

**SHEET INDEX**

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2	PLAN, PROFILE & PLANTING PLAN FOR CABOT CT. & PINELIUT CT.
3	PLAN, PROFILE & PLANTING PLAN FOR REDBRIDGE CT.
4	DETAILS AND PROFILES OF STORM DRAINS
5	DRAINAGE AREA MAP AND SEDIMENT CONTROL PLAN
6	STORM WATER MANAGEMENT NOTES AND DETAILS

**ROADWAY, STORM DRAIN & STORM WATER MANAGEMENT**

**SETTLER'S LANDING**

**SECTION 2, AREA 2**

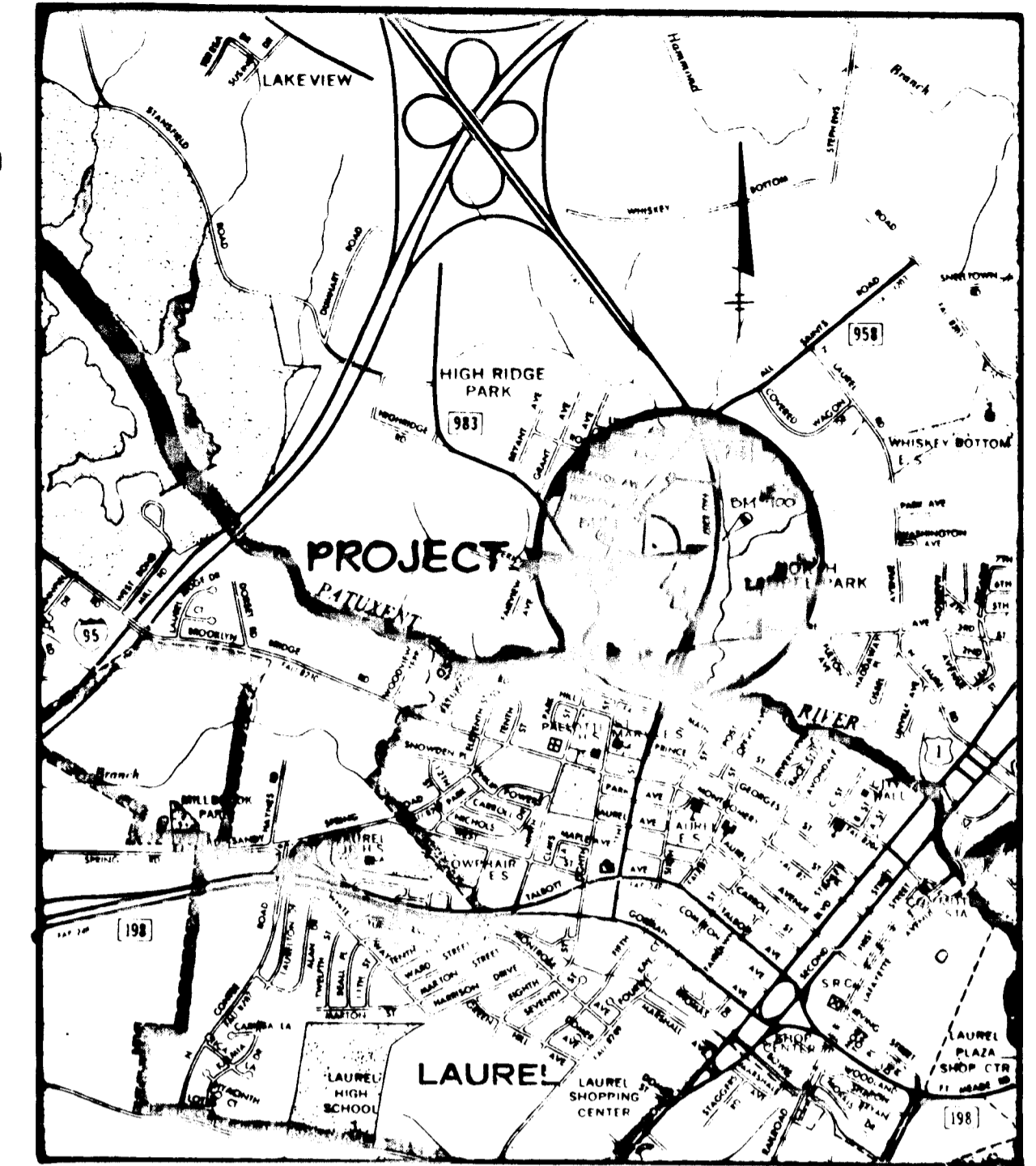
**6TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND**

GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- 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.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS.
- CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
 

MISSED UTILITY	550-0100
BELL TELEPHONE SYSTEM	393-3649
LONG DISTANCE CABLE DIVISION	393-3553 OR 3554
BALTIMORE GAS AND ELECTRIC COMPANY	539-8000, EXT. 691
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION	792-7272
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL STREET CURB RETURNS SHALL HAVE 35.0' RADII UNLESS OTHERWISE NOTED.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1971 EDITION.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:
 

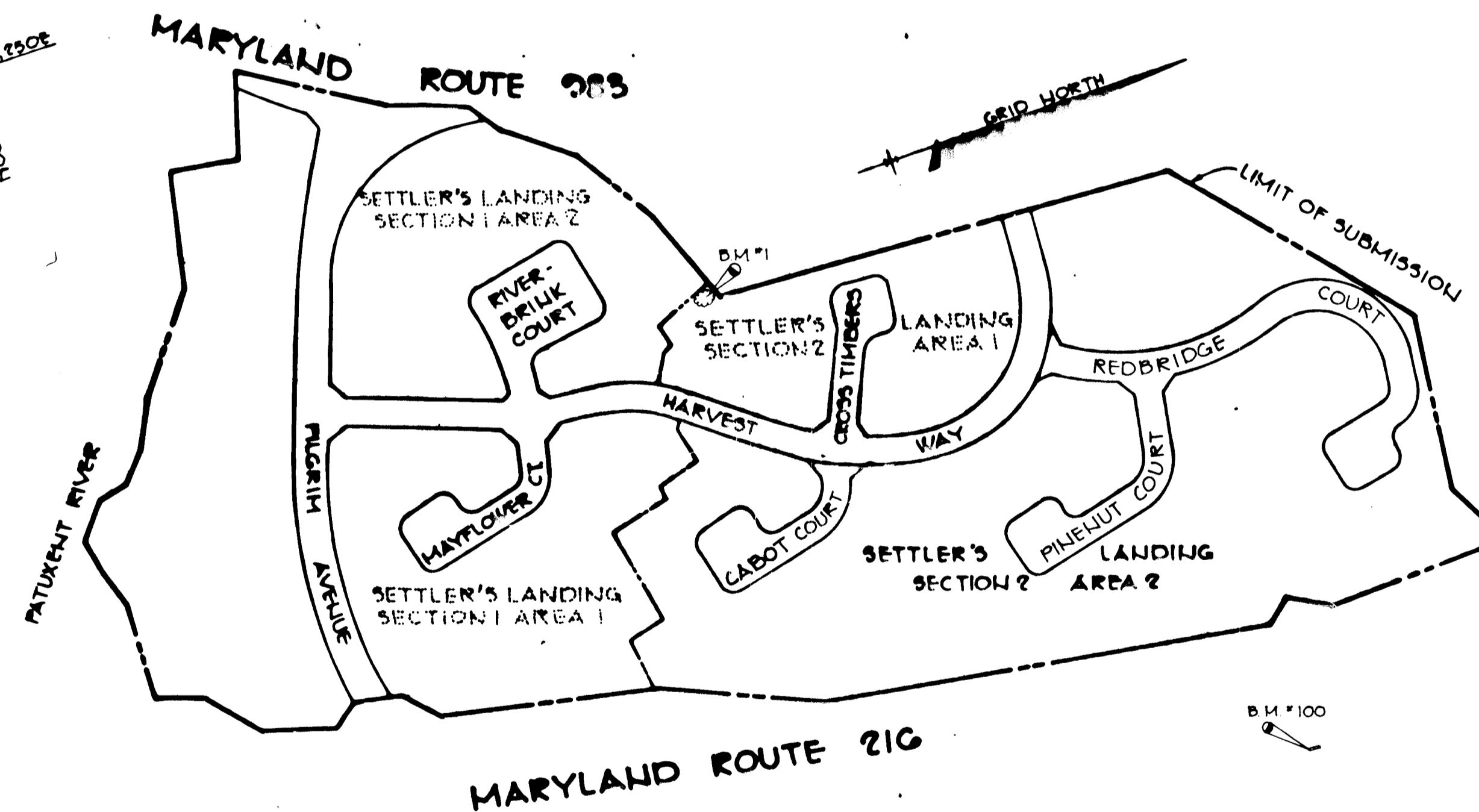
ALL 50' RIGHT-OF-WAYS 30 M.P.H.
- ALL ELEVATIONS SHOWN ARE BASED ON U.S.C. AND G.S. MEAN SEA LEVEL DATUM 1929.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM 95% COMPACTION.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- SUBJECT PROPERTY ZONED R-SA PER 10-03-77 COMPREHENSIVE ZONING PLAN.
- TOPO TAKEN FROM FIELD RUN SURVEY DATED JUNE, 1980 BY CLARK, FINEPROCK AND SACKETT.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS C AS SHOWN IN FIG. 11.4 IN VOLUME I OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



**VICINITY MAP**  
Scale 1"=2000'

BENCH MARKS

- WM #4 BM #100 ELEV. 177.21
- CUT IN S END OF CONC. HEADWALL OF 30' R.C.P. CROSSING ROUTE 216, 1350±5
- 5' INTERSECTION OF ALL SAINTS AND ROUTE 216, EAST SIDE OF ROUTE 216
- BM #1 ELEV. 228.50
- 11 1/2" x 12" MAPLE 5' SOUTH OF EXIST. FENCE LINE.



**PLAN**  
Scale 1"=100'

ITEM	SECTION 1 AREA 1	SECTION 1 AREA 2	SECTION 2 AREA 1	SECTION 2 AREA 2	TOTALS
1 GROSS AREA	7.08	5.56	4.73	17.80	35.17
2 FLOODPLAIN/STEEP SLOPES	.22	.52	NONE	.53	1.27
3 NET AREA	6.86	5.04	4.73	17.27	33.90
4 NO OF DU ALLOWED (BASED ON NET AREA)	54.8	40.3	37.80	138.2	271.1
5 FLOODPLAIN LOT ADJUSTMENT LOT ALLOWANCE	N/A	N/A	N/A	N/A	N/A
6 TOTAL NO OF DU ALLOWED	54.8	40.3	37.80	138.2	271.1
7 TOTAL NO OF DU PROPOSED	48	42	36	143	271
8 DENSITY PER ACRE	6.9	8.3	8.0	8.2	7.9

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Arthur Mueggli* 3-28-89  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Arthur Mueggli* 4-23-89  
 CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER  
 SETTLE'S LANDING ASSOCIATES  
 BRANTLEY DEVELOPMENT CORPORATION GENERAL PARTNER  
 SUITE 105, 5501 TWIN KNOLLS ROAD  
 COLUMBIA, MARYLAND 21045

PROJECT  
**SETTLER'S LANDING**  
 SECTION 2, AREA 2 LOTS 135 THRU 280

AREA  
 ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND  
 TAX MAP #50 PARCEL 34G

TITLE SHEET

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 8859 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2690

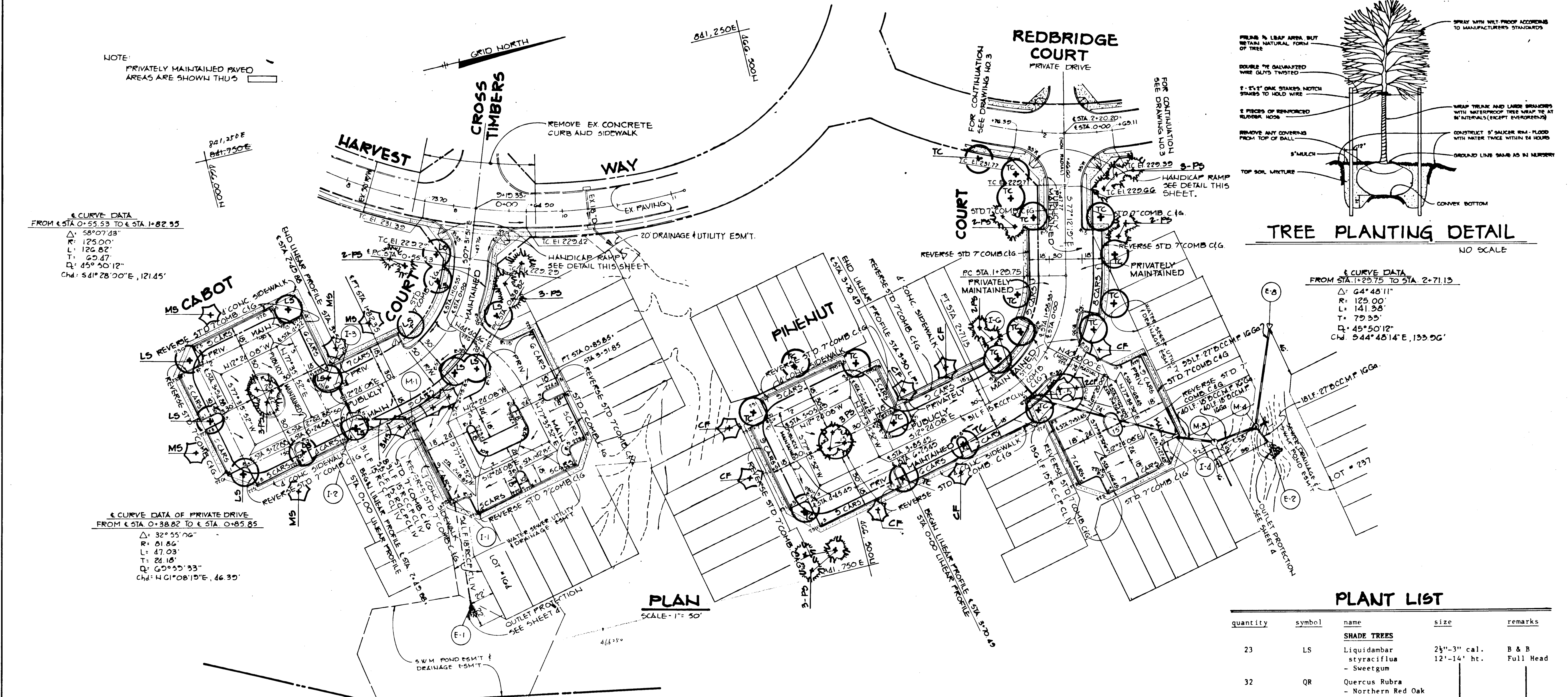
3-21-89 DATE  
 FORMERLY EASTON (P-82-72)  
 DESIGNED BY: LJD  
 DRAWN BY: D.A.M.  
 PROJECT NO: 001500  
 DATE: JULY 26, 1983  
 SCALE: AS SHOWN  
 DRAWING NO. 1 OF 6

NOTE:  
PRIVATELY MAINTAINED PAVED  
AREAS ARE SHOWN THUS

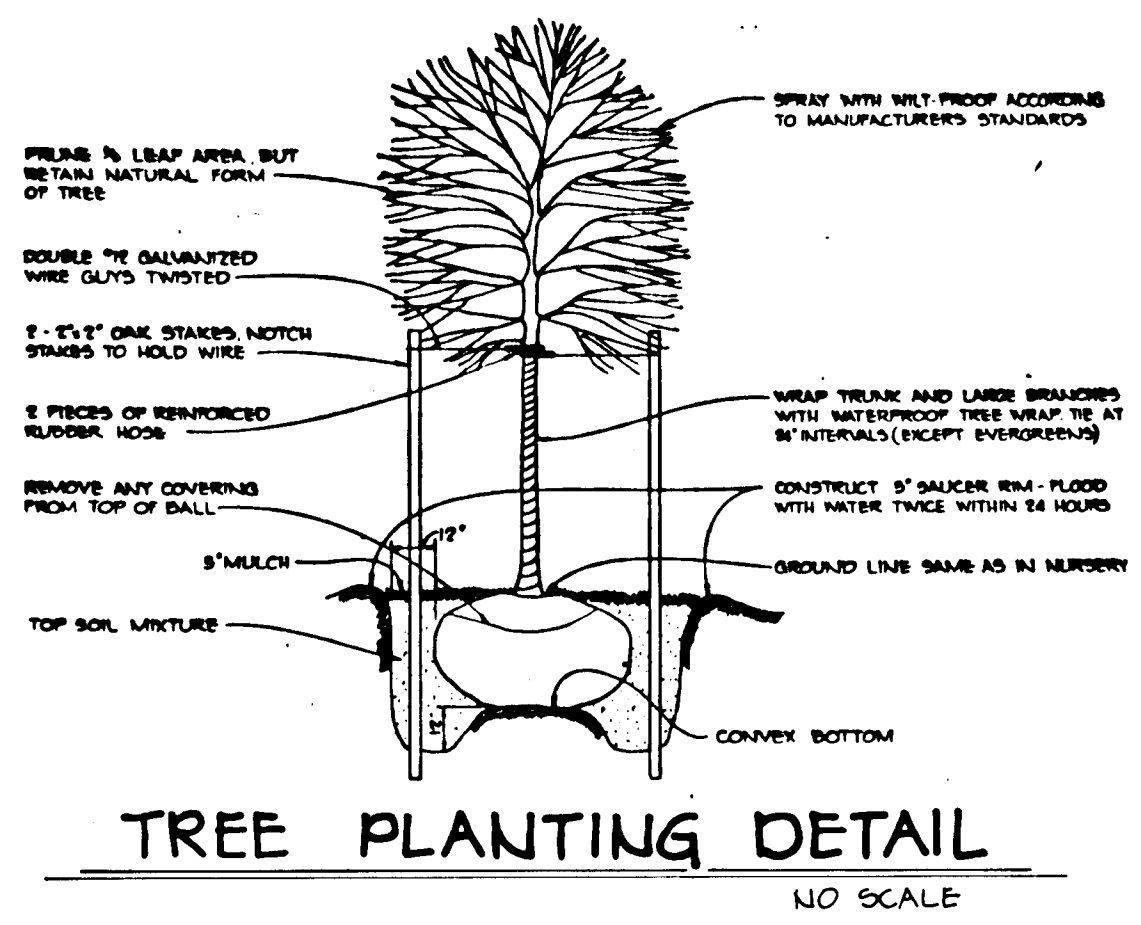
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FROM STA 0+55.53 TO STA 1+82.35  
Δ: 58°07'43"  
R: 125.00'  
L: 126.82'  
T: 65.47'  
Q: 45°40'12"  
Chd: 541'28"00"E, 121.45'

§ CURVE DATA OF PRIVATE DRIVE  
FROM STA 0+38.82 TO STA 0+85.85  
Δ: 32°55'06"  
R: 81.64'  
L: 47.03'  
T: 24.16'  
Q: 60°55'33"  
Chd: 416'08'19"E, 46.35'

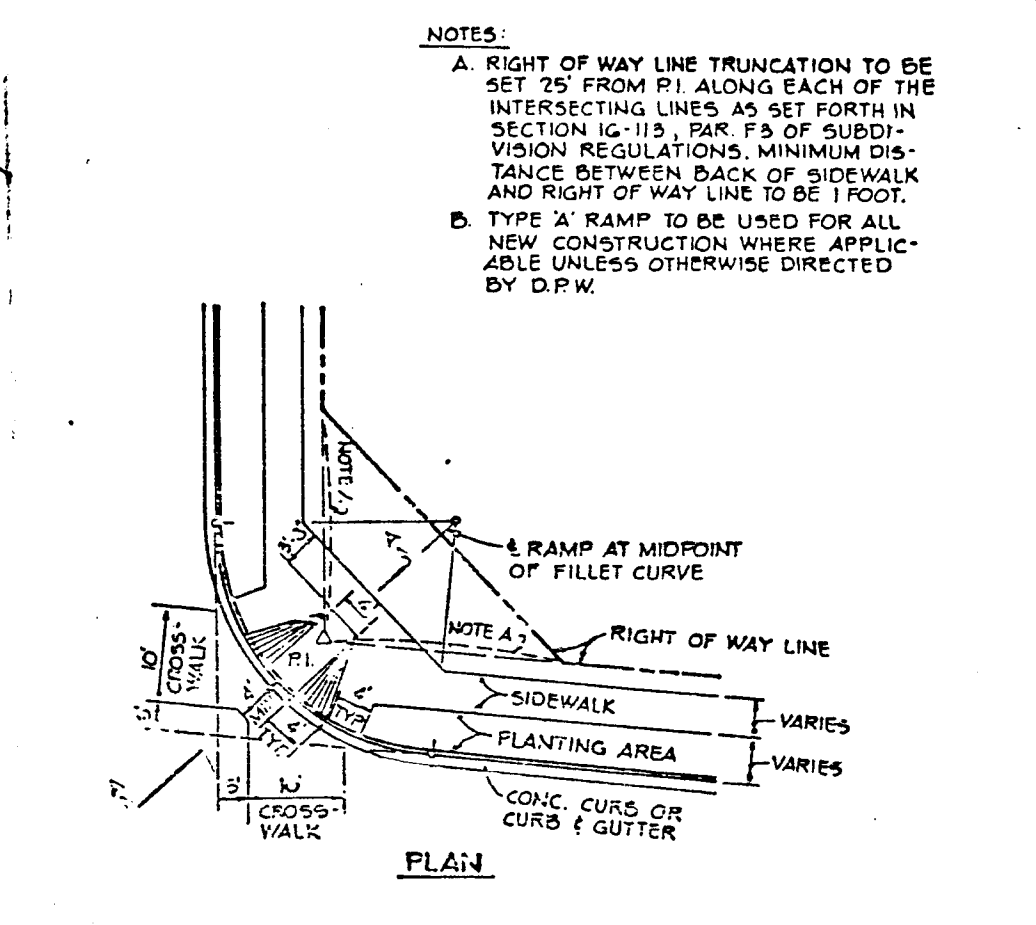
§ CURVE DATA  
FROM STA 1+29.75 TO STA 2+71.13  
Δ: 64°46'11"  
R: 125.00'  
L: 141.36'  
T: 79.95'  
Q: 45°50'12"  
Chd: 944'48'14"E, 155.96'



PLAN  
SCALE: 1" = 50'



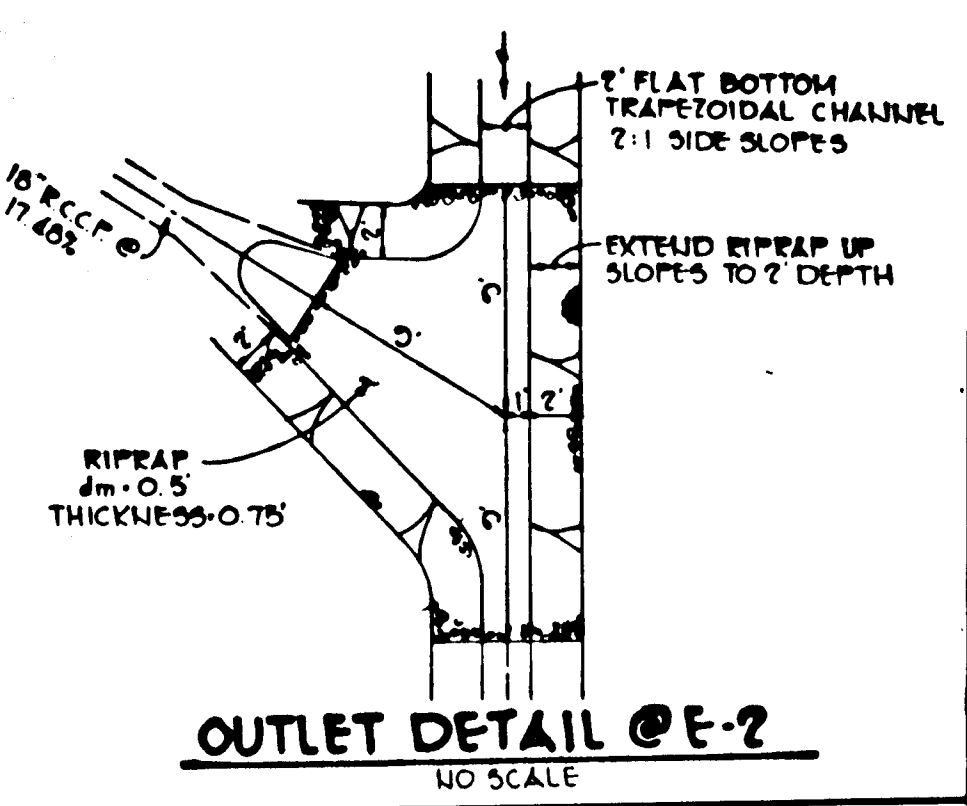
TREE PLANTING DETAIL  
NO SCALE



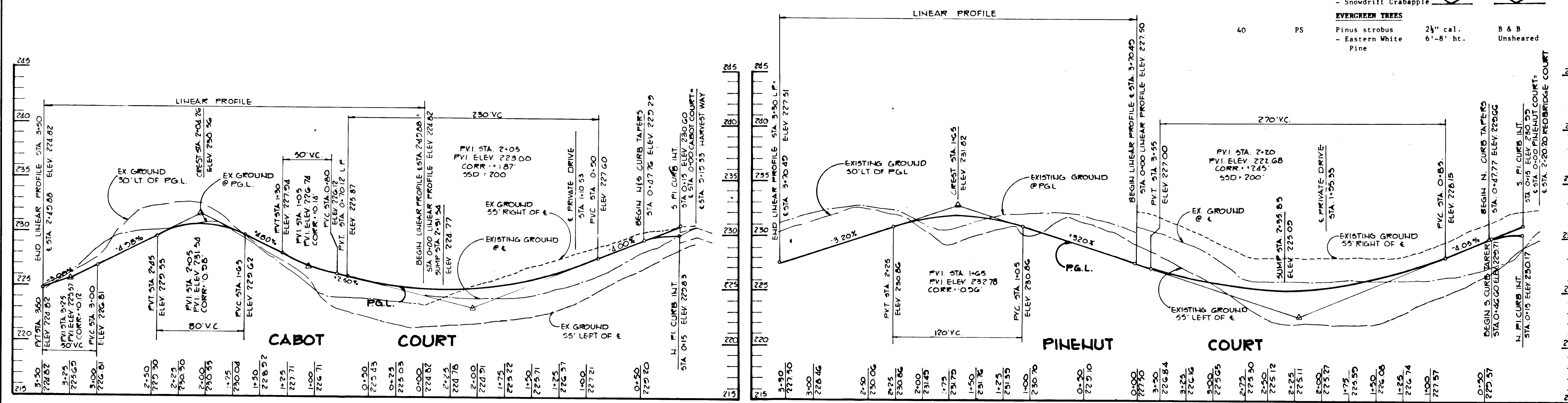
TYPICAL HANDICAP RAMP  
NO SCALE

**PLANT LIST**

Quantity	Symbol	Name	Size	Remarks
23	LS	<b>SHADE TREES</b> Liquidambar styraciflua - Sweetgum	2 1/2" - 3" cal. 12' - 14' ht.	B & B Full Head
32	QR	Quercus Rubra - Northern Red Oak		
19	TC	Tilia Cordata - Little Leaf Linden		
16	CF	<b>FLOWERING TREES</b> Cornus florida - White Flowering Dogwood	2 1/2" cal. 8' - 10' ht.	
10	MS	Malus 'snowdrift' - Snowdrift Crabapple		
40	PS	<b>EVERGREEN TREES</b> Pinus strobus - Eastern White Pine	2 1/2" cal. 6' - 8' ht.	B & B Unsheared



OUTLET DETAIL @ E-2  
NO SCALE



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

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

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John M. Muegge* 4-18-84  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William B. ...* 4-23-84  
CHIEF, BUREAU OF ENGINEERING

11-2-84 Δ ADDED PARKING SPACE  
DATE NO REVISION

OWNER/DEVELOPER  
SETTLER'S LANDING ASSOCIATES  
BRANTLY DEVELOPMENT CORPORATION GENERAL PARTNERS  
SUITE 105 5501 TWIN KNOTS ROAD  
COLUMBIA, MARYLAND 21045

PROJECT  
**SETTLER'S LANDING**  
SECTION 2, AREA 2 LOTS 153 THRU 280

AREA  
ELECTION DISTRICT 14G HOWARD COUNTY MARYLAND  
TAX MAP 149 50 PARCEL 36G

TITLE  
PLAN, PROFILES AND PLANTING PLAN OF  
CABOT COURT AND PINE NUT COURT

**THE RIEMER GROUP, INC.**  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301 461-2890

7-28-85  
DATE  
DESIGNED BY: L.J.D.  
DRAWN BY: J.S.K.  
PROJECT NO: 001500  
DATE: JULY 26, 1985  
SCALE: AS SHOWN  
DRAWING NO. 2 OF 6

ARTHUR E. MUEGGE 4807

NOTE:  
PRIVATELY MAINTAINED PAVED AREAS  
ARE SHOWN THUS

4 CURVE DATA FOR PRIVATE DRIVE  
FROM STA 0+22.00 TO STA 1+39.20

$\Delta = 25^{\circ}11'49''$   
 $R = 107.20'$   
 $L = 47.14'$   
 $T = 25.96'$   
 $D_c = 55^{\circ}22'51''$   
 $Chd = N 69^{\circ}48'14'' W, 46.76'$

4 CURVE DATA  
FROM STA 0+20.52 TO STA 2+20.20

$\Delta = 28^{\circ}51'52''$   
 $R = 395.00'$   
 $L = 199.68'$   
 $T = 107.02'$   
 $D_c = 14^{\circ}30'10''$   
 $Chd = S 78^{\circ}01'27'' E, 107.56'$

4 CURVE DATA  
FROM STA 2+20.20 TO STA 3+09.00

$\Delta = 25^{\circ}56'38''$   
 $R = 395.00'$   
 $L = 178.86'$   
 $T = 100.00'$   
 $D_c = 14^{\circ}30'10''$   
 $Chd = S 92^{\circ}55'52'' W, 107.00'$

4 CURVE DATA  
FROM STA 4+56.29 TO STA 6+76.89

$\Delta = 90^{\circ}00'00''$   
 $R = 140.00'$   
 $L = 219.91'$   
 $T = 140.00'$   
 $D_c = 40^{\circ}55'52''$   
 $Chd = S 92^{\circ}55'52'' W, 107.00'$

4 CURVE DATA  
FROM STA 6+76.89 TO STA 8+73.24

$\Delta = 90^{\circ}00'00''$   
 $R = 125.00'$   
 $L = 196.35'$   
 $T = 125.00'$   
 $D_c = 49^{\circ}50'10''$   
 $Chd = N 57^{\circ}24'08'' W, 176.78'$

LP CURVE DATA  
LP STA 0+00 TO LP STA 0+42.85

$\Delta = 70^{\circ}07'00''$   
 $R = 35.00'$   
 $L = 42.83'$   
 $T = 24.56'$   
 $D_c = 163^{\circ}42'08''$   
 $Chd = S 79^{\circ}27'00'' E, 40.00'$

4 CURVE DATA  
FROM STA 0+20.52 TO STA 3+09.00

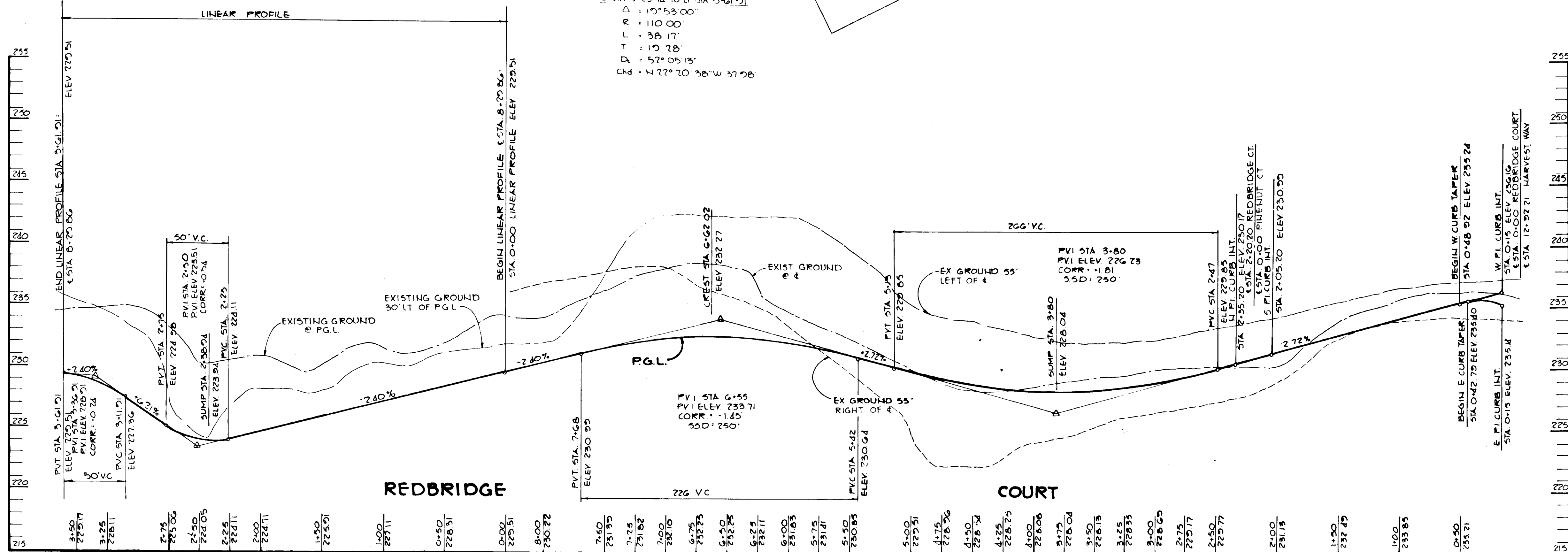
$\Delta = 54^{\circ}54'31''$   
 $R = 395.00'$   
 $L = 378.54'$   
 $T = 205.77'$   
 $D_c = 14^{\circ}30'10''$   
 $Chd = N 15^{\circ}03'08'' E, 364.22'$

NOTE:  
1) SEE SHEET 2 OF 6 FOR  
PLANT LIST AND PLANTING  
DETAIL.  
2) PROVIDE ONE (1) 175 WATT MERCURY  
VAPOR LAMP POST TOP FIXTURE ON  
14' FOOT FIBERGLASS POLE SHOWN  
THUS AT STA 4+40 RT, REDBRIDGE  
COURT.

PLAN  
SCALE 1"=50'

LP CURVE DATA  
LP STA 3+23.24 TO LP STA 3+61.21

$\Delta = 19^{\circ}53'00''$   
 $R = 110.00'$   
 $L = 38.17'$   
 $T = 19.28'$   
 $D_c = 57^{\circ}05'13''$   
 $Chd = N 72^{\circ}20'36'' W, 57.08'$



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

STRUCTURE SCHEDULE									
NO.	TYPE	LOCATION	INV/IN	INV/OUT	TOP ELEV.	REMARKS			
I-1	A-5 INLET	see plan	216.04	215.79	220.4	Ho. Co. Std. DETAIL SD. 4.01			
I-2	A-5 INLET	15' LT sta. 2+35.54	219.44	219.24	224.19	Ho. Co. Std. DETAIL SD. 4.01			
I-3	A-5 INLET	15' RT sta. 2+35.54	-	219.75	224.19	Ho. Co. Std. DETAIL SD. 4.01			
I-4	A-5 INLET	see plan	213.81	213.56	216.5	Ho. Co. Std. DETAIL SD. 4.01			
I-5	A-5 INLET	15' LT of sta. 2+35.83	219.89	219.69	224.56	Ho. Co. Std. DETAIL SD. 4.01			
I-6	A-5 INLET	15' RT of sta. 2+35.83	-	220.20	224.56	Ho. Co. Std. DETAIL SD. 4.01			
I-7	A-5 INLET	see plan	-	217.41	223.0	Ho. Co. Std. DETAIL SD. 4.01			
I-8	A-5 INLET	15' RT of sta. 3+80	222.09	221.89	227.46	Ho. Co. Std. DETAIL SD. 4.01			
I-9	A-5 INLET	15' LT of sta. 3+80	222.96	222.71	227.46	Ho. Co. Std. DETAIL SD. 4.01			
I-10	A-5 INLET	see plan	-	225.61	230.7	Ho. Co. Std. DETAIL SD. 4.01			
I-11	K' INLET GRATE	see plan	-	224.69	232.0	Ho. Co. Std. DETAIL SD. 4.13			
M-1	MANHOLE	see plan	218.40	218.20	223.7	Ho. Co. Std. DETAIL G. 5.13			
E-1	END SECTION	see plan	-	202.70	-	Ho. Co. Std. DETAIL SD. 5.61			
E-2	END SECTION	see plan	-	198.00	-	Ho. Co. Std. DETAIL SD. 5.61			
E-3	END SECTION	see plan	-	209.40	-	Ho. Co. Std. DETAIL SD. 5.61			
E-4	END SECTION	see plan	-	210.77	-	Ho. Co. Std. DETAIL SD. 5.61			
E-5	END SECTION	see plan	197.21	-	-	Ho. Co. Std. DETAIL SD. 5.61			
E-6	C' ENDWALL	see plan	-	207.71	-	Ho. Co. Std. DETAIL SD. 5.21			
E-8	END SECTION	see plan	-	195.00	-	Ho. Co. Std. DETAIL SD. 5.51			
E-9	END SECTION	see plan	192.00	-	-	Ho. Co. Std. DETAIL SD. 5.51			
S-1	SWM STRUCTURE	see plan	-	200.5	-	SEE Detail Sheet 6 of 6			
S-2	SWM STRUCTURE	see plan	194.88	194.38	202.20	SEE Detail Sheet 6 of 6			
M-2	MANHOLE	see plan	220.50	220.00	228.3	Ho. Co. Std. DETAIL G. 5.13			
M-3	MANHOLE	see plan	211.91	211.41	217.5	Ho. Co. Std. DETAIL G. 5.13			
M-4	MANHOLE	see plan	209.58(5)	209.58(W)	204.4	Ho. Co. Std. DETAIL G. 5.13			
M-5	MANHOLE	see plan	206.57	206.37	217.7	Ho. Co. Std. DETAIL G. 5.13			

\* ELEVATIONS AT THROAT OPENING

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. Muegge* 4-18-84  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William R. Reilly* 4-23-84  
 CHIEF, BUREAU OF ENGINEERING

6-8-84  $\Delta$  REVISED STRUCTURES I-8, E-2, E-4, E-6, E-8, I-7 AND E-9 IN THE STRUCTURE SCHEDULE.

DATE NO. REVISION

OWNER/DEVELOPER  
 SETTLER'S LANDING ASSOCIATES  
 BRANTLY DEVELOPMENT CORPORATION - GENERAL PARTNERS  
 SUITE 105, 5501 TWIN KNOLLS ROAD  
 COLUMBIA, MARYLAND 21045

PROJECT  
**SETTLER'S LANDING**  
 SECTION 2, AREA 2 LOTS 135 THRU 280

AREA  
 ELECTION DISTRICT N° 6 HOWARD COUNTY MARYLAND  
 TAX MAP N° 50 PARCEL 346

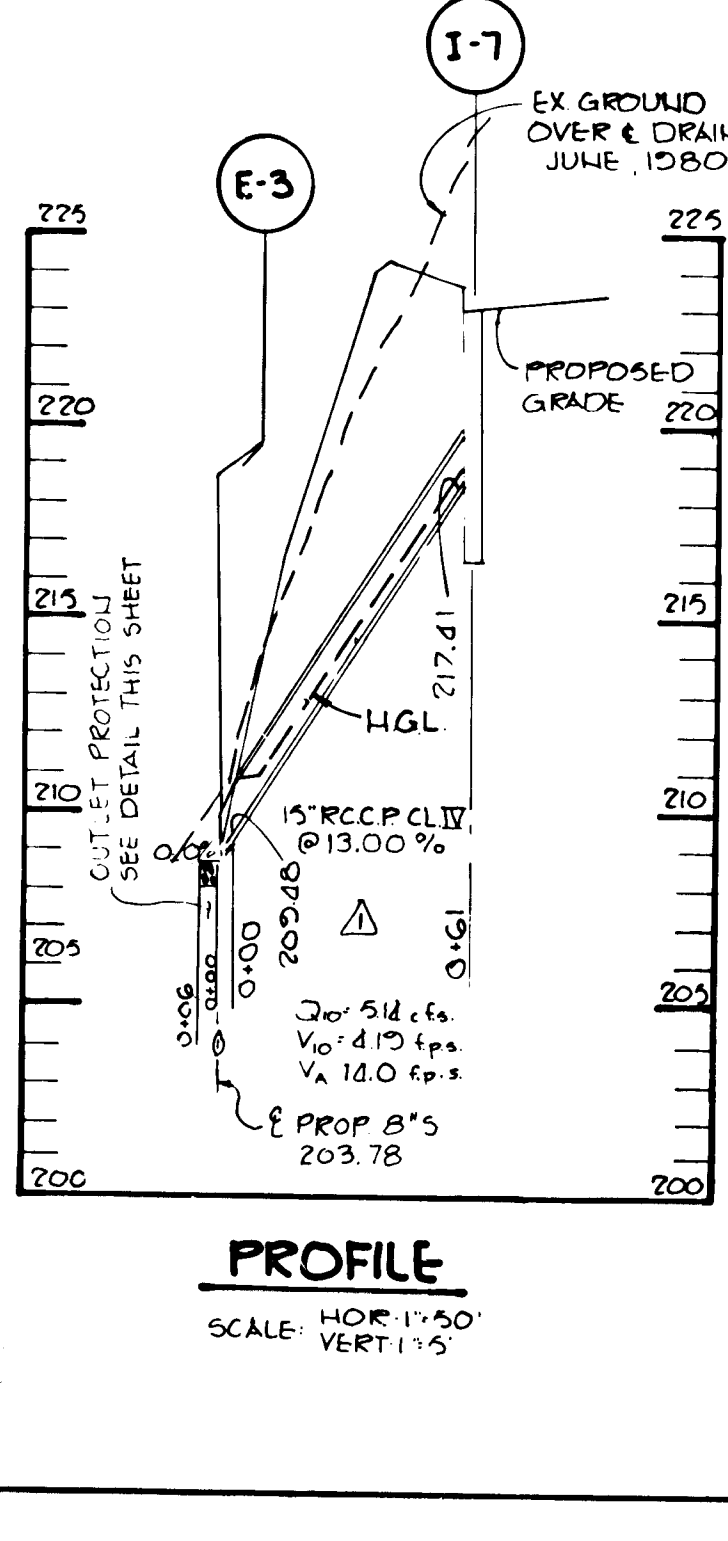
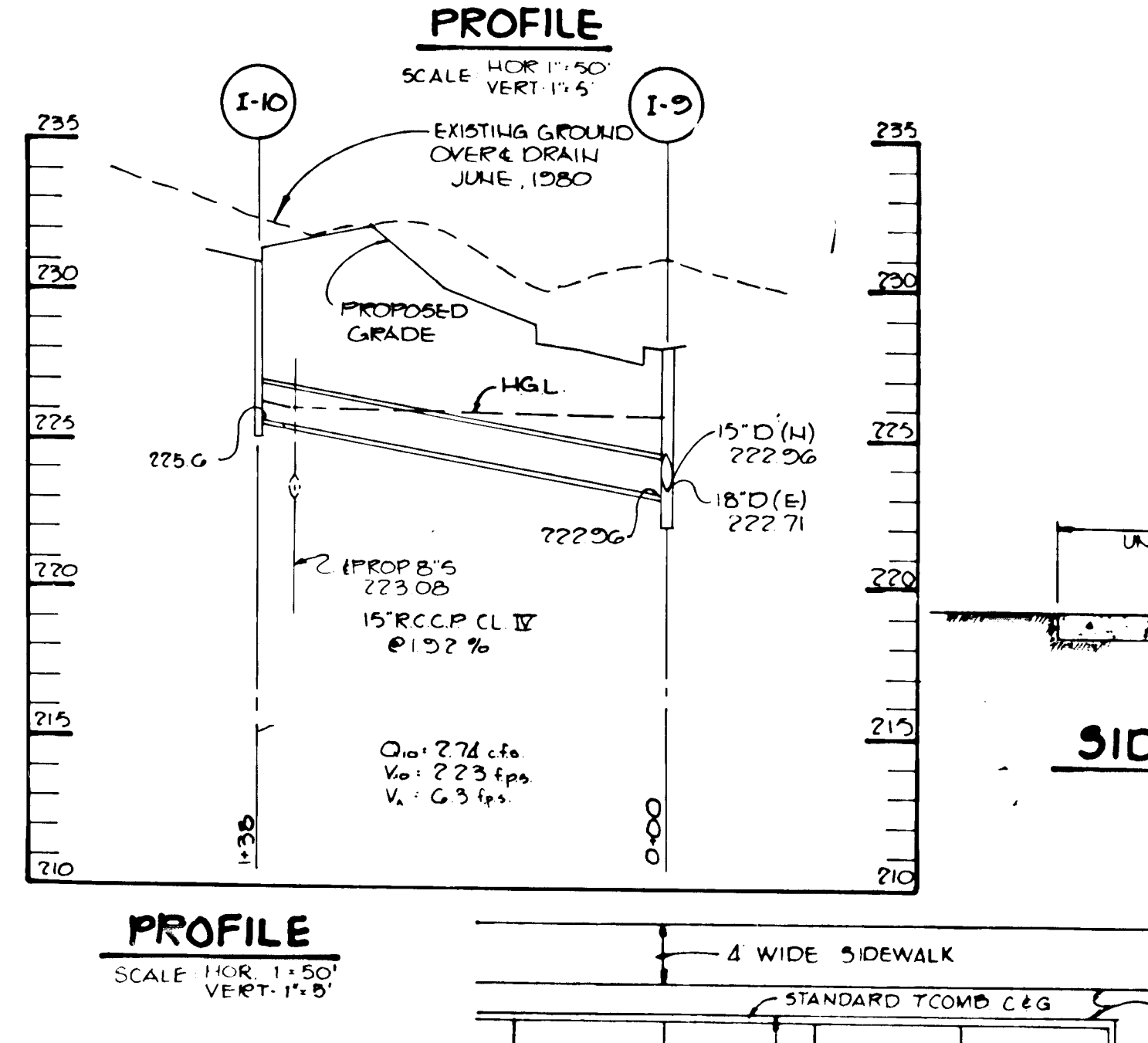
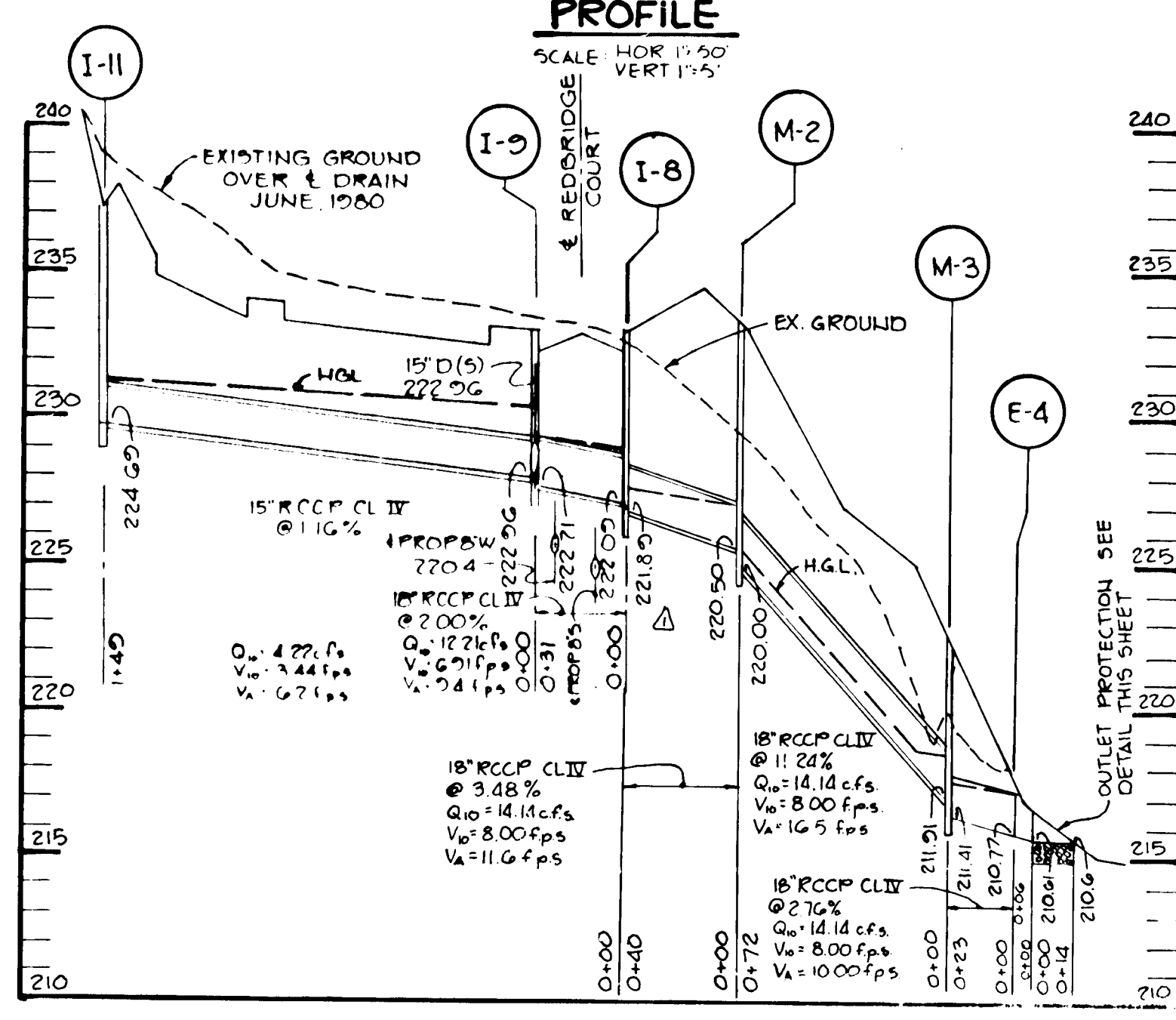
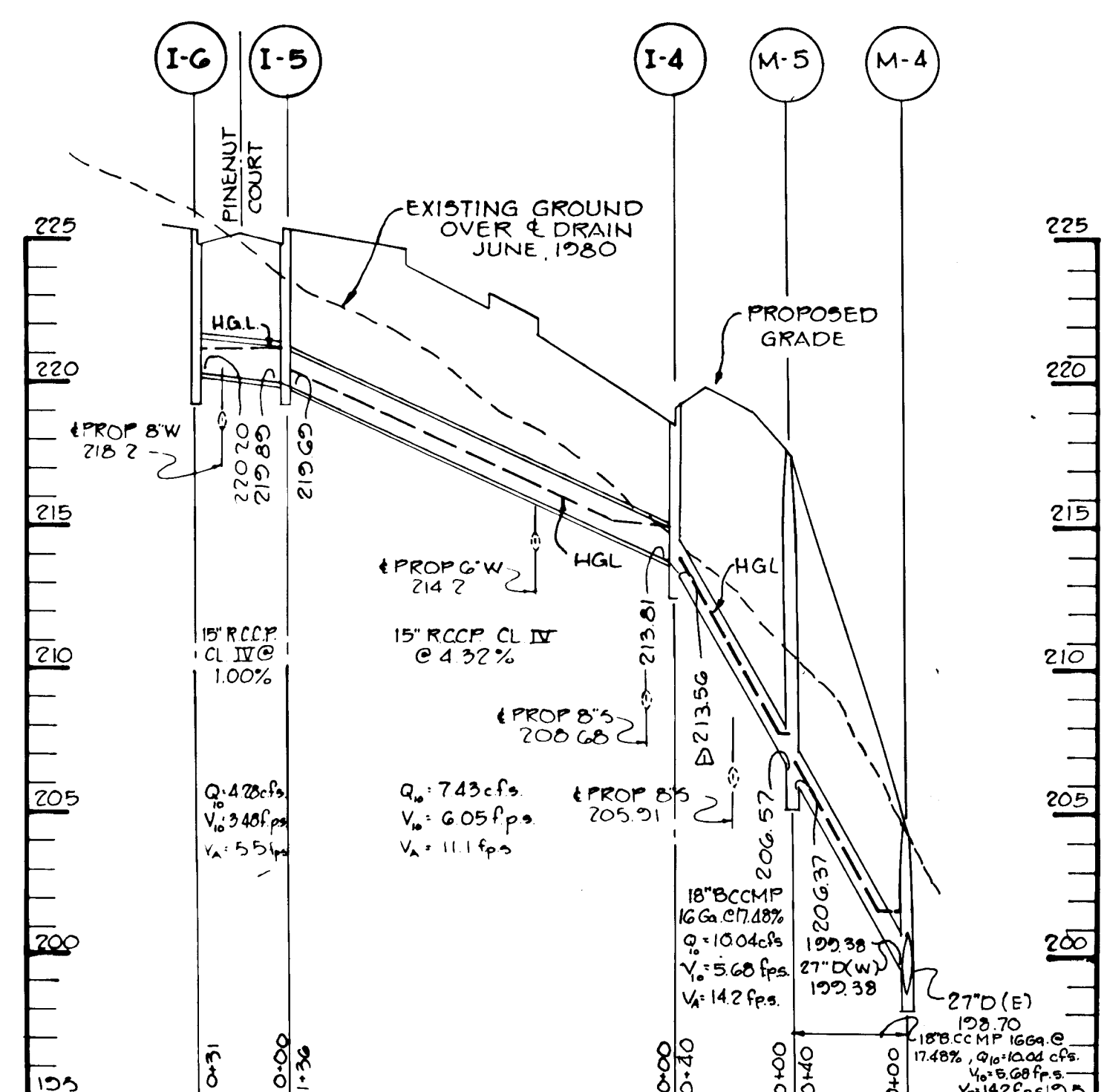
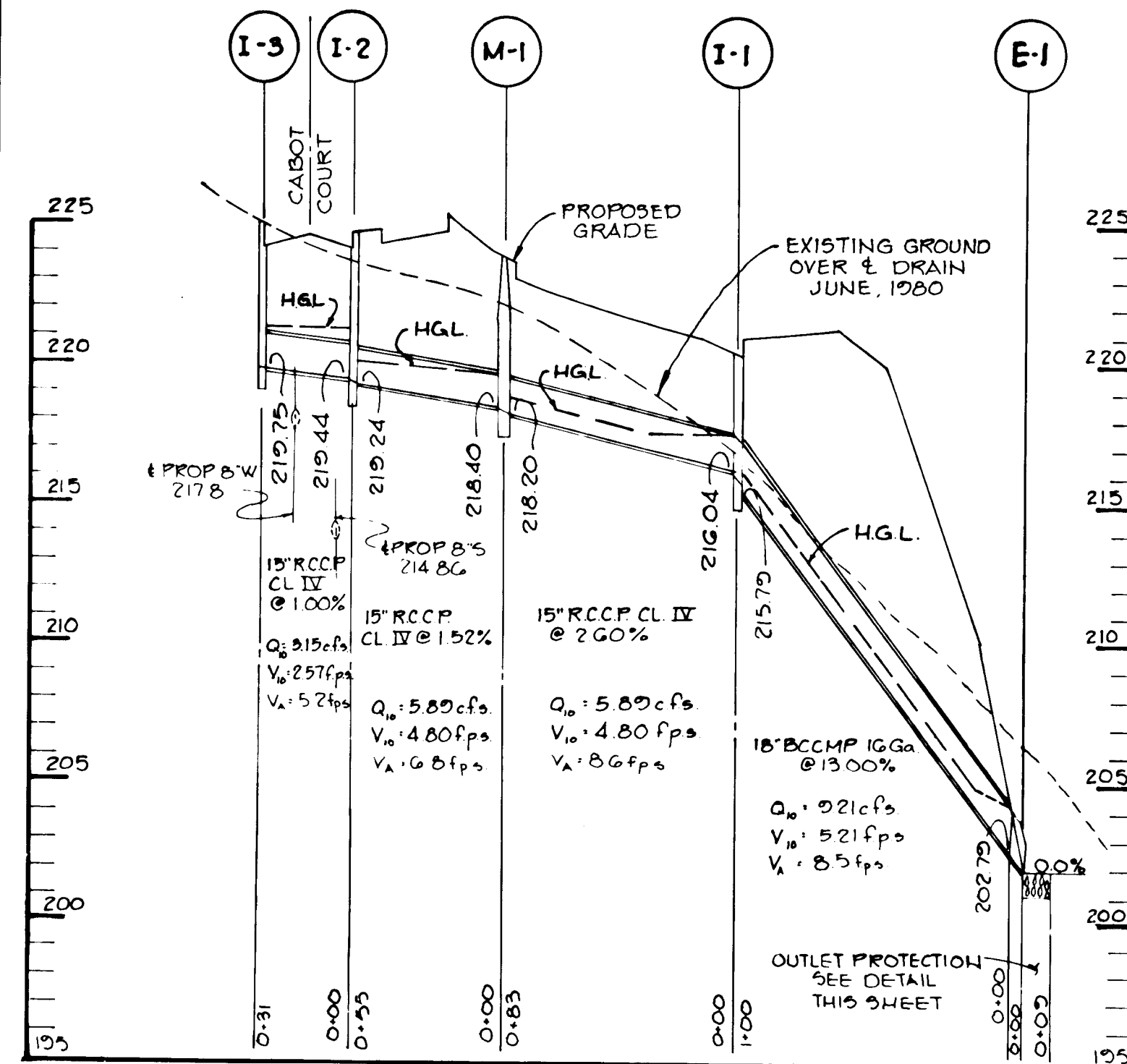
TITLE  
 PLAN, PROFILE AND PLANTING  
 PLAN OF REDBRIDGE COURT

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2690

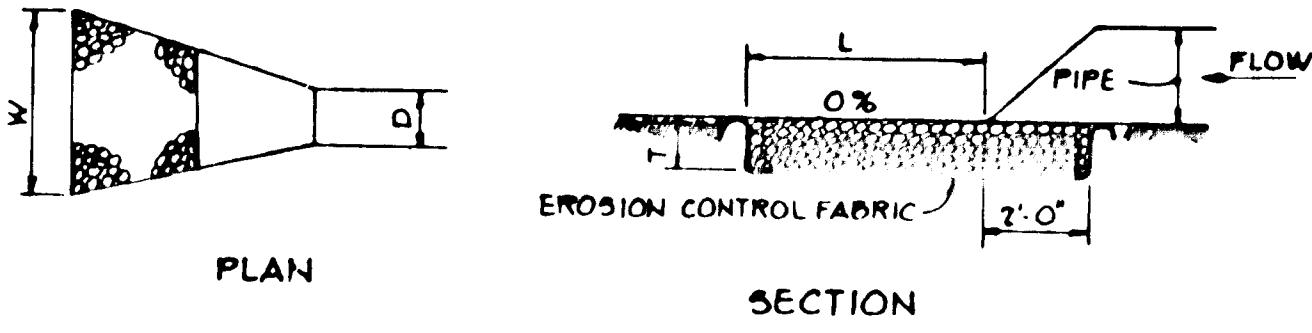
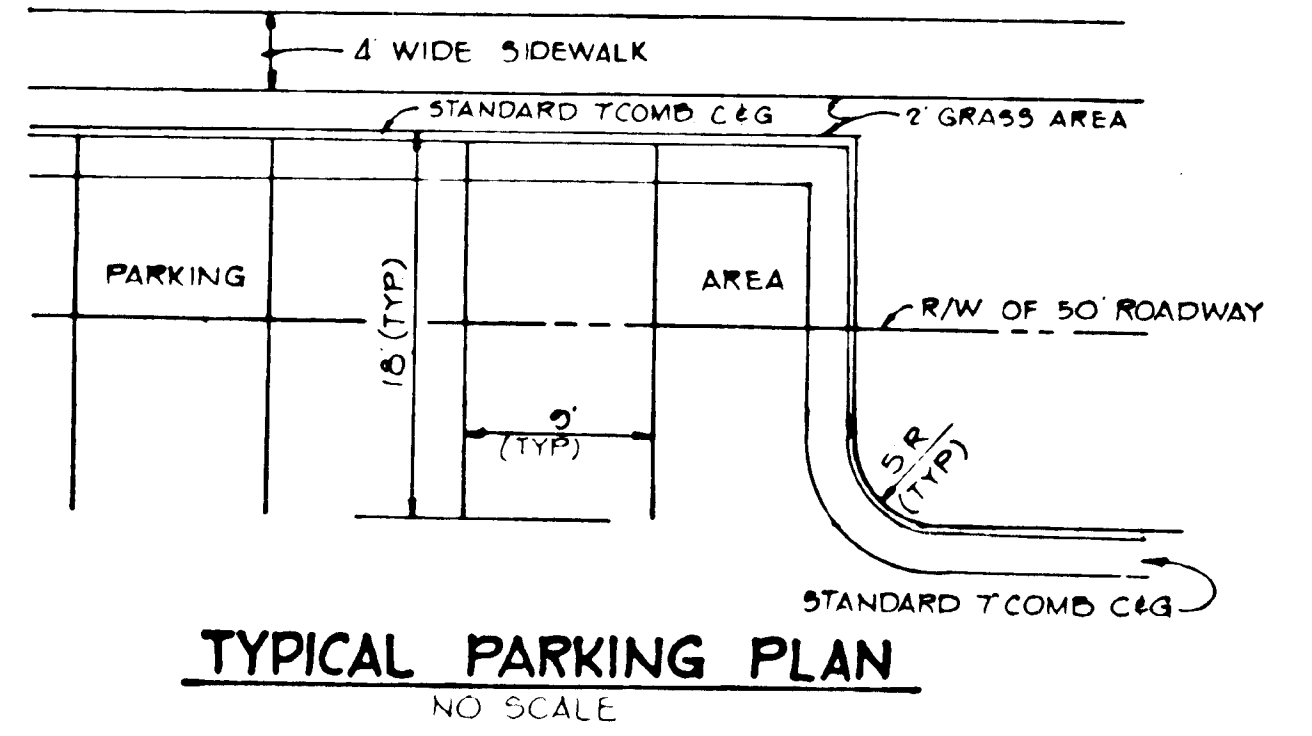
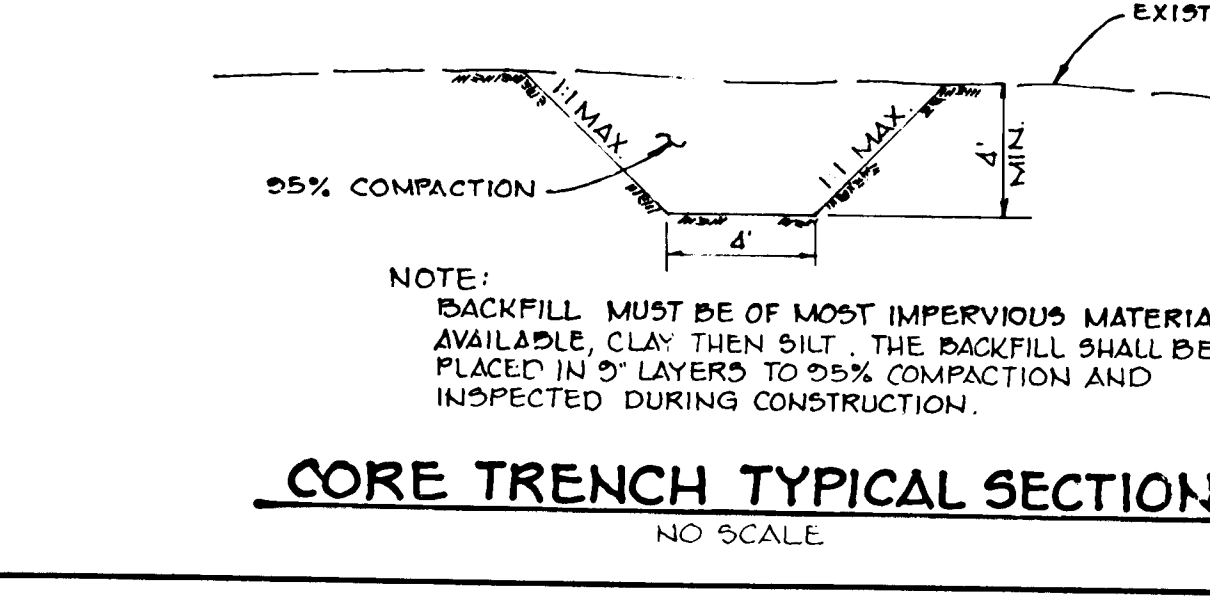
DATE 7-27-83  
 FORMERLY EASTON (P-82-70)

DESIGNED BY: L.J.D.  
 DRAWN BY: J.S.K.  
 PROJECT NO: 001500  
 DATE: JULY 26, 1983  
 SCALE: AS SHOWN  
 DRAWING NO. 3 OF 6

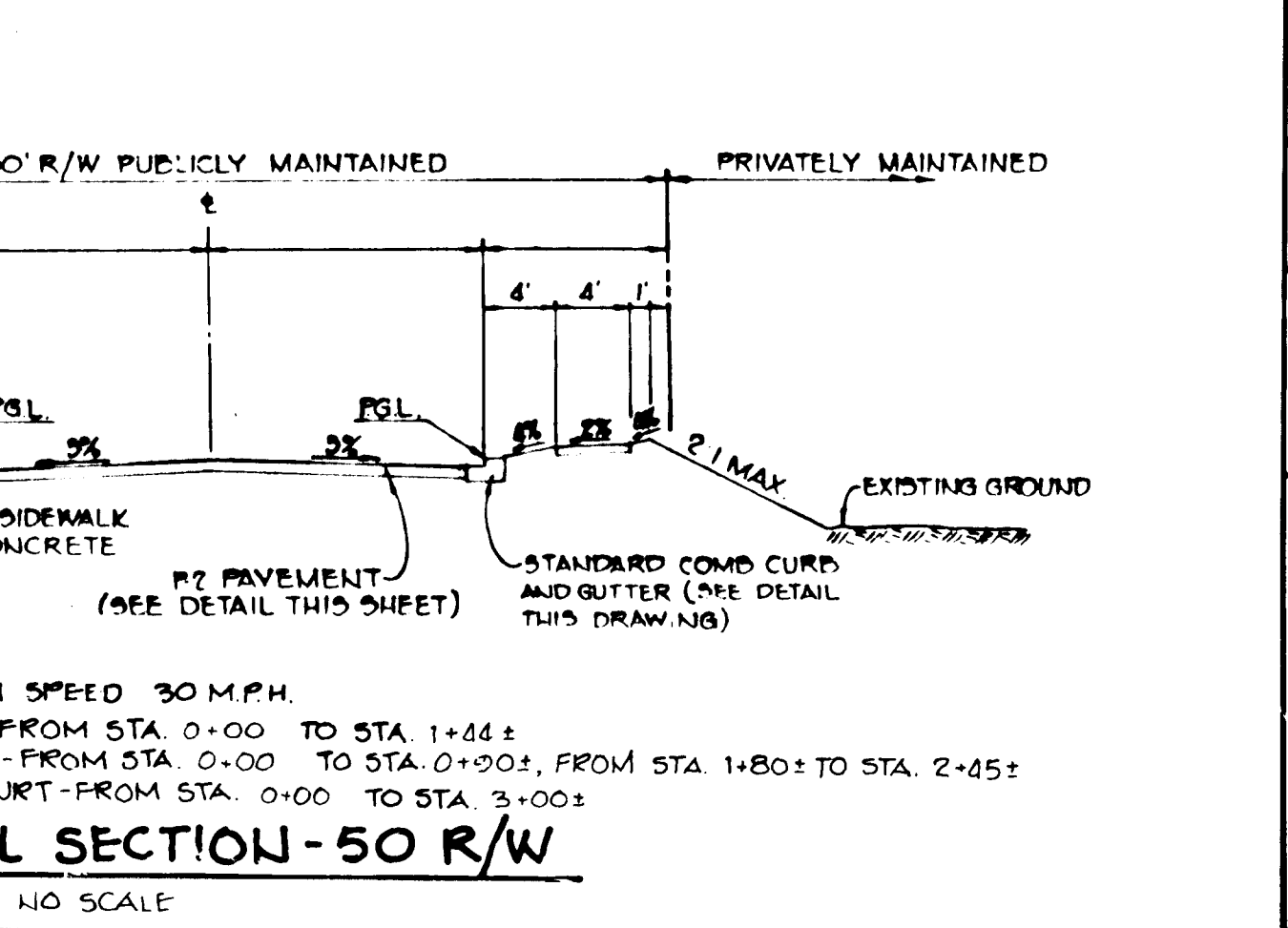
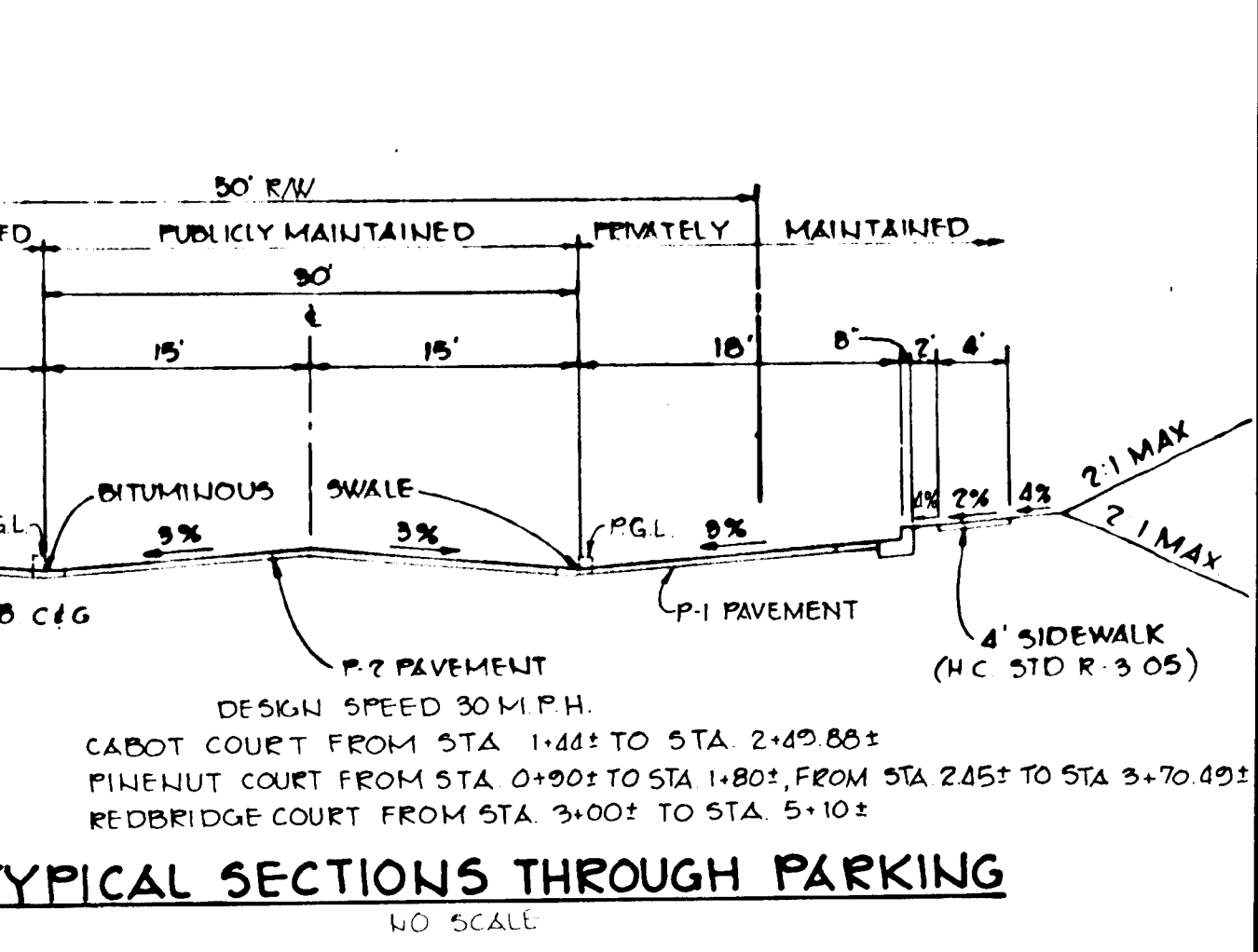
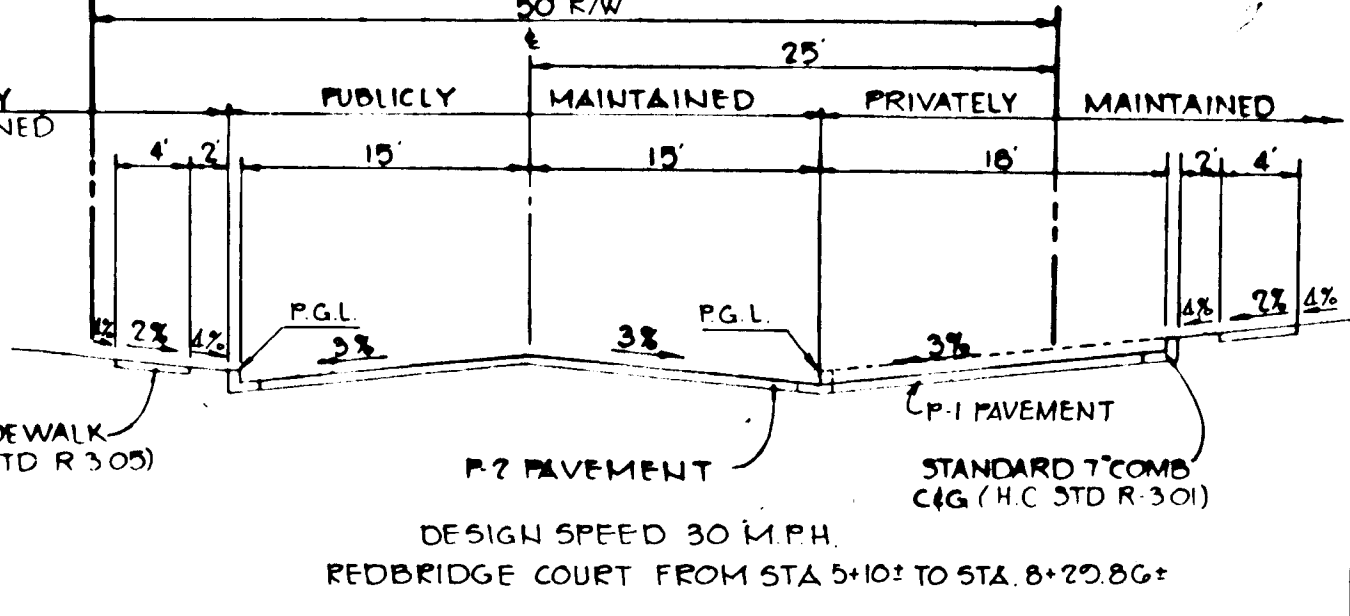
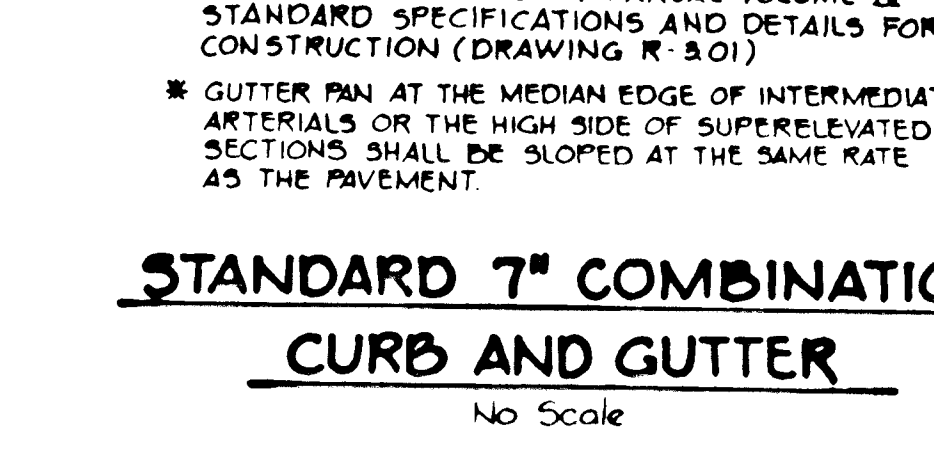
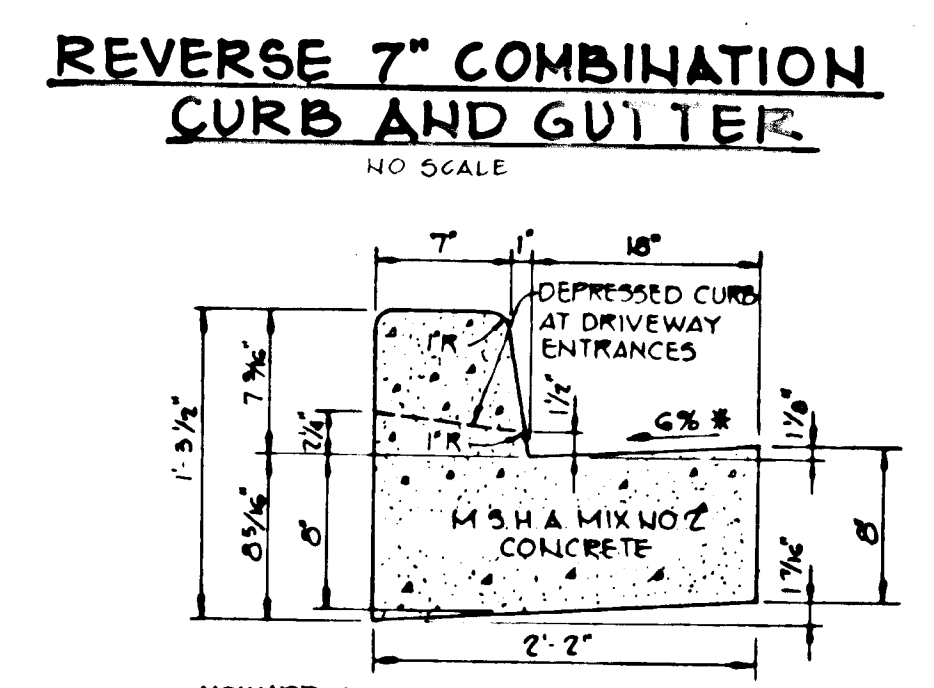
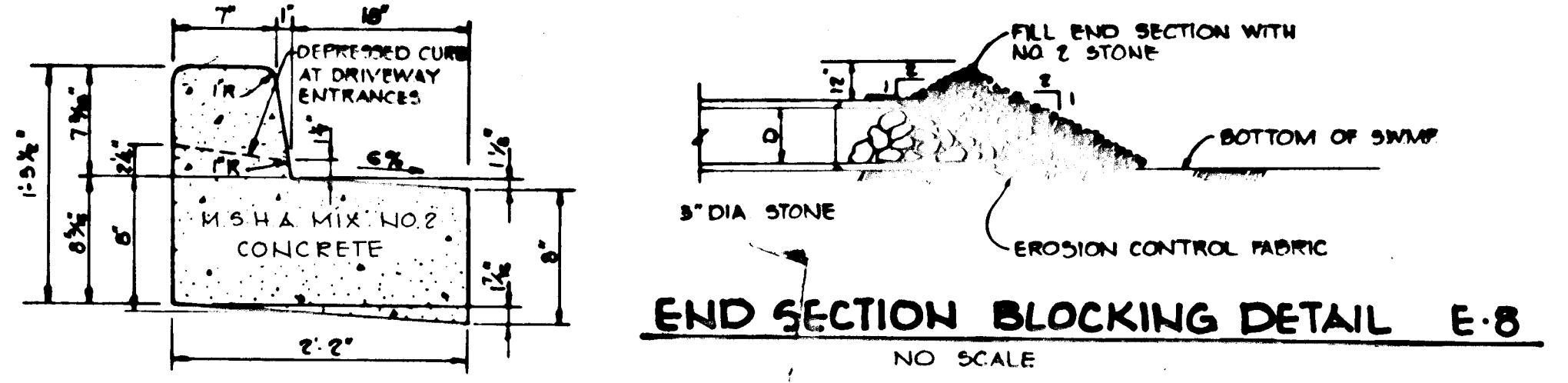
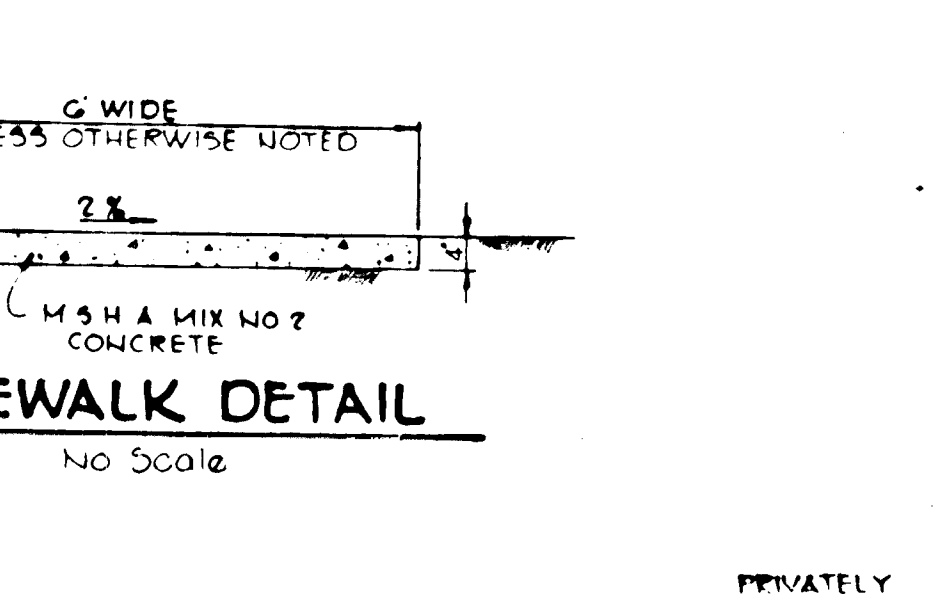
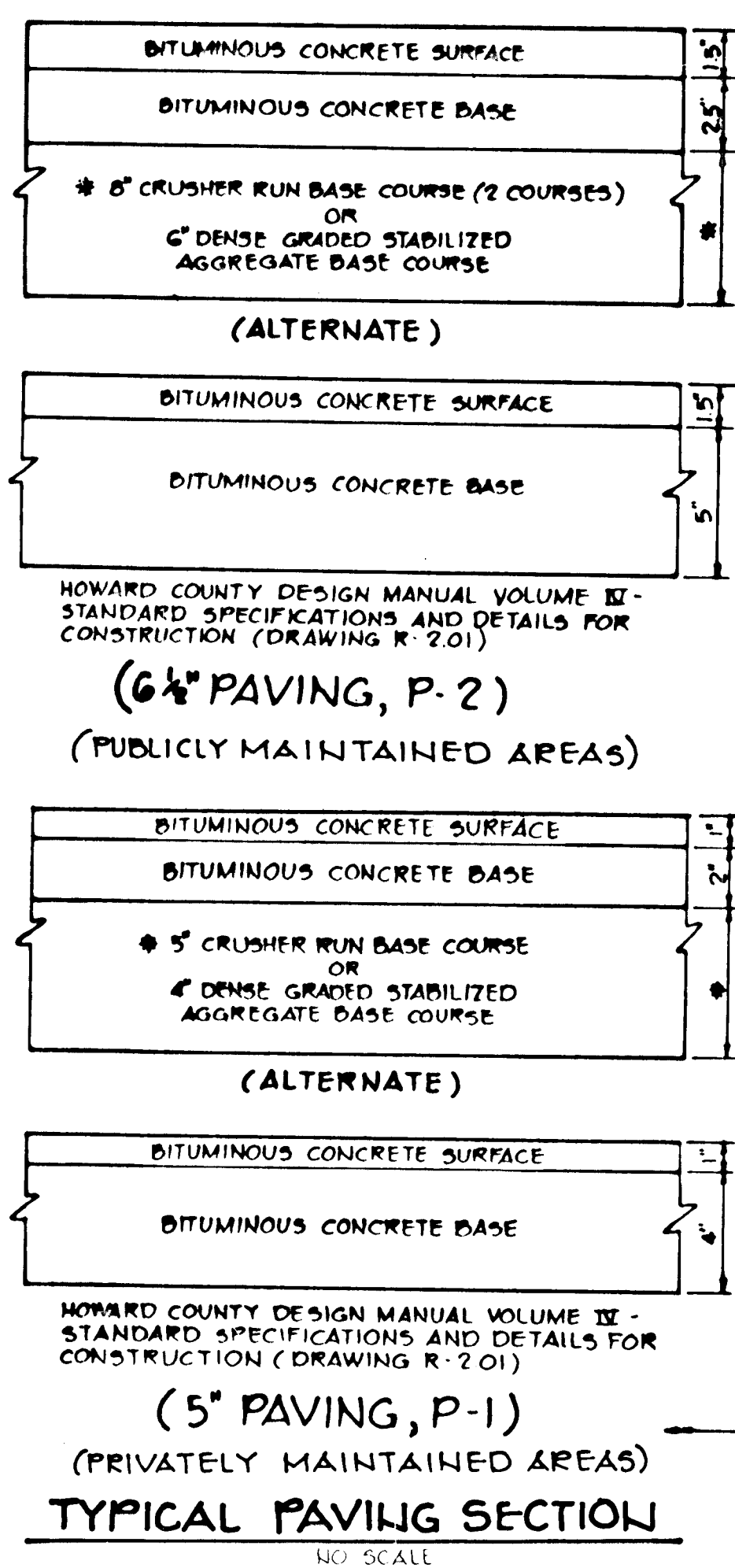
*Arthur E. Muegge*  
 ARTHUR E. MUEGGE #6707



- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT
  - INSTALL STABILIZED CONSTRUCTION ENTRANCES
  - CLEAR AND GRUB ONLY AREAS FOR SEDIMENT CONTROL DEVICE INSTALLATION
  - INSTALL SEDIMENT TRAP AND SILT FENCES
  - PROVIDE TEMPORARY 50 S 3 HIGH AT E-5 4 E-9, USING THE SIZE STONE AS CALLED FOR IN THE OUTLET PROTECTION CHART. AFTER SWMF HAS BEEN COMPLETED AND STABILIZED THE STONE THEN CAN BE USED FOR THE REQUIRED OUTLET PROTECTION.
  - INSTALL STORMWATER MANAGEMENT / SEDIMENT CONTROL PONDS & BLOCK E-8 (ACCORDING TO BLOCKING DETAIL)
  - COMPLETE ALL GRADING
  - INSTALL STORM DRAINS, WATER AND SEWER
  - STABILIZED ALL SLOPES IN ACCORDANCE WITH THE TEMPORARY SEEDING NOTES
  - COMPLETE ALL CONSTRUCTION AND STABILIZE AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES
  - UPON APPROVAL OF THE SOIL CONSERVATION DISTRICT, REMOVE ALL SEDIMENT CONTROL DEVICES AND CONVERT TRAP TO STORM WATER MANAGEMENT FACILITY AS FOLLOWS:
    - PUMP OUT IMPOUNDED WATER
    - REMOVE SEDIMENT AND RESTORE BASIN TO ORIGINAL DIMENSIONS
    - SEED ALL DISTURBED AREAS AS PER THE PERMANENT SEEDING NOTES



STRUCTURE	MEDIUM STONE DIA	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	0.5'	9	10.5	0.75
E-2	0.5'	10	11.5	0.75
E-3	0.5'	6	7.5	0.75
E-4	0.5'	14	15.5	0.75
E-5	0.5'	16	17.5	0.75
E-7	0.5'	16	17.5	0.75
E-9	0.5'	18	19.5	0.75



**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 THIS 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."

DATE: 3/21/84  
DEVELOPER: JOHN LIPARINI

**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."

DATE: 7-25-83  
ENGINEER: ARTHUR E. MUEGGE

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.

DATE: 3-27-84  
U.S. SOIL CONSERVATION SERVICE

APPROVED: Robert W. Ziehn 3-27-84  
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
DATE: 3-23-84  
JOHN M. MARCHMAN 3-23-84  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DATE: 4-8-84  
CHIEF, BUREAU OF ENGINEERING

REVISIONS:  
4-8-84 REVISOR: INVERTS OUT AT I-4 AND I-8 AND REVISED PROFILE FROM E-3 TO I-7  
DATE: NO REVISION

OWNER/DEVELOPER: SETTLER'S LANDING ASSOCIATES  
BRANTLEY DEVELOPMENT CORPORATION GENERAL PARTNER  
SUITE 105, 5501 TWAIN HILLS ROAD  
COLUMBIA, MARYLAND 21045

PROJECT: SETTLER'S LANDING  
SECTION 2, AREA 2, LOTS 135 THRU 280

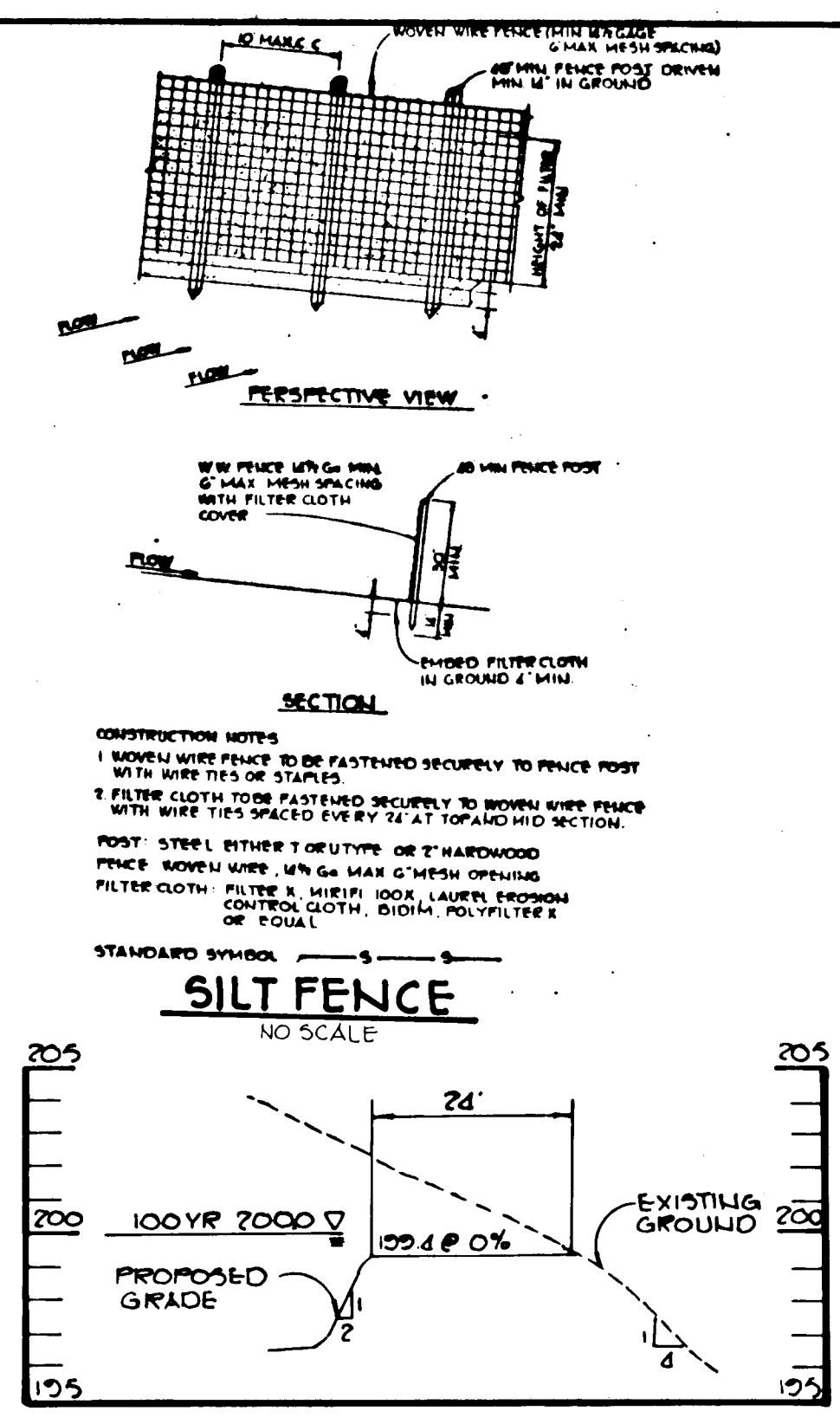
AREA: ELECTION DISTRICT 40G HOWARD COUNTY, MARYLAND  
TAX MAP N 50 PARCEL 34G

TITLE: DETAILS AND PROFILES OF STORM DRAINS

THE RIEMER GROUP, INC.  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
8659 Baltimore National Pike, Ellicott City, Maryland 21043 301.461.2690

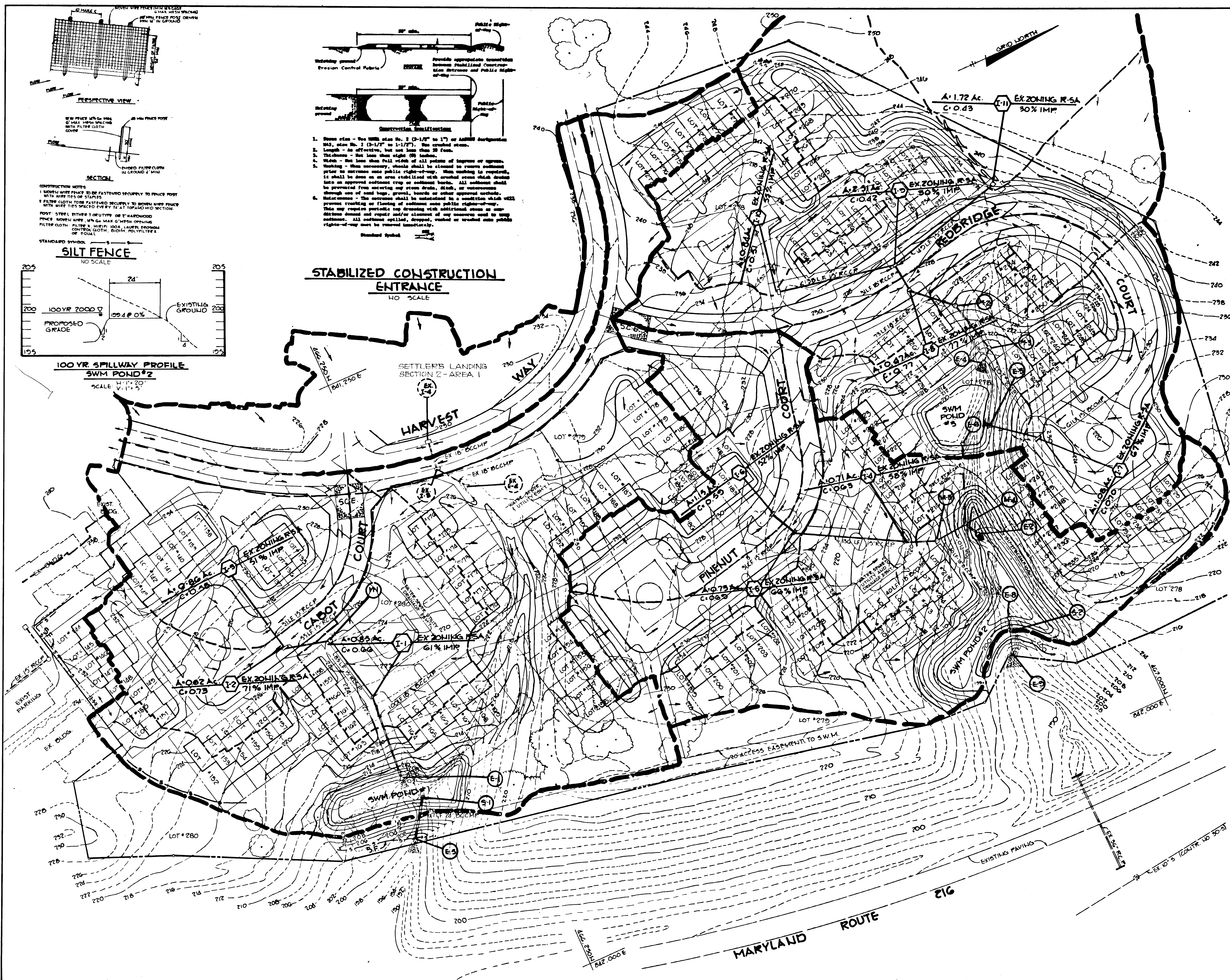
DATE: 3-21-84  
FORMERLY EASTON (P-82-2G)

DESIGNED BY: L.J.D.  
DRAWN BY: P.O.A.  
PROJECT NO: 001500  
DATE: JULY 26, 1983  
SCALE: AS SHOWN  
DRAWING NO: 4 OF 6



**STABILIZED CONSTRUCTION ENTRANCE**  
NO SCALE

1. Stone size - The stone shall be 1 (2-1/2" to 1") or heavier galvanized steel wire mesh (1/2" x 1/2" or 1-1/2" x 1-1/2") on 2x4 stakes.
2. Length - An effective, but not less than 30 feet.
3. Spacing - Not less than eight (8) inches.
4. Width - Not less than full width of all points of ingress or egress.
5. Working - When necessary, silt fence shall be placed to remove sediment prior to entrance into public right-of-way. When working is required, it shall be done on an area stabilized with crushed stone which meets State approved sediment trap or sediment basin. All sediment shall be removed from working area prior to removal of silt fence.
6. Maintenance - The silt fence shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone or sediment basin and repair and/or placement of any material used in top dressing. All sediment applied, deposited or tracked onto public right-of-way must be removed immediately.



BY THE DEVELOPER:

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

*John Liparini* 7-18-83  
DEVELOPER: JOHN LIPARINI 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.

*Arthur E. Muegge* 7-28-83  
ENGINEER: ARTHUR E. MUEGGE 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.

*John M. Velt* 4-18-84  
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.

*Robert W. Zehm* 4-12-84  
APPROVED: HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*Shawn M. Murrain* 4-18-84  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Richard B. Rubin* 4-23-84  
CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO.	REVISION

OWNER/DEVELOPER  
SETTLER'S LANDING ASSOCIATES  
BRANTLY DEVELOPMENT CORPORATION GENERAL PARTNER  
SUITE 102, 9801 TWIL KNUDSS ROAD  
COLUMBIA, MARYLAND 21045

PROJECT  
**SETTLER'S LANDING**  
SECTION 2, AREA 2 LOTS 155 THRU 280

AREA  
ELECTION DISTRICT N<sup>o</sup> 6 HOWARD COUNTY MARYLAND  
TAX MAP N<sup>o</sup> 50 PARCEL 546

TITLE: DRAINAGE AREA MAP, SEDIMENT CONTROL PLAN AND DETAILS

**THE RIEMER GROUP, INC.**  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2690

7-28-83 DATE

FORMERLY EASTON (7-82-83)

DESIGNED BY: L.J.D.

DRAWN BY: J.S.K.

PROJECT NO: 001500

DATE: JULY 26, 1983

SCALE: 1" = 50'

DRAWING NO. 5 OF 6

*Arthur E. Muegge*  
ARTHUR E. MUEGGE #8707

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, over-size stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased 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 sheepfoot, 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. PIPE CONDUITS

A. Reinforced Concrete Pipe

- Materials** - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. Approved equivalents are AWA Specification C-300, 301, and 302.
- Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its diameter with a minimum thickness of 3", or as shown on the drawings.
- Laying pipe** - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.
- Backfilling shall conform to structural backfill as shown above.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

B. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE

- Materials**
  - Cement** - Normal Portland cement shall conform to the latest ASTM Specification C-150.
  - Water** - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
  - 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.
  - Coarse 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 (1-1/2) inches.
  - Reinforcing Steel** - The reinforcing steel shall 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 ratio shall be 5-1/2 to 6 U. S. gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. 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 materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve 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 withstand 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 any 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 supplemented 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 be used.

- Placing Temperature** - Concrete may not be placed at temperatures below 32° 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 slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and borrow shall be stabilized by seeding, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications shown on or accompanying the drawings.

PERMANENT SEEDING

Final stabilization will take place as soon as possible as weather conditions permit, as follows:

- Apply dolomitic limestone at the rate of 2 tons per acre (one ton per acre if application of ton per acre was made for temporary seeding.)
- Apply 0-20-20 fertilizer at the rate of 600 lbs. per acre harrow or disc line and 0-20-20 fertilizer into the soil to a minimum depth of 3" lawns or high maintenance areas will be dragged and leveled with a York rake. At the time of seeding apply 400 pounds of 30-0-0 ureaform fertilizer and 500 lbs. of 10-20-20 or equivalent fertilizer per acre.
- Seed with a mixture of certified "Merion" Kentucky bluegrass - 40 lbs. per acre; common Kentucky bluegrass @ 40 lbs. per acre; Red Fescue, Pennlawn or Jamestown @ 20 lbs. per acre.
- Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gallons per 1000 square feet.
- Seed all slopes with a mixture of certified Kentucky 31 tall fescue @ 50 lbs. per acre and inoculated Korean Lespedeza @ 15 lbs. per acre.
- Sodded swales shall be Kentucky 31 tall fescue.

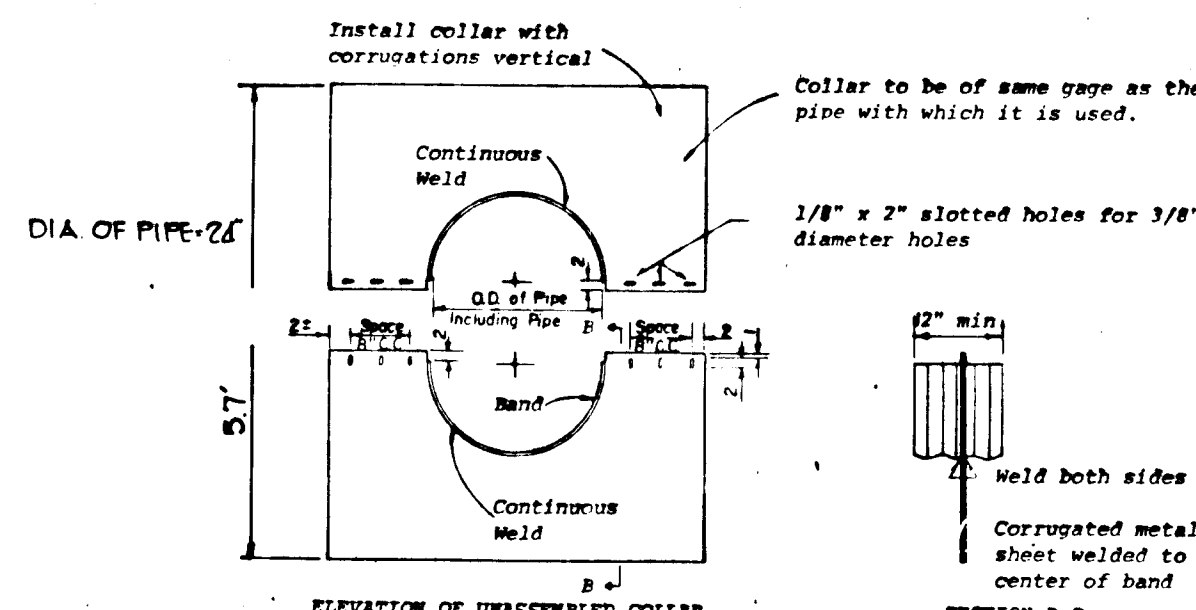
SEDIMENT CONTROL CONSTRUCTION NOTES

GENERAL NOTES

- 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 (922-2070).
- All sediment control structures will be installed in accordance with "The Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" as prepared by the U.S. Department of Agriculture Soil Conservation Service.
- Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
- All disturbed areas are to be dressed and stabilized according to the temporary or permanent seeding schedules as soon as proper weather conditions exist for the establishment of a permanent vegetative cover.
- Sediment will be removed from traps when the depth reaches the clean out elevation shown on the plans.
- Fertilizer and lime rates may be changed through authorization by the Howard Soil Conservation District if soil tests determine a reduction in the specified rates is justified.
- 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.
- References called for on the sediment control construction plan and details are made to "The Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas".
- Sediment control will be installed before clearing and grubbing remainder of site.
- No storm drains shall be installed under this contract.

TEMPORARY SEEDING

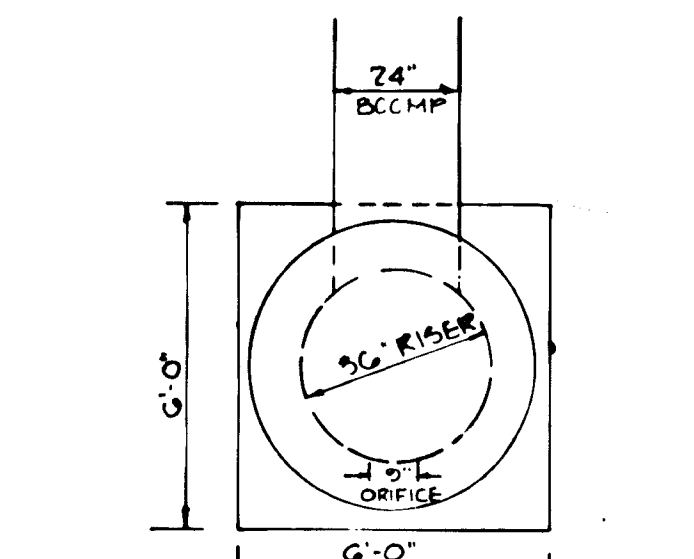
- Area to be seeded shall be recently loosened. If the ground is packed, crusted or hard, the top layer of soil shall be loosened by disking, raking or other acceptable means.
- Apply 10-20-10 fertilizer (or equivalent) at the rate of 600 lbs. per acre or 15 lbs. per 1000 square feet.
  - Where soil is known to be highly acid, apply dolomitic limestone at the rate of 1 ton per acre.
  - Work both into soil and seed with cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry will include seed and fertilizer) at the rate of 40 lbs. per acre of Italian or perennial ryegrass.
  - Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons, per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gal. per 1000 square feet.



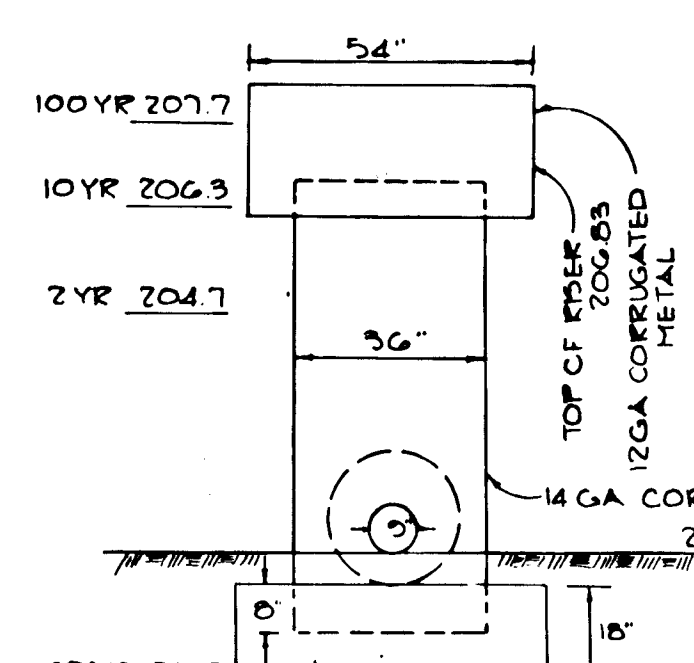
- NOTES FOR COLLARS:
- All materials to be in accordance with construction and construction material specifications.
  - When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
  - Disassembled collars shall be marked by painting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

ANTI-SEEP COLLAR

NO SCALE

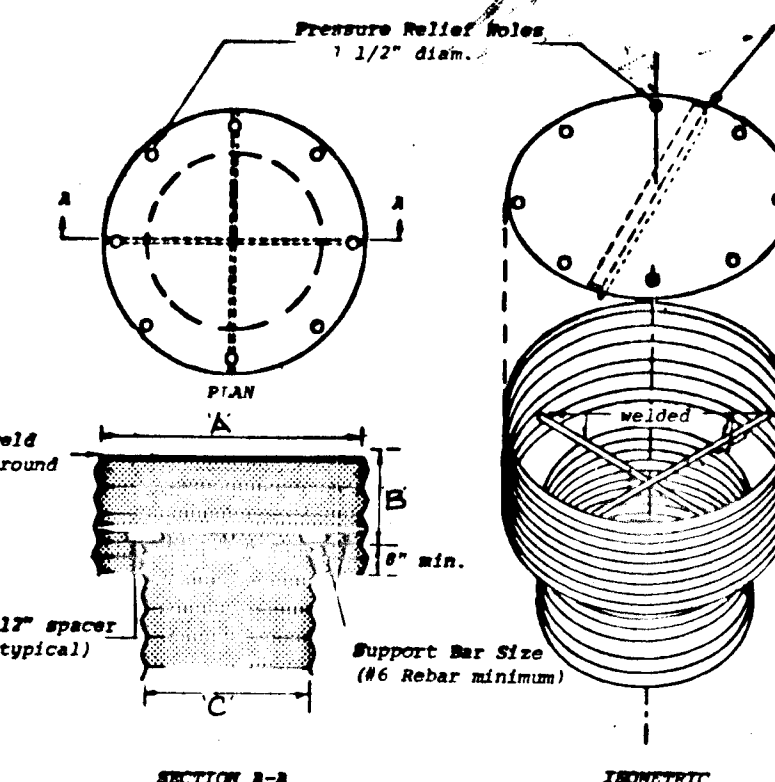


PLAN



ELEVATION

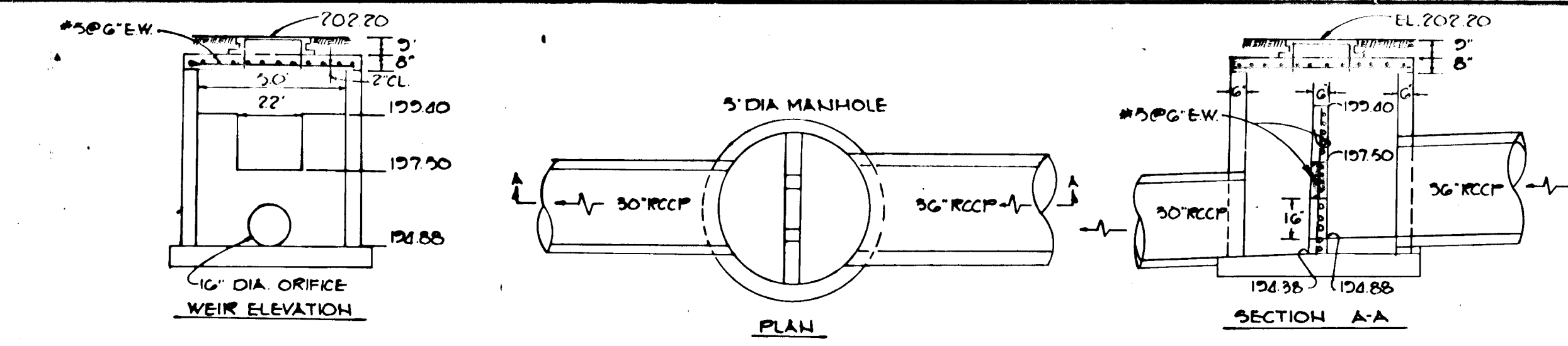
NO SCALE



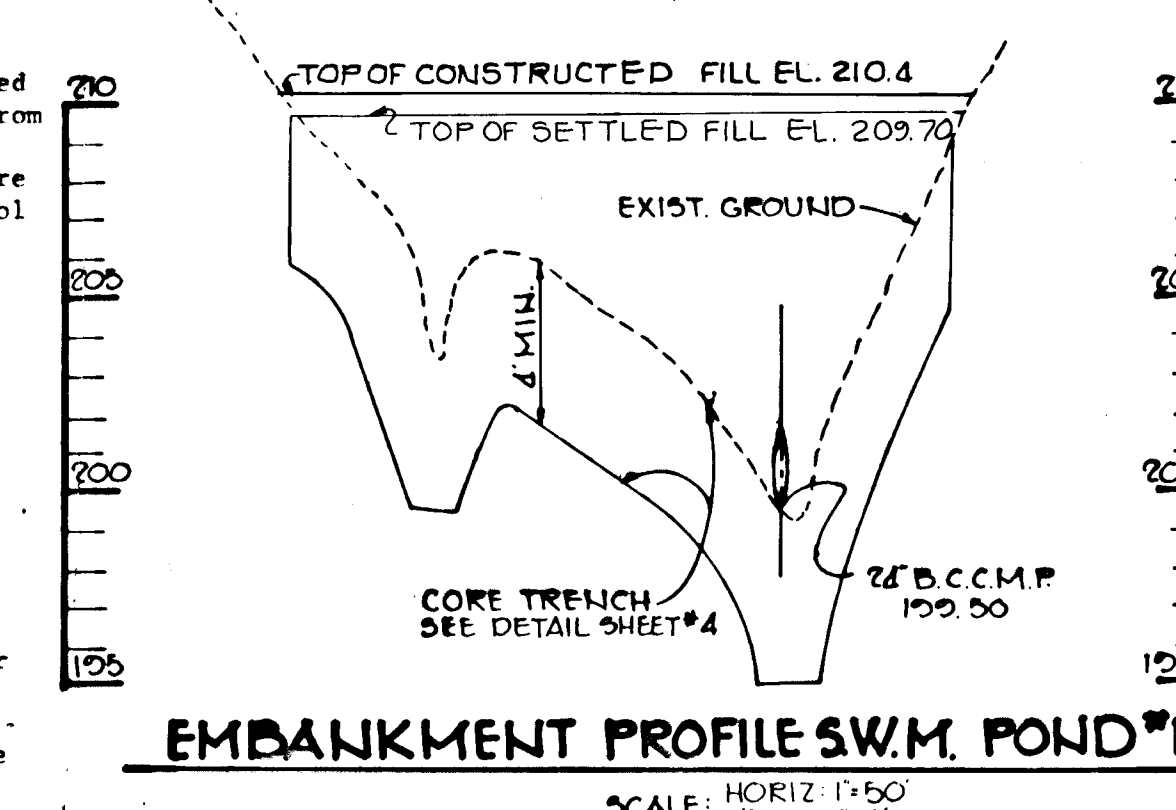
CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

NO SCALE

	RISE
A	54"
B	17"
C	36"

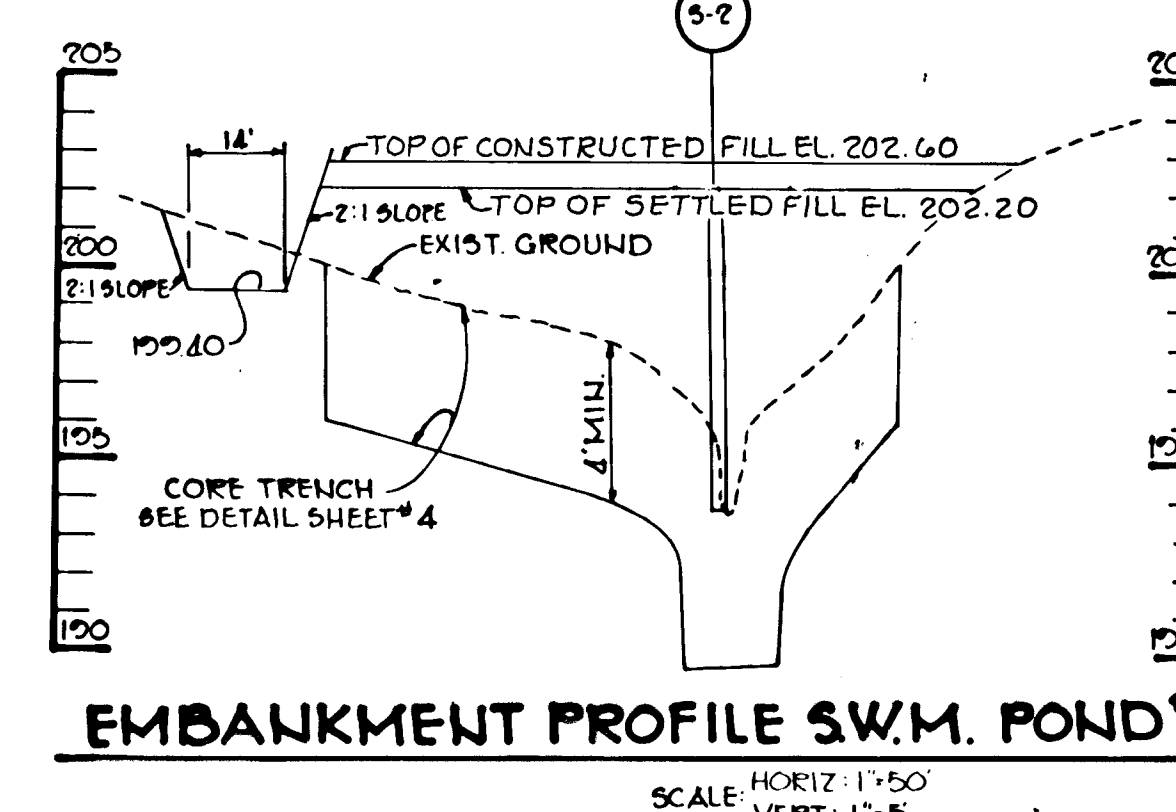


DETAIL-STORM WATER MANAGEMENT CONTROL STRUCTURE #5-2



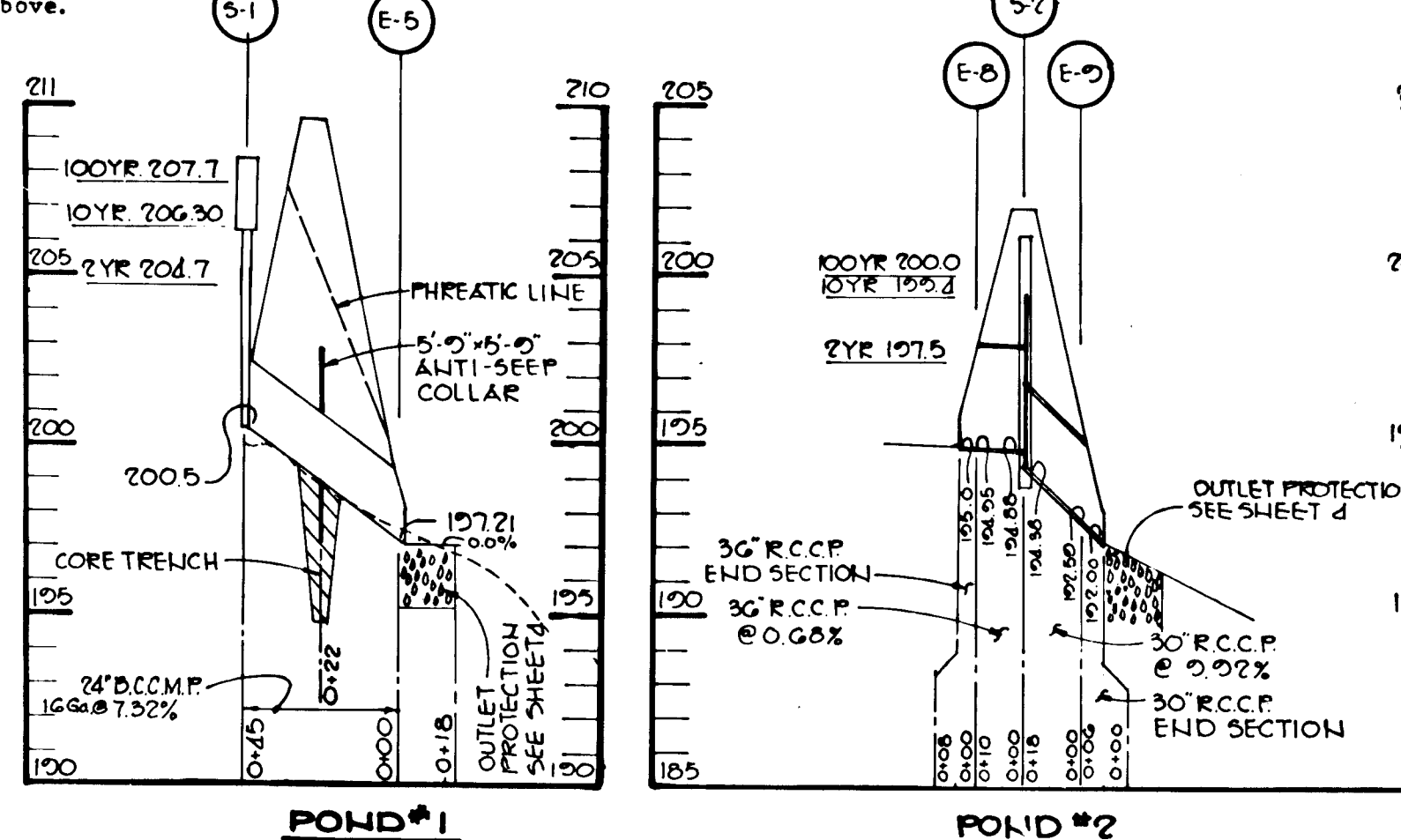
EMBANKMENT PROFILE SW.M. POND #1

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



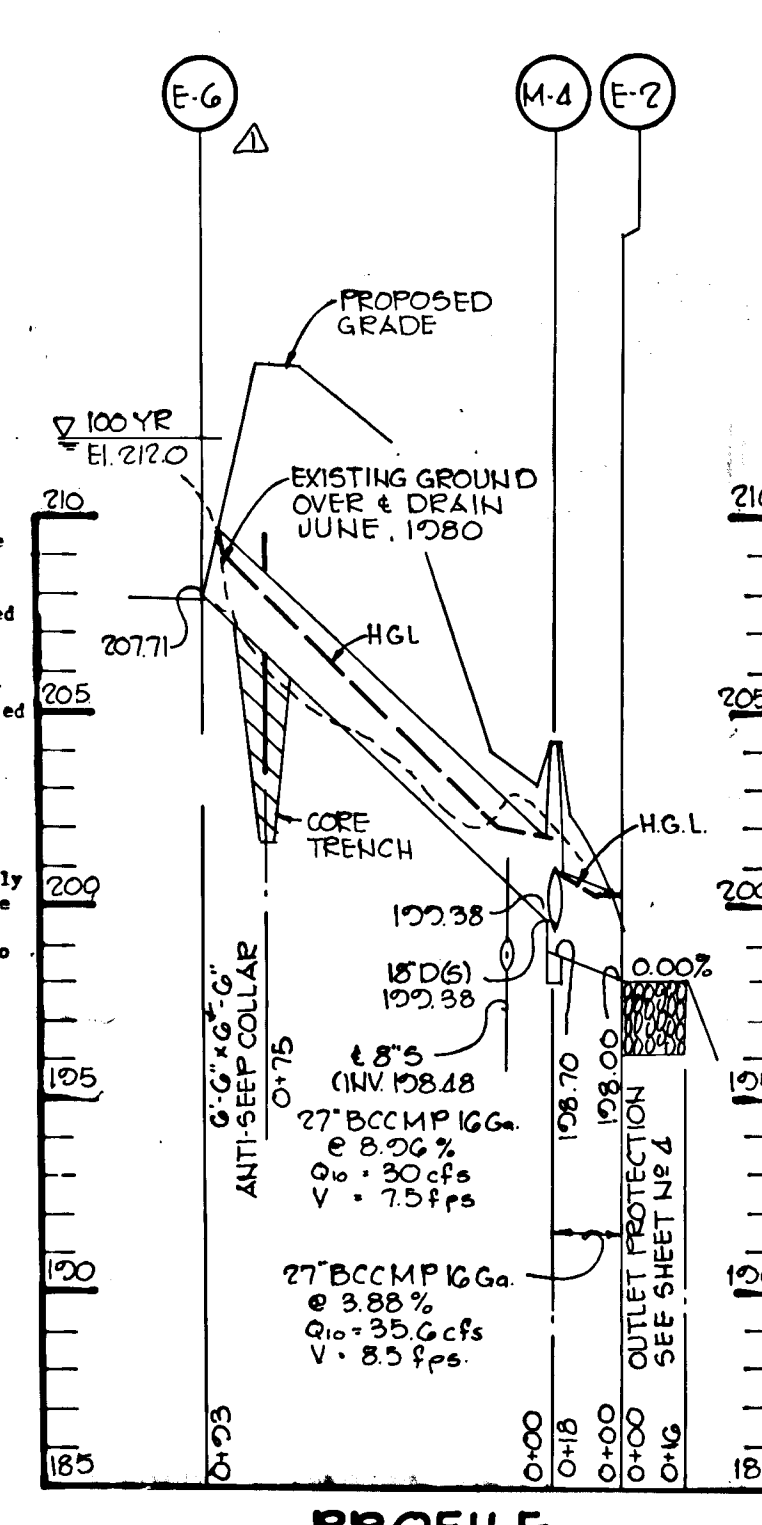
EMBANKMENT PROFILE SW.M. POND #2

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



STORM WATER MANAGEMENT STRUCTURE

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



PROFILE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*William B. Ray* 4-23-84  
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*John M. Macdon* 3-28-84  
PLANNING DIVISION CHIEF 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.

*William B. Ray* 3-27-84  
U.S. SOIL CONSERVATION SERVICE DATE

BY THE DEVELOPER:

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

*Arthur E. Muegge* 3-21-84  
ARTHUR E. MUEGGE DATE

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

APPROVED: *Robert J. Ziehm* 3-27-84  
HOWARD S.C.D. DATE

DATE	NO.	REVISION
6-8-84	84	REVISED PROFILE FROM E-2 TO E-6, CHANGED E-8 TO READ E-6.

OWNER / DEVELOPER: SETTLER'S LANDING ASSOCIATES  
BRANTLY DEVELOPMENT CORPORATION, GENERAL PARTNER  
SUITE 105, 2501 TWIN HILLS ROAD  
COLUMBIA, MARYLAND 21045

PROJECT: SETTLER'S LANDING  
SECTION 2, AREA 2, LOTS 135 THRU 280

AREA: ELECTION DISTRICT 19G HOWARD COUNTY, MARYLAND  
TAX MAP 1950 PARCEL 31G

TITLE: STORM WATER MANAGEMENT NOTES AND DETAILS

THE RIEMER GROUP, INC.  
1000 Riemer Drive, Suite 100, Columbia, MD 21045  
(410) 739-1234

DATE: 3-21-84  
FORMERLY EASTON (P82-26)

DESIGNED BY: J.K.T.  
DRAWN BY: T.E.S.  
PROJECT NO: 001500  
DATE: JULY 26, 1983  
SCALE: AS SHOWN  
DRAWING NO: 6 OF 6

ARTHUR E. MUEGGE 18707