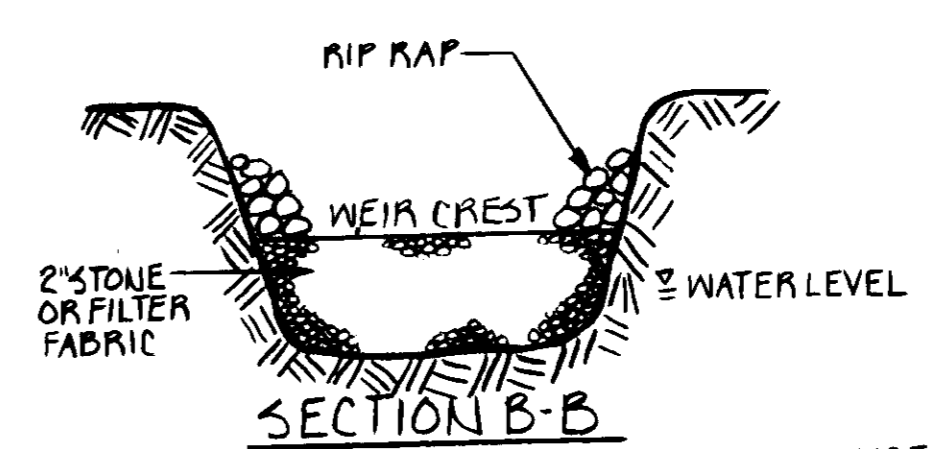
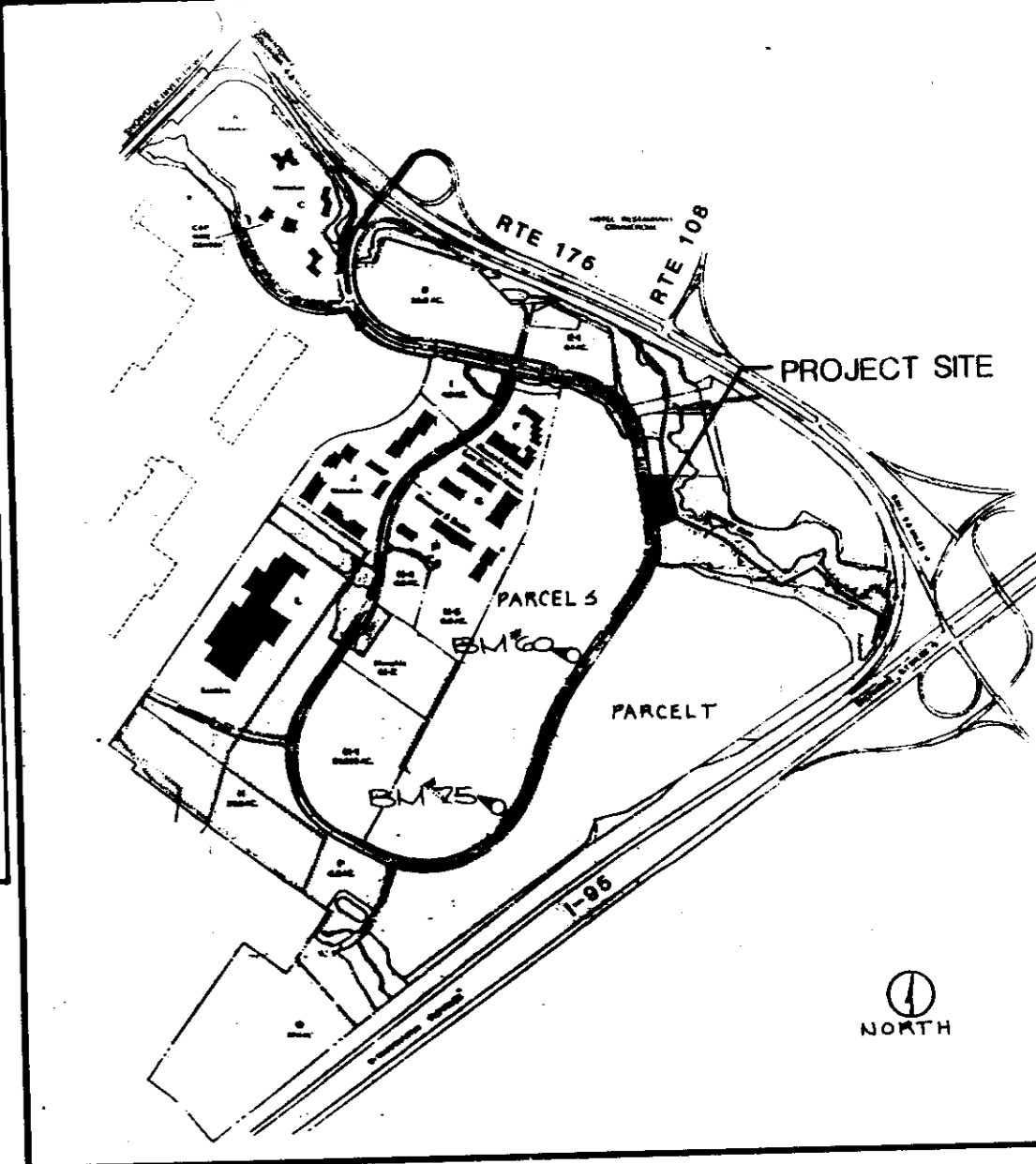


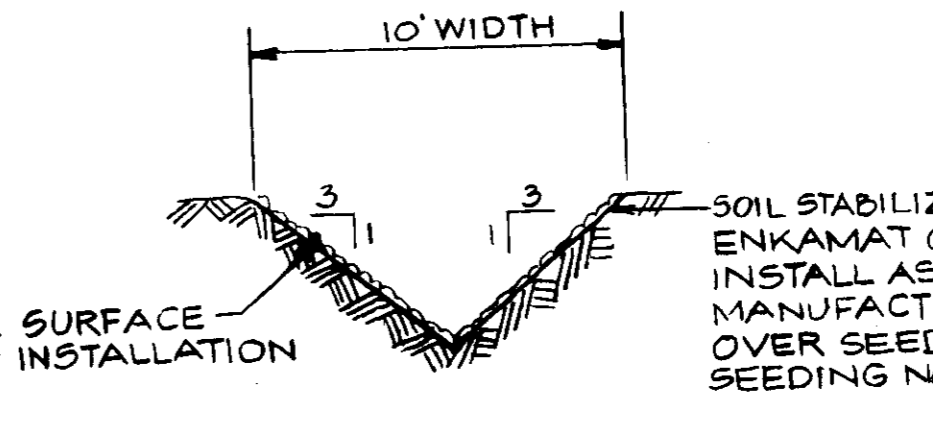
- LEGEND**
- SILT FENCE
 - LIMIT OF DISTURBANCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - LIMITS OF FIELD LOCATED NONTIDAL WETLANDS
 - 25' WETLAND BUFFER
 - FLOODPLAIN DRAINAGE EASEMENT
 - 100 YR. FLOODPLAIN (PROPOSED)
 - 10' WIDE PILOT CHANNEL
 - 75' STREAM BUFFER

SOILS LEGEND

SYMBOLS	SOIL SERIES	DEPTH TO WATER TABLE	CAPABILITY UNIT	HYDROLOGIC CLASS.
CmB2	Chillum	5r	IIa-7	B
CmP3	Chillum	5r	IIa-7	B
L1	LeonardTown	0to1	IIw-3	C
IuB	Iuka	1 1/2 to 3	IIc-1G	D
Sfc2	Sassafras	5r	IIIc-5	B



IN STREAM STONE PIKE DETAIL IN ACCORDANCE WITH WRA WPP 12. SEE SHEET 30F.3. NOT TO SCALE



NOT TO SCALE

BENCH MARKS
 WM #A BM-TACK IN HUB 150' RT OF E STA. 50+82.05 COLUMBIA GATEWAY DRIVE. ELEV. 343.10
 WM #B BM-TACK IN HUB 150' RT OF E STA. 75+35.50 COLUMBIA GATEWAY DRIVE. ELEV. 320.81

NOTE: This Basin is for wetland creation purposes only. Basin does not provide any stormwater management function. This Basin meets the 378-1 criteria for a class 'a' hazard, meaning that failure of this Basin poses no hazard and is located in a flood tolerant area (100 year floodplain is immediately adjacent to this basin).
 NOTE: Area of emergent wetland creation is 0.53 Acres.

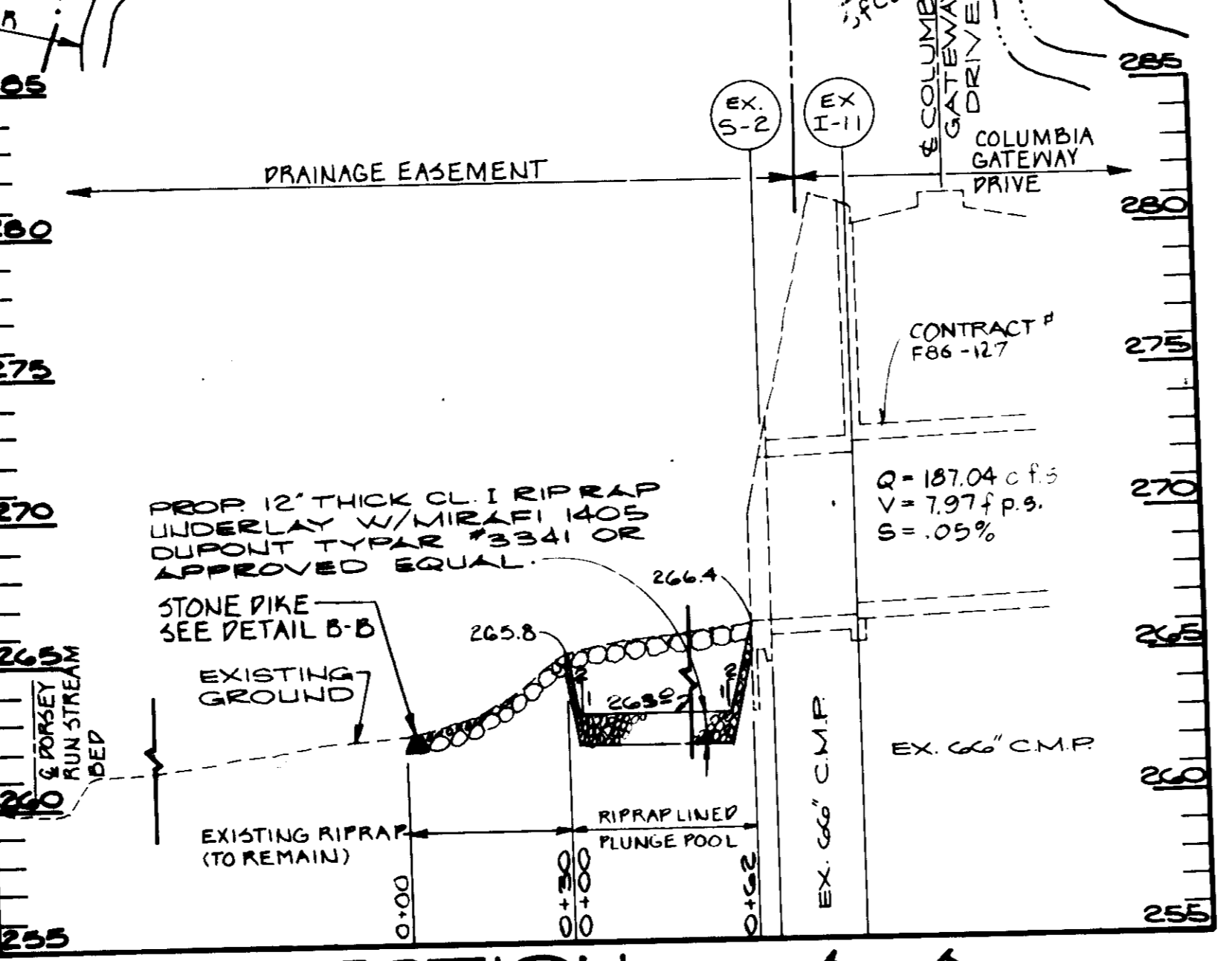
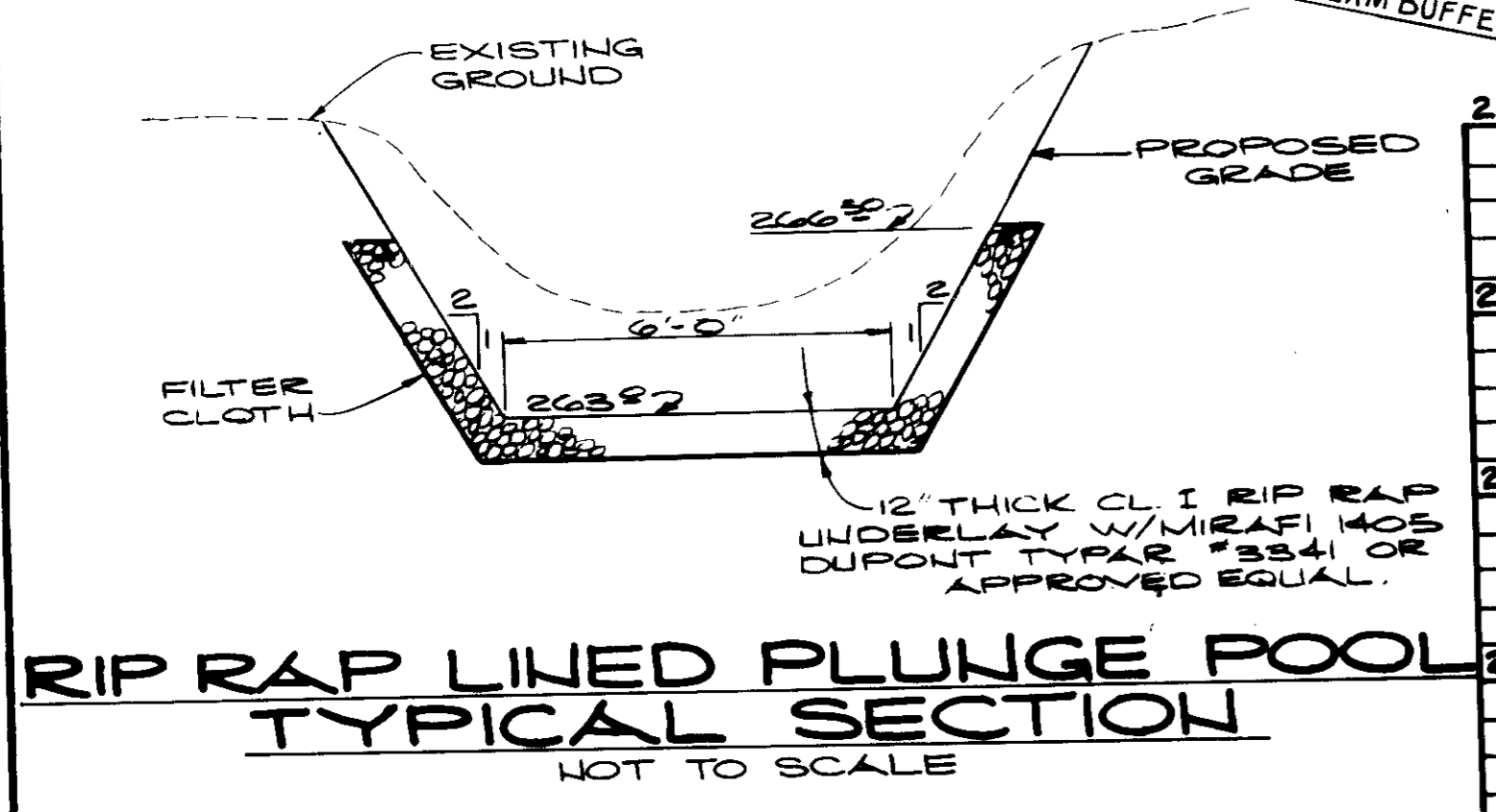
NOTE: The purpose of this site dev. plan is for grading only to create wetlands for mitigation as required by the U.S. Army Corps of Engineers (CENAB-OP-RW 89-1010-3) and Maryland Department of the Environment (88-WQ-0481)

PLUNGE POOL DESIGN

VOLUME REQ'D = 1300 LF ROAD X 48" PVMT. X 0.5" RUNOFF = 2600 CF
 VOLUME PROVIDED =

ELEV.(FT)	AREA(SF)	AVG. AREA(SF)	DEPTH(FT)	VOLUME(CF)
263.0	576	1183	2.5	2957
265.5	1790			

ELEV.	DEPTH	SWM-3		SWM-2		SWM-1	
		DATE	REVISION	DATE	REVISION	DATE	REVISION
275	0.0						
270	0.0						
265	0.0						
260	0.0						
255	0.0						
250	0.0						



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 James M. [Signature] 4/24/90
 U.S. SOIL CONSERVATION SERVICE

APPROVED FOR PUBLIC WATER AND SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT
 [Signature] 2-27-91

APPROVED FOR HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3/1/91

APPROVED FOR PUBLIC WATER AND SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 2/20/91

APPROVED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT
 [Signature] 4/14/90

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 [Signature] 2/29/91

OWNERS/DEVELOPERS CERTIFICATION
 I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN 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. ALSO THAT THE SITE WILL BE INSPECTED AT THE END OF EACH WORKING DAY, AND THAT ANY NEEDED MAINTENANCE WILL BE COMPLETED SO AS TO INSURE THAT ALL SEDIMENT CONTROL PRACTICES ARE LEFT IN OPERATIONAL CONDITION. I/WE AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS.

DEVELOPER
 HRD
 PRINT NAME, TITLE, FIRM & ADDRESS

DATE: 4-7-90

CONSULTANT'S CERTIFICATION
 I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE: [Signature]
 DATE: 4/27/90

MD. LICENSE NO. 10368

DATE	REVISION
6/26/90	REVISED AS PER COUNTY COMMENTS C.L.Y.

ADDRESS CHART

LOT NUMBER	STREET ADDRESS

KIDDE CONSULTANTS, INC.
 ENGINEERS PLANNERS SURVEYORS
 1020 CROMWELL BRIDGE ROAD
 BALTIMORE, MARYLAND 21204
 301-321-5500

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 [Signature]

DESIGNED: JMK
 DRAWN: PAF
 CHECKED: MSR
 DATE: 7/87

SCALE AS SHOWN
 DRAWING: 1 OF 3
 JOB NO.: 01-89052A
 FILE NO.:

SITE DEVELOPMENT PLAN
 FOR THE
EMERGENT WETLAND BASIN
 OF
COLUMBIA GATEWAY
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

OWNER DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

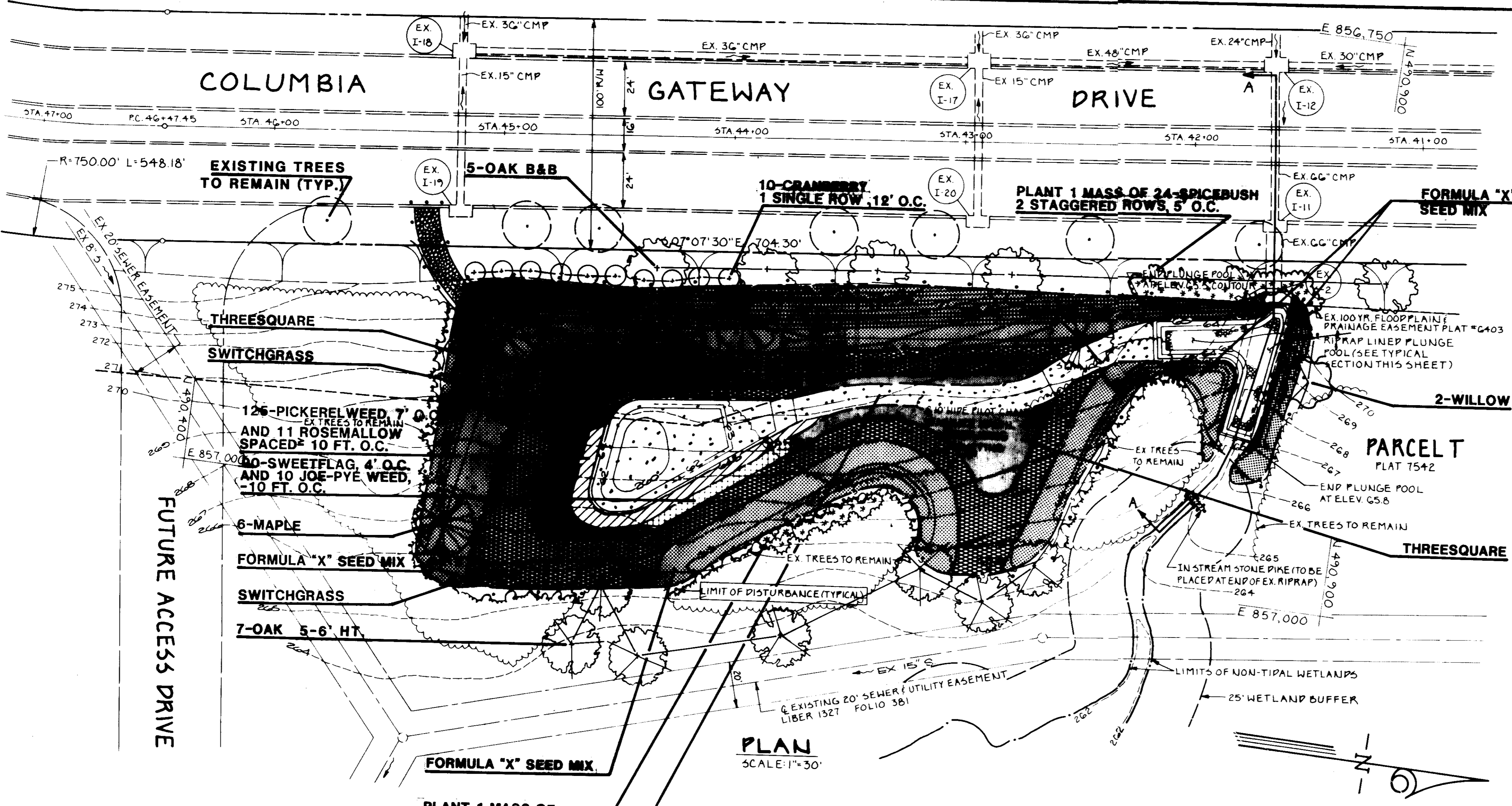
SUBDIVISION NAME: COLUMBIA GATEWAY
 PLAT * OR L/F: 7542
 WATER CODE:

SECT./AREA: N/A
 LOT/PARCEL: T

TAX/ZONE MAP: 43
 ELEC. DIST.: G
 CENSUS TR.: 606502

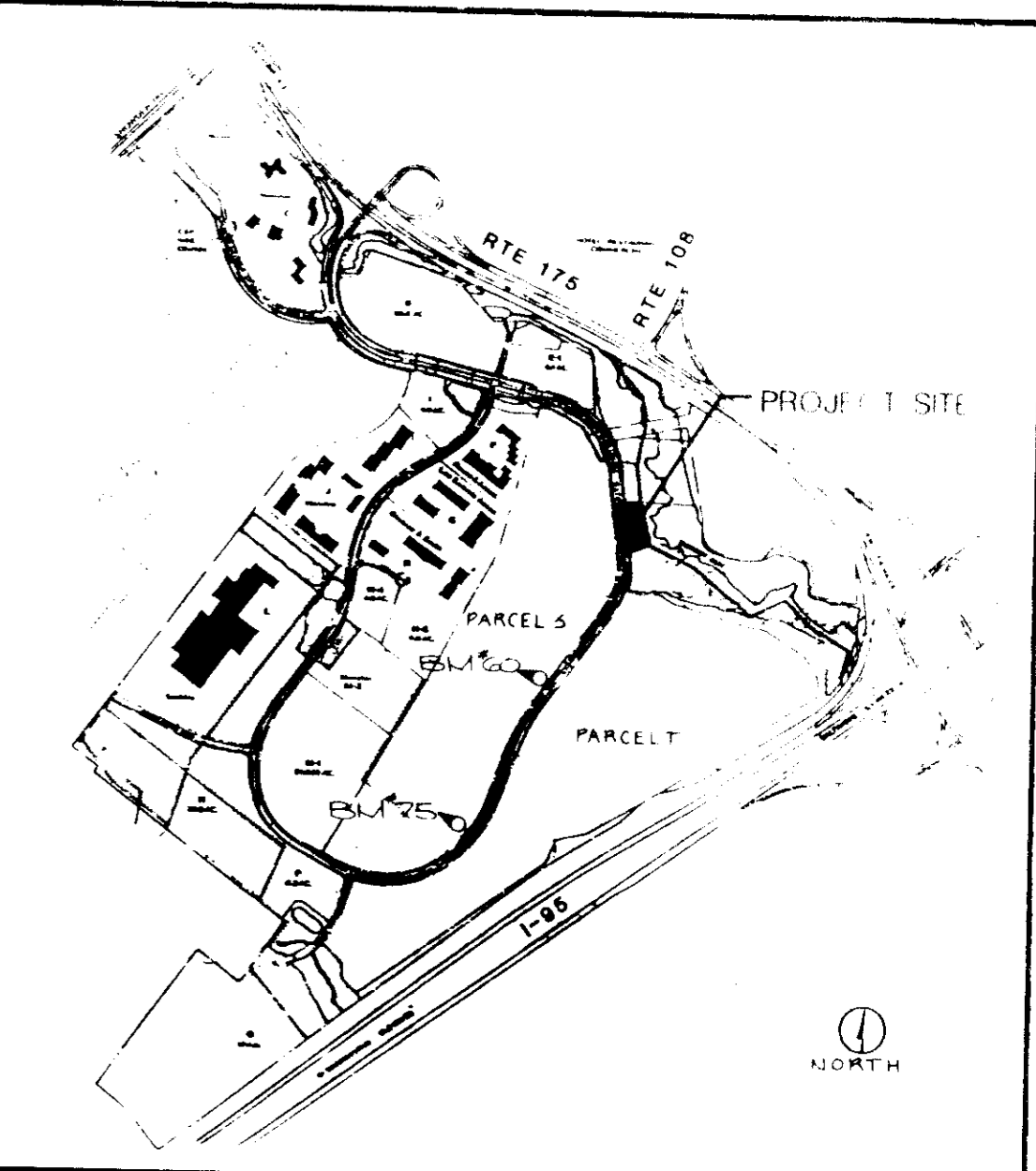
SEWER CODE:

SDP-90-139



- ### LEGEND
- SILT FENCE
 - LIMIT OF DISTURBANCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - LIMITS OF FIELD LOCATED NON-TYPICAL WETLANDS
 - 25' WETLAND BUFFER
 - LIMIT OF HOWARD COUNTY MAPPED 100 YR. FLOODPLAIN
 - 10' WIDE PILOT CHANNEL

- ### LIST OF ABBREVIATIONS
- AMER. - AMERICAN
 - B&B - BALLED IN BURLAP
 - B.R. - BARE ROOT
 - CAL. - CALIPER
 - CON. - CONTAINER, OR POT
 - HT. - HEIGHT
 - O.C. - ON CENTER
 - ' - FOOT
 - " - INCH



VICINITY MAP
SCALE 1"=100'

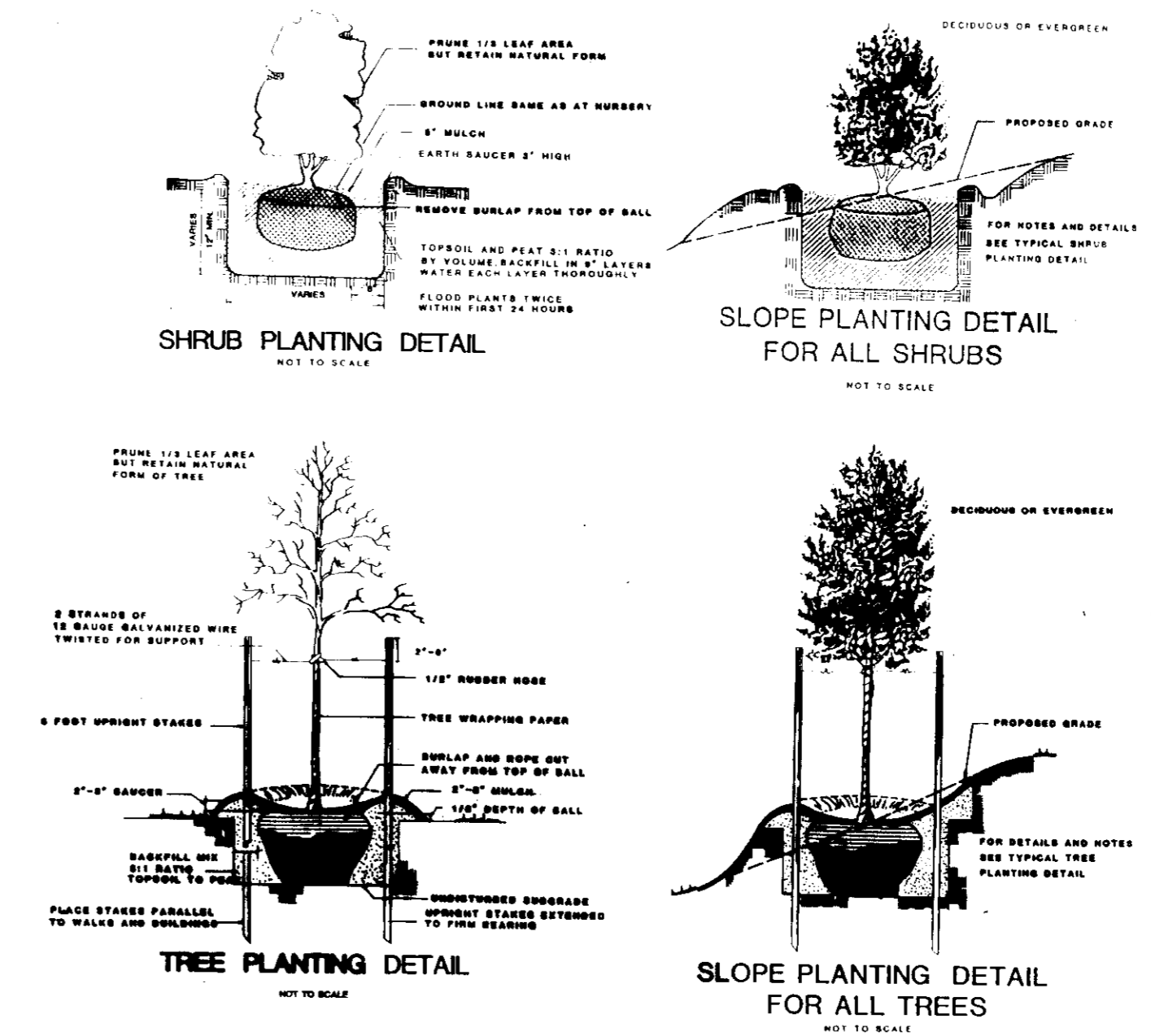
- ### BENCH MARKS
- WB #4 BM-TACK IN HUB 150 FT. OF E. STA 50+00 ON COLUMBIA GATEWAY DRIVE ELEV. 343.10
 - WB #1 BM-TACK IN HUB 150 FT. OF W. STA 3+00 ON COLUMBIA GATEWAY DRIVE ELEV. 320.81

PLANT SCHEDULE

SYMBOL	PLANT	QUANTITY	SIZE	NOTE
(Symbol)	Maple	5	5-6" HT.	Cont.
(Symbol)	Oak	5	2-2 1/2" cal. Ball	Cont.
(Symbol)	Willow	7	5-6" HT.	Cont.
(Symbol)	Elderberry	7	5-6" HT.	Cont.
(Symbol)	Cranberry	11	24-36"	Cont.
(Symbol)	Duck potato	10	15-18" HT.	Cont.
(Symbol)	Spice bush	20	12-18" HT.	Cont.
(Symbol)	Sweetflag	10	12-18" HT.	Cont.
(Symbol)	Joe-pye weed	10	12-18" HT.	Cont.
(Symbol)	Rose mallow	10	12-18" HT.	Cont.
(Symbol)	Pickereelweed	10	12-18" HT.	Cont.
(Symbol)	Threeseed	10	12-18" HT.	Cont.
(Symbol)	Shrub Mix	10	12-18" HT.	Cont.

PLANTING NOTES

- DESCRIPTION**
The Contractor shall furnish and install all plant materials, labor and other materials necessary to complete the work as shown on the plans and details.
- MATERIALS AND METHODS**
A. The materials and methods shall comply with all the requirements of M.S.H.A. "Standard Specifications for Construction and Materials," January 1982, edition, Section 701 entitled "Tree Establishment," Section 702 entitled "Furnish and Plant Trees, Shrubs, Vines, Woody Shrub Seedling and Mulching," and as modified herein.
B. Plant nomenclature will be in accordance with Hortus III.
C. All plant material, where applicable, will conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen.
D. Substitutions
1. If a plant or other material is found not to be suitable or available, the Landscape Contractor is to notify the Owner's Representative before bidding.
2. The Owner or Owner's Representative is then required to select a reasonable alternative, to inform all Landscape Contractors of the source of availability of the original plant or other material.
E. Total number of plants shall be as shown on the landscape plan. If this total differs from the plant schedule, the Contractor is to notify the Owner's Representative live before bidding.
F. Time of Planting -- Planting season schedule shall be in accordance with MSHA standards. No planting shall be done when the temperature is at or below 32 degrees Fahrenheit or in frozen ground.
G. Fertilizer shall be added to the planting mixture depending on the size of the plant and the manufacturer's recommendations. Fertilizer shall be granular, pebble or liquid with 15 to 20% of the total nitrogen in a slowly available form.
H. There shall be no mowing of the area seeded with the SMA weed seed and cover companion seed mixes.
I. Straw mulch and tack or an approved alternative shall be applied to areas to be seeded or planted to prevent soil erosion.
J. Wrapping paper shall be water-proof free paper (33 mil thick).
- INSTALLATION**
A. During the course of planting, existing and waste materials shall be completely removed and the remaining lawn areas kept clear, and all reasonable precautions taken to avoid damage to existing lawns, sidewalks, etc.
B. When planting in an area that has been graded, the area shall be cleaned up thoroughly. Debris, rubbish, silt, soil and waste materials shall be cleaned up and removed from the property.
C. Existing grass areas which have been injured by the work shall be reseeded and sodded to match the existing lawn; the entire area shall be neat and clean to the satisfaction of the Owner's Representative.
D. Protection -- Contractor shall, at all times, protect all plants and lawns from damage. The moving of heavy equipment or material over the lawn areas shall be done on planks or pontoons.
E. Restoration -- The Contractor shall restore their original condition all pavements, sodded and planted areas, structures and substrates, not specifically provided for in the Contract, which are disturbed by the Contractor during planting operations. Such restoration shall be in a manner satisfactory to the Owner's Representative and at no additional cost to the Owner.
F. Watering and Maintenance
The wetland creation site will be irrigated by the Owner's Representative after completion of the planting (including mulching and other work). The Contractor shall be responsible for the maintenance of the site during the first year after planting. The Contractor shall be responsible for the maintenance of the site during the first year after planting. The Contractor shall be responsible for the maintenance of the site during the first year after planting.
G. Two years after the initial acceptance of the planting, 5% of all plant materials of each species shall be in a vigorous growing condition. Any plants infested with disease or insects will be removed. All dead or unacceptable plants will be replaced by the same plant type and size designations as on the plant schedule, or its previously approved substitution. These plants shall be planted, matched, sized, etc. as specified herein. One year after the completion of all such replacement work the site shall be re-inspected. Any maintenance, repairs, or additional measures necessary to ensure the integrity of the project will be performed.
- TERMS OF PAYMENT**
A. Payment -- Terms of payment shall be as specified in the Bill Package.
B. MSHA Specifications referred to are "The Standard Specifications for Construction and Materials," published by the Maryland Department of Transportation, State Highway Administration, dated January 1982, and are intended to apply to this contract as shown on the drawings and standards and specifications for soil erosion and sediment control, have reviewed and approved, inspecting and accepting of work to be performed.



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

James M. Helm 4/24/90
U.S. SOIL CONSERVATION SERVICE

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

John K. Hunter 4/24/90
HOWARD COUNTY

APPROVED: *James M. Helm* 2/27/91
U.S. SOIL CONSERVATION SERVICE

APPROVED: *James M. Helm* 3/1/91
U.S. SOIL CONSERVATION SERVICE

APPROVED: *James M. Helm* 3/1/91
U.S. SOIL CONSERVATION SERVICE

APPROVED: *James M. Helm* 2/20/91
U.S. SOIL CONSERVATION SERVICE

Formula "X" seed mixture consists of the following:

- Agrostis alba - Red top 5 LBS/AC.
- Phalaris arundinacea - Reed canary grass 4 LBS/AC.
- Viburnum lentago - Mannjerryberry 6 LBS/AC.
- Lotus corniculatus - Bird's foot trefoil 2 LBS/AC.

TOTAL: 22 LBS/AC

Formula "X" seed mixture shall not be placed on a dormant, eroded or other bare soil. In Part 1 or placed here over from Part 1 to Part 2. Contractor shall provide water with alternate price. If either of these planting areas are not suitable to this project.

OWNERS/DEVELOPERS CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SOIL EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT, ALSO THAT THE SITE WILL BE INSPECTED AT THE END OF EACH WORKING DAY, AND THAT ANY NEEDED MAINTENANCE WILL BE COMPLETED SO AS TO INSURE THAT ALL SEDIMENT CONTROL PRACTICES ARE LEFT IN OPERATIONAL CONDITION. I/WE AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR ITS AUTHORIZED AGENTS.

DEVELOPER: *James M. Helm* 11-9-90
PRINT NAME, TITLE, FIRM & ADDRESS

CONSULTANT'S CERTIFICATION

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE: _____ DATE: _____

DATE	REVISION

THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY!

NOTE: The purpose of this site dev. plan is for grading only to create wetlands for mitigation as required by the U.S. Army Corps of Engineers (CENAB-OP-RW 89-1010-3) and Maryland Department of the Environment (88-WQ-0481)

KIDDE CONSULTANTS, INC.

1020 TRIMWELL BRIDGE ROAD
BALTIMORE, MARYLAND 21204
301.521.4500

LANDSCAPE PLAN

FOR THE
EMERGENT WETLAND BASIN
OF
COLUMBIA GATEWAY
WITH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DESIGNED: TFM
DRAWN: CLY
CHECKED: PBJ
DATE: 7/87

SCALE: AS SHOWN
DRAWING: 2 OF 3
JOB NO.:
PROF. A:
FILE NO.:

THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY
2074 BATTLE PATHKENT PARKWAY
BETHESDA, MARYLAND 20814

SUBDIVISION NAME: COLUMBIA GATEWAY
PLAT: 7542
WATER CODE: M-1 43 G 6065.02

