

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A FEASIBLE 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.

*Charles J. Crovo* 9/29/87  
 CHARLES J. CROVO SR. DATE

**DEVELOPER'S CERTIFICATE**  
 I HEREBY 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 DEEMED NECESSARY.

*J.D. Evans President* 12-30-87  
 CENTENNIAL MANOR LIMITED PARTNERSHIP DATE

**REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND METS TECHNICAL REQUIREMENTS.**

*James M. DeWalt* 12/31/87  
 U.S. SOIL CONSERVATION SERVICE DATE

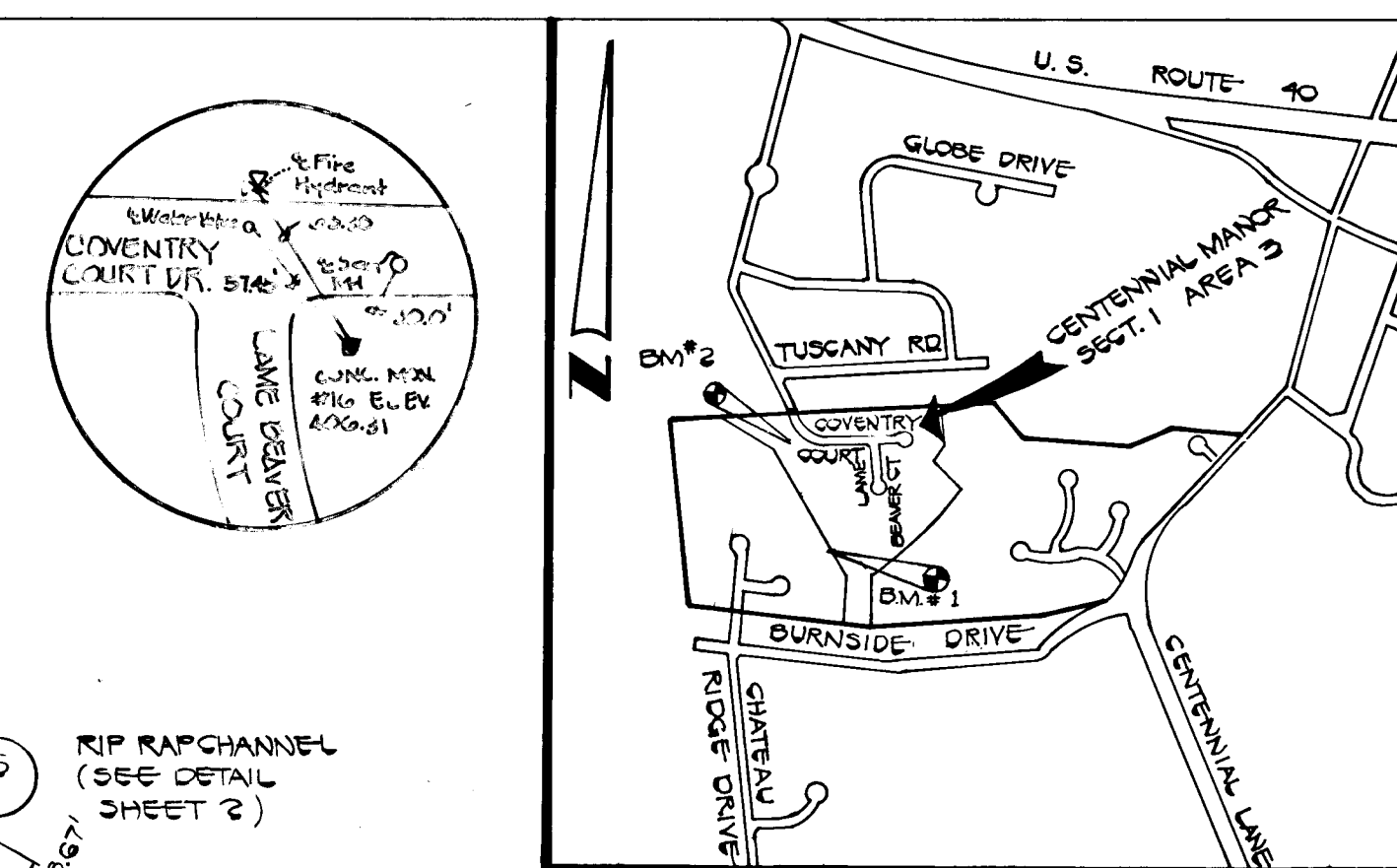
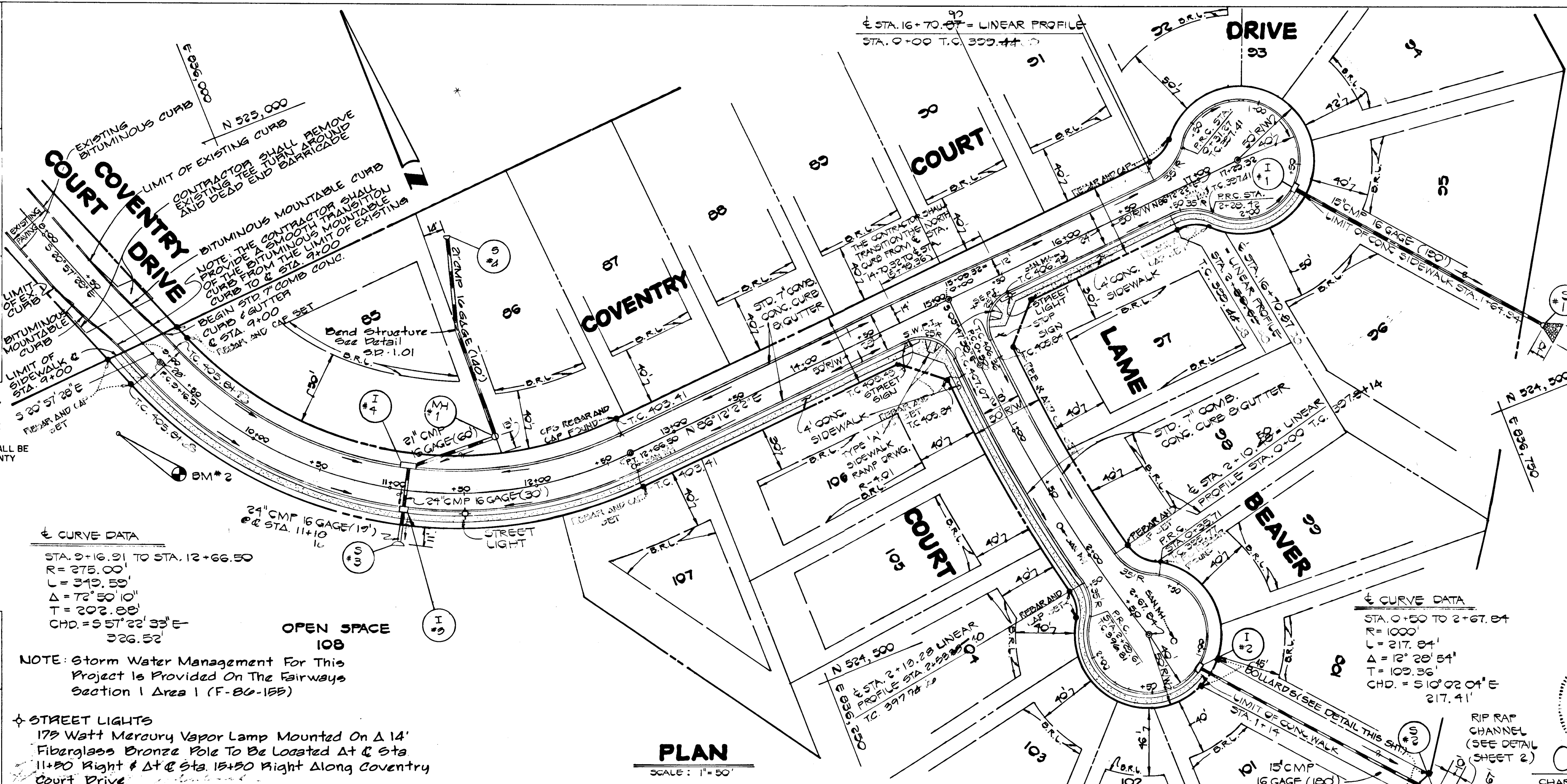
**THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.**

*Shepherd Miller* 12/31/87  
 HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

- GENERAL NOTES**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
  - STORM DRAINAGE TRENCHES WITHIN ROAD RIGHTS-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
  - ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS OR PAVING WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
  - CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS - TELEPHONE: 792-7272.
  - ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1978 EDITION.

**APPROVED** DEPARTMENT OF PUBLIC WORKS  
*William B. Reilly* 1-12-88  
 CHIEF, BUREAU OF ENGINEERING DATE

**APPROVED** OFFICE OF PLANNING AND ZONING  
*James H. Smith* 2/3/88  
 AN Land Development DATE



**BENCH MARKS:**

BM #1 ELEV. 333.07  
 RIM ELEVATION ON EX. SANITARY MH # 2243 (CONT. # 172-5)

BM #2 ELEV. 335.21  
 1/2" REBAR 60' RIGHT OF & STA. 9+50 GOVENTRY COURT DRIVE

**CENTENNIAL MANOR SECTION ONE AREA THREE**  
 LOTS 85-108  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

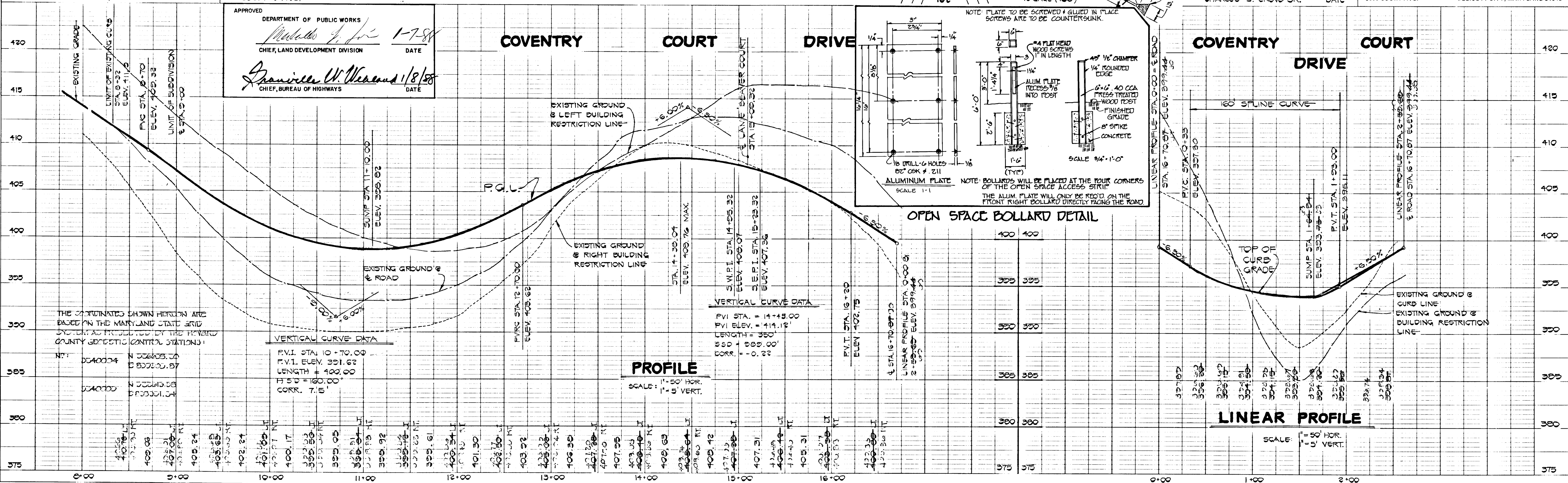
**COVENTRY COURT DR. COVENTRY COURT DR. & LAME BEAVER COURT**

**PLAN PROFILE**

OWNER AND DEVELOPER  
 CENTENNIAL MANOR LIMITED PARTNERSHIP  
 5391 LIGHT HOUSE COURT  
 COLUMBIA, MARYLAND 21044

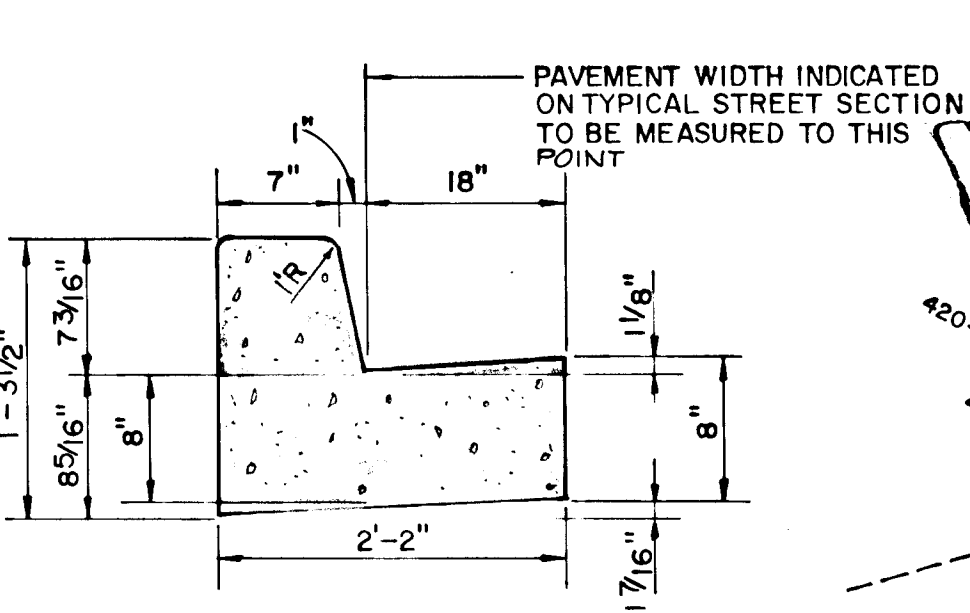
SCALE AS SHOWN DATE AUG. 18, 1986 DWG. NO. 1 OF 3  
 DES. R. SHUMAKER DRN. J. O'DONNELL CHK. C. CROVO

FISHER, COLLINS AND CARTER, INC.  
 CIVIL ENGINEERS AND LAND SURVEYORS  
 8388 COURT AVE. FLEICOTT CITY, MARYLAND 21043

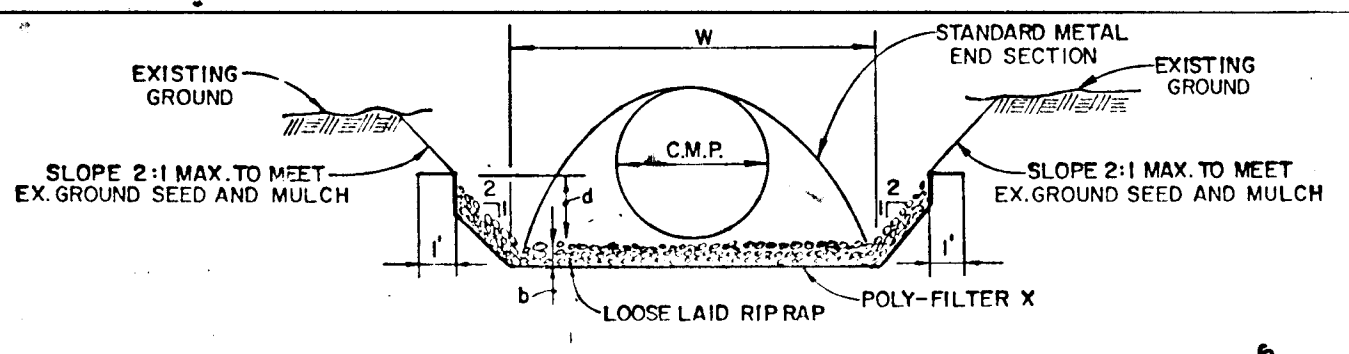


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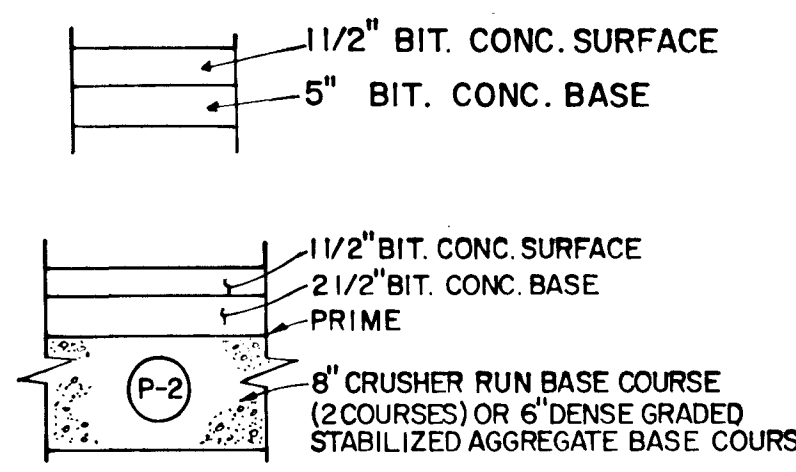




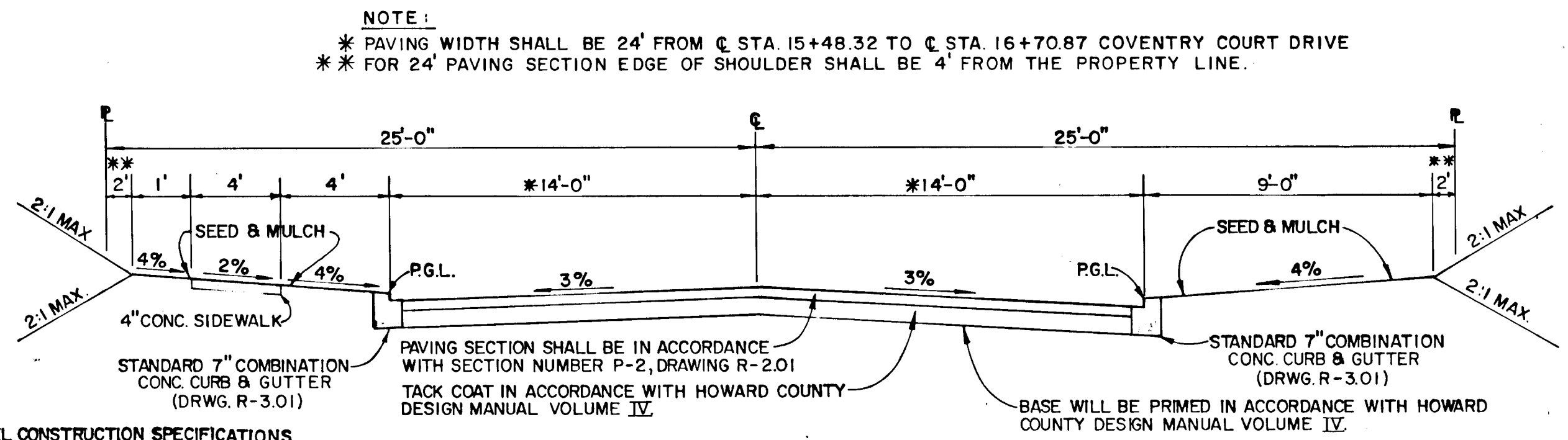
**STANDARD SLOPE 7" COMB. CONC. CURB & GUTTER**  
NO SCALE



**RIP RAP CHANNEL DETAIL**  
NO SCALE



**PAVING SECTION P-2**  
NO SCALE



**TYPICAL ROADWAY SECTION**  
NO SCALE

**RIP RAP CHANNEL CONSTRUCTION SPECIFICATIONS**

- The aggregate for the filter, riprap or gabion shall be prepared to the required size and grades. All riprap to be used shall be inspected by a quantity of approximately that of the surrounding unexcavated material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be provided from multiple sections on leading. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlap joints for riprap or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be constructed in the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably uniform with the center line of the outlet. The riprap between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Any placement will be accepted to the extent necessary to prevent damage to the proposed work.

NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS
COVENTRY COURT DRIVE	CULDESAC	30 MPH	R-20	9+00-16+70.87
LAME BEAVER COURT	CULDESAC	25 MPH	R-20	0+00-2+67.84

**STRUCTURE SCHEDULE**

NO	TYPE	INV. IN	INV. OUT	TOP ELEV.	ROAD STATION	REMARKS
I-1	A-5	383.52		393.75	LINEAR PROFILE STATION 1+00.00	DWG. SD-4.01
I-2	A-5	388.20		393.00	COVENTRY COURT DRIVE	DWG. SD-4.01
I-3	A-5	390.07		398.02	LINEAR PROFILE STATION 1+12.00	DWG. SD-4.01
I-4	A-10	390.18		398.75	COVENTRY COURT DRIVE	DWG. SD-4.02
I-5	MODIFIED TYPE D	399.38		405.64	ROAD STATION 1+00.00	INLET WILL HAVE OPENINGS - ON ALL 4 SIDES THE OPENING SHALL BE 10" IN DEPTH
M-1	STANDARD MANHOLE	394.00	394.85	400.24		DWG. 6-5.01
S-1	STD. METAL END SECTION	376.87		378.12		DWG. SD-5.61
S-2	STD. METAL END SECTION	381.00		382.26		DWG. SD-5.61
S-3	STD. METAL END SECTION	392.07		393.31		DWG. SD-5.61
S-4	STD. METAL END SECTION	402.44		404.17		DWG. SD-5.61

**RIP RAP CHANNEL DESIGN DATA**

STRUCTURE	A	P	R	R <sup>2</sup> /3	S	S <sup>2</sup> /n	Q	V	d	W	RIP RAP SIZE	b
S-1	2.22	5.81	3.82	5.25	1%	1.04	4.33	1.95	4.8	3.67	4	6
S-2	1.96	5.59	3.5	5.0	1%	1.04	3.63	1.86	4.3	3.67	4	6

APPROVED DEPARTMENT OF PUBLIC WORKS  
*Wesley & Ray* 1-12-88  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING  
*James R. Smith* 2/3/88  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED DEPARTMENT OF PUBLIC WORKS  
*Michael H. 1-288*  
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED  
*Graville W. Wickland 1/8/88*  
 CHIEF, BUREAU OF HIGHWAYS DATE

**CENTENNIAL MANOR SECTION ONE AREA THREE LOTS 85-108**  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

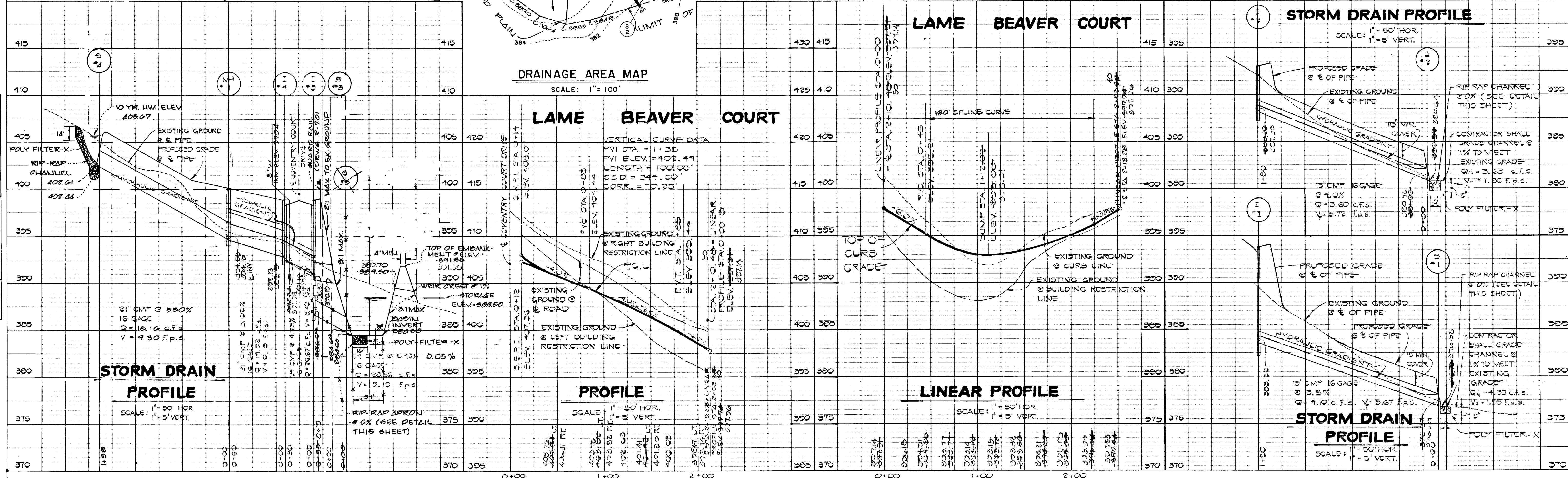
**ROAD SECTIONS, DETAILS, ROAD AND STORM DRAIN PROFILES**

OWNER AND DEVELOPER  
 CENTENNIAL MANOR LIMITED PARTNERSHIP  
 5391 LIGHT HOUSE COURT  
 COLUMBIA MARYLAND 21044

SCALE AS SHOWN DATE AUG. 18, 1986 DWG. NO. 2 OF 3  
 DES. R. SHAMAKER DRN. J. O'DONNELL CHK. C. CROVO

**FISHER, COLLINS AND CARTER, INC.**  
 CIVIL ENGINEERS AND LAND SURVEYORS  
 8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

AS-BUILT  
 CHARLES U. CROVO, SR. 12/30/87  
 DATE



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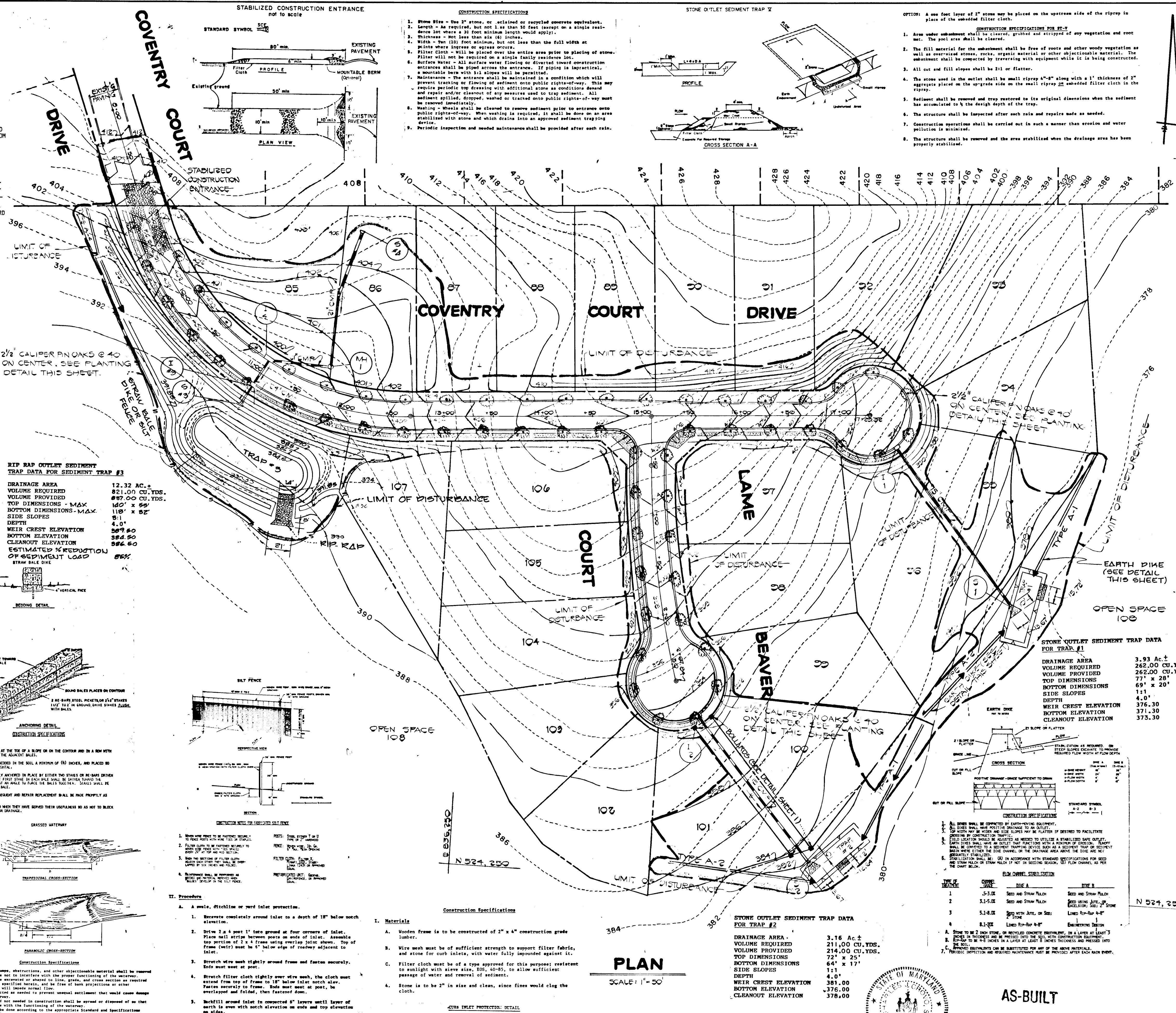
**SEDIMENT CONTROL NOTES:**

- 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 (892-2421).
- 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.
- 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.
- 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. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 52), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONG CURBWAYS, BEYOND PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL FURTHER REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	24.21 ACRES
AREA DISTURBED	5.40 ACRES
AREA TO BE ROOFED OR PAVED	1.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED	4.27 ACRES
TOTAL CUT	CU.YDS.
TOTAL FILL	CU.YDS.
- OFFSITE WASTE/BORROW AREA LOCATION
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY BONDING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPM SEDIMENT CONTROL INSPECTOR.

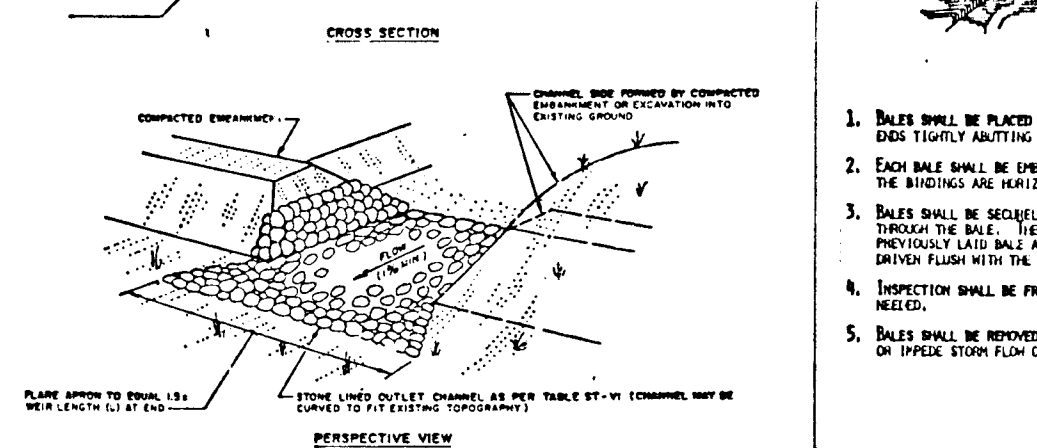
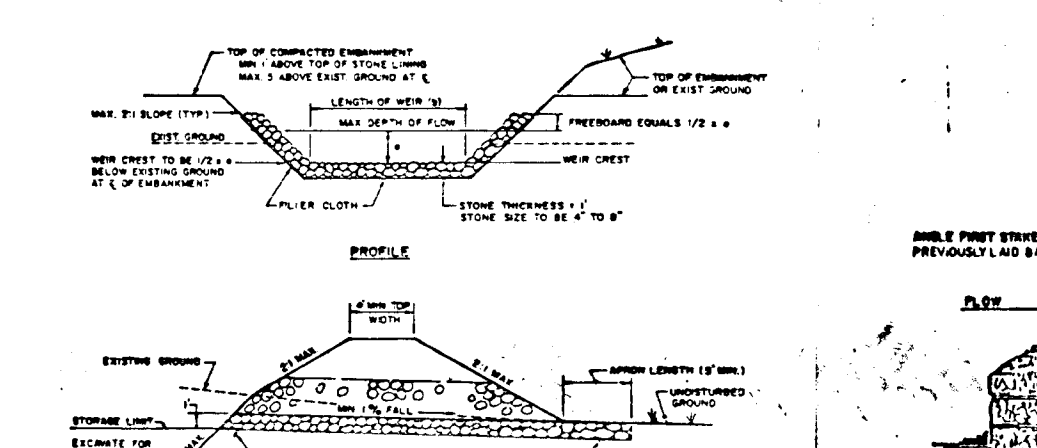
**CONSTRUCTION SEQUENCE:**

- OBTAIN GRADING PERMIT.
- CONSTRUCT STONE CONSTRUCTION ENTRANCE.
- CONSTRUCT STONE AND RIP RAP OUTLET TRAPS AND EARTH DIKES.
- CONSTRUCT STORM DRAIN SYSTEMS AND INSTALL INLET PROTECTION DEVICES.
- GRADE PARABOLIC CHANNEL AT THE REAR OF LOTS 85-89.
- GRADE ROADS TO SUBGRADE STABILIZING SLOPE AREAS BETWEEN EXISTING GROUND AND BACK OF CURB USING PERMANENT SEEDING.
- CONSTRUCT CONCRETE CURB AND LAY BASE COURSE.
- UPON STABILIZATION OF GRADED AREAS, INLETS SHALL BE OPENED AND ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORM DRAIN SYSTEM.
- DURING CONSTRUCTION, SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. DURING CONSTRUCTION AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON.
- REMOVE STONE CONSTRUCTION ENTRANCE.
- CLEAN-BASE COURSE, APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE. STABILIZE ALL SHOULDERS USING PERMANENT SEEDING.
- REMOVE ALL ACCUMULATED SEDIMENT FROM THE SEDIMENT TRAPS AND REMOVE EARTH DIKES ONCE DISTURBED AREAS HAVE BEEN STABILIZED.
- ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING.
- CONSTRUCT REMAINING STORM DRAIN SYSTEM DUE TO TRAP LOCATION AND INSTALL RIP RAP CHANNELS. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING.
- SEDIMENT TRAPS SHALL BE PERMANENT STRUCTURES AS REQUESTED BY THE DEPARTMENT OF THE ENVIRONMENT.
- 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, SLOPES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; b) 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.



**REF RIP RAP OUTLET SEDIMENT TRAP DATA FOR SEDIMENT TRAP #3**

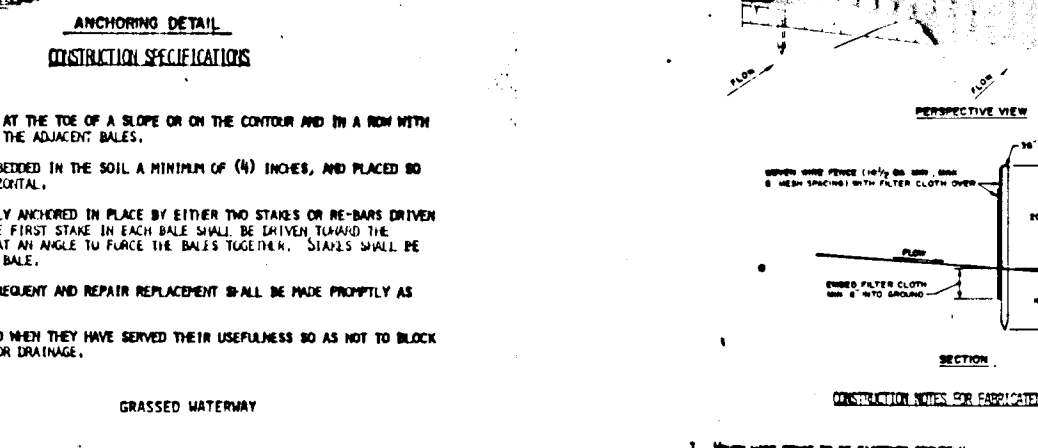
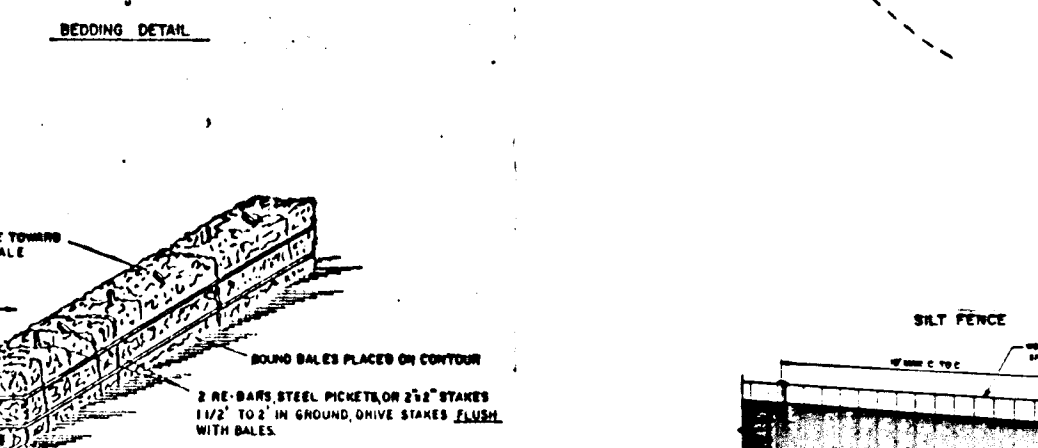
DRAINAGE AREA	12.32 AC. ±
VOLUME REQUIRED	821.00 CU. YDS.
VOLUME PROVIDED	867.00 CU. YDS.
TOP DIMENSIONS - MAX	10'0" x 9'0"
BOTTOM DIMENSIONS - MAX	11'0" x 8'0"
SIDE SLOPES	1:1
DEPTH	4'0"
WEIR CREST ELEVATION	382.60
BOTTOM ELEVATION	382.60
CLEANOUT ELEVATION	386.60
ESTIMATED % REDUCTION OF OVERFLOW LOAD	85%



**CONSTRUCTION SPECIFICATIONS FOR ST-VI**

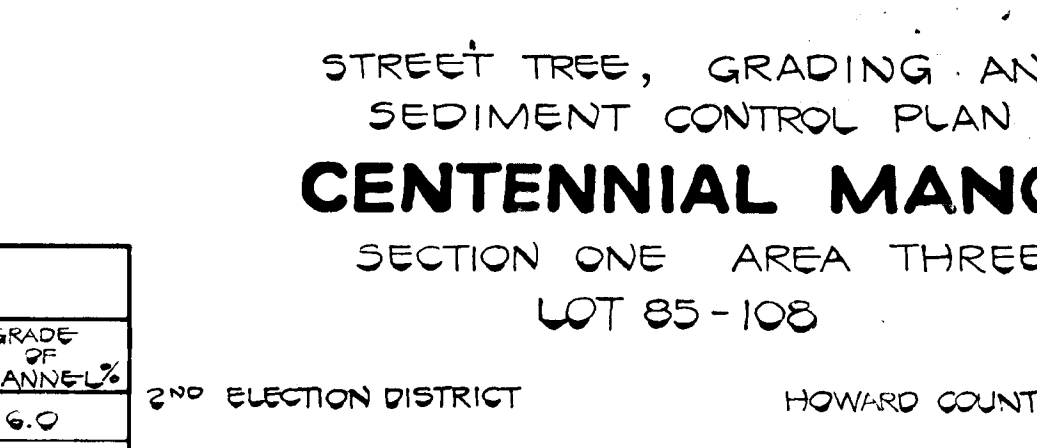
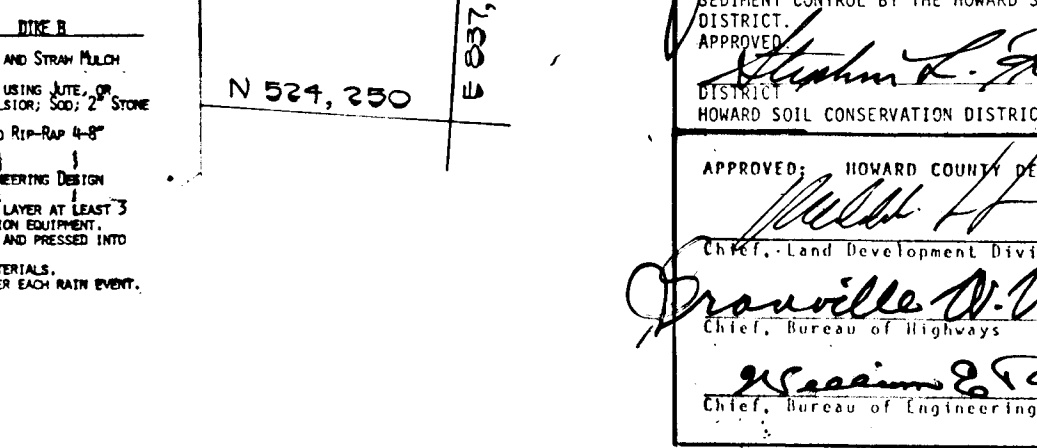
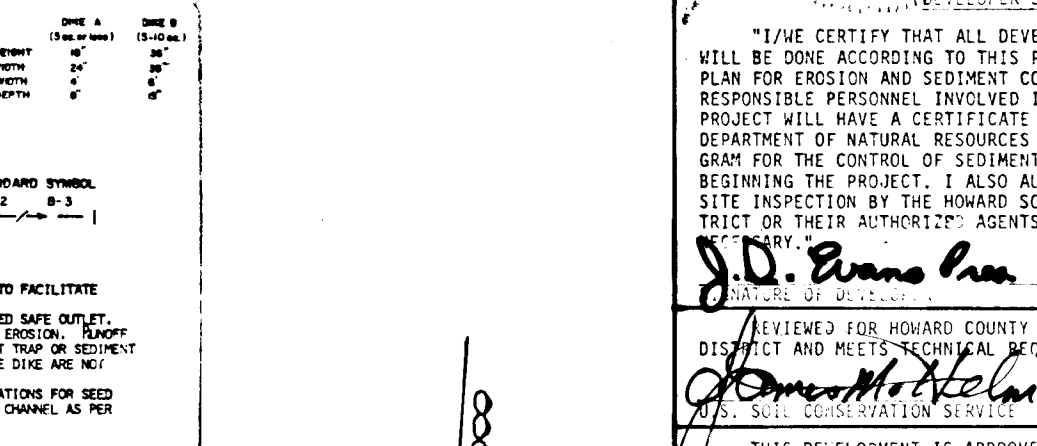
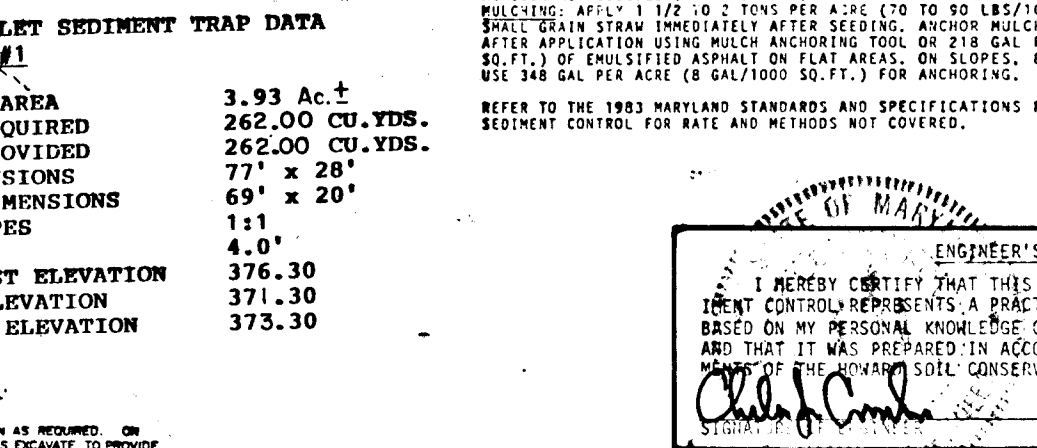
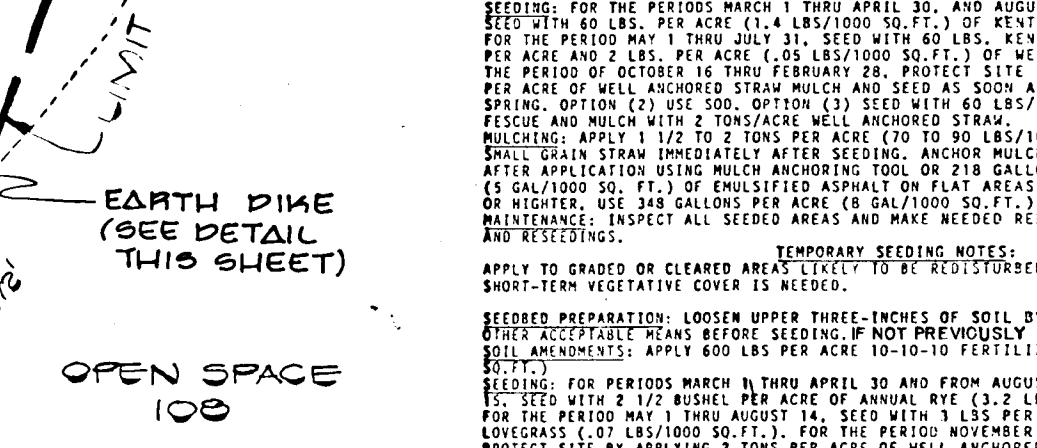
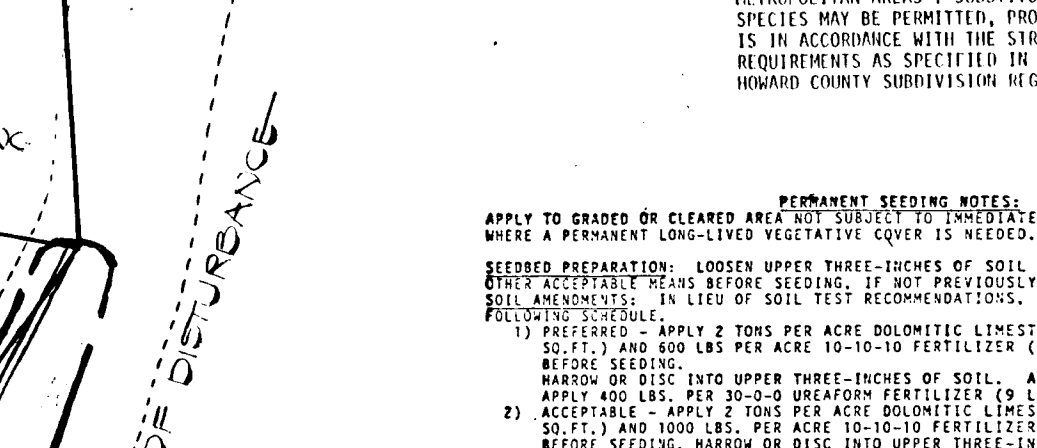
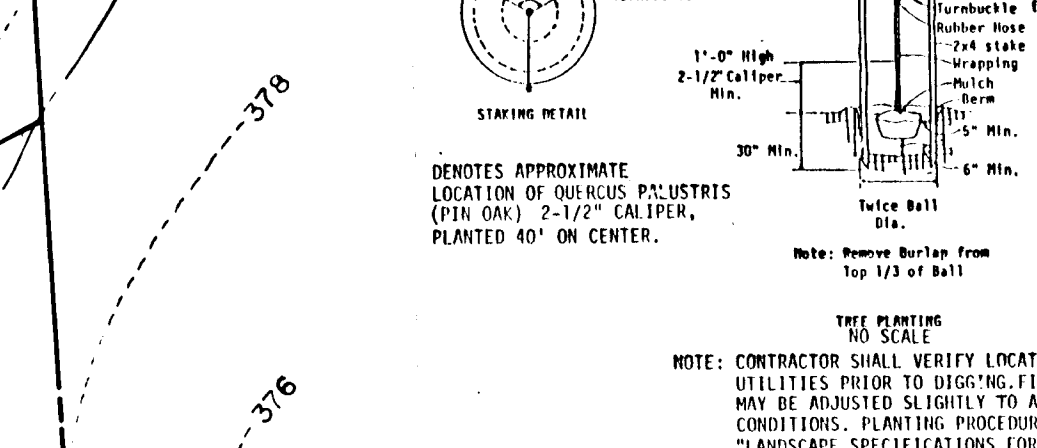
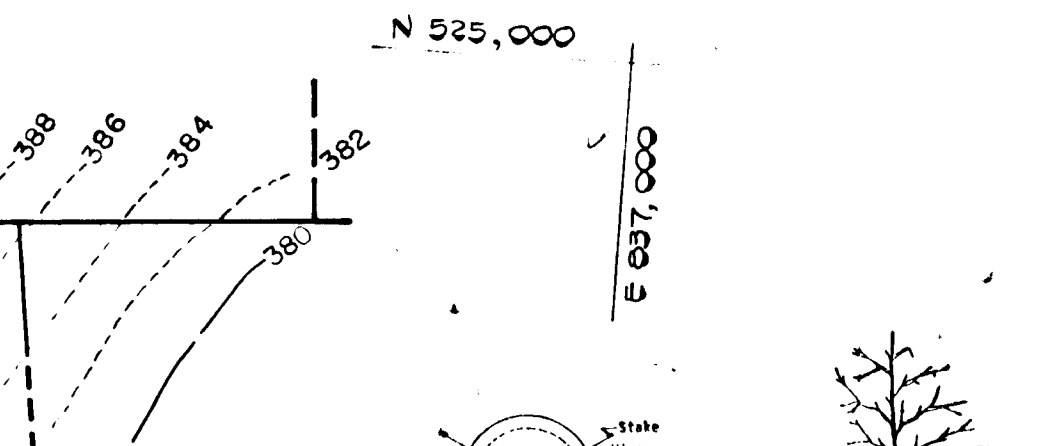
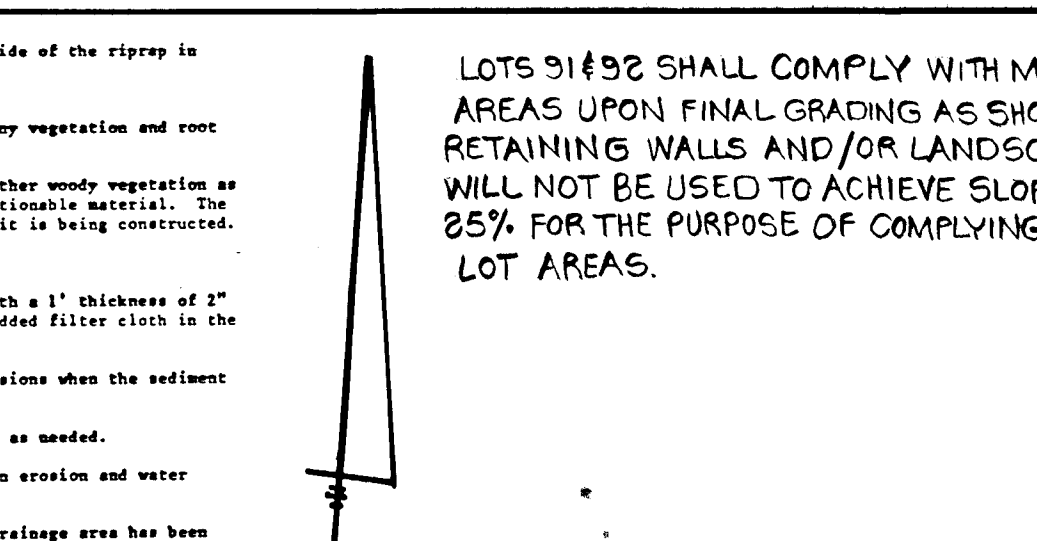
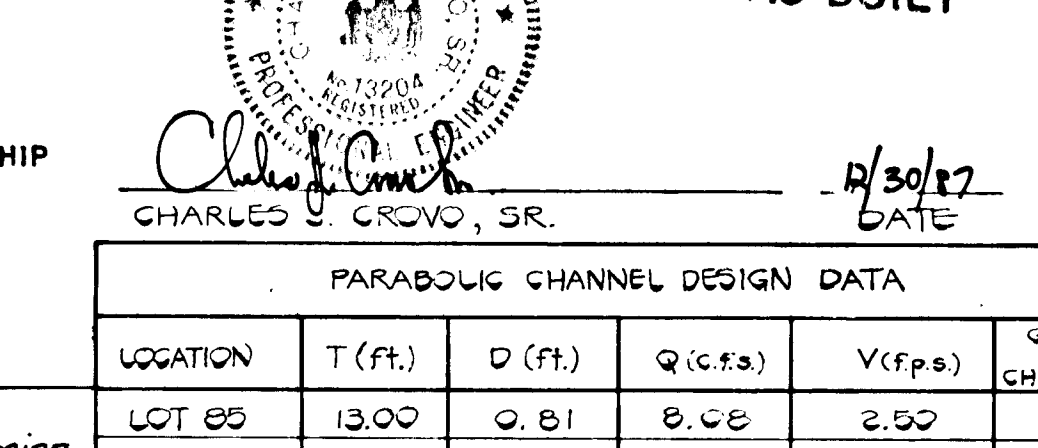
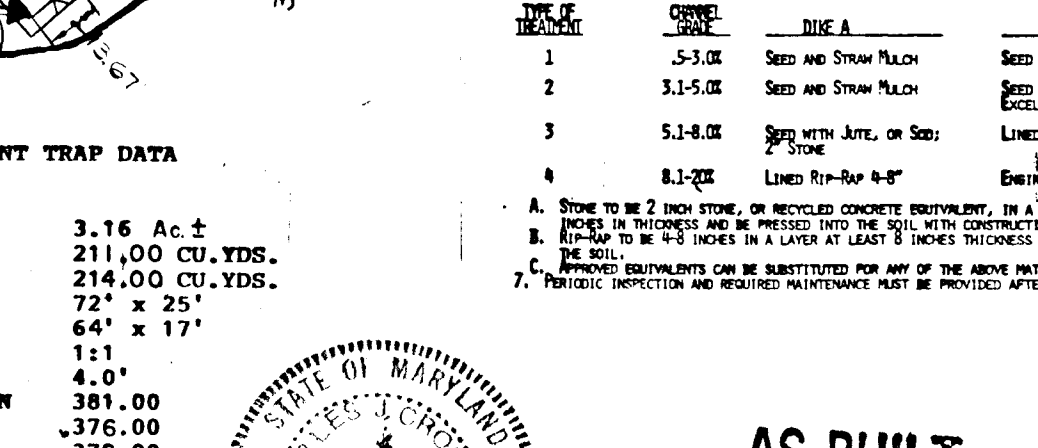
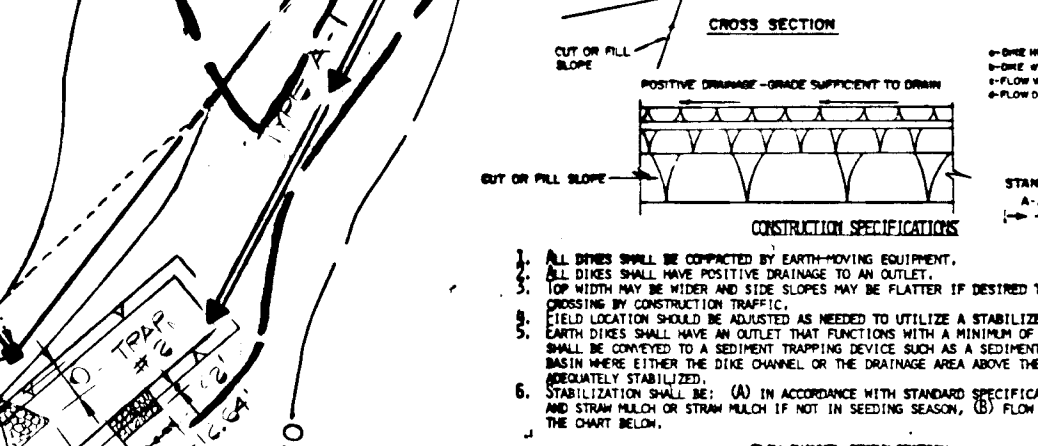
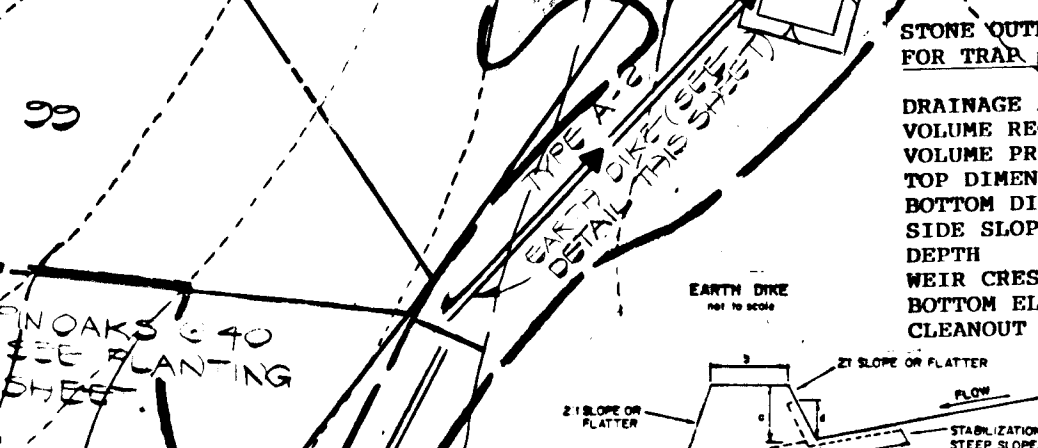
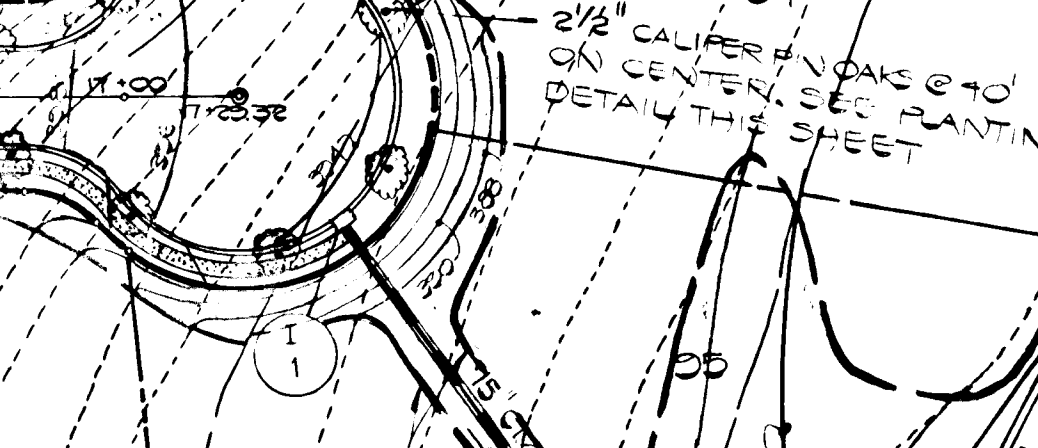
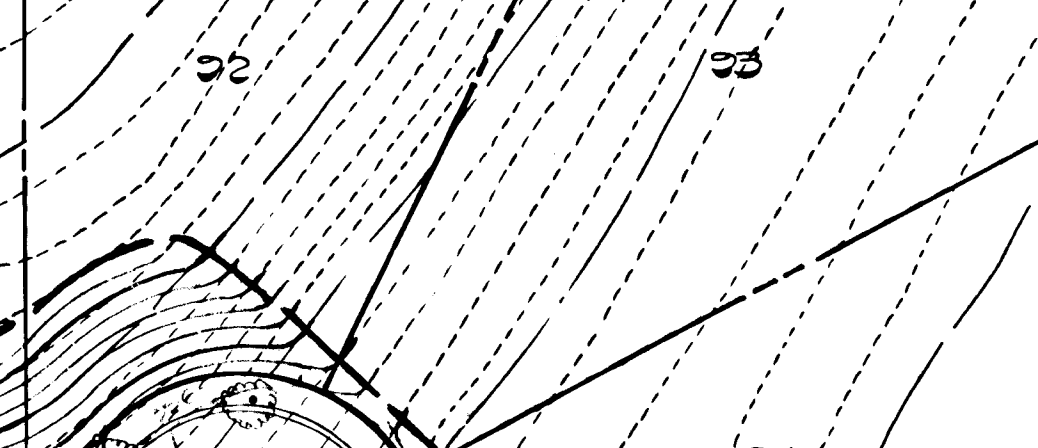
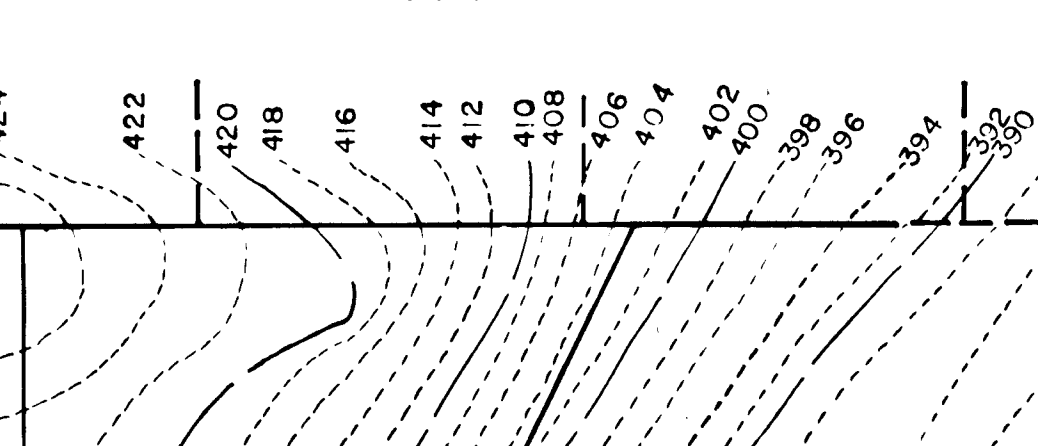
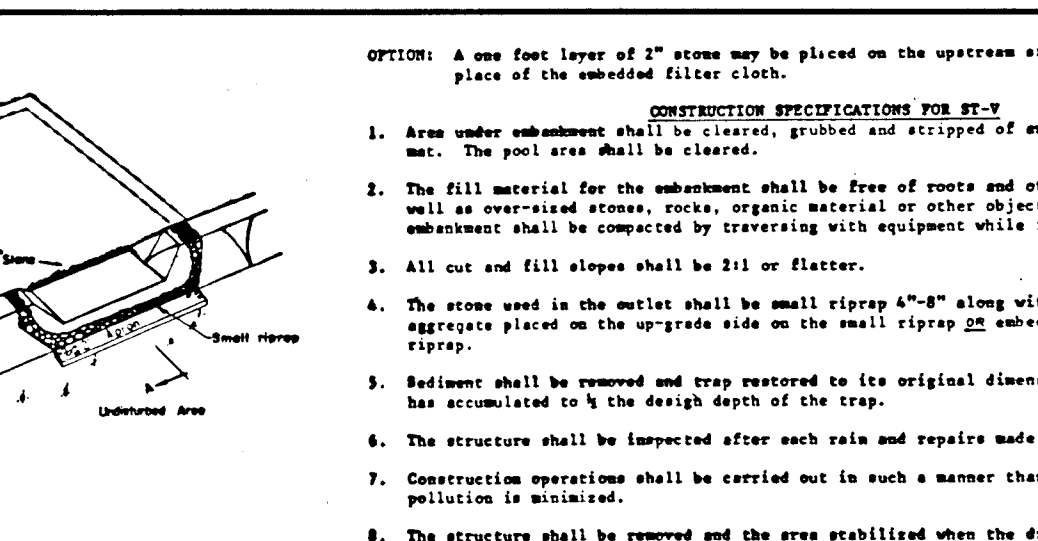
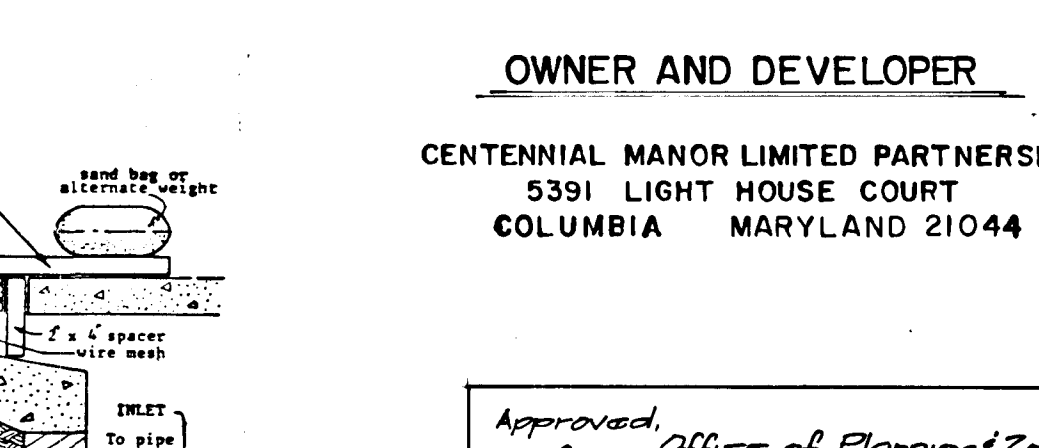
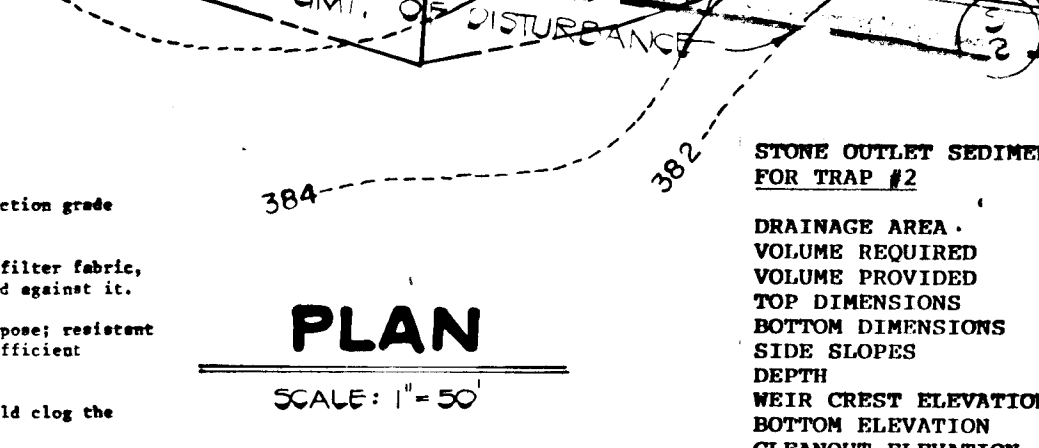
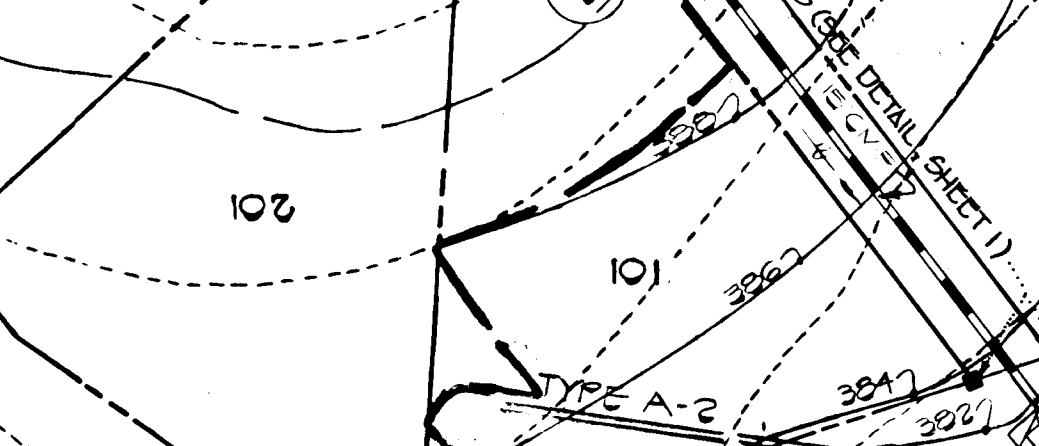
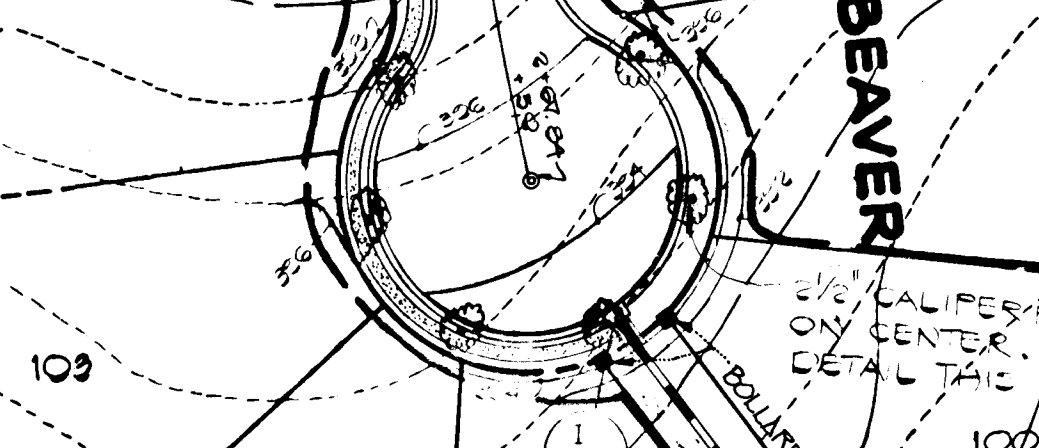
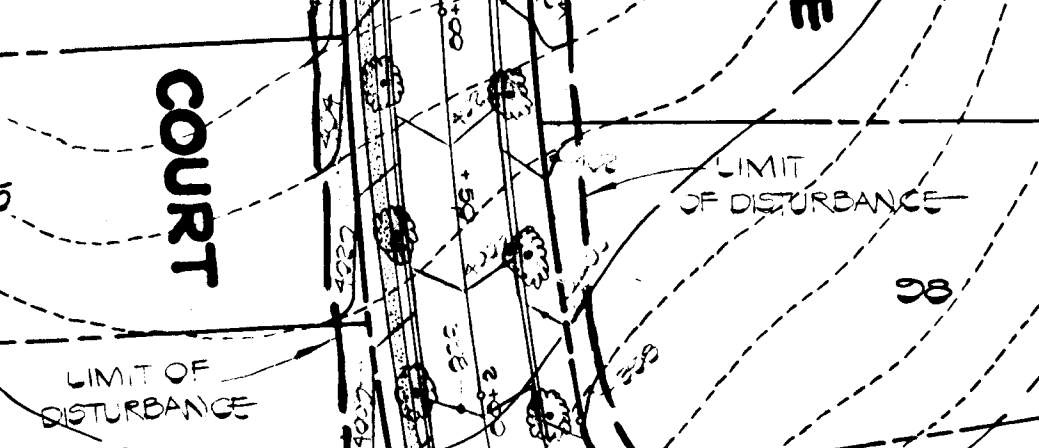
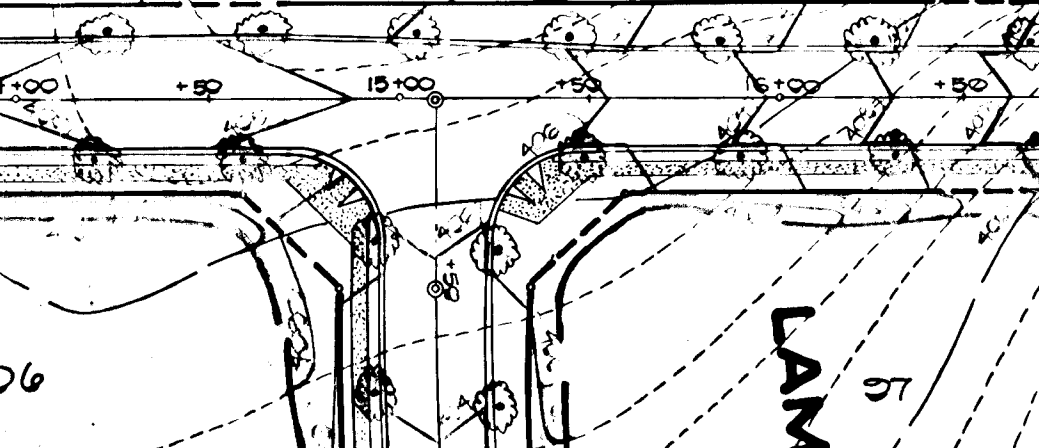
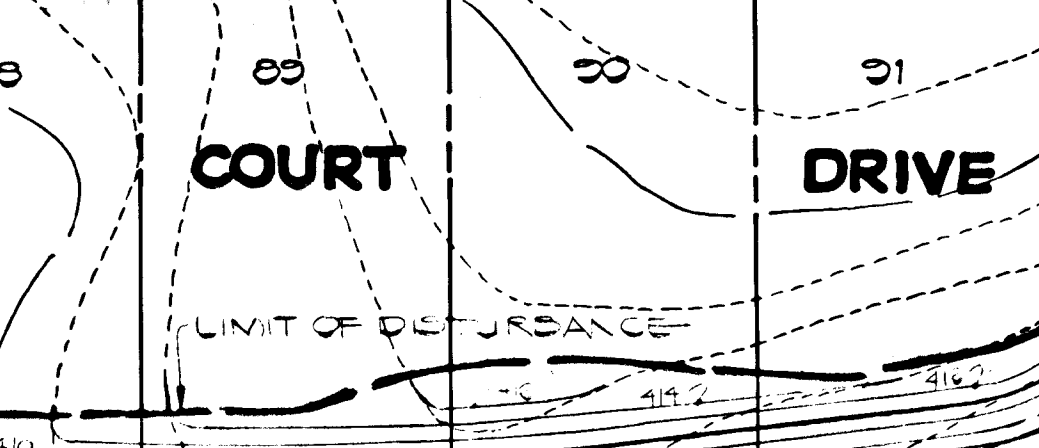
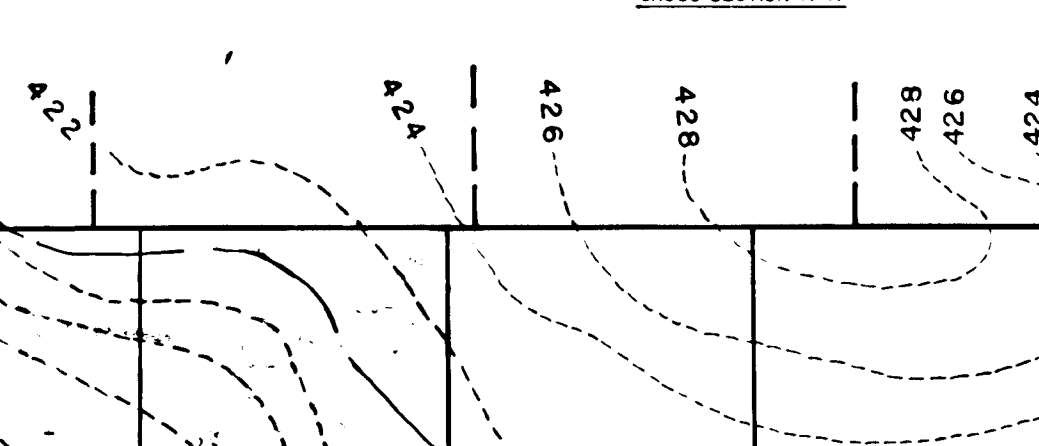
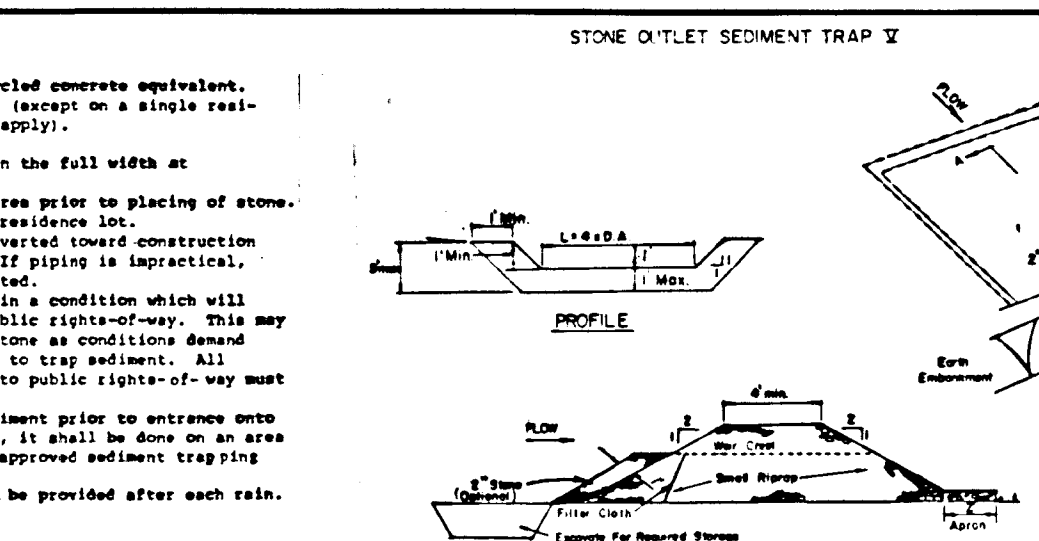
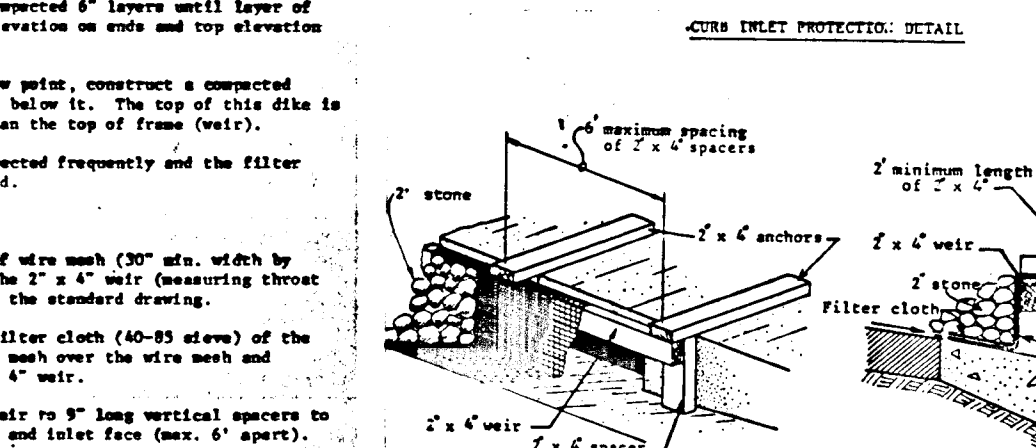
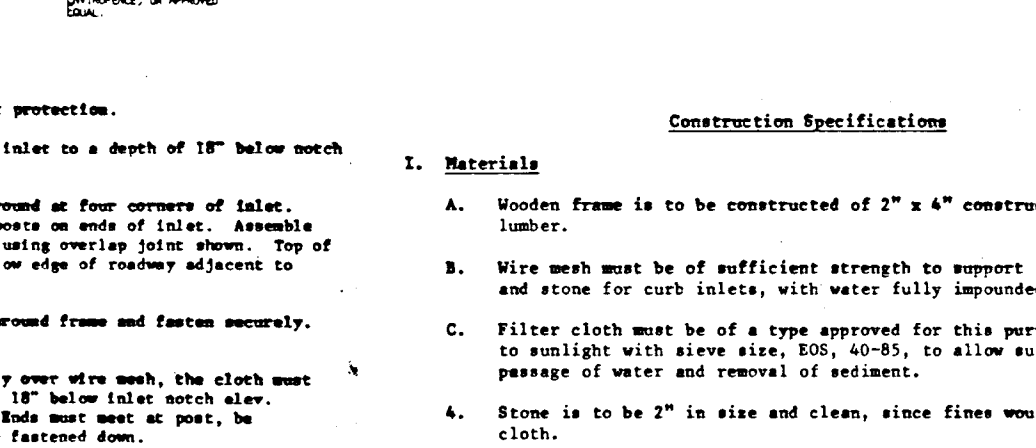
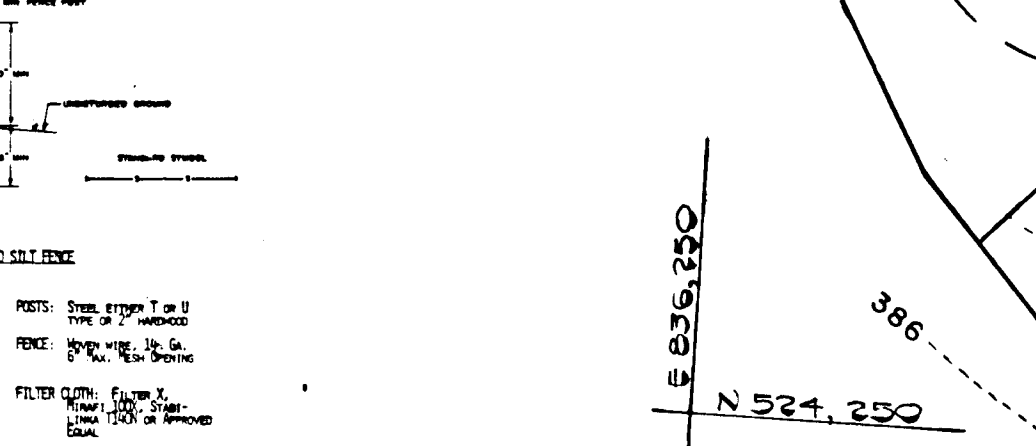
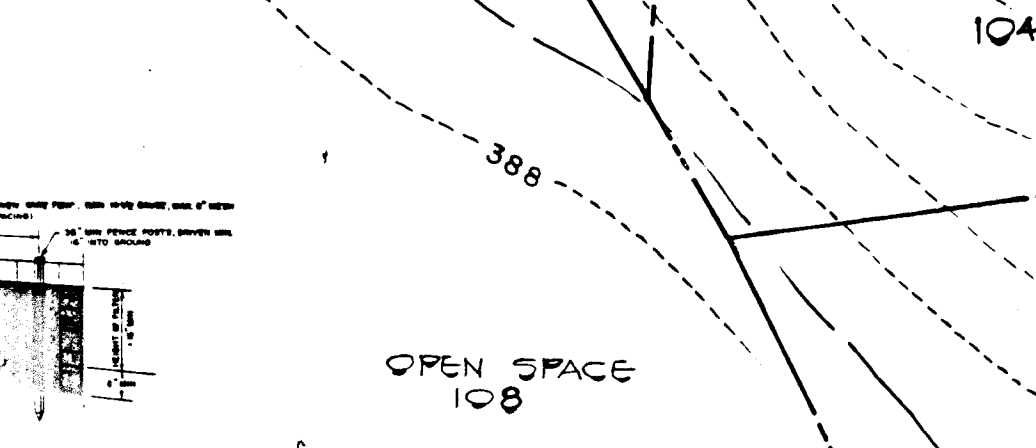
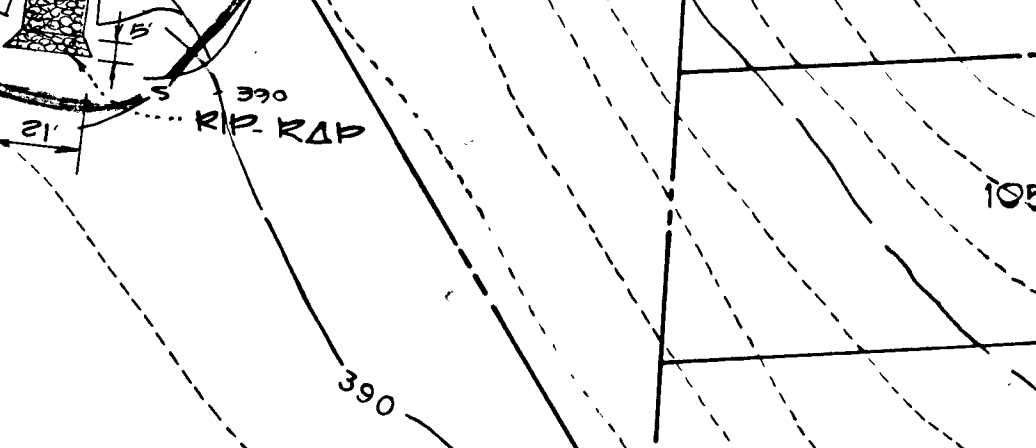
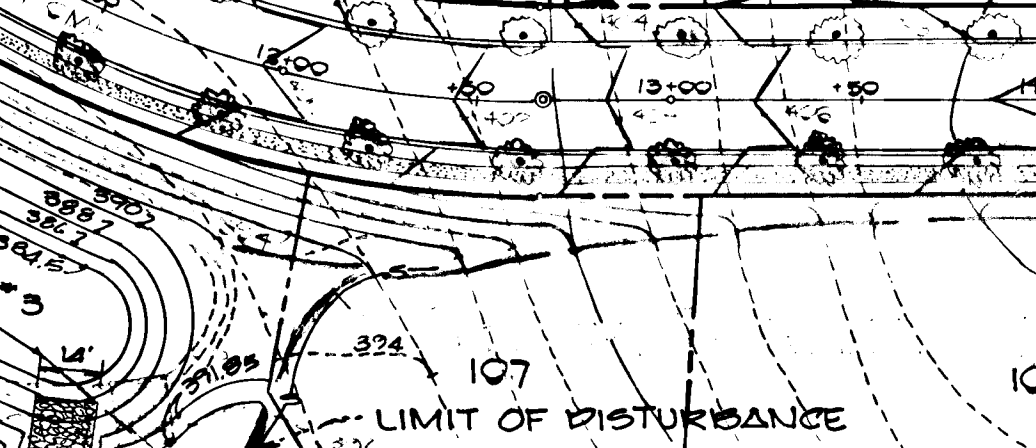
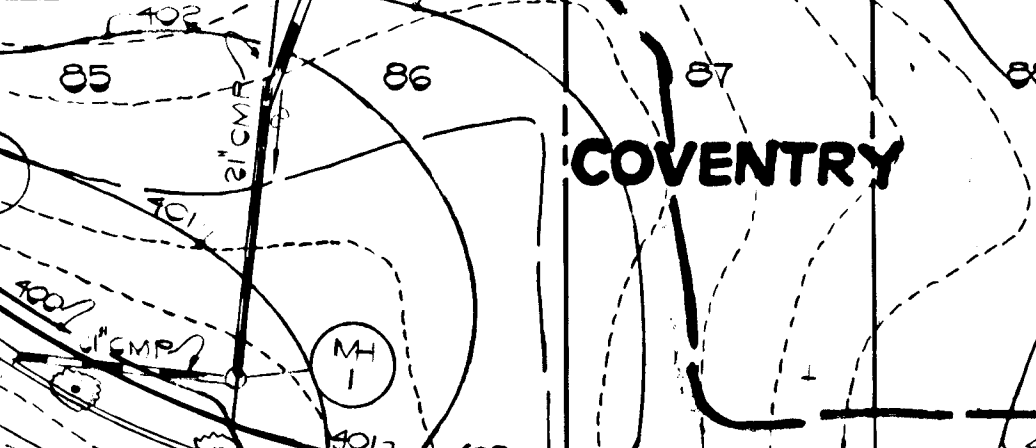
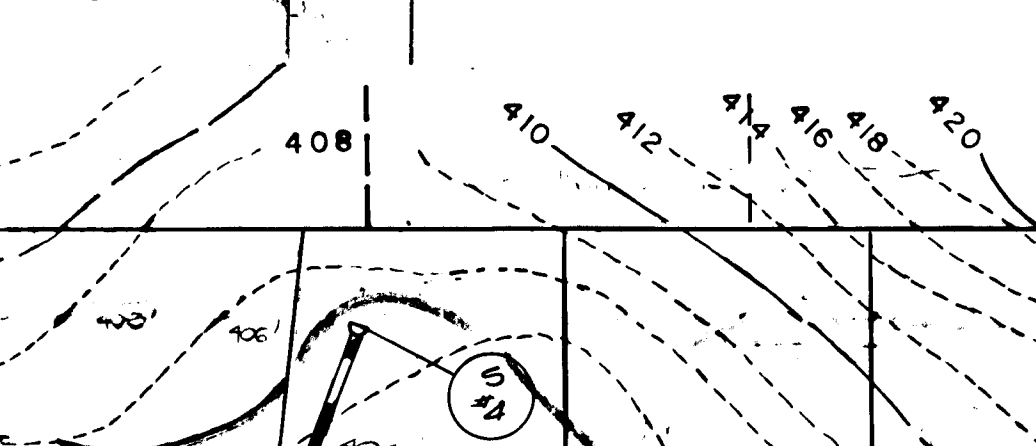
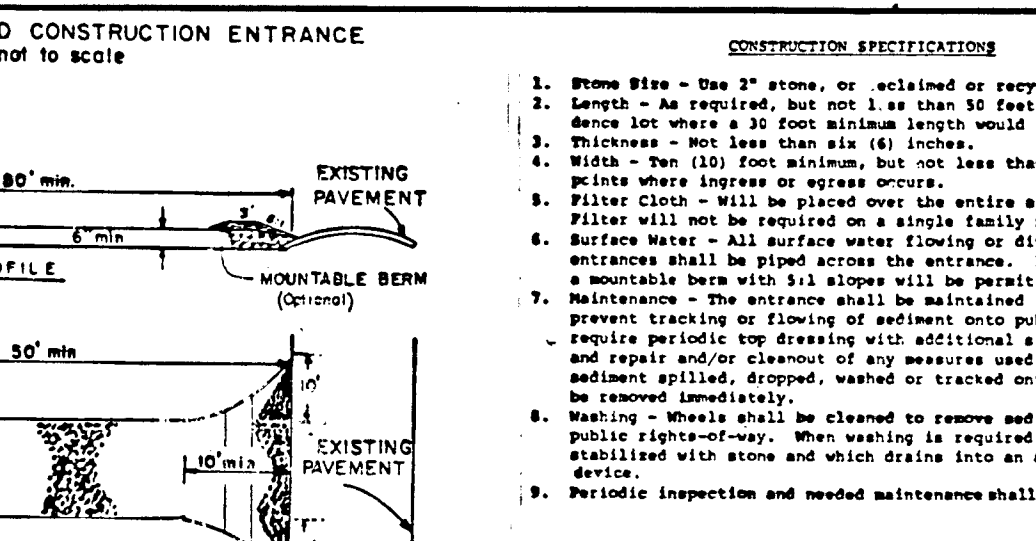
- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. 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 weir crest.
- Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of filter cloth shall overlap at least one (1) foot with section between the entrance placed on top. Fabric shall be 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 (rippap). 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. 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.

**STABILIZED CONSTRUCTION ENTRANCE**

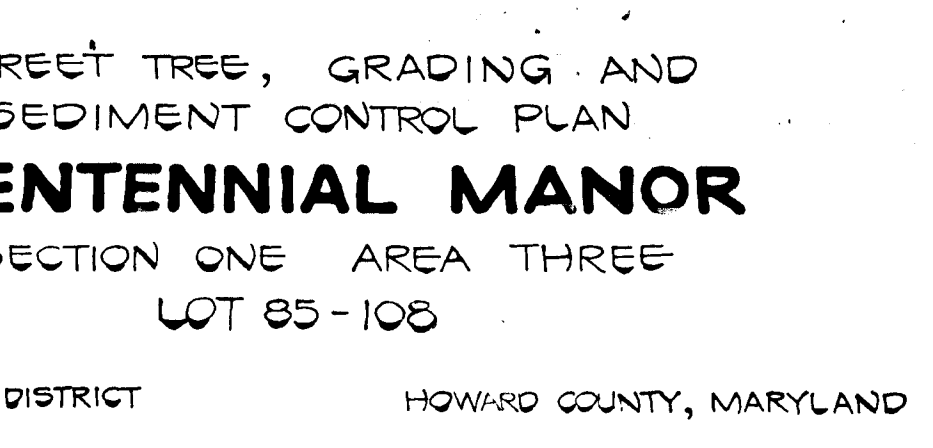
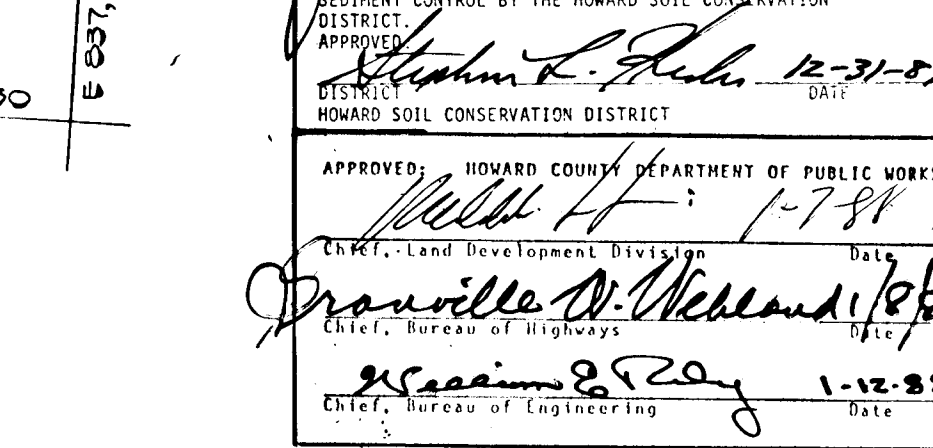
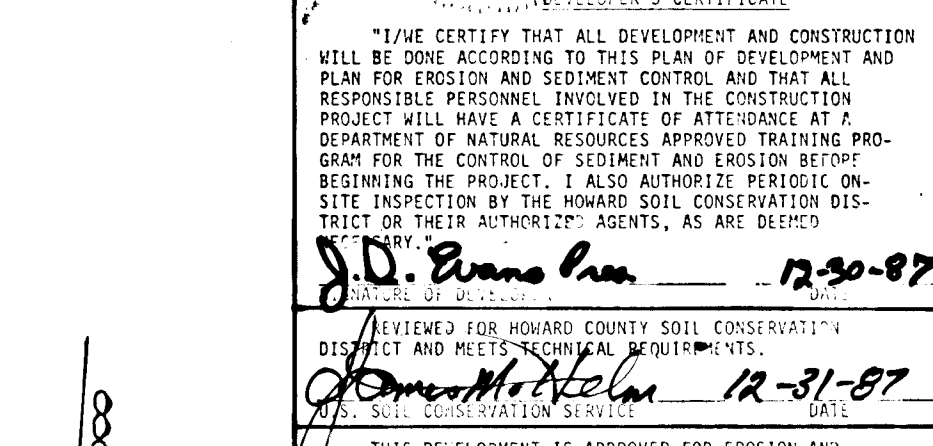
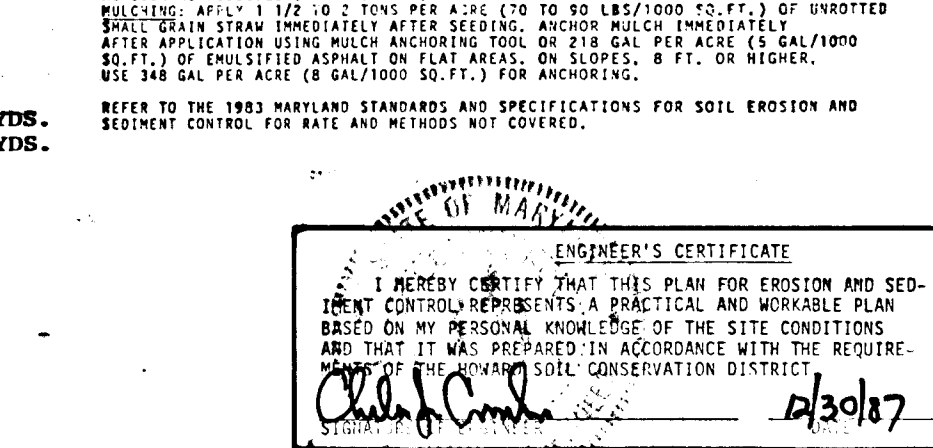
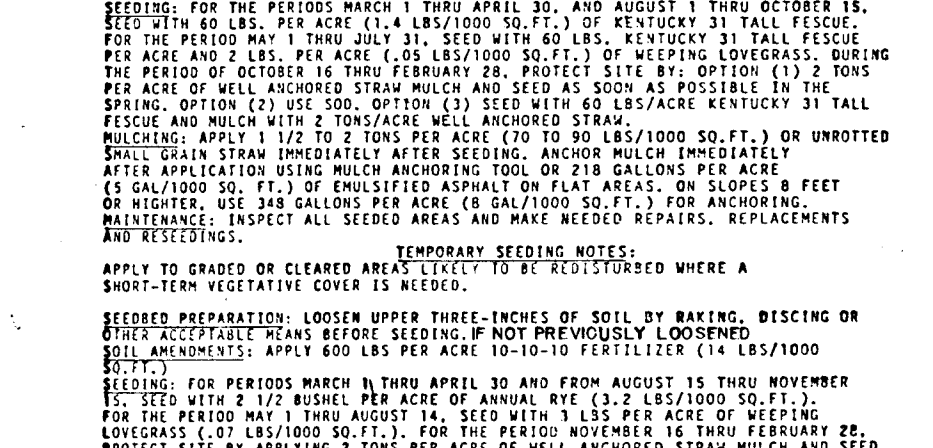
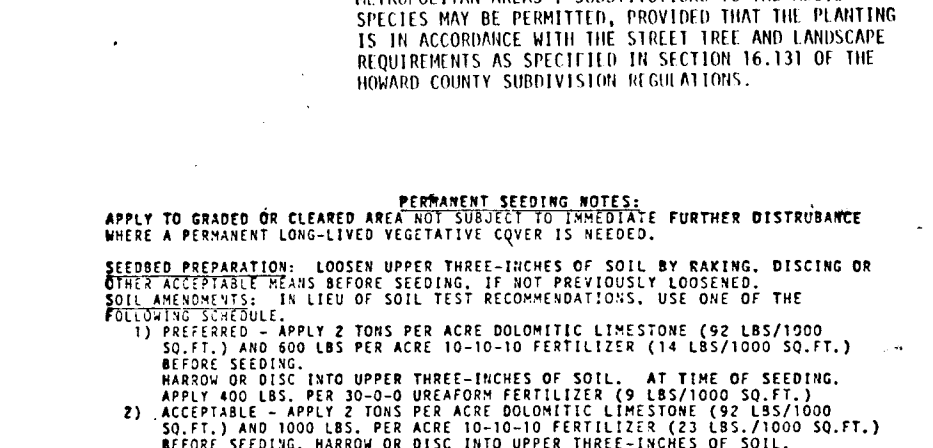
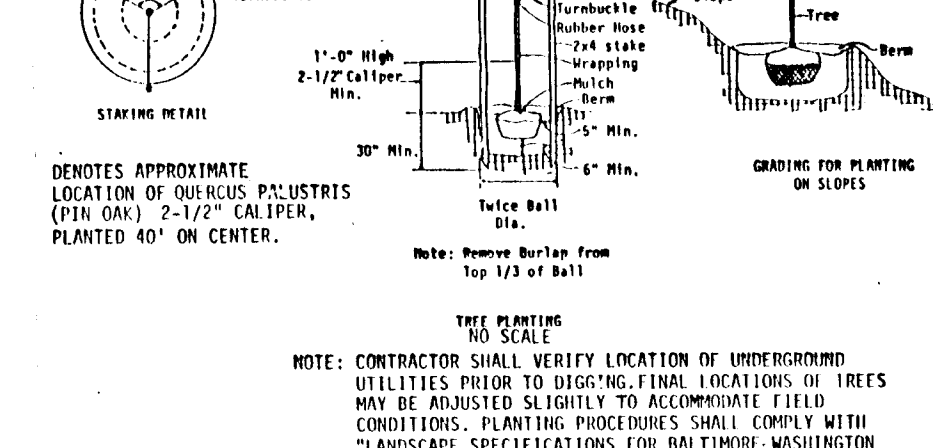
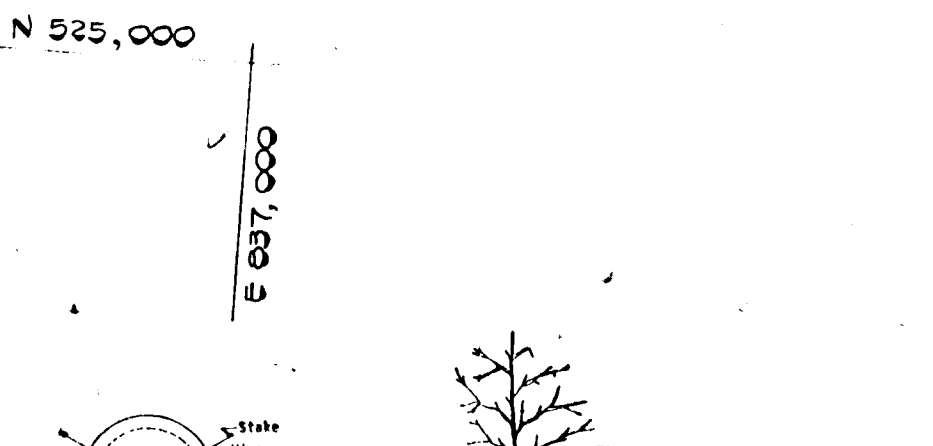


**CONSTRUCTION SPECIFICATIONS FOR ST-VI**

- Stone shall be placed at the toe of a slope on the contour and in a row with each stone touching the adjacent stone.
- Each stone shall be spaced in the row a minimum of (6) inches, and placed so the ridges are horizontal.
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LOTS 91-92 SHALL COMPLY WITH MINIMUM LOT AREAS UPON FINAL GRADING AS SHOWN ON THE S.D.P. RETAINING WALLS AND/OR LANDSCAPING TIES WILL NOT BE USED TO ACHIEVE SLOPES OF LESS THAN 25% FOR THE PURPOSE OF COMPLYING WITH MINIMUM LOT AREAS.



**FISHER, COLLINS AND CARTER, INC.**  
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2000 COURT AVENUE  
ELLICOTT CITY, MARYLAND 21043  
TELEPHONE: (301) 461-2855

**OWNER AND DEVELOPER**  
CENTENNIAL MANOR LIMITED PARTNERSHIP  
5391 LIGHT HOUSE COURT  
COLUMBIA MARYLAND 21044

**AS-BUILT**  
APPROVED: *Charles J. Grovo, Sr.*  
DATE: 1/30/87

**PARABOLIC CHANNEL DESIGN DATA**

LOCATION	T (FT.)	D (FT.)	Q (C.F.S.)	V (F.P.S.)	GRADE CHANNEL%
LOT 85	13.00	0.81	8.08	2.50	6.0
LOT 86	6.44	1.00	7.02	2.2	1.5
LOT 87-88	17.12	0.75	7.02	2.2	3.0
LOT 89	8.76	1.00	7.02	2.2	2.0

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN  
**CENTENNIAL MANOR**  
SECTION ONE AREA THREE  
LOT 85-108  
2<sup>ND</sup> ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 50'  
OCTOBER 10, 1986  
SHEET 3 OF 3  
AS-BUILT

8611

F-88-72