

# COLUMBIA GATEWAY

HOWARD COUNTY, MARYLAND  
2ND ELECTION DISTRICT

## STORM DRAIN CONSTRUCTION PLANS SECTIONS D-1 AND D-2 PHASE ONE

### BENCHMARK

DESCRIPTION
W. R. & A. B.M. - IRON PIPE, 240 FEET RIGHT OF C STA. #2352 15+00 COLUMBIA GATEWAY DRIVE ELEV. 338.29
W. R. & A. B.M. - IRON PIPE, 230 FEET RIGHT OF C STA. #714 34+30 COLUMBIA GATEWAY DRIVE ELEV. 315.29

### GENERAL NOTES

- ALL WORK IS TO BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
- ALL INLETS SHALL BE HOWARD COUNTY STANDARD UNLESS OTHERWISE SHOWN. ALL "A" INLETS SHALL BE DEPRESSED.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS OR PAVING WILL BE CORRECTED AT THE DEVELOPERS EXPENSE.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTORS OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
- THE CONTRACTOR IS TO NOTIFY THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AT LEAST THREE DAYS BEFORE STARTING ANY WORK SHOWN ON THESE DRAWINGS. TELEPHONE 992-2436.
- RELATED FILE NUMBERS: SDP-89-124, SDP-89-80, F-87-11.

### SHEET INDEX

NUMBER	DESCRIPTION
1	TITLE SHEET
2	DRAINAGE AREA MAP
3	STORM DRAIN PLAN
4	STORM DRAIN PROFILES
5	SEDIMENT CONTROL PLAN
6	SEDIMENT CONTROL DETAILS

### PIPE SCHEDULE

SIZE	CLASS	QUANTITY	REMARKS
24"	III	78'	
33"	IV	4'	
42"	III	322'	
42"	IV	646'	

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*Granville W. Woodard* 3/31/89  
CHIEF, BUREAU OF HIGHWAYS DATE

*William R. Coe* 3-31-89  
CHIEF, BUREAU OF ENGINEERING DATE

*Paul M. Seaman* 3/29/89  
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*Frank S. Langhin* 4-11-89  
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Date	No.	Revision Description

**COLUMBIA GATEWAY**

PARCELS D-1 AND D-2, PHASE ONE

6TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**OWNER / DEVELOPER**

THE HOWARD RESEARCH  
AND DEVELOPMENT LAND COMPANY

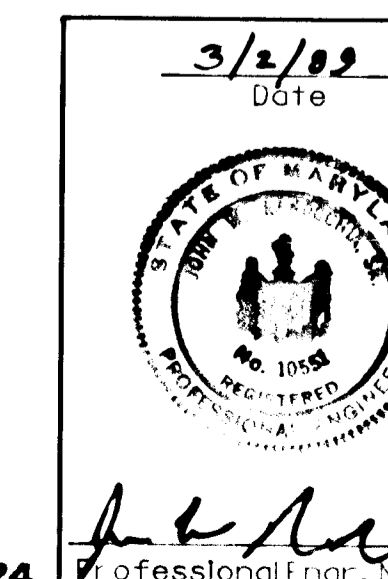
**DAFT McCUNE WALKER, INC.**  
LAND PLANNING CONSULTANTS  
LANDSCAPE ARCHITECTS  
ENGINEERS SURVEYORS  
200 EAST PENNSYLVANIA AVENUE  
TOWSON, MD. 21284  
TELEPHONE: 301-296-3333

AREA: F-89-117  
PARCELS D-1 AND D-2  
PHASE ONE

TITLE: STORM DRAINS  
TITLE SHEET

Des By JDC Scale AS SHOWN Proj. No. 88037A  
Drn By MSS-WALI Date DEC. 19, 1988  
Chk By JWR Approved

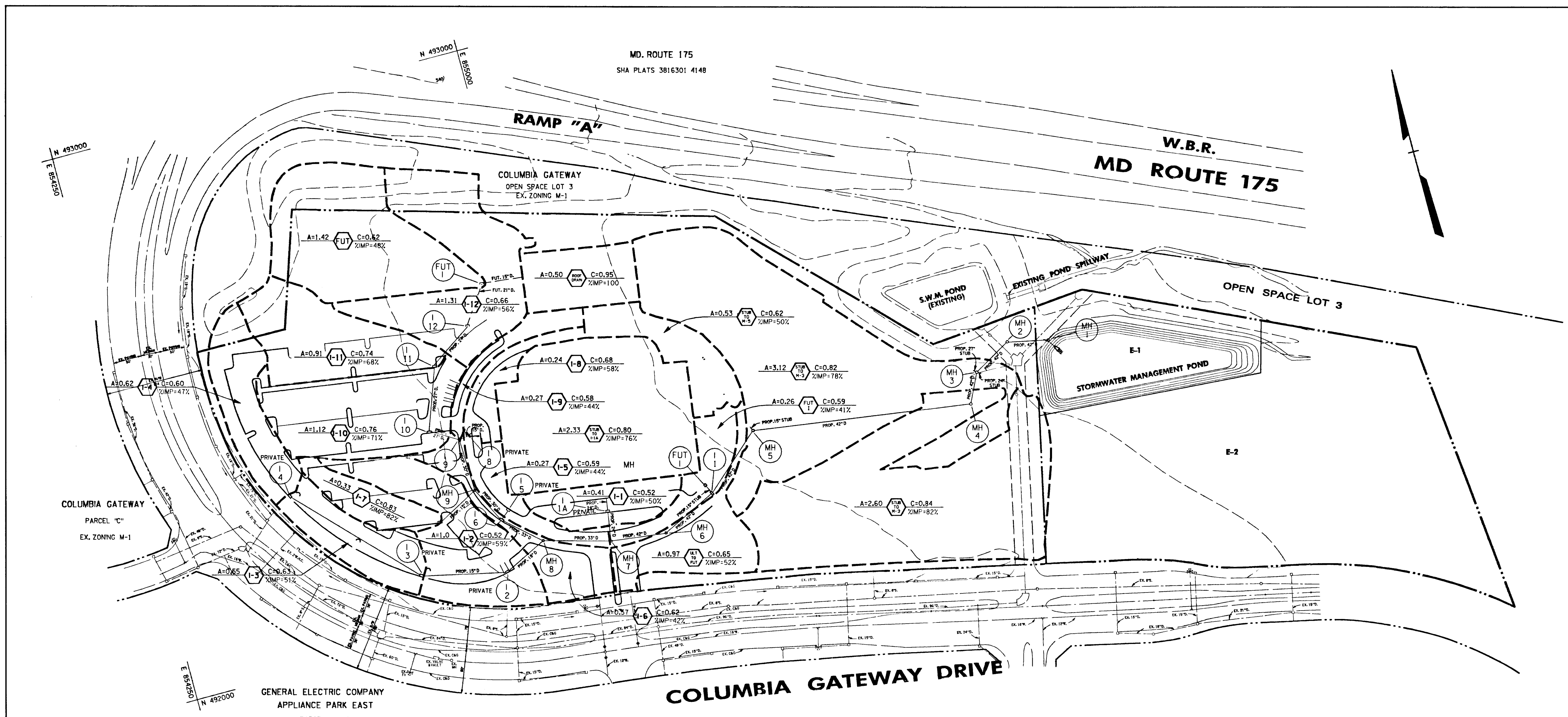
1 OF 6



SDP-89-124

Professional Engr. No. 10551

F-89-117



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*James W. Weiland* 3/31/89  
 CHIEF, BUREAU OF HIGHWAYS DATE  
*Richard E. Reed* 3/31/89  
 CHIEF, BUREAU OF ENGINEERING DATE  
*Charles W. ...* 3/29/89  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Frank J. ...* 4-10-89  
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Date	No.	Revision Description

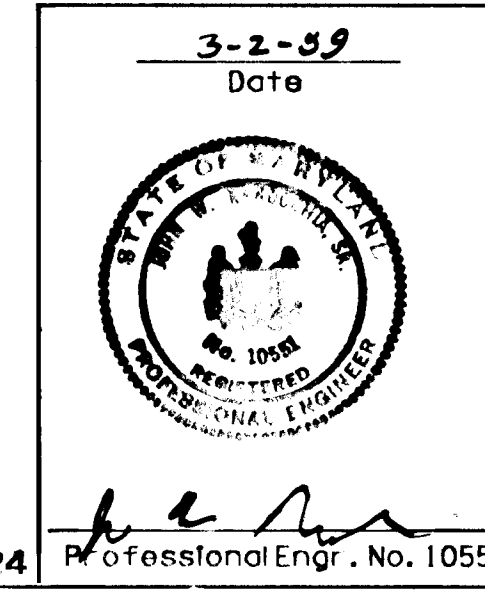
**COLUMBIA GATEWAY**  
 PARCELS D-1 AND D-2, PHASE ONE  
 8TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
**OWNER / DEVELOPER**  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT LAND COMPANY

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 TELEPHONE: 501-296-3333

AREA F-89-117  
 PARCELS D-1 AND D-2  
 PHASE ONE

TITLE STORM DRAIN  
 DRAINAGE AREA MAP

Des By JDC Scale 1" = 100' Proj. No. 88037A  
 Drn By MSS-WALL Date DEC. 19, 1988  
 Chk By JWR Approved 2 OF 6

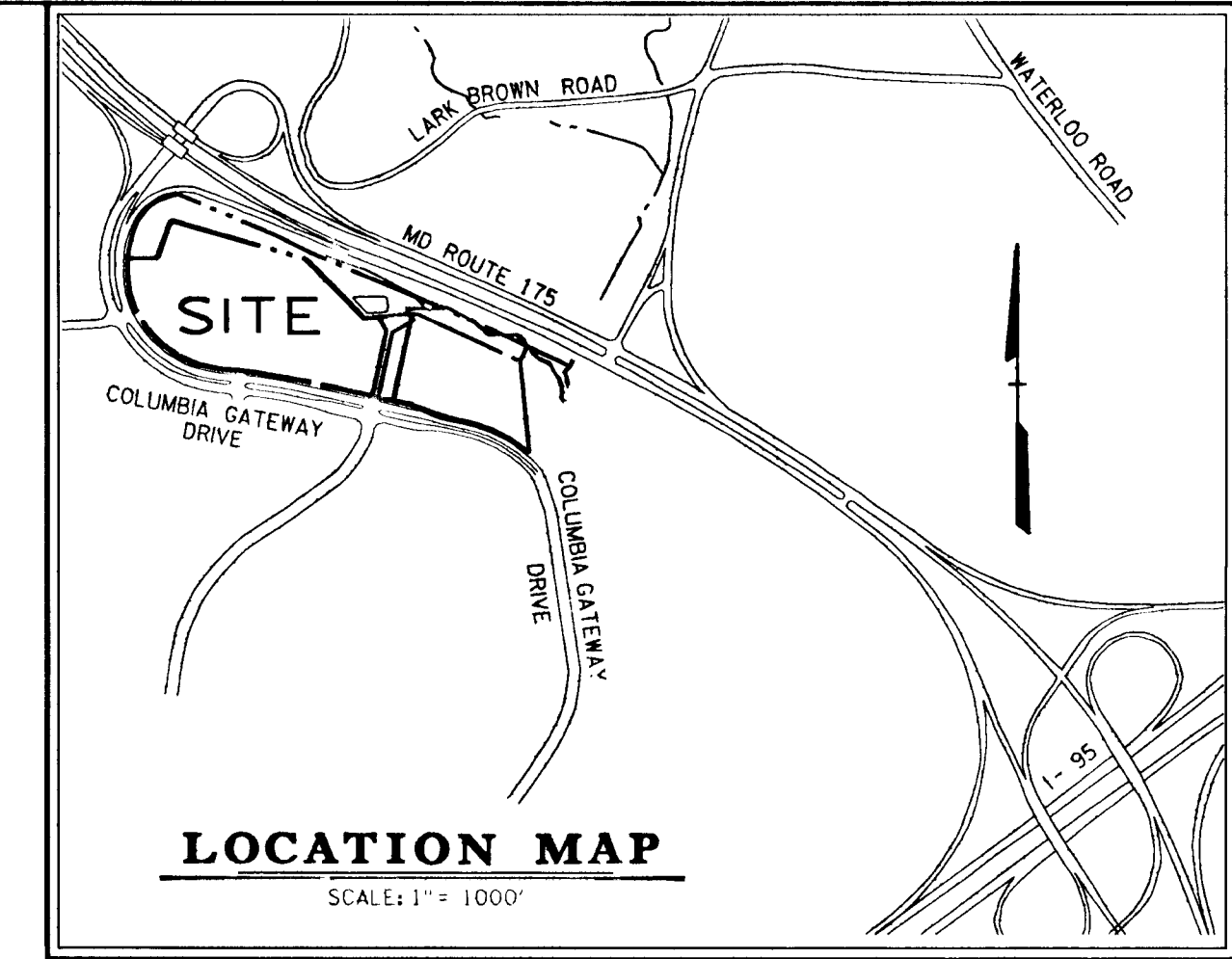


SDP-89-124

F-89-117

20610/5388037A.DAM VHDAM

1158



MD. ROUTE 75

PLAT 6970  
COLUMBIA GATEWAY  
PARCEL D-1  
10.398 Ac.

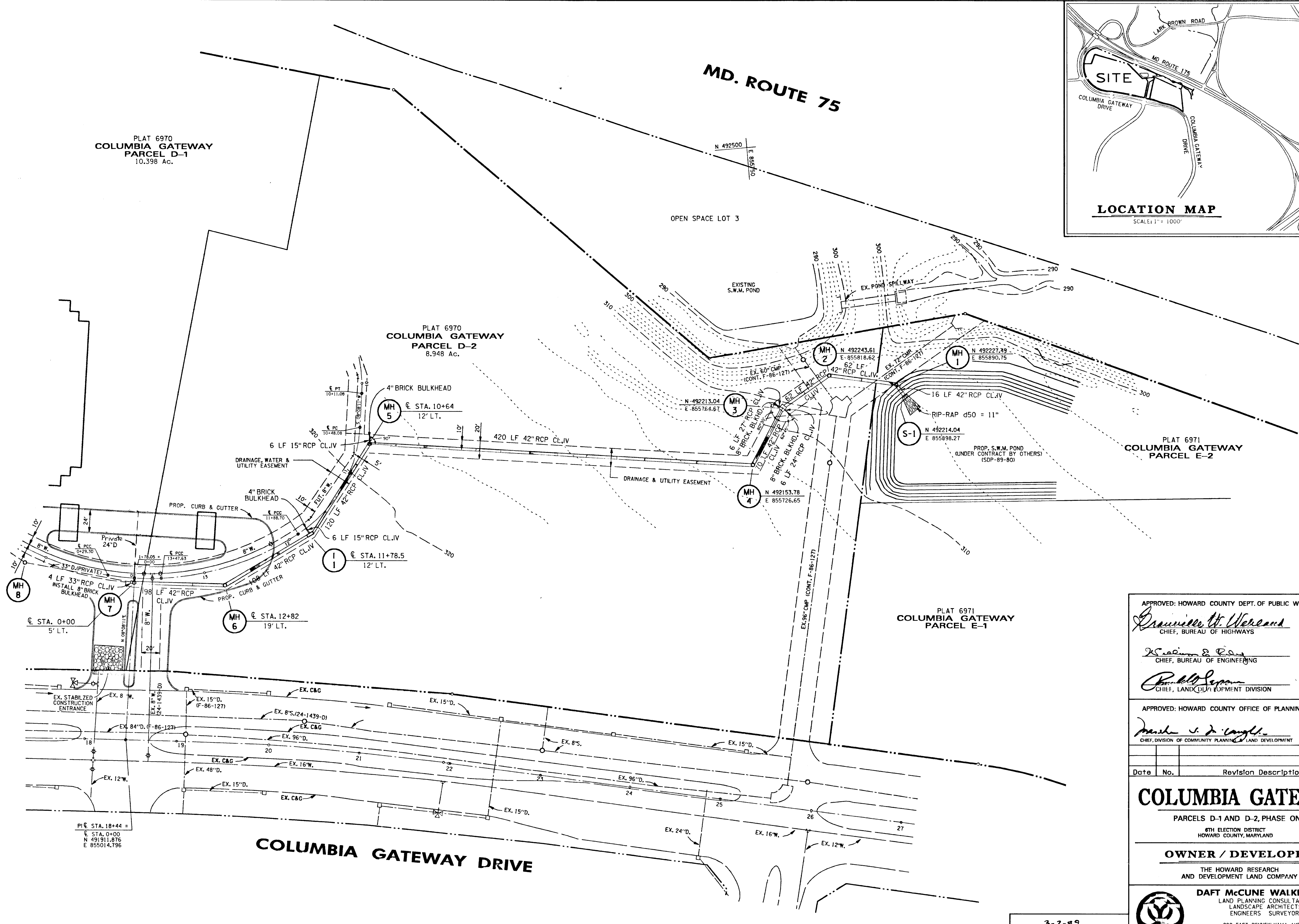
OPEN SPACE LOT 3

PLAT 6970  
COLUMBIA GATEWAY  
PARCEL D-2  
8.948 Ac.

PLAT 6971  
COLUMBIA GATEWAY  
PARCEL E-2

PLAT 6971  
COLUMBIA GATEWAY  
PARCEL E-1

COLUMBIA GATEWAY DRIVE



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Drummond H. Werners* 3/1/89  
 CHIEF, BUREAU OF HIGHWAYS DATE  
*K. Scadding & P. ...* 3-31-89  
 CHIEF, BUREAU OF ENGINEERING DATE  
*Charles ...* 3/23/89  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*... ..* 3/11/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Date	No.	Revision Description

**COLUMBIA GATEWAY**  
 PARCELS D-1 AND D-2, PHASE ONE  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

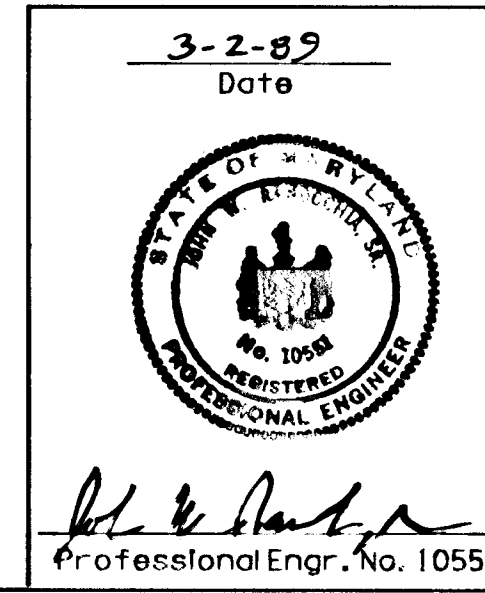
**OWNER / DEVELOPER**  
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 AND DEVELOPMENT LAND COMPANY

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 LANDSCAPE ARCHITECTS  
 ENGINEERS SURVEYORS  
 200 EAST PENNSYLVANIA AVENUE  
 TOWSON, MD. 21284  
 TELEPHONE: 301-296-3333

AREA F-89-117  
 PARCELS D-1 AND D-2  
 PHASE ONE

**TITLE**  
**STORM DRAIN PLAN**

Des By JDC Scale 1" = 50' Proj. No. 88037  
 Drn By MSS-WALL Date FEB. 15, 1989  
 Chk By JWR Approved 3 OF 6



☉ CURVE DATA	☉ CURVE DATA	☉ CURVE DATA	☉ CURVE DATA	☉ CURVE DATA
FROM STA. 0+29.30 TO STA. 1+88.22	FROM STA. 0+00 TO STA. 0+29.30	FROM STA. 13+47.63 TO STA. 0+00	FROM STA. 11+88.70 TO STA. 13+47.63	FROM STA. 10+48.08 TO STA. 11+88.70
Δ = 30°21'08"	Δ = 05°56'08"	Δ = 05°56'08"	Δ = 30°21'08"	Δ = 53°42'43"
R = 300.00'	R = 282.82'	R = 300.00'	R = 300.00'	R = 150.00'
L = 158.92'	L = 29.30'	L = 29.30'	L = 158.92'	L = 140.62'
T = 81.37'	T = 14.66'	T = 14.66'	T = 81.37'	T = 75.96'
CHD. = N 60°45'07" W 157.07'	CHD. = N 78°53'45" W 29.29'	CHD. = N 84°49'53" W 29.29'	CHD. = S 77°01'28" W 157.07'	CHD. = S 34°59'32" W 135.52'

NOTE: LOCATION OF INLETS ARE GIVEN FOR  
 ☉ HEAD PIECE ☉ FACE OF CURB

SDP-89-124

F-89-117

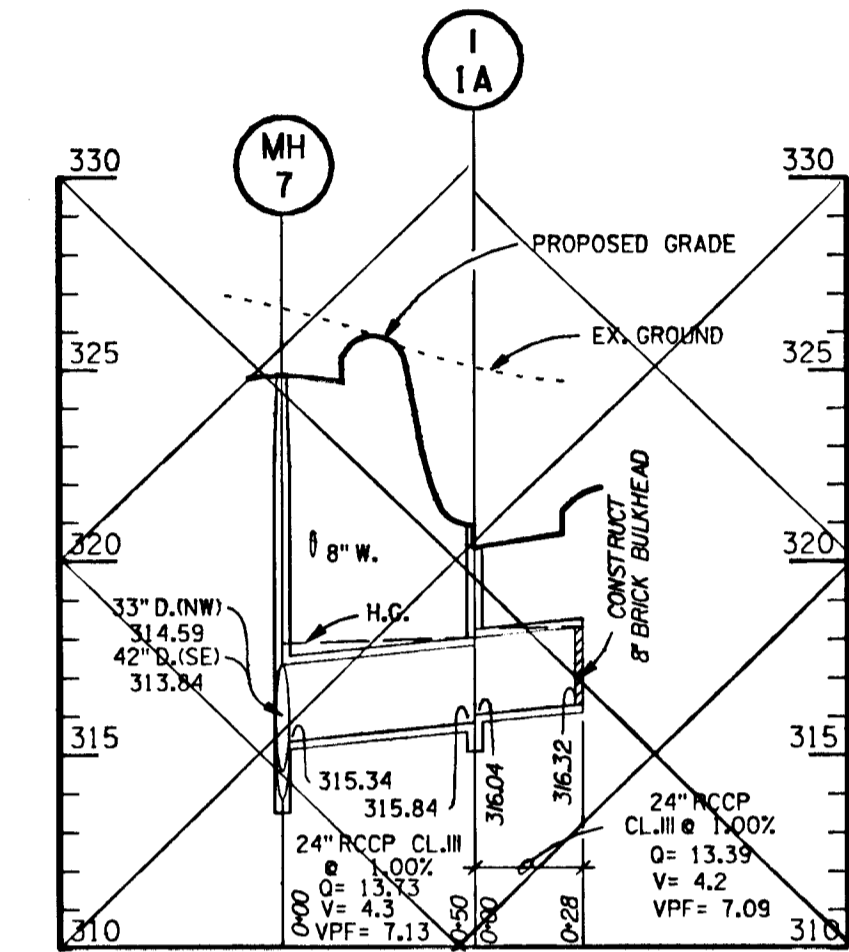
1158

INLET SCHEDULE					
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
1A	A-5(4' WIDE)	320.80	316.04	315.84	SEE HO.CO.STD. SD-4.01
1	DBL. TYPE "S" COMB	321.60	312.61	312.41	SEE HO.CO.STD. SD-4.34

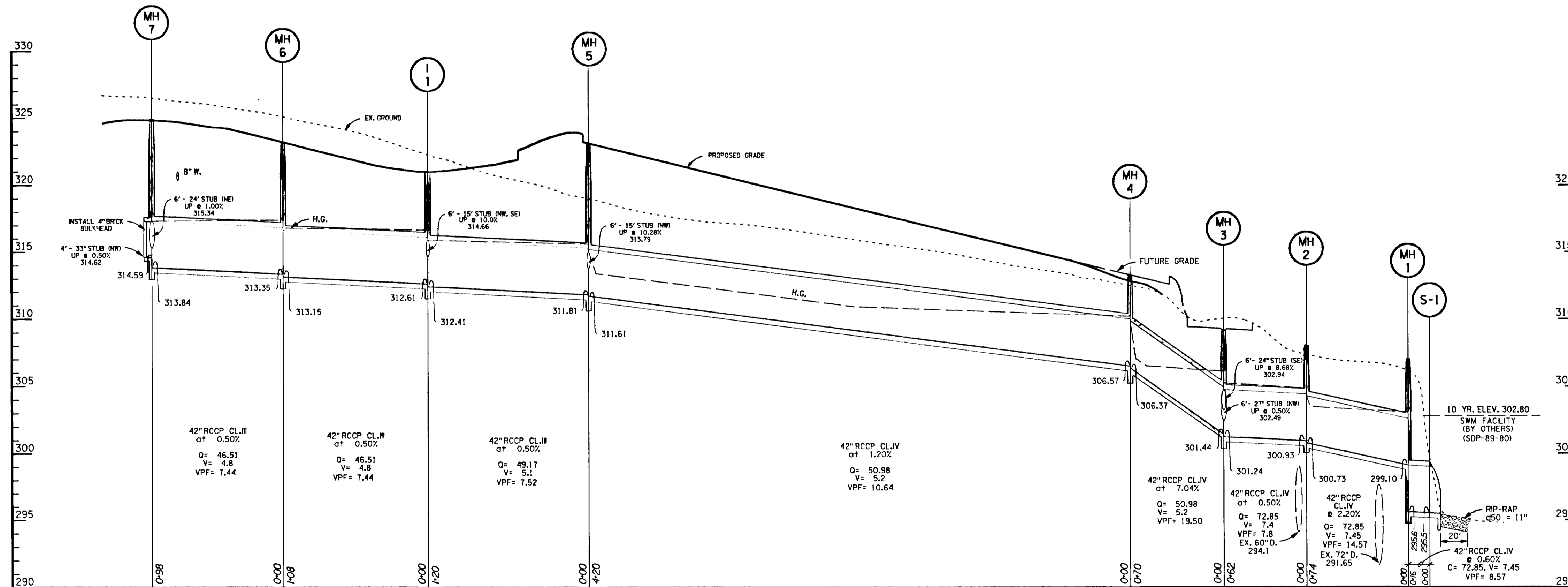
\* TOP ELEVATIONS SHOWN ARE AT 1/2 HEADPIECE @ FACE OF CURB

MANHOLE SCHEDULE					
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
1	BRICK MANHOLE	306.5	299.10	295.6	SEE HO.CO.STD. SD-5.03
2	BRICK MANHOLE	308.0	300.93	300.73	SEE HO.CO.STD. SD-5.03
3	BRICK MANHOLE	309.5	301.44	301.24	SEE HO.CO.STD. SD-5.03
4	BRICK MANHOLE	313.00	306.57	306.37	SEE HO.CO.STD. SD-5.03
5	BRICK MANHOLE	323.04	311.91	311.61	SEE HO.CO.STD. SD-5.03
6	BRICK MANHOLE	322.78	313.35	313.15	SEE HO.CO.STD. SD-5.03
7	BRICK MANHOLE	325.0	314.59	313.84	SEE HO.CO.STD. SD-5.03

STRUCTURE SCHEDULE					
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
1	CONC. END SECT.	---	295.5	295.5	SEE HO.CO.STD. SD-5.51



Private - see SDP 89-124



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Graeville W. Weikand* 3/31/89  
 CHIEF, BUREAU OF HIGHWAYS DATE

*William E. Ziden* 3/31/89  
 CHIEF, BUREAU OF ENGINEERING DATE

*Paul A. Roman* 3/23/89  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Joseph J. Langley* 4/10/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Date	No.	Revision Description

## COLUMBIA GATEWAY

PARCELS D-1 AND D-2, PHASE ONE  
 8TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

**OWNER / DEVELOPER**  
 THE HOWARD RESEARCH  
 AND DEVELOPMENT LAND COMPANY

**DAFT McCUNE WALKER, INC.**  
 LAND PLANNING CONSULTANTS  
 LANDSCAPE ARCHITECTS  
 ENGINEERS SURVEYORS  
 200 EAST PENNSYLVANIA AVENUE  
 TOWSON, MD. 21284  
 TELEPHONE: 301-296-3333

AREA  
 F-89-117  
 PARCELS D-1 AND D-2  
 PHASE ONE

TITLE  
**STORM DRAIN PROFILES**

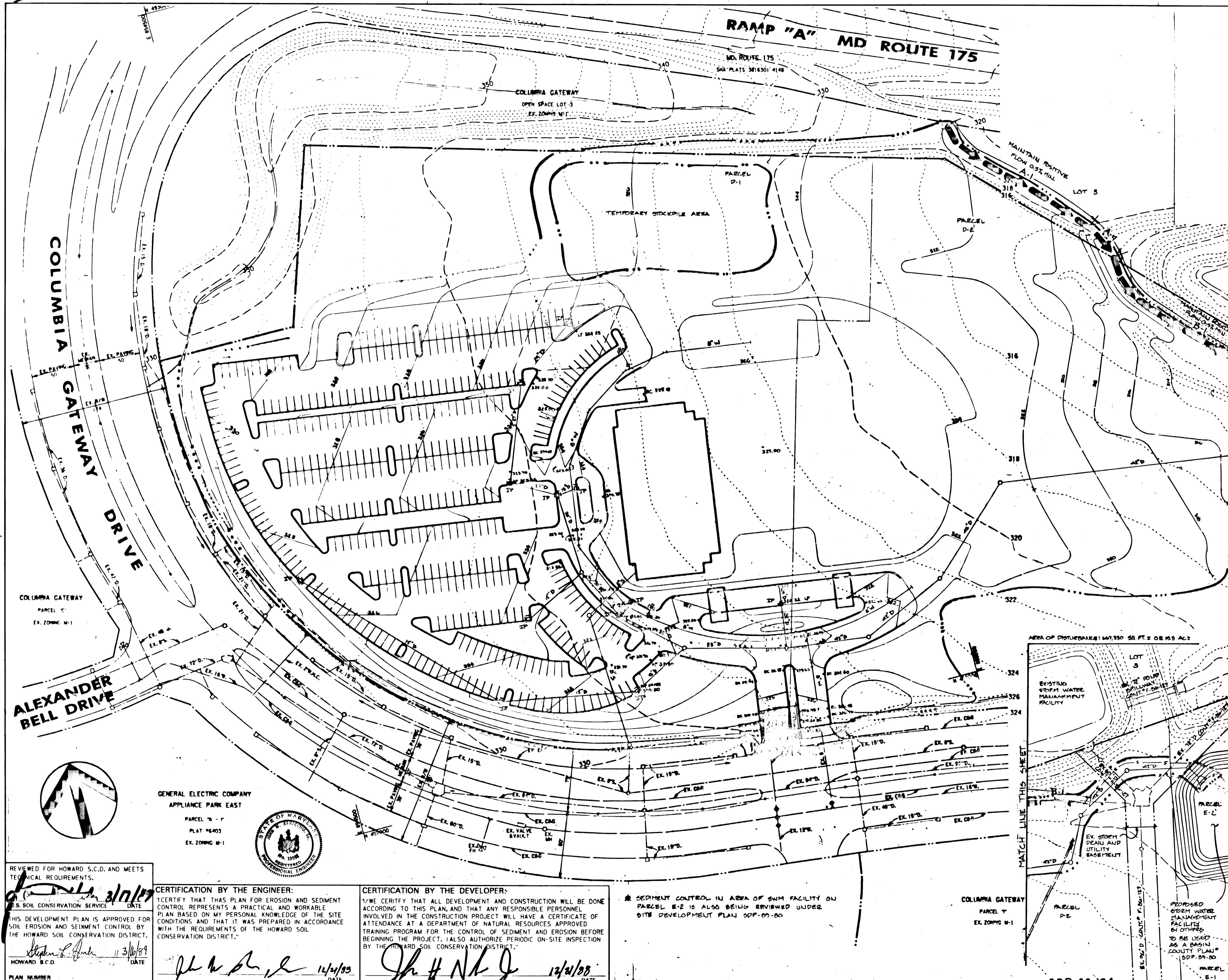
Des By JDC	Scale 1" = 50'	Proj. No.
Drn By MSS-WALI	Date DEC. 18, 1988	4 OF 6
Chk By JWR	Approved	

3-2-89  
 Date  
  
 Professional Engr. No. 10551

SDP-89-124

F-89-117

1158



- Sequence of Construction
1. Obtain grading permit. The sediment basin on Parcel E-2 (under SDP-89-80) must be fully constructed and operational prior to any grading under SDP-89-124 and F-89-117.
  2. Construct temporary stabilized entrance. Construct diversion dike and install silt fence.
  3. Stabilize diversion dike with temporary seeding and mulch, see Sheet 3 of 3 for specifications. (1 day)
  4. Clear, grub and strip and rough grade this site. (3 months)
  5. Install utilities and begin building construction.
  6. Stabilize all graded surfaces with temporary seeding. (1 day)
  7. Repair any sediment or erosion control devices disturbed during construction.
  8. Fine grade site.
  9. Stabilize with permanent seeding.
  10. Remove sediment control devices with the permission of Howard County Sediment Control Division.

3-2-89  
Date

*H. H. Walker*  
Professional Engr. No. 10551

APPROVED HOWARD COUNTY DEPT. OF PUBLIC WORKS

*Francis W. Williams* 3/10/89  
CHIEF, BUREAU OF HIGHWAYS DATE

*William S. Rowe* 3-31-89  
CHIEF, BUREAU OF ENGINEERING DATE

*Paul Johnson* 3/23/89  
CHIEF, LAND DEVELOPMENT DIVISION DATE

OFFICE OF PLANNING AND ZONING

*David J. Langley* 7-11-89  
CHIEF DIV. OF COMM. PLANNING AND LAND DEVEL. DATE

Date	No.	Revision Description

**COLUMBIA GATEWAY**  
PARCELS D-1 AND D-2, PHASE ONE  
8TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

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TOWSON, MD. 21284  
TELEPHONE: 301-296-3333

AREA: F-89-117  
**PARCELS D-1 AND D-2  
PHASE ONE**

TITLE: **STORM DRAINS  
SEDIMENT AND EROSION  
CONTROL PLAN**

Des By	Scale 1" = 50'	Proj. No. 89037A
Drn By	Date 12-21-88	5 OF 6
CHK By	Approved	

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

*Stephen L. Fisher* 3/16/89  
HOWARD S.C.D. DATE

PLAN NUMBER

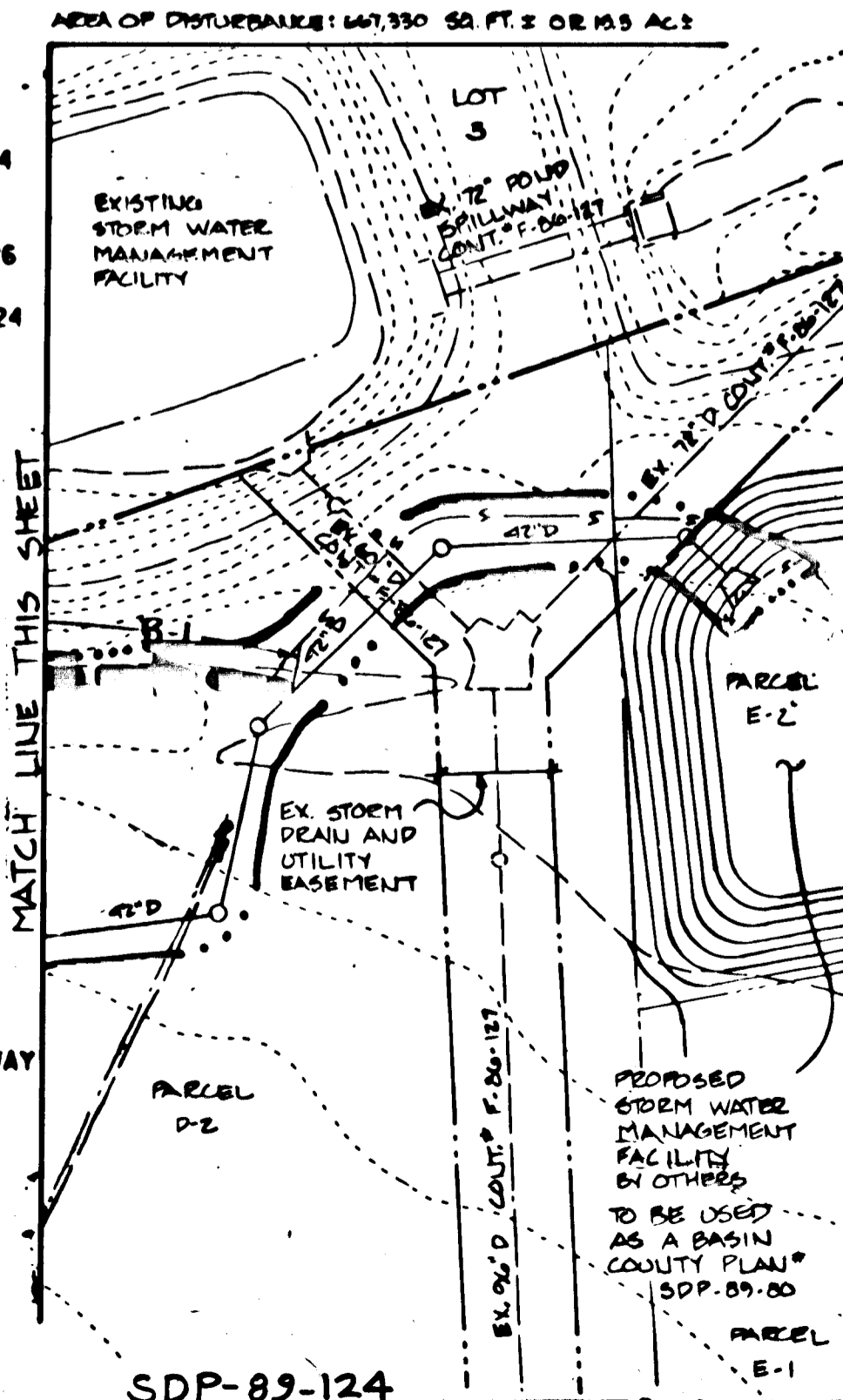
**CERTIFICATION BY THE ENGINEER:**  
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Stephen L. Fisher* 12/21/88  
DATE

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

*John H. Walker* 12/21/88  
DATE

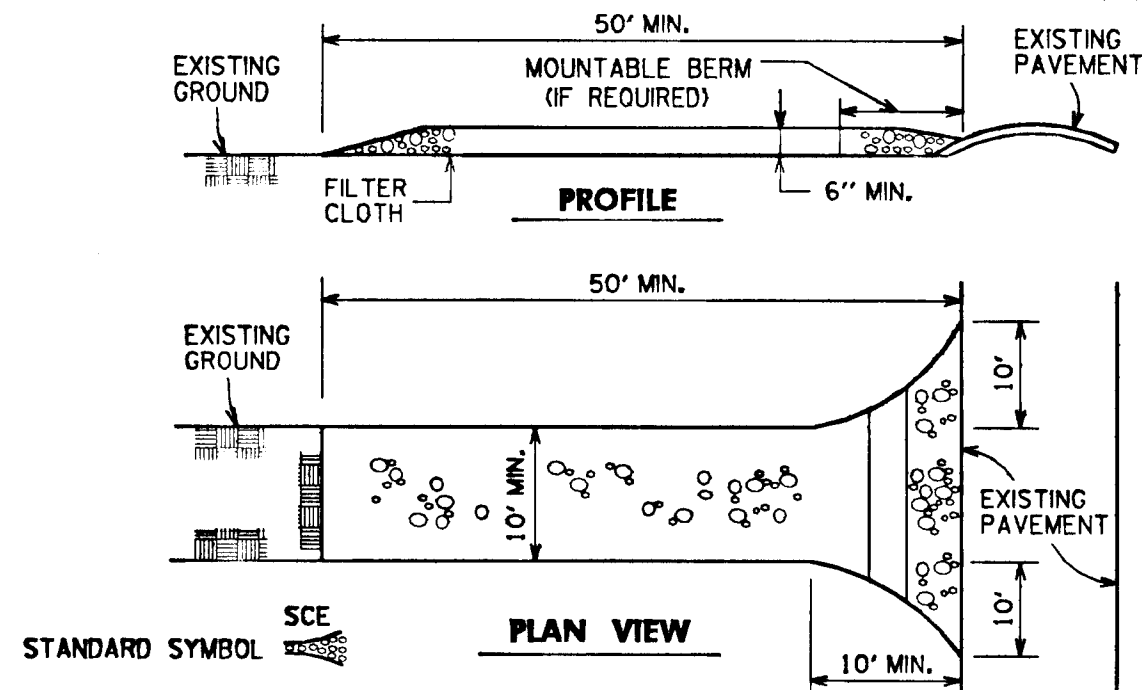
\* SEDIMENT CONTROL IN AREA OF SWM FACILITY ON PARCEL E-2 IS ALSO BEING REVIEWED UNDER SITE DEVELOPMENT PLAN SDP-89-80



1158

SDP-89-124

F-89-117

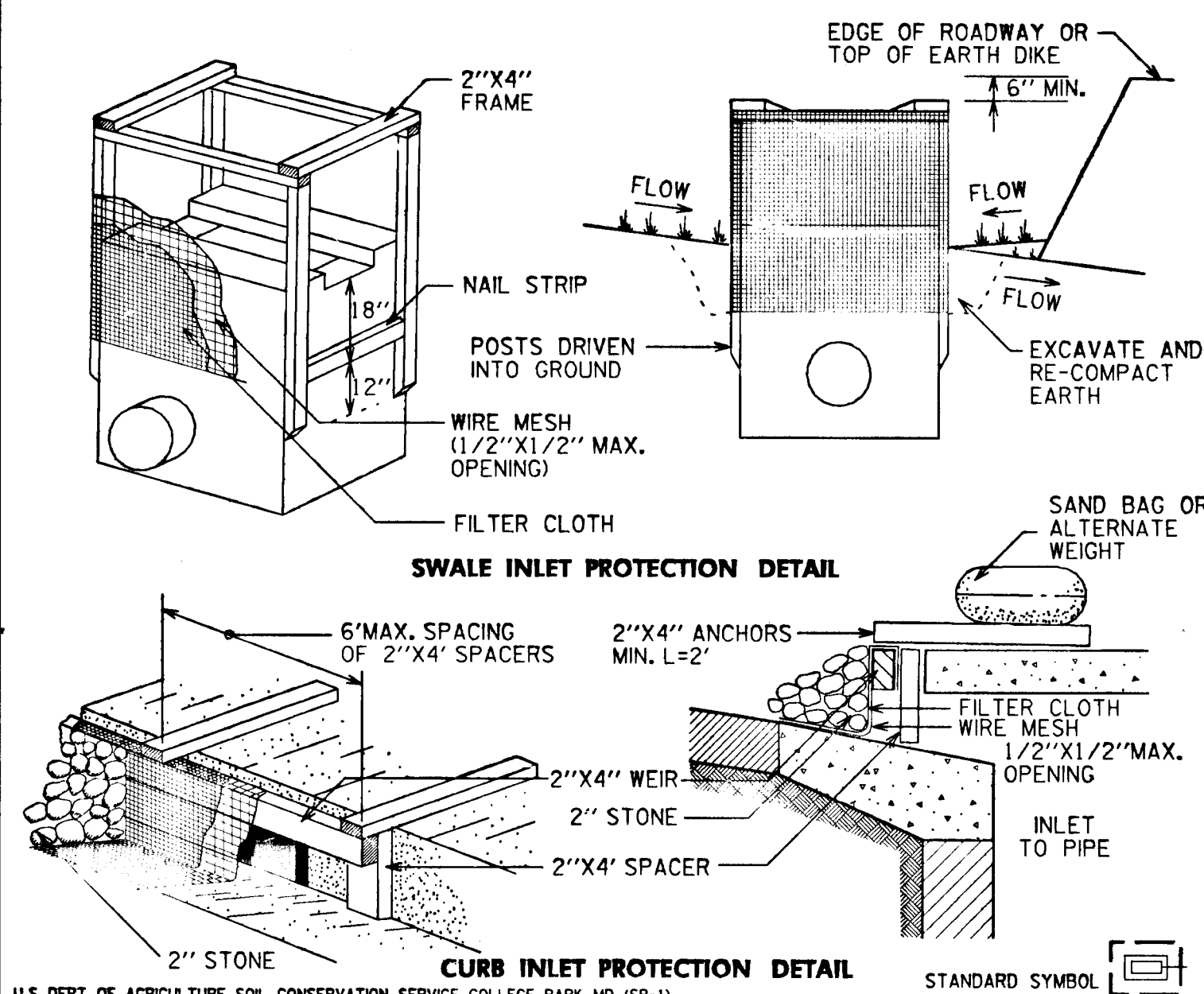


**CONSTRUCTION SPECIFICATIONS:**

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENT LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TEN (10) FOOT MINIMUM BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

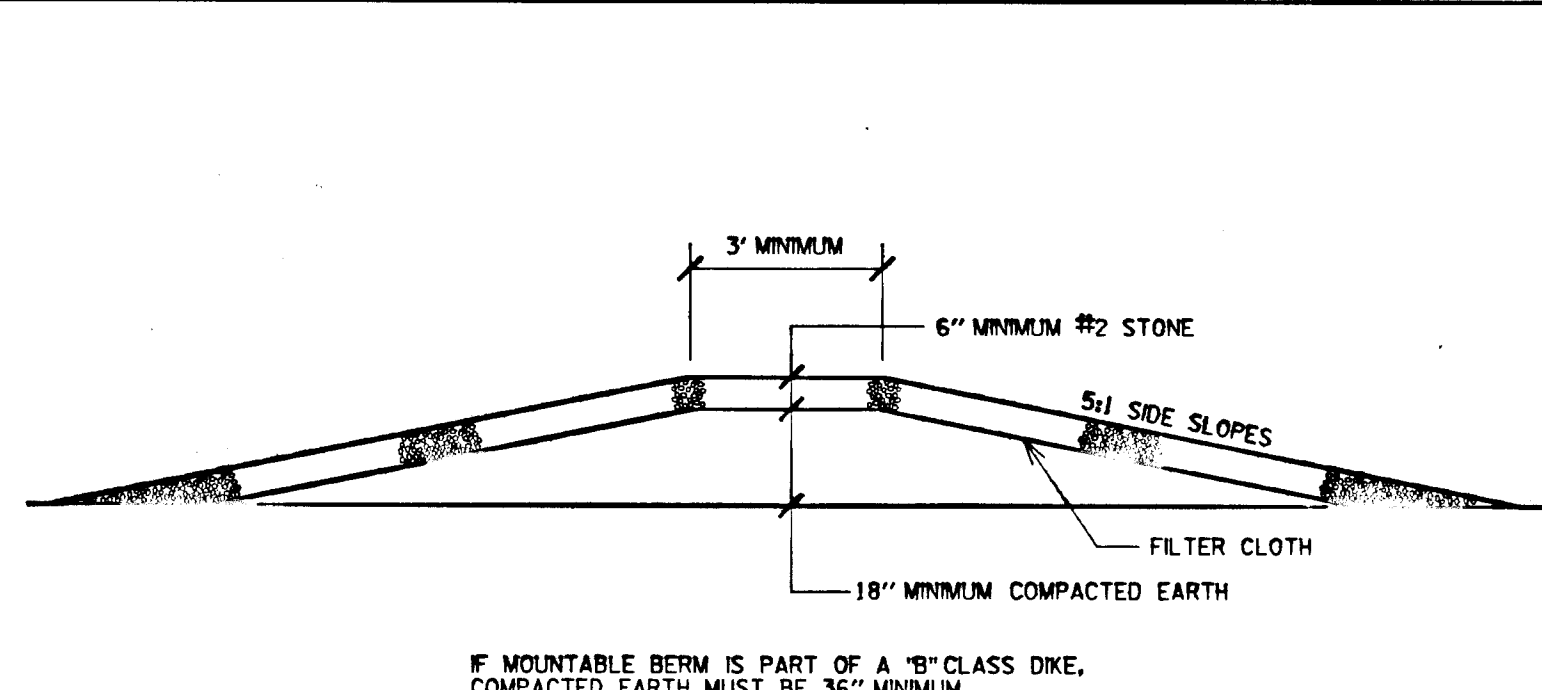
U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (SP-11)

**STABILIZED CONSTRUCTION ENTRANCE**



U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (SP-11)

**INLET PROTECTION DETAIL**



IF MOUNTABLE BERM IS PART OF A 'B' CLASS DIKE, COMPACTED EARTH MUST BE 36" MINIMUM.

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (SP-11)

**MOUNTABLE BERM DETAIL**

**CONSTRUCTION SPECIFICATIONS**

- I. MATERIALS**
  - A. WOODEN FRAME IS TO BE CONSTRUCTED OF 2" X 4" CONSTRUCTION GRADE LUMBER.
  - B. WIRE MESH MUST BE OF SUFFICIENT STRENGTH TO SUPPORT FILTER FABRIC, AND STONE FOR CURB INLETS, WITH WATER FULLY IMPOUNDED AGAINST IT.
  - C. FILTER CLOTH MUST BE OF A TYPE APPROVED FOR THIS PURPOSE, RESISTANT TO SUNLIGHT WITH SIEVE SIZE, EGS. 40-85, TO ALLOW SUFFICIENT PASSAGE OF WATER AND REMOVAL OF SEDIMENT.
  - D. STONE IS TO BE 2" IN SIZE AND CLEAN, SINCE FINES WOULD CLOG THE CLOTH.
- II. PROCEDURE**
  - A. SWALE, DITCHLINE, OR YARD INLET PROTECTION.
    1. EXCAVATE COMPLETELY AROUND INLET TO A DEPTH OF 18" BELOW NOTCH ELEVATION.
    2. DRIVE 2" X 4" POST 1" INTO GROUND AT FOUR CORNERS OF INLET. PLACE NAIL STRIPS BETWEEN POSTS ON ENDS OF INLET. ASSEMBLE TOP PORTION OF 2" X 4" FRAME USING OVERLAP JOINT SHOWN. TOP OF FRAME (WEIR) MUST BE 6" BELOW EDGE OF ROADWAY ADJACENT TO INLET.
    3. STRETCH WIRE MESH TIGHTLY AROUND FRAME AND FASTEN SECURELY. ENDS MUST MEET AT POST.
    4. STRETCH FILTER CLOTH TIGHTLY OVER WIRE MESH. THE CLOTH MUST EXTEND FROM TOP OF FRAME TO 18" BELOW INLET NOTCH ELEVATION. FASTEN SECURELY TO FRAME. ENDS MUST MEET AT POST, BE OVERLAPPED, AND FOLDED, THEN FASTENED DOWN.
    5. BACKFILL AROUND INLET IN COMPACTED 6" LAYERS UNTIL LAYER OF EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
    6. IF INLET IS NOT IN A LOW POINT, CONSTRUCT A COMPACTED EARTH DIKE IN THE DITCHLINE BELOW IT. THE TOP OF THIS DIKE IS TO BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME (WEIR).
    7. THIS STRUCTURE MUST BE INSPECTED FREQUENTLY AND THE FILTER FABRIC REPLACED WHEN CLOGGED.
  - B. CURB INLET PROTECTION.
    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 PIECE OF APPROVED FILTER CLOTH (40-85 SIEVE) OF THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH TO THE 2" X 4" WEIR.
    3. SECURELY NAIL THE 2" X 4" WEIR TO 9" LONG VERTICAL SPACERS TO BE LOCATED BETWEEN THE WEIR AND INLET FACE (MAXIMUM 6" APART).
    4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL ANCHORS (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. CURB THE WIRE MESH AND FILTER CLOTH TO THE CONCRETE GUTTER AGAINST THE FACE OF CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 2" STONE OVER THE WIRE MESH AND FILTER FABRIC IN SUCH MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE FILTER CLOTH.
    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 INLET BY INSTALLING TEMPORARY EARTH OR ASPHALT DIKES DIRECTING FLOW INTO INLET.

**INLET PROTECTION DETAIL**

**PERMANENT SEEDING NOTES**  
K-31 TALL FESCUE

**SEEDBED PREPARATION:** LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS. REMOVE ALL STICKS, BRIS AND STONES LARGER THAN 1 INCH IN SIZE.

**SOIL AMENDMENTS:** APPLY 2 TONS PER ACRE OF GROUND DOLOMITIC LIMESTONE (92 LBS./1,000 SQUARE FEET) OR EQUIVALENT RATE. HARROW OR DISC LIME INTO UPPER 3 INCHES OF SOIL. (OMIT LIME APPLICATION IF AREA WAS PREVIOUSLY AMENDED WITH LIME FOR TEMPORARY SEEDING AS SPECIFIED BELOW.) AT TIME OF SEEDING, APPLY 400 LBS PER ACRE (9.2 LBS./1,000 SQUARE FEET) OF 30-0-0 UREA-NORM FERTILIZER.

**SEEDING:** FOR THE PERIODS MARCH 1ST THROUGH APRIL 30TH, AND AUGUST 1ST THROUGH OCTOBER 15TH, SEED WITH 348 LBS. PER ACRE (8 LBS./1,000 SQUARE FEET) OF BOB KENTUCKY 31 CERTIFIED TALL FESCUE AND 10% ANNUAL RYE GRASS (1-1/2 BUSHELS PER ACRE), DURING THE PERIOD OF OCTOBER 16TH THROUGH FEBRUARY 28TH AND MAY 1ST THROUGH JULY 31ST REFER TO TEMPORARY SEEDING NOTES. THESE AREAS WILL BE RESEED WITH PERMANENT VEGETATION DURING MARCH OR AUGUST AS APPROPRIATE.

**HYDROSEEDING:** WOOD CELLULOSE FIBER MULCH (45 LBS./1,000 SQUARE FEET - DRY WEIGHT) SHALL BE INCORPORATED AS AN INTEGRAL PART OF A SLURRY MIX AFTER SEED, FERTILIZER AND WATER HAVE BEEN THOROUGHLY MIXED. MIX SHALL BE UNIFORMLY APPLIED BY AN APPROPRIATE HYDROSEEDING MACHINE ON ALL 1/4" AREAS DESIGNATED ON THE DRAWINGS AFTER THE PREPARED SOIL SEEDBED HAS BEEN LIMED. SLURRY SHALL FORM A BLOTTER LIKE COVER UNIFORMLY IMPREGNATED WITH GRASS SEED, FERTILIZER AND FIBER MULCH. AN APPROVED TACKIFIER SHALL BE IMMEDIATELY APPLIED TO THE HYDROSEEDED AREAS IF A READY-MIXED TACKIFIER WAS NOT INCORPORATED INTO THE MULCH.

**MAINTENANCE:** SEEDING AREAS SHALL BE WATERED AND MAINTAINED UNTIL A THICK STAND OF GRASS IS ESTABLISHED. BARE SPOTS WHICH PERSIST AFTER THREE WEEKS OF FAVORABLE GROWING WEATHER SHALL BE REVEGETATED AND RESEED AS SPECIFIED EXCEPT THAT LIME AND FERTILIZER MAY BE OMITTED. LAWN AREAS SHALL BE MOWED TO MAINTAIN TURF BETWEEN 2 INCHES AND 4 INCHES AT ALL TIMES, UNTIL A THICK STAND OF TURF IS ESTABLISHED.

**K-31 TALL FESCUE PERMANENT SEEDING NOTES**

**UTILITY CONSTRUCTION OUTSIDE SEDIMENT CONTROL PRACTICES**

1. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSTREAM SIDE OF TRENCH.
2. IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND IMMEDIATELY STABILIZED (MULCHED, SEEDED, AND/OR SOODED MECHANICAL STABILIZATION) AT THE END OF EACH WORK DAY.
3. SILT FENCE SHALL BE PLACED IMMEDIATELY DOWN STREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE (1) WORKING DAY. (SILT FENCE AS PER SCS STANDARD DRAWING - SF-1.)
4. THE CONTRACTOR SHALL DISTURB AND OPEN TRENCH THE MINIMUM PRACTICAL AREA REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
5. ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS."

**UTILITY CONSTRUCTION OUTSIDE SEDIMENT CONTROL**

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

SOIL CONSERVATION SERVICE DATE

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

HOWARD S.C.D. DATE

**CERTIFICATION BY THE ENGINEER:**

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

DATE

**CERTIFICATION BY THE DEVELOPER:**

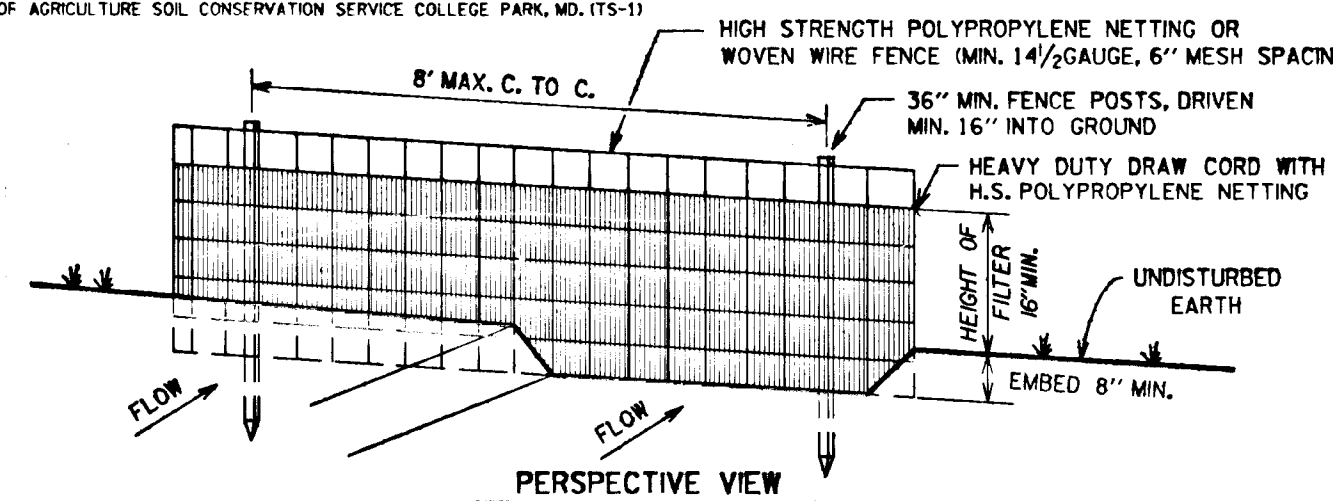
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION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

DATE

PLAN NUMBER DATE

DATE

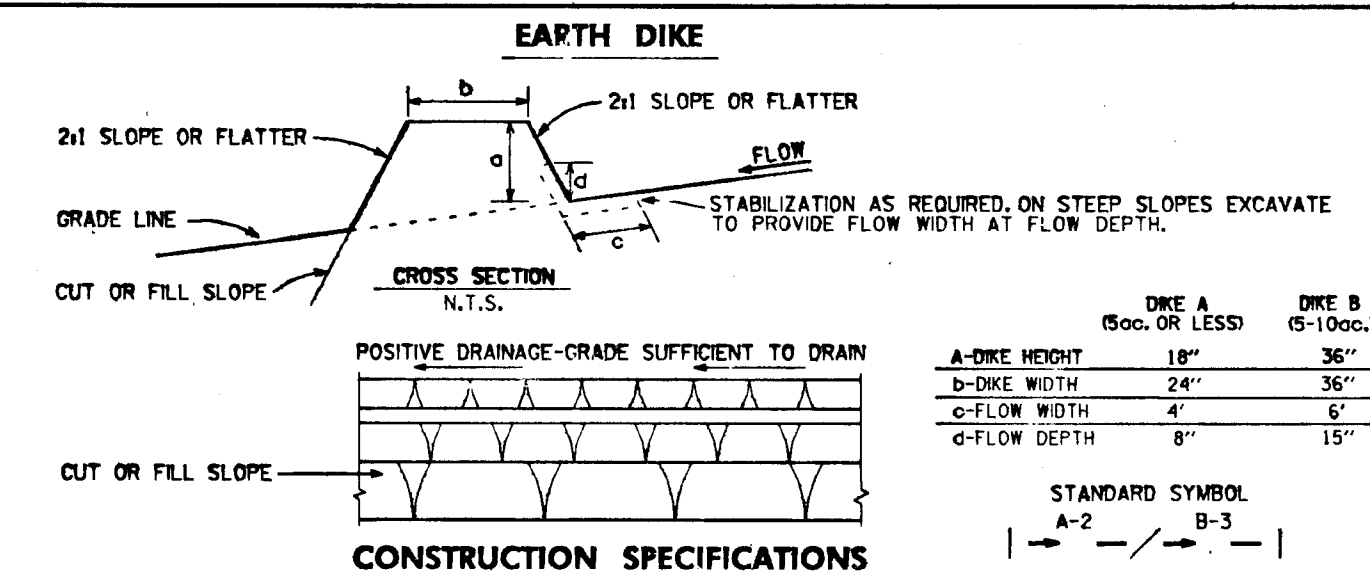
U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (TS-11)



**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

1. HIGH STRENGTH POLYPROPYLENE NETTING OR WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

**SILT FENCE**



**CONSTRUCTION SPECIFICATIONS**

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON. (B) FLOW CHANNEL AS PER THE CHART BELOW.

**FLOW CHANNEL STABILIZATION**

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A (500' OR LESS)	DIKE B (5-1000')
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSDOR, SOD, 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD, 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

- A. STONE TO BE 2" STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- B. RIP-RAP TO BE 4"-8" IN A LAYER AT LEAST 8" THICKNESS AND PRESSED INTO THE SOIL.
- C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
- D. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (ED-11)

**EARTH DIKE**

**TEMPORARY SEEDING NOTES**

**SEEDBED PREPARATION:** LOOSEN UPPER 3 INCHES BY DISCING, RAKING OR OTHER ACCEPTABLE MEANS.

**SOIL AMENDMENTS:** APPLY 2 TONS (92 LBS./1,000 SQUARE FEET) PER ACRE OF GROUND DOLOMITIC LIMESTONE AND 400 LBS. PER ACRE (15 LBS./1,000 SQUARE FEET) OF 10-20-10 FERTILIZER (OR EQUIVALENT RATE). HARROW OR DISC LIME INTO UPPER 3 INCHES OF SOIL.

**SEEDING:** FOR PERIODS MARCH 1ST THROUGH APRIL 30TH, AND FROM AUGUST 15TH THROUGH OCTOBER 31ST, SEED WITH 40 LBS. PER ACRE (9.2 LBS./1,000 SQUARE FEET) OF ITALIAN RYEGRASS. FOR THE PERIOD MAY 1ST THROUGH AUGUST 14TH SEED WITH 3 LBS. PER ACRE (0.07 LBS./1,000 SQUARE FEET) OF WEEPING LOVEGRASS. FOR THE PERIOD NOVEMBER 1ST THROUGH FEBRUARY 28TH, PROTECT THE 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 (TO 90 LBS./1,000 SQUARE FEET) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 210 GALLONS PER ACRE (5 GALLONS/1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GALLONS/1,000 SQUARE FEET) FOR ANCHORING.

**TEMPORARY SEEDING NOTES**

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*Graville W. Moreland* 3/5/89  
CHIEF, BUREAU OF HIGHWAYS DATE

*Deborah E. Remy* 3-31-89  
CHIEF, BUREAU OF ENGINEERING DATE

*Charles J. Gannon* 3/29/89  
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*Daniel J. D'Angelo* 3-11-89  
CHIEF, DIVISION OF COMMUNITY PLANNING AND DEVELOPMENT DATE

Date No. Revision Description

**COLUMBIA GATEWAY**  
PARCELS D-1 & D-2 PHASE I  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**OWNER/DEVELOPER**  
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY

**DAFT McCUNE WALKER, INC.**  
LAND PLANNING CONSULTANTS  
LANDSCAPE ARCHITECTS  
ENGINEERS SURVEYORS  
200 EAST PENNSYLVANIA AVENUE  
TOWSON, MD. 21284  
TELEPHONE: 301-296-3333

AREA F-89-117  
PARCELS D-1 AND D-2  
PHASE 1  
TITLE STORM DRAINS  
**SEDIMENT AND EROSION CONTROL PLAN**

Des By Scale Proj. No.  
Drn By Date  
Chk By Approved 6 OF 6

SDP-89-124

F-89-117

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