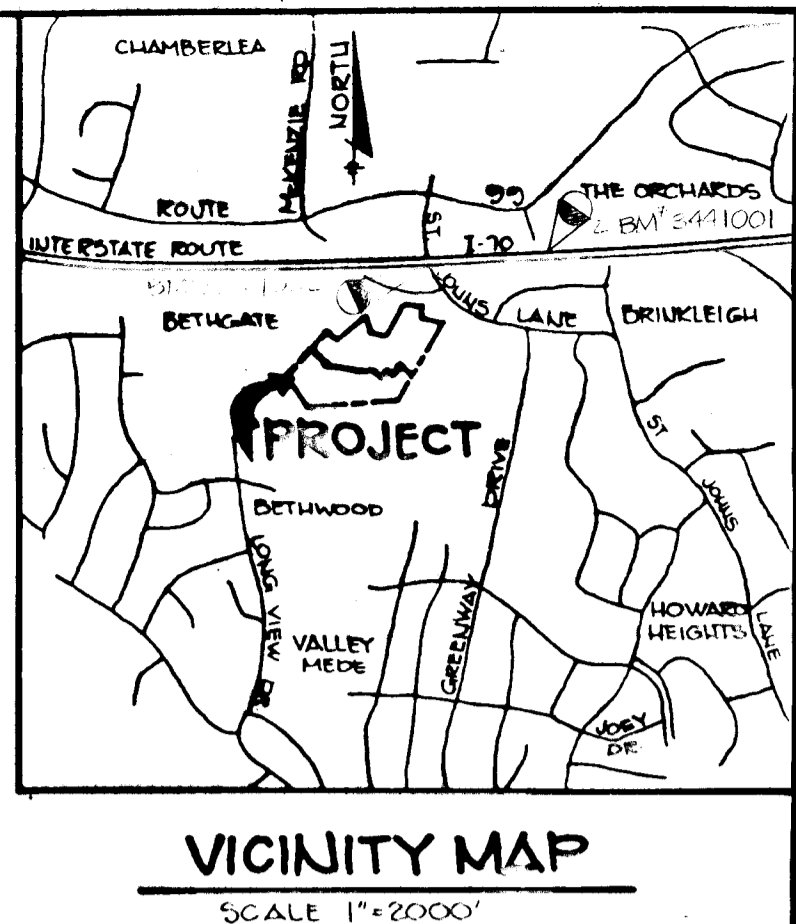
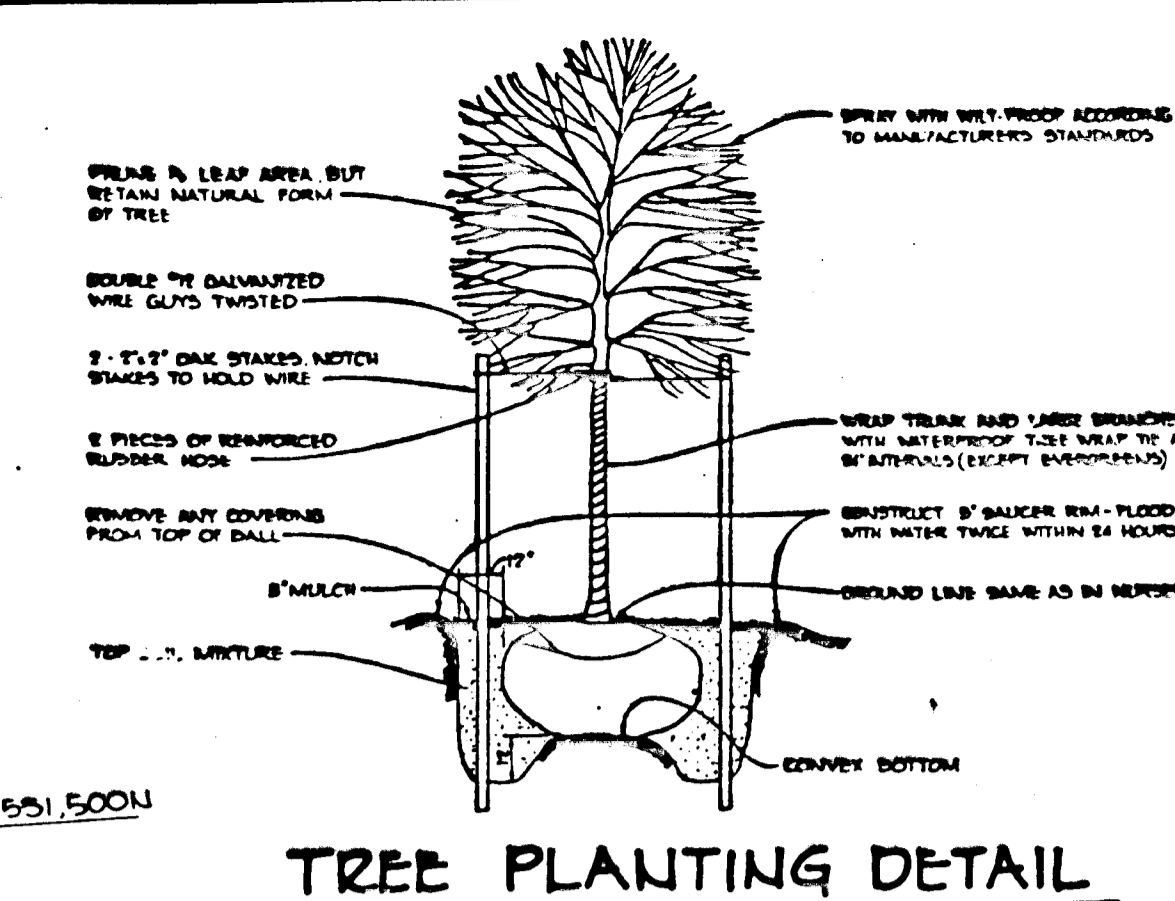
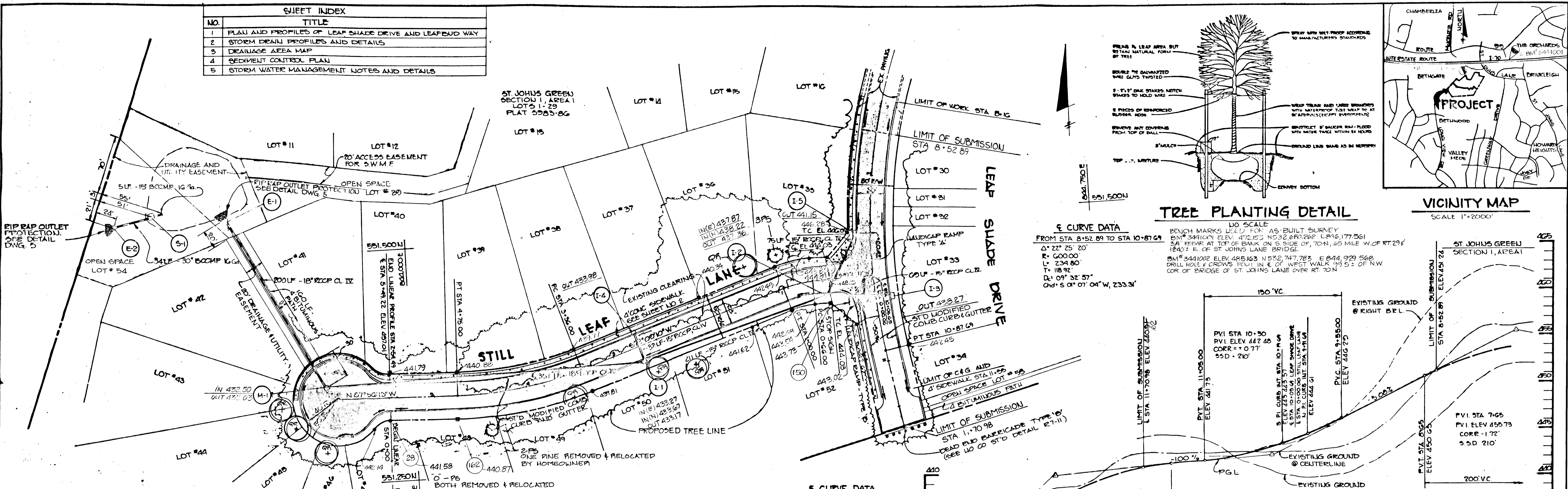
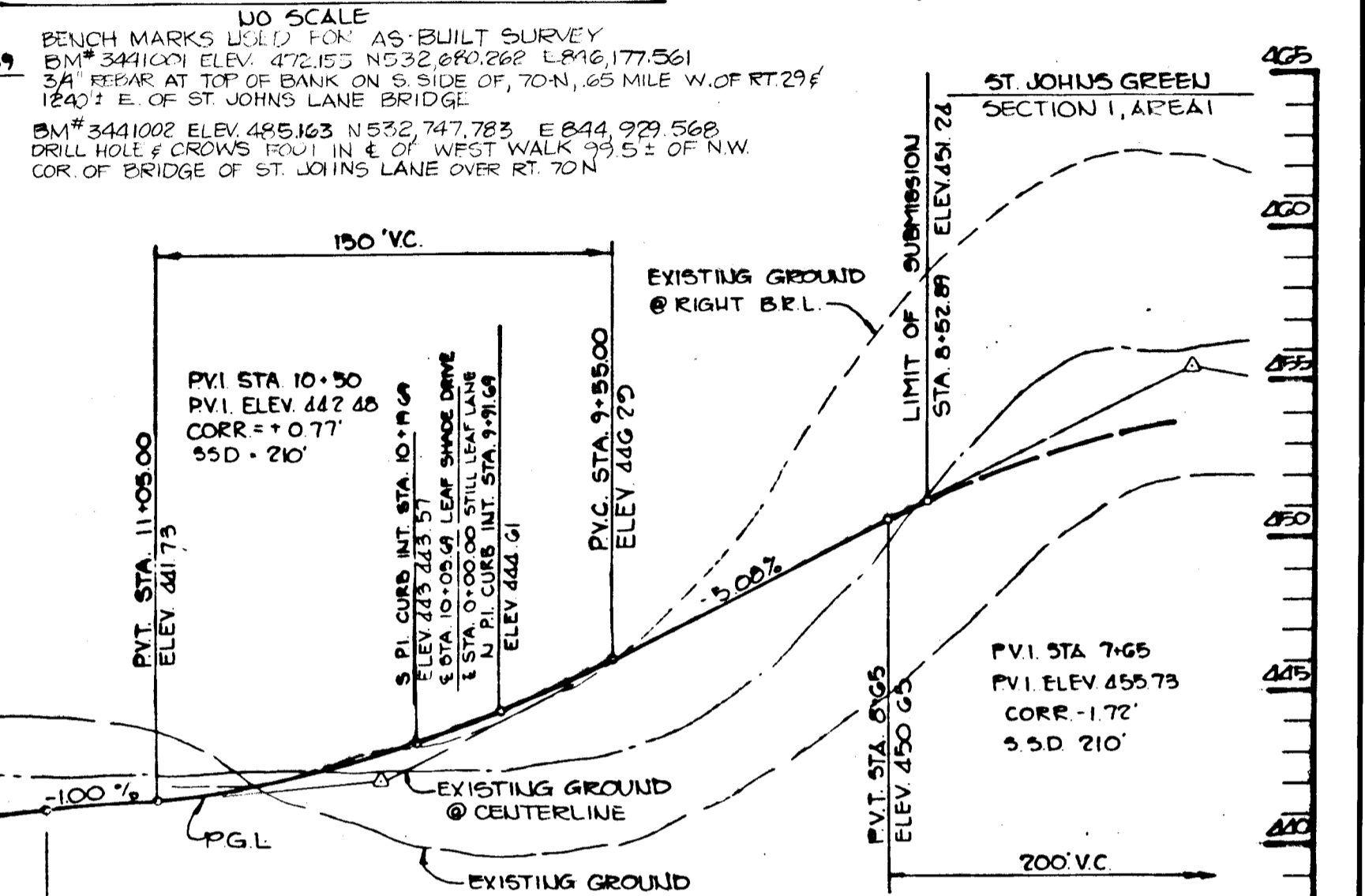


SHEET INDEX	
NO.	TITLE
1	PLAN AND PROFILES OF LEAF SHADE DRIVE AND LEAFBUD WAY
2	STORM DRAIN PROFILES AND DETAILS
3	DRAINAGE AREA MAP
4	SEWAGE CONTROL PLAN
5	STORM WATER MANAGEMENT NOTES AND DETAILS



**ε CURVE DATA**  
 FROM STA 8+52.89 TO STA 10+87.69  
 Δ = 22° 52' 20"  
 R = 600.00'  
 L = 234.80'  
 T = 118.92'  
 D = 0° 32' 57"  
 Chd = 5' 07' 04" W, 233.31'

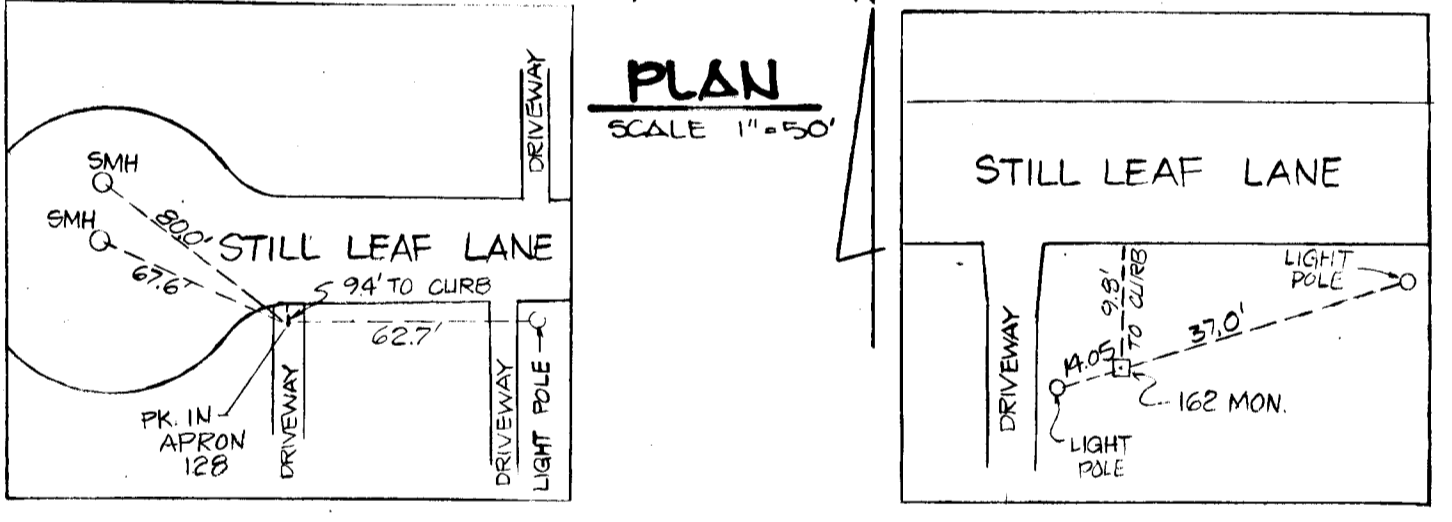


**PLANT LIST**

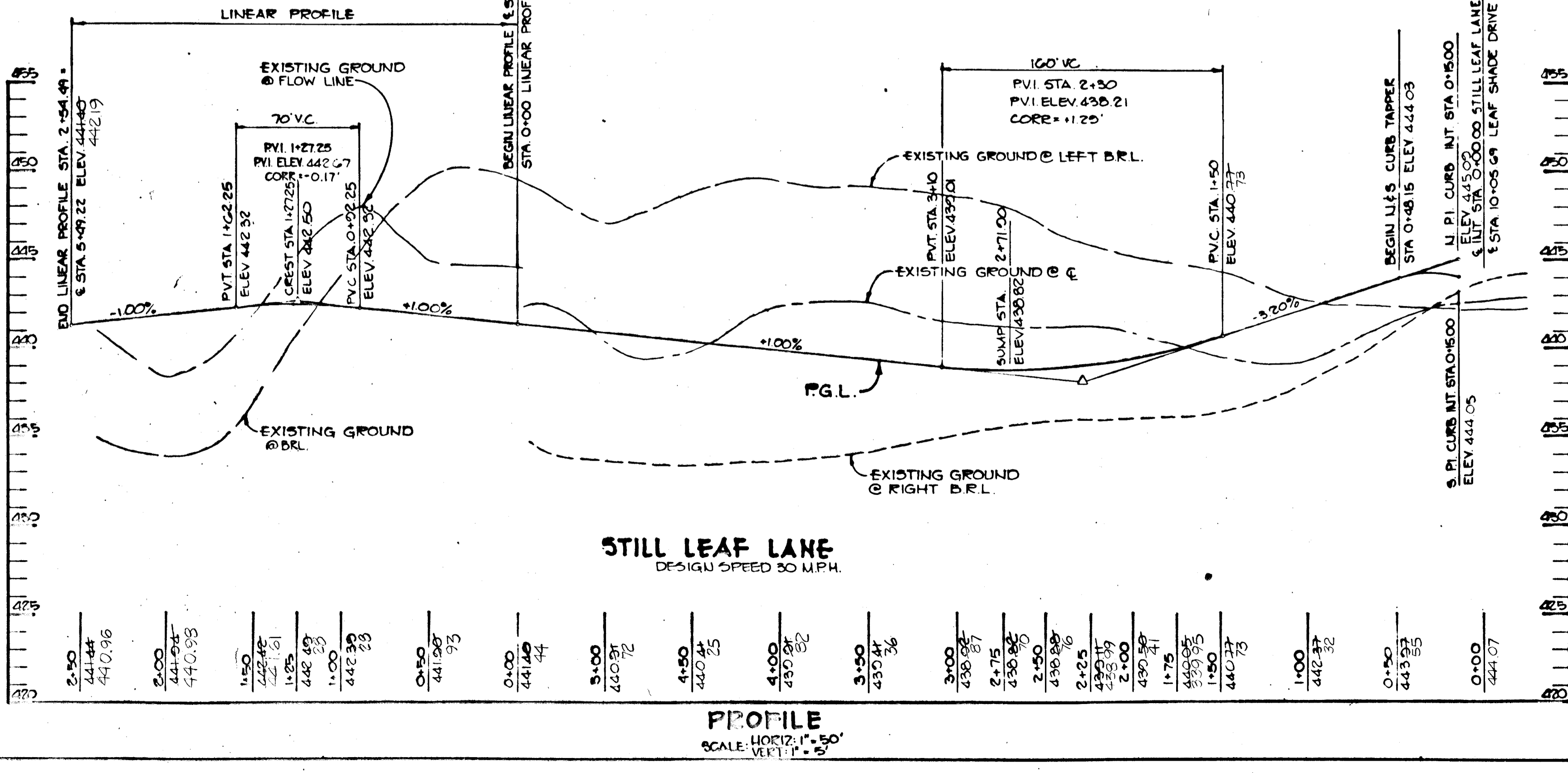
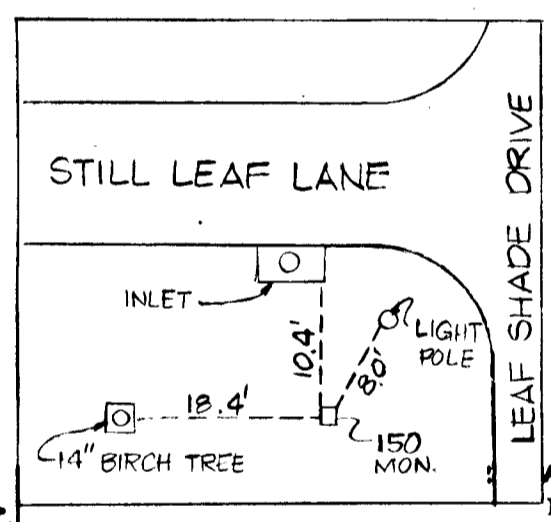
SYM	QUAN.	NAME	SIZE	REMARKS
PS	5	PINUS STROBUS - Eastern White Pine - 3 REMOVED AND RELOCATED BY HOMEOWNER	6'-8" Ht. 2 1/2" Cal. Unsheared	B & B Full Head
QR	7	QUERCUS BOREALIS - Northern Red Oak	13'-15" Ht. 2 1/2"-3" Cal.	B & B Full Head

**NOTE:**  
 All trees of 2 1/2" or better caliper within 30' of public road frontage are to be preserved; these existing trees are preserved as substitute for new street trees.

**ε CURVE DATA**  
 FROM STA 3+36.00 TO STA 4+75.00  
 Δ = 19° 54' 37"  
 R = 400.00'  
 L = 139.00'  
 T = 70.21'  
 D = 1° 19' 26"  
 Chd = 5' 86" CC, 29' W, 138.30'



**ε CURVE DATA**  
 FROM STA 0+66.00 TO STA 1+00.00  
 Δ = 15° 35' 04"  
 R = 125.00'  
 L = 34.00'  
 T = 17.11'  
 D = 45° 50' 12"  
 Chd = 5' 79' 56" 42' W, 33.90'



- GENERAL NOTES**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
  - THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
  - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:  
 MISS UTILITY 559-0100  
 BELL TELEPHONE SYSTEM 393-3649  
 LONG DISTANCE CABLE DIVISION 393-3553 or 3554  
 BALTIMORE GAS AND ELECTRIC COMPANY 539-8000, ext. 691  
 HOWARD COUNTY BUREAU OF UTILITIES 992-2366  
 HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK) 792-7272
  - ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
  - ALL STREET CURB RETURNS SHALL HAVE 35.0' RADIUS UNLESS OTHERWISE NOTED.
  - STORM DRAIN TRIGGERS WITHIN ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
  - INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1978 EDITION.
  - PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
  - DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:  
 ALL 30' RIGHT-OF-WAYS 30 M.P.H.
  - ALL ELEVATIONS SHOWN ARE BASED ON U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
  - ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 93% COMPACTION.
  - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
  - PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
  - SUBJECT PROPERTY ZONED R-SA PER 2-8-85 COMPREHENSIVE ZONING PLAN.
  - TOPO TAKEN FROM FIELD RUN SURVEY DATED JUNE, 1984 BY THE RIEMER GROUP, INC.
  - NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
  - ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME I OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
  - SUBJECT TO VP-25-68.

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 [Signature] 11-18-85  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 11-15-85  
 CHIEF, BUREAU OF ENGINEERING  
 DATE

6-27-80	1	STREET TREE LOCATION REVISION
5-31-80	1	STREET TREE LOCATION REVISION
DATE	NO.	REVISION

OWNER/DEVELOPER  
 OXFORD LAND DEVELOPMENT CORPORATION  
 1185 GREENWOOD ROAD  
 PIKEVILLE, MARYLAND 21208

PROJECT  
**ST. JOHNS GREEN**  
 LOTS 30-54  
 SECTION I, AREA 2

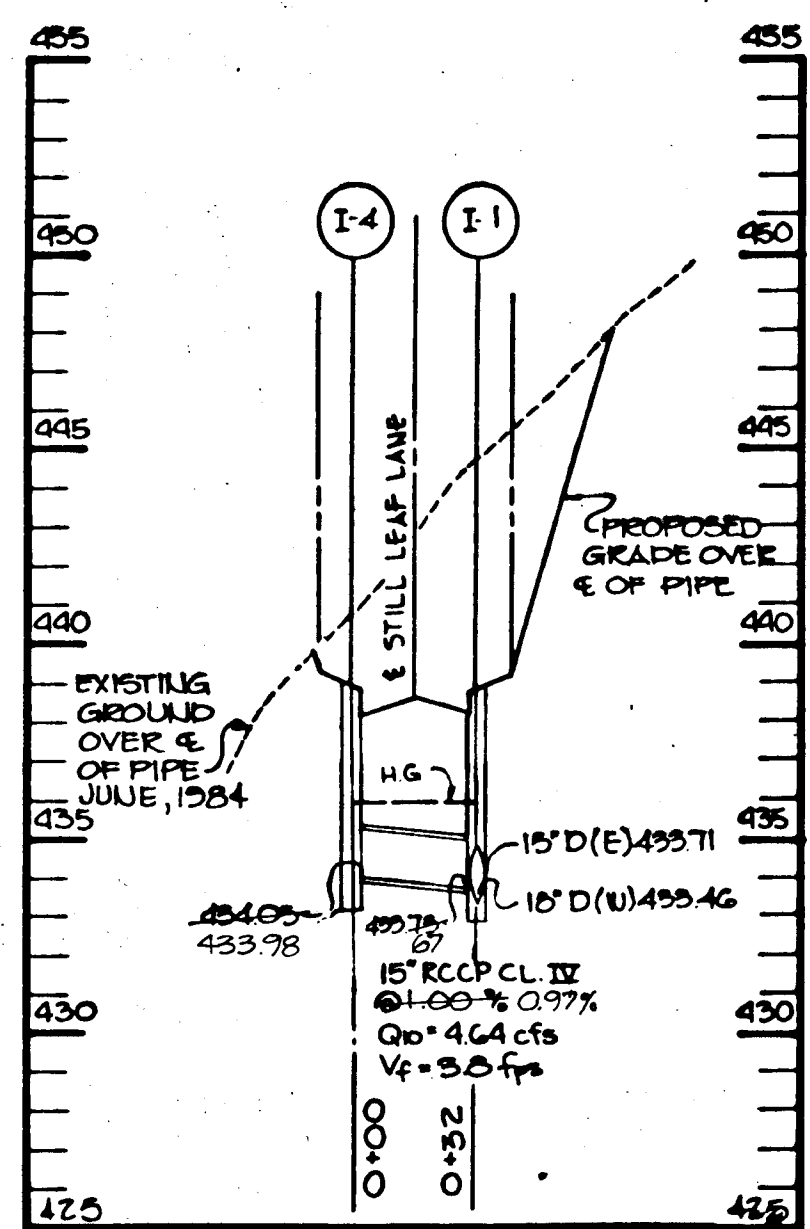
AREA TAX MAP NO. 11-1-80  
 2ND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 ZONED R-20

TITLE  
**PLAN AND PROFILE OF STILL LEAF LANE**

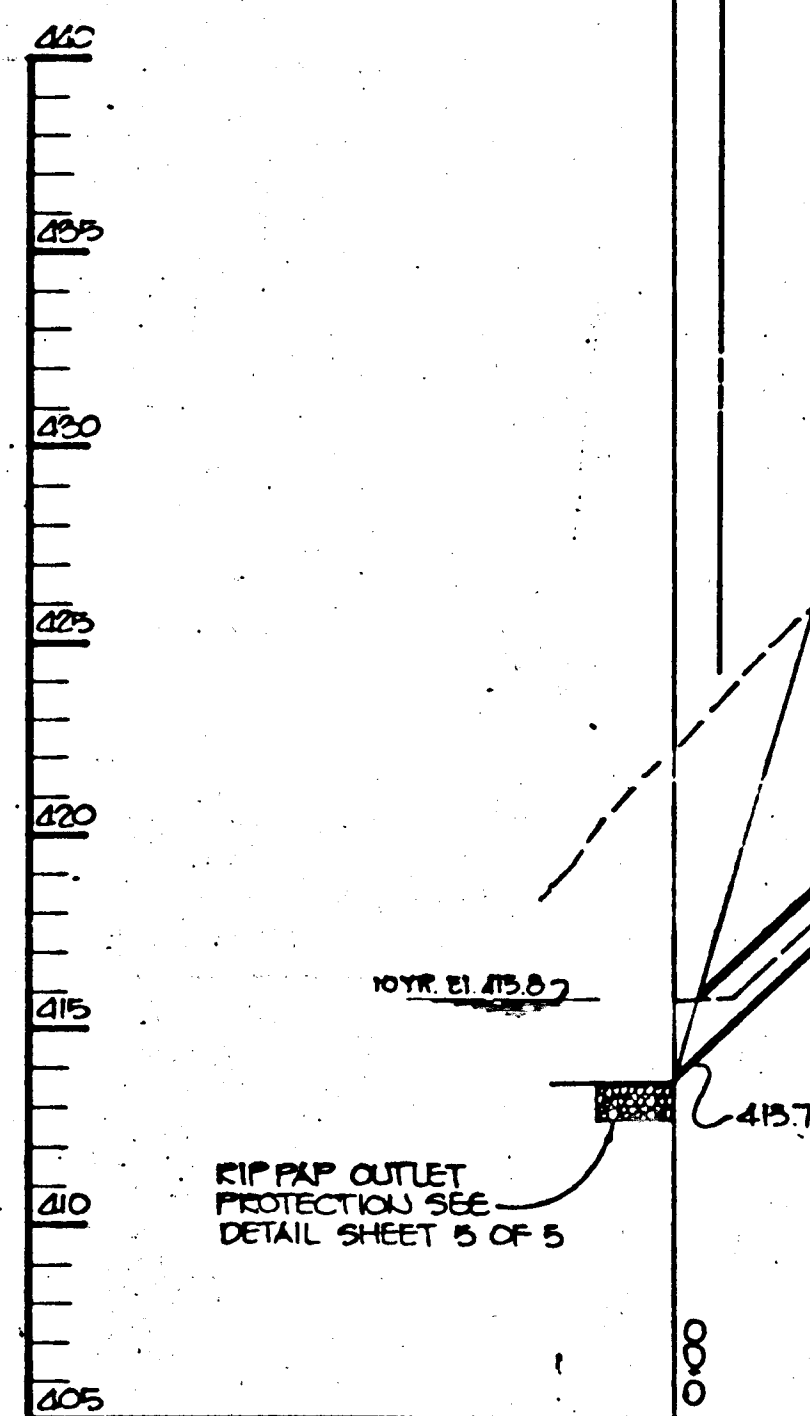
**THE RIEMER GROUP, INC.**  
 A LAND PLANNING, DESIGN & CIVIL ENGINEERING FIRM  
 3105 HEALTH PARK DRIVE, ELLICOTT CITY, MD. 21043 • 301-651-2690

DATE 11-8-85  
 DESIGNED BY L.J.D.  
 DRAWN BY T.J.M.  
 PROJECT NO 006500  
 DATE 7-6-84  
 SCALE AS SHOWN  
 DRAWING NO. 1 OF 5

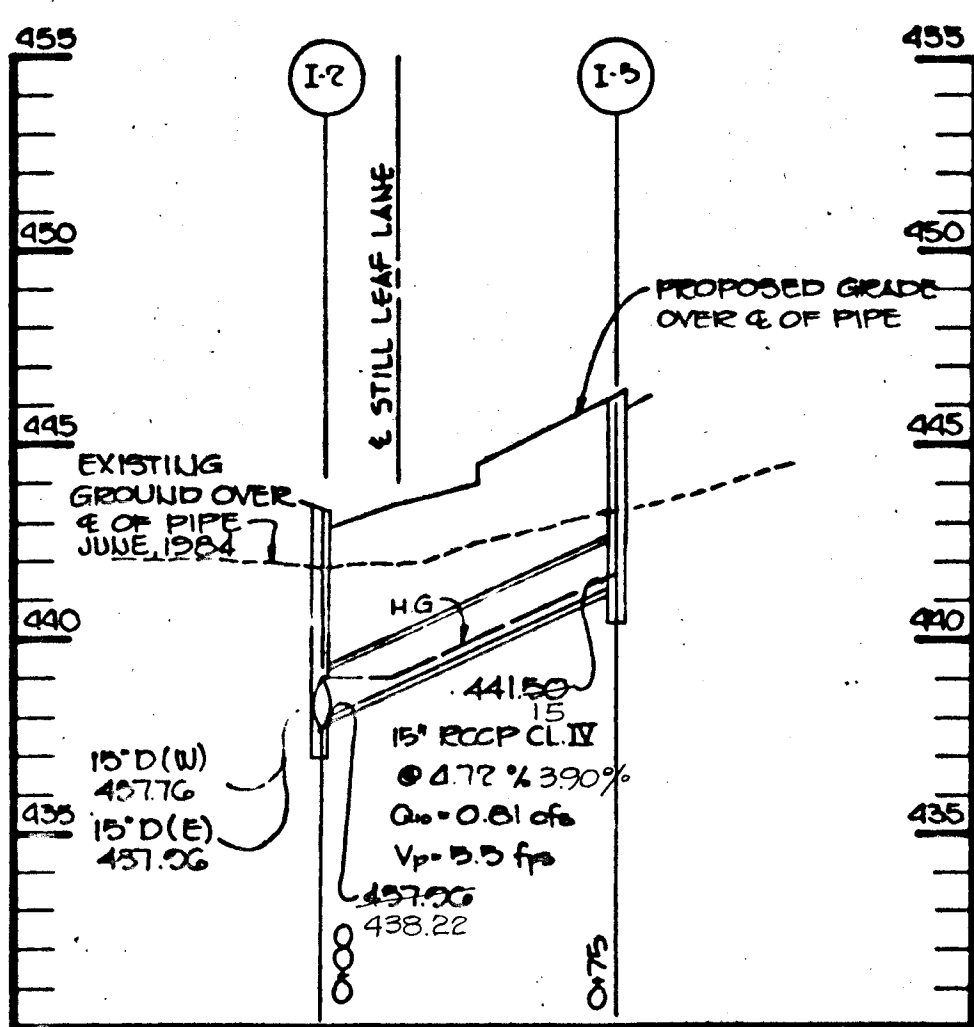
AS-BUILT 9-21-87  
 F-86-53



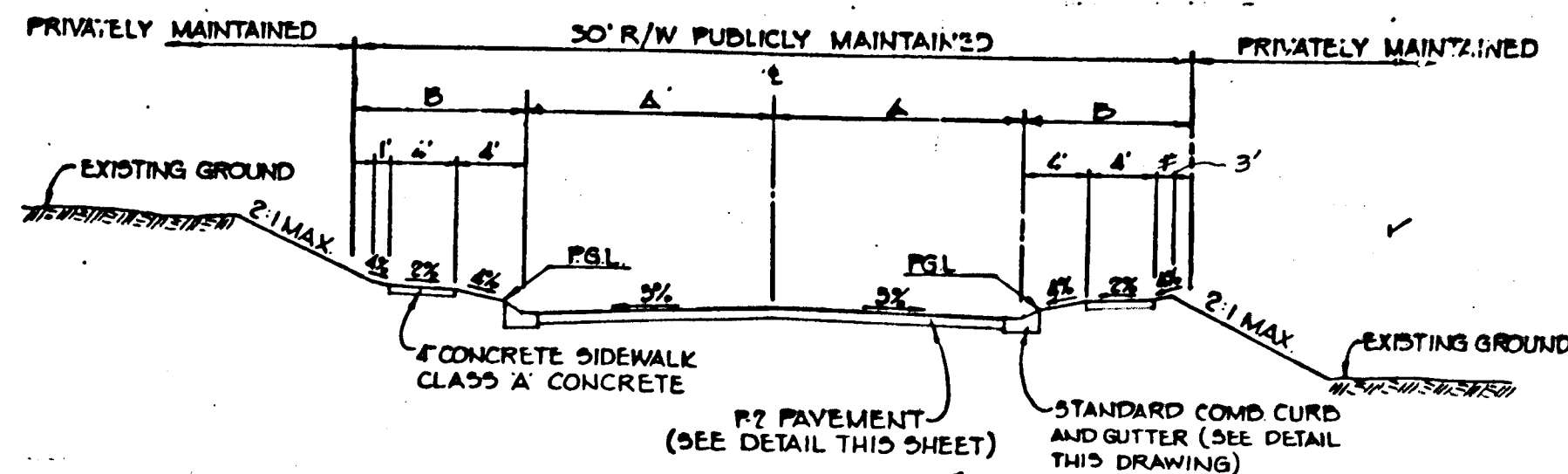
PROFILE  
HORIZ: 1"=50'  
VERT: 1"=5'



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



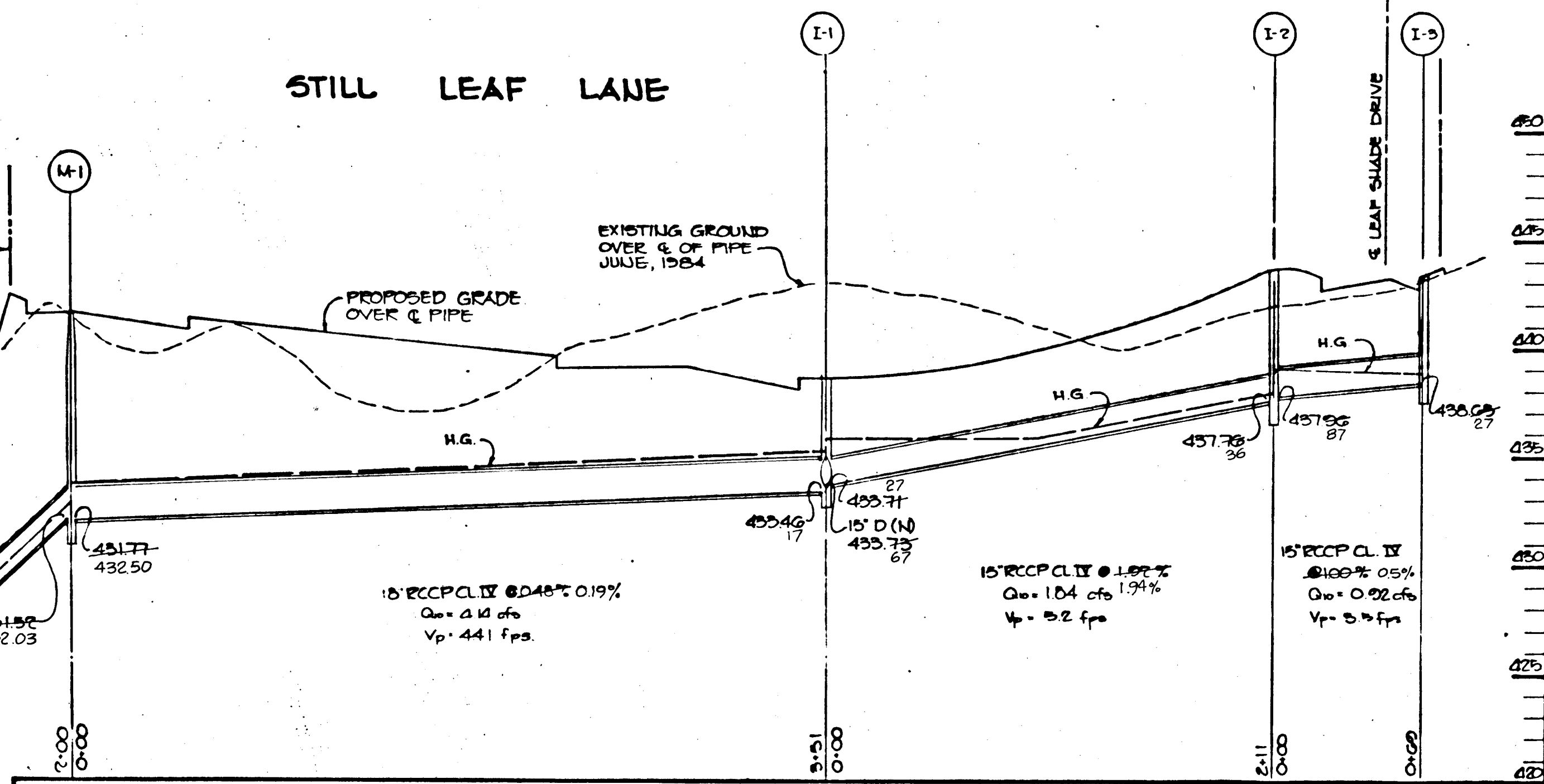
PROFILE  
HORIZ: 1"=50'  
VERT: 1"=5'



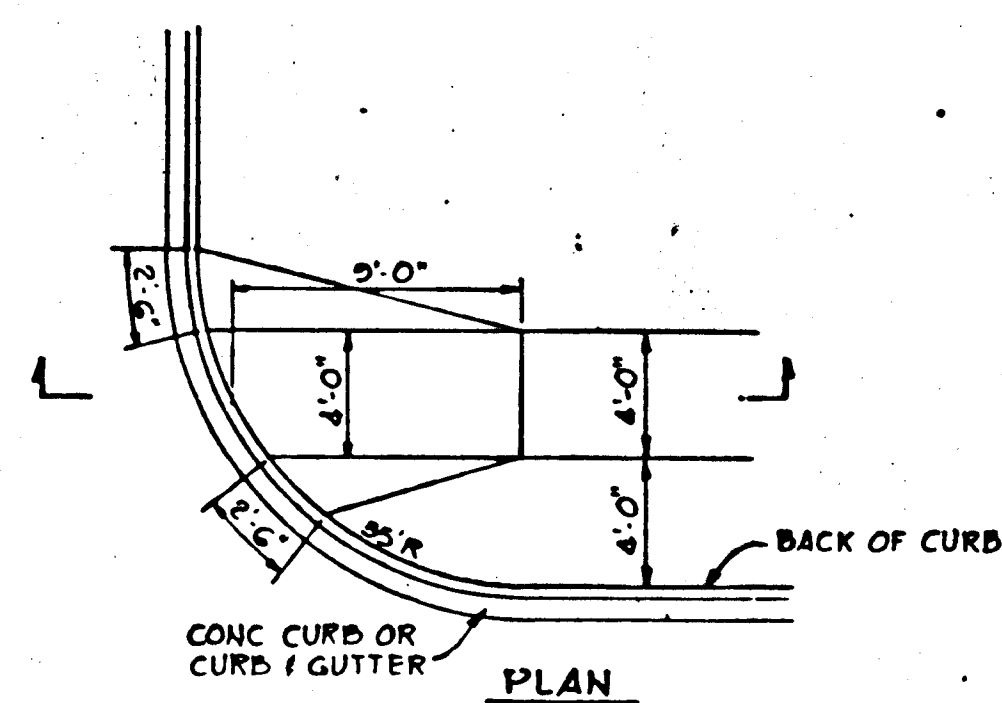
ROAD	A	B
LEAF SHADE DRIVE	15'	10'
STILL LEAF LANE	14'	11'

TYPICAL PAVING SECTION - 30' R/W  
NO SCALE

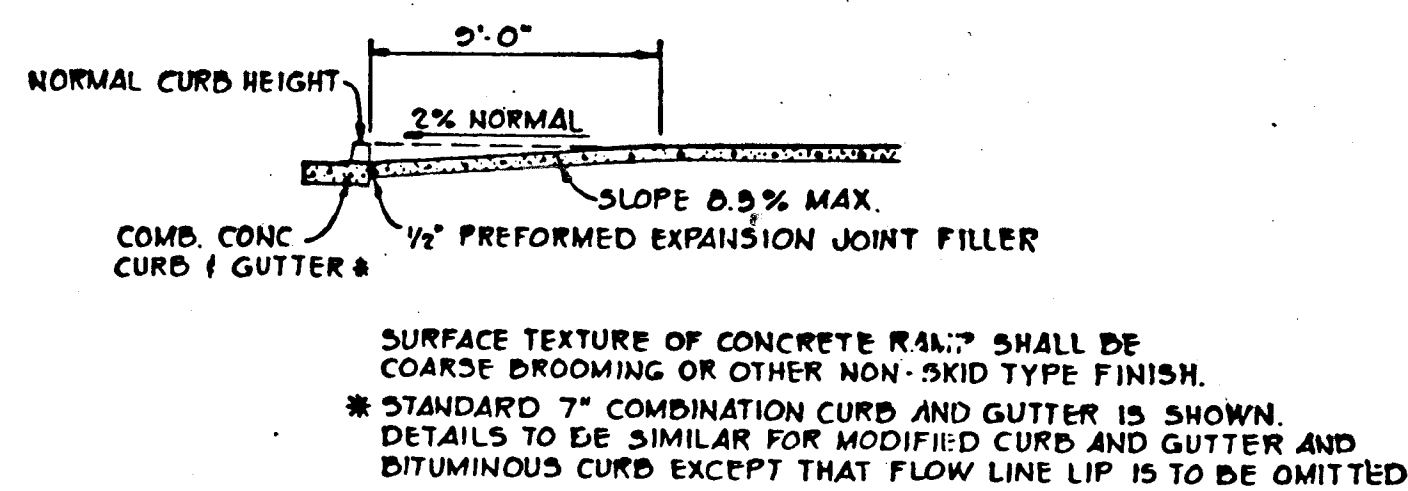
STILL LEAF LANE



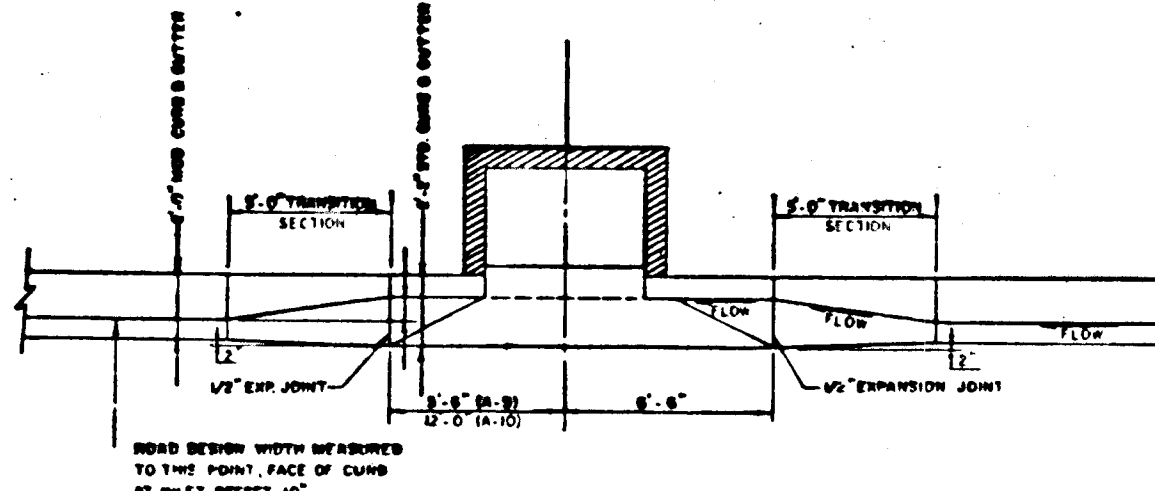
PROFILE  
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'



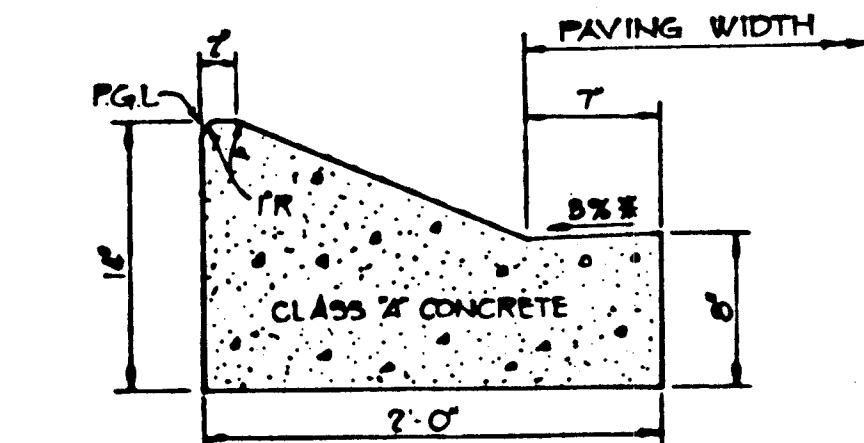
PLAN



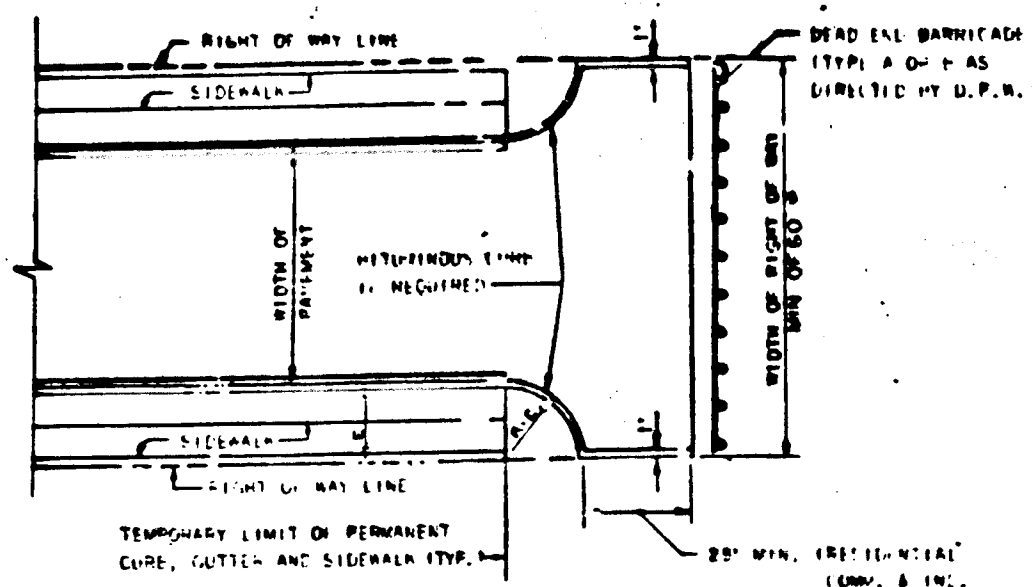
SECTION  
TYPE 'B'  
SIDEWALK RAMP  
(FOR INTERSECTION WITH ONE SIDEWALK)  
NO SCALE



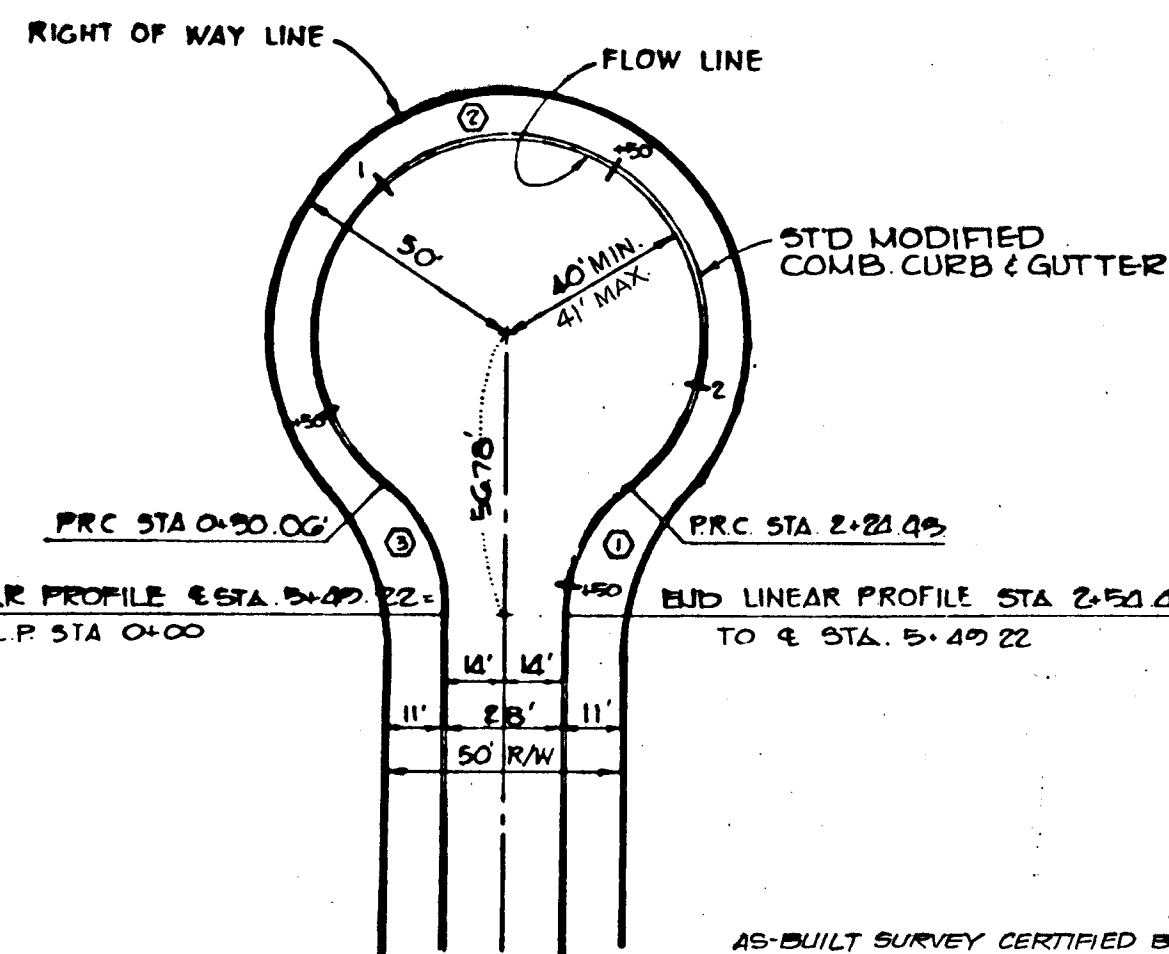
TRANSITION CURB AND GUTTER  
NO SCALE



MODIFIED COMBINATION  
CURB AND GUTTER  
NO SCALE



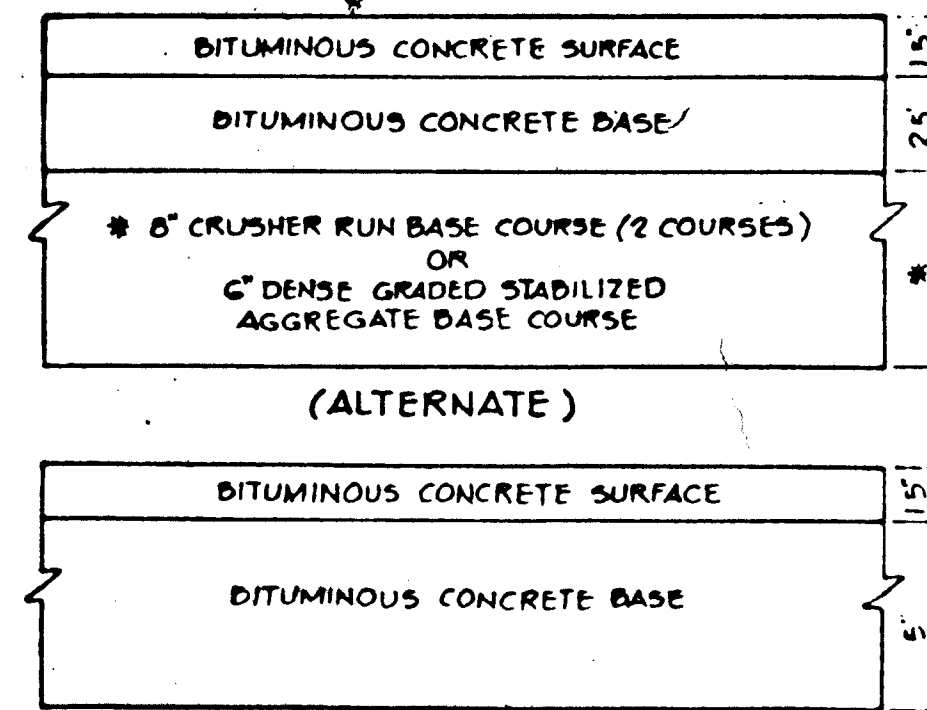
TEE TURN AROUND  
NO SCALE



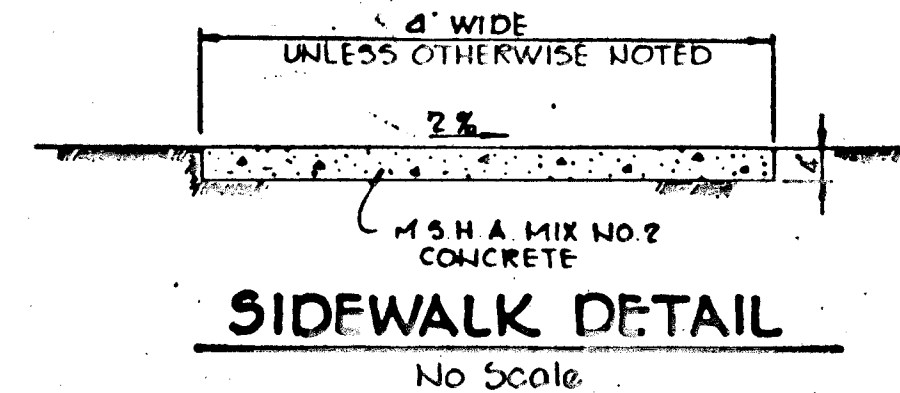
TYPICAL BITUMINOUS  
PATHWAY  
NO SCALE

CURVE	RADIUS	LENGTH	Δ	TAN.
①	35.00'	20.00'	40°12'24"	16.02'
②	40.00'	19.237'	27°24'47"	—
③	35.00'	20.00'	40°12'24"	16.02'

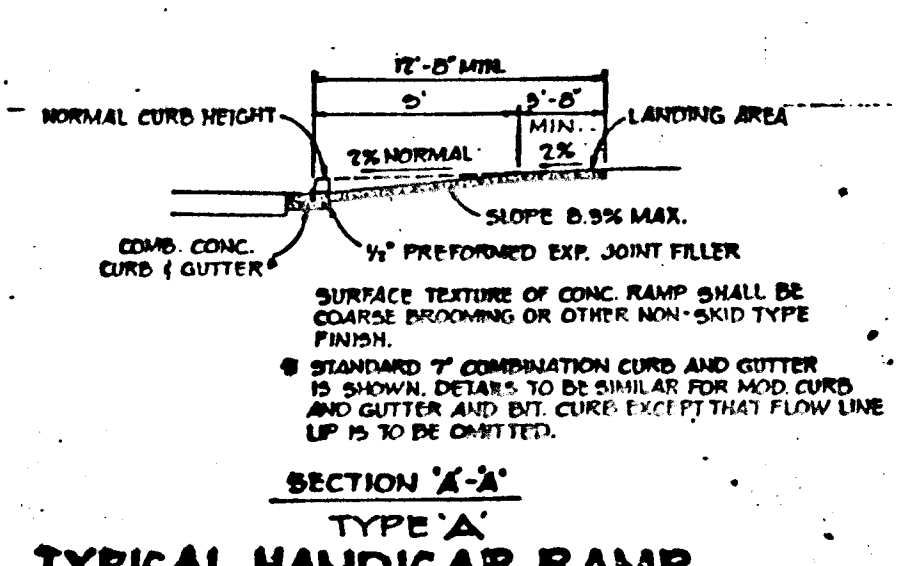
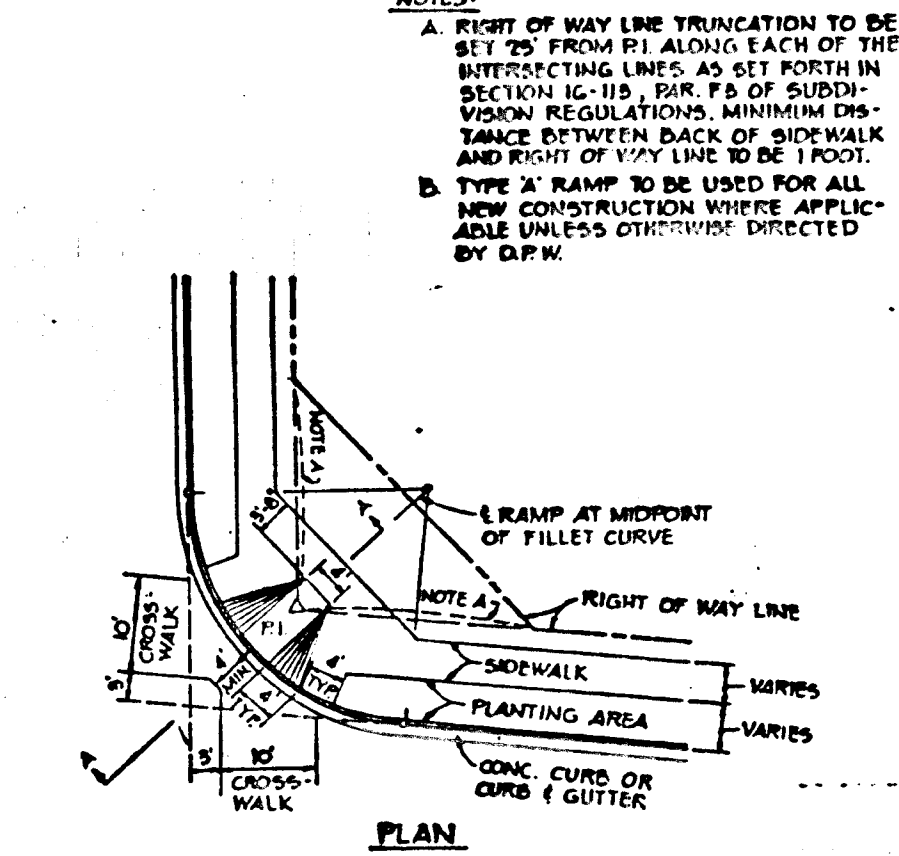
CUL-DE-SAC DETAIL  
NO SCALE



TYPICAL PAVING DETAIL  
NO SCALE



SIDEWALK DETAIL  
NO SCALE



TYPICAL HANDICAP RAMP  
NO SCALE

TYPICAL BITUMINOUS  
PATHWAY  
NO SCALE

HOWARD COUNTY DESIGN MANUAL VOLUME III - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-201)  
(6 1/2" PAVING, P-2)

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
DATE: 11-15-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DATE: 11-15-85  
CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER: OPENED LAND DEVELOPMENT CORPORATION  
1155 GREENWOOD ROAD  
PICOVILLE, MARYLAND 21208

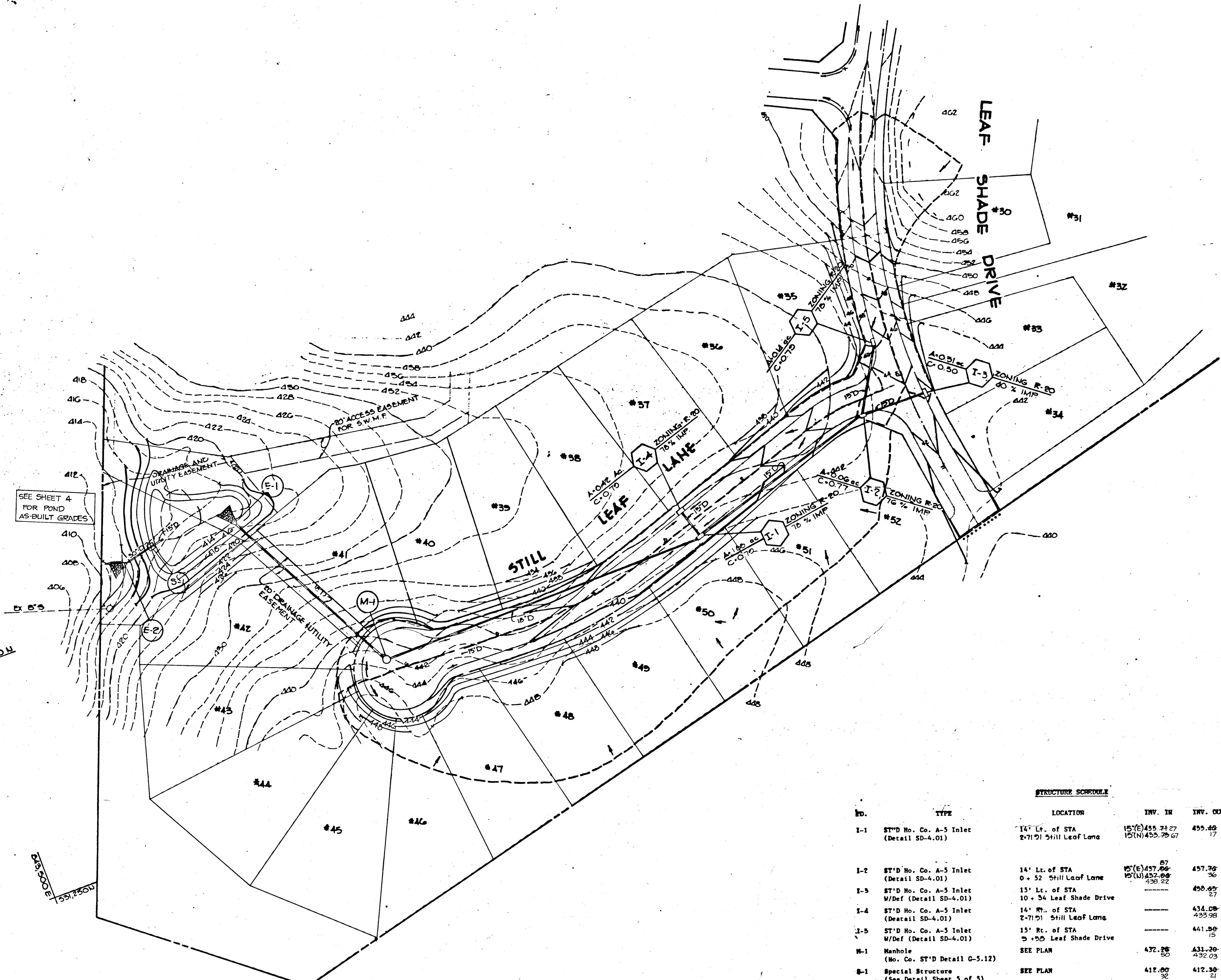
PROJECT: ST. JOHN'S GREEN  
LOTS 30-54  
SECTION 1, AREA 2

AREA: TAX MAP #17  
2ND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
ZONED E-20

TITLE: STORM DRAIN PROFILES AND DETAILS

THE RIEMER GROUP, INC.  
A LAND PLANNING, DESIGN & CIVIL ENGINEERING FIRM  
3105 HEALTH PARK DRIVE, ELLICOTT CITY, MD. 21033 301 461-2600

DESIGNED BY: J.K.P.  
DRAWN BY: J.C.J.  
PROJECT NO: 000000  
DATE: 11-15-85  
SCALE: AS SHOWN  
DATE: 11-15-85



SEE SHEET 4 FOR POND AS-BUILT GRADES

581,500 N  
433,500 E

531,500 N  
125,000 E

581,500 N  
433,500 E

STRUCTURE SCHEDULE					
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.
I-1	ST'D No. Co. A-5 Inlet (Detail SD-4.01)	14' Lt. of STA 2+71.91 Still Leaf Lane	157(E) 457.24 27 15(N) 455.75 67	455.68 17	443.08 67
I-2	ST'D No. Co. A-5 Inlet (Detail SD-4.01)	14' Lt. of STA 0+52 Still Leaf Lane	157(E) 457.06 15(N) 457.08 430.22	457.36 36	443.08 68
I-3	ST'D No. Co. A-5 Inlet W/Def (Detail SD-4.01)	15' Lt. of STA 10+34 Leaf Shade Drive	---	450.65 27	443.45 20
I-4	ST'D No. Co. A-5 Inlet (Detail SD-4.01)	14' Rt. of STA 2+71.91 Still Leaf Lane	---	434.08 433.98	443.08 67
I-5	ST'D No. Co. A-5 Inlet W/Def (Detail SD-4.01)	15' Rt. of STA 10+34 Leaf Shade Drive	---	441.15 15	444.14 08
M-1	Manhole (No. Co. ST'D Detail G-5.12)	SEE PLAN	432.38 50	431.20 432.03	441.75 442.32
S-1	Special Structure (See Detail Sheet 5 of 5)	SEE PLAN	412.00 32	412.30 21	410.00 416.77
E-1	Concrete End Section (No. Col ST'D Detail SD-5.51)	SEE PLAN	---	---	415.76
E-2	Metal End Section (No. Co. ST'D Detail SD-5.61)	SEE PLAN	---	---	412.00

Elevations at top of curb

AS-BUILT SURVEY CERTIFIED BY  
ARTHUR E. MUEGGLE-ND, P.E. No.  
15707 ON 9-21-87

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*Arthur E. Muegge* 11-15-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William S. Rouse* 11-15-85  
CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO.	REVISION

OWNER/DEVELOPER  
OXFORD LAUD DEVELOPMENT CORPORATION  
1155 GREENWOOD ROAD  
PILESVILLE, MARYLAND 21208

PROJECT **ST. JOHN'S GREEN**  
LOTS 30-54  
SECTION 1, AREA 2

AREA TAX MAP #17 PARCEL 66  
2ND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
ZONED R-20

TITLE **DRAINAGE AREA MAP**

**THE RIEMER GROUP, INC.**  
A LAND PLANNING, DESIGN & CIVIL ENGINEERING FIRM  
3105 HEALTH PARK DRIVE, ELLETTTOWN CITY, MD. 21043 301 461-2690

DATE 11-15-85  
DESIGNED BY J.K.B.  
DRAWN BY J.M.G.  
PROJECT NO. 0005,000  
DATE NOV 4, 1985  
SCALE 1" = 40'

AS-BUILT 9-21-87

1087

**SEDIMENT CONTROL GENERAL 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. (992-2437)
- ALL SEDIMENT CONTROL STRUCTURES WILL BE INSTALLED IN ACCORDANCE WITH "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AS PUBLISHED BY SOIL CONSERVATION SERVICE, WATER RESOURCES ADMINISTRATION AND STATE SOIL CONSERVATION COMMITTEE.
- SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 WILL BE STABILIZED WITH IN (7) SEVEN CALENDAR DAYS AND ALL OTHER DISTURBED OR GRADED AREAS ON THE SITE WITH IN (14) FOURTEEN CALENDAR DAYS.
- SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES THE CLEAN OUT ELEVATION SHOWN ON THE PLANS.
- FERTILIZER AND LIME RATES MAY BE CHANGED THROUGH AUTHORIZATION BY THE HOWARD SOIL CONSERVATION DISTRICT IF SOIL TESTS DETERMINE A REDUCTION IN THE SPECIFIED RATES IS JUSTIFIED.
- 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.
- REFERENCES CALLED FOR ON THE SEDIMENT CONTROL CONSTRUCTION PLAN AND DETAILS ARE MADE TO "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
- SEDIMENT CONTROL WILL BE INSTALLED BEFORE CLEARING AND CRUBBING REMAINDER OF THE SITE.

**TEMPORARY SEEDING**

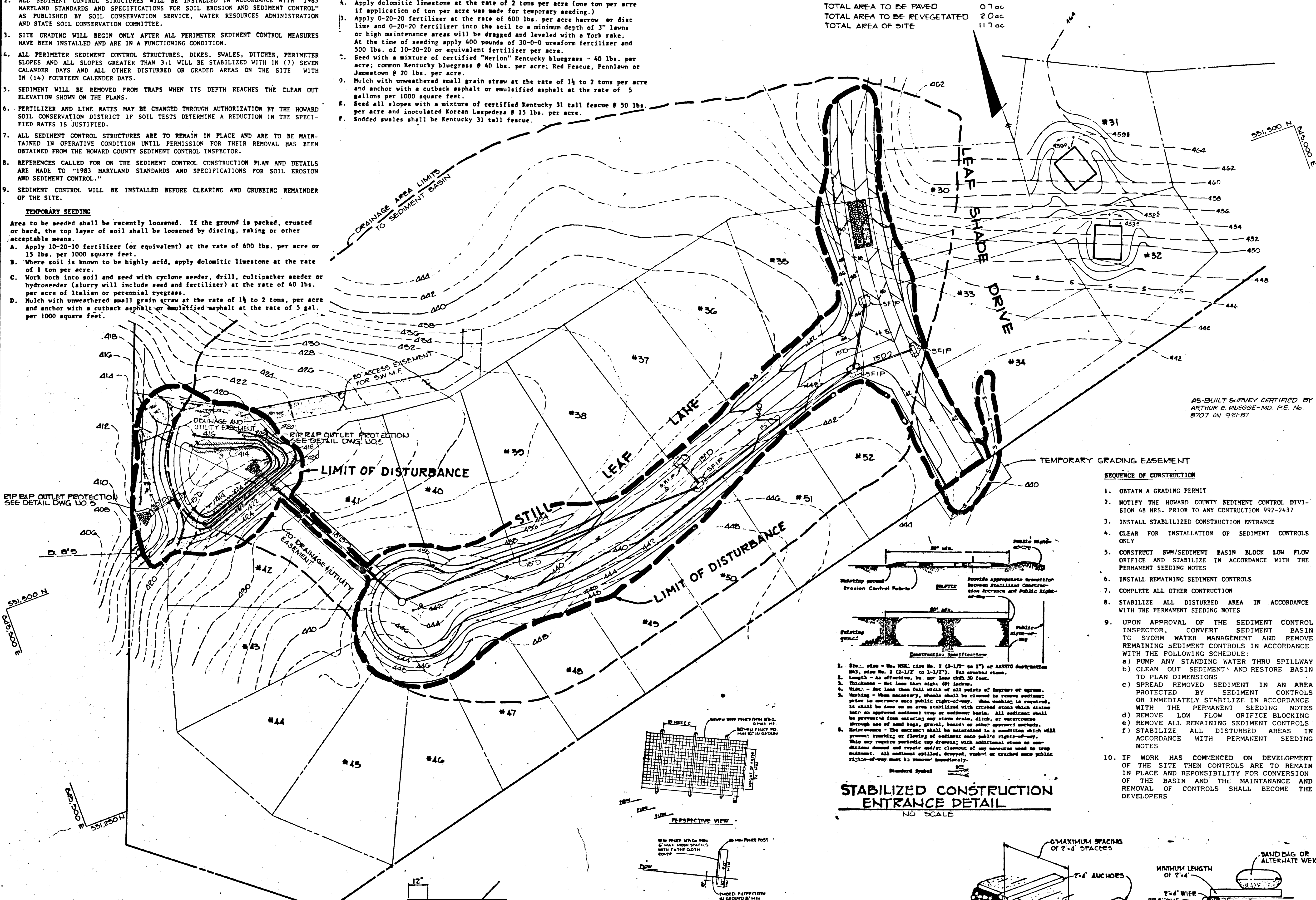
- Area to be seeded shall be recently loosened. If the ground is packed, crusted or hard, the top layer of soil shall be loosened by disking, raking or other acceptable means.
- Apply 10-20-10 fertilizer (or equivalent) at the rate of 600 lbs. per acre or 15 lbs. per 1000 square feet.
  - Where soil is known to be highly acid, apply dolomitic limestone at the rate of 1 ton per acre.
  - Work both into soil and seed with cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry will include seed and fertilizer) at the rate of 40 lbs. per acre of Italian or perennial ryegrass.
  - Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons, per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gal. per 1000 square feet.

**PERMANENT SEEDING**

- Final stabilization will take place as soon as possible as weather conditions permit, as follows:
- Apply dolomitic limestone at the rate of 2 tons per acre (one ton per acre if application of ton per acre was made for temporary seeding.)
  - Apply 0-20-20 fertilizer at the rate of 600 lbs. per acre harrow or disc lime and 0-20-20 fertilizer into the soil to a minimum depth of 3" lavns or high maintenance areas will be dragged and leveled with a York rake. At the time of seeding apply 400 pounds of 30-0-0 ureaform fertilizer and 500 lbs. of 10-20-20 or equivalent fertilizer per acre.
  - Seed with a mixture of certified "Merion" Kentucky bluegrass - 40 lbs. per acre; common Kentucky bluegrass @ 40 lbs. per acre; Red Fescue, Pennlawn or Jamestown @ 20 lbs. per acre.
  - Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gallons per 1000 square feet.
  - Seed all slopes with a mixture of certified Kentucky 31 tall fescue @ 50 lbs. per acre and inoculated Korean Lespedeza @ 15 lbs. per acre.
  - Sodded swales shall be Kentucky 31 tall fescue.

**SITE ANALYSIS**

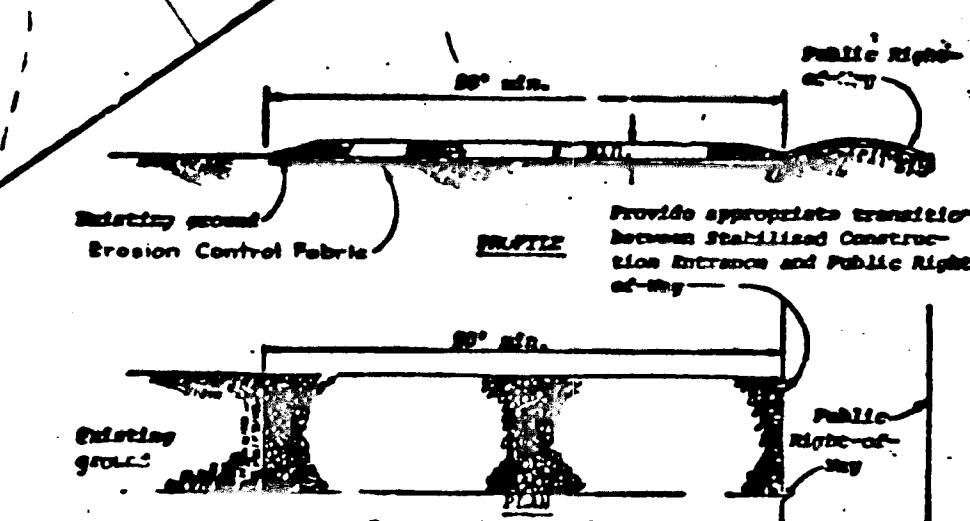
TOTAL AREA DISTURBED	27 ac
TOTAL AREA TO BE PAVED	0.7 ac
TOTAL AREA TO BE REVEGETATED	2.0 ac
TOTAL AREA OF SITE	11.7 ac



AS-BUILT SURVEY CERTIFIED BY ARTHUR E. MUEGGE - MD. P.E. No. 8707 ON 9/21/87

**SEQUENCE OF CONSTRUCTION**

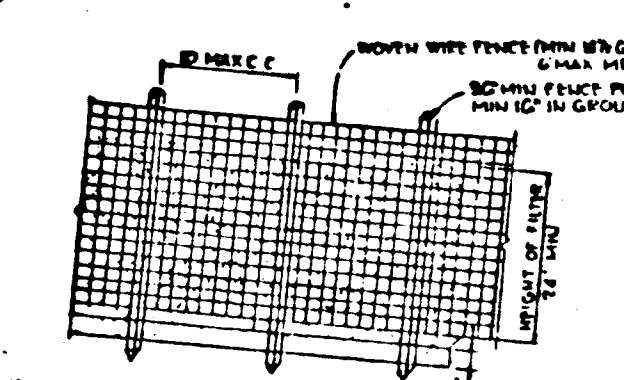
- OBTAIN A GRADING PERMIT
- NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL DIVISION 48 HRS. PRIOR TO ANY CONSTRUCTION 992-2437
- INSTALL STABILIZED CONSTRUCTION ENTRANCE
- CLEAR FOR INSTALLATION OF SEDIMENT CONTROLS ONLY
- CONSTRUCT SWH/SEDIMENT BASIN BLOCK LOW FLOW ORIFICE AND STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES
- INSTALL REMAINING SEDIMENT CONTROLS
- COMPLETE ALL OTHER CONSTRUCTION
- STABILIZE ALL DISTURBED AREA IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES
- UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONVERT SEDIMENT BASIN TO STORM WATER MANAGEMENT AND REMOVE REMAINING SEDIMENT CONTROLS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
  - PUMP ANY STANDING WATER THRU SPILLWAY
  - CLEAN OUT SEDIMENT AND RESTORE BASIN TO PLAN DIMENSIONS
  - SPREAD REMOVED SEDIMENT IN AN AREA PROTECTED BY SEDIMENT CONTROLS OR IMMEDIATELY STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES
  - REMOVE LOW FLOW ORIFICE BLOCKING
  - REMOVE ALL REMAINING SEDIMENT CONTROLS
  - STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES
- IF WORK HAS COMMENCED ON DEVELOPMENT OF THE SITE THEN CONTROLS ARE TO REMAIN IN PLACE AND RESPONSIBILITY FOR CONVERSION OF THE BASIN AND THE MAINTENANCE AND REMOVAL OF CONTROLS SHALL BECOME THE DEVELOPERS



- Size - 18" x 18" x 18" (2-1/2" to 1") at 48000 lbs/ft<sup>2</sup> max. (2-1/2" to 1-1/2"). Use crushed stone.
- Length - As effective, but not less than 30 feet.
- Thickness - Not less than eight (8) inches.
- Width - Not less than full width of all points of ingress or egress.
- Working - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drains, ditches, or watercourses through use of sand bags, gravel, boards or other approved methods.
- Maintenance - The structure shall be maintained in a condition which will prevent eroding or flowing 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 concrete used to trap sediment. All sediment spilled, dropped, wash- or tracked onto public right-of-way must be removed immediately.

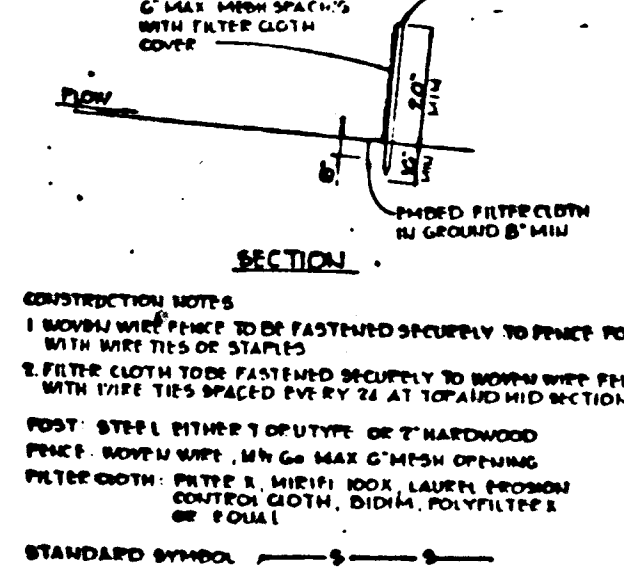
**STABILIZED CONSTRUCTION ENTRANCE DETAIL**

NO SCALE



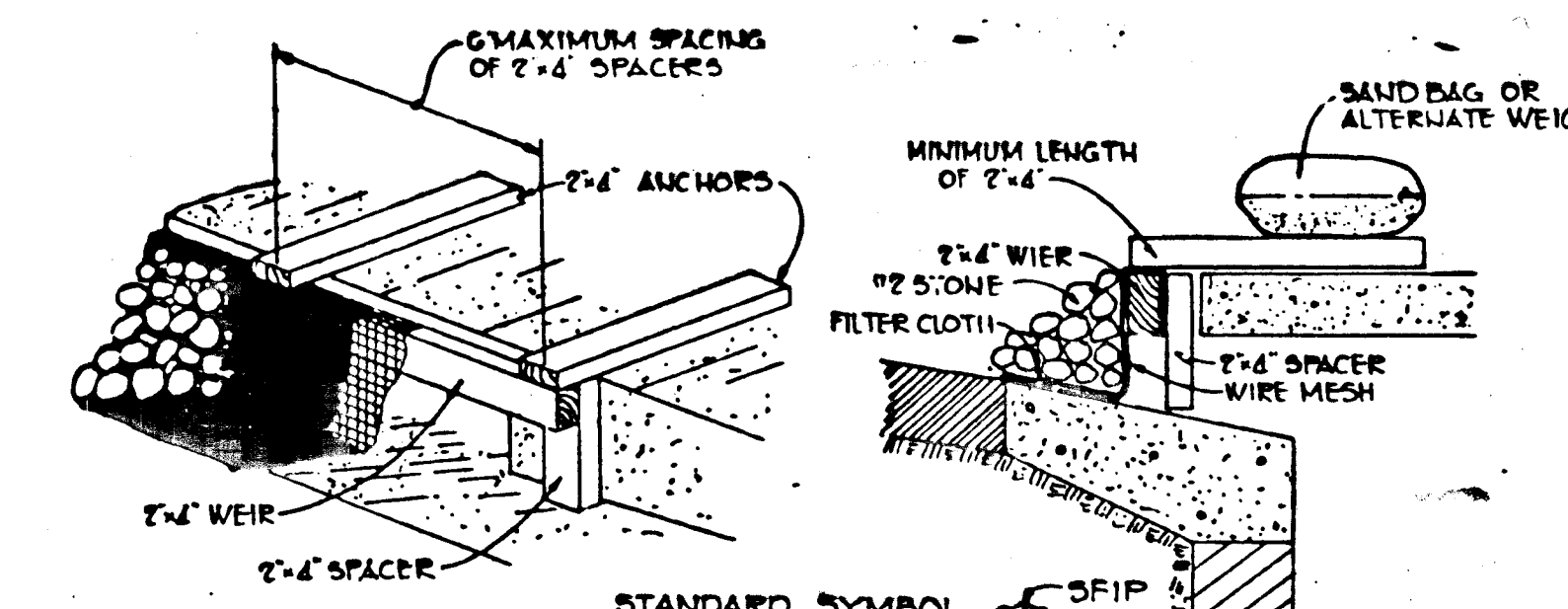
**SILT FENCE DETAIL**

NO SCALE



**LOW FLOW ORIFICE BLOCKING DETAIL**

NO SCALE

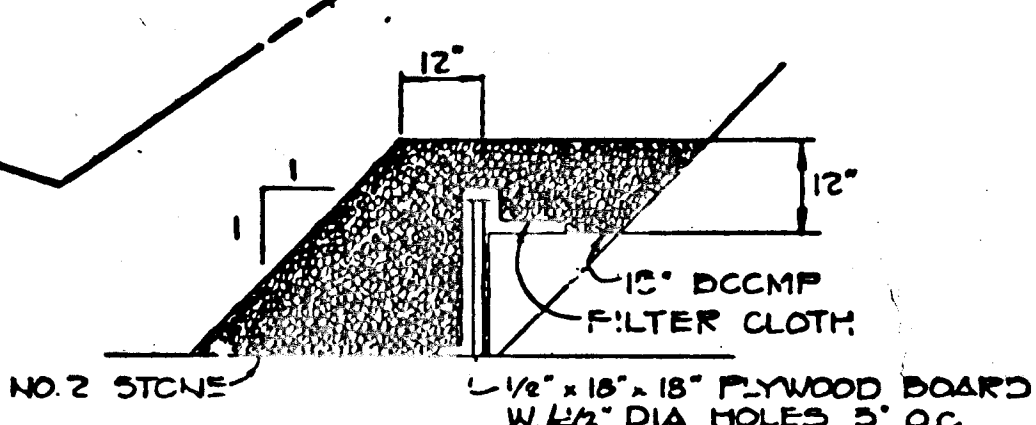


**STONE FILTER INLET PROTECTION DETAIL**

NO SCALE

**SEDIMENT BASIN DATA**

DRAINAGE AREA	66 ac.
STORAGE VOLUME REQ'D	442.0 CY.
STORAGE VOLUME PROVIDED	460.0 CY.
CLEANOUT ELEV.	416.5



**LOW FLOW ORIFICE BLOCKING DETAIL**

NO SCALE

BY THE DEVELOPER:  
 "I 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."  
 DEVELOPER: BERNAED G ROBBINS DATE 11-7-85

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."  
 ENGINEER: ARTHUR E. MUEGGE DATE 11-8-85

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.  
 U.S. SOIL CONSERVATION SERVICE DATE 11-14-85

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 APPROVED: ROBERT W. ZIEHN DATE 11-14-85  
 HOWARD S/C.D.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE 11-15-85

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF ENGINEERING DATE 11-15-85

DATE	NO.	REVISION

OWNER/DEVELOPER: OXFORD LAND DEVELOPMENT CORPORATION  
 1135 GREENWOOD ROAD  
 PIKEVILLE, MARYLAND 21208

PROJECT: ST. JOHN'S GREEN  
 LOTS 30-34  
 SECTION 1, AREA 2

AREA TAX MAP #17 PARCEL G8  
 2ND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 ZONED R-20

TITLE: GRADING & SEDIMENT CONTROL

THE RIEMER GROUP, INC.  
 A LAND PLANNING, DESIGN & CIVIL ENGINEERING FIRM  
 3105 HEALTH PARK DRIVE, ELLICOTT CITY, MD. 21043 301 481-2690

DATE 11-8-85  
 DESIGNED BY: J.K.B.  
 DRAWN BY: J.M.G.  
 PROJECT NO: 006500  
 DATE NOV. 4, 1985  
 SCALE: 1" = 50'  
 DRAWING NO. 4 OF 5

**I. SITE PREPARATION**

Areas under the borrow areas, embankment, and structural works shall be cleared, grubbed and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

All cleared and grubbed material shall be disposed of outside the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**II. EARTH FILL**

**Material:**  
The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized 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 above the design elevation (including freeboard) as 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 8-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 tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

**Cutoff Trench:**  
Where specified, a cutoff 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 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and 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 compacted fill of twenty-four inches or greater over the structure or pipe.

**IV. CORRUGATED METAL PIPE**

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

**Connections:**  
All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Watertight coupling bands shall be used at all joints. Antiseep collars shall be connected to the pipe in such a manner as to be completely watertight.

**Bedding:**  
The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock 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.

**V. CONCRETE**

- Material:**
1. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.
  2. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
  3. Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.
  4. Course Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.
  5. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

**Design Mix:**

The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-3/4 to 6 U.S. gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2-3/4. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

**Mixing:**

The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the material, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the additions of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

**Forms:**

The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressures, tamping, and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.

Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

**Reinforcing Steel:**

All reinforcing material shall be free of dirt, rust, scale, oil, paint or other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

**Consolidating:**

Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

**Finishing:**

Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.

**Protection and Curing:**

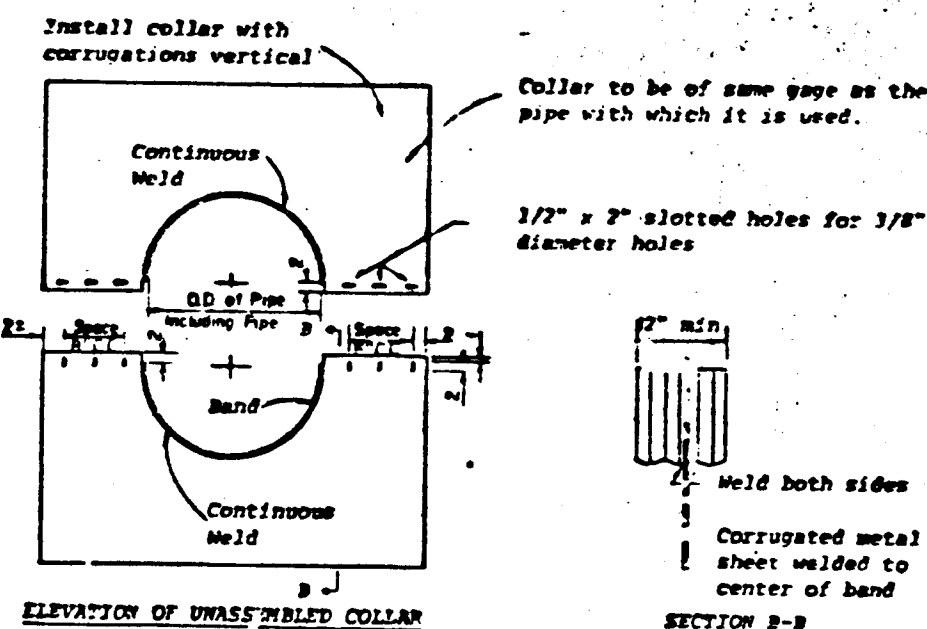
Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also be used.

**Placing Temperature:**

Concrete may not be placed at temperatures below 37° F with the temperature falling, or 34° with the temperature rising.

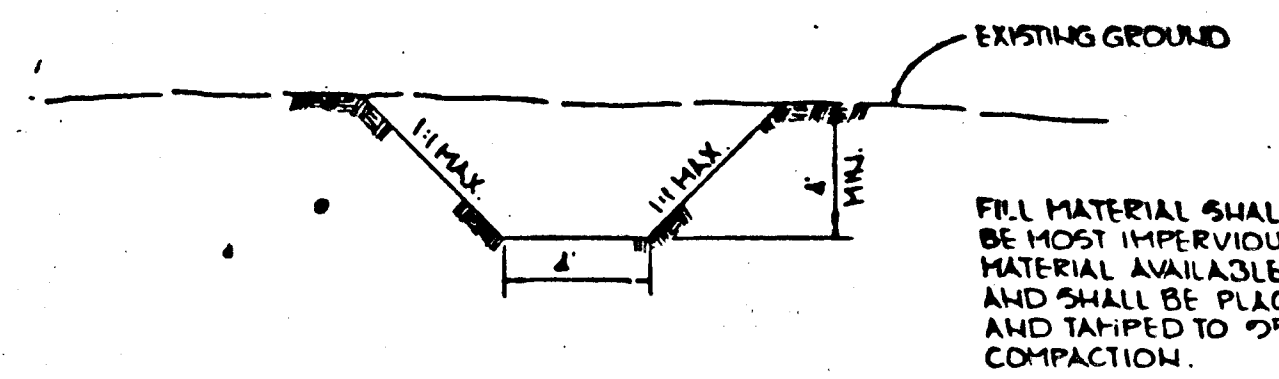
**VI. STABILIZATION**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications shown on or accompanying the drawings.

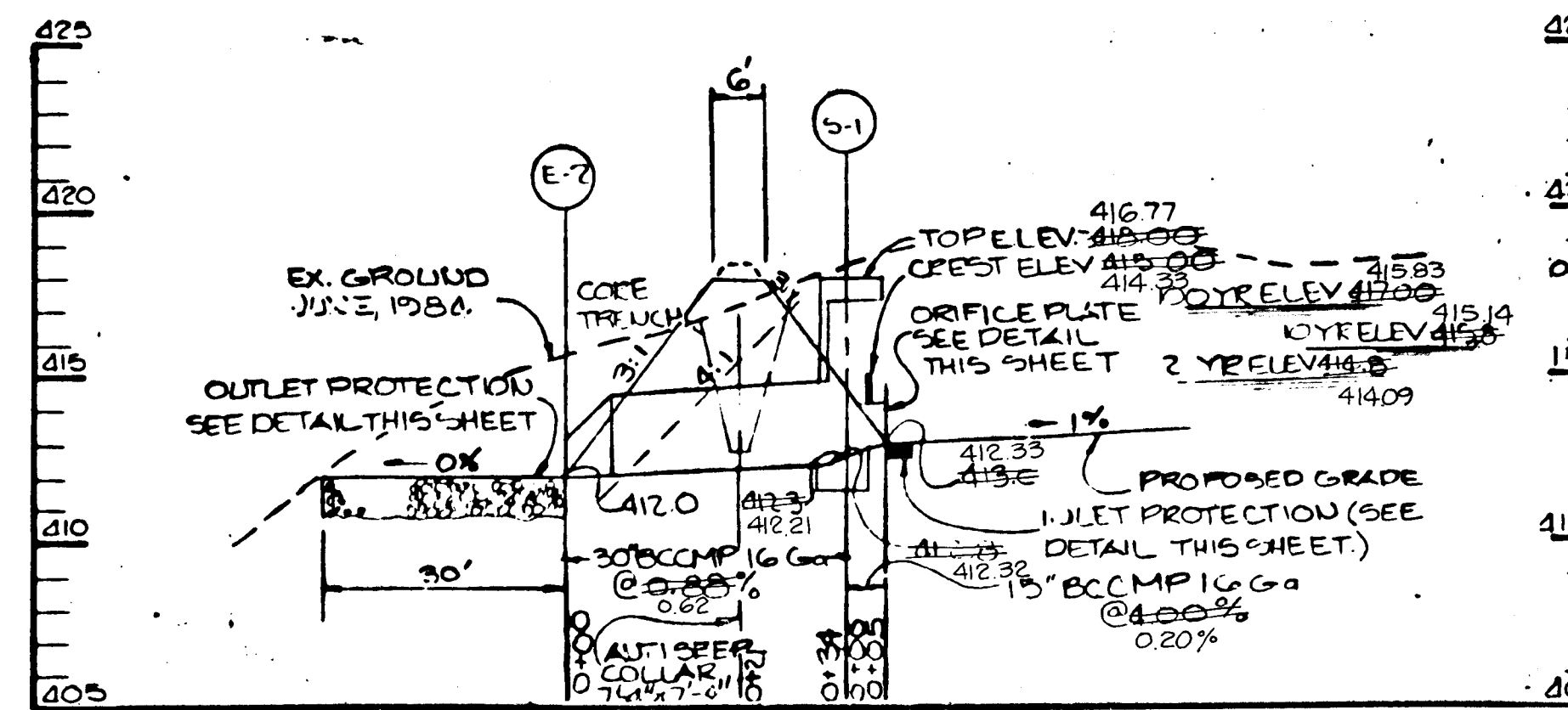


- NOTES FOR COLLARS:**
1. All materials to be in accordance with construction and construction material specifications.
  2. When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
  3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
  4. The gap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at time of installation.
  5. Each collar shall be furnished with two 1/2" diameter rods with standard tank lugs for connector collars to pipe.

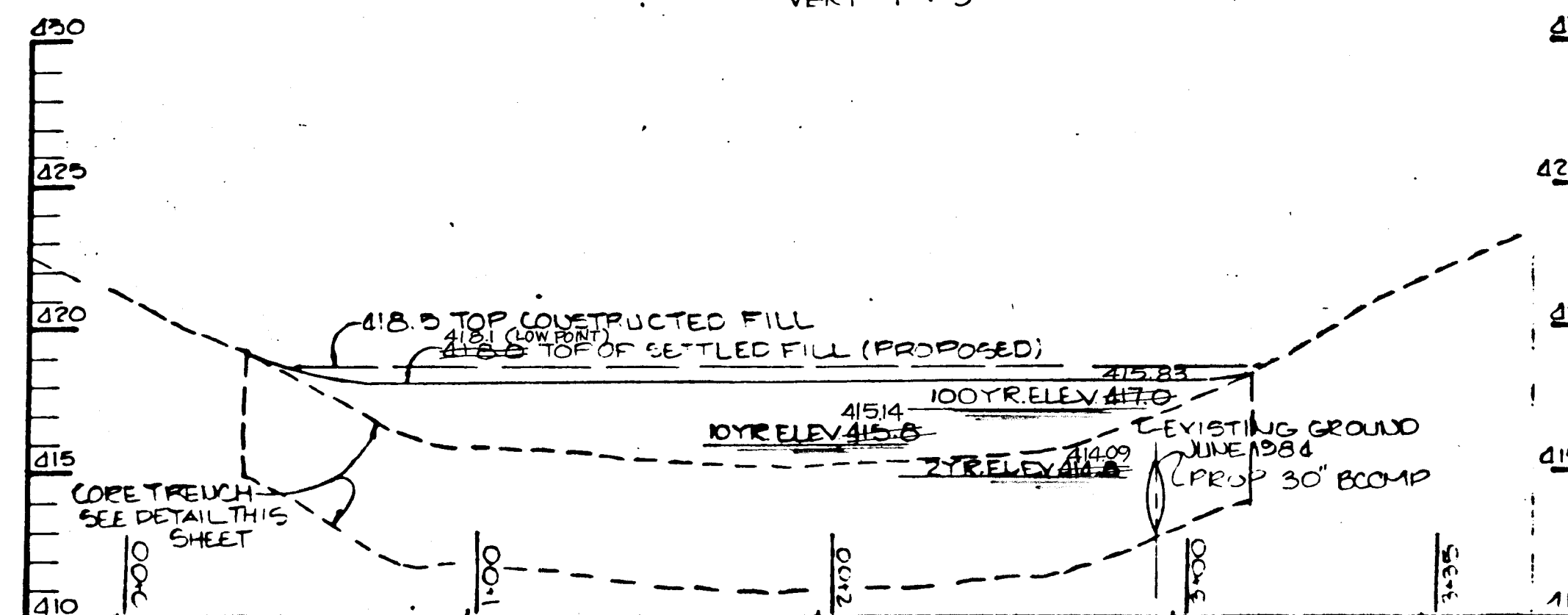
**ANTI-SEEP COLLAR DETAIL**  
NO SCALE



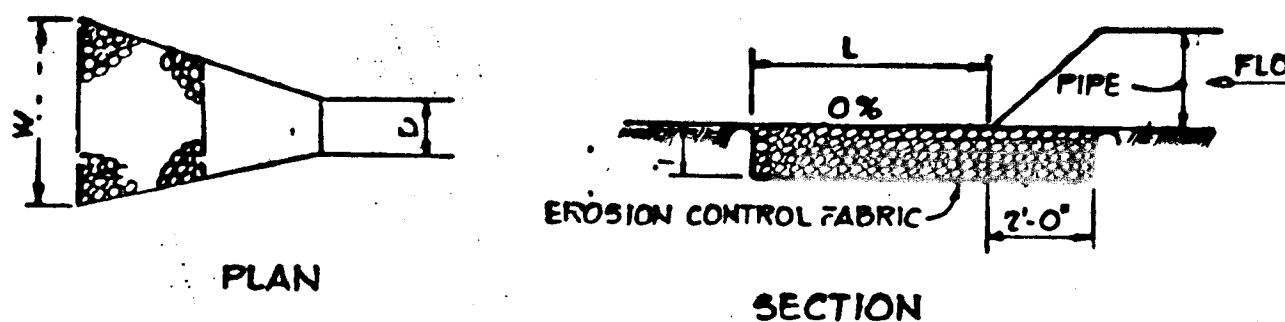
**CORE TRENCH TYP. SECTION**  
NO SCALE



**PROFILE THRU SPILLWAY**  
SCALE HORIZ 1" = 20'  
VERT 1" = 5'



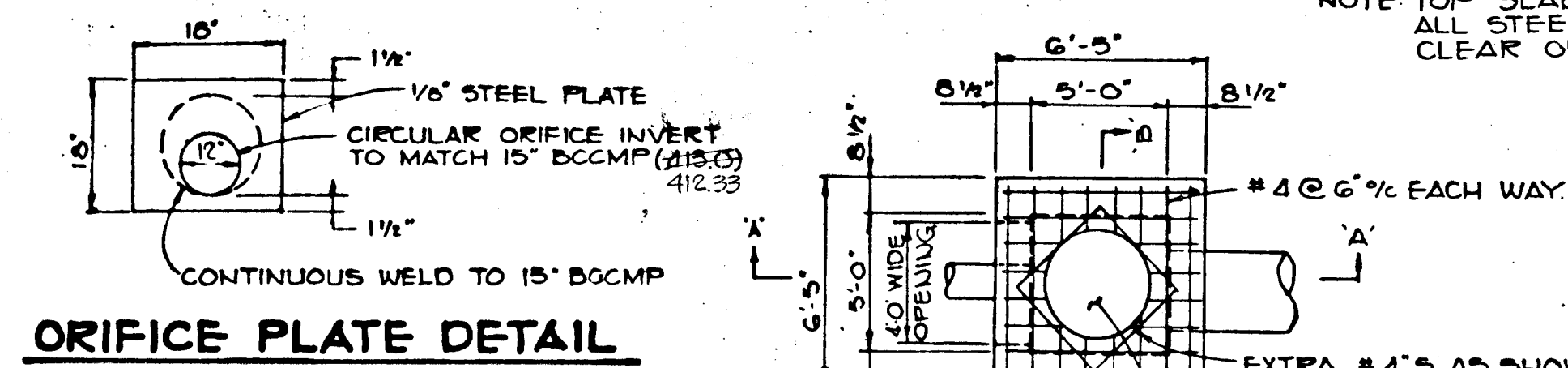
**PROFILE ALONG DAM**  
SCALE HORIZ 1" = 20'  
VERT 1" = 5'



STRUCTURE	MEDIUM STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	8"	16'	18"	18"
E-2	5"	50'	14"	12"

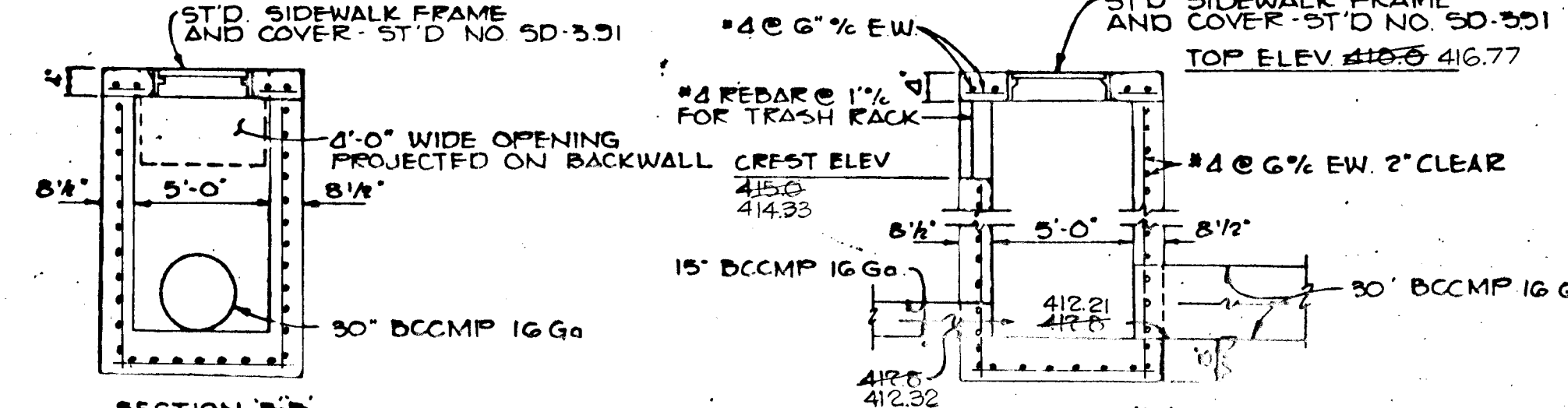
**OUTLET PROTECTION DETAIL**  
NO SCALE

NOTE: ORIFICE PLATE TO BE COATED WITH TWO COATS OF BITUMASTIC COMPOUND

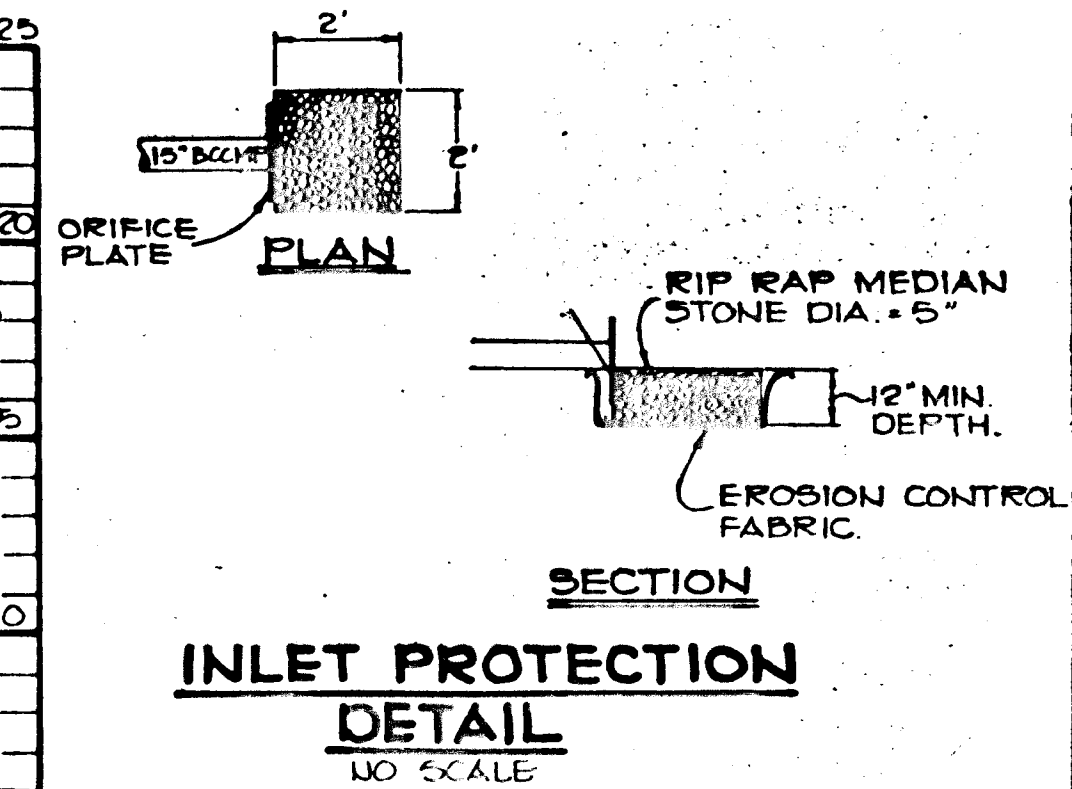


**ORIFICE PLATE DETAIL**  
NO SCALE

NOTE: OTHER THAN MODIFICATIONS AS SHOWN THE INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD NO. 5D-422



**STORM WATER MANAGEMENT STRUCTURE S-1**  
NO SCALE



**INLET PROTECTION DETAIL**  
NO SCALE

BY THE DEVELOPER:  
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

*Bernard G. Robb* 11-7-85  
DEVELOPER: BERNARD G. ROBB DATE

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

*Arthur E. Muegge* 11-8-85  
ENGINEER: ARTHUR E. MUEGGE DATE

REVIEWED FOR HOWARD S. C. D. NAME  
AND MEETS TECHNICAL REQUIREMENTS  
*James McVicker* 11-14-85  
U.S. SOIL CONSERVATION SERVICE DATE

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

*Robert W. Zick* 11-14-85  
HOWARD S. C. D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*John M. ...* 11-15-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James ...* 11-15-85  
CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO	REVISION

OWNER/DEVELOPER  
OXFORD LAND DEVELOPMENT CORPORATION  
193 GREENWOOD ROAD  
PIKESVILLE, MARYLAND 21208

PROJECT **ST. JOHN'S GREEN**  
LOTS 30-54  
SECTION 1, AREA 2  
AREA TAX MAP # 17 PARCEL 65  
2ND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
ZONED R-20

TITLE **STORM WATER MANAGEMENT NOTES & DETAILS**

**THE RIEMER GROUP, INC.**  
A LAND PLANNING, DESIGN & CIVIL ENGINEERING FIRM  
3105 HEALTH PARK DRIVE, ELLCOTT CITY, MD. 21043 301-464-2500

DATE  
DESIGNED BY J.K.P.  
DRAWN BY J.A.  
PROJECT NO. 88-0000  
DATE 11-15-85  
SCALE AS SHOWN  
PROJECT NO. 88-0000