

**GENERAL NOTES**

1. ALL STORM DRAIN & PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST DETAILS AND SPECIFICATIONS OF HOWARD COUNTY & MARYLAND S.E.A.
2. TYPES OF STORM DRAIN STRUCTURES REFER TO THE STANDARD DETAILS OF HOWARD COUNTY & MD. S.E.A.
3. FRENCH COMPACTION FOR STORM DRAINS WITHIN ROADS OR STREET RIGHT OF WAY LIMIT SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY ROAD CODE.
4. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS, BY HAND, AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF CONSTRUCTION.
5. ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HRS. IN ADVANCE OF CONSTRUCTION AT 1-800-257-1177.
6. ALL TRAFFIC CONTROL SERVICES, PARKING AND SIGNING TO BE DONE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" 1970 EDITION.
7. SAG & CREST VERTICAL CURVES WERE DESIGNED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME 111, ROADS & BRIDGES.
8. MIN. COVER OF 12" SHALL BE PROVIDED OVER STORM DRAIN PIPES.
9. DESIGN SPEED: 30 M.P.H.
10. PROVIDE CONCRETE SIDEWALKS, AND RAMPS IN CURBS, WHERE SHOWN IN PLAN (MAX. 12% SLOPE, SEE HOWARD COUNTY STD. DETAILS 9-4.01)
11. ALL HORIZONTAL AND VERTICAL CONTROLS BASED ON MARYLAND STATE DATUM.
12. TOPOGRAPHY WAS SURVEYED BY KIDDE CONSULTANTS, INC.
13. REF. ALSO: E- 67-79 AND P- 68-07
14. R/W: 65.5 ACRES
15. THE STREET LIGHT SHALL BE A 175-WATT "MODERN" MERCURY VAPOR LAMP POST TOP FIXTURE ON A 14-FOOT GRAY FIBERGLASS POLE, SHOWN AS 0.
16. PROPOSED DRIVEWAY CULVERT FOR LOT #3 WILL BE COUNTY MAINTAINED WITHIN PUBLIC EASEMENT.
17. HEALTH AND MENTAL HYGIENE APPROVAL WILL BE REQUIRED FOR THIS SITE.

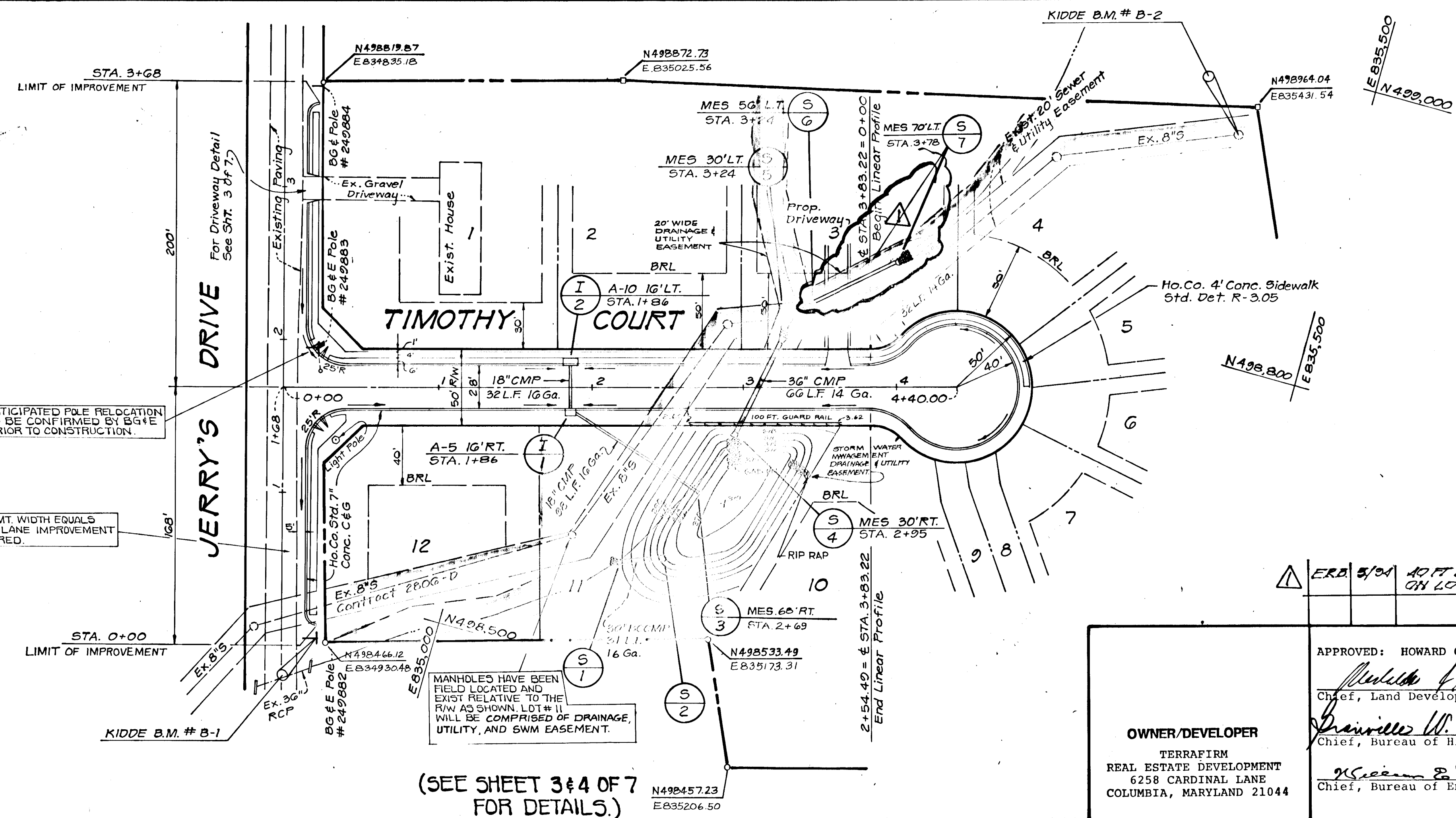
ANTICIPATED POLE RELOCATION TO BE CONFIRMED BY E&E PRIOR TO CONSTRUCTION.

EXISTING PMT. WIDTH EQUALS 18'. TYPICAL LANE IMPROVEMENT OF 5' REQUIRED.

**BENCHMARKS:**

KIDDE BM # B-1 ELEV. = 374.25  
RAILROAD SPIKE IN WEST SIDE OF POLE # 249882 LOCATED @ THE SOUTH WESTERN PROPERTY CORNER

KIDDE BM # B-2 ELEV. = 382.43  
SAN. SEWER MANHOLE, 18" SOUTH OF THE NORTHERN MOST PROPERTY CORNER.



(SEE SHEET 3 & 4 OF 7 FOR DETAILS.)

SCALE: 1"=50'

ERR. 8/24 40 FT EXTENSION OF 30" CULVERT ON LOT 3

**OWNER/DEVELOPER**  
TERRAFIRM  
REAL ESTATE DEVELOPMENT  
6258 CARDINAL LANE  
COLUMBIA, MARYLAND 21044

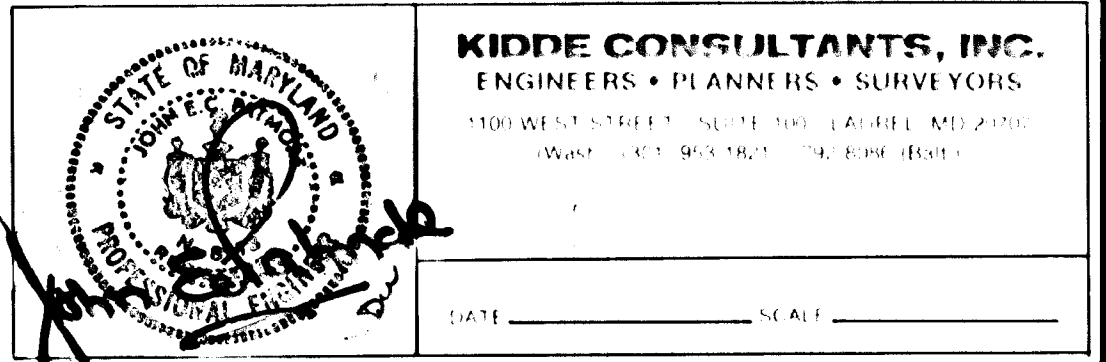
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Chief, Land Development Division  
Date: 1-11-88

Chief, Bureau of Highways  
Date: 1/13/88

Chief, Bureau of Engineering  
Date: 1-14-88

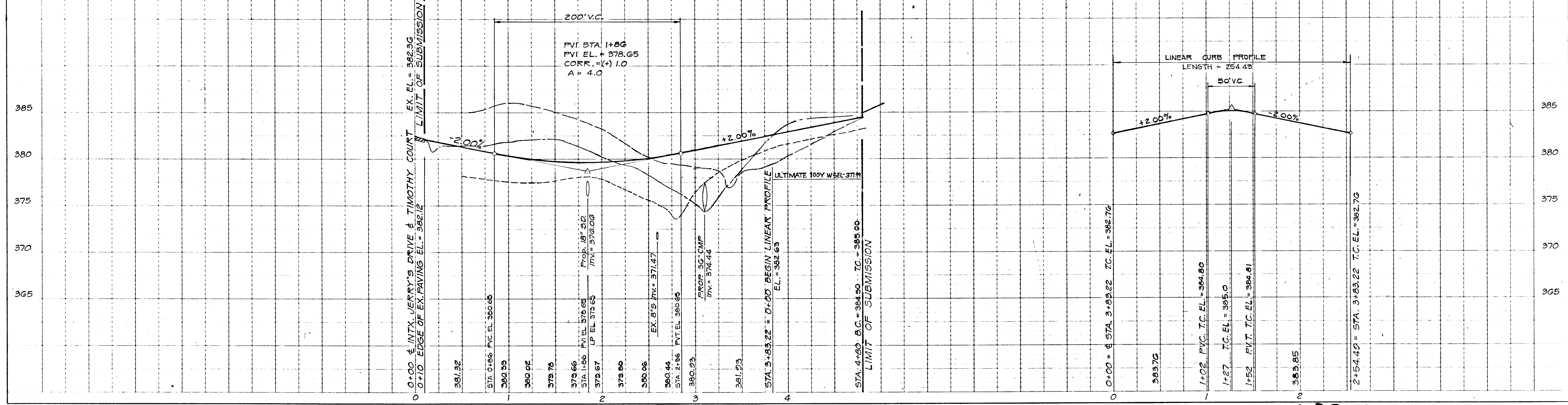
DE. GRA. D.	<b>HICKORY WOODS</b>	SCALE AS SHOWN
DRAWN: D.M.W.	LOTS 1 THRU 12	DWG. NO.
CHECKED: DCW	SECTION	JOB NO. 1687053
DATE: JULY 1987	TAX MAP 35 - PARCEL 179	FILE NO.
	5TH ELECTION DISTRICT	
	HOWARD COUNTY MARYLAND	
	<b>TIMOTHY COURT</b>	
	ROAD PLAN & PROFILE	
	SHEET 1 OF 7	

VICINITY MAP SCALE: 1"=2000'  
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
Chief, Division of Community Planning and Land Development  
Date: 1/21/88



**PROFILE LEGEND**

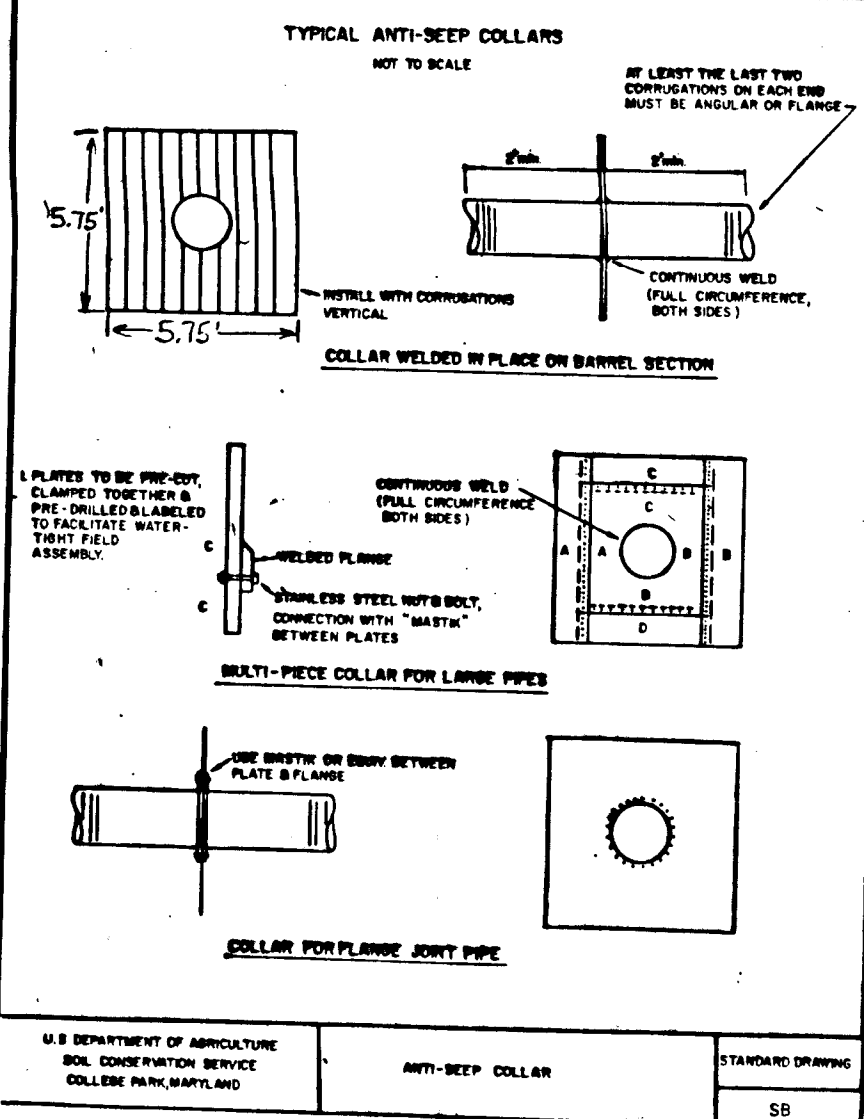
- Profile Grade Line
- Exist. Grade @ ±
- Exist. Grade, B.R.L. Right
- Exist. Grade, B.R.L. Left



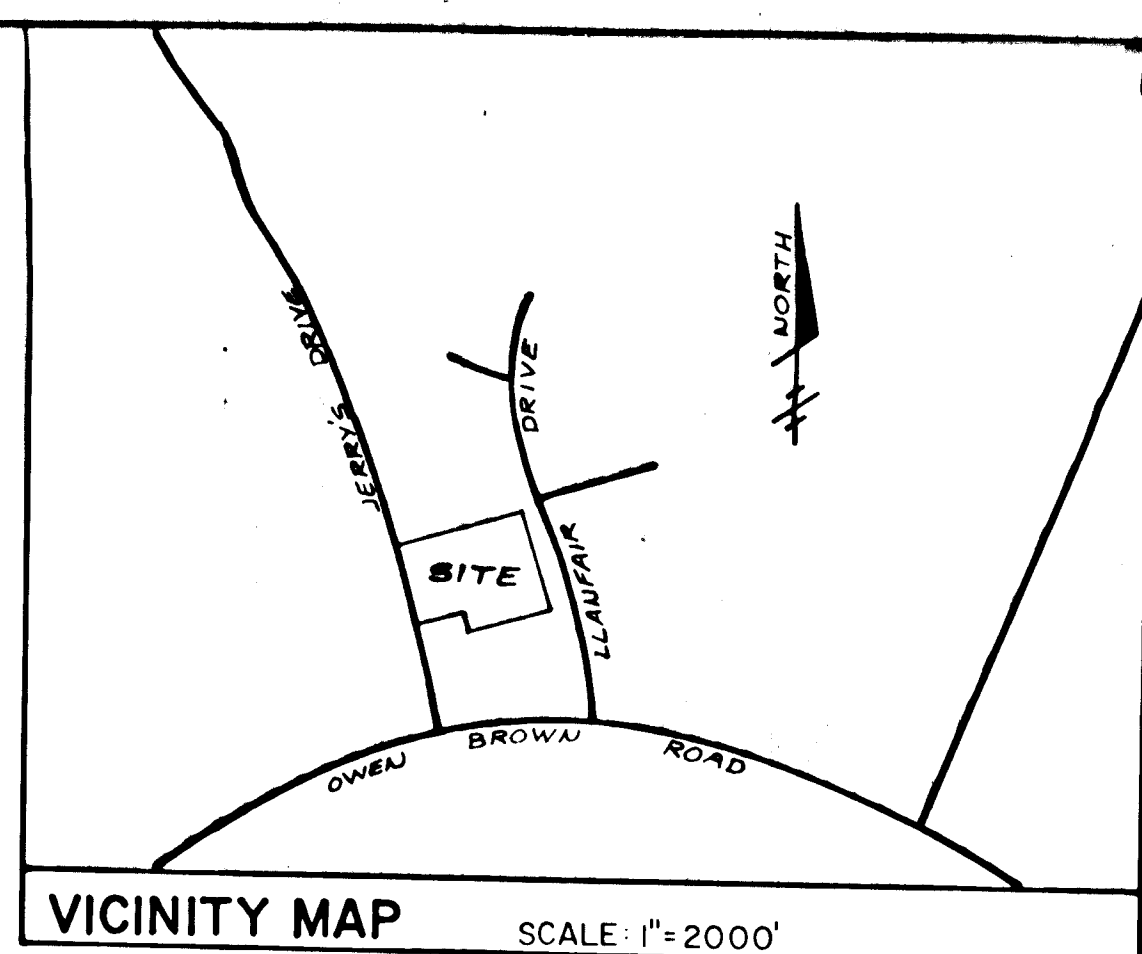
SCALE: HOR. 1"=50'  
VER. 1"=5'

F-88-62

1341



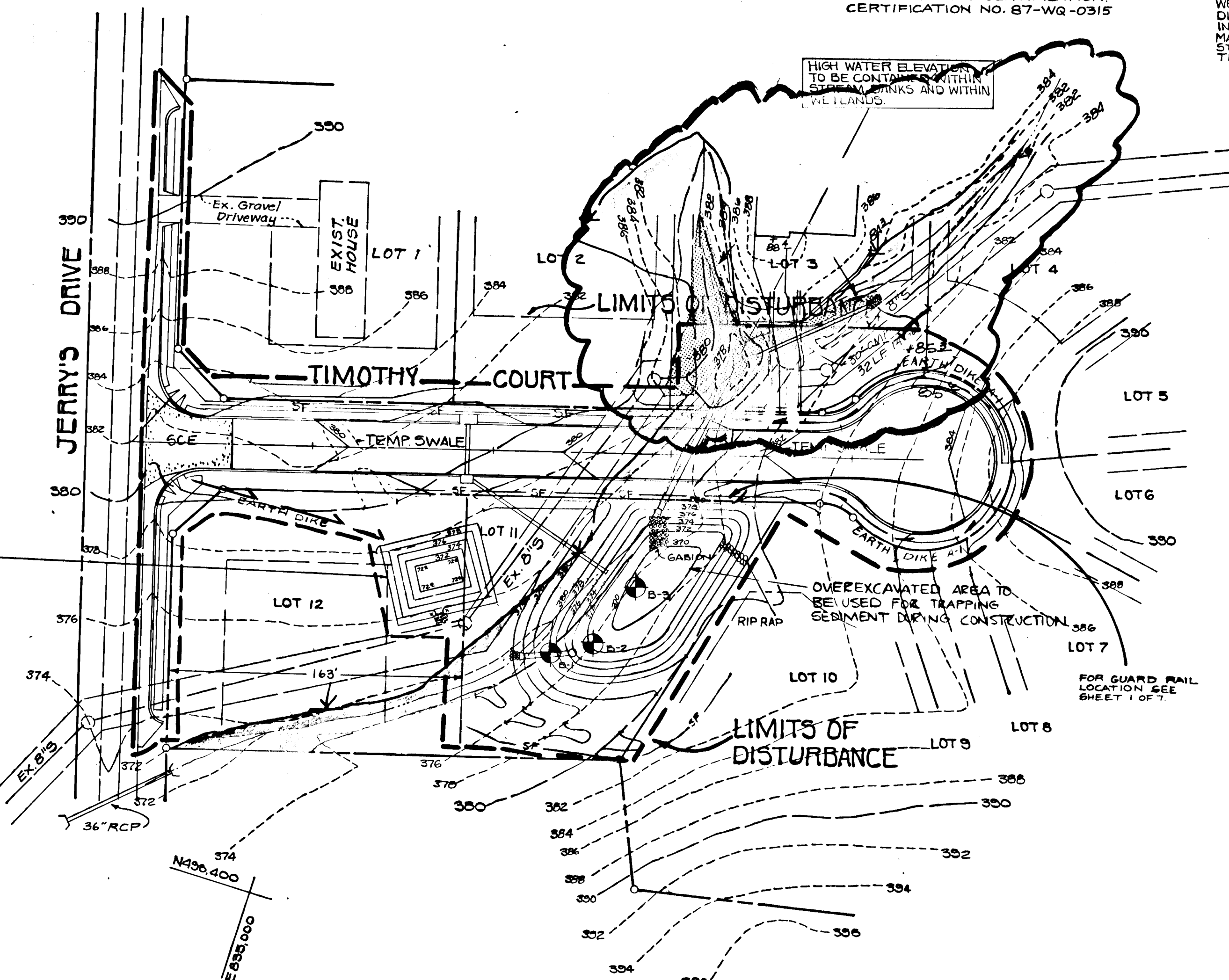
A PERMIT FROM THE CORPS OF ENGINEERS HAS BEEN GRANTED # 86/0482'S DATED NOV. 24, 1987.



SEDIMENT CONTROL TRAP SCHEDULE

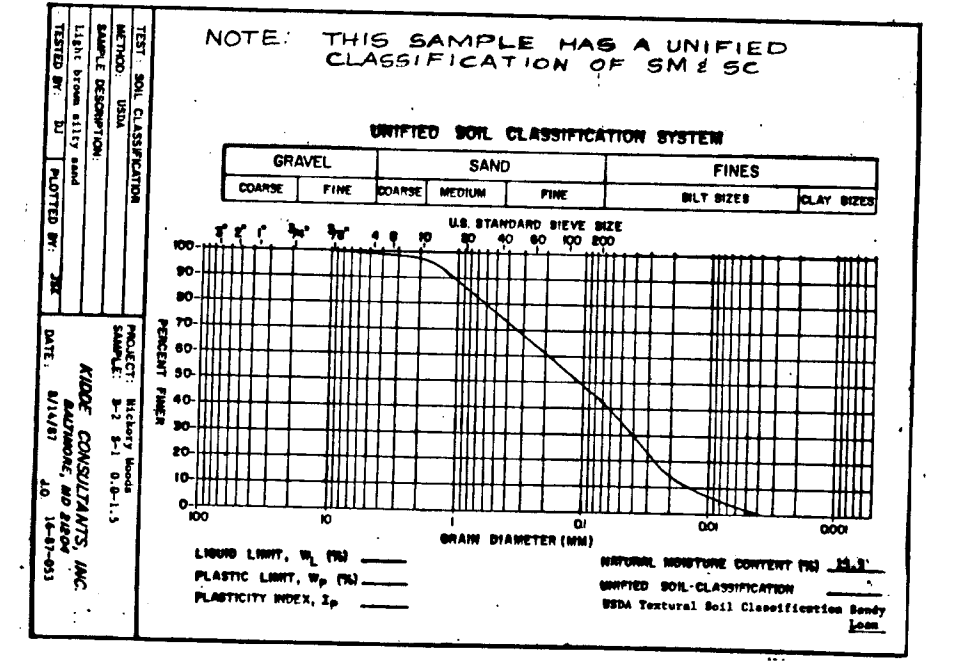
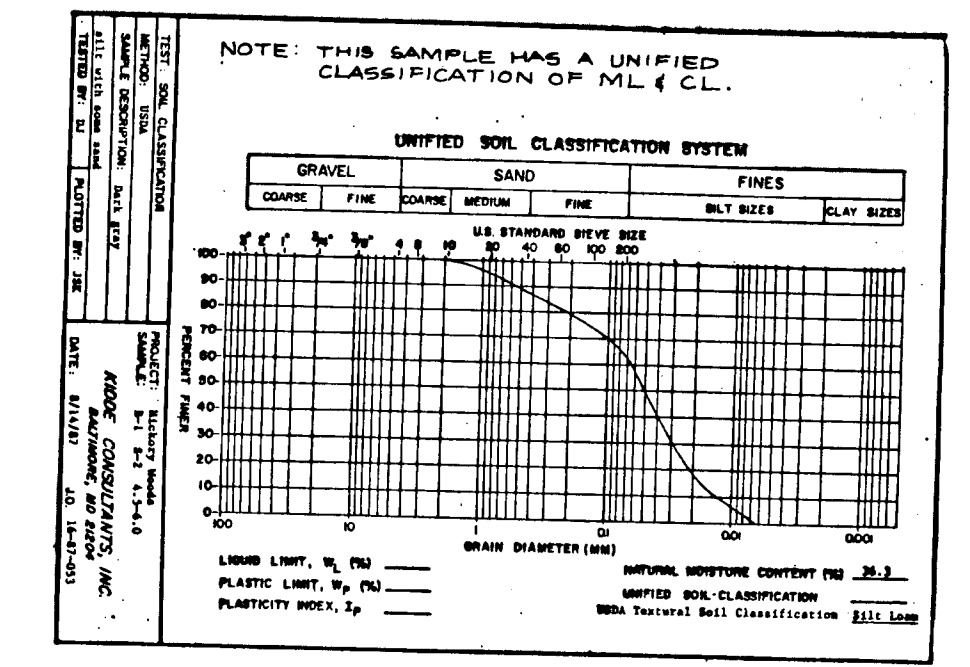
TRAP NO.	1
TRAP TYPE	RIP-RAP
DRAINAGE AREA	1.0 ACRE (MAX)
STORAGE CU. FT. REQUIRED:	1800
PROVIDED:	1992
BOTTOM DIM.	14'x24'
BOTTOM ELEV.	372
EMBANKMENT ELEV.	378
OUTLET WIDTH	4.0
OUTLET ELEV.	376
CLEANOUT ELEV.	373.5
STORAGE DEPTH	3.0

SEDIMENT TRAP # 1  
 1. TO BE REMOVED AFTER INSTALLATION OF STORM DRAIN.  
 2. TO BE REPLACED BY SILT FENCE.



THIS SITE HAS BEEN GRANTED A WATER QUALITY CERTIFICATION CERTIFICATION NO. 87-WQ-0315

NOTE: WETLAND DELINEATED BY KCI ON 6/4/87. DISTURBANCE TO WETLAND WILL BE TO INSTALL STRUCTURES AND STORMWATER MANAGEMENT POND ONLY. THE STREAM WILL BE RELOCATED TO FLOW THROUGH THE PROPOSED SWM POND.



DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP EL.	REMARKS
I-1	No. Co. Std. Type A-5 Inlet	375.82	375.82	377.51	See No. Co. Std. Detail SD-4.01
I-2	No. Co. Std. Type A-10 Inlet		376.30	377.80	See No. Co. Std. Detail SD-4.02
E-1	No. Co. Std. Metal End Section				See No. Co. Std. Detail SD-5.61
E-2	48 Inch Riser	376.8			See SWM Details Sheet 4 of 7
E-3	No. Co. Std. Metal End Section	371.90	371.79	373.40	See No. Co. Std. Detail SD-5.61
E-4		373.50	373.39	376.50	
E-5		375.01	374.90	377.40	
E-6		376.60	376.55	379.10	
E-7	No. Co. Std. Metal End Section	377.05	377.0	379.50	See No. Co. Std. Detail SD-5.61

SCALE 1" = 50'

By the Engineer:  
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."  
 Signature of Engineer: *John E.C. Patmore*  
 Date: 11/2/87  
 Print name below signature: JOHN E.C. PATMORE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Land Development Division: *Granville W. Weiland* 1/13/88  
 Chief, Bureau of Highways: *Ray* 1-14-88  
 Chief, Bureau of Engineering: *Ray* 1-14-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 Chief, Community Planning: *Joseph R. Smith* 1/21/88

ENGINEERS CERTIFICATE  
 "I CERTIFY THAT THIS PLAN FOR EROSION & 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."  
 Signature: *John E.C. Patmore* 9/9/87

DEVELOPERS CERTIFICATE  
 "I/WE CERTIFY THAT ALL DEVELOPMENT & 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 & EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDED THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."  
 Signature: *De A. Rende* 9/5/87

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS. FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
 Signature: *James McNela* 12/31-87  
 U.S. SOIL CONSERVATION SERVICE DATE

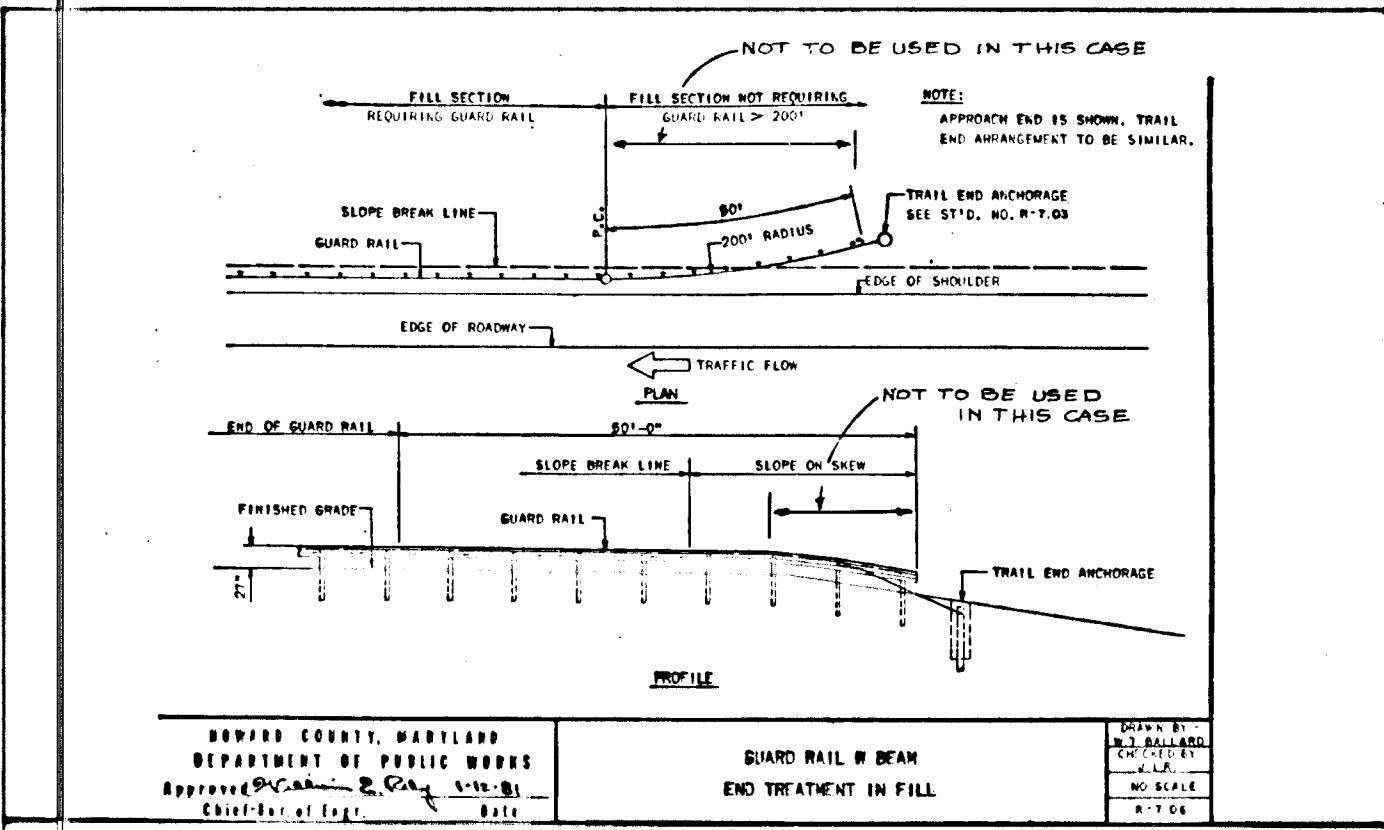
OWNER/DEVELOPER  
 TERRAFIRM  
 REAL ESTATE DEVELOPMENT  
 6258 CARDINAL LANE  
 COLUMBIA MARYLAND 21044  
 Signature: *Stephen L. Feltus* 12/21/87  
 HOWARD SOIL CONSERVATION DISTRICT DATE

5/84 REVISE EXISTING CONTOURS TO REFLECT 2'-0" AS-BUILT CONSTRUCTION, SHOW 40' EMBANKMENT OF 30" GRP. SHOW RIP RAP GRADING FOR 30" GRP EXTENSION LOT 3. E.R.D.

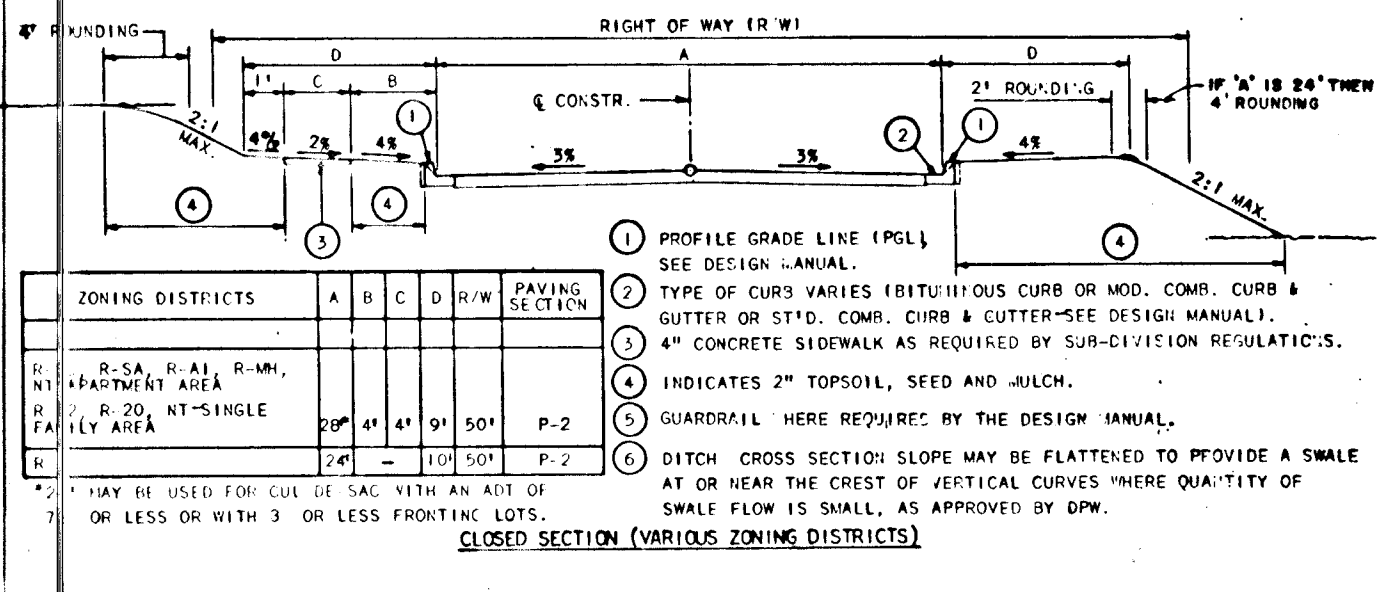
KIDDE CONSULTANTS, INC.  
 ENGINEERS • PLANNERS • SURVEYORS  
 1100 WEST STREET / SUITE 100 / LAUREL MD 20707  
 (WASH.) (301) 953-1821 / 792-8006 (EAST)  
 DATE: \_\_\_\_\_ SCALE: \_\_\_\_\_

GRADING & SEDIMENT CONTROL PLAN FOR HICKORY WOODS SECTION TIMOTHY COURT TAX MAP 35 PARCEL 179 5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND SHEET 2 OF 7

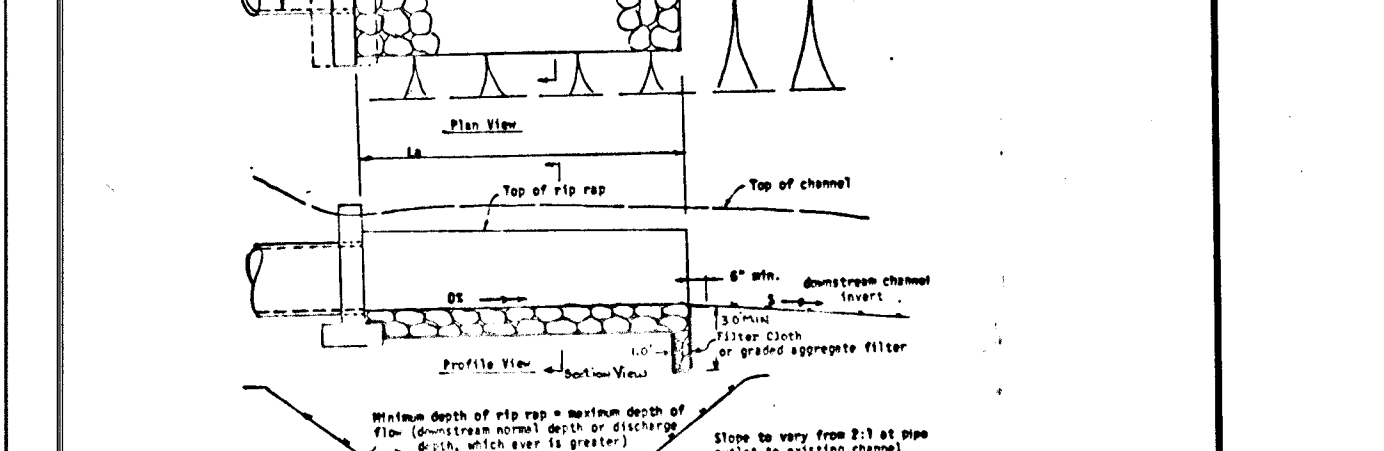
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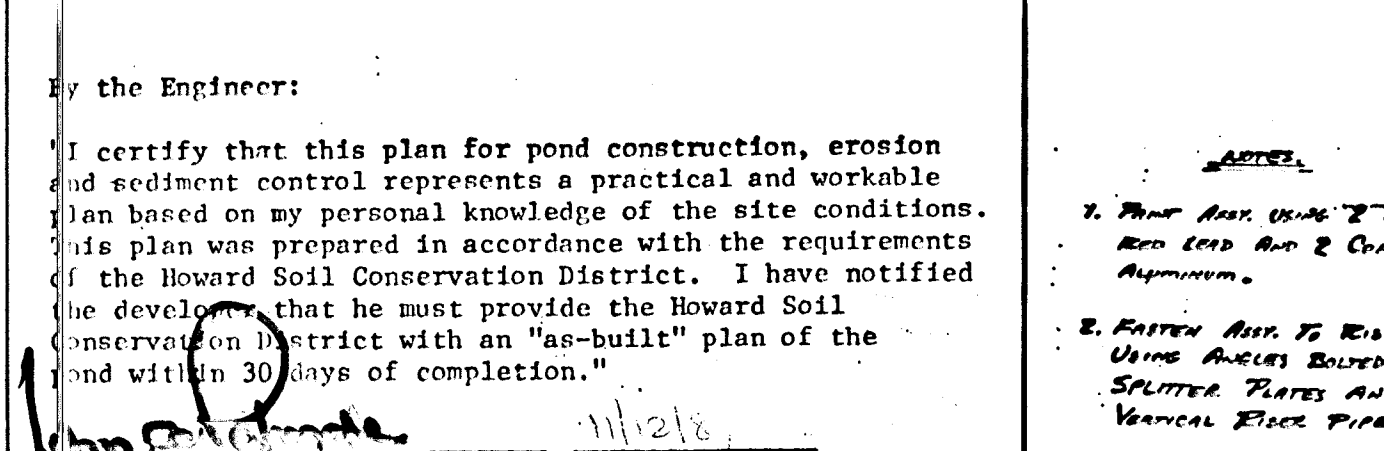
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-2	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



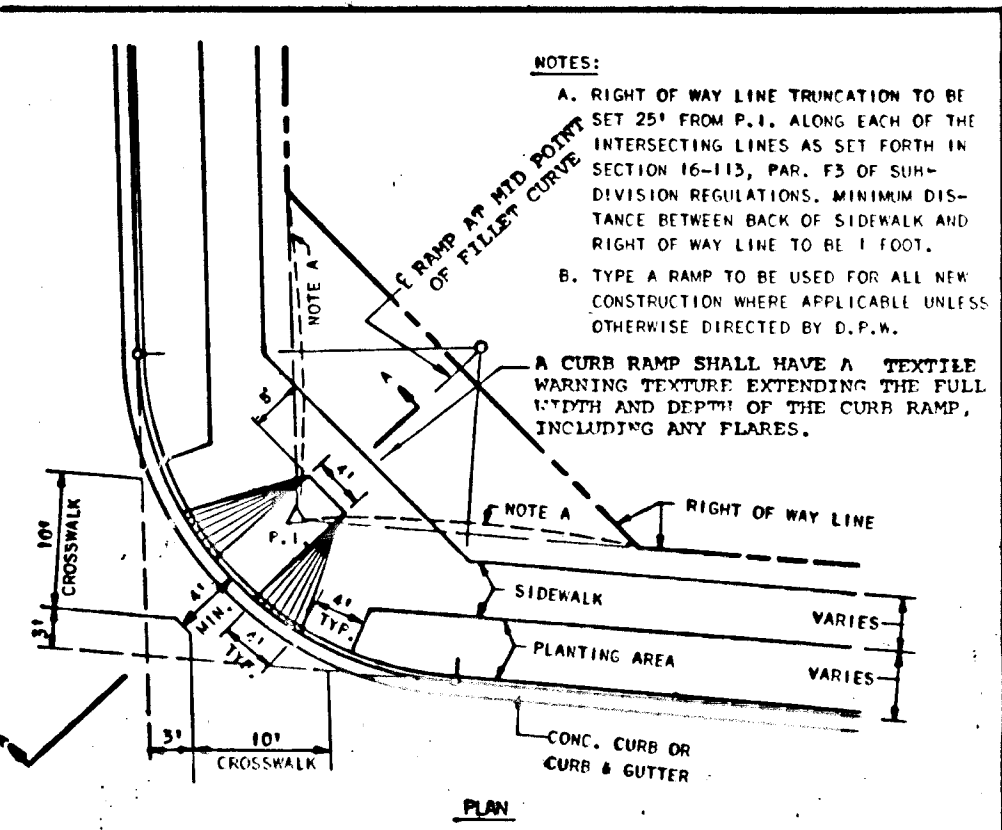
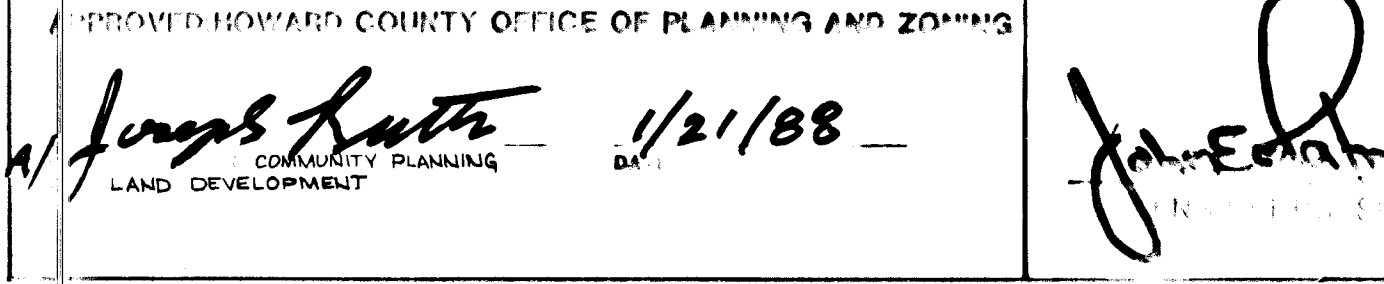
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
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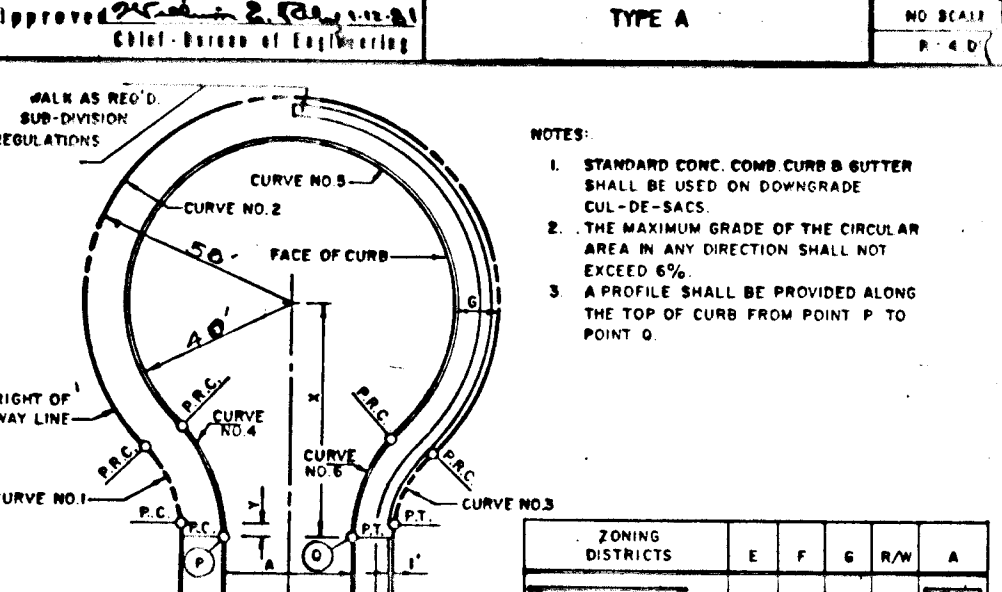
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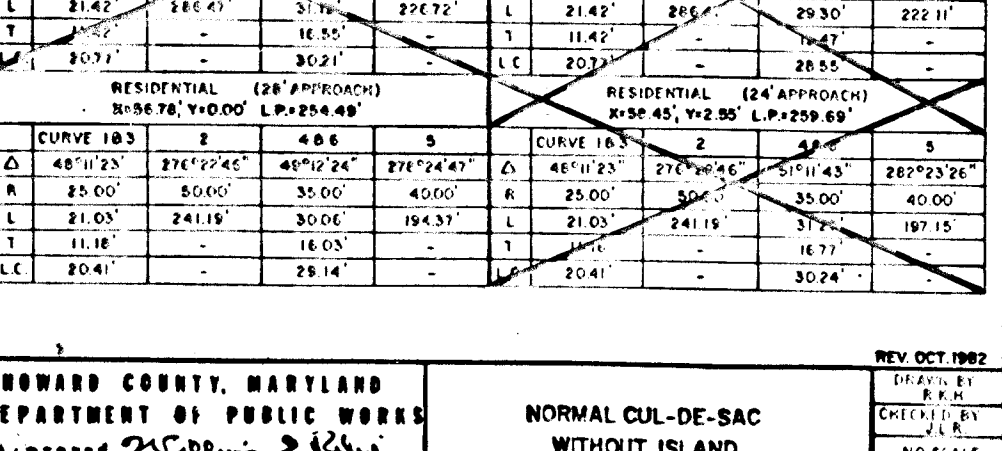
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
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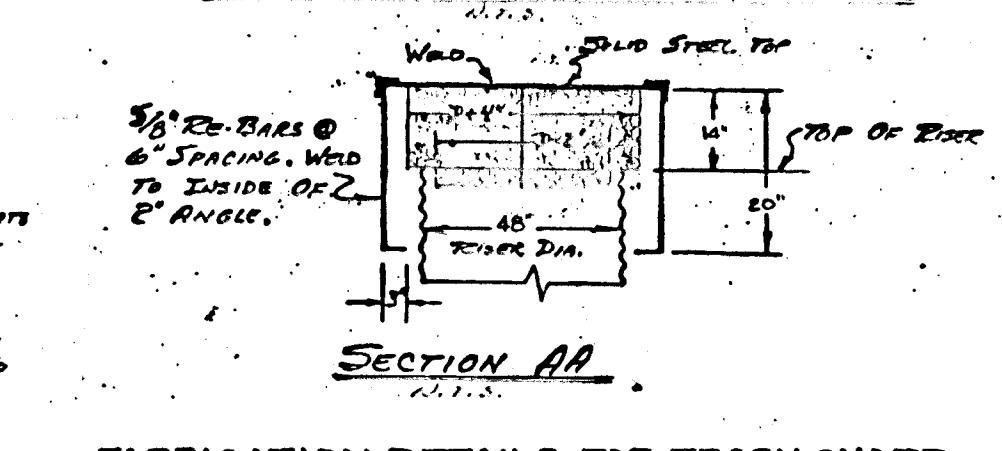
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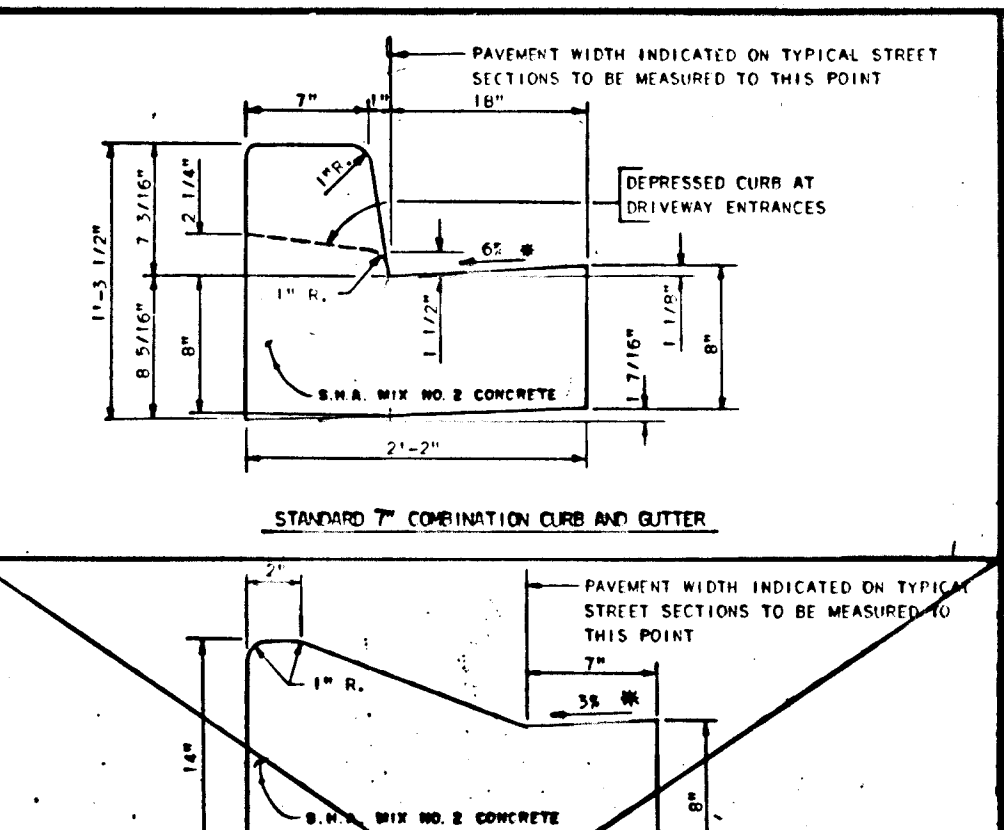
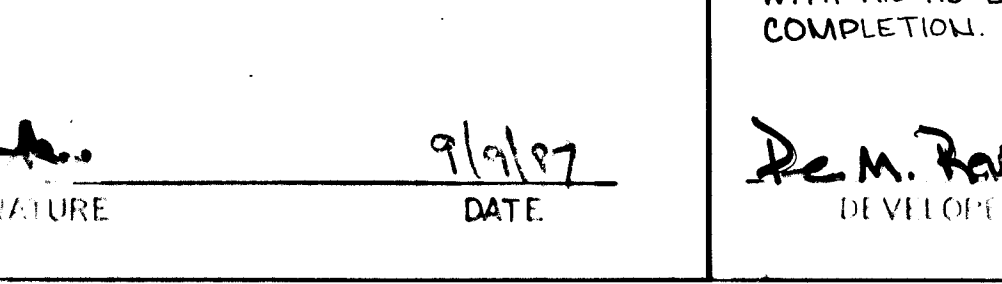
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-6	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



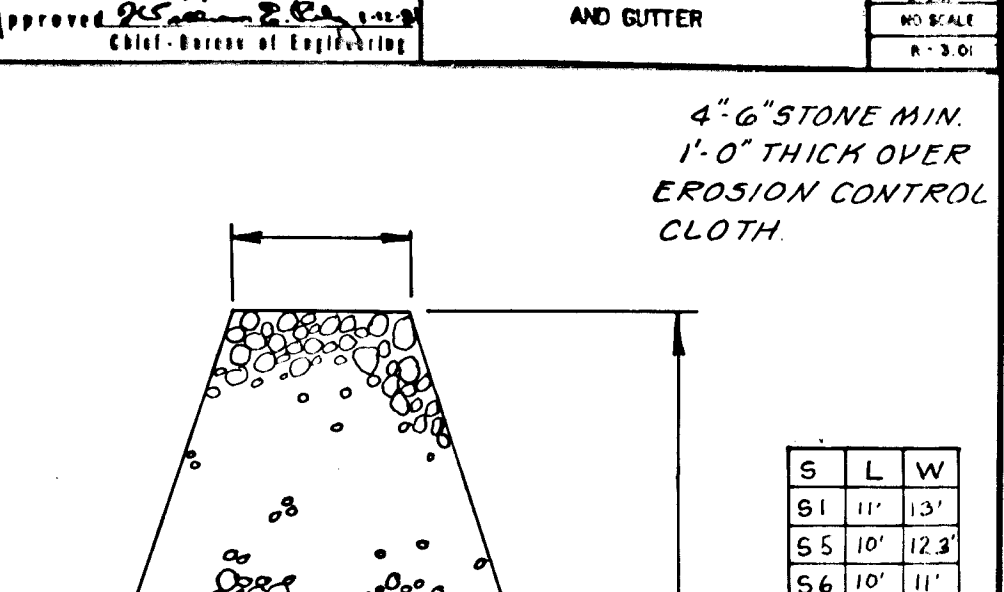
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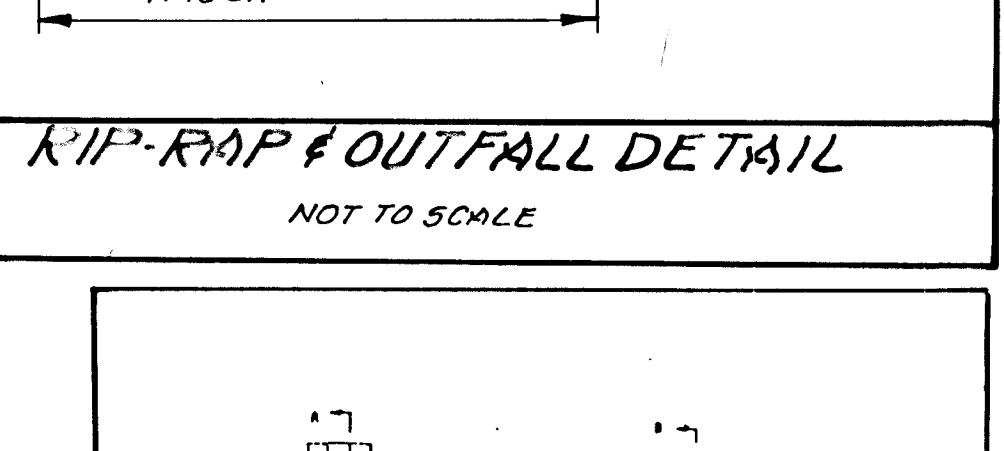
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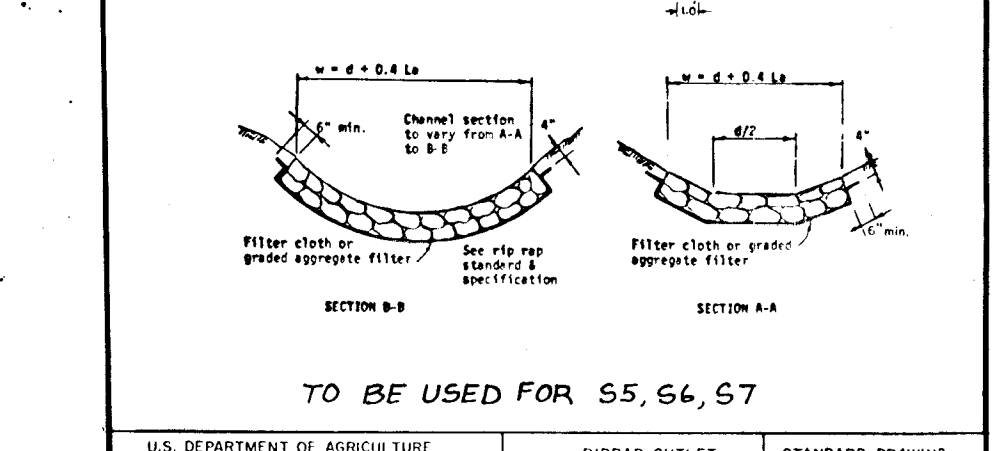
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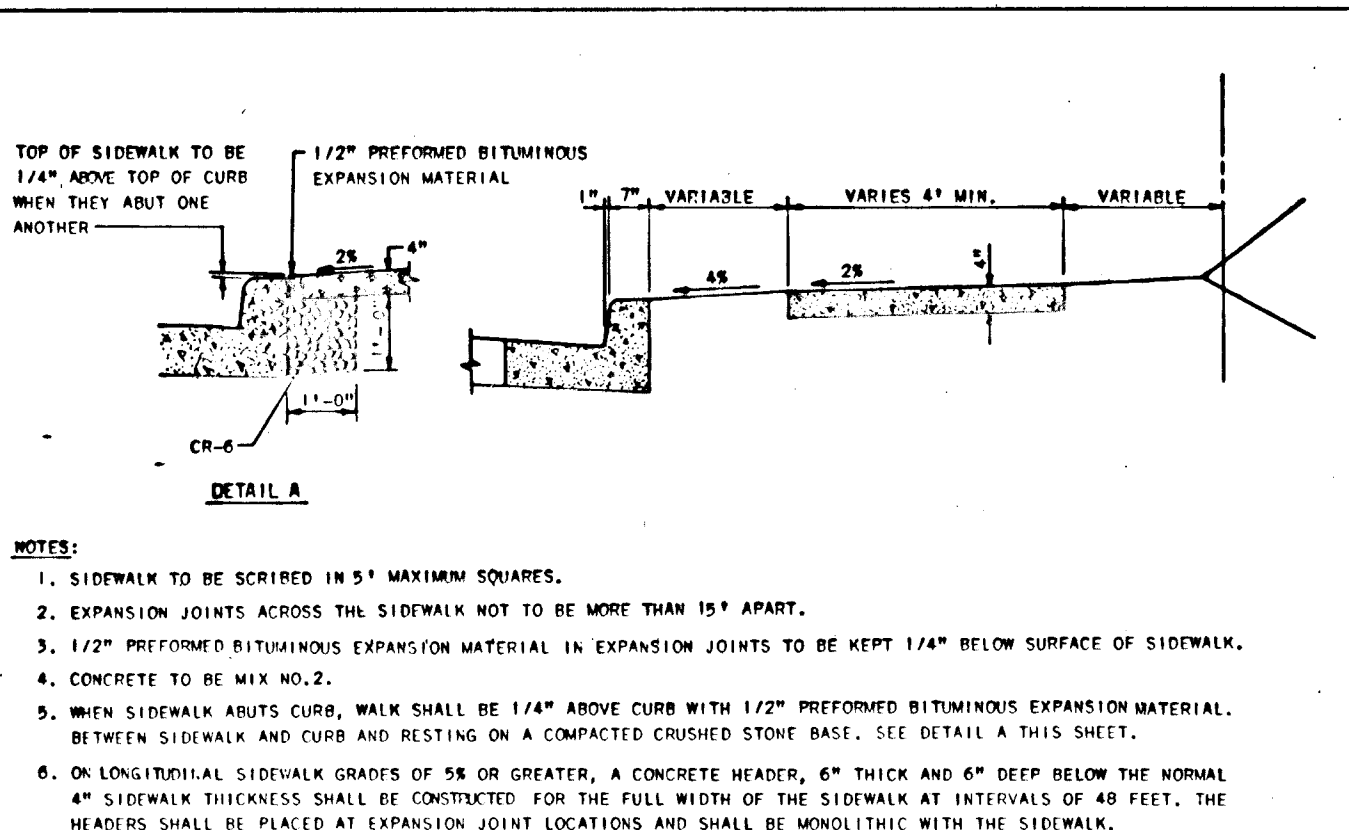
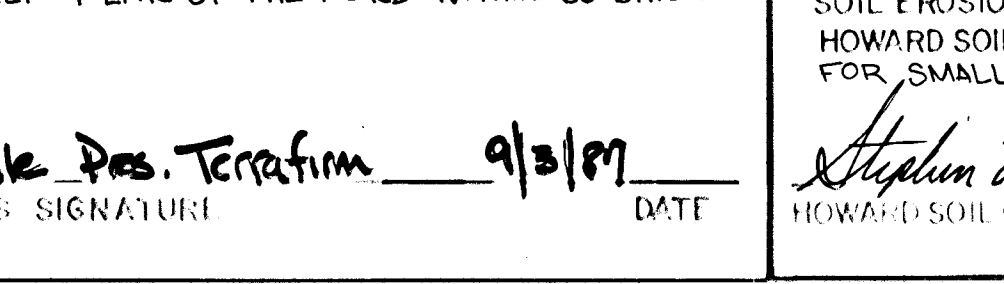
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P-10	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



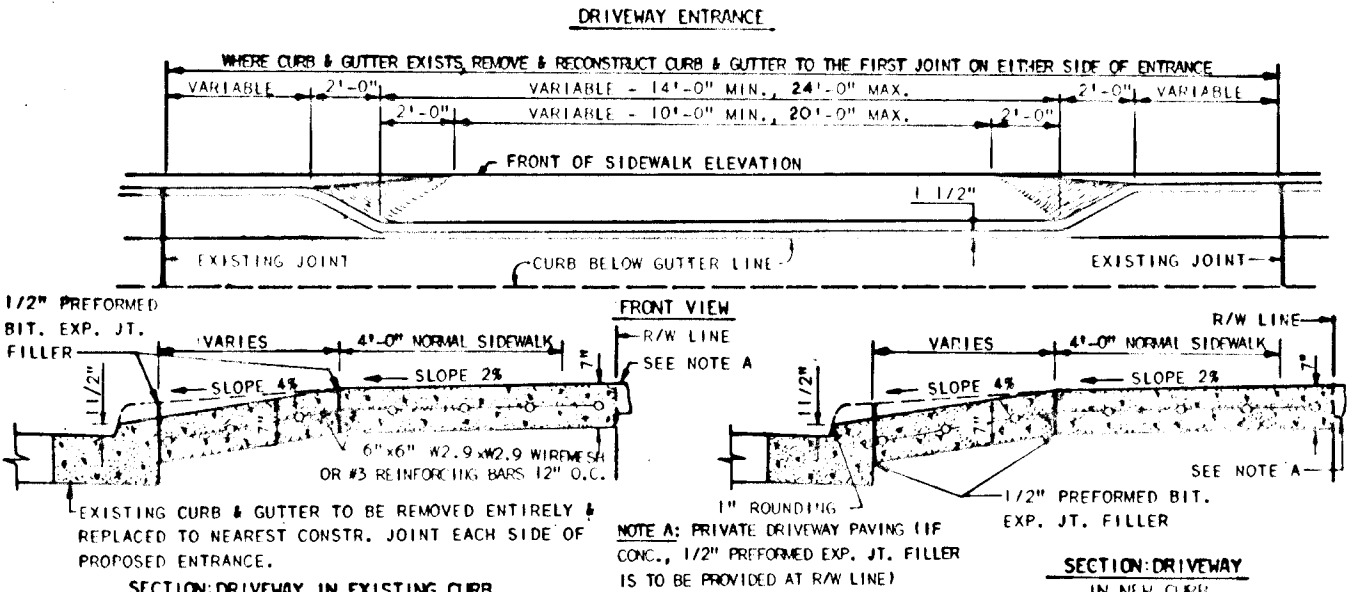
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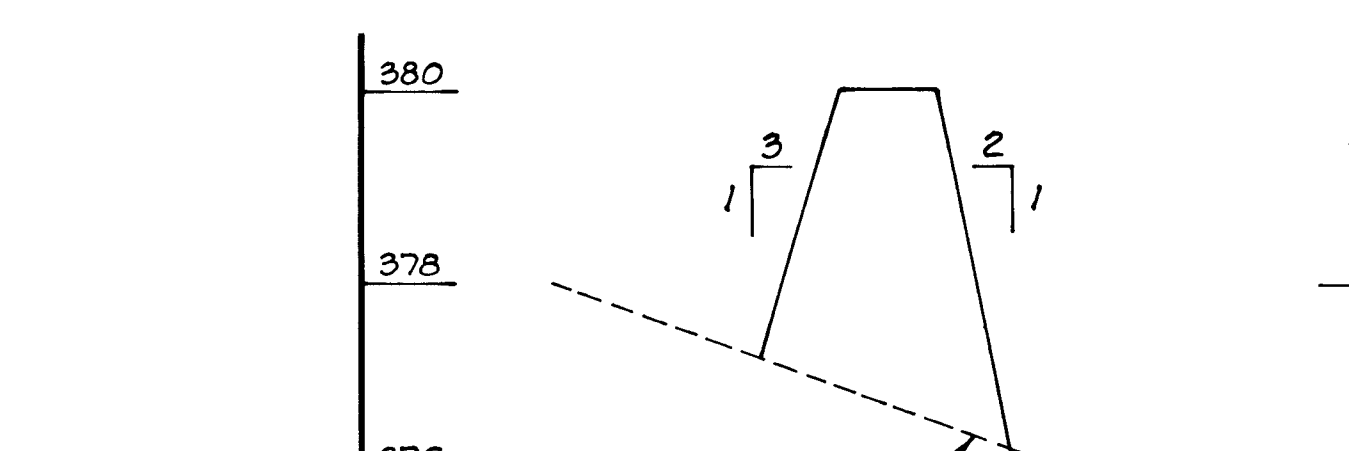
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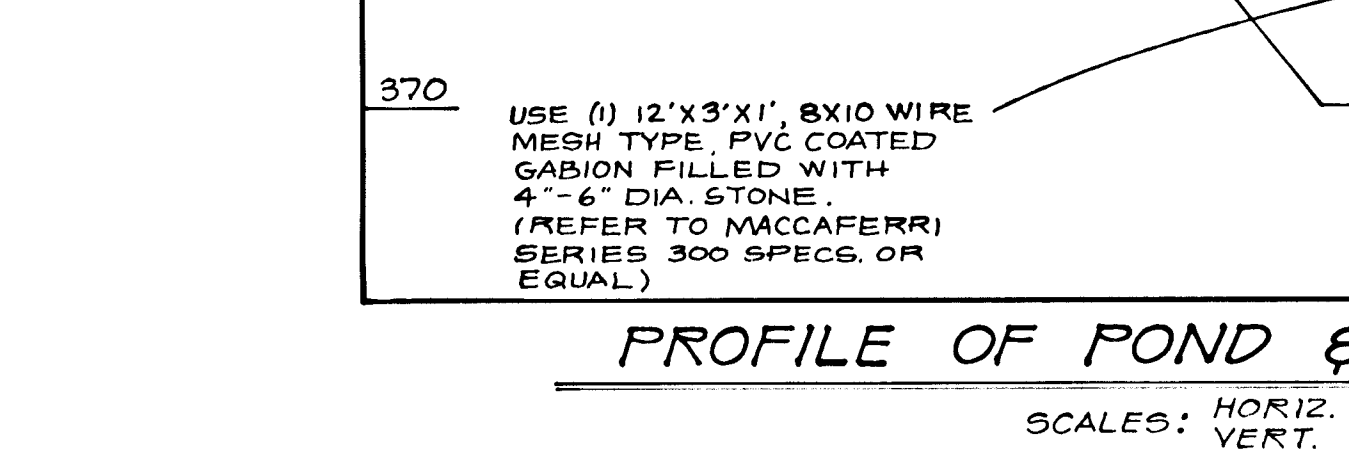
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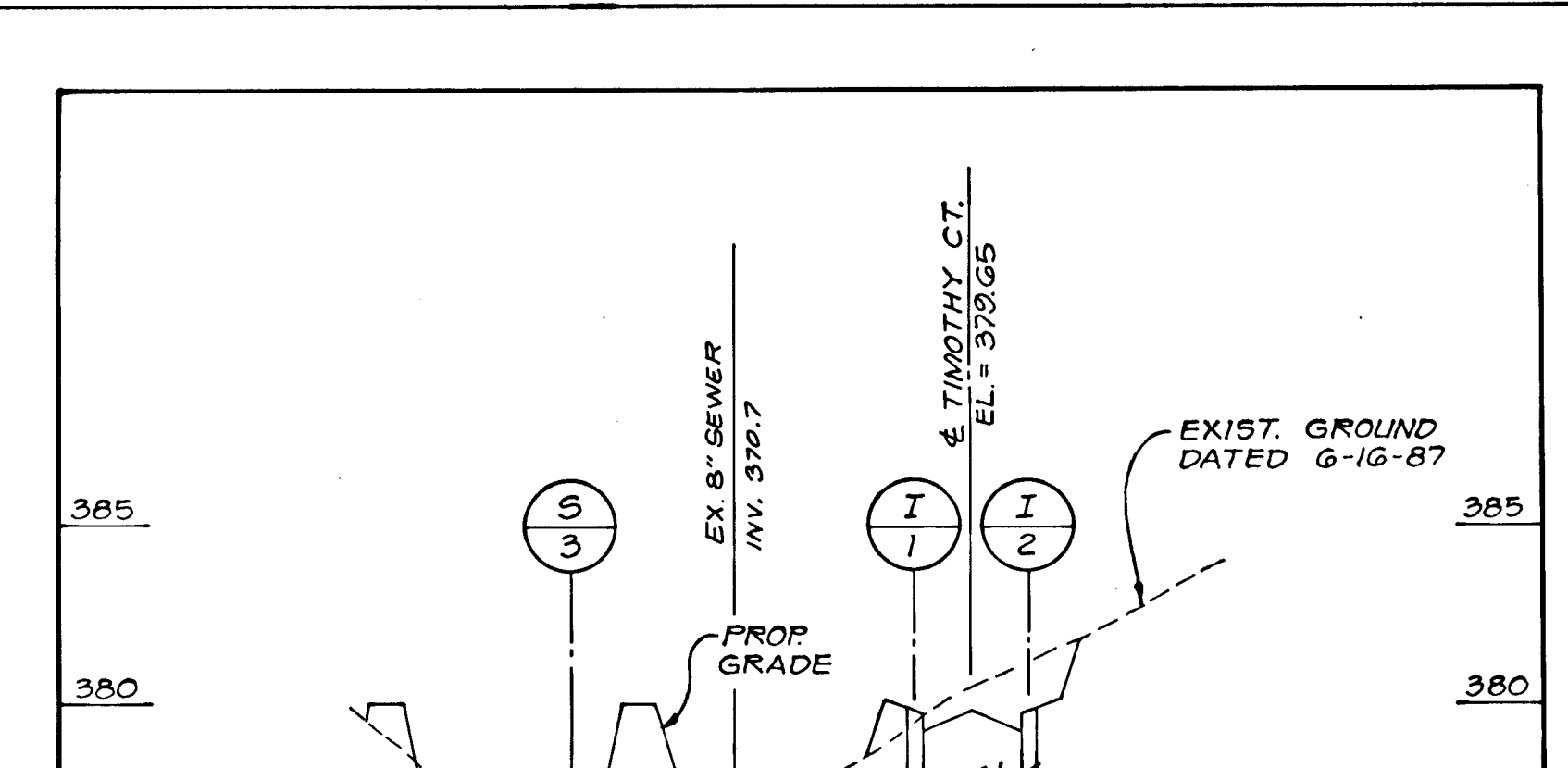
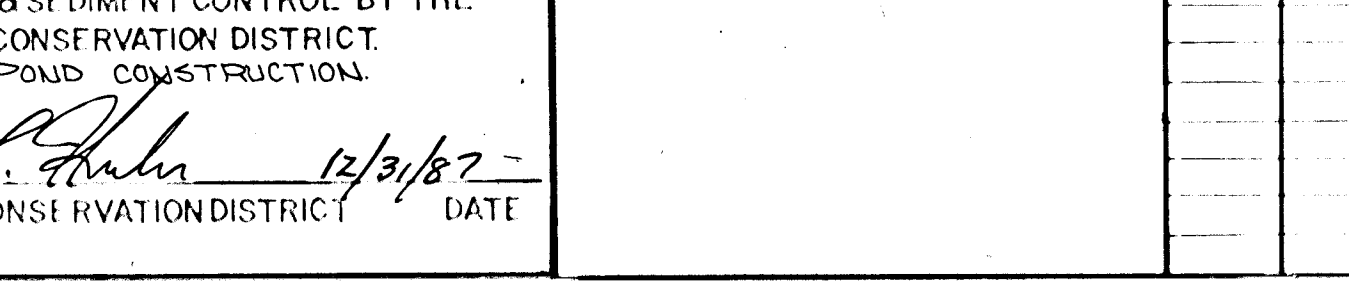
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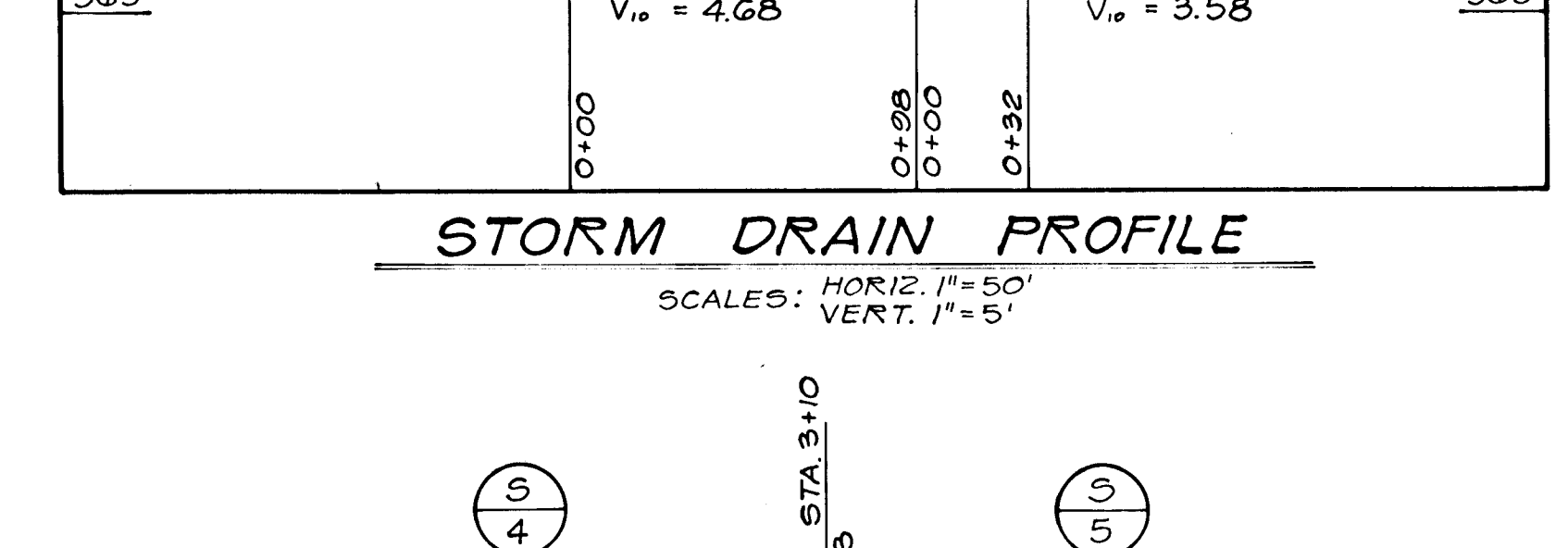
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-15	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



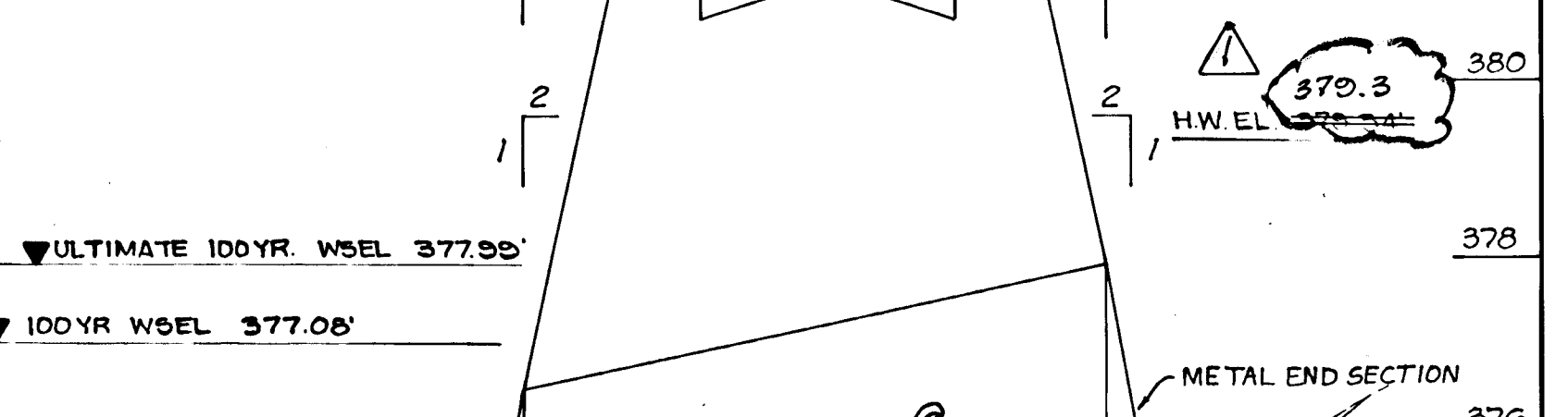
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-16	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



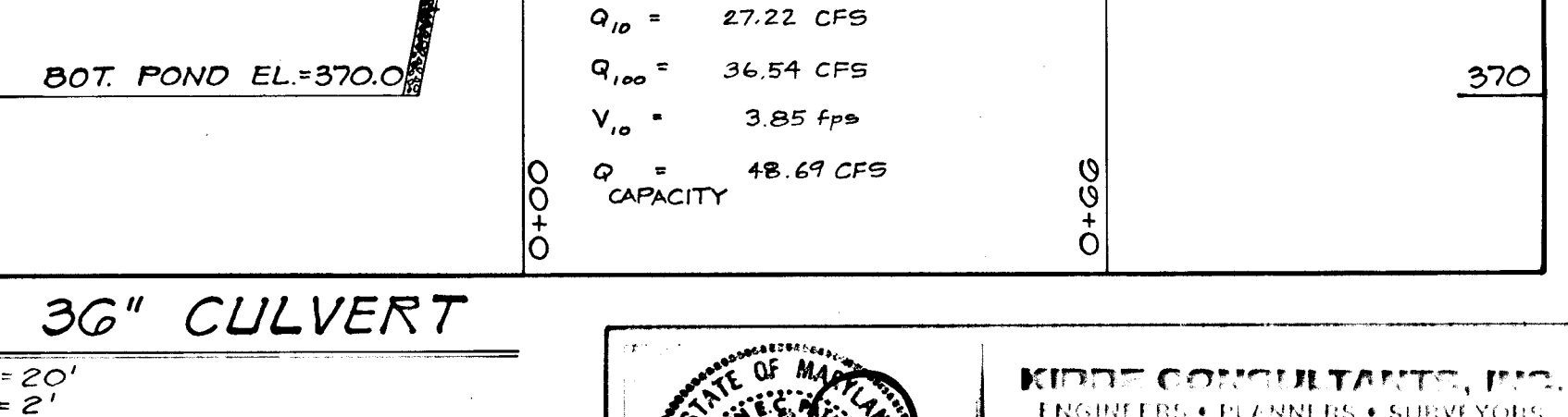
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P-17	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



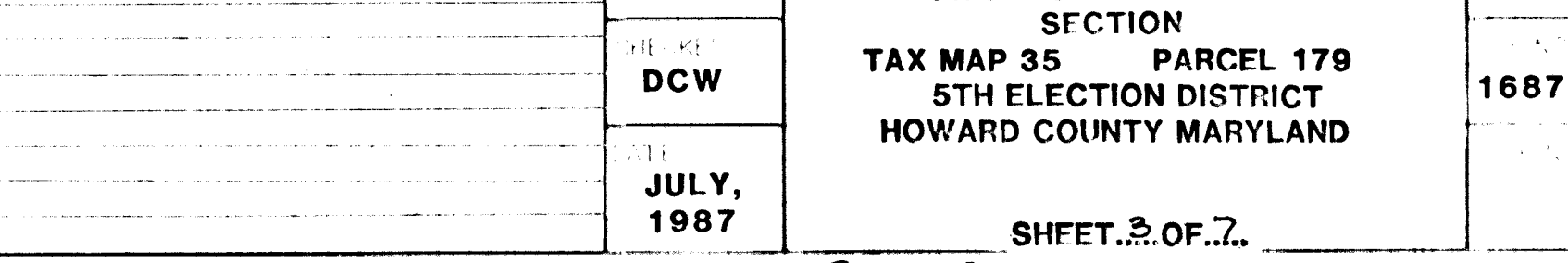
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P-18	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-19	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	FILL DEPTH BIT, CONC. ALTERNATE	SHOULDER BASE ALTERNATES
P-20	RESIDENTIAL ZONES LOCAL CUL-DE-SAC ALLEYS AND PRIVATE ROADS SERVING INDIVIDUALS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 45' HEAVY TRUCK TRIP 50'	1 1/2" BIT, CONC. SURFACE 5" BIT, CONC. BASE	1 1/2" BIT, CONC. SURFACE 2" TOP BIT, CONC. BASE 12" CONCRETE OR 12" COARSE GRADED STABILIZED AGGREGATE BASE CONC.



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

Signature: *John E. C. Patmore*  
Date: 1/13/88  
Chief, Bureau of Highways

Signature: *James R. Kelly*  
Date: 1-14-88  
Chief, Bureau of Engineering

Signature: *James R. Kelly*  
Date: 1/21/88  
Chief, Bureau of Planning and Zoning

**FABRICATION DETAILS FOR TRASH GUARD - ANTI VORTEX ASSEMBLY FOR ALL RISERS**

ENGINEER'S CERTIFICATE  
"I CERTIFY THAT THIS PLAN FOR EROSION & 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."

Signature: *John E. C. Patmore*  
Date: 9/19/87

**DEVELOPERS CERTIFICATE**  
"I/WE CERTIFY THAT ALL DEVELOPMENT & 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 & EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Signature: *De M. Ravelle Pres. Terrafirm*  
Date: 9/31/87

REVIEWED FOR HOWARD SOIL CONSERVATION AND METTS TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Signature: *James M. Helm*  
Date: 12-31-87  
US SOIL CONSERVATION SERVICE

**OWNER/DEVELOPER**  
TERRAFIRM  
REAL ESTATE DEVELOPMENT  
6258 CARDINAL LANE  
COLUMBIA MARYLAND 21044

5/04  
ADD AS-BUILT INVERTS AND HIGH ELEV. FOR 36" CMP

**STATE OF MARYLAND**  
KIRBY CONSULTANTS, INC.  
ENGINEERS • PLANNERS • SURVEYORS  
1300 WEST STREET, SUITE 100, LAUREL, MARYLAND 20646  
(301) 251-1100

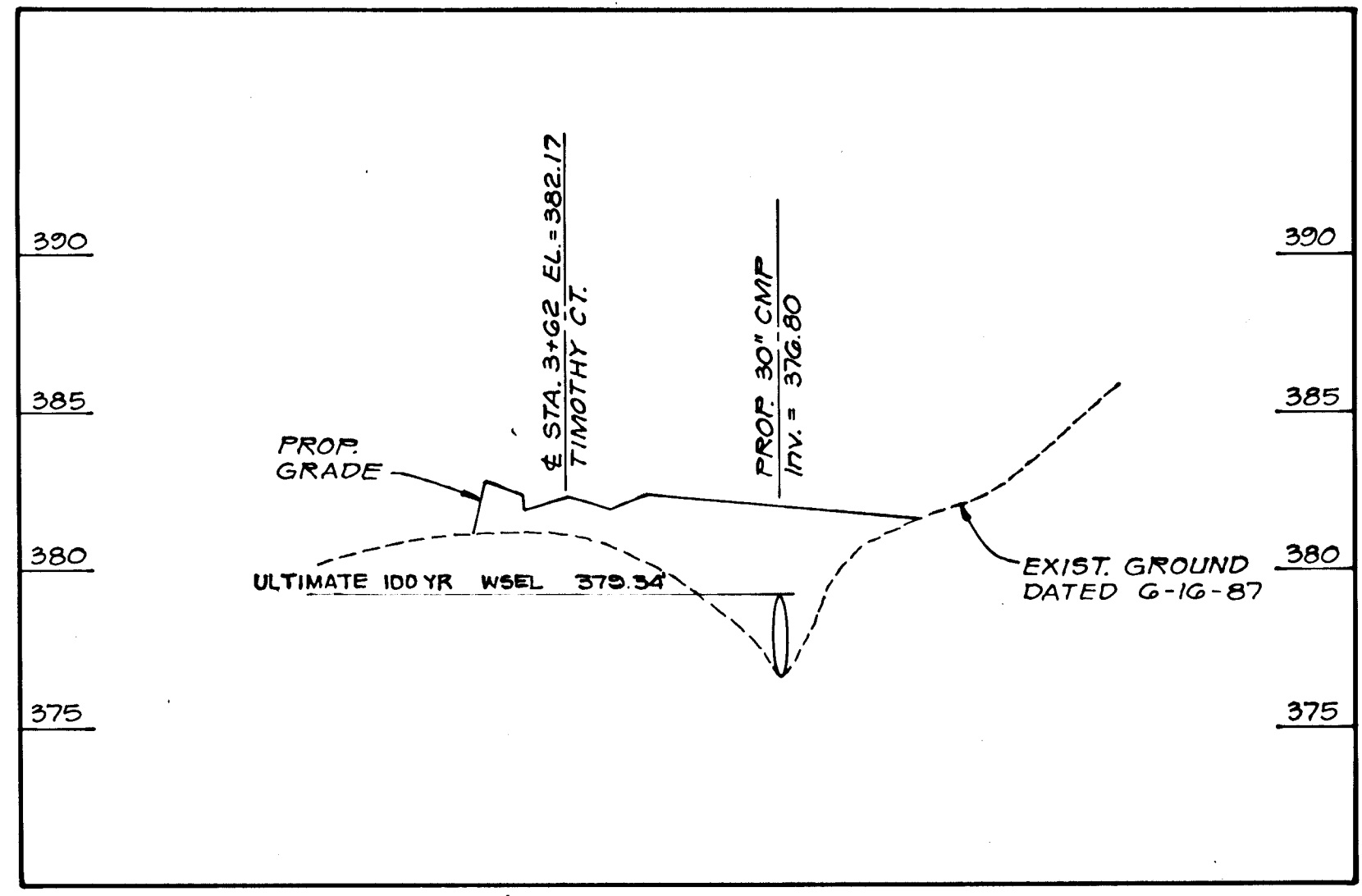
**STORM DRAIN PROFILES & CONSTRUCTION DETAILS**  
FOR  
**HICKORY WOODS SECTION**  
TAX MAP 35 PARCEL 179  
5TH ELECTION DISTRICT  
HOWARD COUNTY MARYLAND

DATE: \_\_\_\_\_ SCALE: \_\_\_\_\_

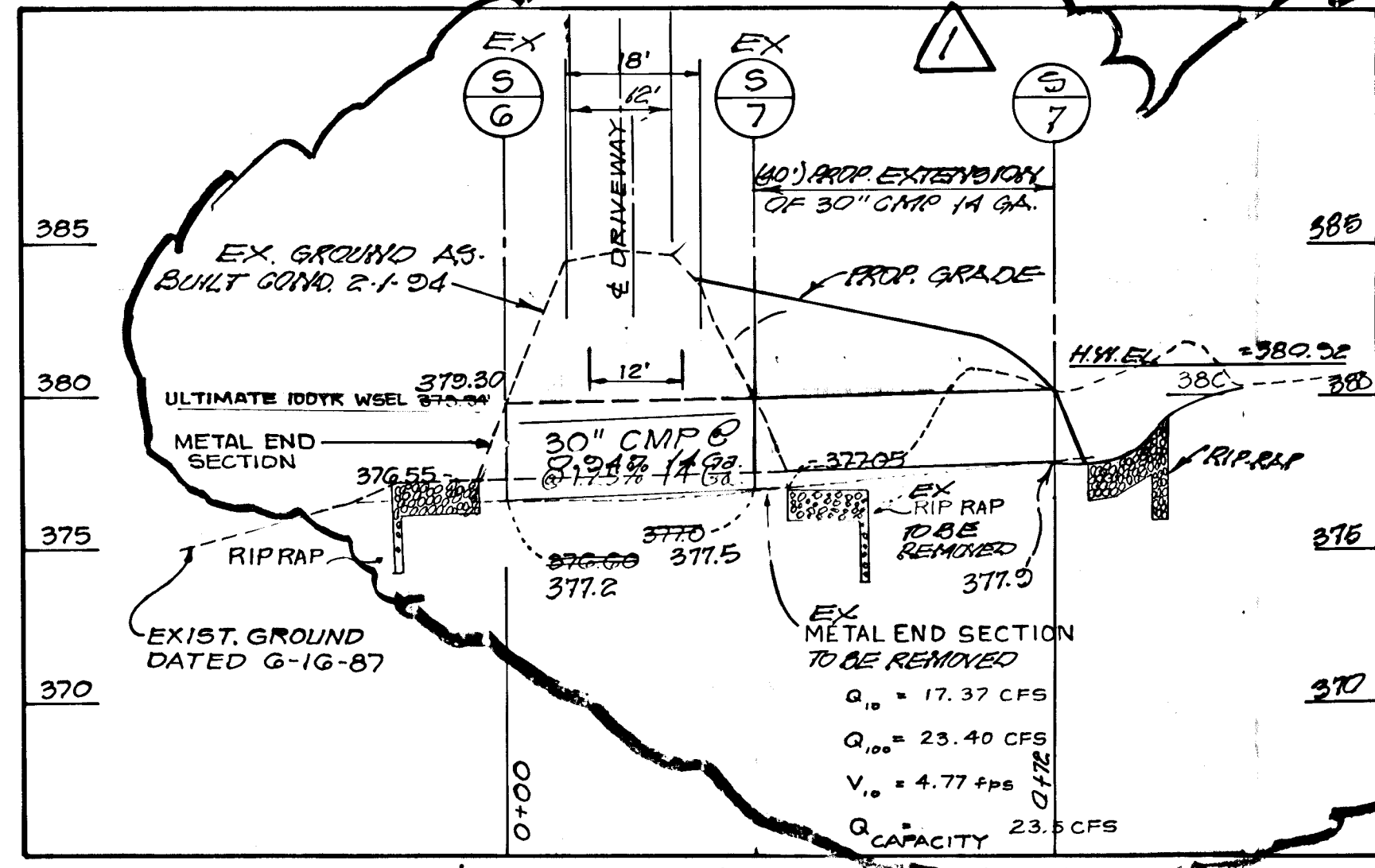
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RTT, JR  
DCW  
JULY, 1987

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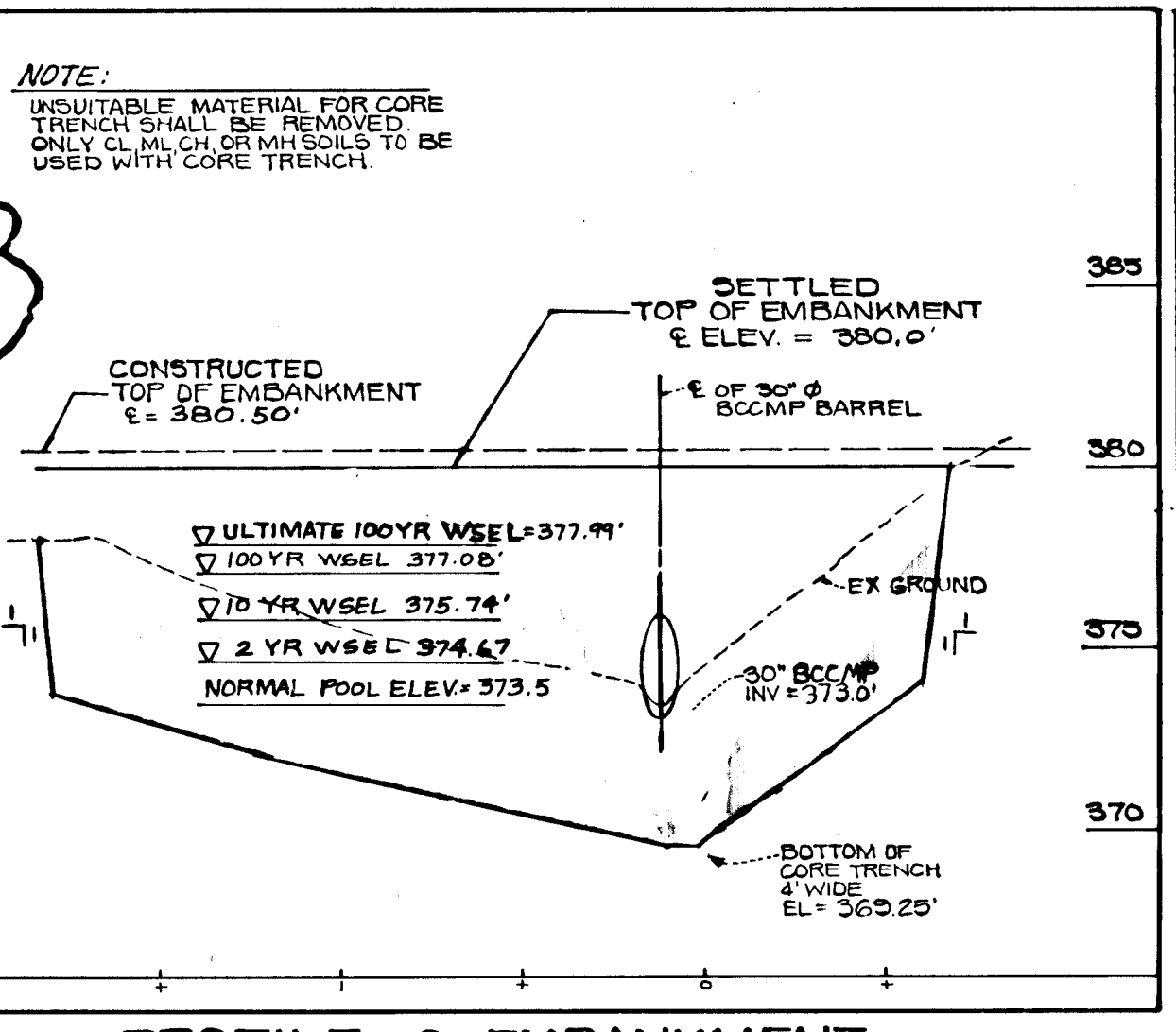
SHEET 2 OF 7



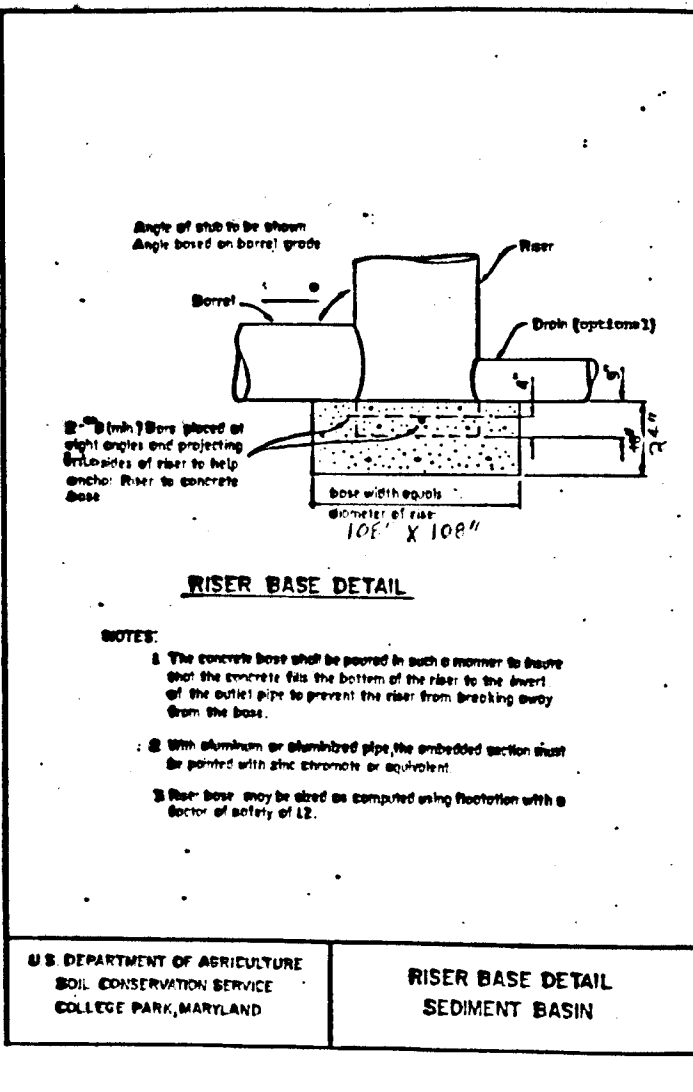
PROFILE & EMBANKMENT LOT 3  
 SCALES: HORIZ. 1" = 50'  
 VERT. 1" = 5'



PROFILE & CULVERT LOT 3  
 SCALES: HORIZ. 1" = 20'  
 VERT. 1" = 5'



PROFILE & EMBANKMENT  
 SCALES: HORIZ. 1" = 50'  
 VERT. 1" = 5'



**CONSTRUCTION SPECIFICATIONS**

**I. SITE PREPARATION**  
 Areas under the embankment and structural works shall be cleared, graded and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. To facilitate clean out and restoration, it is recommended that the permanent pool area be cleared of all brush and trees.

**II. EARTH FILL**  
 Material  
 The fill material shall be taken from approved designated borrow area or areas. It shall be free from roots, stumps, wood, rubbish, over-size stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased at least 10 percent above the design elevation (including freeboard) unless otherwise shown on the plans.

Placement  
 Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 4-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction  
 The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture so that it can be formed into a ball without crumbling. If water can be squeezed out of the ball, it is too wet to compact properly.

Core Trench  
 Where specified, a core trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 on either side. The bottom of the trench shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

**III. STRUCTURAL BACKFILL**  
 Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a concrete structure or pipe unless there is a compact fill of twenty-four inches or greater over the structure or pipe.

**IV. PIPE CONDUITS**

**A. CORRUGATED METAL PIPE**

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

2. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where roots or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the side.

5. Backfilling shall conform to structural backfill as shown above.

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**B. REINFORCED CONCRETE PIPE**

1. Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. Approved equivalents are ASTM Specification C-300, 301, and 302.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and on the sides of the pipe at least 10% of its diameter with a minimum thickness of 3". W.S.C. low cradle bedding is an approved equivalent.

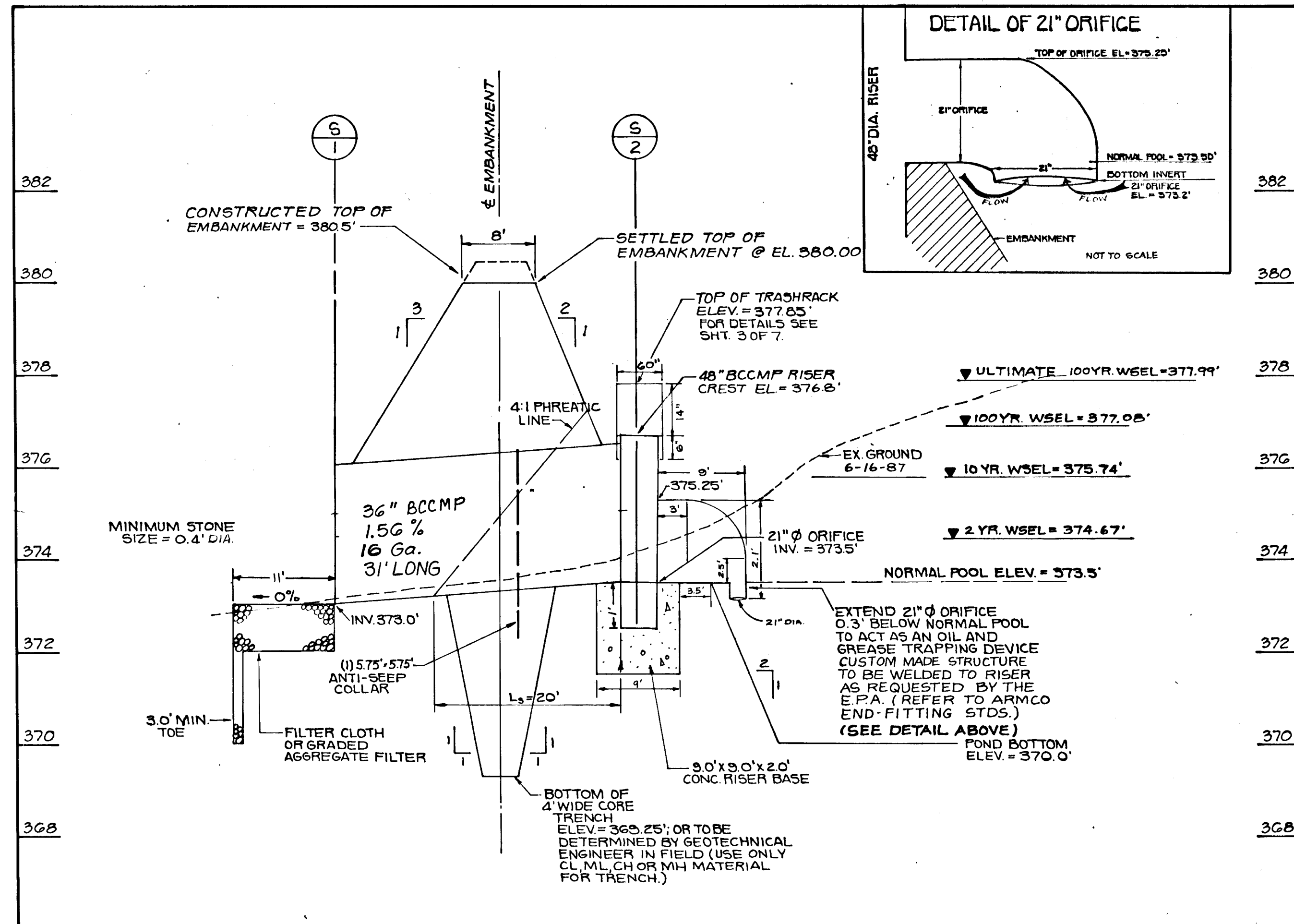
3. Laying pipe - Ball and spigot pipe shall be placed with the ball end upstream. Joints shall be made in accordance with the recommendations of the manufacturer of the material. After the joints are made on the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.

4. Backfilling shall conform to structural backfill as shown above.

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**V. CONCRETE**  
 Concrete shall meet minimum requirements set forth in Maryland State Highway Administration Specifications for Materials, Highways, Bridges, and Industrial Structures, Article 20-07 (Portland Cement Concrete Mixtures), Class A-1, or P-1.

**VI. STABILIZATION**  
 All borrow areas shall be graded to provide proper drainage and left in a suitable condition. All exposed surfaces of the embankment, spillway and borrow areas shall be stabilized by seeding and applying straw mulch in accordance with Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas immediately after final grading.



S.W.M. POND  
 PROFILE ALONG  
 PRINCIPLE SPILLWAY  
 HAZARD CLASS 'A'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Land Development Division  
 Date: 1/13/88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Engineering  
 Date: 1-14-88

ENGINEER'S CERTIFICATE  
 "I CERTIFY THAT THIS PLAN FOR EROSION & 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."

John E. Catmore  
 ENGINEER'S SIGNATURE  
 DATE: 9/9/87

DEVELOPER'S CERTIFICATE  
 "I/WE CERTIFY THAT ALL DEVELOPMENT & 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 & EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

De M. Reelle, President TerraFirm  
 DEVELOPER'S SIGNATURE  
 DATE: 9/9/87

REVIEWED FOR HOWARD COUNTY CONSERVATION AND METS TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Helm 12-31-87  
 US SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION & SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT FOR SMALL POND CONSTRUCTION.

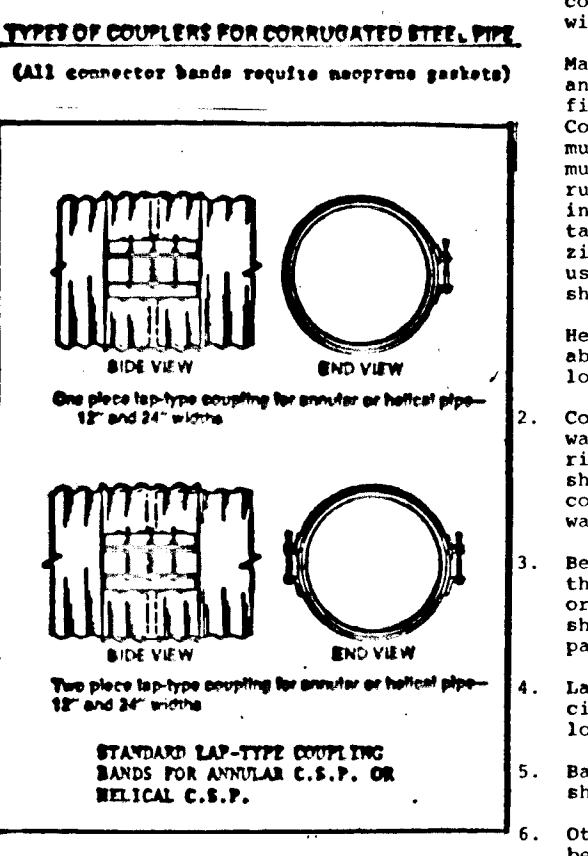
Stephen L. Helm 12/31/87  
 HOWARD SOIL CONSERVATION DISTRICT DATE

RECORD OF SOIL EXPLORATION

NO.	DEPTH	DESCRIPTION	WATER	REMARKS
1	0-12"	Topsoil		
2	12-24"	Light gray silty clay with some mica and (trace) fine sand		
3	24-36"	Light gray silty clay with some mica and (trace) fine sand		
4	36-48"	Light gray silty clay with some mica and (trace) fine sand		
5	48-60"	Light gray silty clay with some mica and (trace) fine sand		
6	60-72"	Light gray silty clay with some mica and (trace) fine sand		
7	72-84"	Light gray silty clay with some mica and (trace) fine sand		
8	84-96"	Light gray silty clay with some mica and (trace) fine sand		
9	96-108"	Light gray silty clay with some mica and (trace) fine sand		
10	108-120"	Light gray silty clay with some mica and (trace) fine sand		
11	120-132"	Light gray silty clay with some mica and (trace) fine sand		
12	132-144"	Light gray silty clay with some mica and (trace) fine sand		
13	144-156"	Light gray silty clay with some mica and (trace) fine sand		
14	156-168"	Light gray silty clay with some mica and (trace) fine sand		
15	168-180"	Light gray silty clay with some mica and (trace) fine sand		
16	180-192"	Light gray silty clay with some mica and (trace) fine sand		
17	192-204"	Light gray silty clay with some mica and (trace) fine sand		
18	204-216"	Light gray silty clay with some mica and (trace) fine sand		
19	216-228"	Light gray silty clay with some mica and (trace) fine sand		
20	228-240"	Light gray silty clay with some mica and (trace) fine sand		
21	240-252"	Light gray silty clay with some mica and (trace) fine sand		
22	252-264"	Light gray silty clay with some mica and (trace) fine sand		
23	264-276"	Light gray silty clay with some mica and (trace) fine sand		
24	276-288"	Light gray silty clay with some mica and (trace) fine sand		
25	288-300"	Light gray silty clay with some mica and (trace) fine sand		

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25	288-300"	Light gray silty clay with some mica and (trace) fine sand		



**Materials - (Aluminum Pipe)** - This pipe and its appurtenances shall conform to the requirements of ASTM Specification M-190 or M-211 with water tight coupling bands. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber plastic insulating materials at least 1/4 inch in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be less than 9 and greater than 4.

Wellness corrugated pipe in addition to the requirements above shall have either continuously welded seams or have lock seams which are caulked with a neoprene bead.

2. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where roots or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

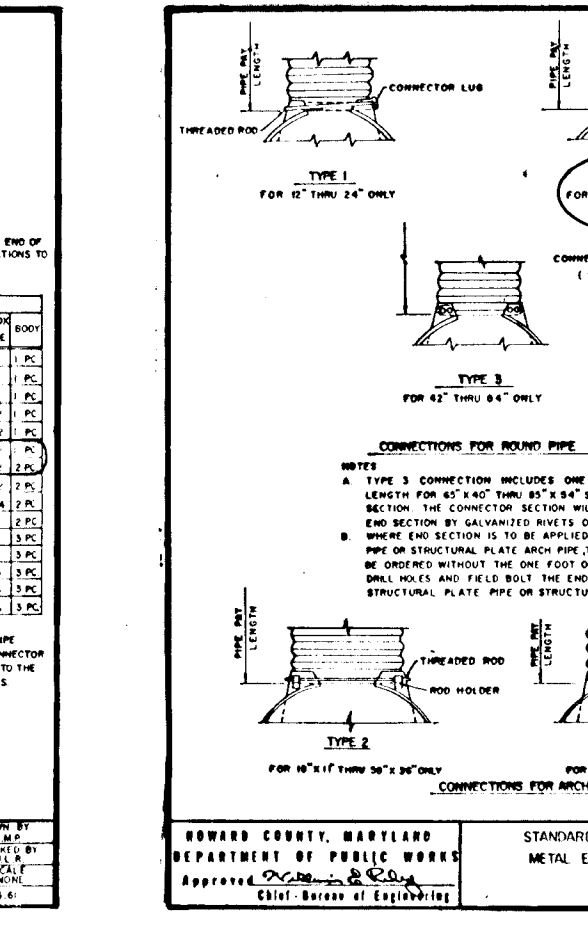
4. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the side.

5. Backfilling shall conform to structural backfill as shown above.

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**C. Acceptable Construction Criteria**  
 The following items should be considered in reviewing As-Built plans to determine if it is acceptable.

- The pipe and riser diameter, materials, and elevations must be correct.
- The number, size and location of the anti-seep collars must be correct.
- The top of fill elevation must be no less than the design elevation plus the allowance for settlement.
- The top width and side slopes must be equal to or flatter than the design.
- There must be the proper release between the elevations of the principal spillway crest, the emergency spillway crest and the top of dam. All of these elevations should be greater than or equal to the design elevations.
- The structure must have an acceptable outlet as provided in the plans.



OWNER/DEVELOPER

TERRAFIRM  
 REAL ESTATE DEVELOPMENT  
 6258 CARDINAL LANE  
 COLUMBIA, MARYLAND 21044

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

John E. Catmore  
 Signature of Engineer  
 Print name below signature  
 JOHN E. CATMORE

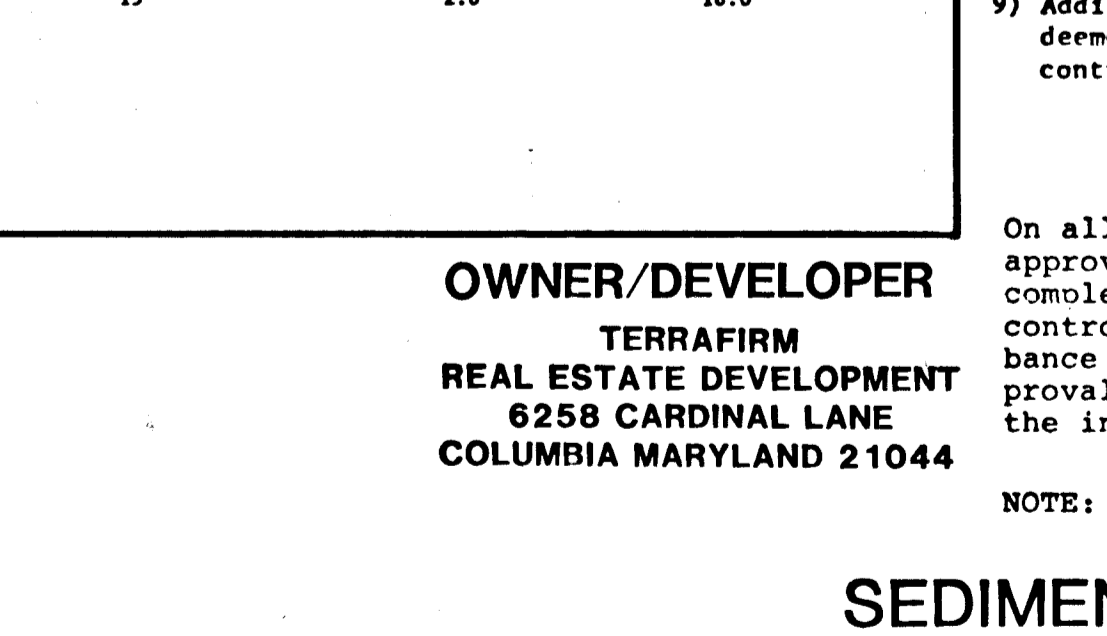
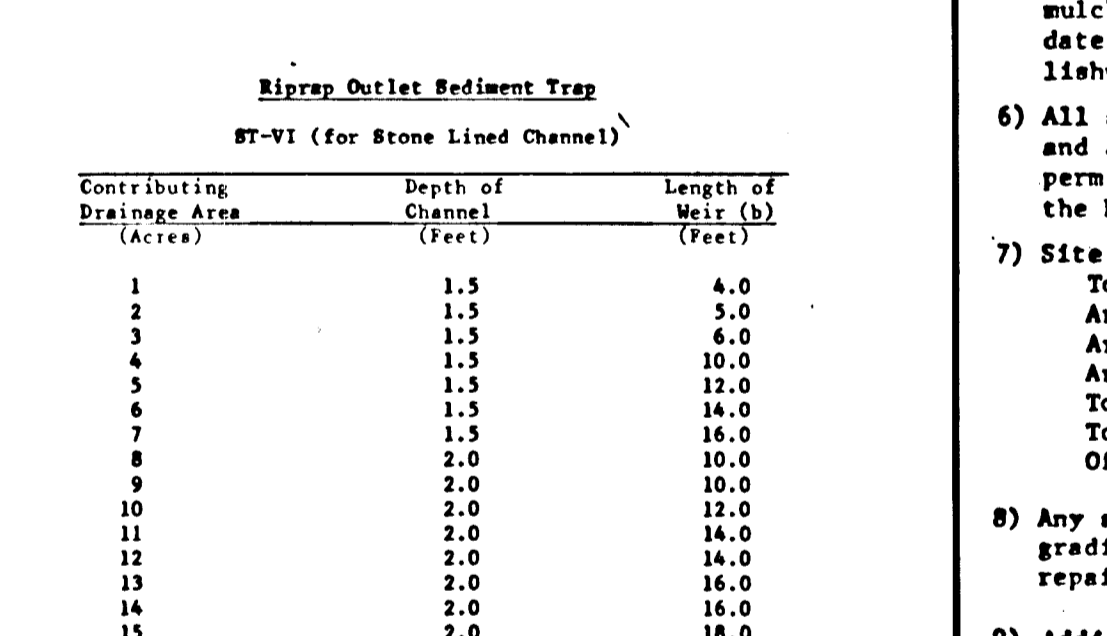
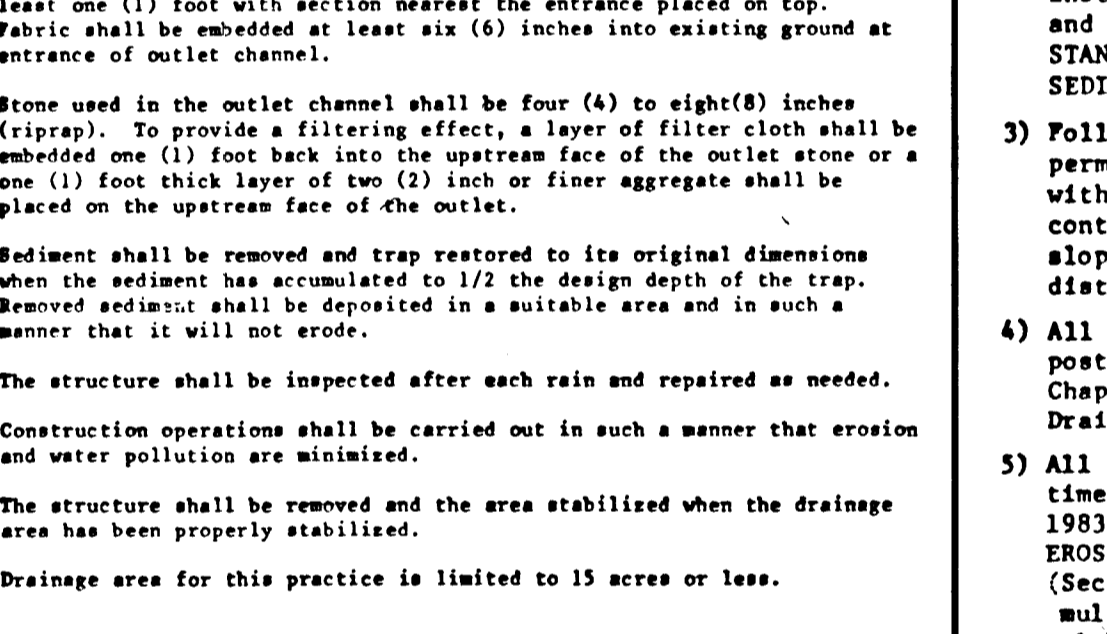
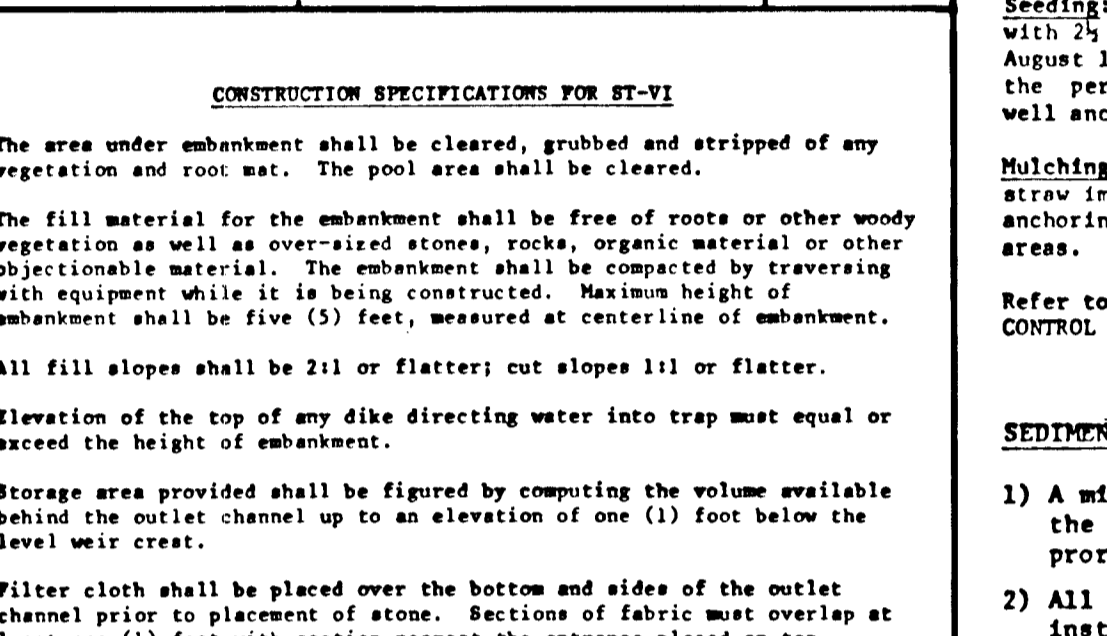
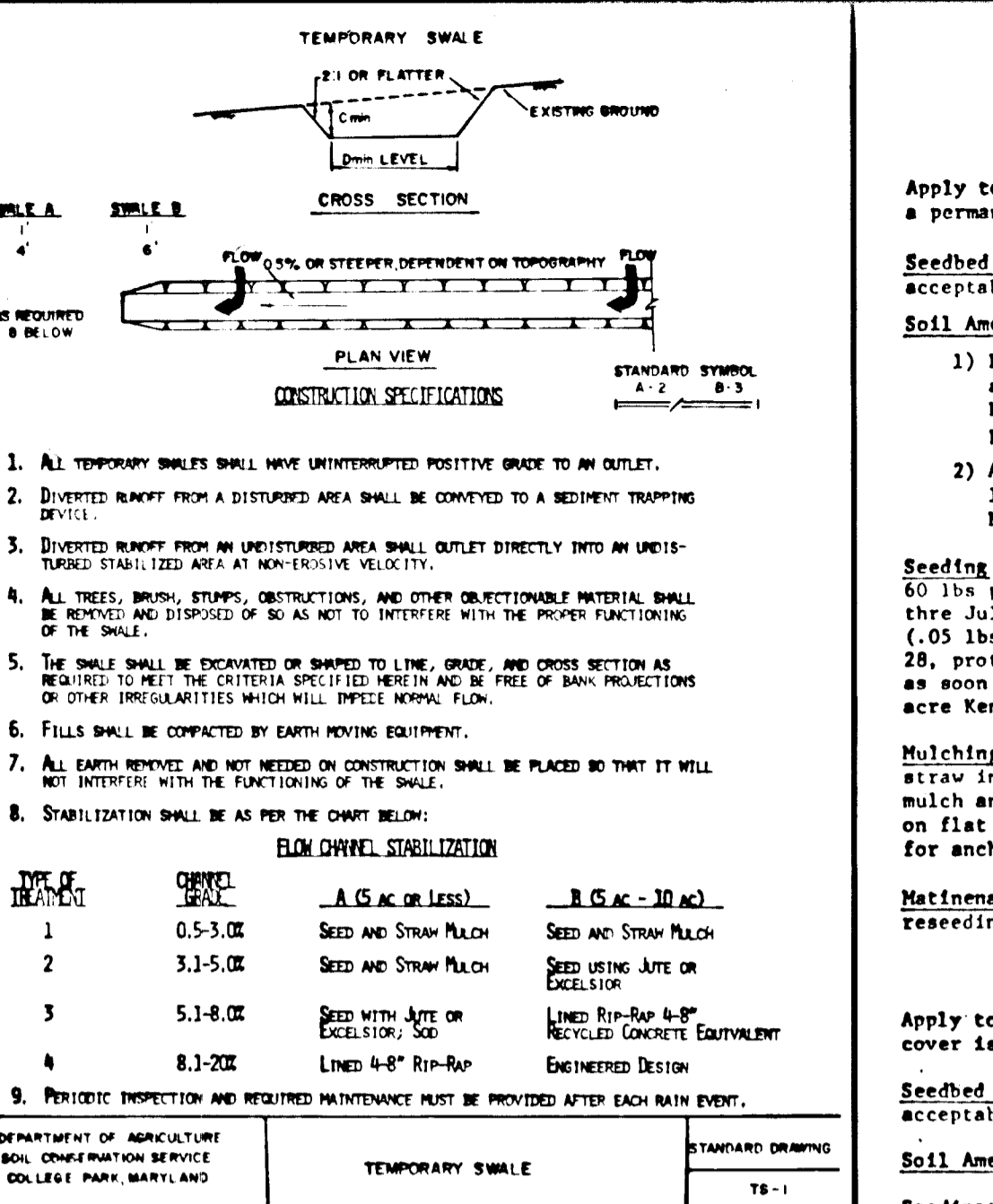
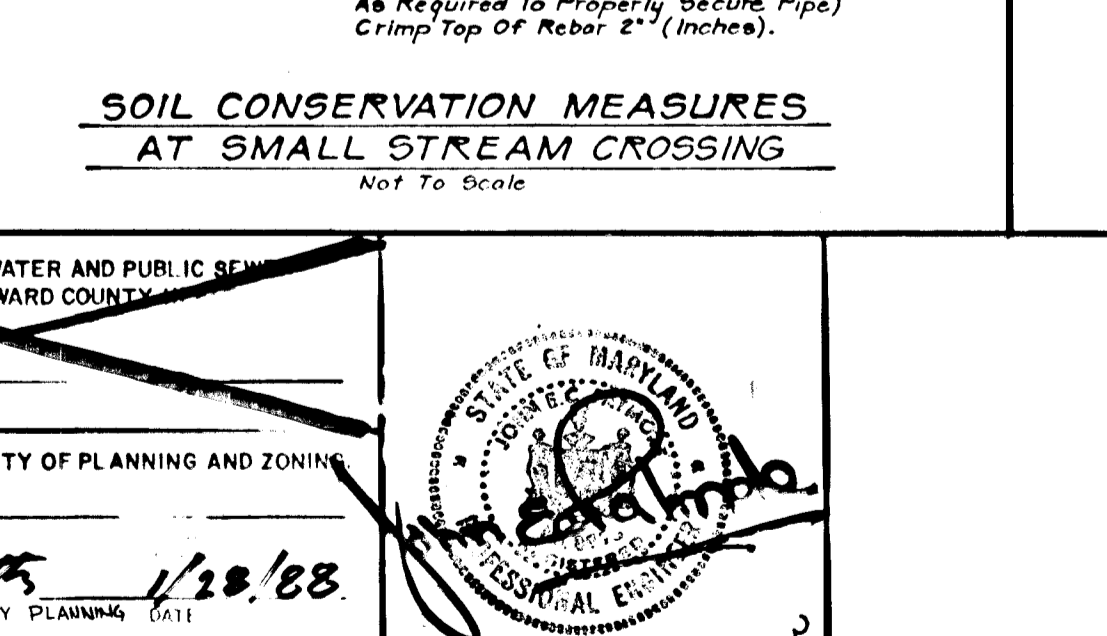
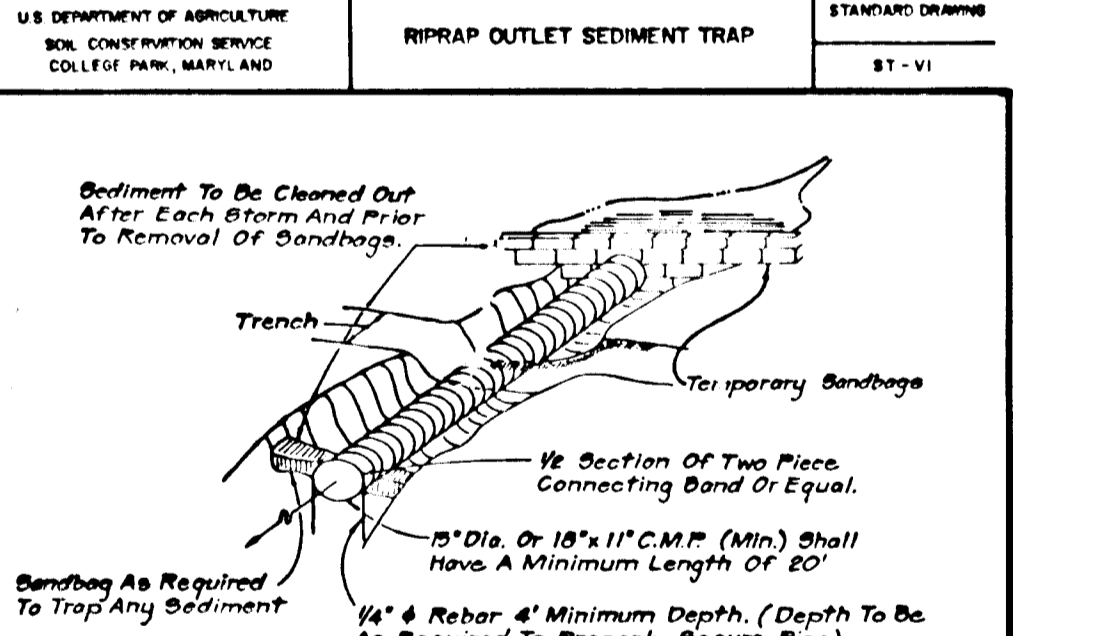
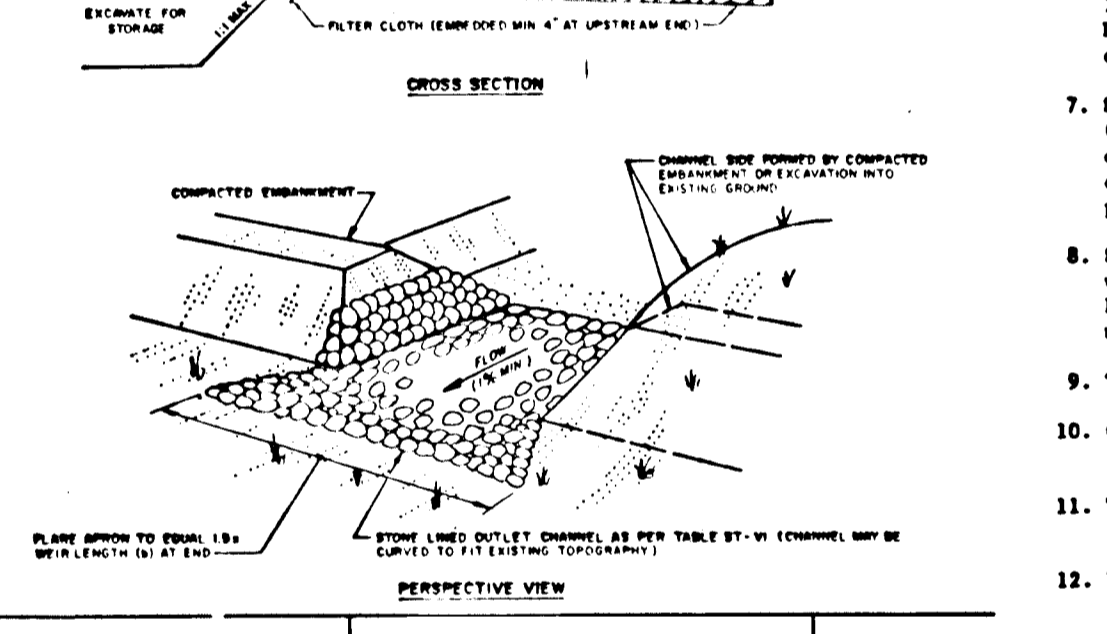
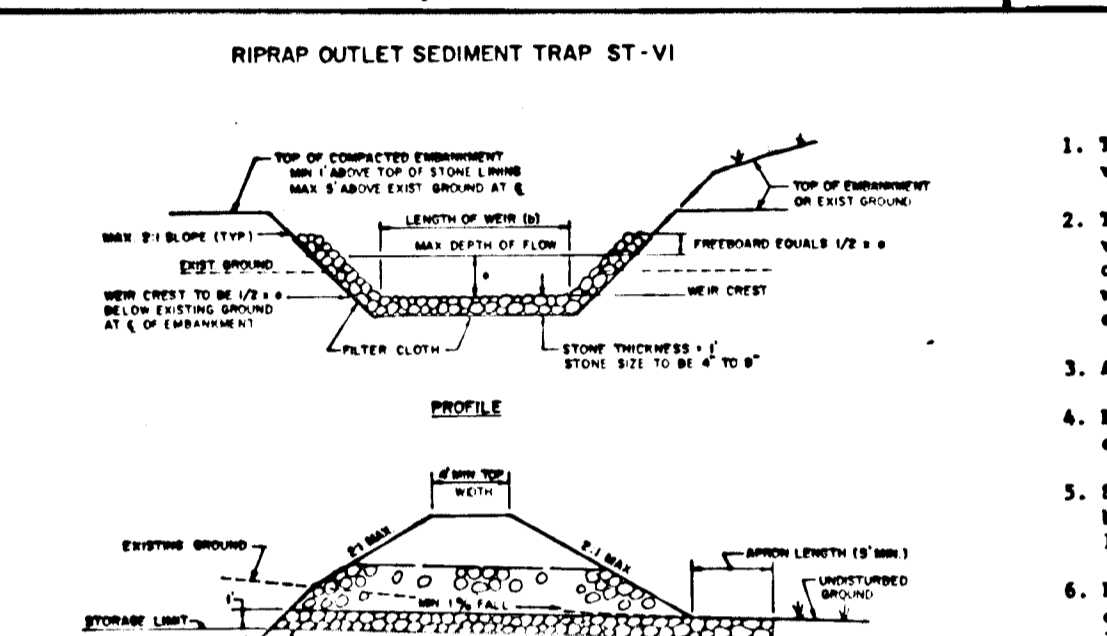
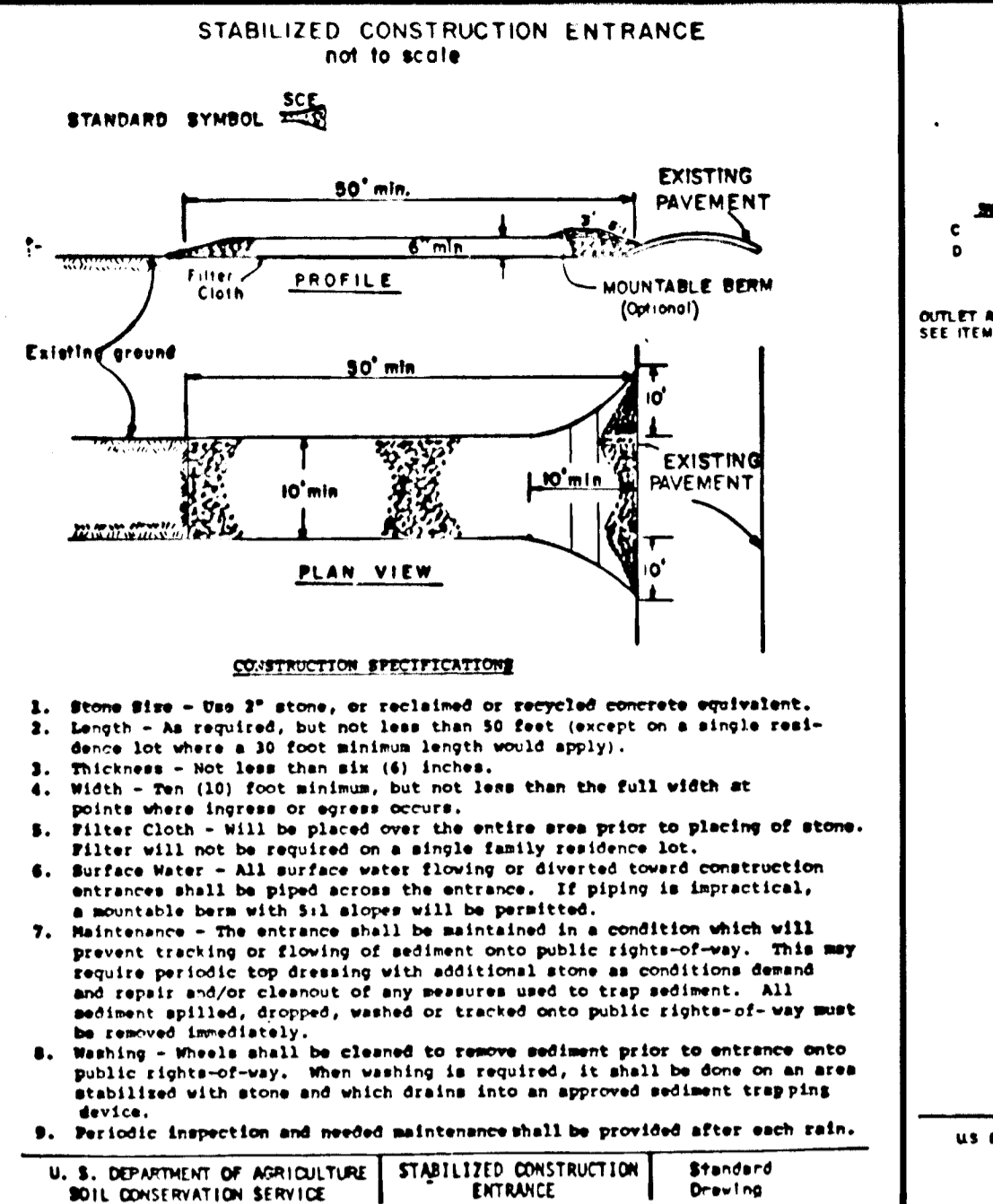
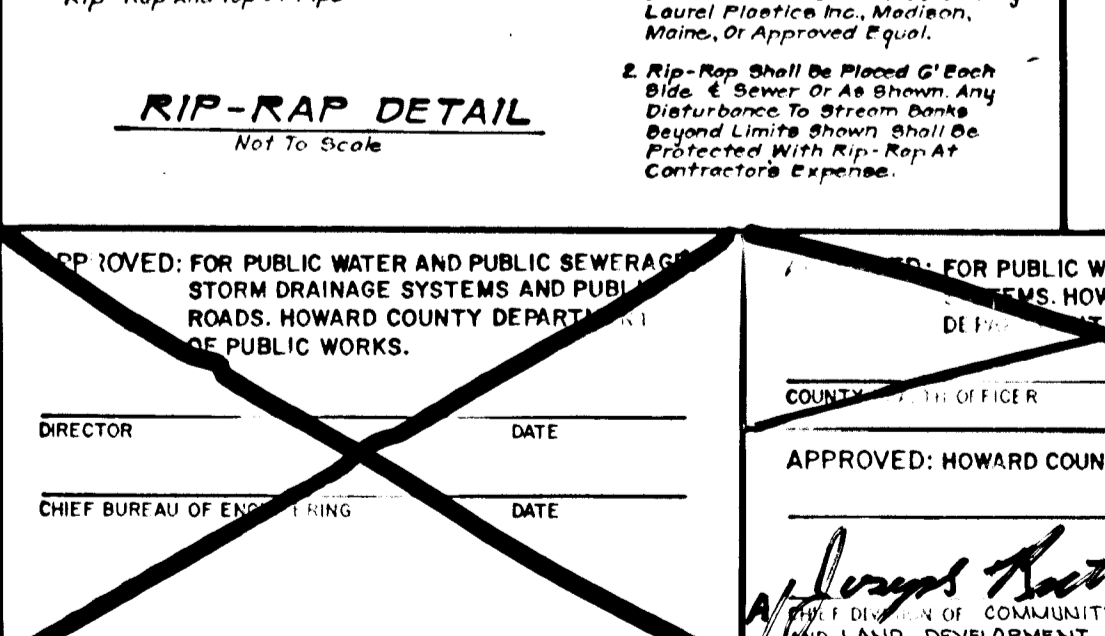
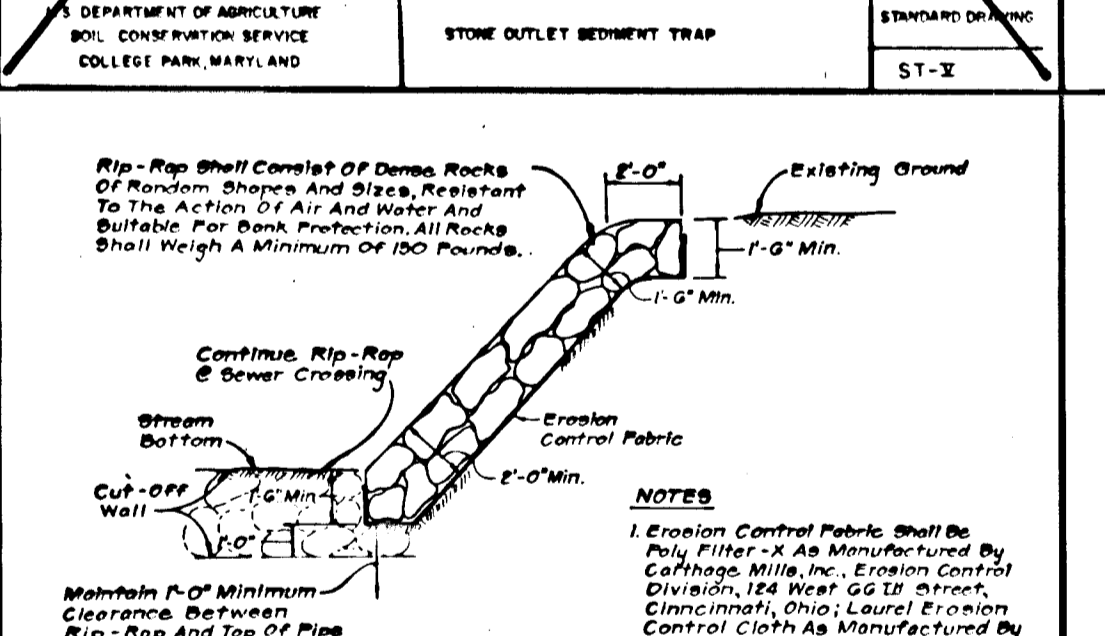
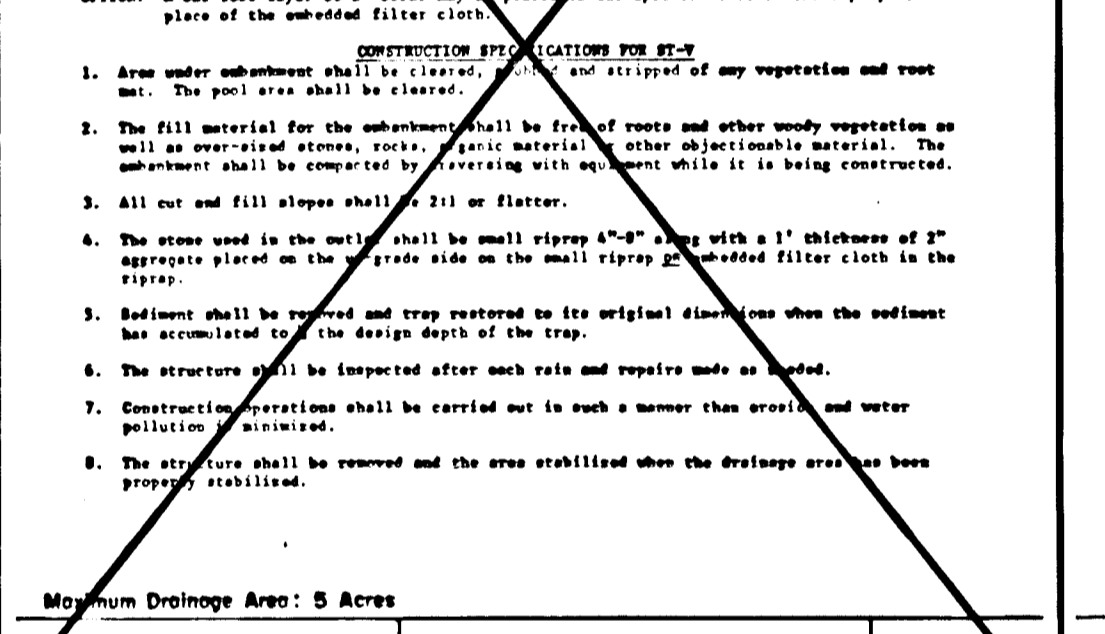
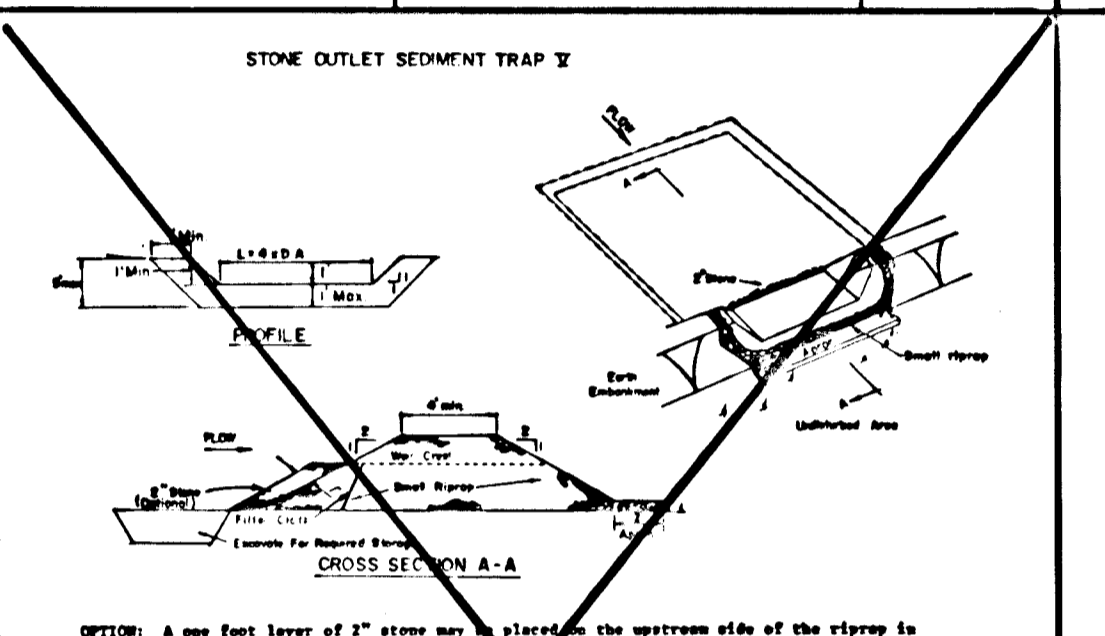
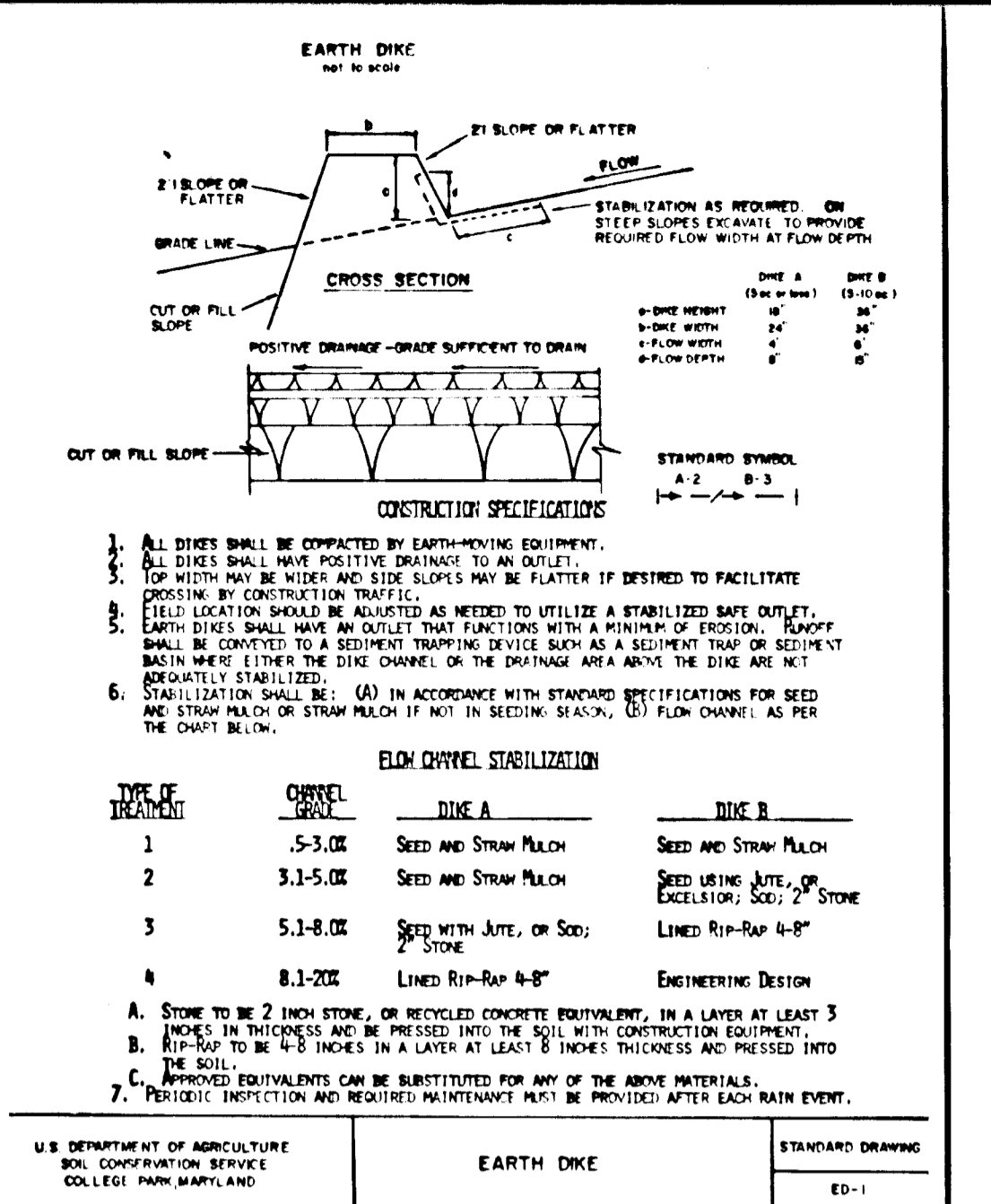
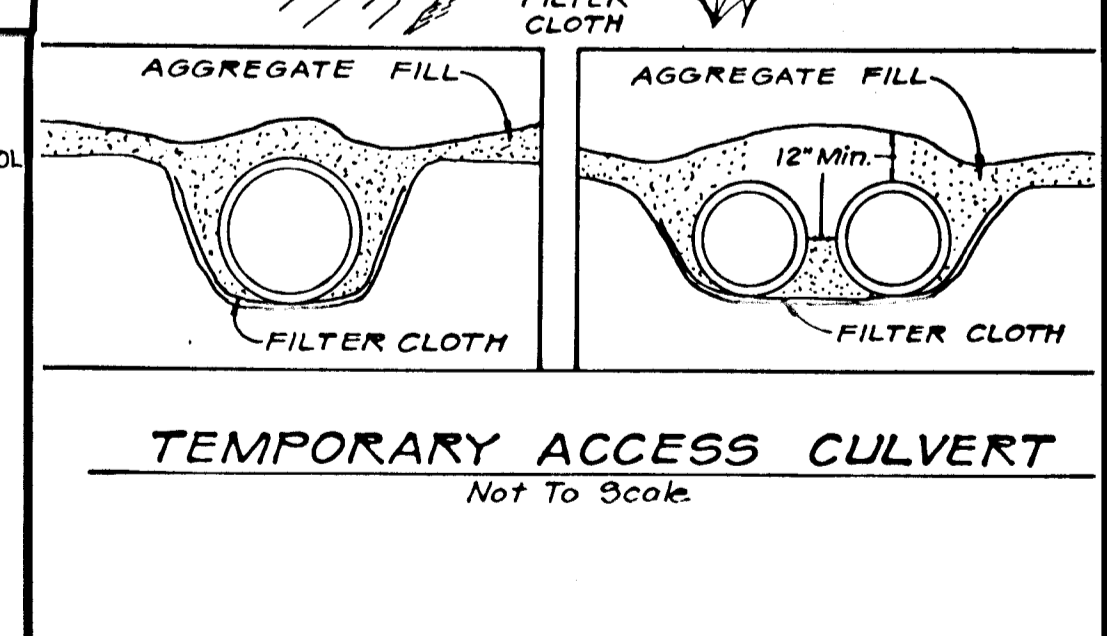
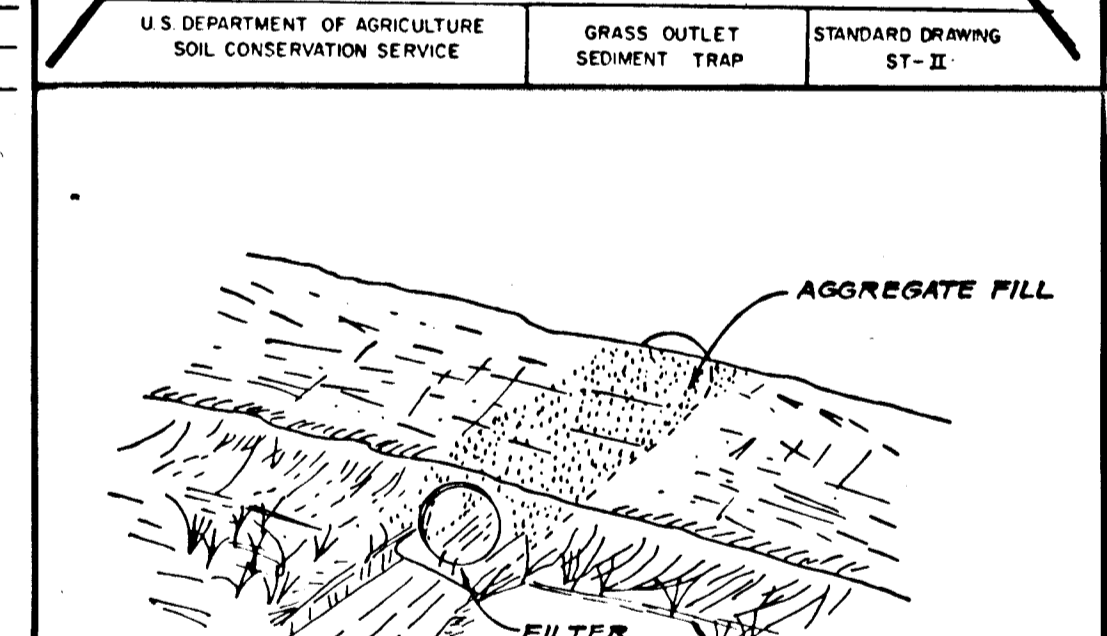
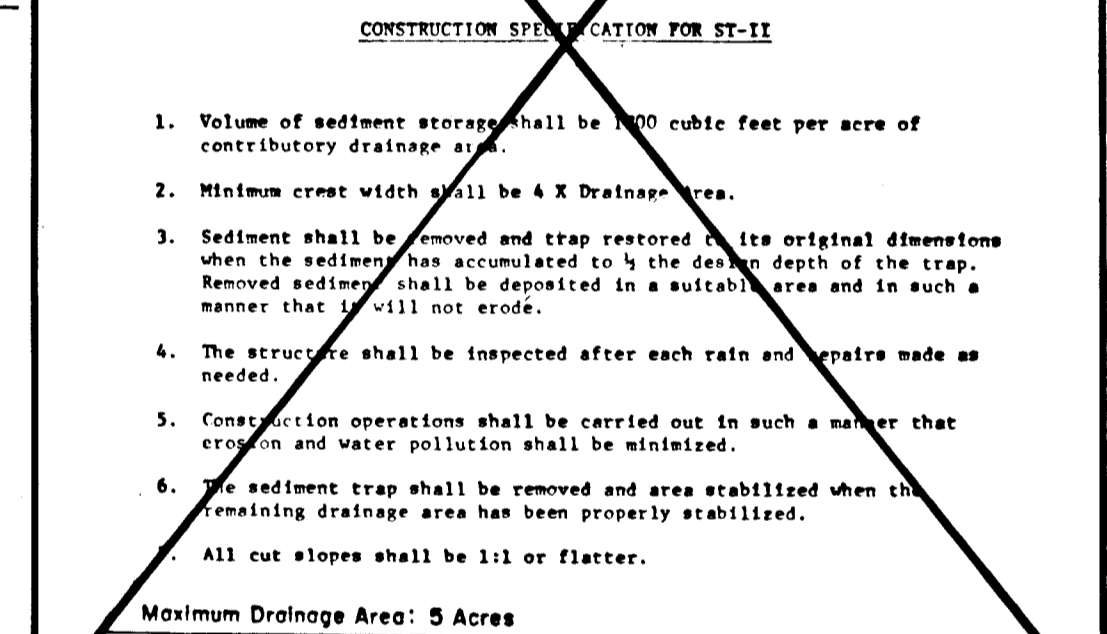
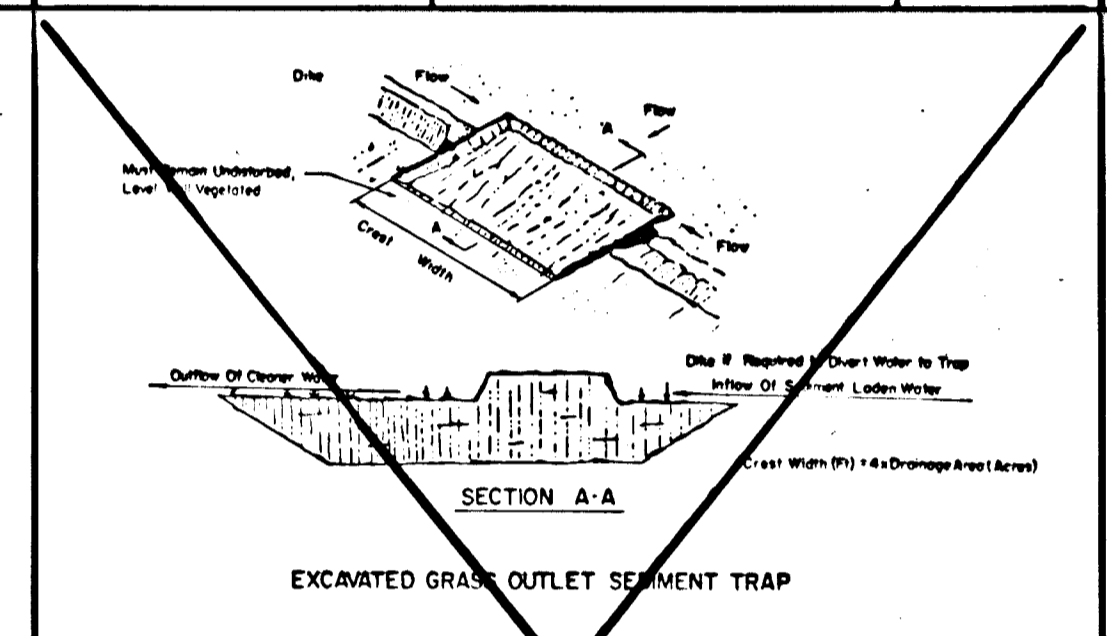
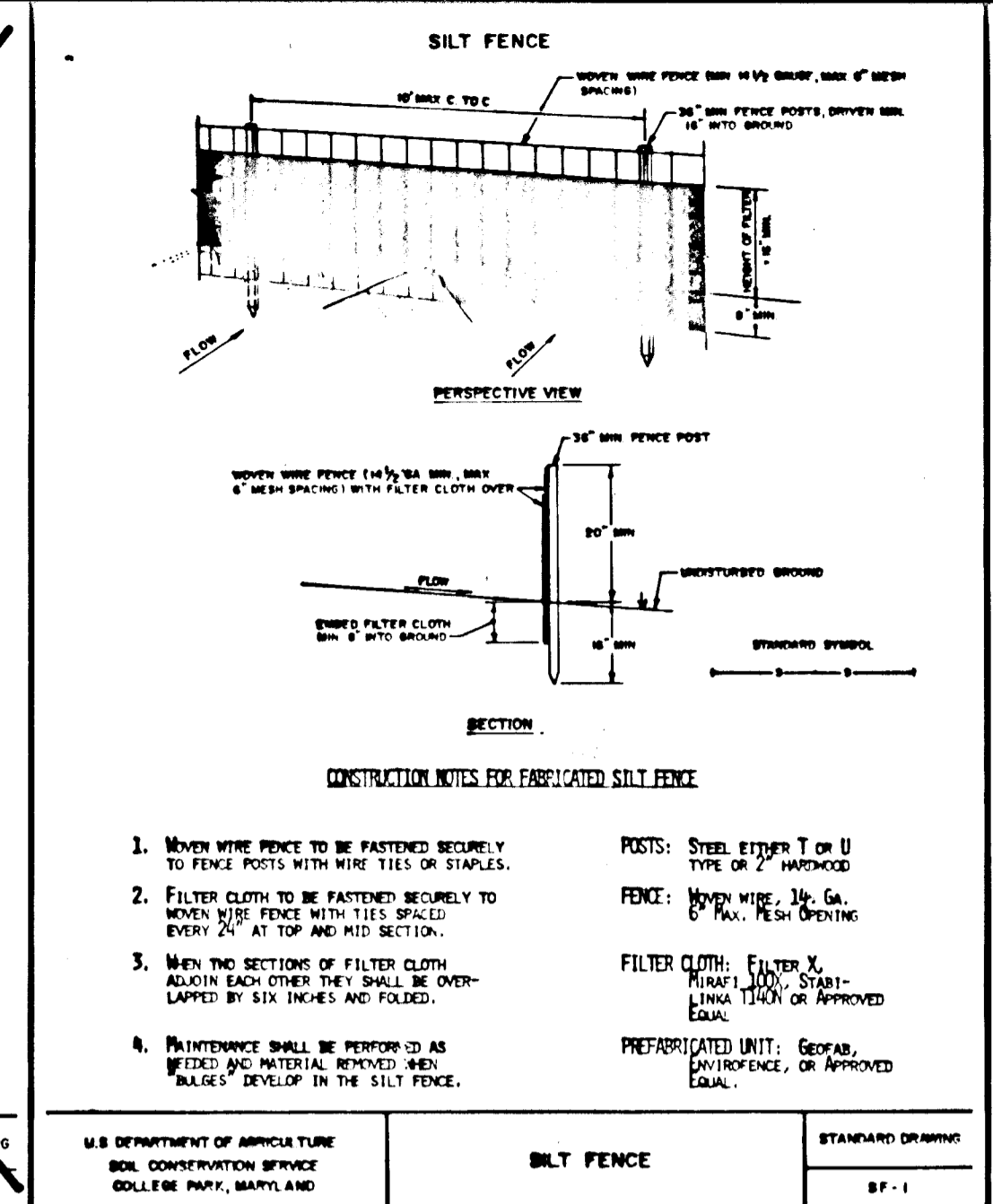
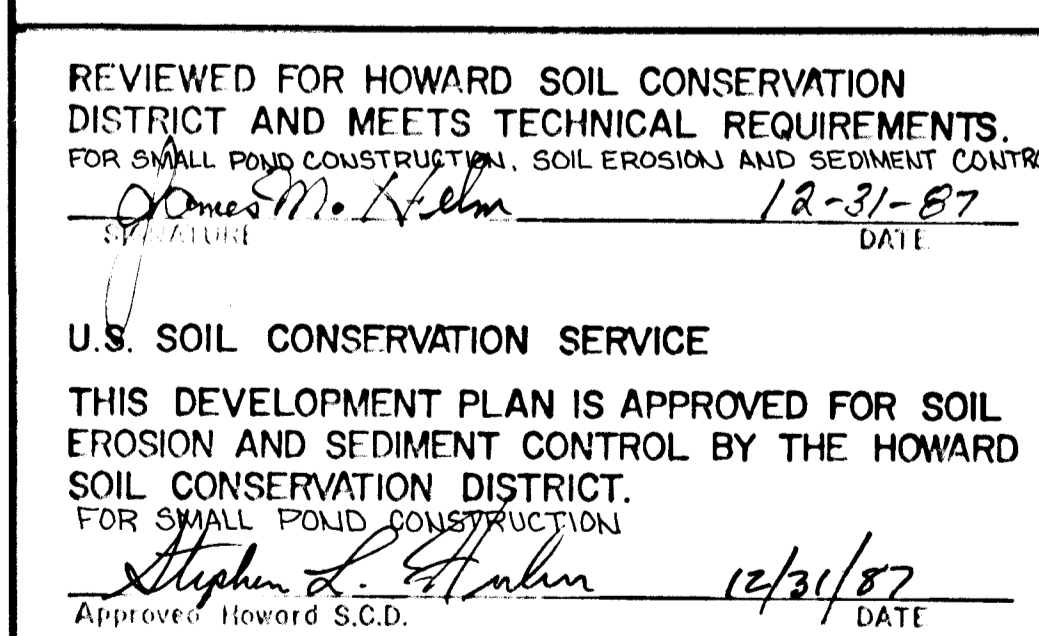
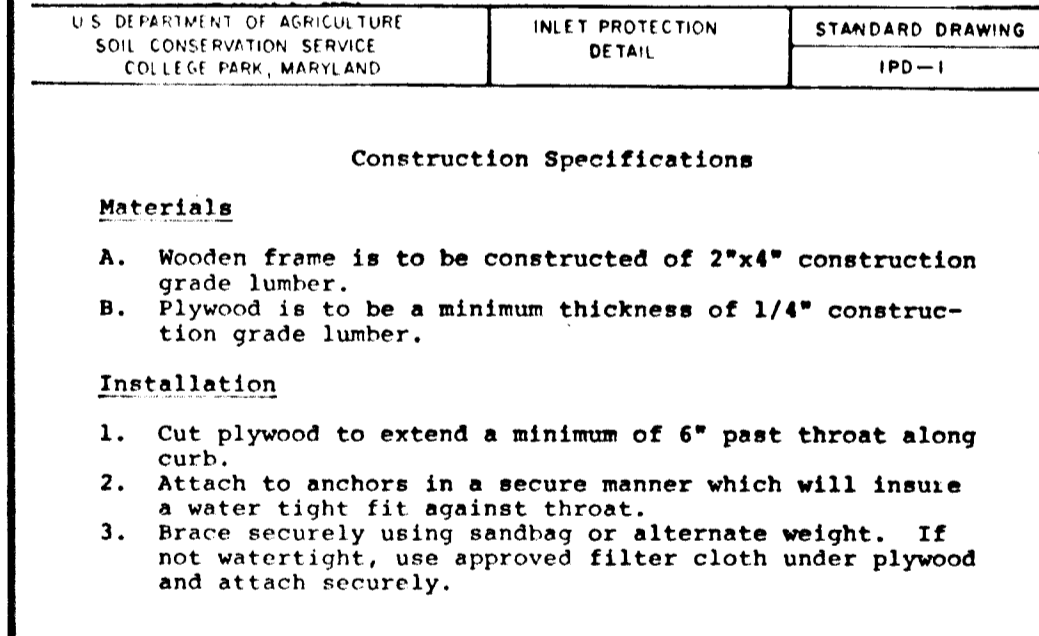
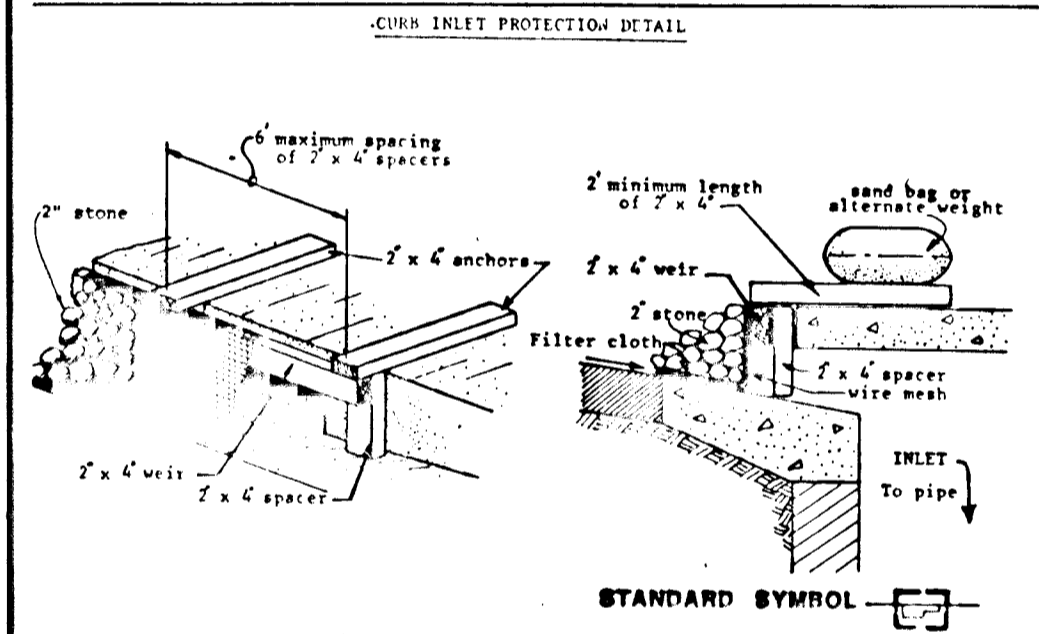
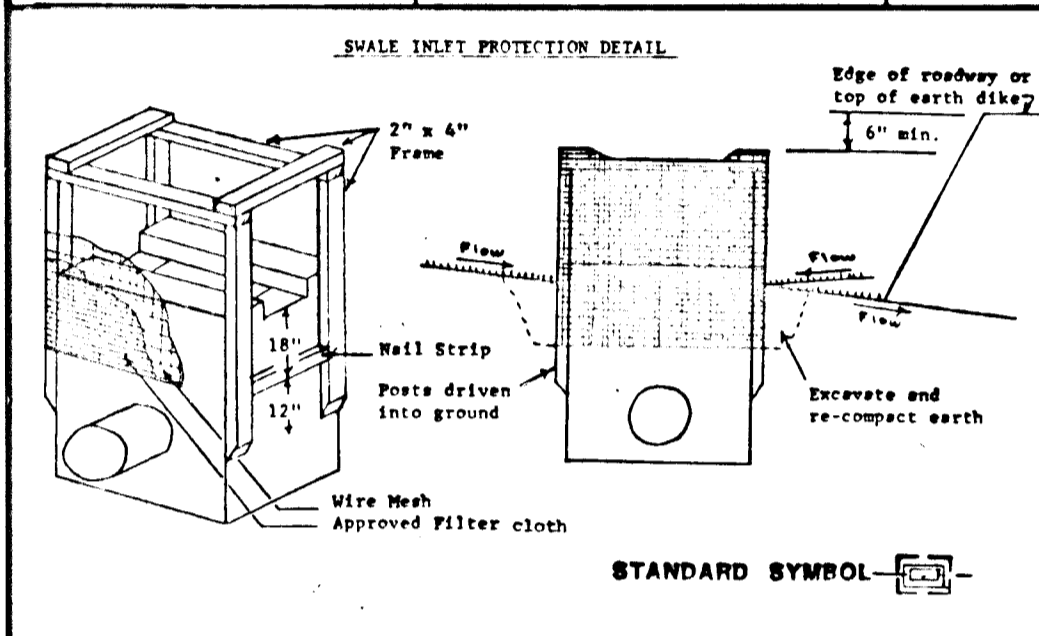
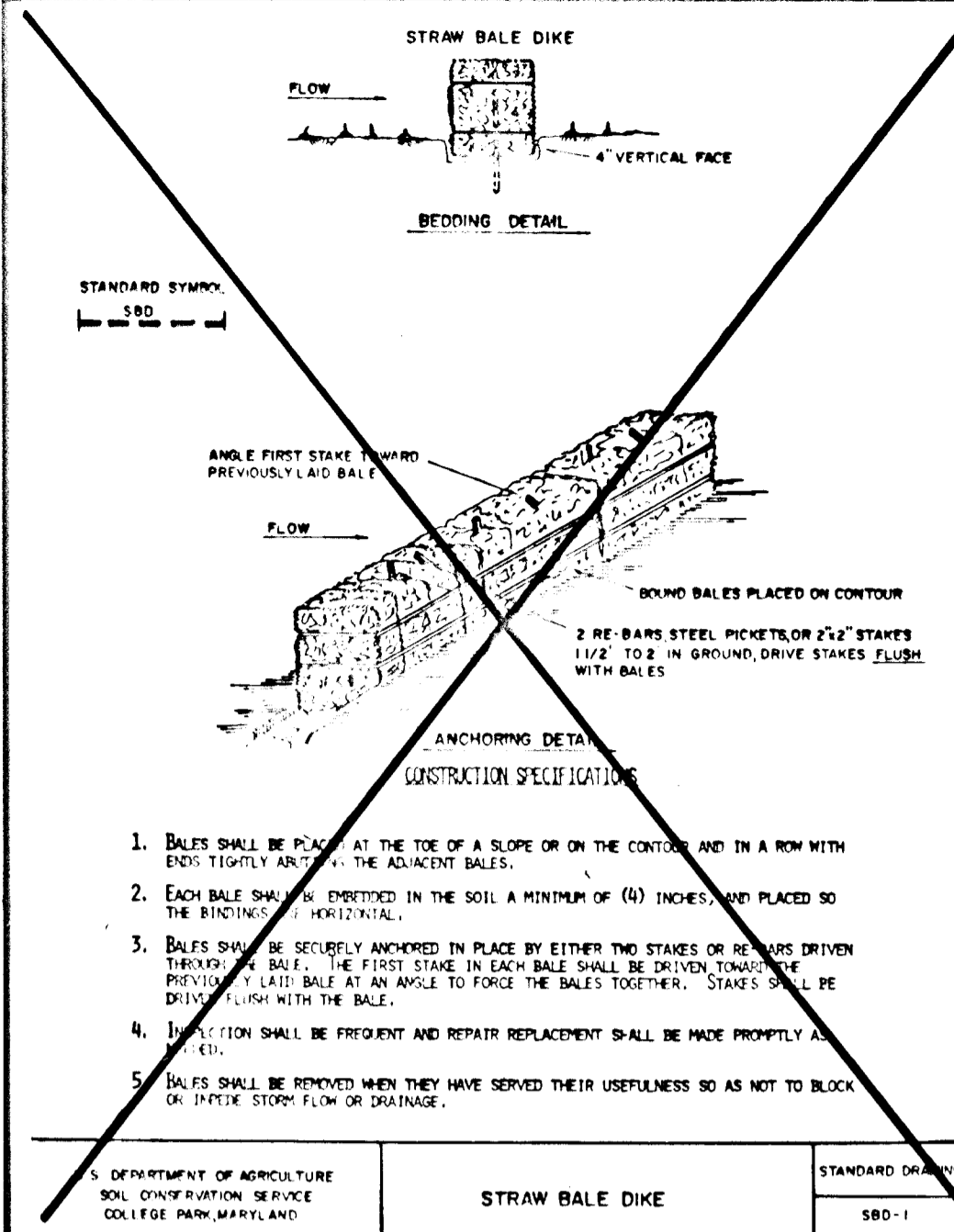
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 Division of Community Planning  
 Date: 1/21/88

KIDDE CONSULTANTS, INC.  
 ENGINEERS • PLANNERS • SURVEYORS  
 1100 WEST STREET, SUITE 100, LAUREL, MD 20707  
 (301) 251-9500 FAX (301) 251-9501

STORMWATER MANAGEMENT  
 PROFILES AND  
 CONSTRUCTION DETAILS  
 HICKORY WOODS  
 SECTION  
 TAX MAP 35 PARCEL 179  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY MARYLAND

DATE: 1/21/88  
 SCALE: AS SHOWN  
 DRAWN: RTT, JR  
 CHECKED: DCW  
 DATE: JULY, 1987

JOB NO: 1687053  
 SHEET 4 OF 7  
 F-88-62



**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:** In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lb/1000 sq ft) and 600 lb per acre 10-10-10 fertilizer (14 lb/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lb per acre 30-0-0 ureaform fertilizer (9 lb/1000 sq ft).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lb/1000 sq ft) and 1000 lb per acre 10-10-10 fertilizer (23 lb/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 60 lbs per acre (1.4 lb/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lb/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use 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 lb/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 lb per acre 10-10-10 fertilizer (14 lb/1000 sq ft)

**Seeding -** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 25 bushel per acre of annual ryegrass (3.2 lb/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lb/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 lb/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 (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**SEEDING CONTROL NOTES**

- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- 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. 51) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). 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: 5.9 Acres  
Area Disturbed: 1.20 Acres  
Area to be roofed or paved: .40 Acres  
Area to be vegetatively stabilized: .80 Acres  
Total Cut: 750 Cu. yds  
Total Fill: 750 Cu. yds  
Offsite waste/borrow area location: \_\_\_\_\_
- 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.

On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

NOTE: FOR SEQUENCE OF CONSTRUCTIONS, SEE SHEET 5 OF 7

**OWNER/DEVELOPER**  
TERRAFIRM  
REAL ESTATE DEVELOPMENT  
6258 CARDINAL LANE  
COLUMBIA MARYLAND 21044

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Director: \_\_\_\_\_ Date: 1-11-88  
Chief, Land Development Division  
Signature: \_\_\_\_\_ Date: 1/13/88  
Chief, Bureau of Highways  
Signature: \_\_\_\_\_ Date: 1-14-88  
Chief, Bureau of Engineering

**OWNER'S/ DEVELOPER'S CERTIFICATION**  
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 inspection by the Howard Soil Conservation District.

**ENGINEER'S CERTIFICATE**  
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.

**KIDDE CONSULTANTS, INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
1100 WEST STREET / SUITE 100 / LAUREL, MD 20707  
(Wash.) (301) 953-1821 / 792-8086 (Balt.)

**HICKORY WOODS**  
LOTS 1 THRU 12  
SECTION  
TAX MAP 95 PARCEL 179  
5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND

DATE	REVISIONS	SHEET	DATE	JOB NUMBER
		5 OF 7	JULY, 1987	1687053

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Director: \_\_\_\_\_ Date: 1-11-88  
Chief, Land Development Division  
Signature: \_\_\_\_\_ Date: 1/13/88  
Chief, Bureau of Highways  
Signature: \_\_\_\_\_ Date: 1-14-88  
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LOTS 1 THRU 12  
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**HICKORY WOODS**  
LOTS 1 THRU 12  
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**HICKORY WOODS**  
LOTS 1 THRU 12  
SECTION  
TAX MAP 95 PARCEL 179  
5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND

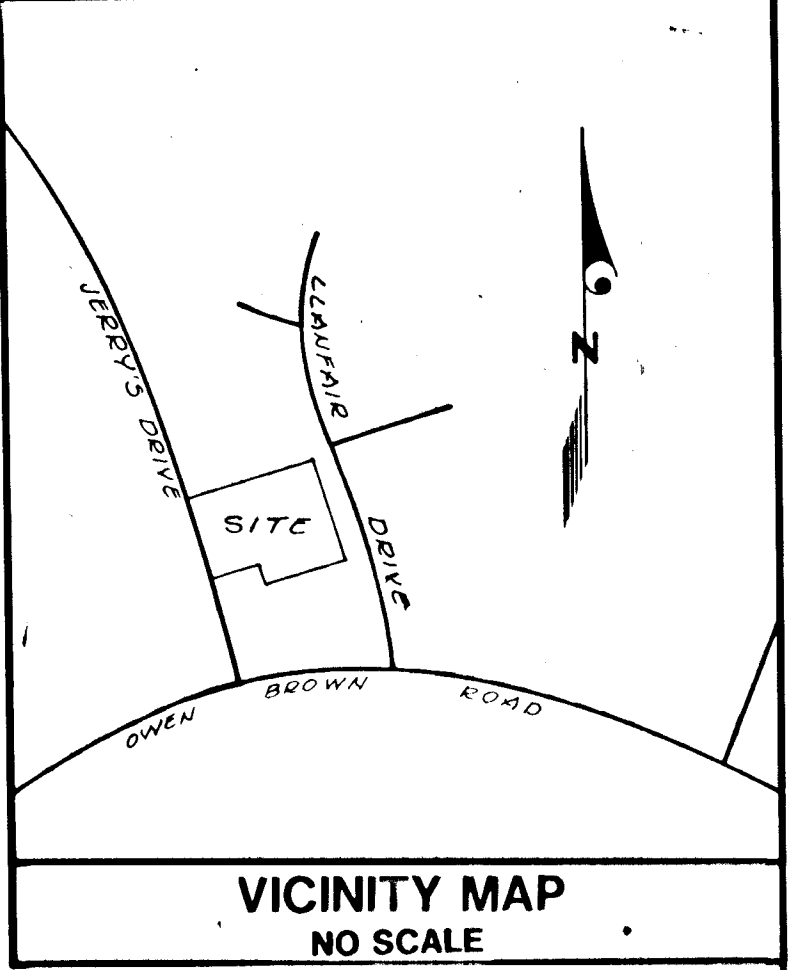
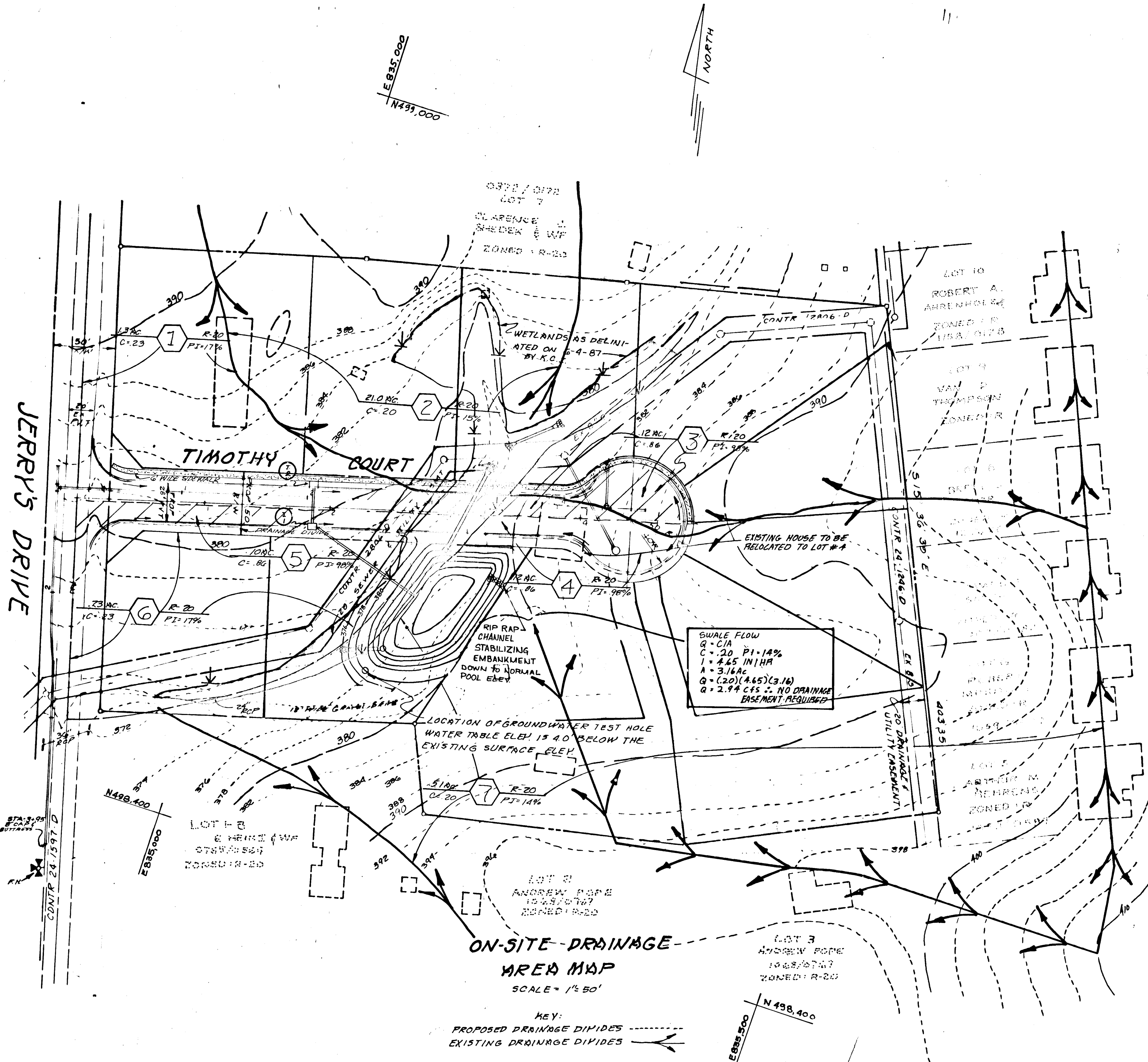
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**HICKORY WOODS**  
LOTS 1 THRU 12  
SECTION  
TAX MAP 95 PARCEL 179  
5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND

F-88-62



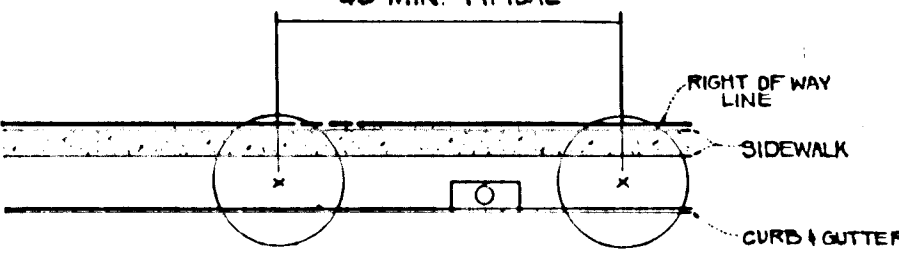
TOTAL AREA DRAINING TO THE DOWNSTREAM R. = 28.47 ACRES

**DRAINAGE AREA MAP FOR HICKORY WOODS**  
 TAX MAP 35 PARCEL 179  
 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND.  
 1687053

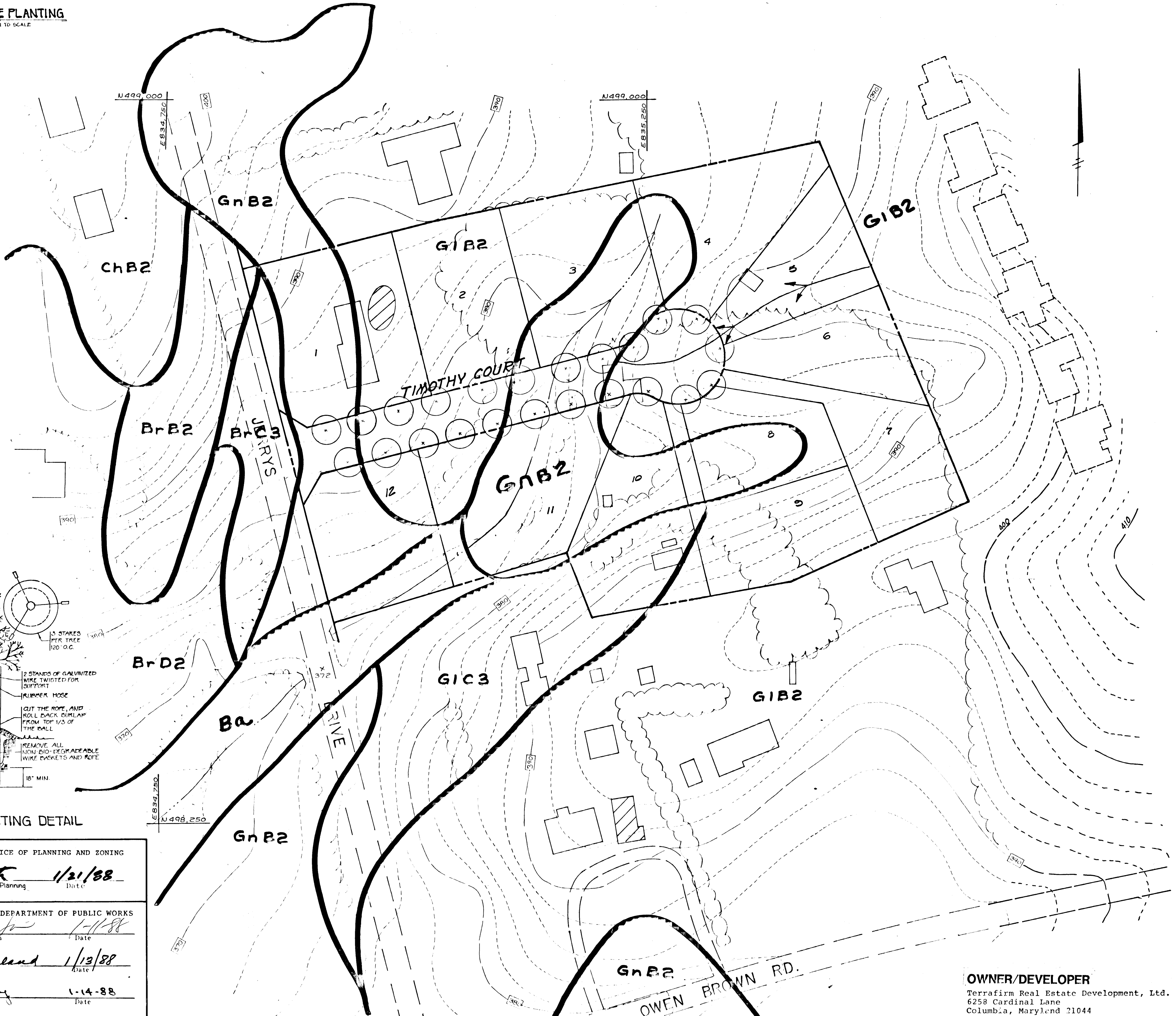
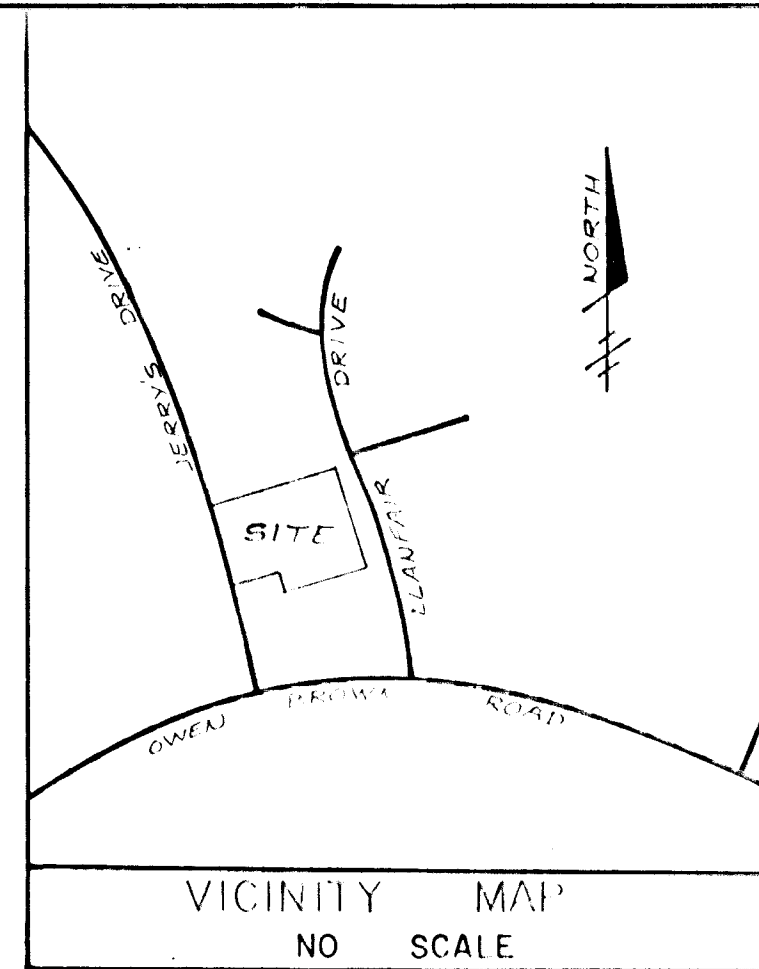
<p>APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING</p> <p><i>Joseph Booth</i> 1/21/88      Chief, Division of Community Planning and Land Development</p>	<p>APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p><i>Phillip L. F.</i> 1/12/88      Chief, Land Development Division</p> <p><i>Francise W. Weiland</i> 1/13/88      Chief, Bureau of Highways</p> <p><i>William J. P.</i> 1-14-88      Chief, Bureau of Engineering</p>	<p><b>OWNER/DEVELOPER</b>      TERRAFIRM REAL ESTATE DEVELOPMENT, LIMITED.      6258 CARDINAL LANE      COLUMBIA, MARYLAND 21044</p>	<p><b>KIDDE CONSULTANTS, INC.</b>      ENGINEERS • PLANNERS • SURVEYORS      1100 WEST STREET / SUITE 100 / LAUREL, MD 20707      (Wash.) (301) 953-1821 / 792-8086 (Balt.)</p> <p>DATE: JULY 1987 SCALE: AS SHOWN</p>
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F-88-62

2 1/2" CALIPER - SUGAR MAPLES  
40' MIN. TYPICAL



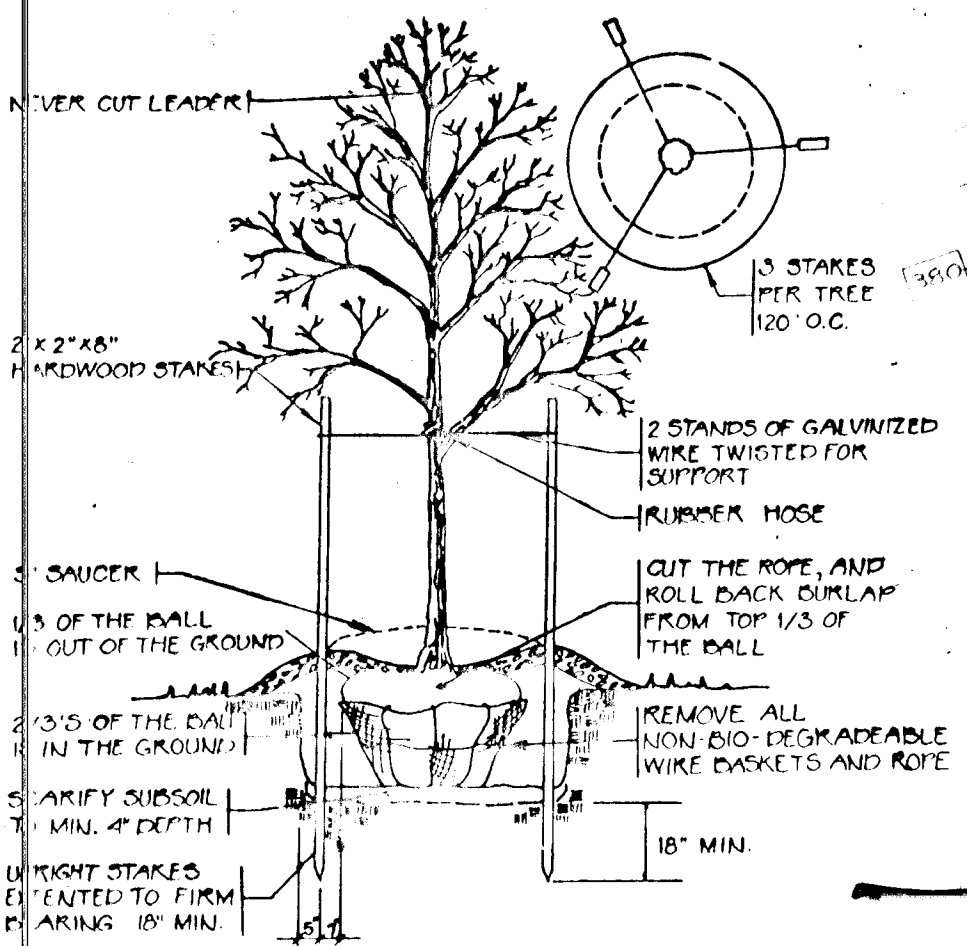
TYPICAL STREET TREE PLANTING  
NOT TO SCALE



**SOILS LEGEND**

Soils Type	Group	Description
*Ba	D	Baile Silt Loam
Br B2	C	Brandywine Loam 3-8% slopes moderately eroded
Br C3	C	Brandywine Loam 8-15% slopes severely eroded
Br D2	C	Brandywine Loam 15-25% slopes moderately eroded
Ch C2	B	Chester Silt Loam 8-15% slopes moderately eroded
G1 B2	B	Glenelg Loam 3-8% slopes moderately eroded
G1 C3	B	Glenelg Loam 8-15% slopes severely eroded
Gn B2	C	Glenville Silt Loam 3-8% slopes moderately eroded.

\*HYDRIC SOIL



TREE PLANTING DETAIL  
NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Joseph Keith* 1/21/88  
 Chief, Division of Community Planning  
 Land Development

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William J. [unclear]* 1-11-88  
 Chief, Land Development Division

*Bronville W. Wickland* 1/13/88  
 Chief, Bureau of Highways

*William [unclear]* 1-14-88  
 Chief, Bureau of Engineering

SOILS & TREES MAP

HICKORY WOODS

TAX MAP 35 PARCEL 179  
 5TH ELECTION DISTRICT HOWARD CO., MD  
 SHEET 7 OF 7

REGISTERED PROFESSIONAL ENGINEER

*[Signature]*

EC PATMORE MD PR 8978  
 MAY, 1987 AS SHOWN

OWNER/DEVELOPER  
 Terrafirm Real Estate Development, Ltd.  
 6258 Cardinal Lane  
 Columbia, Maryland 21044

T-88-62