

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILES OF ROADWAYS
3	DETAILS AND STORM DRAIN PROFILES
4	DRAINAGE AREA MAP
5	GRADING AND SEDIMENT CONTROL PLAN
6	SEDIMENT CONTROL AND SWM DETAILS
7	S.W.M. F. SPECIFICATIONS AND STORM DRAIN PROFILE

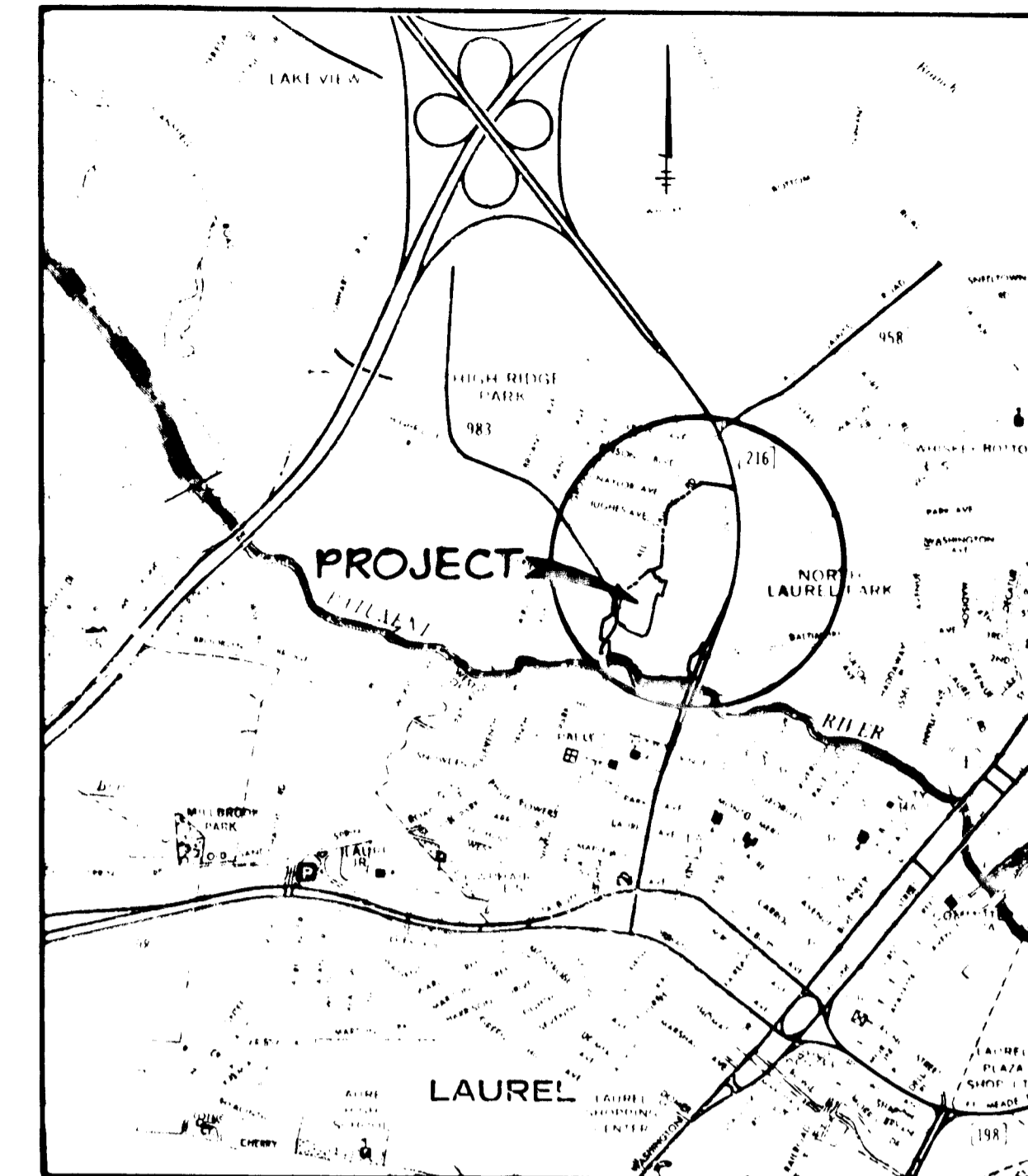
# ROADWAY, STORM DRAIN & STORM WATER MANAGEMENT

# SETTLER'S LANDING

## SECTION 1, AREA 2

## 6TH ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

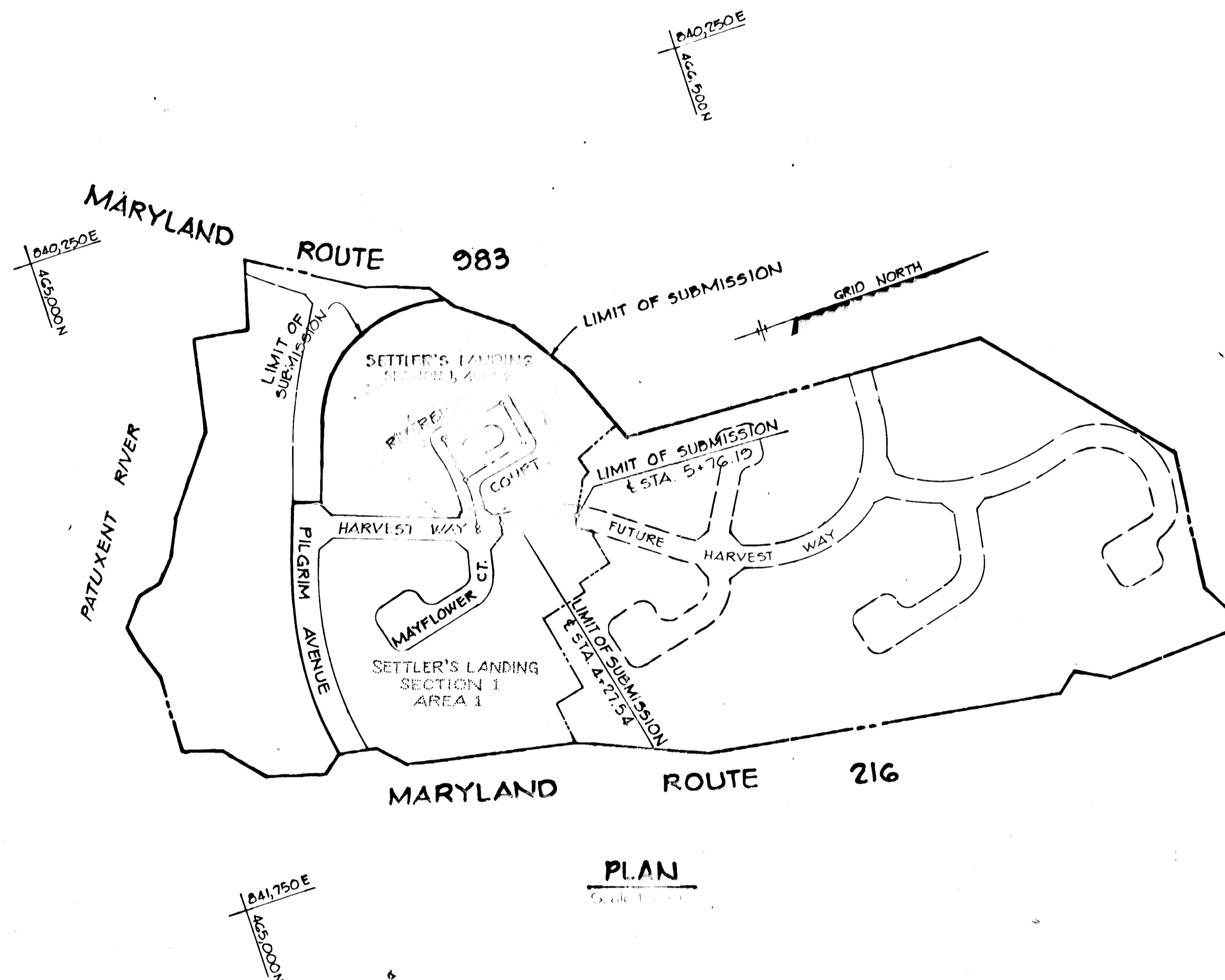


**VICINITY MAP**  
Scale: 1" = 2,000'

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.
 

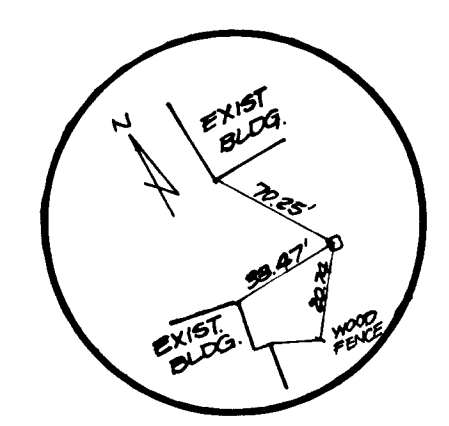
BELL TELEPHONE SYSTEM	393-3649
LONG DISTANCE CABLE DIVISION	393-3553 OR 3554
BALTIMORE GAS AND ELECTRIC COMPANY	539-8000, EXT. 691
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION	702-7272
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY 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 - 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 30M.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.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT TO WITHIN 6" OF FINISHED GRADE.
- PLAN REVIEW TO BE AS OUTLINE IN "VP-85-97".
- TOPS TAKEN FROM FIELD RUN SURVEY DATED JUNE, 1980 BY CLARK, FINEBROCK AND SACKETT.



**PLAN**  
Scale: 1" = 100'

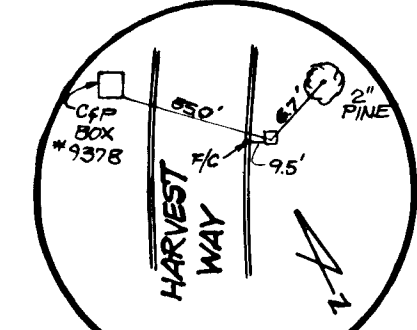
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
 CHIEF, BUREAU OF ENGINEERING      DATE: 10-10-83	
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION      DATE: 83	
DATE	REVISION
OWNER	PILGRIM'S PROGRESS, INC. P.O. BOX 1519 201 NORTH CHARLES STREET BALTIMORE, MARYLAND 21203
PROJECT	CHATEAU BUNGALOWS 8650 BALTIMORE NATIONAL PIKE ELICOTT CITY, MARYLAND 21043
PROJECT	<b>SETTLER'S LANDING</b> SECTION 1, AREA 2 LOTS 51 THRU 94
AREA	ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND
TITLE	TAX MAP NO. 9C PARCEL 34G
TITLE SHEET	
<b>THE RIEMER GROUP, INC.</b>	
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2600	
9-30-83 DATE  Arthur E. Pozzani	FORMERLY EASTON (P87-26) DESIGNED BY L.J.D. DRAWN BY T.E.S. PROJECT NO. 807-800 DATE 6-8-83 SCALE AS SHOWN DRAWING NO. 1 OF 7

202



**¢ CURVE DATA**  
 FROM ¢ STA. 0+13.21 TO STA. 0+27.79 L.P.  
 $\Delta = 26^\circ 30' 00''$   
 $R = 310.00'$   
 $L = 143.38'$   
 $T = 73.00'$   
 $Chd = N 88^\circ 50' 11'' W, 142.10'$

**¢ CURVE DATA**  
 FROM ¢ STA. 4+21.23 TO ¢ STA. 5+60.11  
 $\Delta = 16^\circ 13' 36''$   
 $R = 275.00'$   
 $L = 77.88'$   
 $T = 39.20'$   
 $Chd = N 14^\circ 32' 38'' E, 77.62'$

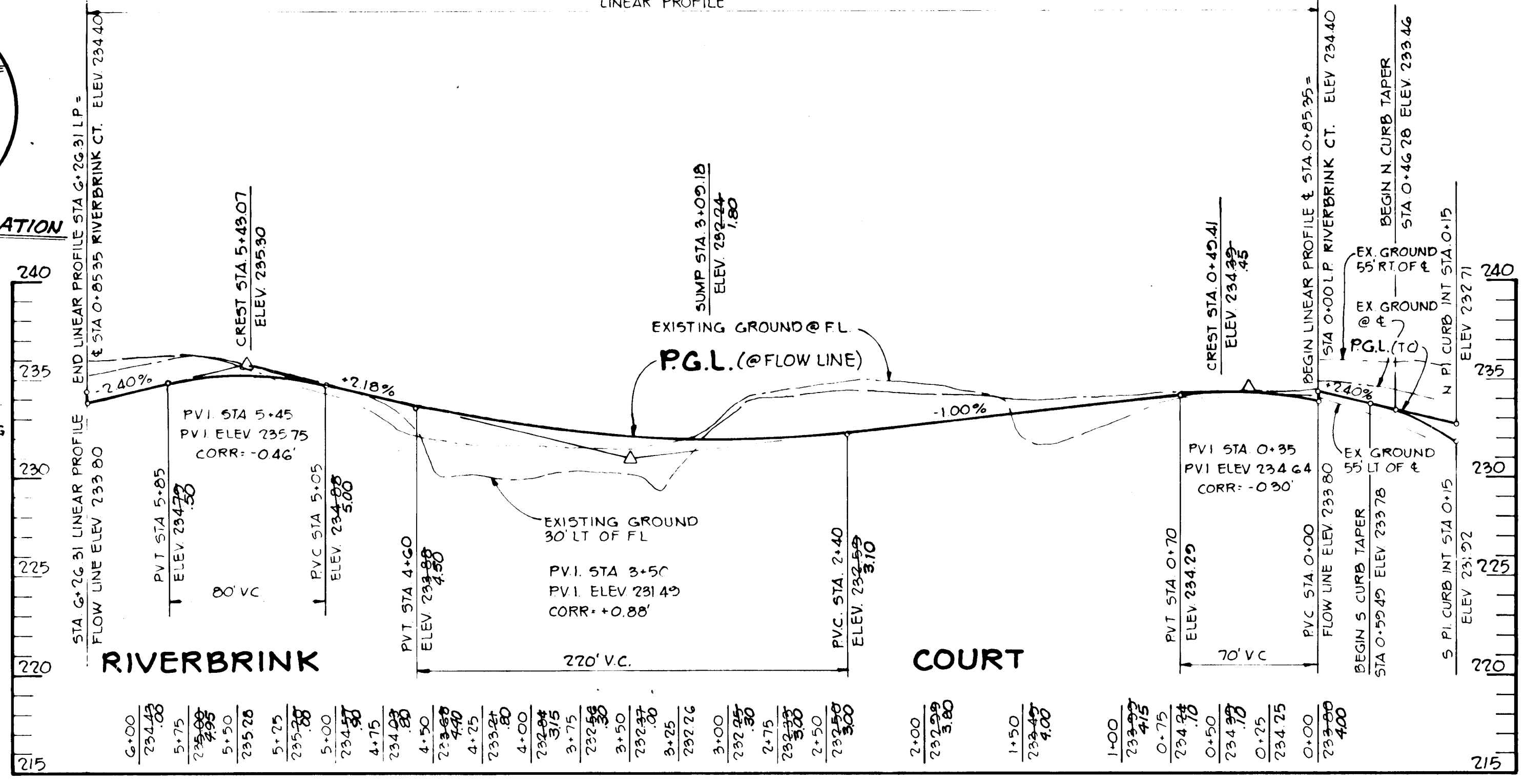
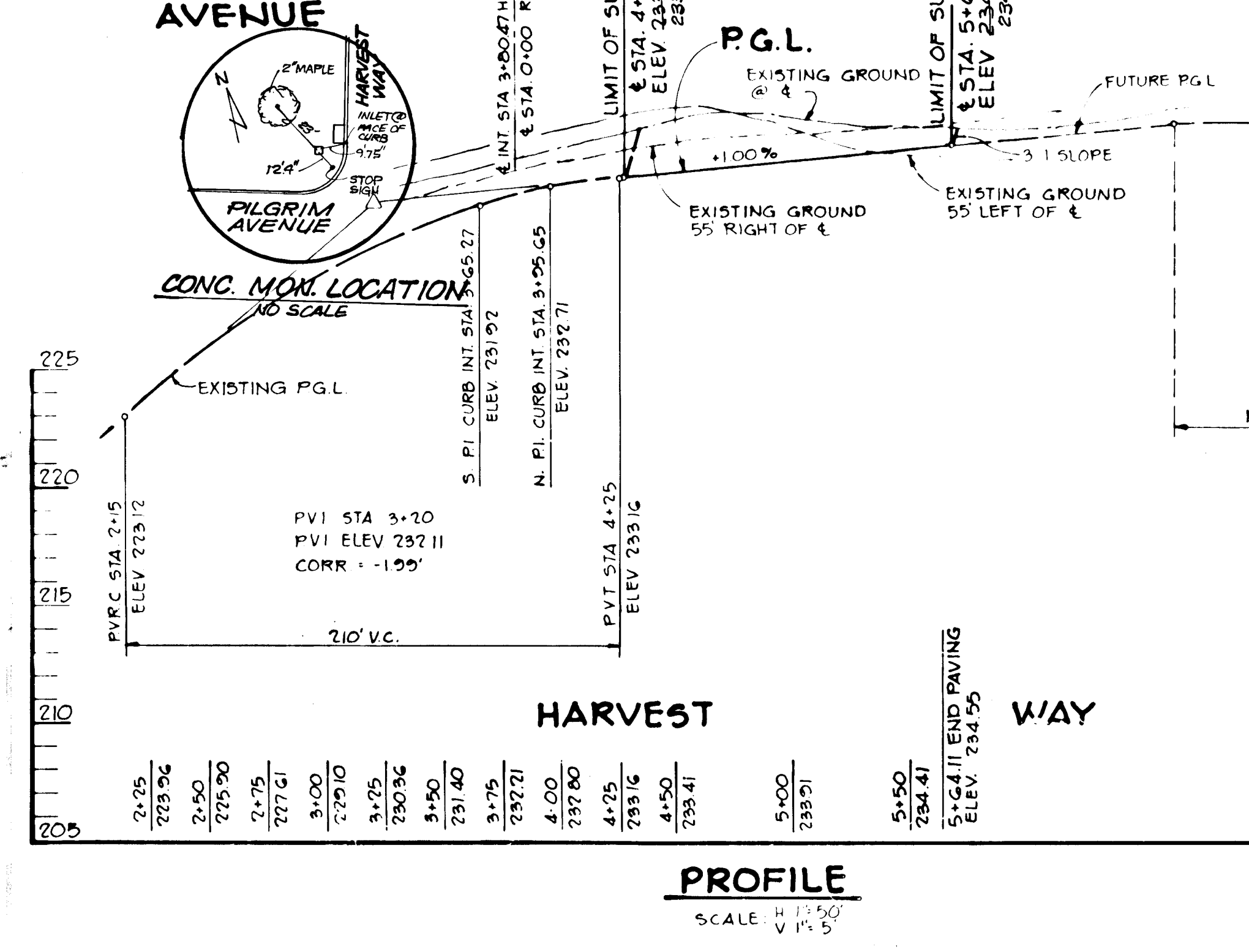
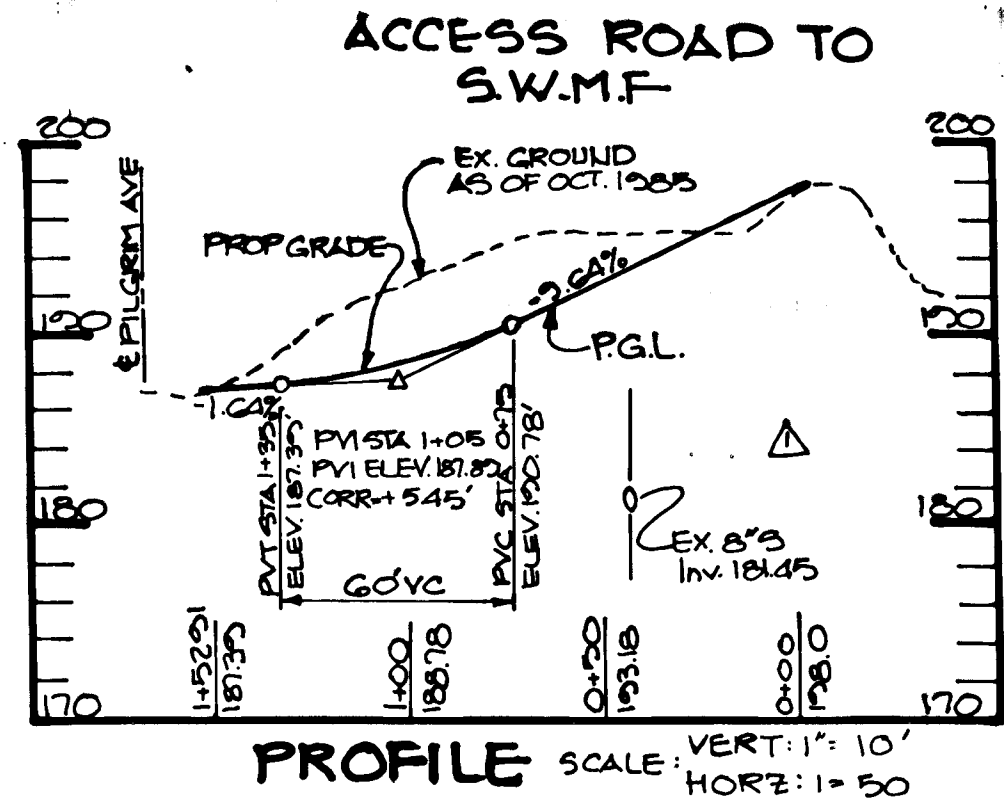
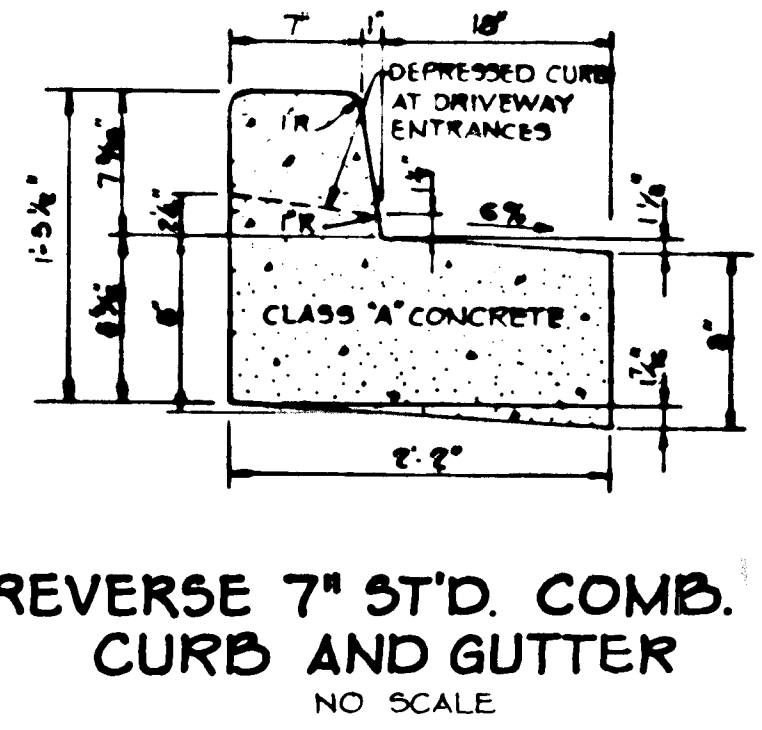
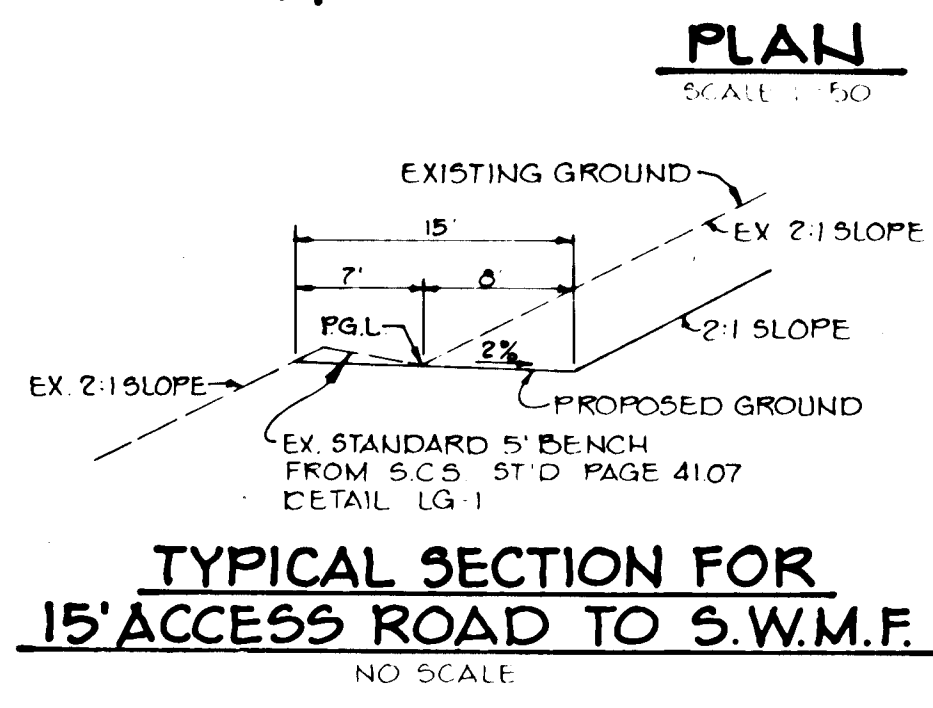
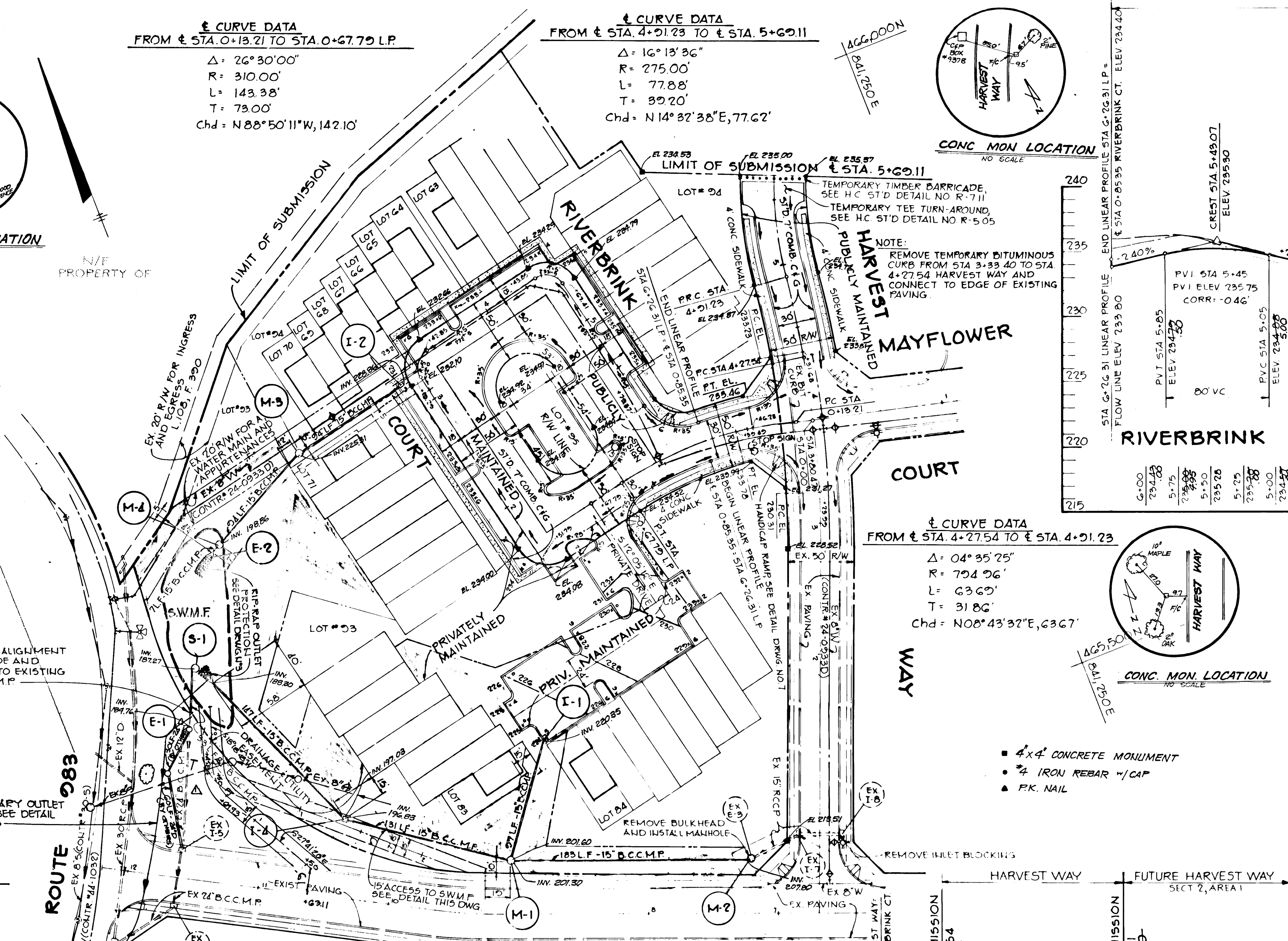


CONC. MON LOCATION  
 NO SCALE

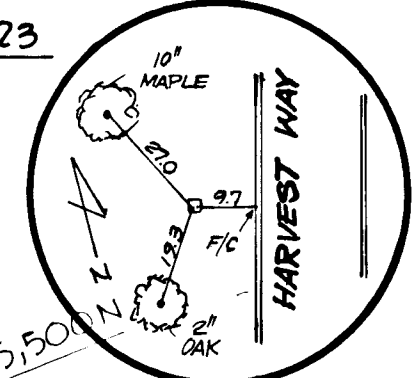
N/F  
 PROPERTY OF

AGG. 000N  
 840,500E

**CURVE DATA**  
 $\Delta = 46^\circ 00' 00''$   
 $R = 50.00'$   
 $L = 24.00'$   
 $T = 12.73'$   
 $Chd = 100^\circ 50' 00''$



**¢ CURVE DATA**  
 FROM ¢ STA. 4+27.54 TO ¢ STA. 4+21.23  
 $\Delta = 04^\circ 35' 25''$   
 $R = 704.06'$   
 $L = 63.60'$   
 $T = 31.80'$   
 $Chd = N 08^\circ 43' 32'' E, 63.67'$



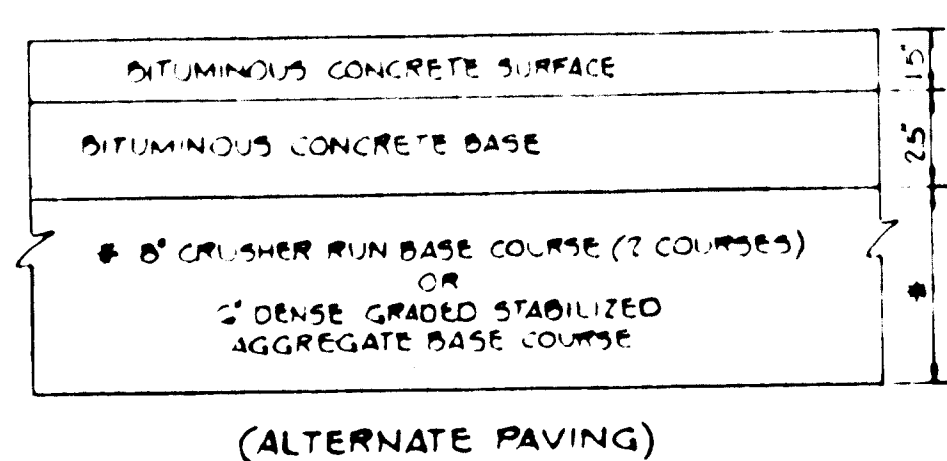
- 4x4 CONCRETE MONUMENT
- 2 IRON REBAR #1 CAP
- PK NAIL

NOTES: RM, USC & GS ELEV 800.03  
 NAIL IN 36" OAK 15' LEFT OF  
 TRAVERSE BETWEEN P.I.#105  
 AND P.I.#106  
 BM#2 USC&GS ELEV 221.98  
 NAIL IN 48" OAK 340' LEFT  
 OF ¢ STA. 6+52.216  
 THE ORIGIN OF COORDINATES IS  
 FROM HOWARD COUNTY MONUMENT  
 Nos 1741002-R & 1741003-R

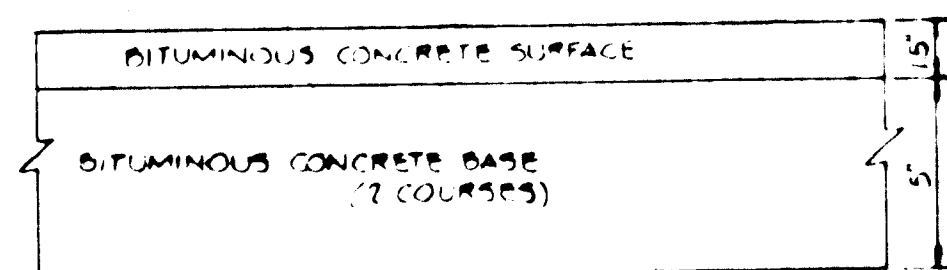
NOTE: PRIVATELY MAINTAINED PAVED AREAS SHOWN THUS.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Paul M. Anderson* 10-5-83  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William E. Kelly* 10-10-83  
 CHIEF, BUREAU OF ENGINEERING  
 10/13/83 RELOCATED ACCESS ROAD TO S.W.M.F. AND ADDED PROFILE FOR ACCESS ROAD.  
 4-17-85 1 ADDED TEMPORARY OUTLET CHANNEL  
 OWNER: PILGRIMS PROGRESS, INC. 201 NORTH CHARLES STREET BALTIMORE, MARYLAND 21203  
 PROJECT: SETTLER'S LANDING SECTION 1, AREA 2 LOTS 51 THRU 24  
 AREA: ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND TAX MAP #50 PARCEL 346  
 TITLE: PLAN AND PROFILES OF ROADWAYS  
 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  
 9-30-83 DATE  
 FORMERLY EASTON (P&E 26)  
 DESIGNED BY: L.J.D.  
 DRAWN BY: T.E.S.  
 PROJECT NO: 000300  
 DATE: 6-8-83  
 SCALE: AS SHOWN  
 DRAWING NO. 2 OF 7

882

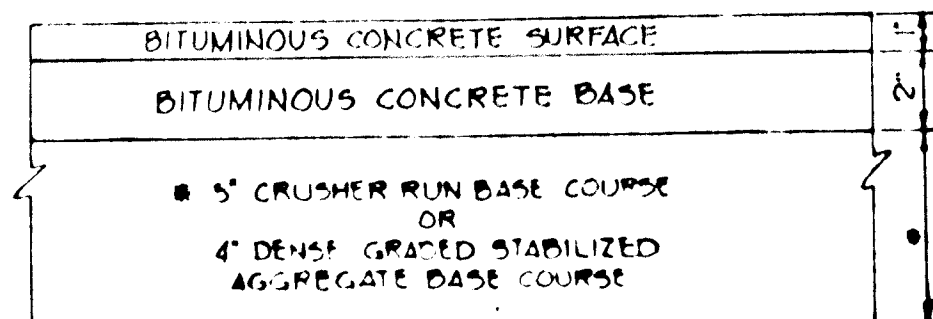


(ALTERNATE PAVING)

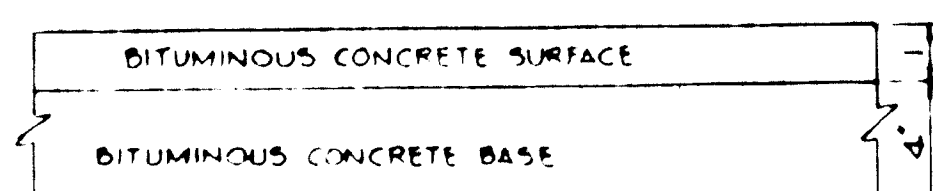


(P-2 PAVING)

PUBLICLY MAINTAINED AREAS



(ALTERNATE PAVING)



(P-1 PAVING)

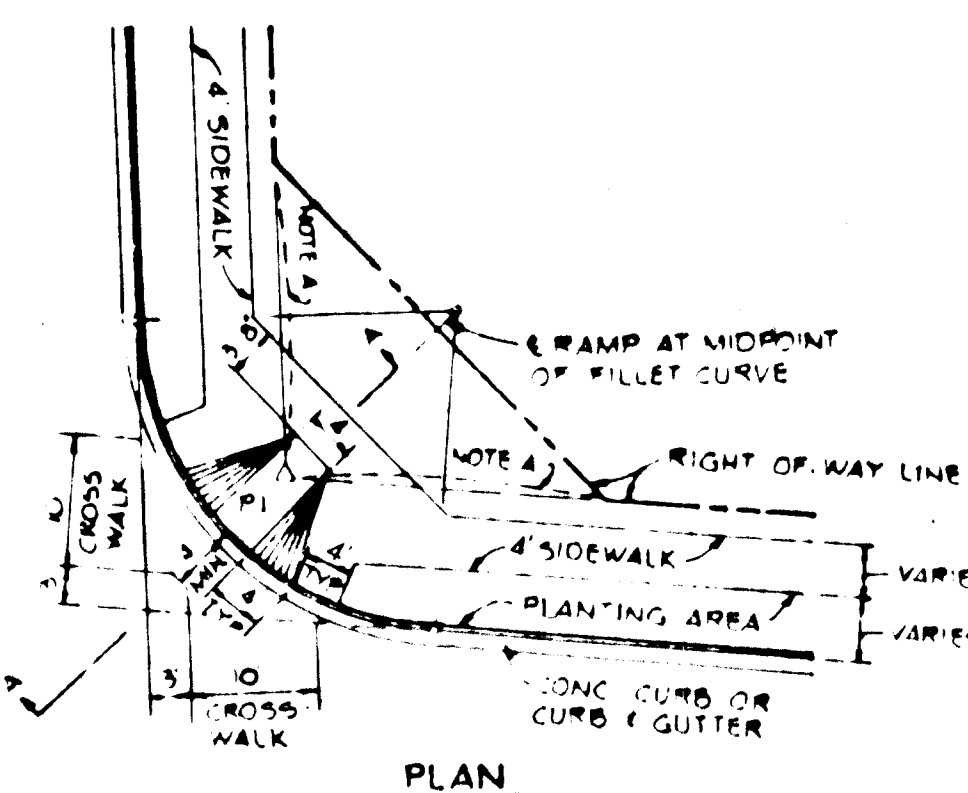
PRIVATELY MAINTAINED AREAS

**TYPICAL PAVING SECTIONS**

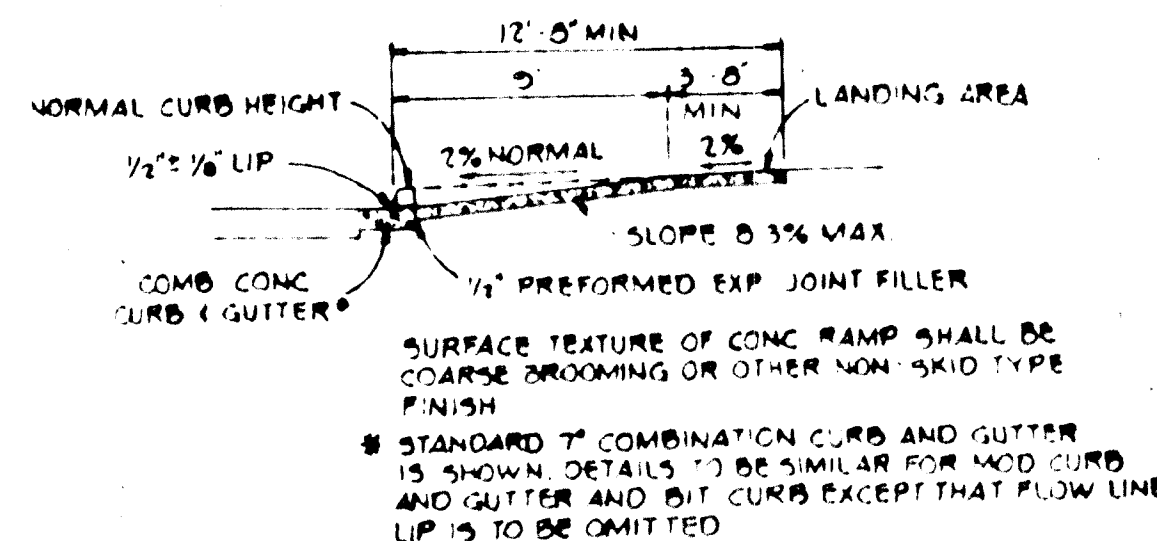
NO SCALE

**NOTES**

- A RIGHT OF WAY LINE TRIMMING TO BE SET 2' FROM PI ALONG EACH OF THE INTERSECTING LINES AS SET FORTH IN SECTION 12.15. PART F5 OF SUBDIVISION REGULATIONS. MINIMUM DISTANCE BETWEEN BACK OF SIDEWALK AND RIGHT OF WAY LINE TO BE 1 FOOT.
- B TYPE A RAMP TO BE USED FOR ALL NEW CONSTRUCTION WHERE APPLICABLE UNLESS OTHERWISE DIRECTED BY O.P.W.



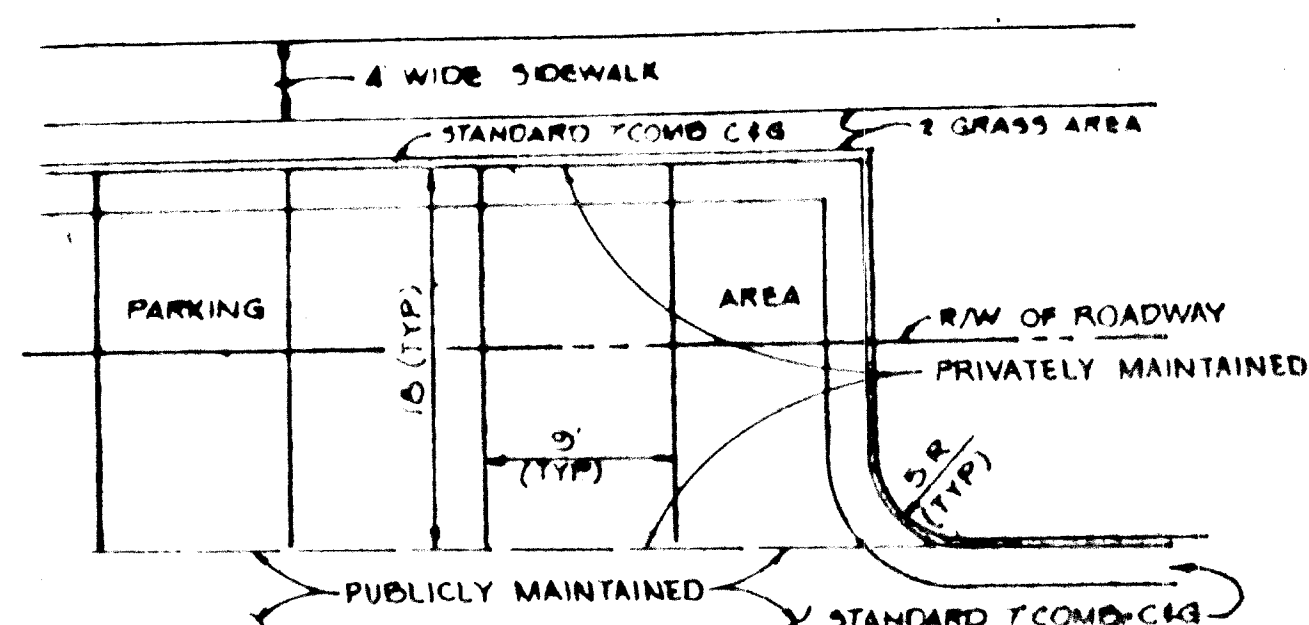
PLAN



SECTION 'A-A'

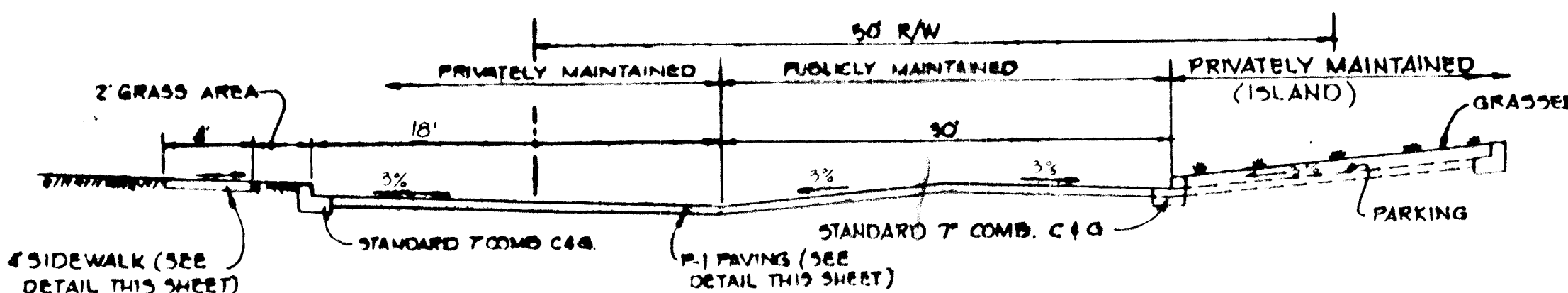
**TYPICAL HANDICAP RAMP**

NO SCALE



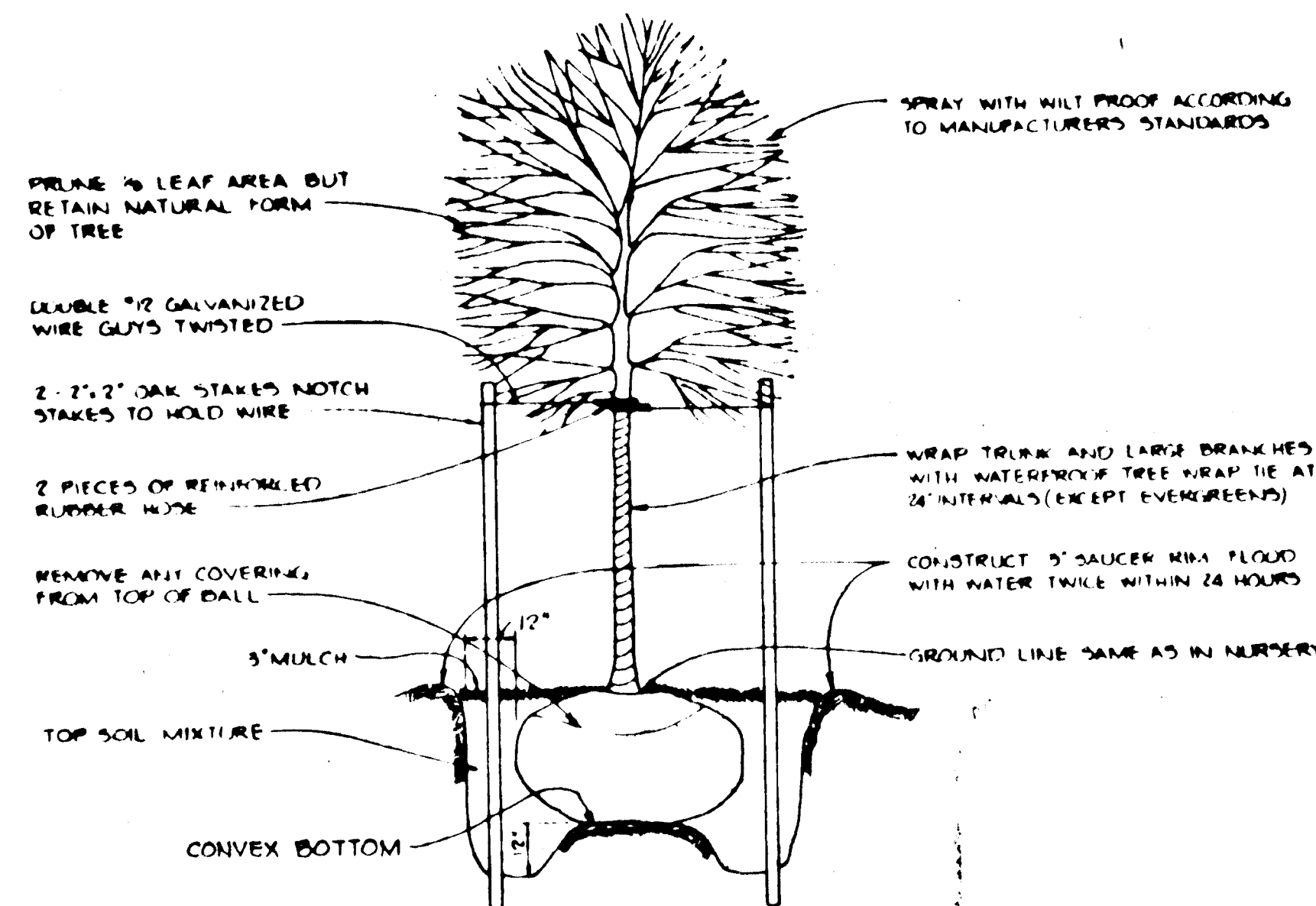
**TYPICAL PARKING PLAN**

NO SCALE



**SECTION THROUGH CUL-DE-SAC (TYPICAL)**

NO SCALE



**TREE PLANTING DETAIL**

NO SCALE

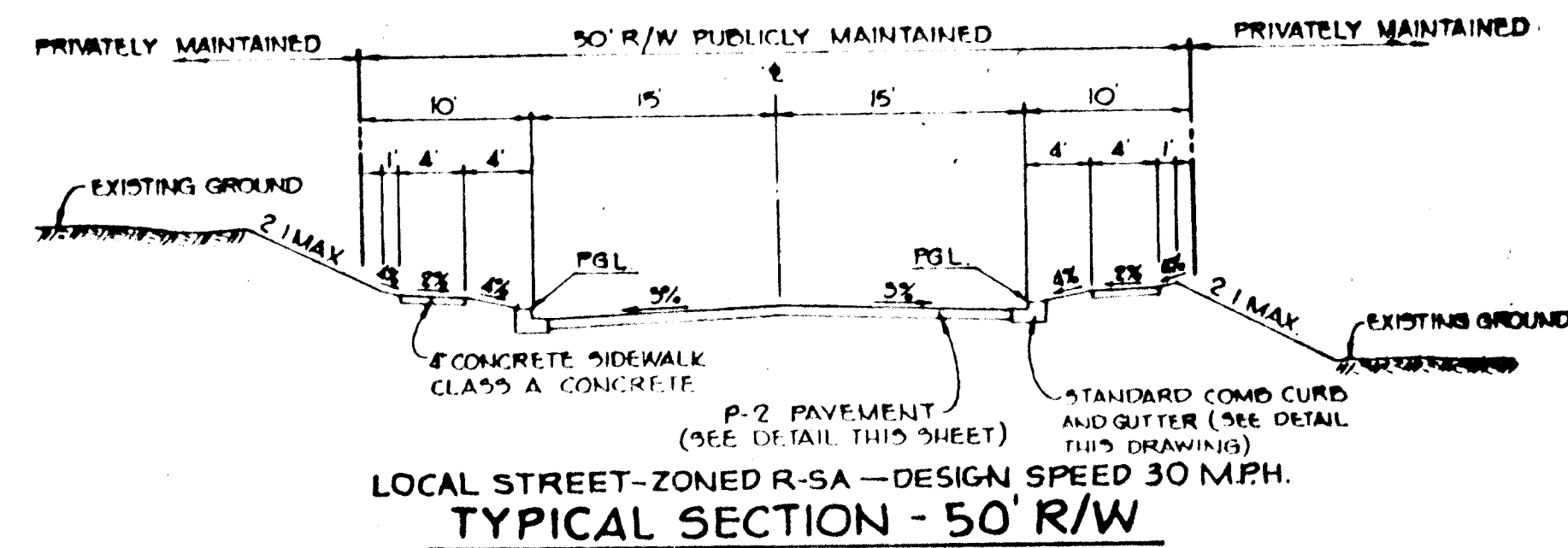
CONSTRUCT 3" SAUCER RIM - FLOOD WITH WATER TWICE WITHIN 24 HOURS

GROUND LINE SAME AS IN NURSERY



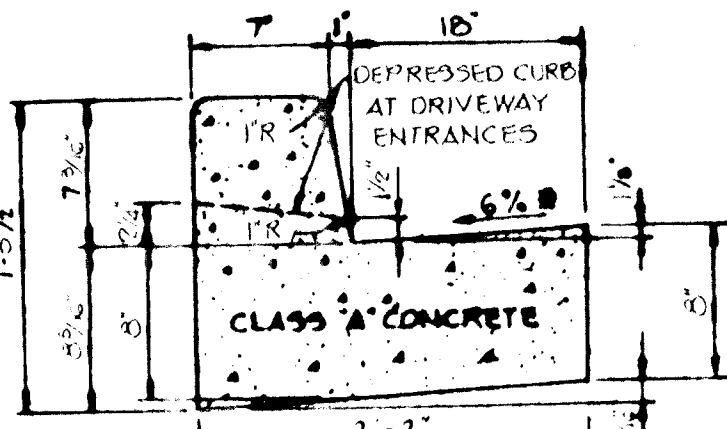
**SHRUB PLANTING DETAIL**

NO SCALE



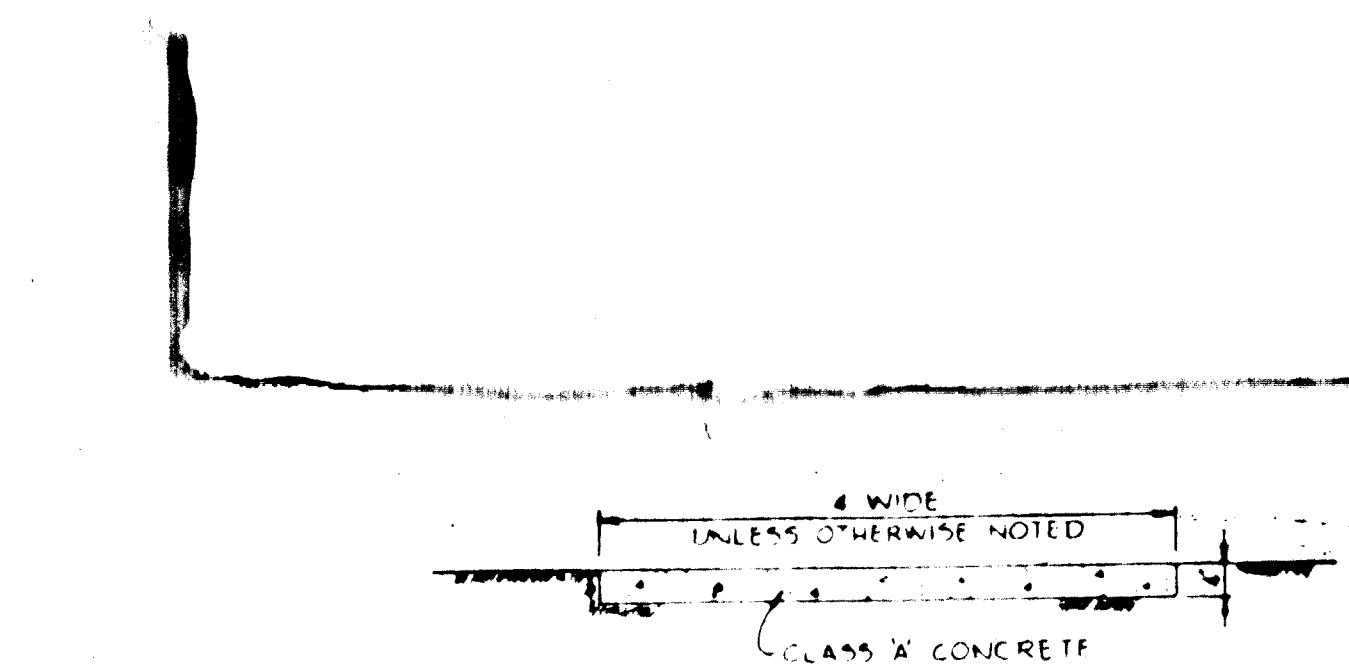
**TYPICAL SECTION - 50' R/W**

NO SCALE



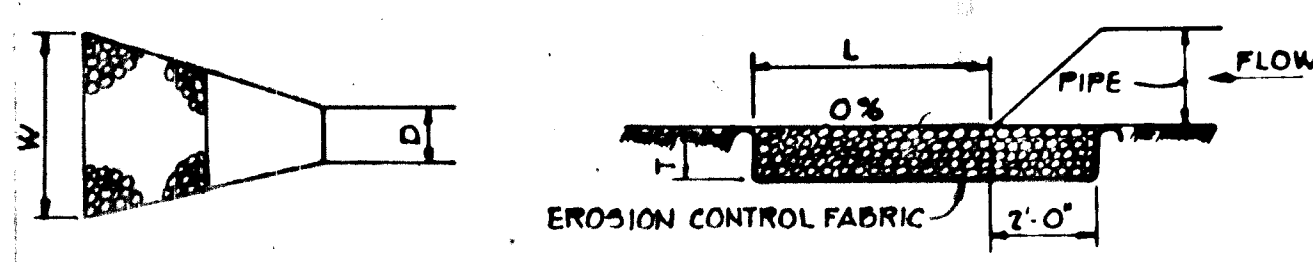
**STANDARD 7" COMBINATION CURB AND GUTTER**

NO SCALE



**SIDEWALK DETAIL**

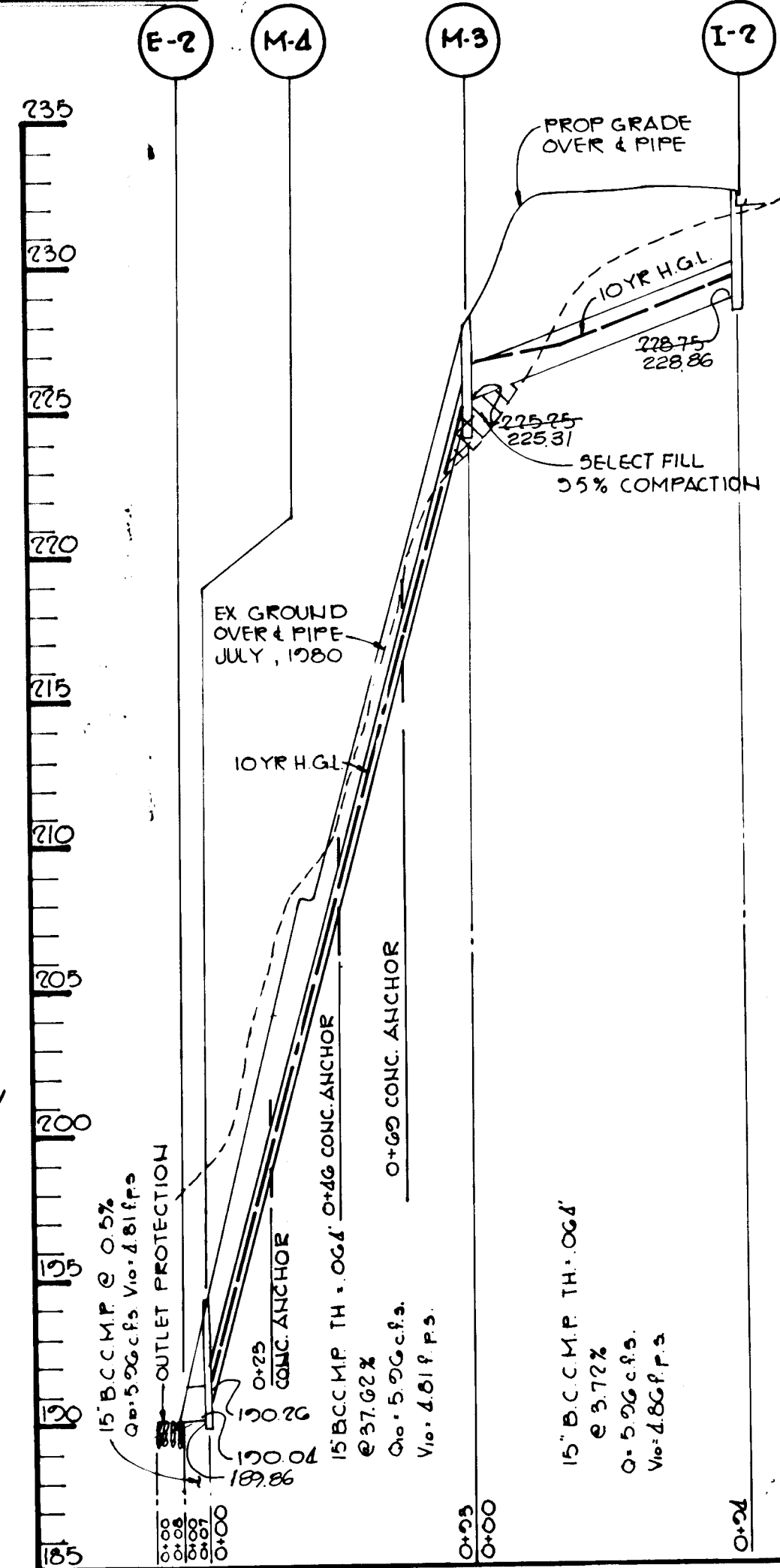
NO SCALE



STRUCTURE	MEDIUM STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	3'	6'	7.5'	5"
E-2	3'	6'	7.5'	5"

**OUTLET PROTECTION DETAIL**

NO SCALE



**PROFILE**

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

12-1-83 REVISED CONC. ANCHORS BETWEEN M-4 AND M-3  
 DATE 4/0 REVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF ENGINEERING  
 DATE

OWNER: PILGRIM'S PROGRESS, INC.  
 PO BOX 1916  
 201 NORTH CHARLES STREET  
 BALTIMORE MARYLAND 21203

DEVEL: CHATEAU BUILDERS, INC.  
 8655 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21043

PROJECT: **SETTLER'S LANDING**  
 SECTION 1, AREA 2 LOTS 51 THRU 94

AREA: ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND  
 TAX MAP #50 PARCEL 346

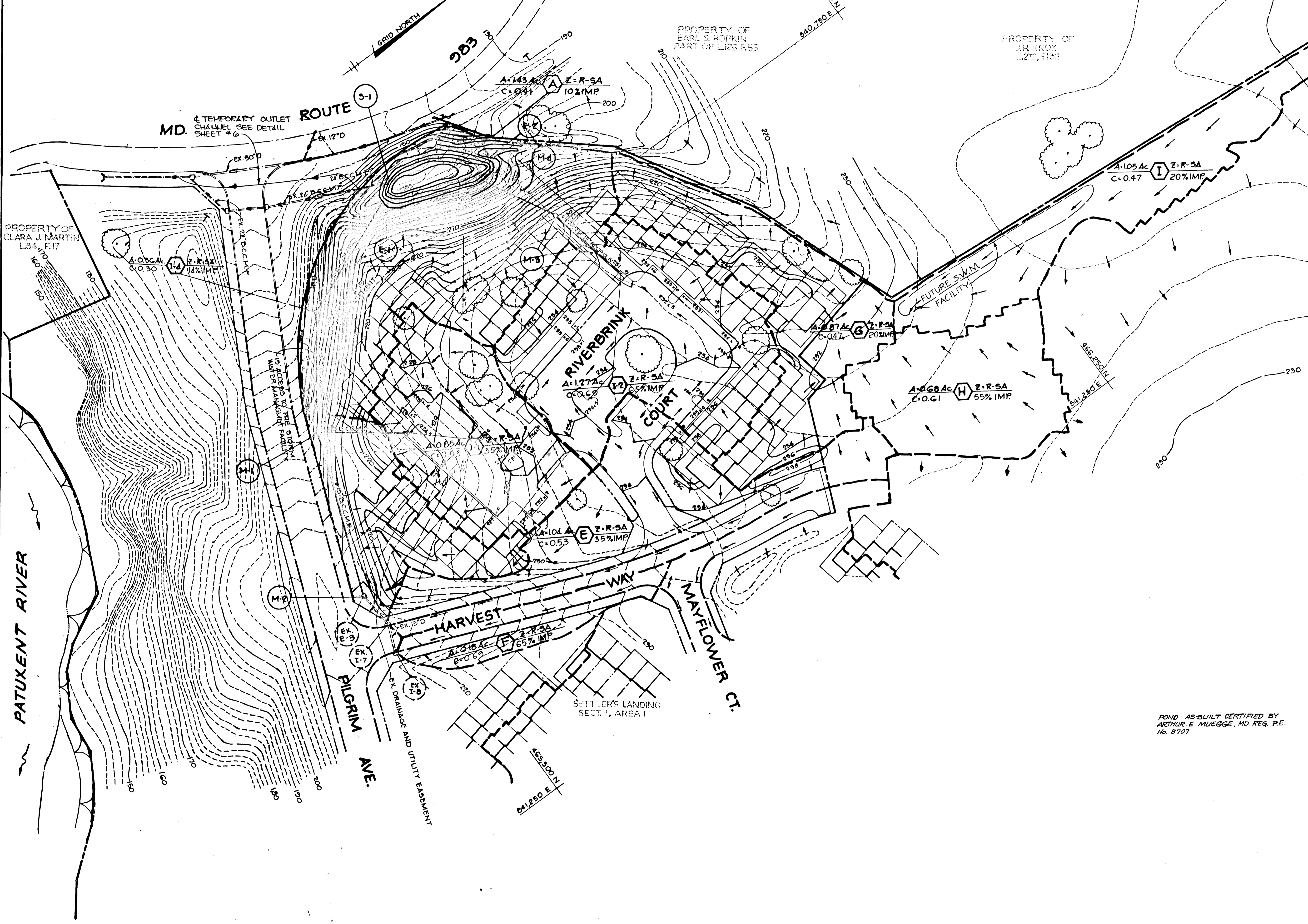
TITLE: DETAILS AND STORM DRAIN PROFILES

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 8559 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2699

DATE: 7-30-82  
 DESIGNED BY: R.J.W.  
 DRAWN BY: T.E.S.  
 PROJECT NO: 000300  
 DATE: 6-8-83  
 SCALE: AS SHOWN  
 DRAWING NO: 3 OF 7

STRUCTURE SCHEDULE						
NO	TYPE	LOCATION	INV IN	INV OUT	TOP ELEV	REMARKS
I-1	S-Comb.	See plan	—	220.00	225.00	H.C. STD. DETAIL SD-4.32
I-2	S-Comb.	See plan	—	228.75	232.40	H.C. STD. DETAIL SD-4.32
M-1	Type B MH	See plan	204.04	201.00	207.30	H.C. STD. DETAIL G 501
M-2	Type B MH	See plan	200.00	207.77	213.90	H.C. STD. DETAIL G 501
M-3	Type B MH	See plan	225.25	225.00	227.00	H.C. STD. DETAIL G 501
M-4	Type B MH	See plan	190.26	190.04	194.30	H.C. STD. DETAIL G 501
E-1	18" Metal End Sect	See plan	—	188.15	—	H.C. STD. DETAIL G 561
E-2	18" Metal End Sect	See plan	—	190.00	—	H.C. STD. DETAIL G 561
S-1	SWM Structure	See plan	187.80	187.30	—	SEE DETAIL SHEET G OF 7
I-4	K INLET	See plan	197.17	196.97	200.70	H.C. STD. DETAIL SD-4.13

\* REMOVE EX END SECTION



APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*John M. Marchman* 10-5-83  
 COUNTY DEVELOPER OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*William E. Reilly* 10-10-83  
 CHIEF, DEPARTMENT OF PUBLIC WORKS

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. Voth* 10-5-83  
 U.S. SOIL CONSERVATION SERVICE DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

*Stewart L. Lowman* 10/26/83  
 GLENWOOD S. LOWMAN 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* 9-30-83  
 ARTHUR E. MUEGGE DATE

APPROVED: *Robert W. Zichner* 10-4-83  
 HOWARD COUNTY DATE

4-16-85  ADDED TEMPORARY OUTLET CHANNEL

12-1-85  REVISED ACREAGE NUMBER AT AREA (E)

DATE NO REVISION

OWNER: PILGRIM'S PROGRESS INC.  
 PO BOX 1316  
 201 NORTH CHARLES STREET  
 BALTIMORE, MARYLAND 21203

DEVEL: CHATEAU BUILDERS, INC.  
 8650 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21043

PROJECT: **SETTLERS LANDING**  
 SECTION 1, AREA 2 LOTS 51 THRU 54

AREA: ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND  
 TAX MAP #50 PARCEL 346

TITLE: DRAINAGE AREA MAP

**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

7-30-83 DATE

FORMERLY EASTON (P-82-26)

DESIGNED BY: J.K.T.

DRAWN BY: L.S.T.

PROJECT NO: 000300

DATE: 6-8-83

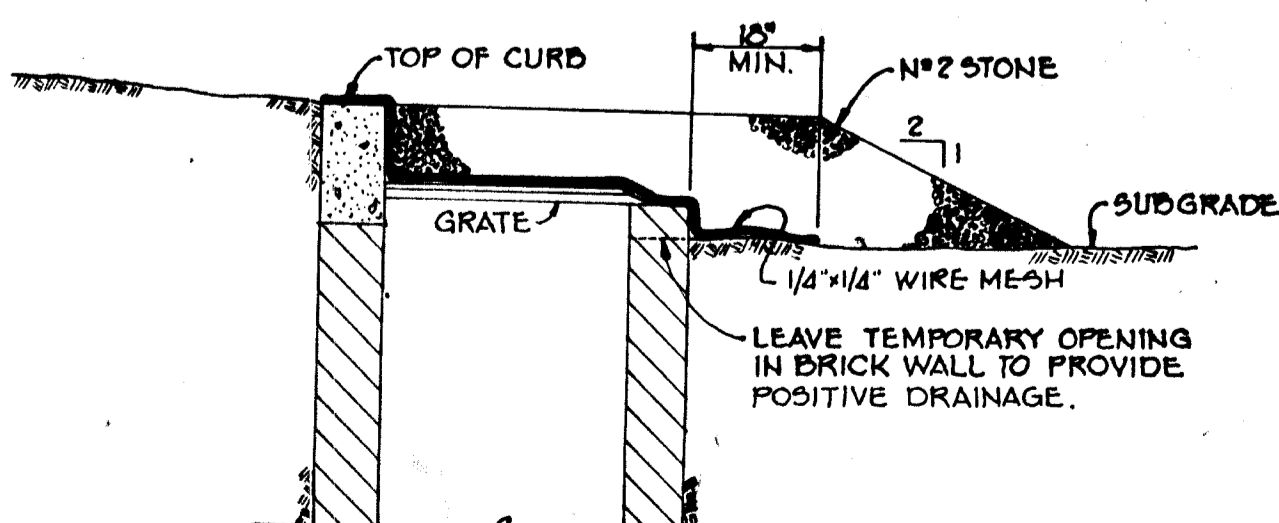
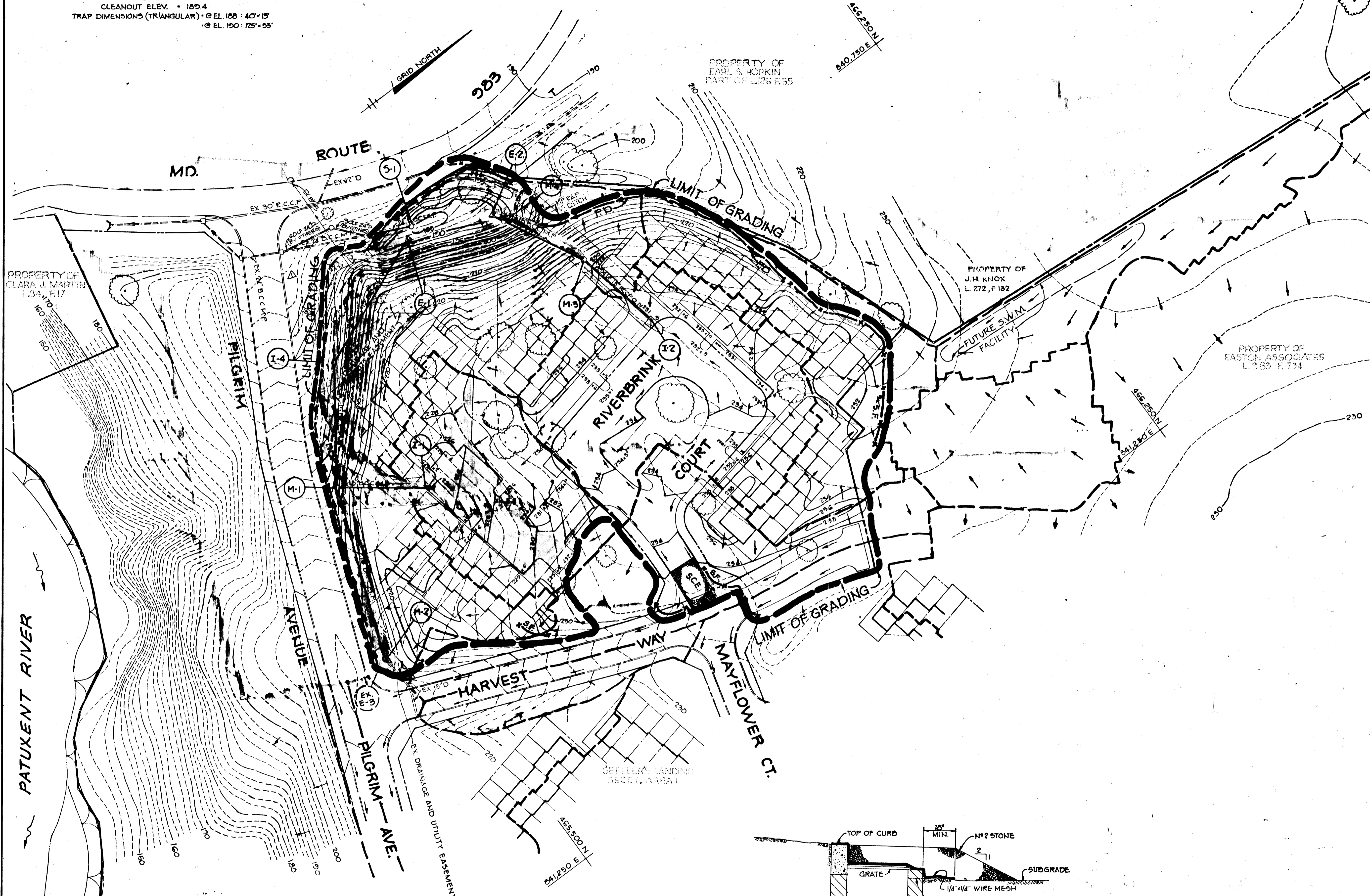
SCALE: 1"=50'

DRAWING NO. 4 OF 7

POND AS-BUILT CERTIFIED BY ARTHUR E. MUEGGE, MD. REG. P.E. No. 8707

882

SEDIMENT TRAP DATA  
 DRAINAGE AREA • 3.80 ACRES  
 DISTURBED AREA • 9.55 ACRES  
 VOLUME:  
 REQUIRED • 6840 C.F.  
 AVAILABLE • 8712 C.F.  
 CREST ELEV. • 191.5  
 BOTTOM ELEV. • 167.5  
 CLEANOUT ELEV. • 169.4  
 TRAP DIMENSIONS (TRIANGULAR) • @ EL. 188 : 40' x 15'  
 @ EL. 190 : 125' x 55'



**STONE FILTER @ I-1 AND I-2**  
 NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. Mueggler* 10-5-83  
 OFFICE OF PLANNING AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. Mueggler* 10-10-83  
 OFFICE OF PLANNING AND ZONING ADMINISTRATION

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*John W. Mueggler* 10-5-83  
 U.S. SOIL CONSERVATION SERVICE DATE

BY THE DEVELOPER:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL EMPLOYED IN THE CONSTRUCTION OF THIS 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.  
*Arthur E. Mueggler* 10/2/83  
 GLENNWOOD S. LOWMAN 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. THE PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT. I HAVE ADVISED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD COUNTY SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
*Arthur E. Mueggler* 9-30-83  
 ARTHUR E. MUEGGLER DATE

APPROVED: *Robert W. Zickler* 10-4-83  
 HOWARD COUNTY OFFICE OF PLANNING AND ZONING DATE

10/24/85 Δ REVISION  
 ROAD: REVISED GRADING, AROUND RELOCATED ACCESS

OWNER: PILGRIM'S PROGRESS, INC.  
 PO BOX 1916  
 201 NORTH CHARLES STREET  
 BALTIMORE, MARYLAND 21203

DEVELOPER: CHATEAU BUILDERS, INC.  
 8622 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21045

PROJECT: **SETTLERS LANDING**  
 SECTION 1, AREA 2 LOTS 51 THRU 54

AREA: ELECTION DISTRICT #6 HOWARD COUNTY, MARYLAND  
 TAX MAP #250 PARCEL 346

TITLE: GRADING AND SEDIMENT CONTROL PLAN

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2100

7-30-83 DATE  
 FORMERLY EASTON (P-82 CG)  
 DESIGNED BY: J.K.T.  
 DRAWN BY: L.S.T.  
 PROJECT NO: 000300  
 DATE: 6-8-83  
 SCALE: 1" = 50'  
 DRAWING NO. 5 OF 7



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 drivin 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

1. 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.

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

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

4. Backfilling shall conform to structural backfill as shown above.

5. 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

1. Materials

- a. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.
- b. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
- c. 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.
- d. 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.
- e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

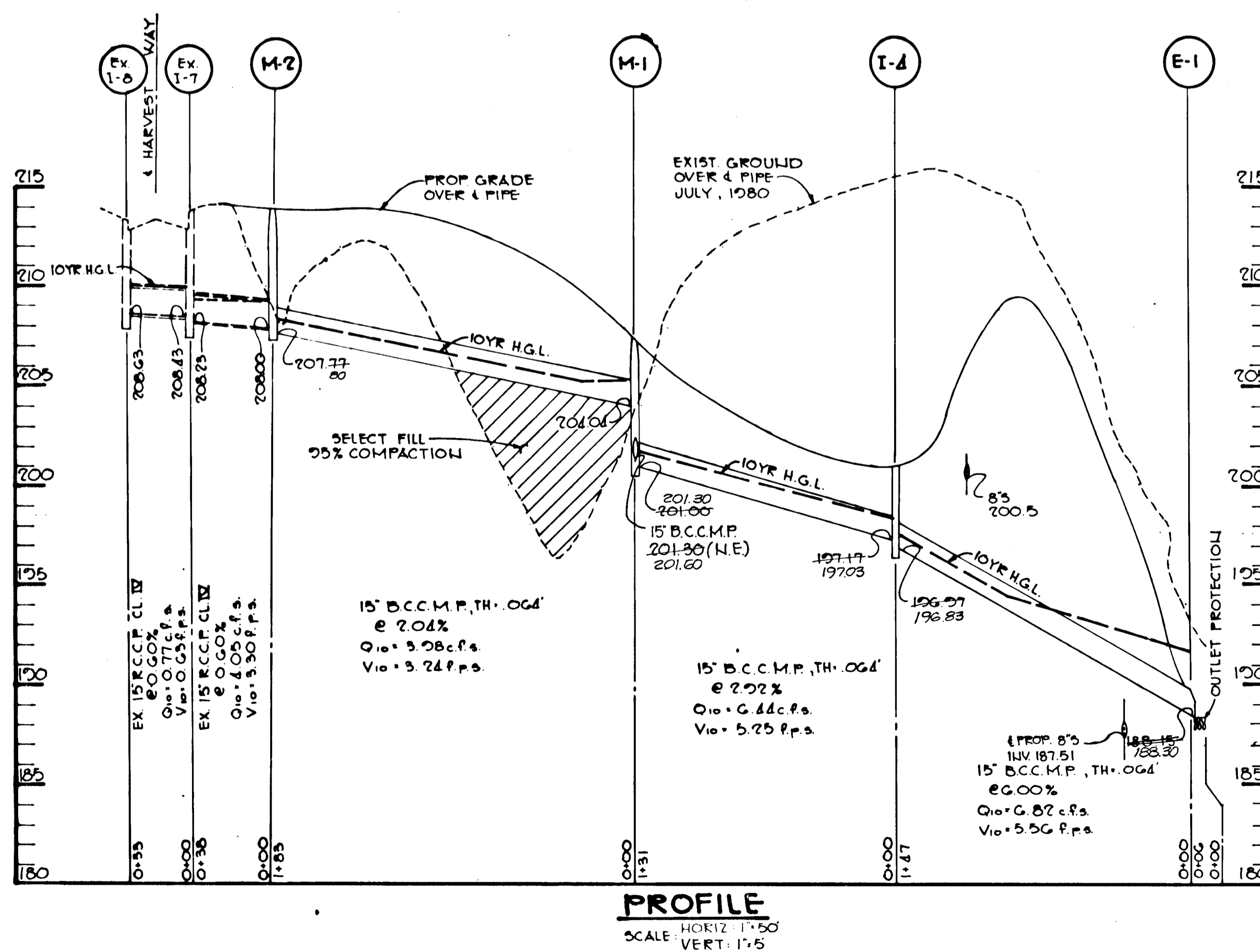
7. Finishing - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled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

8. 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.

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

VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications shown on or accompanying the drawings.



AS-BUILT SURVEY CERTIFIED BY ARTHUR E. MUEGGE, MD. REG. P.E. No. 8707

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Richard E. Muegge* 10-16-83  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John M. Muegge* 10-5-83  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*James M. Hahn* 10-5-83  
 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.  
*Glennwood S. Lowman* 9/16/83  
 GLENNWOOD S. LOWMAN DATE

"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* 9-30-83  
 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 W. Ziehm* 10-4-83  
 HOWARD S.O.D. DATE

DATE	NO.	REVISION
12-1-83	1	ADDED 15" B.C.C.M.P. (15") TO M-1

OWNER: PILGRIM'S PROGRESS, INC.  
 PO BOX 1316  
 701 NORTH CHARLES STREET  
 BALTIMORE, MARYLAND 21205

DEVELOPER: CHATEAU BUILDERS, INC.  
 8055 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21043

PROJECT: SETTLER'S LANDING  
 SECTION 1, AREA 2 LOTS 51 THRU 54

AREA: ELECTION DISTRICT 149 HOWARD COUNTY, MARYLAND  
 TAX MAP 149 50 PARCEL 34G

TITLE: STORM WATER MANAGEMENT SPECIFICATIONS AND STORM DRAIN PROFILE

THE RIEMER GROUP, INC.  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 8655 Baltimore National Pike, Ellicott City, Maryland, 21043 301 461-2690

DATE: 9-30-83  
 FORMERLY EASTON (P-82-26)  
 DESIGNED BY: J.K.T.  
 DRAWN BY: T.E.S.  
 PROJECT NO: 000300  
 DATE: 9-8-83  
 SCALE: AS SHOWN  
 DRAWING NO. 7 OF 7