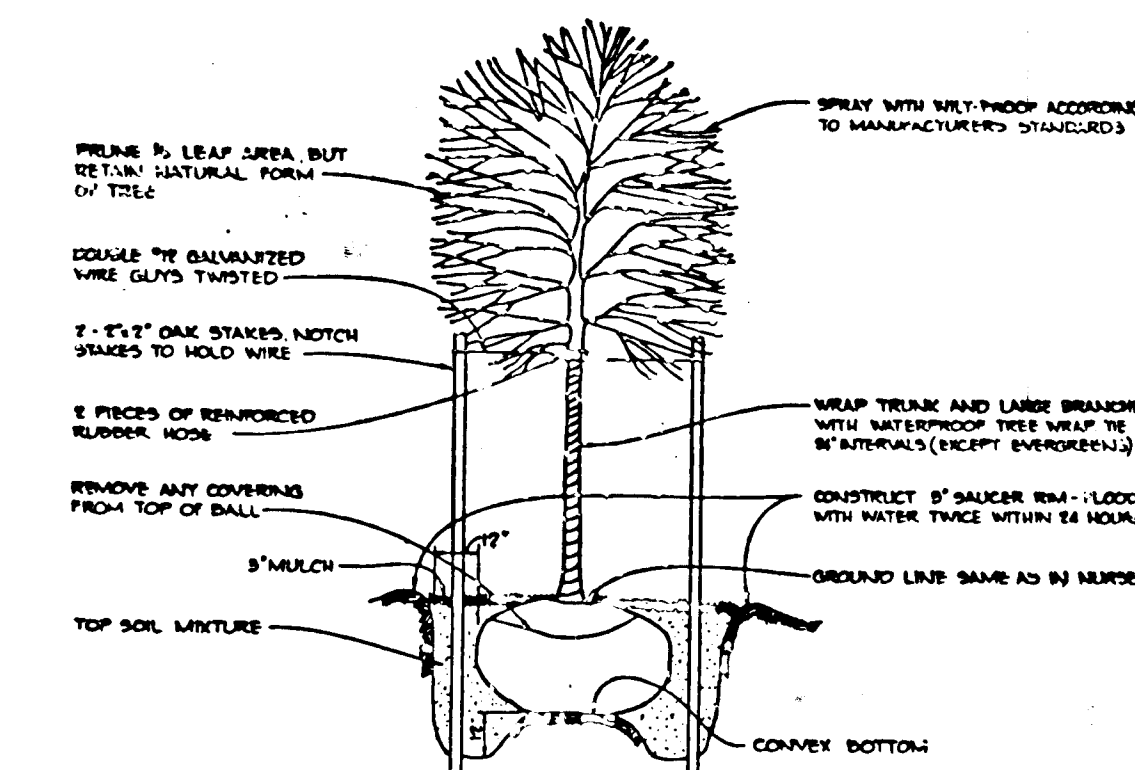
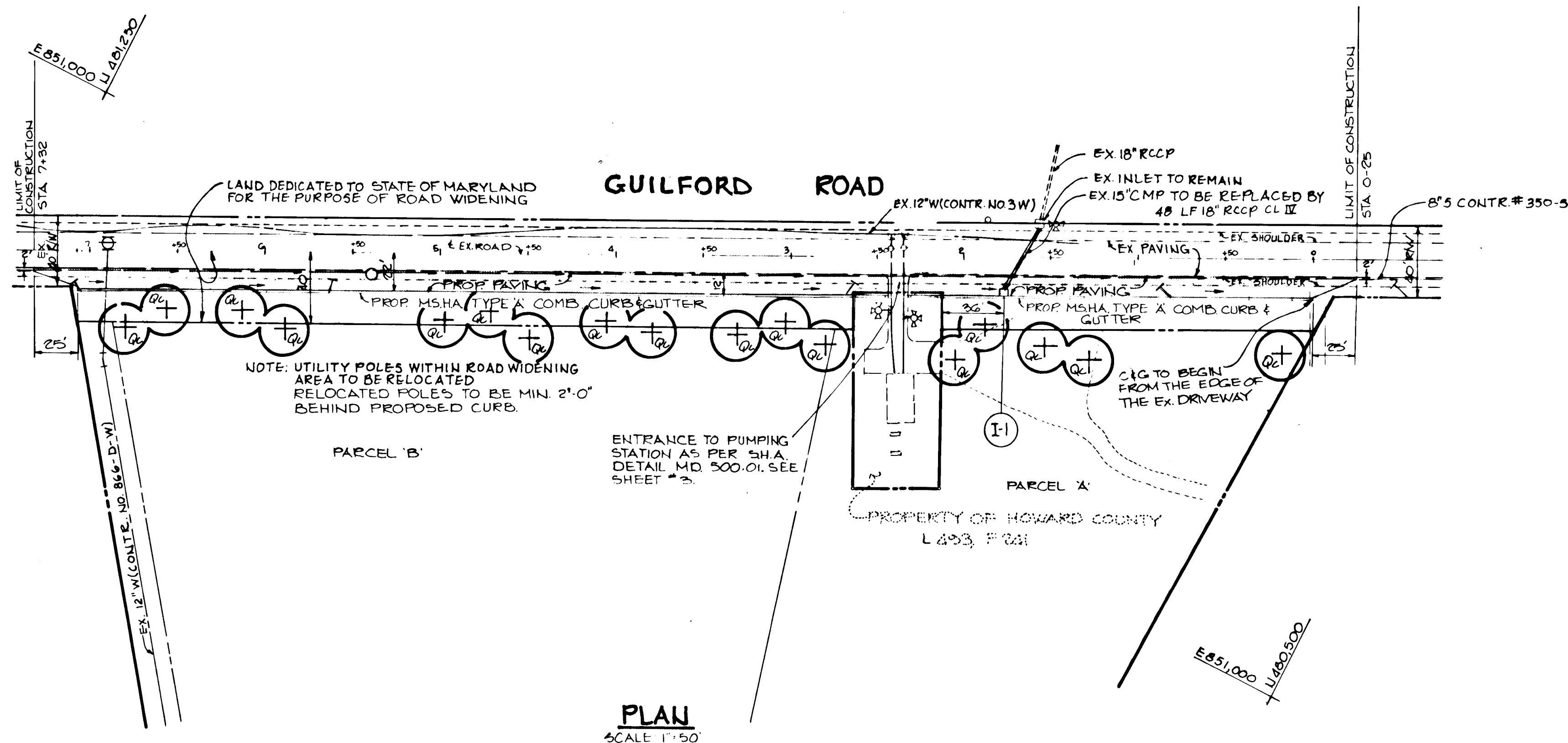
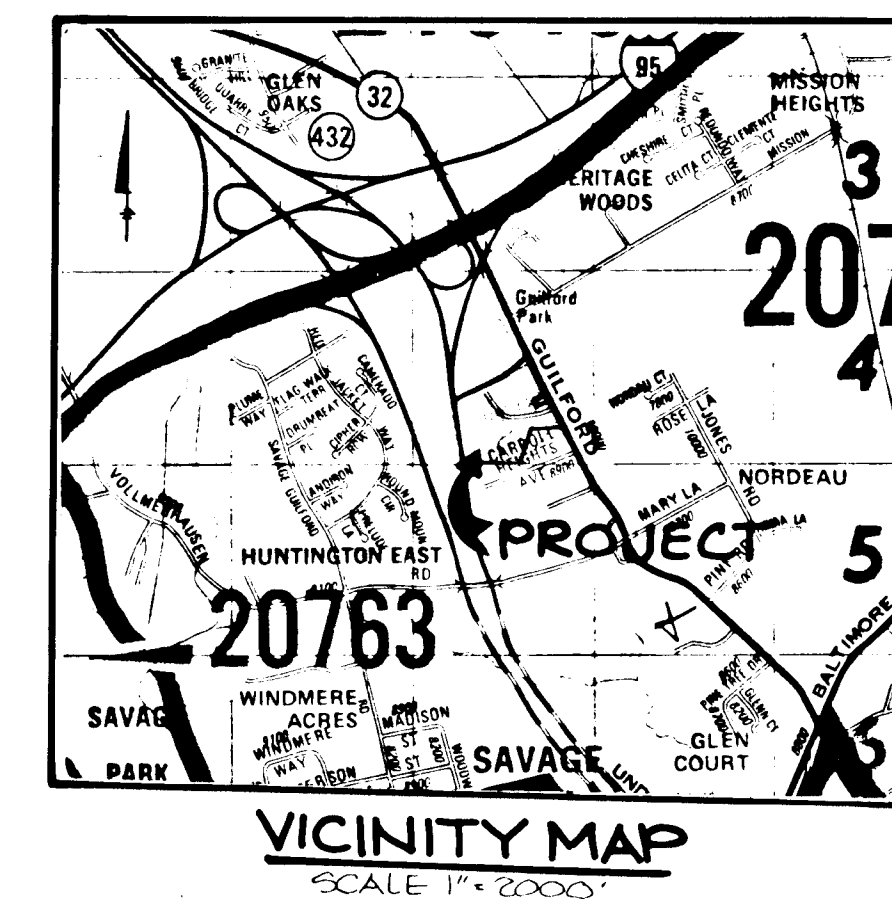


SHEET INDEX

NO	DESCRIPTION
1	GUILFORD ROAD IMPROVEMENT
2	SEDIMENT CONTROL AND DRAINAGE AREA MAP
3	DETAILS



PLANT LIST

SYMBOL	QUANTITY	NAME	NOTES
Qc	17	QUERCUS COCCINEA Scarlet Oak	2 1/2-3' Cal., 13-15' ht., Full Head

TREE QUANTITY CALCULATION:

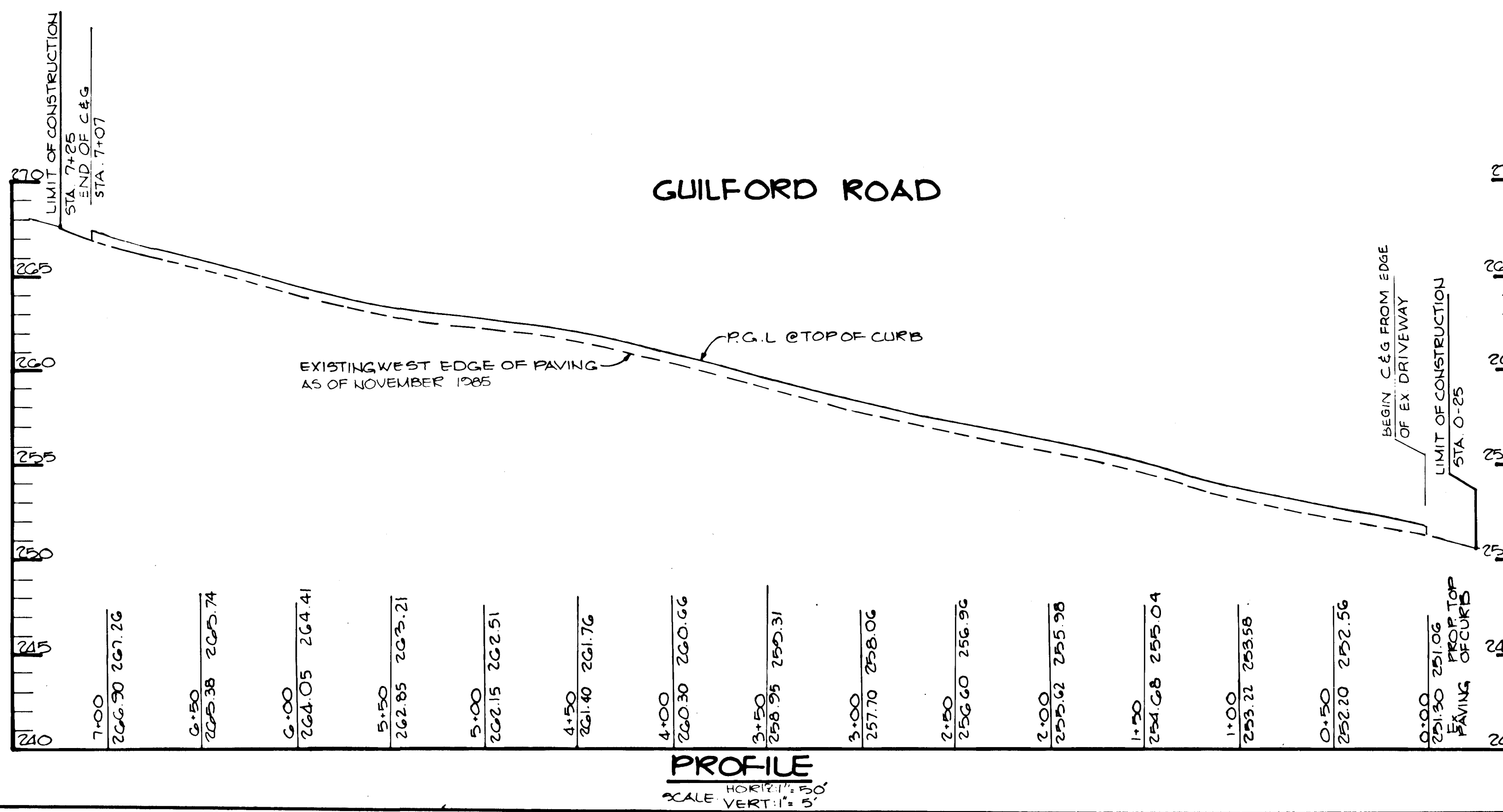
660 linear feet road frontage @ 1 shade tree per 40 linear feet = 17 shade trees required.

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 FROM BEST AVAILABLE INFORMATION. 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 TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY	1-800-257-7777
BELL TELEPHONE SYSTEM	303-3649
LONG DISTANCE CABLE DIVISION	393-3553 or 3554
BALTIMORE GAS AND ELECTRIC COMPANY	339-8000, 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° RADII UNLESS OTHERWISE NOTED.
- STORM DRAIN TRENCHES 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.
- 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 95% COMPACTION PER ASTM 1557.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- TOPO TAKEN FROM FIELD RUN SURVEY DATED NOVEMBER, 1985 BY TYDINGS AND ASSOCIATES.
- 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.



APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Moseley 8-7-86
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John E. Muegge 8-11-86
 CHIEF, BUREAU OF ENGINEERING

OWNER/DEVELOPER
 NGA LIMITED PARTNERSHIP
 5500 STERRETT PLACE
 SUITE 105
 COLUMBIA, MARYLAND 21044

PROJECT
NORTH GREENBRIER

AREA TAX MAP 10 42 PARCELS A & B
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

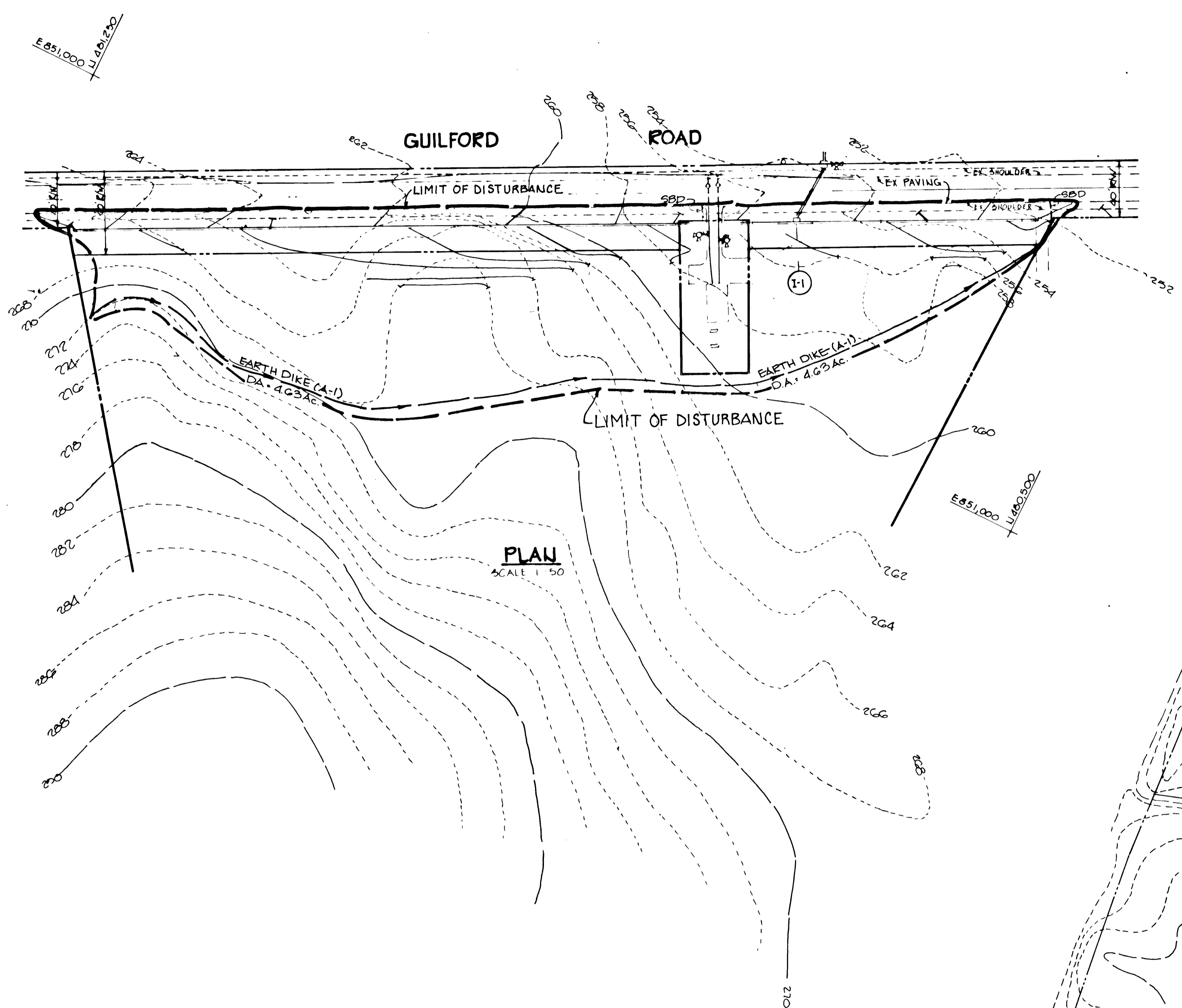
TITLE
GUILFORD ROAD IMPROVEMENT

THE RIEMER GROUP, INC.
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
 3105 Heath Park Drive, Ellicott City, Maryland 21043 (301) 461-2680

DATE: 4-8-86
 DESIGNED BY: J.D.P.
 DRAWN BY: F.O.M.
 PROJECT NO: 25400
 DATE: 4-8-86
 SCALE: AS SHOWN
 DRAWING NO. 1 OF 3

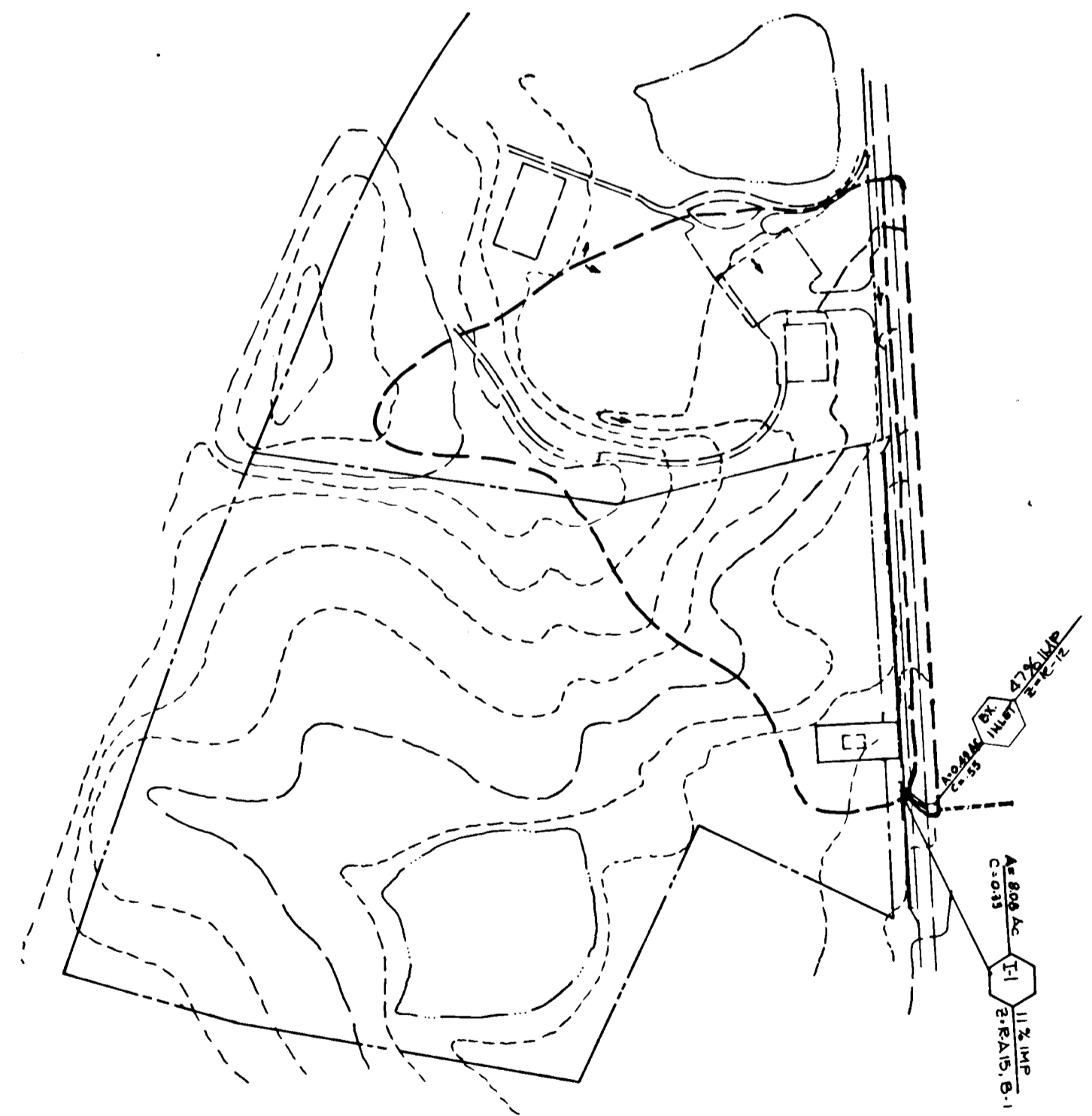
F-86-167

445



PLAN
SCALE 1" = 50'

LEGEND
 ——— EARTH DIKE
 - - - - - STRAW BALE DIKE
 - - - - - LIMIT OF DISTURBANCE



DRAINAGE AREA MAP
SCALE 1" = 200'

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- INSTALL EARTH DIKE. (1/2 DAY)
- INSTALL STRAW BALE DIKES. (1/2 DAY)
- GRADE FOR ROAD AND ON-SITE AS SHOWN AND SEED IN ACCORDANCE WITH TEMPORARY SEEDING NOTES. (2 DAYS)
- INSTALL STORM DRAIN PIPE AND INLET. (2 DAYS)
- INSTALL CURB AND GUTTER. (2 DAYS)
- PAVE THE ROAD WIDENING AND INSTALL CONCRETE APRON. (3 DAYS)
- REMOVE STRAW BALE DIKES AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 DAY)
- UPON APPROVAL OF HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREA IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 DAY)

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."
Shunt B. Bean 8-4-86
 DEVELOPER DATE

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
Arthur E. Muegge 7-31-86
 ENGINEER DATE
 ARTHUR E. MUEGGE #8707

REVIEWED FOR HOWARD S.C.D. NAME
 AND MEETS TECHNICAL REQUIREMENTS
James M. Vetter 8-6-86 U.S. SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Stephen L. Fisher 8-6-86 HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Murchman 8-7-86 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William E. Blinn 8-11-86 CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO	REVISION

OWNER/DEVELOPER
 NGA LIMIT PARTNERSHIP
 5000 STERRETT PLACE
 SUITE 105
 COLUMBIA, MARYLAND 21044

PROJECT **NORTH GREENBRIER**

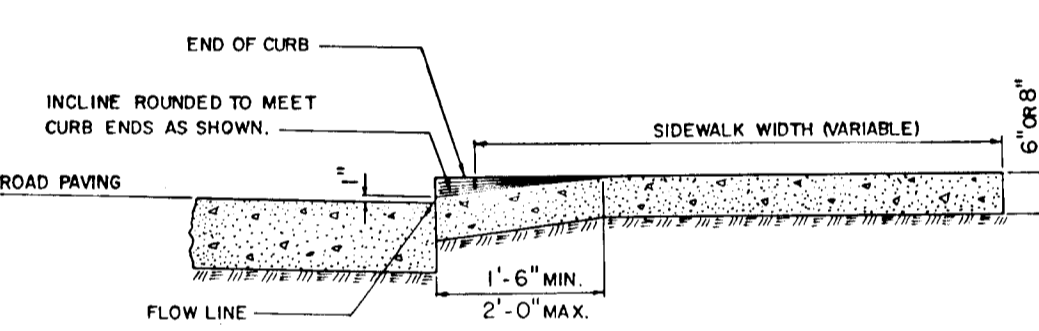
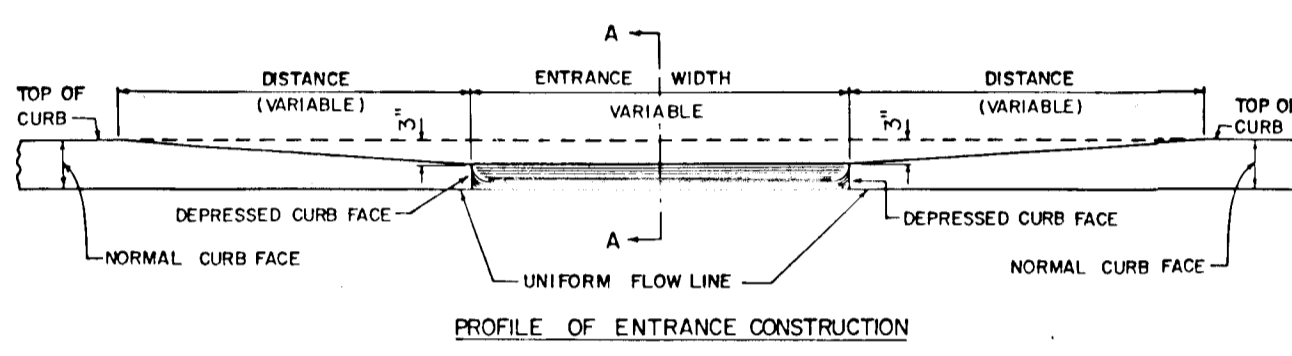
AREA TAX MAP 10 42 PARCELS A+B
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **SEDIMENT CONTROL AND DRAINAGE AREA MAP**

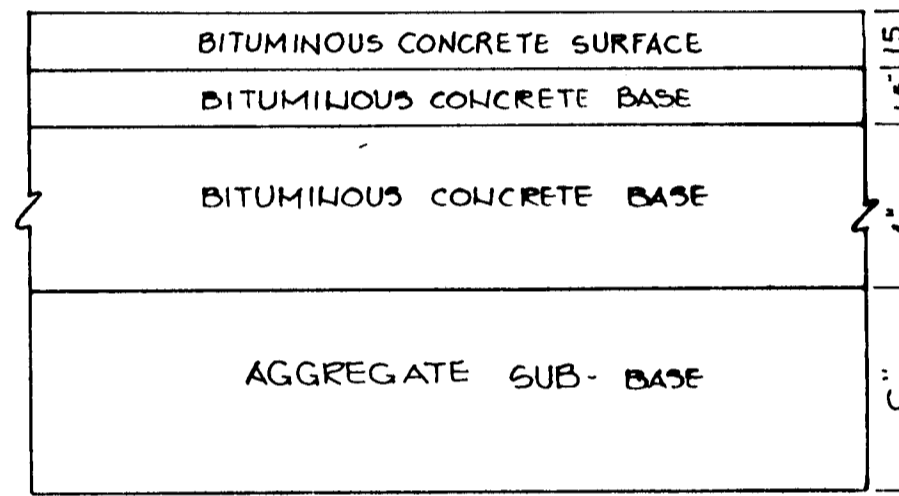
THE RIEMER GROUP, INC.
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
 3106 Heath Park Drive, Ellicott City, Maryland 21043 (301) 481-2890

4-8-86 DATE
 5-8-86 VP-86-38
 DESIGNED BY: J.D.P.
 DRAWN BY: F.D.M.
 PROJECT NO: 25100
 DATE: 4-8-86
 SCALE: AS SHOWN
 DRAWING NO. 2 OF 3

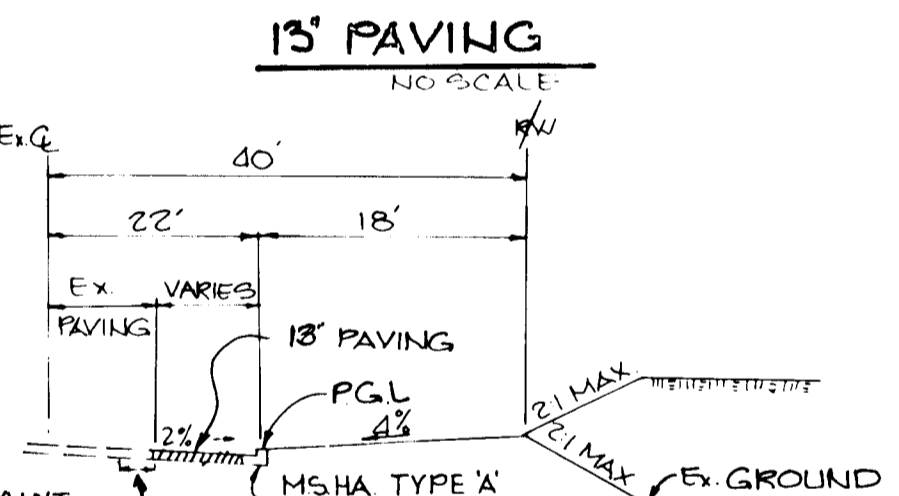
F-86-167



PUMPING STATION ENTRANCE DETAIL
MSHA 5-13-80 MD 500.01



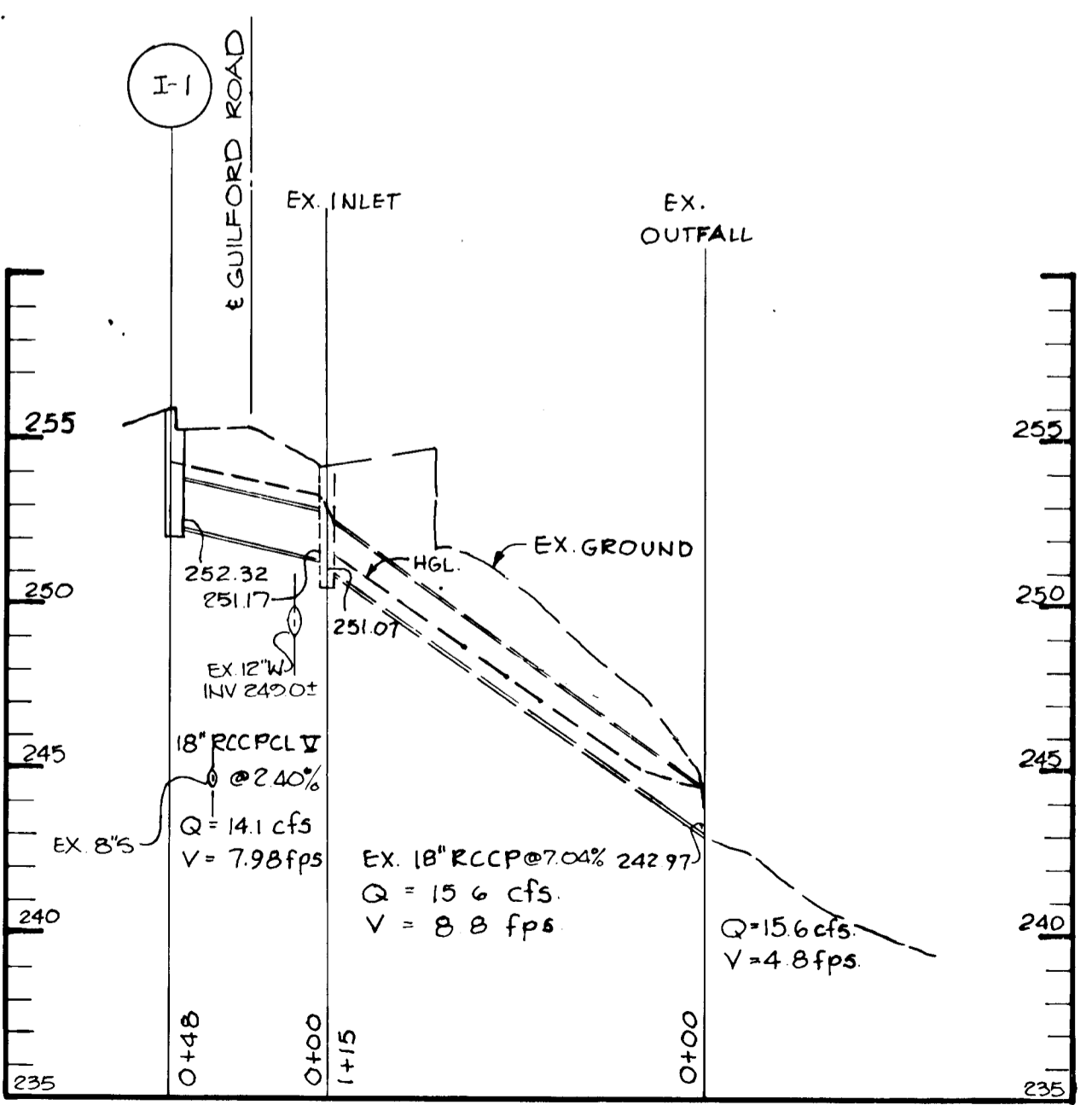
15' PAVING
NO SCALE



CONSTRUCT PAVING JOINT AS PER DIRECTION OF S.H.A. RESIDENT MAINTENANCE ENGINEER OR INSPECTOR.

STRUCTURE SCHEDULE			
NO	TYPE	INV IN	INV OUT
I-1	ST'D. WR INLET	252.32	255.67*
MSHA STD. MD-374.04			
EX	INLET	251.17	251.07

* TOP OF CURB ELEVATION



STORM DRAIN PROFILE
HORI: 1" = 50'
VERT: 1" = 5'

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, disking or other acceptable means before seeding.

Soil Amendments: 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". Lawns or high maintenance areas will be dragged and leveled with a York rake. At the time of seeding, apply 400 lbs. of 30-0-0 ureaform fertilizer and 500 lbs. of 10-20-20 or equivalent fertilizer per acre.

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 40 lbs. per acre (1 lb./1000 sq.ft.) of a mixture of certified 'Merion' Kentucky bluegrass, common Kentucky bluegrass @ 40 lbs. per acre (1 lb./1000 sq.ft.) and Red Fescue, Pennington or Jamestown @ 20 lbs. per acre (0.5 lb./1000 sq.ft.) for the period May 1 thru July 31, seed with 40-60-20 mix as specified above and 2 lbs. per acre (0.05 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 of well-anchored straw mulch and seed as soon as possible in the spring. (Option 2) the sod. (Option 3) Seed with 40-60-20 mix specified above and mulch with 2 tons/acre well-anchored straw.

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of untreated 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 redistributed where a short-term vegetative cover is needed.

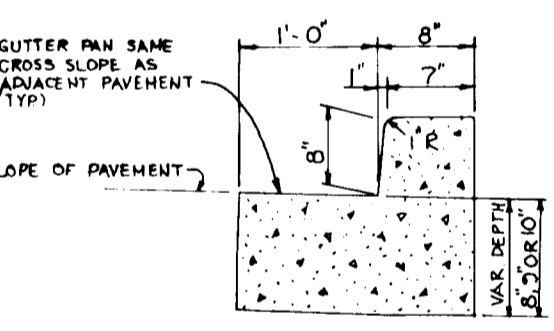
Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding.

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 348 lbs. per acre of annual ryegrass (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of untreated 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.

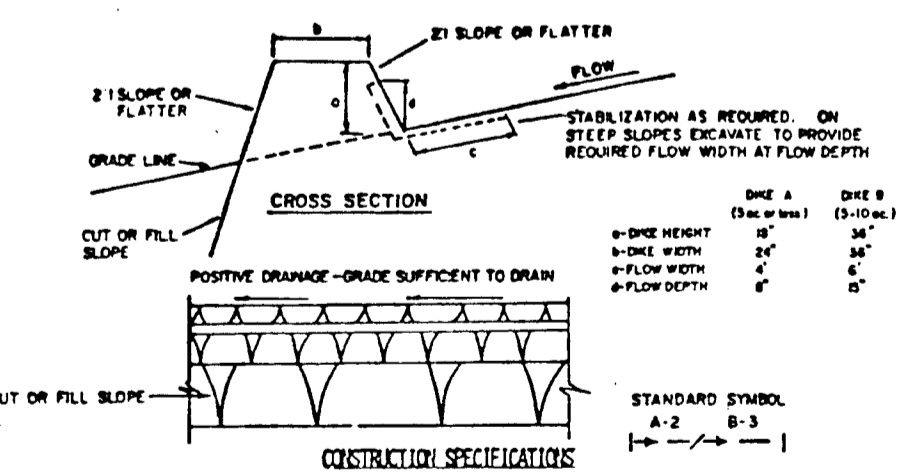


MSHA TYPE 'A' C & G

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All 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.
- 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 reestablishment of grasses.
- 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.
- Site Analysis:

Total Area of Site	N/A acres
Area Disturbed	1.39 acres
Area to be roofed or paved	0.38 acres
Area to be vegetatively stabilized	1.01 acres
Total Cut	124 Cu. yds.
Total Fill	850 Cu. yds.
- Any sediment control practice which is 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 DPM sediment control inspector.
- Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
- Sediment will be removed from traps when its depth reaches the clean out elevation shown on the plans.



1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.

2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.

3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.

4. FIELD LOCATION SHOULD BE AS NEAR AS POSSIBLE TO A STABILIZED SAFE OUTLET.

5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF PROSION. EXCESS SHOULD BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT INSTANTLY STABILIZED.

6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON; (B) FLOW CHANNEL AS PER THE CHART BELOW.

TYPE OF DISTURBANCE	FLOW CHANNEL STABILIZATION	
	DIKE A	DIKE B
1	5-3:1	SEED AND STRAW MULCH
2	3:1-5:1	SEED AND STRAW MULCH
3	5:1-8:1	SEED WITH JUTE, OR SOIL; 2" STONE
4	8:1-20:1	LINED RIP-RAP 4-8"

A. STONE TO BE 2" INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 5 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.

B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.

7. PERMITTED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

8. FURTHER INFORMATION REQUIRED MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE
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."

Arthur E. Muegge 8-4-86
DEVELOPER DATE

BY THE ENGINEER:

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

Arthur E. Muegge 7-31-86
ENGINEER DATE
ARTHUR E. MUEGGE #8707

REVIEWED FOR HOWARD S.C.D.

AND MEETS TECHNICAL REQUIREMENTS

James M. Nelson 8-6-86
U.S. SOIL CONSERVATION SERVICE DATE

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

Stephen L. Fisher 8-6-86
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

John W. Muegge 8-7-86
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

William S. Rouse 8-11-86
CHIEF, BUREAU OF ENGINEERING DATE

DATE NO REVISION

OWNER/DEVELOPER
NGA LIMITED PARTNERSHIP
2560 STERRETT PLACE
SUITE 105
COLUMBIA, MARYLAND 21044

PROJECT NORTH GREENBRIER

AREA TAX MAP NO. 42 PARCELS: A, B
GTH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

TITLE: DETAILS

THE RIEMER GROUP, INC.

The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
3105 Heath Park Drive, Ellicott City, Maryland 21043 (301) 461-2880

4-8-86 DATE
5-8-86 VP-86-38
DESIGNED BY: JDP
DRAWN BY: BAC
PROJECT NO: 28400
DATE: 4-8-86
SCALE: AS SHOWN
DRAWING NO. 3 OF 3

E-86-167

445