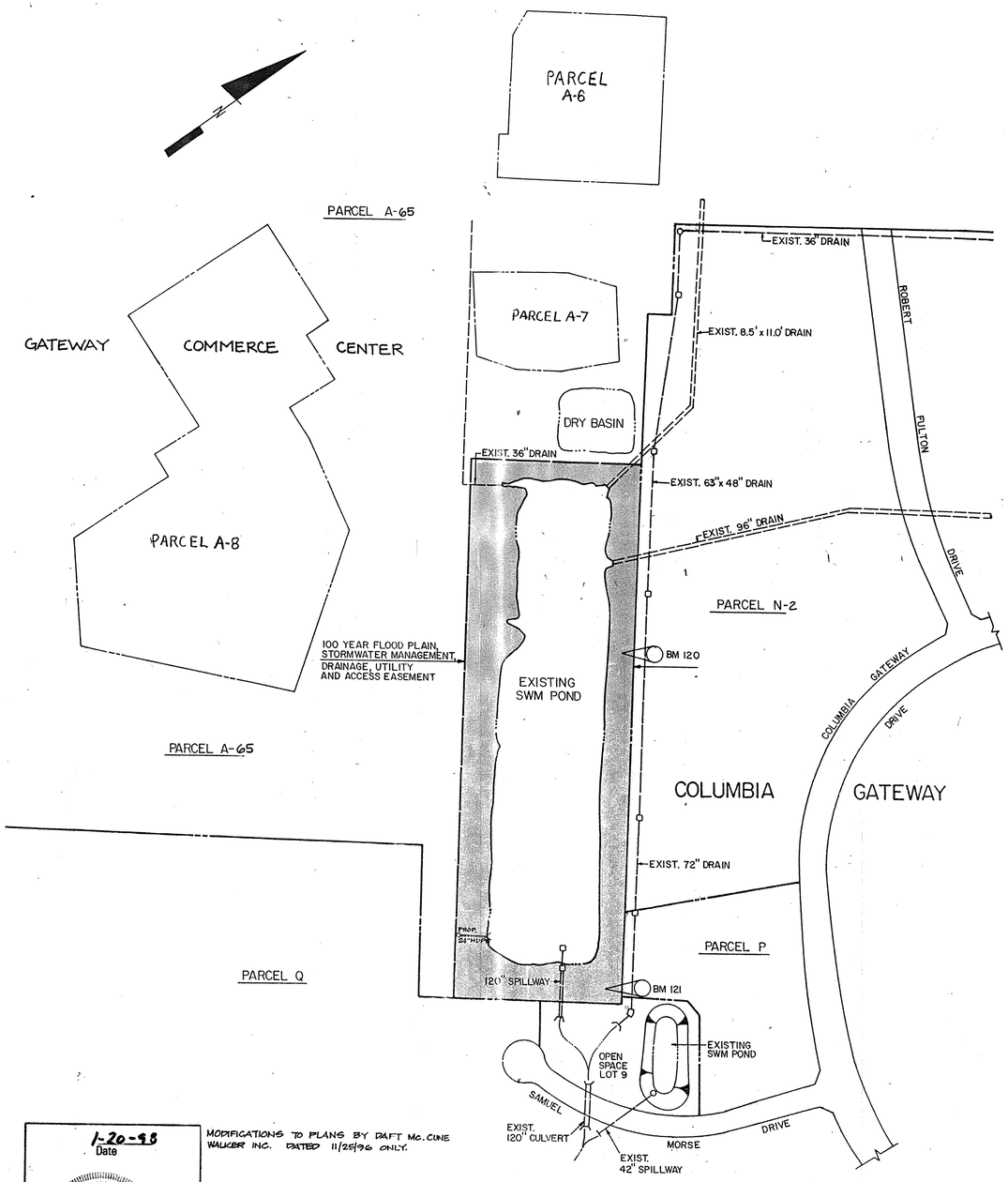
SHEET INDEX	
1	TITLE SHEET
2	SITE PLAN
3	SITE PLAN
4	SITE PLAN
5	PRINCIPAL SPILLWAY PLAN AND PROFILE
6	POND SECTIONS
7	BORING LOGS
8	BORING LOGS
9	POND SPECIFICATIONS
10	SEDIMENT CONTROL PLAN
11	SEDIMENT CONTROL PLAN
12	POND DETAILS
13	SEDIMENT CONTROL DETAILS
14	GRADING SEDIMENT EROSION PLAN FOR DISPOSAL

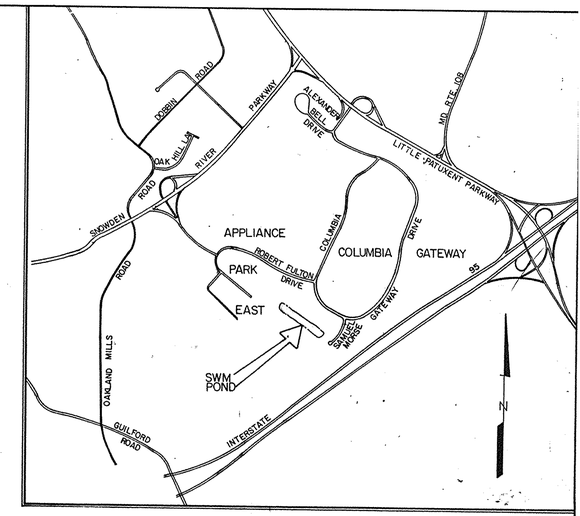
PROPOSED POND MAINTENANCE

1. SEDIMENT CONTROL
2. SEDIMENT REMOVAL, SEDIMENT DISPOSAL AND STABILIZATION.
3. PERMANENT SEEDING OF ALL POND SLOPES AND EARTH DAM EMBANKMENT.
4. FILLING OF VOID AT CONCRETE RISER STRUCTURE.
5. REMOVAL OF TREES IN EARTH DAM EMBANKMENT AND POND SLOPES TO ELEVATION 303.00.
6. TRASH REMOVAL.
7. FINE GRADING ALL AROUND AS REQUIRED AND PERMANENT SEEDING STABILIZATION.
8. ACCESS ROAD REALIGNMENT AND REPAIR.
9. REPAIR OF GULLEY IN SOUTHEAST CORNER OF POND.
10. REMOVAL OF SEDIMENT FROM FORWARD BOX AND LOW WEIR STRUCTURE.
11. ALL EXPOSED METAL SURFACES SHALL BE CLEANED OF RUST, PRIME PAINTED AND FINISHED PAINTED (SPILLWAY PLATFORM, VALVE STEM ASSEMBLY, TRASH RACK ETC.).
12. REMOVE VEGETATION FROM SPILLWAY AND STORM DRAIN OUTFALL STRUCTURES.
13. ALL EXPOSED CONCRETE SURFACES SHALL BE CLEANED AND STAINED. CONCRETE SURFACE STAIN SHALL BE CUSTOM ROCK STAIN AS MANUFACTURED BY CUSTOM ROCK INTERNATIONAL OR EQUAL.
14. MAINTENANCE REPAIR AS STATED IN COUNTY COMMENTS DATED SEPTEMBER 11, 1991.
15. THE POND AND SPILLWAY SHALL BE BROUGHT TO A NEAT, CLEAN AND WORKING CONDITION.



LOCATION PLAN

SCALE: 1" = 200'



VICINITY MAP

SCALE: 1" = 2000'

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF CONSTRUCTION.
3. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
5. WATERWAY CONSTRUCTION PERMIT Ho-70-08-1 WRA DAM #79
6. CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS; TELEPHONE NO. 313-2436.
7. ALL DISTURBED SLOPE AREAS TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
8. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 4000 P.S.I. UNLESS OTHERWISE NOTED.
9. ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE SEED SPECIFICATIONS ON SHEET 10 OF 14.
10. TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1988 REVISED EDITION.
11. STABILENKA (FILTER CLOTH T-100) OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP (FULL WIDTH AND LENGTH OF STONE.
12. REINFORCING STEEL SPECIFICATIONS: FY=60,000 P.S.I.
13. SWM POND AS BUILT SURVEY BY WHITMAN, REQUARDT AND ASSOCIATES (FEBRUARY 1991). TOPOGRAPHY SHOWN ON SOUTH SIDE OF SWM POND ABOVE ELEVATION 322.0 TAKEN FROM AERIAL MAPS PREPARED BY MAPPING ASSOCIATES INC. (1989).
14. THE MD DAM SAFETY DIVISION HAS CLASSIFIED THE DAM AS A HIGH HAZARD STRUCTURE. DUE TO INCREASED FLOODING TO INTERSTATE 95.
15. CALL MISS UTILITY AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
16. THE PURPOSE OF THIS PLAN IS TO REMOVE SEDIMENTS FROM THE EXISTING FACILITY, AND CREATE AN EMERGENCY SPILLWAY.
17. SEE F-92-15, PLAT 10387 AND F-96-76, PLAT 11962.

BENCH MARKS

HRD BM NO.120 - CAP AND REBAR ON NORTH SIDE OF SWM POND. ELEV. 321.12

HRD BM NO.121 - CAP AND REBAR AT NORTHEAST CORNER OF SWM POND. ELEV. 320.34

1-20-98
Date

Professional Engr. No. 10551

MODIFICATIONS TO PLANS BY DAFT MC.CUNE WALKER INC. DATED 11/25/96 ONLY.

MODIFICATIONS TO SPILLWAY
MODIFICATIONS TO POND GRADING
MODIFICATIONS TO SEDIMENT AND EROSION CONTROL PLAN AND SEQUENCE GENERAL NOTES.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

OWNER AND DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
COLUMBIA, MARYLAND

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

DATE	NO.	REVISION
NOV., 1994	1	ORIGINAL 9 DWG. SET CHANGED TO SET OF 13 DWGS. - SEDIMENT REMOVAL/DISPOSAL, SEDIMENT CONTROL, STABILIZATION

COVER SHEET

Gateway Commerce Center,
Parcel A-65

AS BUILT, SEDIMENT REMOVAL AND DISPOSAL
- STORMWATER MANAGEMENT POND -

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND
6TH ELECTION DISTRICT OF
HOWARD COUNTY, MARYLAND

DATE: JUNE 15, 1991 — SCALE: AS SHOWN

F-97-98 SHEET 1 OF 14

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 1-20-98

Albert F. Edwards P.E.
PRINT NAME

Gateway Commerce Center,
Parcel A-65 PLAT 11962

BY THE ENGINEER:

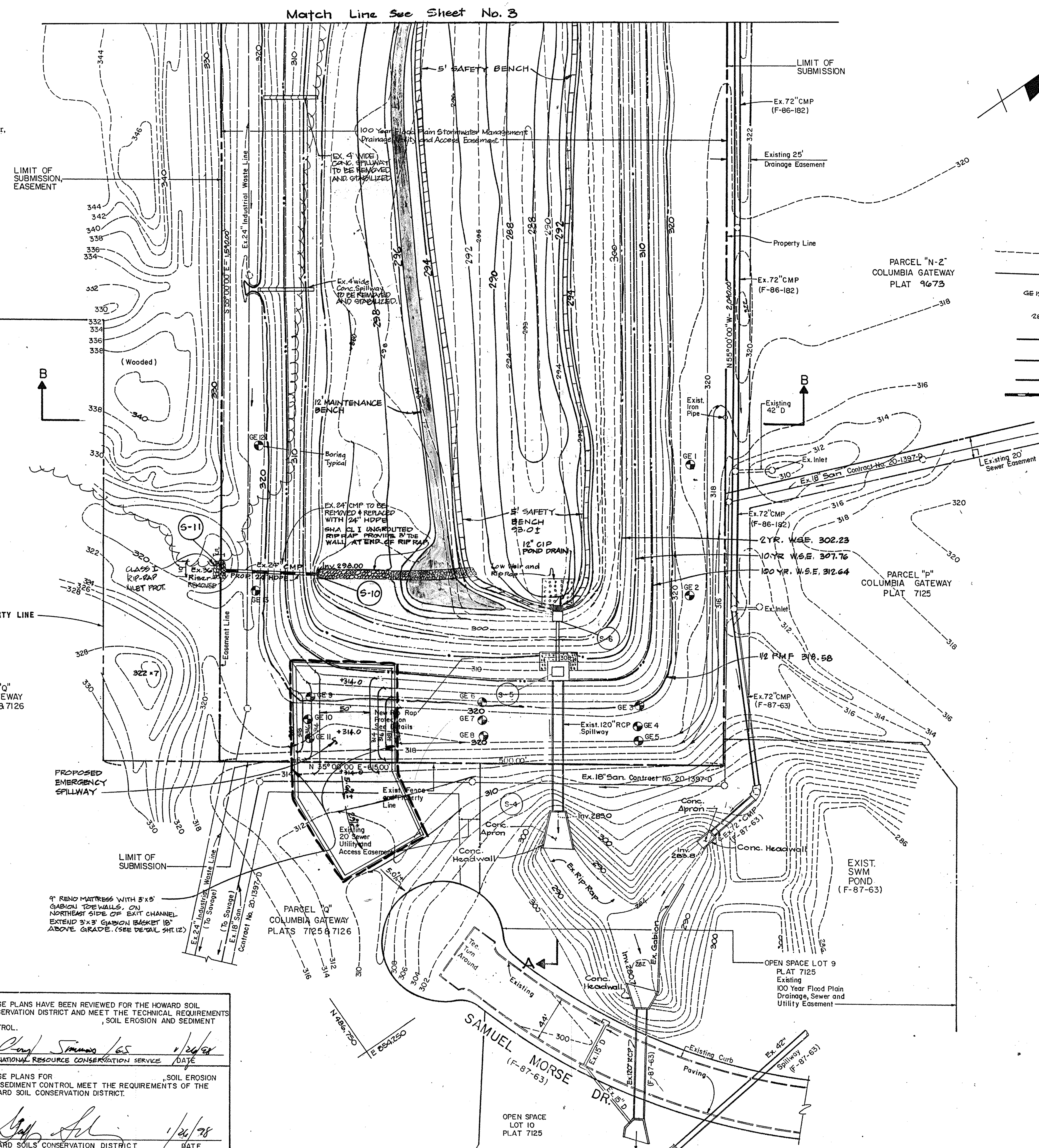
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER 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 1-20-98

John W. Ranocchia, Sr.
PRINT NAME

NOTE: CONTRACTOR SHALL REPAIR AND STABILIZE ALL DISTURBED SLOPE AREAS AT SOUTH WESTERN SIDE OF POND.

Match Line See Sheet No. 3



POND SUMMARY

	DISCHARGE	ELEV.	STORAGE
2 YR.	54.3 CFS	302.23	50.76 AC.FT.
10 YR.	64.8 CFS	307.76	100.89 AC.FT.
100 YR.	126.2 CFS	312.64	153.64 AC.FT.
1/2 PMF	2,839 CFS	318.58	227.20 AC.FT.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

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A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1/20/98
Date

Professional Engr. No. 10551

LEGEND

310 (dashed)	EXISTING CONTOURS
286 (solid)	PROPOSED CONTOURS
GE 12	BORING LOCATIONS
287+0	SPOT ELEVATION
	2 YR. W.S.E.
	10 YR. W.S.E.
	100 YR. W.S.E.
	PROP. SD. PIPE

MODIFICATIONS:
1. POND GRADING
2. POND WATER SURFACE ELEVATION

MODIFICATIONS TO PLANS BY DAFT Mc. CUNE WALKER INC. DATED 11/25/96 ONLY

REV. DATE	REV. NO.	REVISION DESCRIPTION
12-8-97		ADD EMERGENCY SPILLWAY

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

POND SITE PLAN

SCALE: 1"=50' DATE: JUNE 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

THOMAS J. SHAFER — DATE 6/5/91
REGISTRATION NO. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91

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

U.S. NATIONAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD SOILS CONSERVATION DISTRICT — DATE 1/26/98

F-97-98

LEGEND

- 310 — EXISTING CONTOURS
- 286 — PROPOSED CONTOURS
- GE 12 — BORING LOCATIONS
- 287+0 — SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100YR. W.S.E.

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 1-20-98

Albert F. Edwards P.E.
PRINT NAME

BY THE ENGINEER:

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SIGNATURE OF ENGINEER — DATE 1-20-98

John W. Rancochio
PRINT NAME

NOTE: CONTRACTOR SHALL REPAIR AND STABILIZE ALL SLOPE AREAS AT SOUTH WESTERN LOCATION AS NECESSARY.

Gateway Commerce Center.
Parcel A-65 PLAT 11962.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/26/98

BY THE ENGINEER:

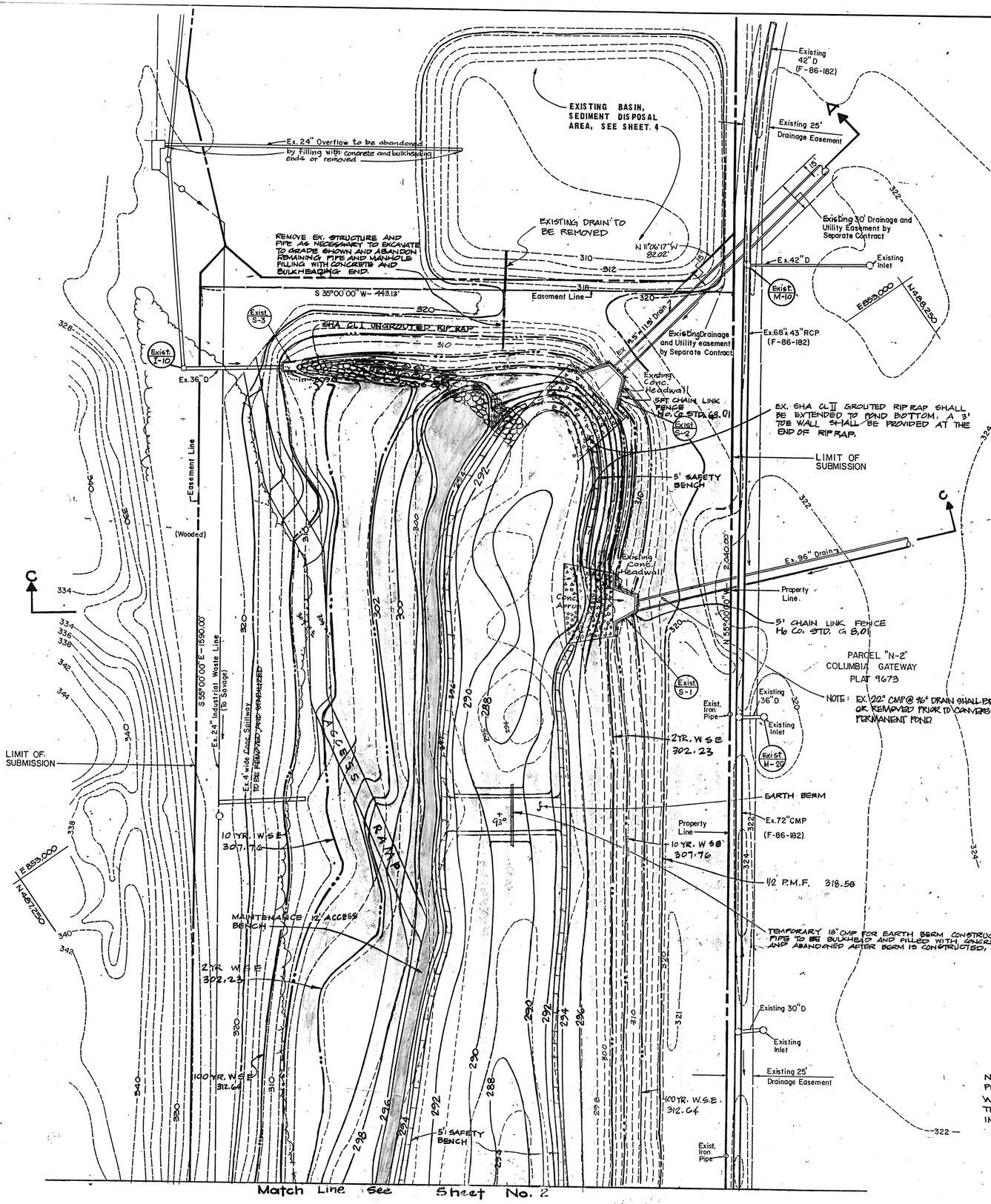
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER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

Thomas J. Shafer — 6/5/91 — DATE
THOMAS J. SHAFER
Registration No. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE 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 30 DAYS OF COMPLETION, ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/7/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705.

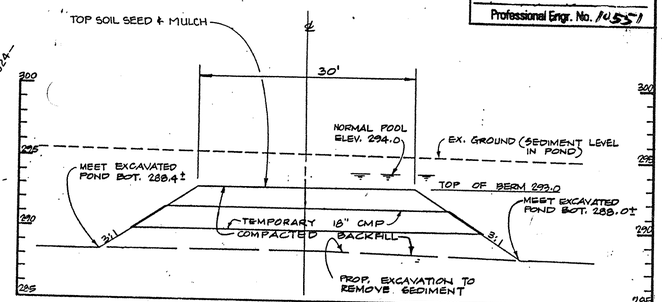
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

MODIFICATIONS TO PLANS BY DAFT Mc CUNE WALKER INC. DATED 11/25/96 ONLY.

1/26/98
Date

JOHN W. RANCOCHIO — No. 10551 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 10551



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

MODIFICATIONS:
1. POND GRADING
2. EARTH BERM ADDED
3. EARTH BERM DETAIL ADDED

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA GATEWAY
13TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
POND SITE PLAN

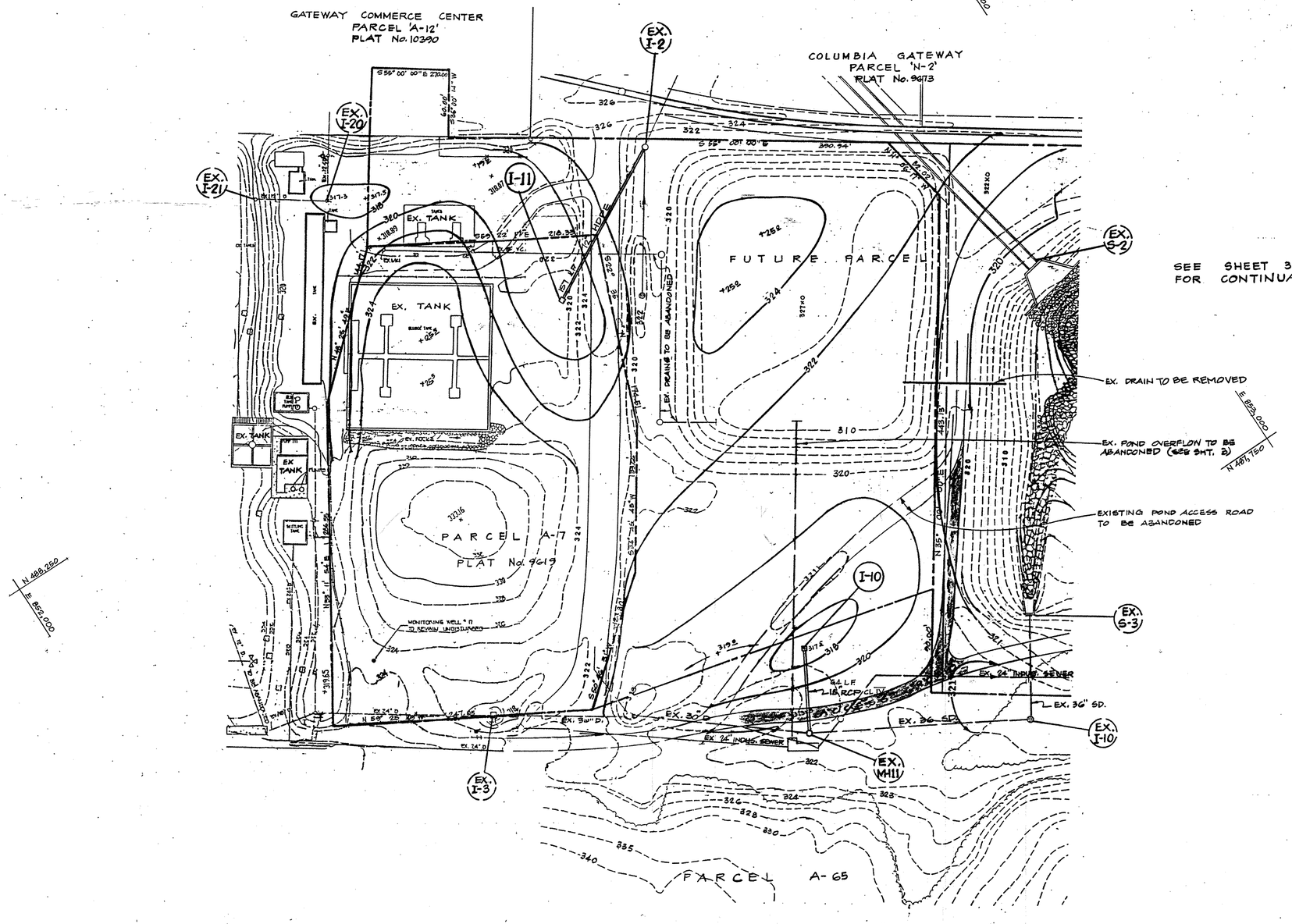
SCALE: 1"=50' — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98



SEE SHEET 3 OF 14 FOR CONTINUATION

NOTE: AT CONTRACTORS OPTION ALL PIPES TO BE ABANDONED BY PLUGGING WITH FLOWABLE FILL OR CONCRETE. THESE PIPES MAY ALSO BE REMOVED INSTEAD OF ABANDONING THEM.

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/7/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/13/98

Date	No.	Revision/ Description

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue,
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

Gateway Commerce Center.
Parcel A-65
6TH ELECTION DISTRICT
Howard County, Maryland

SITE PLAN

STATE OF MARYLAND — JOHN W. BANCROFT JR. — REGISTERED PROFESSIONAL ENGINEER

DATE	BY	REVISIONS

ISSUE DATES
REVIEW:
BID:
PERMIT:
CONSTRUCTION:

BASE:
DRAWN:
DESIGNED:
CHECKED BY:
DATE CHECKED:

SCALE: 1" = 50'
PROJECT NO.: 96033
DRAWING: 4 OF 14

F-97-98

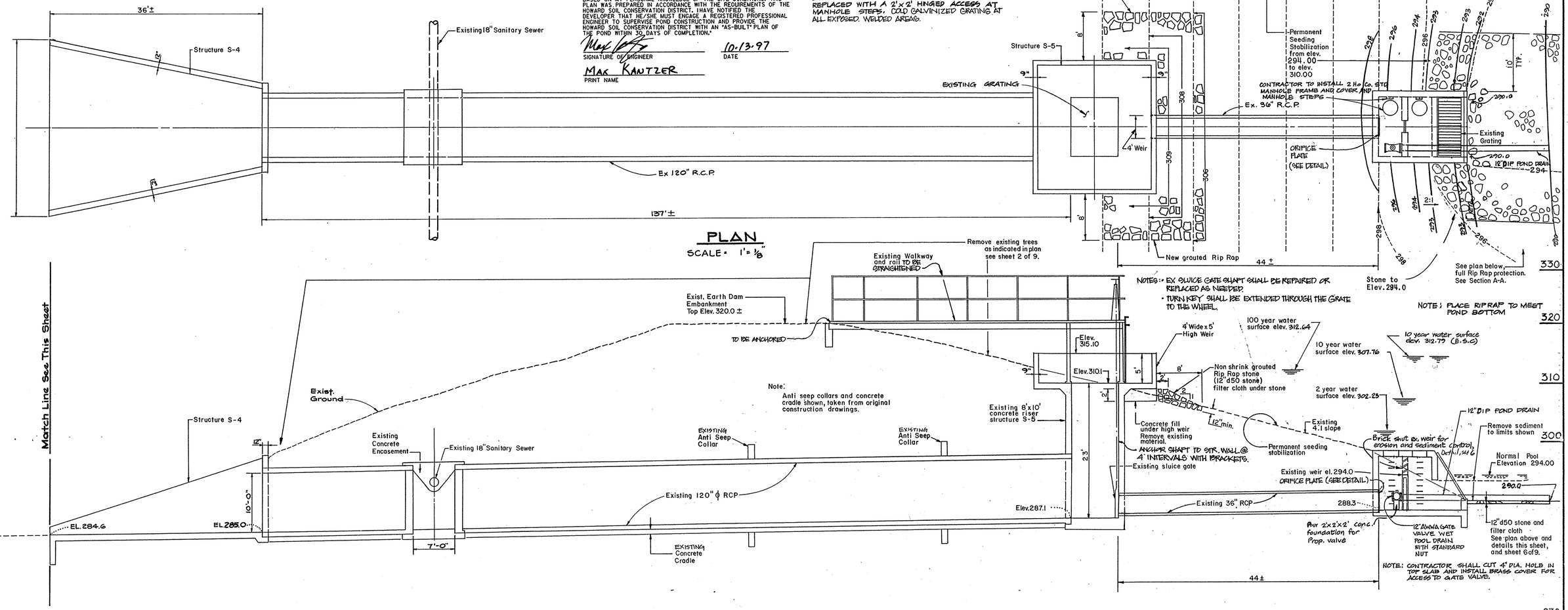
BY THE ENGINEER:

"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."

Mak Kantzer — SIGNATURE OF ENGINEER — 10-13-97 DATE

MAK KANTZER — PRINT NAME

CONTRACTOR SHALL WELD 1" BARS TO EXISTING GRATING TO PROVIDE MAXIMUM OPENINGS OF 6"x6". EXISTING GRATING SHALL BE REMOVED AND REPLACED WITH A 2'x2' HINGED ACCESS AT MANHOLE STEPS. COLD GALVINIZED GRATING AT ALL EXPOSED WELDED AREAS.



PLAN
SCALE = 1" = 1/8"

NOTES: • EX SLUICE GATE SHAFT SHALL BE REPAIRED OR REPLACED AS NEEDED.
• TURN KEY SHALL BE EXTENDED THROUGH THE GRATE TO THE WHEEL.

NOTE: PLACE RIPRAP TO MEET POND BOTTOM

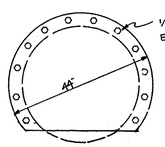
NOTE: CONTRACTOR SHALL CUT 4" DIA. HOLE IN TOP SLAB AND INSTALL BRASS COVER FOR ACCESS TO GATE VALVE.

BY THE DEVELOPER:

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

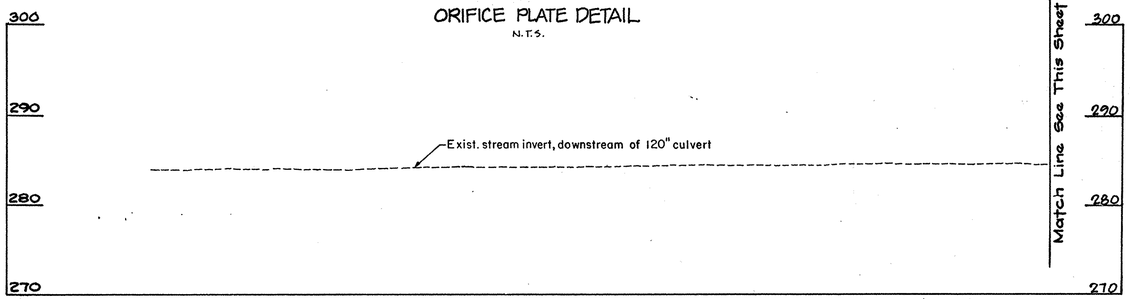
Albert G Edwards — SIGNATURE OF DEVELOPER — 10-13-97 DATE

AL EDWARDS — PRINT NAME



ORIFICE PLATE DETAIL
N.T.S.

PROFILE
SCALE 1" = 1/8"



PROFILE
SCALE: 1" = 1/8"

MODIFICATIONS
1. ADDED ORIFICE PLATE AND DETAIL

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 10/24/97 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 10/24/97 DATE

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Thomas J Shafer — THOMAS J. SHAFER Registration No. 8457 — 6/5/91 DATE

BY THE DEVELOPER:

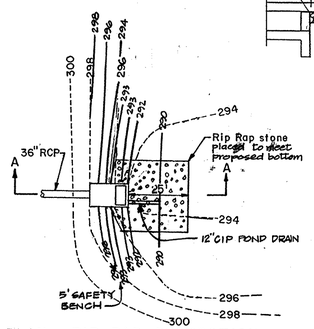
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION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

Joseph H. Necker Jr — JOSEPH H. NECKER JR — 6/5/91 DATE

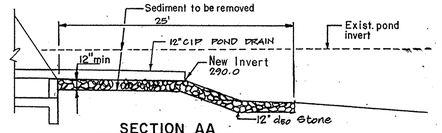
10-13-97 Date

STATE OF MARYLAND MAK KANTZER No. 16872 REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872



PLAN - RIP RAP PROTECTION
SCALE 1" = 30'



SECTION AA
SCALE 1" = 8'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 10-24-97 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 4/12/95 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/15/97 DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
NOV. 1994	1	SEDIMENT REMOVAL, RIP RAP, NEW W.S. ELEVATIONS

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
EXISTING PRINCIPAL SPILLWAY AND MAINTENANCE PLAN AND PROFILE

SCALE: AS SHOWN — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND JOSEPH SHAFER No. 8457 REGISTERED PROFESSIONAL ENGINEER

BY THE DEVELOPER:

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Albert G Edwards — 10-13-97
SIGNATURE OF DEVELOPER — DATE

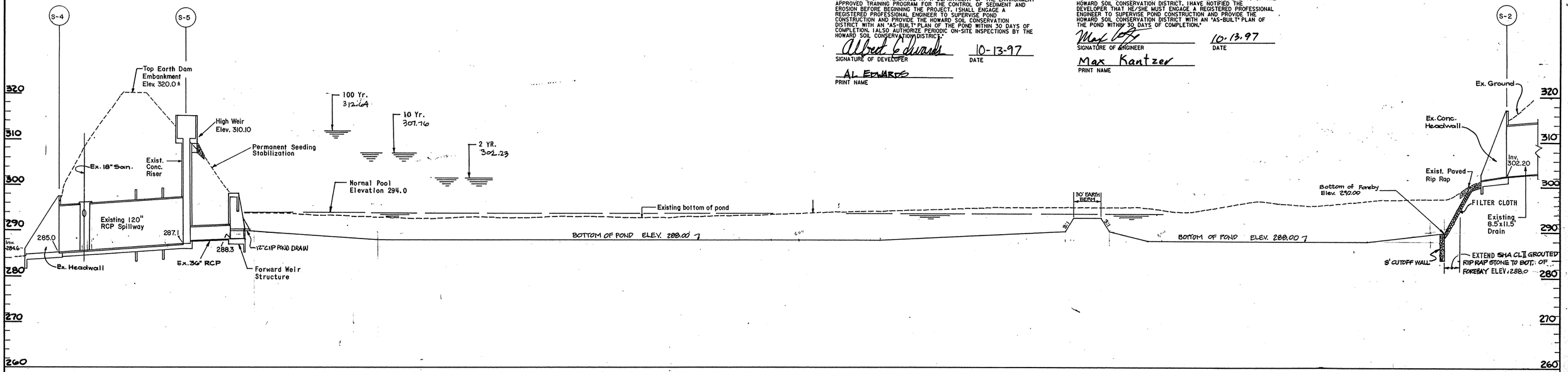
AL EDWARDS
PRINT NAME

BY THE ENGINEER:

"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."

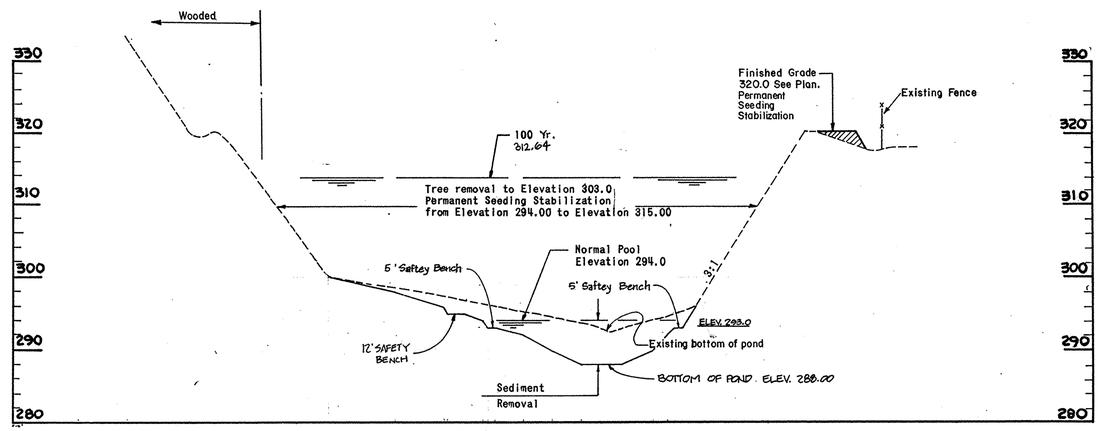
Max Kantzer — 10.13.97
SIGNATURE OF ENGINEER — DATE

Max Kantzer
PRINT NAME



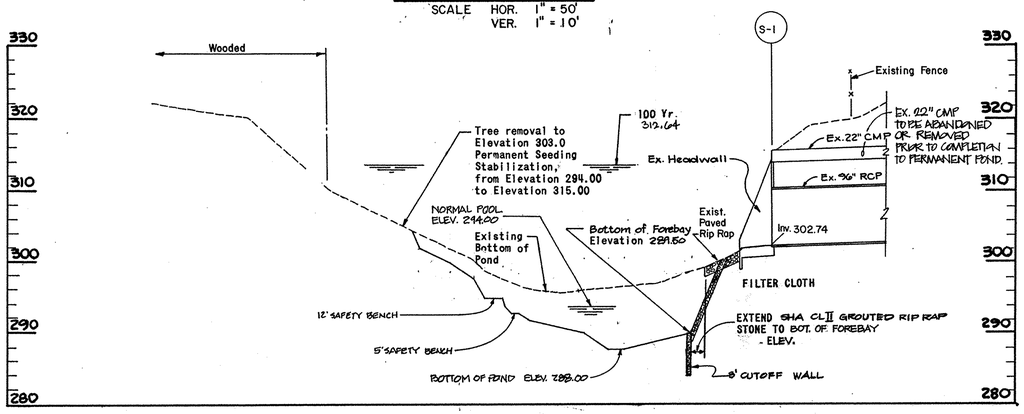
SECTION A-A

SCALE HOR. 1" = 50'
VER. 1" = 10'



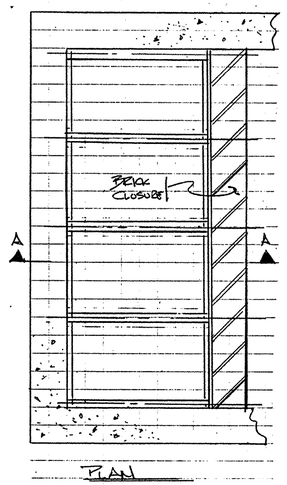
SECTION B-B

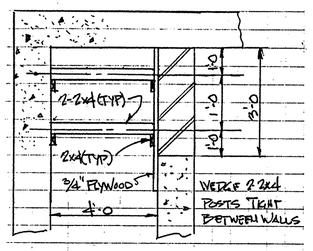
SCALE HOR. 1" = 50'
VER. 1" = 10'



SECTION C-C

SCALE HOR. 1" = 50'
VER. 1" = 10'





SECTION A-A

NOTES: LUMBER - HEM-FIR, No 2, SURFACE DRY @ 19% MAX. MOIST. CONTENT
PLYWOOD - EXTERIOR, STRUCTURAL I, A-A GRADE

TEMPORARY WOOD BRACING

SCALE: 1/2" = 1'-0"

MODIFICATIONS
1. POND BOTTOM PROFILE
2. ADDED SAFETY BENCHES
3. EXTENDED RIP-RAP AT INLETS S-1 & S-2

10-13-97
Date

STATE OF MARYLAND — MAX KANTZER — NO. 16872 — REGISTERED PROFESSIONAL ENGINEER

Max Kantzer
Professional Engr. No. 16872

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/7/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/7/98

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 10/24/97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/24/97

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Thomas J. Shafer — 6/5/97
THOMAS J. SHAFER P.E. NO. 8457 — DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — 6/5/97
DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
NOV. 1994	1	REVISED SECTIONS AA, BB AND CC

COLUMBIA GATEWAY
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

POND SECTIONS

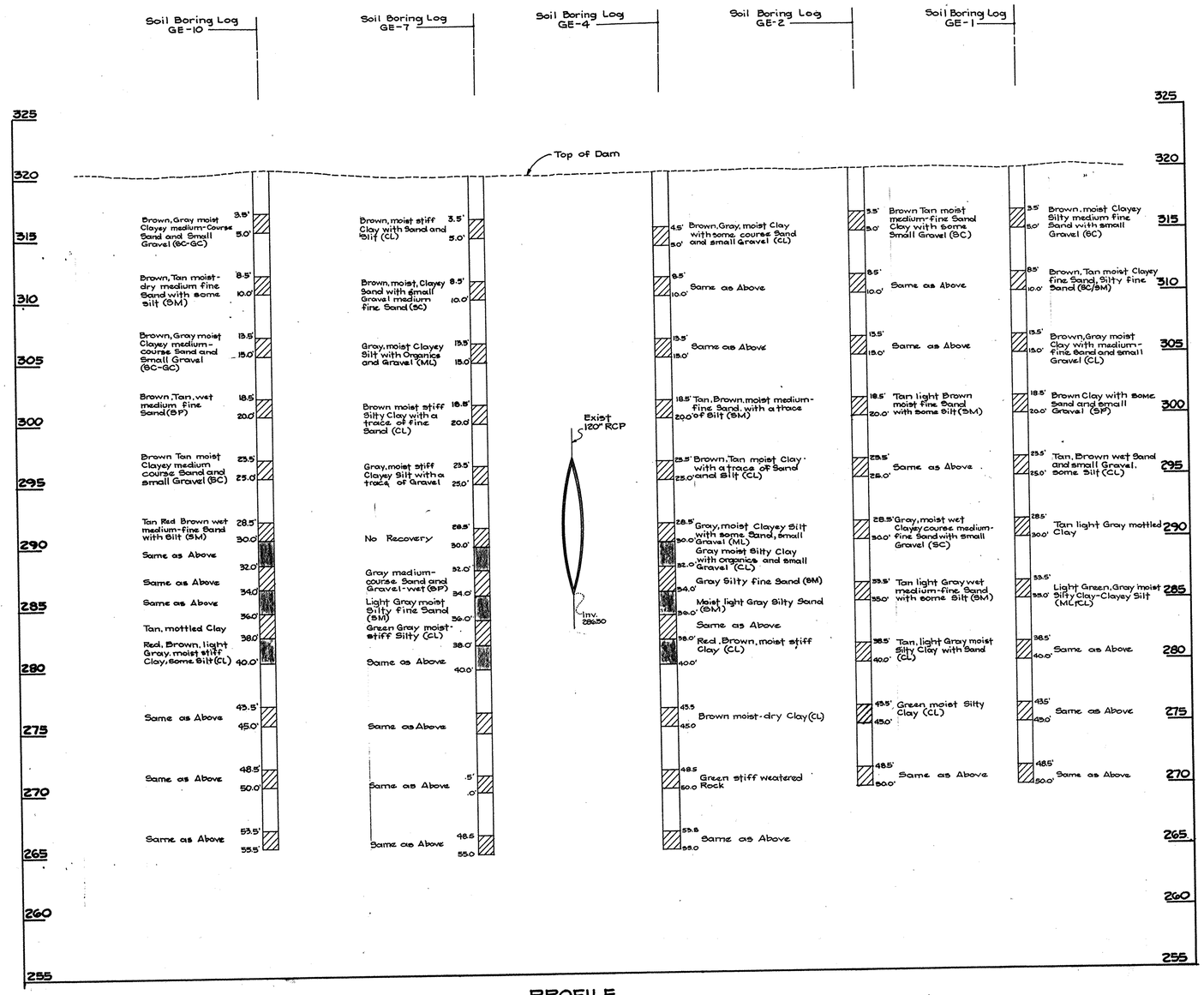
SCALE: As Shown — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — NO. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 6 OF 14



PROFILE

10-13-97
Date

STATE OF MARYLAND
MAX KANTZER
NO. 16872
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 16872

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

NOTE: MODIFICATIONS DONE BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

MODIFICATIONS
1. REVISED CERTIFICATIONS

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 10/13/97

Albert Edwards
PRINT NAME

BY THE ENGINEER:

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SIGNATURE OF ENGINEER — DATE 10.13.97

Max Kantzer
PRINT NAME

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JOSEPH H. NECKER JR. — DATE 6/5/91

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THOMAS J. SHAFER, P.E. NO. 8457 — DATE 6/5/91

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

BORING LOGS

SCALE: NONE — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND
THOMAS J. SHAFER
NO. 8457
REGISTERED
PROFESSIONAL ENGINEER

F-97-98 — SHEET 7 OF 14

BY THE DEVELOPER:

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

Albert Edwards — 10/3/97
SIGNATURE OF DEVELOPER — DATE

Albert Edwards
PRINT NAME

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Max Kantzer — 10.13.97
SIGNATURE OF ENGINEER — DATE

Max Kantzer
PRINT NAME

10-13-97
Date

STATE OF MARYLAND · MAX KANTZER · NO. 16872 · REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872

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APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

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Thomas J. Shafer — 6/5/91
THOMAS J. SHAFER — DATE
Registration No. 8457

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Joseph H. Necker Jr. — 6/5/91
JOSEPH H. NECKER JR. — DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA Gateway Commerce Center, Parcel A-65

PROJECT TITLE
BORING LOGS

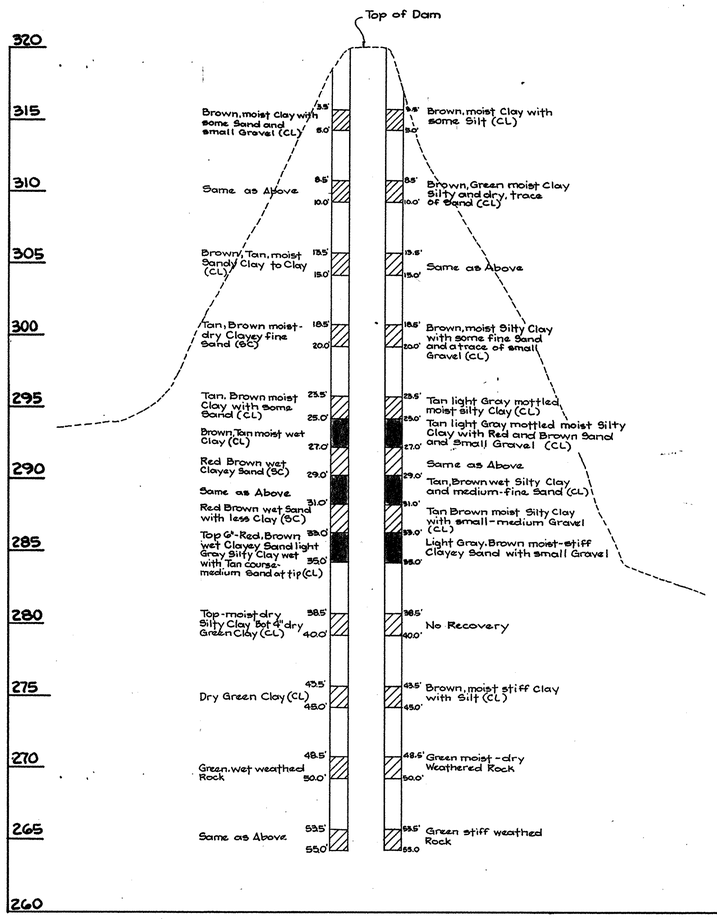
SCALE: NONE — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

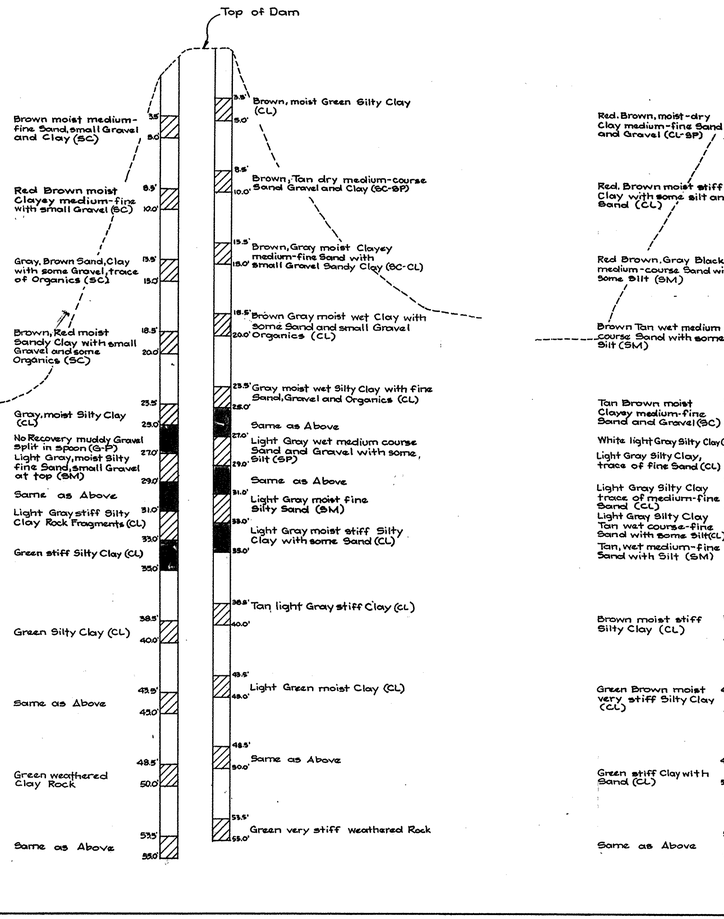
Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND · THOMAS J. SHAFER · NO. 8457 · REGISTERED PROFESSIONAL ENGINEER

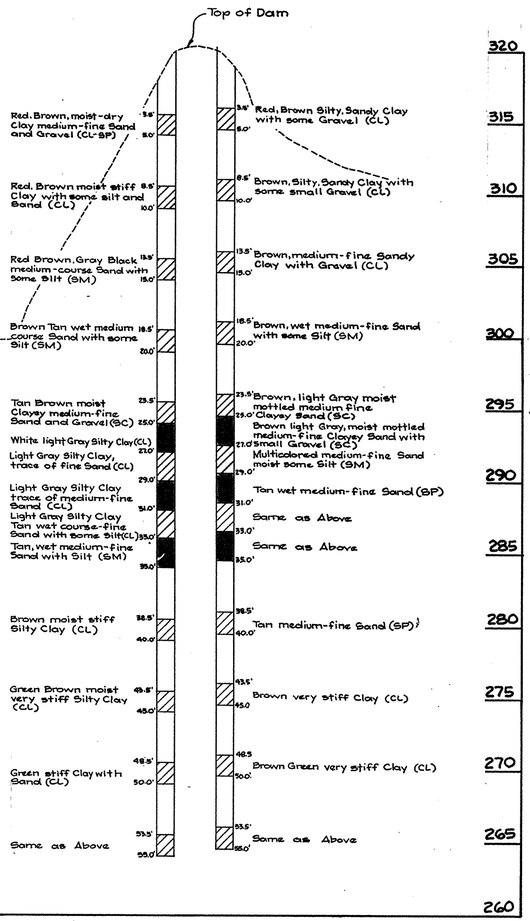
Soil Boring Log GE-3 | Soil Boring Log GE-5



Soil Boring Log GE-6 | Soil Boring Log GE-8



Soil Boring Log GE-9 | Soil Boring Log GE-11



PROFILES

GENERAL CONSTRUCTION SPECIFICATIONS

1. GENERAL
All stormwater management facilities shall be constructed in accordance with Howard County's "Design Manual, Volume I - Storm Drainage (1995)" and the N.R.C.S. Maryland "Standard and Specifications for Ponds" (MD-378, 1992)

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

2. 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.

3. EARTH FILL

MATERIAL. The fill material shall be taken from approved designated borrow area. 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.

All compaction is to be not less than 95 percent of the maximum dry density as determined by AASHTO Specification T-99 (Standard Proctor) with a moisture content within ± 2 percent of 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.

CUTOFF TRENCH AND IMPERVIOUS CORE. 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 4 feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The top width of the impervious core shall be 4 feet minimum. The height of the core shall be as shown on the plans. The side slopes of the core 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.

4. STRUCTURAL 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 4 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 4 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 adequate fill of 24 inches or greater over the structure or pipe.

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL
Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent sound fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

6. PIPE CONDUITS
All pipes shall be circular in cross section. All perforated pipe shall have a minimum of 3.31 square inches of opening per square foot of pipe surface (ex. 30 3/8 inch holes per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any holes blocked or partially blocked by bituminous coating shall be opened prior to installation.

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 Specifications M-36 and 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, and 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 inches in diameter: flanges on both ends of the pipe, a 12 inch wide standard lap type band with 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with O-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 48 inch long annular corrugated band using rods and lugs. A 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24 inches. Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. All aluminum surfaces in contact with concrete shall be painted with inorganic zinc rich primer (see AASHTO Specification M300-86).

5. 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.

6. Backfilling shall conform to "Structural Backfill".

7. 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. Cradle - All reinforced concrete pipe conduits shall be laid in a concrete cradle for their entire length. This cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10 percent 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 cradle 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 "Structural Backfill".

5. Connections - All connections (to anti-seep collars, riser, etc.) shall be watertight.

6. 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 "Structural Backfill".

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

7. CONCRETE
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Sections 414 and 902, Mix No. 3.

Contractor shall add color mix at plant in accordance with manufacturers recommendation "C-12 Messa Beige" as manufactured by L. M: Scofield Company (213) 723-5285.

Supply mixture for approval prior to application. Contractor shall supply load and mix tickets for each truckload. No partial field mixes shall be allowed.

8. ROCK RIP-RAP
Rock rip-rap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 901.02.

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap 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 rip-rap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09.

9. 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.

10. 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.

11. 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.

All disturbed areas shall be controlled by an Erosion and Sediment Control Plan which has been approved by the Howard Soil Conservation District (H.S.C.D.).

12. SEEDING
Seeding, fertilizing and mulching shall be as follows:

Seed Mix: 90% Forager Tall Fescue
10% Kenblue
Applied at a rate of 300 lbs. per acre.
(or)
70% Forager Tall Fescue
30% Chemung Crownvetch, Inoculated
Applied at a rate of 55 lbs. per acre.
Optimum seeding dates: March 1 to April 30.

Lime: 2 tons/acre Dolomitic Limestone.

Fertilizer: 600 lbs./acre 10-10-10 fertilizer before seeding,
400 lbs./acre 30-0-0 ureaform fertilizer at time of seeding.

Mulch: Straw at 4,000 lbs. per acre.

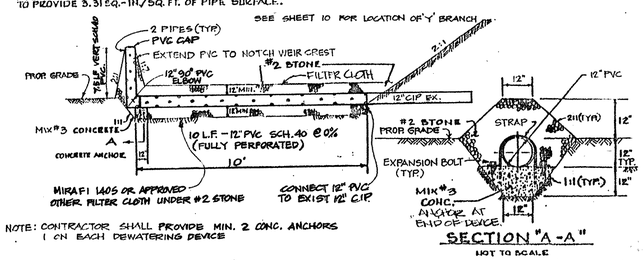
Anchoring: Mulching tool or emulsified asphalt binder at a rate of 8 gal. per 1,000 square feet.

13. FILTER CLOTH
All filter cloth shall conform to Mirifi 140N, Dupont Typar 3341 or 3401, Supac 5P or approved equal.

14. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS
The construction of the pond and embankment, and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The Engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) inspection of pipe trench and bedding, (2) inspection of riser and anti-seep collars and (3) supervision of embankment construction and compaction testing. The Engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam, in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

NOTE: PERFORATED PVC SHALL BE "FULLY PERFORATED", HAVING A MINIMUM 3.31 SQ. IN. OF OPENING PER SQ. FT. OF PIPE SURFACE (EXAMPLE: 30 5/8" Ø HOLES PER SQ. FT.). PERFORATIONS SHALL BE EVENLY DISTRIBUTED AROUND THE FULL PERIPHERY OF THE PIPE.

ALL PERFORATED PIPE SHALL CONFORM TO SPECIFICATIONS AND HAVE SUFFICIENT 5/8" PERFORATIONS TO PROVIDE 3.31 SQ. IN./SQ. FT. OF PIPE SURFACE.



SEDIMENT CONTROL DEWATERING DEVICES
NO SCALE

Operation and Maintenance Schedule

Routine Maintenance

1. Howard County shall inspect the facility annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly. The pond shall also be inspected during a major storm event and initiate any emergency response as necessary.

2. The Owner shall keep the pond embankment clear of any woody vegetation. The other side slopes of the pond should be mowed as needed.

3. Debris and litter shall be removed by the Owner during regular mowing operations and as needed.

4. Silt shall be removed from the forebay by Howard County when accumulation exceeds twenty-four (24) inches.

5. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired by Howard County upon the detection of any damage. The components should be reviewed during routine inspection operations. Visible signs of erosion in the pond as well as rip rap outlet area shall be repaired as soon as it is noticed.

6. Sediment should be removed from the pond by Howard County no later than when the capacity of the pond is half full of sediment, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County Department of Public Works.

DEVELOPER'S CERTIFICATION:

"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 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 inspection by the Howard Soil Conservation District."

Robert F. Edwards, P.G. — 1-20-98 Date

ENGINEER'S CERTIFICATION:

"I certify that these plans 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."

John H. Ranocchia — 11/20/98 Date

These plans have been reviewed for Howard S.C.D. and meets the technical requirements for soil erosion and sediment control.

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 1/20/98 Date

These plans for soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard S.C.D. — 1/26/98 Date

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-17-98 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/17/98 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT — 4/17/98 DATE

Date	No.	Revision Description

MODIFICATIONS
1. REVISED NOTES
2. ADDED OPERATION AND MAINTENANCE SCHEDULE

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

Gateway Commerce Center,
Parcel A-65

6TH ELECTION DISTRICT

Howard County, Maryland

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1-20-98 Date

STATE OF MARYLAND — JOHN H. RANOCCHIA — No. 10551 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 10551

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
PLAT # OR L/F / BLOCK # / ZONE	TAX/ZONE MAP	ELEC. DISTRICT / CENSUS TRACT
WATER CODE	SEWER CODE	

TITLE

POND SPECIFICATIONS

Des By	Scale	Proj. No.
Drn By	Date	9 OF 14
Chk By	Approved	

F-97-98

Wed Oct 16 15:15:07 1996 d:\950\9\base.snp

Gateway Commerce Center,
Parcel A-65 PLAT 11962

DEVELOPERS CERTIFICATION:

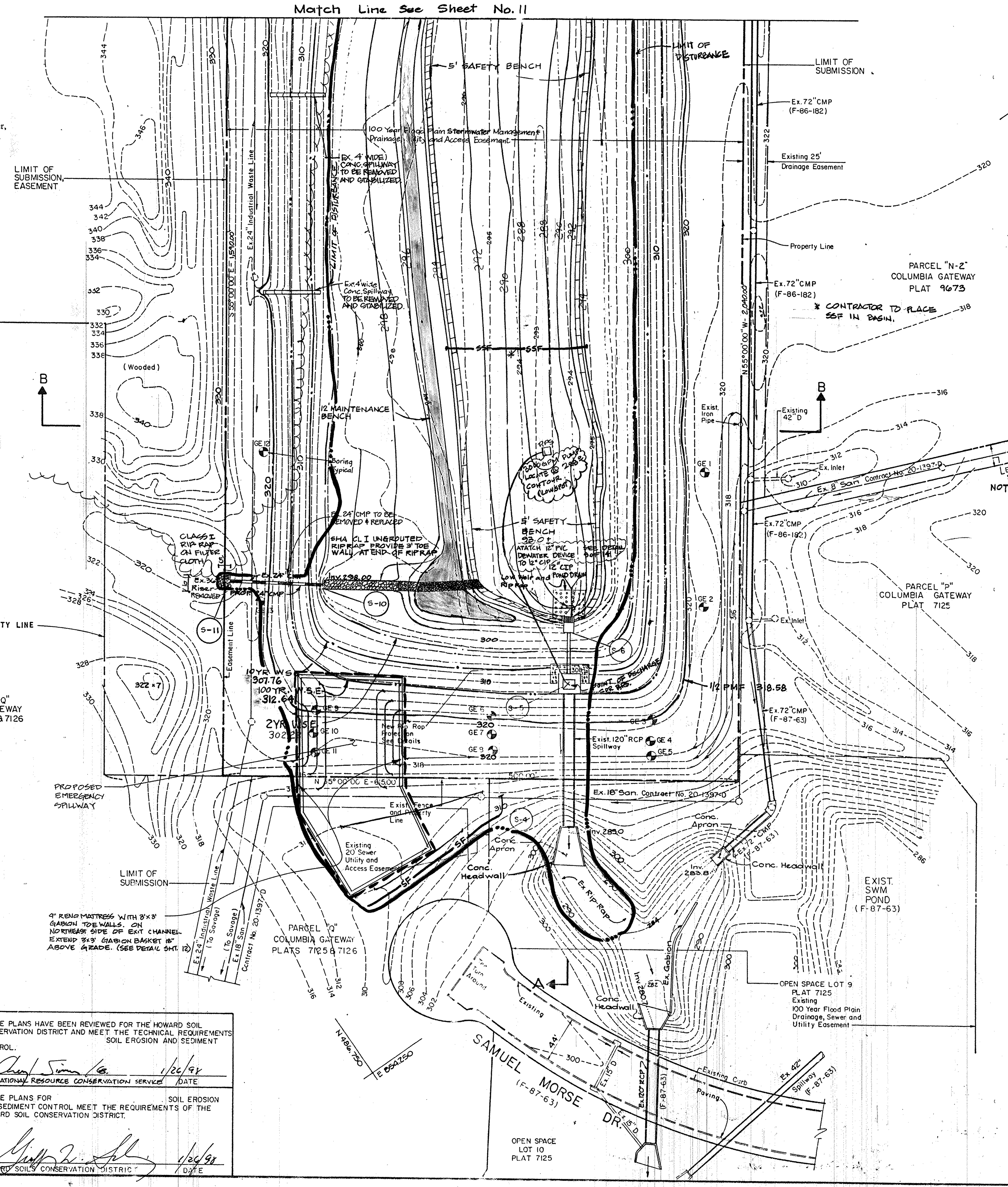
"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Albert F. Edwards — 1-20-98
Date

ENGINEER'S CERTIFICATION:

"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."

John W. Ranocchia — 1-20-98
Date



LEGEND

---- 310 ----	EXISTING CONTOURS
—— 286 ——	PROPOSED CONTOURS
GE 12	BORING LOCATIONS
287+0	SPOT ELEVATION
————	2 YR. W.S.E.
——•——	10 YR. W.S.E.
——••——	100 YR. W.S.E.
▬▬▬	PROPOSED SD. PIPE

BASIN VOLUME REQUIRED = 40.2 AC-FT
BASIN VOLUME PROVIDED = 40.2 AC-FT @ ELEV. 302.1

SEDIMENT BASIN DATA FOR POND

D. A. = 486 Ac.
TOTAL STORAGE REQUIRED 3600 x 486 = 1,749,600 SF = 40.16 Ac. FT.
STORAGE ELEV. 302.1 (40.16 Ac. FT.)
RISER (WEIR) CREST 310.1 (STORAGE 115.89 Ac. FT.)
NOTE: ALL STORAGE PROVIDED IS WET STORAGE

POND SUMMARY

	DISCHARGE	ELEV.	STORAGE
2 YR.	54.3 CFS	302.23	50.76 AC. FT.
10 YR.	64.8 CFS	307.76	100.89 AC. FT.
100 YR.	126.2 CFS	312.64	153.64 AC. FT.
1/2 PMF	2,839 CFS	315.58	227.20 AC. FT.

MODIFICATIONS:
1. POND GRADING
2. POND WATER SURFACE ELEVATION

MODIFICATIONS TO PLANS BY DAFT Mc. CUNE WALKER INC. DATED 11/25/96 ONLY

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

THOMAS J. SHAFER — 6/5/91
REGISTRATION NO. 8457 — DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — 6/5/91
DATE

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

US. NATIONAL RESOURCE CONSERVATION SERVICE — 1/26/98 DATE

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

HOWARD SOILS CONSERVATION DISTRICT — 1/26/98 DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-14-98 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 4/17/98 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/15/98 DATE

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1/20/98
Date

STATE OF MARYLAND — JOHN W. RANOCCHIA — PROFESSIONAL ENGINEER
Professional Engr. No. 10551

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1"=50' — DATE: JUNE 15, 1991

WHITMAN, REQUARDT, AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

LEGEND

- 310 EXISTING CONTOURS
- 286 PROPOSED CONTOURS
- SE 12 BORING LOCATIONS
- 287+0 SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100 YR. W.S.E.

Sequence of Construction

1. Obtain all necessary permits for construction. (1 week)
2. Notify Howard County Department of Inspections and Permits (410-313-1855) a minimum of 48 hours prior to the start of any construction. Notify the Maryland Department of the Environment Nontidal, Wetlands and Waterways Inspection and Compliance Division (410-631-3510) at least five (5) days prior to any in-stream construction. (1 day)
3. Notify the engineer-in-charge of the as-built inspection at (410) 296-3333. (1 day)
4. Clear, grub for and install sediment control measures only. Coordinate all work with the approved erosion and sediment control plan sequence of operations. Also, transfer to the notes "Conditions and Management Practices for Working in Nontidal Wetlands and Buffers" shown on this sheet. (1 week)
5. Install 12-inch CIP pond drain and dewatering device. Brick shut low flow weir in existing structure. Valve on 12-inch drain to be left open at all times, and automatic switch pumps, pipes and bulkheads at structures.
6. Excavate sediments from the pond starting at the upstream end (Inlet) toward the riser Existing 24-inch storm drain to be replaced. Excavation to concentrate on areas below the 294.0 contour. All water pumped from pond to be treated through the removable pumping station. (6 months)
7. After excavation is complete, install proposed earth berm with suitable compacted backfill and stabilize with topsoil, seed and mulch. Eighteen-inch temporary pipe in forebay earth berm to be abandoned upon completion of construction. (1 month)
8. Stabilize spoil areas with topsoil, seed, and mulch (see topsoil specifications, Sheet 13 of 14) and stabilize areas above the wet pool with seed and mulch. (1 month)
9. With prior approval of the Sediment Control Inspector and the Howard County Sediment Control Division, remove sediment controls. Fine grade and stabilize these areas. (1 week)
10. Conduct as-built survey of storm drain modifications, forebay, water quality, wet pool, and outfall areas, and submit to appropriate agencies within 30 days of completion. (1 month)

"Conditions and Management Practices for Working in Nontidal Wetlands and Buffers"

a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;

b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance;

c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;

d) Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.

e) Rectify any nontidal wetlands and buffers temporarily impacted by the permitted activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Oats (Uniola sp.), and/or Rye (Secale cereale). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction;

f) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Resources Administration.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 10/21/97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/21/97

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

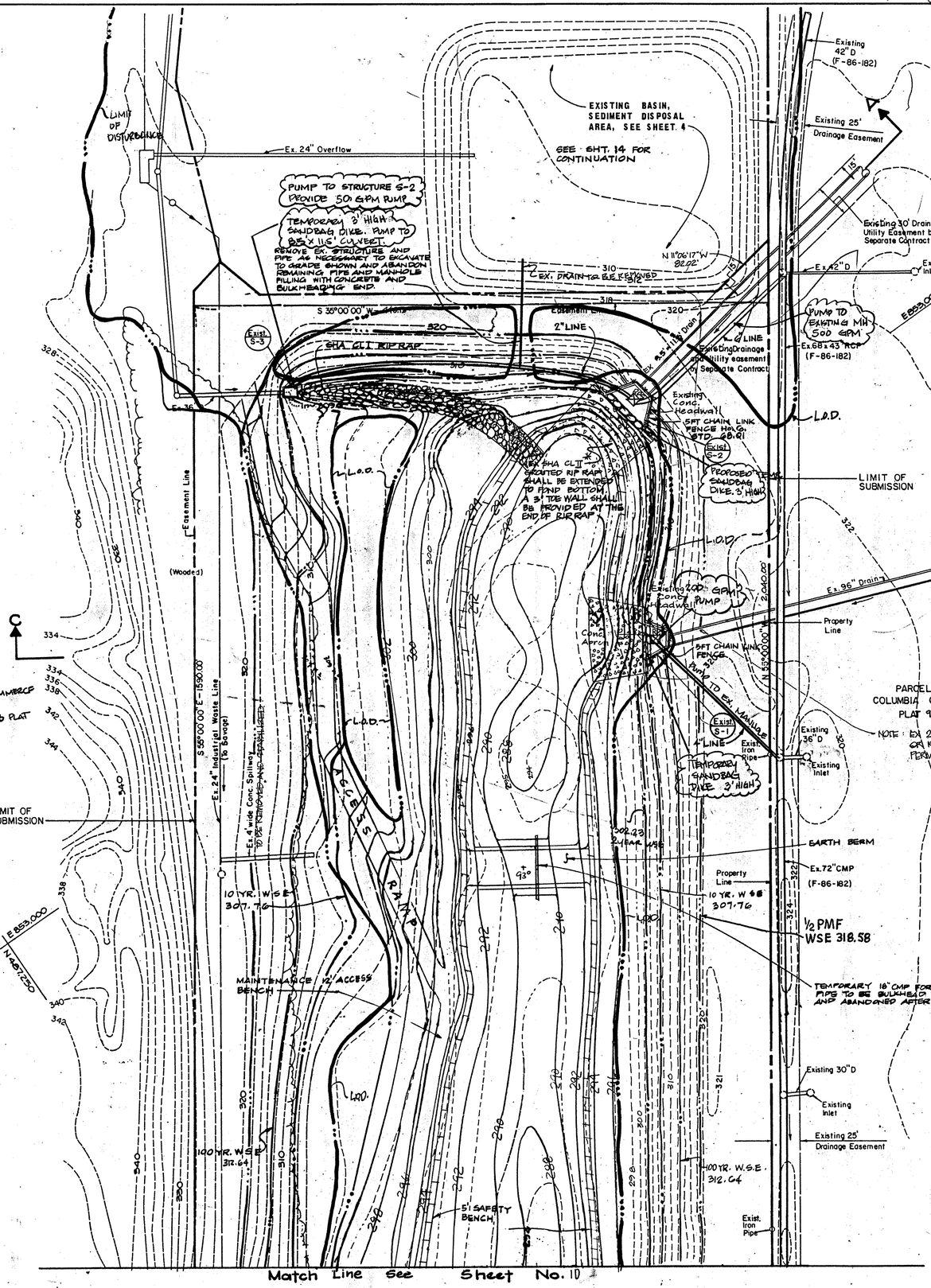
Thomas J. Shafer — 6/5/91

THOMAS J. SHAFER — DATE
Registration No. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE 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 30 DAYS OF COMPLETION, ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/97

DMW
Dodd-McCune-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

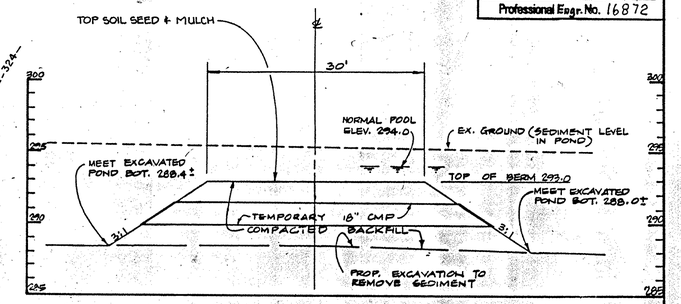
MODIFICATIONS TO PLANS BY DAFT Mc CUNE WALKER INC. DATED 11/25/96 ONLY.

10/13/97 Date

NOTE: PUMPS ARE TO REMAIN IN PLACE AND FUNCTIONAL 24 HRS./DAY BY USE OF AN AUTOMATIC SWITCH.

STATE OF MARYLAND — MAX KANTZER — NO. 16872 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10' VERT. 1" = 5'

MODIFICATIONS:
1. POND GRADING
2. EARTH BERM ADDED
3. EARTH BERM DETAIL ADDED

REV. DATE	REV. NO.	REVISION DESCRIPTION

* NOTE: CLASS II GROUTED RIP-RAP INFLOW PROTECT USED FOR GREATER STABILITY IN PREVENTION OF SOIL EROSION AND SLOPE FAILURE. USED AT EXIST S-2 OUTFALL.

DEVELOPERS CERTIFICATION:

"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 the Environment Approved Training Program for the control of Sediment and Erosion before beginning the project. Ideso authorize periodic on-site inspection by the Howard Soil Conservation District."

Albert Edwards — 10/13/97 Date

ENGINEER'S CERTIFICATION:

"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."

Max Kantzer — 10/13/97 Date

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1"=50' DATE: June 15, 1991

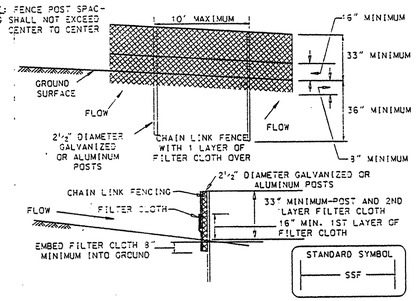
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — NO. 8457 — PROFESSIONAL ENGINEER

F-97-98 SHEET 11 OF 14

DETAIL 3B - SUPER SILT FENCE



Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

1. The poles do not need to set in concrete.
2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

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SUPER SILT FENCE

Design Criteria

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

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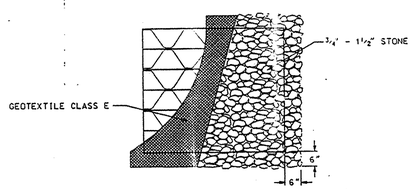
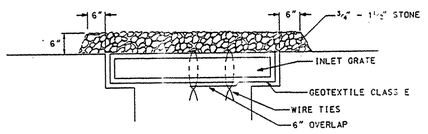
DETAIL 23B - AT GRADE INLET PROTECTION



PLAN/CUT AWAY VIEW



CROSS SECTION

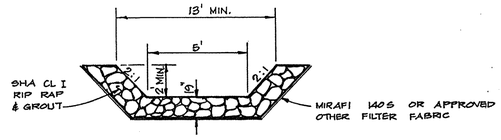
STANDARD SYMBOL
AGIP

MAX. DRAINAGE AREA = ½ ACRE

Construction Specifications

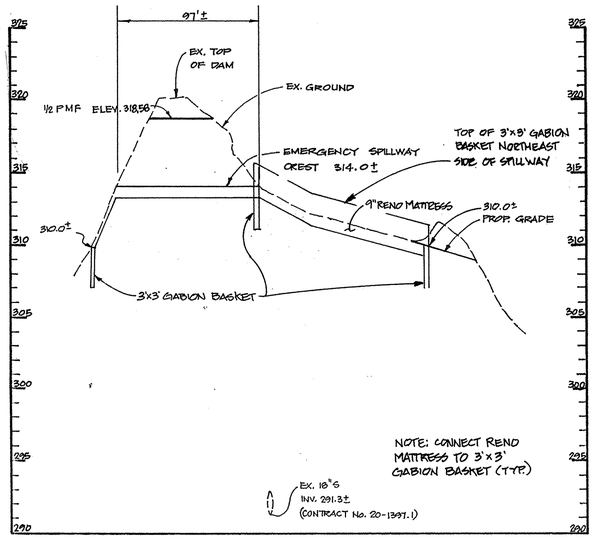
1. Lift grate and wrap with Geotextile Class E to completely cover all openings. then set grate back in place.
2. Place ¾" to 1½" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



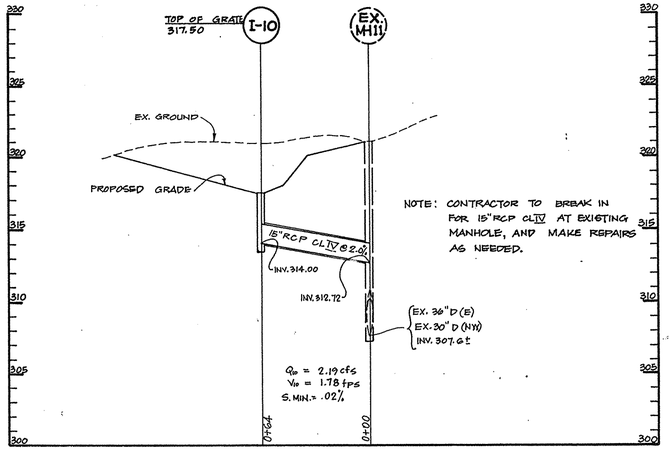
INFLOW PROTECTION TYPICAL SECTION A-A

N.T.S.



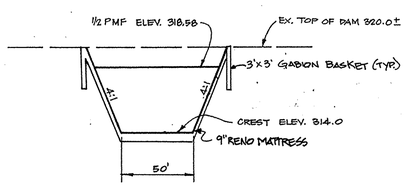
PROFILE ALONG EMERGENCY SPILLWAY

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



STORM DRAIN PROFILE

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



CROSS SECTION EMERGENCY SPILLWAY

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

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

GATEWAY COMMERCE CENTER

6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

POND DETAILS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/13/98

STATE OF MARYLAND — JOHN W. RANOCCHIA SR. — No. 10955 — REGISTERED PROFESSIONAL ENGINEER

DATE	BY	REVISIONS

DEVELOPER'S CERTIFICATION:

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 1-20-98
PRINT NAME BELOW SIGNATURE
Albert F. Edwards, P.E.

ENGINEER'S CERTIFICATION:

"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 REQUIRMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER — DATE 1-20-98
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

THIS DEVELOPEMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 1/26/98

ISSUE DATES			
REVIEW:		BASE:	
BID:		DRAWN:	
PERMIT:		DESIGNED:	
CONSTRUCTION:		CHECKED BY:	
SCALE: AS SHOWN		DATE CHECKED:	
PROJECT NO.: 96033		DRAWING:	12 OF 14

F-97-98

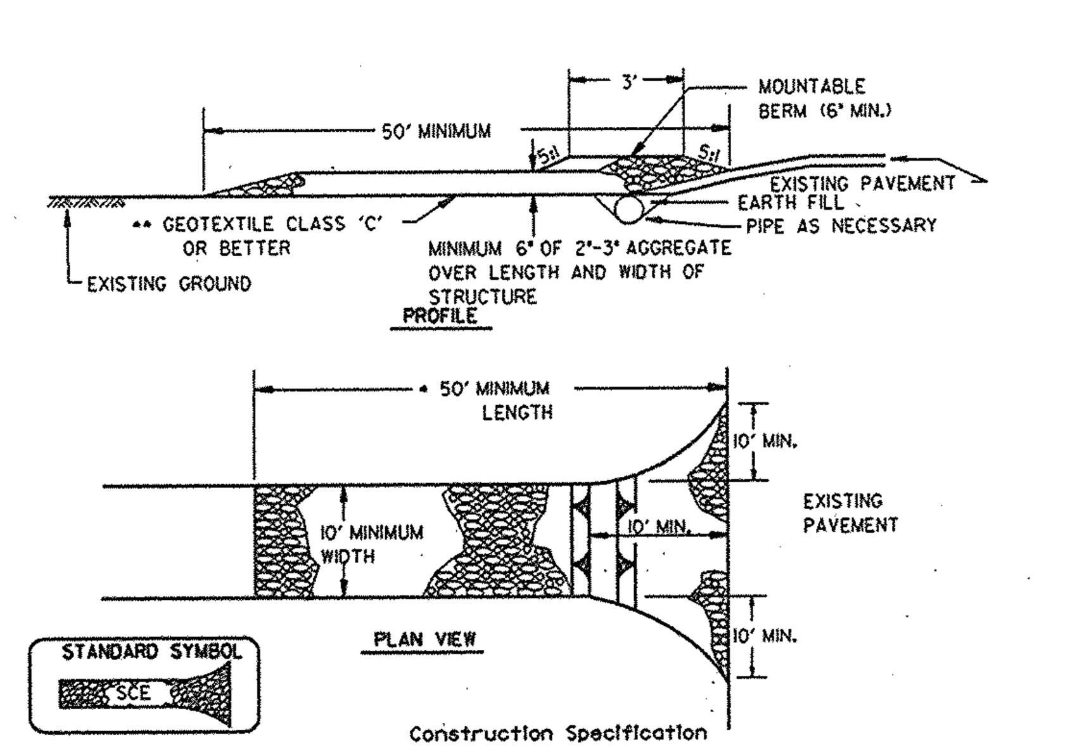
CAD DWG. INC. 391-595-1120 088888

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION ~~(992-2437)~~. 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 "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1
   B. FOURTEEN 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. I, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN MANUAL," STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING, AND MULCHING (SECTION G). 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	21 ACRES
AREA DISTURBED	15.9 ACRES
AREA TO BE ROOFED OR PAVED	NONE ACRES
AREA TO BE VEGETATIVELY STABILIZED	11.0 ACRES
TOTAL CUT	30000 CUBIC YARDS
TOTAL FILL	30000 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION	WASTE = NONE

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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW 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.

HOWARD ~~COUNTY~~ SCD SEDIMENT CONTROL GENERAL NOTES



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 Class C (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 — F - 17 - 3 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STABILIZED CONSTRUCTION ENTRANCE   NOT TO SCALE

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 ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 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 TOMS PER ACRES 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 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU 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 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOD. OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS 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 RESEEDING.

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 BE 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 THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU 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 ASPHLAT ON FLAT AREAS. ON SLOPES 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

TEMPORARY AND PERMANENT SEEDING NOTES

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be perscribed to raise the pH to 6.5 or higher.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientistand approved by the appopriate approval authority, may be used in lieu of natural topsoil.

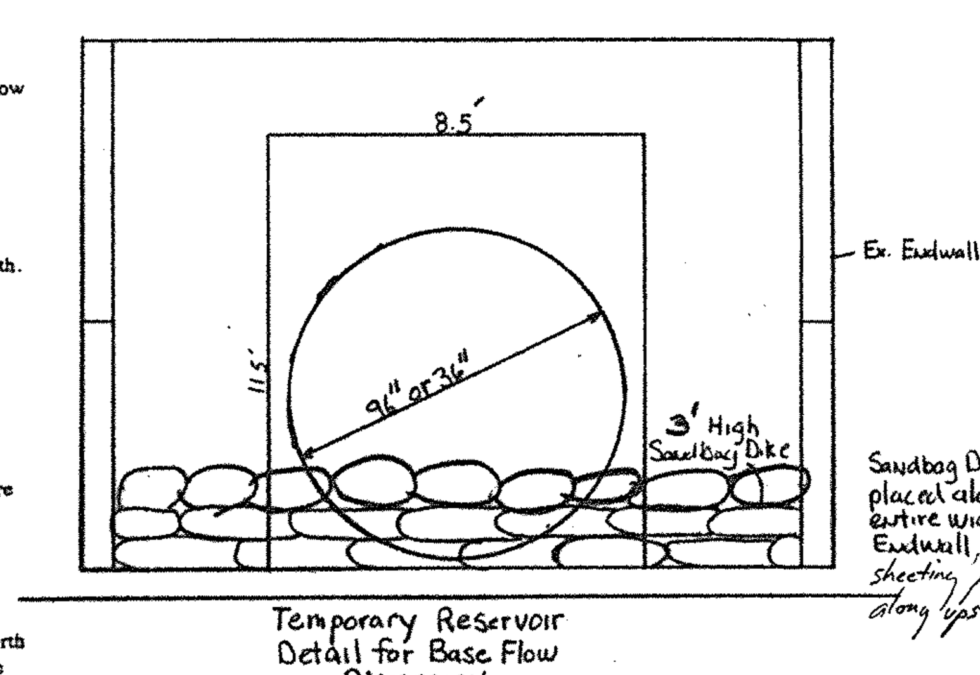
   ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
   iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

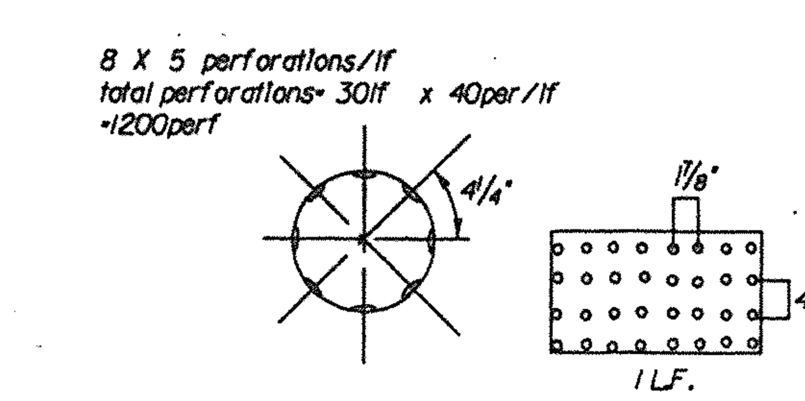
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

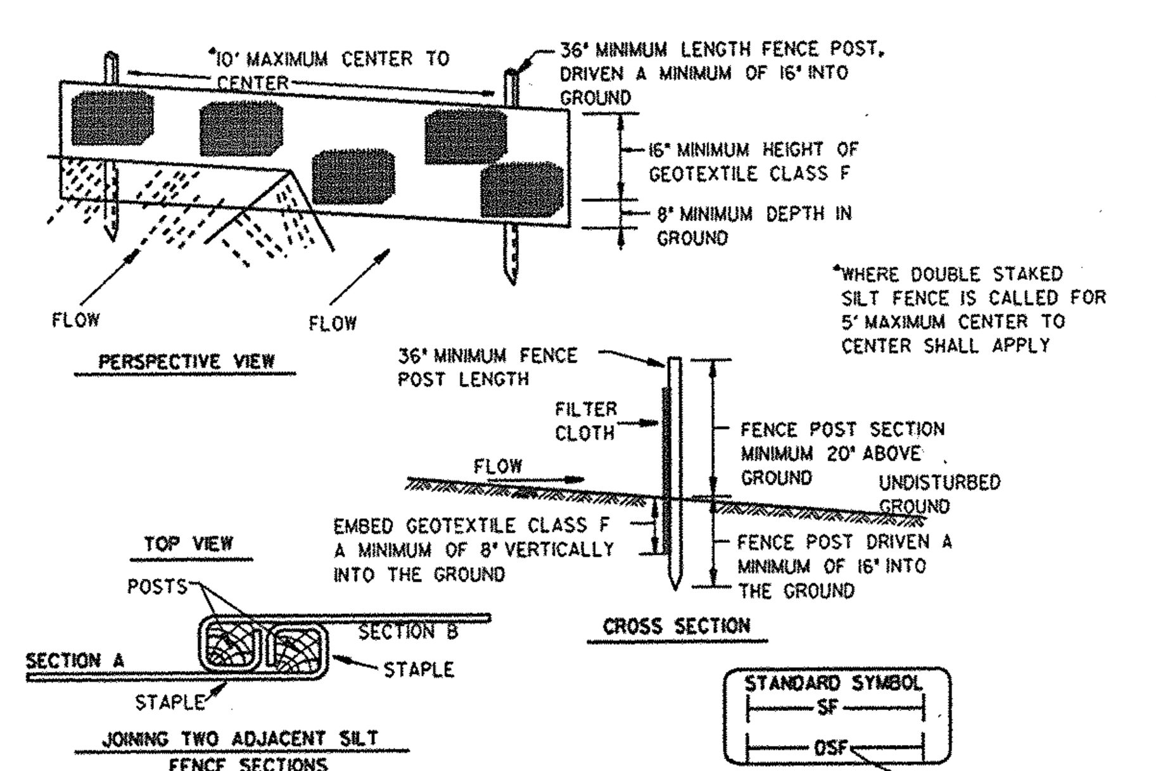
Contractor to repair SANDBAGS as needed After each storm.



Temporary Reservoir Detail for Base Flow Diversion N.T.S.



PERFORATION DETAIL
NOT TO SCALE



Construction Specifications

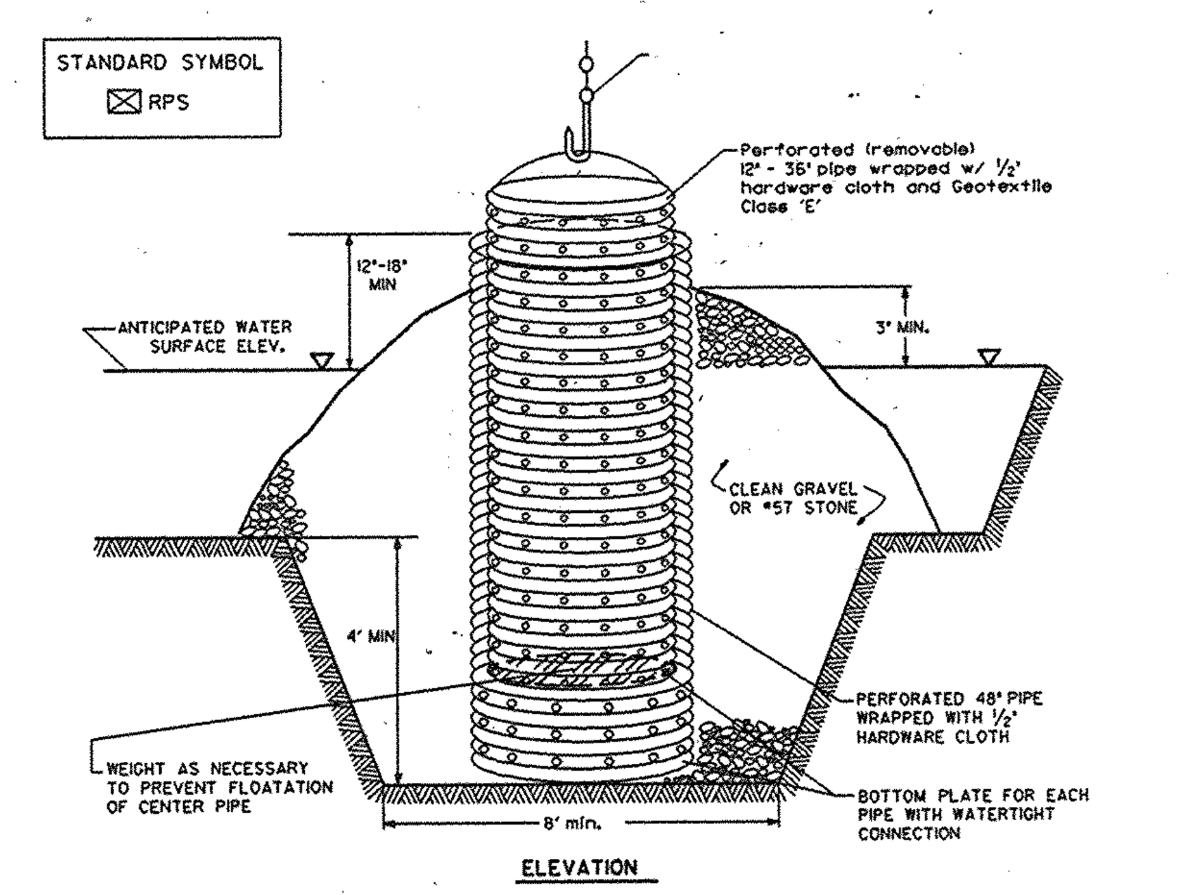
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
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 ft/minute (max.)	Test: MSTM 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.

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

SILT FENCE   NOT TO SCALE

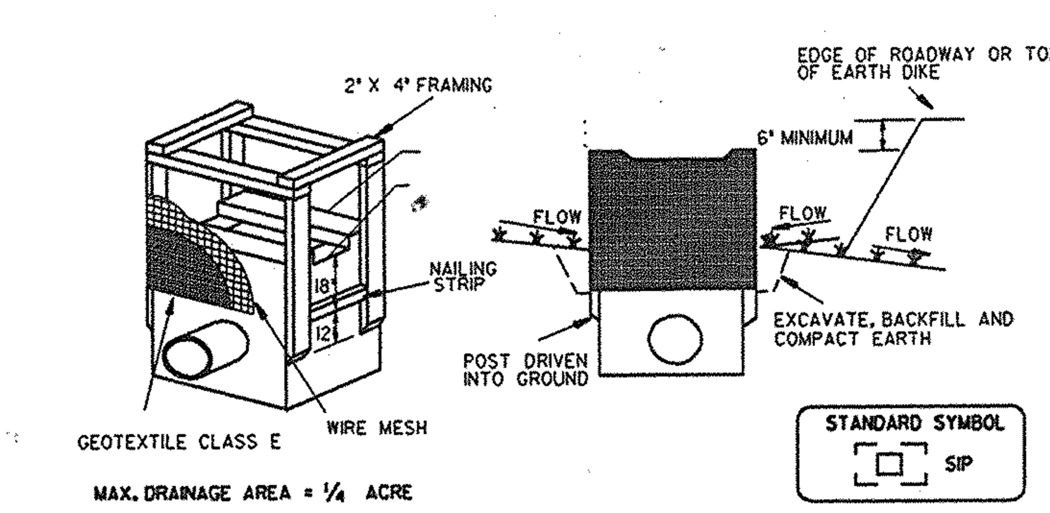


Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with ½" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be ½" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with ½" hardware cloth first, then wrapped again with Geotextile Class E.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — D - 13 - 6 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REMOVABLE PUMPING STATION   NOT TO SCALE

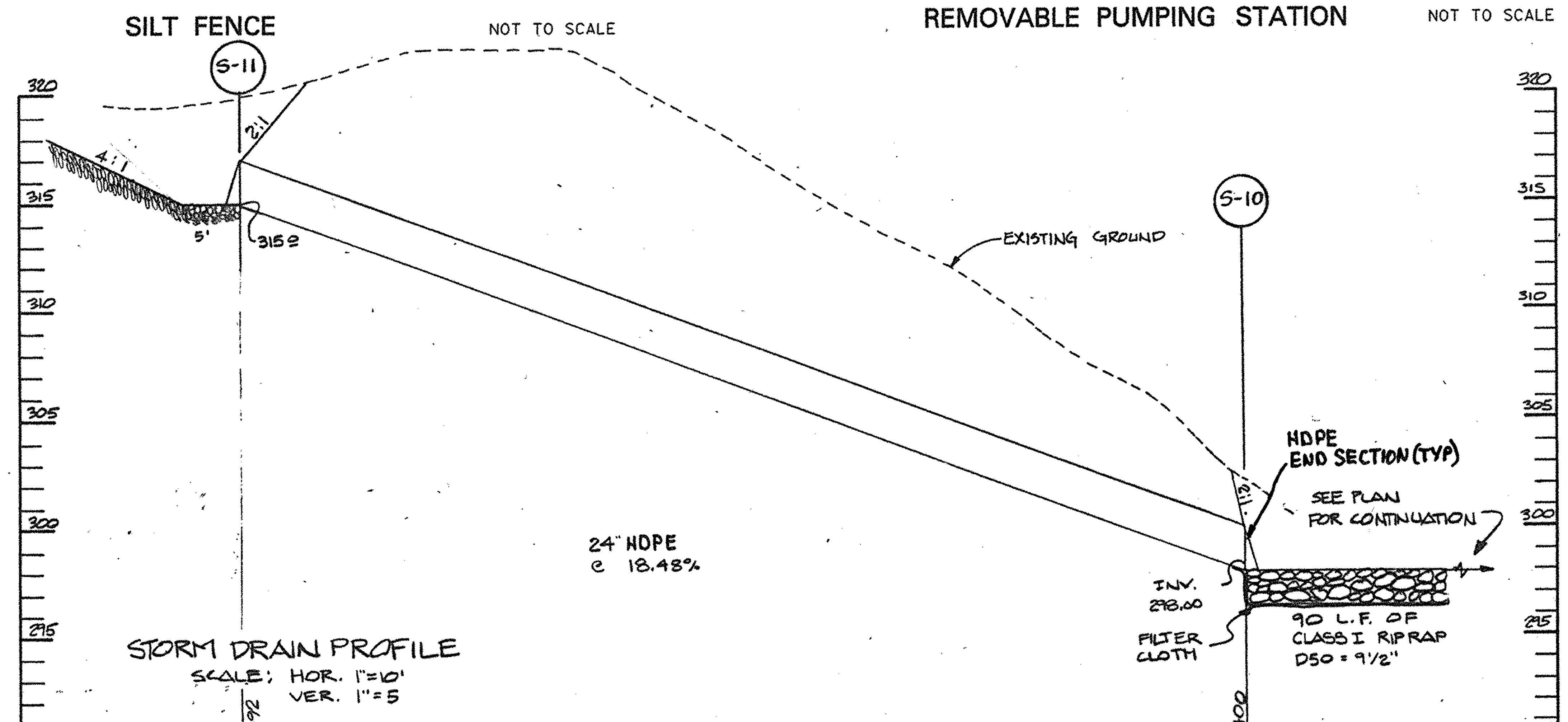


Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail. 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 geotixtile 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 — E - 16 - 5 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STANDARD INLET PROTECTION   NOT TO SCALE



STORM DRAIN PROFILE
SCALE: HOR. 1"=10'
VER. 1"=5'

DEVELOPER'S CERTIFICATION:

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] SIGNATURE OF DEVELOPER — DATE 10.13.97
PRINT NAME BELOW SIGNATURE: Al Edwards

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

[signature] /GS. U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 10/21/97

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

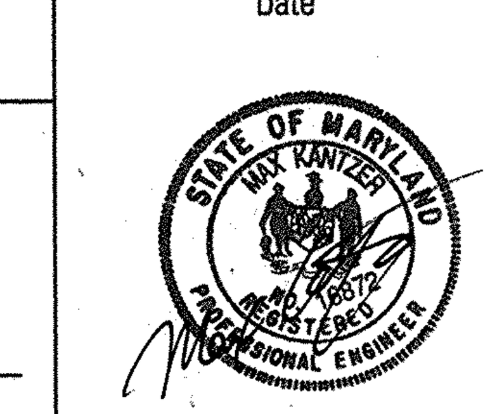
[signature] HOWARD S.C.D. — DATE 10/21/97

ENGINEER'S CERTIFICATION:

"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 REQUIRMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] SIGNATURE OF ENGINEER — DATE 10.13.97
PRINT NAME BELOW SIGNATURE: Max Kantzer

10.13.97
Date



Professional Engr. No. 16872

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

[signature] CHIEF, BUREAU OF HIGHWAYS HS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

Date	No.	Revision Description

GATEWAY COMMERCE CENTER
6TH ELECTION DISTRICT
Howard County, Maryland

OWNER /DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft·McCune·Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
PLAT# OR L/F / BLOCK # / ZONE	TAX/ZONE MAP / ELECT. DISTRICT	CENSUS TRACT
WATER CODE	SEWER CODE	

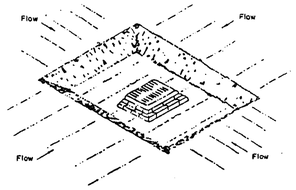
TITLE

SEDIMENT & EROSION CONTROL PLAN DETAILS

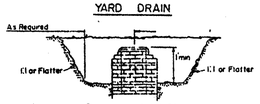
Des By	MJK	Scale		Proj. No. 96033
Drn By	JWM	Date	3/13/97	13 of 14
Chk By	MK	Approved		

F-97-98   Thu Mar 13 13:52:30 1997   d:\96033\96033.escl

STORM INLET SEDIMENT TRAP ST-III



YARD DRAIN



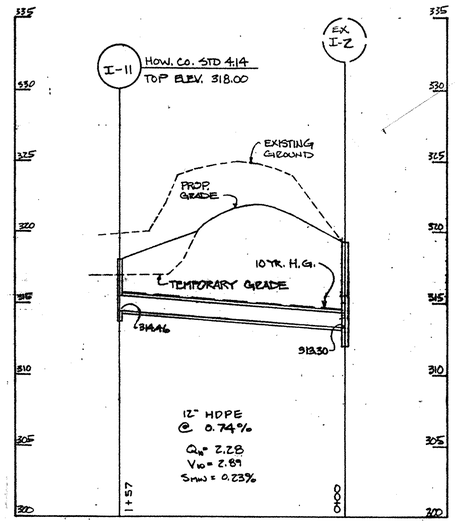
CROSS SECTION

CONSTRUCTION SPECIFICATION FOR ST-III

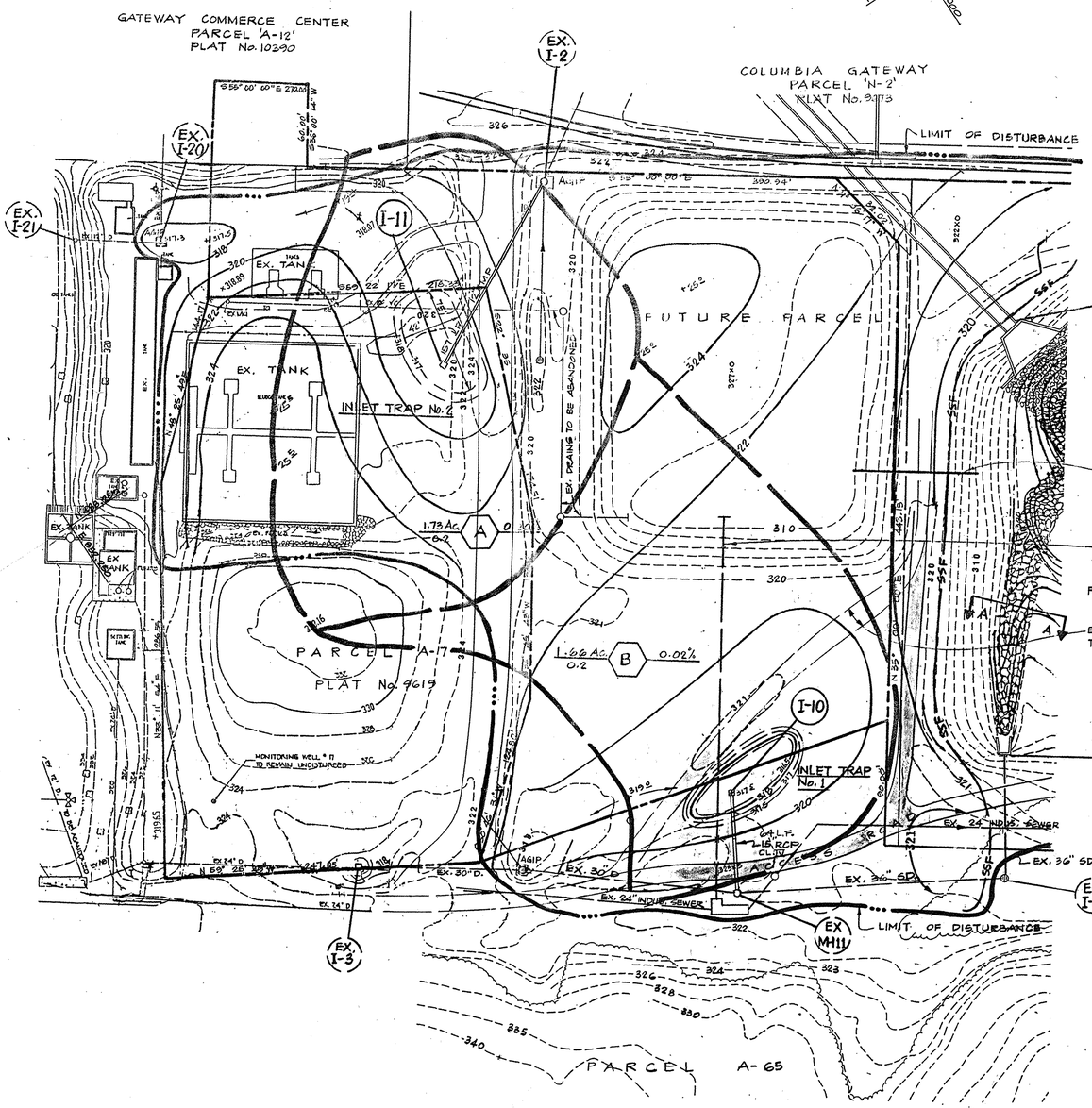
1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
3. The structure shall be inspected after each rain and repairs made as needed.
4. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
5. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
6. All cut slopes shall be 1:1 or flatter.

Maximum Drainage Area: 3 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STORM INLET SEDIMENT TRAP	STANDARD DRAWING ST-III



SCALE: VER.- 1"= 5'
HOR.- 1"= 50'



LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- WOODS
- EXISTING DRAINS
- PROP. DRAINS
- LIMIT OF DISTURBANCE
- DRAINAGE AREA DIVIDE
- AT GRADE INLET PROTECTION
- DRAINAGE AREA
- % IMPERVIOUS
- RUN OFF COEFFICIENT

INLET TRAP No.1 TABLE

MAX. D.A. TO TRAP	= 1.66 Ac.
VOLUME REQ.	= 2,988 CF
VOLUME PROVIDED	= 3,105 CF
TOP OF WET STORAGE	= 317.05
TOP OF DRY STORAGE	= 317.50
INLET THROAT ELEV.	= 317.50
WET ZONE ELEV.	= 316.50 - 317.05
DRY ZONE ELEV.	= 317.05 - 317.50
CLEANOUT ELEV.	= 316.78
BOT. ELEV.	= 316.50

INLET TRAP No.2 TABLE

MAX. D.A. TO TRAP	= 1.78 Ac.
VOLUME REQ.	= 3,114 CF
VOLUME PROVIDED	= 3,686 CF
TOP OF WET STORAGE	= 317.5
TOP OF DRY STORAGE	= 318.0
INLET THROAT ELEV.	= 318.0
WET ZONE ELEV.	= 317.0 - 317.5
DRY ZONE ELEV.	= 317.5 - 318.0
CLEANOUT ELEV.	= 317.25
BOT. ELEV.	= 317.0

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

1/26/98
DATE
U.S. NATURAL RESOURCE CONSERVATION SERVICE

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

1/26/98
HOWARD S.C.D. DATE

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THAS 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."

11/24/98
DATE
John W Ramocchia, Sr.

CERTIFICATION BY THE DEVELOPER:

"I/WE CERITFY 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

1-20-98
DATE

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/2/98

Date	No.	Revision Description

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

Gateway Commerce Center,
Parcel A-65
6TH ELECTION DISTRICT
Howard County, Maryland

GRADING SEDIMENT EROSION PLAN FOR DISPOSAL

STATE OF MARYLAND — JOHN W. RAMOCCHIA — REGISTERED PROFESSIONAL ENGINEER

DATE	BY	REVISIONS

ISSUE DATES			
REVIEW:		BASE:	D S
BID:		DRAWN:	D S
PERMIT:		DESIGNED:	JWM
CONSTRUCTION:		CHECKED BY:	JLS
SCALE:	1" = 50'	DATE CHECKED:	
PROJECT NO.:	96033	DRAWING:	14 OF 14

F-97-98

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 1-20-98

Albert F. Edwards P.E.
PRINT NAME

Gateway Commerce Center,
Parcel A-65 PLAT 11962

BY THE ENGINEER:

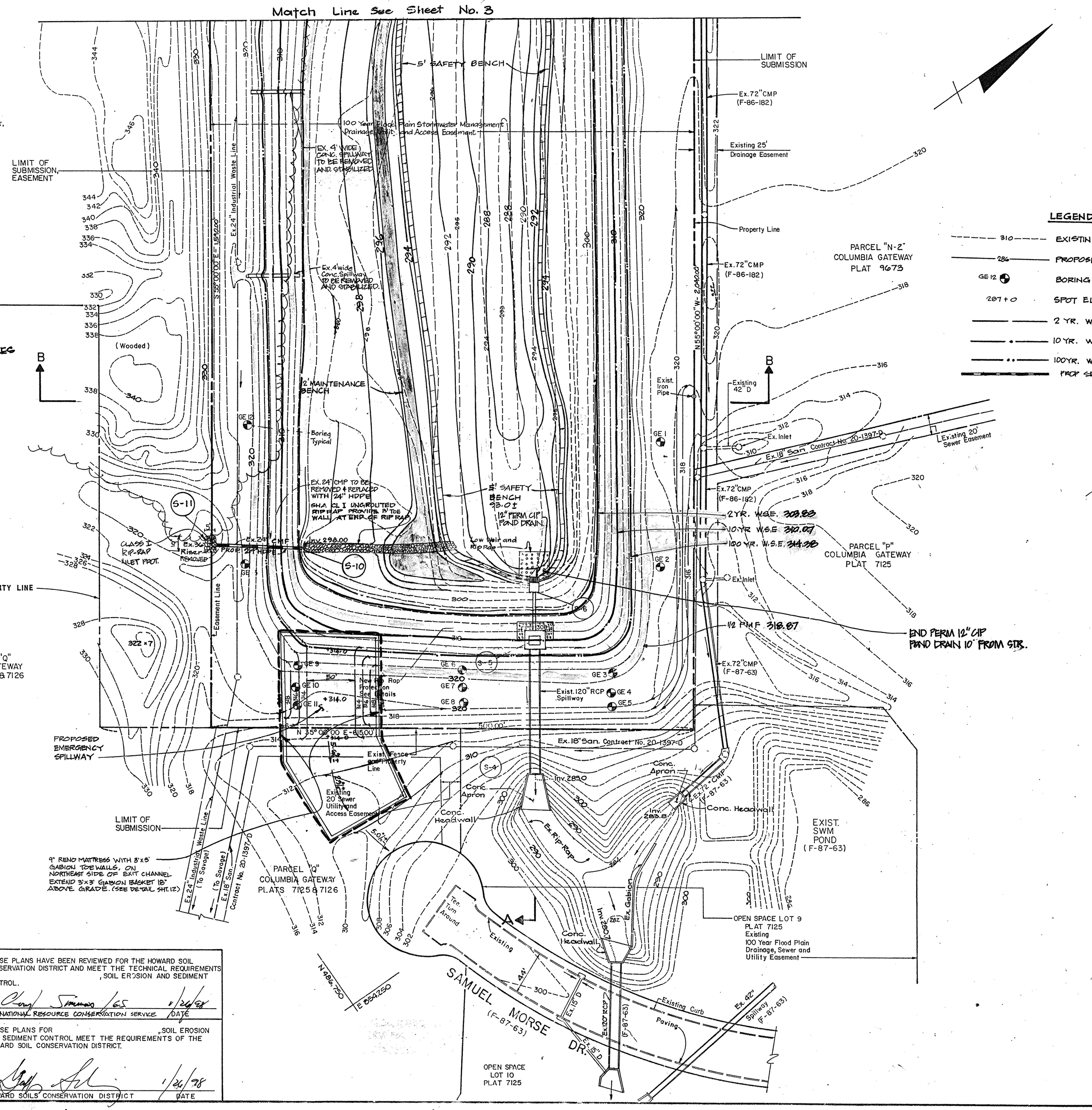
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER 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 1-20-98

John W. Ranocchia, Sr.
PRINT NAME

NOTE: CONTRACTOR SHALL REPAIR AND STABILIZE ALL DISTURBED SLOPE AREAS AT SOUTH WESTERN SIDE OF POND AS NECESSARY.

AT CONTRACTOR'S OPTION ALL PIPES AND STRUCTURES WHICH ARE TO BE ABANDONED MAY BE REMOVED.



LEGEND

---310---	EXISTING CONTOURS
---286---	PROPOSED CONTOURS
GE 12	BORING LOCATIONS
287+0	SPOT ELEVATION
———	2 YR. W.S.E.
——•——	10 YR. W.S.E.
——••——	100YR. W.S.E.
━━━	PROP SD. PIPE

POND SUMMARY

	DISCHARGE	ELEV.	STORAGE
2 YR.	57.6 CFS	303.83	62.7 AC.FT.
10 YR.	68.9 CFS	310.07	125.13 AC.FT.
100 YR.	267.4 CFS	314.38	173.79 AC.FT.
1/2 PMF	4.281 CFS	318.87	230 AC.FT.

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

THOMAS J. SHAFER — DATE 6/5/91
REGISTRATION NO. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91

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

U.S. NATIONAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD SOILS CONSERVATION DISTRICT — DATE 1/26/98

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

DMW
Daft·McCune·Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1/20/98
Date

STATE OF MARYLAND — JOHN W. RANOCCHIA, SR. — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 10551

MODIFICATIONS:
1. POND GRADING
2. POND WATER SURFACE ELEVATION

MODIFICATIONS TO PLANS BY DAFT Mc. CUNE WALKER INC. DATED 11/25/96 ONLY

REV. DATE	REV. NO.	REVISION DESCRIPTION
5-1-98	2	REVISED WATER SURFACE ELEVATIONS
12-8-97	1	ADD EMERGENCY SPILLWAY

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

POND SITE PLAN

SCALE: 1"=50' — DATE: JUNE 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98

SHEET 2 OF 14

LEGEND

- 310 — EXISTING CONTOURS
- 286 — PROPOSED CONTOURS
- GE 12 — BORING LOCATIONS
- 287+0 — SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100 YR. W.S.E.

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — 1-20-98 DATE

Albert F. Edwards, P.E.
PRINT NAME

BY THE ENGINEER:

"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 — 1-20-98 DATE

John W Ranucchio
PRINT NAME

NOTE: CONTRACTOR SHALL REPAIR AND STABILIZE ALL SLOPE AREAS AT SOUTH WESTERN LOCATION AS NECESSARY.

Gateway Commerce Center,
Parcel A-65 PLAT 11962.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 1/26/98 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 1/26/98 DATE

BY THE ENGINEER:

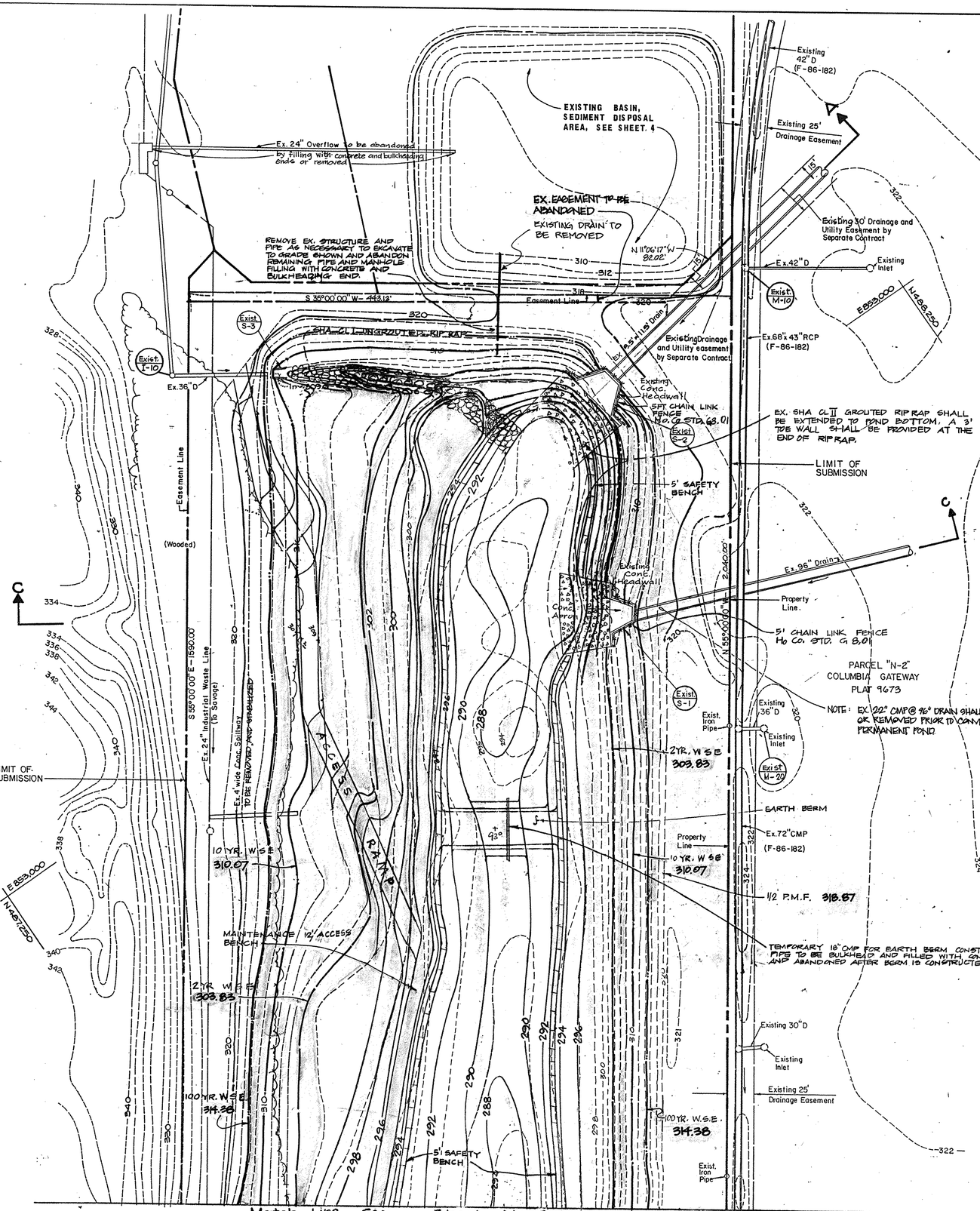
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER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

Thomas J. Shafer — 6/5/91 DATE
THOMAS J. SHAFER
Registration No. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION, AND AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — 6/5/91 DATE



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-14-98 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 4/7/98 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/3/98 DATE

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

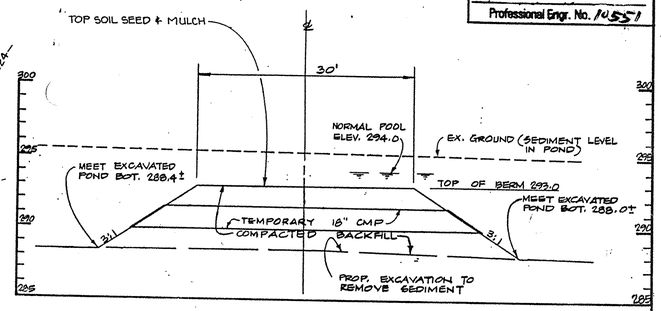
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

MODIFICATIONS TO PLANS BY DAFT Mc CUNE WALKER INC. DATED 11/25/96 ONLY.

1/21/98 Date

STATE OF MARYLAND — JOHN W. RANUCCHIO — No. 15551 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 15551



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

MODIFICATIONS:
1. POND GRADING
2. EARTH BERM ADDED
3. EARTH BERM DETAIL ADDED

REV. DATE	REV. NO.	REVISION DESCRIPTION
5-1-98	1	REVISED WATER SURFACE ELEVATIONS.

COLUMBIA GATEWAY
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
POND SITE PLAN

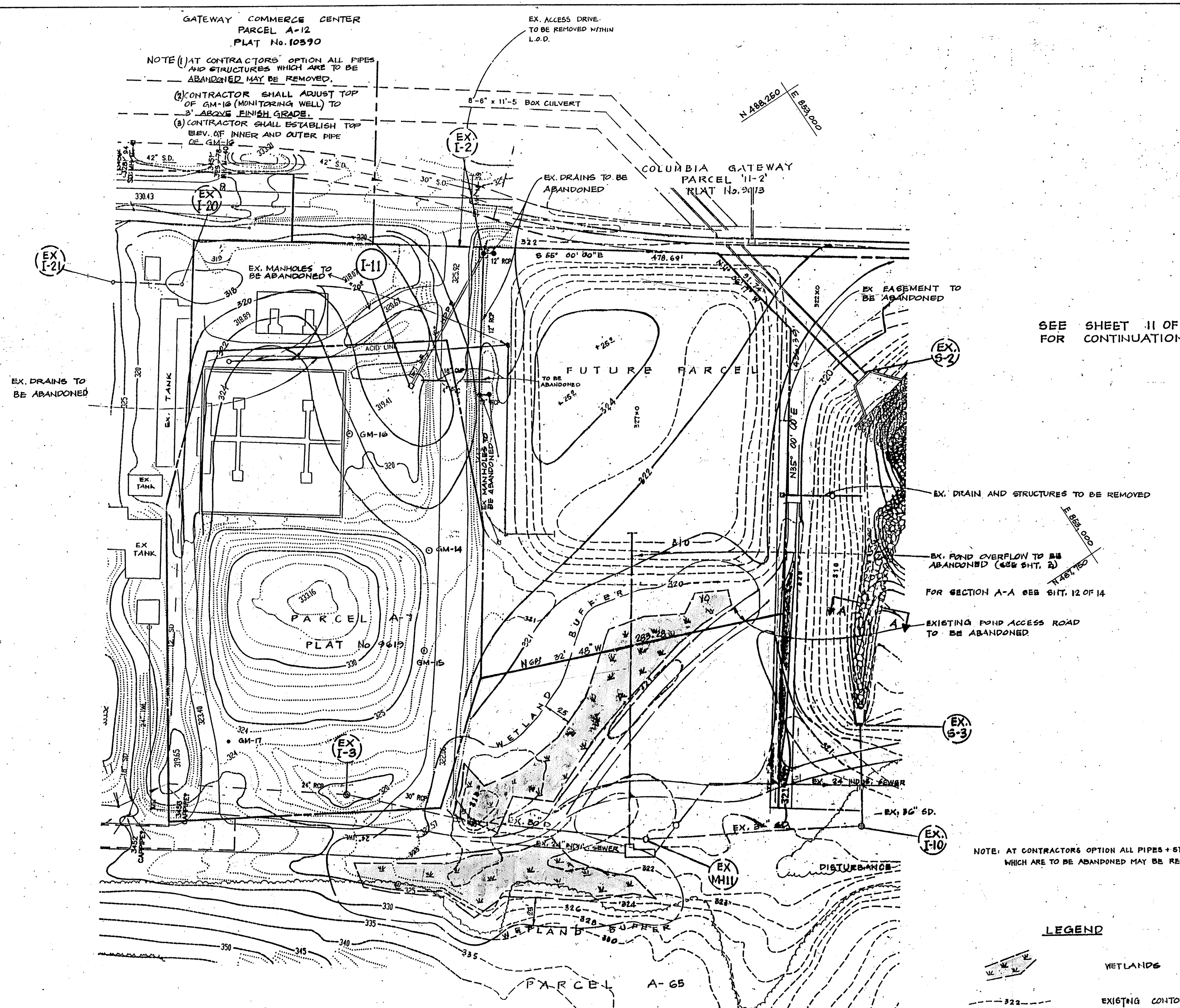
SCALE: 1"= 50' DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 3 OF 14



SEE SHEET 11 OF 14
FOR CONTINUATION

NOTE: AT CONTRACTORS OPTION ALL PIPES + STRUCTURE WHICH ARE TO BE ABANDONED MAY BE REMOVED.

LEGEND

- WETLANDS
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- WOODS
- EXISTING DRAINS (EX. 30" SD.)
- PROP. DRAINS (30" RCP)
- LIMIT OF DISTURBANCE
- DRAINAGE AREA DIVIDE
- AT GRADE INLET PROTECTION (AGIP)
- DRAINAGE AREA / AC. / RUN OFF COEFFICIENT / % IMPERVIOUS — DRAINAGE AREA

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Date	No.	Revision Description
5-1-98	1	REV GRADING; ADD LEGEND.

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue,
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

Gateway Commerce Center,
Parcel A-65

6TH ELECTION DISTRICT

Howard County, Maryland

GRADING PLAN

DATE	BY	REVISIONS

ISSUE DATES			
REVIEW:		BASE:	
BID:		DRAWN:	
PERMIT:		DESIGNED:	
CONSTRUCTION:		CHECKED BY:	
SCALE: 1" = 30'		DATE CHECKED:	
PROJECT NO.: 96033		DRAWING: 4 OF 14	

F-97-98

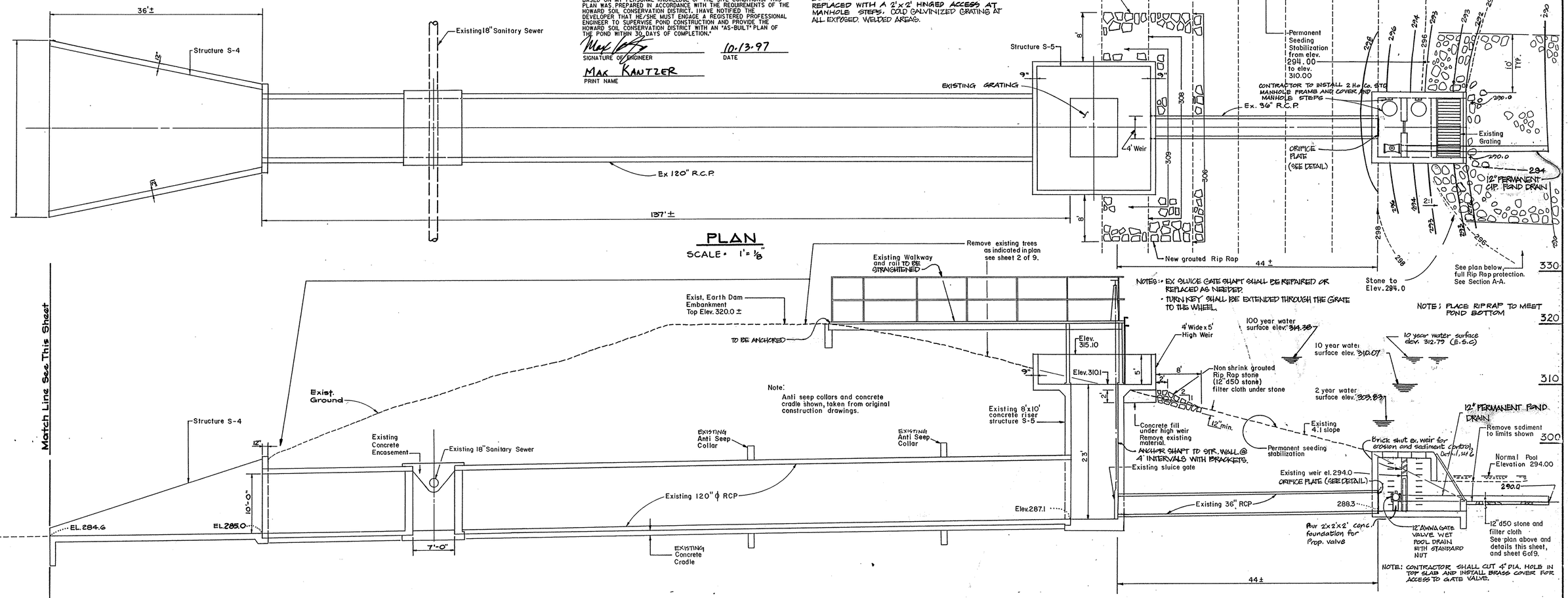
BY THE ENGINEER:

"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."

Mak Kantzer — SIGNATURE OF ENGINEER — 10.13.97 DATE

MAK KANTZER — PRINT NAME

CONTRACTOR SHALL WELD 1" BARS TO EXISTING GRATING TO PROVIDE MAXIMUM OPENINGS OF 6"x6". EXISTING GRATING SHALL BE REMOVED AND REPLACED WITH A 2'x2' HINGED ACCESS AT MANHOLE STEPS. COLD GALVINIZED GRATING AT ALL EXPOSED, WELDED AREAS.



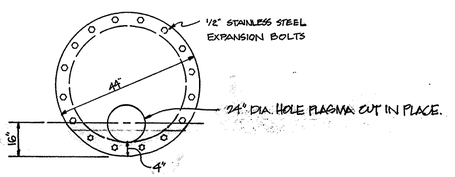
PLAN
SCALE: 1" = 1/8"

BY THE DEVELOPER:

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

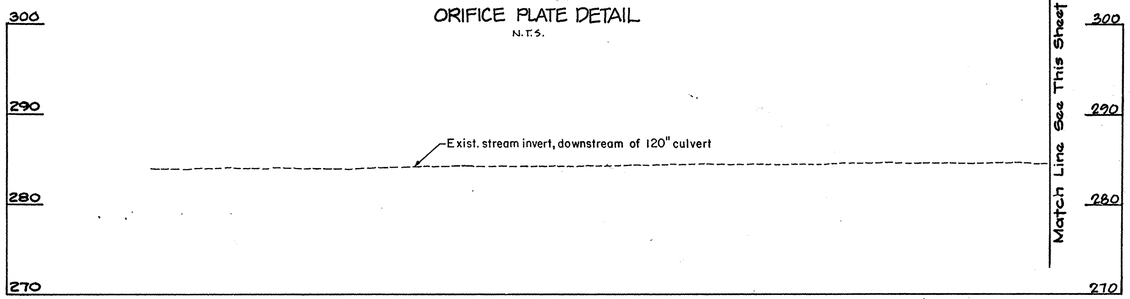
Albert C Edwards — SIGNATURE OF DEVELOPER — 10-13-97 DATE

AL EDWARDS — PRINT NAME



ORIFICE PLATE DETAIL
N.T.S.

PROFILE
SCALE 1" = 1/8"



PROFILE
SCALE: 1" = 1/8"

MODIFICATIONS
1. ADDED ORIFICE PLATE AND DETAIL

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

10-13-97
Date

STATE OF MARYLAND — MAK KANTZER — No. 16872 — REGISTERED PROFESSIONAL ENGINEER

Mak Kantzer

Professional Engr. No. 16872

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 10/24/97 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 10/31/97 DATE

BY THE ENGINEER:

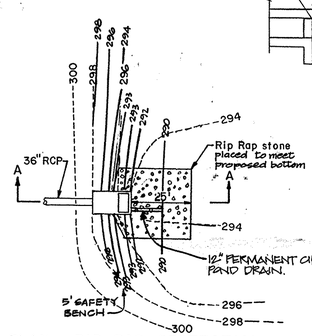
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER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

Thomas J Shafer — THOMAS J. SHAFER Registration No. 8457 — 6/5/91 DATE

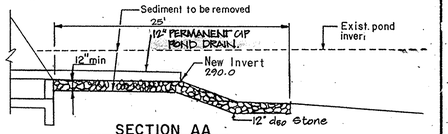
BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE 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 30 DAYS OF COMPLETION, ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR — DATE 6/5/91



PLAN - RIP RAP PROTECTION
SCALE 1" = 30'



SECTION AA
SCALE 1" = 8'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 10-24-97 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 4/12/95 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 4/17/95 DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
NOV. 1994	1	SEDIMENT REMOVAL, RIP RAP, NEW W.S. ELEVATIONS
5-1-98	1	REVISED WATER SURFACE ELEVATIONS.

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
EXISTING PRINCIPAL SPILLWAY AND MAINTENANCE PLAN AND PROFILE

SCALE: AS SHOWN — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 5 OF 14

BY THE DEVELOPER:

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

Albert G Edwards — SIGNATURE OF DEVELOPER — 10-13-97 DATE

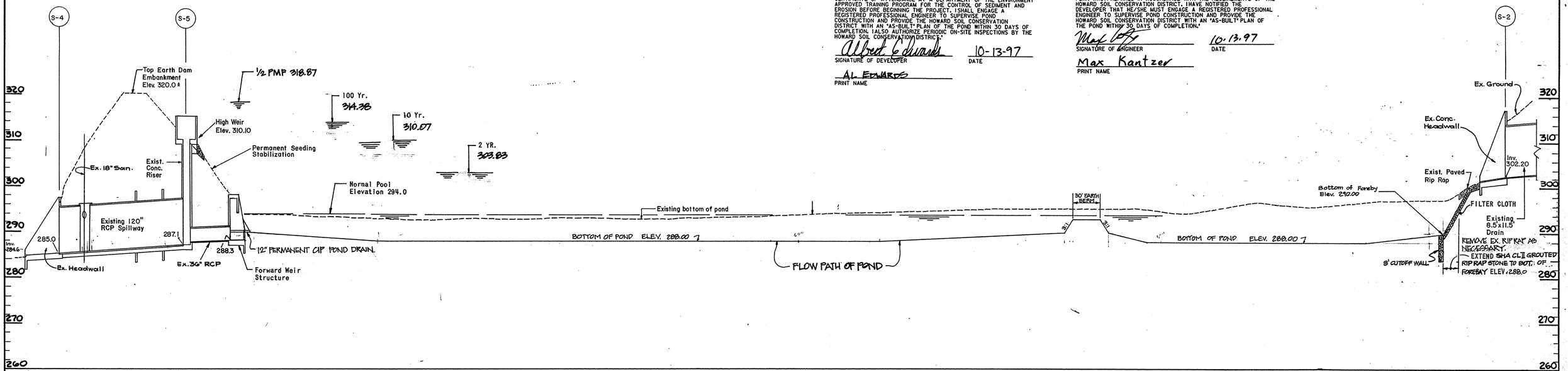
AL EDWARDS — PRINT NAME

BY THE ENGINEER:

"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."

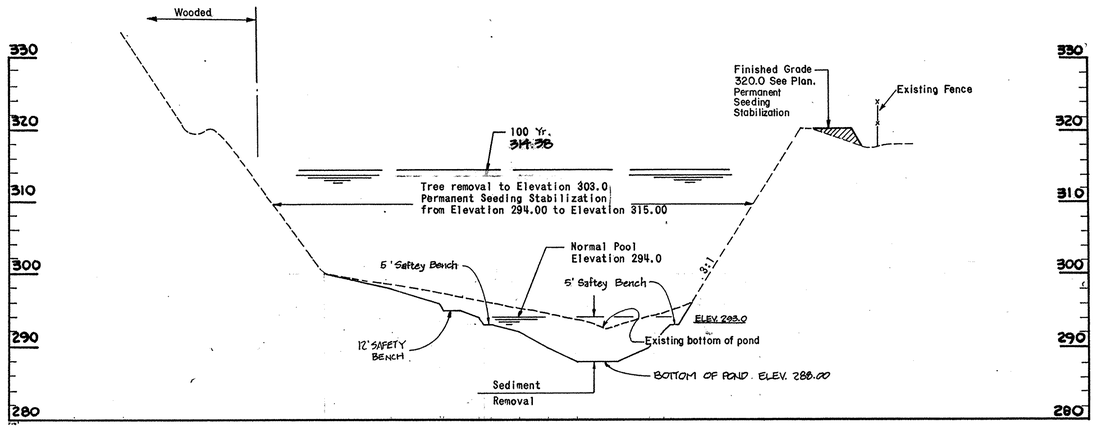
Max Kantzer — SIGNATURE OF ENGINEER — 10.13.97 DATE

Max Kantzer — PRINT NAME



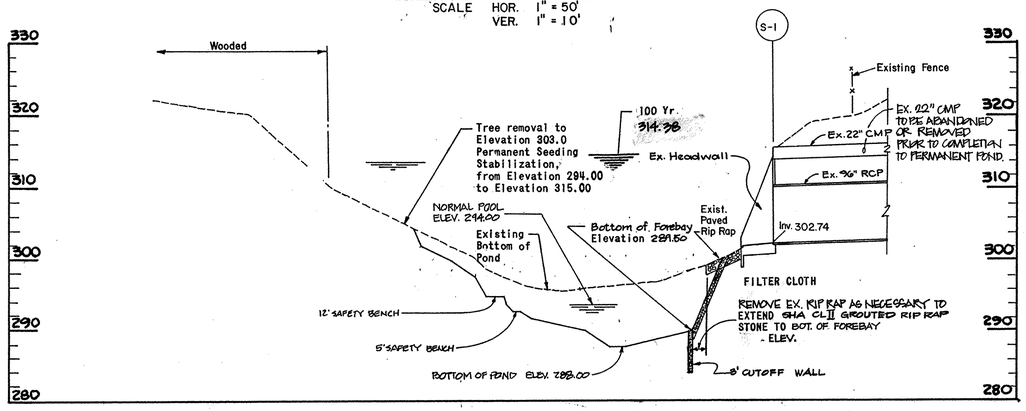
SECTION A-A

SCALE HOR. 1" = 50'
VER. 1" = 10'



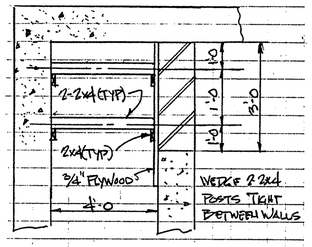
SECTION B-B

SCALE HOR. 1" = 50'
VER. 1" = 10'



SECTION C-C

SCALE HOR. 1" = 50'
VER. 1" = 10'



SECTION A-A

NOTES: LUMBER - HEM-FIR, No 2, SURFACE DRY @ 19% MAX. MOIST. CONTENT
PLYWOOD - EXTERIOR, STRUCTURAL I, A-A GRADE

TEMPORARY WOOD BRACING

SCALE: 1/2" = 1'-0"

MODIFICATIONS
1. POND BOTTOM PROFILE
2. ADDED SAFETY BENCHES
3. EXTENDED RIP-RAP AT INLETS S-1 & S-2

10-13-97
Date

STATE OF MARYLAND — MAX KANTZER — NO. 16872 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 10/21/97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/21/97

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Thomas J. Shafer — THOMAS J. SHAFER P.E. NO. 8457 — DATE 6/5/97

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/97

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/7/95

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/7/95

REV. DATE	REV. NO.	REVISION DESCRIPTION
4-30-98	1	REV. PROFILES & SURFACE WATER ELEV.
NOV. 1994	1	REVISED SECTIONS AA, BB AND CC

COLUMBIA GATEWAY
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

POND SECTIONS

SCALE: As Shown — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — NO. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 6 OF 14

GENERAL CONSTRUCTION SPECIFICATIONS

1. GENERAL
All stormwater management facilities shall be constructed in accordance with Howard County's "Design Manual, Volume I - Storm Drainage (1995)" and the N.R.C.S. Maryland "Standard and Specifications for Ponds" (MD-378, 1992)

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

2. 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.

3. EARTH FILL

MATERIAL. The fill material shall be taken from approved designated borrow area. 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.

All compaction is to be not less than 95 percent of the maximum dry density as determined by AASHTO Specification T-99 (Standard Proctor) with a moisture content within ± 2 percent of 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.

CUTOFF TRENCH AND IMPERVIOUS CORE. 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 4 feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The top width of the impervious core shall be 4 feet minimum. The height of the core shall be as shown on the plans. The side slopes of the core 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.

4. STRUCTURAL 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 4 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 4 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 inches or greater over the structure or pipe.

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL
Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent sound fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

6. PIPE CONDUITS
All pipes shall be circular in cross section. All perforated pipe shall have a minimum of 3.31 square inches of opening per square foot of pipe surface (ex. 30 3/8 inch holes per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any holes blocked or partially blocked by bituminous coating shall be opened prior to installation.

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 Specifications M-36 and 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, and 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 inches in diameter: flanges on both ends of the pipe, a 12 inch wide standard lap type band with 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with O-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 48 inch long annular corrugated band using rods and lugs. A 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24 inches. Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. All aluminum surfaces in contact with concrete shall be painted with inorganic zinc rich primer (see AASHTO Specification M300-86).

5. 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.

6. Backfilling shall conform to "Structural Backfill".

7. 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. Cradle - All reinforced concrete pipe conduits shall be laid in a concrete cradle for their entire length. This cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10 percent 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 cradle 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 "Structural Backfill".

5. Connections - All connections (to anti-seep collars, riser, etc.) shall be watertight.

6. 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 "Structural Backfill".

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

7. CONCRETE
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Sections 414 and 902, Mix No. 3.

Contractor shall add color mix at plant in accordance with manufacturers recommendation "C-12 Messa Beige" as manufactured by L. M. Scofield Company (213) 723-5285.

Supply mixture for approval prior to application. Contractor shall supply load and mix tickets for each truckload. No partial field mixes shall be allowed.

8. ROCK RIP-RAP
Rock rip-rap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 901.02.

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap 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 rip-rap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09.

9. 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.

10. 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.

11. 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.

All disturbed areas shall be controlled by an Erosion and Sediment Control Plan which has been approved by the Howard Soil Conservation District (H.S.C.D.).

12. SEEDING
Seeding, fertilizing and mulching shall be as follows:

Seed Mix:	90% Forager Tall Fescue 10% Kenblue Applied at a rate of 300 lbs. per acre. (or) 70% Forager Tall Fescue 30% Chemung Crownvetch, Inoculated Applied at a rate of 55 lbs. per acre. Optimum seeding dates: March 1 to April 30.
Lime:	2 tons/acre Dolomitic Limestone.
Fertilizer:	600 lbs./acre 10-10-10 fertilizer before seeding, 400 lbs./acre 30-0-0 ureaform fertilizer at time of seeding.
Mulch:	Straw at 4,000 lbs. per acre.
Anchoring:	Mulching tool or emulsified asphalt binder at a rate of 8 gal. per 1,000 square feet.

13.* FILTER CLOTH
All filter cloth shall conform to Mirifi 140N, Dupont Typar 3341 or 3401, Supac 5P or approved equal.

~~14. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS~~
~~The construction of the pond and embankment, and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The Engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) inspection of pipe trench and bedding, (2) inspection of riser and anti-seep collars and (3) supervision of embankment construction and compaction testing. The Engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.~~

Operation and Maintenance Schedule

Routine Maintenance

1. Howard County shall inspect the facility annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly. The pond shall also be inspected during a major storm event and initiate any emergency response as necessary.

2. The Owner shall keep the pond embankment clear of any woody vegetation. The other side slopes of the pond should be mowed as needed.

3. Debris and litter shall be removed by the Owner during regular mowing operations and as needed.

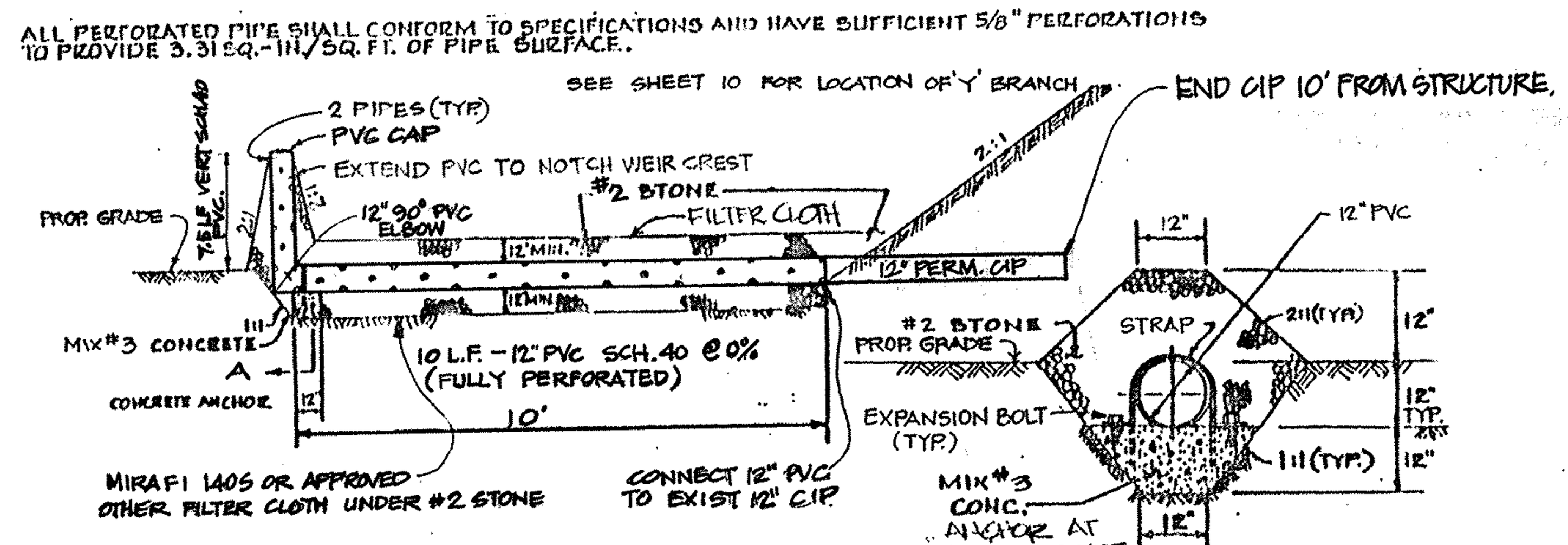
4. Silt shall be removed from the forebay by Howard County when accumulation exceeds twenty-four (24) inches.

5. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired by Howard County upon the detection of any damage. The components should be reviewed during routine inspection operations. Visible signs of erosion in the pond as well as rip rap outlet area shall be repaired as soon as it is noticed.

6. Sediment should be removed from the pond by Howard County no later than when the capacity of the pond is half full of sediment, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County Department of Public Works.

NOTES:
PERFORATED PVC SHALL BE "FULLY PERFORATED", HAVING A MINIMUM 3.31 SQ. IN. OF OPENING PER SQ. FT. OF PIPE SURFACE (EXAMPLE: 50 5/8" ∅ HOLES PER SQ. FT.) PERFORATIONS SHALL BE EVENLY DISTRIBUTED AROUND THE FULL PERIPHERY OF THE PIPE.

ALL PERFORATED PIPE SHALL CONFORM TO SPECIFICATIONS AND HAVE SUFFICIENT 5/8" PERFORATIONS TO PROVIDE 3.31 SQ.-IN./SQ. FT. OF PIPE SURFACE.



SECTION "A-A"
NOT TO SCALE

NOTE: CONTRACTOR SHALL PROVIDE MIN. 2 CONC. ANCHORS 1 ON EACH DEWATERING DEVICE
CONTRACTOR SHALL REMOVE TEMP DEWATERING DEVICE AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR.

SEDIMENT CONTROL DEWATERING DEVICES
NO SCALE

MODIFICATIONS
1. REVISED NOTES
2. ADDED OPERATION AND MAINTENANCE SCHEDULE

NOTE: MODIFICATIONS TO PLANS BY DAFT-McCUNE-WALKER, INC. DATED 11/25/96 ONLY

DEVELOPER'S CERTIFICATION:

"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 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 inspection by the Howard Soil Conservation District."

Albert F. Edwards, P.E. — 1-20-98
Date

ENGINEER'S CERTIFICATION:
"I certify that these plans 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."

John W. Ranocchia — 1/20/98
Date

These plans have been reviewed for Howard S.C.D. and meets the technical requirements for soil erosion and sediment control.

U.S. NATURAL RESOURCE CONSERVATION SERVICE — 1/26/98
Date

These plans for soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard S.C.D. — 1/26/98
Date

1-20-98
Date

STATE OF MARYLAND — JOHN W. RANOCCHIA — No. 10551 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/17/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

Date	No.	Revision Description
4-30-98	1	REV. SEDIMENT CONTROL DEWATERING DEVICES

Gateway Commerce Center,
Parcel A-65

6TH ELECTION DISTRICT
Howard County, Maryland

OWNER / DEVELOPER:

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft·McCune·Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL #
PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
WATER CODE			SEWER CODE		

TITLE

POND SPECIFICATIONS

Des By	Scale	Proj. No.
Drn By	Date	9 OF 14
Chk By	Approved	

F-97-98

Wed Oct 16 16:15:07 1996 d:\95019b\base.snp

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1/20/98 Date

Professional Engr. No. 10551

Gateway Commerce Center,
Parcel A-65 PLAT 11962

DEVELOPERS CERTIFICATION:

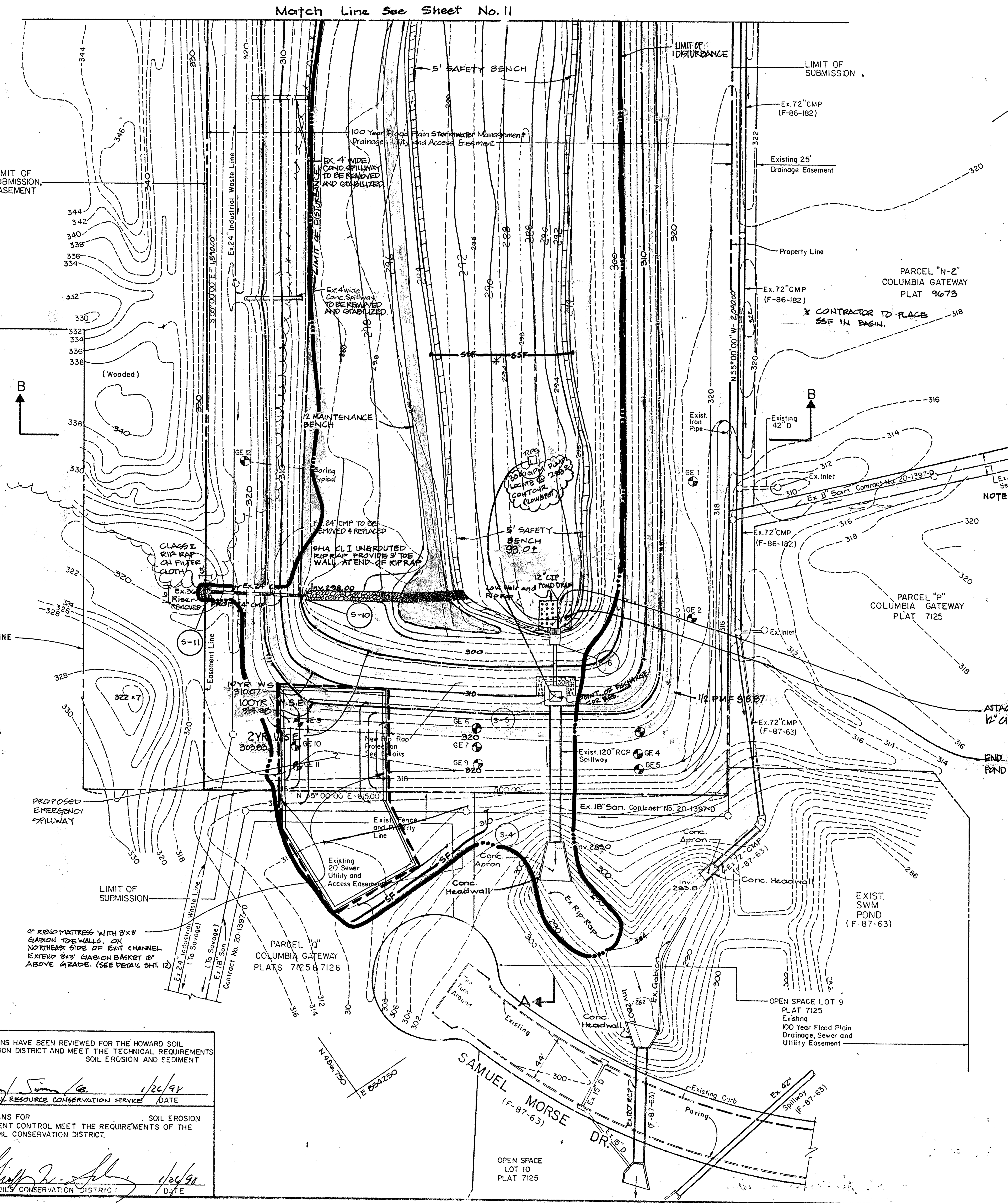
"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Albert F. Edwards — 1-20-98 Date

ENGINEER'S CERTIFICATION:

"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."

John W. Ranocchia — 1-20-98 Date



LEGEND

310 (dashed)	EXISTING CONTOURS
286 (solid)	PROPOSED CONTOURS
GE 12	BORING LOCATIONS
287+0	SPOT ELEVATION
	2 YR. W.S.E.
	10 YR. W.S.E.
	100 YR. W.S.E.
	PROPOSED SD. PIPE

BASIN VOLUME REQUIRED = 40.2 AC-FT
BASIN VOLUME PROVIDED = 40.2 AC-FT @ ELEV. 302.1

SEDIMENT BASIN DATA FOR POND

D. A. = 486 Ac.
TOTAL STORAGE REQUIRED 3600 x 486 = 1,749,600 SF = 40.16 Ac. FT.
STORAGE ELEV. 302.1 (40.16 Ac. FT.)
RISER (WEIR) CREST 310.1 (STORAGE 115.89 Ac. FT.)
NOTE: ALL STORAGE PROVIDED IS WET STORAGE

ATTACH TEMP. 12" PVC DEWATERING DEVICE TO 12" CIP POND DRAIN (SEE DETAIL SHT 9).

END PERM 12" CIP. POND DRAIN 10' FROM STRUCTURES.

MODIFICATIONS:
1. POND GRADING
2. POND WATER SURFACE ELEVATION

MODIFICATIONS TO PLANS BY DAFT Mc. CUNE WALKER INC. DATED 11/25/96 ONLY

POND SUMMARY

	DISCHARGE	ELEV.	STORAGE	
2YR	57.6	303.83	62.7	AC. FT
10YR	68.9	310.07	125.13	AC. FT
100YR	267.4	314.38	173.79	AC. FT
½ PMF	4,281	318.87	230	AC. FT

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

THOMAS J. SHAFER — DATE 6/5/91
REGISTRATION NO. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91

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

U.S. NATIONAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD SOILS CONSERVATION DISTRICT — DATE 1/26/98

REV. DATE	REV. NO.	REVISION DESCRIPTION
4-30-98	1	ADDED NOTES REGARDING 12" PVC DEWATERING DEVICE & REV. WATER SURFACE ELEV.

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1"=50' — DATE: JUNE 15, 1991

WHITMAN, REQUARDT, AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

F-97-98

LEGEND

- 310 — EXISTING CONTOURS
- 286 — PROPOSED CONTOURS
- BORING LOCATIONS
- 287+0 SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100YR. W.S.E.

Sequence of Construction

1. Obtain all necessary permits for construction. (1 week)
2. Notify Howard County Department of Inspections and Permits (410-313-1855) a minimum of 48 hours prior to the start of any construction. Notify the Maryland Department of the Environment Nontidal, Wetlands and Waterways Inspection and Compliance Division (410-631-3510) at least five (5) days prior to any in-stream construction. (1 day)
3. Notify the engineer-in-charge of the as-built inspection at (410) 296-3333. (1 day)
4. Clear, grub for and install sediment control measures only. Coordinate all work with the approved erosion and sediment control plan sequence of operations. Also, transfer to the notes "Conditions and Management Practices for Working in Nontidal Wetlands and Buffers" shown on this sheet. (1 week)
5. Install 12-inch CIP pond drain and dewatering device. Brick shut low flow weir in existing structure. Valve on 12-inch drain to be left open at all times, and automatic switch pumps, pipes and bulkheads at structures.
6. Excavate sediments from the pond starting at the upstream east (inlets) working toward the riser Existing 24-inch storm drain to be replaced. Excavation to concentrate on areas below the 294.0 contour. All water pumped from pond to be treated through the removable pumping station. (6 months)
7. After excavation is complete, install proposed earth berm with suitable compacted backfill and stabilize with topsoil, seed and mulch. Eighteen-inch temporary pipe in forebay earth berm to be abandoned upon completion of construction. (1 month)
8. Stabilize spoil areas with topsoil, seed, and mulch (see topsoil specifications, Sheet 13 of 14) and stabilize areas above the wet pool with seed and mulch. (1 month)
9. With prior approval of the Sediment Control Inspector and the Howard County Sediment Control Division, remove sediment controls. Fine grade and stabilize these areas. (1 week)
10. Conduct as-built survey of storm drain modifications, forebay, water quality, wet pool, and outfall areas, and submit to appropriate agencies within 30 days of completion. (1 month)

"Conditions and Management Practices for Working in Nontidal Wetlands and Buffers"

a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;

b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.

c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;

d) Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.

e) Rectify any nontidal wetlands and buffers temporarily impacted by the permitted activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Oats (Uniola sp.), and/or Rye (Secale cereale). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction;

f) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Resources Administration.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 10/21/97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/21/97

BY THE ENGINEER:

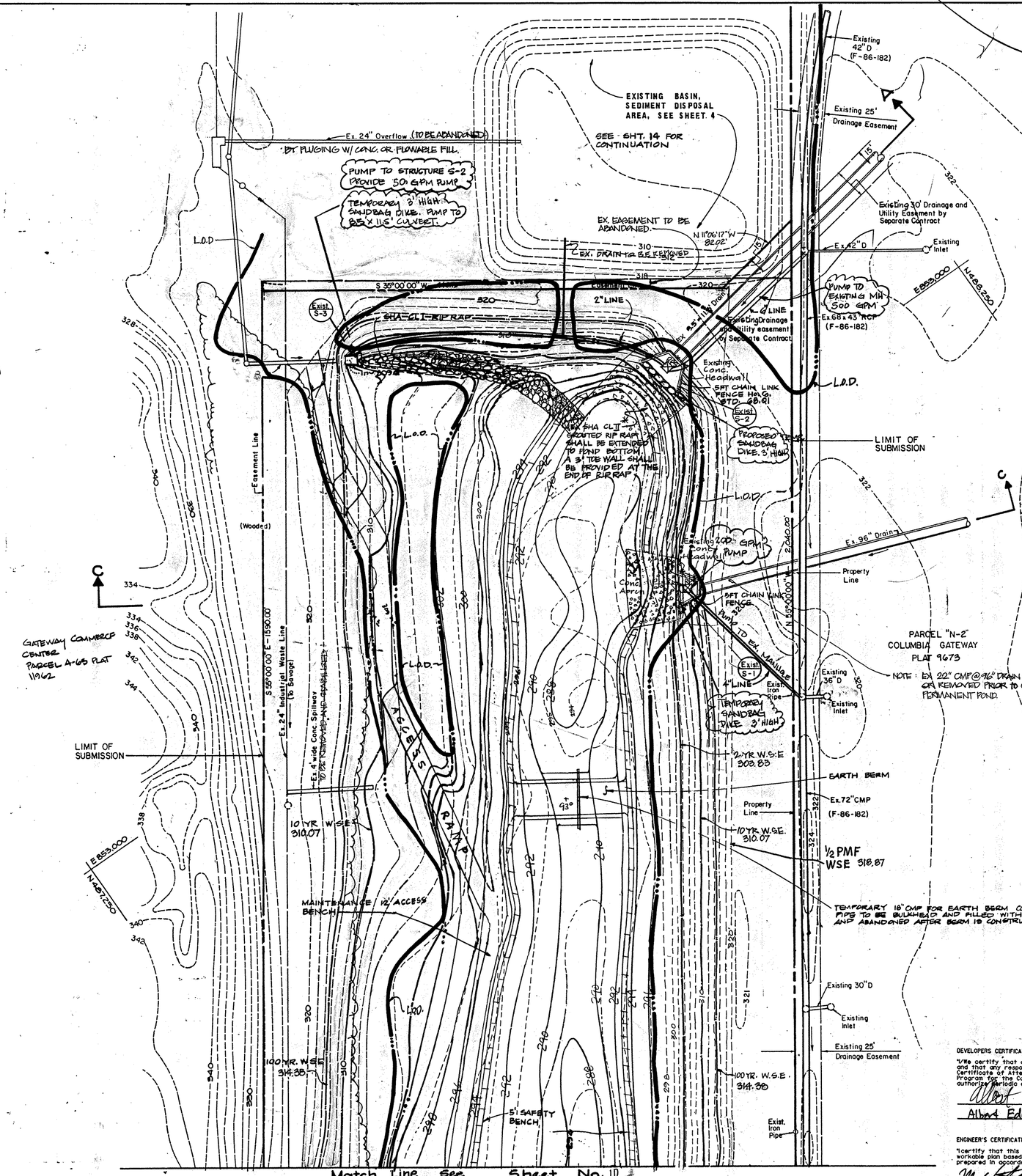
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER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

Thomas J. Shafer — 6/5/91
THOMAS J. SHAFER — DATE
Registration No. 8457

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE 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 30 DAYS OF COMPLETION, ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

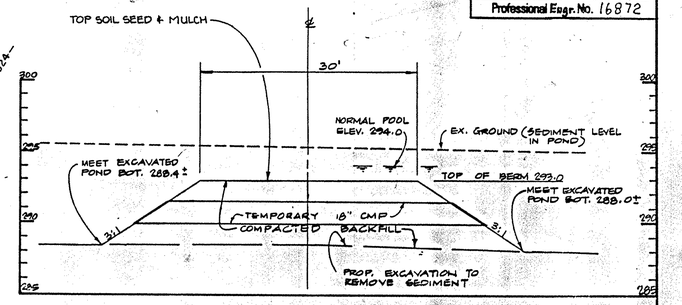
MODIFICATIONS TO PLANS BY DAFT McCUNE WALKER INC. DATED 11/25/96 ONLY.

NOTE: PUMPS ARE TO REMAIN IN PLACE AND FUNCTIONAL 24 HRS/DAY BY USE OF AN AUTOMATIC SWITCH.

10/13/97 Date

STATE OF MARYLAND — MAX KANTZER — NO. 16872 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10' VERT. 1" = 5'

N 488,250 E 853,500

NOTE: AT CONTRACTORS OPTION ALL PIPES & STRUCTURES WHICH ARE TO BE ABANDONED MAY BE REMOVED.

MODIFICATIONS:
1. POND GRADING
2. EARTH BERM ADDED
3. EARTH BERM DETAIL ADDED

* NOTE: CLASS II GROUTED RIP-RAP INFLOW PROTECT USED FOR GREATER STABILITY IN PREVENTION OF SOIL EROSION AND SLOPE FAILURE. USED AT EXIST S-2 OUTFALL.

DEVELOPERS CERTIFICATION:

"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I/We also authorize periodic on-site inspection by the Howard Soil Conservation District."

Albert Edwards — 10/13/97 Date
Albert Edwards

ENGINEER'S CERTIFICATION:

"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."

Max Kantzer — 10/13/97 Date
Max Kantzer

REV. DATE	REV. NO.	REVISION DESCRIPTION
5-1-98	1	REV. WATER SURFACE ELEV.

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER- AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1"=50' DATE: June 15, 1991

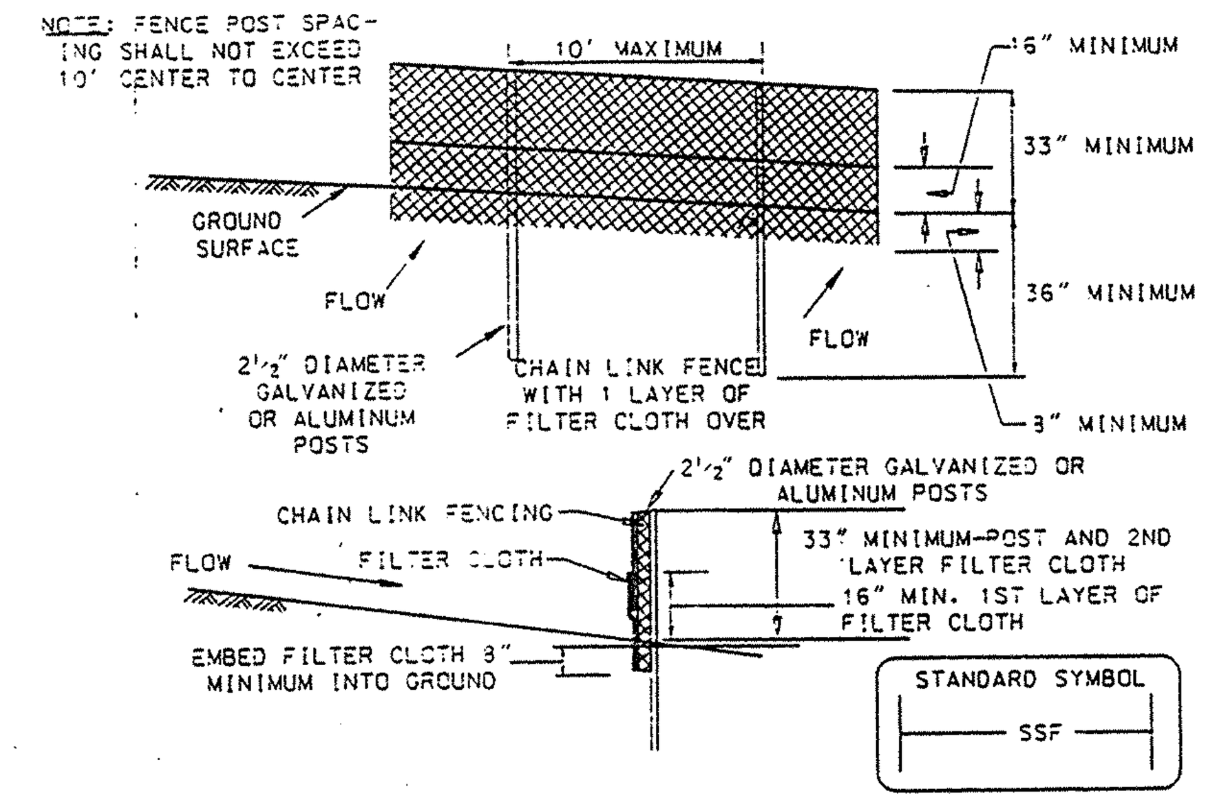
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — NO. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 11 OF 14

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

1. The poles do not need to set in concrete.

2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

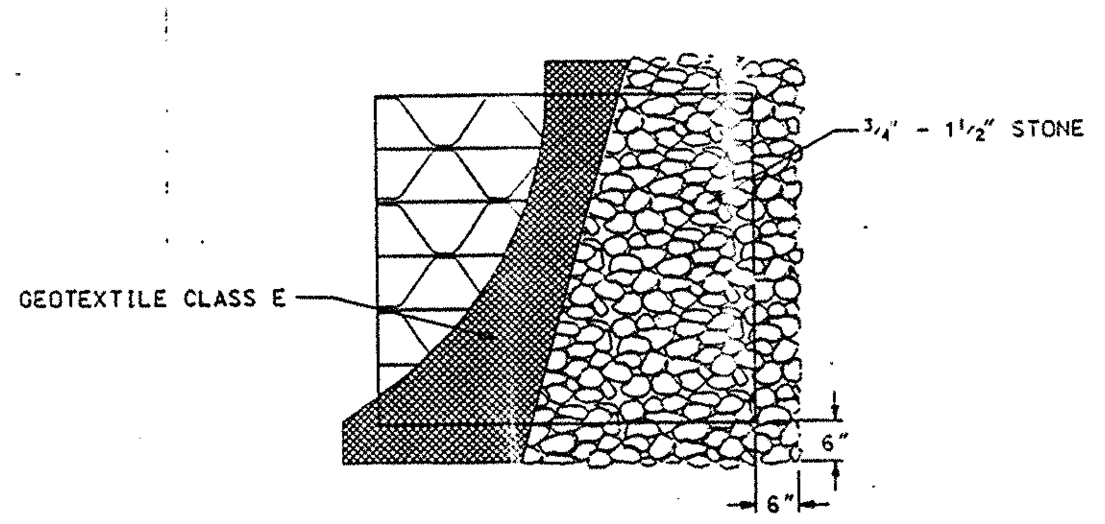
SUPER SILT FENCE

Design Criteria

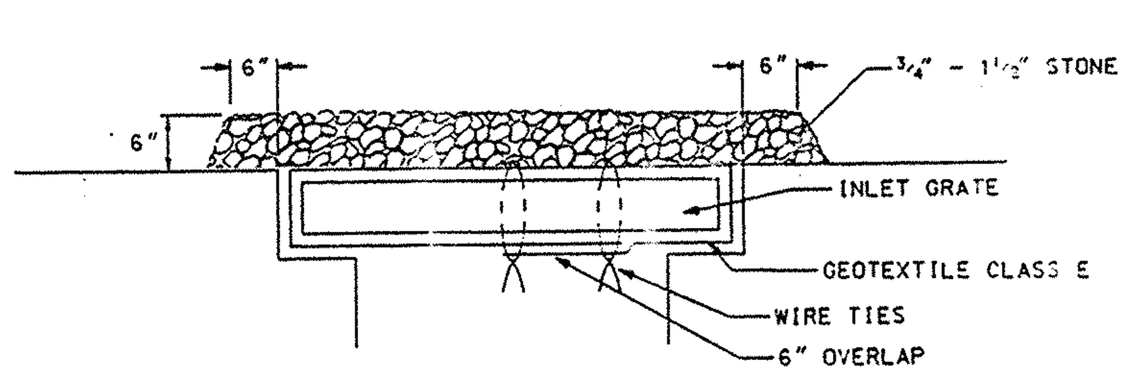
Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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

DETAIL 23B - AT GRADE INLET PROTECTION



PLAN/CUT AWAY VIEW



STANDARD SYMBOL
AGIP

CROSS SECTION

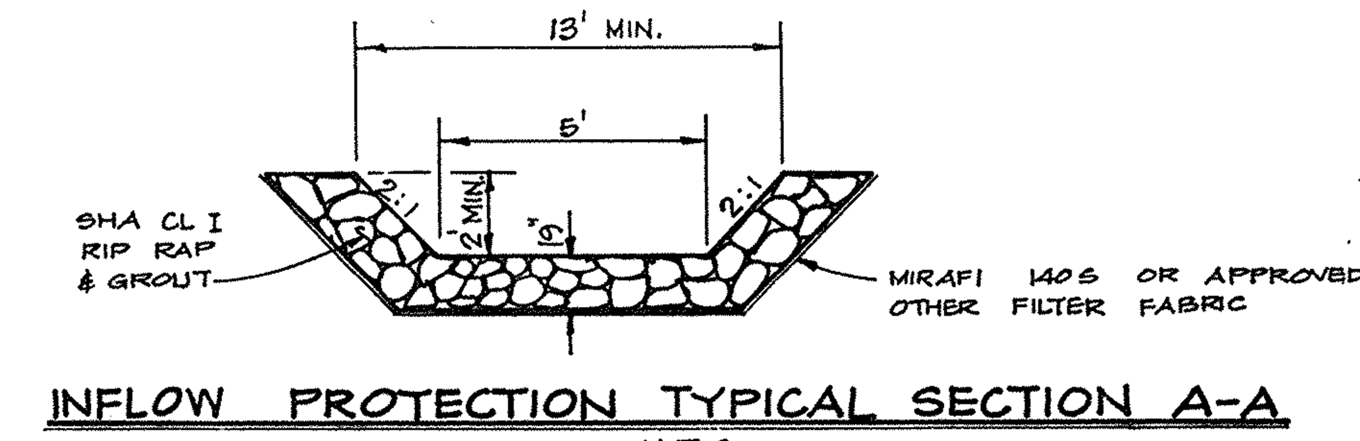
MAX. DRAINAGE AREA = ¼ ACRE

Construction Specifications

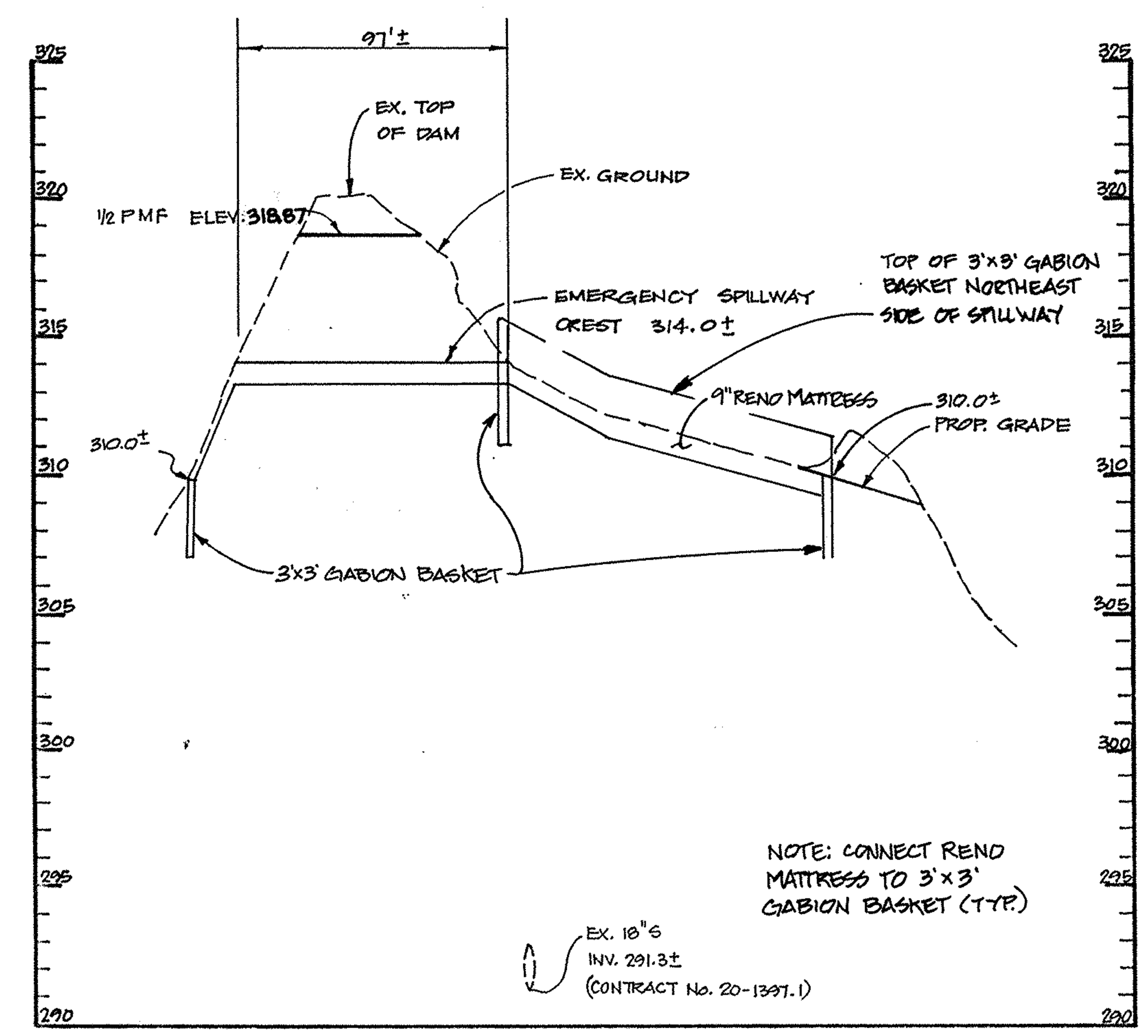
1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

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

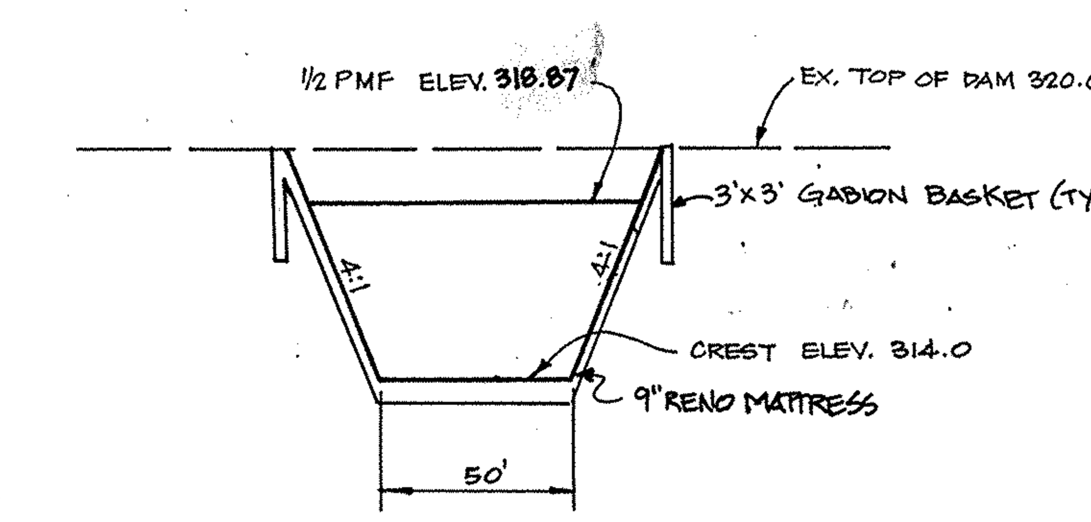
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



INFLOW PROTECTION TYPICAL SECTION A-A
N.T.S.



PROFILE ALONG EMERGENCY SPILLWAY
SCALE: HOR. 1" = 50' VERT. 1" = 5'



CROSS SECTION EMERGENCY SPILLWAY
SCALE: HOR. 1" = 50' VERT. 1" = 5'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

DEVELOPER'S CERTIFICATION:

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 1-20-98
PRINT NAME BELOW SIGNATURE
Albert F. Edwards, P.E.

ENGINEER'S CERTIFICATION:

"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 REQUIRMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER — DATE 1-20-98
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

THIS DEVELOPEMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 1/26/98

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft-McCune-Walker, Inc.
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GATEWAY COMMERCE CENTER
6TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

POND DETAILS

DATE	BY	REVISIONS
4-30-98	DMW	REVISED CROSS SECTION OF EMER. SPILLWAY & REMOVED STORM DRAIN PROFILE.

ISSUE DATES			
REVIEW:		BASE:	
BID:		DRAWN:	
PERMIT:		DESIGNED:	
CONSTRUCTION:		CHECKED BY:	
		DATE CHECKED:	
SCALE: AS SHOWN		DRAWING: 12 OF 14	
PROJECT NO.: 96033			

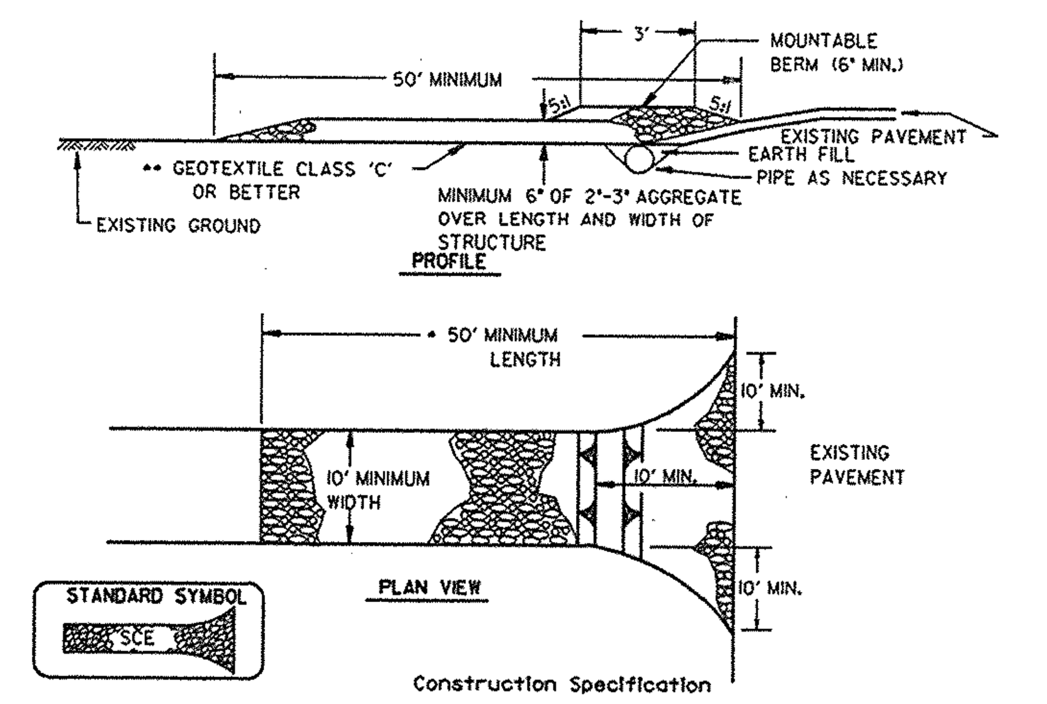
F-97-98

HOWARD S.C.D. SEDIMENT CONTROL GENERAL NOTES

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION ~~(992-2437)~~. 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 "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   - A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1
   - B. FOURTEEN 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. I, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN MANUAL," STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING, AND MULCHING (SECTION G). 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	21 ACRES
AREA DISTURBED	15.9 ACRES
AREA TO BE ROOFED OR PAVED	NONE ACRES
AREA TO BE VEGETATIVELY STABILIZED	11.0 ACRES
TOTAL CUT	30000 CUBIC YARDS
TOTAL FILL	30000 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION	WASTE = NONE

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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW 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.



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 Class C (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 — *F - 17 - 3* — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE

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 ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 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 TOMS PER ACRES 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 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU 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 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOD. OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS 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 RESEEDING.

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 BE 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 THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU 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 ASPHLAT ON FLAT AREAS. ON SLOPES 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

TEMPORARY AND PERMANENT SEEDING NOTES

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
   - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   - c. The original soil to be vegetated contains material toxic to plant growth.
   - d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
   - i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½" in diameter.
   - ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   - iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:
   - i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
   - i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
     - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be perscribed to raise the pH to 6.5 or higher.
     - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
     - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
     - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

   Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientistand approved by the appopriate approval authority, may be used in lieu of natural topsoil.

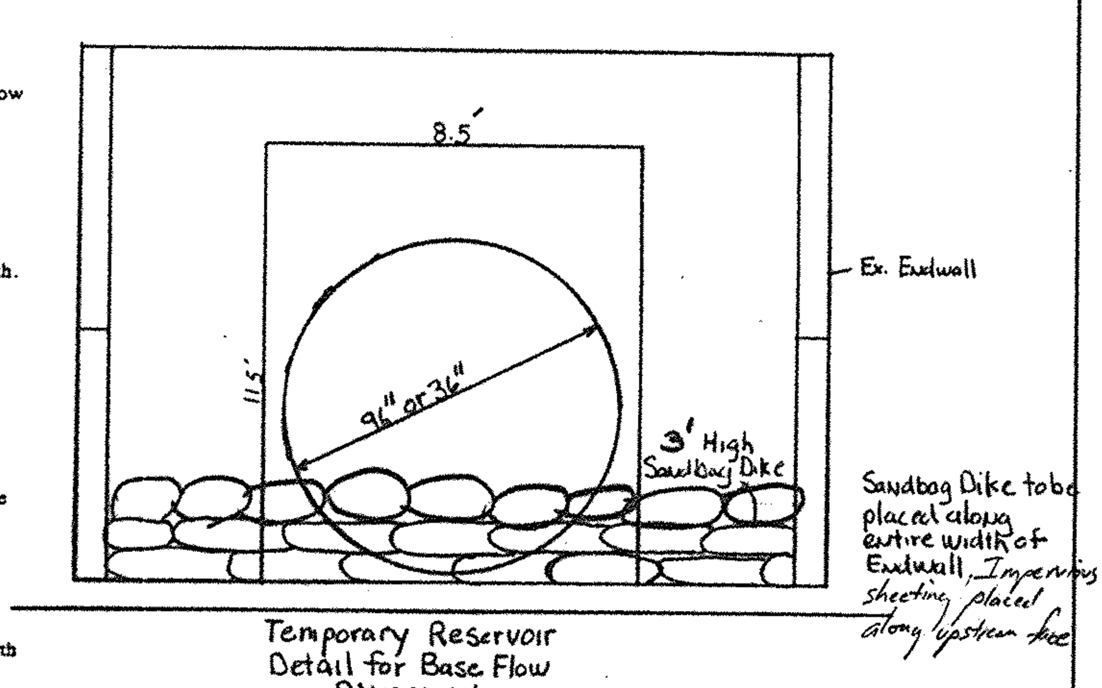
   - ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   - i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   - ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
   - iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   - iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   - i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
     - a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
     - b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
     - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   - iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

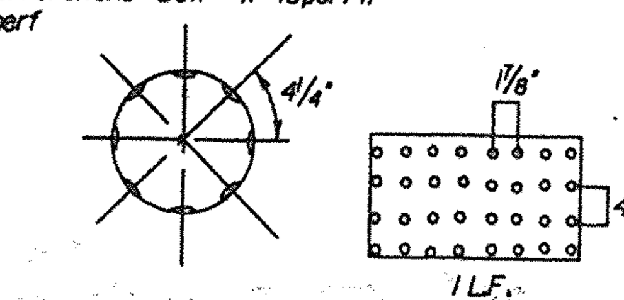
References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

Contractor to repair SANDBAGS as needed After each storm.

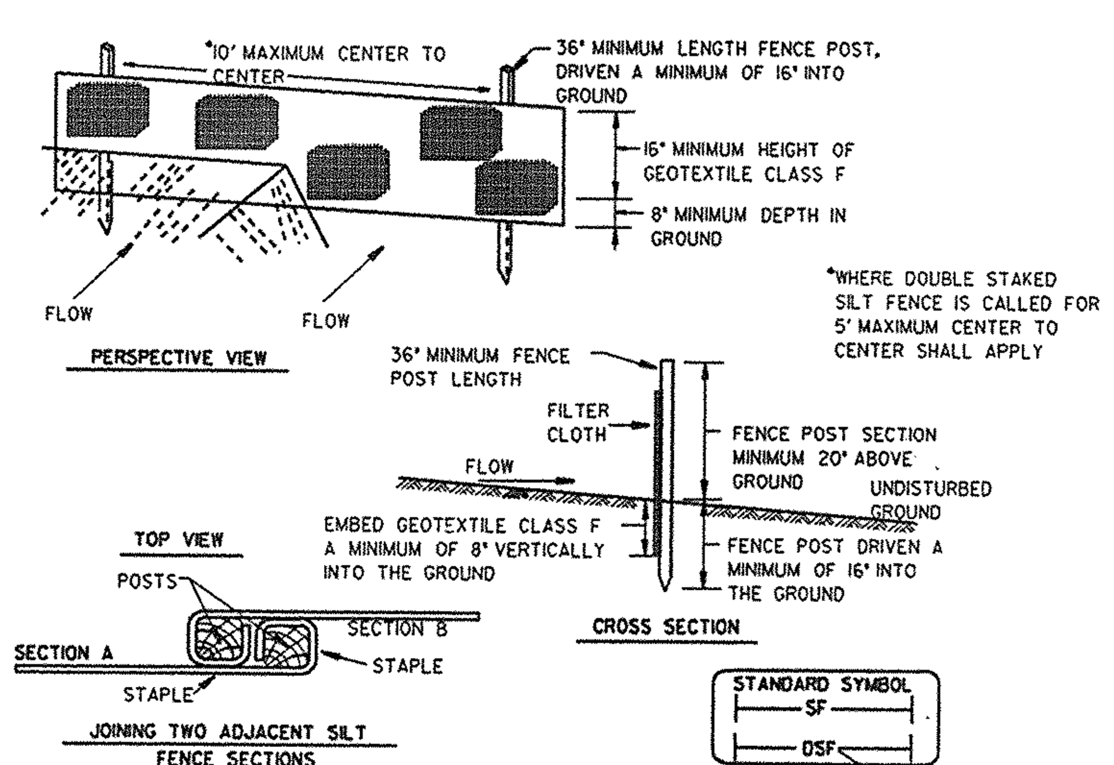


Temporary Reservoir Detail for Base Flow Diversion
N.T.S.

8 X 5 perforations/lf
total perforations= 30lf x 40per/lf =1200perf



TEMPORARY DEWATERING DEVICE.
PERFORATION DETAIL
NOT TO SCALE



Construction Specifications

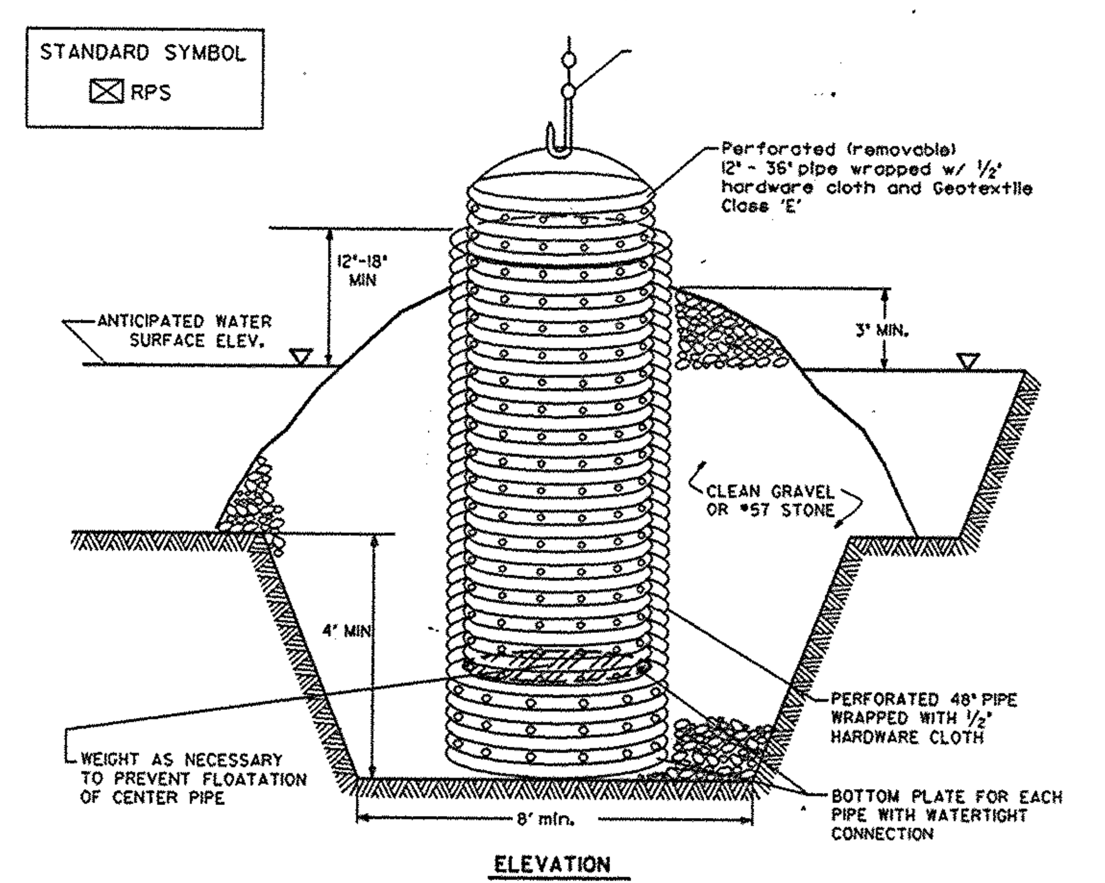
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
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 ft/minute (max.)	Test: MSTM 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — *E - 15 - 3* — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

SILT FENCE NOT TO SCALE

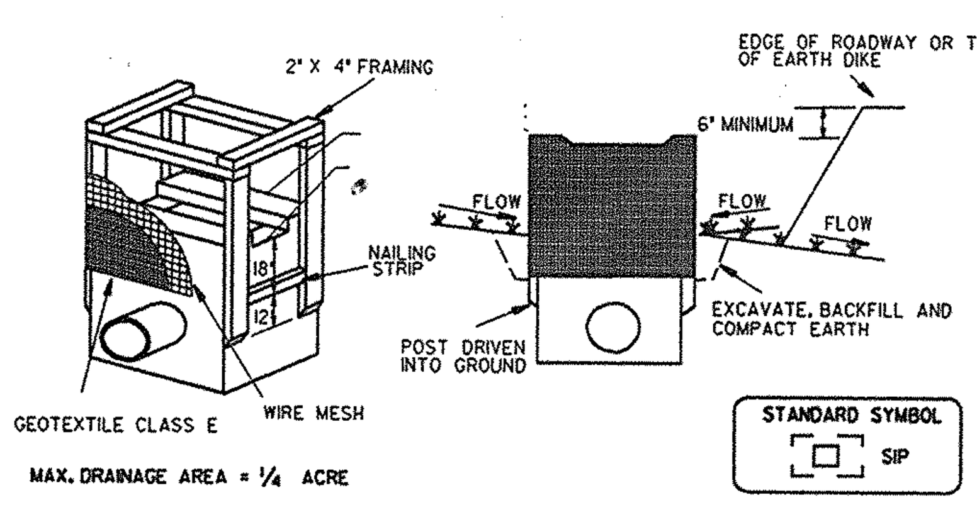


Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with ½" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be ½" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with ½" hardware cloth first, then wrapped again with Geotextile Class E.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — *D - 12 - 6* — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

REMOVABLE PUMPING STATION NOT TO SCALE



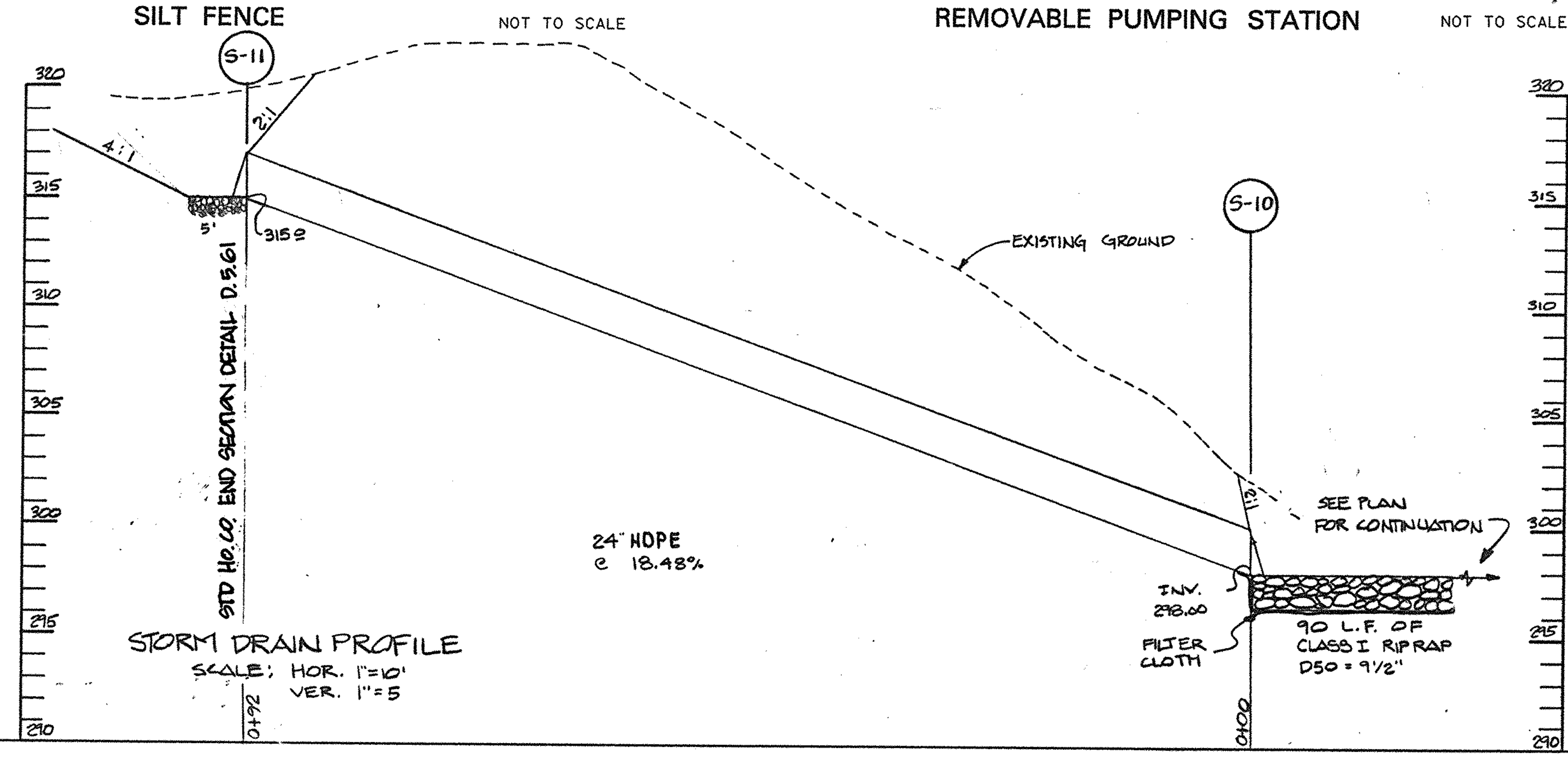
MAX. DRAINAGE AREA = ¼ ACRE

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. 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 geotixtile 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 — *E - 16 - 5* — *MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION*

STANDARD INLET PROTECTION NOT TO SCALE



STORM DRAIN PROFILE
SCALE: HOR. 1"=10'
VER. 1"=5

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

[signature] 10/21/97
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

[signature] 10/21/97
HOWARD S.C.D. — DATE

DEVELOPER'S CERTIFICATION:

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 10.13.97
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE
AL EDWARDS

ENGINEER'S CERTIFICATION:

"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 REQUIRMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 10.13.97
SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE
Max Kantzer

10.13.97
Date

STATE OF MARYLAND — MAX KANTZER — 16872 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

[signature] 10-29-97
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] 4/17/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 4/15/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Date	No.	Revision Description
4-30-98	1	REV. PROFILE & PERFORATION DETAIL.

GATEWAY COMMERCE CENTER
6TH ELECTION DISTRICT
Howard County, Maryland

OWNER /DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft·McCune·Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
PLAT# OR L/F / BLOCK # / ZONE	TAX/ZONE MAP / ELECT. DISTRICT	CENSUS TRACT
WATER CODE	SEWER CODE	

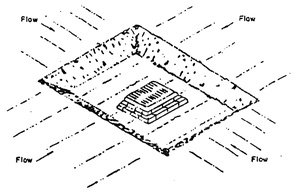
TITLE

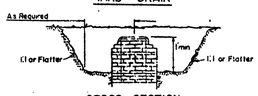
SEDIMENT & EROSION CONTROL PLAN DETAILS

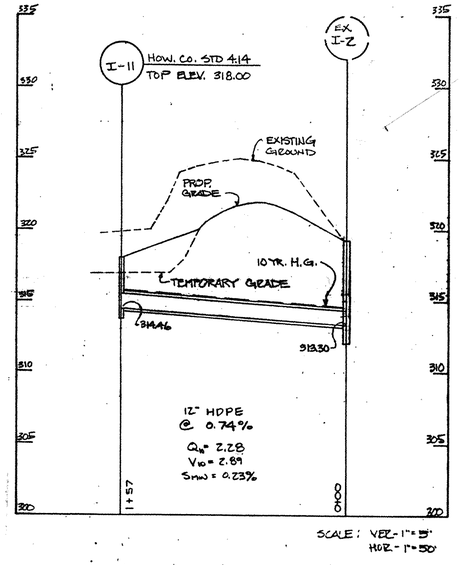
Des By	MJK	Scale		Proj. No. 96033
Drn By	JWM	Date	3/13/97	13 of 14
Chk By	MK	Approved		

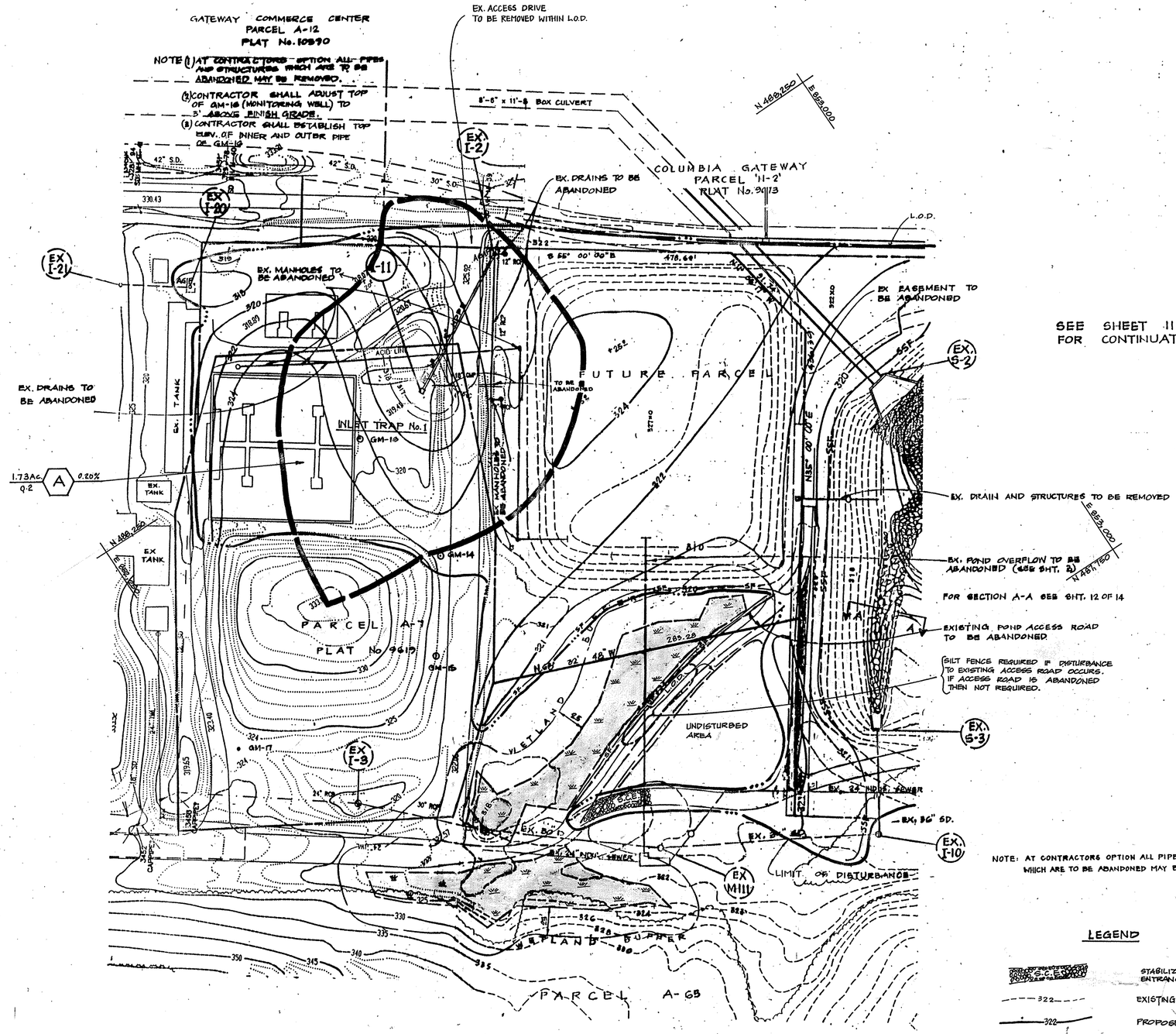
F-97-98

Thu Mar 13 13:52:30 1997 d:\96033\96033.escl









STORM INLET SEDIMENT TRAP ST-III

CONSTRUCTION SPECIFICATION FOR ST-III

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
3. The structure shall be inspected after each rain and repairs made as needed.
4. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
5. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
6. All cut slopes shall be 1:1 or flatter.

Maximum Drainage Area: 3 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STORM INLET SEDIMENT TRAP	STANDARD DRAWING ST - III

NOTE ① ~~AT CONTRACTORS OPTION ALL PIPES AND STRUCTURES WHICH ARE TO BE ABANDONED MAY BE REMOVED.~~
② CONTRACTOR SHALL ADJUST TOP OF GM-16 (MONITORING WELL) TO 3' ABOVE FINISH GRADE.
③ CONTRACTOR SHALL ESTABLISH TOP ELEV. OF INNER AND OUTER PIPE OF GM-16

SEE SHEET 11 OF 14
FOR CONTINUATION

NOTE: AT CONTRACTORS OPTION ALL PIPES + STRUCTURE WHICH ARE TO BE ABANDONED MAY BE REMOVED.

INLET TRAP No. 1 TABLE

MAX. D.A. TO TRAP = 1.73Ac.
VOLUME REQ. = 3,114 CF
VOLUME PROVIDED = 3,686 CF
TOP OF WET STORAGE = 317.5
TOP OF DRY STORAGE = 318.0
INLET THROAT ELEV. = 318.0
WET ZONE ELEV. = 317.0-317.5
DRY ZONE ELEV. = 317.5-318.0
CLEANOUT ELEV. = 317.25
BOT. ELEV. = 317.0

LEGEND

S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
--- 322 ---	EXISTING CONTOURS
—— 322 ——	PROPOSED CONTOURS
317 + 07	EXISTING SPOT ELEVATION
+ 25²	PROPOSED SPOT ELEVATION
	WOODS
EX. 30" SD.	EXISTING DRAINS
30" RCP	PROP. DRAINS
━━ ••• ━━	LIMIT OF DISTURBANCE
━━ ━━	DRAINAGE AREA DIVIDE
AGIP	AT GRADE INLET PROTECTION

DRAINAGE AREA IN AC. / RUN OFF COEFFICIENT — A — % IMPERVIOUS — DRAINAGE AREA

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

Cheryl Simmons 1/26/98
U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE

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

1/26/98
HOWARD S.C.D. DATE

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THAS 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."

John W Ranocchia, Sr. 1/20/98
DATE

CERTIFICATION BY THE DEVELOPER:

"I/WE CERITFY 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

1-20-98
DATE

OWNER /DEVELOPER:

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS HS 4-14-98
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 4/15/98
DATE

Cindy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT 4/17/98
DATE

Date	No.	Revision Description

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

Gateway Commerce Center,
Parcel A-65

6TH ELECTION DISTRICT

Howard County, Maryland

GRADING SEDIMENT EROSION PLAN FOR DISPOSAL

JOHN W. RANOCCHIA

DATE	BY	REVISIONS

ISSUE DATES	
REVIEW:	
BID:	
PERMIT:	
CONSTRUCTION:	
SCALE:	1" = 50'
PROJECT NO.:	96033

BASE:	D S
DRAWN:	D S
DESIGNED.	JWM
CHECKED BY:	JLS
DATE CHECKED:	
DRAWING:	14 OF 14

F-97-98

LEGEND

- 310 — EXISTING CONTOURS
- 286 — PROPOSED CONTOURS
- GE 12 — BORING LOCATIONS
- 287+0 — SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100 YR. W.S.E.

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 1-20-98

Albert F. Edwards, Jr. 6

PRINT NAME

BY THE ENGINEER:

"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 1-20-98

John W Ranucchio

PRINT NAME

NOTE: CONTRACTOR SHALL REPAIR AND STABILIZE ALL SLOPE AREAS AT SOUTH WESTERN LOCATION AS NECESSARY.

NOTE: SEE SHEET 12 OF 14 FOR PROFILE & STRUCTURE SCHEDULE

Gateway Commerce Center,
Parcel A-65 PLAT 11962

NOTE: 1.) CONTRACTOR SHALL TEST PIT 24" IWL @ CROSSING WITH 72" RCP PRIOR TO CONSTRUCTION.

2.) IF 24" IWL IS IN CONFLICT WITH 72" RCP CONTRACTOR SHALL REMOVE 24" IWL WHERE NECESSARY AND PLUG AND CAP IWL @ EACH CUT END WITH 2' OF CONCRETE.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/26/98

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

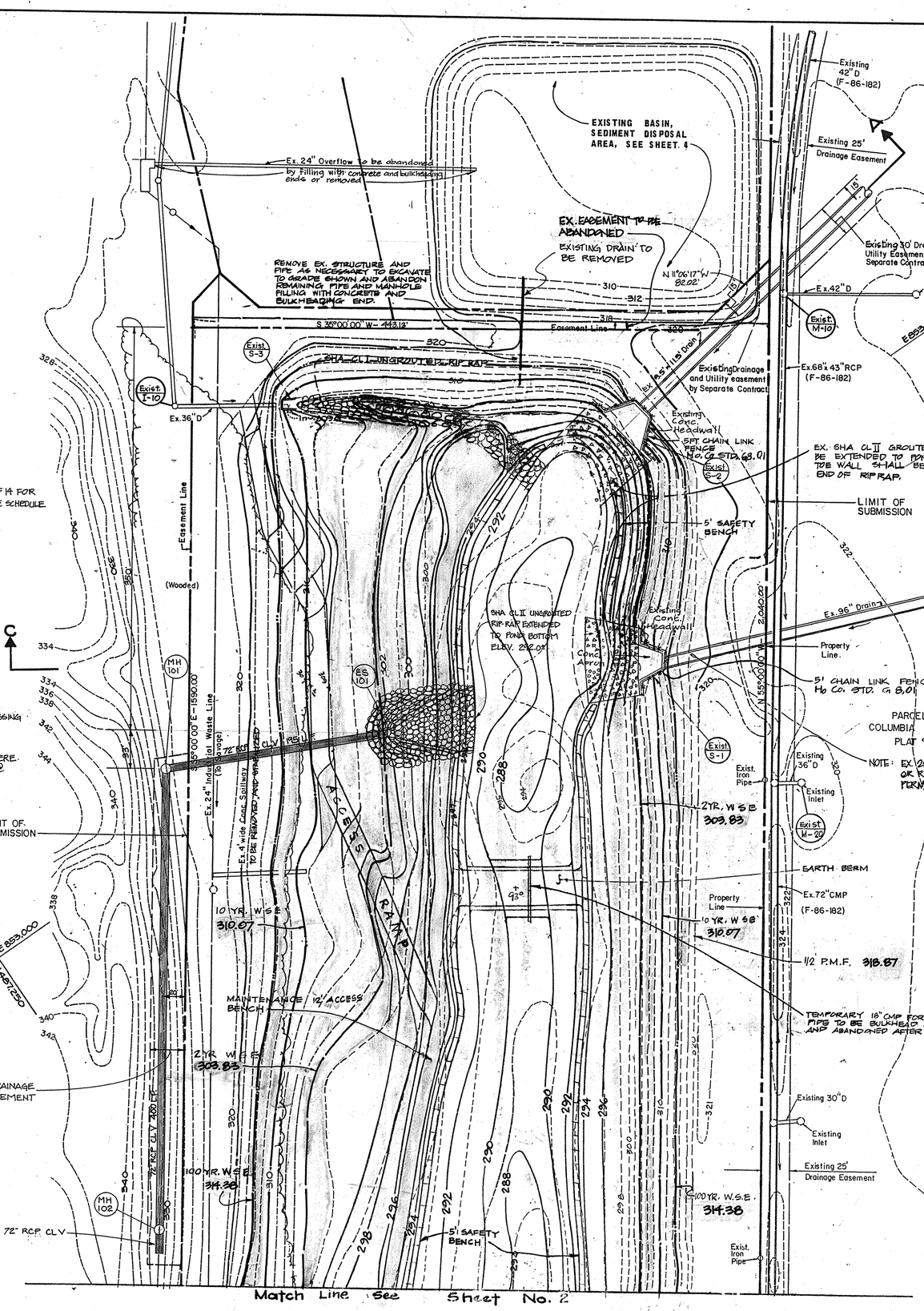
Thomas J. Shafer — 6/5/91

THOMAS J. SHAFER
Registration No. 8457 — DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE 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 30 DAYS OF COMPLETION, ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 6/5/91



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/7/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/13/98

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

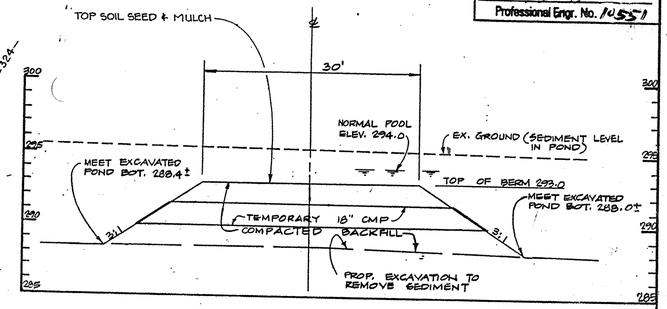
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

MODIFICATIONS TO PLANS BY DAFT Mc CUNE WALKER INC. DATED 11/25/96 ONLY.

1/20/98 Date

STATE OF MARYLAND — JOHN W. RANUCCHIO — No. 10551 — PROFESSIONAL ENGINEER

Professional Engr. No. 10551



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

MODIFICATIONS:

1. POND GRADING
2. EARTH BERM ADDED
3. EARTH BERM DETAIL ADDED

REV. DATE	REV. NO.	REVISION DESCRIPTION
7-23-98	2	ADDED STORM DRAINAGE MH 102 → ES 101
5-1-98	1	REVISED WATER SURFACE ELEVATIONS.

COLUMBIA GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:

POND SITE PLAN

SCALE: 1"=50' — DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

F-97-98 SHEET 3 OF 14

LEGEND

- 310 EXISTING CONTOURS
- 286 PROPOSED CONTOURS
- SE 12 BORING LOCATIONS
- 287+0 SPOT ELEVATION
- 2 YR. W.S.E.
- 10 YR. W.S.E.
- 100 YR. W.S.E.

Sequence of Construction

1. Obtain all necessary permits for construction. (1 week)
2. Notify Howard County Department of Inspections and Permits (410-313-1855) a minimum of 48 hours prior to the start of any construction. Notify the Maryland Department of the Environment Nontidal, Wetlands and Waterways Inspection and Compliance Division (410-631-3510) at least five (5) days prior to any in-stream construction. (1 day)
3. Notify the engineer-in-charge of the as-built inspection at (410) 296-3333. (1 day)
4. Clear, grub for and install sediment control measures only. Coordinate all work with the approved erosion and sediment control plan sequence of operations. Also, transfer to the notes "Conditions and Management Practices for Working in Nontidal Wetlands and Buffers" shown on this sheet. (1 week)
5. Install 12-inch CIP pond drain and dewatering device. Brick shut low flow weir in existing structure. Valve on 12-inch drain to be left open at all times, and automatic switch pumps, pipes and bulkheads at structures.
6. Excavate sediments from the pond starting at the upstream end (inlets) working toward the riser. Existing 24-inch storm drain to be replaced. Excavation to concentrate on areas below the 294.0 contour. All water pumped from pond to be treated through the removable pumping station. (6 months)
7. After excavation is complete, install proposed earth berm with suitable compacted backfill and stabilize with topsoil, seed and mulch. Eighteen-inch temporary pipe in forebay earth berm to be abandoned upon completion of construction. (1 month)
8. Stabilize spoil areas with topsoil, seed, and mulch (see topsoil specifications, Sheet 13 of 14) and stabilize areas above the wet pool with seed and mulch. (1 month)
9. With prior approval of the Sediment Control Inspector and the Howard County Sediment Control Division, remove sediment controls. Fine grade and stabilize these areas. (1 week)
10. Conduct as-built survey of storm drain modifications, forebay, water quality, wet pool, and outfall areas, and submit to appropriate agencies within 30 days of completion. (1 month)

"Conditions and Management Practices for Working in Nontidal Wetlands and Buffers"

a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;

b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.

c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;

d) Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.

e) Rectify any nontidal wetlands and buffers temporarily impacted by the permitted activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Oats (Uniola sp.), and/or Rye (Secale cereale). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction;

f) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Resources Administration.

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

Charles Simmons /GS 10/21/97
U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE

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

10/21/97
HOWARD SOIL CONSERVATION DISTRICT DATE

BY THE ENGINEER:

"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 MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Thomas J. Shafer 6/5/91
THOMAS J. SHAFER DATE
Registration No. 8457

BY THE DEVELOPER:

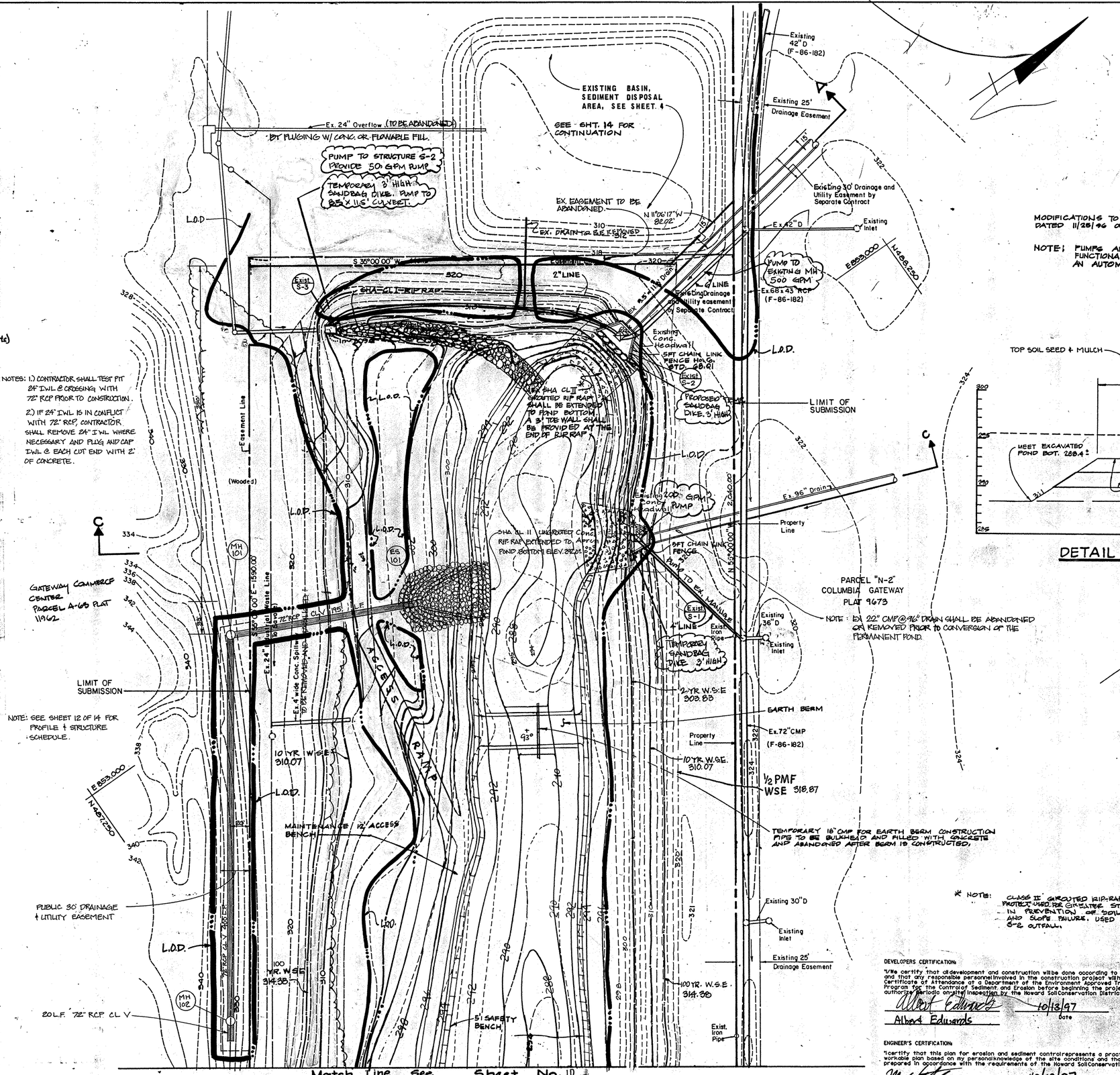
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION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

Joseph H. Necker Jr. 6/5/91
JOSEPH H. NECKER JR. DATE

NOTES: 1) CONTRACTOR SHALL TEST PIT 24" I.W.L. @ CROSSING WITH 72" RCP PRIOR TO CONSTRUCTION.

2) IF 24" I.W.L. IS IN CONFLICT WITH 72" RCP, CONTRACTOR SHALL REMOVE 24" I.W.L. WHERE NECESSARY AND PLUG AND CAP I.W.L. @ EACH CDT END WITH 2' OF CONCRETE.

NOTE: SEE SHEET 12 OF 14 FOR PROFILE & STRUCTURE SCHEDULE.



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 10-24-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/15/98

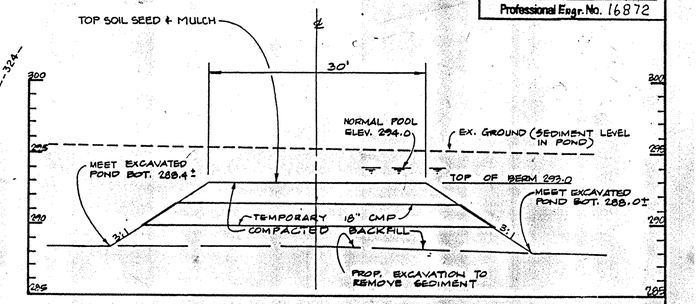
DMW
Dewberry-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

MODIFICATIONS TO PLANS BY DAFT McCUNE WALKER INC. DATED 11/25/96 ONLY. — 10/13/97 Date

NOTE: PUMPS ARE TO REMAIN IN PLACE AND FUNCTIONAL 24 HRS/DAY BY USE OF AN AUTOMATIC SWITCH.

STATE OF MARYLAND — MAX KANTNER — NO. 16872 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872



DETAIL OF EARTH BERM PHASE II

SCALE: HORIZ. 1" = 10' VERT. 1" = 5'

REV. DATE	REV. NO.	REVISION DESCRIPTION
5-1-98	1	REV. WATER SURFACE ELEV.
7-23-98	2	ADDED STORM DRAINAGE MH 102 → ES 101

COLUMBIA—GATEWAY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROJECT AREA: Gateway Commerce Center, Parcel A-65

PROJECT TITLE:
SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1"=50' DATE: June 15, 1991

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

DEVELOPERS CERTIFICATION:
"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."
Albert Edwards 10/13/97
Albert Edwards Date

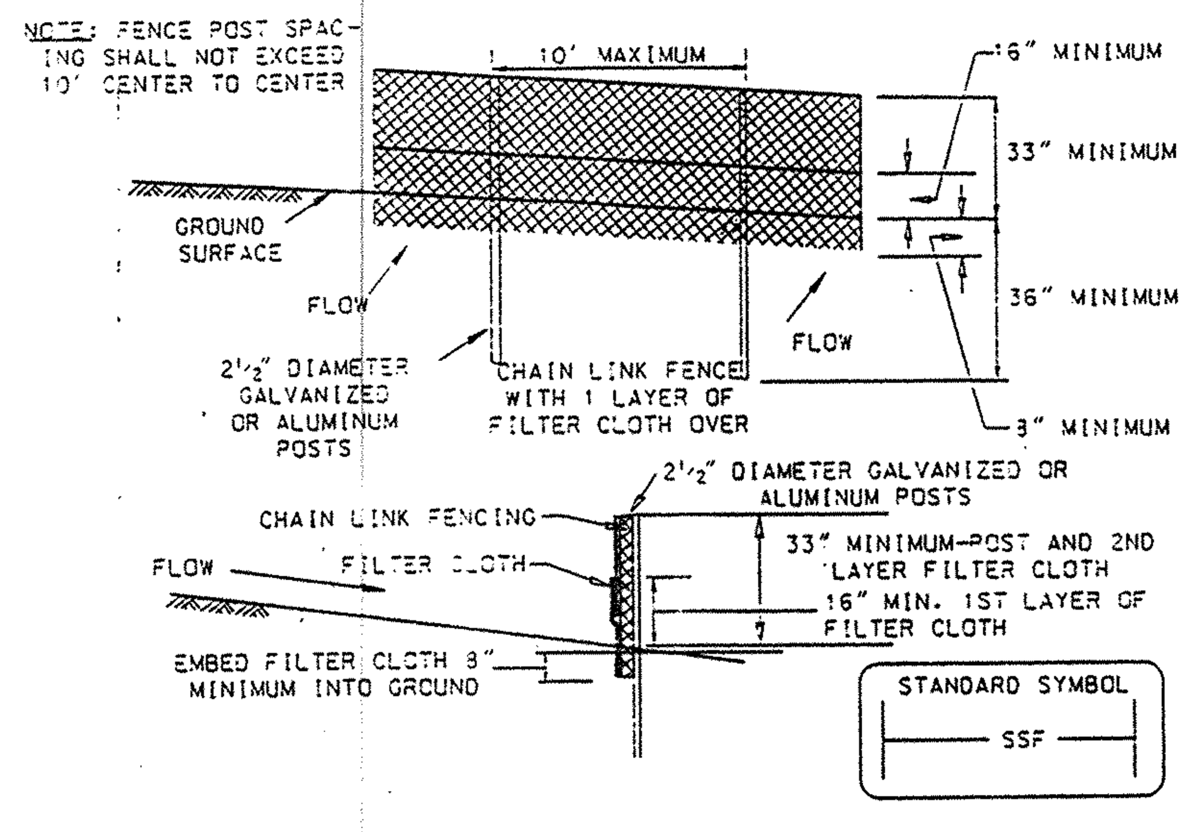
ENGINEER'S CERTIFICATION:
"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Max Kantner 10/13/97
Max Kantner Date

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

STATE OF MARYLAND — THOMAS J. SHAFER — NO. 8457 — PROFESSIONAL ENGINEER

F-97-98 SHEET 11 OF 14

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

1. The poles do not need to set in concrete.
2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

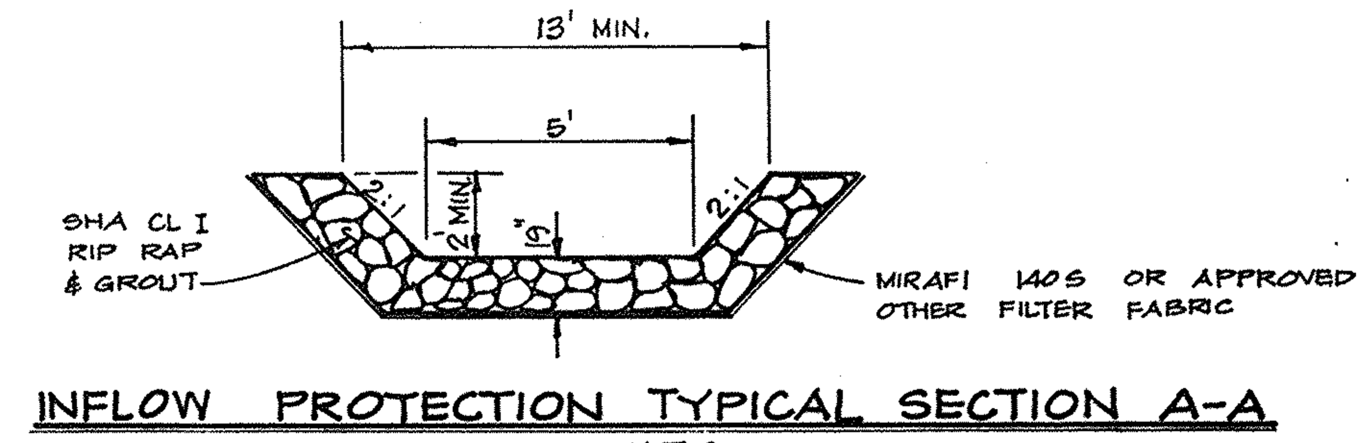
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE

Design Criteria

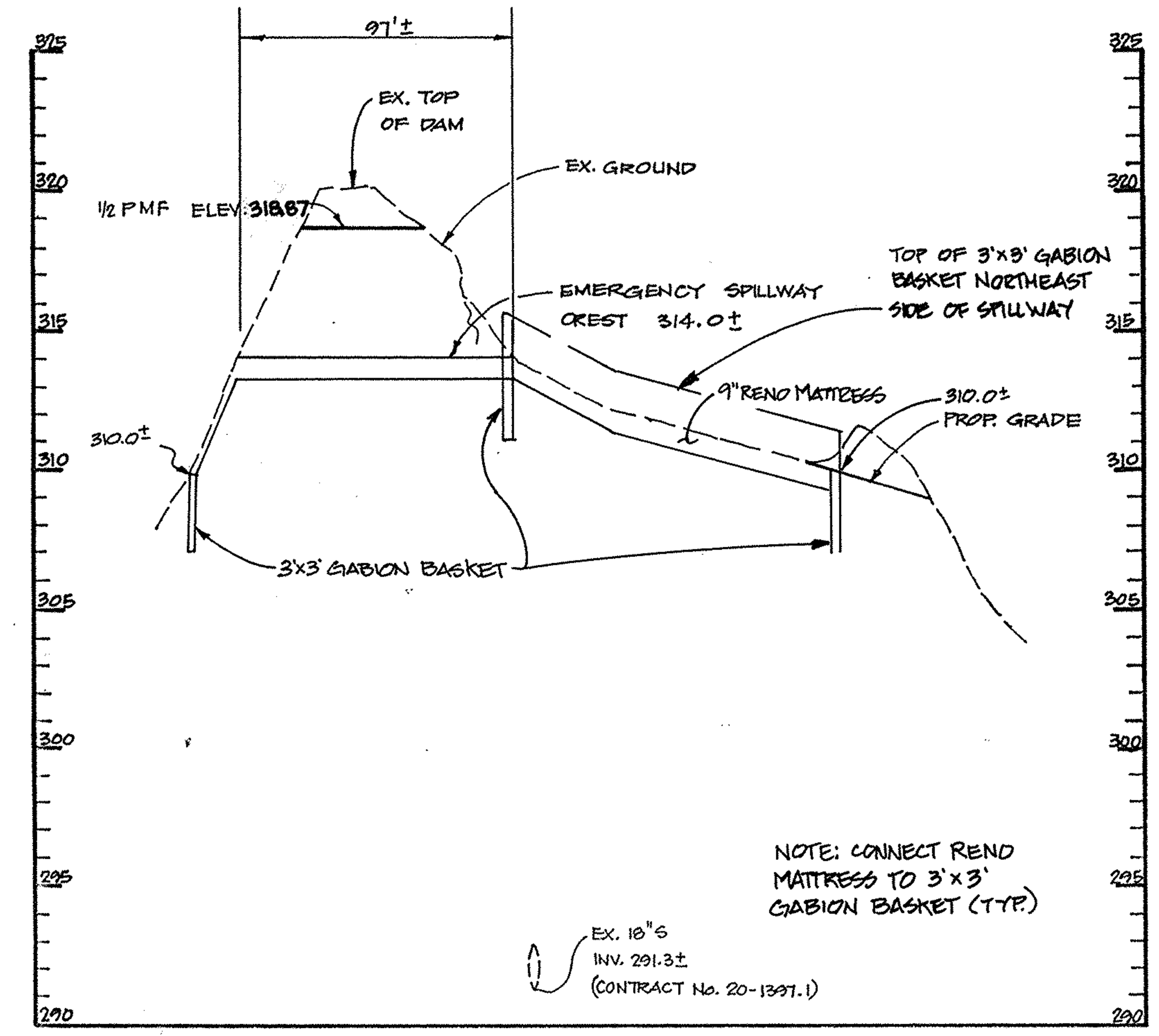
Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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



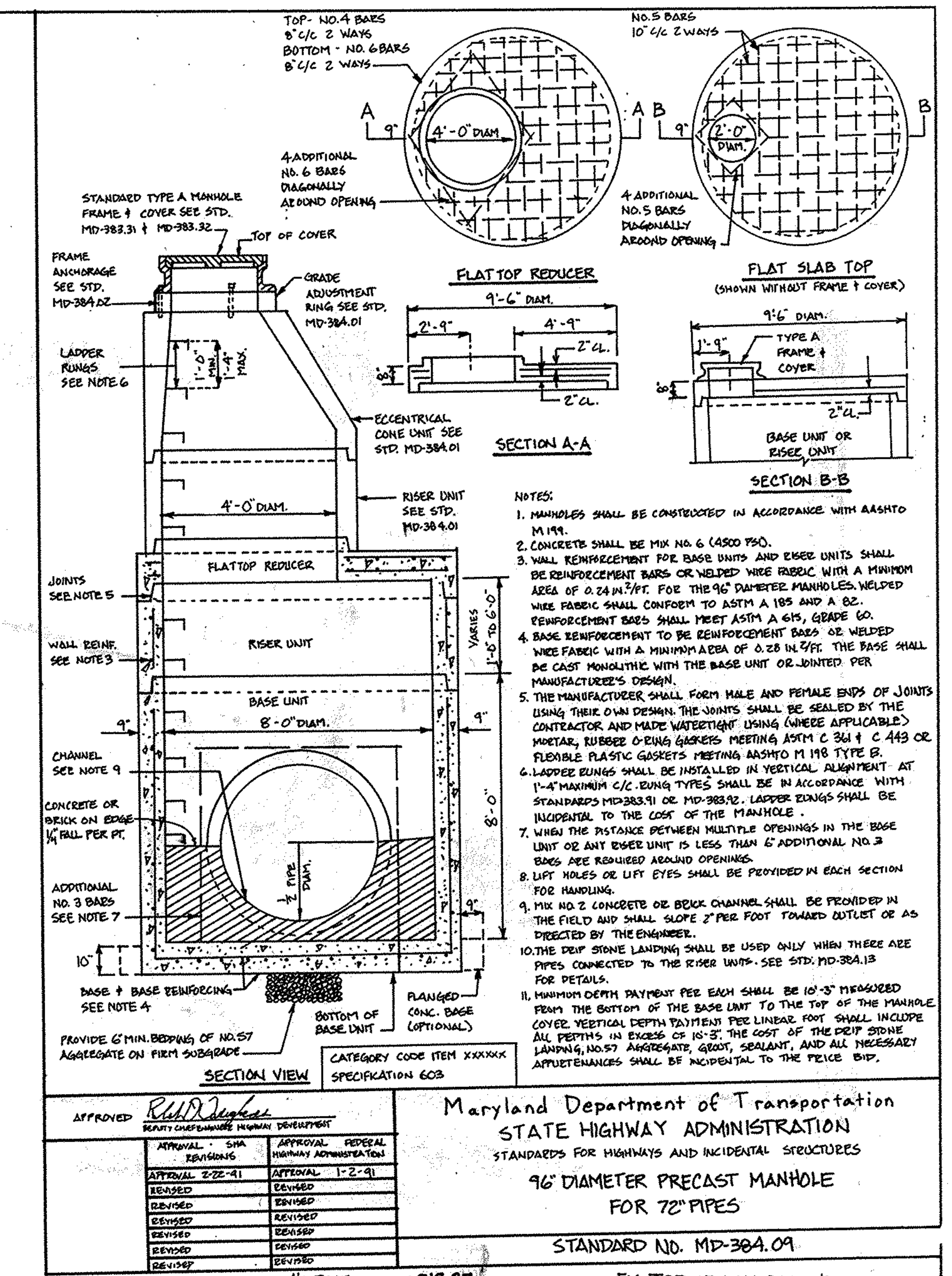
INFLOW PROTECTION TYPICAL SECTION A-A

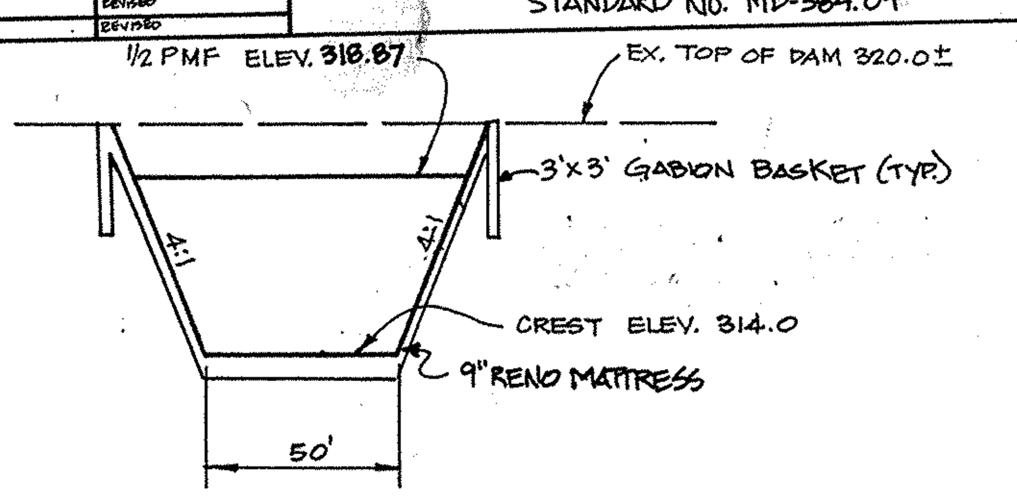
N.T.S.



PROFILE ALONG EMERGENCY SPILLWAY

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

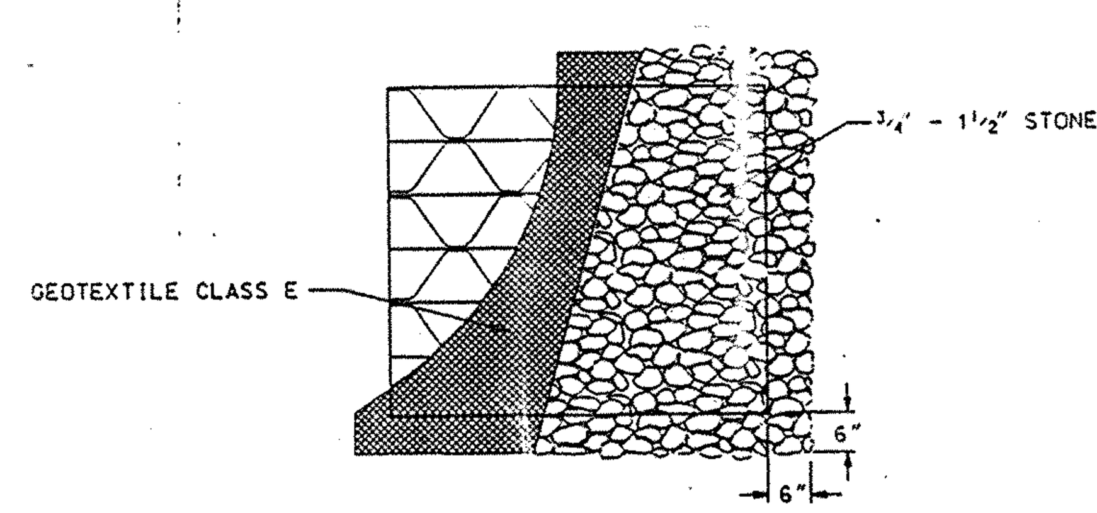




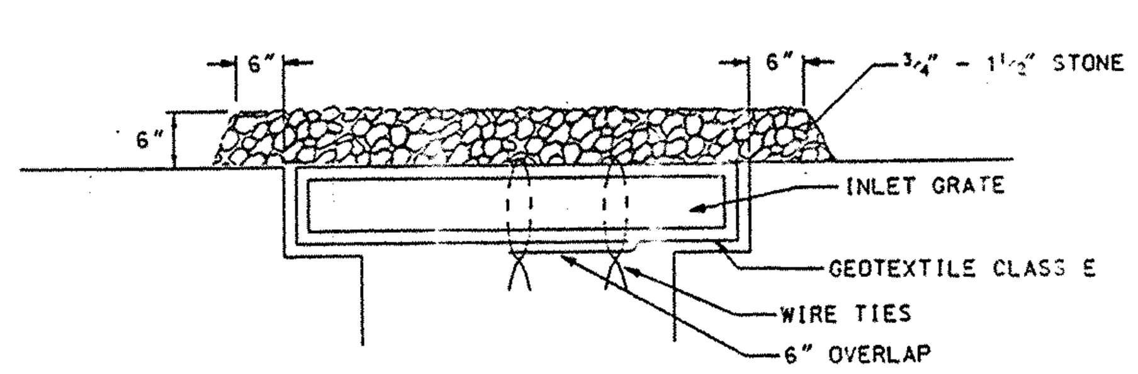
CROSS SECTION EMERGENCY SPILLWAY

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

DETAIL 23B - AT GRADE INLET PROTECTION



PLAN/CUT AWAY VIEW



STANDARD SYMBOL

AGIP

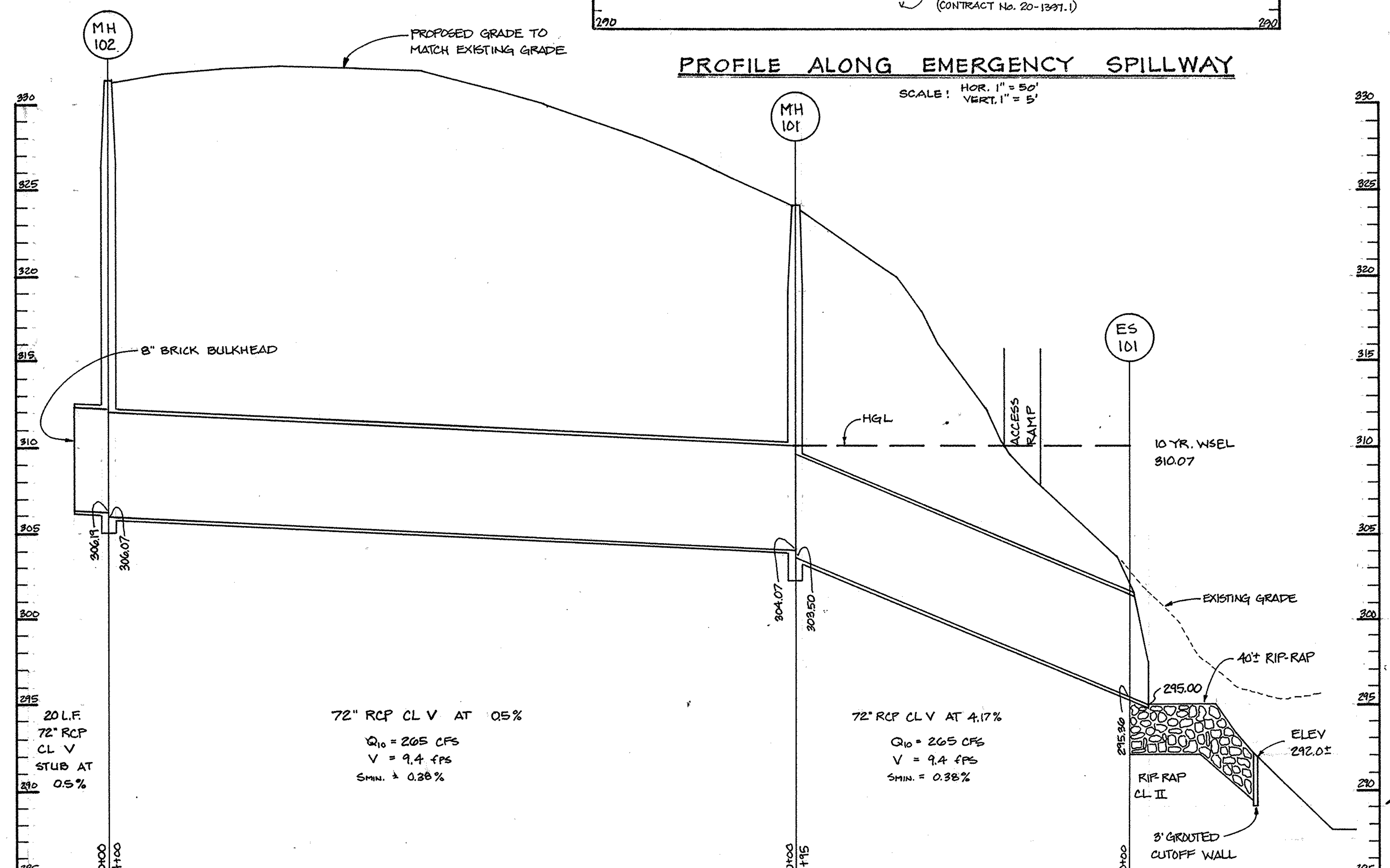
CROSS SECTION

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
2. Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



STRUCTURE SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	STD. DETAIL	LOCATION
ES 101	CONC. END SECTION	—	295.36	295.00	SD 5.51	SEE PLAN
MH 101	PRECAST MH-8'DIAM.	324.0	304.07	303.50	MD 384.09	SEE PLAN
MH 102	PRECAST MH-8'DIAM.	331.4	306.19	306.07	MD 384.09	SEE PLAN

DEVELOPER'S CERTIFICATION:

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 1-20-98

PRINT NAME BELOW SIGNATURE: Albert F. Edwards, P.E.

ENGINEER'S CERTIFICATION:

"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 REQUIRMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER — DATE 1-20-98

PRINT NAME BELOW SIGNATURE: John W. Ranocchia, Sr.

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

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

HOWARD S.C.D. — DATE 1/26/98

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-14-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 4/13/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/17/98

OWNER AND DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
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200 East Pennsylvania Avenue
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A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

GATEWAY COMMERCE CENTER

6TH ELECTION DISTRICT

HOWARD COUNTY MARYLAND

POND DETAILS

DATE	BY	REVISIONS
4-30-98	DMW	REVISED CROSS SECTION OF EMER. SPILLWAY & REMOVED STORM DRAIN PROFILE.
7-23-98	DMW	ADDED STORM DRAIN PROFILE, MH DETAIL STRUCTURE & PIPE SCHEDULE

ISSUE DATES			
REVIEW:		BASE:	
BID:		DRAWN:	
PERMIT:		DESIGNED:	
CONSTRUCTION:		CHECKED BY:	
SCALE: AS SHOWN		DATE CHECKED:	
PROJECT NO.: 96033		DRAWING:	12 OF 14

F-97-98