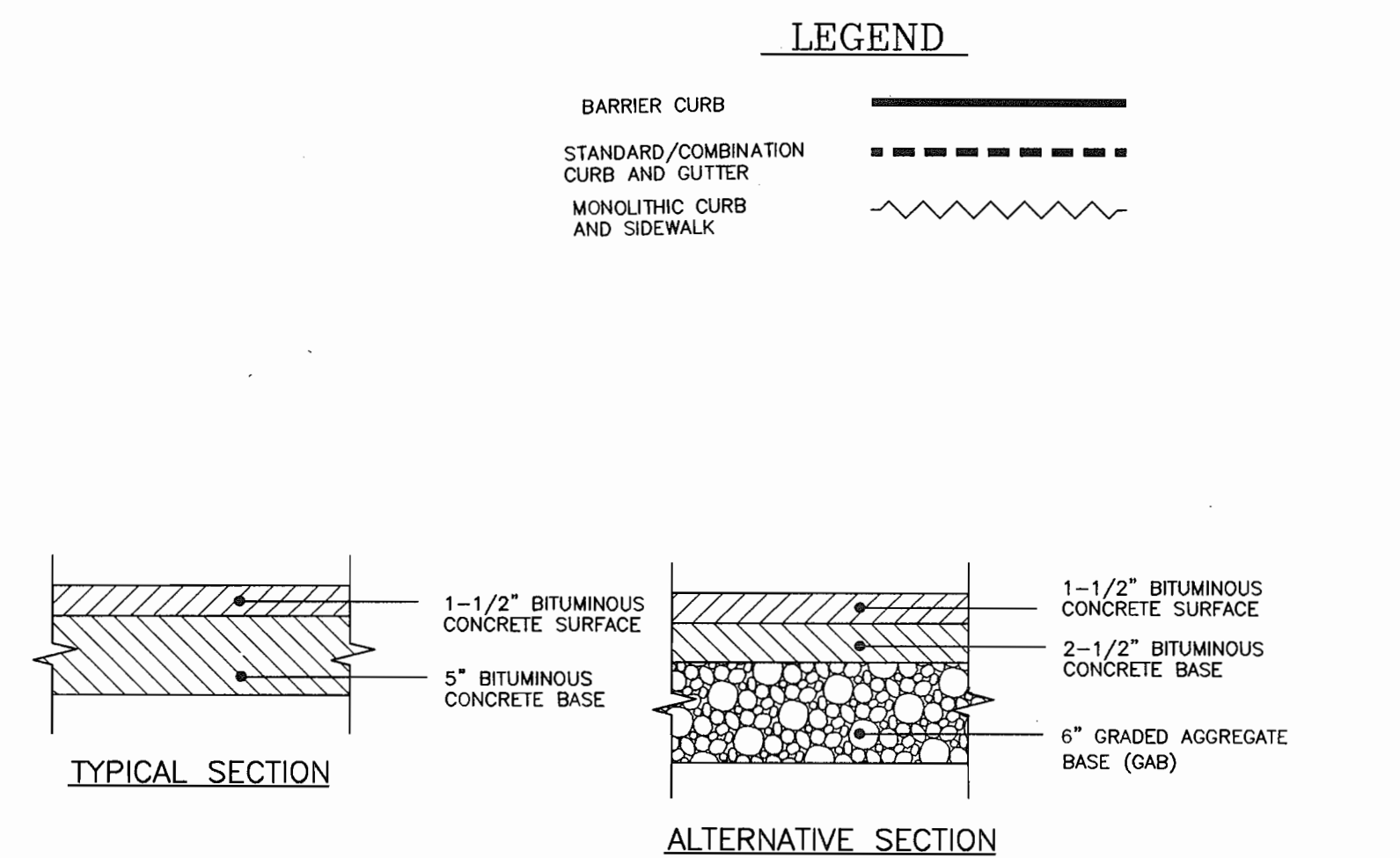
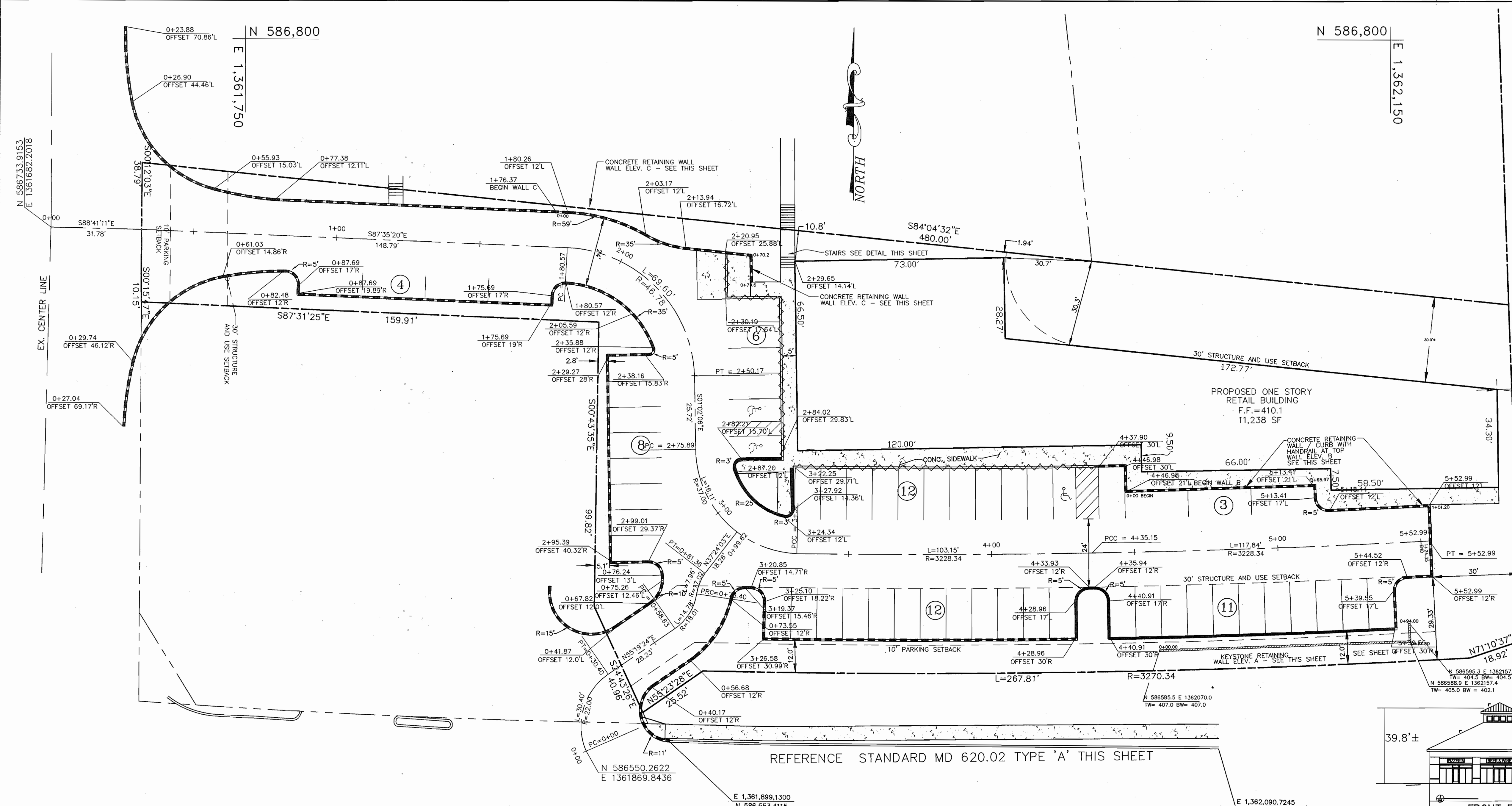
Chief, Development Engineering Division
[Signature]
DATE: 9/25/06

Chief, Division of Land Development
[Signature]
DATE: 9/25/06

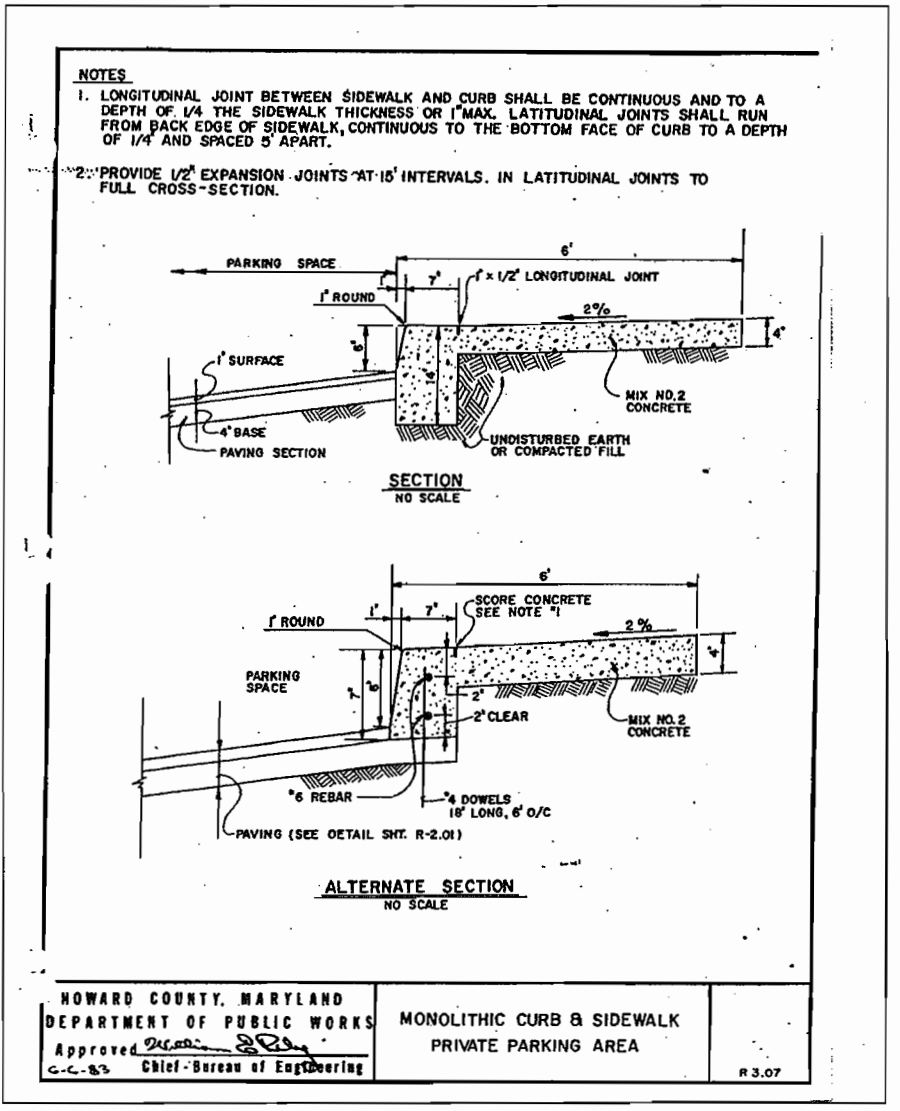
Director
[Signature]
DATE: 9/25/06

RAMP FROM US ROUTE 29 TO US ROUTE 40

PLAN
SCALE: 1" = 20'



PLAN VIEW
SCALE: 1" = 20'

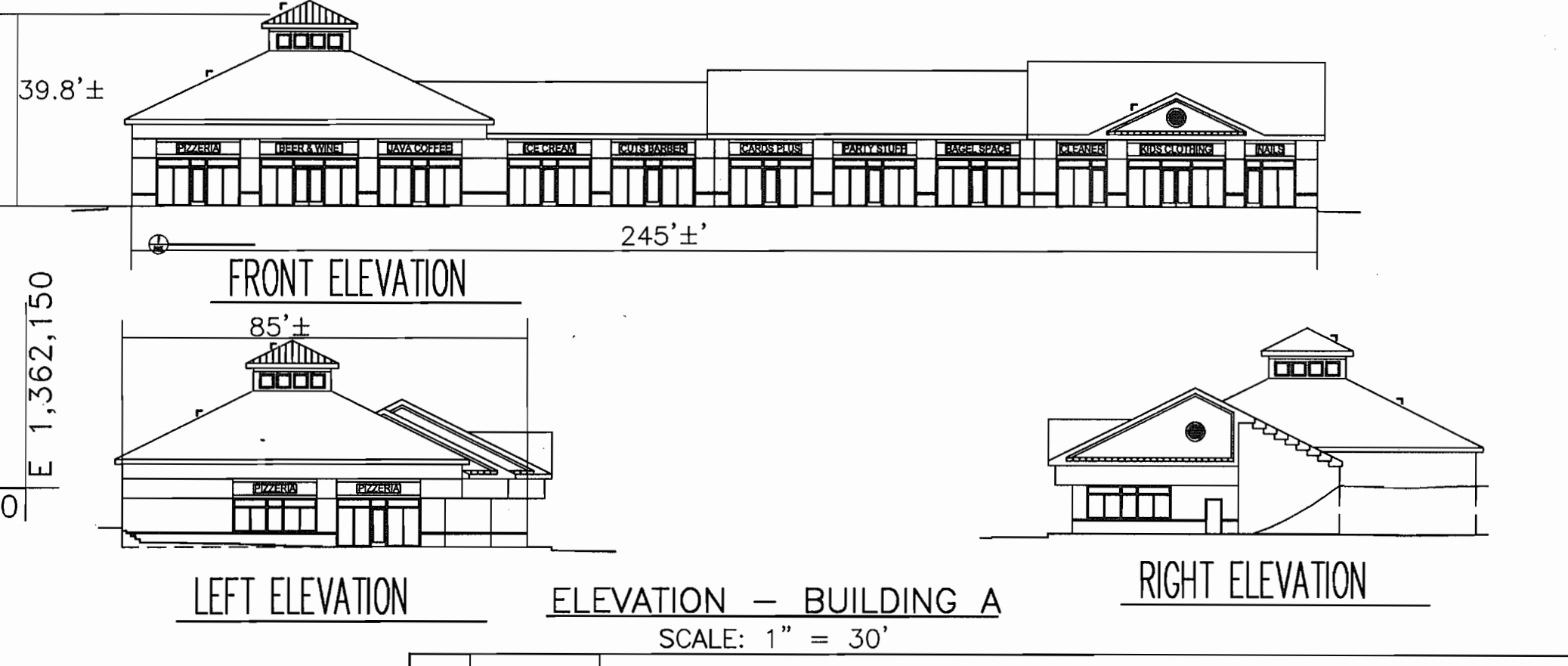


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

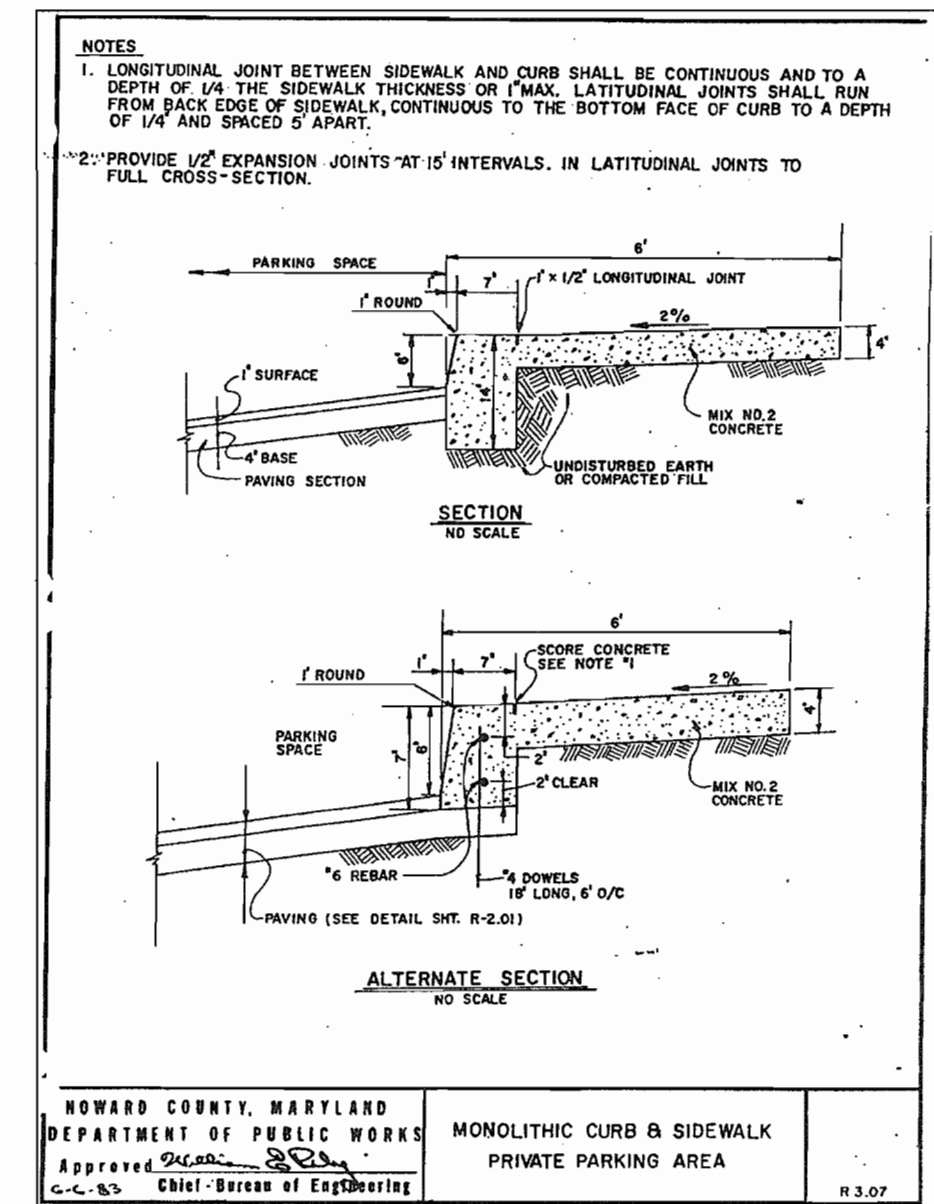
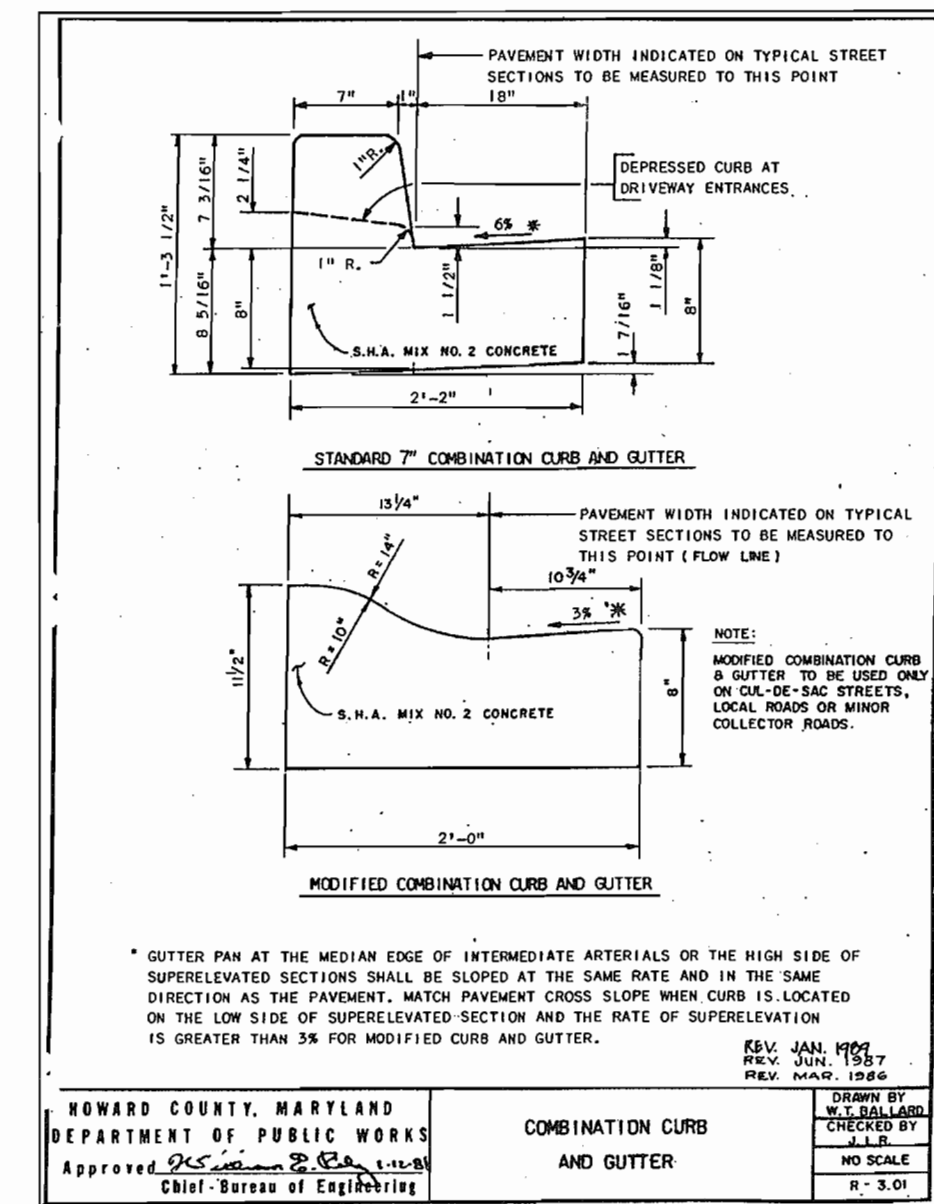
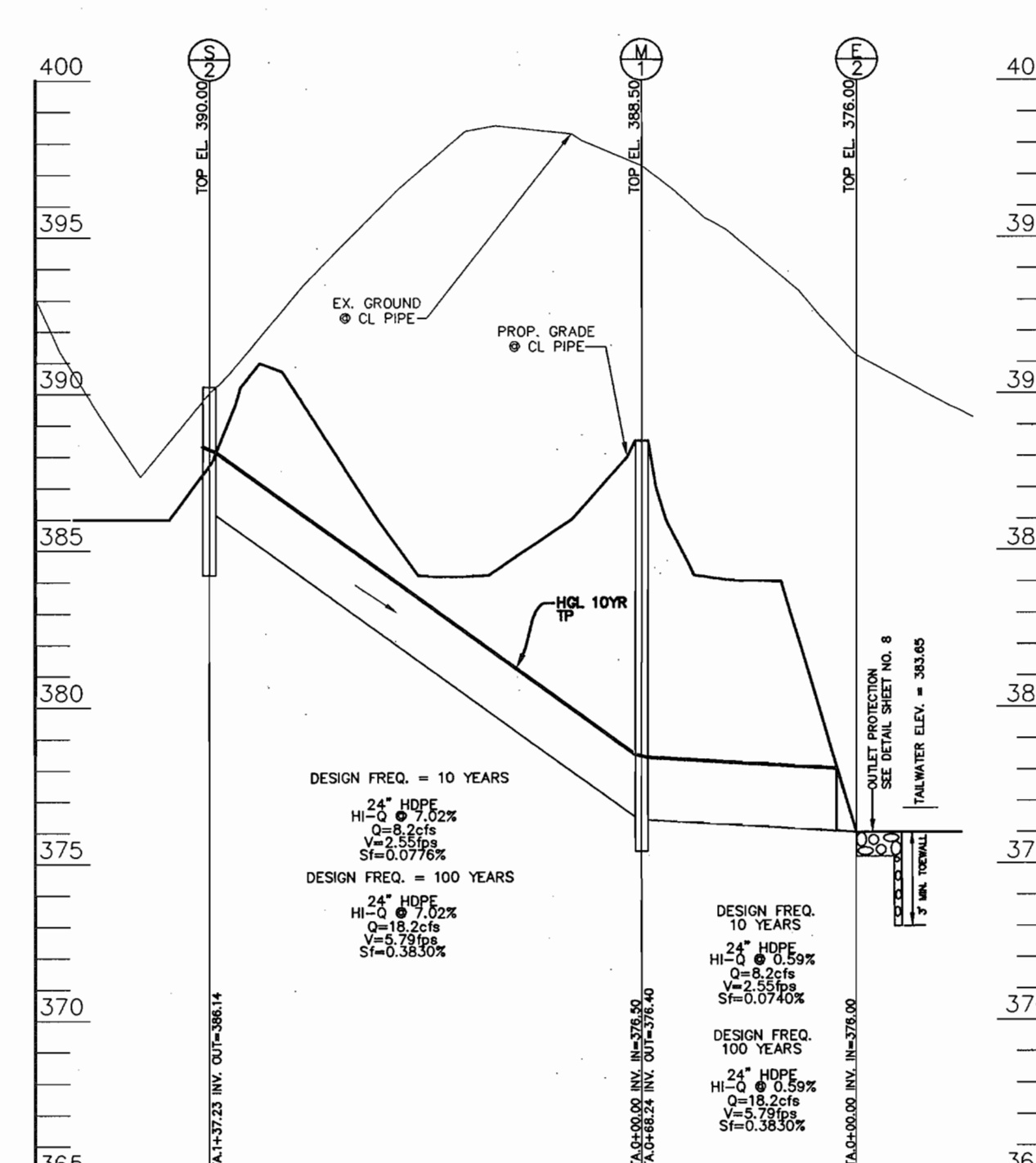
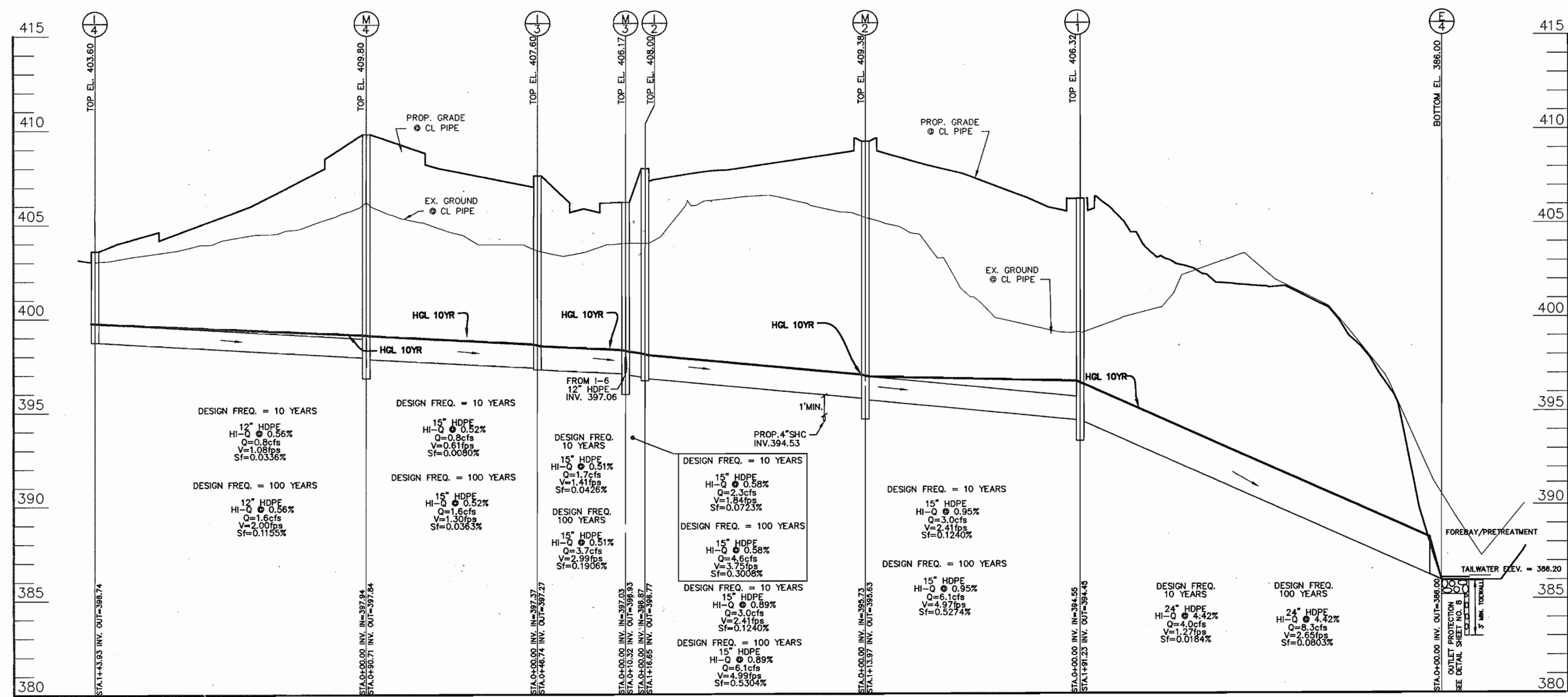
CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] DATE: 9/28/06

CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] DATE: 9/28/06

DIRECTOR
[Signature] DATE: 9/28/06

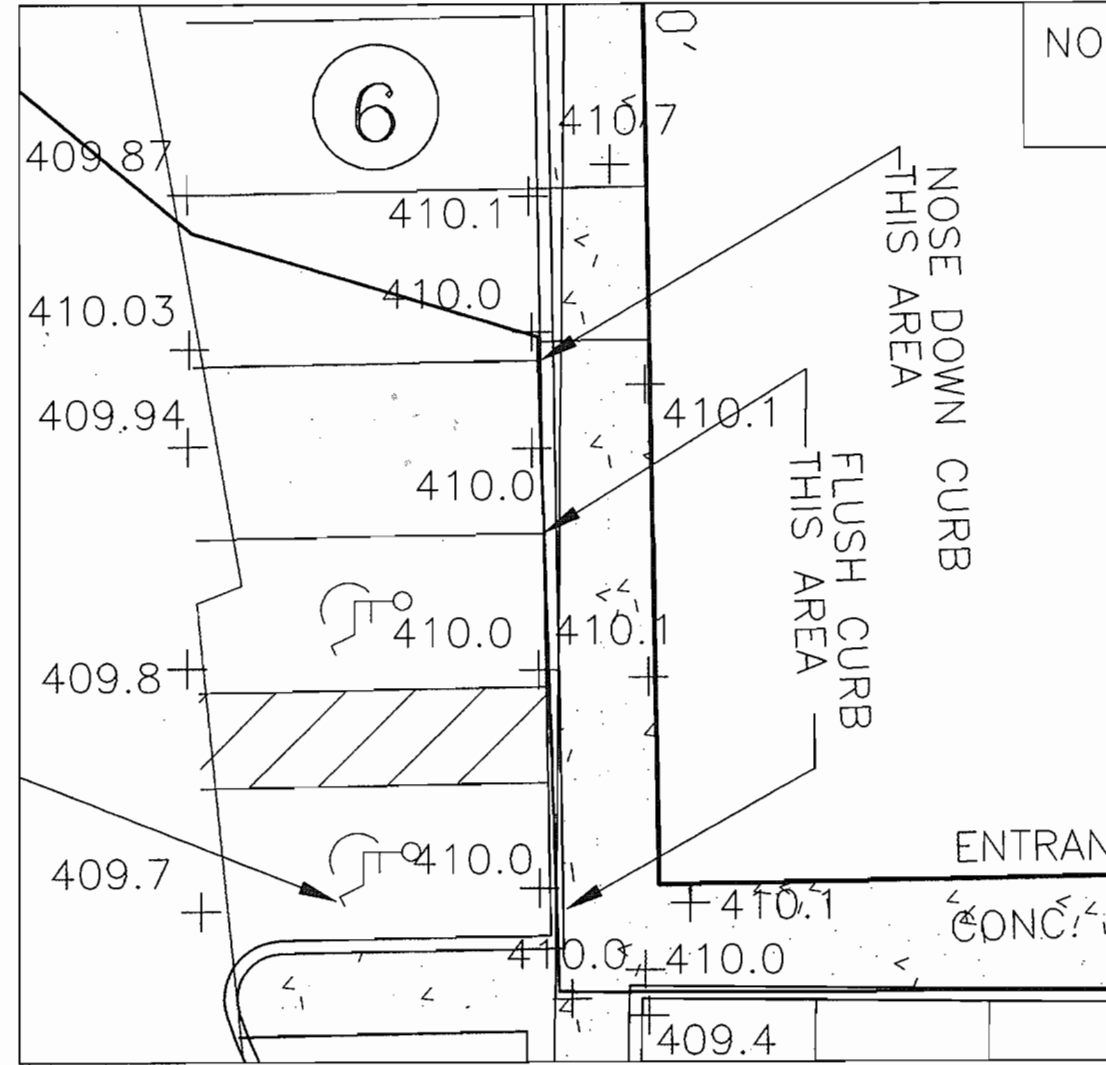
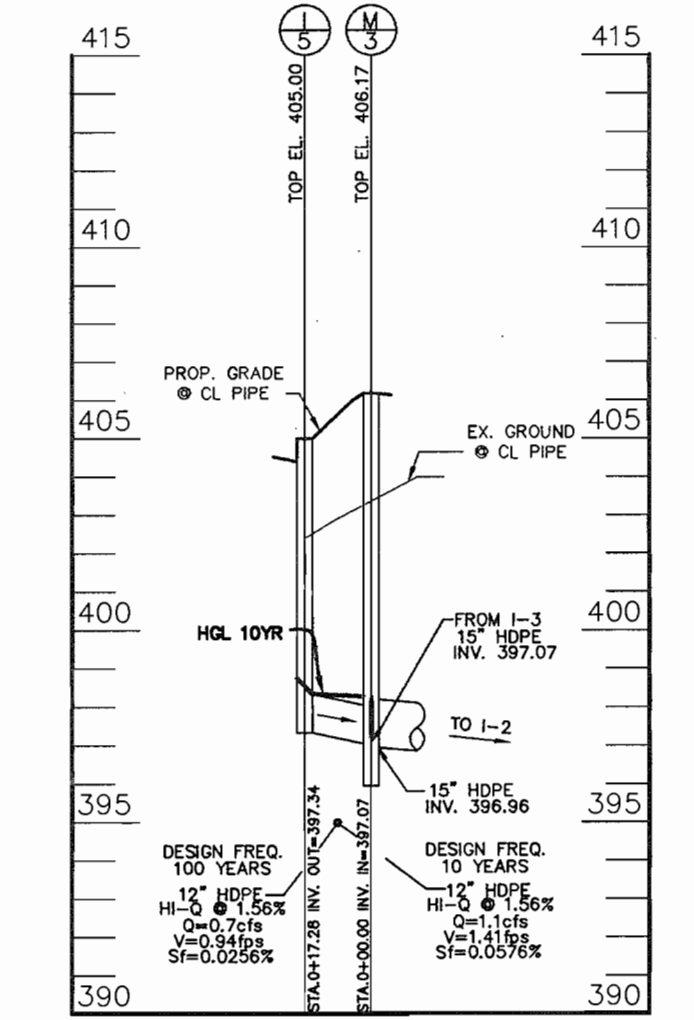


NO. DATE		REVISION	
BENCHMARK			
ENGINEERS • LAND SURVEYORS • PLANNERS			
ENGINEERING, INC.			
8480 BALTIMORE NATIONAL PIKE • SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6844 www.bei-civilengineering.com			
OWNER PARCEL 'A'		PROJECT: 9050 ROUTE 40 RETAIL CENTER	
EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041		ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848	
OWNER PARCEL 848		LOCATION: TAX MAP 24 GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797		TITLE: GEOMETRY PLAN	
Design: DAM	Draft: MAN	Check: DAM	Scale: AS SHOWN
DATE: SEPTEMBER, 2005		PROJECT NO. 1794	
DATE: APRIL, 2006		DRAWING 4 OF 17	

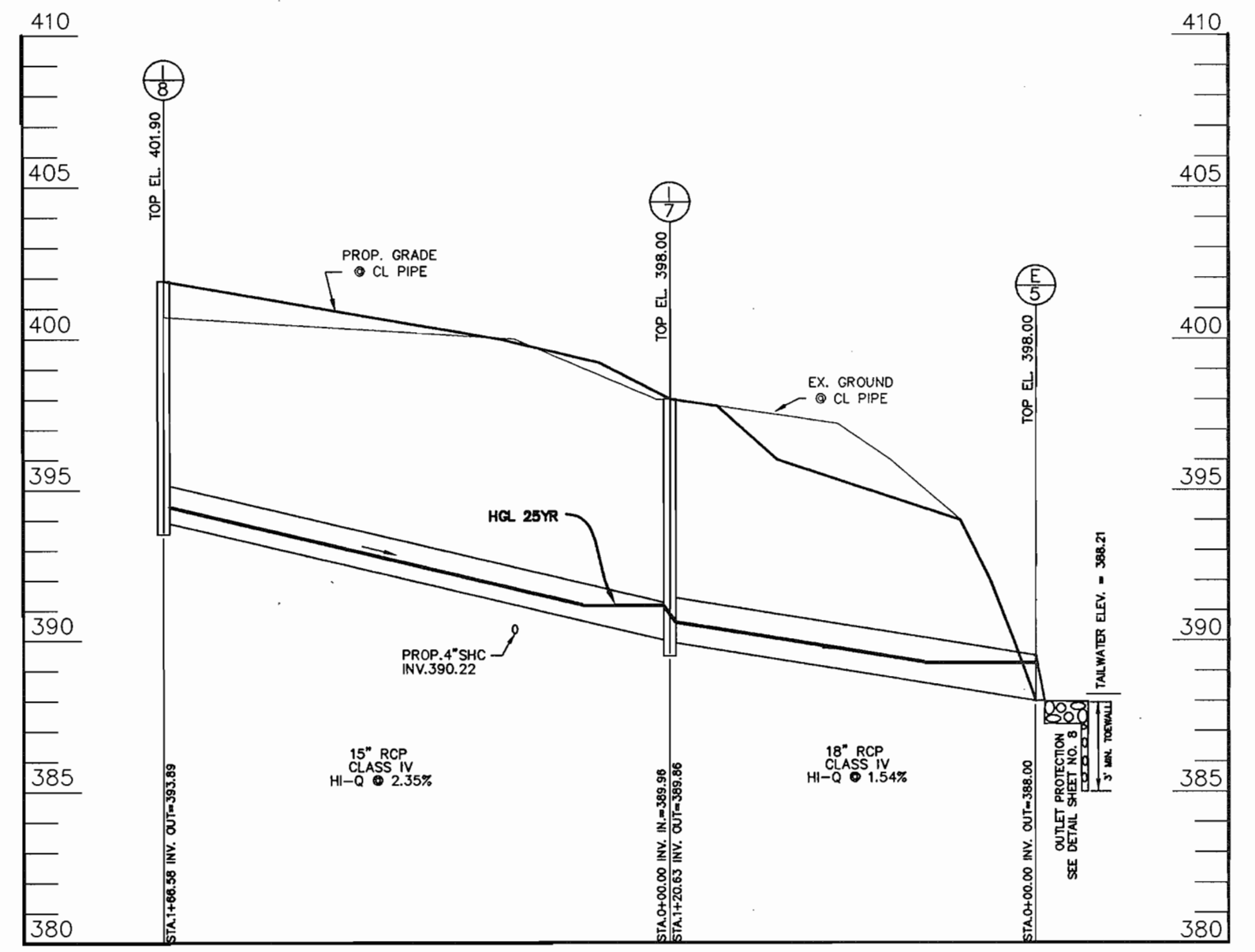


STORMDRAIN PROFILE I-5 TO E-3
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'

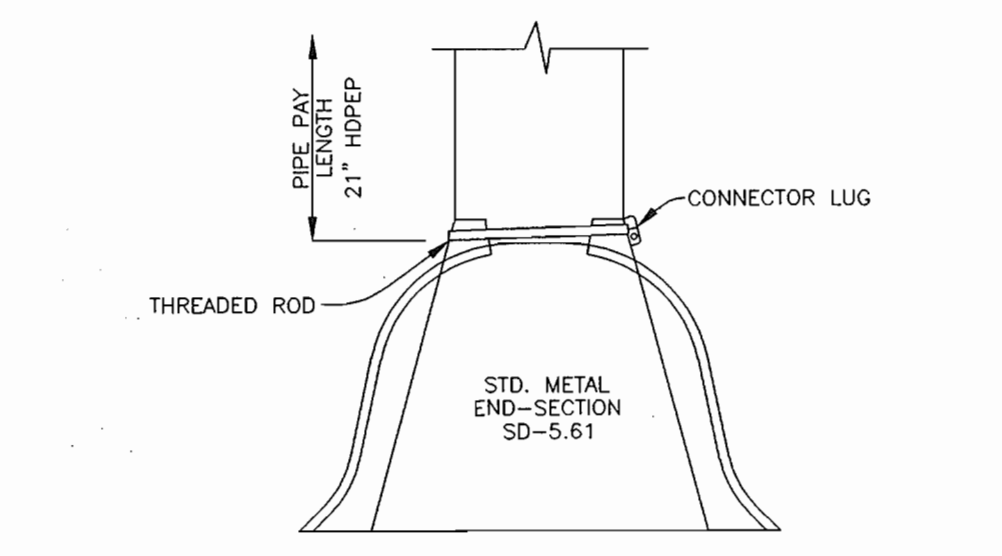
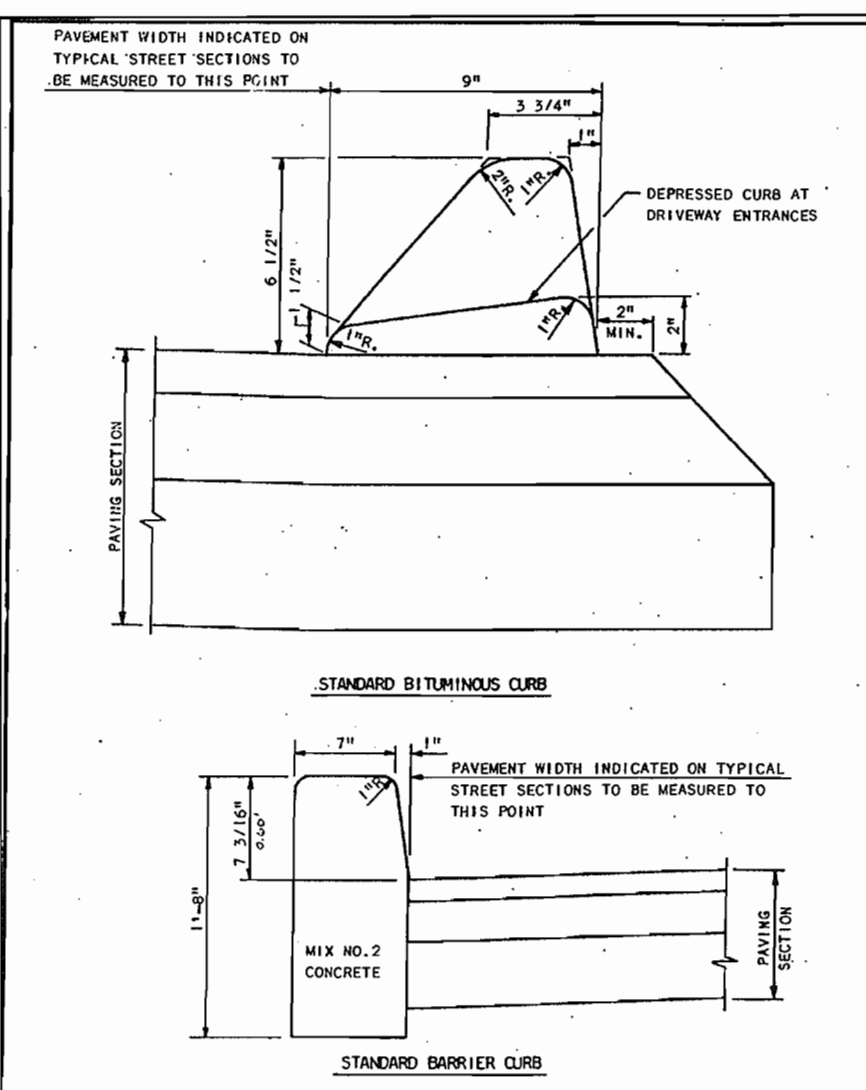
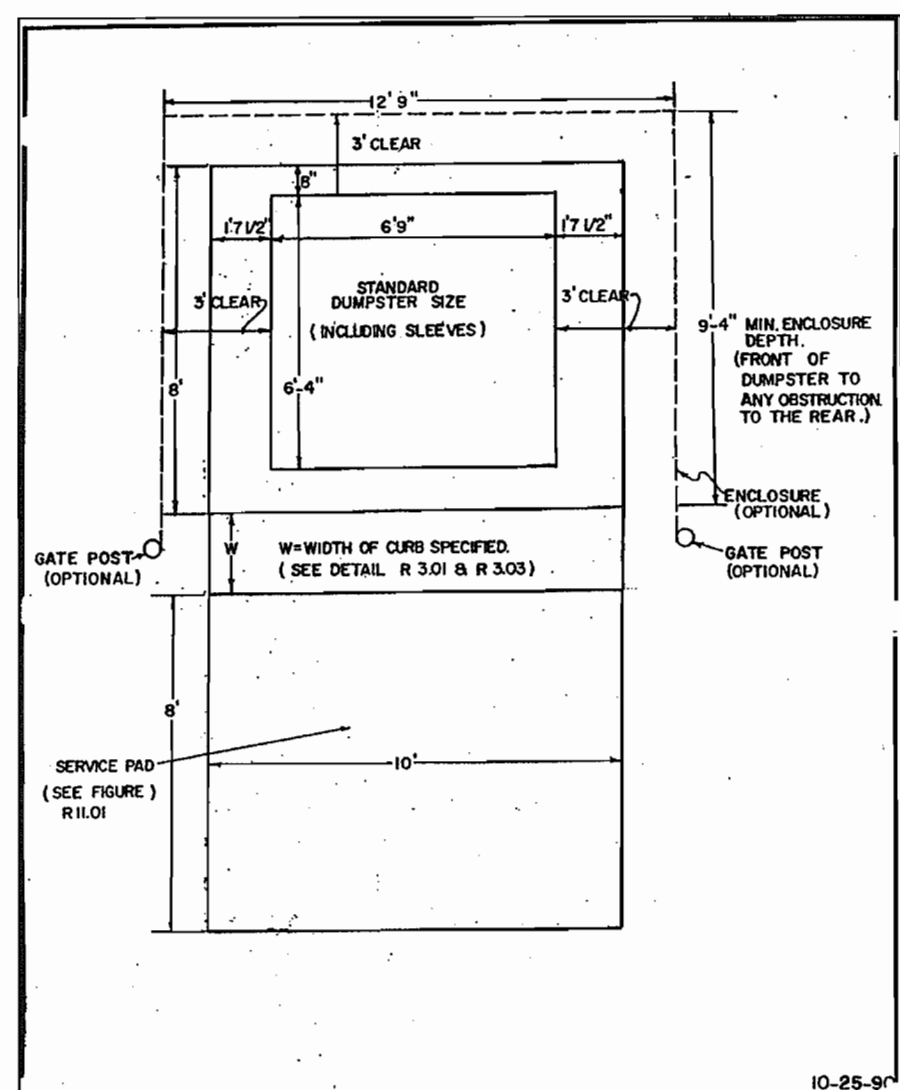
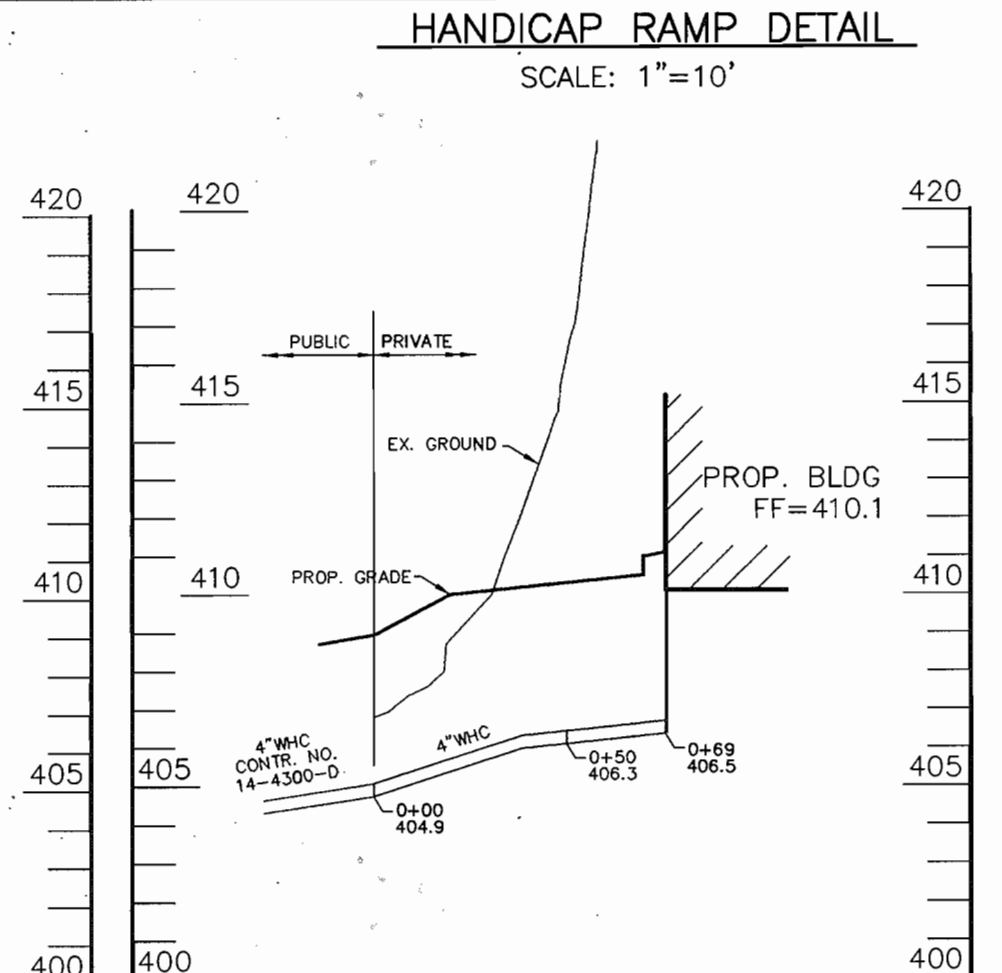
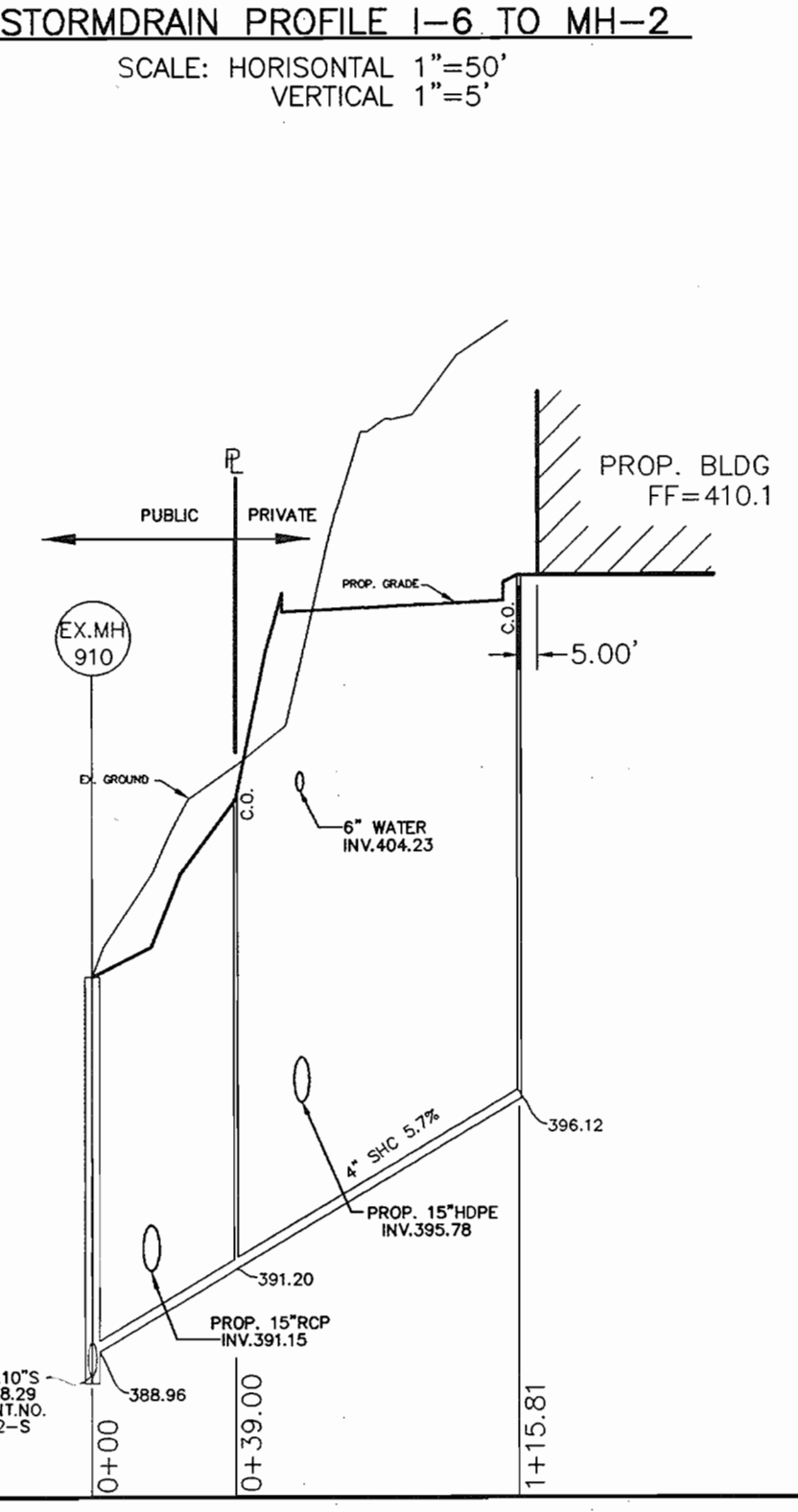
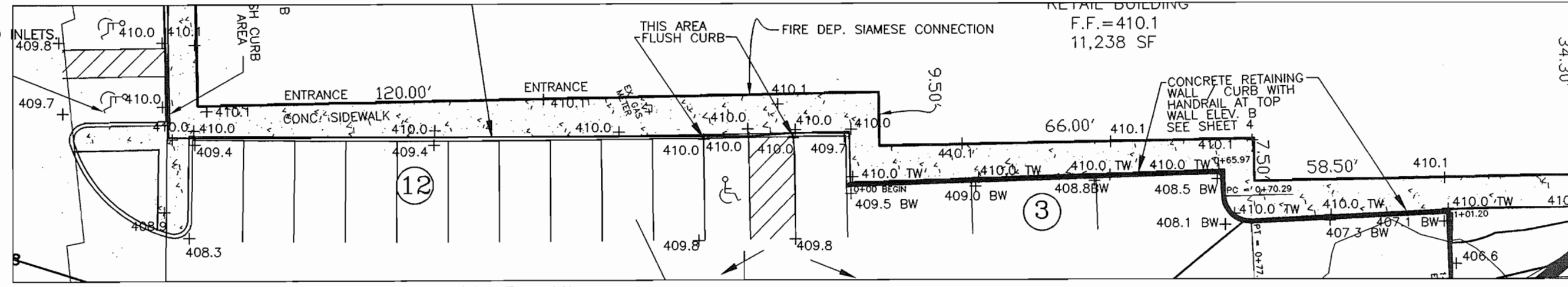
STORMDRAIN PROFILE S-2 TO E-2
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	REMARKS
I-1	TYPE "A-5"	N 586,609.4421 E 1,362,159.0993	394.55	394.45	394.45	406.32	Ho.Co.STD. SD-4.01 INTERIOR WIDTH = 2.5'
I-2	TYPE "A-5"	N 586,592.7567 E 1,361,941.2293	396.87	396.77	396.77	408.00	Ho.Co.STD. SD-4.01 INTERIOR WIDTH = 2.5'
I-3	TYPE "A-5"	N 586,615.0079 E 1,361,881.7057	397.37	397.27	397.27	407.60	Ho.Co.STD. SD-4.01 INTERIOR WIDTH = 2.5'
I-4	TYPE "A-5"	N 586,710.4356 E 1,361,734.8322	398.74	398.64	398.64	403.60	Ho.Co.STD. SD-4.01 INTERIOR WIDTH = 2.5'
I-5	TYPE "A-5"	N 586,569.2696 E 1,361,890.5196	397.34	397.24	397.24	405.00	Ho.Co.STD. SD-4.01 INTERIOR WIDTH = 2.5'
M-1	STANDARD 4' MANHOLE	N 586,832.8910 E 1,362,455.5956	376.50	376.40	376.40	388.50	Ho.Co.STD. G-5.12
M-2	STANDARD 4' MANHOLE	N 586,591.1237 E 1,362,046.7416	395.73	395.63	395.63	409.38	Ho.Co.STD. G-5.12
M-3	STANDARD 4' MANHOLE	N 586,589.1368 E 1,361,920.6362	397.03	396.93	396.93	406.17	Ho.Co.STD. G-5.12
M-4	STANDARD 4' MANHOLE	N 586,705.6735 E 1,361,878.7939	397.94	397.84	397.84	409.80	Ho.Co.STD. G-5.12
E-1	CONCRETE END SECTION	N 586,712.3768 E 1,362,495.6158	-	-	-	373.00	Ho.Co.STD. SD-5.51
E-2	METAL END SECTION	N 586,807.8410 E 1,362,519.0767	-	-	-	383.00	Ho.Co.STD. G-5.61
E-3	METAL END SECTION	N 586,743.3988 E 1,362,367.1185	-	-	-	394.00	Ho.Co.STD. G-5.61
E-4	METAL END SECTION	N 586,733.5408 E 1,362,305.1159	-	-	-	394.00	Ho.Co.STD. G-5.61
S-1	SEE SWM DETAILS	N 586,770.8683 E 1,362,519.3781	-	-	-	376.00	SEE SWM DETAILS
S-2	SEE SWM DETAILS	N 586,758.5696 E 1,362,340.2296	-	-	-	384.50, 386.14	SEE SWM DETAILS



1) STRUCTURE TOP ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
2) STRUCTURE TOP ELEVATION AND LOCATION FOR INLETS IS AT THE TOP, CENTER FACE OF THE INLET FOR CURB INLETS AND AT THE CENTER TOP FOR YARD



PIPE SCHEDULE		
SIZE	LENGTH	TYPE & CLASS
24"	398'	HDPE HI-Q
15"	379'	HDPE HI-Q
12"	193'	HDPE HI-Q

SHA PIPE SCHEDULE		
SIZE	LENGTH	TYPE & CLASS
15"	167'	RCP/IV
18"	121'	RCP/IV

SHA STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	REMARKS
I-7	SHA COG-15 INLET	N 586,553.7714 E 1,362,077.2454	-	-	393.89	397.85	-
I-8	SHA COG-20 INLET	N 586,555.5848 E 1,361,910.7265	-	389.96	389.86	401.79	-
E-5	METAL END SECTION	N 586,568.9566 E 1,362,199.4552	-	-	-	388.00	-

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
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STATE OF MARYLAND
Professional Engineer
C. J. H. HAN

OWNER PARCEL 'A'
EMICON, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K HOENES
15115 CARRS MILL RD
WOODBINE, MD 21797

PROJECT: 9050 ROUTE 40 RETAIL CENTER
PARCEL 'A'

LOCATION: TAX MAP 24 - GRID 5
PARCEL 38 AND 96
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: DETAILS AND PROFILES

DATE: SEPTEMBER, 2005 PROJECT NO. 1794
DECEMBER, 2005

Design: DAM Draft: MAN Check: DAM SCALE: AS SHOWN DRAWING 5 OF 17

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
Cindy K...
CHIEF, DIVISION OF LAND DEVELOPMENT
Mark D. Lytle
DIRECTOR

DATE: 1/2/02

TEMPORARY BASIN #1
 D.A. = 4.84 AC
 NET STORAGE ELEVATION = 378.07
 DEPTH = 6' TOP OF EMBANKMENT
 REQ. AND PROVIDED NET VOL. = 4,178± C.F.
 REQ. AND PROVIDED DRY VOL. = 8,352± C.F.
 RISER BARREL SIZE = 24" DIA
 OUTFALL LENGTH = 55'
 EMBANKMENT ELEV. = 348.30
 CLEANOUT ELEV. = 377.15
 DIST. TO = 0.81 CFS
 DEVELOPED CI = 2.26 CFS

CONSTRUCTION SPECIFICATIONS
 These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

LEGEND

- EXISTING CONTOURS = 999
- PROPOSED CONTOURS = 999
- EXISTING WOODS LINE = [Symbol]
- PROPOSED WOODS LINE = [Symbol]
- EX. 15% - 25% SLOPES = [Symbol]
- EXISTING STRUCTURE = [Symbol]
- PROPOSED STRUCTURE = [Symbol]
- PROPOSED EARTH DIKE = [Symbol]
- LIMIT OF DISTURBANCE = [Symbol]
- PROPOSED SILT FENCE = SF
- PROP. SUPER SILT FENCE = SSF
- STABILIZED CONSTRUCTION ENTRANCE = [Symbol]
- SEDIMENT BASIN BAFFLES = [Symbol]
- EROSION CONTROL MATTING = [Symbol]

Site Preparation
 Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks in slope to be no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill
 Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification (C, SC, CL, or CL) and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that required degree of compaction will be obtained with wet equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill
 Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum grit of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over, and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent flooding the pipe when using flowable fill. All metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill zone) shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits
 All pipes shall be circular in cross section.

Corrugated Metal Pipes - all of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.
2. Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connection shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard top type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugation band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket shall be installed with 1/2 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, sandy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Grovel bedding is not permitted.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M234 Type 5.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, sandy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete
 Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap
 Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water during Construction
 All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be conducted in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compaction of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water pumps from which the water shall be pumped.

Stabilization
 All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, and soil borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Fraction and Sediment Control
 Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Donna Mason 8/16/06
 DEVELOPER DATE

BY THE ENGINEER:
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Donald A. Mason 8/16/06
 ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Jim Hughes 8/16/06
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DME

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert S. ... 8/16/06
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Charles Hamilton 9/25/06
 CHIEF DEVELOPMENT ENGINEERING DIVISION DATE

Mark ... 10/2/06
 CHIEF DIVISION OF LAND DEVELOPMENT DATE

Mark ... 10/2/06
 DIRECTOR DATE

NO.	DATE	REVISION

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ENGINEERS • LAND SURVEYORS • PLANNERS

Donald A. Mason 8/16/06
 REGISTERED PROFESSIONAL ENGINEER

DEVELOPER/CONTRACT PURCHASER:
EMICON, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K. HOENES
 15115 CARPS MILL ROAD
 WOODBINE, MD 21797

PROJECT:
9050 ROUTE 40 RETAIL CENTER
 ONE STORY RETAIL BUILDING NO. 1
 PARCEL 'A' AND PARCEL 848

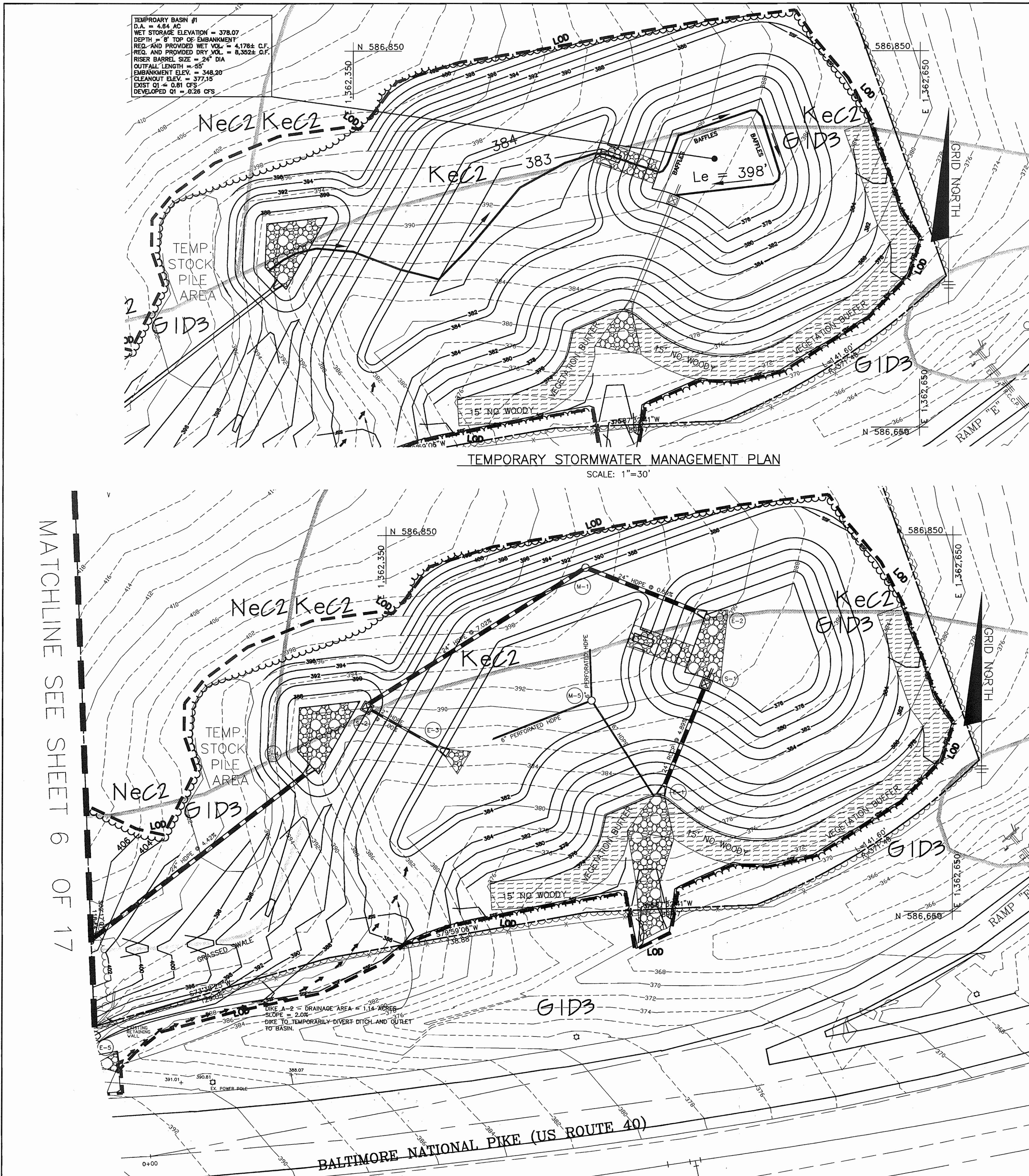
LOCATION:
 TAX MAP 24 - GRID 5
 PARCEL 38, 96 AND PARCEL 848
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE:
SEDIMENT AND EROSION CONTROL PLAN

DATE: NOVEMBER, 2004
 APRIL, 2006
 DRAWING NO. 1794

SCALE: AS SHOWN DRAWING 7 OF 17

Design: DAM Draft: MAN Check: DAM



TEMPORARY STORMWATER MANAGEMENT PLAN
 SCALE: 1"=30'

PLAN
 SCALE: 1"=30'

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
GID3	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GnB2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Kec2	D	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nec2	B	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
NsD3	B	NESHAMINY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

* INDICATES HYDRIC SOILS
 TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 23

**THIS PLAN IS FOR
 SEDIMENT AND EROSION
 CONTROL PURPOSES ONLY**

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: In lieu of soil test recommendations, use on the following schedules.

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sf).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using much anchoring tool or 218 gallons per acre (5 ga/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 345 gallons per acre (8 ga/1000 sf) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf).

Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using much anchoring tool or 218 gallons per acre (5 ga/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 345 gallons per acre (8 ga/1000 sf) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-2855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control, and revisions thereto.
3. Following initial soil disturbances or redisturbances, permanent or temporary sediment control structures, dikes, perimeter silt fences and all slopes greater than 3:1, b) 14 calendar days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the Howard County Design Manual, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for Permanent Seedings (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
Total Area of Site:..... PARCEL 'A' 1.23 AC ± / PARCEL 848 4.95 AC ±
Area to be Disturbed:..... 3.18± acres
Area to be roofed or paved:..... 0.89 ± acres
Area to be vegetatively stabilized:..... 2.29 ± acres
Total Cut:..... 17,700 C.Y.
Offsite Waste/Borrow Area Location: " "

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance. Additional sediment controls must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
9. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
10. Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.
11. Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction.
* It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and it's grading permit number at the time of construction.

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

DEVELOPER - EMICON, LLC
8/16/06
DATE

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

Donnell Mason
ENGINEER - DONALD A. MASON, P.E. # 21443
8/16/06
DATE

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

Jim Meyer/oa
NATURAL RESOURCES CONSERVATION SERVICE
8/25/06
DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Howard Soil Conservation District
8/25/06
DATE

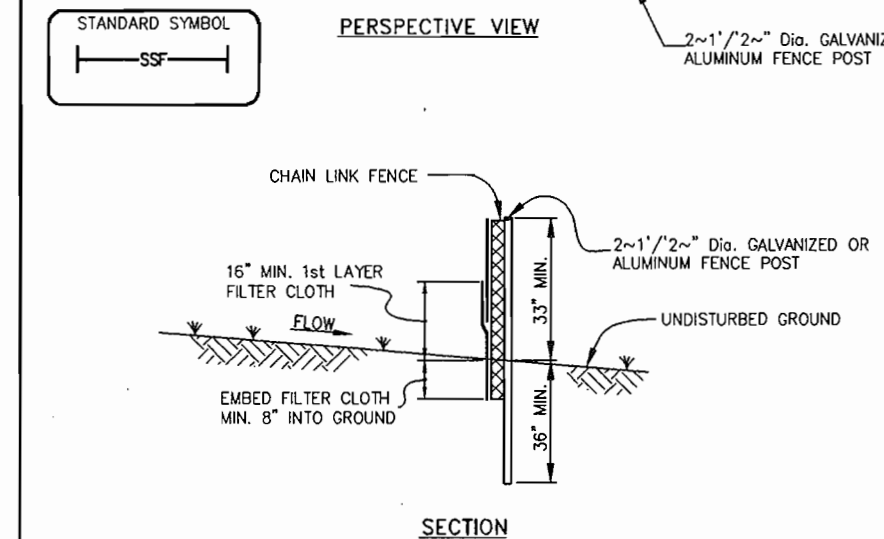
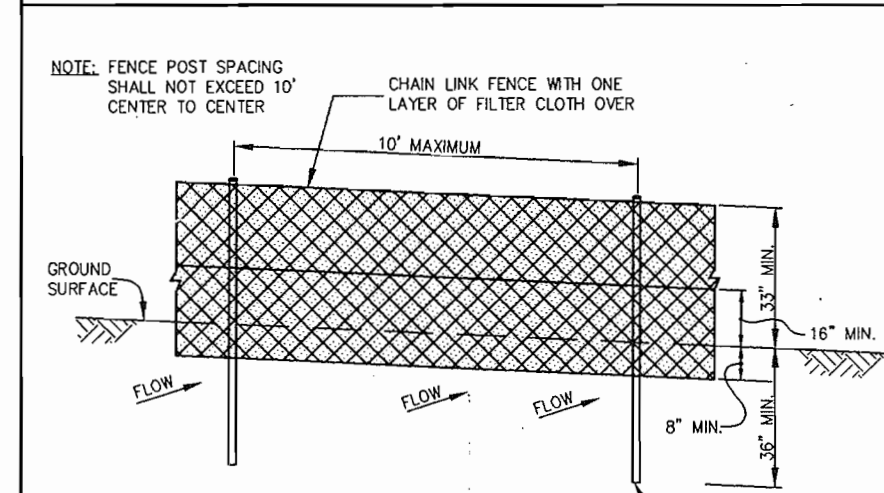
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

8/25/06
DATE

Cindy Hammett
CHIEF, DIVISION OF LAND DEVELOPMENT
7/29/06
DATE

Mark A. Ayell
DIRECTOR
10/14/06
DATE

DETAIL 33 - SUPER SILT FENCE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 25 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 26 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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CONSTRUCTION SPECIFICATIONS

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Dept's for Chain Link Fencing. The specification for a 5 fence shall be used, substituting 42" fabric and 6" length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

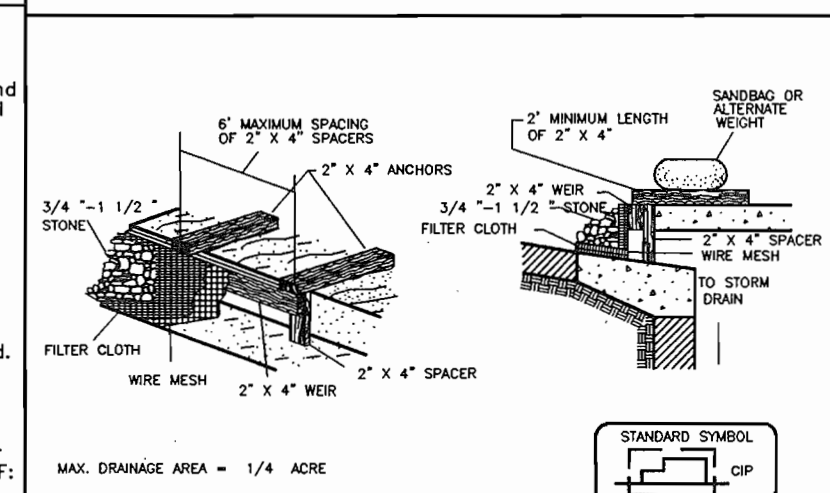
Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322

SUPER SILT FENCE DESIGN CRITERIA

Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length
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 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 26 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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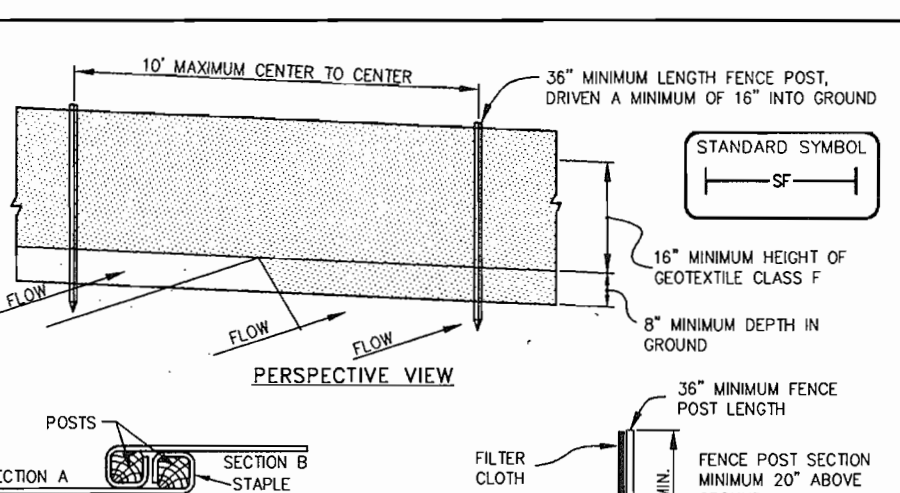
DETAIL 23C - CURB INLET PROTECTION (CDS OR CDS INLETS)



1. Attach a continuous piece of wire mesh (50" minimum width by throat length plus 4") to the 2' x 4" wall (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 over the wire mesh and securely attach it to the 2' x 4" wall.
3. Securely nail the 2' x 4" wall to a 6" long vertical spacer to be located between the curb and the inlet flow line (4' apart).
4. Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the wall of spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by wedges or alternate means.
5. The assembly shall be placed so that the end spacers are a minimum 1" beyond both ends of throat opening.
6. From 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 curb 3/4" x 1 1/2" x 6" with the curb face to the gutter and such a manner 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. Assure that storm flow does not bypass the inlet by installing a temporary curb or asphalt curb to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 26 - 3B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 22 - SILT FENCE



1. Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) and, 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1" or 1 1/2" section weighing not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) and, 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1" or 1 1/2" section weighing not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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SILT FENCE

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 7) maximum slope 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 E - 15 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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30.0 DUST CONTROL

Controlling dust blowing and movement on construction sites and roads.

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.



CONSTRUCTION SPECIFICATIONS

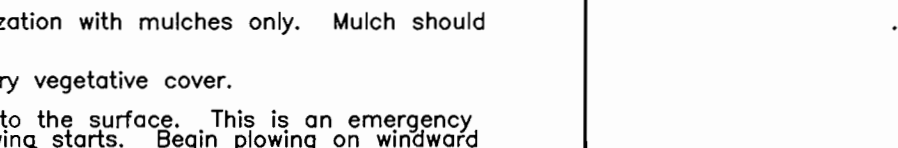
1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ALONG 4" DOWN SLOPE FROM THE TRENCH SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
4. STAPLES SHALL BE PLACED 2' APART WITH A ROW FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS WITHIN THE STRIP.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". OVERLAP TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". OVERLAP TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". OVERLAP TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". OVERLAP TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4".
6. THE DISBURSE END OF THE MATTING LAYER SHOULD BE SPACED 8" APART WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEPT-IN.

SOIL STABILIZATION MATTING

NOT TO SCALE

DETAIL 1 - EARTH DIKE



CONSTRUCTION SPECIFICATIONS

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum.

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area of a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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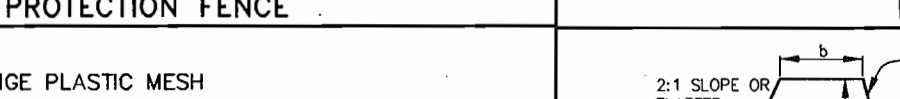


CONSTRUCTION SPECIFICATIONS

1. FOREST PROTECTION DEVICE ONLY.
2. INTENTIONAL DAMAGE WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PERMANENTLY MAINTAINED DURING CONSTRUCTION.
6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

TREE PROTECTION FENCE

NOT TO SCALE

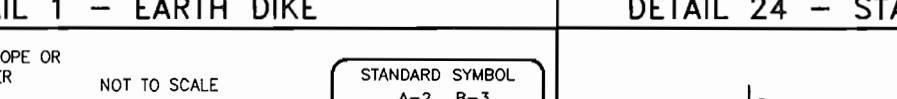


CONSTRUCTION SPECIFICATIONS

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2' x 4" construction grade lumber posts 1" into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4" frame using the overlap joint shown on detail 23A. The top of the frame must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the top of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch. Line directly back to it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain event and the geotextile replaced when it becomes clogged.

DETAIL 23A - STANDARD INLET PROTECTION

NOT TO SCALE



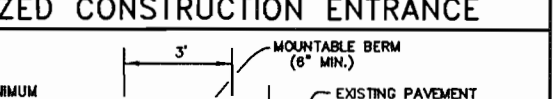
CONSTRUCTION SPECIFICATIONS

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum.

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area of a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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CONSTRUCTION SPECIFICATIONS

1. Length - minimum of 50' (50' for single residence lot).
2. Width - minimum should be flared at the existing road to provide a landing radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface water - at surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipes installed through the stabilized construction entrance shall be protected with a mounted berm with 5:1 slopes and a minimum of 8" of stone over the pipe. Pipe shall be sized according to the drainage. When the size is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe shall be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

SEQUENCE OF CONSTRUCTION

- DAY 1-4 OBTAIN GRADING PERMIT AND DEMOLITION PERMIT. CONTACT MISS UTILITY AND THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION.
- DAY 5-10 CLEAR AND GRUB FOR SEDIMENT CONTROL DEVICES, STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, EARTH DIKES, SEDIMENT BASIN AND CLEANWATER DIVERSIONS. INSTALL ENTIRE STORM DRAIN SYSTEM EXCEPT FOR E-2, E-3, S-2 AND M-1. CONTRACTOR MUST OBTAIN PERMISSION OF INSPECTOR PRIOR TO PROCEEDING TO THE NEXT STEP. NOTE: ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA SAINT JOHNS LANE.
- DAY 11-18 DEMOLITION EXISTING BUILDINGS AND CLEAR AND GRUB REMAINDER OF SITE.
- DAY 19-28 MASS GRADE SITE.
- DAY 29-48 WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, FINISH INSTALLATION OF STORM DRAIN, WATER, SEWER AND UTILITIES AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.
- DAY 49-83 GRADE BUILDING PAD AND COMMENCE BUILDING CONSTRUCTION.
- DAY 84-93 INSTALL CURB AND GUTTER, THE SUPER SILT FENCE LOCATED AT THE ROUTE 40 ENTRANCE SHALL BE REMOVED AND REINSTALLED AFTER THE CURB WITHIN THIS AREA IS PLACED.
- DAY 94-103 INSTALL PAVING FOR PARKING LOT, AND REMOVE THE SILT FENCE CROSSING THE DRIVEWAY AT THE ROUTE 40 ENTRANCE.
- DAY 104-111 FINAL GRADE REMAINDER OF SITE AND PERMANENTLY STABILIZE.
- DAY 112-115 INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THE LANDSCAPE PLAN.
- DAY 116-125 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES CONVERT SEDIMENT BASIN TO PERMANENT SWM FACILITY AND PERMANENTLY STABILIZE.

BENCHMARK ENGINEERING, INC.
8490 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
www.bel-civilengineering.com

OWNER PARCEL 'A'
EMICON, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K. HOENES
15115 CARRS MILL ROAD
WOODBINE, MD 21797

PROJECT: 9050 ROUTE 40 RETAIL CENTER
ONE STORY RETAIL BUILDING NO. 1
PARCEL 'A' AND PARCEL 848

LOCATION: TAX MAP 24 - GRID 5
PARCEL 38, 96 AND PARCEL 848
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

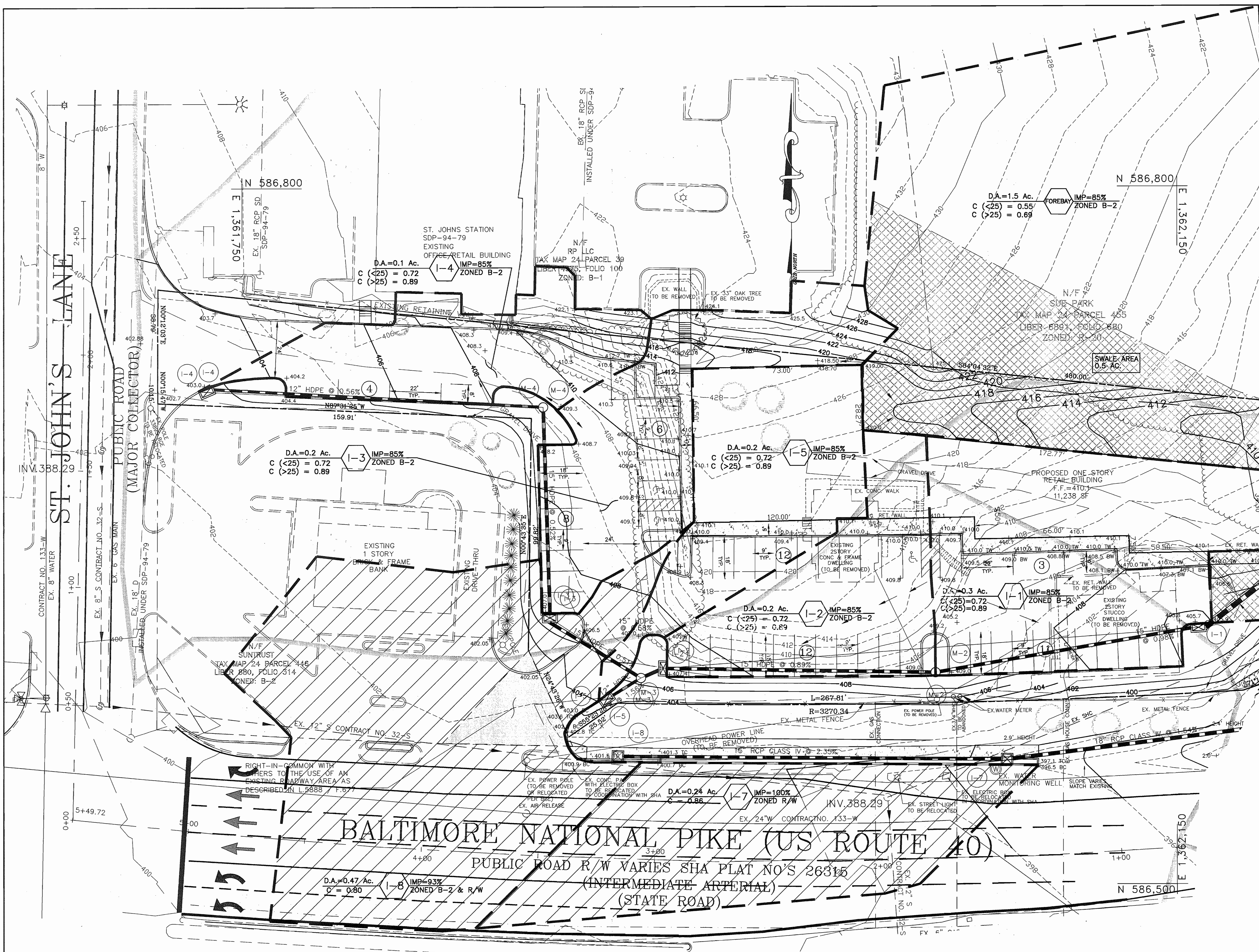
TITLE: SEDIMENT AND EROSION NOTES AND DETAILS

DATE: SEPTEMBER, 2005
APRIL, 2006

PROJECT NO. 1794

SCALE: AS SHOWN DRAWING 8 OF 17

Design: DAM Draft: MAN Check: DAM



LEGEND

SOILS CLASSIFICATION	---
EXISTING CONTOURS	---999---
PROPOSED CONTOURS	---999---
LIMIT OF WETLANDS	---
EXISTING WOODS LINE	---
PROPOSED WOODS LINE	---
EXISTING STRUCTURE	---
PROPOSED STRUCTURE	---
EX. 15% - 25% SLOPES	---
PROP. DRAINAGE AREA	---
PROP. DRAINAGE DIVIDE	---
SHA INLET AREAS	---

MATCHLINE SEE SHEET 10 OF 17

BALTIMORE NATIONAL PIKE (US ROUTE 40)
 PUBLIC ROAD R/W VARIES SHA PLAT NO'S 26315
 (INTERMEDIATE ARTERIAL)
 (STATE ROAD)

PLAN
 SCALE: 1" = 20'

NO.	DATE	REVISION
BENCHMARK		
ENGINEERS • LAND SURVEYORS • PLANNERS		
ENGINEERING, INC.		
8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 www.bel-civilengineering.com		

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 9/25/06

CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR
 DATE: 10/2/06

OWNER PARCEL 'A'	EMICON LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	PROJECT: 9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797	LOCATION: TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: STORM DRAIN DRAINAGE AREA MAP		DATE: SEPTEMBER, 2005 APRIL, 2006 PROJECT NO. 1794
Design: DAM	Draft: MAN	Check: DAM
SCALE: AS SHOWN		DRAWING 9 OF 17

MATCHLINE SEE SHEET 9 OF 17



LEGEND

- SOILS CLASSIFICATION ---
- EXISTING CONTOURS ---
- PROPOSED CONTOURS ---
- LIMIT OF WETLANDS ---
- EXISTING WOODS LINE ---
- PROPOSED WOODS LINE ---
- EXISTING STRUCTURE ---
- PROPOSED STRUCTURE ---
- EX. 15% - 25% SLOPES ---
- PROP. DRAINAGE AREA ---
- PROP. DRAINAGE DIVIDE ---

D.A. = 1.5 Ac.
 FOREBAY IMP=85% ZONED B-2
 C (<25) = 0.55
 C (>25) = 0.69

SWALE AREA
 0.5 AC.

PLAN
 SCALE: 1" = 20'

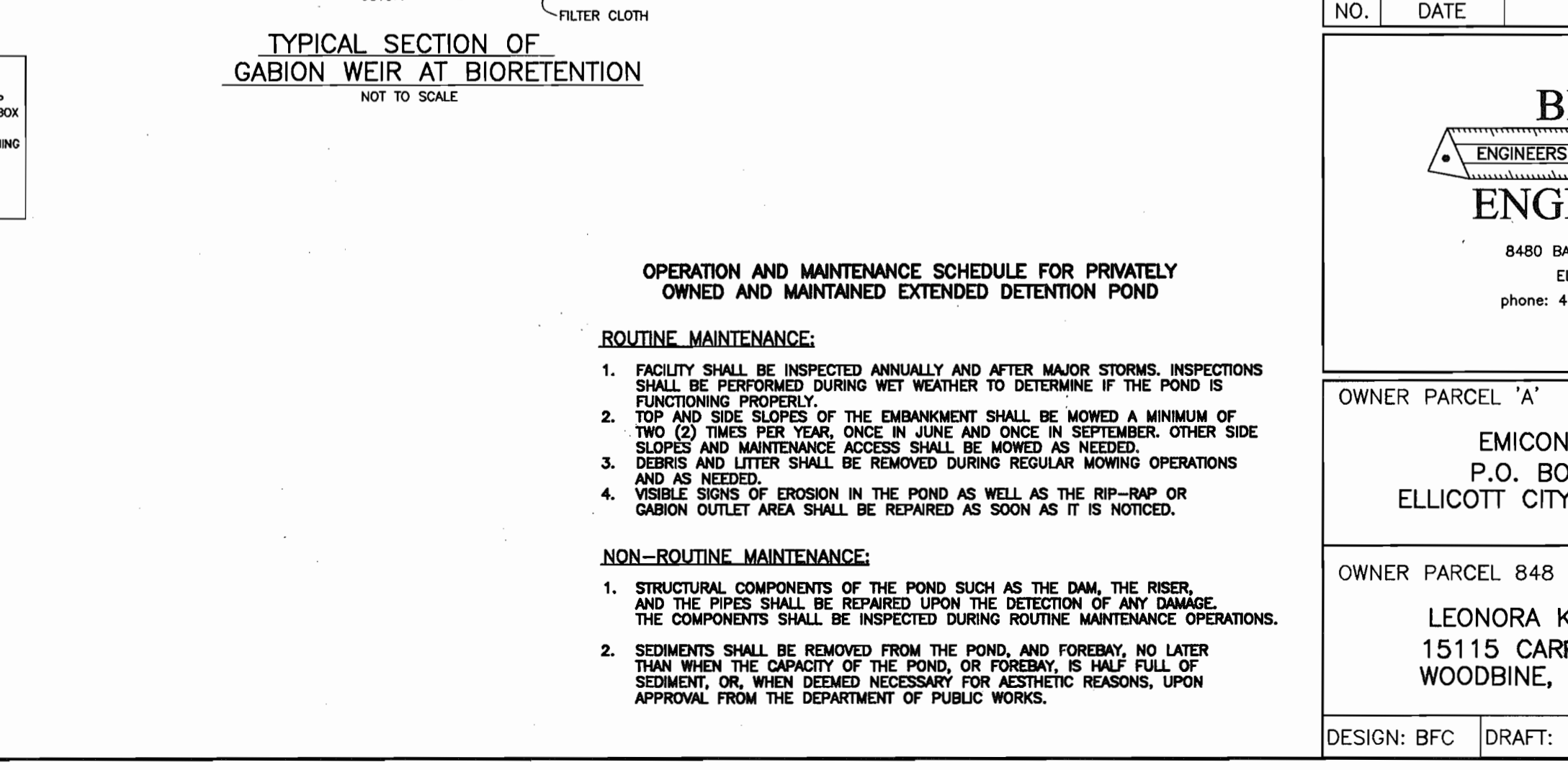
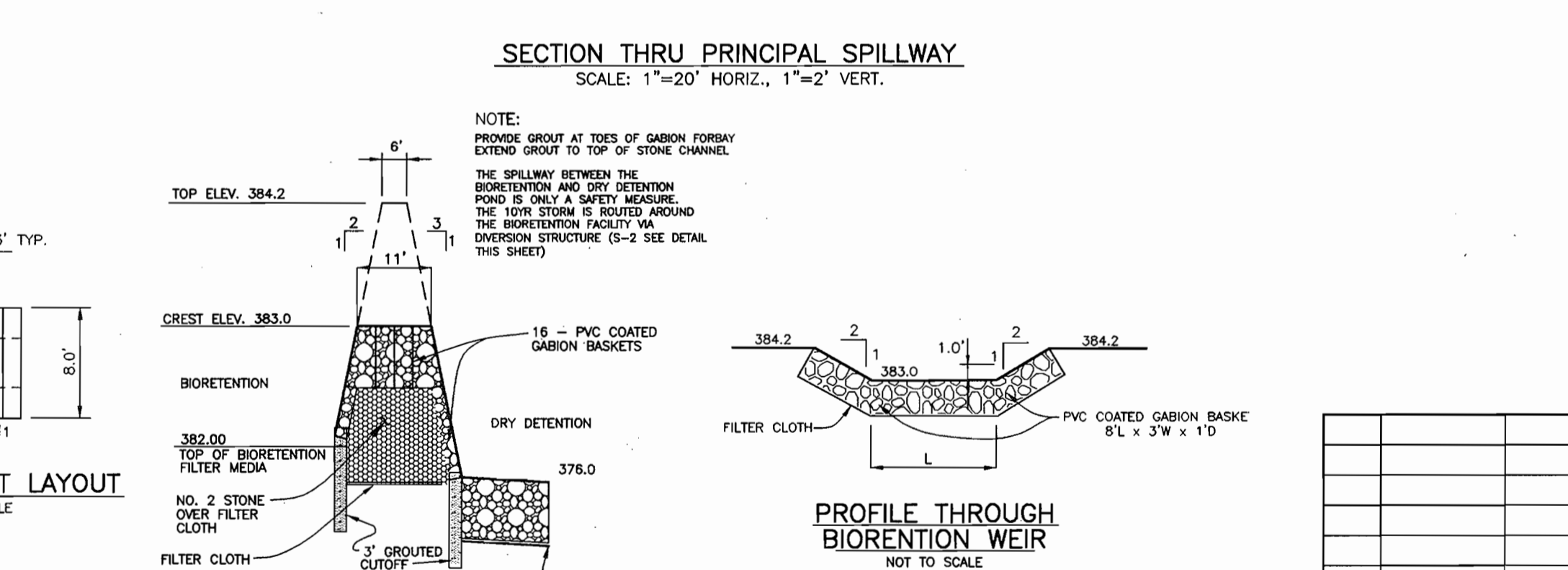
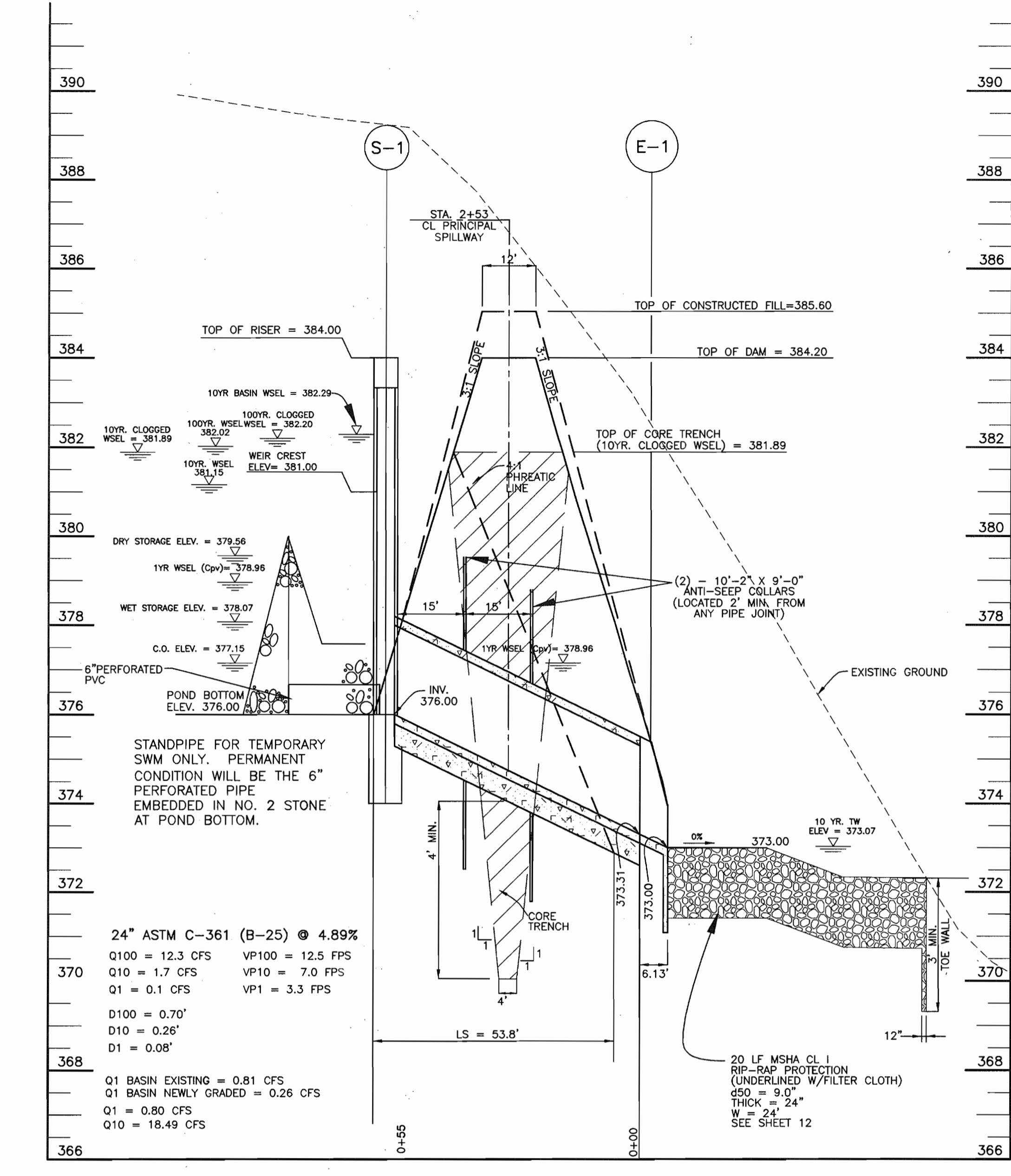
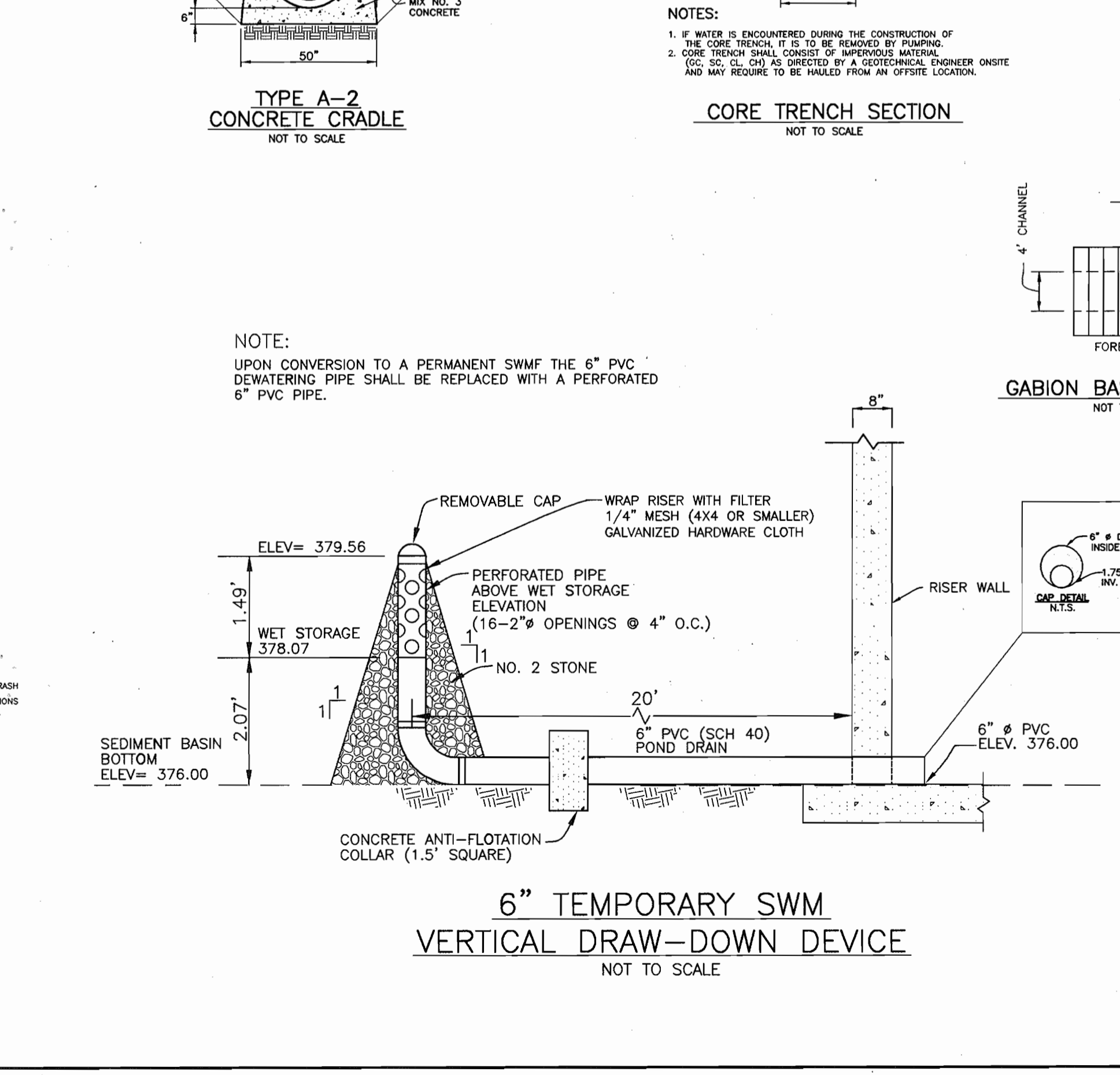
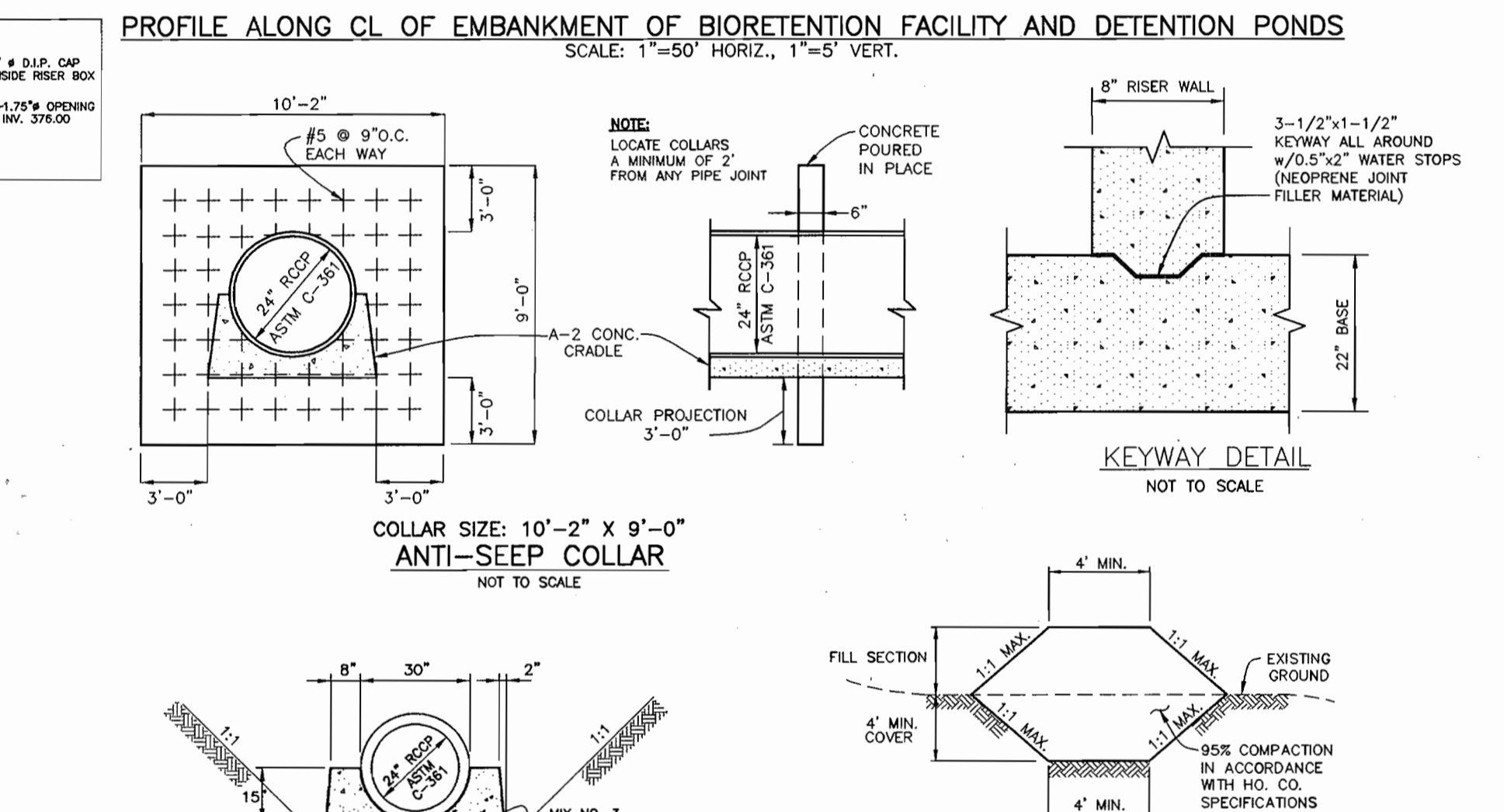
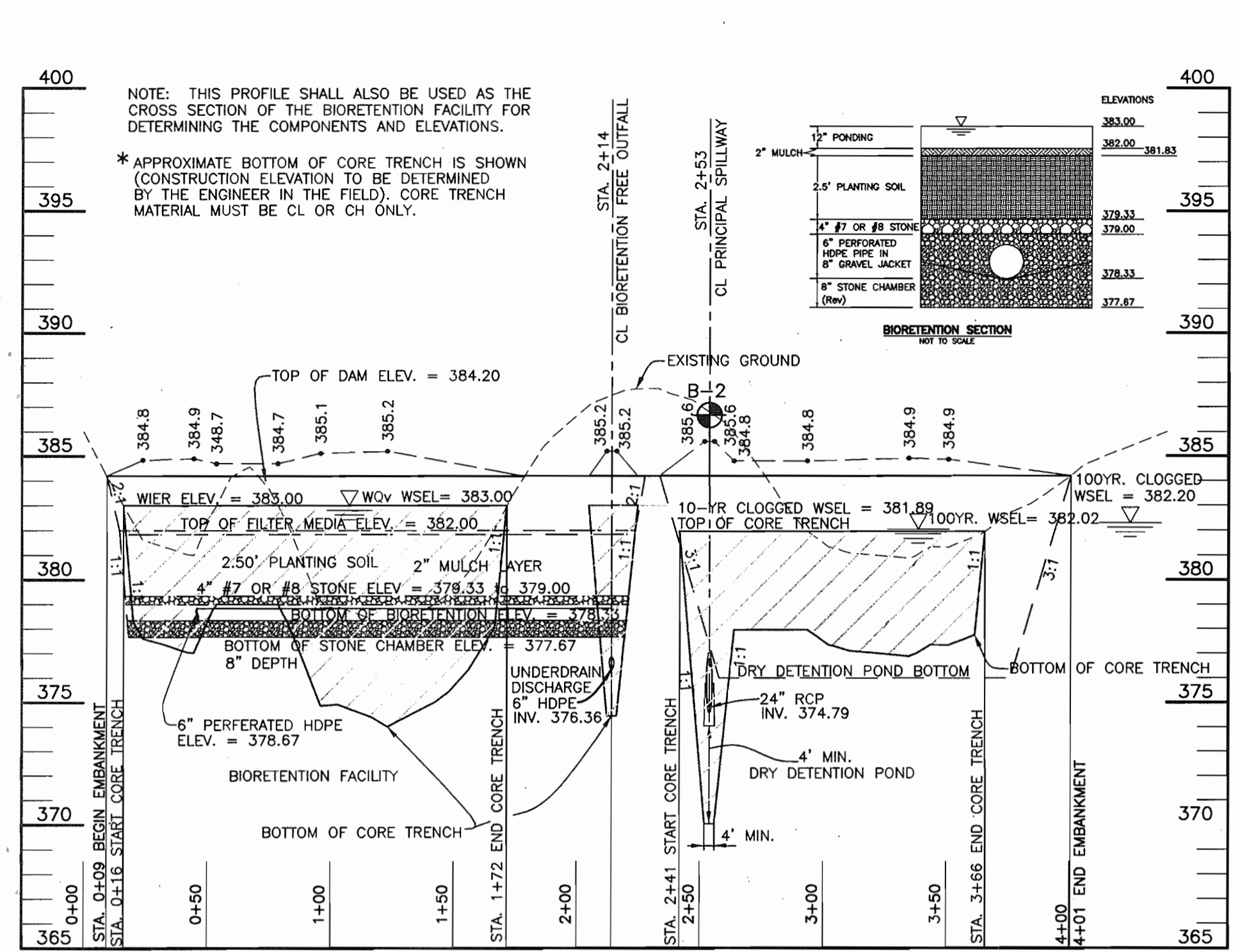
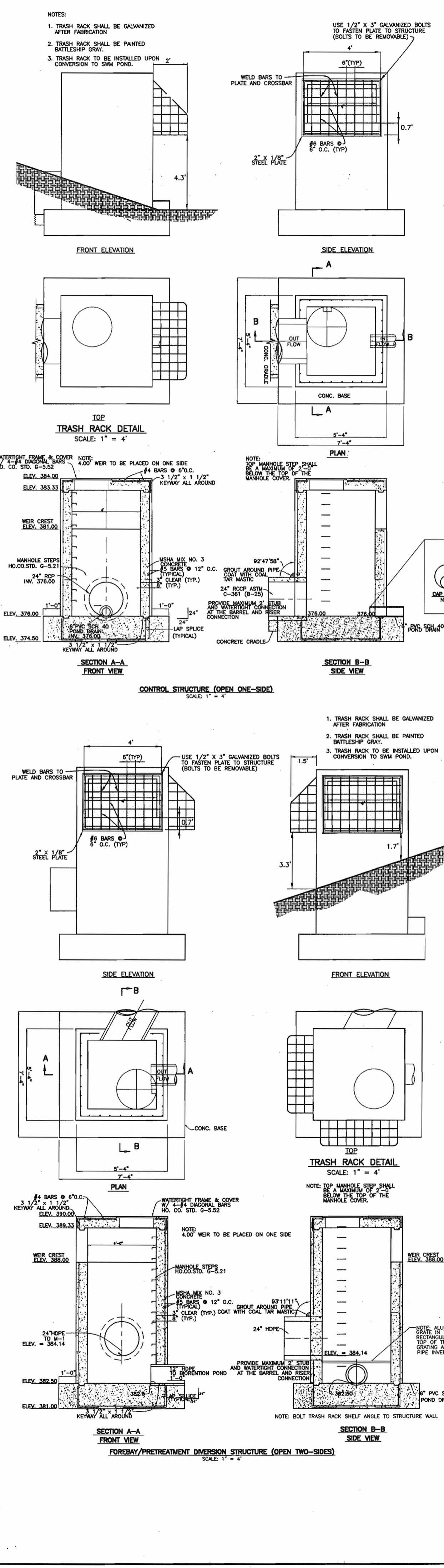
NO.	DATE	REVISION

BENCHMARK
 ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 www.bei-civilengineering.com

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 7/28/06	 DATE: 7/28/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 10/2/06	 DATE: 10/2/06
DIRECTOR	DATE

OWNER PARCEL 'A'	PROJECT:
EMICON LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	LOCATION:
LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797	TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	STORM DRAIN DRAINAGE AREA MAP
DATE:	SEPTEMBER, 2005 APRIL, 2006
PROJECT NO.	1794
Design: DAM	Draft: MAN
Check: DAM	SCALE: AS SHOWN
	DRAWING 10 OF 17



GEOTECHNICAL ENGINEER RECOMMENDATIONS:

EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

THE AREAS OF THE PROPOSED SWM FACILITIES SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREAS IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROFFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. UTILIZING A DYNAMIC CONE PENETROMETER, ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROFFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH NRCS-MD CODE NO. 378 POND STANDARDS/SPECIFICATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL, INCLUDING SILT(ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO. 378 SPECIFICATIONS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. _____
 DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Blidco
 DEVELOPER DATE

BY THE ENGINEER:
 I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTICED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Donald Mason
 ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Sir Niyolas
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Shells
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Patrick C. Cagle
Wendy Hunter
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

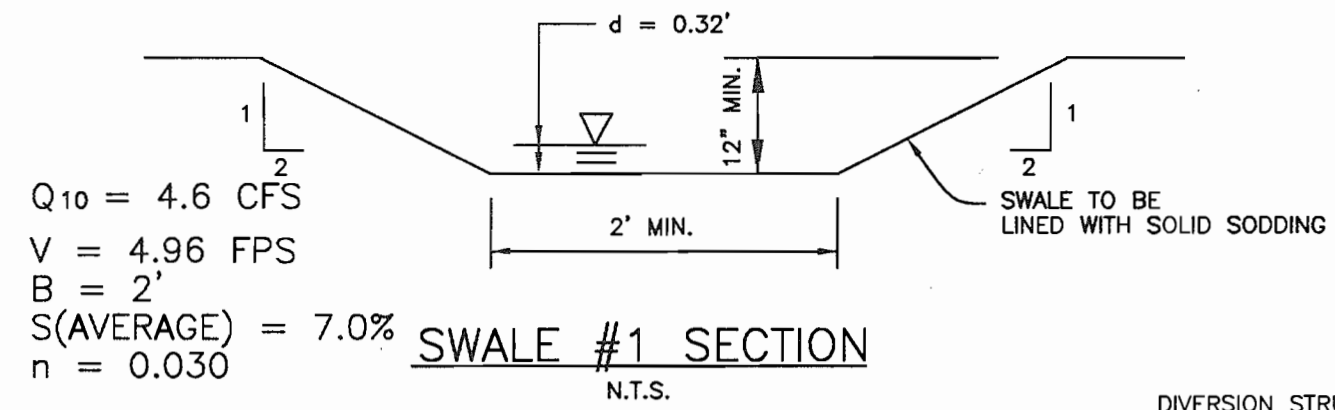
Shobe
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@cois.com

STATE OF MARYLAND
 PROFESSIONAL ENGINEERING
 DONALD A. MASON
 8/10/06

OWNER PARCEL 'A'	PROJECT:	9050 ROUTE 40 RETAIL CENTER
EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	LOCATION:	ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	TITLE:	SWM DETAILS AND PROFILES
LEONORA K. HOENES 15115 CARRS MILL RD WOODBINE, MD 21797	DATE:	DECEMBER, 2005 APRIL, 2006
DESIGN: BFC DRAFT: BFC CHECK: DAM	SCALE:	AS SHOWN
		PROJECT NO. 1794 SHEET 11 OF 17



SYMBOL	QUANTITY	NAME	REMARKS
(R)	4	ACER RUBRUM "RED MAPLE"	1-1/2" - 2" CAL.
(S)	3	PLATANUS OCCIDENTALIS "SYCAMORE"	1-1/2" - 2" CAL.
(B)	4	MYRTICA PENNSYLVANICA "BAYBERRY"	2' - 2-1/2" HT.
(W)	4	VIBURNUM DENTATUM "ARROWWOOD"	2-1/2" - 3" HT.
(OO)	52	PANICUM VIRGATUM "SWITCHGRASS"	
(A)	76	SCORPUS PLUMIGENS "THREE SQUARE BULRUSH"	

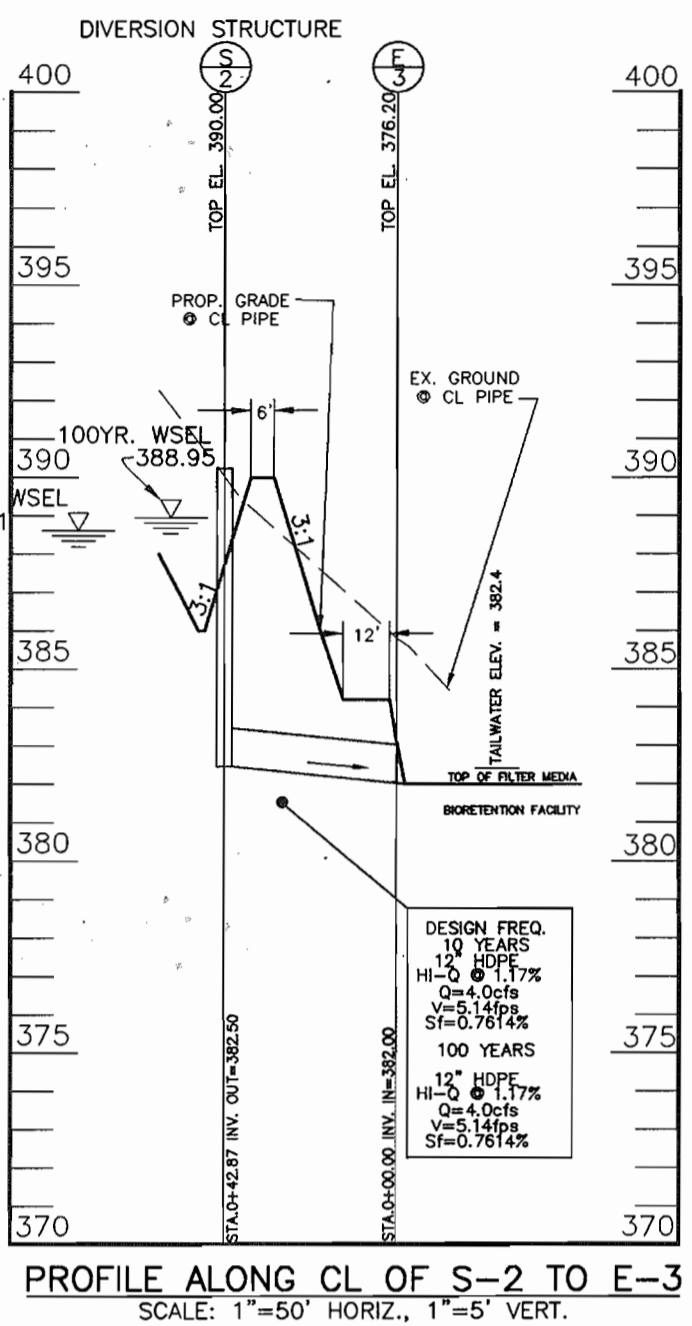
SWMF - LANDSCAPE DATA

HYDROLOGIC ZONE 3 - REGULARLY INUNDED SHORELINE FRINGE (HIGH MARSH)

HYDROLOGIC CONDITION - 0" TO 1'-0" DEEP HARDNESS - TEMPERATE ZONE 6b (-5' TO 0')

SEE SHEET - FOR SEQUENCE OF CONSTRUCTION

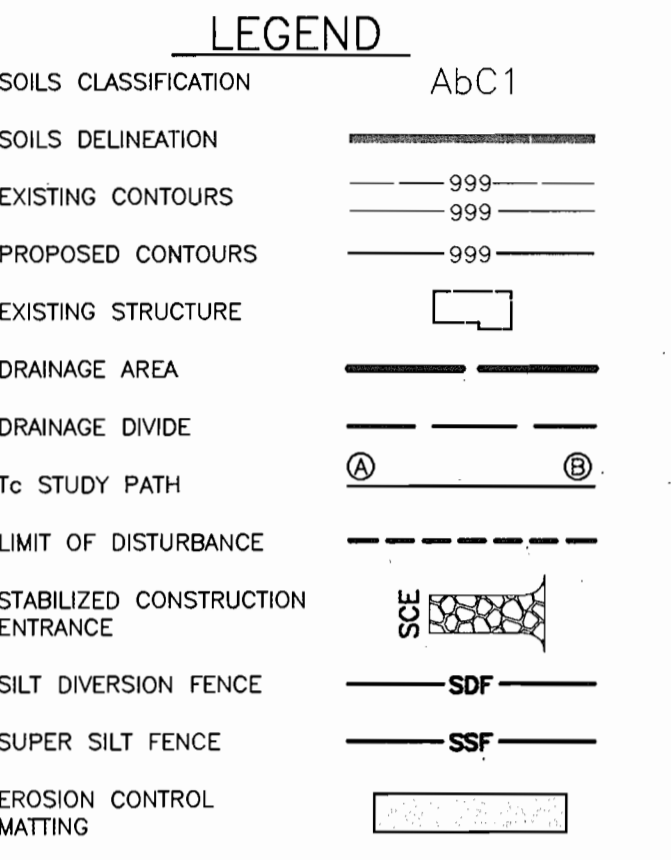
NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES



STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.2153 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.049 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION

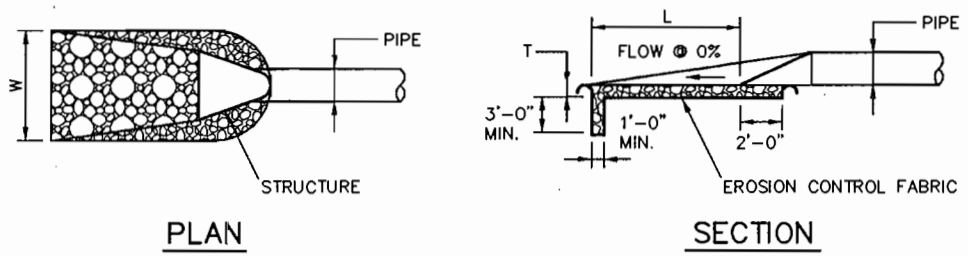
BORING NO.	DEPTH OF TEST	MEASURED RATE (IN./HR.)
B-2	15.5'	0.375
B-4	15.0'	-

RUN	SIZE	LENGTH	TYPE & CLASS
S-1 TO E-1	24"	55.00'	RIPP-RAP C-361 (8-20)
BIORETENTION UNDERDRAIN	6"	85.00'	PERFORATED HDPE
BIORETENTION OUTFALL	6"	61.00'	HDPE H-0



OPERATION & MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

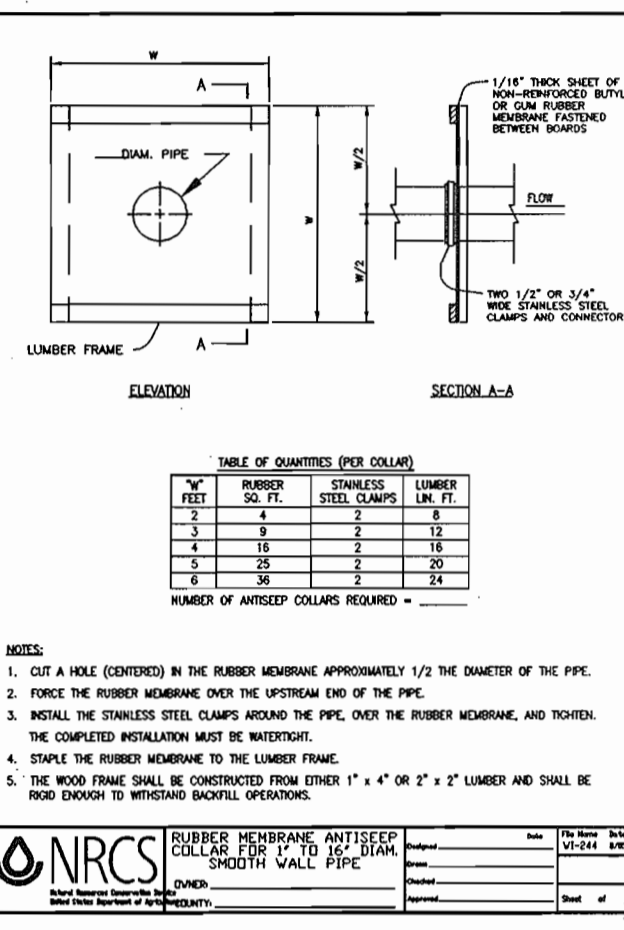
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



STRUCTURE	d50	LENGTH(L)	WIDTH(W)	THICK.(T)	SHA CLASS
E-1	9.5"	22' @ 0%	24'	19"	I
E-2	9.5"	10' @ 0%	14'	19"	I
E-3	9.5"	10' @ 0%	14'	19"	I
E-4	9.5"	20' @ 0%	22'	19"	I
E-5	9.5"	10' @ 0%	12'	19"	I

OUTLET PROTECTION DETAIL

- CONSTRUCTION SPECIFICATIONS
- THE SUBGRADE FOR THE FILTER, RIP-RAP, OR CARBON SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
 - GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
 - STONE FOR THE RIP-RAP OR CARBON OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR CARBON OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS RELATIVELY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE Voids BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORK.
 - THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



NOTE: ALL STORMWATER MANAGEMENT BMP'S SHOWN ON THESE PLANS ARE TO BE PRIVATELY OWNED AND MAINTAINED

NOTE: ALL STORM DRAINS SHOWN ON THESE PLANS ARE TO BE PRIVATELY OWNED AND MAINTAINED

NOTE: ALL STORM DRAINS LABELED AS HDPE SHALL HAVE A SMOOTH-BORE INTERIOR FINISH

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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Donna Mason
DEVELOPER
8/11/06

BY THE ENGINEER:

I/VE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Donald A. Mason
ENGINEER - DONALD A. MASON, P.E. # 21443
8/11/06

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Jim Mages
USDA - NATURAL RESOURCES CONSERVATION SERVICE
8/25/06

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

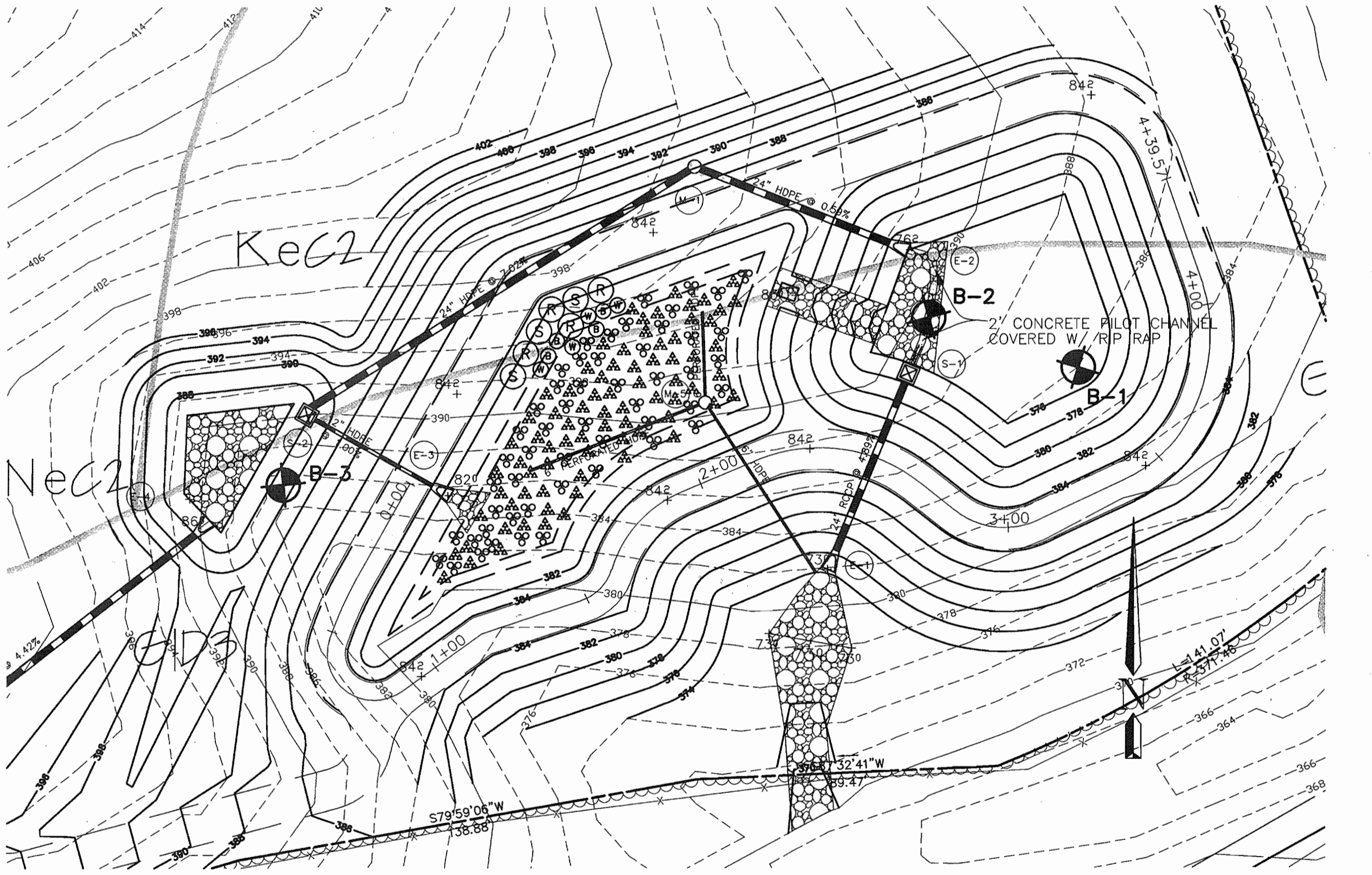
John A. Allen
HOWARD SOIL CONSERVATION DISTRICT
8/25/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

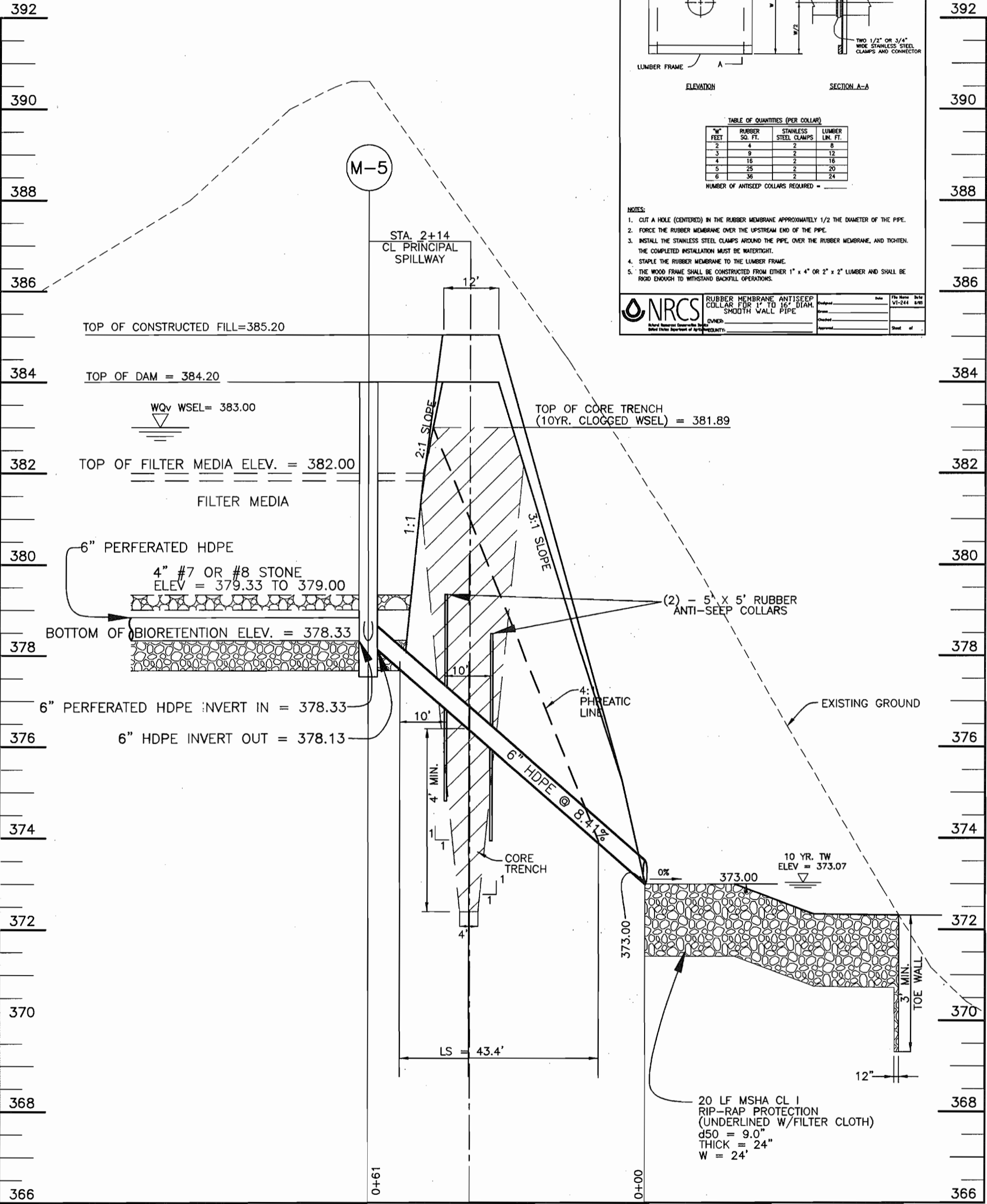
Chief, Development Engineering Division
9/25/06

Chief, Division of Land Development
10/2/06

Director



PLANTING AND SWM PLAN
BIO-RETENTION FACILITY (F-6)
SCALE: 1" = 20'



SECTION THRU BIORETENTION FREE OUTFALL
SCALE: 1" = 20' HORIZ., 1" = 2' VERT.

MAP SYMBOL	SOIL GROUP	SOIL TYPE
Gd3	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GnB2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Mc2	D	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nc2	B	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nd3	B	NESHAMINY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

* INDICATES HYDRIC SOILS
TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 23

- SWM PLANTING NOTES:
- TREES, SHRUBS, AND OR ANY TYPE OF WOODY VEGETATIONS ARE NOT ALLOWED ON THE EMBANKMENT.
 - PLANT TREES AND SHRUBS AT LEAST 15 FEET AWAY FROM THE TOE OF SLOPE OF THE DAM.
 - PLANT TREES AND SHRUBS AT LEAST 25 FEET AWAY FROM PERFORATED PIPES AND PRINCIPLE SPILLWAYS.

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.2024 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0457 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	0.2884 AC.-FT.	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	EX. OF = 13.42CFS DEV. OF = 12.62CFS	PROVIDED IN THE DRY DETENTION FACILITY.

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0061 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0016 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.

STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0068 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0018 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (CPv)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.

BENCHMARK ENGINEERING, INC.

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OWNER PARCEL 'A':
EMICON, LLC
P.O. BOX 417
ELLCOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K. HOENES
15115 CARRS MILL ROAD
WOODBINE, MD 21797

PROJECT:
9050 ROUTE 40 RETAIL CENTER
ONE STORY RETAIL BUILDING NO. 1
PARCEL 'A' AND PARCEL 848

LOCATION:
TAX MAP 24 - GRID 5
PARCEL 38, 96 AND PARCEL 848
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

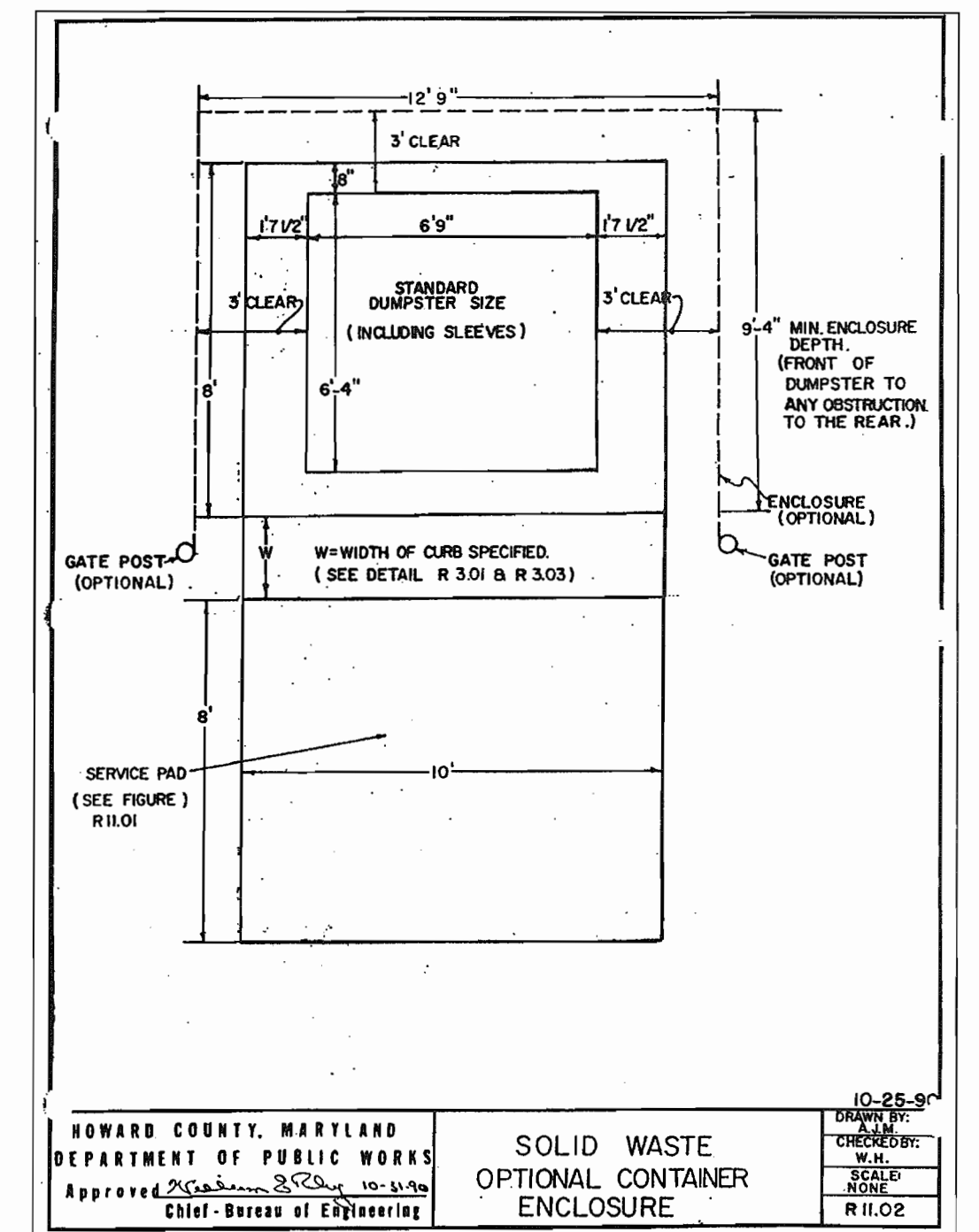
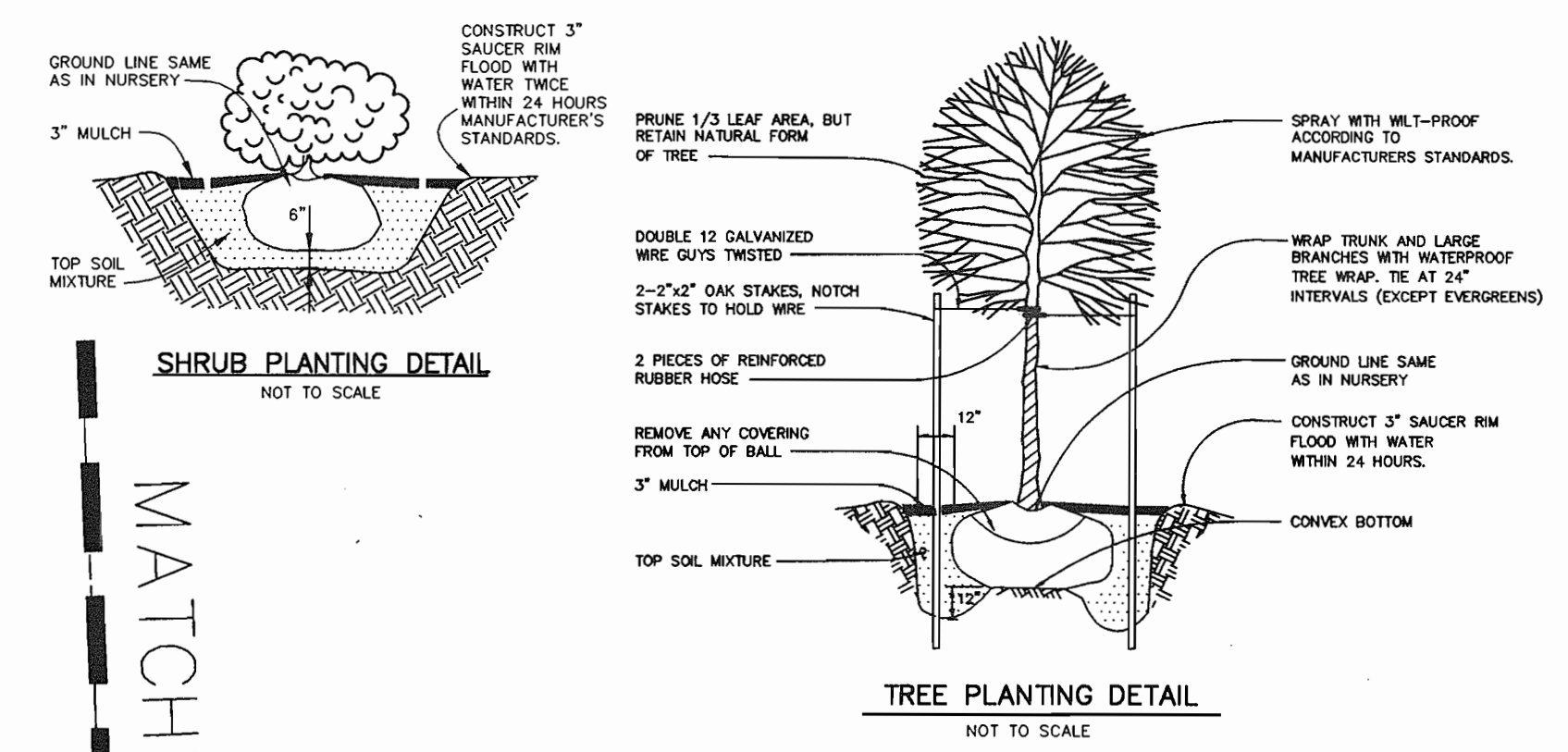
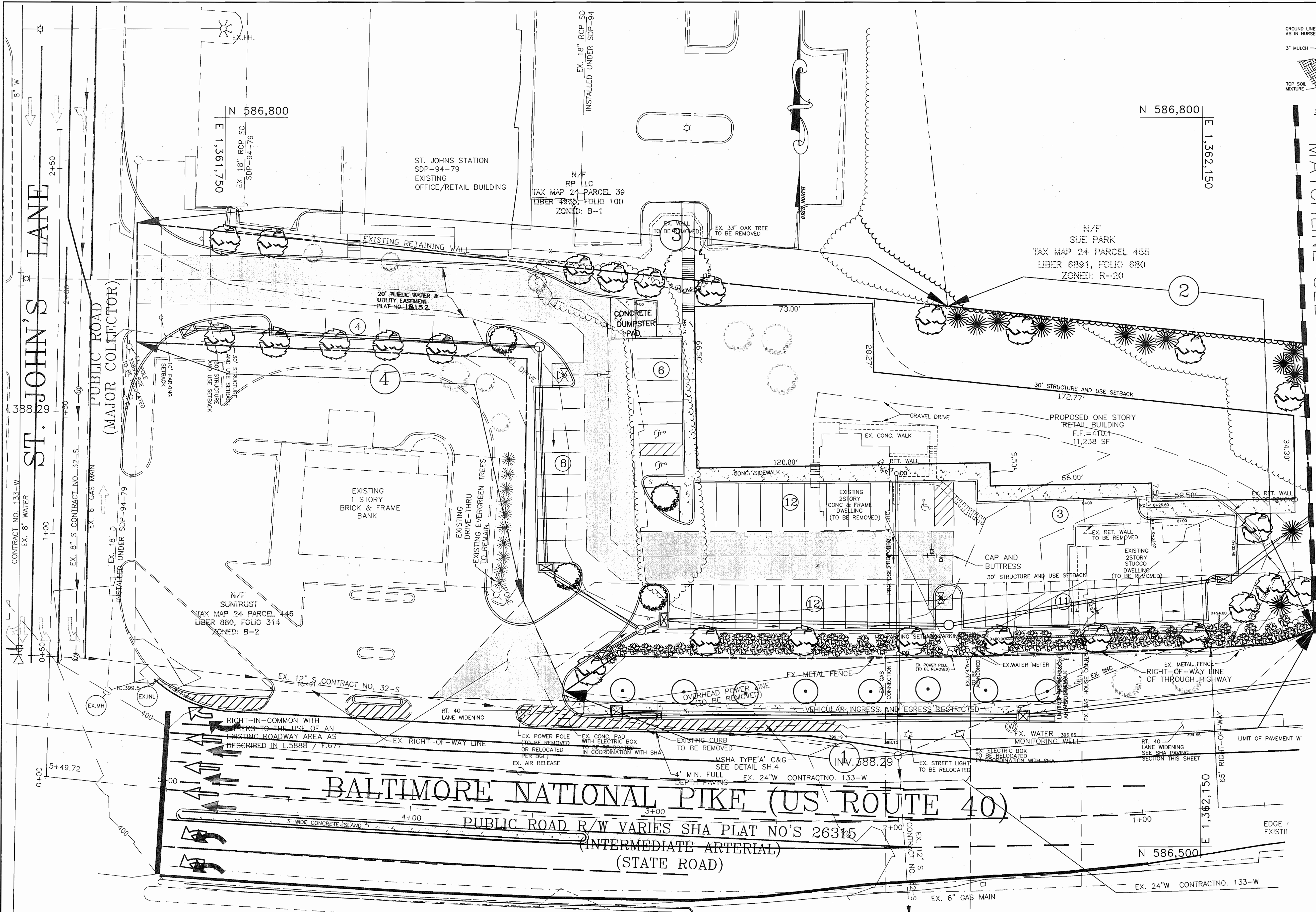
TITLE:
STORMWATER MANAGEMENT
PLAN, PROFILES AND DETAILS

DATE: DECEMBER, 2005
APRIL, 2006

PROJECT NO. 1794

SCALE: AS SHOWN DRAWING 12 OF 17

Design: _____ Draft: _____ Check: _____



SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	55
NUMBER OF LANDSCAPE ISLANDS REQUIRED	3
NUMBER OF LANDSCAPE ISLANDS PROVIDED	4

- PLANTING NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE EDGE OF PAVING, 10' FROM A DRIVEWAY AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
 - ALL PLANTINGS ARE THE RESPONSIBILITY OF THE DEVELOPER.
 - FINANCIAL SURETY FOR PERIMETER LANDSCAPING, INTERNAL PARKING AND STORM WATER MANAGEMENT FOR 58 SHADE TREES, 38 EVERGREENS AND 78 SHRUBS SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PROJECT IN THE AMOUNT OF \$25,440.00.
 - MATURE TREE HEIGHTS OF PLANTED TREES SHALL NOT EXCEED THE EQUIVALENT DISTANCE AS MEASURED FROM THE BASE OF THE TREE TO THE CENTER LINE OF ANY STEEL TOWER STRUCTURE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 7/25/06

DATE: 10/26/06

SCHEDULE A PERIMETER LANDSCAPE EDGE				
CATEGORY	ADJACENT TO ROADWAY		ADJACENT TO PERIMETER PROPERTIES	
	YES	NO	YES	NO
PERIMETER NO. / LANDSCAPE TYPE	① E	② C	③ A	④ A
LINEAR FEET OF ROADWAY (FRONTAGE/PERIMETER)	310	264	334	260
CREDIT FOR EXISTING VEGETATION: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-
CREDIT FOR WALL, FENCE OR BERM: NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	-	-	-
NUMBER OF PLANTS REQUIRED:				
SHADE TREES	8	7	6	5
EVERGREEN TREES	-	13	-	-
OTHER TREES (2:1 SUBSTITUTE)	78	-	-	-
SHRUBS	-	-	-	-
NUMBER OF PLANTS PROVIDED:				
SHADE TREES	8	7	6	5
EVERGREEN TREES	-	13	-	-
OTHER TREES (2:1 SUBSTITUTE)	78	-	-	-
SHRUBS (10:1 SUBSTITUTE)	-	-	-	-
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	-	-	-	-

PLAN
SCALE: 1" = 20'

LANDSCAPE PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
⊙	46	ACER SACCHARUM SUGAR MAPLE	2 1/2"-3" MIN. CAL. B & B FULL HEAD
⊙	4	PRUNUS SARGENTII SARGENT CHERRY	2 1/2"-3" MIN. CAL. B & B FULL HEAD
⊙	78	JUNIPERUS CHINENSIS PFITZERIANA COMPACTA/COMPACT PFITZER JUNIPER	2' - 2 1/2' HT.
⊙	38	PINES STROBUS EASTERN WHITE PINE	6'-8' HT

STREET TREES		
SYMBOL	QUANTITY	NAME
⊙	8	PRUNUS SERRULATA 'KWANZAN' / KWANZAN CHERRY

DEVELOPER'S/BUILDER'S CERTIFICATION

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: [Signature] DATE: 8/16/06

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PROJECT: 9050 ROUTE 40 RETAIL CENTER
ONE STORY RETAIL BUILDING NO. 1
PARCEL 'A' AND PARCEL 848

LOCATION: TAX MAP 24 - GRID 5
PARCEL 38, 95 AND PARCEL 848
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN

DATE: SEPTEMBER, 2005
APRIL, 2006

PROJECT NO. 1794

SCALE: AS SHOWN DRAWING 13 OF 17

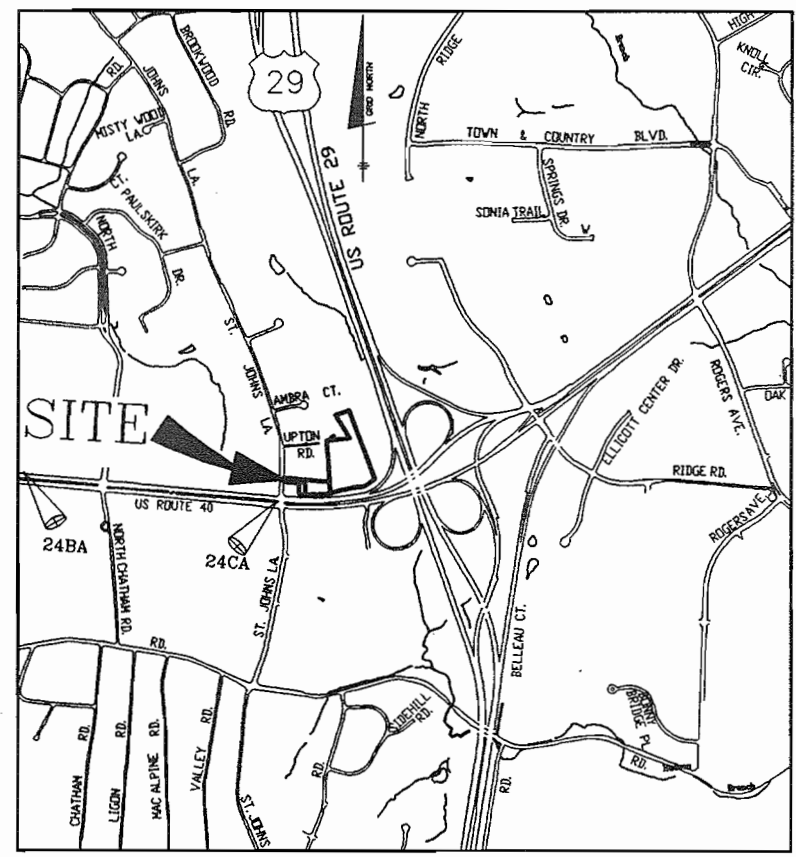
Design: DAM Draft: MAN Check: DAM

SDP-05-119

KEY	COMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F-1	MAPLE-POPLAR	4.95	ACER RUBRUM, LIRIODENDRON TULPIFERA, PINUS VIRGINIANA QUERCUS ALBA	GOOD	0

FSD NOTES:

1. NO RARE THREATENED, OR ENDANGERED SPECIES WERE OBSERVED ON THE PROPERTY.
2. SURROUNDING LAND USE IS HIGH DENSITY RESIDENTION AND COMMERCIAL.
3. ALL FOREST ON THE SITE IS IN STAND F-1



VICINITY MAP

SCALE: 1"=2000'

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. TOTAL TRACT AREA	6.88
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.00
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	6.88

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

INPUT NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.	ARA	MDR	IDA	HDR	MPD	CIA
	0	0	0	0	0	1
E. AFFORESTATION THRESHOLD	15%	x	0			1.03
F. CONSERVATION THRESHOLD	15%	x	0			1.03

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	4.95
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	4.02
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	4.02

BREAK EVEN POINT:

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	1.73
K. CLEARING PERMITTED WITHOUT MITIGATION	3.22

PROPOSED FOREST CLEARING:

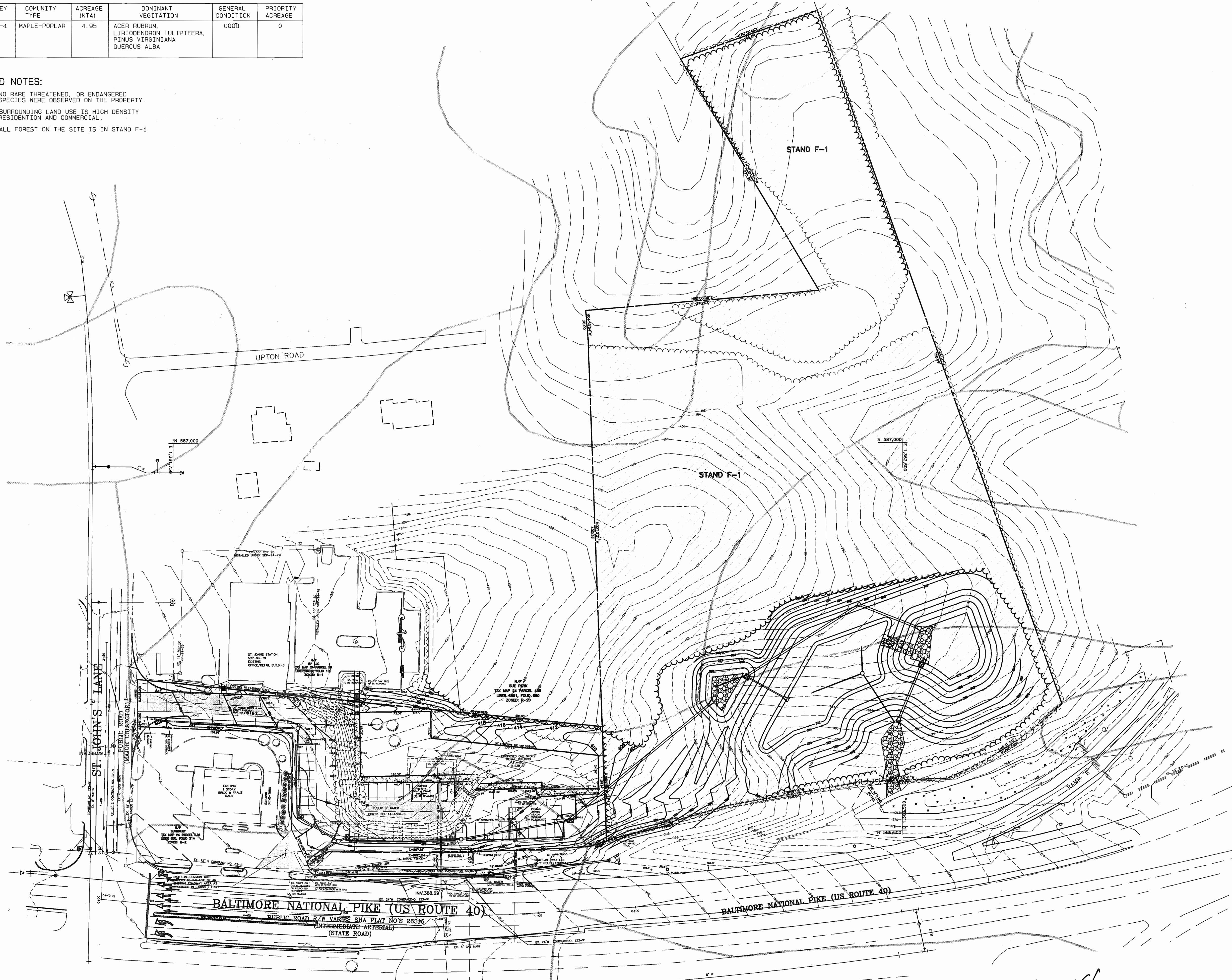
L. TOTAL AREA OF FOREST TO BE CLEARED	4.95
M. TOTAL AREA OF FOREST TO BE RETAINED	0.00

PLANTING REQUIREMENT:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	0.98	1.00	0.00
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	2.06	1.00	0.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	0.00	1.00	1.00
R. TOTAL REFORESTATION REQUIRED	3.04		
S. TOTAL AFFORESTATION REQUIRED	0.00		
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	3.04		

FCP NOTES:

1. ANY FOREST CONSERVATION EASEMENT (FCE) SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY AND WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY PD.
3. NO STOCK PILES, PARKING AREAS, EQUIPMENT CLEARING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENT.
4. PERMANENT SIGNAGE SHALL BE PLACED 100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
5. TEMPORARY PROTECTIVE FENCING SHALL BE INSTALLED ALONG THE PERIMETER OF ALL FOREST RETENTION AREAS OCCURRING WITHIN 50 FEET OF A PROPOSED EASEMENT. FENCING LOCATION ARE SHOWN.
6. THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 3.04 ACRES. THE OBLIGATION IS BEING MET BY THE RETENTION OF 6.08 ACRES (2:1) OF EXISTING FOREST ON THE LAFON PROPERTY (RE-06-06 (52)). SURETY SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$52,968.96 WITH THIS PLAN. **Recorded As PLAT NOS. 18519-51.**



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 9/25/06

[Signature] DATE: 10/2/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

PLAN
SCALE: 1" = 50'

[Signature] 8/17/06

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACE Wetland Delimitator
Certificate # WDC030000046403

P.O. Box 5024 Glen Arm, MD 21057 (410) 592-6752

John P. Cashe

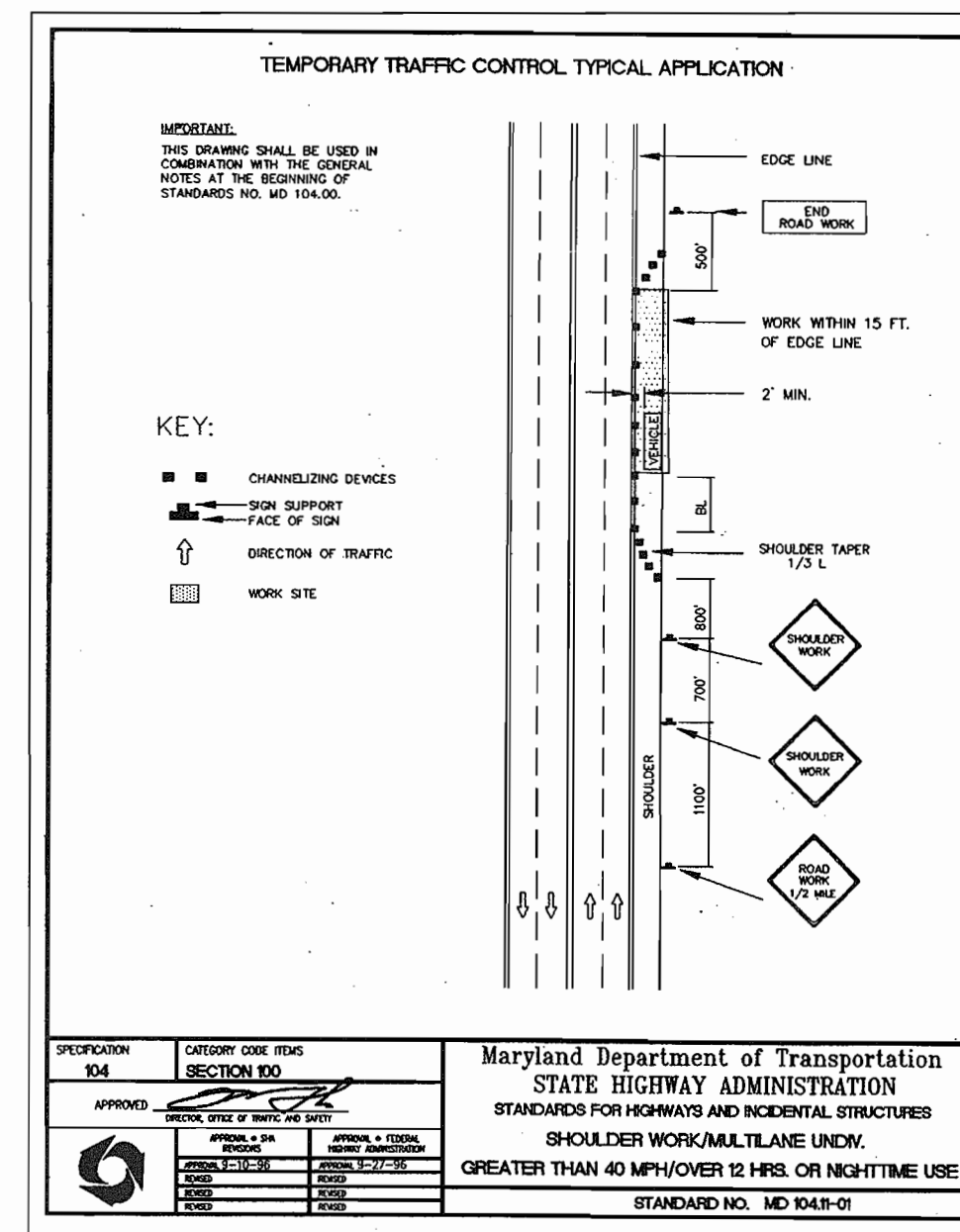
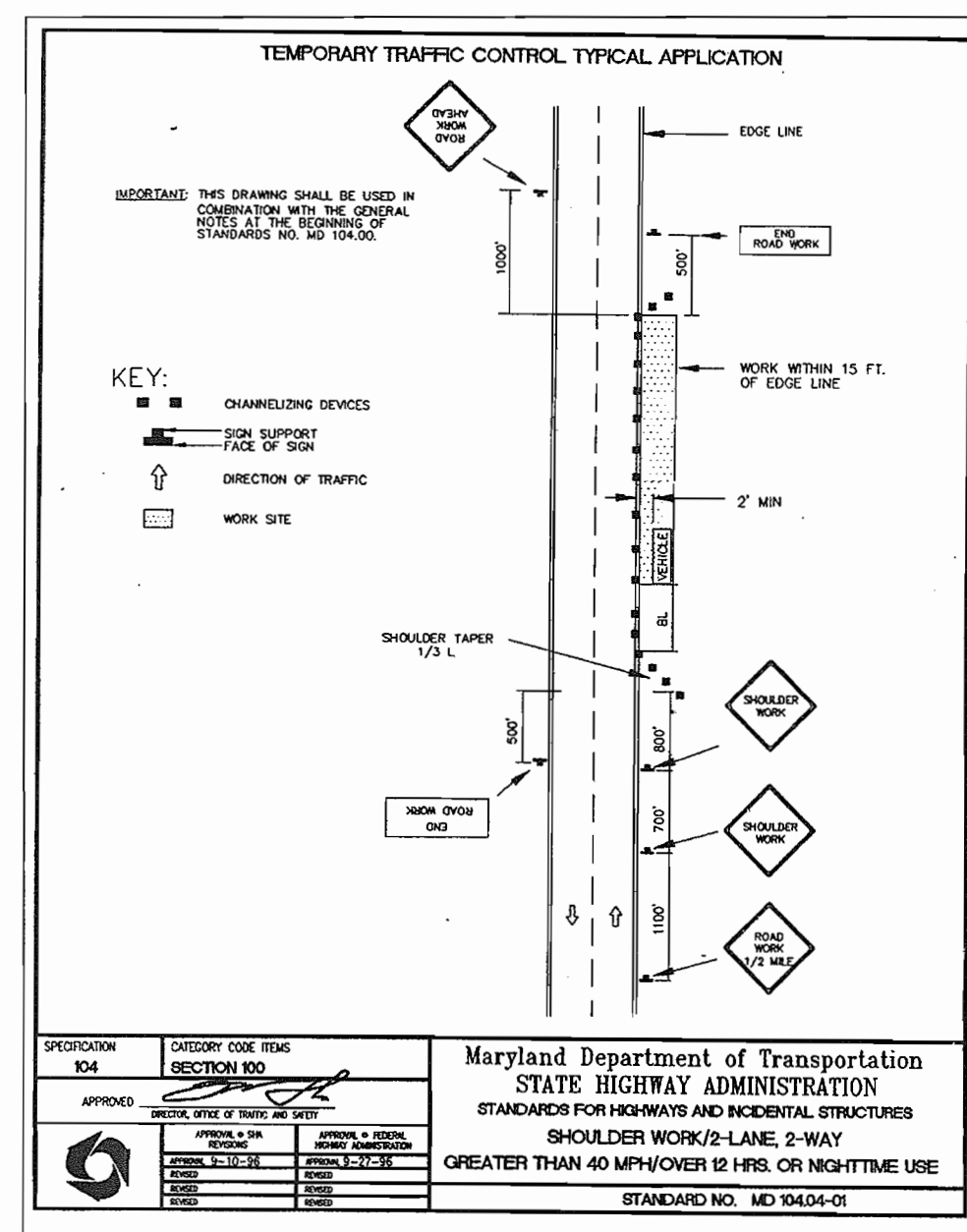
NO.	DATE	REVISION

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
www.bei-civilengineering.com

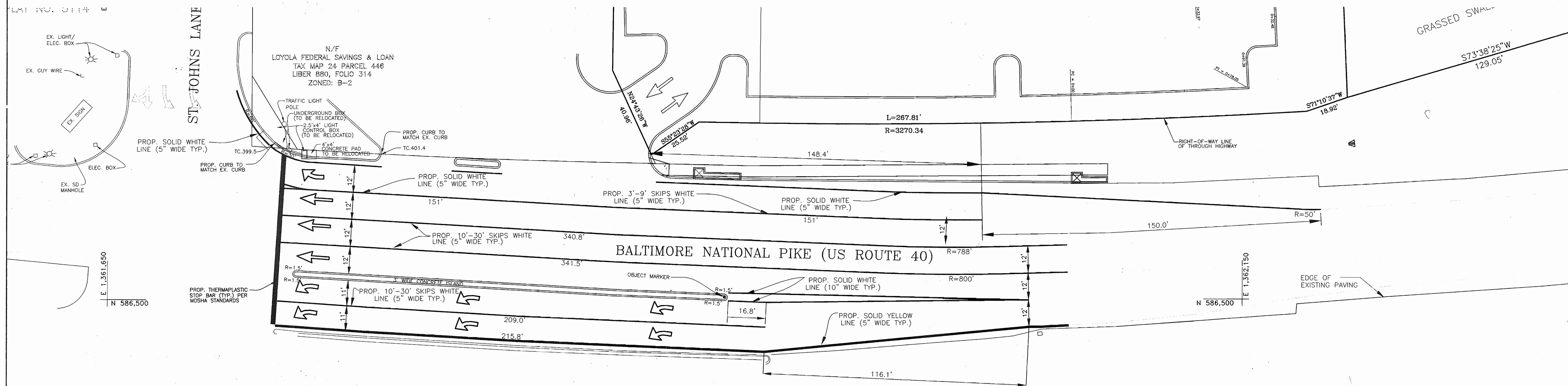
OWNER PARCEL 'A'	PROJECT: 9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	LOCATION: TAX MAP 24 - GRID 5 PARCEL 38, 95 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	TITLE: FOREST STAND DELINEATION FOREST CONSERVATION PLAN
LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797	DATE: SEPTEMBER, 2005 APRIL, 2006
Design: MAN	Draft: MAN
Check: DAM	PROJECT NO. 1794
SCALE: AS SHOWN	DRAWING 15 OF 17



- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - LIMIT OF WETLANDS
 - EXISTING WOODS LINE
 - PROPOSED WOODS LINE
 - EXISTING STRUCTURE
 - PROPOSED STRUCTURE
 - PROP. AUX. LANE FULL DEPTH PAVE. PROP. 2" GRIND AND OVERLAY
- LINE LEGEND**
- (A) SOLID WHITE (5" WIDE)
 - (B) PUPPY TRACKS (5" WIDE - WHITE) (2' LONG / 6" GAP)

TRAFFIC CONTROL ST. JOHN'S LANE

TRAFFIC CONTROL ROUTE 40



NOTE: THE INFORMATION SHOWN IN THIS PAVEMENT MARKING PLAN INCORPORATES MARYLAND STATE HIGHWAY ADMINISTRATION COMMENTS. PLEASE SEE THE SUPPLEMENTAL ROAD IMPROVEMENT PLAN FOR THE ROUTE 40 IMPROVEMENTS.

PAVEMENT MARKING PLAN
SCALE: 1" = 30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 9/27/06

DATE: 9/27/06

DATE: 10/2/06

NO.	DATE	REVISION

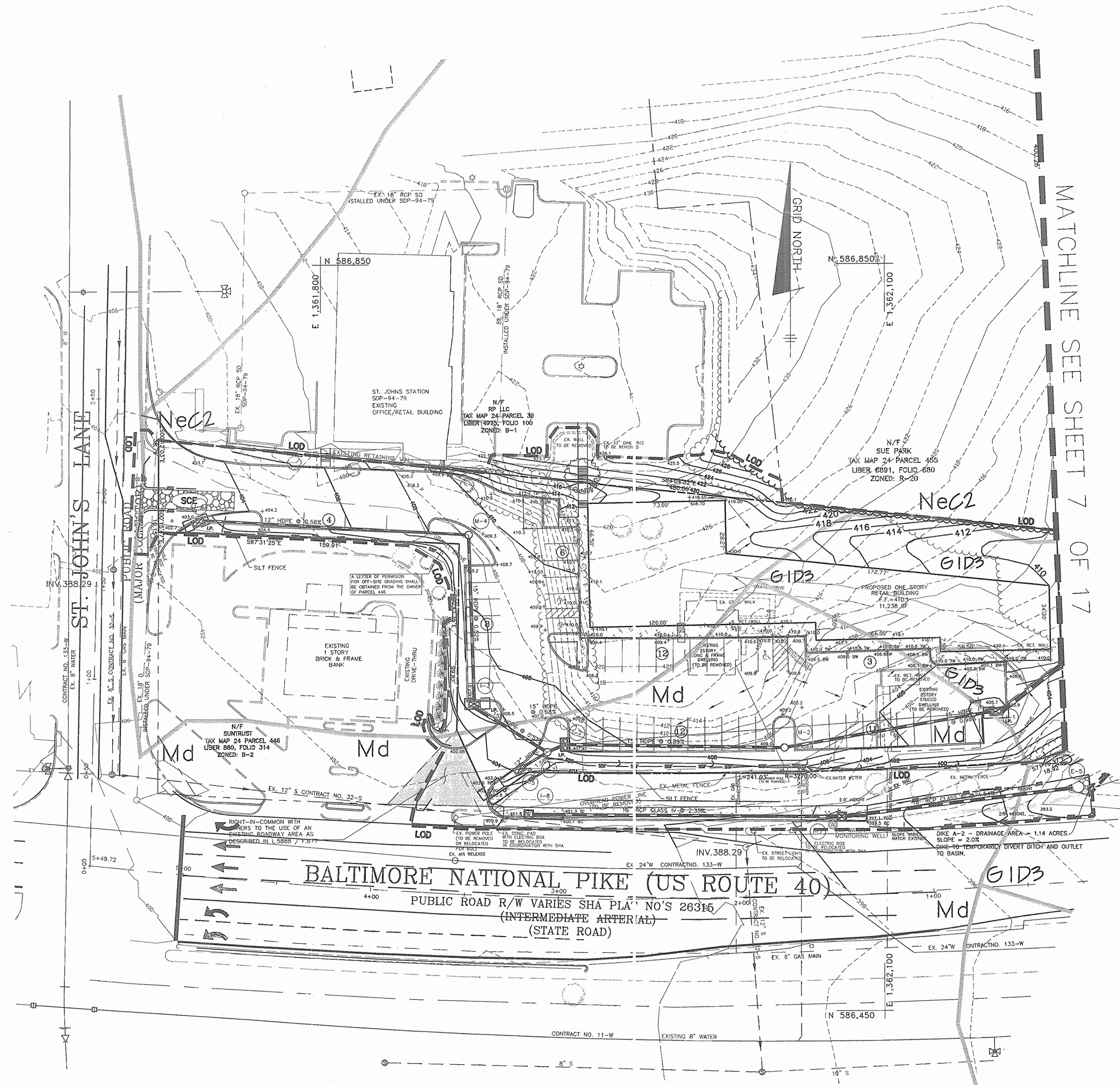
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<p>OWNER PARCEL 'A'</p> <p>EMICON, LLC P.O. BOX 417 ELLCOTT CITY, MD 21041</p>	<p>PROJECT:</p> <p>9050 ROUTE 40 RETAIL CENTER</p> <p>ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848</p> <p>LOCATION: TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>
<p>OWNER PARCEL 848</p> <p>LEONORA K HOENES 15115 CARRS MILL RD WOODBINE, MD 21797</p>	<p>TITLE:</p> <p>MAINTENANCE OF TRAFFIC AND STRIPING PLAN</p>
<p>DATE: SEPTEMBER, 2005 APRIL, 2006</p>	<p>PROJECT NO. 1794</p>
<p>Design: MAN Draft: MAN Check: DAM</p>	<p>SCALE: AS SHOWN DRAWING 16 OF 17</p>



MATCHLINE SEE SHEET 7 OF 17

LEGEND

- EXISTING CONTOURS 999
- PROPOSED CONTOURS 999
- EXISTING WOODS LINE ---
- PROPOSED WOODS LINE ---
- EX. 15% - 25% SLOPES [Symbol]
- EXISTING STRUCTURE [Symbol]
- PROPOSED STRUCTURE [Symbol]
- PROPOSED EARTH DIKE [Symbol]
- LIMIT OF DISTURBANCE [Symbol]
- PROPOSED SILT FENCE SF
- PROP. SUPER SILT FENCE SSF
- STABILIZED CONSTRUCTION ENTRANCE [Symbol]
- SEDIMENT BASIN BAFFLES [Symbol]
- EROSION CONTROL MATTING [Symbol]

OPERATION, MAINTENANCE AND INSPECTION
 Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, NRCS "Standards And Specifications For Ponds" (MD- 378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

<small>BY THE DEVELOPER:</small> I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.	8/16/06 DATE
<i>Mason</i> EMICON, LLC	
<small>BY THE ENGINEER:</small> I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.	8/16/06 DATE
<i>Donald Mason</i> ENGINEER - DONALD A. MASON, P.E. # 21443	
<small>THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT</small>	8/25/06 DATE
<i>Spivey</i> NATURAL RESOURCES CONSERVATION SERVICE	
<small>REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.</small>	8/25/06 DATE
<i>John</i> HOWARD SOIL CONSERVATION DISTRICT	
<small>APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING</small>	8/25/06 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	8/25/06 DATE
<i>[Signature]</i> DIRECTOR	8/25/06 DATE

NO.	DATE	REVISION

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ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

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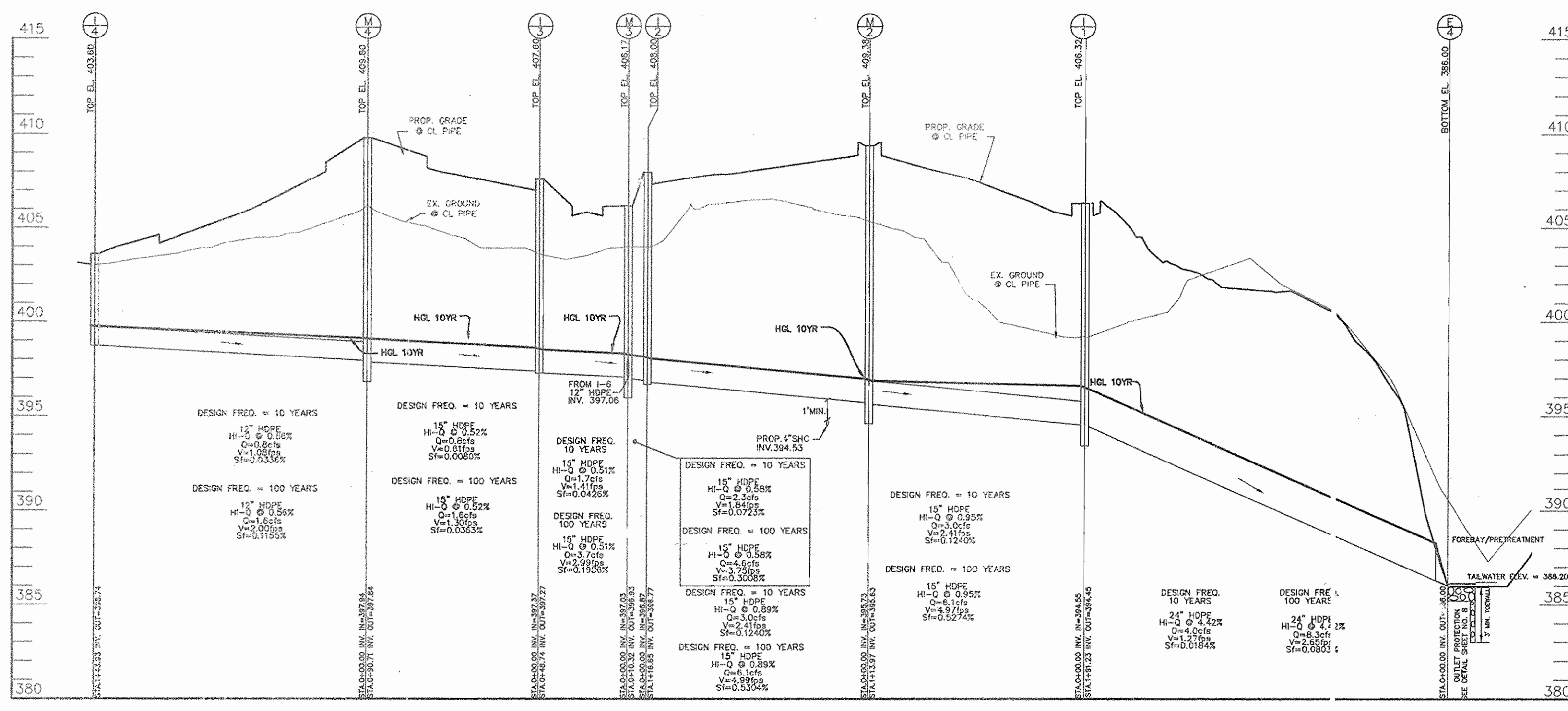
<small>DEVELOPER/CONTRACT PURCHASER:</small> EMICON, LLC P.O. BOX 417 ELLCOTT CITY, MD 21041	<small>PROJECT:</small> 9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL B48 <small>LOCATION:</small> TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND <small>TITLE:</small> SEDIMENT AND EROSION CONTROL PLAN <small>DATE:</small> NOVEMBER, 2004 APRIL, 2006 <small>PROJECT NO.:</small> 1794 <small>SCALE:</small> AS SHOWN <small>DRAWING</small> 6 <small>OF</small> 17
<small>OWNER PARCEL 848</small> LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBIE, MD 21797	<small>Design:</small> DAM <small>Draft:</small> MAN <small>Check:</small> DAM

SOILS LEGEND	
MAP SYMBOL	SOIL TYPE
GID3	B GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GhB2	C* GLENVILLE SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Kec2	D KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nec2	B NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
NcD3	B NESHAMINY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

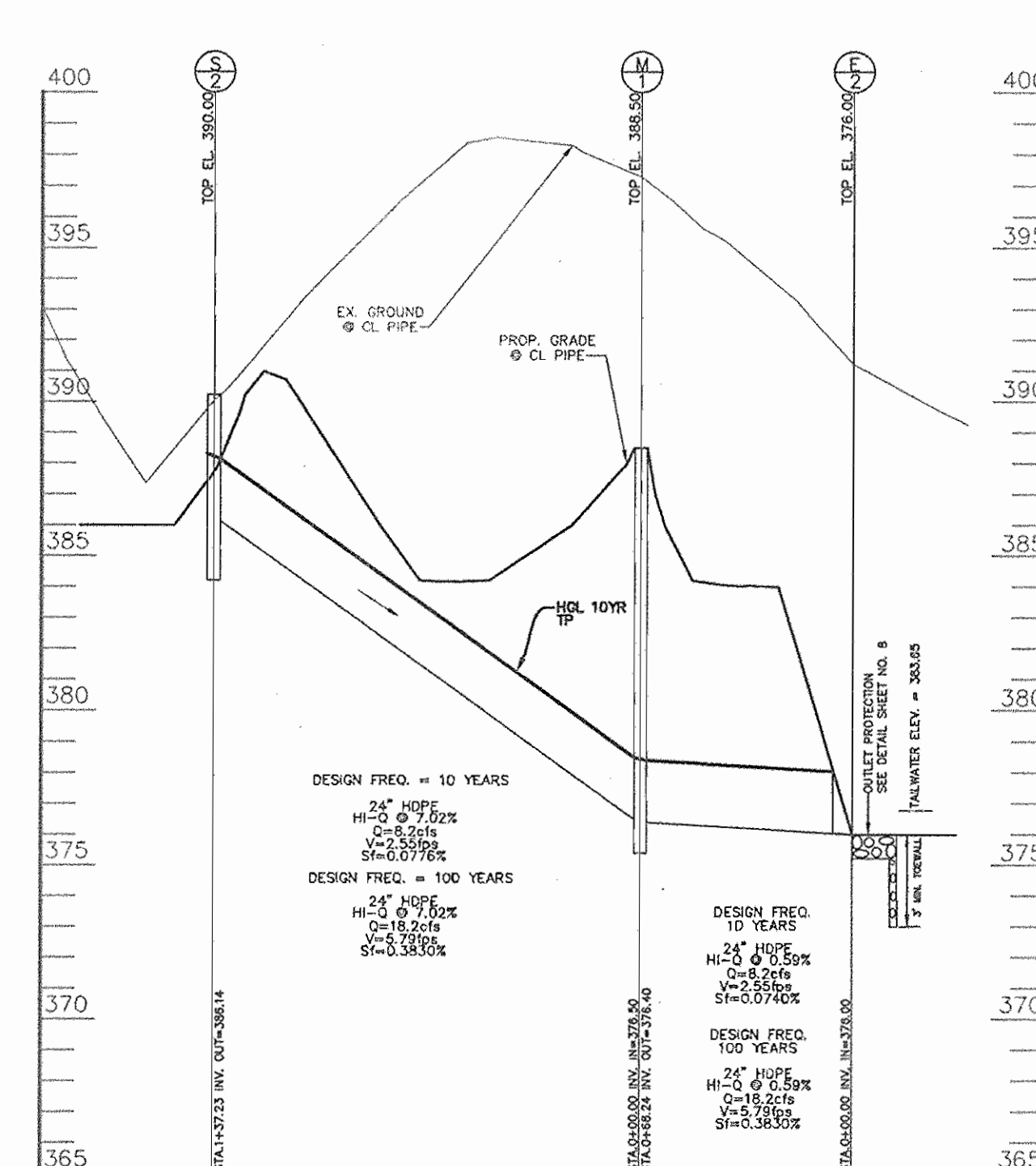
* INDICATES HYDRIC SOILS TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1988) MAP NO. 23

PLAN
SCALE: 1" = 30'

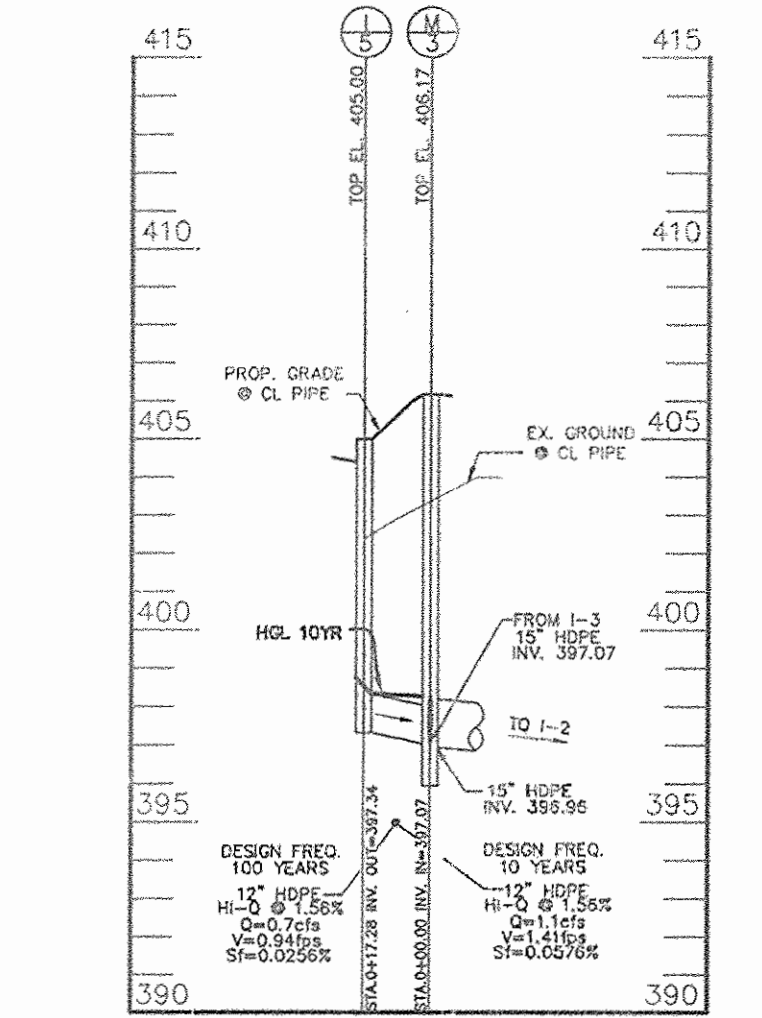
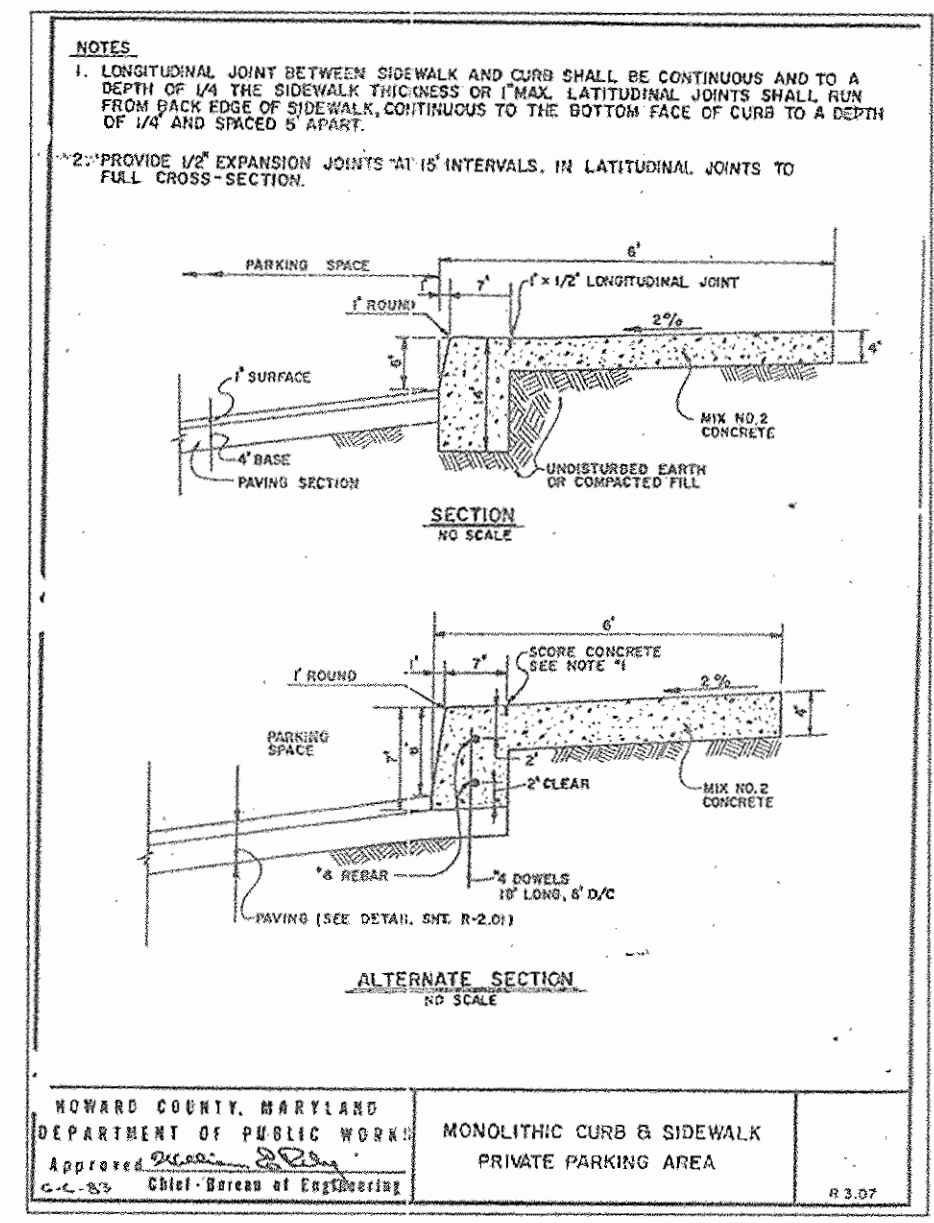
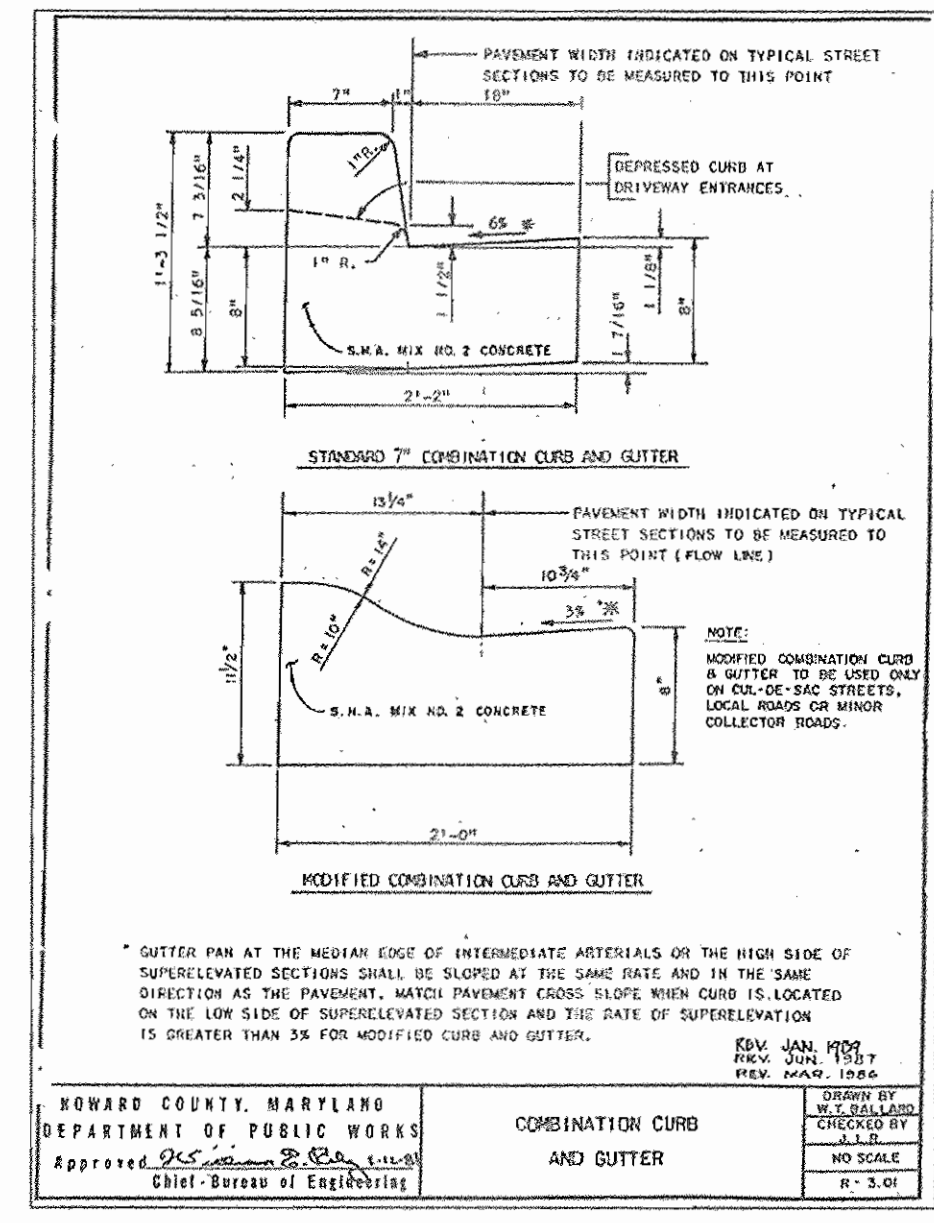
THIS PLAN IS FOR
SEDIMENT AND EROSION
CONTROL PURPOSES ONLY



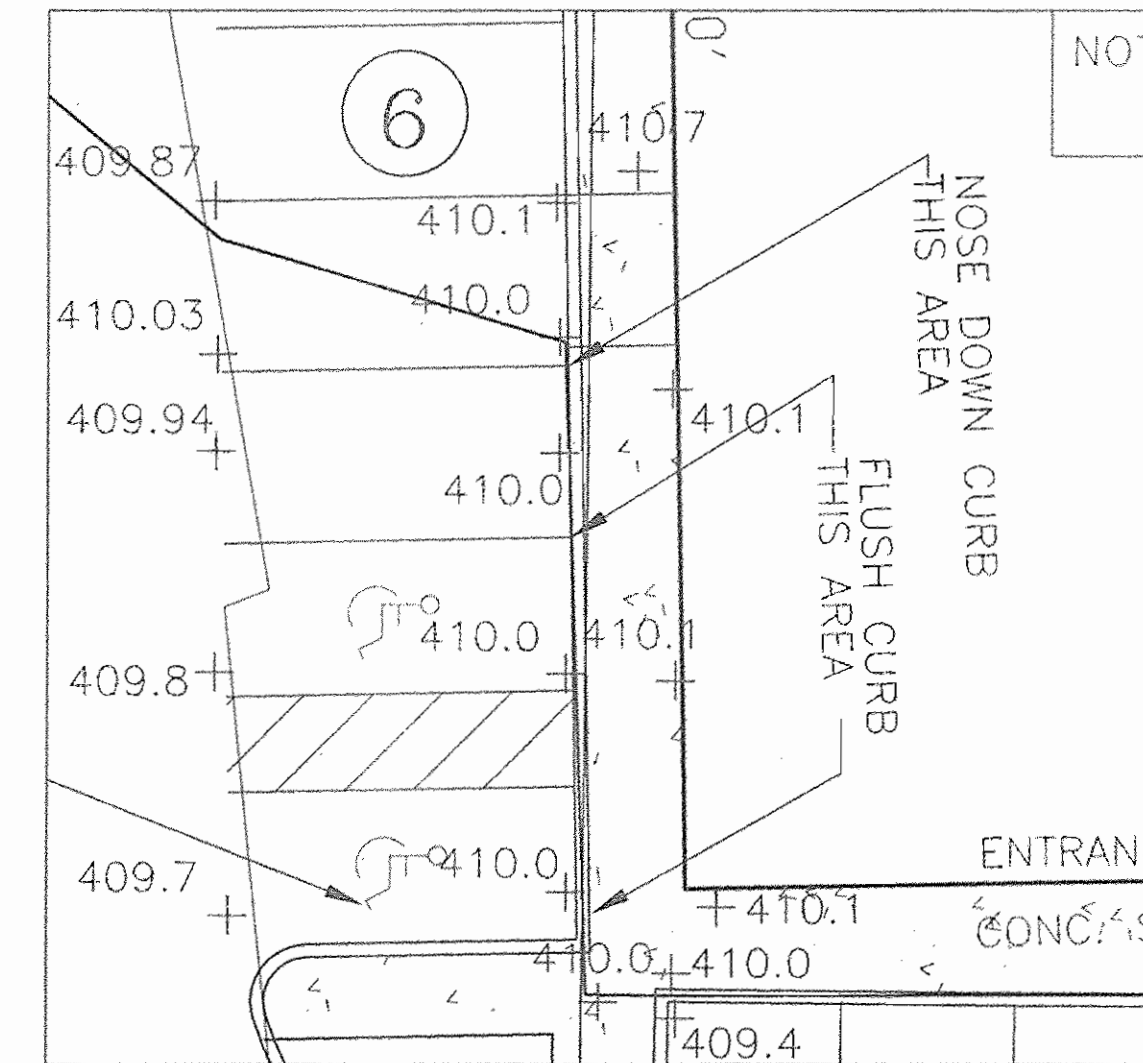
STORMDRAIN PROFILE I-5 TO E-3
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



STORMDRAIN PROFILE S-2 TO E-2
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



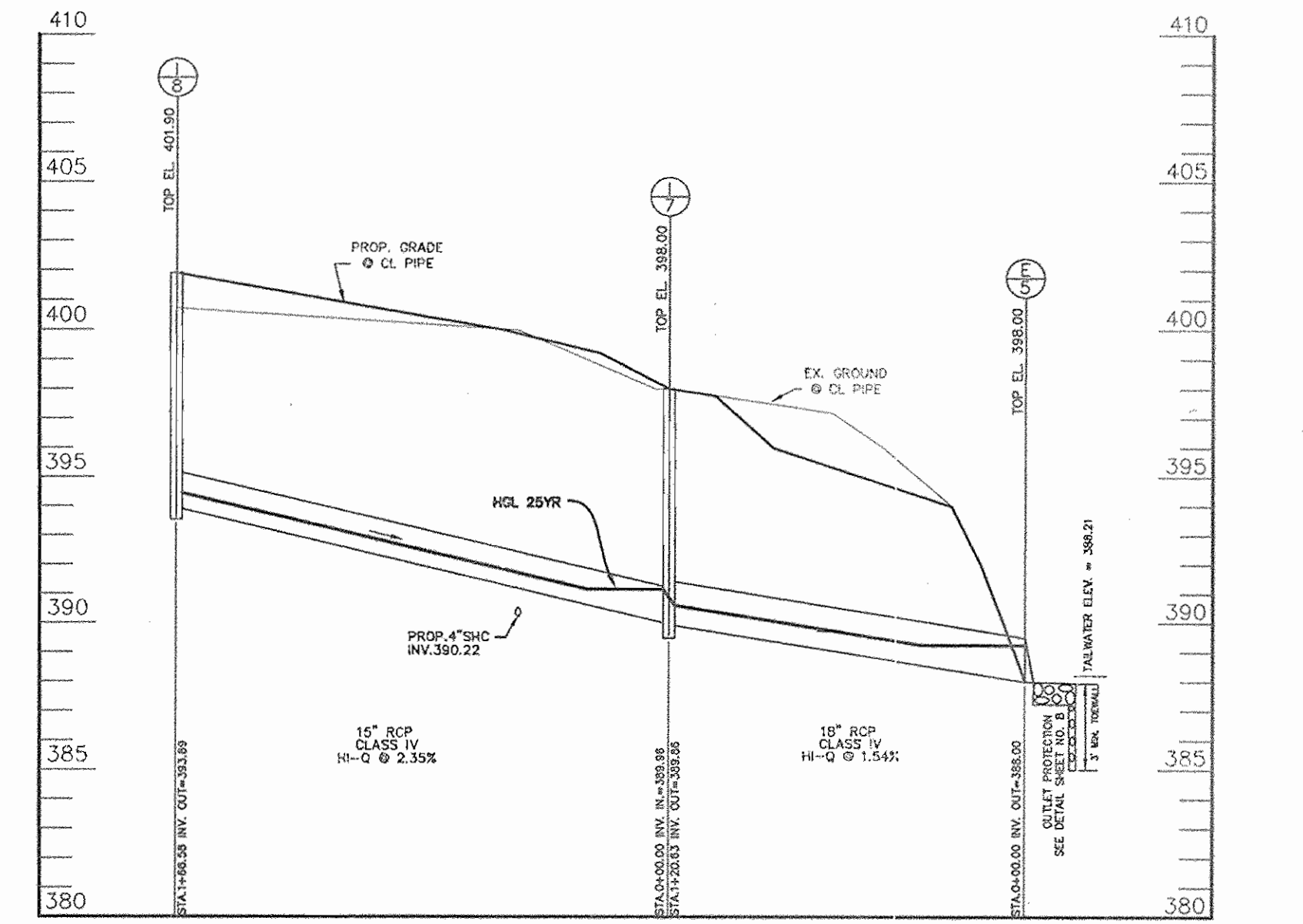
STORMDRAIN PROFILE I-6 TO MH-2
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



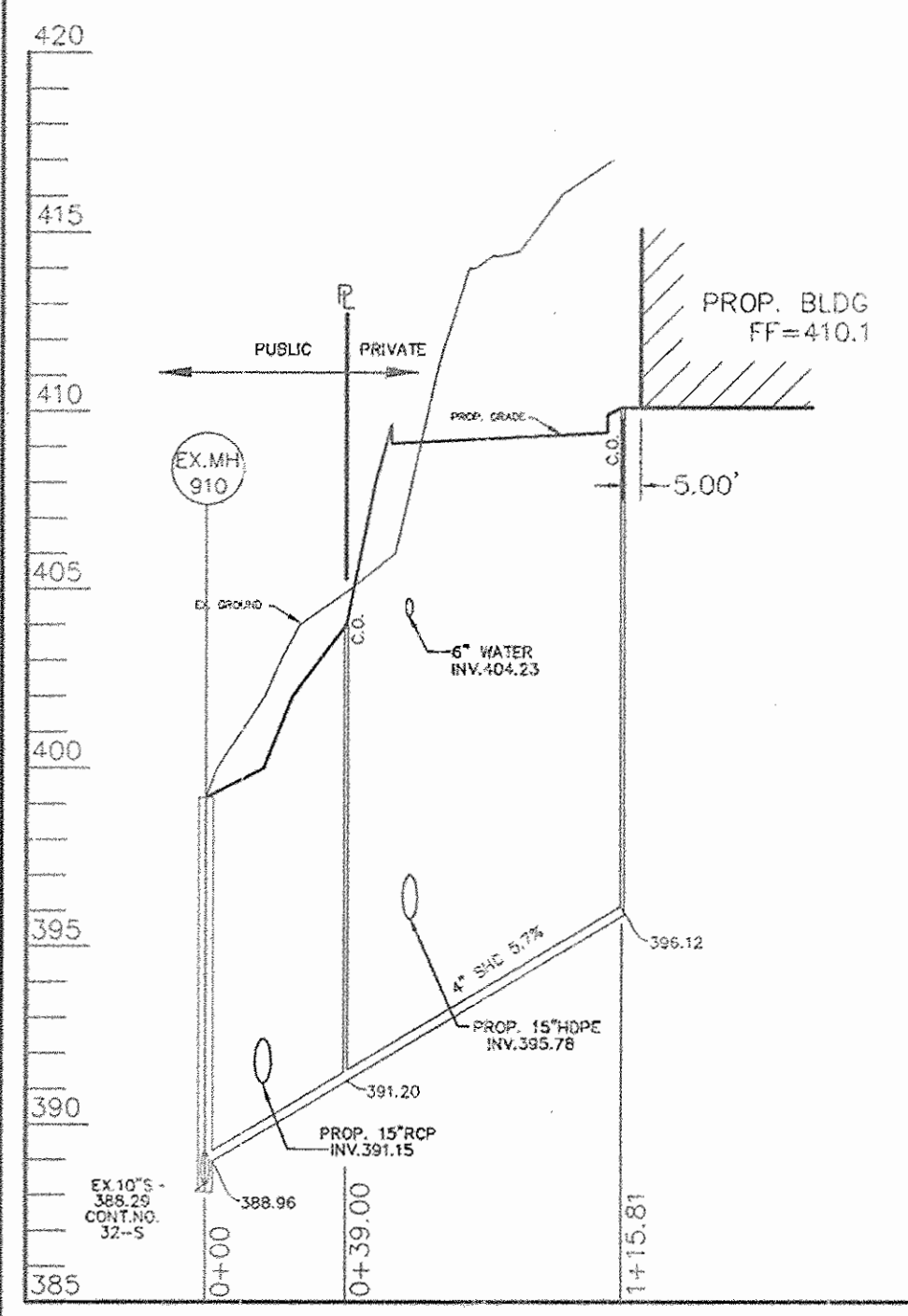
HANDICAP RAMP DETAIL
SCALE: 1"=10'

STRUCTURE SCHEDULE								
NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD.	REMARKS
I-1	TYPE "A-5"	N 586,60 1.4421 E 1,362,159.0993		394.55	394.45	406.32	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-2	TYPE "A-5"	N 586,59 1.7567 E 1,361,941.2293		396.87	396.77	408.00	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-3	TYPE "A-5"	N 586,61 0.0079 E 1,361,881.7057		397.37	397.27	407.60	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-4	TYPE "A-5"	N 586,71 1.4358 E 1,361,734.8322			398.74	403.60	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
I-5	TYPE "A-5"	N 586,56 3.2696 E 1,361,890.5196		397.34	405.00	405.00	Ho.Co.STD. SD-4.01	INTERIOR WIDTH = 2.5'
M-1	STANDARD 4" MANHOLE	N 586,83 1.8910 E 1,362,455.5956		376.50	376.40	388.50	Ho.Co.STD. G-5.12	
M-2	STANDARD 4" MANHOLE	N 586,59 1.237 E 1,362,046.7416		395.73	395.63	409.38	Ho.Co.STD. G-5.12	
M-3	STANDARD 4" MANHOLE	N 586,58 1.1368 E 1,361,920.6362		397.03	396.93	406.17	Ho.Co.STD. G-5.12	
M-4	STANDARD 4" MANHOLE	N 586,70 1.6735 E 1,361,878.7939		397.94	397.84	409.80	Ho.Co.STD. G-5.12	
E-1	CONCRETE END SECTION	N 586,71 1.3768 E 1,362,495.6158				373.00	Ho.Co.STD. SD-5.51	
E-2	METAL END SECTION	N 586,80 1.8410 E 1,362,519.0767				383.00	Ho.Co.STD. G-5.61	
E-3	METAL END SECTION	N 586,74 1.3988 E 1,362,367.1185				394.00	Ho.Co.STD. G-5.61	
E-4	METAL END SECTION	N 586,73 1.5408 E 1,362,305.1159				394.00	Ho.Co.STD. G-5.61	
S-1	SEE SWM DETAILS	N 586,77 1.8683 E 1,362,519.3781				376.00		SEE SWM DETAILS
S-2	SEE SWM DETAILS	N 586,75 1.5696 E 1,362,340.2296				384.50, 386.14		SEE SWM DETAILS

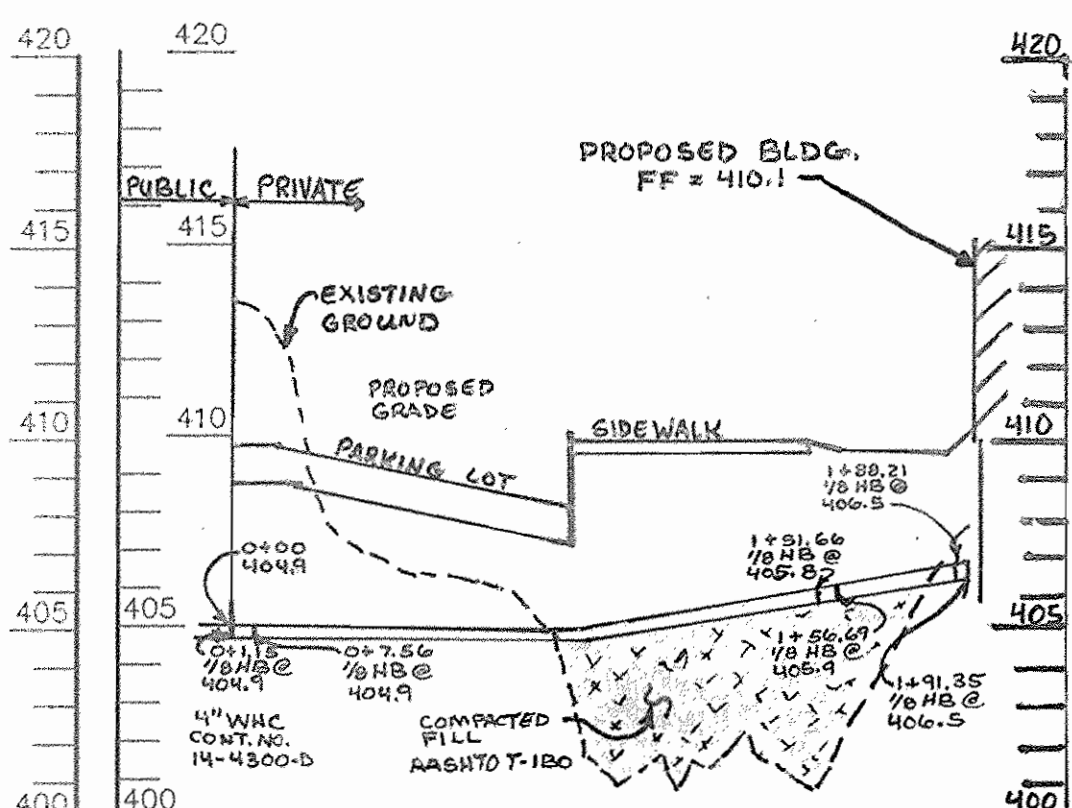
1) STRUCTURE TOP ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
2) STRUCTURE TOP ELEVATION AND LOCATION FOR INLETS IS AT THE TOP, CENTER FACE OF THE INLET FOR CURB INLETS AND AT THE CENTER TOP FOR YARD



SHA STORMDRAIN PROFILE
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



2" SHC PROFILE
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'

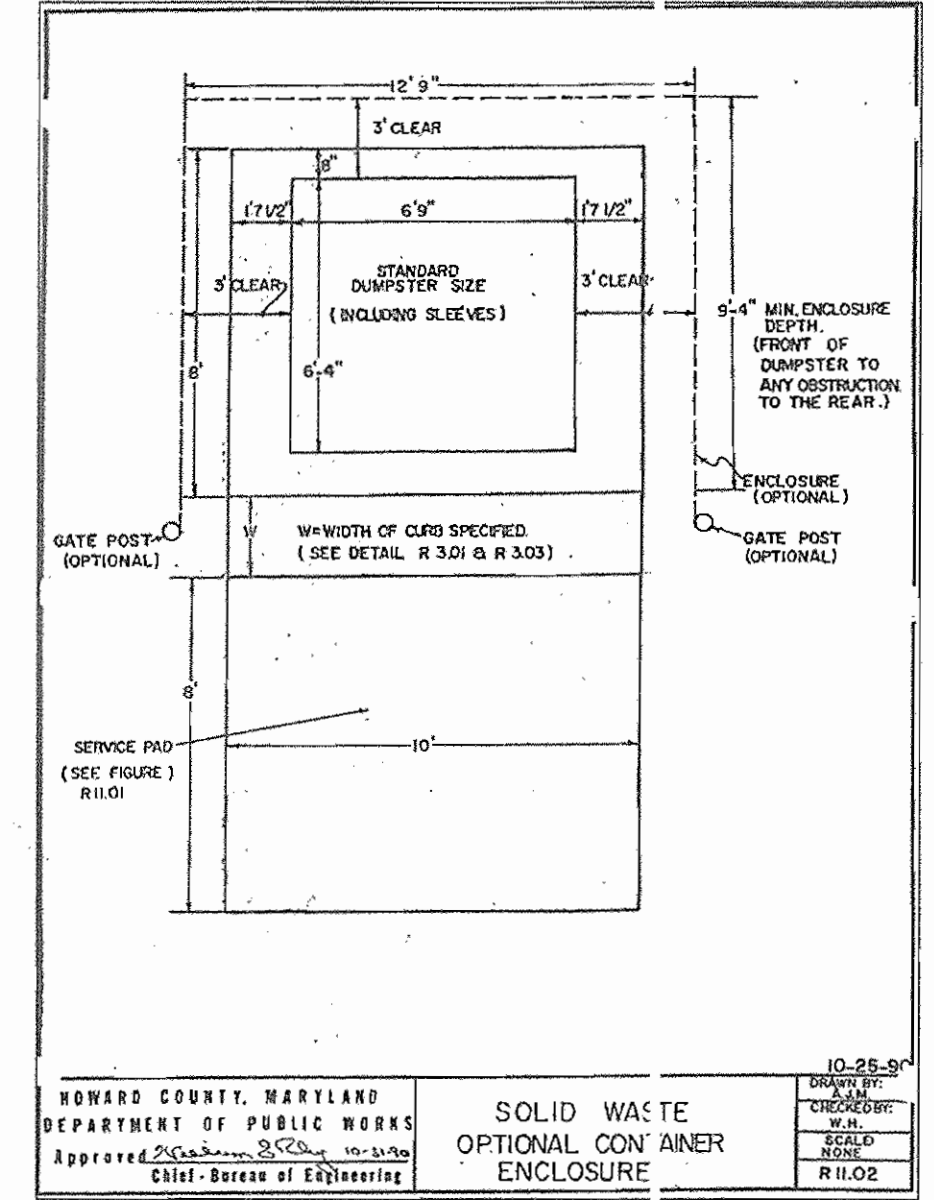


4" WHC PROFILE
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'

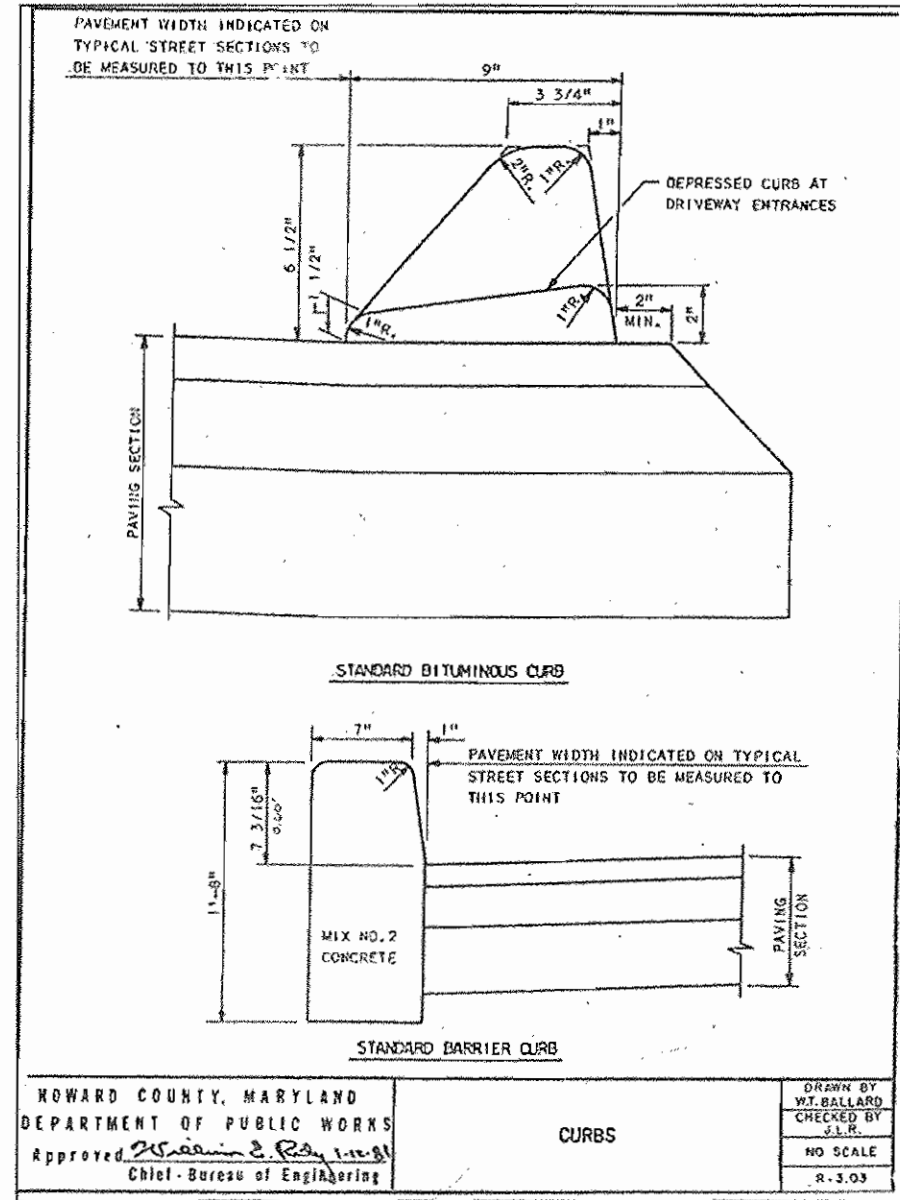
PIPE SCHEDULE			
SIZE	LENGTH	TYPE & CLASS	
24"	398'	HDPE HI-0	
15"	379'	HDPE HI-0	
12"	193'	HDPE HI-0	

SHA PIPE SCHEDULE			
SIZE	LENGTH	TYPE & CLASS	
15"	167'	RCP/N	
18"	121'	RCP/N	

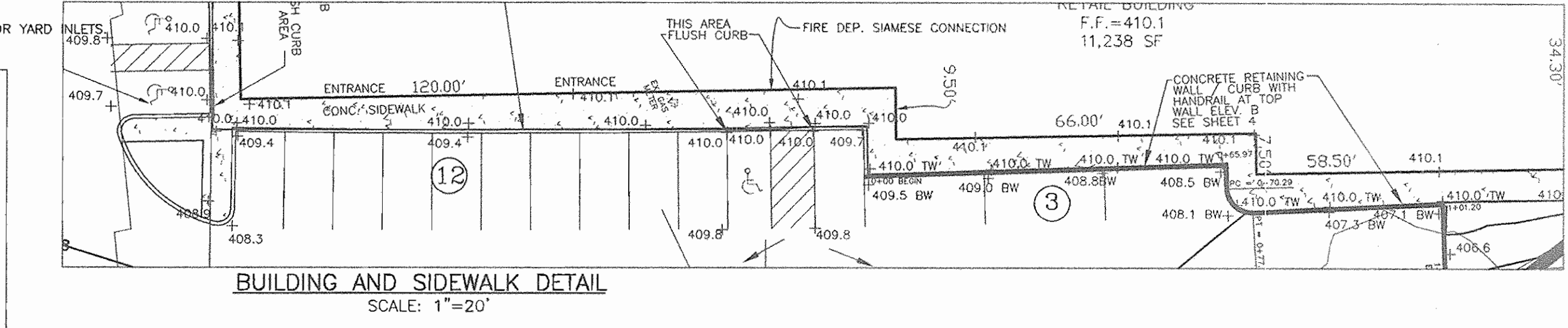
SHA STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	REMARKS
I-7	SHA COG-15 INLET	N 586,553.7714 E 1,362,077.2454			393.89	397.85	
I-8	SHA COG-20 INLET	N 586,555.5848 E 1,361,910.7255		389.96	389.86	401.78	
E-5	METAL END SECTION	N 586,568.9566 E 1,362,199.4552				388.00	



BUILDING AND SIDEWALK DETAIL
SCALE: 1"=20'



CONNECTION FOR HDPE TO METAL END-SECTION
NOT TO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

DATE: 10/20/07
DATE: 10/20/07
DATE: 10/20/07

REVISION: 1-19-07 REMOVE 2" WHC PROFILE AND ADD 4" WHC PROFILE

BENCHMARK ENGINEERING, INC.
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PHONE: 410-465-6105 FAX: 410-465-6644
www.bei-civilengineering.com

OWNER PARCEL 'A'
EMICON, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041

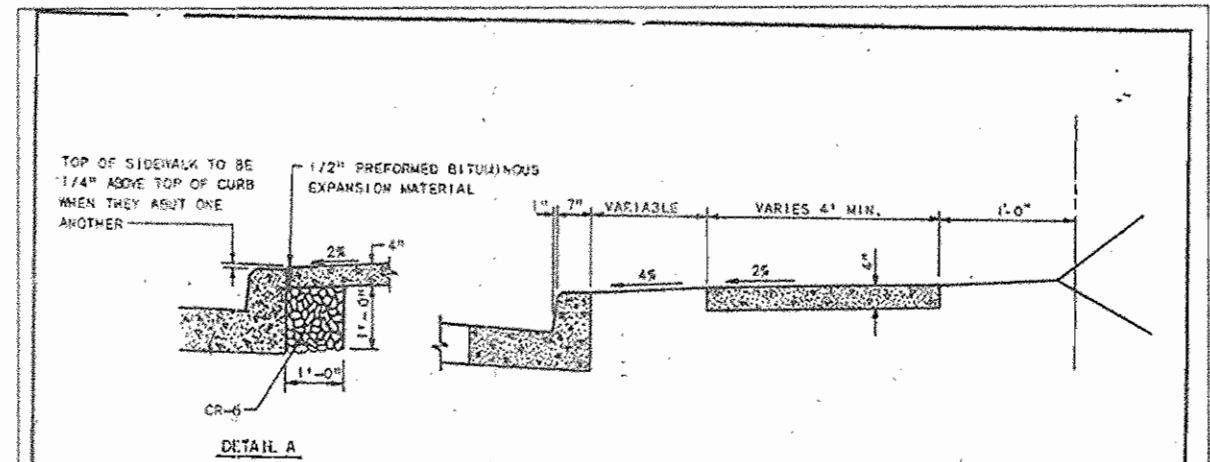
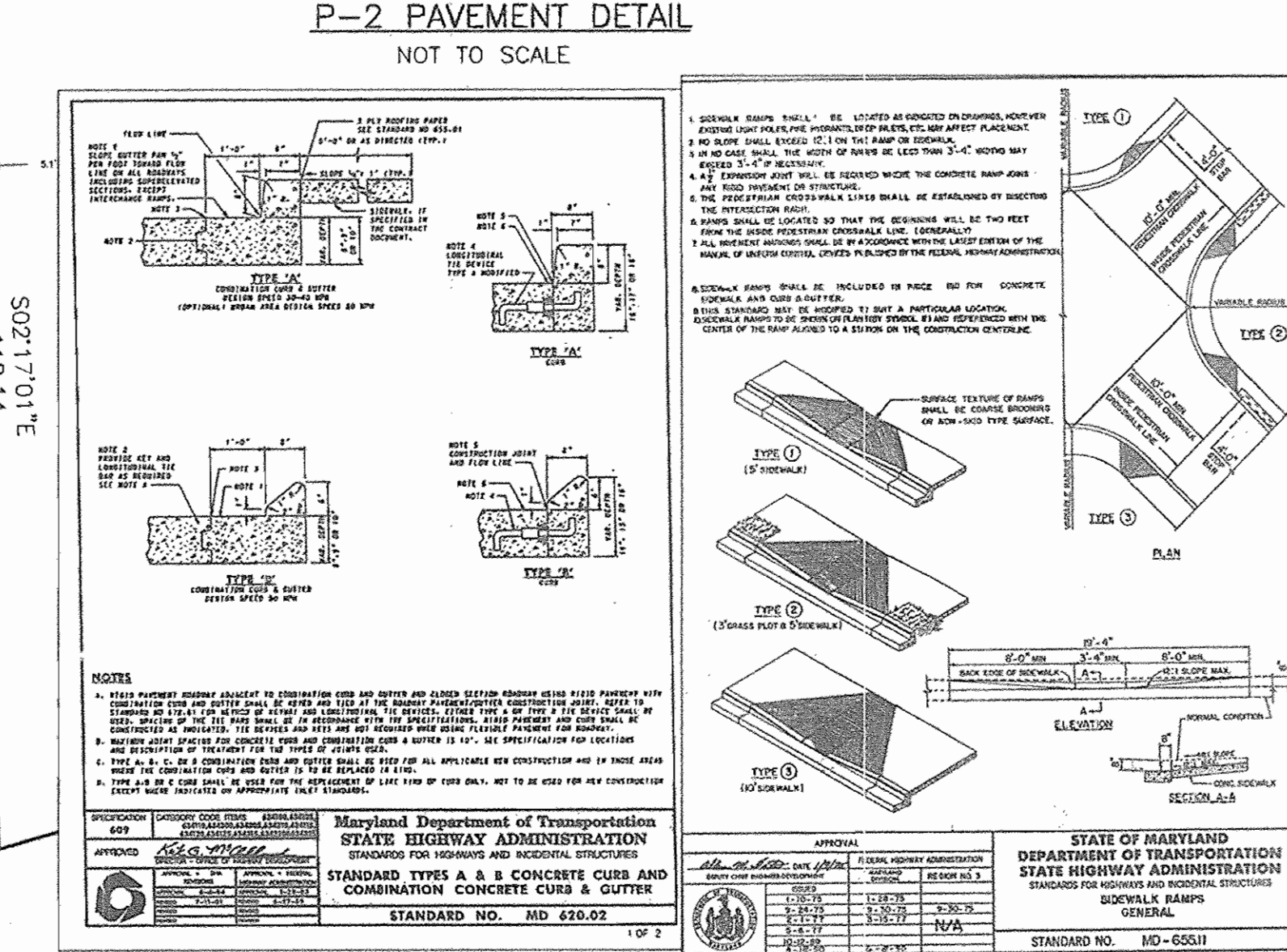
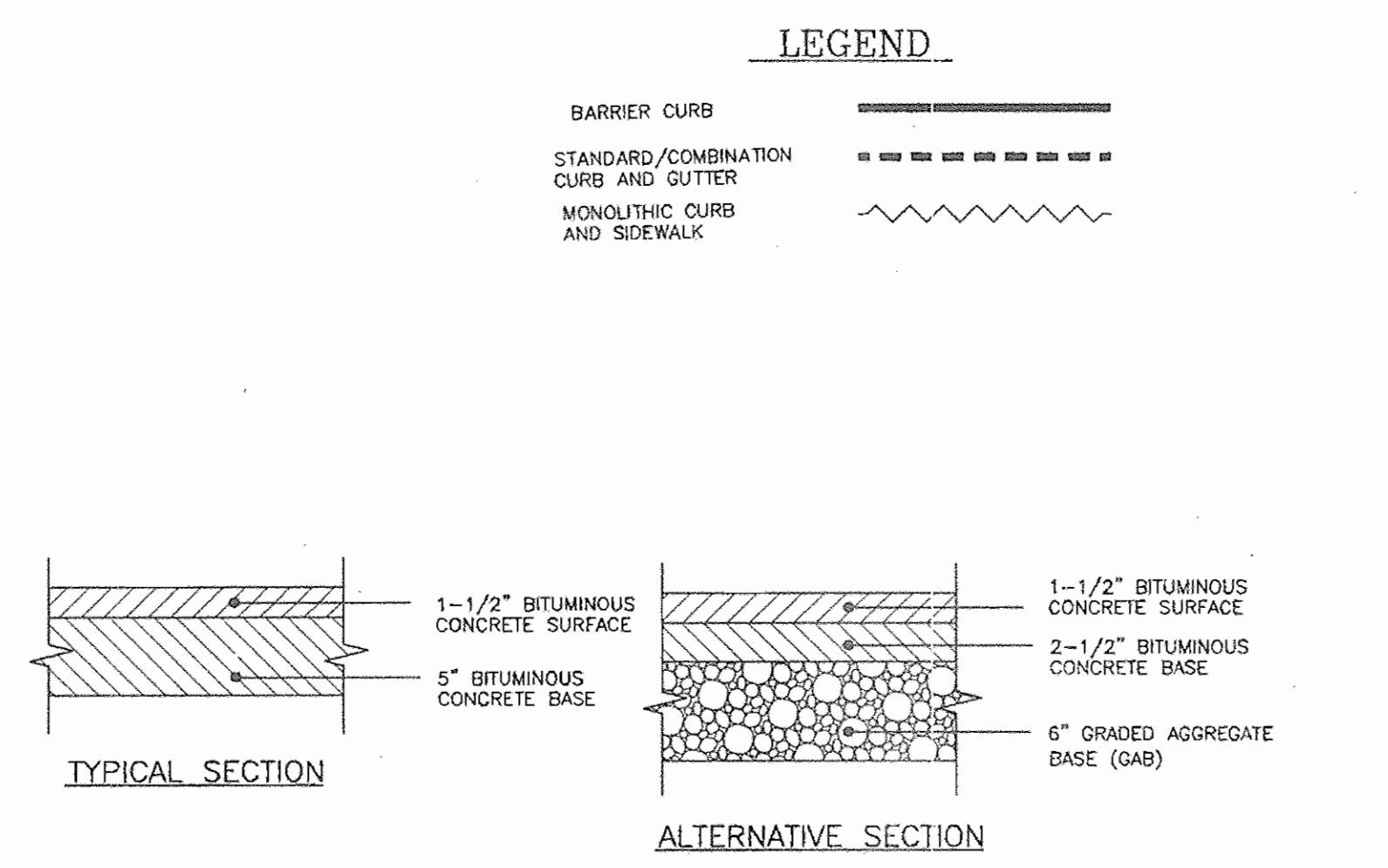
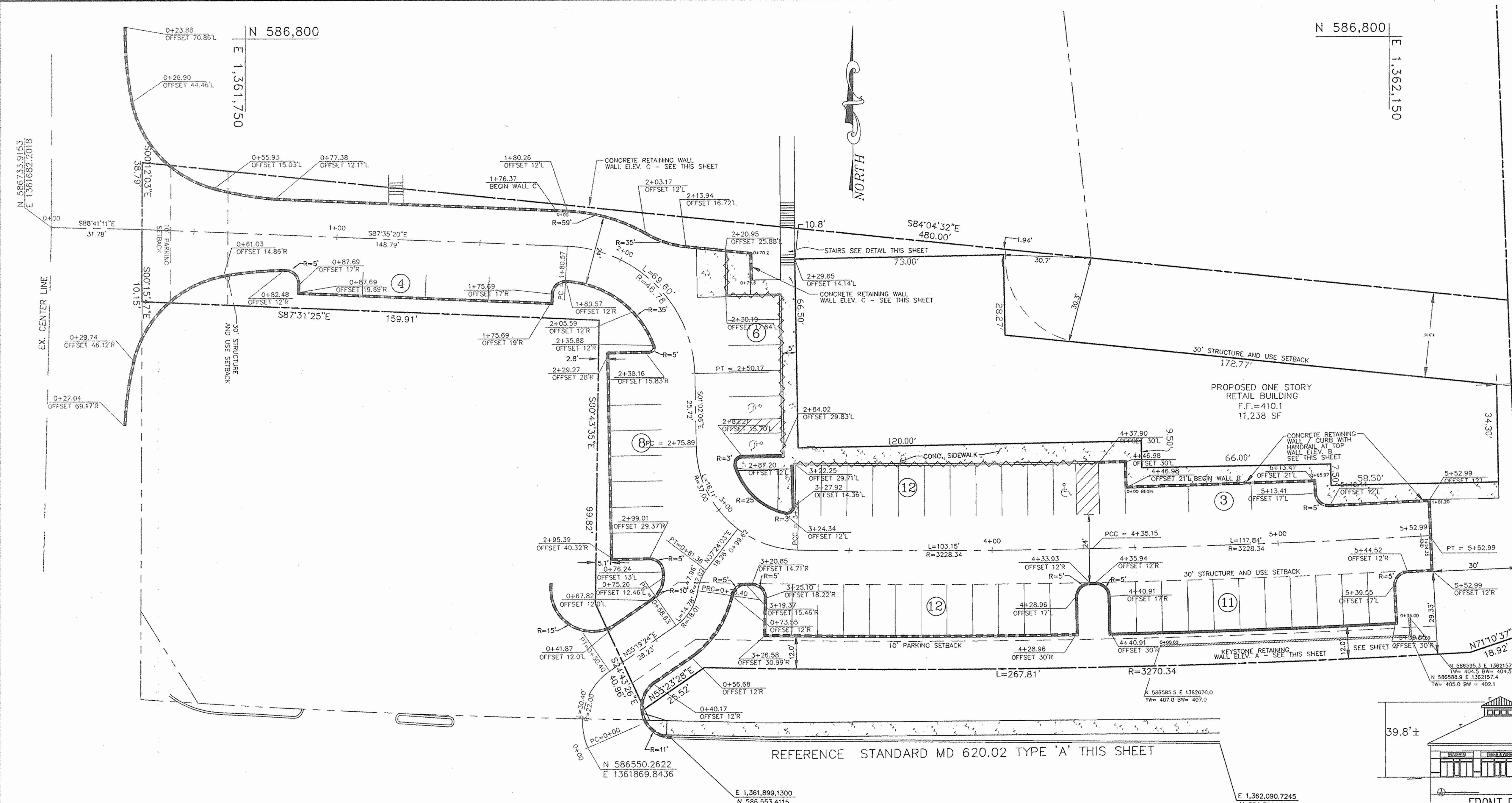
OWNER PARCEL 848
LEONORA K HOENES
15115 CARRS MILL RD
WOODBINE, MD 21797

PROJECT: 9050 ROUTE 40 RETAIL CENTER
PARCEL 'A'
LOCATION: TAX MAP 24 - GRID 5
PARCEL 38 AND 96
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: DETAILS AND PROFILES

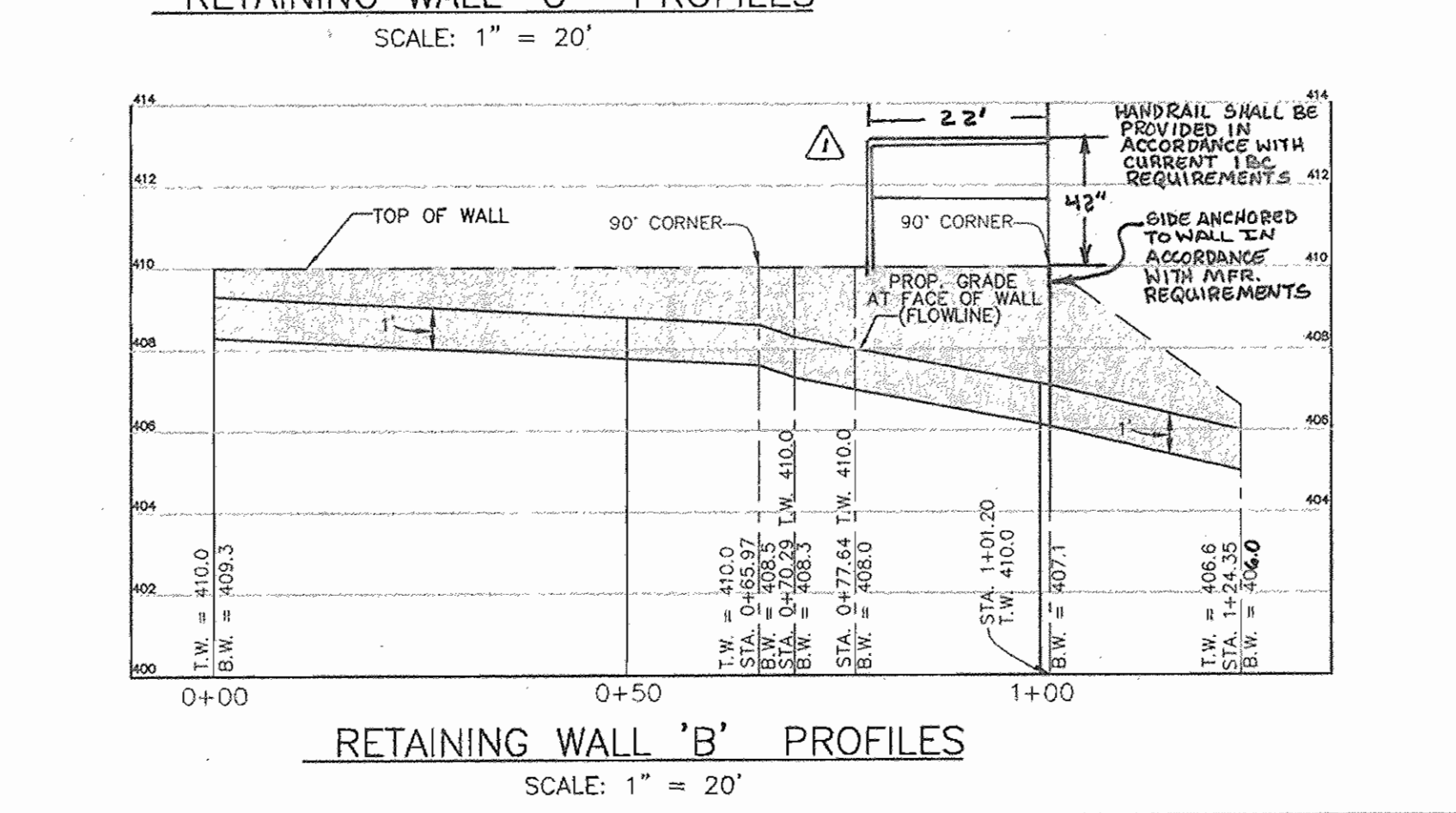
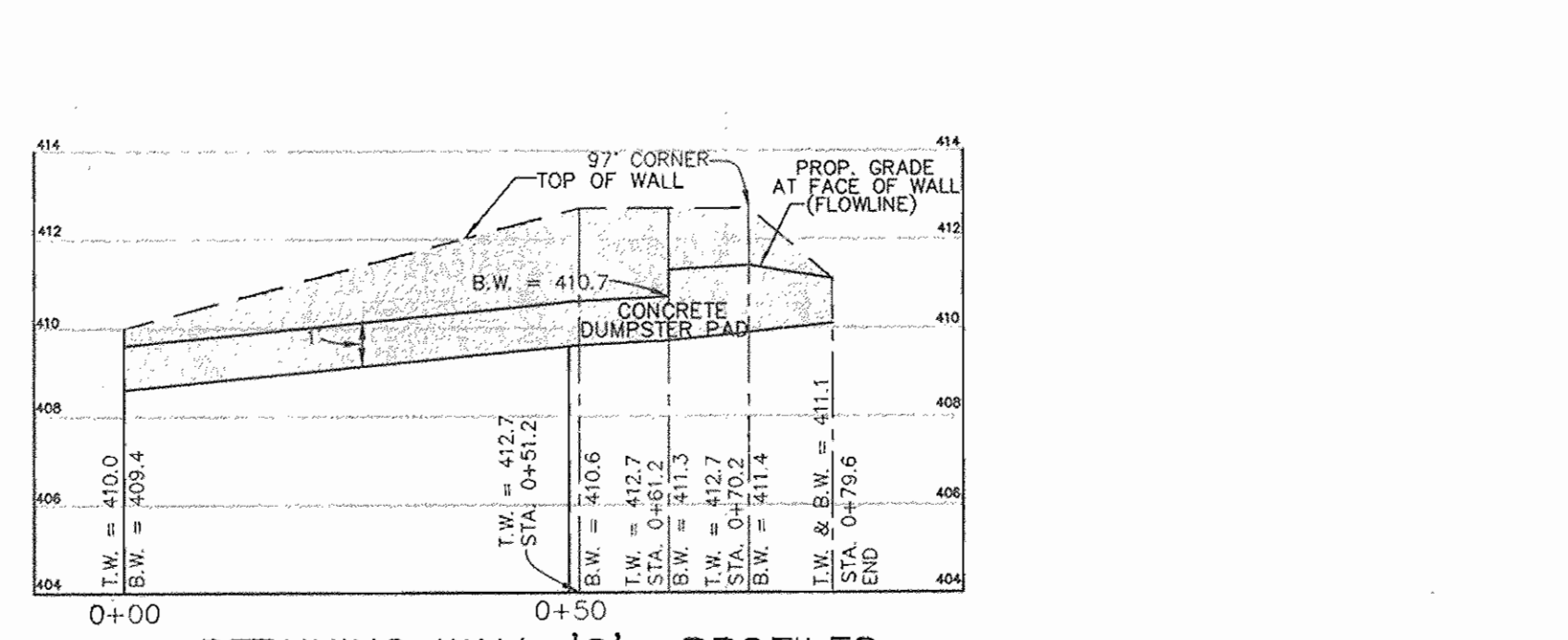
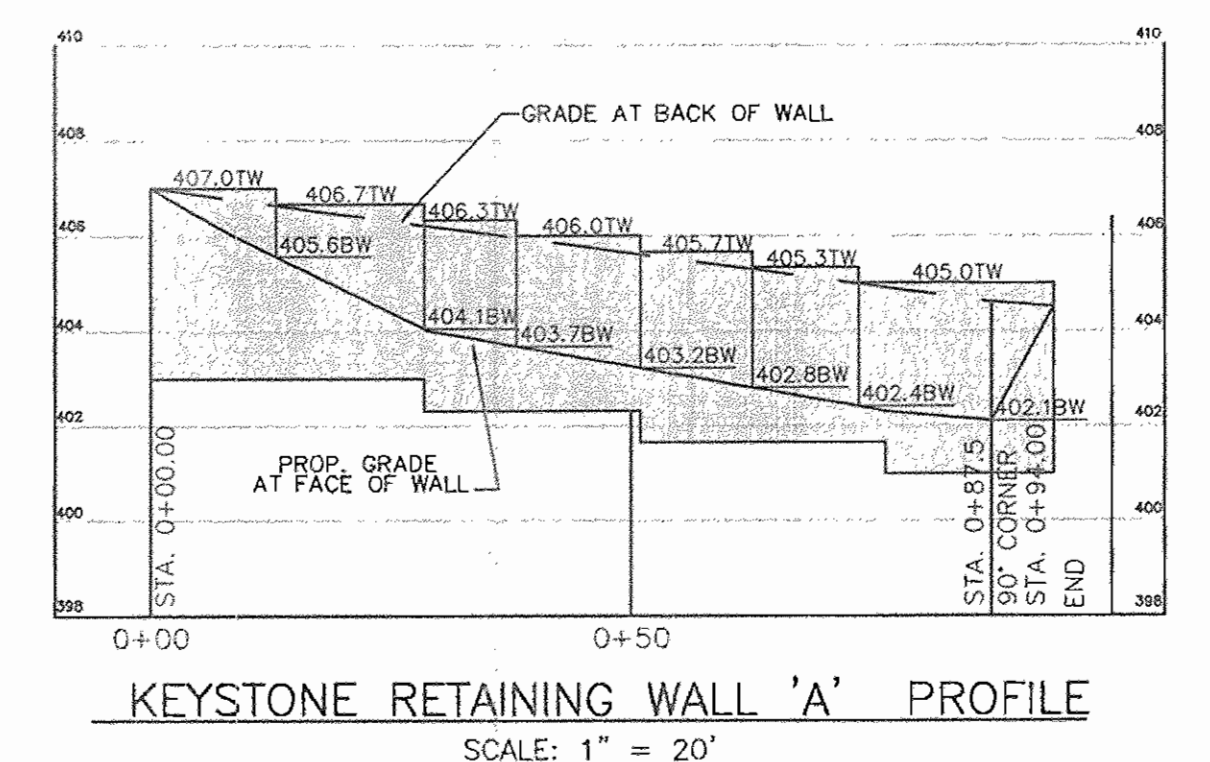
DATE: SEPTEMBER, 2005 PROJECT NO. 1794
DECEMBER, 2005

Design: DAM Draft: MAN Check: DAM SCALE: AS SHOWN DRAWING 5 OF 17

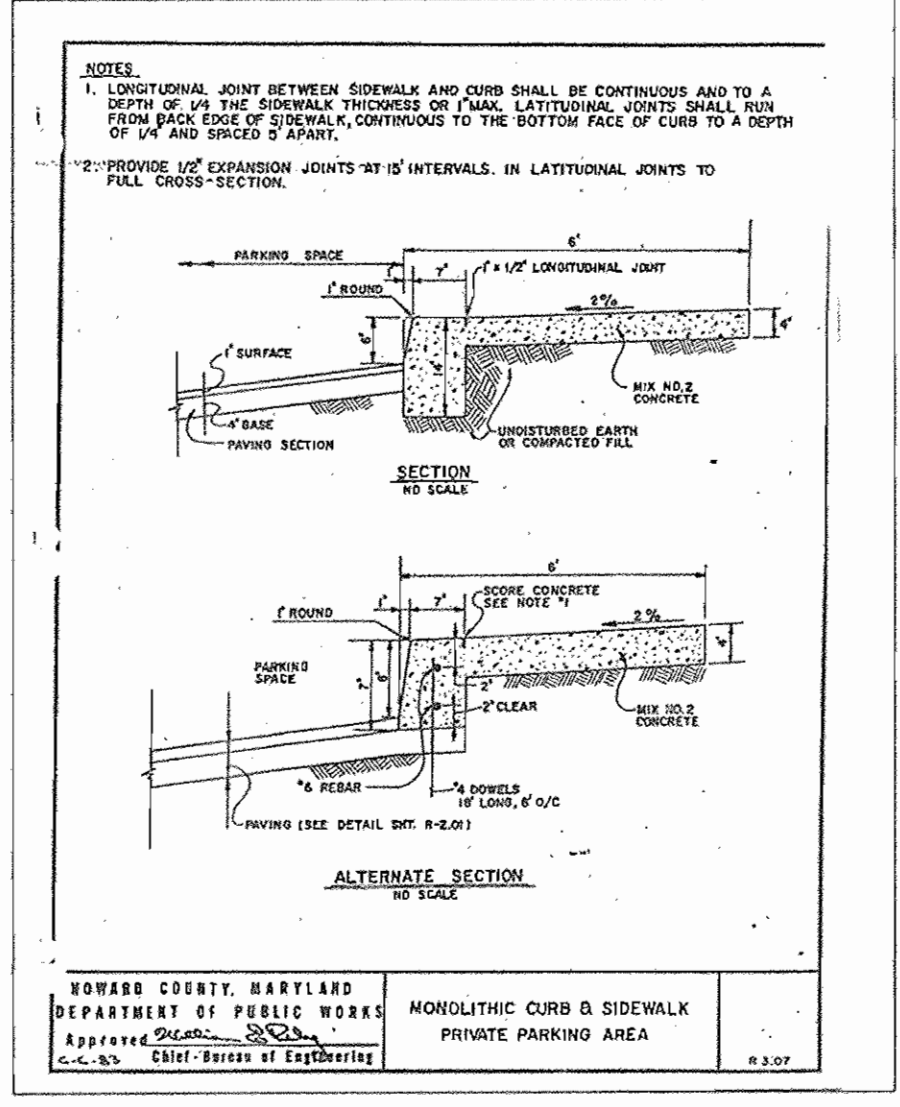


NOTES:

- SIDEWALK TO BE DESCRIBED IN 9" MATRICK SQUARES.
- EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 10' APART.
- 1-1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
- CONCRETE TO BE MIX NO. 2.
- WHEN SIDEWALK ADJUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1-1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB AND RESTING ON A COMPACTED COARSE STONE BASE. SEE DETAIL A THIS SHEET.
- ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 40 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.



PLAN VIEW
SCALE: 1" = 20'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

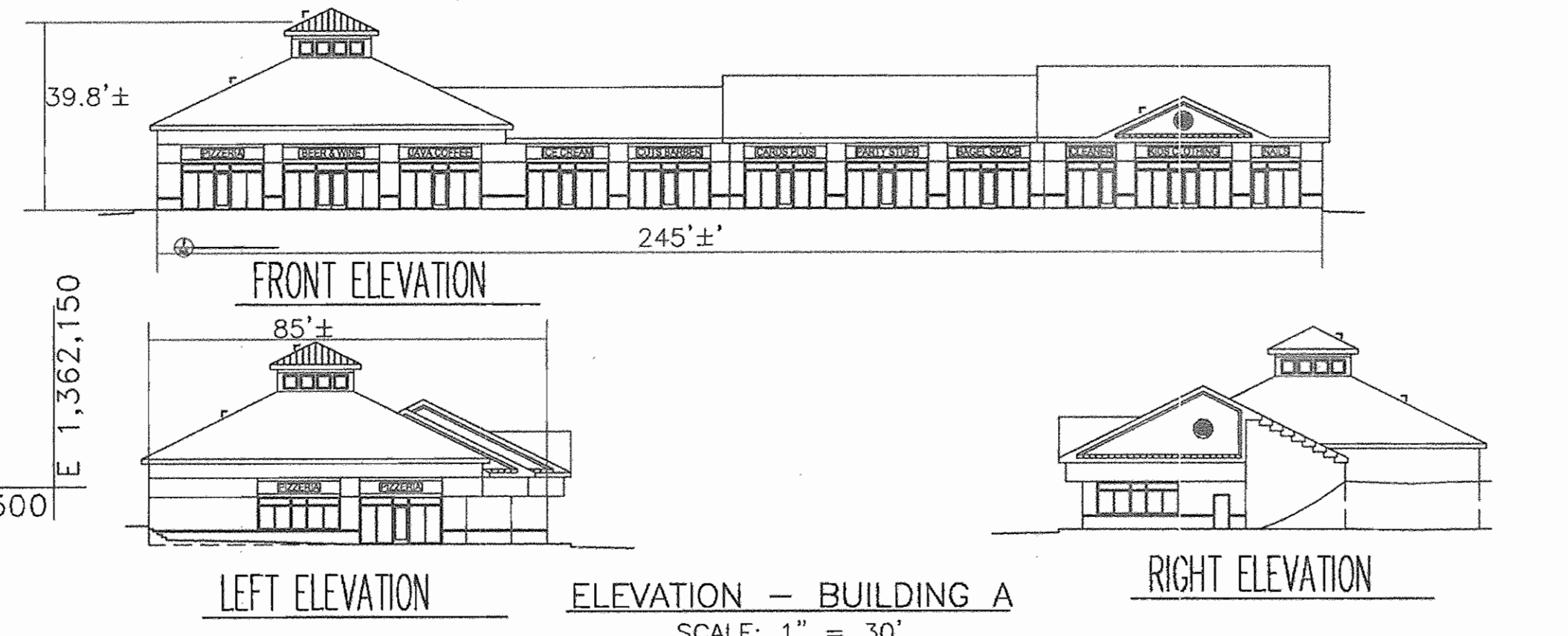
DATE: 9/28/06

CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 9/28/06

DIRECTOR

DATE: 9/28/06



BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
www.bei-civilengineering.com

ENGINEERS & LAND SURVEYORS & PLANNERS

STATE OF MARYLAND PROFESSIONAL ENGINEER

1-19-07 REVISE RETAINING WALL 'B' PROFILE

NO. DATE REVISION

OWNER PARCEL 'A'
EMICON, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041

OWNER PARCEL 848
LEONORA K. HOENES
15115 CARRS MILL ROAD
WOODBINE, MD 21797

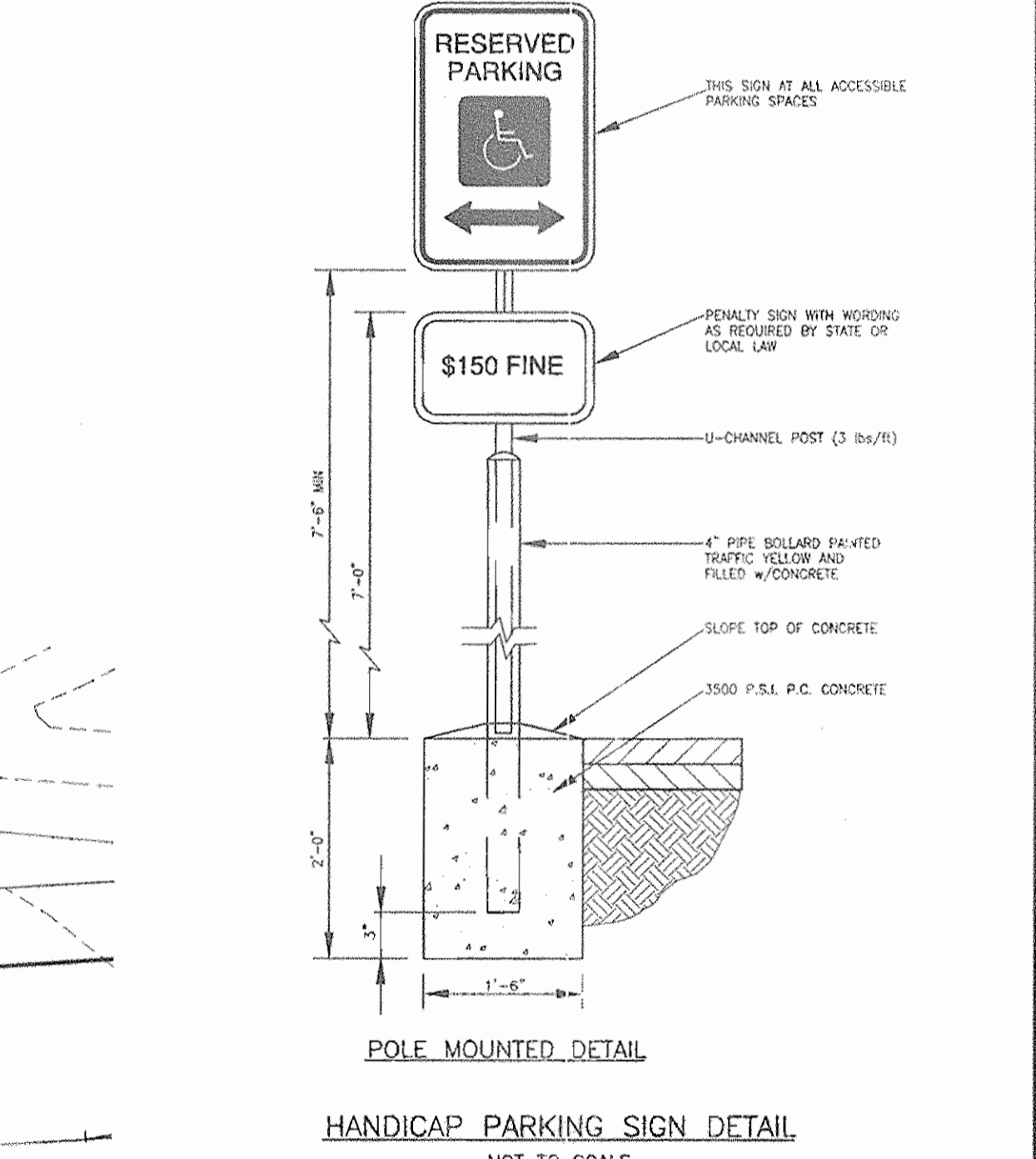
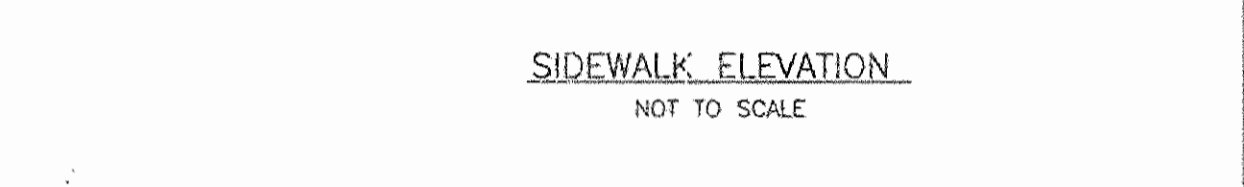
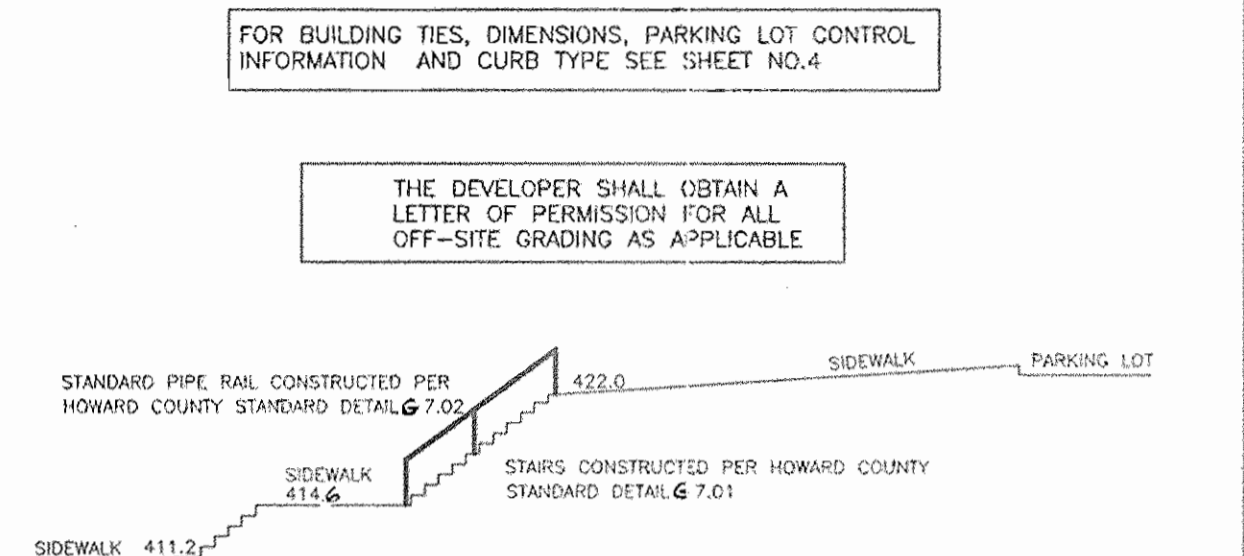
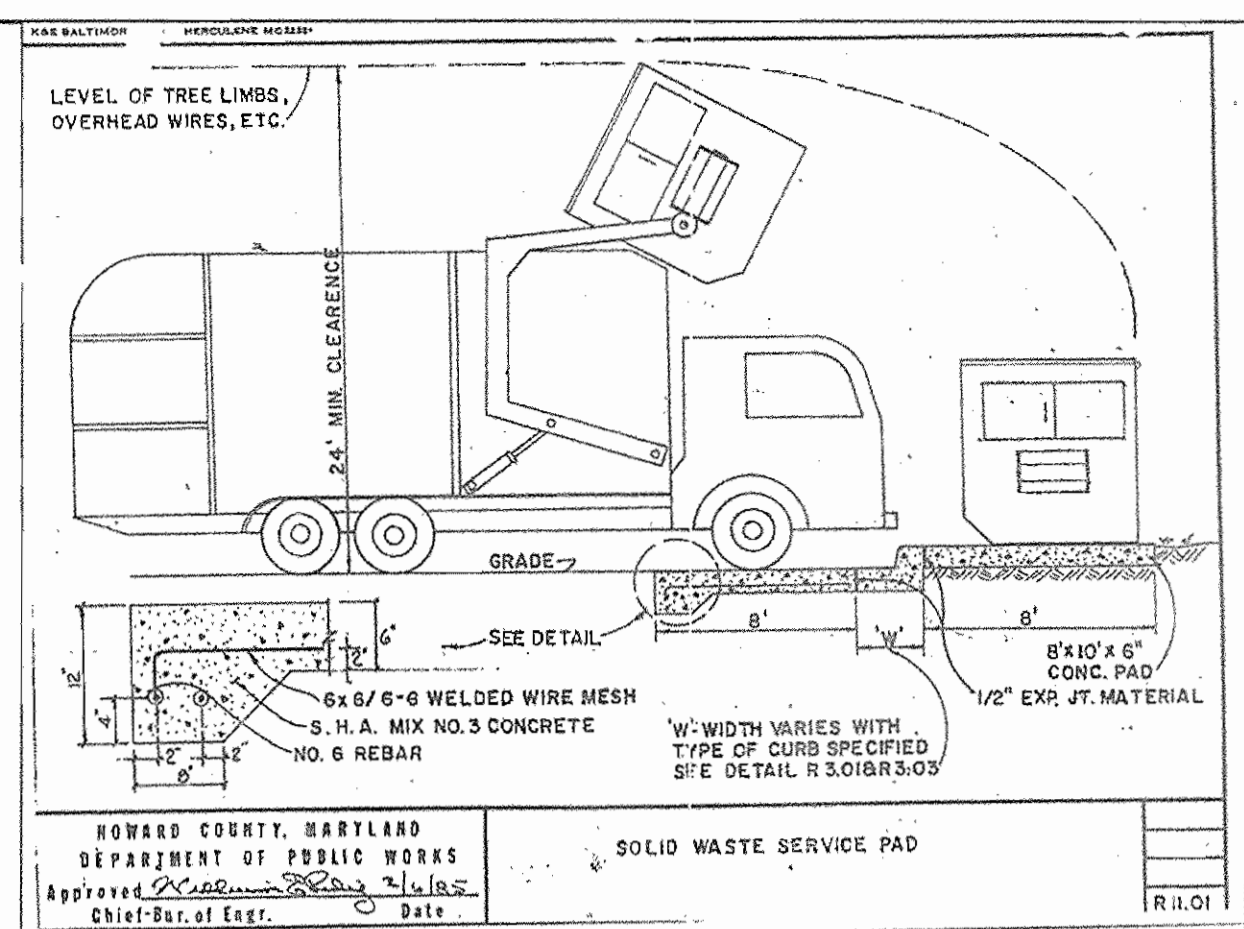
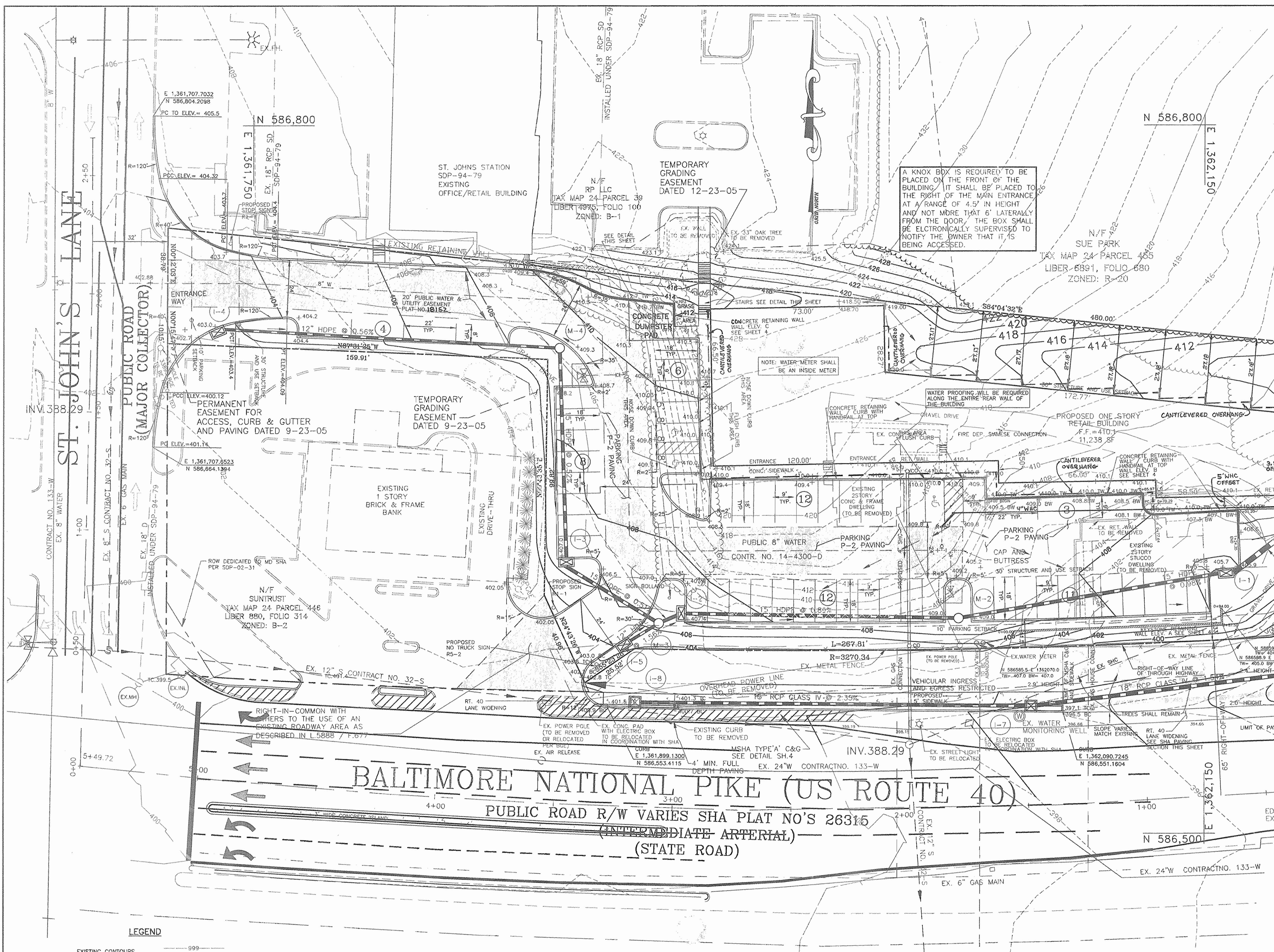
PROJECT:
9050 ROUTE 40 RETAIL CENTER
ONE STORY RETAIL BUILDING NO. 1
PARCEL 'A' AND PARCEL 848

LOCATION:
TAX MAP 24 - GRID 5
PARCEL 38, 96 AND PARCEL 848
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

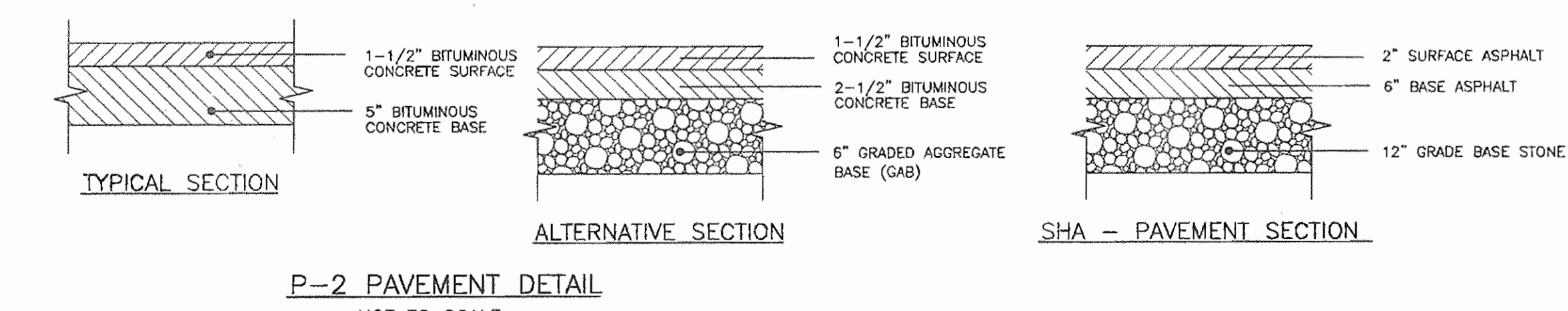
TITLE:
GEOMETRY PLAN

DATE: SEPTEMBER, 2005 PROJECT NO. 1794
APRIL, 2006

Design: DAM Draft: MAN Check: DAM SCALE: AS SHOWN DRAWING 4 OF 17



- LEGEND**
- EXISTING CONTOURS ——— 999
 - PROPOSED CONTOURS ——— 999
 - EXISTING WOODS LINE ———
 - PROPOSED WOODS LINE ———
 - EXISTING STRUCTURE [Symbol]
 - PROPOSED STRUCTURE [Symbol]
 - EX. 25% OR GREATER SLOPES [Symbol]
 - PRIVATE SWM, ACCESS, DRAINAGE & UTILITY EASEMENT [Symbol]
 - PRIVATE DRAINAGE & UTILITY EASEMENT [Symbol]



PLAN
SCALE: 1" = 20'

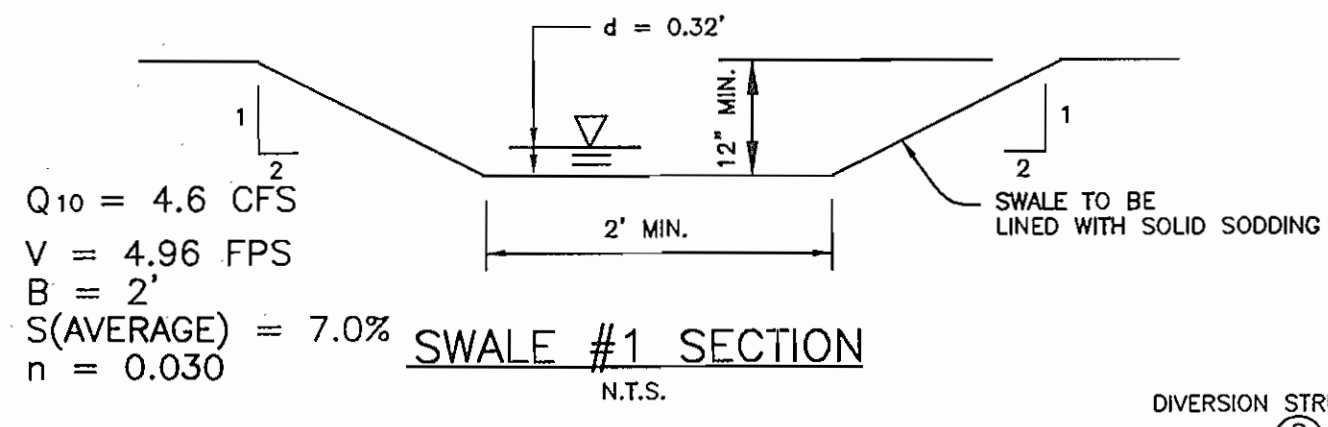
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

V.B. / 6/06
 DATE

C. / 7/20/06
 DATE

M. / 12/14/06
 DATE

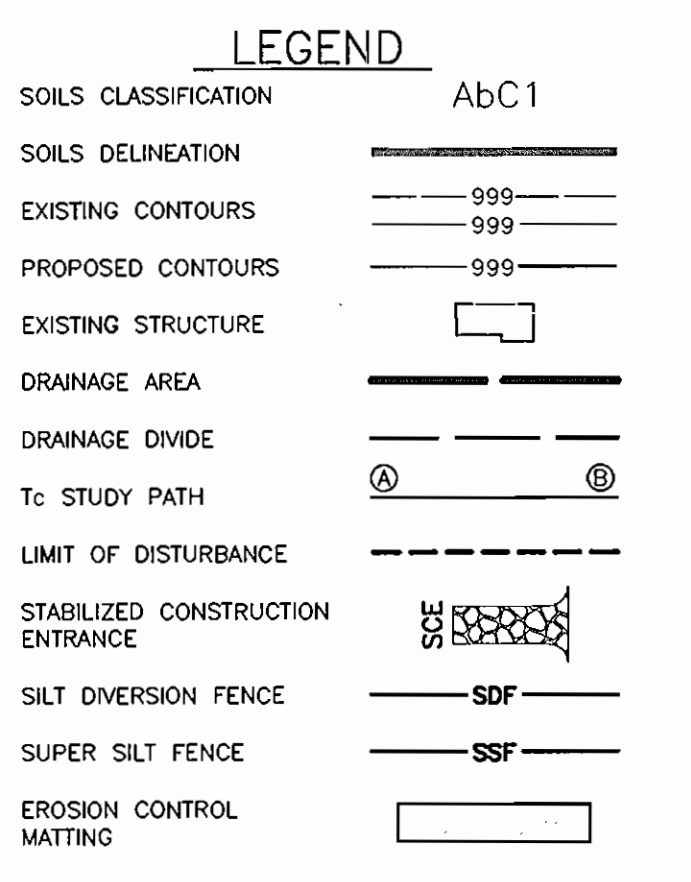
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 www.bei-civilengineering.com		 8/1/06
OWNER PARCEL 'A' EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	PROJECT: 9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848	
OWNER PARCEL 848 LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797	TITLE: SITE DEVELOPMENT AND GRADING PLAN	DATE: SEPTEMBER, 2005 APRIL, 2006
Design: MAN Draft: MAN Check: DAM	SCALE: AS SHOWN	PROJECT NO. 1794 DRAWING NO. OF 17



TOTAL WQv AND Rev PROVIDED WITHIN BIORETENTION			
STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.2153 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.049 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION

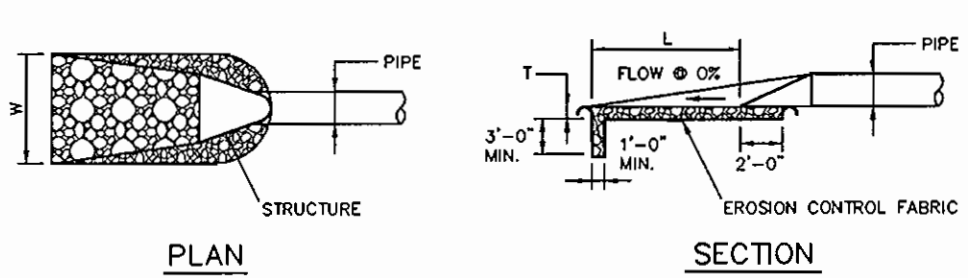
IN-SITU INFILTRATION		
BORING NO.	DEPTH OF TEST	MEASURED RATE (IN./HR.)
B-2	15.5'	0.375
B-4	15.0'	-

PIPE SCHEDULE			
RUN	SIZE	LENGTH	TYPE & CLASS
S-1 TO E-1	24"	55.00'	RIPP-RAP (B-2)
BIORETENTION UNDERDRAIN	6"	85.00'	PERFORATED PIPE
BIORETENTION OUTFALL	6"	81.00'	HDPE (B-2)



OPERATION & MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

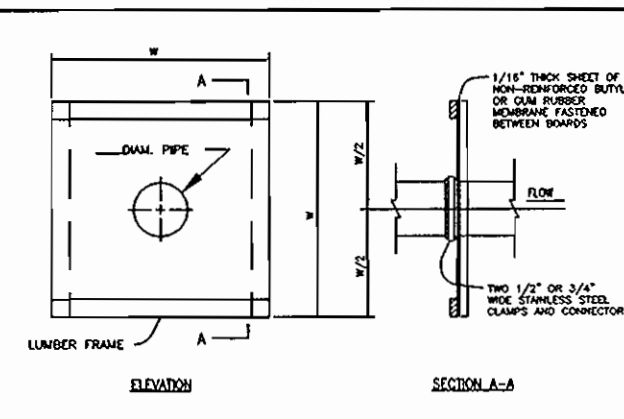
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



STRUCTURE	d50	LENGTH(L)	WIDTH(W)	THICK.(T)	SHA CLASS
E-1	9.5"	22' @ 0.5'	24'	19"	I
E-2	9.5"	10' @ 0.5'	14'	19"	I
E-3	9.5"	10' @ 0.5'	14'	19"	I
E-4	9.5"	20' @ 0.5'	22'	19"	I
E-5	9.5"	10' @ 0.5'	12'	19"	I

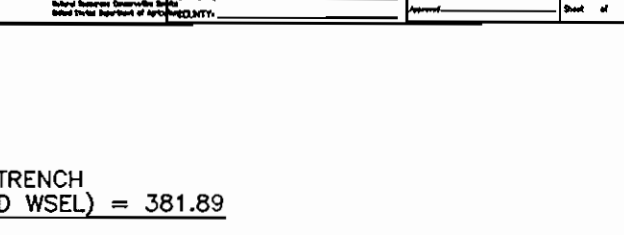
OUTLET PROTECTION DETAIL

- NOT TO SCALE
- CONSTRUCTION SPECIFICATIONS**
- THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED.
 - GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
 - A STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLIERING MATERIALS. THE STONE FOR THE RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
 - THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



NO.	SIZE	LENGTH	THICK.	SHA CLASS
1	24"	55.00'	19"	I
2	6"	85.00'	19"	I
3	6"	81.00'	19"	I

- NEEDS:**
- CUT A HOLE EXISTING IN THE EXISTING ROADWAY APPROXIMATELY 1/2 THE DIAMETER OF THE PIPE.
 - FORCE THE RUBBER ANTI-SEEP COLLARS OVER THE UPPER END OF THE PIPE.
 - INSTALL THE THREADED STEEL CLAMPS AROUND THE PIPE OVER THE RUBBER ANTI-SEEP COLLARS. THE CLAMPS SHOULD BE INSTALLED OVER THE RUBBER ANTI-SEEP COLLARS.
 - STAKE THE RUBBER ANTI-SEEP COLLARS TO THE EXISTING GROUND.
 - THE RUBBER ANTI-SEEP COLLARS SHALL BE CONSTRUCTED FROM EITHER 1" x 4" OR 2" x 4" LUMBER AND SHALL BE BOND BRUSH TO RESIST SWATHING OPERATIONS.



NOTE: ALL STORMWATER MANAGEMENT BMP'S SHOWN ON THESE PLANS ARE TO BE PRIVATELY OWNED AND MAINTAINED

NOTE: ALL STORM DRAINS SHOWN ON THESE PLANS ARE TO BE PRIVATELY OWNED AND MAINTAINED

NOTE: ALL STORM DRAINS LABELED AS HDPE SHALL HAVE A SMOOTH-BORE INTERIOR FINISH

TABLE B.3.2 MATERIALS AND SPECIFICATIONS FOR BIO-RETENTION				
MATERIAL	SPECIFICATION	SIZE	NOTES:	
PLANTINGS (IF REQUIRED)	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC	
PLANTING SOIL (2.5' TO 4.0' DEEP)	USDA - 35-60% Silt, 30-35% Clay, 10-25% Sand	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM	
MULCH	SHREDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM	
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL: ASTM D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: 2" TO 5"		
GEOTEXTILE (CLASS 'C')	APPROPRIATE OPENING SIZE (ASTM D-4751)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY	
UNDERDRAIN GRAVEL	ASTM D-448	0.375" TO 0.750"		
UNDERDRAIN PIPING	FRP PIPE 24" OR 30" OR ASHTO M-278	3/8" PERFOR. @ 6" O/C. 4 HOLES PER ROW MINIMUM OF 3" OF GRAVEL OVER PIPES, NOT NECESSARY UNDERNEATH PIPES		
POURED-IN-PLACE CONC.	MSHA MIX NO. 3, FC=3500psi @ 28 DAYS, MINIMUM WEAR SURFACE ENHANCED, REINFORCING TO MEET ASTM 615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONC. REQUIRED: 28 DAY STRENGTH TEST AND SLUMP TEST. ALL CONC. DESIGN (CAST AND CURED) NOT BEING PREVIOUSLY APPROVED BY STATE OR LOCAL STANDARDS. DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACT CODE 88.01.06. VERTICAL LOADS (H=10' OR H=20') ALLOWABLE HORIZONTAL LOADS (BASED ON SOIL PRESSURES) AND ANALYSIS OF POTENTIAL CRACKING.	
SAND (1.0' DEEP)	ASTM M-6 OR ASTM C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRANITOPHIO ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMITIC SAND. SUBSTITUTIONS ARE ACCEPTABLE. NO 'TRUCK DUST' CAN BE USED FOR SAND	

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald Mason PE NO. 21443 DATE 5-14-08

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

Mmm DEVELOPER DATE 8/16/06

BY THE ENGINEER:

Donald Mason ENGINEER - DONALD A. MASON, P.E. # 21443 DATE 8/16/06

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Jim Myles USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE 8/25/06

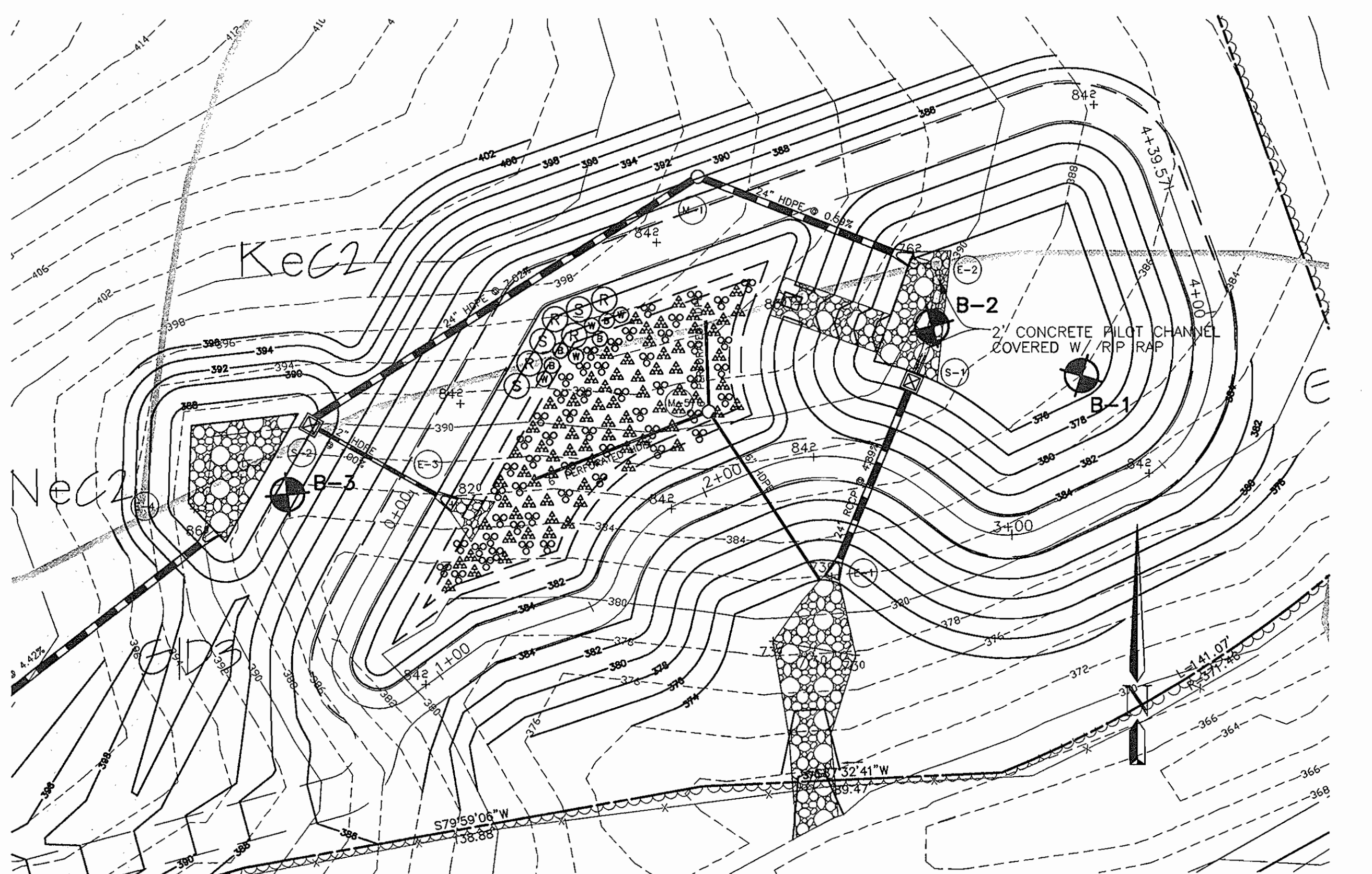
John HOWARD SOIL CONSERVATION DISTRICT DATE 8/25/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Andy CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 9/25/06

Paul CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10/2/06

Paul DIRECTOR DATE 10/2/06



PLANTING AND SWM PLAN
BIO-RETENTION FACILITY (F-6)
SCALE: 1" = 20'

SOILS LEGEND	
MAP SYMBOL	SOIL TYPE
Gb3	CLAYEY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
Cb2	CLAYEY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
Kc2	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nc2	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
Nd3	NESHAMINY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

* INDICATES HYDRIC SOILS
TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 23

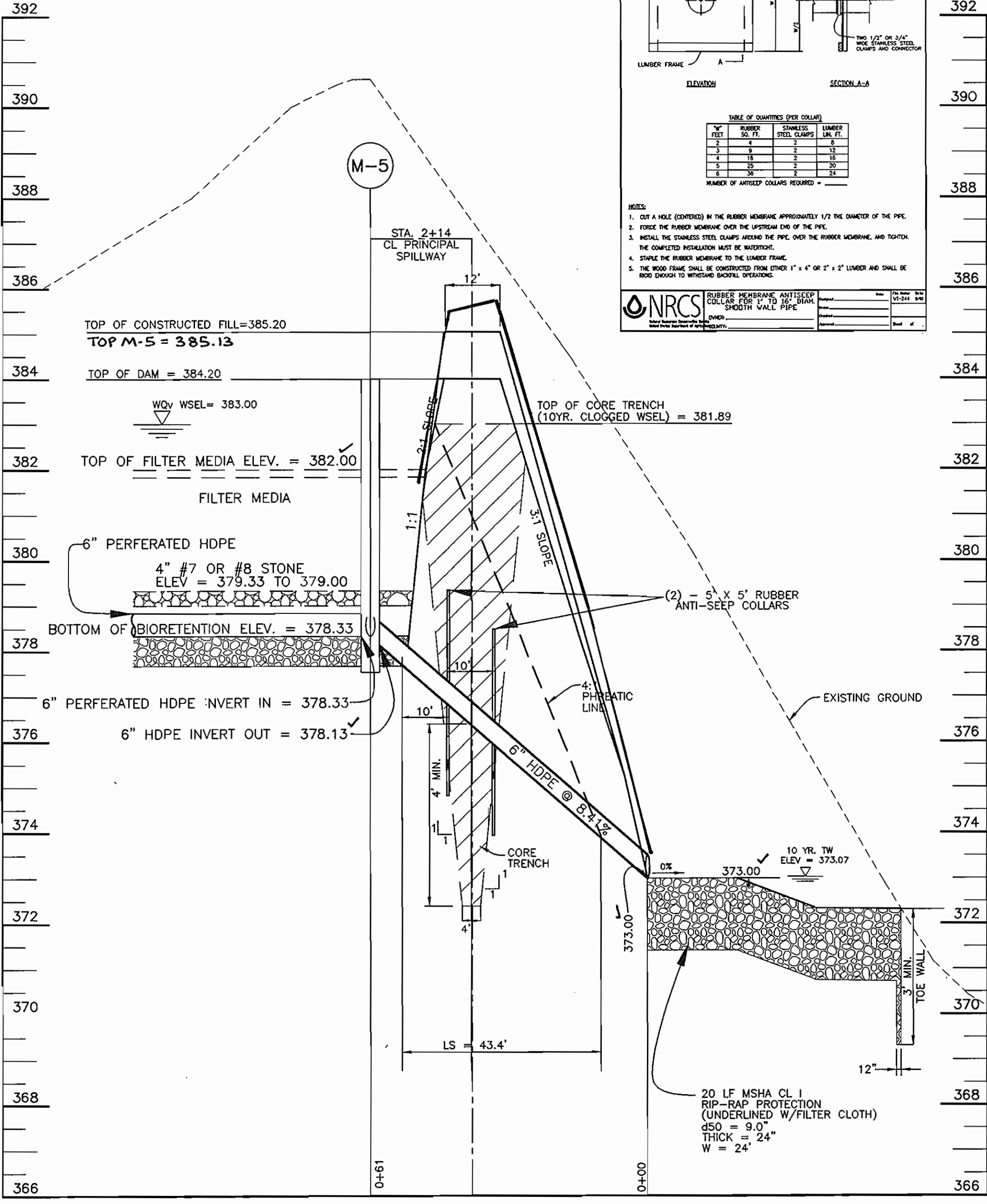
SWM PLANTING NOTES:

- TREES, SHRUBS, AND OR ANY TYPE OF WOODY VEGETATIONS ARE NOT ALLOWED ON THE EMBANKMENT.
- PLANT TREES AND SHRUBS AT LEAST 15 FEET AWAY FROM THE TOE OF SLOPE OF THE DAM.
- PLANT TREES AND SHRUBS AT LEAST 25 FEET AWAY FROM PERFORATED PIPES AND PRINCIPLE SPILLWAYS.

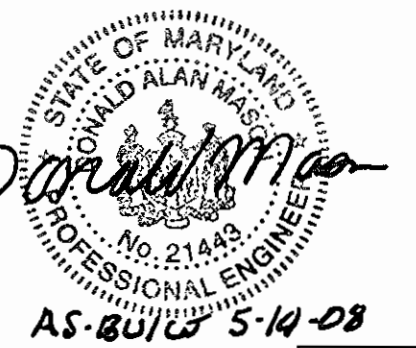
SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1 SUB 1			
STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.2024 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0457 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (Cp)	0.2884 AC.-FT.	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	EX. OF = 13.42CFS DEV. OF = 12.62CFS	PROVIDED IN THE DRY DETENTION FACILITY.

SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1 SUB 2			
STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0061 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0016 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (Cp)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	PROVIDED IN THE DRY DETENTION FACILITY.

SUMMARY OF GENERAL STORAGE REQUIREMENTS - D.A. #1			
STEP	REQUIREMENT	VOLUME REQUIRED (AC.-FT.)	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0068 AC.-FT.	BIO-RETENTION FACILITY (F-6)
2	RECHARGE VOLUME (Rev)	0.0018 AC.-FT.	PROVIDED WITHIN STONE CHAMBER UNDER BIORETENTION
3	CHANNEL PROTECTION VOLUME (Cp)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.
4	OVERBANK FLOOD PROTECTION VOLUME (Op)	N/A	NOT REQUIRED
5	EXTREME FLOOD VOLUME (Of)	N/A	RUN-OFF UNDER DEVELOPED CONDITIONS LESS THAN EXISTING BECAUSE OF AREA REDUCTION.



SECTION THRU BIORETENTION FREE OUTFALL
SCALE: 1" = 20' HORIZ., 1" = 2' VERT.

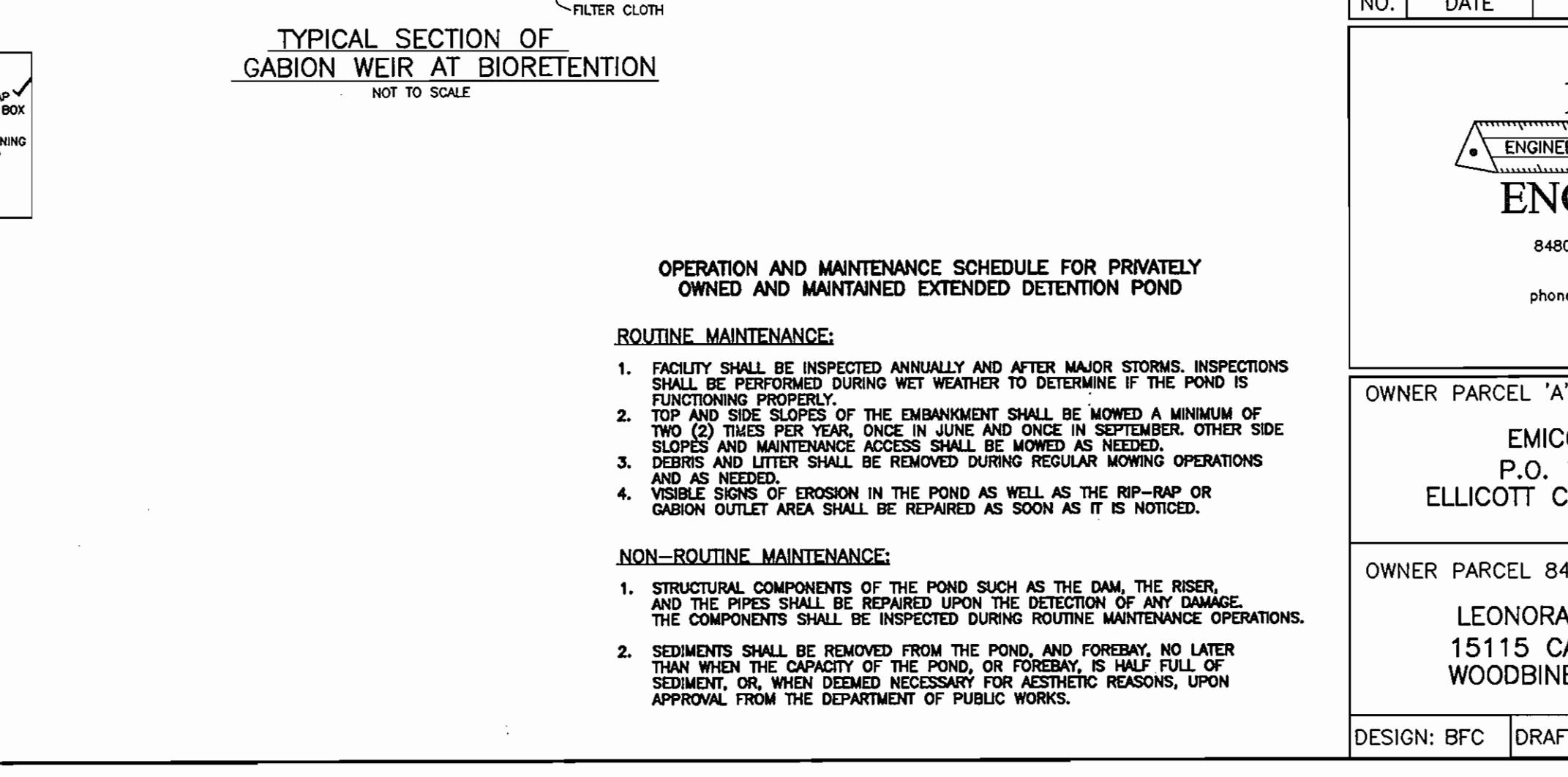
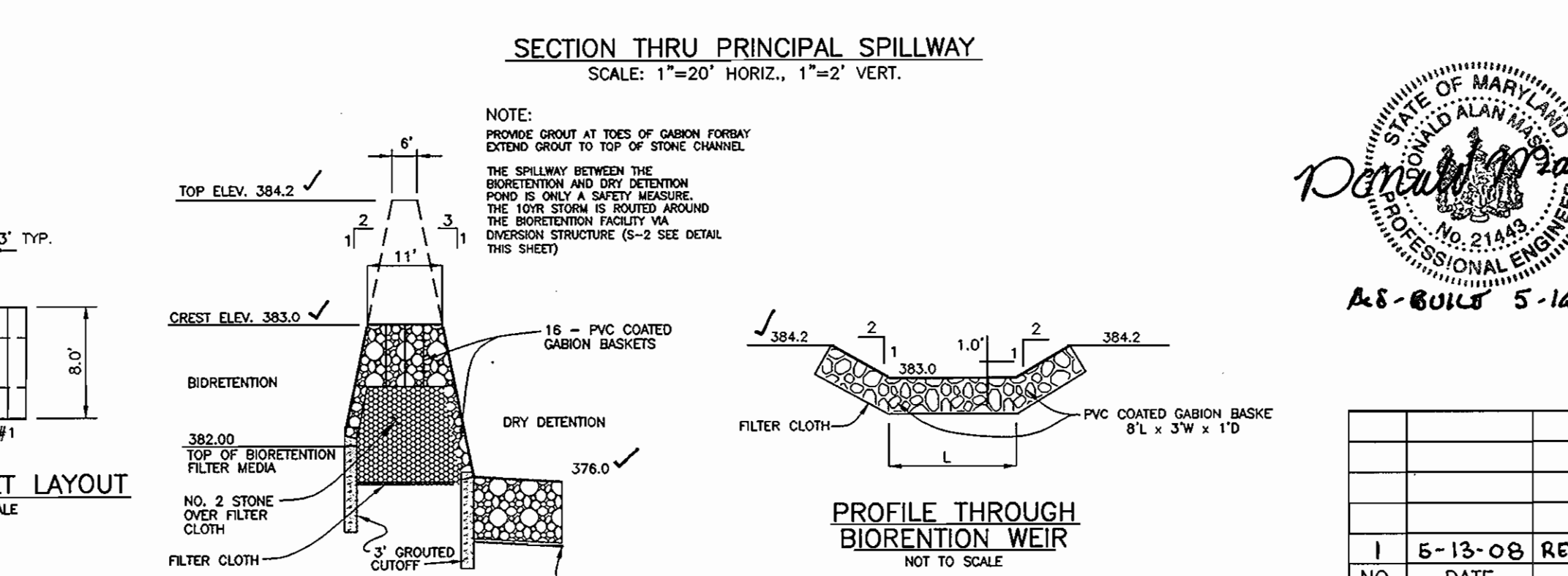
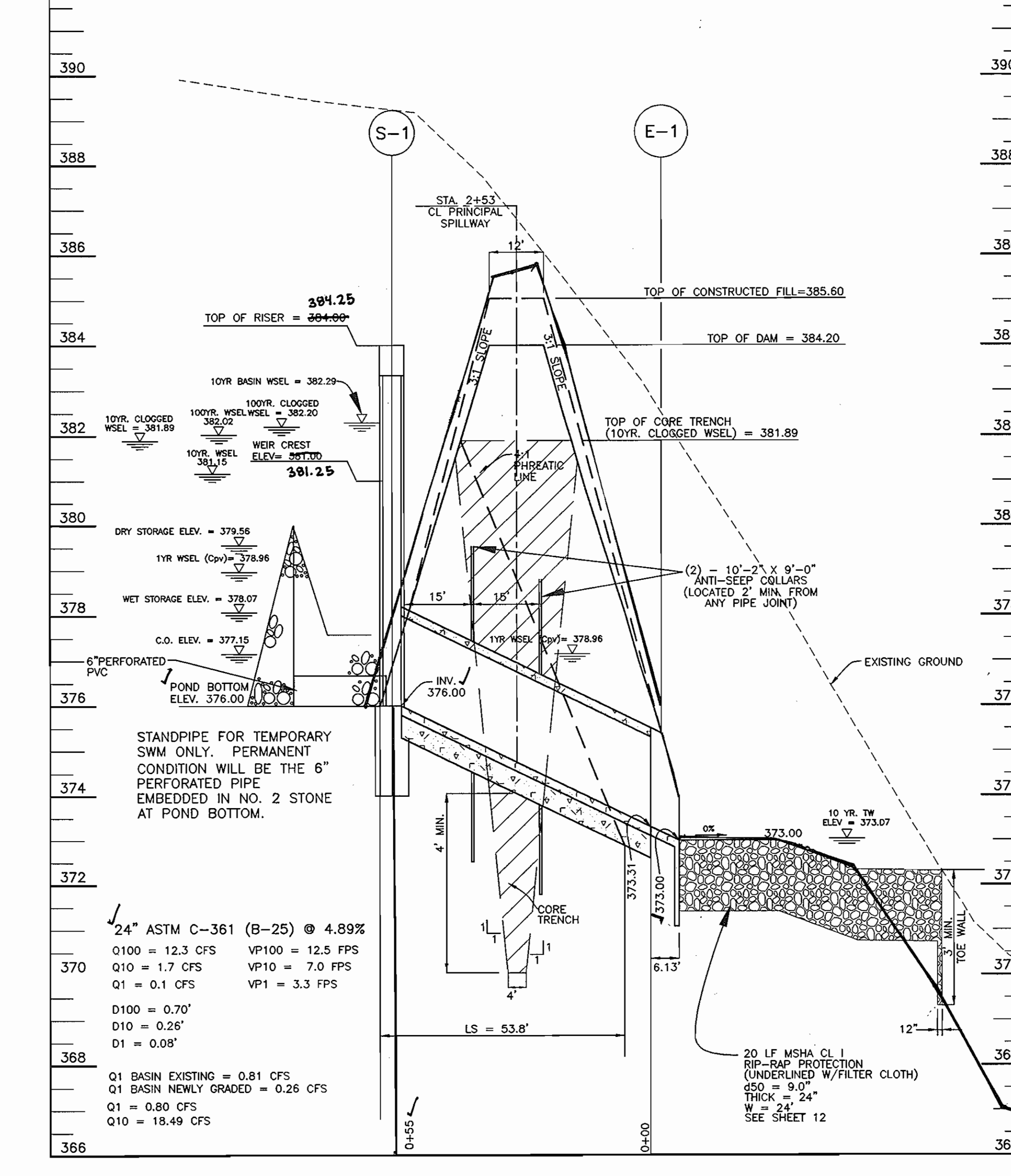
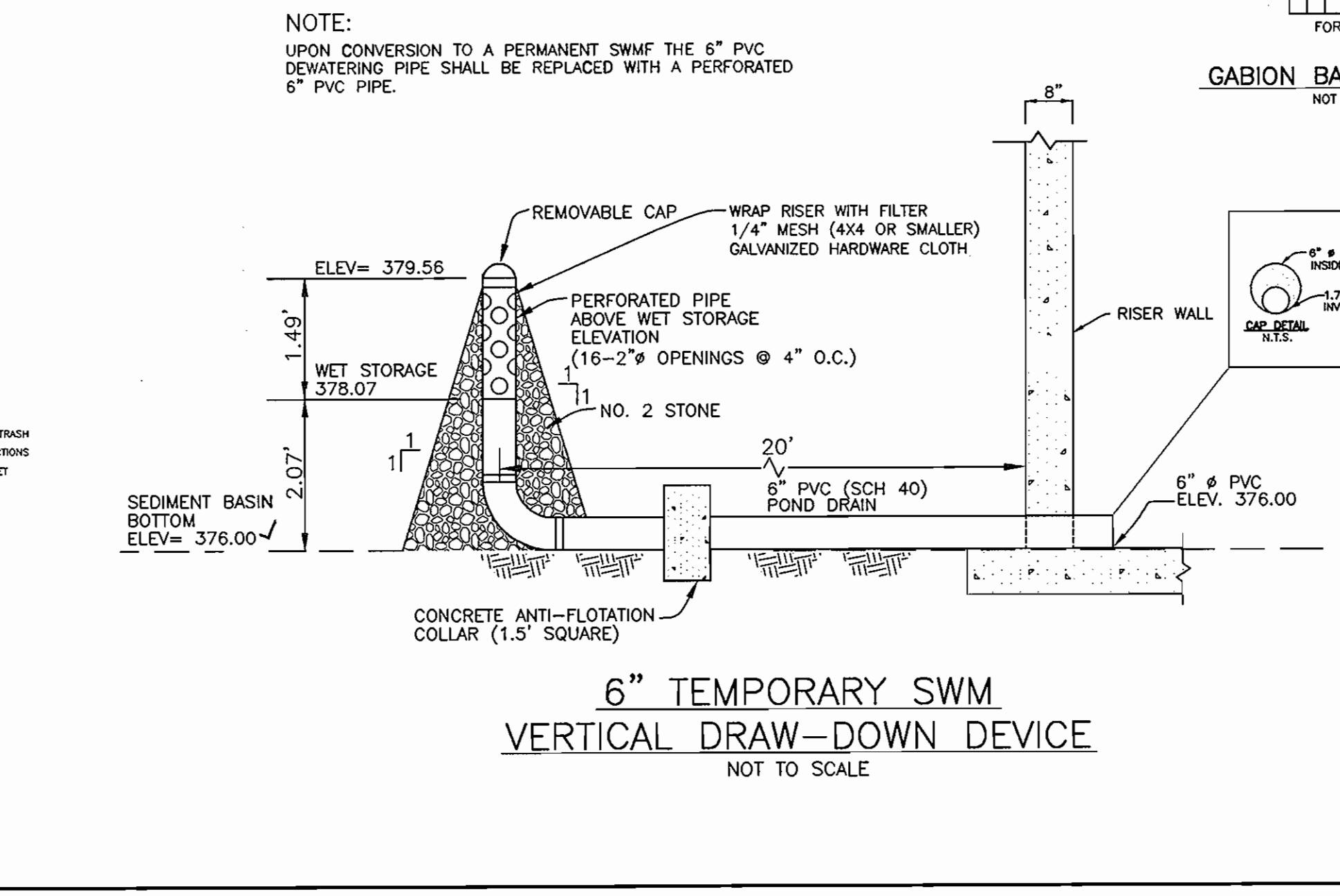
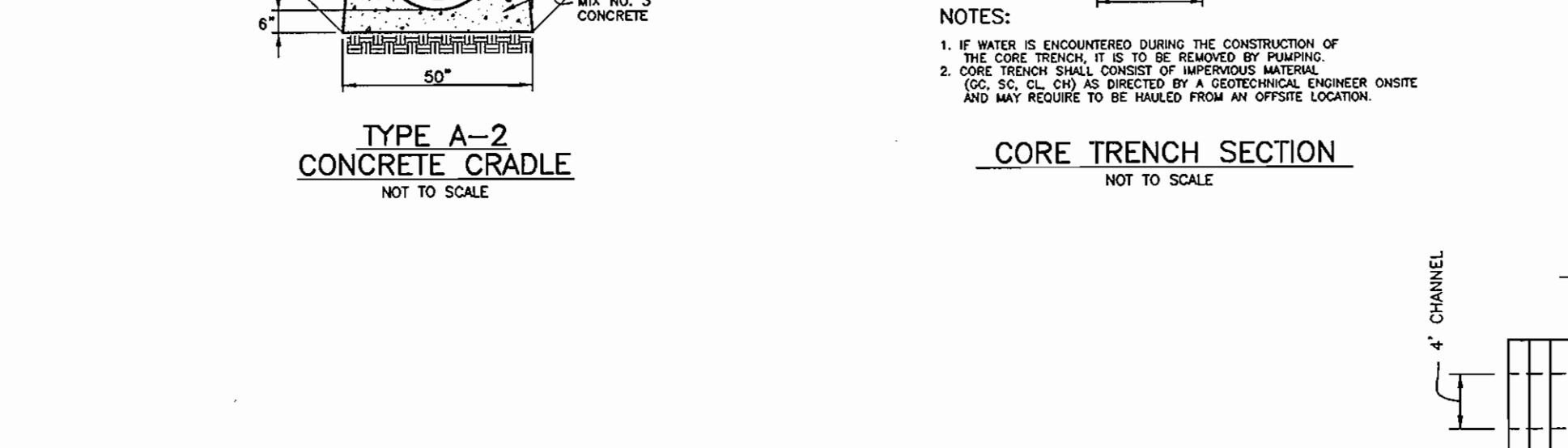
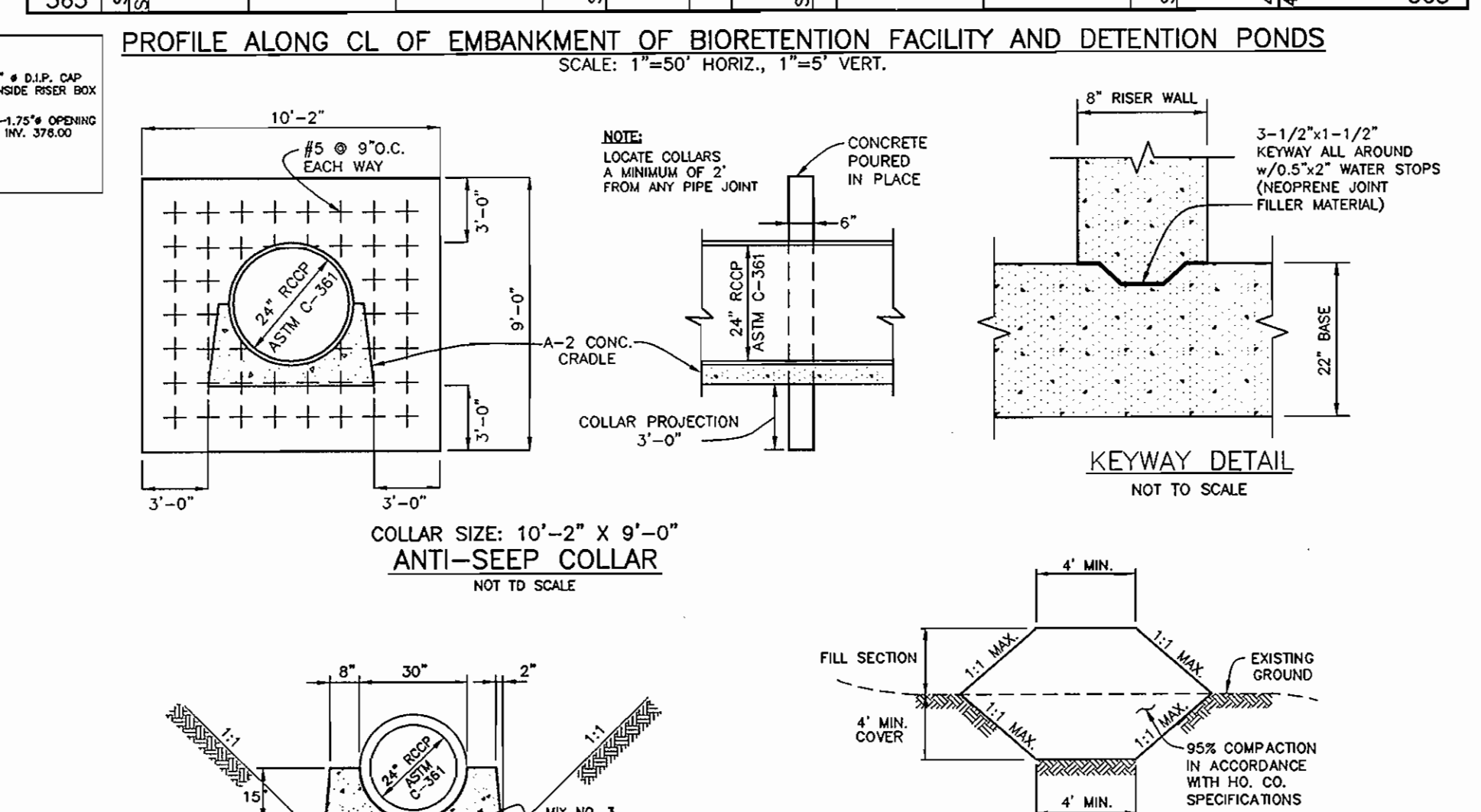
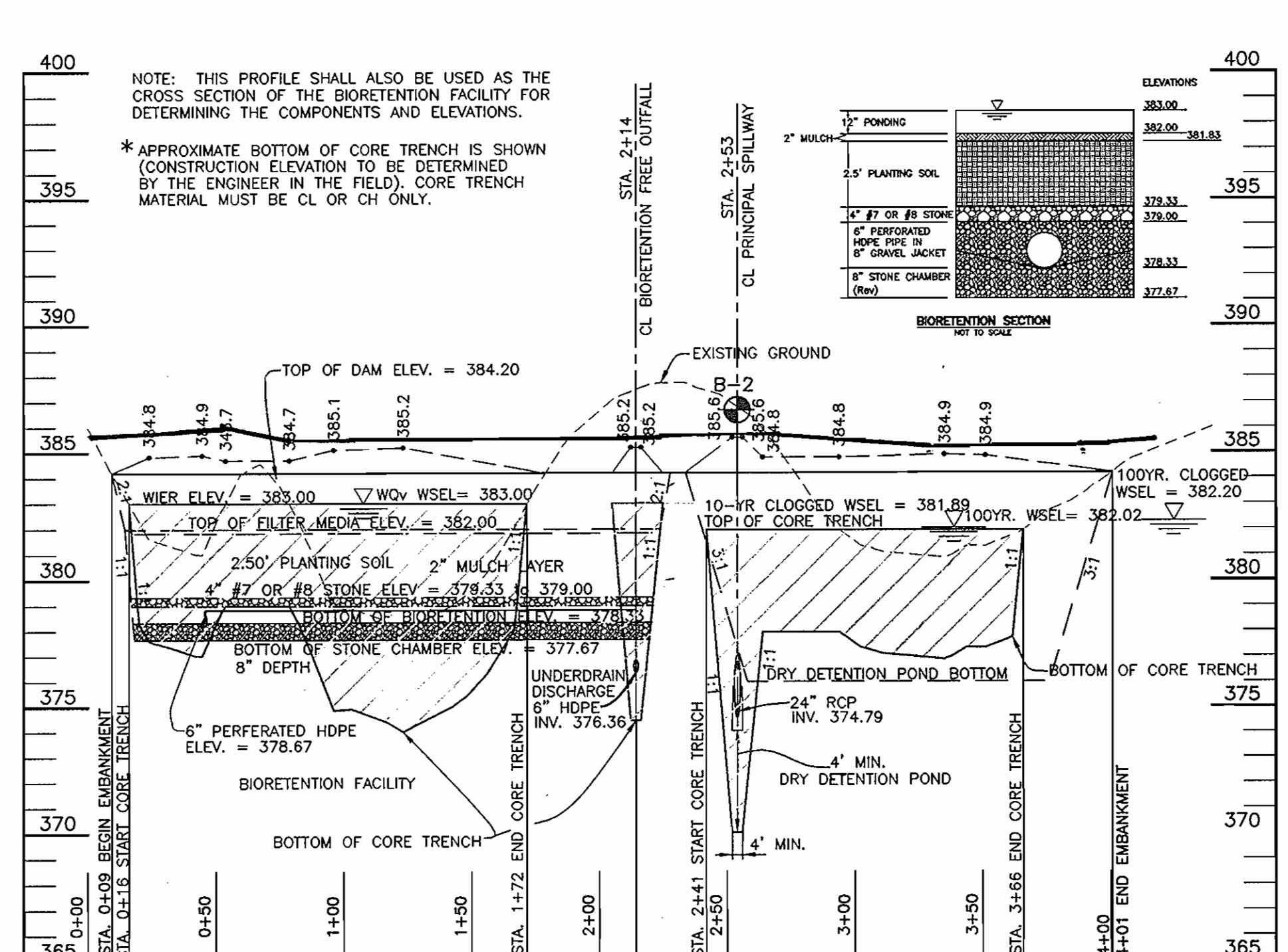
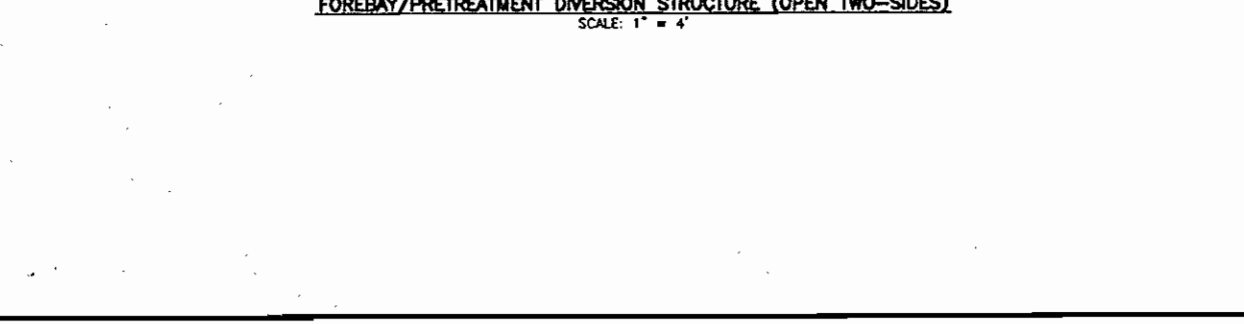
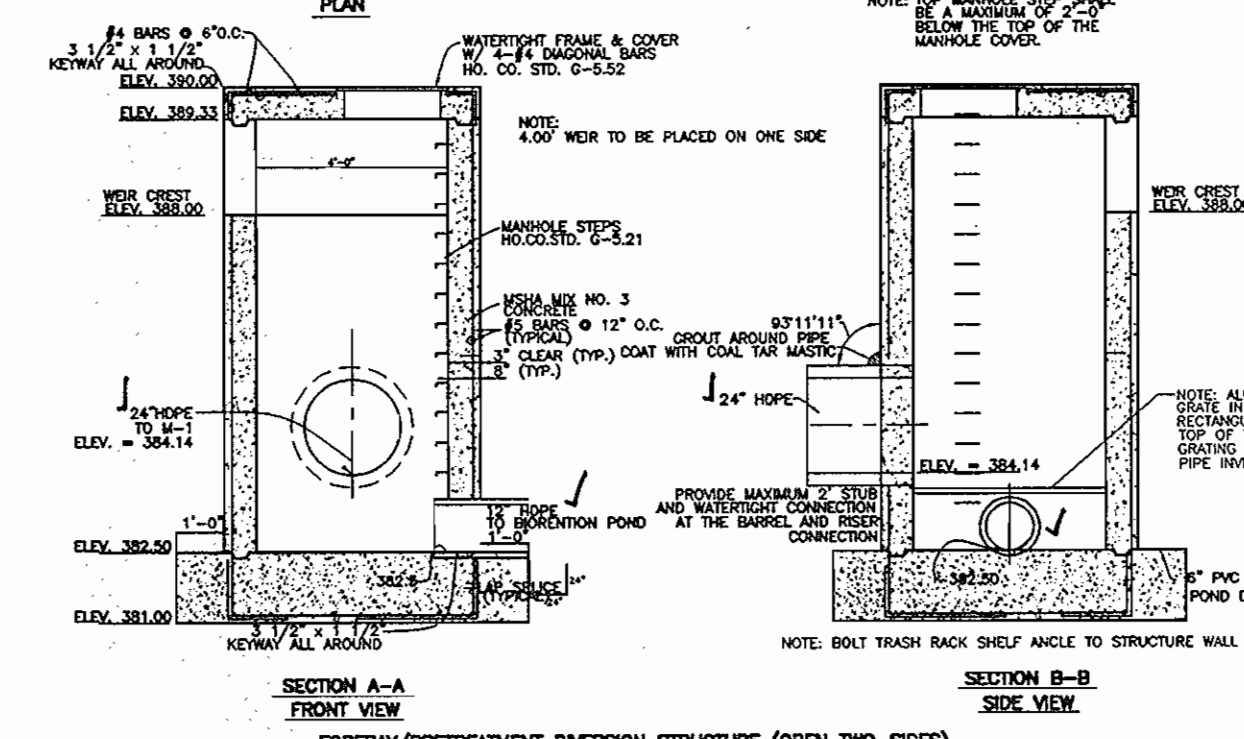
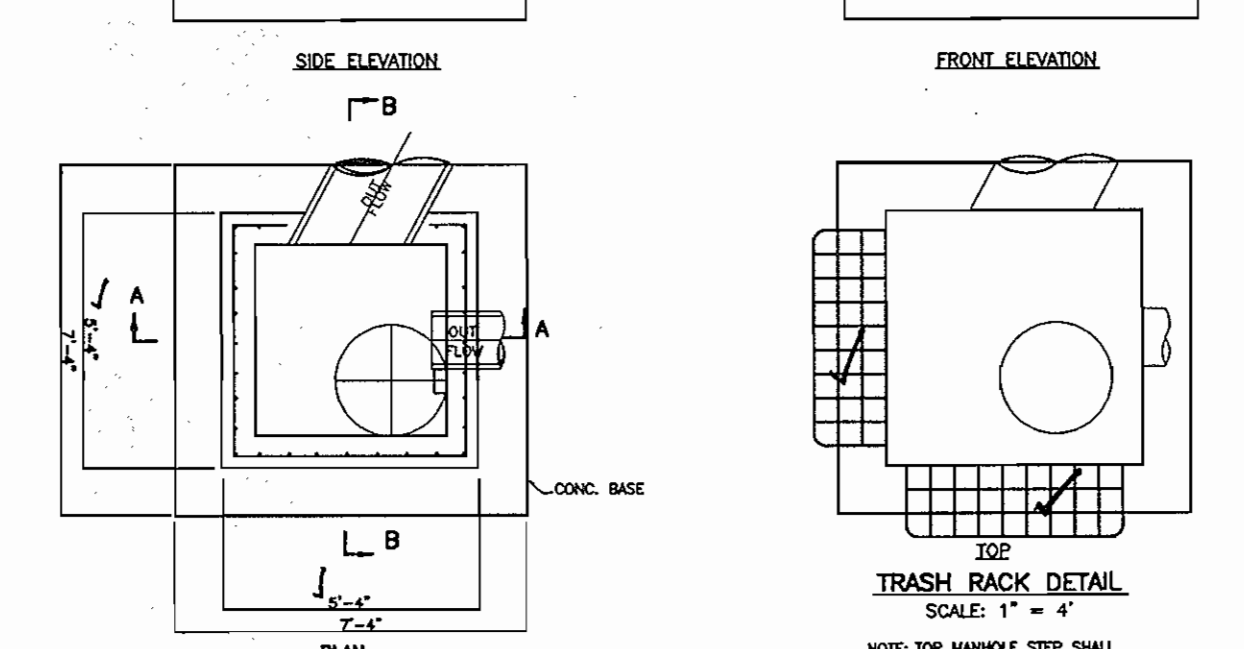
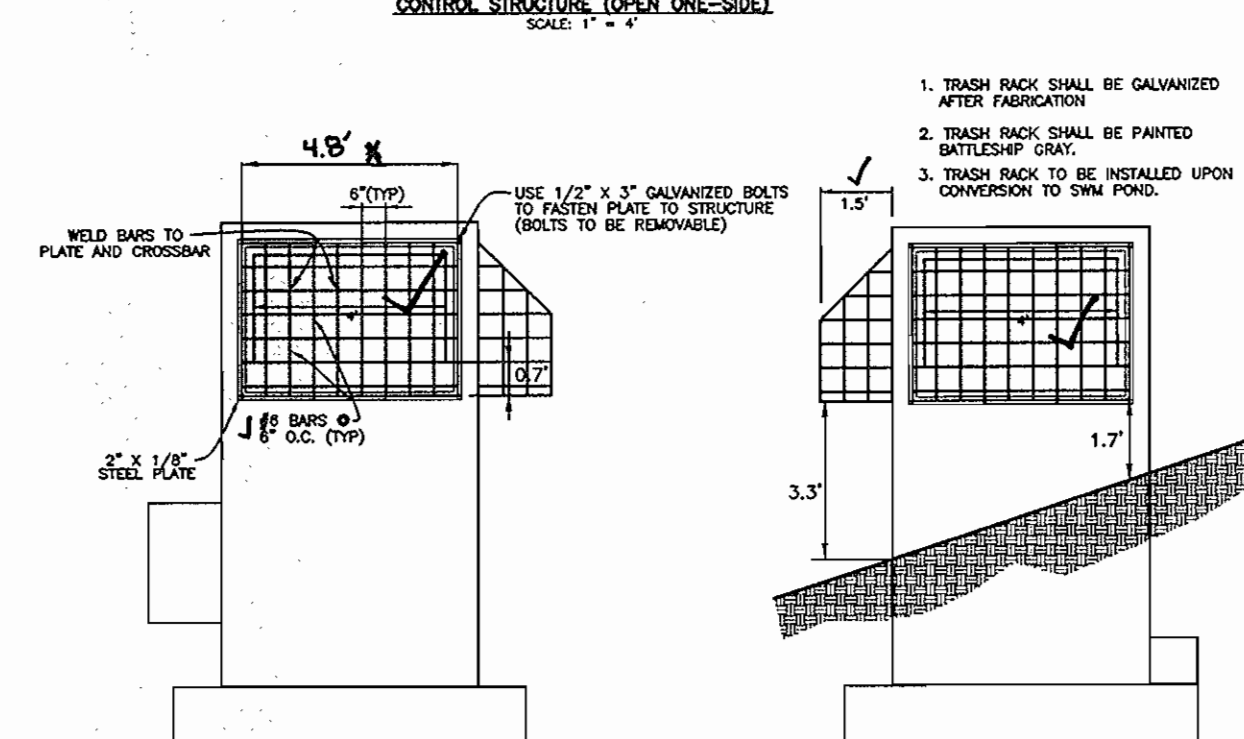
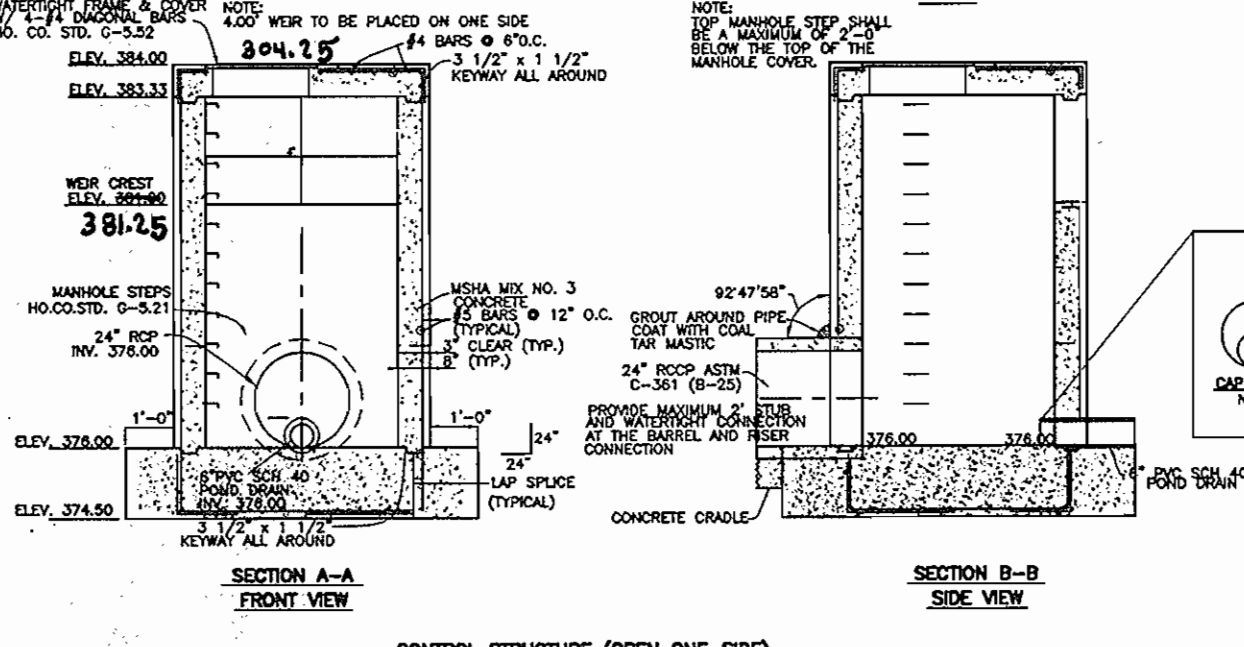
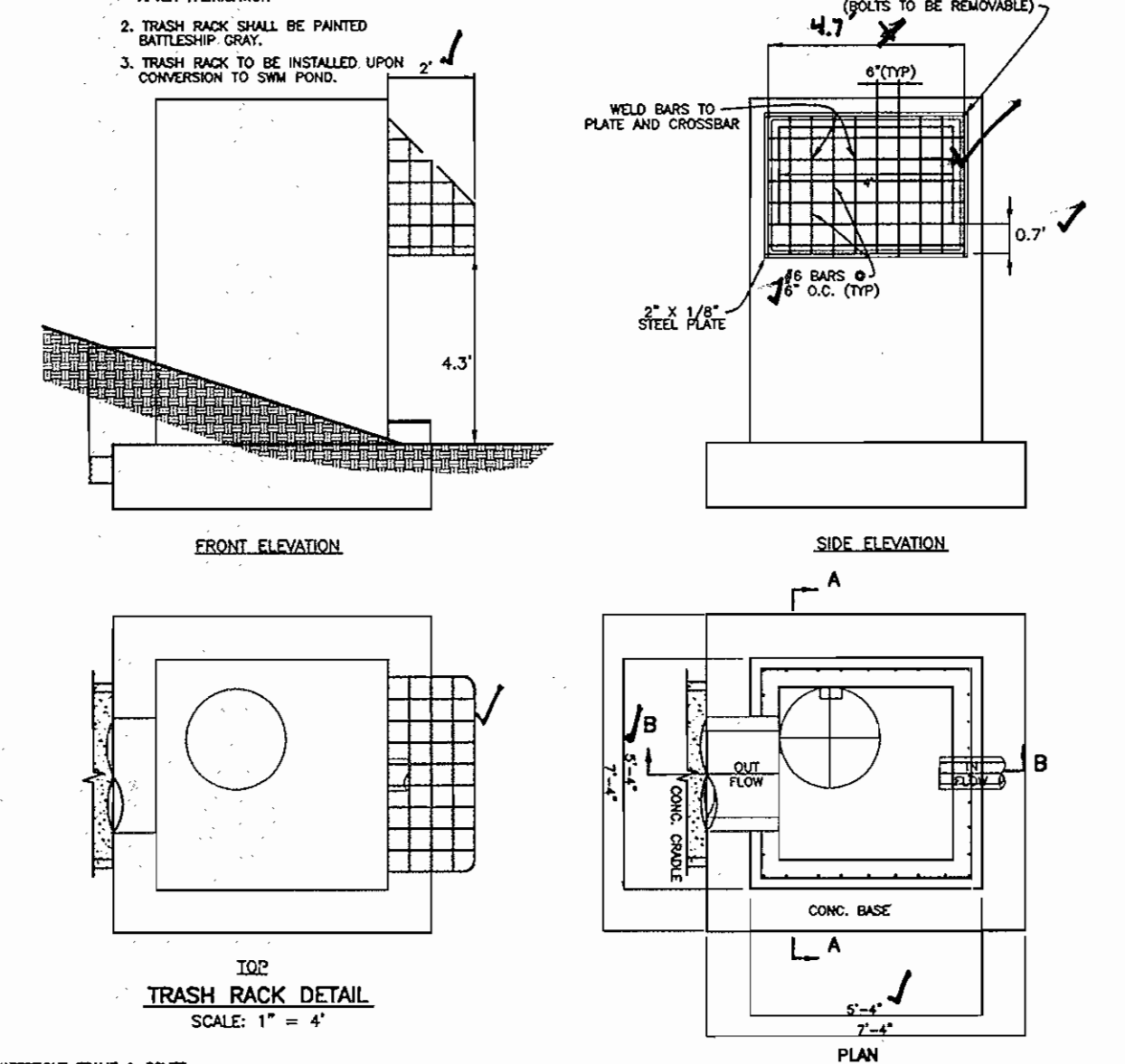


NO.	DATE	REVISION
1	5-13-08	REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
www.bai-civilengineering.com

OWNER PARCEL 'A':		PROJECT:	
EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041		9050 ROUTE 40 RETAIL CENTER ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848	
OWNER PARCEL 848		LOCATION: TAX MAP 24 - GRID 5 PARCEL 38, 96 AND PARCEL 848 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MD 21797		TITLE: STORMWATER MANAGEMENT PLAN, PROFILES AND DETAILS	
Design: Draft: Check:		DATE: DECEMBER, 2005 PROJECT NO. 1794 APRIL, 2006	
SCALE: AS SHOWN		DRAWING 12 OF 17	

NOTES:
 1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION.
 2. TRASH RACK SHALL BE PAINTED BATTLESHIP GRAY.
 3. TRASH RACK TO BE INSTALLED UPON CONVERSION TO SWM POND.



GEOTECHNICAL ENGINEER RECOMMENDATIONS:

EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION
 THE AREAS OF THE PROPOSED SWM FACILITIES SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREAS IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROFFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROFFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH NRCS-MD CODE NO. 378 POND STANDARDS/SPECIFICATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRADED SOIL, INCLUDING SILT(ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO. 378 SPECIFICATIONS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald Mason PE NO. 21443 DATE 5-14-08

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:
Blanca DATE

BY THE ENGINEER:
Donald Mason 5/14/08 DATE
 ENGINEER - DONALD A. MASON, P.E. # 21443

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Jim Myrland 5/15/08 DATE
 USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Edna 5/15/08 DATE
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Wendy 5/15/08 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



NO.	DATE	REVISION
1	5-13-08	REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-485-6105 • fax: 410-485-6844
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OWNER PARCEL 'A'	PROJECT:	9050 ROUTE 40 RETAIL CENTER
EMICON, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041	LOCATION:	ONE STORY RETAIL BUILDING NO. 1 PARCEL 'A' AND PARCEL 848
OWNER PARCEL 848	TITLE:	SWM DETAILS AND PROFILES
LEONORA K. HOENES 15115 CARRS MILL RD WOODBINE, MD 21797	DATE:	DECEMBER 2005 APRIL 2006
DESIGN: BFC DRAFT: BFC CHECK: DAM	SCALE:	AS SHOWN
		PROJECT NO. 1794 SHEET 11 OF 17

TEMPORARY BASIN #1
 D.A. = 4.84 AC
 NET STORAGE ELEVATION = 378.07
 DEPTH = 8' TOP OF EMBANKMENT
 REG. AND PROVIDED NET VOL. = 41,782 C.F.
 REG. AND PROVIDED CRY. VOL. = 8,3024 C.F.
 RISER BARREL SIZE = 24" DIA
 OUTFALL LENGTH = 55'
 EMBANKMENT ELEV. = 348.90
 CLEANOUT ELEV. = 377.35
 EXIST. DI. = 18" CS
 DESIGNED Q1 = 328 CFS

CONSTRUCTION SPECIFICATIONS
 These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

LEGEND

- EXISTING CONTOURS = 999
- PROPOSED CONTOURS = 999
- EXISTING WOODS LINE = [Symbol]
- PROPOSED WOODS LINE = [Symbol]
- EX. 15% - 25% SLOPES = [Symbol]
- EXISTING STRUCTURE = [Symbol]
- PROPOSED STRUCTURE = [Symbol]
- PROPOSED EARTH DIKE = [Symbol]
- LIMIT OF DISTURBANCE = [Symbol]
- PROPOSED SILT FENCE = SF
- PROP. SUPER SILT FENCE = SSF
- STABILIZED CONSTRUCTION ENTRANCE = [Symbol]
- SEDIMENT BASIN BAFFLES = [Symbol]
- EROSION CONTROL MATTING = [Symbol]

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface or dry streambed. All such material shall be cleared, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 5", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification CC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of the fill shall be covered by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of the treader, roller or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within $\pm 2\%$ of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the cores shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers and exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be operated closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 318 modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be placed (bedded), over and on, the side of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent flooding the pipe when using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structure backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section

Corrugated Metal Pipe - all of the following criteria shall apply for corrugated metal pipe:

1. **Materials** - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bonds or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bonds or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need or increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. **Coupling bonds, anti-seep collars, end sections, etc.**, must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials of least 24 mils in thickness.

3. **Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner so as to be completely watertight. Dimple bonds are not considered to be watertight.

All connection shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bondwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepacked to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type bond with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type bond with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long center covered bond using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will fit between the 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helicly corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, sandy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. **Backfilling** shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. **Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. **Bedding** - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe to a depth of at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Grovel bedding is not permitted.

3. **Laying pipe** - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are full. Care shall be exercised to prevent deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. **Backfilling** shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:

1. **Materials** - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. **Joints and connections to anti-seep collars** shall be completely watertight.

3. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where soft, sandy, or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. **Backfilling** shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Core of Water during Construction

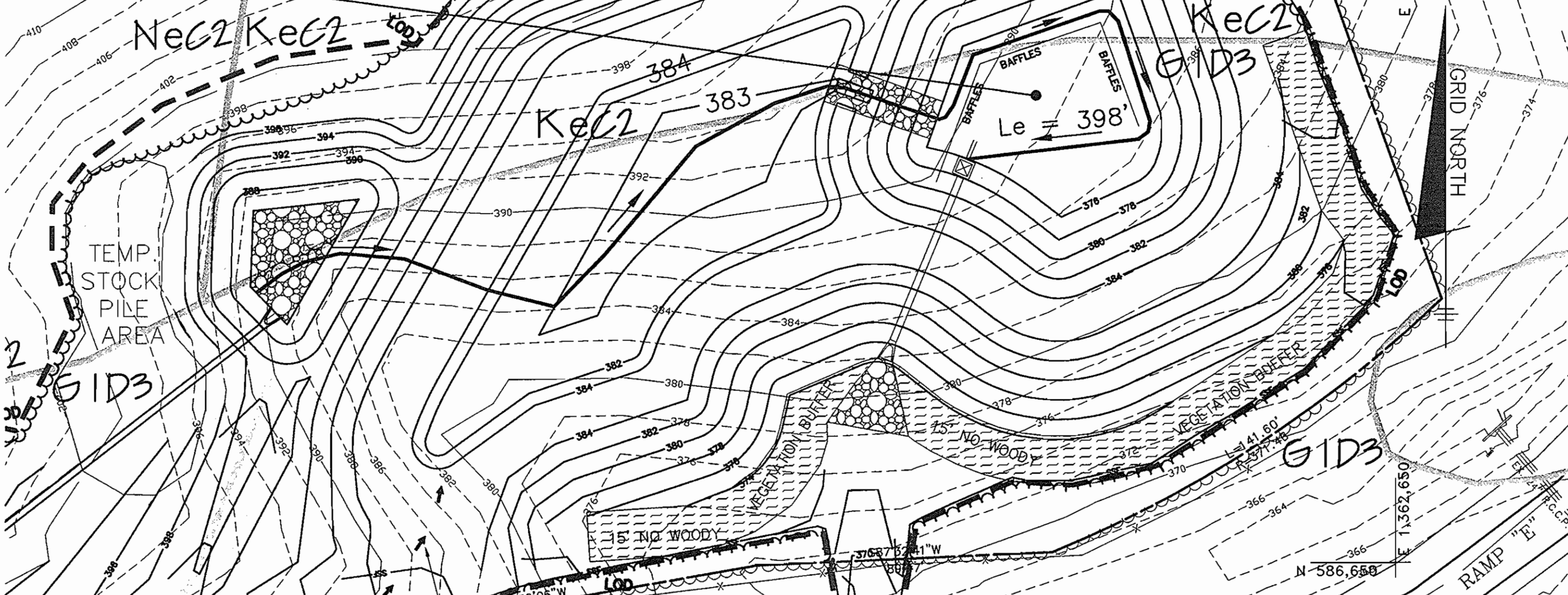
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having saved their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation of such locations which may require draining the water pumps from which the water shall be pumped.

Stabilization

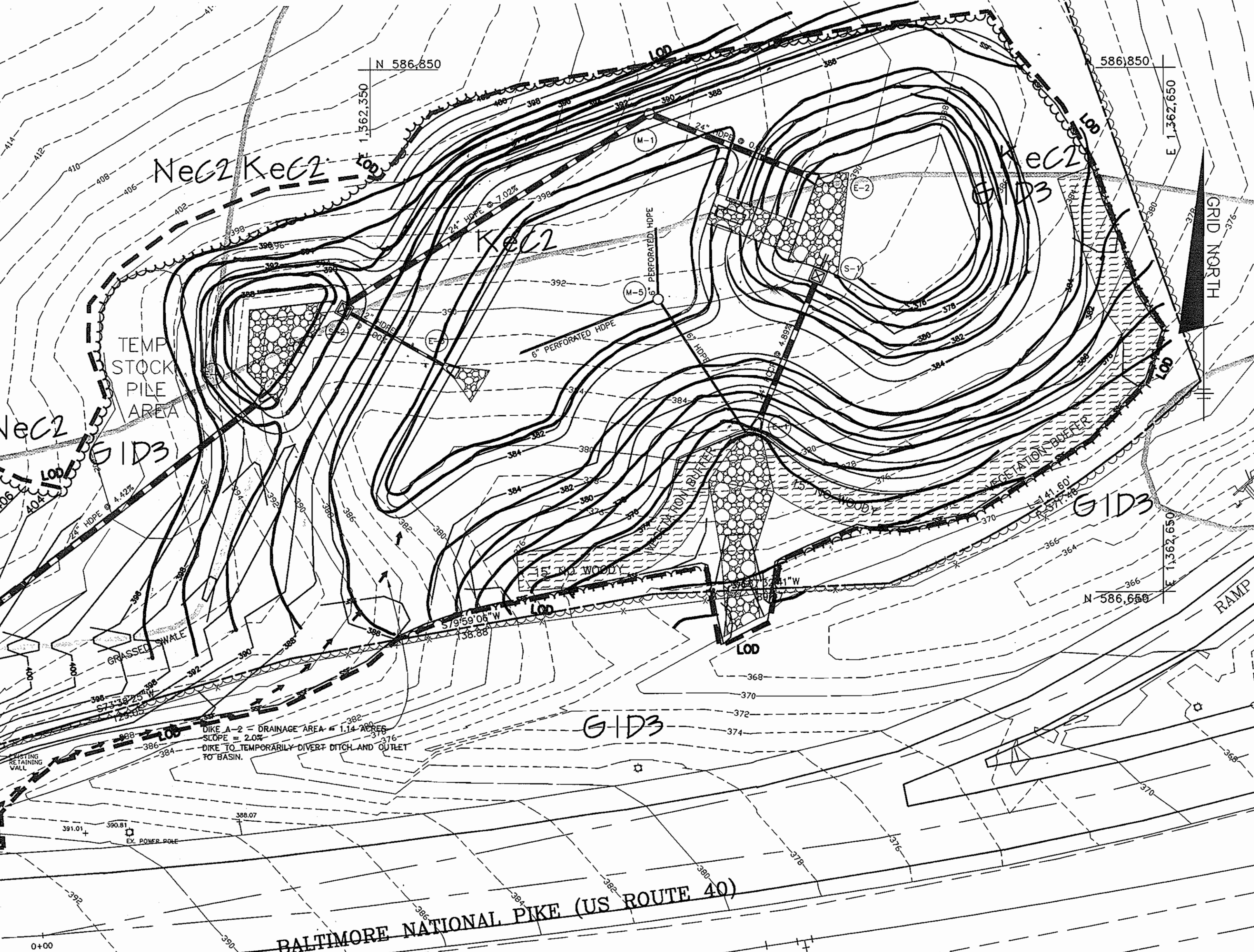
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.



TEMPORARY STORMWATER MANAGEMENT PLAN
 SCALE: 1"=30'



PLAN
 SCALE: 1"=30'

THIS PLAN IS FOR
 SEDIMENT AND EROSION
 CONTROL PURPOSES ONLY

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
GID3	B	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GnB2	C*	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
KeC2	D	KELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
NwC2	B	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
NwD3	B	NESHAMINY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED

* INDICATES HYDRIC SOILS
 TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND (ISSUED JULY 1968) MAP NO. 23

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION

DATE: 9/25/08

CHIEF DIVISION OF LAND DEVELOPMENT

DATE: 10/2/08

DIRECTOR

NO. 1 DATE 5-13-08 REVISED PER AS-BUILT CONDITIONS REVISION

BENCHMARK ENGINEERING, INC.

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 www.bel-civilengineering.com

DESIGNER/CONTRACT PURCHASER: EMICON, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041

OWNER PARCEL 848
 LEONORA K. HOENES
 15115 CARRS MILL ROAD
 WOODBINE, MD 21797

PROJECT: 9050 ROUTE 40 RETAIL CENTER
 ONE STORY RETAIL BUILDING NO. 1
 PARCEL 'A' AND PARCEL 848

LOCATION: TAX MAP 24 - GRID 5
 PARCEL 38, 96 AND PARCEL 848
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT AND EROSION CONTROL PLAN

DATE: NOVEMBER, 2004
 APRIL, 2006 PROJECT NO. 1794

SCALE: AS SHOWN DRAWING 7 OF 17

Design: DAM Draft: MAN Check: DAM

