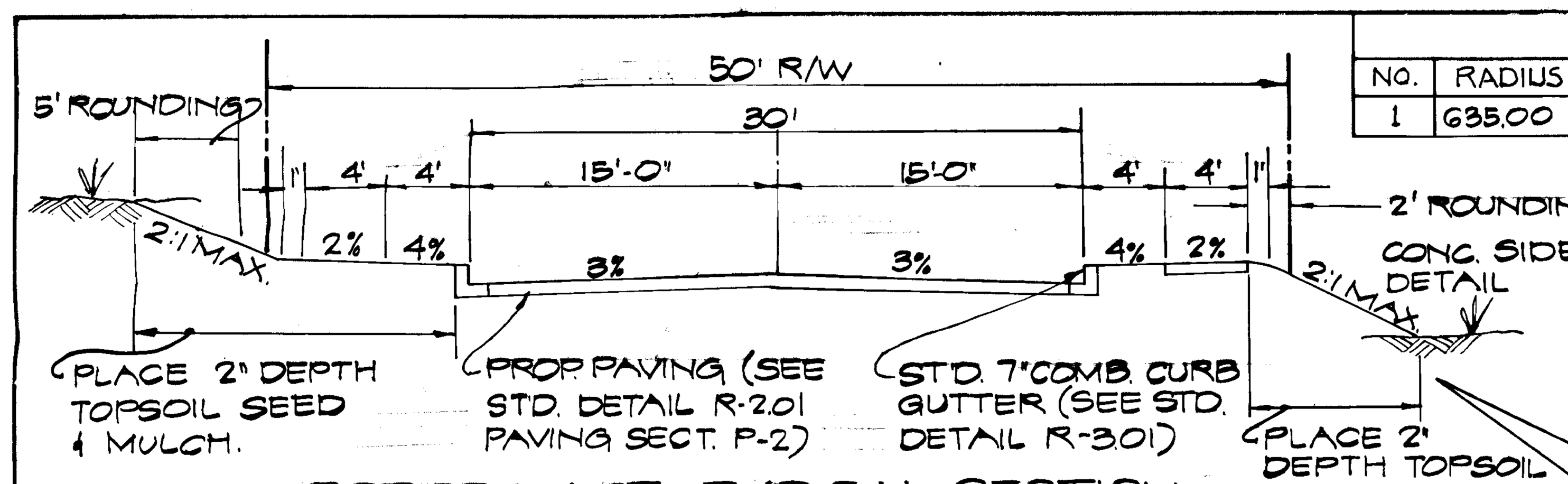
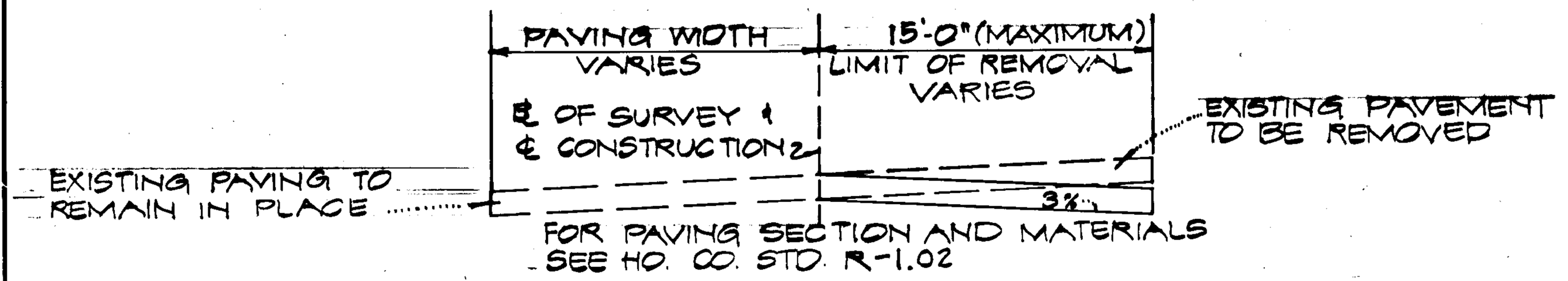
¢ CURVE DATA					
NO.	RADIUS	LENGTH	TANGENT	DELTA	CHORD
1	635.00	180.87	91.05	16-19-10	S56-43-20W 180.25

BENCH MARK# 2344001 ELEV. 307.49
Std. Conc. Mon. set flush with surface 0.25 Mile from traffic Lt.@ Rte. 108, in south side of Median of Rte. 175.



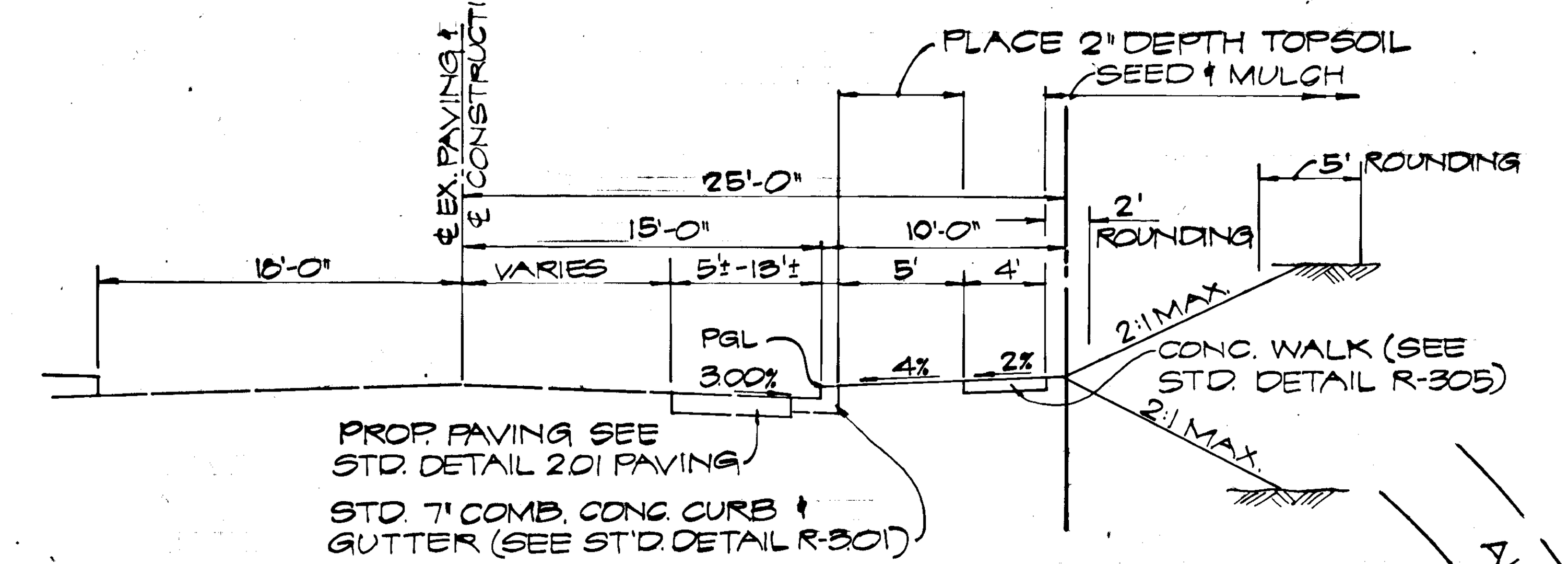
FREEDOM CT. - TYPICAL SECTION

CUL-DE-SAC SCALE: 1/8"=1'-0" (R 1.01)



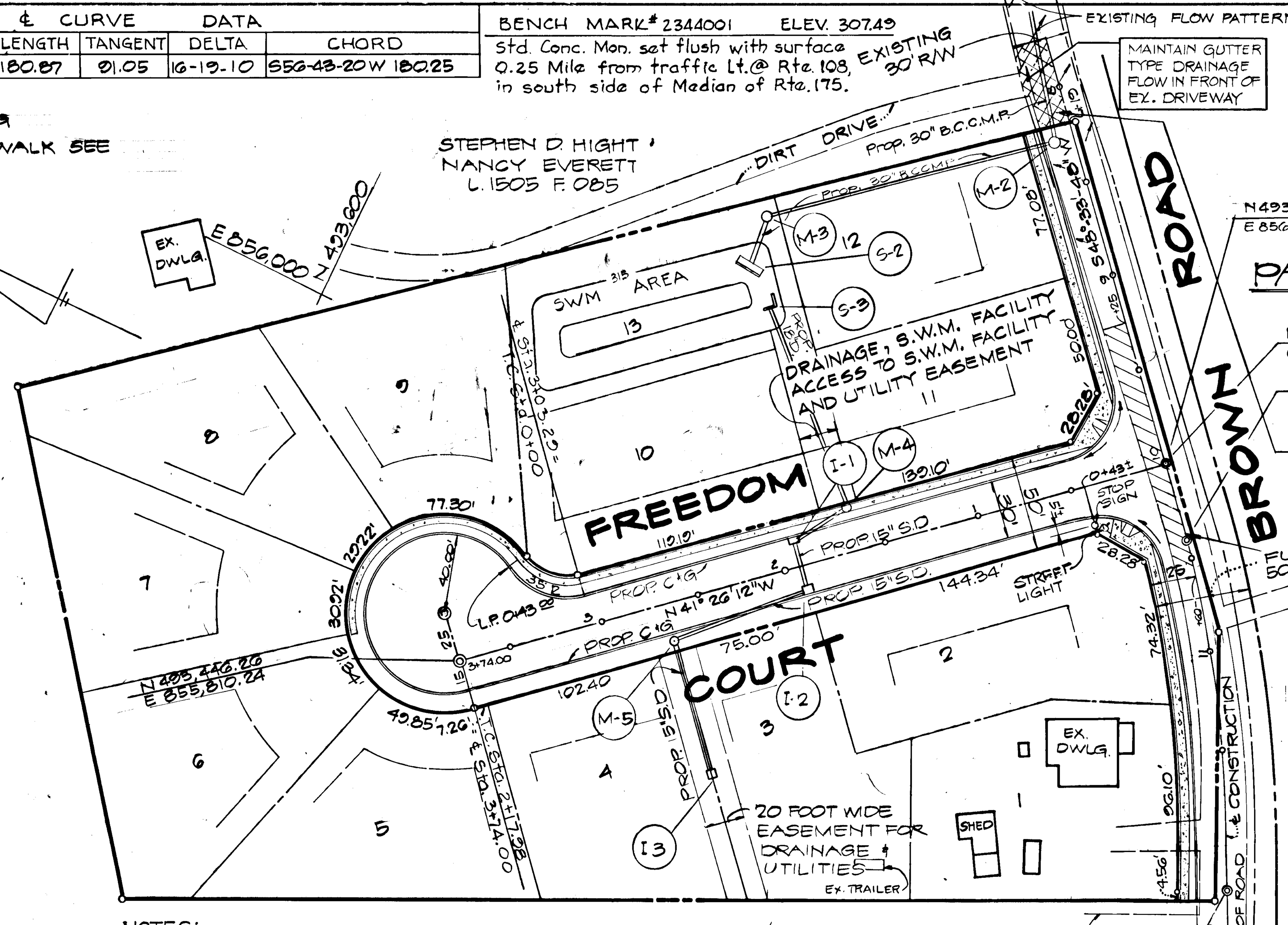
TYPICAL RECONSTRUCT SECTION

LARK BROWN ROAD
STA. 7+74 RT. TO STA. 8+19 (AS DIRECTED BY THE ENGINEER)
STA. 9+25 RT. TO STA. 10+60 RT
NOT TO SCALE



TYPICAL WIDENING SECTION

LOCAL STREET R-1.02
DESIGN SPEED-30 MPH



STA. 7+74 TO STA. 8+19 RT. RECONSTRUCT 2IN. MIN. DEPTH OF PAVEMENT SURFACE TO TRANSITION CROSS SLOPE, FROM PLANE INCLINE X-SLOPE (STA. 7+74) TO 3% X-SLOPE AT STA. 8+19. USE TYPICAL RECONSTRUCT SECTION AS DIRECTED BY THE ENGINEER.

STA. 9+25 TO STA. 10+60 RT., RECONSTRUCT PAVEMENT & REPAIR BASE TO LIMITS SHOWN. SEE DETAIL, THIS SHEET.

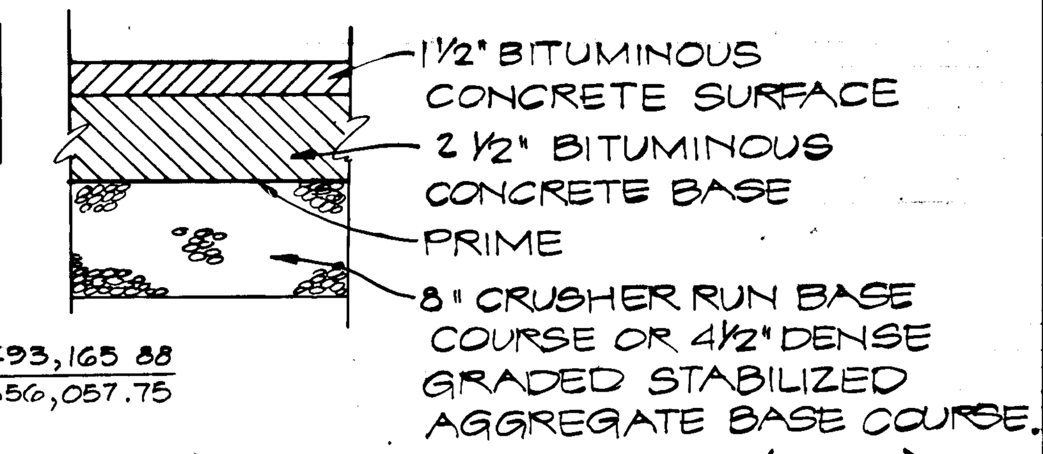
PLAN

SCALE: 1"=50'

P.T. 12+22.54
N 493,038.40
E 855,875.82

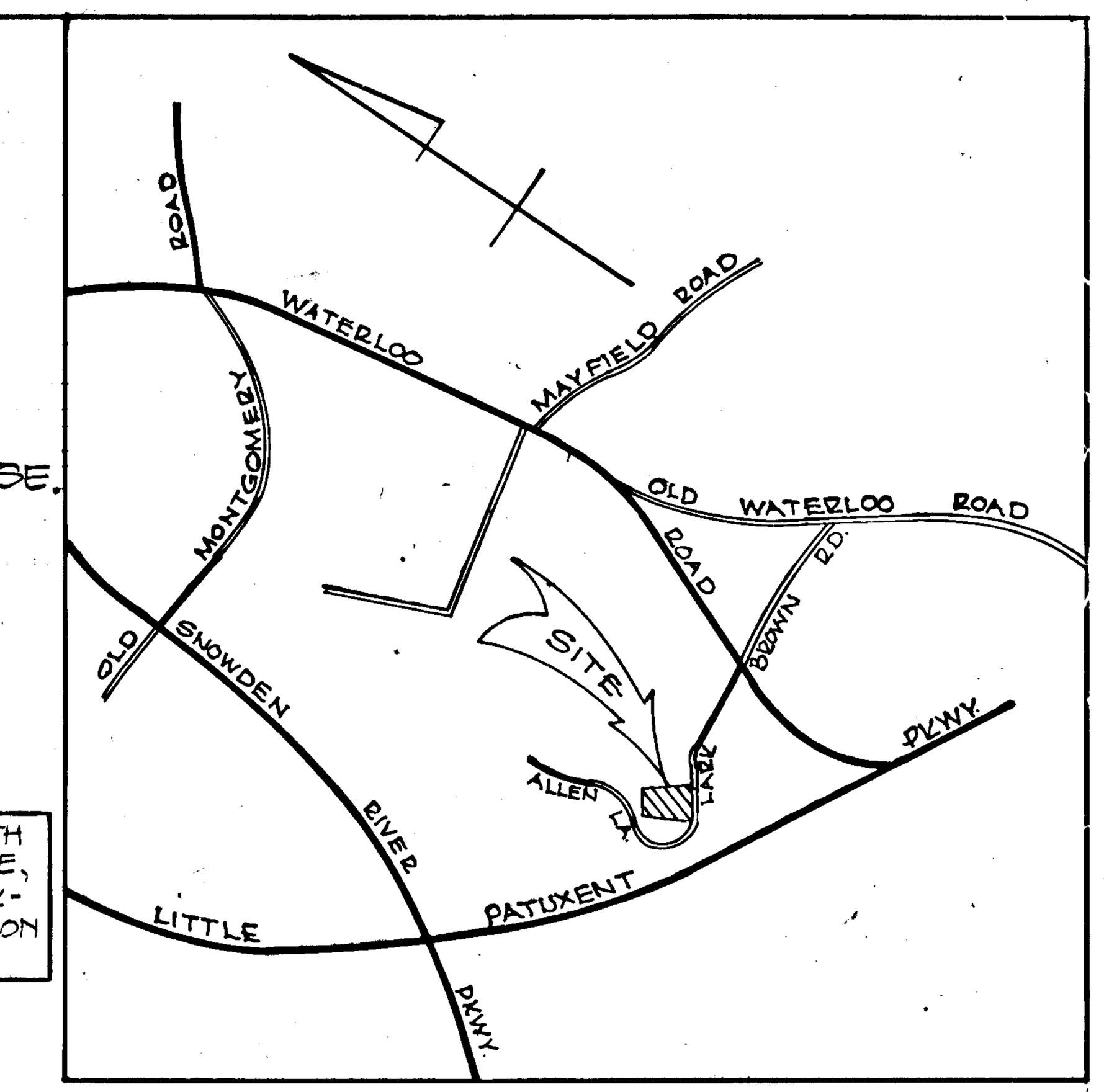
NOTES:

1. THE PROPOSED STREET LIGHT HARDWARE SHALL BE A 250-WATT MERCURY VAPOR LAMP PENDANT MOUNTED FIXTURES ON A 30 FOOT GALVANIZED STEEL POLE, LOCATED 6 FEET MINIMUM FROM THE EDGE OF PAVING AS SHOWN.
2. ALL EXISTING STRUCTURES ON LOT 1 AND THE EXISTING TRAILER ON LOT 3 ARE TO BE REMOVED



PAVING SECTION (P-2)

NOT TO SCALE



VICINITY MAP

SCALE: 1"=2,000'

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature]	9/21/88
CHIEF, LAND DEVELOPMENT DIVISION	DATE
[signature]	10/3/88
CHIEF, BUREAU OF HIGHWAYS	DATE
[signature]	10.4.88
CHIEF, BUREAU OF ENGINEERING	DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature]	10.18-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8676 REGISTERED — PROFESSIONAL ENGINEER [signature]

DESIGNED:	ROAD CONSTRUCTION AND STORM DRAINS PLAN AND PROFILE	SCALE:
D. J. D.	FREEDOM COURT	AS SHOWN
CHECKED:	LARK BROWN ESTATES LOTS NO. 1 THRU 13	DWG. NO.
D. E. H.	6TH ELECTION DISTRICT HOWARD COUNTY, MD.	1 OF 9

F 88-178

HICKS ENGINEERING CO., INC.
200 E. JOPPA ROAD, SUITE 402
TOWSON, MD. 21204 (301) 494-0001

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

1384

PLAN — NOTE BOOK — No. — SURVEYED — PLOTTED — ALIGNMENT CHECKED — RT. OF WAY CHECKED — BY — DATE

PROFILE — NOTE BOOK — No. — SURVEYED — PLOTTED — GRADES CHECKED — B.M.'s NOTED — STRUCTURE NOTATIONS CHECKED — BY — DATE

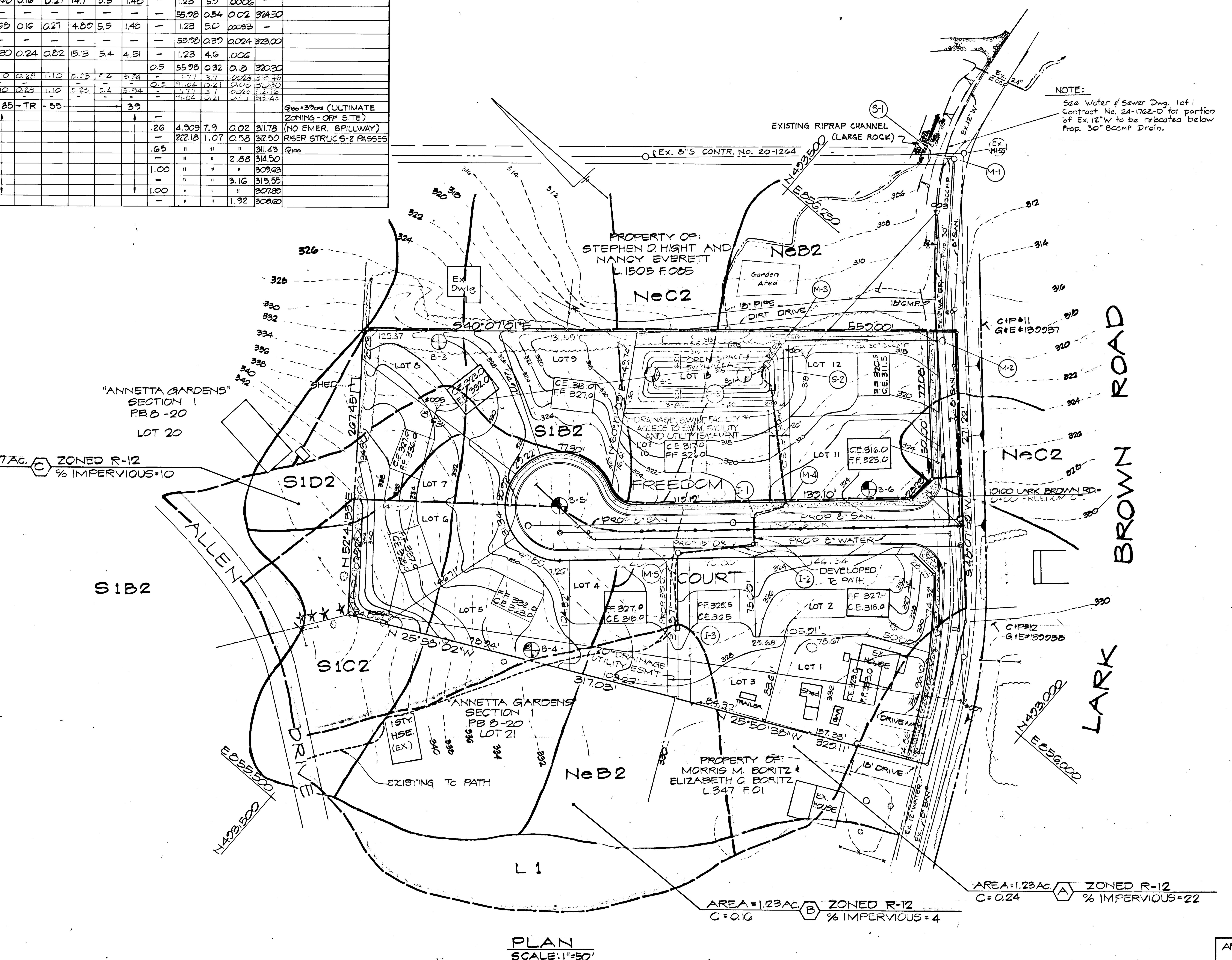
DWG. NO. 1 OF 9

F-88-178

STORM DRAIN DESIGN DATA

Reach	Struc.	CONDUIT: Type Dia.	n L	Ground Elev.	So Sb	Elev.	DRAINAGE AREA & RUNOFF: ΣDA DA	C	ΣCA CA	tc Δtc	I	Q Qs	Drop Struc. Loss	A $Q/S^{1/2}$	V $V^2/2g$	Se Hf	H H-allow	REMARKS
I-3	INLET	RCCP	0.015	325.0	3.80	321.90	1.68	0.16	0.27	14.7	5.5	1.48	—	1.23	5.9	.0006	—	
M-5	A-1	15"	70	323.4	—	319.40	—	—	—	—	—	—	—	55.98	0.54	0.02	324.50	
M-5	A-1	RCCP	0.015	323.4	2.36	319.40	1.68	0.16	0.27	14.89	5.5	1.48	—	1.23	5.0	.00033	—	
I-2	—	15'	74	320.8	—	317.70	—	—	—	—	—	—	—	55.98	0.39	0.024	323.00	
I-2	DBL'S COMB.	RCCP	.015	320.8	0.8	317.20	2.30	0.24	0.82	15.13	5.4	4.51	—	1.23	4.6	.006		
I-1		15"	30	320.8	—	316.96							0.5	55.98	0.32	0.18	320.30	
I-1	DBL'S	RCCP	.015	320.5	0.8	316.71	1.10	0.28	1.10	15.23	5.4	5.94	-	1.77	3.7	.0028	318.46	
M-4	A-1	18"	29	322.14	-	311.91	-	-		-	-	-	0.5	91.04	0.21	0.06	320.30	
M-4	-	BCCMP	.022	322.14	0.8	311.91	1.10	0.25	1.10	15.23	5.4	5.94	-	1.77	3.7	.0026	312.16	
S-5	E.E.WL	18"	100	313.93	-	311.06	-	-	-	-	-	-	-	91.04	0.21	[illegible]	313.43	
POND	SWM	CONC.	—	(BOT	OF	WEIR)	6.85	—TR	- 55	→	→	39						Q100 = 39cfs (ULTIMATE
S-2	WEIR STRUC		—	313.00	—	308.00	↑					↑	—					ZONING - OFF SITE)
S-2		BCCMP	.022	"	—	"							.26	4.909	7.9	0.02	311.78	(NO EMER. SPILLWAY)
MH-3	A-1	30"	29	315.0	—	307.65							—	222.18	1.07	0.58	312.50	RISER STRUC S-2 PASSES
MH-3			.022	"	.012	"							.65	"	"	"	311.43	Q100
MH-2	A-1	BCCMP	144	316.05	—	305.85							—	"	"	2.88	314.50	
MH-2		30"	.022	"	.0101	"							1.00	"	"	"	309.63	
MH-1	A-1		172	309.10	—	304.11							—	"	"	3.16	315.55	
MH-1		BCCMP	.022	"	.0101	311.77	↓					↓	1.00	"	"	"	307.89	
S-1	E.S.WL	30"	20	306.50	—	303.91							—	"	"	1.92	308.60	

NOTE:
1. ALL EXISTING STRUCTURES ON LOT 1 AND THE EXISTING TRAILER ON LOT 3 ARE TO BE REMOVED.



PLAN
SCALE: 1"=50'

⊕ = SOIL BORING LOCATION

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8676 — REGISTERED PROFESSIONAL ENGINEER

1384

HICKS ENGINEERING CO., INC.
200 E. JOPPA ROAD, SUITE 402
TOWSON, MD. 21204

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION	DATE 9/21/88
CHIEF, BUREAU OF HIGHWAYS	DATE 10/3/88
CHIEF, BUREAU OF ENGINEER	DATE 10-10-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE 10-13-88

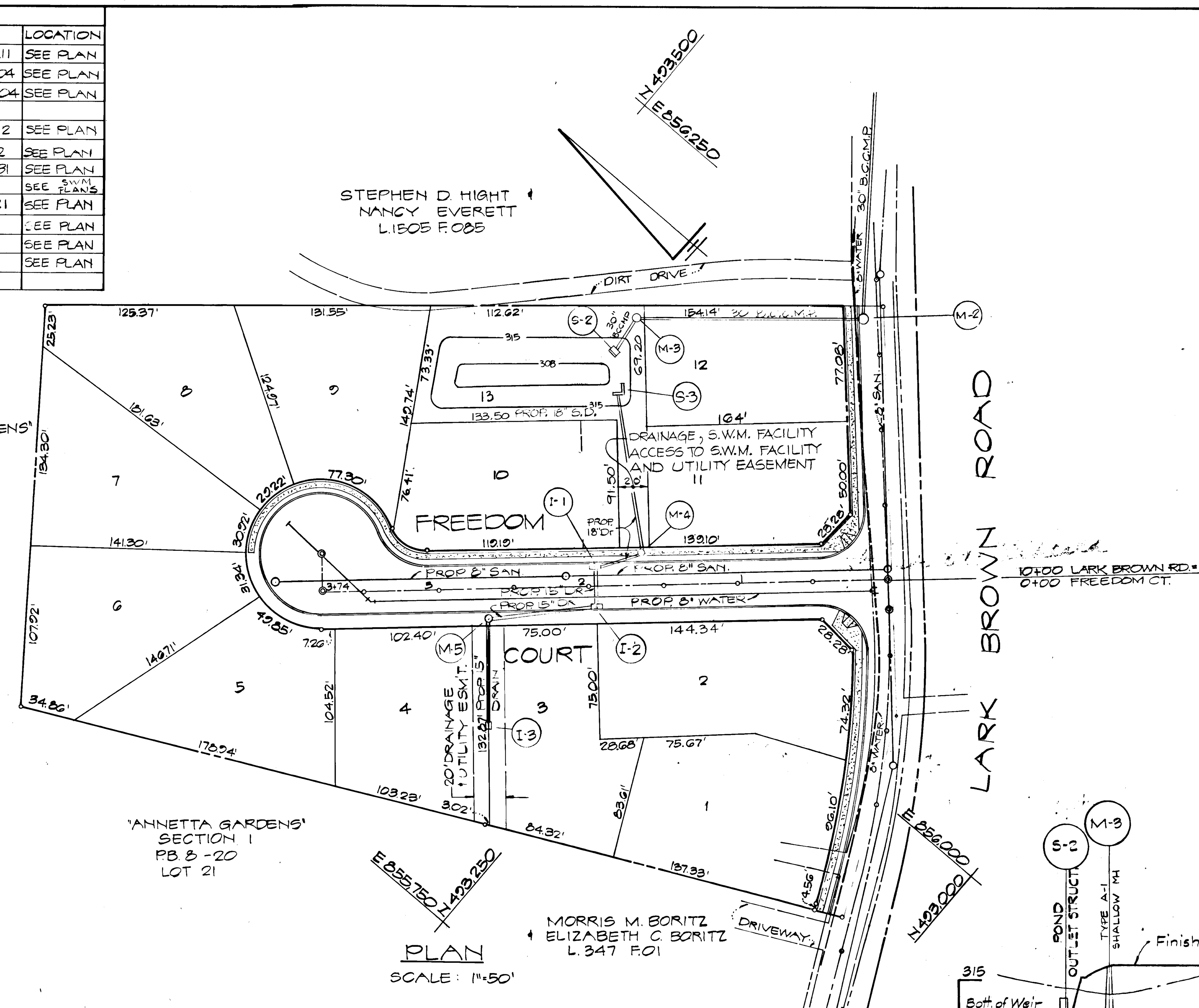
DESIGNED: C.E.P.	GRADING PLAN DRAINAGE AREA MAP & DESIGN DATA FREEDOM COURT LARK BROWN ESTATES LOTS NO. 1 THRU 13 6TH ELECTION DISTRICT HOWARD COUNTY, MD.	SCALE: AS SHOWN
CHECKED: D.E.H.		DWG. NO. 2 OF 9

F88-178

F-88-178

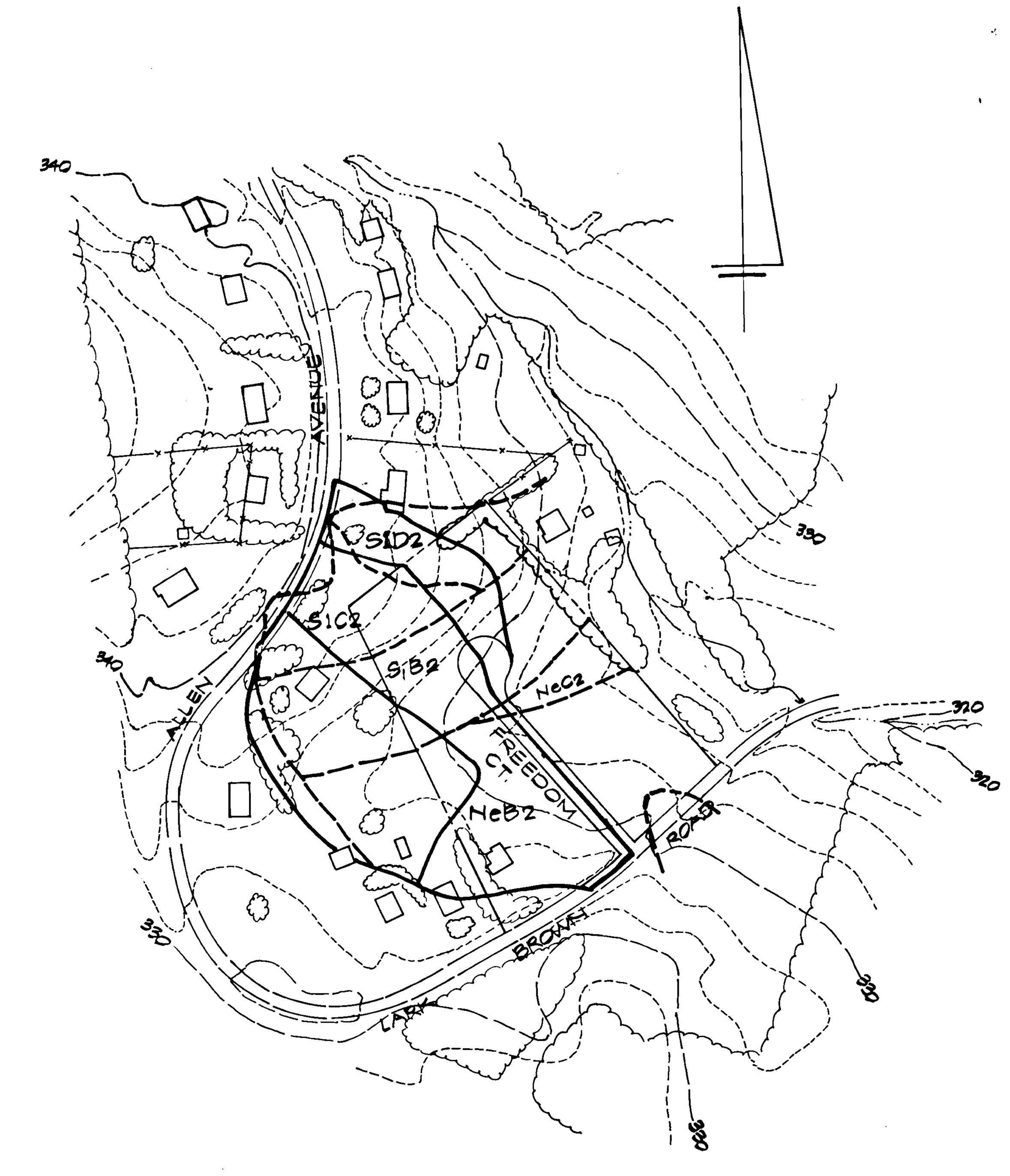
STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	UPPER	LOWER	REMARKS	LOCATION
I-3	TYPE D INLET	–	321.96	325.00	–	HO CO. STD. S.D 4.11	SEE PLAN
I-2	Double 'S' Comb. Inlet	317.70	317.20	320.79	–	S.H.A. STD. MD 379.04	SEE PLAN
I-1	Double 'S' Comb. Inlet	316.94	316.65	320.79	–	S.H.A. STD. MD. 379.04	SEE PLAN
M-5	SHALLOW M.H.	319.45	319.38	322.90		HO. CO. STD G 5.12	SEE PLAN
M-4	STD. M.H.	316.37	309.25	321.95	–	HO. CO. STD G 5.12	SEE PLAN
S-3	'E' Headwall	–	308.10	310.35	–	HO. CO. STD. S.D. 5.31	SEE PLAN
S-2	Conc. Weir Structure	313.0/308.0	307.95	313.00	–	SPECIAL STRUC.	SEE SWM PLANS
S-1	'C' Endwall	–	303.89	307.00	–	Ho. Co. STD S.D. 5.21	SEE PLAN
M-3	Shallow M.H.	307.66	307.60	316.00	–	HO. CO. STD G 5.13	SEE PLAN
M-2	Shallow M.H.	305.88	305.82	316.00	–	HO. CO. STD G 5.13	SEE PLAN
M-1	Shallow M.H.	304.15	304.09	309.15	–	HO. CO. STD G 5.13	SEE PLAN



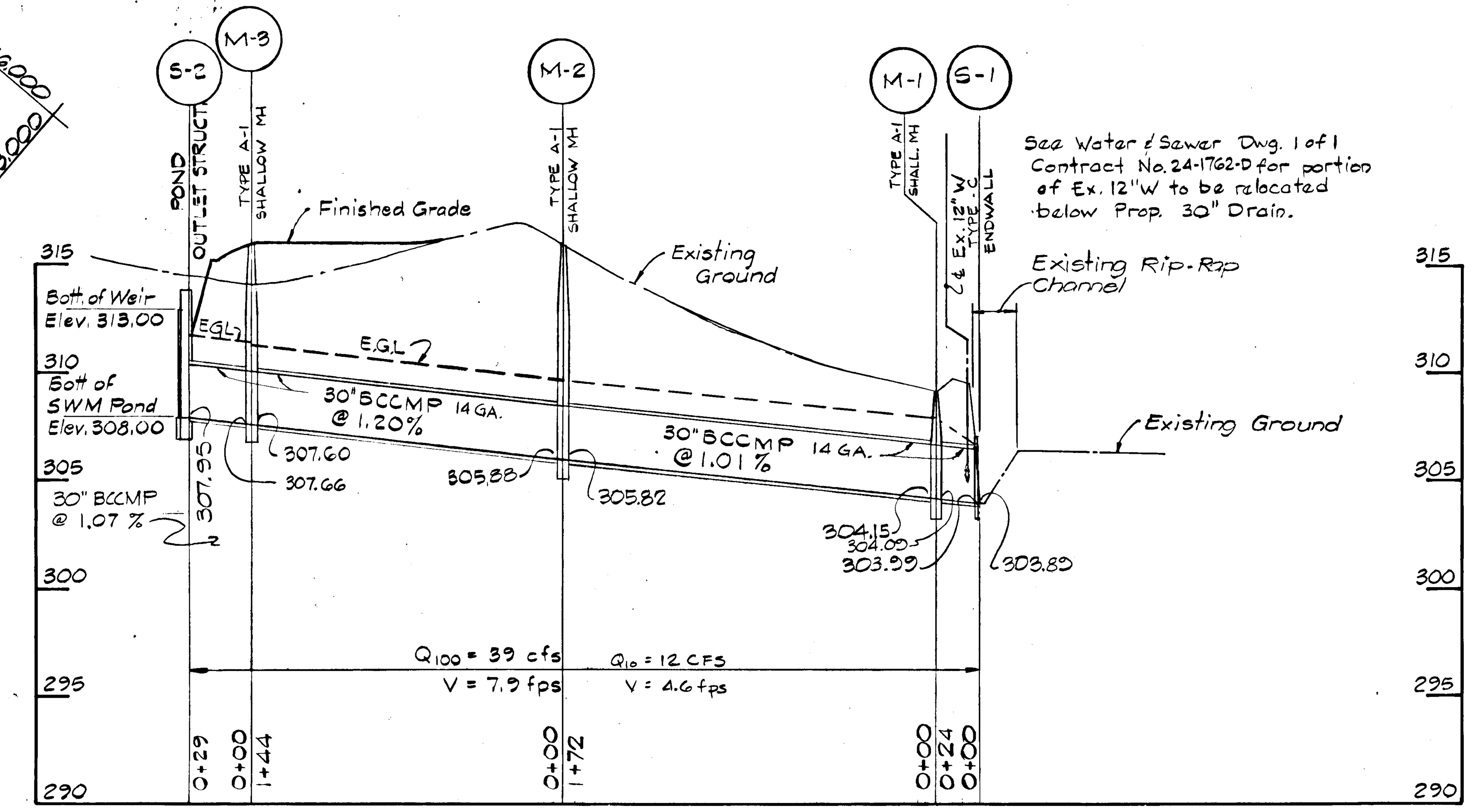
PLAN

SCALE: 1"=50'



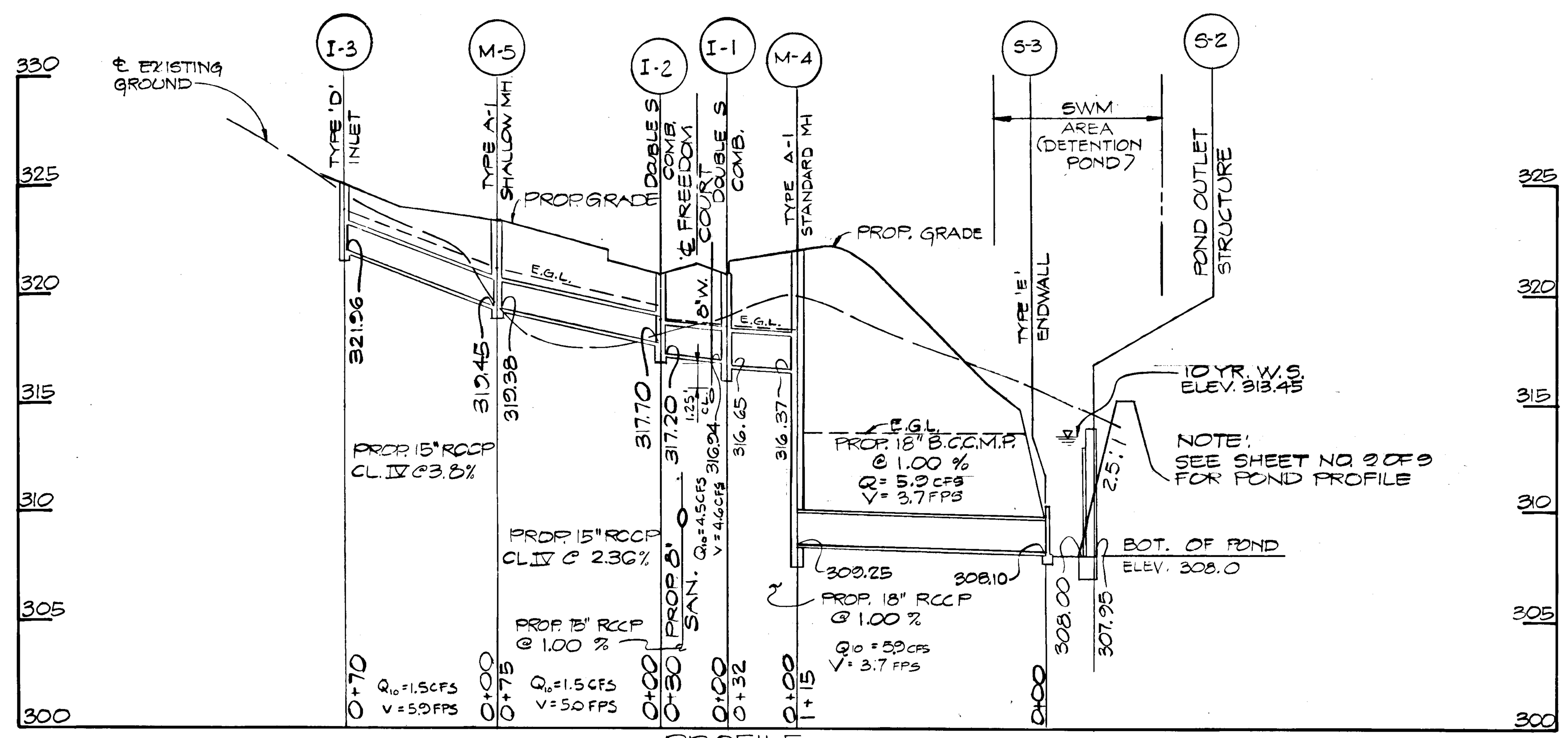
LOCATION MAP

SCALE: 1"=200'



PROFILE

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



PROFILE

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

REVISIONS
12/2/88 RED LINE REV. DJD - INV. ELEV. CORR. IN STRUCT. SCHED., ALSO @ I-3 & M-1 IN PROFILES.

HICKS ENGINEERING CO., INC.
200 E. JOPPA ROAD, SUITE 402
TOWSON, MD. 21204 (301) 494-0001

F 88-178

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/21/88

CHIEF, BUREAU OF HIGHWAYS — DATE

CHIEF, BUREAU OF ENGINEER — DATE 10-10-88

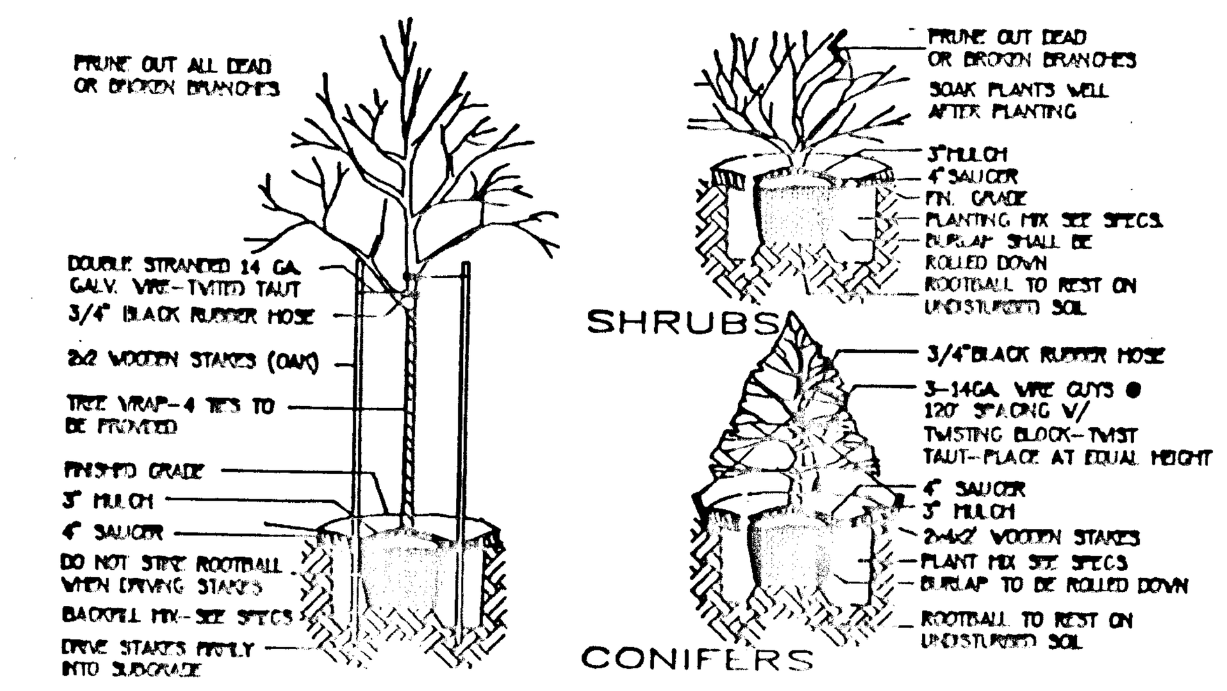
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 10-13-88

DESIGNED: C.E.P.	STORM DRAINS PLAN AND PROFILE	SCALE: AS SHOWN
CHECKED: D.E.H.	FREEDOM COURT LARK BROWN ESTATES LOTS NO. 1 THRU 13 6TH ELECTION DISTRICT HOWARD COUNTY, MD.	DWG. NO. 3 OF 9

F-88-178

1324



TREES 6"CAL & LESS

TREE PLANTING DETAIL

NOT TO SCALE

ADJUST STREET TREE PLANTING TO AVOID DRIVE ENTRANCES & HOUSE CONNECTION UTILITIES

PLANTING NOTES:

All nursery stock shall conform to the American Association of Nurserymen, Inc. standards as described in "American Standards forNursery Stock", publication ANSI Z60.1-1980, latest edition.

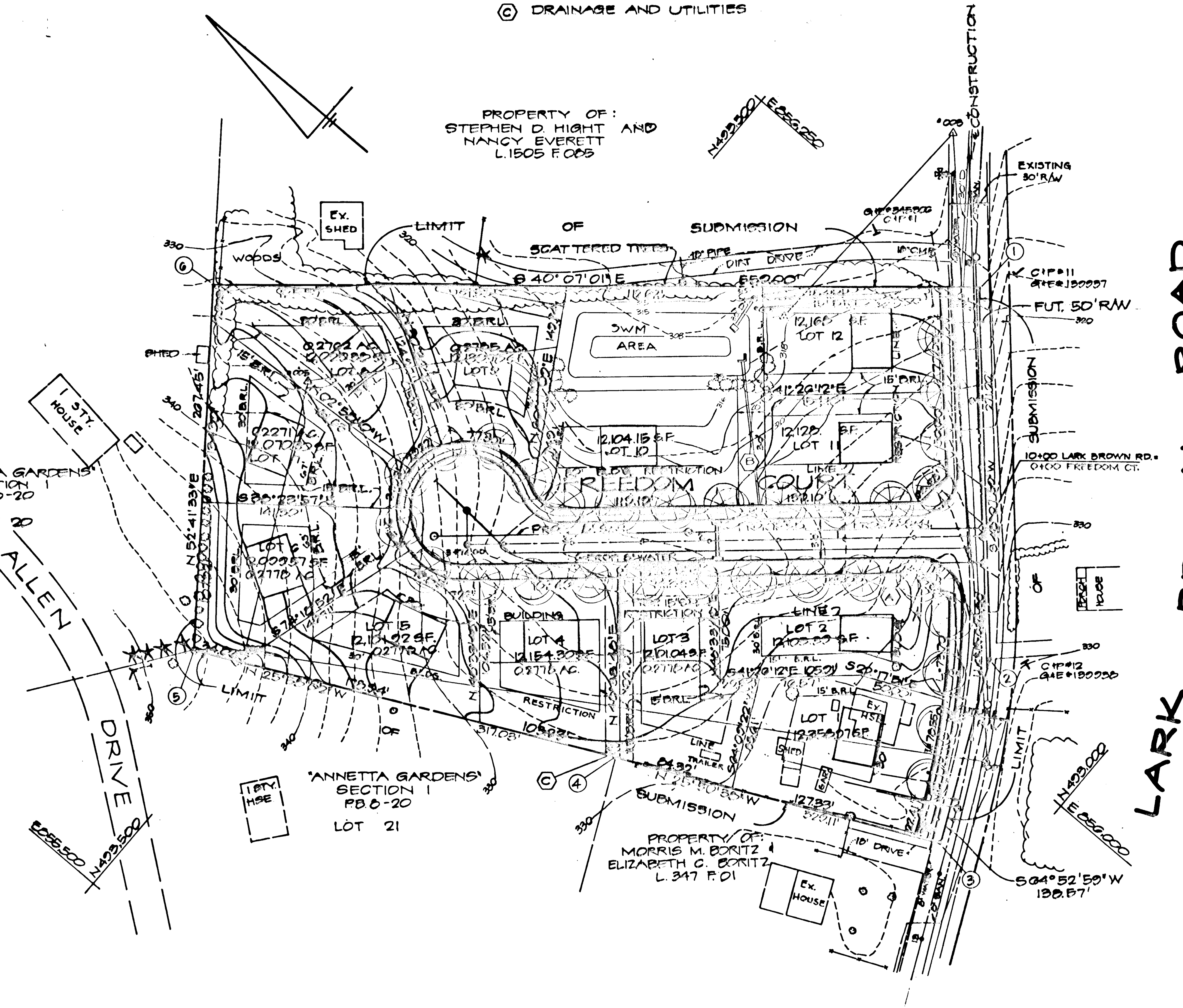
Landscape Specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area". A one year maintenance and warranty period shall be required.

All nursery stock shall be planted in accordance with the American Association of Nurserymen, Inc., "American Standards for Nursery Stock", latest edition. Bare-root material shall not be allowed for any tree defined as major deciduous, minor deciduous, or evergreen.

Equal substitutions and or minor changes on location to suit field conditions shall be approved by the Landscape Architect.

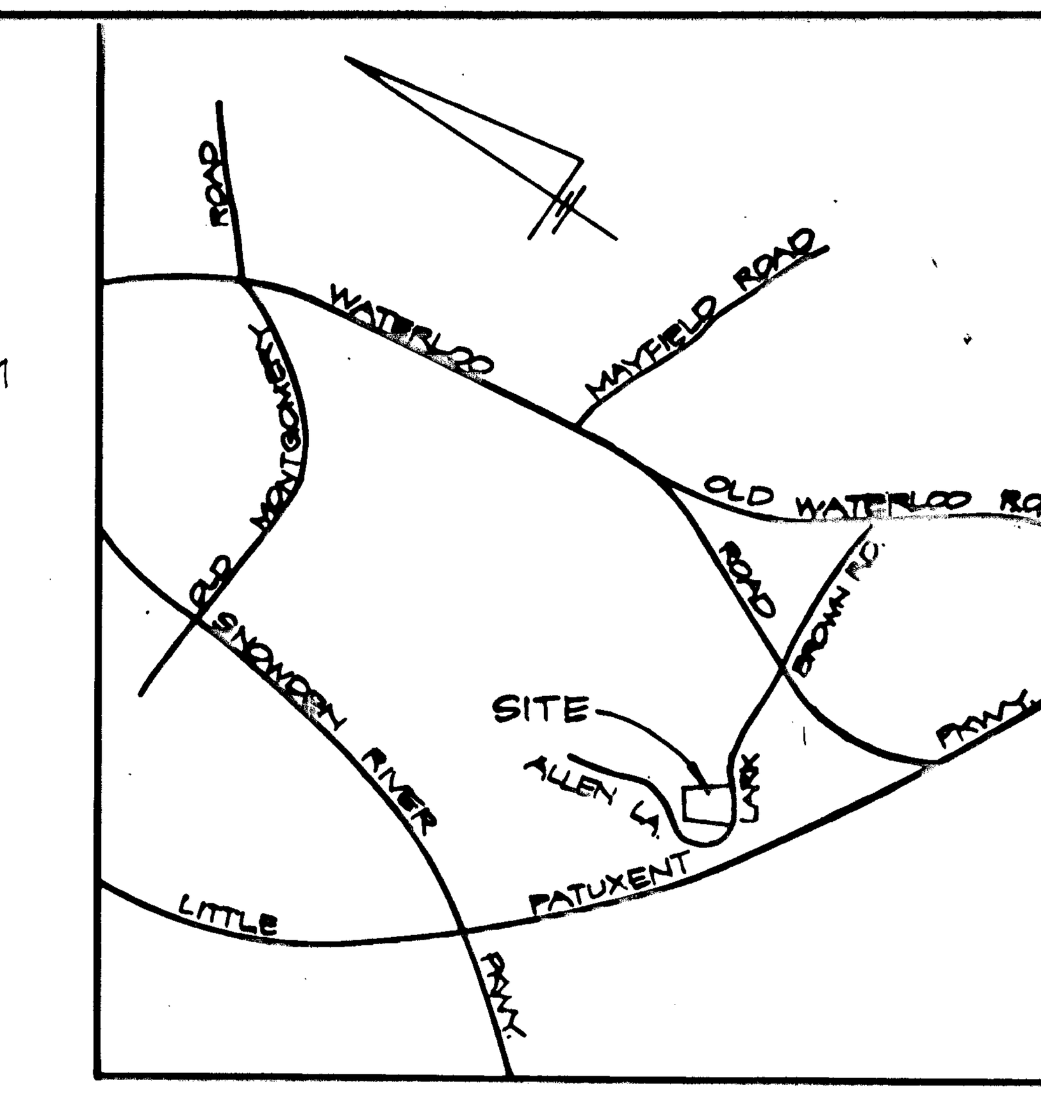
Ⓑ DRAINAGE, S.W.M. FACILITY ACCESS TO S.W.M. FACILITY AND UTILITY EASEMENT

Ⓒ DRAINAGE AND UTILITIES



NOTES

1. TURF ESTABLISHMENT & COVER DESCRIBED & SPECIFIED ON SEDIMENT CONTROL PLAN.
2. PLANTING PROVIDED IN ACCORDANCE WITH HOWARD COUNTY ZONING & SUBDIVISION REGULATIONS. ALL NURSERY STOCK TO CONFORM TO & BE PLANTED IN ACCORDANCE WITH "AMERICAN STANDARDS FOR NURSERY STOCK," AAN INC.



VICINITY MAP
SCALE: 1"=2,000'

PLANT LIST

SPECIES	SIZE	QUANTITY	REMARKS
TILIA CORDATA LITTLELEAF LINDEN	2½"-3"	12	B&B
TSUGA CANADENSIS CANADIAN HEMLOCK	4'-5'	30	B&B

LEGEND:

⊛ MAJ. STREET TREE

✺ EVERGREEN BUFFER TREE

〰 EXISTING VEGETATION TO BE PRESERVED

STATE OF MARYLAND DONALD EDWIN HICKS No. 8076 REGISTERED PROFESSIONAL ENGINEER

SIGNATURE [illegible]

DATE July 25, 1988

F 88-178

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL No.	
LARK BROWN ESTATES				322	
PLAT No. OR L/F	BLOCK No.	ZONE	TAX/ZONE MAP	ELECT. DIST.	CENSUS TR.
281/493		R-12	37	6	
WATER CODE			SEWER CODE		
E 08			3450000		

APPROVED: FOR PUBLIC WATER PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON DATE

[illegible] 10/3/88
CHIEF, BUREAU OF HIGHWAYS DATE

[illegible] 10-10-88
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[illegible] 10-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

LANDSCAPE PLAN

LARK BROWN ESTATES

LOTS NO. 1 THRU 13
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAX MAP #37 PARCEL #322
SCALE: 1"=50' DATE: JULY 25, 1988
DRN. BY: L.A.W CHECKED BY: D.E.H.
F 88-178 SHEET 4 OF 9

HICKS ENGINEERING COMPANY, INC.
CIVIL ENGINEERS · SURVEYORS PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21204
(301) 494-0001

ENGINEER'S CERTIFICATE

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

Donald E. Hicks, P.E. 7/25/88
DONALD E. HICKS P.E. DATE

DEVELOPER'S CERTIFICATE

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

[illegible] 2/18/88
PRADIP GHOSH DATE

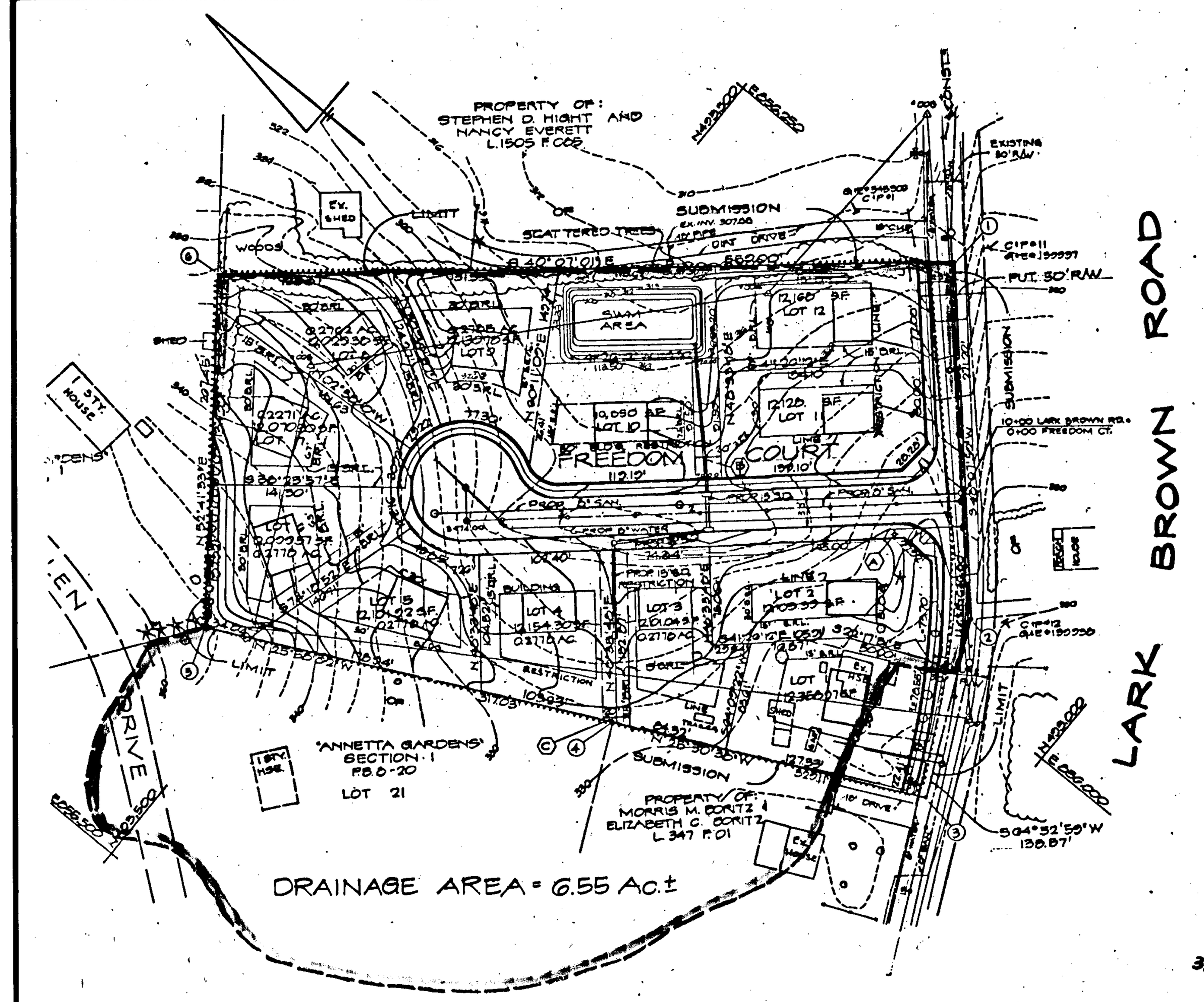
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[illegible] 8/5/88
U.S. SOIL CONSERVATION SERVICE DATE

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

[illegible] 8/5/88
DISTRICT MANAGER DATE
HOWARD SOIL CONSERVATION DISTRICT

F-88-178



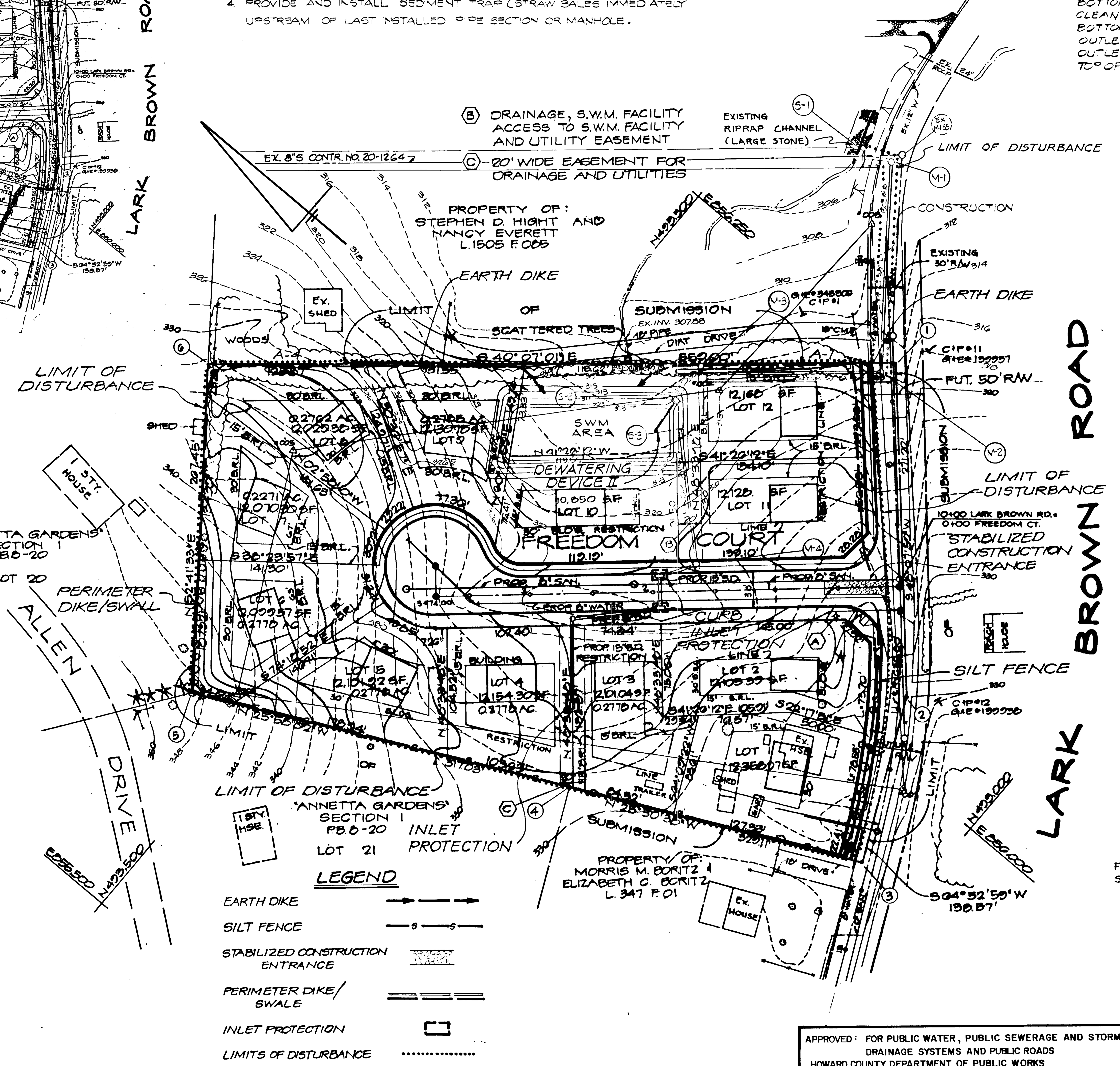
DRAINAGE AREA MAP

SCALE: 1"=100'

NOTE:

STORM DRAIN CONSTRUCTION IN LARK BROWN RD. S-1 THRU M-2 - SEDIMENT CONTROL CONTRACTOR SHALL:

1. PROVIDE DAILY BACKFILL OF PIPE
2. BLOCK UPSTREAM AND OF LAST INSTALLED PIPE SECTION EACH DAY.
3. PROVIDE AND INSTALL SILT FENCE AROUND OUTFALL @ S-1
4. PROVIDE AND INSTALL SEDIMENT TRAP (STRAW BALES IMMEDIATELY UPSTREAM OF LAST INSTALLED PIPE SECTION OR MANHOLE.



LEGEND

EARTH DIKE

SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE

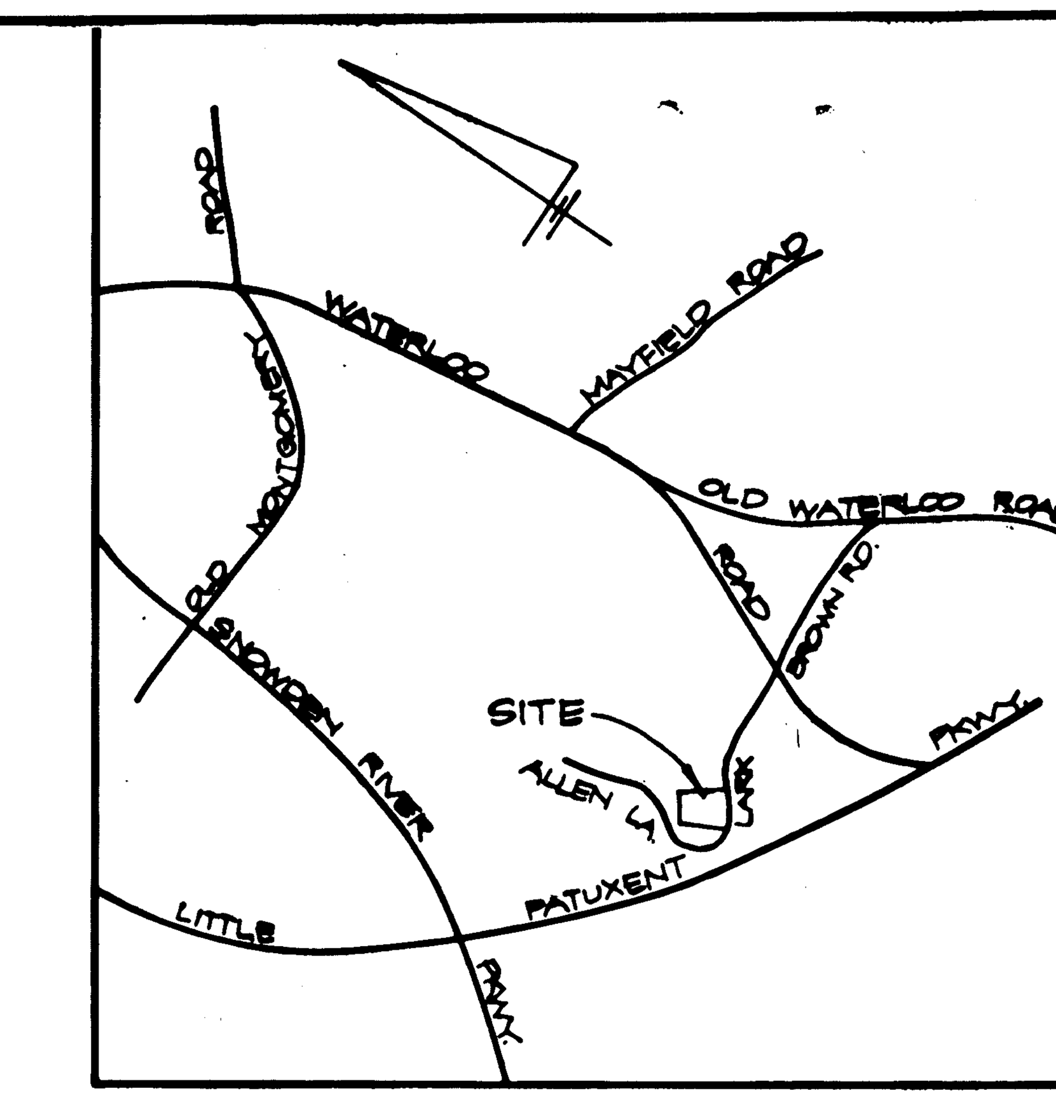
PERIMETER DIKE/ SWALE

INLET PROTECTION

LIMITS OF DISTURBANCE

STONE OUTLET SEDIMENT TRAP (TRAP NO.1)

	No. 1
DRAINAGE AREA	6.55 Ac.±
STORAGE REQUIRED	440 Cu.Yd.
STORAGE PROVIDED	1360 Cu.Yd.
DEPTH	5.0'
BOTTOM ELEV.	308.0
CLEAN OUT ELEV	310.50
BOTTOM DIMENSIONS	42'x 132'
OUTLET ELEV.	313.00
OUTLET SIZE	13' weir length
TOP OF EMBANKMENT	315.30'



VICINITY MAP

SCALE: 1"=2,000'

SEQUENCE OF CONSTRUCTION

1) Obtain the required grading permit _ _ _ _ _ _ _ _ 1 day
2) Notify Howard County Bureau of License, Inspections and Permits three (3) working days prior to grading operation. _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 3 days
3) Construct silt fence below outfall structure S-1 and begin storm drain construction from S-1 up to and including M-2. See Const. Note, this sheet. (Off-Site Construction-Lark Brown Rd.)
4) Clear and grub only for the installation of sediment control devices _ _ _ _ _ _ _ _ _ _ _ _ _ _ 3 days
5) Construct all sediment control devices including Concrete Riser Structure S-2 and S.D. System S-2 to M-2. _ _ _ _ 4 days
6) Clear and grub and begin grading for Site after all Sediment controls are completed. _ _ _ _ _ _ 5 days
7) Vegetatively stabilize all appropriate area _ _ _ _ 2 days
8) After approved from the sediment control inspector, remove all remaining sediment control measures (including removal of temporary weir. (2 x 8'x 4' fir board bolted to riser, face above conc. weir bottom). Stabilize areas as required _ _ _ _ _ 2 days
10) Lot 9 & 0-, house not to be constructed until all other lots have been completely developed and Sediment Pond dimensions reduced to size and shape of the Permanent SWM Pond. _ _ _ _ _ _ _ _ _ _ _ 2 days
9) After all lots except No. 9 & 10 have been fully developed and stabilized, certain pond dimensions must be reduced to those of the permanent SWM pond, as shown on sheet 7 of 9. _ _ _ 2 days

FOR SEDIMENT CONTROL DETAILS, SEE SHEET 6 OF 9.

SEDIMENT CONTROL NOTES

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (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, Chaper 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 4.41 Acres
   - Area Disturbed 4.29 Acres
   - Area to be roofed or paved 0.91 Acres
   - Area to be vegetatively stabilized 3.38 Acres
   - Total Cut 4000 Cu. yds
   - Total Fill 300 Cu. yds
   - Offsite waste/borrow area location To be determined
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) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

STATE OF MARYLAND DONALD EDWIN HICKS No. 8676 REGISTERED PROFESSIONAL ENGINEER

SIGNATURE [illegible]

DATE

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME				SECT./AREA	LOT/PARCEL No.
LARK BROWN ESTATES					322
PLAT No. OR L/F	BLOCK No.	ZONE	TAX/ZONE MAP	ELECT. DIST.	CENSUS TR.
281/493		R 12	37	6	
WATER CODE			SEWER CODE		
E 08			3450000		

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON DATE

[illegible] 10/13/88
CHIEF, BUREAU OF HIGHWAYS DATE

[illegible] 10-10-88
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[illegible] 10-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

SEDIMENT CONTROL PLAN

LARK BROWN ESTATES

LOTS NO. 1 THRU 13

6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

TAX MAP # 37 PARCEL # 322

SCALE: 1"=50' DATE: JULY 25, 1988

DRN. BY: L.A.W. CHECKED BY: D.E.H.

F 88-178 SHEET 5 OF 9

HICKS ENGINEERING COMPANY, INC.

CIVIL ENGINEERS · SURVEYORS PLANNERS

200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21204
(301) 494-0001

ENGINEER'S CERTIFICATE

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

Donald E. Hicks, P.E. 7/25/88
DONALD E. HICKS P.E. DATE

DEVELOPER'S CERTIFICATE

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

[illegible] 2/18/88
PRADIP GHOSH DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[illegible] 8/5/88
U.S. SOIL CONSERVATION SERVICE DATE

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

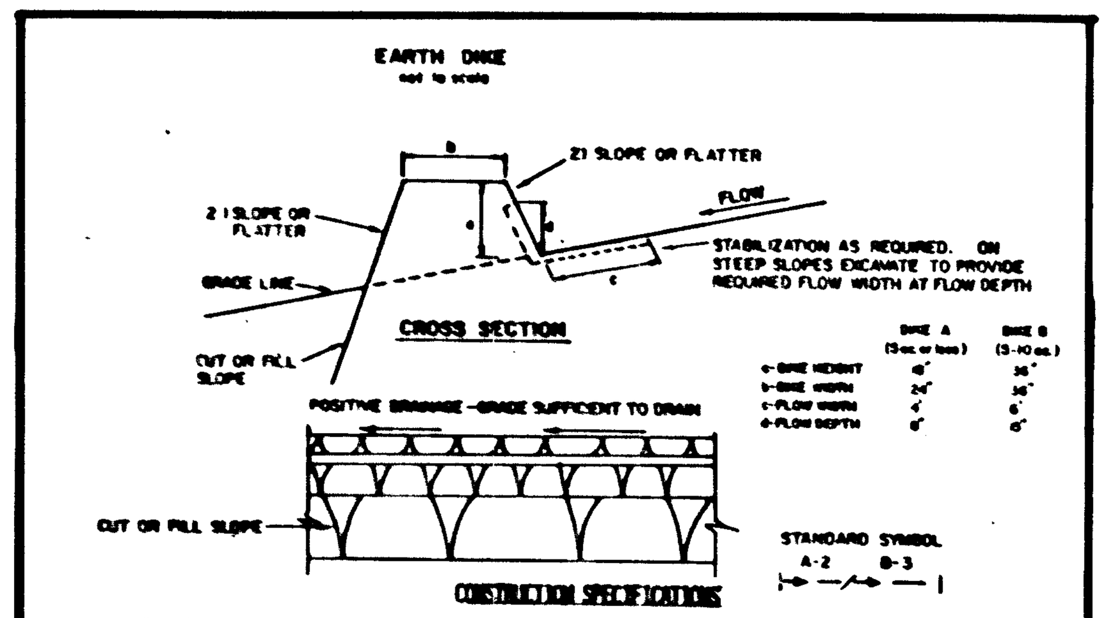
APPROVED:

Robert W. Zehm 8/5/88
DISTRICT MANAGER DATE
HOWARD SOIL CONSERVATION DISTRICT

F-88-178

1384

EARTH DIKE



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

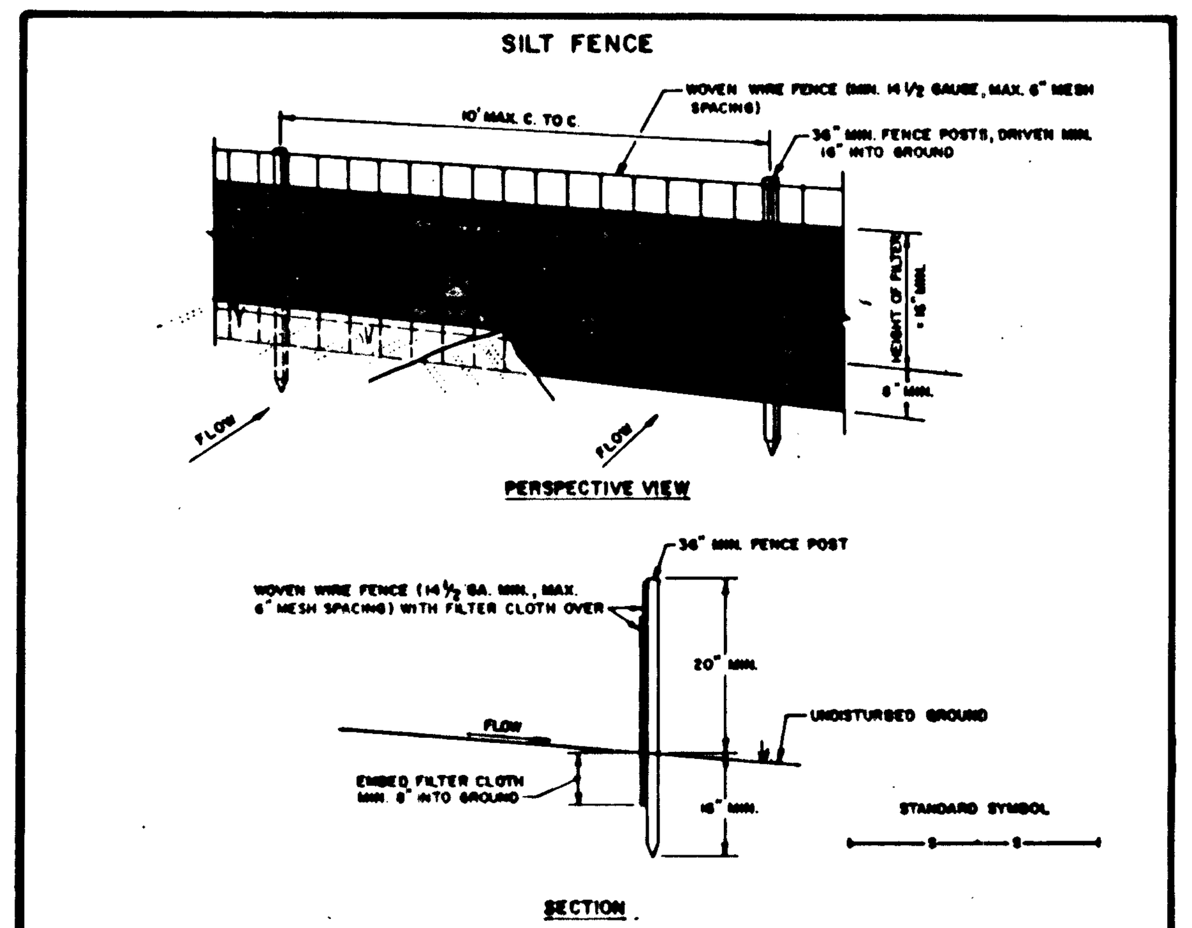
Type of Treatment	Channel Grade	Dike A	Dike B
1	.5-3.0%	Seed and Straw Mulch	Seed and Straw Mulch
2	3.1-5.0%	Seed and Straw Mulch	Seed using Jute, or Excelsior; Sod; 2" Stone
3	5.1-8.0%	Seed with Jute, or Sod; 2" Stone	Lined Rip-Rap 4-8"
4	8.1-20%	Lined Rip-Rap 4-8"	Engineering Design

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

SILT FENCE



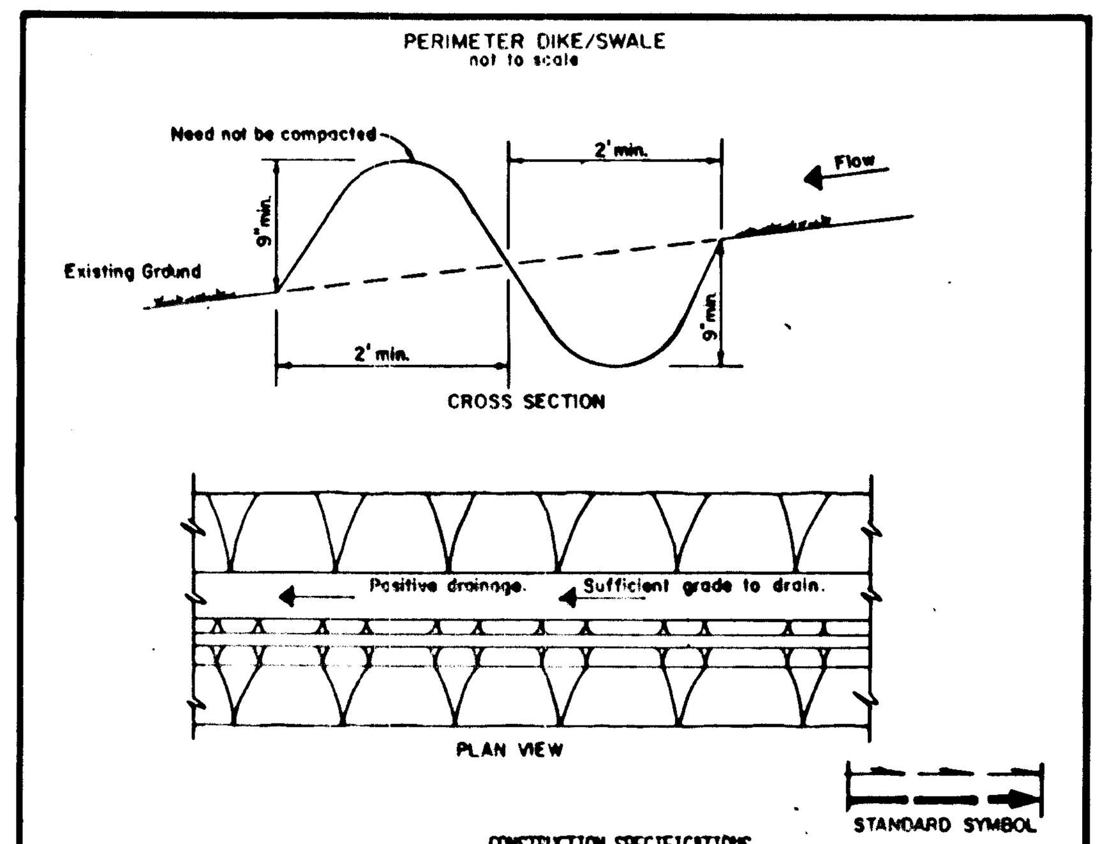
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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 1/2 Ga. 6" Max. Mesh Opening
FILTER CLOTH: Filter X, Mirafi 100X, Stabilinka T140N or approved equal
PREFABRICATED UNIT: Geofab, Envirofence, or approved equal.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1

PERIMETER DIKE/SWALE
not to scale



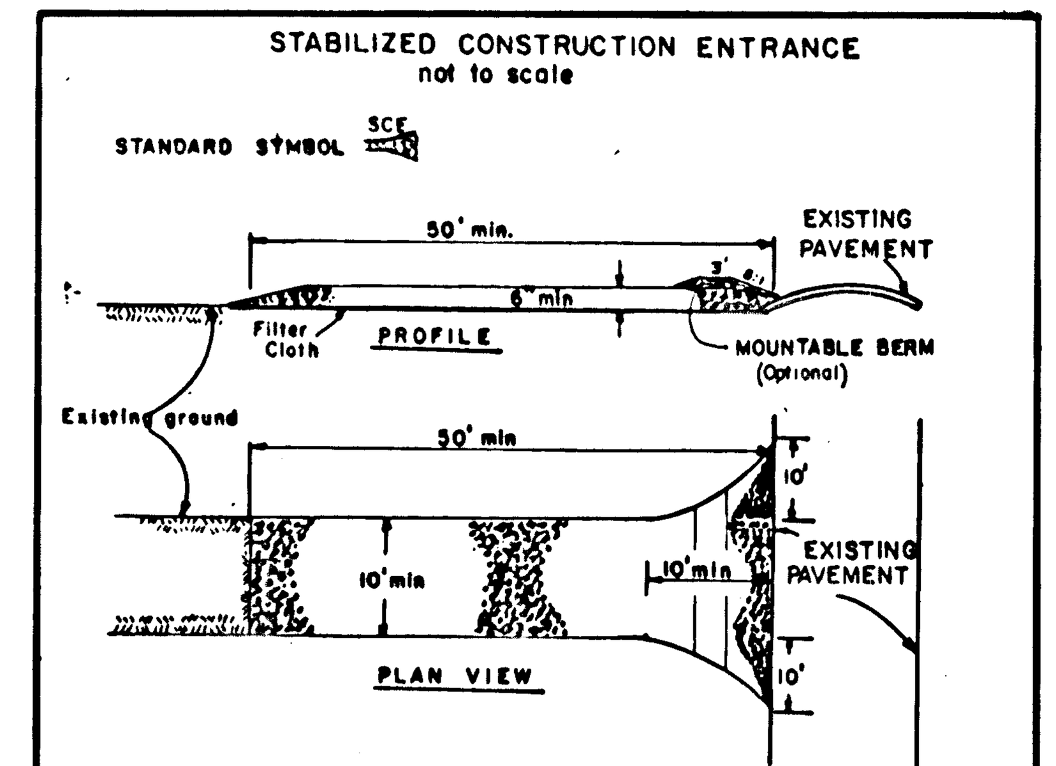
CONSTRUCTION SPECIFICATIONS

1. All perimeter dike/swale shall have uninterrupted positive grade to an outlet.
2. Diverted runoff from a distrubed area shall be conveyed to a sediment trapping device.
3. Diverted runoff from an undisturbed area shall outlet into an undisturbed stabilized area at non-erosion velocity.
4. The swale shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified in the standard.
5. Stabilization of the area disturbed by the dike and swale shall be done in accordance with the standard and specification for seed and straw mulch, and shall be done within 10 days.
6. Periodic inspection and required maintenance must be provided after each rain event.

Max. Drainage Area Limit: 2 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	PERIMETER DIKE/SWALE	Standard Drawing PDS-1

STABILIZED CONSTRUCTION ENTRANCE
not to scale



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.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

PERMANENT SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

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

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

2) Acceptable - Apply 2 tons per acre 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 thre July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1½ 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.

Matinenance - Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

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.

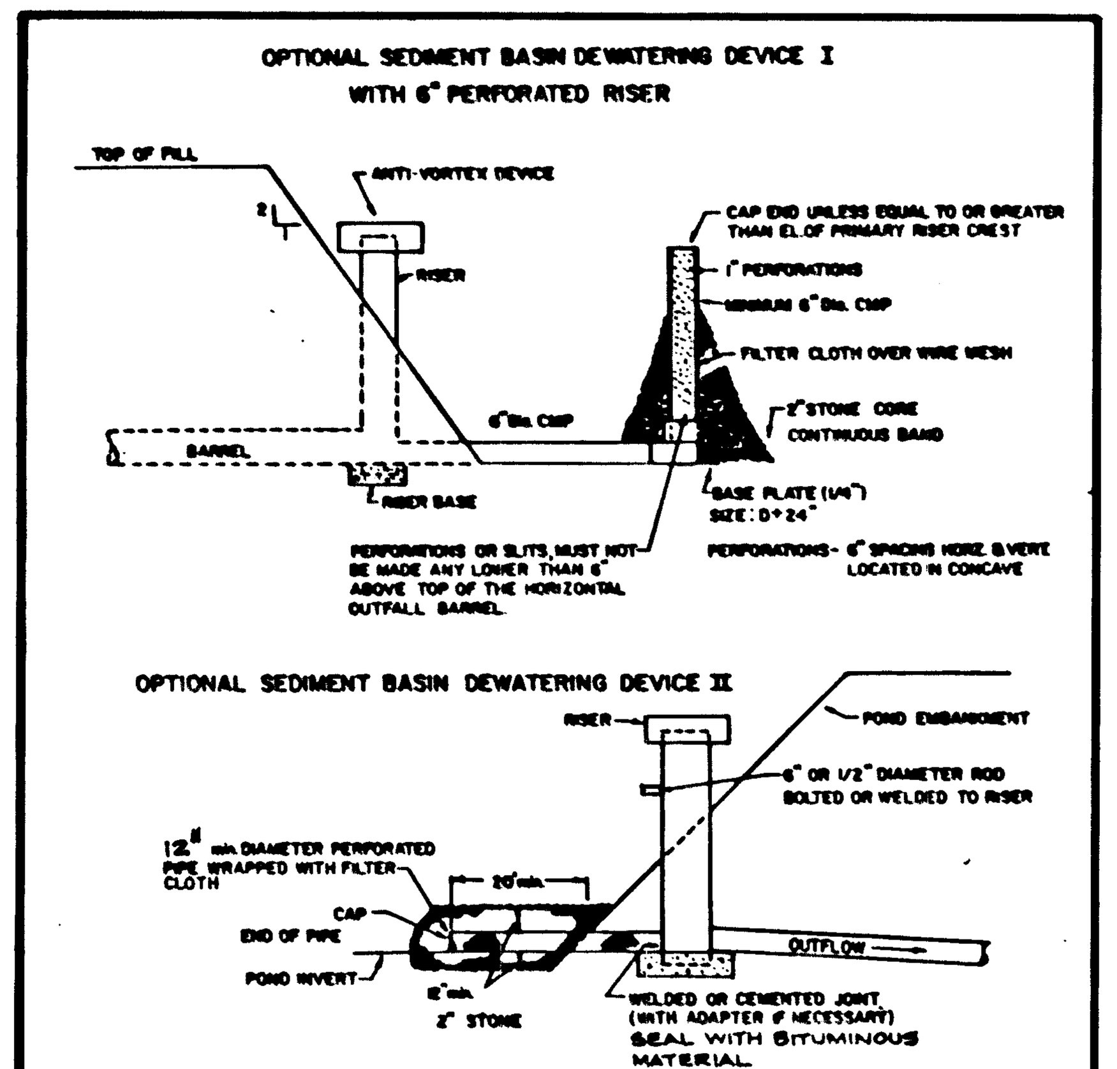
Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft)

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2½ bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For ther 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 1½ 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 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

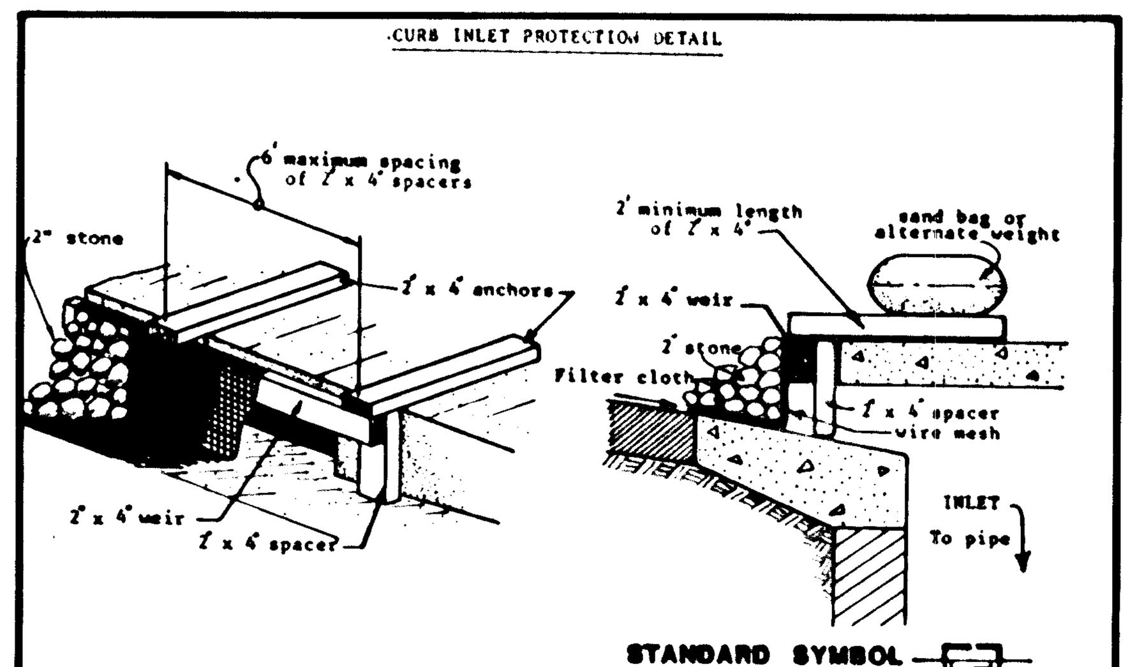
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

OPTIONAL SEDIMENT BASIN DEWATERING DEVICE I WITH 6" PERFORATED RISER



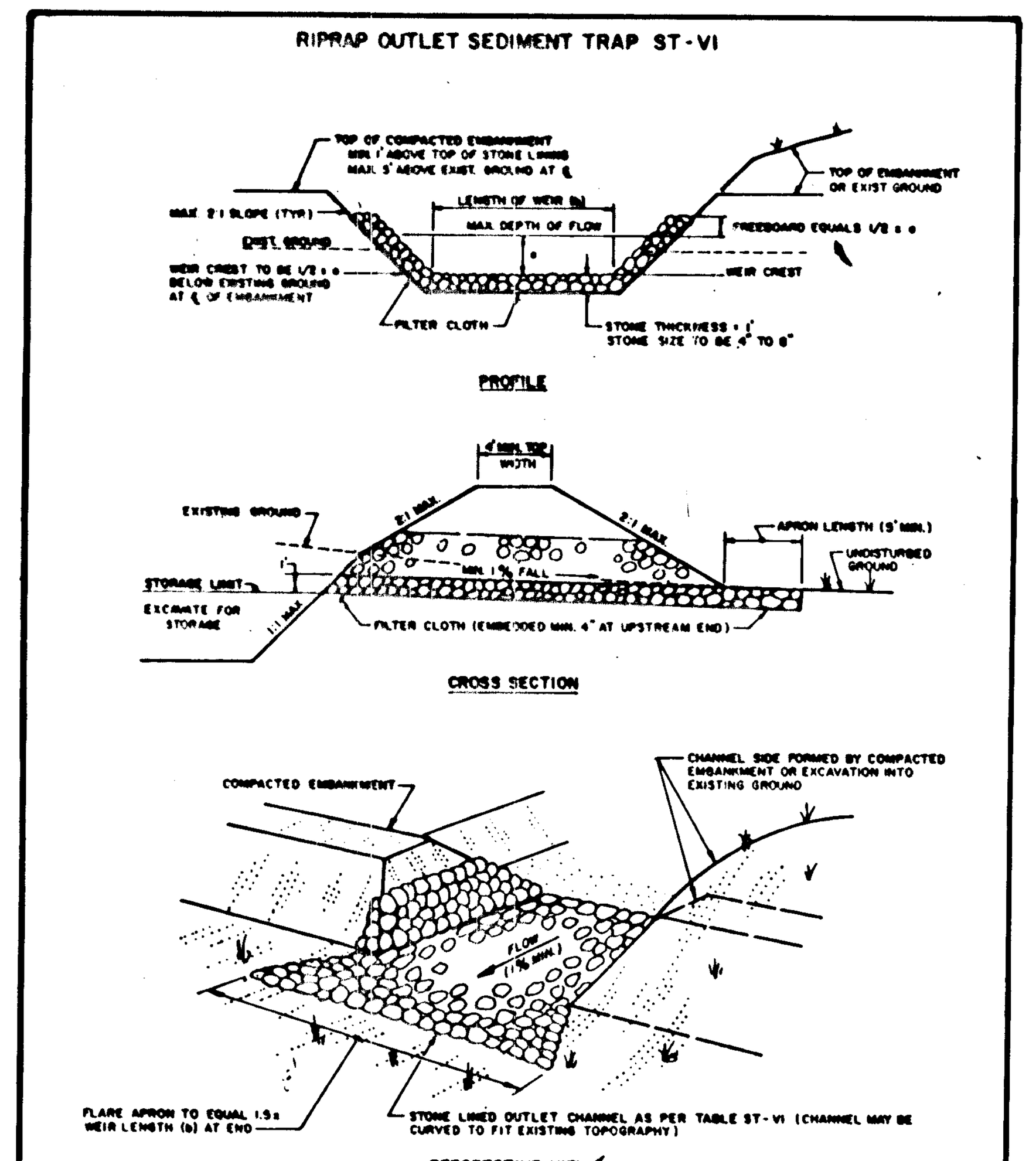
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	OPTIONAL SEDIMENT BASIN DEWATERING DEVICES	STANDARD DRAWING SB

CURB INLET PROTECTION DETAIL



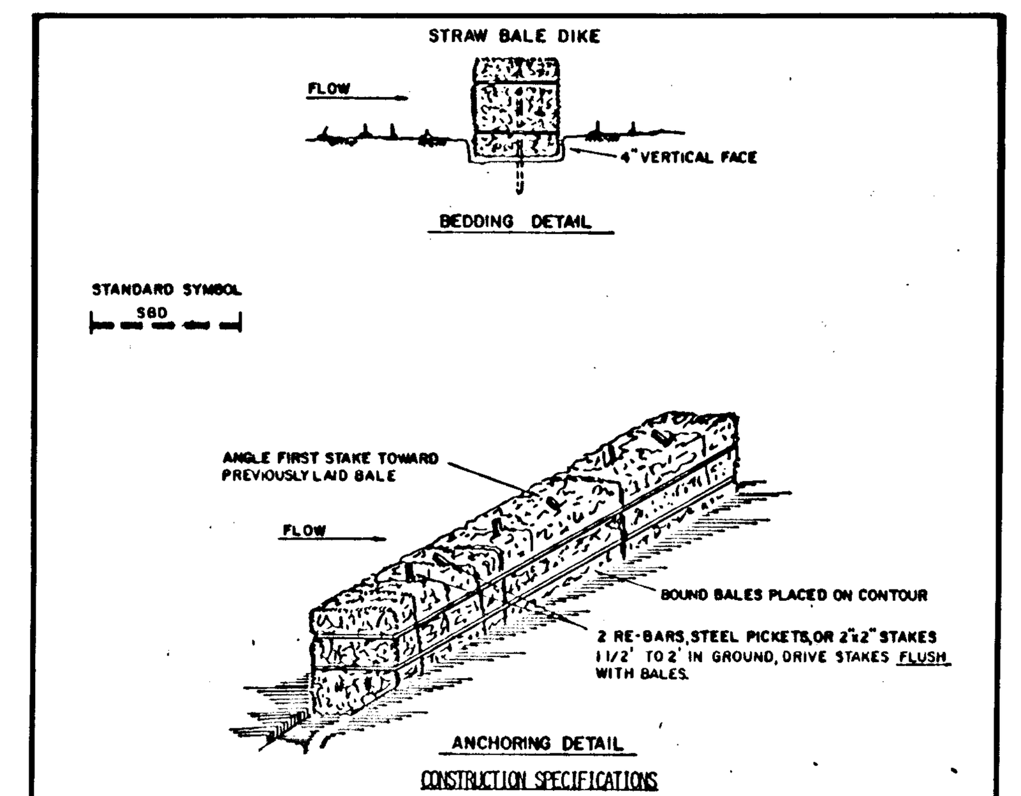
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD-1

RIPRAP OUTLET SEDIMENT TRAP ST-VI



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-VI

STRAW BALE DIKE



CONSTRUCTION SPECIFICATIONS

1. Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
2. Each bale shall be embedded in the soil a minimum of (4) inches, and placed so the bindings are horizontal.
3. Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
4. Inspection shall be frequent and repair replacement shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STRAW BALE DIKE	STANDARD DRAWING SBD-1

STATE OF MARYLAND
DONALD EDWIN HICKS
No. 8676
REGISTERED
PROFESSIONAL ENGINEER

SIGNATURE [illegible]
DATE

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME			SECT. / AREA	LOT/PARCEL No	
LARK BROWN ESTATES				322	
PLAT No. OR L/F	BLOCK No.	ZONE	TAX/ZONEMAP	ELECT.DIST.	CENSUS TR
281/493		R-12	37	6	
WATER CODE			SEWER CODE		
E 08			3450000		

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON DATE

[illegible] [illegible]
CHIEF, BUREAU OF HIGHWAYS DATE

[illegible] 10-10-88
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[illegible] 10-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

SEDIMENT CONTROL DETAILS

LARK BROWN ESTATES
LOTS NO. 1 THRU 13
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAX MAP# 37 PARCEL#322
SCALE: NONE DATE: JULY 25, 1988
DRN. BY: G.J.J. CHECKED BY: D.E.H.
F 88-178 SHEET 6 OF 9

F-88-178

HICKS ENGINEERING COMPANY, INC.
CIVIL ENGINEERS · SURVEYORS PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21204
(301) 494-0001

ENGINEER'S CERTIFICATE

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[illegible] 7/25/88
DONALD E. HICKS P.E. DATE

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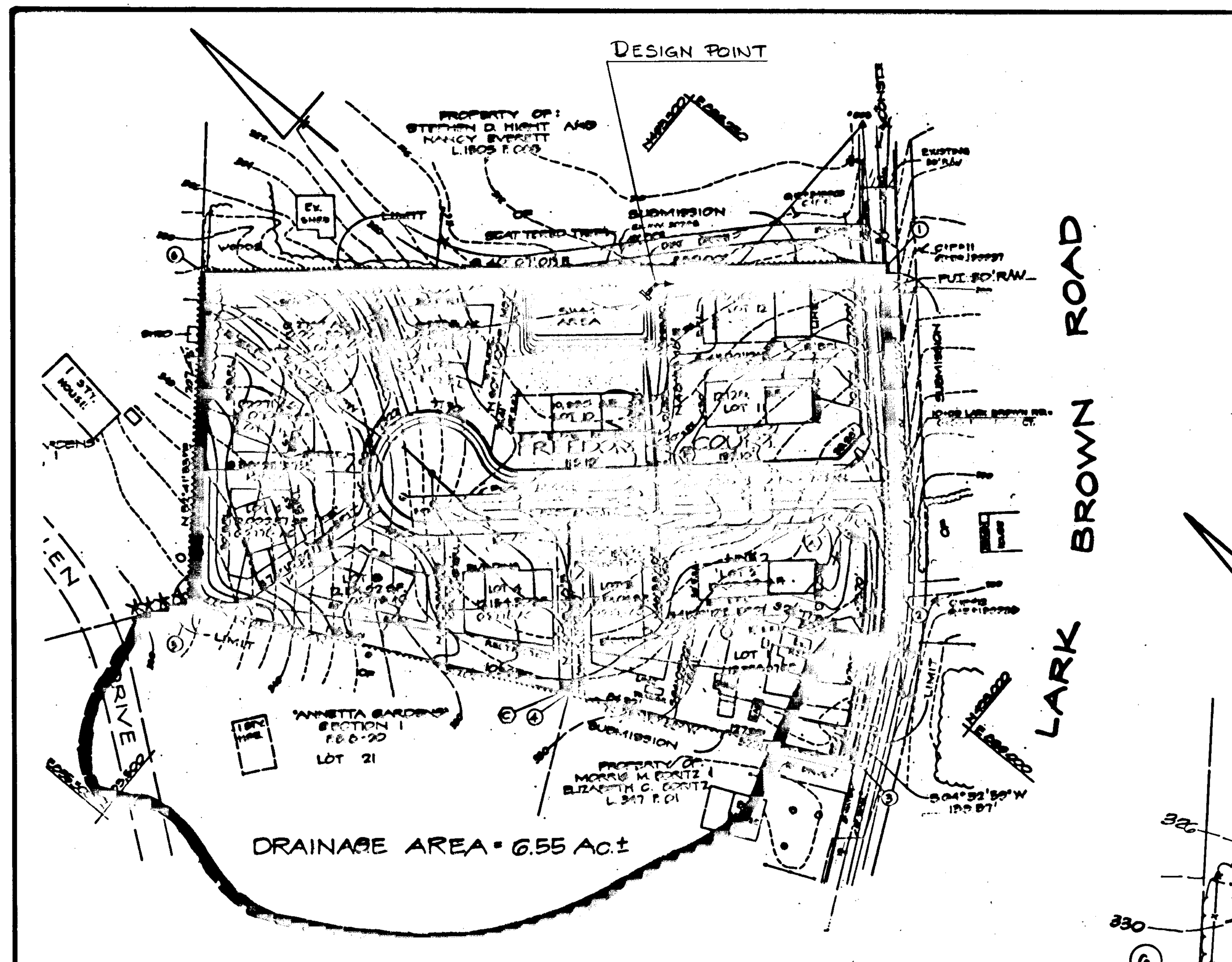
[illegible] 2/18/88
PRADIP GHOSH DATE

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

[illegible] 8/5/88
U.S. SOIL CONSERVATION SERVICE DATE

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

[illegible] 8/5/88
DISTRICT MANAGER DATE
HOWARD SOIL CONSERVATION DISTRICT

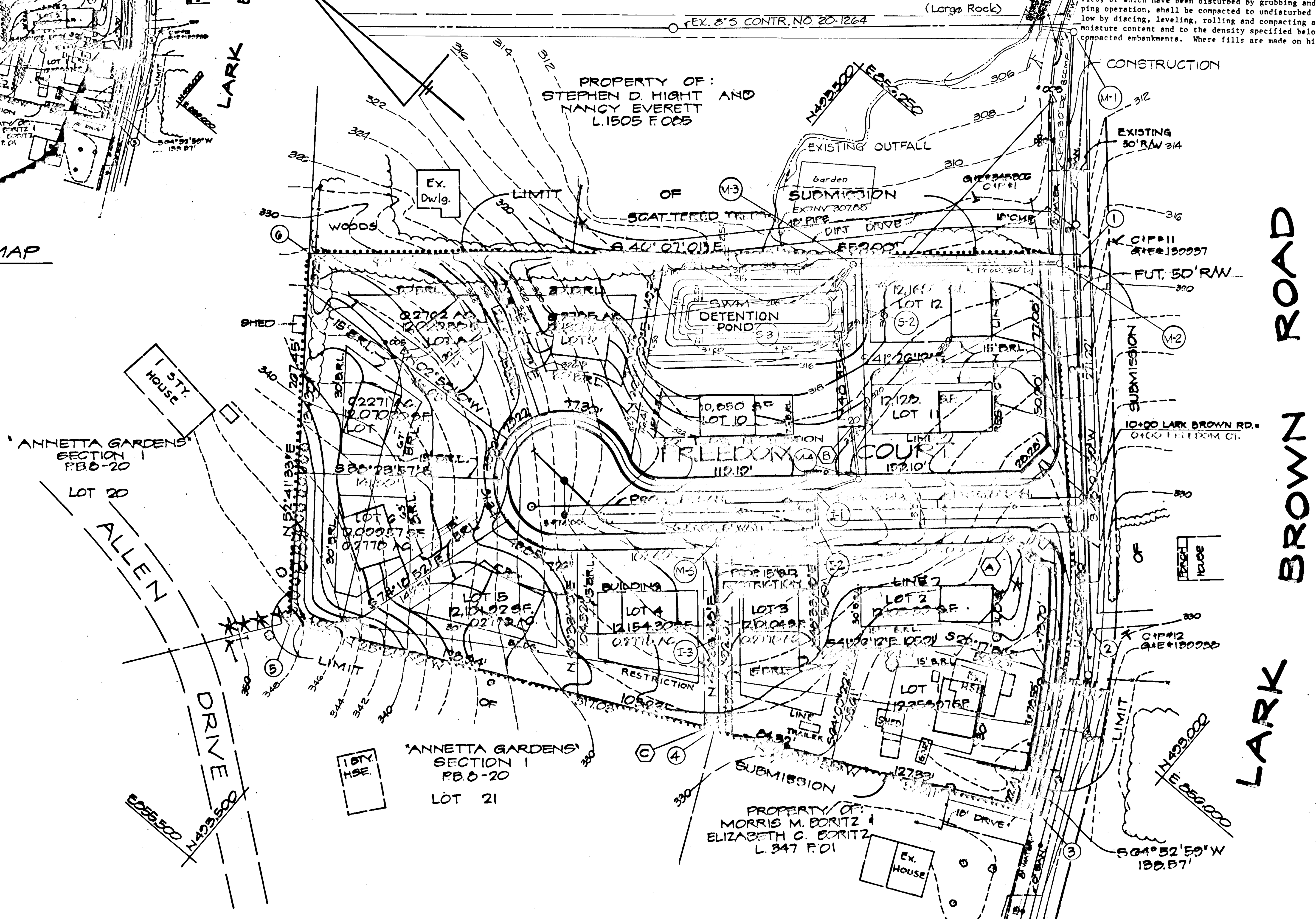


DRAINAGE AREA MAP
SCALE: 1"=100'

NOTE:
See Water & Sewer Dwg. 1of1 Contract No 24-1762-D for portion of Ex. 12"W to be relocated below Prop. 30" BCCMP Drain.

(B) DRAINAGE, S.W.M. FACILITY ACCESS TO S.W.M. FACILITY AND UTILITY EASEMENT

(C) 20' WIDE EASEMENT FOR DRAINAGE AND UTILITIES



FOR S.W.M. DETAILS, SEE SHEETS 8 & 9 OF 9.

GENERAL CONSTRUCTION SPECIFICATIONS

1. **GENERAL**
All stormwater management facilities shall be constructed in accordance with Baltimore County's "Standard Specifications and Details for Construction (1976)" and the S.C.S. Maryland "Standard and Specifications for Ponds".

2. **SITE PREPARATION**
Areas under the embankment, structural works and inlet and outlet channels and spillway shall be cleared, grubbed and topsoil stripped. All trees, debris, vegetation, roots, or other objectionable or organic material shall be removed. Areas to be covered by the pond will be cleared of all trees, brush, logs, fences, rubbish, and other objectionable material. Trees, brush, and stumps shall be cut level with the ground surface. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and outside of the 100 year flood plain limit as directed by the owner.

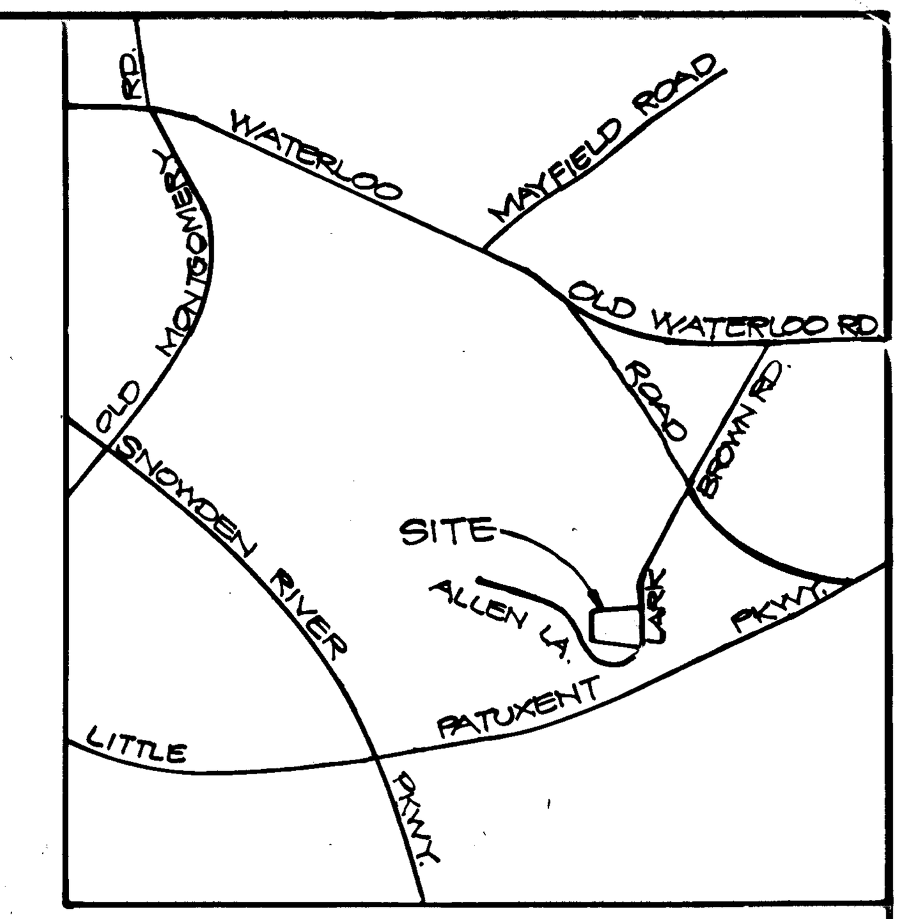
3. **EARTH FILL**
MATERIAL: The fill material shall be taken from an approved borrow area. All material shall be free from roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. For cutoff trenches and dam cores the material used shall conform to the Unified Soil Classification SC or CL.
PLACEMENT: All areas on which fill is to be placed shall be scarified prior to placement of fill. Soils so scarified, or which have been disturbed by grubbing and stripping operation, shall be compacted to undisturbed soil below by discing, leveling, rolling and compacting at the moisture content and to the density specified below for compacted embankments. Where fills are made on hillsides, or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, or where the slope ratio of the original ground is steeper than 5 horizontal on 1 vertical, the bank shall be stepped or benched, when considered necessary by the Engineer, to permit placement of the fill in horizontal layers. The final decision as to the suitability of the exposed soil shall be made by the Soils Engineer at the time of construction. 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.
Each layer shall be spread uniformly and evenly and shall be thoroughly blade mixed during the spreading to insure uniformity of materials in each layer. 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 equipment and compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. All compaction is to be 95 percent of the maximum density as determined by AASHTO Specification T-99 (Standard Proctor) and is to be certified for each layer by the Soils Engineers at the time of construction. The moisture content of the fill shall be as required in order to attain the degree of compaction specified. The filling operation shall be continued as specified above until the fill has been brought to the constructed top elevation shown on the plans. The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and all fill shall be deposited to prevent excessive moisture accumulation from rainwater. When the work is interrupted by rain, filling shall not be re used until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements. All fill placed around CMP barrels shall be compacted using hand compaction equipment when within 4 feet of the pipes.

CUTOFF TRENCH: A cutoff trench shall be excavated parallel to the center line 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 4 feet (minimum) below the barrel pipe and or existing ground. The side slopes of the trench shall be 1 to 1 or flatter.

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 pipes. At no time during the backfilling operations shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

5. **PIPE CONDUITS:**
MATERIALS (CORRUGATED STEEL PIPE). This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO specifications M-190, Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Coated C.M.P. shall have a minimum coating thickness of 10 mil on both sides of pipe and shall meet requirements of AASHTO M-245 and M-246.
CONNECTIONS: All connections with pipes must be completely watertight. The drain pipe or barrel connections to the riser shall be welded all around. Watertight coupling bands or flanges shall be used at all joints. 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. For a prefabricated barrel and riser structure, the angle of the barrel at the barrel and riser connection must reflect the slope of the barrel.
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 materials shall be removed and replaced with suitable earth material, compacted to provide adequate support.
LAYING PIPE: The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
BACKFILLING: Backfill shall conform to structural backfill as shown above.
OTHER DETAILS: (Anti-seep collars, valves, etc.) shall be as shown on the drawings.



VICINITY MAP
SCALE: 1"=2,000'

6. **CONCRETE:**
Concrete shall meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications for Construction and Materials Section 918 (Portland Cement Concrete Mixtures) - Mix No. 3. Reinforcing steel shall be ASTM A-615, Grade 60. Rebars shall have 3" cover (minimum) and a minimum overlap of 30 bar diameters, except as noted on the plans. Steel angles and anchor bars shall be ASTM A-36.

7. **STABILIZATION:**
All borrow and spoil areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, berms, borrow and spoil areas shall be stabilized by seeding and applying straw mulch in accordance with "Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas", or as shown elsewhere in these specifications, immediately after finished grading.

8. **EROSION CONTROL FACILITIES:**
All disturbed areas shall be controlled by an Erosion and Sediment Control Plan which has been approved by the Baltimore County Soil Conservation District (BCSCD).

9. **SEEDING:**
Seeding, fertilizing and mulching shall be as follows:

Seed Mix:	90% Kentucky 31 Tall Fescue 10% Kenblue Applied at a rate of 300 lbs. per acre.
Lime:	2 tons/acre Dolomitic Limestone.
Fertilizer:	600 lbs./acre 10-20-10 fertilizer before seeding, 400 lbs./acre 30-0-0 ureaform fertilizer at time of seeding.
Mulch:	Straw at 4,000 lbs. per acre.
Anchoring:	Mulching tool or emulsified asphalt binder at a rate of 8 gal. per 1,000 square feet.

10. **FILTER CLOTH:**
All filter cloth shall be Polyfilter - X or equivalent.

11. **RIPRAP:**
All riprap shall conform to Baltimore County Specifications.

12. **GABIONS:**
All gabions shall be P.V.C. coated Class IV.

13. **FENCE:**
Fencing shall be constructed in accordance with State Highway Administration Details 690.01 and 690.02. The specifications for a 6'-0" fence shall be used, substituting 42" fabric and 6'-8" line posts. The gate shall be constructed in accordance with S.H.A. Standard Detail 692.01 with 42" fabric. The fabric used for the fence and gate shall conform to AASHTO Designation M181-74.

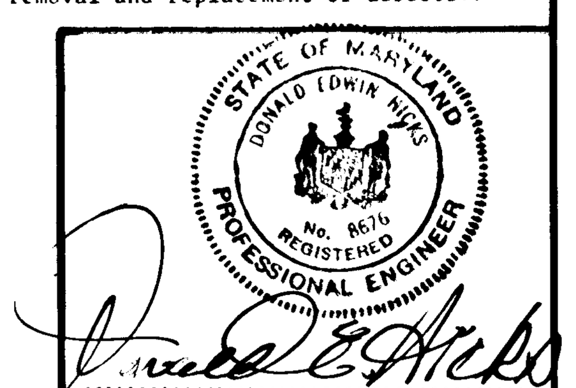
14. **CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS:**
The construciton of the pond and embankment, and certification that the pond and embankment have been build in accordance with the plans shall be under the supevision of a Registered Professional Engineer. The Engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for 1) inspection of pipe trench and bedding, 2) inspection of riser and anti-seep collars and 3) supervision of embankment construction and compaction testing. The Engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

( ) 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 8/5/88
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.

[signature] 8/8/88
Howard Soil Conservation District — Date



Donald E. Hicks
SIGNATURE
Feb. 18, 1988
DATE

F88-178

By the Developer:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of 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 inspections by the Howard Soil Conservation District."

Pradip Ghosh 2/18/88
Signature of Developer — 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 the pond within 30 days of completion."

Donald E. Hicks P.E. 2/18/88
Signature of Engineer — Date

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL No.
LARK BROWN ESTATES		322

PLAT No. OR L/F	BLOCK No.	ZONE	TAX/ZONE MAP	ELECT. DIST.	CENSUS TR.
281/493		R-12	37	6	

WATER CODE	SEWER CODE
E 08	3450000

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON — DATE

Granville W. Wehland 10/3/88
CHIEF, BUREAU OF HIGHWAYS — DATE

[signature] 10/10/88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature] 10-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

HICKS ENGINEERING COMPANY, INC.
CIVIL ENGINEERS · SURVEYORS
PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21204
(301) 494-0001

ENGINEER'S CERTIFICATE

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

Donald E. Hicks, P.E. 2/18/88
DONALD E. HICKS, P.E. — DATE

DEVELOPER'S CERTIFICATE

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

Pradip Ghosh 2/18/88
PRADIP GHOSH — DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

James M. Helm 8/5/88
U.S. SOIL CONSERVATION SERVICE — DATE

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

Robert W. Ziehm 8/5/88
DISTRICT MANAGER — DATE
HOWARD SOIL CONSERVATION DISTRICT

STORM WATER MANAGEMENT PLAN

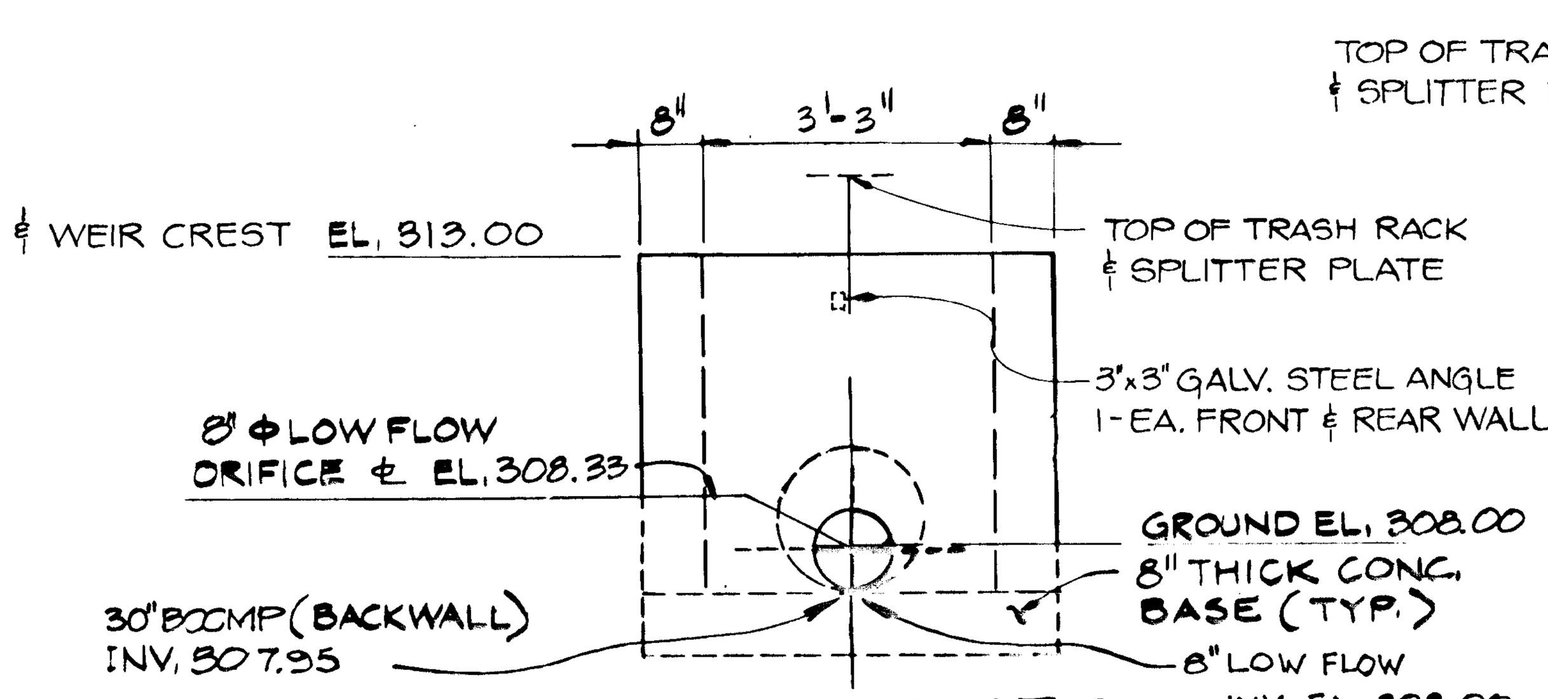
LARK BROWN ESTATES

LOTS NO. 1 THRU 13
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

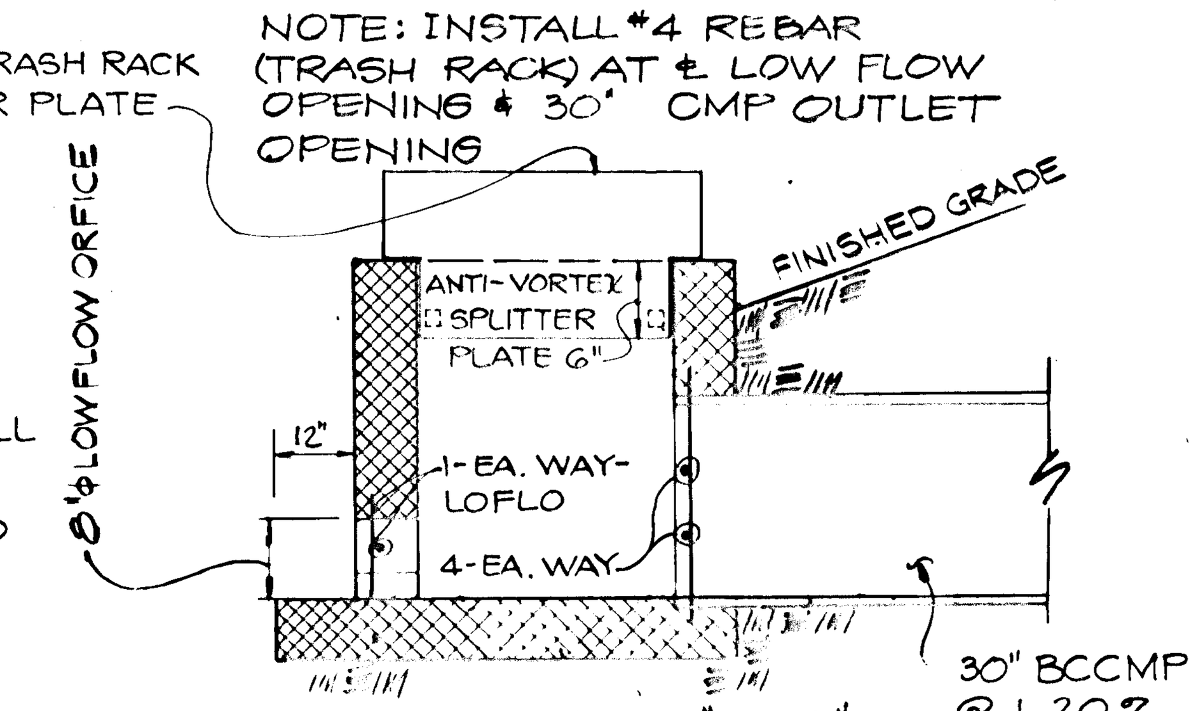
TAX MAP #37 — PARCEL #322
SCALE: 1"=50' — DATE: JULY 25, 1988
DRN. BY: L.A.W. — CHECKED BY:
F 88-178 — SHEET 7 OF 9

F-88-178

1384



FRONT ELEVATION



SECTION "A-A"

INLET CONTROL STRUCTURE DETAILS

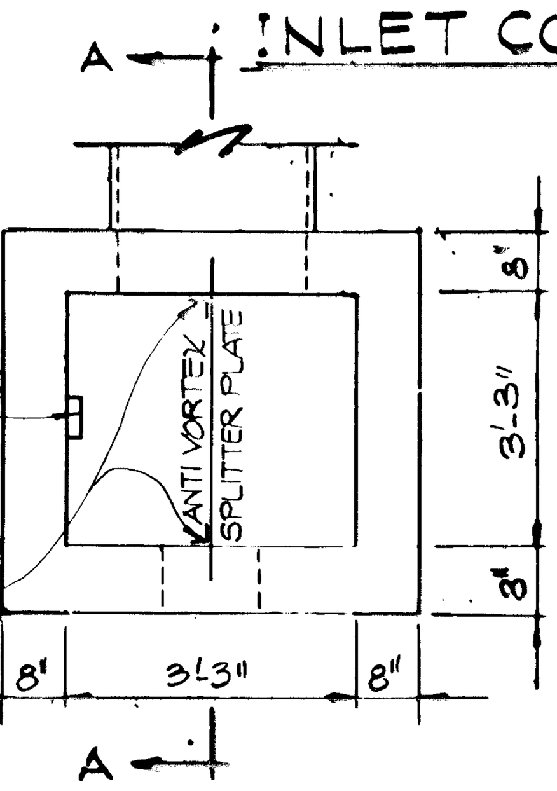
NOT TO SCALE

NOTE: WALLS SHALL BE EITHER 8" BRICK MASONRY OR 8" CAST IN PLACE CONC.

NOTE: CONTRACTOR SHALL:
1. PROVIDE ST'D. MANHOLE STEPS ON INSIDE FACE OF WALL (HO.CO. G 5.21)
2. CENTER STEPS ON ℄ OF 3'-3" OPENING

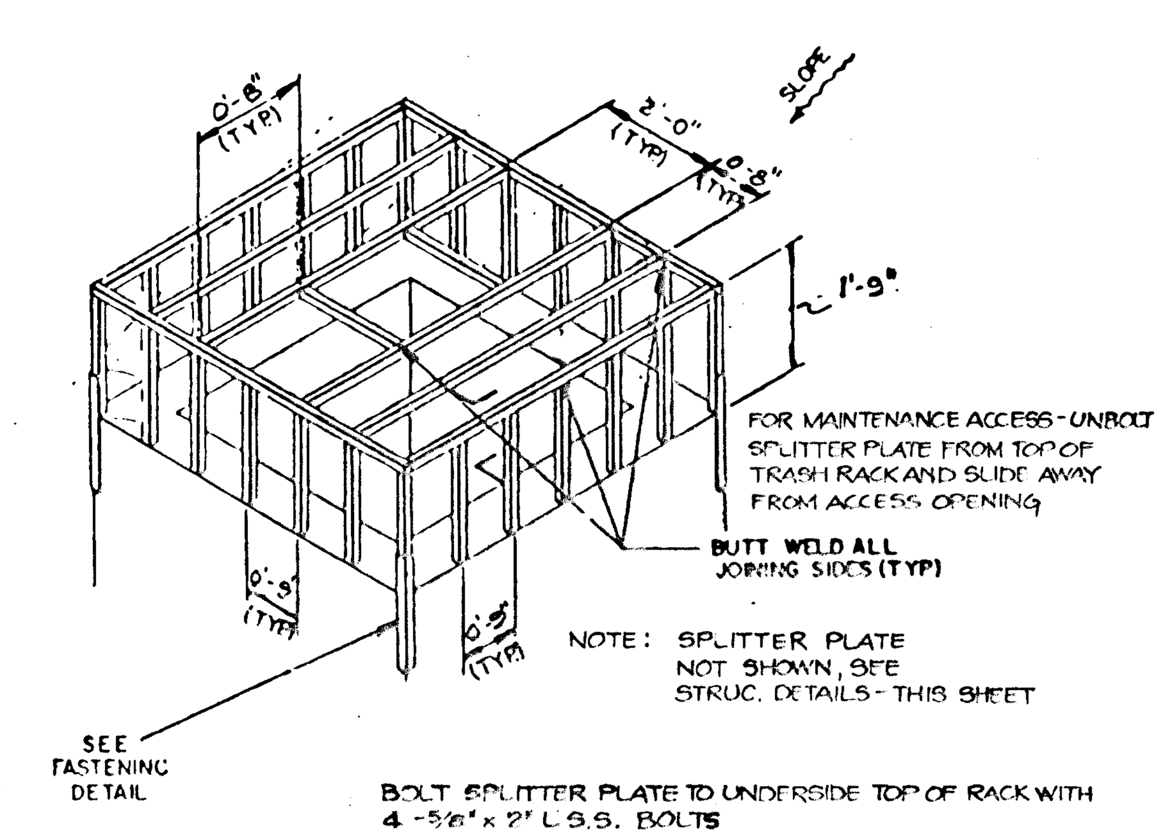
3"x3" GALV. STEEL ANGLE BOLTED TO CONC. WALL (STIFFENER FOR SPLITTER PLATE)

DRILL 3" ANGLE & SPLITTER PLATE W/3 Ø HOLE AND FASTEN W/1 3/8"x2" S.S. BOLT NUT & FLAT WASHER



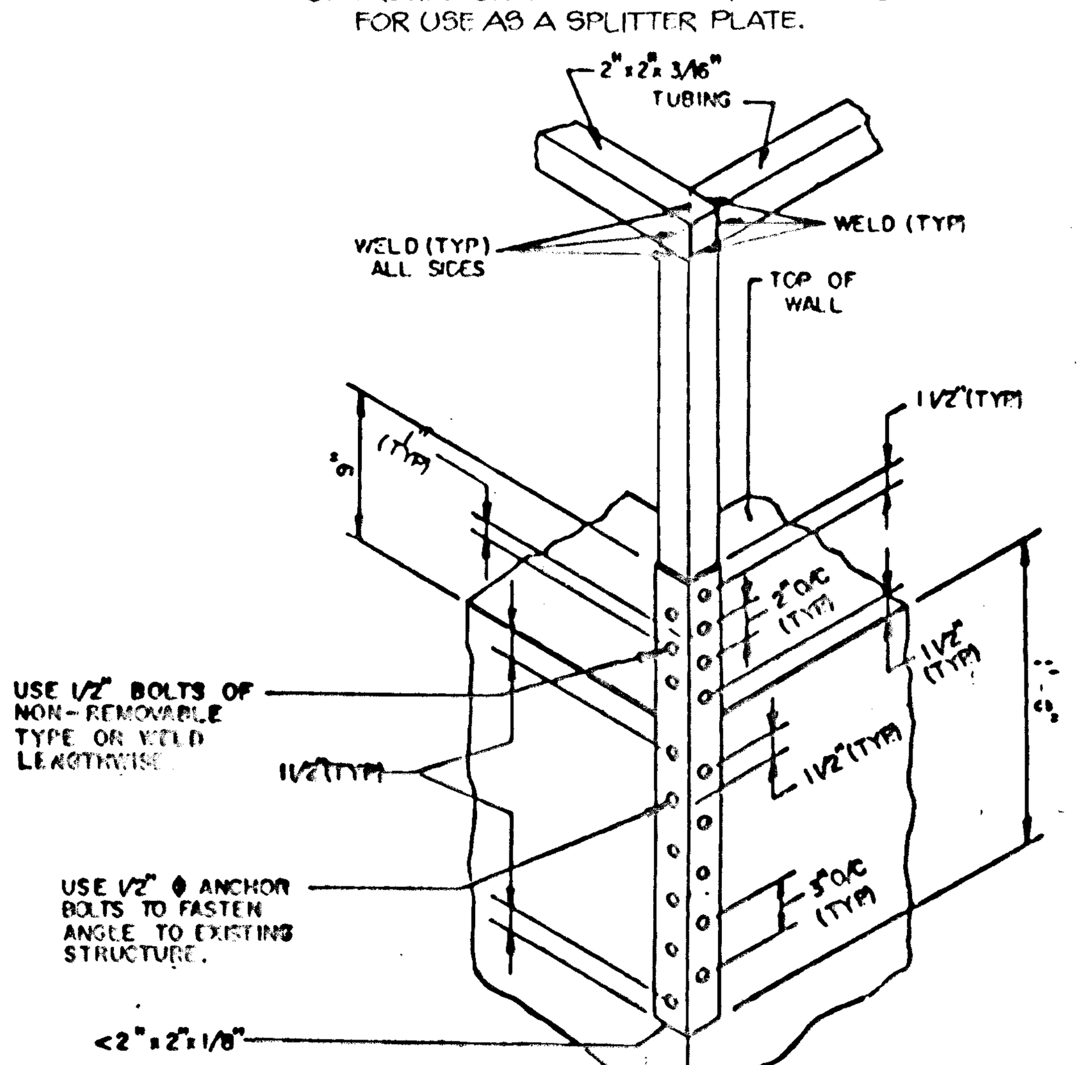
PLAN

NOTE- CONTRACTOR SHALL:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
2. GALVANIZE ENTIRE RACK AFTER FABRICATION; INCLUDING SPLITTER PLATE
3. PROVIDE STANDARD MANHOLE STEPS (B.C.B.E. STD. PLATE G-4) ON INSIDE FACE OF WALL.
4. CENTERLINE OF STEPS TO BE CENTERED WITHIN 2' OPENING.
5. PROVIDE 10.090" MIN. THICK. GALV. STEEL SHEET FOR USE AS A SPLITTER PLATE.



TRASH RACK DETAIL FOR RECTANGULAR CONCRETE RISER

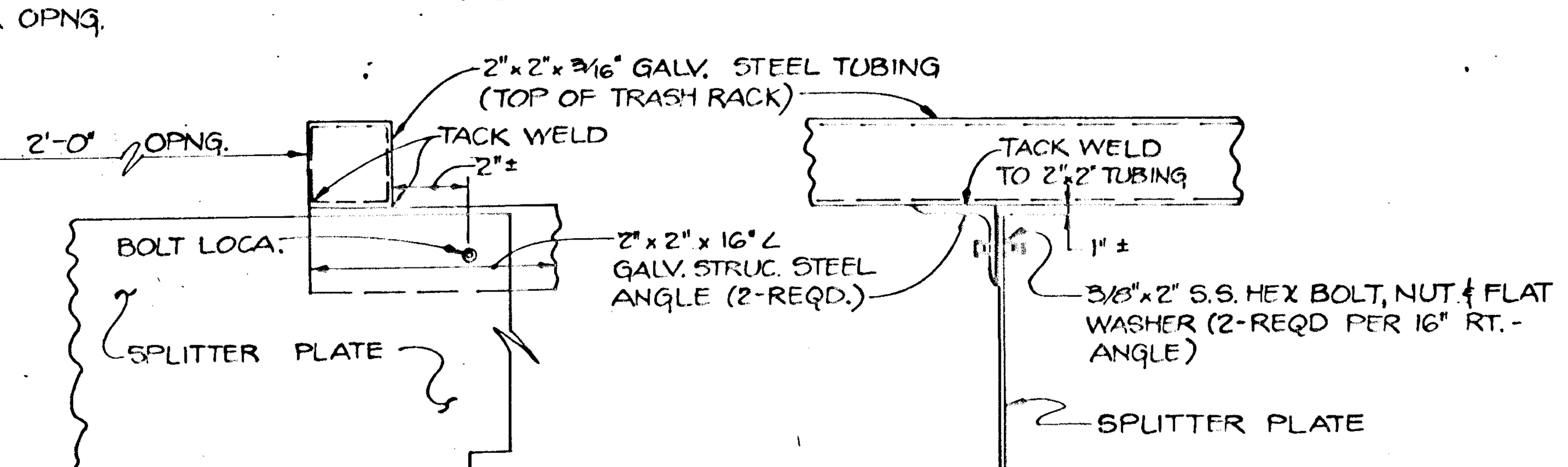
NO SCALE



FASTENING DETAIL NO. 1

NO SCALE

ALIGN 16" RT. ANGLES TO CLEAR 2' OPNG. & TO CENTER SPLITTER PLATE ALONG ℄ OF WEIR OPNG.



SECTION A-A ELEVATION

FASTENING DETAIL NO. 2

SPLITTER PLATE CONNECTION

Earth Engineering & Sciences, Inc.

BORING LOG

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-1 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-17-87 FINISH 7-17-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN D. Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Green brown/gray brown clayey silty sand; thin roots in S-1 (USC: SM)		1-3-5	1	DS	1.0	Topsoil = 7 inches. Groundwater not encountered.
			5-9-15	2	DS	1.4	
		5	6-12-16	3	DS	1.5	
		8.0					
	Red tan silty sand (USC: SM)	10	12-22-20	4	DS	1.5	
		11.0					
	Dark green micaceous silty sand (Schist) (USC: SM)		8-11-13	5	DS	1.5	
		15					
	Bottom of boring at 15.0 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. 5.8 ft. CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-2 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-17-87 FINISH 7-17-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN D. Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Brown clayey silty sand with gravel (Fill?)		2-2-5	1	DS	1.2	Topsoil = 12 inches. Groundwater not encountered.
		2.0					
	Gray brown/green brown clayey silty sand; trace of decomposed organics (USC: SM)		4-9-6	2	DS	1.5	
		5	5-6-6	3	DS	1.5	
		7.0					
	Brown silty sand (USC: SM)	10	12-25-35	4	DS	1.5	
			48-50/3	5	DS	0.8	
		15					
	Bottom of boring at 14.3 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. 5.3 ft. CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-3 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-17-87 FINISH 7-17-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN D. Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Brown/red brown clayey silty sand with thin roots (USC: SM)		2-2-5	1	DS	0.5	Topsoil = 3 inches
		2.0					
	Red brown/brown sandy clayey silt (USC: ML)		10-15-17	2	DS	1.5	
		5.0 5					
	Red brown clayey silty sand with gravel (USC: SM)		7-21-19	3	DS	1.5	
		8.0					
	Tan/red brown silty sand (USC: SM)	10	7-9-15	4	DS	1.5	
		12.0					
	Light gray brown silty sand (USC: SM)		15-50-50/3	5	DS	1.3	
		15					
	Bottom of boring at 14.8 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. Dry CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-4 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-17-87 FINISH 7-17-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN D. Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Brown clayey silty sand with gravel and thin roots (USC: SM)		2-3-5	1	DS	1.9	Topsoil = 11 inches. Groundwater not encountered.
		2.0					
	Red brown sandy silt (USC: ML)		9-9-10	2	DS	1.4	
		5.0 5					
	Red brown clayey silty sand with gravel (USC: SM)		7-11-14	3	DS	1.9	
		7.0					
	Green brown/tan/red brown clayey silty sand (USC: SM)	10	7-13-22	4	DS	1.9	
		11.0					
	Dark green micaceous silty sand (Schist) (USC: SM)		9-10-13	5	DS	1.4	
		15					
	Bottom of boring at 15.0 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. 8.5 ft. CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-5 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-20-87 FINISH 7-20-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN David Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Brown silty sand with gravel and thin roots (USC: SM)		3-3-4	1	DS	1.5	Topsoil = 4 inches. Groundwater not encountered.
		2.0					
	Red/light green brown sandy clayey silt; layer of silty clay at 3 feet (USC: ML)		5-6-7	2	DS	1.5	
		5	5-9-9	3	DS	1.5	
		9.0					
	Green brown silty sand (USC: SM)	10	10-11-19	4	DS	1.5	
		12.0					
	Dark brown silty sand (USC: SM)		13-17-30	5	DS	1.5	
		15					
	Bottom of boring at 15.0 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. 8.8 ft. CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

PROJECT Lark Brown Estates, Howard County, Maryland — BORING No. B-6 — PROJECT No. 87-185
LOCATION OF BORING
ELEV. — DATE: START 7-20-87 FINISH 7-20-87 INSPECTOR
HAMMER 140 lbs. HAMMER DROP 30 in. SPOON OD 2 in. FOREMAN David Hannibal
BORING METHOD HSA ROCK CORE DIA. MISC.

ELEV.	SOIL DESCRIPTION	DEPTH	BLOWS 6"	No.	TYPE	REC	REMARKS
	Brown silty sand with gravel (USC: SM)		2-2-4	1	DS	1.5	Topsoil = 5 inches. Groundwater not encountered.
		2.0					
	Light green brown/red sandy clayey silt (USC: ML)		4-5-7	2	DS	1.4	
		5	7-8-10	3	DS	1.5	
		6.0					
	Red brown silty sand with gravel (USC: SM)						
		8.0					
	Red brown (trace of gree) sandy clayey silt (USC: ML)	10	8-8-8	4	DS	1.5	
		11.0					
	Brown/green brown sandy clayey silt (USC: ML)						
		14.0					
	Dark brown silty sand (USC: SM)		15-19-19	5	DS	1.5	
		15					
	Bottom of boring at 15.0 feet	20					

LEGEND: DS DRIVEN SPOON, ST SHELBY TUBE, PS PISTON SAMPLE, RC ROCK CORE
GROUND WATER: AT COMPLETION Dry CAVED — AT 24 HRS. Dry CAVED
HSA HOLLOW STEM AUGER, DC DRIVEN CASING, MD MUD DRILLING

By the Developer:

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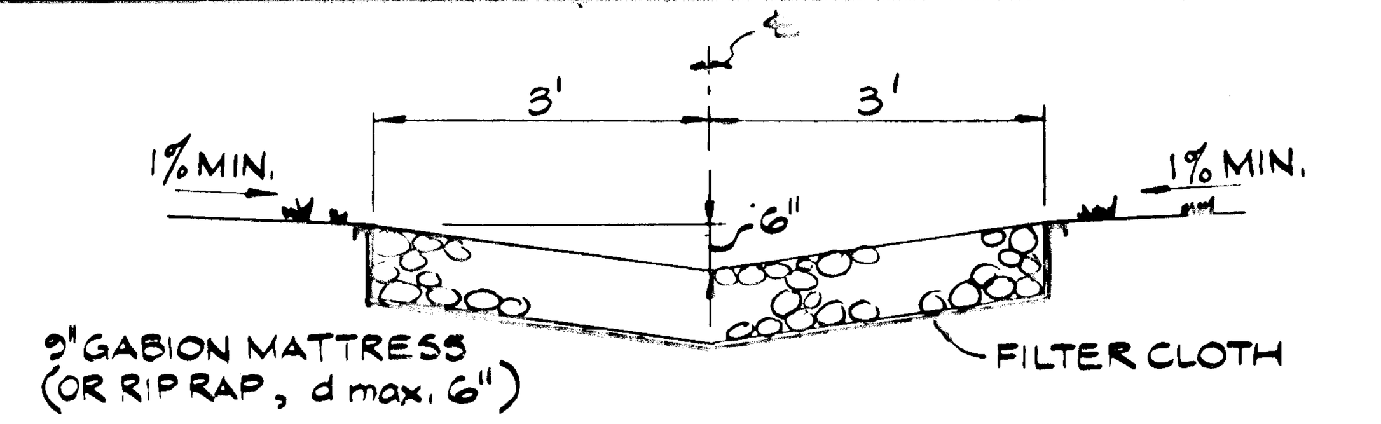
[illegible] 2/18/88
Signature of Developer — Date
Pradip Ghosh

By the Engineer:

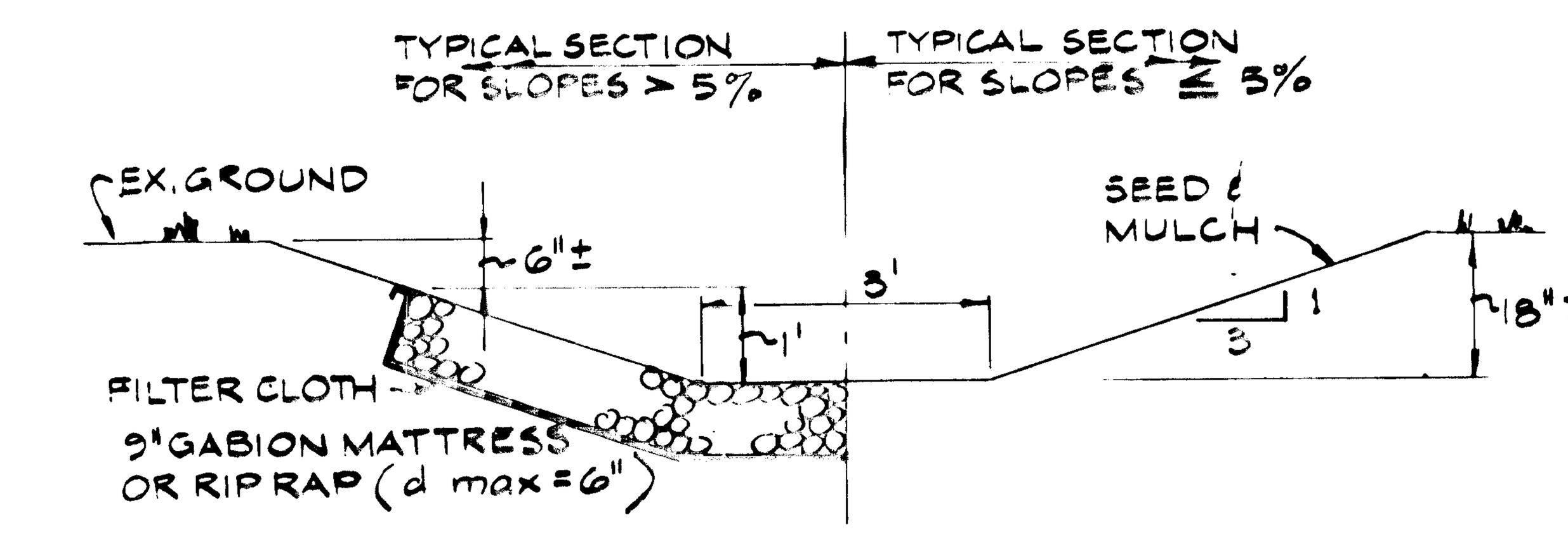
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer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

[illegible]
Signature of Engineer — Date
Donald E. Hicks, P.E.



TYPICAL SECTION - PILOT CHANNEL

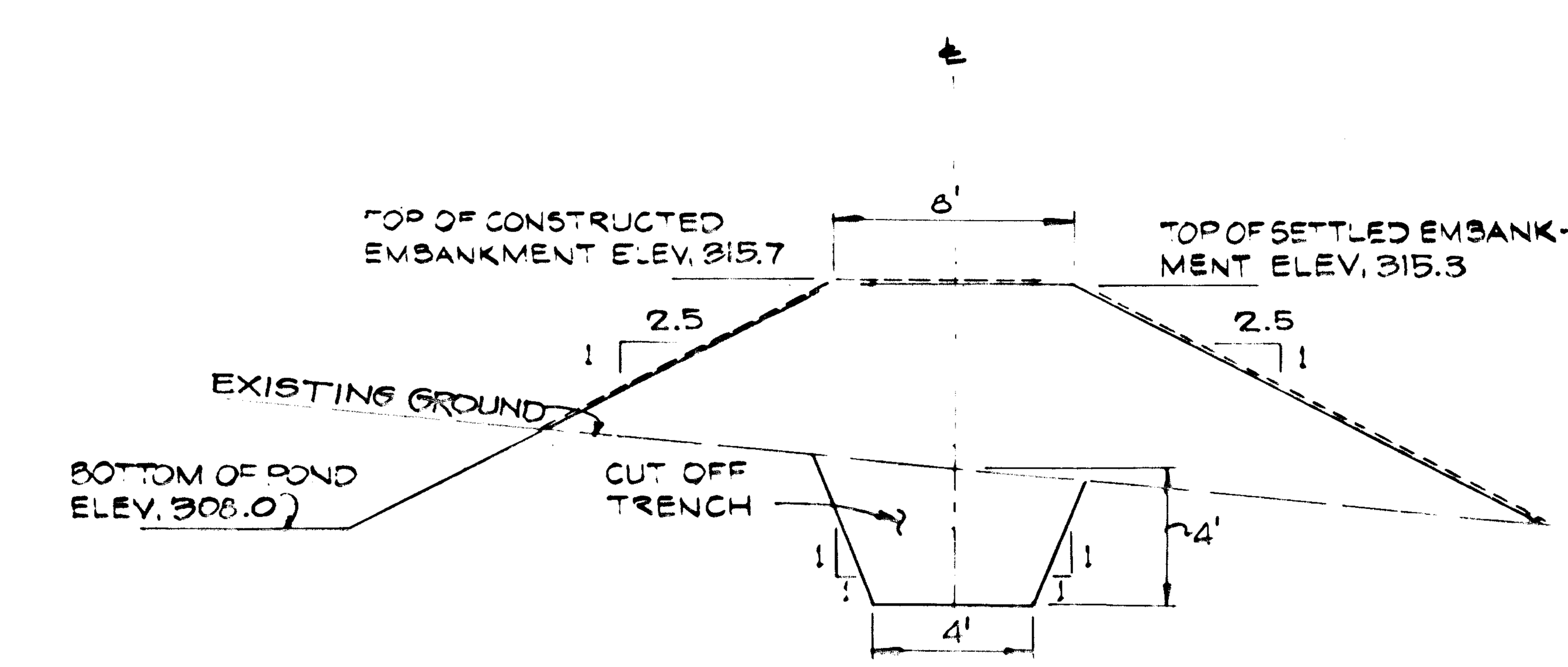
NOT TO SCALE



TYPICAL SECTION - DIVERSION DITCH -

OPTIONAL

NOT TO SCALE



TYPICAL SECTION THRU EMBANKMENT

NOT TO SCALE

( ) 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.

[illegible] [illegible]
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.

[illegible] [illegible]
Howard Soil Conservation District — Date

STATE OF MARYLAND — DONALD E. HICKS — No. 8676 — REGISTERED PROFESSIONAL ENGINEER

SIGNATURE

DATE

F 88-178

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL No.
LARK BROWN ESTATES				322
PLAT No. OR L/F	BLOCK No.	ZONE	TAX/ZONE MAP	ELECT. DIST.	CENSUS TR.
281/493		R-12	37	6	
WATER CODE			SEWER CODE	
E 08			3450000	

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200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21204
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[illegible] 7/5/88
DONALD E. HICKS, P.E. — DATE

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[illegible] 2/18/88
PRADIP GHOSH — DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[illegible] 8/5/88
U.S. SOIL CONSERVATION SERVICE — DATE

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

[illegible] 8/5/88
DISTRICT MANAGER, HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON — DATE

[illegible] [illegible]
CHIEF, BUREAU OF HIGHWAYS — DATE

[illegible] 10-10-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[illegible] 1-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

STORM WATER MANAGEMENT DETAILS

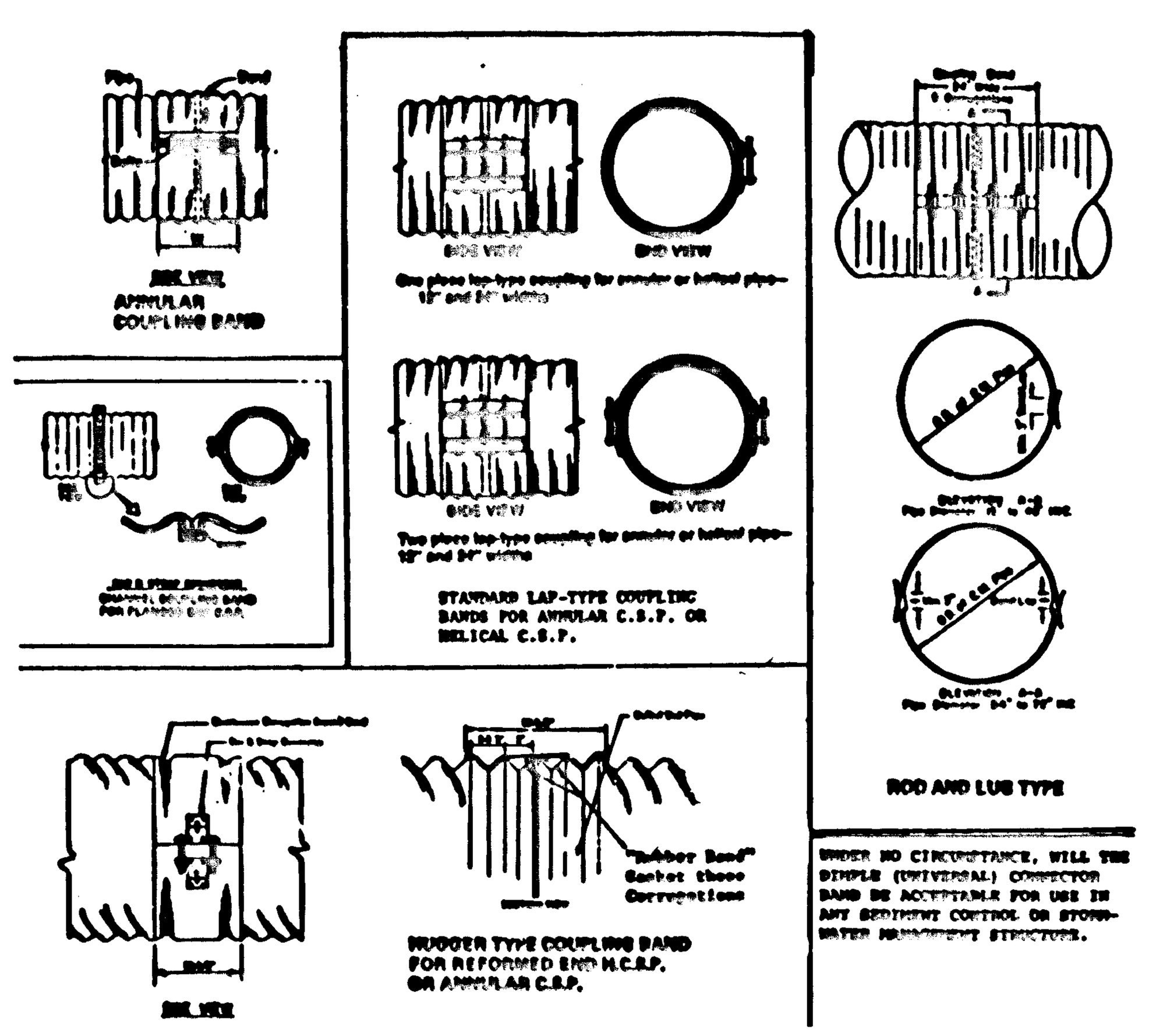
LARK BROWN ESTATES

LOTS NO. 1 THRU 13
6 TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

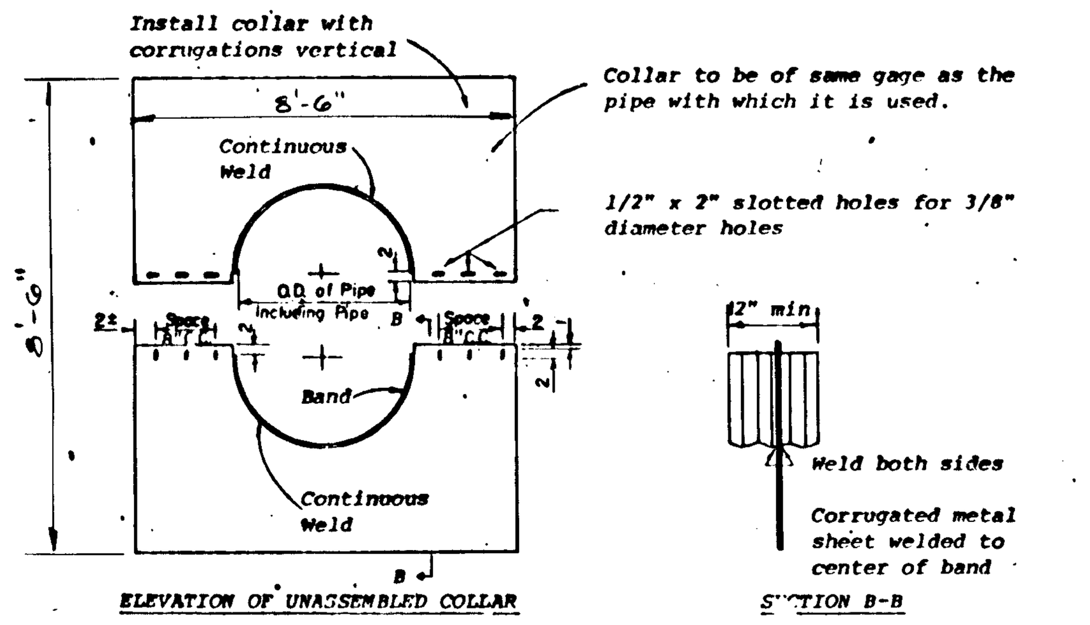
TAX MAP #37 — PARCEL #322
SCALE: AS SHOWN — DATE: JULY 25, 1988
DRN. BY: G.J.J. — CHECKED BY: D.E.H.
F 88-178 — SHEET 8 OF 9

F-88-178

TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE
(All connector bands require neoprene gaskets)



UNDER NO CIRCUMSTANCE, WILL THE SIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORM-WATER MANAGEMENT STRUCTURE.

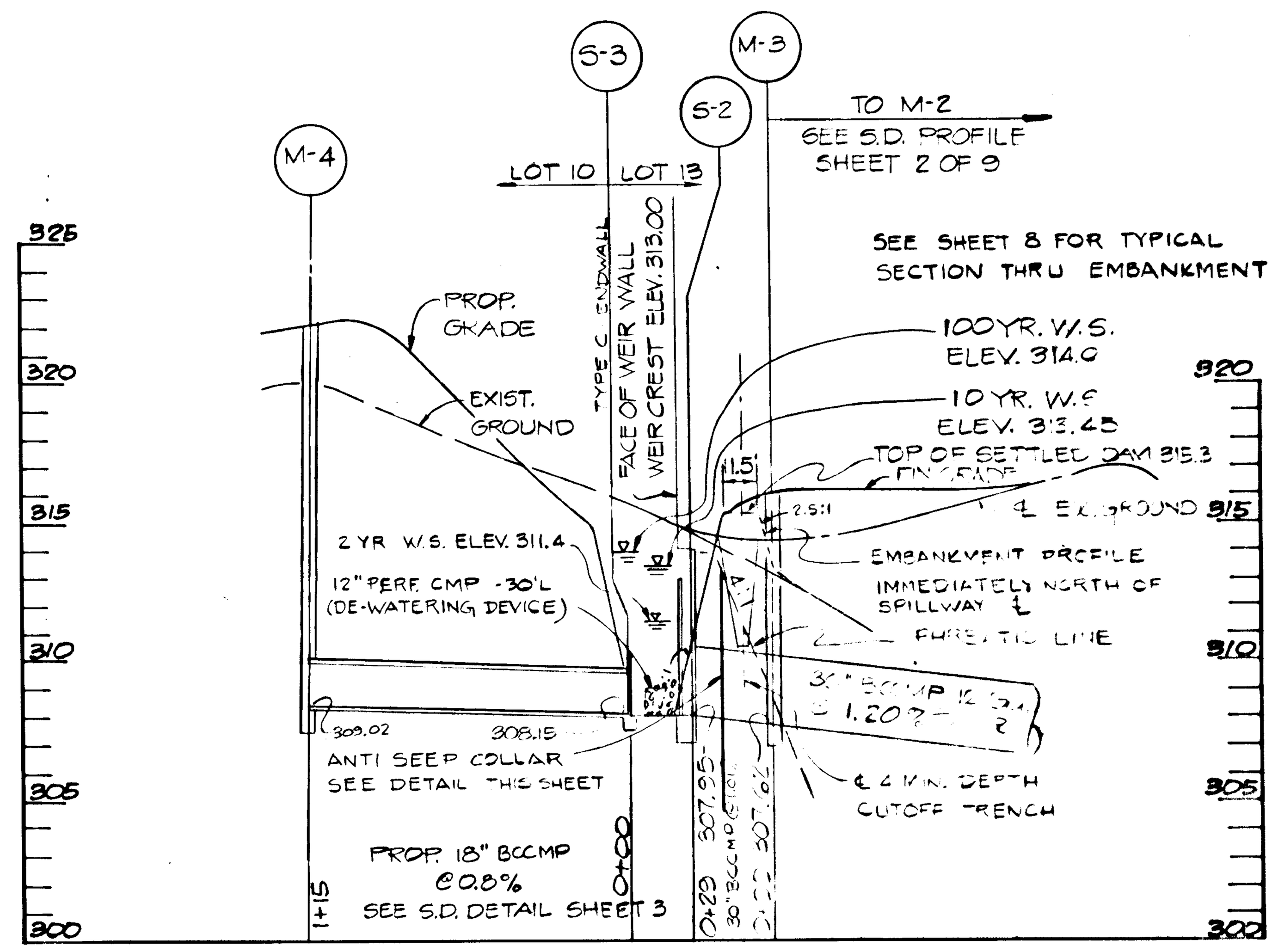


ELEVATION OF UNASSEMBLED COLLAR

SECTION B-B

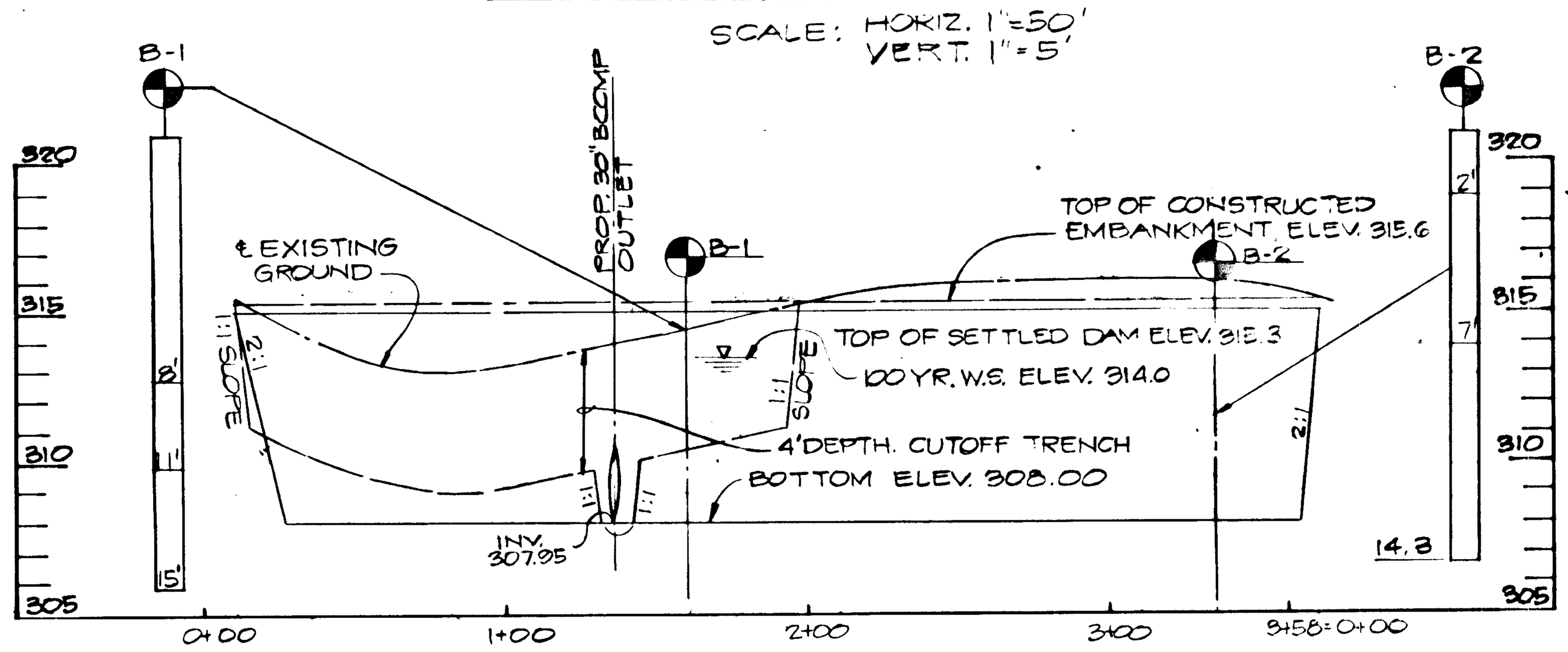
NOTES FOR COLLARS:
1. All materials to be in accordance with construction and construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
3. Unassembled collars shall be marked by painting 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.

DETAILS OF CORRUGATED METAL ANTI-SEEP COLLAR



PROFILE - PRINCIPAL SPILLWAY

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



PROFILE - ℄ SWM POND EMBANKMENT

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VERT. 1"=5'

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[illegible] 7/25/88
Signature of Engineer — Date

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[illegible] 2/18/88
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[illegible] 8/5/88
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.

[illegible] 8/8/88
Howard Soil Conservation District — Date

STATE OF MARYLAND
DONALD EDWIN HICKS
No. 8676
REGISTERED
PROFESSIONAL ENGINEER

SIGNATURE [illegible]
DATE [illegible]

F 88-178

ADDRESS CHART	
LOT NO.	STREET ADDRESS

SUBDIVISION NAME				SECT./AREA	LOT/PARCEL No.
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[illegible] 7/25/88
DONALD E. HICKS, P.E. — DATE

DEVELOPER'S CERTIFICATE

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

[illegible] 2/18/88
PRADIP GHOSH — DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[illegible] 8/5/88
U.S. SOIL CONSERVATION SERVICE — DATE

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

[illegible] 8/5/88
DISTRICT MANAGER — DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE AND STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[illegible] 9/21/88
CHIEF, LAND DEVELOPMENT DIVISON — DATE
[illegible] [illegible]
CHIEF, BUREAU OF HIGHWAYS — DATE
[illegible] 10-10-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[illegible] 10-13-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

STORM WATER MANAGEMENT DETAILS
LARK BROWN ESTATES
LOT NO. 1 THRU 13
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAX MAP #37 PARCEL #322
SCALE: AS SHOWN DATE: JULY 25, 1988
DRN. BY: G.J.J. CHECKED BY: D.E.H.
F 88-178 SHEET 9 OF 9

F-88-178

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