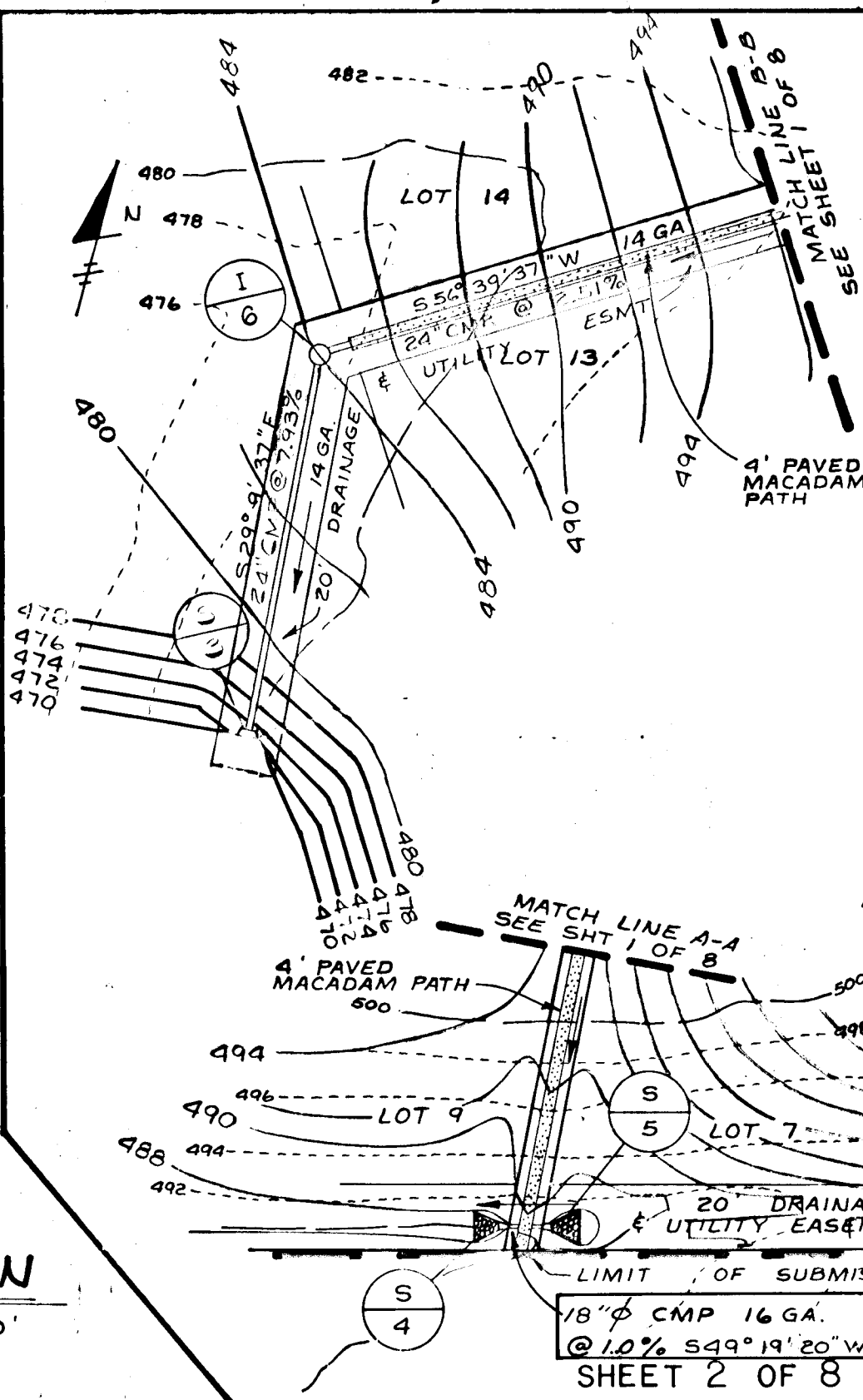
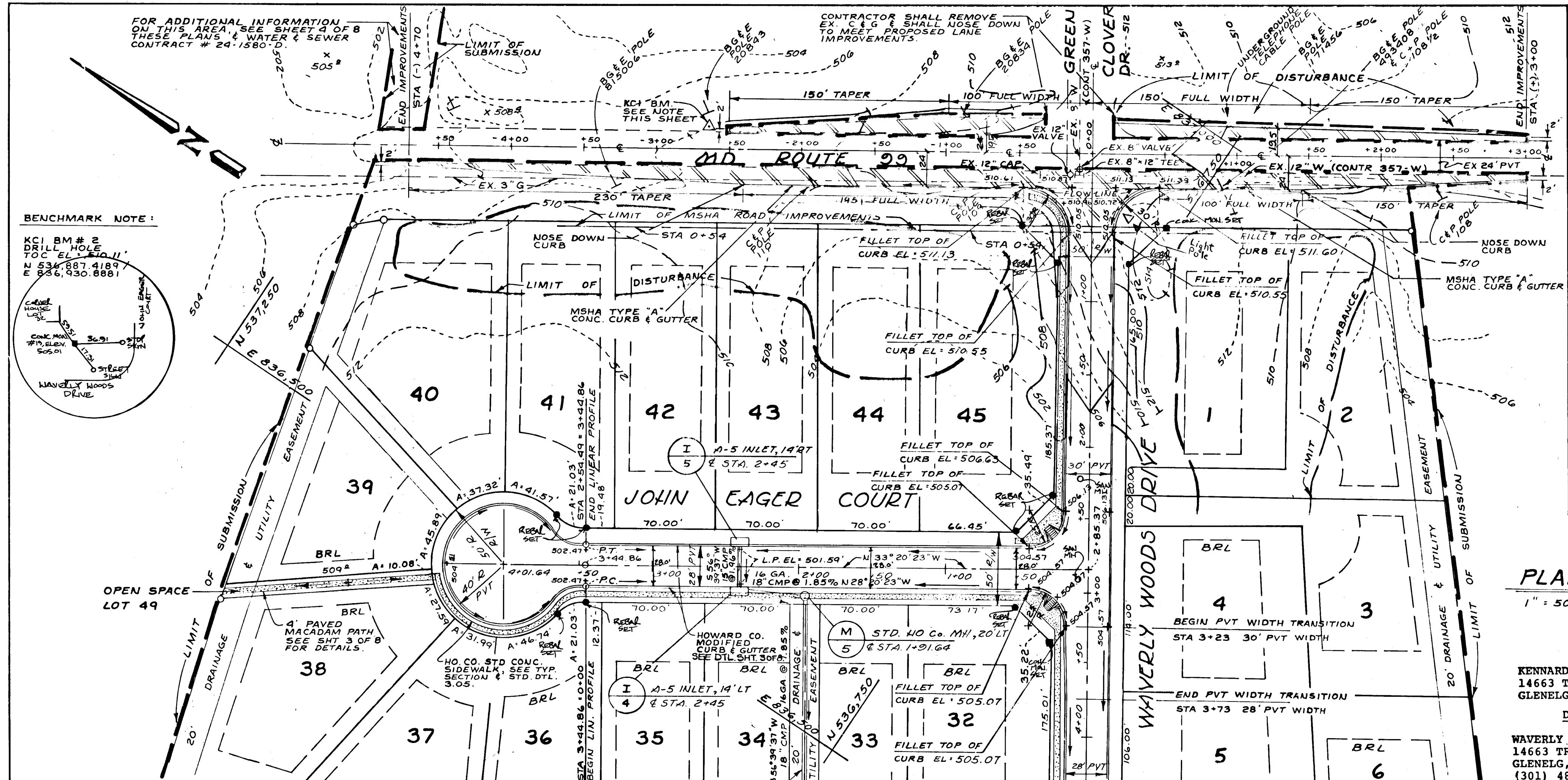


1253

General Notes
For
Md. Rt. 99 Lane Improvements Only

1. Relocate existing utility poles shown on plan which shall include BG&E Poles #20834, #171456, #493408, & C&P Poles Nos. 1081, 109, 110 & the underground telephone cable pole adjacent to BG&E Pole 171456.
2. Install sediment control devices as shown on Sheet 4 of 8 within the road improvement area.
3. Remove existing concrete curbing adjacent to Green Clover Road necessary to build improvements.
4. Grade for lane improvements and construct MSHA curb and gutter as shown on S.W. side of Md. Rt. 99 to Sta. 0+54 of Waverly Woods Drive.
5. Pave all lane improvements and stabilize all disturbed areas not to be paved.
6. See Site Analysis on sheet 5 of 8 for quantities relating to the Road Improvements.



REVISION #24 WIDTH 12-9-87 GR.
APPROVED: DEPARTMENT OF PUBLIC WORKS
4-7-87
CHIEF, BUREAU OF ENGINEERING
APPROVED: OFFICE OF PLANNING AND ZONING
11-7-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

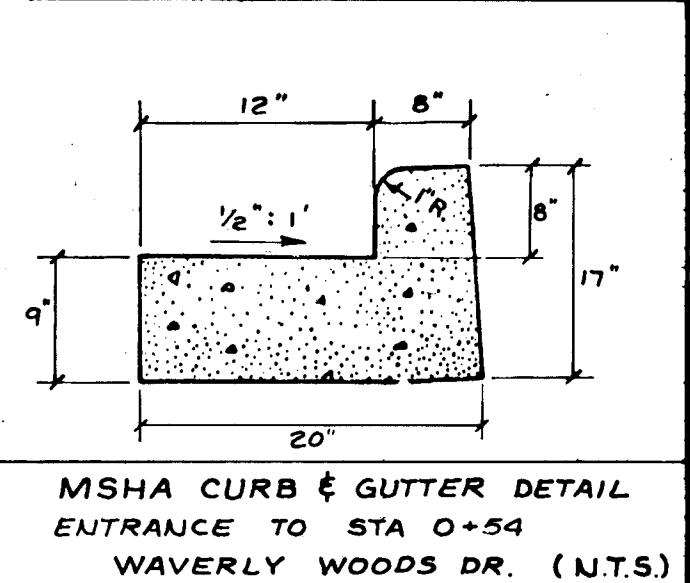
BENCHMARK NOTE:
KCI BM # 2
DRILL HOLE
TOC EL. 505.11
N 534,887.4189
E 836,930.8881

PLAN
1" = 50'

OWNER
KENNARD WARFIELD, JR.
14663 TRIADDELPHIA ROAD
GLENELG, MD 21737
DEVELOPER
WAVERLY WOODS DEVELOPMENT CORP.
14663 TRIADDELPHIA ROAD
GLENELG, MD 21737
(301) 489-4978

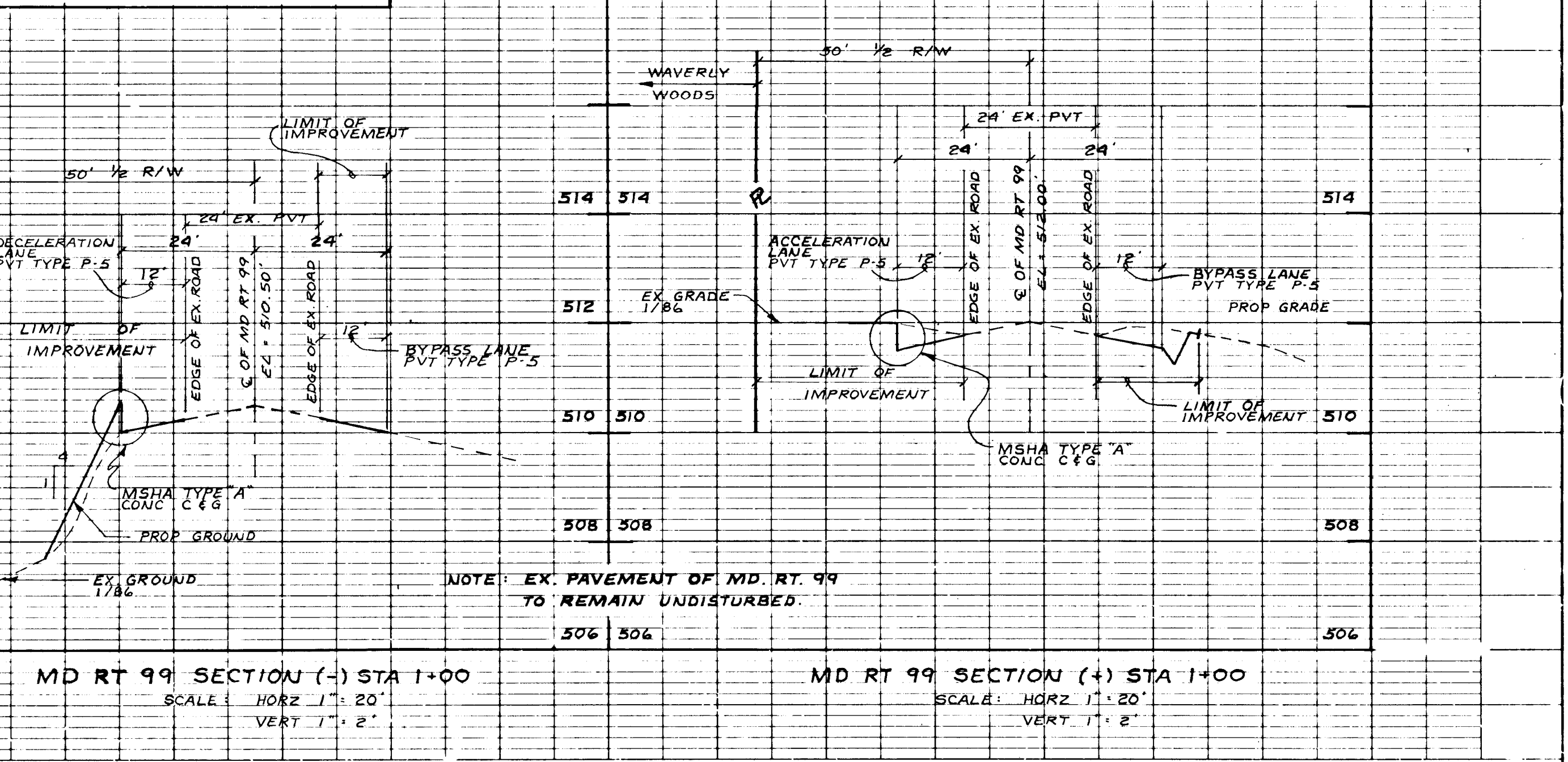
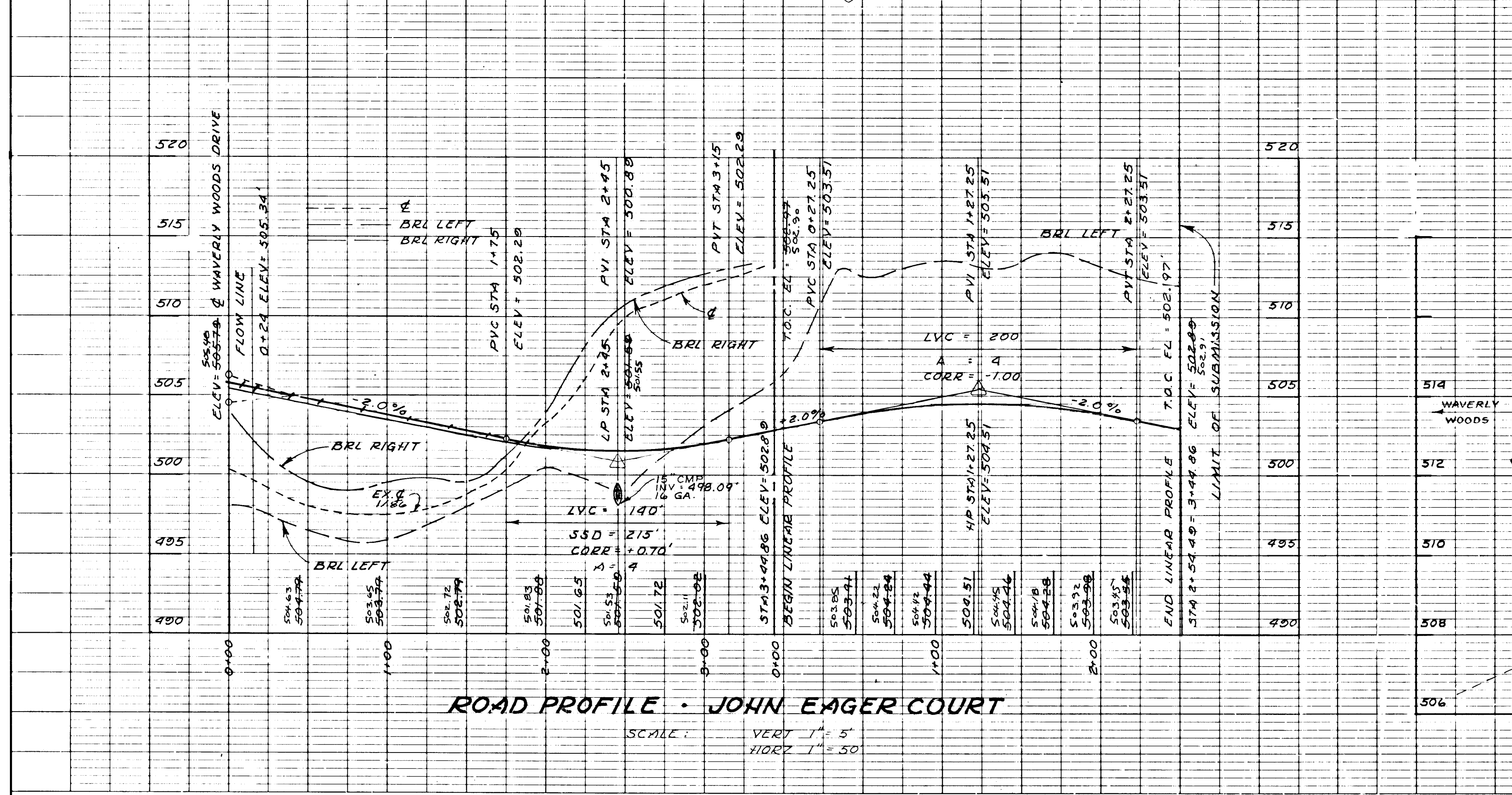
ROAD PLAN AND PROFILE AND ROAD IMPROVEMENT PLAN
JOHN EAGER CT. & MD RT 99
WAVERLY WOODS
LOT 1 thru 49
SECTION 1 AREA 1
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

KIDDE CONSULTANTS, INC.
ENGINEERS • PLANNERS • SURVEYORS
1100 WEST STREET / SUITE 100 / LAUREL, MD 20707
(Wash.) (301) 953-1821 / 792-8086 (Bart.)
JOHN E. C. PATMORE, NO. 8978
DATE DEC. 1986 SCALE AS SHOWN
KCI JOB # 1685112



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS	
		FULL DEPTH BIT. CONC. ALTERNATE	GRANULAR BASE ALTERNATES
P-5	COMMERCIAL-INDUSTRIAL ZONES	1 1/2" BIT. CONC. SURFACE	1 1/2" BIT. CONC. BASE
	MAJOR COLLECTOR	4 1/2" BIT. CONC. SURFACE	5" BIT. CONC. BASE
	ALL ZONES MINOR ARTERIAL	5" BIT. CONC. SURFACE	PRIME 12 COURSES OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE

TYPICAL PAVING SECTION FOR ROAD IMPROVEMENTS TO MD RT 99
NO SCALE

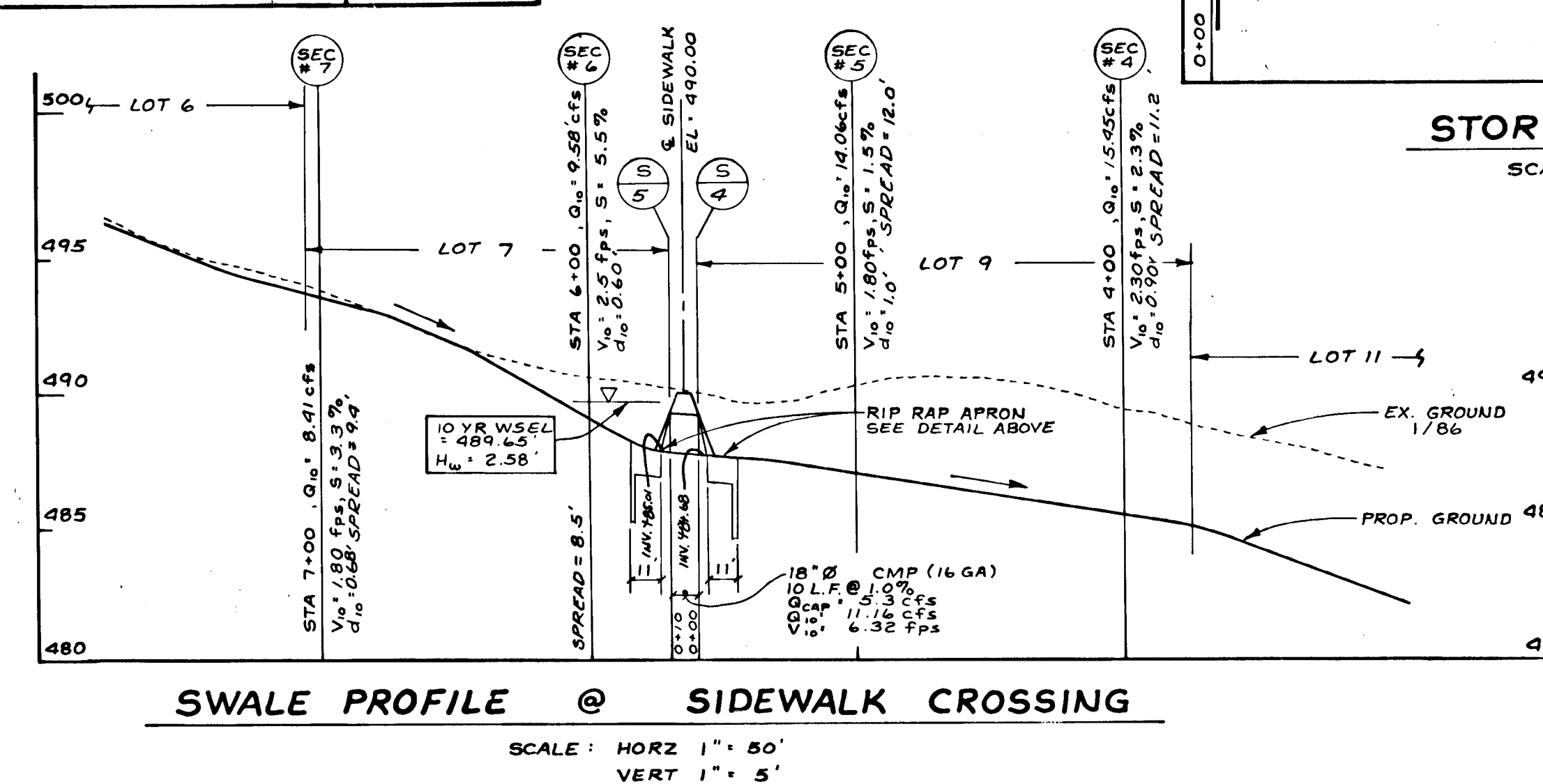
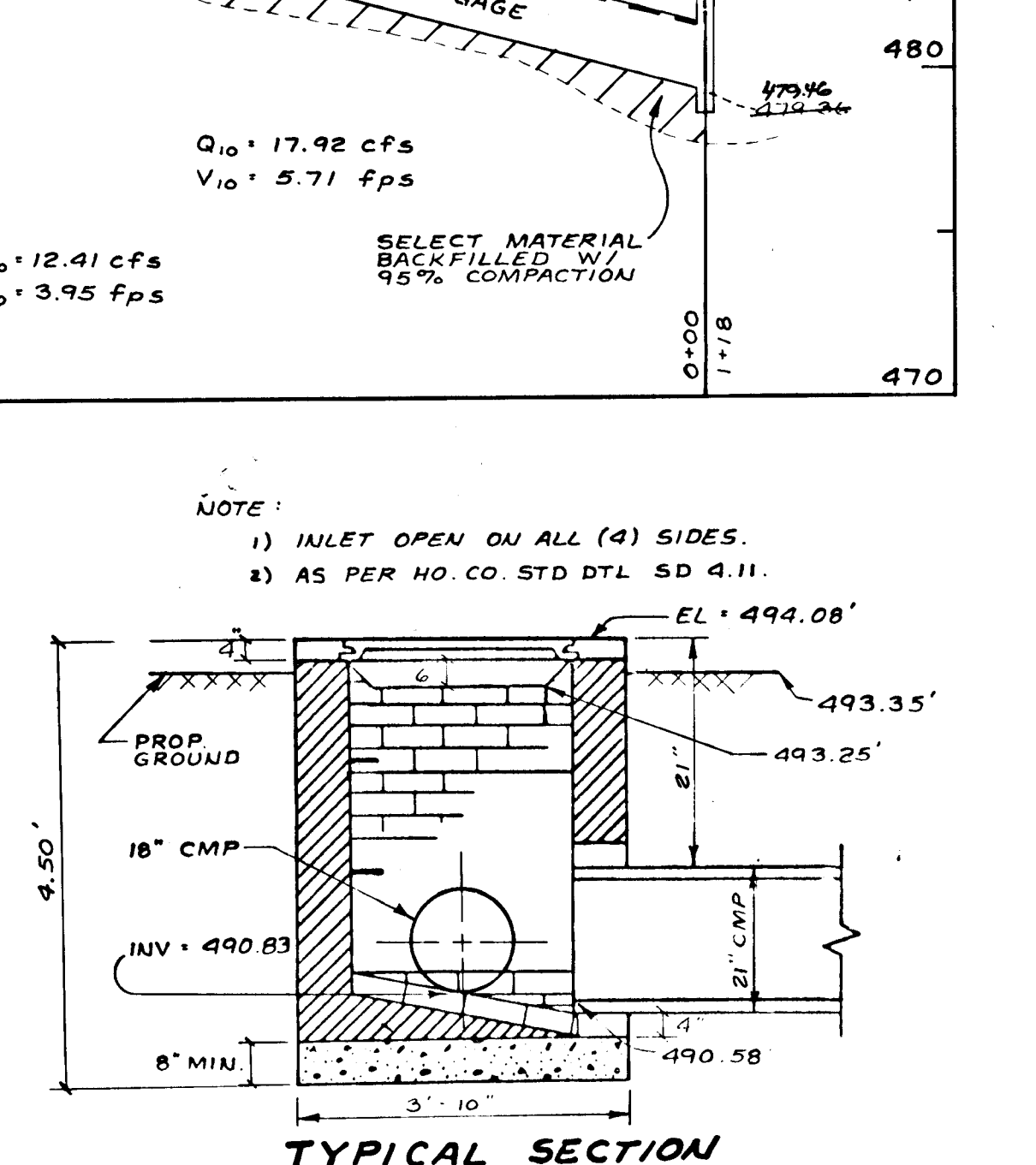
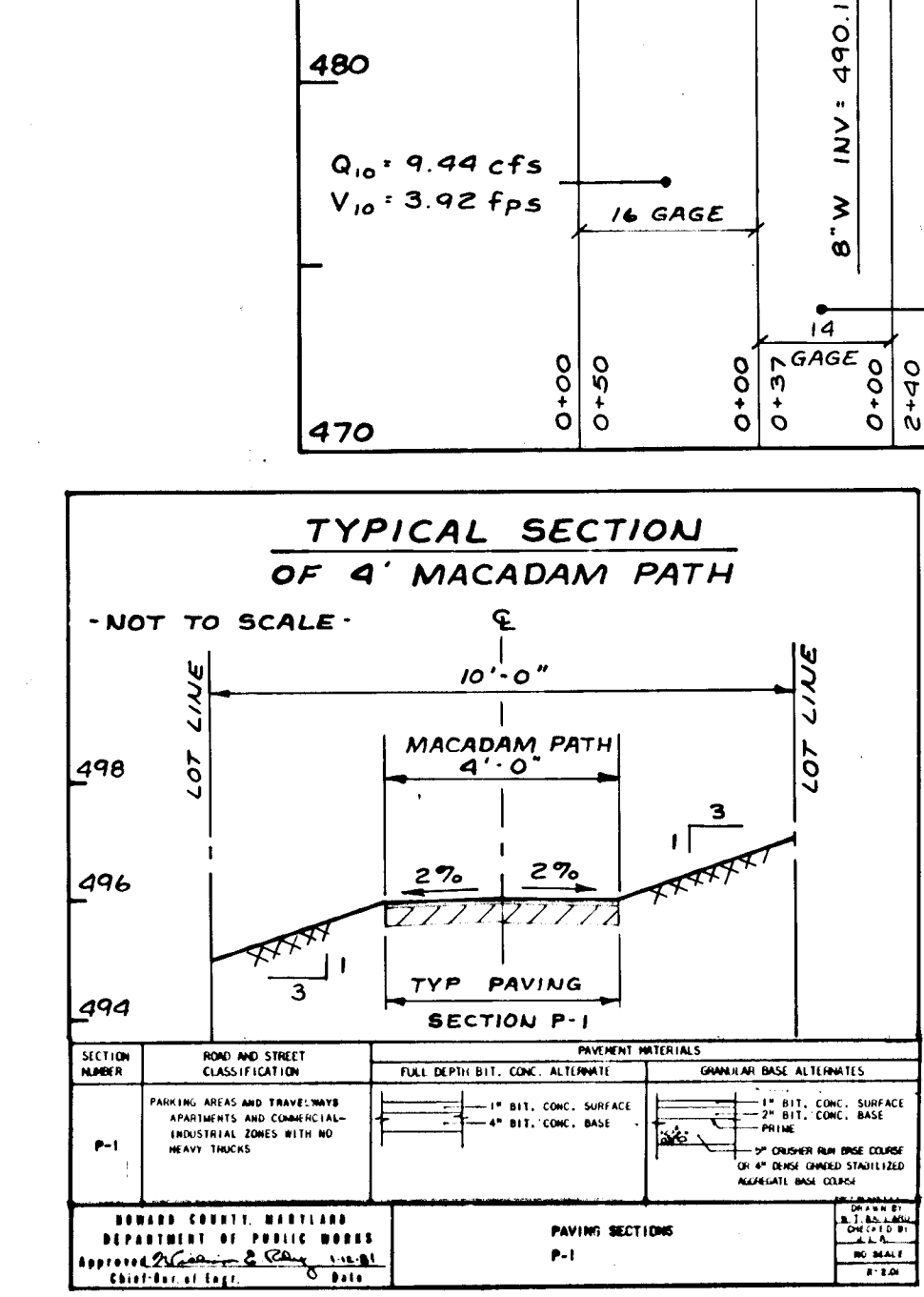
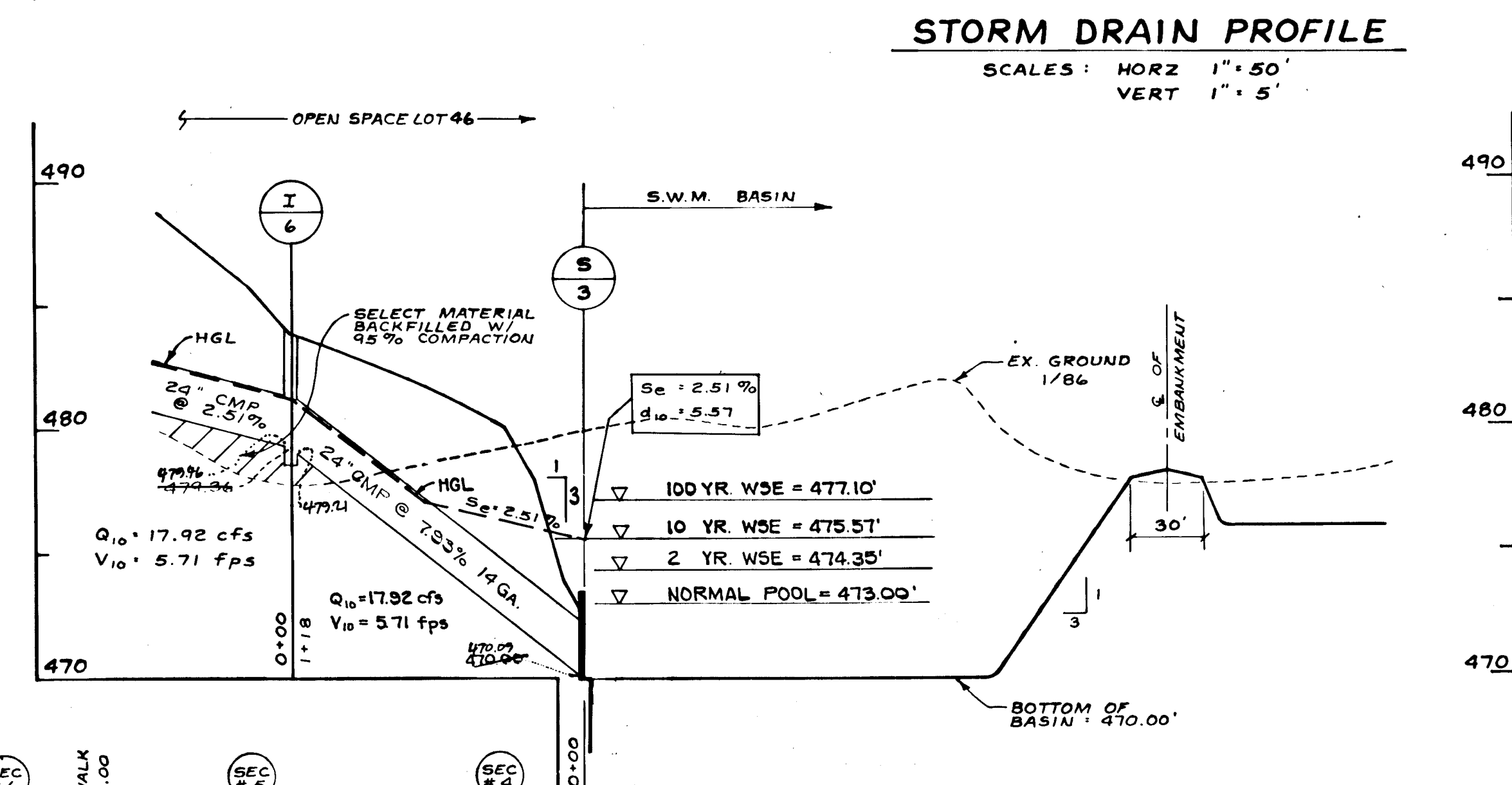
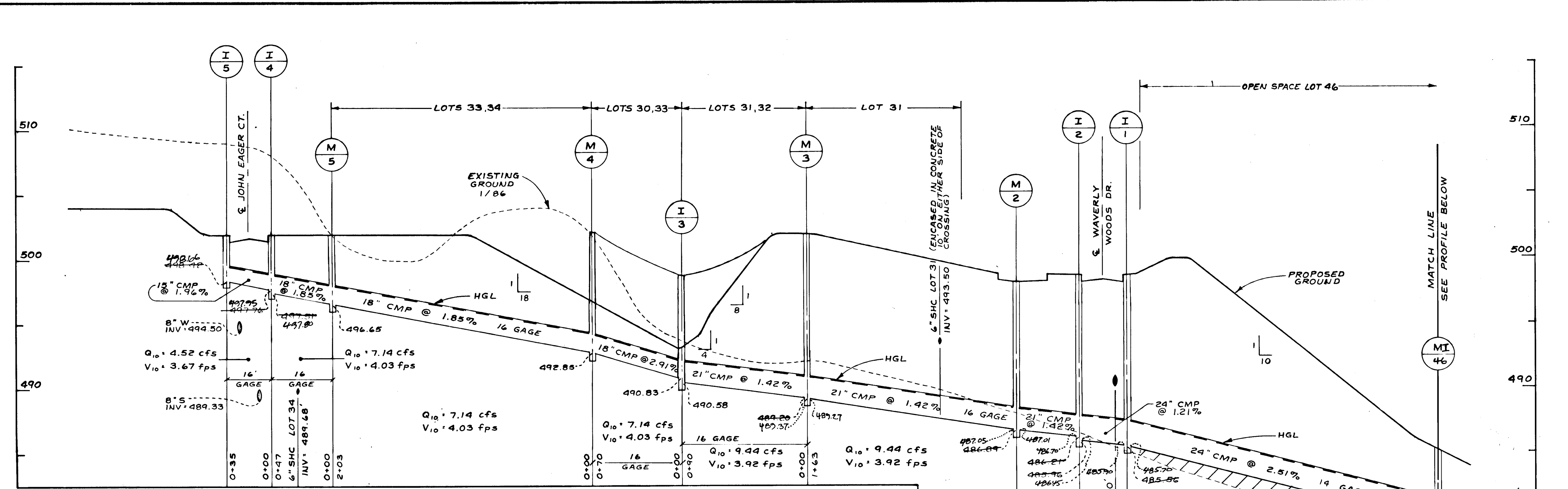
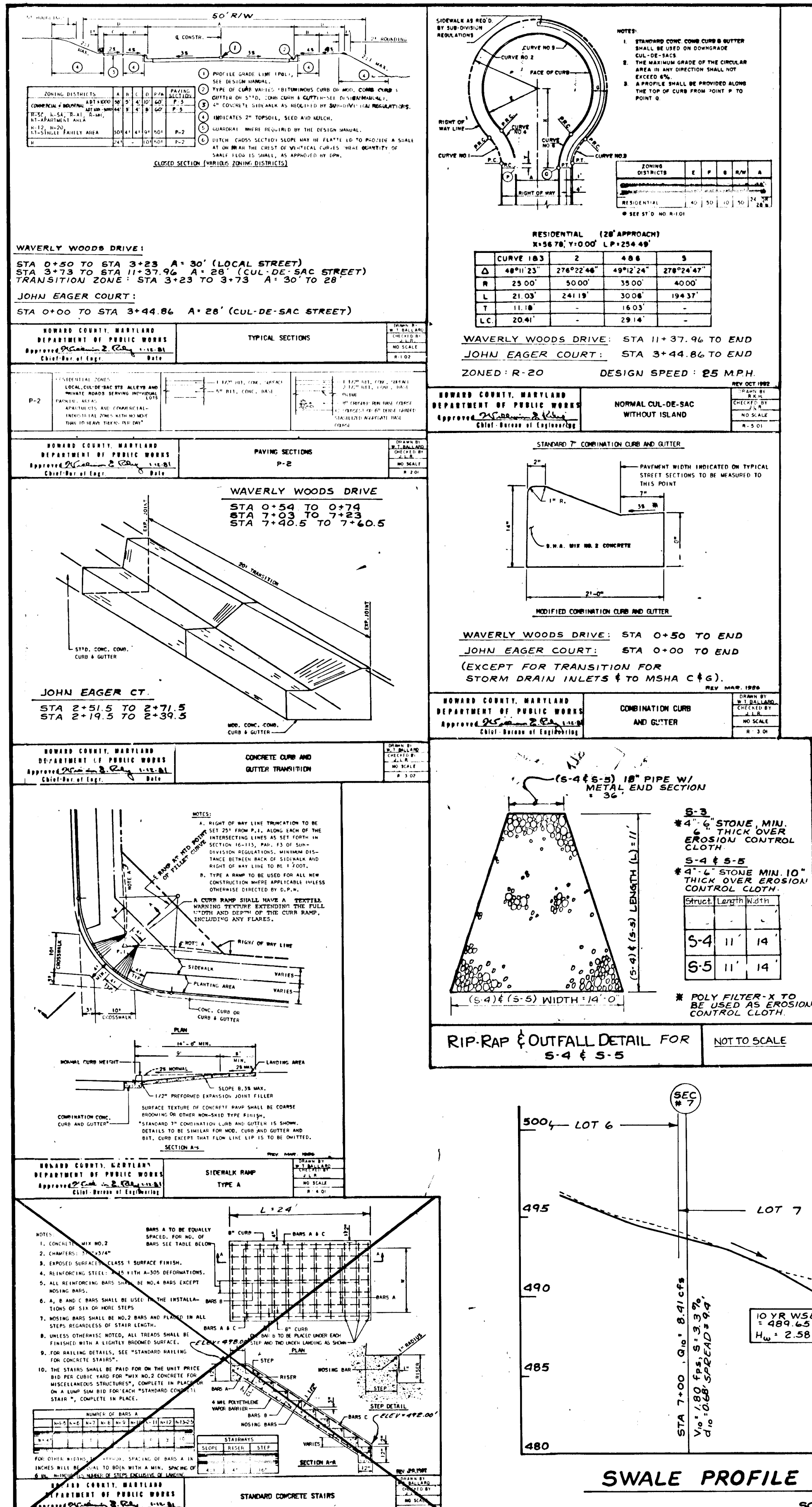


MD RT 99 SECTION (-) STA 1+00
SCALE: HORIZ 1" = 20'
VERT 1" = 2'

MD RT 99 SECTION (+) STA 1+00
SCALE: HORIZ 1" = 20'
VERT 1" = 2'

PLAN
NOTED: SURVEYED, DRAWN, CHECKED, BY: [Name]
NOTE BOOK: [Number]
NO. [Number]

PROFILE
NOTED: GRADES CHECKED, BY: [Name]
NOTE BOOK: [Number]
NO. [Number]



NO.	TYPE	INLET	INLET	INLET	INLET	INLET	INLET
1-1	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-2	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-3	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-4	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-5	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-6	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-7	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-8	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-9	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70
1-10	NO. CO. STD. TYPE A-10 INLET	488.70	488.70	488.70	488.70	488.70	488.70

STORM DRAIN PROFILES & DETAIL SHEET
 FOR
WAVERLY WOODS
 1 thru 49
SECTION I AREA I
TAX MAP 16 & 17 PARCEL 22
2nd ELECTION DISTRICT HOWARD COUNTY MD.
SHEET 3 OF 8

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 plan will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

KENNARD WARFIELD JR. Date

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."

JOHN E.C. PATMORE Date
 Registered Professional Engineer # 8978

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENGINEERING 4-3-87
 APPROVED: OFFICE OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION 4-7-87

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 APPROVED: U.S. SOIL CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTR. BY THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER: KENNARD WARFIELD, JR. 14663 TRIADAPLHIA ROAD GLENELG, MD 21737
 DEVELOPER: WAVERLY WOODS DEVELOPMENT CORP. 14663 TRIADAPLHIA ROAD GLENELG, MD 21737 (301) 489-4978

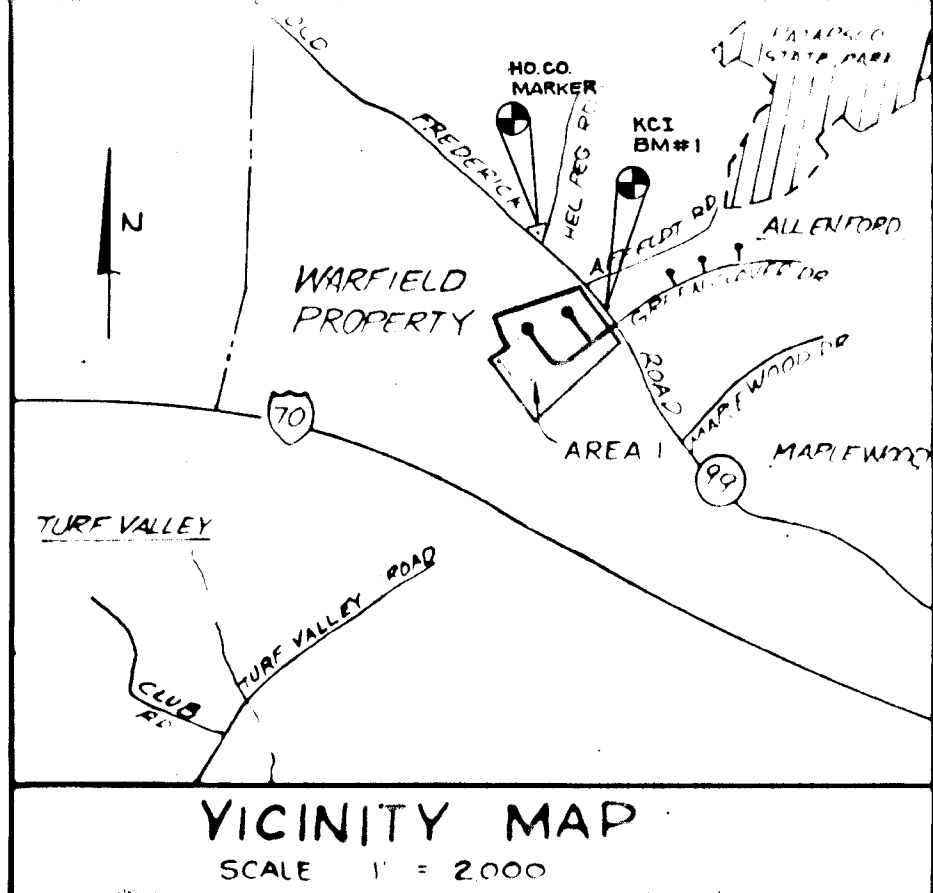
KIDDE CONSULTANTS, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 1100 WEST STREET / SUITE 100 / LAUREL, MD 20707
 (Wash.) (301) 953-1821 / 792-8086 (Ballt)

APPROVED BY: M.S.S. / M.W.G. / M.S.S.
 1685112

JOHN E.C. PATMORE P.E. NO. 8978
 DATE DEC. 1986 SCALE AS SHOWN

SWALE SEDIMENT TRAP

TRAP DEPTH	3'
DA	0.52 AC
VOL REQ	936 FT ³
VOL PROV	1000 FT ³
BOTTOM EL.	501.00'
BOTTOM DIM.	50' x 100'
CLEANOUT EL.	502.00'
TOP EL.	503.00'



APPROVED: DEPARTMENT OF PUBLIC WORKS
 4-7-87
 CHIEF, BUREAU OF ENGINEERING

APPROVED: OFFICE OF PLANNING AND ZONING
 4-7-87
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

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.
 4-6-87
 U.S. Soil Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 4-6-87
 Howard Soil Conservation District

ENGINEERS CERTIFICATE
 "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."
 Registered Professional Engineer #8978
 By the Developer:

"I do 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 as a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."
 Signature: KENNARD WARFIELD, JR. Date: 12-1-86
 Name: KENNARD WARFIELD, JR. Title: OWNER/DEVELOPER Phone No. 489-4978
 Firm: N/A Complete Address: 14663 TRIADDELPHIA RD. GLENELG, MD 21737

GRADING & SEDIMENT CONTROL PLAN
 FOR
WAVERLY WOODS
 LOTS 1 thru 49
 SECTION I AREA I
 TAX MAP 16 & 17 PARCEL 22
 2ND ELECTION DISTRICT HOWARD CO. MD
 SHEET 4 OF 8

KIDDE CONSULTANTS, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 1100 WEST STREET / SUITE 100 / LAUREL, MD 20707
 (Wash.) (301) 953-1821 / 792-8086 (Blatt.)
 JOHN E.C. PATMORE MD PE NO. 8978
 DATE DEC. 1986 SCALE 1" = 50'
 1685112

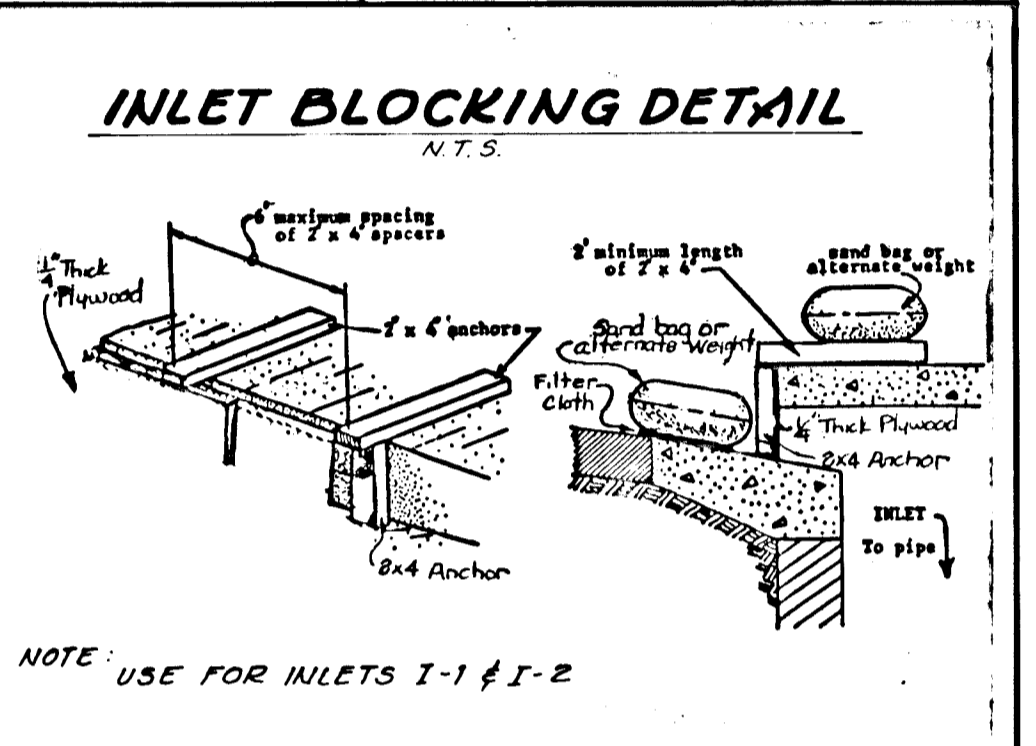
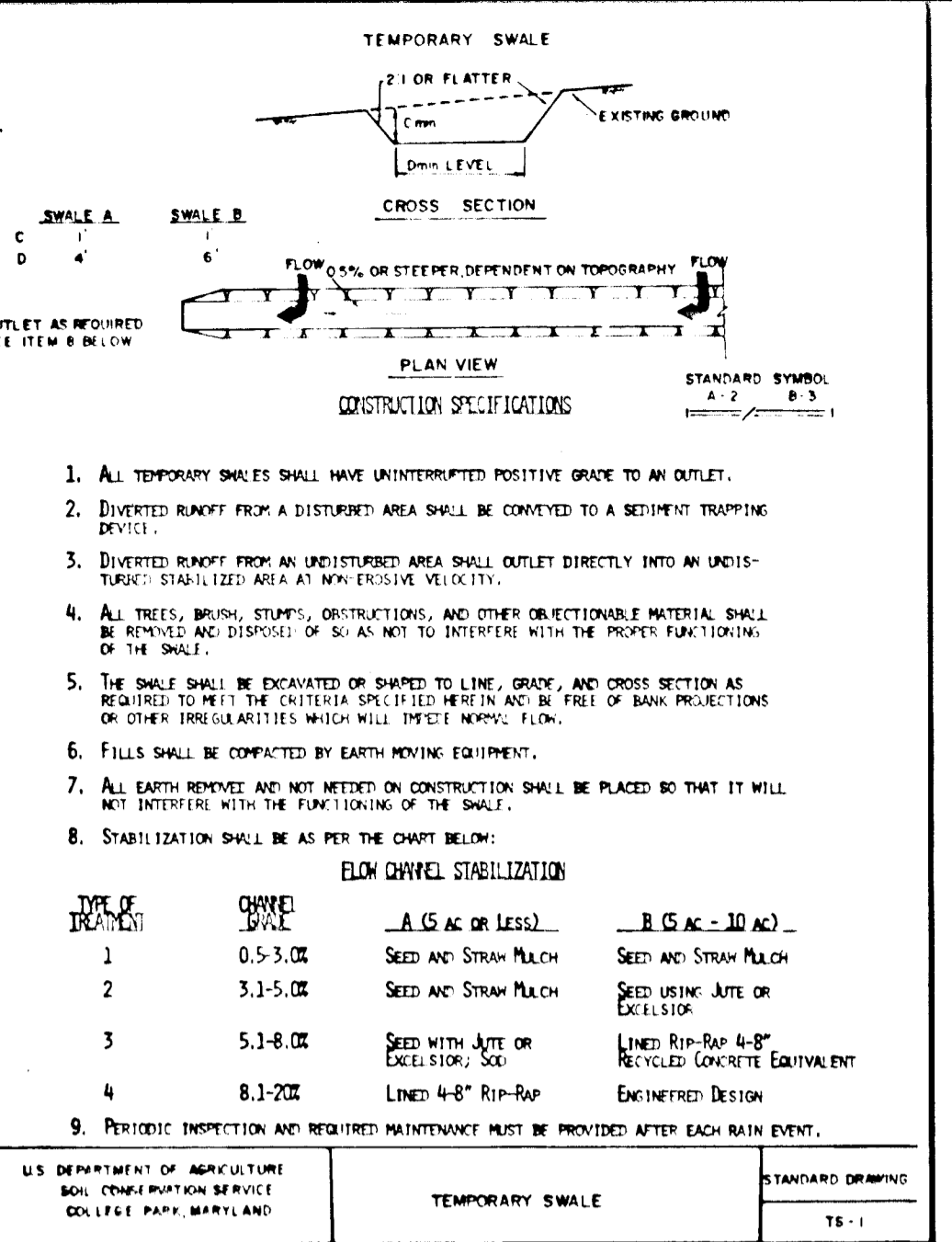
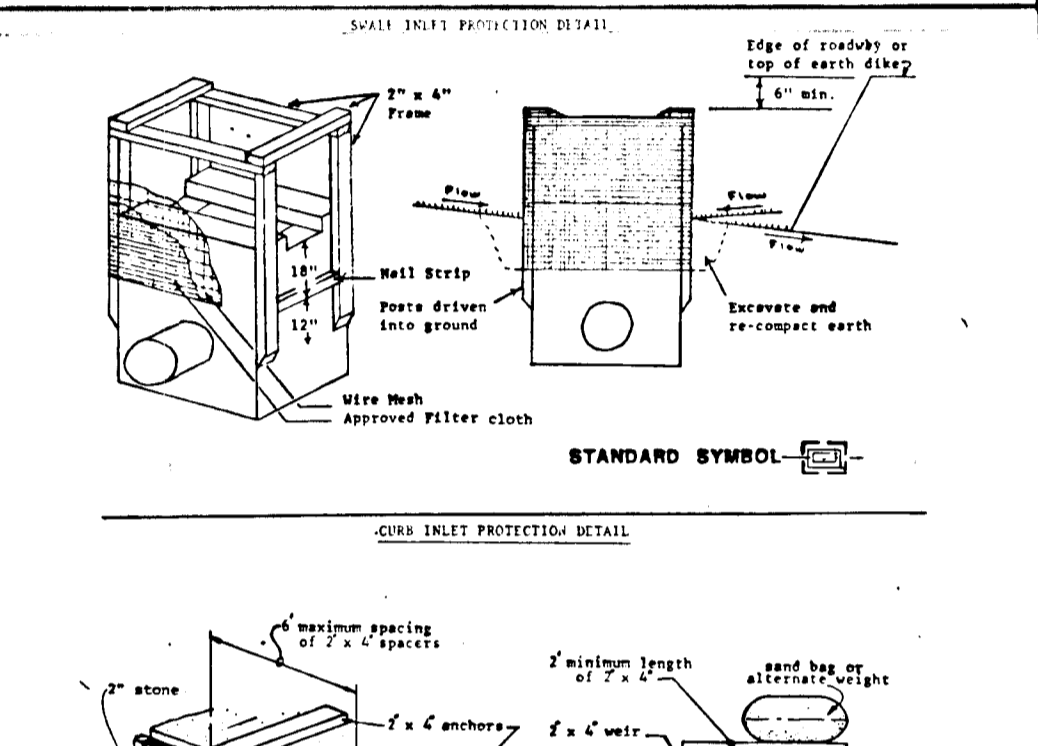
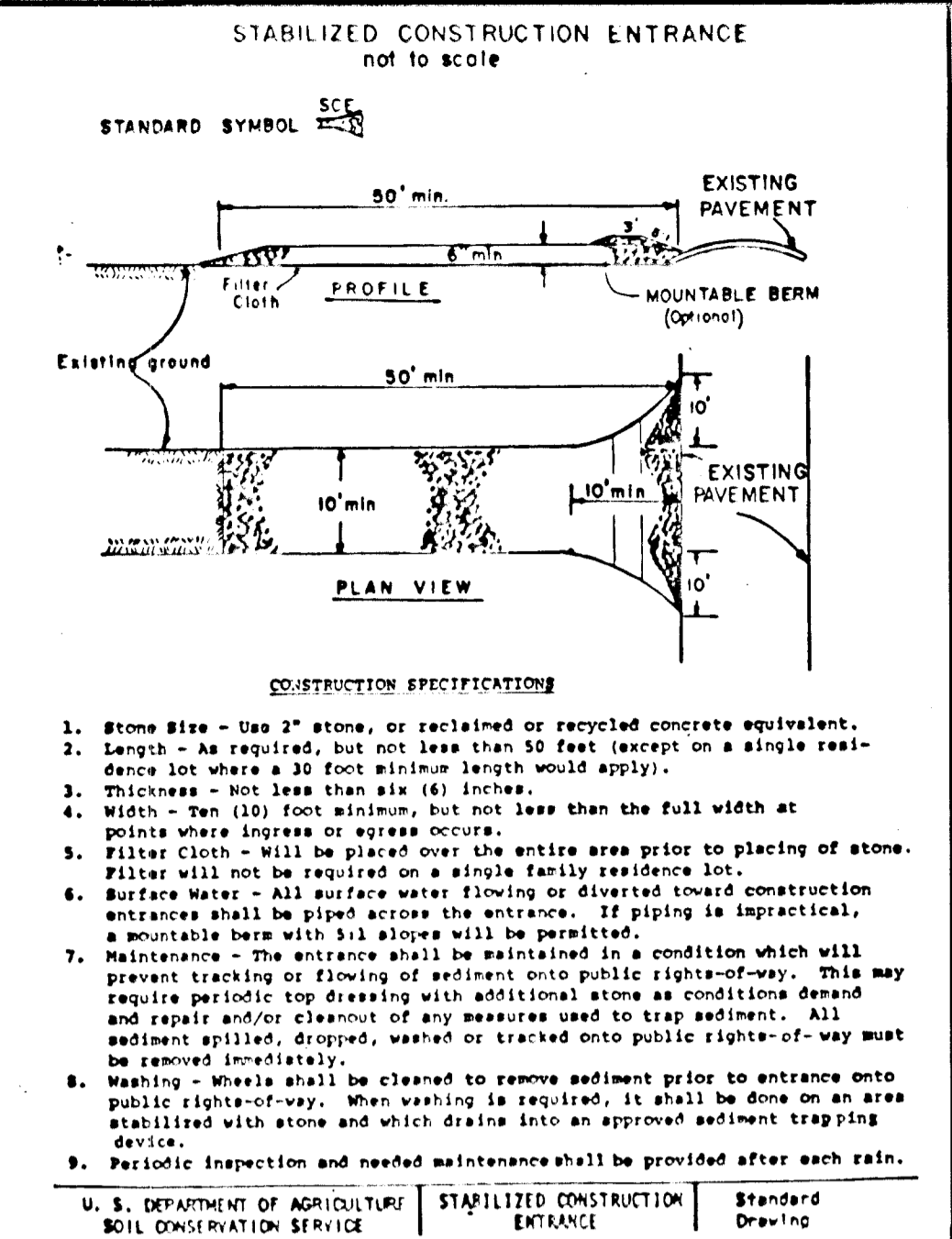
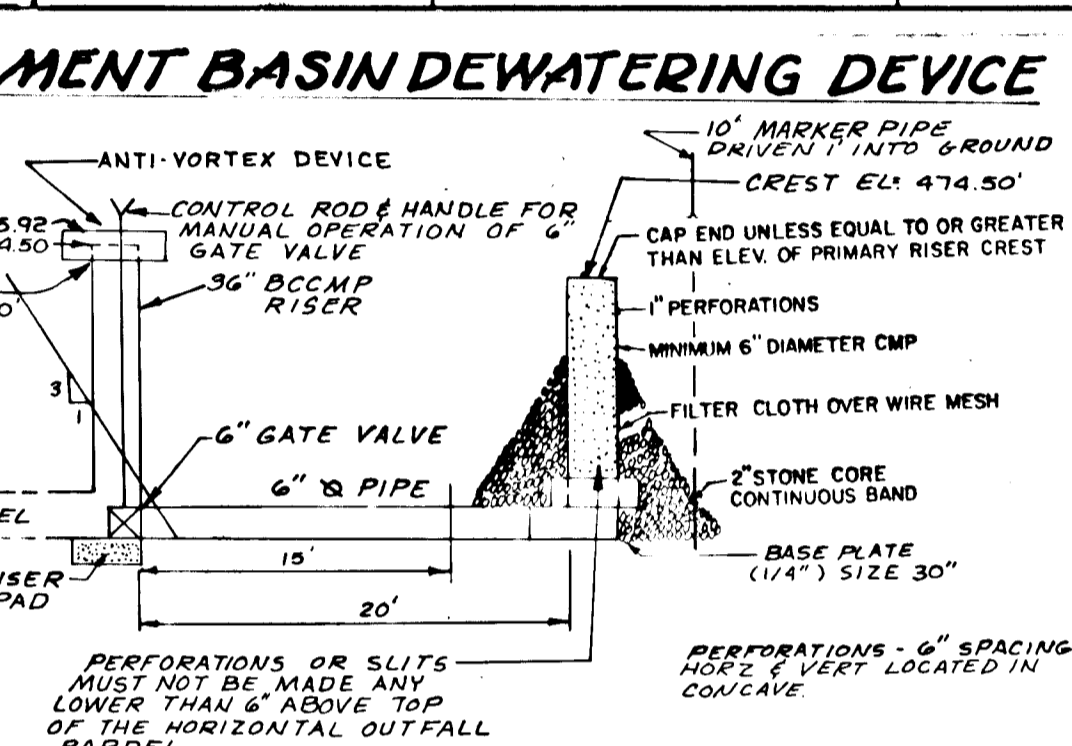
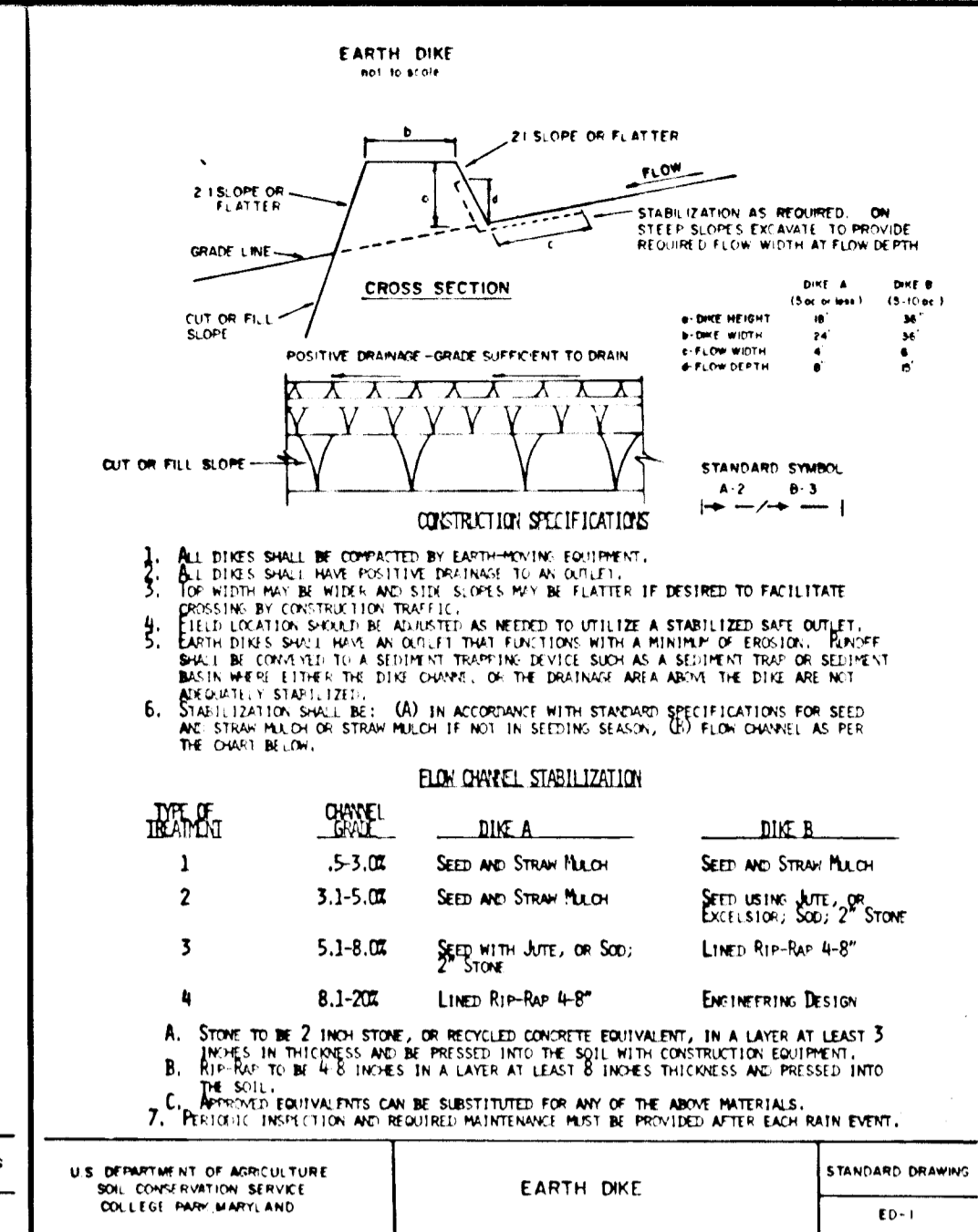
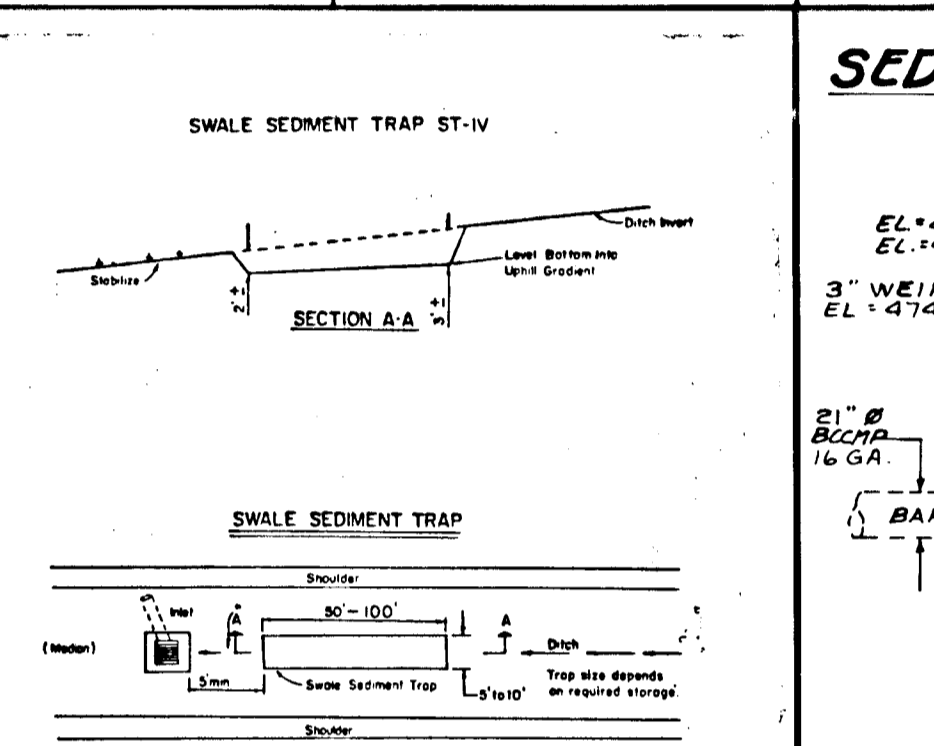
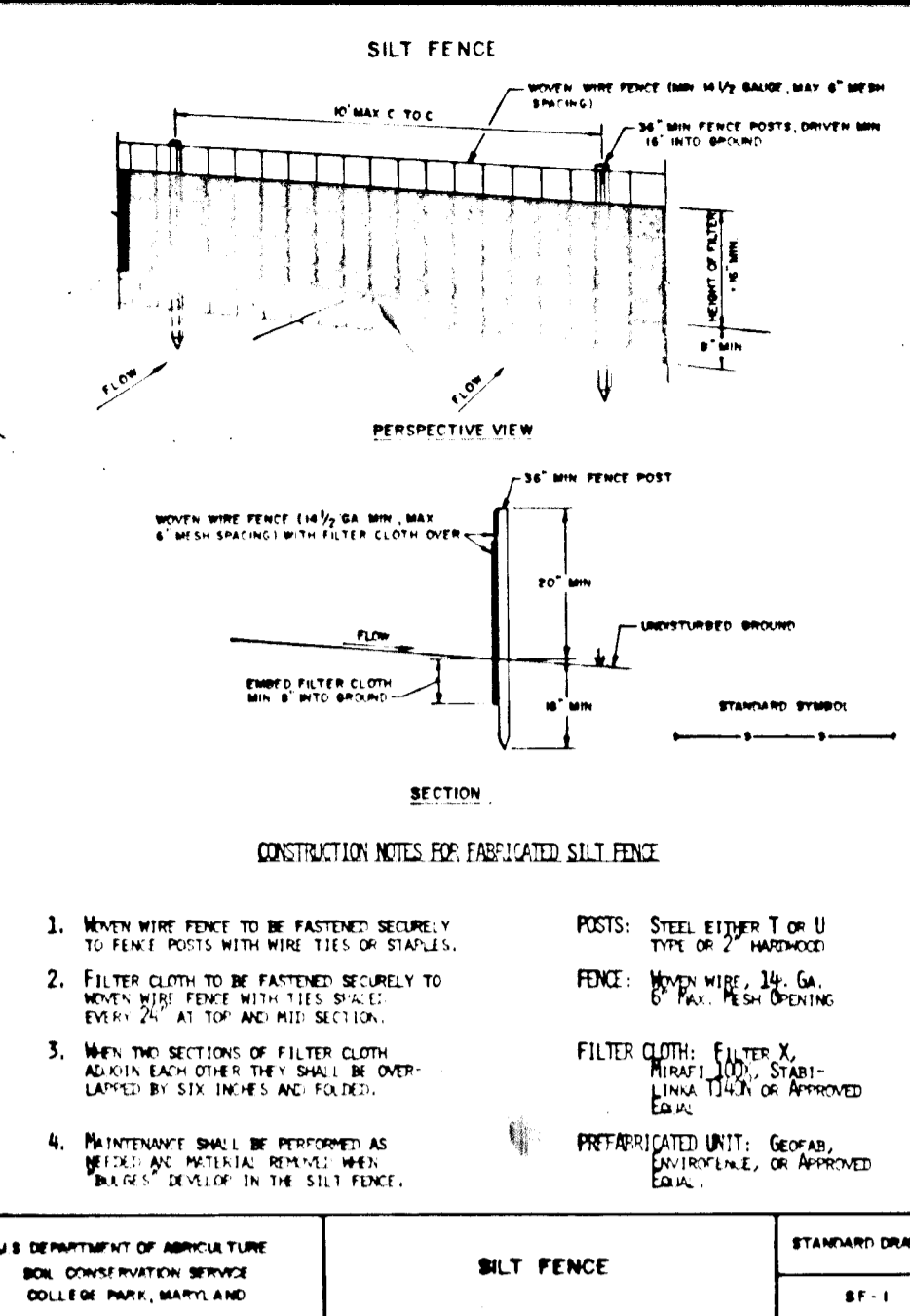
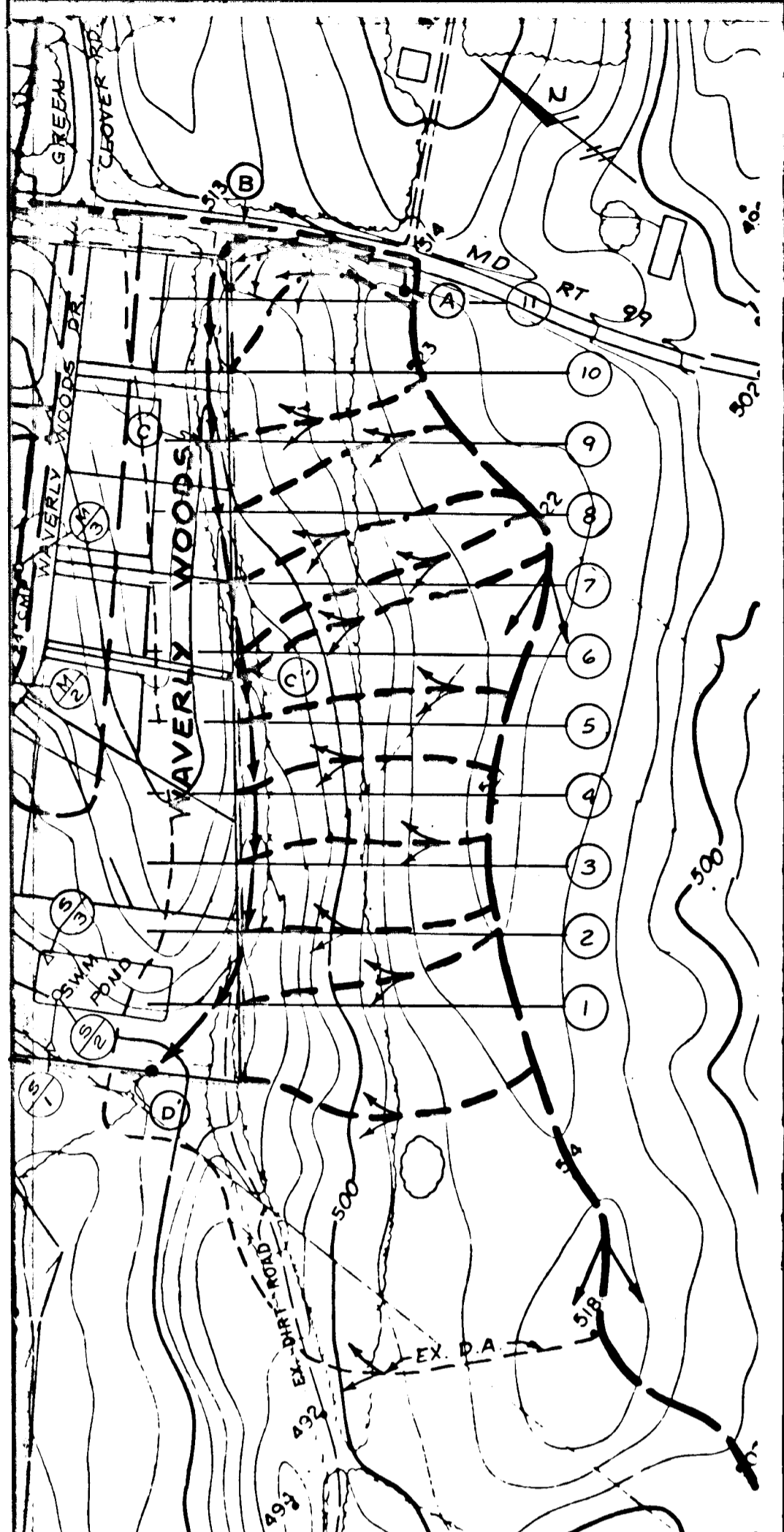
TRAP # 1

DA	1.33 AC	BOT EL.	479.0'
STOR REQ	2394 FT ³	TOP/EMB.	484.0'
	PROV. 2844 FT ³	WEIR LEN.	5.0'
OUTLET EL.	482.0'	CLEANOUT EL.	480.5'
WIDTH OF EMBANK.	4.0'	TEMP. SWM.	N/A

OWNER
 KENNARD WARFIELD, JR.
 14663 TRIADDELPHIA ROAD
 GLENELG, MD 21737

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORP.
 14663 TRIADDELPHIA ROAD
 GLENELG, MD 21737
 (301) 489-4978

#1253



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: In lieu of soil test recommendations, use one of the following schedules:
 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding.
 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding.
 Narrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureafertilizer (9 lbs/1000 sq ft).
 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Narrow 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 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.5 lbs/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) Use seed. Option (3) 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 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (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).
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushels per acre of annual ryegrass (3.2 lbs/1000 sq ft). For the period May 1 thru August 15, seed with 3 lbs per acre of weeping lovegrass (0.3 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 seed.
Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (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.

SEDIMENT 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 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.
 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 seeding (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	23.98 Acres	ROAD IMPROVEMENTS ONLY
Area Disturbed	19.16 Acres	1.03 AC
Area to be roofed or paved	2.01 Acres	1.03 AC
Area to be vegetatively stabilized	17.75 Acres	0.30 AC
Total Cut	39,416 cu. yds	100
Total Fill	116,873 cu. yds	100

 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.
 * Includes Offsite Sewer Extension W&S Contract #24-1580-D
 ** TO BE PROVIDED UNDER A SEPARATE GRADING PLAN, GP-87-
 On all sites with disturbed areas in excess of 2 acres, approval of all 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 THIS SHEET.

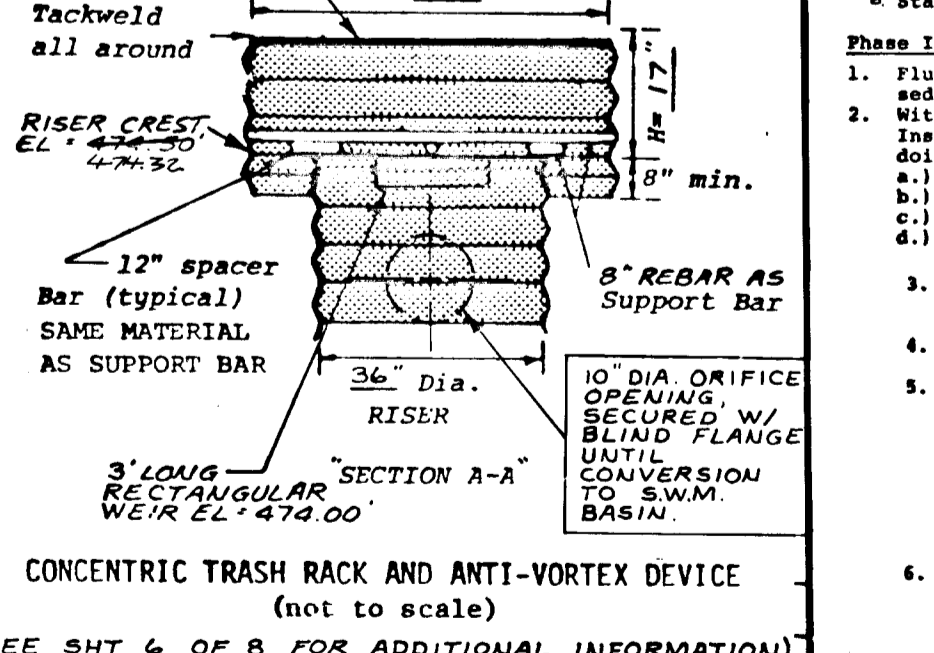
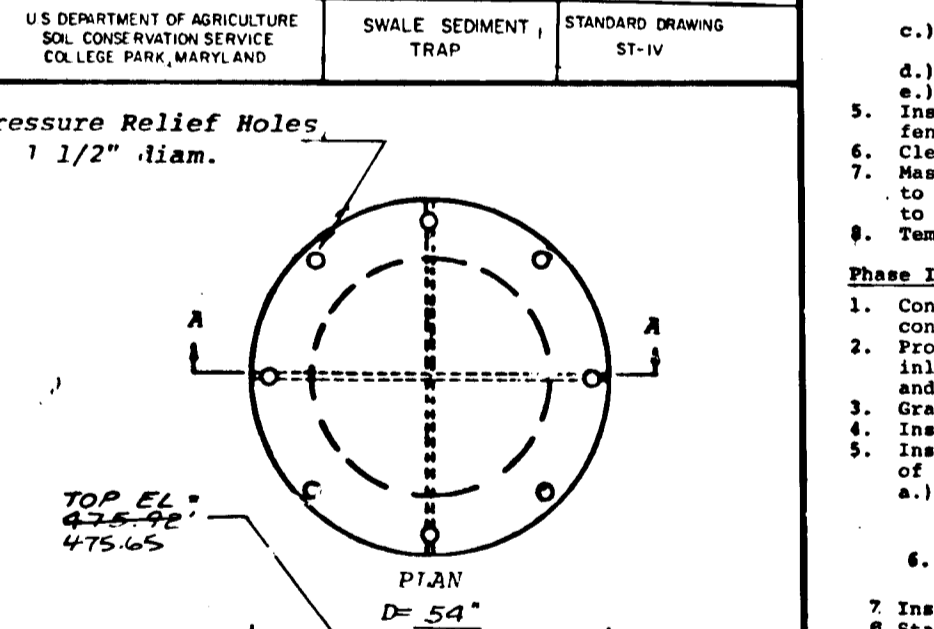
OFFSITE DRAINAGE AREA MAP
 SCALE: 1" = 200'
EXISTING CONDITIONS:
 OFFSITE TIME OF CONCENTRATION
 A-B 300' OVERLAND FLOW (ROAD GUTTER) t = 0.06 HR
 C-D 600' SWALE @ 3fps t = 0.17 HR
 C-D 600' SWALE @ 3fps t = 0.06 HR
TOTAL TIME = 0.29 HR.
FUTURE CONDITIONS:
 OFFSITE TIME OF CONCENTRATION
 A-B 300' OVERLAND FLOW (ROAD GUTTER) t = 0.06 HR
 B-C 300' GRASSED SWALE (V = 1.9 fps) t = 0.04 HR
 C-D 600' SWALE (V = 2.0 fps) t = 0.04 HR
TOTAL TIME = (0.10 HR + 0.0 MIN) = 0.10 HR
 C TO S.W.M. BASIN (SEE SWALE COMPUTATIONS) TOTAL Tc = 13.98 MIN = 0.23 HR.
 NOTE:
 SINCE Tc FOR STORM DRAIN SYSTEM IS 18.86 MIN., SINCE TC FOR SWALE IS 13.98 MIN., TC TO S.W.M. BASIN IS 18.86 MIN., TC TO S.W.M. BASIN IS 0.31 HR.

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE
 1. NEEDED WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OF STAPLES.
 2. FILTER CLOTH TO BE FASTENED SECURELY TO WOODEN POSTS WITH TIE RINGS.
 3. WHEN THE SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THE SHALE BE OVERLAPPED BY SIX INCHES AND FASTENED.
 4. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO REPAIR, REPLACE, OR REPLACE WIRE DEVELOP IN THE SILT FENCE.
POSTS: STEEL EITHER T OR U TYPE OF 3" HARDWOOD
FENCE: WOVEN WIRE 36 GA. 2" X 4" GALV. STEEL
FILTER CLOTH: FILTER TYPICAL 100 MICRONS OR APPROVED EQUIV.
PREFABRICATED UNIT: GEOTEX, POLYPROPYLENE, OR APPROVED EQUIV.
STANDARD DRAWING: ST-IV

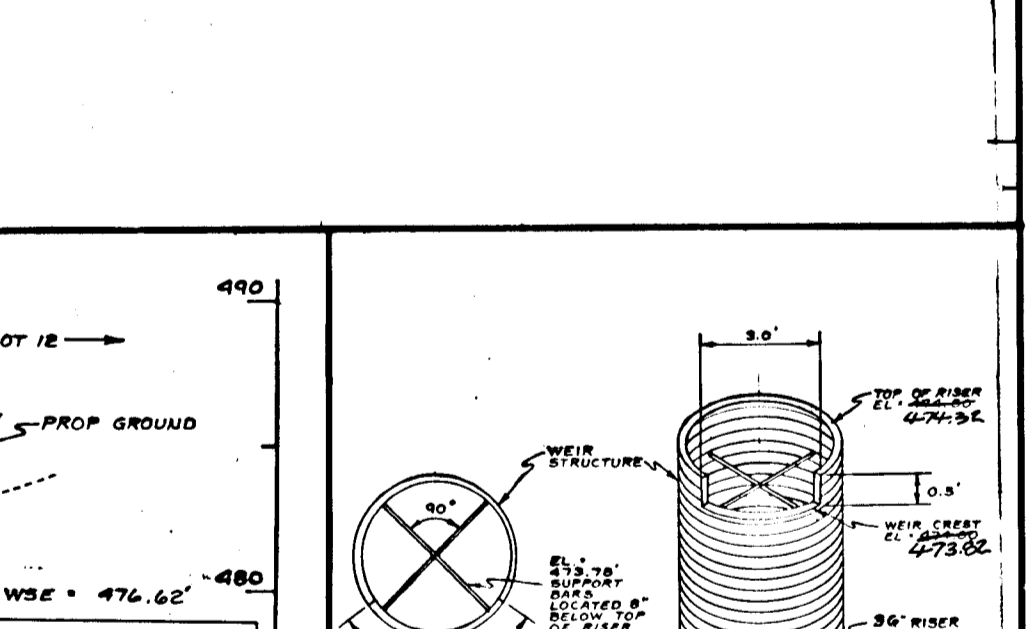
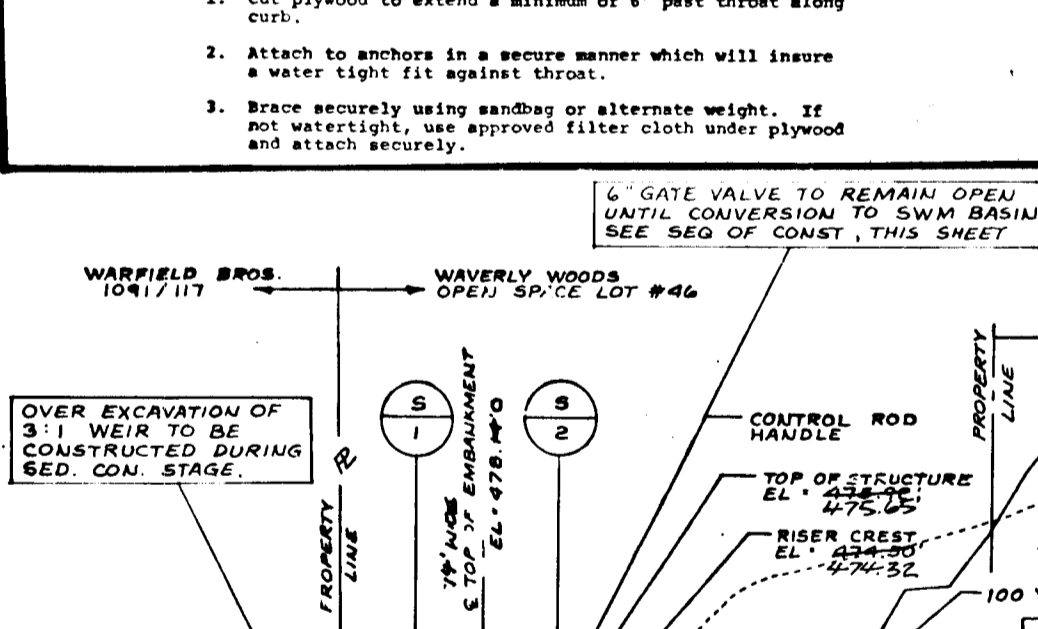
CONVERSION OF SEDIMENT BASIN DEWATERING DEVICE TO PERMANENT DRAIN
 1) EXCAVATE BASIN TO DESIGN ELEVATION OF 470.00'.
 2) REMOVE PERFORATED RISER & 6" PIPE SO THAT A MIN. OF 15" OF 6" PIPE REMAINS.
 3) REMOVE 6" Ø GATE VALVE.
 4) CLOSE FLANGE ASSEMBLY FOR 10" Ø ORIFICE (SEE SHT 6 OF 8)

CONSTRUCTION SPECIFICATIONS
 A. Wooden frame is to be constructed of 2"x4" construction grade lumber.
 B. Plywood is to be a minimum thickness of 1/4" construction grade lumber.
Installation
 1. Cut plywood to extend a minimum of 6" past throat along curb.
 2. Attach to anchors in a secure manner which will insure a water tight fit against throat.
 3. Brace securely using sandbag or alternate weight. If not watertight, use approved filter cloth under plywood and attach securely.

CONSTRUCTION SPECIFICATIONS
 A. Wooden frame is to be constructed of 2"x4" construction grade lumber.
 B. Plywood is to be a minimum thickness of 1/4" construction grade lumber.
Installation
 1. Cut plywood to extend a minimum of 6" past throat along curb.
 2. Attach to anchors in a secure manner which will insure a water tight fit against throat.
 3. Brace securely using sandbag or alternate weight. If not watertight, use approved filter cloth under plywood and attach securely.



Sequence of Construction
Phase I
 1. Obtain a grading permit. Week 1
 2. Install Stabilized Construction Entrance. Week 1
 3. Clear a grade for installation of Sediment Basin. Week 1
 4. Construct Sediment Basin by doing the following:
 a.) Excavate & place curb (trash).
 b.) Construct 8'-11" to 8'-2", over excavate outfall area as shown on profile leaving a 3" weir in original ground.
 c.) Construct 6" diameter sediment dewatering device as shown on detail sheet.
 d.) Construct embankment to elevation 478.60'.
 5. Stabilize Basin Area. Week 2
Phase II
 1. Install all Perimeter Sediment Control Devices including silt fence and earth dikes. Week 3
 2. Clear a grade remaining areas to be disturbed. Week 3
 3. Mass grade site. Fill material placement should be controlled to allow adequate compaction. Provide positive drainage to sediment basin. Week 4
 4. Temporarily stabilize site. Week 5-7
Phase III
 1. Flush the storm drain system to remove any accumulated sediment. Week 8
 2. With the approval of Onsite Sediment Control Inspector, construct 15" curb beneath sidewalk by doing the following:
 a.) Excavate & place curb.
 b.) Place pipe.
 c.) Remove search dikes where necessary.
 d.) Final grade construction of sidewalk and strip apron 8'-4" x 8'-5". Week 38
 3. With approval of Onsite Sediment Control Inspector, unblock all inlets and remove all inlet protection. Week 39
 4. Restore area to the grades shown on the plan and stabilize with vegetative measures. Week 39
 5. With the approval of the Onsite Sediment Control Inspector, convert the Sediment Control Basin to a Storm Drainage Basin by doing the following:
 a.) Remove sediment to bottom design elevation.
 b.) Install 15" diameter dewatering pipe, leave minimum of 15" of pipe to serve as a drain (see detail sheet).
 c.) Grade for final elevations.
 d.) Construct riser approx 8'-1 & 8'-3, remove weir 8'-1.
 e.) Permanently stabilize basin area. Week 39
 6. With the approval of the Onsite Sediment Control Inspector, remove all sediment control practices along perimeter, including Swale Trap along MD Rt. 99, silt fence and silt fence around site. Week 39



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: 4-6-87

These plans for: small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 U.S. Soil Conservation District
 Date: 4/6/87

OWNER: KENNARD WARFIELD, JR.
 14663 TRIADDELPHIA ROAD
 GLENELG, MD 21737
 DEVELOPER: WAVERLY WOODS DEVELOPMENT CORP.
 14663 TRIADDELPHIA ROAD
 GLENELG, MD 21737
 (301) 483-4978
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 4-7-87
 APPROVED: OFFICE OF PLANNING AND ZONING
 DATE: 4-7-87

BY THE DEVELOPER:
 "I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."
 Signature: KENNARD WARFIELD, JR.
 Title: OWNER/DEVELOPER
 Phone: No. 483-4978
 Firm: N/A
 Complete Address: 14663 TRIADDELPHIA RD GLENELG, MD 21737

BY THE ENGINEER:
 "I certify that this plan for pond construction, erosion and sediment control represents a actual 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. PATMORE
 Registered Professional Engineer #8978

KIDDE CONSULTANTS, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 1100 WEST STREET / SUITE 100 / LAUREL, MD 20707
 (Wash.) (301) 953-1821 / 792-8086 (Balt.)
 Drawing: MWG
 Check: MSS
 Design: MSS
 Check: DCW

SEDIMENT CONTROL DETAIL SHEET
 WAVERLY WOODS
 LOTS 1 thru 49
 SECTION 1 AREA 1
 TAX MAP 16 & 17 PARCEL 22
 2nd ELECTION DISTRICT HOWARD CO. MD
 SHEET 5 OF 8
 DATE: DEC. 1986
 SCALE: AS SHOWN
 JOB NUMBER: 1685112
 AS-BUILT F-87-95

SOIL CONSERVATION SERVICE
NATIONAL
CONSTRUCTION SPECIFICATIONS
FOR
POND

These specifications are appropriate to ponds within the scope of the standards for practice 310.

I. SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, fence, cobble 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 and below 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 areas or areas. It shall be free of roots, stumps, mud, rubbish, oversize stones, frozen or other objectionable material. 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 settlement) as shown on the plans.

Placement

Areas on which fill is to be placed shall be certified prior to placement of fill. Fill materials shall be placed in 4-inch maximum loose (compaction) layers which are to be continuous over the entire length of the fill. The bottom portion of the embankment 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 sheepsfoot, 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.

Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer.

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 as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The sides shall be sloped at a minimum of 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 layers not exceeding four inches in thickness and compacted by hand tamper 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 any equipment be allowed to operate closer than four feet, measured horizontally, to the structure. Under no circumstances shall equipment be driven over any part of concrete structure or pipe unless there is a compacted fill or twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUIT

All pipes shall be circular in cross section.

A. Corrugated Metal Pipe

1. **Materials - (Steel Pipe)** - This pipe and its appurtenances shall be galvanized and fully furnished coated and shall conform to the requirements of ASTM Specification A-130 Type A with watertight coupling bands. Any bituminous coating damaged or removed shall be replaced with cold applied bituminous coating compound.

Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Necon, Plast-Cote, Bie-Blad, and Bie-Bu-Coy. Coated corrugated steel pipe shall meet the requirements of ASTM's M-245 and M-246.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASTM Specification M-274-79.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASTM Specification M-136 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, and sections, etc. must be composed of the same material as the pipe.

Details shall be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mil 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.

2. **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 or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dipole bands are not considered to be watertight.

3. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or loose material is encountered, all such material shall be removed and replaced with suitable material 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 sides.

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-301. An approved equivalent is ASTM Specification C-301.

2. **Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of a 4-inch minimum concrete bedding on top and the sides of the pipe at least 10% of the outside diameter with a minimum thickness of 3" or as shown on the drawings.

3. **Laying pipe** - Bell and spigot pipe shall be placed in accordance with recommendations of the manufacturer. The bedding on top and sides of the pipe shall be placed so that the bedding shall be placed so that all bedding shall be filled. Care shall be exercised to prevent any distortion 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.

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE

Materials

a. **Cement** - Normal Portland cement shall conform to the latest ASTM Specification C-150.

b. **Water** - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

c. **Sand** - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a No. 20 sieve. Limestone sand shall not be used.

d. **Coarse Aggregate** - The coarse aggregate shall be clean, hard, strong and durable, and shall be well graded with not less than one and one-half percent passing a No. 10 sieve. The maximum size of coarse aggregate shall be 1 1/2" for concrete in contact with water. The proportion of materials for the trial mix shall be 1:2 1/2:1 1/2. The combination of aggregate may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

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

f. **Finishing** - Defective concrete, honeycombed areas, voids left by the removal of the rods, ridges on all concrete surfaces previously exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reared and completely filled with dry packing mix.

g. **Protection and Curing** - Exposed surfaces of concrete shall be protected from the direct rays of the sun, wind, and frost. The concrete shall be kept continuously moist for at least ten (10) days after placing. 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.

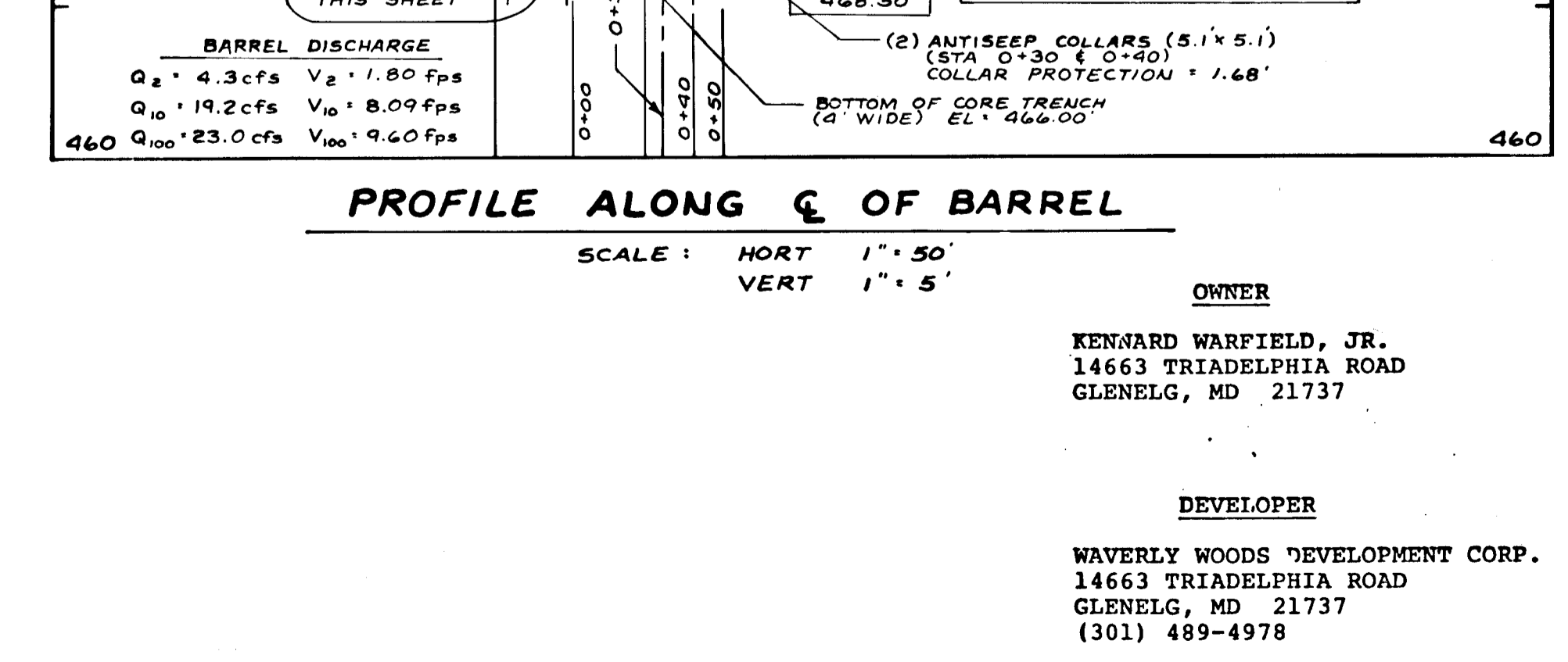
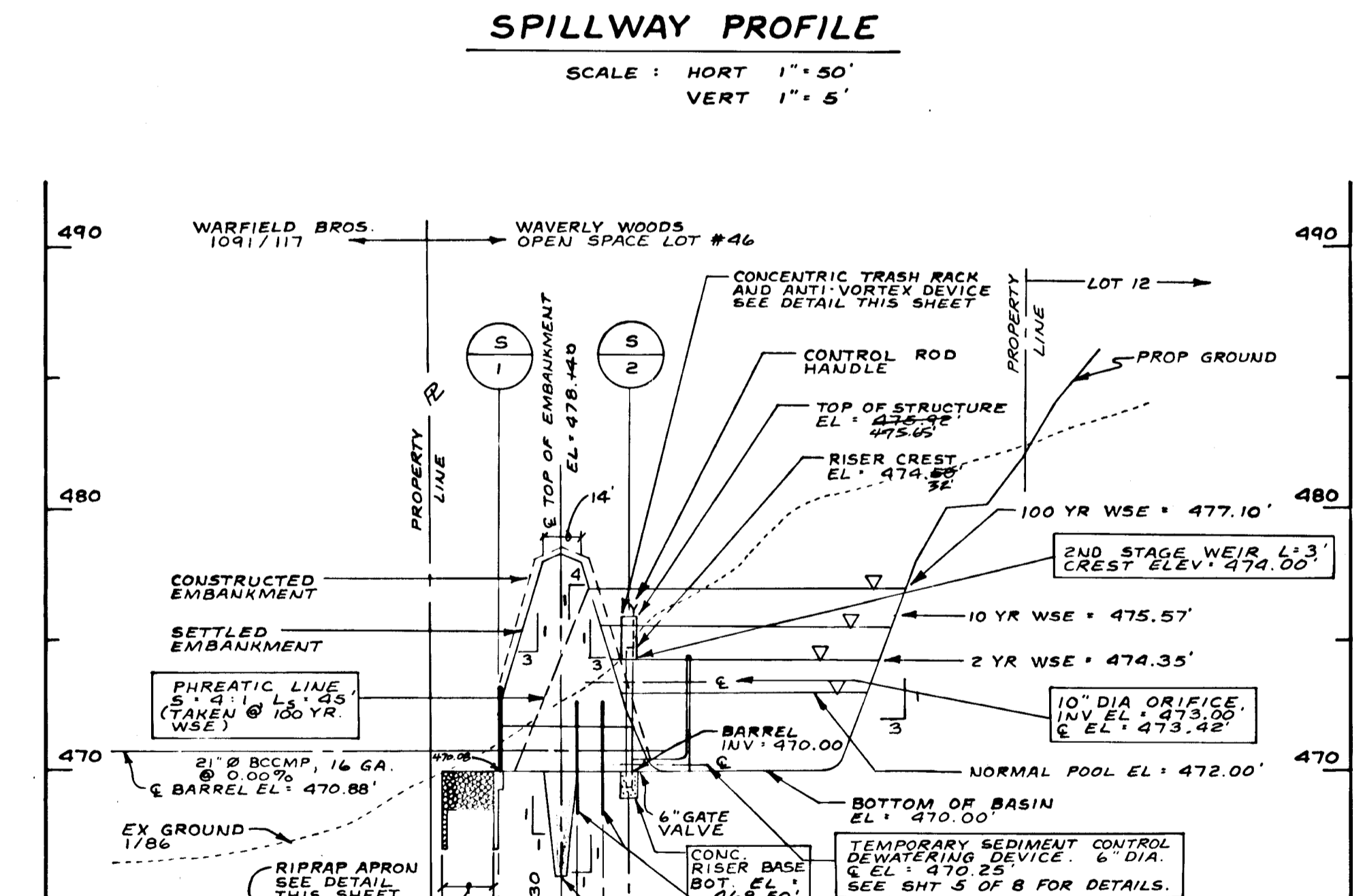
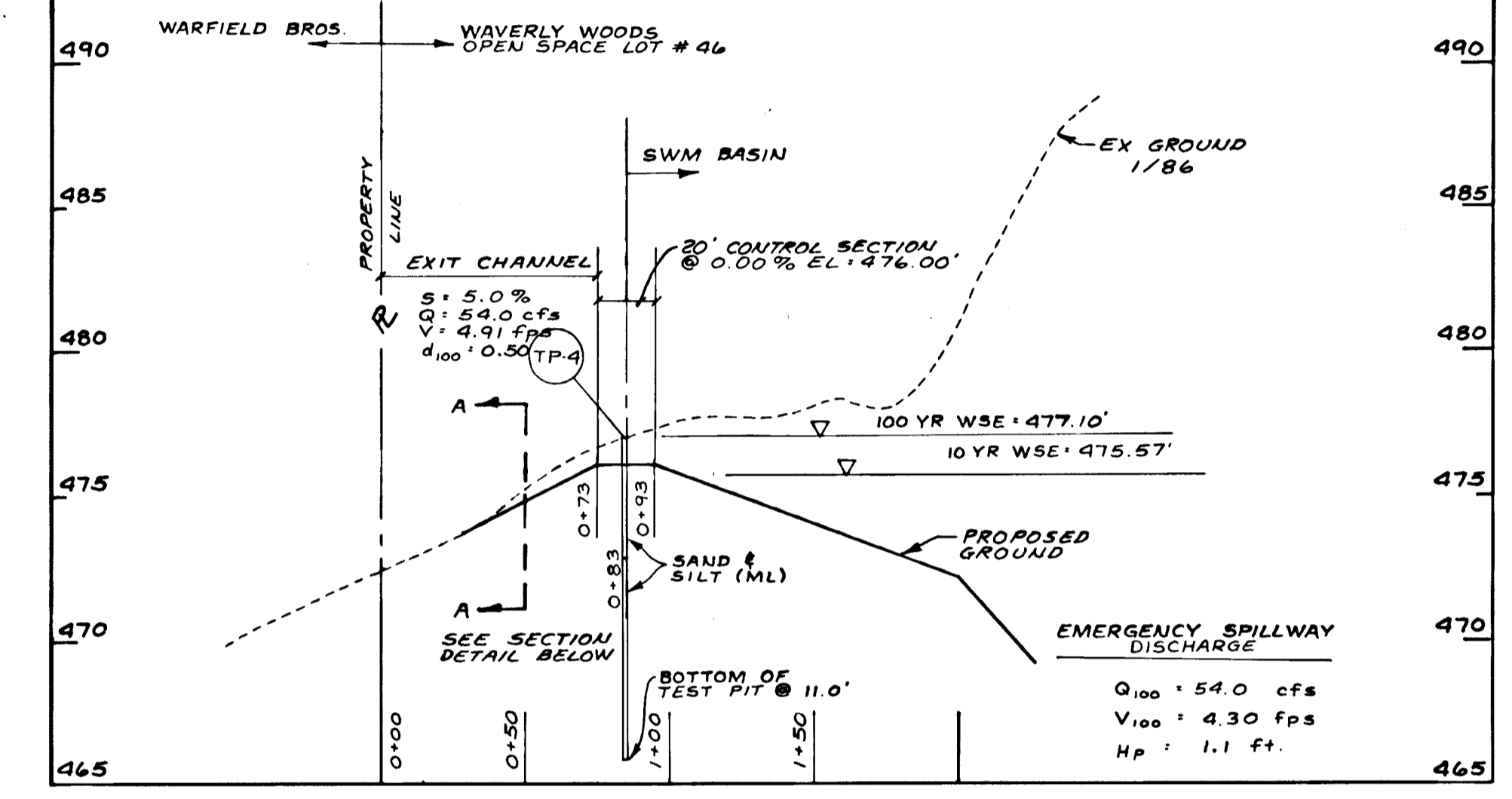
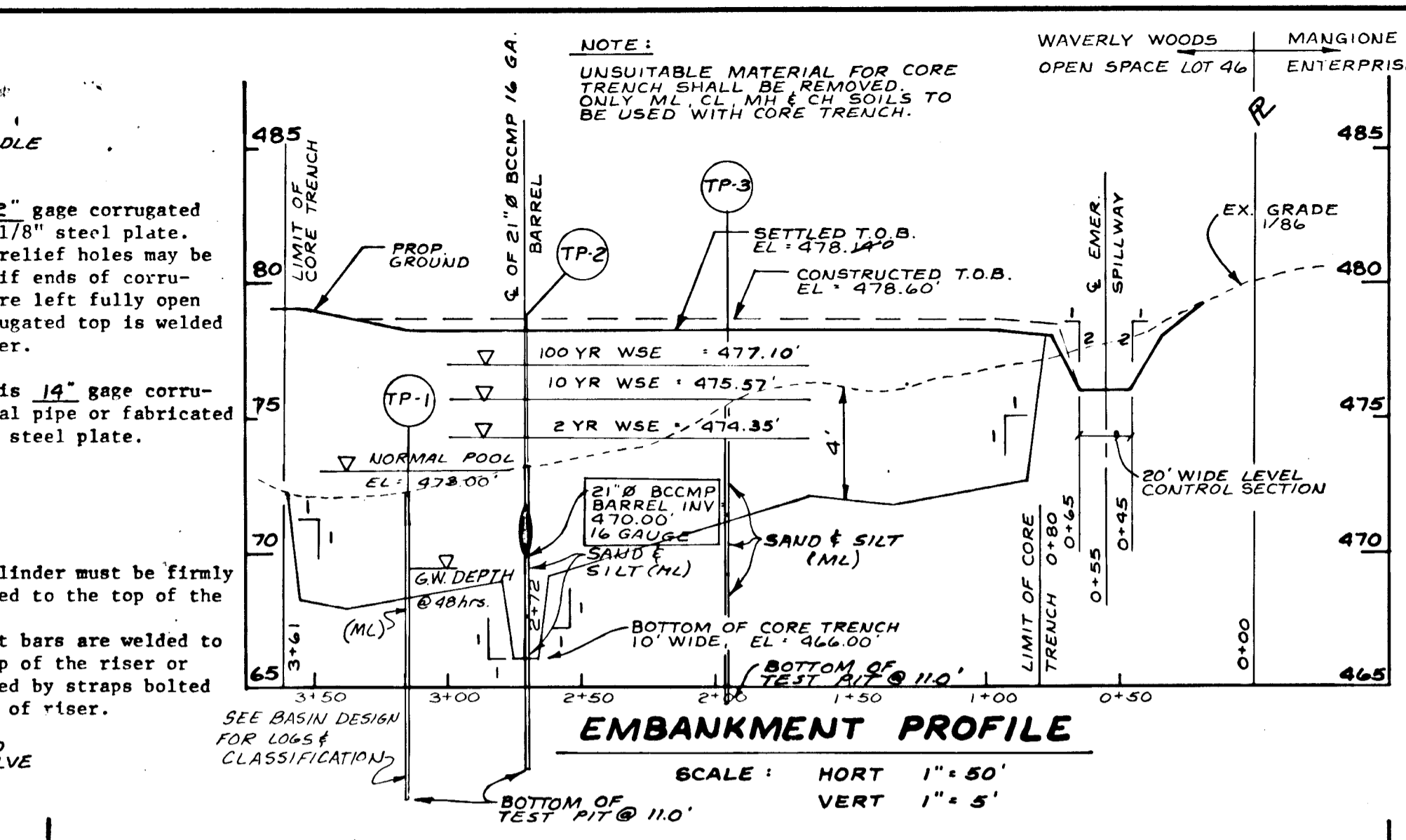
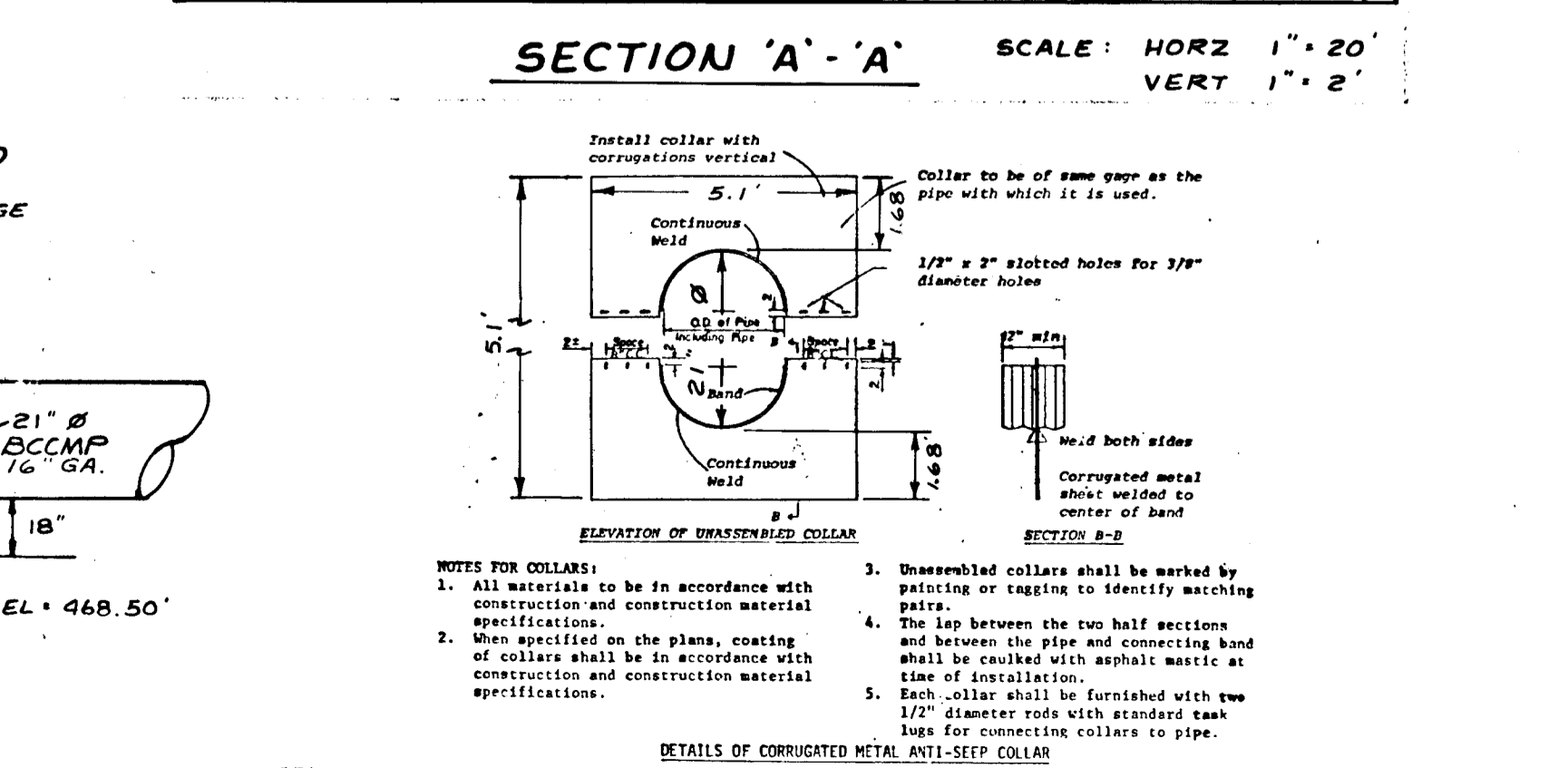
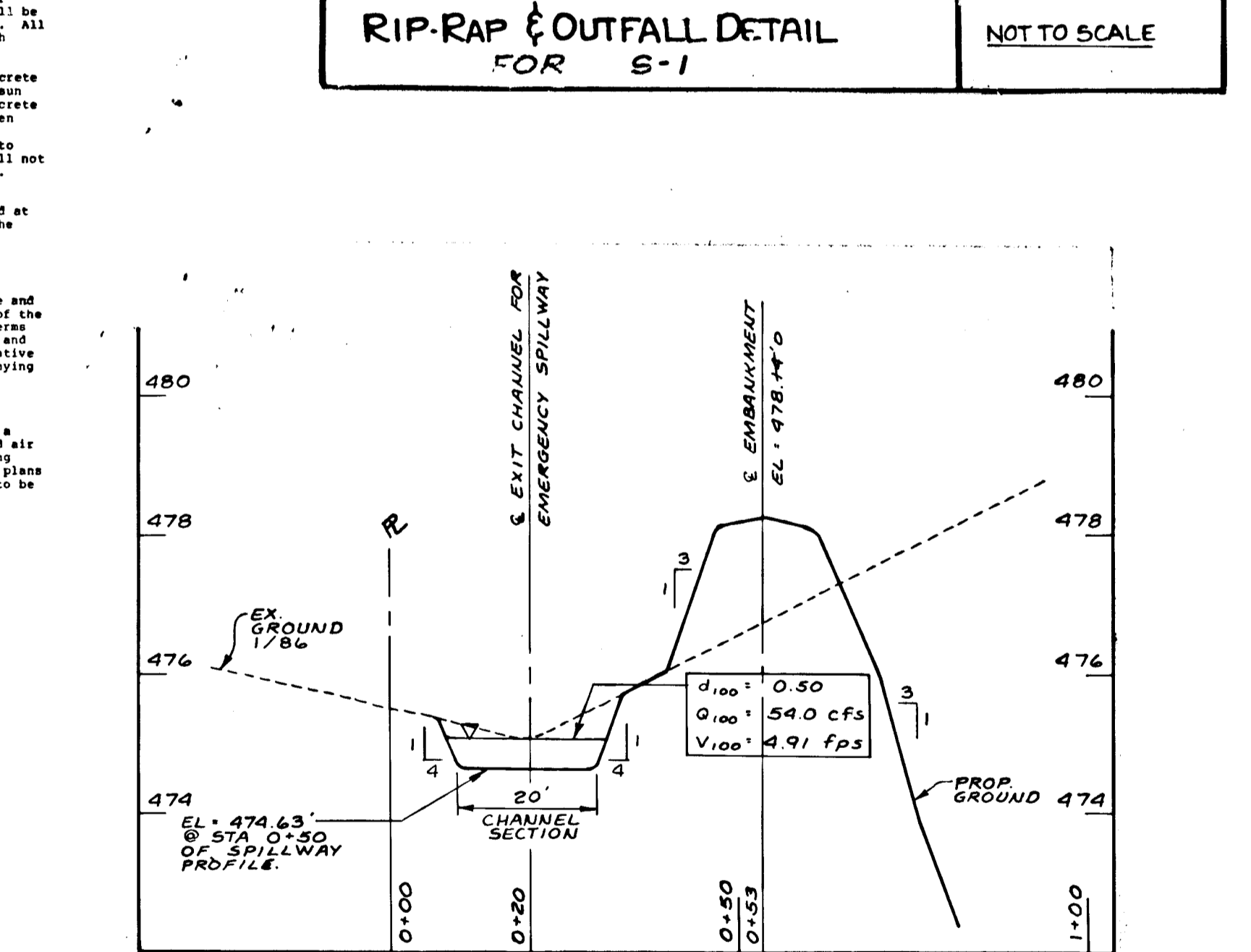
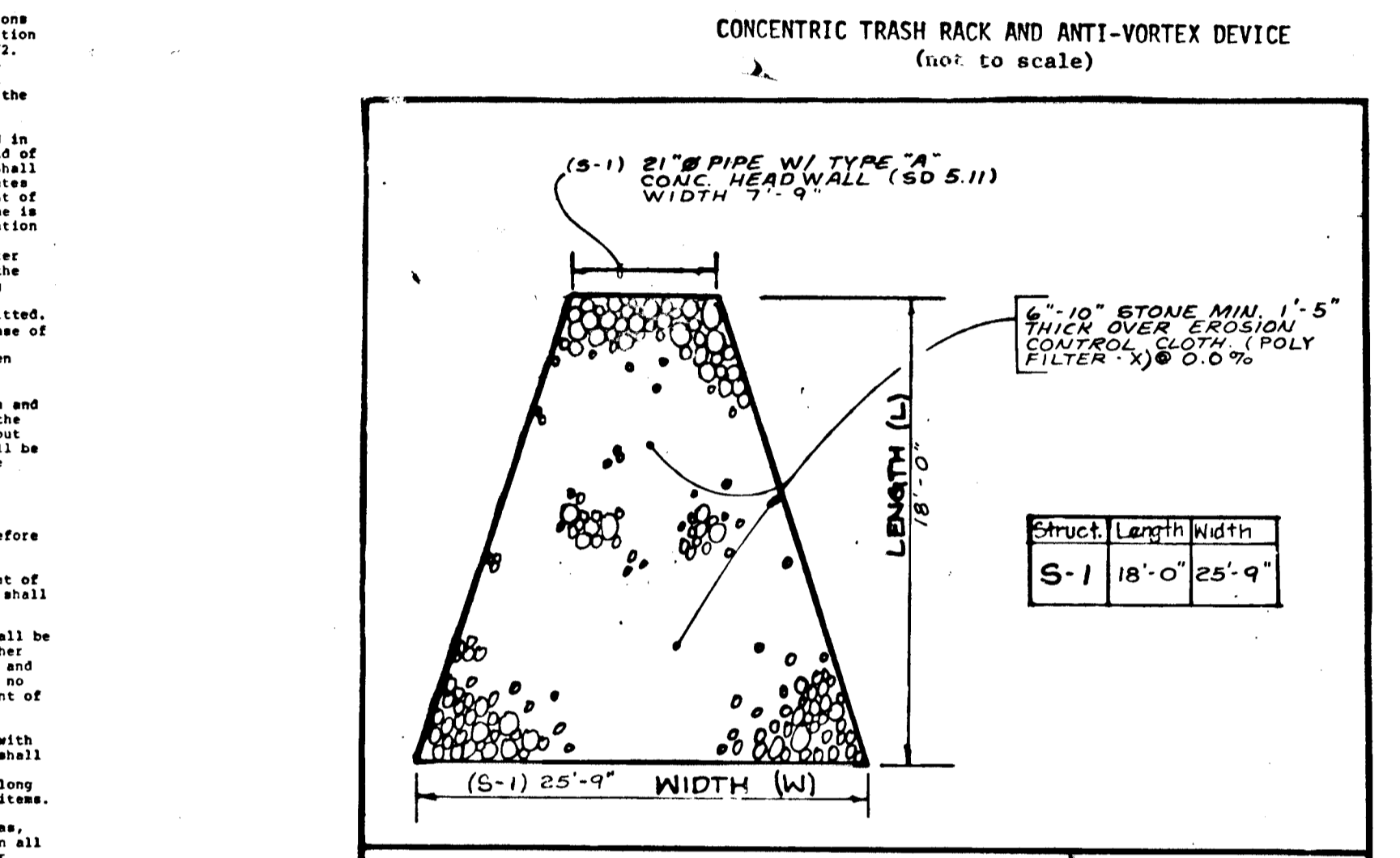
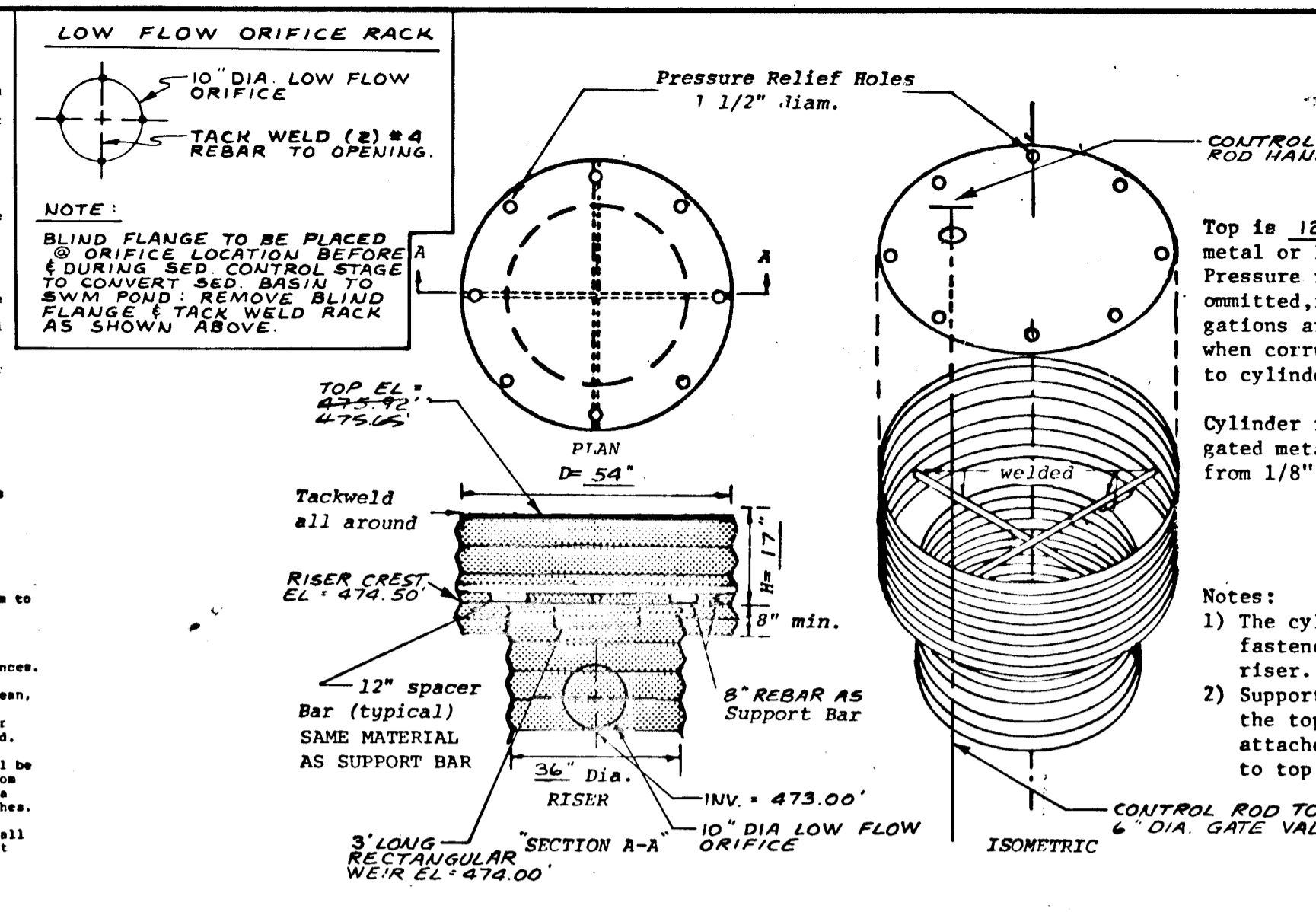
h. **Placing Temperature** - Concrete may not be placed at temperatures below 37 degrees Fahrenheit with the temperature falling, or 34 degrees with the temperature rising.

VI. STABILIZATION

All borrow areas shall be graded to provide drainage and left in a suitable condition. All exposed surfaces of the embankment, spillway, apron and borrow areas, and borrow areas shall be stabilized in accordance with the following specifications and in accordance with the accompanying drawings:

VII. EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and soil pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 4-9-87
CHIEF, BUREAU OF ENGINEERING

APPROVED: OFFICE OF PLANNING AND ZONING
DATE: 4-7-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

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

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.C. PATMORE MD PE 8978 Date

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

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Conservation District Date

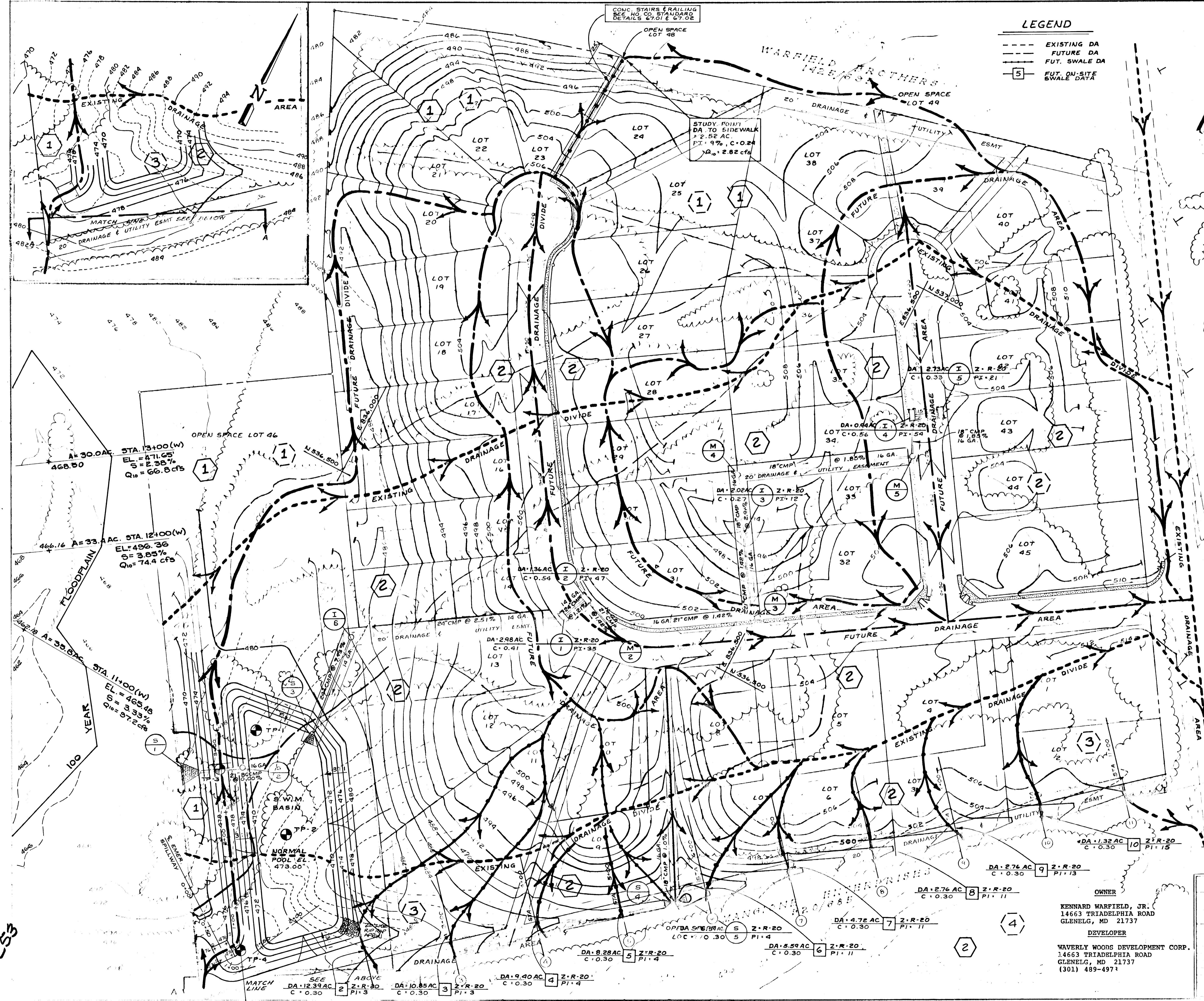
S.W.M. POND PROFILES & DETAIL SHEET
FOR
WAVERLY WOODS
LOTS 1 thru 49
SECTION 1 AREA 1
TAX MAP 16 & 17 PARCEL 22
2nd ELECTION DISTRICT, HOWARD COUNTY MD.
SHEET 6 OF 8

KIDS CONSULTANTS, INC.
ENGINEERS • PLANNERS • SURVEYORS
1100 WEST STREET / SUITE 100 / LAUREL MD 20707
(Wash.) (301) 953-1871 / 792-8086 (Balt.)

OWNER: KENNARD WARFIELD, JR. 14663 TRIADDELPHIA ROAD GLENELG, MD 21737
DEVELOPER: WAVERLY WOODS DEVELOPMENT CORP. 14663 TRIADDELPHIA ROAD GLENELG, MD 21737 (301) 489-4978

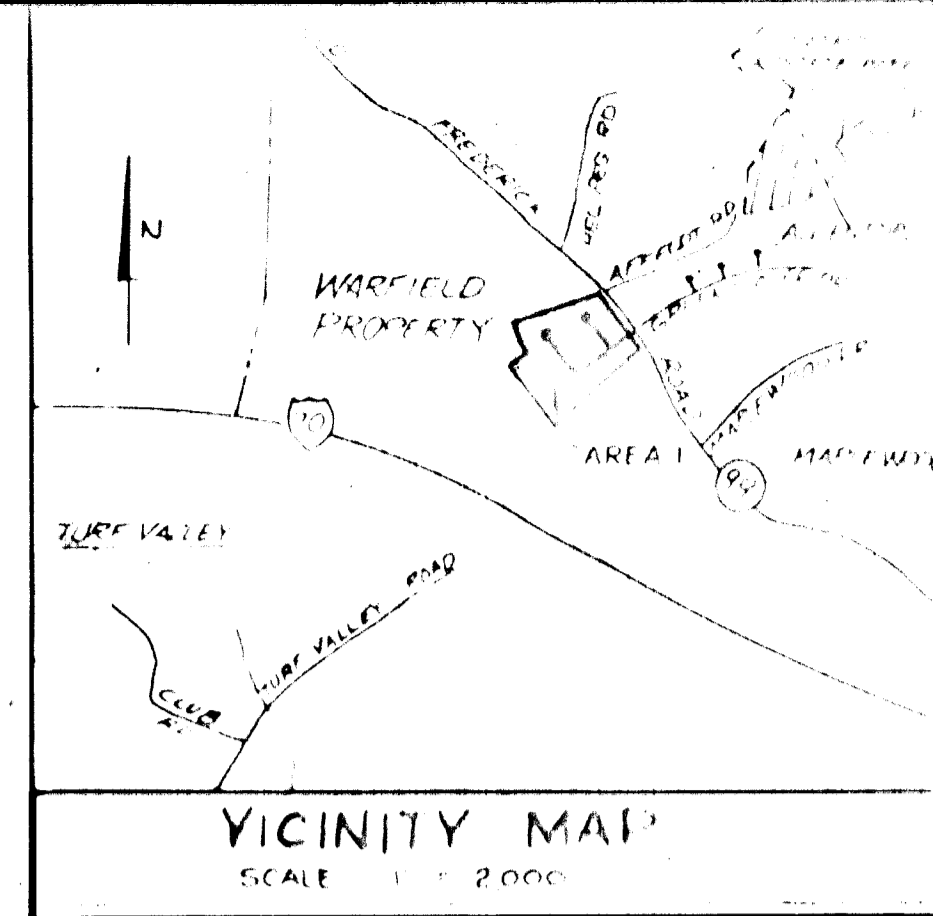
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AS-BUILT DEC. 23, 1991 F-87-95



LEGEND

- EXISTING DA
- - - FUTURE DA
- - - FUT. SWALE DA
- 5 FUT. ON-SITE SWALE DATA



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 4-9-87
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
[Signature] 4-7-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

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.

[Signature] 4-6-87
DATE

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

[Signature] 4-6-87
DATE

SWM. LEGEND

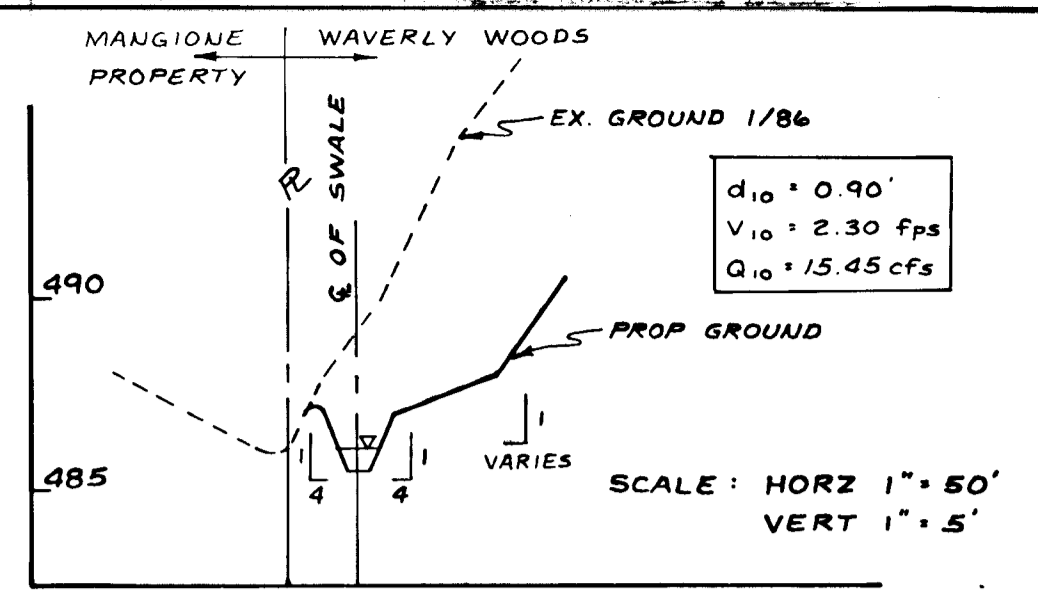
- | | |
|---|---|
| EXISTING: (1) | FUTURE: (1) |
| (1) DA: 8.63 AC.
RCN: 87
Tc: 0.22 HR. | (1) UNCONTROLLED RUNOFF
DA: 5.44 AC.
RCN: 79
Tc: 0.23 HR. |
| (2) | (2) CONTROLLED TO SWM BASIN
FOR 24 YR. STORM
DA: 29.81 AC.
RCN: 71
Tc: 0.31 HR. |
| (3) | (3) FOR 100 YR. STORM
DA: 29.81 AC.
RCN: 77
Tc: 0.31 HR. |
| (4) | (4) DA: 11.27 AC.
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Tc: 0.29 HR. |
- * REFER TO SHT. 5 OF 8 FOR OFFSITE DA.

DRAINAGE AREA MAP

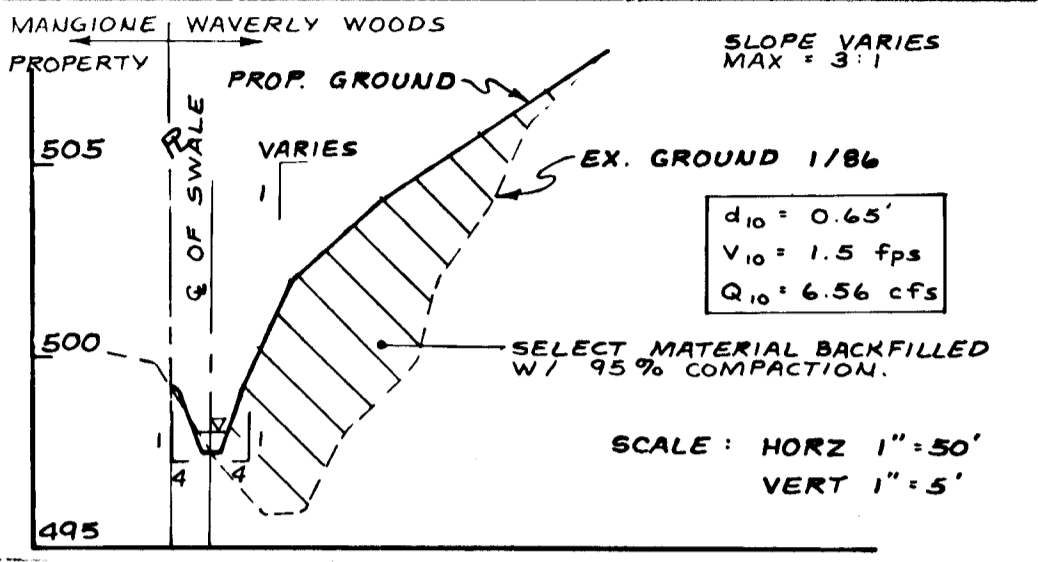
FOR
WAVERLY WOODS
LOTS 1 thru 49
SECTION 1 AREA 1
TAX MAP 16 & 17 PARCEL 22
2nd ELECTION DISTRICT, HOWARD COUNTY
SHEET 7 OF 8

OWNER
KENNARD WARFIELD, JR.
14663 TRIADDELPHIA ROAD
GLENELG, MD 21737

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORP.
14663 TRIADDELPHIA ROAD
GLENELG, MD 21737
(301) 489-4971

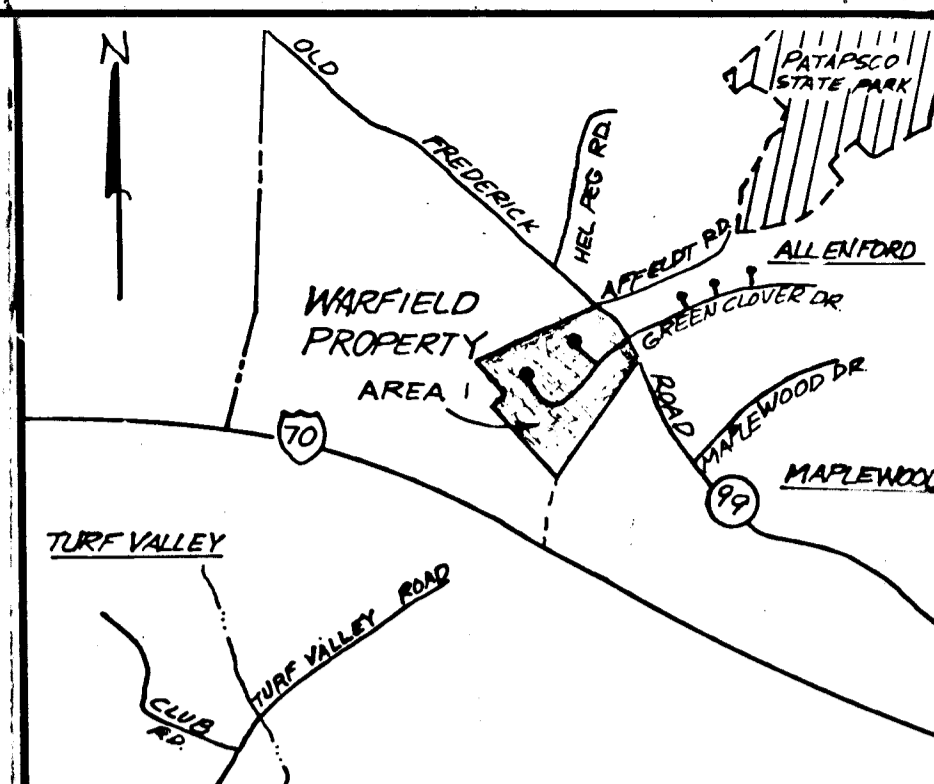


PROFILE STA 4+00



PROFILE STA 8+00

SWALE CROSS SECTIONS



VICINITY MAP
SCALE: 1" = 2000'

SOIL TYPE	GROUP	DESCRIPTION
ChB2	B	Chester Silt Loam 3 to 8% slopes, moderately eroded
CUB	B	Census Silt Loam local alluvium, 3 to 8% slopes
DeA	C	Delanco Silt Loam 0 to 3% slopes
EnB2	B	Elainboro Loam 3 to 8% slopes, moderately eroded
G1B2	B	Glenelg Loam 3 to 8% slopes, moderately eroded
G1C2	B	Glenelg Loam 8 to 15% slopes, moderately eroded
Ha	D	Hatboro Silt Loam level, stream bottom
Kn	D	Kinkora Silt Loam nearly level, stream bottom
M1B2	B	Manor Loam 3 to 8% slopes, moderately eroded
M1D2	B	Manor Loam 15 to 25% slopes, moderately eroded

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard B. Row 4-9-87
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
John W. Murchman 4-7-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
James M. Nelson 4-6-87
U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Robert J. White 4-6-87
Howard Soil Conservation District Date

SOILS MAP & STREET TREE PLAN
WAVERLY WOODS
LOTS 1 thru 49
SECTION I AREA I
TAX MAP NO. 16 & 17 PARCEL 22
2ND ELECTION DISTRICT. HOWARD CO., MD

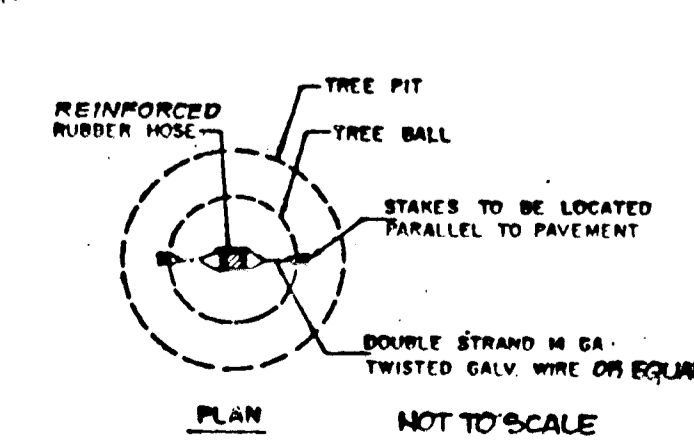
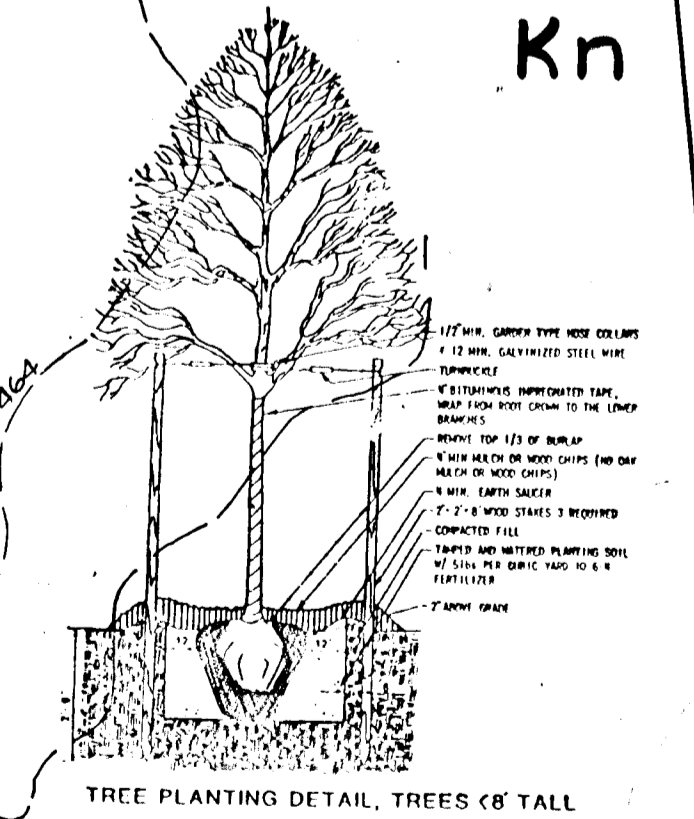
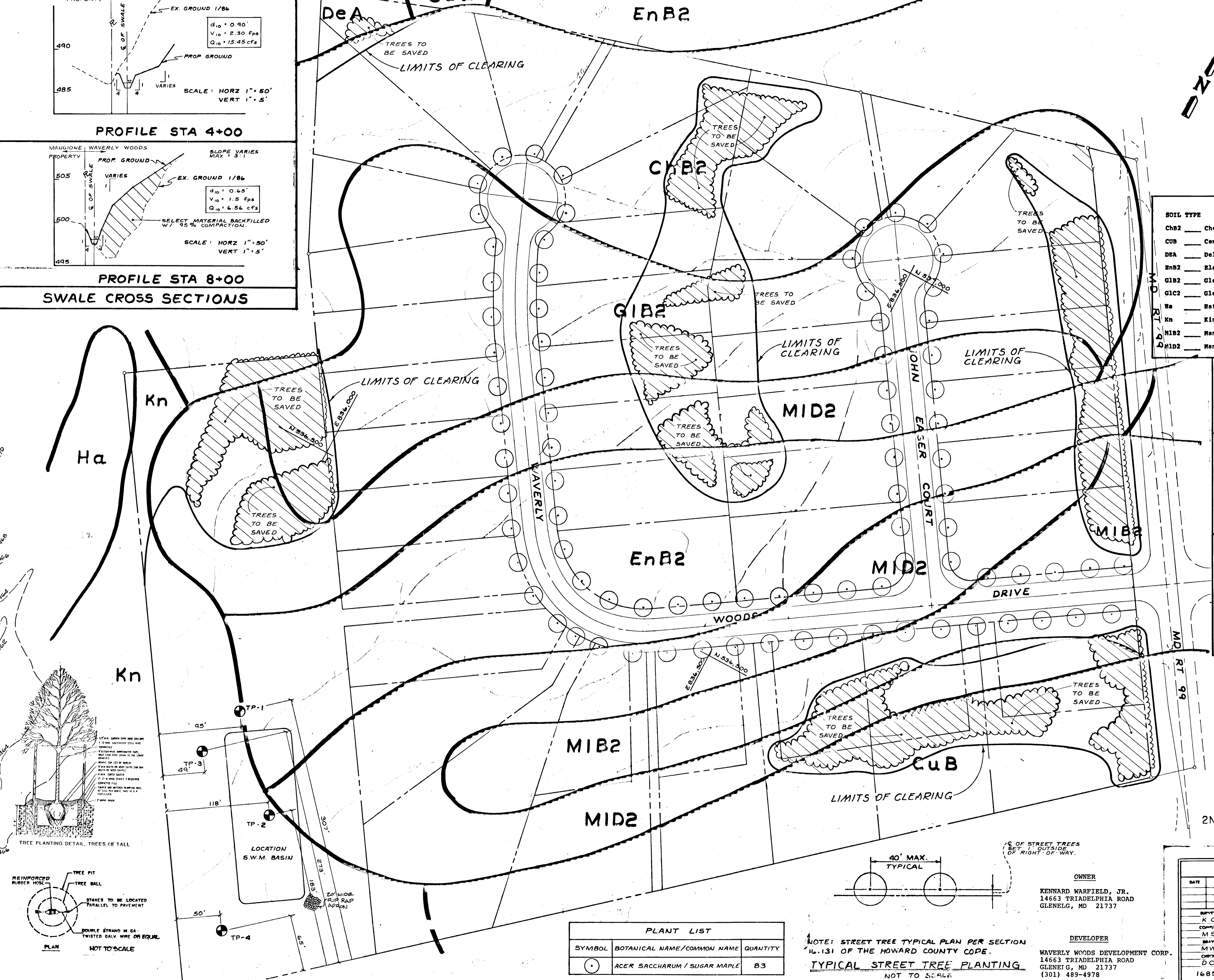
SHEET 8 OF 8

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

OWNER: KENNARD WARFIELD, JR. 14663 TRIADDELPHIA ROAD GLENELG, MD 21737

DEVELOPER: WAVERLY WOODS DEVELOPMENT CORP. 14663 TRIADDELPHIA ROAD GLENELG, MD 21737 (301) 489-4978

DATE DEC '86 SCALE 1" = 50'



PLANT LIST		
SYMBOL	BOTANICAL NAME / COMMON NAME	QUANTITY
○	ACER SACCHARUM / SUGAR MAPLE	83

NOTE: STREET TREE TYPICAL PLAN PER SECTION 16.131 OF THE HOWARD COUNTY CODE.
TYPICAL STREET TREE PLANTING
NOT TO SCALE

12523