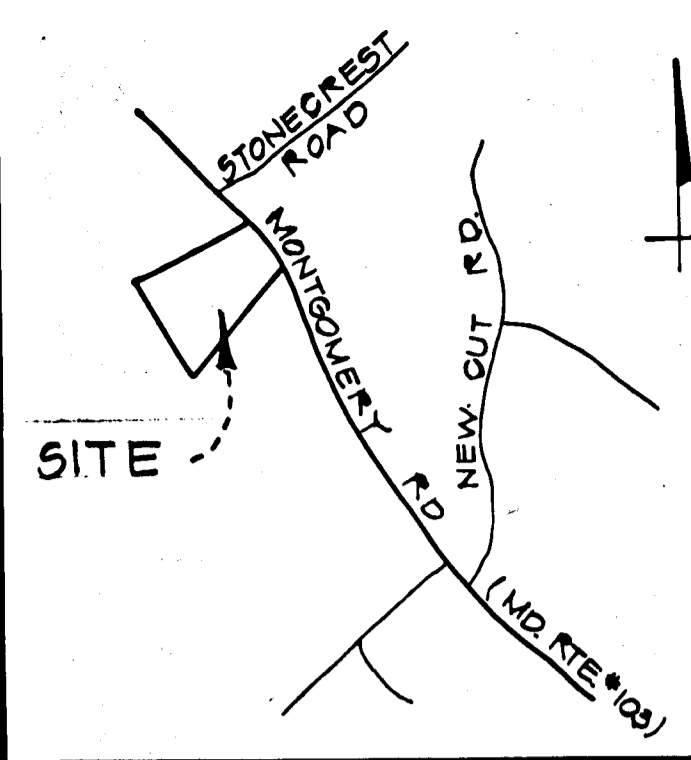


BRAMPTON HILLS (SECT. 2)
 PLAT 5561
 ZONED R-20



BENCH MARK
 R.R. SPIKE EDGE OF
 ROAD - EL. 462.62

VICINITY MAP
 SCALE: 1" = 2,000'

- GENERAL NOTES**
- Area of Parcel: 11.4AC/496584 SQ FT
 - Open Space to remain on site: 61,401.85 SQ FT/123.96%
 - Present zoning is: R-20
 - Minimum Setbacks:
 Front: 50' (Lots 20,000 SF)
 40' (Lots 20,000 SF)
 Side: 30' (From Public R/W)
 Rear: 10'
 - Typical house dimensions, schematic profile, details, sediment control notes and specifications can be found on sheet 2 of 2.
 - Site Analysis: (1 existing unit)
 A. Total number of lots: 22 (19 proposed units)
 B. Total area of lots: 374,616 SQ FT/8.6 AC ±
 Street trees will be provided under F-87-215 by the Developer.
 - The Contractor or the Developer shall contact the Construction Inspection Division, 24 hours in advance of commencement of work @ 792-2630.
 - All vegetative and structural practices installed according to the provisions of this plan are to be in conformance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control 1983.
 - The Contractor or Developer shall contact the Construction Inspection Division 24 hours in advance of commencement of work at 792-2630.
 - No structures are to be constructed on open space lots 21 & 22 at a distance less than Howard County Regulations require.
 - There is an existing structure on lot no. 14. No new buildings, extensions or additions to the existing building is to be constructed at a distance less than the Howard County Zoning Regulations allow.
 - All structures shown on lots 6, 7 & 8 are to conform to the building setback lines as required in Section 106 of the Howard County Zoning Regulations. Any existing structures which do not meet the required setback are to be removed.
 - For all pipestem lots; refuse collection, snow removal and road maintenance is provided to the junction of the pipestem lot driveway only.

- Notes:**
- ⊙ - 250 Watt mercury vapor lamp on 30-ft. galvanized steel pole.
 - ⊙ - 175-Watt "Modern" mercury vapor lamp on 14-ft. gray fiberglass pole.
 - ⊙ SURVEY LINE
 - ⊙ CONCRETE SURVEY MONUMENT

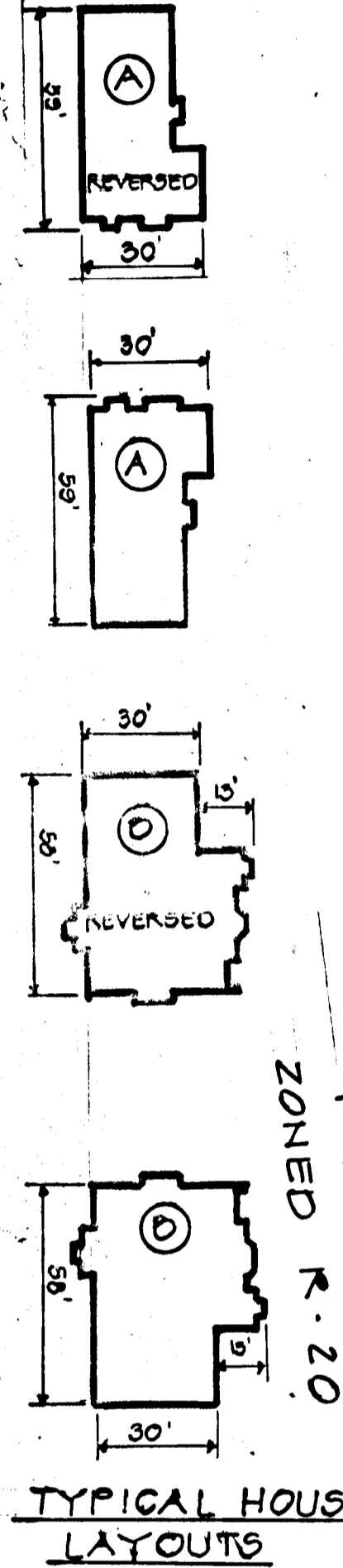
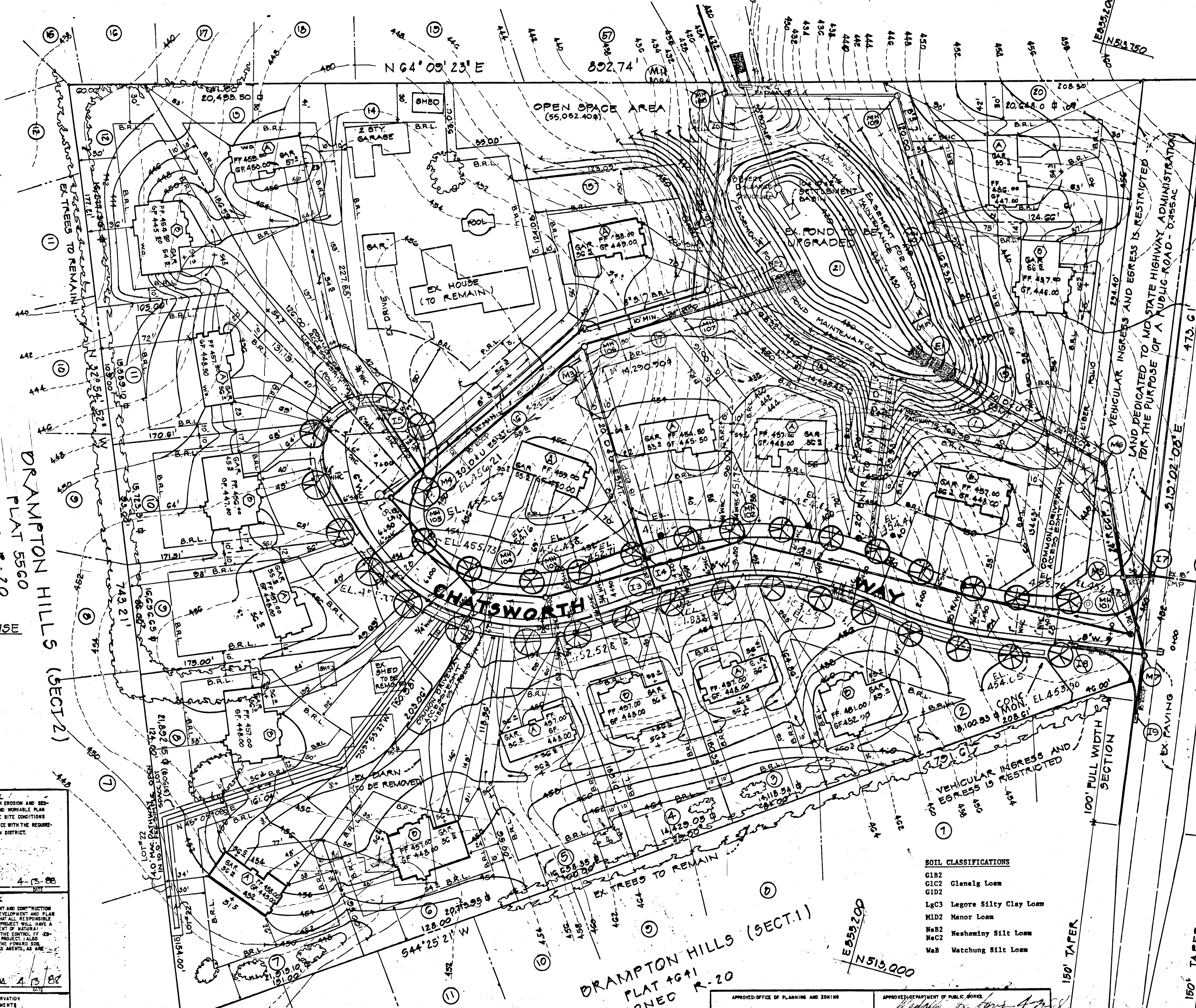
ADDRESS CHART

LOT NO.	STREET ADDRESS
1	Chatsworth Way
2	Chatsworth Way
3	Chatsworth Way
4	Chatsworth Way
5	Chatsworth Way
6	Chatsworth Way
7	Chatsworth Way
8	Chatsworth Way
9	Chatsworth Way
10	Chatsworth Way
11	Chatsworth Way
12	Chatsworth Way
13	Chatsworth Way
14	Chatsworth Way
15	Chatsworth Way
16	Chatsworth Way
17	Chatsworth Way
18	Chatsworth Way
19	Chatsworth Way
20	Chatsworth Way

SURVEY PERFORMED 1/19/87

ATLANTIC ENGINEERING CORPORATION
 CIVIL ENGINEERS • SURVEYORS • PLANNERS
 198 PENNSYLVANIA AVE.
 WESTMINSTER, MARYLAND
 2157
 TELEPHONE: (301) 876-1288

DEVELOPMENT PLAN
MANORS OF OAKWOOD
 SECTION 1
 LOT, HOUSE SITE, UTILITY LAYOUT/
 LOTS GRADING 21
 TAX MAP 31 PARCEL 563
 2ND ELECTION DIST. HOWARD COUNTY, MD
 SCALE 1" = 40' SHEET 1 OF 11
 F-87-215



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.

R.H.C. 4-13-88

DEVELOPER'S CERTIFICATE
 I HEREBY 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 EROSION AND SEDIMENT BEFORE RECEIVING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

N.P. BOWEN 4/13/88

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
James M. P. ... 4-15-88
 U.S. SOIL CONSERVATION SERVICE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zelman 4/15/88

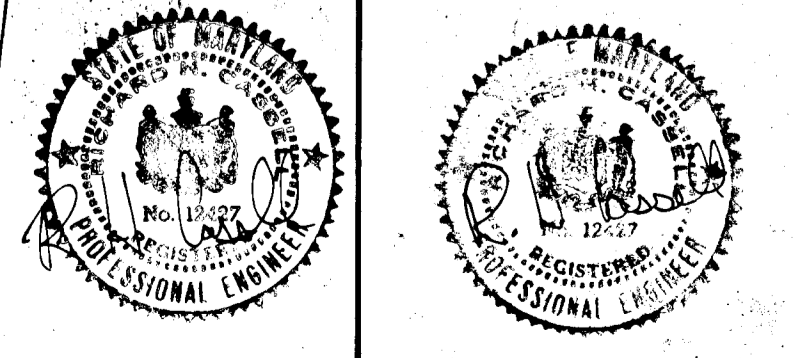
APPROVED OFFICE OF PLANNING AND ZONING
[Signature] 5/12/88
 CHIEF, OFFICE OF COMMUNITY PLANNING AND ZONING

APPROVED DEPARTMENT OF PUBLIC WORKS
[Signature] 4/22/88
 CHIEF, BUREAU OF HIGHWAYS

APPROVED HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWAGE SYSTEMS
 HEALTH OFFICER

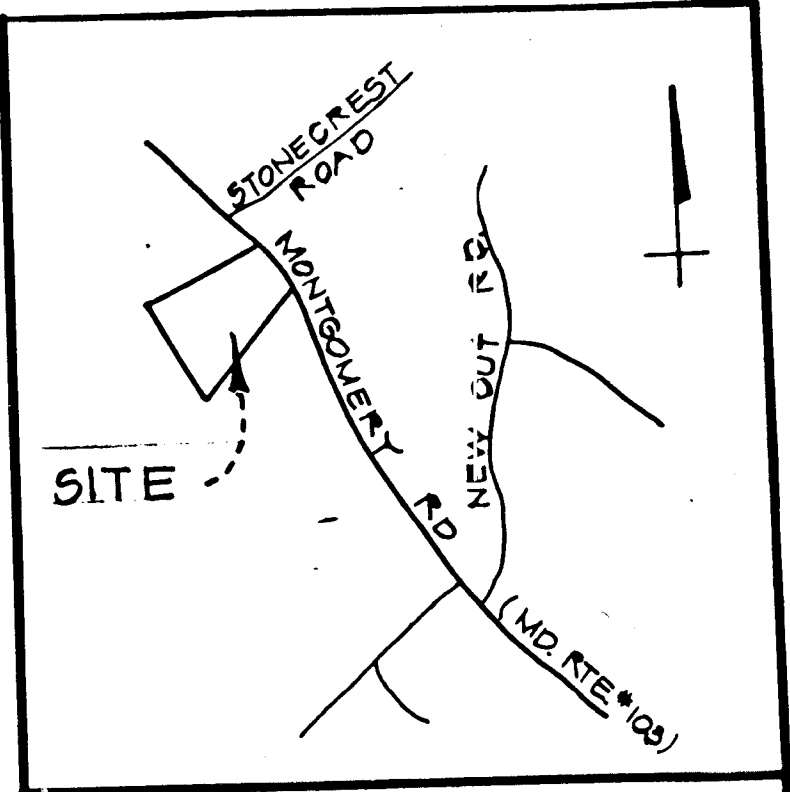
APPROVED SURVEYOR
[Signature] 4/21/88
 CHIEF, BUREAU OF SURVEYING

SECTION/AREA
 PLAT NO. BLOCK NO. DIST. W/SECTION ELEC. DIST. CENTER TR.
 SHEET CODE SHEET CODE



1358

BRAMPTON HILLS (SECT. 2)
 PLAT 5561
 ZONED R-20



VICINITY MAP
 SCALE: 1" = 2,000'

BENCH MARK
 R.R. SPIKE EDGE OF
 ROAD - EL. 488.62

(MO RTE. # 103)

ROAD

MONTGOMERY ROAD

250' FULL WIDTH SECTION

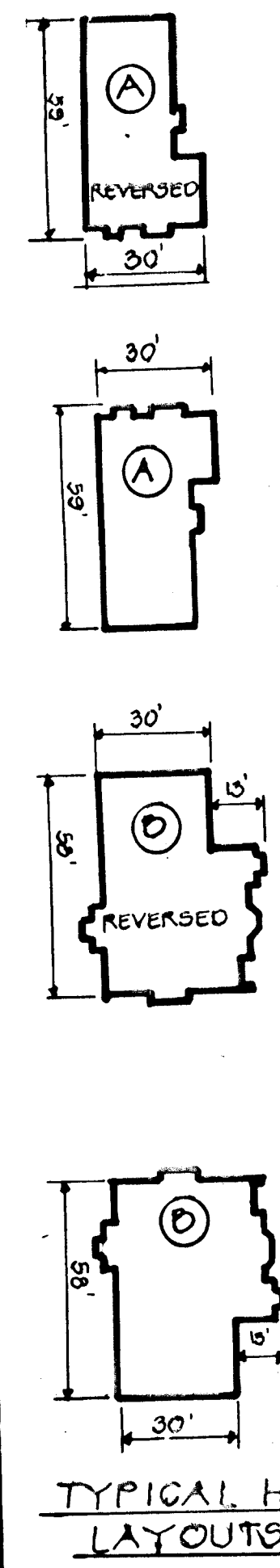
EX. PAVING

150' TAPER

100' FULL WIDTH SECTION

150' TAPER

VEHICULAR INGRESS AND EGRESS IS RESTRICTED TO MONTEGOMERY HIGHWAY ADMINISTRATION FOR THE PURPOSE OF A PUBLIC ROAD



TYPICAL HOUSE LAYOUTS

BRAMPTON HILLS (SECT. 2)
 PLAT 5560
 ZONED R-20

EB 855230
 N 513,000

BRAMPTON HILLS (SECT. 1)
 PLAT 1091
 ZONED R-20

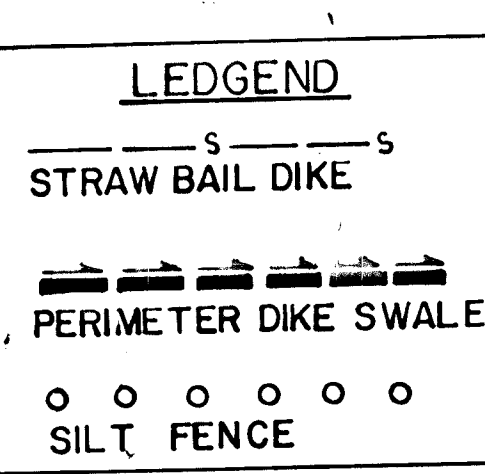
EB 855200
 N 513,000

OPEN SPACE AREA
 (55,052.46 sq ft)

EX. HOUSE (TO REMAIN)

EX. SHED (TO BE REMOVED)

CHATSWORTH WAY



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 Approval and 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 of Developer: [Signature] Date: 4/13/88

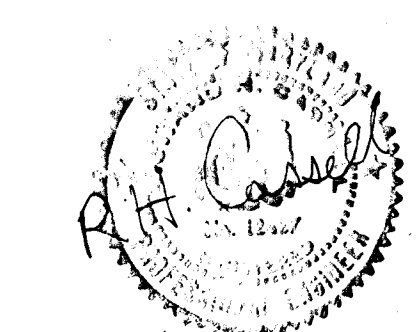
By the Engineer:
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
 Signature of Engineer: [Signature] Date: 4-13-88

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

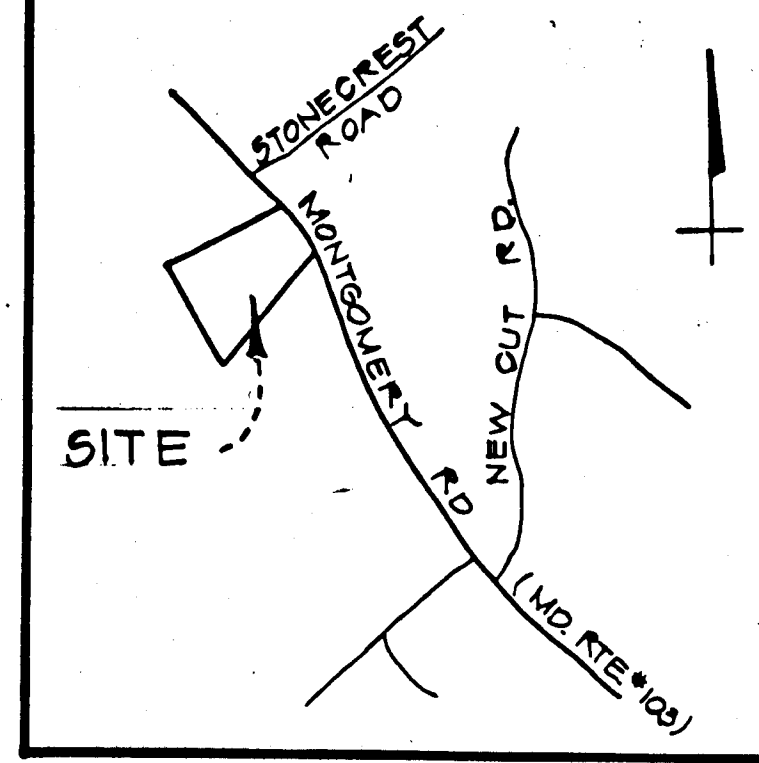
ATLANTIC ENGINEERING CORPORATION
 CIVIL ENGINEERS • SURVEYORS • PLANNERS
 198 PENNSYLVANIA AVE.
 WESTMINSTER, MARYLAND
 21157
 TELEPHONE: (301) 876-1298

DEVELOPMENT PLAN
 SEDIMENT CONTROL PLAN
MANORS OF OAKWOOD
 SECTION 1
 SEDIMENT CONTROL SHEET
 LOTS 1 THRU 21
 TAX MAP 31 PARCEL 563
 2ND ELECTION DIST. HOWARD COUNTY, MD
 SCALE 1" = 40' MARCH, 1988
 SHEET 2 OF 11

APPROVED: OFFICE OF PLANNING AND ZONING [Signature] 5/12/88	APPROVED: DEPARTMENT OF PUBLIC WORKS CHIEF, LAND DEVELOPMENT DIVISION [Signature] DATE
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS [Signature] DATE	CHIEF, BUREAU OF HIGHWAYS [Signature] DATE
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS [Signature] DATE	CHIEF, BUREAU OF ENGINEERING [Signature] DATE



BRAMPTON HILLS (SECT. 2)
 PLAT 5561
 ZONED R-20



VICINITY MAP
 SCALE: 1" = 2,000'

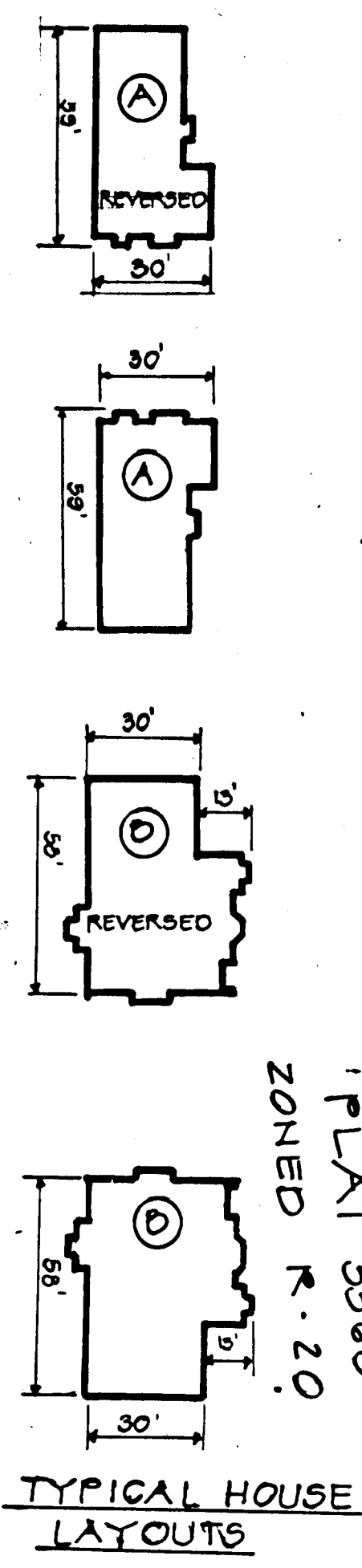
- SOIL CLASSIFICATIONS
- GIB2 - GLENELG LOAM
 - GID2 - GLENELG LOAM
 - LQ3 - LEGORE SILTY CLAY LOAM
 - MID2 - MANOR LOAM
 - NoB2 - NESHAMINY SILT LOAM
 - NoC2 - NESHAMINY SILT LOAM
 - WoB - WATCHUNG SILT LOAM
- STREET TREES
- ⊗ - PIN OAK (QUERCUS PALUSTRIC) No. Col. 18 2.5'
 - ⊗ - RED MAPLE (ACER RUDNUM) 17 2.5'

SLOPE ADJUSTMENTS FOR LOT AREAS

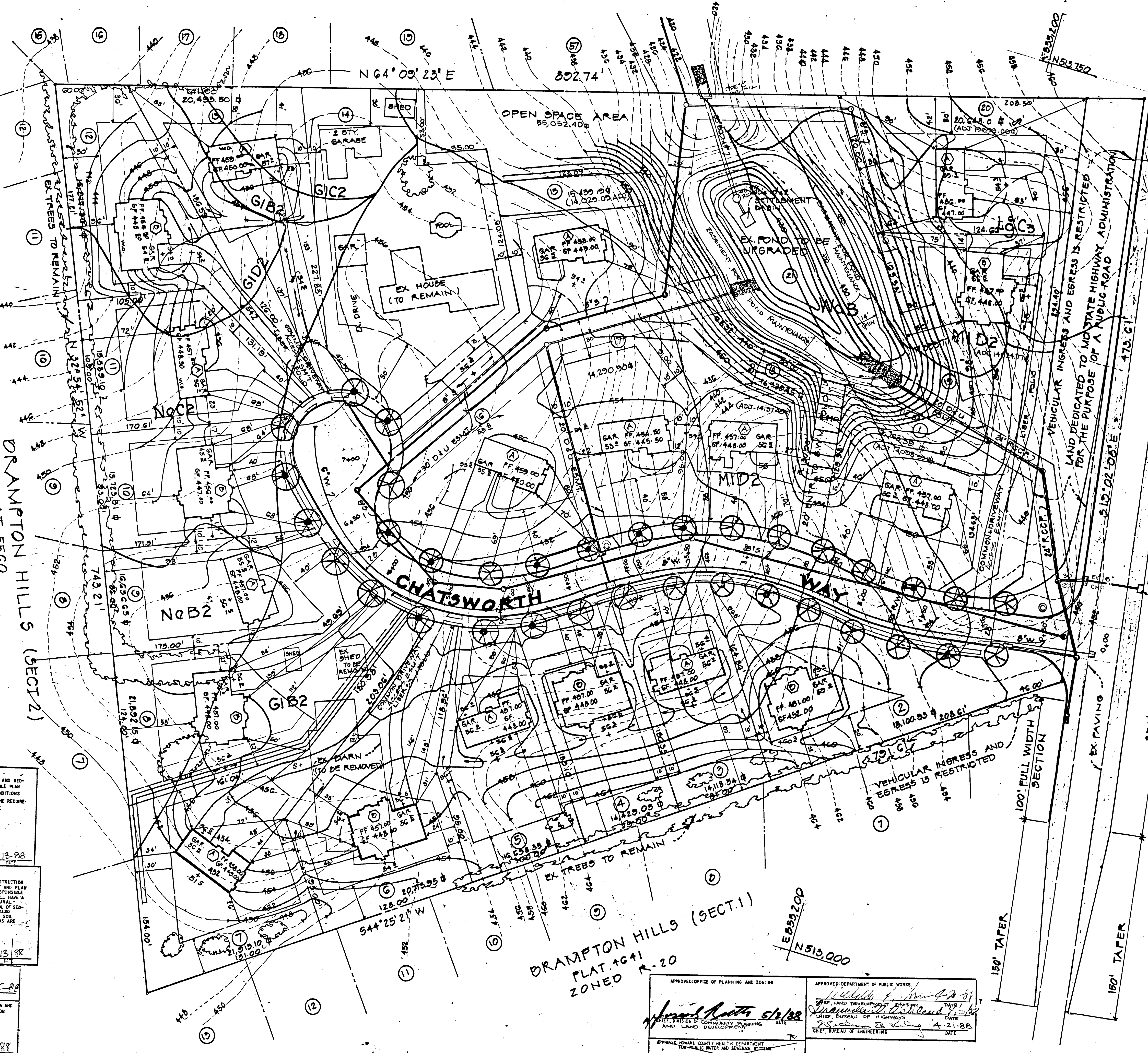
LOT NO.	PLATTED AREA	25% SLOPE AREA	ADJ. # AREA
15	15439.19#	1410.10#	14029.09#
16	16939.45#	2802.00#	14137.45#
1	13703.59#	1695.00#	14008.59#
19	17507.77#	3575.00#	14024.77#
20	20645.00#	750.00#	19895.00#
21	59092.40#	8632.30#	OPEN SPACE LOT (< 50%)

* ADJUSTED LOT AREAS DO NOT INCLUDE AREAS OF PIPESTEMS.

□ AREAS OF 25% OR GREATER SLOPES.



BRAMPTON HILLS (SECT. 2)
 PLAT 5560
 ZONED R-20



BENCH MARK
 R.R. SPIKE EDGE OF ROAD - EL. 455.62

MONTGOMERY ROAD
 (MO RTE. # 103)

250' FULL WIDTH SECTION
 150' TAPE

100' FULL WIDTH SECTION
 150' TAPE

BRAMPTON HILLS (SECT. 1)
 FLAT 4641
 ZONED R-20

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.

DATE: 4-13-88

DEVELOPER'S CERTIFICATE
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM 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 OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

DATE: 4-13-88

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

DATE: 4-15-88

APPROVED: [Signature]

APPROVED: OFFICE OF PLANNING AND ZONING
 DATE: 5/12/88

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 4-21-88

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT
 DATE: [Blank]

ATLANTIC ENGINEERING CORPORATION
 CIVIL ENGINEERS • SURVEYORS • PLANNERS

198 PENNSYLVANIA AVE.
 WESTMINSTER, MARYLAND 21157
 TELEPHONE: (301) 876-1288

DEVELOPMENT PLAN

MANORS OF OAKWOOD

SECTION 1
 SLOPE LOT ADJUSTMENT, LANDSCAPE & SOILS
 LOTS 1 THRU 21

TAX MAP 31 PARCEL 563
 2ND ELECTION DIST HOWARD COUNTY, MD
 SCALE 1" = 40' MARCH, 1988
 SHEET 3 OF 11

F-87-215

1359

- CONSTRUCTION SPECIFICATIONS**
- Obtain grading permits.
 - Construct stabilized construction entrance as shown.
 - Install silt fence as shown. Begin pond construction.
 - Drain pond by pumping; excavate & re-build dam to area shown place river, low flow outlet & outlet pipe. Close down drainage to the river & valve. Use pond as secondary sediment structure.
 - Install sediment traps and roadway to area shown.
 - Clear & grub site & prepare to sub-grade.
 - Construct drainage system & install inlet protection; excavate for foundations & begin house construction.
 - Inspect & maintain sedimentation control devices after each rainfall and on a daily basis.
 - Complete roadway construction; fine-grade base & stabilize; install driveway and sidewalks.
 - Remove silt fences & stabilize; remove low flow discharge from pond & remove all sediment.
 - After permission has been given by the Sediment Control Inspector, back-fill sediment traps; storm drain construction will be completed after contributing drainage areas have been stabilized and traps removed.
 - Stabilize all remaining disturbed areas with permanent seeding mixture and straw mulch.
 - House construction to be done only under an approved S.D.P.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FLOOD DISTURBANCE WHERE A PERMANENT LONG LIVED VEGETATIVE COVER IS NEEDED.

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

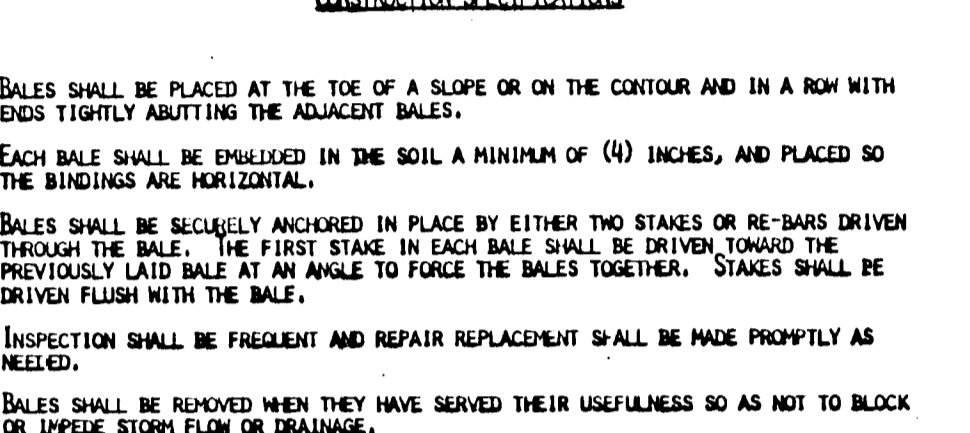
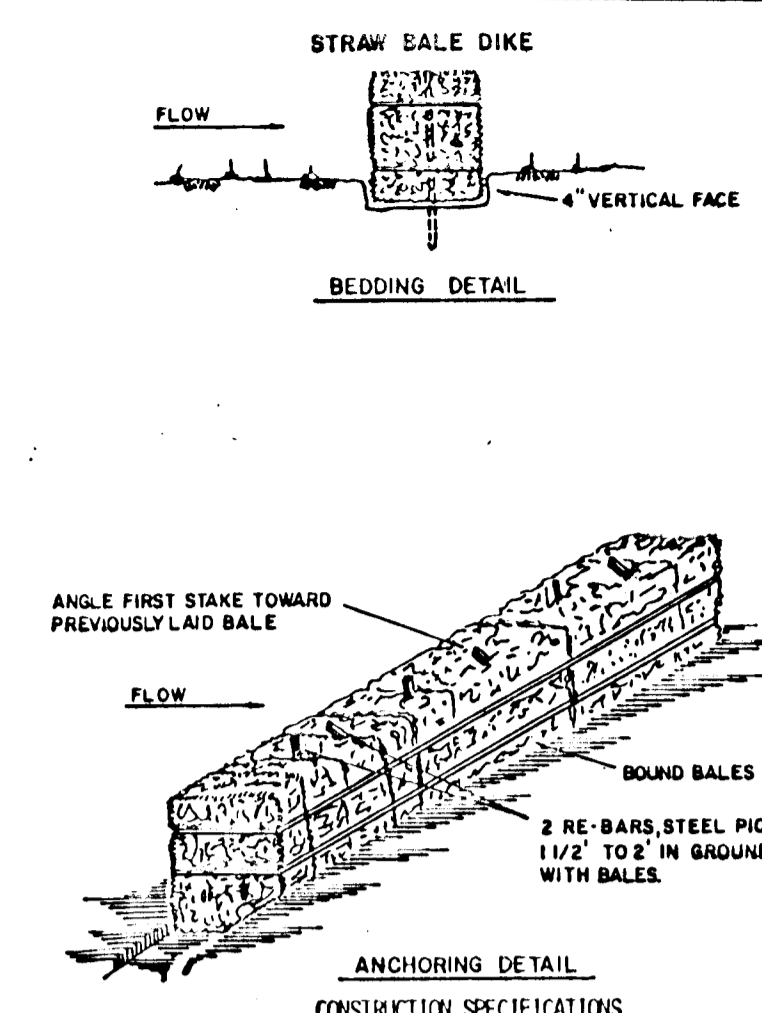
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 ft²) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 ft²) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREA FERTILIZER (9 LBS/1000 ft²).
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 ft²) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23.85/1000 ft²) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, WITH 60 LBS PER ACRE (1.4 LBS/100 ft²) OF KENTUCKY 31 TALL FESCUE PER ACRE PERIOD MAY 1 THRU JULY 31, SEED WITH 40 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 ft²) OF WEEDING LOVEGRASS. DURING 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 SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

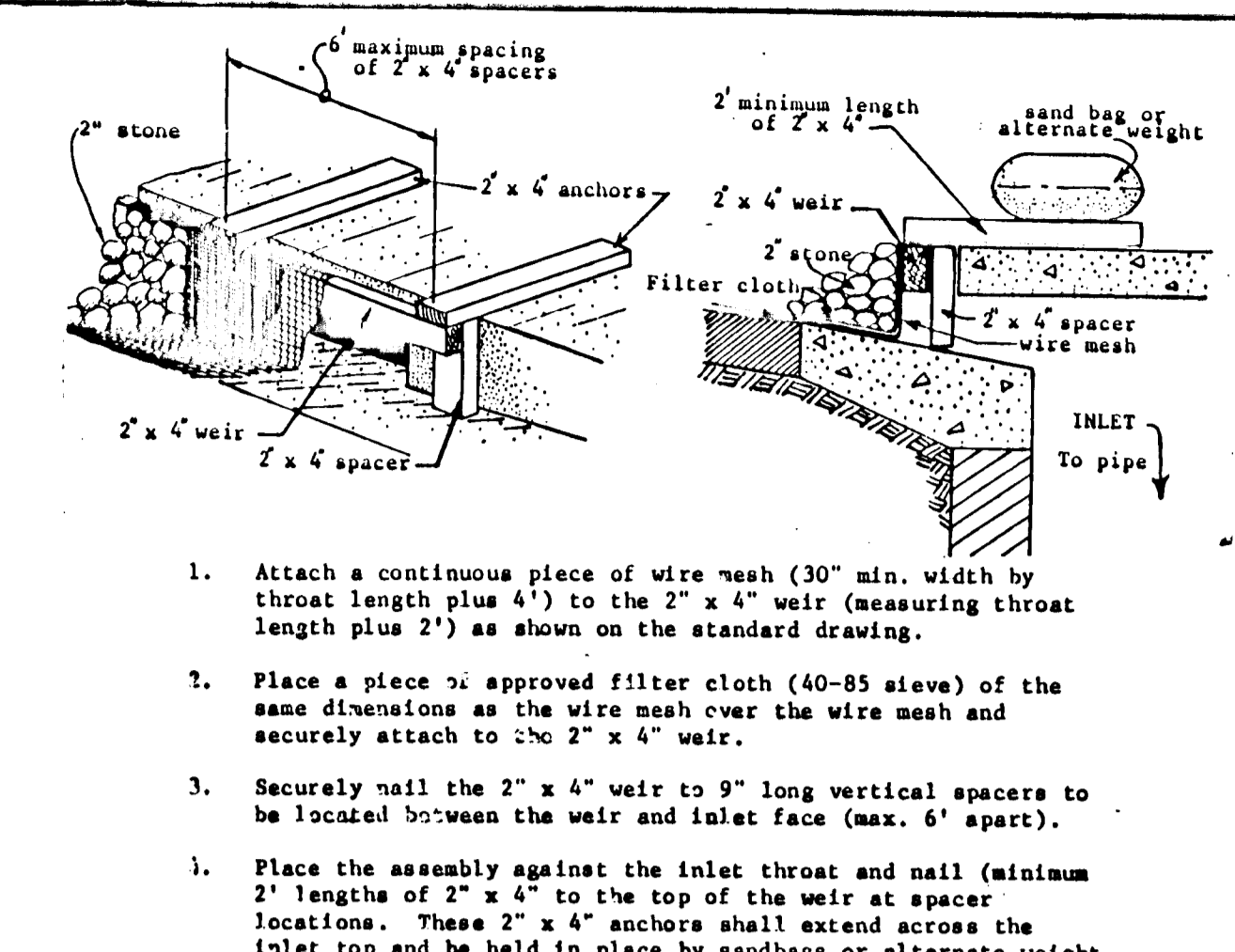
MULCHING: APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 ft²) OF UNWETTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 ft²) OF UNWETTED ASPHALT ON FLAT AREAS ON SLOPES 8 FT OR HIGHER. USE 348 GALLONS PER ACRE (8 GAL/1000 ft²) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

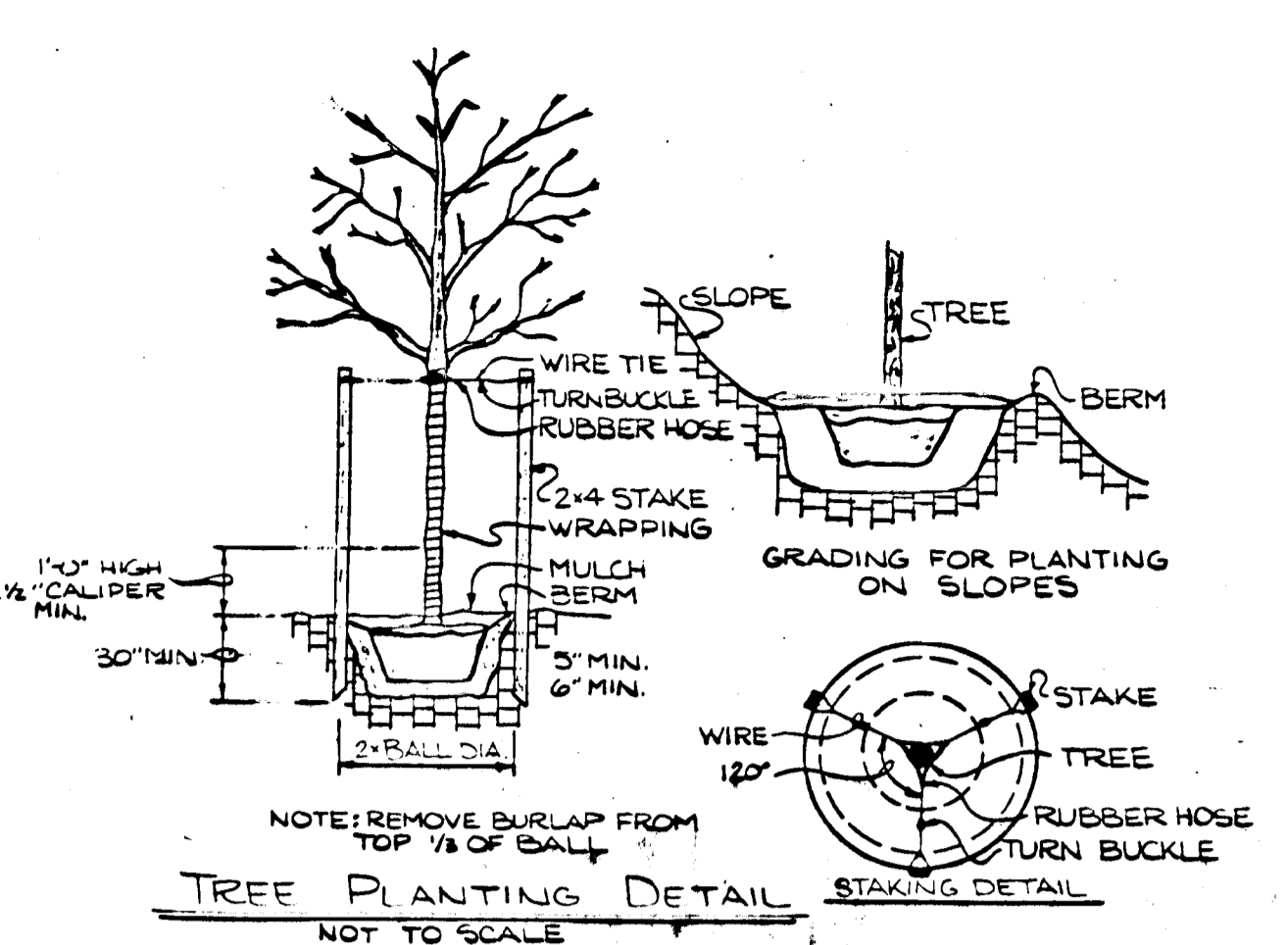


CONSTRUCTION SPECIFICATIONS

- 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-bars 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.



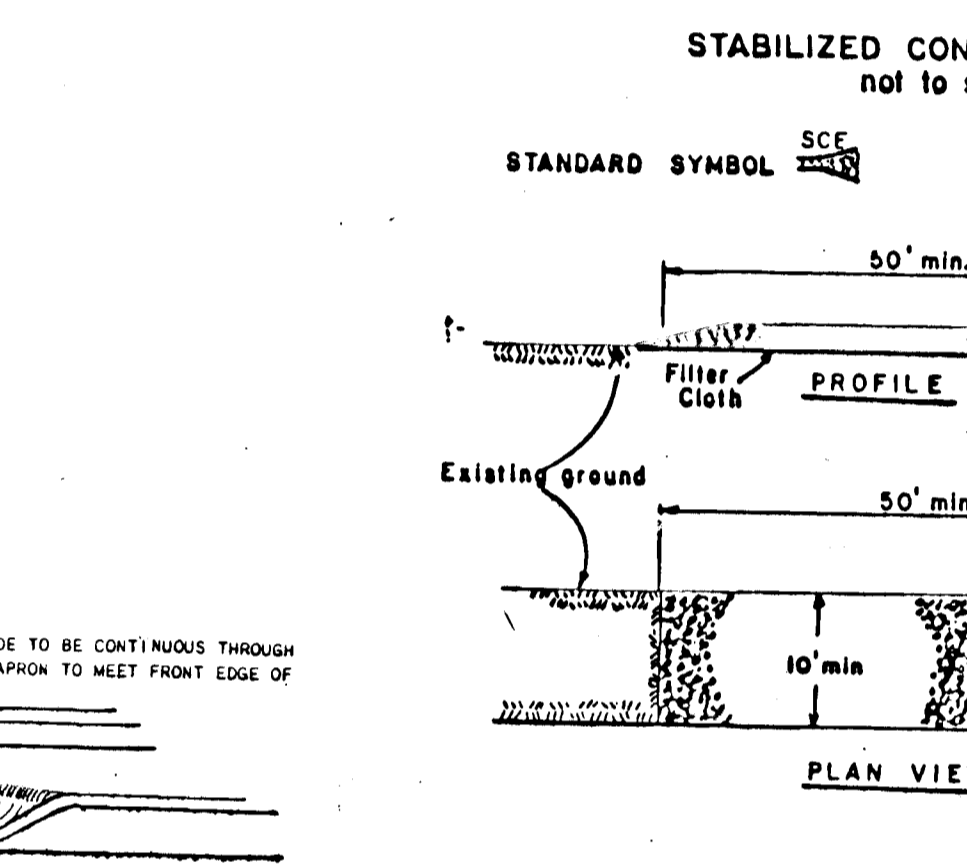
- Attach a continuous piece of wire mesh (30" min. width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
 - Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
 - Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).
 - Place the assembly against the inlet throat and nail (minimum 2" lengths the 2" x 4" to the top of the weir at a spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags 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 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 dikes directing flow into inlet.



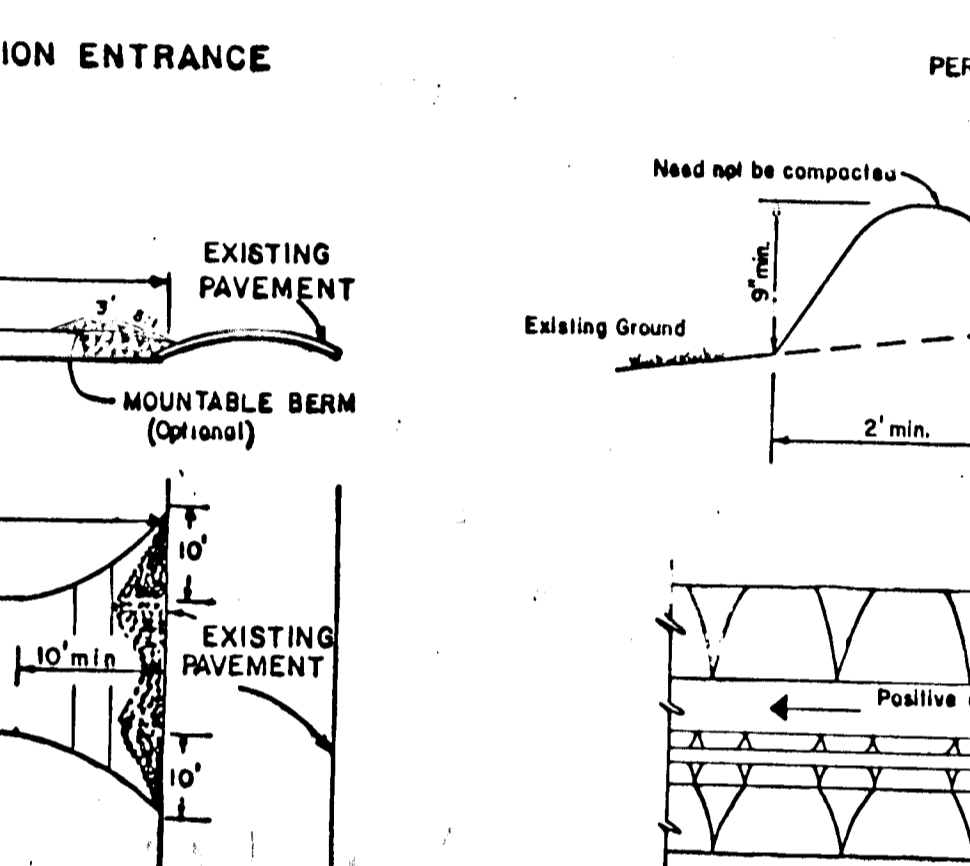
- NOTE: REMOVE BURGLAR FROM TOP 1/8 OF BALL
- TREE PLANTING DETAIL**
NOT TO SCALE

- STABILIZATION OF EXISTING PAVEMENT MUST BE COMPLETED TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (986-2347).
- ALL VEGETATIVE AND EROSION CONTROL STRUCTURES 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 DAYS FOR PERIMETER DIKES AND ALL SLOPES GREATER THAN 3:1; b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAP BASINS SHOWN MUST BE FENCED AND MARKING 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 ANCHORING CAN ONLY BE TERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNLESS PERMITTED FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SOIL ANALYSIS:**

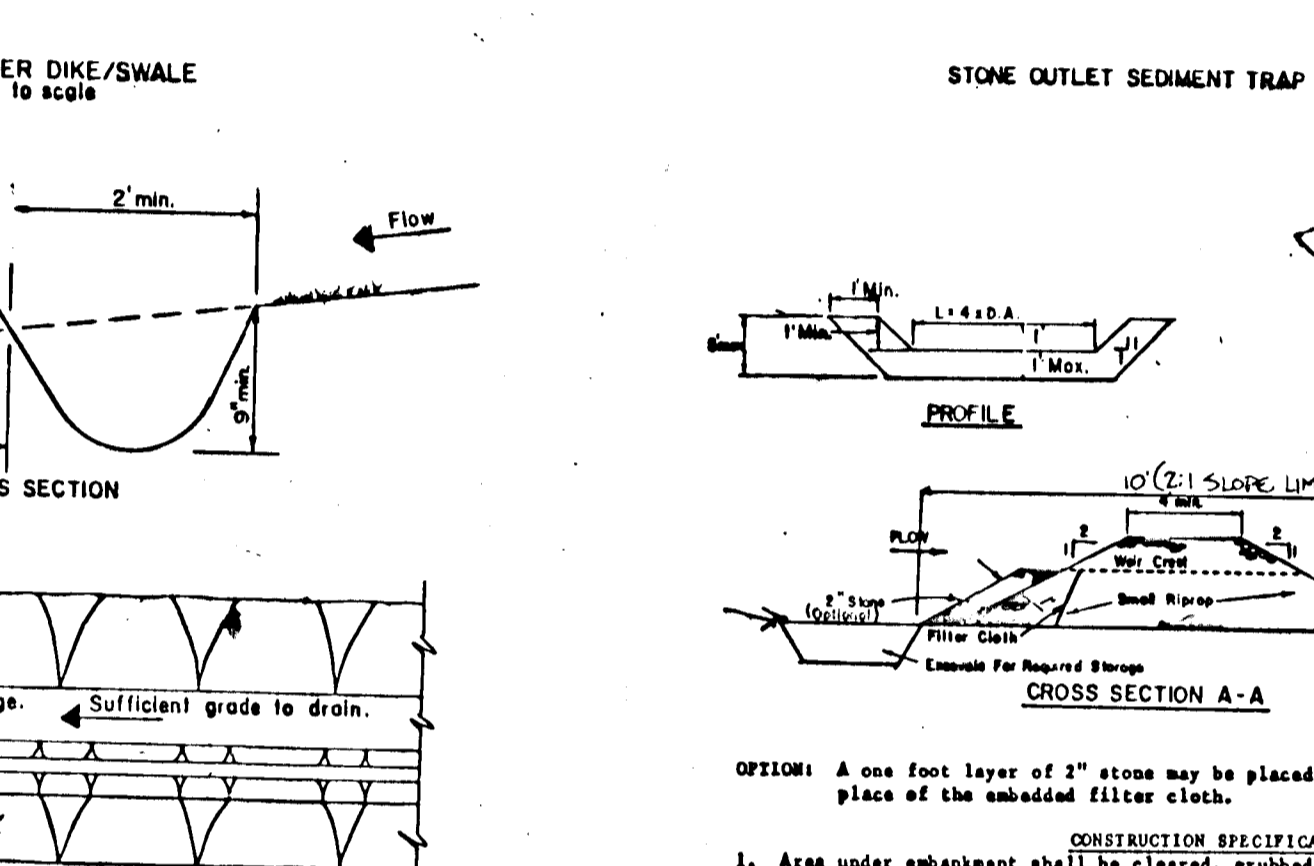
TOTAL AREA OF SITE	1.40	ACRES
AREA DISTURBED	0.32	ACRES
AREA TO BE ROOFED OR PAVED	1.4	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.11	ACRES
TOTAL CUT	2693	CU. YDS.
TOTAL FILL	1944	CU. YDS.
OFFSITE WASTE /BORROW AREA LOCATION	NA	
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPM SEDIMENT CONTROL INSPECTOR.



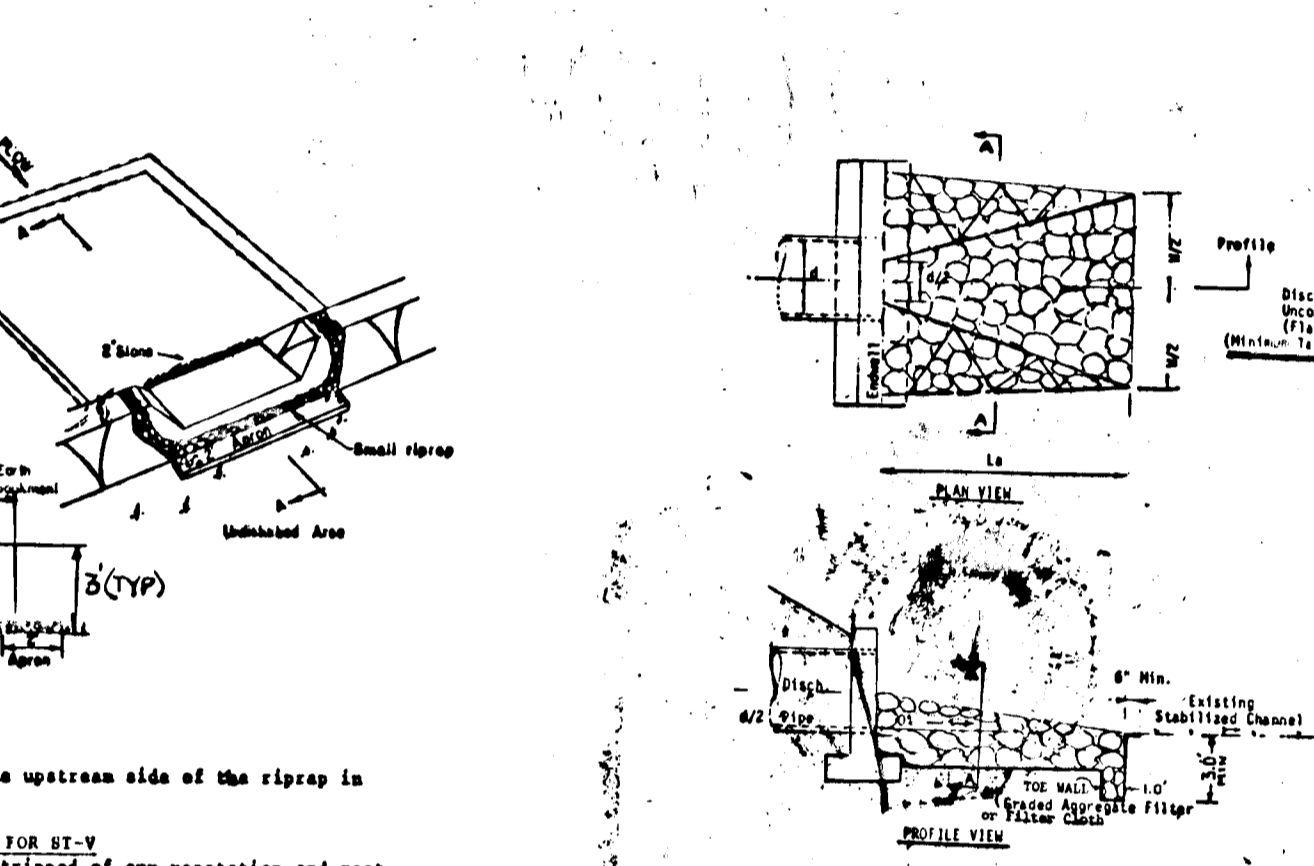
- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 3" stone, or reclaimed or recycled concrete equivalent.
 - Length - as required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) 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 entrance shall be piped across the entrance. If piping is impractical, a mounding 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 dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - Washing - Stone 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.



- CONSTRUCTION SPECIFICATIONS**
- ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
 - DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
 - DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
 - THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
 - STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
 - PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

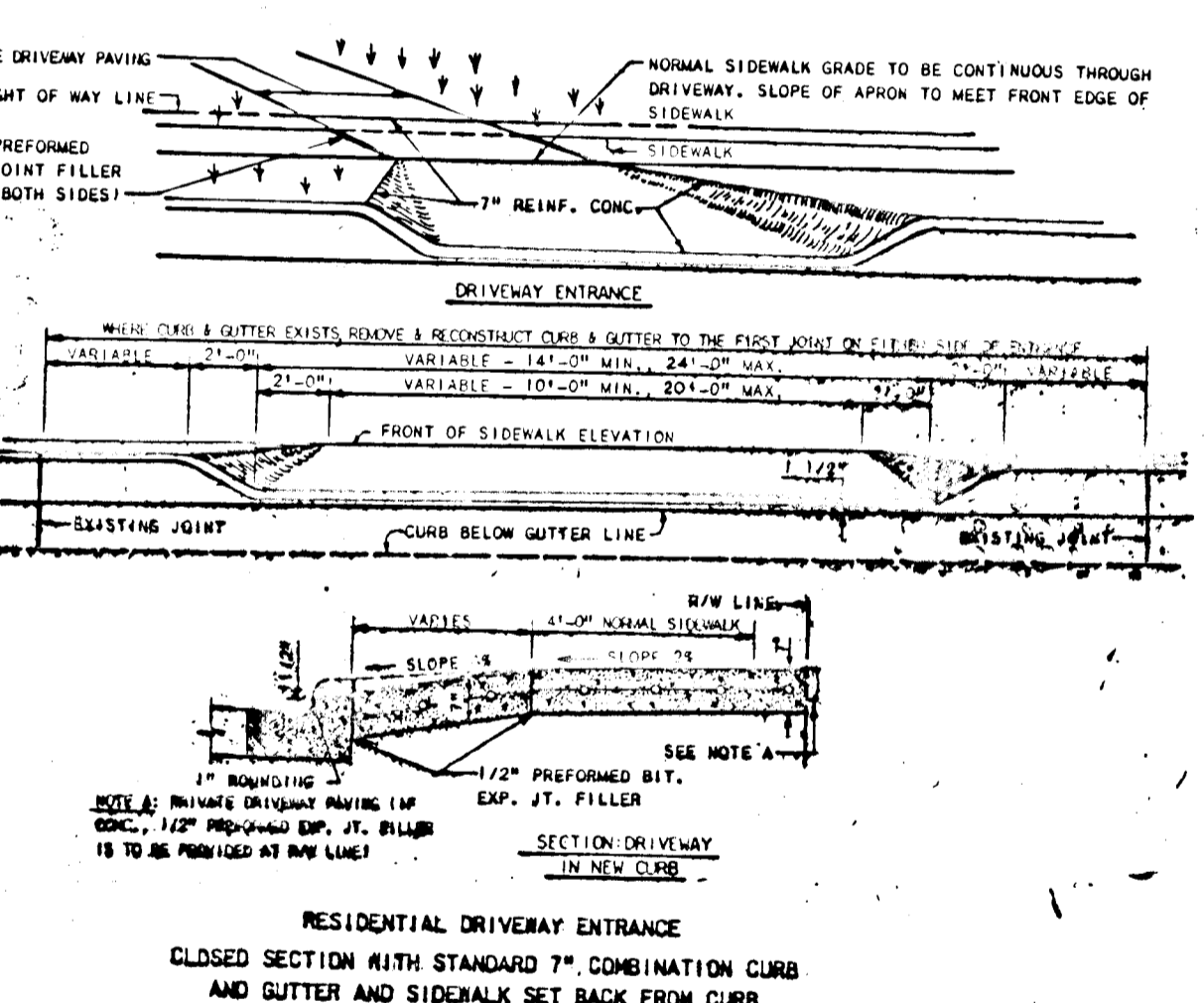


- CONSTRUCTION SPECIFICATIONS FOR ST-T**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the up-grade side on the small riprap embedded filter cloth in the riprap.
 - Sediment will be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.



TRAP 1

1. STONE OUTLET SED. TRAP	1.85 AC	TRAP 2	2.2 AC	TRAP 3	1.38 AC
2. DRAINAGE AREA	2356 ft ²		2967 ft ²		2479 ft ²
3. STORAGE BQ'D	3933 ft ²		4230 ft ²		3150 ft ²
4. STORAGE DEPTH	7.6 ft		9.0 ft		5.3 ft
5. OUTLET LENGTH	3.0 ft		3.0 ft		8.0 ft
6. STORAGE HEIGHT	3.0 ft		3.0 ft		3.0 ft
8. STONE CREST ELEV.	442.0		435.5		431.0
9. BOTTOM ELEV.	436.0		430.5		427.0
10. TOP BANK ELEV.	444.0		438.0		433.0
11. CLEANOUT ELEV.	NA		NA		NA
12. BOT. TRAP ELEV.	438.0		430.5		427.0
13. BOT. TRAP DIM.	30 x 37		30 x 40		50 x 15
14. ORIG. GRD. ELEV.	441.0		434.5		430.0
(AT OUTLET)					



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Michelle L. ...
Chief, Land Development Division Date

Richard H. Caswell
Chief, Bureau of Highways Date

Richard H. Caswell
Chief, Bureau of Engineering Date 4/13/88

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."

Richard H. Caswell
Signature of Engineer Date 4/13/88

R.H. Caswell
RICHARD H. CASWELL Date 4-13-88

"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. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

John N. Bowers
Signature of Developer Date 4/13/88

John N. Bowers
John N. BOWERS Date 4/13/88

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

U.S. SOIL CONSERVATION SERVICE DATE 4-13-88

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

APPROVED: *Richard H. Caswell* DATE 4-13-88

DISTRICT HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: OFFICE OF PLANNING AND ZONING

Richard H. Caswell DATE 5/2/88

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS

HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR PUBLIC WATER, SEWER & STORM DRAINAGE SYSTEMS & ROADS

DIRECTOR, PUBLIC WORKS DATE

CHIEF, BUREAU OF ENGINEERING DATE

SUBDIVISION SECTION/AREA LOT #

PLAT NO. BLOCK NO. SOON TAX/ZONE ELEC. DIST. CENSUS TR.

WATER CODE SEWER CODE

Date

PROFESSIONAL ENGR. NO.

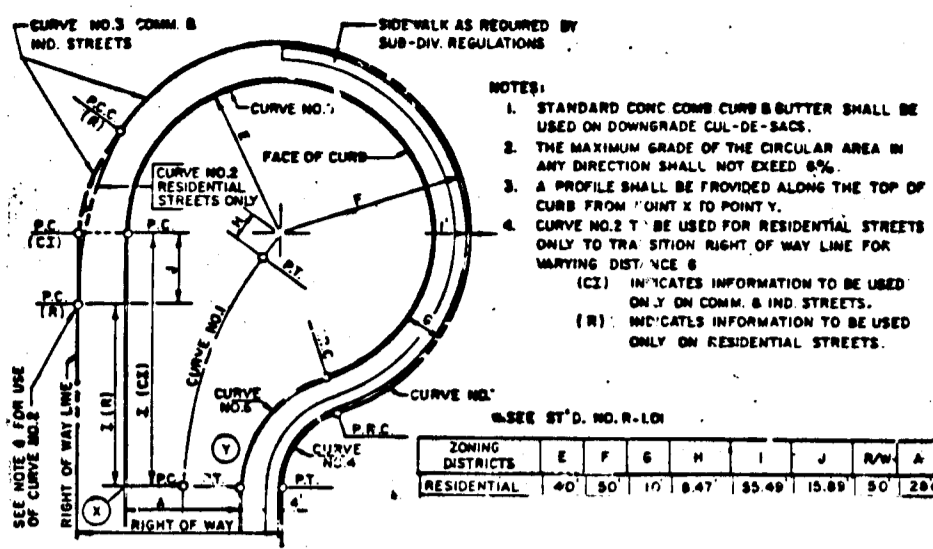
OWNER/DEVELOPER
HERITAGE HOMES IN OAKWOOD LIMITED PARTNERSHIP
8950 RT.103 SUITE 210 GORMAN PLAZA
COLUMBIA, MARYLAND 21045

ATLANTIC ENGINEERING, Corp.
CONSULTING ENGINEERS, PLANNERS
196 PENNSYLVANIA AVE. WESTMINSTER MD, 21157
(301) 876-1288

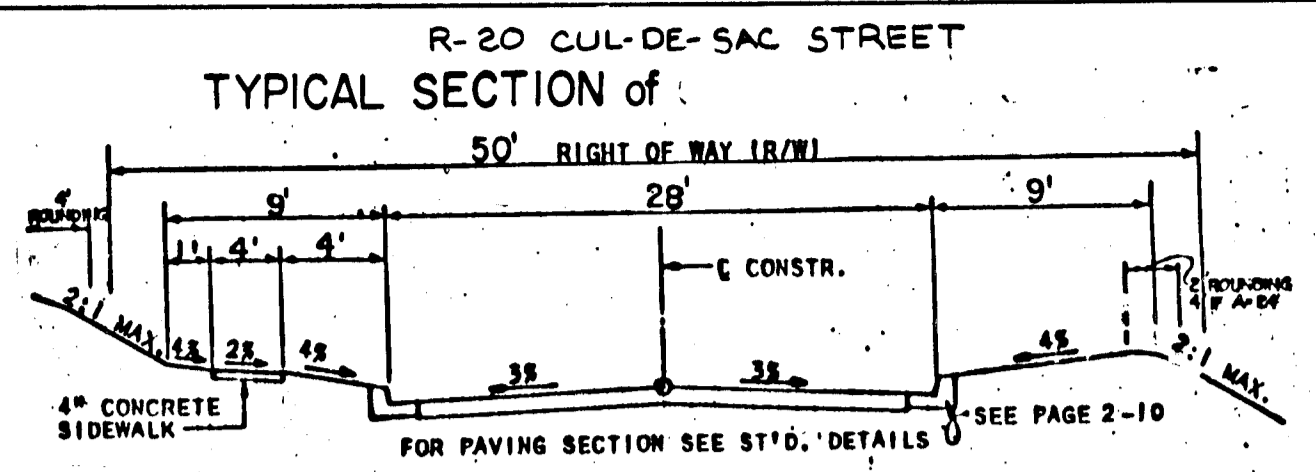
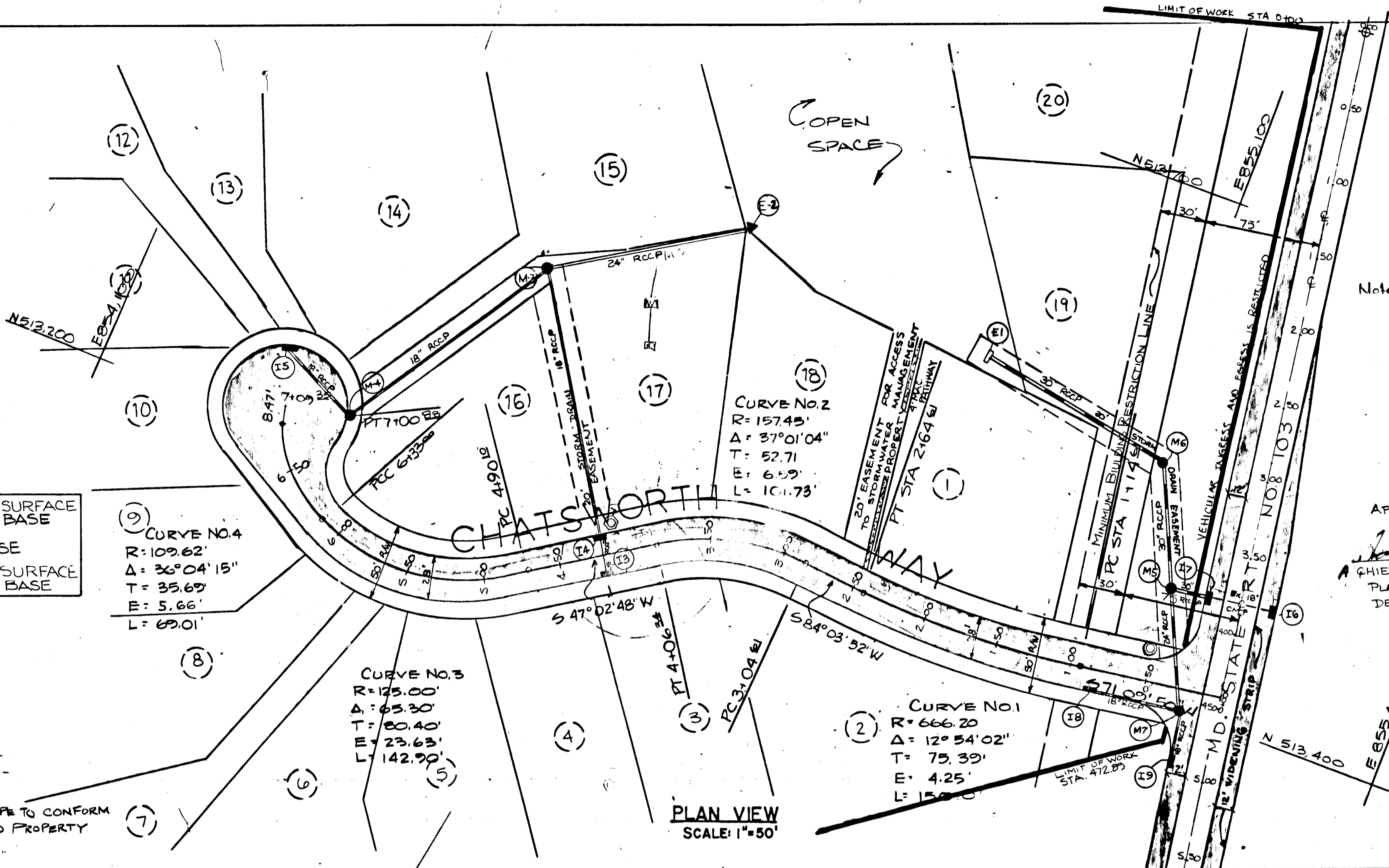
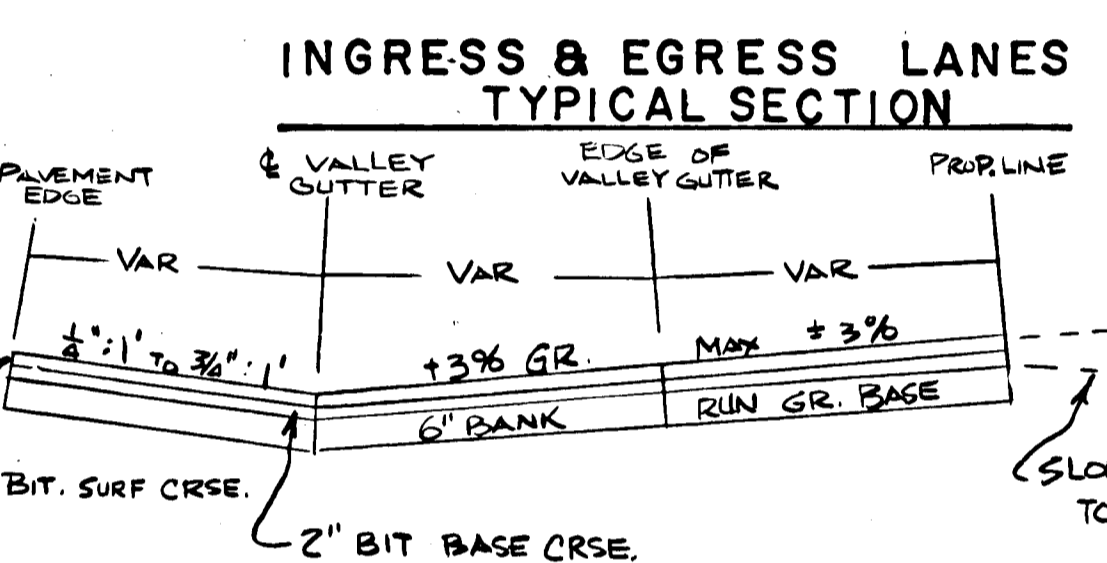
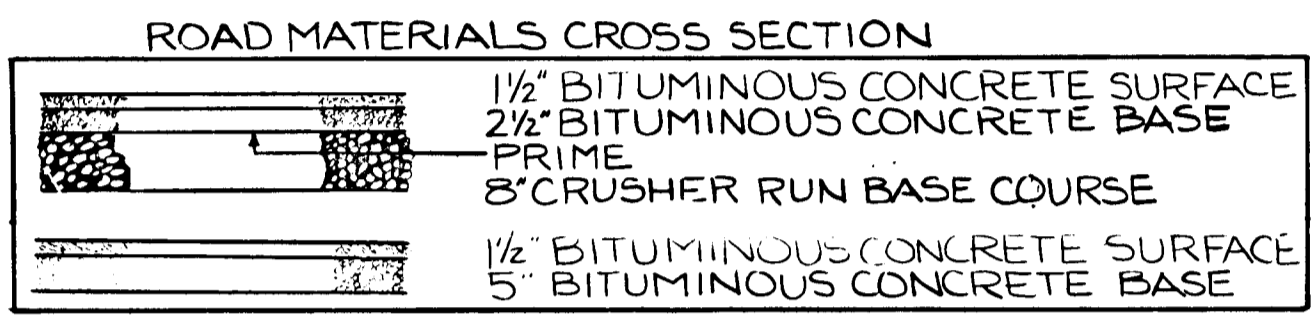
AREA MD RT. 103 NEAR HAWPTON PARKWAY
2nd ELECTION DISTRICT, BROMWART COUNTY MD
TAX MAP 31, PARCEL 563

TITLE
MANORS OF OAKWOOD
SECTION ONE
LOTS 1-20 AND LOT 21

Dec. By RHC MFF Scale: 1" = 40' Plot No.
Dwn By AFC Date 6/24/87 Drawing No. 4 of 11
CHK By RHC Approved



STATION	RESIDENTIAL (20' APPROACH)	LP 120' 40"
0+00	125.00	125.00
0+20	125.00	125.00
0+40	125.00	125.00
0+60	125.00	125.00
0+80	125.00	125.00
1+00	125.00	125.00
1+20	125.00	125.00
1+40	125.00	125.00
1+60	125.00	125.00
1+80	125.00	125.00
2+00	125.00	125.00



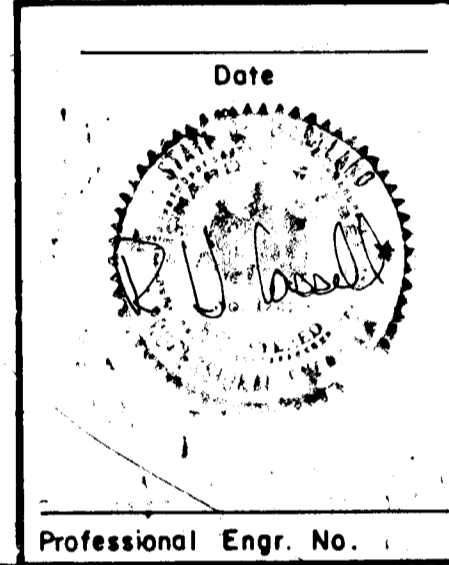
CHATSWORTH WAY
DESIGN SPEED 30 MPH / POSTED SPEED 25 MPH

Note:
 (1) 255-Whit mercury vapor lamp on 30-ft. galvanized steel pole.
 (2) 175-Whit "Modern" mercury vapor lamp on 14-ft. gray fiberglass pole.

APPROVED:
 OFFICE OF PLANNING AND ZONING
James Kettle 5/2/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT.

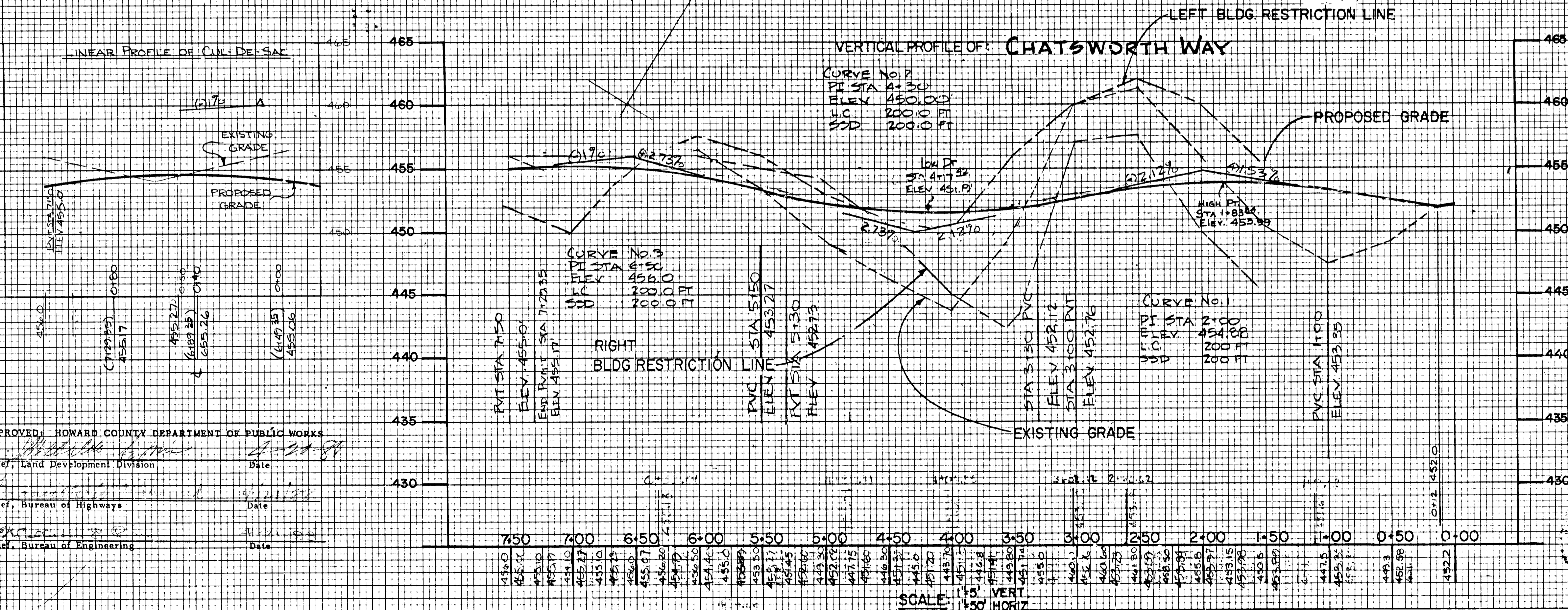
Date	No	Revision Description

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



TITLE MANORS OF OAKWOOD
 VERTICAL PROFILE AND PLAN VIEW

Des By MFF	Scale As Noted	Proj No
Drn By JMT	Date 9/18/86	Drawing No. 5 OF 11
Chk By RHC	Approved	



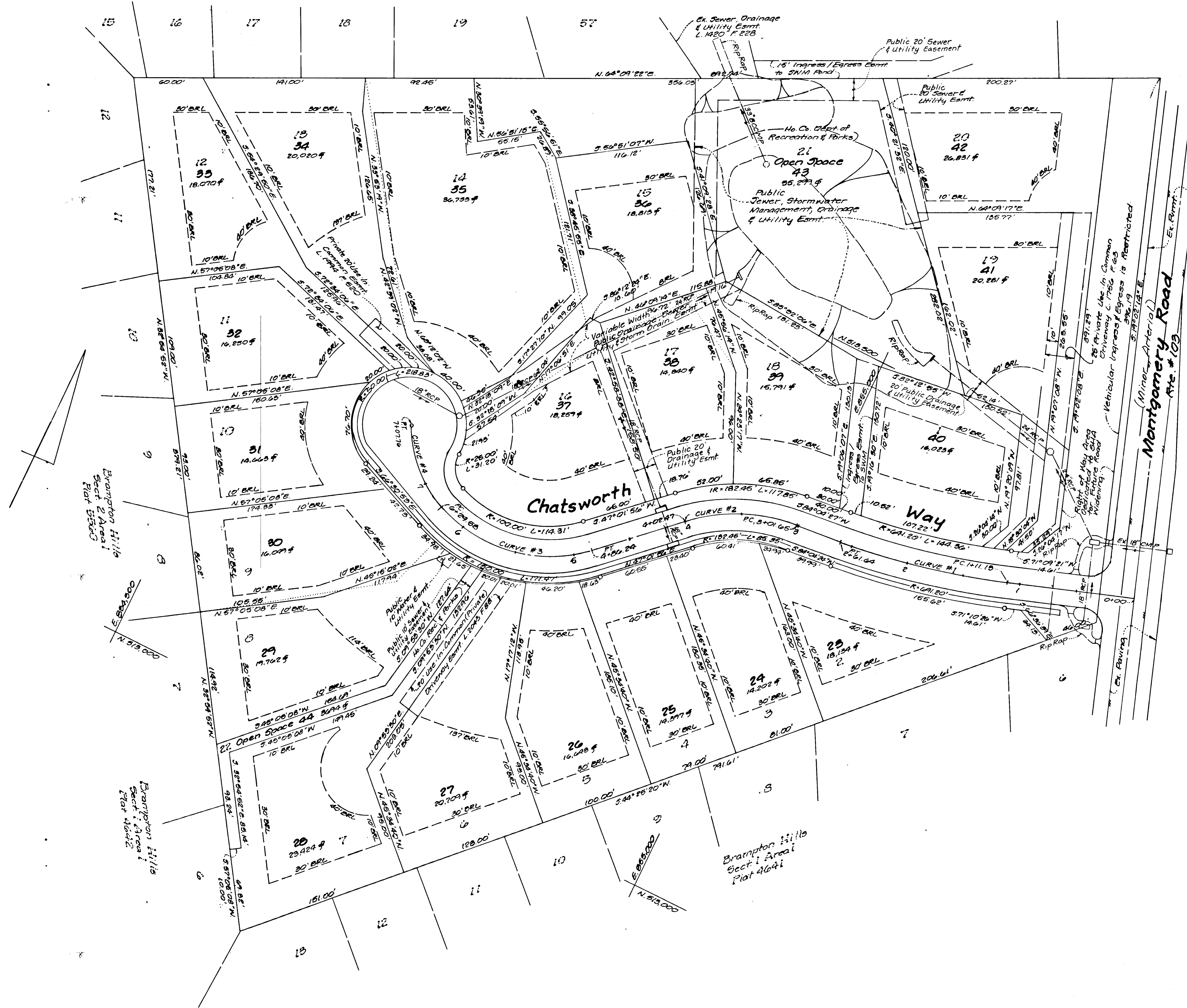
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division Date
 Chief, Bureau of Highways Date
 Chief, Bureau of Engineering Date

SCALE: 1" = 5' VERT, 1" = 50' HORIZ
 PLATE 4-SINGLE PLAN AND CROSS SECTION-FULL LINE
 PRINTED IN U.S.A.

DATE BY
 FINAL SURVEY BY
 SURVEY BY
 ORIGINAL SURVEY BY

Brampton Hills
Sect 2 Area
Plat 5561

CENTERLINE CURVE DATA							
CURVE	STATION TO STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
#1	1+11.13 to 2+61.64	668.55'	12°53'58"	150.52'	75.58'	150.20'	S77°36'49"W
#2	3+01.65 to 4+02.47	156.08'	37°00'35"	100.82'	52.24'	99.08'	S65°33'10"W
#3	4+86.24 to 6+29.58	125.38'	65°30'12"	143.34'	80.65'	135.66'	S79°48'01"W
#4	6+29.58 to 7+07.76	109.62'	40°51'46"	78.18'	40.84'	76.53'	N46°22'50"W



NOTE: THIS PLAN SUPERCEDES SHEET 5 OF 11 F 87-215. THE PURPOSE OF THIS PLAN IS TO SHOW CONSTRUCTED ROADS AND STORM DRAIN IMPROVEMENTS AS RECORDED ON PLAT OF RESUBDIVISION FOR "MANORS OF OAKWOOD" LOTS 23-44, PLAT NUMBERS 12278 and 12279 (F 96-B2)

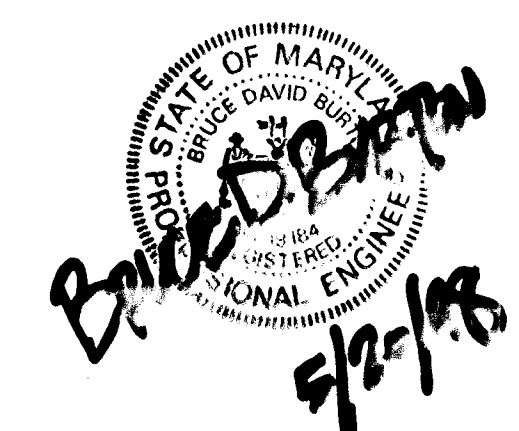
APPROVED: DEPARTMENT OF PLANNING AND ZONING

6/18/98
DATE

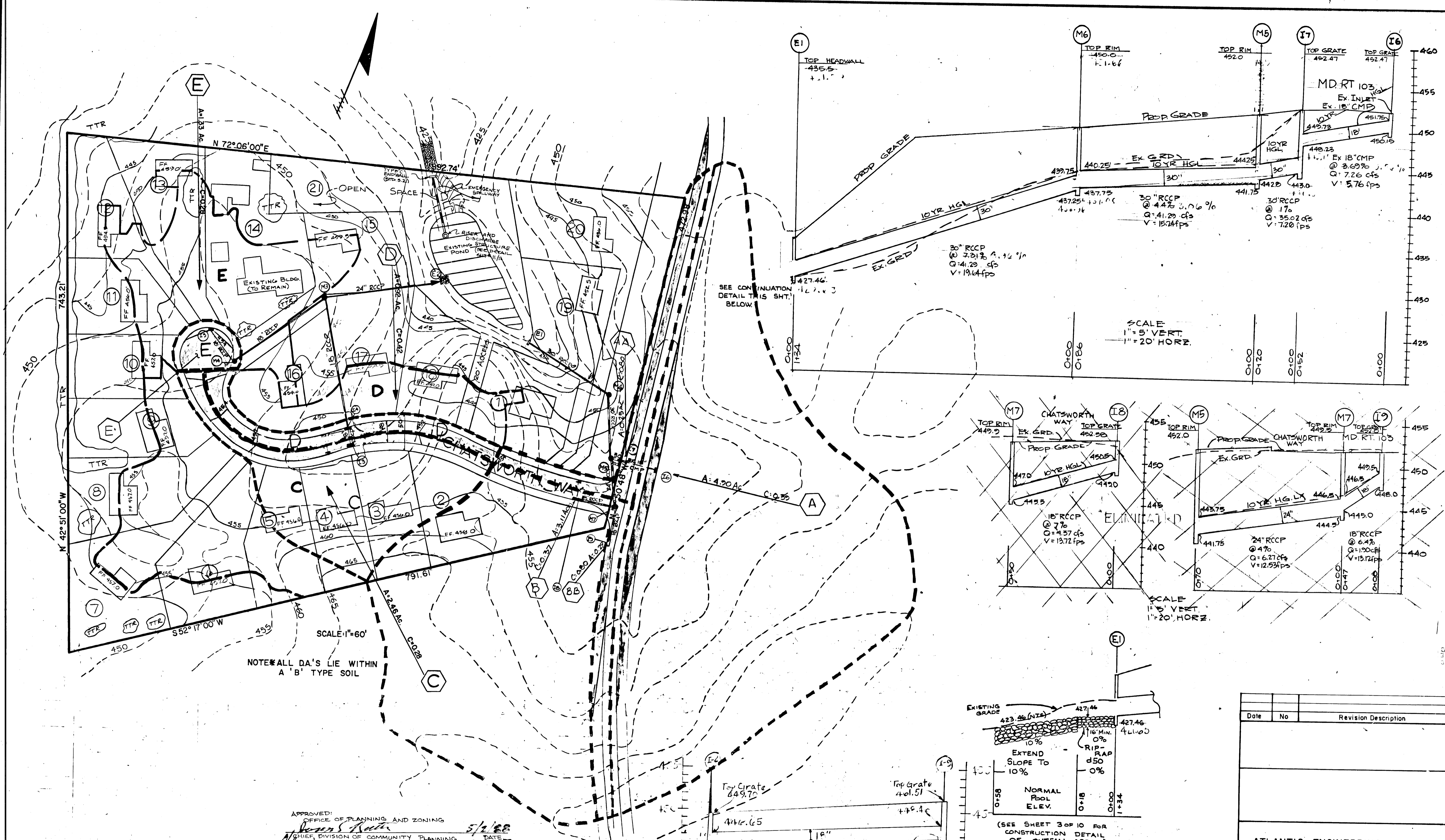
6/18/98
DATE

6/18/98
DATE

4/2/98
DATE



<p>LDE, INC. 9250 Rumsey Road, Suite 106, Columbia, MD. 21045 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)</p>		
DESIGNED	ROAD CONSTRUCTION PLAN	SCALE 1" = 50'
DRAWN	MANORS OF OAKWOOD	DRAWING 5A OF 11
CHECKED	Lots 23-44	JOB NO. 96-021
DATE	A Resubdivision of Lots 1-22	FILE NO. F87-215
	Tax Map 31 Par 583	
	2nd Election District - Howard County, Maryland	
	Owner/Developer: HERITAGE HOMES	
	8050 Old Montgomery Road	
	Ellicott City, MD 21043	



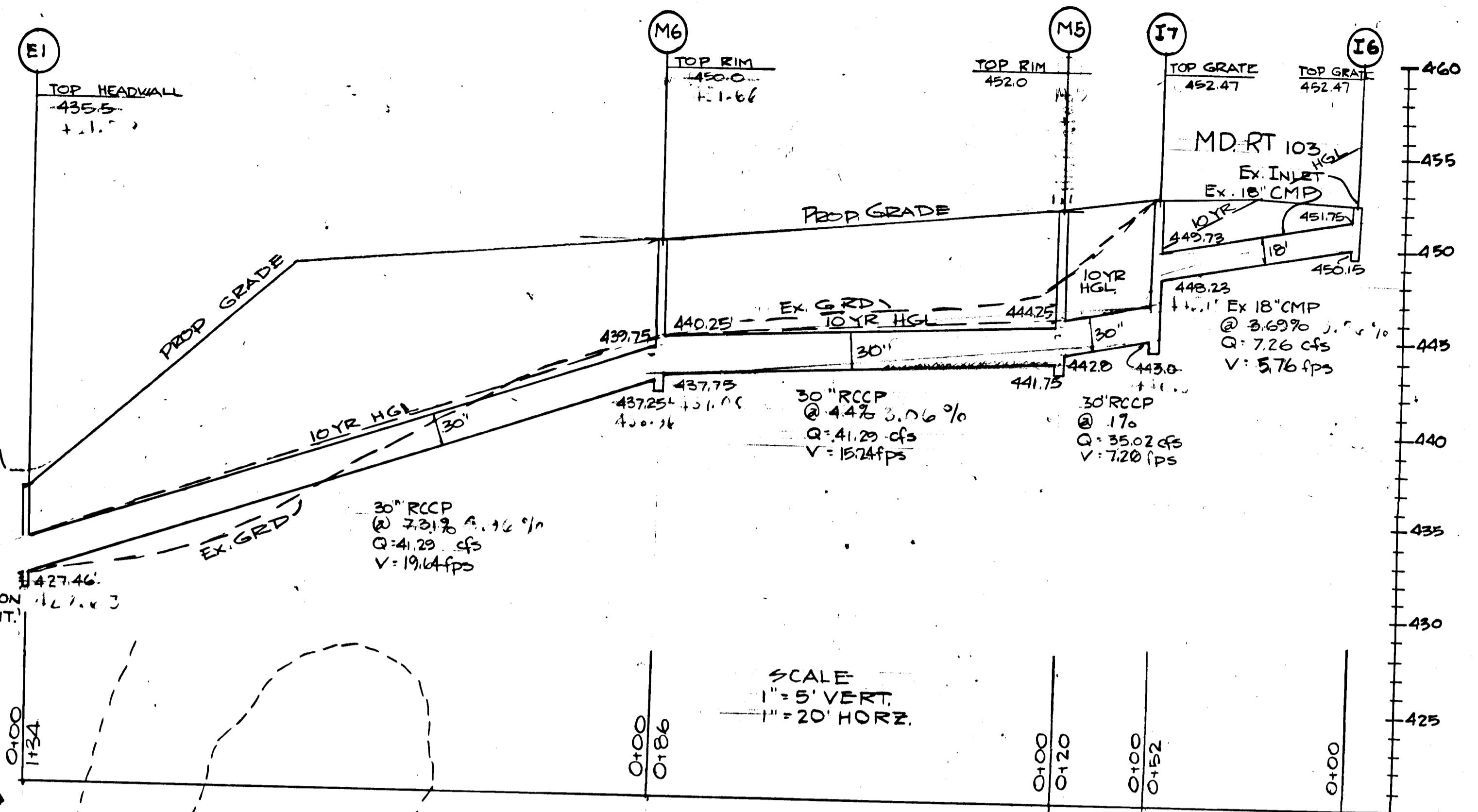
NOTE: ALL DA'S LIE WITHIN A 'B' TYPE SOIL

APPROVED: OFFICE OF PLANNING AND ZONING
[Signature] 5/2/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

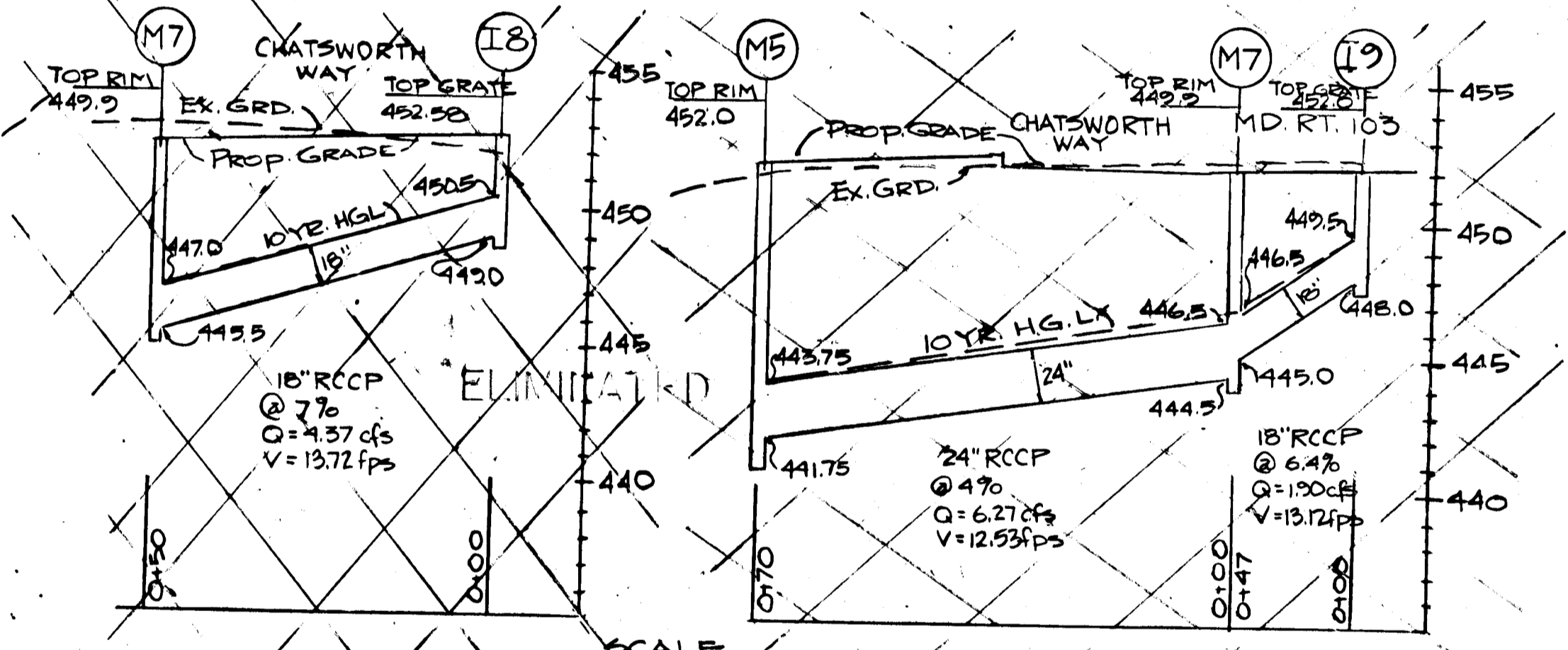
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 4/21/88
 CHIEF, LAND DEVELOPMENT DIVISION

[Signature] 4/21/88
 CHIEF, BUREAU OF HIGHWAYS

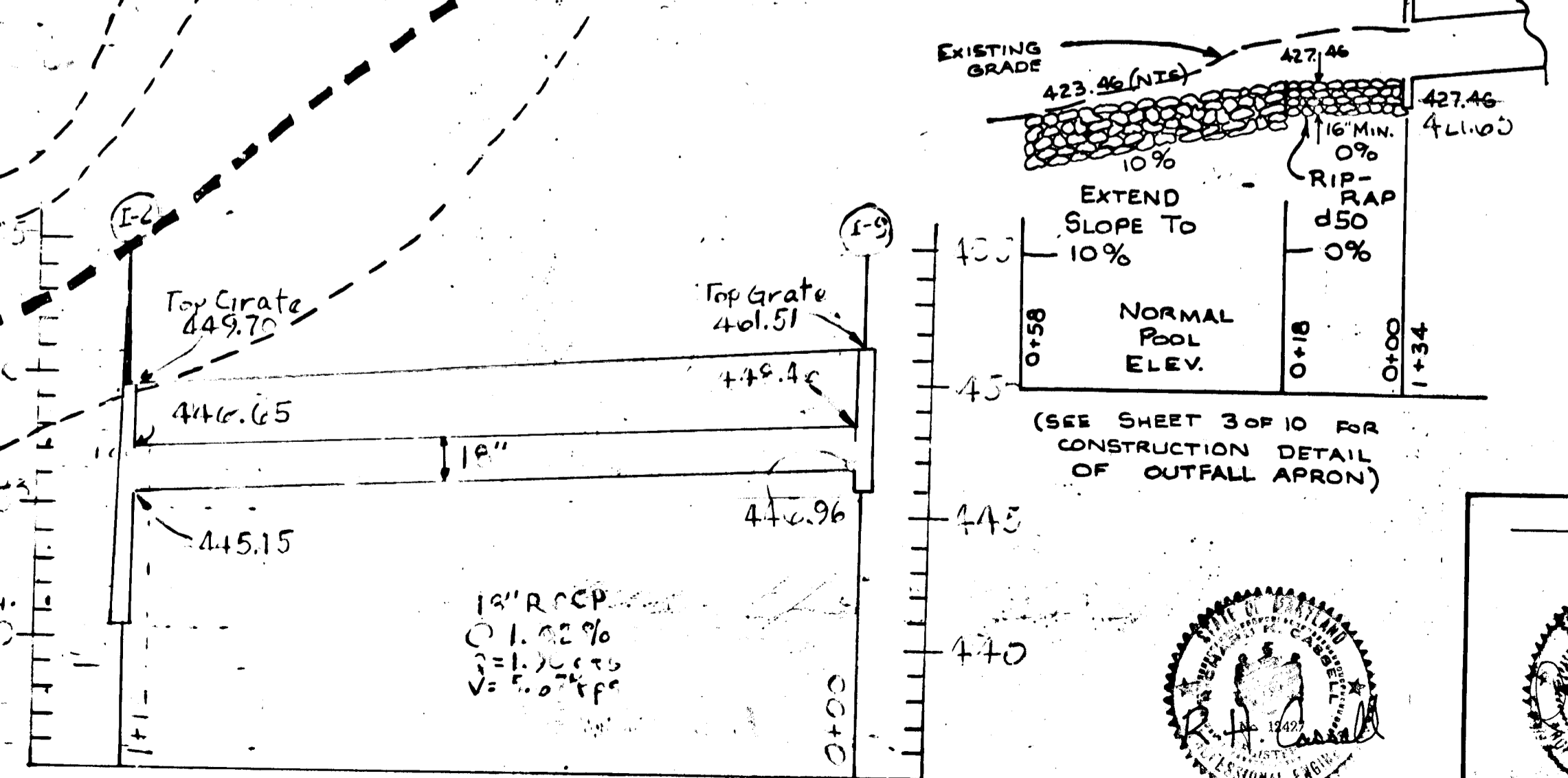
[Signature] 4-21-88
 CHIEF, BUREAU OF ENGINEERING



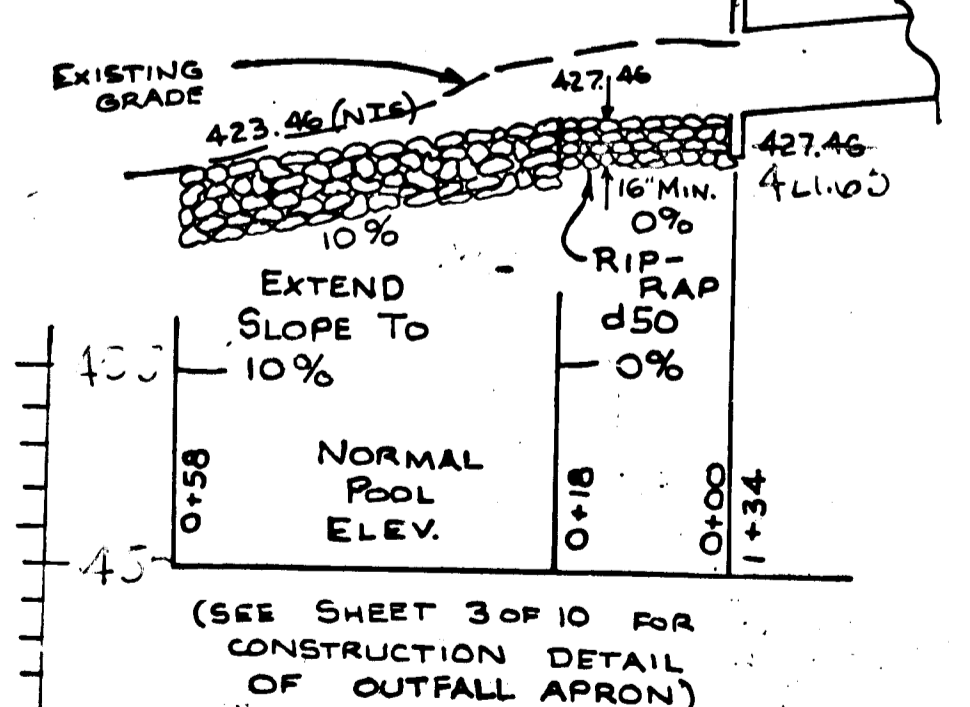
SCALE
 1" = 5' VERT.
 1" = 20' HORIZ.



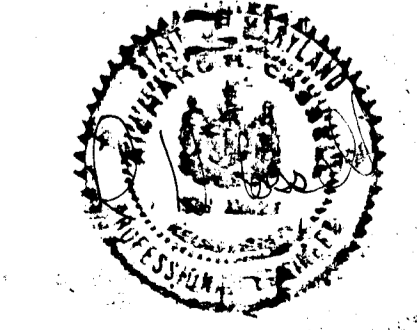
SCALE
 1" = 5' VERT.
 1" = 20' HORIZ.



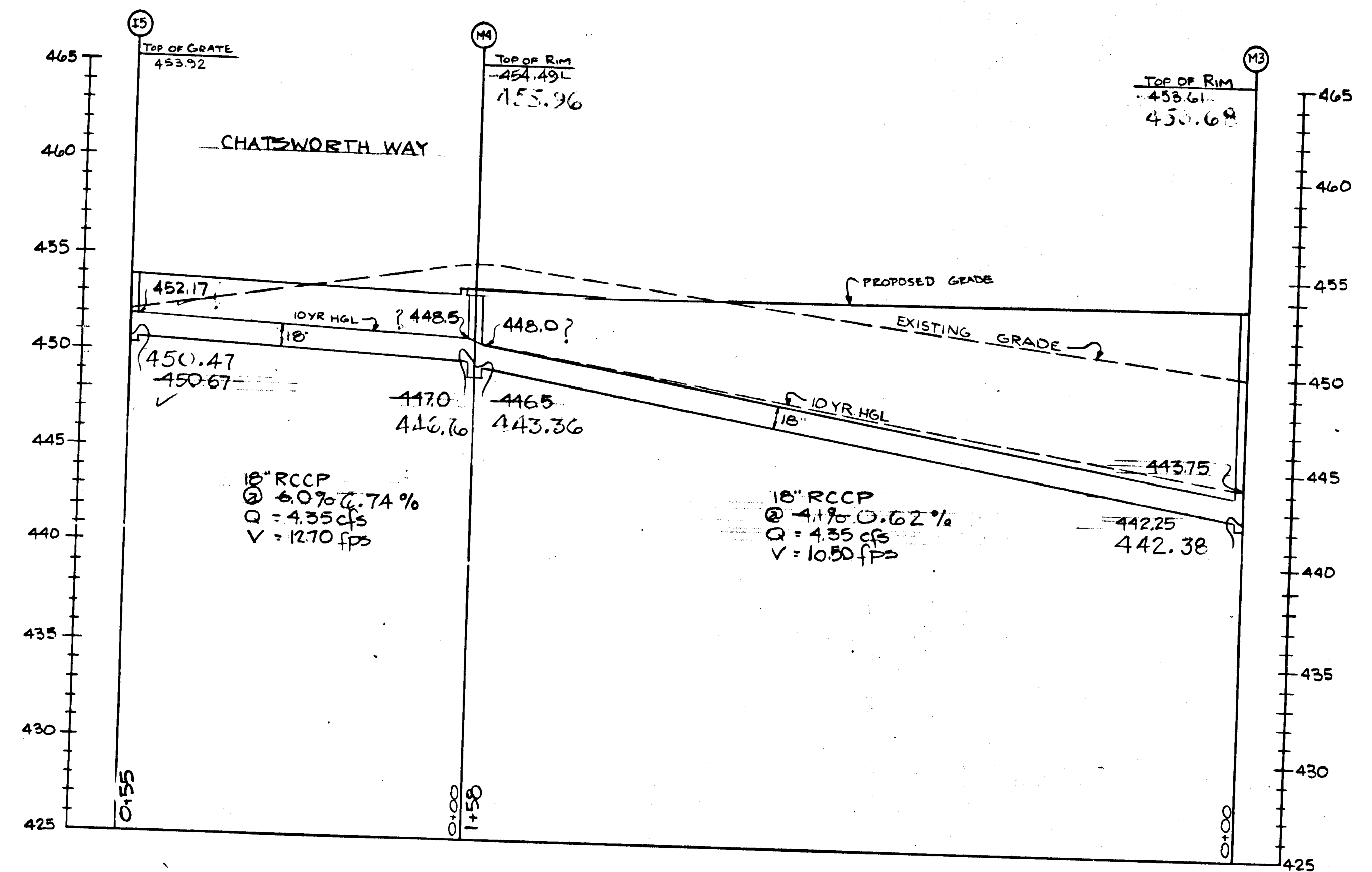
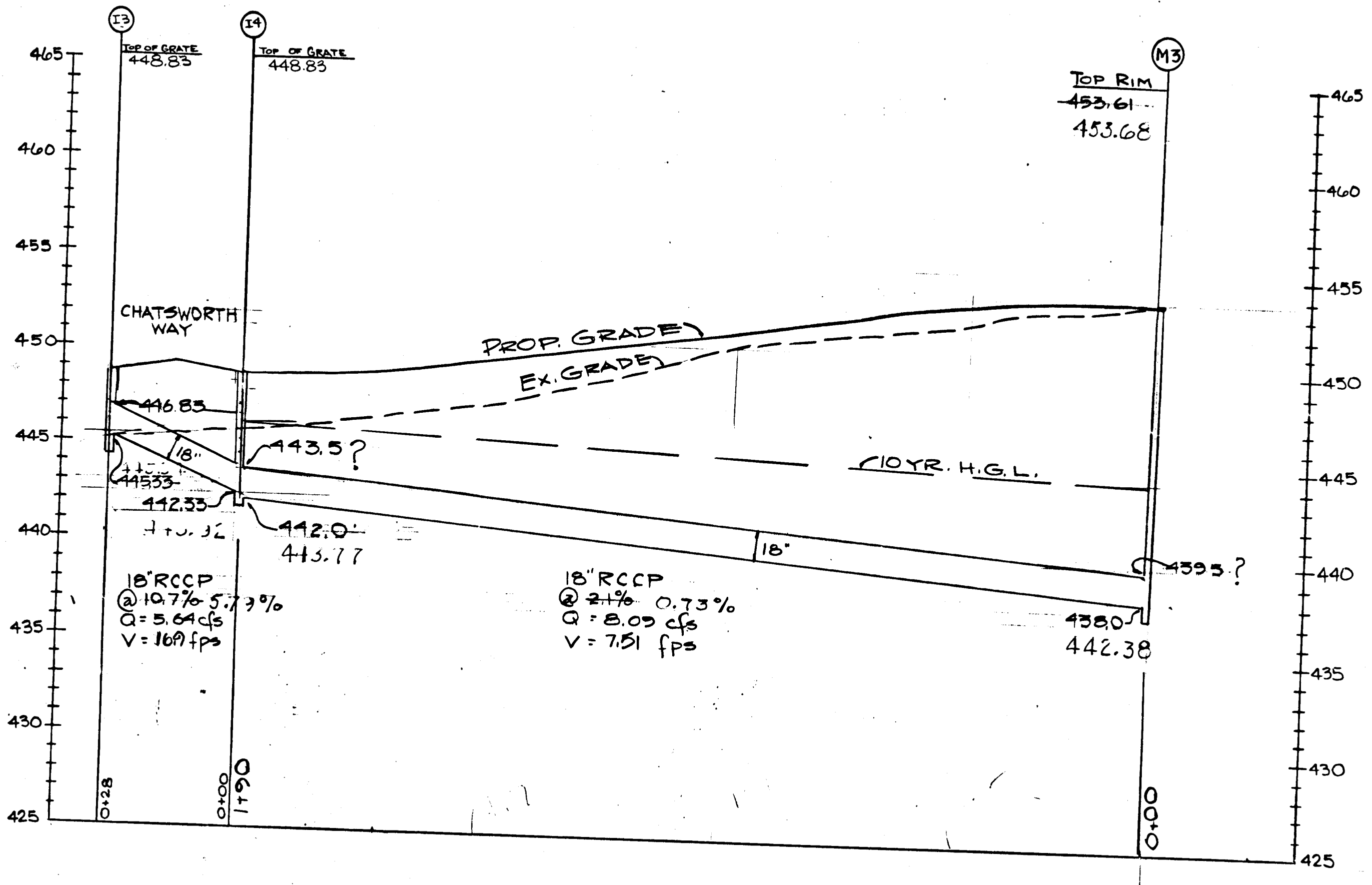
Scale:
 Vert. 1" = 5'
 Horiz. 1" = 20'



Date	No	Revision Description
ATLANTIC ENGINEERING CORP. CONSULTING ENGINEERS - PLANNERS 133 PENNSYLVANIA AVE WESTMINSTER MD 21157 (301) 876-1288		
AREA F-87-215		
TITLE MANORS OF OAKWOOD STORM DRAIN AREAS AND STORM DRAIN PROFILES		
Des By MFF	Scale 1"=60'	Proj No
Drn By JMT	Date 1/7/87	Dwng No
Chk By RHC	Approved	OF 11

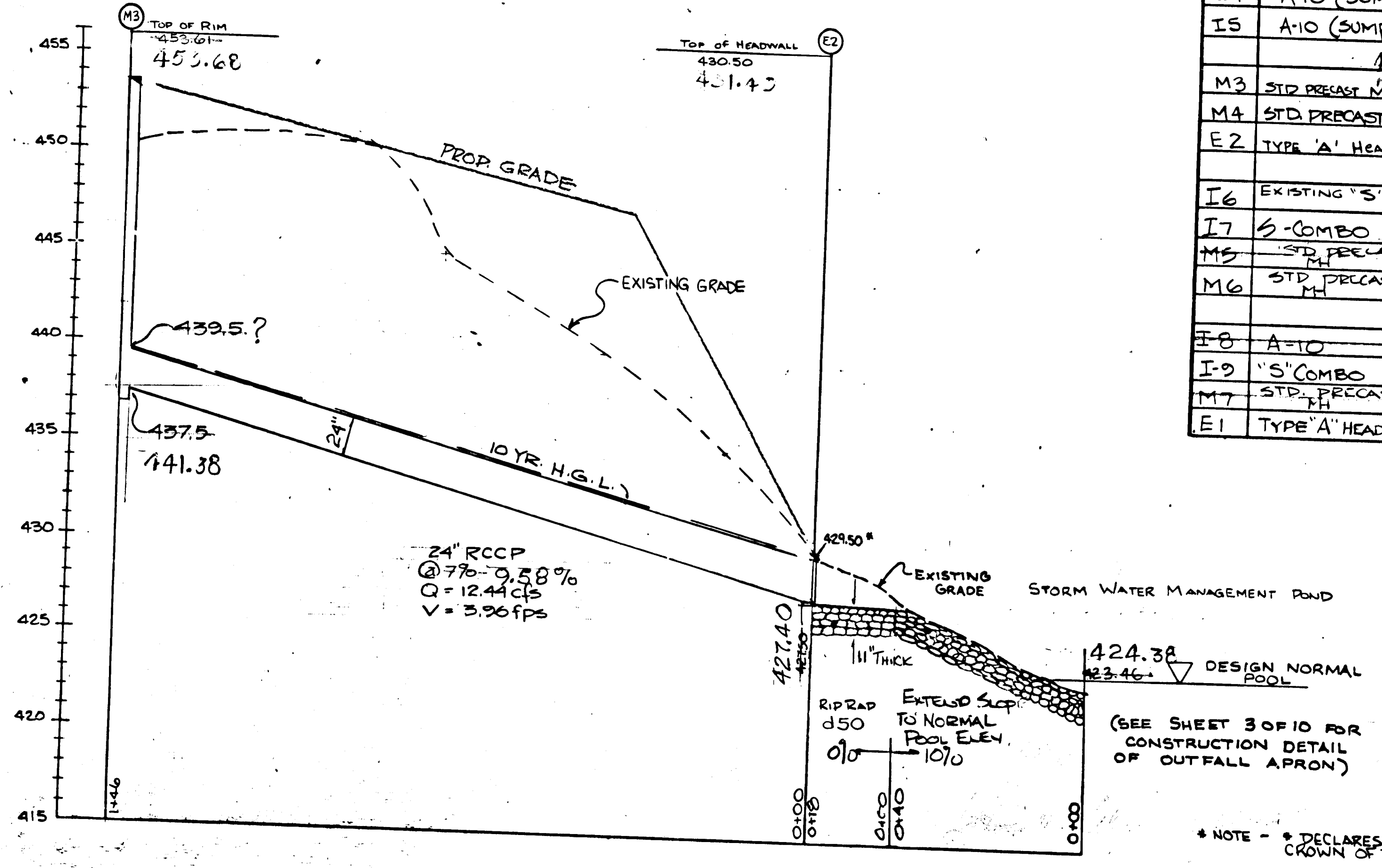
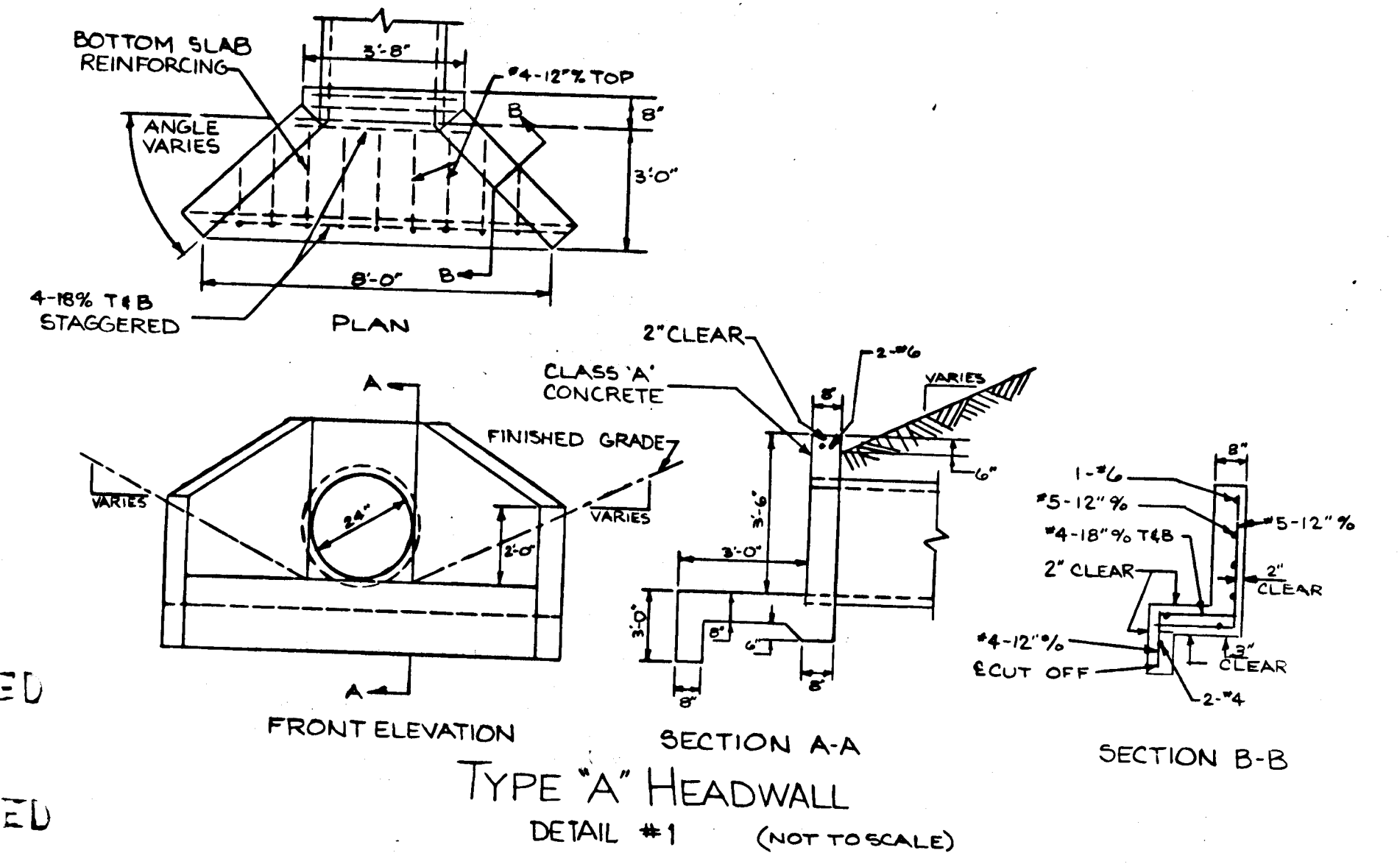


F-87-215



STORM DRAIN PROFILES
SCALE: 1"=5' V, 1"=20' H

STORM STRUCTURE SCHEDULE							
STRUCT. NUMBER	TYPE	INVERT IN ELEV.	INVERT OUT ELEV.	TOP ELEV.	± STA.	OFFSET	REMARKS
I3	A10 (SUMP)	—	445.33	448.83	4+50	19'4" L	'SUMP' (SD-4.02)
I4	A10 (SUMP)	445.85	443.77	448.83	4+50	13'4" R	'SUMP' (SD-4.02)
I5	A10 (SUMP)	—	450.67	453.92	7+54	10'0"	'SUMP' (SD-4.02)
M3	STD. PRECAST MH	438.0	437.5	453.61	—	—	G5.11
M4	STD. PRECAST MH	447.0	446.5	453.39	7+00	40' R	G5.11
E2	TYPE 'A' HEADWALL	427.40	—	430.50	—	—	SEE DETAIL #1
I6	EXISTING "S"	—	450.15	452.47	—	—	EXIST. SHAINLET
I7	"S" COMBO	448.23	443.0	452.47	—	—	SD-4.32
M5	STD. PRECAST MH	442.8	441.75	452.0	—	—	G5.11
M6	STD. PRECAST MH	437.75	437.25	450.0	—	—	G5.11
I8	A10	—	449.0	452.58	0+80	14' L	SD-4.02
I9	"S" COMBO	—	448.0	452.0	0+30	7'5" L	SD-4.32
M7	STD. PRECAST MH	445.0	444.5	449.9	0+30	14' L	G5.11
E1	TYPE 'A' HEADWALL	427.40	—	431.06	—	—	SEE DETAIL #1



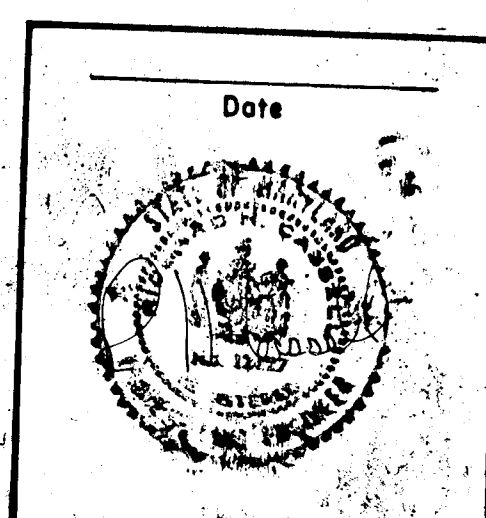
* NOTE - * DECLARES THAT 10 YEAR HG LINE LIES AT THE CROWN OF THE PIPE

APPROVED: OFFICE OF PLANNING AND ZONING
Howard Kutter 5/2/08
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William H. [Signature] 4/2/08
Chief, Land Development Division

Francis W. Wickland 4/2/08
Chief, Bureau of Highways

J. Cassin R. [Signature] 4/2/08
Chief, Bureau of Engineering



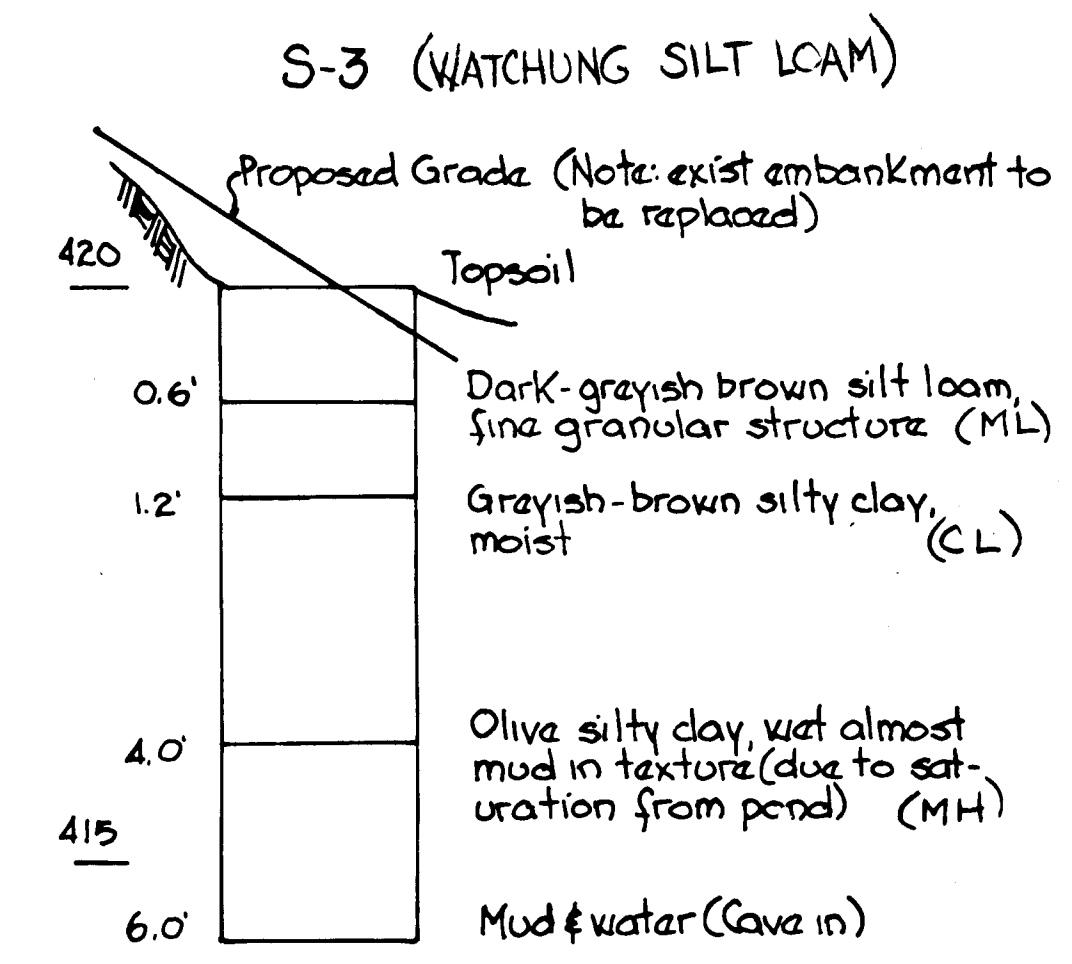
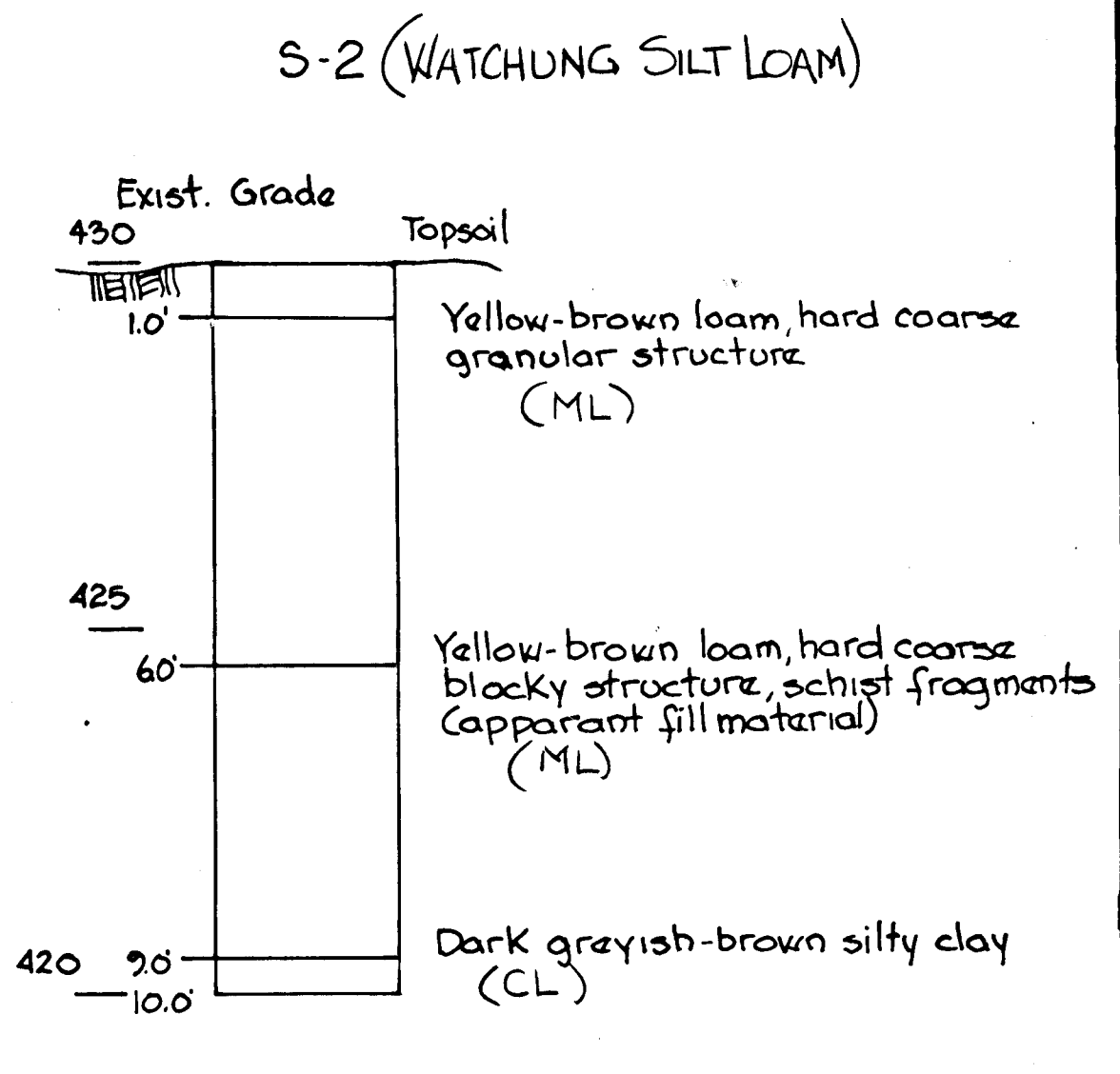
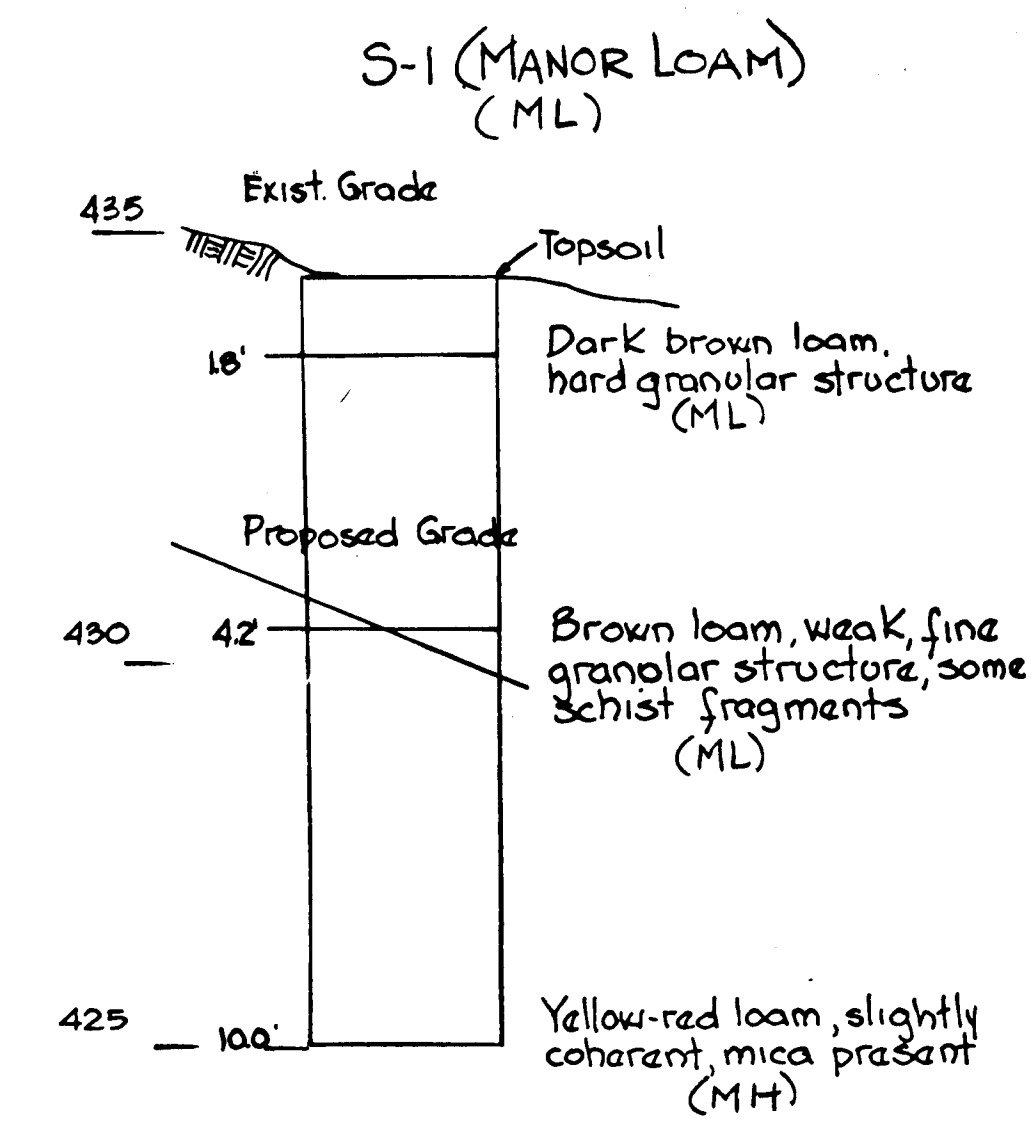
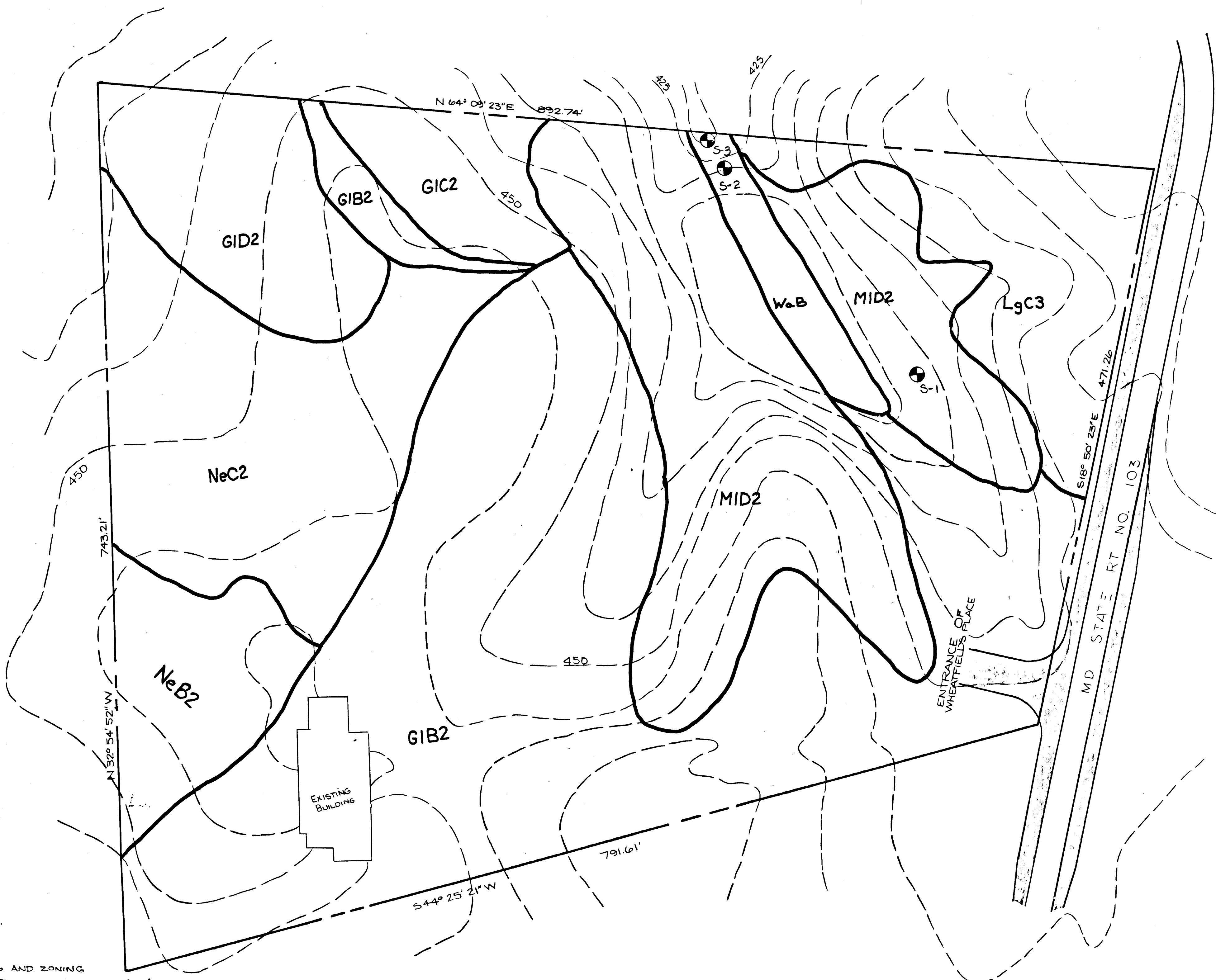
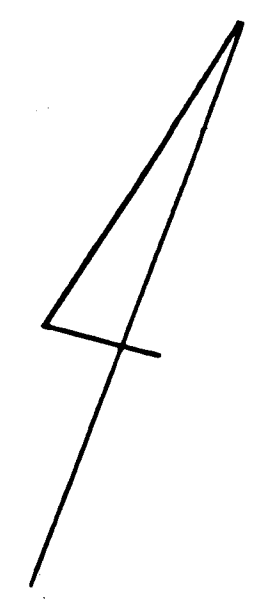
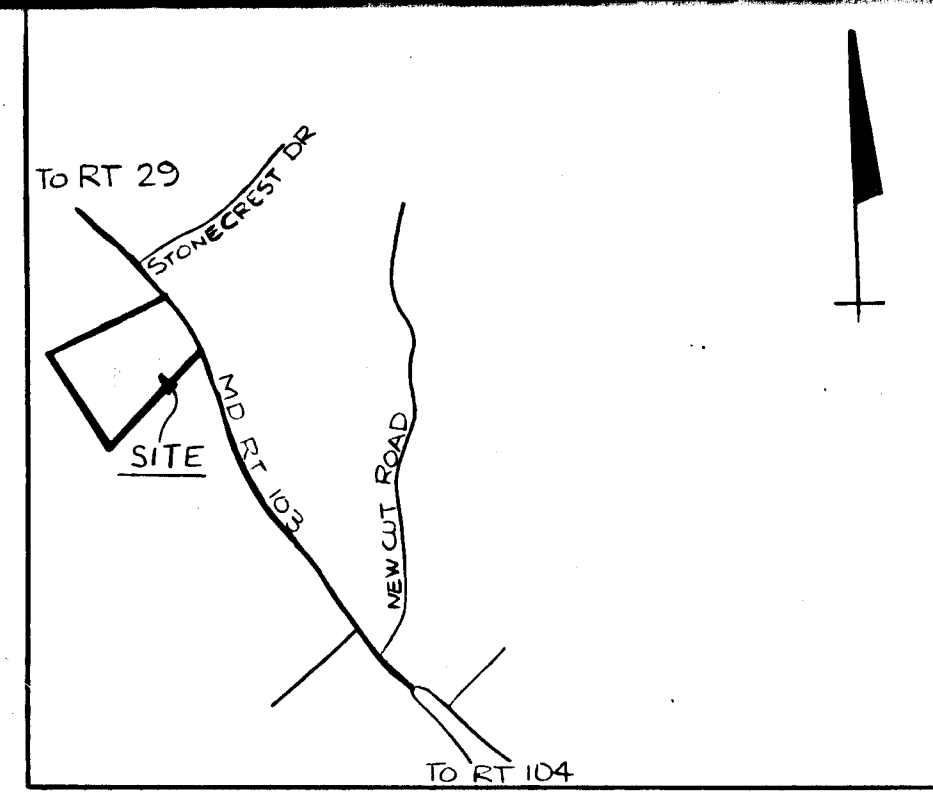
Date	No	Revision Description

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

AREA

TITLE MANORS OF OAKWOOD
STORM DRAIN PROFILES
F-87-215 Dwg. 7 of 11

Des By MFF Scale As Noted Proj No
Drn By JMT Date 7/12/87 7 Drawings



Test borings taken 10/87

BORING LOGS

Date	No	Revision Description

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

AREA

F-87-215

TITLE **MANORS OF OAKWOOD**
SOILS MAP & CLASSIFICATIONS

Des By RHC	Scale 1"=50'	Proj No
Drn By JMT/MFF	Date 3/4/87	Drawing No.
Chk By RHC	Approved	8 OF 11

Professional Engr. No.

APPROVED: OFFICE OF PLANNING AND ZONING
James Smith 5/2/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Michael J. Jones 4/16/88
Chief, Land Development Division

Francis W. Chelard 4/21/88
Chief, Bureau of Highways

William R. Reed 4-21-88
Chief, Bureau of Engineering

SOIL CLASSIFICATIONS
GIB2 - GLENELG LOAM
GIC2 - GLENELG LOAM
LgC3 - LEGORE SILTY CLAY LOAM
MID2 - MANOR LOAM
NeB2 - NESHAMINY SILT LOAM
NeC2 - NESHAMINY SILT LOAM
WaB - WATCHUNG SILT LOAM

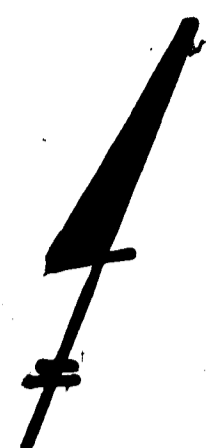
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
Richard H. Caswell 4-15-88
U.S. Soil Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Richard H. Caswell 4-15-88
Howard Soil Conservation District

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."
Richard H. Caswell 4/22/88
Signature of Engineer
RICHARD H. CASSELL
R. H. Caswell 4-13-88

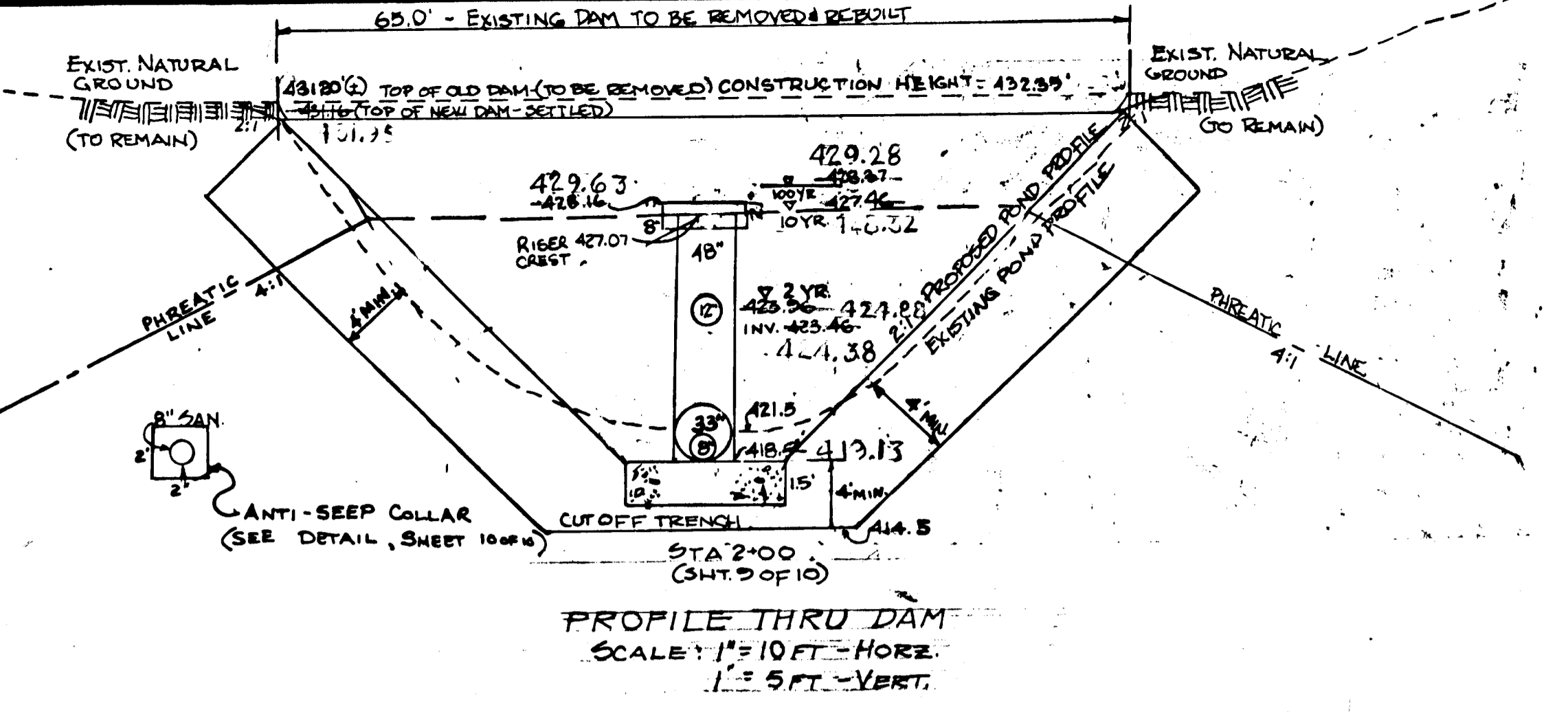
By the Developer:
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control 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."
John N. Bowers 4/13/88
Signature of Developer
JOHN N. BOWERS John N. Bowers 4/13/88

F-87-215

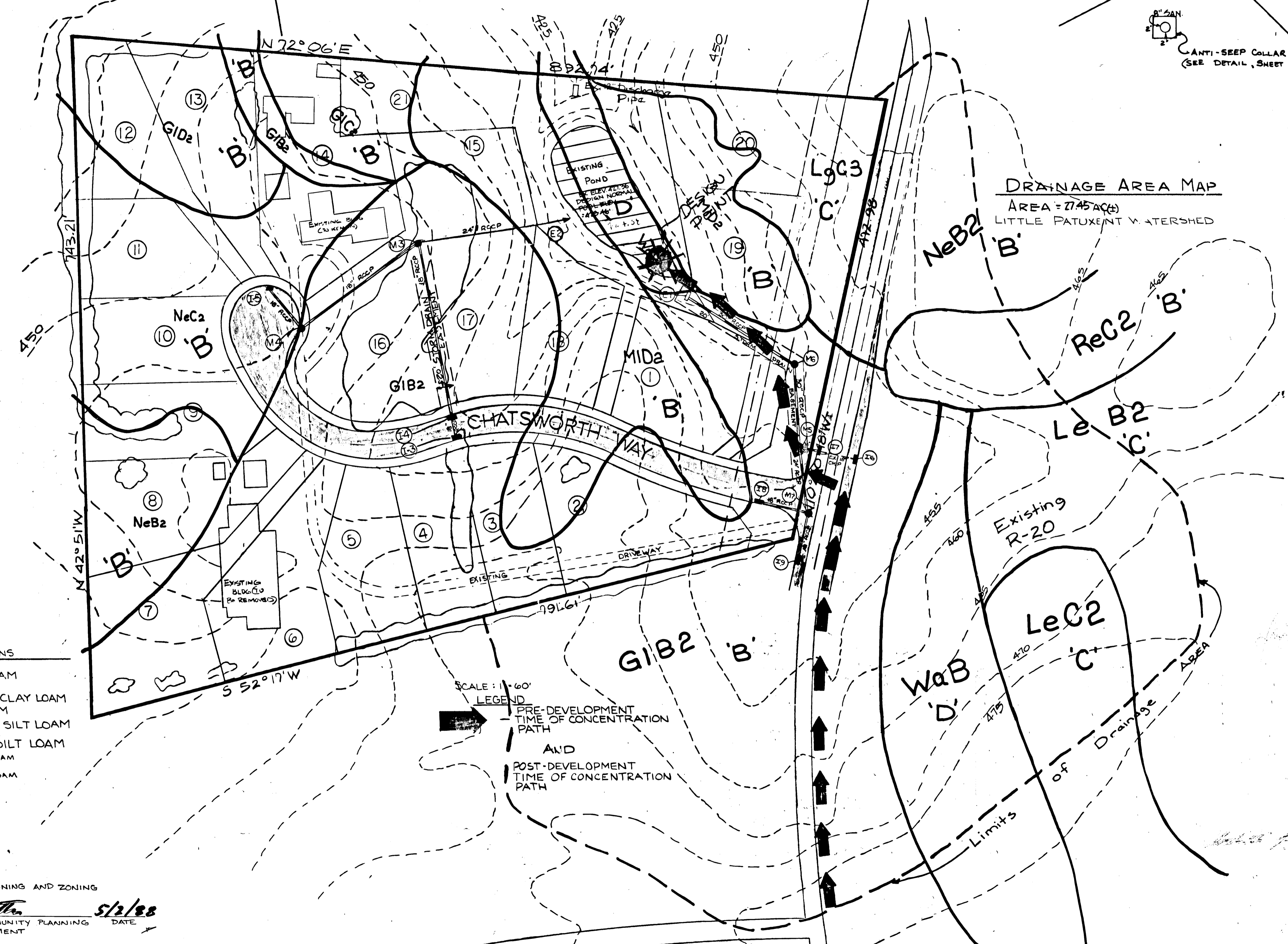


EXISTING OPEN SPACE
LOT NO. 57
CMP-5561
41476

EXISTING 100 YR
FLOOD PLAIN &
DRAINAGE ELEV. 60



DRAINAGE AREA MAP
AREA = 27.45 AC(±)
LITTLE PATUXENT WATERSHED



- Soil Classifications
- GIB2 } GLENELG LOAM
 - GIC2 } GLENELG LOAM
 - GID2 } GLENELG LOAM
 - LcC3 } LEGORE SILTY CLAY LOAM
 - MID2 } MANOR LOAM
 - NeB2 } NESHAMINY SILT LOAM
 - NeC2 } NESHAMINY SILT LOAM
 - WaB } WATCHUNG SILT LOAM
 - ReC2 } RELAY SILT LOAM
 - LeB2 } LEGORE SILT LOAM
 - LeC2 } LEGORE SILT LOAM

SCALE: 1" = 60'
LEGEND
PRE-DEVELOPMENT TIME OF CONCENTRATION PATH
AND
POST-DEVELOPMENT TIME OF CONCENTRATION PATH

APPROVED: OFFICE OF PLANNING AND ZONING
James Keenan 5/12/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James W. Chelcovec 4/12/88
Chief, Bureau of Highways
John R. Ryan 4/12/88
Chief, Bureau of Engineering

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.
Richard H. Caspell 4-15-88
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.
Richard H. Caspell 4-15-88
Howard Soil Conservation District

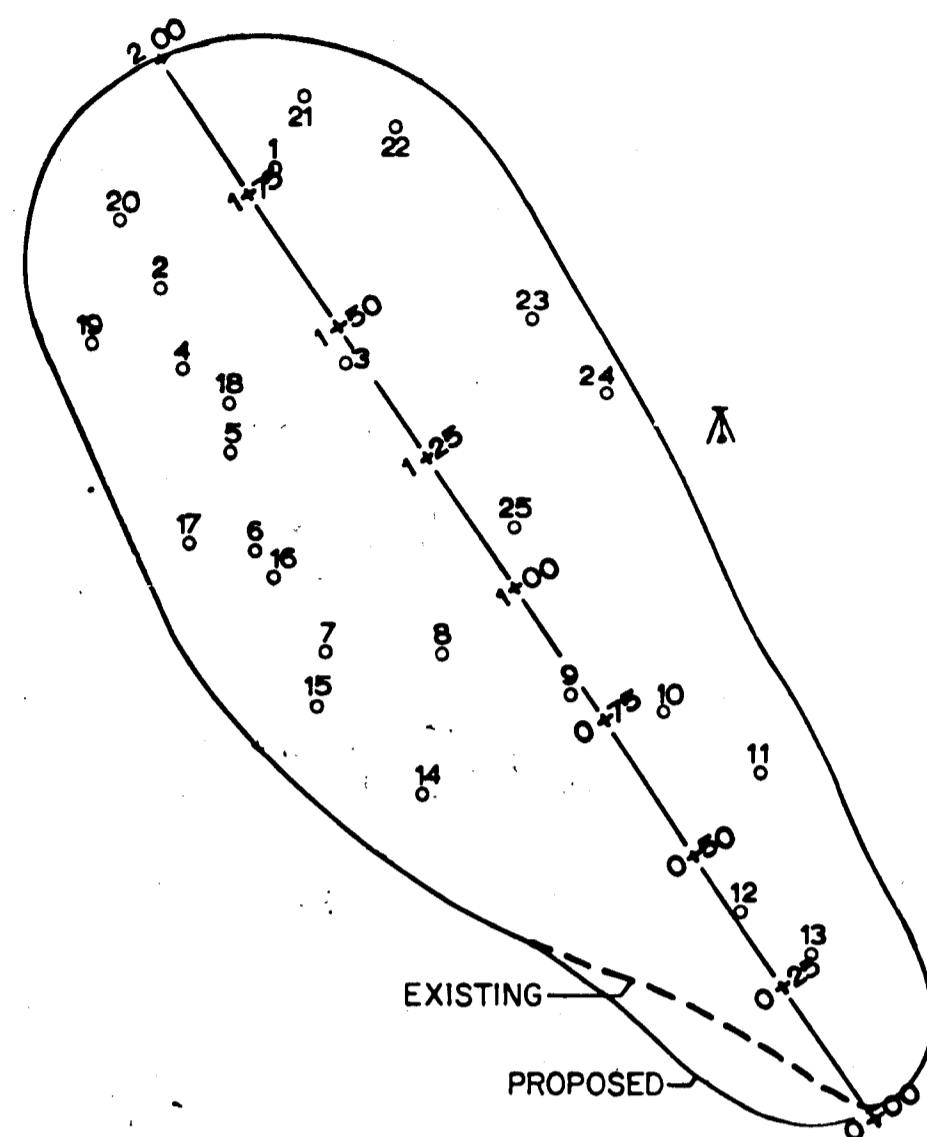
By the Engineer:
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
Richard H. Caspell 4-13-88
RICHARD H. CASPELL R. H. Caspell 4-13-88

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."
John N. Bowers 4-22-88
Signature of Developer
JOHN N. BOWERS John N. Bowers 4/13/88



Date
John N. Bowers 4/13/88
Professional Engr. No.

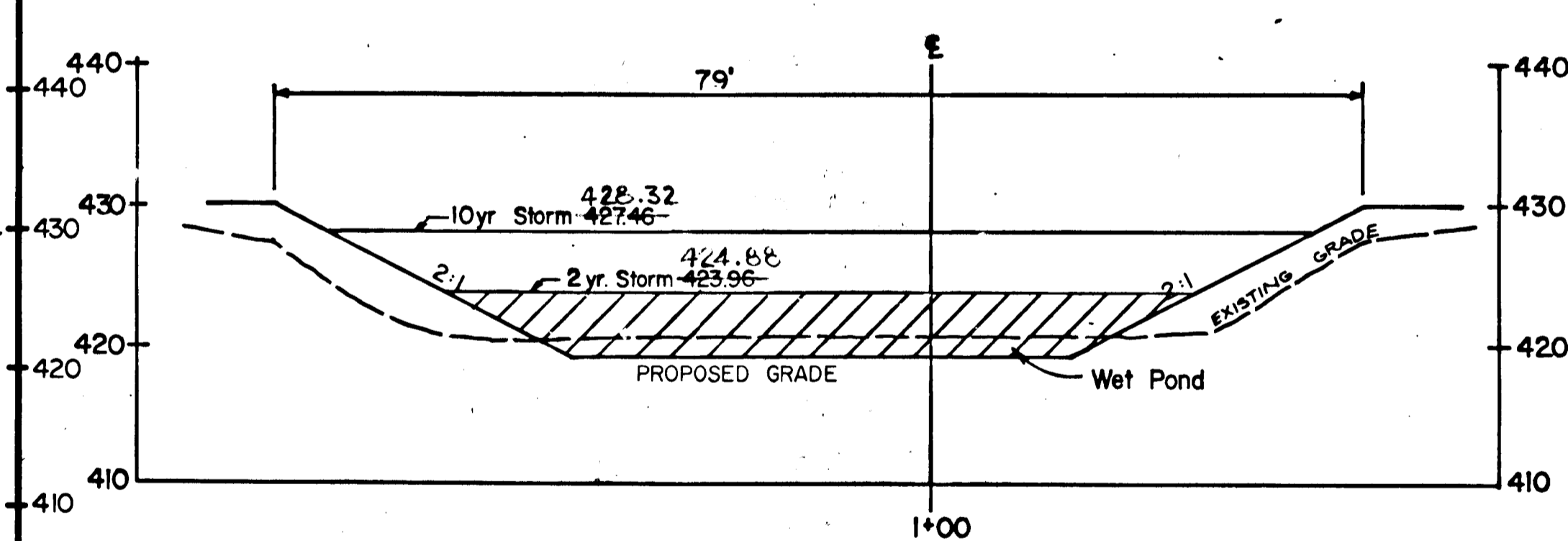
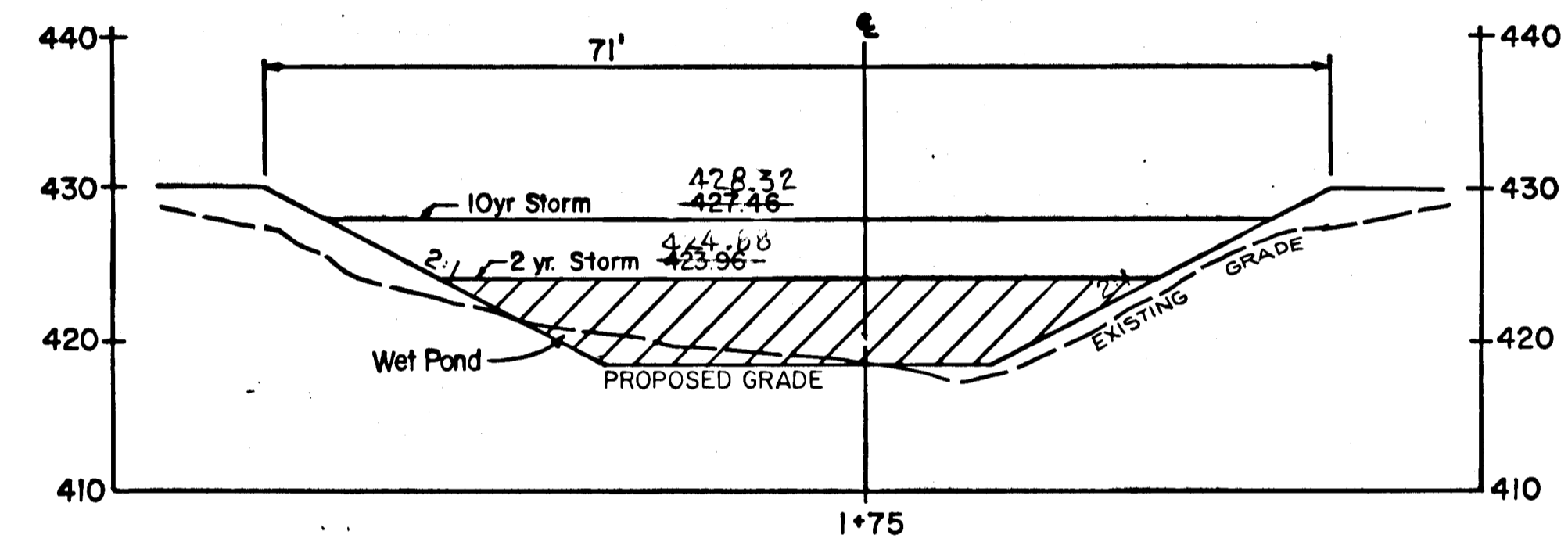
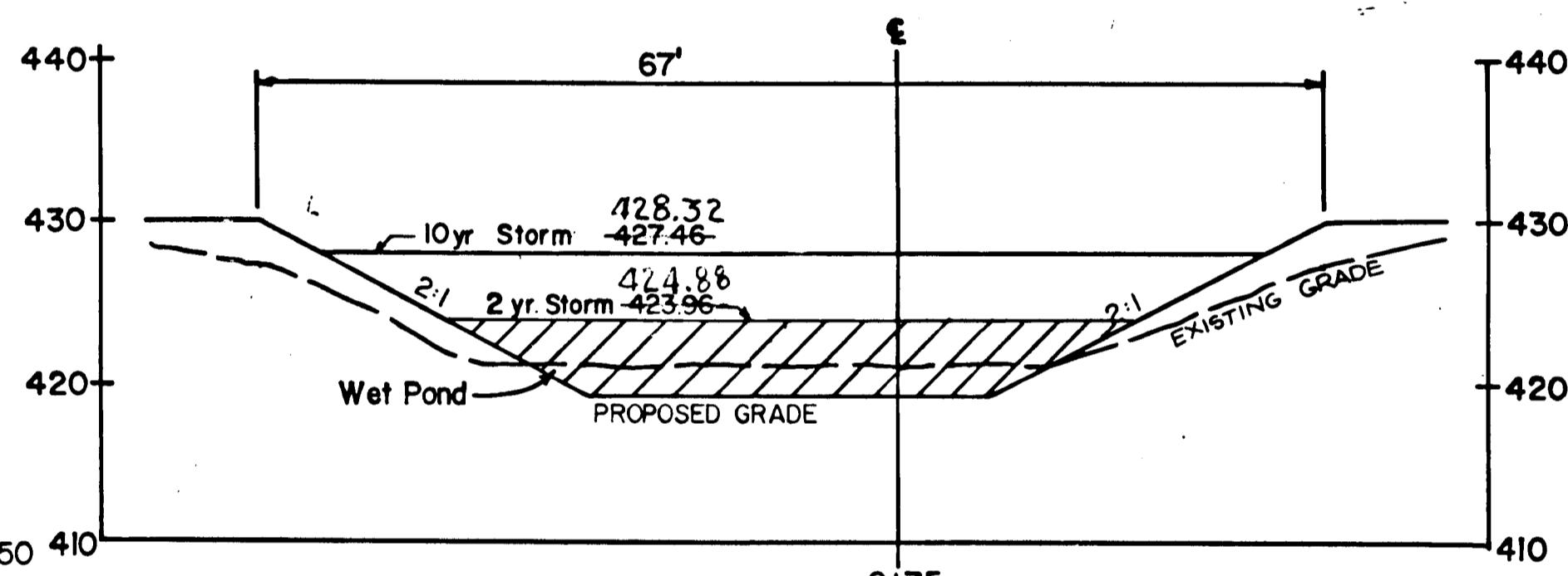
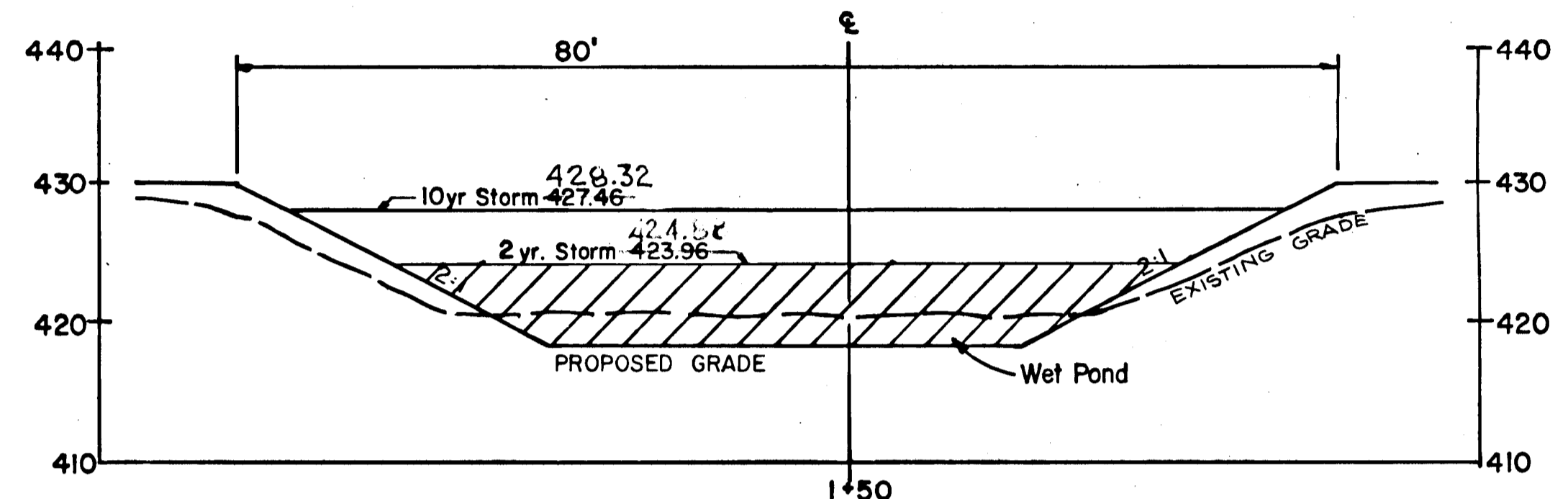
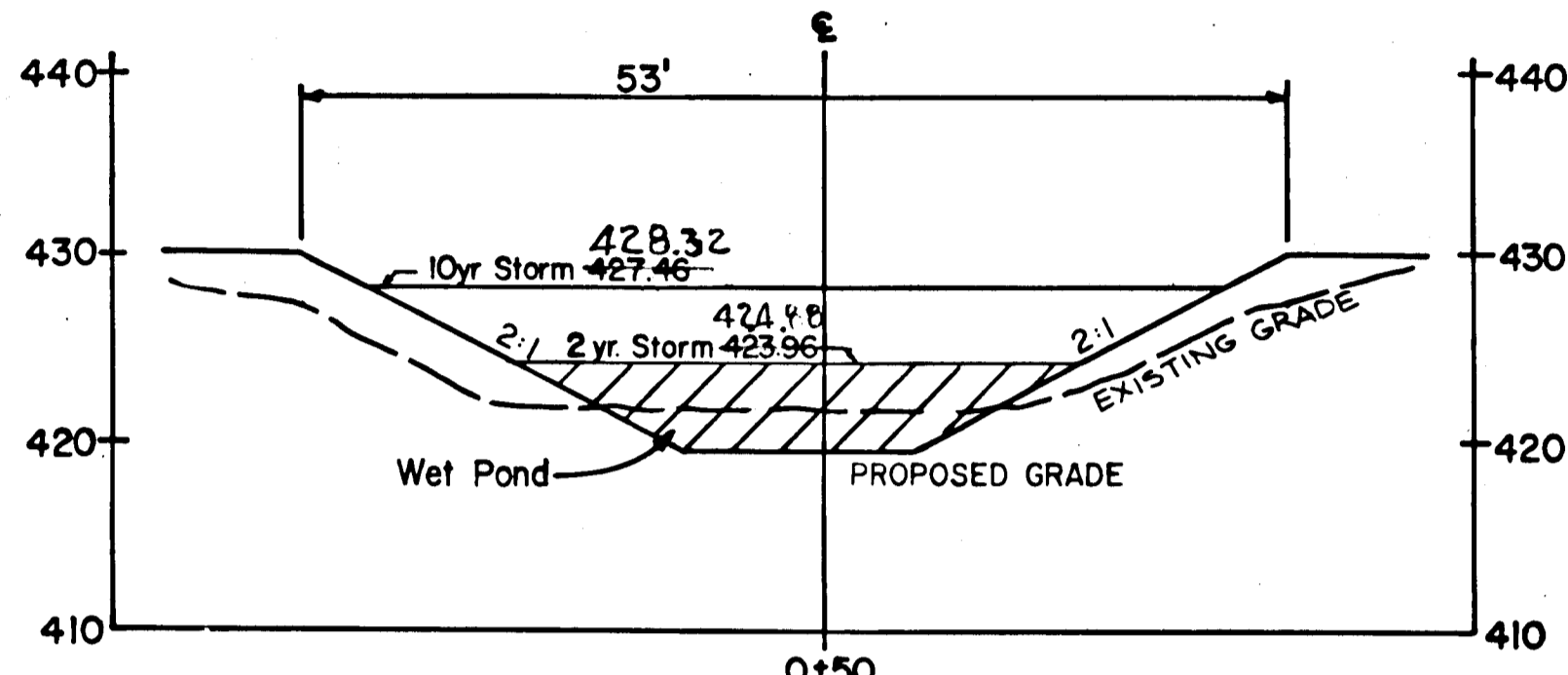
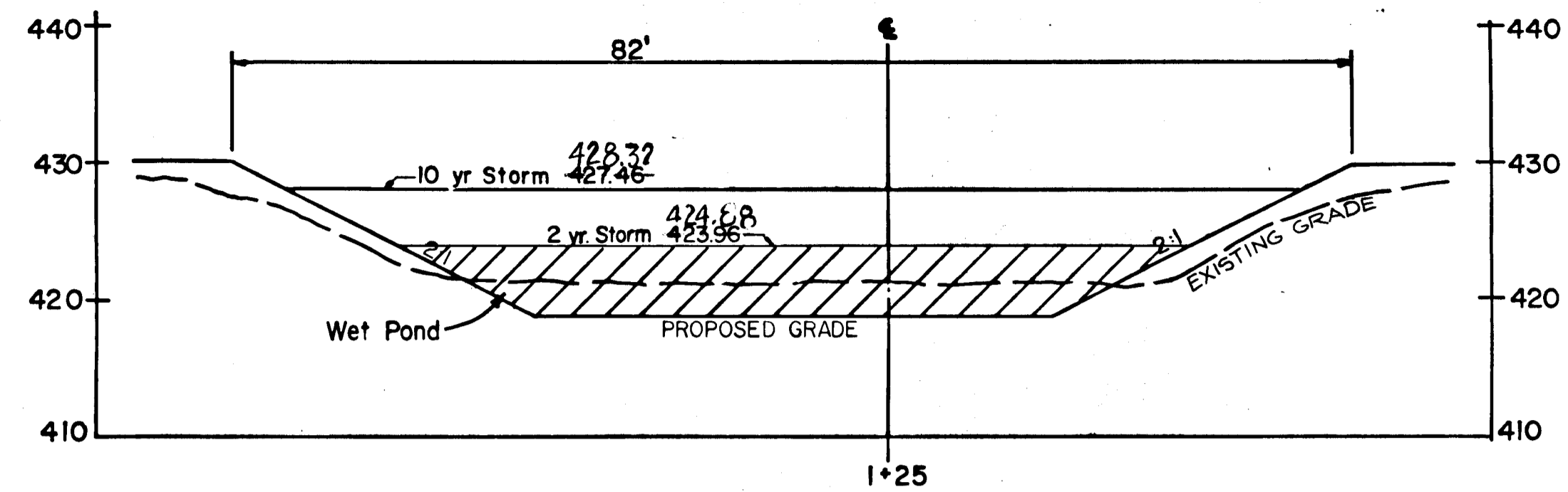
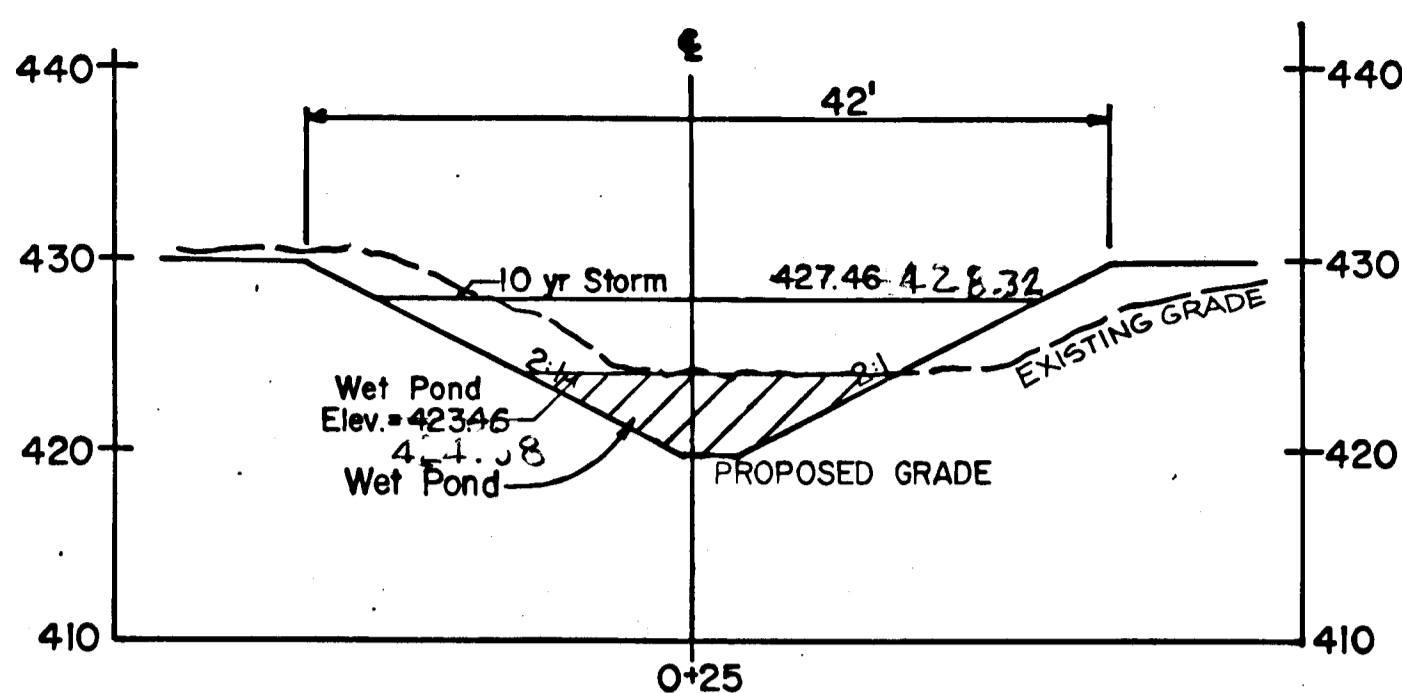
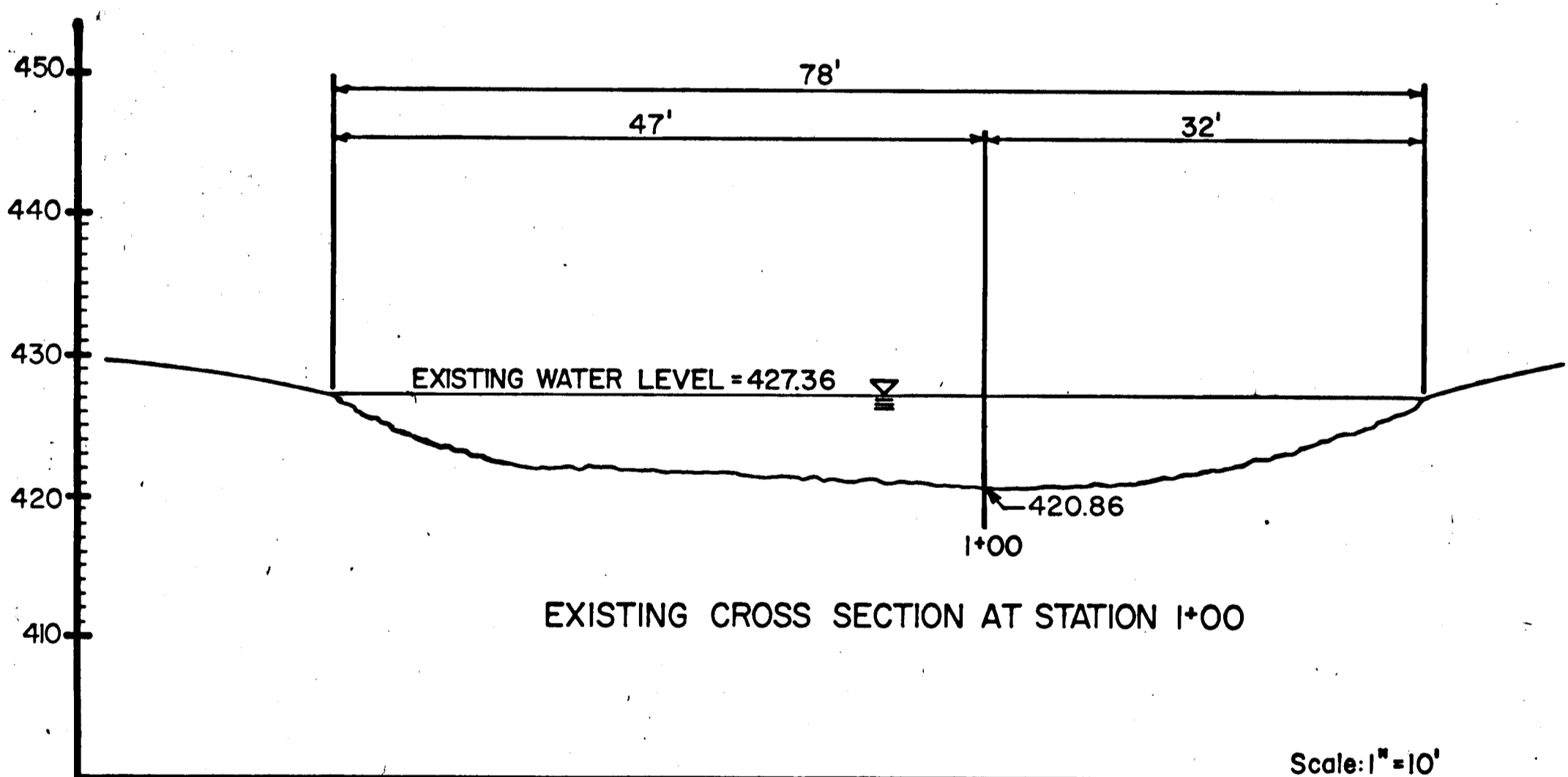
Date	No	Revision Description
ATLANTIC ENGINEERING CORP. CONSULTING ENGINEERS - PLANNERS 198 PENNSYLVANIA AVE. WESTMINSTER, MD 21157 (301) 876-1288		
AREA		
TITLE STORMWATER MANAGEMENT FOR MANORS OF OAKWOOD (PREVIOUSLY VILLAS WHEATFIELDS)		
Des By MFF	Scale AS NOTED	Proj No
Drn By BDA	Udate 12/23/86	Drawing No
Chk By RHC	Approved	9 OF 11



Scale: 1" = 30'

HYDRO-SURVEY			
PT.	DEPTH	BTM.ELEV.	
1	7.70'	419.66	
2	8.10'	419.26	
3	7.90'	419.46	
4	7.00'	420.36	
5	7.15'	420.21	
6	6.50'	420.86	
7	5.95'	421.41	
8	5.82'	421.54	
9	6.00'	421.36	
10	5.90'	421.46	
11	5.20'	422.16	
12	3.50'	423.86	
13	3.20'	424.16	
14	2.50'	424.86	
15	4.85'	422.51	
16	5.80'	421.56	
17	4.90'	422.46	
18	6.80'	420.56	
19	5.60'	421.76	
20	8.00'	419.06	
21	8.00'	419.36	
22	9.80'	417.56	
23	6.80'	420.56	
24	5.20'	422.16	
25	6.50'	420.86	

*-FIGURES ARE ACCORDING TO SURVEY DONE BY ATLANTIC ENGINEERING ON APRIL 20, 1987



CROSS SECTIONS SCALE = 1" = 10'

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.

Richard H. Caswell 4-15-88
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.

Richard H. Caswell 4-16-88
Howard Soil Conservation District Date

10 YR. STORM

Vs required: 38869.46 ft = 0.892 ac.ft
Vs provided: 43666.75 ft = 1.002 ac.ft

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."

Richard H. Caswell 4-13-88
Signature of Engineer Date

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."

John N. Bowers 4-13-88
Signature of Developer Date

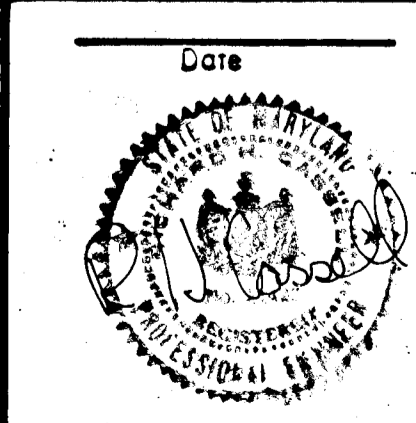
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

John N. Bowers 4-20-88
Chief, Land Development Division Date

Traville W. Ullmann 4/21/88
Chief, Bureau of Highways Date

John N. Bowers 4-21-88
Chief, Bureau of Engineering Date

APPROVED: OFFICE OF PLANNING AND ZONING
John N. Bowers 5/12/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



OWNER/DEVELOPER

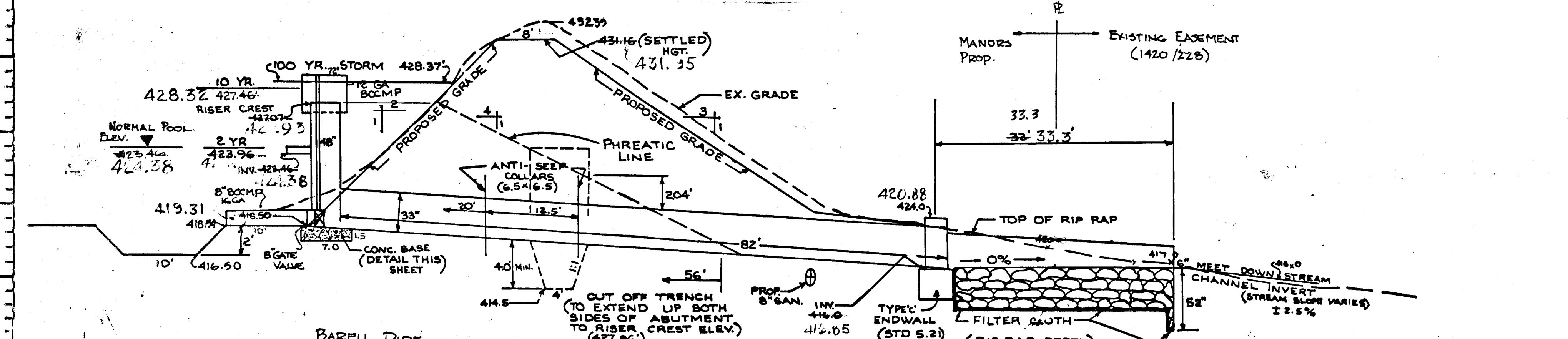
ATLANTIC ENGINEERING, Corp.
CONSULTING ENGINEERS, PLANNERS
196 PENNSYLVANIA AVE. WESTMINSTER MD, 21157
(301) 876-1288

AREA

TITLE **MANORS OF OAKWOOD STORM WATER MANAGEMENT POND DETAIL**

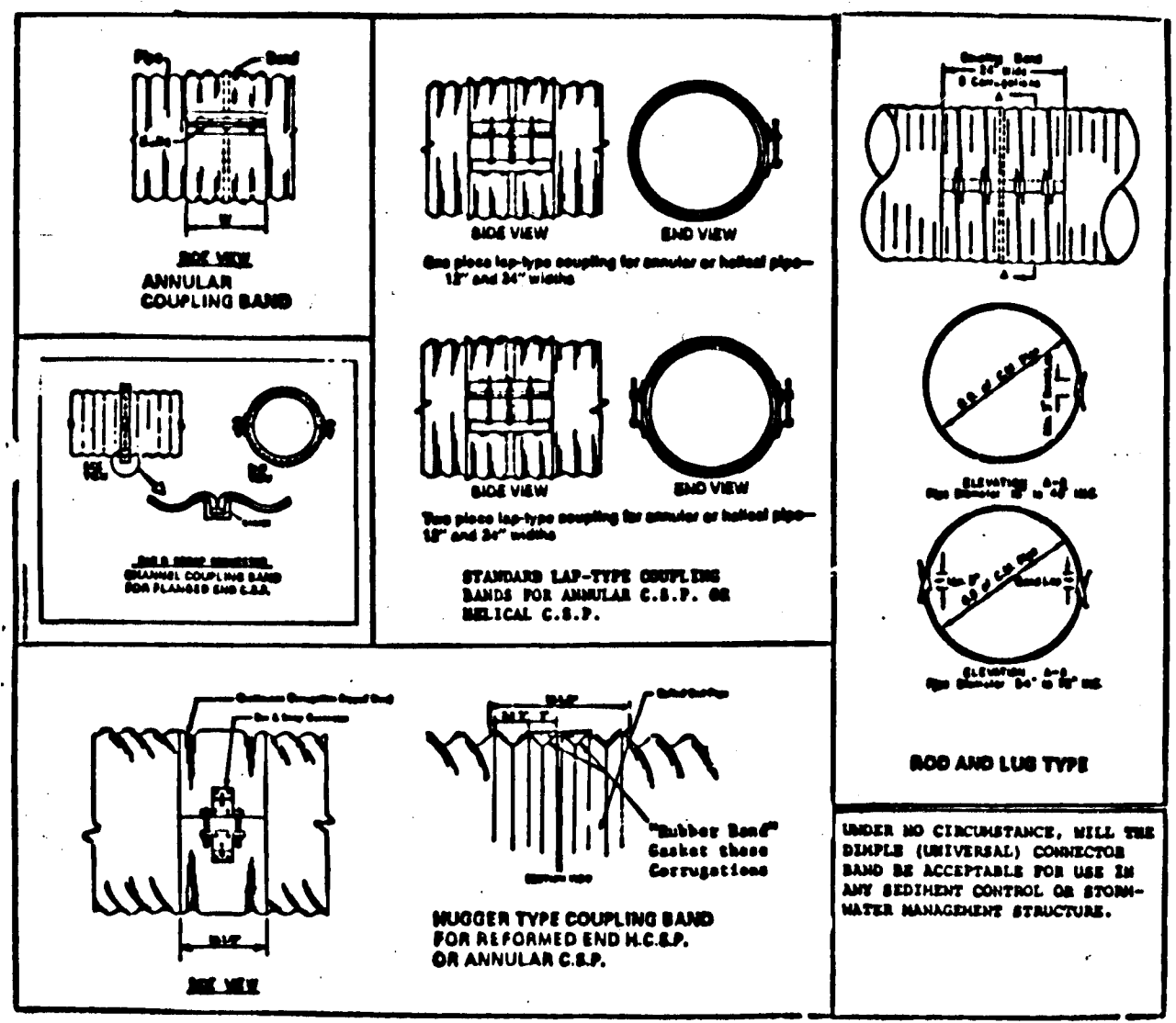
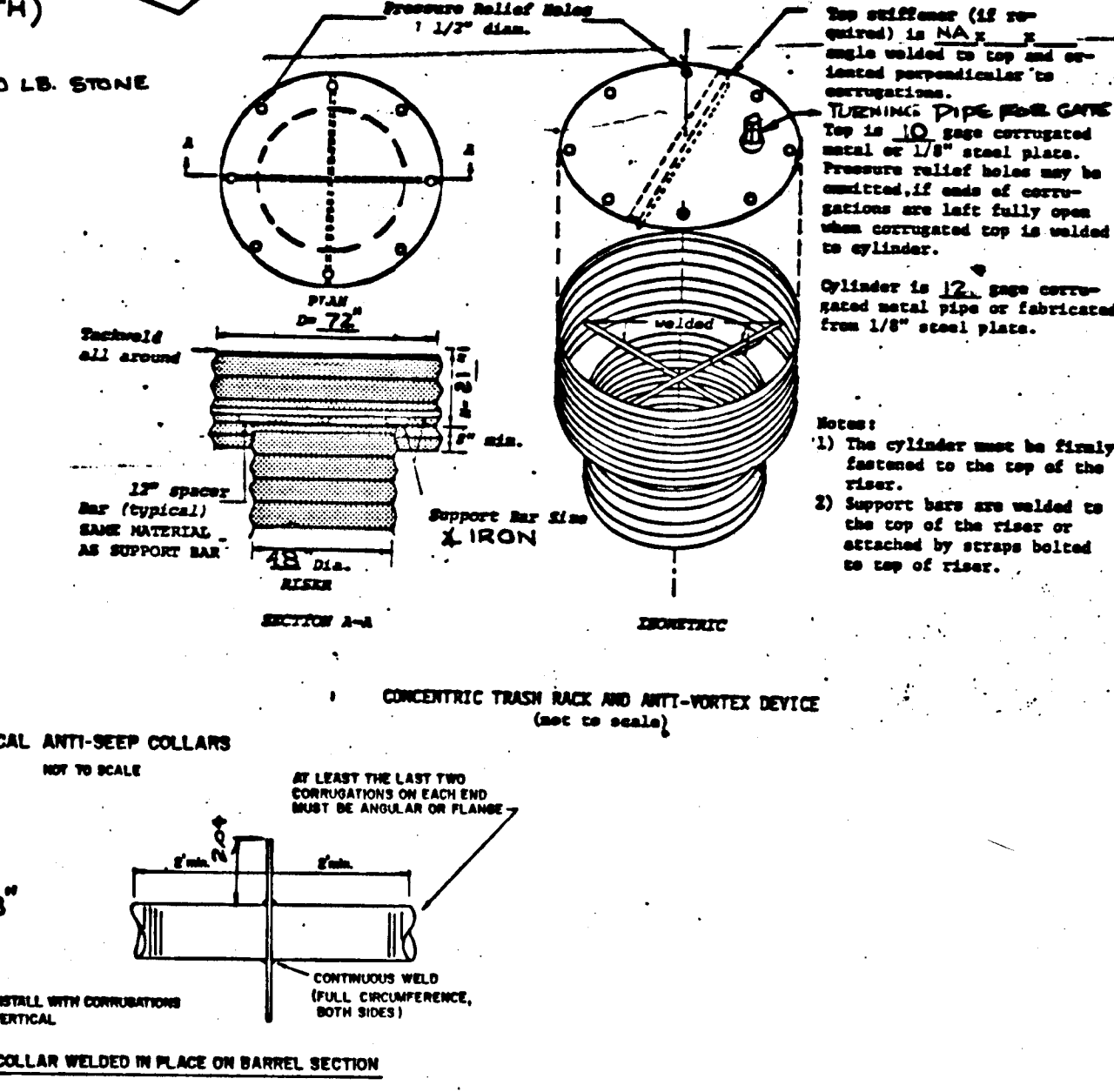
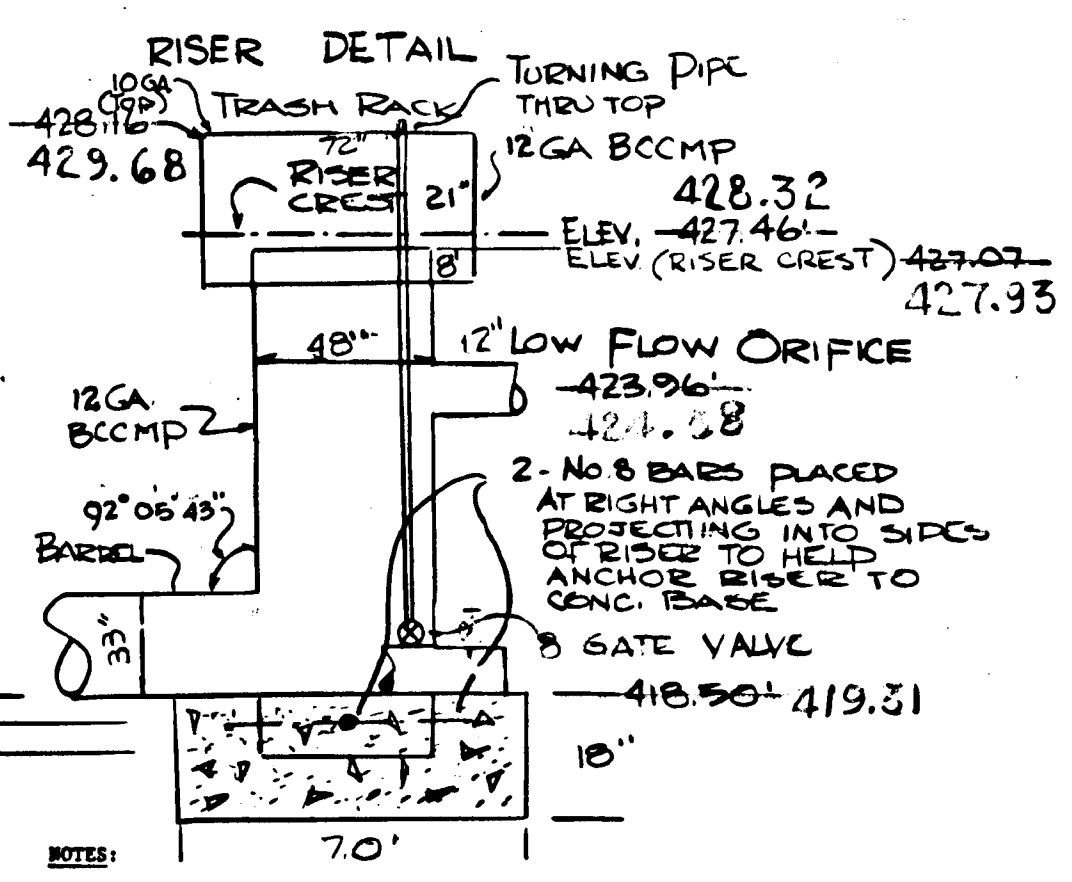
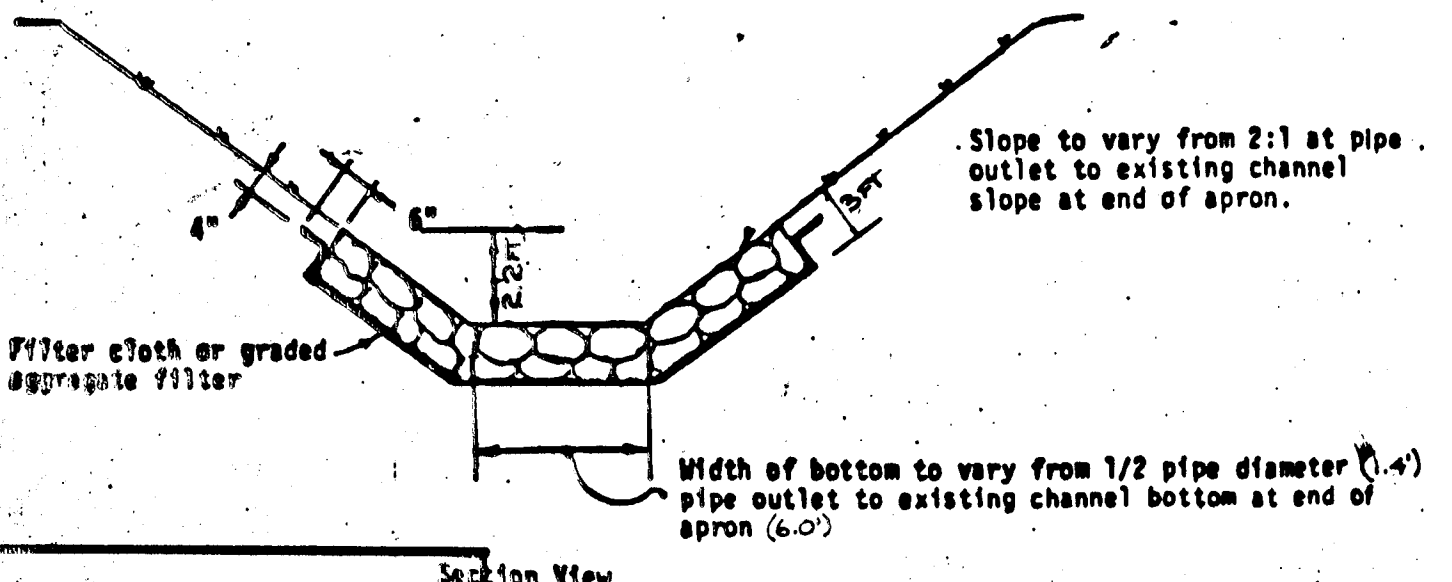
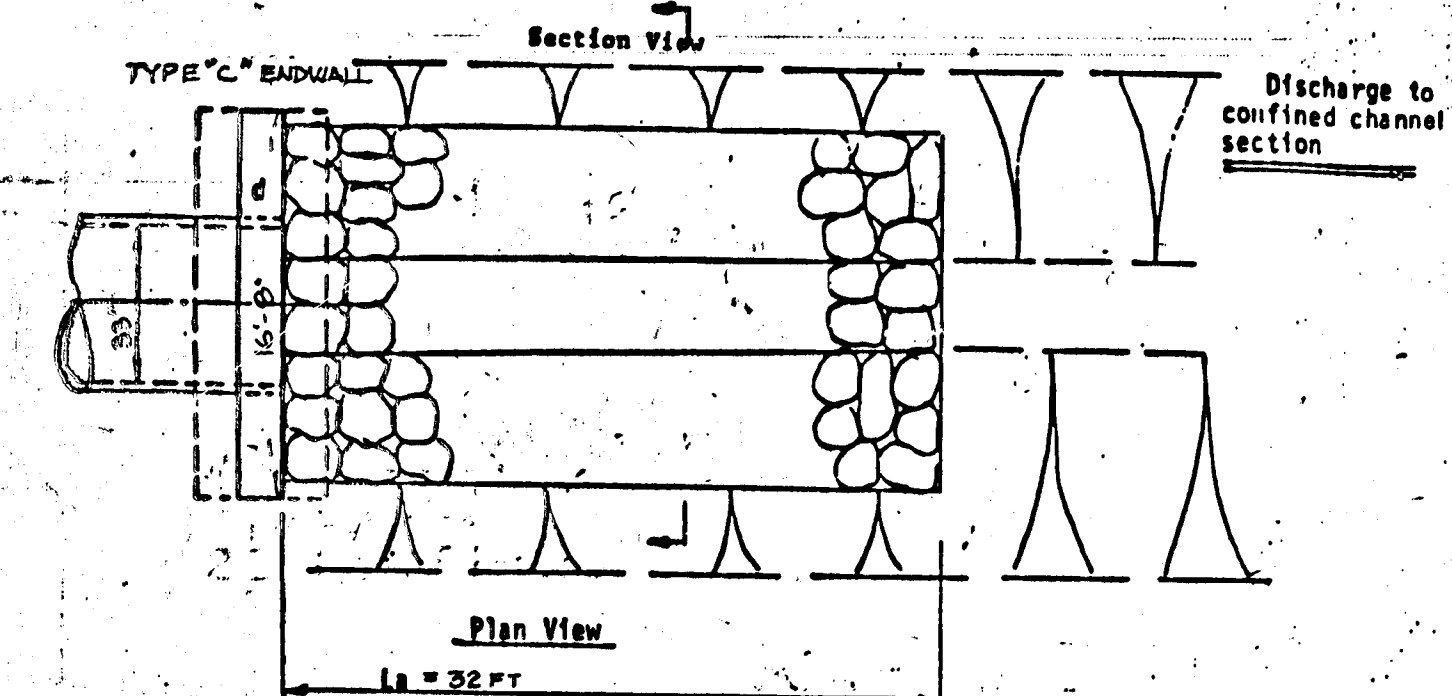
Des. By MFF	Scale: 1" = 30'	Proj. No.
Drn. By JMT	Date 4/22/87	Drawing No.
Chk. By RHC	Approved	10 of 11

PROFESSIONAL ENGR. NO.



BARELL PIPE
DIA: 33 IN
GAGE: 16
TYPE: BCCMP
LENGTH: 82 FT.

SCALE: 1"=10' HORIZ.
1"=5' VERT.



SOIL CONSERVATION SERVICE
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, brush, stumps 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 areas or areas. It shall be free of roots, stumps, wood rubbish, gravel, stones, fossils or other objectionable material. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height 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 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 materials shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used. Excessive overwatering shall not be permitted. Truck mixing will be permitted provided that the use of this method shall cause no honeycombing in the structure.

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 adjusting 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 drive 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**

- Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of ASTM Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.
- Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are made 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.
- 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 bedding shall be removed and replaced with suitable earth compacted to provide adequate support.

B. **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.

C. **PLACING TEMPERATURE**

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

V. **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.

VI. **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 Date
Graeme W. Holland 4/12/88
Chief, Bureau of Highways Date
Richard H. Caswell 4-21-88
Chief, Bureau of Engineering Date

NOTES:

- All pipe connections shall be securely welded about their entire circumference to riser here metal shall then be bituminous coated. Minimum 2" of barrel is to be welded to riser.
- The concrete base shall be poured in such a manner to insure that the concrete fills the bottom of the riser to the invert of the outlet pipe to prevent the riser from breaking away from the base.
- With aluminum or aluminum pipe, the embossed section must be painted with zinc chromate or equivalent.

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.

John N. Bowers 4-15-88
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.

John N. Bowers 4-15-88
Howard Soil Conservation District Date

APPROVED: OFFICE OF PLANNING AND ZONING

James A. ... 5/12/88
DATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS

HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR PUBLIC WATER, SEWER & STORM DRAINAGE SYSTEMS & ROADS

DIRECTOR, PUBLIC WORKS DATE

CHIEF, BUREAU OF ENGINEERING DATE

SUBDIVISION SECTION/AREA LOT #

PLAT NO. BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR.

WATER CODE SEWER CODE



OWNER/DEVELOPER
HERITAGE HOMES IN OAKWOOD LIMITED PARTNERSHIP
8950 RT.103 SUITE 210 GORMAN PLAZA
COLUMBIA, MARYLAND 21045

ATLANTIC ENGINEERING, Corp.
CONSULTING ENGINEERS, PLANNERS
196 PENNSYLVANIA AVE. WESTMINSTER MD, 21157
(301) 876-1288

2nd ELECTION DISTRICT, HOWARD COUNTY MD
TAX MAP 31, PARCEL 563

TITLE MANORS OF OAKWOOD
SECTION ONE
LOTS 1-20 AND LOT 21

Des. By RHC MFF Scale: 1"=10'
Dm. By AEC Date 6/24/87
Chk. By RHC Approved of

