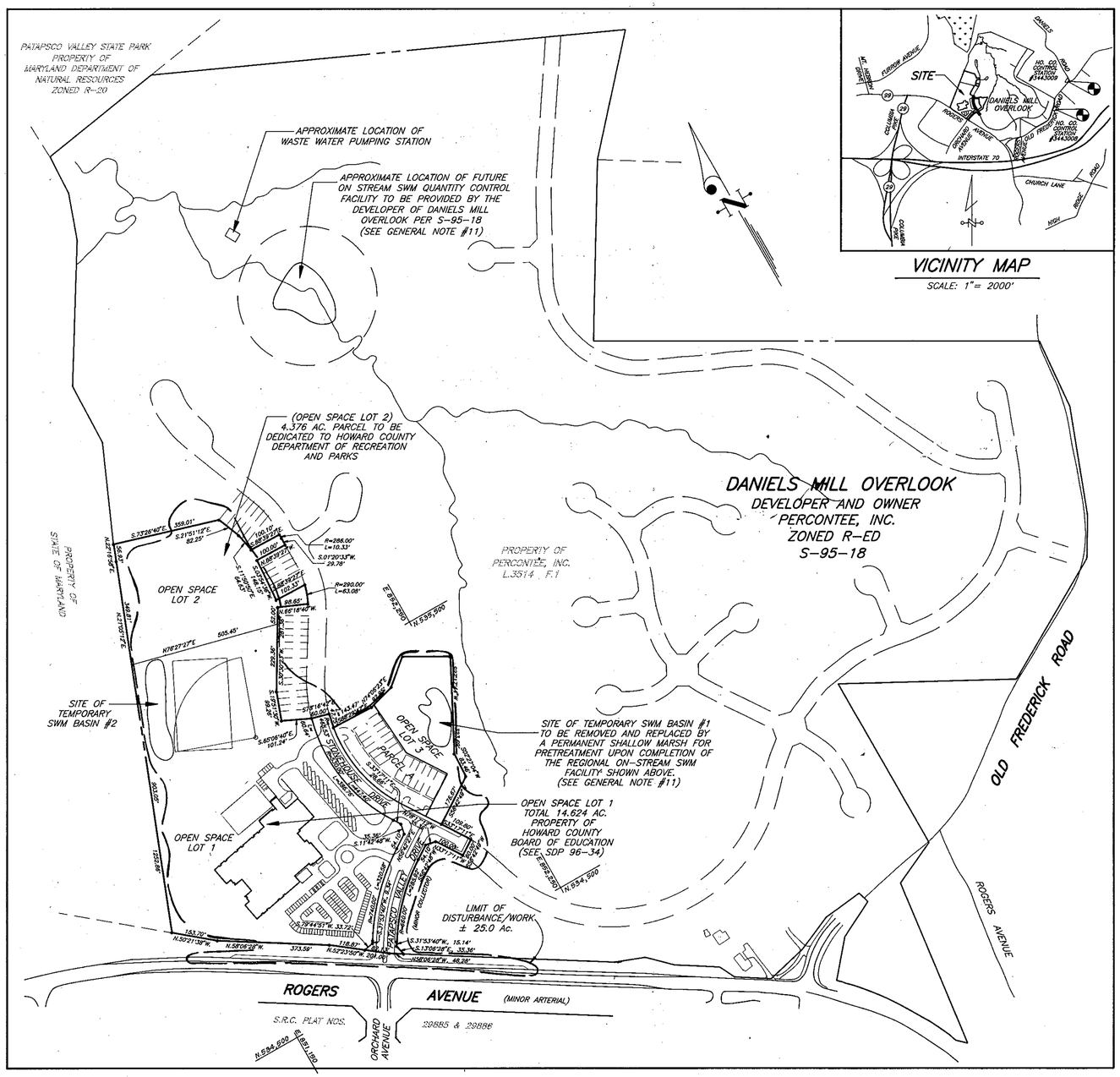
ROAD CONSTRUCTION, STORM DRAINAGE AND GRADING PLANS
FOR
DANIELS MILL OVERLOOK
SECOND (2ND) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GENERAL NOTES

1. Construction of this project is intended to be executed in close conjunction with the Site Development Plans for Northern Elementary School #3; Open Space Lots 1 & 2, Daniels Mill Overlook. (SDP-96-34)
2. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
3. 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.
4. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
5. Project Background:
   a) Location: Tax Map #17, Part of Parcel 41
   b) Zoning: R-ED
   c) ZB/BA REF: ZB-965M
   d) Election District: 2nd Election District
   e) Section/Area: N/A
   f) Proposed Lots & Parcels: 3 O.S. Lots, 1 Parcel
   g) Preliminary Plan - waived per WP 96-30 Approved 11-3-95.
   h) Other DPZ References: S-95-18, Approved 5-15-95; WP-95-74, Approved 4-21-95; ZB-965M;
6. 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.
7. Topographic survey mapping at 2' contour intervals was provided by Photo Science, Inc. dated April 13, 1989; c/o Fisher, Collins and Carter, Inc.
8. Boundary coordinates are based on NAD 83' Maryland Coordinate System as projected by Howard County Geodetic Control Stations No. H.C.M. 17EA & No. HCM 17EB.
   STATION No. H.C.M. 17 EA N 181160.5724 (METERS) E 413772.7247 (METERS)
   STATION No. H.C.M. 17 EB N 180994.8448 (METERS) E 413227.8979 (METERS)
9. Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between any street light and any tree.
10. Public water and public sewer systems are to be utilized for this site and are extended from the limits of existing Contract Nos. 70-W and 10-1352-D. (Patapsco Water Shed)
    Water Extension Contract No. 14-3429.
    Sewer Extension Contract No.14-3499.
    Water Main Extension Contract No. 14-3487-D
11. STORMWATER MANAGEMENT:
    Ultimately, but no later than 36 months after obtaining grading permits, a regional on-stream quantity control facility will be provided by the developer of Daniel's Mill Overlook per S-95-18. At such time, Basin #1 will be reconstructed, per these plans, into a shallow marsh pre-treatment facility for the area of this submission.
12. No floodplain exists within Open Space Lots 1, 2 & 3 or Parcel 'A' which are part of this submission.
13. Wetland determination provided by Environmental Systems Analysis, 48 Maryland Avenue, Annapolis, MD 21401 in a report dated December 1990 per S-95-18, Approved 5/15/95.
14. A traffic study is not required for Open Space Lots 1, 2 & 3 or Parcel 'A' which are part of this submission.
15. A noise study is not required for Open Space Lots 1, 2 & 3 or Parcel 'A' which are part of this submission.
16. The Geotechnical Report was prepared by Hillis-Carnes Engineering Associates, Inc., dated July 25, 1995; Approved on
17. Forest Stand Delineation was provided by M.A. Dircks and Co., Inc., dated June 1993 per S-95-18; Approved 5/15/95.
18. The existing utilities were located by aerial and field surveys. The contractor must dig test pits, by hand, at all utility crossings and connection points to verify exact location.
19. The developer will be responsible for the street trees and stormwater management area plantings indicated on the plans.



LOCATION PLAN
SCALE: 1"= 200'

VICINITY MAP
SCALE: 1"= 2000'

SHEET INDEX	
NO.	DESCRIPTION
1	COVER SHEET
2	PLAN & PROFILE - ROGERS AVENUE
3	STRIPING & TRAFFIC CONTROL PLAN FOR ROGERS AVENUE
4	PLAN & PROFILE - PATAPSCO VALLEY DRIVE
5	PLAN & PROFILE - STONEHOUSE DRIVE
6	PAVING DETAILS
7	SIGHT DISTANCE ANALYSIS - ROGERS AVENUE & PATAPSCO VALLEY DRIVE
8	STORM DRAINAGE PROFILES
9	STORM DRAINAGE PROFILES
10	STORM DRAINAGE AND SHALLOW MARSH DETAILS
11	SPECIFICATIONS FOR SHALLOW MARSH
12	DRAINAGE AREA MAP FOR EXISTING CONDITIONS
13	DRAINAGE AREA MAP FOR PROPOSED CONDITIONS
14	MASS GRADING & SEDIMENT AND EROSION CONTROL PLAN
15	MASS GRADING & SEDIMENT AND EROSION CONTROL PLAN
16	SEDIMENT BASIN PROFILES
17	SEDIMENT BASIN DETAILS
18	SEDIMENT AND EROSION CONTROL DETAILS
19	SOILS AND SLOPES ANALYSIS
20	LANDSCAPE PLAN FOR WATER QUALITY BASIN & STREET TREE DETAILS

DEVELOPER:
PERCONTEE, INC.
% MICHAEL DIFFENDAL
11900 TECH ROAD
SILVER SPRING, MD. 20904

OWNERS:
PERCONTEE, INC.
% MICHAEL DIFFENDAL
11900 TECH ROAD
SILVER SPRING, MD. 20904

THE BOARD OF EDUCATION OF HOWARD COUNTY
c/o MR. BILL GRAU
10910 RTE. 108
ELLICOTT CITY, MD 21043

STATE OF MARYLAND — MICHAEL WILSON DIFFENDAL — NO. 20740 — REGISTERED PROFESSIONAL ENGINEER — 11-10-00 — "AS-BUILT"

STATE OF MARYLAND — NELSON CLARK — NO. 7139 — REGISTERED PROFESSIONAL ENGINEER — 1-29-96

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH ~~Bureau of Highways~~ — 1-30-96 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 2/6/96 DATE TC

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 2/1/96 DATE

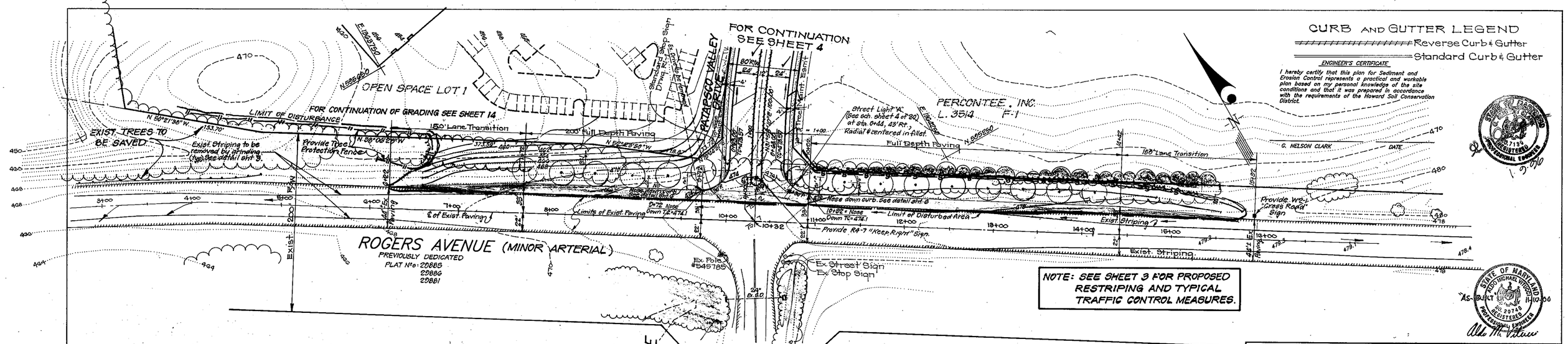
CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 - BALTO. • (301) 621-8100 - WASH.

DESIGNED KIWM	COVER SHEET ROAD CONSTRUCTION PLANS DANIELS MILL OVERLOOK LOTS 1 THRU 3 AND PARCEL "A" TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT, MARYLAND 21043	SCALE AS SHOWN
DRAWN LAI/DM		DRAWING 1 OF 20
CHECKED WHT		JOB NO. 94-203
DATE 12-27-95		FILE NO. 94-203 D

AS-BUILT 12-1-99

1783

F-96-37



CURB AND GUTTER LEGEND

Reverse Curb & Gutter

Standard Curb & Gutter

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.

G. NELSON CLARK DATE

1.9.96

"AS-BUILT" 11-10-00

Aldo M. Vitun

NOTE: SEE SHEET 3 FOR PROPOSED RESTRIPING AND TYPICAL TRAFFIC CONTROL MEASURES.

PLAN

SCALE: 1"=50'

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".

John Gudelsky 1/4/96
NAME John Gudelsky DATE

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

Signature Date
Natural Resources Conservation Service

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

Approved

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Dancker HS 1-30-96
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Jim Irvinmanzy 2/2/96
Chief, Division of Land Development and Research Date TC
2/1/96
Chief, Development Engineering Division Date

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

DESIGNED KIWM	PLAN AND PROFILE FOR ROAD IMPROVEMENTS ROGERS AVENUE DANIELS MILL OVERLOOK TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE As Shown
DRAWN		DRAWING 2 of 20
CHECKED KM		JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

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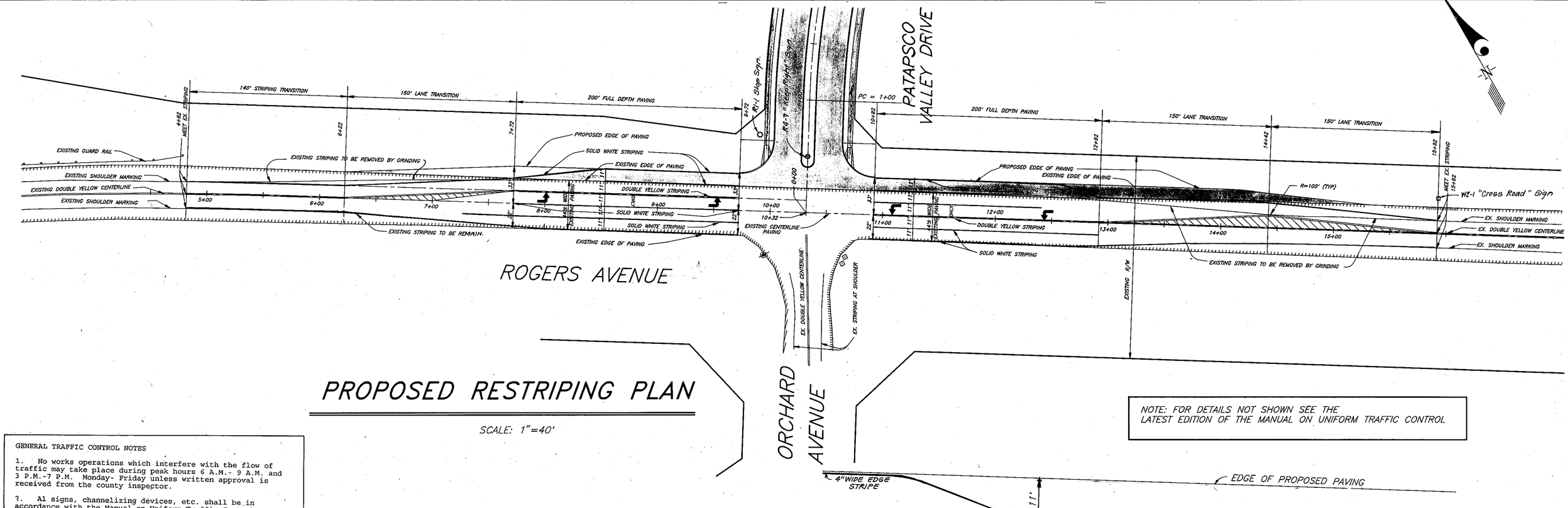
AS-BUILT 12-1-99

(2) 94-203D



PROPOSED RESTRIPING PLAN

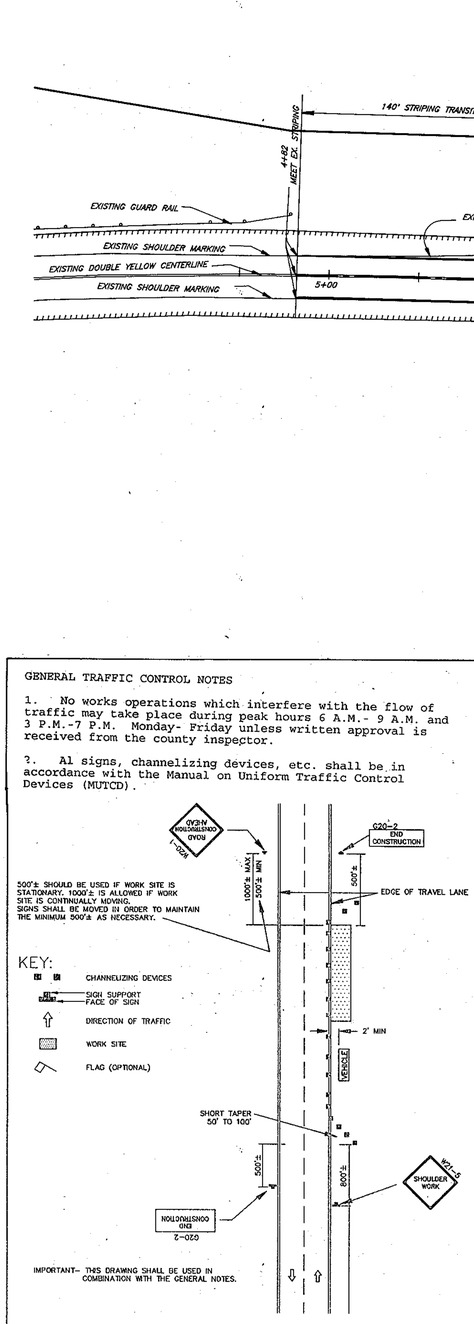
SCALE: 1"=40'

NOTE: FOR DETAILS NOT SHOWN SEE THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL

GENERAL TRAFFIC CONTROL NOTES

1. No works operations which interfere with the flow of traffic may take place during peak hours 6 A.M.- 9 A.M. and 3 P.M.-7 P.M. Monday- Friday unless written approval is received from the county inspector.

?. Al signs, channelizing devices, etc. shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).



APPROVED _____ DEPUTY CHIEF ENGINEER – TRAFFIC 2-1-84 DATE

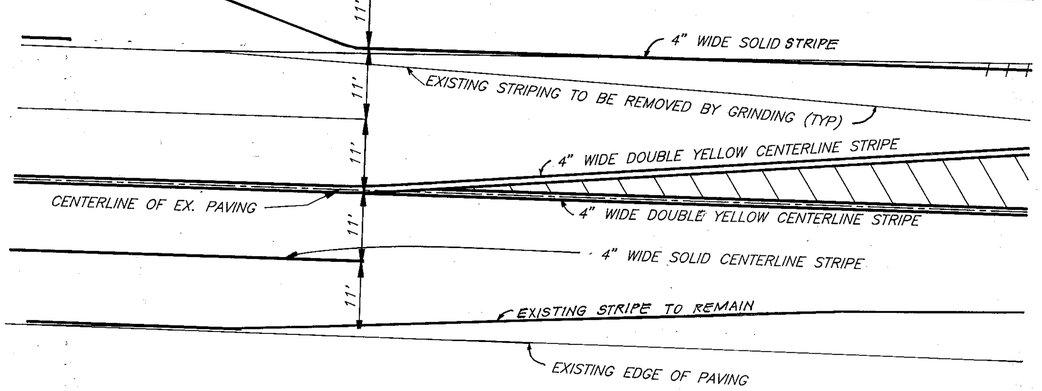
REVISIONS: DATE / APPROVAL — FEDERAL HIGHWAY ADMINISTRATION

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
WORK ZONE TRAFFIC CONTROL TYPICAL

SHOULDER WORK

15 MIN–24 HRS | OFF ROAD | EQL/LESS THAN 40 MPH
2 LANES, 2 WAY | STANDARD NO. MD-105.106

TYPICAL TRAFFIC CONTROL PLAN FOR PAVING WIDENING AT ROGERS AVENUE



TYPICAL STRIPING DETAIL

NO SCALE

STATE OF MARYLAND — G. NELSON CLARK — NO. 7139 — REGISTERED PROFESSIONAL ENGINEER — 1.9.96

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research — 2/2/96 Date TC
Chief, Development Engineering Division — 2/1/96 Date JN

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ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED KIWM	STRIPING AND TRAFFIC CONTROL PLAN FOR ROGERS AVENUE
DRAWN ZAH	DANIELS MILL OVERLOOK
CHECKED KIWM	TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042
SCALE As Shown	
DRAWING 3 of 20	
JOB NO. 94-203	
FILE NO. 94-203	

AS BUILT 12-1-99 — STATE OF MARYLAND — ALDO M. VITUCCI — NO. 20748 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILT 12-1-99

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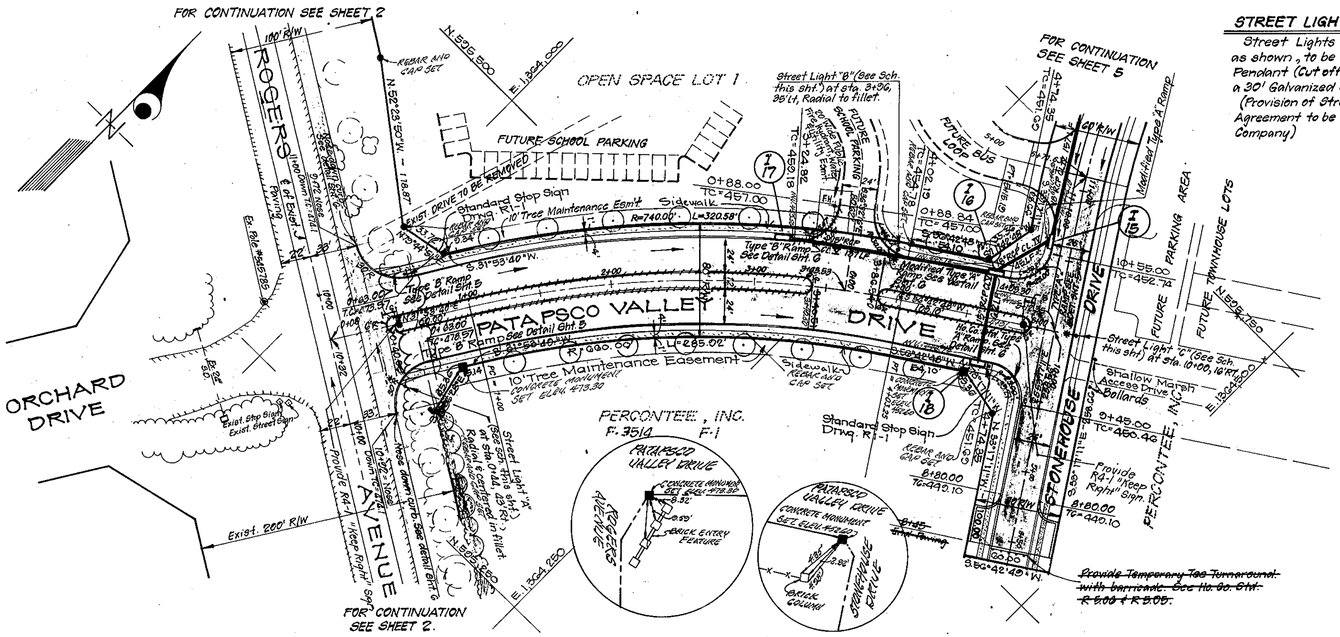

PLAN

SCALE: 1"=50'

CENTER LINE CURVE DATA

P.C.STA. to P.T. STA.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
1+00 to 4+03.25	700.00'	24°49'17"	303.25'	154.04	300.88	S44°18'11"W

STREET LIGHT SCHEDULE (See also General Note #9)

Street Lights A, B, C, D and E placed as shown, to be 150 Watt HPS Vapor Pendant (Cut off) fixtures mounted on a 30' Galvanized Steel Pole.
(Provision of Street Lights is part of Developer's Agreement to be co-ordinated with the Utility Company)

CURB AND GUTTER LEGEND

╪╪╪╪╪ Reverse Curb & Gutter
═════ Standard Curb & Gutter

"AS-BUILT" 11-10-00
ALDO MICHAEL VITUCCI No. 20740
Aldo M. Vitucci

G. NELSON No. 7139
1-9-96

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels HS 1-30-96
Chief, Bureau of Highways — Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
2/2/96
Chief, Division of Land Development and Research — Date TC
2/1/96
Chief, Development Engineering Division — Date

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

DESIGNED KIWM	GRADE ESTABLISHMENT, STORM DRAINAGE & PAVING PLAN PATAPSCO VALLEY DRIVE **DANIELS MILL OVERLOOK** TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=50'
DRAWN		DRAWING 4 of 20
CHECKED KJM		JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

PATAPSCO VALLEY DRIVE - PROFILE

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AS-BUILT 12-1-99

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CURB AND GUTTER LEGEND

⫽⫽⫽⫽⫽	Reverse Curb & Gutter
═════	Standard Curb & Gutter

CENTER LINE CURVE DATA

P.C. STA. to PT STA.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
10+03.66 to 16+50.65	500.00'	63°47'33"	556.99	311.18	528.38	S.01°23'24"E.

"AS-BUILT" 11-10-99
Aldo M. Vitucci
NO. 20740

APPROVED: DEPARTMENT OF PUBLIC WORKS

Andrew M. Daneker HS 1-30-96
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Jim Irvin 2/2/96
Chief, Division of Land Development and Research Date TC

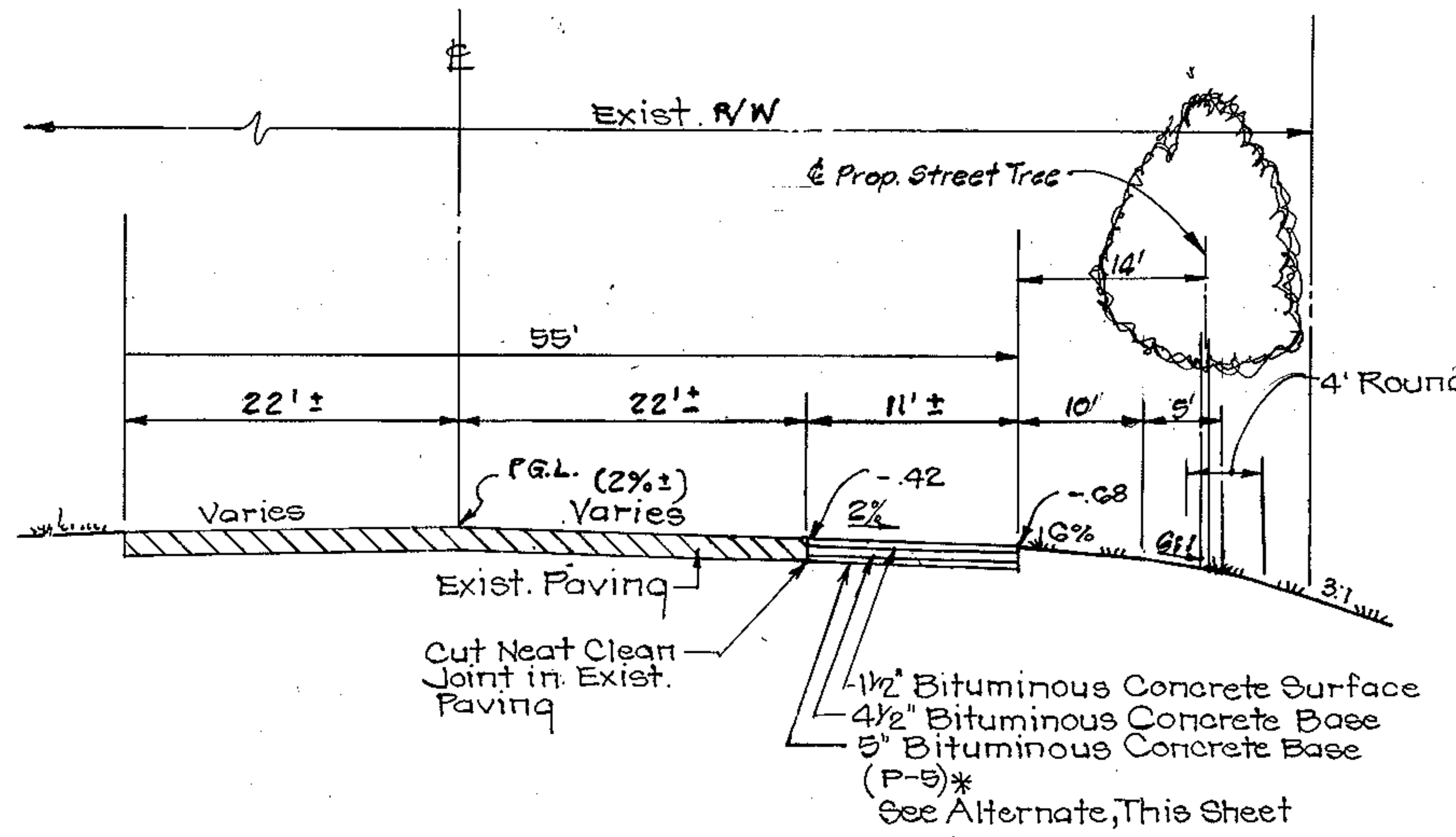
2/1/96
Chief, Development Engineering Division Date

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

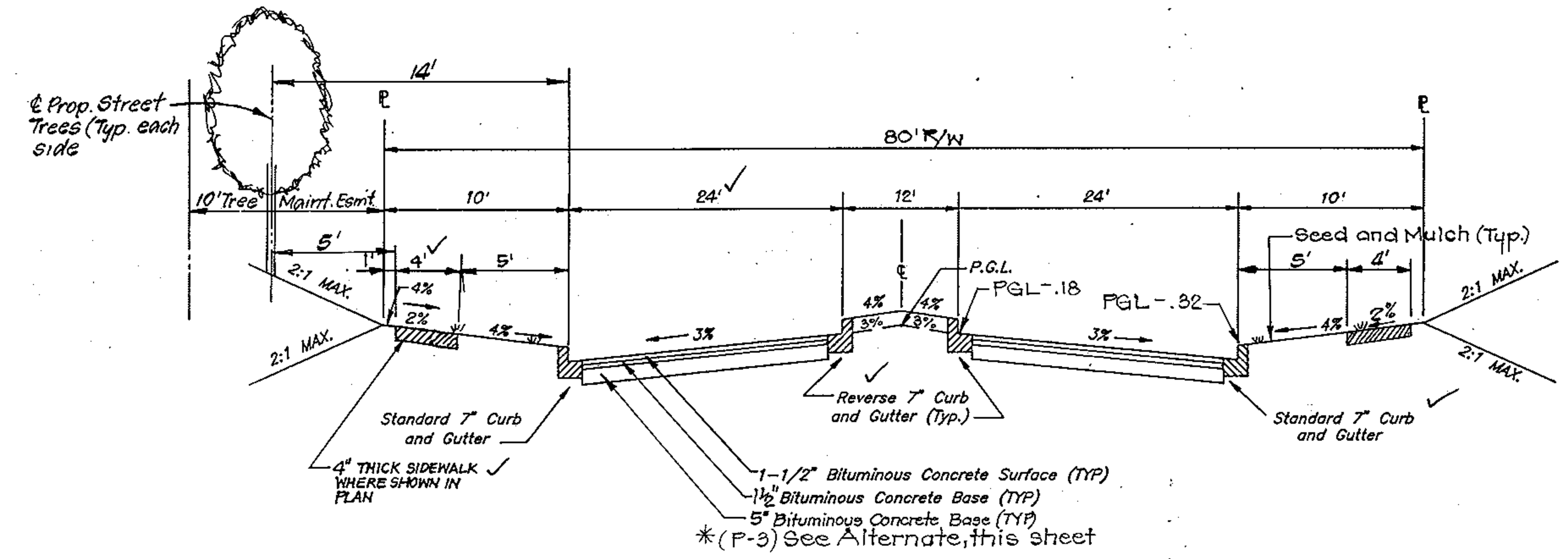
DESIGNED KIWM	GRADE ESTABLISHMENT, STORM DRAINAGE & PAVING PLAN STONEHOUSE DRIVE DANIELS MILL OVERLOOK TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=50'
DRAWN		DRAWING 5 of 20
CHECKED KM		JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

F-96-37
94-203D

AS-BUILT 12-1-99

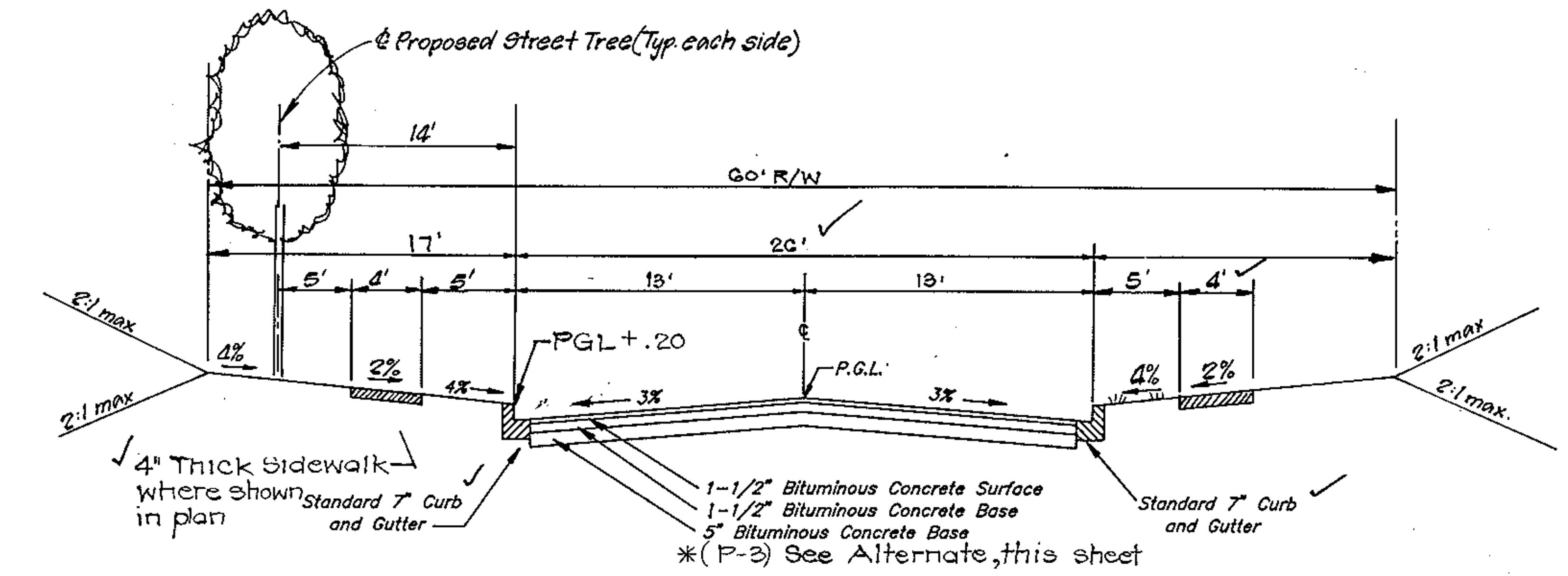


TYPICAL HALF SECTION (MINOR ARTERIAL)
ROGERS AVENUE
No Scale



TYPICAL PAVING SECTION
PATAPSCO VALLEY DRIVE (MINOR COLLECTOR)
NO SCALE

Design Speed: 35 mph
Zoning: SFA, SFD, Commercial, Industrial
Sta. 0+00 to 5+12.35



TYPICAL PAVING SECTION
STONEHOUSE DRIVE (MINOR COLLECTOR)
NO SCALE

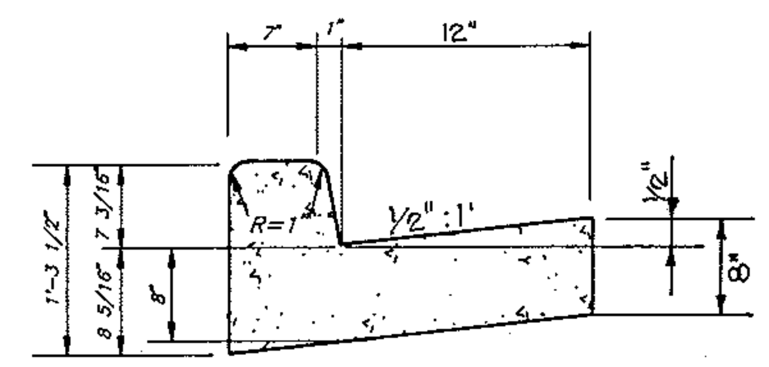
Design Speed: 35 mph
Zoning: SFA
Sta. 8+45 to 14+76.43

1-1/2" Bituminous Concrete Surface	1-1/2"
4-1/2" Bituminous Concrete Base	4-1/2"
Prime 8" Crusher Run Base Course or 4-1/2" Dense Graded Stabilized Aggregate Base Course	8" OR 4-1/2"

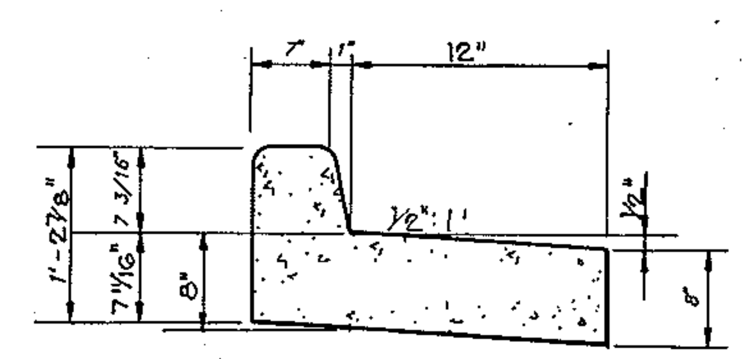
(P-3)
ALTERNATE PAVING SECTION
PUBLIC ROADS
NO SCALE

1½" Bituminous Concrete Surface	1½"
1½" Bituminous Concrete Base	1½"
5" Bituminous Concrete Base	5"
Prime 8" Crusher Run Base Course or 6" Dense Graded Stabilized Aggregate Base Course	6" OR 8"

(P-5)
ALTERNATE PAVING SECTION
ROGERS AVENUE
NO SCALE

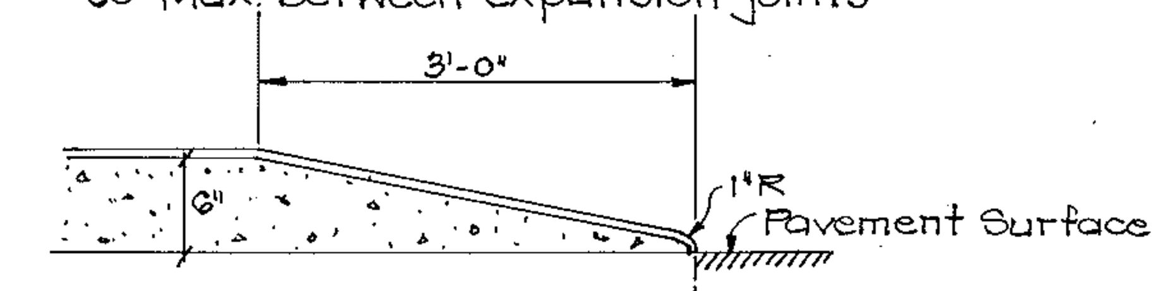


STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE

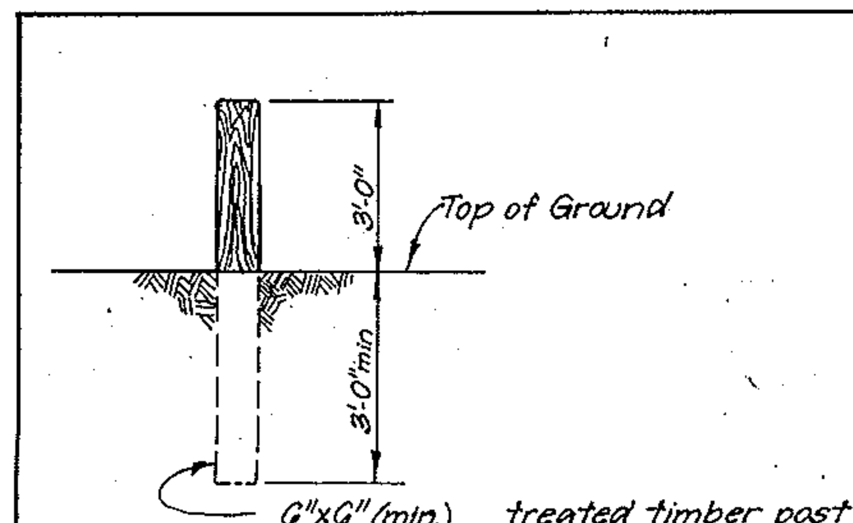


REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE

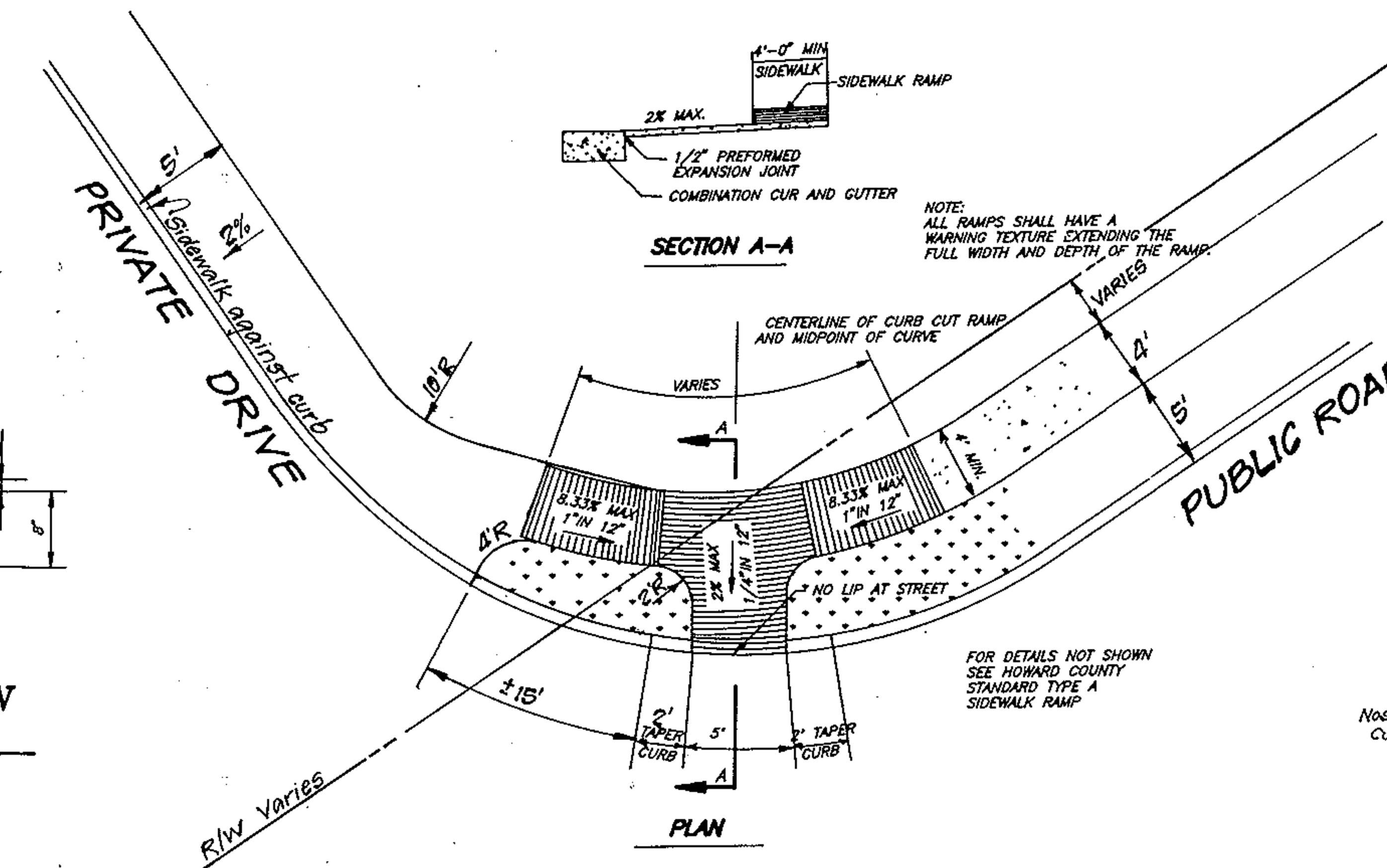
4000 psi Air Entrained Concrete
10' Max. between control joints
50' Max. between expansion joints



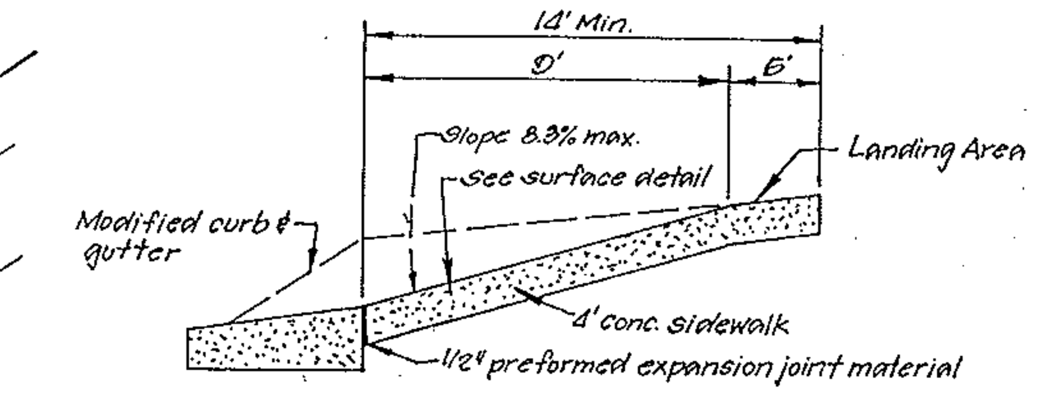
NOSE DOWN CURB & GUTTER DETAIL
NO SCALE



TIMBER BOLLARD DETAIL
NO SCALE



MODIFIED TYPE A SIDEWALK RAMP
SEE PLAN VIEW FOR LOCATION
NO SCALE



SECTION 'A-A'
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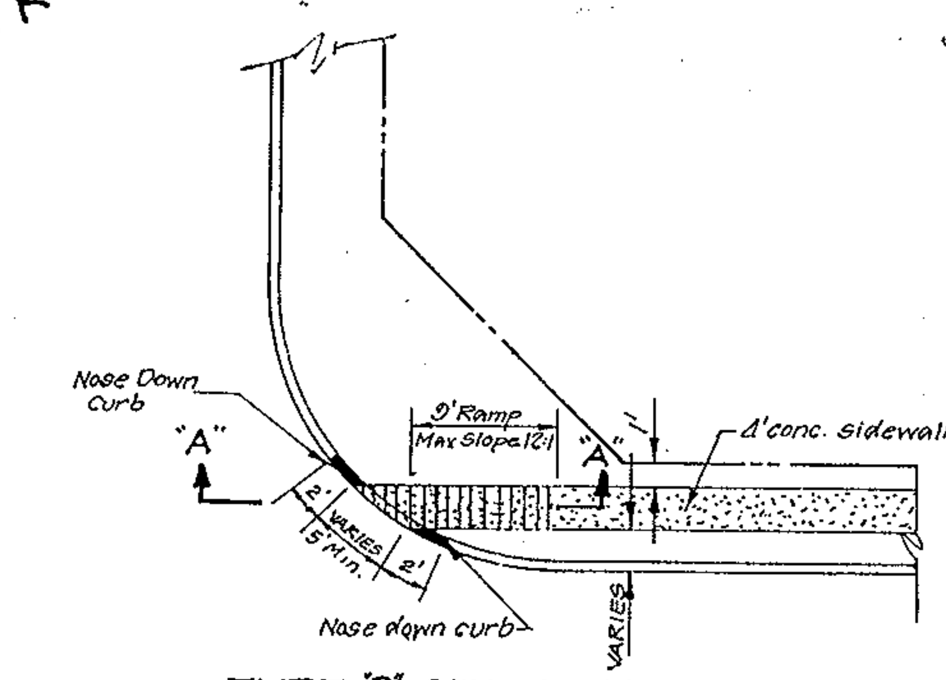
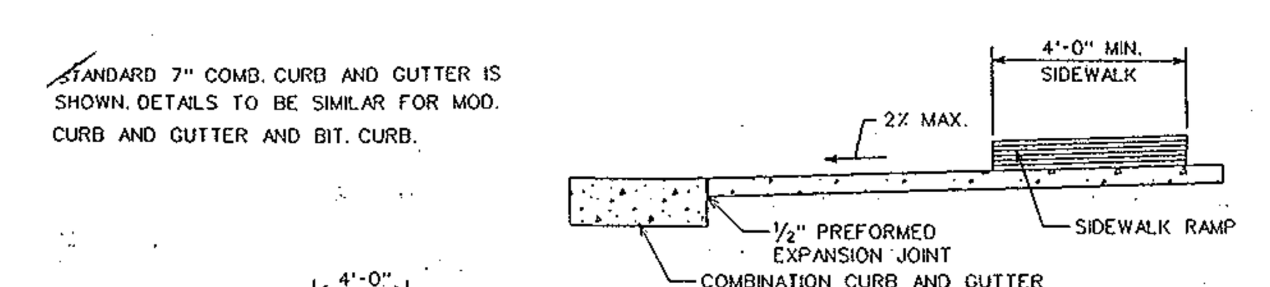
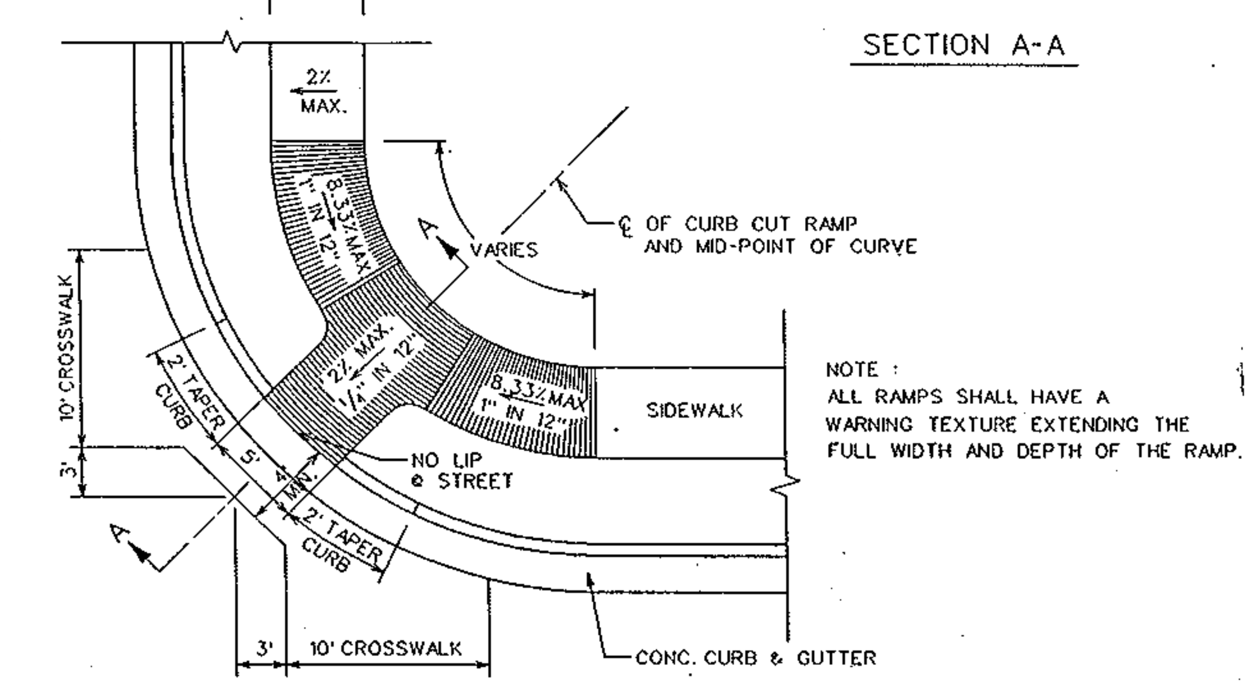


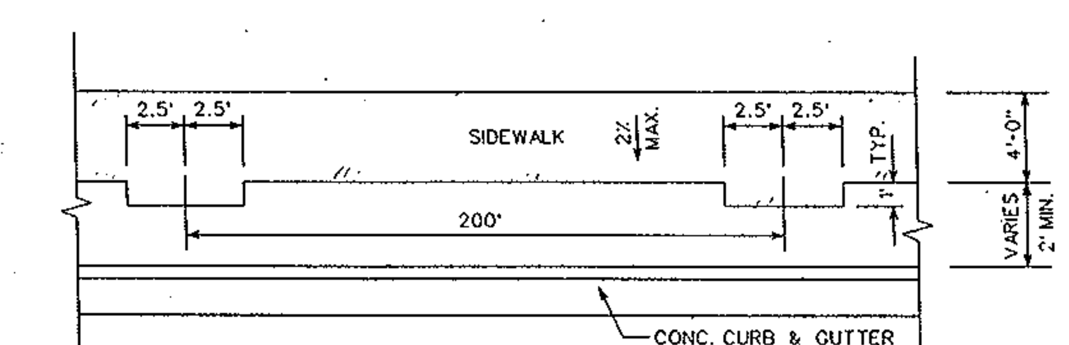
TYPE 'B' SIDEWALK RAMP
No Scale



SECTION A-A



PLAN



SIDEWALK WITH PASSING AREA

NOTE: ALL SIDEWALKS TO HAVE PASSING AREA AT 200' SPACING.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — 1-30-96 — Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research — 2/2/96 — Date
Chief, Development Engineering Division — 2/1/96 — Date

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

DESIGNED KWM	PAVING DETAILS DANIELS MILL OVERLOOK TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE —
DRAWN		DRAWING 6 of 20
CHECKED		JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

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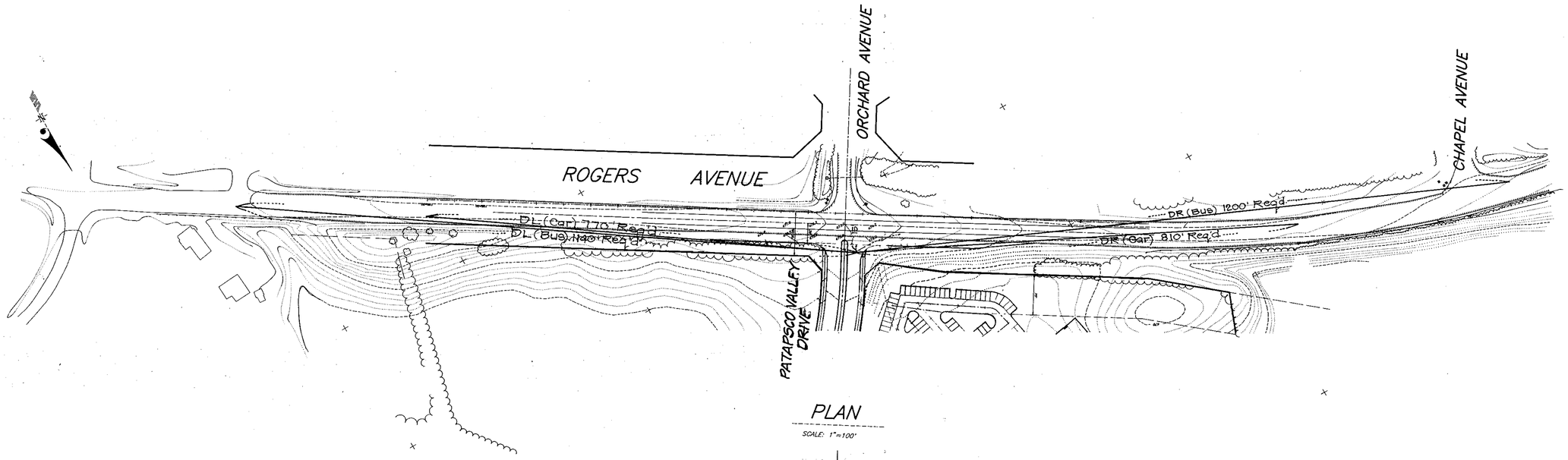
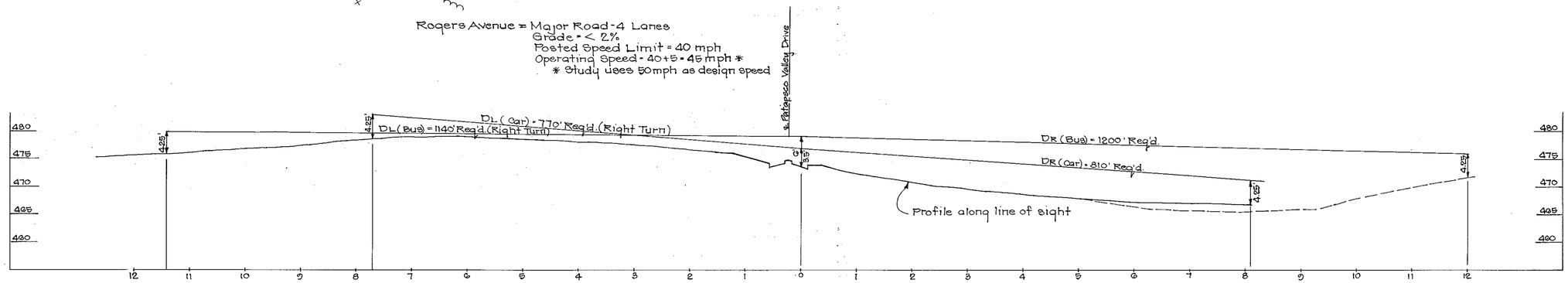


PLAN

SCALE: 1"=100'

Rogers Avenue = Major Road - 4 Lanes
Grade = < 2%
Posted Speed Limit = 40 mph
Operating Speed - 40+5 = 45 mph *
* Study uses 50mph as design speed



PROFILE

SCALE: HOR. 1"=100'
VERT. 1"=10'

SIGHT DISTANCE ANALYSIS
ROGERS AVENUE AND PATAPSCO VALLEY DRIVE

STATE OF MARYLAND — ALDO MICHAEL VITTORI — NO. 20749 — REGISTERED PROFESSIONAL ENGINEER
AS-BUILT 12/10/99

STATE OF MARYLAND — G. NELSON CLARK — NO. 7379 — REGISTERED PROFESSIONAL ENGINEER
12-27-95

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research — 2/2/96 Date
Chief, Development Engineering Division — 2/1/96 Date

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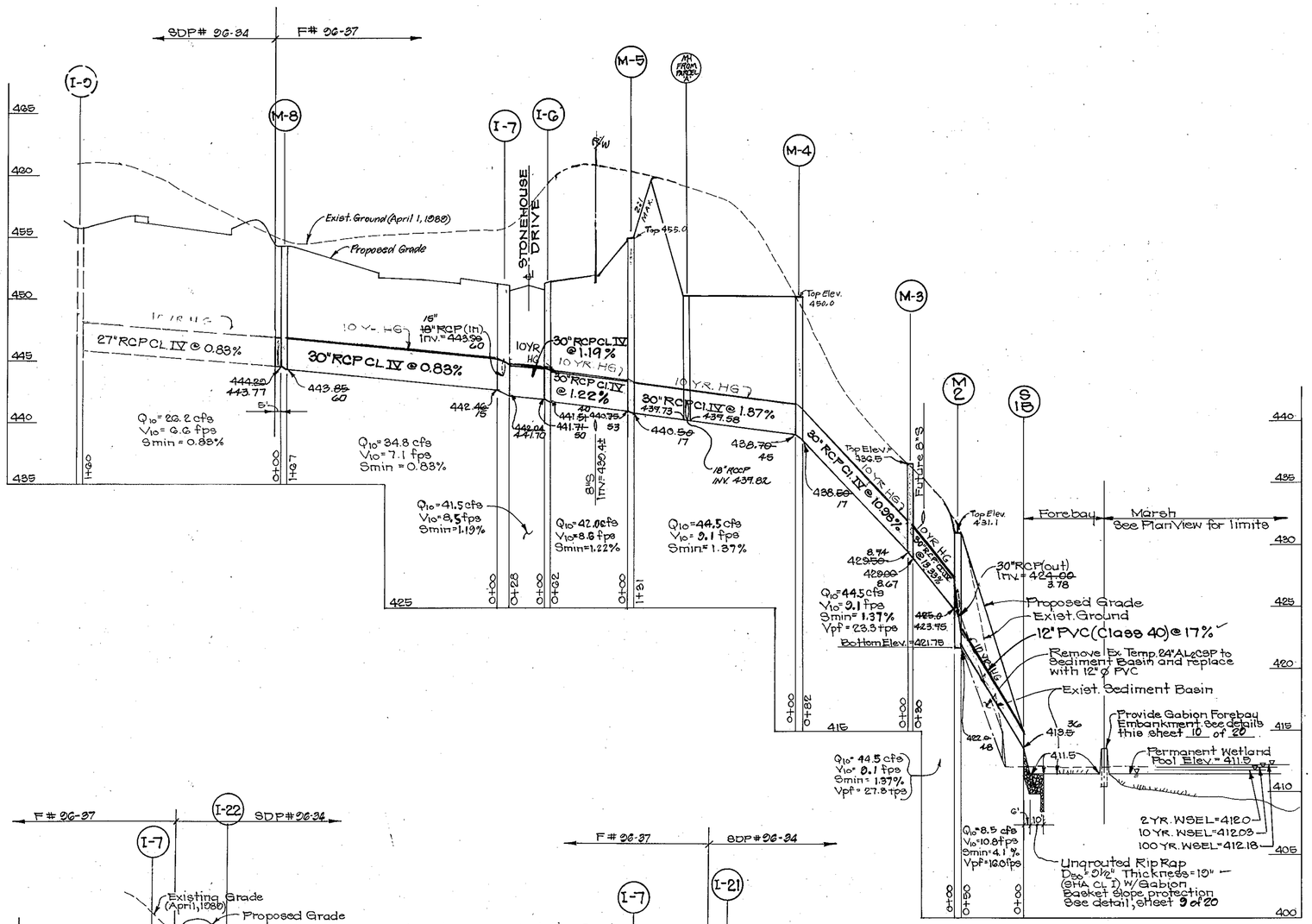
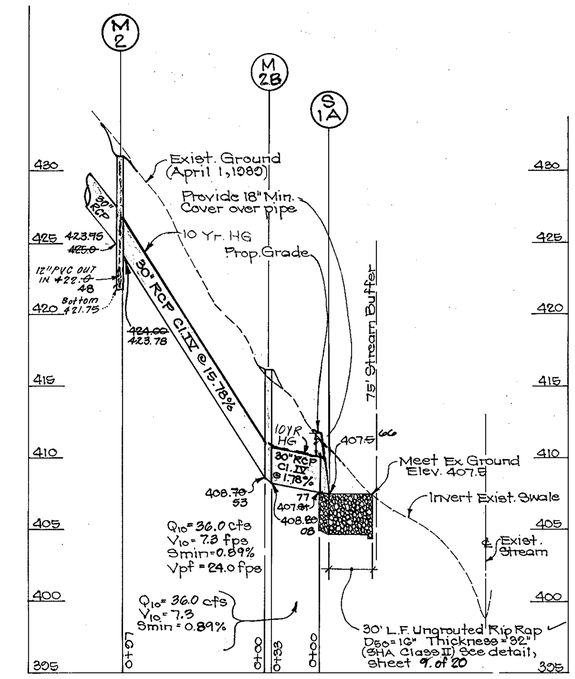
DESIGNED KIWM	SIGHT DISTANCE ANALYSIS ROGERS AVE. & PATAPSCO VALLEY DR.	SCALE AS SHOWN
DRAWN	DANIELS MILL OVERLOOK	DRAWING 7 of 20
CHECKED KM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043	FILE NO. 94-203D

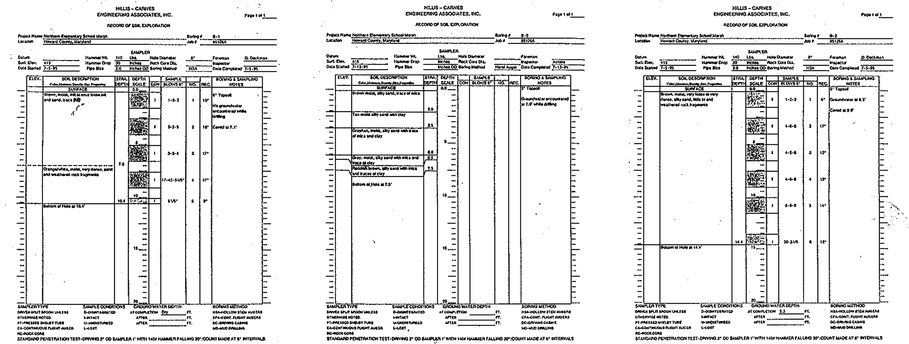
1783

AS-BUILT 12-1-99

F-96-37







BORING PROFILES FOR SHALLOW MARSH

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Fabrizio Engineers 1/19/96
Signature Date
Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE ~~NATURAL RESOURCES~~ HSCD CONSERVATION DISTRICT.
Approved 1/19/96

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 John Gudelsky 1/4/96 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.

G. NELSON CLARK 1.9.96 DATE

"AS-BUILT" 10-10-00

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research 2/2/96 Date TC
Chief, Development Engineering Division 2/1/96 Date

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ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED KIWM	STORM DRAINAGE PROFILES	SCALE AS SHOWN
DRAWN	DANIELS MILL OVERLOOK	DRAWING 8 of 20
CHECKED KIWM	TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

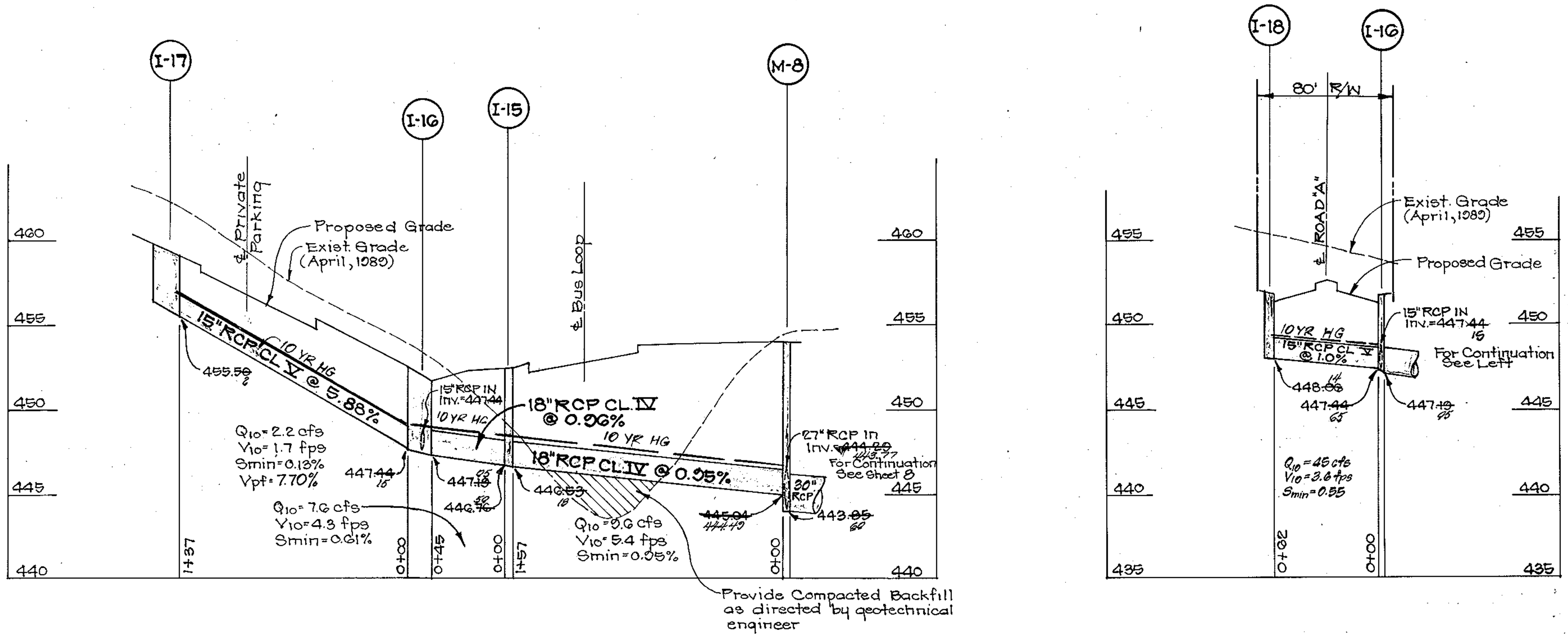
STORM DRAIN PROFILES

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

1783

AS-BUILT 12-1-99

F-96-37



STORM DRAIN PROFILES

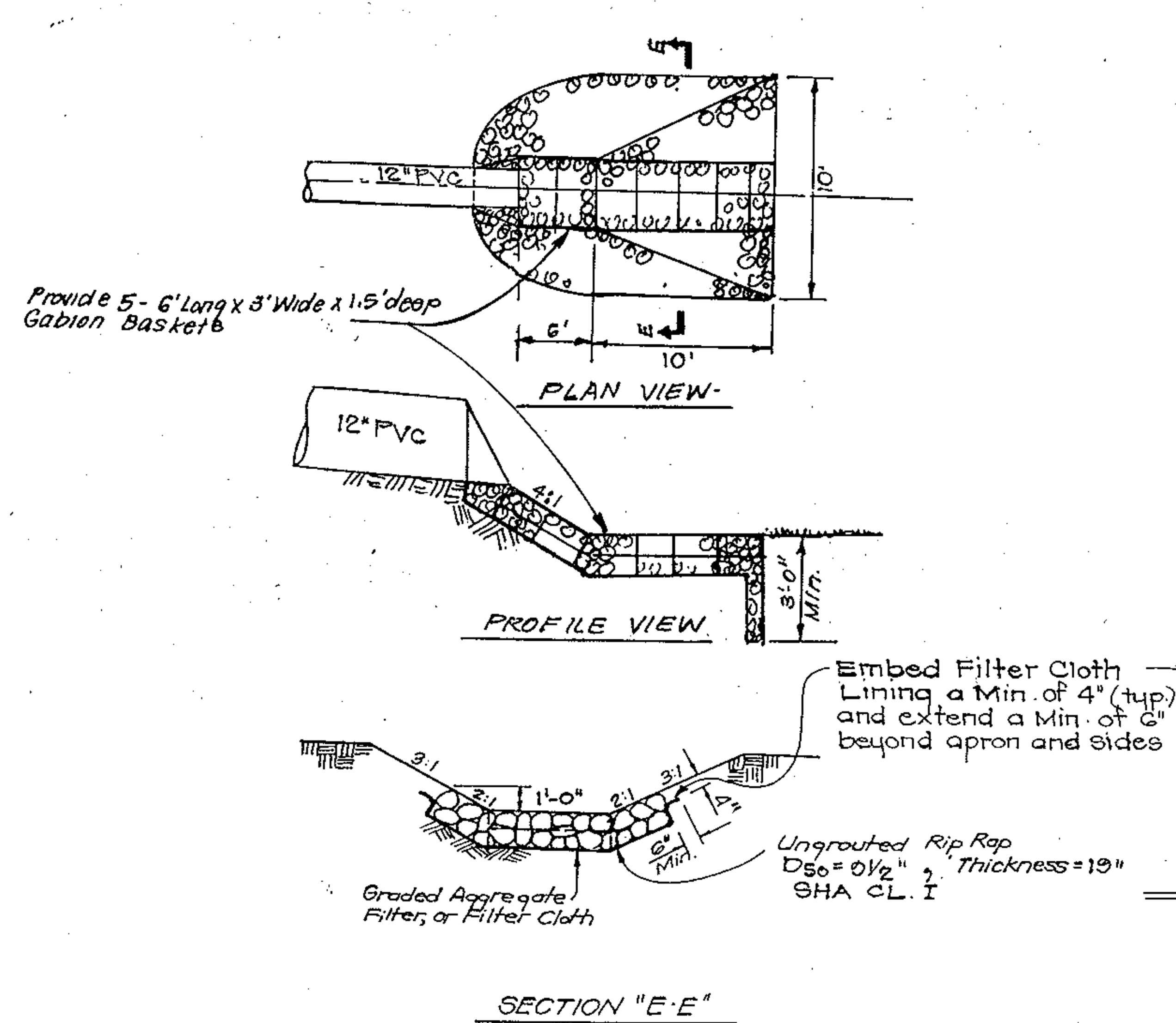
SCALE: HOR. 1"=50' VERT. 1"=5'

STRUCTURE SCHEDULE □

Nº	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS	LOCATION
Temp. S-2A	Metal End Section	412.06	412.0			Ho. Co. St'd. SD 5.61 24"Ø	End Pipe N. 596030.6 E. 1364550.9
M-2B	Std. Precast Manhole	~~408.70~~ 52	~~408.20~~ 22	415.73 ~~416.0~~		Ho. Co. Std. G 5.13 5'Ø	℄ N. 596086.9 E. 1364699.2
S-1A	Concrete End Section	~~407.61~~ 77	~~407.5~~ 26			Ho. Co. St'd. SD 5.51 30"Ø	End Pipe N. 596079.5 E. 1364087.6
S-1B	End Pipe	—	413.36				End Pipe N. 596011.6 E. 1364654.16
* M-2	St'd. Precast Manhole	~~425.00~~ 423.32	422.048	431.13		Ho. Co. St'd. G 5.13 5'Ø	℄ N. 596058 E. 1364531
M-3	St'd. Precast Manhole	~~428.86~~	~~428.86~~	436. ~~5.35~~		Ho. Co. St'd. G 5.13 5'Ø	℄ N. 596086 E. 1364511
M-4	St'd. Precast Manhole	~~438.70~~	~~438.50~~	450.0		Ho. Co. St'd. G 5.13 5'Ø	℄ N. 596061 E. 1364427
M-5	St'd. Precast Manhole	~~440.75~~	~~440.50~~	455.0		Ho. Co. St'd. G 5.13 5'Ø	℄ N. 596065 E. 1364289
I-6	A-10 Inlet	~~441.71~~	~~441.51~~	~~451.21~~ 10	~~451.06~~	Ho. Co. St'd. SD 4.02 W=2'-6"	LFC 13+~~90.5~~ 86.20 26' Rt. Rd. B
I-7	A-10 Inlet	~~444.48~~	~~442.04~~ 441.70	~~451.21~~ 10	~~451.06~~	Ho. Co. St'd. SD 4.02 W=2'-6"	RFC 13+~~90.5~~ 86.20 26' Lt. Rd. B
M-8	St'd. Precast Manhole	~~444.85~~ 445.04	~~443.85~~	454.~~00~~ 20		Ho. Co. St'd. G 5.13 5'Ø	℄ 12+~~18.91~~ ~~28.75~~ Lt. Rd. B
MH From Parcel 'A'	St'd. Precast Manhole	439.82 437.73	437.53	450.22		Ho. Co. St'd. G 5.13 5' Ø	N 596,064.45 E 1,364,335.27
I-15	A-10 Inlet	~~446.76~~ 50	~~446.53~~ 78	~~452.97~~ 85	~~452.76~~	Ho. Co. St'd. SD 4.01 W=2'-6"	LFC 10+56.00 26' Lt. Rd. B
I-16	A-15 Inlet	447.44	~~447.15~~ 05	~~452.41~~ 05	~~451.81~~	Ho. Co. St'd. SD 4.02 W=2'-6"	RFC 4+~~69.35~~ 30' Lt. Rd. A
I-17	A-10 Inlet	—	~~455.56~~	~~459.58~~ 52	~~459.35~~	Ho. Co. St'd. SD 4.02 W=2'-6"	RFC 3+21.5 30' Lt. Rd. A
I-18	A-15 Inlet	—	~~448.66~~ 14	~~452.41~~ 06	~~451.81~~	Ho. Co. St'd. SD 4.02 W=2'-6"	LFC 4+~~69.35~~ 30' Rt Rd. A
S-25	Metal End Section	410.26	410.20			Ho. Co. St'd. SD 5.61 10"Ø	End Pipe N. 596010.8 E. 1364664.7
I-26	15"Ø Riser	—	412.0	Top Riser 416.58		See detail sheet 14 of	℄ Structure N. 596003.7 E. 1364604.4
S-27	Metal End Section	407.05	407.0			Ho. Co. St'd. SD 5.61 12"Ø	End Pipe N. 596582.8 E. 1363825.9
I-28	18"Ø Riser	—	408.0	Top Riser 412.67		See detail sheet 14 of	℄ Structure N. 596548.3 E. 1363868.7

□ All inverts to be fully developed, except at M-2.

* See Trash Rack grate details, Sheet 10
Invert is not developed.

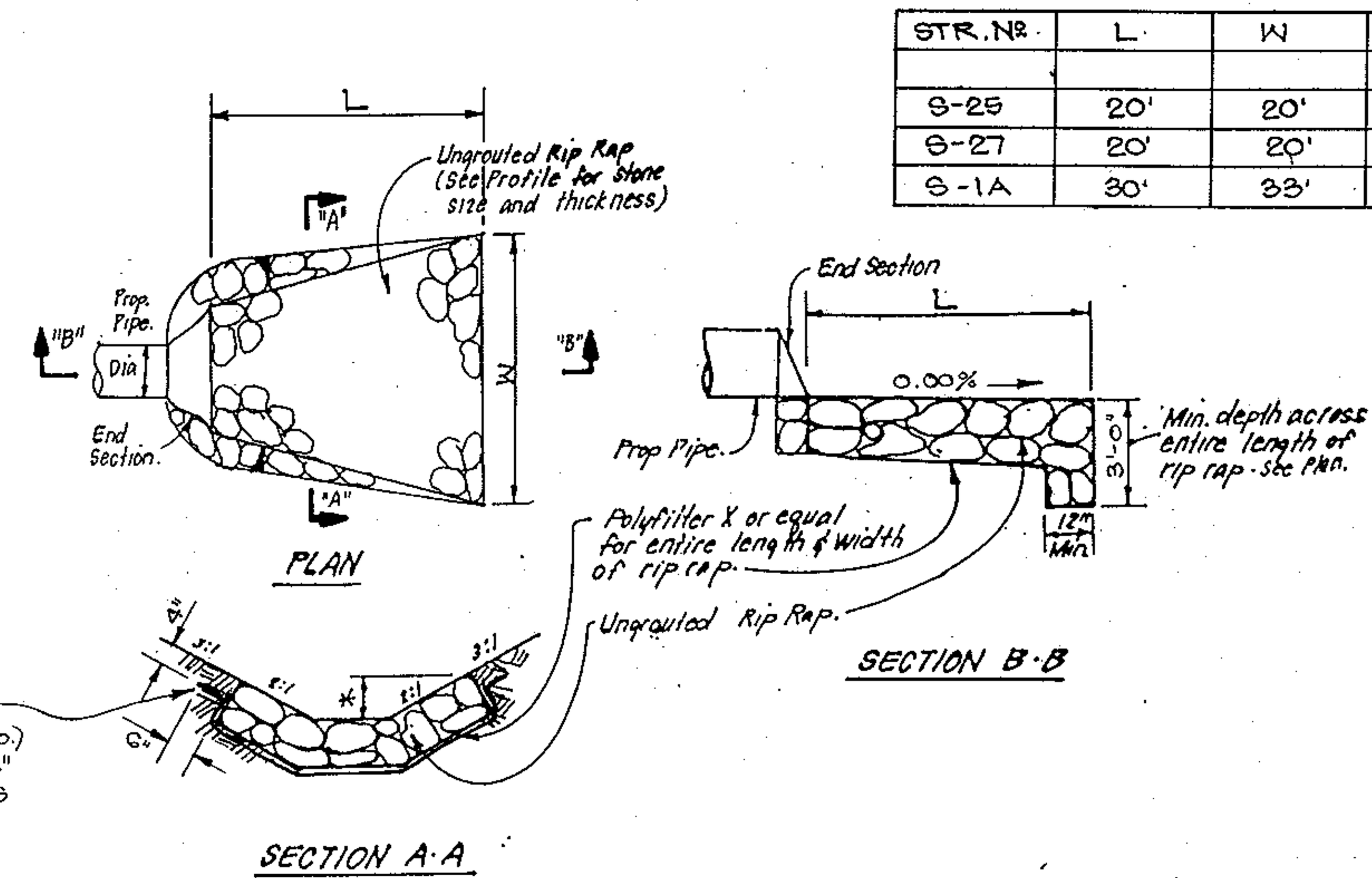


STRUCTURE #S-1B UNGROUTED RIP-RAP DETAIL

NO SCALE

STR. Nº	L	W	D50	THICKNESS	SHA CL.	*
S-25	20'	20'	9½"	19"	I	1.0'
S-27	20'	20'	9½"	19"	I	1.0'
S-1A	30'	33'	16"	32"	II	Varies

1.5' at pipe outlet
1.0' at end of RipRap



DETAIL FOR STRUCTURES S-1A, S-25 AND S-27

NOT TO SCALE

PIPE SCHEDULE

SIZE	TYPE	LENGTH
12"	PVC SCHEDULE 40	50 L.F.
15"	RCP CL. IV	12 L.F.
15"	RCP CL. V	254 L.F.
18"	RCP CL. IV	202 L.F.
30"	RCP CL IV	630 L.F.
Temp. 24"	AL2 CSP 16 ga.	32 L.F.
Temp. 12"	BCCMP 16 ga.	55 L.F.
Temp. 10"	BCCMP 16 ga.	60 L.F.

"As-Built" 11-10-99

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Signature — Date 1/19/96
Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE ~~NATURAL RESOURCES CONSERVATION SERVICE.~~ HSCD
Approved 1/19/96

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research — Date 2/2/96
Chief, Development Engineering Division — Date 2/1/96

DEVELOPER'S/BUILDER'S CERTIFICATE

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NAME John Gudelsky — DATE 1/4/96

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.

G. NELSON CLARK — DATE 1-2-96

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ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 — BALTO. • (301) 621-8100 — WASH.

DESIGNED	TITLE	SCALE
KWM	STORM DRAINAGE PROFILES AND DETAILS	AS SHOWN
DRAWN	DANIELS MILL OVERLOOK	DRAWING 9 of 20
CHECKED	TAX MAP 17 PART OF PARCEL 41, SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION, 10910 ROUTE 108, ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

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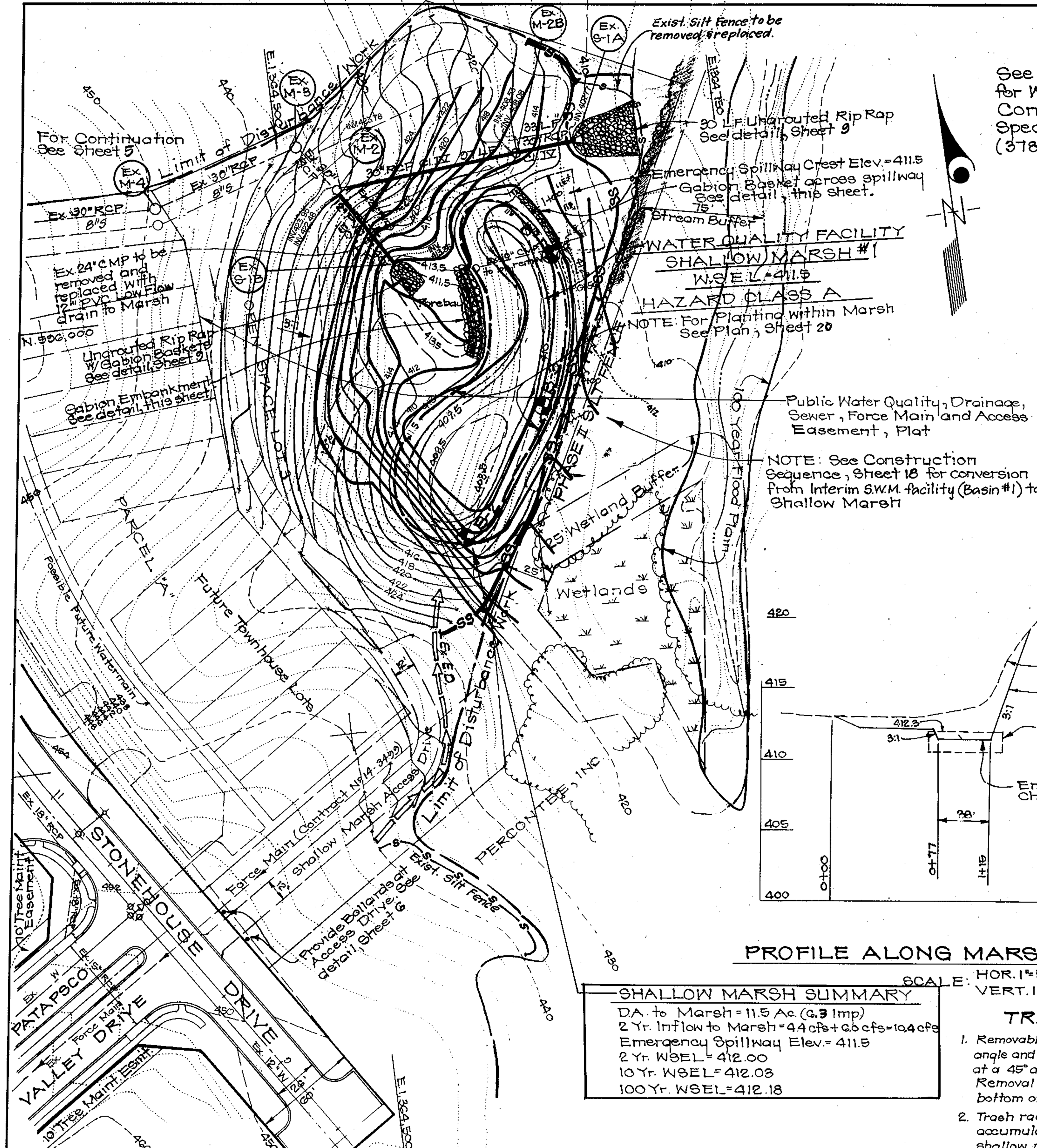


See Sheet 11 for Water Quality Construction Specifications (378 Pond Specs.)

PLAN

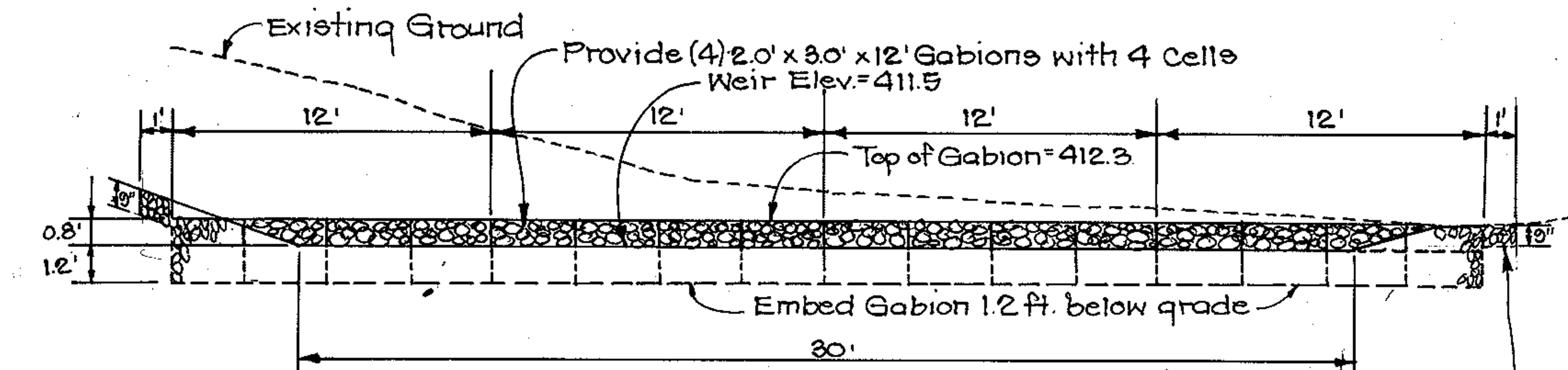
SCALE: 1" = 40'

HOMEOWNER'S ASSOCIATION RESPONSIBLE FOR OPERATION, MAINTENANCE & INSPECTION

Inspection of the Shallow Marsh shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards and Specifications for Ponds" (MD-378) The Shallow Marsh owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the marsh and the continued operation, surveillance, inspection and maintenance thereof. The pond owner(s) shall promptly notify the Ho. Co. Dept. of Public Works of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

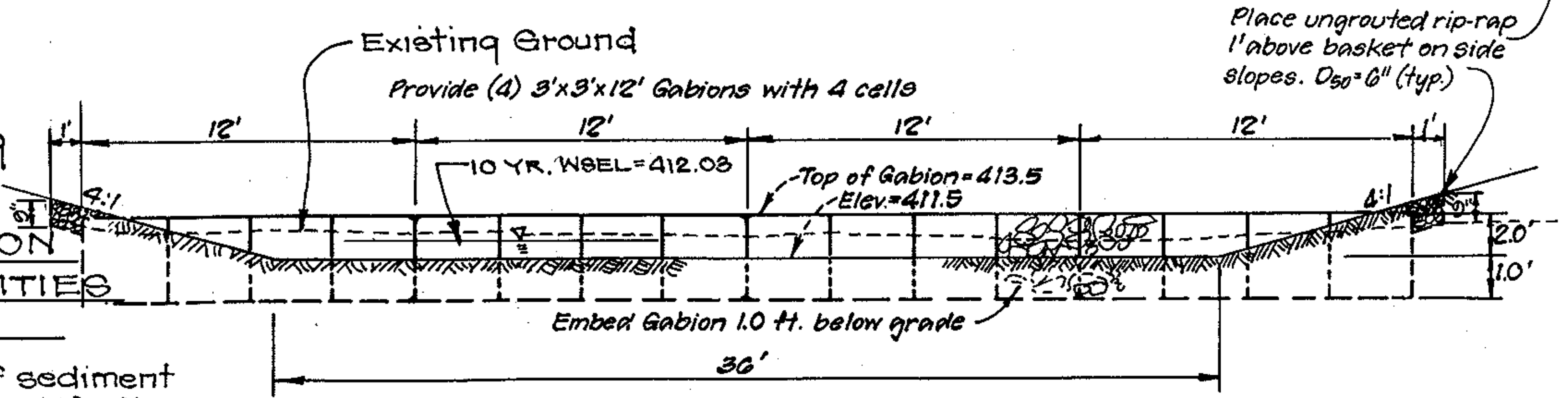
HOMEOWNER'S ASSOCIATION MAINTENANCE RESPONSIBILITIES FOR SHALLOW MARSH

1. Inspect forebay after each storm. If sediment buildup exceeds four (4) inches, notify the Department of Public Works, Bureau of Highways to facilitate cleanout operations.
2. Removal of accumulated paper, trash and debris after every storm as necessary.
3. Annual inspection and repair of the gabion structures as needed.
4. Vegetation growing on the embankment top or faces is not allowed to exceed 18 inches in height at any time.
5. Corrective maintenance is required any time the forebay does not drain down to the designed surface elevation within 60 hours.
6. NOTE: This facility is to be jointly maintained by the H.O.A. for Daniels Mill Overlook and the Department of Public Works.



SECTION AT EMERGENCY SPILLWAY

SCALE: 1" = 5'

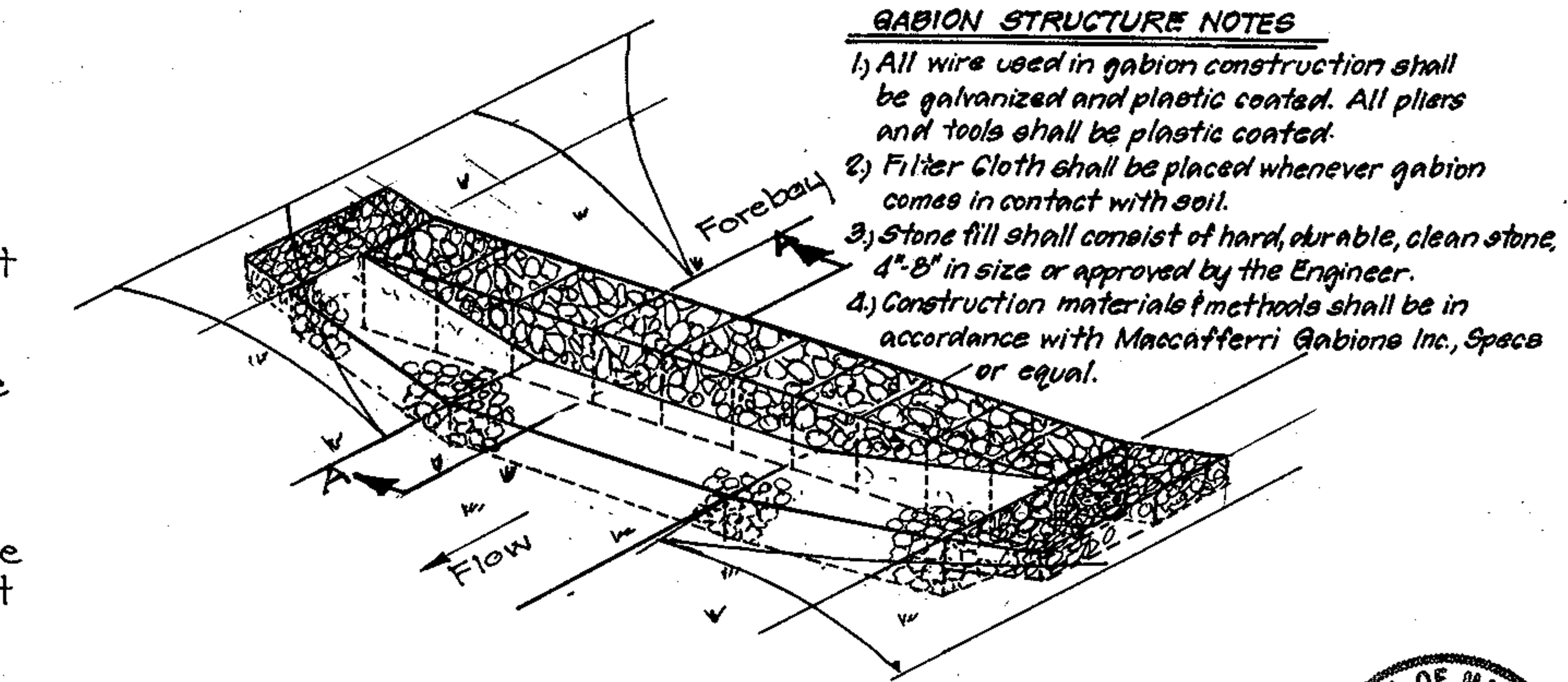


SECTION THRU EMBANKMENT @ FOREBAY

NO SCALE

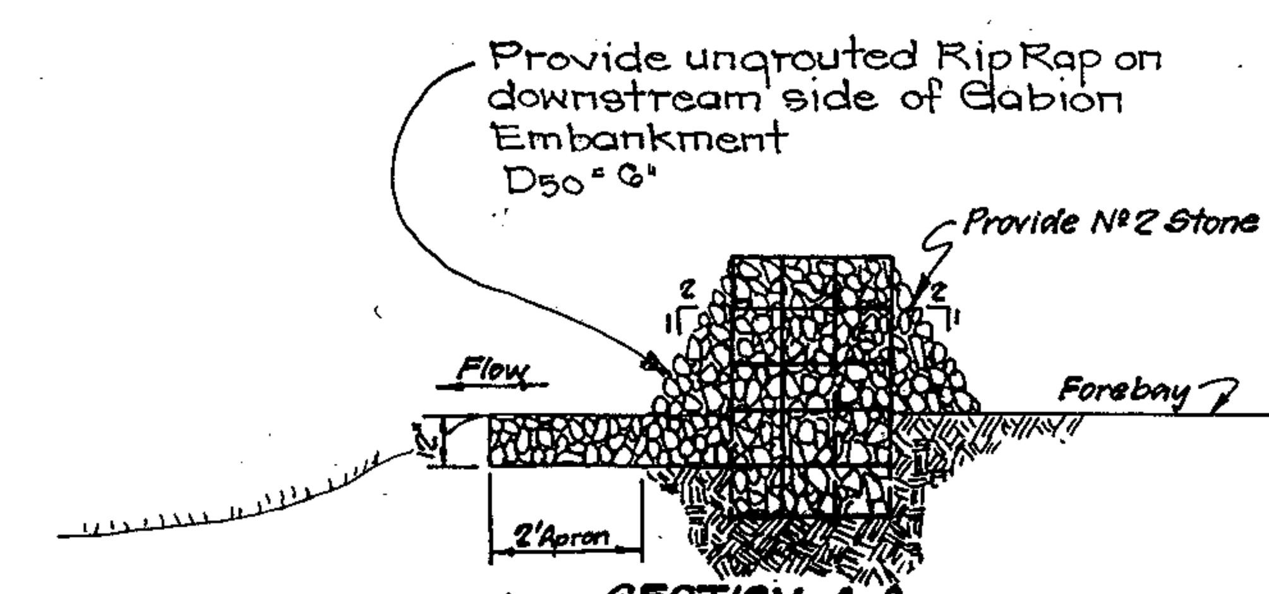
GABION STRUCTURE NOTES

1. All wire used in gabion construction shall be galvanized and plastic coated. All pliers and tools shall be plastic coated.
2. Filter Cloth shall be placed whenever gabion comes in contact with soil.
3. Stone fill shall consist of hard, durable, clean stone, 4"-8" in size or approved by the Engineer.
4. Construction materials & methods shall be in accordance with Maccafferri Gabions Inc, Spec or equal.



ISOMETRIC VIEW

N.T.S.



SECTION A-A

N.T.S.

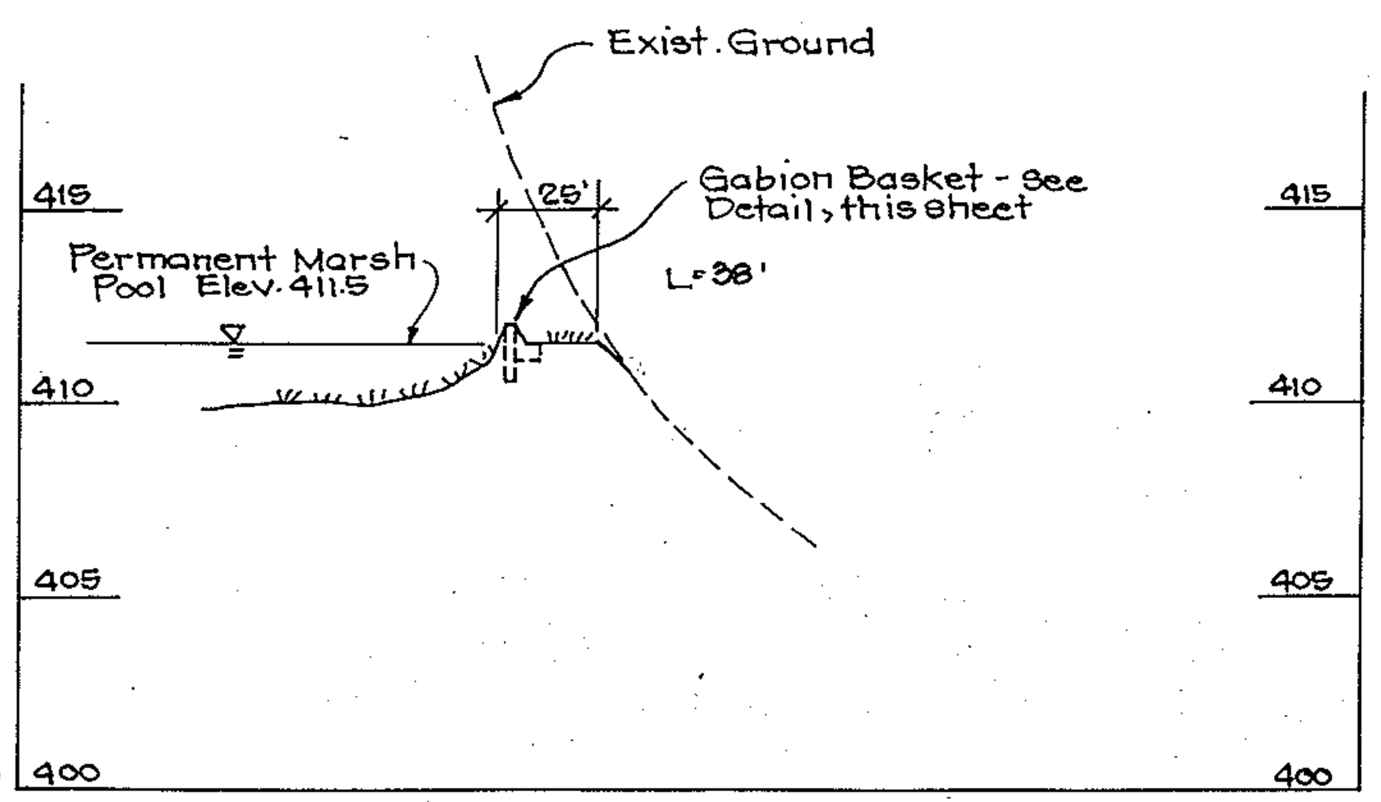
PROFILE ALONG MARSH EMBANKMENT

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

SHALLOW MARSH SUMMARY
D.A. to Marsh = 11.5 Ac. (6.3 Imp)
2 Yr. Inflow to Marsh = 4.4 cfs + 6.0 cfs = 10.4 cfs
Emergency Spillway Elev. = 411.5
2 Yr. WSEL = 412.00
10 Yr. WSEL = 412.03
100 Yr. WSEL = 412.18

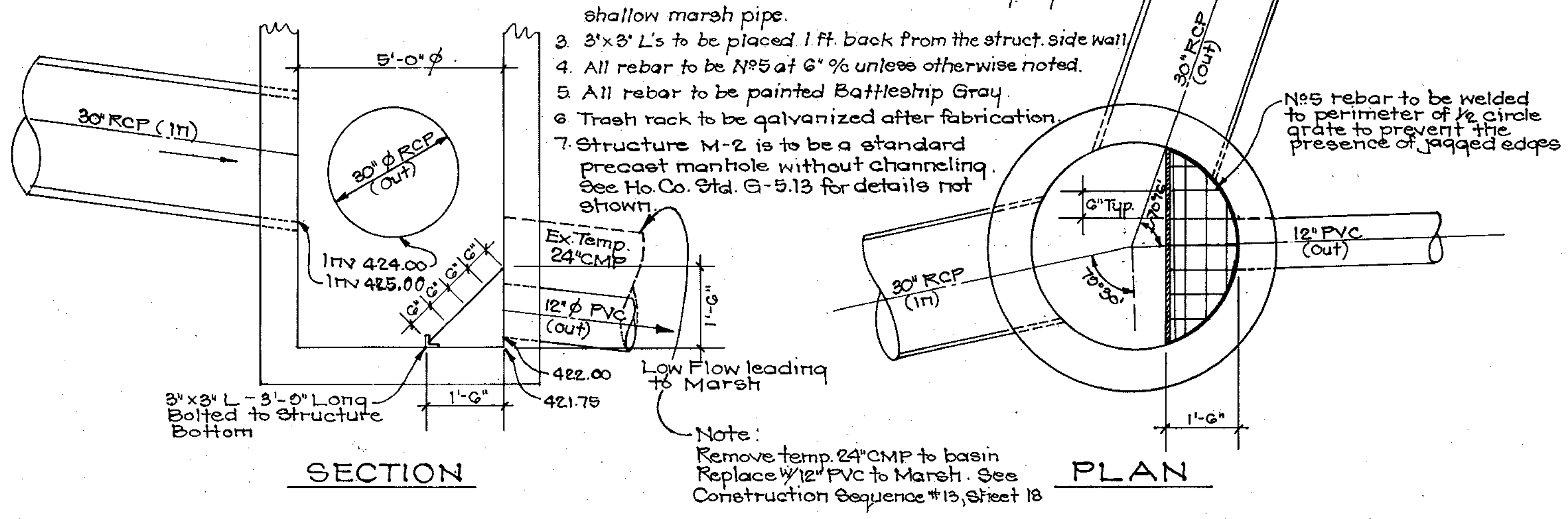
TRASH RACK NOTES

1. Removable trash rack is to be placed on the bolted angle and is to rest against the side of the structure at a 45° angle as shown. Removal of the trash rack will allow access to the bottom of the structure for maintenance.
2. Trash racks are to lay angled as shown to prevent accumulation of debris in front of the outgoing shallow marsh pipe.
3. 3" x 3" L's to be placed 1 ft. back from the struct. side wall.
4. All rebar to be No. 5 at 6" o/c unless otherwise noted.
5. All rebar to be painted Battleship Gray.
6. Trash rack to be galvanized after fabrication.
7. Structure M-2 is to be a standard precast manhole without channeling. See Ho. Co. Std. G-5.13 for details not shown.



PROFILE THRU EMERGENCY SPILLWAY AT MARSH

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



STRUCTURE No. M-2 TRASH RACK DETAIL

NO SCALE

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

Signature Date

Natural Resources Conservation Service

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Approved 1/9/96

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John Gudelsky — NAME — 1/4/96 DATE

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G. NELSON CLARK — 1-9-96 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — 2/2/96 Date

Chief, Development Engineering Division — 2/1/96 Date

As-Built 11-16-00

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED KWM	WATER QUALITY FACILITY/ SHALLOW MARSH PLAN, PROFILES AND DETAILS	SCALE AS SHOWN
DRAWN	DANIELS MILL OVERLOOK	DRAWING 10 of 20
CHECKED	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

1783

WATER QUALITY CONSTRUCTION SPECIFICATIONS

SPECIFICATIONS

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

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

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

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

   Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

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

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

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

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill."

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

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

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

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill."

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

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3

Rock Riprap

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

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

1783

"AS-BUILT" 10-10-96

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — Date 2/3/96

Chief, Development Engineering Division — Date 2/1/96

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ENGINEERS • PLANNERS • SURVEYORS
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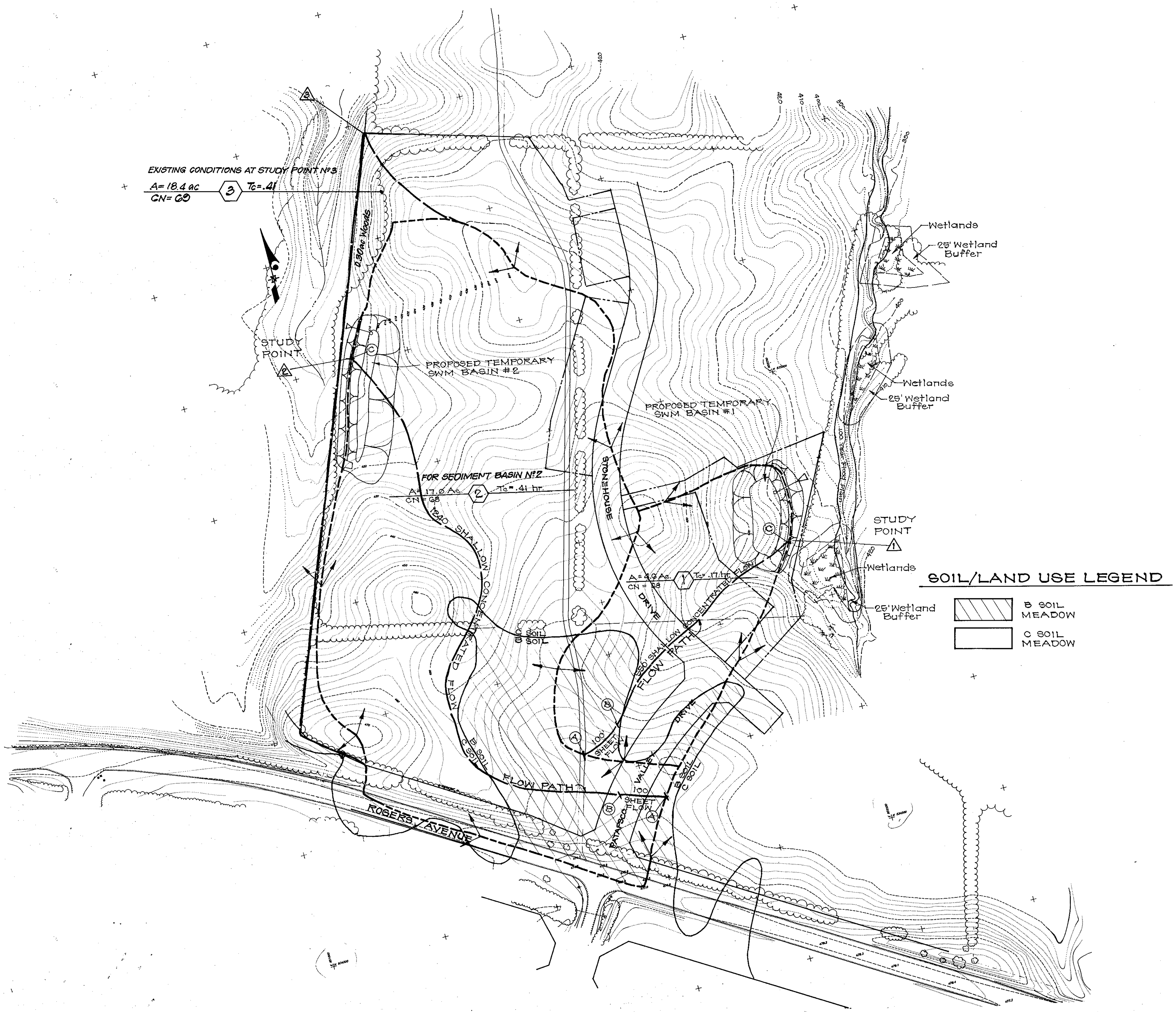
DESIGNED KIWM	WATER QUALITY SPECIFICATIONS	SCALE —
DRAWN	DANIELS MILL OVERLOOK	DRAWING 11 of 20
CHECKED	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

1783



"AS-BUILT" 11-10-00

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — Date 2/2/96

Chief, Development Engineering Division — Date 2/1/96

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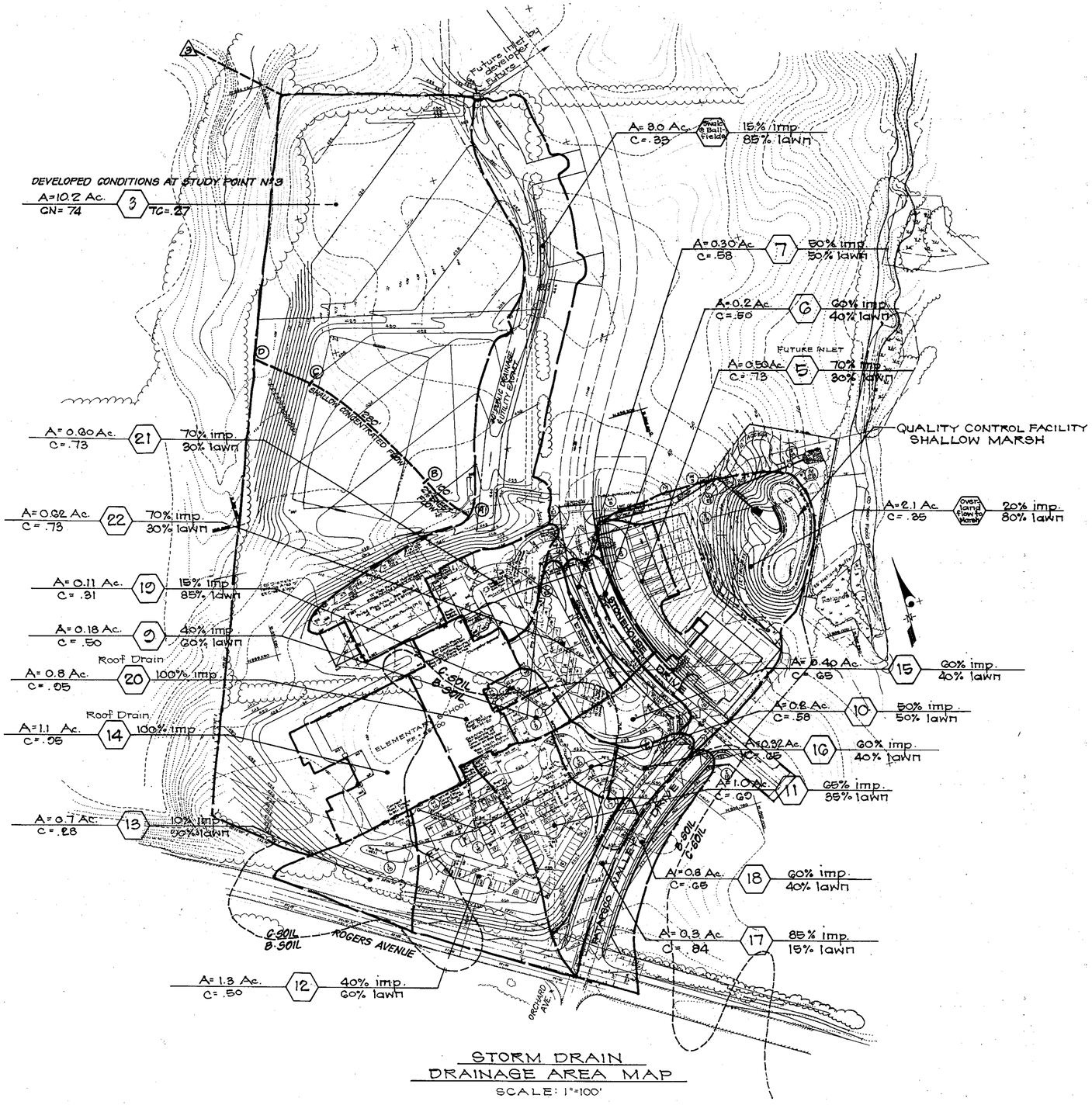
DESIGNED KIWM	DRAINAGE AREA MAP EXISTING CONDITIONS	SCALE 1"=100'
DRAWN	DANIELS MILL OVERLOOK	DRAWING 12 of 20
CHECKED KM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37



STORM DRAIN
DRAINAGE AREA MAP
SCALE: 1"=100'

1783

AS BUILT 1-10-00

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — 2/2/96 Date

Chief, Development Engineering Division — 2/1/96 Date

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ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED KIWM	DRAINAGE AREA MAP PROPOSED CONDITIONS	SCALE 1"=100'
DRAWN	DANIELS MILL OVERLOOK	DRAWING 13 of 20
CHECKED KIWM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

INTERIM S.W.M. FACILITY / BASIN Nº 1

Drainage Area = 11.5 Ac.
Sediment Storage Required = 11.5 x 3600 = 41,400 cf
Sediment Storage Provided = 20,740 c.f. @ Elev. 414º
+ 24,394 c.f. @ Elev. = 416º
45,134 c.f. TOTAL

Riser Crest Elev. = 416.0
Cleanout Elev. = 413.0
Inv. 6" Ø Dewatering Device = 412.5
Top of Constructed Dam Elev. = 422.0
Top of Settled Dam Elev. = 421.0
2:1 Side Slopes

DISTANCE FROM RISER CREST TO CLEANOUT ELEV. = 3'

Storm Event	W.S.E.L.	Exist. Q	Managed Q	Unmanaged Q
2 Year	417.55	4.0	3.77	27.0
10 Year	419.48	11.5	NA	48.4
10 Year*	419.50	11.5	NA	48.4

*clogged

NOTE: THIS SEDIMENT BASIN WILL PROVIDE INTERIM S.W.M. AND WILL BE REMOVED UPON WRITTEN PERMISSION FROM HOWARD COUNTY SOIL CONSERVATION DISTRICT.

NOTE:
THIS SEDIMENT AND EROSION CONTROL PLAN IS TO SERVE FOR BOTH ROAD CONSTRUCTION AND PROPOSED SCHOOL CONSTRUCTION. (SDP-96-34)

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.

G. Nelson Clark 1.9.96
G. NELSON CLARK DATE

G. NELSON CLARK

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".

John Gudelsky 1/4/96
NAME DATE
John Gudelsky

Reviewed for HOWARD S.C.D.
and meets Technical Requirements
Patricia Engley/66. 1/19/96
Signature Date
Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE ~~NATURAL RESOURCES CONSERVATION SERVICE~~ HSCD
1/19/96
Approved

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Ganeke HS 1-30-96
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Gina Swinmanye 2/2/96
Chief, Division of Land Development and Research Date TC
2/1/96
Chief, Development Engineering Division Date

"AS-BUILT" 11-10-00
ALDO MICHAEL VITUCCI
NO. 20748

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ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (410) 381-7500 — BALTO. • (301) 621-8100 — WASH.

DESIGNED KIWM	MASS GRADING AND SEDIMENT AND EROSION CONTROL PLAN DANIELS MILL OVERLOOK TAX MAP 17 PART OF PARCEL 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=40'
DRAWN		DRAWING 14 of 20
CHECKED WHH KR		JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

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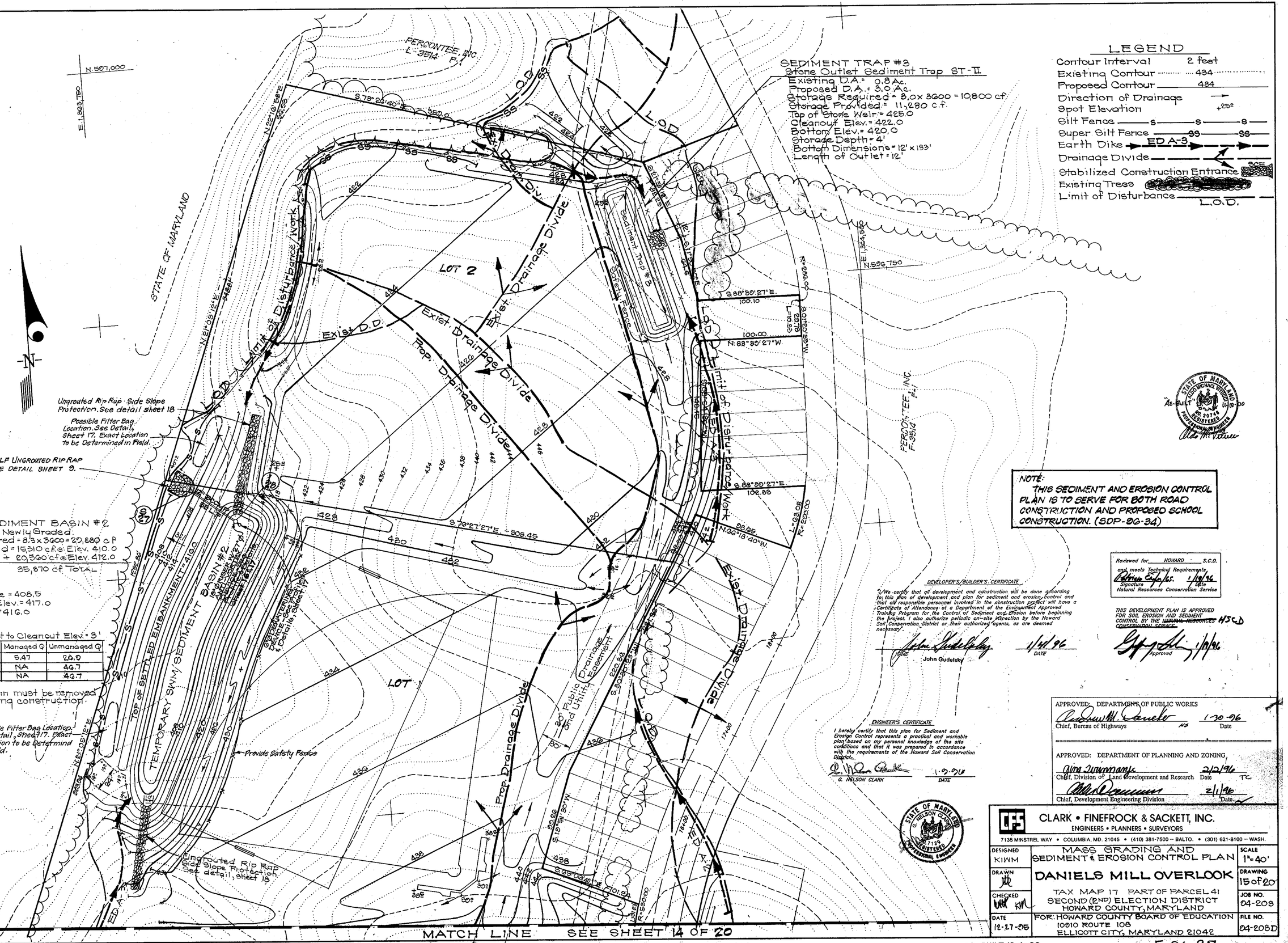

SEDIMENT TRAP #3
Stone Outlet Sediment Trap ST-II
Existing D.A.= 0.8 Ac.
Proposed D.A.= 3.0 Ac.
Storage Required = 3.0 x 3600 = 10,800 c.f.
Storage Provided = 11,280 c.f.
Top of Stone Weir = 425.0
Clearout Elev. = 422.0
Bottom Elev. = 420.0
Storage Depth = 4'
Bottom Dimensions = 12' x 133'
Length of Outlet = 12'

TEMPORARY SWM/SEDIMENT BASIN #2
Drainage Area = 8.3 Ac. Newly Graded
Sediment Storage Required = 8.3 x 3600 = 29,880 c.f.
Sediment Storage Provided = 15,310 c.f. @ Elev. 410.0
+ 20,560 c.f. @ Elev. 412.0
35,870 c.f. TOTAL

Riser Crest Elev. = 412.0
Clearout Elev. = 409.0
Inv. 6"ø Dewatering Device = 408.5
Top of Constructed Dam Elev. = 417.0
Top of Settled Dam Elev. = 416.0
2:1 Side slopes

NOTE: Distance from Riser Crest to Clearout Elev. = 3'

Storm Event	W.S.E.L.	Exist. Q	Managed Q	Unmanaged Q
2 Year	412.85	2.88	5.47	26.9
10 Year	414.52	20.5	NA	40.7
10 Year*	414.58	20.5	NA	40.7

*Clogged

NOTE: This Sediment Basin must be removed 36 months after beginning construction.

LEGEND
Contour Interval 2 feet
Existing Contour 434
Proposed Contour 434
Direction of Drainage
Spot Elevation +25.0
Silt Fence —S—S—S—
Super Silt Fence —SS—SS—
Earth Dike EDA-3
Drainage Divide
Stabilized Construction Entrance SCE
Existing Trees
Limit of Disturbance L.O.D.

NOTE:
THIS SEDIMENT AND EROSION CONTROL PLAN IS TO SERVE FOR BOTH ROAD CONSTRUCTION AND PROPOSED SCHOOL CONSTRUCTION. (SDP-96-34)

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Signature Natural Resources Conservation Service 1/19/96

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE NATURAL RESOURCES CONSERVATION SERVICE. HSCD
Approved 1/19/96

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 John Gudelsky 1/11/96 DATE
John Gudelsky

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.

G. NELSON CLARK 1-9-96 DATE

STATE OF MARYLAND G. NELSON CLARK No. 7139 REGISTERED PROFESSIONAL ENGINEER

As-Built 1-10-00
STATE OF MARYLAND HUGO MICHAEL VISCONTI NO. 20748 REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development and Research 2/2/96 Date TC
Chief, Development Engineering Division 2/1/96 Date

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ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED KIWM	MASS GRADING AND SEDIMENT & EROSION CONTROL PLAN	SCALE 1"=40'
DRAWN	DANIELS MILL OVERLOOK	DRAWING 15 of 20
CHECKED KIWM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 04-208
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 04-208D

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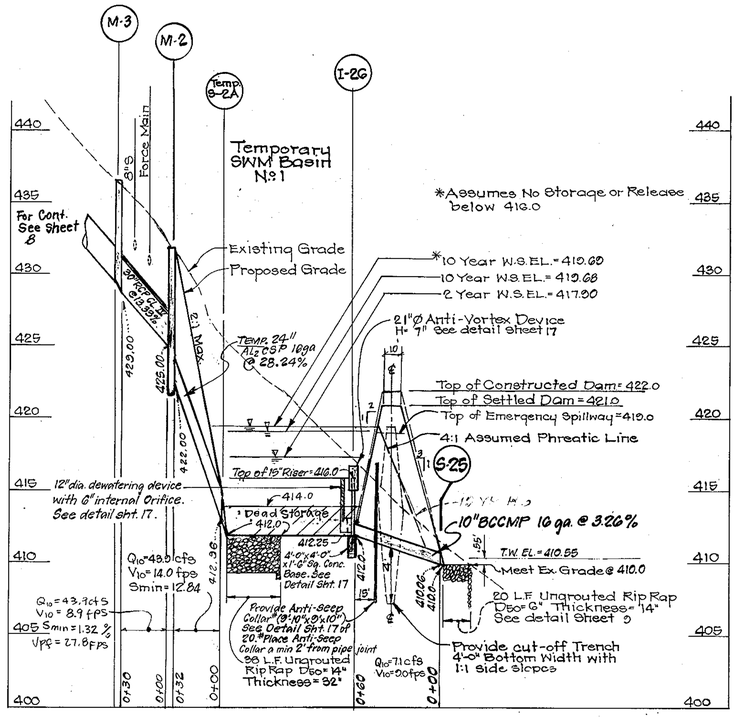
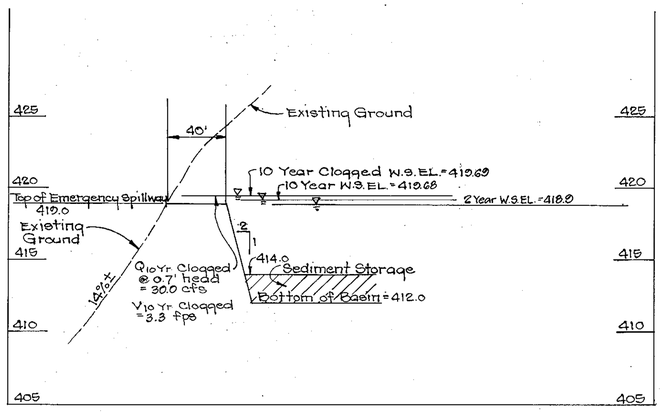
AS-BUILT 12-1-99

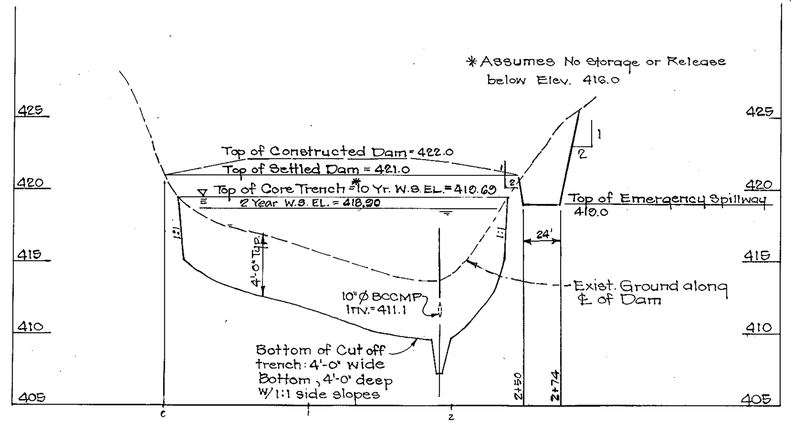
F-96-37



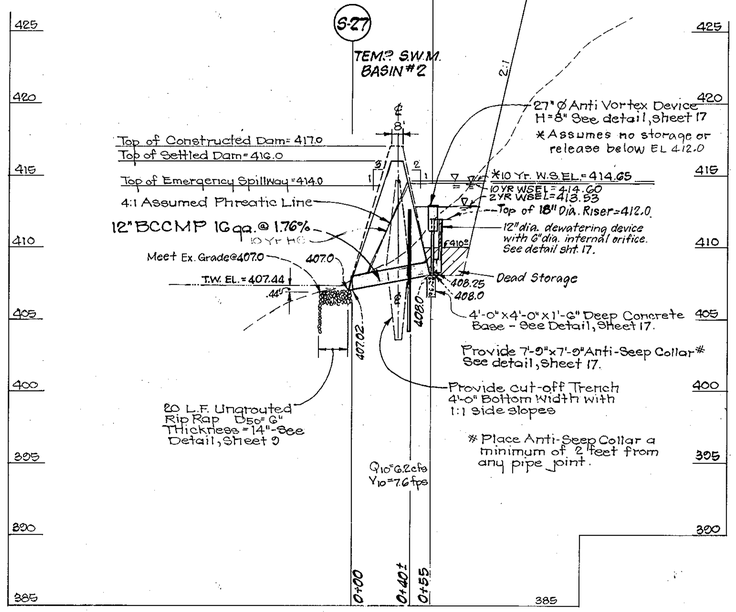
PROFILE THRU PRINCIPAL SPILLWAY
INTERIM S.W.M. FACILITY - BASIN Nº 1



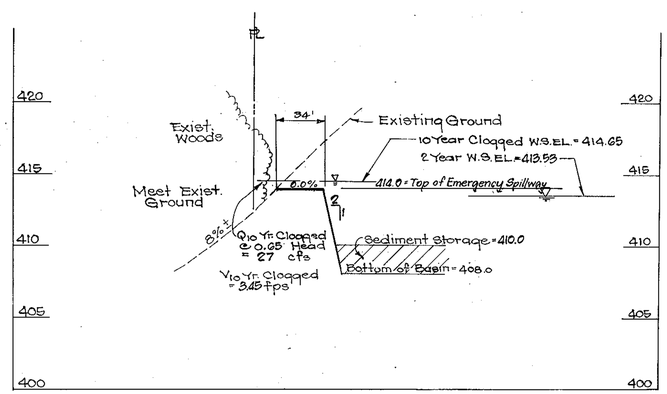
PROFILE THRU EMERGENCY SPILLWAY
INTERIM S.W.M. FACILITY - BASIN Nº 1



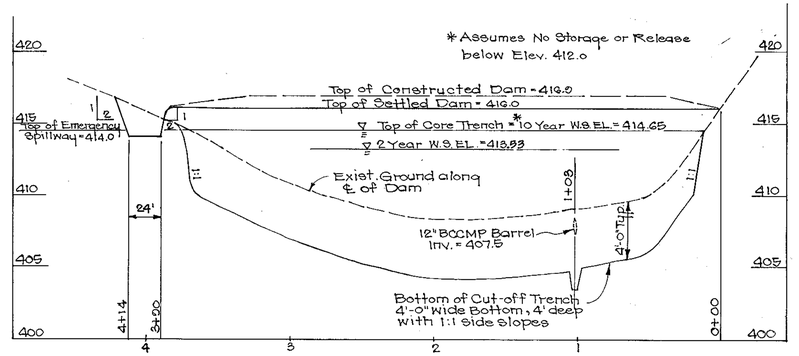
PROFILE ALONG CENTERLINE OF DAM
INTERIM S.W.M. FACILITY - BASIN Nº 1



PROFILE THRU PRINCIPAL SPILLWAY
TEMPORARY SEDIMENT BASIN Nº 2



PROFILE THRU EMERGENCY SPILLWAY
TEMPORARY SEDIMENT BASIN Nº 2



PROFILE ALONG CENTERLINE OF DAM
TEMPORARY SEDIMENT BASIN Nº 2

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

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.

G. NELSON CLARK — 1-17-96 DATE

STATE OF MARYLAND G. NELSON CLARK No. 7139 REGISTERED PROFESSIONAL ENGINEER

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".

John Gudelsky — NAME — 1/4/96 DATE

APPROVED DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — 2/2/96 Date TC

Chief, Development Engineering Division — 2/1/96 Date

Reviewed for HOWARD S.C.D. and meets Technical Requirements
Signature — 1/19/96 Date
Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE ~~NATURAL RESOURCES~~ ~~CONSERVATION SERVICE~~ NRCS

Approved — 1/19/96

AS-BUILT — STATE OF MARYLAND ALDO MICHAEL VITUCCI No. 20748 REGISTERED PROFESSIONAL ENGINEER — 11-10-00

AS-BUILT 12-1-99

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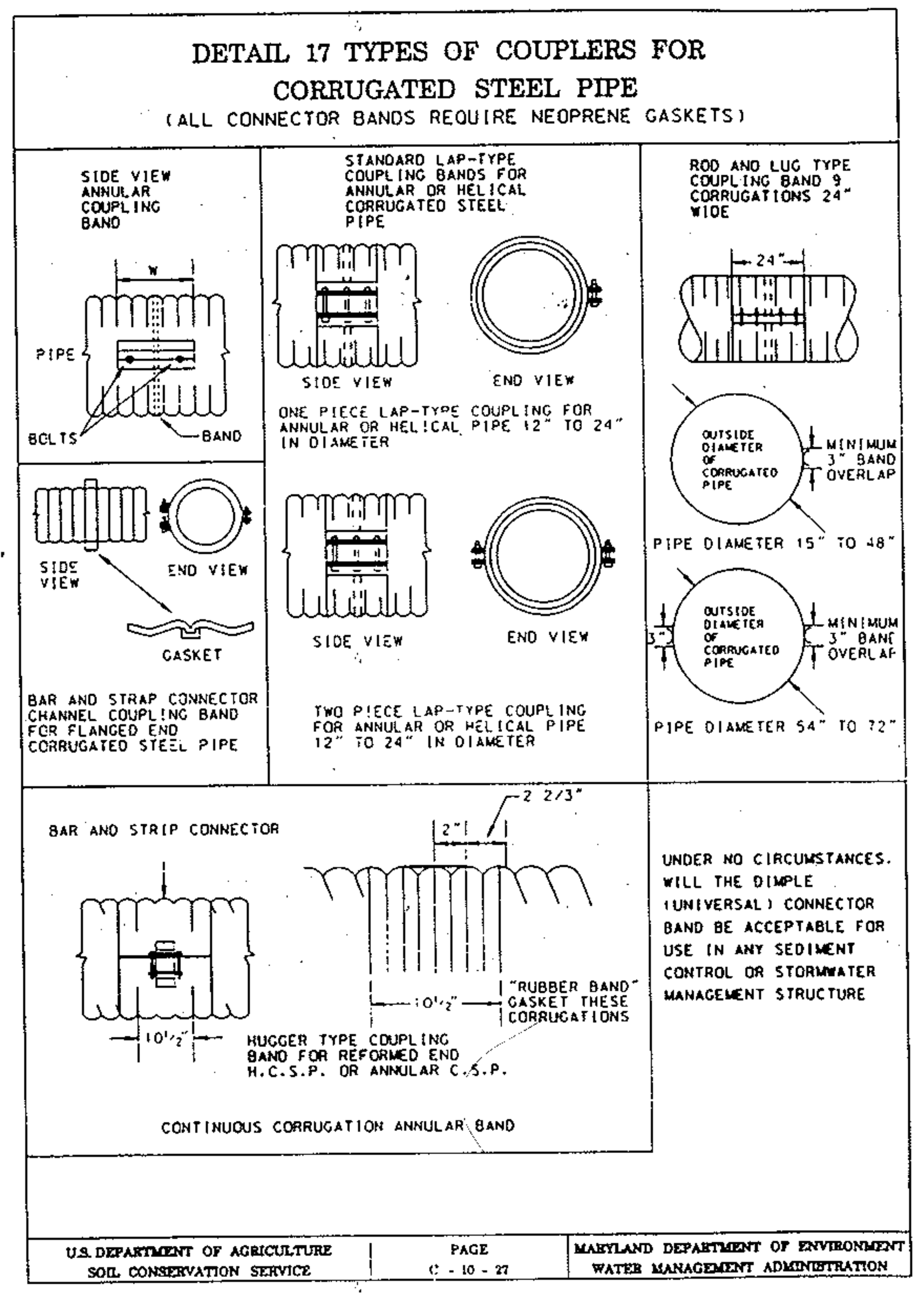
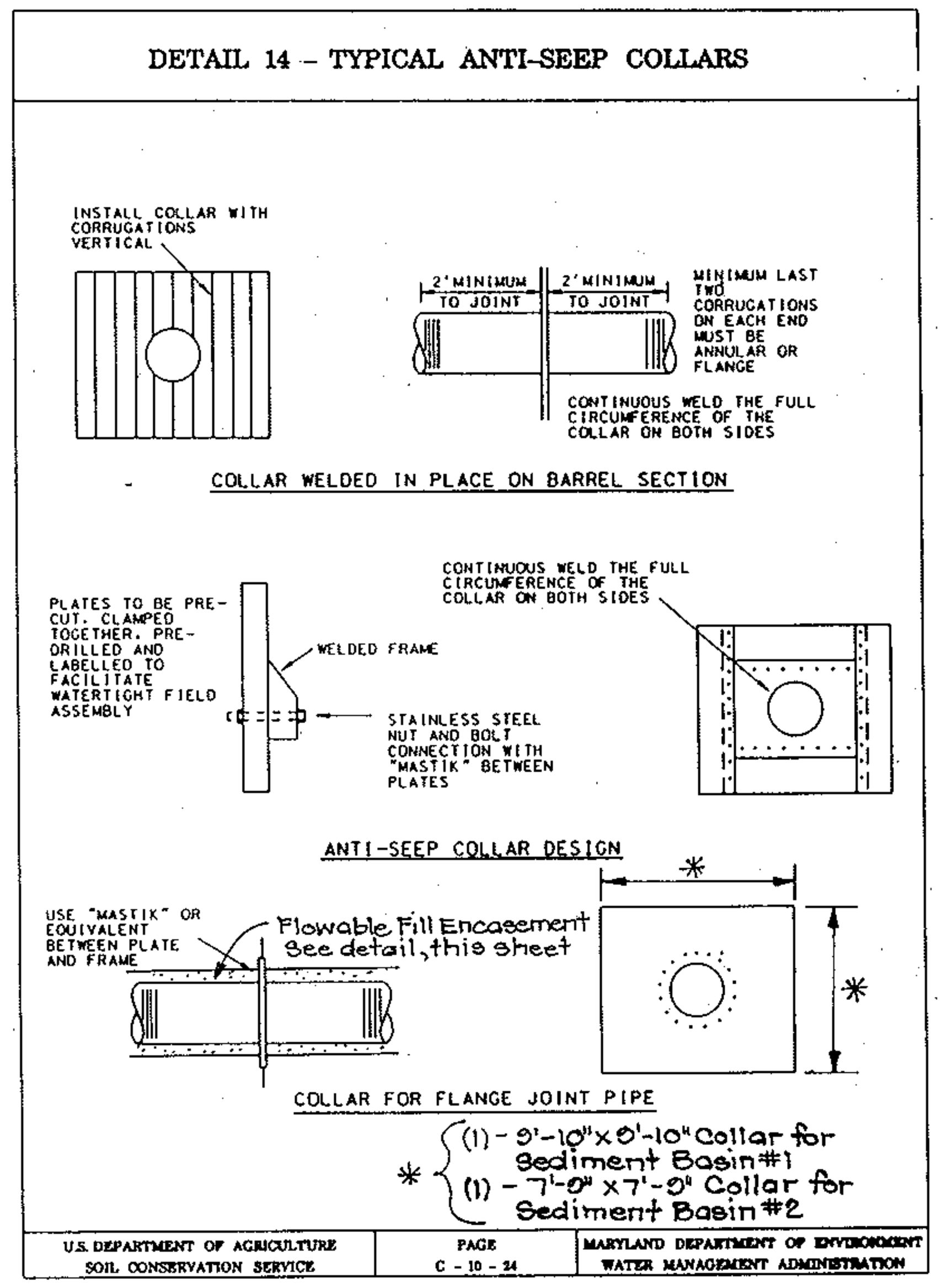
DESIGNED KIWM	INTERIM S.W.M. AND SEDIMENT BASIN PROFILES	SCALE As Shown
DRAWN KK	DANIELS MILL OVERLOOK	DRAWING 16 of 20
CHECKED KIWM KPM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

1783

F-96-37





Note: Place anti-seep collar a minimum of 2 feet from any joint.

Construction Specifications

1. Site Preparation: Perimeter sediment control devices must be installed prior to clearing and grubbing. Areas where the embankment is to be placed shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. The pool area shall not be cleared until completion of the dam embankment unless the pool area is to be used for borrow. In order to facilitate clean-out and restoration, the pool area (measured at the top of the pipe spillway) shall be cleared of all brush, trees, and other objectionable materials.

2. Cut-off Trench: A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be four feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be two feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for the embankment. The trench shall be dewatered during the backfilling-compaction operations. For dewatering see Section D.

3. Embankment: The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) or organic materials (Unified Soil Classes OL and OH) shall not be placed in the embankment. Areas on which fill is to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous lifts over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of each layer of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.

4. Principal Spillway: Steel risers shall be securely attached to the barrel or barrel stub by welding the full circumference making a watertight structural connection. Concrete risers shall be poured with the principal spillway in place or precast with voids around the principal spillway filled with concrete or shrink proof grout for watertight connection. The barrel stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between barrel sections must be achieved by approved watertight band assemblies. The barrel and riser shall be placed on a firm, smooth foundation of impervious soil as the embankment is constructed. Breaching the embankment to install the barrel is unacceptable. Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in four inch lifts and hand compacted under and around the pipe to at least the same density as the adjacent embankment. A depth of 1.5 times the pipe diameter (min.) shall be backfilled over the principal spillway and hand compacted before crossing it with construction equipment.

5. Emergency Spillway: The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of ± 0.2 feet.

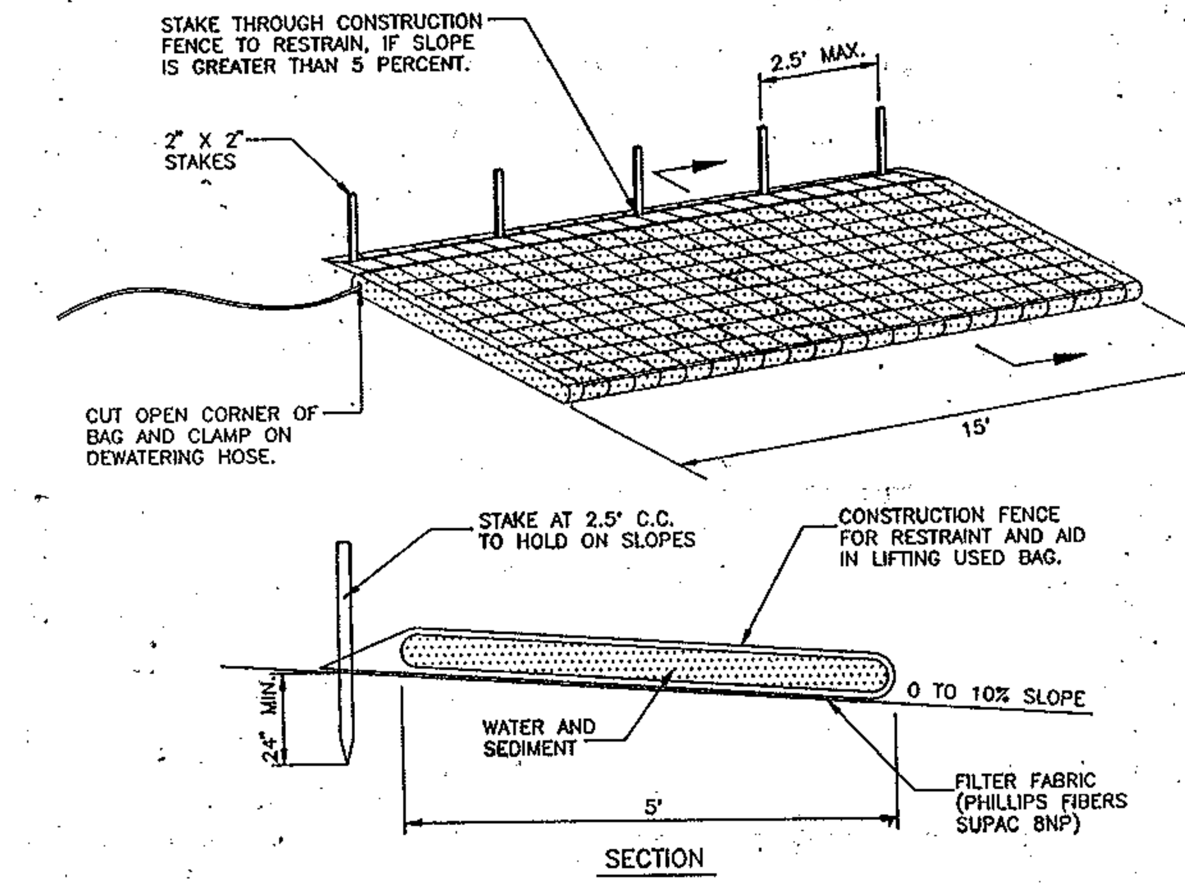
6. Vegetative Treatment: Stabilize the embankment in accordance with the appropriate vegetative Standard and Specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven (7) days. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon basin completion and monitored and maintained erosion free during the life of the basin.

7. Safety: Local requirements concerning fencing and signs shall be met, warning the public of hazards of soft sediment and floodwater.

8. Maintenance: Repair all damage caused by soil erosion and construction equipment at or before the end of each working day. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser as shown on the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain. Disposal areas must be stabilized.

9. Final Disposal: When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the basin material and trapped sediments must be removed and safely disposed of and the basin shall be backfilled with a structural fill. When the basin area is to remain open space, the pond may be pumped dry (using methods in Section D - Dewatering), graded, and back filled.

10. Conversion to Stormwater Management Structure: After permanent stabilization of all disturbed contributory drainage areas, temporary sediment basins, if initially built and certified to meet permanent standards, may be converted to permanent stormwater management structures. To convert the basin from temporary to permanent use, the outlet structure must be modified in accordance with approved stormwater management design plans. Additional grading may also be necessary to provide the required storage volume in the basin. Conversion can only take place after all disturbed areas have been permanently stabilized to the satisfaction of the inspection authority and storm drains have been flushed.



NOTES:

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

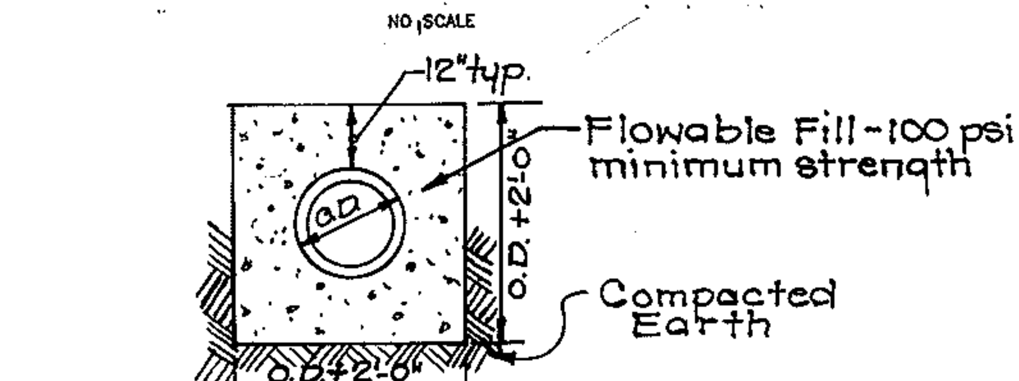
AVAILABLE FROM:

ACF ENVIRONMENTAL 1801-A WILLIS ROAD RICHMOND, VA 23237 TOLL FREE: 1-800-448-3000	INDIAN VALLEY INDUSTRIES, INC. P. O. BOX 810 JOHNSON CITY, NY 13790 (888) 859-5111	PRICE & COMPANY, INC. 425 36TH STREET WYOMING, MI 49548 (616) 530-8230

FILTER BAG — FB

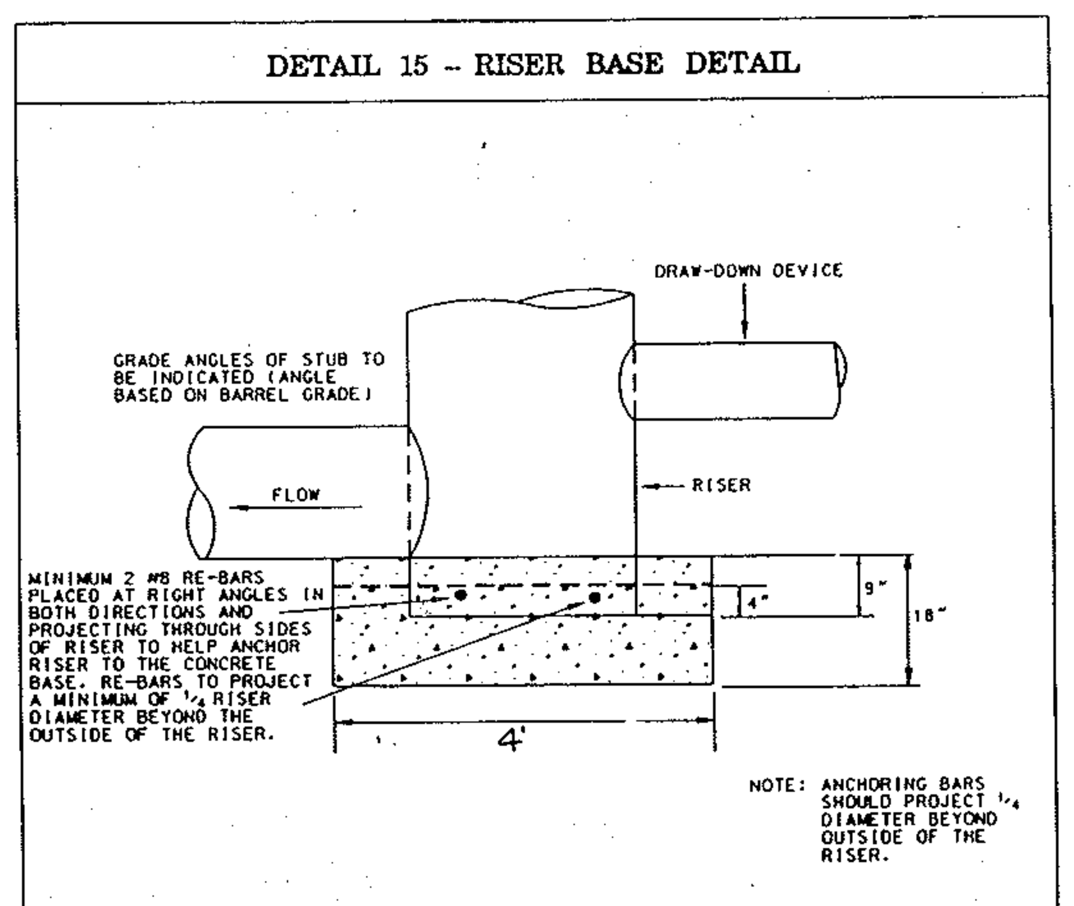
TEMPORARY EROSION CONTROL MEASURE

NO SCALE



FLOWABLE FILL ENCASEMENT DETAIL

N.T.S.



Construction Specifications

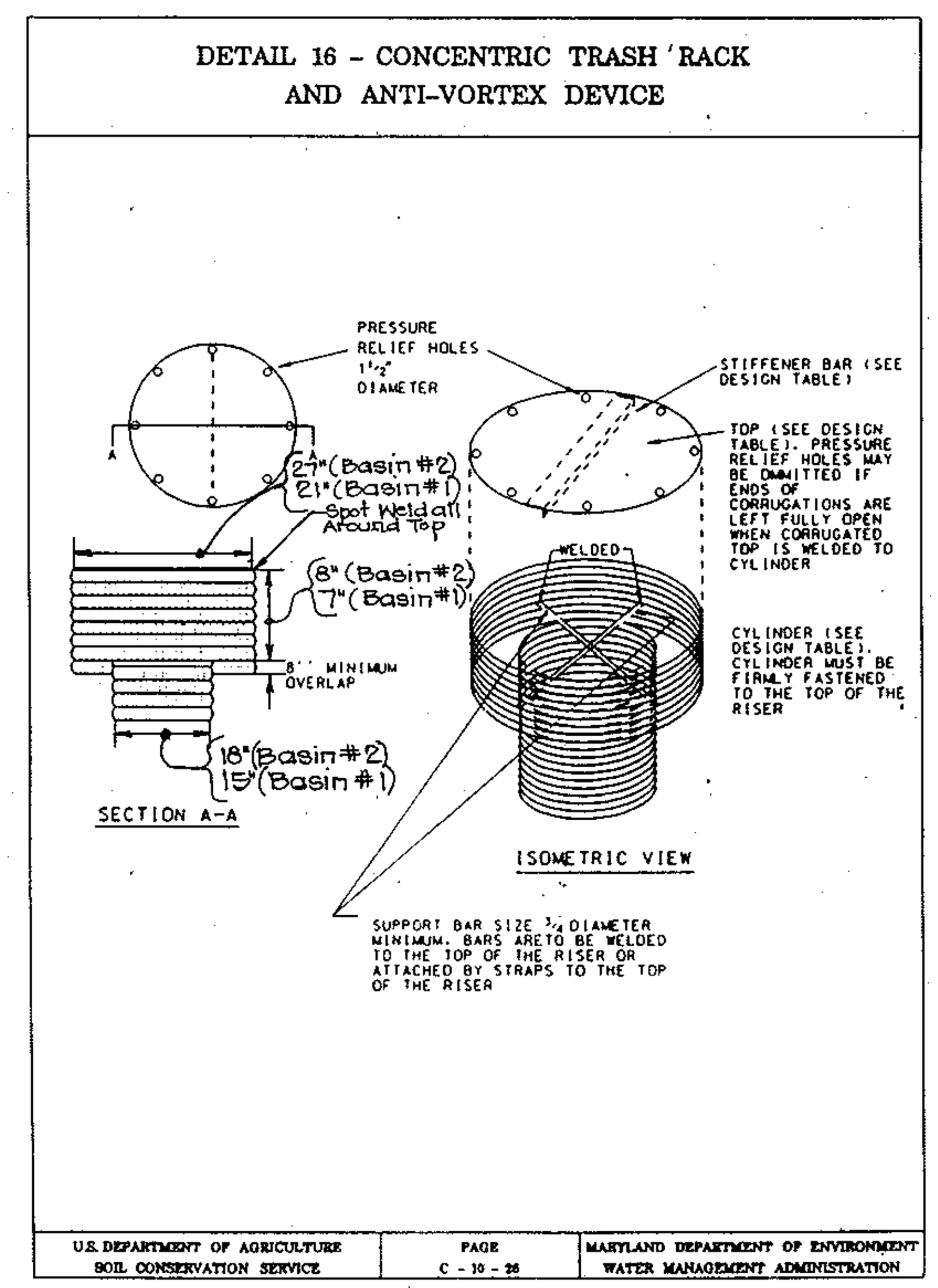
The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10' or less in height are:

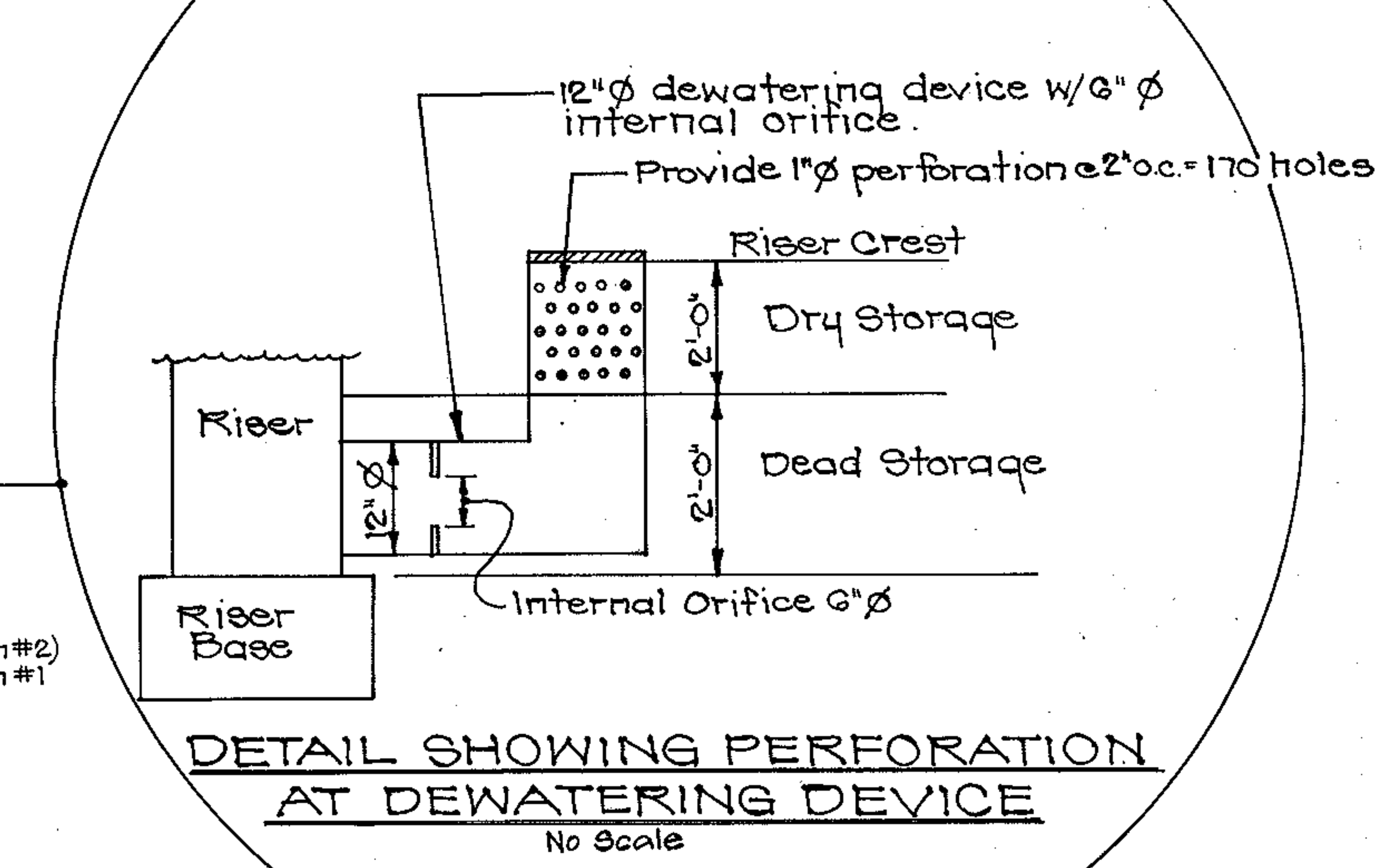
1. A concrete base 18" thick with the riser embedded 9" in the base.

2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2' of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



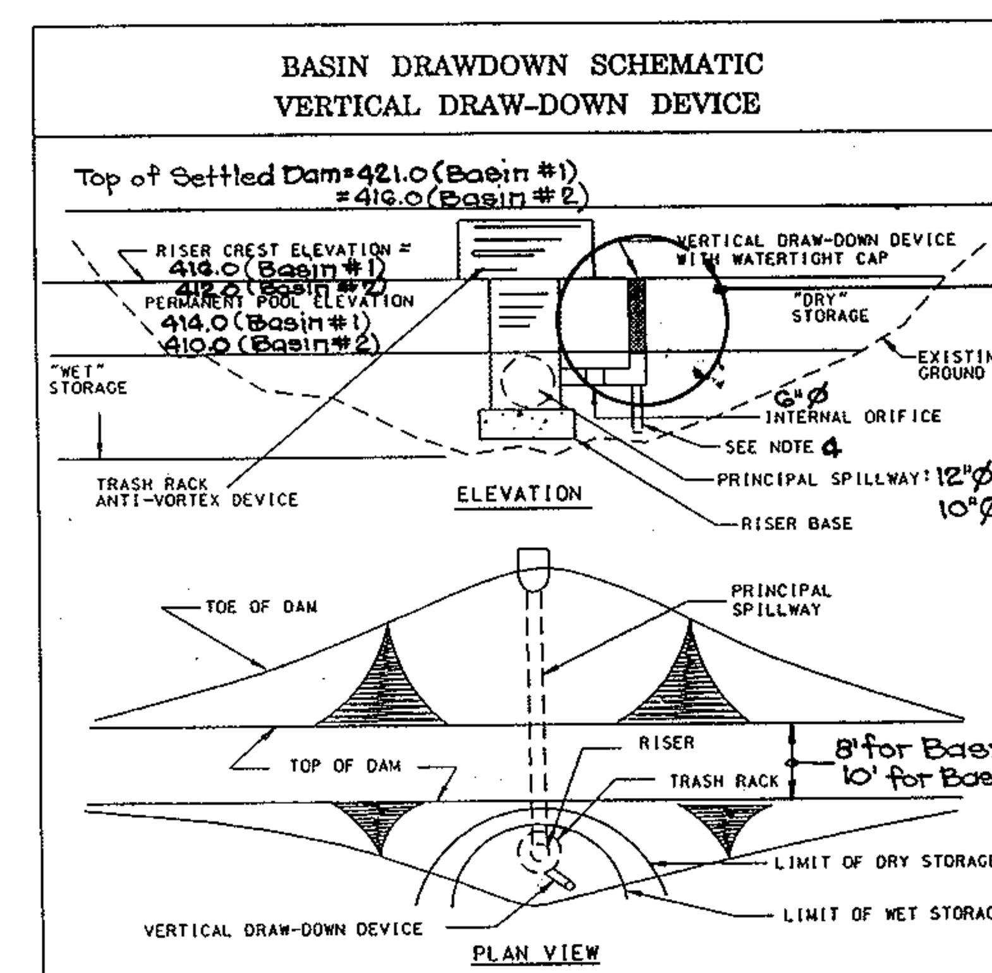


DETAIL SHOWING PERFORATION AT DEWATERING DEVICE

No Scale

BASIN DRAWDOWN SCHEMATIC

VERTICAL DRAW-DOWN DEVICE



Construction Specifications

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

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

3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 30	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE: Dewatering Device to be used with Temporary Sediment Basin.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — Date 2/2/96

Chief, Development Engineering Division — Date 2/1/96

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

Signature — Date

Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE NATURAL RESOURCES CONSERVATION SERVICE.

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."

NAME John Gudelsky — DATE 1/4/96

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.

G. NELSON CLARK — DATE 1.9.96

"As-Built"

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ENGINEERS • PLANNERS • SURVEYORS

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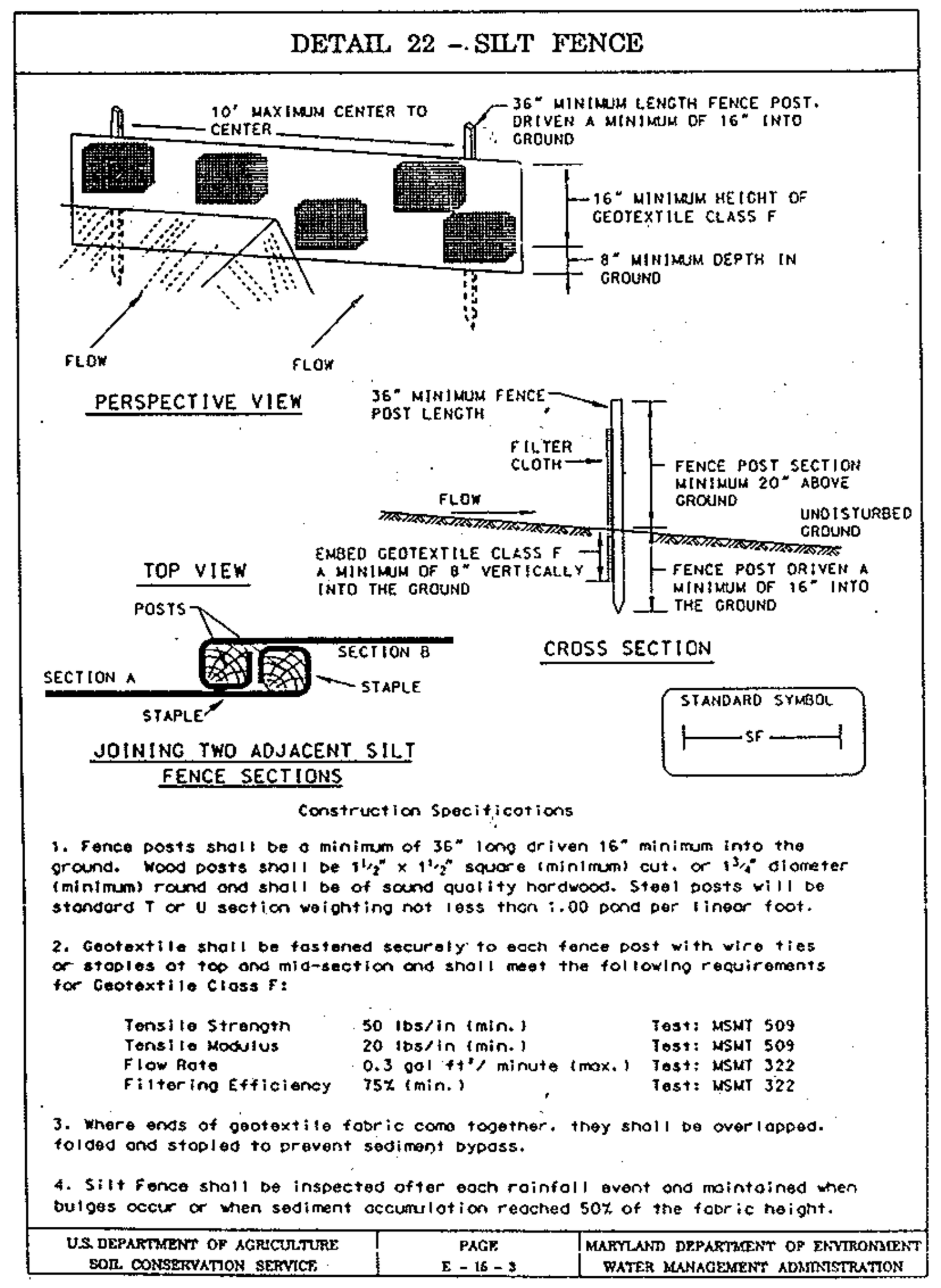
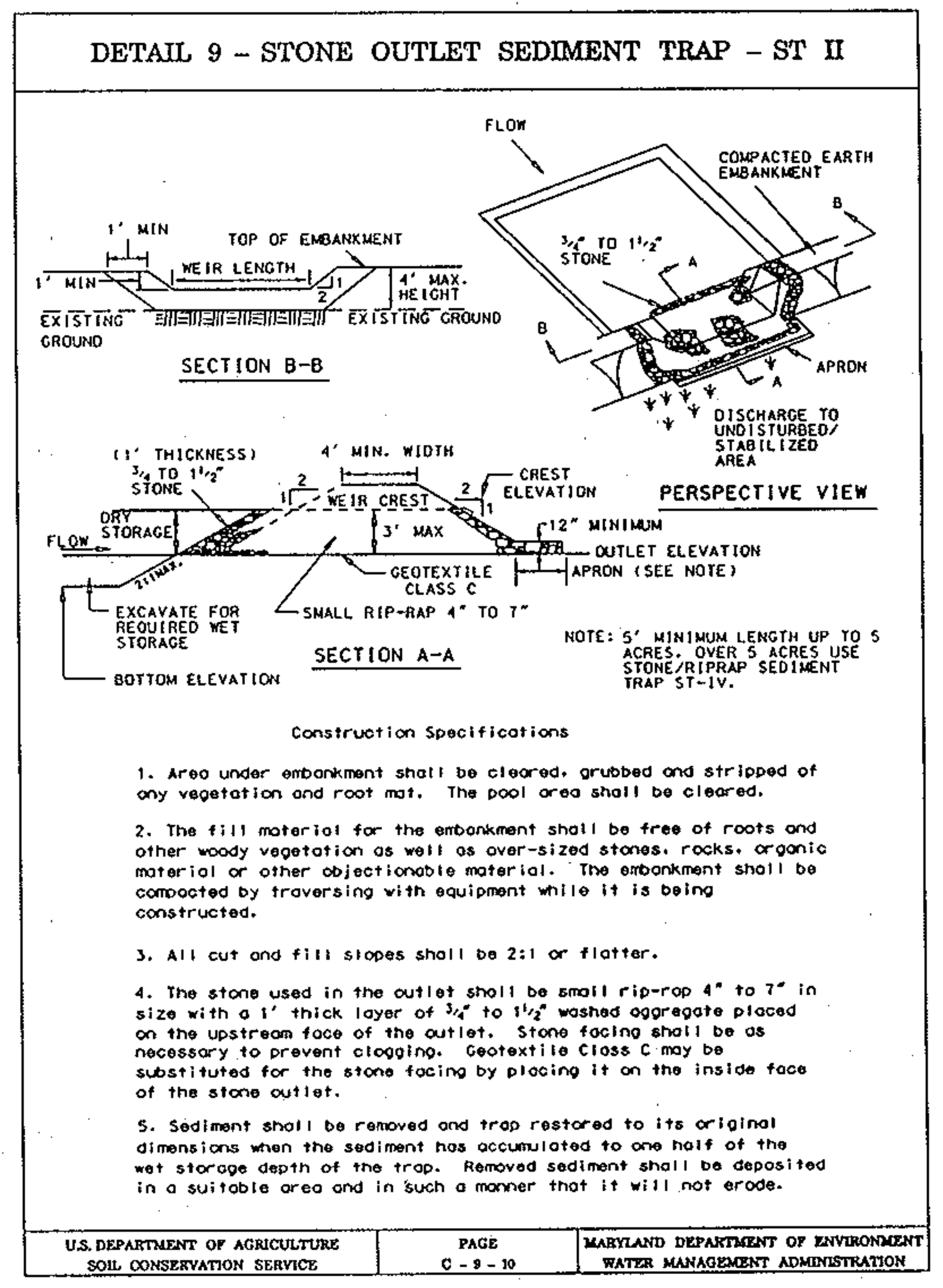
DESIGNED KWM	INTERIM S.W.M. AND SEDIMENT BASIN PROFILES DANIELS MILL OVERLOOK	SCALE —
DRAWN		DRAWING 17 of 20
CHECKED	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

1783





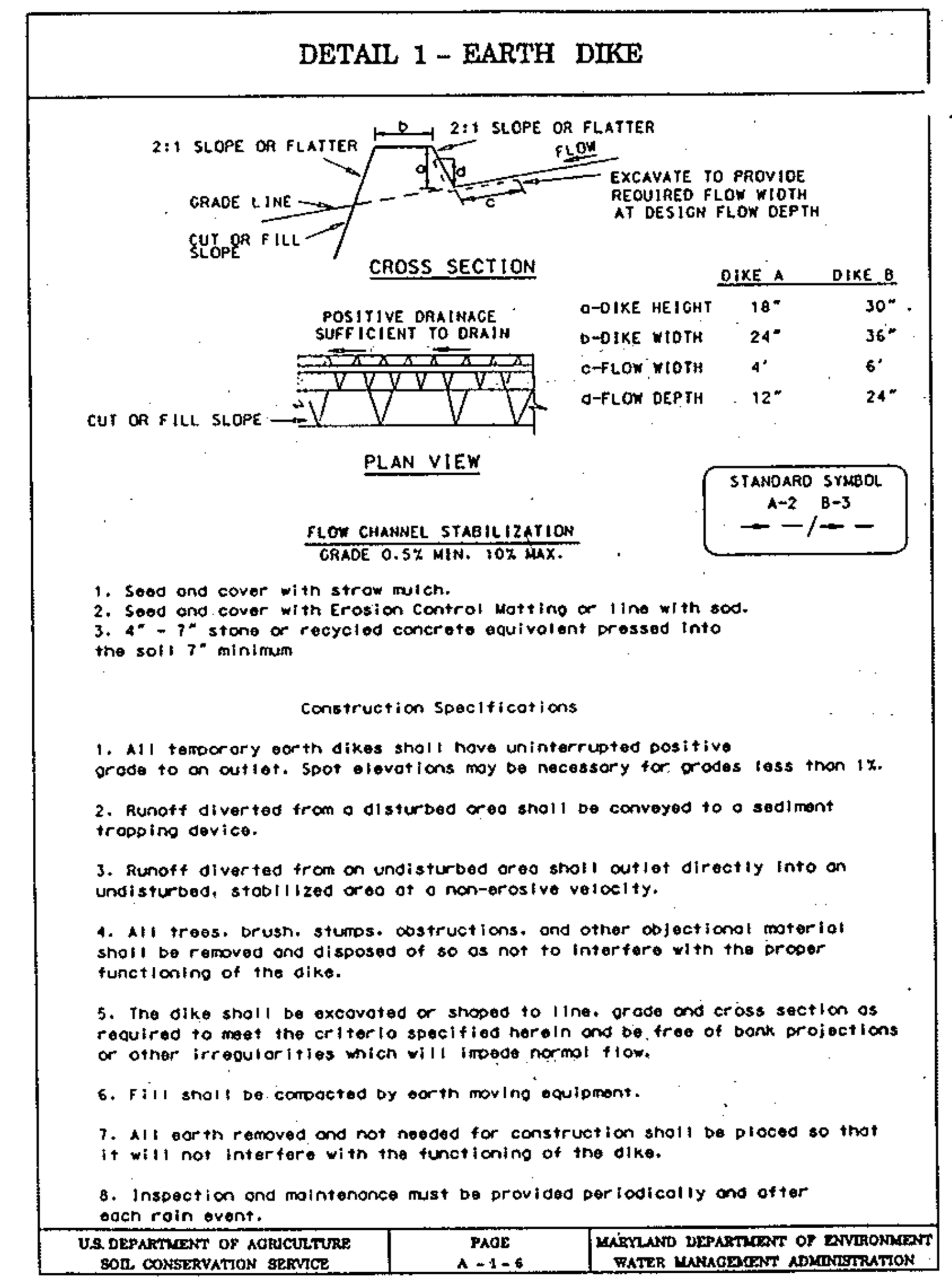


Table 2: Earth Dike Selection

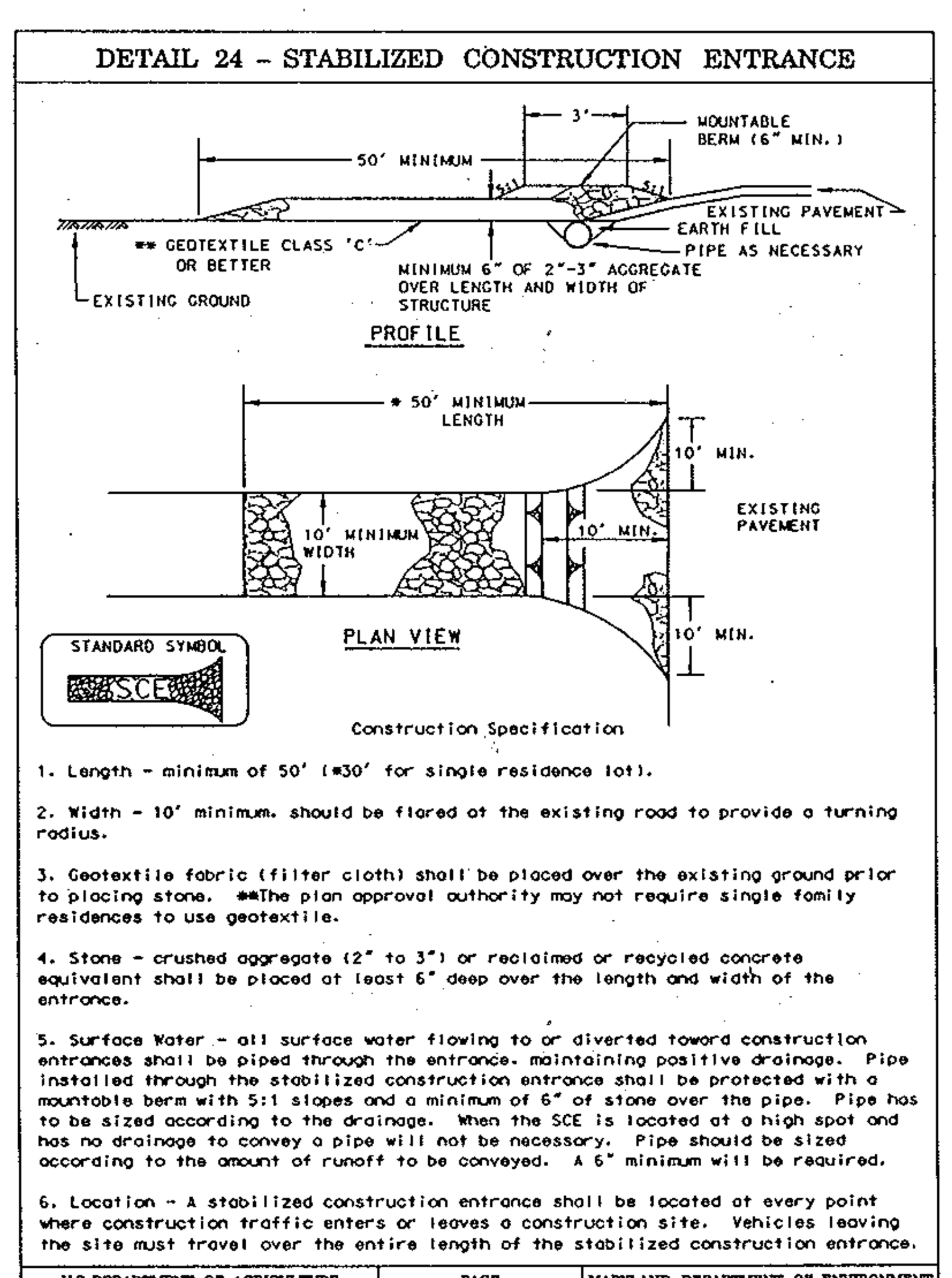
	Drainage Area (acres)									
Slope % **	1	2	3	4	5	6	7	8	9	10
1	SEED	AND	4							
2	MULCH	4		SEED	AND	SOIL	STABILIZATION			
3				MATTING				6	6	6
4	4*						6			
5					6	6				
6				6		4" –	7"	STONE	PRESSED	
7			6			7"	(Min)	INTO	GROUND	
8										
9										
10		6								

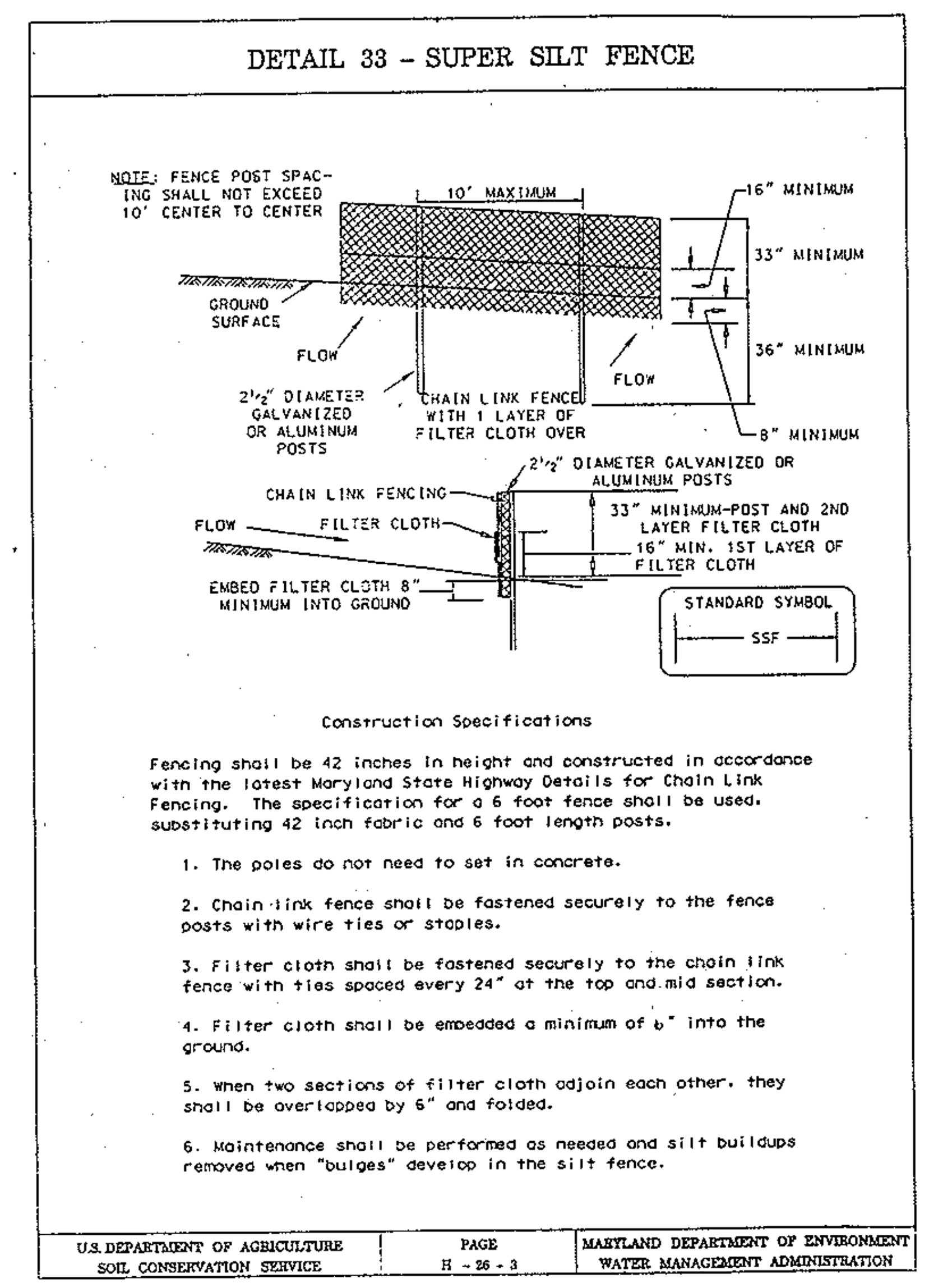
"B" Dike

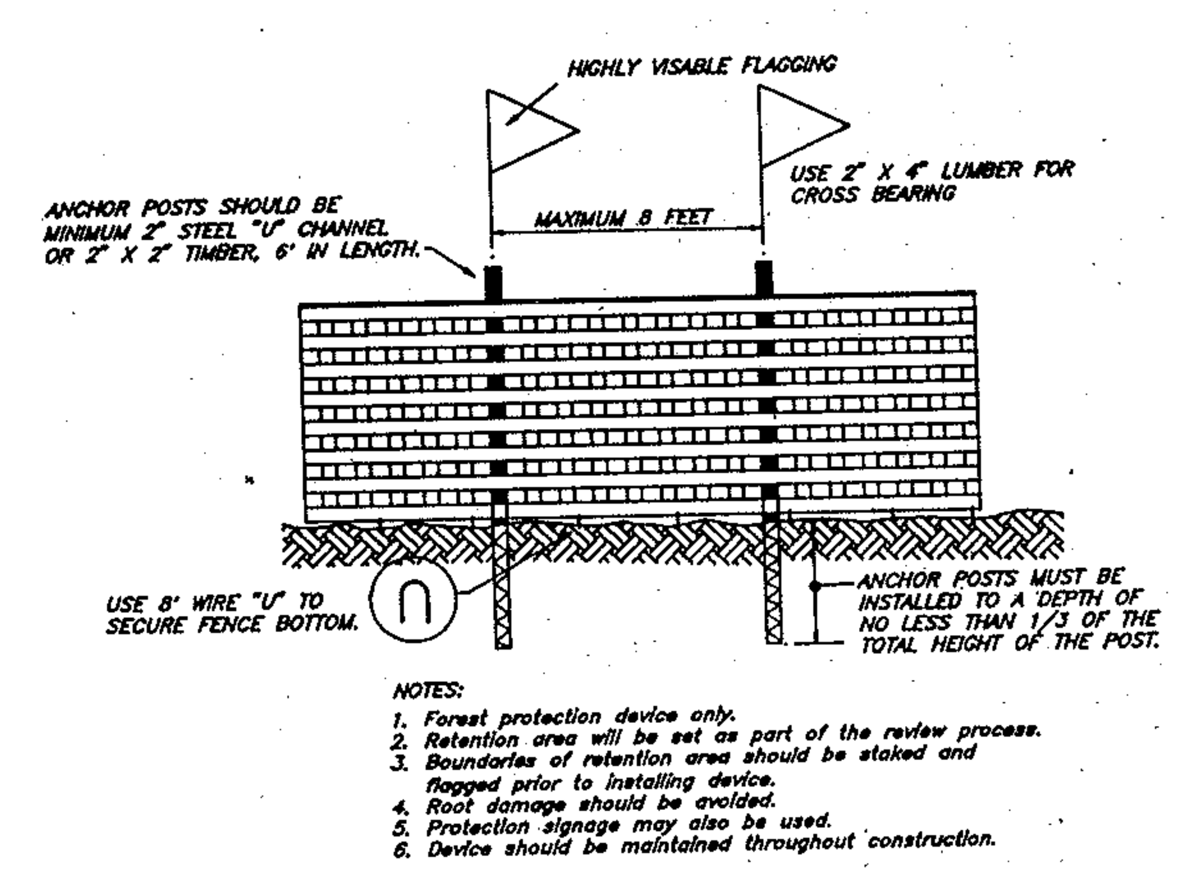
"A" Dike

*Velocity of discharge in feet/second

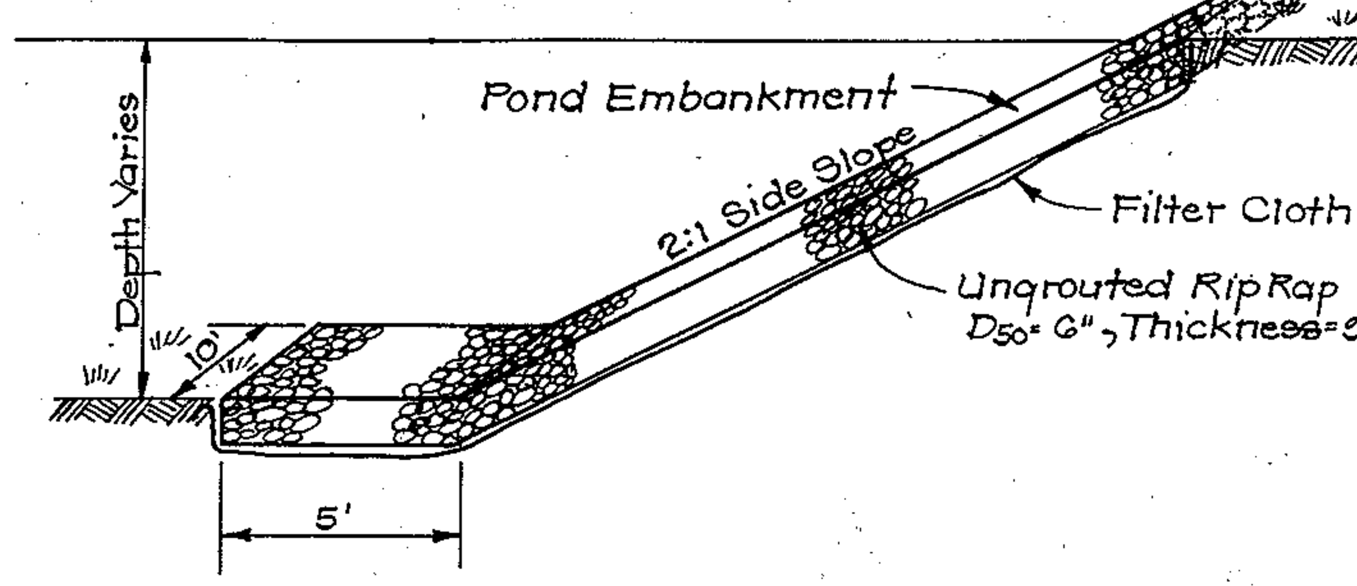
** For slopes steeper than 10% refer to Section B - Grade Stabilization Structures







BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL
NO SCALE



DETAIL-SIDE SLOPE PROTECTION
NO SCALE

SEDIMENT AND EROSION CONTROL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (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 1983 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within:
   a) 7 calendar days for all perimeter sediment control stuctures, dikes, perimeter slopes and all slopes greater than 3:1
   b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeters in accordance with Vol.1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above, in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec 52). Temporary stabilization with mulch alone can only be done wher. recommended seeding dates do not allow for proper germinatior. 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: ______
   - Area Disturbed: 25.87Ac (7.9Ac ROADS ONLY)
   - Area to be roofed or paved: ▲ 6.3Ac (1.4Ac ROADS ONLY)
   - Area to be vegetatively stabilized: 19.57 Ac (6.5 Ac ROADS ONLY)
   - Total Cut: 71460cy (14125 Cy ROADS & MARSH)
   - Total Fill: 71525 cy (6320 Cy ROADS & MARSH)
   - Offsite Waste/Borrow Area Location: *

   (▲ Includes THE SCHOOL)
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County 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.
11. The total amount of silt fence = 1260 LF
    Super silt fence = 600 LF

* It is the responsibility of the contractor to identify the spoil/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.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG–LIVED VEGETATIVE COVER IS NEEDED. FOR ALL AREAS EXCEPT OPEN SPACE LOTS 1 & 2 *

* For Permanent Seeding of Open Space Lots 1 & 2 See more stringent seeding specifications under General Contract for Elementary School.

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:

1) 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.)
2) Acceptable–Apply 2 tons per acre dolomatic 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 (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 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 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 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 (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.

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

CONSTRUCTION SEQUENCE:

NO. OF DAYS

1. OBTAIN GRADING PERMIT 7
2. INSTALL TREE PROTECTION FENCE 7
3. INSTALL SEDIMENT AND EROSION CONTROL DEVICES INCLUDING SEDIMENT BASINS #1 AND #2, TRAP #3 SILT FENCE AND STABILIZED CONTRUCTION ENTRANCE 14
4. CLEAR AND ROUGH GRADE SITE 30
5. * EXCAVATE FOR FOUNDATION AND CONSTRUCT SCHOOL 180
6. * CONSTRUCT ALL STORM DRAINAGE EXCEPT PERMANENT PIPES BETWEEN M2 TO S1B AND M2 TO S1A. TEMPORARILY DIRECT WATER TO SEDIMENT BASIN #1 WITH 24" CMP (M2 TO TEMP S2A) 45
   (See Detail Sheet 16 for temp. 24" to basin)
7. CONSTRUCT WATER AND SEWER 90
8. CONSTRUCT UTILITIES 60
9. FINE GRADE AND CONSTRUCT CURB AND GUTTER, PAVING ROADWAYS AND SIDEWALKS 60
10. STABILIZE ALL DISTURBED AREAS ON-SITE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS 14
11. # UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR REMOVE SEDIMENT AND EROSION CONTROL MEASURES EXCEPT FOR TEMPORARY SEDIMENT BASIN #1 14
12. INSTALL PHASE II SILT FENCE 7
13. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONVERT SEDIMENT BASIN #1 INTO SHALLOW MARSH.
    A. FLUSH ALL STORM DRAIN SYSTEMS TO REMOVE ANY SEDIMENT BUILD-UP.
    B. PUMP OUT IMPOUNDED WATER IN BASIN.
    C. COMPLETE PERMANENT STORM DRAIN CONSTRUCTION BETWEEN STRUCTURE M2 AND S1A/S1B. Install trash rack for 12" PVC per Det. Sheet 10
    D. GRADE FOREBAY AND INSTALL RIP RAP AS SHOWN ON PLAN.
    E. GRADE SHALLOW MARSH.
    F. PERMANENTLY STABILIZE AND PLANT ACCORDING TO THE LANDSCAPE PLAN SHEET 20 90
14. UPON APPROVAL OF THE INSPECTOR REMOVE REMAINING SEDIMENT AND EROSION CONTROL MEASURES AND STABILIZE 7

* NOTE: ON-SITE SCHOOL CONSTRUCTION IS TO BE COORDINATED WITH THIS PLAN. THE SEDIMENT CONTROLS ARE DESIGNED TO BE UTILIZED FOR SCHOOL CONSTRUCTION AND ROADWAY CONSTRUCTION.

NOTE: Sediment Basins must be removed 36 months after beginning construction.

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".

John Gudelsky 1/6/96
NAME John Gudelsky 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.

G. NELSON CLARK 1.9.96
DATE

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

Signature Date
Natural Resources Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE NATURAL RESOURCES CONSERVATION SERVICE.

Approved

"As-Built" 11-30

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways HS 1-30-96 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research 2/2/96 Date TC

Chief, Development Engineering Division 2/1/96 Date

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

DESIGNED KIWM	SEDIMENT & EROSION CONTROL DETAILS	SCALE
DRAWN	DANIELS MILL OVERLOOK	DRAWING 18 of 20
CHECKED KM	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

AS-BUILT 12-1-99

F-96-37

1783

SOILS CHART			
	SYMBOL	TYPE	DESCRIPTION
C	BrB2	Brandywine Loam	3-8% slopes, moderately eroded
C	BrC2	Brandywine Loam	8-15% slopes, moderately eroded
C	BrC3	Brandywine Loam	8-15% slopes, severely eroded
C	BrD2	Brandywine Loam	15-25% slopes, moderately eroded
C	BrD3	Brandywine Loam	15-25% slopes, severely eroded
B	G1B2	Glenelg Loam	3-8% slopes, moderately eroded
C	GnB2	Glenville Silt Loam	3-8% slopes, moderately eroded
B	M1B2	Manor Loam	3-8% slopes, moderately eroded
B	M1C2	Manor Loam	8-15% slopes, moderately eroded

Note: See Howard County Soils Map №10

"As-Built" 10-96

Denotes Slopes 15%-25%

Denotes Slopes 25% or Greater

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development and Research — Date 2/2/96

Chief, Development Engineering Division — Date 2/1/96

1783

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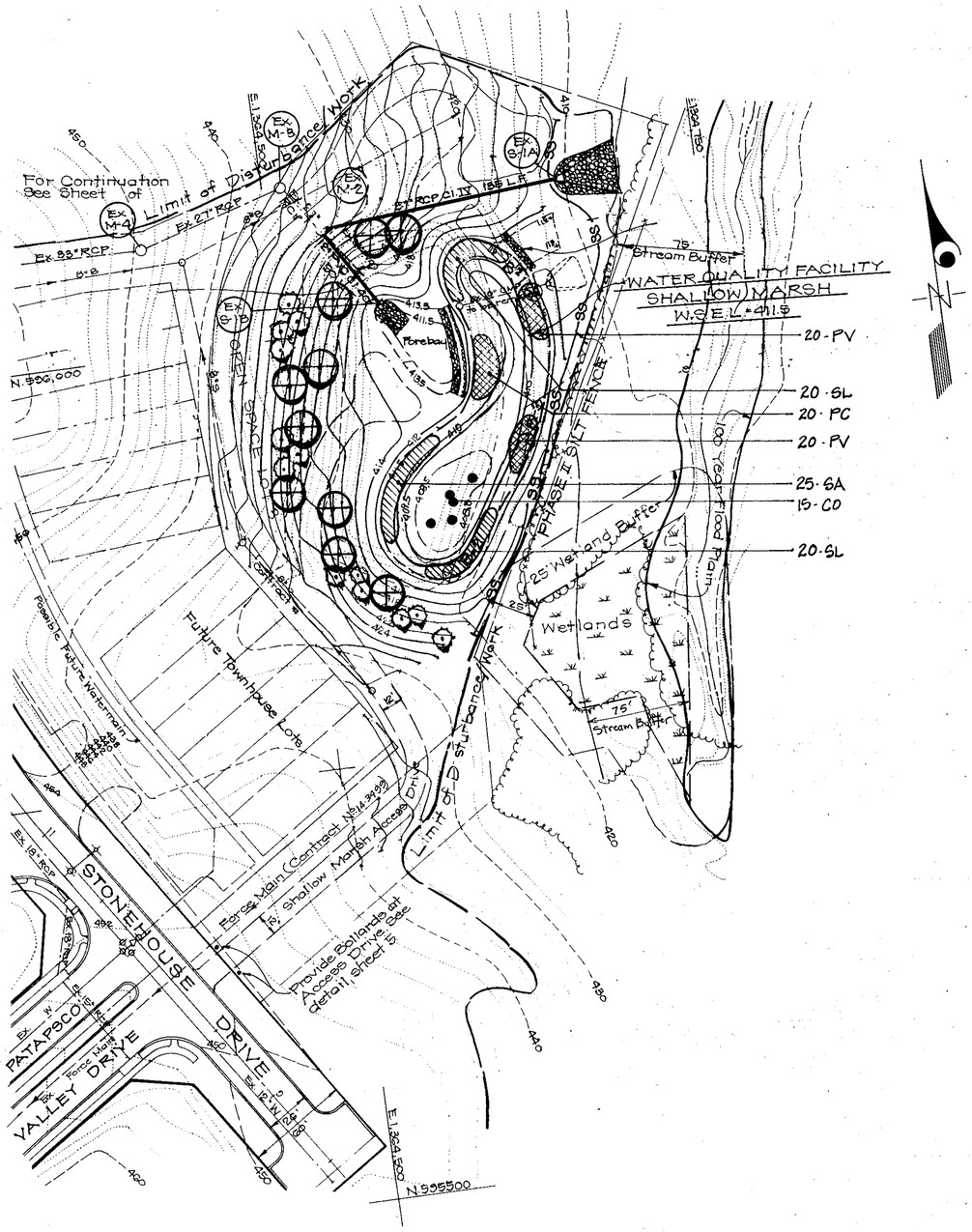
DESIGNED KIWM	SOILS AND SLOPES ANALYSIS PLAN	SCALE 1"=100'
DRAWN	DANIELS MILL OVERLOOK	DRAWING 10 of 20
CHECKED	TAX MAP 17 PART OF PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94203D

AS-BUILT 12-1-99

F-96-37



1783

WATER QUALITY FACILITY
SHALLOW MARSH

SCALE: 1" = 40'

SHADE TREE PLANTING DETAIL

NO SCALE

EVERGREEN TREE PLANTING DETAIL

NO SCALE

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	765'
Number of Trees Required Shade Trees Evergreen Trees	Based on 500 L.F. 10 (1/50) 13 (1/40)
Credit for Existing Vegetation (No, [✓ Yes] and %)	265'
Credit for Other Landscaping (No, Yes and %)	—
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution)	 10 13

LANDSCAPE BONDING NOTE:

This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.

Financial surety for the required 80 trees in the amount of $8,000 is part of the Developers Agreement.

PLANT LIST FOR WATER QUALITY FACILITY, SHALLOW MARSH

KEY	QTY	PLANT SPECIES	SIZE	REMARKS
		PRIMARY WETLAND VEGETATION		
SL	40	SAGGITTARIA LATIFOLIA Duck Potato	ROOTS	36" OC
SA	25	SCIRPUS AMERICANUS Common Three Square	ROOTS	36" OC
		SECONDARY WETLAND VEGETATION		
CO	15	CEPHALATHUS OCCIDENTALIS Button Bush	ROOTS	5 clumps of 3
PV	40	PELTANDRA VIRGINICA Arrow-Arum	ROOTS	36" OC
PC	20	PONTEDERIA CORDATA Pickerel Weed	ROOTS	36"OC

NOTES:
1. All plant material to be wet grown or adapted to wetland conditions.
2. Alterations to the proposed grading shown may affect the success of the plant material.
3. Contractor shall verify location of all underground utilities prior to digging.

PLANT LIST FOR STREET TREES (SEE SHTS 2,3,& 4)

⊙	57	ACER RUBRUM "Red Sunset" Red Sunset Maple	2 1/2"C	B&B

PLANT LIST FOR WATER QUALITY FACILITY BUFFER

⊕	10	ACER RUBRUM "Red Sunset" Red Sunset Maple	2 1/2"C	B&B
○	13	PINUS STROBUS White Pine	6'-8'HT	B&B

80 Total Trees for Bonding

NOTES:
1. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE BALT./WASH. LANDSCAPE SPECIFICATIONS OF L.C.A.M.W.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY VARY PER FINAL FIELD CONDITIONS.
4. FOR SEEDING SPECIFICATIONS SEE SHEET 18

"AS-BUILT" Aldo Michael Vitucci No. 20748 11-10-00
Aldo M. Vitucci

Nelson Clark No. 7190

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Dancker HS 1-30-96
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
2/2/96
Chief, Division of Land Development and Research Date TC
2/1/96
Chief, Development Engineering Division Date

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ENGINEERS • PLANNERS • SURVEYORS
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DESIGNED MJP	LANDSCAPE PLAN FOR WATER QUALITY FACILITY AND STREET TREE DETAILS	SCALE As Shown
DRAWN	DANIELS MILL OVERLOOK	DRAWING 20 of 20
CHECKED	TAX MAP 17, PARCEL 41 SECOND (2ND) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 94-203
DATE 12-27-95	FOR: HOWARD COUNTY BOARD OF EDUCATION 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21042	FILE NO. 94-203D

F-96-37

AS-BUILT 12-1-99

F-96-37