

Section 2  
TWELVE HILLS  
Plot 7430  
Zoned: R

Ex. Twelve Hills Road  
(F-88-05)

STA. 16+85.27 245' NORTH  
LIMIT OF SUBMISSION

**Curve Data**  
Sta. 16+85.27 to Sta. 19+56.41  
R = 931.71'  
L = 271.14'  
T = 136.54'  
D = 16° 40' 26"  
Ch = N 32° 20' 13" E, 270.18'

**PLAN**

SCALE: 1" = 50'

SEE SHEET 7 OF 10  
FOR TYPICAL SECTION

**Owner and Developer**

ALTOGETHER LIMITED PARTNERSHIP  
c/o HOWARD COUNTY LAND SERVICES, INC.  
8307 MAIN STREET  
ELLCOTT CITY, MARYLAND 21043

**VICINITY MAP**  
SCALE: 1" = 2000'  
**PROJECT BENCH MARKS**

BM #1 HOWARD COUNTY CONTROL POINT 2835001  
N 508373.269 E 807783.008  
CONCRETE MONUMENT 0.5' BELOW SURFACE  
SOUTH SIDE OF LINDEN CHURCH ROAD, EASTERLY 135'  
FROM THE E. OF MD ROUTE 32  
ELEV. 575.69

BM #2 HOWARD COUNTY CONTROL POINT 2835002  
N 809214.859 E 807271.46  
CONCRETE MONUMENT 0.5' BELOW SURFACE  
25' WESTERLY OF THE E. OF MD ROUTE 32  
ELEV. 536.67

**GENERAL NOTES**

- All work shall be done in accordance with Howard County Standards, Specifications and Details for Construction.
- All utility companies must be notified in advance of any construction.
- Storm drainage trenches within road rights-of-way shall be backfilled and compacted in accordance with Howard County Road Code.
- Any damage to public rights-of-way or paving will be corrected at the contractor's expense.
- Contractor to notify the Howard County Inspection and Survey Division at least three days before starting work shown on these drawings (Telephone: (301) 792-7272).
- All traffic control devices shall be installed in accordance with the Manual of Uniform Traffic Control Devices, 1978 Edition.
- Location of existing utilities shall be verified by the contractor prior to starting any work shown on these drawings. Any damage to existing utilities will be corrected at the contractor's expense.

APPROVED:

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

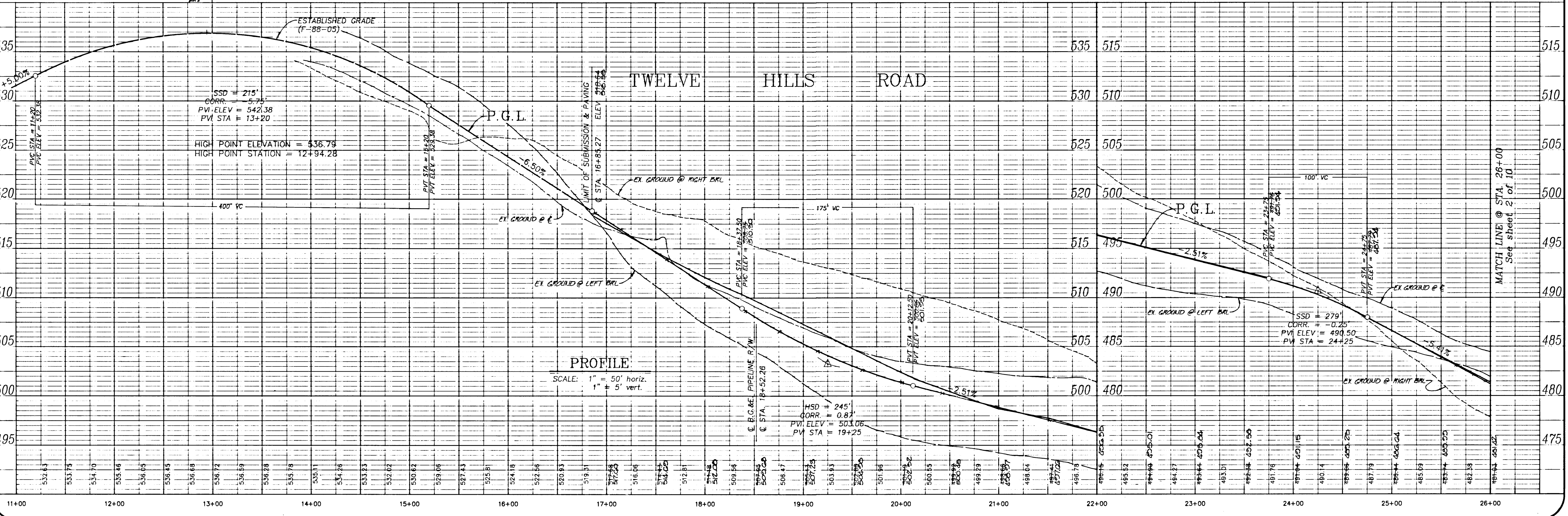
*Chad Dammus* 12/10/88  
CHIEF, LAND DEVELOPMENT DIVISION DATE

*Granville W. Weiland* 1/14/89  
CHIEF, BUREAU OF HIGHWAYS DATE

*Robert E. Pugh* 1-6-89  
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING

*Frank J. Z. Vogel* 1/6/89  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



**PROFILE**

SCALE: 1" = 50' horiz.  
1" = 5' vert.

664

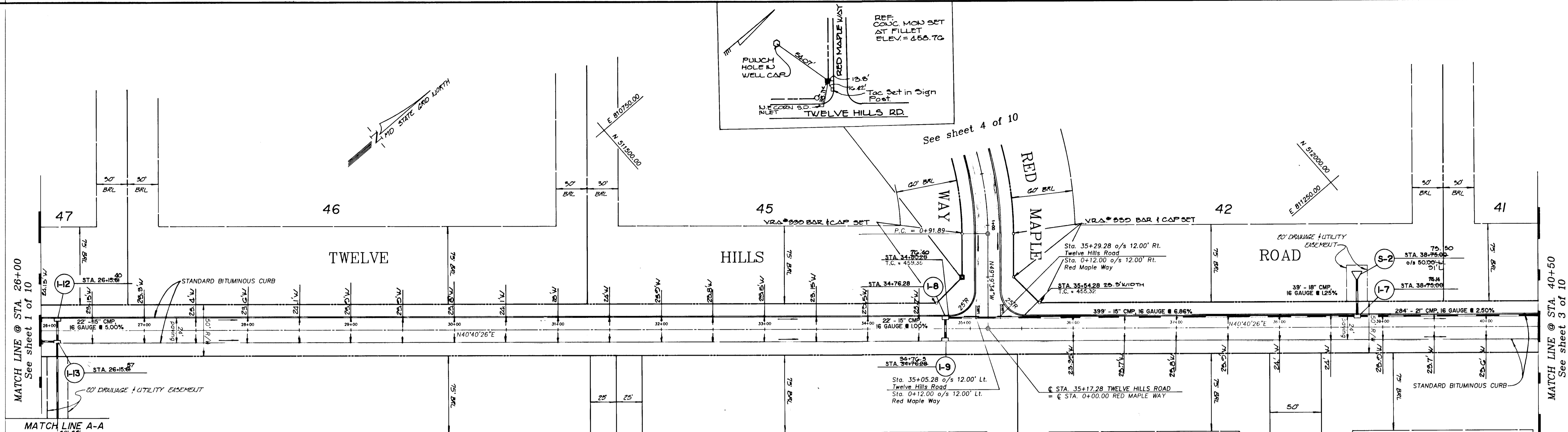
project	88013.00	date	5/13/88
illustration	LIG/JLM	engineering	JLM/JBM
scale	1" = 50'	approval	RMM

Submitted to	Howard County OPZ	description	
no.	0	revisions	
date	8/24/88		

TWELVE HILLS - Section 3  
LOTS 25 THROUGH 50  
TAX MAP 28  
ELECTION DISTRICT NO. 5  
P/O PARCEL 68 B P/O PARCEL 49  
HOWARD COUNTY, MARYLAND  
TWELVE HILLS ROAD - PLAN & PROFILE

**MILDENBERG, MOCH & ASSOCIATES, INC.**  
ENGINEERS - SURVEYORS - PLANNERS  
3300 North Ridge Road, Suite 203, Ellicott City, Maryland, 21043-3300  
(301) 461-0078 D.C. Metro: (301) 621-5188





APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

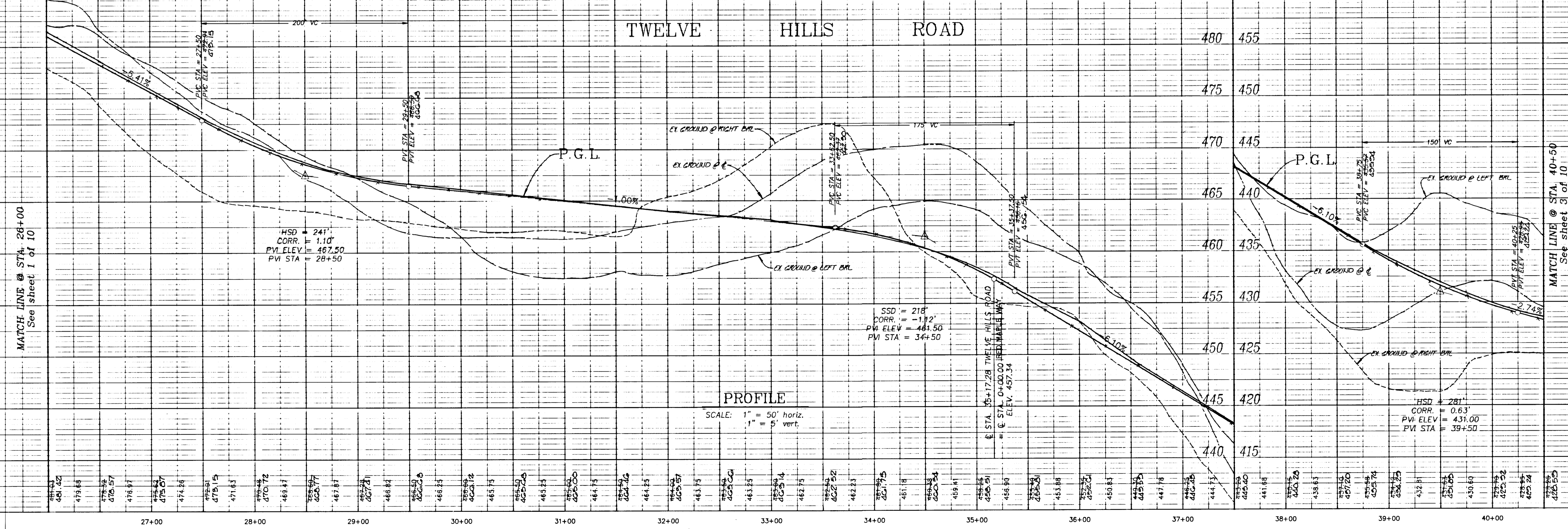
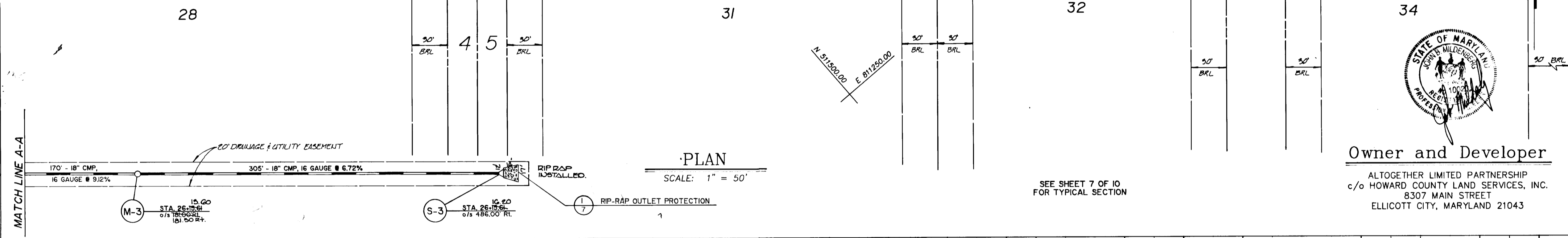
*[Signature]* 12/2/88  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

*[Signature]* 1/4/89  
 CHIEF, BUREAU OF HIGHWAYS DATE

*[Signature]* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING

*[Signature]* 1/1/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 12/2/88  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

*[Signature]* 1/4/89  
 CHIEF, BUREAU OF HIGHWAYS DATE

*[Signature]* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING

*[Signature]* 1/1/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

project 88013.00  
 illustration LJC/JLM  
 scale 1" = 50'  
 date 5/13/88  
 engineering JLM/JBM  
 approval RMW

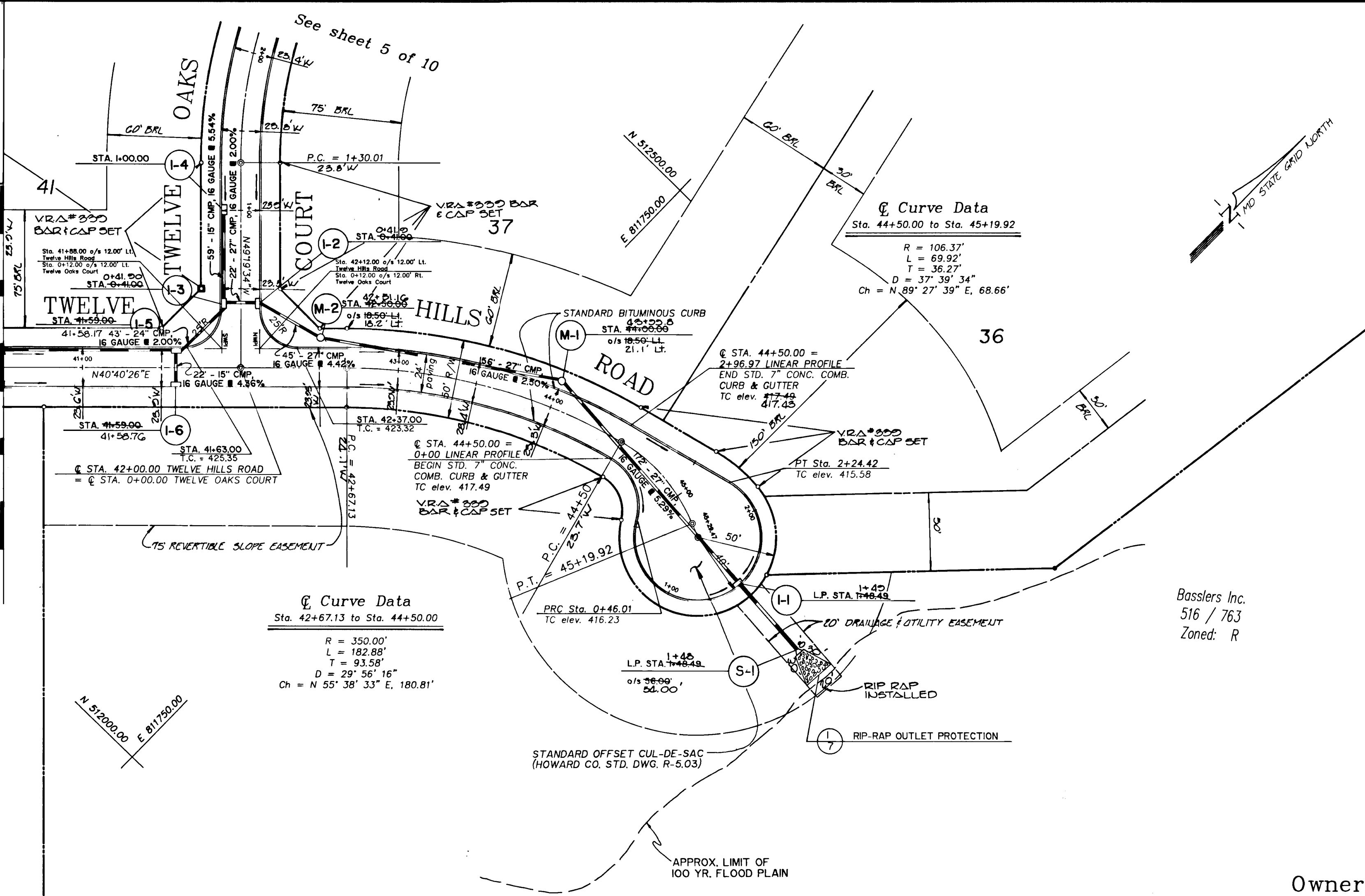
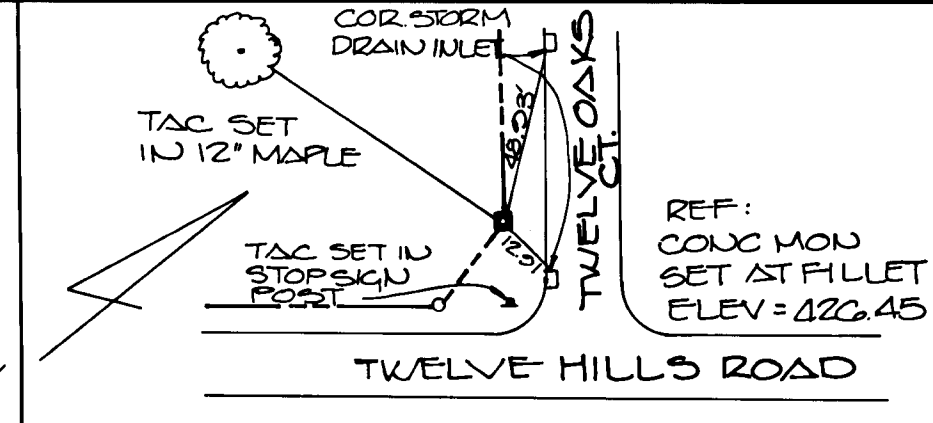
Submitted to Howard County OPZ  
 description  
 no. 8/24/88  
 date

TWELVE HILLS - Section 3  
 TAX MAP 28  
 P/O PARCEL 66 & P/O PARCEL 49  
 HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT NO. 5  
 TWELVE HILLS ROAD - PLAN & PROFILE

MILDENBERG, MOUCH & ASSOCIATES, INC.  
 ENGINEERS • ARCHITECTS • PLANNERS  
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland, 21044-3350  
 (301) 461-0078 D.C. Metro: (301) 921-5188

2 OF 10

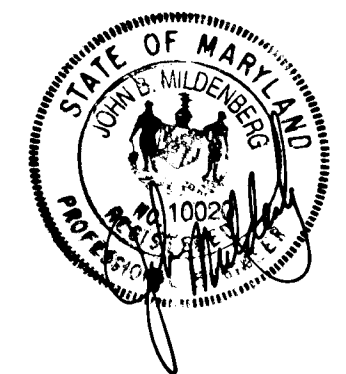




PLAN  
SCALE: 1" = 50'

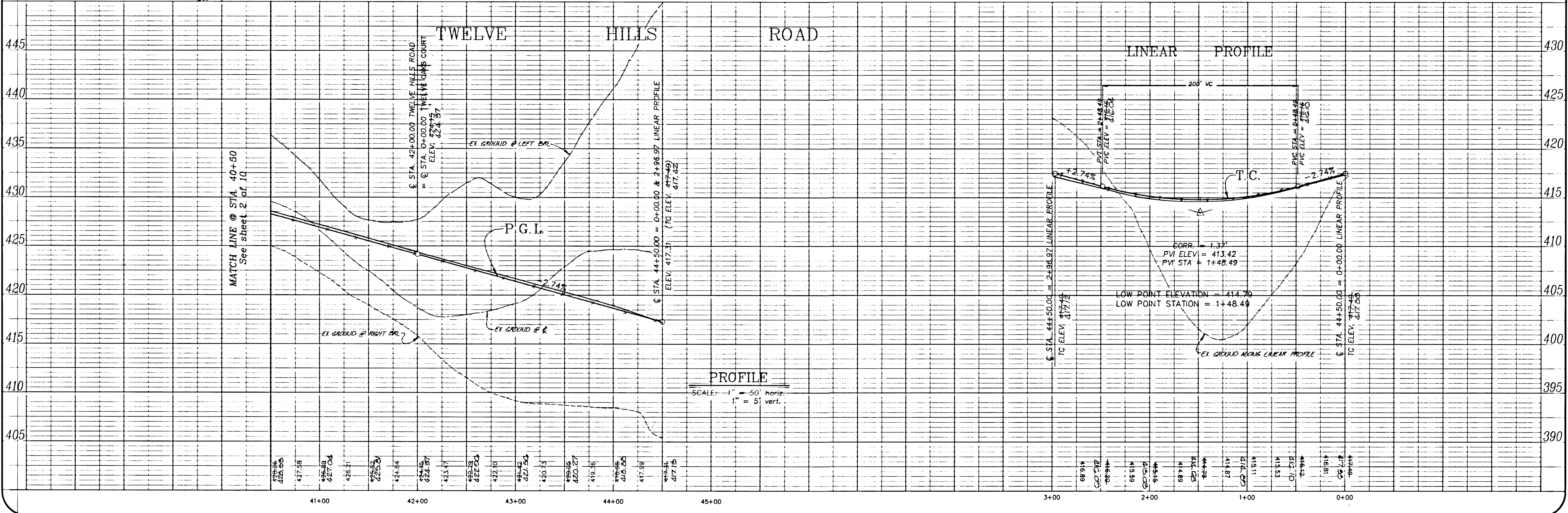
Owner and Developer

ALTOGETHER LIMITED PARTNERSHIP  
c/o HOWARD COUNTY LAND SERVICES, INC.  
8307 MAIN STREET  
ELICOTT CITY, MARYLAND 21043



APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles Cummings* 12/2/88  
CHIEF, LAND DEVELOPMENT DIVISION  
*Francis W. Woodard* 1/4/89  
CHIEF, BUREAU OF HIGHWAYS  
*Richard E. Reidy* 1-6-89  
CHIEF, BUREAU OF ENGINEERING

APPROVED: OFFICE OF PLANNING AND ZONING  
*Frank S. DeLong* 1/4/89  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



PROFILE  
SCALE: 1" = 50' horiz.  
1" = 5' vert.

project	88013.00	date	5/13/88
illustration	LJG/JLM	engineering	JLM/JBM
scale	1" = 40'	approval	
no.	0	revisions	

Submitted to	Howard County DPZ	date	8/24/88
description			
revisions			

TWELVE HILLS ROAD - Section 3  
LOTS 25 THROUGH 50  
TAX MAP 28  
ELECTION DISTRICT NO. 5  
P/O PARCEL 66 & P/O PARCEL 49  
HOWARD COUNTY, MARYLAND

MILDENBERG, MOCH & ASSOCIATES, INC.  
ENGINEERS - SURVEYORS - PLANNERS  
3300 North Ridge Road, Suite 205, Ellicott City, Maryland 21044-3350  
(301) 461-0078 D.C. Metro (301) 921-5188

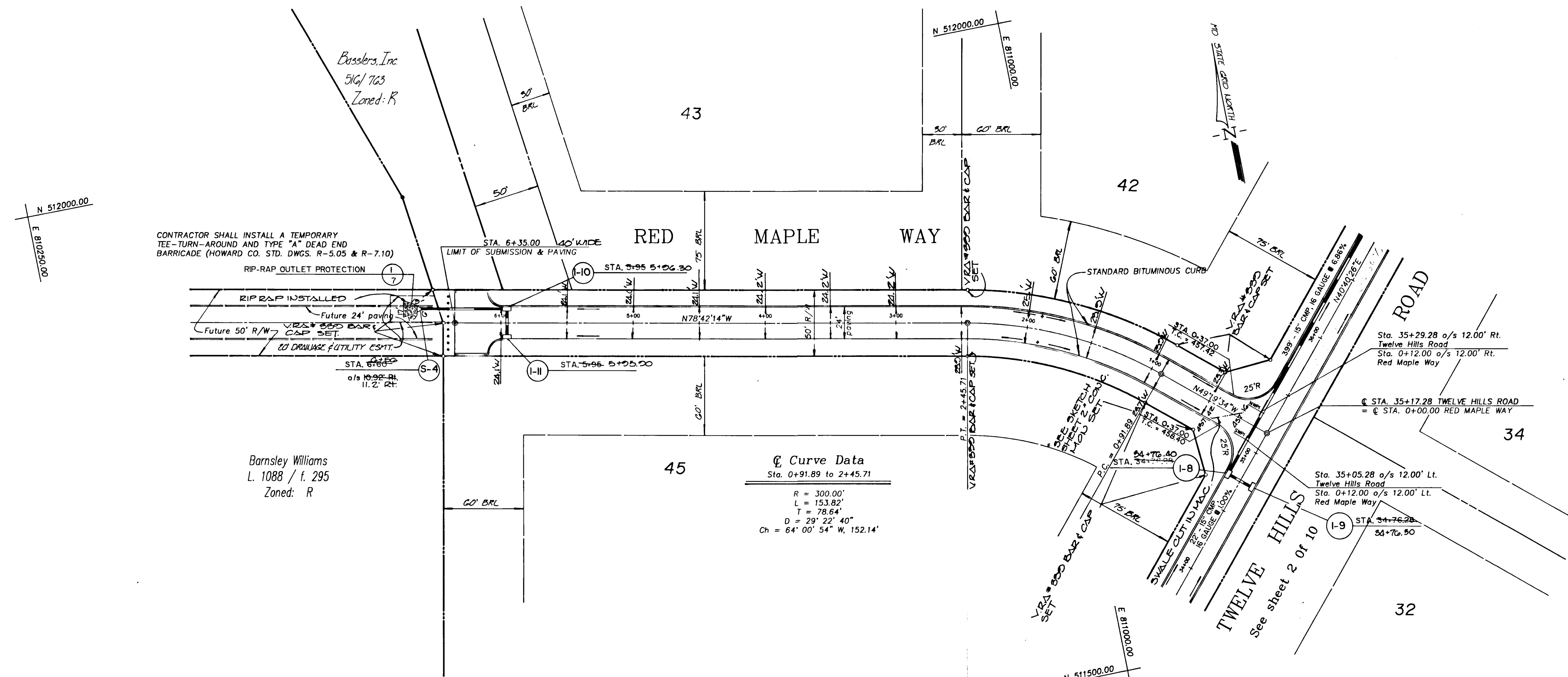


Project	88013.00
Date	5/13/88
Illustration	LJC/JLM
Scale	1" = 50'
Approval	JLM/JBM
Approval	JLM/JBM
Approval	RAM

Submitted to	Howard County DPZ
Description	REVISIONS
Revisions	
Date	9/27/88

TWELVE HILLS - Section 3  
 P/O PARCEL 86 & P/O PARCEL 49  
 HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT NO. 5  
 RED MAPLE WAY - PLAN & PROFILE

MILDENBERG, BOCHI & ASSOCIATES, INC.  
 ENGINEERS & ARCHITECTS  
 3300 North Ridge Road, Suite 215, Ellicott City, Maryland, 21043-3300  
 (301) 461-0078 D.C. Metro: (202) 627-5788

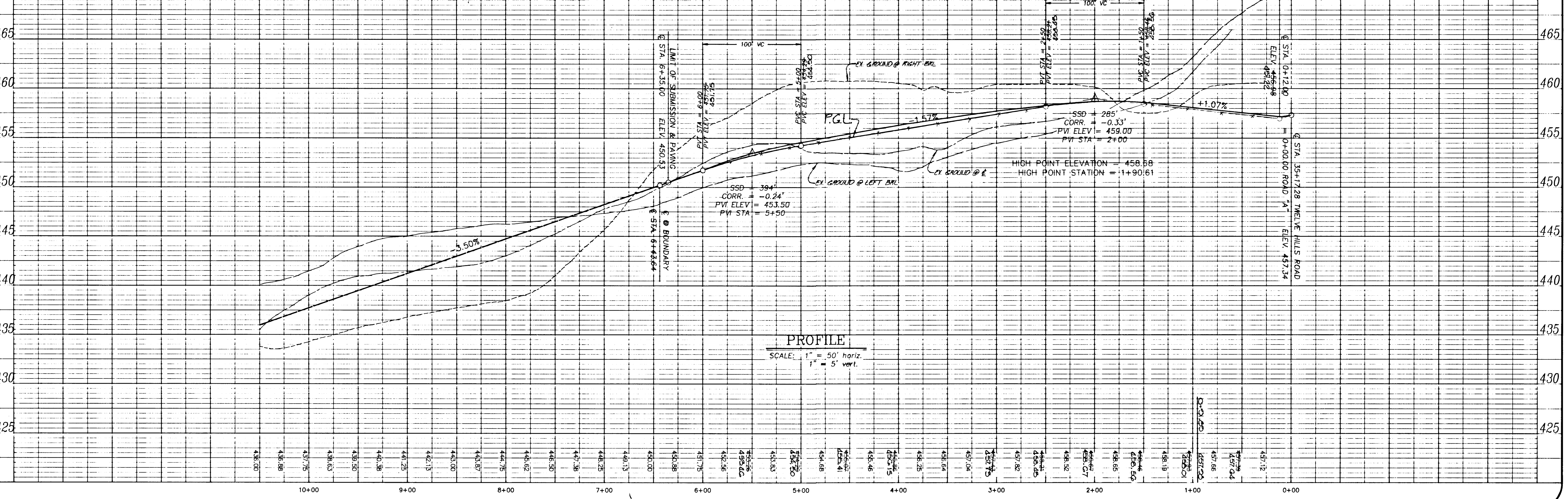


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Chad Damians* 12/29/88  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

*Francis W. Weverand* 1/4/89  
 CHIEF, BUREAU OF HIGHWAYS DATE

*Richard E. Raley* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*Frank S. DeLong* 1/6/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



667

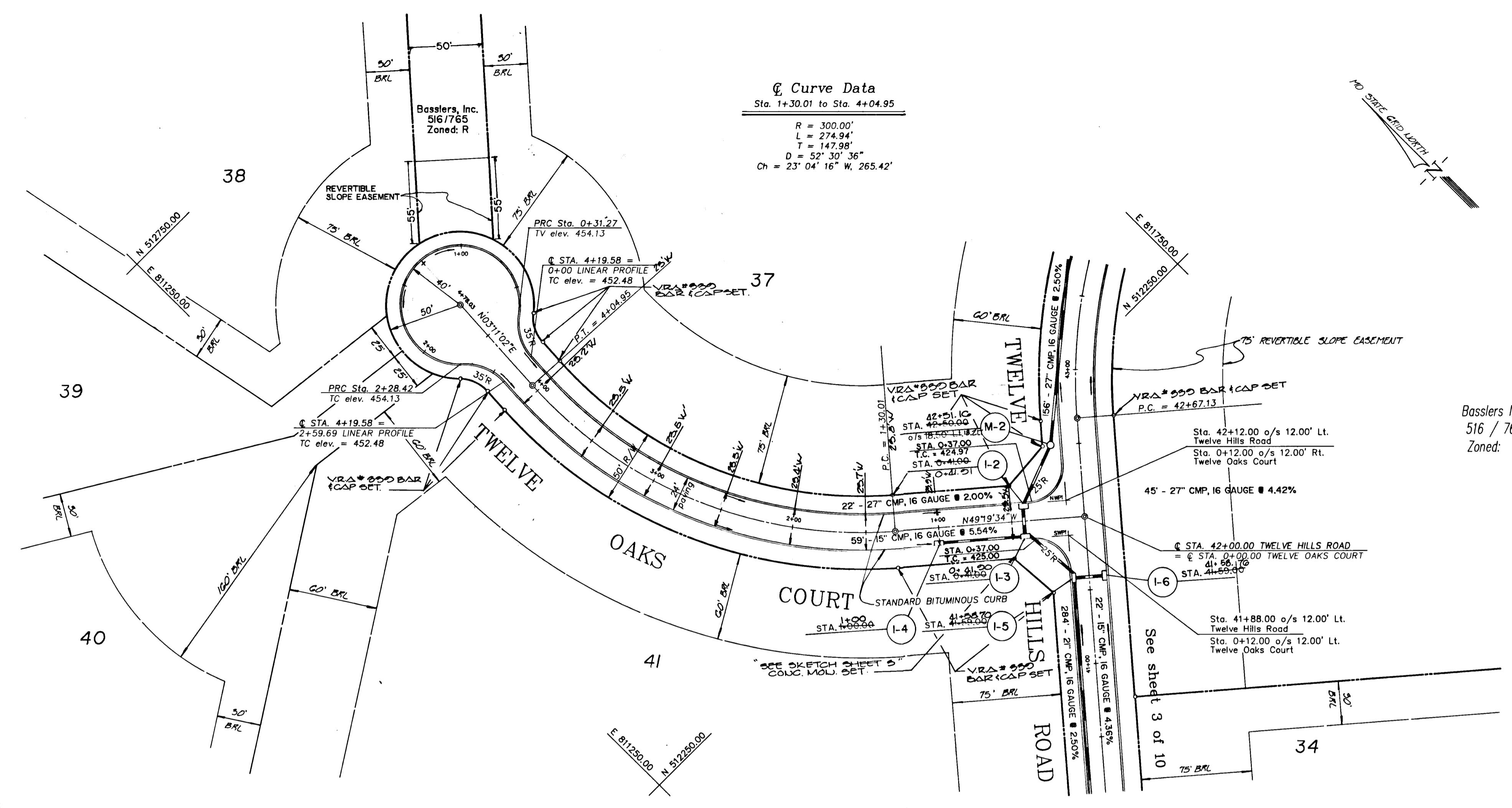


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illustration	JLJ/JLM	engineering	JLM/JBM
scale	1" = 5'	approval	RMM

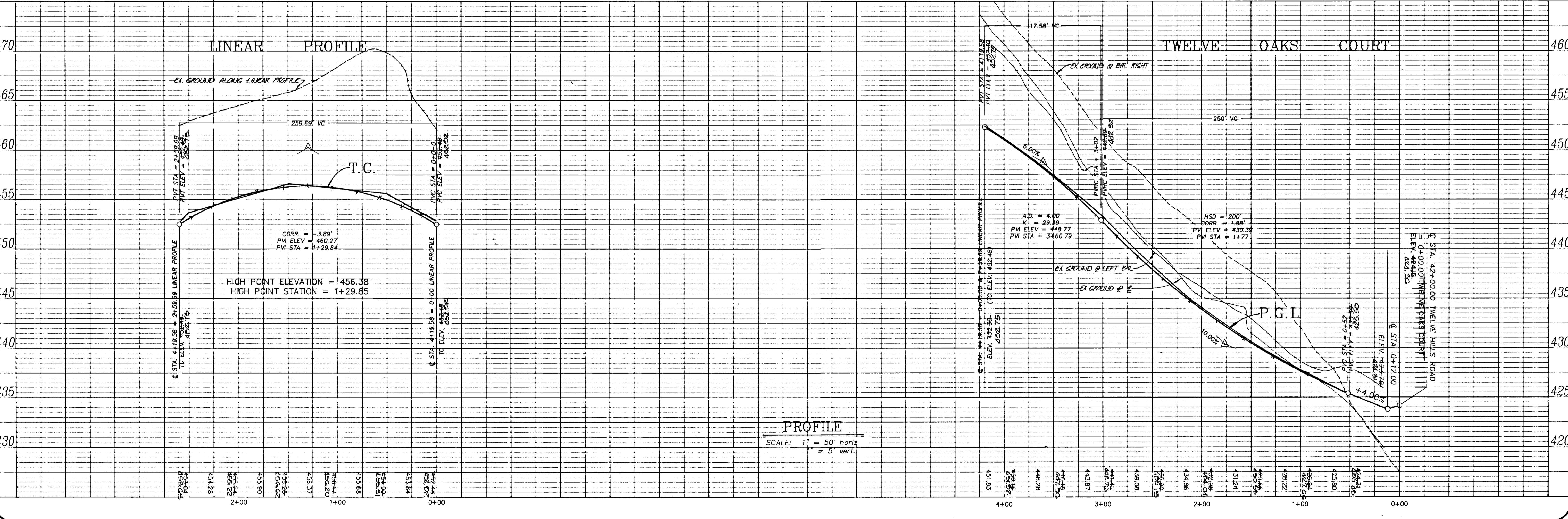
no.	0	date	8/24/88
description	Submitted to Howard County OPZ		
revisions			

TWELVE HILLS - Section 3  
 LOTS 23 THROUGH 50  
 P/O PARCEL 66 & P/O PARCEL 49  
 TAX MAP 28  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND  
**TWELVE OAKS COURT - PLAN & PROFILE**

**MILDBERG, MOUCH & ASSOCIATES, INC.**  
 ENGINEERS - SURVEYORS - PLANNERS  
 1300 North Beltsville Road, Suite 205, Beltsville, Maryland 21054-3350  
 (301) 461-6078 D.C. Permit: CB1 621-5756



APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles R. ...* 12/2/88  
 CHIEF, LAND DEVELOPMENT DIVISION  
*Granville W. ...* 1/14/89  
 CHIEF, BUREAU OF HIGHWAYS  
*Robert ...* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING  
 APPROVED: OFFICE OF PLANNING AND ZONING  
*Frank S. ...* 4/1/89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



407



167

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

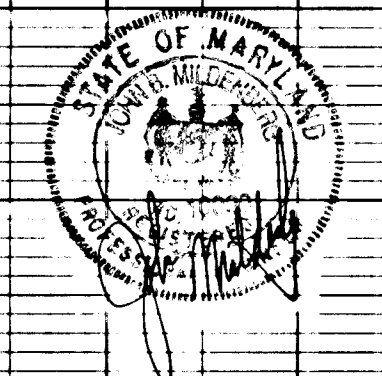
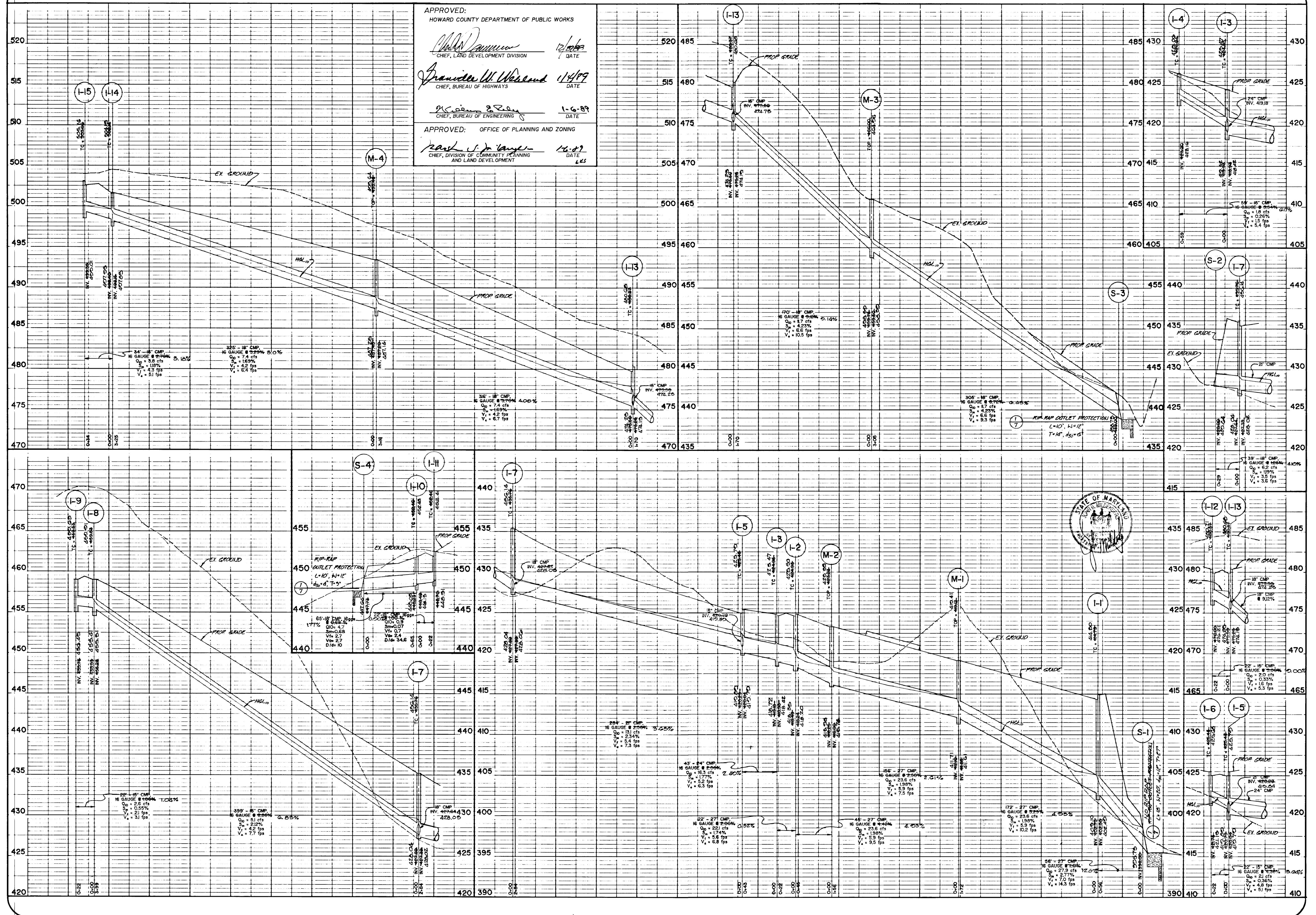
*Walter Dammann* 12/88  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

*Granville W. Weiland* 1/14/89  
 CHIEF, BUREAU OF HIGHWAYS DATE

*W. C. ...* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING

*David J. ...* 1-6-89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



project 88013.00  
 date 5/13/88  
 illustration JLM/JBM  
 engineering JLM/JBM  
 approval RMM

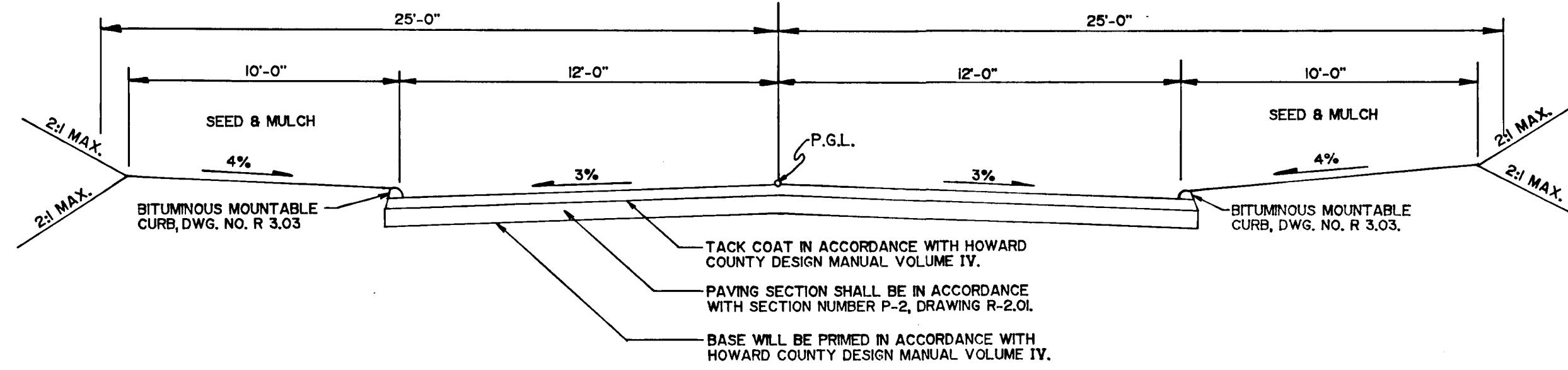
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 description Submitted to Howard County DPZ  
 date 8/24/88

TWELVE HILLS - Section 3  
 LOTS 25 THROUGH 28  
 TAX MAP 28 P/O PARCEL 66 & P/O PARCEL 49  
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND  
 STORM DRAIN PROFILES

LOEBENBERG,  
 MOCH & ASSOCIATES, INC.  
 ENGINEERS - PLUMBERS  
 3300 North Ridge Road, Suite 200, Great Falls, Maryland 21044-3350  
 (301) 961-5078 U.S. Metric (301) 621-5788

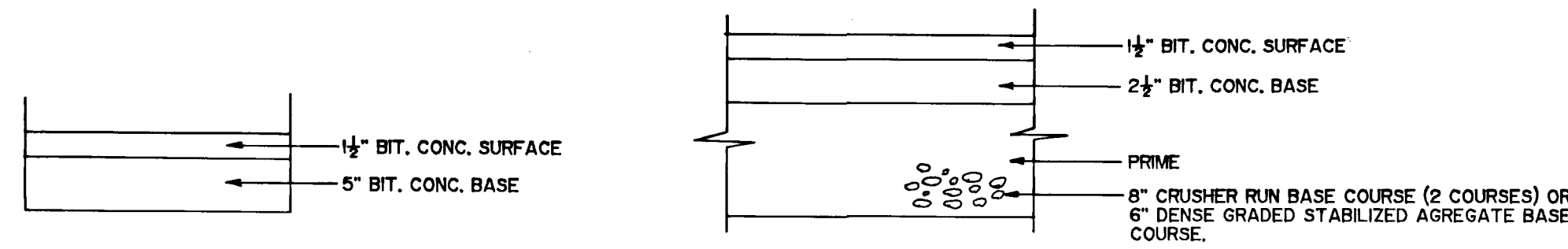


STRUCTURE SCHEDULE						
STRUCTURE NO.	TYPE	INV. IN	INV. OUT	TOP	STA/OFFSET	COMMENTS
S-1	METAL END SECTION CIRCULAR METAL PIPE SD-5.61	398.00 415.75		398.25 415.75	1425 LP. STA. 44+49 0/15 50+00 54.00'	* PIPE INVERT
I-1	DOUBLE TYPE 3 COMB. INLET SD-4-34	402.75 405.10	402.40 402.25	414.30 414.30	LP. STA. 44+48 1+40	* FACE OF CURB
M-1	5'-0" BRICK MANHOLES G-5.02	412.90 411.71	416.86 411.61	416.86 412.41	45+00 00 STA. 45+00 00 0/15 18+50 LT. 21.11'	
M-2	5'-0" BRICK MANHOLES G-5.02	416.26 415.08	416.76 415.76	423.23 422.50	42+00 00 STA. 42+00 00 0/15 18+50 LT. 15.21'	
I-2	DOUBLE TYPE 3 COMB. INLET SD-4-34	416.48 418.35	418.24 418.20	424.96 TC 425.50	0+12.51 STA. 40+98 0/15 12.00 RT. 12.00'	* FACE OF CURB
I-3	DOUBLE TYPE 3 COMB. INLET SD-4-34	418.72 I-5 419.18 419.52 I-4	418.33 418.33	424.96 TC 425.47	0+12.51 STA. 40+98 0/15 12.00 LT. 12.00'	* FACE OF CURB
I-4	DOUBLE TYPE 3 COMB. INLET SD-4-34		423.26 423.10	424.96 TC 425.00	STA. 40+98 0/15 12.00 LT. 12.00'	* FACE OF CURB
I-5	DOUBLE TYPE 3 COMB. INLET SD-4-34	426.78 419.80	426.04 419.72	426.46 TC 425.70	STA. 41+00 00 0/15 12.00 LT. 12.00'	* FACE OF CURB
I-6	DOUBLE TYPE 3 COMB. INLET SD-4-34		426.75 421.12	426.46 TC 425.00	STA. 41+00 00 0/15 12.00 RT. 12.00'	* FACE OF CURB
I-7	DOUBLE TYPE 3 COMB. INLET SD-4-34	427.83 425.04	427.38 425.02	433.76 TC 425.14	STA. 41+00 00 0/15 12.00 LT. 12.00'	* FACE OF CURB
S-2	METAL END SECTION CIRCULAR METAL PIPE SD-5.61	428.00 425.04		428.50 428.14	52+75.5 STA. 50+00 0/15 50+00 LT. 50.51'	RIP RAP PIPE INVERT INSTALLED
I-8	DOUBLE TYPE 3 COMB. INLET SD-4-34	435.53 434.41	435.28 434.31	439.33 TC 438.31	STA. 51+00 00 0/15 12.00 LT. 12.00'	* FACE OF CURB
I-9	DOUBLE TYPE 3 COMB. INLET SD-4-34		435.76 435.45	439.33 TC 438.31	STA. 51+00 00 0/15 12.00 RT. 12.00'	* FACE OF CURB
I-10	DOUBLE TYPE 3 COMB. INLET SD-4-34	438.18 444.15	438.23 444.05	442.46 TC 442.42	STA. 51+00 00 0/15 12.00 RT. 12.00'	* FACE OF CURB
I-11	DOUBLE TYPE 3 COMB. INLET SD-4-34		438.70 446.31	442.46 TC 442.41	STA. 51+00 00 0/15 12.00 LT. 12.00'	* FACE OF CURB
S-4	METAL END SECTION CIRCULAR METAL PIPE SD-5.61		437.04 447.04	433.96 443.14	6+56 STA. 46+00 0/15 11.20 RT. 11.20'	RIP RAP PIPE INVERT INSTALLED
S-3	METAL END SECTION CIRCULAR METAL PIPE SD-5.61		INV. 18" CHP 435.00 435.75	420.56 440.25	STA. 26+46 0/15 17+00 RT. 51.00 0/15 45.00 RT. 45.00'	PIPE INVERT
M-3	4'-0" BRICK MANHOLES G-5.01	435.76 435.50	435.80 435.50	446.00 444.24	STA. 26+46 0/15 17+00 RT. 51.00 0/15 45.00 RT. 45.00'	RIP RAP INSTALLED
I-12	DOUBLE TYPE 3 COMB. INLET SD-4-34		436.60 470.21	440.37 TC 440.71	STA. 26+46 0/15 12.00 LT. 12.00' STA. 26+15.40 0/15 15.40'	* FACE OF CURB
I-13	DOUBLE TYPE 3 COMB. INLET SD-4-34	435.59 474.25	435.26 474.15	440.37 TC 440.00	STA. 26+46 0/15 12.00 RT. 12.00' STA. 26+15.37 0/15 15.37'	* FACE OF CURB
M-4	4'-0" BRICK MANHOLES G-5.01	437+45 447.24	437.14 447.14	443.16 442.00	STA. 26+00 00 0/15 12.00 RT. 12.00' STA. 26+00 00 0/15 12.00 RT. 12.00'	
I-14	DOUBLE TYPE 3 COMB. INLET SD-4-34	438+48 457.25	438+46 457.25	452.14 TC 450.15	STA. 19+50 00 0/15 12.00 LT. 12.00' STA. 19+50 00 0/15 12.00 LT. 12.00'	* FACE OF CURB
I-15	DOUBLE TYPE 3 COMB. INLET SD-4-34		439.35 455.01	453.06 TC 450.16	STA. 19+50 00 0/15 12.00 LT. 12.00' STA. 19+50 00 0/15 12.00 LT. 12.00'	* FACE OF CURB

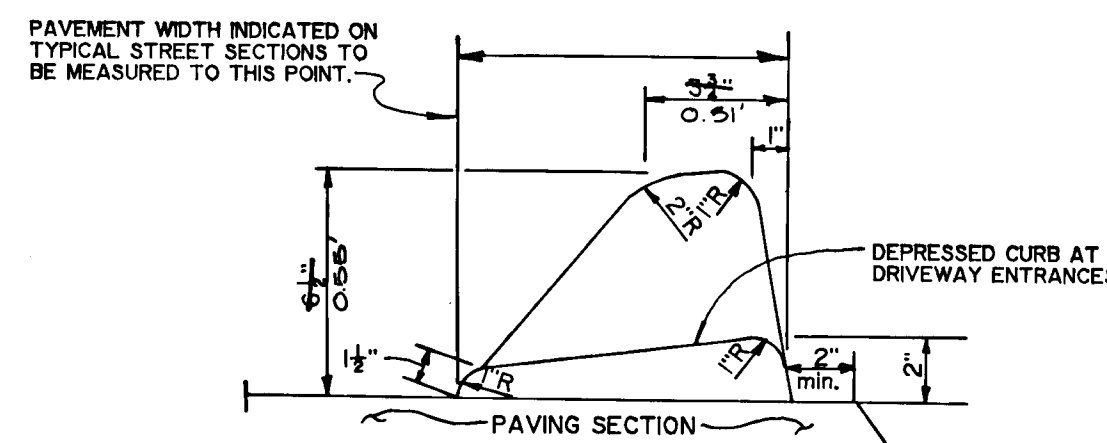


TYPICAL ROADWAY SECTION

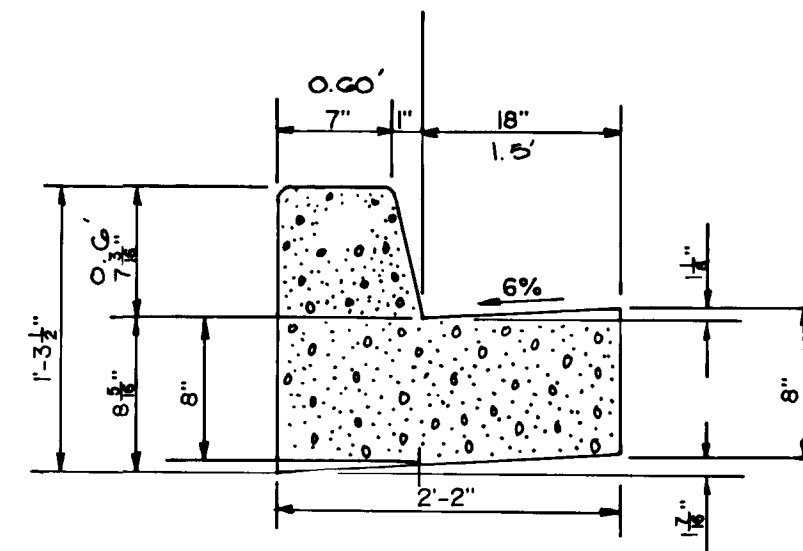
CLOSED SECTION (RURAL) ("R" ZONING DISTRICT)  
HOWARD COUNTY STANDARD R-102  
TWELVE HILLS ROAD STATION 16+85.27 TO STATION 44+50  
RED MAPLE WAY STATION 0+00 TO STATION 6+00  
TWELVE OAKS COURT STATION 0+00 TO STATION 4+19.58  
MAXIMUM DESIGN SPEED = 30 MPH



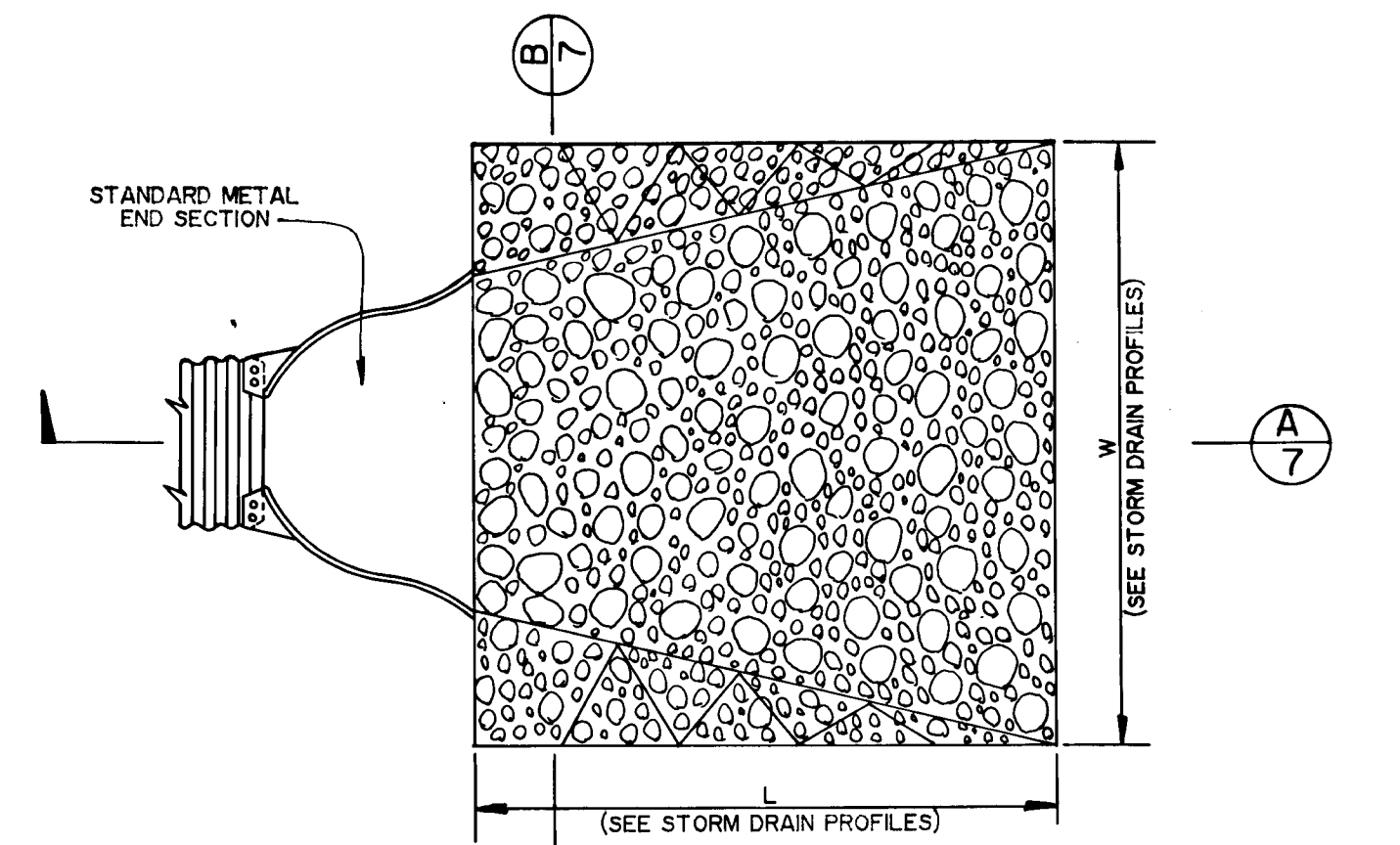
PAVING SECTION P-2



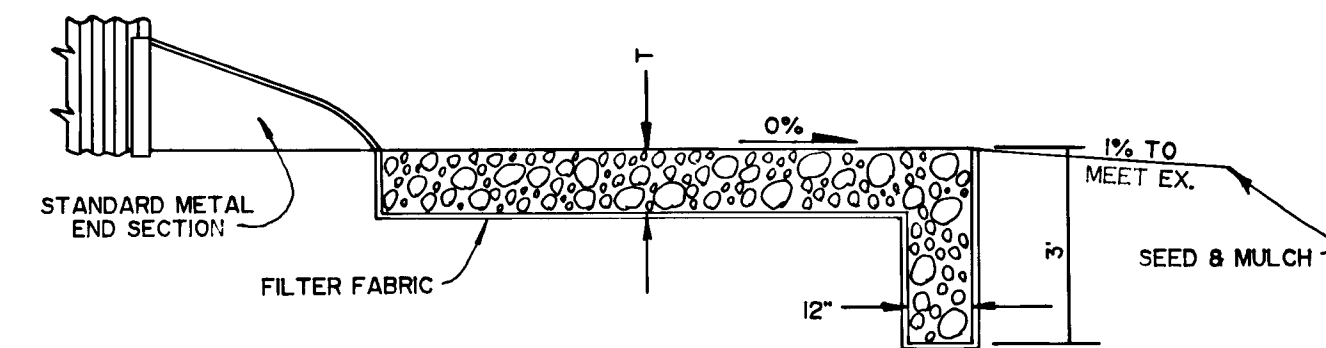
STANDARD BITUMINOUS CURB



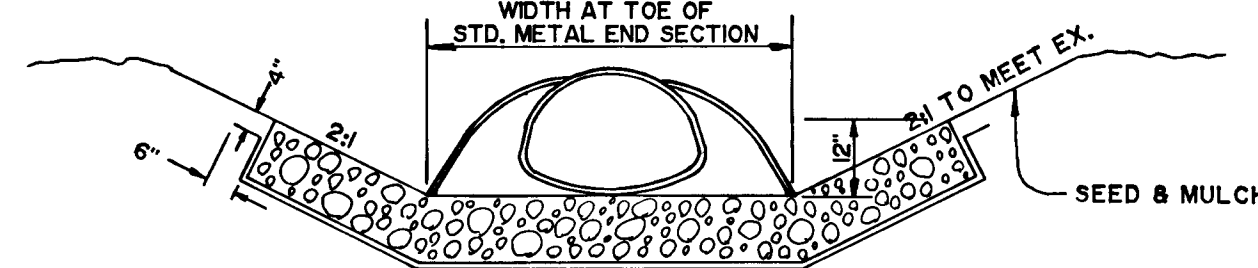
STANDARD SLOPE 7" COMB. CONC. CURB & GUTTER



1 RIP-RAP OUTLET PROTECTION  
2,3,4,6 NOT TO SCALE

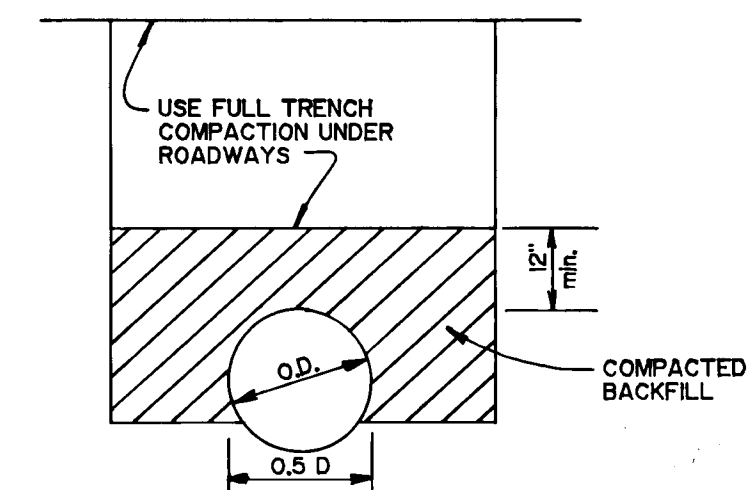


A SECTION



B SECTION

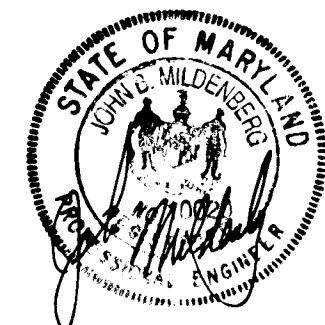
NOTE: FOR DIMENSIONS, DETAILS AND SPECIFICATIONS NOT SHOWN, REFER TO 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL, "ROCK OUTLET PROTECTION, STANDARD DRAWING ROP-1"



PIPE BEDDING DETAIL  
(CLASS C) NOT TO SCALE

NOTES: 1. FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, OVEREXCAVATE THE TRENCH FOR 6" AND REFILL WITH GRANULAR MATERIAL  
2. COMPACTED BACKFILL SHALL BE PLACED IN ACCORDANCE WITH SECTION 1003.03J OF VOLUME IV (STANDARDS & SPECS.)

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles Dammus* 12/2/88  
CHIEF, LAND DEVELOPMENT DIVISION DATE  
*Granville W. Cleveland* 1/4/89  
CHIEF, BUREAU OF HIGHWAYS DATE  
*John S. R. R. R.* 1-6-89  
CHIEF, BUREAU OF ENGINEERING DATE  
APPROVED: OFFICE OF PLANNING & ZONING  
*Mark J. D. Taylor* 1-6-89  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE  
LKS



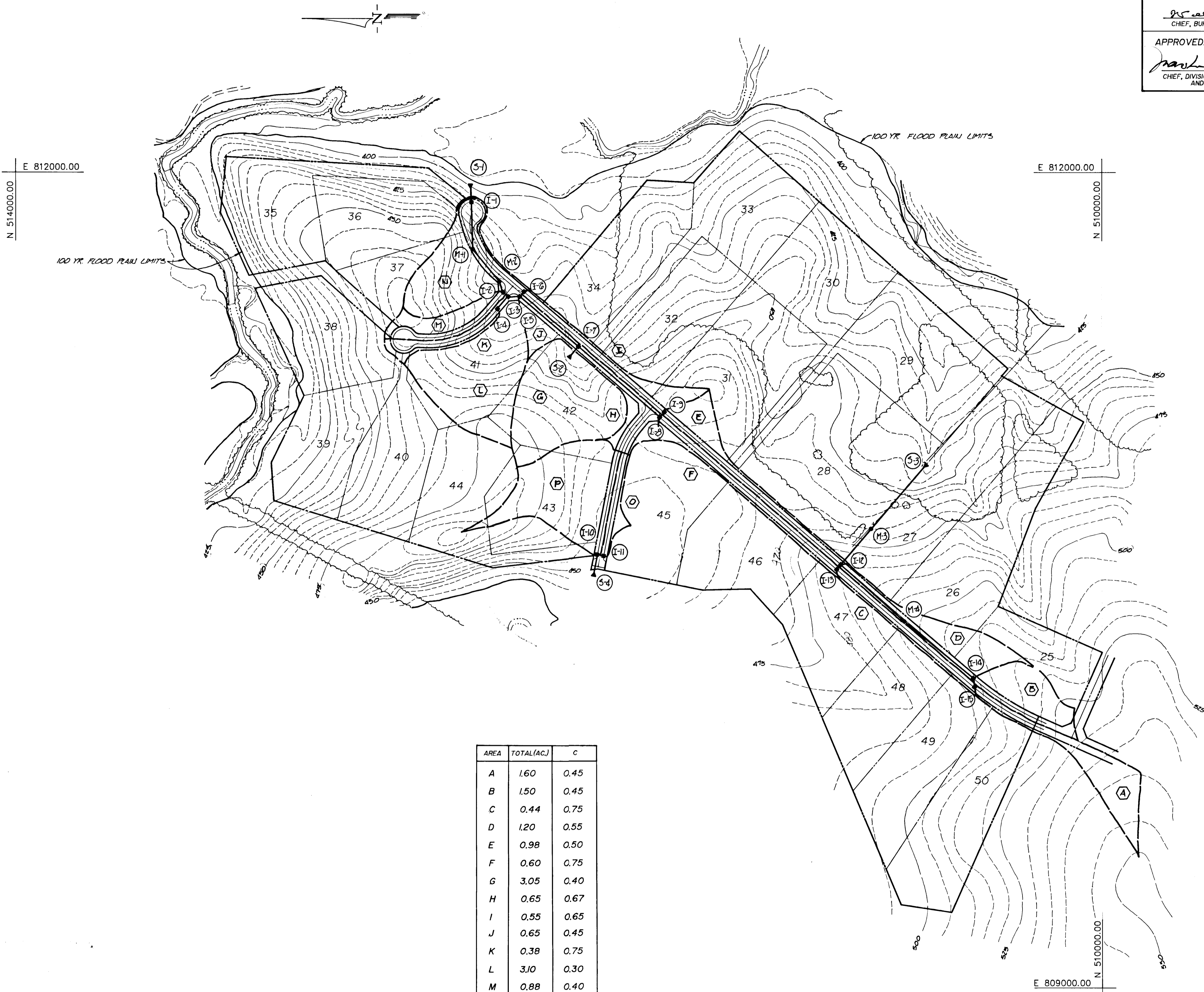
project	date	5/13/88
illustration	engineering	JLM/JSB
scale	approval	As shown
revisions	date	

Submitted to	Howard County DPZ
description	
revisions	
date	8/22/89
no.	

TWELVE HILLS - Section 3  
LOTS 25 THROUGH 50  
P/O PARCEL 66 & P/O PARCEL 49  
TAX MAP 28  
HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT NO. 5  
DETAILS AND SCHEDULE

MILDENBERG, BOCHI & ASSOCIATES, INC.  
ENGINEERS • SURVEYORS • PLANNERS  
3300 North Ridge Road, Suite 235, Pikesville, Maryland 21083-3550  
(301) 451-0078 D.C. Permit (01) 121 47198

497



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Robert D. ...* 12/2/88  
 CHIEF, LAND DEVELOPMENT DIVISION / DATE

*Arvid W. Weiland* 1/4/89  
 CHIEF, BUREAU OF HIGHWAYS / DATE

*...* 1-6-89  
 CHIEF, BUREAU OF ENGINEERING / DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*Paul J. ...* 1-6-89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT / DATE

Project	88013.00	date	5/13/88
Illustration	LJM/JLM	engineering	JLM/JLM
scale	1" = 200'	approval	RMM

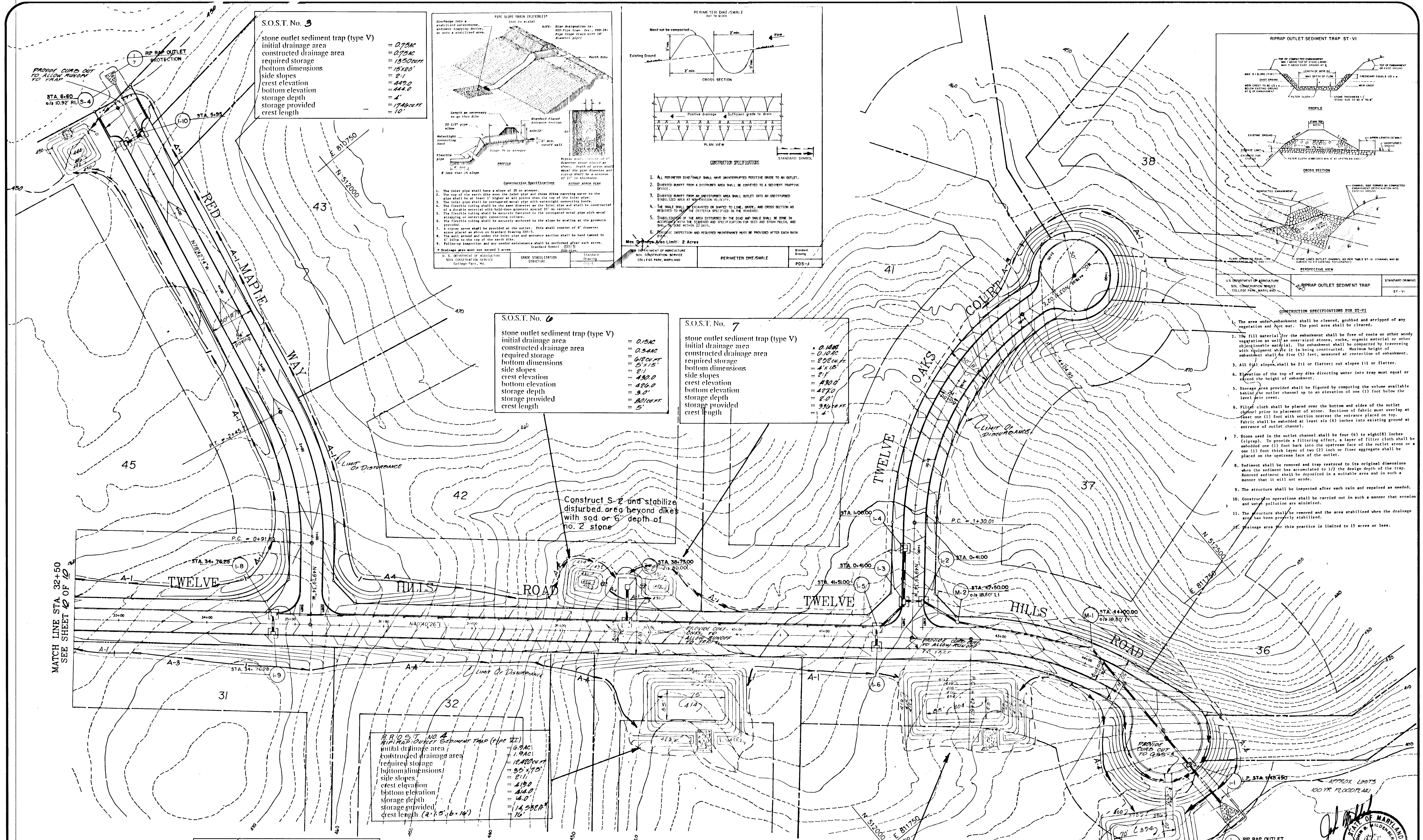
no.	0	date	8/24/88
description	Submitted to Howard County OPZ		
revisions			

TWELVE HILLS - Section 3  
 LOTS 25 THROUGH 50  
 TAX MAP 28 P/O PARCEL 66 & P/O PARCEL 49  
 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND  
 DRAINAGE AREA MAP

MILDENBERG, MOCH & ASSOCIATES, INC.  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 North Ridge Road, Suite 215, Ellicott City, Maryland 21043-3380  
 (301) 461-0078 D.C. Metro: (301) 671-5768

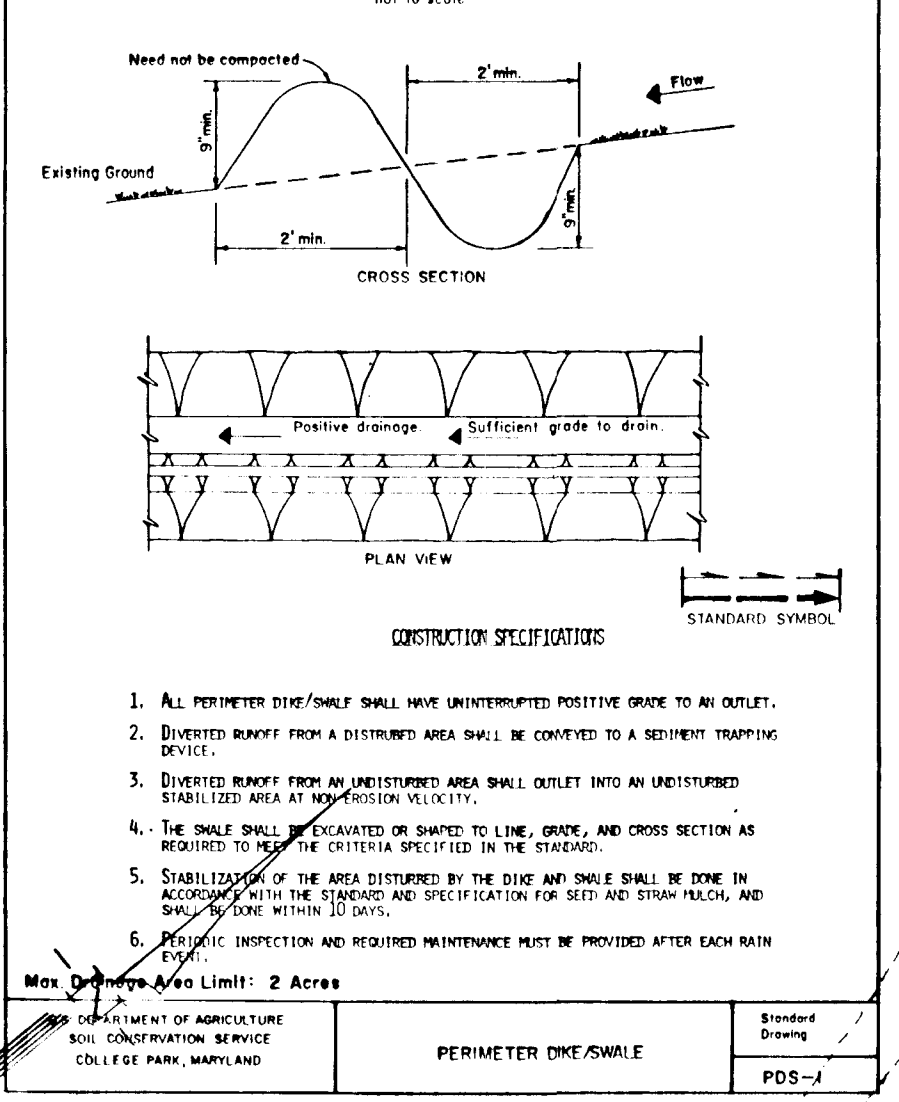
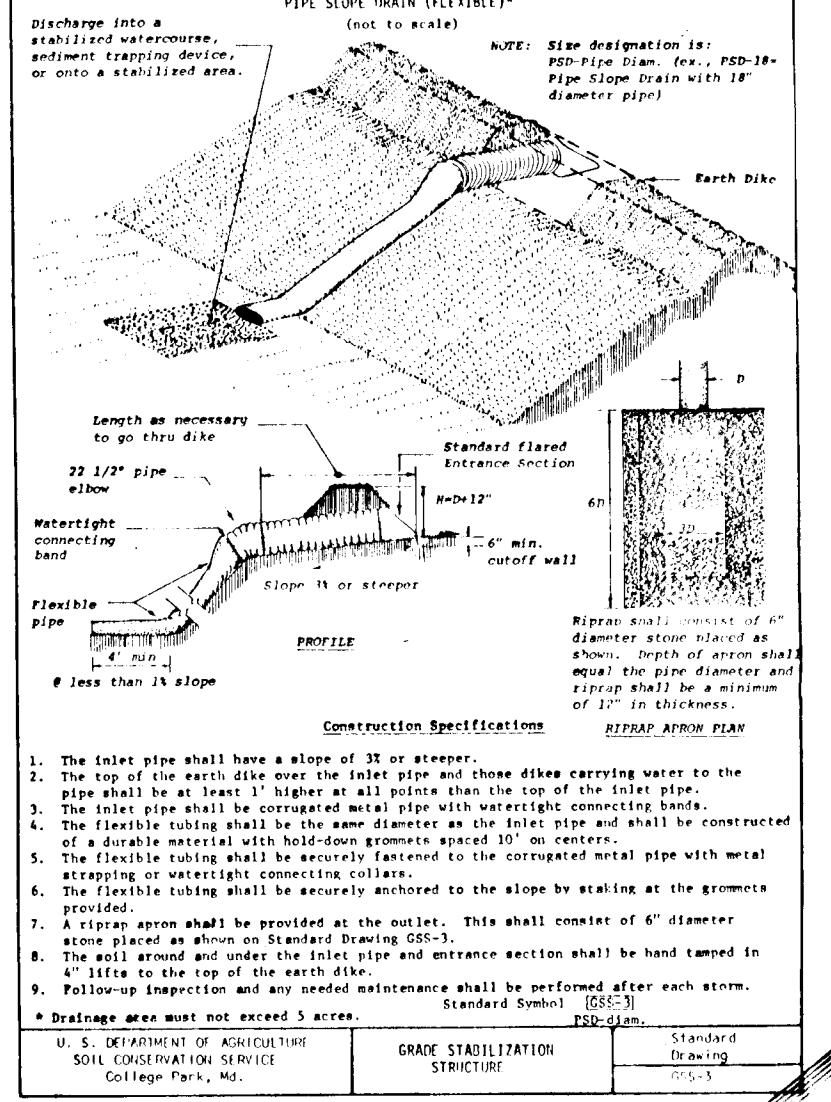






**S.O.S.T. No. 3**  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

= 0.75AC  
 = 0.75AC  
 = 15,320 cu ft  
 = 15' x 10'  
 = 2:1  
 = 449.0  
 = 444.0  
 = 4'  
 = 17,400 cu ft  
 = 10'



**S.O.S.T. No. 6**  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

= 0.15AC  
 = 0.15AC  
 = 6,800 cu ft  
 = 5' x 15'  
 = 2:1  
 = 430.0  
 = 425.0  
 = 2'  
 = 8,000 cu ft  
 = 5'

**S.O.S.T. No. 7**  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

= 0.14AC  
 = 0.14AC  
 = 2,920 cu ft  
 = 4' x 15'  
 = 2:1  
 = 430.0  
 = 427.0  
 = 2'  
 = 3,160 cu ft  
 = 4'

Construct S-2 and stabilize disturbed area beyond dikes with sod or 6" depth of no. 2 stone

**S.O.S.T. No. 8**  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

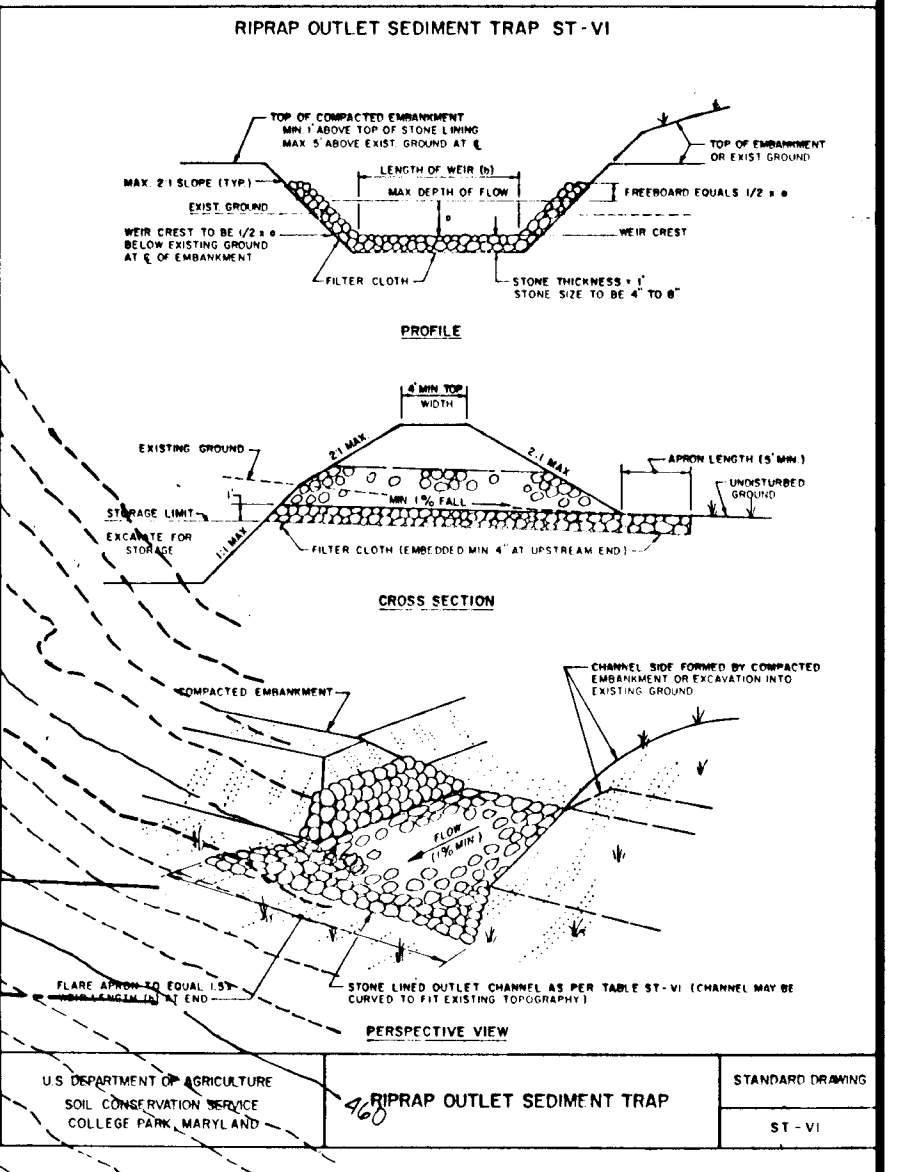
= 0.9AC  
 = 0.9AC  
 = 18,800 cu ft  
 = 35' x 75'  
 = 2:1  
 = 419.0  
 = 416.0  
 = 4'  
 = 14,500 cu ft  
 = 10'

**R.R.O.S.T. NO. 5 (Type II)**  
 RIP RAP OUTLET SEDIMENT TRAP  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

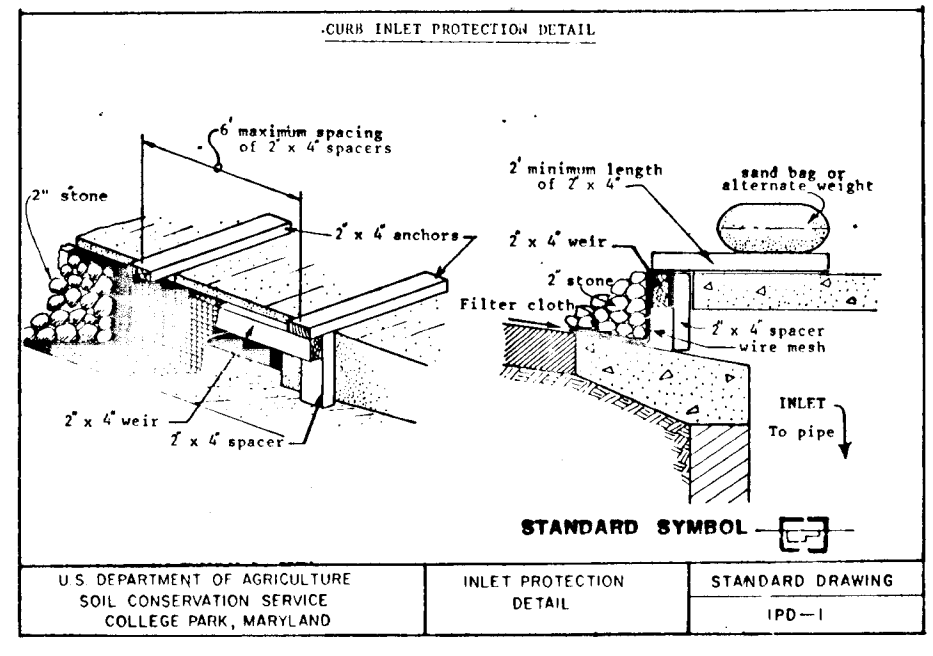
= 0.5AC  
 = 0.5AC  
 = 11,700 cu ft  
 = 25' x 85'  
 = 2:1  
 = 409.0  
 = 404.0  
 = 4'  
 = 12,538 cu ft  
 = 16'

**S.O.S.T. No. 8**  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length

= 1.04AC  
 = 3.3AC  
 = 53,400 cu ft  
 = 80' x 70'  
 = 2:1  
 = 399.0  
 = 394.0  
 = 3'  
 = 60,000 cu ft  
 = 15'



- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
- The area under the embankment shall be cleared, grubbed and stripped of any vegetation and top soil. The pool area shall be cleared.
  - The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, clogs, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
  - All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
  - Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
  - Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level of crest.
  - Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
  - Stone used in the outlet channel shall be four (4) to eight (8) inches (4-8") in size. To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
  - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
  - The structure shall be inspected after each rain and repaired as needed.
  - Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
  - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
  - Drainage area for this practice is limited to 15 acres or less.



APPROVED: DEPARTMENT OF PUBLIC WORKS  
 DATE: 11-6-87  
 CHIEF, BUREAU OF ENGINEERING

APPROVED: OFFICE OF PLANNING AND ZONING  
 DATE: 12-15-88  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: OFFICE OF PLANNING AND ZONING  
 DATE: 12-29-88  
 CHIEF, LAND DEVELOPMENT DIVISION

APPROVED: OFFICE OF PLANNING AND ZONING  
 DATE: 1-17-89  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
 DATE: 12-15-88  
 J.S. SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 DATE: 12/15/88  
 DISTRICT SOIL CONSERVATION DISTRICT

**TWELVE HILLS - Section 3**  
 TAX MAP 28  
 ELECTION DISTRICT NO. 5  
 P/O PARCEL 66 B P/O PARCEL 49  
 HOWARD COUNTY, MARYLAND

PROJECT: 88013.00  
 DATE: 5/13/88  
 ILLUSTRATION: JLM/JBM  
 SCALE: 1" = 50'  
 APPROVAL: JLM/JBM  
 DATE: 8/24/88

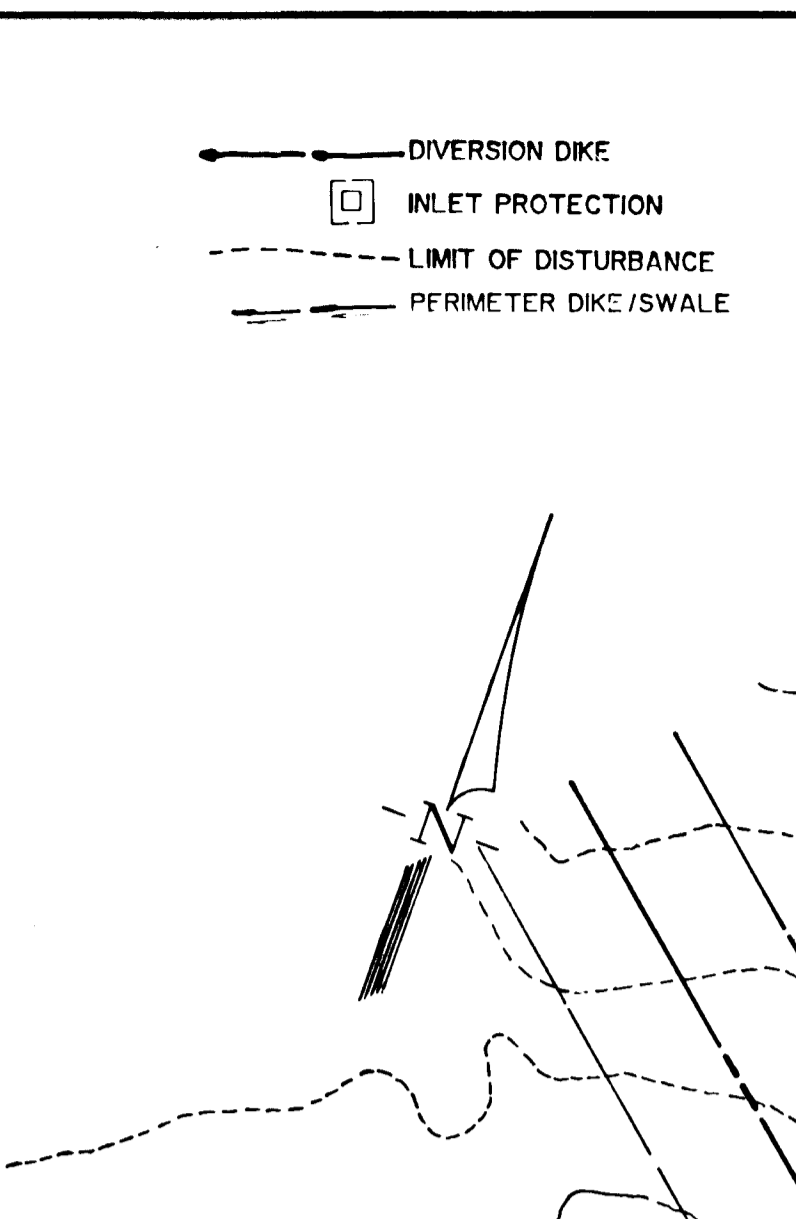
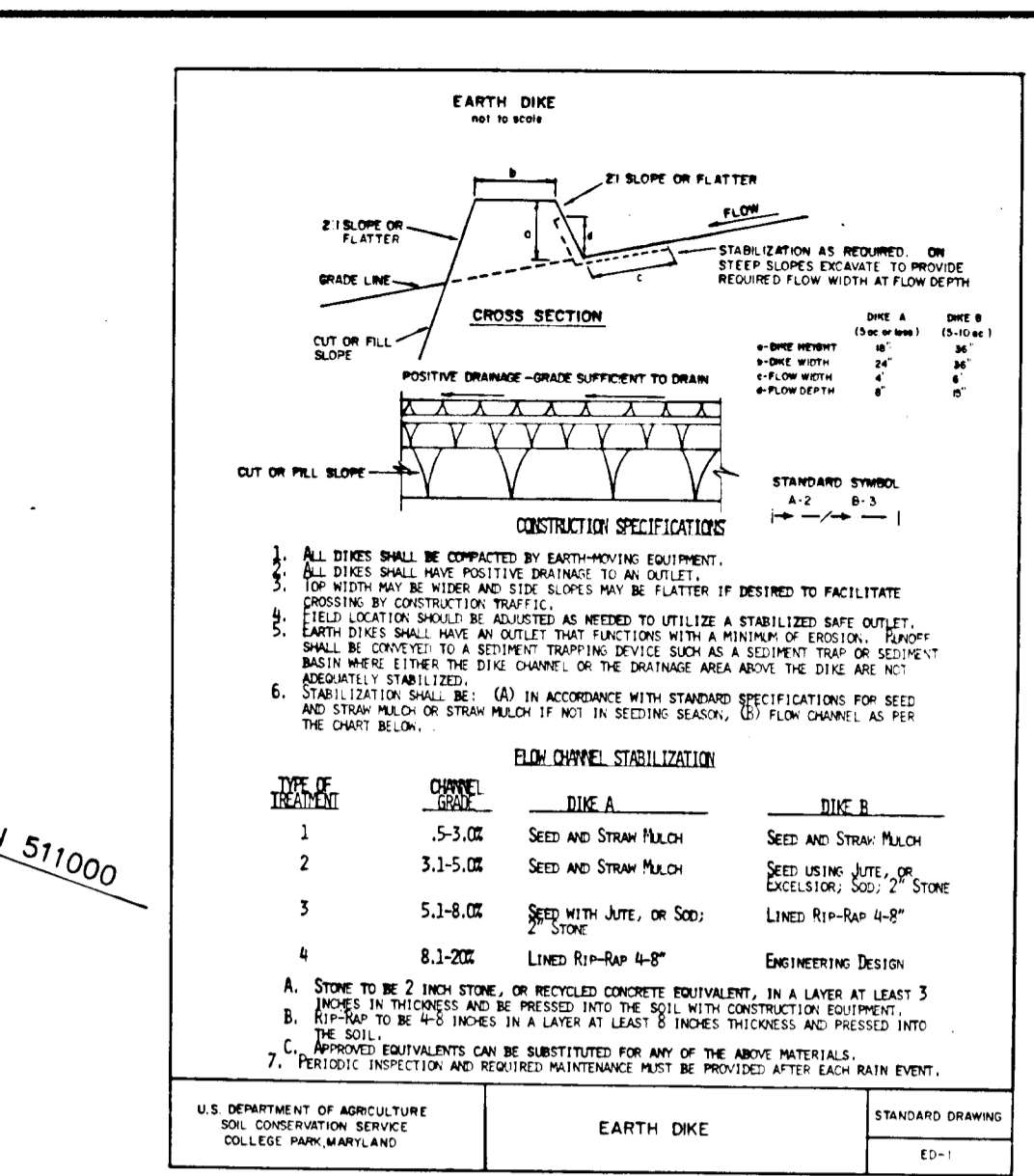
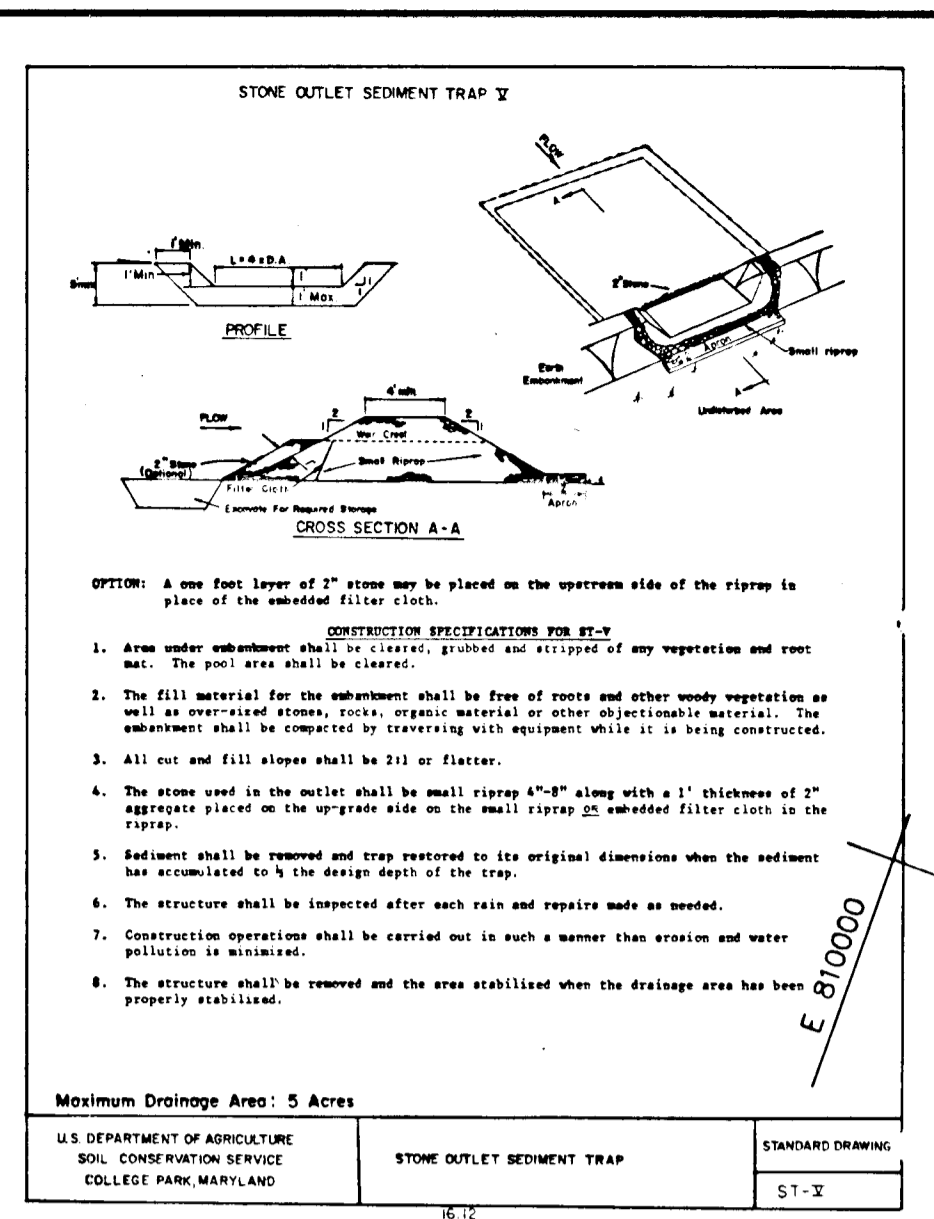
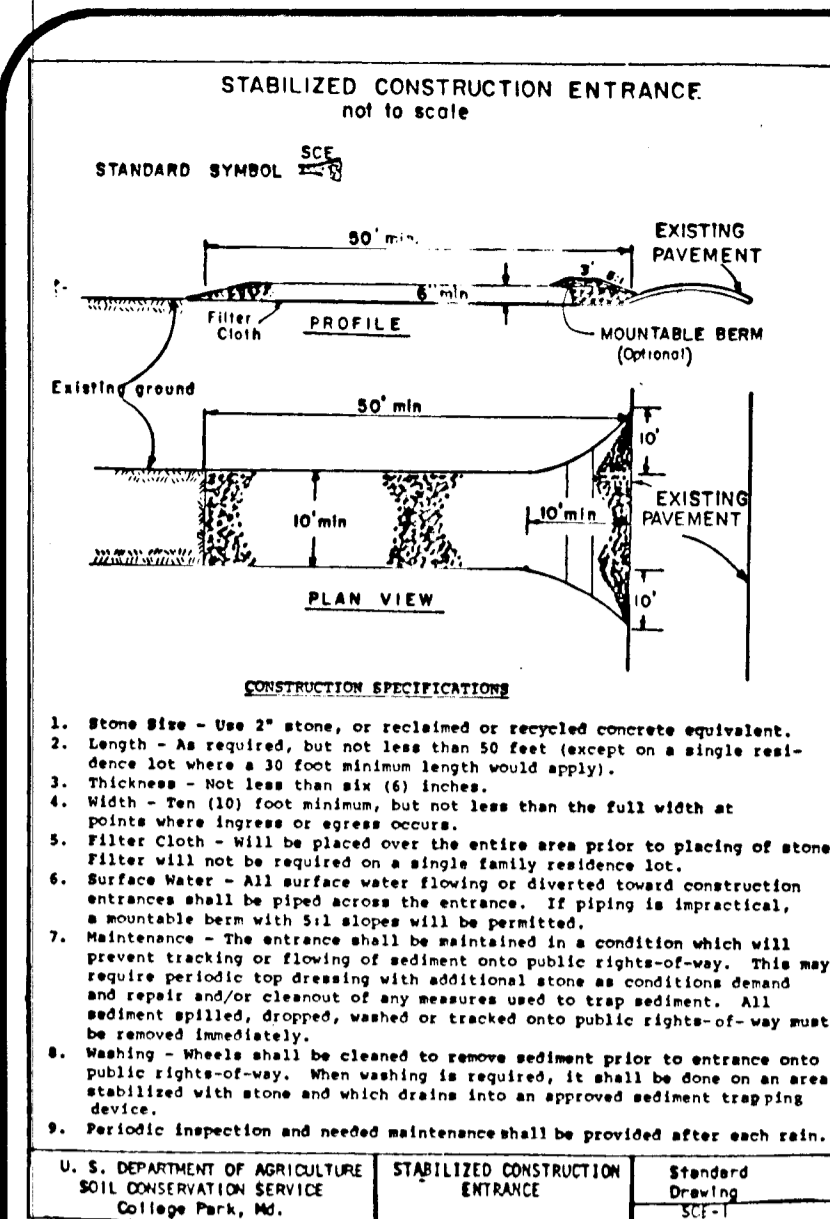
REVISIONS:  
 1. REVISION: APPROX. RIP RAP TRAP S.O.S.T. 8  
 2. REVISION: APPROX. RIP RAP TRAP S.O.S.T. 8  
 3. REVISION: APPROX. RIP RAP TRAP S.O.S.T. 8  
 4. REVISION: APPROX. RIP RAP TRAP S.O.S.T. 8  
 5. REVISION: APPROX. RIP RAP TRAP S.O.S.T. 8

**GRADING & SEDIMENT CONTROL PLAN**

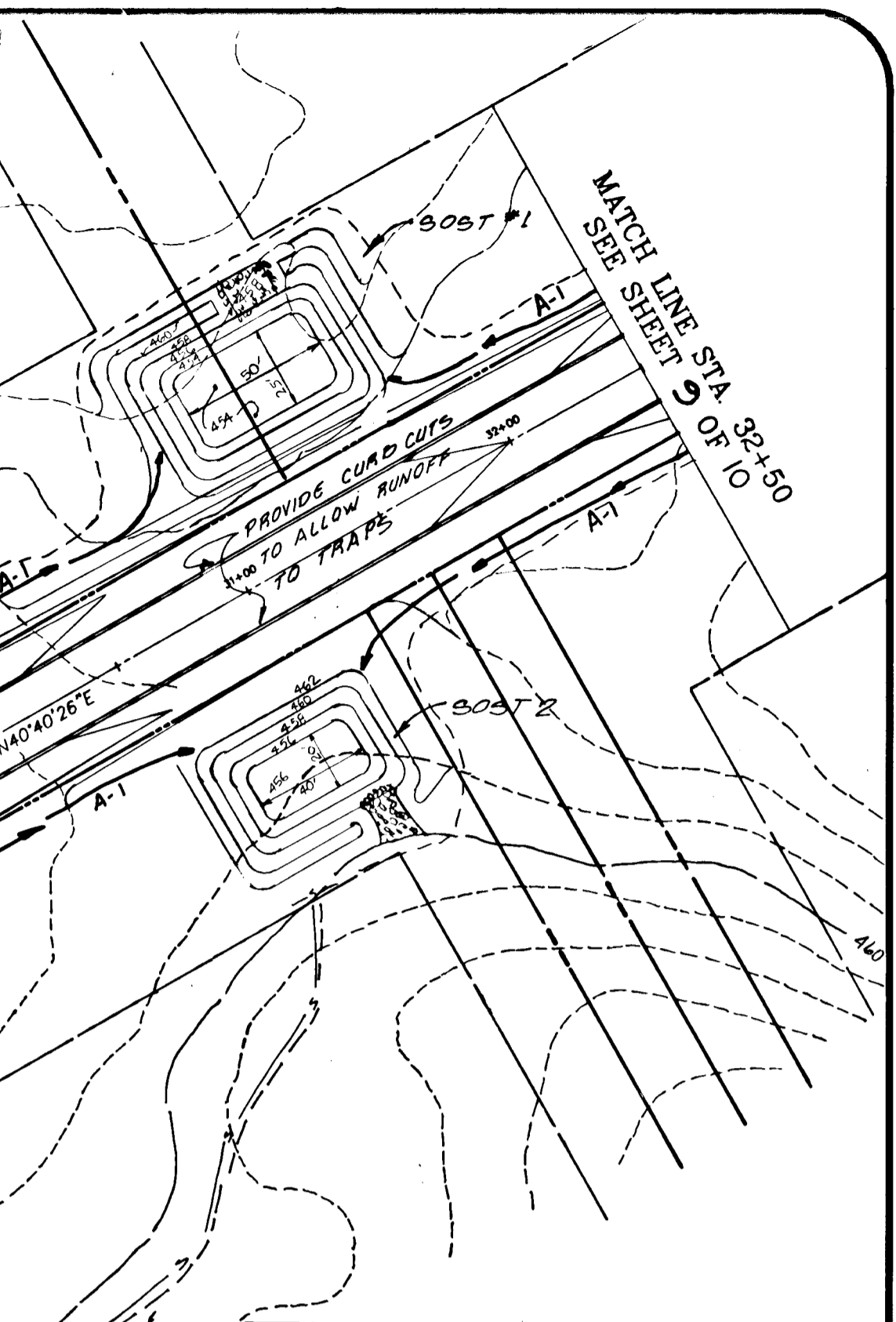
J. ILLBERG, INC.  
 ENGINEERS  
 1300 W. BOSTON ST. SUITE 300  
 WASHINGTON, D.C. 20004  
 (202) 871-5788

9 OF 10





S.O.S.T. No. 1  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length



**CONSTRUCTION SPECIFICATIONS**

- Stone Blank - Use 2" stone, or crushed or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - 18".
- Width - 10' to 12' foot minimum, but not less than the full width at points where there will be a change in slope.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter cloth will be covered with a single family residence lot.
- Surface Water - All surface water flowing or directed toward construction activities shall be piped across the entrance. If piping is impractical, a mounded berm with 3:1 slope will be provided.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or dumping of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleaning of any measure used to trap sediment. All sediment applied, dropped, washed or tracked onto public right-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area established with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

U.S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 COLLEGE PARK, MD.

**SEQUENCE OF CONSTRUCTION**

- Obtain Grading Permit. 3 days
- Construct Stabilized Construction Entrance with mountable berm. 1 day
- Construct Sediment Control Traps and stabilize with temporary seeding. 3 days
- Construct Earth Dikes and perimeter dike swale. Stabilize Earth Dikes with temporary seeding. 3 days
- Begin grading operations for roadway construction. Construct storm drain system, inlet protection devices and 6" layer of 2" stone or sod on disturbed areas upstream of S.C. Construct paving and stabilize disturbed areas with permanent seed and mulch. Stabilized Construction Entrance may be removed with approval of Sediment Control Inspector to facilitate paving. 30 days
- All sediment shall be removed from sediment traps when cleanout elevations have been reached. 2 days
- Daily during construction and after each rainfall, inspect all sediment control devices and repair as necessary. 2 days
- When all contributing areas to sediment control devices have been permanently stabilized, remove sediment control devices, grade area disturbed, and provide permanent seed and mulch. 5 days

U.S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 COLLEGE PARK, MARYLAND

**FLY CHAIR STABILIZATION**

TREATMENT	CONTROL	DIKE A	DIKE B
1	5-5:00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3:15-3:00	SEED AND STRAW MULCH	SEED WITH MULCH OF SOIL
3	5:15-5:00	SEED WITH MULCH OF SOIL	LINED RIP-RAP 4-8"
4	8:15-8:00	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES THICK AND BE PLACED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.  
 B. RIP-RAP TO BE 4 TO 8 INCHES IN LAYER AT LEAST 3 INCHES THICKNESS AND PLACED INTO THE SOIL.  
 C. APPROVED EQUIPMENTS CAN BE SUBSTITUTES FOR ANY OF THE ABOVE MATERIALS.  
 D. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

**Seedbed Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (11 NOT PERFORMED IN LOCATIONS)

**Soil Amendment:** Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 square feet).

**Seeding:** For periods March 1 through April 30 and from August 15 through November 15, seed with 1-1/2 bushels per acre of annual ryegrass (3.2 lbs/1000 square feet). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.7 lbs/1000 square feet). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 square feet) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/8 gallons per acre (5 gal/1000 square feet) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 3/4 gal/1000 square feet for anchoring.

Refer to the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

**PERMANENT SEEDING NOTES**

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

**Seedbed Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (11 NOT PERFORMED IN LOCATIONS)

**Soil Amendment:** In lieu of soil test recommendations, use one of the following schedule:

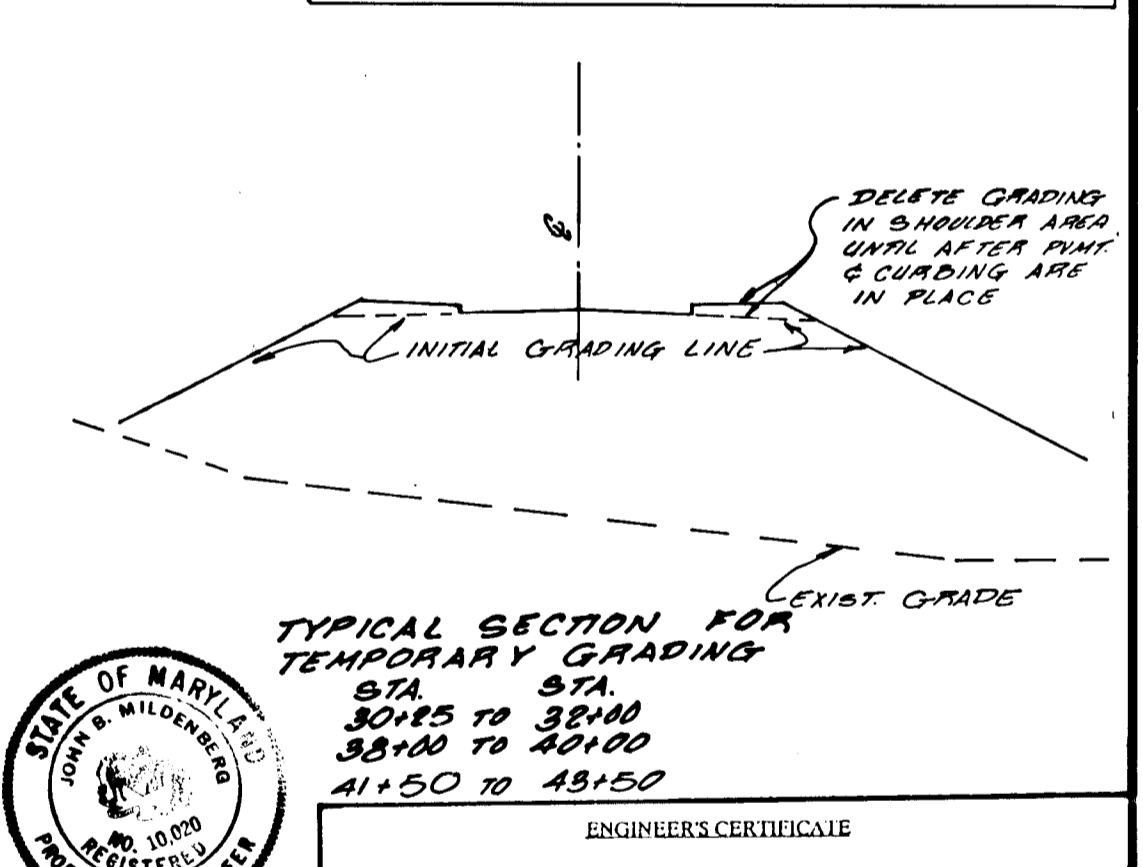
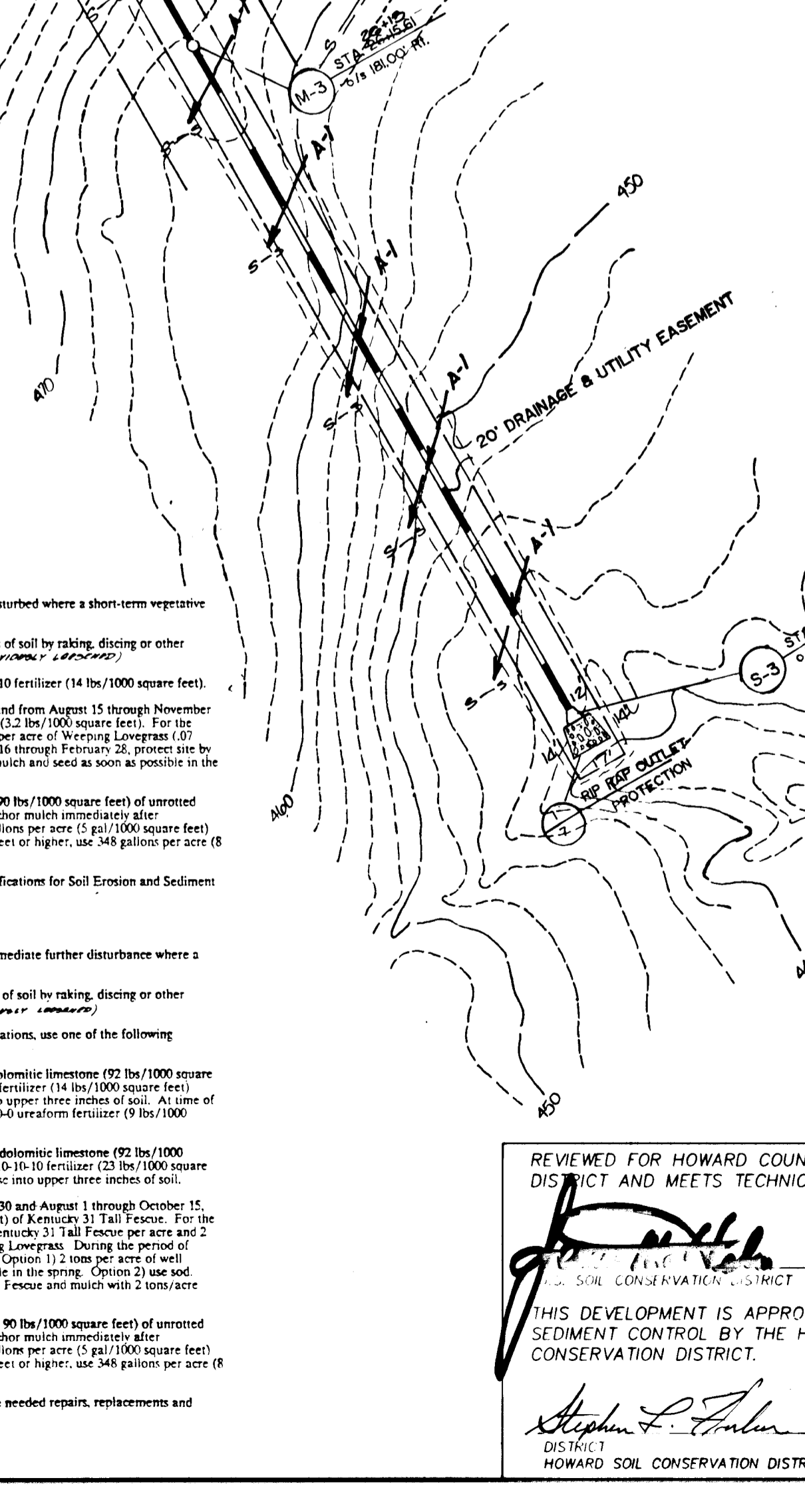
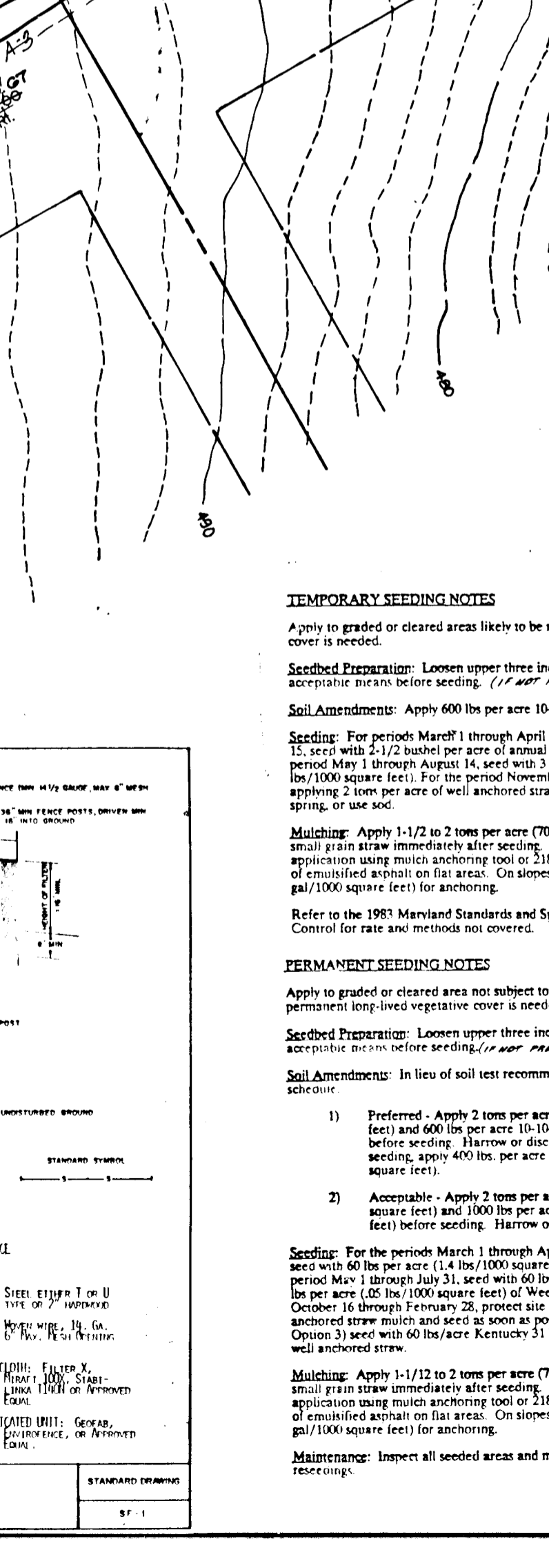
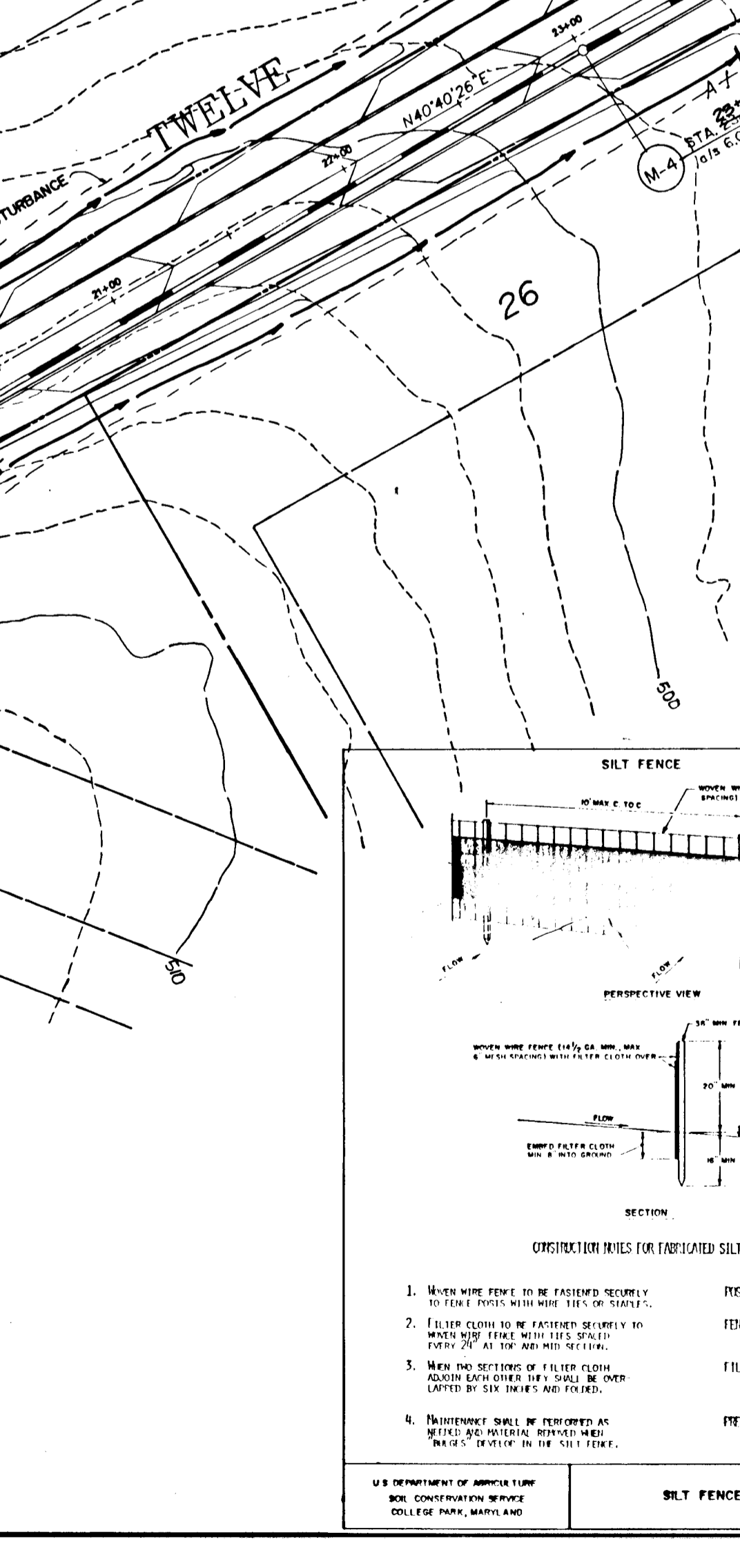
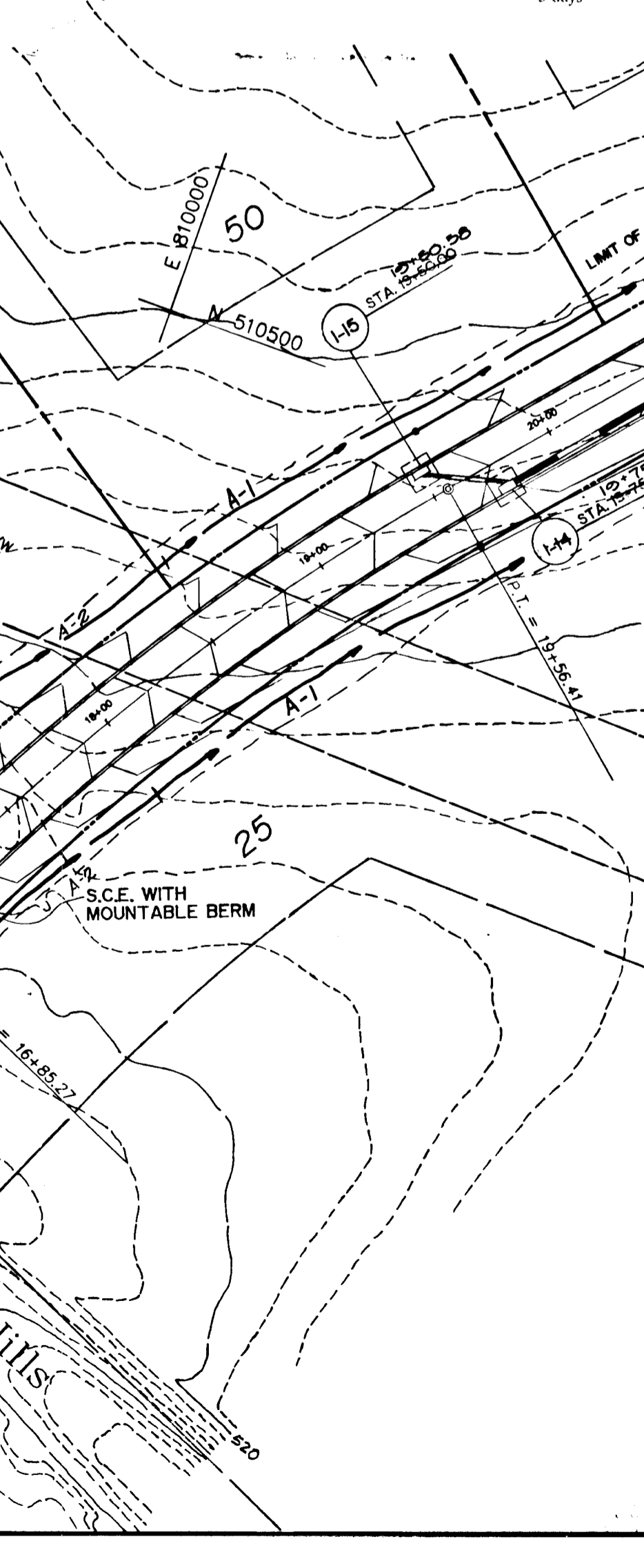
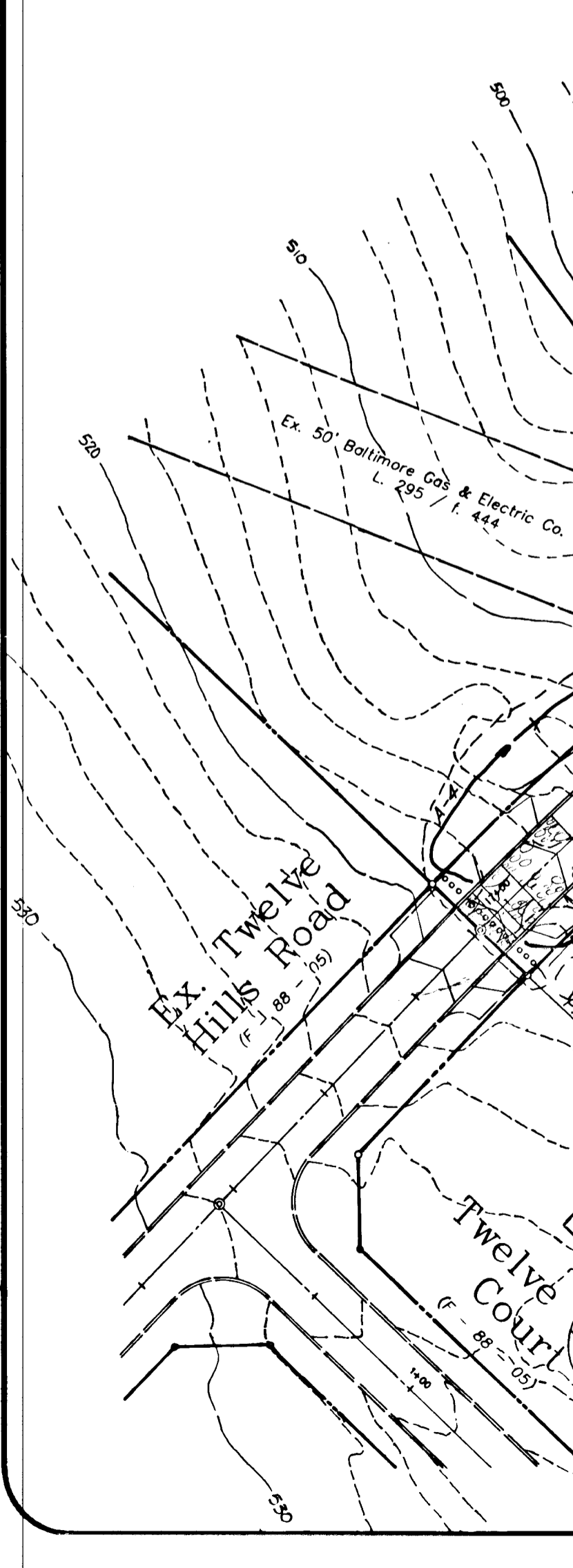
- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 400 lbs per acre 10-10-10 fertilizer (14 lbs/1000 square feet) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 urea-form fertilizer (9 lbs/1000 square feet).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 1000 lbs per acre 10-10-10 fertilizer (28 lbs/1000 square feet) before seeding. Harrow or disc into upper three inches of soil.

**Seeding:** For the period March 1 through April 30 and August 15 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 square feet) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.5 lbs/1000 square feet) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 square feet) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/8 gallons per acre (5 gal/1000 square feet) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 3/4 gal/1000 square feet for anchoring.

**Maintenance:** Inspect all seeded areas and make needed repairs, replacements and cleanups.

S.O.S.T. No. 2  
 stone outlet sediment trap (type V)  
 initial drainage area  
 constructed drainage area  
 required storage  
 bottom dimensions  
 side slopes  
 crest elevation  
 bottom elevation  
 storage depth  
 storage provided  
 crest length



**ENGINEER'S CERTIFICATE**

I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

*John P. Hildnerberg* 10/7/88  
 DISTRICT ENGINEER

**DEVELOPER'S CERTIFICATE**

I/WE certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all 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 also authorize periodic on-site inspection by the Howard County Soil Conservation District or their authorized agents, as are deemed necessary.

*John P. Hildnerberg* 10/7/88  
 DISTRICT ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Richard W. Wehland* 10/14/88  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: OFFICE OF PLANNING AND ZONING  
*Wanda S. 2. Cangel* 10/16/88  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

**TWELVE HILLS - Section 3**  
 P/O PARCEL 66 & P/O PARCEL 49  
 TAX MAP 28 THROUGH 30  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND

**GRADING & SEDIMENT CONTROL PLAN**

Project No. 88013.00  
 Date 5/13/88  
 Illustration LAG/JLM  
 Approval JLM/JBM  
 Scale 1" = 50'

Approved this 10th day of October 1988 by the Board of Supervisors of Howard County, Maryland.  
 Submitted to Howard County DPZ

10 OF 10  
 F-89-39