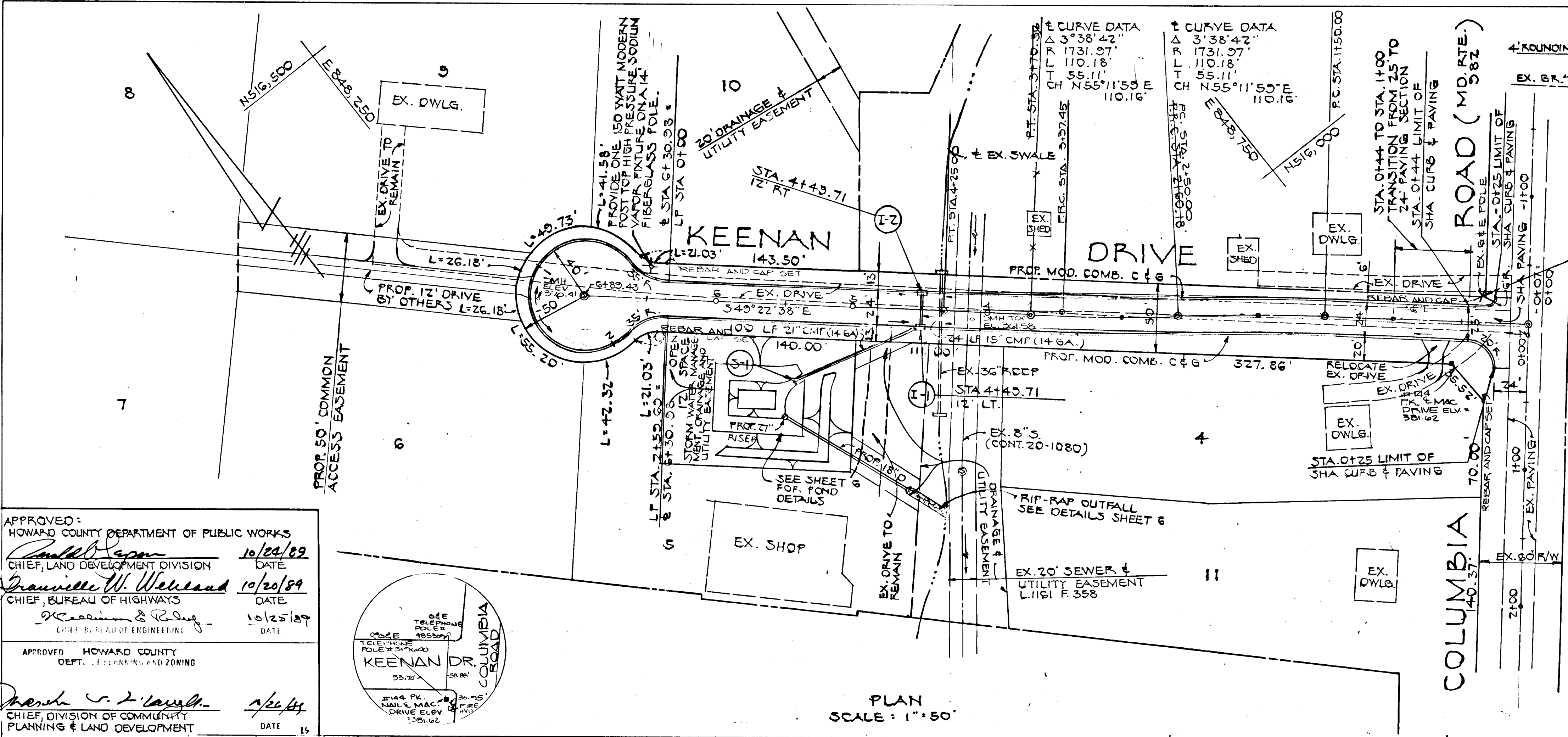


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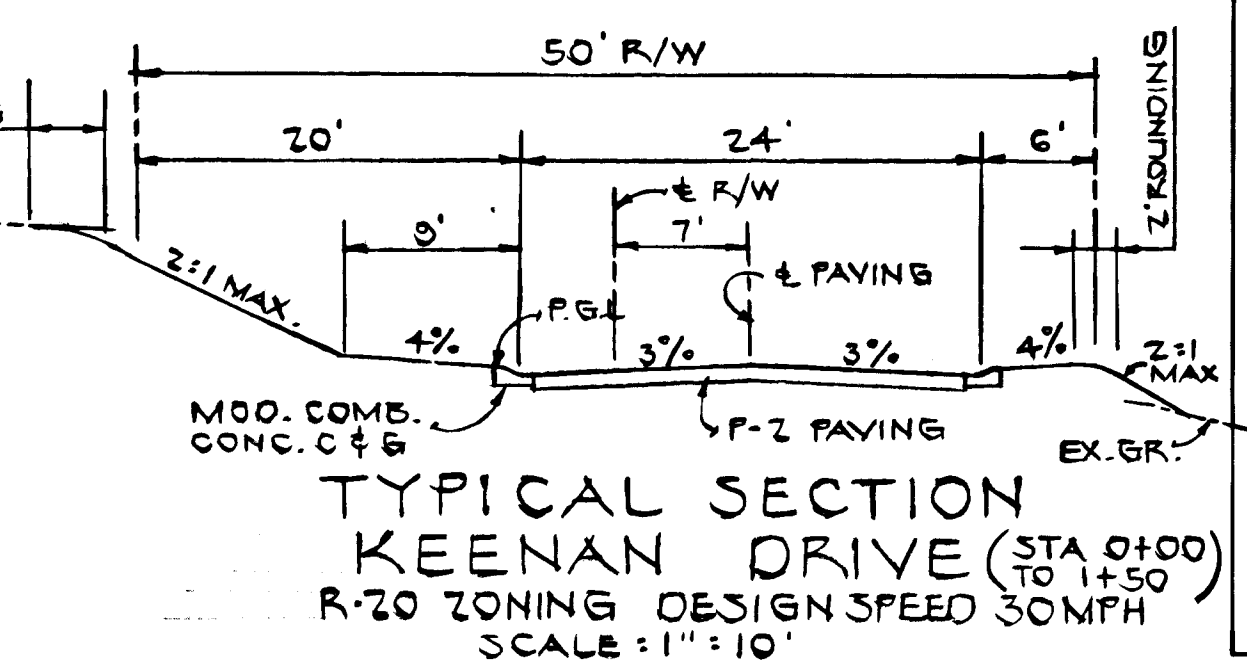
DATE	
BY	
PLAN	
NO.	
DATE	
BY	
PROFILE	
NO.	
DATE	
BY	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIVISION
Drumville W. Welland 10/20/89
 CHIEF, BUREAU OF HIGHWAYS
W. C. ... 10/25/89
 CHIEF, DIVISION OF ENGINEERING
 DATE 10/25/89

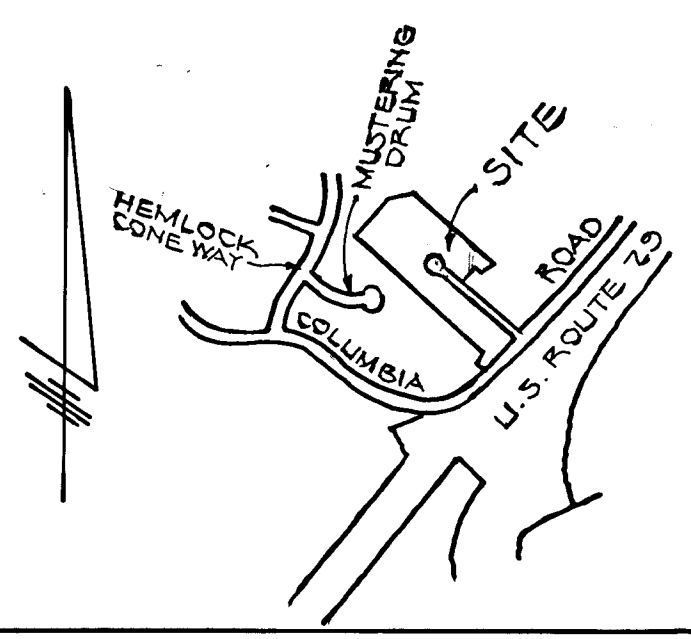
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Mark ... 1/26/89
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
 DATE 1/26/89



PLAN SCALE: 1" = 50'



TYPICAL SECTION KEENAN DRIVE (STA 0+00 TO 1+50)
 R-20 ZONING DESIGN SPEED 30MPH
 SCALE: 1" = 10'



VICINITY MAP SCALE 1" = 1200'

NO.	TYPE	INV. IN	INV. OUT	TOP	HO. CO. STD.
I-1	S-COMB.	356.52	356.82	361.50	SD 4-32
I-2	DRY S-COMB.	357.00	357.30	361.50	SD 4-34
S-1	MET END SECT	-	351.24	361.50	SD 5-61

- NOTES:
- ALL CONSTRUCTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE HOWARD COUNTY STD. SPECIFICATIONS & DETAILS.
 - CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPT. OF INSPECTION AT LEAST 3 DAYS BEFORE STARTING WORK. 792-7272
 - ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1984 REVISED EDITION.
 - ANY DAMAGE TO PUBLIC RIGHTS-OF-WAYS OR PAVING WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - SEE VP-87-134 PARCELS OR LOTS SHOWN HEREON MAY NOT BE FURTHER SUBDIVIDED UNLESS KEENAN DRIVE IS WIDENED TO 28' AND SIDEWALKS CONSTRUCTED.

BENCH MARK
 STA. 20+42002
 CONC. MON. IN U.S. RATE 20
 MEDIAN 13' SW OF A LINE
 PERPENDICULAR TO LANES THRU
 C & G # 89

KEENAN TRACT
 2ND ELECTION DISTRICT
 HOWARD CO., MARYLAND

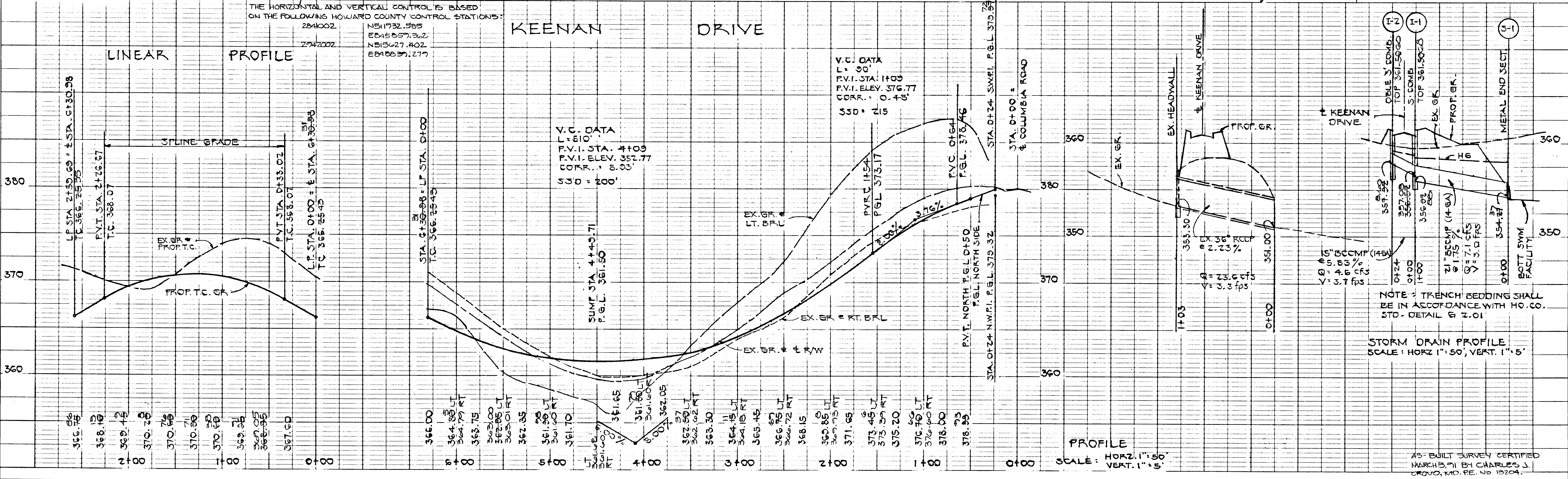
PLAN AND PROFILE
 KEENAN DRIVE

OWNER AND DEVELOPER
 JAMES F. KEENAN
 4422 COLUMBIA ROAD
 ELLICOTT CITY, MD. 21043

SCALE: AS SHOWN DATE: MARCH 1989 DWG. NO. 1 OF 6
 DES. D.B. DRN. O.B. CHK. C.T.

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

THE HORIZONTAL AND VERTICAL CONTROL IS BASED ON THE FOLLOWING HOWARD COUNTY CONTROL STATIONS:
 2841002 N51°13'2.38S
 2742002 E045°05'7.36E
 N913°27.402
 E84°08'37.277



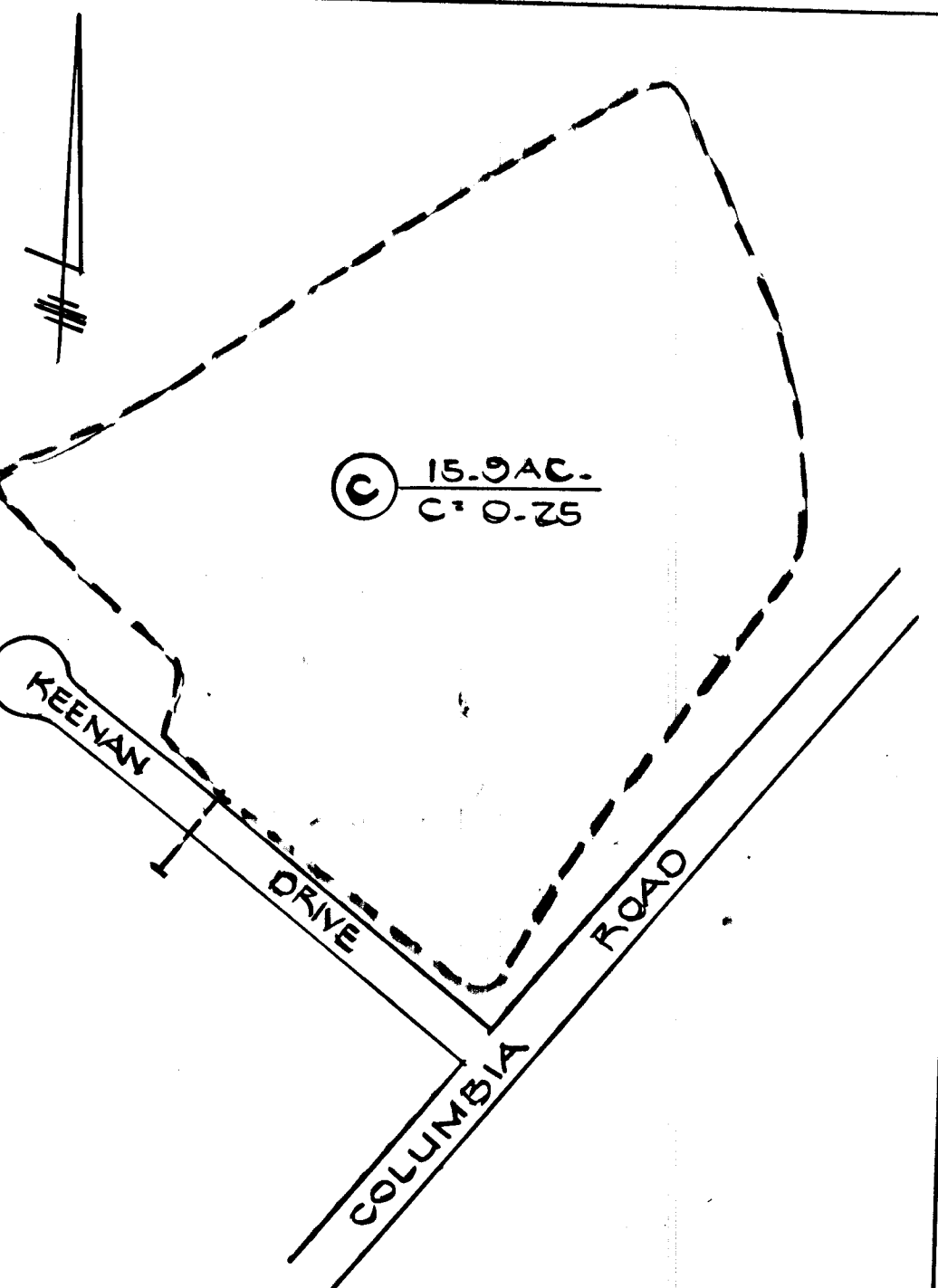
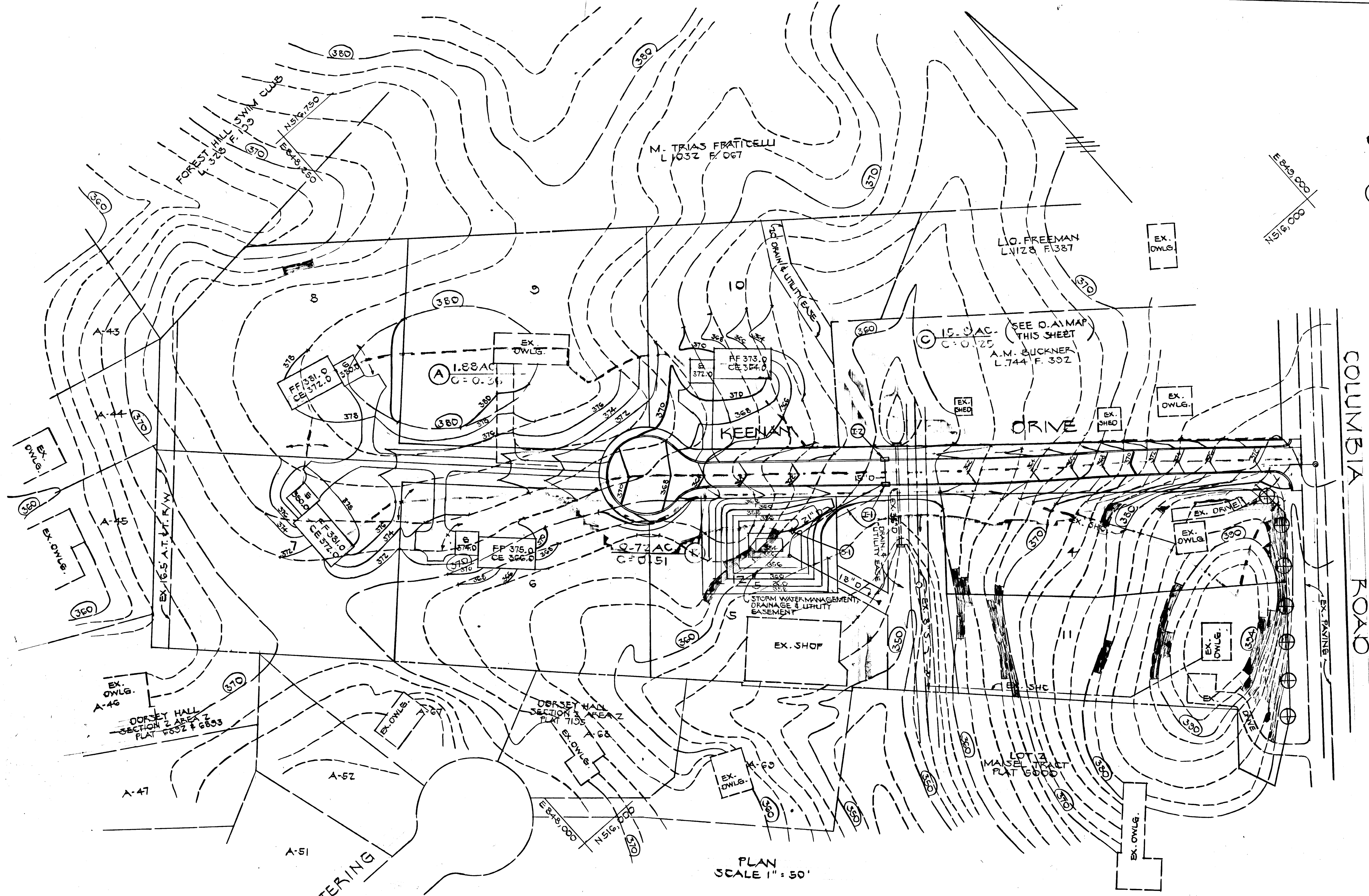
PROFILE SCALE: HORIZ. 1" = 50' VERT. 1" = 5'

NOTE: TRENCH BEDDING SHALL BE IN ACCORDANCE WITH HO. CO. STD. DETAIL # 2.01

STORM DRAIN PROFILE SCALE: HORIZ. 1" = 50' VERT. 1" = 5'

AS-BUILT SURVEY CERTIFIED MARCH 5, 1991 BY CHARLES J. CROVO, MD. PE. NO. 13204.

AS-BUILT



DRAINAGE AREA MAP FOR 36" RCCP (EX.) SCALE: 1" = 200'

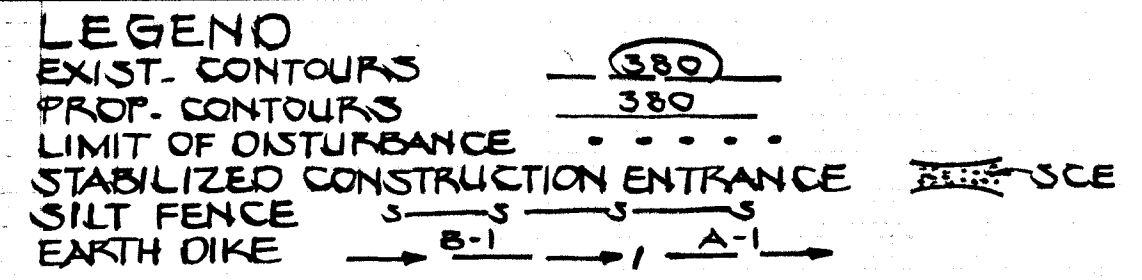
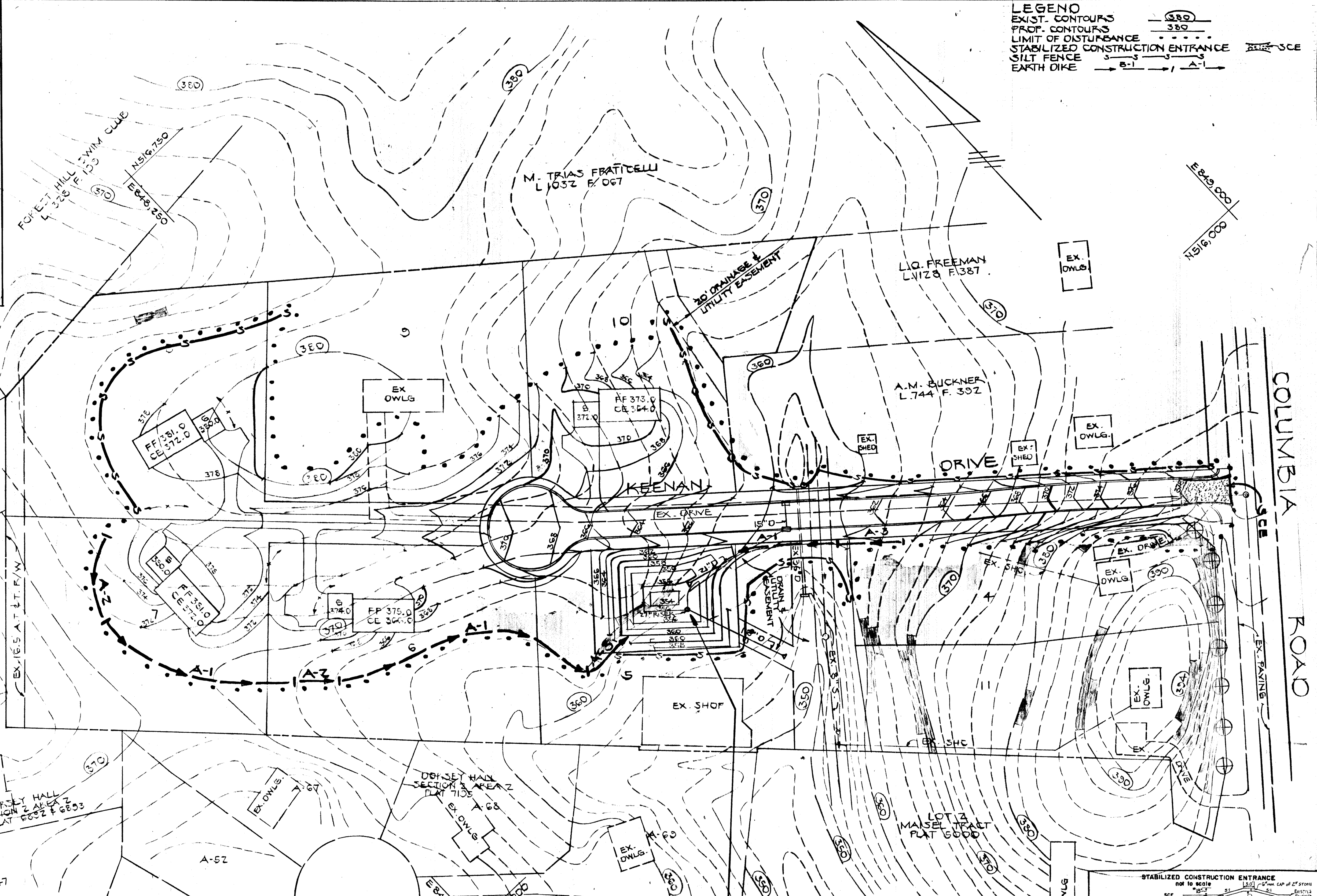
PLAN SCALE 1" = 50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 10/28/82
 CHIEF, LAND DEVELOPMENT DIVISION DATE
 [Signature] 10/20/82
 CHIEF, BUREAU OF HIGHWAYS DATE
 [Signature] 10/25/82
 CHIEF, BUREAU OF ENGINEERING DATE
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 [Signature] 10/25/82
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE 15

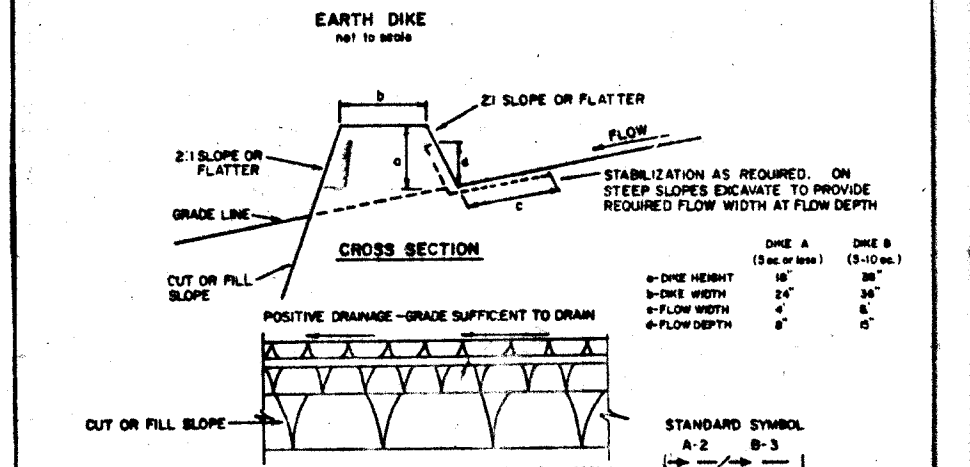
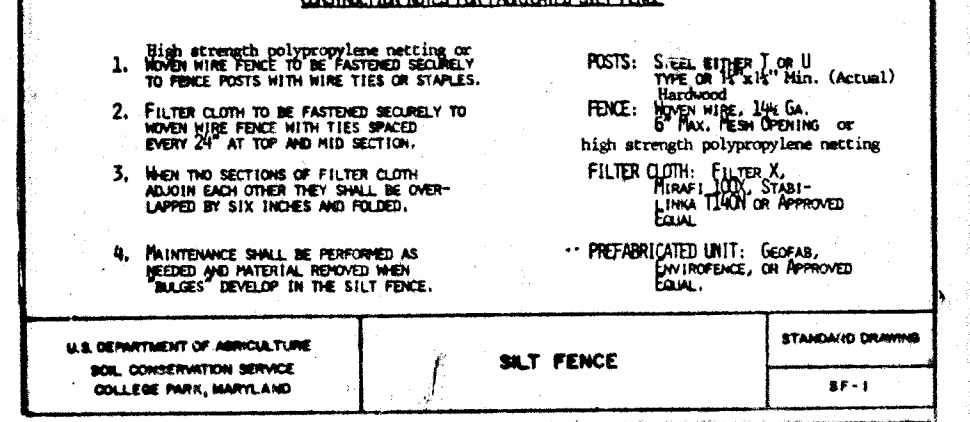
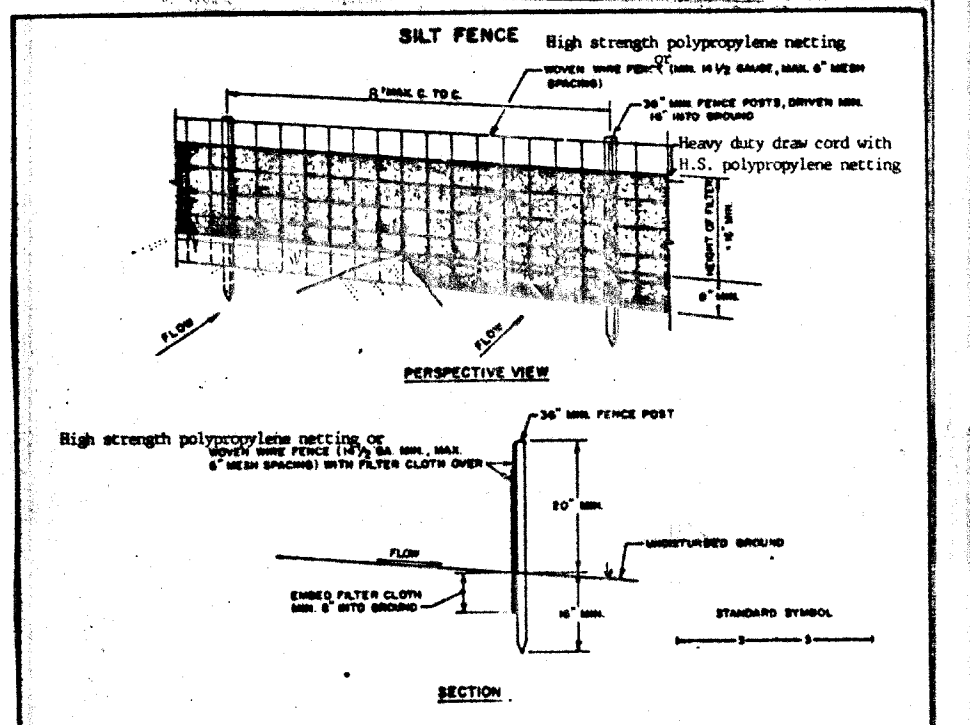
KEENAN TRACT
 2ND ELECTION DISTRICT
 HOWARD CO., MARYLAND
 DRAINAGE AREA MAP
 OWNER AND DEVELOPER:
 JAMES F. KEENAN
 4422 COLUMBIA ROAD
 ELLICOTT CITY, MD. 21043
 SCALE: AS SHOWN DATE: MARCH, 1983 DWG NO 3 OF 6
 DES. D.B. DKN. D.B. CHK. C.C.
 FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043



- NOTES
- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permitting prior to the start of any construction. (192-2477)
 - All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the 1983 NUTRIENT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 7 calendar days for all permanent sediment control structures. Allow, perimeter slopes and all slopes greater than 3:1, to be done as to all other disturbed or graded areas on the project site.
 - All sediment traps/fences shall be located and oriented parallel around their perimeter in accordance with Vol. 1, Section 11, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
 - All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 NUTRIENT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 33 and Sec. 34), temporary seedings (Sec. 30) and mulching (Sec. 32). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
 - All sediment control structures are to remain in place and are to be maintained in operative condition until notification for their removal has been obtained from the Howard County Sediment Control Inspector.
 - Site Analysis:
 - Total Area of Site: 10.8 Acres
 - Area Disturbed: 10.8 Acres
 - Area to be vegetatively stabilized: 10.8 Acres
 - Total Cost: \$10,000.00
 - Local File: 10-17-89
 - Office notes/permit location: NA
 - Any sediment control practices which are disturbed by grading 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 DVI sediment control Inspector.
 - On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of sediment control structures. No grading or building or grading activities shall be authorized until this initial approval by the inspection agency is made.



- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT
 - CONSTRUCT SEDIMENT BASIN PER STORM WATER MANAGEMENT PLAN SHEET 6 OF 6 - BLOCK 3 OFFICE
 - INSTALL REMAINING SEDIMENT CONTROL DEVICES
 - INSTALL STORM DRAINS
 - ROUGH GRADE SITE
 - INSTALL REMAINING UTILITIES
 - PLACE SUB-BASE ON ROADS
 - FINE GRADE SITE
 - STABILIZE GRADED AREAS
 - PAVE ROAD
 - UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, CONVERT BASIN TO STORM WATER MANAGEMENT POND AND REMOVE SEDIMENT CONTROL DEVICES.



FLUM CHANNEL STABILIZATION

TYPE OF CHANNEL	COVER	DIKE A	DIKE B
1	5-3-0	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3-1-5-0	SEED AND STRAW MULCH	SEED USING MULCH EXCELLENCE; SEED 2" STONE
3	5-1-0-0	SEED WITH MULCH OR SEED AND STRAW MULCH	LINED RIP-RAP 4'-8"
		8-1-2-0	LINED RIP-RAP 4'-8"

CONSTRUCTION SPECIFICATIONS

- Stone Size - Use 2" stone, or recycled concrete equivalent, in a layer at least 3" thick in thickness and be pressed into the soil with construction equipment.
- Surface Material - All surface wear/tear/erosion or dislodged concrete construction entrance shall be replaced with a similar material.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flooding 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 measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.
- Mulching - Mulch shall be cleaned to remove sediment prior to entrance onto public right-of-way. When mulching is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

SEDIMENT BASIN 10.8-3.9 AC.
SEE CONSTRUCTION DETAILS SHEET 6 OF 6 & SEQUENCE OF CONSTRUCTION THIS SHEET.

TEMPORARY SEEDING NOTES:
APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RESTORED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 1/2 BUSHEL PER ACRE OF ANNUAL RYE (2.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WHEATING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELLS 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 GAL PER ACRE (3 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS; OR SLOPES, 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

PERMANENT SEEDING NOTES:
APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RESTORED WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (32 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING.
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (32 LBS/1000 SQ. FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 80 LBS. PER ACRE (4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS/1000 SQ. FT.) OF WHEATING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELLS 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 WELLS 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 (3 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS; OR SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING. MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

James M. Helm, Jr. 10/20/89
Howard Soil Conservation District

Robert W. Z. Smith, Jr. 10/20/89
Howard Soil Conservation District

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
EMULSIFIED ASPHALT DIVISION
DANIELLE W. HALL 10/20/89
CHIEF, BUREAU OF HIGHWAYS
10/25/89
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
10/25/89
DATE

By the Developer:
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

James F. Keenan 10-17-89
Signature of Developer Date

By the Engineer:
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on the professional knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

10-17-89
Signature of Engineer Date

**KEENAN TRACT
2ND ELECTION DISTRICT
HOWARD CO., MARYLAND**

SEDIMENT CONTROL PLAN

OWNER AND DEVELOPER:
JAMES F. KEENAN
4422 COLUMBIA ROAD
ELLICOTT CITY, MD. 21043

SCALE: AS SHOWN DATE: MARCH, 1989 DWG NO 4 OF 6
DES. D.B. DRN. D.B. CHK. C.C.

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

