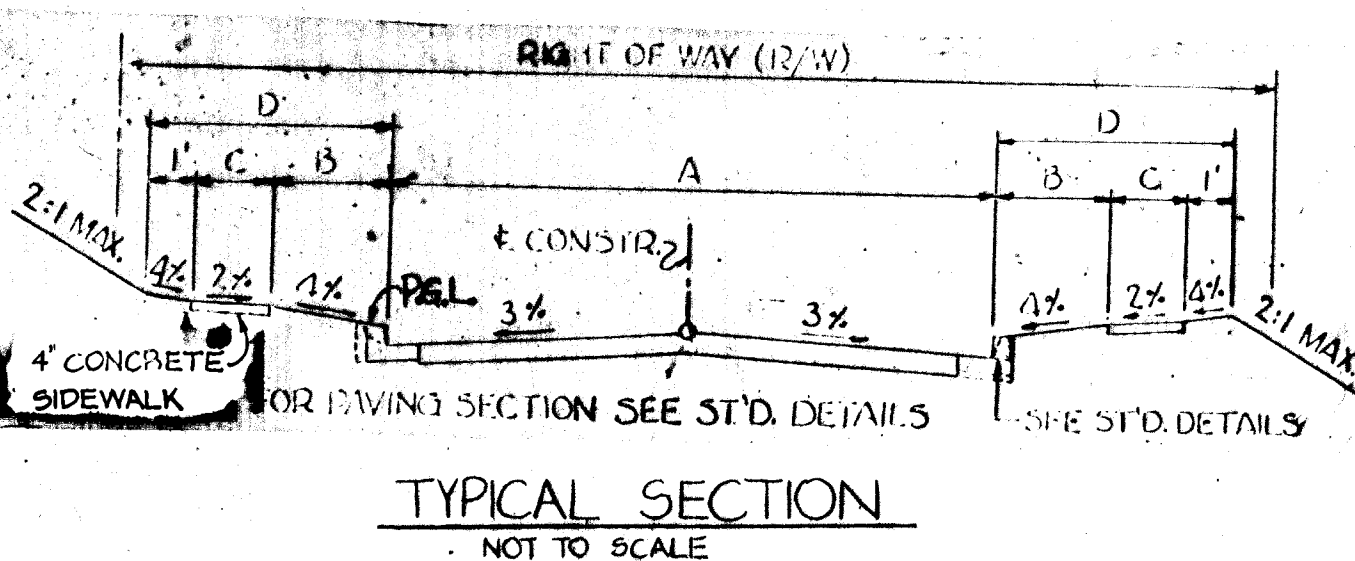


STREET AND STATION LIMITS	TYPE OF TRAFFICWAY	A	B	C	D	Q/W	EX. ZONING	DESIGN SPEED	PAVING SECTION
MARY LEE LA STA. 0+00 TO 14+29	LOCAL	30'	4'	4'	9'	60'	RSC	30 MPH	P-2
MARY LEE LA STA. 14+29 TO 16+72.72	LOCAL	30'	4'	4'	9'	60'		30 MPH	P-2
STYERS CT. STA. 0+00 TO 24+77.43	CUL-DE-SAC	24'	4'	4'	7'	50'		25 MPH	P-2
STONE TRAIL CT. STA. 0+00 TO 14+33.33	CUL-DE-SAC	24'	4'	4'	10'	50'		25 MPH	P-2
GRIFFITH CT. STA. 0+00 TO 2+82.00	CUL-DE-SAC	18'	4'	4'	7'	50'		25 MPH	P-2
LEISHEAR RD STA. 0+00 TO 0+66 & 0+15 TO 0+36	PRIN. ART.	SEE TYPICAL SECTION						40 MPH	P-3

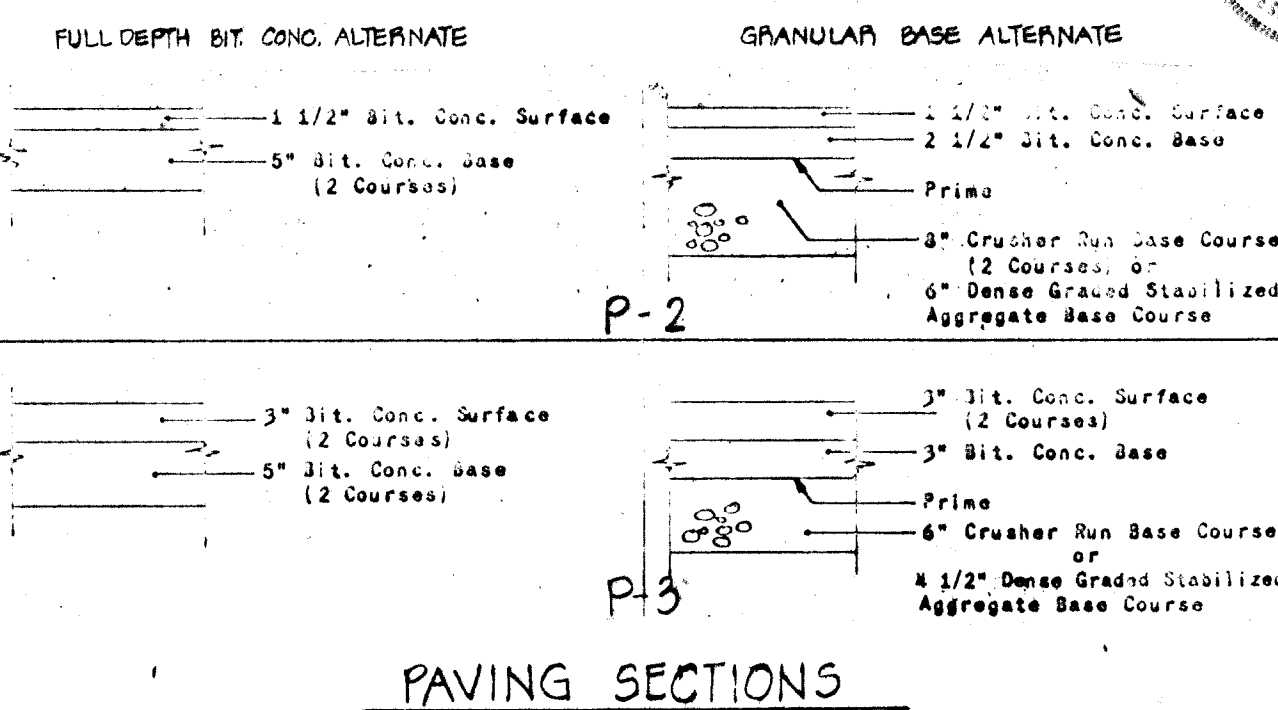
NOTE: ALL ROADS TO HAVE MODIFIED COMBINATION CURB & GUTTER, EXCEPT LEISHEAR RD, WHICH SHALL HAVE STANDARD HOWARD CO. CONC. CURB & GUTTER.  
 NOTES: SURVEY IS BASED ON HOWARD COUNTY CONTROL STATIONS 204-0002 & 204-0001



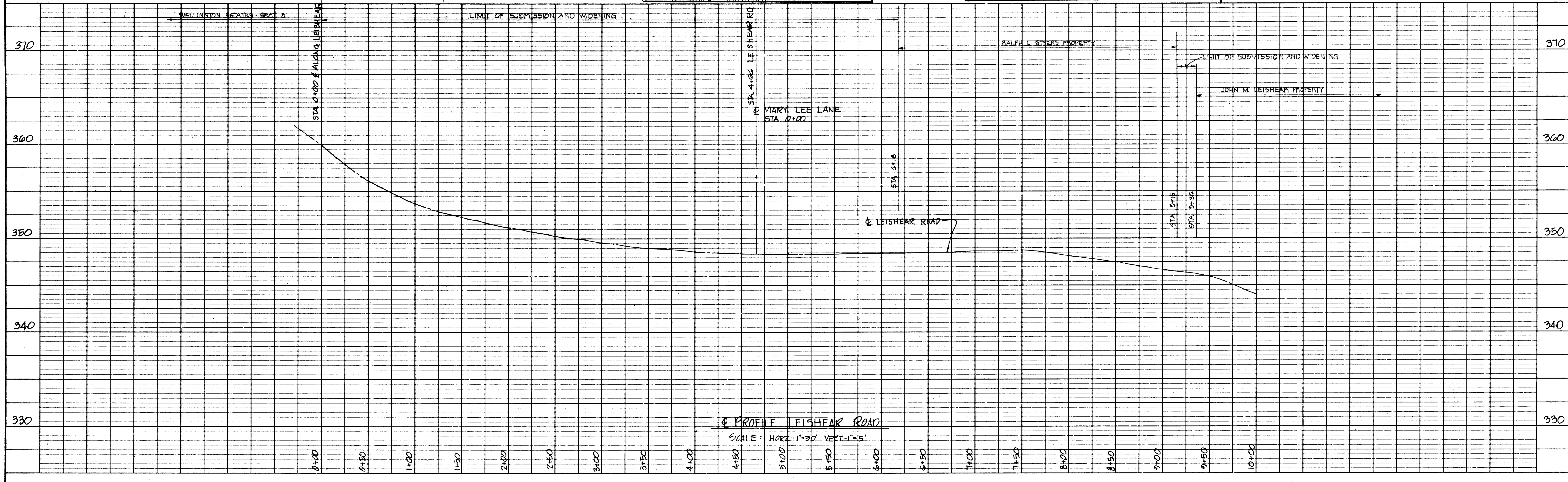
- NOTES:
- THE BASE WILL BE PRIMED IN ACCORDANCE WITH SECTION C-30-3 AS PROVIDED IN THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS
  - A TACK COAT IS REQUIRED IN ACCORDANCE WITH SECTION C-31-4 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS.
  - LEISHEAR ROAD IS AN EXISTING ROAD
  - STREET LIGHTS (X) TO BE ONE OF THE FOLLOWING:
    - A. 175 WATT 'MODERN' MERCURY VAPOR POST TOP FIXTURES INSTALLED ON 14 FOOT GALVANIZED STEEL POLES, OR
    - B. 250 WATT MERCURY VAPOR PENDANT MOUNTED FIXTURES INSTALLED ON 25 FOOT GALVANIZED STEEL POLES.

APPROVED DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF ENGINEERING  
 DATE 2/1/82

APPROVED OFFICE OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION  
 DATE 4/3/82

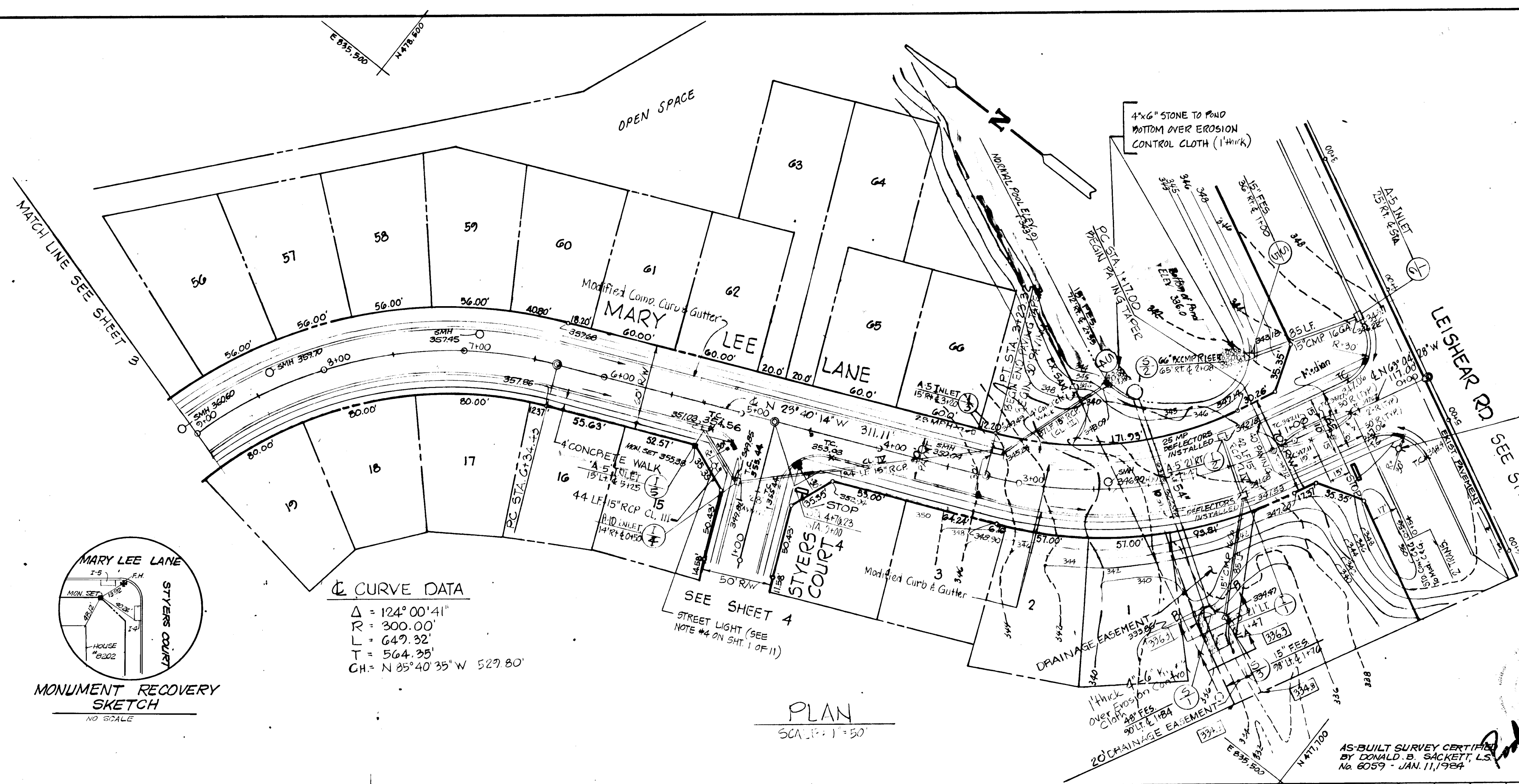


OWNER: MURRAY HILL ASSOCIATES  
 DEVELOPER: MURRAY HILL ASSOCIATES  
 PROJECT: ROAD PROFILE - LEISHEAR ROAD  
 LOCATION: 6TH ELECTION DISTRICT, HOWARD COUNTY, MD.  
 DATE: FEBRUARY, 1981  
 SCALE: AS SHOWN  
 DRAWING NO.: 1 OF 11



DATE	
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REVISIONS	
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**△ CURVE DATA**

Δ = 37° 24' 14"

R = 300.00'

L = 206.32'

T = 107.43'

CH = N 43° 22' 21" W 202.20'

**△ CURVE DATA**

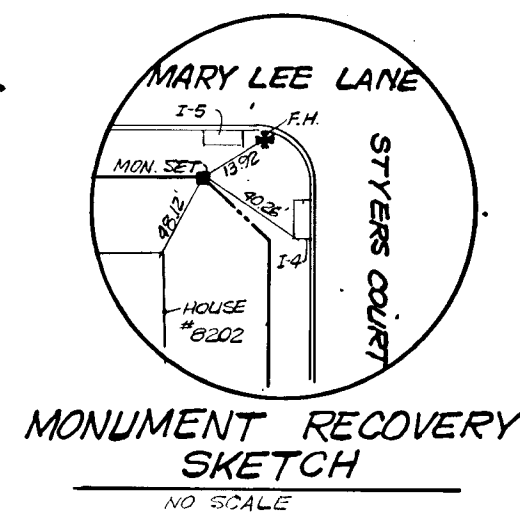
Δ = 124° 00' 41"

R = 300.00'

L = 647.32'

T = 564.35'

CH = N 25° 40' 35" W 529.80'



**PLAN**

SCALE: 1" = 50'

APPROVED DEPARTMENT OF PUBLIC WORKS

*Kearin & Ray* 4-7-82 DATE

CHIEF, BUREAU OF ENGINEERING

APPROVED OFFICE OF PLANNING AND ZONING

*John W. ...* 4-2-82 DATE

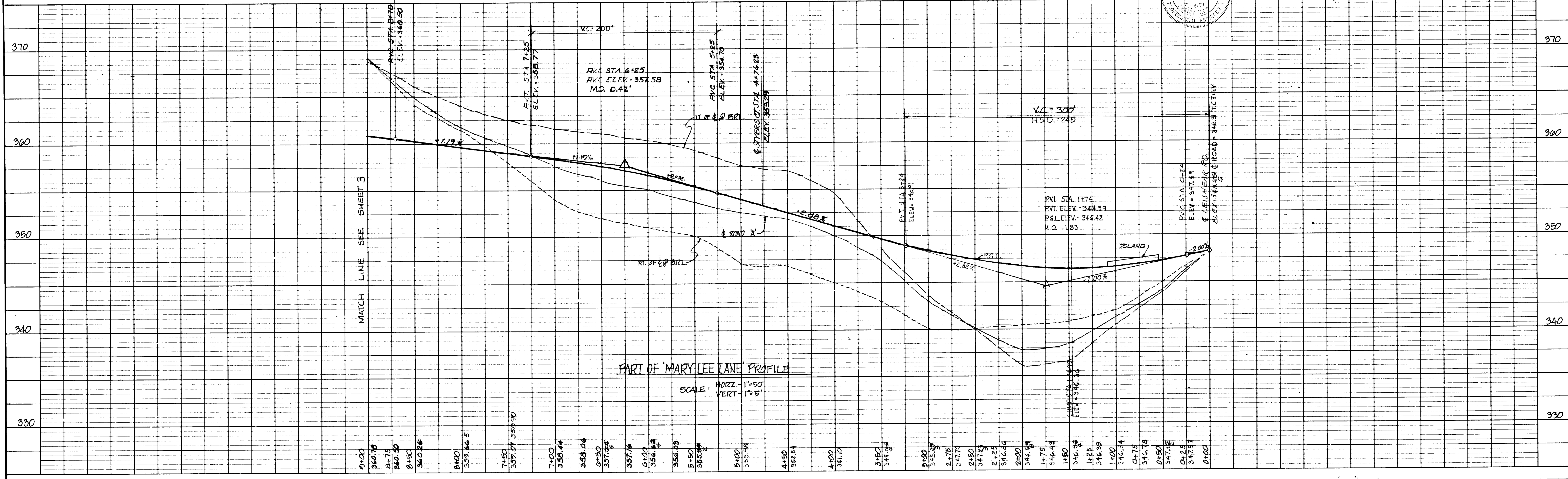
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

**OWNER & DEVELOPER**

JOHN T. LEISHEAR, JR.  
RALPH L. STYERS, SR.  
FRANK A. COOK, JR.  
MALCOM B. KANE, ATTORNEY  
3716 COURT PLACE, ELLICOTT CITY, MD

MURRAY HILL ASSOCIATES  
218 TEACHERS BUILDING  
COLUMBIA, MD 21044

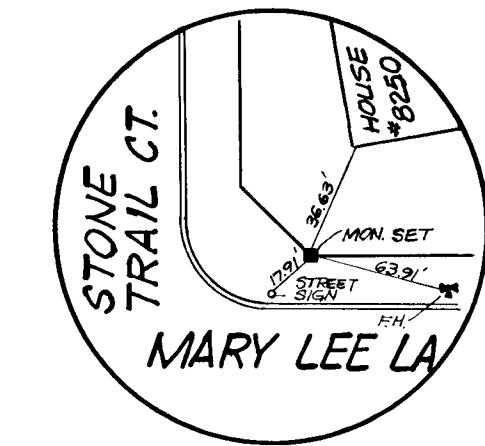
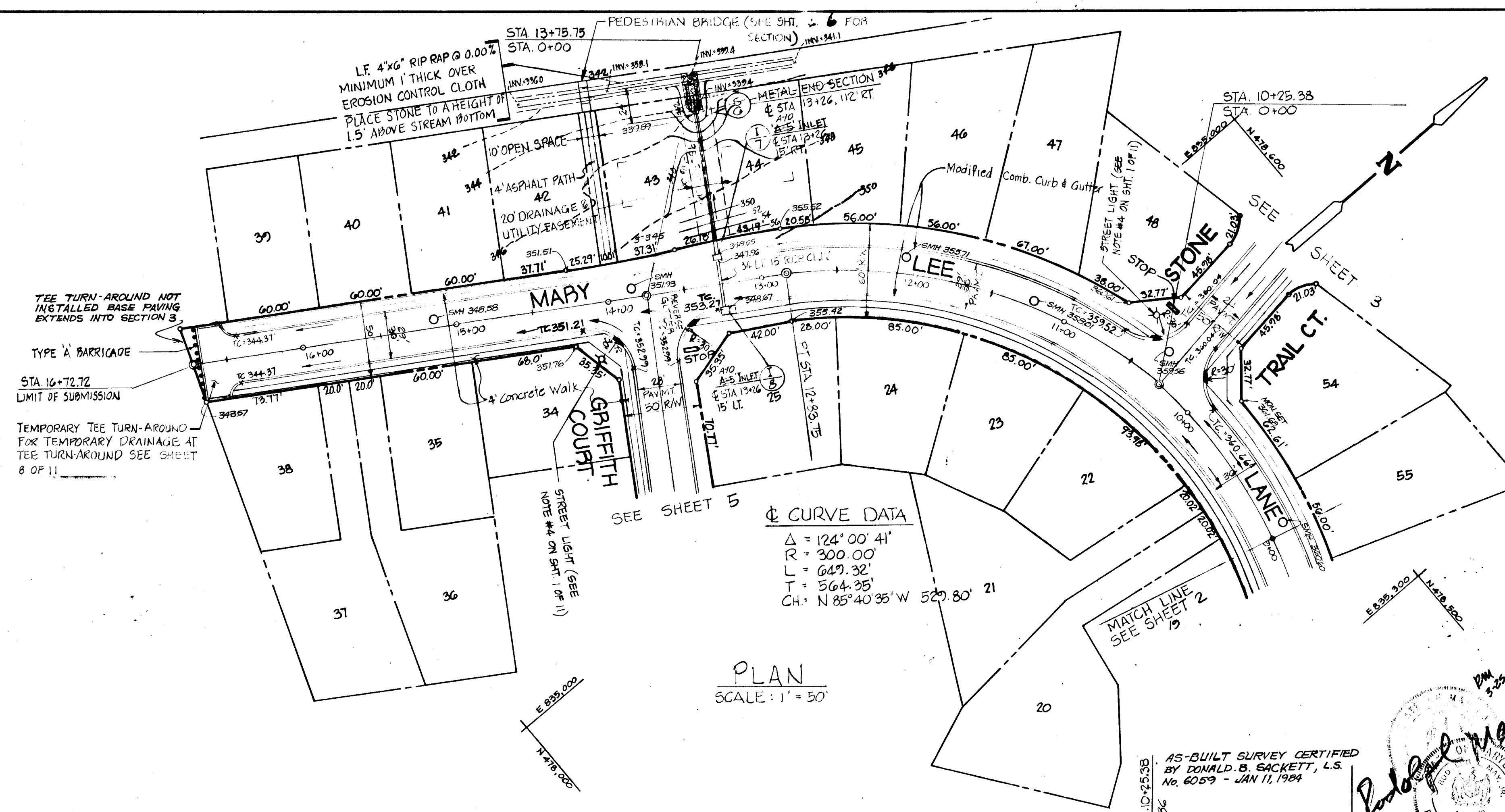
TITLE	MARY LEE LANE - STA. 0+00 TO STA. 9+00		
PROJECT	MURRAY HILL - SECTION I		
LOCATION	6TH ELECTION DISTRICT	HOWARD COUNTY, MD.	
DATE	FEBRUARY, 1981	DESIGN BY: J.J.B.	DRAWN BY: D.T.M.
SCALE	AS SHOWN	JOB NO.: 80034	CHECKED BY: P.L.M.
		DRAWING NO.: 2 OF 11	
boender associates		engineers surveyors planners	
BALTIMORE 301 465-7777 • SALISBURY 301 749-1285			



908

DATE	
BY	
REVISION	
NO.	
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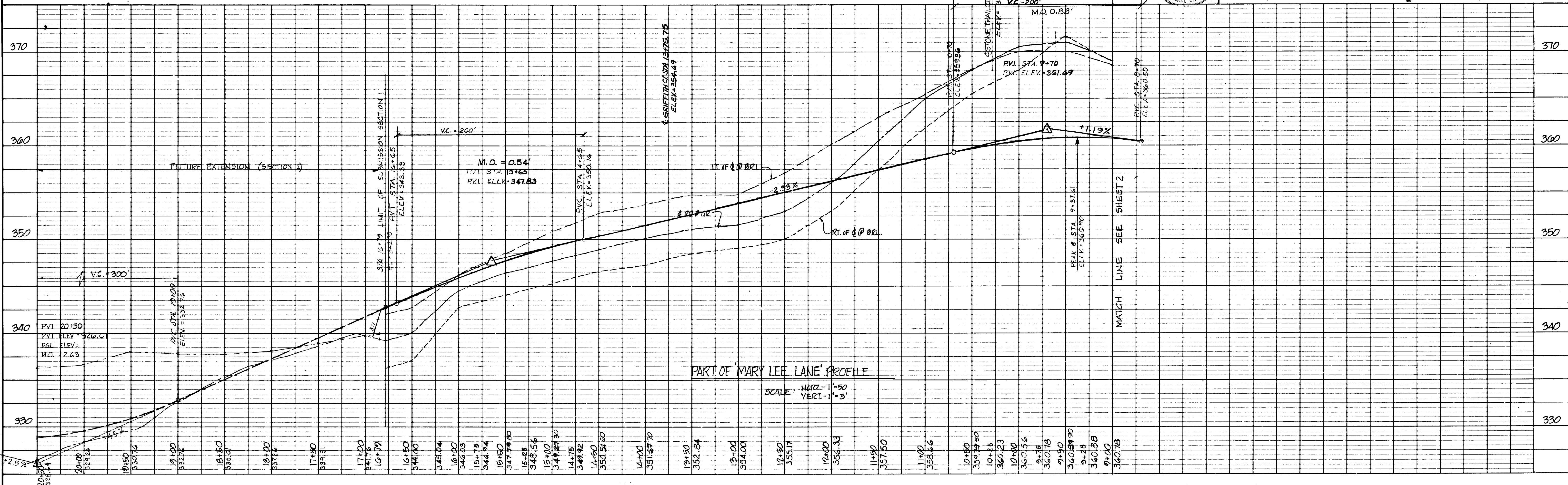
APPROVED OFFICE OF PUBLIC WORKS  
*William E. Rode* 4-7-82  
 CHIEF BUREAU OF ENGINEERING

APPROVED OFFICE OF PLANNING AND ZONING  
*John W. Muschman* 4-2-82  
 CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

**OWNER:**  
 JOHN T. LEISHEAR JR.  
 RALPH STYERS SR.  
 FRANK A. COOK  
 % MALCOM B. KANE ATTORNEY  
 3716 COURT PLACE  
 ELLICOTT CITY, MD 21043

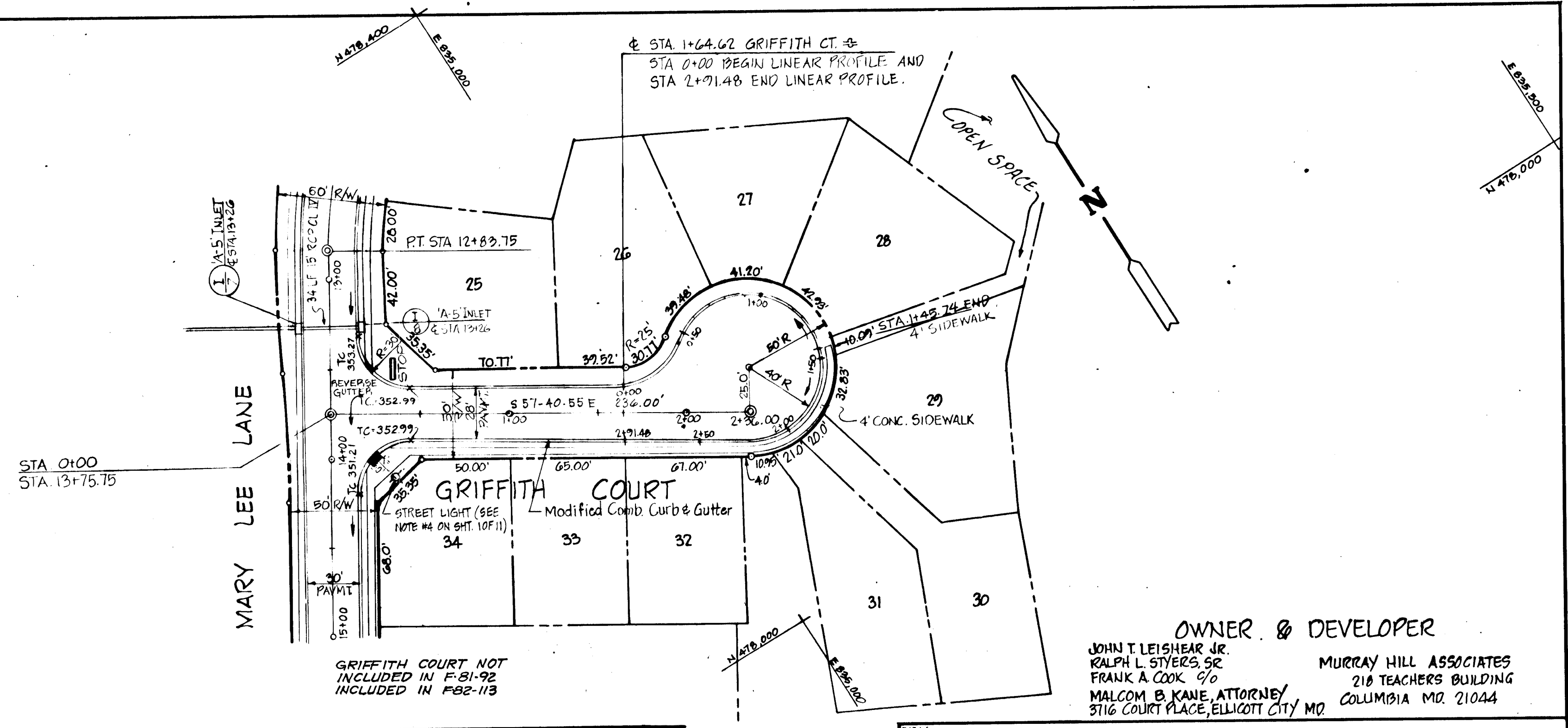
**DEVELOPER:**  
 MURRAY HILL ASSOCIATES  
 218 TEACHERS BLDG.  
 COLUMBIA, MD 21044

TITLE	MARY LEE LANE STA. 9+00 TO LIMIT OF SUBMISSION		
PROJECT	MURRAY HILL - SECTION I		
LOCATION	6TH ELECTION DISTRICT	HOWARD COUNTY, MD.	
DATE	FEB., 1981	DESIGN BY: JJB.	DRAWN BY: DTM. CHECKED BY: P.L.M.
SCALE	AS SHOWN	JOB NO.: 80034	DRAWING NO.: 3 OF 11
boender associates		engineers surveyors planners	
BALTIMORE 301 465-7777 • SALISBURY 301 749-1286			



PLAN  
 SURVEYED, PLOTTED, & M.A. NOTED.  
 ALIGNMENT CHECKED.  
 NOTE BOOK NO. \_\_\_\_\_

PROFILE  
 SURVEYED, PLOTTED, & M.A. NOTED.  
 STRUCTURE NOTATIONS CHECKED.  
 NOTE BOOK NO. \_\_\_\_\_



APPROVED DEPARTMENT OF PUBLIC WORKS  
*William B. Ray* 4-7-82  
 CHIEF, BUREAU OF ENGINEERING DATE

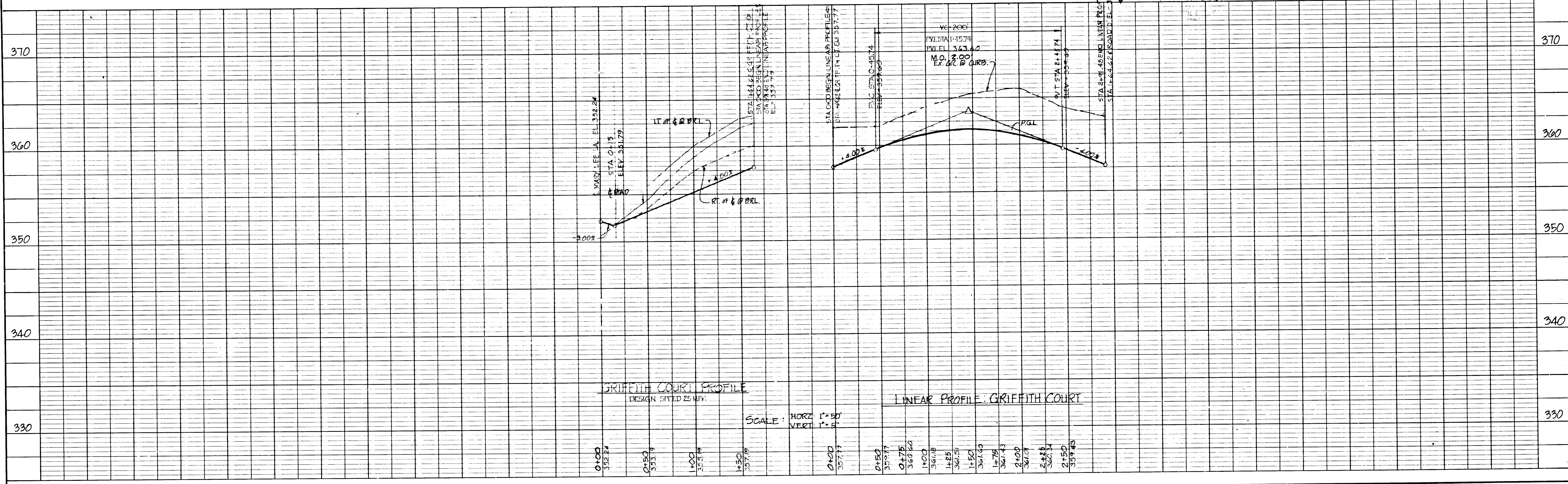
APPROVED OFFICE OF PLANNING AND ZONING  
*William W. MacArthur* 4-2-82  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

TITLE  
 PROJECT: GRIFFITH COURT  
 MURRAY HILL - SECTION I

LOCATION: 6TH ELECTION DISTRICT HOWARD COUNTY, MD.

DATE: FEBRUARY, 1981 DESIGN BY: J.J.B. DRAWN BY: D.T.M. CHECKED BY: P.L.M.  
 SCALE: AS SHOWN JOB NO.: 80034 DRAWING NO.: 5 OF 11

boender associates  
 BALTIMORE 301 465-7777 • SALISBURY 301 749-1286  
 engineers, surveyors, planners

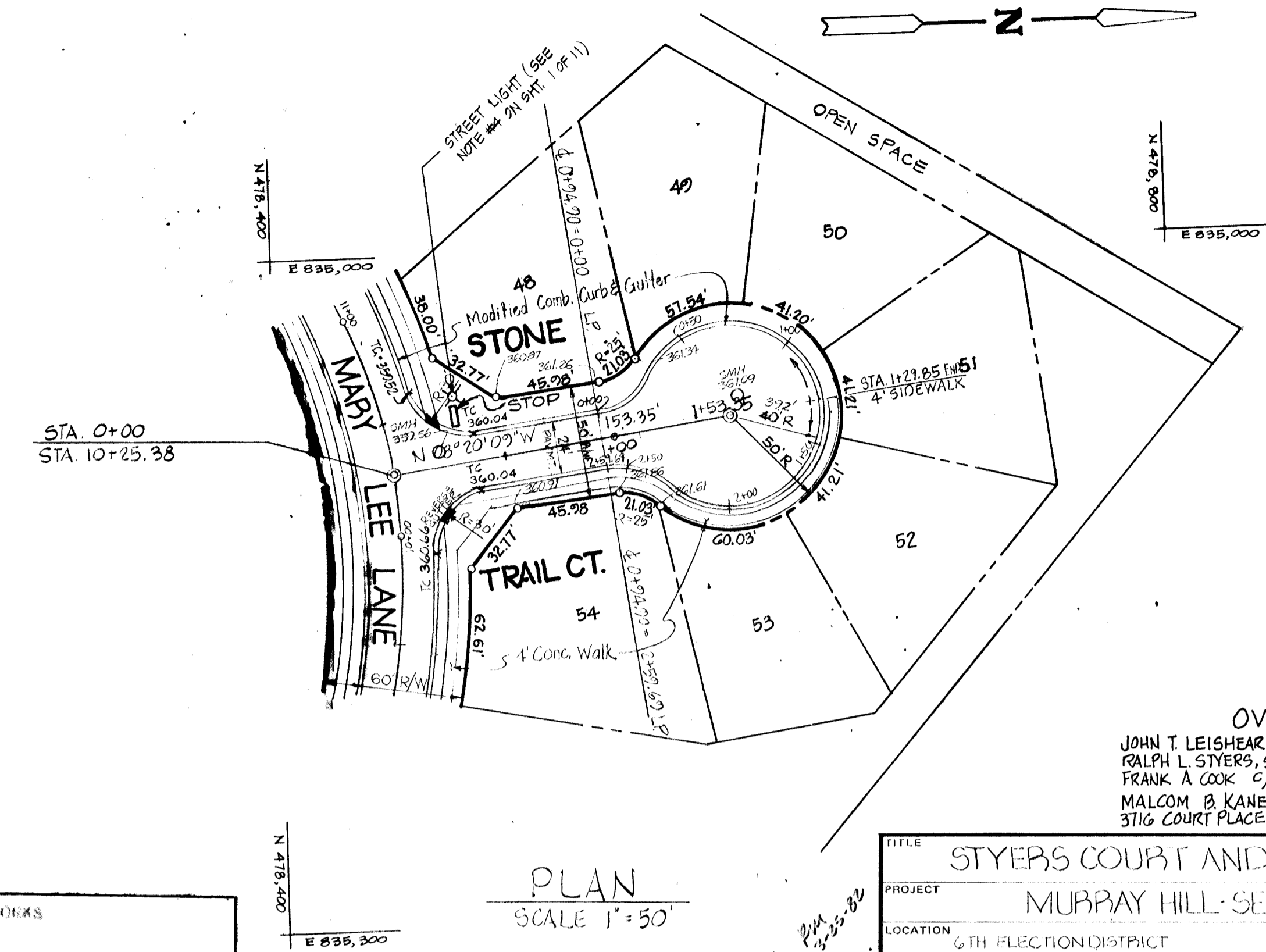
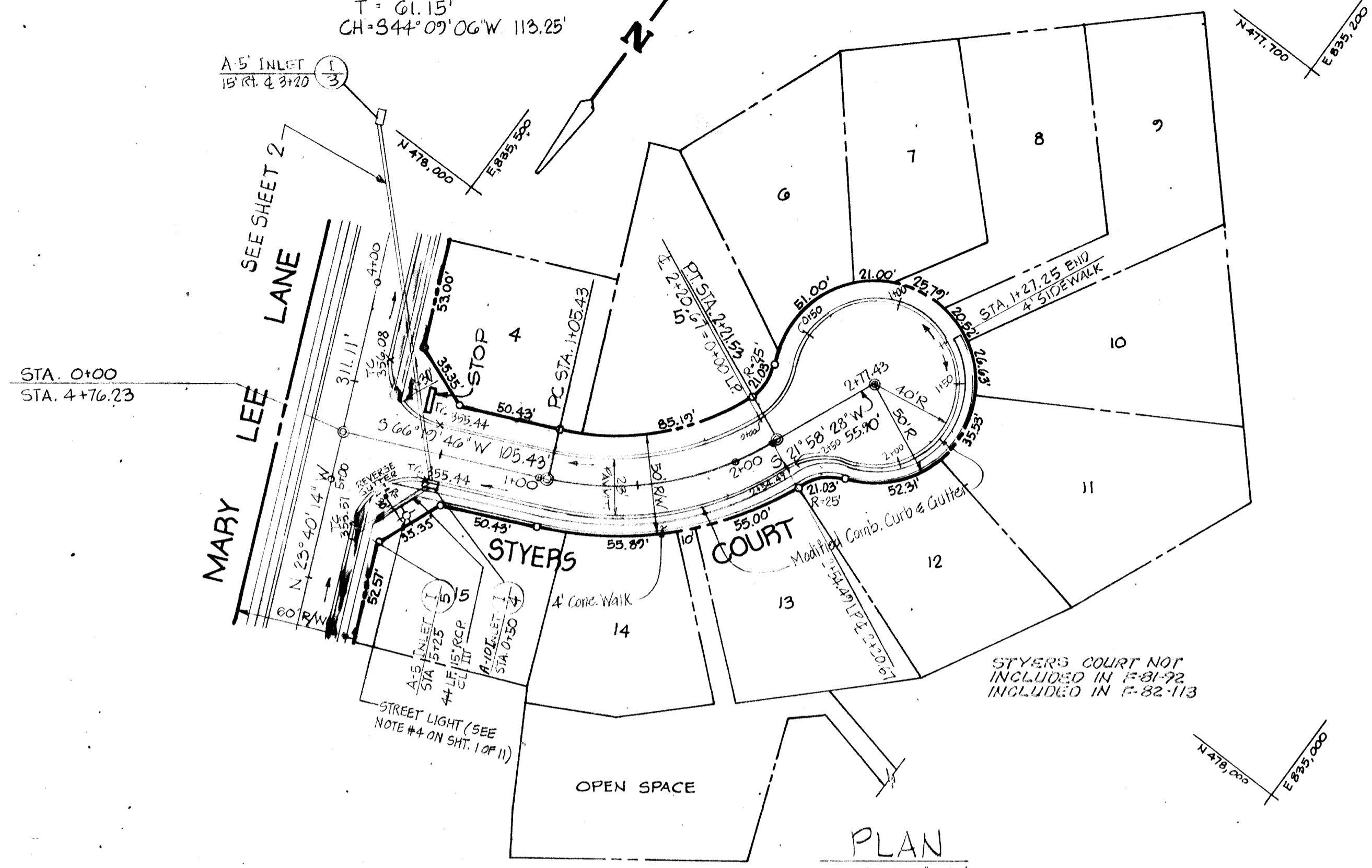


# 908

PLAN  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 TOWN: MURRAY HILL  
 COUNTY: HOWARD  
 NOTE BOOK: ALIGNED CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

PROFILE  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 TOWN: MURRAY HILL  
 COUNTY: HOWARD  
 NOTE BOOK: GRADES CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

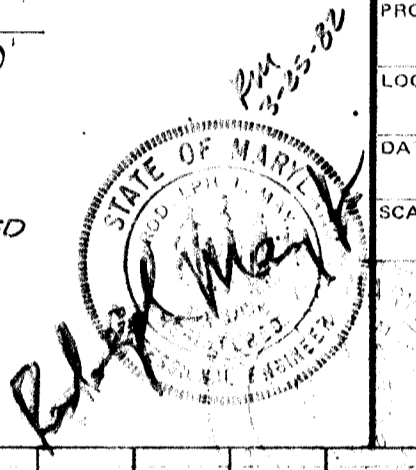
☉ CURVE DATA  
 $\Delta = 44^\circ 21' 18''$   
 $R = 150.00'$   
 $L = 116.10'$   
 $T = 61.15'$   
 $CH = 844^\circ 09' 06'' W 113.25'$



OWNER & DEVELOPER  
 JOHN T. LEISHEAR, JR.  
 RALPH L. SYERS, SR.  
 FRANK A. COOK, C/O  
 MALCOLM B. KANE, ATTORNEY  
 3116 COURT PLACE, ELLICOTT CITY, MD.  
 MURRAY HILL ASSOCIATES  
 218 TEACHERS BUILDING  
 COLUMBIA, MD. 21044

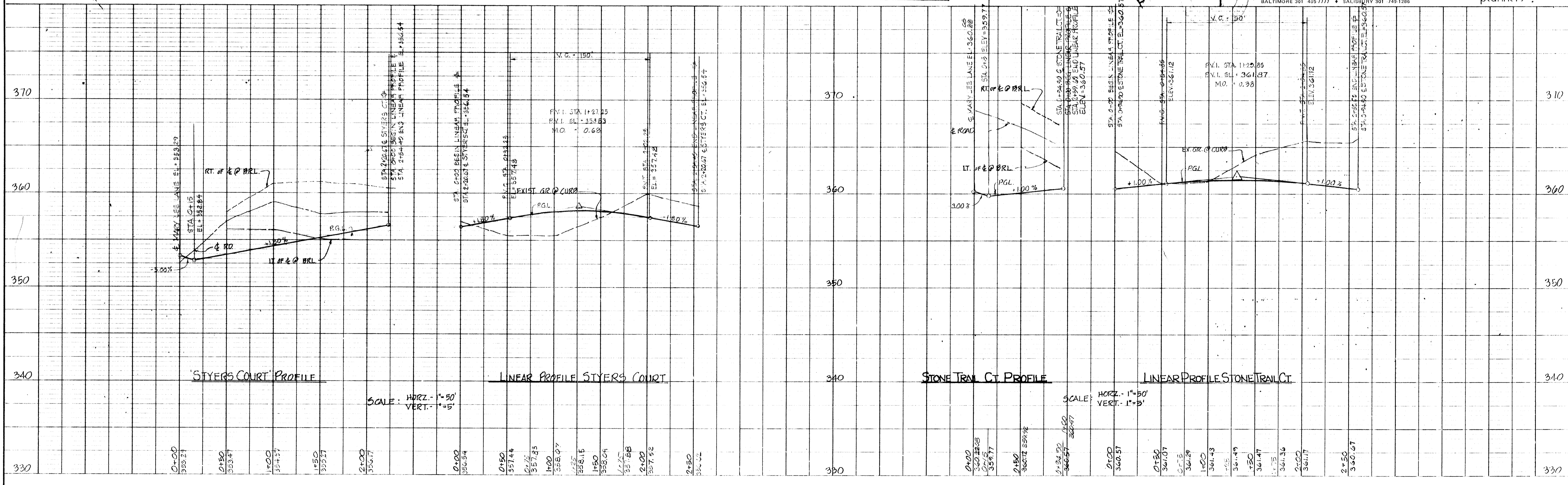
APPROVED DEPARTMENT OF PUBLIC WORKS  
 \_\_\_\_\_ DATE: 4-7-81  
 CHIEF, BUREAU OF ENGINEERING  
 APPROVED OFFICE OF PLANNING AND ZONING  
 \_\_\_\_\_ DATE: 4-2-81  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

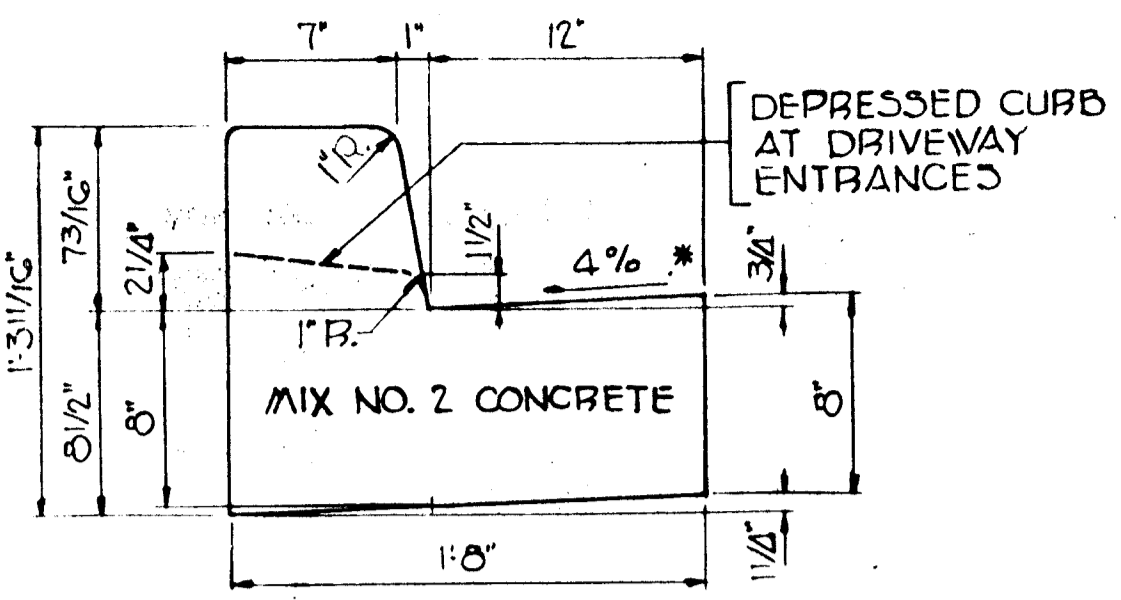
AS-BUILT SURVEY CERTIFIED  
 BY DONALD B. SACKETT, L.S.  
 No. 0039 JAN 11, 1985



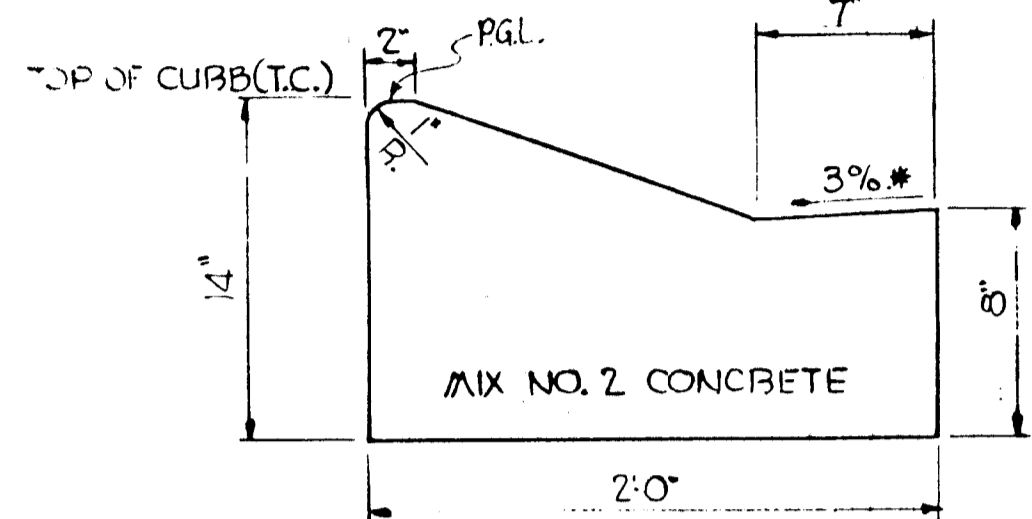
TITLE: STYERS COURT AND STONE TRAIL CT.  
 PROJECT: MURRAY HILL SECTION I  
 LOCATION: 6TH ELECTION DISTRICT HOWARD COUNTY, MD.  
 DATE: FEB, 1981 DESIGN BY: J.J.B. DRAWN BY: DTM/J.J.B. CHECKED BY: P.L.M.  
 SCALE: AS SHOWN JOB NO.: 80034 DRAWING NO.: 4 OF 11

baender associates  
 engineers  
 surveyors  
 planners





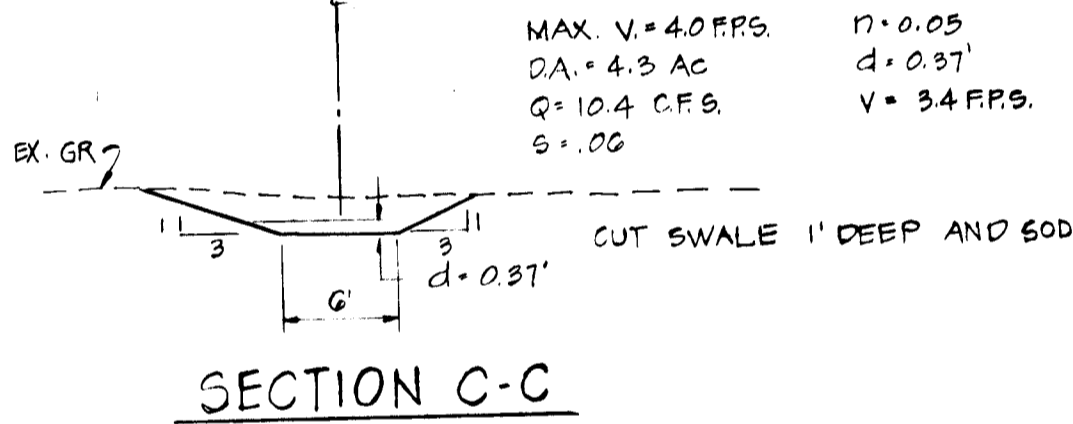
STANDARD 7' COMBINATION CURB AND GUTTER



MODIFIED COMBINATION CURB AND GUTTER

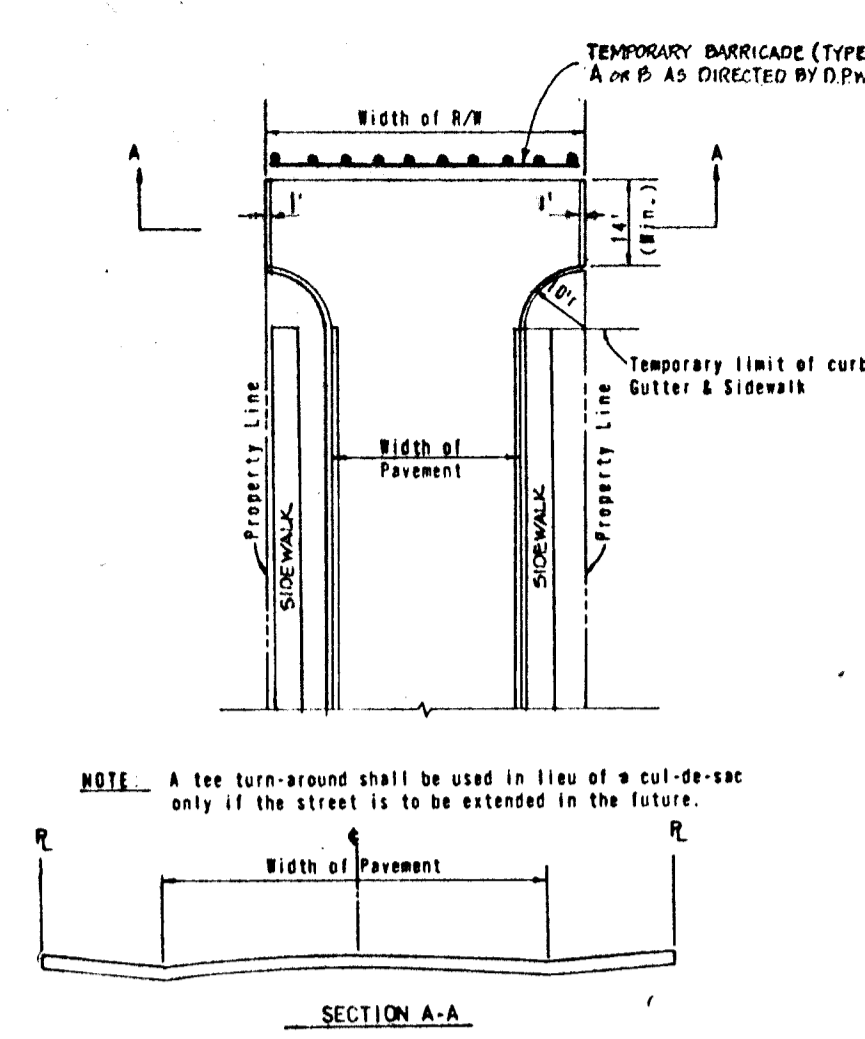
\* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
ST'D. ROAD & STREET DETAILS  
COMBINATION CURB  
AND GUTTER  
DRAWN BY: [blank]  
CHECKED BY: [blank]  
SCALE: NONE  
STD. NO. 11

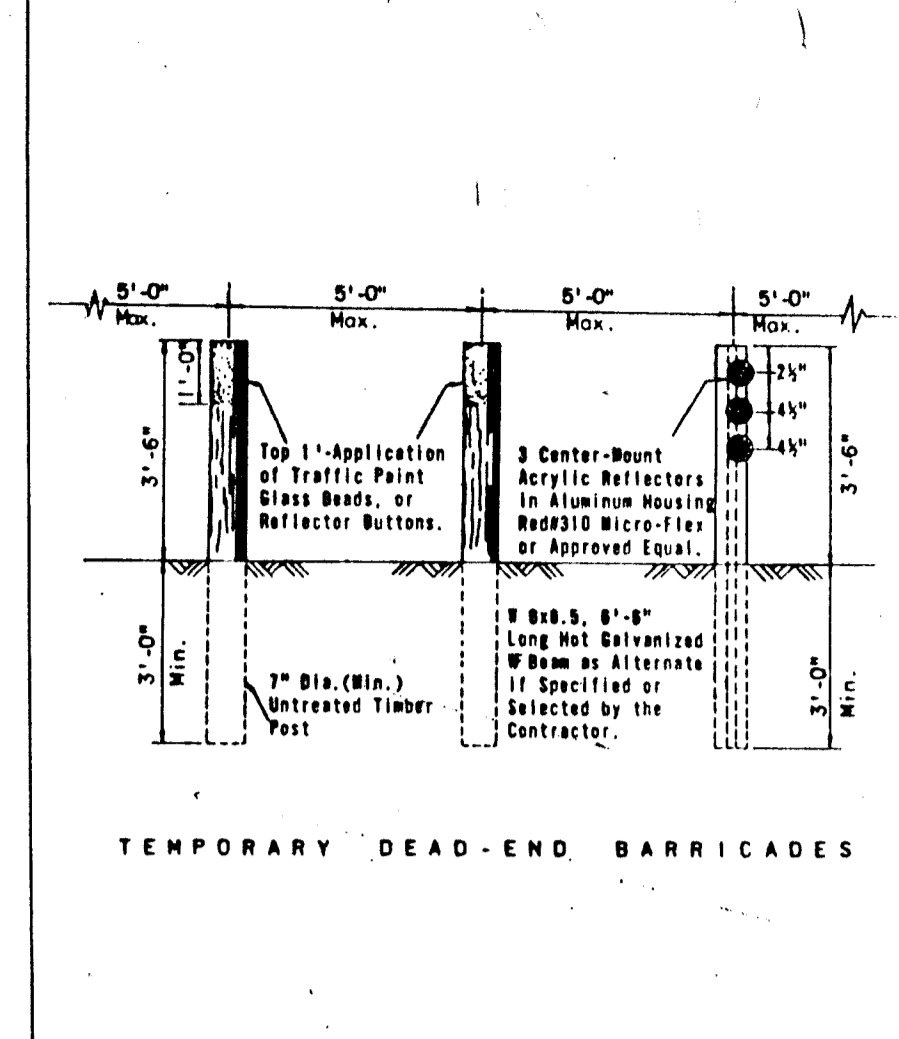


SECTION C-C

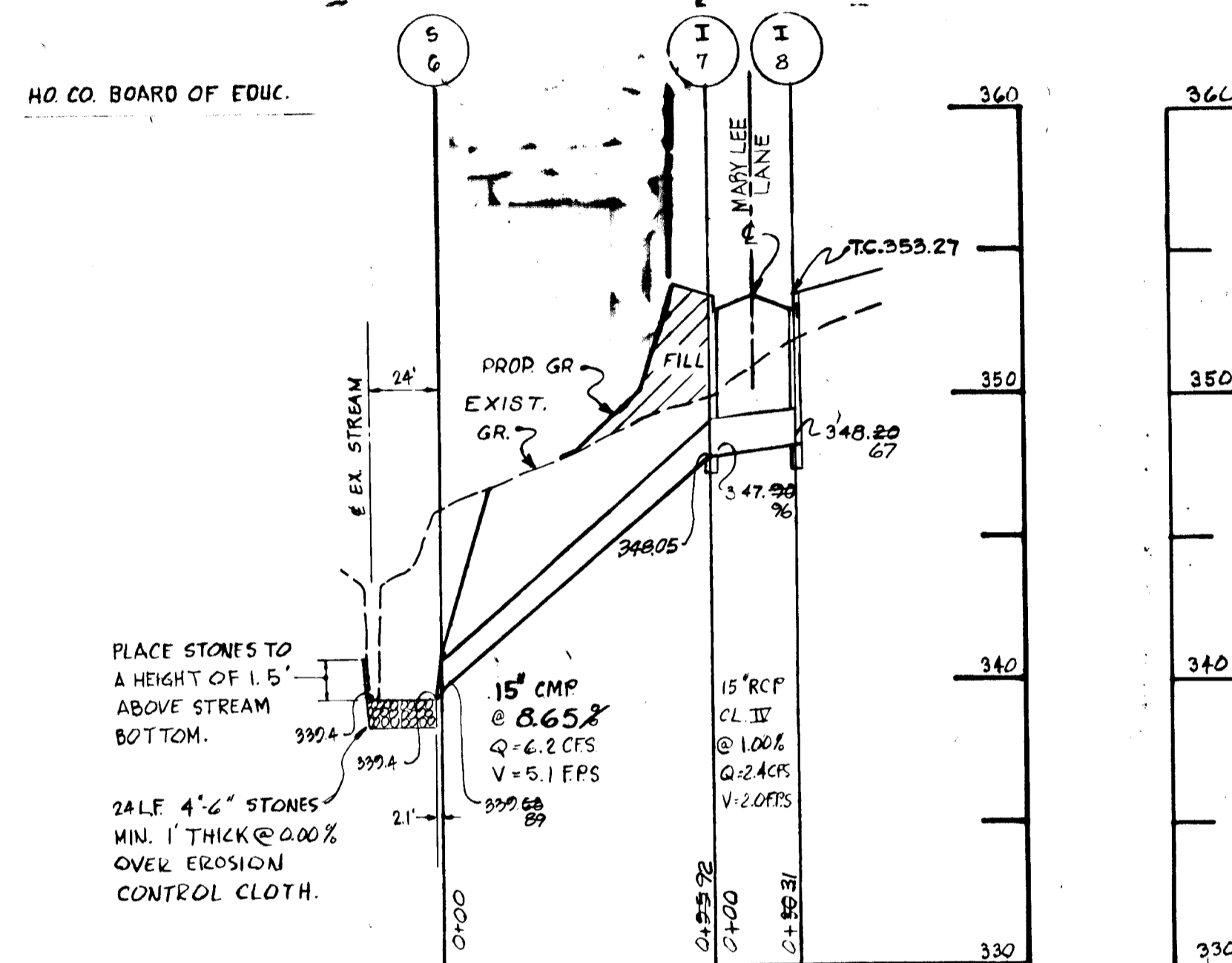
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
U.S. SOIL CONSERVATION SERVICE  
DATE: 4/2/82



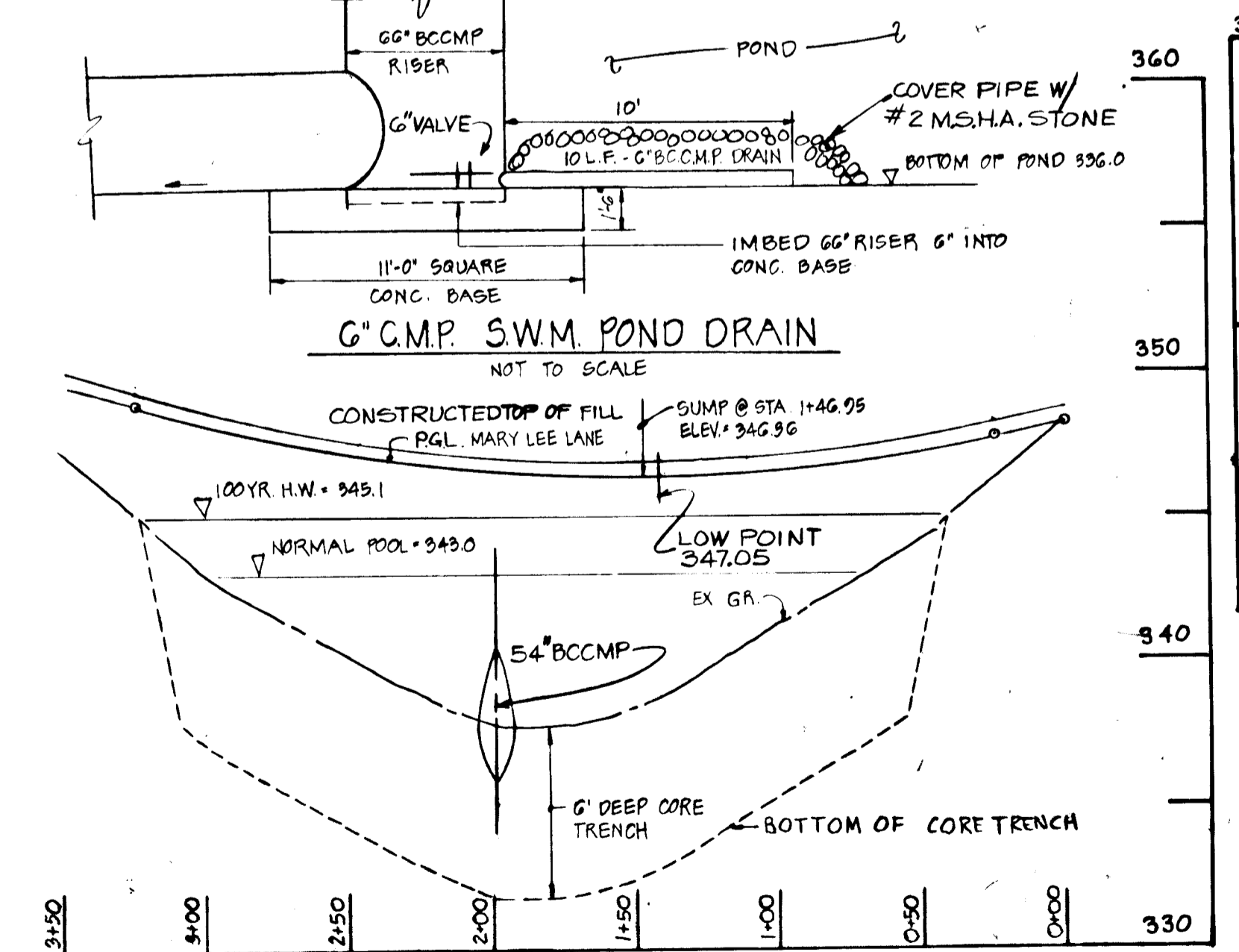
TEE TURNAROUND DETAIL  
NOT TO SCALE



TEMPORARY BARRICADE DETAIL  
NOT TO SCALE



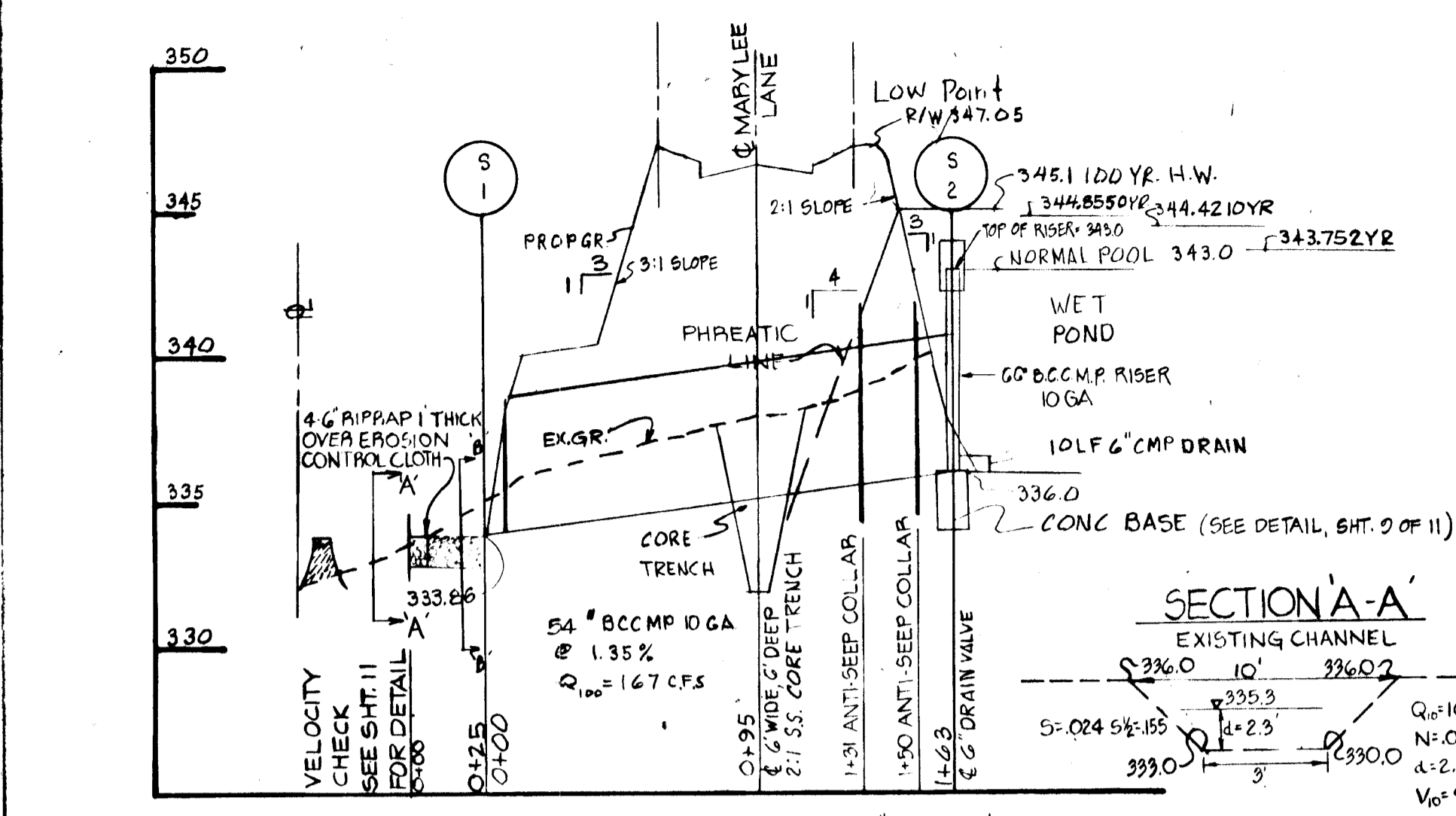
PROFILE  
SCALE: VERT. 1"=5'  
HORZ. 1"=50'



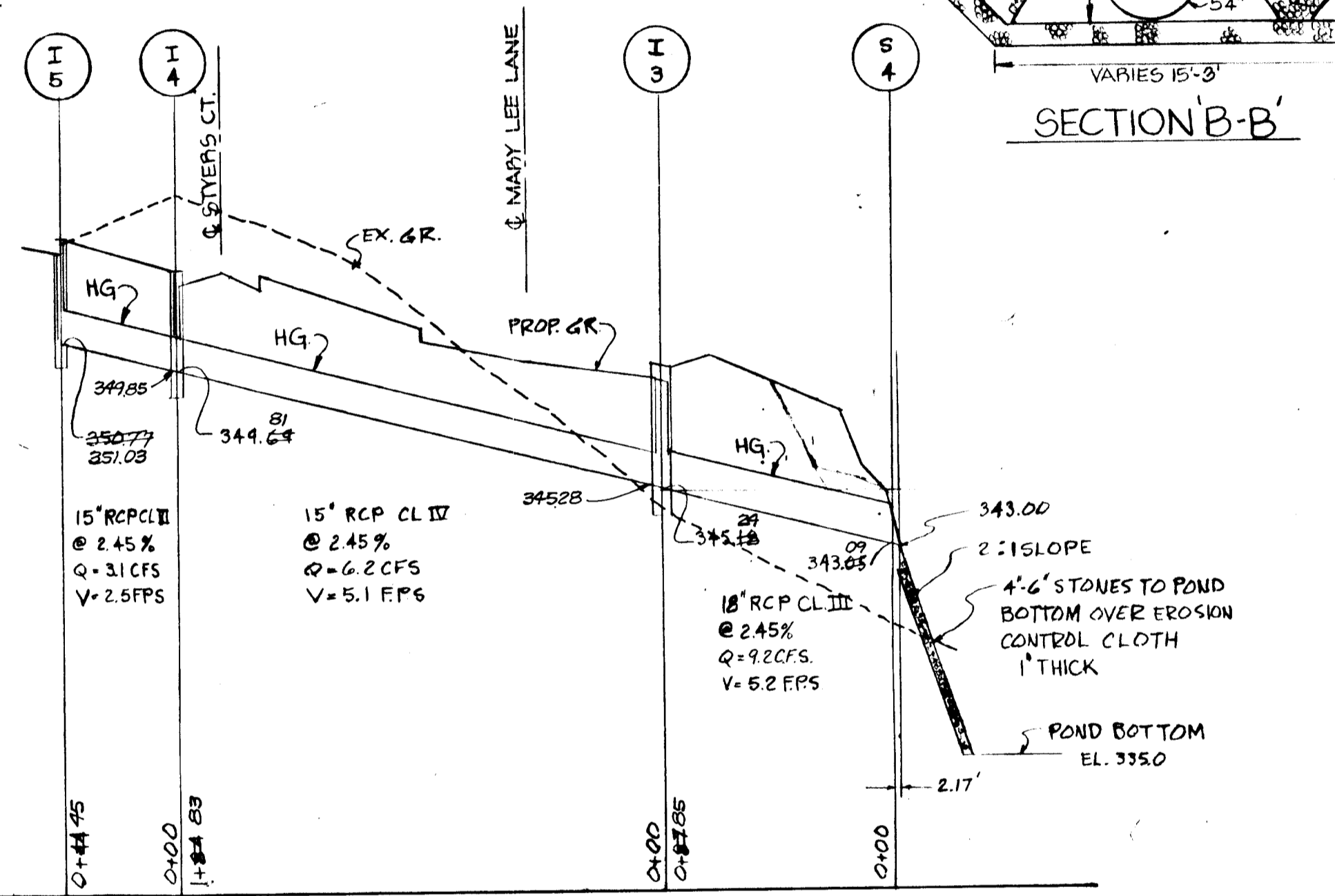
PROFILE & DAM  
SCALE: VERT. 1"=5'  
HORZ. 1"=50'

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
HOWARD CO. SOIL CONSERVATION DISTRICT  
DATE: 4/1/82

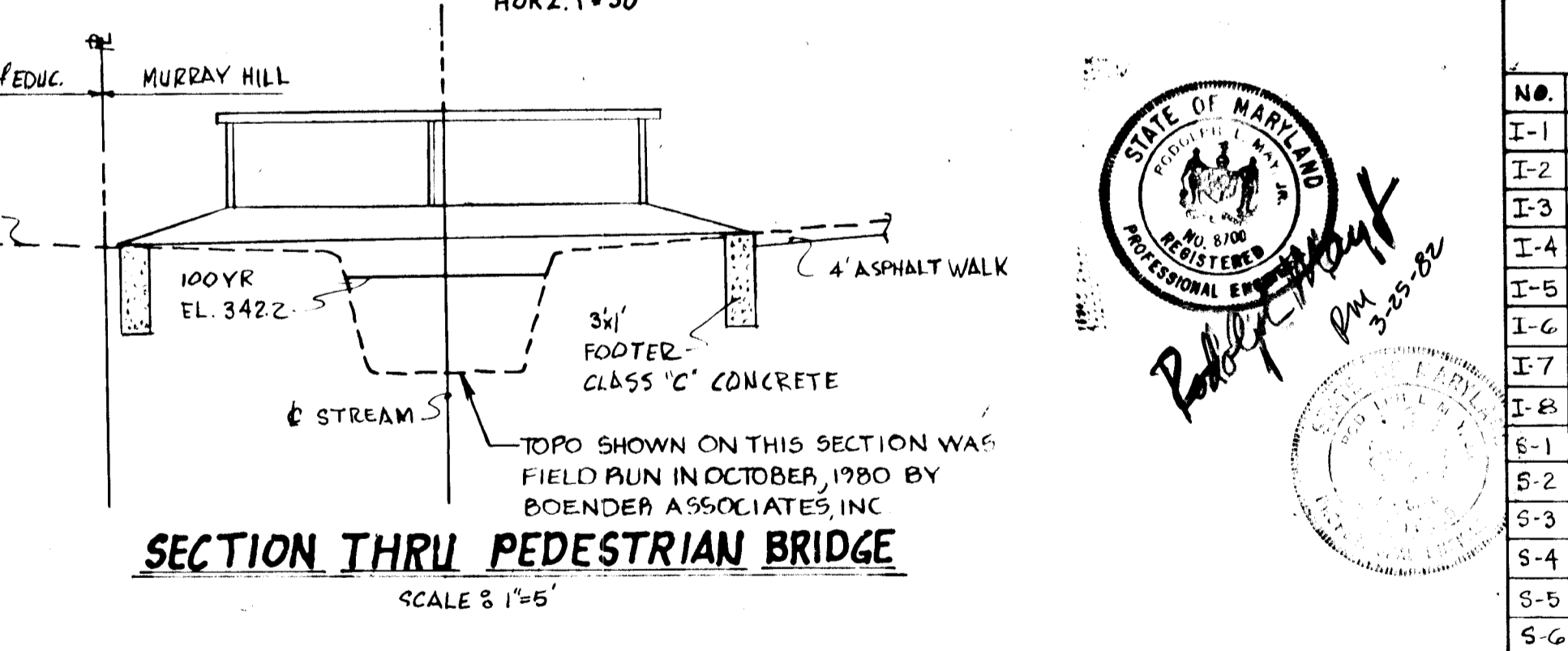
APPROVED DEPARTMENT OF PUBLIC WORKS  
[Signature]  
DATE: 4-7-82



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



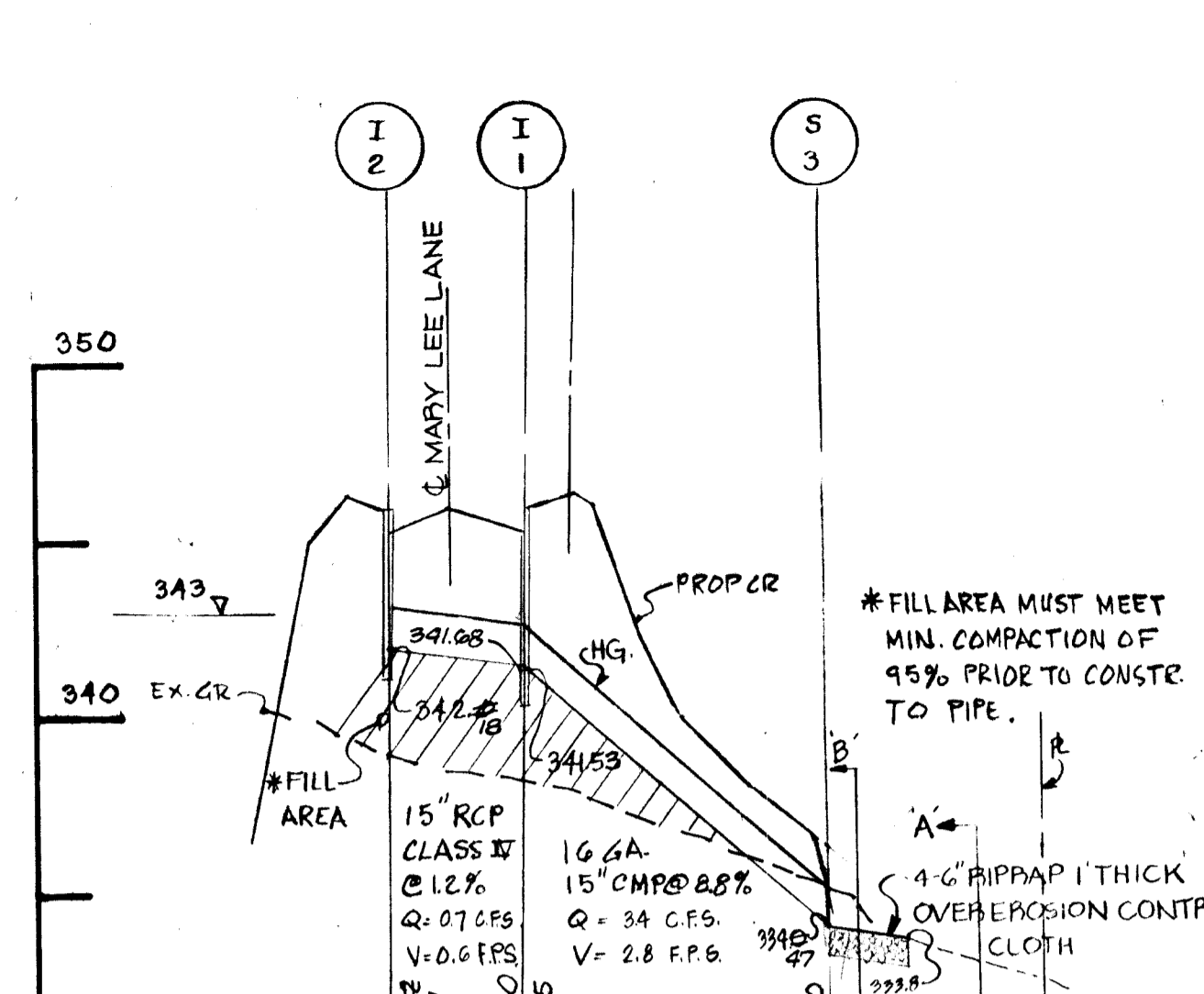
PROFILE  
SCALE: VERT. 1"=5'  
HORZ. 1"=50'



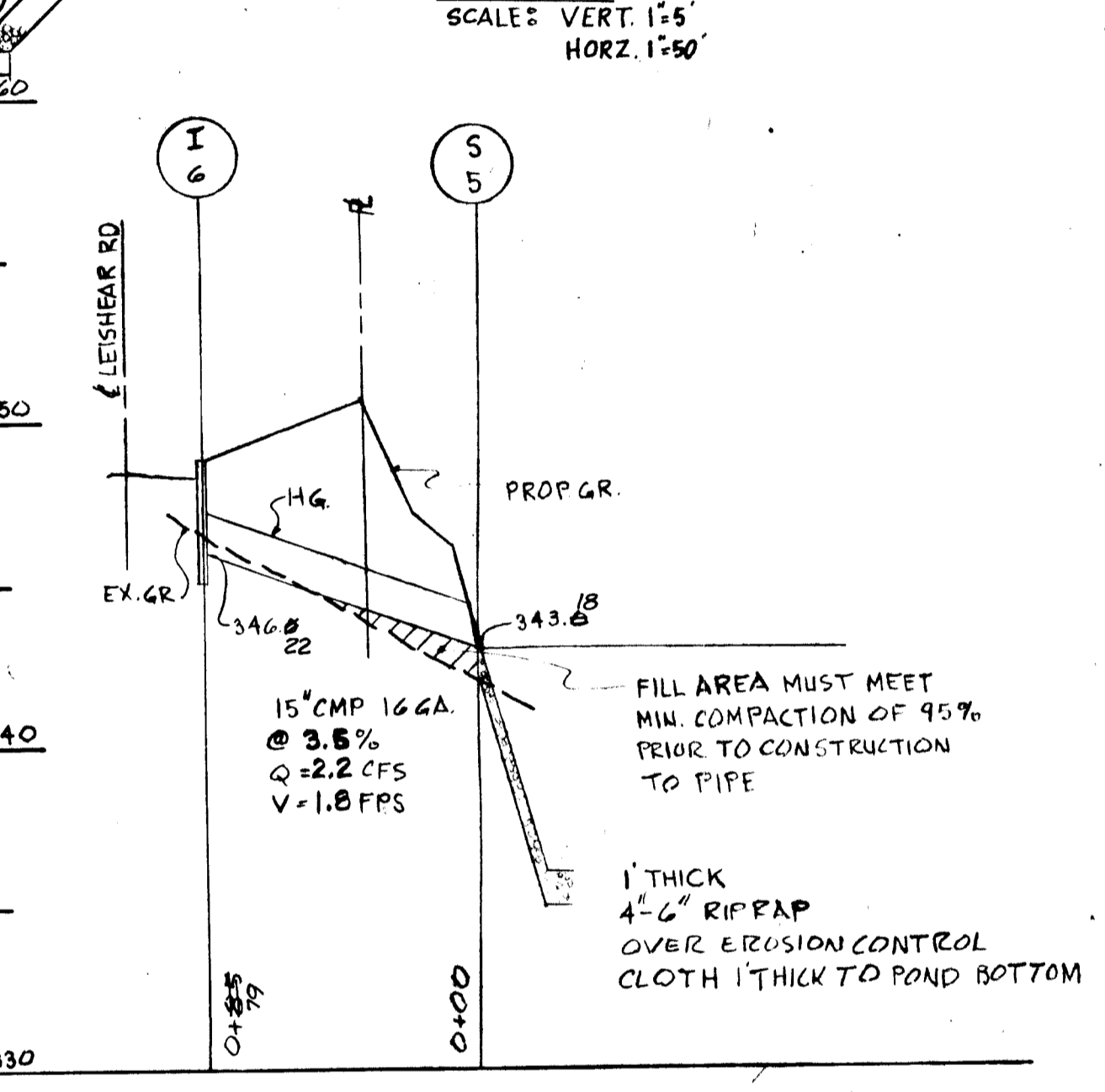
SECTION THRU PEDESTRIAN BRIDGE  
SCALE: 1"=5'

CERTIFICATION 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.  
[Signature]  
DATE: 4-23-82

CERTIFICATION 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.  
[Signature]  
DATE: [blank]



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



AS-BUILT SURVEY CERTIFIED BY DONALD B. SACKETT, L.S. No. 6289 - JAN. 14, 1984

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

PROPOSED STRUCTURE SCHEDULE						
NO.	TYPE	DEFLECTORS INSTALLED	INV. IN	INV. OUT	TOP EL.	REMARKS
I-1	A-5 INLET	DEFLECTORS INSTALLED	341.5	341.5	346.36	HO. CO. STD. DRWG. 5.D.401
I-2	A-5 INLET	DEFLECTORS INSTALLED	342.0	342.0	346.36	HO. CO. STD. DRWG. 5.D.401
I-3	A-5 INLET w/DEFLECTOR	DEFLECTORS INSTALLED	345.18	345.18	349.79	HO. CO. STD. DRWG. 5.D.401 AND 5.D.483
I-4	A-10 INLET		349.69	349.69	353.45	HO. CO. STD. DRWG. 5.D.402
I-5	A-5 INLET w/DEFLECTOR		350.77	350.77	354.64	HO. CO. STD. DRWG. 5.D.401 AND 5.D.483
I-6	A-5 INLET		346.0	346.0	349.8	HO. CO. STD. DRWG. 5.D.401
I-7	A-10 INLET w/DEFLECTOR		347.0	347.0	351.0	HO. CO. STD. DRWG. 5.D.402 AND 5.D.483
I-8	A-5 INLET w/DEFLECTOR		341.5	341.5	346.36	HO. CO. STD. DRWG. 5.D.401 AND 5.D.483
S-1	METAL END SECTION		333.8	333.8	333.8	HO. CO. STD. DRWG. 5.D.501
S-2	6" C.M.P. RISER		336.0	336.0	343.0	SEE SHT. 2 OF 11
S-3	METAL END SECTION		334.0	334.0	334.0	HO. CO. STD. DRWG. 5.D.501
S-4	CONCRETE END SECTION		343.0	343.0	343.0	HO. CO. STD. DRWG. 5.D.501
S-5	METAL END SECTION		343.0	343.0	343.0	HO. CO. STD. DRWG. 5.D.501
S-6	METAL END SECTION		339.4	339.4	339.4	HO. CO. STD. DRWG. 5.D.501

OWNER: JOHN T. LEISHEAR JR., RALPH L. STYERS SR., FRANK A. COOK, 3716 COURT PLACE, ELLICOTT CITY, MD 21043  
DEVELOPER: MURRAY HILL ASSOCIATES, 218 TEACHERS BLDG., COLUMBIA, MD 21044

TITLE: STORM DRAIN PROFILES & DETAILS  
PROJECT: MURRAY HILL - SECTION I  
LOCATION: 6TH ELECTION DISTRICT, HOWARD COUNTY, MD.  
DATE: FEB. 1981  
SCALE: AS SHOWN  
DESIGN BY: RLM/JJB  
JOB NO: 80034  
DRAWN BY: DWN.  
DRAWING NO: 6 OF 11  
CHECKED BY: RLM.  
boender associates  
SUITE 102 107 TOWN & COUNTRY PROFESSIONAL BUILDING  
ELICOTT CITY, MARYLAND 21043  
BALTIMORE 301-468-7777  
SALISBURY 301-748-1288  
engineers  
surveyors  
planners

**SEDIMENT CONTROL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS," PREPARED BY THE U.S.D.A. SOIL CONSERVATION SERVICE.
  - APPLY FOR GRADING PERMIT.
  - NOTIFY THE BUREAU OF LICENSE INSPECTIONS AND PERMITS 24 HRS. PRIOR TO GRADING OPERATION.
  - CONSTRUCTION SHALL ADHERE TO THE CONSTRUCTION SEQUENCE.
  - CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM.
  - ELEVATIONS MARKED WITH (X) SHALL BE FINISHED GRADE.
  - ANY EXCESS MATERIAL SHALL BE STOCKPILED IN A CLEARED LOCATION ON SITE WHICH IS PROTECTED BY SEDIMENT CONTROL STRUCTURE(S). MAXIMUM FILL SLOPE SHALL BE 3:1. STOCKPILED MATERIAL SHALL BE STABILIZED ACCORDING TO SEEDING SPECIFICATIONS BELOW.
  - SEDIMENT CONTROL STRUCTURES SHALL BE REMOVED ONLY WITH PERMISSION OF THE BUREAU OF LICENSE, INSPECTIONS AND PERMITS.
  - STABILIZATION MEASURES
- TEMPORARY STABILIZATION**  
 APPLY: 4,000 LBS./AC OR 46 LBS./1,000 SQFT. OF PULVERIZED DOLOMIC LIMESTONE.  
 600 LBS./AC. OR 15 LBS./1,000 SQFT. OF 10-20-10 FERTILIZER. PLANT WITH ANNUAL RYEGRASS AT 2.5 BUSHELS/AC. MULCH ALL DISTURBED AREAS WITH 2 TONS/AC. OR 90 LBS./1,000 SQFT. WITH WEED FREE, SMALL GRAIN MULCH IMMEDIATELY.
- PERMANENT STABILIZATION**  
 APPLY: 4000 LBS./AC. OF PULVERIZED DOLOMIC LIMESTONE.  
 500 LBS./AC. OF 10-10-10 FERTILIZER.  
 SEED: 85 LBS./AC. OF KENTUCKY 31 TALL FESCUE.  
 40 LBS./AC. OF KENTUCKY BLUE GRASS.  
 25 LBS./AC. OF ANNUAL RYEGRASS.
- NOTE: SEEDING MAY BE DONE BETWEEN MARCH 1 - MAY 1, OR AUG. 1-OCT. -1 ONLY.  
 MULCH ALL DISTURBED AREAS IMMEDIATELY AFTER GRADING.  
 MULCH: 2 TONS / AC. OF UNWEATHERED WHEAT STRAW. TIE MULCH DOWN WITH 480 GAL. / AC. OF LIQUID ASPHALT.

**SITE ANALYSIS**

TOTAL AREA OF SITE: 20.8 AC.  
 AREA PAVED: 2.1 AC.  
 AREA DISTURBED: 9.8 AC.  
 AREA UNDISTURBED: 11.0 AC.  
 AREA REVEGETATED: 7.7 AC.

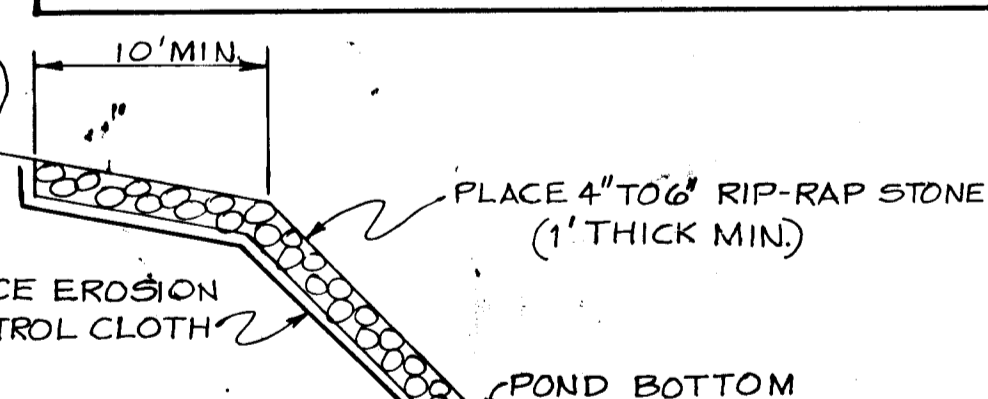
**CONSTRUCTION SEQUENCE**

- OBTAIN GRADING PERMIT.
  - NOTIFY HOWARD COUNTY BUREAU OF LICENSE, INSPECTIONS AND PERMITS 24 HOURS PRIOR TO GRADING OPERATIONS.
  - CLEAR FOR SEDIMENT CONTROL. INSTALL SEDIMENT CONTROL. CLEAR REMAINDER OF SITE. RAISE EX. SAN. MH. # 214 TO ELEV. 348.0
  - CLEAR AND GRUB SITE
  - GRADE ROADS, CUTS, E. INSTALL SPERM DRAINS, BLOCK ALL INLETS.
  - ROUGH GRADE SITE AS SHOWN ON SEDIMENT CONTROL PLAN AND STABILIZE ROADS WITH BASE COURSE.
  - STABILIZE SITE WITH PERMANENT SEEDING.
  - REMOVE TEMPORARY SEDIMENT CONTROL MEASURES WITH APPROVAL FROM HOWARD COUNTY BUREAU OF LICENSE, INSPECTIONS AND PERMITS. CLEAN OUT SEDIMENT BASIN AND RESTORE TO SWIM. FOND SIZE AND SHAPE USING A GRADALL. SPREAD SPOILS & APPLY PERMANENT SEEDING.
- NOTE: FOR SEDIMENT CONTROL DETAILS SEE SHT. 10 OF 11.

APPROVED DEPARTMENT OF PUBLIC WORKS

*William E. Ryan* 4-7-82  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING  
*William M. ...* 4-2-82  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE



**OWNER & DEVELOPER**

JOHN T. LEISHAAR JR.  
 RALPH L. STYERS, SR.  
 FRANK A. COOK, JR.  
 MALCOM B. KANE, ATTORNEY  
 311 1/2 COURT PLACE, ELLICOTT CITY, MD. COLUMBIA, MD. 21044

MURRAY HILL ASSOCIATES  
 218 TEACHERS BUILDING  
 COLUMBIA, MD. 21044

**SEDIMENT CONTROL PLAN & GRADING PLAN**

MURRAY HILL SECTION 1

GTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FEB. 1981 RLM/JJB GEM P.L.M.

8034 T OF 11

boender architect

AS-BUILT 1-11-84

SEDIMENT TRAP SCHEDULE									
NO.	DA.	VOLUME REQ'D	VOLUME PROVIDED	POT. SIZE	DEPTH	BOTTOM ELEV.	C.O. ELEV.	SPILLWAY LENGTH	ELEV.
1	0.5 AC.	900 C.F.	2310 C.F.	30'x40'	1.5'	334.0	334.75	6'	335.5
2	3.5 AC.	6,300 C.F.	8,200 C.F.	40'x53'	3.0'	330.0	331.5	21'	333.0

SWM FOR WESTERN BRANCH TO BE PROVIDED OFFSITE ACCORDING TO COMPUTATIONS SUBMITTED UNDER SEPARATE COVER.

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

HOWARD CO. SOIL CONSERVATION DISTRICT  
 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 P. ...* 4/8/82  
 U.S. SOIL CONSERVATION SERVICE DATE

CERTIFICATION BY THE DEVELOPER

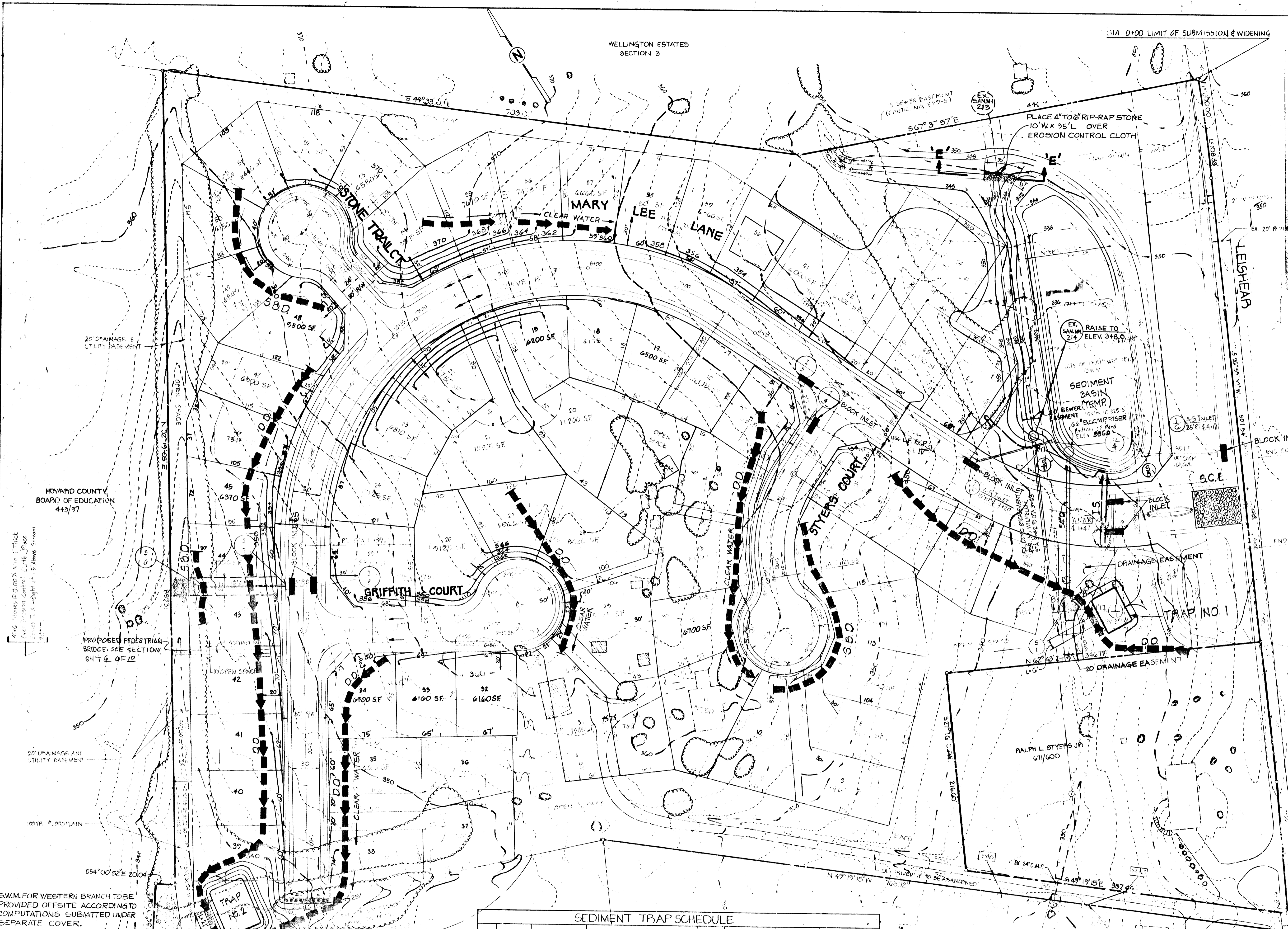
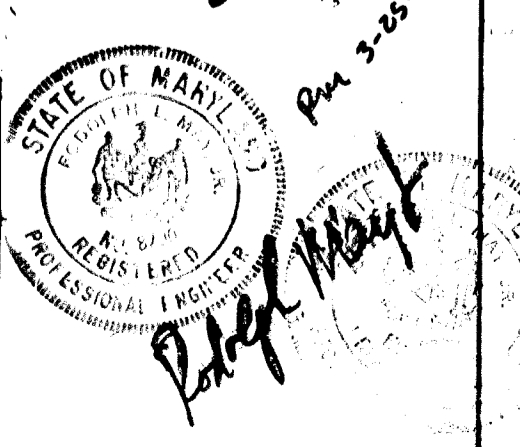
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION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

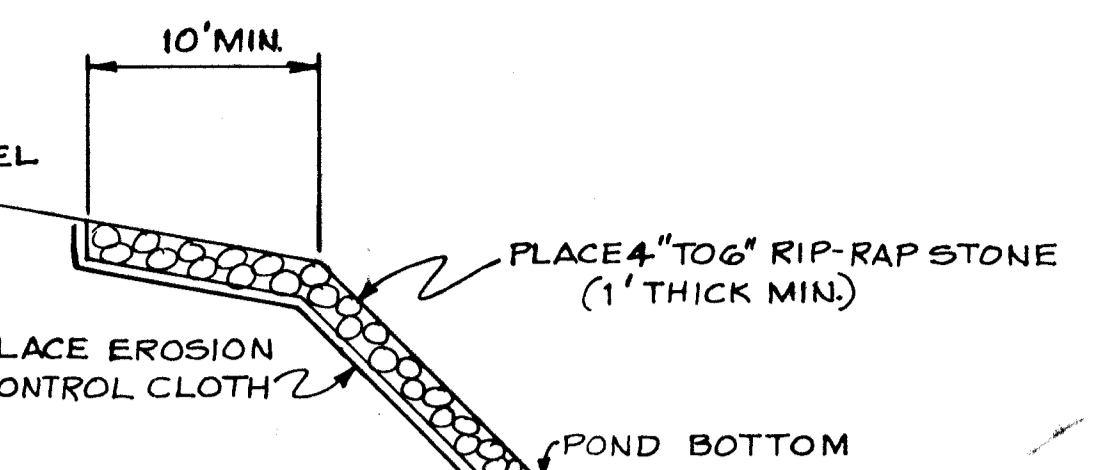
*Dennis M. ...* Nov. 29, 1981  
 SIGNATURE: DATE:

CERTIFICATION 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.

*Robert ...*  
 SIGNATURE: DATE:





**SECTION E-E**  
**CHANNEL RIP-RAP DETAIL**  
NOT TO SCALE

NOTES:  
1. SEE SHT. 10 OF 11 FOR CONTINUATION OF OFFSITE DRAINAGE AREAS.  
2. THE CROSS-SECTIONS FOR THE 100 YR. FLOODPLAIN ARE FIELD RUN.

HOWARD COUNTY BOARD OF EDUCATION 443/97

24" CIRCULAR CONCRETE MAINLINE SEWER  
AFTER PERMANENT CONTROL CLOTH PLACE  
ELEVATION AT HEIGHT OF 15' ABOVE 11' DIAMETER  
LEFT.

PROPOSED PEDESTRIAN BRIDGE (SEE SHT. 6 OF 11 FOR SECTION I)

20' DRAINAGE AND UTILITY EASEMENT

100 YR. FLOODPLAIN

554°00'52"E 20.00'

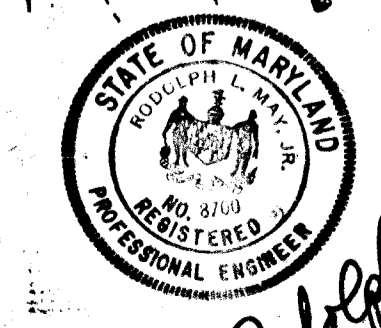
LIMIT OF SUBMISSION-SECTION I

20' TEMP. DRAINAGE & UTILITY EASEMENT

6" WIDE, 1' DEEP TEMP. SODDED SWALES (FOR SECT. C-C SEE SHT. 6 OF 11)

OWNER FOR SECTION I HAS TO BE PROVIDED OFFSITE ACCORDING TO COMPUTATIONS SUBMITTED UNDER SEPARATE COVER.

APPROVED DEPARTMENT OF PUBLIC WORKS  
*Michael P. Ryan* 4-2-82 DATE  
CHIEF, BUREAU OF ENGINEERING  
APPROVED OFFICE OF PLANNING AND ZONING  
*M. M. M. M.* 4-2-82 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION



*Ralph May Jr.*  
Ralph May Jr. Eng. - 525-82  
STATE OF MARYLAND PROFESSIONAL ENGINEER

OWNER & DEVELOPER  
JOHN T. LEISHEAR JR.  
RALPH L. STYERS, SR.  
FRANK A. COOK  
MALCOM B. KANE, ATTORNEY  
316 COURT PLACE, ELLICOTT CITY MD.  
MURRAY HILL ASSOCIATES  
218 TEACHERS BUILDING  
COLUMBIA MD 21044

ONSITE DRAINAGE AREA MAP AND STORM WATER MANAGEMENT PLAN ONLY

MURRAY HILL SECTION I  
6TH ELECTION DISTRICT  
FEB. 1981  
1-50'

HOWARD COUNTY, MARYLAND  
GEN./D.T.M.  
8034  
B OF 11

boender associates



SOIL CONSERVATION SERVICE  
MARYLAND  
CONSTRUCTION SPECIFICATIONS  
FOR  
PONDS

These specifications are appropriate for ponds within the scope of the Standard for practice 378.

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 formboard) as shown on the plans. (FILL FOR POND TO BE CLASSIFIED AS C.H.C.C. SC.)

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.

APPROVED FOR USE IN MARYLAND

MAY 1977

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 3 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 structure to be filled. The fill shall be placed in 8-inch maximum thickness layers which are to be continuous over the entire length of the structure. The material used to fill completely all spaces under and adjacent to the structure. 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 connected fill of twenty-four inches or greater over the structure or pipe.

IV. PIPE

A. Corrugated Metal Pipe

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type 2 with watertight coupling bands. Watertight couplings containing damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-201 with watertight coupling bands. Coupling bands, anti-seep collars, and sections, etc. must be composed of like material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be coated with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pitch of surrounding soils shall be less than 6 and greater than 4.

Electrically corrugated pipe in addition to the requirements above shall have either continuously welded seams or have sections which are welded, during fabrication, with a neoprene seal.

- Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Watertight coupling bands shall be lapped at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight.
- Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
- Backfilling shall conform to structural backfill as shown above.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

318-14

- 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 37° F with the temperature falling, or 36° 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, spill and horseshoe 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.

VII. CONCRETE

1. 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.

2. Design Mix - The concrete shall be placed in the following proportions, measured by weight. The water-cement ratio shall be 1-1/2 to 6 U.S. gallons of water per 94 pound bag of cement. The proportions of materials for the trial mix shall be 1:1.75:3.125. The proportions of aggregates may be adjusted to produce a plastic and workable mix that will not produce hairiness 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 predicated 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.

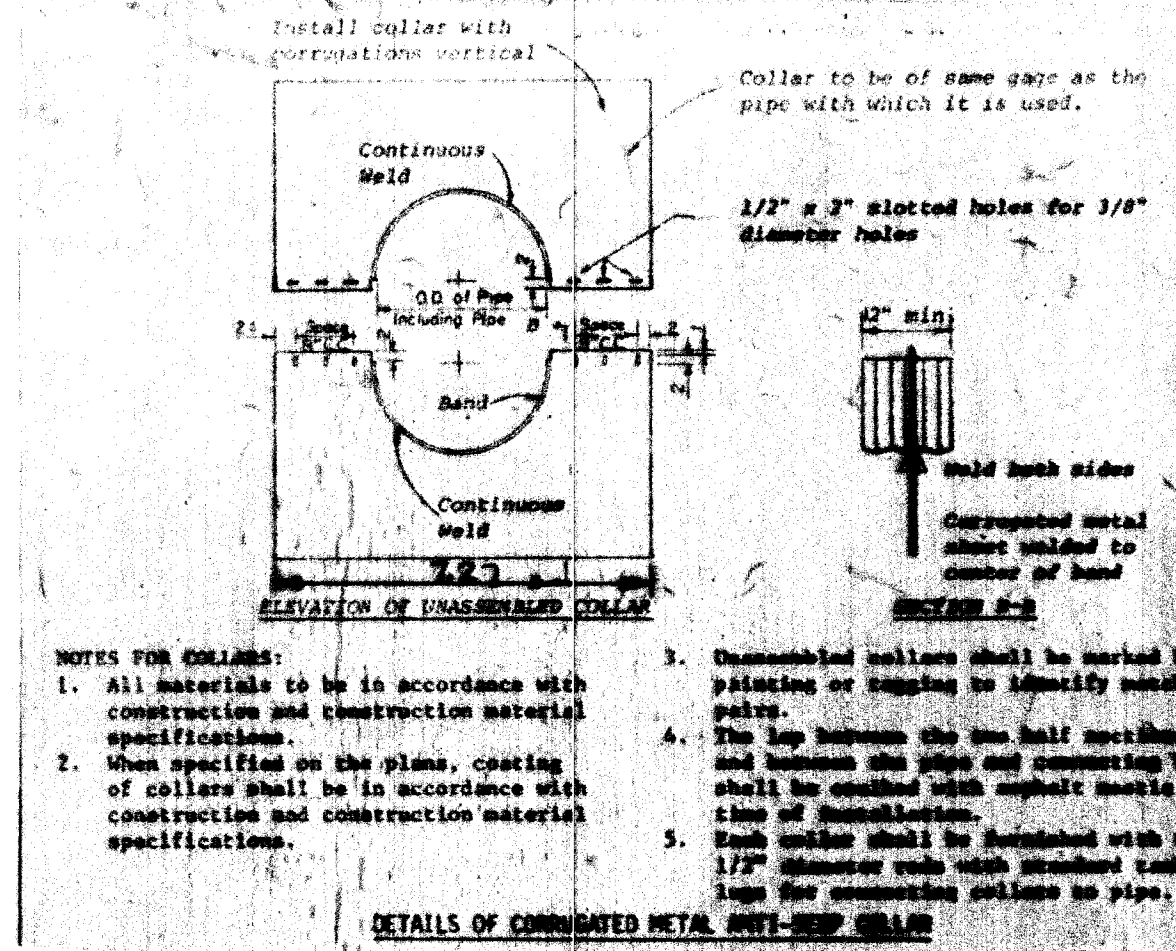
4. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, ramming, and vibration without deflection from the specified lines. They shall be watertight and constructed so that they can be removed without hammering or bumping against the concrete.

The inside of forms shall be coated with a non-staining material and thoroughly oiled before concrete is placed.

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

5. Reinforcing Steel - All reinforcing materials shall be free of dirt, rust, scale, oil, binding 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 tamping and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.



2 COLLARS 7.2 SQUARE

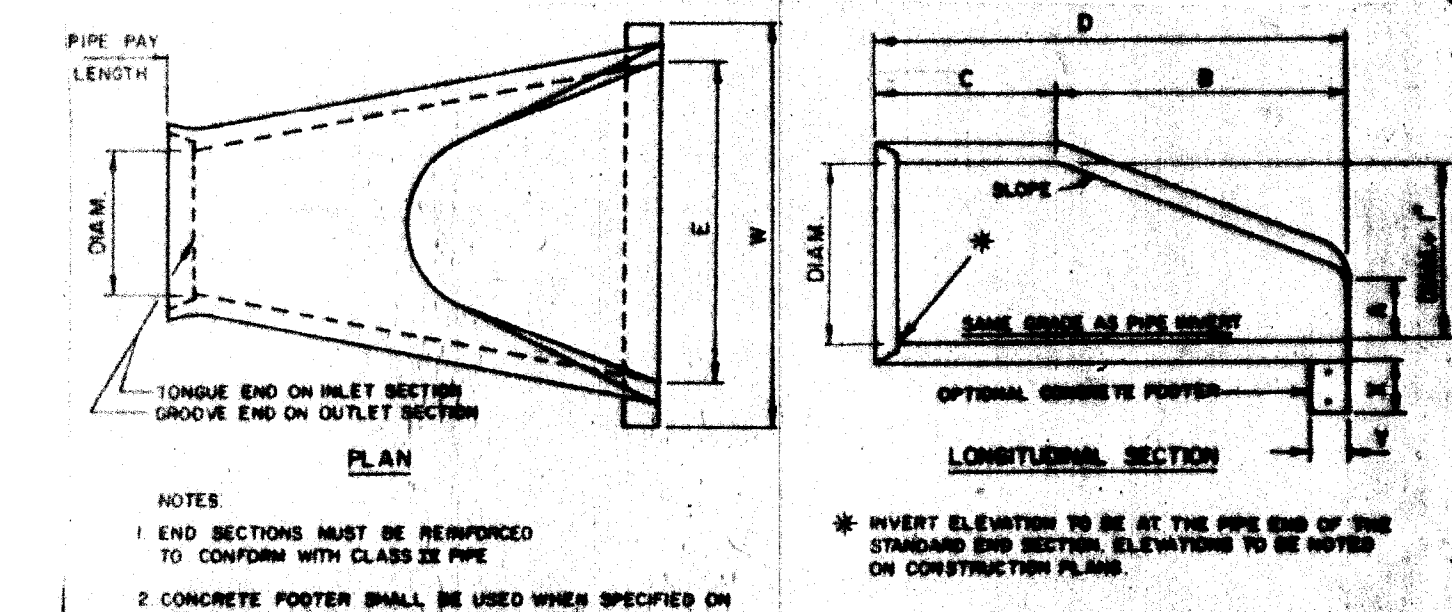
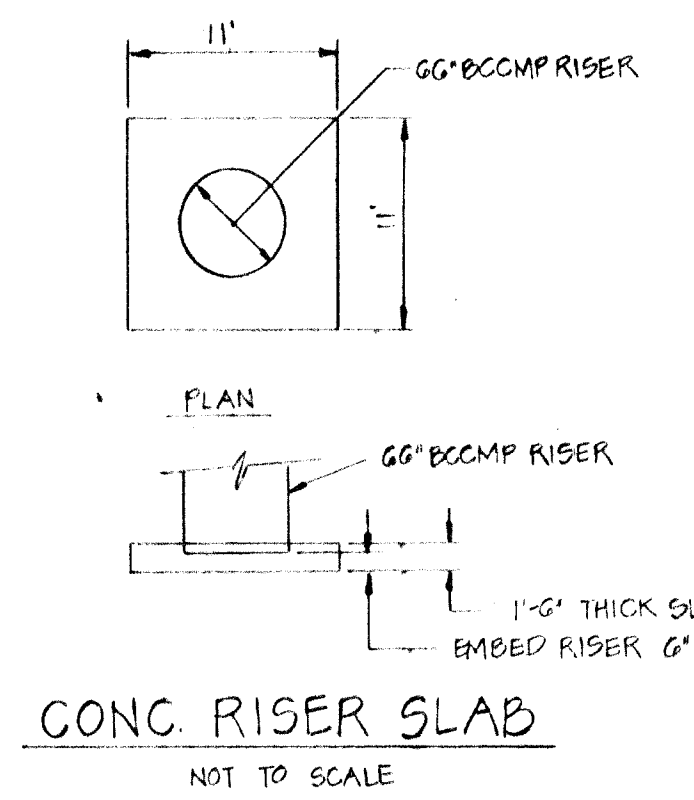


TABLE OF DIMENSIONS

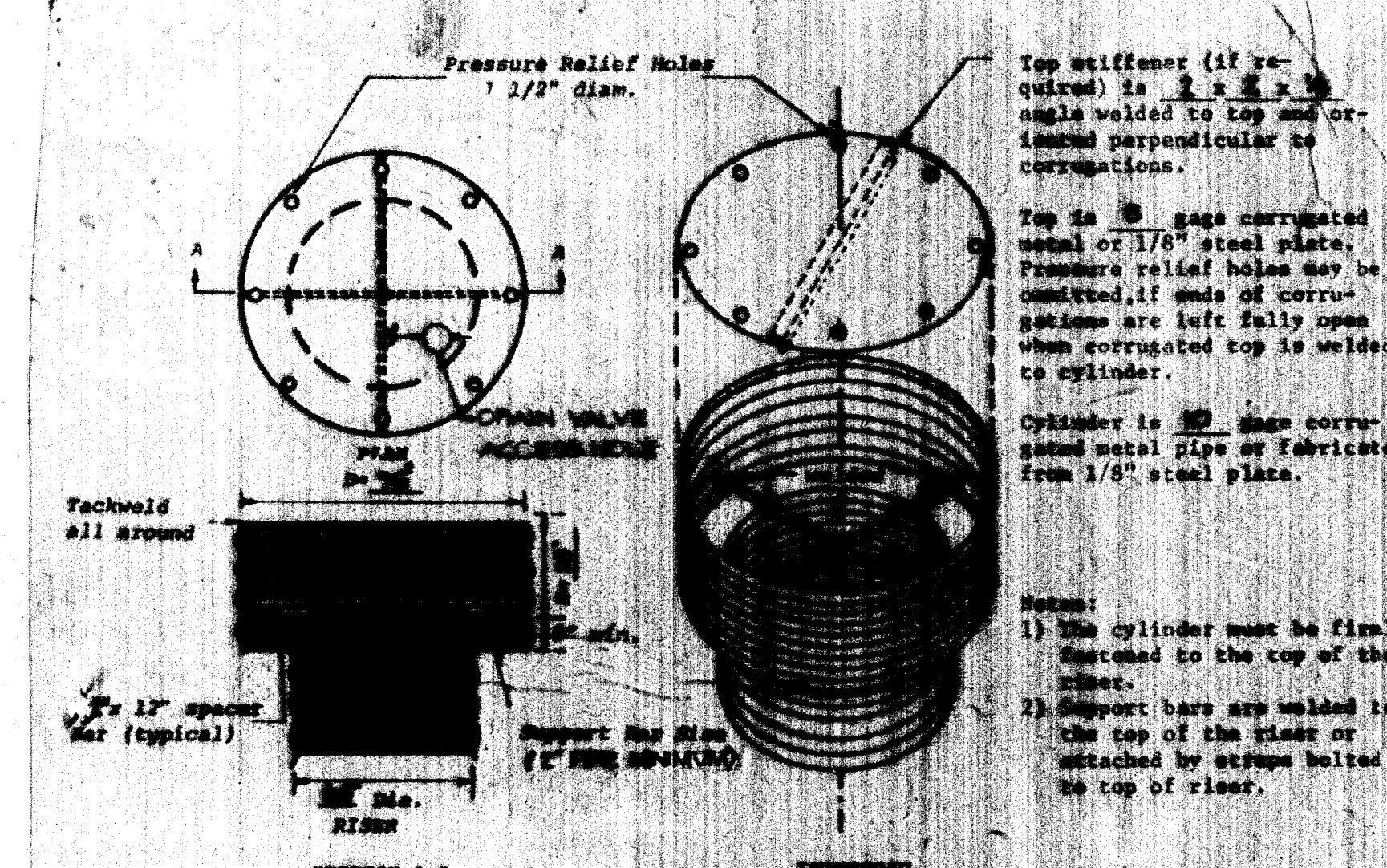
DIAM.	SLOPE	CONCRETE END SECTION				CONCRETE FOOTER			
		A	B	C	D	E	F	G	H
18"	3:1	10'	8'-2"	4'-0"	6'-2"	5'-0"	4'-0"	12'	9'

STATE OF MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
STANDARD SPECIFICATIONS FOR  
STANDARDS FOR REINFORCED AND UNREINFORCED  
STRUCTURAL CONCRETE AND STRUCTURAL  
STEEL CONCRETE PIPE



CONC. RISER SLAB

NOT TO SCALE



CONCENTRIC TRASH RACK AND ANTI-SIPHON DEVICE

(not to scale)

CERTIFICATION 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 M. Smith* Nov 22, 1981  
SIGNATURE DATE

CERTIFICATION 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.

*Robert M. Smith*  
SIGNATURE DATE

APPROVED - DEPARTMENT OF PUBLIC WORKS  
*George S. Smith* 11-2-81  
CHIEF, BUREAU OF ENGINEERING DATE  
APPROVED OFFICE OF PLANNING AND ZONING  
*William W. Smith* 11-2-81  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

OWNER & DEVELOPER  
JOHN T. LEISHEAR JR.  
RALPH L. STYERS, SR.  
FRANK A. COOK, JR.  
MALCOM B. KANE, ATT.  
3716 COURT PLACE, ELLICOTT CITY, MD.  
MURRAY HILL ASSOCIATES  
218 TEACHERS BUILDING  
COLUMBIA, MD. 21044

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

APPROVED *Robert M. Smith* DATE 11/1/81

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. Smith* DATE 11/2/81

U.S. SOIL CONSERVATION SERVICE

TITLE POND CONSTRUCTION SPECIFICATIONS

PROJECT MURRAY HILL - SECTION I

LOCATION 6TH ELECTION DISTRICT HOWARD CO., MD.

DATE FEB, 1981 DESIGN BY: R.J.M. DRAWN BY: G.E.M. CHECKED BY: R.L.M.

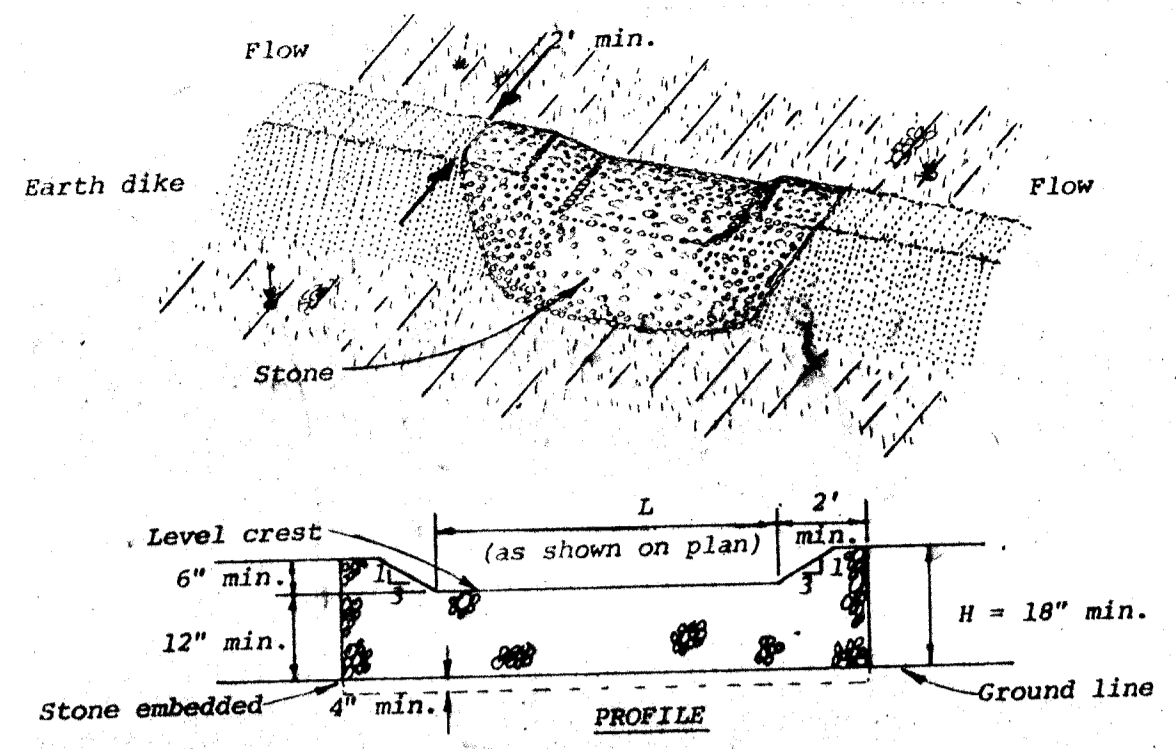
SCALE: AS NOTED JOB NO.: 80034 DRAWING NO.: 50P11

boender associates engineers/surveyors/planners

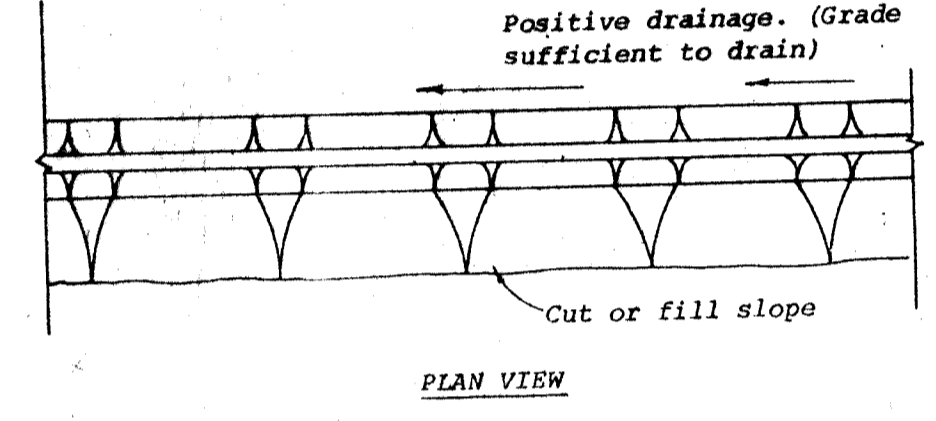
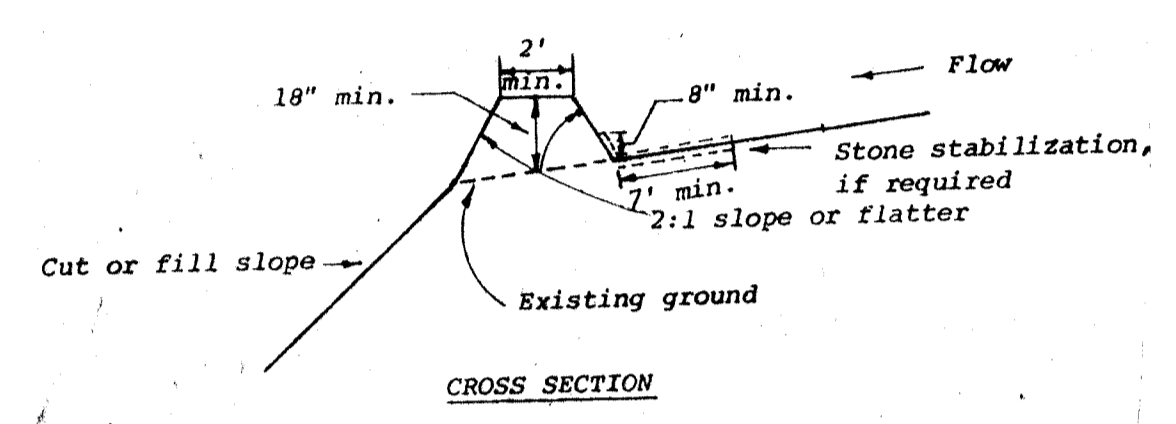
SUITE 102-107 TOWN & COUNTRY PROFESSIONAL BUILDING  
ELLICOTT CITY, MARYLAND 21043  
BALTIMORE 301-468-7777 SALISBURY 301-748-1288

F-81-90

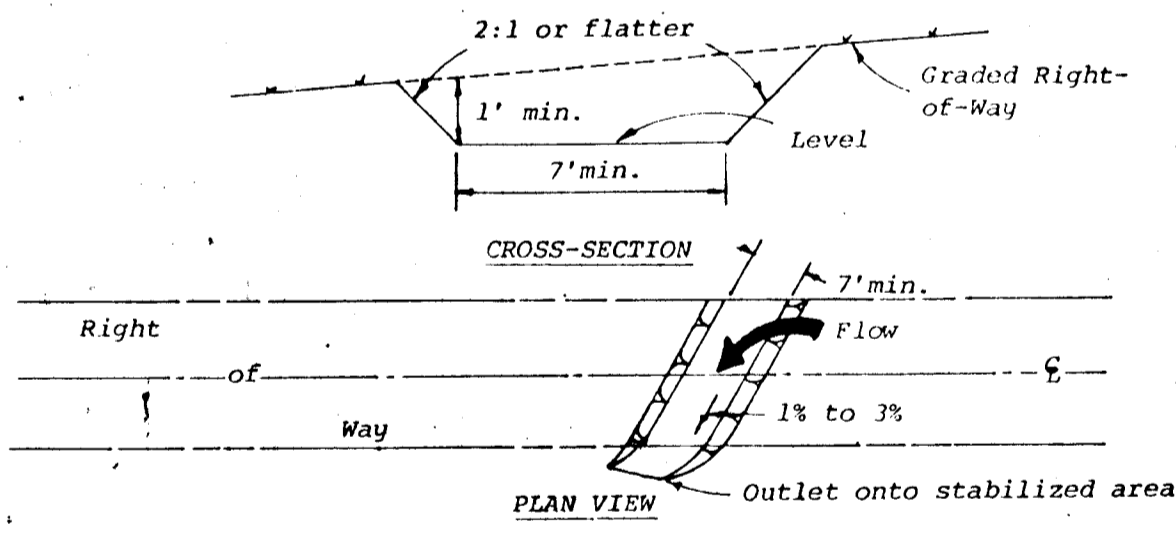
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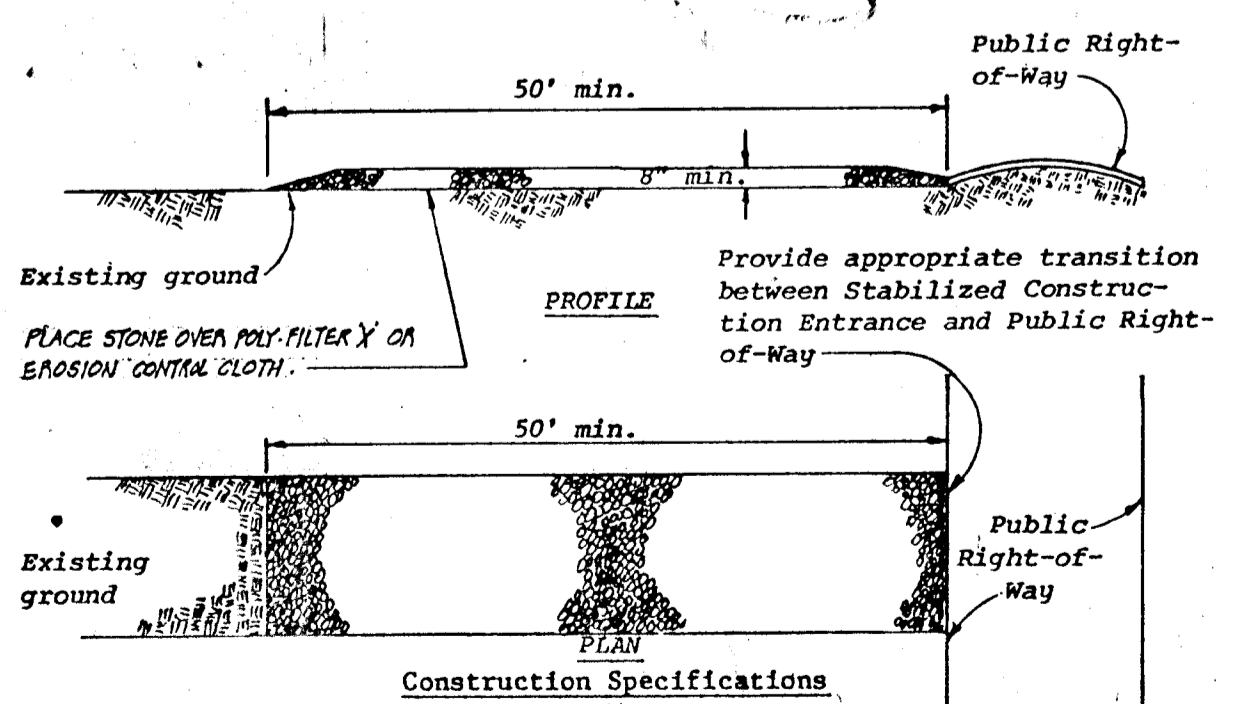
**STONE OUTLET STRUCTURE**  
NOT TO SCALE



**DIVISION DIKE**  
NOT TO SCALE

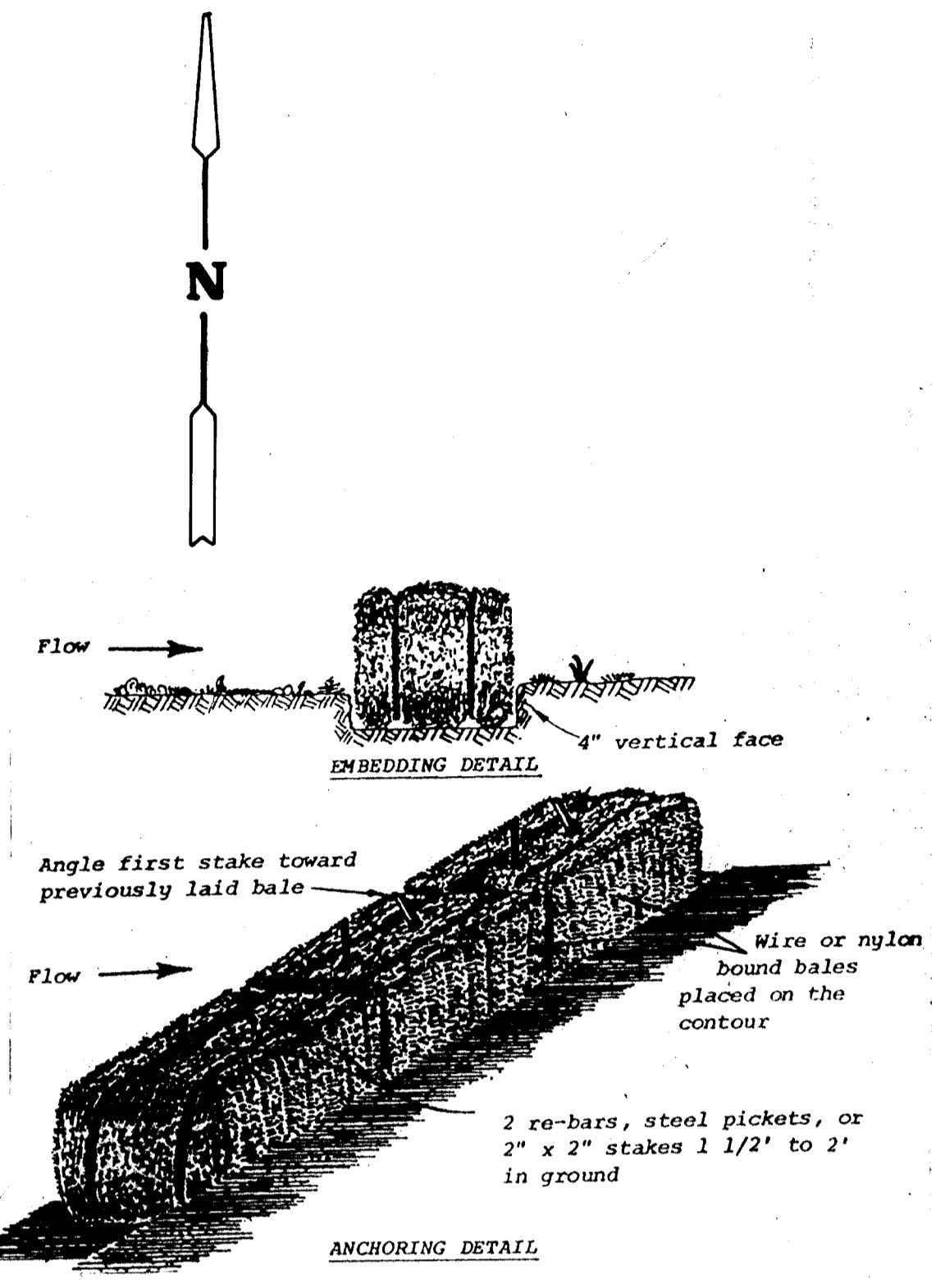
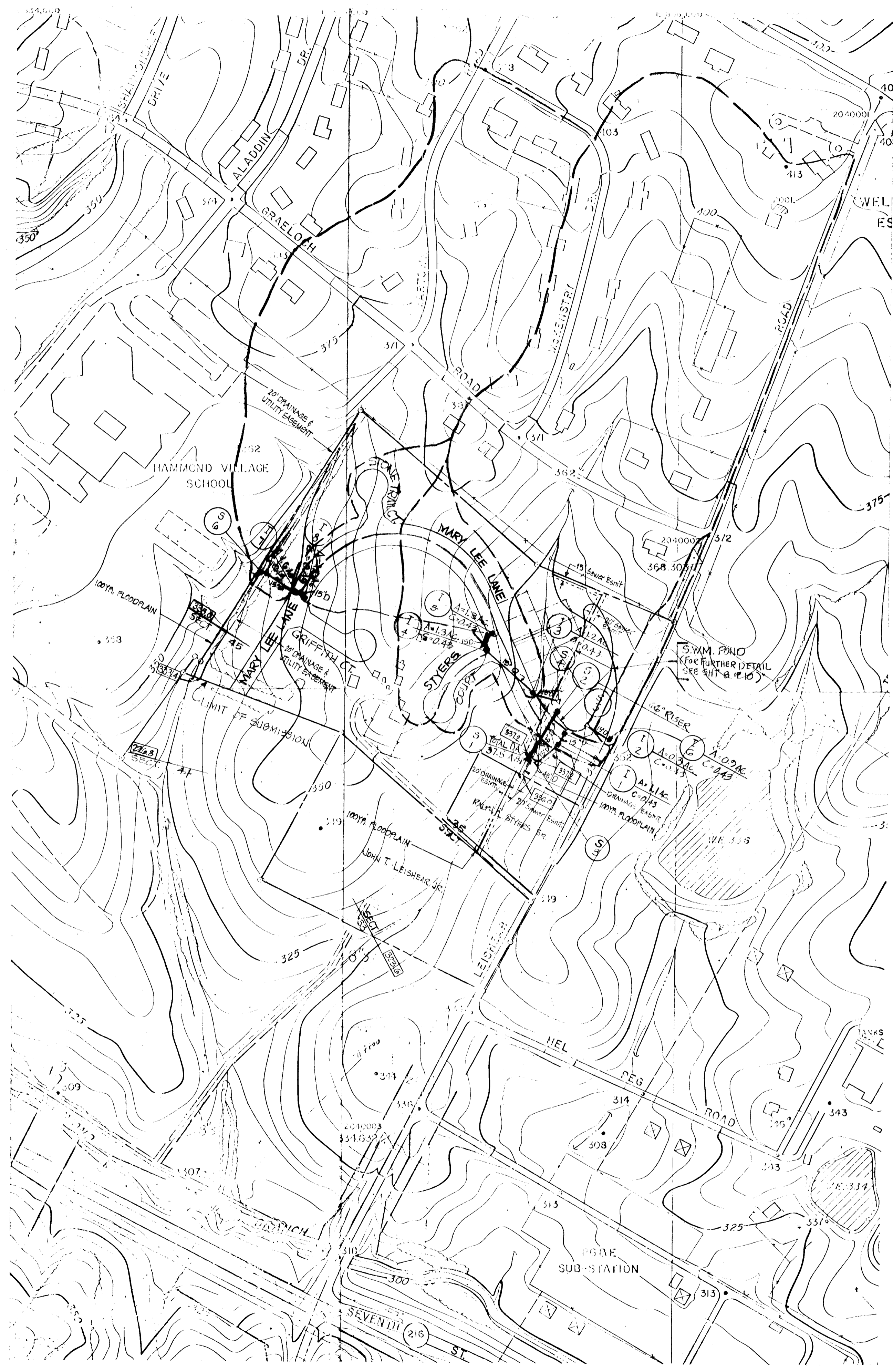


**INTERCEPTOR SWALE**  
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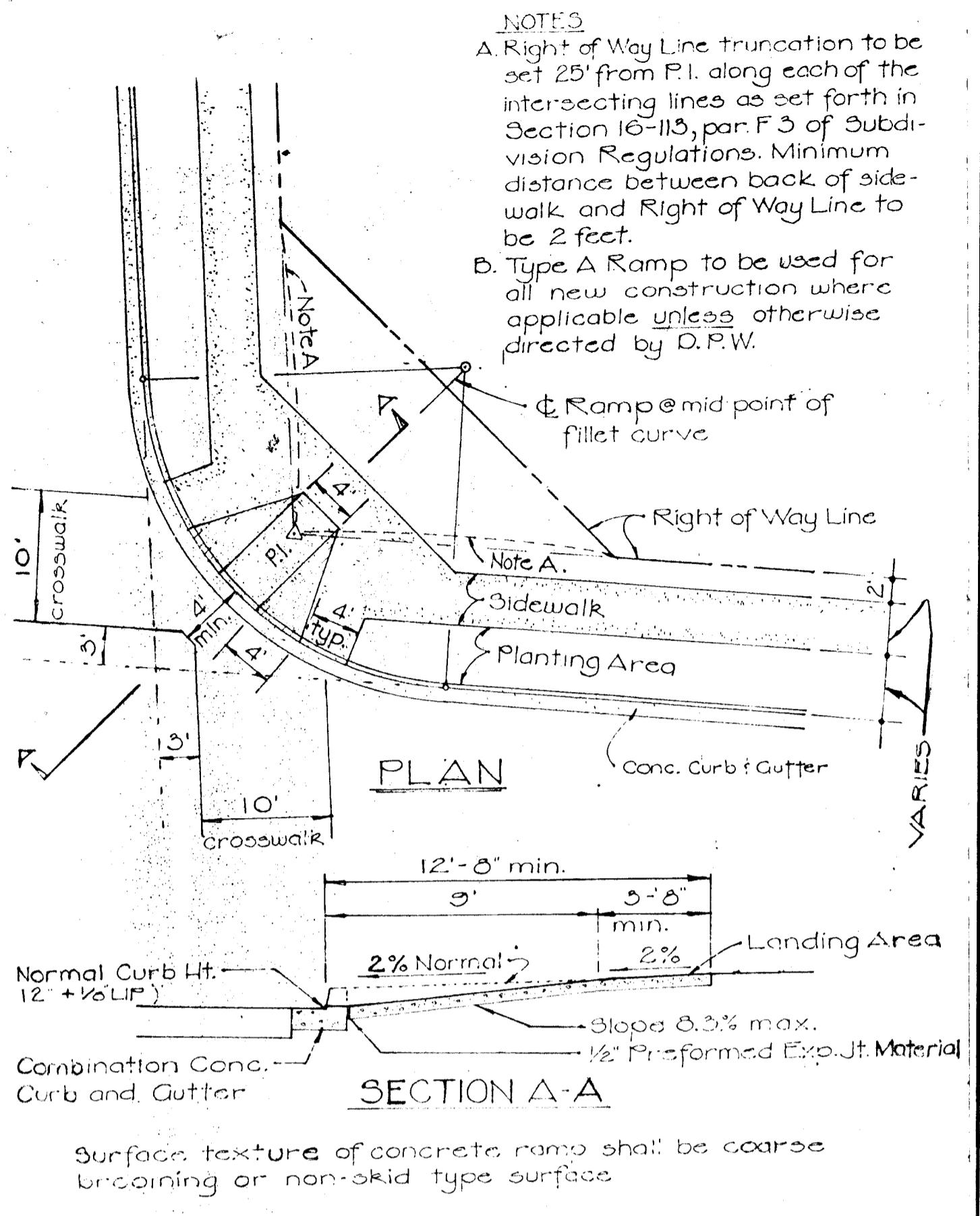
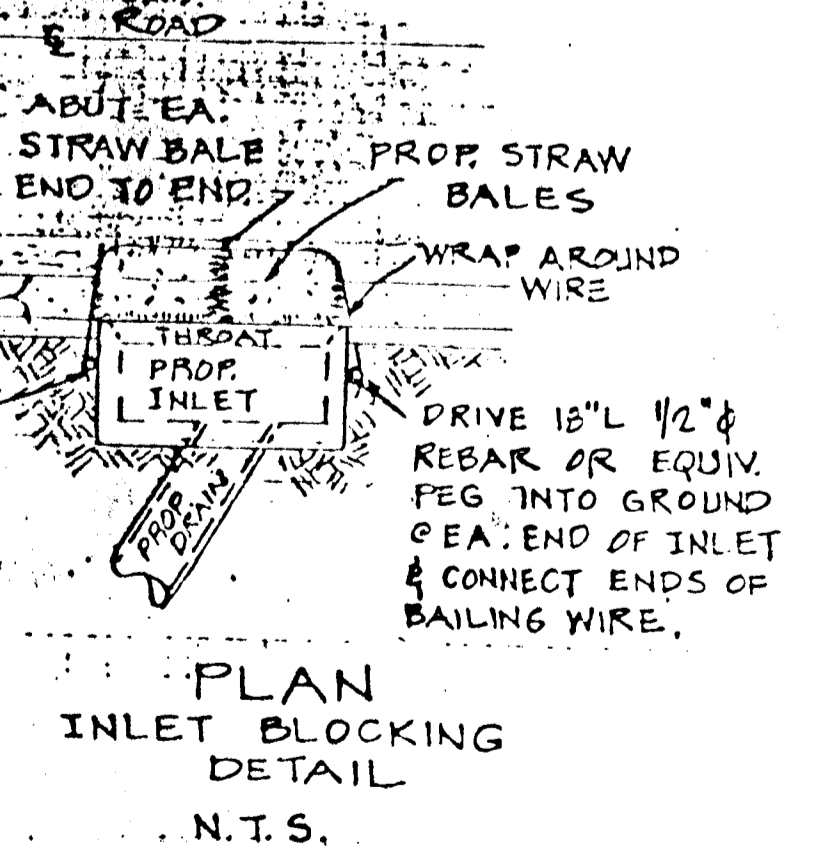
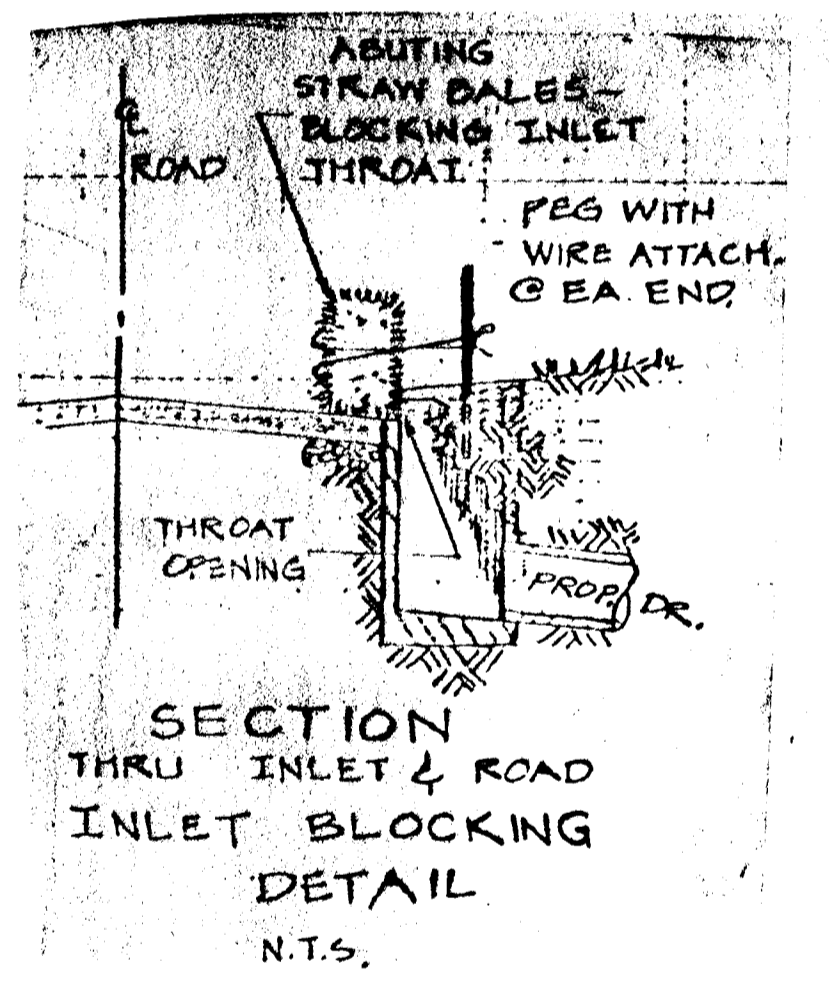


STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1
----------------------------------	------------------------

**STABILIZED CONSTRUCTION ENTRANCE**  
NOT TO SCALE



**STRAW BALE DIKE**  
NOT TO SCALE



**ST'D. ROAD & STREET DETAILS**  
SIDEWALK RAMP  
TYPE A

**NOTES**  
A. Right of Way Line truncation to be set 25' from P.I. along each of the intersecting lines as set forth in Section 16-113, par. F.3 of Subdivision Regulations. Minimum distance between back of sidewalk and Right of Way Line to be 2 feet.  
B. Type A Ramp to be used for all new construction where applicable unless otherwise directed by D.P.W.

APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>[Signature]</i>	DATE 4-7-82
CHIEF, BUREAU OF ENGINEERING	
APPROVED OFFICE OF PLANNING AND ZONING	
<i>[Signature]</i>	DATE 4-2-82
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION	

*[Signature]*  
PM 3-25-82

**OWNER & DEVELOPER**  
JOHN T. LEISHEAR, JR.  
RALPH L. STYERS, SR.  
FRANK A. COOK, JR.  
MALCOM B. KANE, ATTORNEY  
3716 COURT PLACE, ELLICOTT CITY, MD.

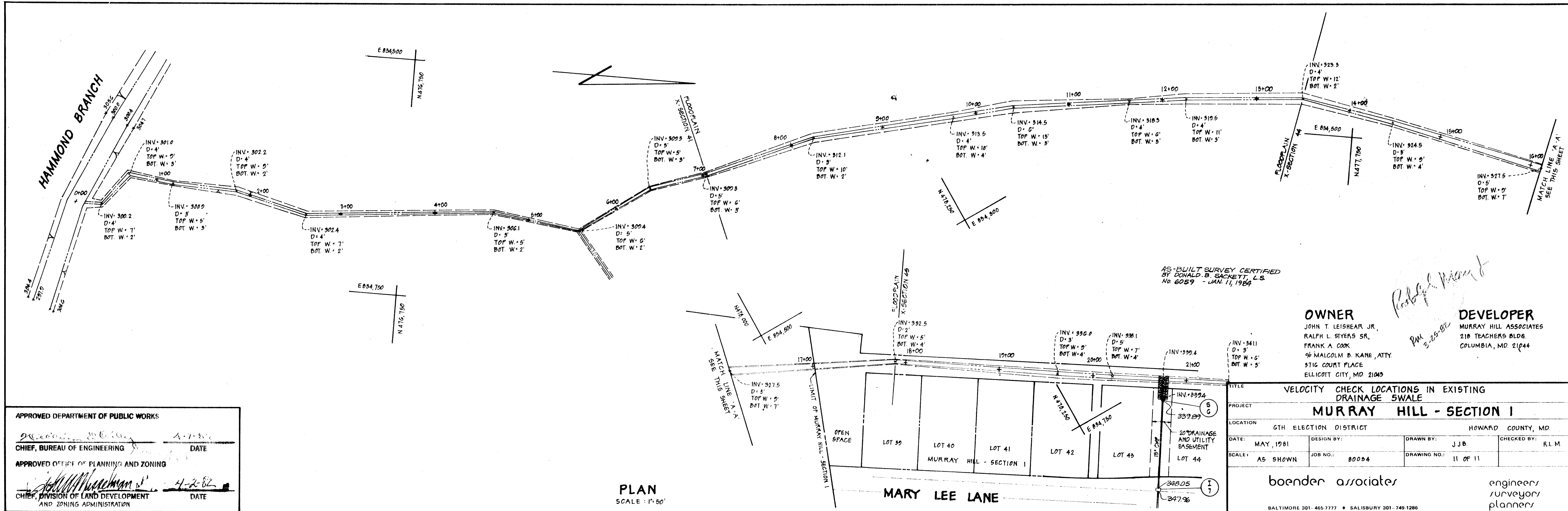
MURRAY HILL ASSOCIATES  
218 TEACHERS BUILDING  
COLUMBIA, MD. 21044

TITLE: DRAINAGE AREA MAP AND SEDIMENT CONTROL DETAILS			
PROJECT: MURRAY HILL SECTION I			
LOCATION: 6TH. ELECTION DISTRICT		HOWARD COUNTY, MARYLAND	
DATE: FEBRUARY, 1981	DESIGN BY: R.L.M./J.J.B.	DRAWN BY: G.E.M.	CHECKED BY: R.L.M.
SCALE: 1" = 20'	JOB NO.: 8034	DRAWING NO.: 10 OF 11	

boender associates  
SUITE 102 107 TOWN & COUNTRY PROFESSIONAL BUILDING  
ELLICOTT CITY, MARYLAND 21043  
BALTIMORE 301 468-7777 SALISBURY 301-749-1286

engineers/surveyors/planners

DATE	
BY	
SUBMITTED	
APPROVED	
NOTE BOOK	
NO.	



AS-BUILT SURVEY CERTIFIED BY DONALD B. SACKETT, L.S. NO. 6059 - JAN. 11, 1984

**OWNER**  
 JOHN T. LEISHEAR JR.,  
 RALPH L. SWEERS SR.,  
 FRANK A. COOK  
 96 MALCOLM B. KANE, ATTY  
 5716 COURT PLACE  
 ELLICOTT CITY, MD 21045

**DEVELOPER**  
 MURRAY HILL ASSOCIATES  
 210 TEACHERS BLDG.  
 COLUMBIA, MD 21044

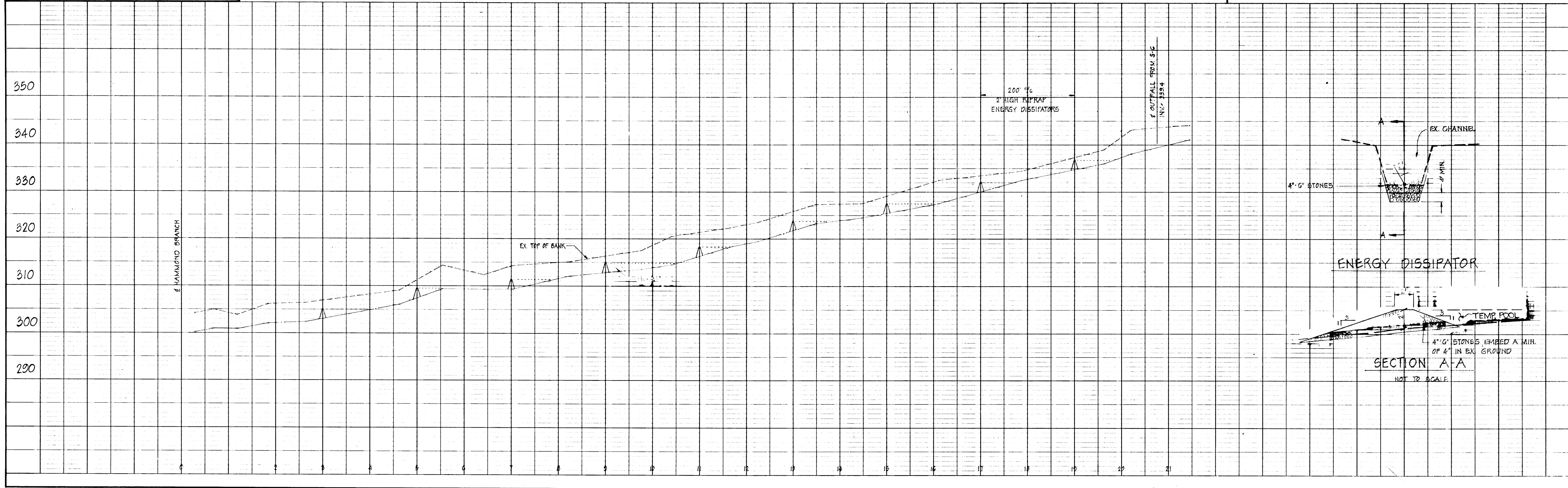
APPROVED DEPARTMENT OF PUBLIC WORKS  
 \_\_\_\_\_ DATE 4-7-84  
 CHIEF, BUREAU OF ENGINEERING

APPROVED OFFICE OF PLANNING AND ZONING  
 \_\_\_\_\_ DATE 4-2-84  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

PLAN  
 SCALE: 1"=50'

TITLE: VELOCITY CHECK LOCATIONS IN EXISTING DRAINAGE SWALE			
PROJECT: MURRAY HILL - SECTION I			
LOCATION: GTH ELECTION DISTRICT		HOWARD COUNTY, MD	
DATE: MAY, 1981	DESIGN BY:	DRAWN BY: JJB	CHECKED BY: RLM
SCALE: AS SHOWN	JOB NO.: 80054	DRAWING NO.: 11 OF 11	
boender associates		engineers surveyors planners	
BALTIMORE 301-465-7777 • SALISBURY 301-749-1286			

DATE	
BY	
SUBMITTED	
APPROVED	
NOTE BOOK	
NO.	



#902