

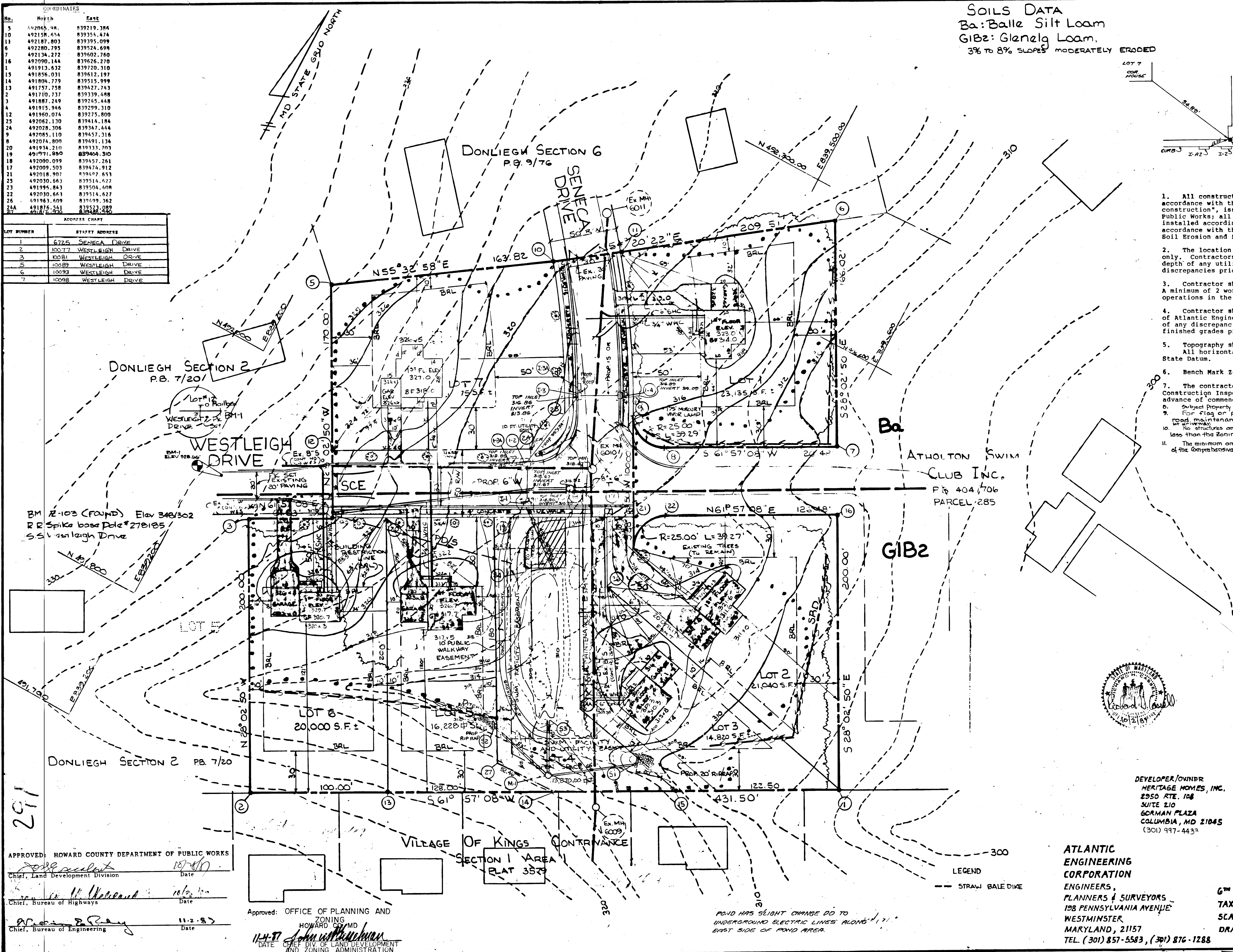
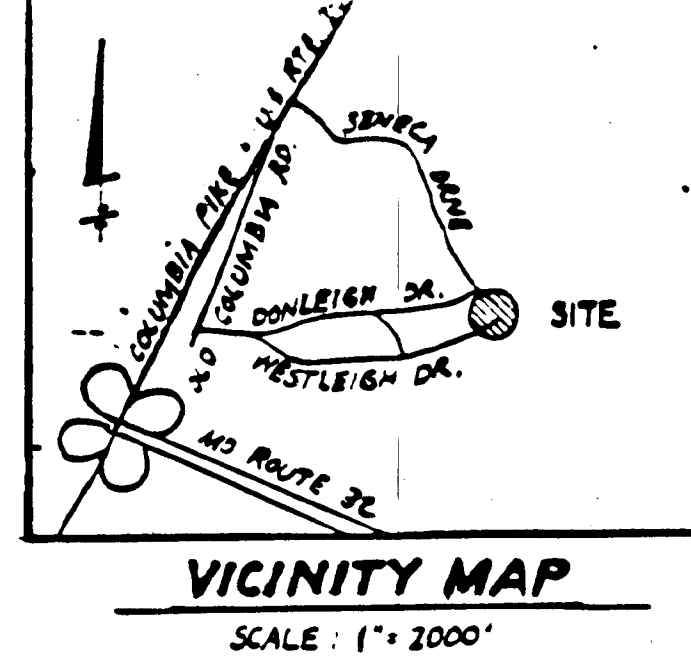
COORDINATES

No.	North	East
5	492065.98	839219.386
10	492158.654	839354.474
11	492187.803	839395.099
6	492280.795	839524.699
7	492134.272	839502.760
16	492090.144	839626.270
1	491913.632	839720.310
15	491856.031	839612.197
14	491804.779	839515.999
13	491757.758	839427.743
2	491710.737	839339.488
3	491687.249	839245.488
4	491915.966	839299.310
12	491960.074	839275.800
25	492062.130	839414.184
24	492028.306	839347.444
9	492085.110	839457.316
8	492074.800	839491.134
20	491814.210	839133.103
19	491971.800	839404.310
18	492000.099	839457.261
17	492009.503	839474.912
21	492018.907	839497.653
25	492030.663	839514.627
23	491995.843	839504.408
22	492030.663	839514.627
26	491983.609	839499.362
25A	491876.541	839523.082
27	491876.541	839448.342

ADDRESS CHART

LOT NUMBER	STAFF ADDRESS
1	6725 SENEGA DRIVE
2	10077 WESTLEIGH DRIVE
3	10081 WESTLEIGH DRIVE
5	10089 WESTLEIGH DRIVE
6	10093 WESTLEIGH DRIVE
7	10098 WESTLEIGH DRIVE

SOILS DATA
 Ba: Balle Silt Loam
 GIB2: Glenelg Loam,
 3% to 8% SLOPES MODERATELY ERODED



- GENERAL NOTES
- All construction on these plans shall be performed in accordance with the "standard specifications and details for construction", issued by the Howard County Department of Public Works; all vegetative and structural practices installed according to the provisions of the plan are to be in accordance with the "Maryland Standards and Specifications for Soil Erosion and Sediment Control, 1983".
 - The location of existing utilities shown, is approximate only. Contractors shall verify the existence, locations and depth of any utilities and shall notify the Engineer of any discrepancies prior to beginning work.
 - Contractor shall notify "Miss Utility" at (301) 559-0100. A minimum of 2 working days in advance of construction operations in the vicinity of utilities.
 - Contractor shall be responsible for notifying the office of Atlantic Engineering, Corp. at (301) 876-1288 in the event of any discrepancies in the plans or in the relationships of finished grades prior to beginning work.
 - Topography shown based on field survey dated June 1986. All horizontal and vertical controls are in Maryland State Datum.
 - Bench Mark Z-103; elev. 348.302.
 - The contractor or developer shall contact the Construction Inspection Division of Howard County, 24 hours in advance of commencement of work at (301) 792-2630.
 - Subject Property zoned R-20 per 1985 Comprehensive Zoning Plan.
 - For flag or pipelot lots, refuse collection, snow removal and road maintenance are provided to the junction of the flag or pipelot driveway.
 - No structures are to be constructed on open space lot No. 4 at a distance less than the Zoning Regulations allow.
 - The minimum area for each lot is 20,000 sq. ft. except as provided by Sect. 106.02 of the Comprehensive Zoning Regulations.

REVISED 7-10-88 RHC
 REVISED 1-12-88 GAG
 SEE OFFICE OF PLANNING AND ZONING FILE NO. 5-86-72

- PLANT SCHEDULE
- | No. | Col. | Tree Name |
|-----|------|---------------------------|
| 3 | 2.5" | ACER RUDDUM RED MAPLE |
| 2 | 2.5" | QUERCUS PALUSTRIC PIN OAK |
- FREE SIMPLE ACCESS
 - GRADED EASEMENT AREA
 - 175-WATT MERCURY VAPOR LAMP POST, TOP FIXTURE ON 14-FT. FIBERGLASS POLE.
 - LIMITS OF DISTURBED AREA



DEVELOPER/OWNER
 HERITAGE HOMES, INC.
 2550 RTE. 108
 SUITE 210
 GORMAN PLAZA
 COLUMBIA, MD 21045
 (301) 997-4432

ATLANTIC ENGINEERING CORPORATION
 ENGINEERS, PLANNERS & SURVEYORS
 198 PENNSYLVANIA AVENUE
 WESTMINSTER, MARYLAND, 21157
 TEL. (301) 857-5583, (301) 876-1288

SITE PLAN FOR
 SENEGA PLACE LOTS 1-3+5-7
 6TH ELECTION DISTRICT HOWARD COUNTY, MD.
 TAX MAP Nos. 36 F 32
 SCALE 1" = 30'
 DRAWN BY: GAG
 DATE: MAY, 1987
 CHECKED BY: RHC
 SHEET 1 OF 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: OFFICE OF PLANNING AND ZONING
 HOWARD COUNTY, MD.
 Chief, Div. of Land Development and Zoning Administration

POUND HAS SLIGHT CHANGE DO TO UNDERGROUND ELECTRIC LINES ALONG EAST SIDE OF POND AREA.

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CONSTRUCTION SEQUENCE

- OBTAIN GRADING PERMIT. CONSTRUCT SEDIMENT CONTROL DEVICES, BERMINGS AND CONDUIT FOUND. TEMPORARILY BLOCK OUTLET FOR ADD. SED. CONTROL.
- CONSTRUCT STONE CONSTRUCTION ENTRANCE FOR LOTS.
- INSTALL STRAW BALE DIKE OR SILT FENCE ON LOTS AS REQUIRED. SED. CONTROL FOR HSG. CONST. IN ACCORDANCE WITH SDP 87-145.
- CLEAR AND GRUB HOUSE SITES TO SUBGRADE.
- EXCAVATE FOR FOUNDATIONS AND BEGIN HOUSE CONSTRUCTION. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEAROUT ELEVATION HAS BEEN REACHED.
- THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS.
- THE SEDIMENT TRAP SHALL BE DEWATERED BY PUMPING. THE SEDIMENT FROM THE TRAPS SHALL BE PLACED UP-GRADE FROM THE SEDIMENT TRAPS IN SUCH A MANNER AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS OR CAUSE EROSION DOWNGRADE FROM THE SEDIMENT TRAPS.
- STORM DRAINS MUST EMPTY INTO SEDIMENT TRAPS (CONC. POND).
- REMOVE SEDIMENT FROM ROADWAYS AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED.
- FINE GRADE LOTS AND STABILIZE. INSTALL DRIVEWAYS AND SIDEWALKS.
- REMOVE STRAW BALE DIKE OR SILT FENCE AND STABILIZE.
- AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, BACKFILL SEDIMENT TRAPS. STORM DRAIN CONSTRUCTION WILL BE COMPLETED AFTER CONTRIBUTING DRAINAGE AREAS ARE STABILIZED AND TRAPS HAVE BEEN REMOVED. STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. CLEAN POND RUN BLOCK LOW FLOW ORIFICE.

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 REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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 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.
- 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	34.3	ACRES
AREA DISTURBED	2.70	ACRES
AREA TO BE ROOFED OR PAVED	.77	ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.93	ACRES
TOTAL CUT	6034	CU. YDS.
TOTAL FILL	6102	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	NA	
- ANY SEDIMENT CONTROL PRACTICES 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 DPW SEDIMENT CONTROL INSPECTOR.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREA 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 SCHEDULE.

- 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. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).
- 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. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS FROM MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, 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 (.05 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 WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE 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 RESEEDING.

TEMPORARY SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

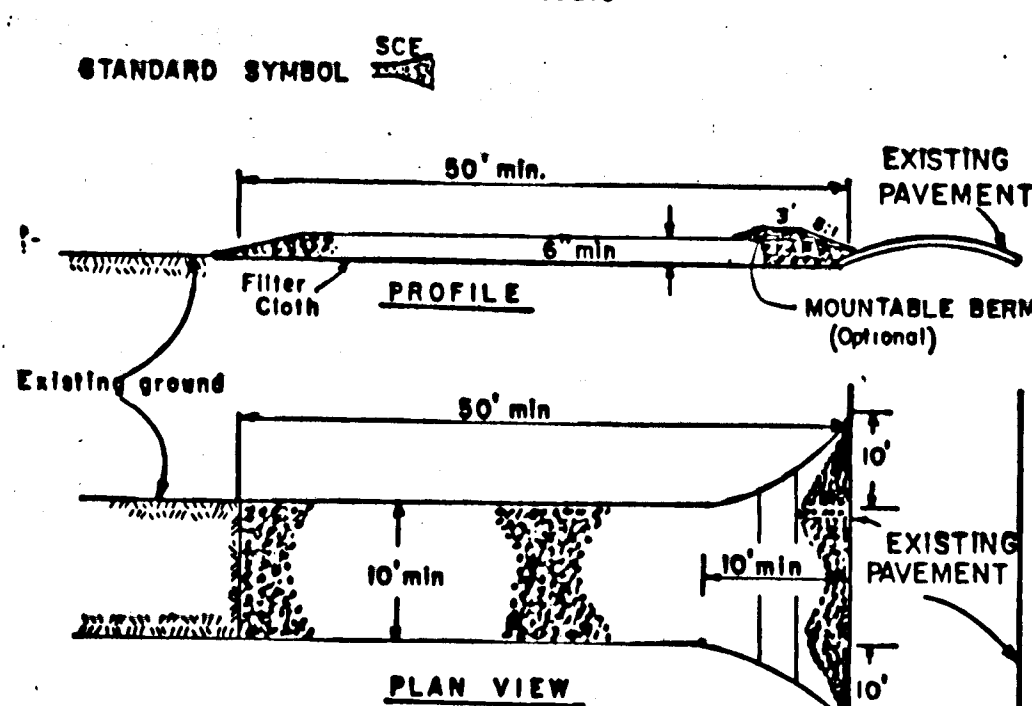
SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 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 SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (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.

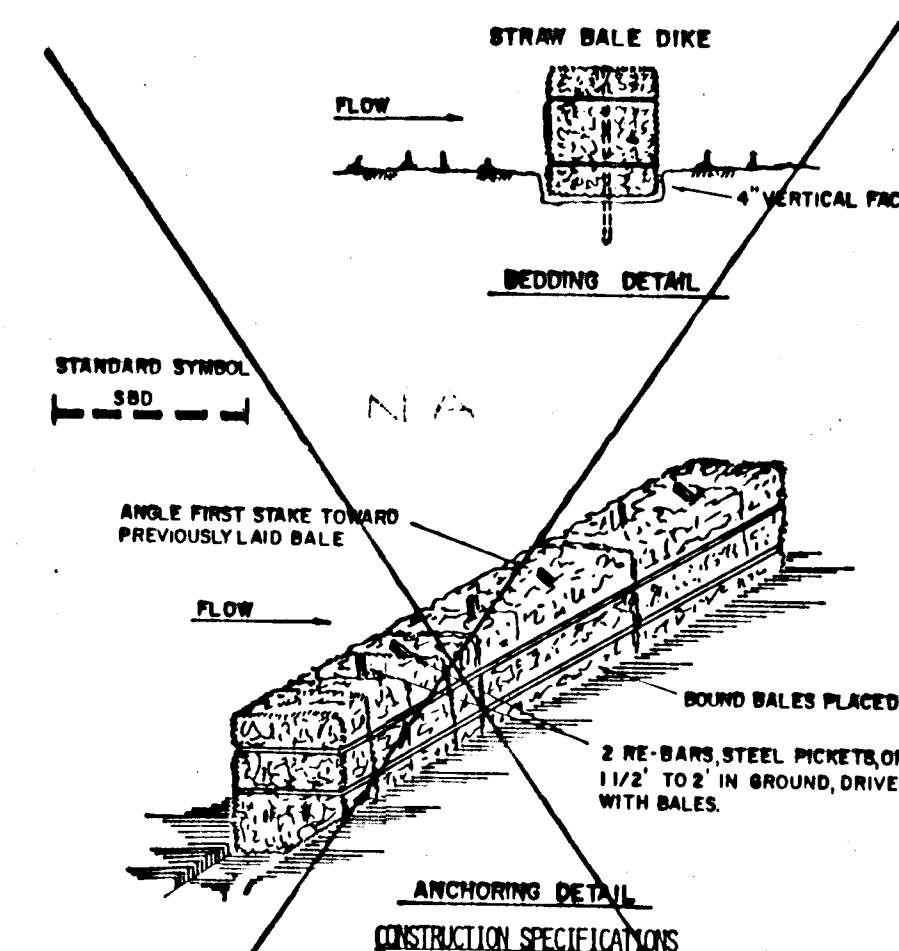
REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

STABILIZED CONSTRUCTION ENTRANCE
not to scale

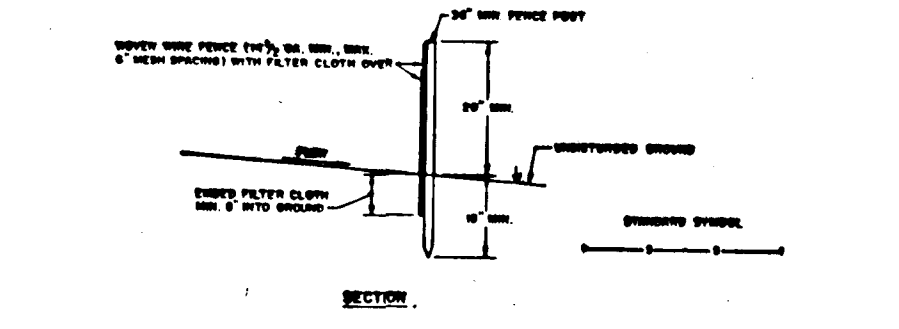
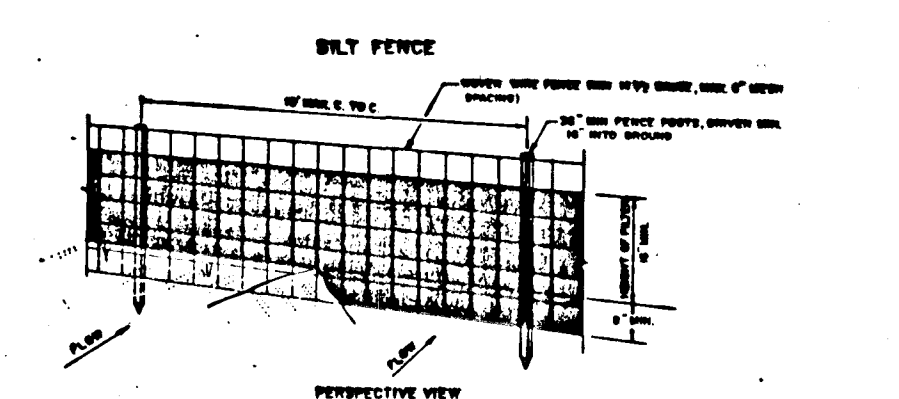


CONSTRUCTION SPECIFICATIONS

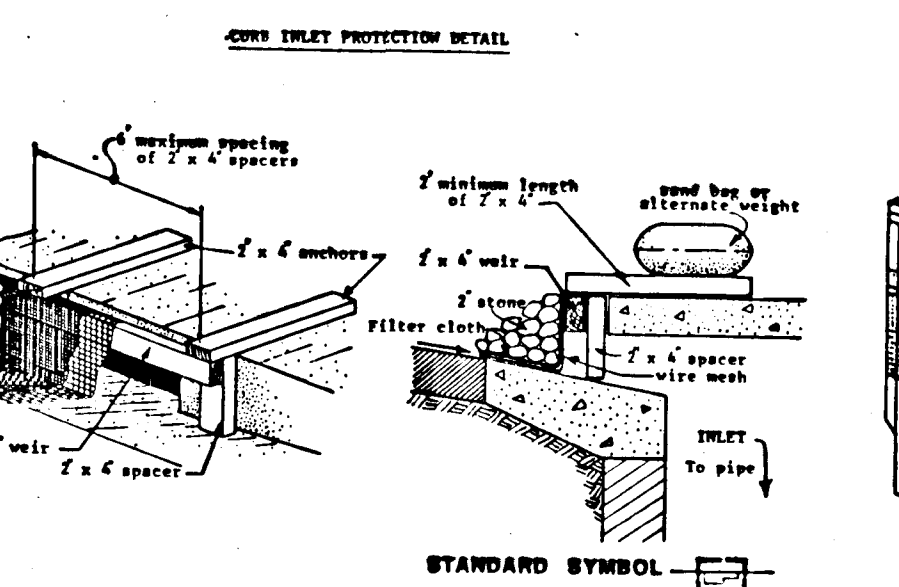
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent. Length - As required, but not less than 30 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any weasours used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.



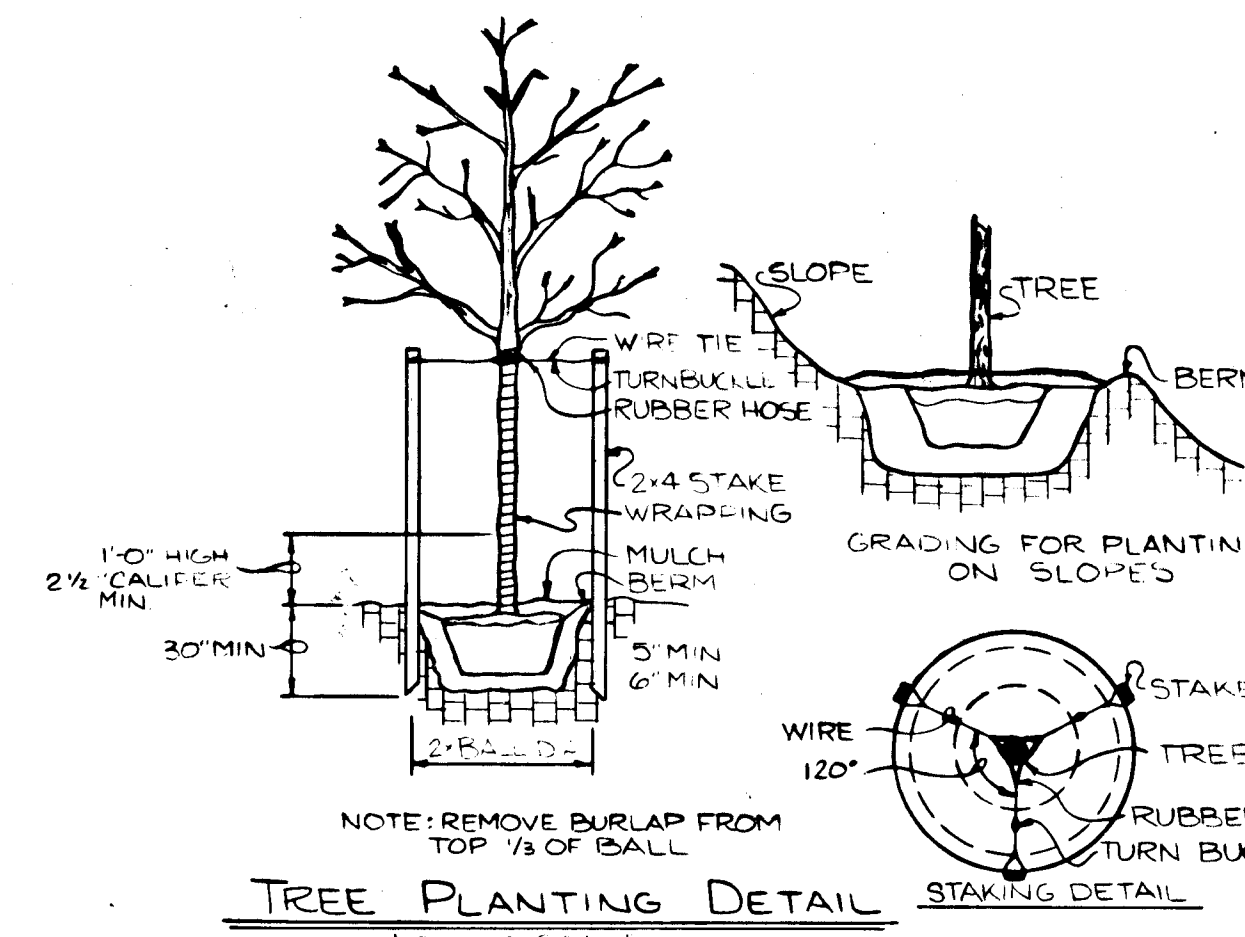
- Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a minimum of (4) inches, and placed so the bindings are horizontal.
- Bales shall be securely anchored in place by either two stakes or re-bar driven through the bale. The first stake, in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
- Inspection shall be frequent and repair/replacement shall be made promptly as needed.
- Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.



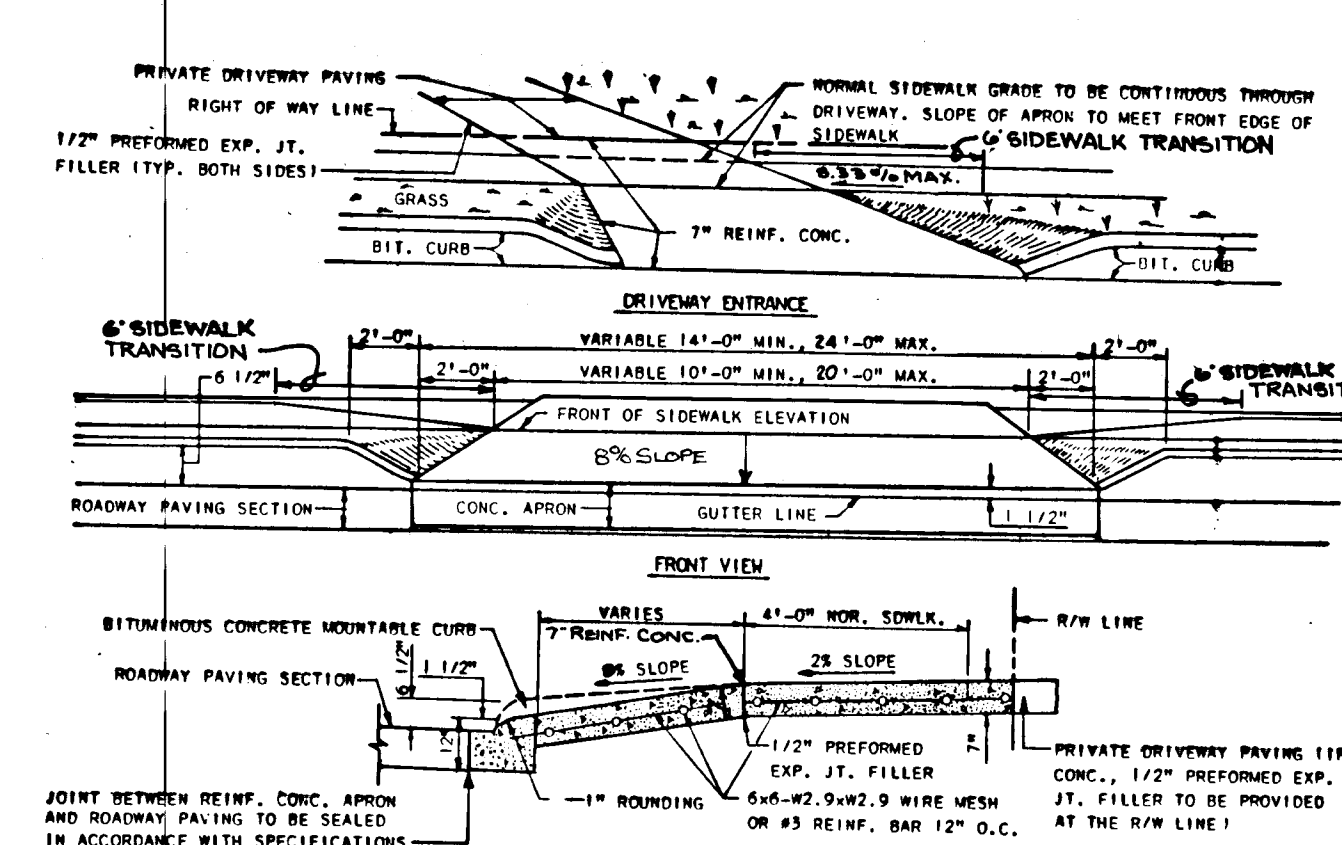
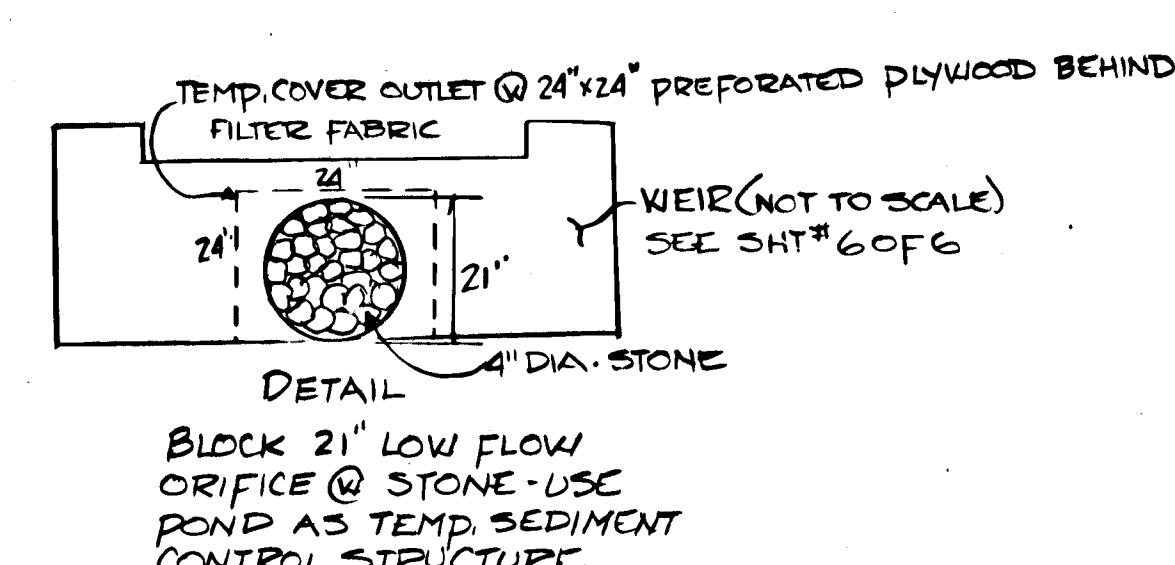
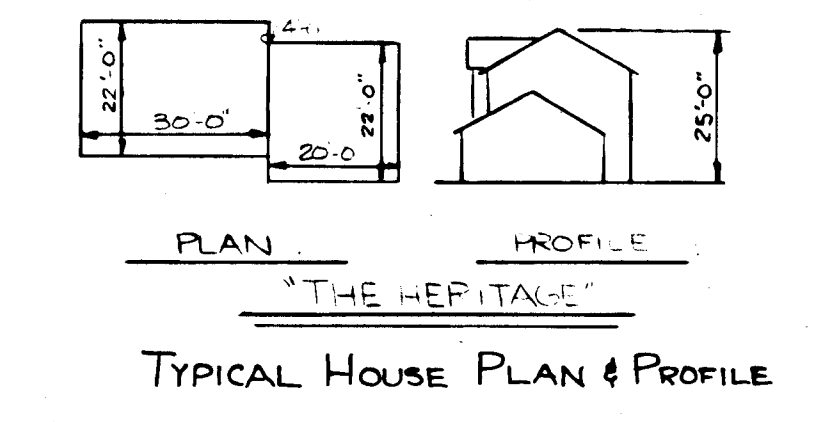
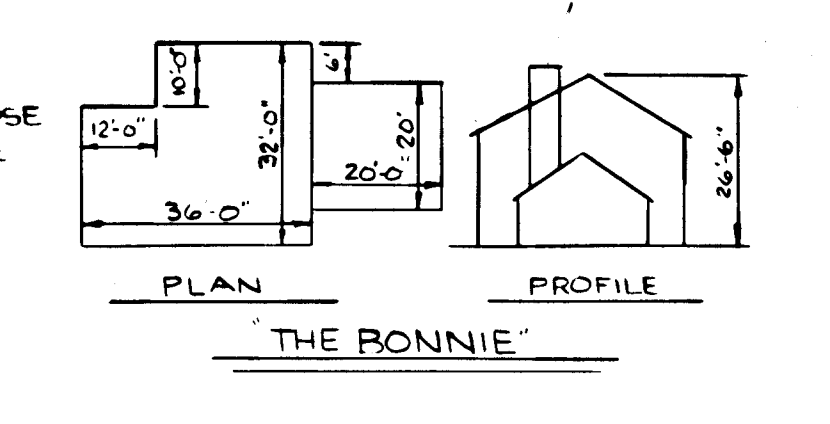
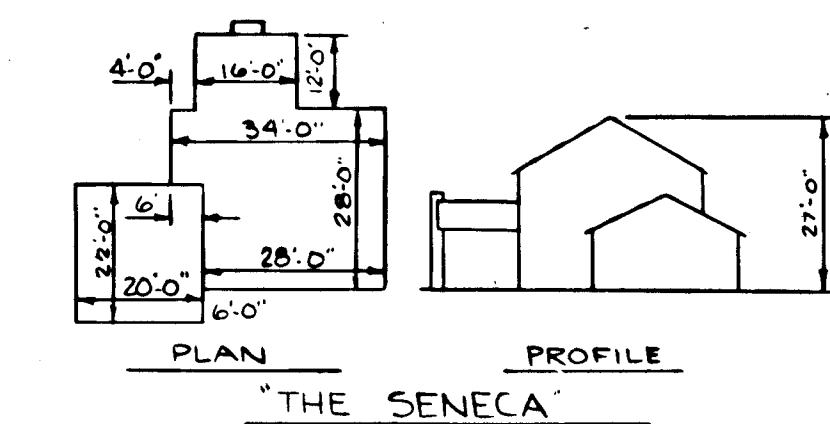
- When wire fence is to be installed, securely tie to fence posts with wire ties or staples.
- Filter cloth to be fastened securely to wood wire fence with staples every 24" at top and mid section.
- When two sections of filter cloth abut, each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed. Periodic inspection and needed maintenance shall be provided after each rain.



- Attach a continuous piece of wire mesh (30" mesh) with three length plus 4" to the 2' x 4" wire (measuring throat length plus 2") as shown on the standard drawing.
- Place a piece of approved filter cloth (40-85 sigma) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2' x 4" wire.
- Securely mill the 2' x 4" wire to 3" long vertical supports to be located between the wire and inlet face (max. 6" apart).
- Place the assembly against the inlet throat and mill (retains) lengths of 2' x 4" to the top of the wire at spacer locations. These 2' x 4" spacers shall extend across the inlet top and be held in place by snapcaps or alternate weight.
- The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
- Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place a clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dike directing flow into inlet.



- Remove burlap from top 1/3 of ball.
- Stake 120°.
- Wire 120°.
- Stake 120°.
- Wire 120°.



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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Div. Date
 Chief, Bureau of Highways Date
 Chief, Bureau of Engineering Date

ENGINEER'S CERTIFICATE
 I HEREBY 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.
 Signature: [Signature] Date: 6/18/87

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL 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 ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 Signature: [Signature] Date: 6/18/87

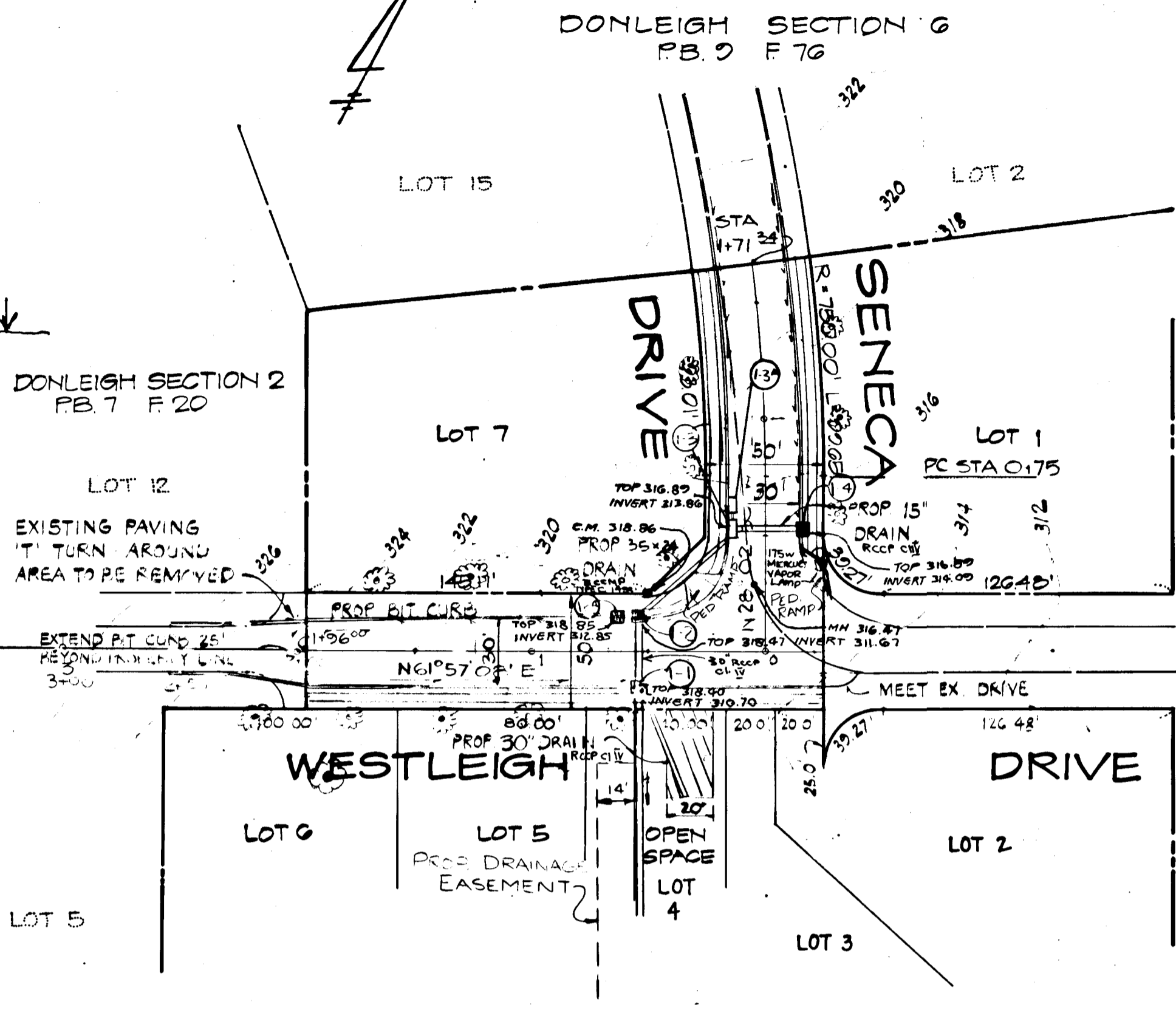
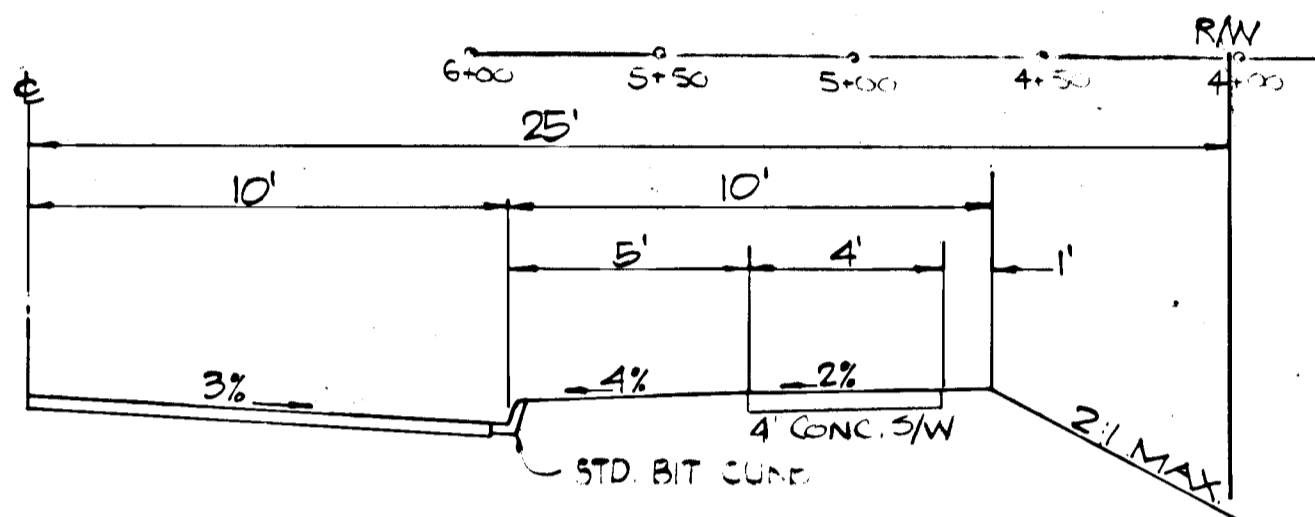
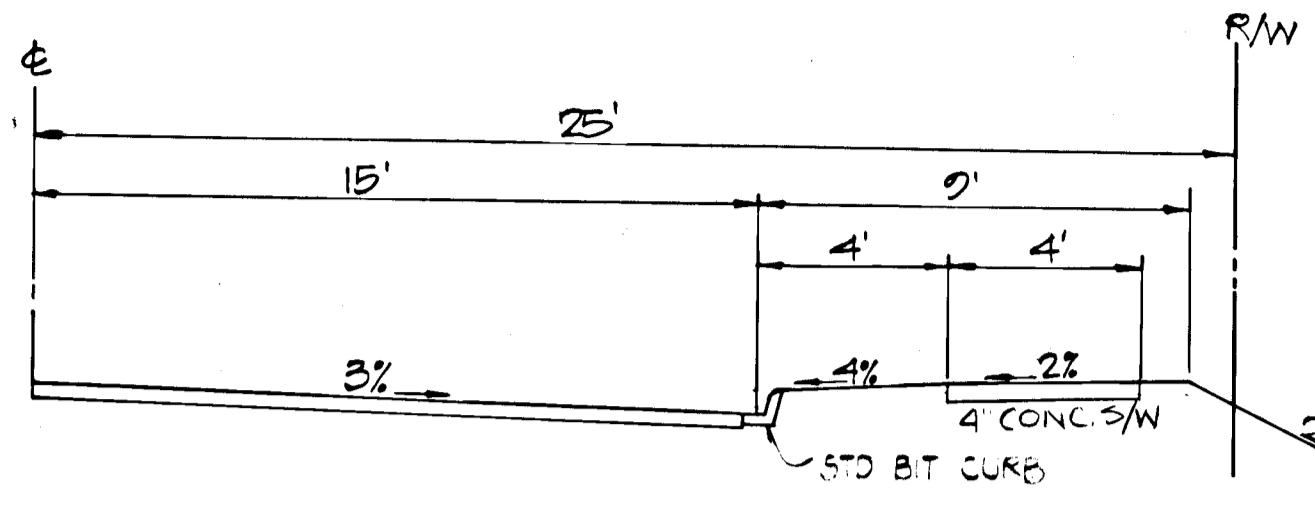
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
 Signature: [Signature] Date: 10-19-87
 U.S. SOIL CONSERVATION SERVICE DATE
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: [Signature] Date: 10/18/87

APPROVED: OFFICE OF PLANNING AND ZONING
 Signature: [Signature] Date: 11-2-87
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

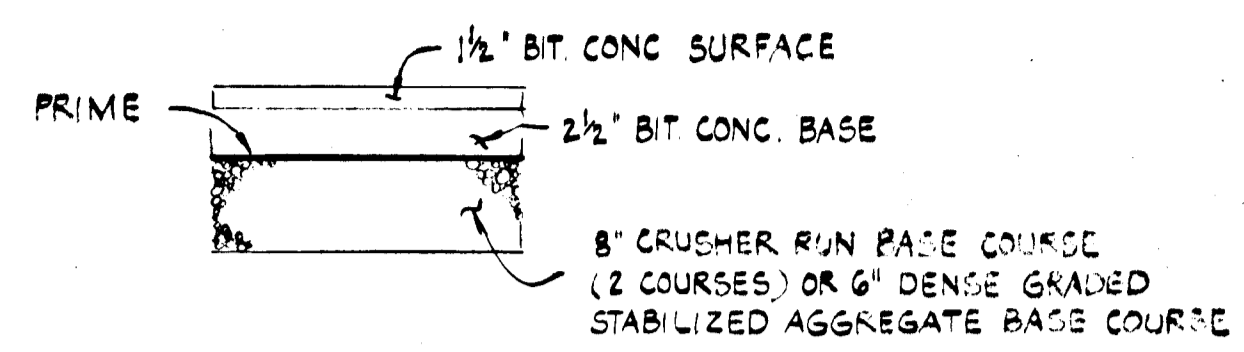
10/2/87 Date
 PROFESSIONAL ENGR. NO. [Number]

OWNER/DEVELOPER
ATLANTIC ENGINEERING, Corp.
 CONSULTING ENGINEERS, PLANNERS
 196 PENNSYLVANIA AVE. WESTMINSTER, MD, 21157
 (301) 876-1288
 AREA 6TH ELECTION DISTRICT, HOWARD COUNTY, MD
 TAX MAP NO. 36 & 42 ZONING = R-20
 FILE NO. P87-01
 TITLE: SENECA PLACE,
 LOTS 1-3 AND 5-7
 Des. By MFF Scale: 1"= [Scale] Proj. No.
 Drawn By JMT Date 6/12/87 Drawing No.
 Chk By RHC Approved 21 of 6

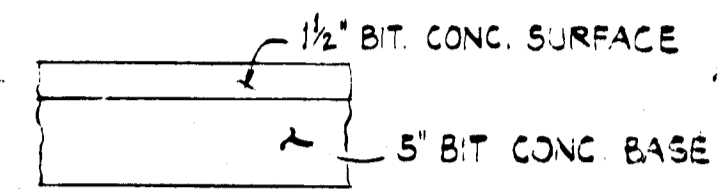
DATE: _____ BY: _____
 PLAN REVIEWED: _____
 NOTE BOOK: _____
 NO. _____
 STRUCTURE: _____
 DATE: _____ BY: _____
 PROFILE REVIEWED: _____
 NOTE BOOK: _____
 NO. _____
 STRUCTURE: _____
 DATE: _____ BY: _____



CURVE DATA
 $\Delta = 7^{\circ}36'45''$
 $D.R. = 7^{\circ}54'33''$
 $R = 725.00'$
 $T = 48.24'$
 $L = 96.94'$
 $E = 1.60'$



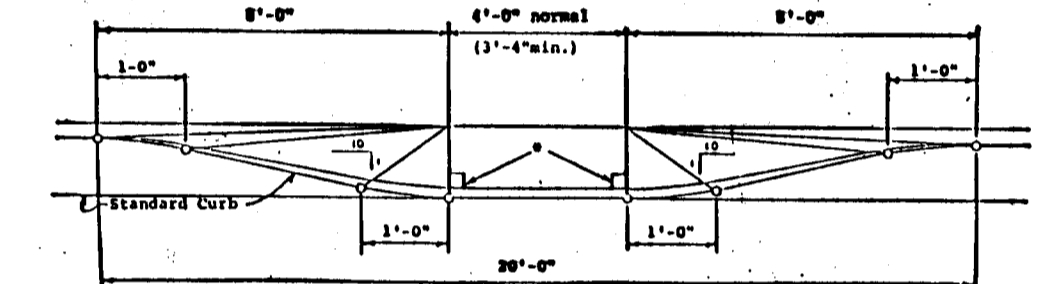
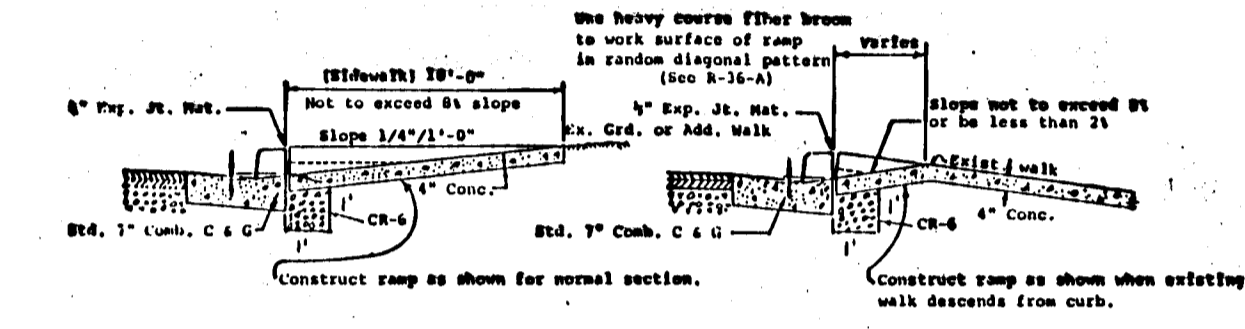
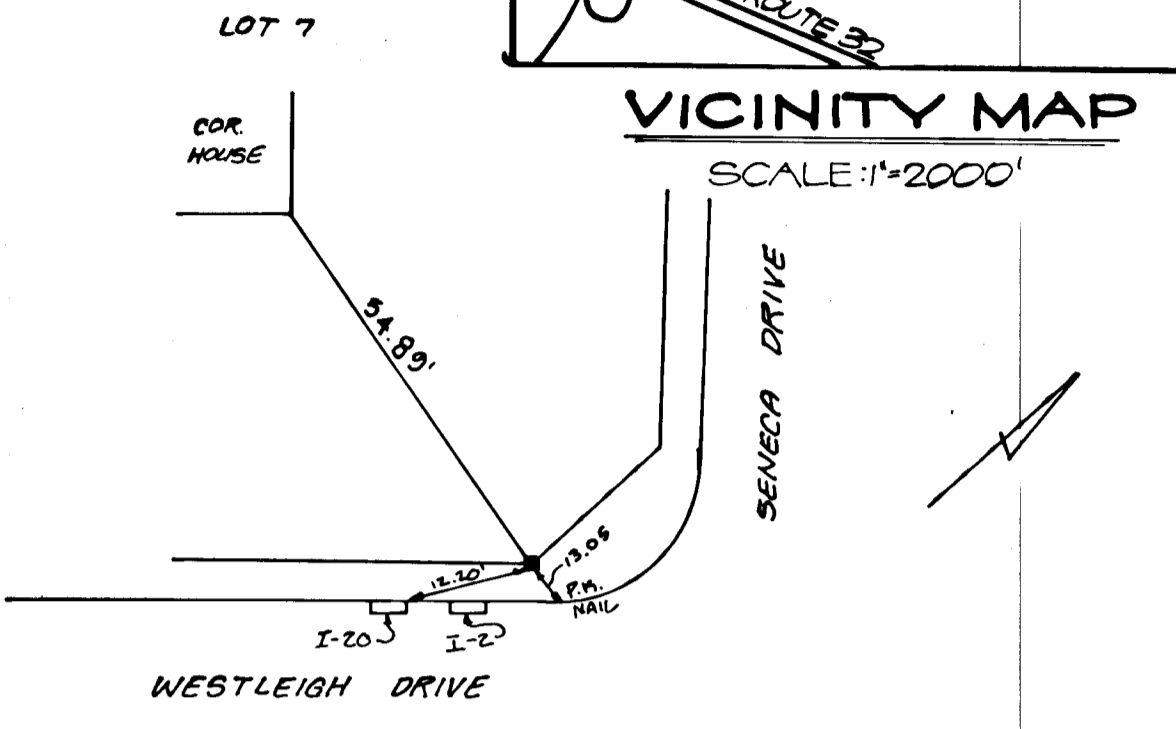
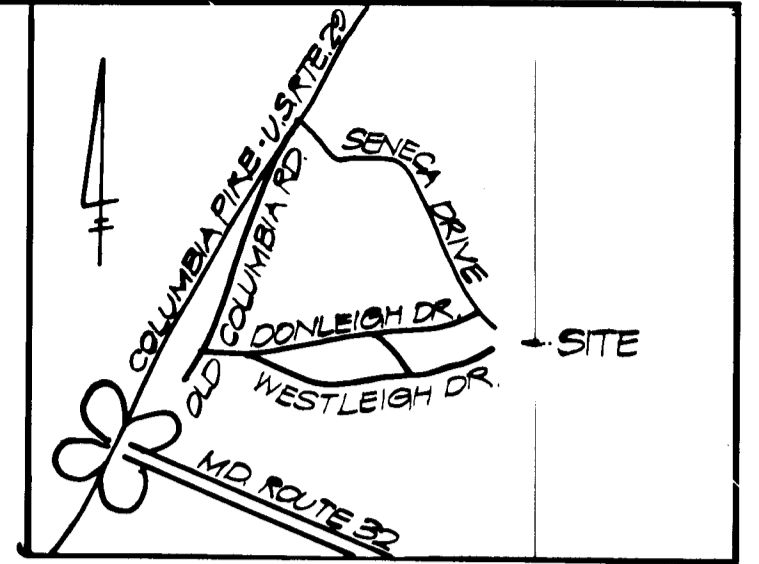
GRANULAR BASE ALTERNATE



FULL DEPTH BIT. CONC. ALTERNATE

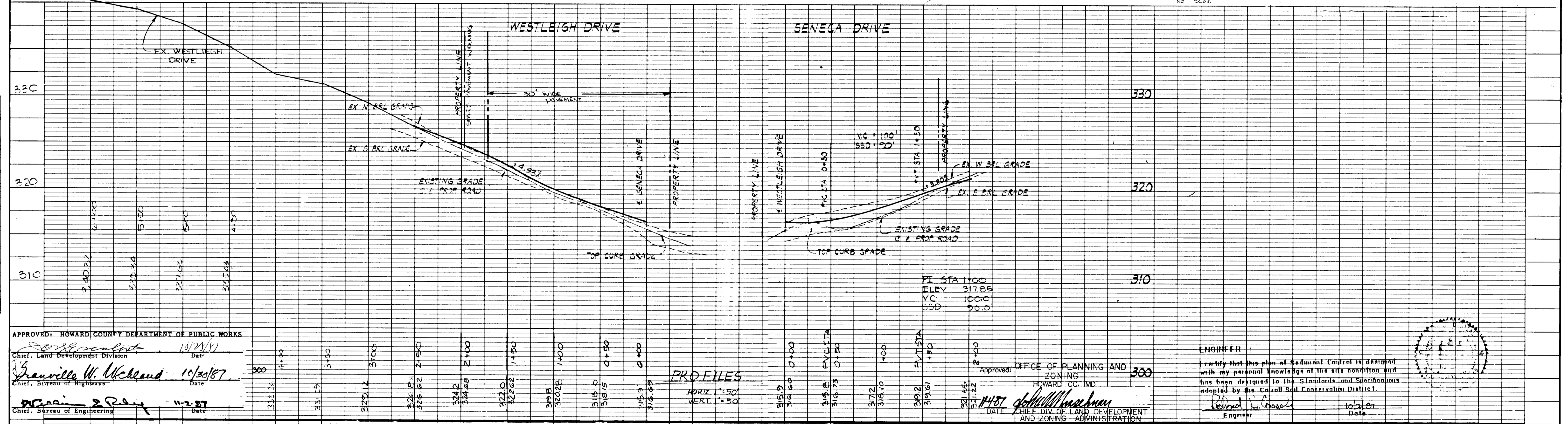
(P-2) PAVING SECTIONS

NOT TO SCALE



Notes: Pedestrian ramps should be constructed where indicated on drawings and standard details. However, existing poles, hydrants, inlets, etc. may affect ramp placement.
 * Place 4\"/>

REVISED 1-12-88 GAG



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
Granville W. Wickland 10/30/87
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: OFFICE OF PLANNING AND ZONING
 HOWARD CO. MD
 DATE: 11/28/87
 CHIEF DIV. OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

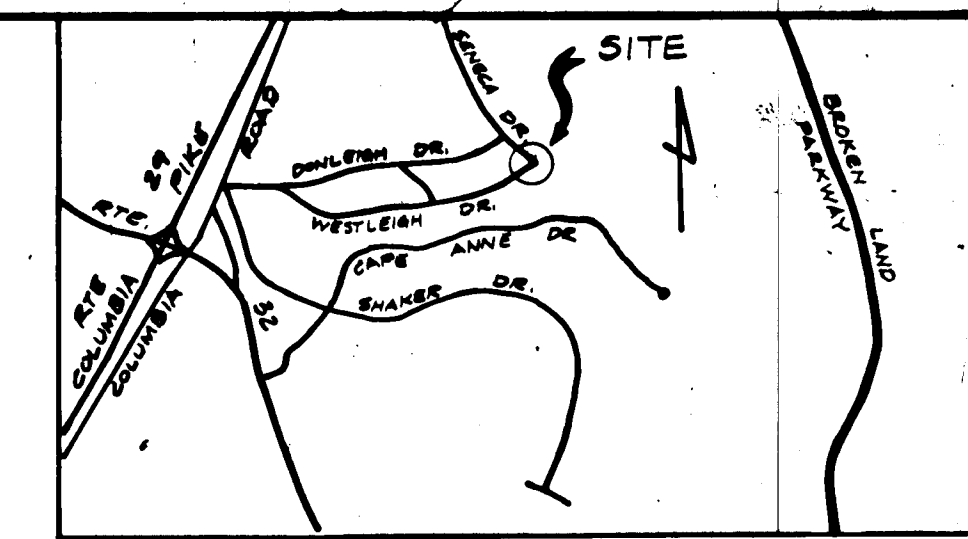
ENGINEER
 I certify that the plan of Sediment Control is designed with my personal knowledge of the site condition and has been designed to the Standards and Specifications adopted by the Carroll Soil Conservation District.
Robert J. Basore
 Engineer
 Date: 10/2/87

ATLANTIC ENGINEERING CORP.
 CONSULTING ENGINEERS
 198 PENNSYLVANIA AVE. WESTMINSTER, MD 21157
 (301) 876-1288

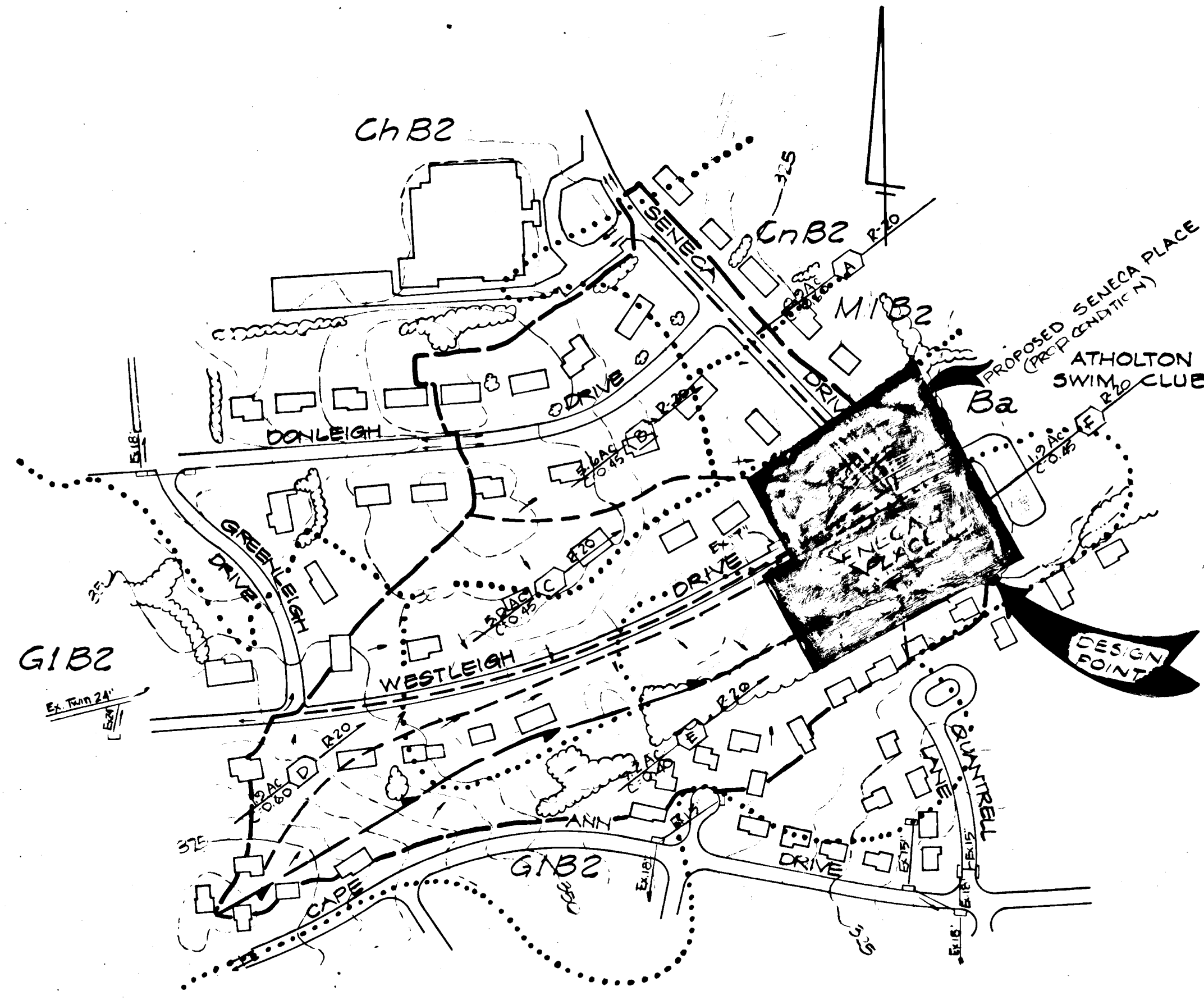
ROADWAY PLAN
 SENECA PLACE LOTS 1-3 & 5-7
 6TH ELECTION DISTRICT HOWARD COUNTY, MD.
 TAX MAP Ncs. 36 42 PARCEL No. 213
 DRAWING SCALE: 1" = 100'
 3 OF 6
 DWN BY BA.
 DES. BY M.F.
 CHK. BY R.H.C.

162

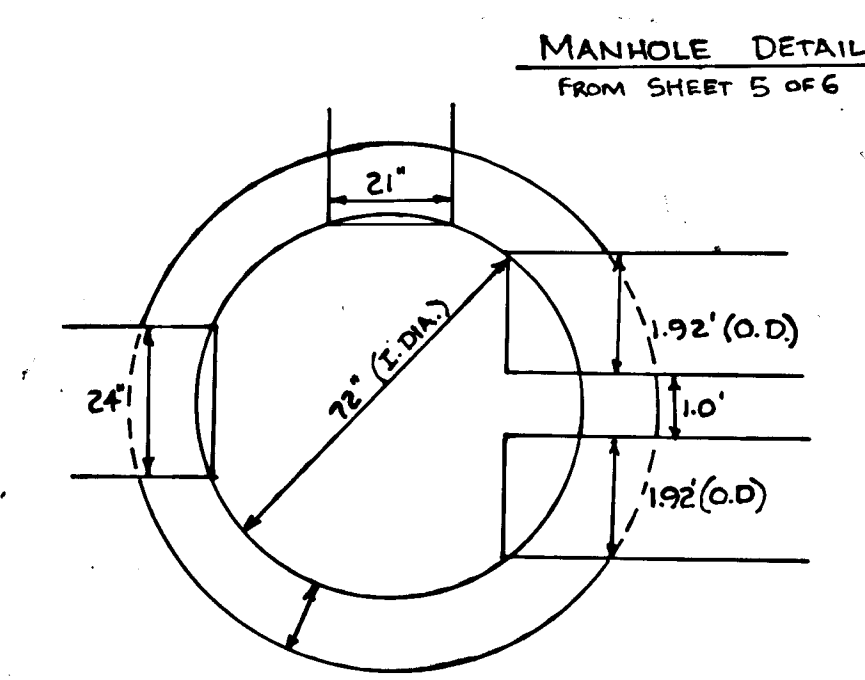
DRAINAGE AREA DESIGNATION (in acres)	AREA (in acres)	SOIL CLASSIFICATION	HYDROLOGIC SOIL GROUP (As per table 606)
a	9.51	G1B2 - Glenelg loam	B
b	5.68	Ba - Baile silt	D
c	5.00	ChB2 - Chester silt loam	B
d	1.15	M1B2 - Manor loam	B
e	1.07	GnB2 - Glenville silt loam	C



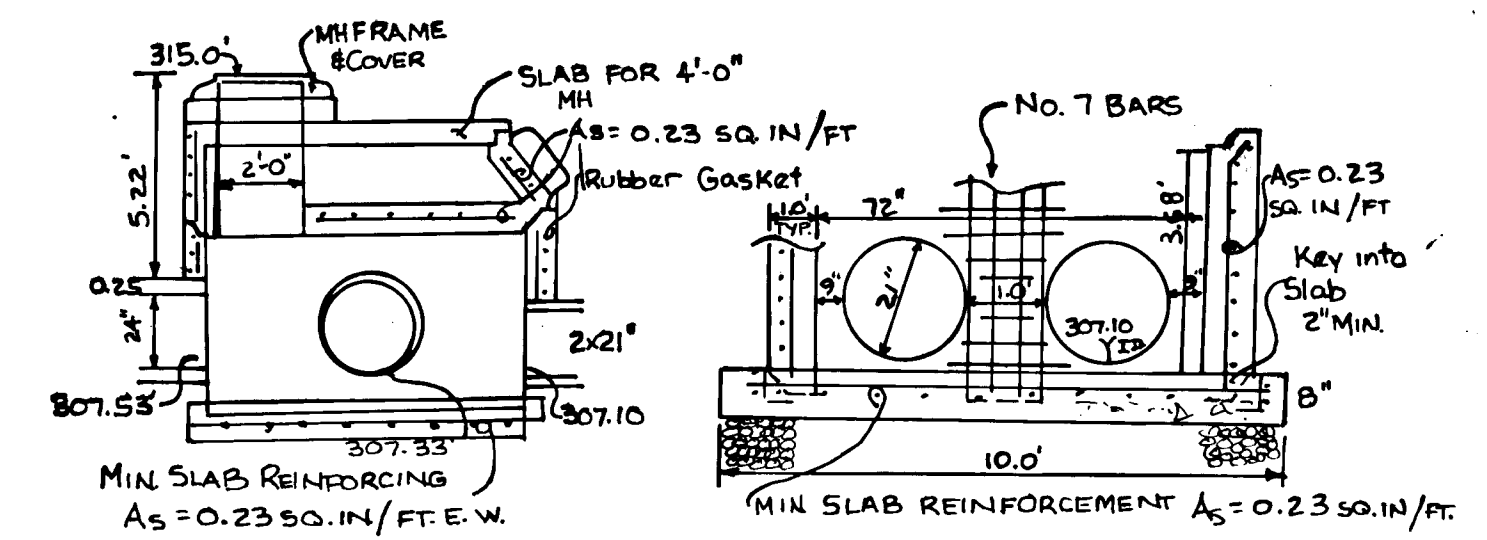
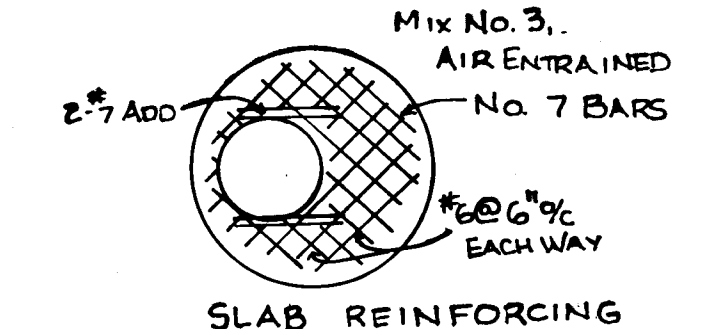
VICINITY MAP



DRAINAGE AREA MAP
SCALE: 1"=200'



21" CMP = 7.175 + 2(0.08)
 ≈ 1.92 * 2 = 3.84
 6.00'
 - 3.84'
 2.16
 USE 1.0' SEP.



REV. 5-27-78 GAG

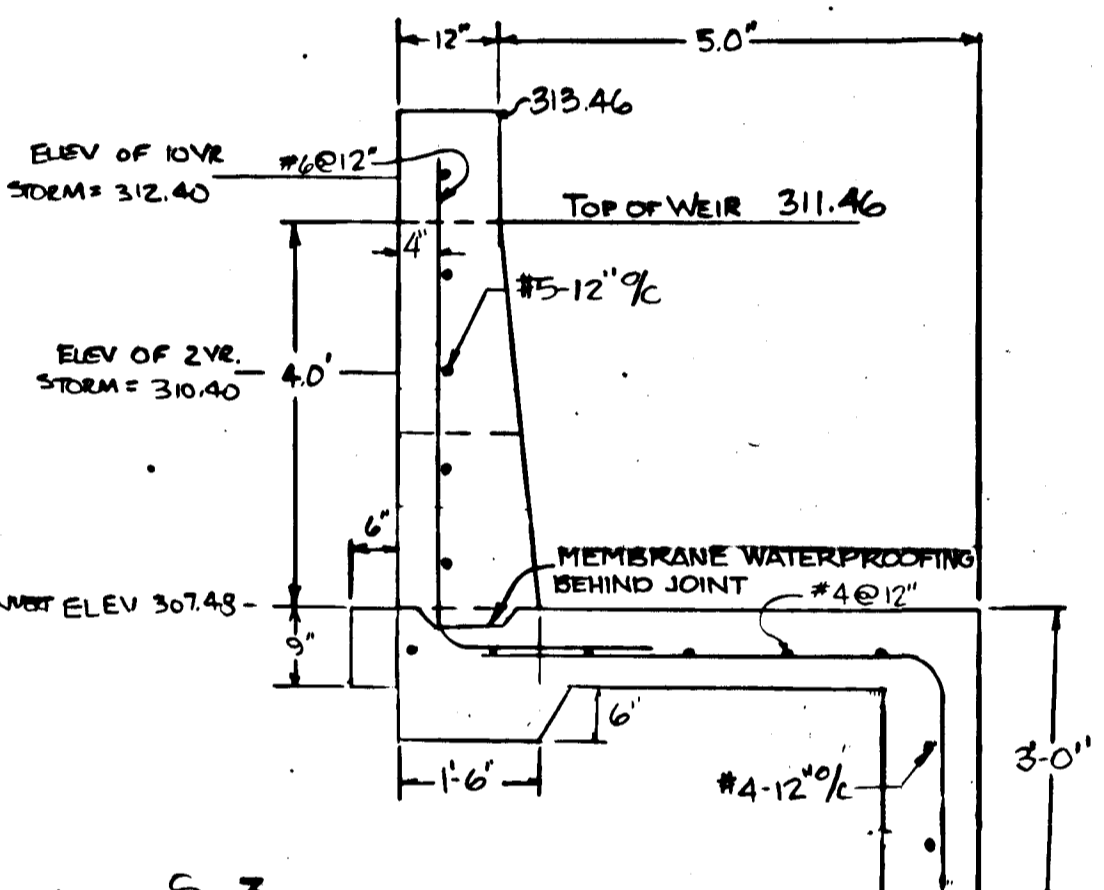
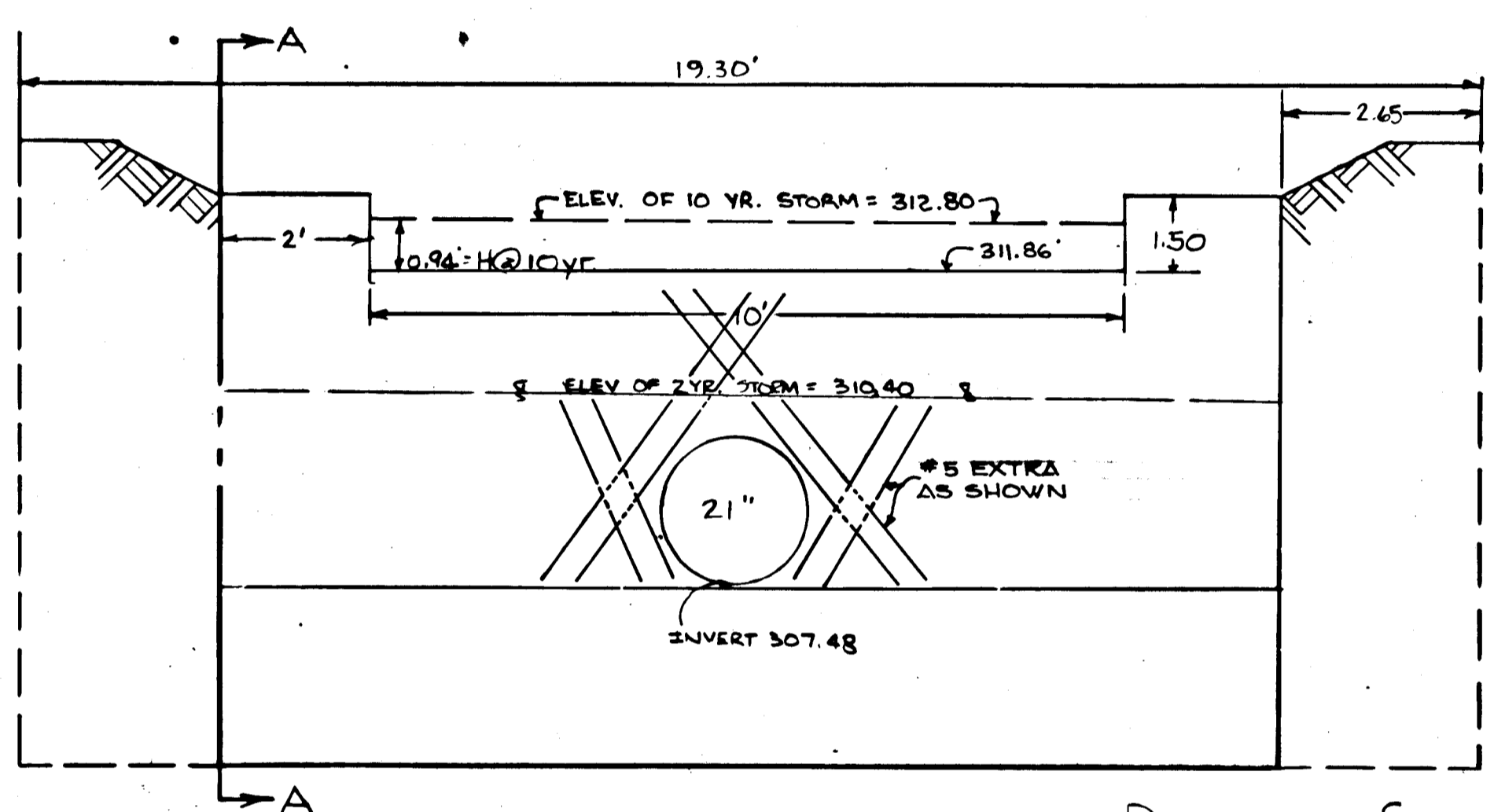
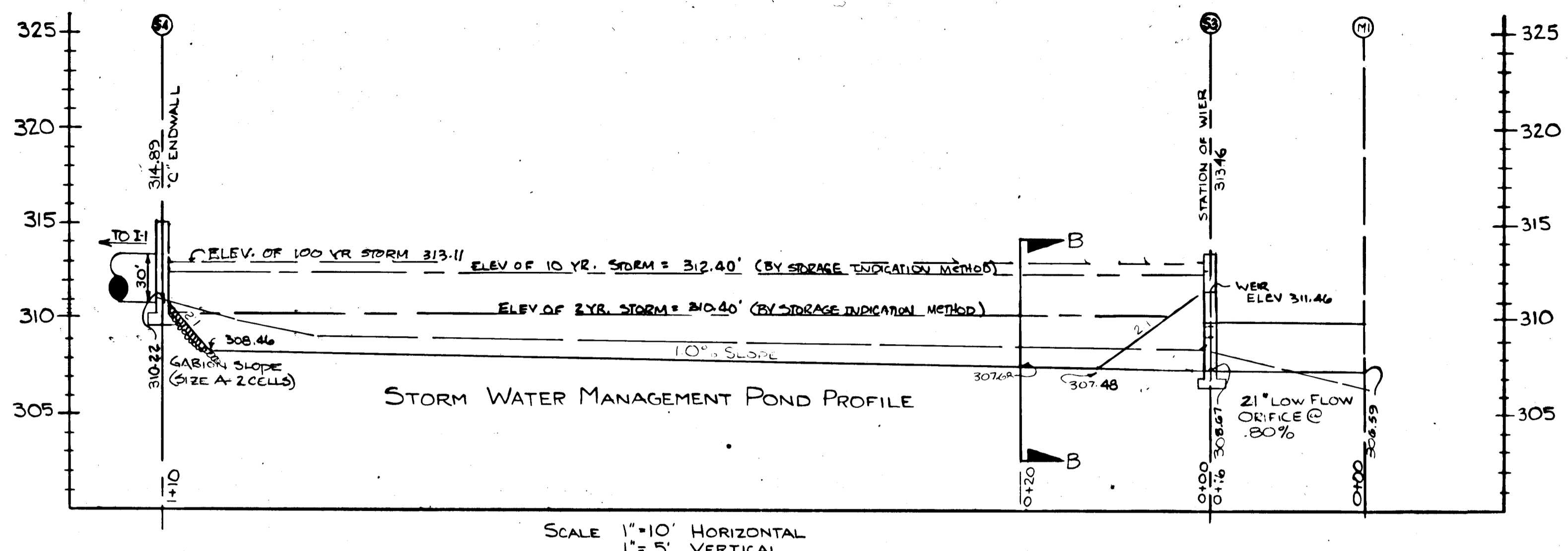
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 Chief, Division of Land Development and Zoning Administration

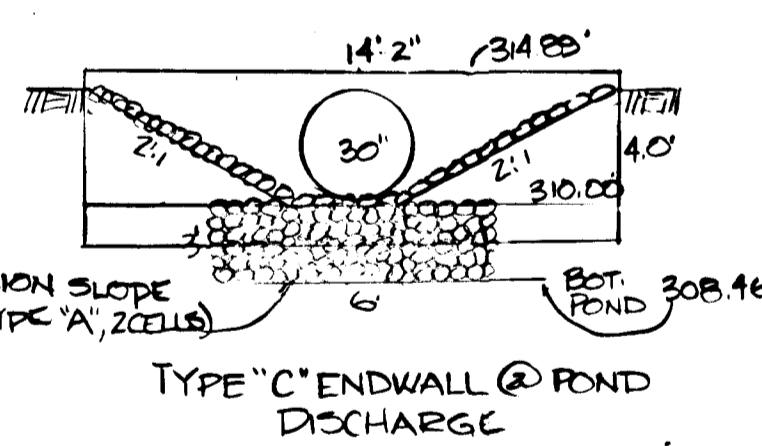
ENGINEER
 I certify that this plan of Sediment Control is designed with my personal knowledge of the site condition and has been designed to the Standards and Specifications adopted by the Howard Soil Conservation District.
 Richard H. Russell
 Engineer Date 10/2/87



STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
SENECA PLACE LOTS 1-3 15-7
 TAX MAPS NO 36 / NO 42 ; PARCEL NO 213
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JULY, 1986
 SHEET NO 4 OF 6

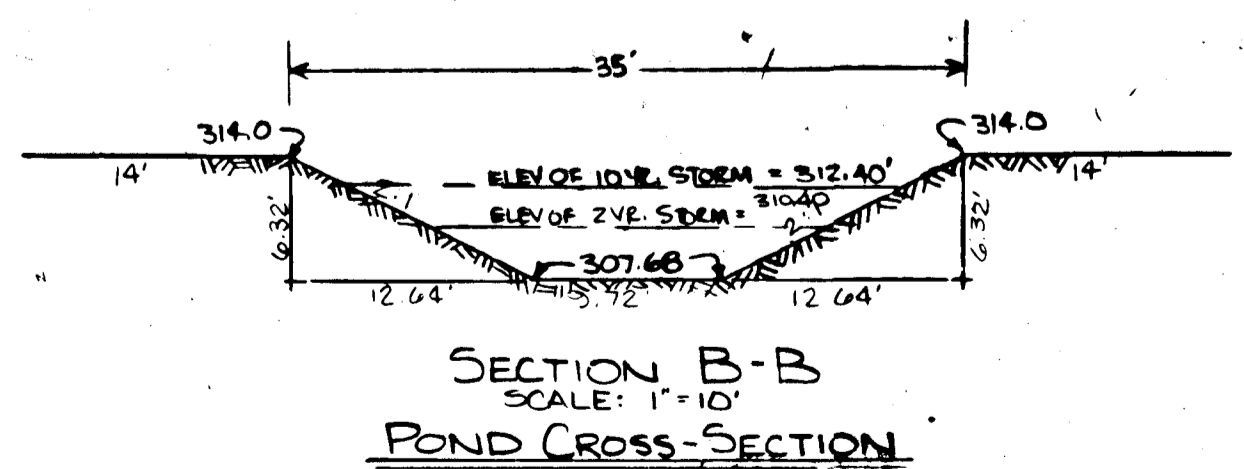


NOTE: All footings to be poured on undisturbed soil.



ENGINEER
 I certify that this plan of Sediment Control is designed with my personal knowledge of the site condition and has been designed to the Standards and Specifications adopted by the Howard Soil Conservation District.

Richard W. Beall
 Engineer
 10/28/87
 Date



**SOIL CONSERVATION SERVICE
 MARYLAND
 CONSTRUCTION SPECIFICATIONS
 FOR
 PONDS**

These specifications are appropriate to ponds within the scope of the Standard for practice 378.

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, 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 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 area or areas. It shall be free of roots, stumps, wood rubbish, oversize 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.

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 (CLAY CORE)
 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 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 equipment be driven 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. PIPE CONDUITS
 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 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.

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. Dimple 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 other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
- Backfilling shall conform to structural backfill as shown above.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

V. CONCRETE

1. 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 one-quarter inch sieve. Limestone sand shall not be used.

d. Coarse 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.

e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. Design Mix - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. 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.

3. 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 materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition 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.

4. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, 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.

5. Reinforcing Steel - All reinforcing material shall be free of dirt, rust, scales, oil, paint or any 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.

6. 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.

7. 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.

8. 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.

9. Placing Temperature - Concrete may not be placed at temperatures below 34°F.

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, liming, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications or as shown on 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 air 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: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

NO.	DATE	BY	FOR
1	10/30/87	DR	AS-BUILT

ATLANTIC ENGINEERING, CORP.
 CONSULTING ENGINEERS
 198 PENNSYLVANIA AVE, WESTMINSTER, MD 21157
 (301) 876-1288

APPROVED: OFFICE OF PLANNING AND ZONING
 HOWARD CO. MARYLAND
 DATE: 11-2-87
 CHIEF DIV. OF LAND DEVELOPMENT AND ZONING ADMINISTRATION.

STORMWATER MANAGEMENT
 GENERAL NOTES & DETAILS

SENECA PLACE LOTS 1-3 #5-7
 6TH ELECTION DISTRICT
 TAX MAP Nos. 36 & 42
 HOWARD COUNTY, MD
 PARCEL No. 213

REVISED 1-12-88
 DRAWING NO. 6 OF 6
 SCALE 1" = 1'
 DES: DRWN: JMT
 CHK:

F-87-118