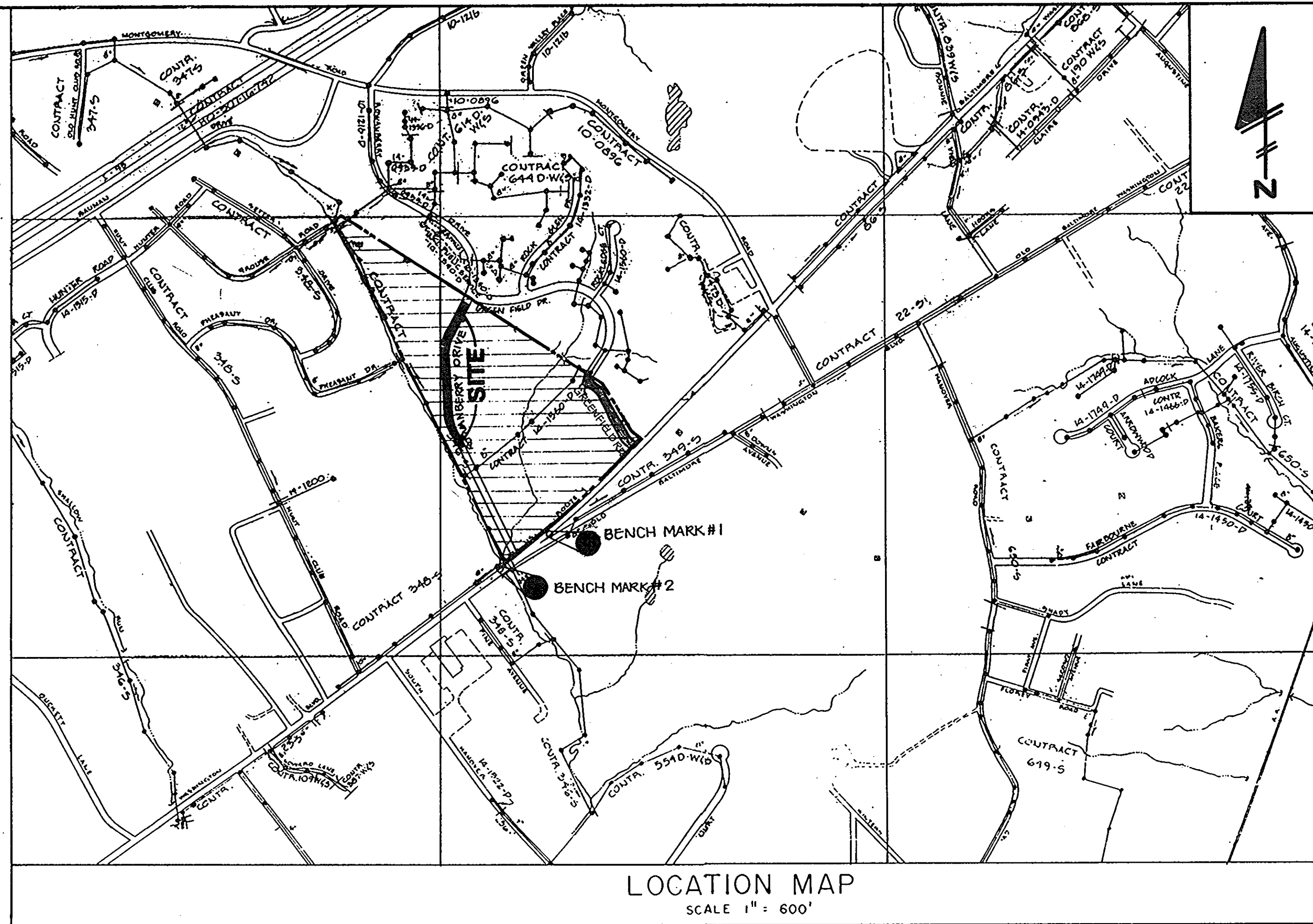


INDEX OF SHEETS

SHEET NO.	TITLE
1	Title Sheet
2	Plan & Profile
3	S.W.M. Grading & Sediment Control Plan & Profile
4	Storm Drain Profiles
5	S.W.M. Details
6	S.W.M. Details & Structure Schedule
7	S.W.M. Details



GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES MUST BE NOTIFIED 24-HOURS IN ADVANCE OF ANY CONSTRUCTION.
- STORM DRAINAGE TRENCHES WITH ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY CODE.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TELEPHONE 792-7272.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION, CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE.
- ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1988 EDITION.
- STREET TREES TO BE PROVIDED AS REQUIRED BY SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 STATE HIGHWAY ADMINISTRATION 531-5533
 BALTIMORE GAS & ELECTRIC UNDERGROUND ELECTRIC DISTRIBUTION CUSTOMER SERVICE 685-0123
 ENGINEERING-DAMAGE CONTROL 234-5611
 "MISS UTILITY" 1-559-0100
 CHESAPEAKE & POTOMAC (C & P) TELEPHONE COMPANY 725-9976
 AMERICAN TELEPHONE & TELEGRAPH CABLE LOCATION DIVISION 393-3533
 COLONIAL PIPELINE COMPANY 795-1390
 BUREAU OF UTILITIES
 HOWARD COUNTY 992-2366

ELKRIDGE TOWN CENTER ROWANBERRY DRIVE

ROAD CONSTRUCTION DRAWINGS 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

[Signature] 9/5/90
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible person involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."

[Signature] 9/5/90
Signature of Developer/Builder Date

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[Signature] 12/14/90
DATE

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

[Signature] 12/14/90
DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 215 OF THE STANDARD SPECIFICATIONS AND SOP 85-207.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[Signature] 12/15/90
Chief, Division of Community Planning and Land Development DATE



OWNER / DEVELOPER
ORCHARD DEVELOPMENT CORP.
7060 OAKLAND MILLS ROAD SUITE I
COLUMBIA, MARYLAND 21046

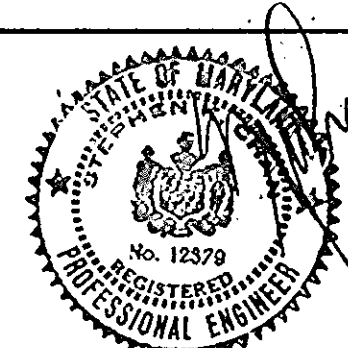
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 12/14/90
CHIEF, LAND DEVELOPMENT DIVISION DATE

[Signature] 12-19-90
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 12/11/90
CHIEF, BUREAU OF HIGHWAYS DATE

LB ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
18223-A FLOWER HILL WAY
GAITHERSBURG, MD. 20879
301-980-0525 Wash. 948-9439



DES: SHP				
DRN: SHP				
CHK: SHC				
DATE: 11-27-90	BY NO.	REVISION	DATE	600 SCALE MAP NO. 38 BLOCK NO. 22

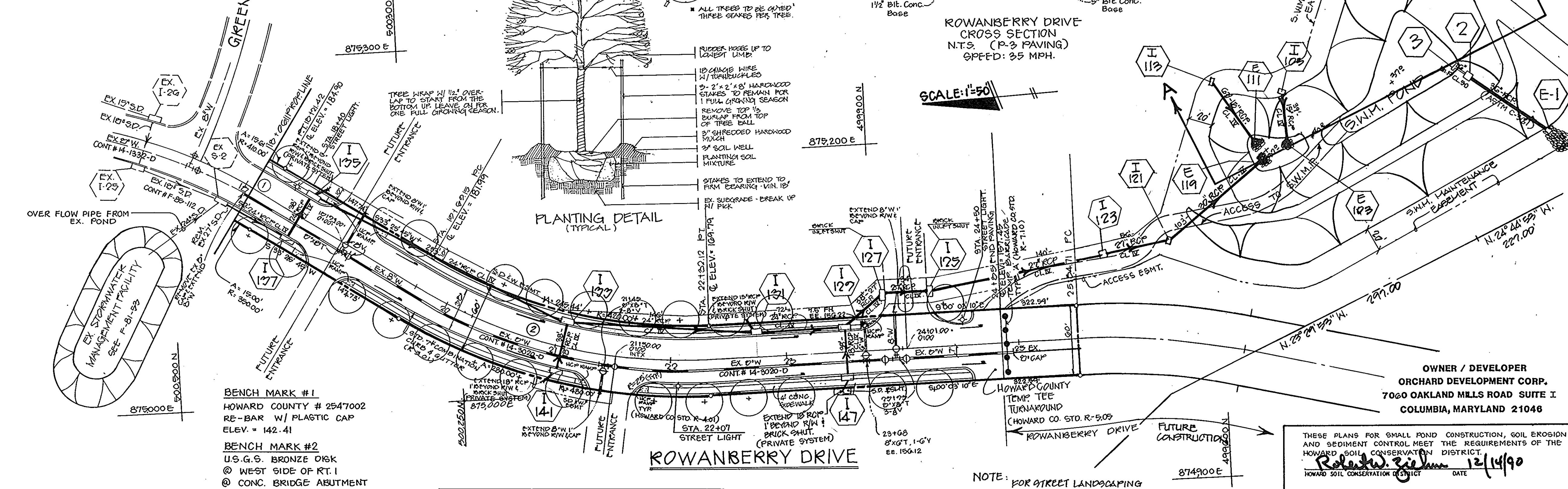
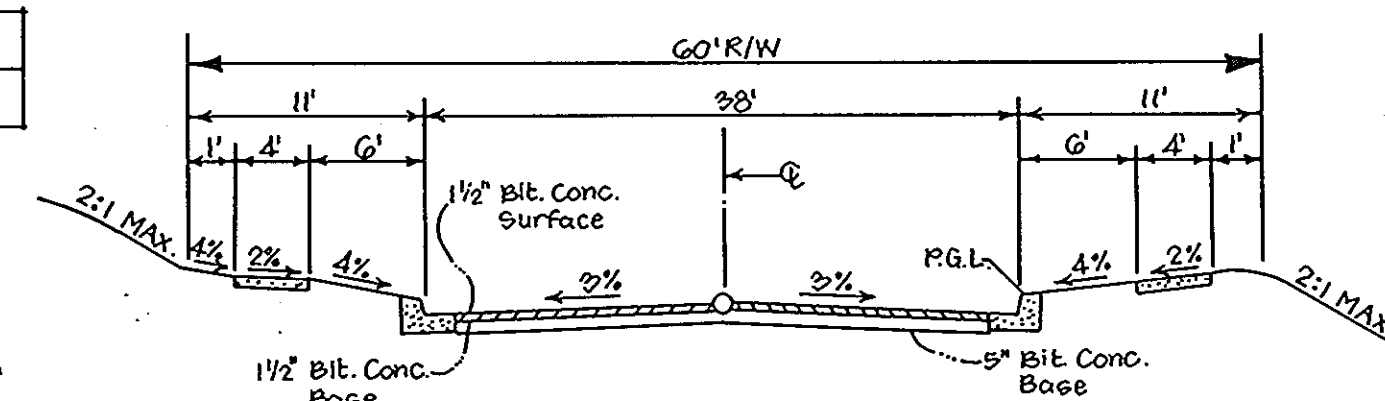
TITLE SHEET

**ELKRIDGE TOWN CENTER
ROWANBERRY DRIVE
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND**

SCALE AS SHOWN
SHEET 1 OF 12

STREET LIGHT -
25 FT. GALVANIZED STEEL POLE.
150 W SODIUM VAPOR.

KEY	COMMON & BOTANICAL NAME	QTY.	SIZE	REMARKS
ZS	ZELKOVA 'SEKKATA' VILLAGE GREEN VILLAGE GREEN ZELKOVA	24	2 1/2" CAL.	D & B HEAVY HEADS

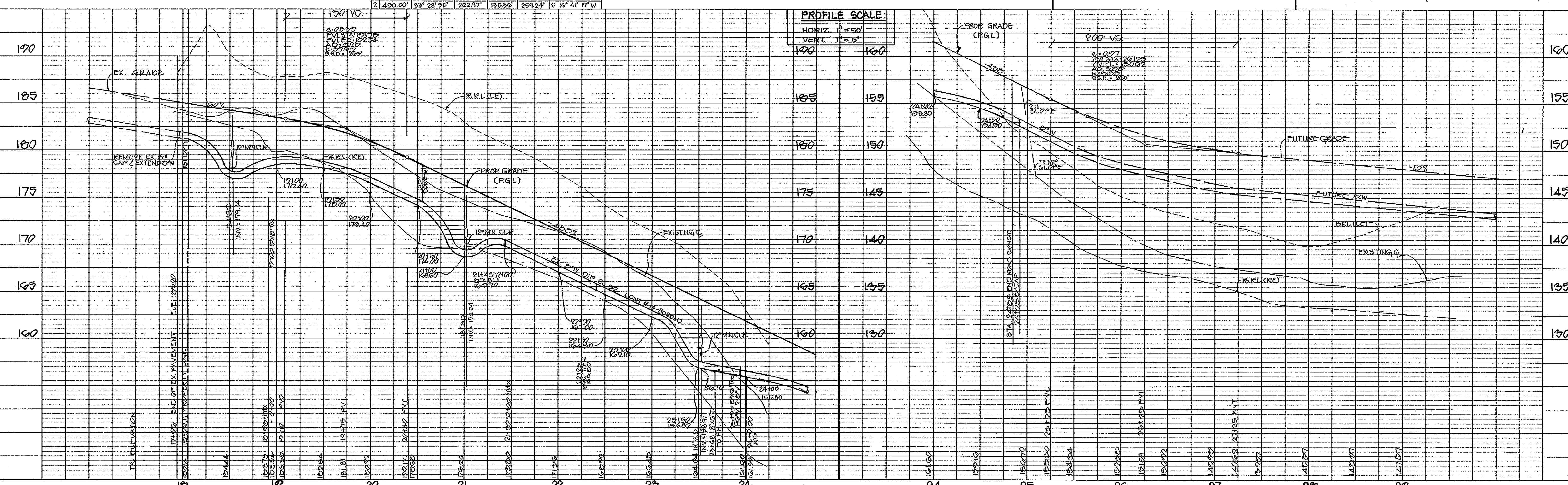


BENCH MARK #1
HOWARD COUNTY # 2547002
RE-BAR W/ PLASTIC CAP
ELEV. = 142.41

BENCH MARK #2
U.S.G.S. BRONZE OAK
WEST SIDE OF RT. 1
CONC. BRIDGE ABUTMENT
ELEV. = 131.82

CURVE DATA					
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD
1	380.00'	02° 18' 28"	19.31'	7.05'	19.31'
2	450.00'	33° 28' 58"	262.97'	135.92'	259.24'

PROFILE SCALE:
HORIZ. 1" = 50'
VERT. 1" = 5'



ENGINEER'S CERTIFICATE
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
STEPHEN K. CHAN 9/5/90
DATE

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on site inspection by the Howard Soil Conservation District."
Signature of Developer/Builder 9/5/90
DATE
12/15/90

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Community Planning and Land Development DATE
12/15/90
THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
J. Helms 12/14/90
DATE

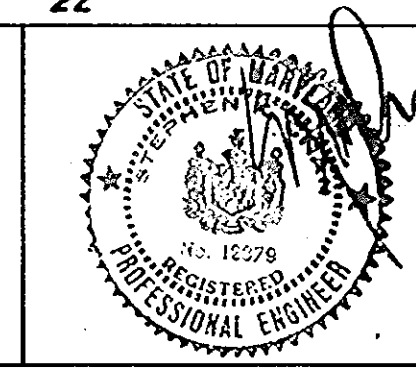
OWNER / DEVELOPER
ORCHARD DEVELOPMENT CORP.
7060 OAKLAND MILLS ROAD SUITE I
COLUMBIA, MARYLAND 21048

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
12/14/90
DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND SSP 20-26

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
12/14/90
12/14/90

ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
18223-A FLOWER HILL WAY
GAITHERSBURG, MD. 20879
301-990-0525 Wash. 948-9439



DES: SHP	
DRN: SHP	
CHK: SKC	
DATE: 11-27-90	
BY: NO	
REVISION	
DATE	

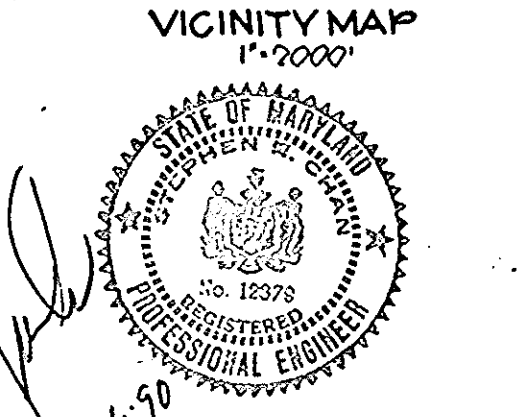
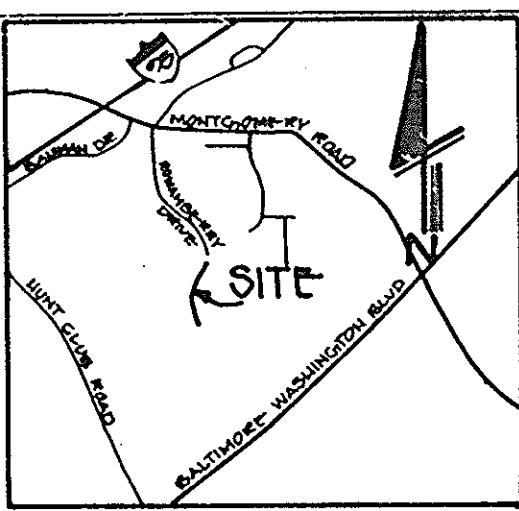
PLAN & PROFILE
600 SCALE MAP NO. 38 BLOCK NO. 22

**ROWANBERRY DRIVE
ELKBRIDGE TOWN CENTER**
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SHT. 2 OF 7 ROWANBERRY DRIVE
SCALE AS SHOWN
SHEET 2 OF 12
F 90-09

1540

NOTE: SEDIMENT CONTROLS ARE TO BE REMOVED ONLY AFTER RECEIVING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR.

SCALE: 1"=50'



THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Robert Zilman 12/14/90
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND SDP 90-06.

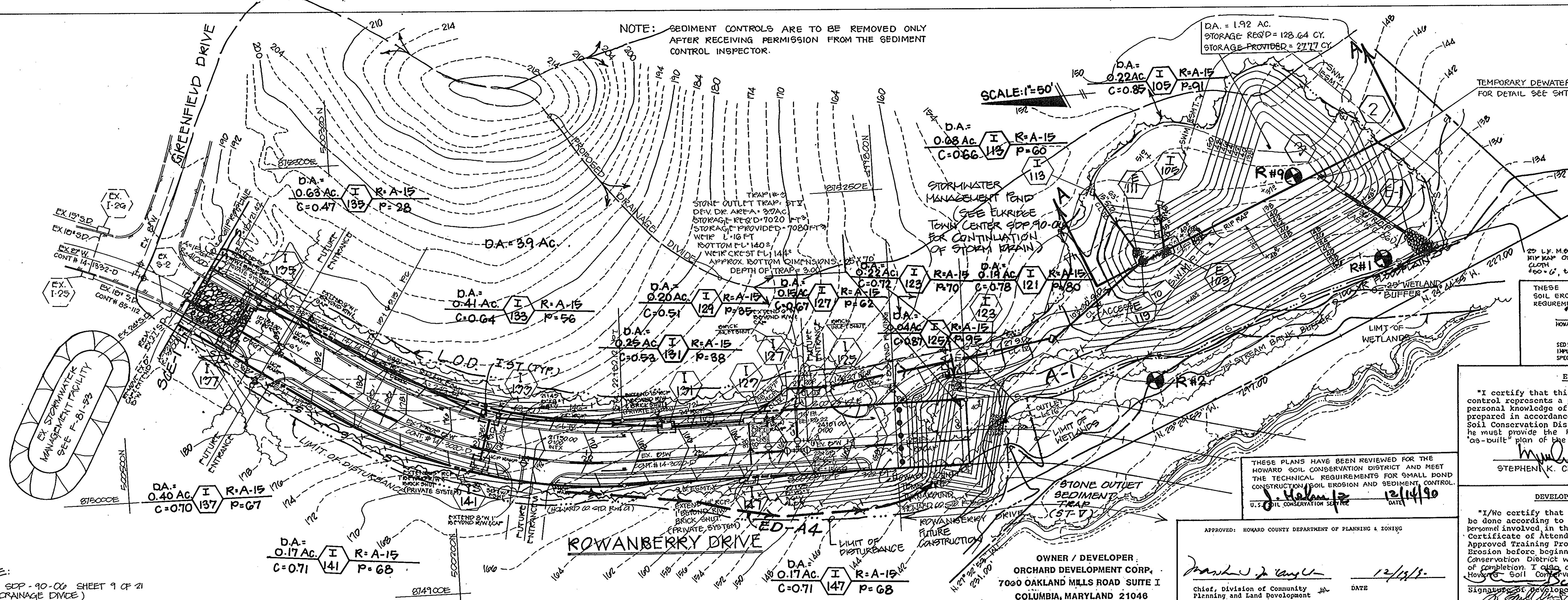
ENGINEER'S CERTIFICATE
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 90 days of completion."
 Stephen K. Chan 12/14/90
 DATE

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 90 days of completion. I also authorize periodic on site inspection by the Howard Soil Conservation District."
 12/14/90
 DATE

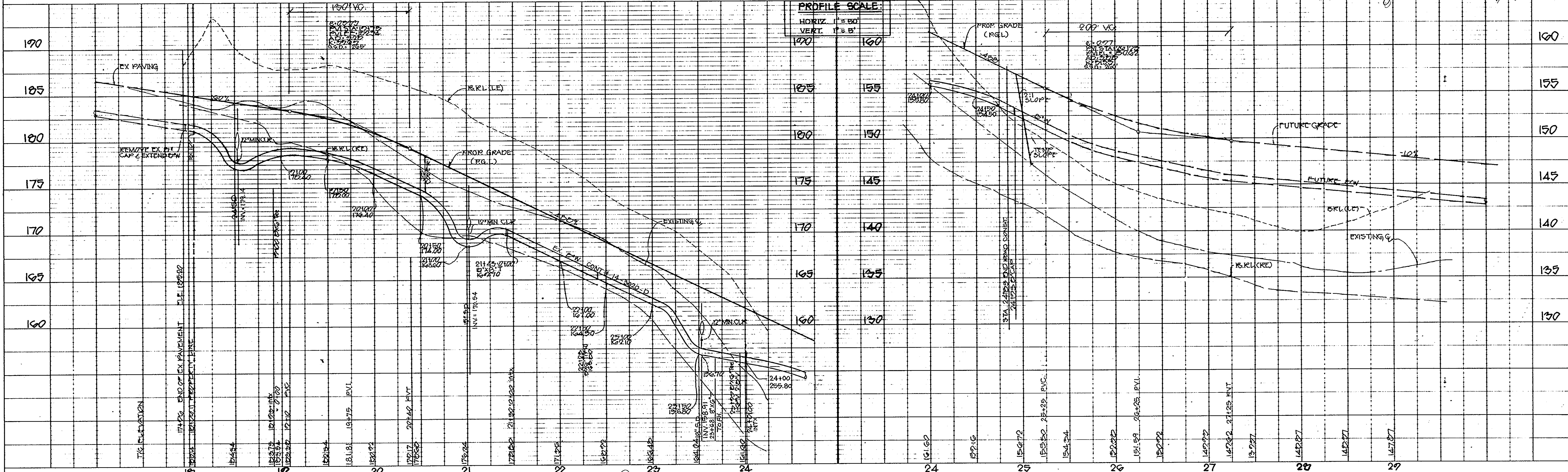
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 Robert Zilman 12/14/90
 U.S. SOIL CONSERVATION SERVICE DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Frank J. Lang 12/14/90
 Chief, Division of Community Planning and Land Development DATE

OWNER / DEVELOPER
 ORCHARD DEVELOPMENT CORP.
 7060 OAKLAND MILLS ROAD SUITE I
 COLUMBIA, MARYLAND 21046



NOTE:
 (SEE SDP 90-06 SHEET 9 OF 21 FOR DRAINAGE DEVICE)

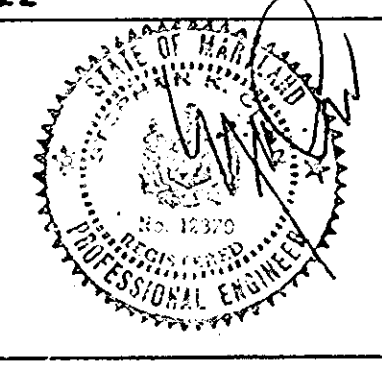


1540

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chan M. Simpson 12/14/90
 CHIEF, LAND DEVELOPMENT DIVISION DATE

12-14-90
 DATE

ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 18223-A FLOWER HILL WAY
 GAITHERSBURG, MD. 20879
 301-990-0525 Wash. 948-9439



DES: GKC	BY: NO	REVISION	DATE: 11-27-90
DRN: SHP			
CHK: GKC			

S.W.M., GRADING & SEDIMENT CONTROL
 PLAN & PROFILE
 DATE: 11-27-90

SCALE AS SHOWN
 SHEET 3 OF 12
 1ST ELECTION DISTRICT
 HOWARD COUNTY MARYLAND
 6HT. 3 OF 7 ROWANBERRY DRIVE
 F 90-09

ENGINEER'S CERTIFICATE
 "I certify that this plan for erosion and erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
 Signature: *[Signature]* Date: 12/22/90

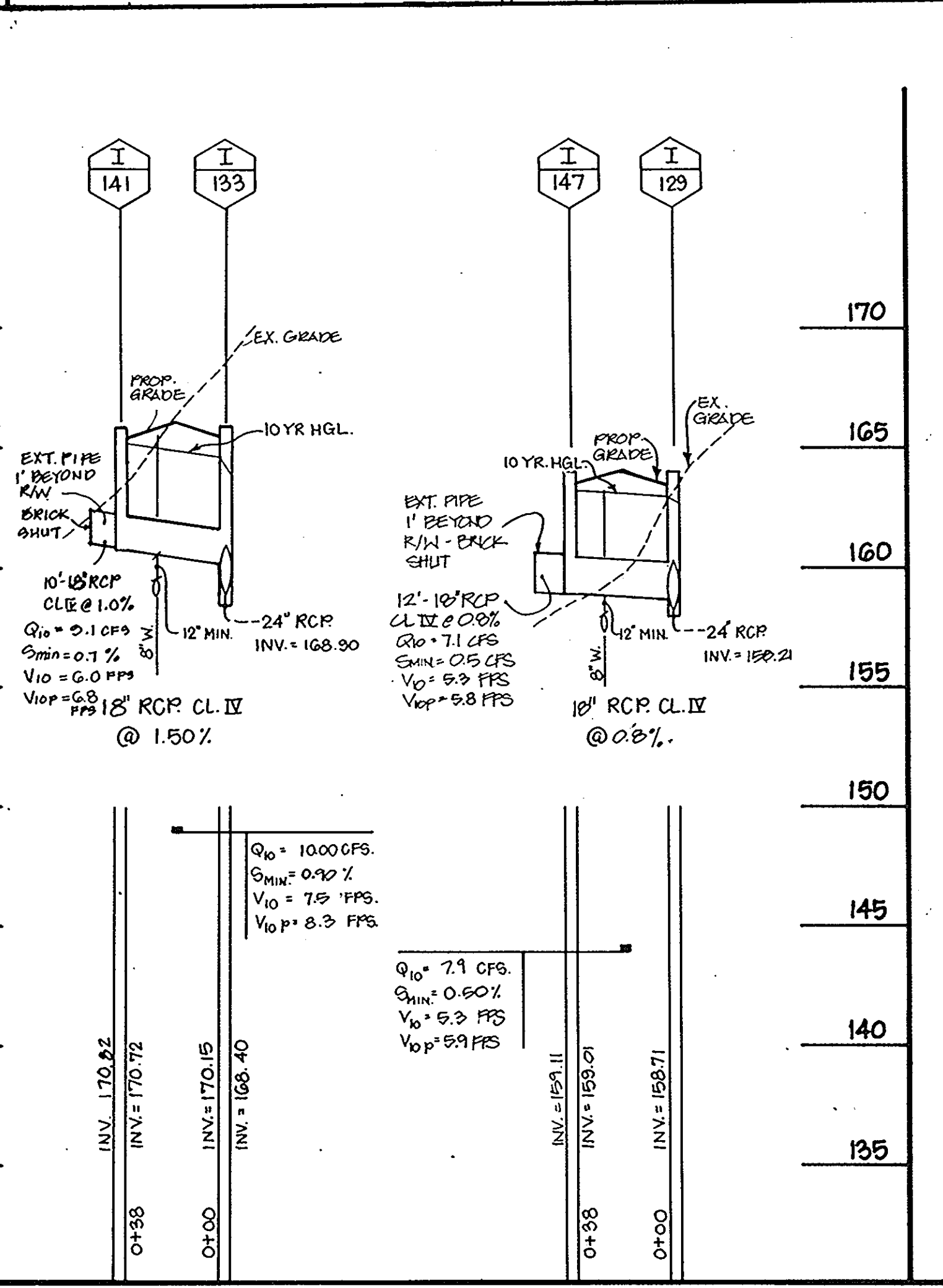
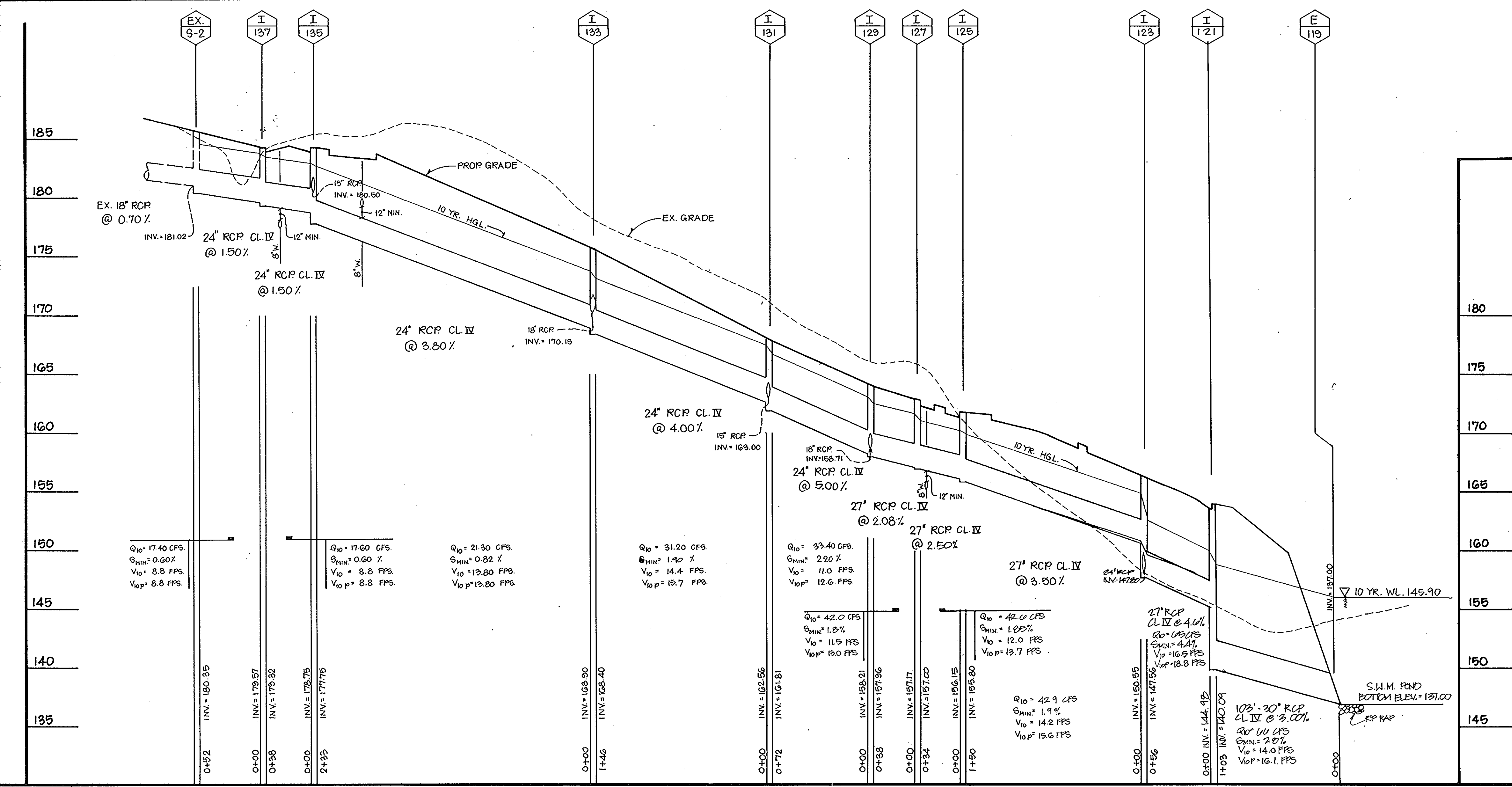
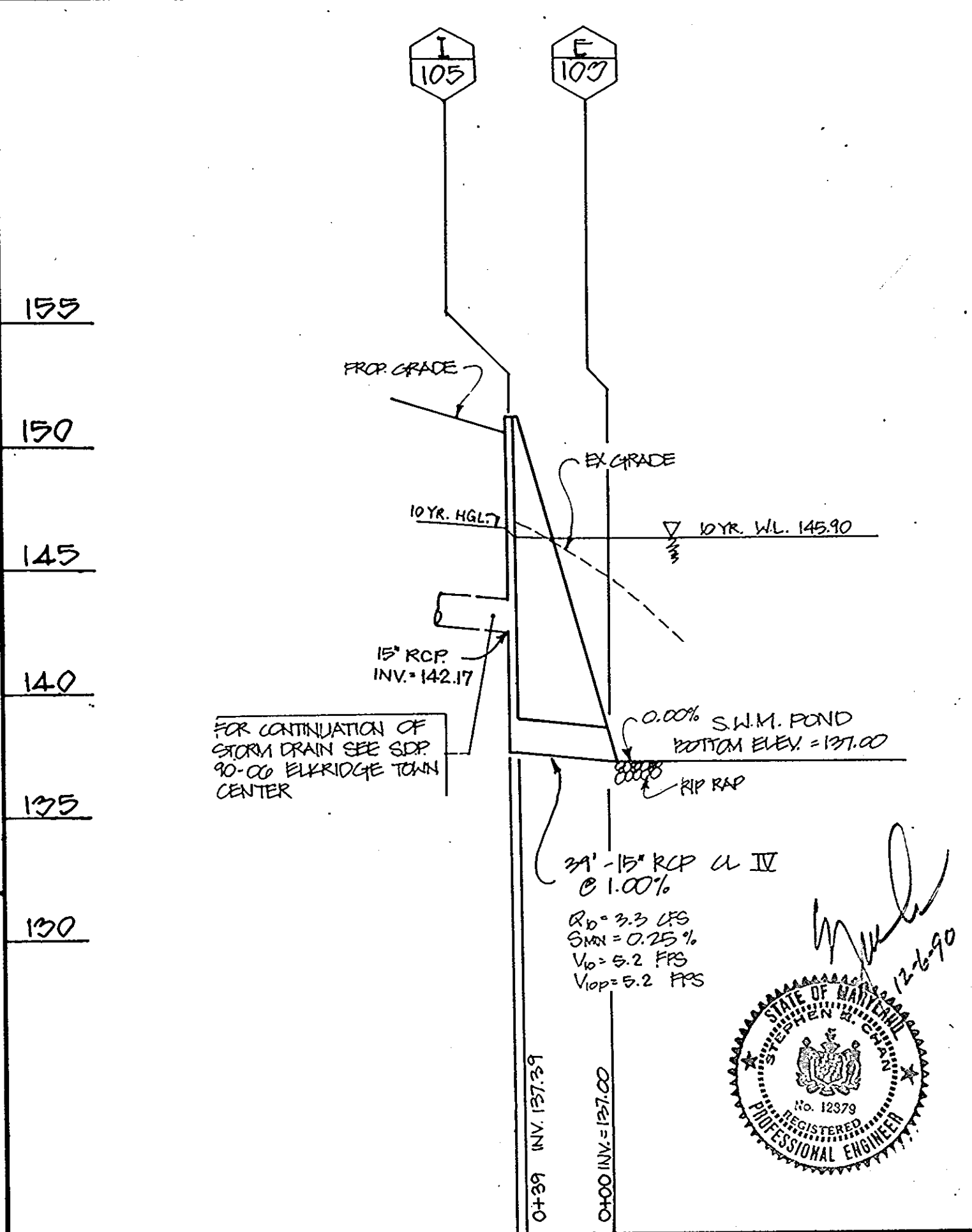
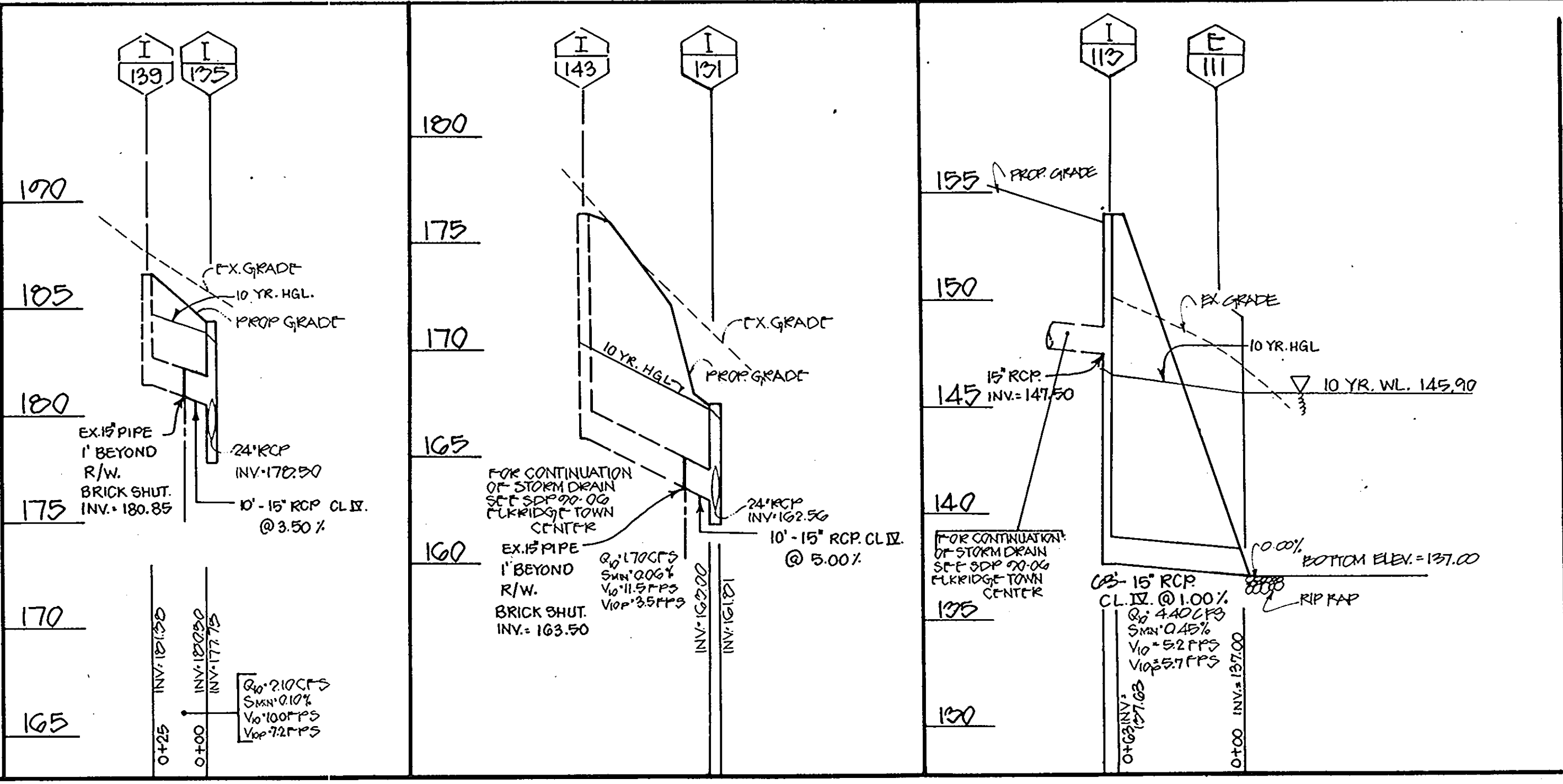
DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/we certify that all development and construction will be done according to this plan, and that any responsible person involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."
 Signature: *[Signature]* Date: 9/5/90

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Signature: *[Signature]* Date: 12/13/90
 Chief, Division of Community Planning and Land Development

THE DEVELOPMENT PLAN IS APPROVED FOR SOIL AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *[Signature]* Date: 12/14/90
 HOWARD SOIL CONSERVATION DISTRICT

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Signature: *[Signature]* Date: 12/14/90
 HOWARD SOIL CONSERVATION DISTRICT

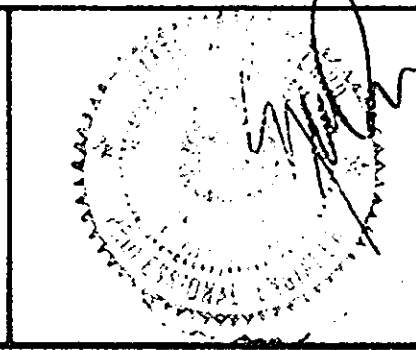
OWNER / DEVELOPER
 ORCHARD DEVELOPMENT CORP.
 7060 OAKLAND MILLS ROAD SUITE I
 COLUMBIA, MARYLAND 21046



1540

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Signature: *[Signature]* Date: 12/19/90
 Signature: *[Signature]* Date: 12/19/90

ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 18223-A FLOWER HILL WAY
 GAITHERSBURG, MD. 20879
 301-990-0525 Wash. 948-9439



DES: SHP			
DRN: SHP			
CHK: SKC			
DATE: 11-27-90	BY	NO.	REVISION

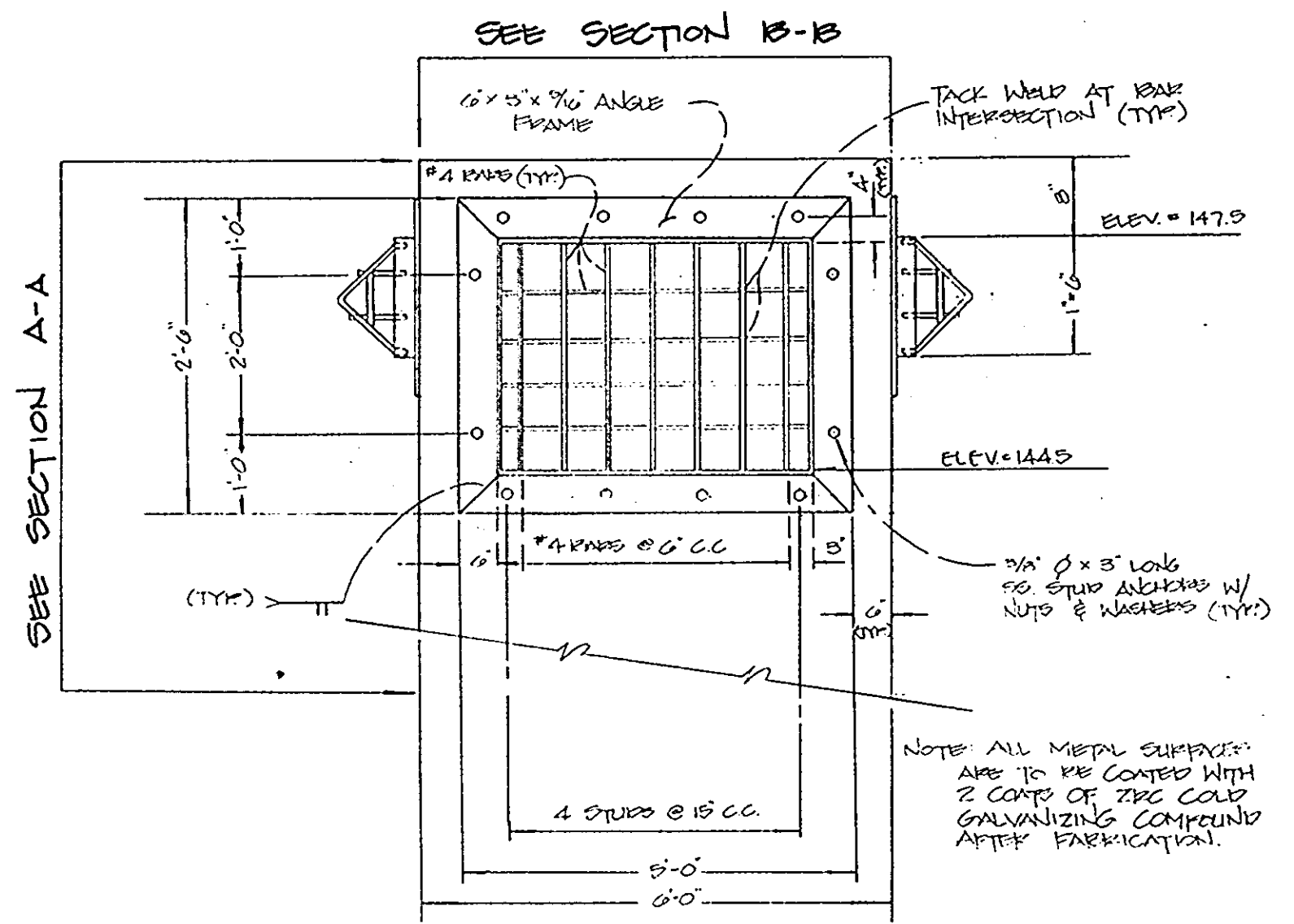
STORM DRAIN PROFILES
 600' SCALE MAP NO. 30 BLOCK NO. 22

TAX MAP 38 PARCEL NO. 526
 SECTION ONE
ELKRIDGE TOWN CENTER
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SHT. 4 OF 7 ROWANBERRY DRIVE
 SCALE AS SHOWN
 SHEET 4 OF 12
 F 90-09

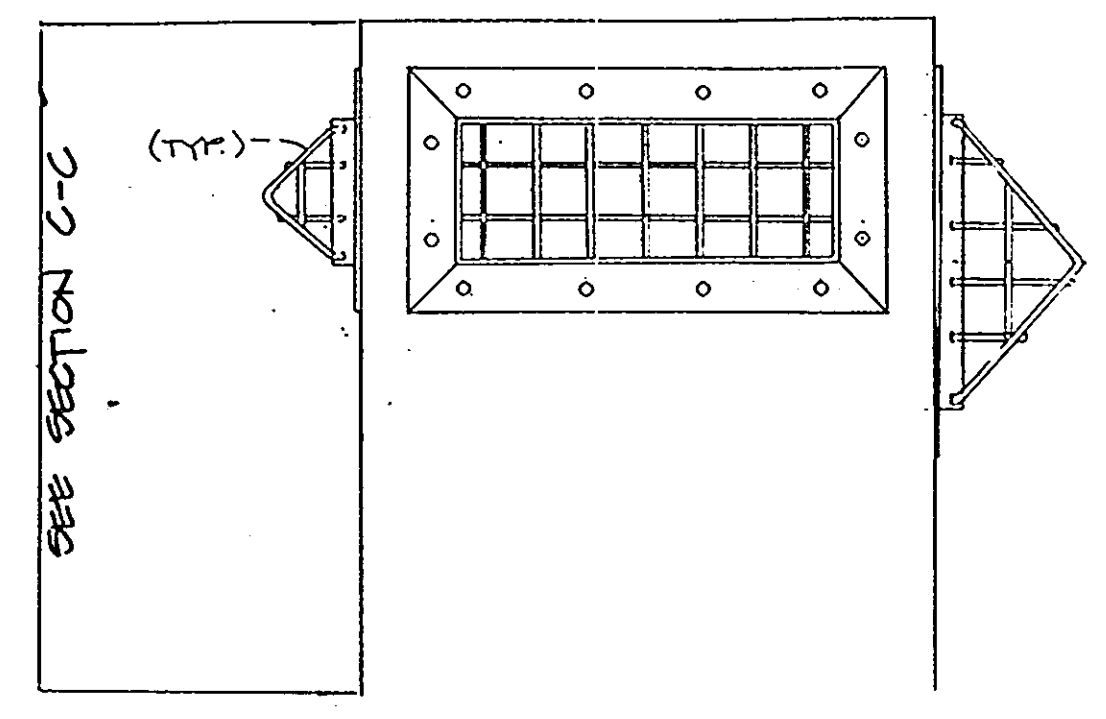
CHECK FOR LOW FLOW AREA AT TRASH RACK :-

LOW FLOW TRASH RACK AREA = 4'x15'
= 6.0 SF
LOW FLOW PIPE SIZE = 6" DIA.
LOW FLOW PIPE AREA = 0.2 SF
G x LOW FLOW PIPE AREA = 6 x 0.2 SF
= 1.2 SF < 6.0 SF
OK

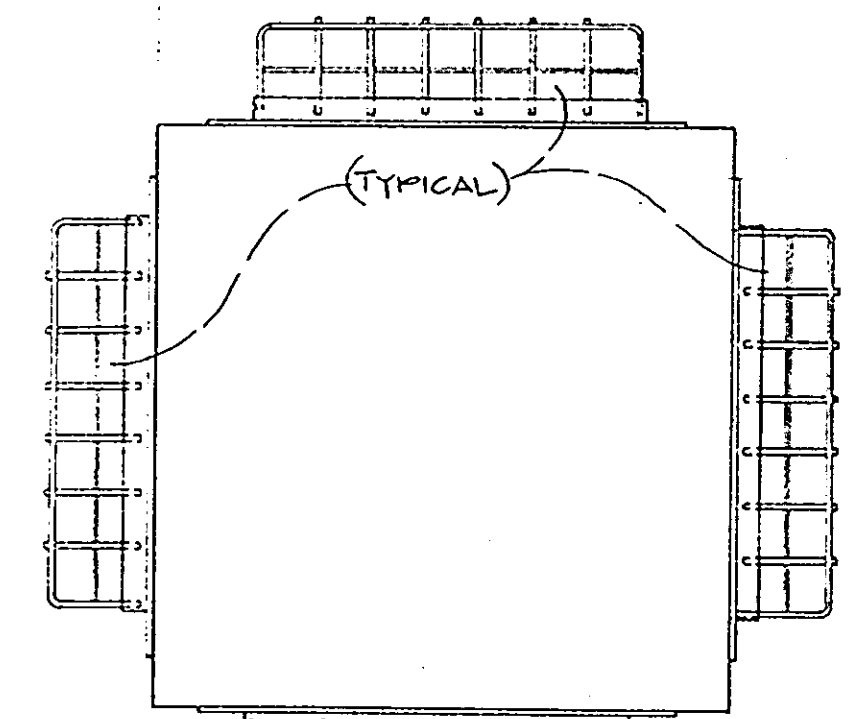
OWNER / DEVELOPER
ORCHARD DEVELOPMENT CORP.
7080 OAKLAND MILLS ROAD SUITE I
COLUMBIA, MARYLAND 21046



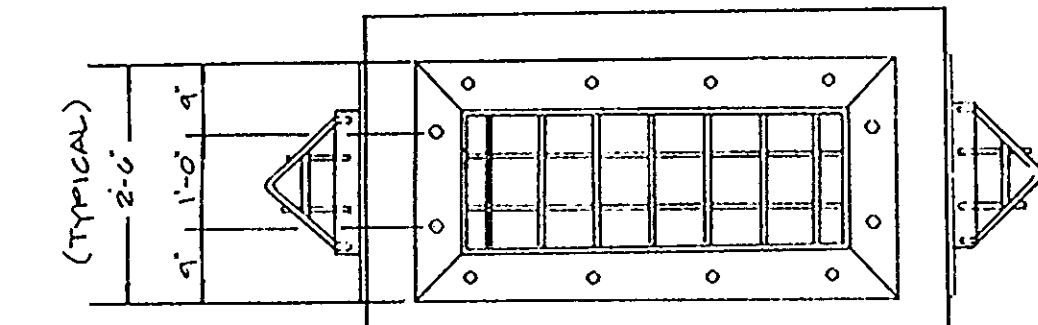
REMOVABLE TRASH RACK DETAIL
1" = 20"



SECTION A-A

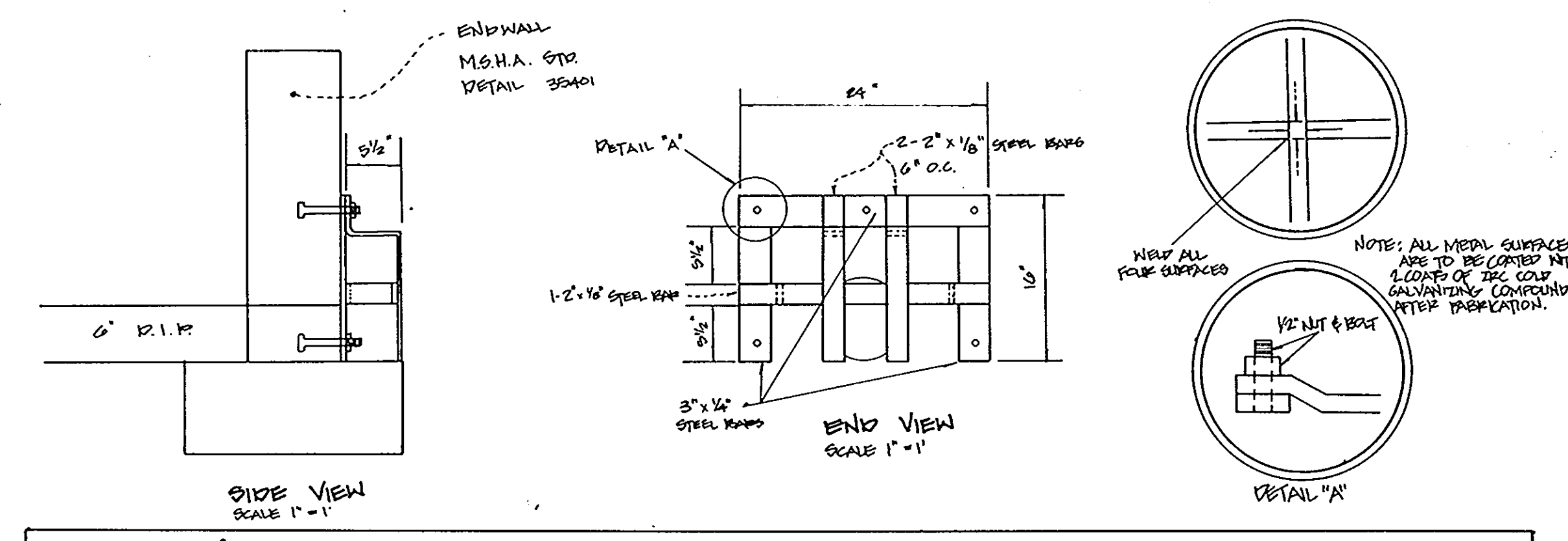


SECTION B-B



SECTION C-C

REMOVABLE TRASH RACK FOR LOW FLOW DETAIL

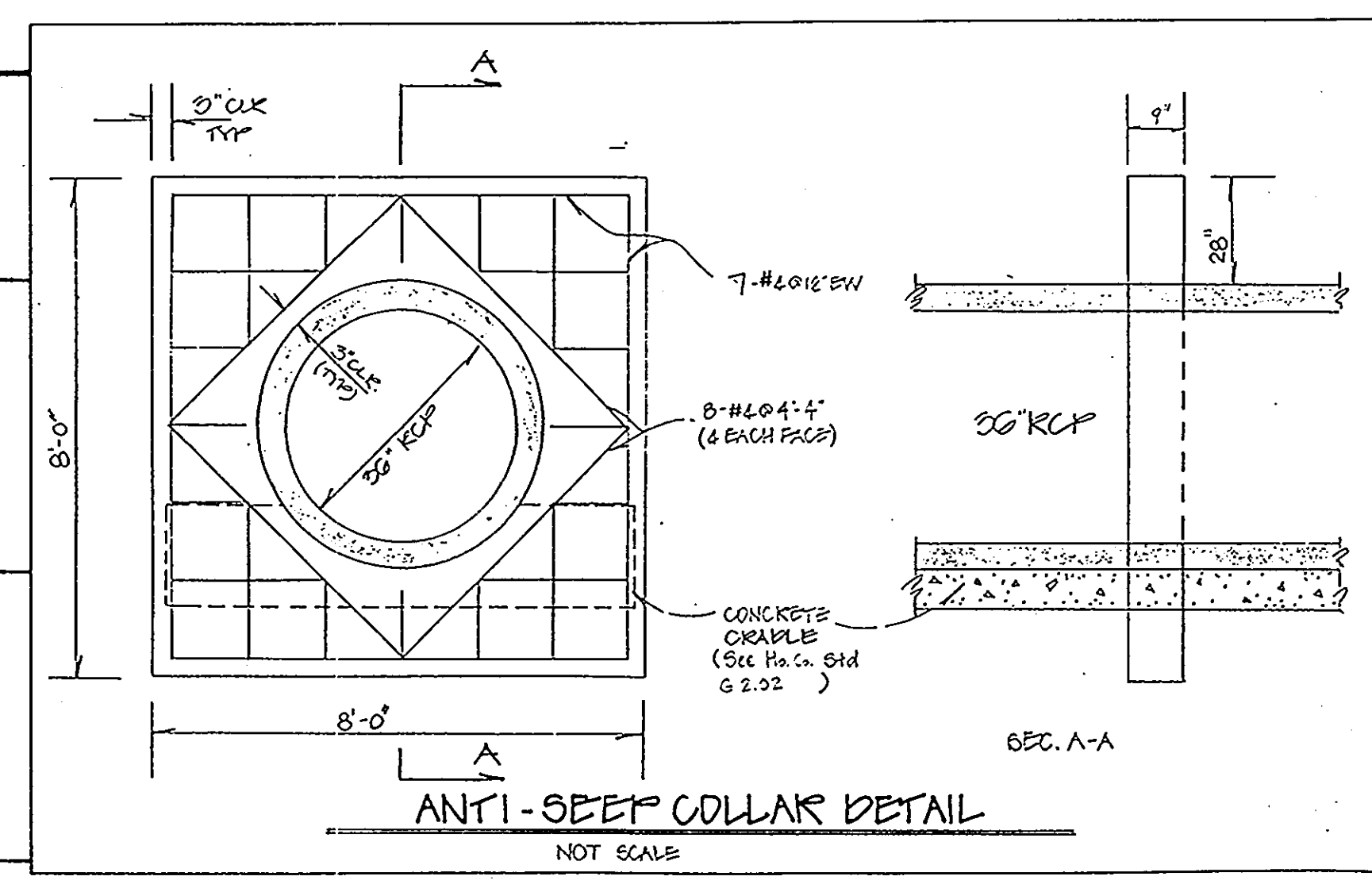


ENGINEER'S CERTIFICATE
"I certify that this plan for erosion and erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
[Signature]
Date: 12/14/90

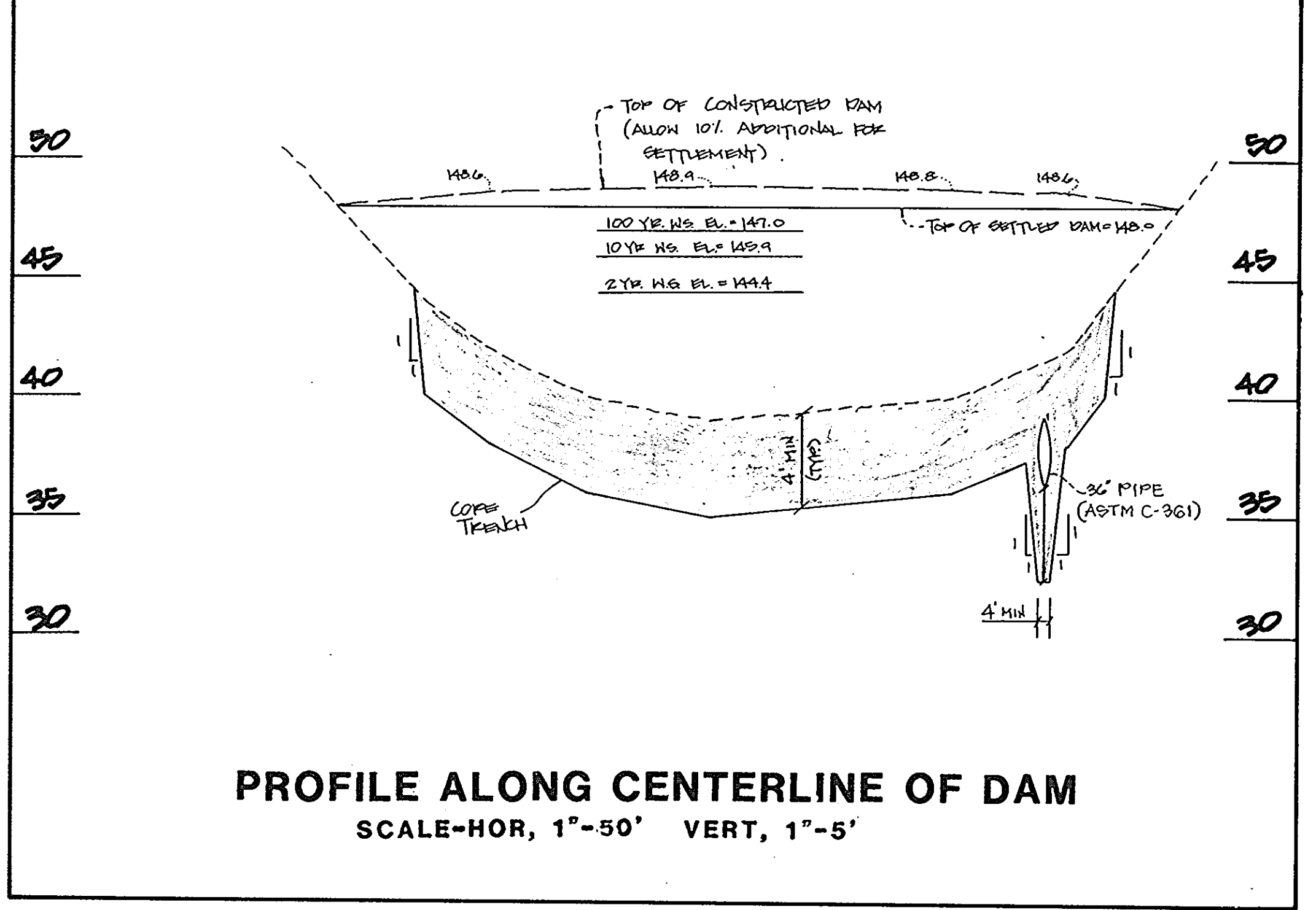
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
[Signature] 12/14/90
U.S. SOIL CONSERVATION SERVICE DATE

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan, and that any responsible person involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."
[Signature] 12/16/90
Signature of Developer/Builder Date

THE DEVELOPMENT PLAN IS APPROVED FOR SOIL AND SEDIMENT CONTROL OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 12/14/90
HOWARD SOIL CONSERVATION DISTRICT DATE



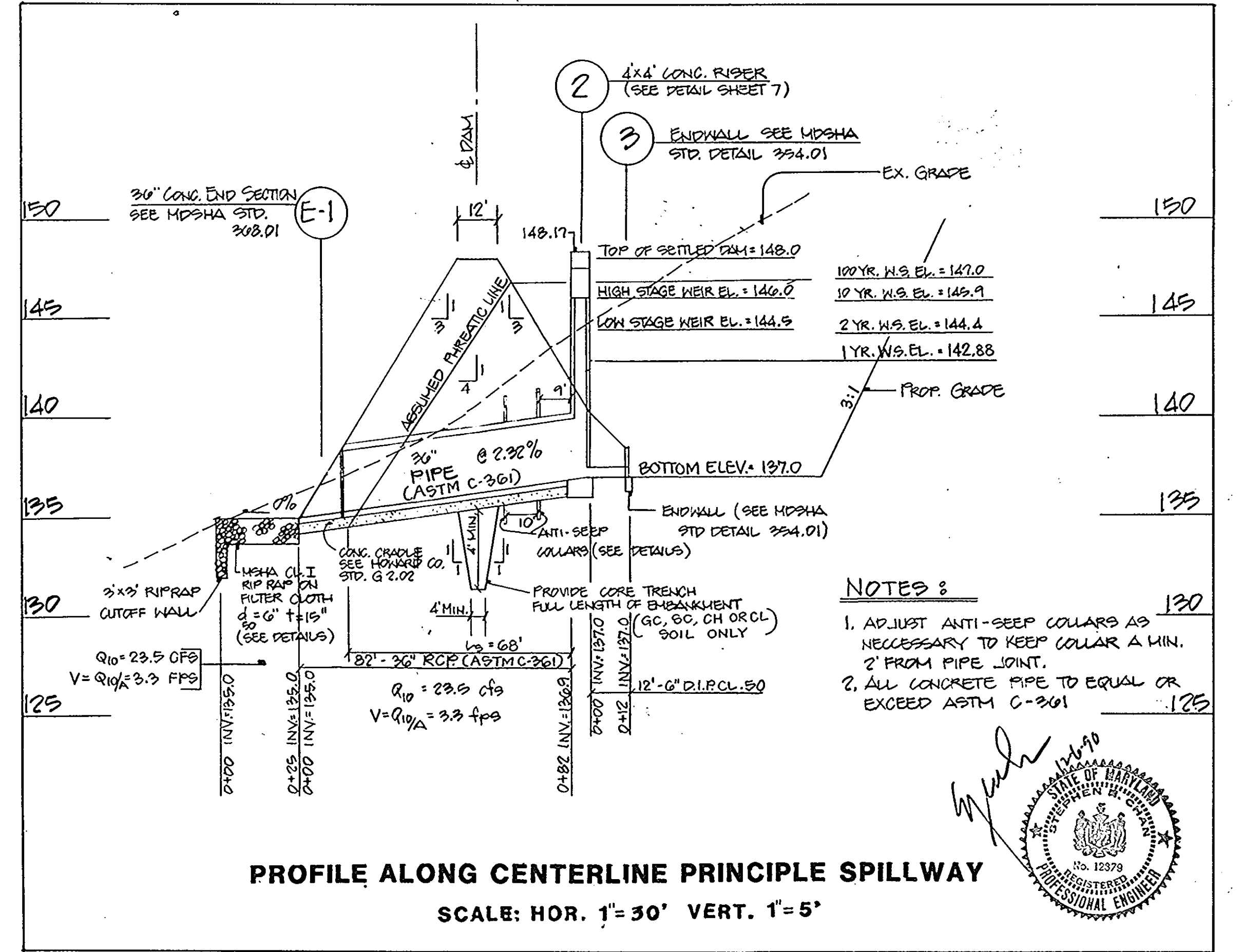
ANTI-SEEP COLLAR DETAIL
NOT SCALE



PROFILE ALONG CENTERLINE OF DAM
SCALE-HOR, 1"=50' VERT, 1"=5'

CONCRETE ENCASEMENT	SEEL	TRENCH WORK	SEEL
4"	0.90	1.20	1.50
6"	1.20	1.50	2.25
8"	1.22	1.84	2.55
10"	1.51	2.33	3.63
12"	1.73	2.82	4.20
14"	2.35	4.02	5.71
16"	2.82	4.52	6.25
18"	3.24	5.35	8.22
20"	3.70	6.16	8.94
22"	4.18	7.02	9.83
24"	5.08	7.92	12.16
26"	5.45	8.53	13.09
28"	6.44	10.20	15.27
30"	6.83	10.83	16.83
32"	7.84	12.45	22.57
34"	8.93	14.06	24.88
36"	12.25	21.08	27.71

CONCRETE ENCASEMENT AND CRADLE DETAILS

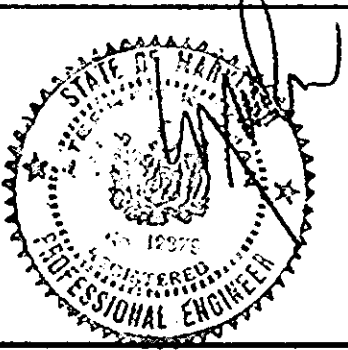


PROFILE ALONG CENTERLINE PRINCIPLE SPILLWAY
SCALE: HOR, 1"=30' VERT, 1"=5'

1540

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[Signature] 12/16/90
CHIEF, LAND DEVELOPMENT DIVISION DATE
[Signature] 12/11/90
CHIEF, BUREAU OF ENGINEERING DATE

ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
18223-A FLOWER HILL WAY
GAITHERSBURG, MD. 20879
301-990-0525 Wash. 948-9439



DES: SKC.	
DRN: JEB	
CHK: SKC.	
DATE: 11-27-90	
BY NO.	
REVISION	
DATE	

S.W.M. DETAILS
600' SCALE MAP NO. 38 BLOCK NO. 22

ROWANBERRY DRIVE
ELKRIDGE TOWN CENTER
1ST ELECTION DISTRICT
HOWARD COUNTY MARYLAND
SHT. 5 OF 7 ROWANBERRY DRIVE
SCALE AS SHOWN
SHEET 5 OF 12
F 90-09

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Soil Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

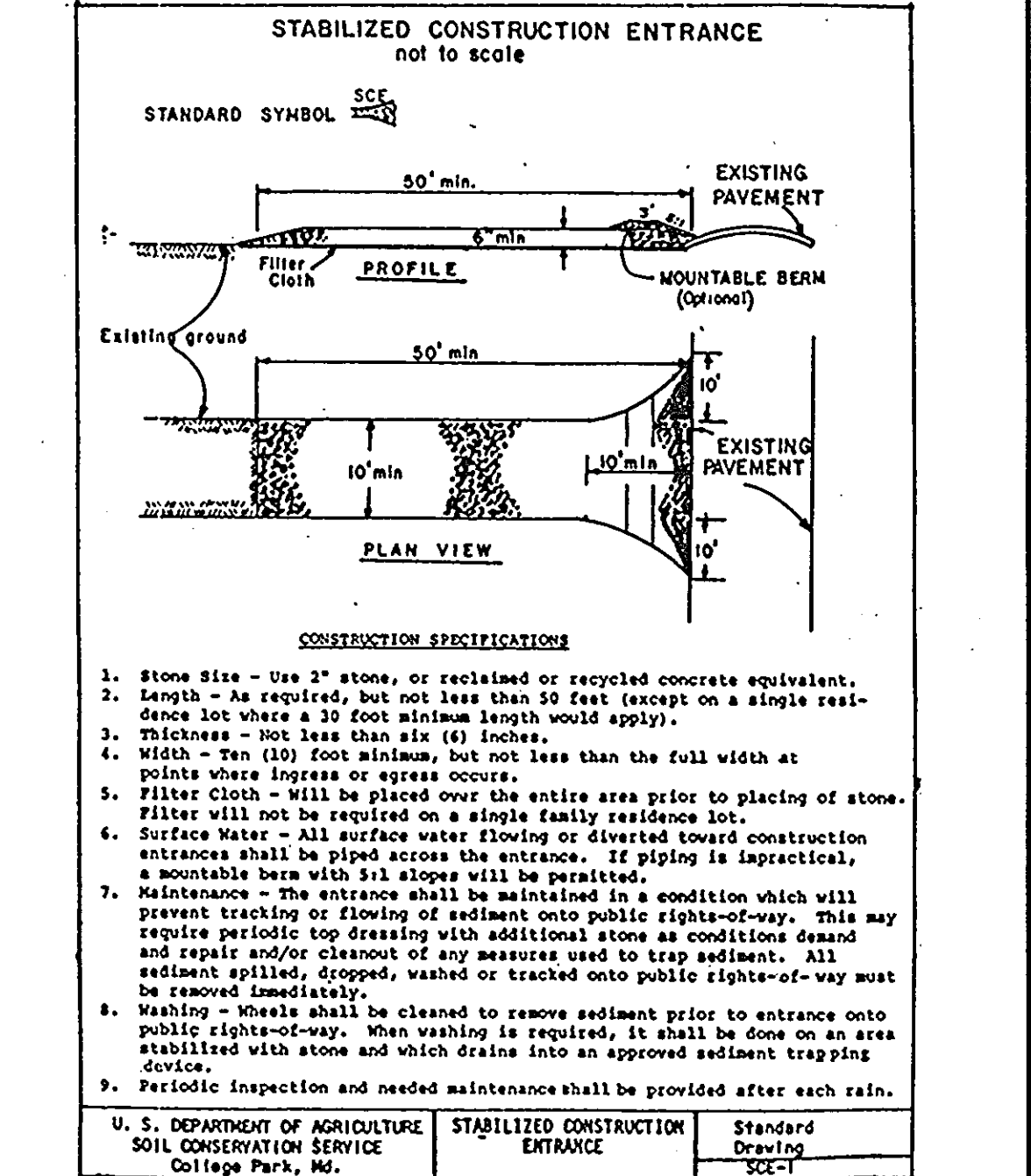
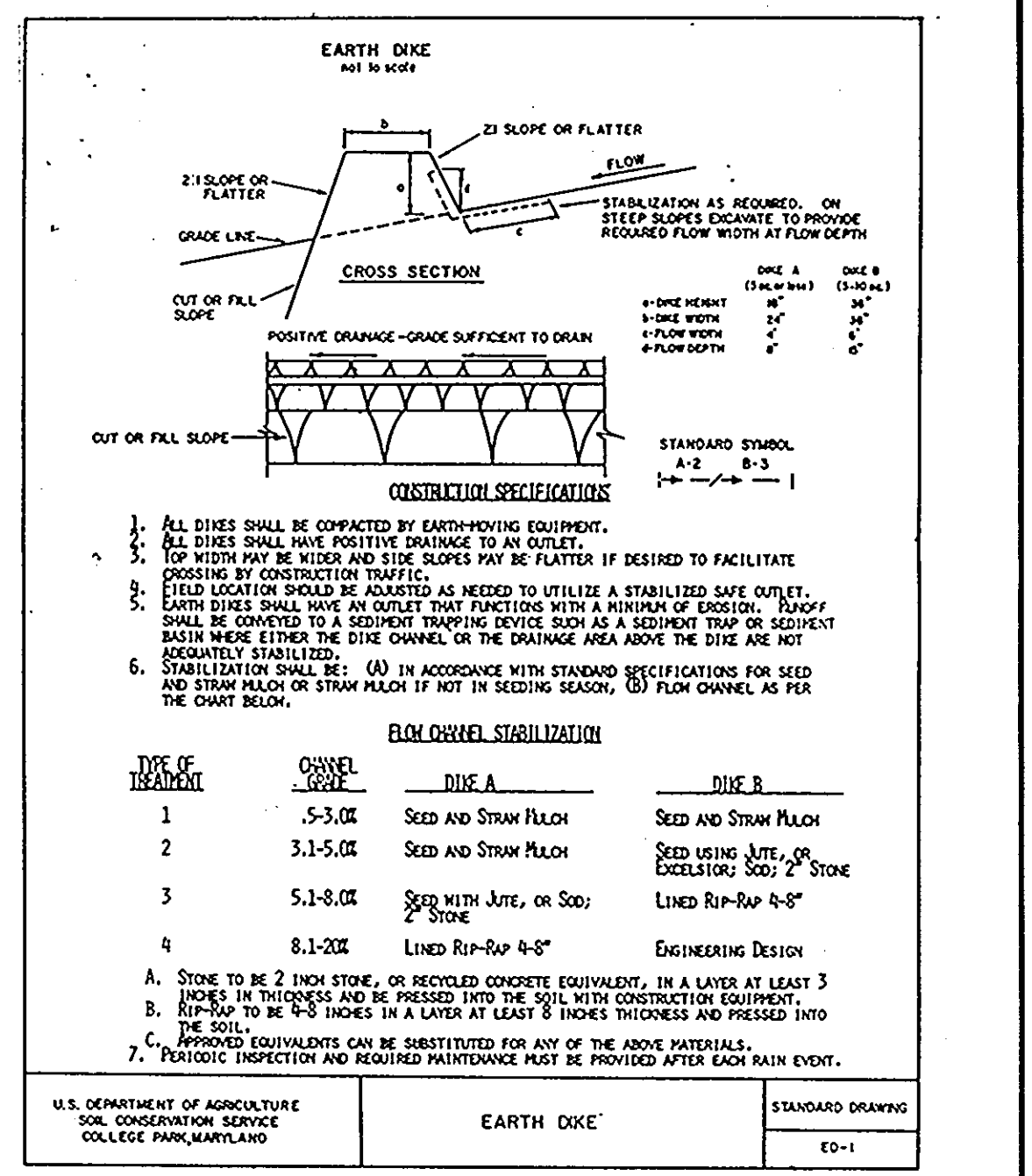
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureamorph fertilizer (9 lbs/1000 sq. ft.)
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of untreated 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.

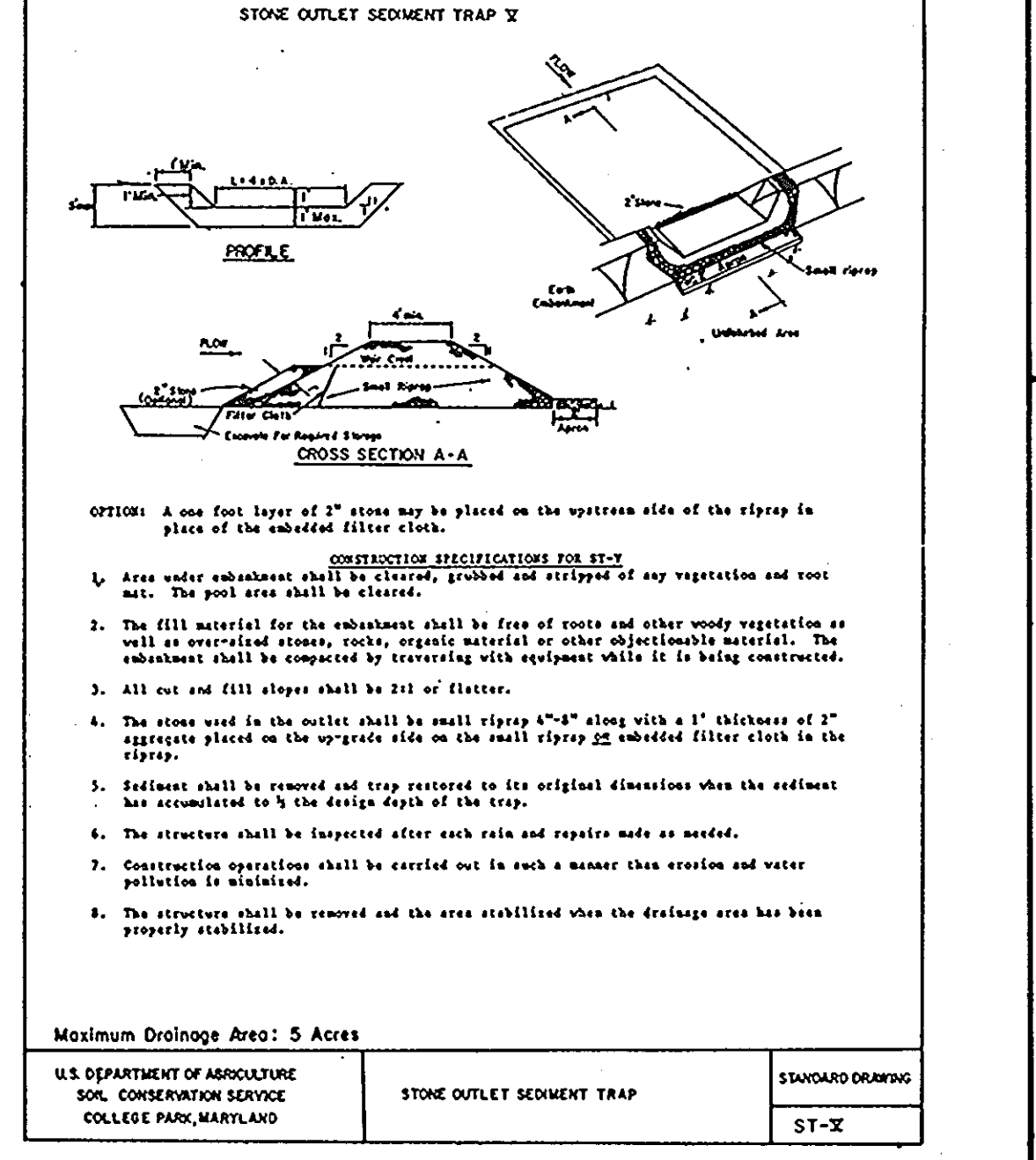
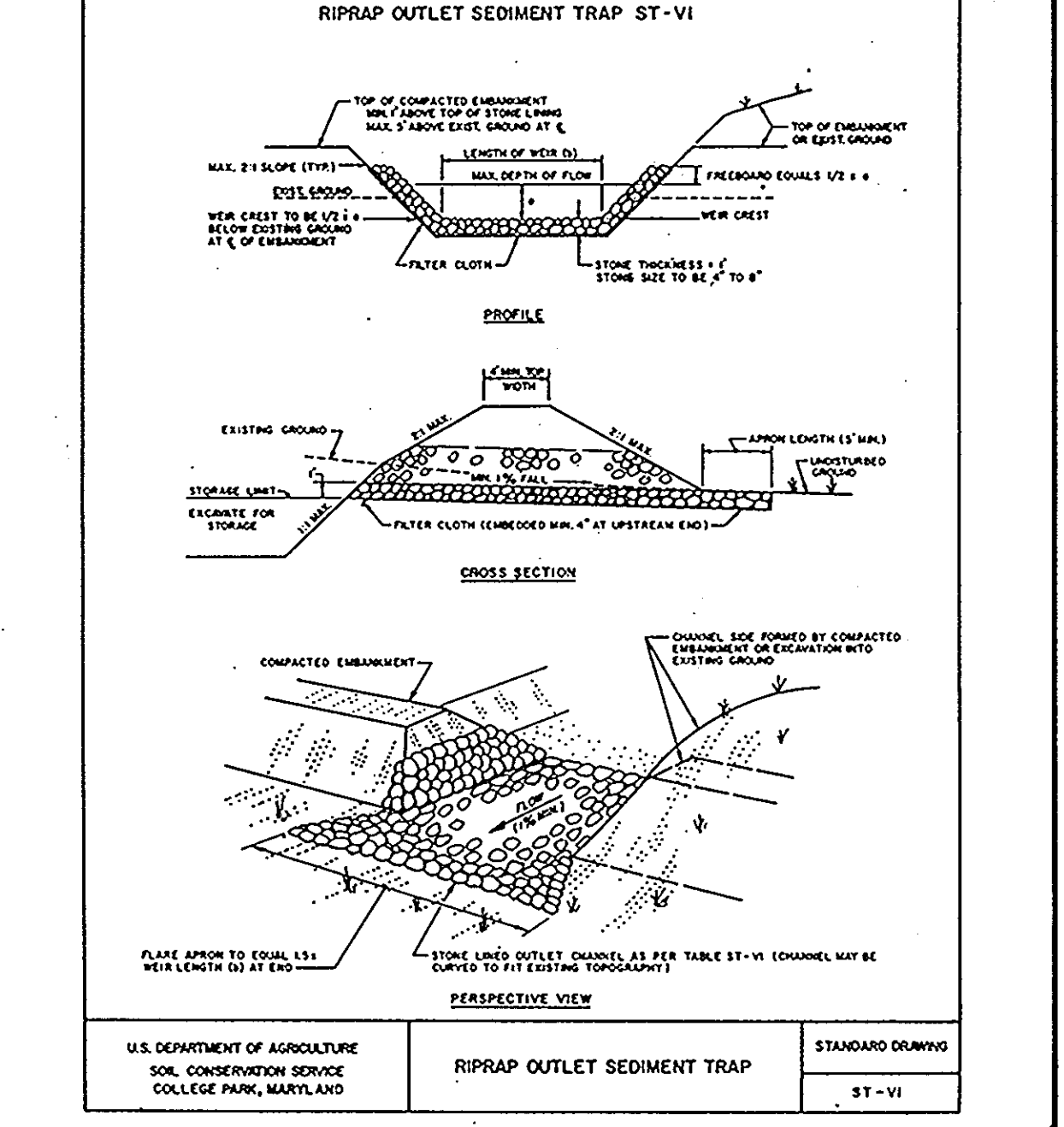
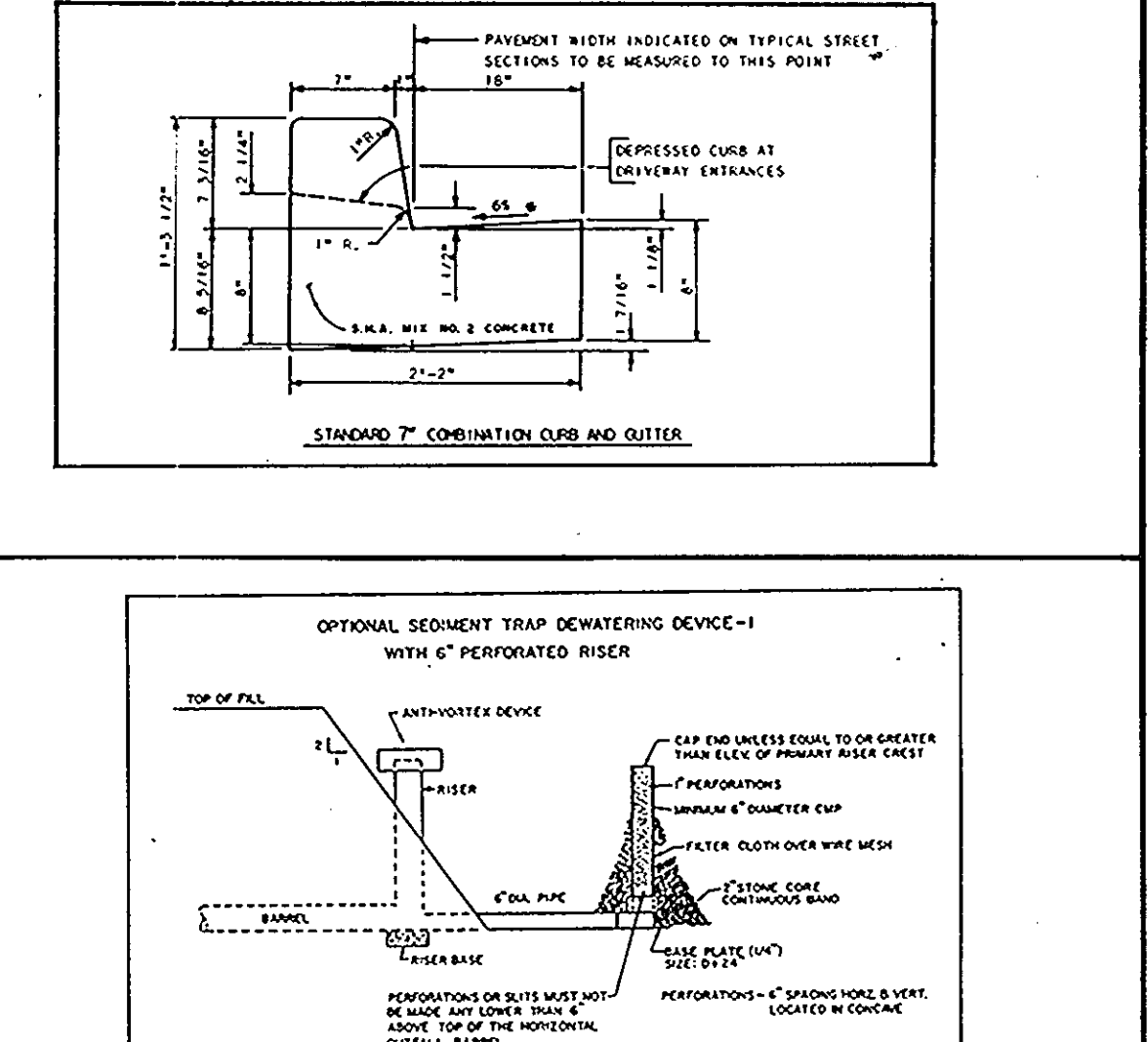
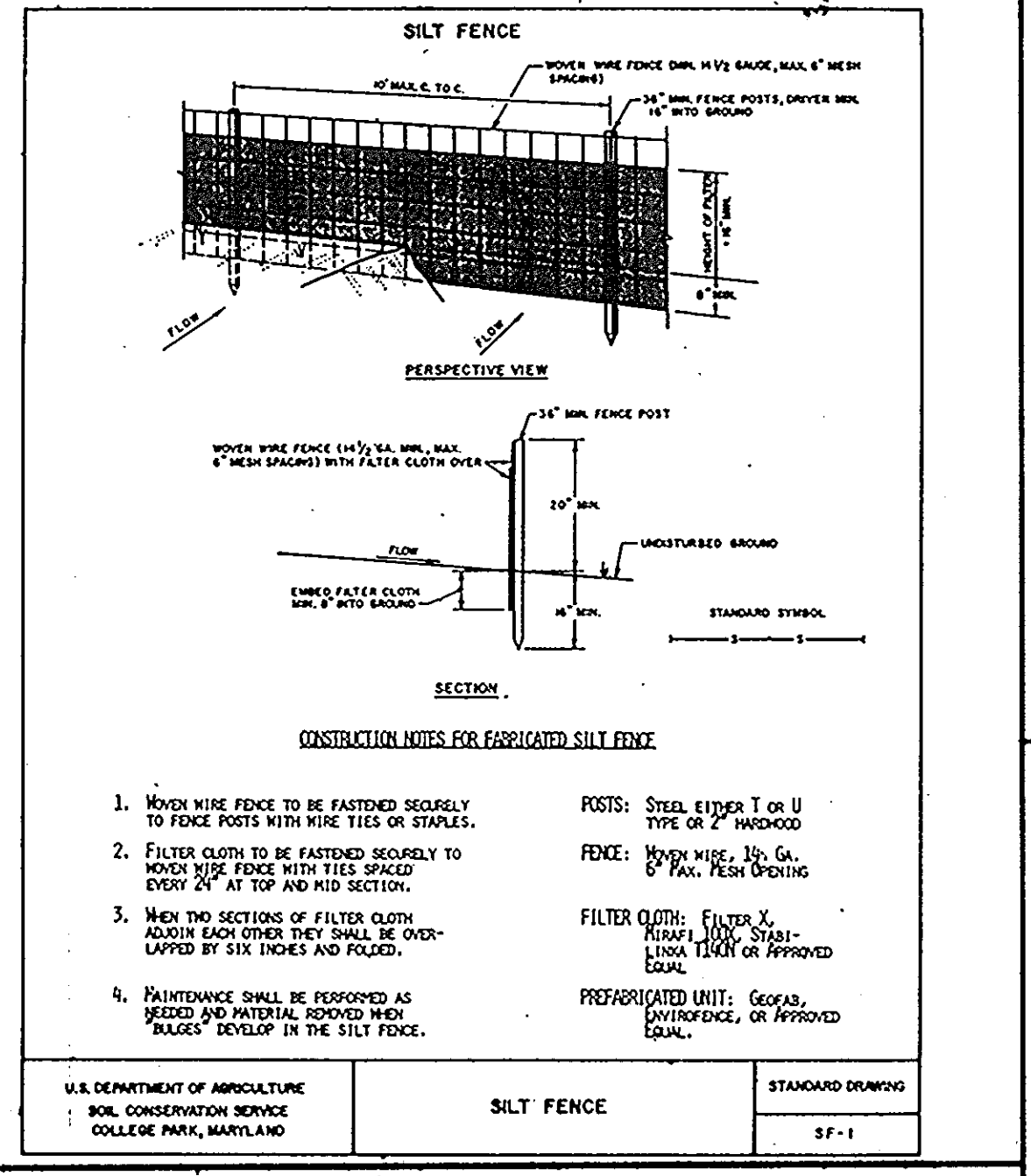


STRUCTURE SCHEDULE

STRUCTURE	STATION	TYPE	ELEVATION	INVERTS		REMARKS
				IN	OUT	
E-119	Shown on Plan	End Section			137.00	Howard Co. Std. S.D. 5.51
I-121	Shown on Plan	A-5	TC 154.20	144.98	140.09	Howard Co. Std. S.D. 4.01
I-123	Shown on Plan	Type "E" Inlet	RIM.156.15	150.55	147.56	Howard Co. Std. S.D. 4.21
I-125	Shown on Plan	A-5	TC 162.35	156.19	155.80	Howard Co. Std. S.D. 4.01
I-127	Shown on Plan	A-5	TC 162.90	157.17	157.00	Howard Co. Std. S.D. 4.01
I-129	Shown on Plan	A-5	TC 163.94	158.21	157.96	Howard Co. Std. S.D. 4.01
I-131	Shown on Plan	A-10	TC 167.70	162.56	161.81	Howard Co. Std. S.D. 4.02
I-133	Shown on Plan	A-10	TC 175.95	168.90	168.40	Howard Co. Std. S.D. 4.02
I-135	Shown on Plan	A-10	TC 184.28	178.75	177.75	Howard Co. Std. S.D. 4.01
I-137	Shown on Plan	A-5	TC 184.28	179.57	179.32	Howard Co. Std. S.D. 4.01
I-141	Shown on Plan	A-10	TC 175.95	170.82	170.72	Howard Co. Std. S.D. 4.02
I-147	Shown on Plan	A-10	TC 163.94		159.01	Howard Co. Std. S.D. 4.02
E-111	Shown on Plan	End Station			137.00	Howard Co. Std. S.D. 5.51
I-113	Shown on Plan	A-5	TC 154.00	147.50	137.69	Howard Co. Std. S.D. 4.01
E-103	Shown on Plan	End Station			137.00	Howard Co. Std. S.D. 5.51
I-105	Shown on Plan	A-5	TC 151.00	142.17	137.30	Howard Co. Std. S.D. 4.01

SEEDING CONTROL NOTES

- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permitting prior to the start of any construction. (292-2437)
- 2) All vegetative and structural practices are to be installed according to the provisions of Chapter 16 of the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 3) Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 7 calendar days for all perimeter erosion control structures, dikes, perimeter slopes and all slopes greater than 3:1, 14 days to all other disturbed or graded areas on the project site.
- 4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 11, 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) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding rates do not allow for proper germination and establishment of grasses.
- 6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 7) Site Analysis:
 - Total Area of Site: 150.20 Acres
 - Area Disturbed: 3.25 Acres
 - Area to be seeded or paved: 0.18 Acres
 - Area to be vegetatively stabilized: 2.82 Acres
 - Total Out: 3.25 Acres
 - Total Fill: 150.20 Acres
 - Offsite waste/borrow area location: ELKBRIDGE TOWN CENTER PHASE - I
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.



TEMPORARY DEWATERING DEVICE

Station	Depth	Description of Material	Sample No.	Moisture Content (%)	Remarks
0.5	0.5	Forest litter/organic matter	1	2.5	GROUNDWATER DATA
0.5	8	Gray and dull yellow orange fine to coarse sand with some fine to a little clay silt and traces of gravel and organic matter (above 2.0 feet), moist, medium dense (SANDY LOAM)	2	2.5	
4.2	4	Silvery gray to off-white/light gray micaceous clay silt with some fine sand, moist, medium stiff to stiff (SILT LOAM)	3	7.5	M/C - 26.41
11.0	5	Light grayish-green to yellowish-green fine sand with a little clay silt, moist, very dense (SANDY LOAM)	4	10.0	M/C - 24.31
20.0	14	BORING TERMINATED @ 20.0 FEET	20-31	15.0	M/C - 19.81

SOIL BORING LOG

Report No. 068073 DATE September 26, 1989

Client: MCH Corporation c/o Reath & Ross Distribution, Inc.

Project: Elkridge Town Center - Residential, Elkridge, Howard County, Maryland

Boring No. R-2

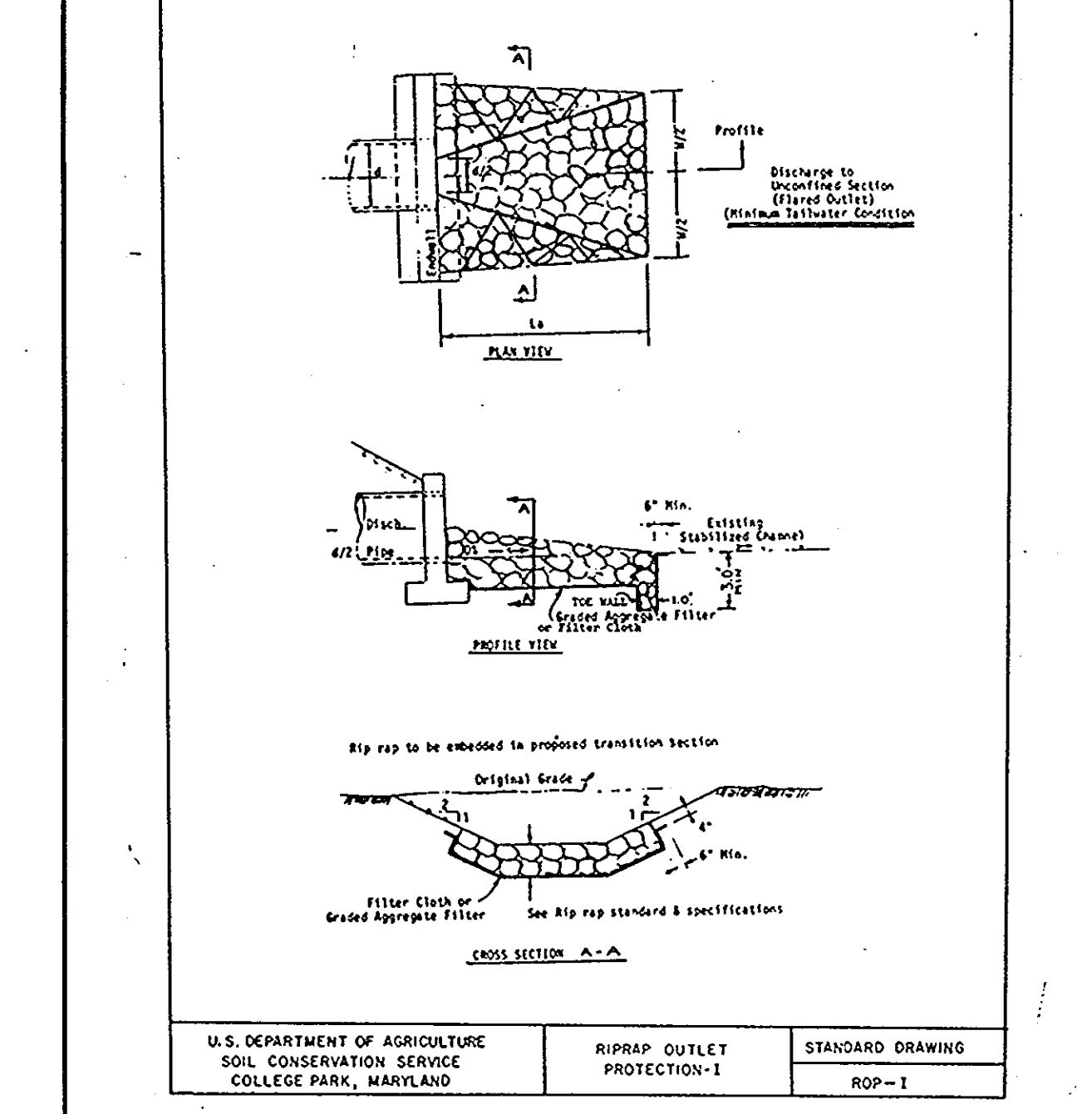
Table of Boring: Hollow-stem auger, 3-1/4" ID, 159.6' Location: See Boring Location Plan

Station	Depth	Description of Material	Sample No.	Moisture Content (%)	Remarks
0.5	0.5	Forest litter/organic matter	1	2.5	GROUNDWATER DATA
0.5	8	Gray and dull yellow orange fine to coarse sand with some fine to a little clay silt and traces of gravel and organic matter (above 2.0 feet), moist, medium dense (SANDY LOAM)	2	2.5	
4.2	4	Silvery gray to off-white/light gray micaceous clay silt with some fine sand, moist, medium stiff to stiff (SILT LOAM)	3	7.5	M/C - 26.41
11.0	5	Light grayish-green to yellowish-green fine sand with a little clay silt, moist, very dense (SANDY LOAM)	4	10.0	M/C - 24.31
20.0	14	BORING TERMINATED @ 20.0 FEET	20-31	15.0	M/C - 19.81

Groundwater initially encountered at 15.1 feet

Boring caved at 15.2 feet following removal of drilling auger.

After 24 hours, water level recorded at 7.3 feet.



The results of the Modified Proctor and CBR Tests on the three (3) bag samples are as follows:

Boring No.	Soil Description	Maximum Dry Density (pcf)	Opt. Moist. Content %	CBR No.
R-1	Fine to medium SAND with a little silt and a trace of gravel	115.7	9.5	20.0
R-9	Fine to coarse SAND with some silty clay and a little gravel	131.4	7.4	34.0
R-2	Fine sandy clayey SILT	119.4	11.3	6.0

OWNER / DEVELOPER
ORCHARD DEVELOPMENT CORP.
7060 OAKLAND MILLS ROAD SUITE I
COLUMBIA, MARYLAND 21046

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

John J. Zehn 9/23/90
DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible person involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."

John J. Zehn 9/23/90
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

William W. Weiland 12/11/90
CHIEF, BUREAU OF HIGHWAYS

William W. Weiland 12/11/90
CHIEF, BUREAU OF ENGINEERING

ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS

18223-A FLOWER HILL WAY
GATHERSBURG, MD. 20879
301-990-0525 Wash. 948-9439

S.W.M. DETAILS & STRUCTURE SCHEDULE

DATE: 11-27-90

BY NO. REVISION

S.W.M. DETAILS & STRUCTURE SCHEDULE

DATE: 600' SCALE MAP NO. 38 BLOCK NO. 22

TAX MAP 38 PARCEL NO.526
SECTION ONE
ELKBRIDGE TOWN CENTER
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 12

SHT. 6 OF 7 ROWANBERRY DRIVE F 90-09

A. Site Preparation
Areas under the embankment, structural works, and stream diversion shall be cleared, grubbed, and the top soil stripped. All trees, vegetation, roots, or other objectionable material shall also be removed. To facilitate clean out and restoration, the permanent pool or impounding area should be cleared of all brush, trees, rubbish and other objectionable material.

B. Earth Fill
Earth fill shall conform to SMA Specifications, Section 206 and these specifications:

1. Material
The fill material shall be taken from an approved borrow area. The first two feet of excavation under the embankment is to be wasted at the designated spoil area. The final decision as to the suitability of the exposed soil shall be made by the Soils Engineer at the time of construction. All material shall be free from roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The dam embankment should be formed of material conforming to the Unified Soil Classification CL and ML. SC and SN can be used if controlled compaction is used. As a minimum criteria, the fill material for the dam embankment (except as noted below) will have a maximum density not less than 100 pcf as determined by AASHTO T99 Method A. All material shall contain no stone larger than three inches in the greatest dimension. Such stones shall not be more than 25 percent by volume of the fill material. For dam core trenches, the material used can include clean and organic-free CH and MH material in addition to CL and ML. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased at least ten percent above the design elevation (including freeboard) unless otherwise shown on the plans.

2. Placement
Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in eight-inch maximum thick layers (before compaction) and shall be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

3. Compaction
(To be used when soil testing is required)
The movement of hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be compacted to a minimum of 95 percent of the maximum dry density obtained in compaction tests of the fill materials performed in accordance with the requirements of the AASHTO designation T99 Method A, prior to the next lift being spread and being certified by the Soils Engineer at the time of construction. The fill density shall meet minimum specified density regardless of the compaction method used. The moisture content of the embankment material shall be within the designated upper and lower limits of the optimum moisture content. Limits of moisture content may be modified by the engineer during construction depending on material encountered. Fill placed at densities lower than the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill.
or When Specified:

(To be used when soil testing is not required)
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 sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used. The proper moisture content can generally be judged when the material can be forced into a ball without crumbling. If water can be squeezed out of the ball, it is too wet to compact properly.

4. Core-Trench/Cutoff Trench/Key Trench
Where specified, a core trench shall be excavated 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 or as shown on the plans. The side slopes of the trench shall be one-to-one. The backfill material for the core trench shall be approved prior to use and shall be free of all organic material.
(To be used when soil testing is required)

The fill for the trench shall be compacted with equipment or rollers to assure that a minimum of 95 percent of the maximum dry density and minimum permeability is achieved.
or When Specified
(To be used when soil testing is not required)

The backfill material for the cutoff trench shall be GC, SC, CH OR CL material and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

C. Structural Backfill
Backfill material 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 compaction equipment. The material must completely fill all spaces under and adjacent to the structure or pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, as measured horizontally, to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a concrete structure or pipe unless there is a compacted fill of 24 inches or greater over the structure or pipe.

D. Pipe Conduits
All pipe denoted as "CP" may be either corrugated aluminum pipe or corrugated steel pipe. The barrel, riser, trash rack, and section, and anti-seep collars must all be made of the same material (either steel or aluminum).

1. Corrugated Metal Pipe (for pipes larger than 48 inches only).
a. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and have full bituminous coating 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.
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. 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 plastic insulating materials at least 24 mils in thickness. 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 soil shall be less than nine (9) and greater than four (4). Helically corrugated pipe, in addition to the requirements above, shall have either continuously welded seams or have lock seams which are caulked with a neoprene bead.
b. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around and shall be at the proper angle to provide a watertight connection. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight.
c. 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.
d. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
e. Backfilling shall conform to structural backfill as described above.
f. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

2. Reinforced Concrete Pipe (all pipes 48 inches and smaller inclusive).
a. Materials - This pipe shall conform to SMA Specifications, Section 908. Class IV pipe shall be used unless otherwise specified. Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. Approved equivalents are AWWA Specifications C-300, 301, and 302.
b. Bedding - all reinforced concrete pipe shall be laid in concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe (minimum four inches) and up the sides of the pipe at least ten percent of its diameter with a minimum thickness of three inches. HSSC low cradle bedding is an approved equivalent.
c. 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 on 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.
d. All concrete pipe joints will be sealed with mortar inside and outside.
e. Backfilling shall conform to structural backfill as described above.
f. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

E. Concrete
Concrete shall meet minimum requirements set forth in SMA Specifications, Section 918 (Portland Cement Concrete Mixtures), for Mix No. 3 (A-1) or 2 (P-1) concrete and Section 911 for reinforcement. Concrete construction shall conform to SMA Specifications, Section 608 and Section 905.

F. Riprap and Slope Protection
Rock for riprap shall conform to SMA Specifications, Section 818. Plastic filter cloth shall be placed under all riprap. Filter cloth shall be "Poly Filter X" or approved substitute. All filter cloths shall be resistant to ultraviolet deterioration.

G. Fencing
When required, chainlink fence fabric, fence posts, top rail braces, gates, and accessories shall conform to the requirements of SMA Specifications, Section 912. Materials shall be as follows, except as otherwise specified:
Fabric: Type 1, 2-inch mesh, 9-gauge, minimum weight of zinc coating - 1.8 ounces per square foot.
Barbed Wire: Zinc-coated steel.
Posts: Type 1, Class 1, zinc-coated.
Top Rails: Type 11, Class 1, zinc-coated.
Braces: Zinc-coated steel.
Gates: Type 1, zinc-coated steel.

H. Stabilization
Borrow areas, spoil areas, and all graded areas of the dam and road shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, and borrow areas shall be stabilized by seeding and applying straw mulch in accordance with these specifications and SMA Specification, Sections 920 and 701.

1. Soil Amendments
Apply two tons of dolomitic limestone and 600 pounds of 0-20-20 fertilizer, or equivalent, per acre before seeding. Harrow or disc line and fertilizer uniformly into the soil to a minimum depth of three inches on slopes flatter than three to one. On slopes of, or greater than three to one, the line and fertilizer shall be worked in, on the contour, to a minimum depth of two inches. No attempt shall be made to drag any disced area to make the soil surface very smooth after disking. At time of seeding, apply 400 pounds of 38-0-0 fertilizer, and 500 pounds of 10-20-20, or equivalent, fertilizer per acre.

2. Seeding
a. Embankment and sloping areas (slopes steeper than 4:1). During the seeding period March 1 through May 31, apply 3.1 pounds per 1,000 square yards of Crownvetch, triple inoculated, and a mixture of 8.3 pounds of Kentucky 31 Fescue and 2.1 pounds of Annual Rye per 1,000 square yards.
During seeding period June 1 through October 15, apply 12.4 pounds of Kentucky 31 Tall Fescue and 2.1 pounds of Annual Rye per 1,000 square yards and hold 3.5 pounds of Crownvetch plus sufficient inoculant per 1,000 square yards of area to be seeded with Crownvetch for the next seeding season.
Pond excavation area and flat surfaces. During seeding period March 1 through October 15, apply 45.5 pounds per 1,000 square yards of SMA Seed Mix No. 1 on flat areas.
At the direction of the engineer, up to 20 percent of any seed mixture can be replaced with Annual Rye seed.

3. Mulching
Immediately after seeding, uniformly mulch the specified areas at the minimum rate of two tons per acre or 50 pounds per 1,000 square feet with clean bright straw. The mulch should be crimped into the ground or otherwise secured.

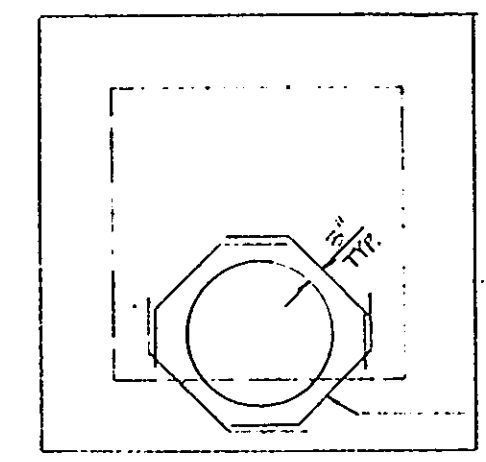
I. Reforestation
Seedlings or trees may be planted above the two-year storm pool. Varieties and spacing shall be in accordance with the State Forester, Maryland Forestry Service. The State Forestry Service should be contacted to establish details of Reforestation Plan.

J. Construction Inspection by Designated Engineer
The construction of the pond and embankment shall be under the supervision of a registered engineer. The engineer shall have the responsibility and authority to make minor changes in the plans in order to compensate for unusual soil conditions encountered during construction as long as changes do not adversely affect the integrity of the dam. Major changes to the design which may result from site conditions encountered during construction must be reviewed and approved by the Design Engineer, DPW and the HSCD prior to initiation of construction.

K. 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 permanent works, and to 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. The diversion and care of the stream will be diverted through the site 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.

SEQUENCE OF CONSTRUCTION

1. Obtain grading permit. 1 week
2. Notify Howard County Department of Licenses and Permits Inspector 48 hours before beginning work. (301-992-2437) 2 weeks
3. Construct stabilized construction entrance and install earth dikes and sediment traps and silt fence. 4 weeks
4. Clear & Grub area for Stormwater Management Facility and Rowanberry Drive. 2 weeks
5. Construct Stormwater Management Facility with temporary dewatering device. 2 weeks
6. Rough Grade Rowanberry Drive and install utilities. 4 weeks
7. Install paving for Rowanberry Drive and stabilize remainder of right-of-way. 2 weeks

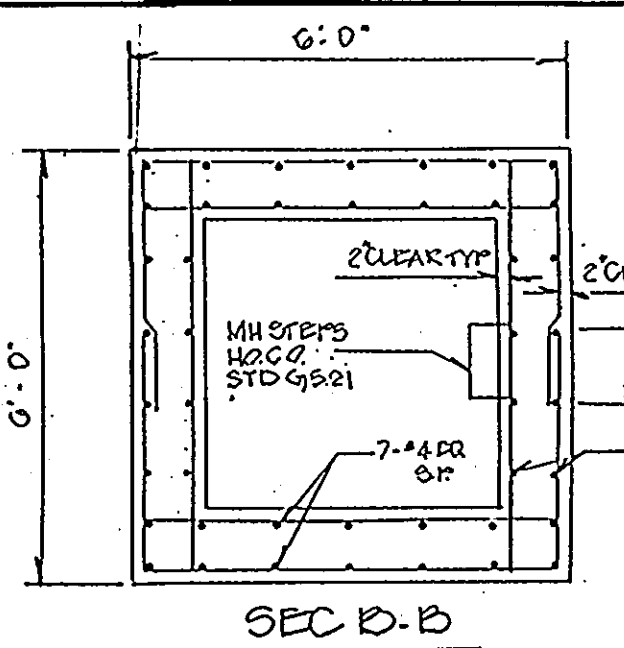
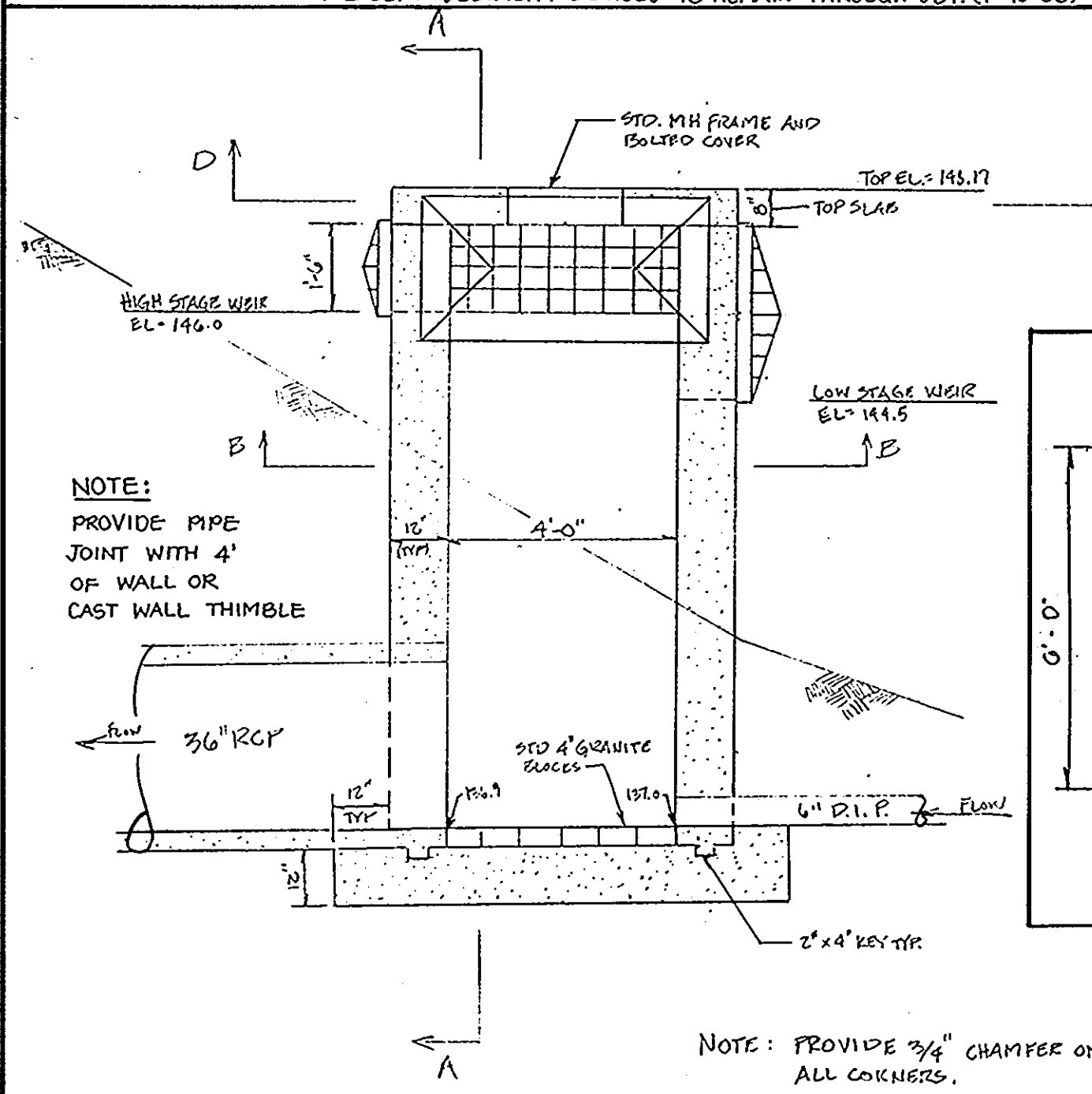


SEC D-D

REINFORCING FOR MH FRAME

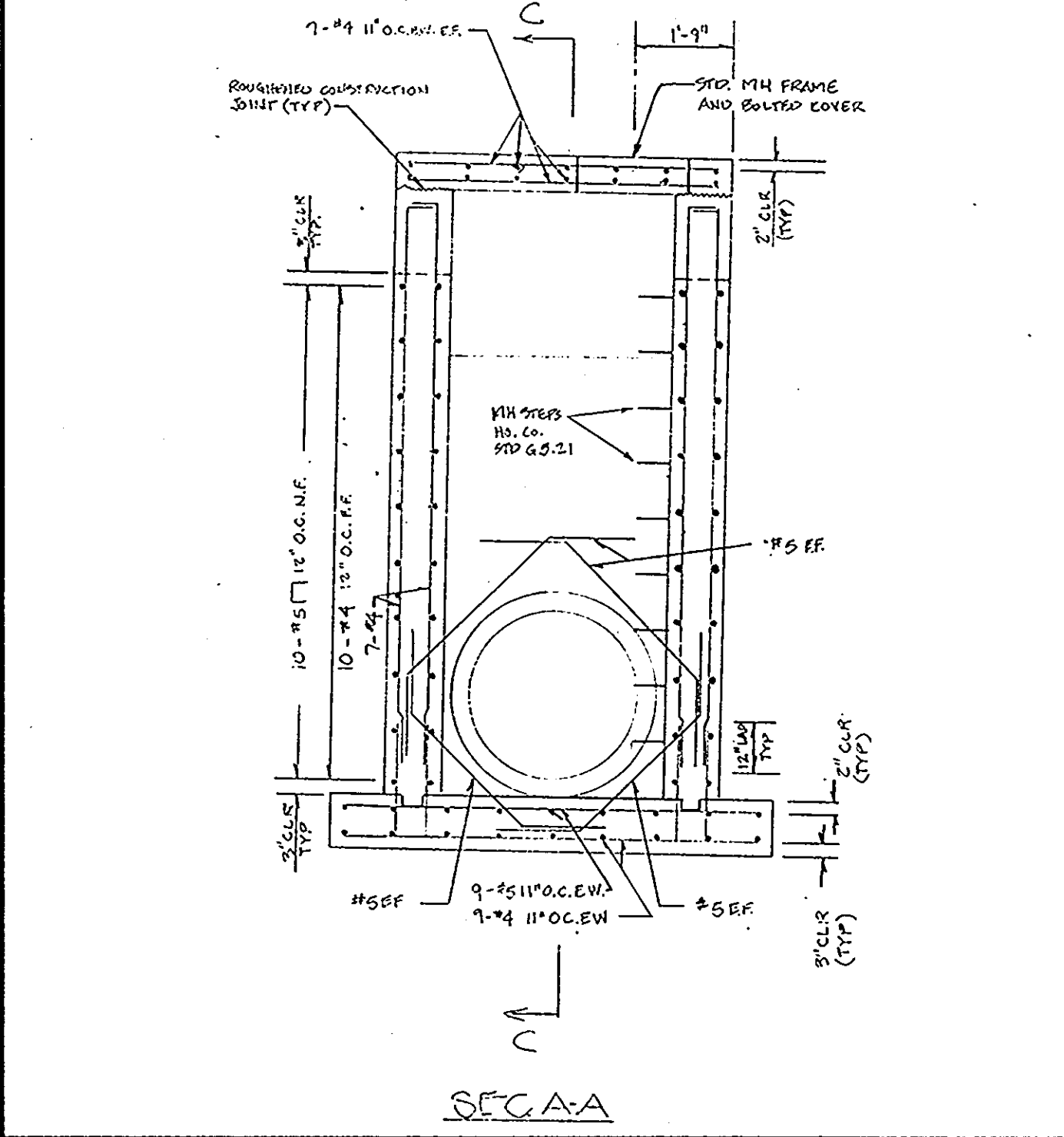
ANTI-FLOSION CHECK

$RIBER = 5' \times 4' \times 11.7' = 234 \text{ CU FT}$
 $BASE = 8' \times 2' \times 1' = 64 \text{ CU FT}$
 $WT. OF RIBER = 287.4 \text{ CU FT}$
 $287.4 \text{ CU FT} \times 150 \text{ CU FT} = 43110 \text{ \#}$
 $WT. OF TRASH RACK = 900 \text{ \#}$
 $TOTAL WT. = 43610 \text{ \#}$
 $WT. OF RIBER AT WATER = 10' \times 6' \times 6' \times 0.4' = 22,464 \text{ \#}$
 $22,464 \text{ \#} < 43610 \text{ \#}$
 $F.S. = 1.94 \text{ OK}$

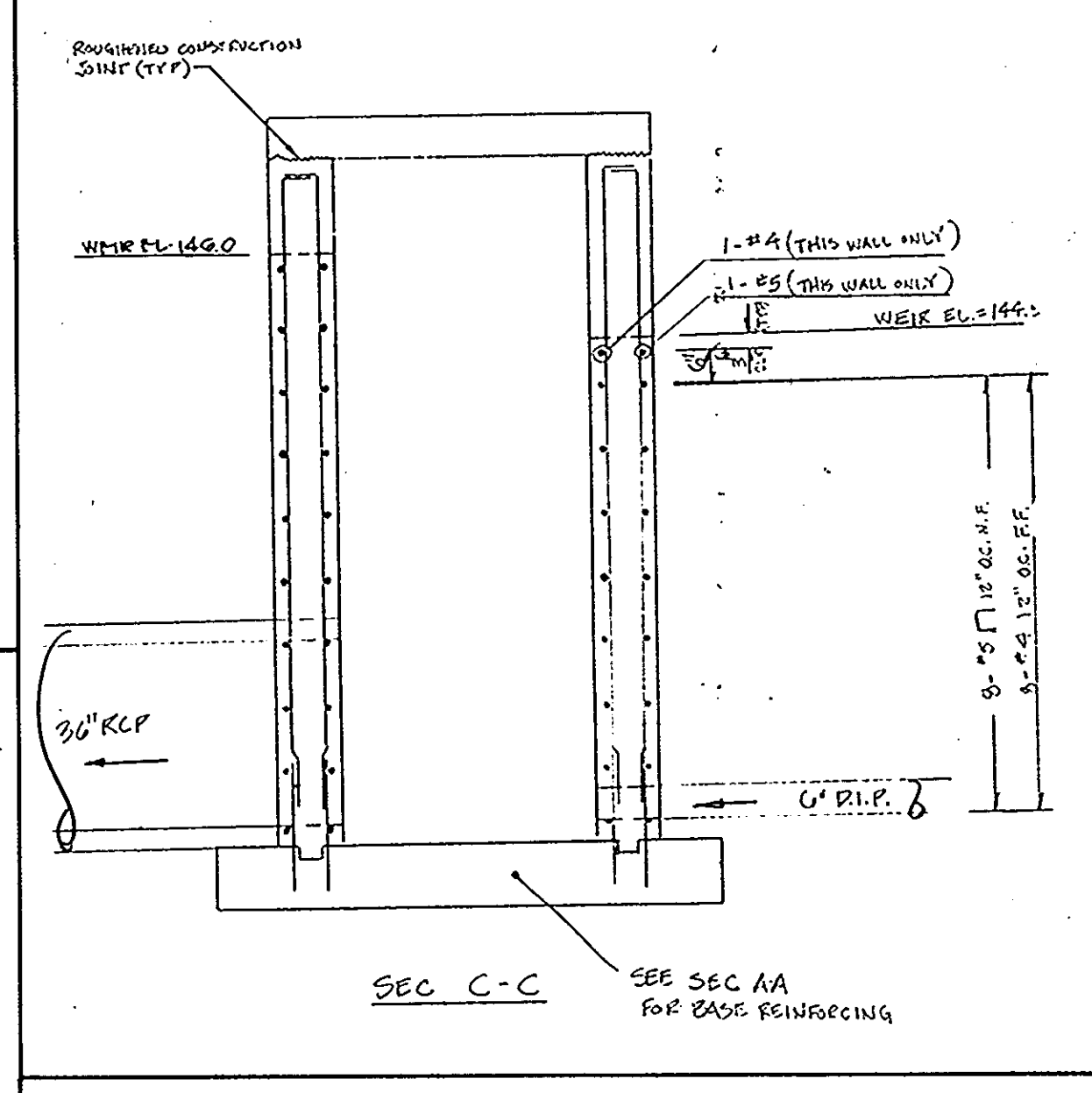
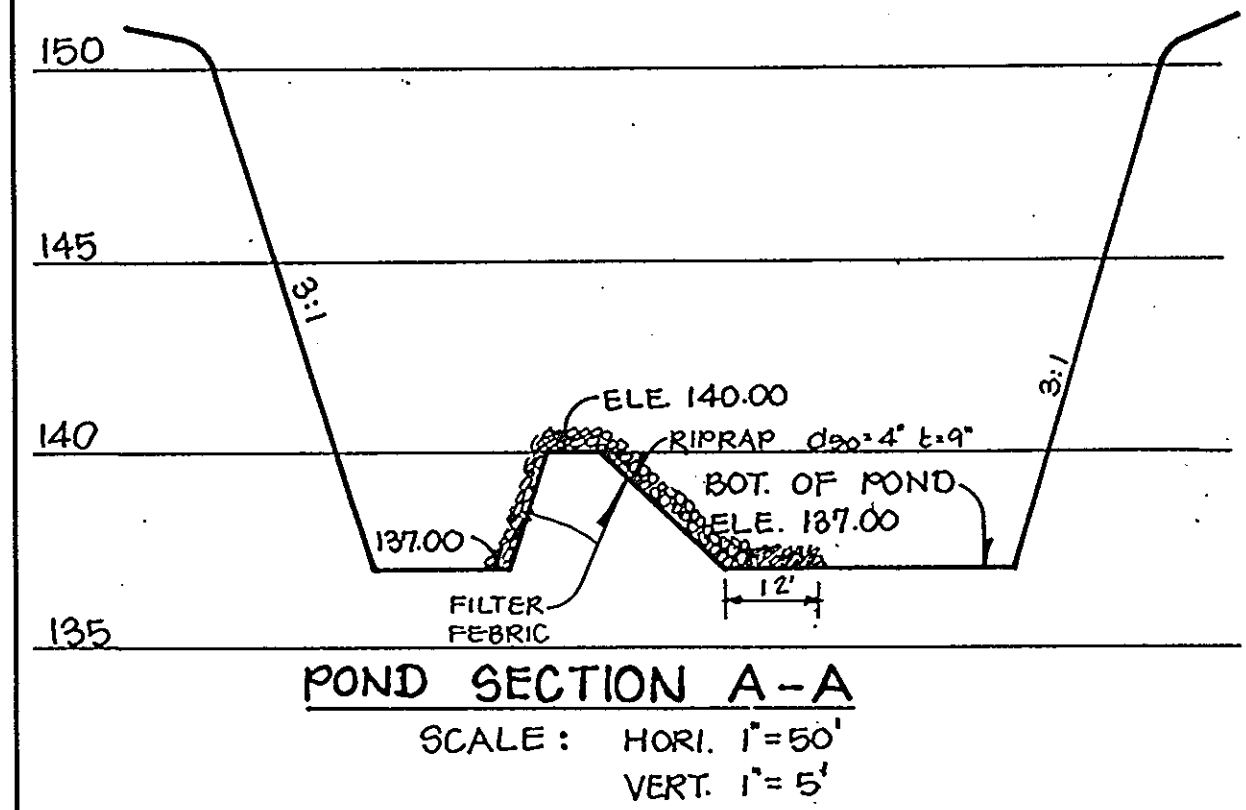


RIPRAP OUTLET DESIGN TABLE

OUTLET #	d ₅₀	t	L _a	W
E-1	6"	15'	25'	28'
E-103	6"	15'	8'	9.5'
E-111	6"	15'	8'	9.5'
E-119	9"	20'	26'	28.5'



OWNER / DEVELOPER
ORCHARD DEVELOPMENT CORP,
7060 OAKLAND MILLS ROAD SUITE I
COLUMBIA, MARYLAND 21046



ENGINEER'S CERTIFICATE
"I certify that this plan for erosion and erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature: [Signature] Date: 9/5/90

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan, and that any responsible person involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."

Signature: [Signature] Date: 9/5/90

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Signature: [Signature] Date: 12/12/90
Chief, Division of Community Planning and Land Development

Signature: [Signature] Date: 12/14/90
HOWARD SOIL CONSERVATION DISTRICT

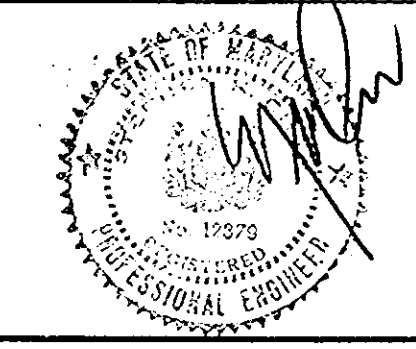
Signature: [Signature] Date: 12/14/90
U.S. SOIL CONSERVATION SERVICE

Signature: [Signature] Date: 12/14/90
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

1540

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Signature: [Signature] Date: 12/12/90
Signature: [Signature] Date: 12/14/90

ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
18223-A FLOWER HILL WAY
GAITHERSBURG, MD. 20879
301-990-0525 Wash. 948-9439

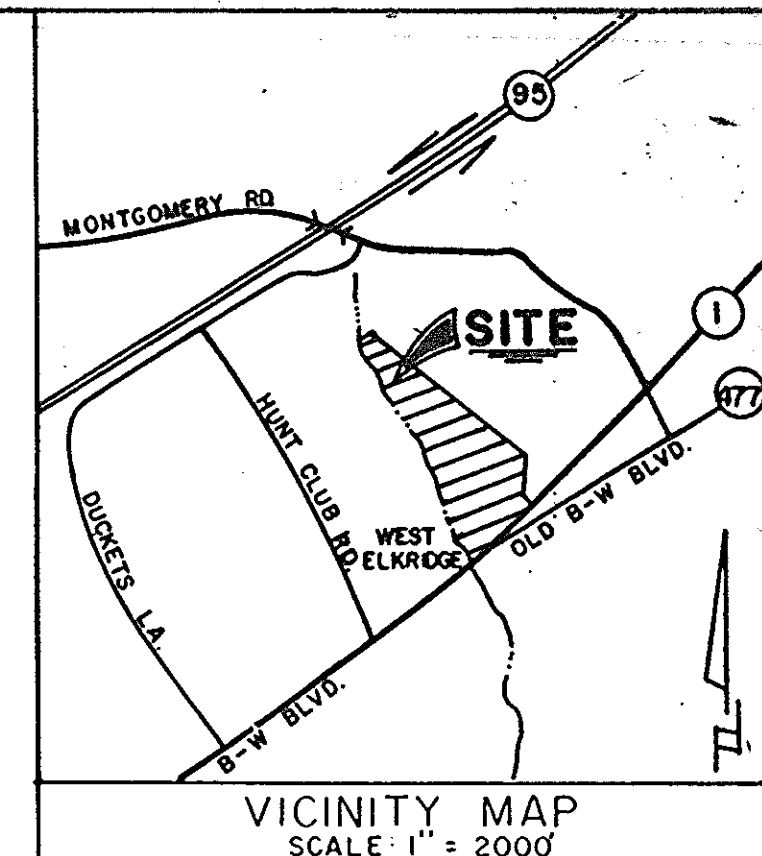
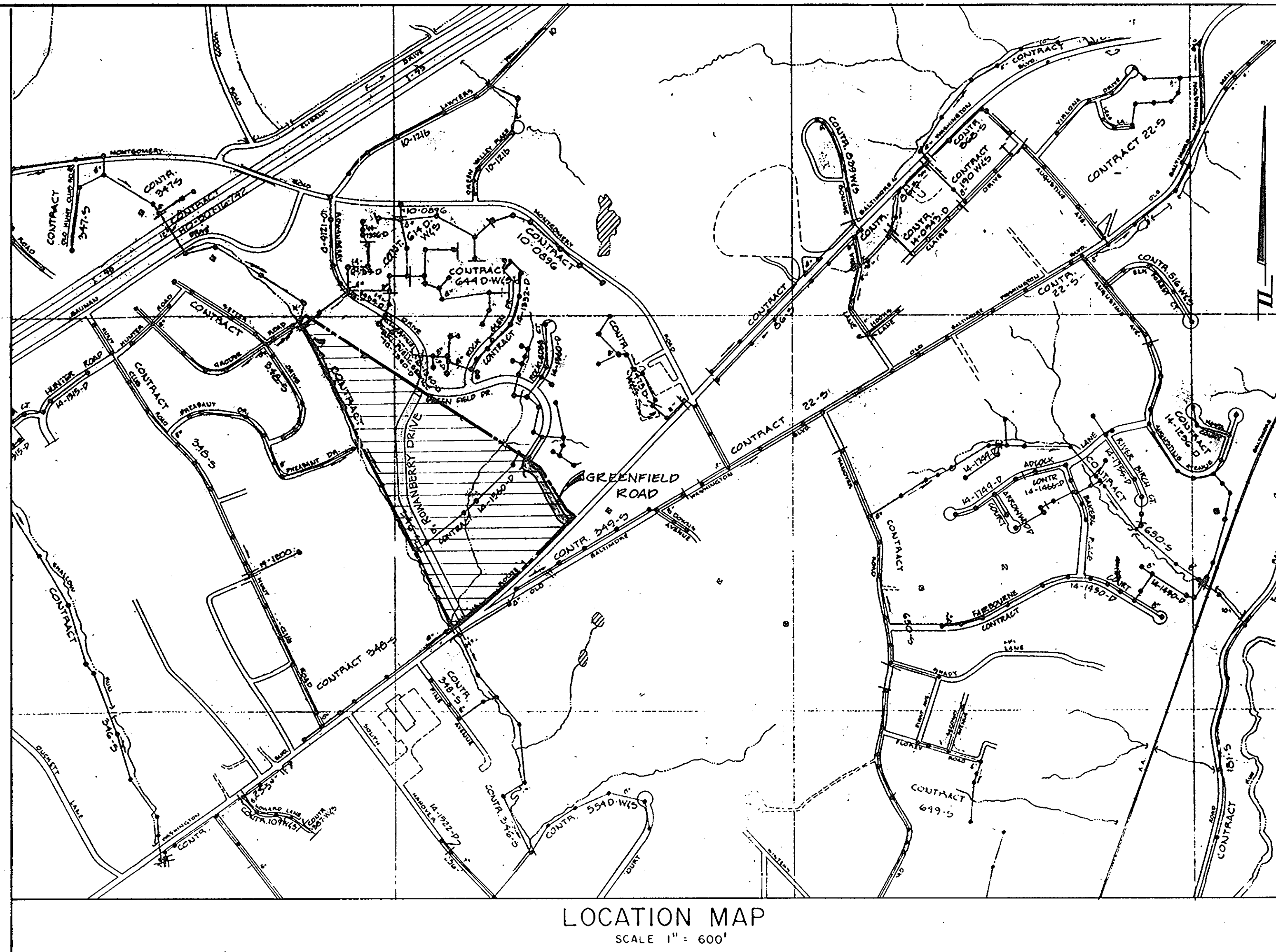


DES: GAA			
DRN: GHP			
CHK: GKC			
DATE: 11-27-90	BY NO.	REVISION	DATE

S.W.M. DETAILS
600' SCALE MAP NO. 38 BLOCK NO. 22

SCALE AS SHOWN
SHEET 7 OF 12
ROWANBERRY DRIVE
ELKRIDGE TOWN CENTER
1ST ELECTION DISTRICT
HOWARD COUNTY MARYLAND
GHT. 7 OF 7 ROWANBERRY DRIVE F 90-09

INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN AND PROFILE
3	GRADING, SEDIMENT CONTROL & STORM DRAIN PLAN AND PROFILES
4	RT. 1 IMPROVEMENT PROFILE 0+9 SEPARATOR & DETAILS
5	DETAILS



GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
- STORM DRAINAGE TRENCHES WITH ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY CODE.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TELEPHONE 792-7272
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION, CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE.
- ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1988 EDITION.
- STREET TREES TO BE PROVIDED AS REQUIRED BY SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 STATE HIGHWAY ADMINISTRATION 531-5533
 BALTIMORE GAS & ELECTRIC-UNDERGROUND ELECTRIC DISTRIBUTION CUSTOMER SERVICE 685-0123
 ENGINEERING-"DAMAGE CONTROL" 234-5611
 MISS UTILITY 1-559-0100
 CHESAPEAKE & POTOMAC (C&P) TELEPHONE COMPANY 725-9976
 AMERICAN TELEPHONE & TELEGRAPH -CABLE LOCATION DIVISION 393-3533
 COLONIAL PIPELINE COMPANY 795-1390
 BUREAU OF UTILITIES- HOWARD COUNTY 992-2366

ELKRIDGE TOWN CENTER

GREENFIELD ROAD

ROAD CONSTRUCTION DRAWINGS 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

BENCHMARK W 102
R.R. SPIKE IN POLE #295982
ELEVATION= 130.83
HOWARD COUNTY BENCHMARK
#2547002. ELEVATION= 142.31

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

[Signature] 5-1-90
Date

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

[Signature] 12/6/90
Date

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[Signature] 12/14/90
Date

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

[Signature] 12/14/90
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 12/16/90
Date
CHIEF, LAND DEVELOPMENT DIVISION

[Signature] 12/11/90
Date
CHIEF, BUREAU OF HIGHWAY

[Signature] 12-14-90
Date
CHIEF, BUREAU OF ENGINEERING

APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[Signature] 12/19/90
Date
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

REVISIONS DONE BY

LB ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS

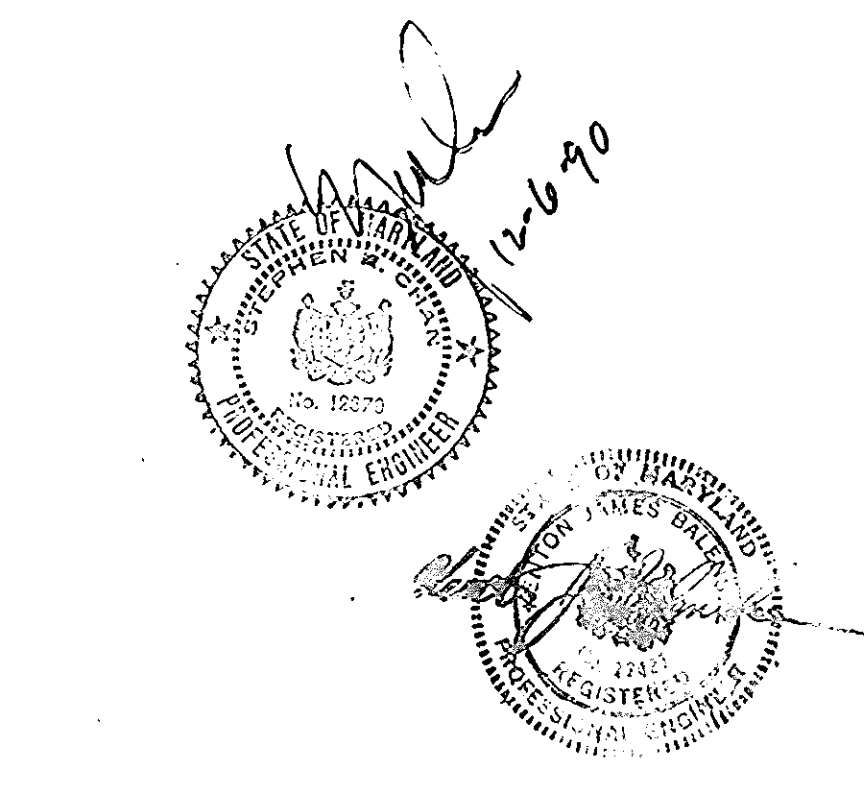
18223-A FLOWER HILL WAY
GAITHERSBURG, MD 20879
301-980-0525 • WASH. 848-9439
FAX: 869-9152

201-B BROADWAY STREET
FREDERICK, MD 21701
831-4510 • 888-9722
FAX: 831-4801

gpi
Greenman-Pedersen, Inc.
ENGINEERS ARCHITECTS PLANNERS

14504 GREENVIEW DRIVE, SUITE 100
LAUREL MD 20708
(301) 470-2772 WASHINGTON
(301) 880-3055 BALTIMORE

DESIGNED	BY	NO	REVISION DESCRIPTION	DATE
D.J.				
A.J.U.				
P.A.H.				
4/24/90				



DEVELOPER
ORCHARD DEVELOPMENT, CORPORATION
7060 OAKLAND MILLS ROAD
COLUMBIA, MARYLAND 21045
(301) 290-9494

F-90-09

LANDSCAPE SCHEDULE				
SYMBOL	QUANTITY	NAME	SIZE	REMARKS
⊙ N	35	TILIA C. GREENSPIKE (LITTLELEAF LINDEN)	2" CAL. (MIN.)	BALLED AND BURLAPPED

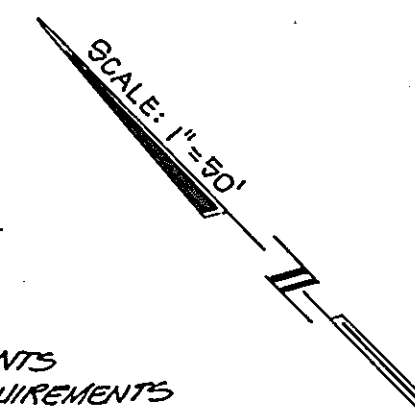
ELKRIDGE TOWN CENTER
TITLE SHEET
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET NO. 8
OF 12

1540

TRAFFIC SIGN LEGEND		
DESIGNATION	SIZE	DESCRIPTION
W1-1L	30" x 30" DIAMOND	"TURN SIGN"
W13-1	18" x 18" SQUARE	"5 MPH"
W1-6	48" x 24" RECTANGLE	"ARROW SIGN"

NOTE:
NO CONSTRUCTION SHALL OCCUR IN SPECIFIED EASEMENT OR ACQUISITION AREAS UNTIL EASEMENT AND ACQUISITION AREAS ARE PROCURED AND DOCUMENTS SUBMITTED PER DEPARTMENT OF PUBLIC WORKS REQUIREMENTS



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
J. Helms 12/14/90
 U.S. SOIL CONSERVATION SERVICE DATE

THE DEVELOPMENT PLAN IS APPROVED FOR SOIL AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert J. Zehner 12/14/90
 HOWARD SOIL CONSERVATION DISTRICT DATE

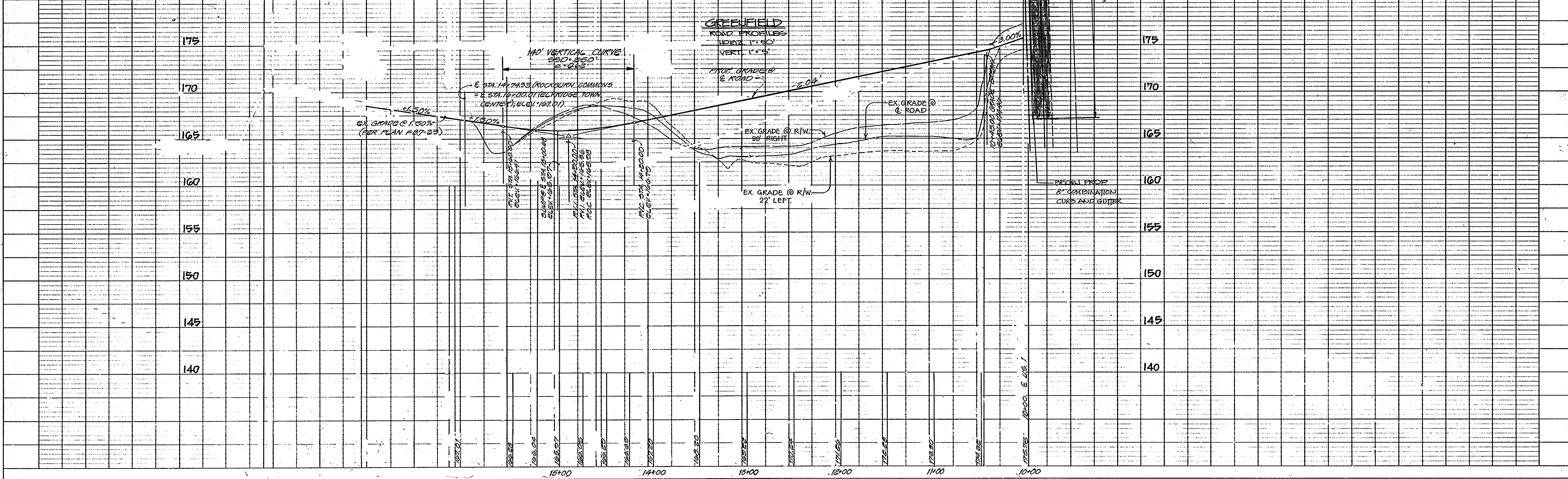
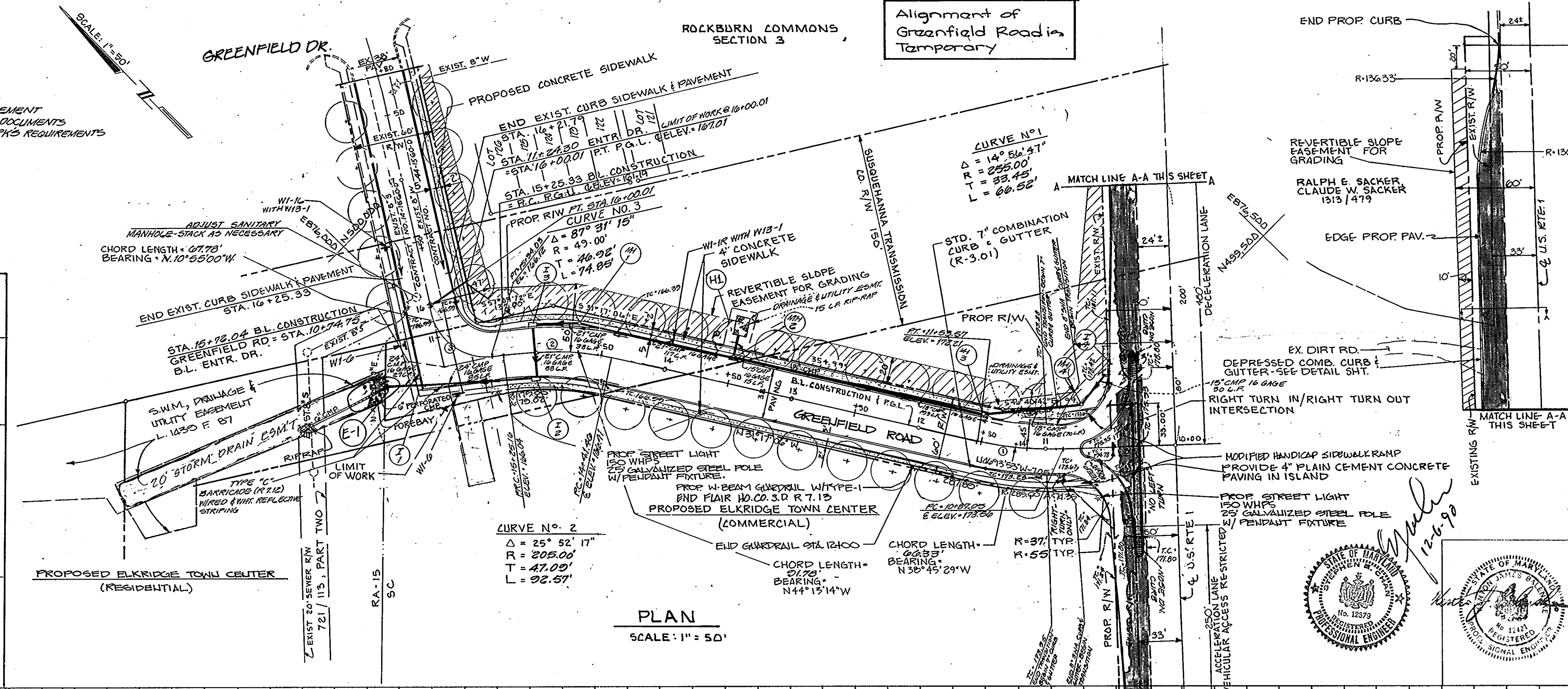
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND SSP 85-207.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William W. Wehland 12/11/90
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Paul J. Tangle 12/15/90
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

DATE	BY	REVISION

DATE	BY	REVISION



REVISIONS DONE BY
ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYORS

18223-A FLOWER HILL WAY
 GAITHERSBURG, MD 20879
 301-990-0525 • WASH. 948-8439
 FAX: 889-9152

201-B BROADWAY STREET
 FREDERICK, MD 21701
 831-4510 • 895-9722
 FAX: 831-4801

REVISIONS DONE BY:
GLITSCHICK LITTLE & WEBER
 3009 NATIONAL DRIVE, SUITE 250
 BURTONSVILLE OFFICE PARK, BURTONSVILLE, MD 20866

DATE	REVISION	BY
9-24-91	REV. CURB & GUTTER, & DR. LAYOUT	GLW
10/21/91	REV. I-4 to a C&G 20 Inlet	GLW
11-1-91	REMOVED STREET LIGHT, R/W, WATER GATE TO ROADWAY	GLW



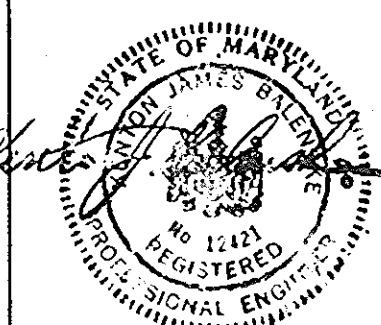
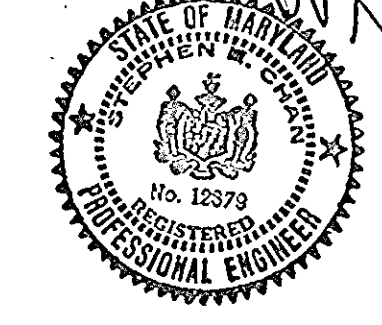
ELKRIDGE TOWN CENTER
 TAX MAP 38 PARCEL 526
 1 ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

PLAN AND PROFILE
GREENFIELD ROAD

OWNER / DEVELOPER
 ORCHARD DEVELOPMENT CORPORATION
 7060 OAKLAND MILLS ROAD
 COLUMBIA, MARYLAND 21045
 (301) 290-9494

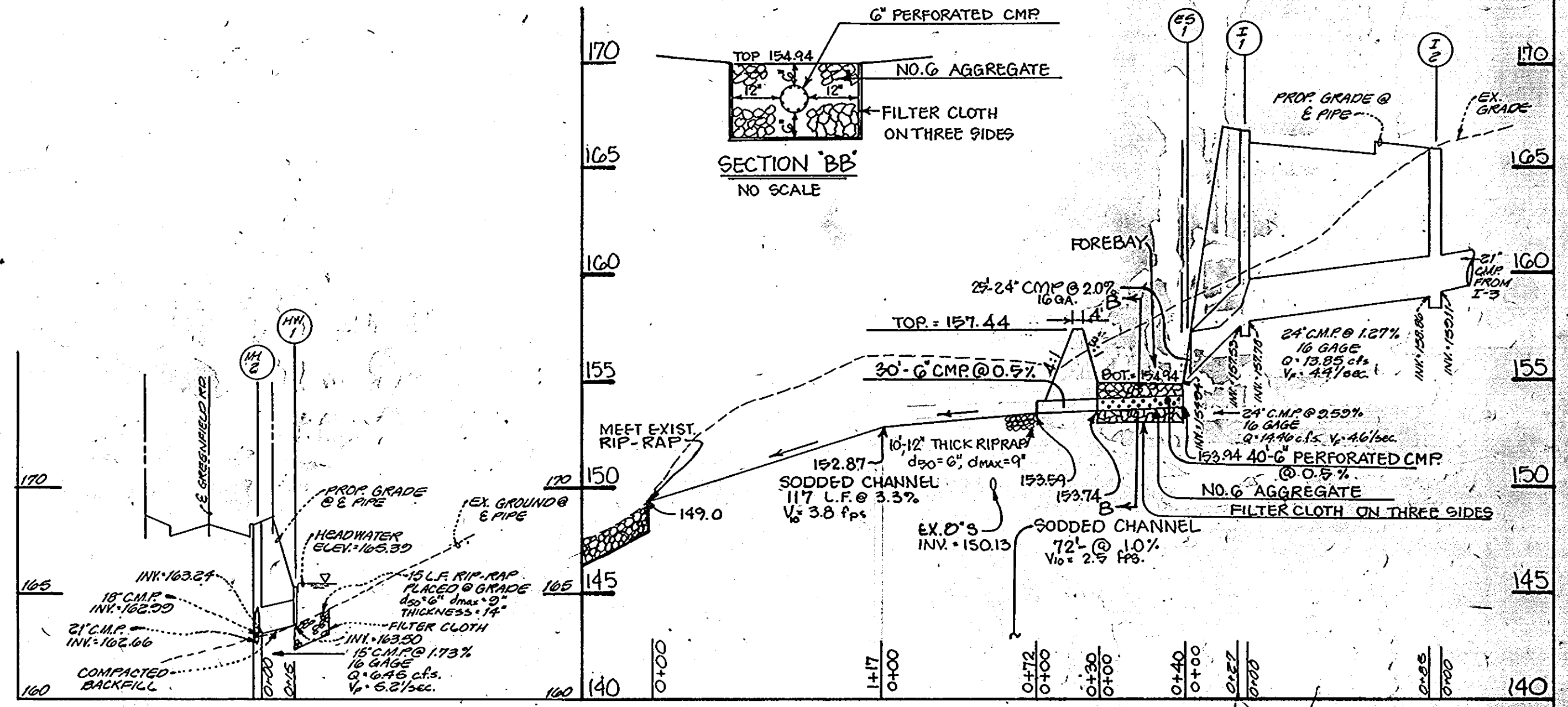
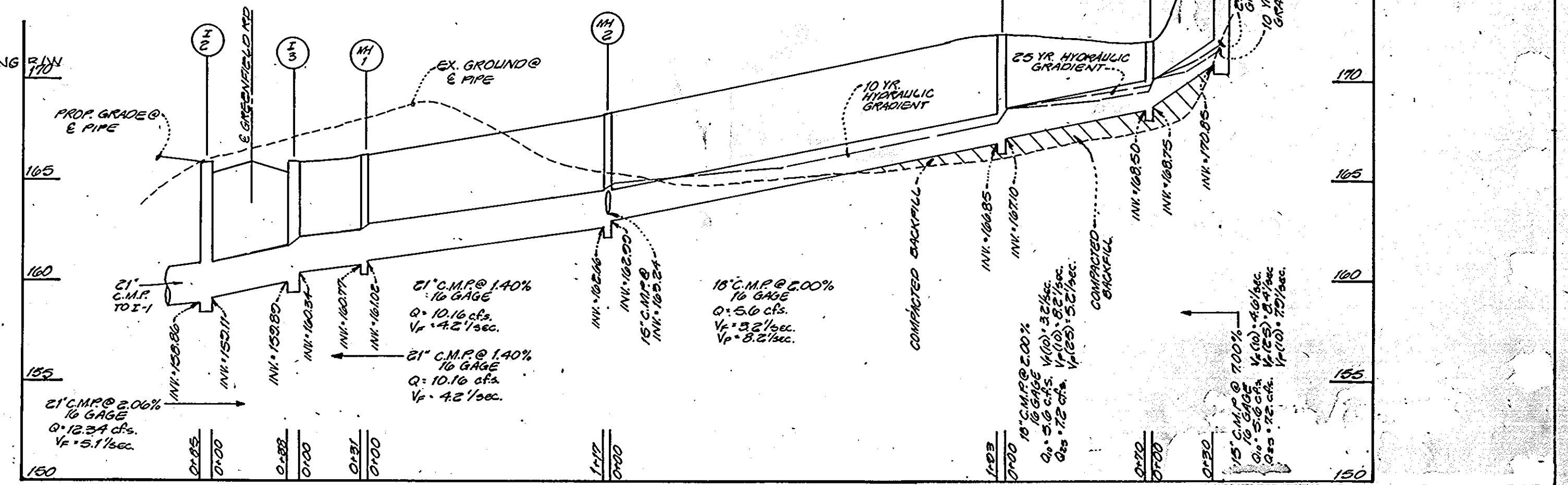
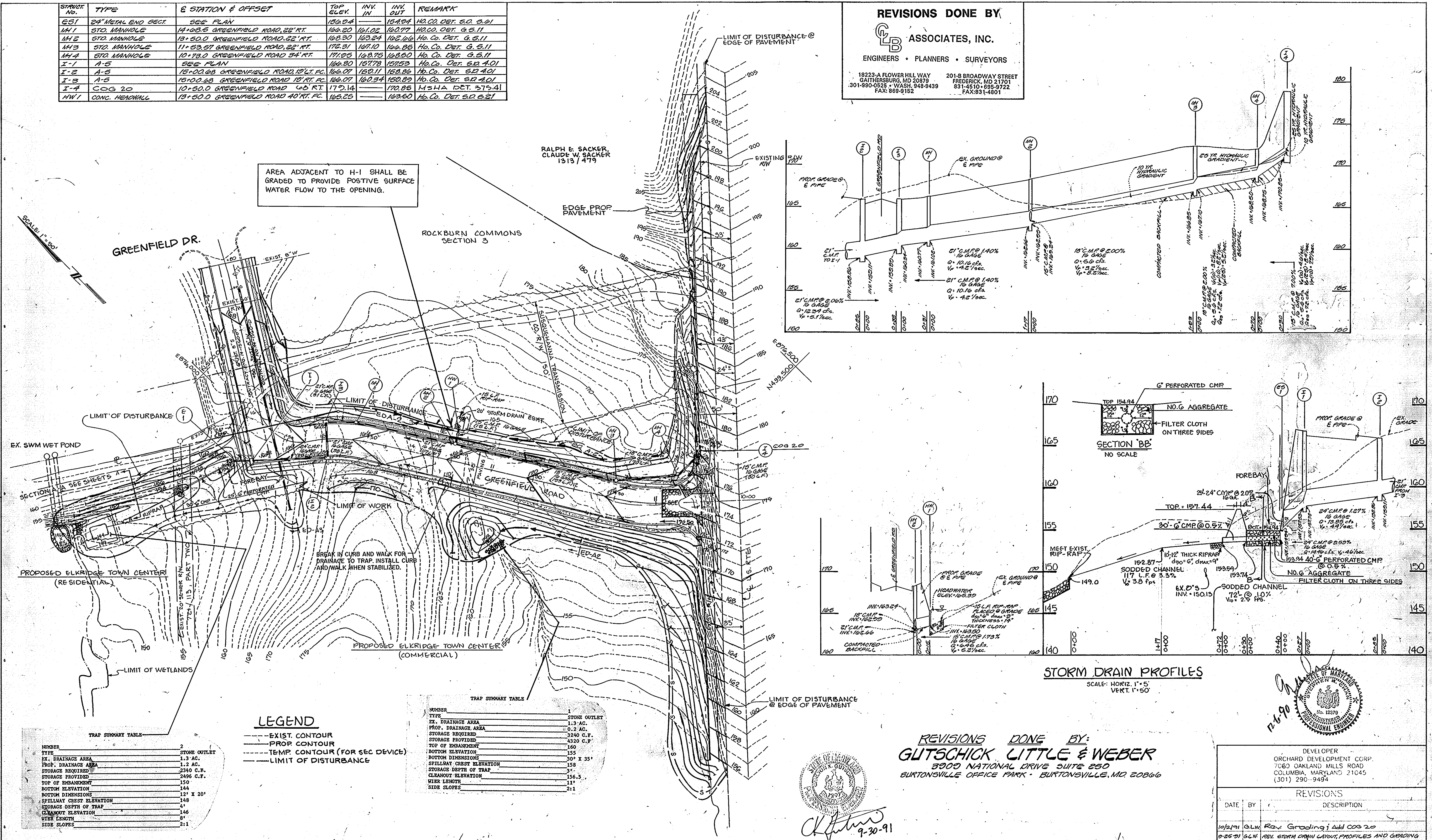
SCALE AS SHOWN DATE: 4-24-90 SHEET 9 OF 12
 DESIGNED BY: D.J. DRAWN BY: A.J.U. CHECKED BY: P.A.H.

GREENMAN • PEDERSEN, INC.
 CONSULTING ENGINEERS
 14004 GREENVIEW DRIVE, SUITE 100, LAUREL, MD 80708
 (301) 470-0775, (301) 880-8085, (301) 880-8889



STRUCT. No.	TYPE	E STATION & OFFSET	TOP ELEV.	INV. IN	INV. OUT	REMARK
ES1	24" METAL END SECT.	SEE PLAN	154.94	154.94	154.94	HO. CO. DET. S.D. 3.01
MH1	STD. MANHOLE	14+08.5 GREENFIELD ROAD, 22' RT.	160.20	161.02	160.77	HO. CO. DET. G. 5.11
MH2	STD. MANHOLE	13+50.0 GREENFIELD ROAD, 22' RT.	168.30	163.24	162.60	HO. CO. DET. G. 5.11
MH3	STD. MANHOLE	11+53.57 GREENFIELD ROAD, 22' RT.	172.31	167.10	166.85	HO. CO. DET. G. 5.11
MH4	STD. MANHOLE	10+73.0 GREENFIELD ROAD, 54' RT.	171.95	166.75	166.50	HO. CO. DET. G. 5.11
I-1	A-S	SEE PLAN	168.80	157.78	157.53	HO. CO. DET. S.D. 4.01
I-2	A-S	15+00.88 GREENFIELD ROAD, 19' LT. FC.	166.07	152.11	151.86	HO. CO. DET. S.D. 4.01
I-3	A-S	15+00.88 GREENFIELD ROAD, 19' RT. FC.	166.07	160.34	159.89	HO. CO. DET. S.D. 4.01
I-4	COG 20	10+50.0 GREENFIELD ROAD, 40' RT.	172.14	172.85	172.85	MSHA DET. 375.41
NW1	CONC. HEADWALL	13+50.0 GREENFIELD ROAD, 40' RT. FC.	165.25	163.60	163.60	HO. CO. DET. S.D. 3.21

REVISIONS DONE BY:
LB ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 18223-A FLOWER HILL WAY
 CATHERSBURG, MD 20819
 301-990-0525 • WASH. 948-8439
 FAX: 889-9152
 201-B BROADWAY STREET
 FREDERICK, MD 21701
 881-4810 • 835-3722
 FAX: 831-4801



STORM DRAIN PROFILES
 SCALE: HORIZ. 1" = 5'
 VERT. 1" = 5'

TRAP SUMMARY TABLE

NUMBER	TYPE	STONE OUTLET
1	EX. DRAINAGE AREA	1.3 AC.
2	PROP. DRAINAGE AREA	0.2 AC.
3	STORAGE REQUIRED	3240 C.F.
4	STORAGE PROVIDED	4320 C.F.
5	TOP OF EMBANKMENT	160
6	BOTTOM ELEVATION	155
7	BOTTOM DIMENSIONS	30' X 35'
8	SPILLWAY CREST ELEVATION	158
9	STORAGE DEPTH OF TRAP	3"
10	CLEANOUT ELEVATION	156.5
11	WIER LENGTH	11'
12	SIDE SLOPES	2:1

LEGEND
 --- EXIST. CONTOUR
 --- PROP. CONTOUR
 --- TEMP. CONTOUR (FOR SEC DEVICE)
 --- LIMIT OF DISTURBANCE

TRAP SUMMARY TABLE

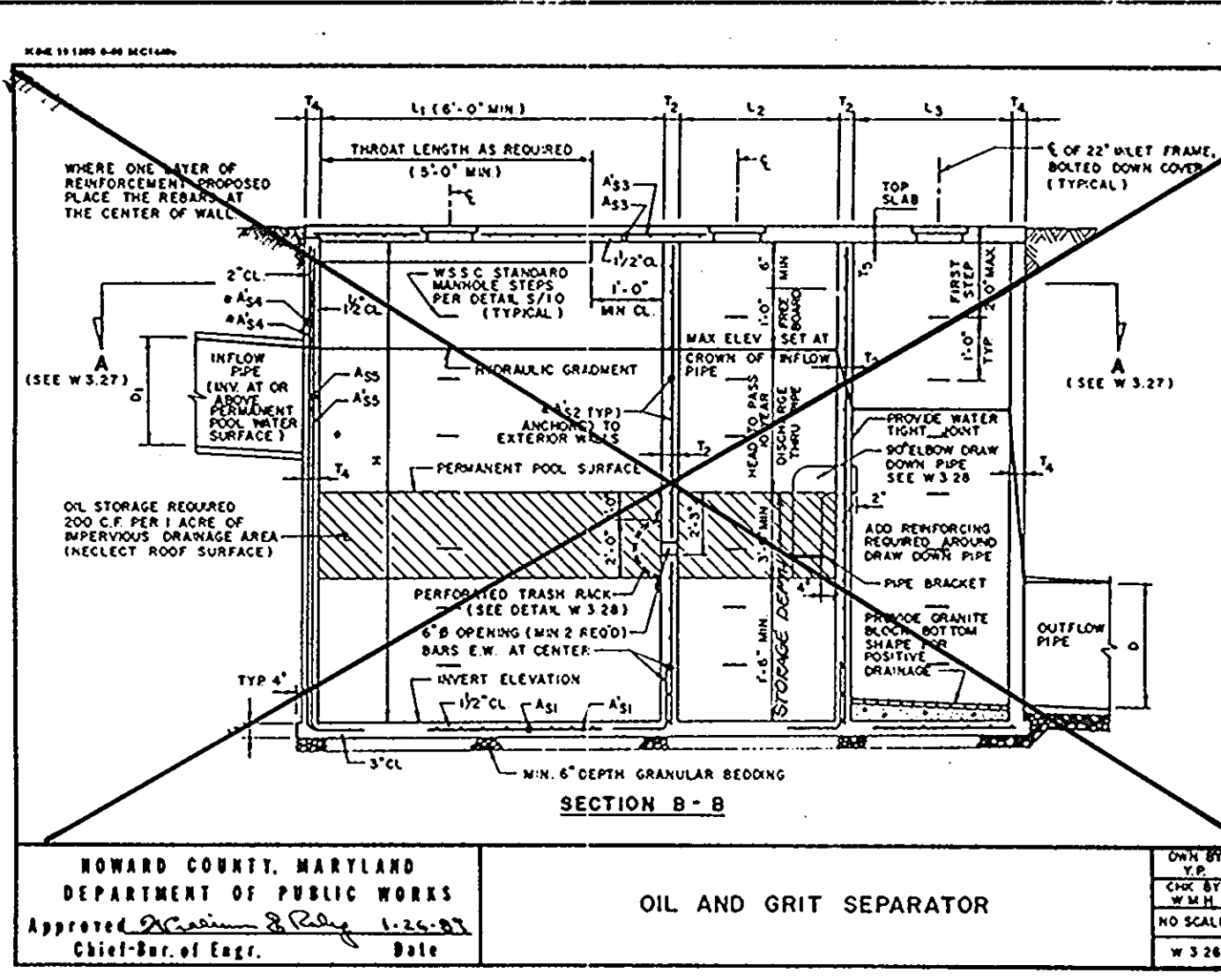
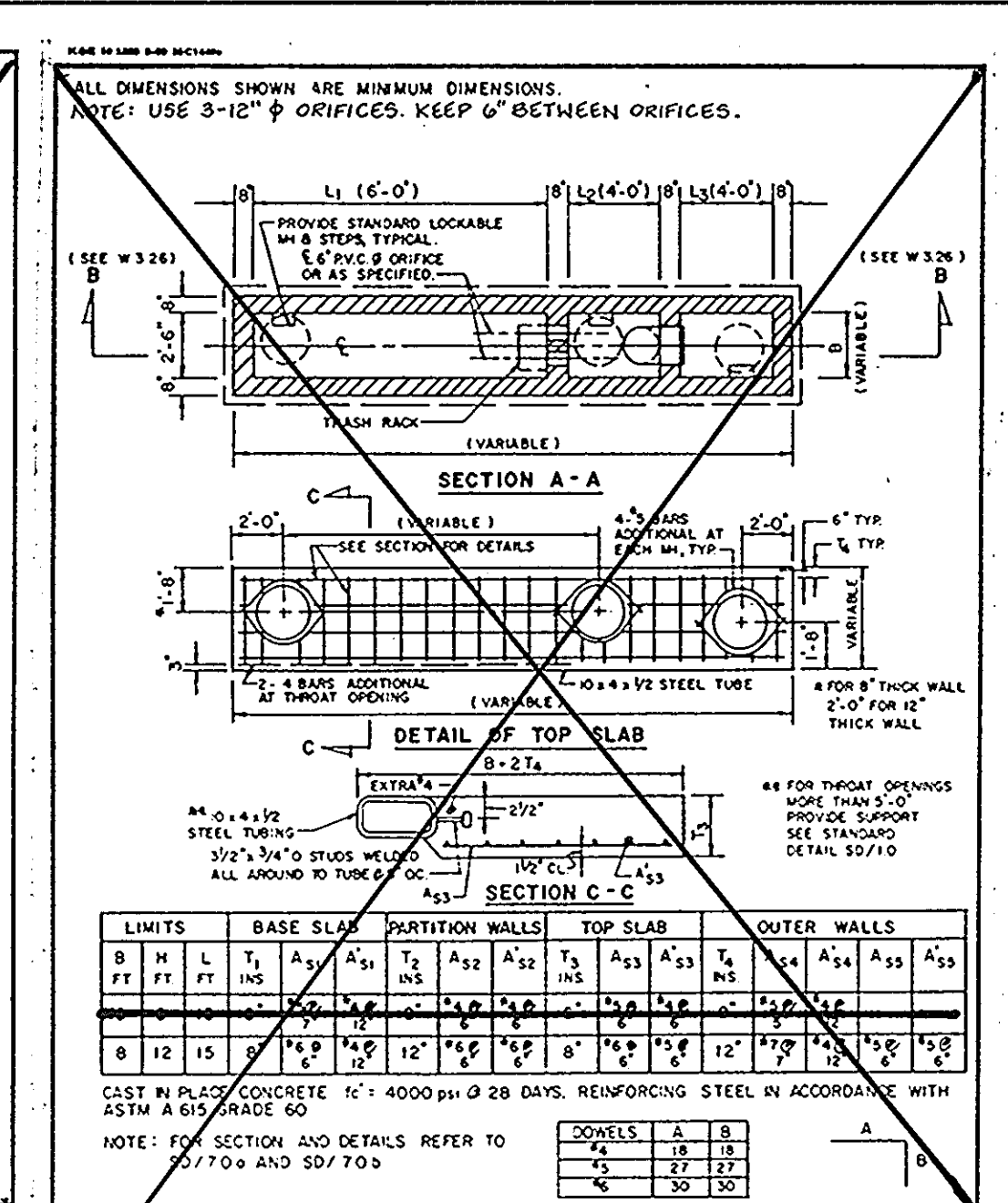
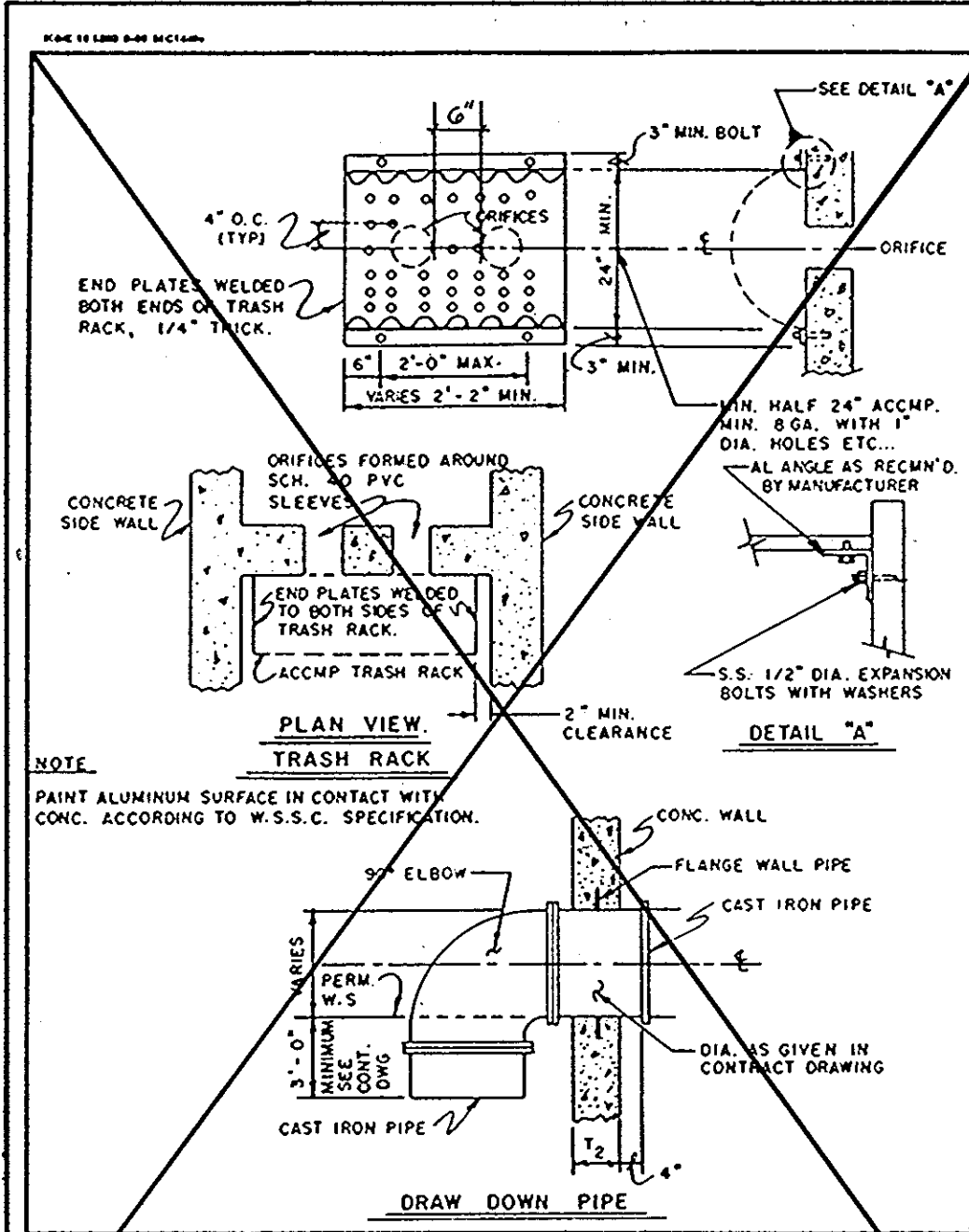
NUMBER	TYPE	STONE OUTLET
2	EX. DRAINAGE AREA	1.3 AC.
3	PROP. DRAINAGE AREA	1.2 AC.
4	STORAGE REQUIRED	2340 C.F.
5	STORAGE PROVIDED	2496 C.F.
6	TOP OF EMBANKMENT	150
7	BOTTOM ELEVATION	144
8	BOTTOM DIMENSIONS	12' X 20'
9	SPILLWAY CREST ELEVATION	148
10	STORAGE DEPTH OF TRAP	4"
11	CLEANOUT ELEVATION	146
12	WIER LENGTH	8'
13	SIDE SLOPES	2:1



REVISIONS DONE BY:
GLUTSCHICK LITTLE & WEBER
 3900 NATIONAL DRIVE SUITE 250
 BURTONSVILLE OFFICE PARK • BURTONSVILLE, MD 20886

1540

<p>ENGINEER'S CERTIFICATE</p> <p>I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>[Signature]</i> 2-12-90 DATE</p>	<p>DEVELOPER'S CERTIFICATE</p> <p>I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>[Signature]</i> 12/6/90 <i>[Signature]</i> 3-2-90 DATE</p>	<p>THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.</p> <p><i>[Signature]</i> 12/14/90 DATE</p> <p>THESE PLANS FOR EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>[Signature]</i> 12/14/90 DATE</p>	<p>APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING</p> <p><i>[Signature]</i> 12/15/90 DATE</p> <p>APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS</p> <p><i>[Signature]</i> 12/15/90 DATE</p>	<p>APPROVED: DEPARTMENT OF PUBLIC WORKS FOR PUBLIC WATER AND SEWER AND STORM DRAINAGE SYSTEMS AND ROADS</p> <p><i>[Signature]</i> 12/14/90 DATE</p> <p><i>[Signature]</i> 12/11/90 DATE</p> <p><i>[Signature]</i> 12/19/90 DATE</p>	<p>ELKRIDGE TOWN CENTER</p> <p>GRADING & SEDIMENT CONTROL STORM DRAIN PLAN & PROFILES</p> <p>SCALE: 1" = 50' DATE: 04/24/90 SHEET 10 OF 12</p>



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: [Signature] Chief, Bureau of Engineering

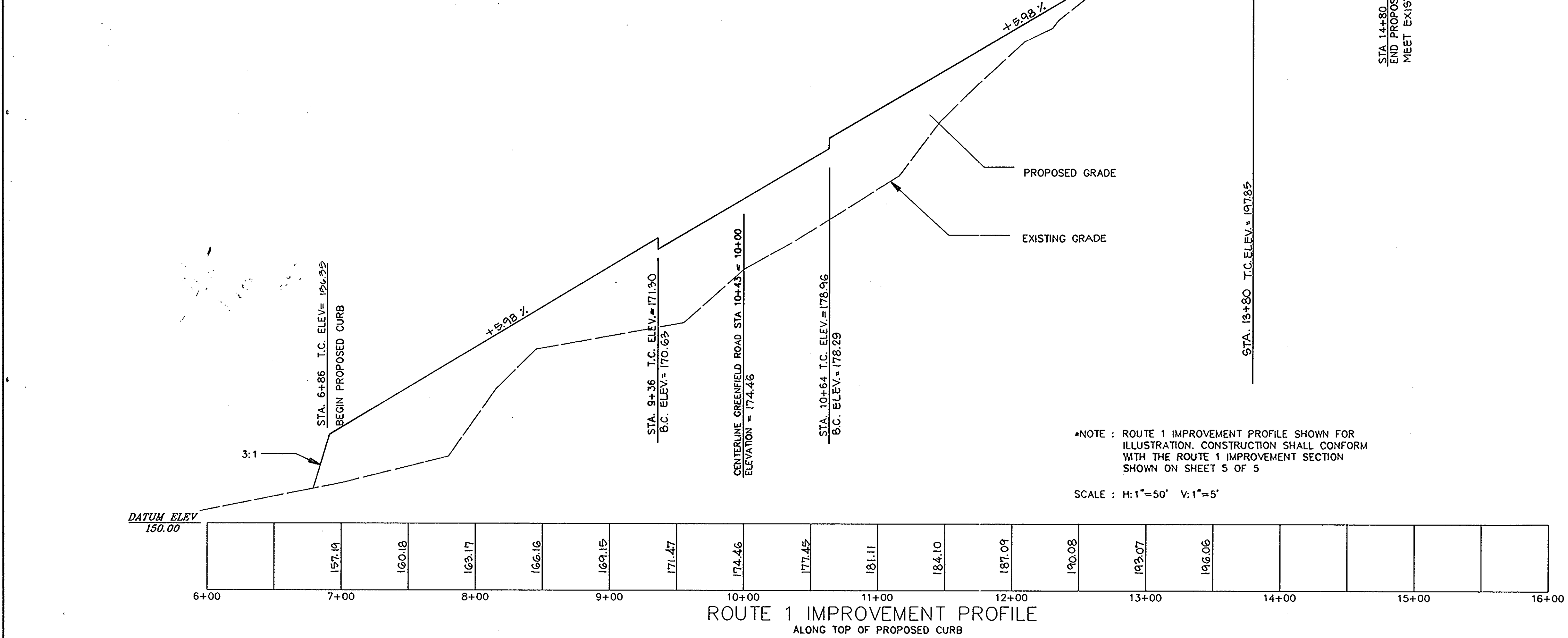
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: [Signature] Chief, Bureau of Engineering

DIMENSION SCHEDULE

STRUCTURE NUMBER	DIMENSIONS				DRAW DOWN DATA	INFLOW PIPE DATA	STRUCTURE INVERT
	H	B	STORAGE DEPTH	LI			
I-1	10.33	5.0'	4.5'	10.0'	10.0'	4.0'	5.0'

LIMITS	BASE SLAB		PARTITION WALLS		TOP SLAB		OUTER WALLS	
	B	L	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
8	12	15	12	12	12	12	12	12

NOTE: USE 3-1/2" Ø ORIFICES. KEEP 6" BETWEEN ORIFICES.



GREENMAN-PEDERSEN INC.
ENGINEERS/ARCHITECTS/PLANNERS
14504 GREENVIEW DRIVE, SUITE 100, LAUREL, MD. 20708
WASH. (301) 470-2772 BALT. (301) 880-3055

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

[Signature] 12/6/90

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

[Signature] 12/6/90

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

[Signature] 12/14/90
U.S. SOIL CONSERVATION SERVICE

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

[Signature] 12/14/90
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/13/90
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS

[Signature] N.A. M. DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR PUBLIC WATER AND SEWER AND STORM DRAINAGE SYSTEMS AND ROADS

[Signature] 12/14/90
CHIEF, BUREAU OF ENGINEERING

PROPERTY NAME	SECTION/AREA	PARCEL NUMBER
N/A	N/A	N/A
LIBER FOLIO	BLOCK NO.	ZONE
L1576/F107	N/A	SC
TAX/ZONE	ELEC. DIST.	CENSUS TR.
38/SC	1ST	
SEWER CODE		

REVISIONS DONE BY
CB ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS

18223-A FLOWER HILL WAY GAITHERSBURG, MD 20879
301-990-0525 • WASH. 948-9439
FAX: 869-9152

201-B BROADWAY STREET FREDERICK, MD 21701
831-4510 • 635-5722
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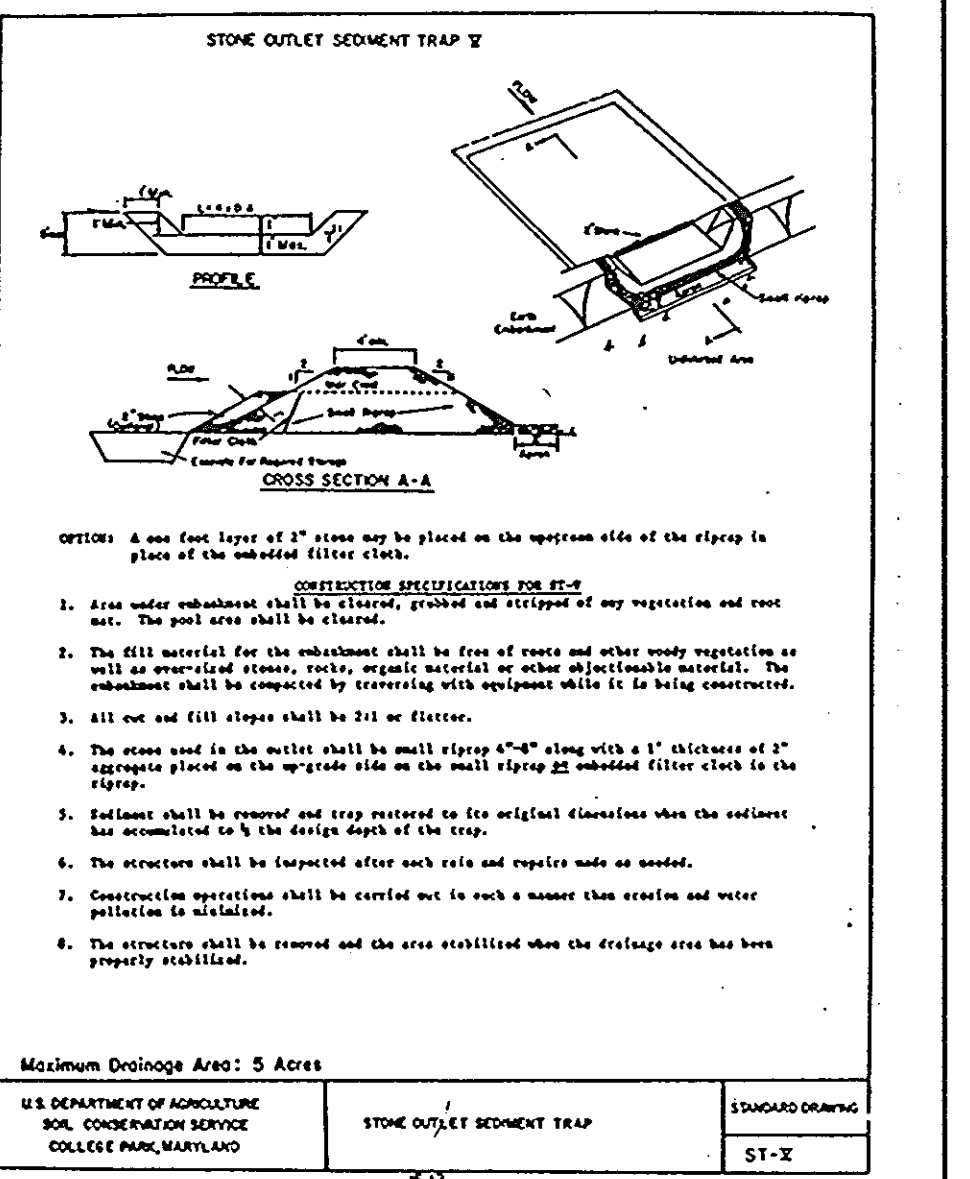
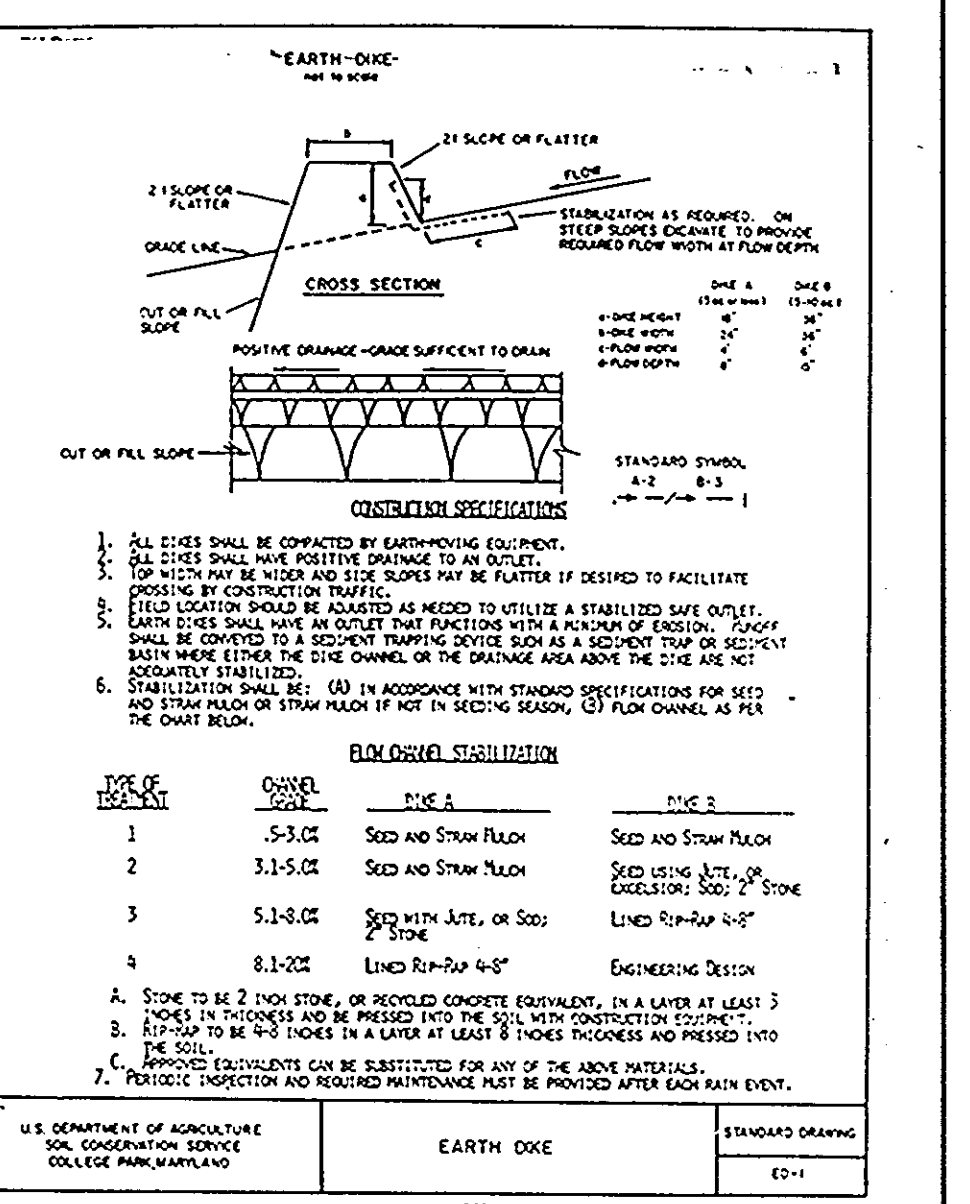
REVISIONS

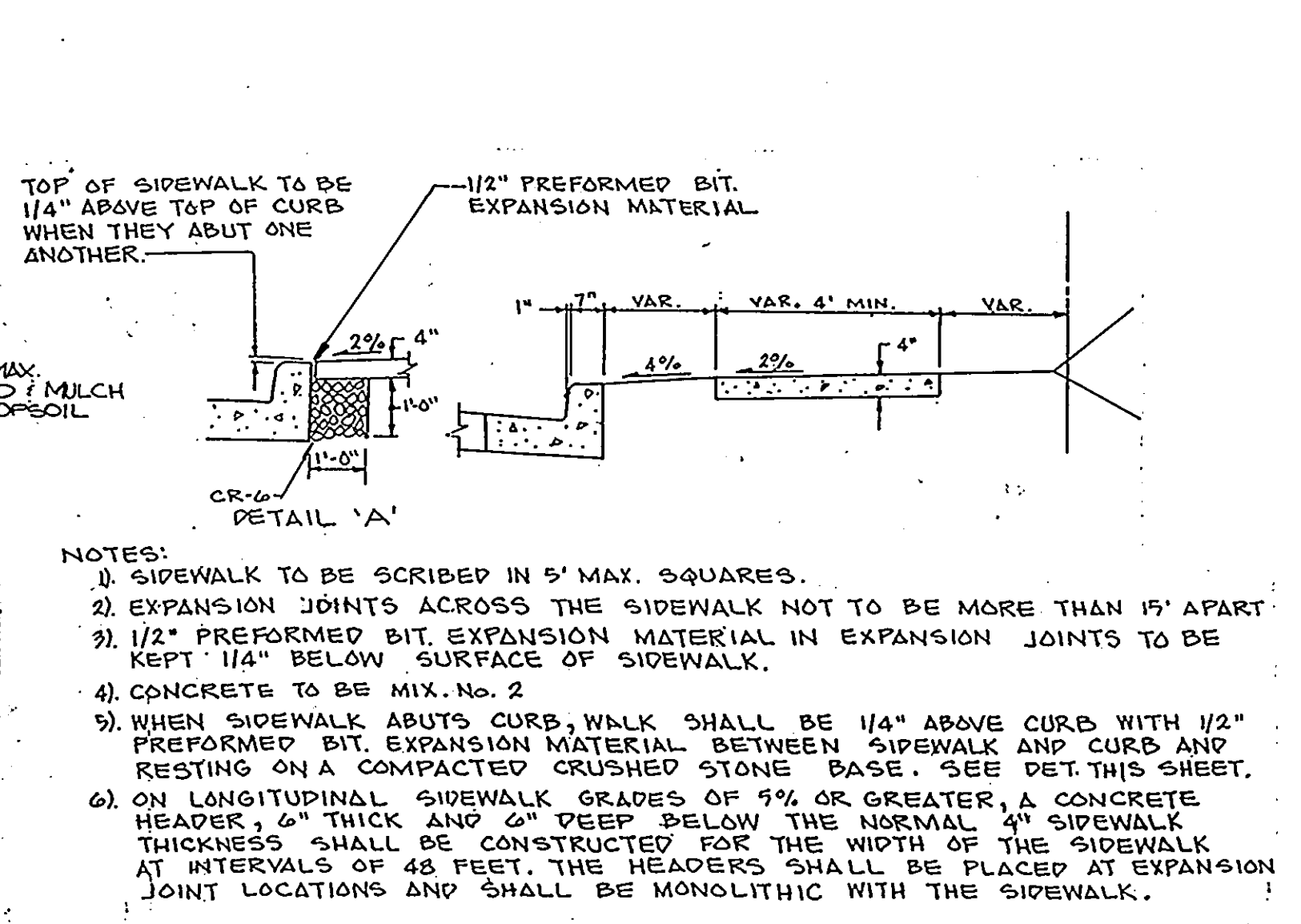
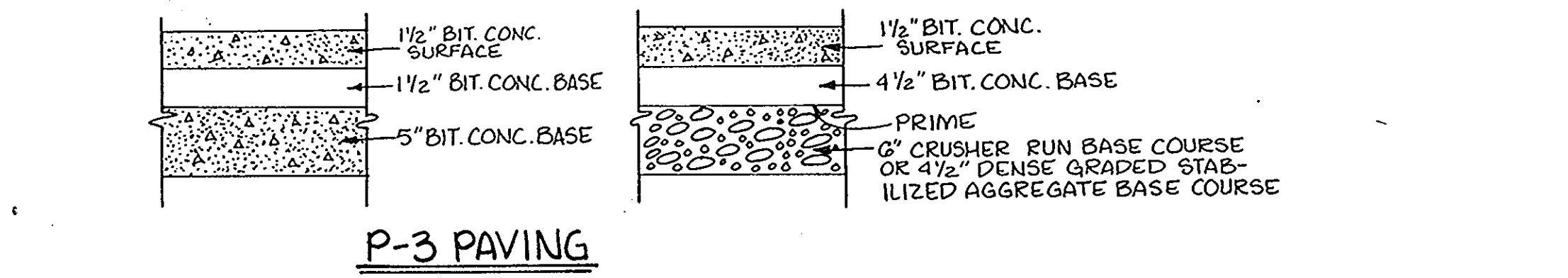
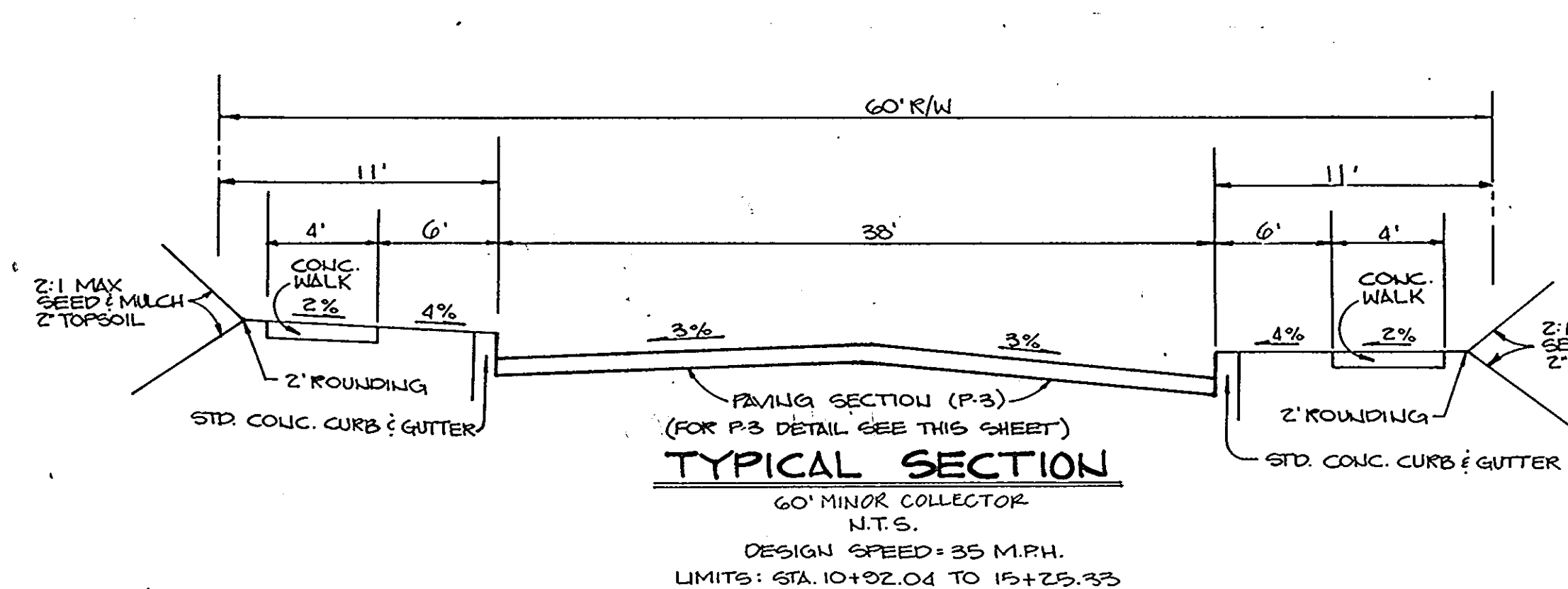
DATE	BY	DESCRIPTION

ELKRIDGE TOWN CENTER
ROUTE 1 IMPROVEMENT PROFILE
OIL & GRIT SEPARATOR
AND DETAILS
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

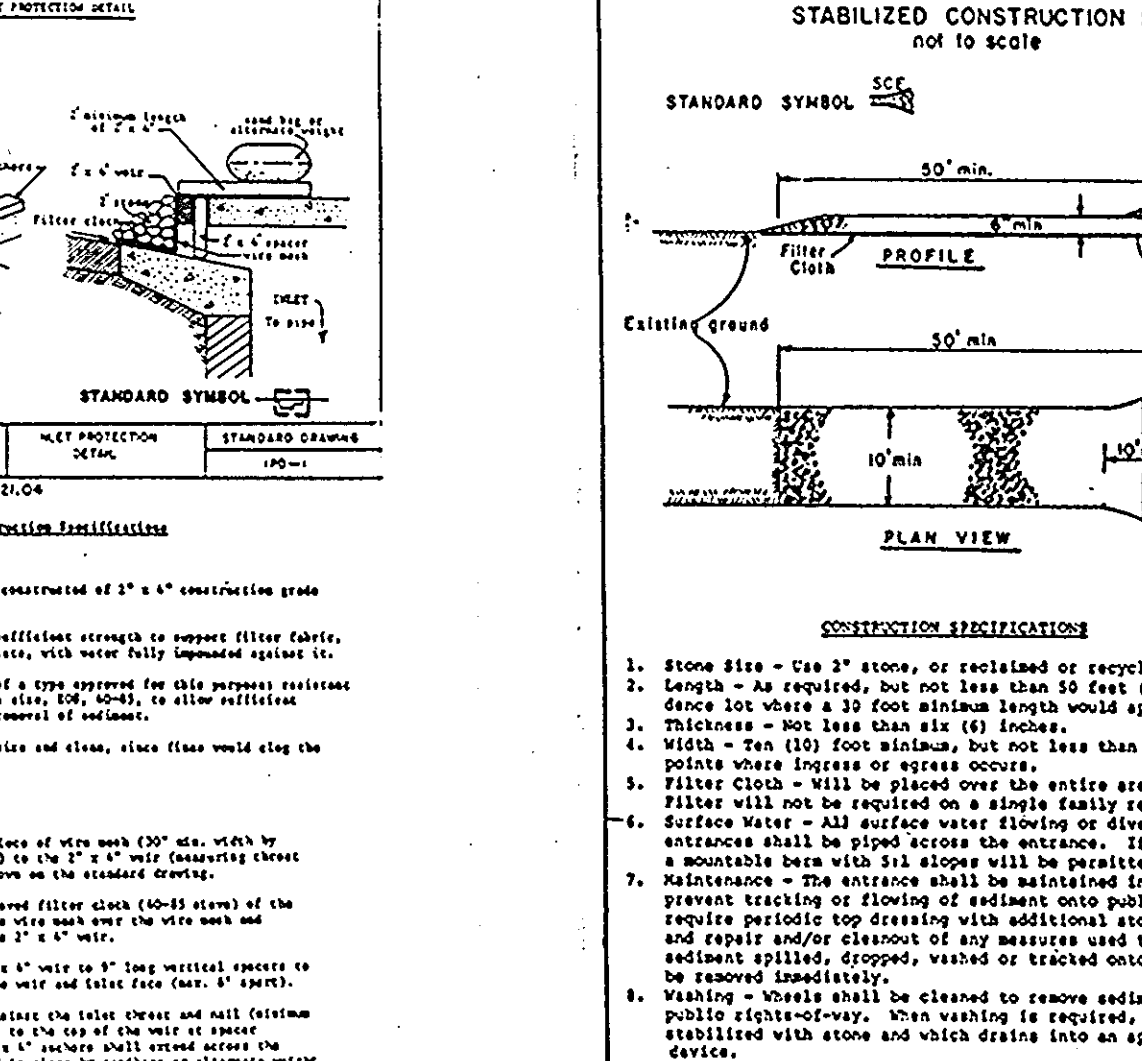
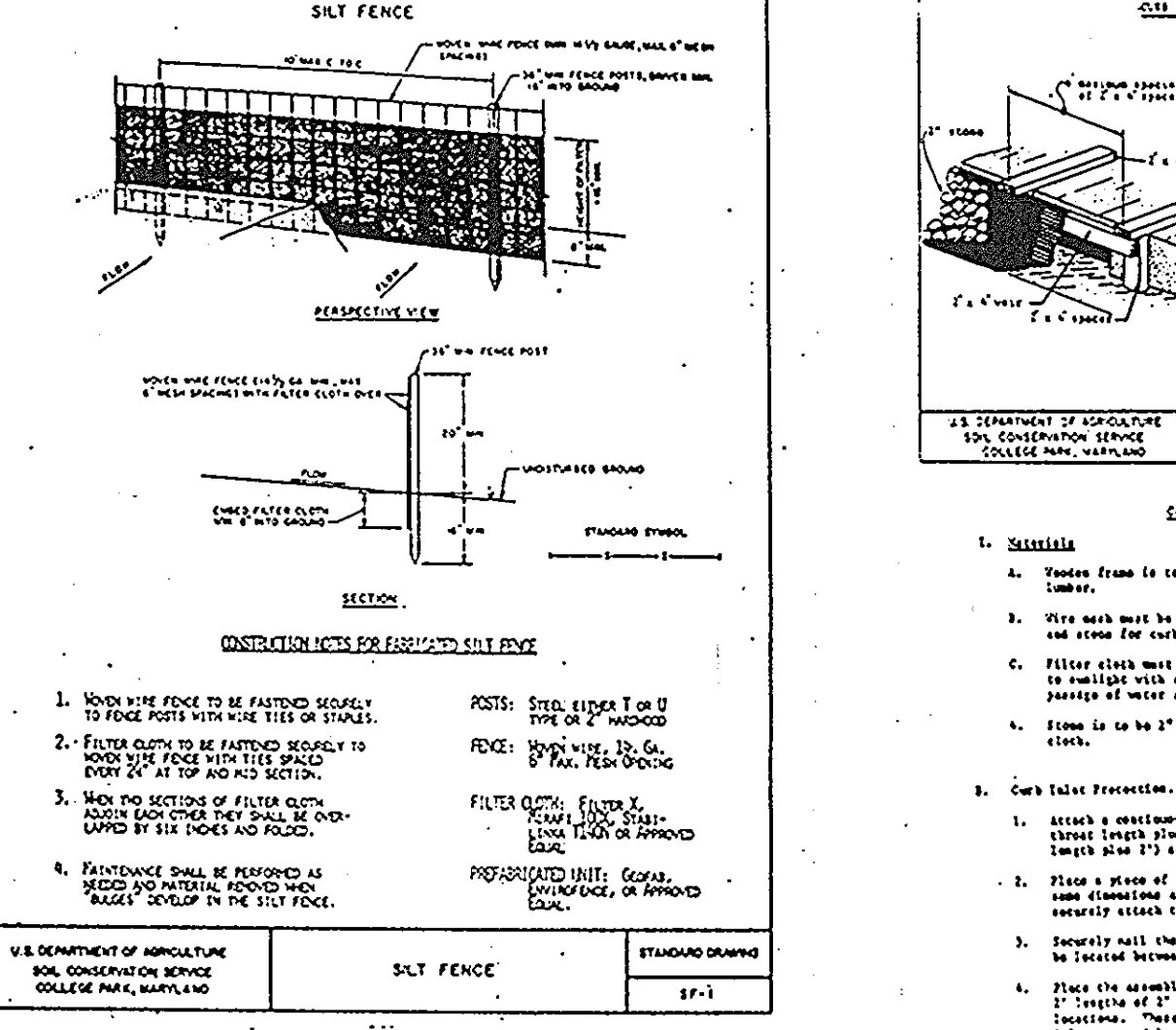
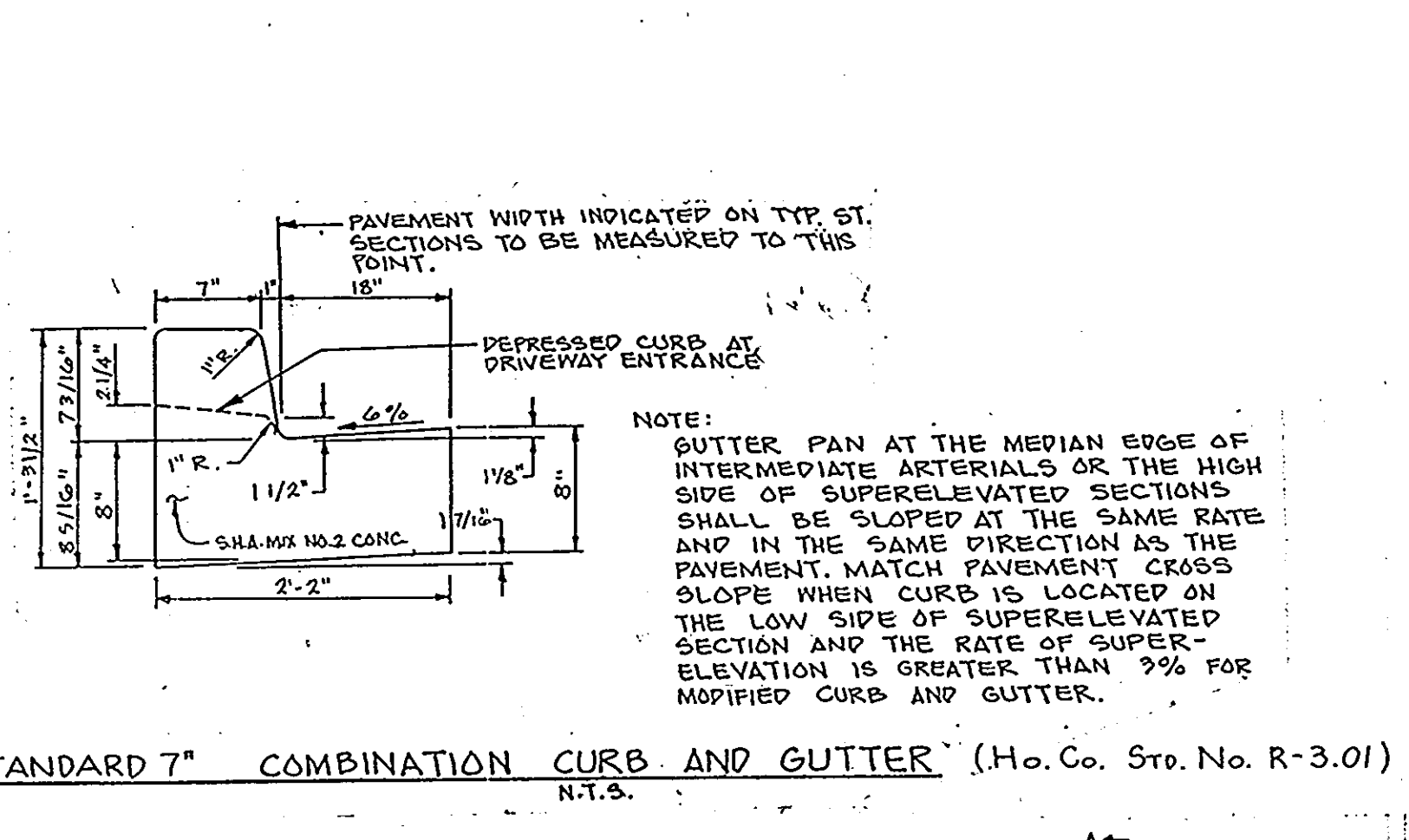
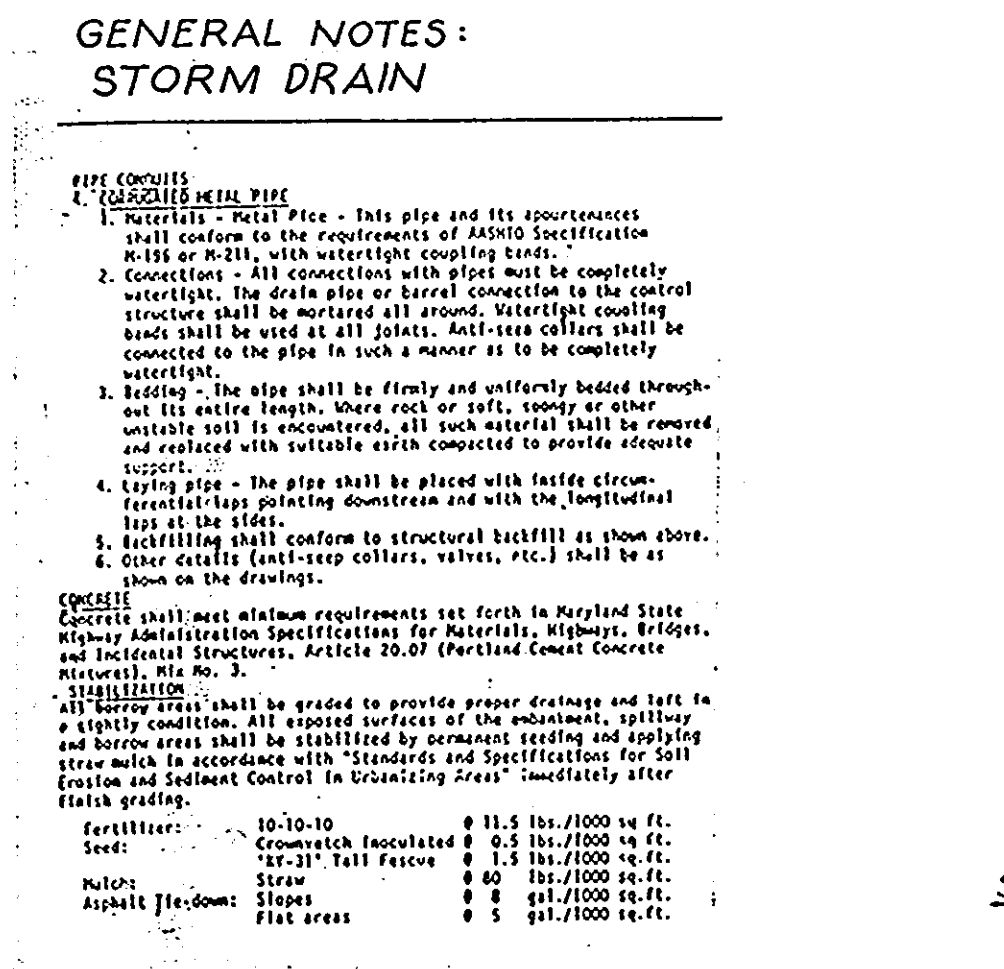
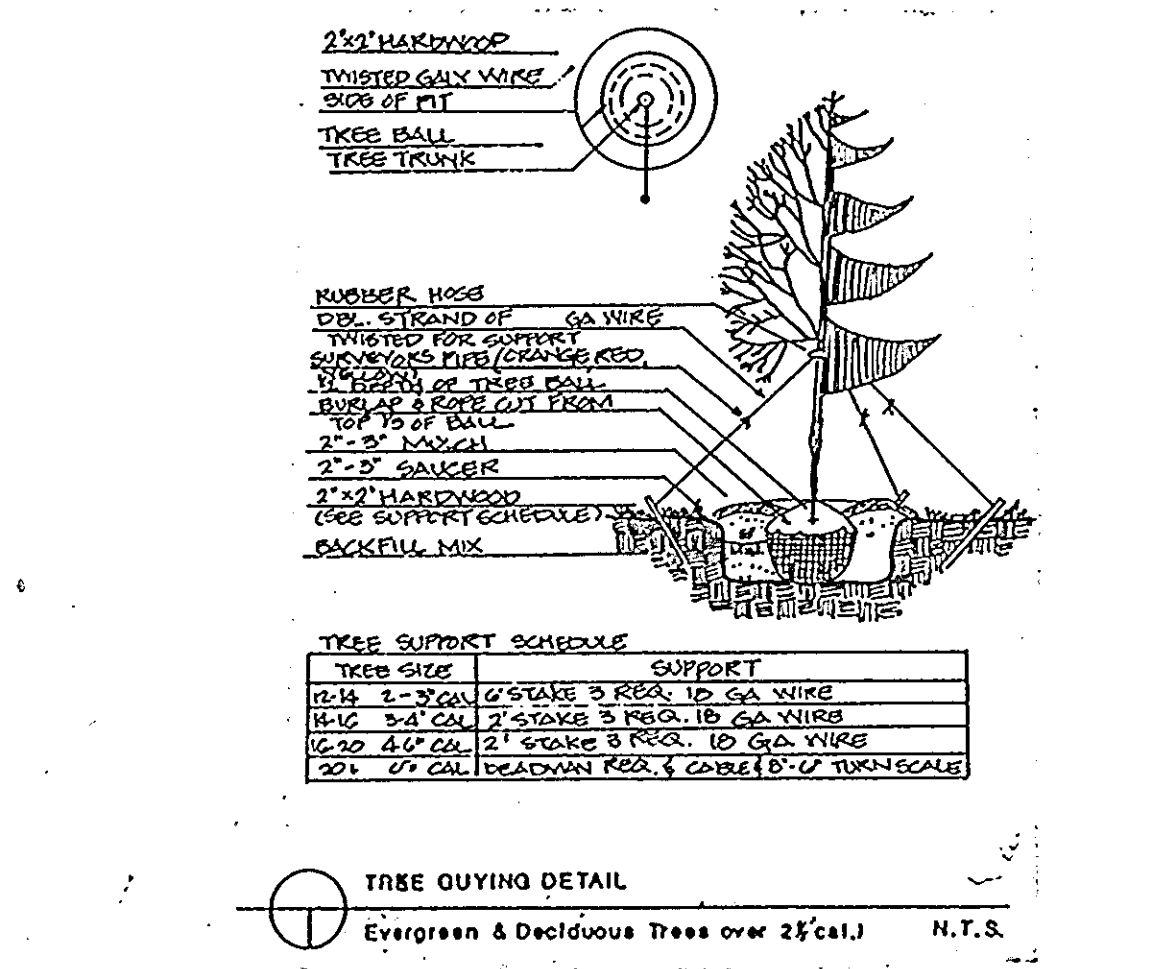
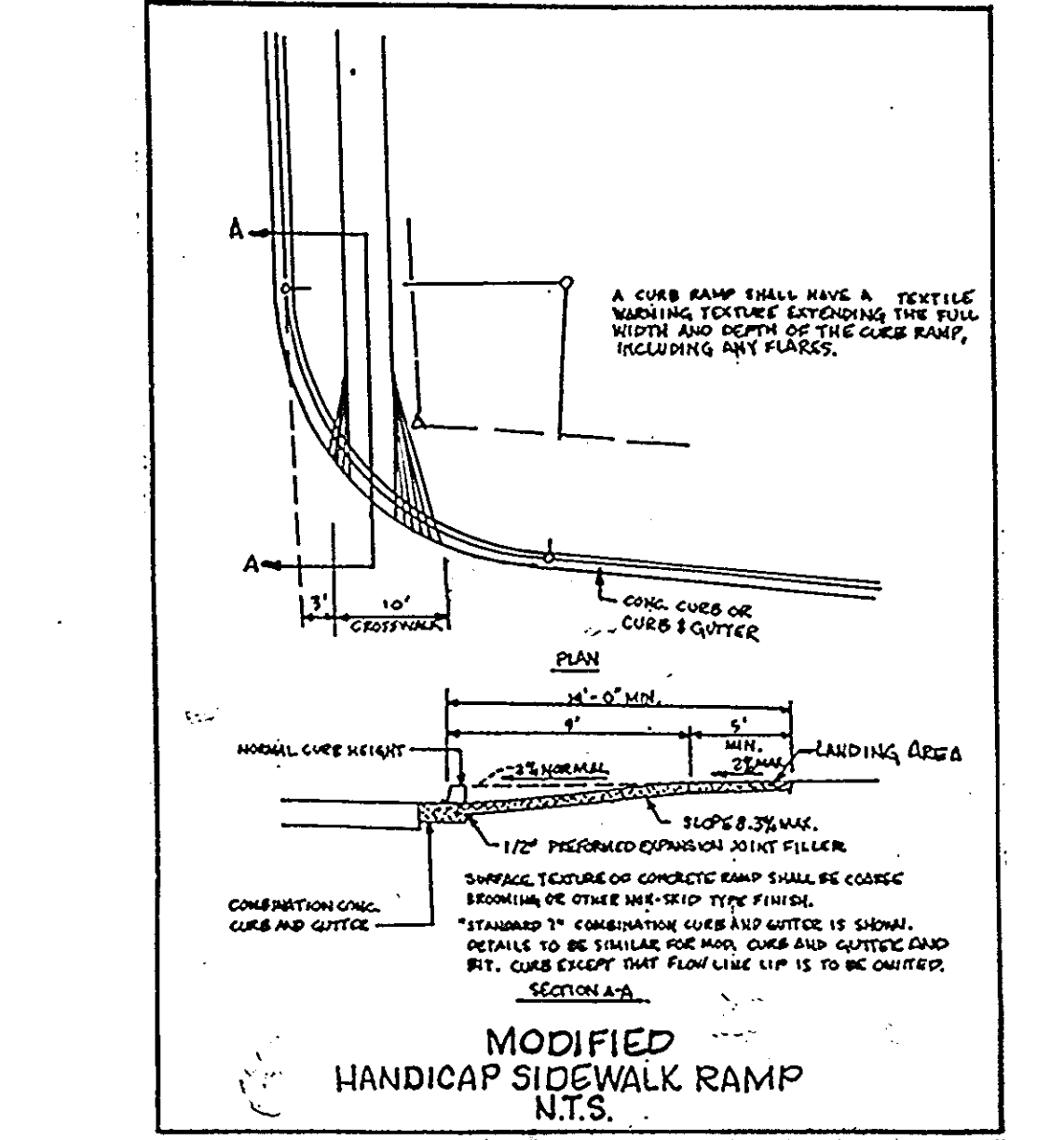
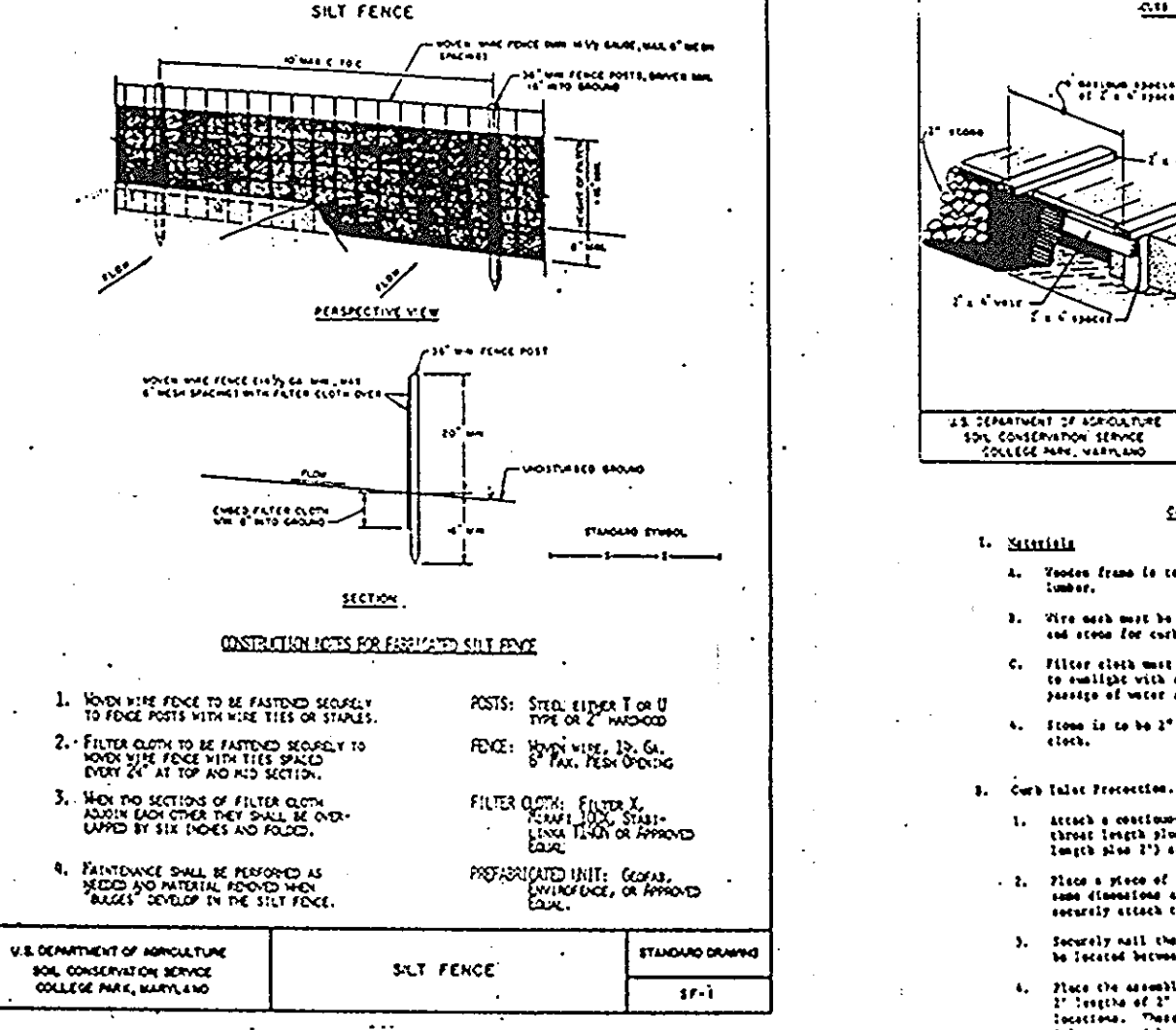
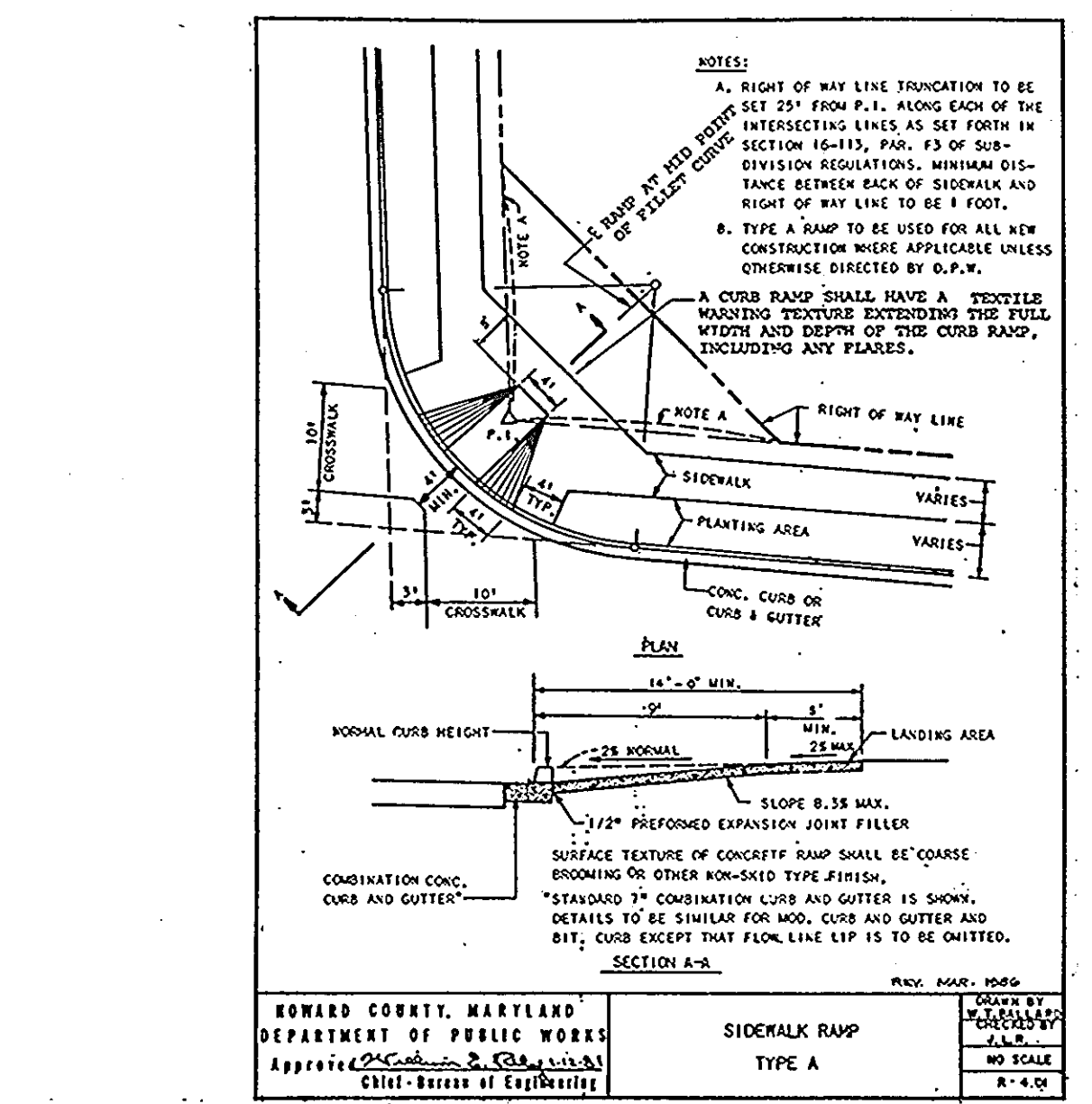
SCALE: AS SHOWN DATE: 4/24/90 SHEET 11 OF 12

- GENERAL NOTES**
- SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STRUCTURE UNTIL THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN PERMANENTLY STABILIZED.
 - ALL OPENINGS TO THE STRUCTURE SHALL BE PROTECTED BY THE APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. (SEE EROSION AND SEDIMENT CONTROL PLAN)
 - THE HOWARD COUNTY INSPECTOR MUST BE CALLED 48 HOURS IN ADVANCE OF CONSTRUCTION OF WATER QUALITY CONTROL STRUCTURE.
 - THE HOWARD COUNTY INSPECTOR MUST BE NOTIFIED AT EACH OF THE FOLLOWING STAGES:
 - APPROVAL OF SUBGRADE FOR FOOTINGS
 - FOOTING FORMED AND READY FOR POURING CONCRETE.
 - STRUCTURE SIDES FORMED AND ALL STEEL SET PRIOR TO POURING CONCRETE. PAVING
 - PRIOR TO TOP SLAB AND MANHOLES BEING SET, DEER INSPECTOR MUST CHECK STRUCTURE AND ALL DEBRIS AND SILT IN STRUCTURE REMOVED.
 - WHEN SITE IS PERMANENTLY STABILIZED AND SEDIMENT CONTROL MEASURES TO PROTECT INLET ARE TO BE REMOVED.
- MAINTENANCE NOTES (QUALITY-CONTROL STRUCTURES, WASTE)**
- WATER QUALITY- STRUCTURES WILL REQUIRE PERIODICAL CLEANING. OWNERS OF THESE FACILITIES WILL HAVE TO CLEAN THEM AS NEEDED OR ON A FREQUENCY THAT THE COUNTY DETERMINES IS APPROPRIATE. OWNERS OF WATER QUALITY STRUCTURE WILL BE NOTIFIED BY THE COUNTY OF THE FREQUENCY OF MAINTENANCE.
 - MAINTENANCE OF THIS FACILITY WILL CONSIST OF CLEANING OUT THE SEPARATOR AND DISPOSAL OF THE WASTE AND THE REPAIR OF THE FACILITY AS NEEDED. PERIODIC INSPECTION OF THIS FACILITY WILL BE MADE BY DER.
 - THE DISPOSAL OF LIQUID AND SOLID MATTER SHOULD BE AS FOLLOWS:
 - ALL LIQUID MATERIAL IN THE SEPARATOR INLET SHALL BE PUMPED INTO SUITABLE TANK TRUCK AND DISPOSED AT AN APPROVED SANITARY DISTRICT DISCHARGE MANHOLE OR BE TAKEN TO AN APPROVED SEWAGE TREATMENT PLANT FOR DISCHARGE.
 - THE SOLID MATERIAL SHALL BE LANDFILLED IN AN APPROVED SANITARY LANDFILL.
 - THE INLET PIPES, TRASH RACKS, AND STRUCTURAL PARTS SHALL BE REPAIRED AS NEEDED.
 - USE CAST IN PLACE CONCRETE FOR ENTIRE STRUCTURE
 - REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR THE MATERIALS AND METHODS OF CONSTRUCTION
 - CONCRETE STRENGTH: $f_c = 3500$ PSI @ 28 DAYS
 - ALL REINFORCING STEEL TO BE ASIM A 615 GRADE 60.
 - PROVIDE MINIMUM LAP LENGTH OF 36 BAR DIAMETERS FOR ALL REINFORCEMENT BAR SPLICES, UNLESS NOTED OTHERWISE.
 - PROVIDE 2" MINIMUM CONCRETE COVER FOR ALL REINFORCEMENT BARS, UNLESS NOTED OTHERWISE.
 - KEYS: ALL KEYS ARE NOMINAL SIZE.



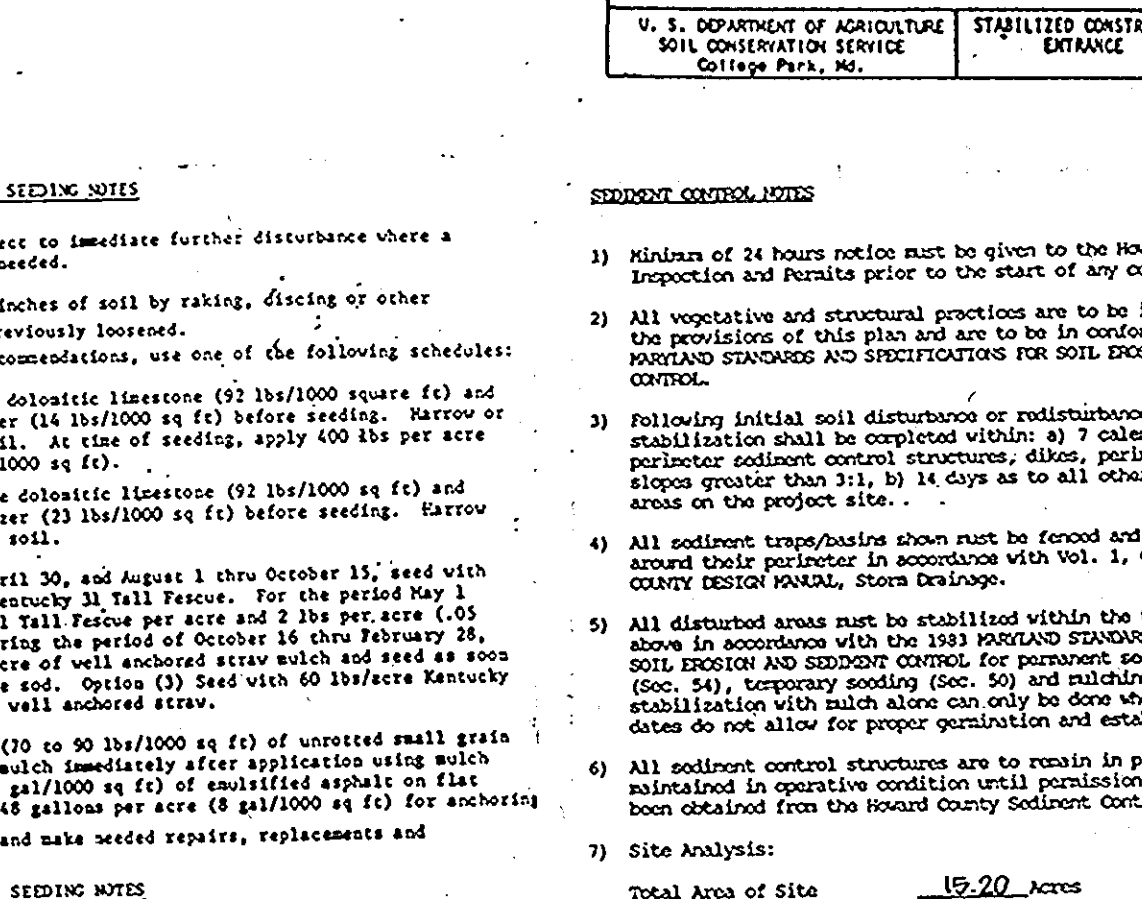
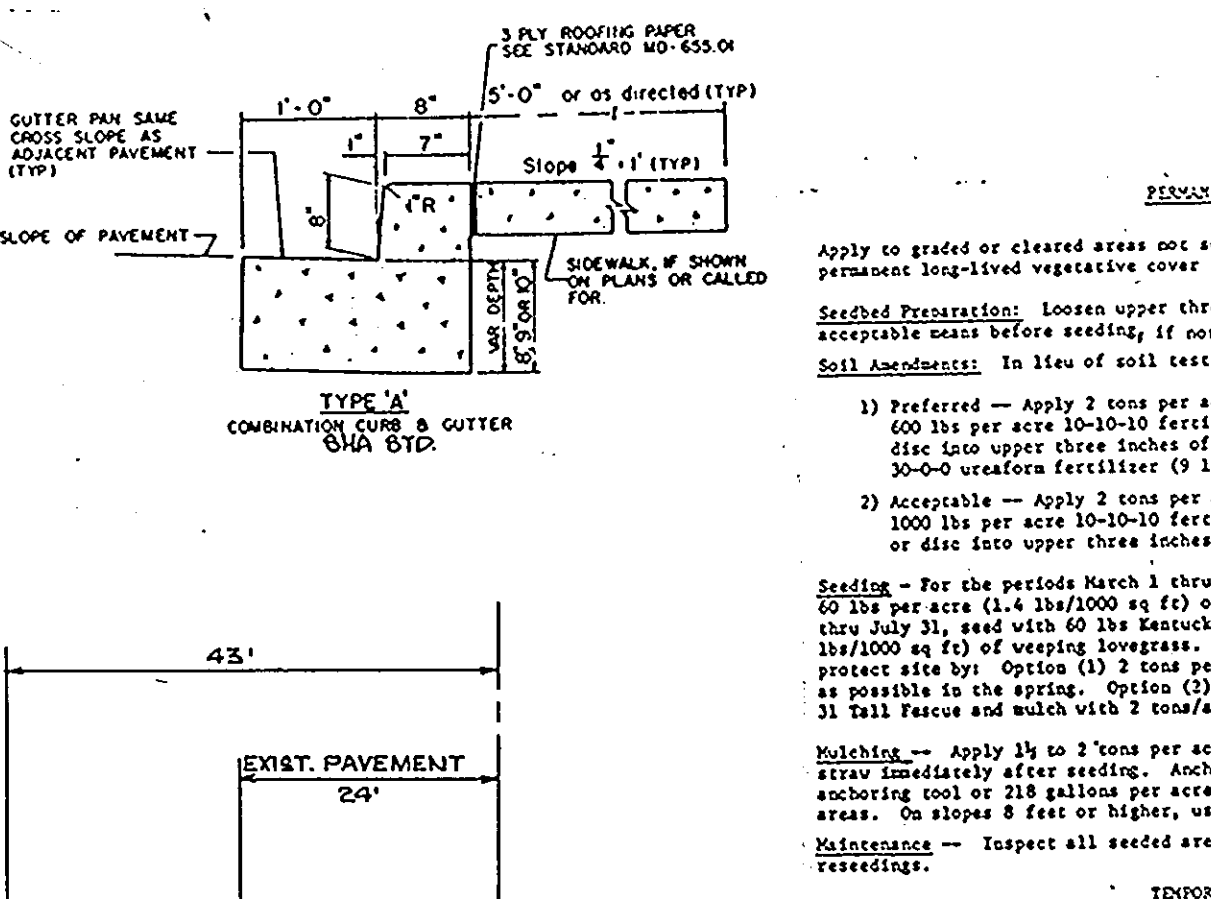
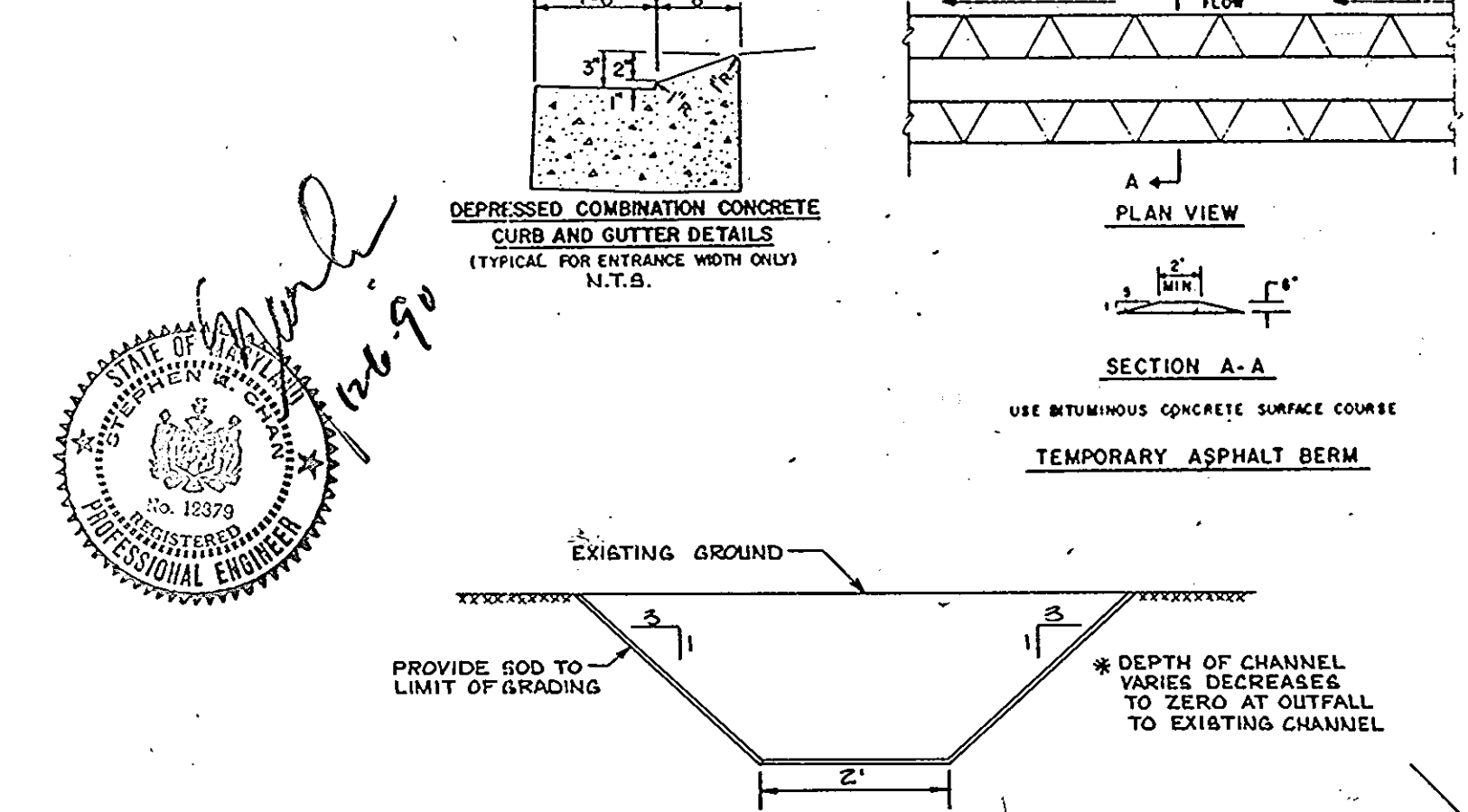
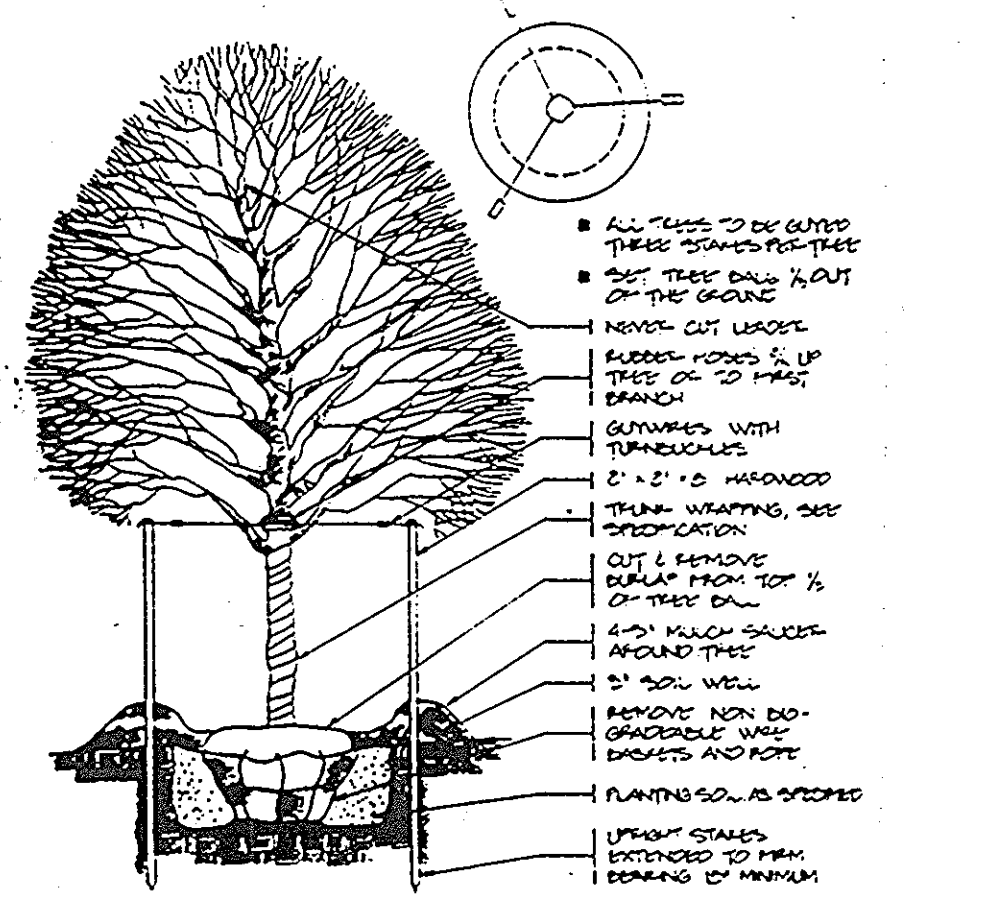


NOTES:
1. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART
3. 1/2" PREFORMED BIT EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX. NO. 2
5. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BIT EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB AND RESTING ON A COMPACTED CRUSHED STONE BASE. SEE DET. THIS SHEET.
6. ON LONGITUDINAL SIDEWALK GRADES OF 2% OR GREATER, A CONCRETE HEADER, 6" THICK AND 2" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.



ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.



REVISIONS DONE BY
DESIGNED: D.J.
DRAWN: A.J.U.
CHECKED: P.A.H.
DATE: 4/24/00

REVISION
BY NO. DESCRIPTION DATE

REVISIONS DONE BY
CLB ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
18223A FLOWER HILL WAY GAITHERSBURG, MD 20878 301-990-0525 • WASH. 948-9439 FAX: 869-9152
201-B BROADWAY STREET FREDERICK, MD 21701 831-4510 • 869-9722 FAX: 831-4801

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SCALE: AS SHOWN
SHEET NO. 12 OF 12
SHT. 5 OF 5 GREENFIELD ROAD F 90-09

1540