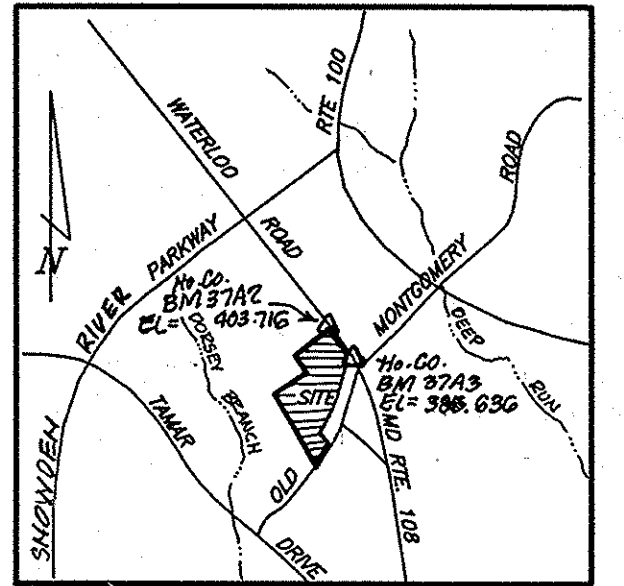


WATERLOO ELEMENTARY SCHOOL

SHEET INDEX	
NO.	SHEET
1	COVER SHEET
2	SITE PLAN
3	STORM DRAIN PROFILES
4	PAVING DETAILS
5	WATER HOUSE CONNECTION PROFILE AND SOIL BORINGS LOGS
6	DRAINAGE AREA MAP
7	SEDIMENT CONTROL PLAN
8	SEDIMENT CONTROL DETAILS
9	LANDSCAPE PLAN



VICINITY MAP
Scale: 1"=2000'

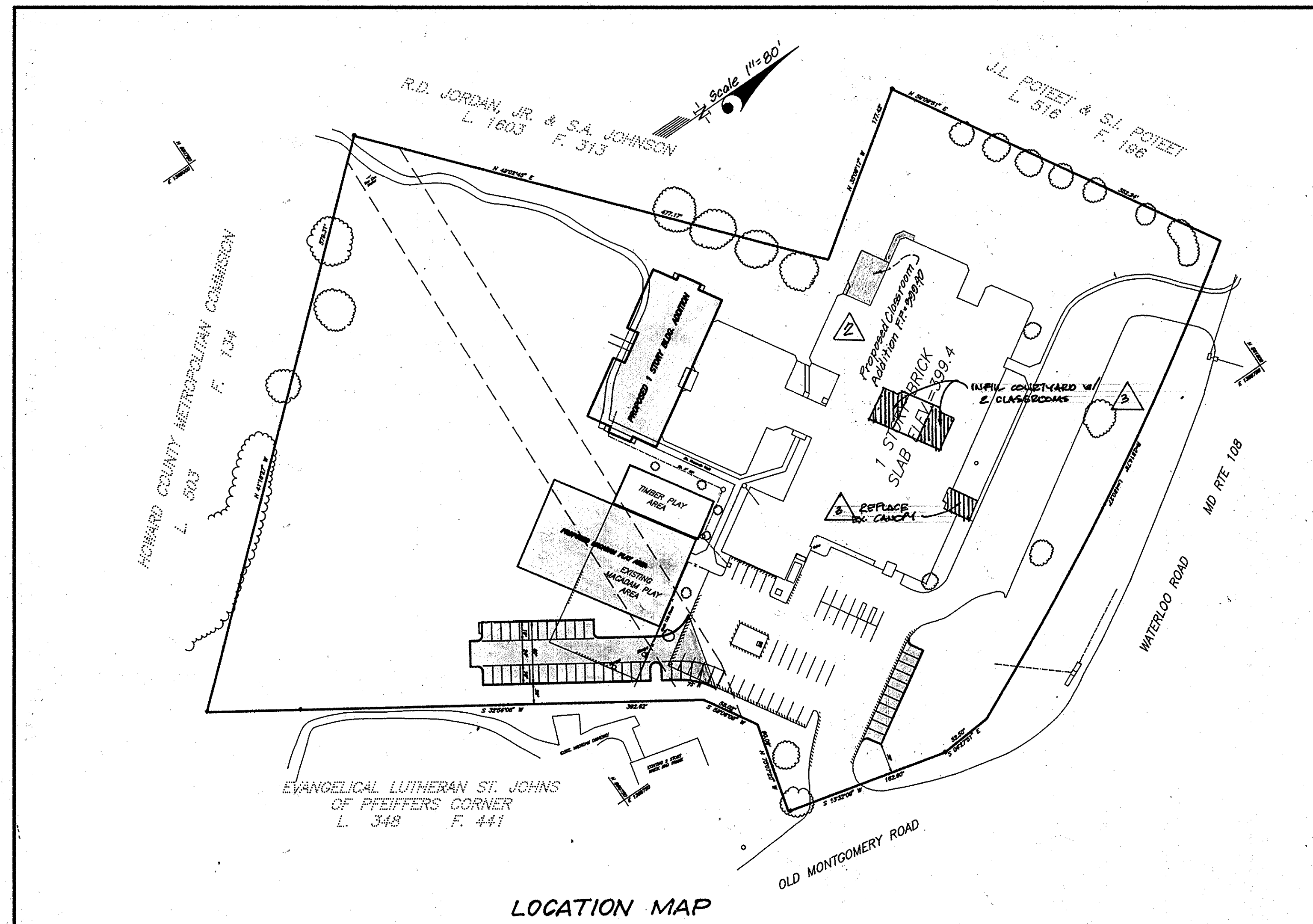
GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards if applicable.
- The contractor shall notify the Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Project Background:
 - Location: Tax Map #37 Parcel 489
 - Setbacks: R-20
 - Election District: 6th Election District
 - Site Area: 10.4 Ac +/-
 - Other DP&Z Reference Files: SDP 85-223
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Topographic survey mapping at 2' contour intervals was field run by Clark, Finefrock & Sackett, Inc., February 1997.
- Boundary coordinates are based on NAD 83 Maryland Coordinate System as projected by Howard County Geodetic Control Stations No. 37A2 & 37A3.
- All plan dimensions are to the face of the curb unless otherwise noted.
- Existing public water and sewer systems are being utilized for this project.
 - Public Water: Contract #397-W
 - Public Sewer: Contract #547-SB
- Stormwater Management for both quality and quantity is being provided onsite by Bioretention Methods. These facilities to be privately maintained by the Ho. Co. Board of Education.
- This site is not affected by a 100 year flood plain.
- No wetlands exist on the site - Disturbed areas have previously been maintained in turf for school athletic activities.
- Traffic study - N/A - Exempt.
- The Geotechnical Report was prepared by Engineering Consulting Services, Ltd., dated March 24, 1997.
- The existing utilities were located by field surveys and available records. The contractor must dig test pits, by hand, at all utility crossings and connection points to verify exact location.
- Forest Conservation Obligations do not apply to this project as no forest exists on the site.
- Handicap parking details shall be in accordance with the "Maryland Building Code for the Handicapped" Section 5.01-7.05.
- All driveways and parking to be owned and maintained by the Howard County Board of Education.
- Any damage to off-site improvements by the contractor to be corrected at the contractor's expense.
- All sidewalks to be cross sloped at 1/4" ft. away from the building unless otherwise indicated.
- Trench bedding for storm drainage structures shall be in accordance with Howard County Standard 02.01.
- Gutter of curbs shall be pitched to conform to adjacent drainage patterns.
- Refer to architectural drawings for building dimensions.
- For permanent Seeding & Landscaping Specifications see General Contract Specifications.
- Refer to Electrical Site Plan for Exterior Lighting Locations and Specifications, if applicable.
- All proposed improvements to be privately maintained.

SITE ANALYSIS

- GENERAL SITE DATA
 - Existing Zone: R-20
 - Proposed use of addition: Classrooms
 - Proposed water and sewer system: Public
 - Applicable DP&Z files: SDP-85-223
- AREA TABULATION
 - Total area of site: 10.4ac±
 - Area of submission / disturbance:
 - Floor space: Existing building = 61,575 s.f.±
Proposed addition = 11,530 s.f.± + 1,222 s.f.± = 72,827 s.f.±
Total = 72,827 s.f.±
Building coverage = 72,827 s.f.± / 10.4 ac = 16.4% of site
 - Building coverage: Existing 38
New spaces 42
Total Spaces 80*

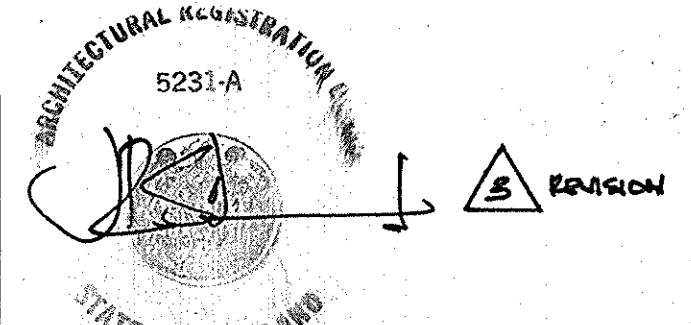
*Including H.C. spaces 4



SITE DEVELOPMENT PLAN FOR PARKING AREA AND BUILDING ADDITION

ADDRESS CHART:	
PARCEL 489	5940 WATERLOO ROAD
PROJECT NAME	WATERLOO EL. SCHOOL
SECTION	SECTION 8
BLK. NO.	BLK. 37
LOT NO.	LOT 6
OWNER	HO. CO. BOARD OF EDUCATION
OWNER CODE	E 07
OWNER NO.	2780000

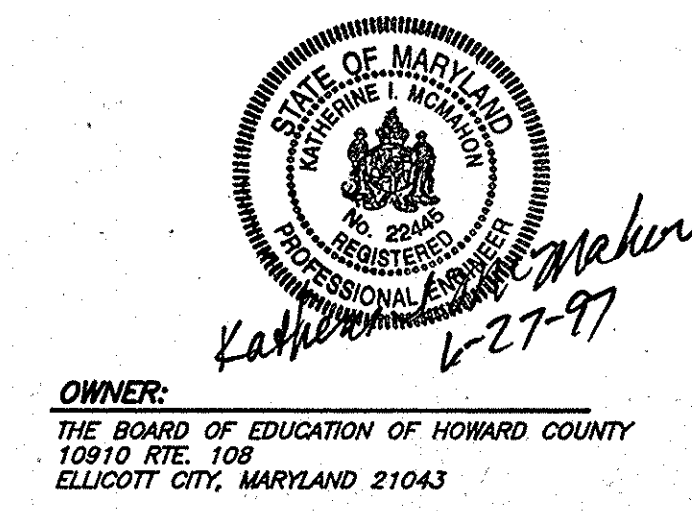
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	7/10/97
Chief, Development Engineering Division	Date
<i>[Signature]</i>	7/10/97
Chief, Division of Land Development	Date
<i>[Signature]</i>	7/10/97
Director	Date



NO.	REVISION	DATE
2	WELL COURTYARD w/ CLASSROOMS, NEW WALKWAY, REPLACE CURB	12-14-07



REVISION 2
2/16/04
FISHER COLLINS
FOR CARTER INC.

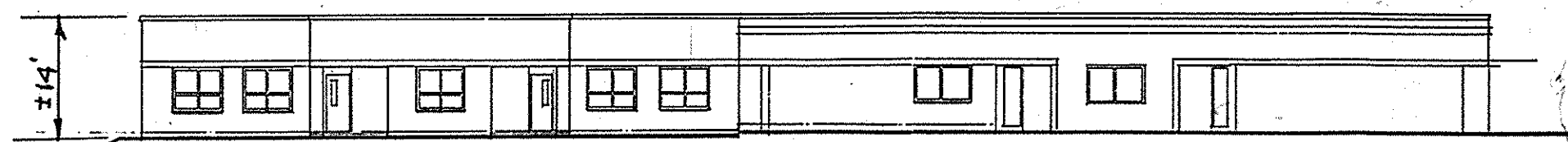


OWNER:
THE BOARD OF EDUCATION OF HOWARD COUNTY
10910 RTE. 108
ELLICOTT CITY, MARYLAND 21043

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.

DESIGNED KWM	COVER SHEET WATERLOO ELEMENTARY SCHOOL TAX MAP 37, GRID 8, PARCEL 489 FIFTH (6TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=100'
DRAWN ZAH		DRAWING 1 of 9
CHECKED EJM		JOB NO. 98-172
DATE 6-4-97		FILE NO. 98-172-X

FOR: NICHOLS, BANIA, CAMPBELL ARCHITECTS
2705-A COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046



SOUTH ELEVATION

Addition Existing

N 59°02'20" E
E 138°00'00"

R-20 Zone
HOWARD COUNTY METROPOLITAN COMMISSION
L. 1003 F. 134

See Typical Section A-A Sheet 3.

NOTE
THIS CLEARANCE MUST BE VERIFIED PRIOR TO CONSTRUCTION.

Relocate and reconstruct paved play area. (P-C Paving) Restripe and relocate (2) existing basketball backstops as directed by owner.

Private Bioretention Area No. 1 for SWM Quality and Quantity. (See planting details sheet 9).

15 LF ungrouted rip-rap
See detail sheet 3.

TYPICAL PARKING LOT LIGHTING SHOWN THUS TO BE 250 WATT H.I.S. CUT-OFF BOX LIGHTS MOUNTED ON 20" ALUMINUM POLES. (SEE ELECTRICAL PLANS - 5 REQ'D)

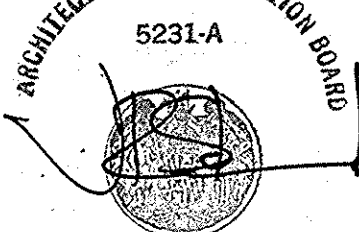
EVANGELICAL LUTHERAN ST. JOHNS OF PFEIFFERS CORNER
L. 348 F. 441
R-20 Zone

NOTE
EXTREME CARE TO BE TAKEN WHEN FRAMING PROPOSED CURB & GUTTER OVER THE EXISTING GAS MAIN.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary.

NAME: [Signature] DATE: 6/27/97



No.	Revision	Date
1	Add Building Addition, 4' SHC & Concrete Walk	5/16/97
2	INFILL COURTYARD w/ 2 CLASSROOMS, NEW WATER LINE, CANTON	12/14/97

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/5/97
Chief, Development Engineering Division

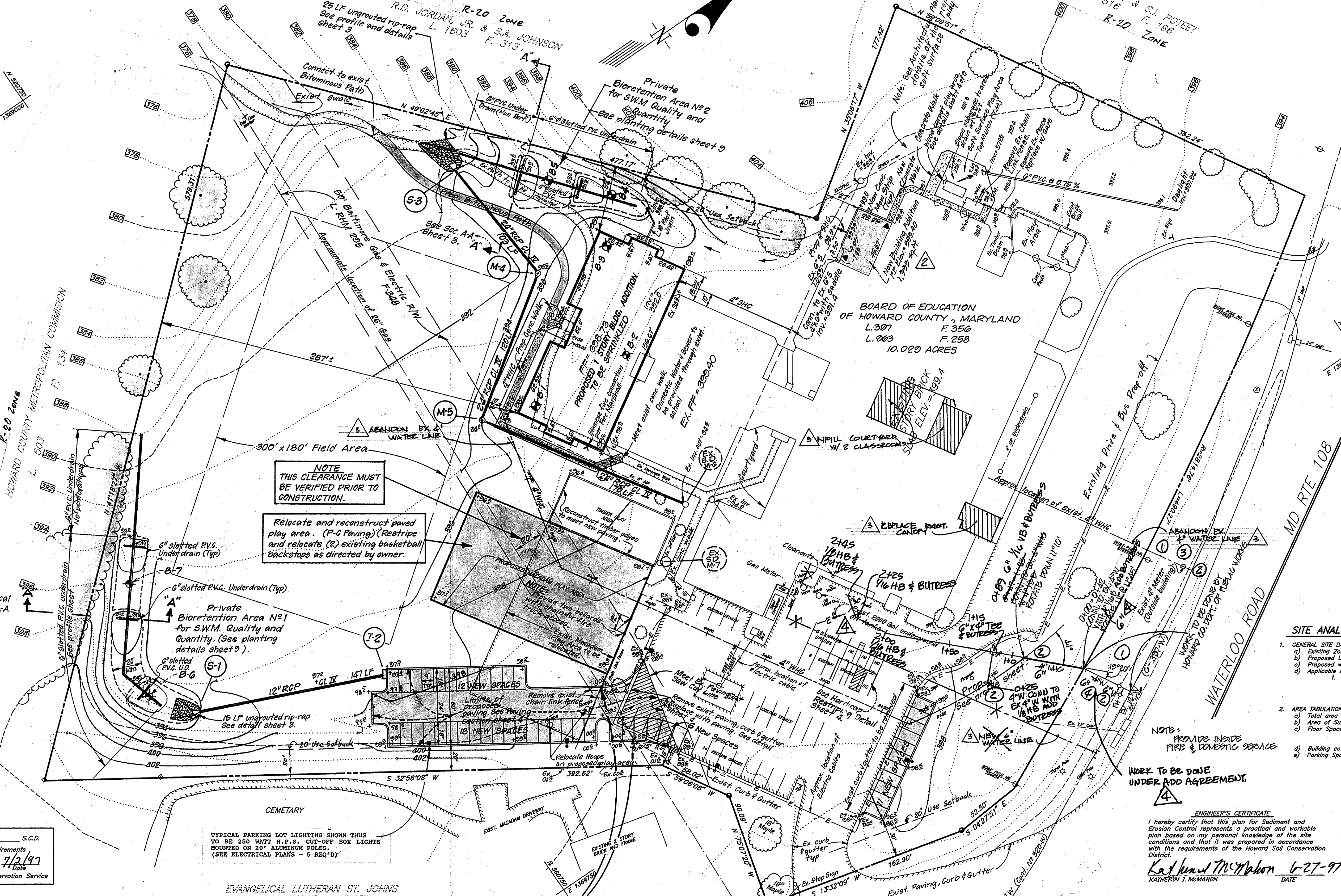
[Signature] 7/16/97
Chief, Division of Land Development

[Signature] 7/16/97
Director

Reviewed for HOWARD S.C.D. and meets Technical Requirements
[Signature] 7/2/97
U.S. Natural Resources Conservation Service

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

[Signature] 7/2/97
Approved



CONSTRUCTION NOTES

- ALL WATERLINE CONSTRUCTION IN WATERLOO ROAD R/W SHALL CONFORM TO VOLUMES II AND III OF THE HOWARD COUNTY DESIGN MANUAL.
- TEST PIT TO LOCATE EXIST. PIPE AND/OR FITTING. REPORT TO ENGINEER THE HOR. AND VERT. LOCATION.
- TO ABANDON EXIST. WATERLINE, SHOT DOWN EX. 12" W/ (COOT # 320-W) COT ADD REMOVE TAPPING SLEEVES AND A SECTION OF EX. 12" W/ID. INSTALL NEW SECTION OF 12" W/ID WITH COUPLINGS PER H.C.D.P.W. REQUIREMENTS. REMOVE AND DISPOSE OF METER VAULT TOPS. PIPE AND VALVES. REMOVE METER AND RETURN TO HOWARD CO. BACK FILL METER VAULT WITH COMPACTED CR-6 STONE TO SUBGRADE, TOPSOIL AND SEED.
- REPLACE 4" X 6" R AND 4" X 4" WITH 6" V AND 6" W HC TO PROPERTY LINE.

[Signature] 6-27-98
Professional Engineer Seal

SITE ANALYSIS

- GENERAL SITE DATA
 - Total area of site: 10.4 AC +/-
 - Area of Submission/Disturbance: 11,530 S.F. +/-
 - Floor Space - Existing Building: 61,575 S.F. +/-
 - Floor Space - Proposed Addition: 11,530 S.F. +/-
 - Total: 73,105 S.F. +/-
- AREA TABULATION
 - Building coverage = 73,105 S.F. = 1.88 AC = 16.1% of Site
 - Parking Spaces: Existing 38, New Spaces 42, Total Spaces 80+ (including H.C. Spaces 4)

NOTE: PROVIDE INSIDE FIRE & DOMESTIC SERVICE

WORK TO BE DONE UNDER ADD AGREEMENT.

ENGINEER'S CERTIFICATE
I hereby certify that this plan for Sediment and Erosion 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.
[Signature] 6-27-97
KATHERINE T. McMAHON DATE

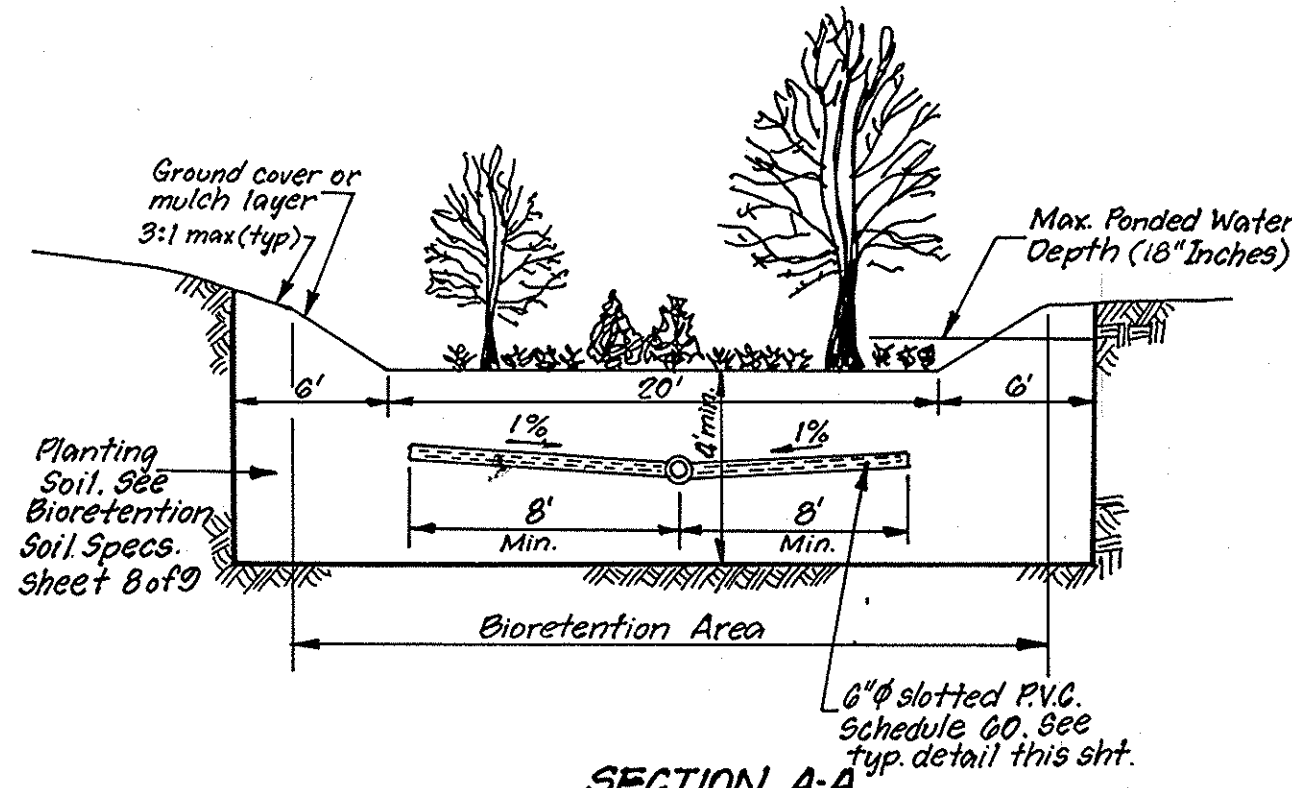


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ENGINEERS • PLANNERS • SURVEYORS
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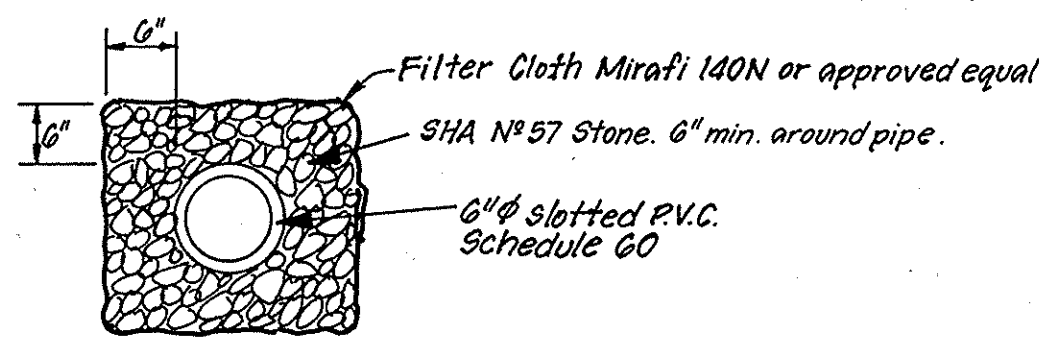
DESIGNED R/W/M	SITE DEVELOPMENT PLAN FOR PARKING AREA AND BUILDING ADDITION WATERLOO ELEMENTARY SCHOOL TAX MAP 37, GRID B, PARCEL 489 FIFTH (6TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=40'
DRAWN Z.P.H.		DRAWING 2 of 9
CHECKED K/M	JOB NO. 96-172	FILE NO. 96-172-X
DATE 6-8-97	OWNER: THE BOARD OF EDUCATION OF HOWARD COUNTY 10910 RTE. 108 ELICOTT CITY, MARYLAND 21043	DATE 5/14/98

FOR: NICHOLS SANTA CAMPBELL ARCHITECTS
715-A COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046

- Notes**
- 1) See operation and maintenance schedule for Bio-Retention Area, sheet B of D.
 - 2) Insitu testing to be done on planting soil by Geotechnical Engineer.
 - 3) See planting plans for Bioretention Area sheet D of D.



SECTION A-A
TYPICAL SECTION THROUGH BIORETENTION AREA
Not to Scale

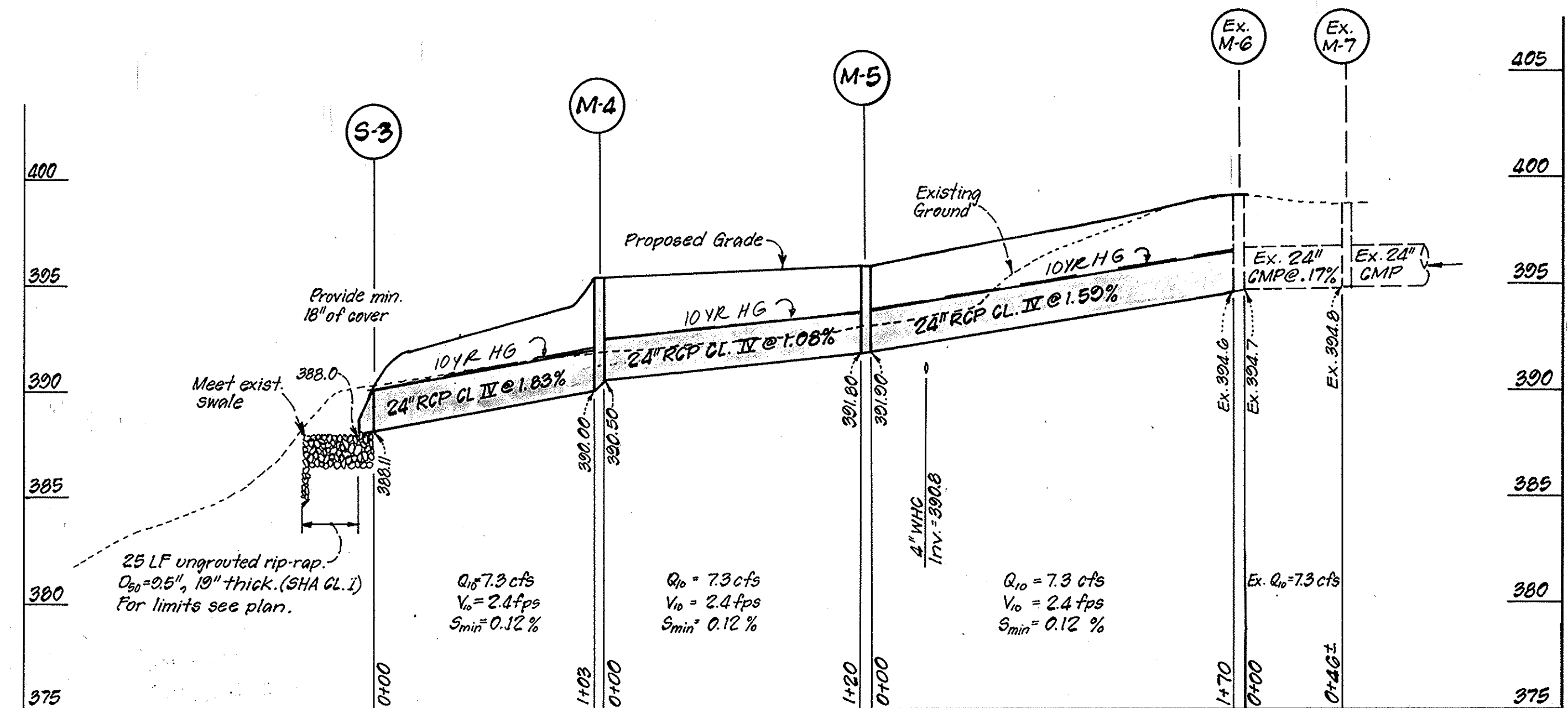


TYPICAL UNDERDRAIN DETAIL
Not to Scale

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
12"	RCP CL. IV	147 LF
24"	RCP CL. IV	303 LF
10"	PVC CL. 80	27 LF

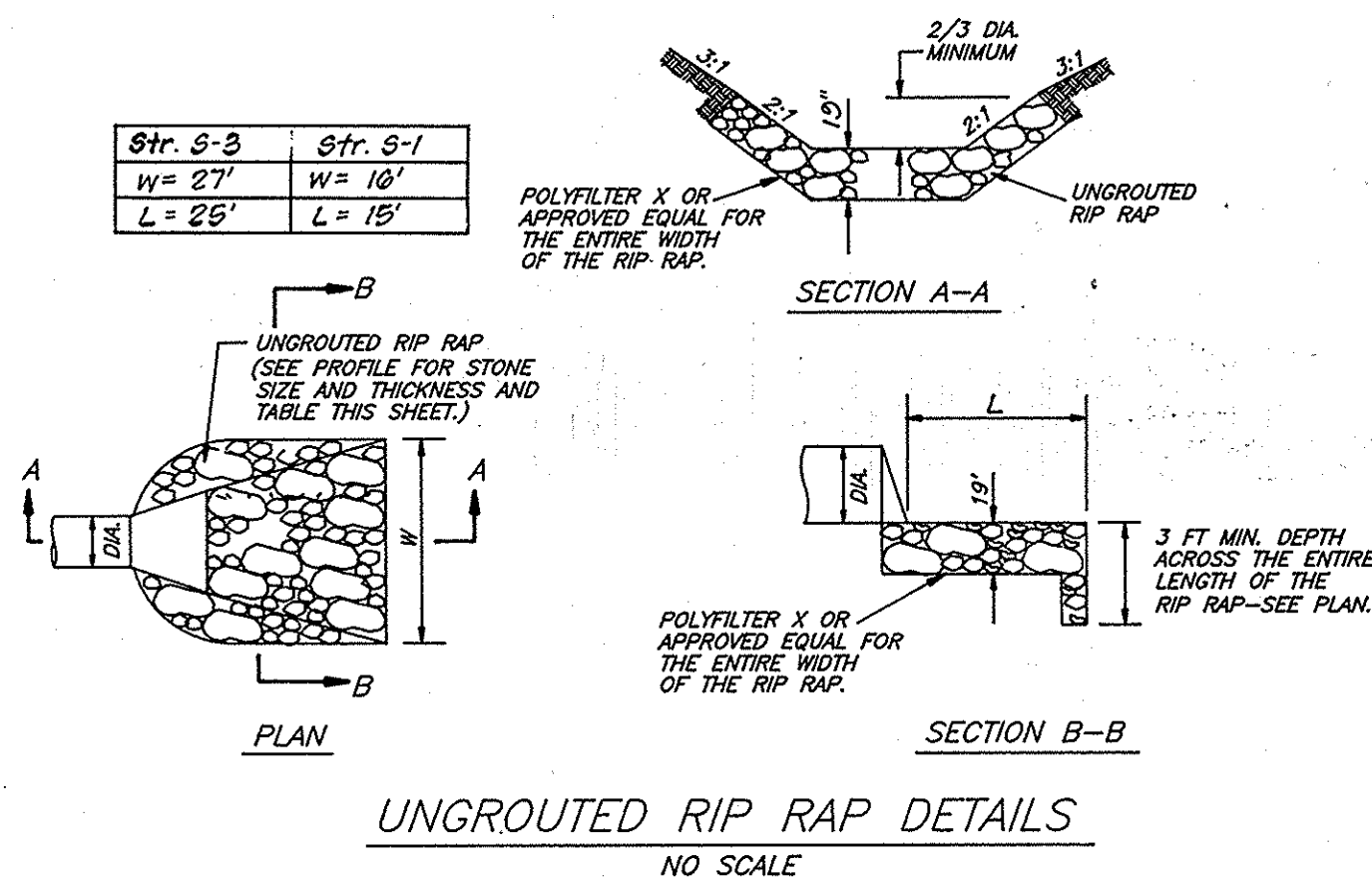
STRUCTURE SCHEDULE A						
Nº	TYPE	INV. IN	INV. OUT	TOP EL.	REMARKS	LOCATION
S-1	Concrete End Section	302.50	302.50	-	Ho. Co. Std. SD 5.92 12" Ø	N. 560228.73 E. 1362472.54 (E.A.)
I-2	A-5 Inlet	-	324.03	307.0	Ho. Co. Std. SD 4.40 W=2'-0" N. 566733.32 E. 1362520.61 (R.F. Inside Corner)	
M-5	Shallow Brick Manhole	301.00	301.80	306.0	Ho. Co. Std. G 5.05 4' Sq	N. 560204.84 E. 1362410.26 (E)
S-3	Concrete End Section	308.11	308.00	-	Ho. Co. Std. SD 5.51 24" Ø	N. 560207.02 E. 1362234.80 (Epd of Pipe)
M-4	Shallow Brick Manhole	300.50	300.00	305.50	Ho. Co. Std. G 5.05 4' Sq	N. 561006.83 E. 1362330.73 (E)

△ Provide Fully developed inverts.

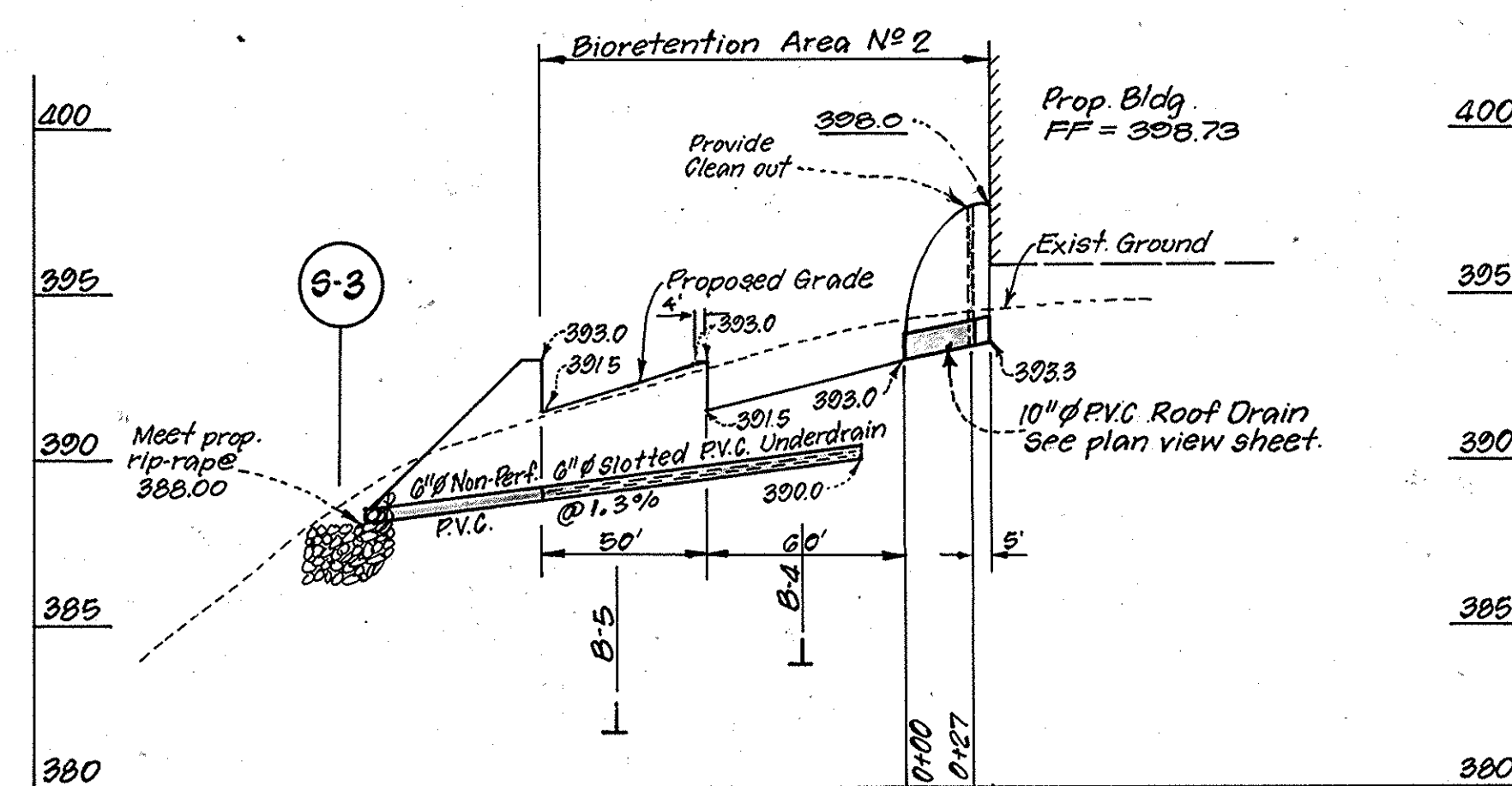


STORM DRAIN PROFILE

Scale: HOR: 1"=50'
VER: 1"=5'

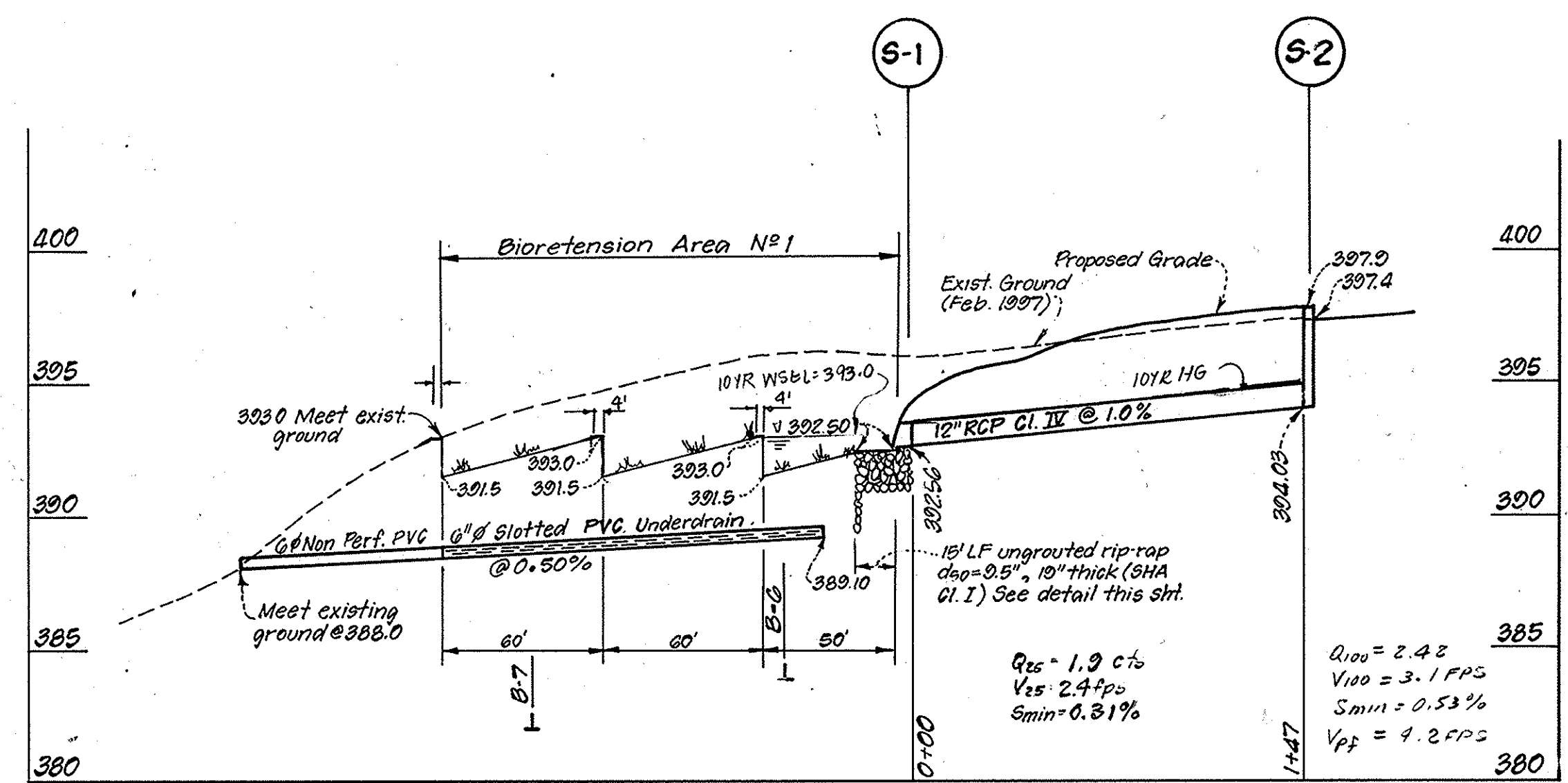


UNGRAUTED RIP RAP DETAILS
NO SCALE



BIORETENTION AREA PROFILE

Scale: HOR: 1"=50'
VER: 1"=5'



STORM DRAIN & BIORETENTION PROFILE

Scale: HOR: 1"=50'
VER: 1"=5'

Reviewed for: HOWARD S.C.D.
and meets Technical Requirements

Signature: _____ Date: _____
U.S. Natural Resources Conservation Service

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary."

Signature: Wahj Date: 6/21/97
NAME: _____ DATE: _____

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Sediment and Erosion 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.

Signature: Katherine McMahon Date: 6-27-97
KATHERINE I. MCMAHON DATE



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DESIGNED KMM	STORM DRAIN PROFILES AND DETAILS WATERLOO ELEMENTARY SCHOOL TAX MAP 37, GRID 8, PARCEL 489 FIFTH (6TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN DRAWING 3 of 9
DRAWN ZAH		JOB NO. 96 172
CHECKED KMM	DATE 6-8-97	FILE NO. 96-172-X

FOR: NICHOLS, BANFI, CAMPBELL ARCHITECTS
7165-A COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046

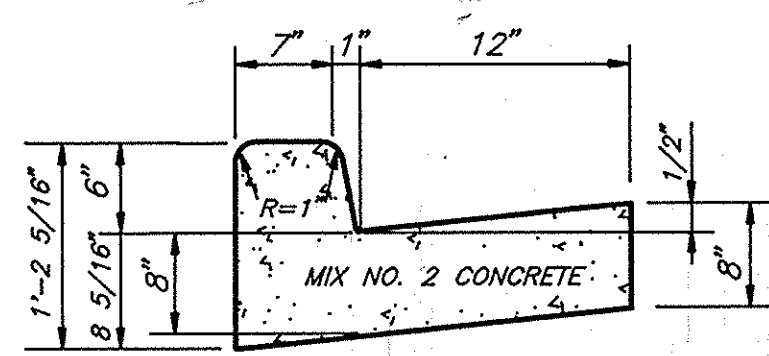
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: Chad Damman Date: 7/10/97
Chief, Development Engineering Division

Signature: Cecily Hammit Date: 7/14/97
Chief, Division of Land Development

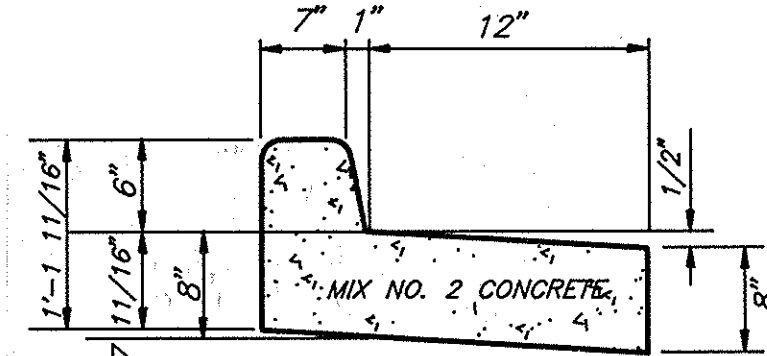
Signature: Joseph Sackett Date: 7/10/97
Director

- NOTES
1. 4000 PSI AIR ENTRAINED CONCRETE.
 2. 10' MAX. BETWEEN CONTROL JOINTS.
 3. 50' MAX. BETWEEN EXPANSION JOINTS.



STANDARD 6" COMBINATION CURB AND GUTTER

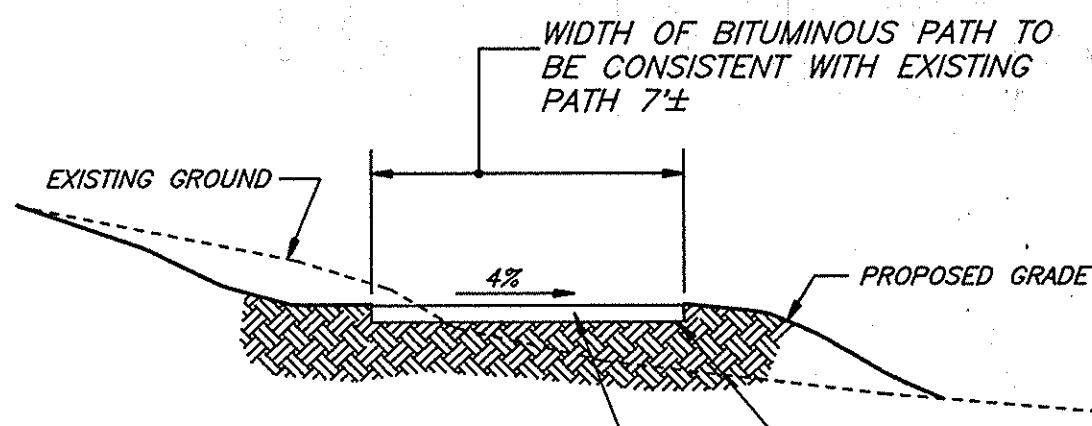
NO SCALE



REVERSE 6" COMBINATION CURB AND GUTTER

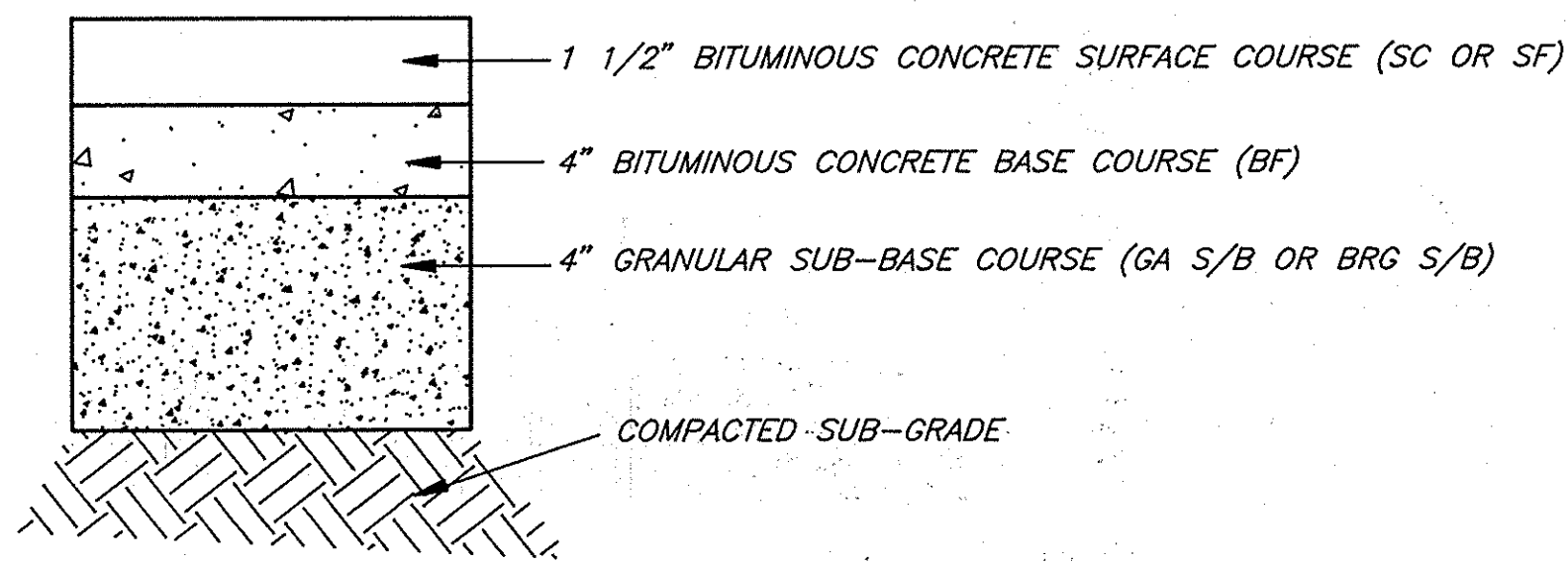
TO BE USED WHERE FLOW IS AWAY FROM CURB.

NO SCALE



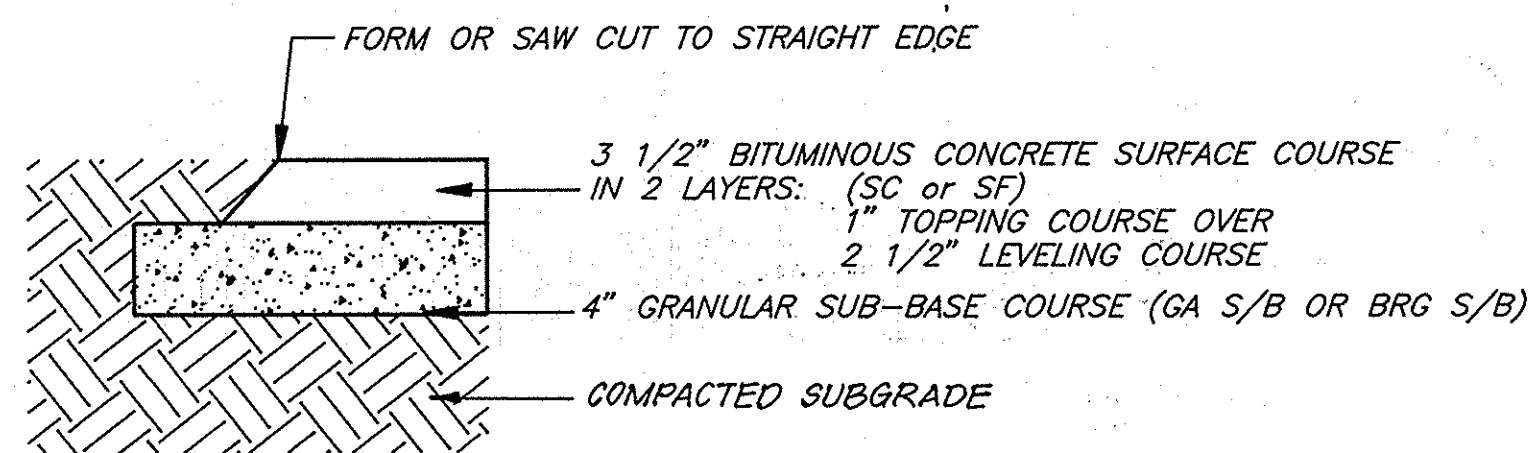
BITUMINOUS PATH DETAIL

NO SCALE



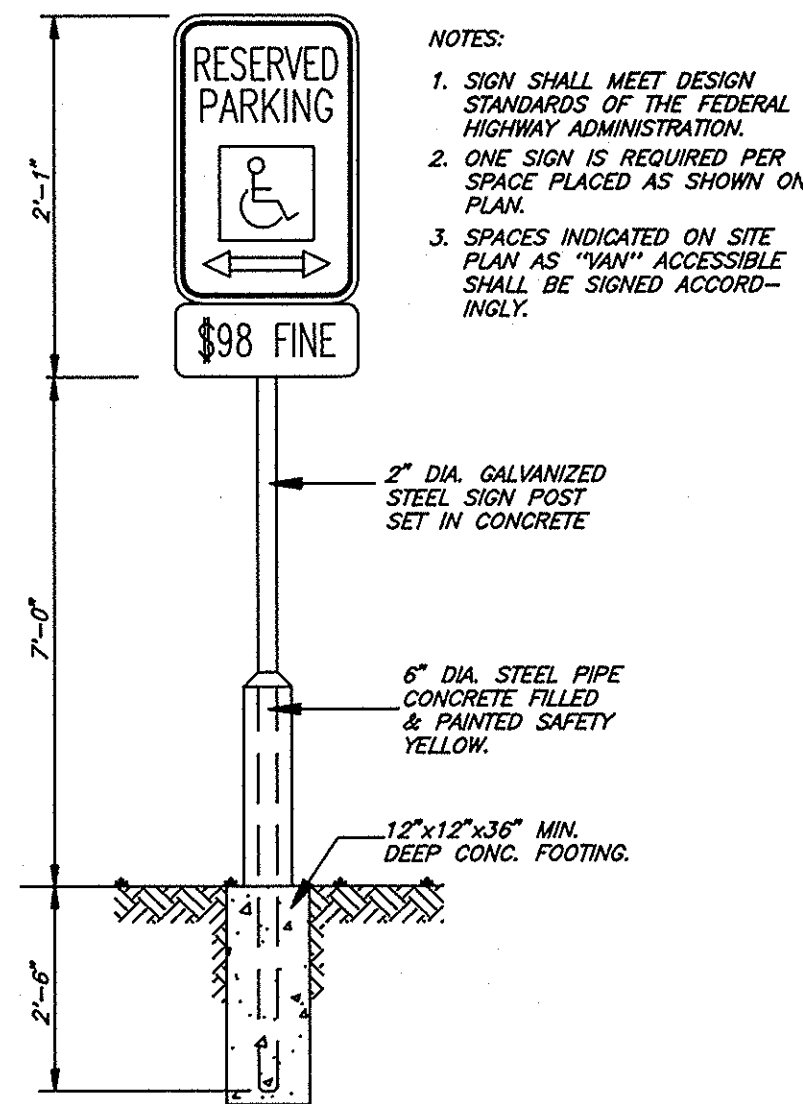
BITUMINOUS CONCRETE PAVING SECTION PARKING AREAS (P-A)

NO SCALE



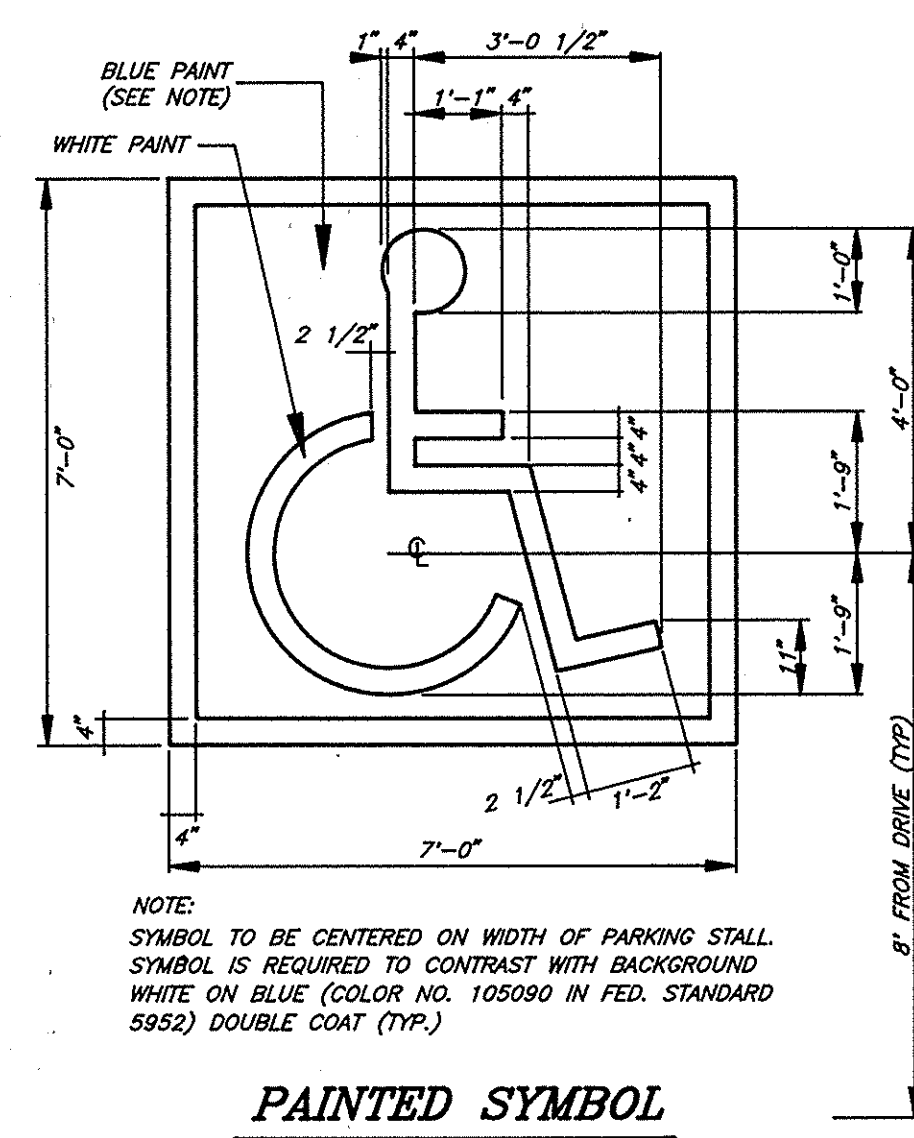
BITUMINOUS CONCRETE PAVING MULTI PURPOSE PLAY COURT

NO SCALE



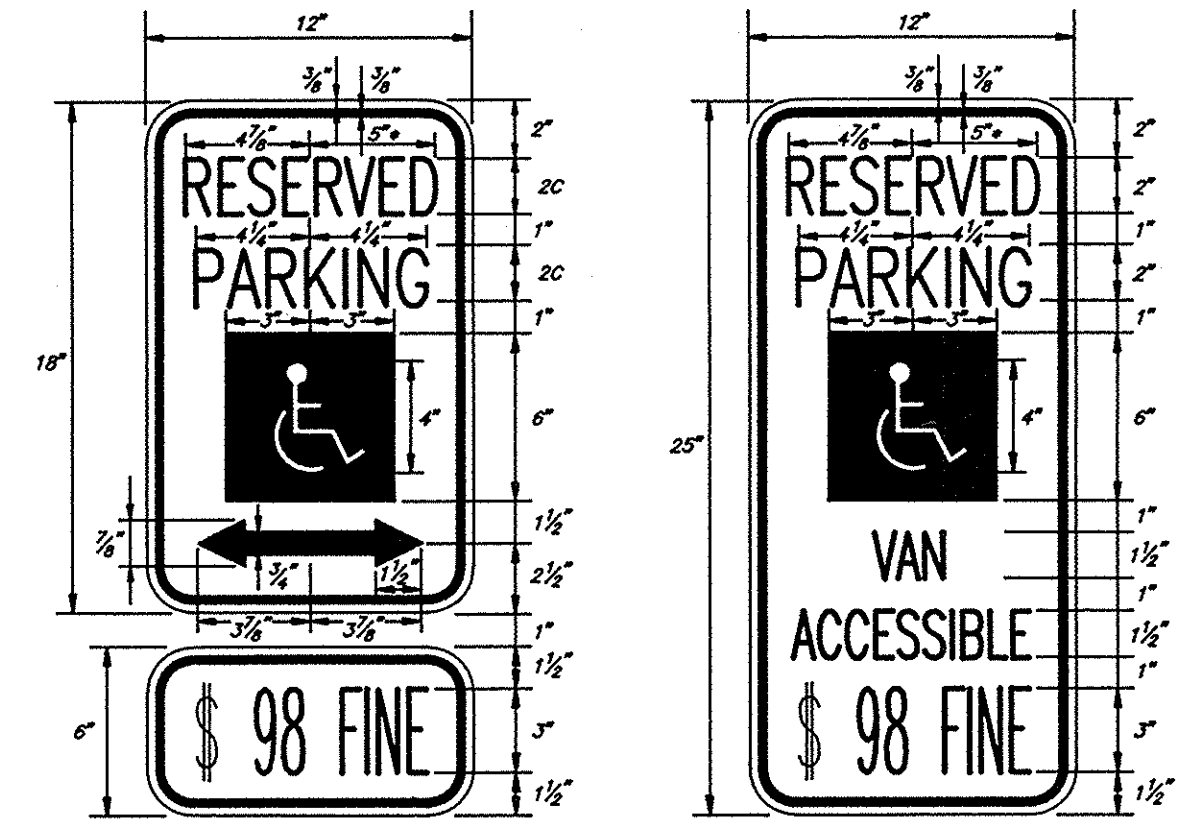
HANDICAP PARKING SIGN DETAIL

NO SCALE



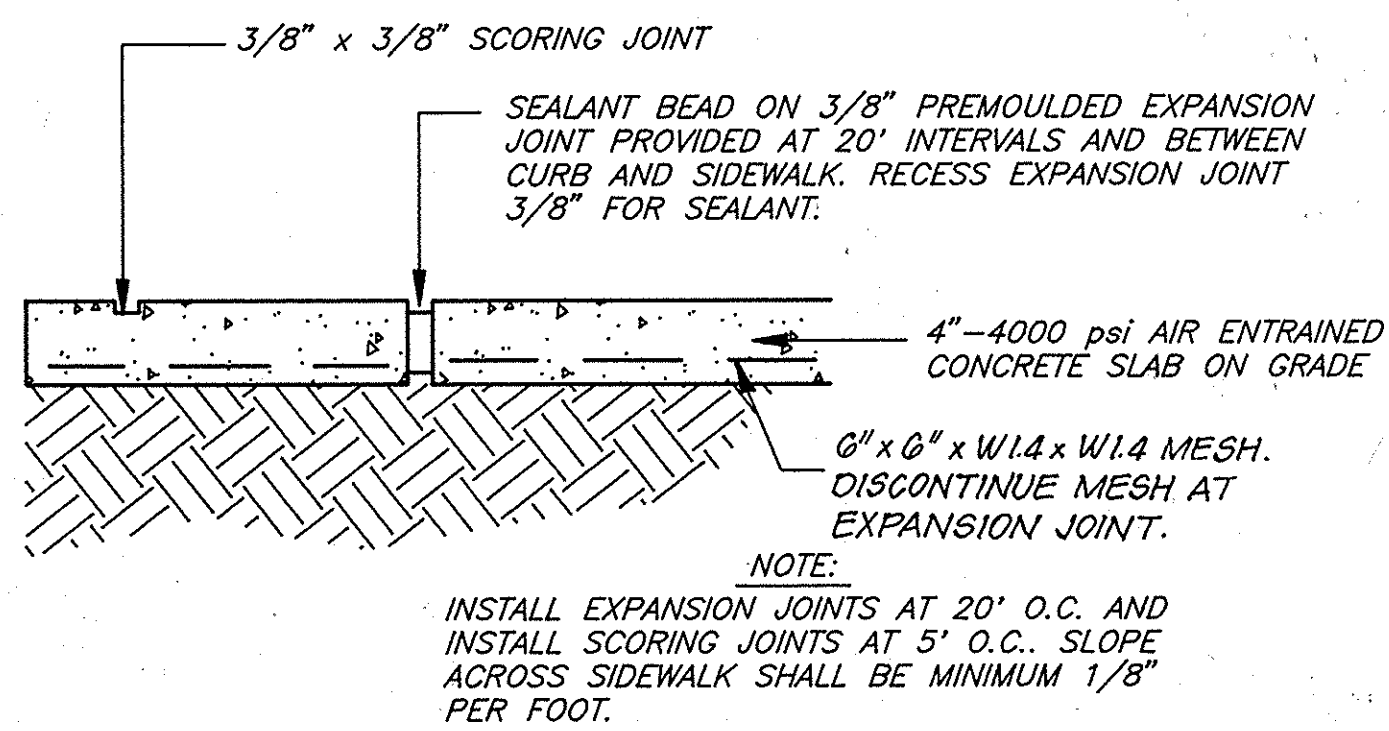
PAINTED SYMBOL

NO SCALE



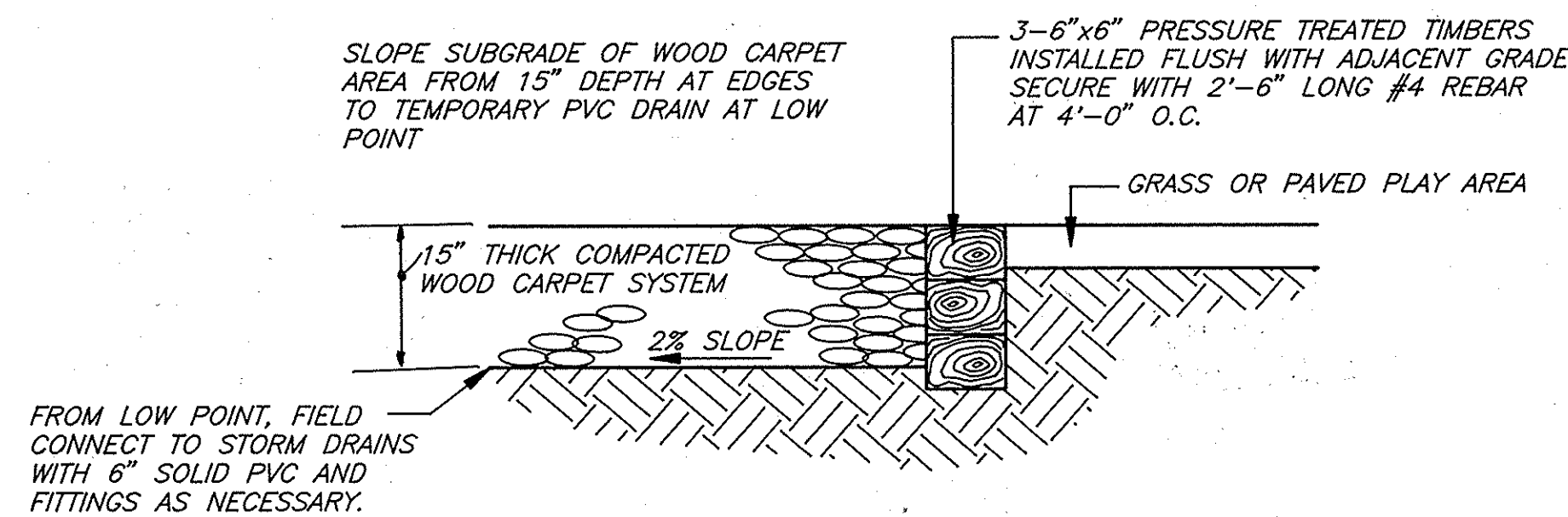
HANDICAP PARKING RESTRICTION SIGN DETAIL

NO SCALE



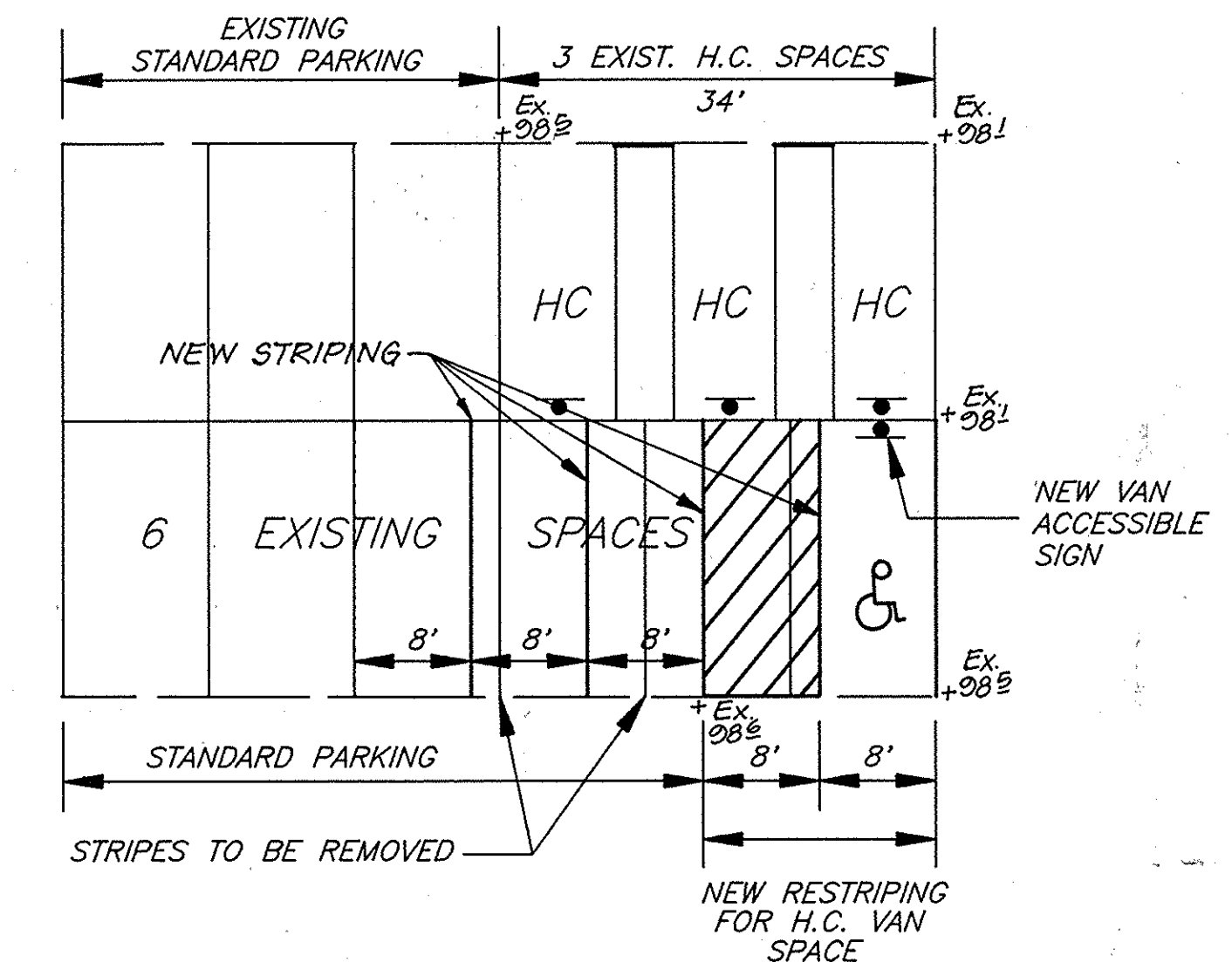
CONCRETE WALK DETAIL

NO SCALE



PLAY AREA SURFACE AND DRAINAGE DETAILS

NO SCALE



RESTRIPIING DETAIL FOR HANDICAP PARKING

NO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Walter D. Hamilton 7/2/97
Chief, Development Engineering Division

Cindy Hamilton 7/10/97
Chief, Division of Land Development

David R. Sackett 7/10/97
Director

Reviewed for HOWARD S.C.D. and meets technical requirements

Charles Summons 7/2/97
Signature Date
U.S. Natural Resources Conservation Service

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

John R. Johnston 7/2/97
Approved

DEVELOPER'S/BUILDER'S CERTIFICATE

"I, We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary."

W. J. G. Jr. NAME
4/27/97 DATE

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Sediment and Erosion 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.

Katherine I. McMahon 6-27-97
KATHERINE I. MCMAHON DATE

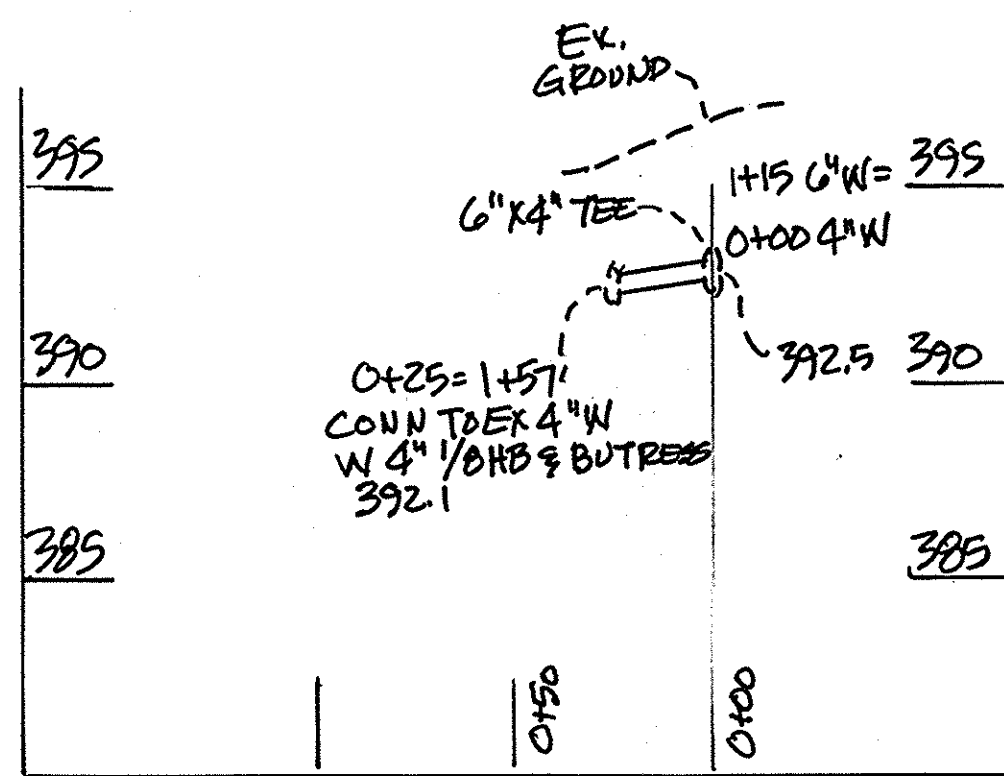


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ENGINEERS • PLANNERS • SURVEYORS

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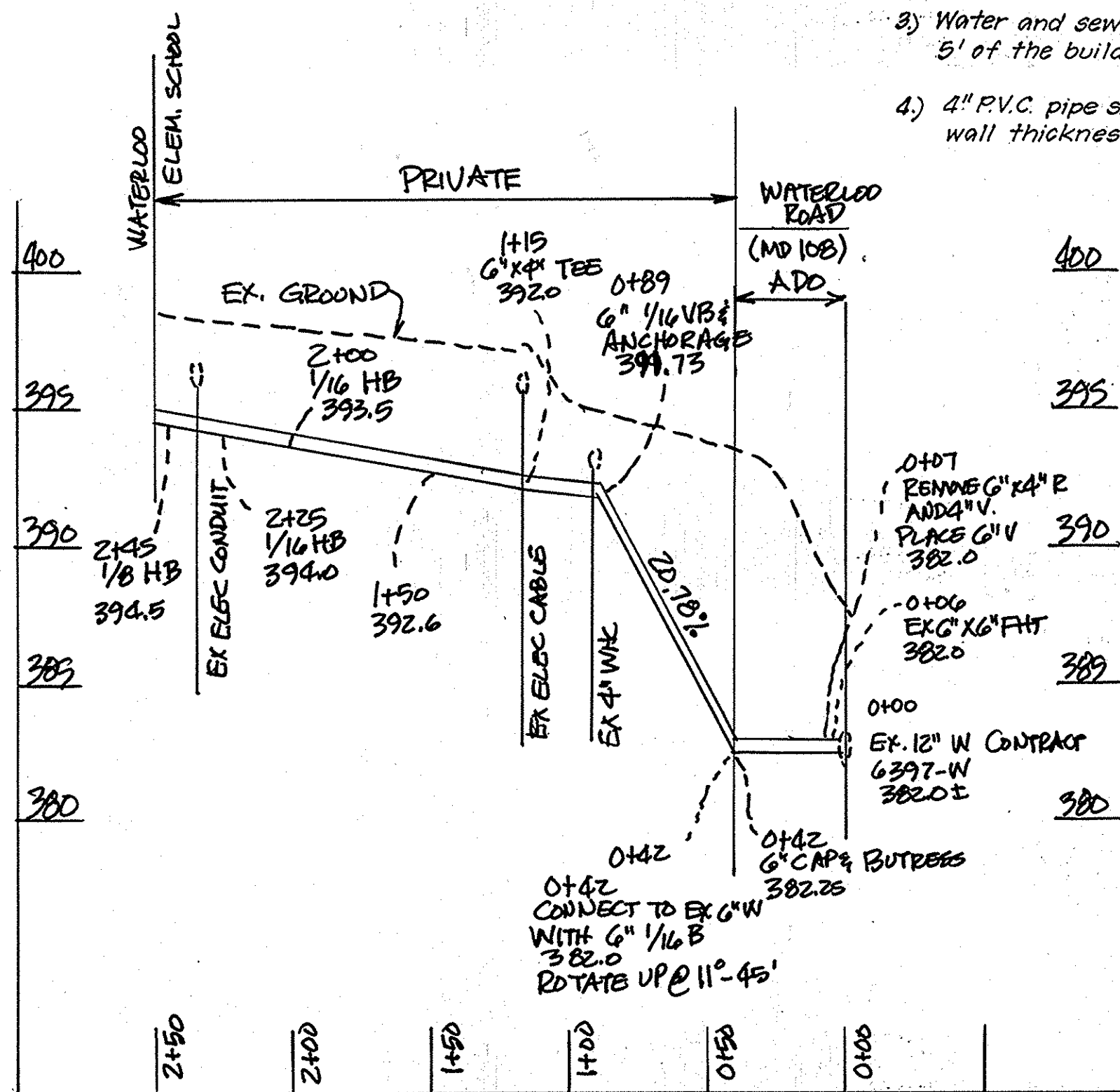
DESIGNED KIWM	PAVING DETAILS WATERLOO ELEMENTARY SCHOOL TAX MAP 37, GRID 8, PARCEL 489 FIFTH (6TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE —
DRAWN ZAH		DRAWING 4 of 9
CHECKED KIM		JOB NO. 06-172
DATE 6-4-97		FILE NO. 06-172-X

FOR: NICHOLS BANTA CHAMPRELL ARCHITECTS
7165-A COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046



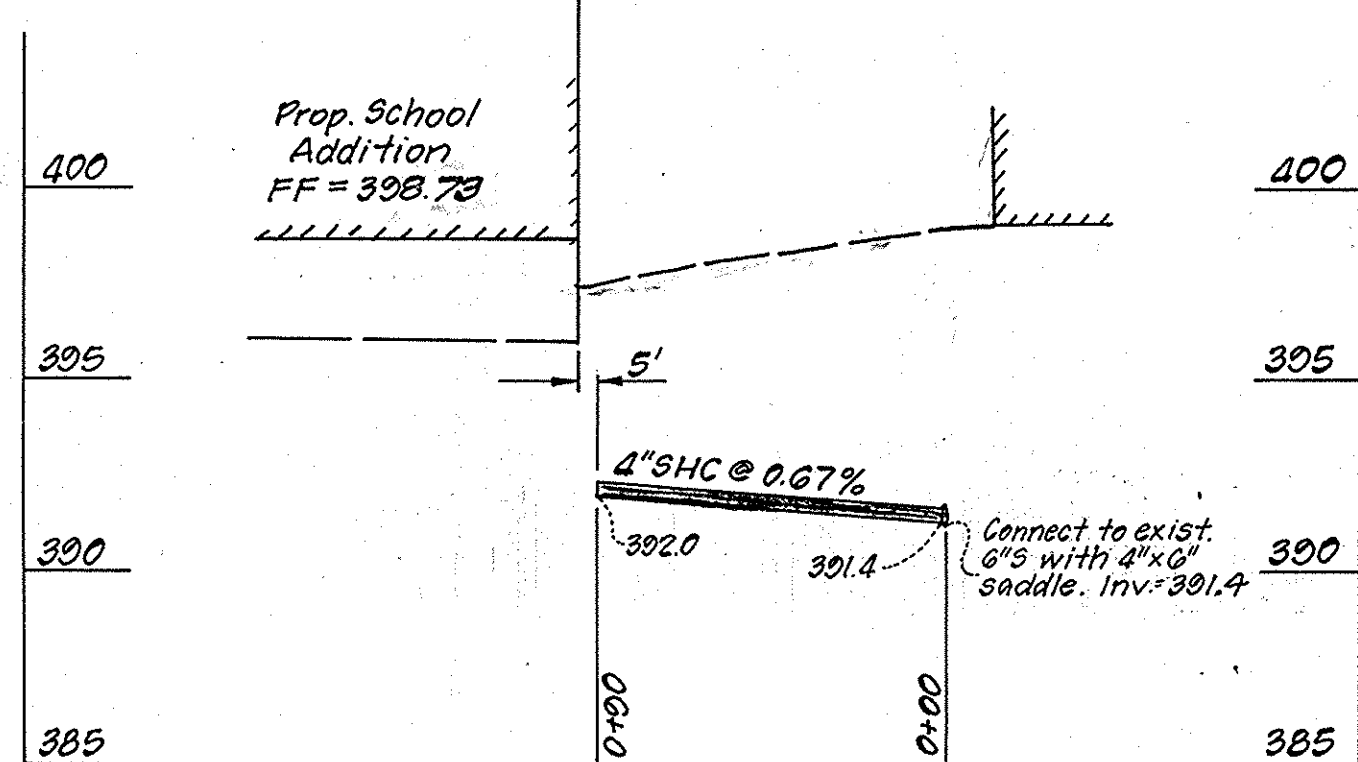
NEW 4" WATER SERVICE PROFILE

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



NEW WATER 6" SERVICE PROFILE

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

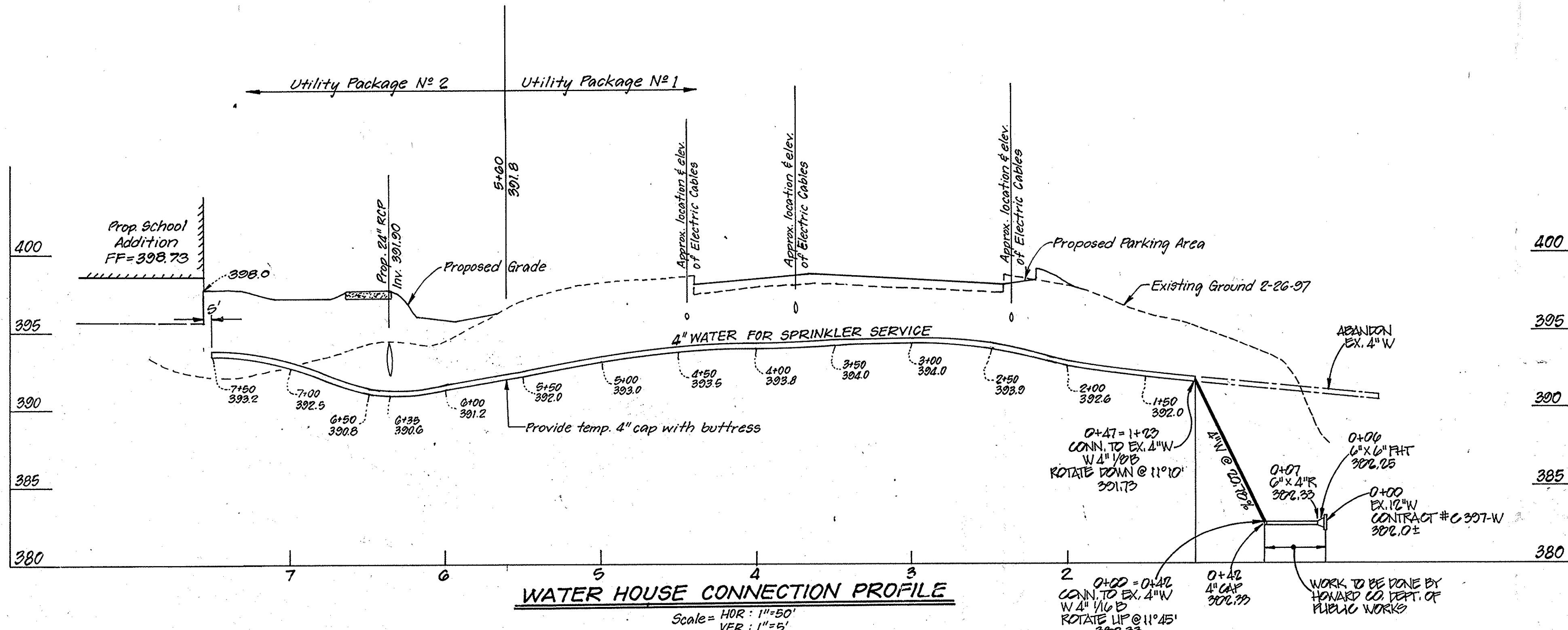


S.H.C. PROFILE

Scale: Hor: 1"=50'
Ver: 1"=5'

NOTES:

- All construction methods and materials for on-site water and sewer systems shall follow the current editions of the Howard County Plumbing Code, supplemented by the Howard County Standard Details and Specifications where necessary.
- Area where water house connections are to be built shall be at final grade and the water house connections shall be laid with a minimum of 3.5' cover. Water house connection shall be 4" diameter, Ductile Iron, Class 52.
- Water and sewer house connection shall be built to within 5' of the building.
- 4" P.V.C. pipe shall meet the requirements of A.S.T.M. D.3034, wall thickness classification SDR-35.



WATER HOUSE CONNECTION PROFILE

Scale: HOR: 1"=50'
VER: 1"=5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0				FILL - Sampled As Clayey SILT, Trace Gravel, Brown, Moist, Silty (FILL)	392.00
1	SS 18 12				391.5
2	SS 18 12				391.0
3	SS 18 12				390.5
4	SS 18 12				390.0
10				END OF BORING @ 10.0'	

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0				FILL - Sampled As Silty SILT, Trace Gravel, Brown, Moist, Silty (FILL)	392.00
1	SS 18 12				391.5
2	SS 18 12				391.0
3	SS 18 12				390.5
4	SS 18 12				390.0
10				END OF BORING @ 10.0'	

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0				Silty Medium to Coarse SAND, Trace Clay, Brown to Tan, Moist, Medium Dense (SM), LOAMY SAND	395.00
1	SS 18 14				394.5
2	SS 18 12				394.0
3	SS 18 12				393.5
4	SS 18 12				393.0
5	SS 18 12				392.5
10				Clayey Sand at 12 feet	388.0
12				END OF BORING @ 12.0'	

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	DESCRIPTION OF MATERIAL	ELEVATION (FT)
0				Clayey SILT, Trace Sand, Brown, Moist, Hard (ML), CLAY LOAM	395.00
1	SS 18 14				394.5
2	SS 18 16				394.0
3	SS 18 12				393.5
4	SS 18 12				393.0
5	SS 18 14				392.5
10				END OF BORING @ 12.0'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

Reviewed for HOWARD S.C.D. and meets Technical Requirements
 Signature: [Signature]
 Date: 7/10/97
 U.S. Natural Resources Conservation Service
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
 Signature: [Signature]
 Date: 7/10/97
 Approved

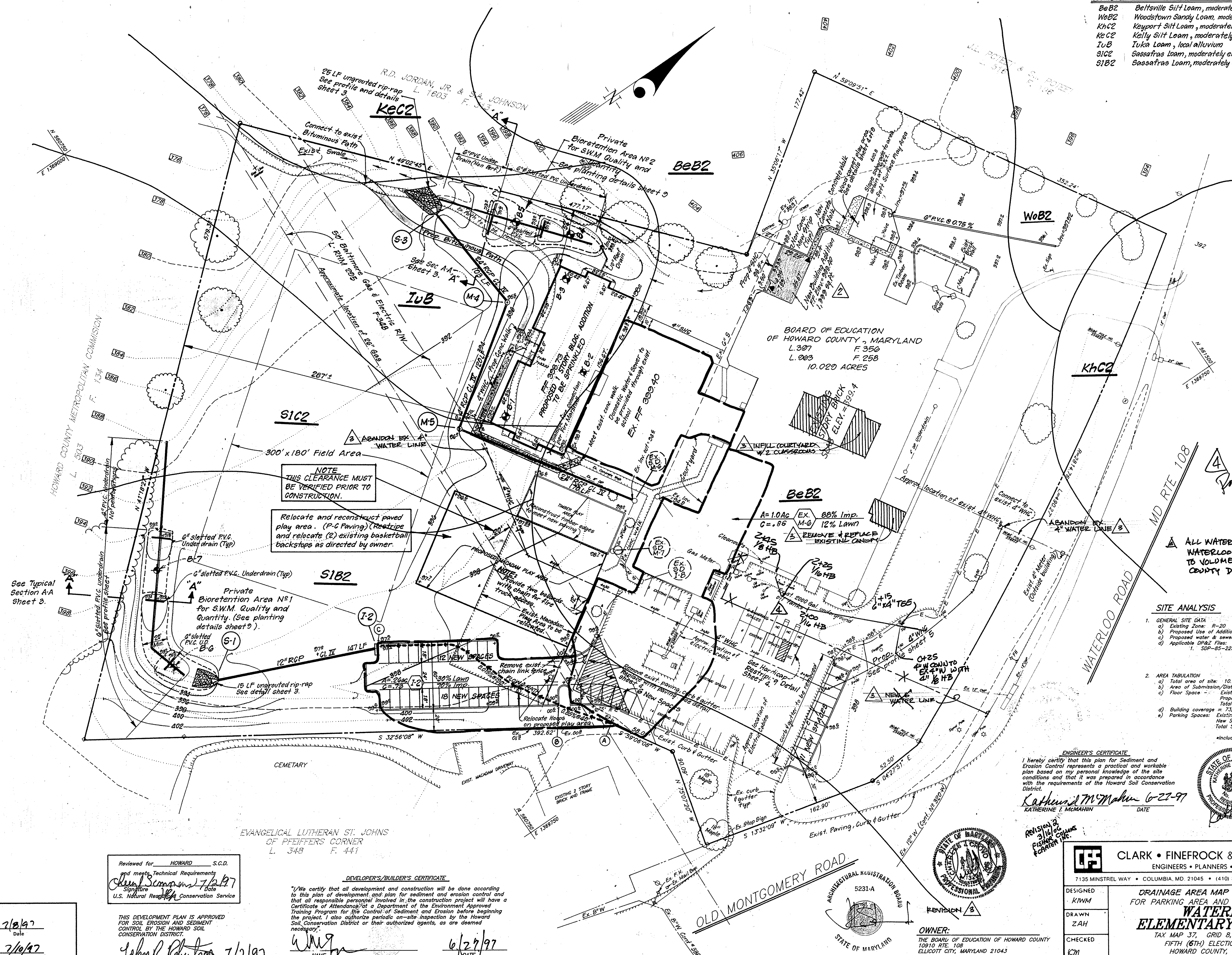
DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department 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 or their authorized agents, as are deemed necessary.
 Signature: [Signature]
 Date: 6/27/97
 NAME: [Name]
 DATE: [Date]

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion 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.
 Signature: [Signature]
 Date: 6-27-97
 KATHERINE L McMAHON
 DATE

4 REPLACE WATER SERVICE CONNECTIONS
 1 REVISE PROFILE TO SHOW NEW CONN. TO 4" W PROVIDED BY HOWARD CO. DEPT. OF PUBLIC WORKS
 NO. 1
 DATE 6/25/08
 DATE 5/14/00
 DATE
 CLARK • FINEFROCK & SACKETT, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.
 DESIGNED: KMM
 DRAWN: JAH
 CHECKED: KMM
 DATE: 6-8-97
 WATER HOUSE CONNECTION PROFILE AND SOIL BORING LOGS
 WATERLOO ELEMENTARY SCHOOL
 TAX MAP 37, GRID 8, PARCEL 489
 FIFTH (6TH) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN
 DRAWING: 5 of 9
 JOB NO.: 96-172
 FILE NO.: 96-172-X

SOILS LEGEND

SYMBOL	DESCRIPTION	SLOPES
BeB2	Beltsville Silty Loam, moderately eroded	1 to 5%
WoB2	Woodstown Sandy Loam, moderately eroded	1 to 5%
KhC2	Keyport Silty Loam, moderately eroded	3 to 10%
KeC2	Kelly Silty Loam, moderately eroded	8 to 15%
IuB	Iuka Loam, local alluvium	1 to 5%
SiC2	Cassatras Loam, moderately eroded	5 to 10%
SiB2	Cassatras Loam, moderately eroded	1 to 5%



ALL WATERLINE CONSTRUCTION IN WATERLOO ROAD R/W SHALL CONFORM TO VOLUME II AND III OF THE HOWARD COUNTY DESIGN MANUAL.

SITE ANALYSIS

- GENERAL SITE DATA
 - Existing Zone: R-20
 - Proposed Use of Addition: Classrooms
 - Proposed water & sewer system: Public
 - Applicable DP&Z Files: SDP-85-223
- AREA TABULATION
 - Total area of site: 10.4 AC +/-
 - Area of Submission/Disturbance: 61,575 S.F. +/-
 - Floor Space - Existing Building: 11,530 S.F. +/-
 - Floor Space - Proposed Addition: 73,105 S.F. +/-
 - Total: 84,635 S.F. +/-
 - Building coverage = 73,105 S.F. = 1.68 AC = 16.1% of Site
 - Parking Spaces: Existing 38, New Spaces 42, Total Spaces 80+ (including H.C. Spaces 4)

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion 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.
 Katherine J. McMahon 6-27-97
 KATHERINE J. MCMAHON DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

7/10/97
 7/10/97
 7/10/97

Reviewed for HOWARD S.C.D. and meets Technical Requirements
 Signature Date
 U.S. Natural Resources Conservation Service

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary.
 Signature Date
 STATE OF MARYLAND

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

OWNER: THE BOARD OF EDUCATION OF HOWARD COUNTY
 10910 RTE. 108
 ELLICOTT CITY, MARYLAND 21043

No.	Revision	Date
1	Add Building Addition, 2" PVC & Concrete Wall	3/16/98
2	INFILL COURTYARD W/ CLASSROOMS, NEW WATER LINE, CANOPY	12/14/97
3	REPLACE WATER SERVICE CONNECTION	6/25/97

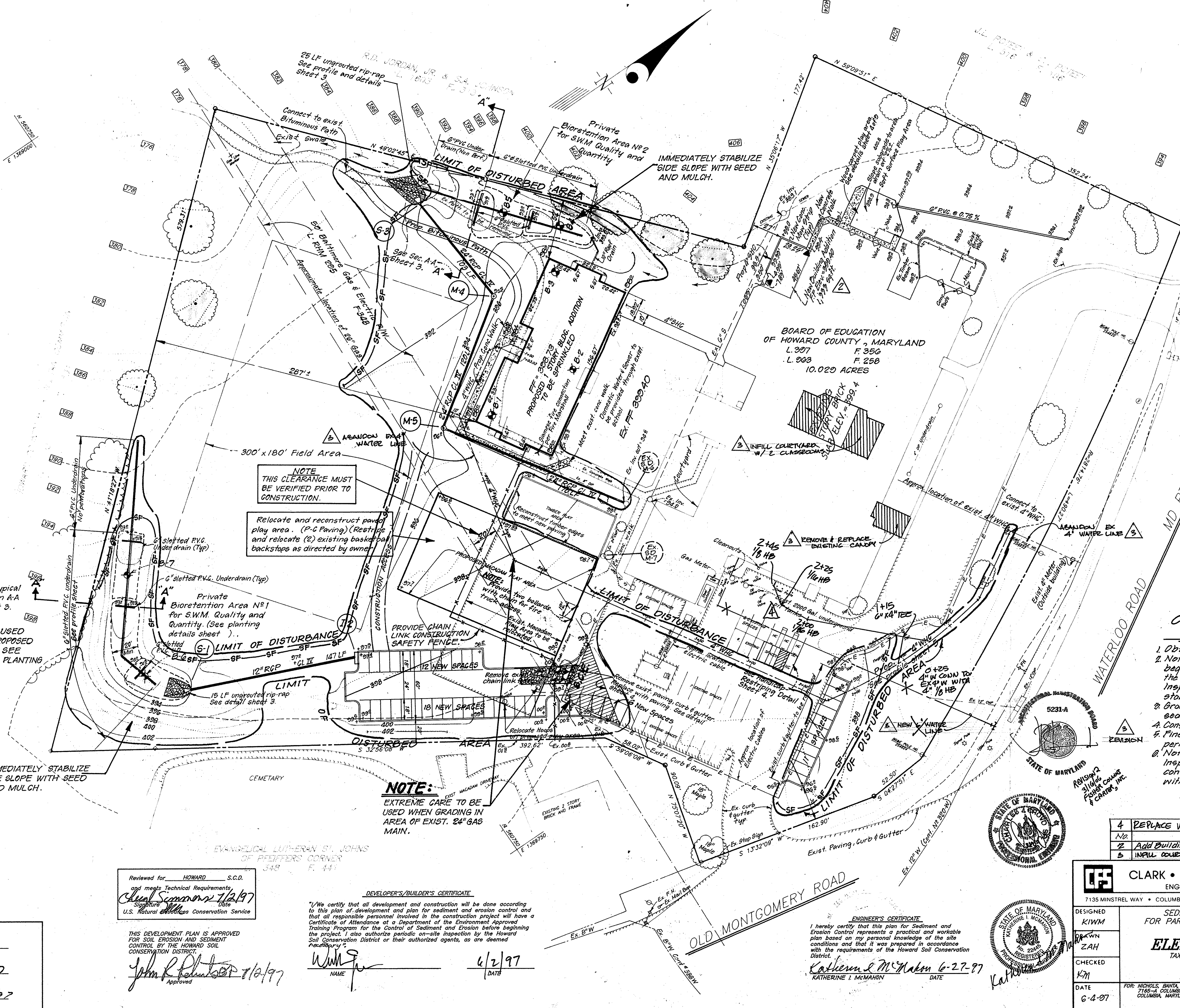
CLARK • FINEFOCK & SACKETT, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 • BALTO • (301) 621-8100 • WASH

DESIGNED: KJWM
 DRAWN: ZAH
 CHECKED: KJM
 DATE: 6-4-97

SCALE: 1"=40'
 DRAWING: 6 OF 9
 JOB NO.: 96-172
 FILE NO.: 96-172-5E

FOR: NICHOLS, BANTA, CAMPBELL ARCHITECTS
 7185-A COLUMBIA GATEWAY DRIVE
 COLUMBIA, MARYLAND 21046

SDP-97-132



NOTE:
EXTREME CARE TO BE USED WHEN GRADING THE PROPOSED BIORETENTION AREAS. SEE TYPICAL SECTION FOR PLANTING SOIL PLACEMENT.

NOTE:
THIS CLEARANCE MUST BE VERIFIED PRIOR TO CONSTRUCTION.

Relocate and reconstruct paved play area. (P-C Paving) (Restrict and relocate (2) existing basketball backstops as directed by owner)

NOTE:
EXTREME CARE TO BE USED WHEN GRADING IN AREA OF EXIST. 24" GAS MAIN.

ALL WATERLINE CONSTRUCTION IN WATERLOO ROAD ROW SHALL CONFORM TO VOLUMES II AND III OF THE HOWARD COUNTY DESIGN MANUAL

- LEGEND**
- Contour Interval - 2'
 - Existing Contour - 396
 - Proposed Contour - 396
 - Silt Fence - SF - SF - SF - SF
 - Limit of Disturbance
 - Trees to be saved
 - Stabilized Construction Entrance

Construction Sequence for Classroom Addition

1. Obtain grading permit.
2. Notify Area Utility at least 48 hours before beginning any work at 1-800-257-7777. Notify the Howard County Office of Construction/Inspection at 410-319-1990 24 hours before starting work.
3. Grade to subgrade classroom addition area. (Install sediment control measures shown on the plan. 1 week.)
4. Construct classroom addition. (3 months.)
5. Fine grade disturbed areas and stabilize with permanent seeding.
6. Notify Howard County Office of Construction/Inspection for permission to remove sediment control devices and stabilize disturbed areas with permanent seeding.

4	REPLACE WATER SERVICE CONNECTIONS	6/25/08
Nr	Revision	Date
2	Add Building Addition, 4" SMC & Concrete Walk	8/16/08
3	INFLU COURTYARD W/ CURBSCAPE, NEW WATER LINE, CANYON	12/1/07

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/8/07
Chief, Development Engineering Division

[Signature] 7/10/07
Chief, Division of Land Development

[Signature] 7/10/07
Director

Reviewed for HOWARD S.C.D. and meets Technical Requirements
[Signature] 7/2/07
U.S. Natural Resources Conservation Service

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

[Signature] 7/10/07
Approved

DEVELOPER'S/BUILDER'S CERTIFICATE

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[Signature] NAME
6/2/07 DATE

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Sediment and Erosion 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.

[Signature] KATHERINE I. McMAHON 6-27-07
KATHERINE I. McMAHON DATE



CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALTO • (301) 621-8100 WASH

DESIGNED: KIWM
DRAWN: ZAH
CHECKED: KM
DATE: 6-4-07

SEDIMENT EROSION CONTROL PLAN FOR PARKING AREA AND BUILDING ADDITION
WATERLOO ELEMENTARY SCHOOL
TAX MAP 37, GRID 8, PARCEL 489
FIFTH (6TH) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FOR: NICHOLS, BANTA, CAMPBELL ARCHITECTS
7165-A COLUMBIA GATEWAY DRIVE
COLUMBIA, MARYLAND 21046

SCALE: 1"=40'
DRAWING: 7 of 9
JOB NO: 96-172
FILE NO: 96-172-6E

I. BIORETENTION AREA SOIL SPECIFICATIONS

A. Planting Soil

The bioretention areas shall consist of a planting soil having a composition of at least 10 to 25 percent clay and shall be of a sandy loam or loamy sand texture. Loamy soils may be utilized for the planting soil but must consist of 35% sand. In addition, the furnished planting soil shall be of uniform composition, free of stones, stumps, roots or similar objects larger than one inch, brush, or any other material or substance which may be harmful to plant growth, or a hindrance to planting or maintenance operations.

The planting soil shall be free of plants or plant parts of Bermuda grass, Quack grass, Johnson grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle or others as specified.

It shall not contain toxic substances harmful to plant growth.

The planting soil shall be tested and meet the following criteria:

pH range	5.5 - 6.5
Organic matter	1.5 - 3.0%
Magnesium - Mg	35 lbs./acre
Phosphorus - P ₂ O ₅	100 lbs./acre
Potassium - K ₂ O	85 lbs./acre
Soluble salts	not to exceed 500 ppm

The following testing frequencies shall apply to the above soil constituents:

pH, Organic Matter: 1 test per 90 cubic yards, but no more than 1 test per Bioretention Area

Magnesium, Phosphorus, Potassium, Soluble Salts:

1 test per 500 cubic yards, but no less than 1 test per borrow source

One grain size analysis shall per performed per 90 cubic yards of planting soil, but no less than 1 test per Bioretention Area.

B. Mulch Layer Specifications (3" thick)

A mulch layer shall be provided on top of the planting soil. An acceptable mulch layer shall include shredded hardwood or shredded wood chips or other similar product approved by the Prince George's Landscape Architecture Division.

Of the approved mulch products all must be well aged, uniform in color, and free of foreign material including plant material. Well aged mulch is defined as mulch that has been stockpiled or stored for at least twelve (12) months.

C. Sand Specifications

The sand shall be free of deleterious material and rocks greater than 1 inch in diameter.

D. Compaction

Soil shall be placed in lifts less than 18 inches and lightly compacted (minimal compactive effort) by tamping with a bucket from a dozer or a backhoe.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning.
- Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
- Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
- Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

SEDIMENT AND EROSION CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
 - All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1984 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
 - Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
 - 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1
 - 14 days as to all other disturbed or graded areas on the project site.
 - All sediment traps/basins shown must be fenced and warning signs posted around their perimeter. Temporary stabilization shall be completed within the time period specified above, in accordance with the 1984 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, soil, temporary seeding and mulching (Sec. C).
 - Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
 - 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.
 - SITE ANALYSIS:

Total Area of Site:	10,093
Area Disturbed:	3,526
Area to be roofed or paved:	1,046
Area to be vegetatively stabilized:	2,830
Total Cut:	1,830
Total Fill:	2,230
Off-site Water/Borrow Area Location:	2
 - Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
 - 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.
 - Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
 - The total amount of fill fence = 1000 LF
 - The total amount of super silt fence = 0
- * It is the responsibility of the contractor to identify the spot/borrow site and notify and gain approval from the sediment control inspector of the site and it's grading permit number at the time of construction.

CONSTRUCTION SEQUENCE

	NO. OF DAYS
1. Obtain grading permit	7
2. Install silt fence	N/A
3. Install sediment and erosion control devices and stabilize	16
4. Excavate for foundations, rough grade and temporarily stabilize	80
5. Construct structures, sidewalks and driveways	120
6. Final grade and stabilize in accordance with Sds, and Specs.	16
7. Upon approval of the sediment control inspector, remove sediment and erosion control devices and stabilize.	7

21.0 STANDARDS AND SPECIFICATIONS

TOPSOIL

Definition

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

Purpose

To provide a suitable soil medium for vegetable 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

- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.

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 Experiment Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

- 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 a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsols and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 and 1/2" in diameter.
- Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
- Where the subsol 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.

For sites having disturbed areas under 5 acres:

- Place topsoil (if required) and apply soil amendments as specified in 21.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as ditches, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 6" 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.
- 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 seeded preparation.

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, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./100 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs./1000 sq.ft.).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc 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 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 application using mulch anchoring tool or 218 gallons per acre (8 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 seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

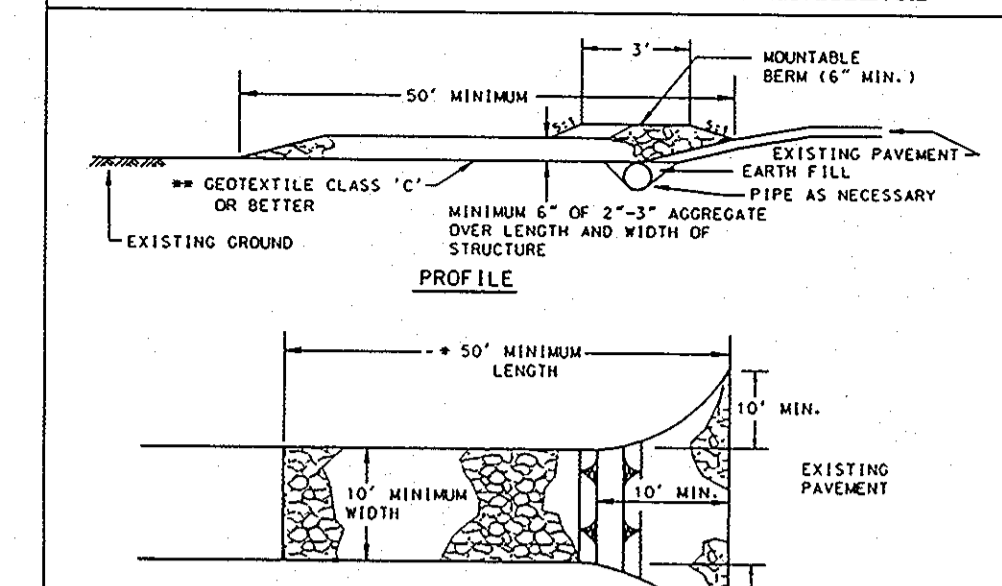
SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.).

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass (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 1 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 small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (8 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.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

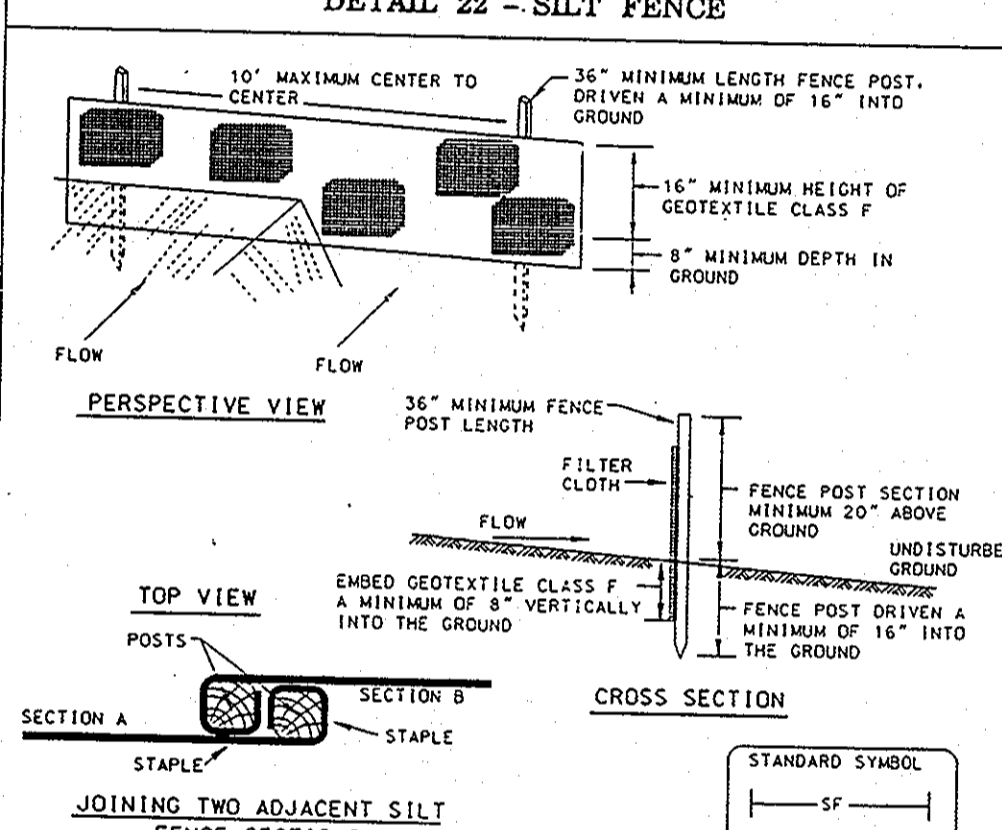
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specifications

- Length - minimum of 50' (430' for single residence lots).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The stone approval authority may not require single family residences to use geotextile.
 - 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.
 - 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 SCS 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.
 - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.
- U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE P-11-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut or 1 1/2" 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 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
 - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.
- U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE P-11-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Reviewed for HOWARD S.C.D. and meets Technical Requirements
 Signature: *Charles Simmons* 7/2/97
 U.S. Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *John P. Redutoor* 7/2/97
 Approved

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all 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 or their authorized agents, as are deemed necessary."
 Signature: *Katherine I. McMahon* 6/27/97
 NAME DATE

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion 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.
 Signature: *Katherine I. McMahon* 6-27-97
 KATHERINE I. MCMAHON DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

2/6/97
 7/19/97
 7/19/97

CLARK • FINEFROCK & SACKETT, INC.
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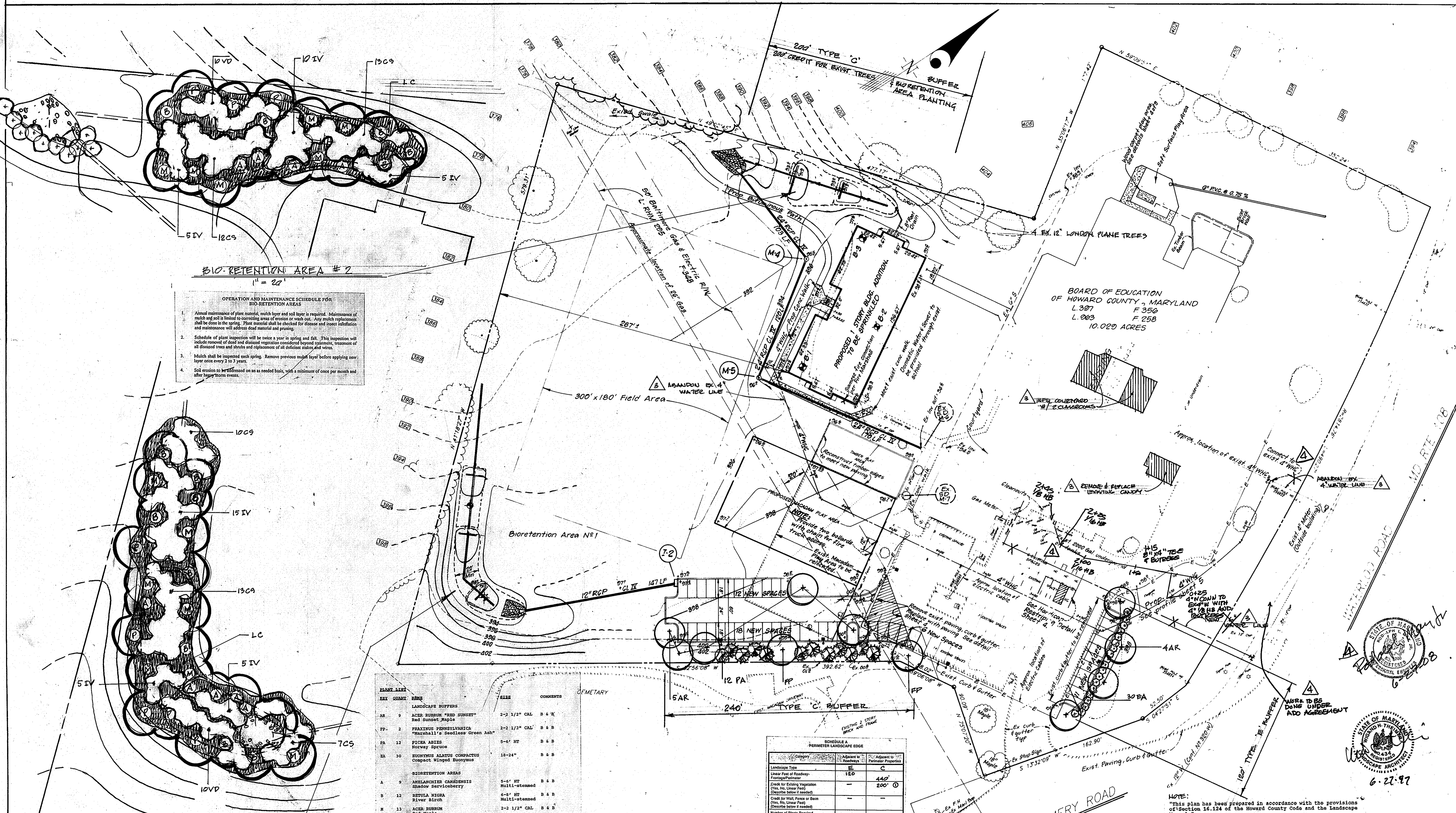
DESIGNED: KIWM
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SEDIMENT EROSION CONTROL DETAILS FOR PARKING AREA AND BUILDING ADDITION
WATERLOO ELEMENTARY SCHOOL
 TAX MAP 37, GRID 8, PARCEL 489
 FIFTH (5TH) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: -
 DRAWING: B of B
 JOB NO.: 96-172
 FILE NO.: 96-172-3E

FOR: NICHOLS, BANTA, CAMPBELL ARCHITECTS
 7185-A COLUMBIA GATEWAY DRIVE
 COLUMBIA, MARYLAND 21046

SDP-97-132



OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION AREAS

- Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning.
- Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
- Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
- Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

KEY	QUANT.	NAME	SIZE	COMMENTS
LANDSCAPE BUFFERS				
AR	9	ACER RUBRUM "RED SUNSET" Red Sunset Maple	2-2 1/2" CAL	B & B
FP	2	FRAXINUS PENNSYLVANICA "Marshall's" Seedless Green Ash	2-2 1/2" CAL	B & B
PA	12	PICEA ABIES Norway Spruce	5-6' HT	B & B
EA	30	ERIONYCHUS ALATUS COMPACTUS Compact Winged Euonymus	18-24"	B & B
BIORETENTION AREAS				
A	9	AMELANCHIER CANADENSIS Shadow Spotted Redbud	5-6' HT	B & B
B	12	BETULA NIGRA River Birch	6-8' HT	B & B
M	13	ACER RUBRUM Red Maple	2-2 1/2" CAL	B & B
P	7	QUERCUS PALUSTRIS Pin Oak	2-2 1/2" CAL	B & B
VD	20	VIBURNUM DENTATUM Arrowwood Viburnum	2-3' HT	B & B HEAVY
CS	45	CORNUS STOLONIFERA Red Osier Dogwood	2-3' HT	B & B HEAVY
IV	45	ILEX VERECYLLATA Winterberry Holly	2-3' HT	B & B HEAVY
PV		PANICUM VIRGATUM Switch Grass		SEED & MULCH

SCHEDULE A PERIMETER LANDSCAPE EDGE		
Category	Adjacent to Roadways	Adjacent to Palmetto Properties
Landscape Type	E	C
Linear Feet of Roadway- Frontage/Perimeter	120	440
Credits for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	-	200' ①
Credits for Walk, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	-	-
Number of Plants Required		
Shade Trees	140	3
Evergreen Trees	140	6
Shrub	140	12
Number of Plants Provided		
Shade Trees	140	3
Evergreen Trees	140	6
Shrub (21 substitution)	140	12
Explain plant substitution credits below if needed	30	

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of Parking Spaces	42 NEW SPACES
Number of Trees Required	120 or 2
Number of Trees Provided	
Shade Trees	
Other Trees (21 substitution)	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/13/97
Chief, Development Engineering Division

[Signature] 7/10/97
Chief, Division of Land Development

[Signature] 7/10/97
Director

NOTES:

- ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE BALTO./WASH. LANDSCAPE SPECIFICATIONS OF I.C.A.M.W.
- ALL PLANT MATERIAL SHALL CONFORM TO THE LATEST "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE ASSOCIATION OF NURSERYMEN (A.N.S.)
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING IF HE/SHE ENCOUNTERS SOIL OR DRAINAGE CONDITIONS WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.
- THIS PLAN TO BE USED FOR PLANTING ONLY.
- FINAL LOCATION OF PLANT MATERIAL MAY VARY PER FINAL FIELD CONDITIONS.

NO.	REVISION	DATE
1	REPLACE WATER SERVICE CONNECTIONS	6/25/97
2	REPLACE WATER SERVICE CONNECTIONS	6/25/97
3	REPLACE WATER SERVICE CONNECTIONS	6/25/97

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA MD 21045 • 410/581-7500 BALTO • 301/621-8100 WASH

LANDSCAPE PLAN
FOR PARKING AREA AND BUILDING ADDITION
WATERLOO ELEMENTARY SCHOOL
TAX MAP 37, GRID 8, PARCEL 489
FIFTH (6TH) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE 1"=40'
DRAWING 9069
JOB NO. 96-172
FILE NO. 96-172-X

DESIGNED: WHT
DRAWN: WHT
CHECKED: WHT

OWNER: THE BOARD OF EDUCATION OF HOWARD COUNTY
10910 RTE. 108
ELICOTT CITY, MARYLAND 21043

FOR: NICHOLS, BANJA, CAMPBELL ARCHITECTS
7185-A COLUMBIA CATEWAY DRIVE
COLUMBIA, MARYLAND 21046

DATE: 6/4/97

SDP-97-132

