

**SHEET INDEX**

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2	PLAN AND PROFILE OF LOVAT ROAD
3	PLAN AND PROFILE OF LOVAT ROAD
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5	DRAINAGE AREA MAP
6	GRADING, SEDIMENT CONTROL AND DETAIL SHEET
7	GRADING, SEDIMENT CONTROL

**GENERAL NOTES**

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. 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 FIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	725-9976
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS AND ELECTRIC COMPANY	685-0123
STATE HIGHWAY ADMINISTRATION	531-5533
HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	792-7272
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOL. IV, I.E., STANDARD SPECIFICATIONS AND DETAILS.
- STORM DRAIN BACKFILL WITHIN ROADWAYS, UNDER STRUCTURES AND FOR STORM DRAIN TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 1557.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE AS SHOWN IN DETAIL G2.01 (TRENCH IN ROCK OR TRENCH IN EARTH AS DETERMINED BY FIELD CONDITIONS) IN VOL. IV OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE DRAWINGS.
- ALL STREET CURB RETURNS SHALL HAVE 35.0' RADII UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS SHOWN ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM, 1929.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- TOPO TAKEN FROM FIELD RUN SURVEY DATED DECEMBER, 1982.
- SUBJECT PROPERTY ZONED R PER 8.2.85 COMPREHENSIVE ZONING PLAN.
- INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1978 EDITION.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:
 

ALL 50' RIGHT-OF-WAYS	30 M.P.H. - LOCAL ROAD
ALL 50' RIGHT-OF-WAYS	25 M.P.H. - CUL-DE-SAC
- SEE OFFICE OF PLANNING AND ZONING FILE NO. S-86-91 AND P-87-15
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY LINE.

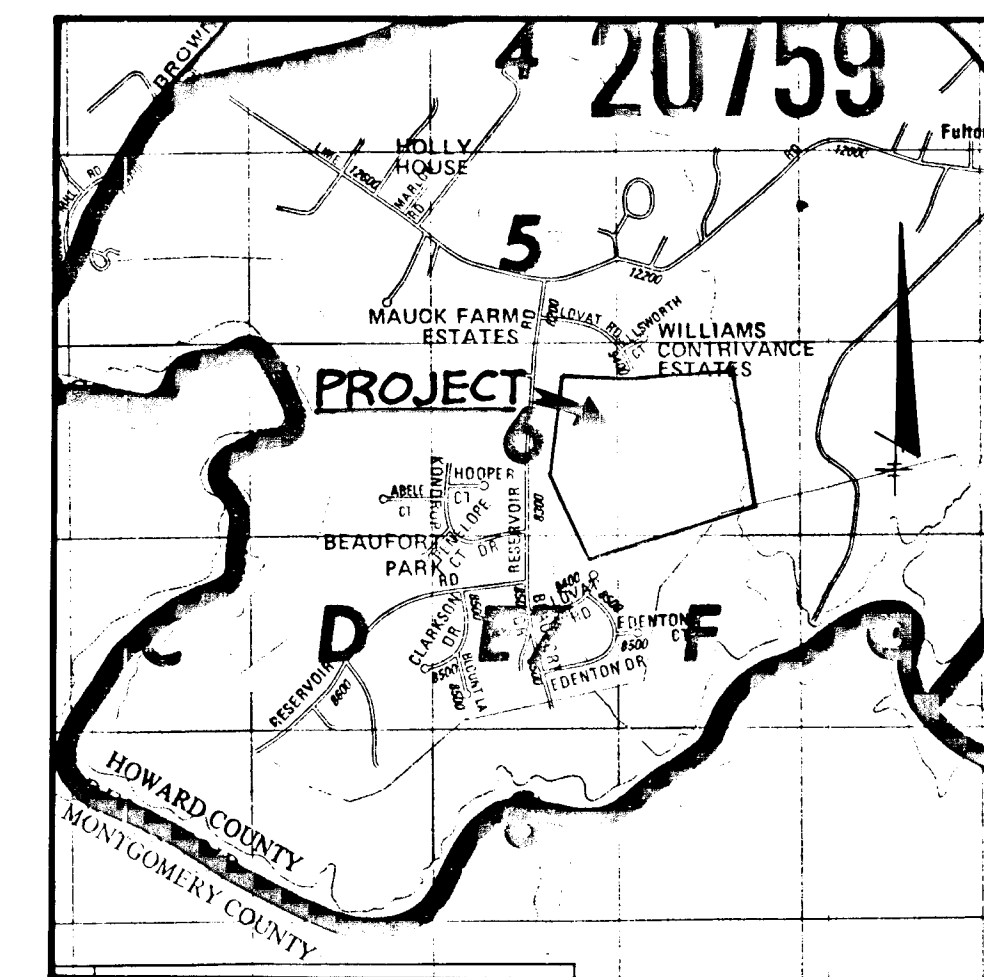
# ROADWAYS AND STORM DRAINS

## WILLIAMS CONTRIVANCE ESTATES

### SECTION 3

#### 5th ELECTION DISTRICT

#### HOWARD COUNTY, MARYLAND



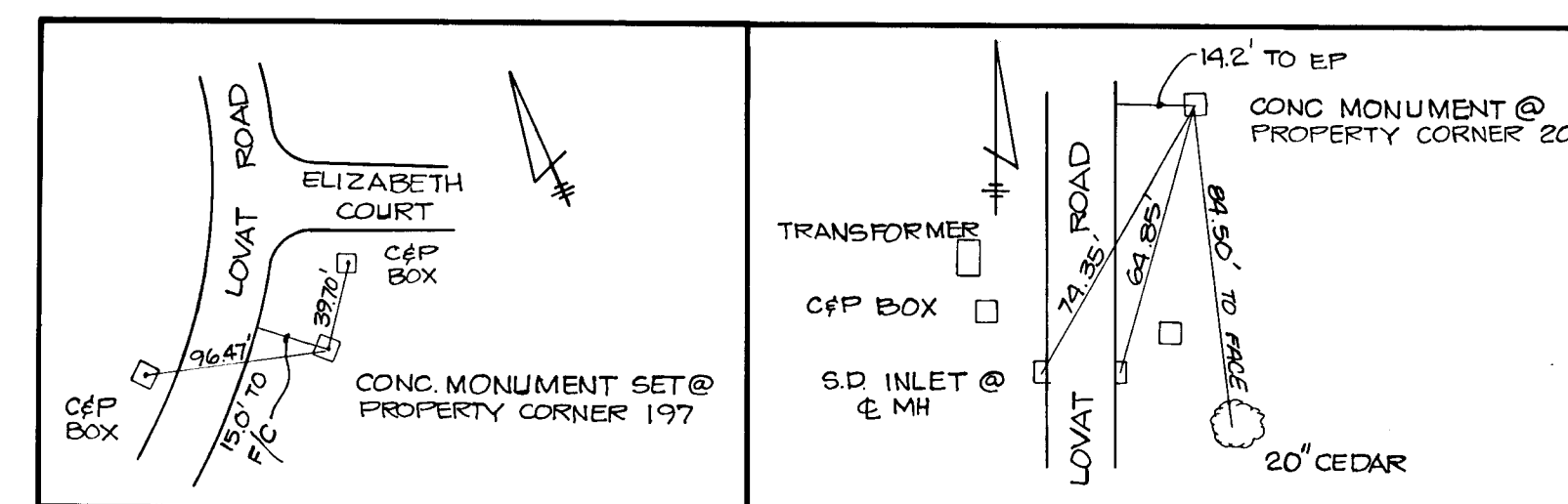
**VICINITY MAP**  
SCALE: 1" = 2000'

**BENCH MARKS**

BM#1  
HO, CO. # 1937001 ELEV. 397.739  
CONCRETE MONUMENT 0.3' BELOW SURFACE, 24' OFF  
RESERVOIR ROAD 52' OFF E. BEAUFORT DRIVE.

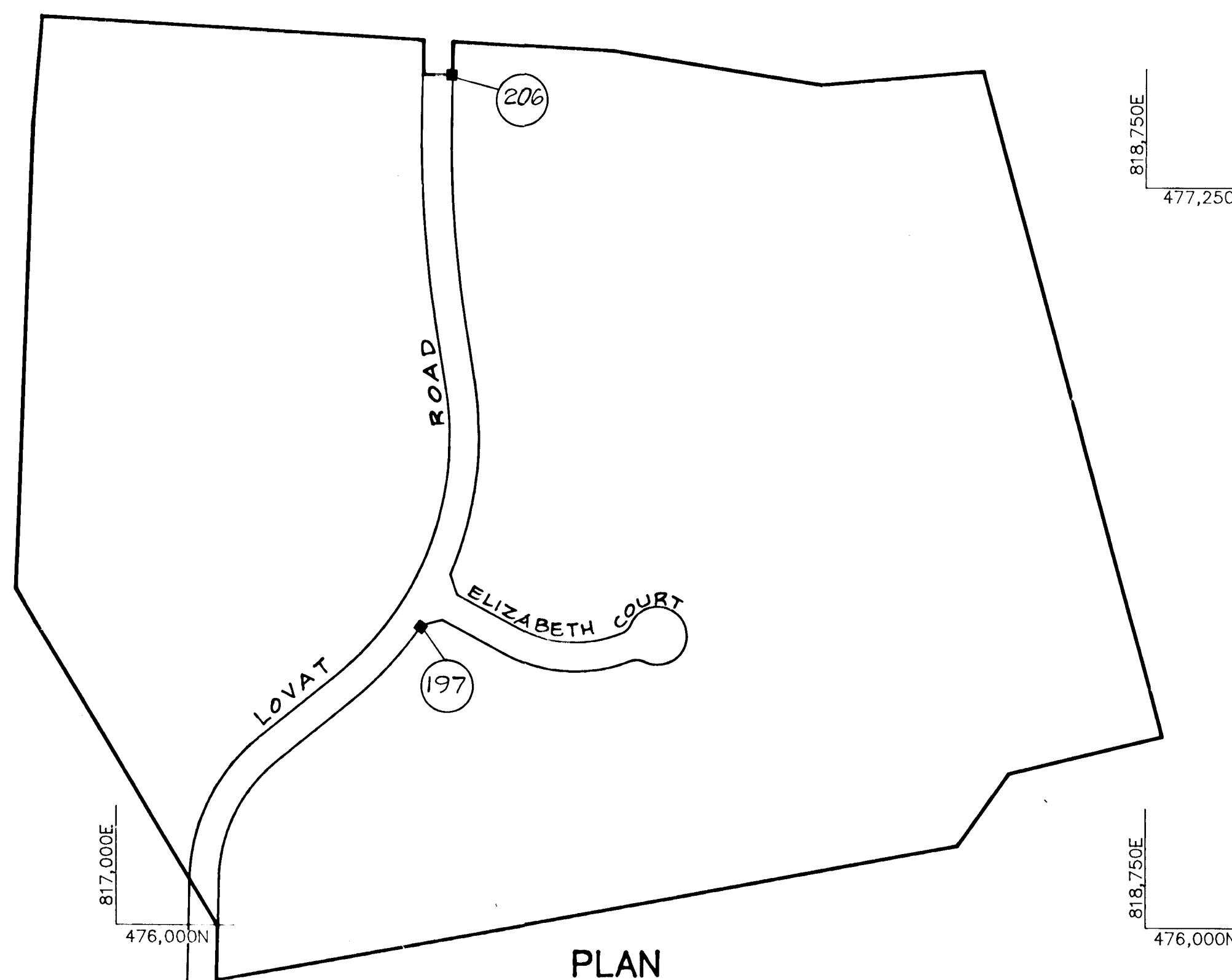
BM#2  
HO, CO. # 1936001 ELEV. 424.553 CONCRETE MONUMENT  
0.1' BELOW SURFACE, 17.6' OFF EDGE PAVING OF RESERVOIR  
ROAD, 230' OFF EDGE PAVING OF CLARKSON DRIVE.

HORIZONTAL AND VERTICAL CONTROL USED FOR AS-BUILT SURVEY.



LOCATION OF MONUMENT 197

LOCATION OF MONUMENT 206



**PLAN**  
SCALE: 1" = 200'

AS-BUILT SURVEY CERTIFIED BY  
ARTHUR E. MUEGGE, MD. P.E. No.  
8707 ON 9-13-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. ...* 5-12-87  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William S. ...* 5-18-87  
CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER  
C. ELLSWORTH IAGER, ET AL.  
11788 ROUTE 216  
FULTON, MARYLAND

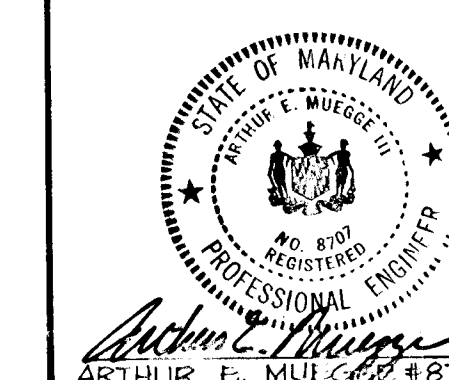
PROJECT:  
**WILLIAMS CONTRIVANCE ESTATES**  
SECTION 3

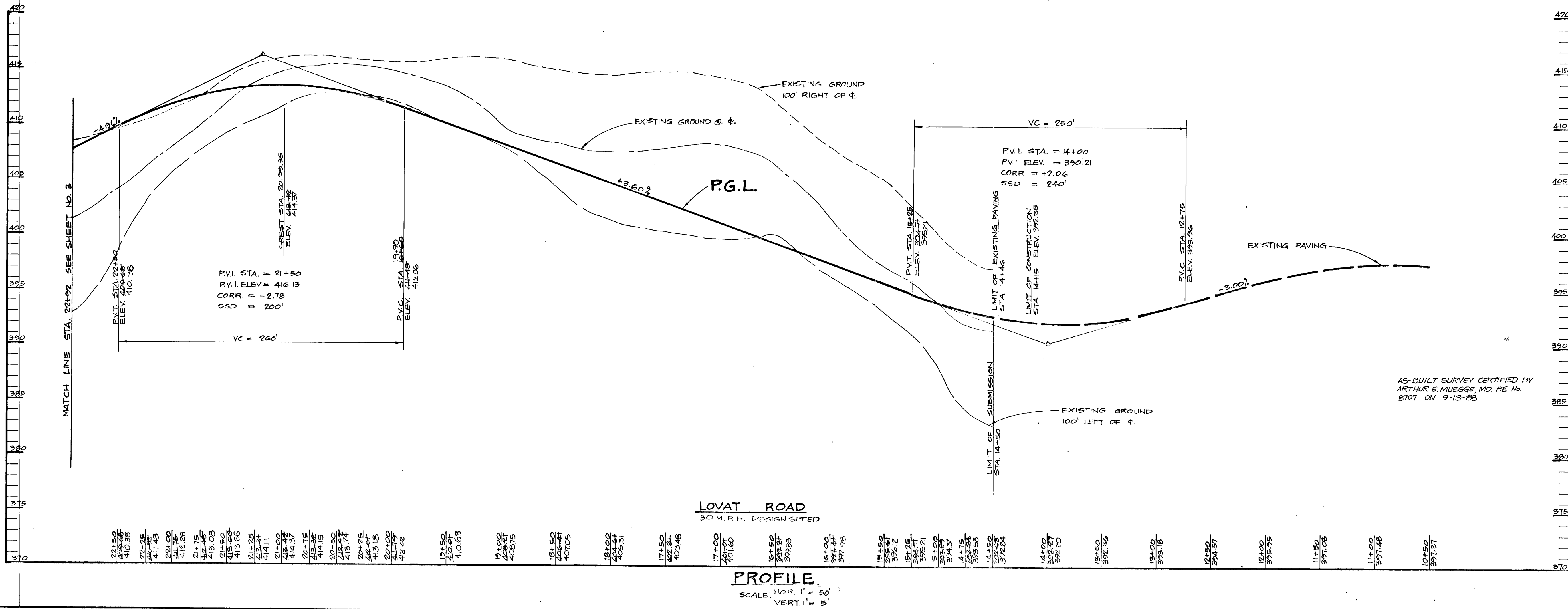
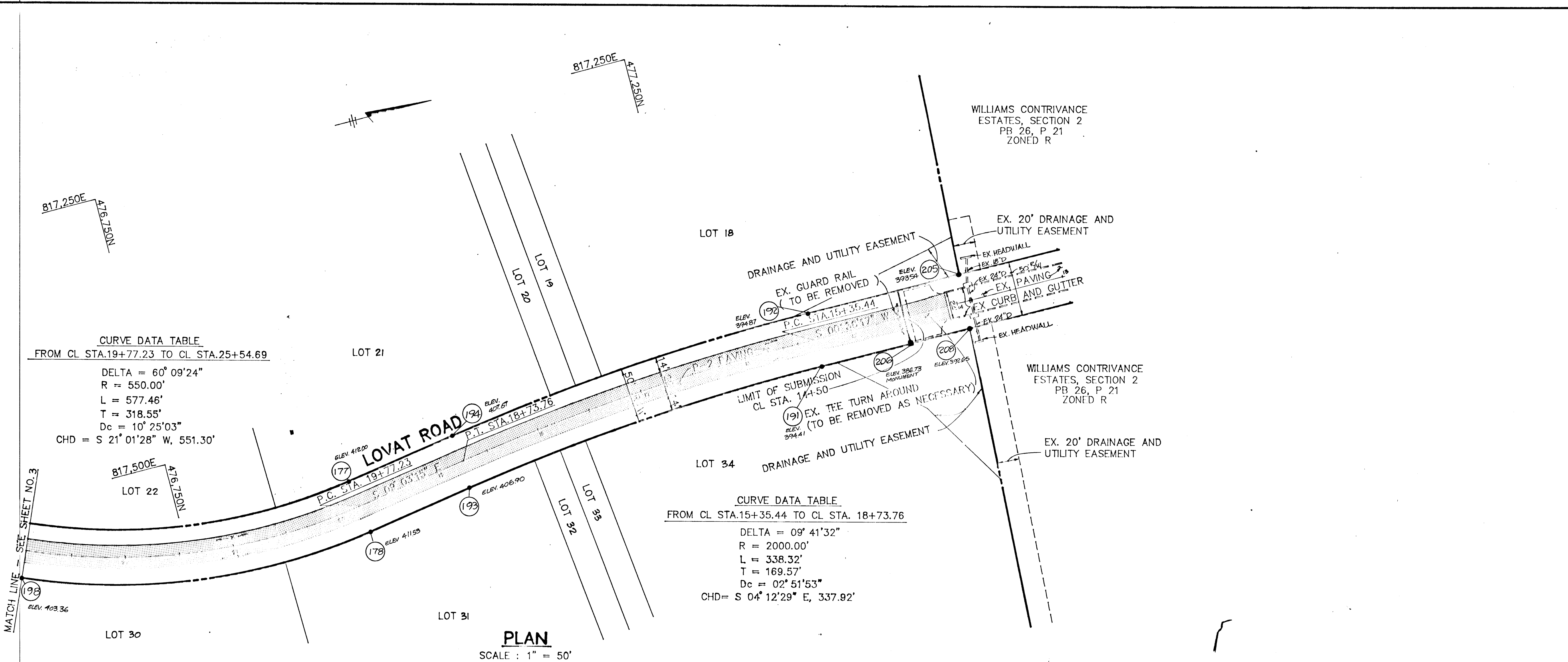
AREA TAX MAP 45 PARCEL 2  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE:  
**TITLE SHEET**

**THE RIEMER GROUP, INC.**  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
3105 Health Park Drive, Ellicott City, Maryland 21043 (801) 481-2690

DATE	DESIGNED BY:
5-7-87	W.C.W.
DATE	DRAWN BY:
5-80-91	H.A.L.
DATE	PROJECT NO.:
MARCH 80, 1987	30800
SCALE:	DRAWING NO.:
AS SHOWN	1 OF 7





APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. ...* 5-12-87  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*...* 5-18-87  
 CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER  
 C. ELLSWORTH JAGER, ET AL.  
 11788 ROUTE 216  
 FULTON, MARYLAND

PROJECT:  
**WILLIAMS CONTRIVANCE ESTATES**  
 SECTION 3

AREA TAX MAP 45 PARCEL 2  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE:  
**PLAN AND PROFILE OF LOVAT ROAD**

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 3105 Health Park Drive, Ellicott City, Maryland 21043 (801) 461-2600

5-7-87	5-86-01	P-87-15
DATE	DESIGNED BY: J.D.P.	
	DRAWN BY: D.B.S.	
	PROJECT NO: 30800	
	DATE: MARCH 30, 1987	
	SCALE: AS SHOWN	
	DRAWING NO. 2 OF 7	

AS-BUILT SURVEY CERTIFIED BY  
 ARTHUR E. MUEGGE, MD. P.E. No. 8707 ON 9-13-88

**CURVE DATA TABLE**  
FROM P.C. STA. 32+18 TO P.T. STA. 32+83

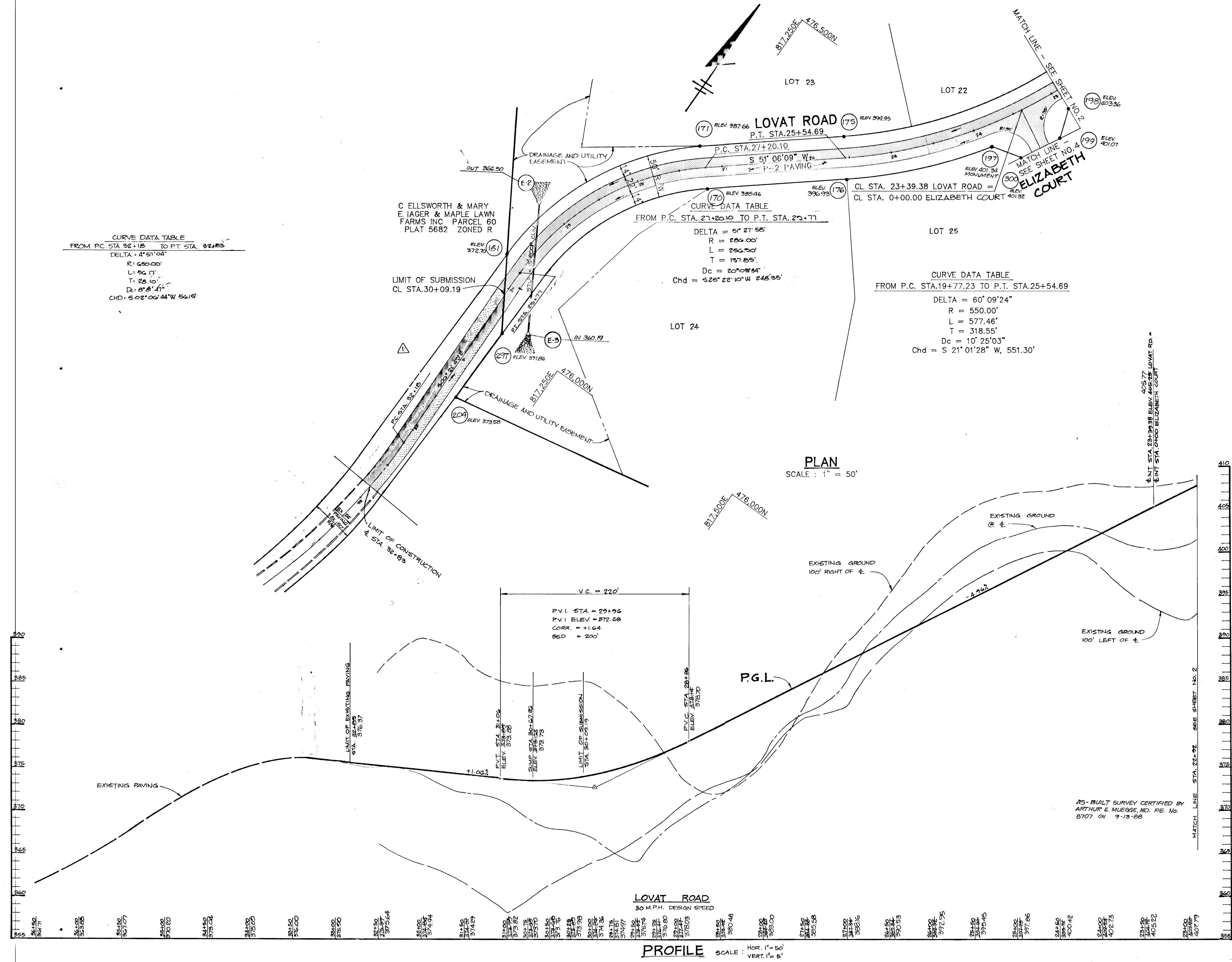
DELTA	4°51'04"
R	650.00'
L	56.17'
T	28.10'
Dc	8°08'41"
CHD	S 02°06'44" W 56.15'

**CURVE DATA TABLE**  
FROM P.C. STA. 27+20.10 TO P.T. STA. 29+77

DELTA	51°27'58"
R	250.00'
L	256.20'
T	137.85'
Dc	20°08'54"
CHD	S 25°22'10" W 248.35'

**CURVE DATA TABLE**  
FROM P.C. STA. 19+77.23 TO P.T. STA. 25+54.69

DELTA	60°09'24"
R	550.00'
L	577.46'
T	318.55'
Dc	10°25'03"
CHD	S 21°01'28" W, 551.30'



APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. Bachman* 5-12-87  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Arthur E. Muegge* 5-18-87  
CHIEF, BUREAU OF ENGINEERING

REVISION ROAD ALIGNMENT  
DATE NO REVISION

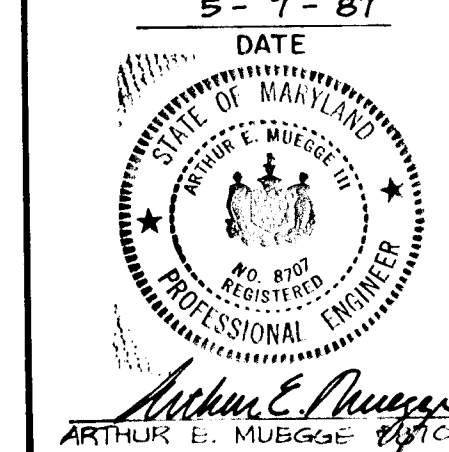
OWNER/DEVELOPER  
C. ELLSWORTH JAGER, ET AL.  
11788 ROUTE 216  
FULTON, MARYLAND

PROJECT:  
**WILLIAMS CONTRIVANCE ESTATES**  
SECTION 3  
AREA TAX MAP 45 PARCEL 2  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE:  
**PLAN AND PROFILE OF LOVAT ROAD**

**THE RIEMER GROUP, INC.**  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2690

DATE	5-7-87	P-87-15
DESIGNED BY:	J.D.P.	
DRAWN BY:	D.B.S.	
PROJECT NO:	20800	
DATE:	MARCH 30, 1987	
SCALE:	AS SHOWN	
DRAWING NO.	3	OF 7



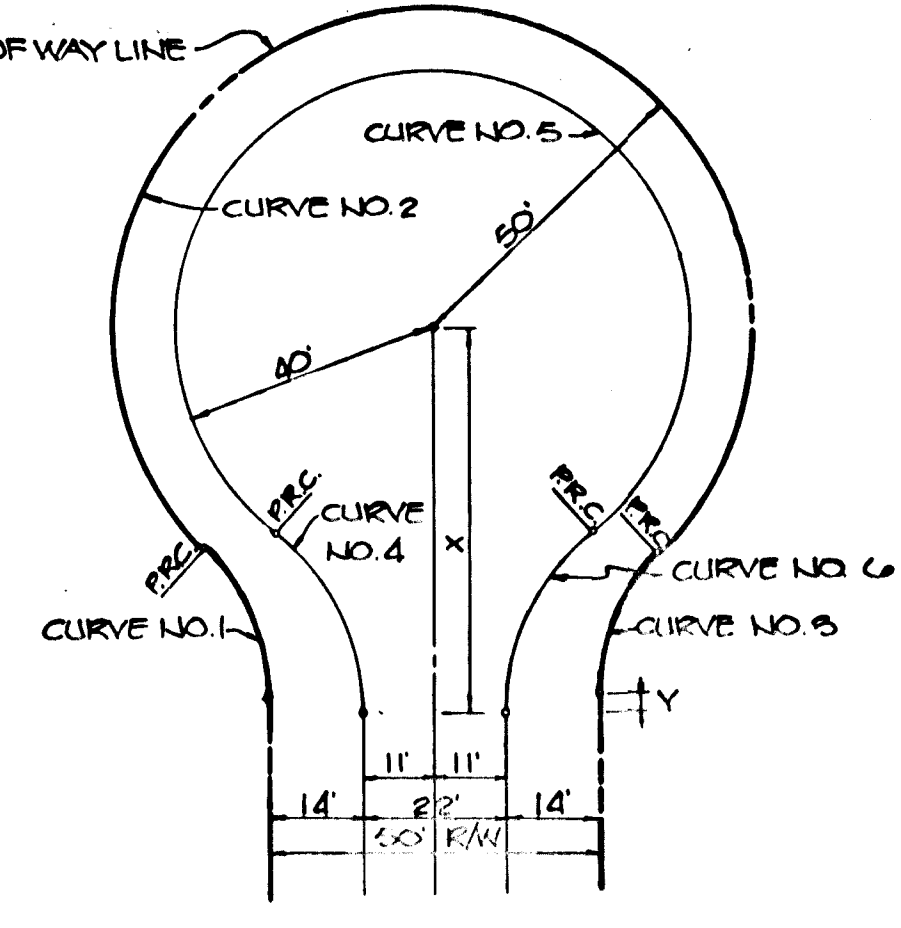
143



MATCH LINE - SEE SHEET NO. 3  
 ELIZABETH COURT  
 P.C. STA. 1+71.00  
 P.T. STA. 3+64.40

CURVE DATA TABLE  
 FROM P.C. STA. 1+71.00 TO P.T. STA. 3+64.40

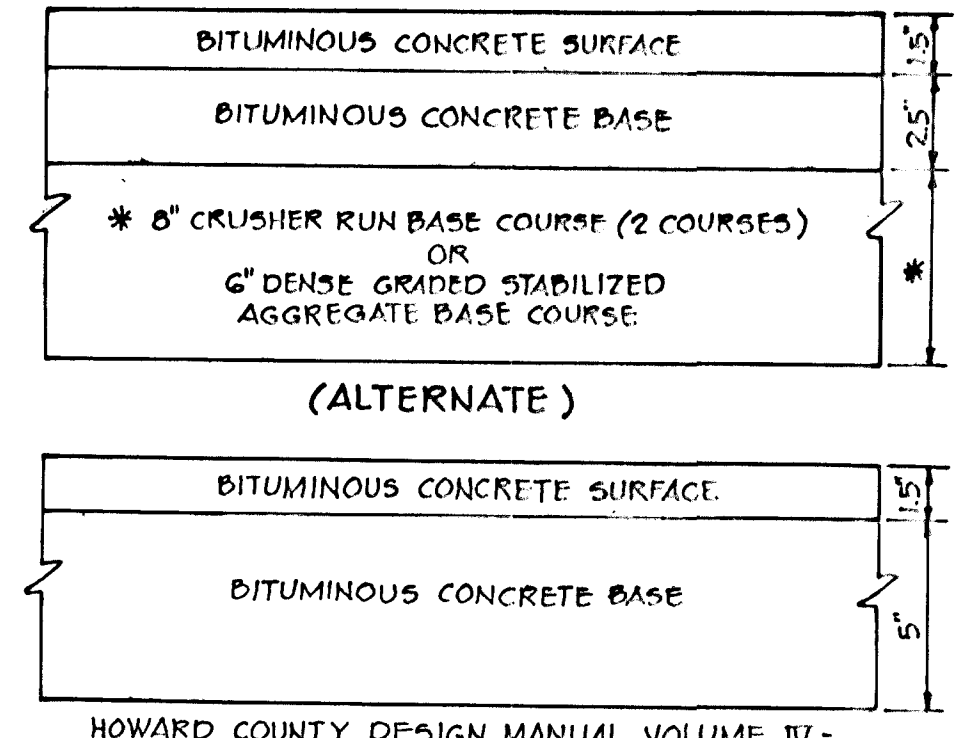
DELTA = 49° 14' 59"  
 R = 225.00'  
 L = 193.40'  
 T = 103.13'  
 Dc = 25° 27' 53"  
 Chd = S 85° 57' 08" E, 187.50'



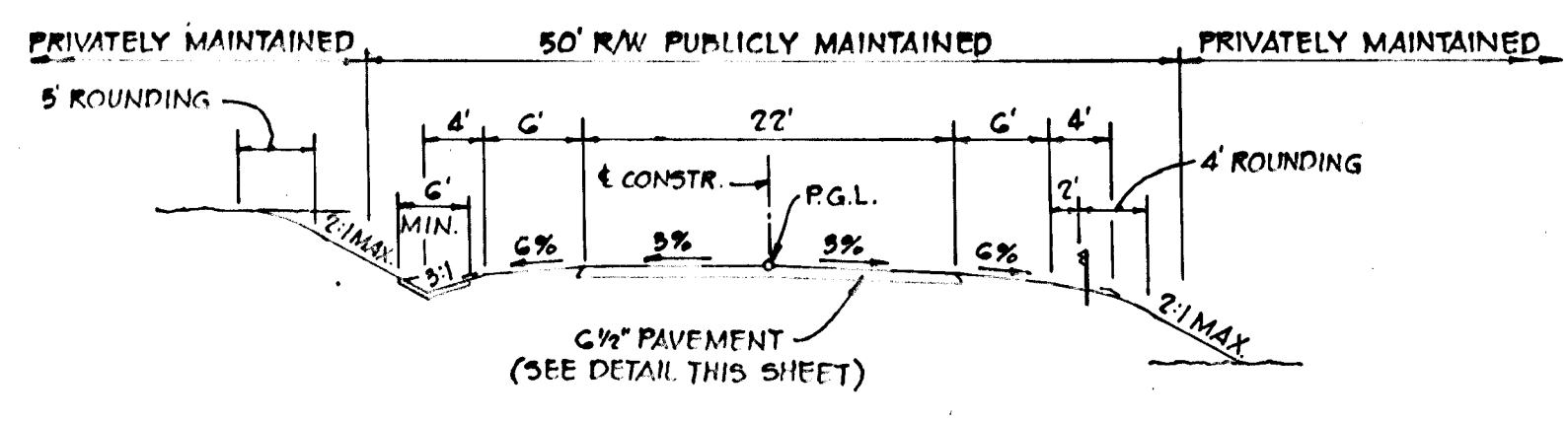
CURVE DATA

X	Y	L.P.	CURVE NO.
55.90	1.25	242.25	1
11.25	218.00	100.00	2
26.00	10.00	100.00	4
11.15	20.41	100.00	5

CUL-DE-SAC DETAIL  
 NO. 50411



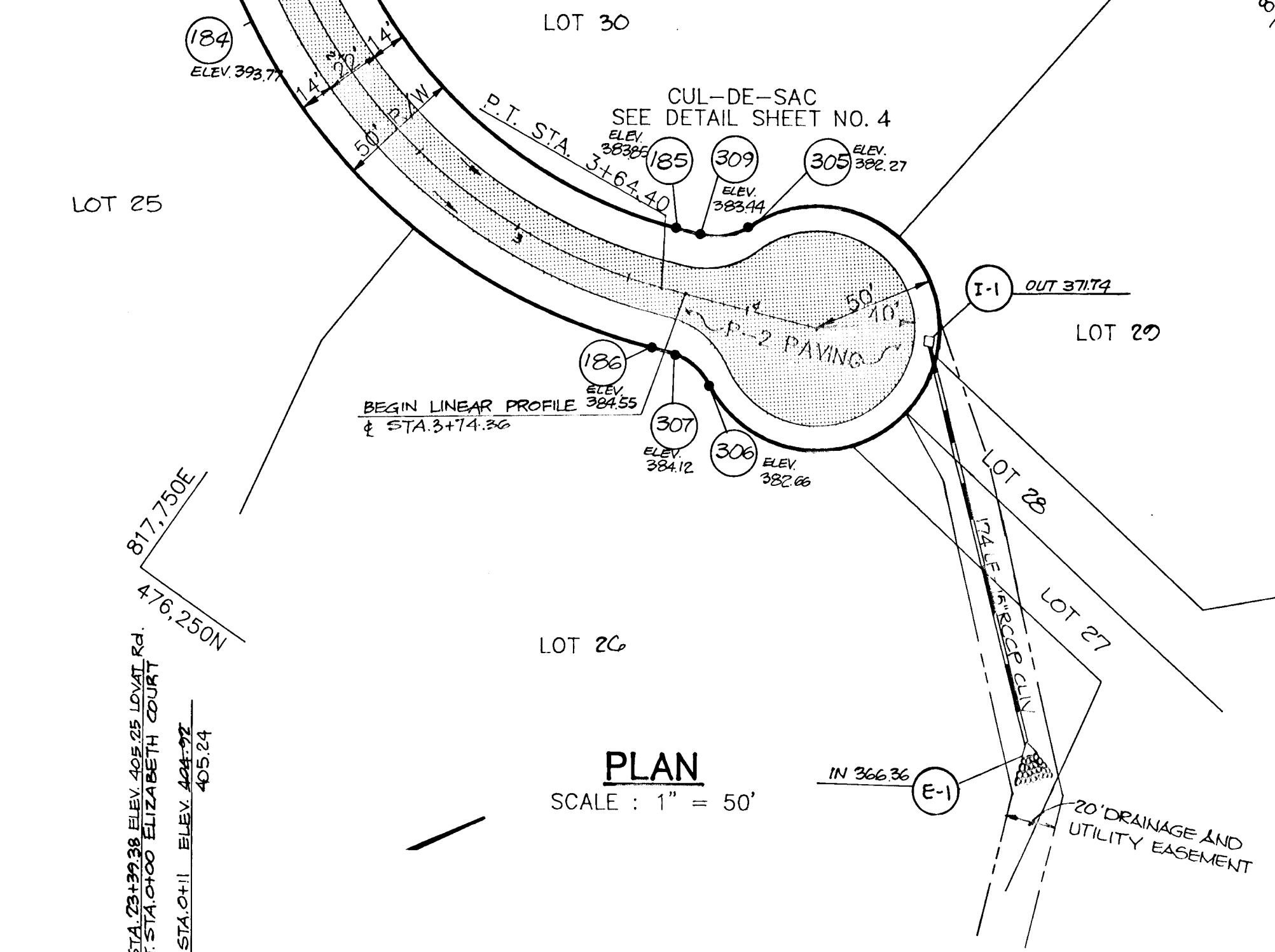
(6 1/2" PAVING, P. 2)  
 NO SCALE



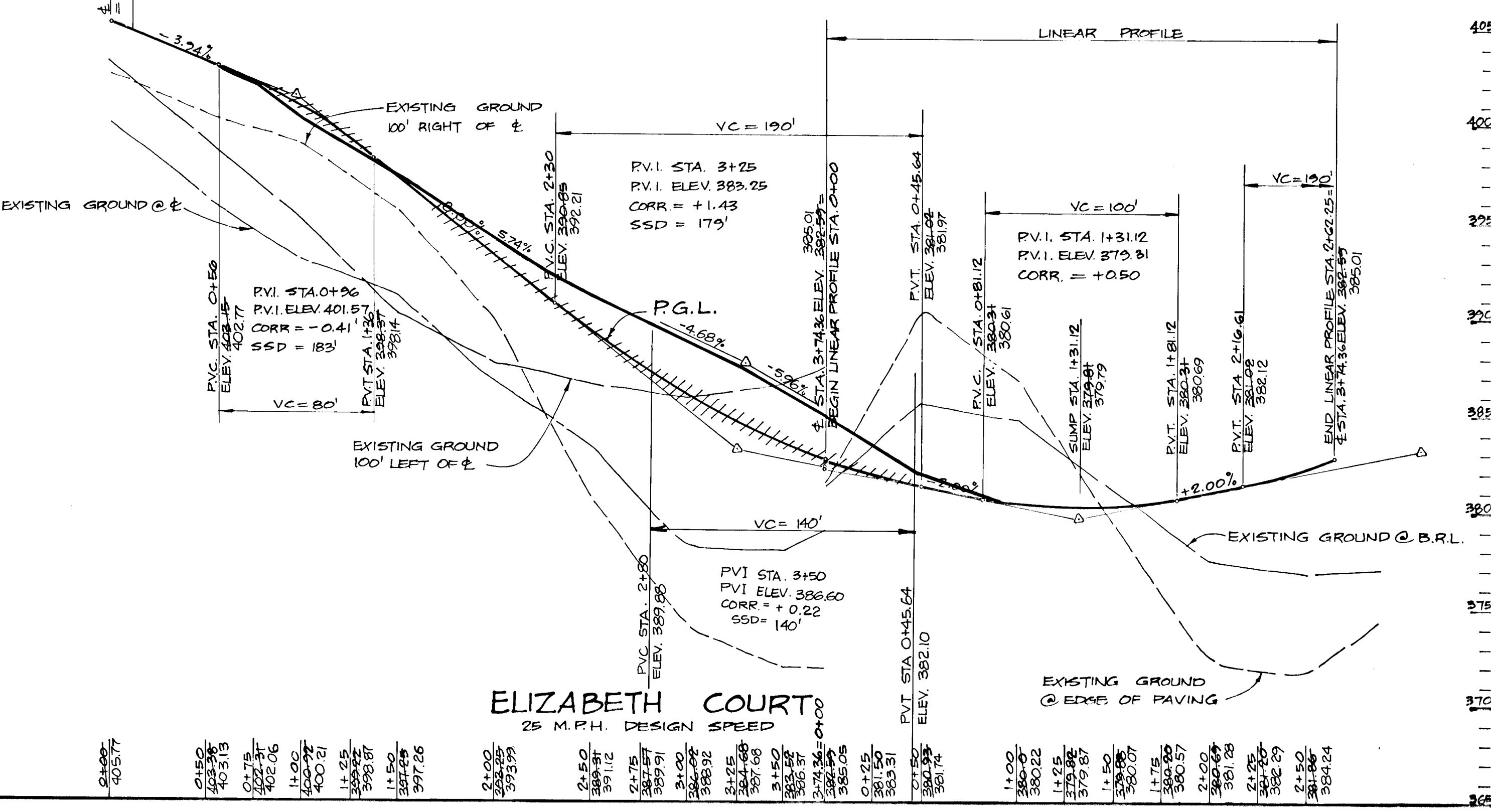
TYPICAL SECTION FOR 50' R/W  
 NO. 50411

ZONED - R  
 LOVAT ROAD FROM STA. 14+15 TO 32+31 LOCAL ROAD - 30 MPH  
 ELIZABETH COURT FROM STA. 0+46 TO 3+74.36 CUL-DE-SAC - 25MPH

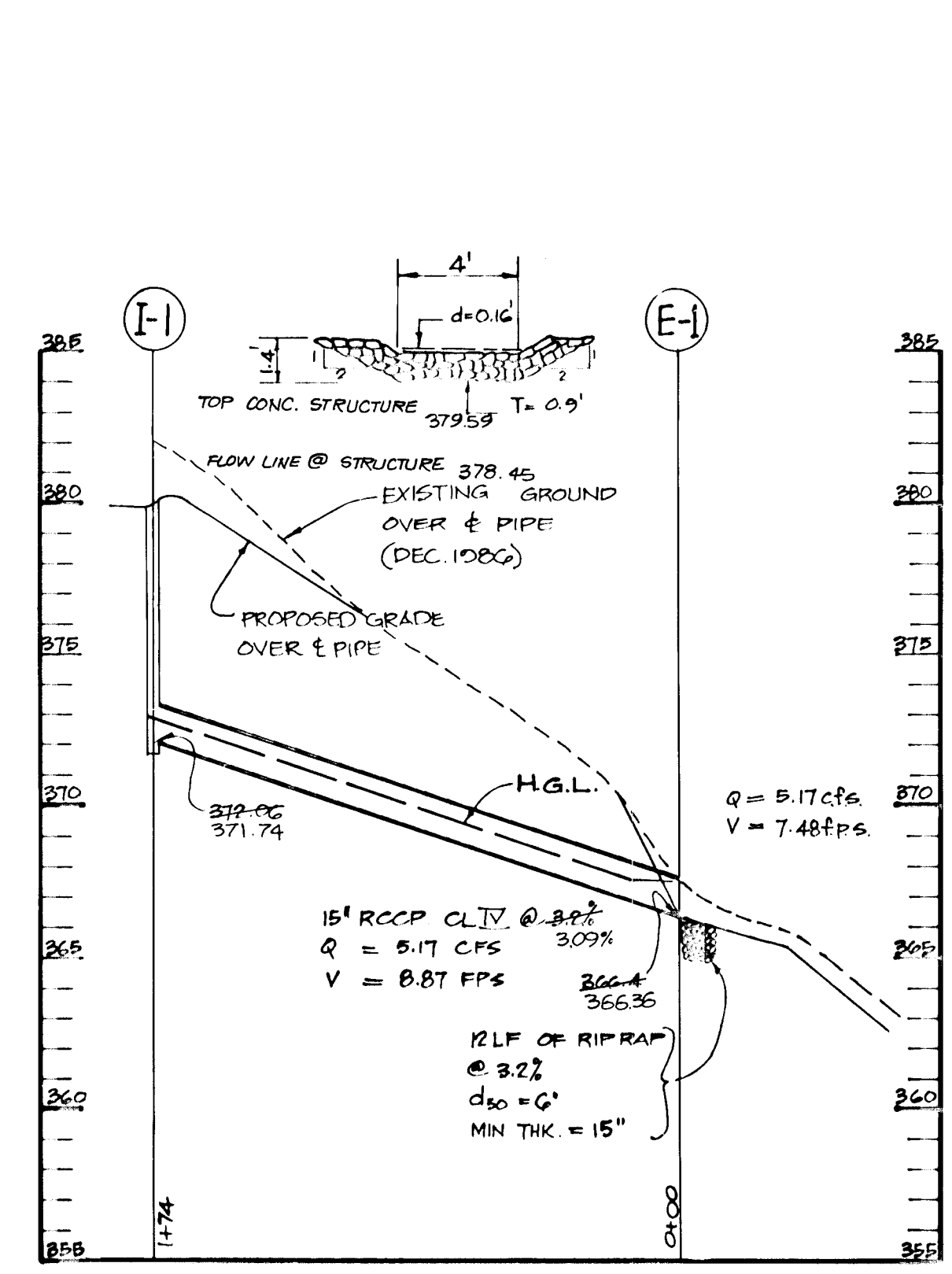
AS-BUILT SURVEY CERTIFIED BY  
 ARTHUR E. MUEGGE, MD. P.E. No.  
 8707, DV. 9-13-88



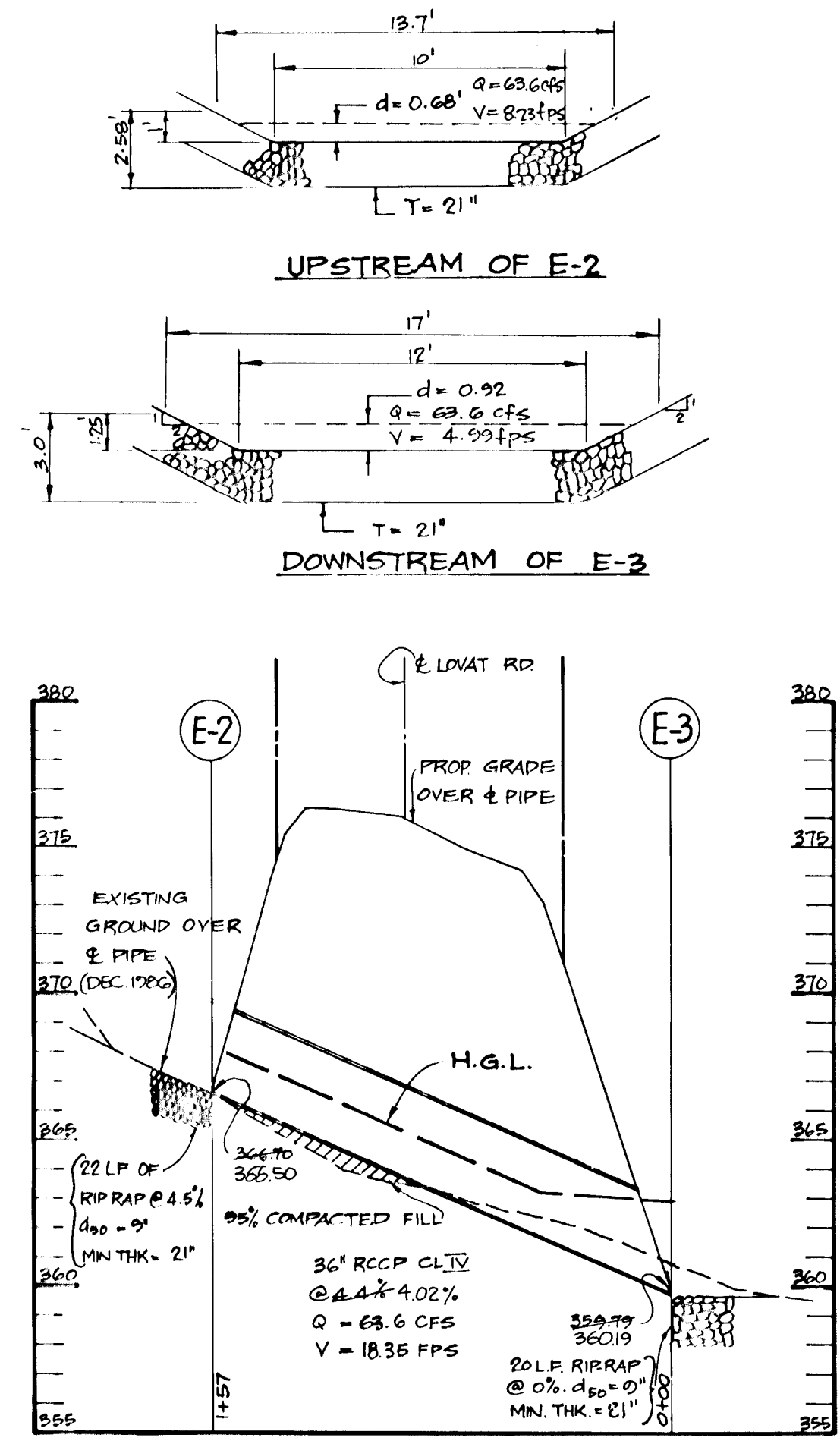
PLAN  
 SCALE: 1" = 50'



ELIZABETH COURT  
 25 MPH DESIGN SPEED  
 PROFILE  
 SCALE: HOR. 1" = 50'  
 VERT. 1" = 5'



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



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

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 Arthur E. Muegge 5-12-87  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 William E. Reed 5-18-87  
 CHIEF, BUREAU OF ENGINEERING

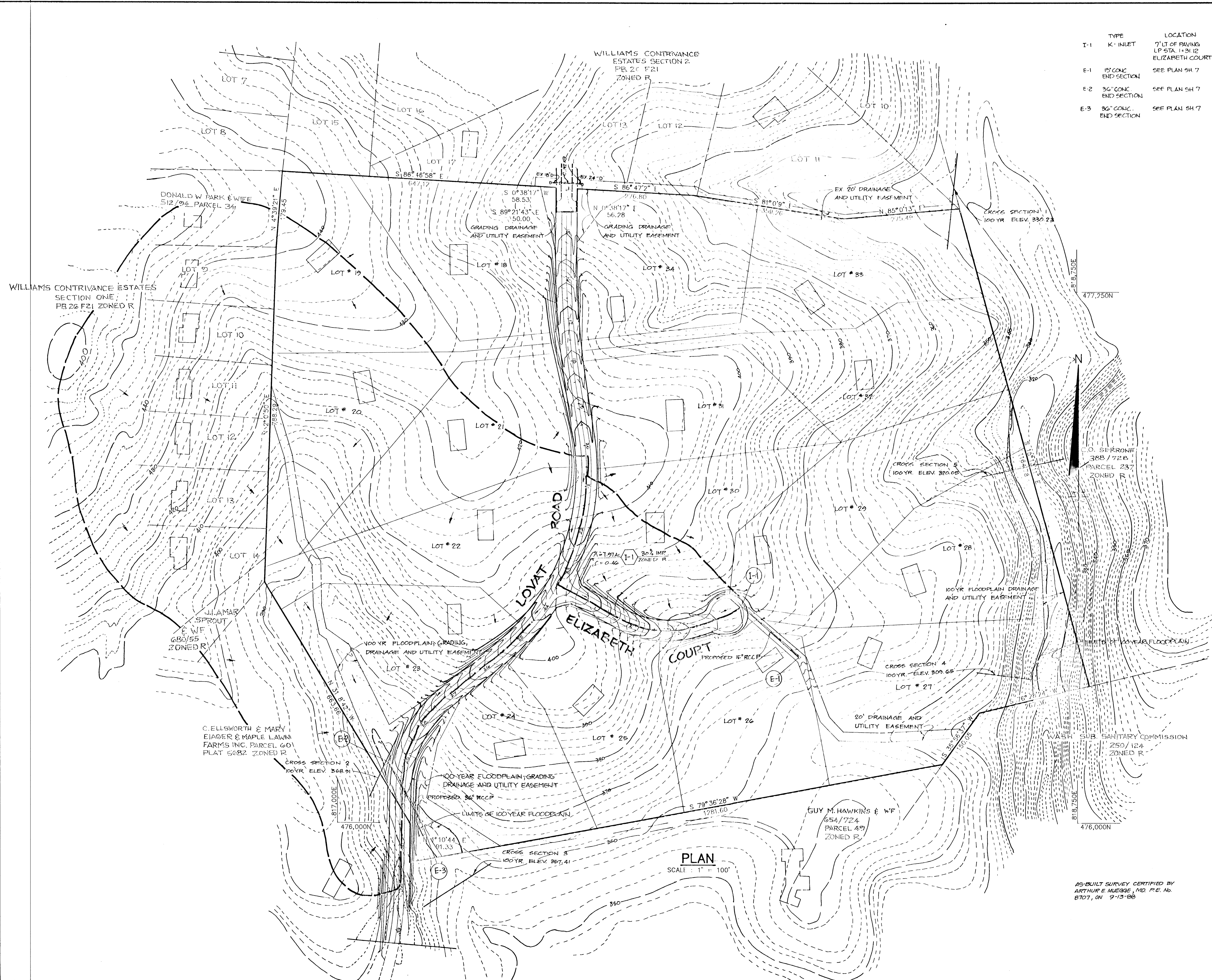
OWNER/DEVELOPER  
 C. ELLSWORTH IAGER, ET AL.  
 11788 ROUTE 216  
 FULTON, MARYLAND

PROJECT:  
 WILLIAMS CONTRIVANCE ESTATES  
 SECTION 3  
 AREA TAX MAP 45 PARCEL 2  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE:  
 PLAN AND PROFILE OF ELIZABETH COURT  
 STORM DRAIN PROFILE AND DETAIL SHEET

THE RIEMER GROUP, INC.  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 481-2880  
 DATE: 5-7-87  
 DESIGNED BY: J.D.P.  
 DRAWN BY: D.B.S.  
 PROJECT NO: 30800  
 DATE: MARCH 30, 1987  
 SCALE: AS SHOWN  
 DRAWING NO. 4 OF 7





STRUCTURE SCHEDULE						
	TYPE	LOCATION	INV. IN	INV. OUT	ELEVATION	REMARKS
	I-1	K-INLET	-	279.05	375.87	HO CO STD 50-4.15
	E-1	15" CONC. END SECTION	306.82	-	-	HO CO STD 50-5.51
	E-2	36" CONC. END SECTION	-	306.38	-	HO CO STD 50-5.51
	E-3	36" CONC. END SECTION	350.75	-	-	HO CO STD 50-5.51
			360.19	-	-	

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John W. Hanchman* 5-18-87  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Gregory S. Kelly* 5-18-87  
 CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER  
 C. ELLSWORTH IAGER, ET AL.  
 11788 ROUTE 216  
 FULTON, MARYLAND

PROJECT  
**WILLIAMS CONTRIVANCE ESTATES SECTION 3**

AREA TAX MAP 45 PARCEL 2  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE  
**DRAINAGE AREA MAP**

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 3106 Heath Park Drive, Ellicott City, Maryland 21043 (301) 481-2880

5-7-87 DATE	5-20-91 DATE	P.87-15
DESIGNED BY: JDP		
DRAWN BY: D.D.B.		
PROJECT NO: 30800		
DATE: MARCH 30, 1987		
SCALE: AS SHOWN		
DRAWING NO. 5 OF 7		

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

PLAN  
 SCALE: 1" = 100'



**PERMANENT SEEDING NOTES**

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

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

**Soil Amendments:** Apply 0-20-20 fertilizer at the rate of 600 lbs. per acre. Nitrogen or slow release and 0-20-20 fertilizer into the soil to a minimum depth of 3". Lawns or high maintenance areas will be dragged and leveled with a York rake. At the time of seeding, apply 400 lbs. of 30-0-0 ureaform fertilizer and 500 lbs. of 10-20-20 or equivalent fertilizer per acre.

**Seeding:** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 40 lbs. per acre (1 lb./1000 sq.ft.) of a mixture of certified 'Merion' Kentucky bluegrass; common Kentucky bluegrass @ 40 lbs. per acre (1 lb./1000 sq.ft.) and Red Fescue, Pennlawn or Jamestown @ 20 lbs. per acre (0.5 lb./1000 sq.ft.) for the period May 1 thru July 31, seed with 40-40-20 mix as specified above and 2 lbs. per acre (0.05 lb./1000 sq.ft.) of weaving lovegrass. During the period of October 16 thru February 28, protect site by (Option 1) 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring. (Option 2) Use sod. (Option 3) Seed with 40-40-20 mix specified above and mulch with 2 tons/acre well-anchored straw.

**Mulching:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal./1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal./1000 sq.ft.) for anchoring.

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

**TEMPORARY SEEDING NOTES**

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

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

**Soil Amendments:** Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) where soil is highly acidic, apply dolomitic limestone at the rate of 1 ton per acre.

**Seeding:** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 140 lbs. per acre of annual rye (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal./1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal. per acre (8 gal./1000 sq.ft.) for anchoring.

**SEDIMENT CONTROL NOTES**

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (492-2433)

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 513 and Sec. 514), temporary seedings (Sec. 503) and mulching (Sec. 522). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

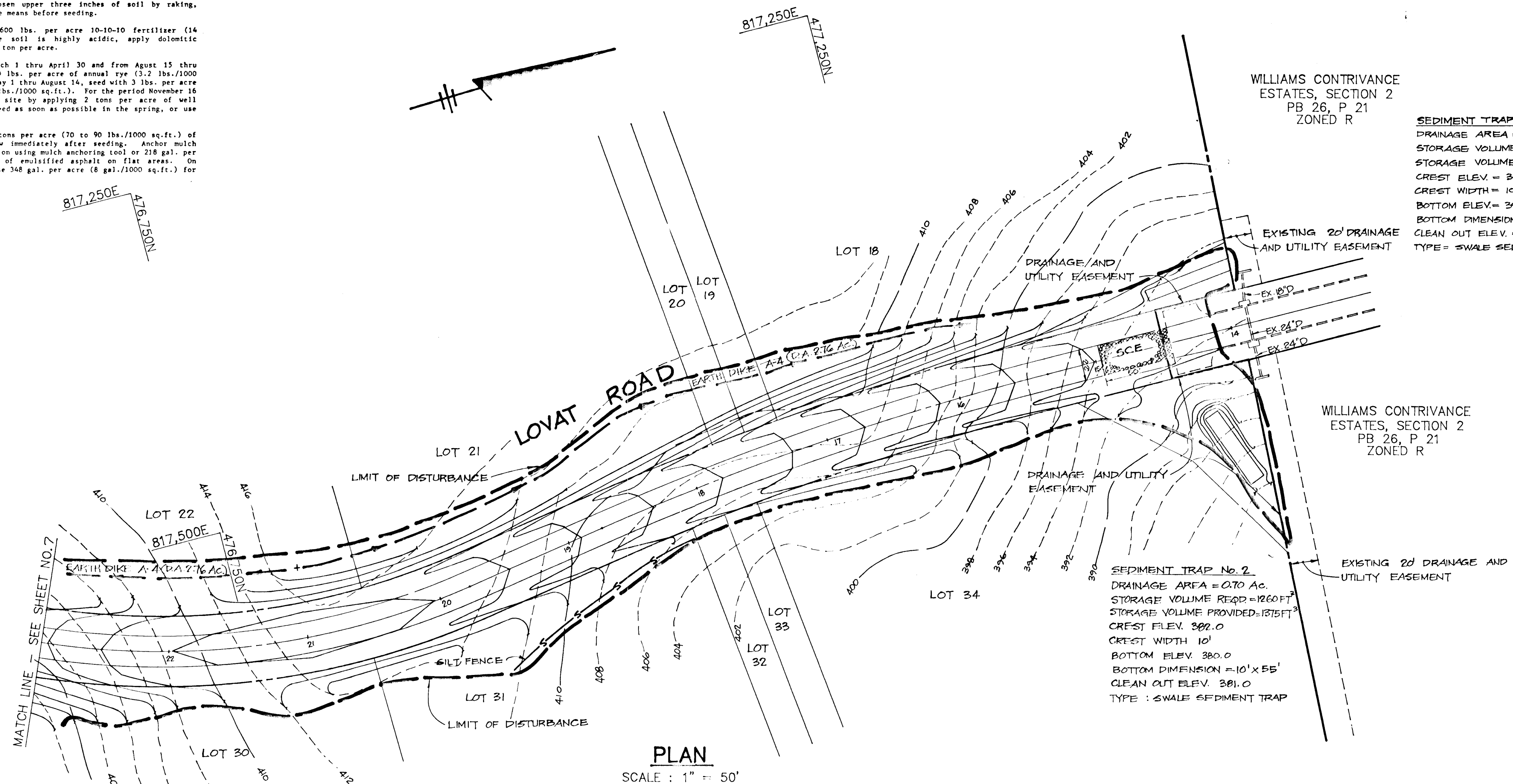
7. Site Analysis:  
Total Area of Site: 50.00 acres  
Area Disturbed: 6.06 acres  
Area to be roofed or paved: 1.91 acres  
Area to be vegetatively stabilized: 1.85 acres  
Total Cut: 18,800 cu. yds.  
Total Fill: 22,700 cu. yds.  
Topsoil: 7,100 cu. yds.

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.

10. Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.

11. Sediment will be removed from traps when its depth reaches the clean out elevation shown on the plans.



**PLAN**  
SCALE: 1" = 50'

WILLIAMS CONTRIVANCE ESTATES, SECTION 2  
PB 26, P 21  
ZONED R

**SEDIMENT TRAP No. 1**  
DRAINAGE AREA = 0.85 AC.  
STORAGE VOLUME REQ'D = 1523 FT<sup>3</sup>  
STORAGE VOLUME PROVIDED = 1025 FT<sup>3</sup>  
CREST ELEV. = 393.3  
CREST WIDTH = 10 FT.  
BOTTOM ELEV. = 392.3  
BOTTOM DIMENSION = 65'x10'  
CLEAN OUT ELEV. = 391.3  
TYPE = SWALE SEDIMENT TRAP

WILLIAMS CONTRIVANCE ESTATES, SECTION 2  
PB 26, P 21  
ZONED R

**SEDIMENT TRAP No. 2**  
DRAINAGE AREA = 0.70 AC.  
STORAGE VOLUME REQ'D = 1260 FT<sup>3</sup>  
STORAGE VOLUME PROVIDED = 1375 FT<sup>3</sup>  
CREST ELEV. 392.0  
CREST WIDTH 10'  
BOTTOM ELEV. 380.0  
BOTTOM DIMENSION = 10'x55'  
CLEAN OUT ELEV. 381.0  
TYPE : SWALE SEDIMENT TRAP

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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."  
C. G. Ellsworth Iager, Jr. 5/7/87  
DEVELOPER DATE

BY THE ENGINEER:  
"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
Arthur E. Mueggler 3-30-87  
ENGINEER DATE

REVIEWED FOR: HOWARD COUNTY S.C.D.  
AND MEETS TECHNICAL REQUIREMENTS  
U.S. SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Stephen H. Huber 5/10/87  
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
John M. Mueggler 5-12-87  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
J. S. B. B. 5-18-87  
CHIEF, BUREAU OF ENGINEERING & PLANNING DATE

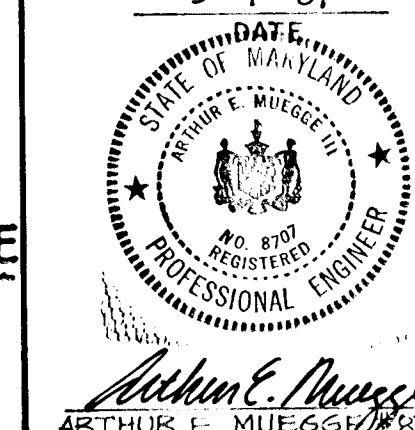
OWNER/DEVELOPER  
C. ELLSWORTH IAGER, ET AL.  
11788 ROUTE 21G  
FULTON, MARYLAND

PROJECT  
WILLIAMS CONTRIVANCE ESTATES SECTION 3  
AREA TAX MAP 45 PARCEL 2  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

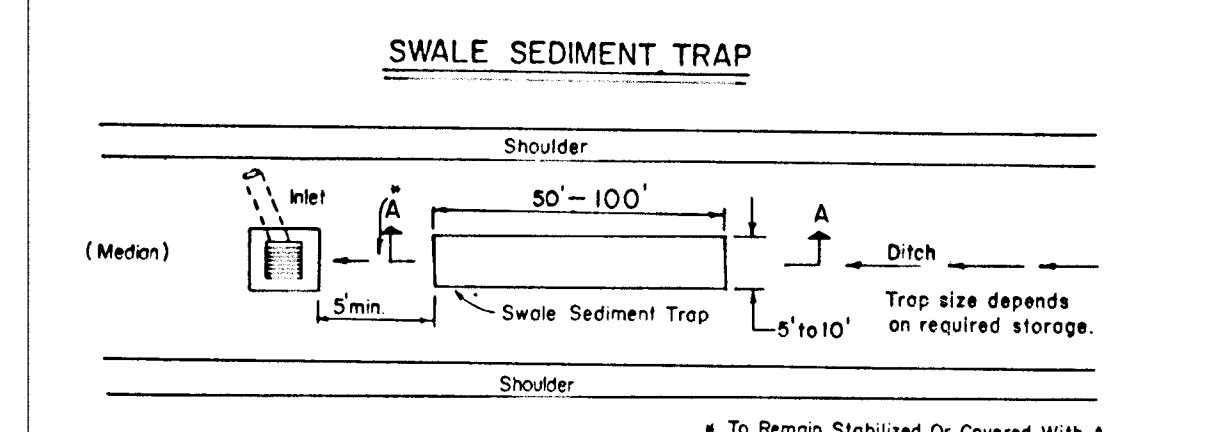
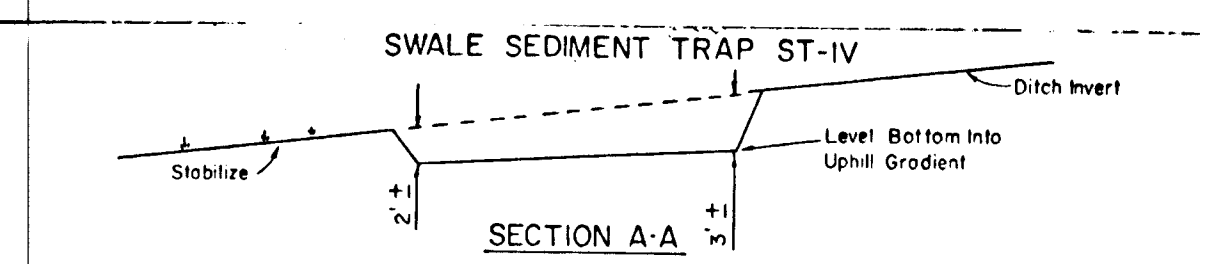
TITLE  
GRADING, SEDIMENT CONTROL AND DETAIL SHEET

THE RIEMER GROUP, INC.  
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2890

DATE: 5-7-87  
DESIGNED BY: J.D.P.  
DRAWN BY: D.B.S.  
PROJECT NO: 30800  
DATE: MARCH 30, 1987  
SCALE: AS SHOWN  
DRAWING NO. 6 OF 7

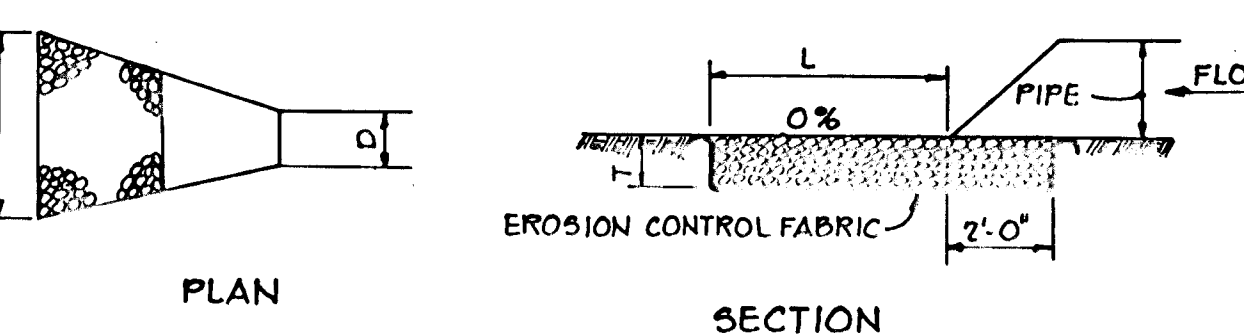


- SEQUENCE OF CONSTRUCTION**
1. Obtain Grading Permit.
  2. Install all the sediment traps, earth dikes and silt fence as shown on the plan. (3 days)
  3. Install the storm drain pipe from E-2 to E-3. (1 day)
  4. Begin grading without disturbing any sediment control measure.
  5. Bring all the grading up to subgrade and stabilize in accordance with temporary seeding notes. (10 days)
  6. Install storm drains. Divert drainage flow of I-1 to sediment trap no. 6 until Eligibility Code is proved.
  7. Pave the roads and stabilize the side ditches in accordance with permanent seeding notes. (10 days)
  8. Upon approval from the Department of Public Works Sediment Control Inspector, remove all the sediment control devices and stabilize in accordance with permanent seeding notes. (2 days)



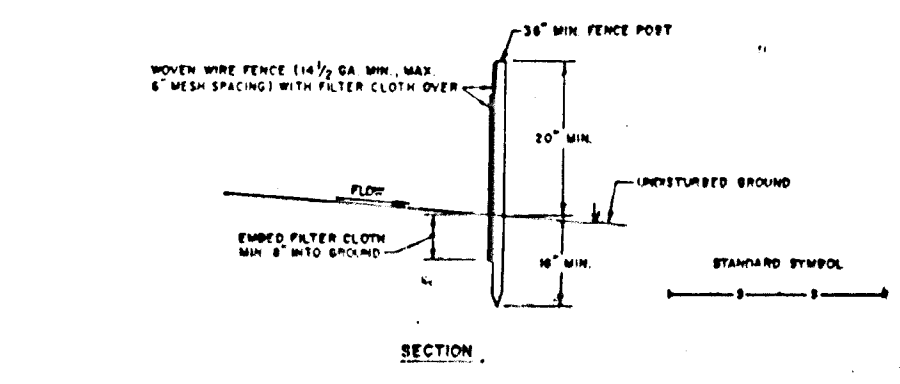
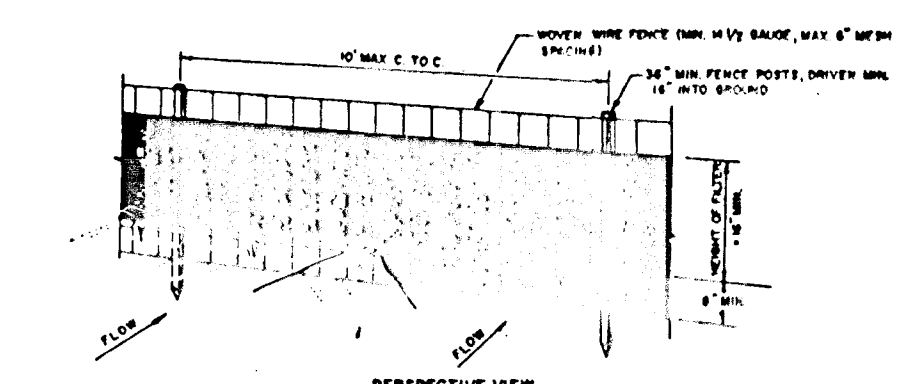
- CONSTRUCTION SPECIFICATION FOR ST-IV**
1. The swale sediment trap shall be constructed in accordance with the dimensions provided on the design drawings or sized to provide the minimum storage necessary 1800 cubic feet of storage for each acre of drainage area.
  2. Sediment shall be removed and trap 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.
  3. The structure shall be inspected after each rain and repairs made as needed.
  4. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
  5. The sediment trap shall be removed and area stabilized when the contributory drainage area has been properly stabilized.
  6. The swale sediment trap will be properly backfilled and the swale or ditch reconstructed.
- Maximum Drainage Area: 2 Acres

**SWALE SEDIMENT TRAP ST-IV**  
NO SCALE



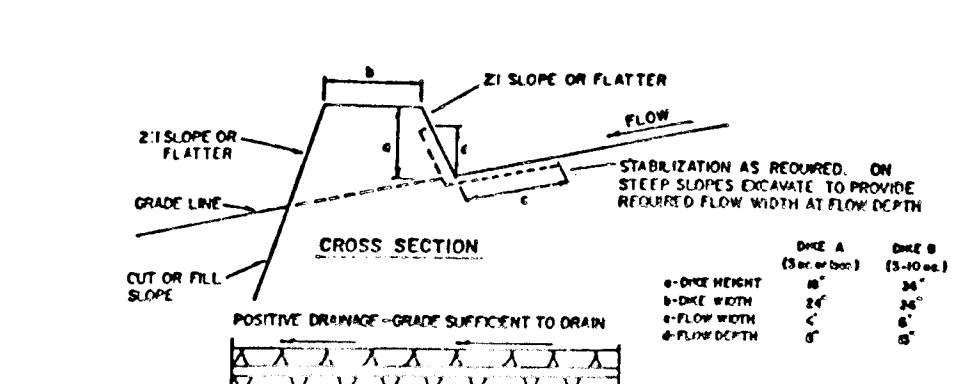
**OUTLET PROTECTION DETAIL**  
NO SCALE

STRUCTURE	MEDIUM STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	6"	12'	13 25'	15"
E-2	9"	22'	12'	21"
E-3	9"	20'	23'	21"



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
1. WHEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
  2. FILTER CLOTH TO BE FASTENED SECURELY TO WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
  3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
  4. MAINTENANCE SHALL BE PERFORMED AS PERCED AND MATERIAL REPAIRED WHEN "BOLDS" DEVELOP IN THE SILT FENCE.

**SILT FENCE**  
NO SCALE



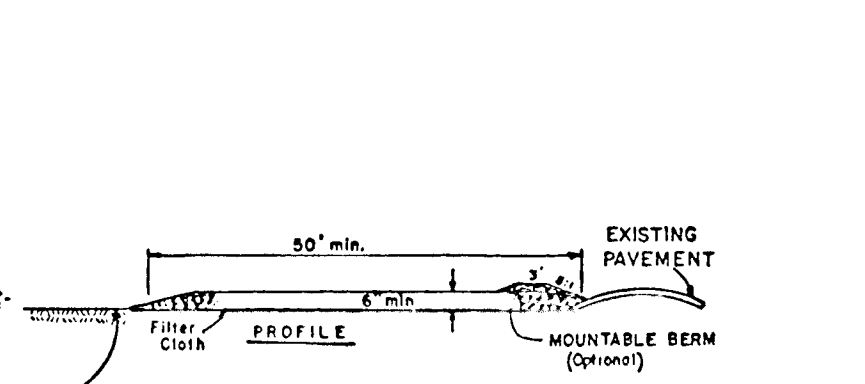
- CONSTRUCTION SPECIFICATIONS**
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
  2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
  3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRUCKS.
  4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
  5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF OBSTRUCTION. TRUCKS SHALL BE CAPABLE TO A SUFFICIENT TROOPING DEVICE SUCH AS A SEDIMENT TRAP OR CHECK DAM WHICH RETARDS THE FLOW OF WATER ON THE DRAINAGE AREA ABOVE THE DIKE AND BEST STAGNATELY STABILIZED.
  6. STABILIZATION SHALL BE (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SETTING SEASON; (B) FLOW CONTROL, AS PER THE OWNER'S DESIGN.

**FLOW CONTROL STABILIZATION**

TYPE OF DRAINAGE	CHANNEL SIZE	DIKE A	DIKE B
1	5-3.00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.00	SEED AND STRAW MULCH	SEED USING JUTE OR EXTENSION SOOT 2" STONE
3	5.1-8.00	SEED WITH JUTE OR SOOT 2" STONE	LINEN RIP-RAP 4-8"
4	8.1-20.00	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIPMENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESENT INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.  
B. RIP-RAP TO BE 3/8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESENT INTO THE SOIL.  
C. PROTECTIVE EQUIPMENT CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.  
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

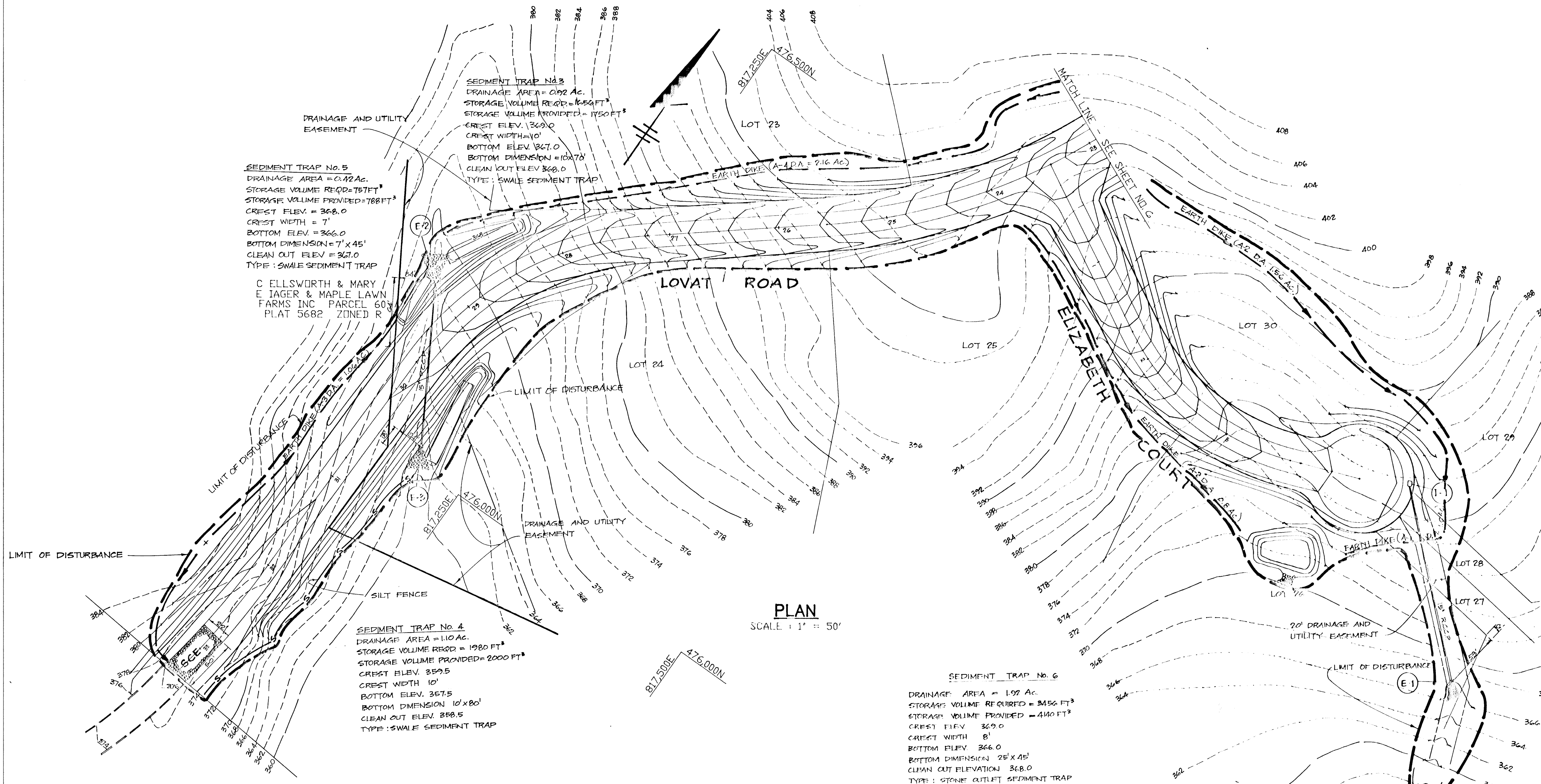
**EARTH DIKE**  
NO SCALE



- CONSTRUCTION SPECIFICATIONS**
1. Stone Size - Use 2" stone, or equivalent or recycled concrete equivalent.
  2. Length - As required, but not less than 30 feet (except on a single residential lot where a 20 foot minimum length would apply).
  3. Thickness - Not less than 18" (4' inches).
  4. Width - The (10) foot minimum, but not less than the full width at points where engineer or owner occurs.
  5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be exposed on a single family residential lot.
  6. Surface Water - All surface water flowing or directed toward construction entrances shall be spread across the entrance. If piping is installed, a manhole with 3/4 slope will be permitted.
  7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
  8. Warning - Signs will be cleaned to remove sediment prior to entrance onto public rights-of-way. When warning is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
  9. Periodic inspection and needed maintenance shall be provided after each rain.

**STABILIZED CONSTRUCTION ENTRANCE**  
NO SCALE





SEDIMENT TRAP No. 5  
 DRAINAGE AREA = 0.42 AC.  
 STORAGE VOLUME REQUIRED = 757 FT<sup>3</sup>  
 STORAGE VOLUME PROVIDED = 788 FT<sup>3</sup>  
 CREST ELEV. = 368.0  
 CREST WIDTH = 7'  
 BOTTOM ELEV. = 366.0  
 BOTTOM DIMENSION = 7' x 45'  
 CLEAN OUT ELEV. = 367.0  
 TYPE: SWALE SEDIMENT TRAP

SEDIMENT TRAP No. 3  
 DRAINAGE AREA = 0.92 AC.  
 STORAGE VOLUME REQUIRED = 1654 FT<sup>3</sup>  
 STORAGE VOLUME PROVIDED = 1750 FT<sup>3</sup>  
 CREST ELEV. = 369.0  
 CREST WIDTH = 10'  
 BOTTOM ELEV. = 367.0  
 BOTTOM DIMENSION = 10 x 70'  
 CLEAN OUT ELEV. = 368.0  
 TYPE: SWALE SEDIMENT TRAP

SEDIMENT TRAP No. 4  
 DRAINAGE AREA = 1.10 AC.  
 STORAGE VOLUME REQUIRED = 1980 FT<sup>3</sup>  
 STORAGE VOLUME PROVIDED = 2000 FT<sup>3</sup>  
 CREST ELEV. = 359.5  
 CREST WIDTH = 10'  
 BOTTOM ELEV. = 357.5  
 BOTTOM DIMENSION = 10' x 80'  
 CLEAN OUT ELEV. = 368.5  
 TYPE: SWALE SEDIMENT TRAP

SEDIMENT TRAP No. 6  
 DRAINAGE AREA = 1.97 AC.  
 STORAGE VOLUME REQUIRED = 3456 FT<sup>3</sup>  
 STORAGE VOLUME PROVIDED = 4100 FT<sup>3</sup>  
 CREST ELEV. = 369.0  
 CREST WIDTH = 8'  
 BOTTOM ELEV. = 366.0  
 BOTTOM DIMENSION = 25' x 45'  
 CLEAN OUT ELEVATION = 368.0  
 TYPE: STONE OUTLET SEDIMENT TRAP

PLAN  
 SCALE: 1" = 50'

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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."  
*C. Ellsworth Iager* 5/7/87  
 DEVELOPER DATE

BY THE ENGINEER:  
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
*Arthur E. Mueggler* 5-7-87  
 ENGINEER DATE

REVIEWED FOR \_\_\_\_\_ NAME \_\_\_\_\_ S.C.D.  
 AND MEETS TECHNICAL REQUIREMENTS  
 \_\_\_\_\_ DATE  
 U.S. SOIL CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Howard S.C.D.* 5-16-87  
 HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*John Marchman* 5-12-87  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Richard R. Kelly* 5-18-87  
 CHIEF, BUREAU OF ENGINEERING & CONSTRUCTION DATE

DATE	NO.	REVISION

OWNER/DEVELOPER  
 C. ELLSWORTH IAGER, ET AL.  
 11788 ROUTE 216  
 FULTON, MARYLAND

PROJECT  
**WILLIAMS CONTRIVANCE ESTATES**  
 SECTION 3  
 AREA TAX MAP 4E PARCEL 2  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE:  
**GRADING AND SEDIMENT CONTROL**

**THE RIEMER GROUP, INC.**  
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm  
 3105 Health Park Drive, Ellicott City, Maryland 21043 (301) 461-2190

5-7-87 DATE	5-26-91 DATE
DESIGNED BY: J.D.P.	P-87-15
DRAWN BY: D.B.S.	
PROJECT NO: 30800	
DATE: MARCH 30, 1987	
SCALE: AS SHOWN	
DRAWING NO. 7 OF 7	

