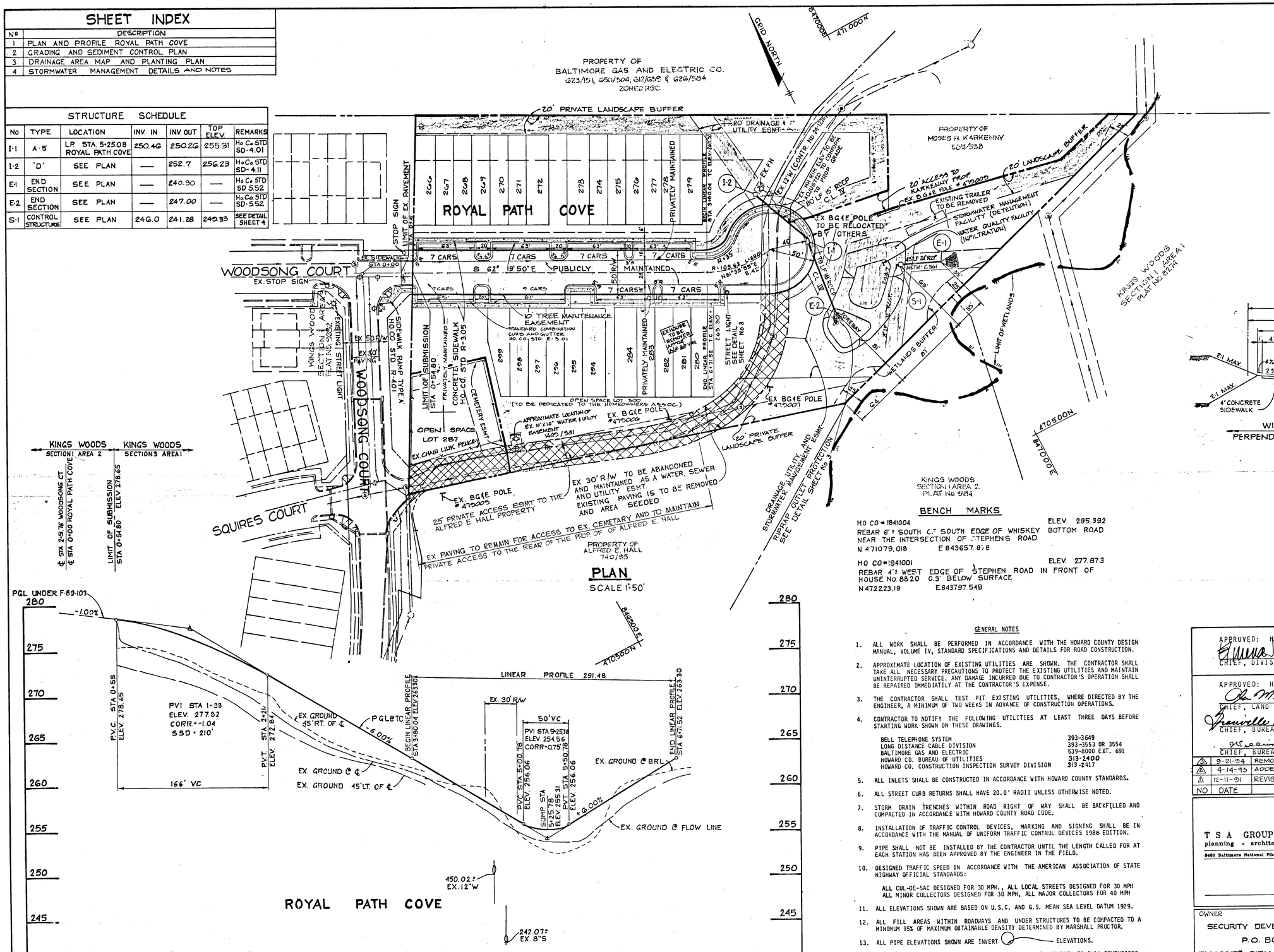


SHEET INDEX

Nº	DESCRIPTION
1	PLAN AND PROFILE ROYAL PATH COVE
2	GRADING AND SEDIMENT CONTROL PLAN
3	DRAINAGE AREA MAP AND PLANTING PLAN
4	STORMWATER MANAGEMENT DETAILS AND NOTES

STRUCTURE SCHEDULE

No	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	A-5	LP. STA. 5+25.08 ROYAL PATH COVE	250.46	250.26	255.31	Ho Co STD SD-4.01
I-2	'D'	SEE PLAN	—	252.7	256.23	Ho Co STD SD-4.11
E-1	END SECTION	SEE PLAN	—	240.30	—	Ho Co STD SD 5.52
E-2	END SECTION	SEE PLAN	—	247.00	—	Ho Co STD SD-5.52
S-1	CONTROL STRUCTURE	SEE PLAN	246.0	241.28	249.33	SEE DETAIL SHEET 4

PLAN
SCALE 1"=50'

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

VICINITY MAP
SCALE 1"=2000'

TYPICAL SECTION
NO SCALE

BENCH MARKS

HO CO #1841004 ELEV. 295.392
REBAR 6'± SOUTH OF SOUTH EDGE OF WHISKEY BOTTOM ROAD
NEAR THE INTERSECTION OF STEPHENS ROAD
N 471079.018 E 843657.878

HO CO #1941001 ELEV. 277.873
REBAR 4'± WEST EDGE OF STEPHEN ROAD IN FRONT OF
HOUSE No. 8820 0.3' BELOW SURFACE
N 472223.19 E 843797.549

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR ROAD CONSTRUCTION.
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES, WHERE DIRECTED BY THE ENGINEER, A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS.
4. CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES AT LEAST THREE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

BELL TELEPHONE SYSTEM	393-3649
LONG DISTANCE CABLE DIVISION	393-3553 OR 3554
BALTIMORE GAS AND ELECTRIC	539-8000 EXT. 691
HOWARD CO. BUREAU OF UTILITIES	313-2400
HOWARD CO. CONSTRUCTION INSPECTION SURVEY DIVISION	313-2417

5. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
6. ALL STREET CURB RETURNS SHALL HAVE 20.0' RADII UNLESS OTHERWISE NOTED.
7. STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
8. INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1988 EDITION.
9. PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
10. DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:

    ALL CUL-DE-SAC DESIGNED FOR 30 MPH., ALL LOCAL STREETS DESIGNED FOR 30 MPH
    ALL MINOR COLLECTORS DESIGNED FOR 30 MPH, ALL MAJOR COLLECTORS FOR 40 MPH
11. ALL ELEVATIONS SHOWN ARE BASED ON U.S.C. AND G.S. MEAN SEA LEVEL DATUM 1929.
12. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM 95% OF MAXIMUM OBTAINABLE DENSITY DETERMINED BY MARSHALL PROCTOR.
13. ALL PIPE ELEVATIONS SHOWN ARE INVERT ⊘——— ELEVATIONS.
14. PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
15. SUBJECT PROPERTY ZONED R-SC PER 8/2/85 COMPREHENSIVE ZONING PLAN.
16. COUNTY COUNCIL RESOLUTION No 212 WAS APPROVED ON NOV. 4, 1991 PERMITTING THE CLOSURE OF HARMONY LANE.
17. SIDEWALKS AND SIDEWALK RAMPS SHALL BE IN ACCORDANCE WITH THE CURRENT ADA REQUIREMENTS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Elmina J. Hilsenrath 11/1/91
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT Com DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Alan M. Tenenzuma 10/21/91
CHIEF, LAND DEVELOPMENT DIVISION DATE
Granville W. Wehland 10/10/91
CHIEF, BUREAU OF HIGHWAYS DATE
William E. Riley 10-21-91
CHIEF, BUREAU OF ENGINEERING DATE

NO	DATE	REVISION
3	9-21-94	REMOVED SIDEWALK IN CUL-DE-SAC
2	4-14-93	ADDED LOTS 294-299 AND PARKING AREAS.
1	12-11-91	REVISED LIMIT OF EX. PAVING TO REMAIN ON EX. HARMONY LANE

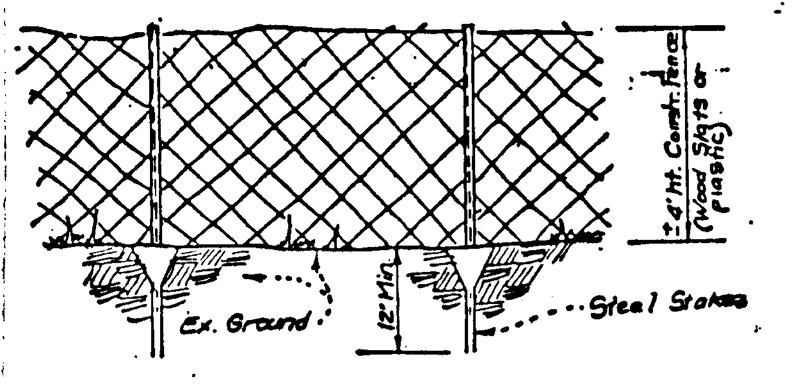
T S A GROUP INC.
planning • architecture • engineering
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (301)465-6105

STATE OF MARYLAND
JOHN M. ZAMAGA
NO. 1689
REGISTERED PROFESSIONAL ENGINEER
John Zamaga

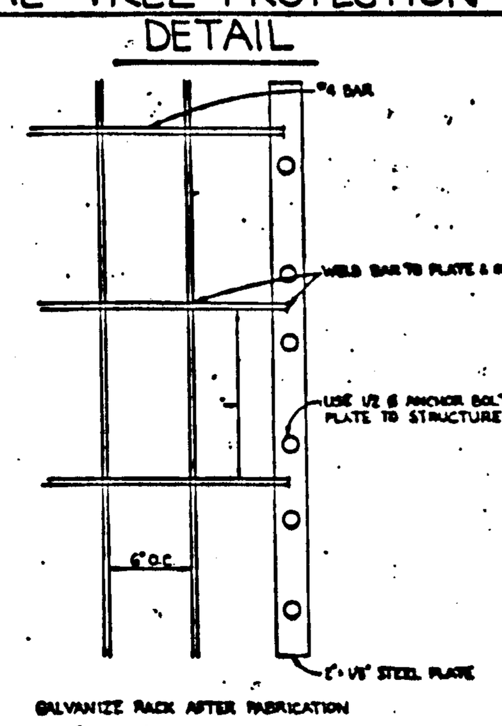
OWNER SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	PROJECT: KINGS WOODS SECTION 3, AREA 1
	LOCATION: TAX MAP NO. 47 PARCEL NO. 553 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	TITLE: PLAN AND PROFILE ROYAL PATH COVE P-01-09 S-00-17 PB-260 -261 F-91-173
	DATE. JUNE 10, 1991 SEPT. 23, 1991 — PROJECT NO. 373
DES: D.A.M. — DRN: I.P.	SCALE: AS SHOWN — DRAWING 1 OF 4

F91-173

987

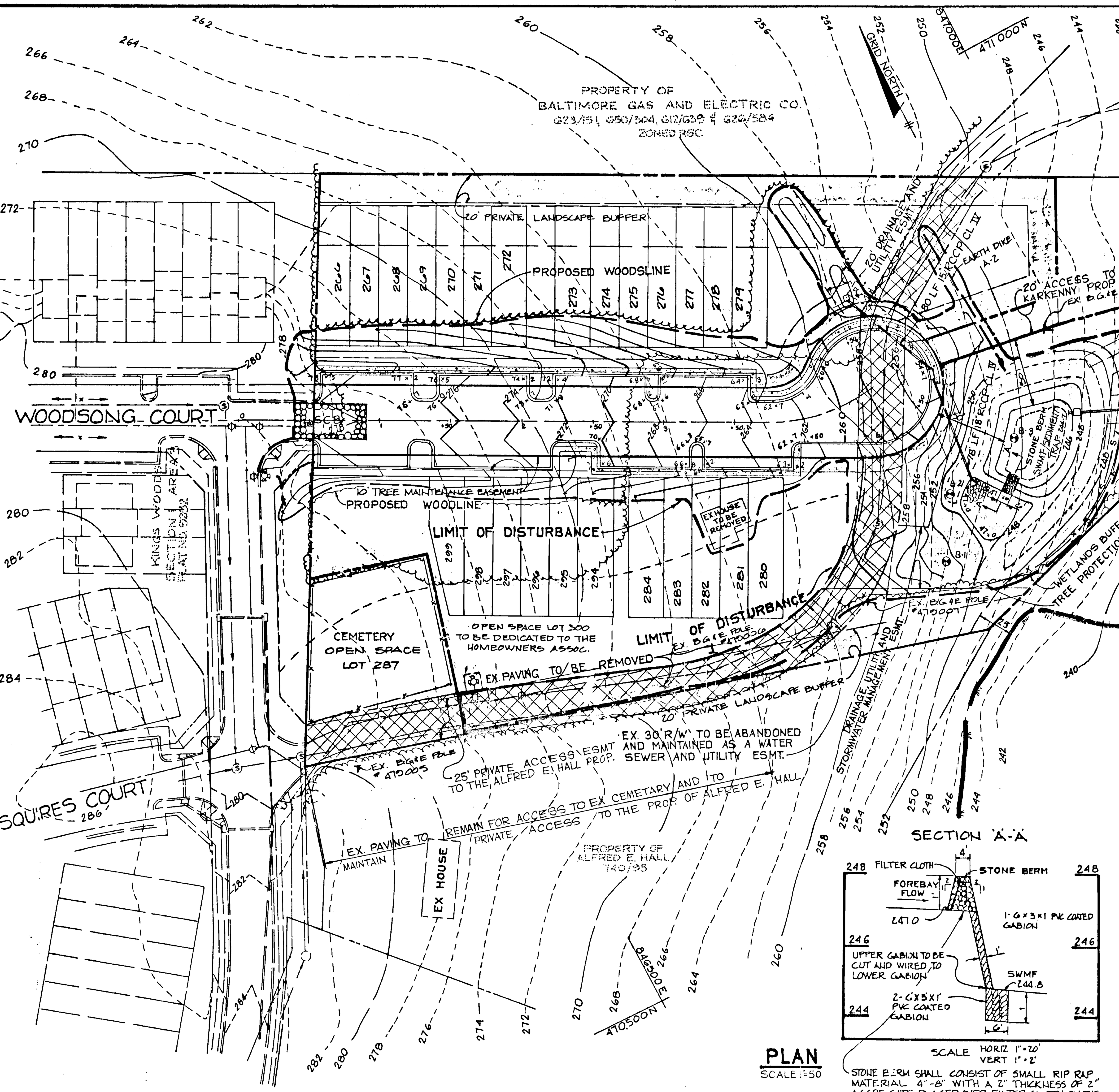


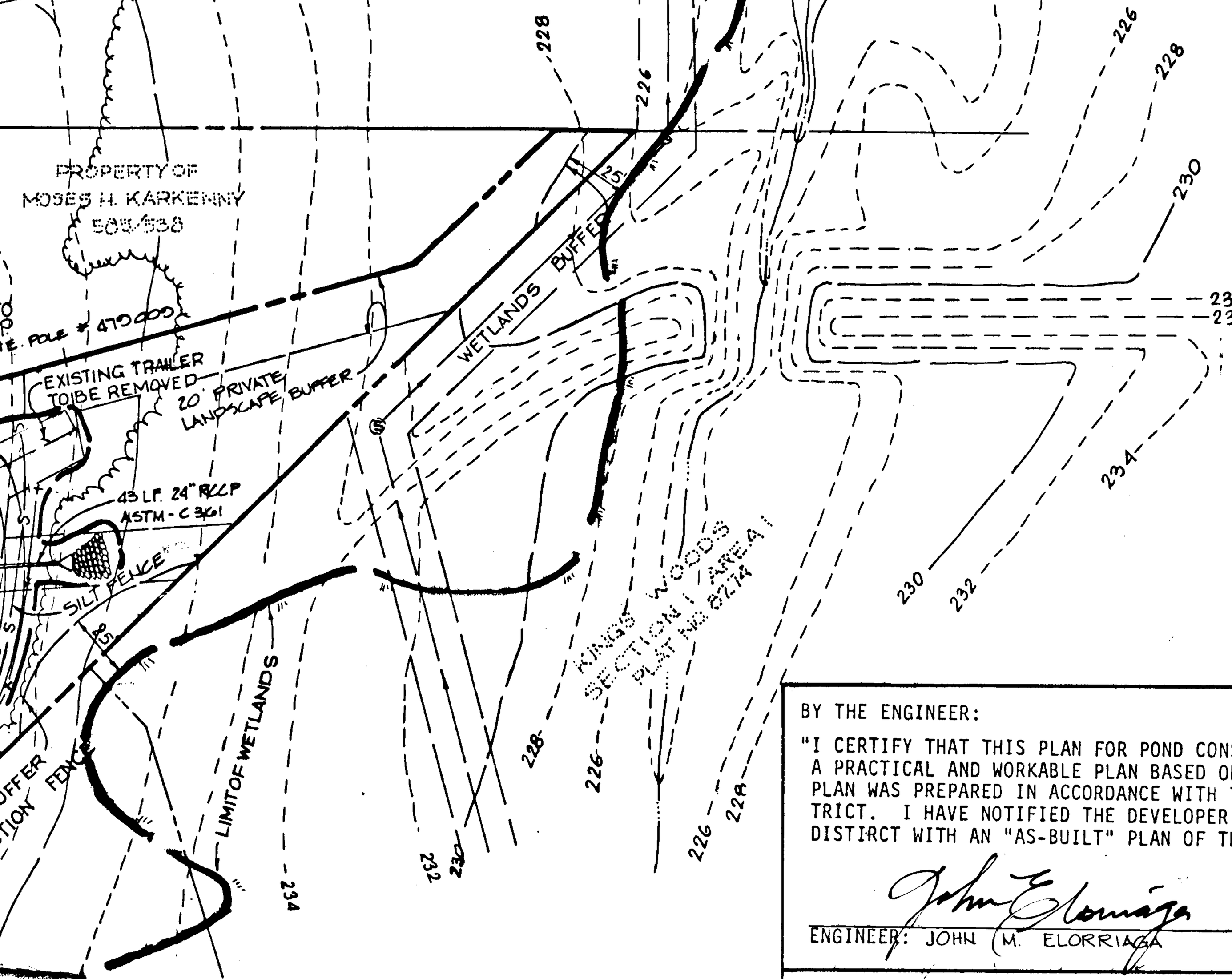
TYPICAL TREE PROTECTION FENCE DETAIL



TRASH RACK DETAIL

NO SCALE





SEDIMENT TRAP DATA

DRAINAGE AREA	4.4 Ac.
STORAGE REQUIRED	7920 CU. FT
STORAGE PROVIDED	11247 CU. FT.
CREST ELEV.	247.4
TOP ELEV.	250.8
BOTTOM ELEV.	246.0
CLEANOUT ELEV.	246.7

LEGEND

- S——S SILT FENCE
- TEMPORARY SWALE
- LIMIT OF DISTURBANCE
- x——x——x TREE PROTECTION FENCE

SEQUENCE OF CONSTRUCTION

DAY 1	OBTAIN A GRADING PERMIT.
DAY 2	INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND EARTH DIKE
DAY 3 - 7	INSTALL STORMWATER MANAGEMENT FACILITY. LEAVING BOTTOM AT ELEV. 246.0 WHILE BEING USED AS A SEDIMENT TRAP, AND INSTALL STONE FILTER ON LOW FLOW PIPE.
DAY 7 - 12	INSTALL STORM DRAINS
DAY 12 - 17	GRADING SITE TO SUBGRADE
DAY 18 - 25	INSTALL WATER AND SEWER.
DAY 26 - 36	COMPLETE ROAD CONSTRUCTION AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
DAY 37 - 42	UPON THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES. REMOVE SEDIMENT FROM SWMF AND COMPLETE BOTTOM EXCAVATION TO ELEVATION 244.7 AND REMOVE STONE FILTER FROM LOW FLOW PIPE.

BY THE ENGINEER:

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

ENGINEER: JOHN M. ELORRIAGA No16891 — 9-23-91 DATE

BY THE DEVELOPER:

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

DEVELOPER — 9-23-91 DATE

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

HOWARD S.C.D. — 10/2/91 DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

U.S. SOIL CONSERVATION SERVICE — 10/07/91 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 11/1/91 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 10/21/91 DATE

CHIEF, BUREAU OF HIGHWAYS — 10/10/91 DATE

CHIEF, BUREAU OF ENGINEERING — 10-21-91 DATE

NO	DATE	REVISION
3	9-21-94	REMOVED SIDEWALK IN CUL-DE-SAC
2	4-14-93	ADD LOTS 294-299 AND PARKING AREA
1	12-11-91	REVISION LIMIT OF EX PAVING TO REMAIN ON EX. HARMONY LANE

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (992-2437).

2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (Sec.51) SOD (Sec. 54), TEMPORARY SEEDING (Sec. 50) AND MULCHING (Sec. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7) SITE ANALYSIS:

TOTAL AREA OF SITE	4.83	ACRES
AREA DISTURBED	2.22	ACRES
AREA TO BE ROOFED OR PAVED	0.6	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.62	ACRES
TOTAL CUT	1681	CU.YDS.
TOTAL FILL	4622	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	KINGS WOODS SECT. 2 AREA 2 SDP-92-07	

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.

10) ALL SEDIMENT TRAPS 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.

PERMANENT SEEDBED PREPARATION

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

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 lbs/1000 sq ft) AND 600 lbs PER ACRE 10-10-10 FERTILIZER (14 lbs/1000 sq ft) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 lbs/10000 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 DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30 AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 lbs/1000 sq ft) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS OF 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 PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 lbs/1000 sq ft) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 gal/1000 sq ft) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 gal/1000 sq ft) FOR ANCHORING.

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

TEMPORARY SEEDBED PREPARATION

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

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

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

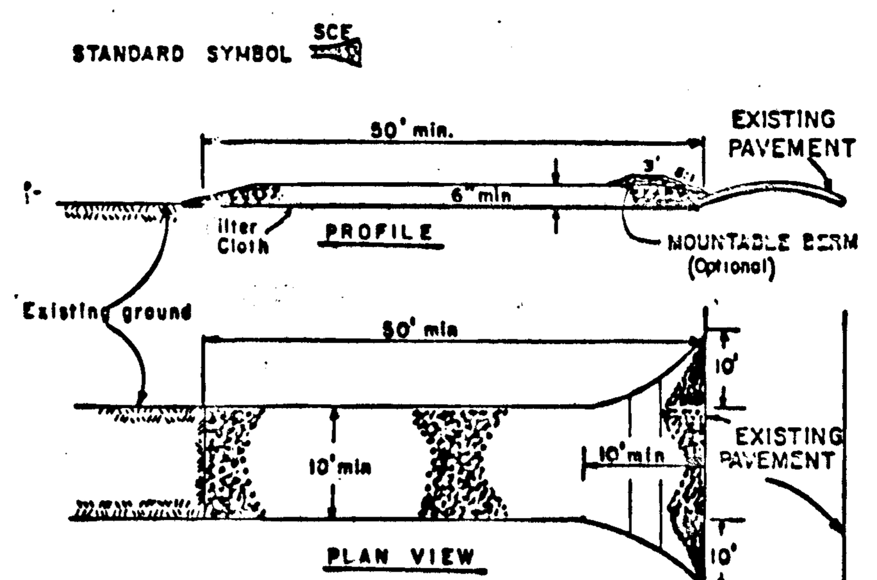
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 lbs/1000 sq ft). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 lbs/1000 sq ft). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT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

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 to 90 lbs/1000 sq ft) OF UNROTTED 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 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 gal/1000 sq ft) FOR ANCHORING.

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

SECTION 'A'-'A'
FILTER CLOTH
STONE BERM
FOREBAY FLOW
1'-6'x3'x1' PVC COATED GABION
UPPER GABION TO BE CUT AND WIRED TO LOWER GABION
SWMF
2-6'x3'x1' PVC COATED GABION
SCALE HORIZ. 1"=20' VERT. 1"=2'

STONE BERM SHALL CONSIST OF SMALL RIP RAP MATERIAL 4"-8" WITH A 2" THICKNESS OF 2" AGGREGATE PLACED OVER FILTER CLOTH ON THE UP GRADE SIDE.

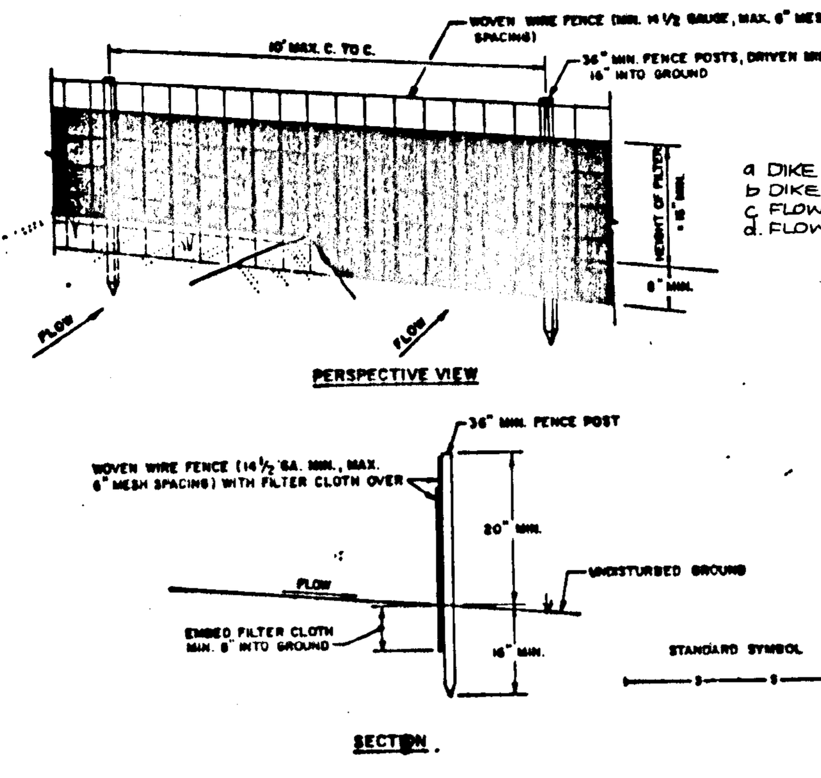


CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE

NO SCALE



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

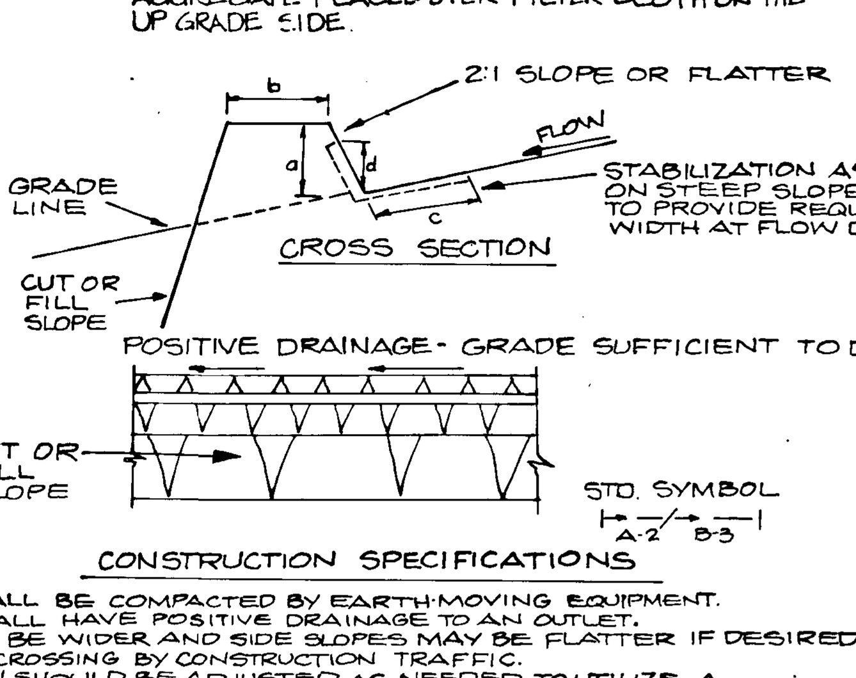
FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE

NO SCALE



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE AREA ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1.	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2.	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR, SOD; 2" STONE LINED RIP-RAP 4-8"
3.	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE LINED RIP-RAP 4-8"	
4.	8.1-20%		ENGINEERING DESIGN.

A. STONE TO BE 2" STONE OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.

B. RIP-RAP TO BE 4-8" INCHES IN A LAYER AT LEAST 8" THICKNESS AND PRESSED INTO THE SOIL.

C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS

7. PERIODIC INSPECTION AND REQ'D. MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

NO SCALE

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planning • architecture • engineering
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (301)465-6105

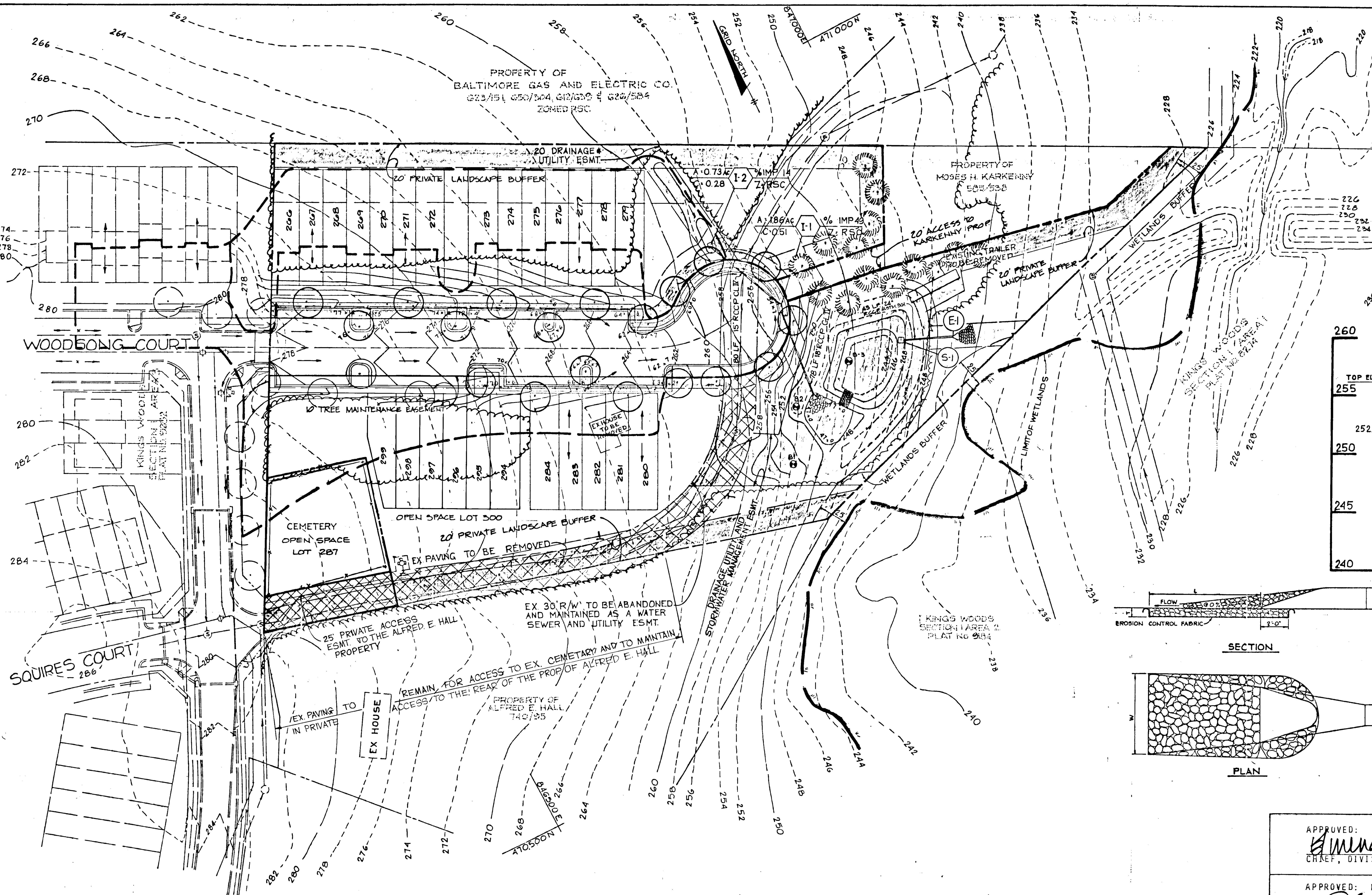
OWNER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	PROJECT: KINGS WOODS SECTION 3, AREA 1
	LOCATION: TAX MAP NO. 47 PARCEL NO. 553 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	TITLE: GRADING AND SEDIMENT CONTROL PLAN
	P-91-00 500-11 F-91-173 PB-260 PB-261
	DATE: JUNE 10, 1991 / SEPT. 23, 1991 — PROJECT NO. 373
DES: D.A.M. — DRN: I.P.	SCALE: AS SHOWN — DRAWING 2 OF 4

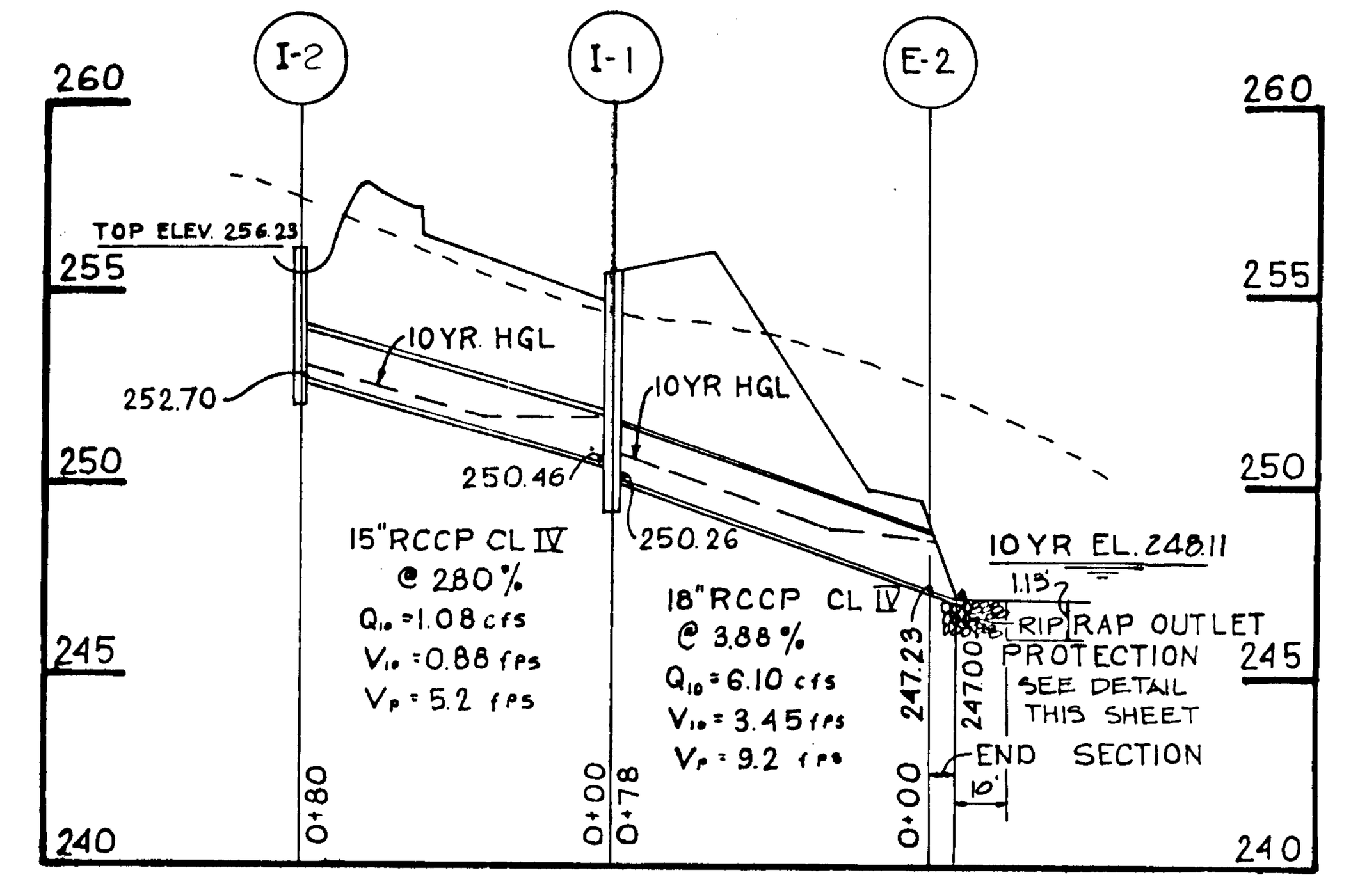
F91-173

987

PLANT LIST

SYMBOL	QUANTITY	NAME	REMARKS
(circle)	22	ACER RUBRUM RED MAPLE	2½ MIN. CAL B & B FULL HEAD
(starburst)	14	PINUS STROBUS WHITE PINE	5'-6' UNSHEARED
(circle)	EXISTING TREES INSTALLED UNDER F-89-103		





PROFILE

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

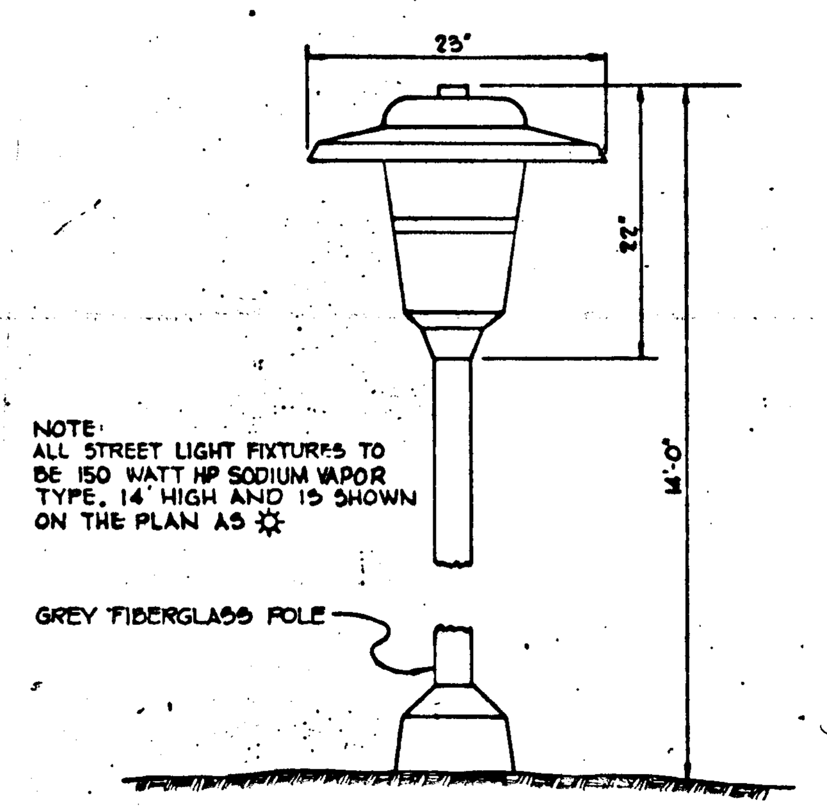
SECTION

PLAN

STRUCTURE	d-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	0.75'	14'	16'	1.7'
E-2	0.5'	10'	10'	1.13'

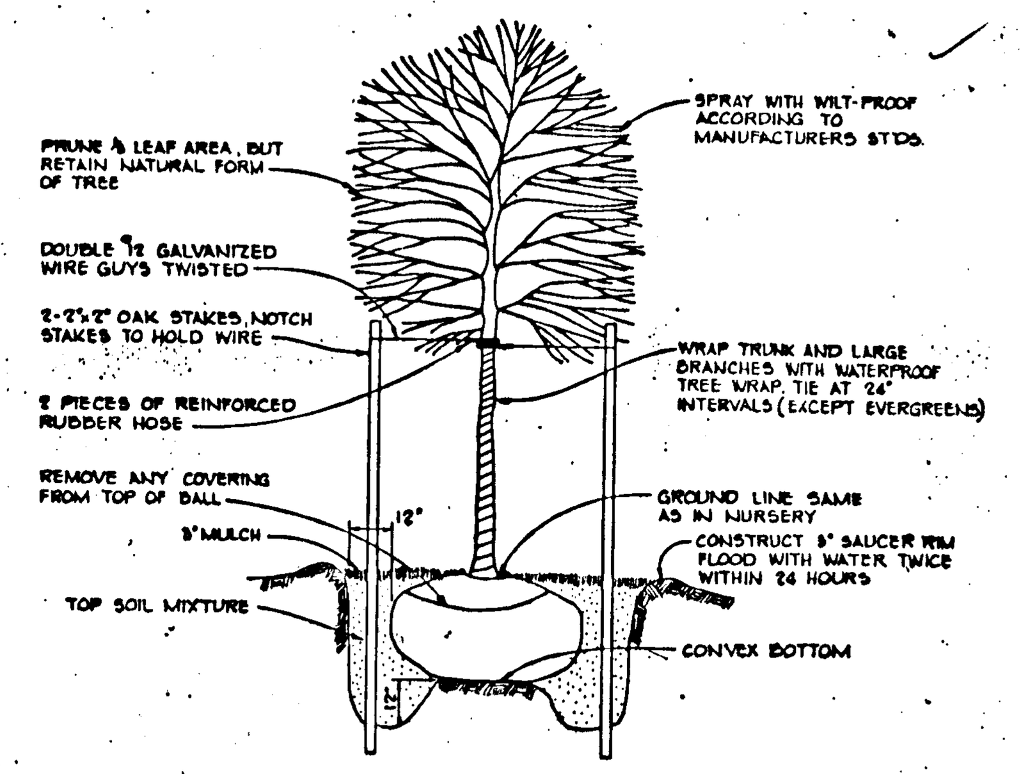
OUTLET PROTECTION DETAIL

NO SCALE



DETAIL - LIGHTING FIXTURE

NO SCALE



TREE PLANTING DETAIL

NO SCALE

BORING LOG #1

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Plasticity, Size, Proportions)	STRA. DEPTH	DEPTH SCALE	Cond.	Blows/6"	No.	Type	Rec. "	BORING & SAMPLING NOTES
	SURFACE	0.0							Topsoil: 1 ft Cave-in Depth: 8.5'
	Tan, moist, loose Silty SAND (SM), trace to some gravel, trace to little clay Sandy Loam				2 4-6	1	DS	18	
			5		7 9-9	2	DS	15	
		8.0			6 8-9	3	DS	18	
	Orange and orange-brown, saturated, medium dense Silty SAND (SM), trace gravel and clay Sandy Loam		10		8 8-11	4	DS	14	
		16.0	15		7 9-7	5	DS	18	
	Reddish-brown, moist, very stiff Silty CLAY (CL), little sand Clay	20	22		7 10-11	6	DS	18	
	Terminated at 20'								

BORING LOG #2

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Plasticity, Size, Proportions)	STRA. DEPTH	DEPTH SCALE	Cond.	Blows/6"	No.	Type	Rec. "	BORING & SAMPLING NOTES
	SURFACE	0.0							Topsoil: 1' Cave-in Depth: 14'
	Light brown, moist, medium dense Silty SAND (SM), trace clay and gravel Sandy Loam	3.0			7 13-7	1	DS	18	
	Orange-brown, moist, very stiff Silty and Sandy CLAY (CL), trace gravel Sandy Clay Loam		5		8 9-9	2	DS	15	
		8.0			8 8-9	3	DS	14	
	Orange, beige, and light grey, moist, very stiff to medium stiff Silty CLAY (CL) trace sand and gravel Clay		10		6 8-9	4	DS	18	
			15		4 4-4	5	DS	18	
		20	22		5 4-5	6	DS	18	
	Terminated at 20'								

BORING LOG #3

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Plasticity, Size, Proportions)	STRA. DEPTH	DEPTH SCALE	Cond.	Blows/6"	No.	Type	Rec. "	BORING & SAMPLING NOTES
	SURFACE	0.0							Topsoil: 1' Cave-in Depth: 15.5'
	Orange-brown, moist, medium dense, Silty SAND (SM), little clay trace to little gravel Sandy Loam				6 7-8	1	DS	18	
			5		8 10-10	2	DS	18	
		8.0			8 8-10	3	DS	18	
	Orange, light grey, moist medium stiff Silty CLAY (CL), trace sand and gravel Clay		10		5 5-5	4	DS	18	
		16.0	15		4 5-5	5	DS	18	
	Greenish, light grey moist, Stiff Silty CLAY (CL), little sand Clay	20	22		6 7-6	6	DS	18	
	Terminated at 20'								

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/1/91

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 10/21/91

CHIEF, BUREAU OF HIGHWAYS — DATE 10/10/91

CHIEF, BUREAU OF ENGINEERING — DATE 10-21-91

NO	DATE	REVISION
3	5-21-94	REMOVED SIDEWALK IN CUL-DE-SAC
2	4-14-93	ADDED LOTS 294-299 AND PARKING AREA
1	12-11-91	REVISED LIMIT OF EX. PAVING TO REMAIN ON EX. HARMONY LANE

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OWNER SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	PROJECT: KING'S WOODS SECTION 3, AREA 1
	LOCATION: TAX MAP NO. 47 PARCEL NO. 553 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	TITLE: DRAINAGE AREA MAP AND PLANTING PLAN P-91-00 S-90-17 PB-26 PB-261 F-191-173
	DATE: JUNE 10, 1991 / SEPT. 23, 1991 — PROJECT NO. 373
DES: D.A.M. — DRN: I.P.	SCALE: AS SHOWN — DRAWING 3 OF 4

F91 173

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SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

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

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

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

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

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

Structure Backfill

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

Pipe Conduits

All pipes shall be circular in cross section.

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

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

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

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

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

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

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 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 hugger type band with 0-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.

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

5. Backfilling shall conform to "Structure Backfill."

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

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

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

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

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

4. Backfilling shall conform to "Structure Backfill."

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill."

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

Concrete

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

Rock Riprap

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 subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.

2. Absorption not more than three percent.

3. 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 88.

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

Care of Water during Construction

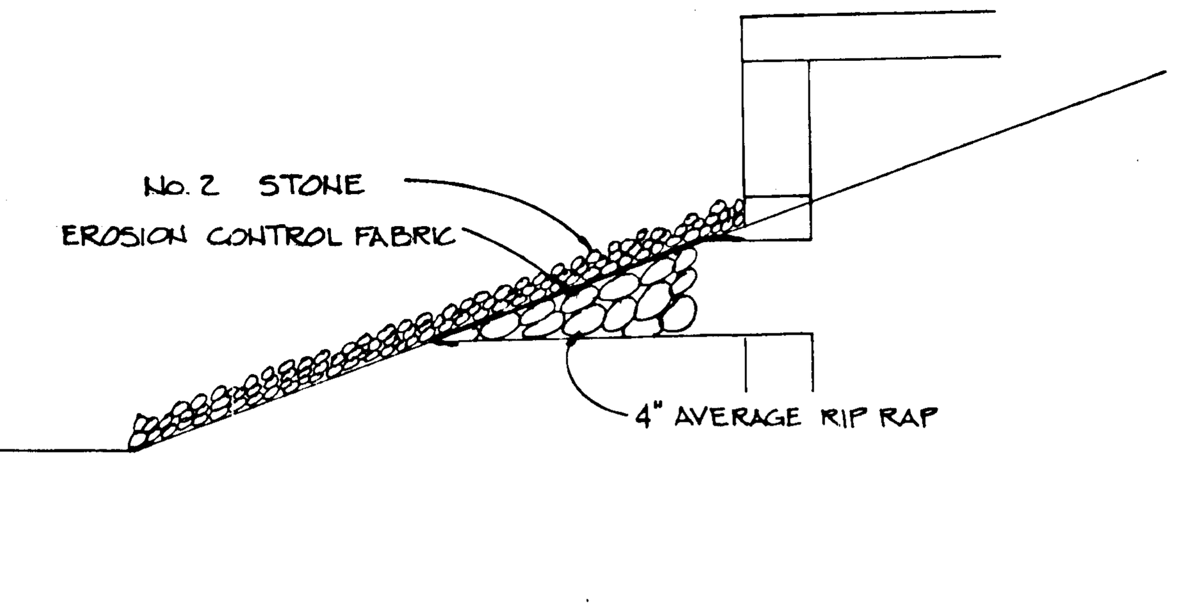
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also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

Stabilization

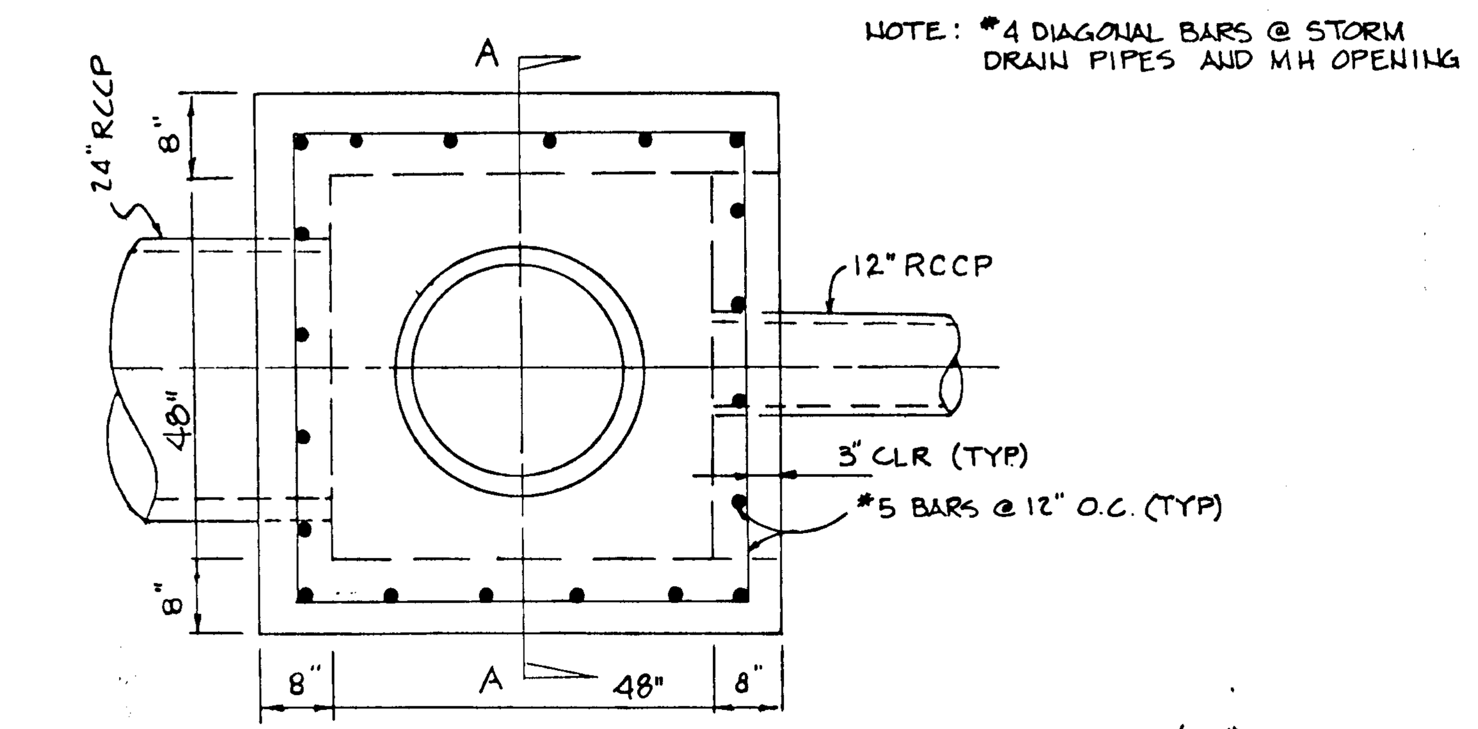
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards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

Erosion and Sediment Control

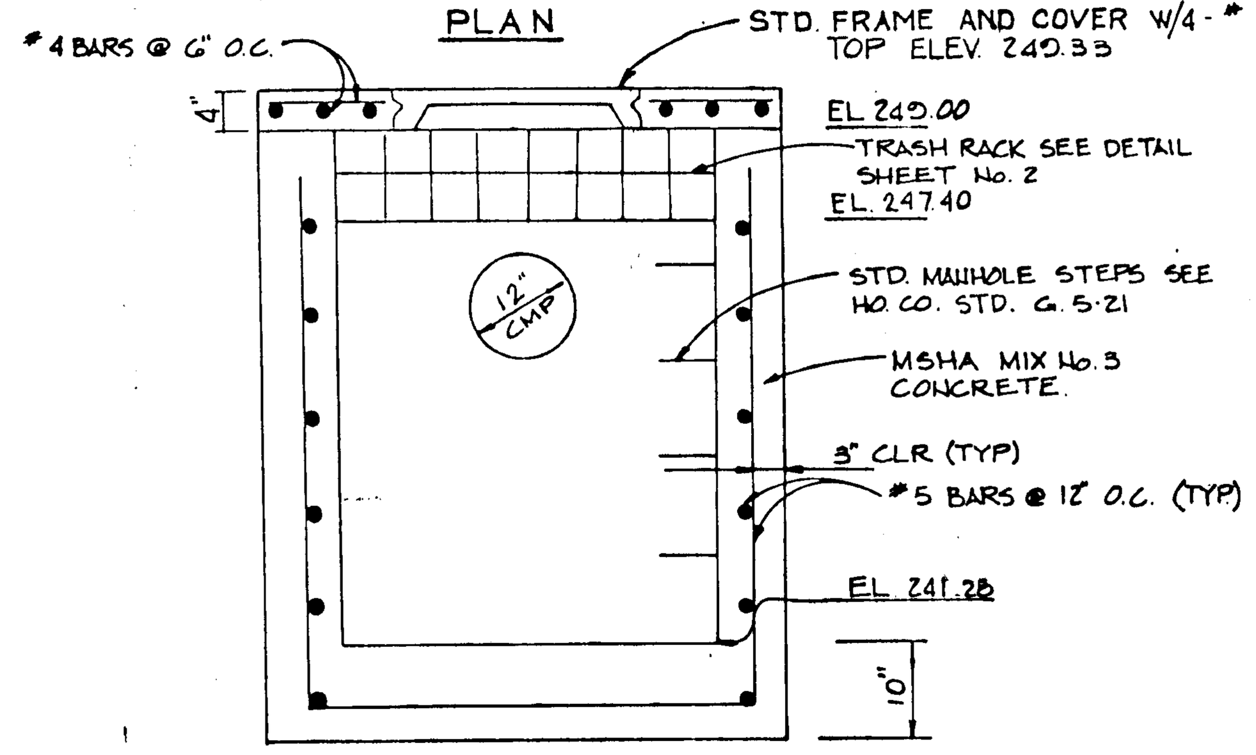
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction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



STONE FILTER DETAIL
NO SCALE



PLAN



SECTION 'A-A'
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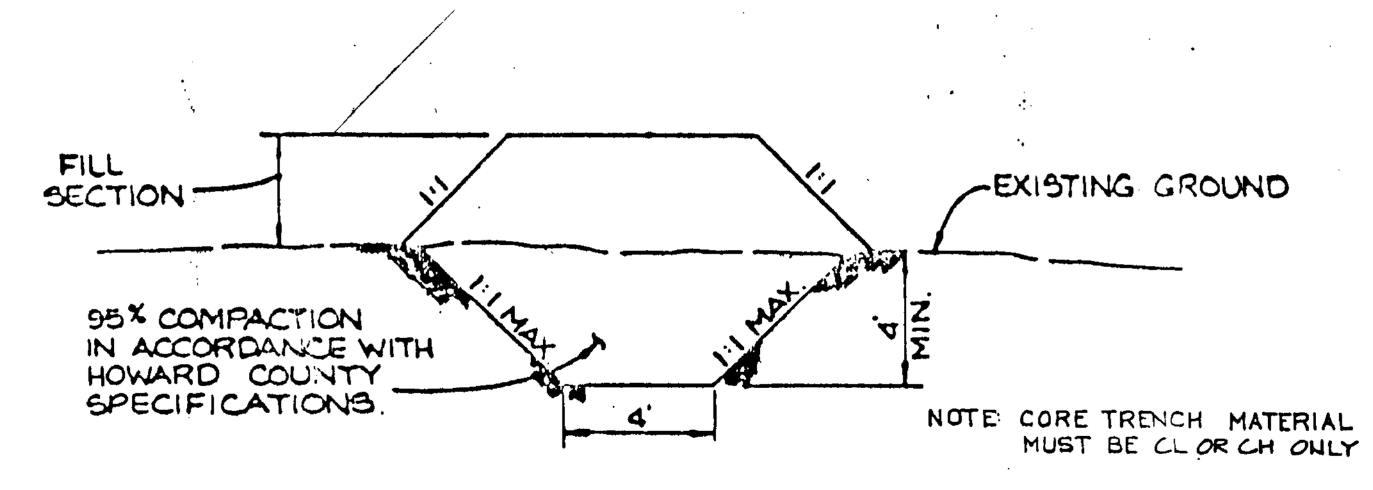

CORE TRENCH SECTION
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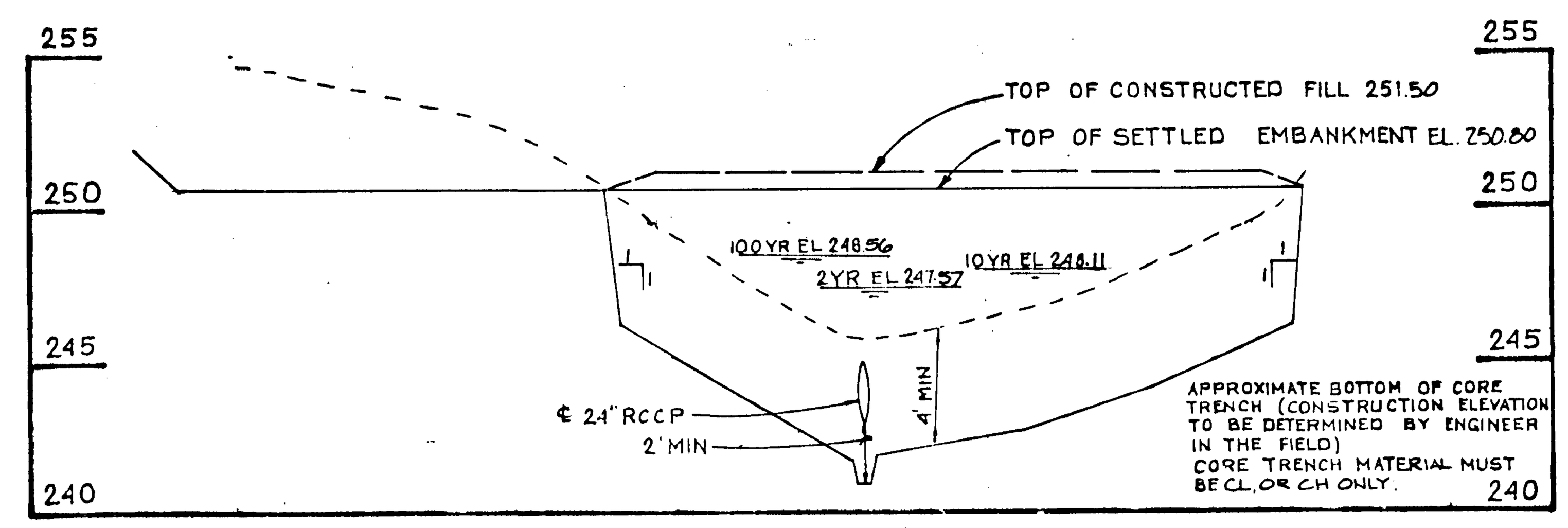
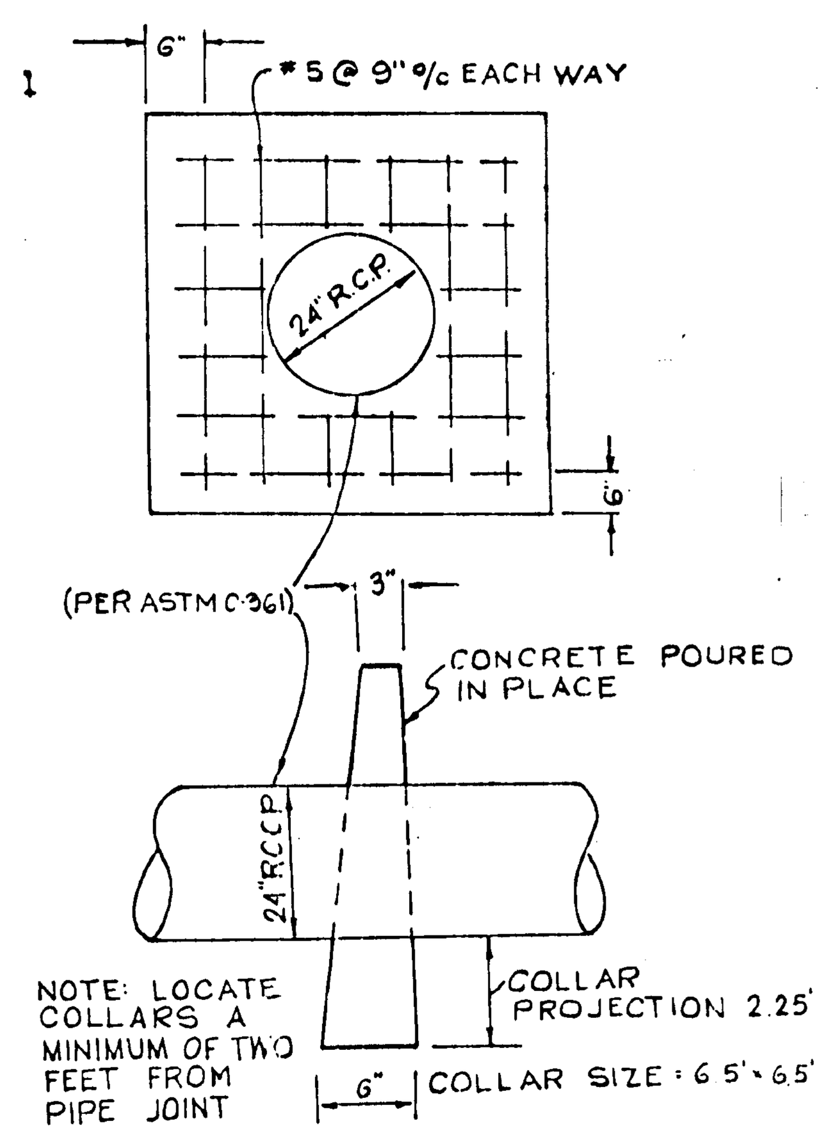


PROFILE THROUGH ℄ EMBANKMENT
SCALE HORIZ 1"=50' VERT 1"=5'



ANTI-SEEP COLLAR
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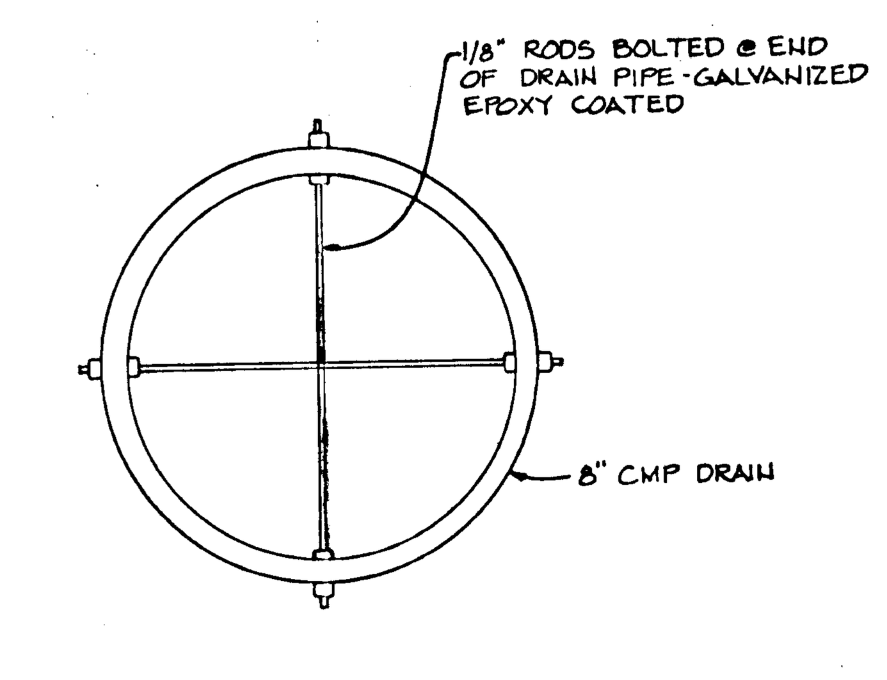
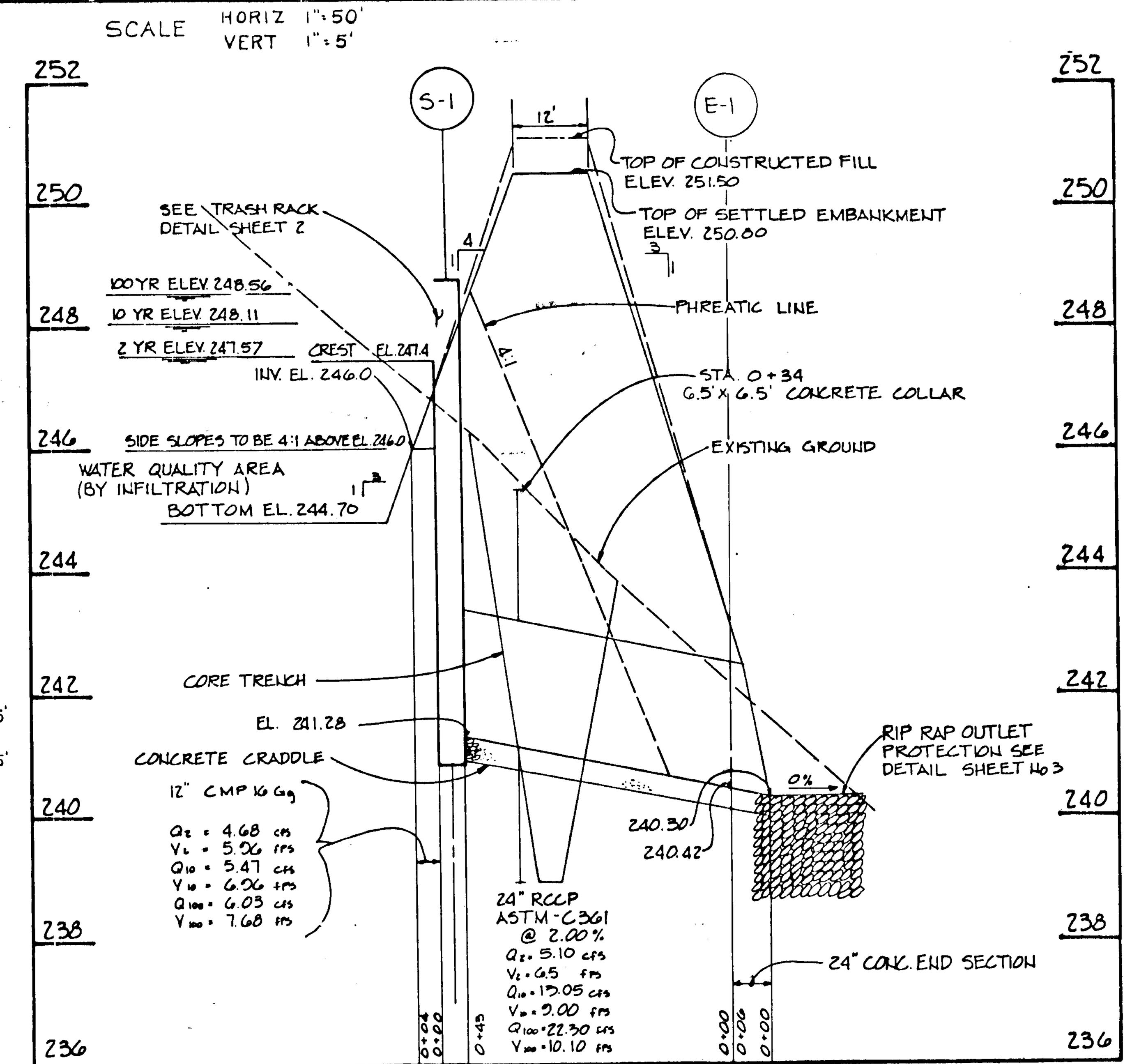


LOW FLOW DRAIN TRASH RACK
NO SCALE



PRINCIPAL SPILLWAY PROFILE
SCALE HORIZ 1"=20' VERT 1"=2'

BY THE ENGINEER:

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

John Elorriaga — 9-23-91
ENGINEER JOHN M. ELORRIAGA No16891 — DATE

BY THE DEVELOPER:

"I 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 MARYLAND DEPT 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."

James R. Moxley Jr. — 9-23-91
DEVELOPER: — 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.

James M. Helm — 10/07/91
U.S. SOIL CONSERVATION SERVICE — DATE

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

APPROVED Robert W. Ziehm — 10/7/91
HOWARD S.C.D. — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
[signature] — 11/1/91
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Alan M. Ferragamo — 10/21/91
CHIEF, LAND DEVELOPMENT DIVISION — DATE
Granville W. Wehland — 10/10/91
CHIEF, BUREAU OF HIGHWAYS — DATE
William E. Riley — 10-21-91
CHIEF, BUREAU OF ENGINEERING — DATE

NO	DATE	REVISION
1	4-14-93	REVISED ELEVATIONS OF STORMS WITHIN SWMF.

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OWNER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	PROJECT: KINGS WOODS SECTION 3, AREA 1
	LOCATION: TAX MAP NO. 47 PARCEL NO. 553 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER: SECURITY DEVELOPMENT CORP. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043	TITLE: DETAILS P91-09 S-90-17 PB-260 PB-261 F-91-173
	DATE: JUNE 10, 1991 / SEPT. 23, 1991 — PROJECT NO.: 373
DES. D.A.M. — DRN. I.P.	SCALE: AS SHOWN — DRAWING 4 OF 4

F91 173

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