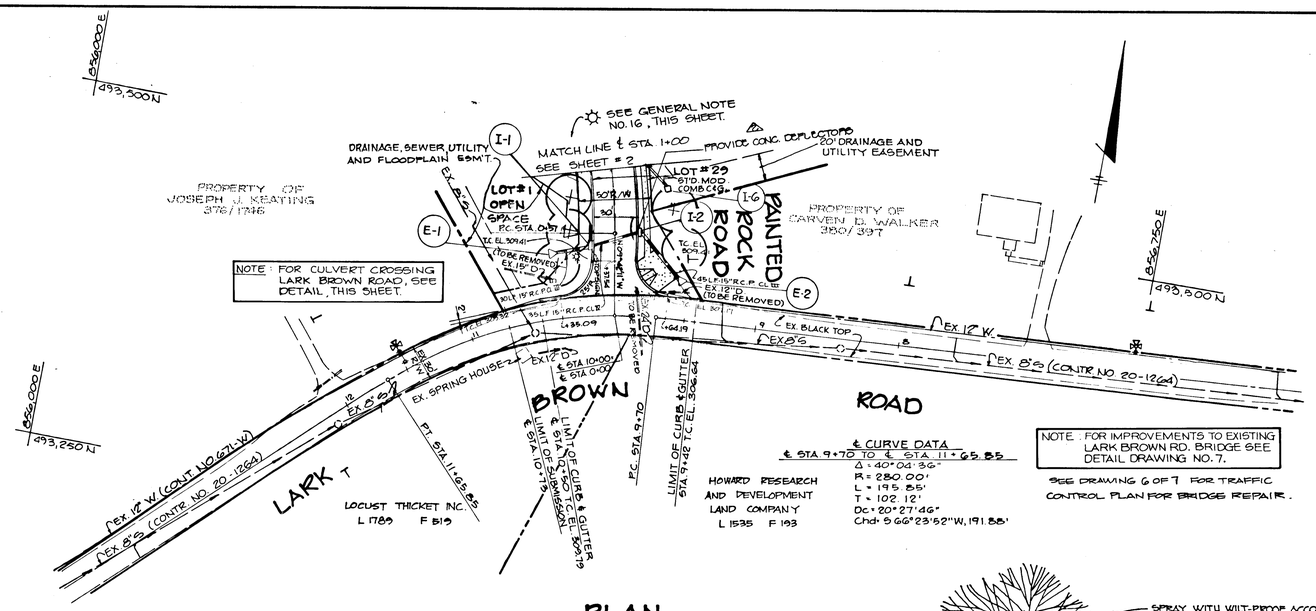


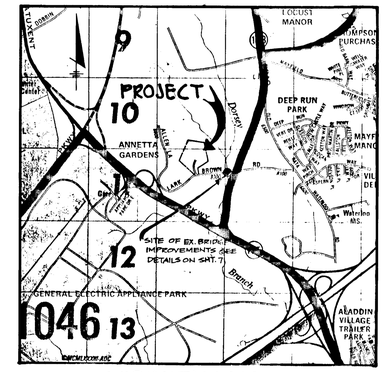
PLAN
SCALE: 1"=50'

SHEET INDEX

BENCHMARKS

1) HO. CO. STA. 2343001 ELEV. 288.241
½ R.B. SET 3' BELOW SURFACE OF GROUND IN THE NORTHEAST GRASSED ISLAND OF ROUTE # 108 AND ROUTE # 175

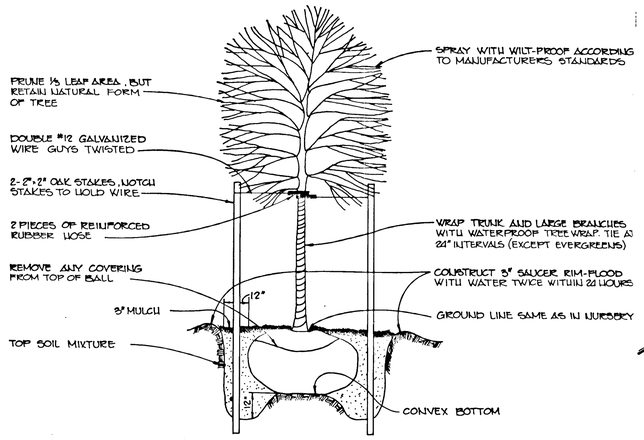
2) HO. CO. MONUMENT 2443001 ELEV. 291.400
STANDARD CONCRETE MONUMENT SET 2' BELOW SURFACE OF GROUND IN THE NORTHWEST CORNER OF THE INTERSECTION OF ROUTE # 108 AND LARK BROWN ROAD.



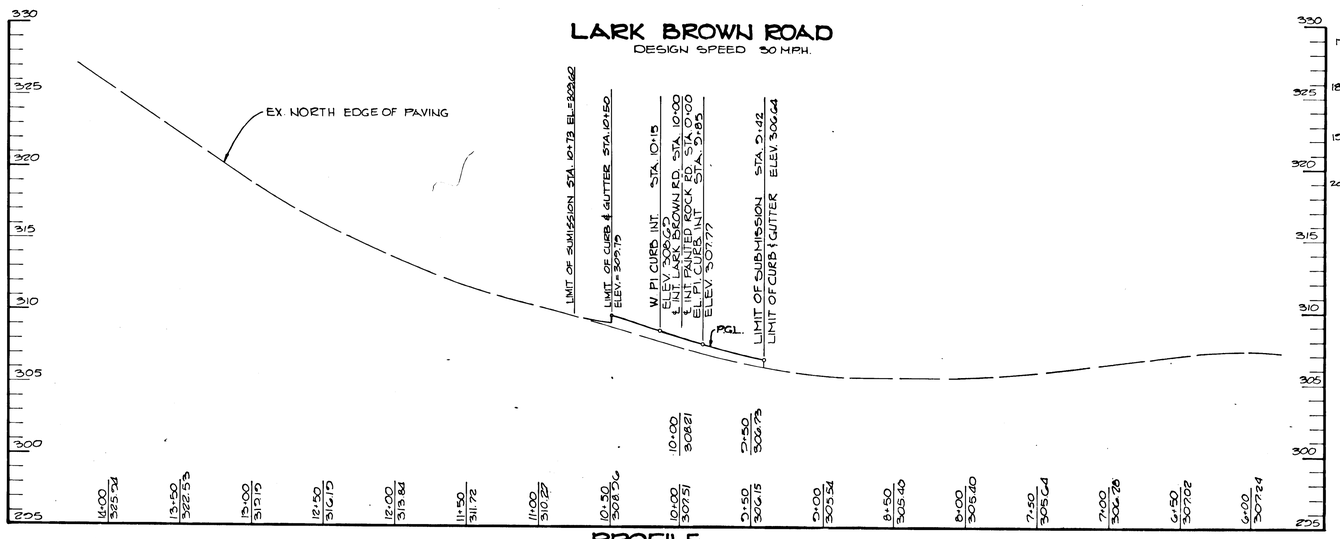
VICINITY MAP
SCALE: 1"= 2000

PLANT LIST

Qty.	Symbol	Name	Size	Remrks
52	SHADE TREE			
	Ap	ACER PLATANOIDES 'SUMMERSHADE' Summershade Norway Maple	2½'-3" Cal., 12'-14' Ht.	B&B, Full Head
6	EVERGREEN TREE			
	Ps	PINUS STROBUS Eastern White Pine	2½'-3" Cal., 7'-8' Ht.	B&B, Unsheared

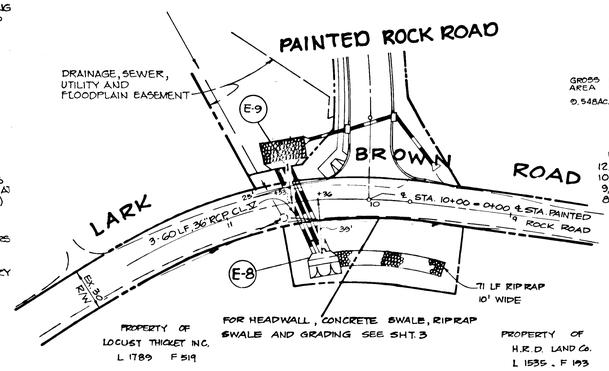


TREE PLANTING DETAIL
NO SCALE



PROFILE
SCALE: HORI.- 1"=50'
VERT.- 1"=5'

17. PLANS AND SPECIFICATIONS FOR BRIDGE WORK SHALL BE IN ACCORDANCE HO.CO., AASHTO AND STATE ROAD STDS.
18. ANY DAMAGE TO THE BRIDGE DURING OR AS A RESULT OF THE DEVELOPERS MODIFICATION TO THE BRIDGE SHALL BE CORRECTED AT THE DEVELOPERS EXPENSE.
19. DEVELOPER WILL BE RESPONSIBLE FOR BRIDGE DURING THE PERIOD OF TIME THE PROPOSED WORK IS BEING DONE.
20. DEVELOPER WILL NOTIFY BUREAU OF HIGHWAYS FIVE DAYS BEFORE STARTING WORK ON BRIDGE.



FOR HEADWALL, CONCRETE SWALE, RIPRAP SWALES AND GRADING SEE SHT. 3

DETAIL CULVERT CROSSING LARK BROWN ROAD
SCALE: 1"= 50

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV, i.e., STANDARD SPECIFICATIONS AND DETAILS FOR 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 AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
4. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	725-9976
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS AND ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/INSPECTION	
" " SURVEY DIVISION (24 HOURS NOTICE	
" " PRIOR TO COMMENCEMENT OF WORK)	792-7272

5. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOL. IV, i.e., STANDARD SPECIFICATIONS AND DETAILS.
6. STORM DRAIN BACKFILL WITHIN ROADWAYS, UNDER STRUCTURES AND FOR STORM DRAIN TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 1557.
7. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
8. ALL STORM DRAIN PIPE BEDDING SHALL BE AS SHOWN IN DETAIL G2.01 (TRENCH IN ROCK OR TRENCH IN EARTH AS DETERMINED BY FIELD CONDITIONS) IN VOL. IV OF HOWARD COUNTY DESIGN MANUAL AND UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE DRAWINGS.
9. ALL STREET CURB RETURNS SHALL HAVE 35.0' RADII UNLESS OTHERWISE NOTED.
10. ALL ELEVATIONS SHOWN ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM, 1929.
11. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
12. TOPO TAKEN FROM FIELD RUN SURVEY DATED OCTOBER, 1985.
13. SUBJECT PROPERTY ZONED R-12 PER 8.2.85 COMPREHENSIVE ZONING PLAN.
14. INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1978 EDITION.
15. DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:
16. ⚡ DENOTES 175 WATT "MODERN" MERCURY VAPOR LAMP POST TOP FIXTURES ON A 14 FOOT GRAY FIBERGLASS POLE LOCATED 2-10 FEET FROM BACK OF CURB.

DENSITY TABULATION

GROSS AREA	FLOODPLAIN & STEEP SLOPES	NET AREA	FLOODPLAIN ADJUSTMENT LOTS PROPOSED	TOTAL LOTS ALLOWED	TOTAL LOTS PROPOSED	DENSITY PER ACRE
9.548Ac.	0.197Ac.	9.351Ac.	-0-	28	27	2.87

OPEN SPACE TABULATION

LOT SIZE	NO. OF LOTS	AREA OF LOTS IN ACRES	REQUIRED MANDATORY OPEN SPACE	REQUIRED AREA OF OPEN SPACE IN ACRES	OPEN SPACE PROVIDED
12,000# LARGER	1	0.501	5%	0.024±	1.419Ac±
10,800#-11,999#	3	0.778	10%	0.078±	0.159Ac±
9,600#-10,799#	8	1.855	20%	0.371±	0.340Ac±
8,400#-9,599#	15	3.005	50%	0.901±	
TOTALS	27	5.835		1.374±	1.918Ac±

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 12-3-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 10/27/88

Chief, Bureau of Highways — Date 11/2/88

Chief, Bureau of Engineering — Date 11-14-88

DATE	NO	REVISION
1-15-91	2	ADD DEFLECTORS AT I-2

OWNER/DEVELOPER:
H&A CONSTRUCTION CO. INC.
13C STREET
LAUREL, MARYLAND 20707

PROJECT:
PAINTER'S HILL
SECTION ONE

AREA TAX MAP NO. 37 PARCEL 667
6TH ELECTION DISTRICT P.86-55
HOWARD COUNTY, MARYLAND 5.86-15

TITLE: PLAN AND PROFILE OF LARK BROWN ROAD

THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

5-21-88 DATE

ARTHUR E. MUEGGE #8707

DESIGNED BY: L.J.D.	
DRAWN BY: F.D.M.	
PROJECT NO: 22200	
DATE: OCTOBER 2, 1987	
SCALE: AS SHOWN	
DRAWING NO. 1 OF 7	

1392

F-88-13

NOTE: PROVIDE 4' HIGH CHAIN LINK FENCE FROM ℄ STA. 1+50 LEFT TO 1' OFF PROPERTY LINE FOR LOT 2 AND ALONG SIDE PROPERTY LINE OF LOT 2 TO THE REAR PROPERTY LINE, MAINTAINING 1' OFF PROPERTY LINE.

NOTE: PROVIDE HO. CO. STD. GUARDRAIL FROM ℄ STA. 1+50, LEFT TO ℄ STA. 3+48, LEFT.

℄ CURVE DATA
FROM ℄ STA. 0+57 TO ℄ STA. 1+81
Δ = 17°59'11"
R = 395.00'
L = 124.00'
T = 62.51'
Dc = 14°30'19"
Chd = N 15°21'46"W, 123.49'

℄ CURVE DATA
FROM ℄ STA. 2+91.70 TO ℄ STA. 6+05
Δ = 67°46'22"
R = 350.00'
L = 414.00'
T = 235.07'
Dc = 16°22'13"
Chd = N 06°11'50"E, 390.28'

℄ CURVE DATA
FROM ℄ STA. 7+95 TO ℄ STA. 9+41.26
Δ = 36°29'04"
R = 230.00'
L = 146.26'
T = 75.70'
Dc = 24°54'40"
Chd = N 58°18'02"E, 143.81'

LEGEND:
Ap = ACER PLATANOIDES (TYP.)

SEE SHEET 1 FOR PLANT LIST & DETAIL

PLAN
SCALE: 1" = 50'

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

PAINTED ROCK ROAD
30 MPH DESIGN SPEED

STAIRTOP COURT
25 MPH DESIGN SPEED

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 12-7-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division — Date 10/27/88
Chief, Bureau of Highways — Date 11/02/88
Chief, Bureau of Engineering — Date 11-16-88

DATE	NO.	REVISION
1-18-91	1	REMOVE 1-5, ADD GRAVEL PATHS FOR POND MAINTENANCE & OPEN SPACE ACCESS

OWNER/DEVELOPER:
H & A. CONSTRUCTION CO. INC.
13C STREET
LAUREL, MARYLAND 20707

PROJECT:
PAINTER'S HILL
SECTION ONE

AREA TAX MAP NO. 37 — PARCEL 467
6TH ELECTION DISTRICT — F-86-53
HOWARD COUNTY MARYLAND — S-86-15

TITLE: PLAN AND PROFILES OF PAINTED ROCK ROAD AND STAIRTOP COURT

THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

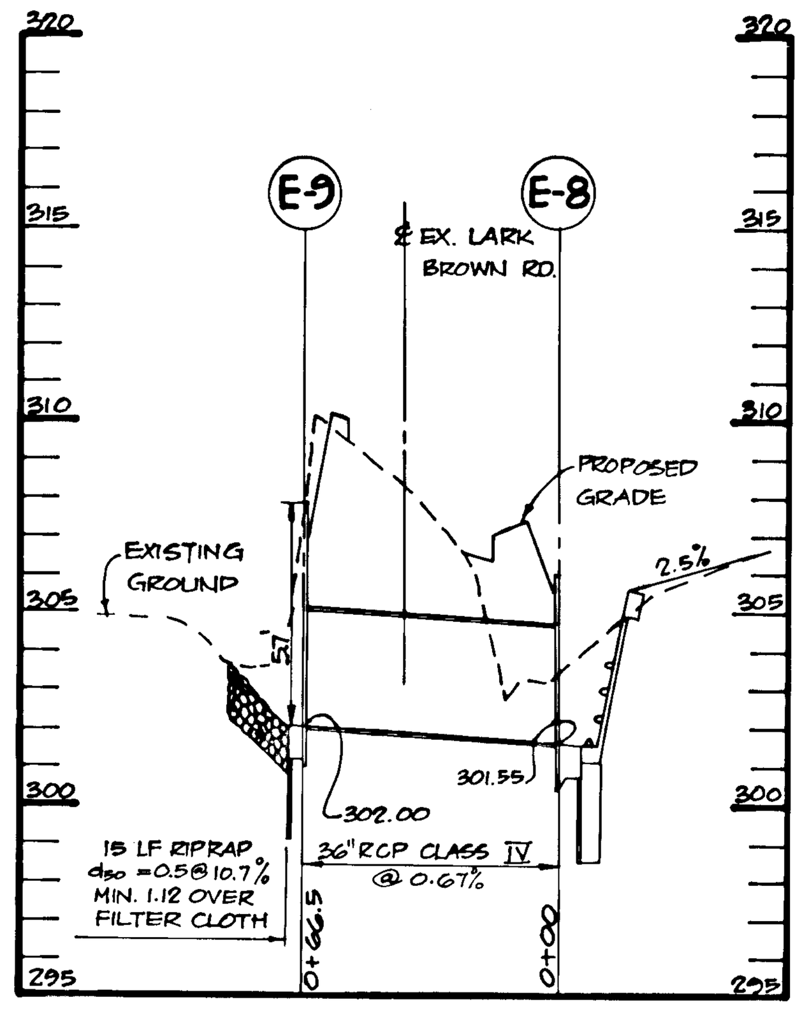
5-31-88 DATE
STATE OF MARYLAND — ARTHUR E. MUEGGE — No. 6707 — REGISTERED PROFESSIONAL ENGINEER
ARTHUR E. MUEGGE, No. 6707

DESIGNED BY: LJD	
DRAWN BY: FDM	
PROJECT NO: 22200	
DATE: OCTOBER 2, 1987	
SCALE: AS SHOWN	
DRAWING NO. 2 OF 7	

F-88-13

1302

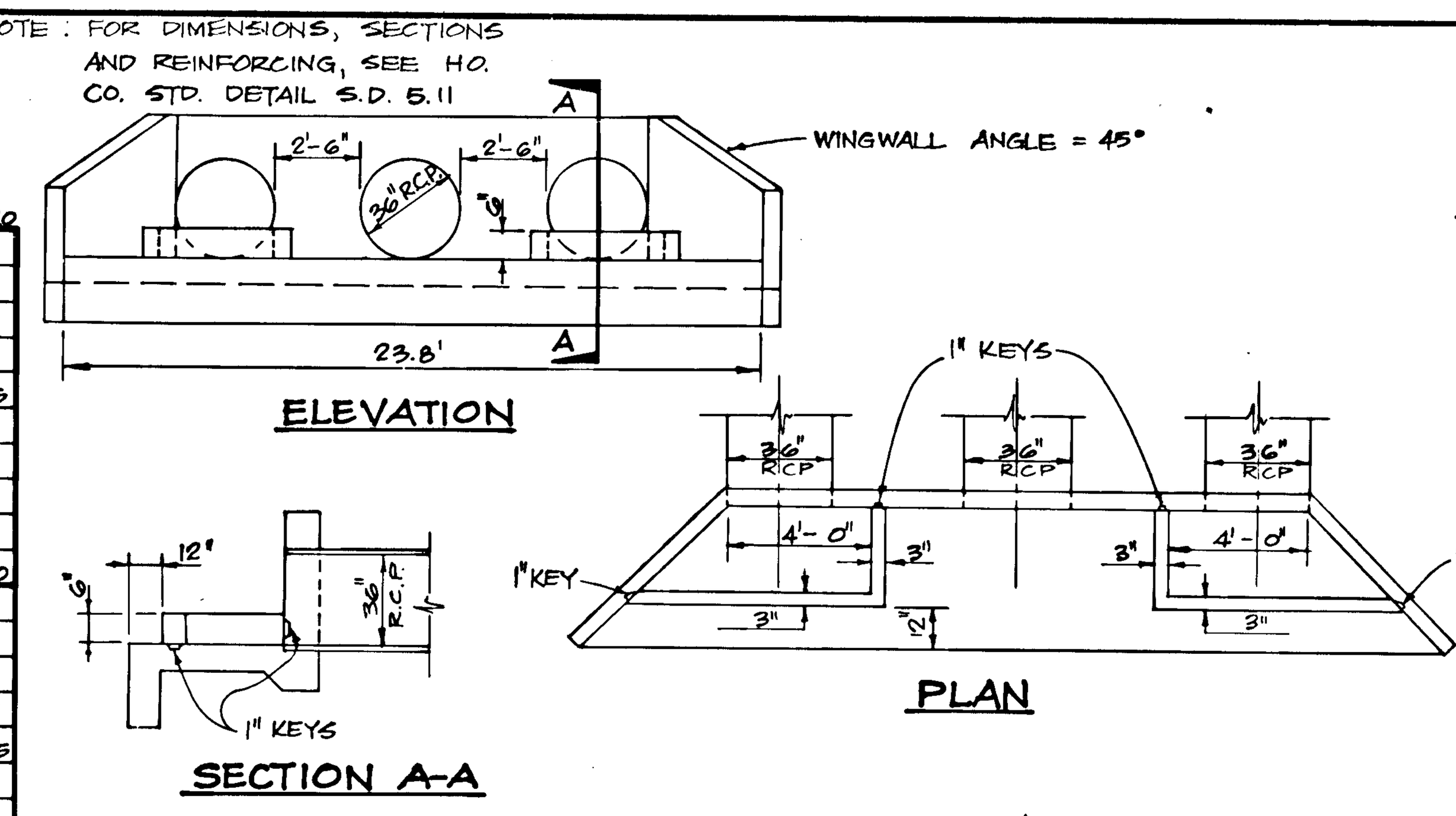
MARYLAND BLUEPRINT CO., INC. NAMES



PROFILE

SCALE: HOR. 1" = 30' VERT. 1" = 5'

NOTE: FOR DIMENSIONS, SECTIONS AND REINFORCING, SEE HO. CO. STD. DETAIL S.D. 5.11



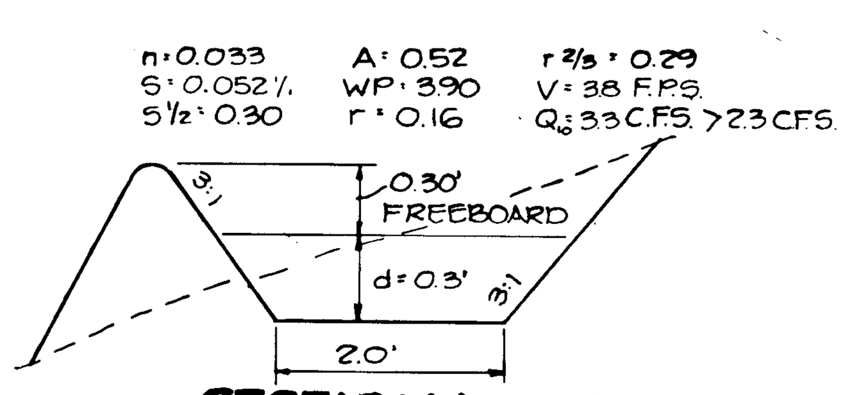
LOW FLOW DIVERTER AT E-9

NO SCALE

STRUCTURE SCHEDULE

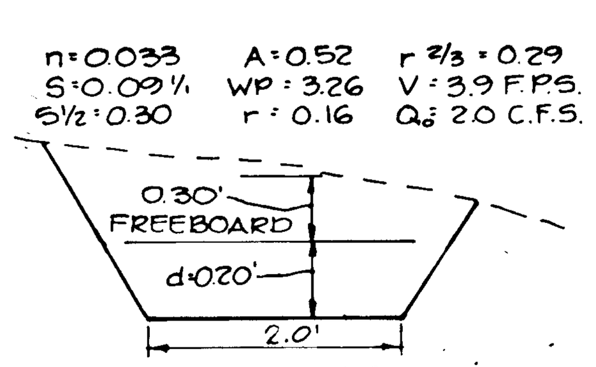
NO.	TYPE	DETAIL	LOCATION	INV. IN	INV. OUT	TOP OF CURB OR RIM ELEVATION
I-1	A-5	SD 4.01	15' LT C/L STA 0+48	304.20	304.00	309.74
I-2	A-5 w/ Def.	SD 4.01	15' RT C/L STA 0+57	305.10	304.90	310.03
I-3	A-5 w/ Def.	SD 4.01	15' LT C/L STA 1+77.5	311.06, 307.67	307.17	315.49
I-4	A-5 W/ Def.	SD 4.01	15' RT C/L STA 1+77.5	311.60	311.40	315.49
I-6	D Inlet	SD 4.11	38' RT C/L STA 0+84	311.50	308.23	312.33*
I-7	A-5 w/ Def.	SD 4.01	15' LT C/L STA 3+52	—	320.71	328.17
I-8	A-5 w/ Def.	SD 4.01	15' RT C/L STA 3+97.35	325.61	325.41	331.55
I-9	A-5	SD 4.01	14' RT C/L STA 0+47.96	328.67	328.47	335.98
I-10	A-5	SD 4.01	14' LT C/L STA 0+47.96	—	330.85	335.98
I-11	A-5 w/ Def.	SD 4.01	15' RT C/L STA 8+69	327.95	327.75	332.77
I-12	A-5 w/ Def.	SD 4.01	15' RT C/L STA 8+69	—	328.12	332.77
M -1	4'0" Brick MH	G 5.01	62 LT C/L STA 3+25	310.96	308.08	315.60*
M -2	Shallow MH	G 5.05	See Plan	327.41	327.21	330.70
E-1	Conc. End Section	SD 5.51	46' LT STA 0+41	—	303.40	—
E-2	Conc. End Section	SD 5.51	47' RT STA 0+23	306.00	—	—
E-3	Conc. End Section	SD 5.51	46' LT STA 1+84	—	307.00 △2	—
E-4	Metal End Section	SD 5.61	70' LT STA 3+20	—	308.00	—
E-5	Conc. End Section	SD 5.51	See Plan	—	327.00	—
E-6	Metal End Section	SD 5.61	86' LT STA 1+77	—	305.00	—
E-7	Conc. End Section	SD 5.51	See Plan	—	325.50	—
S-1	Outlet Control Str.	Sheet #5	65' LT STA 2+05	—	305.20	—
S-2	Outlet Control Str.	Sheet #5	See Plan	—	325.75	—
S-3	Outlet Control Str.	Sheet #5	See Plan	—	330.00	—
E-8	Mod. Type 'A' Headwall	Sheet #3	38 LT. STA. 10+36	—	301.55	—
E-9	Mod. Type 'A' Headwall	Sheet #3	25 RT. STA. 10+54	302.00	—	—

* Denotes top of frame elevation.



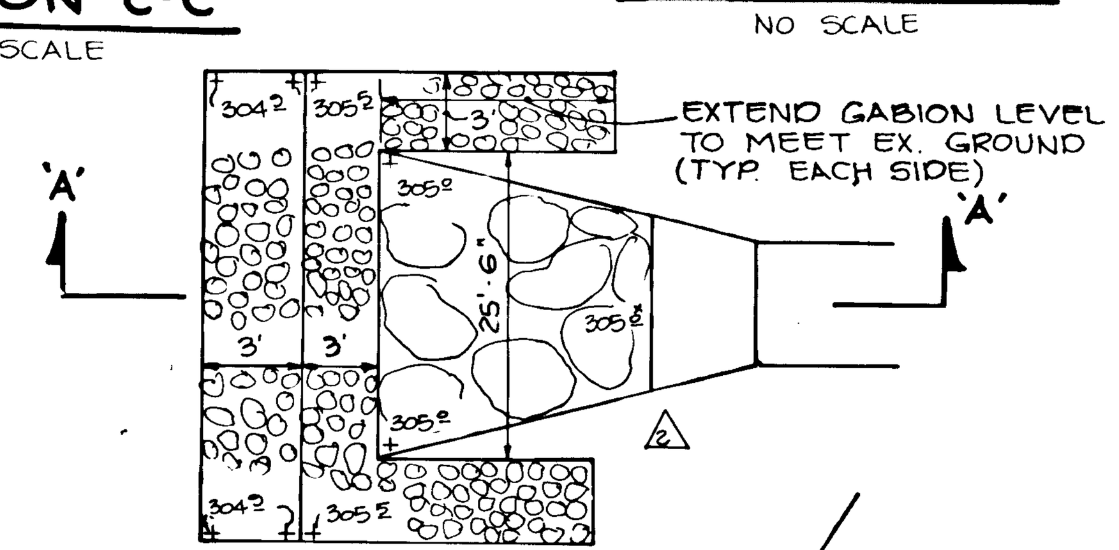
SECTION 'C-C'

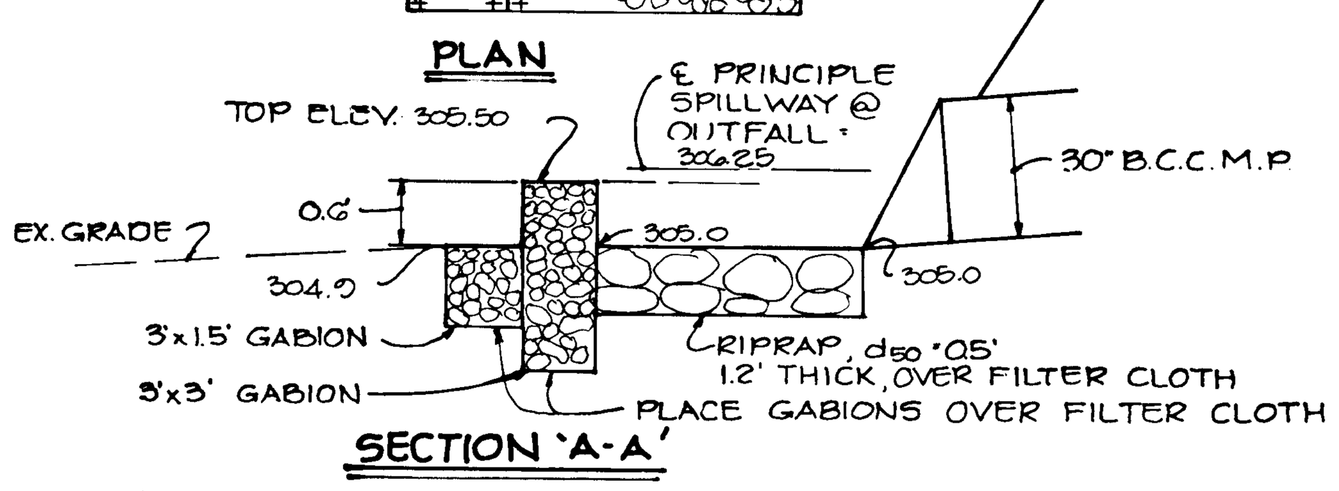
NO SCALE



SECTION 'D-D'

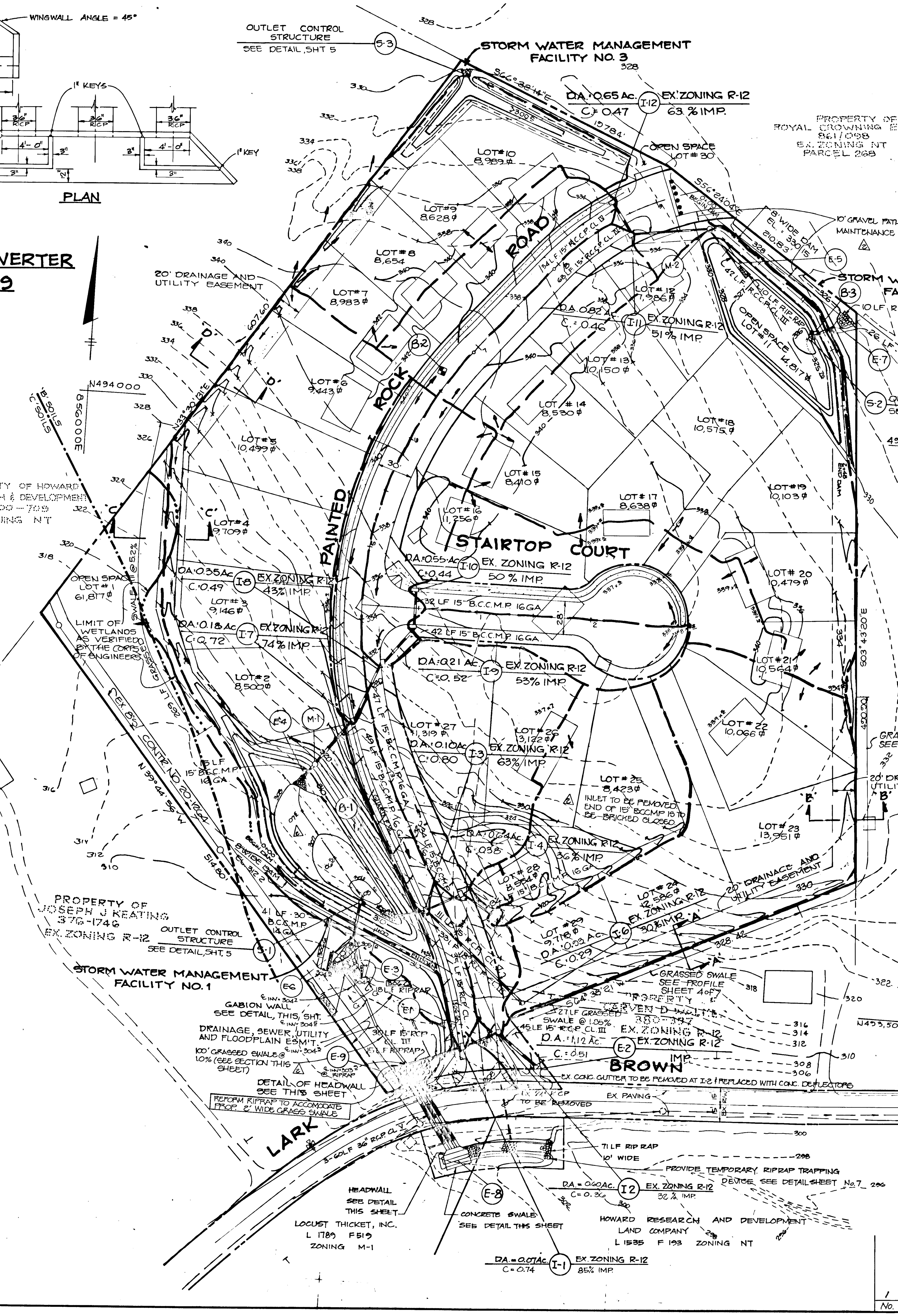
NO SCALE



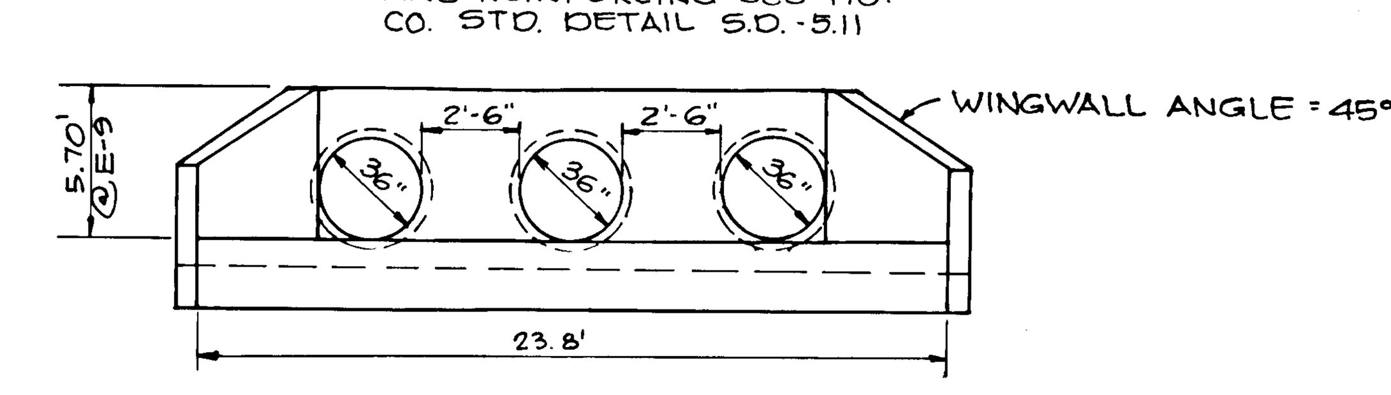


DETAIL GABION LOW FLOW ENERGY DISSIPATER AT E-6

NO SCALE

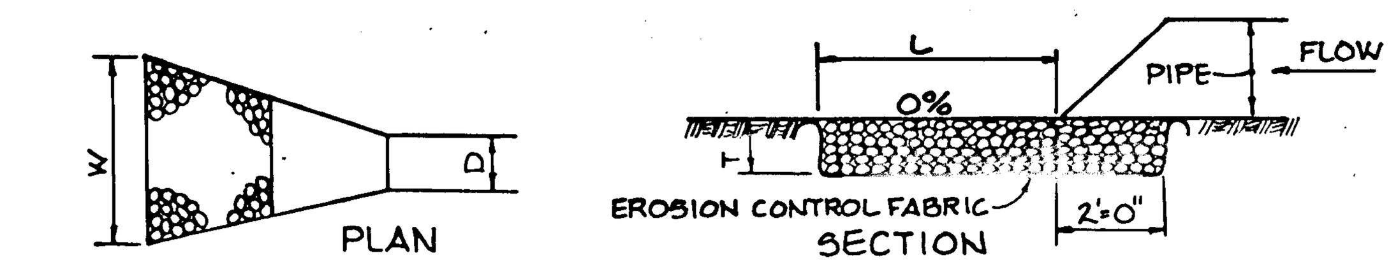


NOTE: FOR DIMENSIONS, SECTIONS, AND REINFORCING SEE HO. CO. STD. DETAIL S.D.-5.11



MODIFIED FRONT ELEVATION TYPE 'A' HEADWALL FOR E-8 AND E-9

NO SCALE

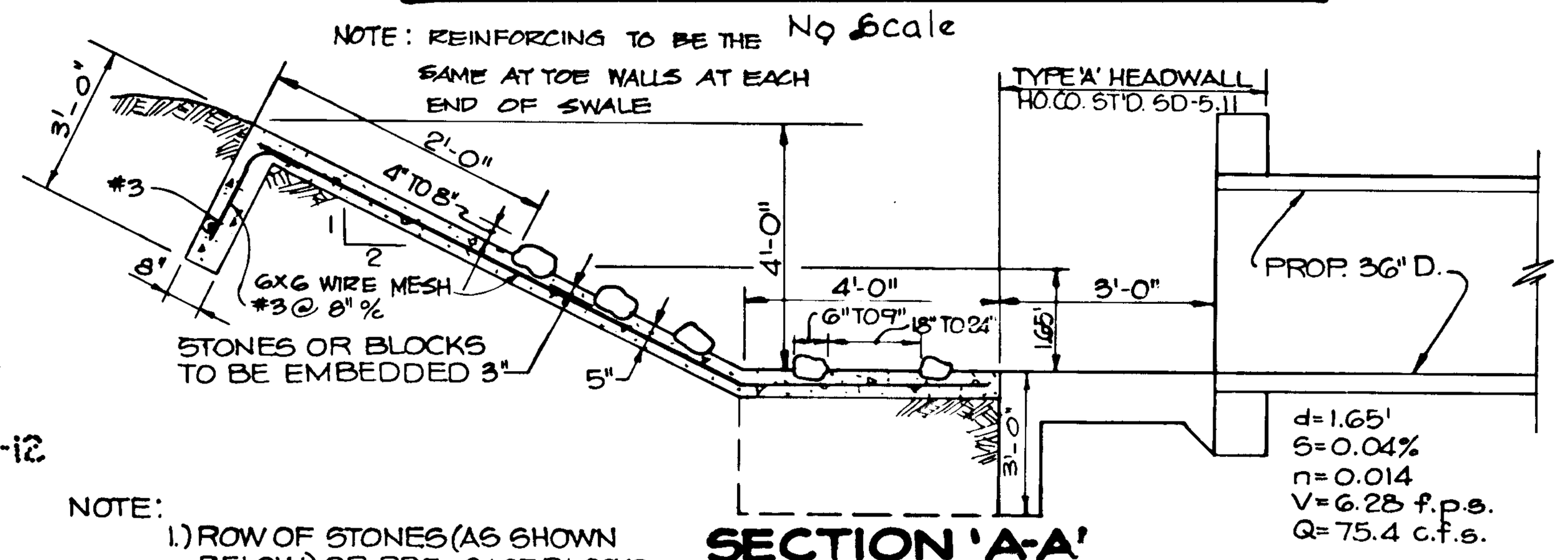


STRUCTURE	MEDIUM STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-6	0.5'	23'	25.5'	1.2'
E-5	0.5'	10'	5.25'	1.2'
E-7	0.5'	10'	12.0'	1.2'
E-4	0.5'	10'	11.25'	1.2'
E-3	0.5'	10'	11.50'	1.2'

OUTLET PROTECTION DETAIL

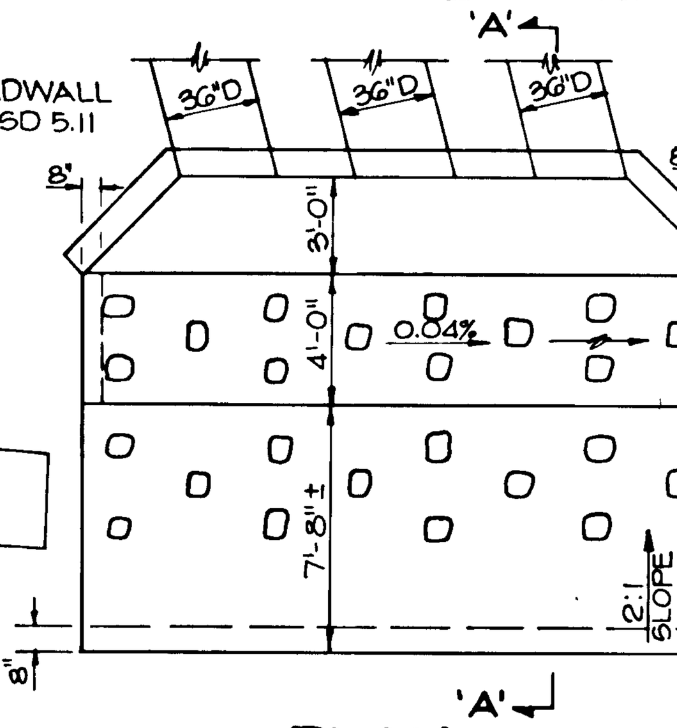
No Scale

NOTE: REINFORCING TO BE THE SAME AT TOE WALLS AT EACH END OF SWALE



SECTION 'A-A'

NOTE:
1.) ROW OF STONES (AS SHOWN BELOW) OR PRE-CAST BLOCKS (4"x8"x8") SHALL BE 18" APART STAGGER ALTERNATE ROWS.
2.) ALL DIMENSIONS AND LOCATIONS NOT INDICATED, FOR ITEMS APPEARING ON THIS SHEET OR ON THE PLANS SHALL BE DIRECTED BY THE ENGINEERS.

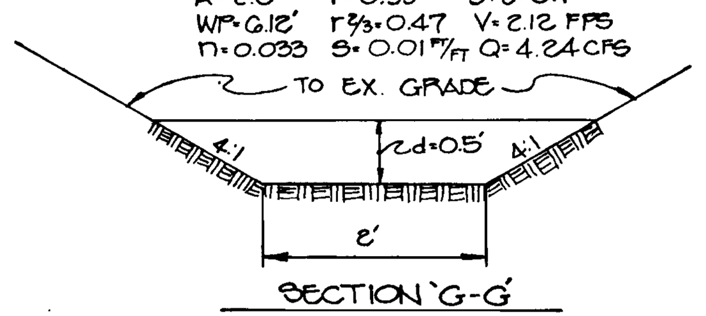


PLAN

DETAIL OF 5' CONCRETE ENERGY DISSIPATING SWALE

NO SCALE

NOTES:
1. Proposed swale to be installed in cut area to avoid erosion.
2. Area adjacent to I-6 shall be graded to provide positive drainage to inlet openings.



SECTION 'G-G'

NO SCALE

No.	REVISION	Date
1	Rev. grd., x section grassed swale by C.F.&S.	10-19-90

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 12-2-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 10/27/88

Chief, Bureau of Highways — Date 11/02/88

Chief, Bureau of Engineering — Date 11-16-88

DATE	NO.	REVISION
1-15-91	△2	REMOVE I-5, REVISE POND OUTLET STRUCTURE, ADD GRAVEL PATHS FOR POND MAINTENANCE & OPEN SPACE ACCESS.

OWNER/DEVELOPER:
H.& A. CONSTRUCTION CO., INC.
13 C STREET
LAUREL, MARYLAND 20707

PROJECT:
PAINTER'S HILL
SECTION ONE

AREA TAX MAP 37 PARCEL 467
6TH ELECTION DISTRICT P-86-53
HOWARD COUNTY, MARYLAND S-86-15

TITLE:
DRAINAGE AREA & SOILS MAP

THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

5-31-88
DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE III — NO. 8707 REGISTERED PROFESSIONAL ENGINEER

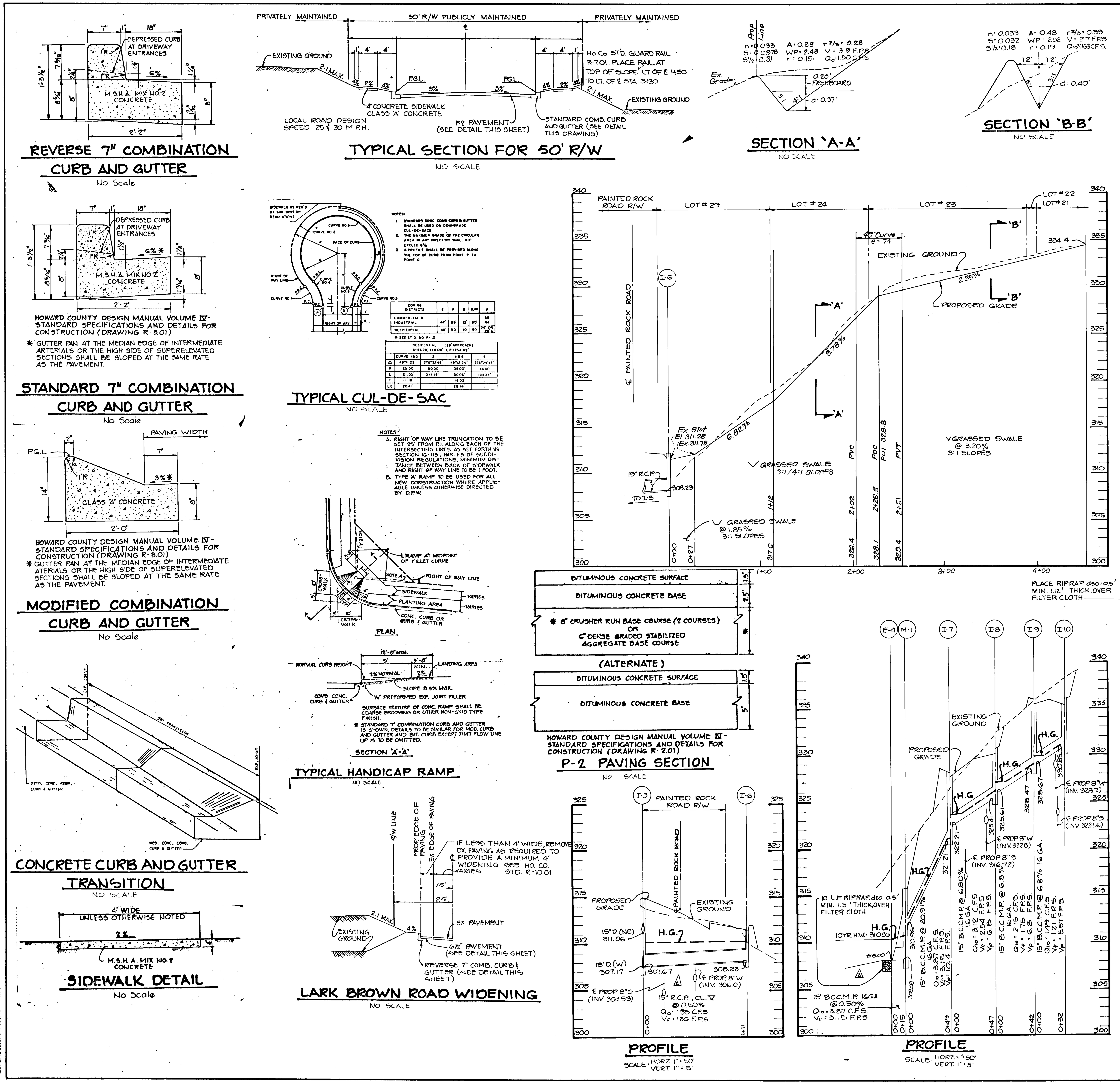
ARTHUR E. MUEGGE #8707

DESIGNED BY:
DRAWN BY: D.V.P.
PROJECT NO: 22200
DATE: OCTOBER 2, 1987
SCALE: 1" = 50'
DRAWING NO. 3 OF 7

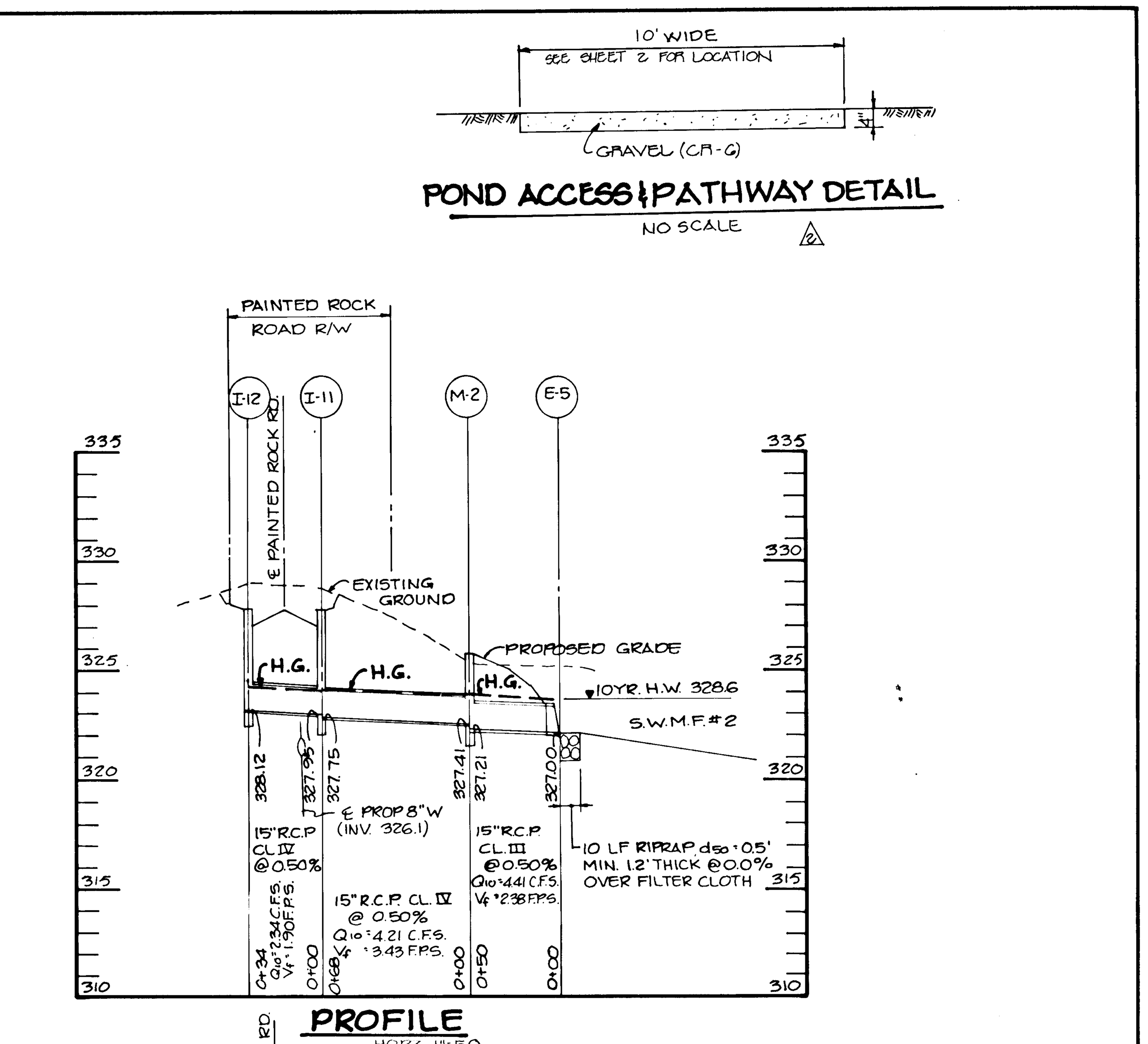
F-88-13

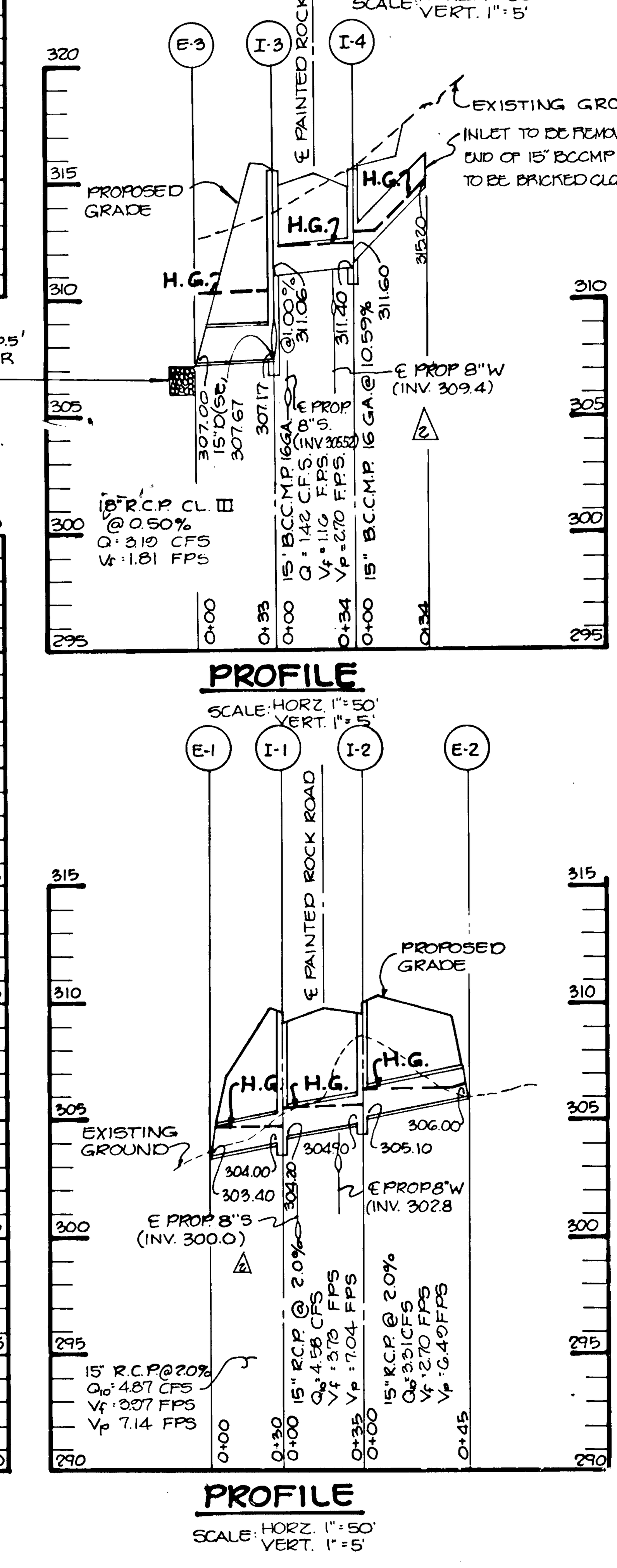
1398

MARYLAND BLUEPRINT CO., INC.



REVERSE 7" COMBINATION CURB AND GUTTER
No Scale
DEPRESSED CURB AT DRIVEWAY ENTRANCES
M.S.H.A. MIX NO. 2 CONCRETE
STANDARD 7" COMBINATION CURB AND GUTTER
No Scale
HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01)
* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.
MODIFIED COMBINATION CURB AND GUTTER
No Scale
P.G.L.
PAVING WIDTH
CLASS 'A' CONCRETE
CONCRETE CURB AND GUTTER TRANSITION
NO SCALE
4' WIDE UNLESS OTHERWISE NOTED
M.S.H.A. MIX NO. 2 CONCRETE
SIDEWALK DETAIL
No Scale
PRIVATELY MAINTAINED
50' R/W PUBLICLY MAINTAINED
PRIVATELY MAINTAINED
EXISTING GROUND
Ho.Co. STD. GUARD RAIL R-7.01. PLACE RAIL AT TOP OF SLOPE LT. OF ℄ 1+50 TO LT. OF ℄ STA. 3+30
4" CONCRETE SIDEWALK CLASS 'A' CONCRETE
LOCAL ROAD DESIGN SPEED 25 & 30 M.P.H.
P-2 PAVEMENT (SEE DETAIL THIS SHEET)
STANDARD COMB. CURB AND GUTTER (SEE DETAIL THIS DRAWING)
TYPICAL SECTION FOR 50' R/W
NO SCALE
SECTION 'A-A'
NO SCALE
SECTION 'B-B'
NO SCALE
TYPICAL CUL-DE-SAC
NO SCALE
TYPICAL HANDICAP RAMP
NO SCALE
SECTION 'A-A'
PLAN
LARK BROWN ROAD WIDENING
NO SCALE
IF LESS THAN 4' WIDE, REMOVE EX. PAVING AS REQUIRED TO PROVIDE A MINIMUM 4' WIDENING. SEE HO. CO. STD. R-10.01
REVERSE 7" COMB. CURB & GUTTER (SEE DETAIL THIS SHEET)
BITUMINOUS CONCRETE SURFACE
BITUMINOUS CONCRETE BASE
* 8" CRUSHER RUN BASE COURSE (2 COURSES) OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
(ALTERNATE)
HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)
P-2 PAVING SECTION
NO SCALE
PAINTED ROCK ROAD R/W
LOT # 29
LOT # 24
LOT # 23
LOT # 22
LOT # 21
EXISTING GROUND
PROPOSED GRADE
V GRASSED SWALE 3:1/4:1 SLOPES
V GRASSED SWALE @ 3.20% 3:1 SLOPES
V GRASSED SWALE @ 1.85% 3:1 SLOPES
PROFILE
SCALE: HORZ 1"=50' VERT 1"=5'
PROFILE
SCALE: HORZ 1"=50' VERT 1"=5'





No.	Revision	Date
1	Rev. Profile, X-section of grassed swale by C.F.&S.	10-19-90

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature] 12-?-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 10/27/88
Chief, Land Development Division — Date

[signature] 11/02/88
Chief, Bureau of Highways — Date

[signature] 11-16-88
Chief, Bureau of Engineering — Date

DATE	NO.	REVISION
1-15-01	2	RAISED STORM DRAIN BETWN. MH-1 TO E-4, REMOVED I-5, ADJUSTED DATA BETWN. E-2 & E-1.

OWNER/DEVELOPER:
H. & A. CONSTRUCTION CO., INC.
13 C STREET
LAUREL, MARYLAND 20707

PROJECT: **PAINTER'S HILL**
SECTION ONE

AREA TAX MAP NO. 37 — PARCEL 467
6TH ELECTION DISTRICT — P-86-53
HOWARD COUNTY, MARYLAND — S-86-15

TITLE: **DETAILS & STORM DRAIN PROFILES**

THE RIEMER GROUP, INC.

The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

5-31-88
DATE

STATE OF MARYLAND — ARTHUR E. MUEGGE III — NO. 8707 REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY: L.J.D.
DRAWN BY: M.A.D.
PROJECT NO: 22200
DATE: OCTOBER 2, 1987
SCALE: AS SHOWN
DRAWING NO. 4 OF 7

F-88-13

1393

S.W.M. SPECIFICATIONS

I. SITE PREPARATION

Areas under the borrow areas, embankment, and structural works shall be cleared, grubbed and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas covered by the pond or 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.

All cleared and grubbed material shall be disposed of outside 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.

II. EARTH FILL

Material:

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipatd settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of 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 can be obtained with the equipment used.

Cutoff Trench:

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material 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 the contractor drive equipment over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. CORRUGATED METAL PIPE

Material:

(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.

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. Watertight coupling bands shall be used at all joints. Antiseep collars shall be connected to the pipe in such a manner as to 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.

V. CONCRETE

Material:

1. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.
2. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
3. Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.
4. Course Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-½) inches.
5. Renforcing Steel - The reinforcing steel shall be be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

Design Mix:

The concrete shall be mixed in the following proportions, measured by weight. The water-cement ration shall be 5-½ to 6 U.S. gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-½. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

Mixing:

The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the material, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the additions of water to perserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

Forms:

The forms shall have sufficient strength and rigidity to hold the concrete and to with stand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.

Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

Reinforcing Steel:

All reinforcing material shall be free of dirt, rust, scale, oil, paint or other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

Consolidating:

Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be suplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

Finishing:

Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.

Protection and Curing:

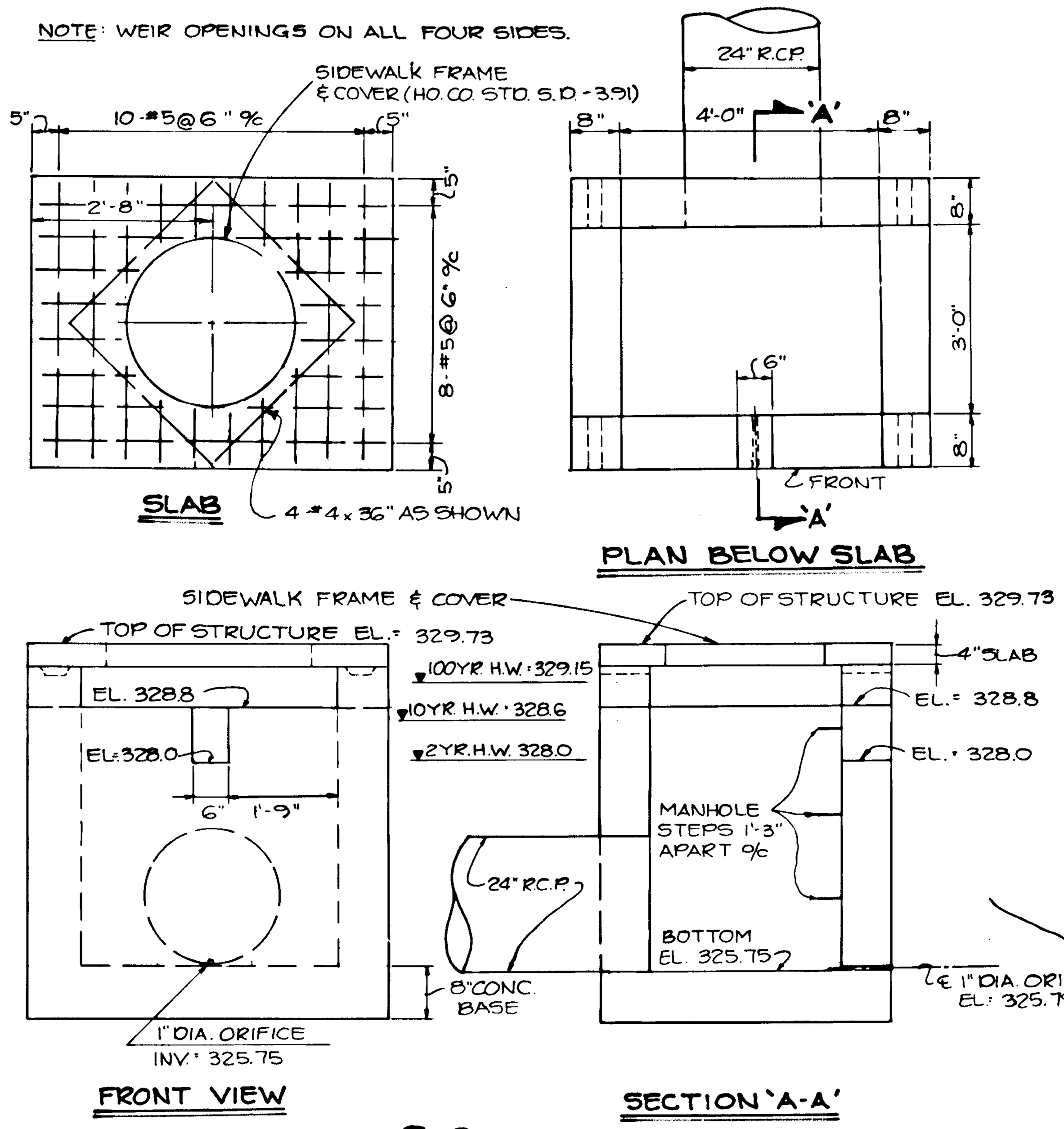
Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also by used.

Placing Temperature:

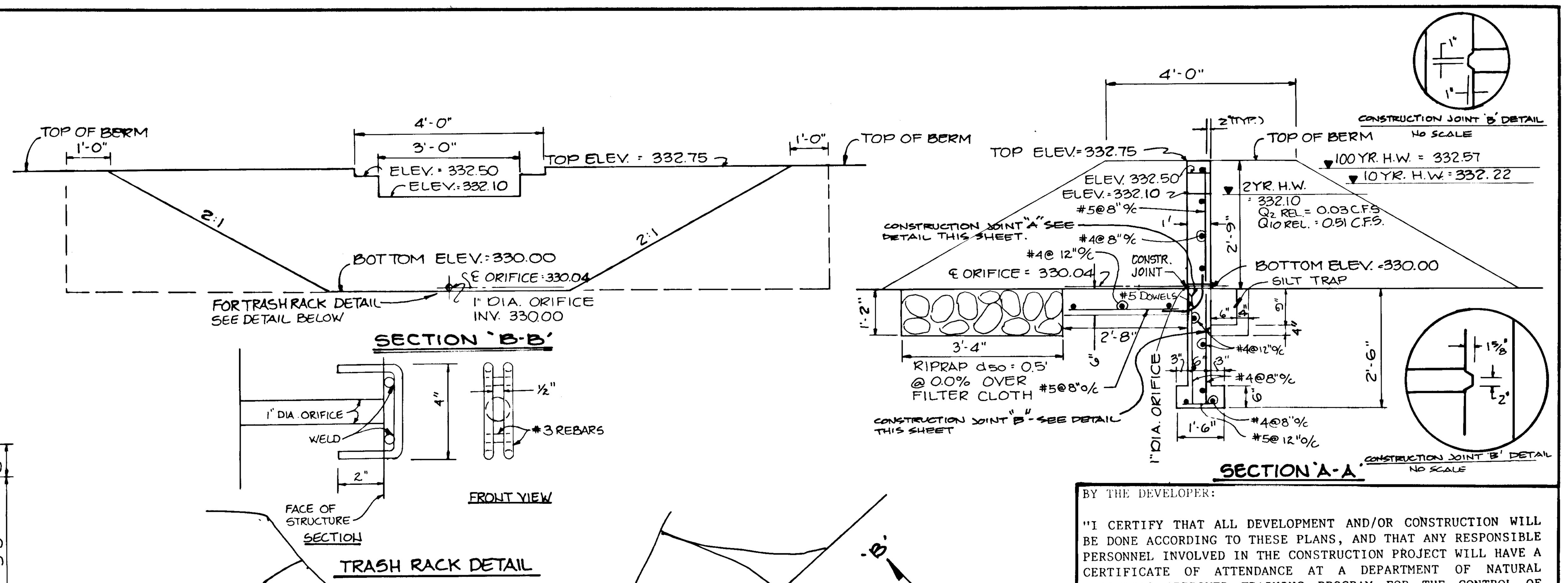
Concrete may not be placed at temperatures below 37° F with the temperature falling, or 34° with the temperature rising.

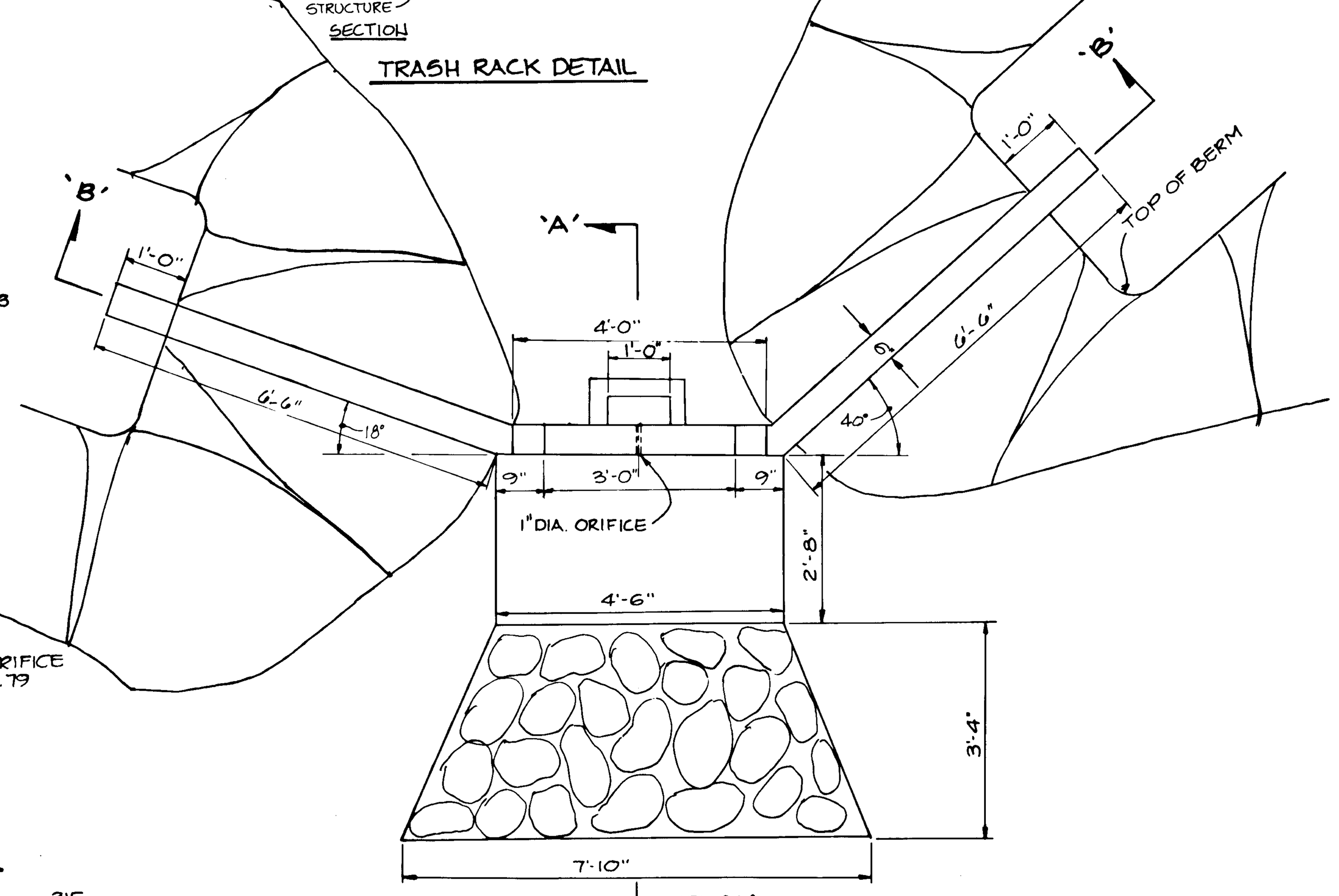
VI STABILIZATION

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, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications shown on or accompanying the drawings.

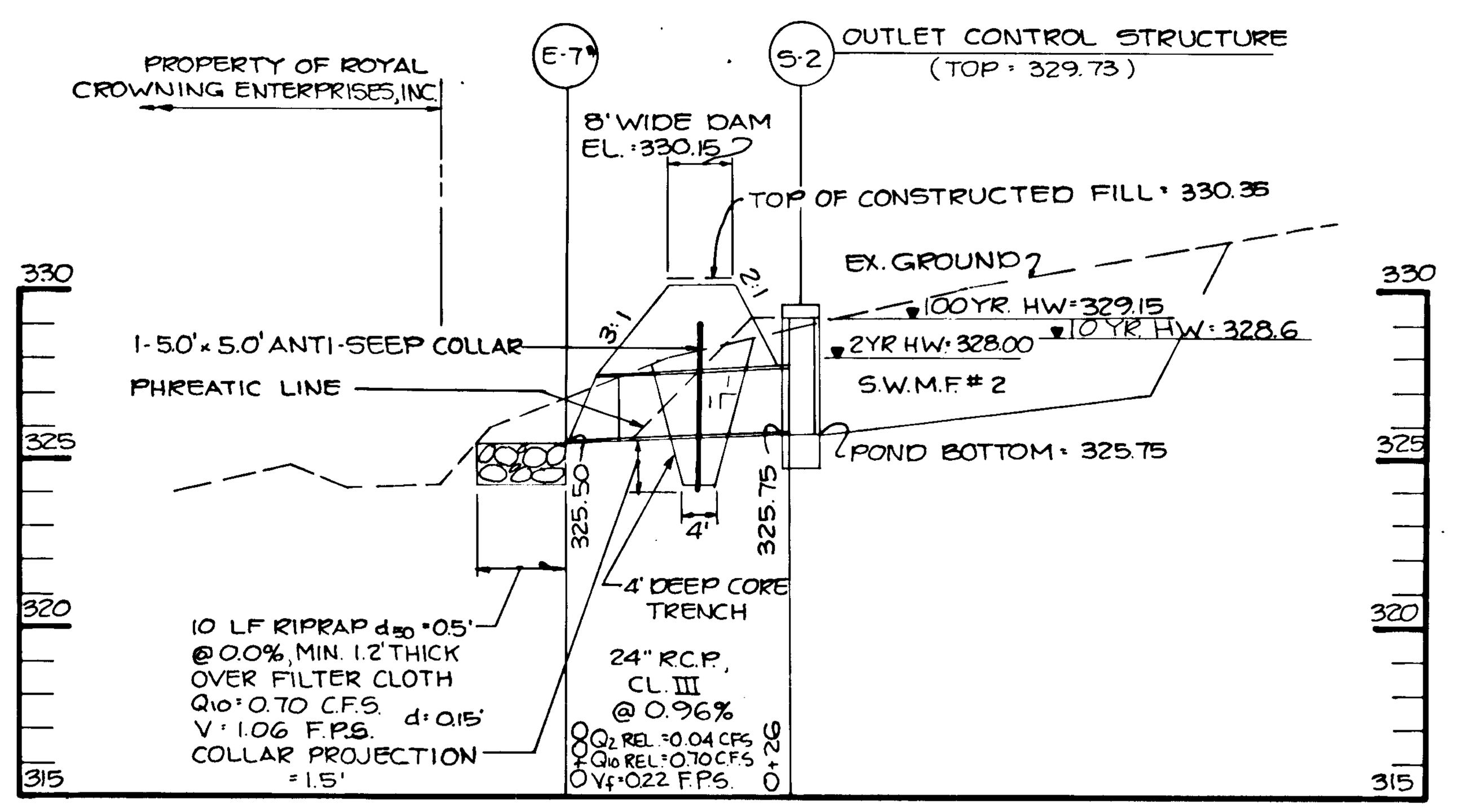


S-2
OUTLET CONTROL STRUCTURE - S.W.M.F. #2
NO SCALE

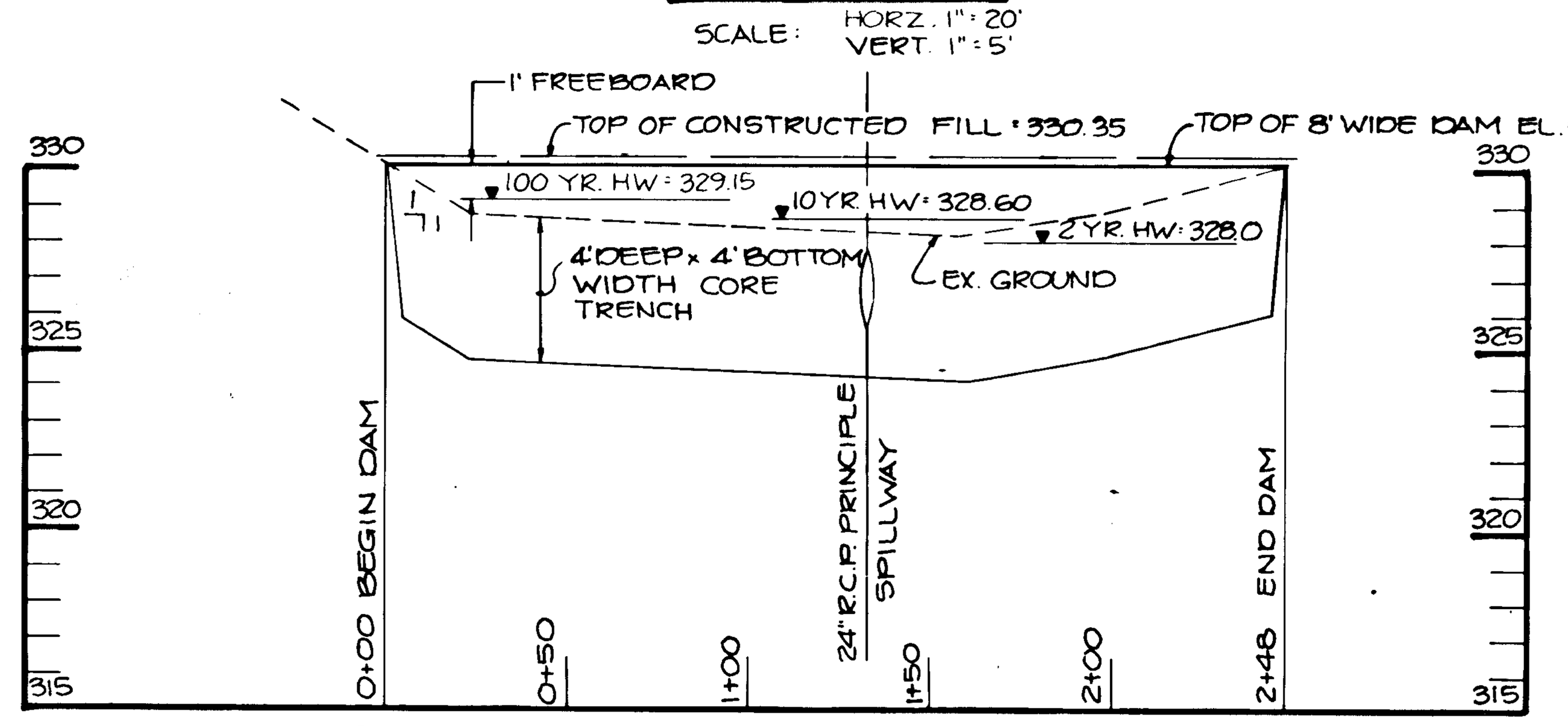




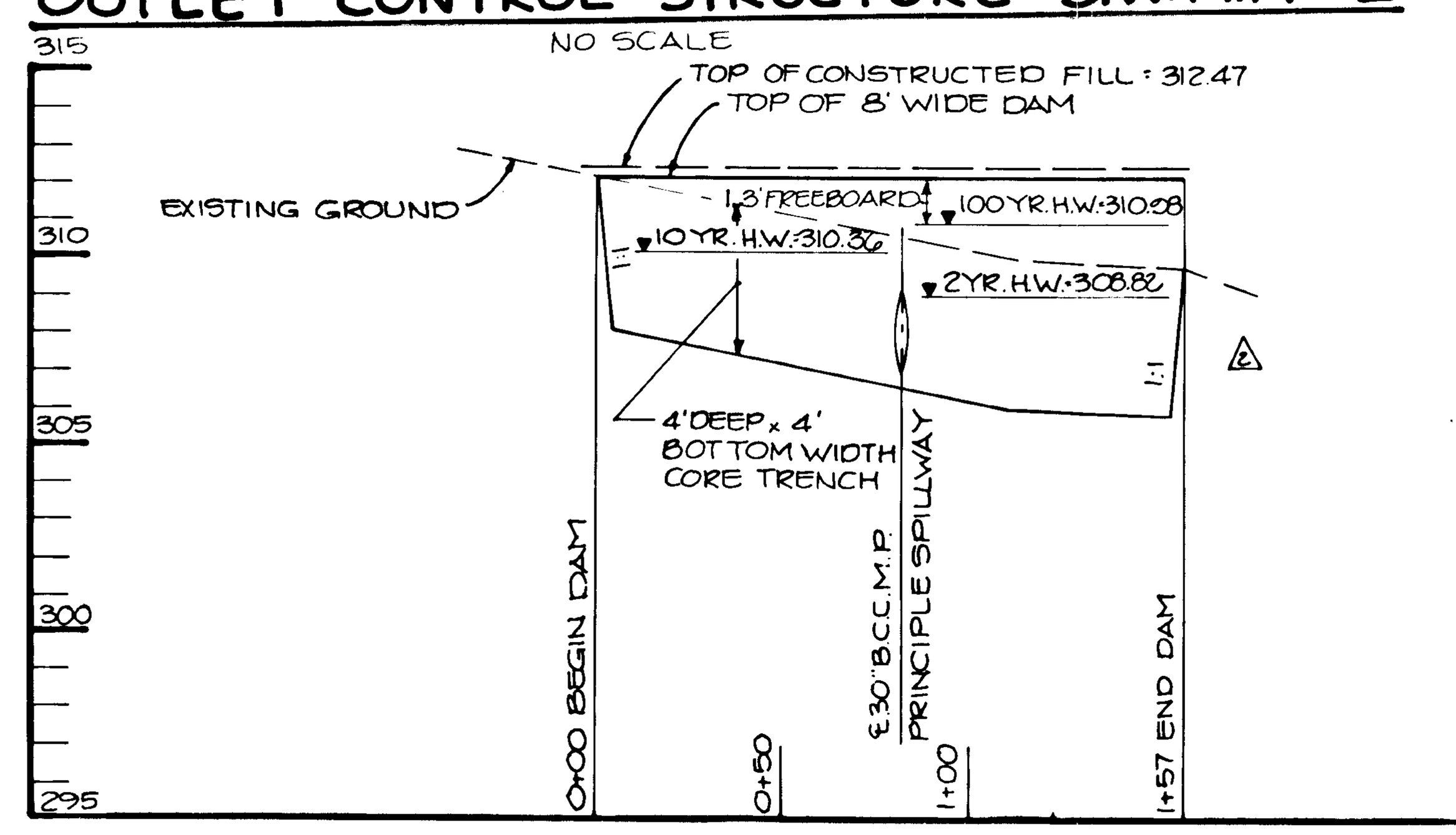
S-3 'A' PLAN
OUTLET CONTROL STRUCTURE S.W.M.F. #3
NO SCALE



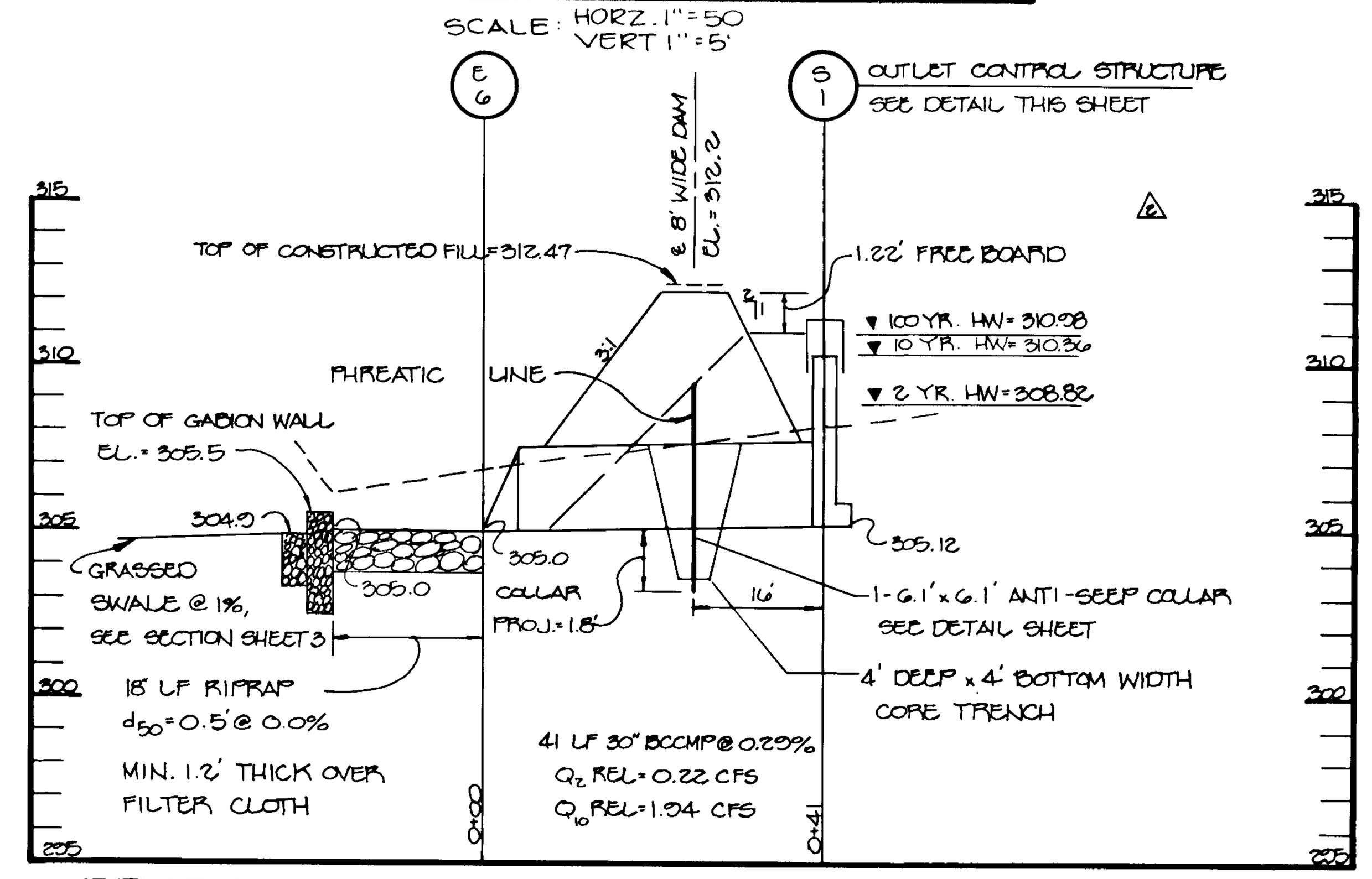
PROFILE: PRINCIPLE SPILLWAY S.W.M.F. #2
SCALE: HORZ. 1" = 20' VERT. 1" = 5'



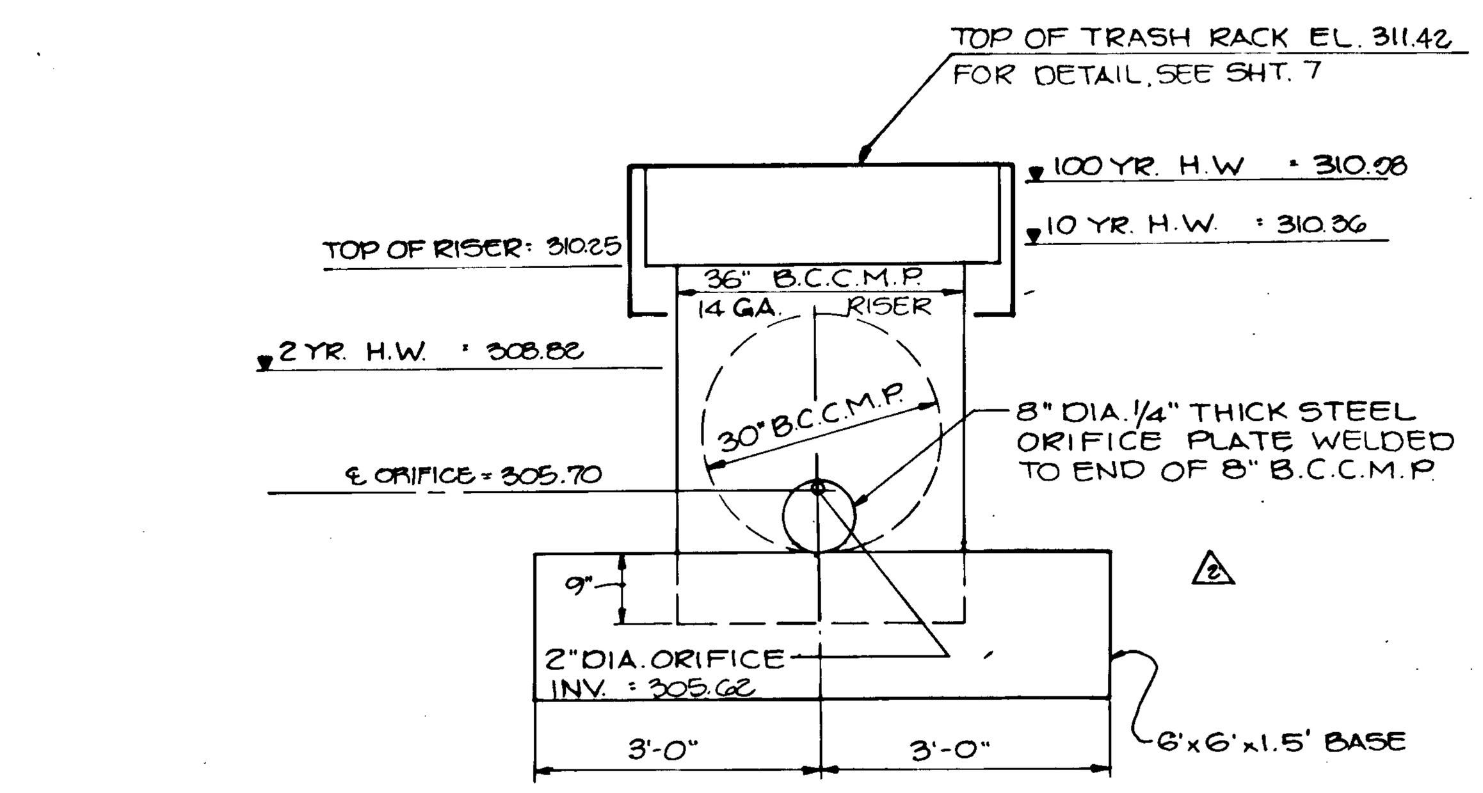
PROFILE: TOP OF DAM - S.W.M.F. #2
SCALE: HORZ. 1" = 50' VERT. 1" = 5'



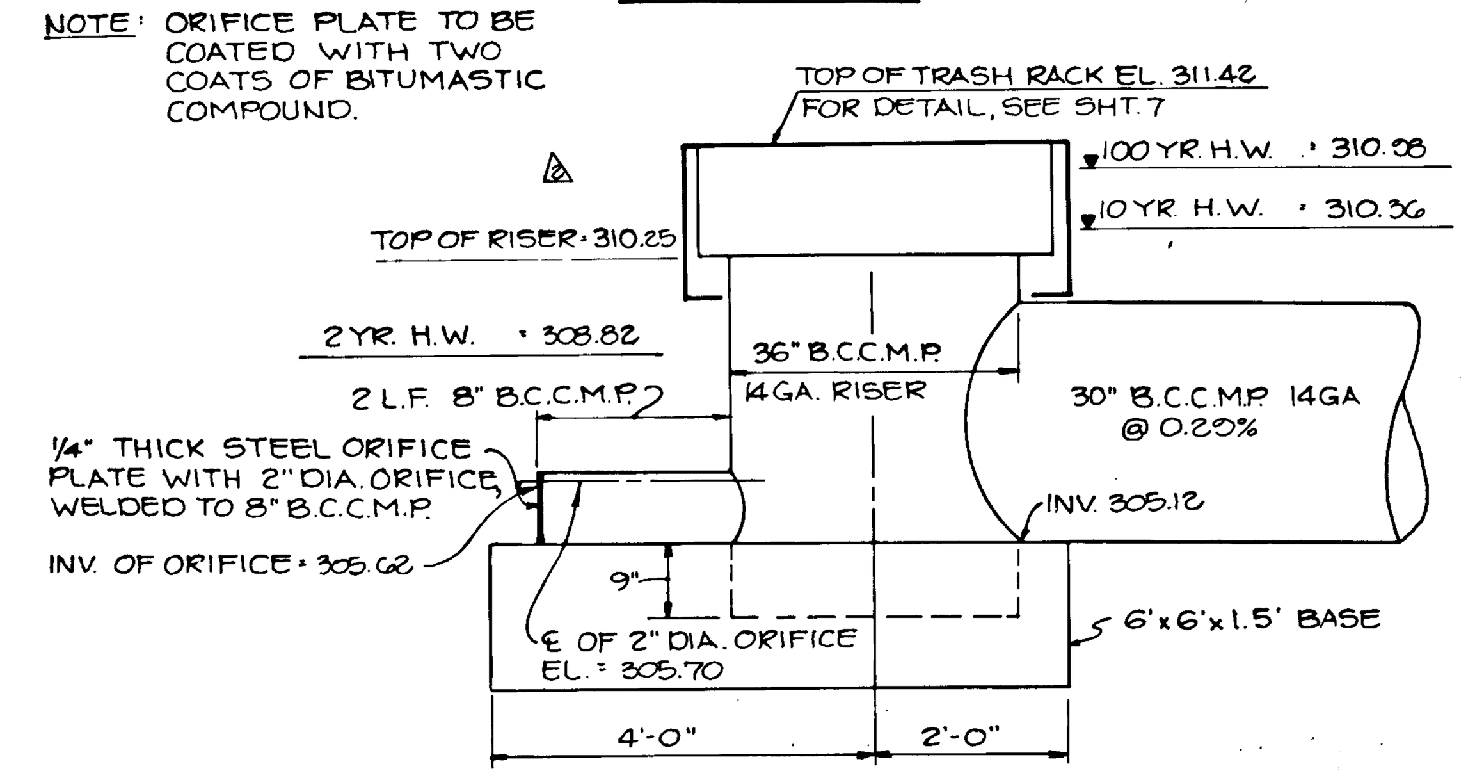
PROFILE: TOP OF DAM - S.W.M.F. #1
SCALE: HORZ. 1" = 50' VERT. 1" = 5'



PROFILE: PRINCIPLE SPILLWAY - S.W.M.F. #1
SCALE: HOR. 1" = 20' VERT. 1" = 5'



NOTE: ORIFICE PLATE TO BE COATED WITH TWO COATS OF BITUMASTIC COMPOUND.



S-1
OUTLET CONTROL STRUCTURE S.W.M.F. #1
NO SCALE

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 PONDS NO. 1 AND 2 WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] DEVELOPER — 5-26-88 DATE

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 PONDS NO. 1 AND 2 WITHIN 30 DAYS OF COMPLETION."

Arthur E. Muegge — ENGINEER — 5-31-88 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.

[signature] U.S. SOIL CONSERVATION SERVICE — 6/23/88 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 — HOWARD S.C.D. — 6/24/88 DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature] CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 12-2-88 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald B. Jepson — Chief, Land Development Division — 10/27/88 Date

Granville W. Wehland — Chief, Bureau of Highways — 11/02/88 Date

William E. Riley — Chief, Bureau of Engineering — 11-16-88 Date

DATE	NO	REVISION
1-15-91	2	REVISED POND OUTLET STRUCTURE

OWNER / DEVELOPER

H&A CONSTRUCTION CO., INC.
13 C STREET
LAUREL, MARYLAND 20707

PROJECT
PAINTER'S HILL
SECTION ONE

AREA TAX MAP 37 — PARCEL 467
6TH ELECTION DISTRICT — P-86-53
HOWARD COUNTY, MARYLAND — S-86-15

TITLE **STORM WATER MANAGEMENT SPECIFICATIONS AND DETAILS**

THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 North Ridge Road, Ellicott City, Maryland 21043 (301) 461-2690

5-31-88
DATE
STATE OF MARYLAND — ARTHUR E. MUEGGE III — NO. 8707 REGISTERED PROFESSIONAL ENGINEER
ARTHUR E. MUEGGE #8707

DESIGNED BY: J.J.B.
DRAWN BY: D.V.P.
PROJECT NO: 22200
DATE: OCTOBER 2, 1987
SCALE: AS SHOWN
DRAWING NO. 5 OF 7

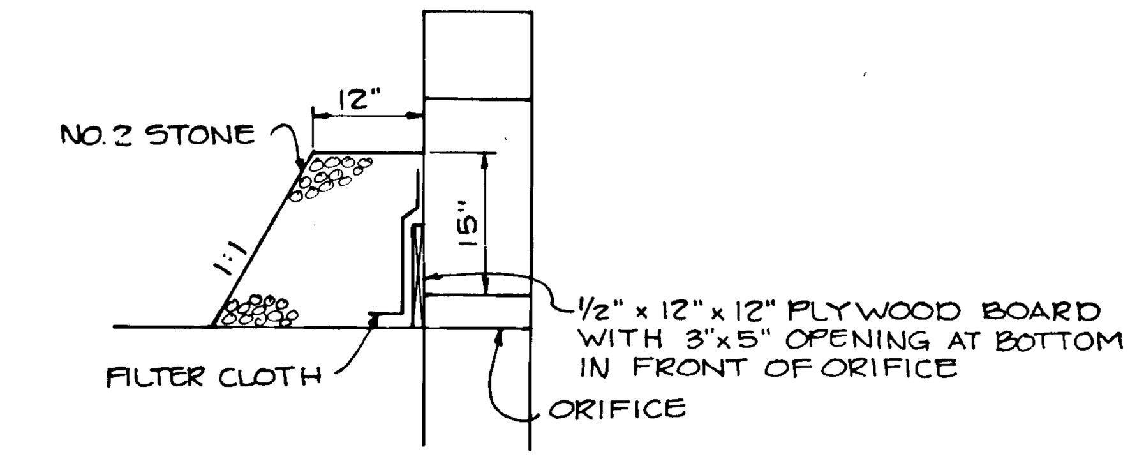
F-88-13

1392

MARYLAND BLUEPRINT CO. INC.

LOW FLOW ORIFICE BLOCKING DETAIL @ S-3

NO SCALE

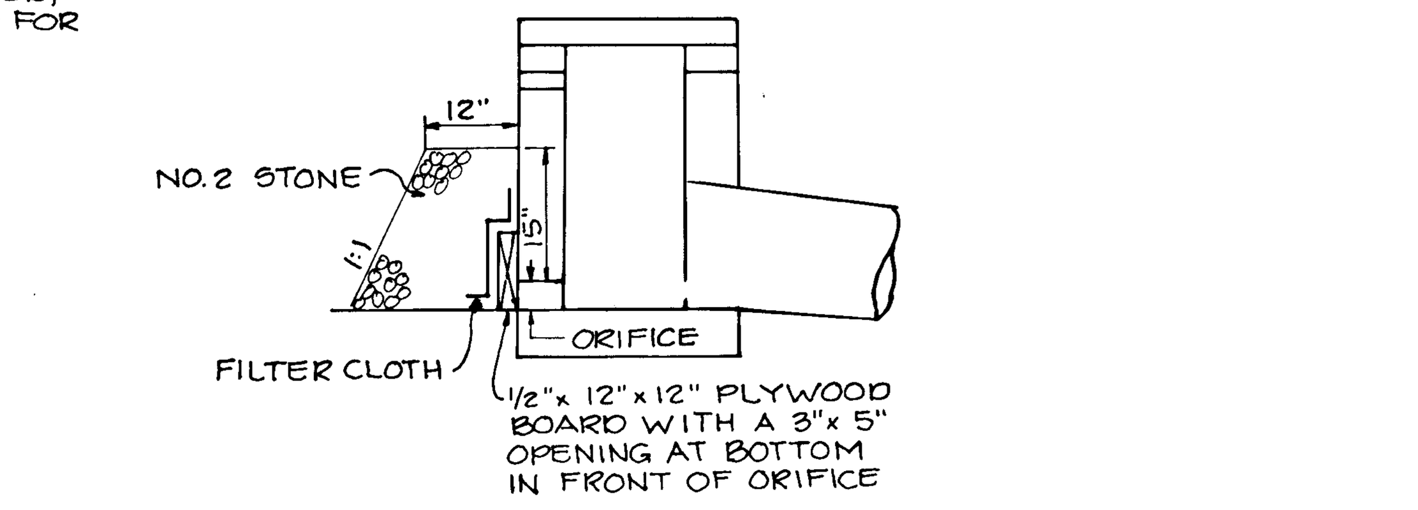


AREA 3 (STONE OUTLET SEDIMENT TRAP MODIFIED, USE OUTLET CONTROL STRUCTURE FOR SPILLWAY - SEE DETAIL, SHT. 5)
D.A. = 0.85 Ac.
Vol. REQ'D. = 0.85 x 1800 = 1530 C.F.
VOL. PROV'D = 2,530 C.F. @ CREST
CREST ELEV. = 332.1
BOTTOM ELEV. = 330.0
CLEANOUT ELEV. = 331.0
DEPTH = 2.1' (BELOW SPILLWAY)
SPILLWAY WIDTH = 3' (WEIR 1) AND 4' (WEIR 2)

AREA 2 (PIPE OUTLET SEDIMENT TRAP MODIFIED, USE OF OUTLET CONTROL STRUCTURE FOR SPILLWAY - SEE DETAIL, SHT. 5)
D.A. = 2.82 Ac.
VOL. REQ'D. = 2.82 x 1,800 = 5,076 C.F.
VOL. PROV'D. = 8,356 C.F. @ CREST
CREST ELEV. = 328.0
BOTTOM ELEV. = 325.75
CLEAOUT ELEV. = 326.8
DEPTH = 2.25' (BELOW SPILLWAY)
SPILLWAY WIDTH = 0.5' (WEIR 1) AND 14' (WEIR 2)

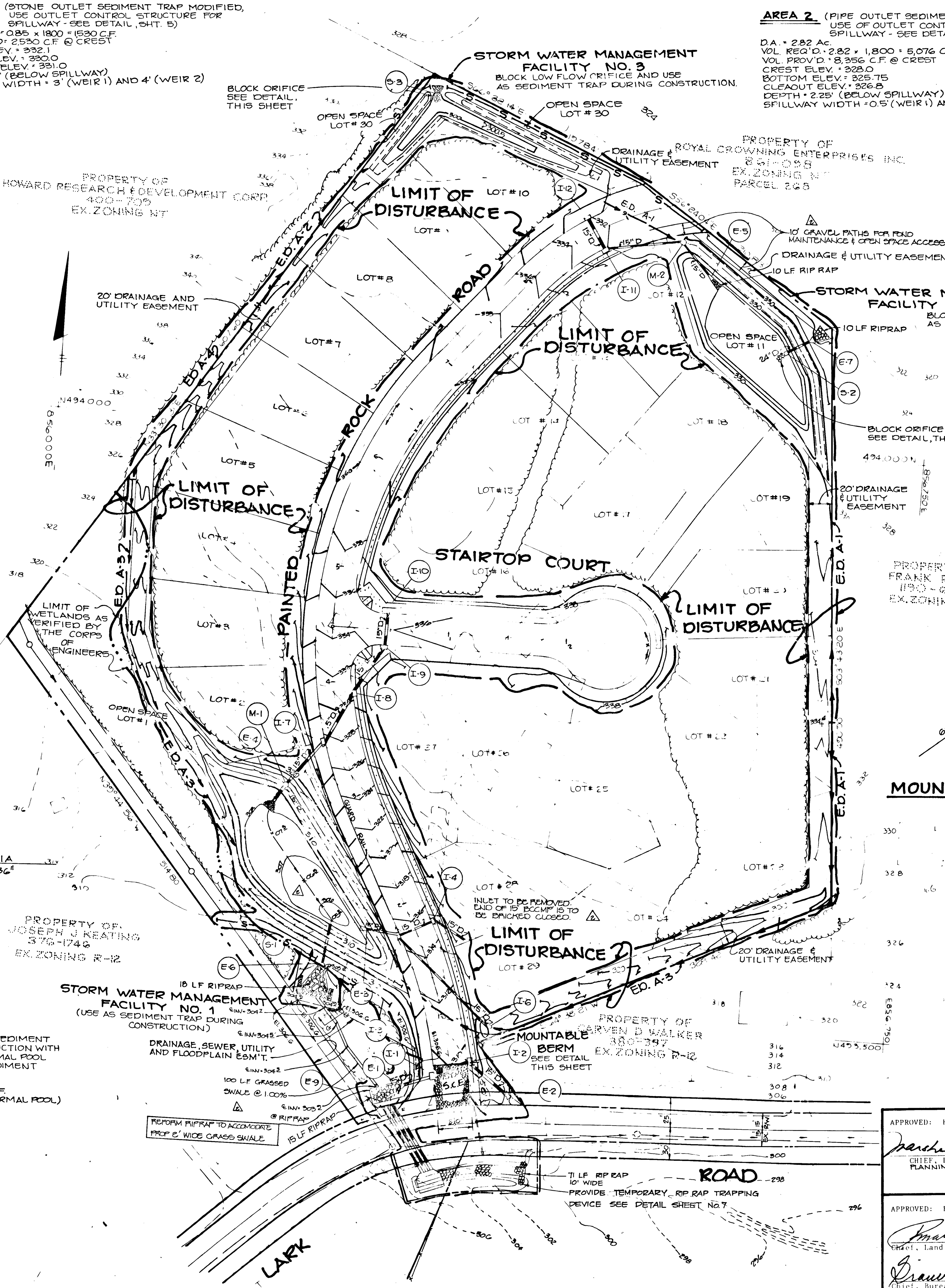
LOW FLOW ORIFICE BLOCKING DETAIL @ S-2

NO SCALE

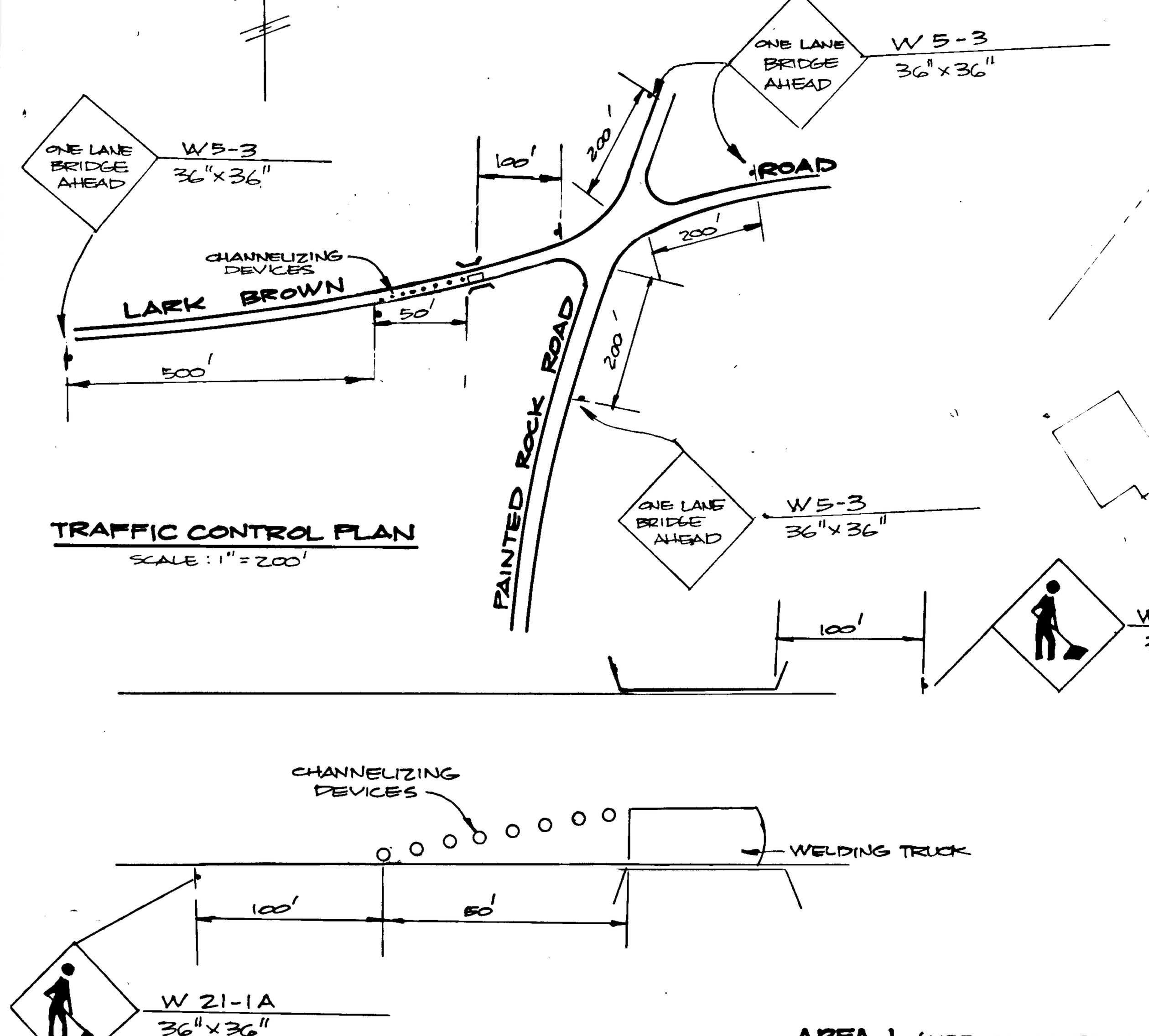


SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, AND SILT FENCE. INSTALL STORM WATER MANAGEMENT FACILITIES, BLOCKING LOW FLOW ORIFICES. (5 DAYS)
3. CLEAR AND GRUB AREA WITHIN LIMITS OF DISTURBANCE. (5 DAYS)
4. GRADE SITE. STABILIZE PER TEMPORARY SEEDING NOTES. (6 DAYS)
5. INSTALL UTILITIES AND STABILIZE DISTURBED AREAS PER TEMPORARY SEEDING NOTES. (2 WEEKS)
6. INSTALL CURB AND GUTTER AND PAVE ROADS. (10 DAYS)
7. FINE GRADE AS NEEDED. STABILIZE ALL DISTURBED AREAS PER PERMANENT SEEDING NOTES. (3 DAYS)
8. AFTER OBTAINING PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR REMOVE TEMPORARY SEDIMENT CONTROL MEASURES AND RESTORE TEMPORARY TRAPS INTO S.W.M. FACILITIES BY:
   A. PUMP STANDING WATER ONTO A STABILIZED OUTFALL.
   B. REMOVE SEDIMENT AND DEPOSIT ON A SITE WITH APPROVED SEDIMENT CONTROL.
   C. REMOVE LOW FLOW ORIFICE BLOCKING, RESTORE GRADES TO DESIGN ELEVATIONS AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
   D. REMOVE REMAINING SEDIMENT CONTROL MEASURES AND STABILIZE ANY DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.



AREA 1 (USE S.W.M. POND AS SEDIMENT TRAP DURING CONSTRUCTION WITH THE AREA BELOW NORMAL POOL BEING USED FOR SEDIMENT TRAP VOLUME.)
D.A. = 5.39 Ac.
VOL. REQ'D. = 5.39 x 1800 = 9,702 C.F.
VOL. PROV'D. = 15,500 @ 307.0 (NORMAL POOL)
CREST ELEV. = 307.0
BOTTOM ELEV. = 303.0
CLEANOUT ELEV. = 305.0
(DEPTH 4' (BELOW SPILLWAY)



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 PONDS NO. 1 AND 2 WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — 5-26-88 DATE

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 PONDS NO. 1 AND 2 WITHIN 30 DAYS OF COMPLETION."

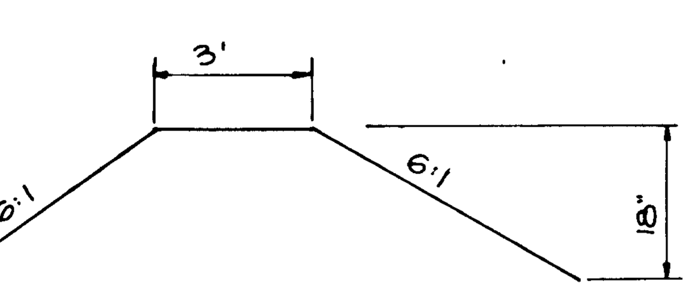
Arthur E. Muegge — ENGINEER — 5-31-88 DATE

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.

U.S. SOIL CONSERVATION SERVICE — 6/23/88 DATE

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

APPROVED Robert W. Zehm — HOWARD S.C.D. — 6/24/88 DATE



MOUNTABLE BERM

NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 12-7-88 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — 10/27/88 Date

Chief, Bureau of Highways — 11/02/88 Date

Chief, Bureau of Engineering — 11-16-88 Date

DATE	NO	REVISION
11-6-91	1	REMOVE I-5, REVISE POND OUTLET STRUCTURE, ADD GRAVEL PATHS FOR POND MAINTENANCE & OPEN SPACE ACCESS

OWNER / DEVELOPER
H A CONSTRUCTION CO. INC.
13 C STREET
LAUREL, MARYLAND 20707

PROJECT **PAINTER'S HILL** SECTION ONE

AREA TAX MAP 37 PAR. [illegible]
6TH ELECTION DISTRICT P-86-58
HOWARD COUNTY, MARYLAND S-86-15

TITLE **GRADING AND SEDIMENT CONTROL PLAN**

THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

5-31-88 DATE

ARTHUR E MUEGGE 10707

DESIGNED BY	LJD
DRAWN BY	DV.P
PROJECT NO	22200
DATE	OCTOBER 2, 1987
SCALE	1" = 50'
DRAWING NO.	6 OF 7

F-88-13

1322

sediment control specifications

PERMANENT SEEDING

Seedbed Preparation: Flat areas and slopes up to 3:1 slope shall be loose and friable to a depth of at least 3 inches. The top layer of soil shall be loosened by raking, discing or other acceptable means before seeding. Slopes steeper than 3:1 shall have the top 1 to 3 inches of soil loose and friable before seeding.

Soil Amendments: Use one of the following schedules.

Lime and fertilize according to soil tests. Lime and fertilizer needs can be determined by a soil testing laboratory, such as the University of Maryland's Soil Testing Laboratory.
In lieu of soil test results, use one of the following schedules.

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 LBS./1000 SF) and 600 LBS. per acre 10-10-10 fertilizer (14 LBS./1000 SF) 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 (91 LBS./1000 SF)
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 LBS./1000 SF) and 1000 LBS. per acre 10-10-10 fertilizer (23 LBS./1000 SF) before seeding. Harrow or disc into upper three inches of soil.

On slopes steeper than 3:1 slope, the lime and fertilizer shall be worked the best way possible. On sloping land, the final harrowing or discing operation should be on the contour wherever feasible. No attempt should be made to drag any disced area to make the soil surface smooth after discing.

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 SF) of Kentucky 31 Tall Fescue.

For the period May 1 thru July 31.
Seed with 60 LBS. Kentucky 31 Tall Fescue per acre and 2 LBS. per acre (.05 LBS./1000 SF) of Weeping Lovegrass.

For the period October 16 thru February 28, protect site by:
Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
Option (2) Use sod.
Option (3) Seed with 60 LBS./acre (1.4 LBS./1000 SF) Kentucky 31 Tall Fescue and mulch with 2 tons per acre well-anchored straw.

Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer) on a firm, moist seedbed. Maximum seeding depth should be 1/4 inch on clayey soils and 1/2 inch on sandy soils, when using other than hydroseeder method of application. Note: If hydroseeding is used and the seed and fertilizer is mixed, they shall be mixed on site and the seeding shall be immediate without interruption.

Mulching: See Mulching Specification.

Irrigation:

If soil moisture is deficient, supply new seedings with adequate water for plant growth until they are firmly established, if feasible. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Maintenance:

Irrigation - If soil moisture becomes deficient, irrigate to prevent loss of stand of protective vegetation, if feasible.
Repairs - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season, if possible.
1) If stand is inadequate for erosion control, overseed and fertilize using half of the rates originally applied.
2) If stand is over 60% damaged, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.

TEMPORARY SEEDING

Seedbed Preparation:

When the area to be seeded has been recently loosened to the extent that an adequate seedbed exists, no additional treatment is required.
However, when the area to be seeded is packed, crusted, and hard, the top 3 inches of soil shall be loosened by discing, raking or other acceptable means before seeding.

Soil Amendments:

For temporary seedings, fertilizer shall be applied at the rate of 600 LBS. per acre (15 LBS./1000 SF), using 10-10-10 or equivalent. Soils which are highly acid should be limed.

Seeding:

For periods March 1 thru April 30 and August 15 thru November 15.
Seed with 2 1/2 BU. per acre (3.2 LBS./1000 SF) of annual rye

For the period May 1 thru August 14.
Seed with 3 LBS. per acre (.07 LBS./1000 SF) of Weeping Lovegrass.

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.

Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer).

Mulching: See Mulching Specification.

SOD

Sod shall be Kentucky 31 Tall Fescue or Kentucky Bluegrass/Red Fescue mixture, or approved equal. All sod shall be Maryland or Virginia State Certified or Maryland or Virginia State approved sod.

Site Preparation:

Fertilizer and lime application rates shall be determined by soil tests. Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer and lime materials may be applied in amounts shown under B, below.
A) Prior to sodding, the surface shall be cleared of all trash, debris, and of all roots, brush, wire, grade stakes and other objects that would interfere with planting, fertilizing or maintenance operations.
B) Where the soil is acid or composed of heavy clays, ground limestone shall be spread at the rate of 2 tons per acre (100 LBS./1000 SF). In all soils 1000 LBS. per acre (25 LBS./1000 SF) of 10-10-10 fertilizer or equivalent shall be uniformly applied and mixed into the top 3 inches of soil with the required lime.
C) All areas receiving sod shall be uniformly fine graded. Hard-packed earth shall be scarefied prior to placement of sod.

Sod Installation:

During periods of excessively high temperature the soil shall be lightly irrigated immediately prior to laying the sod.

The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Insure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

On sloping areas where erosion may be a problem, sod shall be laid with the long edges parallel to the contour and with staggered joints. Secure the sod by tamping and pegging or other approved methods.

As sodding is completed in any one section, the entire area shall be rolled or tamped to insure solid contact of roots with the soil surface. Sod shall be watered immediately after rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

Sod Maintenance:

In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done during the heat of the day to prevent wilting.

After the first week, sod shall be watered as necessary to maintain adequate moisture and insure establishment.

First mowing should not be attempted until sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 and 3 inches unless otherwise specified.

MULCHING

Materials and Amounts:

1) Straw - Straw shall be unrotted small grain applied at the rate of 1 1/2 to 2 tons per acre (70 to 90 LBS./1000 SF). Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds such as: thistles, Johnsongrass and quackgrass.
Spread uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1000 SF sections and place 70 to 90 LBS.(two bales) of mulch in each section.
2) Asphalt emulsion or cutback asphalt at 600 to 1200 GALS. per acre (15 to 30 GALS./1000 SF). This is suitable for a limited period of time where travel by people, animals or machines is not a problem.
3) Synthetic soil stabilizers may be used according to manufacturer's recommendations, under suitable conditions.
4) Mulch mattings such as jute or excelsior blanket shall be stapled to the surface in waterways and on steep slopes. Lighter materials of paper, plastic and cotton mulch mattings may be used where erosion hazard is not severe. If area is to be mowed, do not use metal staples.
5) Wood chips at the rate of approximately 6 tons per acre (275 LBS./1000 SF) may be used when available and when feasible to use.
6) Crushed rock, stones, gravel or shale blankets. Apply at rate of 20 to 100 tons per acre (900 to 4500 LBS./1000 SF) with coarsest material applied at the highest rate.

Mulch Anchoring

Mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by one of the following methods, (listed by preference) depending upon size of area, erosion hazard, and cost. On sloping land, practice No. 1 below, should be done on the contour wherever possible, except "tracking" should be done up and down the slope with 1 1/2 inch cleat marks running across the slope.

1) Mulch Anchoring Tool and Tracking. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the surface two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely - primarily used on flatter than 3:1 cut and fill slopes to cut the mulch into the soil. "Tracking" is used primarily on slopes steeper than 3:1 cut and fill slopes to cut the mulch into the soil with cleated tracks.
2) Mulch Nettings. Staple lightweight biodegradable paper, plastic or cotton netting over the mulch according to manufacturer's recommendations.
3) Liquid Mulch Binders. Applications of liquid binder should be heavier at edges where wind catches mulch, in valleys and at crests of banks. The remainder of the area should be uniform in appearance. Caution should be used with asphalt in residential and similar areas.
   a. Cutback asphalt - rapid curing (RC-70, RC-250 and RC-800) or medium curing (MC-250 or MC-800). Apply at the rate of 200 gallons per acre (5 GAL./1000 SF) on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, apply at the rate of 348 gallons per acre (8 GAL./1000 SF).
   b. Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply at the rate of 200 gallons per acre (5 GAL./1000 SF) on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, apply at the rate of 348 gallons per acre (8 GALS./1000 SF).

   All asphalt designations are from the Asphalt Institute Specifications.

   c. Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tac may be used at rates recommended by the manufacture to anchor mulch material.
4) Wood Cellulose Fiber Binder. The fiber binder shall be applied at a net dry weight of 750 LBS. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 LBS. of wood cellulose fiber per 100 gallons.
5) Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more round turns.

BRIDGE CONSTRUCTION NOTES

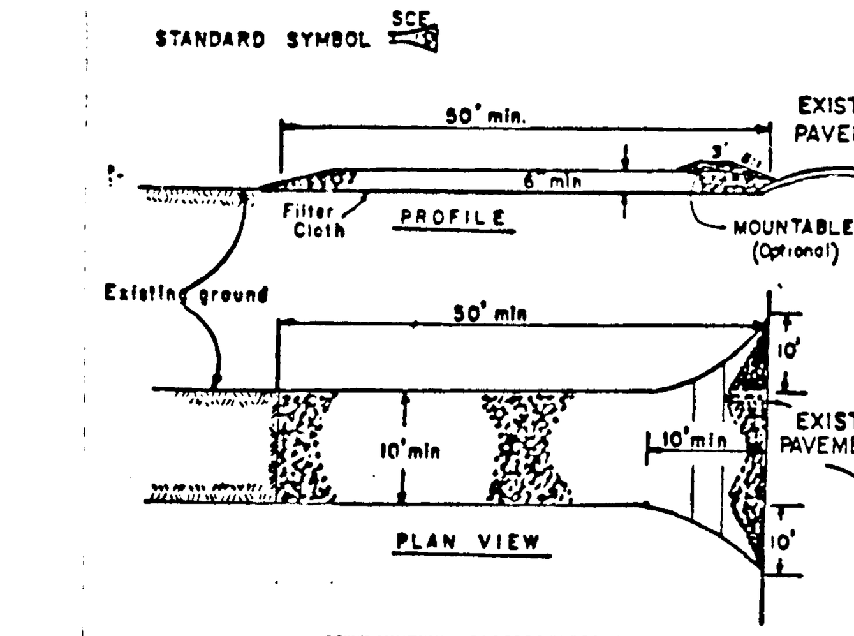
ALL WELDING WORK WILL BE DONE BY A WELDER CERTIFIED IN THE STATE OF MARYLAND.
ALL WORK ON BRIDGE SHOULD BE IN ACCORDANCE WITH HOWARD COUNTY, AASHTO AND STATE ROAD SPECIFICATIONS, LATEST EDITION.
THE DEVELOPER WILL NOTIFY THE BUREAU OF HIGHWAYS FIVE DAYS BEFORE STARTING WORK ON THE BRIDGE.
THE DEVELOPER WILL BE RESPONSIBLE FOR THE BRIDGE DURING THE PERIOD OF TIME THE PROPOSED WORK IS BEING DONE.
ANY DAMAGE TO THE BRIDGE DURING OR AS A RESULT OF THE DEVELOPERS MODIFICATION TO THE BRIDGE SHALL BE CORRECTED AT THE DEVELOPERS EXPENSE.
CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS AND ARRANGE FOR WELD INSPECTION PRIOR TO LEAVING CONSTRUCTION SITE.

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	9.5	acres
Area Disturbed	4.0	acres
Area to be roofed or paved	0.9	acres
Area to be vegetatively stabilized	3.1	acres
Total Cut	1,111	Cu. yds.
total Fill	850	Cu. yds.

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of distrubance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
10. Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
11. Sediment will be removed from traps when its depth reaches the clean out elevation shown on the plans.

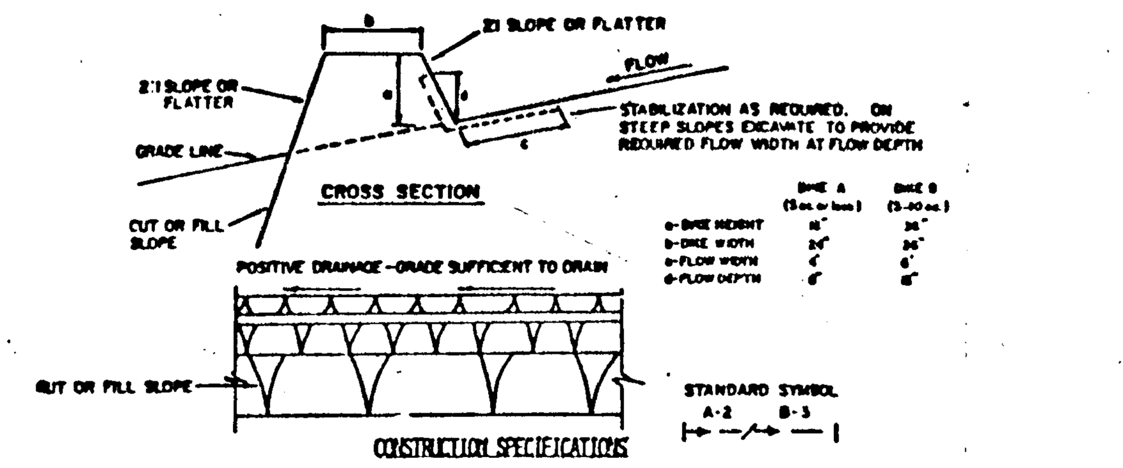


CONSTRUCTION SPECIFICATIONS

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 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 ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

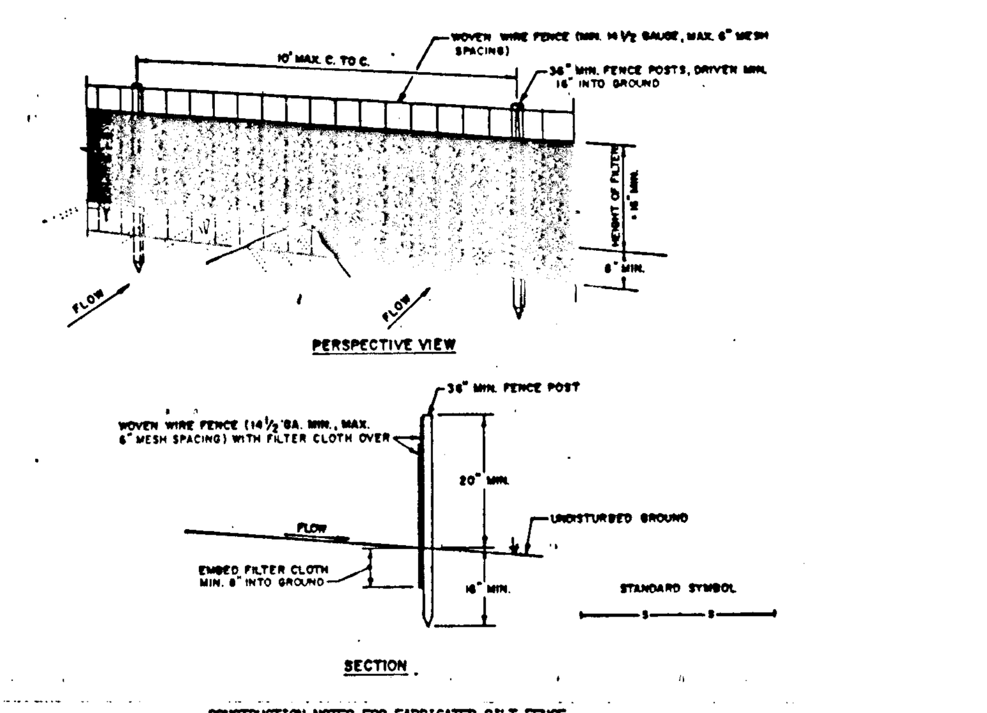
FLOW CHANNEL STABILIZATION

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
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES 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 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE DETAIL

NO SCALE



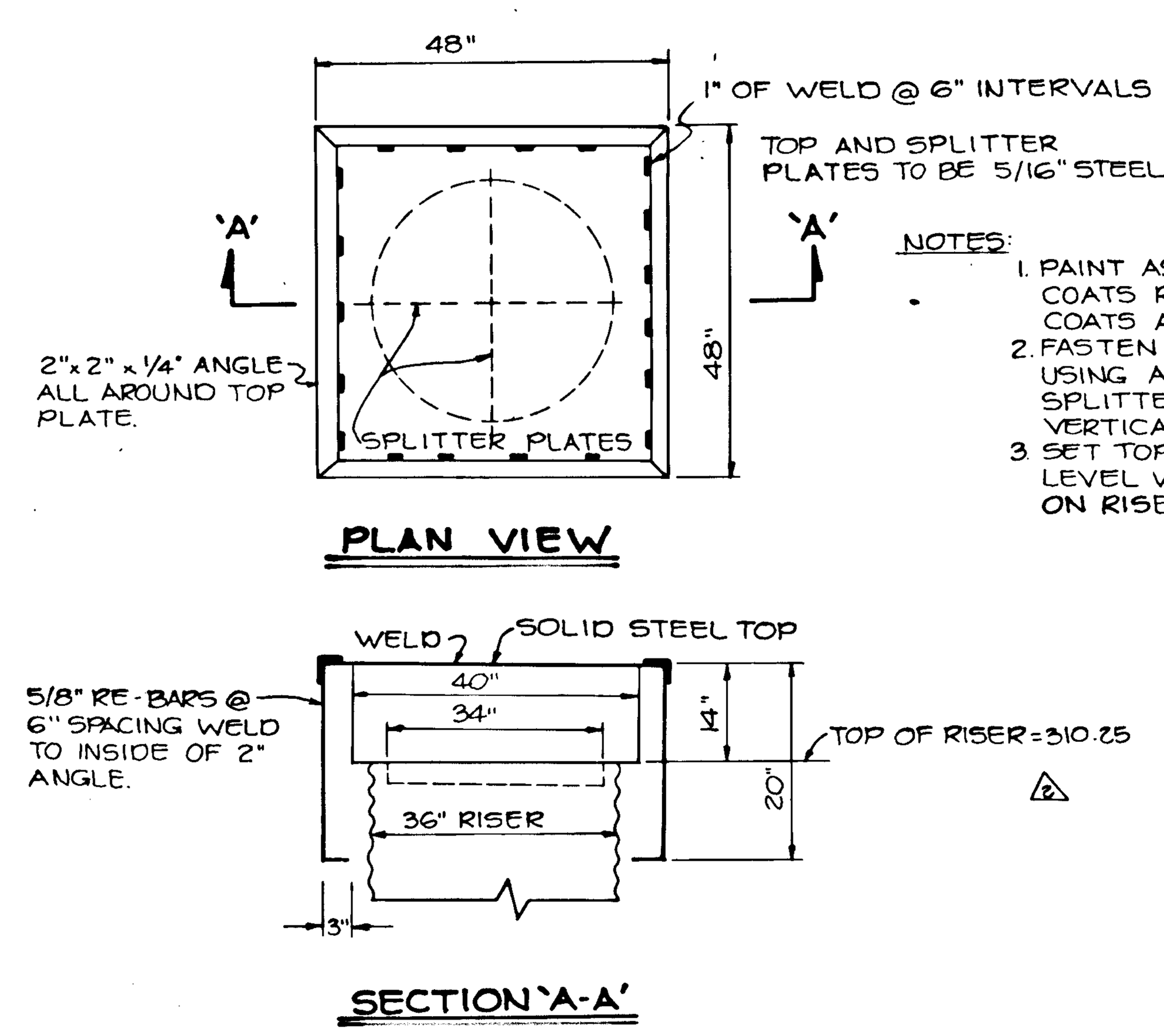
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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 OVER-LAPPED 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

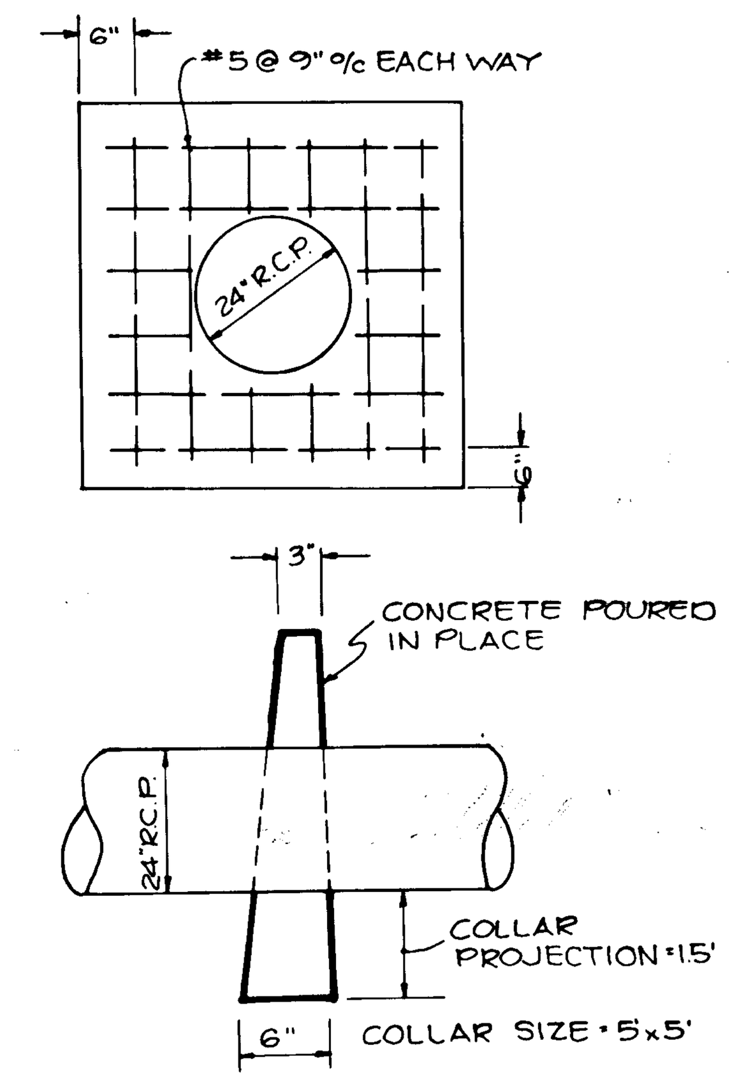
NO SCALE



NOTES:
1. PAINT ASSEMBLY USING 2 COATS RED LEAD AND 2 COATS ALUMINUM.
2. FASTEN ASSEMBLY TO RISER USING ANGLES BOLTED TO SPLITTER PLATES AND VERTICAL RISER PIPE
3. SET TOP OF ASSEMBLY LEVEL WHEN INSTALLING ON RISER.

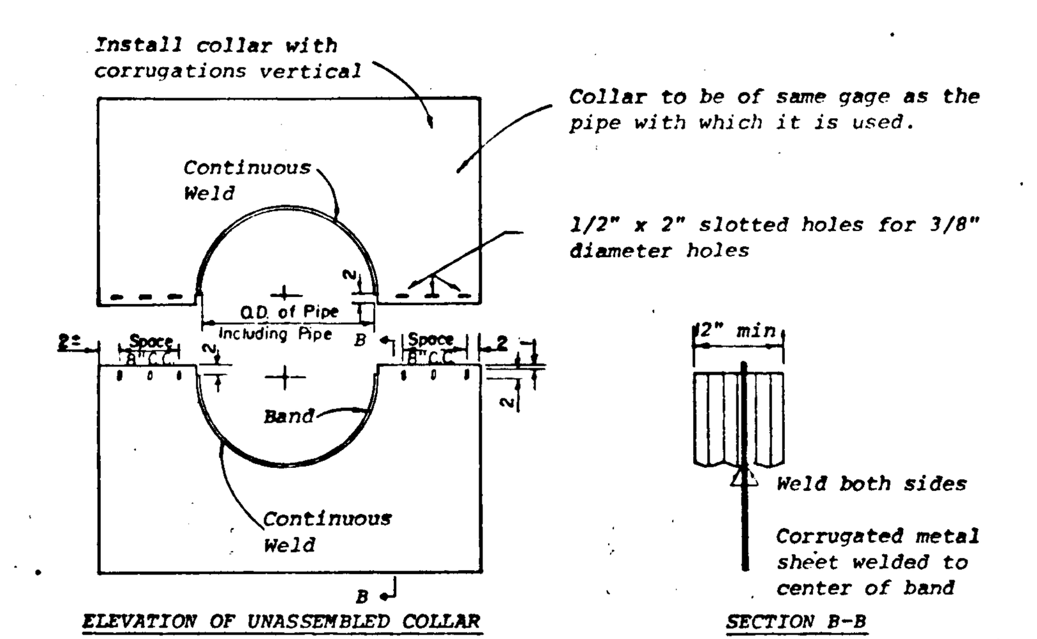
TRASH RACK DETAIL FOR S-1

NO SCALE



ANTI-SEEP COLLAR - S.W.M.F. #2

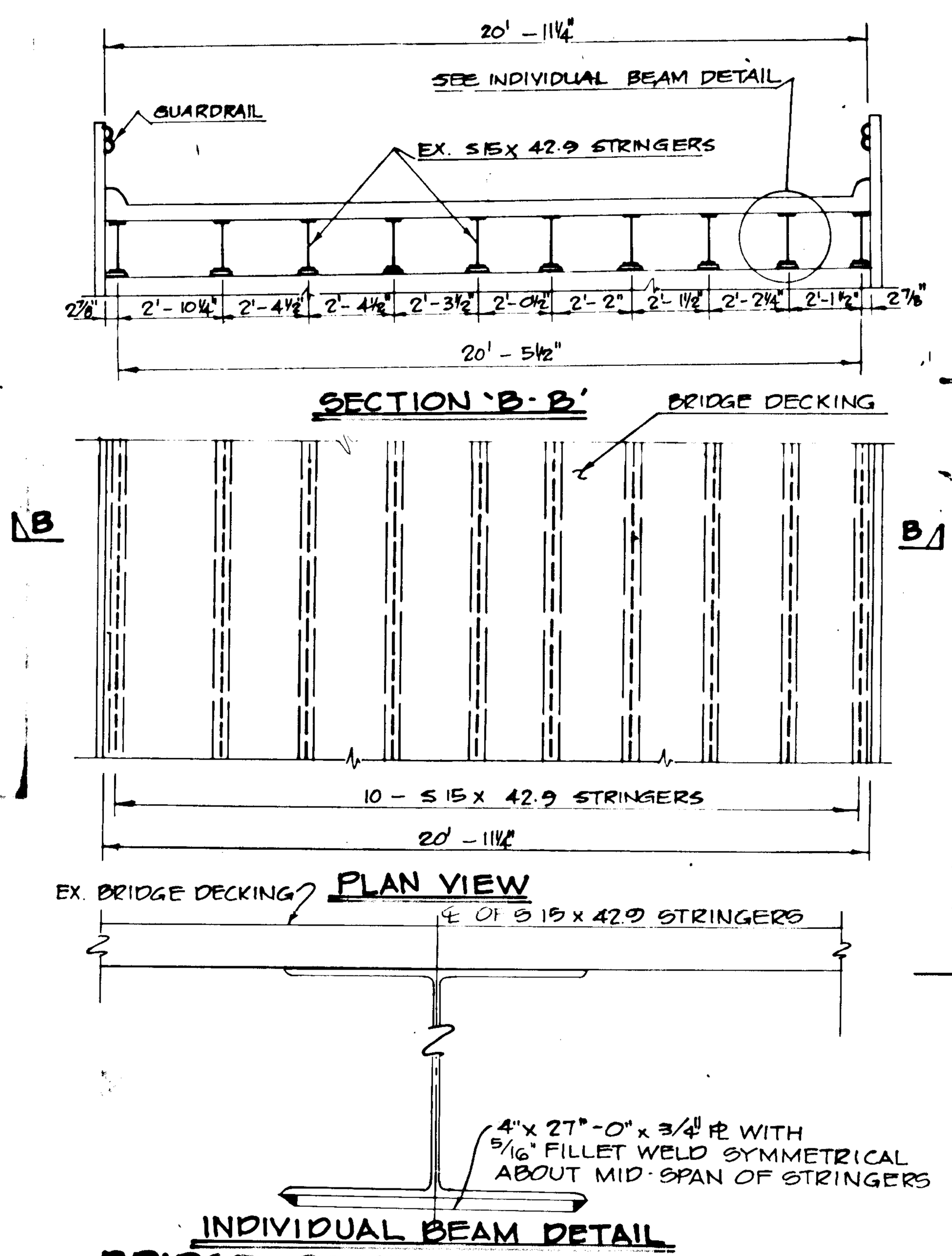
NO SCALE



NOTES FOR COLLARS:
1. All materials to be in accordance with construction and construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at time of installation.
5. Each collar shall be furnished with two 1/2" diameter rods with standard tank lugs for connecting collars to pipe.

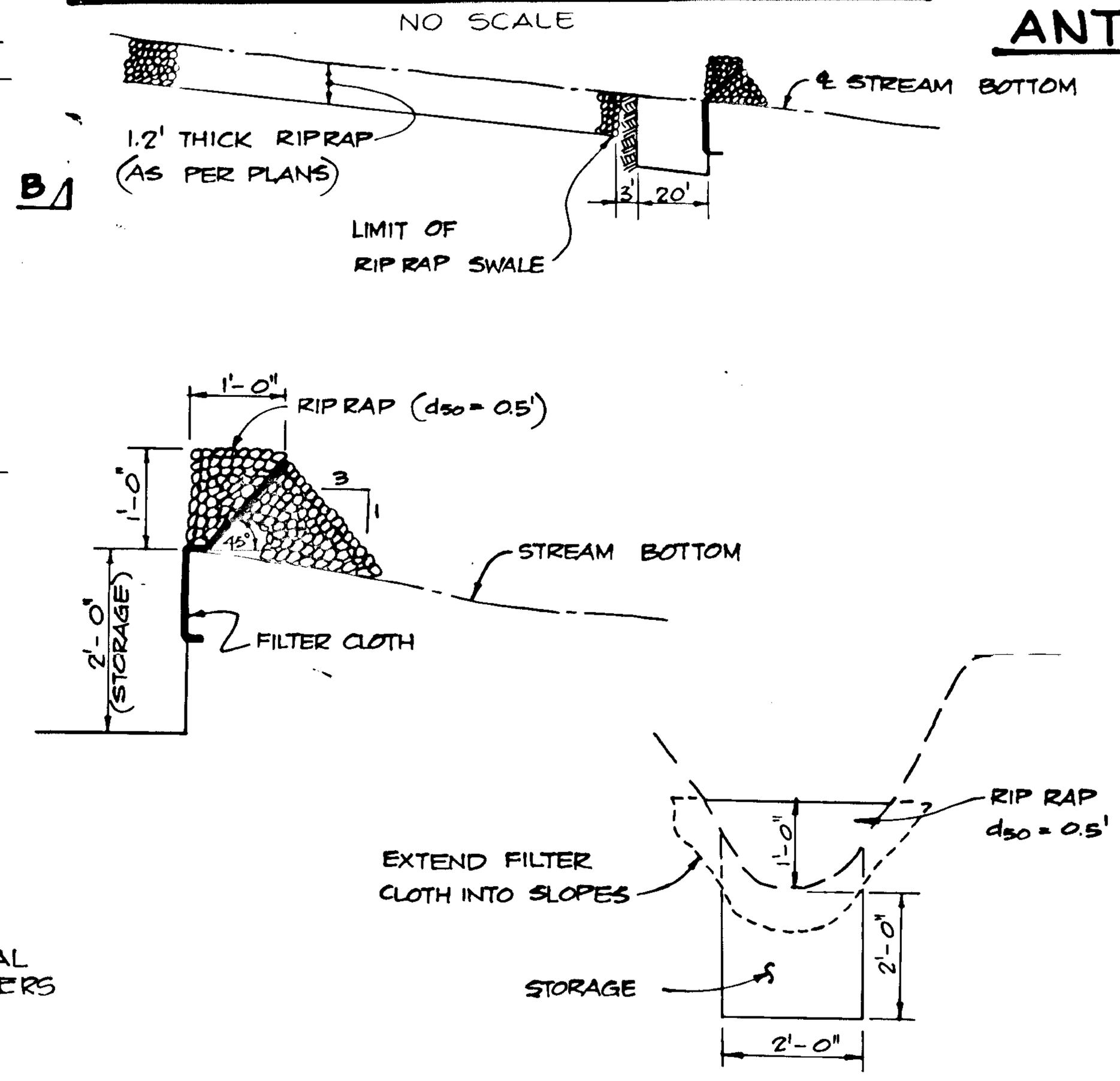
DETAIL OF CORRUGATED METAL ANTI-SEEP COLLAR - S.W.M.F. #1

NO SCALE



BRIDGE REINFORCEMENT DETAIL

NO SCALE



TRAPING DEVICE AT END RIP RAP SWALE

NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 12-?-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 10/27/88

Chief, Bureau of Highways — Date 11/02/88

Chief, Bureau of Engineering — Date 11-16-88

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 PONDS NO.1 AND 2 WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — DATE 5-26-88

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 PONDS NO.1 AND 2 WITHIN 30 DAYS OF COMPLETION."

ENGINEER — DATE 5-31-88

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.

U.S. SOIL CONSERVATION SERVICE — DATE 6/23/88

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

APPROVED HOWARD S.C.D. — DATE 6/24/88

DATE	NO	REVISION
1-15-91	2	REVISED POND OUTLET STRUCTURE

OWNER/DEVELOPER

H.A. CONSTRUCTION CO. INC.
13 C STREET
LAUREL, MARYLAND 20707

PROJECT

PAINTER'S HILL
SECTION ONE

AREA TAX MAP — PARCEL 467
6TH ELECTION DISTRICT — P 86-53
HOWARD COUNTY, MARYLAND — S-86-15

TITLE

SEDIMENT CONTROL NOTES AND DETAILS

THE RIEMER GROUP, INC.

The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 North Ridge Road, Ellicott City, Maryland 21043 (301) 461-2690

DATE 5-31-88

STATE OF MARYLAND — ARTHUR E. MUEGGE III — NO. 8707 REGISTERED PROFESSIONAL ENGINEER

ARTHUR E. MUEGGE #8707

DESIGNED BY: L.J.D.
DRAWN BY: J.C.R.
PROJECT NO: 22200
DATE: OCTOBER 2, 1987
SCALE: AS SHOWN
DRAWING NO. 7 OF 7

F-88-13