MASS GRADING AND STORMWATER MANAGEMENT PLANS

WAL-MART STORES, INC.

ROUTE 40 AND ROUTE 29

2nd ELECTION DISTRICT
ELLICOTT CITY, MD
HOWARD COUNTY

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

I 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.

SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION ANDLAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

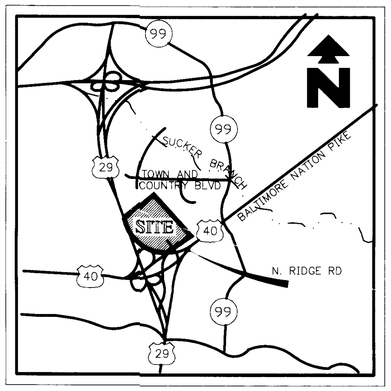
DIRECTOR — DATE 4/3/96

PERMIT INFORMATION BLOCK

E.C. WALMART, PARCELS B, C & D, HOENES PROP., PARCEL A-3, PARCELS 47 & 970			SECTION/AREA N/A	LOT/PARCEL # 970, 47, A-3, B, C, D.	
PLAT # 12106, 12107, 12108 11976 L1577/F489 L1244/F251	BLOCK # 23, 24 & 5, 6	ZONE RA-15 B-2 & P.O.R.	TAX/ZONE MAP 17 & 24	ELEC. DIST. 2nd	CENSUS TRACT 5026
WATER CODE F-03			SEWER CODE 1452800		

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
HOENES PROPERTY. 970, 47, A-3, B, C, D	3200 NORTH RIDGE ROAD



Vicinity Map

SCALE: 1"=2000'

STORE NUMBER 2412

SITE ANALYSIS: (PROPOSED UNDER SDP-96-11)

AREA OF PARCEL:	799,847 Sq.Ft. OR 18.36 AC
PRESENT ZONING:	B-2 ZONING BOARD CASE ZB-941
TOTAL AREA OF SITE:	65.79 ACRES
AREA DISTURBED:	46.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	4.04 ACRES
TOTAL CUT:	130,000 CU YD
TOTAL FILL:	130,000 CU YD

PLAN INDEX

1. COVER SHEET
2. PROPOSED DRAINAGE AREA MAP AND SCHEMATIC PLAN
3. MASS GRADING PLAN
4. MASS GRADING PLAN
5. MASS GRADING PLAN
6. SEDIMENT AND EROSION CONTROL PLAN - PHASE I
7. EROSION AND SEDIMENT CONTROL PLAN - PHASE I
8. EROSION AND SEDIMENT CONTROL PLAN - PHASE I
9. SEDIMENT AND EROSION CONTROL PLAN - PHASE II
10. EROSION AND SEDIMENT CONTROL PLAN - PHASE II
11. SEDIMENT AND EROSION CONTROL PLAN - PHASE III
12. EROSION AND SEDIMENT DETAILS
13. STORMWATER MANAGEMENT DETAILS
14. STORM SEWER PROFILES
15. STORM SEWER PROFILES
16. MISC. NOTES AND DETAILS
17. MISCELLANEOUS DETAILS
18. POND SOIL BORINGS/MISCELLANEOUS DETAILS
19. SOIL BORING PLAN
20. REFORESTATION PLAN
21. REFORESTATION PLAN
22. RETAINING WALL DESIGN PLAN
23. RETAINING WALL DESIGN PLAN
24. RETAINING WALL DESIGN PLAN
25. RETAINING WALL DESIGN PLAN

GENERAL NOTES

1) TOTAL AREA OF PARCELS - 69.40 AC.
PARCEL A-1 - 6.25 AC.
PARCEL B - 18.36 AC.
PARCEL C - 1.70 AC.
BULK PARCEL D - 17.12 AC.
BULK PARCEL E - 7.30 AC.
PARCEL F - 8.27 AC.
PARCEL G - 10.40 AC.
TOTAL GROSS AREA OF SUBDIVISION - 69.40 AC.

2) THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION AND DEPTH OF ANY EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK.

3) THE CONTRACTOR SHALL NOTE THAT IN CASE OF A DISCREPANCY BETWEEN THE SCALED AND FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.

4) WATER AND SEWER CONTRACT NUMBER 14-3444-D.
ALL WATER AND SEWER ARE PROPOSED AS PUBLIC.
THIS PROJECT IS LOCATED WITHIN THE METROPOLITIAN DISTRICT.

5) THERE ARE NO CONTIGUOUS SLOPES OF 25% OR GREATER WHICH ARE GREATER THAN 20.000 SQ.FT. IN AREA.

6) THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS. WITH THE EXCEPTION OF STORMWATER MANAGEMENT WAIVER, APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME I, SECTION 10.2.6.5.a AND SECTION 10.2.6.6.a. OFFICIAL LETTER FROM DPW ATTACHED TO THIS PLAN SET ON SHEET 14.

7) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.

8) THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

9) THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN OR AERIAL SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY RIEMER MUEGGE AND ASSOCIATES, INC. DATED MAY 5, 1994.

10) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NUMBERS 24C2 AND 18G1 WERE USED FOR THIS PROJECT.

11) STORMWATER MANAGEMENT FOR THE ENTIRE SITE WILL BE PROVIDED IN THE PROPOSED "PRIVATE" FACILITY AS DESIGNED IN THIS PLAN SET. WATER QUALITY WILL BE PROVIDED BY A STORMCEPTOR SEWER SYSTEM ON THE PARCELS ZONED COMMERCIAL. EXTENDED DETENTION BY FOREBAY WILL PROVIDE WATER QUALITY MANAGEMENT FOR THE RESIDENTIAL SECTION. THE STORMWATER MANAGEMENT POND WILL BE OWNED AND MAINTAINED BY WAL-MART STORES, INC.

12) REFERENCE FILE NUMBERS: F-96-01 (FINAL ROAD CONSTRUCTION PLANS FOR NORTH RIDGE ROAD), F-96-09 (FINAL RECORD PLAT), SDP-96-11 (WAL-MART FINAL SITE PLAN) AND C#14-3444-D (FINAL WATER PLAN)

13) THE OWNER SHALL BE ADVISED THAT A BUILDING PERMIT IS REQUIRED FOR THE CONSTRUCTION OF THE ON-SITE RETAINING WALLS. TWO (2) COMPLETE SETS OF STRUCTURAL DRAWINGS BEARING THE SEAL AND ORIGINAL SIGNATURE OF MARYLAND STATE REGISTERED PROFESSIONAL ENGINEER SHALL ACCOMPANY THE BUILDING PERMIT APPLICATION.

14) NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS OR STREAM BUFFERS, OR FOREST CONSERVATION AREAS.

15) THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF THE FOREST CONSERVATION EASEMENT ARE ALLOWED.

RESOURCE LIST :

SURVEYOR (TOPOGRAPHY)
RIEMER MUEGGE AND ASSOCIATES, INC.
MR. RON ANDERSON
8818 CENTER PARK DRIVE, SUITE 200
COLUMBIA, MD 21045
(410) 997-8900

SURVEYOR (EASEMENT INFORMATION)
SET, INC.
MR. JOHN MOSELEY
3098 NEWINGTON DR.
RIVA, MD 21140-1440
(410) 974-8086

MARYLAND STATE HIGHWAY ADMIN.
ENGINEERING ACCESS PERMITS DIVISION
707 N. CALVERT STREET
P.O. BOX 717
BALTIMORE, MARYLAND 21203
(410) 333-1350

BELL ATLANTIC TELEPHONE
MR. JOHN FIDLER
7133 RUTHERFORD RD.
2nd FLOOR
WOODLAWN, MD 21244
(410) 281-7532

HOWARD COUNTY
GEORGE HOWARD BUILDING
3430 COURTHOUSE DRIVE
ELLICOTT CITY, MARYLAND 21043
(410) 313-2393

DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION
MR. CHARLES DAMMERS, P.E.
(410) 313-2420

DEPARTMENT OF PLANNING AND ZONING
MS. REGINA TIRINNANZI
(410) 313-2354

DEPARTMENT OF INSPECTIONS LICENSES AND PERMITS DEPARTMENT
(410) 313-2455

DEVELOPER
WAL-MART STORES, INC.
MOHSEN GHADIMKHANI
701 SOUTH WALTON BLVD.
BENTONVILLE, AR 72716
(501) 273-4940

CONTRACT PURCHASER
MANGIONE FAMILY ENTERPRISES
1205 YORK ROAD PENTHOUSE
LUTHERVILLE, MARYLAND 21093
(410) 825-9400

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

STATE OF MARYLAND — ROBERT L. WALTON — REGISTERED PROFESSIONAL ENGINEER

3-1-96

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306
Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24 — P/O PARCEL 848
REZONING CASE NUMBER ZB-941 — DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01 — APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21 — APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6a.

ENGINEER SHALL ACCOMPANY THE BUILDING PERMIT APPLICATION.

HAZARD CLASSIFICATION

CLASS "A" - STRUCTURES LOCATED IN RURAL, AGRICULTURAL OR URBAN AREAS DEDICATED TO REMAIN IN FLOOD TOLERANT USAGES WHERE FAILURE MAY DAMAGE NON-INHABITED BUILDINGS, AGRICULTURAL LAND, FLOODPLANS OR COUNTY ROADS.

NOTICE TO BIDDERS:

ALL QUESTIONS REGARDING THE GENERAL CONTRACTOR'S PREPARATION OF HIS BID SHALL BE DIRECTED TO THE WAL-MART CONSTRUCTION DEPARTMENT AT (501) 273-4940. SUBCONTRACTORS MUST DIRECT THEIR QUESTIONS THROUGH THE GENERAL CONTRACTOR ONLY. THE CONSULTING ARCHITECT AND/OR THE CONSULTING ENGINEER SHALL NOT BE CONTACTED DIRECT WITHOUT PRIOR AUTHORIZATION FROM WAL-MART.

FLOOD CERTIFICATION:

THIS PROPERTY IS NOT LOCATED WITHIN ANY PRESENTLY ESTABLISHED 100-YEAR FLOOD PLAIN, AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP FOR THE ELLICOTT CITY, MARYLAND. COMMUNITY PANEL NUMBER 2400440 023 B

WETLAND CERTIFICATION:

THIS PROJECT DOES NOT REQUIRE A DEPARTMENT OF THE ARMY SECTION 404 PERMIT PER A DETERMINATION BY THE CORPS OF ENGINEERS, BALTIMORE DISTRICT.

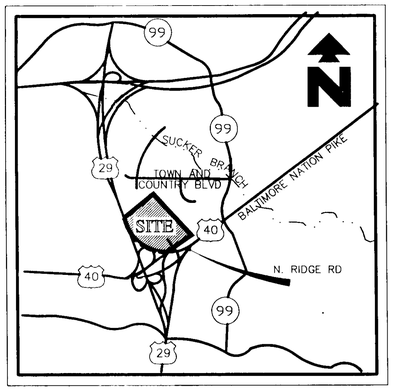
NOTICE TO CONTRACTOR:

THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 THREE (3) WORKING DAYS PRIOR TO BEGINING ANY WORK IN THE VICINITY OF EXISTING UTILITIES.

Bentonville, Arkansas * Fresno, California * San Francisco, California * Columbia, Maryland * St. Augustine, Florida * Nashville, Tennessee * Atlanta, Georgia

JOB NO.: 9146
DWG NAME: 9146COVR
DATE 11-17-95

SDP-96-01



Vicinity Map
SCALE: 1" = 2000'

SHEET DIVISIONS
NOT TO SCALE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321
LIBER 1197 FOLIO 2041

0 100' 150' 200'
SCALE IN FEET
1" = 100'

LEGEND

- PROPOSED DRAINAGE AREAS
- GIB2 (B) SOIL TYPE
- 15-24.9% EXISTING SLOPES
- 25% OR MORE EXISTING SLOPES

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SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

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

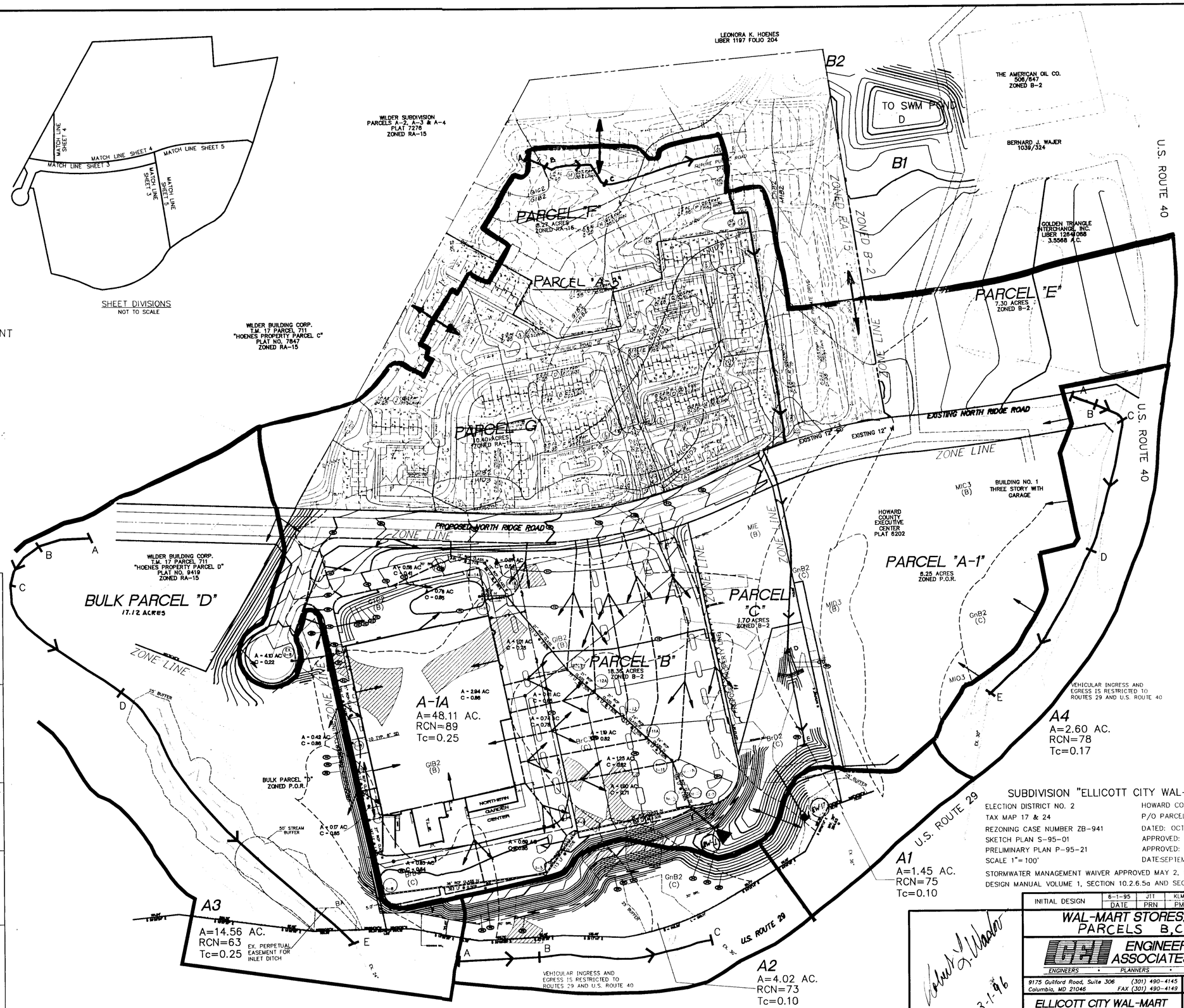
HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96
DIRECTOR — DATE 4/3/96



THIS SHEET IS FOR PROPOSED DRAINAGE AREA AND SCHEMATIC PURPOSES ONLY !!!

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21	APPROVED: 6-6-95
SCALE 1" = 100'	DATE: SEPTEMBER 6, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a

INITIAL DESIGN	6-1-95	JTT	KLM		IVY
	DATE	PRN	PM	DES	DRW

3-1-96

WAL-MART STORES, INC.
PARCELS B,C,D

GEA ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149

JOB NO: 9146
DWG NAME: 9146PRJ1

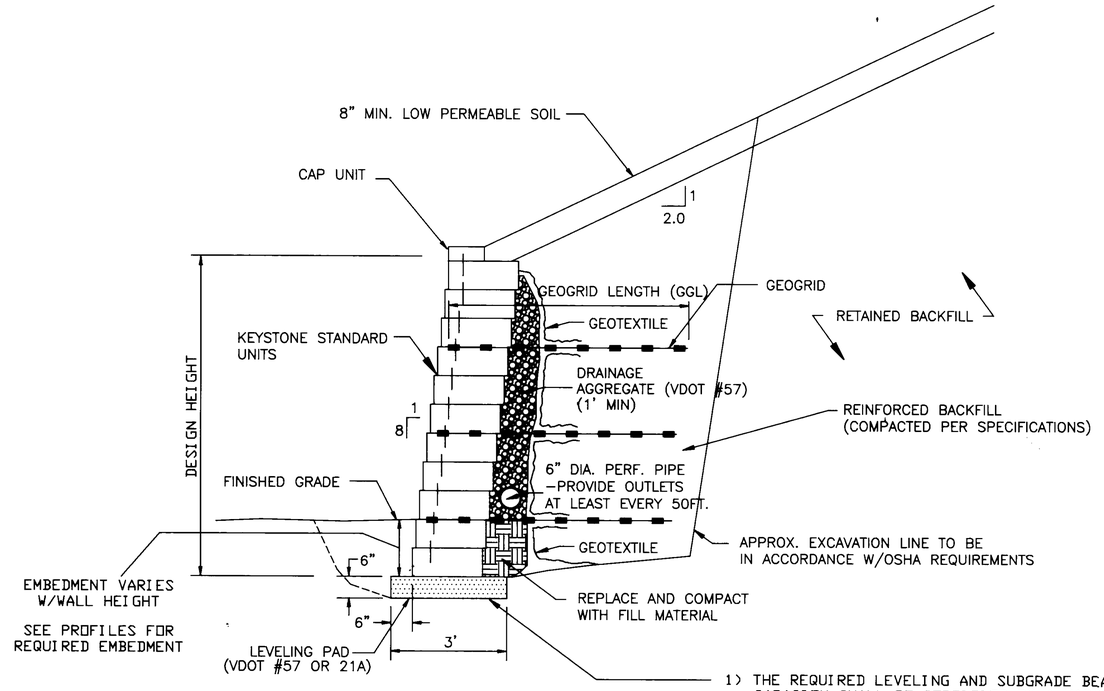
ELLICOTT CITY WAL-MART
PROPOSED DRAINAGE AREA MAP AND SCHEMATIC PLAN

DATE 7-5-95 — SHEET NO 2 OF 25

SDP-96-01

G:\3000\9146\MASSDWG\9146PRJ1 Tue Aug 29 15:54:09 1995

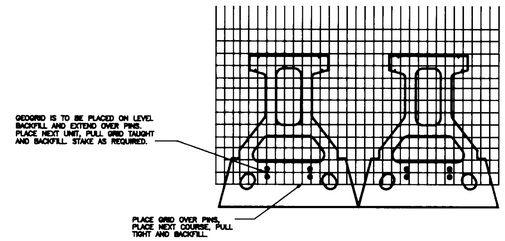
ECS LTD



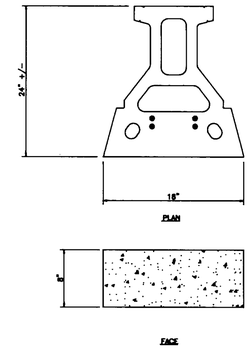
TYPICAL REINFORCED SECTION
STANDARD UNIT – 1" SETBACK
SCALE: NONE

1) THE REQUIRED LEVELING AND SUBGRADE BEARING CAPACITY SHALL BE CERTIFIED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER PRIOR TO FOOTING PLACEMENT.

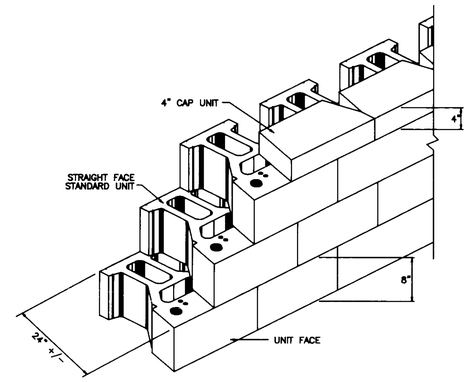
2) THE FOUNDATION SOIL MUST BE EXAMINED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO ASSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS ASSUMED DESIGN STRENGTH.



KEYSTONE STANDARD UNIT
GRID/PIN CONNECTION
SCALE: NONE – KD11S



KEYSTONE STANDARD UNIT
SCALE: NONE – KD8S



KEYSTONE STANDARD UNIT
ISOMETRIC
SCALE: NONE – KD7S

NOTE: 1) THE PROPOSED CONSTRUCTION OF ALL RETAINING WALLS SHALL BE PERFORMED UNDER THE DIRECTION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.

I 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 NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION.

SIGNATURE OF DEVELOPER _____ DATE _____

I 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 COUNTY SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION

DISTRICT

SIGNATURE OF ENGINEER _____ DATE _____

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

HOWARD SOIL CONSERVATION DISTRICT _____ 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

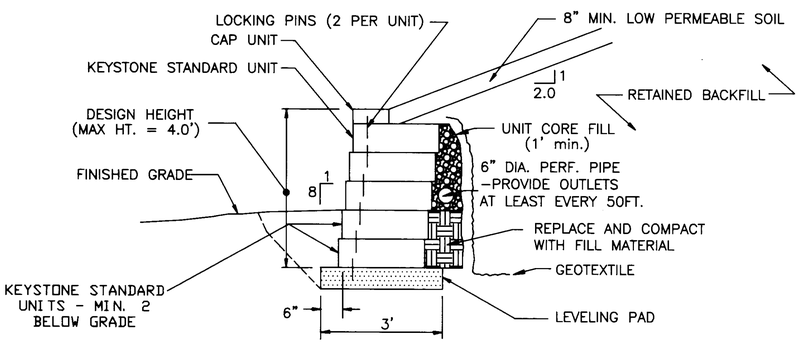
U.S. SOIL CONSERVATION SERVICE _____ DATE _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING

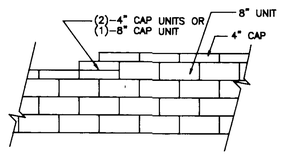
CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH _____ DATE 4/3/96

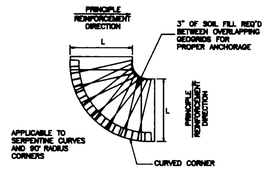
DIRECTOR _____ DATE 4/3/96



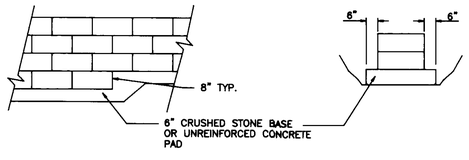
TYPICAL GRAVITY SECTION
STANDARD UNITS – 1" SETBACK
SCALE: NONE – KD5S



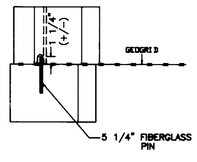
TOP OF WALL STEPS
SCALE: NONE – KD23



CONVEX CORNER GEOGRID PLACEMENT DETAIL
SCALE: NONE – KD2B



LEVELING PAD AND STEP DETAILS
SCALE: NONE – KD24



GRID/PIN CONNECTION DETAIL
SCALE: NONE – KD13

NOTE: REFER TO SHEET 25 OF 25 FOR RETAINING WALL SPECIFICATIONS

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

ELECTION DISTRICT NO. 2
HOWARD COUNTY, MD
TAX MAP 17 & 24

REVISIONS

ECS LTD
ENGINEERING CONSULTING SERVICES, LTD

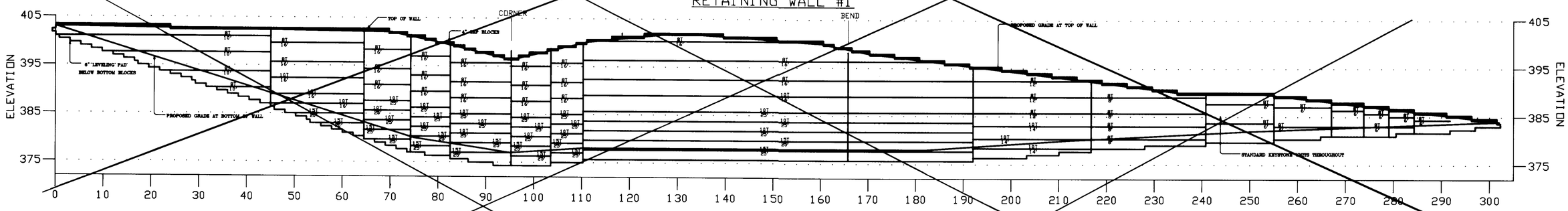
RETAINING WALL DETAILS
WAL*MART STORE #2412 – ELLICOTT CITY, MD.
WAL*MART STORES, INC

RAC	JRC	08-30-95	NTS	B1177	24 OF 25

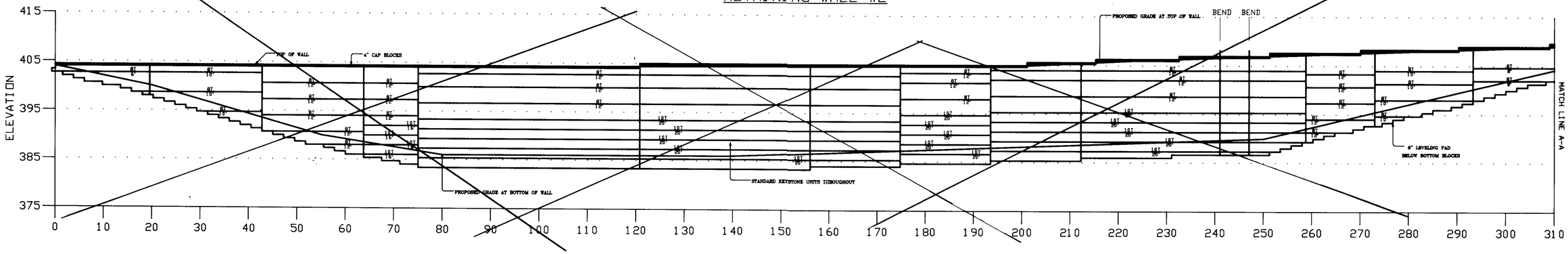
SDP-96-01

ECS LTD

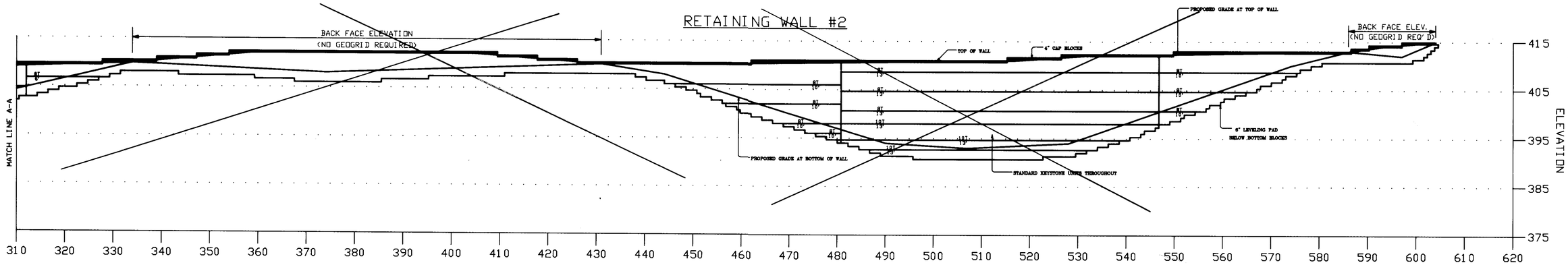
RETAINING WALL #1



RETAINING WALL #2



RETAINING WALL #2



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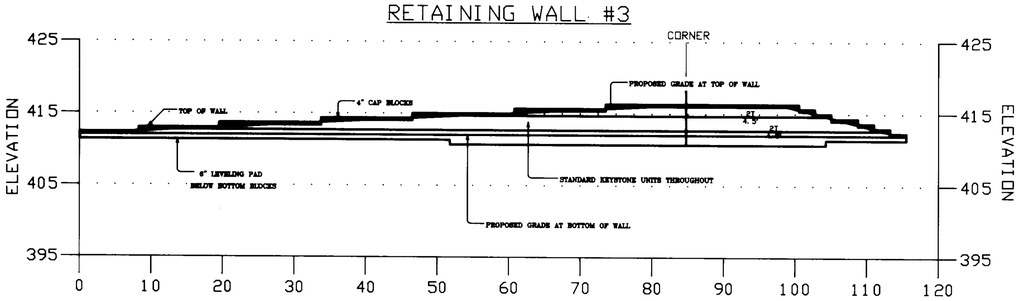


I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION.

SIGNATURE OF DEVELOPER _____ DATE _____

I 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 COUNTY SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION

DISTRICT

SIGNATURE OF ENGINEER _____ DATE _____

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

HOWARD SOIL CONSERVATION DISTRICT _____ 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

U.S. SOIL CONSERVATION SERVICE _____ DATE _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24

HOWARD COUNTY, MARYLAND

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

REVISIONS
10-11-95
VOIDS RETAINING WALLS 1 & 2 7/9/96

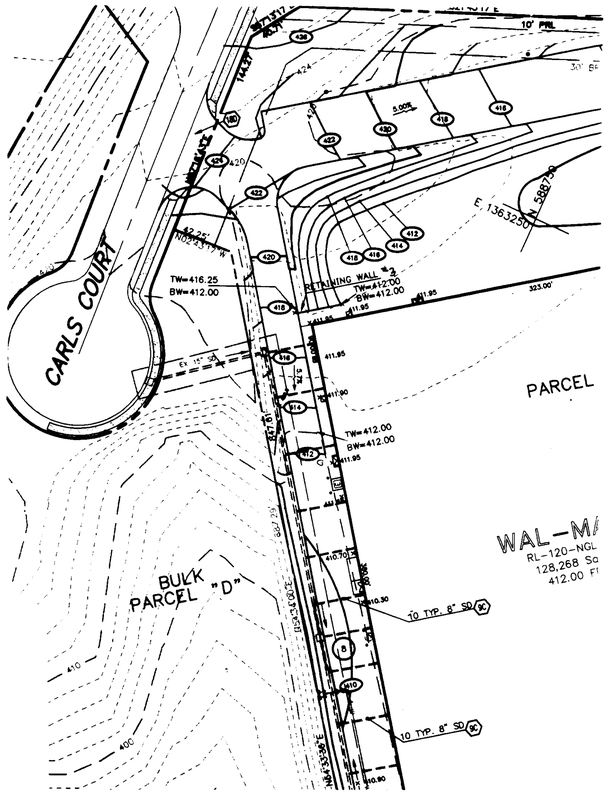
ECS LTD
ENGINEERING CONSULTING SERVICES, LTD

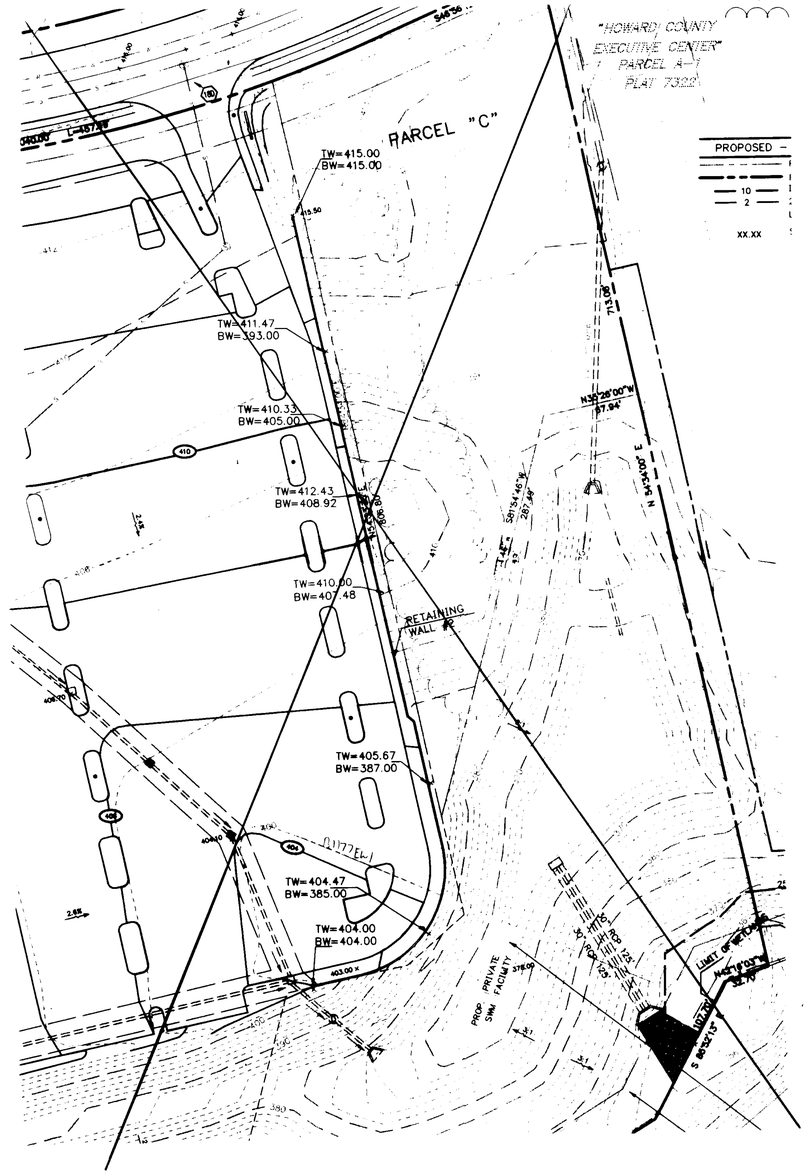
RETAINING WALL PROFILES
WAL*MART STORE #2412 – ELLICOTT CITY, MD.
WAL*MART STORES, INC.

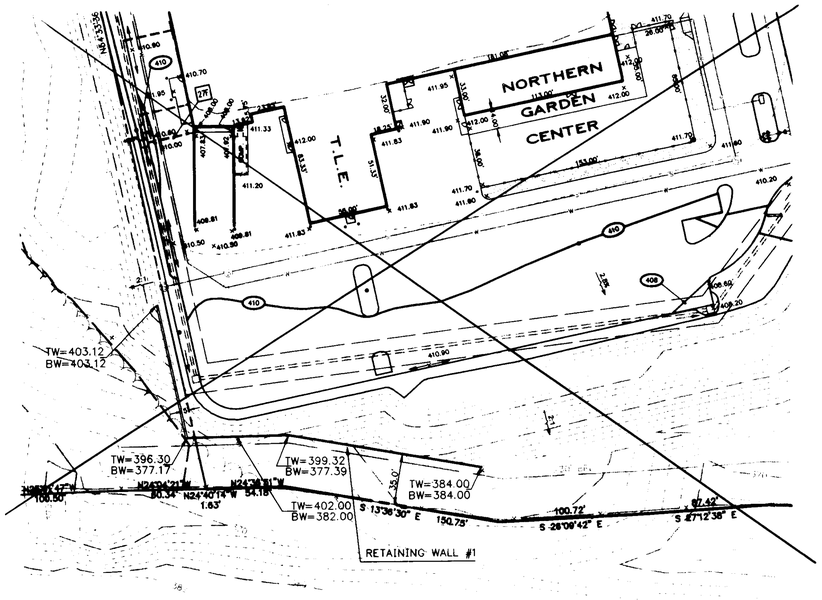
RAC	JRC	08-30-95	1"=10'	B1177	23 OF 25

SDP-96-01

ECS LTD







DESIGN PARAMETERS

WALL GEOMETRY

Exposed Height:	See Profiles
Back Batter of Face (deg):	7.1°
Minimum Block Embedment:	See Profiles
Maximum Backfill Slope:	2H:1V (=26.6°)

REINFORCED FILL ZONE

Density of Backfill (pcf):	125
Phi (deg):	32°
Cohesion (psf):	0

RETAINED ZONE

Density (pcf):	125
Phi (deg):	32°
Cohesion (psf):	25

FOUNDATION SOIL

Density (pcf):	125
Phi (deg):	32°
Cohesion (psf):	25
Allowable Bearing Pressure (psf):	0'<H<10': 2,000 10'<H<20': 4,000 20'<H<25': 5,000 Where "H" is the total wall height from leveling pad to top of wall
Leveling Pad:	Crushed Stone (AASHTO #57), or Graded Aggregate (MDOT CR-467)

SURCHARGE LOADS

Surcharge (psf):	Unpaved Areas: 0 Parking Stalls: 125 Truck Lanes: 250

MODULAR BLOCK DATA

Modular Block System:	Keystone Blocks and Caps
Block Type:	Keystone Standard Units (Straight Face), with 4" Cap Units
Unit Fill:	Crushed Stone (AASHTO # 57)

GEOGRID DATA

Geogrid Type:	Mirafi (or approved equivalent; See Profiles)
Coverage of Geogrids (%):	100
Construction Damage Based on:	Sand, Silt, or Clay

FACTORS OF SAFETY

F.S. against Sliding:	1.5
F.S. against Overturning:	2.0
F.S. against Bearing Capacity Failure	3.0
F.S. against Global Instability:	1.5
F.S. against Uncertainties:	1.5
F.S. against Geogrid Pullout:	1.5

NOTE: The design is based on a local borrow source with a Unified Soil Classification System Designation of SM or better for the Reinforced Backfill and a soil friction angle of 32° or better.

NOTE: Site Plan Taken From CEI Engineering Associates, Inc. Grading Plan, Latest Revision Dated 7-21-95, Scale: 1" = 50'

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
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HOWARD SOIL CONSERVATION DISTRICT — DATE

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U.S. SOIL CONSERVATION SERVICE — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

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CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

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ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24

REVISIONS
10-11-95
VOIDS RETAINING WALLS 1 & 2 7/21/86

ECS LTD
ENGINEERING CONSULTING SERVICES, LTD

RETAINING WALL SITE PLANS

WAL*MART STORE #2412 – ELLICOTT CITY, MD.

WAL*MART STORES, INC.

RAC	JRC	08-30-95	NTS	B1177	22 OF 25

SDP-96-01

PLANTING SPECIFICATIONS

SITE PREPARATION FOR PLANTING

a. Undisturbed Sites: Soils disturbance should be limited to the planting field for each plant. **Planting field** is a new term that reflects a change in recommended planting specifications. Research has shown that root systems of trees planted in the traditional holes with amended soils are likely to remain confined to the amended soil area. Such trees have lower survival rates. A planting field of radius = 5 x diameter of the root ball is recommended.

On steep slopes or erodible soils, soil disturbance should be limited to the planting field whose radius is equal to 2.5 diameter of the root ball.

b. Disturbed Areas: Soils should be treated by incorporating natural mulch within the top 12 inches or by amendments as determined by a soils analysis. Soil amendments, by definition, include modifications of soils to improve such structural characteristics as bulk density or porosity. On development sites, the common use of fill materials may increase the need for such amendments. Natural amendments such as organic mulch or leaf mold compost are preferred.

When fill material is used at the planting site, it should be clean fill topped with 12 inches of native soil. Stockpiling of native top soils must be done in such a way that the height of the pile does not damage the seed bank.

c. Planting Period: Planting windows are the time during the year when, depending on the size stock being used, planting windows differ. Recommended planting windows are shown in Exhibit M - 1.

d. Plant Material Storage: Planting should occur within 24 hours of delivery to the site. Plant materials left unplanted for more than 24 hours should be protected from direct sun and weather and kept moist. Bare root stock unplanted for more than 24 hours should be heeled in as shown in Exhibit M - 2. Nursery stock should be planted within 2 weeks. On-site or local transplanted materials should be stored in tree banks if unplanted for more than 24 hours, following the example in Exhibit M -3.

e. On Site Inspection: Planting stock should be inspected prior to planting. Plants not conforming to standard nurseryman specifications for size, form, vigor, roots, trunk wounds, insects and disease should be replaced.

PLANT INSTALLATION

a. Seedlings/Whips: Small stock, such as seedlings and whips, and ball and burlap stock up to 2" caliper, can be planted by manual methods of planting using shovels, planting or dibble bars, and mattocks (See Exhibit M - 4). For large areas, planting machines are occasionally used but have the drawback of creating linear, plantation-type forests.

Extreme care should be taken to insure retained moisture of the roots. When planting seedlings and whips, a moist carrying container should be used to prevent desiccation (See Exhibit M - 5). For greater protection, seedlings may be planted with tree shelters.

Areas planted with seedlings or whips should be mulched after planting as shown in Exhibit M - 6.

GENERAL GUIDANCE FOR MAINTENANCE OF PLANTED AREAS

a. Watering: A watering plan should only be implemented to compensate for deficient rainfall patterns. Trees can die from too much water as well as too little. Newly planted trees may need water as much as once a week for the entire first growing season. The next two years, in contrast, may require watering only a few times a year (one a month during July and August). After that, trees should only need water in severe droughts. Bare root transplants, if sufficiently watered during planting, may not need water for almost 2-4 weeks after growth begins. Balled and burlap material may require more frequent watering.

Soil and Watering: Soil texture influences the downward flow of water. Soils with more clay tend to retain more water and can be watered less often; soils with more sand drain more quickly and need to be watered more often. For examples of on-site evaluation recommendations. If the soil was well prepared before planting, there should be few drainage problems. Restricted downward penetration indicates the soil may have been compacted during construction and not aerated before planting, or there may be a clay hardpan.

How to Water: The best way to water is deeply and slowly using a regular hose, a soaker hose, or drip irrigation. For larger trees, start by watering the root ball thoroughly. The watered area shall be enlarged to include the whole root zone as the tree becomes more established. Mulching around the base of newly transplanted trees prevents roots from drying too quickly while still providing air movement to the roots.

b. Fertilizing: Fertilizing is the chemical modification of soils to correct for a specific nutrient deficiency. These deficiencies are most effectively identified in a laboratory soils analysis. Nothing should be added to the soil without first testing to determine any nutrient needs.

What Nutrients to Apply: Trees depend on three major nutrients, nitrogen, phosphorus, and potassium and a host of other minor ones (or micronutrients) such as calcium, magnesium and iron. In most soils, most of the micronutrients are available in abundance. Of the major nutrients, nitrogen is usually the limiting one.

When to Fertilize: Even when soils are deficient in nitrogen, fertilizing within the first growing season after planting is not recommended. Too much nitrogen may cause a spurt of canopy growth which the roots cannot support. It is, therefore, best to wait until after the end of the first growing season, either in the late fall or early spring.

What Type of Fertilizer: Organic fertilizers are preferred to synthetic fertilizers. Bone meal or seaweed based products are available commercially. Organic fertilizers have a slow-release effect that can supply nutrients to the plant as needed while minimizing the risk of excess nutrients entering the forest system and the water supply. Some synthetic fertilizers can mimic this slow-release action and may be appropriate for use.

c. Control of Competing Vegetation: Unfortunately, good sites for reforestation and afforestation are generally good sites for unwanted vegetation as well. Unwanted vegetation growing near newly planted trees can take over the site. The need to control this problem depends on the ability of the planted material to withstand the intrusion. Smaller trees may need more care, although some seedlings survive with the overgrowth and will shade it out as the trees grow. As a preventative measure, consider the potential for growth of invasive species while choosing a reforestation or afforestation area.

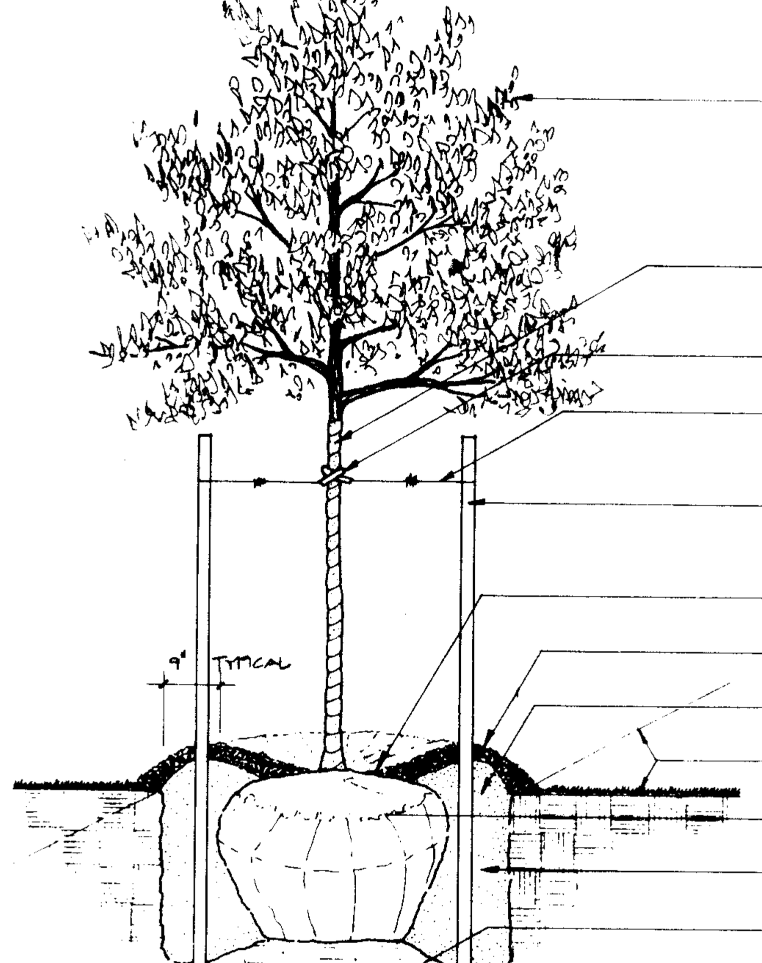
Mulch is one of the best weed deterrents. Spread a 2" to 4" layer of mulch over the root area of the newly planted trees avoiding direct contact with the trunk, a prime spot for fungal growth. (Mulch also helps maintain the soil moisture level and may provide a buffer for any equipment such as mowers that may be used to maintain the area.) Mulching and manual control of competing vegetation is more compatible with the long term forest health than the use of herbicides.

d. Protection: Pests, Diseases and Mechanical Injury.

Integrated Pest Management (IPM) is one of the most effective and safest approaches for maintaining a healthy forest. IPM basics include proper species selection for the site, good pruning, mulching and fertilizing practices, regular monitoring, and proper timing of necessary sprays. Good cultural practices will minimize the amount of spraying. Professional IPM programs have reduced pesticide use by 90%. Some aspects of a full IPM program include:

1) Elimination of some low vegetation before planting to help control the rodent population which thrives in brushy environments.
2) Use of tree shelters to protect the trunks of seedlings or whips from animal damage. The shelters act as mini-greenhouses to speed growth. (These trees need more water than those planted without tree shelters, however.)
3) Mulching around the trees to minimize trunk damage from mowers. Wounds provide an entry way for pests.
4) Pruning dead and diseased branches with a clean cut to prevent establishment or spreading of disease.

Sunscald is a problem for thin barked young trees. Tree wrap was commonly used to protect trees from sunscald but is no longer recommended due to the increased opportunities for insect infestation and disease. An alternative to wrapping is to allow small non-competitive branches, commonly pruned during or before planting, to grow on the sunny side of the trunk to help shade the trunk.

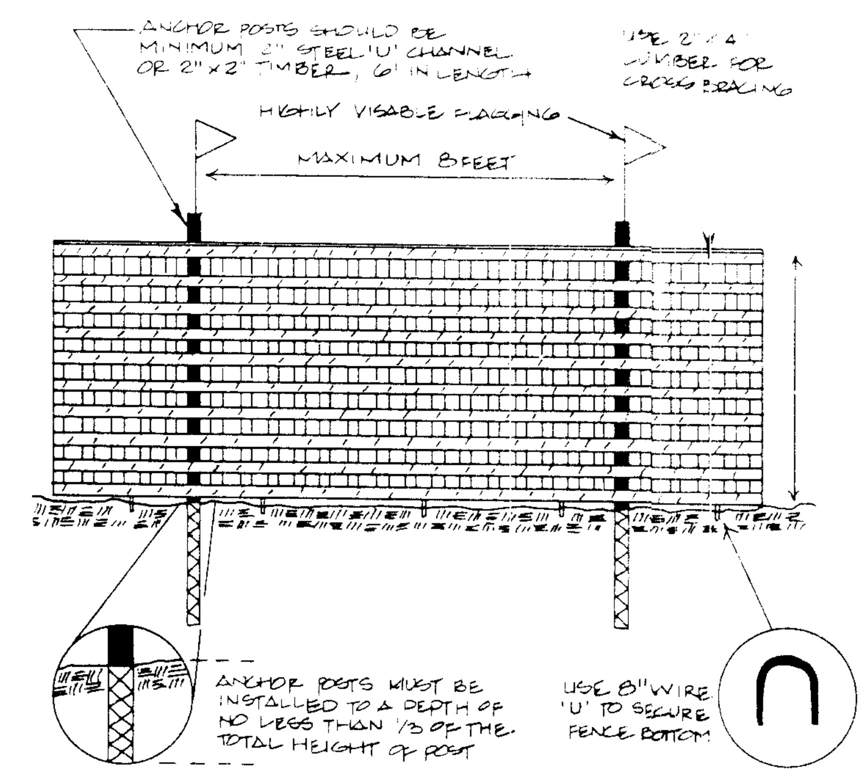


DECIDUOUS TREE
(2 1/2"-3" CAL. AND SMALLER) PLANTING DETAIL
NOT TO SCALE

FOREST RETENTION DETAILS

TREE PROTECTION DEVICE

Figure J-4 **Blaze Orange Plastic Mesh**



Notes
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.

FOREST RETENTION SIGNAGE

Min 11" × Min 15"

FOREST RETENTION AREA

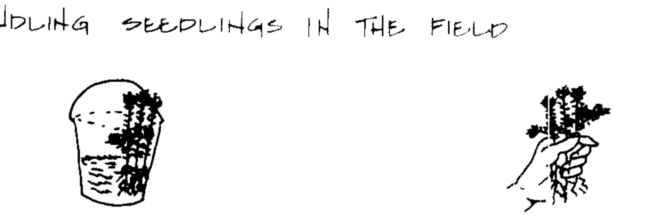
MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS
PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

ATTACH SIGNAGE SECURELY TO TREE PROTECTION DEVICE POSTS @ ±200' O.C. SIGNS SHALL BE BRIGHT RED OR ORANGE IN COLOR WITH A CONTRASTING COLOR LETTERING

REFORESTATION DETAILS

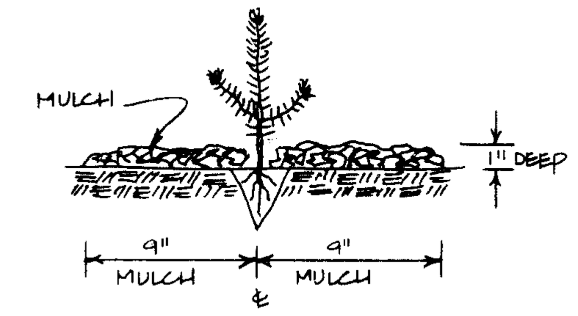
HANDLING SEEDLINGS IN THE FIELD



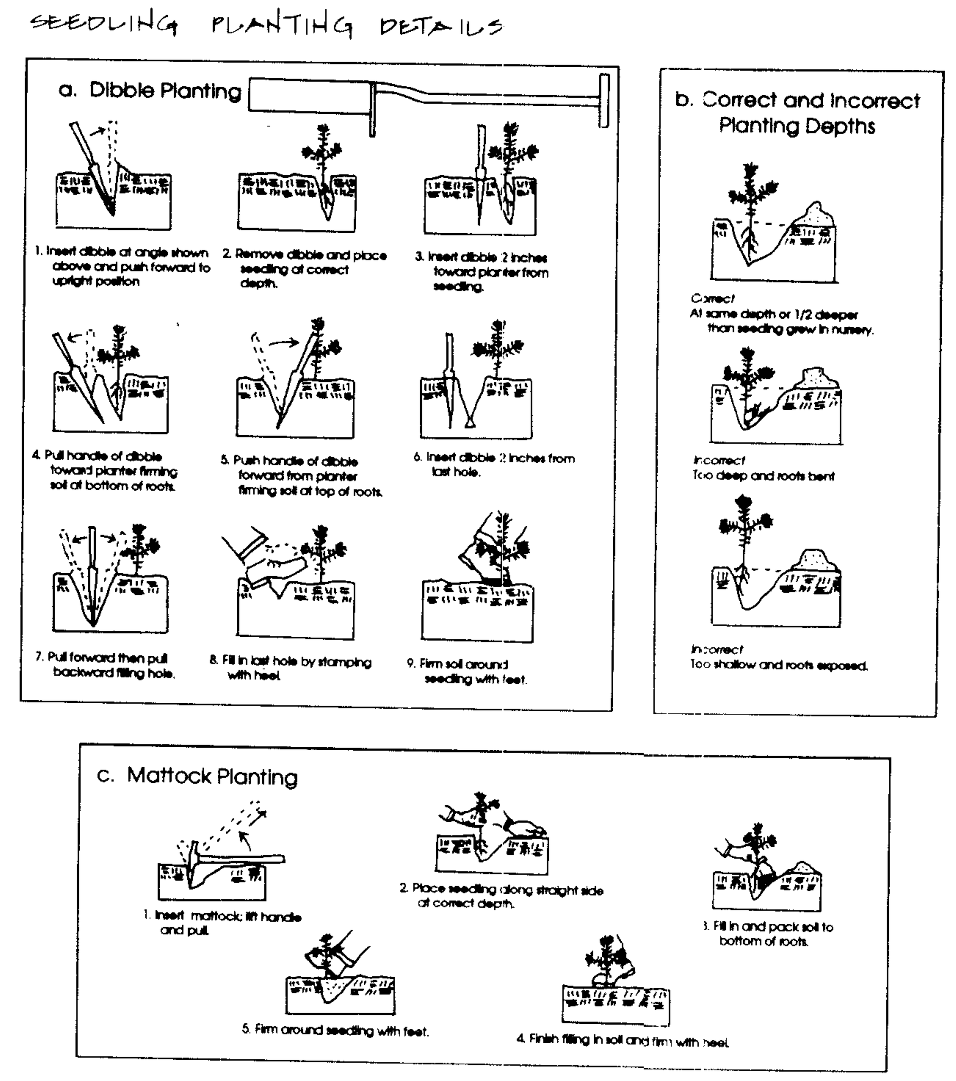
Correct
In bucket with sufficient water to cover roots

Incorrect
In hand: roots dry out.

SEEDLING MULCHING DETAIL



SEEDLING PLANTING DETAILS



REFORESTATION SIGNAGE

Min 11" × Min 15"

Forest Conservation Area

REFORESTATION PROJECT

Trees for Your Future

ATTACH SIGNAGE TO STEEL "U" CHANNEL POSTS. LOCATE AT PERIPHERY OF REFORESTATION AREAS @ ±200' O.C. SIGNS SHALL BE BRIGHT RED OR ORANGE WITH A CONTRASTING COLOR LETTERING.

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

TAX MAP 17 & 24

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 4/1/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	DATE 4/3/96
DIRECTOR	DATE 4/3/96

FOREST CONSERVATION WORKSHEET

ACRES (1/10 acre)

I. BASIC SITE DATA

GROSS SITE AREA	66.35 AC.
AREA WITHIN 100 YEAR FLOODPLAIN	0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0
NET TRACT AREA	66.35 AC.
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/I/O, I) C/I/O	

II. INFORMATION FOR CALCULATIONS

A.	NET TRACT AREA	66.35 AC.
B.	REFORESTATION THRESHOLD (15 % x A)	9.95
C.	AFFORESTATION MINIMUM (15 % x A)	9.95
D.	EXISTING FOREST ON NET TRACT AREA	14.1
E.	FOREST AREAS TO BE CLEARED	5.23
F.	FOREST AREAS TO BE RETAINED	8.87 AC.

III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION

1. Reforestation

If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.

GO TO SECTION IV

If existing forests exceed the afforestation minimum (if D equals or is more than C) and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.

2. Afforestation ———— N.A.

If existing forest area are less than the afforestation minimum (if D is less than C), afforestation requirements apply.

GO TO SECTION V

IV. REFORESTATION CALCULATIONS

A.	NET TRACT AREA	66.35 AC.
B.	REFORESTATION THRESHOLD (15 % x A)	9.95
D.	EXISTING FOREST ON NET TRACT AREA	14.1
E.	FOREST AREAS TO BE CLEARED	5.23
F.	FOREST AREAS TO BE RETAINED	8.87
G.	FOREST AREAS CLEARED **ABOVE** REFORESTATION THRESHOLD (D - F, if F equals or is greater than B, Alternate 1) (D - B, if F is less than B, Alternate 2)	4.15
H.	FOREST AREAS CLEARED **BELOW** REFORESTATION THRESHOLD (B - F, if applicable)	1.08
I.	FOREST AREAS RETAINED **ABOVE** REFORESTATION THRESHOLD (F - B, Retention Credit, if applicable)	0

Select the alternative that applies:

1. Clearing above the threshold only

If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:

REFORESTATION FOR CLEARING ABOVE THRESHOLD G x 1/4	N.A.
CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD I = Retention Credit	N.A.
TOTAL REFORESTATION REQUIRED (G x 1/4) - I	N.A.

If the total reforestation requirement is equal to or less than 0, no reforestation is required.

2. Clearing below the threshold

If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply:

REFORESTATION FOR CLEARING ABOVE THRESHOLD G x 1/4	1.04
REFORESTATION FOR CLEARING BELOW THRESHOLD H x 2	2.16
TOTAL REFORESTATION REQUIRED (G x 1/4) + (H x 2)	3.20 AC.

Since clearing occurs below the threshold, no forest retention credit is possible.

A TOTAL OF 1.5 ACRES OF REFORESTATION HAS BEEN INDICATED ON THE PLAN (SEE SHEET 1). THIS PLANTING SHALL BE 1½" CAL. NURSERY STOCK, PLANTED AT A DENSITY OF 150 PER ACRE, APPROXIMATELY 8' O.C. - SEE DETAILS AND PLANTING SPECIFICATIONS.

SEEDLINGS SHALL BE COMPOSED OF THE FOLLOWING SPECIES.

LOW LYING WETLAND AREAS AND WETLAND BUFFERS:

± 40%	RED MAPLE	ACER RUBRUM
± 30%	BLACK GUM	NYSSA SYLVATICA
± 30%	SYCAMORE	PLATANUS OCCIDENTALIS

ALL OTHER AREAS:

± 30%	TULIP TREE	LIRIODENDRON TULIPIFERA
± 20%	RED MAPLE	ACER RUBRUM
± 20%	BLACK GUM	NYSSA SYLVATICA
± 10%	NORTHERN RED OAK	QUERCUS RUBRA

3/19/96

THE LAND PLANNING & DESIGN GROUP

SCALE AS NOTED DATE 2.24.95

REVISIONS: 5.26.95 A.E./M.V. REVISE GROSS AREA; 7/31/95 Rev. per ...; 11.7.95 SUBMITTED FOR SIGNATURES

FOREST CONSERVATION PLAN
ELLICOTT CITY WAL-MART
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SHEET: 21 OF 25

SDP-96-01

HOWARD COUNTY
MEDICAL RESEARCH PARK
A SUBDIVISION OF PARCEL "C"
BON SECOURS HOWARD COUNTY HEALTH PARK
PLAT NO. 5677
PARCEL G12

TOWN & COUNTRY BLVD.

NORTH RIDGE ROAD

WILDER SUBDIVISION
PARCELS A-2, A-3, A-4
PLAT 7020
ZONED RA-15

LEONORA K. HOENES
LIBER 1107 FOLIO 204

THE AMERICAN OIL COMPANY
L 976 F 661
ZONED B-2

BULK PARCEL "F"
AREA-10.39 AC ±

ENVELOPE OF FUTURE DEVELOPMENT

WILDER BUILDING CORP.
"HOENES PROPERTY PARCEL C"
TM 17 PARCEL 711
PLAT NO 7047
ZONED RA-15

BULK PARCEL E
AREA-1.30 AC ±

ENVELOPE OF FUTURE DEVELOPMENT

EX. BUILDING

EX. NORTH RIDGE ROAD

BALTIMORE NATIONAL PIKE

SEE LANDSCAPE PLAN FOR PLANTING DETAILS

MATCH LINE

SEE THIS SHEET

SCALE 1"=100'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

3/19/96

WILDER BUILDING CORP.
TM 17 PARCEL 711
"HOENES PROPERTY PARCEL D"
PLAT NO 5410
ZONED RA-15

ENVELOPE OF FUTURE DEVELOPMENT

AREA OF FOREST COVER TO BE REMOVED 3.66 AC ±

ENVELOPE OF FUTURE DEVELOPMENT

AREA OF EXISTING WOODS TO REMAIN 8.63 AC ±

PARCEL 'B'
17.0 AC ±

ROAD

ENVELOPE OF FUTURE DEVELOPMENT

AREA-0.48 AC ±

PARCEL 'C'
3.0 AC ±

AREA-0.71 AC ±

EXISTING BUILDING NO. 1 THREE STORY W/GARAGE

EXISTING PARCEL 'A-1'
PLAT 7092
(NOTE: PROPOSED WORK UNDER SDP 87-182 IS NOT PART OF THIS SUBDIVISION)

AREA OF EXISTING WOODS TO REMAIN 0.24 AC ±

EX. SWM FACILITY

EX. DRAINAGE & UTILITY EASEMENT PLAT 7092

APPROXIMATE US WETLANDS BUFFER

APPROXIMATE LIMIT OF WETLANDS

U.S. ROUTE 40
(SEE RDA PLATS 5670 & 5672)

ROAD IMPROVEMENT PLANS FOR THE INTERSECTION OF NORTH RIDGE ROAD AND U.S. ROUTE 40 HAVE BEEN PREPARED BY FOX & ASSOCIATES AND SUBMITTED TO THE SHA FOR REVIEW AND APPROVAL.

U.S. ROUTE 29
(VEHICULAR INGRESS AND EGRESS IS RESTRICTED)

COLUMBIA PIKE
(SEE RDA PLATS 5670 & 5672)

NOTES:

- BASE INFORMATION FOR AREAS OTHER THAN THE WAL-MART PROXIMITY, INCLUDING BOUNDARY, TOPOGRAPHICAL INFORMATION, PROPOSED GRADING AND ROAD ALIGNMENTS, AND ADJACENT USES, PROVIDED BY R.M. MOCHI GROUP, P.C.
- BASE INFORMATION FOR THE WAL-MART PROXIMITY PROVIDED BY C.E.C. ENGINEERING ASSOCIATES, INC.
- THIS PLAN FOR FOREST CONSERVATION PURPOSES ONLY.

LANDSCAPE BUFFERS IN THIS AREA SEE LANDSCAPE PLANS PREPARED BY C.E.C. ENGINEERING ASSOCIATES, INC.

LEGEND

- FOREST COVER REMAINING
- FOREST COVER TO BE REMOVED
- PROPOSED RE-FORESTATION
- LOCATION FOR TREE PROTECTION DEVICE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
5068 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21043
(410) 465-2361

TAX MAP 17 & 24

ELLICOTT CITY WAL-MART
FOREST CONSERVATION PLAN

LPDG

20 25

SDP-96-01

N

0 100' 150' 200'
SCALE IN FEET
1"= 100'

KEY

SOIL BORINGS BY ECS, LTD

SOIL BORINGS BY ATEC ASSOC., INC.

NOTE:
SOIL BORING LOCATIONS ARE APPROXIMATE. RECENT BORING ARE STILL LOCATED IN THE FIELD, HOWEVER CONTRACTOR SHOULD COMPLETE THEIR OWN BORING IF ADDITIONAL INFORMATION IS REQUIRED FOR MASS GRADING.

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

I 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 PROFFESIONAL 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.

SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

OWNER OF DEVELOPMENT
LEONORA K. HOENES
ELLICOTT CITY, MD 21043
8668 BALTIMORE NATIONAL PIKE
(410) 465-2321

THIS SHEET IS FOR APPROXIMATE LOCATIONS OF SOIL BORINGS ONLY !!!

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21	APPROVED: 6-6-95
SCALE 1"=100'	DATE: SEPTEMBER 6, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

3-1-96

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
WAL-MART STORE #2412

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS

9175 Guilford Road, Suite 306
Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

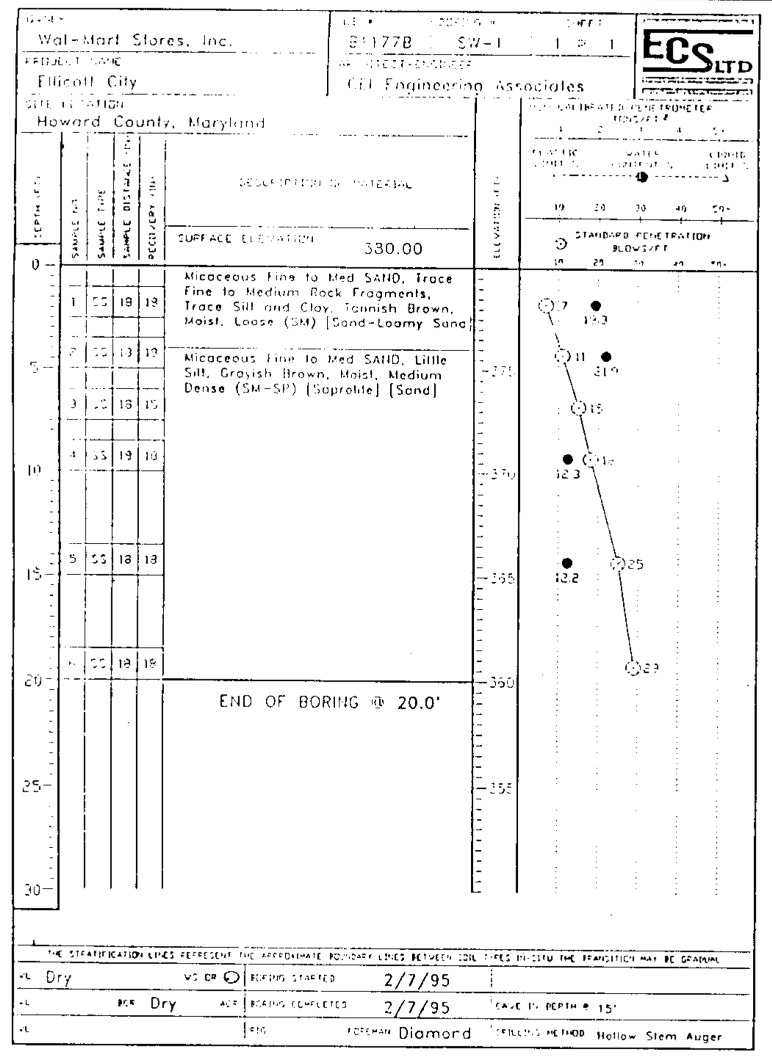
JOB NO.: 9146
DWG NAME: 9146PRJ1

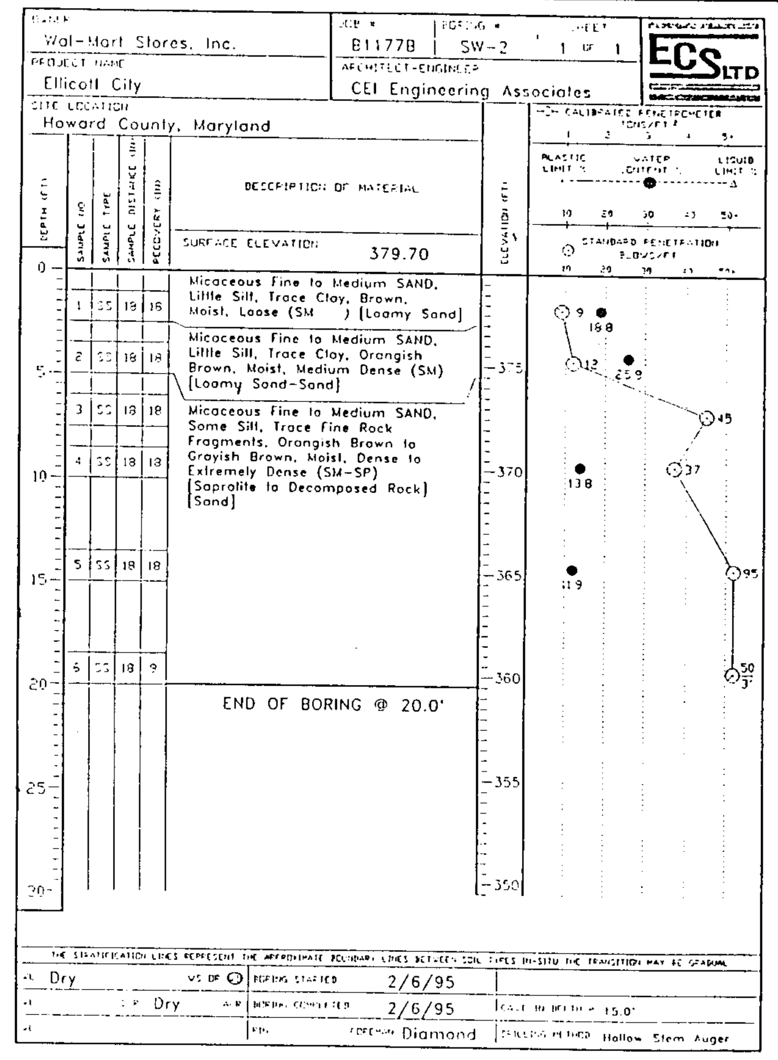
ELLICOTT CITY WAL-MART
SOIL BORING PLAN

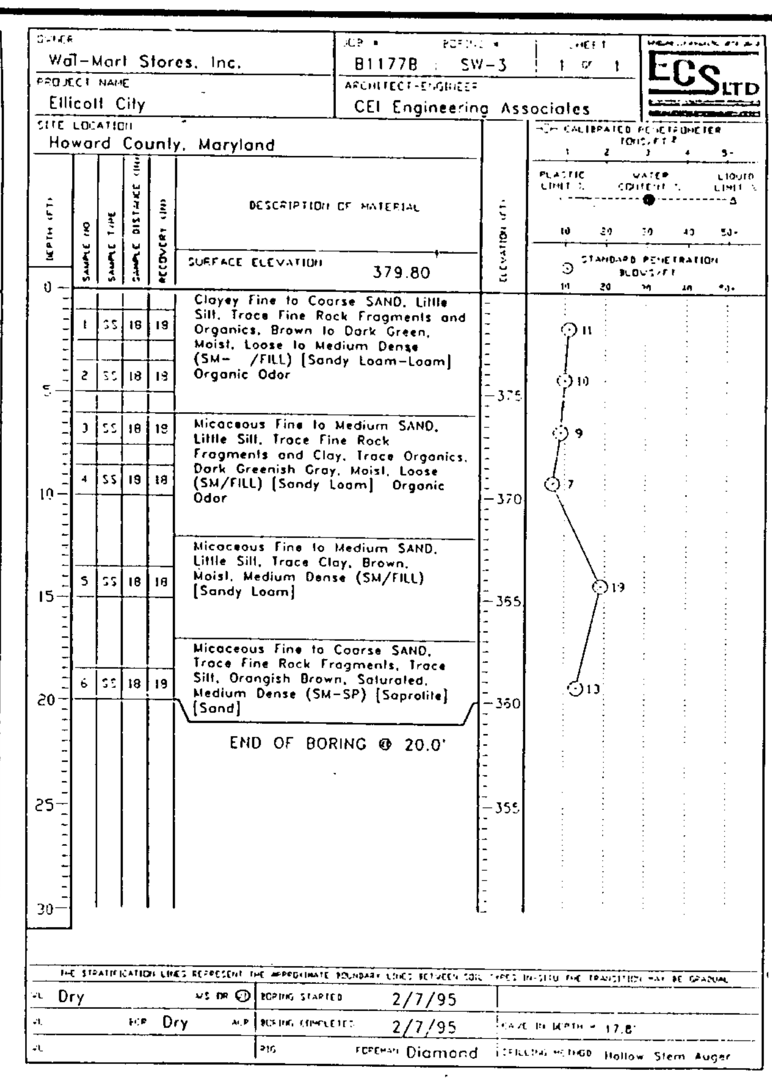
DATE 11-17-95

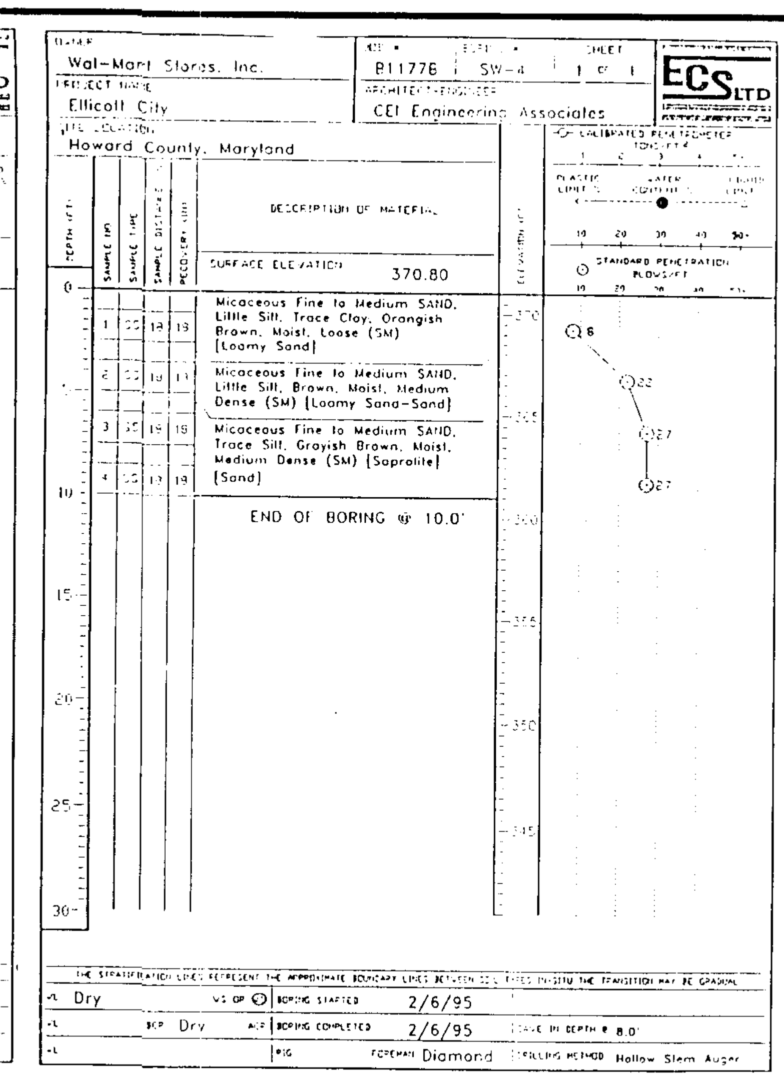
SHEET NO. 19 OF 25

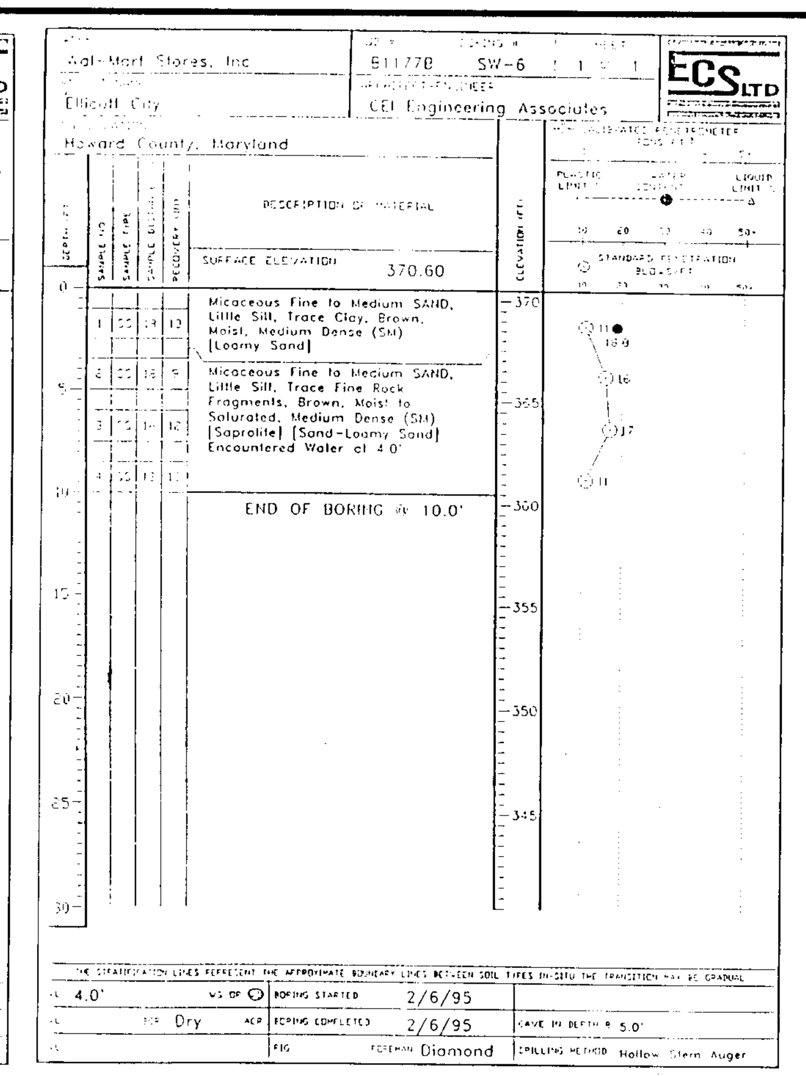
SDP-96-01

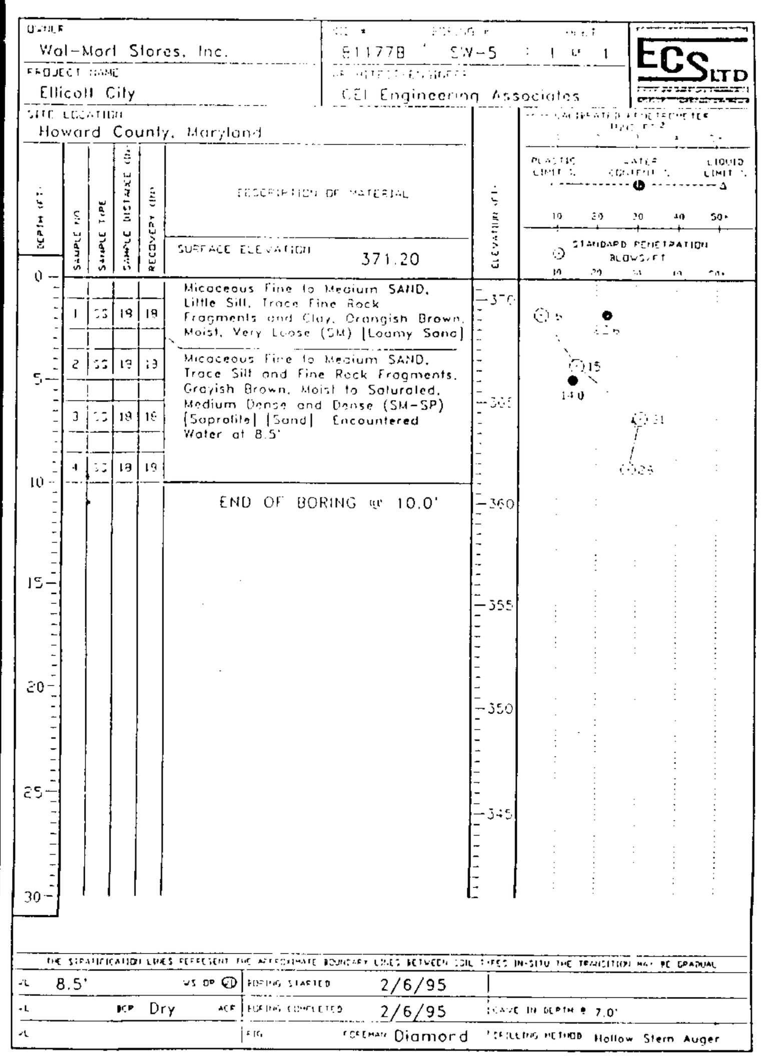




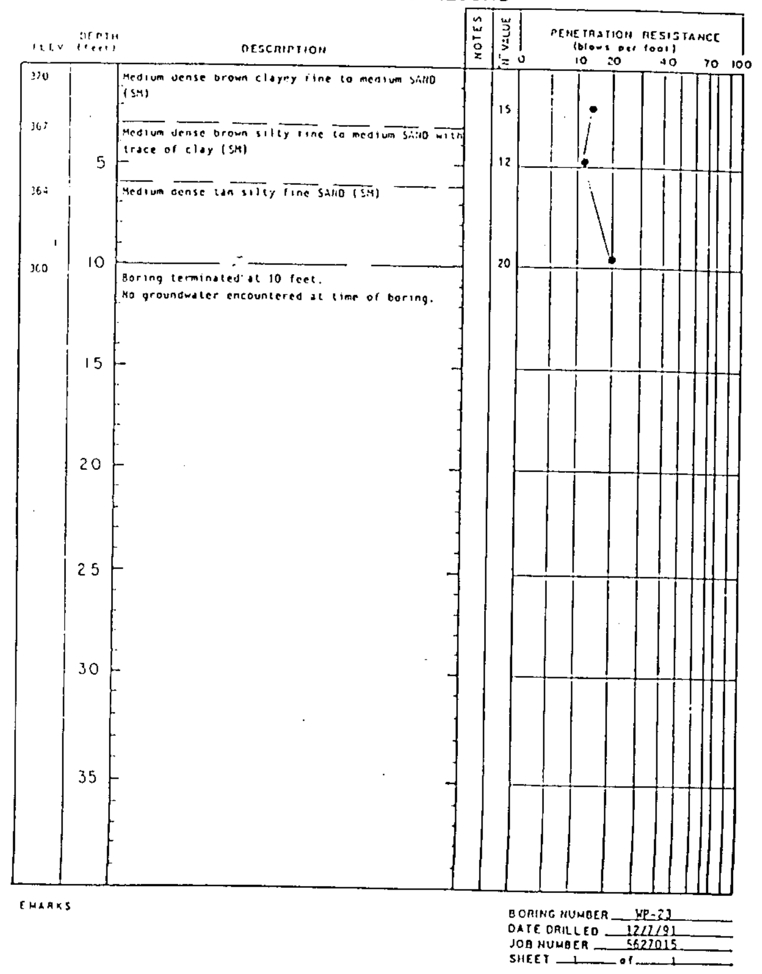








TEST BORING RECORD



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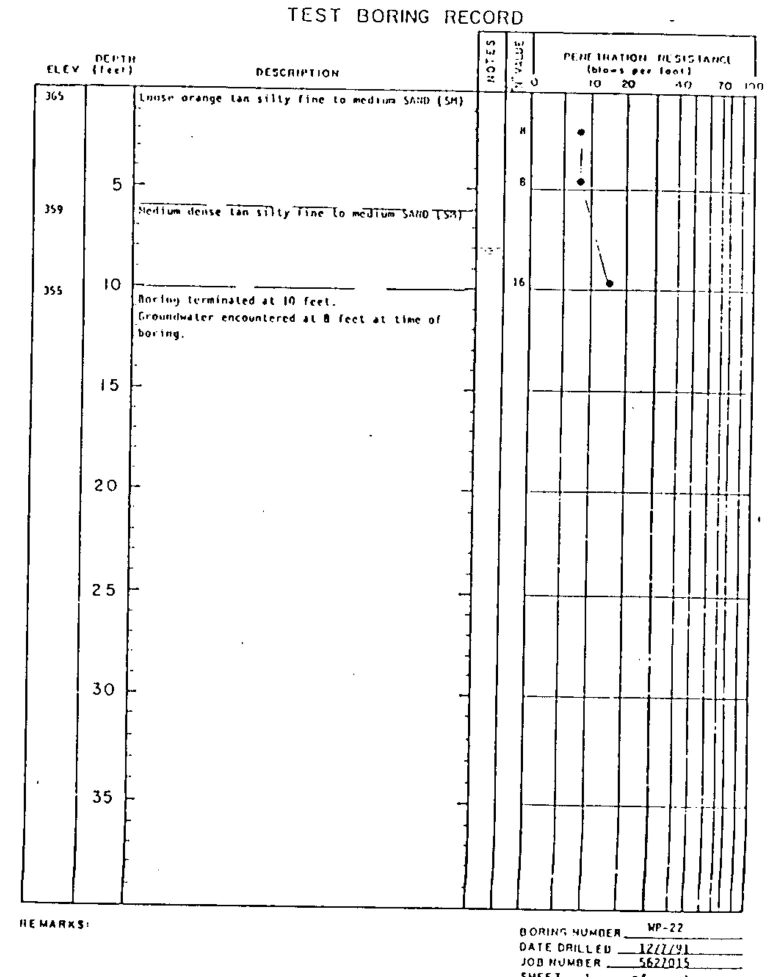

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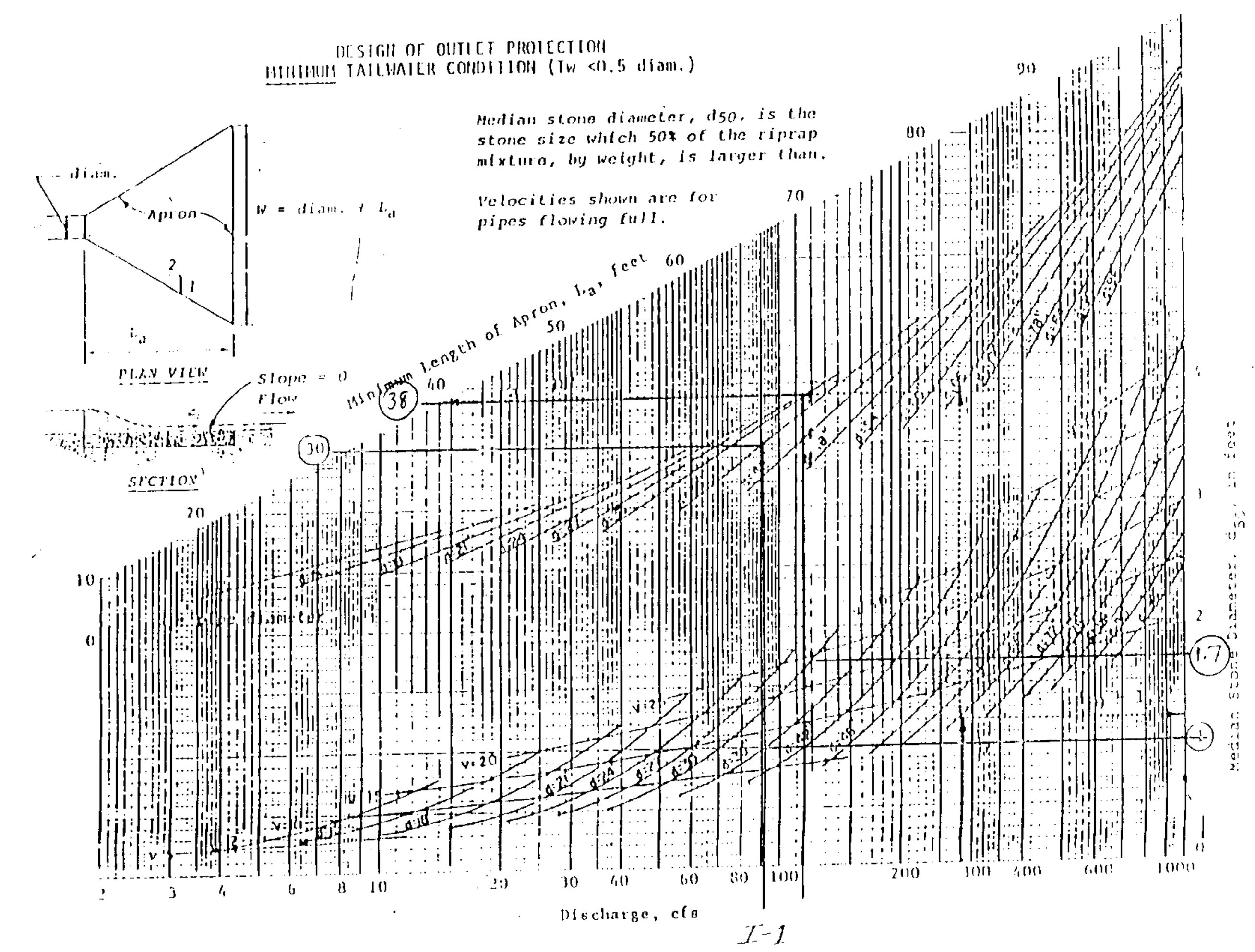


POND CONSTRUCTION SPECIFICATIONS

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.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of 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.

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 50 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 materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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 track of the 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 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.

Where a minimum required density is specified, it 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.

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.

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 concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

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 - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   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. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   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 surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip 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 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 connections 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 band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with 0-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

   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, spongy 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 Designation C-361.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

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 2 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.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

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, spongy 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.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, 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 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth 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 919.12.

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 the 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 accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of 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 locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly 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 Maryland Soil 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 to be employed during the construction process.

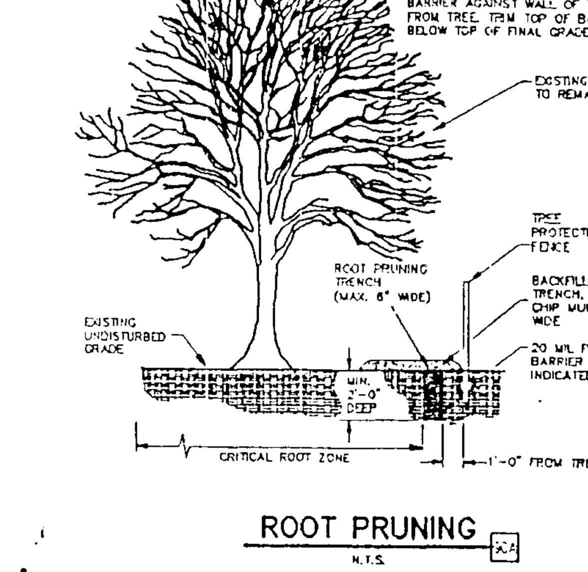
RIP-RAP SCHEDULE

STR. NO.	W FT.	LA FT.	D FT.	PIPE SIZE	Q10 CFS	PIPE VELOCITY	RIP-RAP SIZE d50	CLASS
EW-1	30.00	33.00	2.00	36"	90.8	11.40	1.00	II
EW-17	38.00	40.50	3.50	30"	120.0	25.00	1.70	II

* THE Q SHOWN FOR STRUCTURE 17 IS A 100 YEAR DESIGN FLOW FOR EACH PIPE.

CONTRACTOR TO EMPLOY THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT PREPARED BY ECS, LTD. DATED FEBRUARY 27, 1995, INCLUDING, BUT NOT LIMITED TO:

1. OFF-SITE CLAY MATERIAL WILL BE NEEDED FOR CORE CONSTRUCTION.
2. USE CARE IN ADEQUATELY BENCHING THE NEW CORE INTO THE EXISTING CORE AND PERFORM IT WHILE UNDER GEOTECH SUPERVISION.
3. THE CORE TRENCH MUST BE DEWATERED DURING CONSTRUCTION.
4. A SHEEPSFOOT ROLLER MUST BE USED FOR COMPACTION.



ROOT PRUNING
N.T.S.

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SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

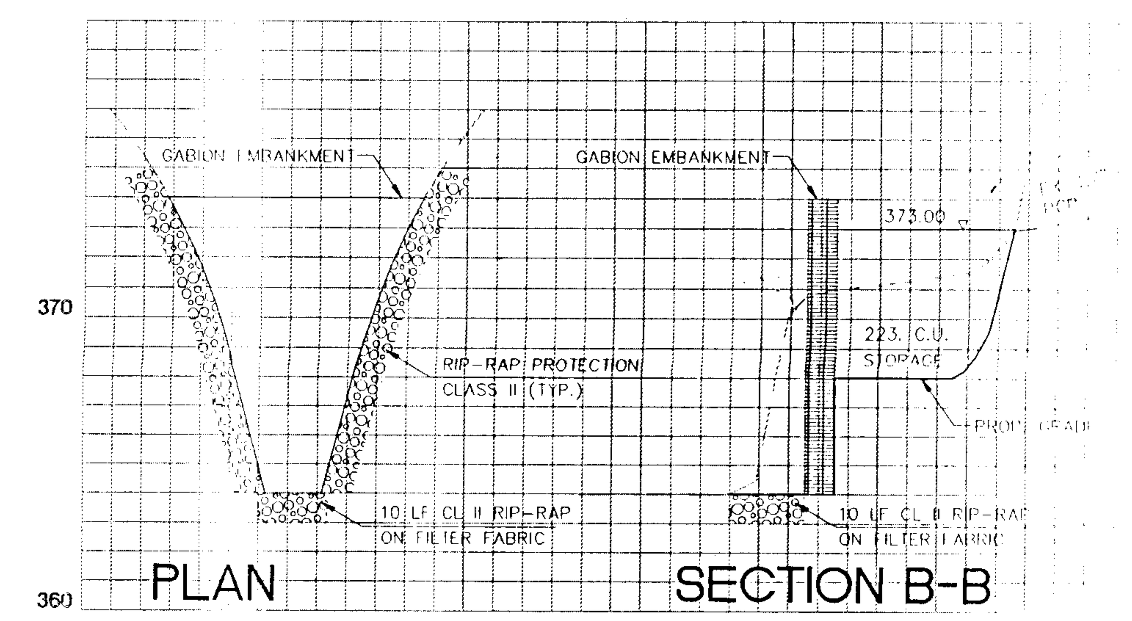
J. D. Warfield/Z
USDA NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96



PROFILE THROUGH FOREBAY EMBANKMENT

SCALE: HORIZ. 1"= 50'
VERT. 1"= 5'

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
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STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
WAL-MART STORE #2412

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149
JOB NO.: 9146
DWG NAME: 9146MISC

ELLICOTT CITY WAL-MART
POND SOIL BORINGS/MISC. DETAILS
DATE 7-5-95
SHEET NO. 18 of 25

SDP-96-01

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4.0 Installation Procedures

4.1 *Concrete Stormceptor® Installation*

The installation of the concrete Stormceptor® should conform in general to state highway or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

Excavation

Excavation for the installation of the Stormceptor® should conform to state highway or local specifications. Topsoil that is removed during the excavation for the Stormceptor® should be stockpiled in designated areas and should not be mixed with subsoil or other materials. Topsoil stockpiles, and the general site preparation for the installation of the Stormceptor® should conform to state highway or local specifications.

The Stormceptor® should not be installed on frozen ground. Excavation should extend a minimum of 12 inches from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

In areas with a high water table, continuous dewatering should be provided to ensure that the excavation is stable and free of water.

Leveling

A 6 to 12 inch layer of granular material (conforming to local or state highway backfill specifications) should be installed, compacted, and leveled at the bottom of the excavation to the proper elevation for the installation of the interceptor base.

Backfilling

Backfill material should conform to state highway or local specifications. Generally, backfill material should be placed in uniform layers not exceeding 12 inches in depth. Each layer should be compacted to 95% of the maximum dry density. *Backfill is not to contain topsoil.

The concrete Stormceptor® is installed in sections in the following sequence :

1. aggregate base
2. base slab
3. treatment chamber section(s)
4. transition slab (if required)
5. by-pass section
6. connect inlet and outlet pipes
7. transition slab
8. maintenance access way
9. frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the Stormceptor® can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be replaced. Once the Stormceptor® has been constructed, the lift holes should be plugged with mortar.

Down Pipe and Riser Pipe

Once the by-pass section has been attached to the treatment chamber the down pipe and riser pipe can be attached. To install these pipes a worker enters the treatment chamber through the central access way in the by-pass section.

STC 900, STC 1200, STC 1800

The inlet pipe (pipe with the tee at the end) is installed by coating the outside of the end of the pipe with quick dry PVC cement and pushing the pipe into the coupling provided on the underside of the by-pass section. The tee must be oriented such that water which enters the treatment chamber is directed tangentially around the inside walls of the chamber.

The outlet riser pipe (straight pipe without the tee) is installed in a similar fashion using the quick dry PVC cement and coupling provided underneath the by-pass section near the downstream pipe.

STC 2400, STC 3600, STC 4800, STC 6000, STC 7200

The inlet pipe (pipe with the tee at the end) is installed by coating the outside of the end of the pipe with lubricant and pushing the pipe into the pressure coupling provided on the underside of the by-pass section. The tee must be oriented such that water which enters the treatment chamber is directed tangentially around the inside walls of the chamber.

The outlet riser pipe (straight pipe without the tee) is installed in a similar fashion using pipe lubricant and a pressure coupling provided underneath the by-pass section near the downstream pipe.

Inlet and Outlet Pipes

Inlet and outlet pipes should be securely set into the by-pass chamber using grout or approved pipe seals so that the structure is watertight. Kor-N-Seal® boots are normally used and installed at the precast concrete plant prior to shipping. The Kor-N-Seal® boots are applicable for pipes with an outside diameter up to 46 inches. Stormceptor Corporation should be notified if the pipe is to be grouted in the field at the time of ordering (i.e. Kor-N-Seal® boots will not be used) since the boots are generally included in the price quotations.

Installation of the Kor-N-Seal® boots should follow the manufacturer's recommendations. As previously mentioned, the boots will already be attached to the Stormceptor® at the concrete plant. Accordingly, the following procedure should be followed to attach the inlet and outlet pipes to the Stormceptor® in the field :

1. Center the pipe in the boot opening
2. Lubricate the outside of the pipe and/or inside of the boot if the pipe outside diameter is the same as the inside diameter of the boot
3. Position the pipe clamp in the groove of the boot with the screw at the top
4. Tighten the pipe clamp screw to 60 inch pounds
5. On minimum outside diameter installations lift the boot such that it contacts the bottom of the pipe while tightening the pipe clamp to ensure even contraction of the rubber.
6. Move the pipe horizontally and/or vertically to bring it to grade

Frame and Cover Installation

Precast concrete adjustment units should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.

DEPARTMENT OF PUBLIC WORKS

James M. Irvin, Director
May 2, 1995

CEI Engineering Associates, Inc.
9175 Guilford Road
Suite 306
Columbia, Maryland 21046

Attn: Ms. Kim Morgan

Re: Walmart - Ellicott City
Waiver Request
P-95-21

Dear Ms. Morgan:

I am writing in reference to your letter dated April 19, 1995 requesting a waiver from Design Manual Volume I, Section 10.2.3.D. prohibiting stormwater management facilities within wetlands or 100-year floodplains, Section 10.2.6.5.a. which requires a 12' level area around the entire facility for maintenance and Section 10.2.6.6.a. which requires that the side slopes of the facility be no steeper than 3:1 anywhere around the facility.

After reviewing the information enclosed with your request, this Department has decided to approve your request for a waiver to Design Manual Volume I, Sections 10.2.6.5.a. and 10.2.6.6.a.

This approval is based principally on:

1. The waiving of the requirements would be in the best interest of the County.
2. The facility is to remain as a privately maintained facility. A detailed Operation & Maintenance Schedule must be included at time of Final Plan submittal outlining the owners maintenance requirements.

3430 Courthouse Drive • Ellicott City, Maryland 21043 • (410) 313-4400 • TDD 313-2323

Walmart - Ellicott City
Waiver Request
Page 2

This department has decided, however, to deny your request for a waiver to Design Manual Volume I, Section 10.2.3.D.

This denial is based principally on that a disturbance of the wetlands buffer requires a waiver of the Subdivision and Land Development Regulations through the Department of Planning and Zoning not a Design Manual Waiver. Any wetlands filling requires permitting through State and Federal regulators and a waiver would not be granted until those permits were appropriated.

Please contact Mr. Charles Dammers, Chief of the Land Development Division at 313-2420 if you have any further questions on this matter.

Very truly yours,

James M. Irvin
Director

JMI/pmt

cc: Ron Lepson
Charles Dammers
Gina Tirinnanzi
Phil Thompson
file (DPW 5)
file (LDD 2)

INSTALLATION INSTRUCTIONS: PRECAST CONCRETE STORMCEPTOR

1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (95% STANDARD PROCTOR DENSITY) AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER. INSTALL SCREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT), IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 8.).

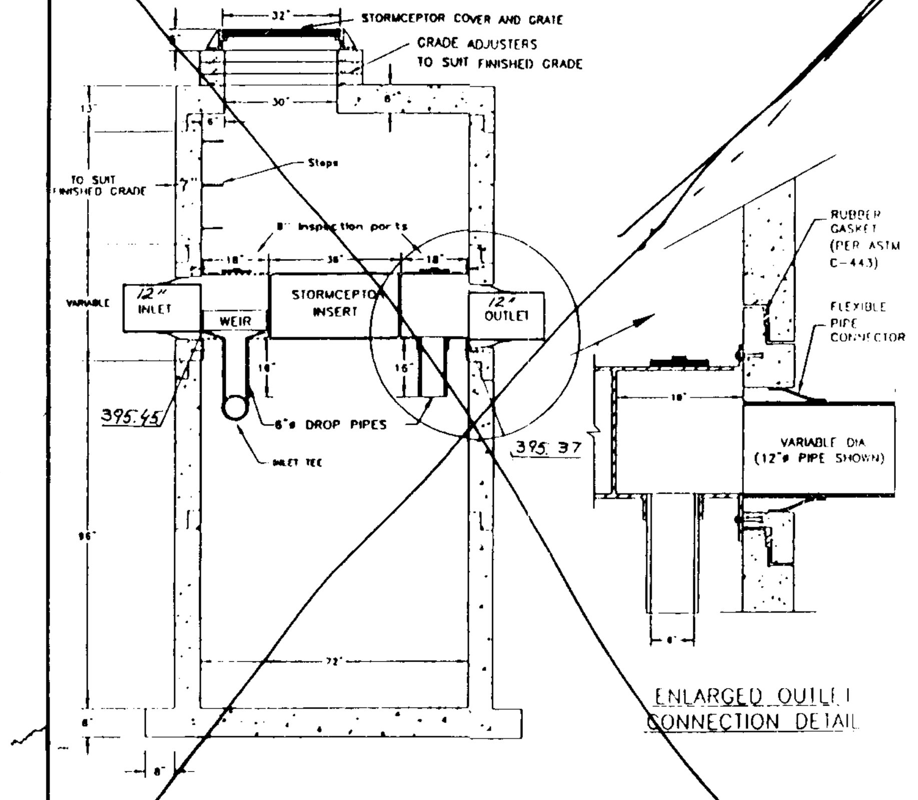
   (FOR STORMCEPTOR MODELS STC-900, STC-1200 AND STC-1800 SKIP STEP 5 AND GO TO STEP 6)
5. INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
7. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE ON REVERSE SIDE OF THESE INSTRUCTIONS.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED IF STEP(S) ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE, FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
10. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
12. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
13. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES : CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.

FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 1-800-762-4703

MAINTENANCE NOTES (WATER QUALITY STRUCTURE WASTE)

1. WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC CLEANING. OWNERS OF THESE FACILITIES WILL HAVE TO CLEAN THEM AS NEEDED.
2. MAINTENANCE OF THESE FACILITIES WILL CONSIST OF CLEANING OUT THE STORMCEPTOR AND DISPOSAL OF THE WASTE AND REPAIR OF THE FACILITY AS NEEDED. PERIODIC INSPECTIONS OF THESE FACILITIES WILL BE MADE BY THE OWNER.
3. THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHALL BE AS FOLLOWS:
   A. ALL LIQUID MATERIAL IN THE STORMCEPTOR SHALL BE PUMPED INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SANITARY DISTRICT DISCHARGE MANHOLE OR BE TAKEN TO AN APPROVED SEWAGE TREATMENT PLANT FOR DISCHARGE.
   B. THE SOLID MATERIAL SHALL BE LANDFILLED IN AN APPROVED SANITARY LANDFILL.
4. THE INLET PIPES AND STRUCTURAL PARTS SHALL BE REPAIRED AS NEEDED.
5. STORMCEPTOR INLET AND OUTLET ASSEMBLY SHALL BE PERIODICALLY INSPECTED. BLOCKAGES SHALL BE REMOVED AND DISPOSED OF AS REQUIRED IN 3B ABOVE.

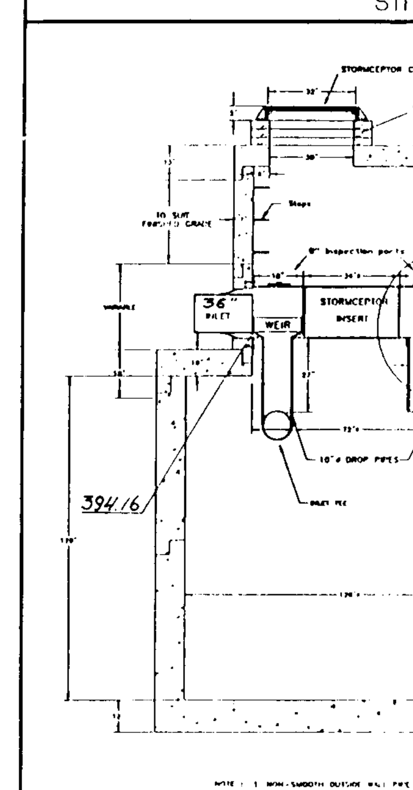
STC 1800 PRECAST CONCRETE STORMCEPTOR
1800 US GALLON CAPACITY
STRUCTURE M 2A



NOTE: 1. NON-SMOOTH OUTSIDE WALL PIPE TO BE GROUTED IN PLACE (NO KOR-N-SEAL BOOTS)
2. RISER SECTION ABOVE THE INSERT TO BE 72" ø FOR A MINIMUM OF 80" OR TO THE GRADE (WHICHEVER IS THE LESSER)
3. COVER TO BE LOCATED ADJACENT TO INLET INSPECTION PORT

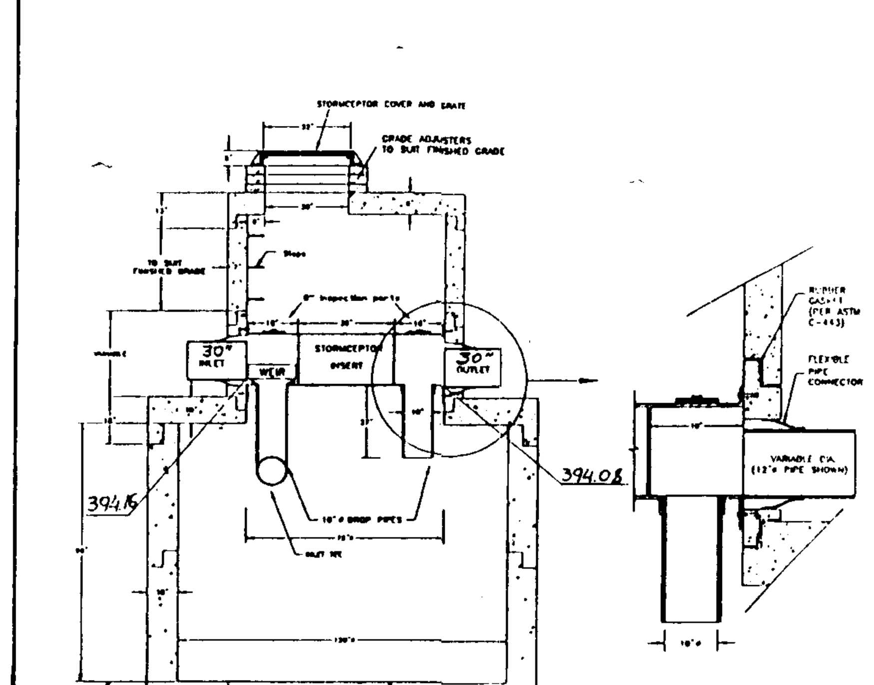
Design Specifications:
1. ASTM C 478
2. BASE WEIGHT = 6.35 TONS

STC 6000 PRECAST CONCRETE STORMCEPTOR
6000 US GALLON CAPACITY
STRUCTURE M-4



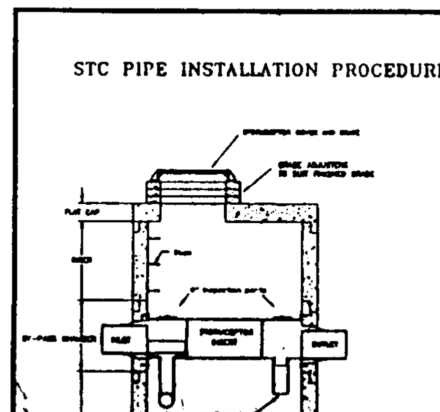
Design Specifications:
1. ASTM C 478
2. BASE WEIGHT = 19.72 TONS

STC 4800 PRECAST CONCRETE STORMCEPTOR
4800 US GALLON CAPACITY
STRUCTURE M-3A



Design Specifications:
1. ASTM C 478
2. BASE WEIGHT = 18.53 TONS

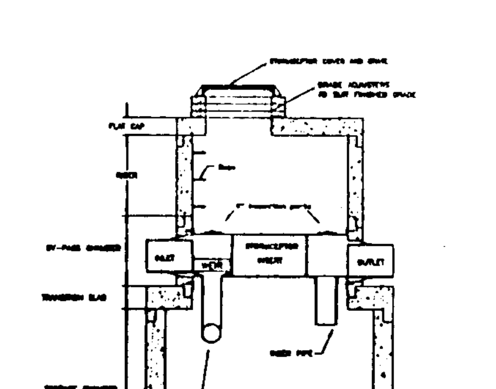
STC PIPE INSTALLATION PROCEDURE



MODELS STC 900, STC 1200, STC 1800

DROP PIPE INSTALLATION

1) Drop pipes MUST NOT be attached to Stormceptor™ nipples until the BY-PASS CHAMBER section has been connected to the installed STORAGE CHAMBER.
2) Install the drop pipe while inside the Storage Chamber. Enter the Storage Chamber via a ladder placed down the Stormceptor™ access hole.
3) The drop pipe with the T-section MUST be connected to the INLET nipple using the supplied PVC cement. Make certain that the orientation of the Tee is correct. (see diagrams)
4) The riser pipe MUST be connected to the OUTLET nipple using the supplied PVC cement.



MODELS STC 2400, STC 3600, STC 4800, STC 6000, STC 7200

DROP PIPE INSTALLATION

1) The drop pipe and the riser pipe MUST NOT be attached to Stormceptor™ couplings until the BY-PASS CHAMBER section has been connected to the installed TRANSITION SLAB.
2) Install the drop pipe and riser pipe while inside the Storage Chamber via a ladder placed down the Stormceptor™ access hole.
3) The drop pipe with the T-section MUST be connected to the INLET gasketed coupling using the supplied PVC lubricant. Make certain that the orientation of the Tee is correct. (see diagrams)
4) The riser pipe MUST be connected to the OUTLET gasketed coupling using the supplied pvc pipe lubricant.

Concrete Stormceptor® Order Request Form

Contractor Information	
Name	
Address	
City	
State	
Zip Code	
Contact	
Phone	
Fax	

I INV.= 394.11 — O INV.= 394.06

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipes with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information	
Name	
Phone	
Fax	

Stormceptor® Model: 900 ☐ 1200 ☐ 1800 ☐ 2400 ☐ 3600 ☐ 4800 ☐ 6000 ☒ 7200 ☐
Insert Size: 22" ☐ 32" ☐ 44" ☐ Custom 36"
Pipe Type: RCP CLASS IV

Project Name: ELLICOTT CITY WAL-MART
Approximate time frame until required delivery (weeks): 24 WEEKS
Delivery Address: Street 3200 NORTH RIDGE ROAD
City: ELLICOTT CITY State: MD Zip Code: 21043
Designer Company: CEI ENGINEERING ASSOCIATES, INC.
Designer Contact: Phone 301-490-4145 Fax 301-490-4149

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn : Dave Brinser / Bryant Lowery (Phone: 1-800-999-2278)

For credit information/applications contact Carole Broadus at (804) 798-6068

For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

* TO BE INCLUDED ON SWM PLAN BY DESIGNER

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

I 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 PROFFESIONAL 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.

SIGNATURE OF ENGINEER — DATE 3-1-96, 6-6-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/27/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 6/27/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/25/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

DIRECTOR — DATE 7/2/96

Concrete Stormceptor® Order Request Form

Contractor Information	
Name	
Address	
City	
State	
Zip Code	
Contact	
Phone	
Fax	

30° 30° — I INV.= 391.98 — O INV.= 391.48

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipes with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information	
Name	
Phone	
Fax	

Stormceptor® Model: 900 ☐ 1200 ☐ 1800 ☐ 2400 ☐ 3600 ☐ 4800 ☒ 6000 ☐ 7200 ☐
Insert Size: 22" ☐ 32" ☐ 44" ☐ Custom 30"
Pipe Type: RCP CLASS IV
Pipe Inside Diameter (in) [ID]: 30"
Pipe Outside Diameter (in) [OD]: 36"

Project Name: ELLICOTT CITY WAL-MART
Approximate time frame until required delivery (weeks): 24 WEEKS
Delivery Address: Street 3200 NORTH RIDGE ROAD
City: ELLICOTT CITY State: MD Zip Code: 21043
Designer Company: CEI ENGINEERING ASSOCIATES, INC.
Designer Contact: Phone 301-490-4149 Fax 301-490-4149

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn : Dave Brinser / Bryant Lowery (Phone: 1-800-999-2278)

For credit information/applications contact Carole Broadus at (804) 798-6068

For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

* TO BE INCLUDED ON SWM PLAN BY DESIGNER

Concrete Stormceptor® Order Request Form

Contractor Information	
Name	
Address	
City	
State	
Zip Code	
Contact	
Phone	
Fax	

15° 15° — O INV. — I INV.

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipes with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information	
Name	
Phone	
Fax	

Stormceptor® Model: 900 ☐ 1200 ☐ 1800 ☐ 2400 ☐ 3600 ☐ 4800 ☐ 6000 ☐ 7200 ☐
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Project Name / Approximate time frame until required delivery (weeks) / Delivery Address: Street / City / State / Zip Code / Designer Company / Designer Contact / Phone / Fax

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn : Dave Brinser / Bryant Lowery (Phone: 1-800-999-2278)

For credit information/applications contact Carole Broadus at (804) 798-6068

For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

TO BE INCLUDED ON SWM PLAN BY DESIGNER

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24 — P/O PARCEL 848
REZONING CASE NUMBER ZB-941 — DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01 — APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21 — APPROVED: 6-6-95
DATE: SEPTEMBER 6, 1995

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
WAL-MART STORE #2412

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS

9175 Guilford Road, Suite 306, Columbia, MD 21046 — (301) 490-4145 — FAX (301) 490-4149
JOB NO.: 9146 — DWG NAME: 9146MISC

ELLICOTT CITY WAL-MART
MISCELLANEOUS DETAILS

DATE 10-18-95 — SHEET NO. 17 OF 25

SDP-96-01

\9000\9146\MASS\DWG\9146MISC Fri Nov 17 13:31:27 1995 System WS-2004 * TV

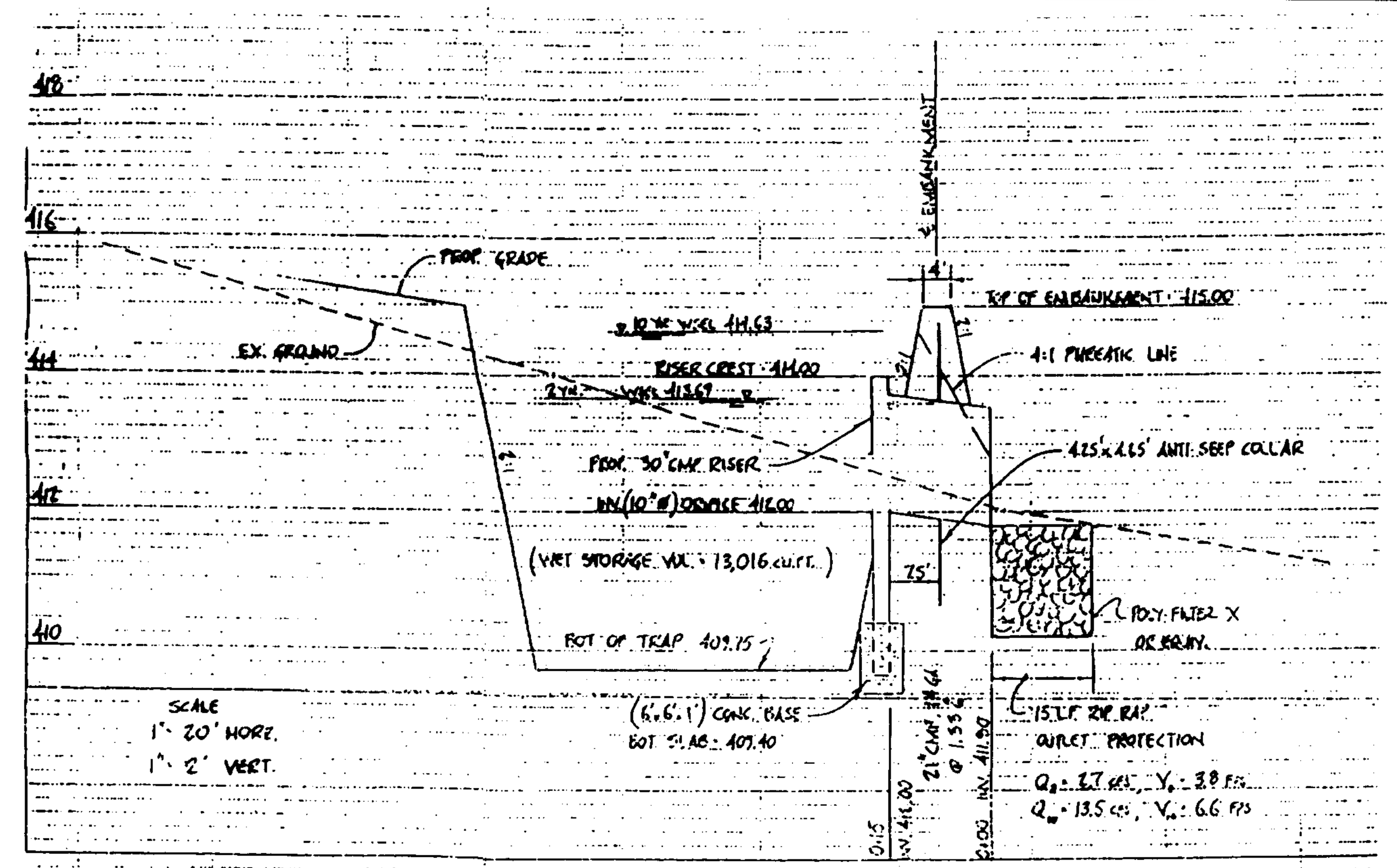
STORM DRAIN DESIGN

From No.	To No.	Inc. Area (ac.)	Total Area (ac.)	C	CxA	SUM (CxA)	TIME (min.)	I (in./hr.)	Q (cfs)	Design Slope (%)	Diameter (in.)	Velocity (ft\sec)	Length (ft.)	Time (min.)	Remarks
*EXI-6	M-9	4.10	4.10	0.32	0.88 / 1.04	1.04	5.0	8.80 / 8.70	8.8	2.99	15	10.2	91	0.15	
○ M-9	I-8	1.55	5.65	0.85	1.33	2.37	5.1	8.46	20.02	2.84	21	12.2	187	0.26	
○ I-8	M-7	1.75	7.4	0.88	1.51 / 1.75	4.31	5.4	8.30 / 8.88	34.05	1.47	27	10.7	173	0.27	
M-7	I-6	0.00	7.4	0.00	0.00	4.11	5.7	8.15	36.4	1.00	27	10.7	78	0.12	
I-6	M-6B	0.10	7.50	0.85	0.42 / 4.48	4.80	5.8	8.10 / 8.38	37.16	0.80	36	7.4	126	0.28	
M-6B	M-6A	0.00	7.50	0.00	0.00	4.80	6.08	8.00	38.72	0.80	36	7.40	42	0.09	
M-6A	I-5	0.00	7.50	0.00	0.00	4.80	6.17	7.93	38.46	0.80	36	7.40	183	0.43	
I-5	M-4	0.37	8.21	0.88	0.32 / 4.88	4.96	6.6	7.76 / 8.86	38.44	0.80	36	7.40	70	0.16	
M-4	M-3	0.00	3.30	0.00	0.00	4.96	6.7	7.72	38.25	0.96	36	9.70	282	0.50	
I-14	I-13A	1.88	1.88	0.46	0.86	0.86	5.0	8.50	7.31	0.50	18	4.79	192	0.67	
I-13A	I-13	0.00	1.88	0.00	0.00	0.86	5.7	8.15	7.01	0.50	18	4.80	212	0.74	
I-13	I-12A	0.84	2.72	0.63	0.53	1.39	6.4	7.84	10.9	1.50	21	8.2	77	0.16	
I-12A	I-12	0.46	3.18	0.78	0.36	1.74	6.6	7.76	13.50	1.50	18	8.4	78	0.16	
I-12	I-11A	0.84	4.02	0.64	0.54	2.28	6.7	7.72	17.6	1.36	21	8.7	97	0.18	
I-11A	I-11	1.11	5.13	0.67	0.74	3.03	6.9	7.64	23.15	2.00	24	11.10	85	0.13	
I-11	M-3A	1.09	6.22	0.73	0.80	3.82	7.0	7.56	28.88	1.80	24	11.0	39	0.10	
M-3A	M-3	0.00	8.36	0.00	0.00	5.53	7.1	7.52	41.58	1.20	30	10.4	68	0.12	
M-3	M-2	0.00	16.62	0.00	0.00	10.46	7.2	7.52	78.38	13.90	36	31.2	35	0.02	
M-2	EW-1	0.00	16.62	0.00	0.00	10.46	7.2	7.52	78.38	2.00	36	14.9	32	0.03	
I-3	M-2A	2.14	2.14	0.80	1.71	1.71	5.0	8.80	14.56	1.00	21	6.71	64	0.10	

* STRUCTURES 10 AND THE 15" STORM DRAIN FROM STR.10 TO STR.9 TO BE CONSTRUCTED BY OTHER'S.

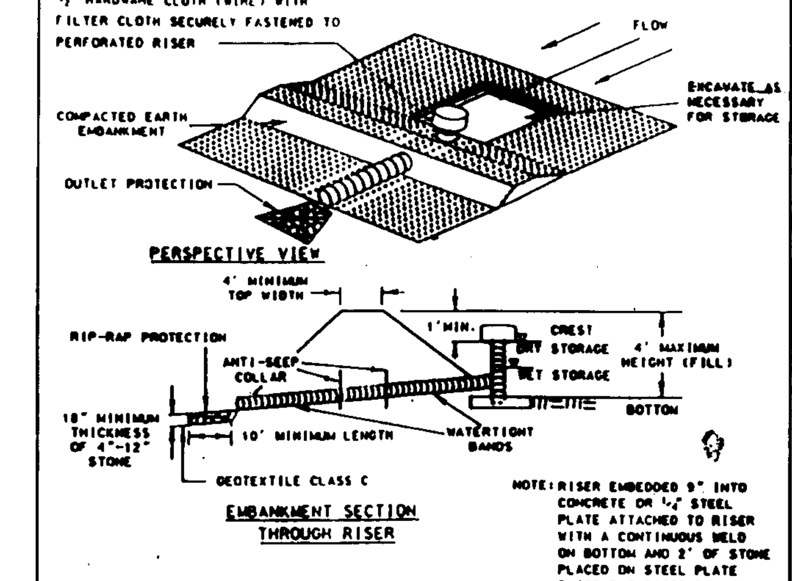
○ THE DRAINAGE AREA OF 1.55 BETWEEN STRUCTURES 9 AND 8 IS THROUGH A SERIES OF ROOF DRAIN CONNECTIONS. ACTUAL DRAINAGE AREA TO STRUCTURE 9 IS 0.0 ACRES AS IT IS A MANHOLE.

○ THERE IS 0.5 ACRES OF FLOW TO THIS INLET. THE REMAINING DRAINAGE AREA IS THROUGH A SERIES OF ROOF DRAIN CONNECTIONS.



PRINCIPLE SPILLWAY PROFILE - P.O.S.T. # 6

DETAIL 8 - PIPE OUTLET SEDIMENT TRAP - ST I



Construction Specifications

1. The area under the embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. The total trap volume as measured from the bottom to riser crest elevation shall be 3600 cubic feet per acre of drainage area (see Table 5). The top of embankment must be ≥ 1' above the riser crest elevation.
4. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap (900cf/ac). The sediment shall be deposited in a suitable area and in such a manner that it will not erode.
5. The structure shall be inspected periodically and after each rain and repairs made as necessary.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C-9-7	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

I 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.

SIGNATURE OF DEVELOPER — DATE 5/31/96

I 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.

SIGNATURE — DATE 6/6/96

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

Robert W. Zick /GS — HOWARD SOIL CONSERVATION DISTRICT — DATE 6/27/96

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

J.G. Warfield /GS — USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 6/27/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/25/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

DIRECTOR — DATE 7/2/96

SEQUENCE OF CONSTRUCTION

PHASE I

1. NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO THE START OF WORK.
2. CLEAR FOR AND INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY).
3. CLEAR FOR AND INSTALL SILT FENCE AND DIVERSION DIKE AS SHOWN. (1 WEEK)
4. CLEAR FOR AND INSTALL DIVERSION DIKES, SILT FENCE AND TEMPORARY SEDIMENT TRAPS ON SITE EAST OF NORTH RIDGE ROAD, AS SHOWN ON THE PHASE I SEDIMENT AND EROSION CONTROL PLAN. INSTALL CULVERT INLET PROTECTION AT EXISTING PIPE IN LOW POINT ALONG NORTH RIDGE ROAD. INSTALL ALL TREE PROTECTION DEVICES AS SHOWEN ON THE PHASE I EROSION AND SEDIMENT PLANS. (1 WEEK)
5. CLEAR AND GRUB WITHIN LIMITS OF DISTURBANCE. THE PHASE I PLANS SHOW AN APPROXIMATE LOCATION OF AN ACCESS POINT BETWEEN THE SWM POND AND THE AREA MARKED FOR CORE TRENCH MATERIAL AND ROCK AND/OR DENSE MATERIAL. THE CONTRACTOR SHALL FIELD LOCATE THE BEST ACCESS BETWEEN THE LOCATIONS. THE ACCESS SHALL BE EAST OF THE DIVERSION DIKE TO ENSURE THAT DISTURBED DRAINAGE FROM THE ACCESS IS DIVERTED TO THE TEMPORARY SEDIMENT BASIN. THE ACCESS SHOULD BE LINED WITH A DIVERSION DIKE, MUCH LIKE THE PHASE I PLAN SHOWS, AND A TEMPORARY CROSSING TO ALLOW THE CLEAN WATER TO BY PASS THE SEDIMENT BASIN. (2 WEEKS)
6. REMOVE TOPSOIL AND STOCKPILE WHERE INDICATED ON PLAN. (1 WEEK)
7. CONSTRUCT COFFER DAM.(3 DAYS) THE STORAGE AREA OF THE COFFER DAM SHALL BE DRAINED BY PUMPING UPON REQUEST OF THE INSPECTOR. THE HEIGHT OF THE DAM WILL ACCOMODATE STORAGE OF THE 2 YEAR STORM.
8. BEGIN POND CONSTRUCTION OPERATIONS BY CUTTING AT THE NORTHEASTERN PORTION OF THE SITE EAST OF NORTH RIDGE ROAD, IN THE AREA DESIGNATED AS POSSIBLE CORE TRENCH MATERIAL (CONTRACTOR TO FIELD LOCATE THIS AREA AND COMPLETE BORINGS, IF NEEDED, TO ACCURATELY DEPICT LOCATION AND QUANTITY OF MATERIAL). FILL OPERATIONS TO BEGIN AT THE SOUTHWESTERN PORTION OF SITE WEST OF NORTH RIDGE ROAD BY CONSTRUCTING THE STORMWATER MANAGEMENT POND IN THE AREA ALONG RTE. 29. POSITIVE DRAINAGE OF THE DISTURBED AREA MUST ALWAYS BE MAINTAINED TO THE POND. PLACE DENSE MATERIAL (LOCATED IN THE APPROXIMATE AREA SHOWN ON SHEET 6) IN ACCORDANCE WITH THE GEOTECHNICAL REQUIREMENTS REGARDING THE SIZE OF MATERIAL VERSUS THE DEPTH OF FILL. (2 MONTHS)

NOTE: UPON FINAL CONSTRUCTION OF THE POND OUTFALL STRUCTURE, PLUG THE 12" ORIFICE WITH WATERTIGHT SEALS UNTIL SUCH TIME AS THE SWM POND IS CONVERTED FROM A TEMPORARY SEDIMENT BASIN TO A SWM POND.

9. INSTALL OUTLET PROTECTION AT THE EXISTING TWIN OUTFALL PIPES. (1 DAY)
10. REMOVE EMBANKMENT ON WESTERN PORTION OF EX. SWM POND NEAR COFFER DAM AND ENLARGE POND AS SHOWN ON PLAN. (3 MONTHS)
11. ONCE SWM POND IS ENLARGED, STABILIZE AND REMOVE COFFER DAM. (1 WEEK)
12. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL DIVISION INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL MEASURES FOR PHASE I AND STABILIZE ANY AREAS STEEPER THAN 3:1 SLOPES WHICH WILL NOT BE WORKED FOR 7 DAYS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES. (2 WEEKS)

PHASE II

NOTE: EXISTING STORMWATER MANAGEMENT POND TO BE USED AS A TEMPORARY SEDIMENT BASIN (TSB).

1. CLEAR FOR AND INSTALL DIVERSION DIKES, SILT FENCE AND TEMPORARY SEDIMENT TRAPS ON SITE WEST OF NORTH RIDGE ROAD. (1 WEEK)
2. CLEAR AND GRUB WITHIN LIMITS OF DISTURBANCE FOR PHASE II. (2 WEEKS)
3. REMOVE TOPSOIL AND STOCKPILE WHERE INDICATED ON PLAN. (1 WEEK)
4. CONTINUE MASS GRADING OPERATIONS BY CUTTING AT THE NORTHEASTERN PORTION OF SITE, EAST OF NORTH RIDGE ROAD. CUTTING OPERATIONS TO PROCEED IN A NORTHEAST TO SOUTHWEST DIRECTION TOWARD RT. 29 ALWAYS MAINTAINING POSITIVE DRAINAGE TO THE TEMPORARY SEDIMENT BASIN BY FLOW ALONG THE DIVERSION DIKE. AS THE AREA IS FILLED TOWARD THE POND BEGIN TO REMOVE SED. TRAP #1 THROUGH #4 WITH PERMISSION OF THE SEDIMENT/EROSION CONTROL INSPECTOR, PLACE SILT FENCE AT THE TOE OF THE 2:1 SLOPE. STABILIZE THE SEDIMENT TRAP AREAS TO ORIGINAL CONDITION TO BE VERIFIED BY GEOTECHNICAL ENGINEER (3 WEEKS)
5. BEGIN CONSTRUCTION OF RETAINING WALLS. PROCEED WITH PLACEMENT OF COMPACTED FILL ALONG WESTERN PORTION OF SITE UNTIL ENTIRE AREA WEST OF NORTH RIDGE ROAD IS BROUGHT TO GRADE. (3 MONTHS)

NOTE: CONTRACTOR SHALL RECONSTRUCT DIKES AT THE END OF EACH WORKING DAY TO ENSURE POSITIVE DRAINAGE TO THE TSB AND SEDIMENT TRAPS. PORTIONS OF THE TSB AND SEDIMENT TRAPS MAY BE FILLED, UPON RECEIVING PERMISSION FROM INSPECTOR, AS UPSLOPE AREAS ARE STABILIZED PROVIDED SUFFICIENT VOLUME IS MAINTAINED FOR REMAINING DISTURBED AREAS.

PHASE III

1. CONTINUE MASS GRADING OPERATIONS TOWARD WESTERN PORTION OF SITE, ONCE THE POND ACCESS ROAD IS CONSTRUCTED AND STABILIZED, GRADE DITCH IN CENTER FOR CHANNELIZATION OF WATER TO TSB/SWM POND. (CONTINUATION OF PHASE II)
2. CONTINUE CONSTRUCTION OF RETAINING WALL IN AREA OF SWM POND AND FILL OPERATIONS CONCURRENTLY. ALWAYS MAINTAIN POSITIVE DRAINAGE TO THE TSB BY PLACING A DIVERSION DIKE AT THE TOP OF THE 2:1 SLOPE AS SHOWN IN PHASE II. (CONTINUATION OF PHASE II)
3. COMPLETE MASS GRADING, CONSTRUCT STORM SEWER SYSTEM, INSTALL INLET PROTECTION ON ALL STORM STRUCTURES. (3 MONTHS)
4. REMOVE THE DITCH IN THE CENTER OF THE POND ACCESS ROAD AND GRADE SWALE WITH 2% CROSS-SLOPE. (3 DAYS)

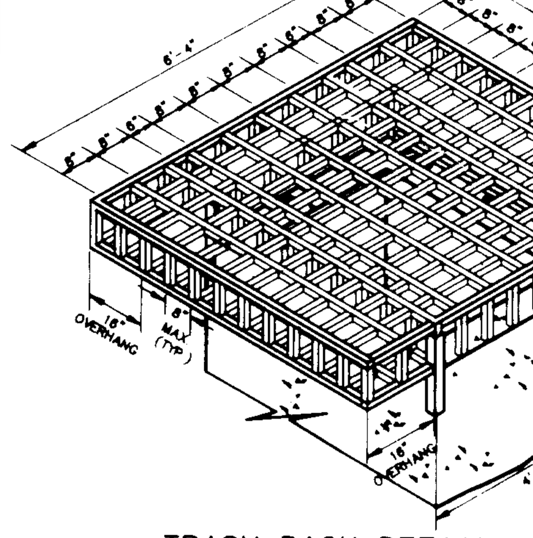
NOTE: [illegible] OF THE HOWARD COUNTY SEDIMENT CONTROL DIVISION, [illegible] SEDIMENT CONTROL DEVICES AND [illegible] DISTURBED AREAS IN ACCORDANCE WITH PERMANENT [illegible]

STORMCEPTOR WATER QUALITY MANAGEMENT

FOR ELLICOTT CITY, MD WAL-MART SITE

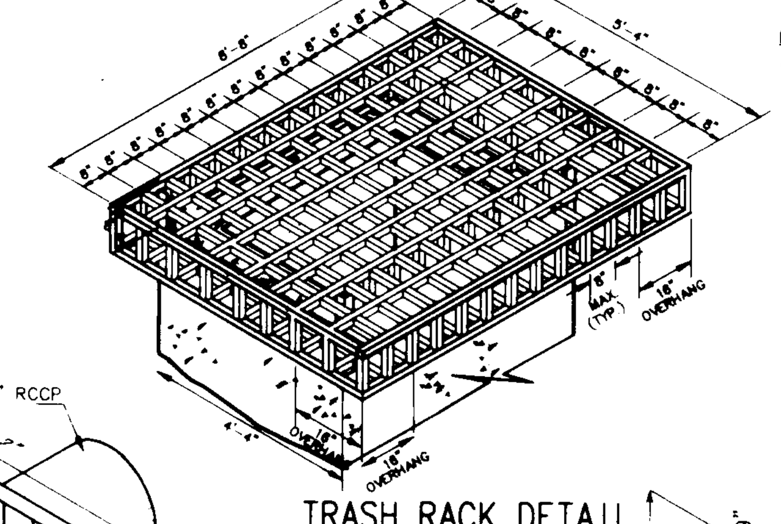
STRUCTURE NUMBER	STORMCEPTOR MODEL	ACTUAL DRAINAGE AREA	% IMPERVIOUS DRAINAGE AREA	SIZE OF STORM DRAIN DISCHARGING INTO STORMCEPTOR SIZE IN	SIZE OUT
M-4	STC 6000	8.26	0.85	36	36
M-3B	STC 6000	8.36	0.85	30	30

NOTES:
1. FOR ADDITIONAL TECHNICAL QUESTIONS ON THE STORMCEPTOR DESIGN, PLEASE NOTIFY MR. VINCE BERG (301) 762-8361.
2. A MAINTENANCE AGREEMENT WILL BE PREPARED TO ENSURE THAT THE SYSTEM IS MAINTAINED ON AN ANNUAL BASIS. ONCE THE SITE IS STABILIZED, THE SYSTEM WILL BE MONITORED TO DETERMINE THE FREQUENCY OF MAINTENANCE BASED ON THE SITE CONDITIONS. THE SEDIMENT WILL BE TESTED TO DETERMINE THE DISPOSAL OPTIONS. THE HAZARDOUS MATERIALS (OIL, CHEMICALS, FUEL) WILL BE REMOVED BY A LICENSED WASTE MANAGEMENT COMPANY AND DISPOSED OF ACCORDINGLY.



TRASH RACK DETAIL FOR UPPER WEIR

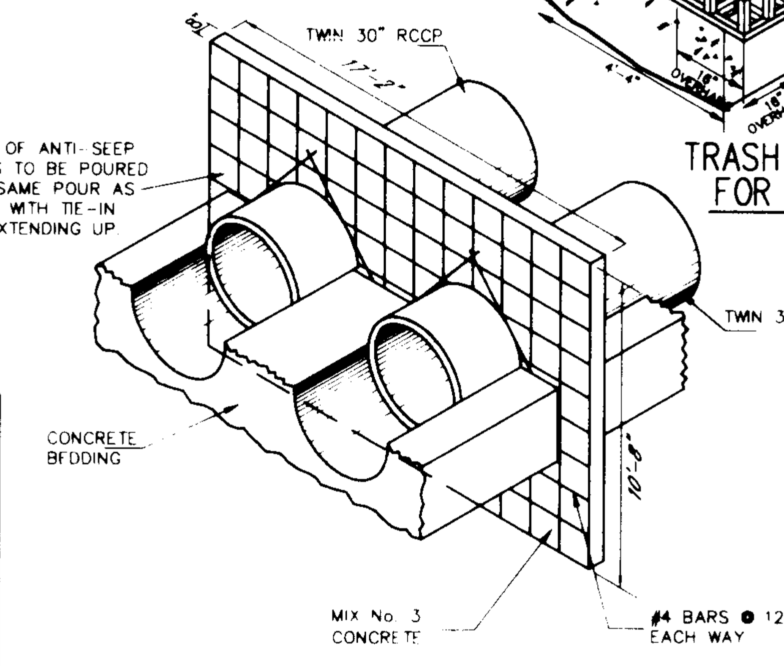
N.T.S.



TRASH RACK DETAIL FOR LOWER WEIR

N.T.S.

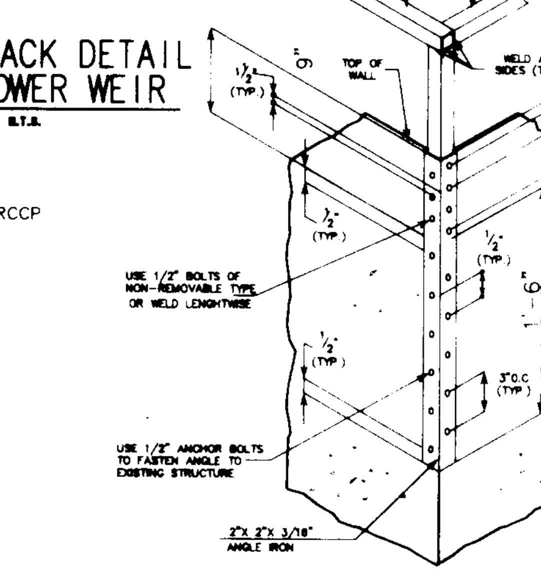
NOTES:
CONTRACTOR SHALL:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF THE TRASH RACK.
2. PROVIDE STANDARD MANHOLE STEPS ON INSIDE FACE OF WALL.
3. C OF STEPS TO BE CENTERED WITHIN CENTER OPENING.
4. TRASH RACK TO BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.
5. SPACING TO BE 8" MAXIMUM.



1- SUBGRADE TO BE COMPACTED AROUND VICINITY OF COLLAR.
2- ANTI-SEEP COLLARS SHALL BE LOCATED 2'-0" (MIN.) FROM PIPE JOINT.

TRASH RACK DETAIL

NOT TO SCALE



FASTENING DETAIL

N.T.S.

30.0 DUST CONTROL

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

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

Conditions Where Practice Applies

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

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.

2. Vegetative Cover - See standards for temporary vegetative cover.

3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.

4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.

5. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.

6. Calcium Chloride - Apply at rates that will keep surface moist. May need treatment [illegible]

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.

2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.

3. Stone - Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their use in Predicting Soil Loss.

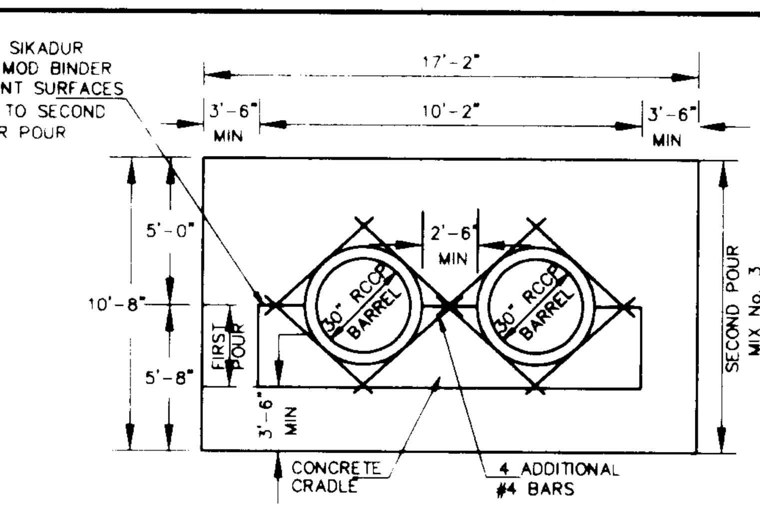
2. Agriculture Information Bulletin 354. How to Control Wind Erosion. USDA ARS [illegible]

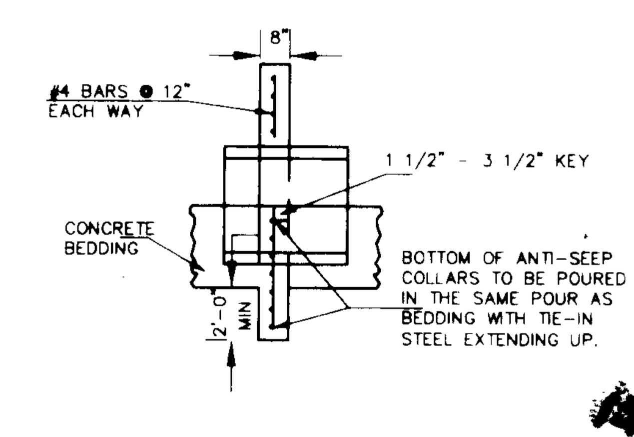
THIS SHEET WILL SUPERSEDE SHEET NUMBER 16 (DATED 11/7/95) APPROVED BY HOWARD COUNTY.

STRUCTURE SCHEDULE

STR. NO.	S.D. COORD.	TYPE	ELEV. TOP	MSHA STANDARD	HOWARD COUNTY STANDARD
EW-1	N 587955.2976 E 1363072.3502	STD TYPE "C" ENDWALL	379.01		SD 5.21
M-2	N 587973.8360 E 1363090.6754	STD. MANHOLE	388.00		G 5.02
M-3	N 587996.6209 E 1363114.0274	STD. MANHOLE	400.50	MD-384.03	
I-3	N 587987.9555 E 1363206.9064	COG INLET	399.30	MD-374.62 THT=15'	
M-3A	N 588037.6353 E 1363169.8863	STD. MANHOLE/STC 4800	400.15		G - 5.02
M-4	N 588234.1105 E 1362942.7092	STD. MANHOLE/STC 6000	410.10		G 5.02
I-5	N 588281.8216 E 1362892.8320	COG INLET	410.46		SD. 4.41
I-6	N 588594.2020 E 1362766.6452	COG INLET	410.10	MD-374.62 THT=15'	
M-7	N 588668.8611 E 1362785.3761	STD. MANHOLE	410.50		SD 4.41
I-8	N 588767.2793 E 1362927.3856	COG INLET	410.00		SD 4.41
M-9	N 588877.6970 E 1363078.8608	STD. MANHOLE	415.50		G - 5.01
*EX.I-6		COG INLET	417.89		SD 4.41
I-11	N 588061.5618 E 1363200.0569	STD. "WR" INLET	400.35		SD 4.35
I-11A	N 588145.8558 E 1363214.2540	STD. "WR" INLET	402.54		SD 4.35
I-12	N 588243.9077 E 1363219.8999	COG INLET	405.60		SD 4.41
I-12A	N 588317.9433 E 1363242.0797	STD. "WR" INLET	406.90		SD. 4.35
I-13	N 588391.9906 E 1363264.2513	STD. "WR" INLET	408.90		SD. 4.35
M-13A	N 588582.7485 E 1363352.1942	STD. MANHOLE	418.26		SD.
I-14	N 588646.1338 E 1363379.7943	COG INLET	409.50		SD. 4.41 SD. 4.14
EW-17	N 587786.87436 E 1363171.38967	MOD TYPE "A" ENDWALL	365.00		SD. 5.11
R-1	N 587886.16923 E 1363240.72291	RISER STRUCTURE	376.60		

* BY OTHERS SEE F-98-01 FOR CO-ORDINATES TO EX.STRUCTURE I-6





ANTI-SEEP COLLAR DETAIL

NOT TO SCALE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21	APPROVED: 6-6-95
	DATE: NOVEMBER 17 , 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

6-6-96

NO.	DATE	DESCRIPTION	BY
4	5/20/96	H.C. REDLINE REVISION	
3	11/15/95	COUNTY COMMENTS REVISION	
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCEL B,C,D

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306, Columbia, MD 21046 — (301) 490-4145 — FAX (301) 490-4149
JOB NO. 9146 — DWG NAME: 9146MISC

ELLICOTT CITY WAL-MART
MISC. NOTES AND DETAILS

DATE 05-30-96 — SHEET NO. 16 OF 25

SDP-96-01

Thu May 30 17:15:51 1996 STATION 2008 - FTC

I 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.

SIGNATURE OF DEVELOPER — DATE 5/31/96

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SIGNATURE OF ENGINEER — DATE 6/6/96

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/25/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

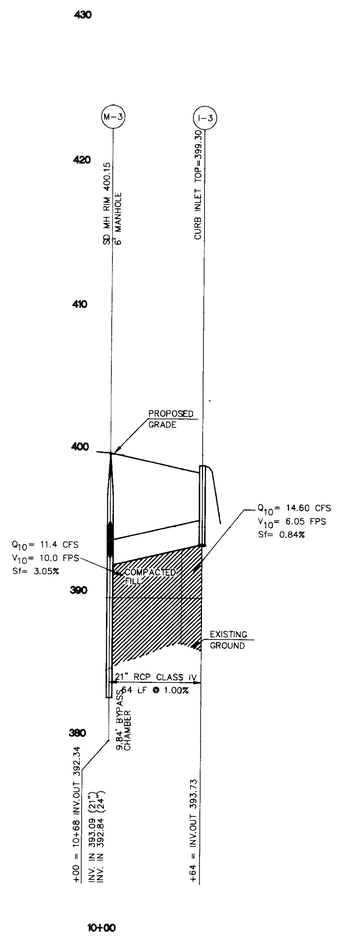
DIRECTOR — DATE 7/2/96

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

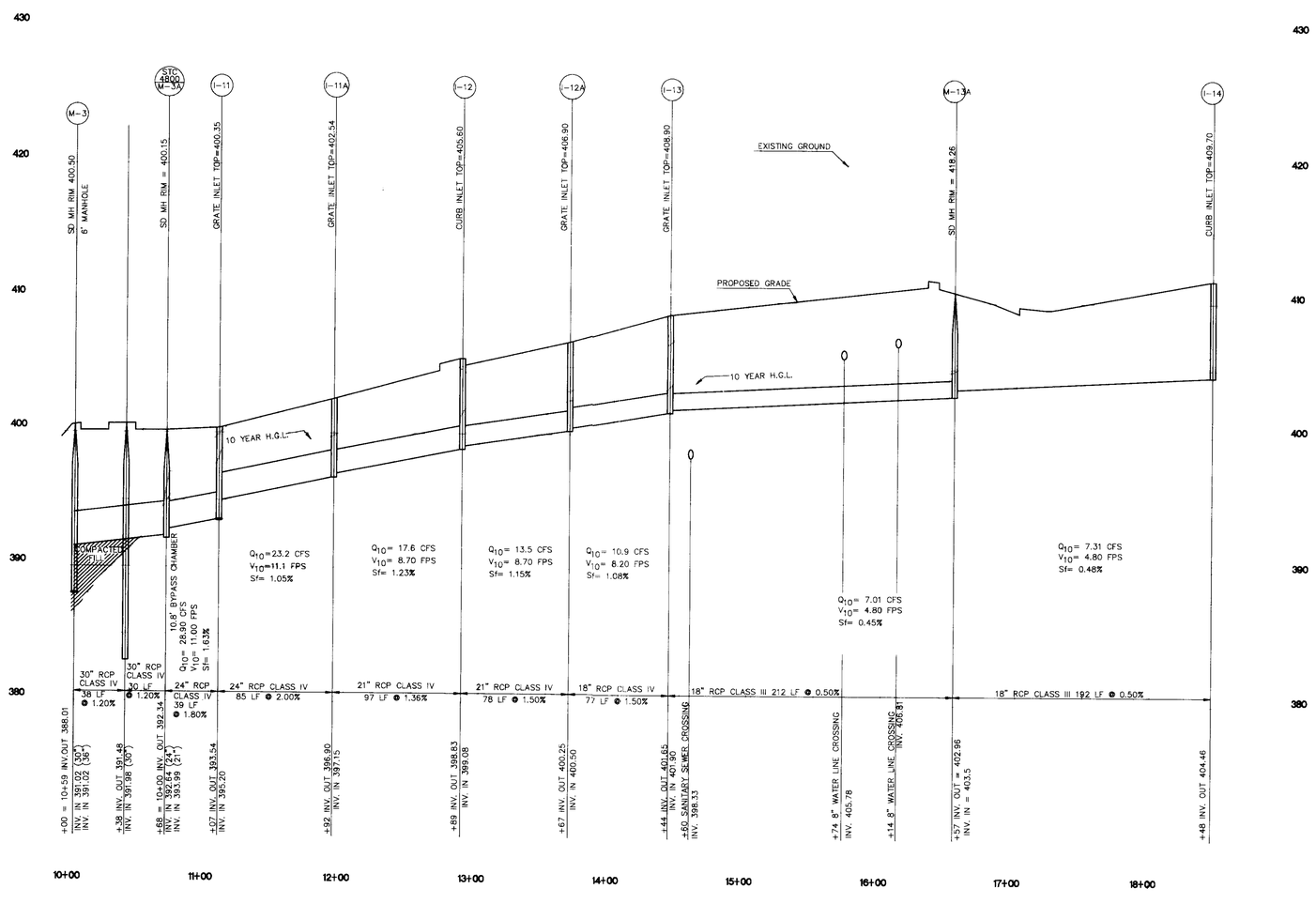
USDA - NATURAL RESOURCES CONSERVATION SERVICE — J.G. Warfield /as. — DATE 6/27/96

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

HOWARD SOIL CONSERVATION DISTRICT — Robert W. Ziehm /as — DATE 6/27/96



PROPOSED STORM SEWER
STA. 10+00 TO 10+49
SCALE: 1"=50' HORZ.
1"=5' VERT.



PROPOSED STORM SEWER LINE #2
STA. 10+00 TO 17+94
SCALE: 1"=50' HORZ.
1"=5' VERT.

THIS SHEET WILL SUPERSEDE SHEET NUMBER 15 (DATED 11/17/95) APPROVED BY HOWARD COUNTY.

STORMCEPTOR STRUCTURES

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24 — P/O PARCEL 848
REZONING CASE NUMBER ZB-941 — DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01 — APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21 — APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6a.

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 6-6-96

NO.	DATE	DESCRIPTION
	5/20/96	REVISED PER H.C. REDLINE COMMENTS

REVISIONS

	DATE				
INITIAL DESIGN	8-29-94	LDF	KLM	TMP	MAM
		PRN	PM	DES	CADD

WAL-MART STORES, INC.
PARCELS B,C,D

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS

9175 Guilford Road, Suite 306
Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

JOB NO.: 9146.0.350
DWG NAME: 9146PROF

ELLICOTT CITY WAL-MART
STORM SEWER PROFILES

DATE: 05-30-96

SHEET NO. 15 OF 25

SDP-96-01

I 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.

SIGNATURE OF DEVELOPER — DATE

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SIGNATURE — DATE 6/6/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/5/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

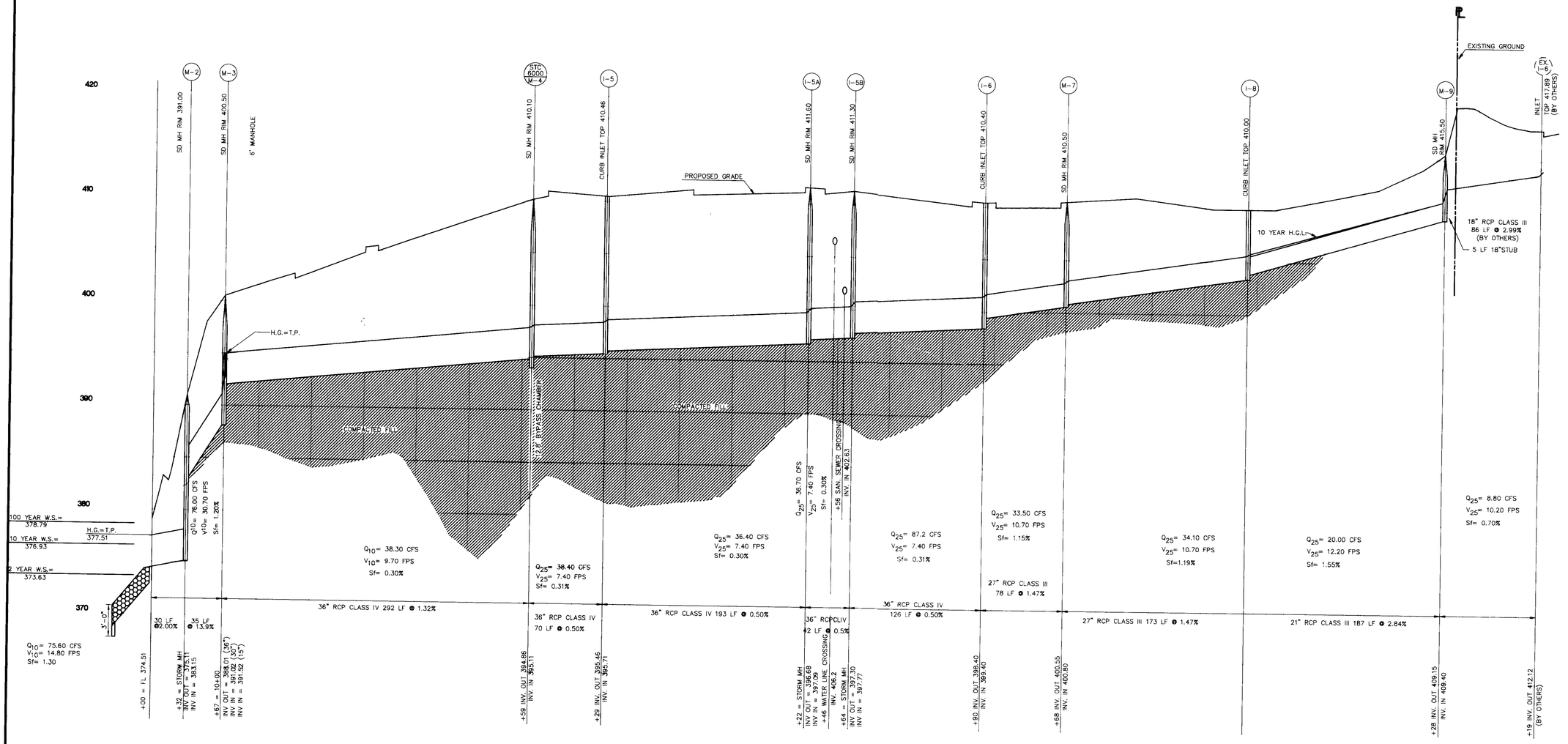
DIRECTOR — DATE 7/2/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 6/27/96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/27/96



THIS SHEET WILL SUPERSEDE SHEET NUMBER 14 (DATED 11/17/95) APPROVED BY HOWARD COUNTY.

PROPOSED STORM SEWER LINE #1
STA. 10+00 TO 23+44

SCALE: 1"=50' HORZ.
1"=5' VERT.

⊖STORMCEPTOR STRUCTURES

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21

HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
APPROVED: 12-2-1994
APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6a.

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 14210 — 6-6-96

NO.	DATE	DESCRIPTION
	5/20/96	REVISED PER H.C. REDLINE COMMENTS

REVISIONS

INITIAL DESIGN	8-29-94	LDF	KLM	TMP	MAM
	DATE	PRN	PM	DES	CADD

WAL-MART STORES, INC.
PARCELS B,C,D

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149

JOB NO.: 9146.0.350
DWG NAME: 9146PROF

ELLICOTT CITY WAL-MART
STORM SEWER PROFILES

DATE 05-30-96 — SHEET NO. 14 OF 25

SDP-96-01

P:\9000\9146\MASS\MKD\9146PROF Thu May 30 15:35:11 1996 STATION 2000M - 1:10

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

I 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 PROFFESIONAL 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.

SIGNATURE OF ENGINEER — DATE 5-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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.

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

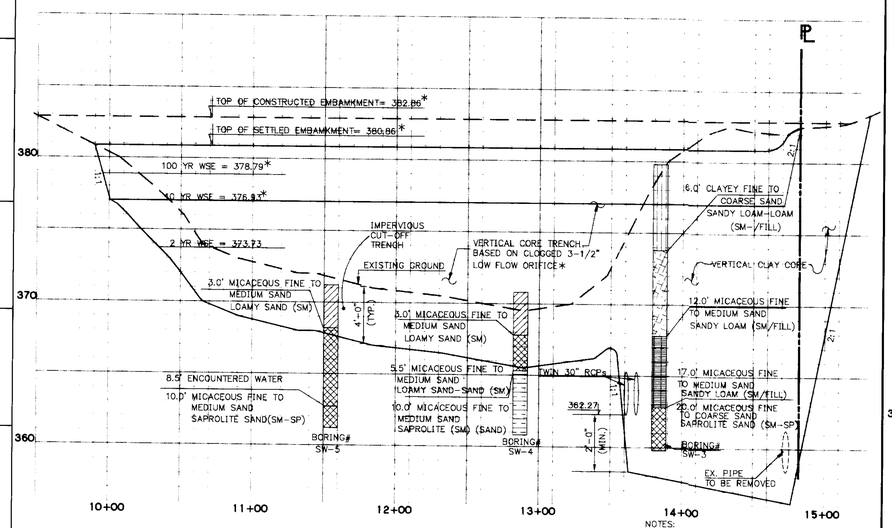
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

NO.	DATE	DESCRIPTION	BY
3	11/14/95	COUNTY COMMENTS REVISION	
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	

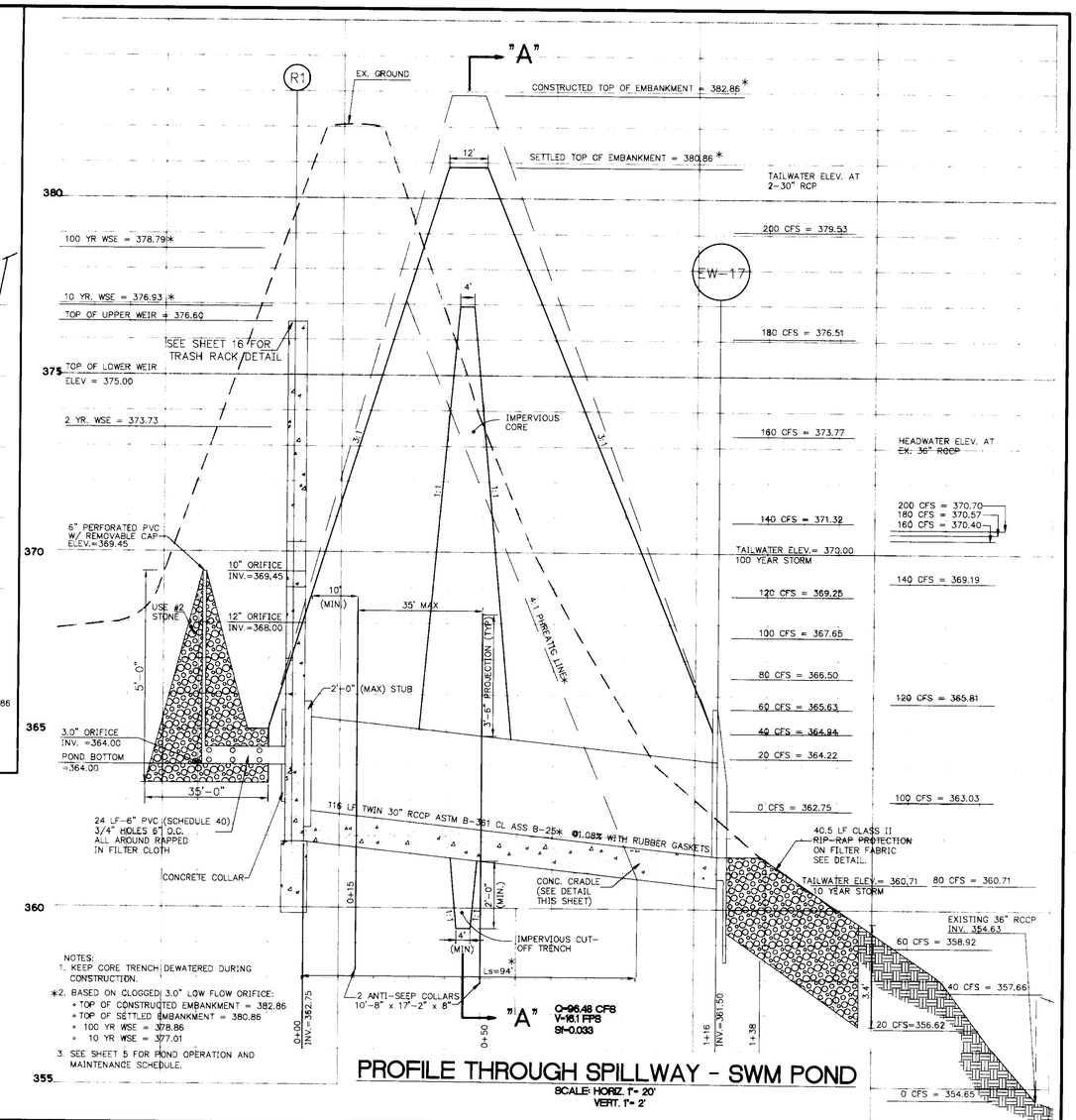
OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321



PROFILE THROUGH ℄ EMBANKMENT

SCALE: HORIZ. 1"= 50'
VERT. 1"= 5'

NOTES:
1. KEEP CORE TRENCH DEWATERED DURING CONSTRUCTION.
*2. BASED ON CLOGGED 3.0" LOW FLOW ORIFICE:
- TOP OF CONSTRUCTED EMBANKMENT = 382.86
- TOP OF SETTLED EMBANKMENT = 380.86
- 100 YR WSE = 378.79
- 10 YR WSE = 376.93
3. SEE SHEET 5 FOR POND OPERATION AND MAINTENANCE SCHEDULE.



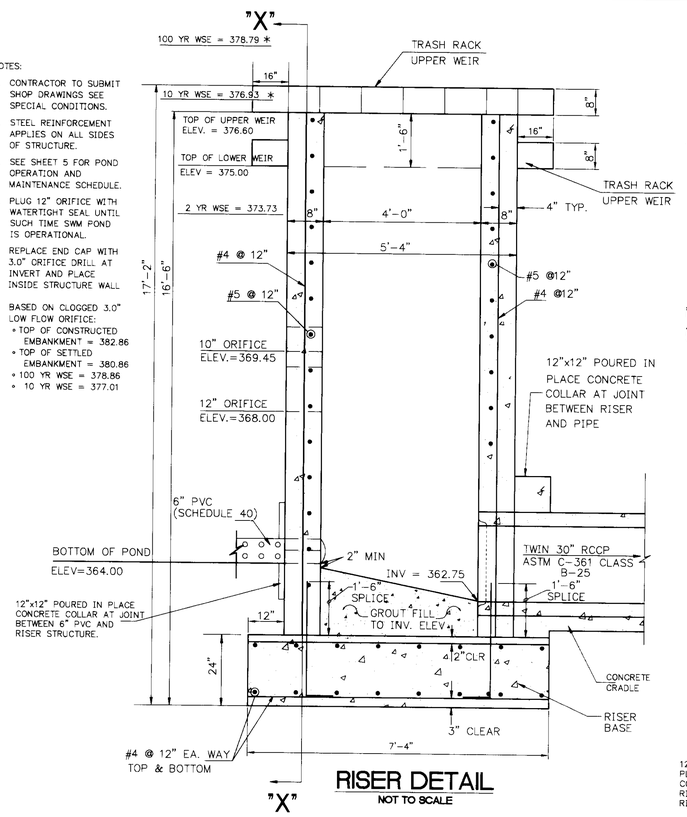
NOTES:
1. KEEP CORE TRENCH DEWATERED DURING CONSTRUCTION.
*2. BASED ON CLOGGED 3.0" LOW FLOW ORIFICE:
- TOP OF CONSTRUCTED EMBANKMENT = 382.86
- TOP OF SETTLED EMBANKMENT = 380.86
- 100 YR WSE = 378.86
- 10 YR WSE = 377.01
3. SEE SHEET 5 FOR POND OPERATION AND MAINTENANCE SCHEDULE.

PROFILE THROUGH SPILLWAY - SWM POND

SCALE: HORIZ. 1"= 20'
VERT. 1"= 2'

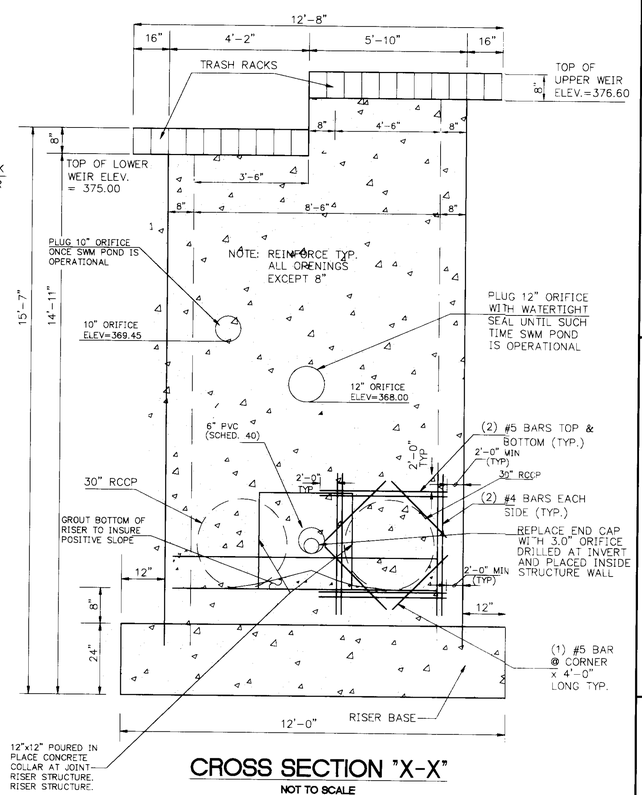
NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWINGS SEE SPECIAL CONDITIONS.
2. STEEL REINFORCEMENT APPLIES ON ALL SIDES OF STRUCTURE.
3. SEE SHEET 5 FOR POND OPERATION AND MAINTENANCE SCHEDULE.
4. PLUG 12" ORIFICE WITH WATERTIGHT SEAL UNTIL SUCH TIME SWM POND IS OPERATIONAL.
5. REPLACE END CAP WITH 3.0" ORIFICE DRILL AT INVERT AND PLACE INSIDE STRUCTURE WALL

* BASED ON CLOGGED 3.0" LOW FLOW ORIFICE:
- TOP OF CONSTRUCTED EMBANKMENT = 382.86
- TOP OF SETTLED EMBANKMENT = 380.86
- 100 YR WSE = 378.86
- 10 YR WSE = 377.01



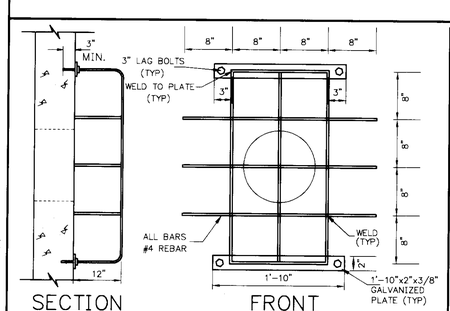
RISER DETAIL

NOT TO SCALE



CROSS SECTION "X-X"

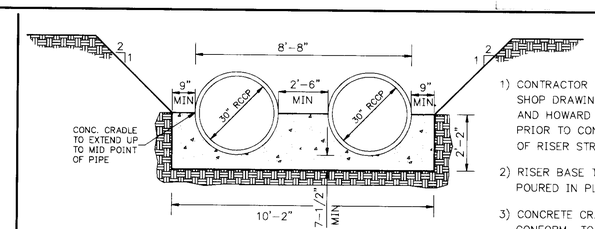
NOT TO SCALE



REMOVABLE TRASH RACK DETAIL 12" ORIFICE

NOT TO SCALE

NOTE: TRASH RACK TO BE GALVANIZED AND PAINTED BATTLESHIP GRAY.



CONCRETE CRADLE DETAIL

NOT TO SCALE

1) CONTRACTOR TO SUBMIT SHOP DRAWINGS TO C.E.I. AND HOWARD COUNTY PRIOR TO CONSTRUCTION OF RISER STRUCTURE.
2) RISER BASE TO BE POURED IN PLACE.
3) CONCRETE CRADLE TO CONFORM TO THE SCS TR-46 A-2 CRADLE SPECIFICATIONS

SUBDIVISION "ELLICOTT CITY WAL-MART"
ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21
HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
APPROVED: 12-2-1994
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STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

3-1-96

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCELS B,C,D

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146SWMD

ELLICOTT CITY WAL-MART
STORMWATER MANAGEMENT DETAILS

DATE 11-17-95 — SHEET NO. 13 OF 25

SDP-96-01

D:\1000\9146\MAIN\LAYOUT45.DWG Thu Nov 16 10:44:19 1995 System MT 2006 MAM

I 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 PROFFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTOTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

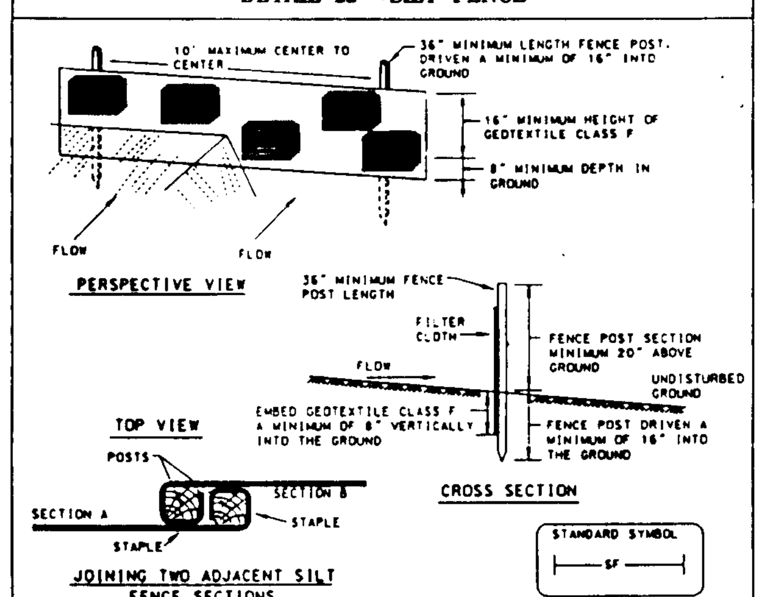
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVE TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN 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 DISTURBANCE OR REDISBURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAT 3:1, B) 14 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 1995 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (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	65.19	ACRES
AREA DISTURBED	46.00	ACRES
AREA TO BE ROOFED OR PAVED	N/A	ACRES
AREA TO BE VEGETATIVELY STABILIZED	4.04	ACRES
TOTAL CUT	100,000	CU YD
TOTAL FILL	100,000	CU YD

OFFSITE WASTE/BORROW AREA LOCATED AT NORTHEASTEN PORTION OF SITE EAST OF NORTH RIDGE ROAD.

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR
10. 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.
11. 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.

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond 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 ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 reached 50% of the fabric height.

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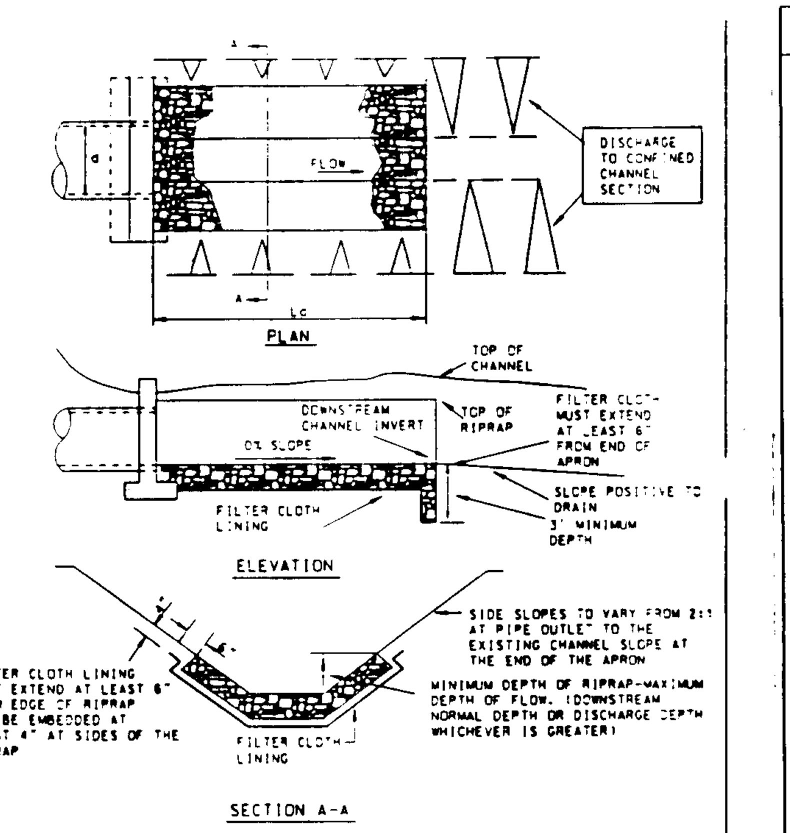
DETAIL 26 - ROCK OUTLET PROTECTION II



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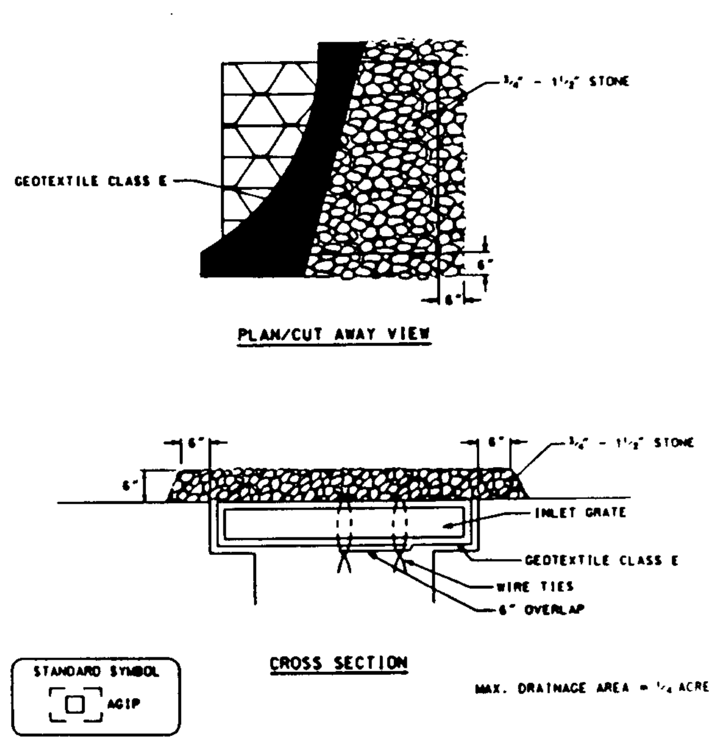
DETAIL 23B - AT GRADE INLET PROTECTION



Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place ¾" to 1½" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

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HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED -- APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ.FT.)
2) ACCEPTABLE -- APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE 92 LBS./1000 SQ. FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK 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 SQ. FT.) 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 (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF 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 (70-90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING 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.

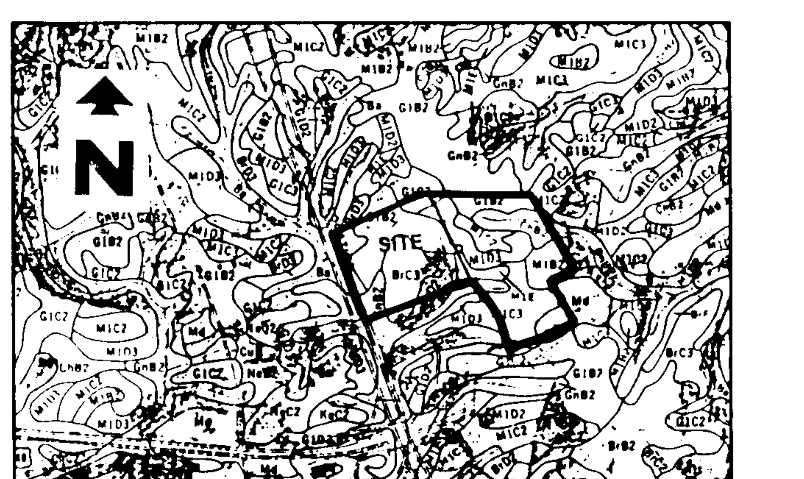
SEEDBED PREPARATION -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS -- APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING -- FOR PERIODS MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH OCTOBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). 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.

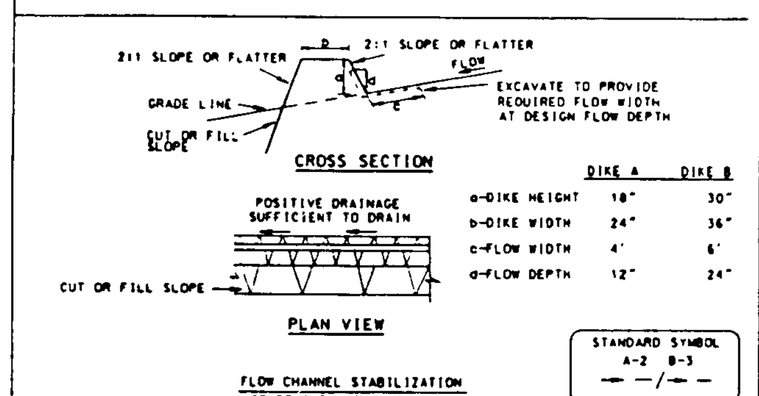
MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1995 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.



SOIL SURVEY MAP
HOWARD COUNTY, MARYLAND
ELLICOTT CITY SITE

DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

STANDARD SYMBOL A-2 B-3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

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 at 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.

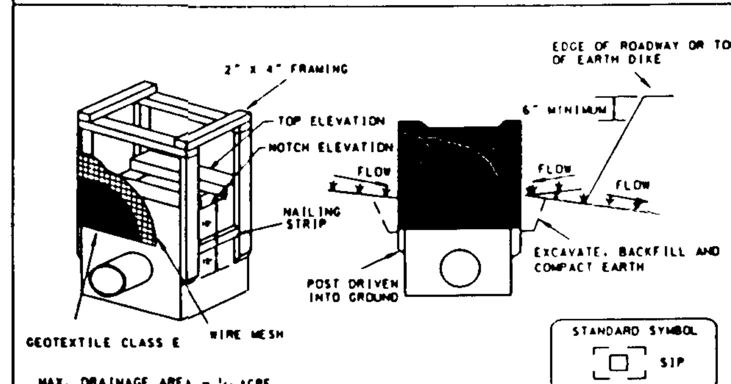
6. Fill shall be compacted by earth moving equipment.

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

DETAIL 23A - STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = ¼ ACRE

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 (weir) 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.

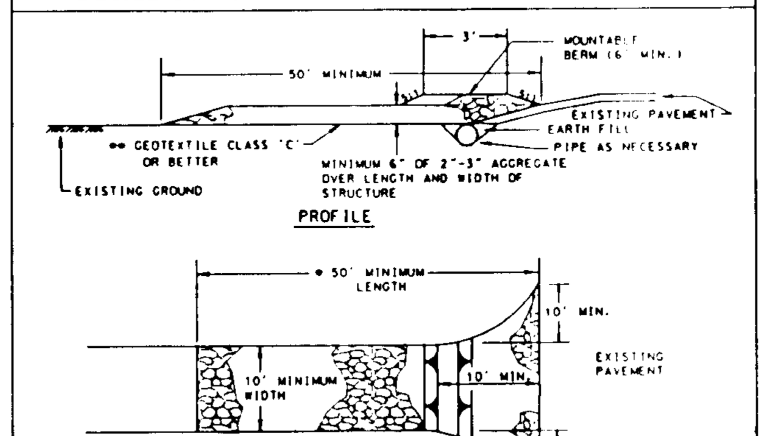
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below 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 and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning 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.

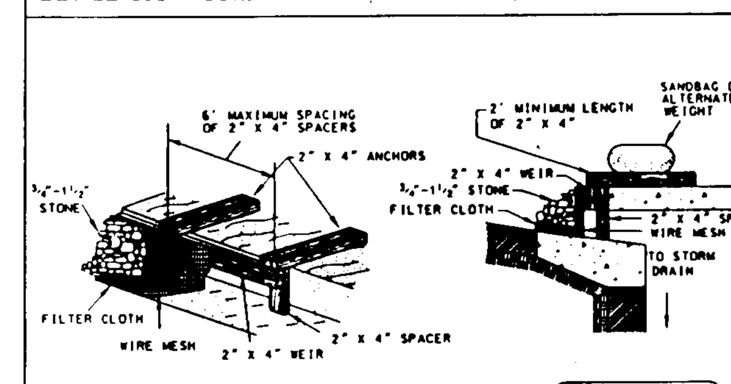
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA = ¼ ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (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" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

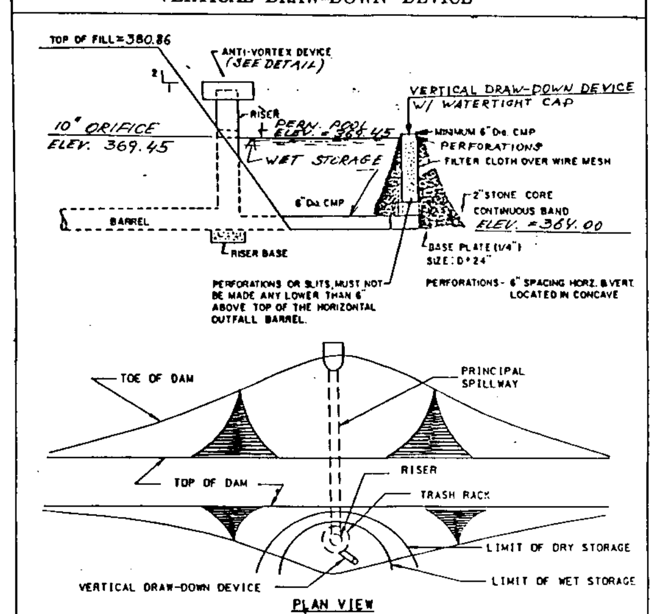
6. Form the ½" x ½" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean ¾" x 1½" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

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 earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 6B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BASIN DRAWDOWN SCHEMATIC
VERTICAL DRAW-DOWN DEVICE



Construction Specifications

1. Perforations in the draw-down device may not extend into the wet storage.

2. The total area of the perforations must be greater than 2 times the area of the internal orifice.

3. The perforated portion of the draw-down device shall be wrapped with ½" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

4. Provide support of draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 guage minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 30 - 30	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Figure 2 Temporary Sediment Basin Design Data Sheet

Computed by: T.P. Date: 10/18/95 Checked by: ____ Date: ____
Project name: ELLICOTT CITY, WAL-MART Basin #: ____
Location: ____

Total area draining to basin: 48.11 acres (ac)

Basin Volume Design

Note: 1. Also see Surface Area Design #30, this form.
2. To convert ft³ to yd³, divide ft³ by 27. To convert ft² to yd², divide ft² by 9.

1. Min. required vol. = 3600 ft³/ac x 48.11 ac. drainage = 173,196 ft³
2. Actual Volume of basin = 431,950 ft³
3. Excavate 2,210 ft³ (81.9 yd³) to obtain required capacity
4. Vol. at dewatering elev. = 1800 ft³/ac x 48.11 ac. = 86,596 ft³
5. Vol. of basin at cleanout = 900 ft³/ac x 48.11 ac. = 43,299 ft³
6. Elevation corresponding to min. required volume of basin (riser crest elevation) 372.70 ft.
7. Permanent pool elevation 369.45 ft.
8. Distance from riser crest elevation to permanent pool elevation 3.25 ft.
9. Basin cleanout elevation 367.20 ft.
10. Distance from riser crest elevation to cleanout elevation 5.50 ft

Spillway Design

11. Q_{10} = 192 cfs (peak discharge from 10-yr, 24-hr storm event, attach computations)

Principal Spillway (Qps) (See Detail 11)

12. Design Principal Spillway (Barrel) discharge, Design Q_{ps} = 192 cfs (min. 10% of 10 year peak or 8" Diameter Pipe)
13. H = 19.4 ft.; Barrel length = 116 ft.
14. Barrel Diam. 2@20 in. Note: Q_{ps} must equal or exceed Design Q_{ps}
Q_{ps} = Q (from Table 13 or 14) 228.40 x (length correction factor) 0.93 = 212.4 cfs.
15. Riser Diameter ____ in.; Riser Height ____ ft.; Riser Head (h) = ____ ft.
16. Trash Rack Diam. ____ in.; Trash Rack Height = ____ in.
* SEE RISER STRUCTURE DETAIL

Emergency Spillway (Qes)

17. Emergency spillway cap., $Q_{es} = Q_{10} - Q_{ps}$ = N/A ____ - ____ = ____ cfs
18. Width ____ ft; Hp ____ ft
19. Entrance channel slope ____ %.
20. Exit channel slope ____ %

Anti-Seep Collar Design (If Required)

21. y = 12.60 ft.; z = 3 :1; pipe slope = 1.08 %; Ls = 94 ft
22. Use 2 collars, 10 ft. - 8 in. square; projection = 3.5 ft.
× 17'-2"

Design Elevations

23. Riser Crest	= 376.60 ft.	24. Design High Water	= N/A ft.
25. Emergency Spillway Crest	= N/A ft.	26. Min. settled top of dam	= 380.86 ft.
27. Permanent pool	= 369.45 ft.	28. Bottom of Basin	= 364.00 ft.
29. Draw-down orifice invert	= 368.25 ft.		

Surface Area Design

30. Min.basin surface area; SA ≥ 0.0035 x Q_{10} = 0.0035 x 192 cfs ≤ 0.67 ac.

Draw-down Device

31. Draw-down device orifice diameter = 10" in. (From Table 11)
32. A_t = Total area of perforations ≥ $4A_o$
A_t = (# of perforation/foot)(perforation area ft²)(perforated section length ft.)
A_t = 2.20 ft²
A_o = Internal orifice area (from Table 11 or computed) 0.55 FT²

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21	APPROVED: 6-6-95
	DATE: SEPTEMBER 6, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6a.

INITIAL DESIGN	8-29-95	LDF	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

STATE OF MARYLAND — ROBERT L. VASLOV — NO. 14210 REGISTERED — PROFESSIONAL ENGINEER — 3-1-96

WAL-MART STORES, INC.
WAL-MART STORE #2412

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS

9175 Guilford Road, Suite 306, Columbia, MD 21046 — (301) 490-4145 — FAX (301) 490-4149 — JOB NO.: 9146 — DWG NAME: 9146PRJ

ELLICOTT CITY WAL-MART
EROSION AND SEDIMENT DETAILS

DATE 7-5-95 — SHEET NO. 12 OF 25

SDP-96-01

I 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.

SIGNATURE OF DEVELOPER — DATE 5/31/96

I 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 PROFFESIONAL 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.

SIGNATURE OF ENGINEER — DATE 6/6/96

STATE OF MARYLAND — ROBERT L. ZICH — No. 14210 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.25.96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

DIRECTOR — DATE 7/2/96

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

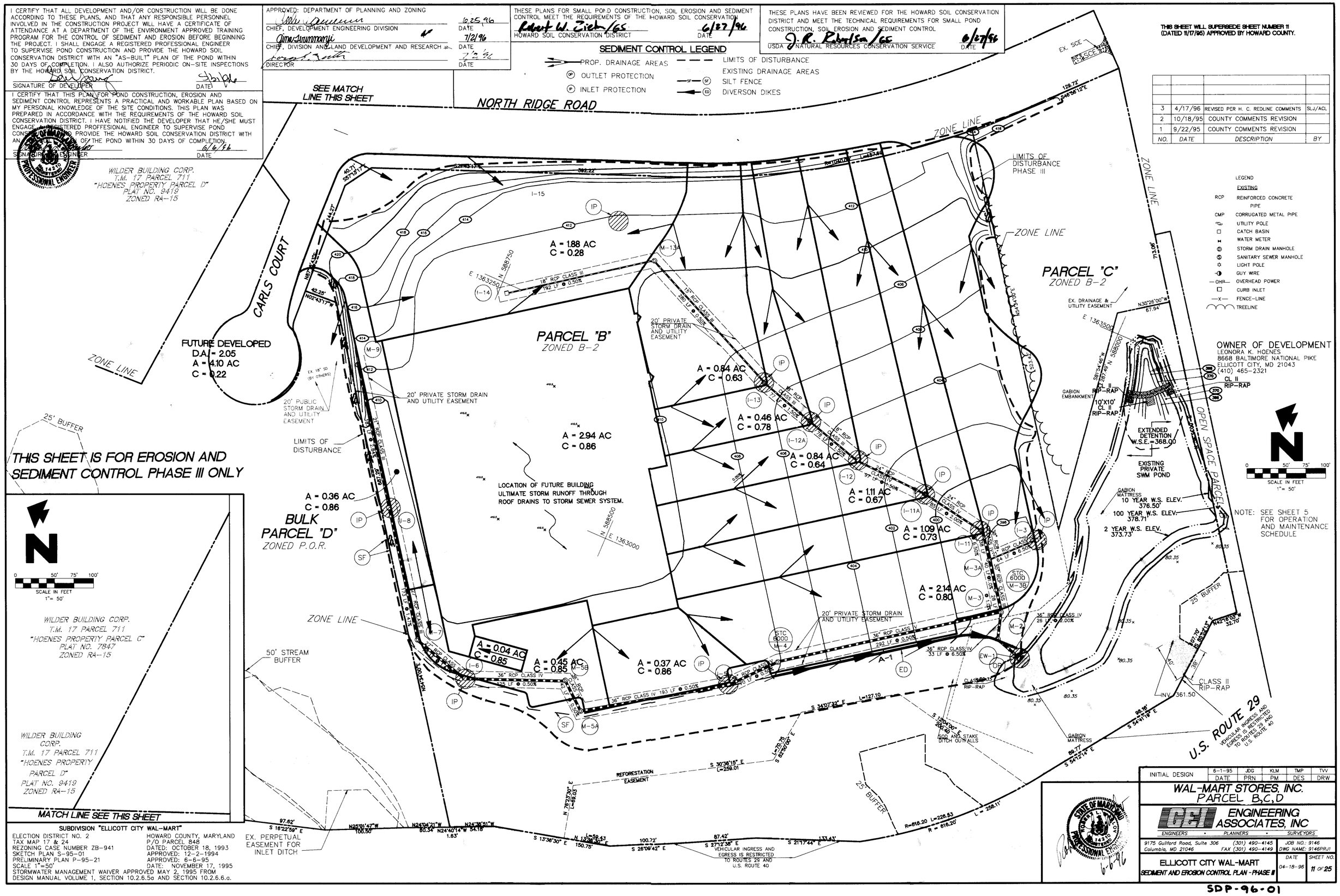
HOWARD SOIL CONSERVATION DISTRICT — DATE 6/27/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 6/27/96

THIS SHEET WILL SUPERSEDE SHEET NUMBER 11 (DATED 11/17/95) APPROVED BY HOWARD COUNTY.

NO.	DATE	DESCRIPTION	BY
3	4/17/96	REVISED PER H. C. REDLINE COMMENTS	SLJ/ACL
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	



LEGEND

EXISTING

RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
	UTILITY POLE
	CATCH BASIN
	WATER METER
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	LIGHT POLE
	GUY WIRE
—OHP—	OVERHEAD POWER
	CURB INLET
—X—	FENCE-LINE
	TREELINE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

NOTE: SEE SHEET 5 FOR OPERATION AND MAINTENANCE SCHEDULE

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21
SCALE 1"=50'
STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
APPROVED: 12-2-1994
APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

INITIAL DESIGN	6-1-95	JDG	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCEL B,C,D

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS

9175 Guilford Road, Suite 306
Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PRJ1

STATE OF MARYLAND — ROBERT L. ZICH — No. 14210 — REGISTERED PROFESSIONAL ENGINEER — 6-6-96

ELLICOTT CITY WAL-MART
SEDIMENT AND EROSION CONTROL PLAN - PHASE III

DATE 04-18-96

SHEET NO. 11 OF 25

SDP-96-01

P:\9600\9146\MASS\UMD\9146PR.1 Thu May 30 09:04:06 1996 STATION 2008 - ITC

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

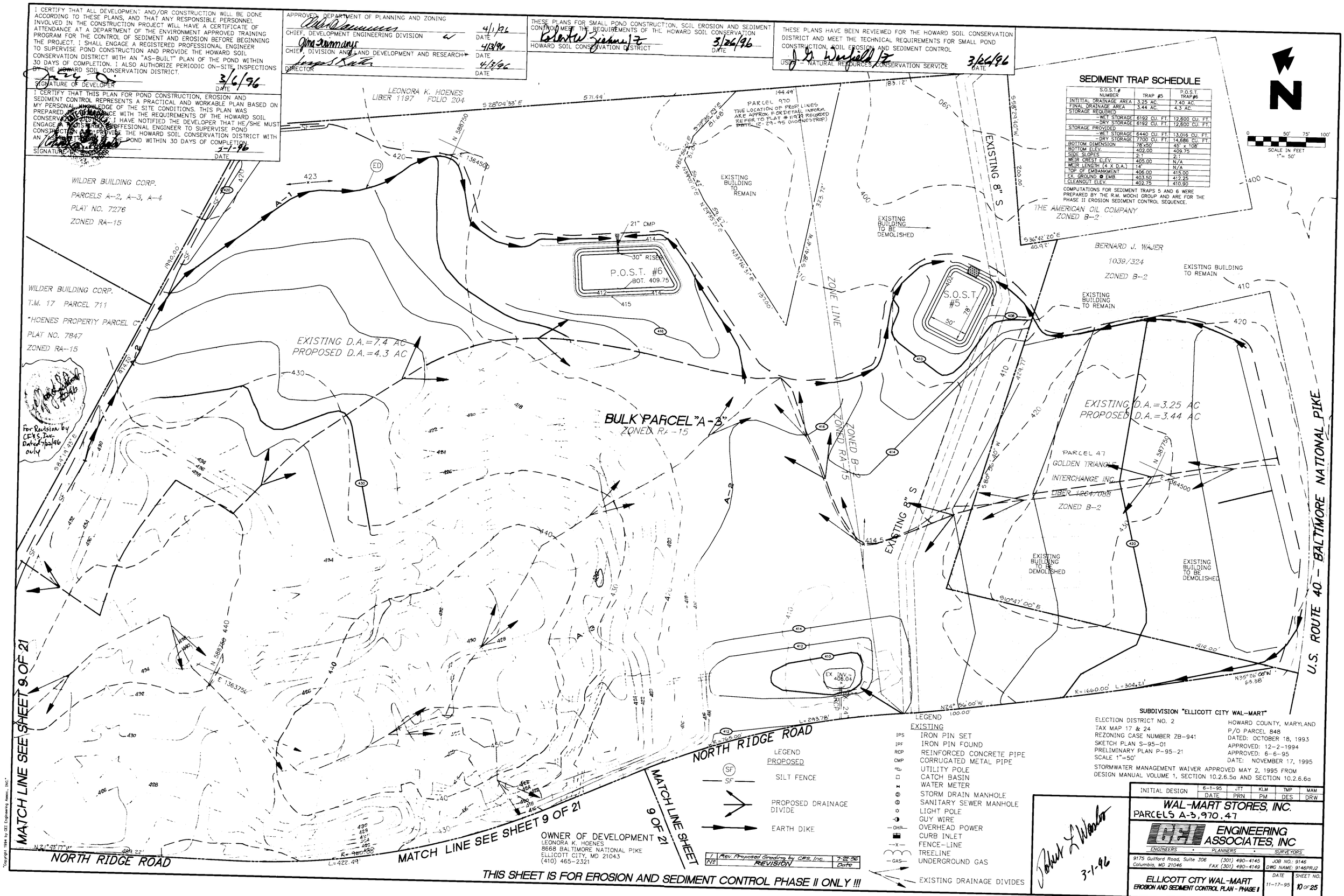
DIRECTOR — DATE 4/3/96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96



SEDIMENT TRAP SCHEDULE

S.O.S.T.# NUMBER	TRAP #5	P.O.S.T. TRAP #6
INITIAL DRAINAGE AREA	3.25 AC.	7.40 AC.
FINAL DRAINAGE AREA	3.44 AC.	4.3 AC.
STORAGE REQUIRED		
-WET STORAGE	6192 CU. FT.	12,600 CU. FT.
-DRY STORAGE	6192 CU. FT.	12,600 CU. FT.
STORAGE PROVIDED		
-WET STORAGE	6440 CU. FT.	13,016 CU. FT.
-DRY STORAGE	7700 CU. FT.	14,686 CU. FT.
BOTTOM DIMENSION	78'x50'	45' x 108'
BOTTOM ELEV.	402.00	409.75
SIDE SLOPES	2:1	2:1
WEIR CREST ELEV.	405.00	N/A
WEIR LENGTH (4 X D.A.)	14'	N/A
TOP OF EMBANKMENT	406.00	415.00
EX. GROUND @ EMB.	403.50	412.25
CLEANOUT ELEV.	402.75	410.90

COMPUTATIONS FOR SEDIMENT TRAPS 5 AND 6 WERE PREPARED BY THE R.M. MOCHI GROUP AND ARE FOR THE PHASE II EROSION SEDIMENT CONTROL SEQUENCE.

For Revision by CE&S, Inc. Dated 7/22/96 only

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OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

No.	REVISION	Date
1	Rev. Proposed Grading by CES, Inc.	7-22-96

THIS SHEET IS FOR EROSION AND SEDIMENT CONTROL PHASE II ONLY !!!

LEGEND

PROPOSED

- SF — SILT FENCE
- PROPOSED DRAINAGE DIVIDE
- EARTH DIKE

EXISTING

- IPS — IRON PIN SET
- IPF — IRON PIN FOUND
- RCP — REINFORCED CONCRETE PIPE
- CMP — CORRUGATED METAL PIPE
- UTILITY POLE
- CATCH BASIN
- WATER METER
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- LIGHT POLE
- GUY WIRE
- —OHR— OVERHEAD POWER
- CURB INLET
- —X— FENCE-LINE
- TREELINE
- —GAS— UNDERGROUND GAS
- EXISTING DRAINAGE DIVIDES

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24 — P/O PARCEL 848
REZONING CASE NUMBER ZB-941 — DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01 — APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21 — APPROVED: 6-6-95
SCALE 1"=50' — DATE: NOVEMBER 17, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6a

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	MAM
	DATE	PRN	PM	DES	DRW

3-1-96

WAL-MART STORES, INC.
PARCELS A-3, 970, 47

CEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306, Columbia, MD 21046 — (301) 490-4145, FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PRJ2

ELLICOTT CITY WAL-MART
EROSION AND SEDIMENT CONTROL PLAN - PHASE II

DATE: 11-17-95
SHEET NO. 10 OF 25

SDP-96-01

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF PROFESSIONAL ENGINEER — DATE 3-1-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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.

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

SEDIMENT TRAP SCHEDULE

TRAP NUMBER	TYPE	DRAINAGE AREA	STORAGE REQUIRED	STORAGE PROVIDED	WIER LENGTH PIPE SIZE	CLEANOUT ELEV.	STORAGE DEPTH	EMBANKMENT HEIGHT/ELEV.	TRAP BOTTOM	WET STORAGE LIMIT	CREST ELEV.
1	ST-II	4.93	17,748	20,864	20'	386.70	4'	2.0'	386.00	387.25	390.00
3	ST-II	4.05	14,580	20,864	20'	366.82	4'	2.0'	366.00	367.64	370.00
4	ST-II	4.69	16,884	18,084	20'	360.93	4'	2.0'	360.00	361.87	364.00
–	TSB	48.11	173,196	491,950	SEE DETAIL	367.20	5.45'	19.36'	364.00	369.45	376.60

SEDIMENT CONTROL LEGEND

- SSF — SUPER SILT FENCE – 3.05
- LIMITS OF DISTURBANCE
- EARTH DIKE
- EXISTING DRAINAGE AREAS

NO.	DATE	DESCRIPTION	BY
3	7-20-95	[illegible]	[illegible]
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	

LEGEND

EXISTING

- RCP — REINFORCED CONCRETE PIPE
- CMP — CORRUGATED METAL PIPE
- UTILITY POLE
- CATCH BASIN
- WATER METER
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- LIGHT POLE
- GUY WIRE
- OHR — OVERHEAD POWER
- CURB INLET
- FENCE-LINE
- TREELINE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

NOTE: SEE SHEET 5 FOR OPERATION AND MAINTENANCE SCHEDULE

SCALE IN FEET 1"= 50'

SEE MATCH LINE THIS SHEET

SEE MATCH LINE SHEET 10 OF 25

NORTH RIDGE ROAD

SEE MATCH LINE SHEET 10 OF 25

WILDER BUILDING CORP. T.M. 17 PARCEL 711 "HOENES PROPERTY PARCEL D" PLAT NO. 9419 ZONED R4-15

CARLS COURT

ZONE LINE

25' BUFFER

LIMIT OF WETLANDS

LIMITS OF DISTURBANCE FOR PHASE II

BULK PARCEL "D" ZONED P.O.R.

EX.D.A. = 4.97 AC
PROP.D.A. = 4.97 AC

PARCEL "B" ZONED B-2

EX. D.A.= 22.09 AC
PROP. D.A.= 48.11 AC

PARCEL "C" ZONED B-2

EX. DRAINAGE & UTILITY EASEMENT

EXISTING PRIVATE SWM POND

10 YEAR W.S. ELEV. 376.50'
100 YEAR W.S. ELEV. 378.71'
2 YEAR W.S. ELEV. 373.73'

OPEN SPACE PARCEL "E"

DIKE TO MAINTAIN POSITIVE FLOW TO TRAP/BASIN AT ALL TIMES

EX.D.A. = 4.05 AC
PROP.D.A. = 1.42 AC

EX.D.A. = 4.69 AC
PROP.D.A. = 1.04 AC

50' STREAM BUFFER

REFORESTATION EASEMENT

CLASS II RIP-RAP

U.S. ROUTE 29

VEHICULAR INGRESS AND EGRESS IS RESTRICTED TO ROUTES 29 AND U.S. ROUTE 40

EX. PERPETUAL EASEMENT FOR INLET DITCH

For Revision by CF&S Dated 7/20/96 mlw

WILDER BUILDING CORP. T.M. 17 PARCEL 711 "HOENES PROPERTY PARCEL C" PLAT NO. 7847 ZONED R4-15

WILDER BUILDING CORP. T.M. 17 PARCEL 711 "HOENES PROPERTY PARCEL D" PLAT NO. 9419 ZONED R4-15

MATCH LINE SEE SHEET 10 OF 25

MATCH LINE SEE THIS SHEET

THIS SHEET IS FOR EROSION AND SEDIMENT CONTROL PHASE II ONLY

3-1-96

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21
SCALE 1"=50'
STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
APPROVED: 12-2-1994
APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

INITIAL DESIGN	6-1-95	JDG	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCELS A,B,C,D

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PRJ1

ELLICOTT CITY WAL-MART
SEDIMENT AND EROSION CONTROL PLAN - PHASE II

DATE 11-17-95 — SHEET NO. 9 OF 25

SDP-96-01

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

I 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.

SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

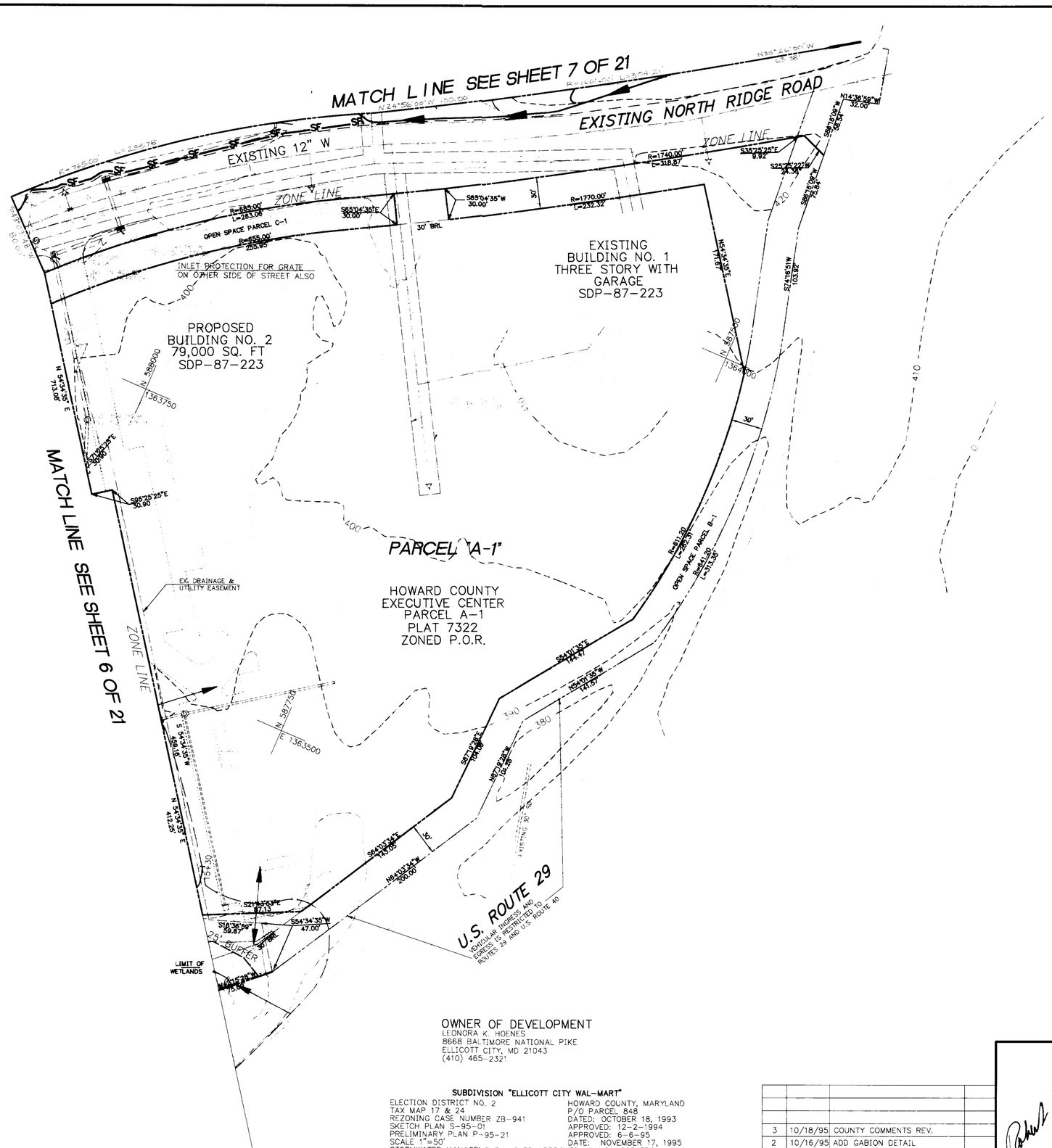
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96



N

0 50' 75' 100'
SCALE IN FEET
1" = 50'

LEGEND

EXISTING

IPS	IRON PIN SET
IPF	IRON PIN FOUND
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
	UTILITY POLE
	CATCH BASIN
	WATER METER
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	LIGHT POLE
	GUY WIRE
—OHP—	OVERHEAD POWER
	CURB INLET
—X—	FENCE-LINE
	TREELINE
—GAS—	UNDERGROUND GAS

PROPOSED SEDIMENT CONTROL LEGEND

	EXISTING DRAINAGE DIVIDE
—SF—	SILT FENCE
	LIMITS OF DISTURBANCE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24 — P/O PARCEL 848
REZONING CASE NUMBER ZB-941 — DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01 — APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21 — APPROVED: 6-6-95
SCALE 1"=50' — DATE: NOVEMBER 17, 1995
STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5c AND SECTION 10.2.6.6.a.

NO.	DATE	DESCRIPTION	BY
3	10/18/95	COUNTY COMMENTS REV.	
2	10/16/95	ADD GABION DETAIL	
1	9/22/95	COUNTY COMMENTS REV.	

3-1-96

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCEL A-1

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149
JOB NO.: 9146
DWG NAME: 9146PRJ3

ELLICOTT CITY WAL-MART
SEDIMENT AND EROSION CONTROL PLAN-PHASE I
DATE 11-17-95
SHEET NO. 8 OF 25

SDP-96-01

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SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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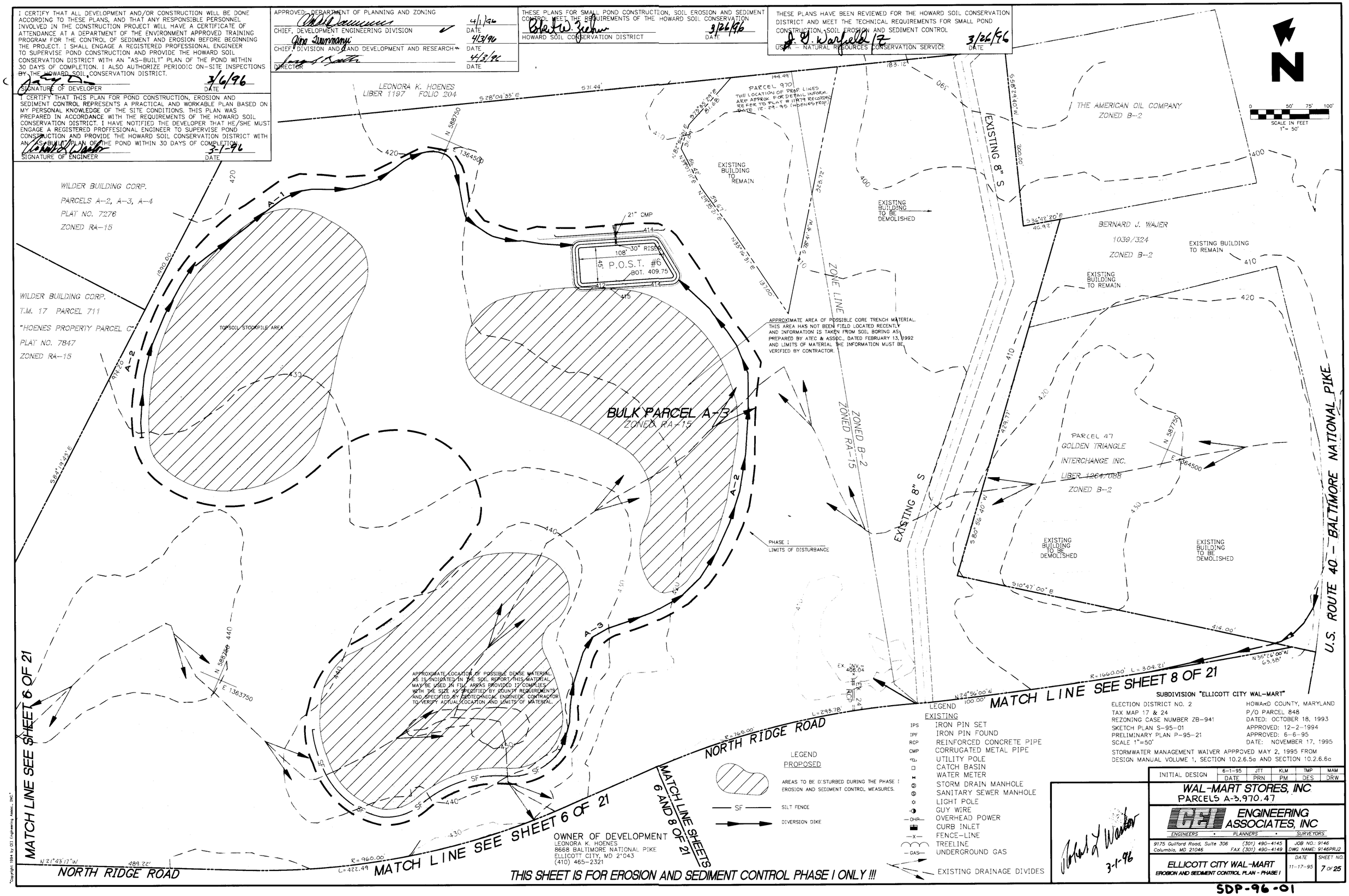
USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96



SDP-96-01

"Copyright 1994 by GEI Engineering Assoc., INC."

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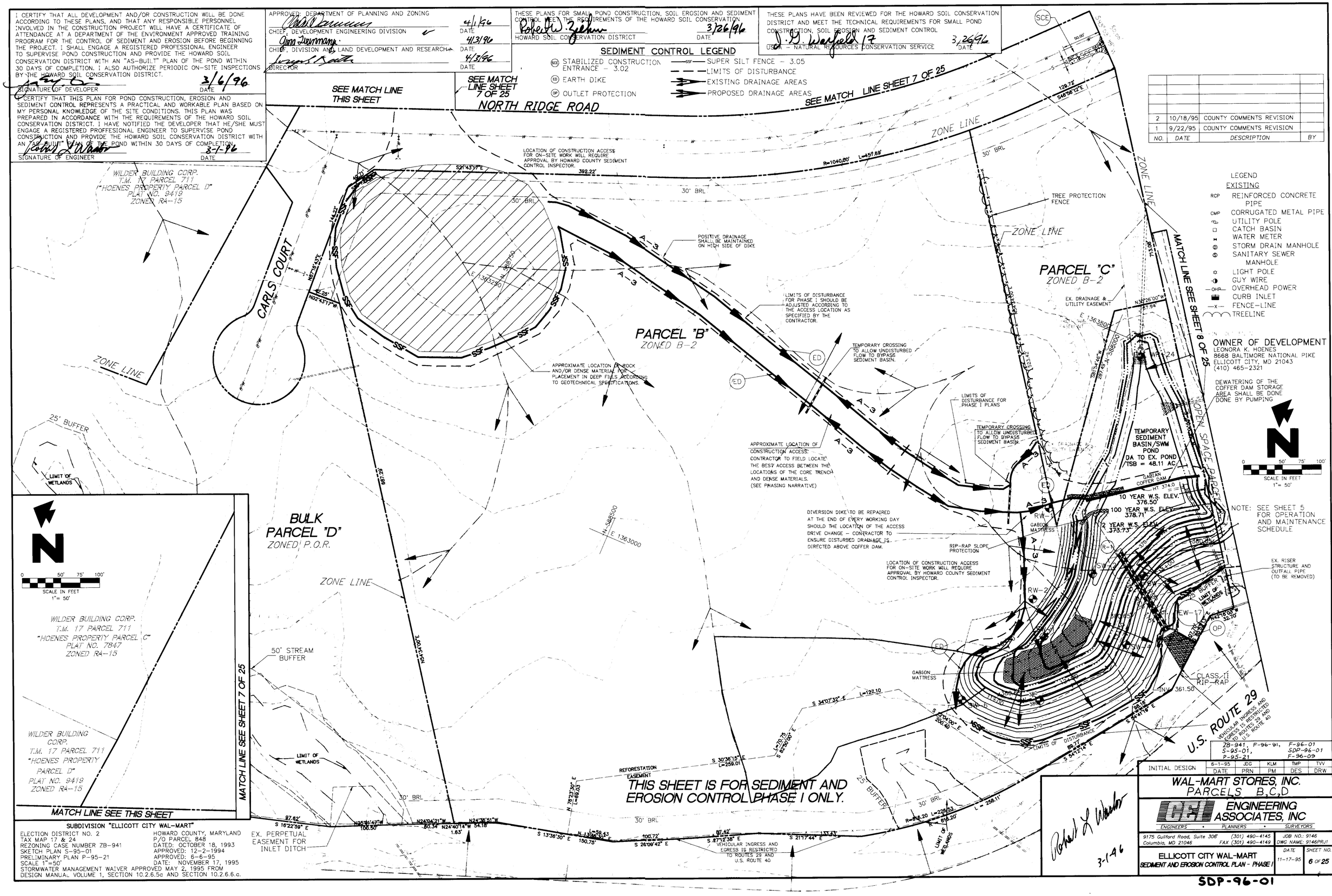
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

SEDIMENT CONTROL LEGEND

- SCE STABILIZED CONSTRUCTION ENTRANCE - 3.02
- ED EARTH DIKE
- OP OUTLET PROTECTION
- SSF SUPER SILT FENCE - 3.05
- LIMITS OF DISTURBANCE
- EXISTING DRAINAGE AREAS
- PROPOSED DRAINAGE AREAS

NO.	DATE	DESCRIPTION	BY
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	



LEGEND

EXISTING

- RCP REINFORCED CONCRETE PIPE
- CMP CORRUGATED METAL PIPE
- UTILITY POLE
- CATCH BASIN
- WATER METER
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- LIGHT POLE
- GUY WIRE
- OVERHEAD POWER
- CURB INLET
- FENCE-LINE
- TREELINE

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21
SCALE 1"=50'
HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
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ZB-941, F-96-91, F-96-01, S-95-01, SDP-96-01, P-95-21, F-96-09

INITIAL DESIGN	6-1-95	JDG	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

3-1-96

WAL-MART STORES, INC.
PARCELS B,C,D

GEI ENGINEERING ASSOCIATES, INC
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Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PR1

ELLICOTT CITY WAL-MART
SEDIMENT AND EROSION CONTROL PLAN - PHASE I

DATE 11-17-95 — SHEET NO. 6 OF 25

SDP-96-01

I 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.

SIGNATURE OF DEVELOPER — DATE 3/6/96

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SIGNATURE OF ENGINEER — DATE 3-1-96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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

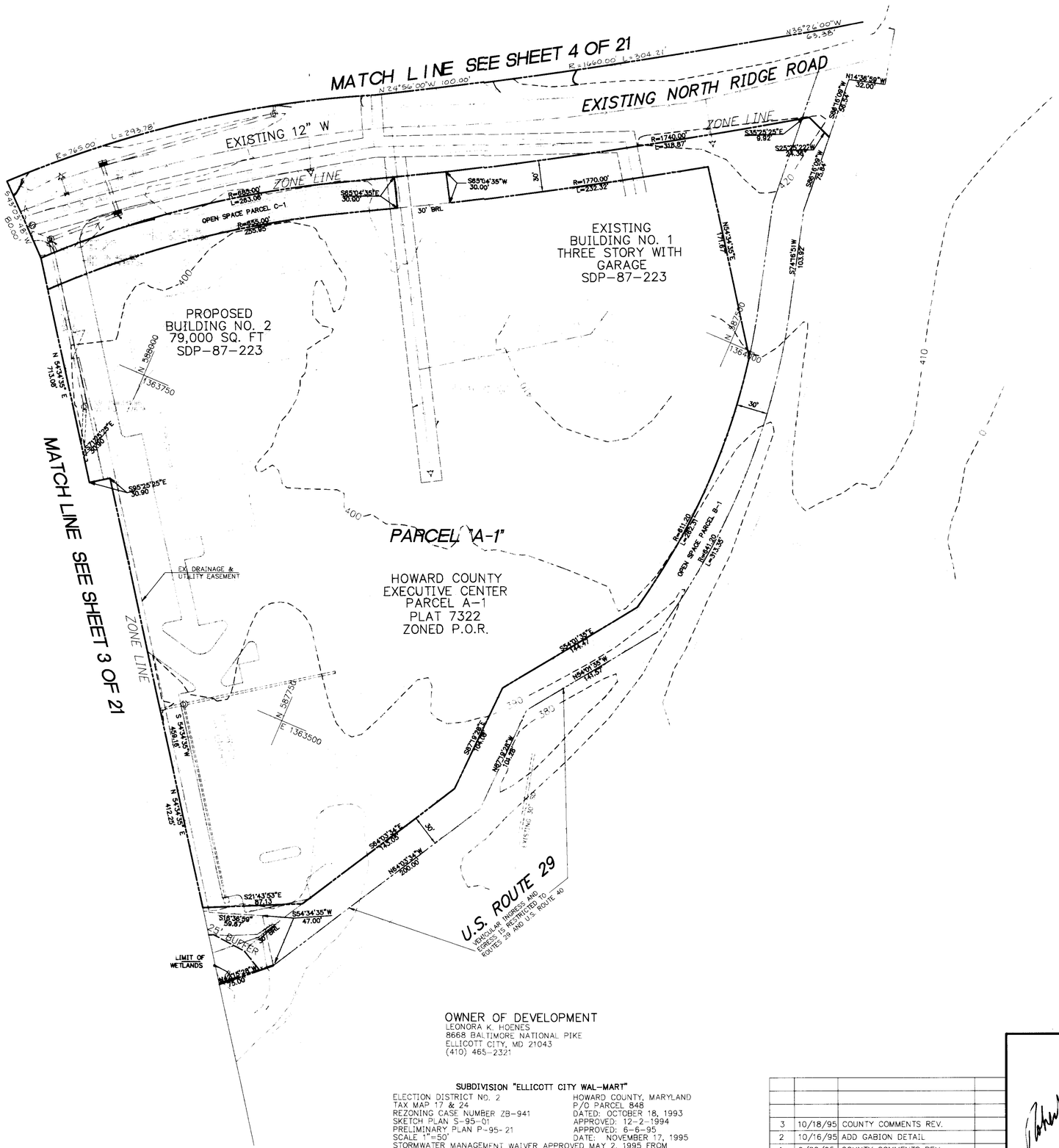
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96



LEGEND

EXISTING

IPS	IRON PIN SET
IPF	IRON PIN FOUND
RCP	REINFORCED CONCRETE PIPE
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	UTILITY POLE
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	LIGHT POLE
	GUY WIRE
—OHP—	OVERHEAD POWER
	CURB INLET
—X—	FENCE-LINE
	TREELINE
—GAS—	UNDERGROUND GAS

OPERATION AND MAINTENANCE SCHEDULE
OF PRIVATELY OWNED AND MAINTAINED
STORMWATER MANAGEMENT FACILITY
EXTENDED DETENTION POND

ROUTINE MAINTENANCE

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. VEGETATION GROWING ON THE EMBANKMENT TOP AND FACES SHALL NOT EXCEED 18 INCHES IN HEIGHT AT ANY TIME. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS. IN ADDITION, REMOVAL OF SILT SHALL OCCUR WHEN THE ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE FOREBAY.
3. CORRECTIVE MAINTENANCE WILL BE COMPLETED ANY TIME AN EXTENDED DETENTION BASIN DOES NOT DRAIN THE EQUIVALENT OF THE WATER QUALITY VOLUME WITHIN 60 HOURS, SO AS NOT TO ALLOW ANY STANDING WATER. IN ADDITION, CORRECTIVE MAINTENANCE WILL BE COMPLETED ANY TIME THE FOREBAY DOES NOT DRAIN DOWN COMPLETELY WITHIN 60 HOURS.

OPERATION AND MAINTENANCE SCHEDULE
STORMCEPTOR DEVICES

AS RECOMMENDED BY THE MANUFACTURER OF THE STORMCEPTOR SYSTEM, THE SYSTEM WILL BE MAINTAINED BY CLEANING ON AN ANNUAL BASIS INITIALLY. AFTER THE SITE IS STABILIZED THE SYSTEM WILL BE MONITORED TO DETERMINE THE FREQUENCY OF MAINTENANCE BASED ON THE LOCAL SITE CONDITIONS.

SHOULD SOME TYPE OF SPILL OCCUR, THE STORMCEPTOR SHALL BE CLEANED IMMEDIATELY AFTER THE SPILL OCCURS. APPROPRIATE REGULATORY AGENCIES WILL ALSO BE NOTIFIED IN THE EVENT OF A SPILL.

THE SEDIMENT FROM THE STORMCEPTOR SHALL BE TESTED TO DETERMINE THE DISPOSAL OPTIONS. THE HAZARDOUS MATERIALS (OIL/CHEMICAL/FUEL) WILL BE REMOVED BY A LICENSED WASTE MANAGEMENT COMPANY AND DISPOSED OF ACCORDINGLY. ALL METHODS OF DISPOSAL SHALL BE APPROVED BY THE PROPER LOCAL AND STATE AGENCIES.

ALL INSPECTIONS AND MAINTENANCE PROCEDURES OF THE STORMCEPTOR SYSTEM SHALL BE COMPLETED USING THE ATTACHED FORM.

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2	HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24	P/O PARCEL 848
REZONING CASE NUMBER ZB-941	DATED: OCTOBER 18, 1993
SKETCH PLAN S-95-01	APPROVED: 12-2-1994
PRELIMINARY PLAN P-95-21	APPROVED: 6-6-95
SCALE 1"=50'	DATE: NOVEMBER 17, 1995

STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.5.5a AND SECTION 10.2.6.6.a.

NO.	DATE	DESCRIPTION	BY
3	10/18/95	COUNTY COMMENTS REV.	
2	10/16/95	ADD GABION DETAIL	
1	9/22/95	COUNTY COMMENTS REV.	

3-1-96

INITIAL DESIGN	6-1-95	JTT	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCEL A-1

GEI ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306 (301) 490-4145
Columbia, MD 21046 FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PRJ3

ELLICOTT CITY WAL-MART
MASS GRADING PLAN

DATE 11-17-95 — SHEET NO. 5 OF 25

SDP-96-01

I 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.

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SIGNATURE OF ENGINEER — DATE 3-1-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIRECTOR — DATE 4/3/96

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/26/96

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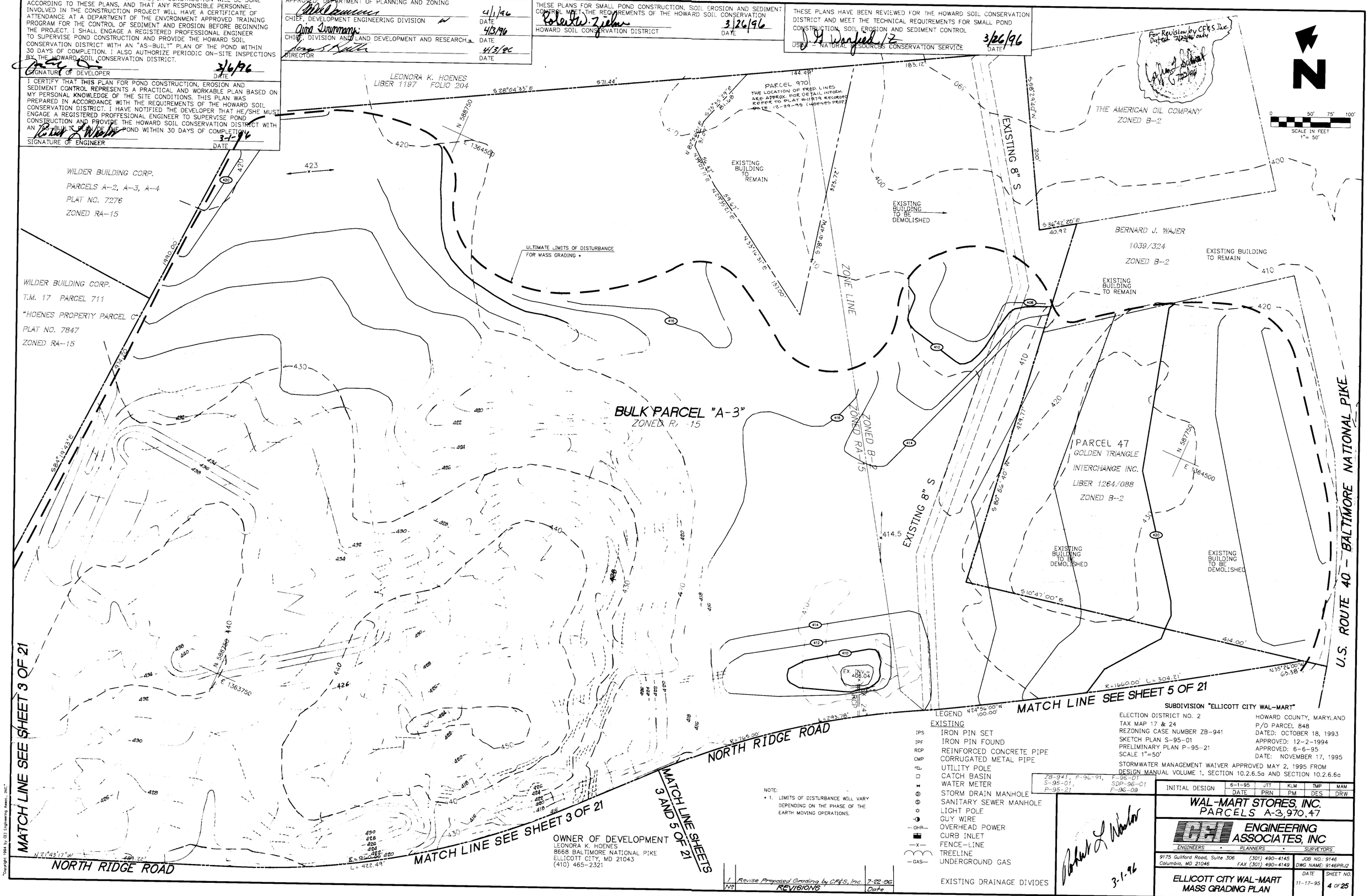
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 3/26/96



OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

NOTE:
* 1. LIMITS OF DISTURBANCE WILL VARY DEPENDING ON THE PHASE OF THE EARTH MOVING OPERATIONS.

LEGEND

EXISTING

IPS	IRON PIN SET
IPF	IRON PIN FOUND
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
	UTILITY POLE
	CATCH BASIN
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—OHP—	OVERHEAD POWER
	CURB INLET
—X—	FENCE-LINE
	TREELINE
—GAS—	UNDERGROUND GAS
	EXISTING DRAINAGE DIVIDES

No	REVISIONS	Date
1	Revise Proposed Grading by CF&S, Inc.	7-22-96

ZB-941, F-96-91, S-95-01, P-95-21, F-95-01, SDP-96-01, F-96-09

3-1-96

SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2 — HOWARD COUNTY, MARYLAND
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INITIAL DESIGN	6-1-95	JTT	KLM	TMP	MAM
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCELS A-3, 970, 47

CEI ENGINEERING ASSOCIATES, INC
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9175 Guilford Road, Suite 306, Columbia, MD 21046 — (301) 490-4145, FAX (301) 490-4149

JOB NO.: 9146
DWG NAME: 9146PRJ2

ELLICOTT CITY WAL-MART
MASS GRADING PLAN

DATE 11-17-95 — SHEET NO. 4 OF 25

SDP-96-01

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I 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.

SIGNATURE OF DEVELOPER — DATE 5/31/96

I 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.

SIGNATURE OF ENGINEER — DATE 6/6/96

STATE OF MARYLAND — ROBERT L. HANNA — No. 11431 — PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/2/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96

DIRECTOR — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/27/96

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 6/27/96

POND SUMMARY TABLE			
DA TO SWM POND = 48.11 AC	2 YEAR	10 YR	100 YR
ALLOWABLE RELEASE RATES (EXISTING CFS)	25.6	99.5	203.2
PEAK INFLOW (CFS)	114.2	205.1	305.9
DISCHARGE RELEASE RATES (DEVELOPED CFS)	23.59	97.93	224.92
DISCHARGE ELEVATION	373.73	376.61	378.65
STORAGE VOLUME (CU. FT.)	206,509	322,954	417,653

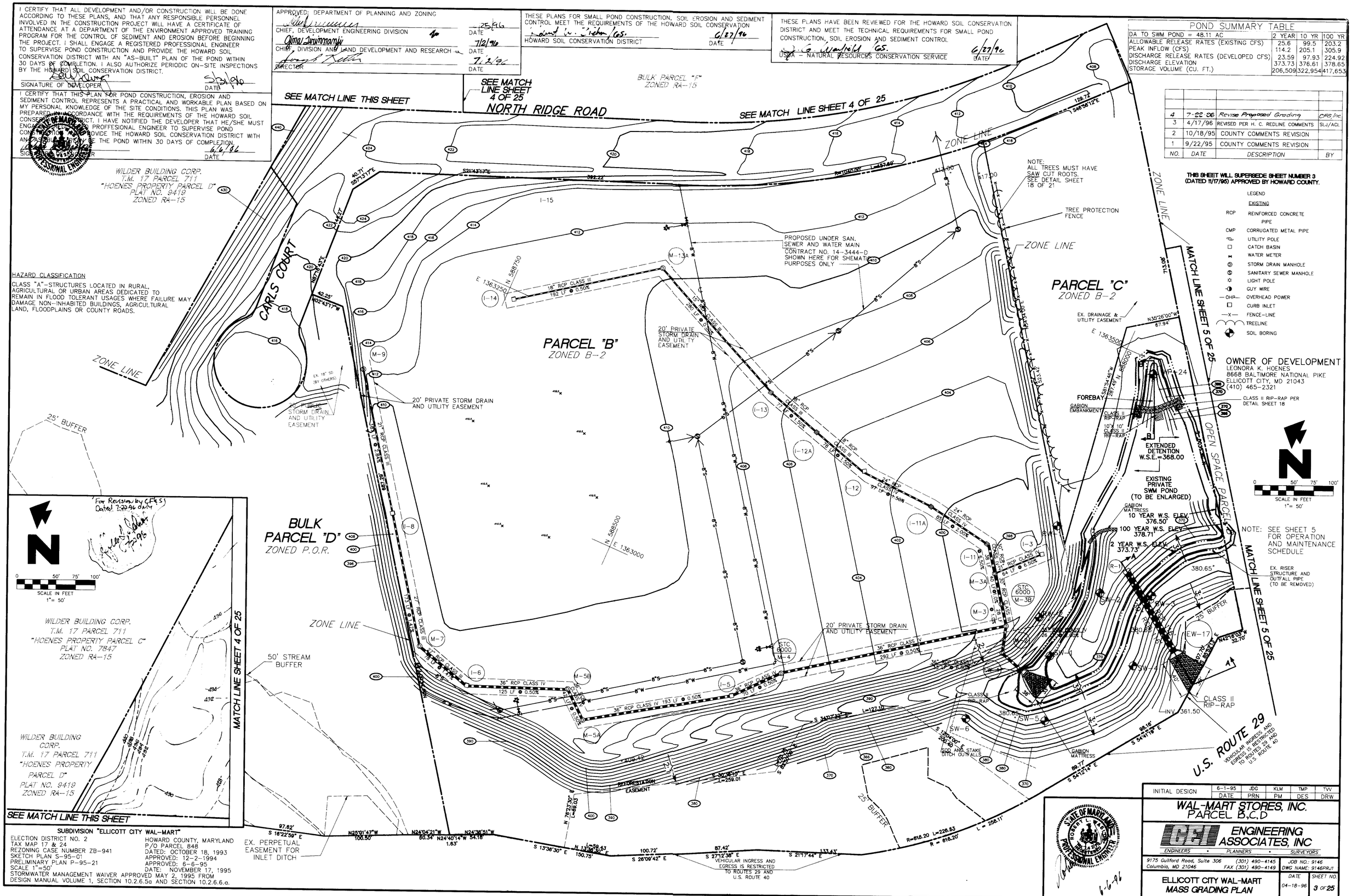
NO.	DATE	DESCRIPTION	BY
4	7-22-96	Revise Proposed Grading	CRS,Inc.
3	4/17/96	REVISED PER H. C. REDLINE COMMENTS	SLJ/ACL
2	10/18/95	COUNTY COMMENTS REVISION	
1	9/22/95	COUNTY COMMENTS REVISION	

THIS SHEET WILL SUPERSEDE SHEET NUMBER 3 (DATED 11/17/95) APPROVED BY HOWARD COUNTY.

LEGEND

EXISTING

RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
	UTILITY POLE
	CATCH BASIN
	WATER METER
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	LIGHT POLE
	GUY WIRE
—OHP—	OVERHEAD POWER
	CURB INLET
—X—	FENCE-LINE
	TREELINE
	SOIL BORING



SUBDIVISION "ELLICOTT CITY WAL-MART"

ELECTION DISTRICT NO. 2
TAX MAP 17 & 24
REZONING CASE NUMBER ZB-941
SKETCH PLAN S-95-01
PRELIMINARY PLAN P-95-21
SCALE 1"=50'
STORMWATER MANAGEMENT WAIVER APPROVED MAY 2, 1995 FROM DESIGN MANUAL VOLUME 1, SECTION 10.2.6.5a AND SECTION 10.2.6.6.a.

HOWARD COUNTY, MARYLAND
P/O PARCEL 848
DATED: OCTOBER 18, 1993
APPROVED: 12-2-1994
APPROVED: 6-6-95
DATE: NOVEMBER 17, 1995

INITIAL DESIGN	6-1-95	JDC	KLM	TMP	TVV
	DATE	PRN	PM	DES	DRW

WAL-MART STORES, INC.
PARCEL B,C,D

GEA ENGINEERING ASSOCIATES, INC
ENGINEERS • PLANNERS • SURVEYORS
9175 Guilford Road, Suite 306
Columbia, MD 21046
(301) 490-4145
FAX (301) 490-4149

STATE OF MARYLAND — ROBERT L. HANNA — No. 11431 — PROFESSIONAL ENGINEER — 6-6-96

ELLICOTT CITY WAL-MART
MASS GRADING PLAN

JOB NO.: 9146
DWG NAME: 9146PR.I1
DATE: 04-18-96
SHEET NO. 3 OF 25

SDP-96-01

ECS LTD

RETAINING WALL CONSTRUCTION SPECIFICATIONS
for
KEYSTONE SEGMENTAL BLOCK RETAINING WALLS REINFORCED WITH MIRAGRID GEOGRIDS

CLEARING AND SUBGRADE PREPARATION

1. Clearing and stripping limits shall be extended a minimum of 2 feet in front of the retaining walls and to the back of the reinforced zone.
2. All existing topsoil, rootmat, and any other soft or unsuitable materials shall be removed from the clearing and stripping limits.
3. Prior to initiation of construction operations or fill placement, the stripped area shall be observed by an experienced geotechnical engineer or his authorized representative to aid in locating unsuitable materials which require removal.
4. If feasible, proofrolling, using a loaded dump truck having an axle weight of at least 10 tons, or similar equipment, shall be used to identify localized soft or unsuitable material which required removal.
5. Any soft or unsuitable materials encountered during this proofrolling shall be removed and replaced with an approved backfill compacted to the criteria outlined in the section entitled COMPACTIVE EFFORT AND FILL PLACEMENT.

EXCAVATION SUPPORT AND SLOPES

1. Temporary slopes shall be no steeper than 1H:1V.
2. Excavations shall be constructed and braced in accordance with current OSHA requirements.
3. The Contractor shall not stockpile excavated materials or equipment immediately adjacent to the excavation walls or slopes. All such materials shall be kept back from the top of the excavation a minimum distance equal to the excavation depth. Where equipment or materials must be placed immediately adjacent to the excavation walls, the excavation walls shall be designed for the anticipated surcharge loading, or additional bracing must be provided to support the anticipated surcharge loading.

MATERIALS

1. Retaining Wall Units shall consist of KEYSTONE straight face masonry units. All masonry retaining wall units shall be in strict accordance with the latest specifications furnished by KEYSTONE Retaining Wall Systems, Inc., Minneapolis, MN.
2. The color of block units to be selected by the Owner.
3. Fiberglass Pins shall be nylon resin rods with fiberglass reinforcement as supplied by KEYSTONE Retaining Wall Systems, Inc. and shall be in accordance with the latest KEYSTONE specifications.
4. Geogrids shall consist of Mirafi (Miragrid) geogrids. All geogrids shall be in strict accordance with the latest specifications furnished by the Nicolon/Mirafi Group, Norcross, GA.
5. Geotextiles shall consist of Mirafi 140N, or Amoco 4551, or other equivalent as approved by ECS, Ltd.
6. Material handling and storage shall be in accordance with the manufacturer's specifications.
7. Drainage Aggregate shall consist of AASHTO #57 stone.
8. Leveling Pad shall consist of AASHTO #57 stone, MDOT CR-487, or VDOT 21-A graded aggregate.
9. Fill materials for the Reinforced Fill and Retained Fill zones shall consist of soils having a Unified Soil Classification System designation of SM, SC, SP, SW, GM, GC, GP, or GW, be free of organic matter, rocks greater than 6 inches in maximum dimension, or debris, and have maximum Liquid Limit and Plasticity Index of 40 and 15, respectively. Furthermore, the reinforced and retained fill zones shall consist of materials that meet or exceed the requirements of the design parameters.
10. Unacceptable fill materials include topsoil, organic materials (OH, OL), low plasticity silts and clays (ML, CL), plastic silts and clays (CH, MH), and soils not meeting the criteria of the previous paragraph.
11. High plasticity materials (MH, CH) shall not be used as controlled fill. Acceptable fill soils shall be defined as those soils meeting the design parameters and the requirements of this section.

FOUNDATIONS

1. The reinforced backfill zone shall bear on natural materials that have been prepared in accordance with the section CLEARING AND SUBGRADE PREPARATION.
2. The leveling pad shall also bear on suitable natural materials. The leveling pad should consist of a granular material such as graded aggregate (MDOT CR-487, VDOT 21-A) or crushed stone (VDOT # 57) that is at least 6 inches thick.
3. The bearing capacity of the subgrade supporting all retaining wall elements, including masonry blocks and reinforced fill zone, shall be verified by a qualified soil technician or geotechnical engineer at a minimum frequency of 25 feet on center.

COMPACTIVE EFFORT AND FILL PLACEMENT

1. Leveling Pad -
   a. Where No. 57 stone is used, tamp in place w/a flat plate tamper.
   b. Where MDOT CR-487 or VDOT 21A is used, compact to a minimum of 95% of the maximum dry density in accordance with ASTM D-698, Standard Proctor method.
2. Drainage Aggregate - Tamp and compact with a smooth plate walk-behind tamper.
3. Reinforced Fill Zone - Compact to a minimum of 95% of the maximum dry density obtained in accordance with ASTM D-698 Standard Proctor method.
4. Retained Fill Zone - Compact to a minimum of 95% of the maximum dry density obtained in accordance with ASTM D-698 Standard Proctor method.
5. Fill materials shall not be placed on frozen or frost heaved soils. All such soils shall be removed prior to continuation of fill operations.
6. Fill materials shall not be contain frozen materials at the time of fill placement. All such materials shall be removed prior to continuation of fill operations.
7. Fill soils should be placed in lifts not exceeding 8 inches in loose thickness.
8. At the time of compaction, fill soils shall be within ±2% of the optimum moisture content, and should be compacted to a minimum of 95% of the maximum dry density as determined in accordance with ASTM Specification D-698, Standard Proctor Method.
9. All fill and backfill operations shall be observed on a full-time basis by a qualified soil technician to determine if minimum compaction requirements are being met and that materials meeting or exceeding the specification requirements are used.
10. In-place density tests shall be performed with a minimum of 1 test per 1,000 square feet of fill area for each lift of fill placed. The elevation and location of the tests should be clearly identified at the time of fill placement.
11. Granular soils (Unified Soil Classification SM or better) shall be compacted with smooth drum vibratory compaction equipment or rubber tire compactors.
12. Low plasticity soils (Unified Soil Classifications ML, SC) shall be compacted with a sheepsfoot roller.
13. Care should be exercised regarding the use of relatively heavy machinery close to the wall. Lighter compaction equipment should be used close to the wall.
14. The fill area shall be graded at the end of each day to facilitate the positive drainage of surface water associated with precipitation away from it.

DEWATERING AND SITE DRAINAGE

1. The contractor shall provide sump pit and pumping operation as required for dewatering the retaining wall excavations.
2. The Contractor shall provide and maintain adequate site drainage during earthwork operations, including providing for drainage of surface water away from the construction areas, and enhancement of natural drainage paths without interrupting its pattern.
3. All erosion and sedimentation control shall be controlled in accordance with sound engineering practice and current County requirements.

GENERAL NOTES

1. If the elevation, location, surcharge loading, or grading surrounding the retaining walls changes from that depicted on these plans, ECS, Ltd. shall be notified so that modifications to the geotechnical design can be made, as necessary.

<<End of Section>>

GENERAL CONSTRUCTION SEQUENCE
for
KEYSTONE SEGMENTAL BLOCK RETAINING WALLS REINFORCED WITH MIRAGRID GEOGRIDS

STEP 1 - EXCAVATION AND LEVELING PAD

A. WALL LAYOUT AND GENERAL EXCAVATION

1. Survey stake wall location and general excavation limits for wall construction.
2. Ensure the wall is along proper alignment, and within appropriate property boundaries, and construction easements.
3. Perform general excavation for wall.

B. LEVELING PAD CONSTRUCTION

1. Stake wall location for leveling pad excavation.
2. Excavate trench to create the minimum leveling pad thickness and to the minimum width shown.
3. Install drain pipe with positive gravity flow to outlet, if required, and as shown on the plans.
4. Place, level and compact leveling pad material for retaining wall units.
5. Place and compact aggregate blanket drain. Install geotextile as shown.

STEP 2 - INSTALLING FIRST COURSE OF BLOCK UNITS

A. SETTING FIRST COURSE OF BLOCK UNITS

1. Check leveling pad elevation and smooth leveling pad surface.
2. Stake and string line the wall location paying close attention to exact location of curves, corners, and vertical and horizontal steps. String line must be along the molded face (back) of the block unit, and not along the broken block finish surface.
3. Install first course of blocks, checking level as placed.

B. BACKFILLING FIRST COURSE OF BLOCK UNITS

1. Recheck wall location.
2. Use drainage aggregate to fill any openings in and between block units, as required.
3. Carefully place drainage aggregate behind and up to the height of the block unit to create wall face drain.
4. Place geotextile as shown.
5. Place and compact reinforced soil behind wall drain.
6. Place and compact fill soils in front of block unit.
7. Place and compact retained fill soils.
8. Compact drainage aggregate.

STEP 3 - PLACEMENT AND BACKFILLING OF BLOCK UNITS

A. INSTALLING SUCCESSIVE COURSES OF BLOCK UNITS

1. Ensure that drainage aggregate is level with, or slightly below top of block unit below.
2. Thoroughly clean debris and aggregate off of top of block units.
3. Install connecting shear pins.
4. Place next course of block and push units forward to engage shear pins and establish proper setback, consistent with setback shown on the details and in accordance with manufacturer's specifications.

B. FILL PLACEMENT AND COMPACTION

1. Use drainage aggregate to fill openings in and between block units as required.
2. Carefully place drainage aggregate behind and up to the height of the block unit to create wall face drain.
3. Place geotextile as shown.
4. Place and compact reinforced soil behind wall drain.
5. Place and compact retained fill soils.
6. Compact drainage aggregate.

STEP 4 - GEOGRID REINFORCEMENT INSTALLATION

A. PLACEMENT OF GEOGRID REINFORCEMENT

1. Ensure that drainage aggregate is level with, or slightly below top of block unit below.
2. Thoroughly clean debris and aggregate off of top of block units.
3. Install connecting shear pins.
4. Cut geogrid to design length shown on plans (GGL) and install with strength direction perpendicular to the wall face. Hook geogrid over protruding pins as shown on details provided.
5. Place next course of block on geogrid and push units forward to engage shear pins and establish proper setback, consistent with setback shown on the details and in accordance with manufacturer's specifications.

B. BACKFILLING OVER GEOGRID

1. Pull geogrid tight using uniform tension so that there are no wrinkles in the geogrid. Hold or stake in place to maintain tension throughout fill placement process.
2. Place drainage aggregate for wall face drain in and between block units as required.
3. Place geotextile as shown.
4. Place and compact reinforced fill soil behind wall drain, working from the wall back towards the free end of the geogrid.
5. Place and compact retained fill soils.
6. Compact drainage aggregate.

NOTE: CONTINUE CONSTRUCTION OF THE WALL TO FULL HEIGHT USING STEPS 3 AND 4

STEP 5 - CAPPING AND GRADING

1. Install cap/coping unit (optional) and secure in place per manufacturer's recommendations.
2. Place and compact final backfill
3. Finish grade for positive drainage away from the wall face.
4. Place topsoil and vegetate slopes above, below, and around wall terminations.

GENERAL NOTES:

1. Alignment should be checked every other course, especially for straight walls.
2. Blocks, drainage aggregate, reinforced fill, and retained fill shall be brought up simultaneously. None of these items should lead another by more than one course height.

<<End of Section>>

OWNER OF DEVELOPMENT
LEONORA K. HOENES
8668 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD 21043
(410) 465-2321

ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND
TAX MAP 17 & 24

I 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 NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION.

SIGNATURE OF DEVELOPER — DATE

I 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 COUNTY SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN THIRTY DAYS OF COMPLETION

DISTRICT

SIGNATURE OF ENGINEER — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 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

U.S. SOIL CONSERVATION SERVICE — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/1/96

CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH — DATE 4/3/96

DIREGTOR — DATE 4/3/96

REVISIONS
10-11-95

ECS LTD ENGINEERING CONSULTING SERVICES, LTD

RETAINING WALL SPECIFICATIONS
WAL*MART STORE #2412 - ELLICOTT CITY, MD.
WAL*MART STORES, INC.

RAC	JRC	08-30-95	NTS	B1177	25 OF 25

SDP-96-01