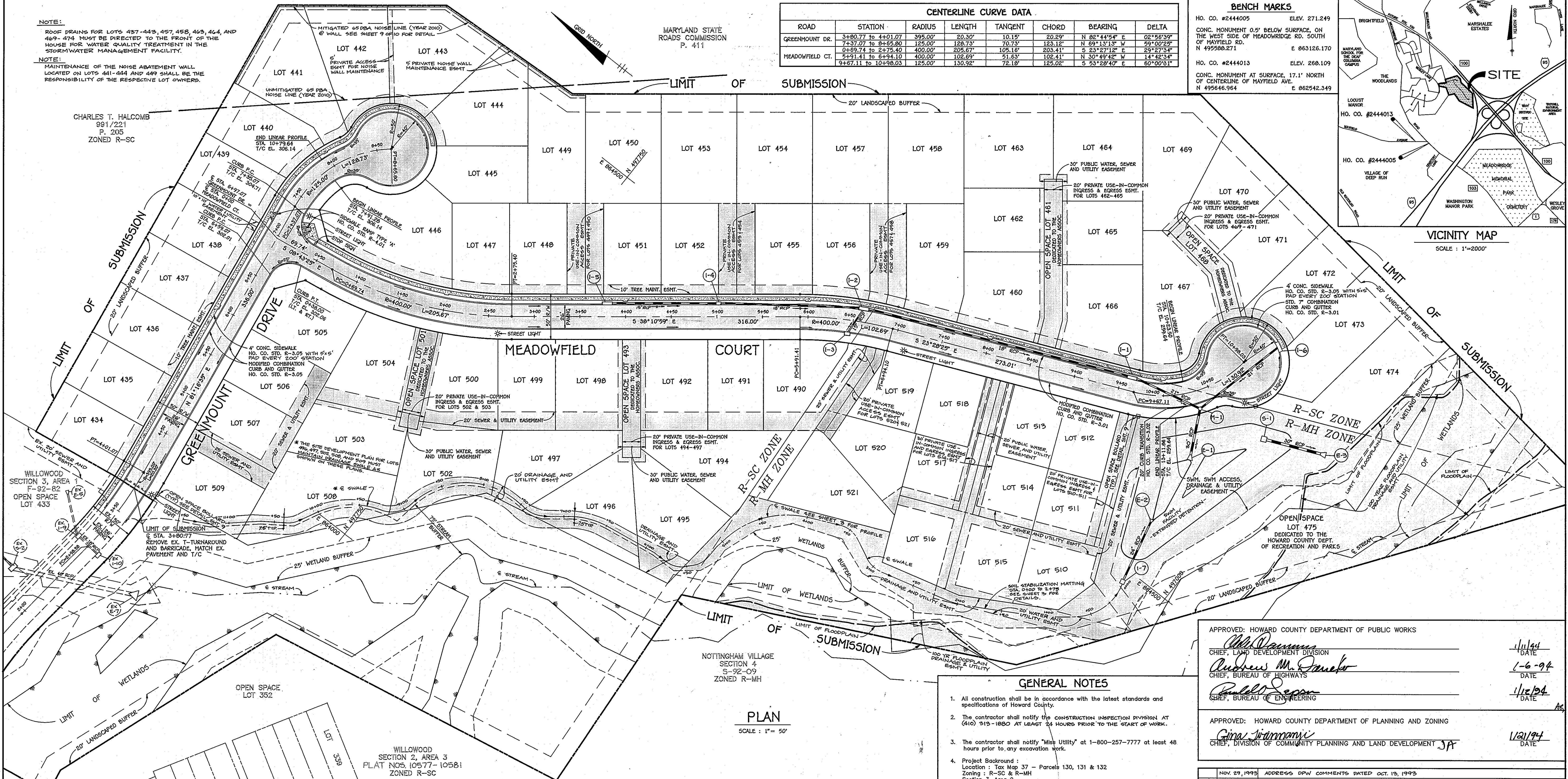
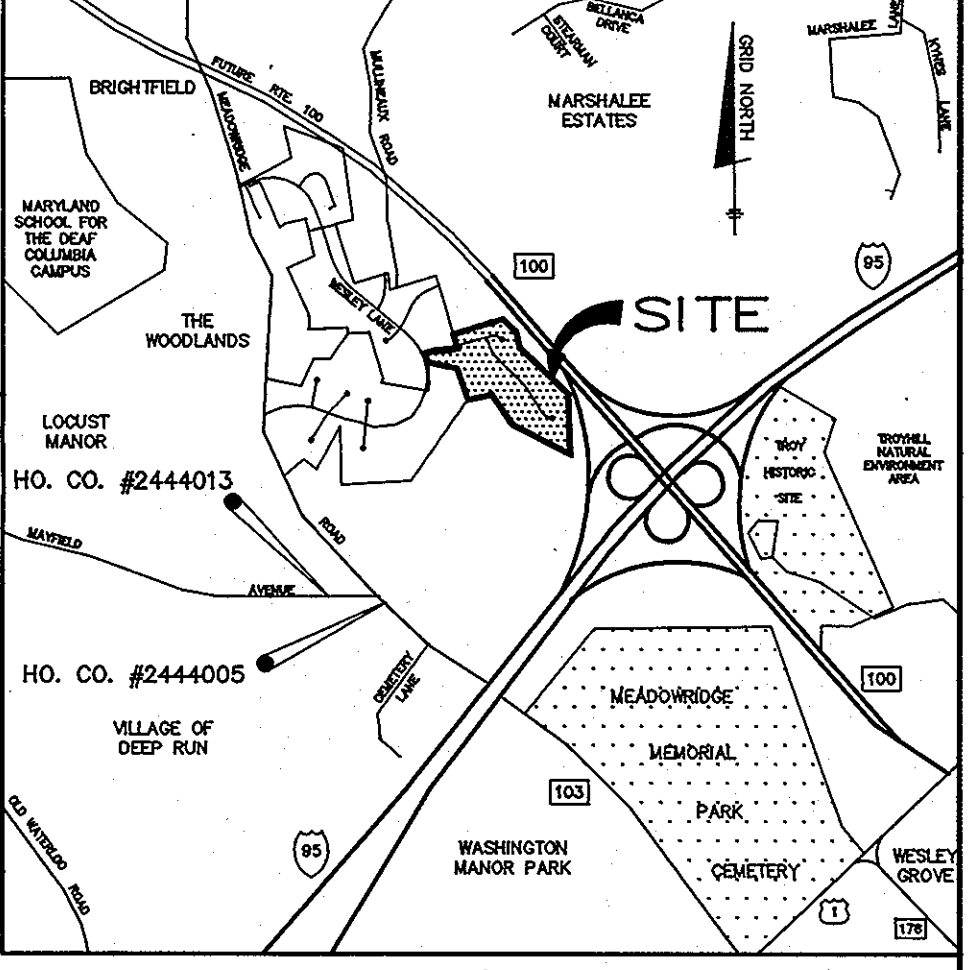


NOTE:
ROOF DRAINS FOR LOTS 437-443, 457, 458, 463, 464, AND 469-474 MUST BE DIRECTED TO THE FRONT OF THE HOUSE FOR WATER QUALITY TREATMENT IN THE STORMWATER MANAGEMENT FACILITY.

NOTE:
MAINTENANCE OF THE NOISE ABATEMENT WALL LOCATED ON LOTS 441-444 AND 449 SHALL BE THE RESPONSIBILITY OF THE RESPECTIVE LOT OWNERS.

CENTERLINE CURVE DATA							
ROAD	STATION	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
GREENMOUNT DR.	3+80.77 to 4+01.07	395.00'	20.30'	10.15'	20.29'	N 82°44'54" E	02°56'39"
	7+37.07 to 8+59.80	125.00'	128.73'	70.73'	123.12'	N 69°13'13" W	59°00'29"
MEADOWFIELD CT.	0+59.74 to 2+75.40	400.00'	205.67'	105.18'	203.41'	S 23°27'12" E	29°27'34"
	5+91.41 to 6+94.10	400.00'	102.69'	51.63'	102.41'	N 30°49'42" W	14°42'34"
	9+67.11 to 10+98.03	125.00'	130.92'	72.18'	125.02'	S 53°28'40" E	60°00'31"

BENCH MARKS	
HO. CO. #2444005	ELEV. 271.249
CONC. MONUMENT 0.5' BELOW SURFACE, ON THE WEST SIDE OF MEADOWFIELD RD. SOUTH OF MAYFIELD RD.	
N 495988.271	E 863126.170
HO. CO. #2444013	ELEV. 268.109
CONC. MONUMENT AT SURFACE, 17.1' NORTH OF CENTERLINE OF MAYFIELD AVE.	
N 495646.964	E 862542.349



NOTTINGHAM VILLAGE SECTION 4 S-92-09 ZONED R-MH

PLAN
SCALE: 1" = 50'

STRUCTURE SCHEDULE							
No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.	
I-1	A-10	13.92' LT. STA. 9+81.44 MEADOWFIELD CT.	257.56	257.15	263.98	SD 4.01 & R 3.08 A	
I-2	A-10	13.92' LT. STA. 6+59.08 MEADOWFIELD CT.	269.00	268.80	273.80	SD 4.02 & R 3.08 A	
I-3	A-5	13.92' RT. STA. 6+45.29 MEADOWFIELD CT.	---	269.32	274.01	SD 4.01 & R 3.08 A	
I-5	A-10	13.92' LT. STA. 3+80.00 MEADOWFIELD CT.	---	273.37	279.87	SD 4.01 & R 3.08 A	
I-6	A-10	13.92' LT. STA. 11+68.06 MEADOWFIELD CT.	---	249.95	254.80	SD 4.02 & R 3.08 A	
I-7	1" W/GRADE	N 497048.14 E 884486.33	248.00	254.50	SD 4.12 & 4.13		
M-1	MANHOLE	20.00' RT. STA. 10+35.03 MEADOWFIELD CT.	248.63	248.30	258.16	G 5.12	
E-1	30" CONC.	N 497075.84 E 884842.11	---	246.14	---	SD 5.51	
E-2	24" CONC.	N 497044.55 E 864956.95	---	246.10	---	SD 5.51	
E-3	30" CONC.	N 489864.99 E 864730.88	---	244.16	---	SD 5.51	
S-1	SWM CONT. STRUCT.	N 497023.89 E 864705.36	---	244.50	254.75	---	
I-4	A-5	16.62' RT. STA. 5+02.12 MEADOWFIELD CT.	271.54	271.94	276.15	SD 4.01 & R 3.08 A	

UNLESS OTHERWISE NOTED:
1. ALL STORM DRAIN BEDDING SHALL BE CLASS C.
2. ALL STORM DRAIN PIPE SHALL BE CLASS 4 REINFORCED CONC.
3. INLET TOP SHOWN ARE PER P&L. ADJUSTMENT TO BE MADE PER HO. CO. STD. R-9.06 A.
4. TOP ELEVATIONS SHOWN ARE AT CENTER OF INLET.

NOTE:
SEE SHEET 8 OF 10 FOR SEQUENCE OF CONSTRUCTION

STREET LIGHT LEGEND			
ROAD	STATION	OFFSET	TYPE
GREENMOUNT DRIVE	3+85	19' RIGHT	100 WATT TRADITIONAL SODIUM VAPOR LAMP POST TOP FIXTURE ON 14 FOOT BLACK FIBERGLASS POLE
	7+36	19' RIGHT	
MEADOWFIELD COURT	2+61	19' RIGHT	
	7+10	19' RIGHT	
	10+73	35' RIGHT	

SHEET INDEX	
No.	DESCRIPTION
1	ROAD PLAN
2	ROAD PROFILES
3	DRAINAGE AREA MAP AND PROFILES
4	GRADING PLAN
5	GRADING PLAN
6	SWM DETAILS
7	SEDIMENT CONTROL PLAN
8	SEDIMENT CONTROL PLAN
9	DETAILS AND NOTES
10	PLANTING PLAN

CENTERLINE CONTROL DATA				
ROAD	STATION	NORTH	EAST	
GREENMOUNT DRIVE	LIMIT P.C. 3+80.77	497962.5322	863897.0905	
	P.T. 4+01.07	497965.0939	863917.2222	
	P.C. 7+37.07	496016.0245	854249.3318	
	P.T. 8+59.80	497972.3747	864364.4421	
MEADOWFIELD COURT	0+00	498009.9877	864209.7946	
	P.C. 0+69.74	497941.0546	864220.3720	
	P.T. 2+75.40	497754.4522	864301.3286	
	P.C. 5+91.41	497506.0633	864496.6725	
	P.T. 6+94.10	497418.1228	864549.1545	
	P.C. 9+67.11	497167.7041	864657.9019	
	P.T. 10+98.03	497093.3027	864758.3681	

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County.
- The contractor shall notify the CONSTRUCTION INSPECTION DEPARTMENT AT (410) 512-1080 AT LEAST 24 HOURS PRIOR TO THE START OF WORK.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Project Background:
Location: Tax Map 37 - Parcels 130, 131 & 132
Zoning: R-SC & R-MH
Section 3, Area 2
Total Tract Area: 52,393 Ac.
Section Area: 21,052 Ac.
Number of Proposed Lots: 77
Date Preliminary Plan Approved: March 28, 1991
DPZ Reference #: P-91-08
- Traffic control devices, markings, and signing shall be in accordance with the most current 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.
- Topography taken from field run survey by TSA Group, Inc. dated 5/91. Contour interval is 2 feet.
- Howard County monuments 2444005 and 2444013 used for horizontal and vertical datum (MD 27).
- Light poles and fixtures for street lights shall be in accordance latest Howard County Design Manual, Volume III, Roads and Bridges.
- Water and Sewer for this subdivision is public. Drainage area is Patapsco. Contract No. 14-9503-D
- Stormwater Management for this subdivision is extended detention.
- Existing utilities were located by record drawings and field run survey by TSA Group, Inc. dated 5/91.
- Floodplain Study compiled by TSA Group, Inc. 9/92.
- Wetlands Delineation Study compiled by Exploration Research Inc., 7/90. Approved 3/28/91.
- Traffic Study compiled by A/E Group, Inc., 10/88. Approved 3/28/91.
- Noise Study compiled by Stalano Eng., Inc., 1/89. Approved 3/28/91.
- Geotechnical Report compiled by Atec Assoc., Inc., 8/90. Approved 3/28/91.
- CELLAR ELEVATIONS FOR LOTS ABUTTING THE 100 YEAR FLOODPLAIN SHALL BE A MINIMUM 2 FEET ABOVE THE 100 YR FLOODPLAIN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danelo
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE: 1/12/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Gina J. Williams
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE: 1/12/94

NO.	DATE	REVISION
1	NOV 29, 1993	ADDRESS DPW COMMENTS DATED OCT. 13, 1993
2	JUNE 16, 1994	REVISE PER RMH REDIVIDUATION. REVISE GABION SWALE TO STABILIZATION MATTING

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

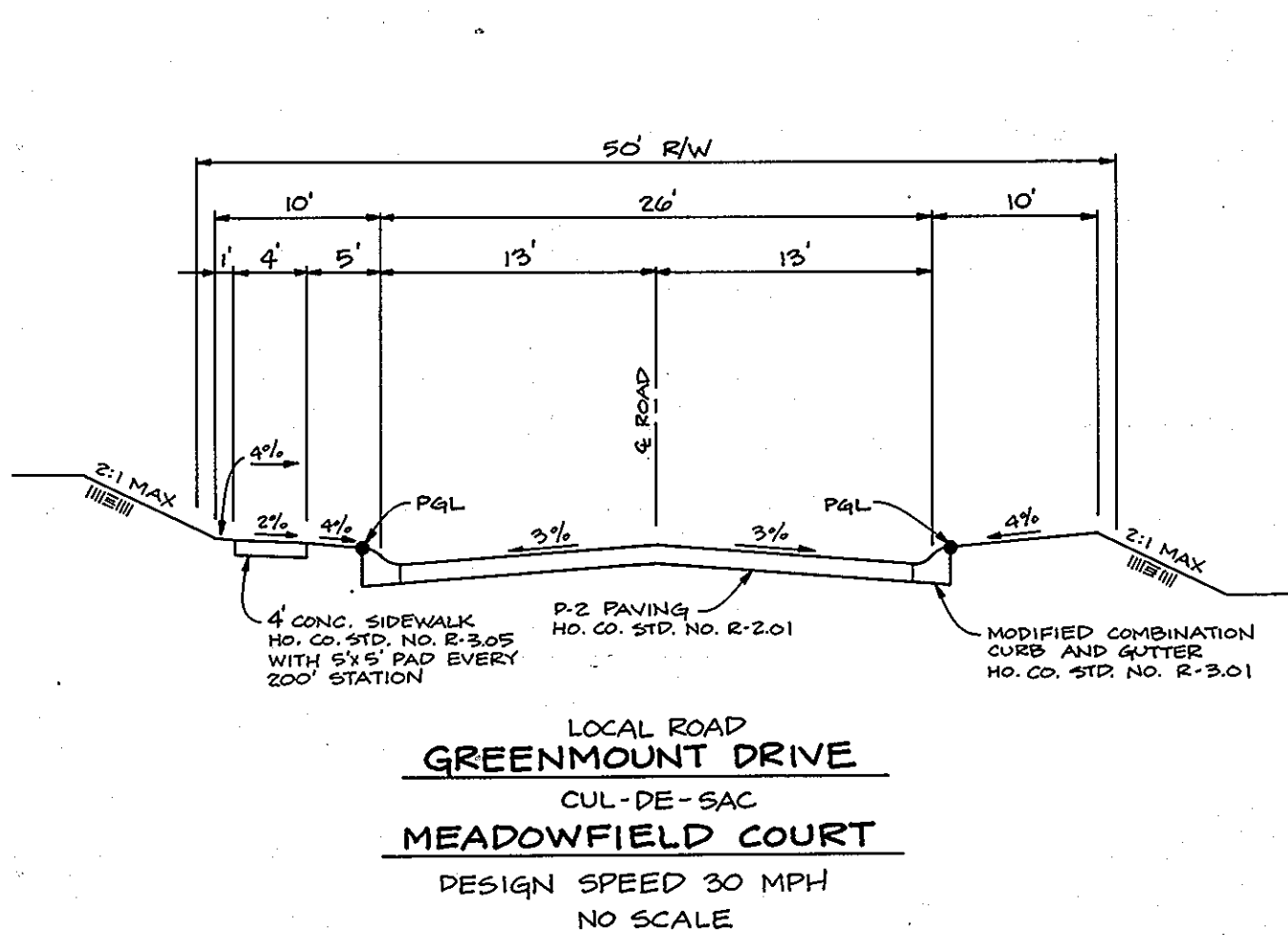
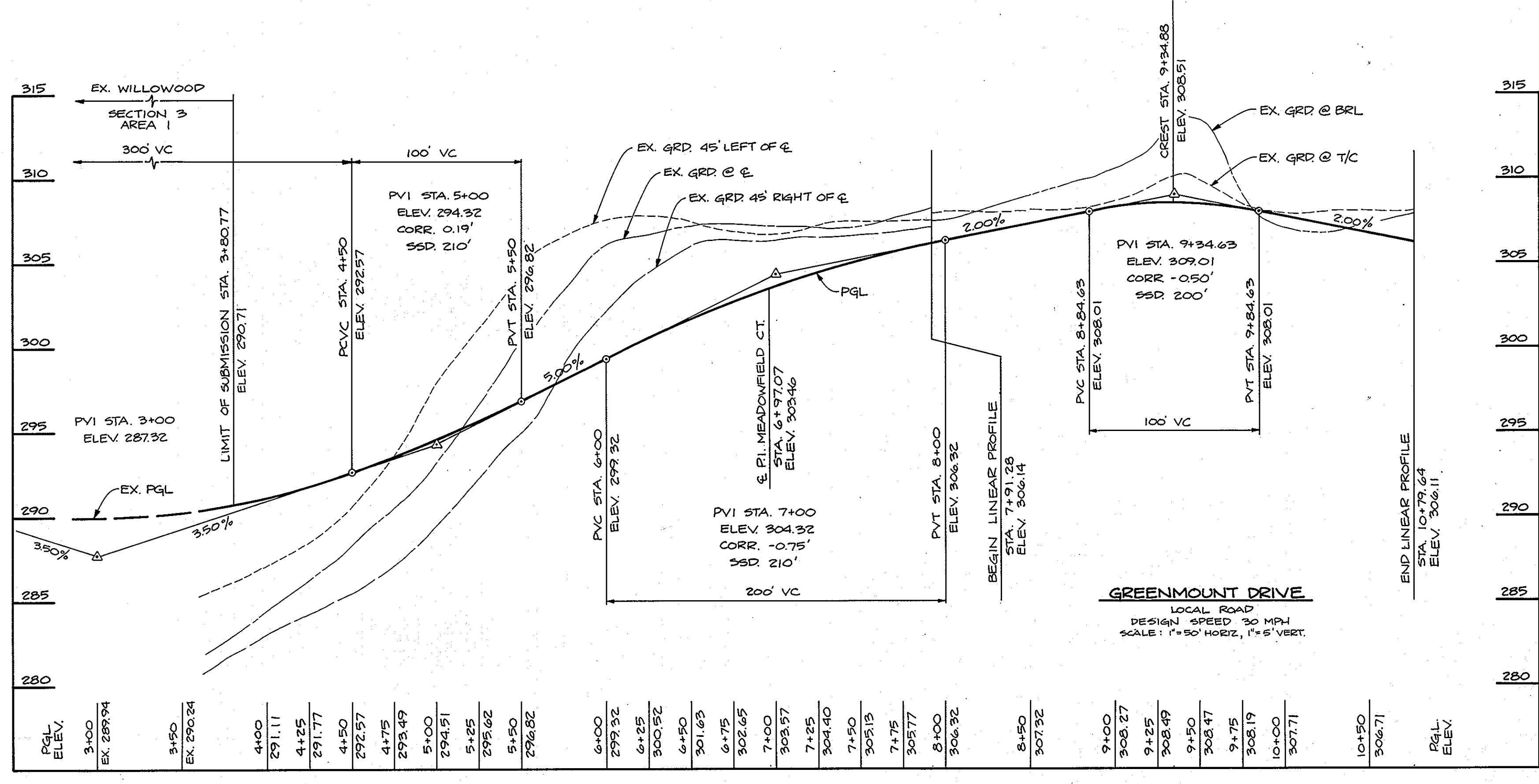
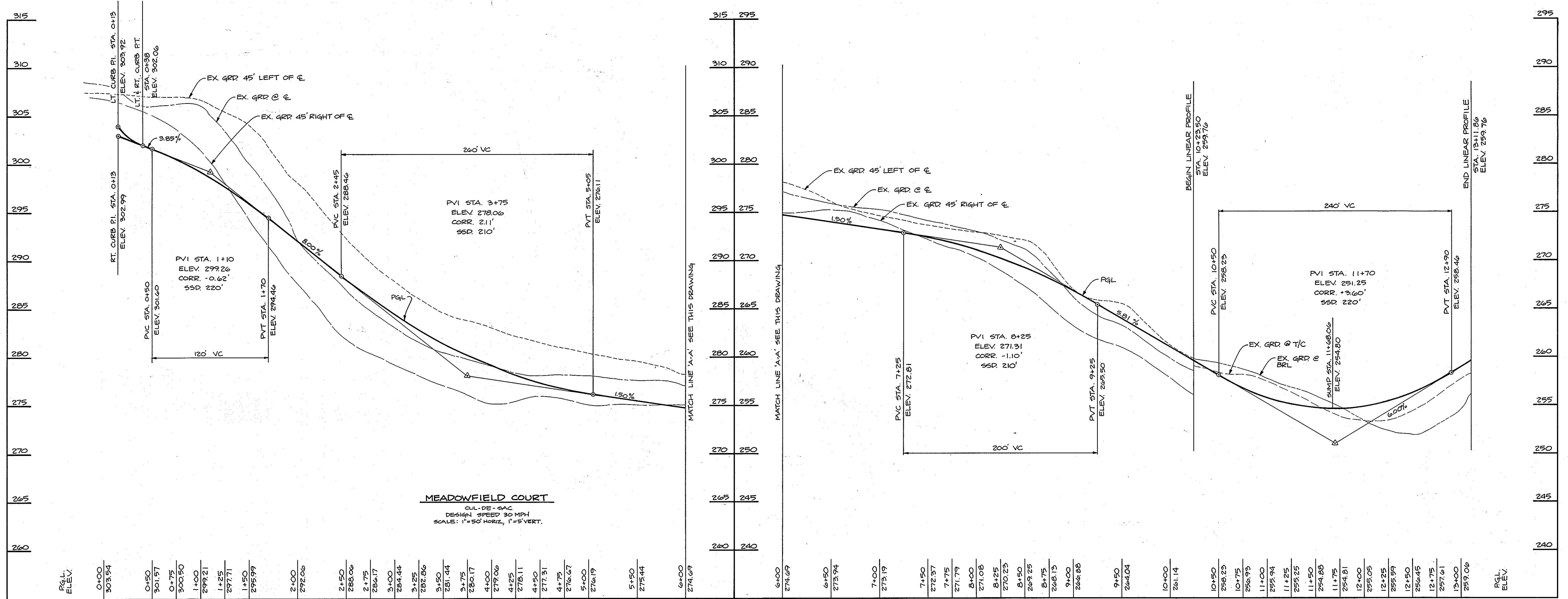
OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-4244

PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509
 LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: PLAN OF GREENMOUNT DRIVE AND MEADOWFIELD COURT
 5-89-24 WP-91-76 P-91-08 F-92-82
 DATE: SEPTEMBER 30, 1992 PROJECT NO. 0509
 SEPTEMBER 10, 1993

DES: JME/DRK DRN: DRK/OBT SCALE: AS SHOWN DRAWING 1 OF 10

1248



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Michael Damm
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE: 1/16/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Gina Summy
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE: 1/16/94

NO.	DATE	REVISION

NOV. 29, 1993 ADDRESS DPW COMMENTS DATED OCT. 13, 1993

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465-6105

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-4244

PROJECT: **WILLOWOOD**
 SECTION 3 - AREA 2
 LOTS 434-509

LOCATION: TAX MAP 37 - PARCELS 130, 131, 132 AND 436
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: **ROAD PROFILES**
 5-89-24 P-91-08 WP-91-76 F-92-82

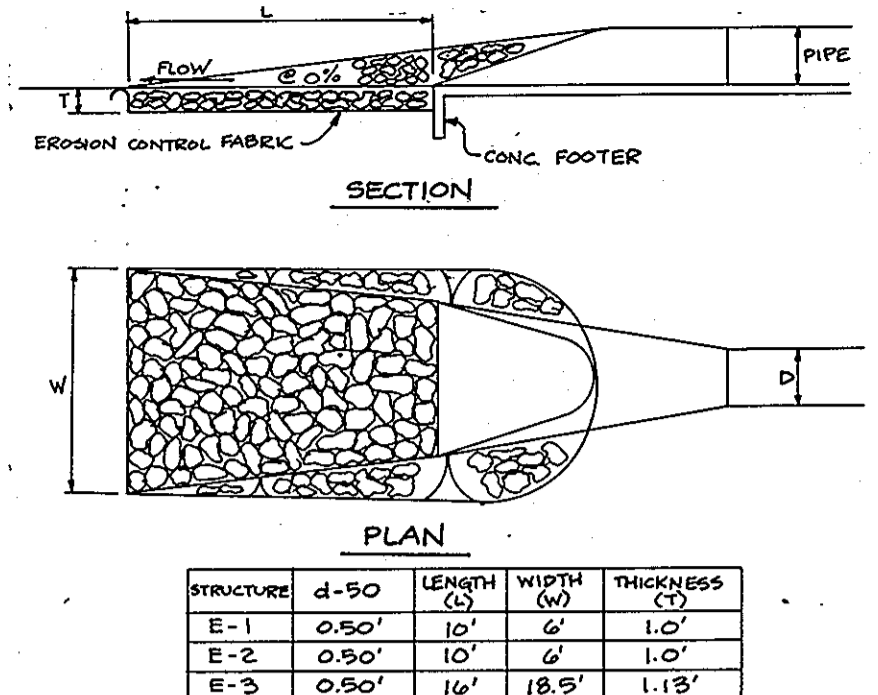
DATE: SEPTEMBER 30, 1992
 SEPTEMBER 10, 1993

DES: JME/MA DRN: DBT

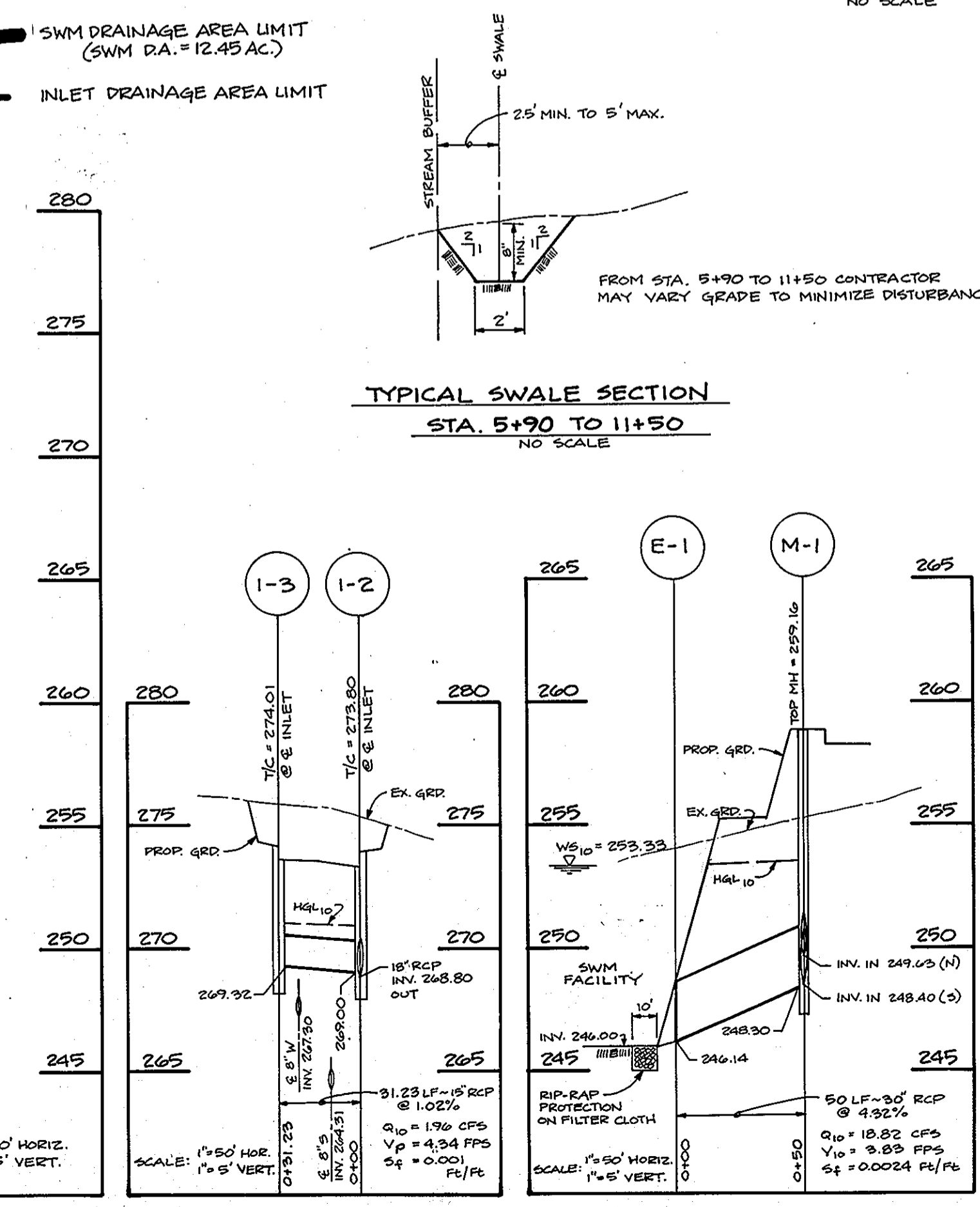
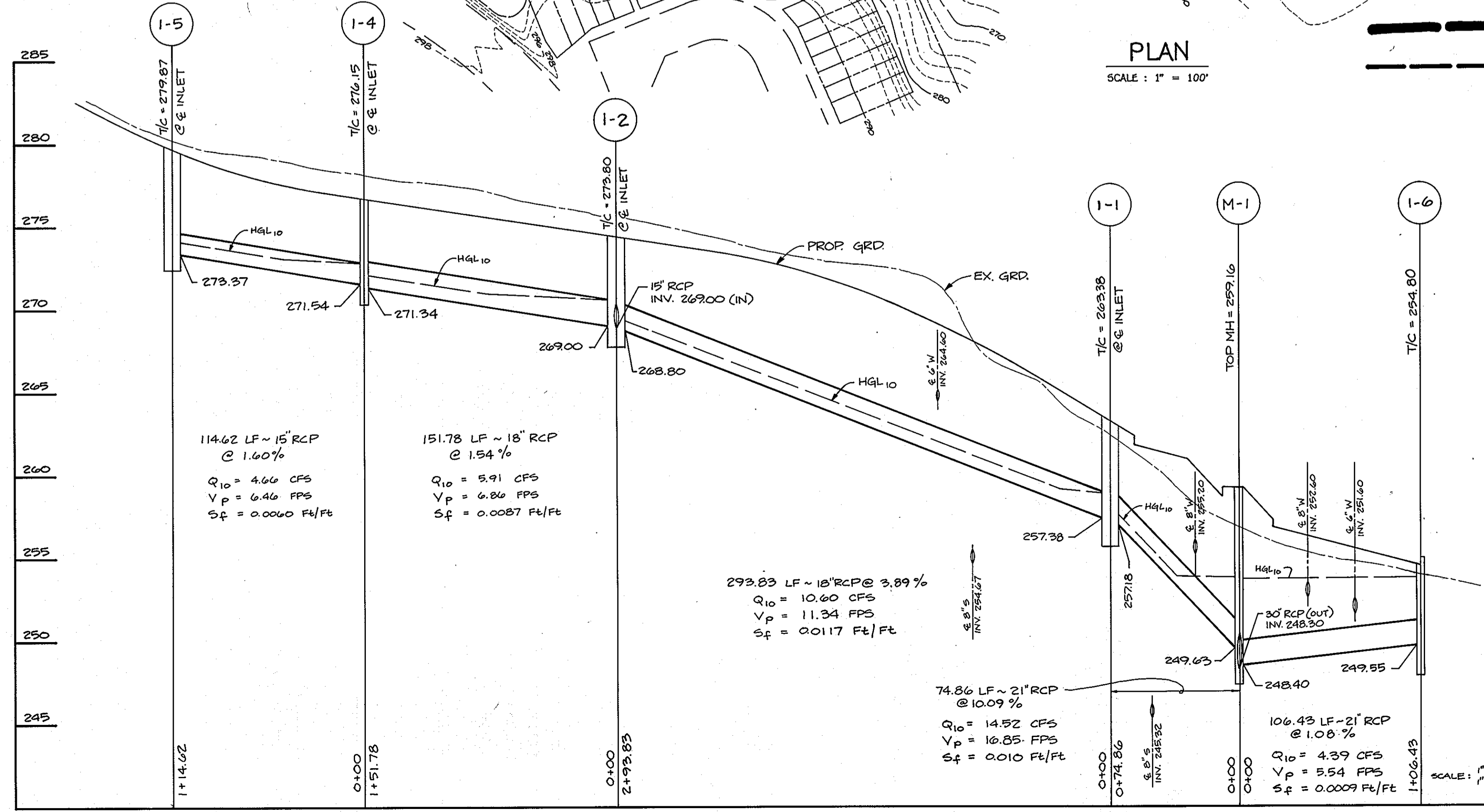
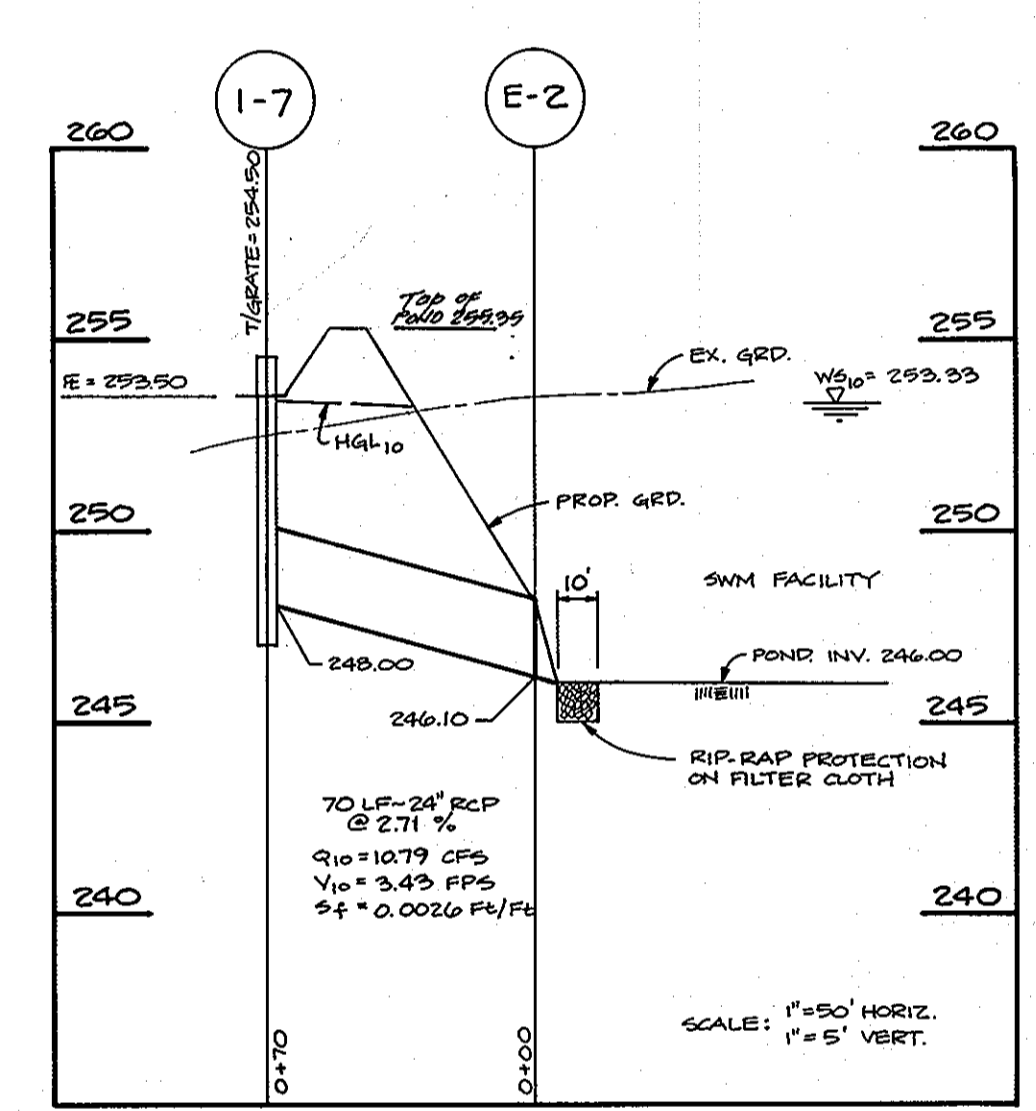
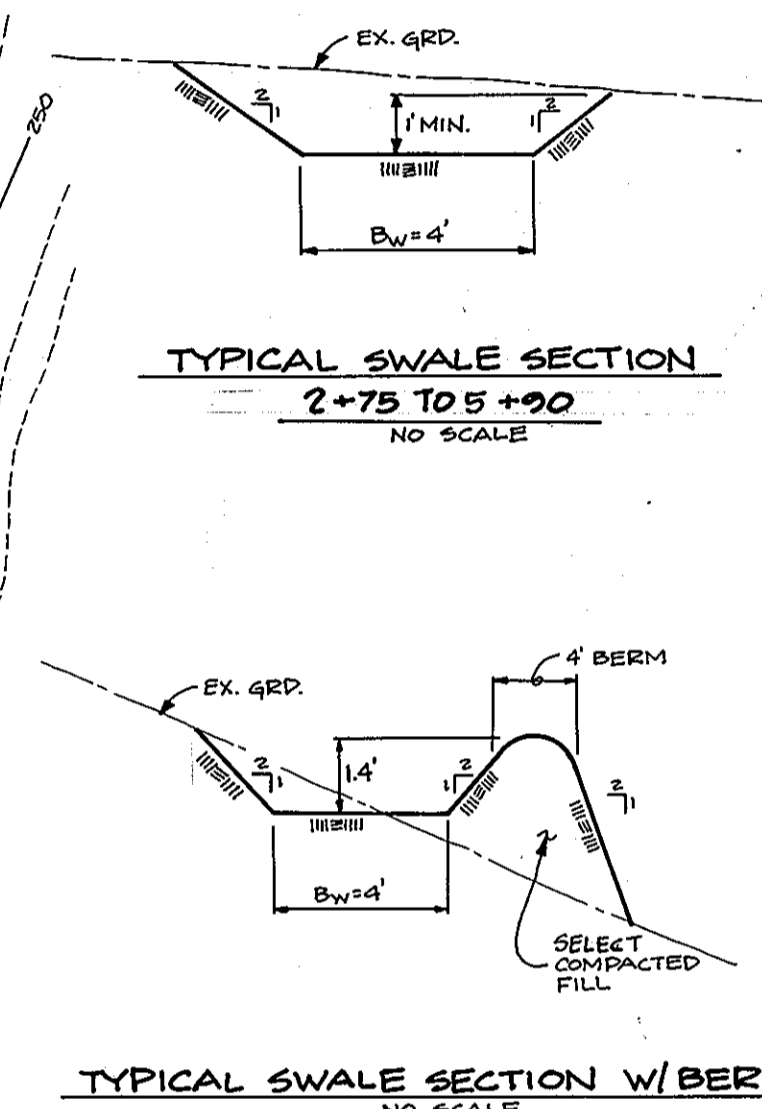
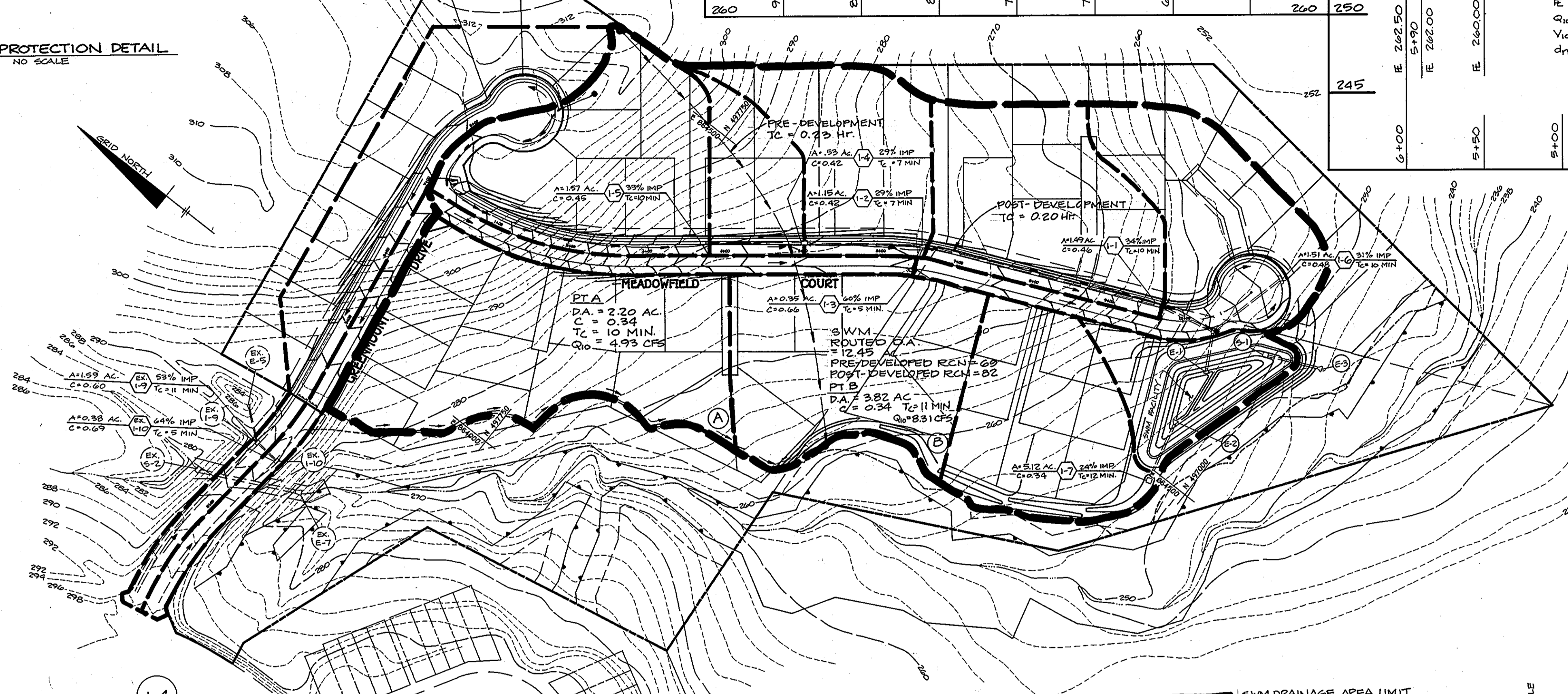
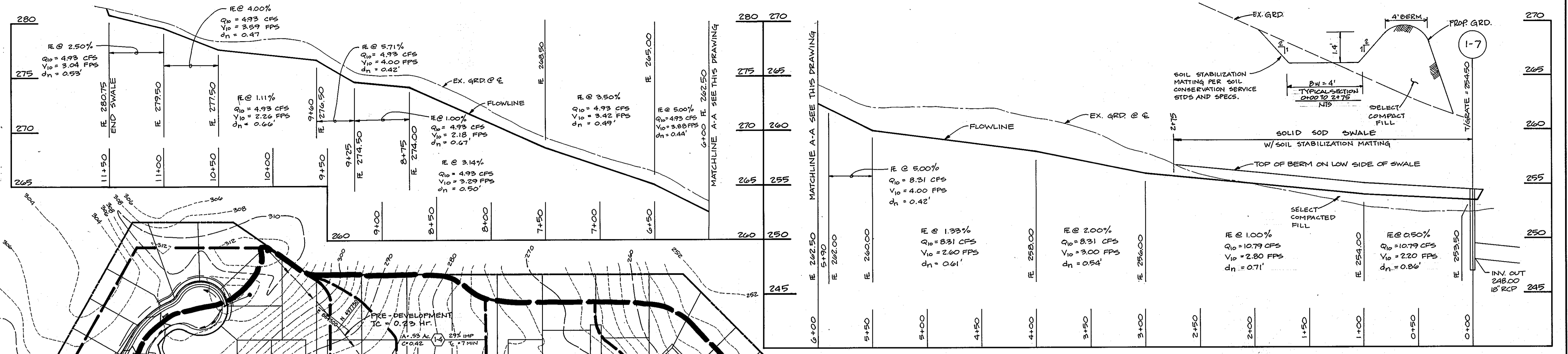
SCALE: 1" = 50' HORIZ.
 1" = 5' VERT.

PROJECT NO. 0509
 DRAWING 2 OF 10

1248



OUTLET PROTECTION DETAIL
NO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Andrew W. ...
 Chief, Bureau of Highways
 Paul ...
 Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development

NOV. 29, 1993 ADDRESS DPW COMMENTS DATED OCT. 13, 1993
 JUNE 16, 1994 REVISE PER RMH RESUBDIVISION. REVISE GABION SWALE TO STABILIZATION MATTING.

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-4244

PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509

LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

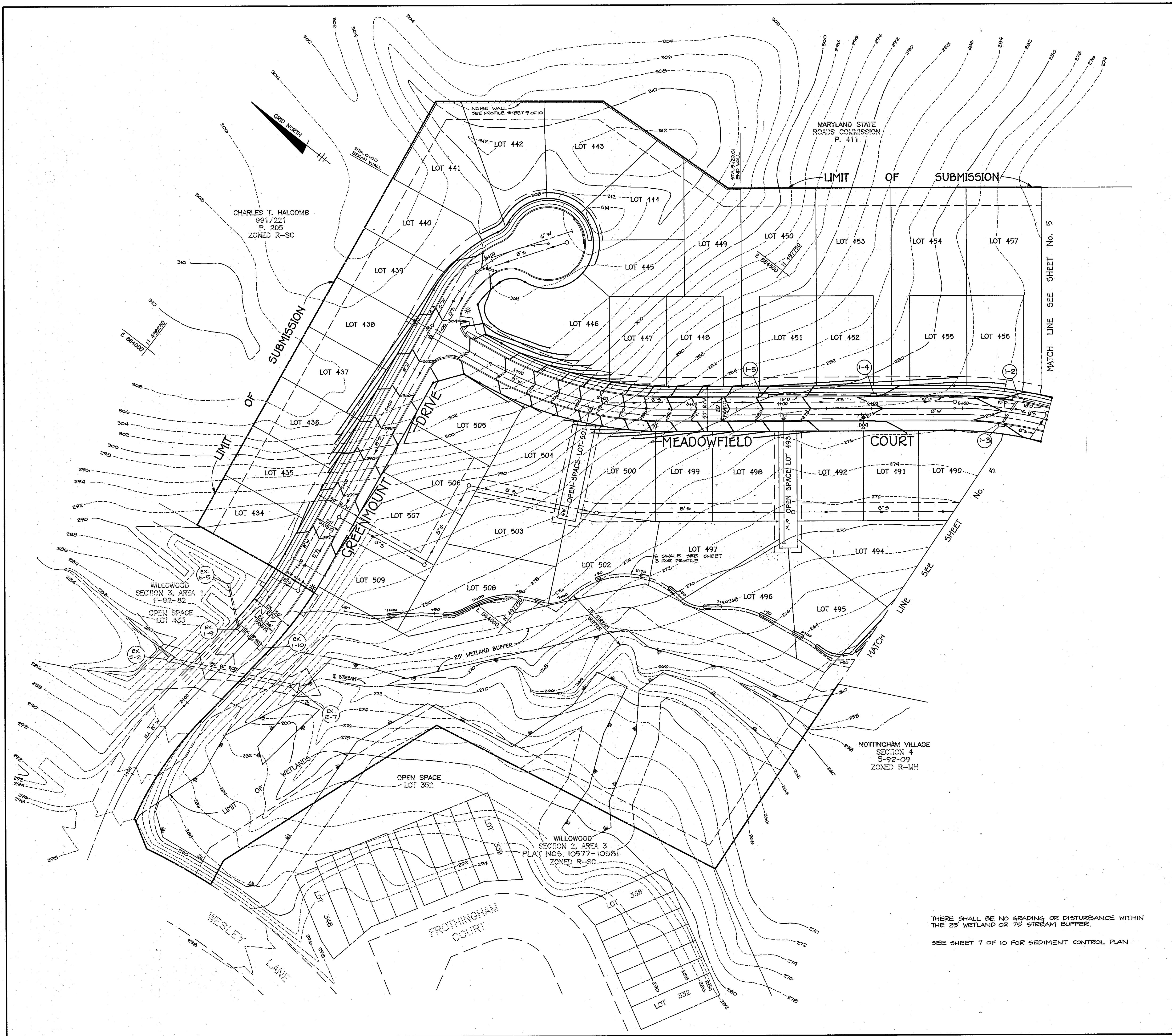
TITLE: STORM DRAIN PROFILES AND DRAINAGE AREA MAP

DATE: SEPTEMBER 30, 1992
 SEPTEMBER 10, 1993

SCALE: AS SHOWN

DRAWING 3 OF 10

1248



BY THE DEVELOPER:
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."
 James R. Moxley, Jr. 10-6-92
 DEVELOPER: JAMES R. MOXLEY, JR. / SECURITY DEVELOPMENT CORPORATION - PRESIDENT DATE

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. 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."
 John M. Elorriaga, P.E. 10-6-92
 ENGINEER: JOHN M. ELORRIAGA, P.E. / 75891 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.
 J. M. Warfield/JMK 9/17/93
 USE SOIL CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Robert W. Zink/JMK 9/17/93
 HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division 1/16/94
 Chief, Bureau of Highways 1-6-94
 Chief, Bureau of Engineering 1/12/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Gina Zimmari 1/21/94
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JAZ DATE

NOV. 29, 1993	ADDRESS DPW COMMENTS DATED OCT. 12, 1993
JUNE 16, 1994	REVISE PER RMH RESUBDIVISION. REVISE GABION SWALE TO STABILIZATION MATTING.
NO	DATE
	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8600 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-5105

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21043 (410) 465-4244	PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509
LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: GRADING PLAN
DATE: SEPTEMBER 30, 1992 SEPTEMBER 10, 1993	PROJECT NO. 0509
DES: JHE	DRN: DRK/DBT
SCALE: 1" = 50'	DRAWING 4 OF 10

THERE SHALL BE NO GRADING OR DISTURBANCE WITHIN THE 25' WETLAND OR 75' STREAM BUFFER.
 SEE SHEET 7 OF 10 FOR SEDIMENT CONTROL PLAN

1248

SWM FACILITY CONTROL POINTS		
Ⓐ	N 497045.28	E 864709.94
Ⓑ	N 496989.93	E 864734.27
Ⓒ	N 497045.99	E 864516.92
Ⓓ	N 497068.01	E 864504.96
Ⓔ	N 497120.37	E 864627.55

NOTES

1. THERE SHALL BE NO GRADING OR DISTURBANCE WITHIN THE 25' WETLAND OF 75' STREAM BUFFERS.
2. SEE SHEET 6 OF 10 FOR SWM DETAILS & SOIL BORING LOGS.
3. SEE SHEET 8 OF 10 FOR SEDIMENT CONTROL & SEQUENCE OF CONSTRUCTION.
4. SEE SHEET 3 OF 10 FOR RIP-RAP OUTLET PROTECTION DIMENSIONS AND DETAILS.
5. 100 YR FLOODPLAIN CROSS-SECTIONS ARE BASED ON FIELD RUN TOPOGRAPHY.

LEGEND

- ③ — 100 YR. FLOODPLAIN CROSS-SECTION
- LIMIT OF 100 YR FLOODPLAIN

BY THE DEVELOPER:
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT 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. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."
James R. Moxley 10-6-92
 DEVELOPER: JAMES R. MOXLEY, JR. DATE
 SECURITY DEVELOPMENT CORPORATION - PRESIDENT

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION 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. 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."
John M. Elorriaga 10-6-92
 ENGINEER: JOHN M. ELORRIAGA, P.E. #16891 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.
J. H. Warfield 9/17/93
 J. H. WARFIELD/SWEE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zichem 9/17/93
 ROBERT W. ZICHEM/SWEE DATE
 HOWARD S.C.D.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John J. Danner 1/1/94
 CHIEF, LAW DEVELOPMENT DIVISION DATE
Robert W. Zichem 1-6-94
 CHIEF, BUREAU OF HIGHWAYS DATE
Paul J. Saper 1/12/94
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John J. Danner 1/21/94
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

NOV. 29, 1993	ADDRESS DFW COMMENTS DATED OCT. 13, 1993	
JUNE 16, 1994	REVISE PER RMH RESUBDIVISION, REVISE GABION SWALE TO STABILIZATION MATTING	
NO	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043 (410) 465-4244	PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509
LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: GRADING PLAN
DATE: SEPTEMBER 30, 1992 SEPTEMBER 10, 1993	DATE: SEPTEMBER 30, 1992 SEPTEMBER 10, 1993
DES: JME	DRN: DRK/DBT
SCALE: 1" = 50'	DRAWING 5 OF 10

1248



ELEV. 253.9 B-5

DEPTH (ft)	SOIL DESCRIPTION	WATER CONTENT (%)	LIQUIDITY INDEX	PLASTICITY INDEX	U.S.D.A. CLASSIFICATION
0-1	Blackish, moist medium stiff silty clay (CL), trace of organics and root mat. (LOW)	2	0.5	10	CL
1-2	Water on Road; Dry	3-5	0.5	10	CL
2-3	Completion: Water: Dry	4	0.5	10	CL
3-4	Cave-in: 11.8"	12-14	2	10	CL
4-5	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	3-11	3	10	CL
5-6	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	7-12	4	10	CL
6-7	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	18	5	10	CL
7-8	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	38-50	5	10	CL
8-9	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	14-13	7	10	CL
9-10	Greenish, moist very dense silty clay (CL), trace of fine sand (SANDY LOW)	20	7	10	CL

ELEV. 253.5 B-6

DEPTH (ft)	SOIL DESCRIPTION	WATER CONTENT (%)	LIQUIDITY INDEX	PLASTICITY INDEX	U.S.D.A. CLASSIFICATION
0-1	Topsoil: 1 ft	2	0.5	10	CL
1-2	Water on Road; Dry	3-5	0.5	10	CL
2-3	Completion: Water: Dry	4	0.5	10	CL
3-4	Cave-in: 11.8"	12-14	2	10	CL
4-5	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	3-11	3	10	CL
5-6	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	7-12	4	10	CL
6-7	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	18	5	10	CL
7-8	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	38-50	5	10	CL
8-9	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	14-13	7	10	CL
9-10	Greenish, moist very dense silty clay (CL), trace of organics (LOW)	20	7	10	CL

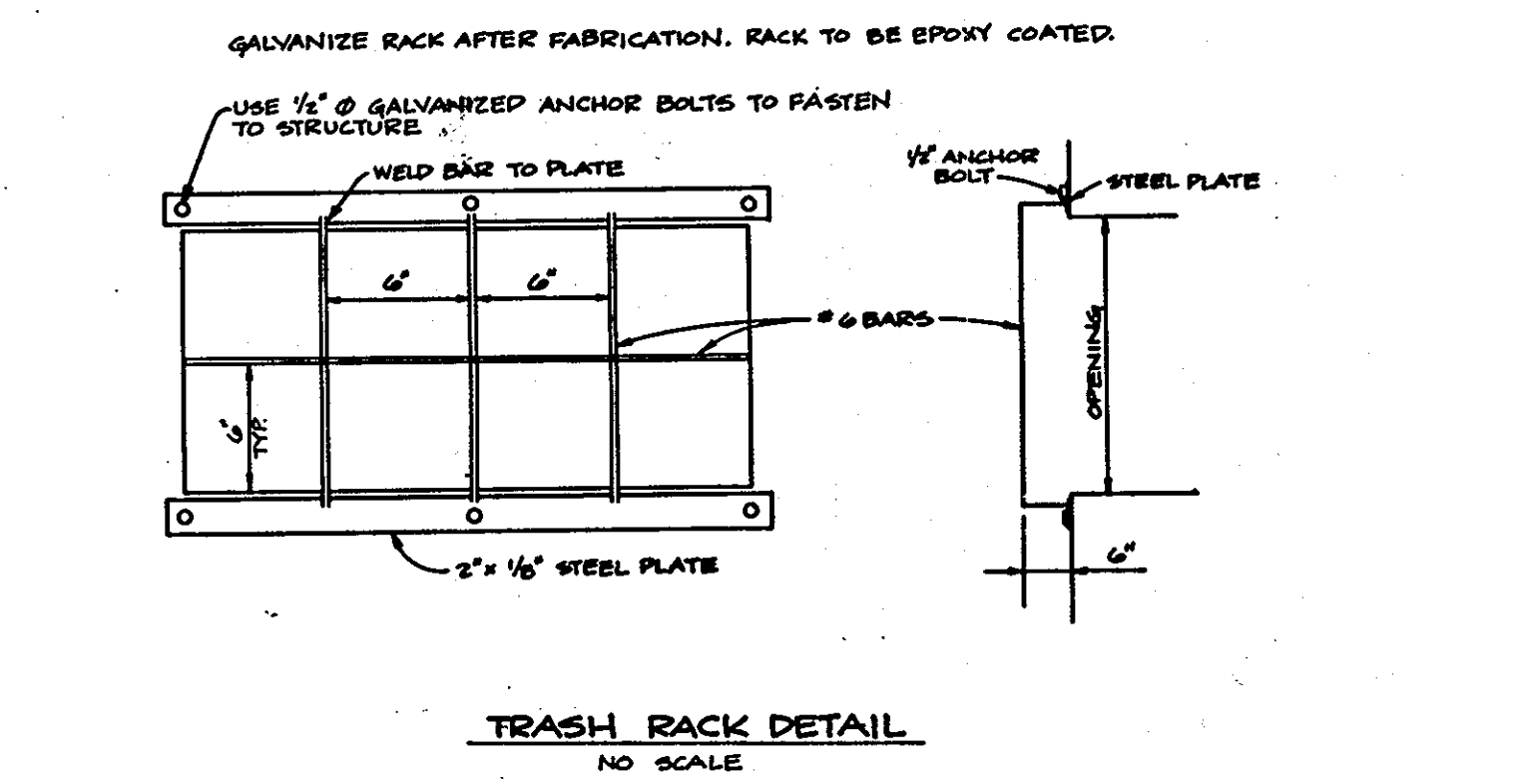
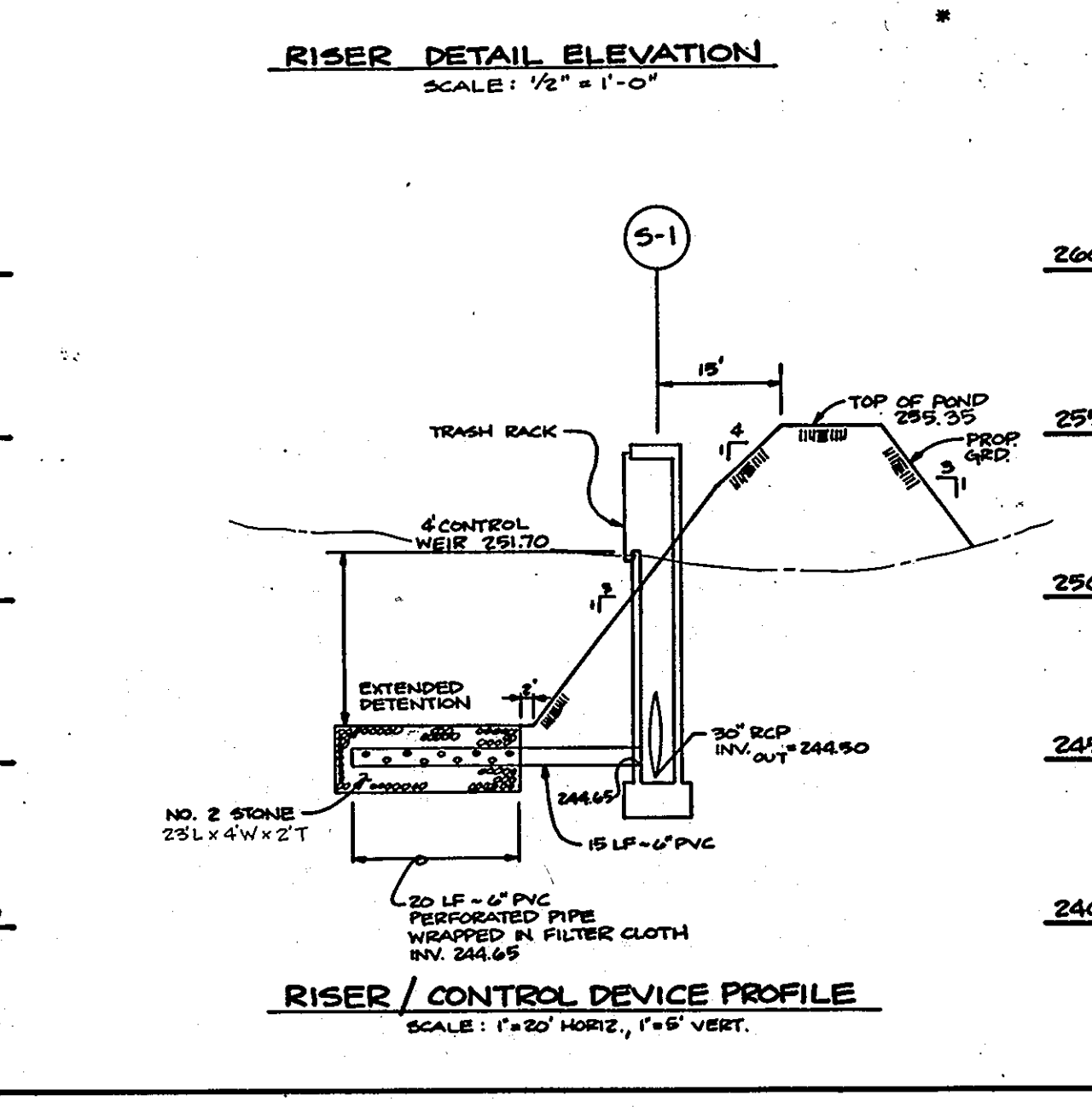
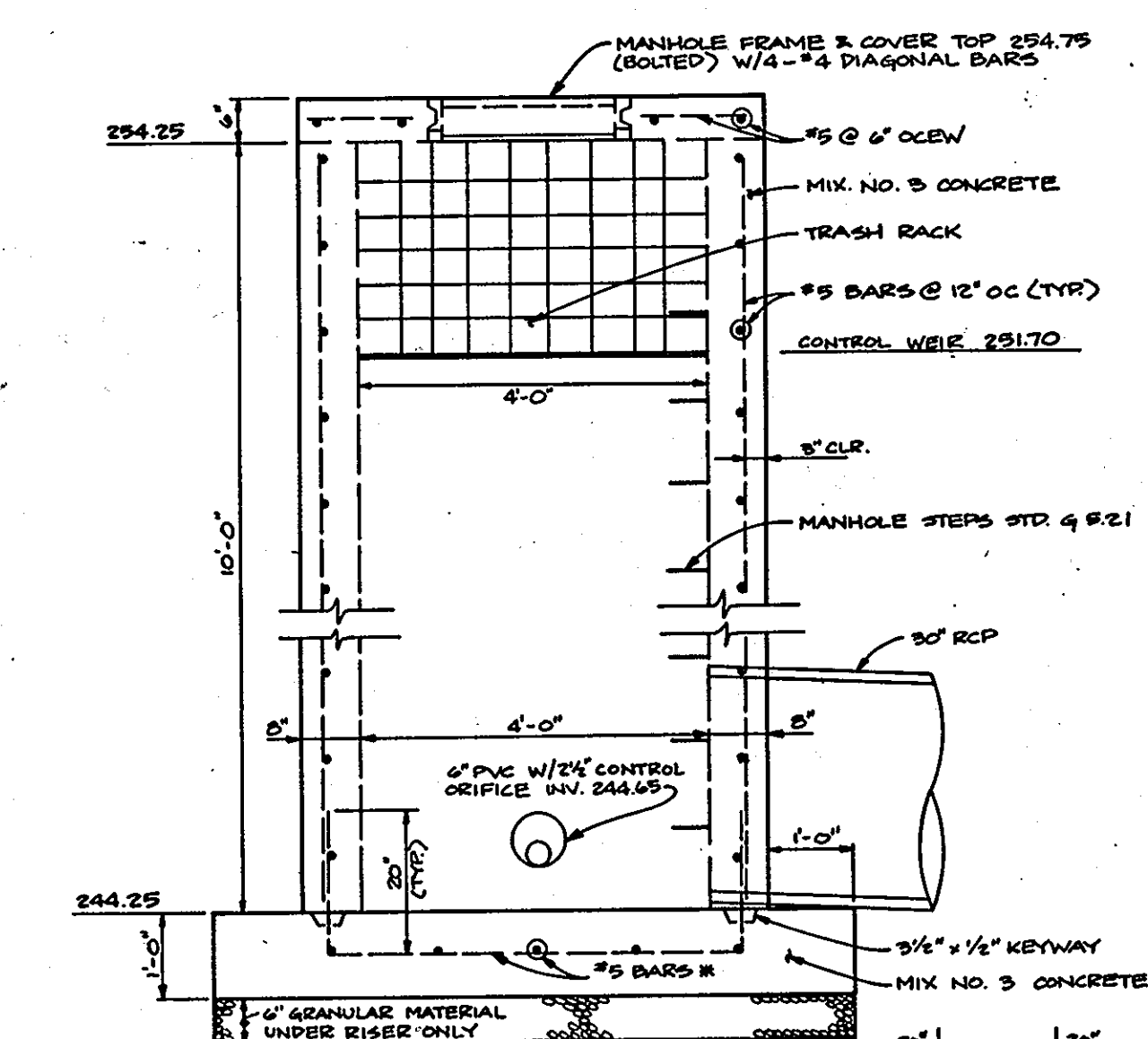
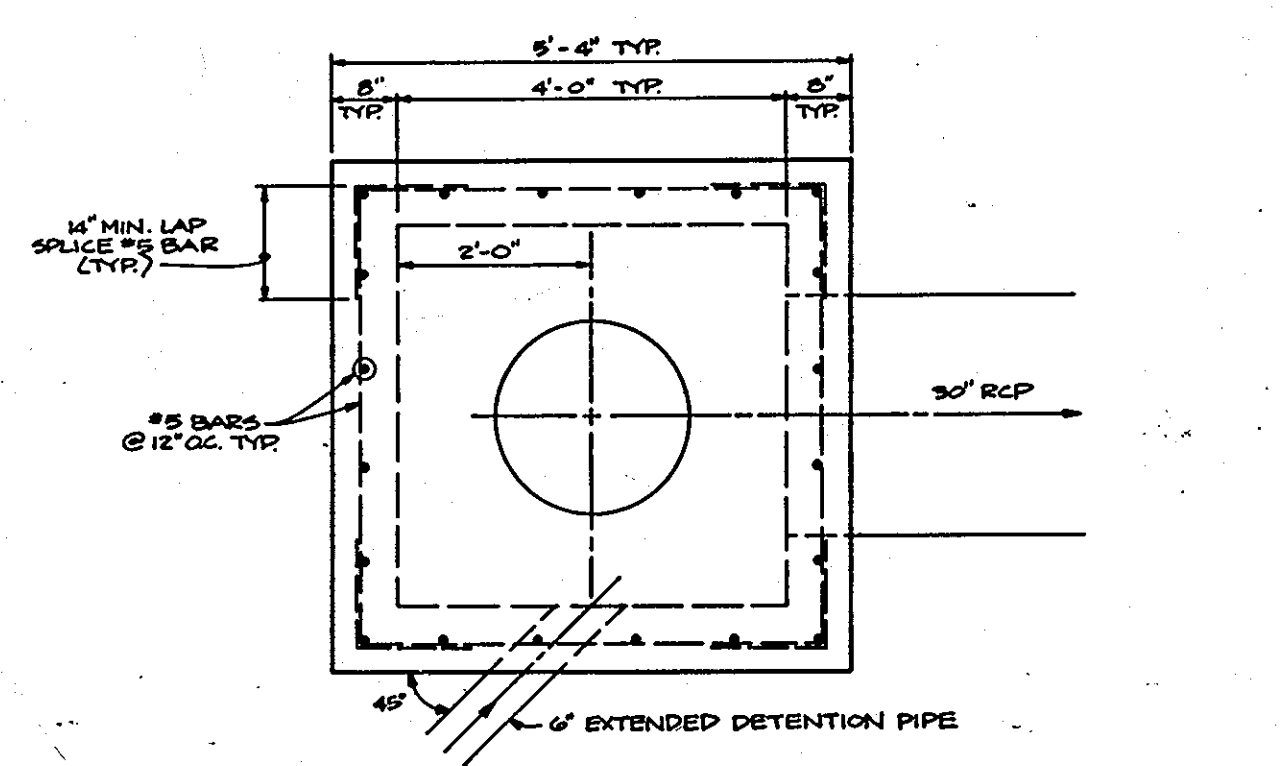
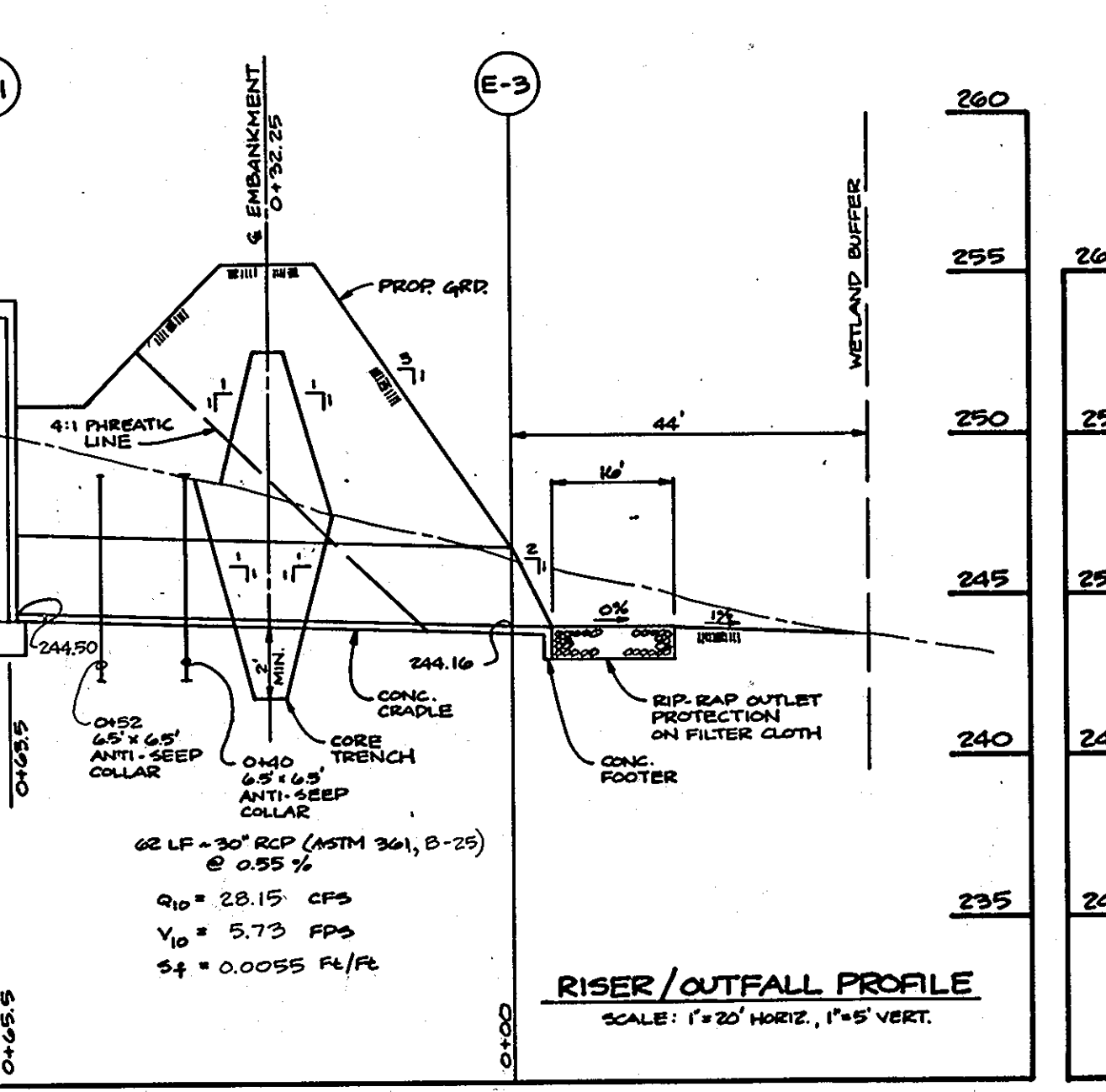
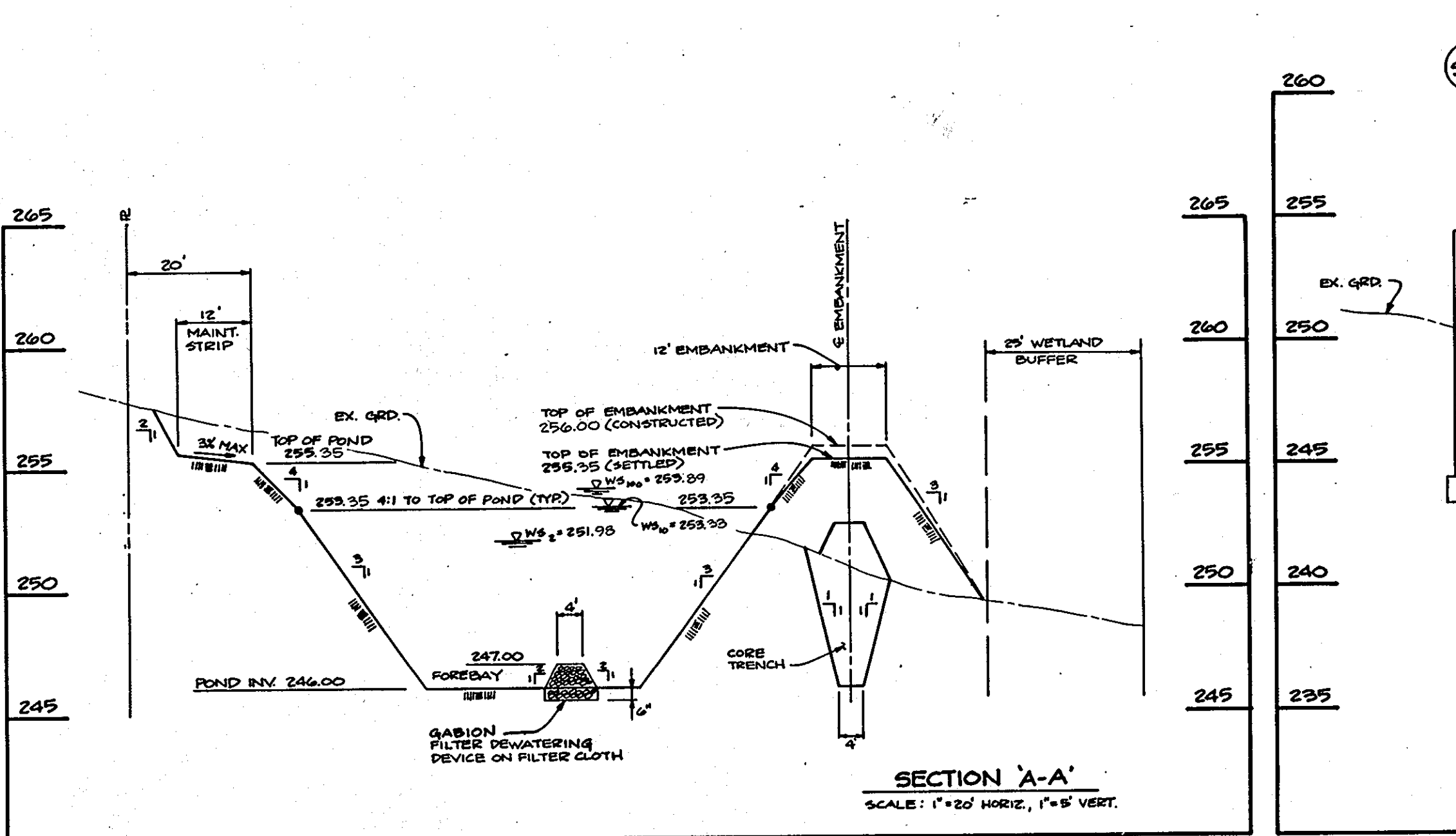
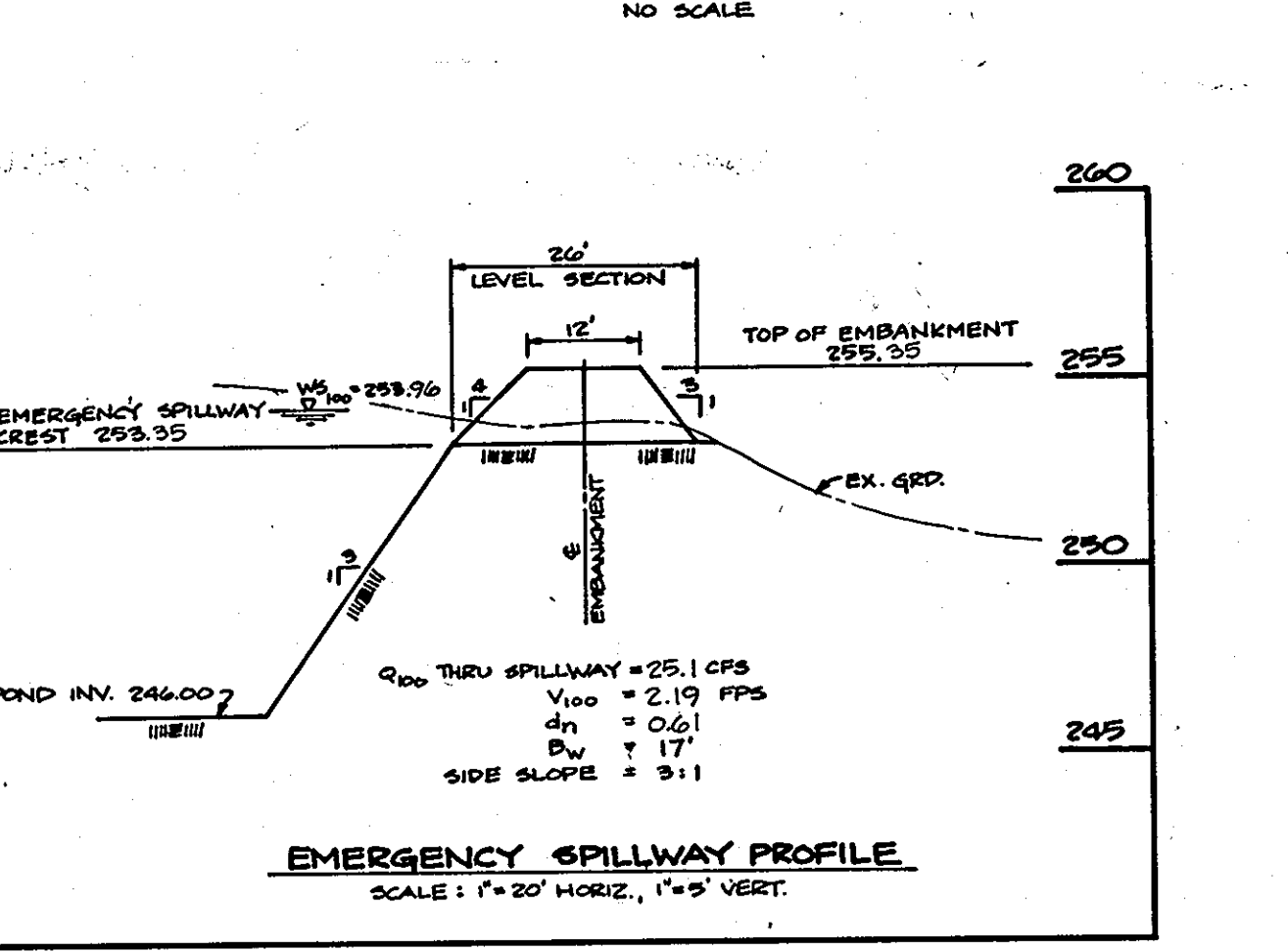
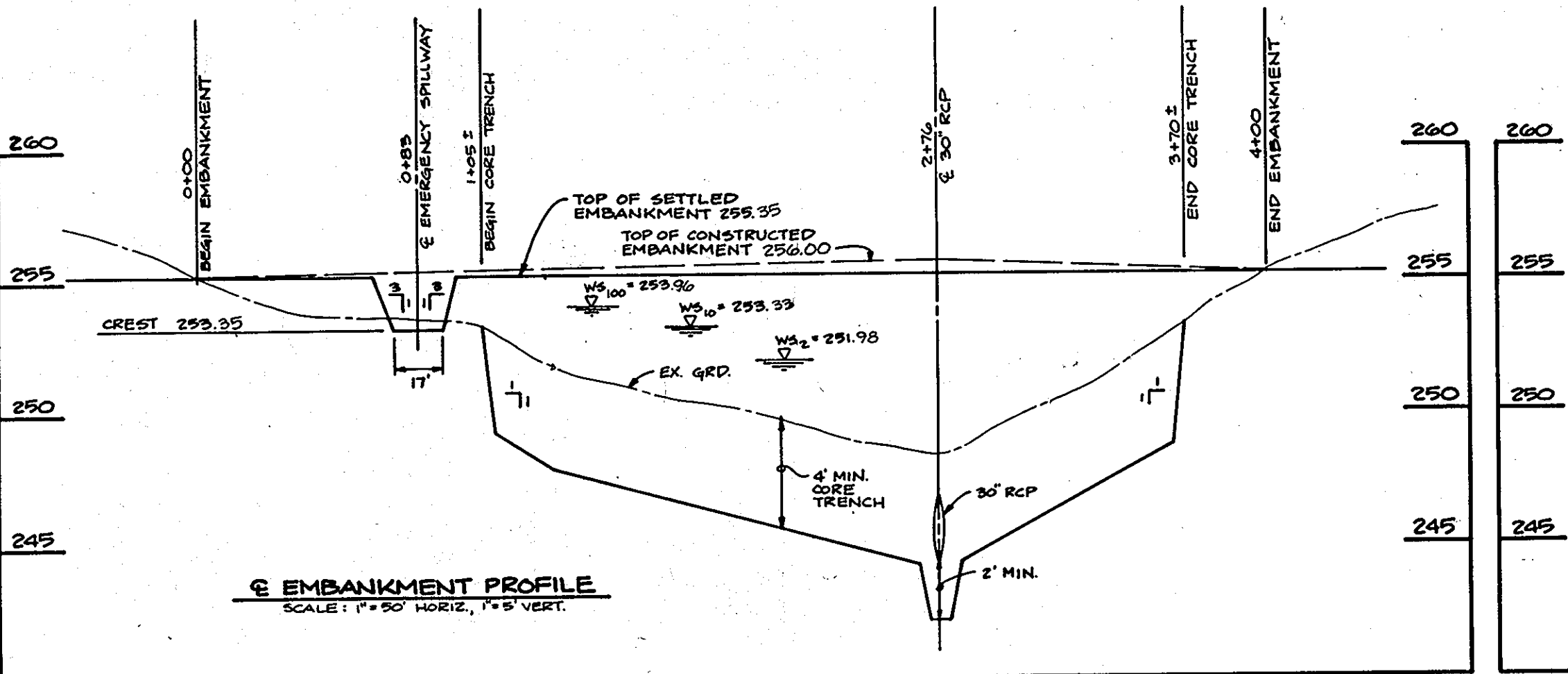
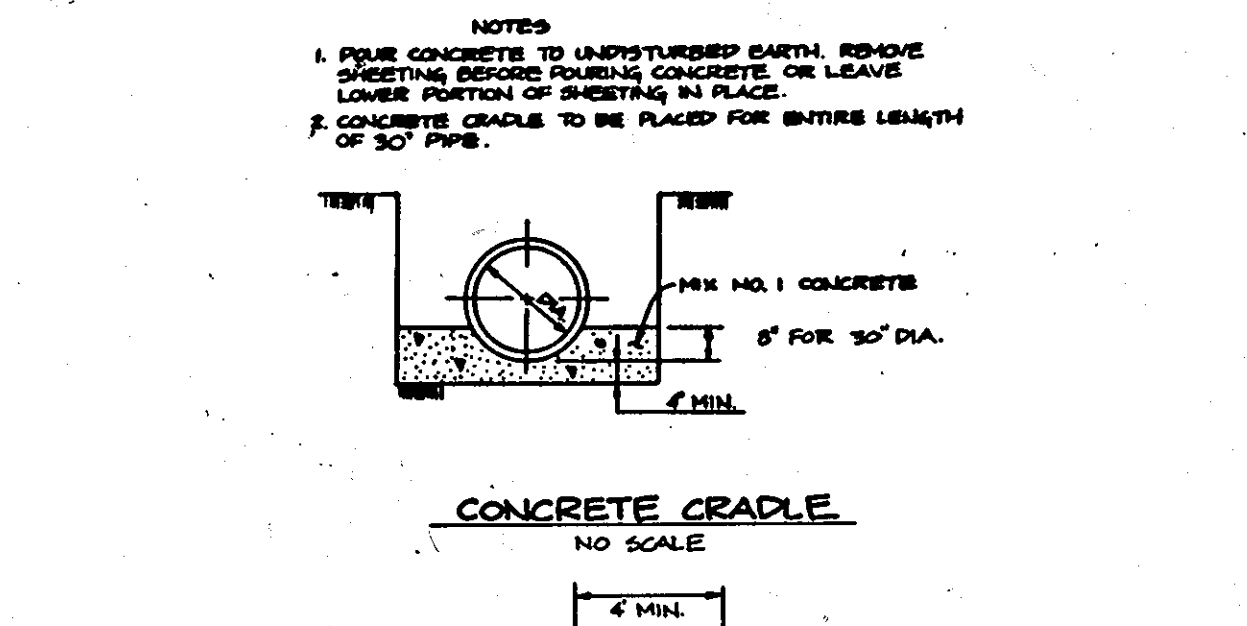
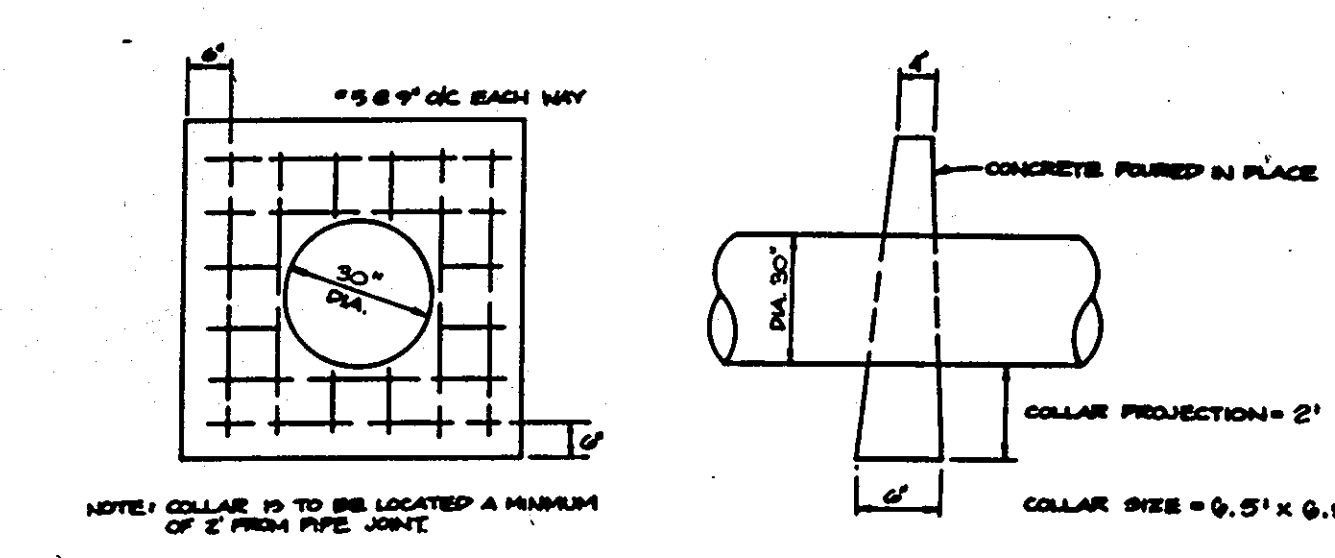
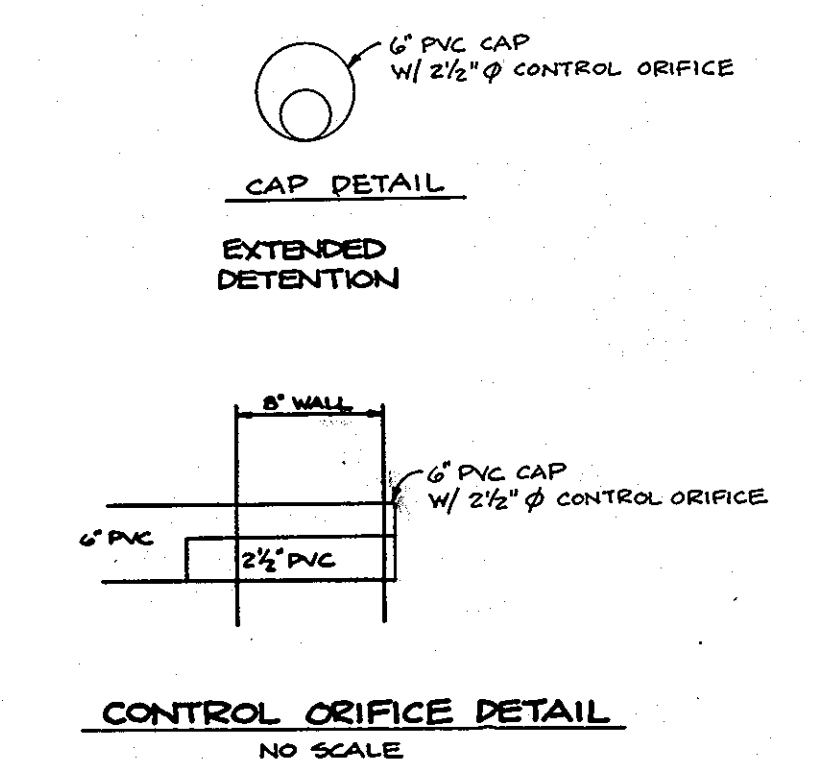
ELEV. 250.1 B-7

DEPTH (ft)	SOIL DESCRIPTION	WATER CONTENT (%)	LIQUIDITY INDEX	PLASTICITY INDEX	U.S.D.A. CLASSIFICATION
0-1	Topsoil: 1 ft	2	0.5	10	CL
1-2	Water on Road; Dry	3-5	0.5	10	CL
2-3	Completion: Water: Dry	4	0.5	10	CL
3-4	Cave-in: 10.2"	12-14	2	10	CL
4-5	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	3-11	3	10	CL
5-6	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	7-12	4	10	CL
6-7	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	18	5	10	CL
7-8	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	38-50	5	10	CL
8-9	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	14-13	7	10	CL
9-10	Greenish, moist medium stiff silty clay (CL), trace of organics (LOW)	20	7	10	CL

ELEV. 247.6 B-8

DEPTH (ft)	SOIL DESCRIPTION	WATER CONTENT (%)	LIQUIDITY INDEX	PLASTICITY INDEX	U.S.D.A. CLASSIFICATION
0-1	Topsoil: 10 inch	2	0.5	10	CL
1-2	Water on Road; Dry	3-5	0.5	10	CL
2-3	Completion: Water: Dry	4	0.5	10	CL
3-4	Cave-in: 11"	12-14	2	10	CL
4-5	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	3-11	3	10	CL
5-6	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	7-12	4	10	CL
6-7	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	18	5	10	CL
7-8	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	38-50	5	10	CL
8-9	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	14-13	7	10	CL
9-10	Greenish, moist medium stiff to very hard silty clay (CL), trace of fine sand (SANDY LOW)	20	7	10	CL

- NOTES**
- MATERIAL FOR EMBANKMENT CONSTRUCTION IS TO BE USED GC, SC, CH, OR CL.
 - ONLY CL, CH, OR SC SOILS ARE TO BE USED FOR CORE TRENCH CONSTRUCTION.
 - ALL SLOPES AROUND POND ARE TO BE 3:1 MAX.
 - SHOULD WATER BE ENCOUNTERED DURING CONSTRUCTION OF CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" @ 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
 - SEE SHEET 9 OF 10 FOR CONSTRUCTION NOTES.



BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

James R. Moxley, Jr.
DEVELOPER: JAMES R. MOXLEY, JR., SECURITY DEVELOPMENT CORPORATION - PRESIDENT 10-6-92 DATE

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION 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. 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.

John M. Elorriaga
ENGINEER: JOHN M. ELORRIAGA, P.E. # 16891 10-6-92 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.

J. M. Warfield/JMK 9/17/93 DATE
SOIL CONSERVATION SERVICE

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

Robert W. Zichorn/JMK 9/12/93 DATE
HOWARD S.C.D.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chris Dammann 1/16/94 DATE
CHIEF, LAND DEVELOPMENT DIVISION

Robert M. Canale 1-6-94 DATE
CHIEF, BUREAU OF HIGHWAYS

Paul J. ... 1/16/94 DATE
CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Gina Dammann 1/21/94 DATE
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

NO.	DATE	REVISION

NOV. 29, 1993 ADDRESS DPW COMMENTS DATED OCT. 13, 1993

TSA GROUP, INC.
planning • architecture • engineering
6450 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 485-8100

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP., P.O. BOX 417, ELLICOTT CITY, MARYLAND 21043 (410) 465-4244

PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509

LOCATION: TAX MAP 37-PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

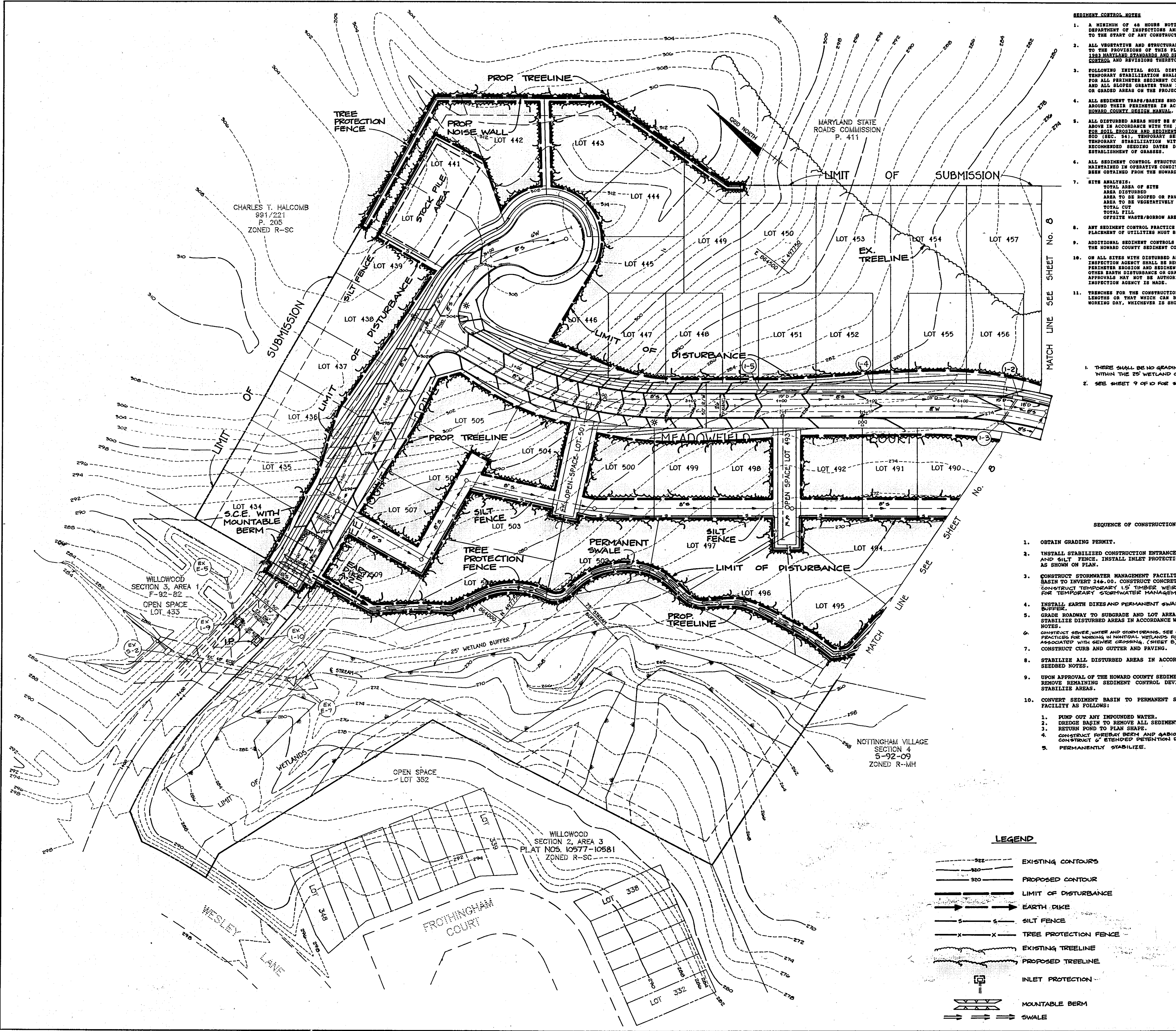
TITLE: STORMWATER MANAGEMENT DETAILS

5-89-24 WP-91-76 P-91-08 F-92-02

DATE: SEPTEMBER 30, 1992 PROJECT NO. 0509
SEPTEMBER 10, 1993

DES: JME **DRN:** DGT **SCALE:** AS SHOWN **DRAWING** 6 OF 10

1248



SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
- 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER GROPPES AND ALL SLOPES GREATER THAN 3:1; B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS OF THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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) 500 LBS. 2-1/2" TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**
 TOTAL AREA OF SITE: 21.05 ACRES
 AREA DISTURBED: 6.00 ACRES
 AREA TO BE ROOFED OR PAVED: 1.00 ACRES
 AREA TO BE VEGETATIVELY STABILIZED: 6.00 ACRES
 TOTAL CUT: 7000 CU YDS
 TOTAL FILL: 17000 CU YDS
 OFFSITE WASTE/BORROW AREA LOCATION: N/A
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

1. THESE SHALL BE NO GRADING OF DISTURBANCE WITHIN THE 25' WETLAND OR 75' STREAM BUFFERS.
 2. SEE SHEET 9 OF 10 FOR SEDIMENT CONTROL DETAILS.

PERMANENT SEEDING PREPARATION

SEEDING 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:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 1b/1000 sq ft) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 1b/1000 sq ft) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 1b/1000 sq ft)
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 1b/1000 sq ft) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 1b/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 40 LBS PER ACRE (14 1b/1000 sq ft) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 1b/1000 sq ft) OF KEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOIL, OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELLS ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 1b/1000 sq ft) OF UNROOTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 216 GALLONS PER ACRE (5 9a/1000 sq ft) OF DENSIFIED ASHALL ON FLAT AREAS, ON SLOPES 6 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 9a/1000 sq ft) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REINSTATED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 1b/1000 sq ft).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 1b/1000 sq ft). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF KEEPING LOVEGRASS (.07 1b/1000 sq ft). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 1b/1000 sq ft) OF UNROOTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 216 GALLONS PER ACRE (5 9a/1000 sq ft) OF DENSIFIED ASHALL ON FLAT AREAS, ON SLOPES 6 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 9a/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.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTION FENCE AND SILT FENCE. INSTALL INLET PROTECTION TO EXISTING INLETS AS SHOWN ON PLAN.
- CONSTRUCT STORMWATER MANAGEMENT FACILITY/TEMPORARY SEDIMENT BASIN TO INVEST 244.00. CONSTRUCT CONCRETE RISES AND OUTFALL. CONSTRUCT TEMPORARY 1.5' TIMBER WEIR IN RISE CONTROL FOR TEMPORARY STORMWATER MANAGEMENT.
- INSTALL EARTH DIKES AND PERMANENT SWALE ALONG STREAM BUFFER.
- GRADE ROADWAY TO SUBGRADE AND LOT AREA TO PROPOSED GRADES. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.
- CONSTRUCT SWALE, WATER AND STORM DRAINAGE. SEE CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS FOR TEMPORARY IMPACTS ASSOCIATED WITH SERVICE CROSSING, (SHEET 8)
- CONSTRUCT CURB AND GUTTER AND PAVING.
- STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
- UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE AREAS.
- CONVERT SEDIMENT BASIN TO PERMANENT STORMWATER MANAGEMENT FACILITY AS FOLLOWS:
 - PUMP OUT ANY IMPOUNDED WATER.
 - DREDGE BASIN TO REMOVE ALL SEDIMENT.
 - RETURN POND TO PLAN SHAPE.
 - CONSTRUCT FOREBAY BERM AND GABION DOWNSLOPING FILTER. CONSTRUCT 6' EXTENDED DETENTION DRAIN.
 - PERMANENTLY STABILIZE.

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
 James R. Moley, Jr. 10-6-92 DATE
 DEVELOPER: JAMES R. MOLEY, JR. SECURITY DEVELOPMENT CORPORATION - PRESIDENT

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. 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.
 John M. Elorriaga, P.E. 10-6-92 DATE
 ENGINEER: JOHN M. ELORRIAGA, P.E. 16891

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.
 J. H. Warfield/JHM 9/17/93 DATE
 U.S. SOIL CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Robert W. Ziehm/JRW 9/17/93 DATE
 HOWARD S.C.D.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 11/16/94 DATE
 CHIEF, LAND DEVELOPMENT DIVISION

[Signature] 1-6-94 DATE
 CHIEF, BUREAU OF HIGHWAYS

[Signature] 1/12/94 DATE
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 1/21/94 DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

NOV. 29, 1993	ADDRESS: DPW COMMENTS DATED OCT. 13, 1993
JUNE 16, 1994	REVISE PER RMH RESUBDIVISION, REVISE GABION SWALE TO STABILIZATION MATTING.
NO DATE	REVISION

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOUR
- LIMIT OF DISTURBANCE
- EARTH DIKE
- SILT FENCE
- TREE PROTECTION FENCE
- EXISTING TREELINE
- PROPOSED TREELINE
- INLET PROTECTION
- MOUNTABLE BERM
- SWALE

TSA GROUP, INC.
 planning • architecture • engineering
 6440 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

STATE OF MARYLAND
 REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043 (410) 465-4244	PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509
TITLE: SEDIMENT CONTROL PLAN	LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER 30, 1992 SEPTEMBER 10, 1993	PROJECT NO. 0509
DES: JHE	DRAWING 7 OF 10
DRN: DRK/DBT	SCALE: 1" = 50'

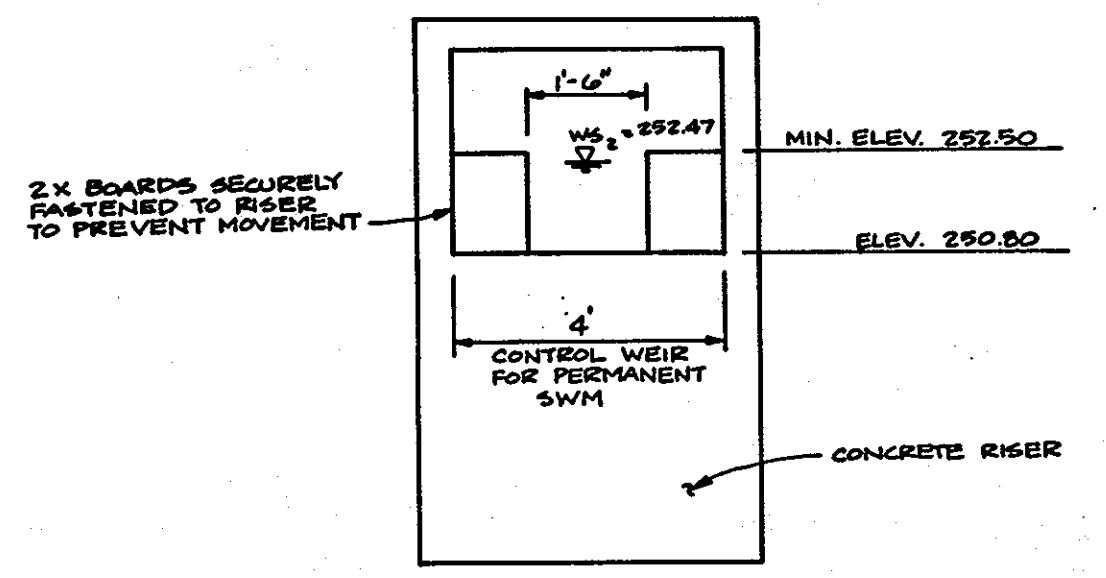
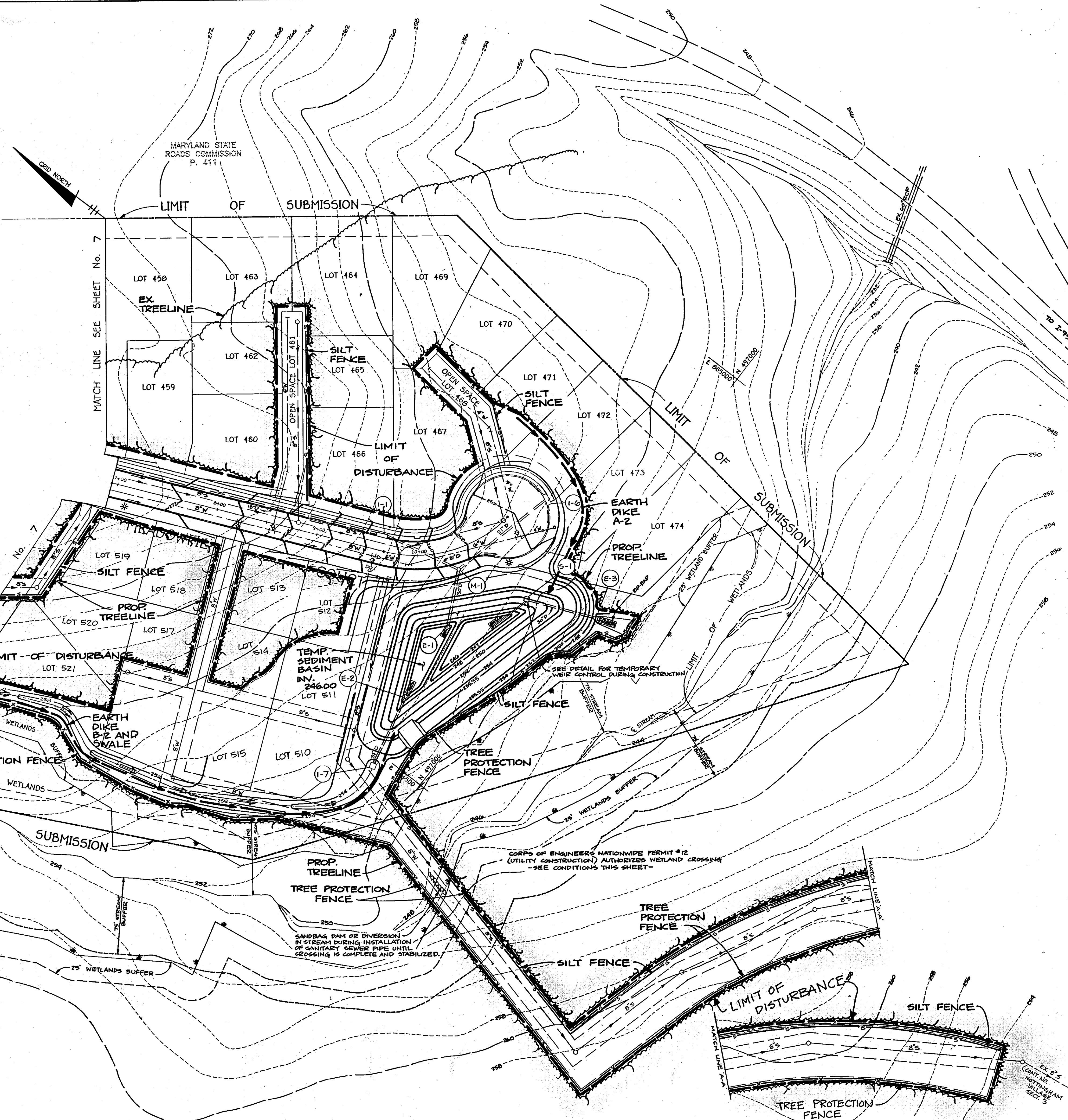
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LEGEND

- 2'-2" --- EXISTING CONTOURS
- 2'-0" --- PROPOSED CONTOUR
- --- LIMIT OF DISTURBANCE
- --- EARTH DIKE
- --- SILT FENCE
- --- TREE PROTECTION FENCE
- --- EXISTING TREELINE
- --- PROPOSED TREELINE
- --- INLET PROTECTION
- --- MOUNTABLE BERM
- --- SWALE

CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS

- a) Stockpile and maintain separately the top 6"-12" of topsoil material, to be replaced as the top layer of the backfilled material;
- b) Remove excess fill or construction material or debris to an upland disposal area;
- c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;
- d) Use previously excavated material as backfill, unless it contains waste metal products, unsightly debris, toxic material or any other deleterious substance. Use clean borrow material when excavated material is not suitable for use as backfill;
- e) All stabilization in the wetland and buffer shall be of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*) and/or Rye (*Secalis caerulea*). These species allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Division. Kentucky 31 fence shall not be utilized in the wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed. Upon completion of the project nontidal wetlands and the 25-foot nontidal wetland buffer will not be mowed or otherwise managed to prevent the establishment of woody vegetation.
- f) After installation has been completed, make post construction grades and elevations of nontidal wetlands the same as the original grades and elevations;
- g) To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows (tributary to Deep Run is a classified as Use 1 waters):
 - 1) Class I Waters. In-stream work may not be conducted during the period March 1 through June 15, inclusive, during any year.



TEMPORARY 1.5' TIMBER WEIR FOR STORMWATER MANAGEMENT DURING CONSTRUCTION
NOT TO SCALE

1. THERE SHALL BE NO GRADING OR DISTURBANCE WITHIN THE 25' WETLAND OR 75' STREAM BUFFERS.
2. SEE SHEET 9 OF 10 FOR SEDIMENT CONTROL DETAILS.
3. SEE SHEET 3 AND 6 FOR POND CONSTRUCTION DETAILS.

BY THE DEVELOPER:
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

James R. Moxley
 DEVELOPER: JAMES R. MOXLEY, JR., SECURITY DEVELOPMENT CORPORATION - PRESIDENT
 10-6-92 DATE

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

John M. Elorriaga
 ENGINEER: JOHN M. ELORRIAGA, P.E. # 16891
 10-6-92 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.
J. A. Warfield / JPK
 SOIL CONSERVATION SERVICE
 9/17/93 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zilber / JPK
 HOWARD S.C.D.
 9/17/93 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John J. Williams
 CHIEF, LAND DEVELOPMENT DIVISION
 1/11/94 DATE
Robert M. Sauer
 CHIEF, BUREAU OF HIGHWAYS
 1-6-94 DATE
Donald J. Sauer
 CHIEF, BUREAU OF ENGINEERING
 1/16/94 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Gina Murrain
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 1/21/94 DATE

NOV. 29, 1993	ADDRESS DPW COMMENTS DATED OCT. 13, 1993
JUNE 16, 1994	REVISE PER RWH RESUBDIVISION, REVISE GABION SWALE TO STABILIZATION MATTING
NO	DATE
	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21043 (410) 465-4244	PROJECT: WILLOWOOD SECTION 3, AREA 2 LOTS 434-509
LOCATION: TAX MAP 57 - PARCELS 130, 131 & 132 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: SEDIMENT CONTROL PLAN
DATE: SEPTEMBER 30, 1992 SEPTEMBER 10, 1993	PROJECT NO. 0509
DES: JME	DRN: DRK/DBT
SCALE: 1" = 50'	DRAWING 8 OF 10

1248

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 it 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 Pipes - All of the following criteria shall apply for corrugated metal pipes:

- Materials** - (Steel Pipe) - This pipe and its appurtenances shall be galvanized with fully 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. 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: Plast-O-Bond, Bona-Bond, and Bona-Bond. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated 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.

- Coupling bands, anti-seep collars, and sections, etc.** must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
- 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 48" 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 huggar type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" 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.

- 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.
- Backfilling** shall conform to "Structure Backfill."
- 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:

- Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-381. An approved equivalent is AWWA Specification C-302.
- 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.
- 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.
- Backfilling** shall conform to "Structure Backfill."
- 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:

- Materials** - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
- Joints and connections** to anti-seep collars shall be completely watertight.
- 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.
- Backfilling** shall conform to "Structure Backfill."
- 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

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subangular in shape. The least dimension of an individual rock fragment shall be not less than three times the greatest dimension of the fragment.

The rock shall have the following properties:

- Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
- Absorption not more than three percent.
- Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 85.

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 slightly condition. All exposed surfaces of the embankment, spillway, spill 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.

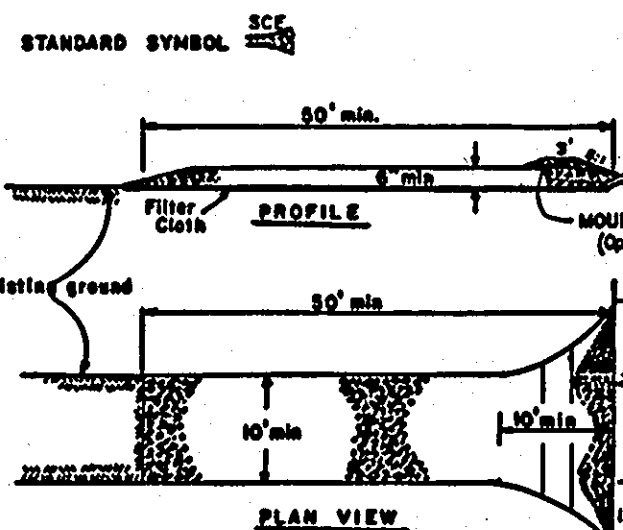
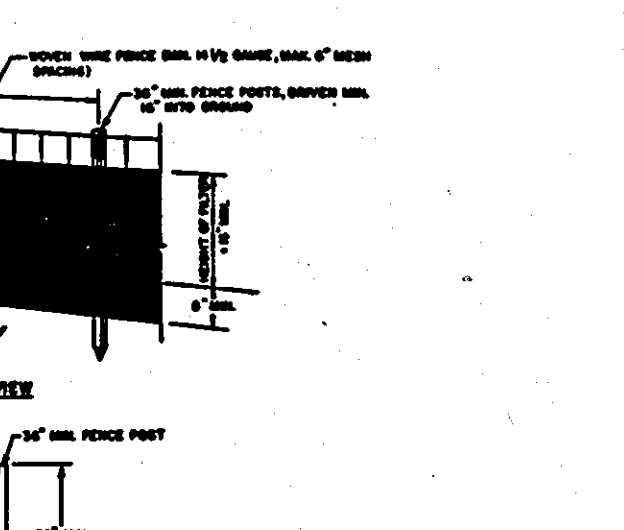
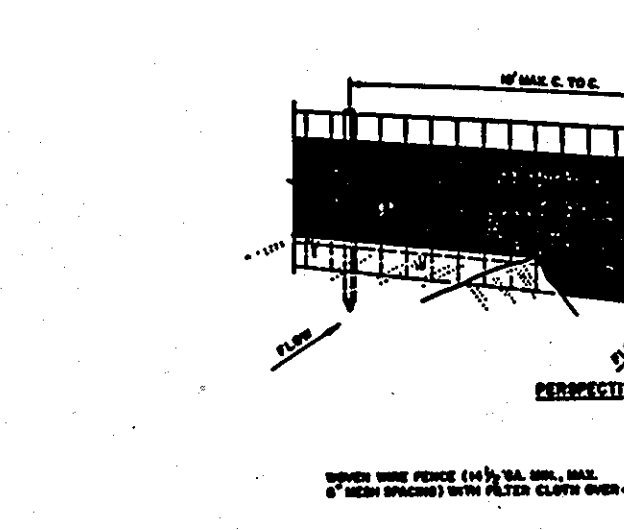
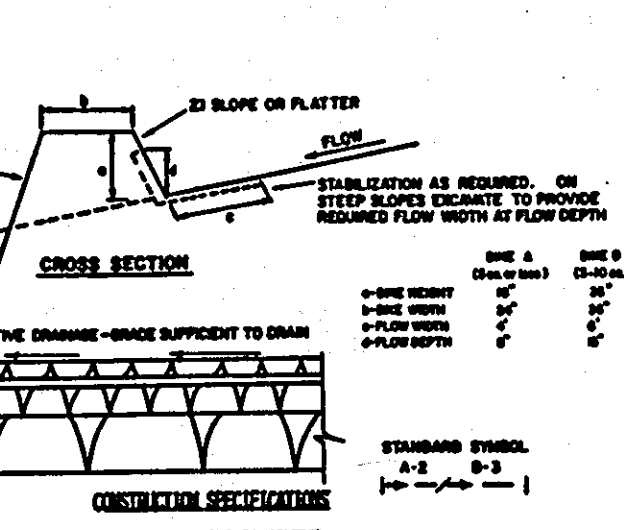
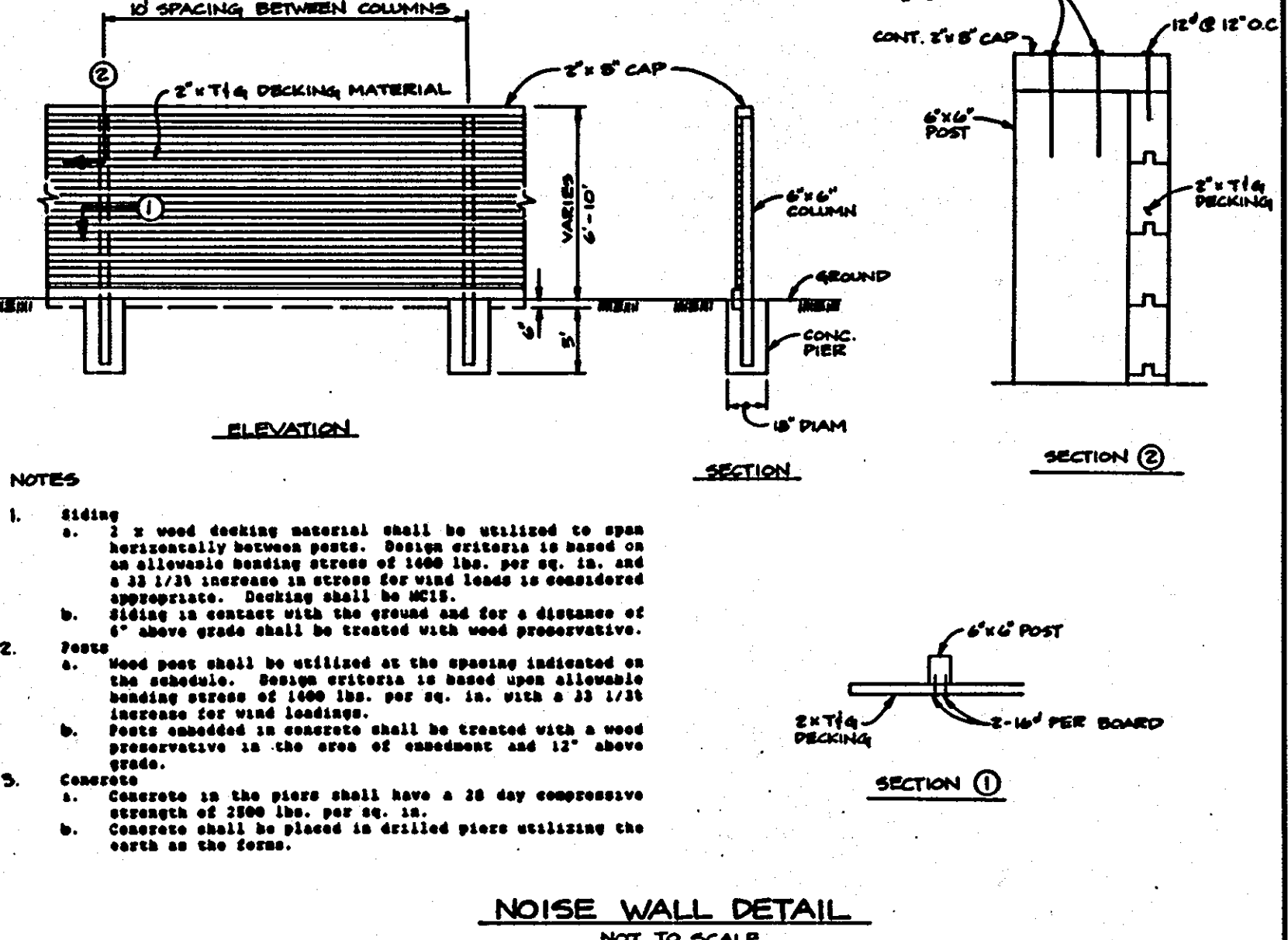
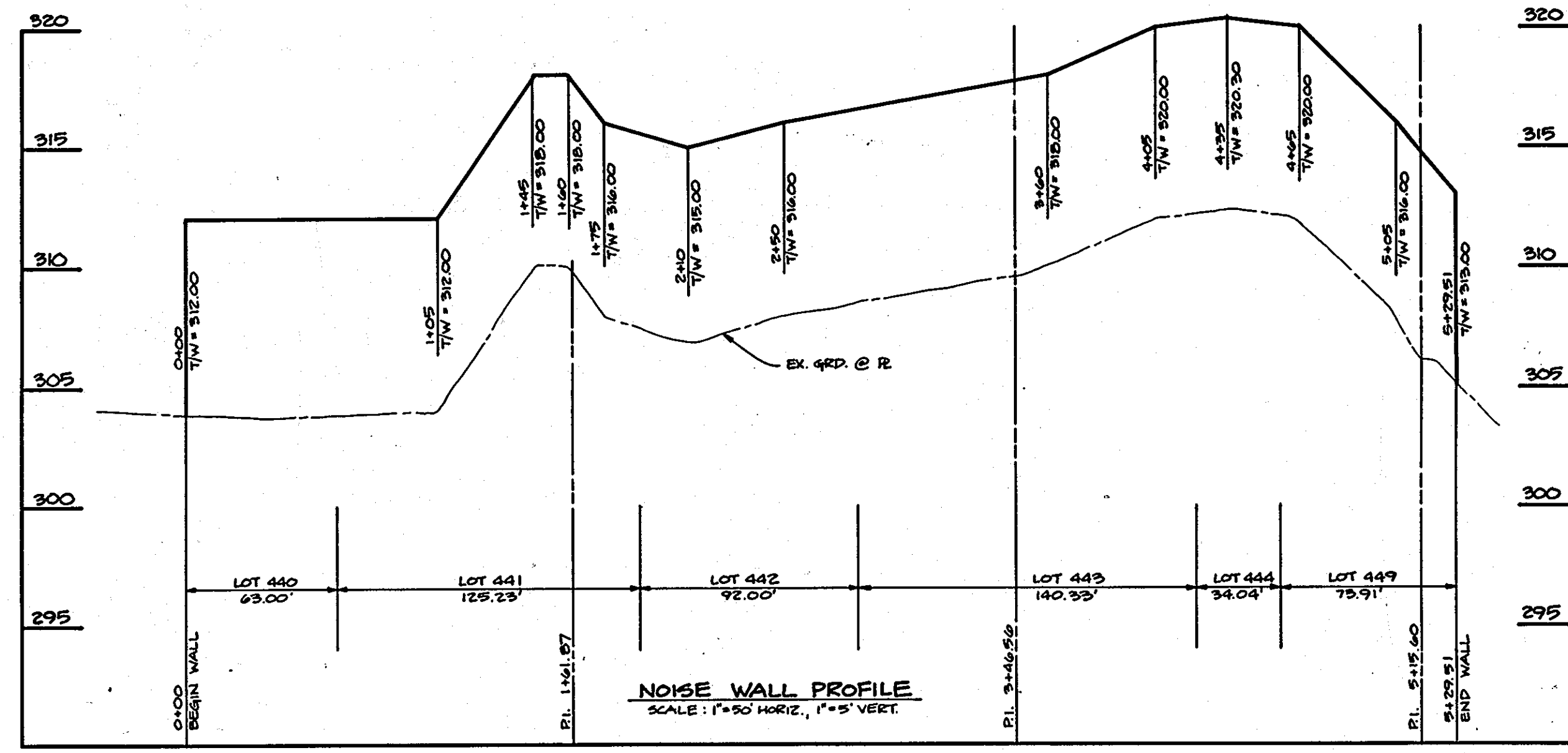
Erosion and Sediment Control

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.

3. Curb Inlet Protection.

- Attach a continuous piece of wire mesh (30" dia. with by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
- Place a piece of approved filter cloth (40-55 sieve) of the same dimensions as the wire mesh over the wire mesh and secure the wire mesh to the concrete gutter and securely attach to the 2" x 4" weir.
- Securely nail the 2" x 4" weir to 8" long vertical spacers to be located between the weir and inlet face (max. 6" apart).
- Place the assembly against the inlet throat and nail (minimum 2" length of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend above the inlet top and be held in place by sandbags or alternate weights.
- The assembly shall be placed so that the end spacers are a minimum 1" beyond both ends of the throat opening.
- Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

INLET PROTECTION DETAIL

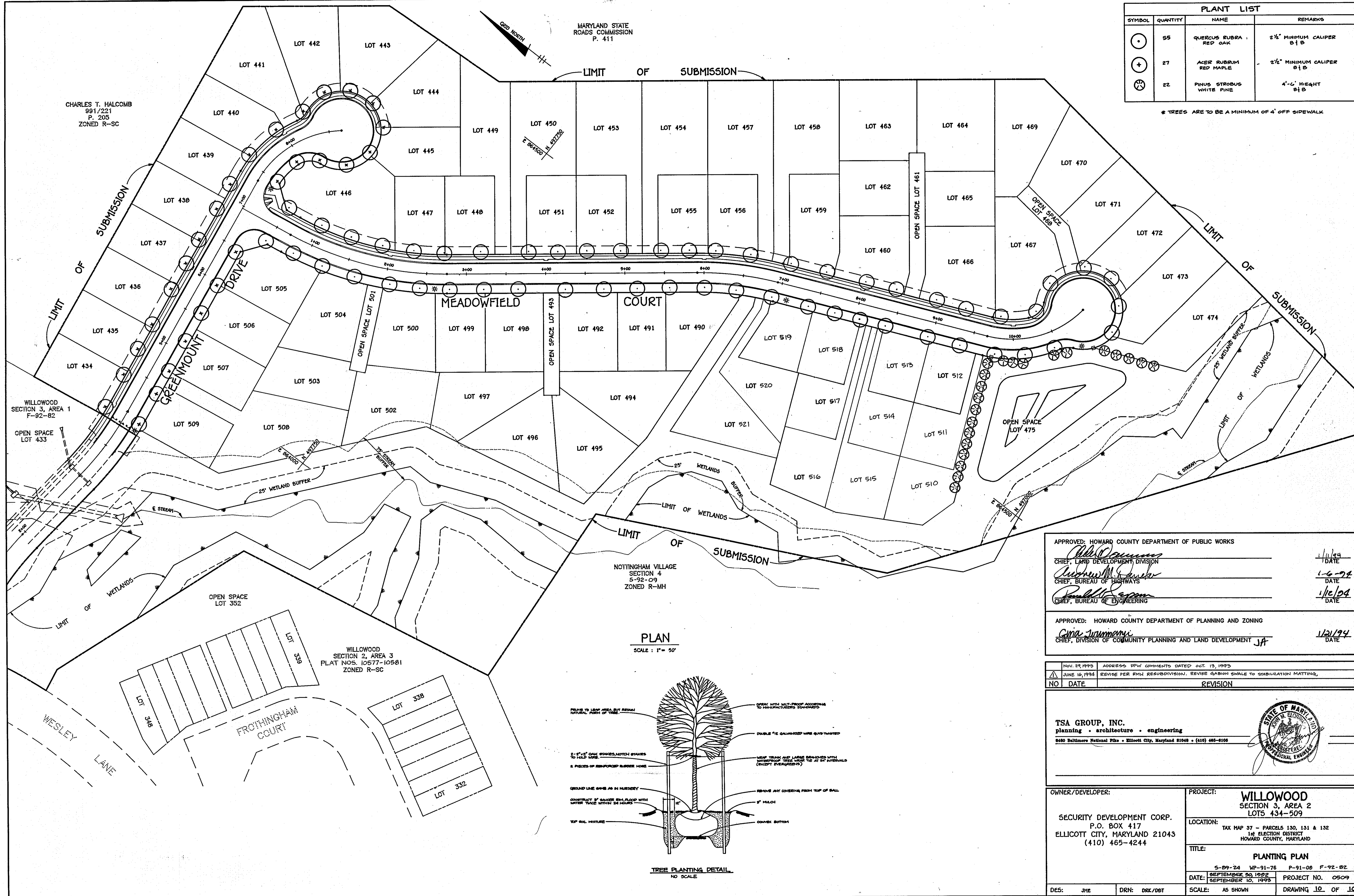


CONSTRUCTION SPECIFICATIONS

- ALL SITES SHALL BE CONNECTED BY EARTH-MOVING EQUIPMENT.
- TOP WIDTH AND SLOPE SHALL BE AS SHOWN ON THE PLANS.
- FIELD LOCATION SHALL BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE QUILITY.
- ALL SITES SHALL HAVE A SLOPE THAT FUNCTIONS WITH A SYSTEM OF PROTECTION.
- ALL SITES SHALL BE PROTECTED BY A SLOPE PROTECTION DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BAY.
- STABILIZATION SHALL BE (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (B) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (C) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (D) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (E) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (F) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (G) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (H) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (I) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (J) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (K) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (L) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW PLANTING OR (M) IN ACCORDANCE WITH STANDARD 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PLANT LIST			
SYMBOL	QUANTITY	NAME	REMARKS
○	55	QUERCUS RUBRA RED OAK	2 1/2" MINIMUM CALIPER Ø 1 Ø
+	27	ACER RUBRUM RED MAPLE	2 1/2" MINIMUM CALIPER Ø 1 Ø
⊗	22	PINUS STROBUS WHITE PINE	4'-0" HEIGHT Ø 1 Ø

* TREES ARE TO BE A MINIMUM OF 4' OFF SIDEWALK



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 _____ DATE 1/16/94
 CHIEF, LAND DEVELOPMENT DIVISION
 _____ DATE 1-6-94
 CHIEF, BUREAU OF HIGHWAYS
 _____ DATE 1/16/94
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 _____ DATE 1/21/94
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JA

NO	DATE	REVISION
1	NOV. 29, 1993	ADDRESS DPW COMMENTS DATED OCT. 13, 1993
2	JUNE 16, 1994	REVISE PER RMH RESUBDIVISION. REVISE GABION SWALE TO STABILIZATION MATTING.

TSA GROUP, INC.
 planning • architecture • engineering
 6480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8108

OWNER/DEVELOPER: SECURITY DEVELOPMENT CORP.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-4244

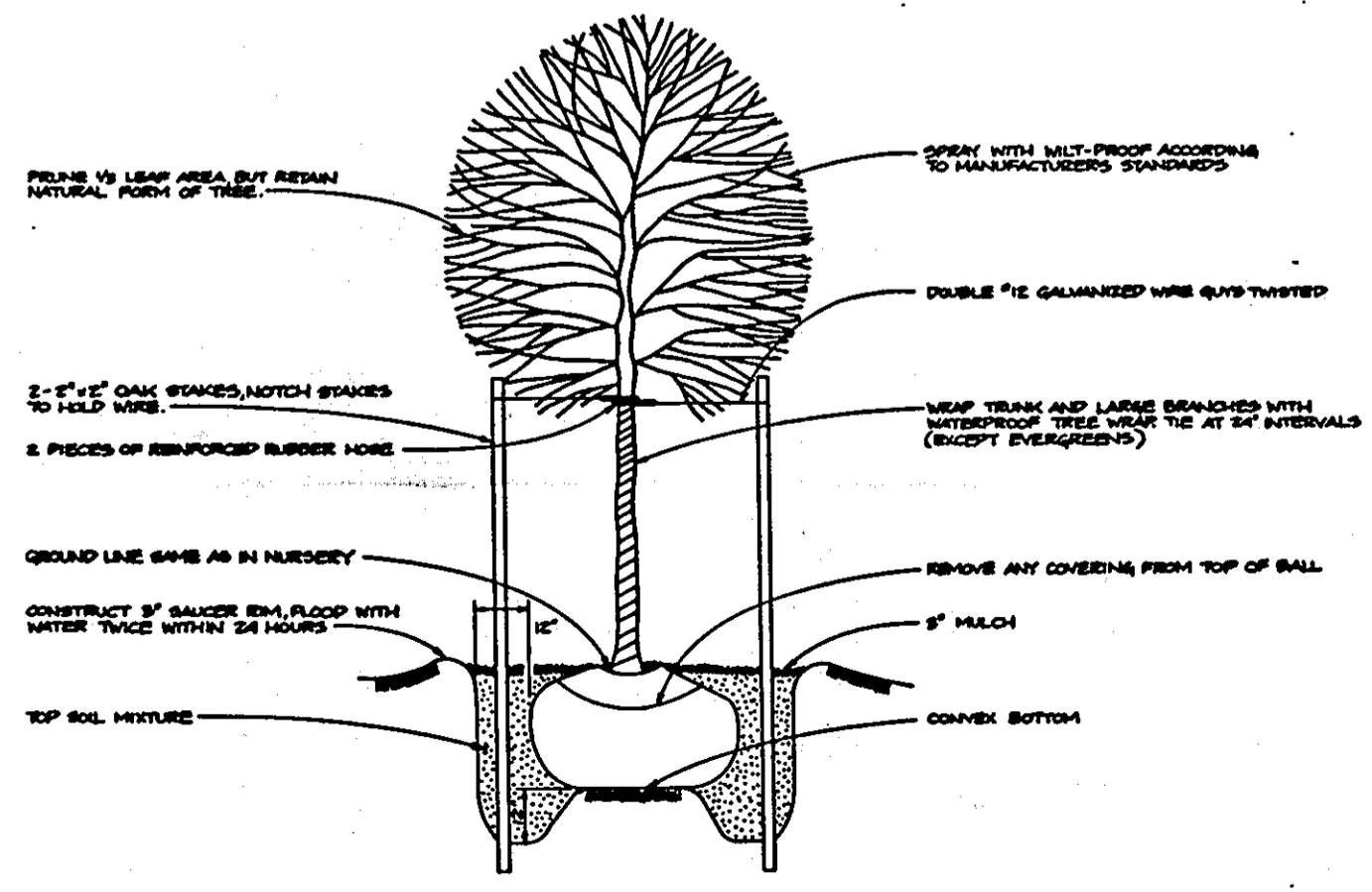
PROJECT: **WILLOWOOD SECTION 3, AREA 2 LOTS 434-509**

LOCATION: TAX MAP 37 - PARCELS 130, 131 & 132
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: **PLANTING PLAN**

5-29-24 WP-91-76 P-91-08 F-92-82
 DATE: SEPTEMBER 30, 1992 PROJECT NO. 0509
 SEPTEMBER 10, 1993
 DES: JME DRN: DRK/DBT SCALE: AS SHOWN DRAWING 10 OF 10

PLAN
 SCALE: 1" = 50'



TREE PLANTING DETAIL
 NO SCALE

1248