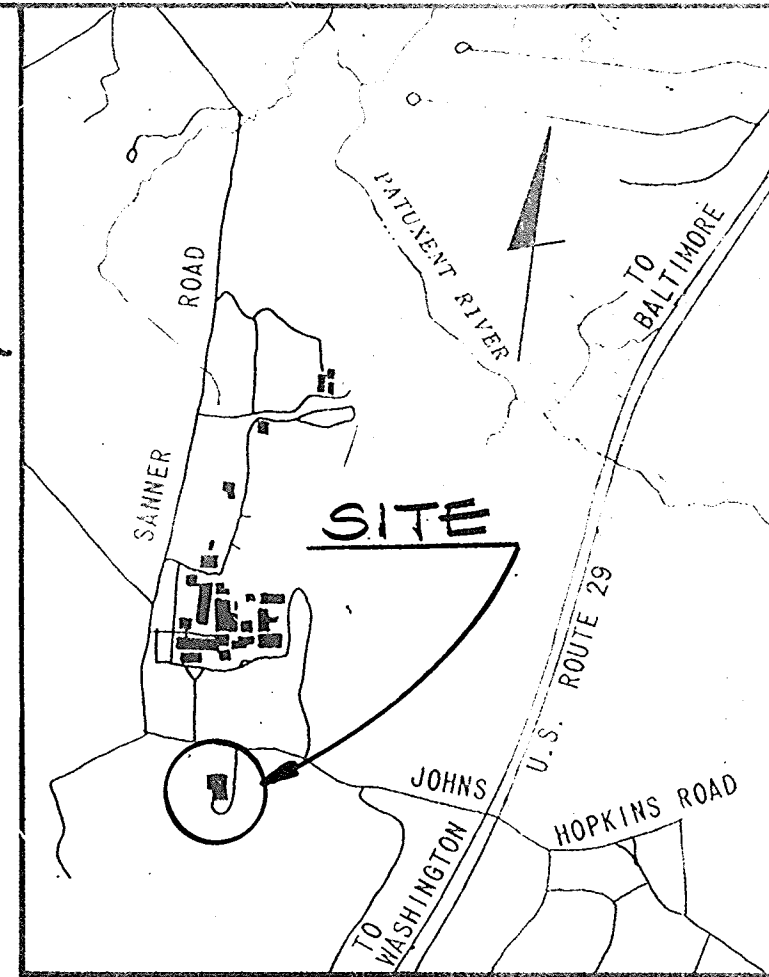


GENERAL NOTES

1. ALL SITE WORK CONSTRUCTION TO BE DONE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL - VOLUME III - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. PUBLIC WATER TO BE UTILIZED.
3. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY OR PAVING MUST BE CORRECTED AT THE DEVELOPER'S EXPENSE.
4. GRADES HAVE BEEN ESTABLISHED TO INSURE POSITIVE DRAINAGE.
5. SIDEWALKS SHALL BE SCORED OR OTHERWISE TEXTURED TO INDICATE TO BLIND PERSONS THE LOCATION OF DOORS AT BUILDINGS.
6. ONE HANDICAPPED PARKING SIGN SHALL BE PLACED AT EACH HANDICAPPED PARKING SPACE IN ACCORDANCE WITH REQUIREMENTS OF THE MARYLAND BUILDING CODE.
7. ALL ADJACENT LANDS ARE ZONED "R".
8. BUILDING TO BE USED FOR RESEARCH & DEVELOPMENT.
9. ROADS TO REMAIN PRIVATE.
10. ALL PROPOSED EXTERIOR LIGHTING DEVICES SHALL BE REFLECTED/DIRECTED AWAY FROM ALL ADJOINING PUBLIC ROAD RIGHT-OF-WAYS AND SURROUNDING RESIDENTIAL AREAS.



VICINITY MAP
SCALE: 1" = 2000'

SITE DEVELOPMENT PLAN

WESTVACO RESEARCH LABORATORY EXPANSION

SHEET INDEX	
No.	DESCRIPTION
1.	COVER SHEET
2.	STAKEOUT PLAN
3.	GRADING / UTILITY PLAN
4.	SITE DETAILS
5.	PROFILES
6.	DRAINAGE AREA MAP
7.	S.W.M. DETAILS
8.	S.W.M. DETAILS
9.	SEDIMENT CONTROL PLAN
10.	SEDIMENT CONTROL DETAILS
11.	LANDSCAPING PLAN

SITE ANALYSIS

PRESENT ZONING	RURAL - R
AREA OF PARCEL	1,524,600 s.f. 35.00 Acres
AREA OF SUBMISSION	5.2 ACRES
BUILDING FLOOR SPACE:	
EXISTING	28,000 s.f.
PROPOSED TOTAL	63,700 s.f.

NUMBER OF EMPLOYEES	
EXISTING-100	ADDITIONAL-100
PROPOSED TOTAL	200

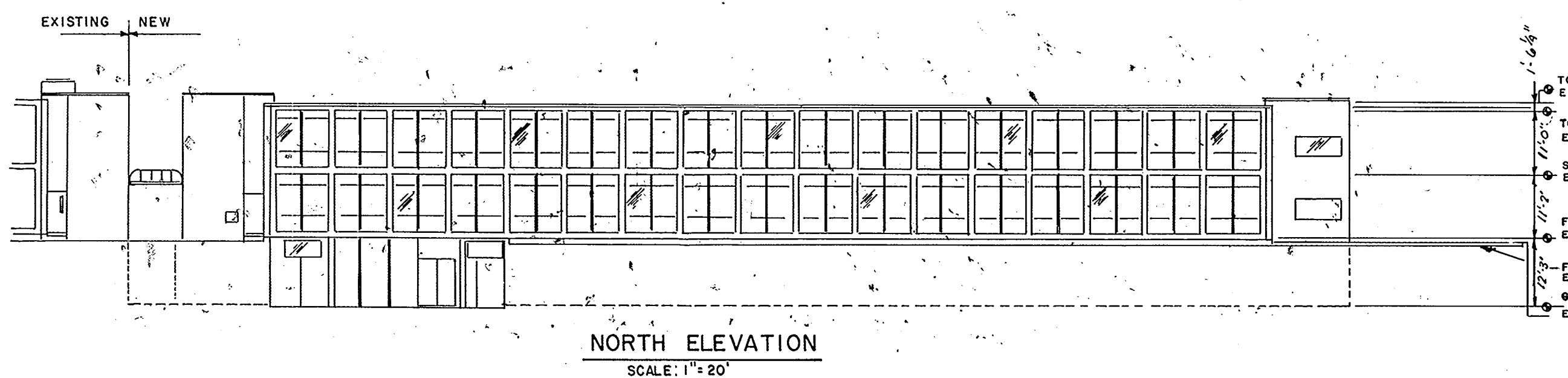
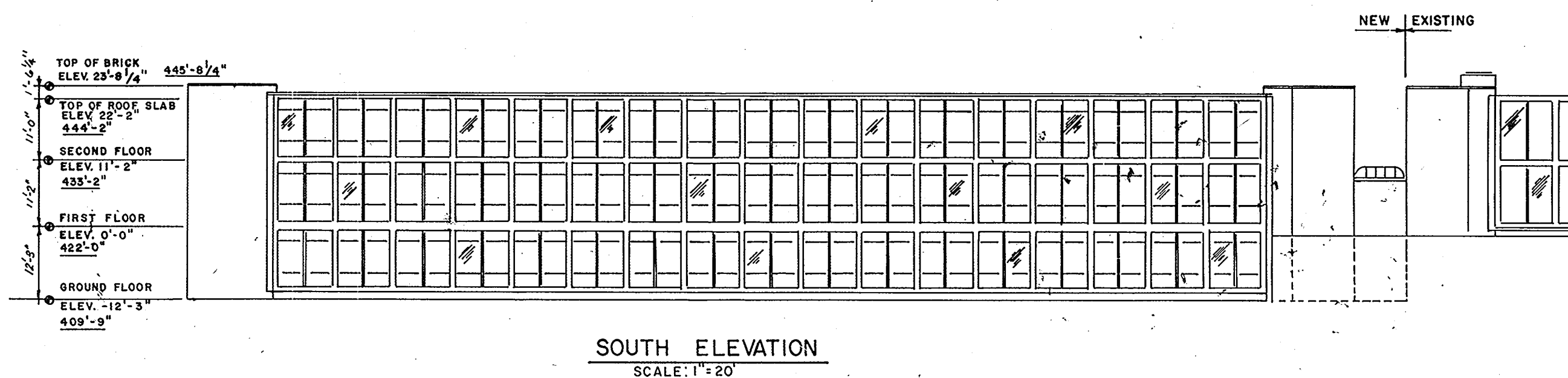
NUMBER OF PARKING SPACES	
EXISTING	112
REQUIRED 63.7 x 4 SPACES/1000 S.F.	255
NEW SPACES 174 TOTAL PROVIDED	286

GREEN AREA	
EXISTING	32.96 AC. 94.2%
PROPOSED	30.18 AC. 86.2%

BUILDING COVERAGE:	
EXISTING	.67 AC. 1.9%
PROPOSED	1.02 AC. 2.9%

PAVING AREA	
EXISTING	1.97 AC. 3.9%
PROPOSED (PARKING LOTS 257 AC.) (DRIVEWAYS 1.23 AC.)	3.80 AC. 10.9%

AREA OF LANDSCAPED ISLANDS PROVIDED WITHIN THE PARKING
 LOT-13,550 SF. 0.31 AC
 THE LANDSCAPED ISLANDS ARE 0.9% OF THE TOTAL SITE ACREAGE
 THE LANDSCAPED ISLANDS ARE 7.5% OF THE PARKING LOT ACREAGE



ZONING HISTORY
 Howard Co Planning Commission
 Board of Zoning Appeals
 Case No. 44B-C
 Applicants: Mildred B. Price and West Virginia Pulp & Paper Company.
 Pursuant to Section 19.26 of Zoning Regulations, to use a 35 acre parcel of land in an R-40 District for a research laboratory.
 Restrictions:
 a. Buildings, not closer than 200 feet to property line. Any water structure to conform to rural aspects of neighborhood.
 b. Such use shall be confined to building or buildings.
 c. Parking not closer than 100 feet to property line.
 d. Building use to be limited to the test tube and bench phase of scientific inquiry, and shall not include any type of pilot plant or manufacturing process.
 Approved 8th January 1964

JAMES GOLDSTEIN & PARTNERS
 ARCHITECTS
 89 MILLBURN AVE.
 MILLBURN, NEW JERSEY 07041
 (201) 467-8840

ADDRESS CHART	
PARCEL NUMBER	STREET ADDRESS
P. 300	11101 Johns Hopkins Road
SUBDIVISION NAME Westvaco	SECT./AREA 41
LOT/PARCEL P300	LOT/PARCEL P300
PLAT# OR L/F 414/11	BLOCK# 16+22
ZONE R	TAX/ZONE MAP 41
ELEC. DIST 5	CENSUS TR 6031
WATER CODE E-21	SEWER CODE 7690000
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
DIRECTOR: James G. ...	DATE: 1/10/89
CHIEF, BUREAU OF ENGINEERING: ...	DATE: 1-10-89
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT	
Joyce M. Boyd ...	DATE: 1-19-89
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING	
PLANNING DIRECTOR: ...	DATE: 1-20-89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 SAINT PAUL STREET BALTIMORE, MARYLAND 21218 	WESTVACO 11011 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20707	SITE DEVELOPMENT PLAN WESTVACO LAUREL RESEARCH LABORATORY EXPANSION FIFTH ELECTION DISTRICT TAX MAP 41	HOWARD COUNTY, MARYLAND PARCEL 300	COVER SHEET
---	---	---	---	--------------------

REVISIONS	SCALE: AS SHOWN	DRAWING
	SHEET NO. 1	
	OF 11	
	DATE: 9-16-88	

PITTSBURGH TESTING LABORATORY
LOG OF BORING

Job No. 429-85322
Client: Whitman Requardt & Associates
Project: Westvaco
Location of Boring: Johns Hopkins
Water Level: 416.5'
Time: 9-6-88
Date: 9-6-88

DEPTH IN FEET	DESCRIPTION
0	5" Topsoil
1.0'-2.5'	Brown, moist SILT
3.5'-5.0'	Brown, fine SILT with mica
6.0'-9.17'	Sand
8.5'-10.11'	Sand
13.5'-15.0'	Gray and brown SILT with rock fragments
18.5'-20.0'	Gray silty SAND with mica

PITTSBURGH TESTING LABORATORY
LOG OF BORING

Job No. 429-85322
Client: Whitman Requardt & Associates
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3.5'-5.0'	Sand
6.0'-9.17'	Brown, silty SAND with rock fragments
8.5'-10.11'	Greenish brown SILT with mica
13.5'-15.0'	Sand
18.5'-20.0'	Sand

PITTSBURGH TESTING LABORATORY
LOG OF BORING

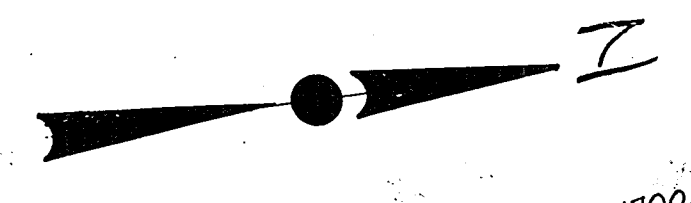
Job No. 429-85322
Client: Whitman Requardt & Associates
Project: Westvaco
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8.5'-10.11'	Sand
13.5'-15.0'	Brown, fine SILT with mica
18.5'-20.0'	Brown and black, moist SILT

PITTSBURGH TESTING LABORATORY
LOG OF BORING

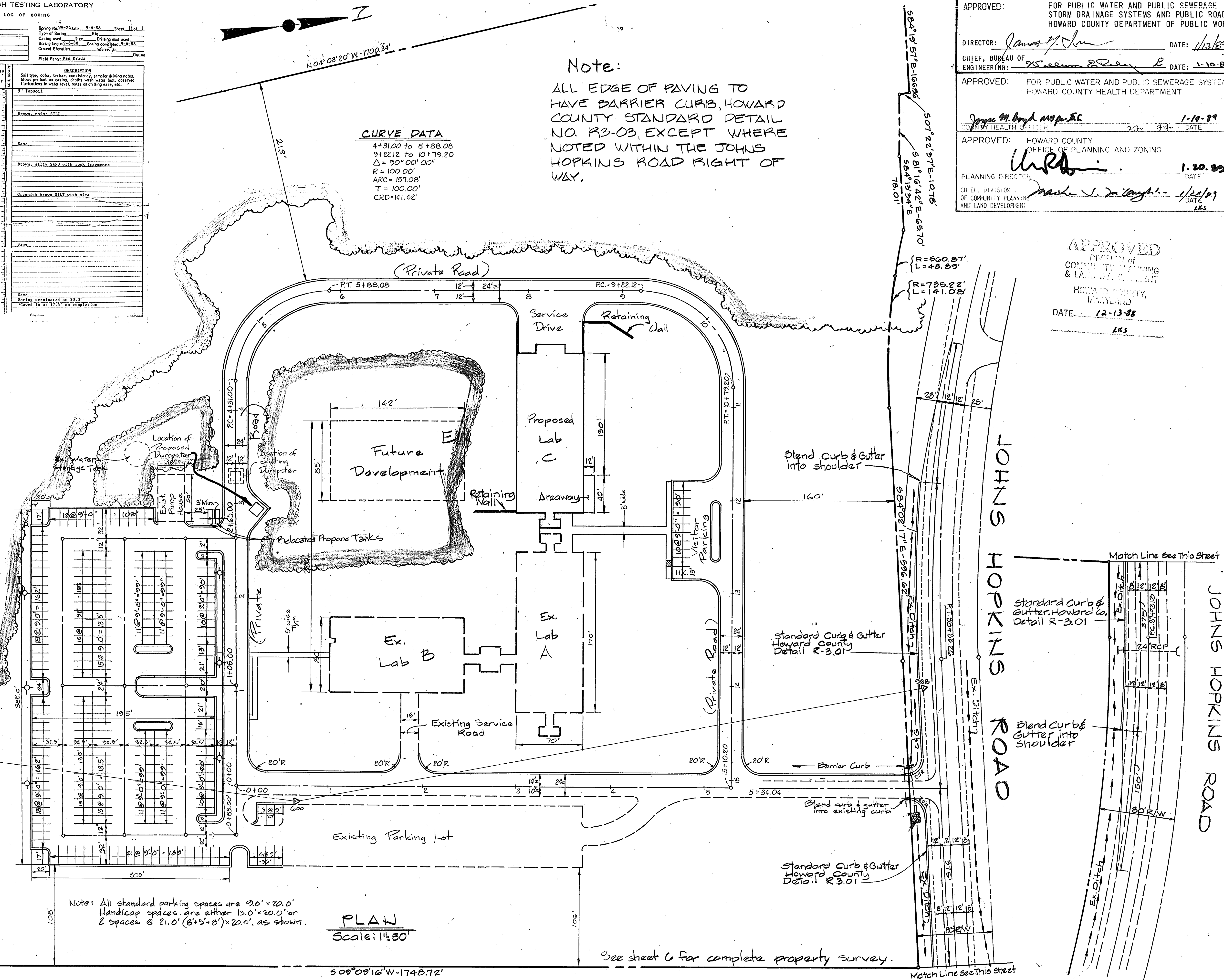
Job No. 429-85322
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3.5'-5.0'	Sand
6.0'-9.17'	Brown, fine SILT with rock fragments
8.5'-10.11'	Sand
13.5'-15.0'	Greenish-brown, sandy SILT
18.5'-20.0'	Sand



CURVE DATA
 4+31.00 to 5+88.08
 9+22.12 to 10+79.20
 $\Delta = 90^{\circ}00'00''$
 $R = 100.00'$
 $ARC = 151.08'$
 $T = 100.00'$
 $CRD = 141.42'$

Note:
 ALL EDGE OF PAVING TO HAVE BARRIER CURB, HOWARD COUNTY STANDARD DETAIL NO. R3-03, EXCEPT WHERE NOTED WITHIN THE JOHN HOPKINS ROAD RIGHT OF WAY.



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: James M. Jan DATE: 1/13/89

CHIEF, BUREAU OF ENGINEERING: [Signature] DATE: 1-10-89

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

Joyce M. Boyd M.P.E. DATE: 1-10-89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[Signature] DATE: 1-20-89

PLANNING DIRECTOR: [Signature] DATE: 1/20/89

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: [Signature] DATE: 1/20/89

APPROVED: DEPARTMENT OF COMMUNITY PLANNING & LAND DEVELOPMENT
 HOWARD COUNTY, MARYLAND
 DATE: 12-13-88
 LKS

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 210 SAINT PAUL STREET
 BALTIMORE, MARYLAND 21218



WESTVACO
 11011 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20707

SITE DEVELOPMENT PLAN
 WESTVACO LAUREL
 RESEARCH LABORATORY EXPANSION

STAKEOUT PLAN

FIFTH ELECTION DISTRICT
 TAX MAP 41

HOWARD COUNTY, MARYLAND
 PARCEL 300

REVISIONS
 Pelicate dumpster & tanks March 27 1989
 Change propane to oxygen as directed 3/27/89
 Dimension propane tank 4/5/89

SCALE: 1" = 50'

DRAWING SHEET NO. 2 OF 11

DATE: 9-16-88

2

STRUCTURE SCHEDULE

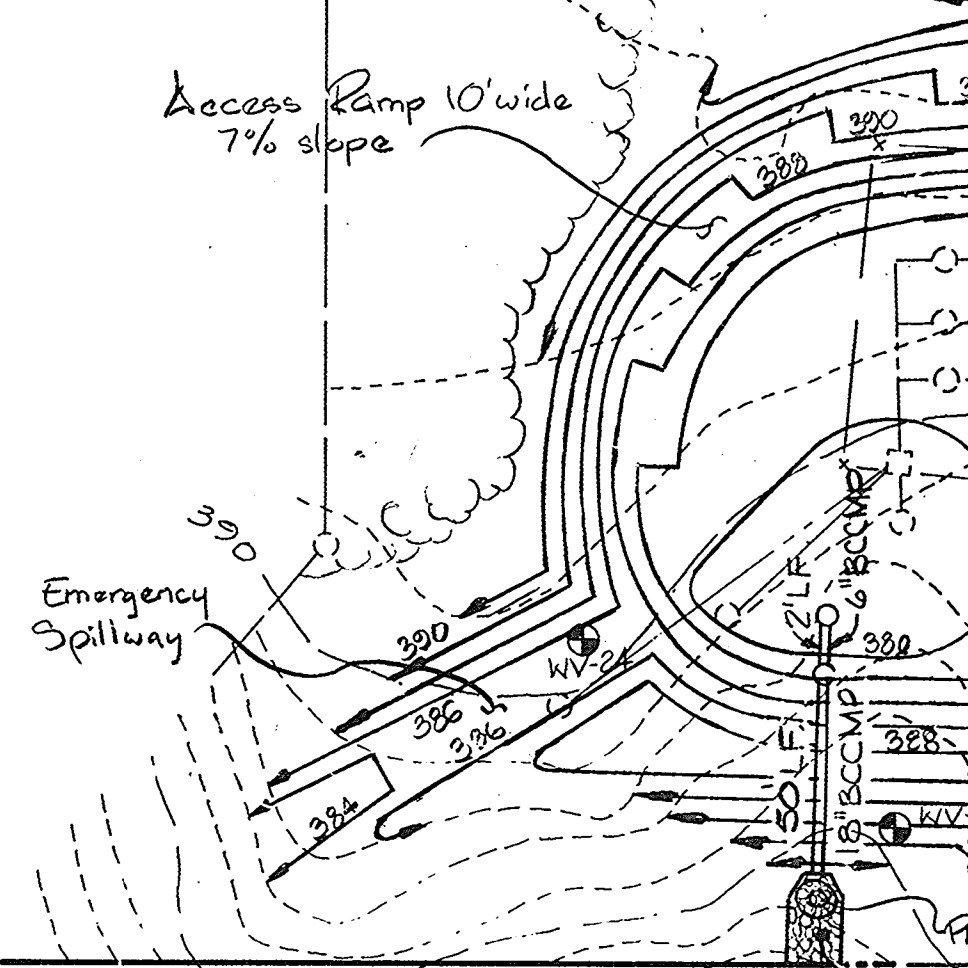
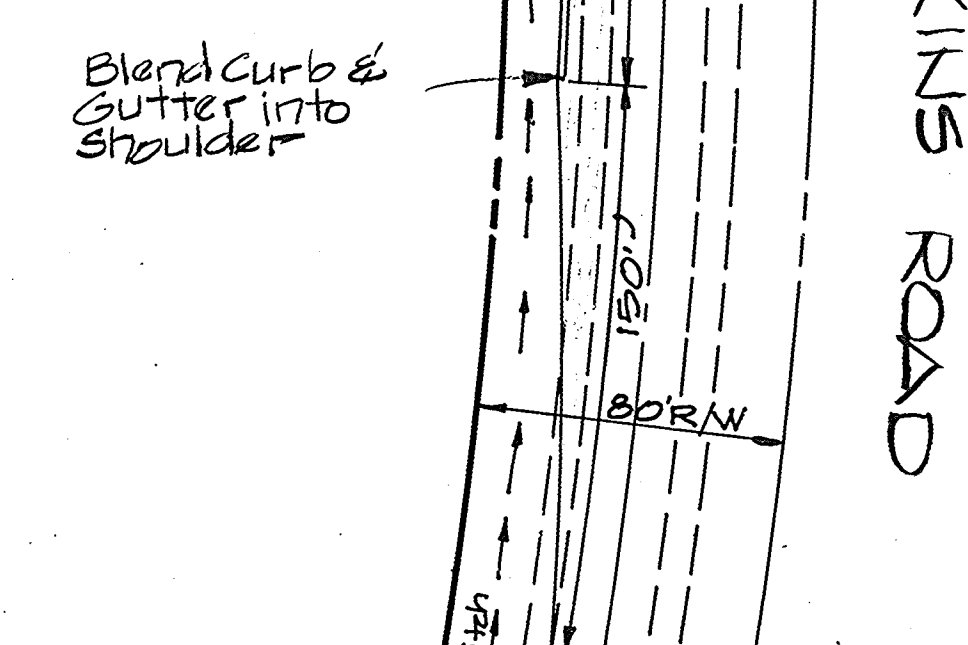
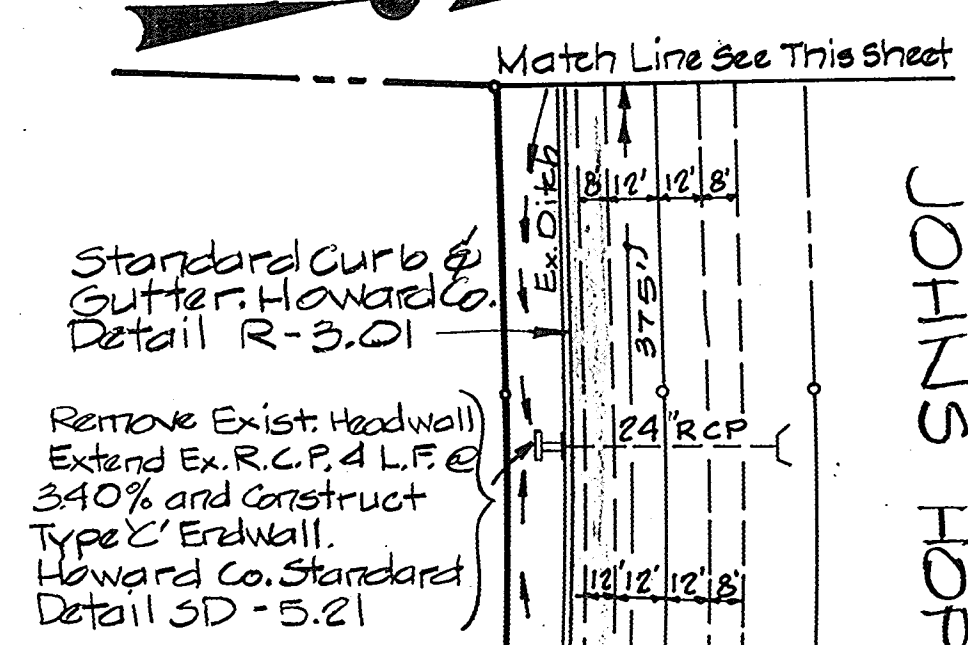
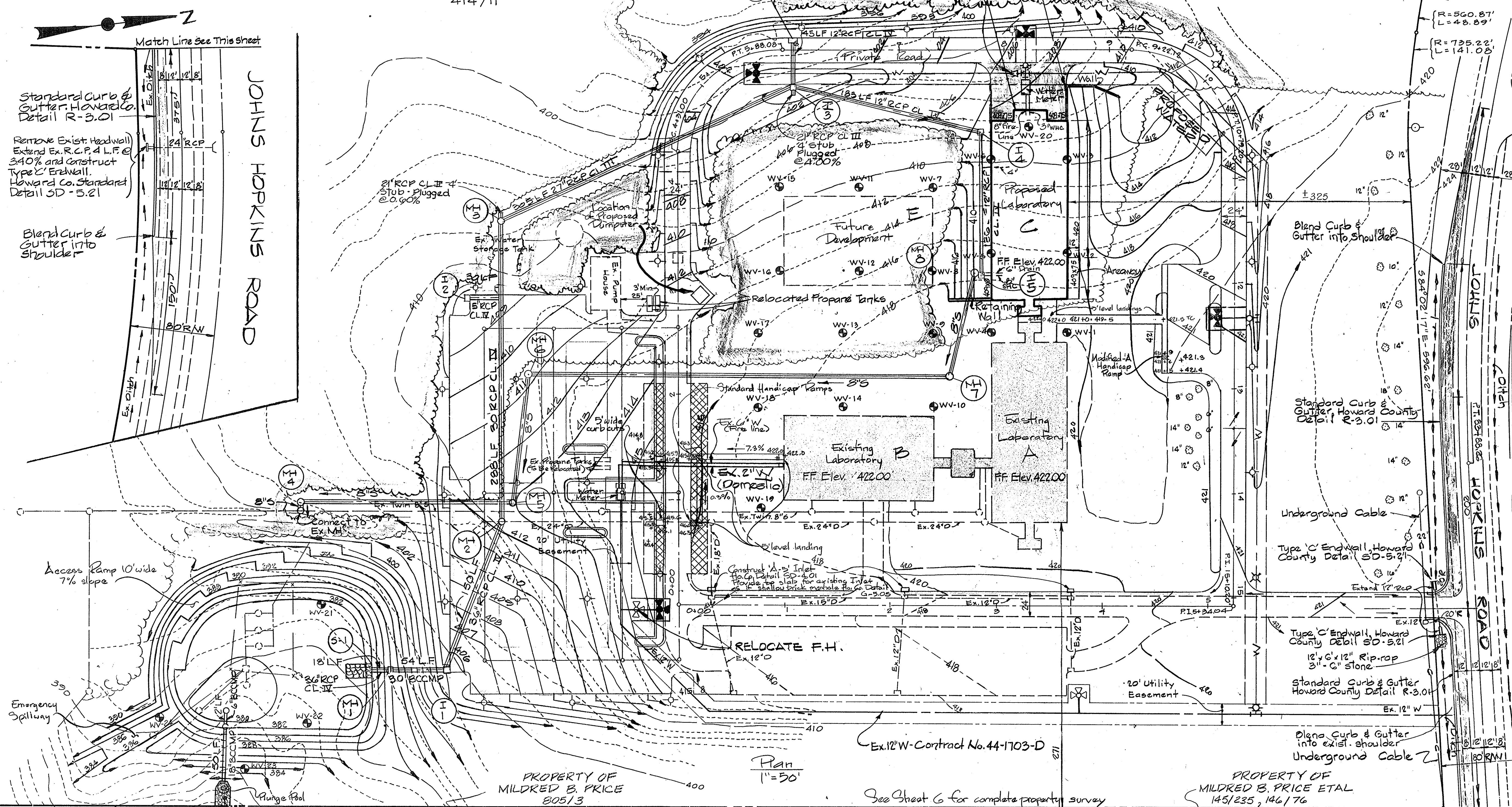
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT
MH-1	5'-0" shallow MH	385.00	382.00	381.50
MH-2	5'-0" STD. MH	412.40	393.47	393.25
MH-3	"	402.00	395.16	394.91
MH-4	4'-0" STD. MH	402.00	392.10	392.00
MH-5	"	412.80	397.10	396.90
MH-6	"	"	398.40	398.30
MH-7	"	"	399.30	399.10
MH-8	"	"	"	"
I-1	A-5 (SD-4.01)	406.00	392.45	392.30
I-2	A-5 (SD-4.01)	408.70	"	401.15
I-3	Type 'D'	400.00	396.46	396.26
I-4	Yard Inlet	409.00	403.37	403.12
I-5	Yard Inlet	409.00	"	404.00
I-6	Type 'S' Comb	401.08	"	397.00
S-1	2' Headwall	385.50	381.50	"

* ELIMINATE MANHOLE FRAME AND COVER, ACCESS TO MH-1 NOT REQUIRED

PROPERTY OF
MAPLE LAWN FARMS
894/596

PROPERTY OF
WEST VIRGINIA PULP & PAPER CO. 300
414/11

PROPERTY OF
MILDRED B. PRICE
805/13



CERTIFICATION 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 A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION"

Kenneth A. McCord
KENNETH A. MCCORD, P.E. NO. 1974
DATE: 12/27/88

CERTIFICATION BY THE OWNER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION"

Ronald G. Kirby
WESTVACO CORPORATION
DATE: 9/27/88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James W. Jones* DATE: 1/13/89

CHIEF, BUREAU OF *William E. Pugh* DATE: 1-10-89

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

CHIEF, DIVISION OF *Joseph M. Boyd* DATE: 1-19-89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *Frank J. Taylor* DATE: 1-20-89

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *Frank J. Taylor* DATE: 1/20/89

APPROVED
DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
HOWARD COUNTY, MARYLAND
DATE: 12-13-88

LEGEND

- Existing Paving
- - - Existing Contour
- ⊙ Light Standard
- ==== Proposed Paving
- XXXX Existing Paving (To be removed)

STORMWATER MANAGEMENT DATA @ POND				INTERIM STORMWATER MANAGEMENT DATA @ POND			
STORM	Qi (cfs)	Qout (cfs)	ELEVATION (ft)	Qi (cfs)	Qout (cfs)	ELEVATION (ft)	
2	5.83	1.09	381.82	6.86	1.18	381.97	
10	19.56	5.14	384.27	6.35	2.84	384.32	
100	38.51	18.00	385.50	40.52	20.32	385.57	

STORMWATER MANAGEMENT DATA @ DESIGN POINT				INTERIM STORMWATER MANAGEMENT DATA @ DESIGN POINT			
STORM	Qpre (cfs)	Qpost (cfs)	Qpre (cfs)	Qpost (cfs)			
2	8.27	0.21	8.27	1.32			
10	35.51	20.67	35.51	22.38			
100	76.19	40.28	76.19	42.74			

MISCELLANEOUS DATA
TOTAL DRAINAGE AREA --- 37 AC
DRAINAGE TO POND ONLY --- 21.7 AC

NOTE:
THE WATER AS PROPOSED WILL BE BUILT UNDER CONTRACT 44-1882-D

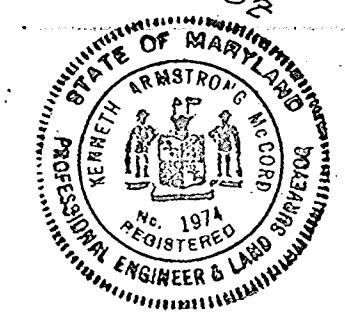
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Helm DATE: 1-4-89
SOIL CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *Robert J. Zehner* DATE: 1-4-89
HOWARD S.C.

WHITMAN, REQUARDT AND ASSOCIATES
Engineers
2315 SAINT PAUL STREET
BALI MORE, MARYLAND 21218



Kenneth A. McCord

WESTVACO
11011 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SITE DEVELOPMENT PLAN
WESTVACO LAUREL
RESEARCH LABORATORY EXPANSION

FIFTH ELECTION DISTRICT
TAX MAP 41

HOWARD COUNTY, MARYLAND
PARCEL 300

GRADING/UTILITY PLAN

REVISIONS
12-14-88 Revised Grading @ Retaining Wall, Storm Sewer & Storm Drain.
3-27-89 Relocate dumpster tanks - Jim Dash
3-31-89 change propane to oxygen - As directed
Dimension Propane Tank 4/5/89

SCALE: 1" = 50'
SHEET NO. 3
DATE: 9-16-88

DRAWING
3

500-89-60

12/15/88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY, DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James M. ...* DATE: 1-13-89

CHIEF, BUREAU OF ENGINEERING: *William ...* DATE: 1-10-88

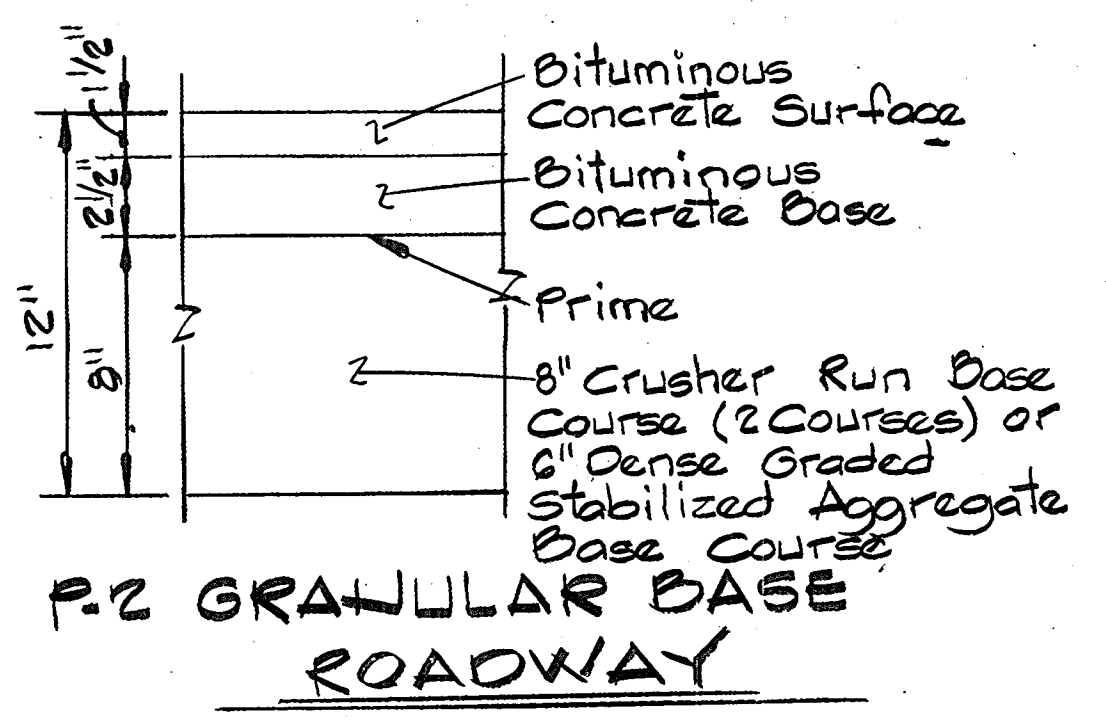
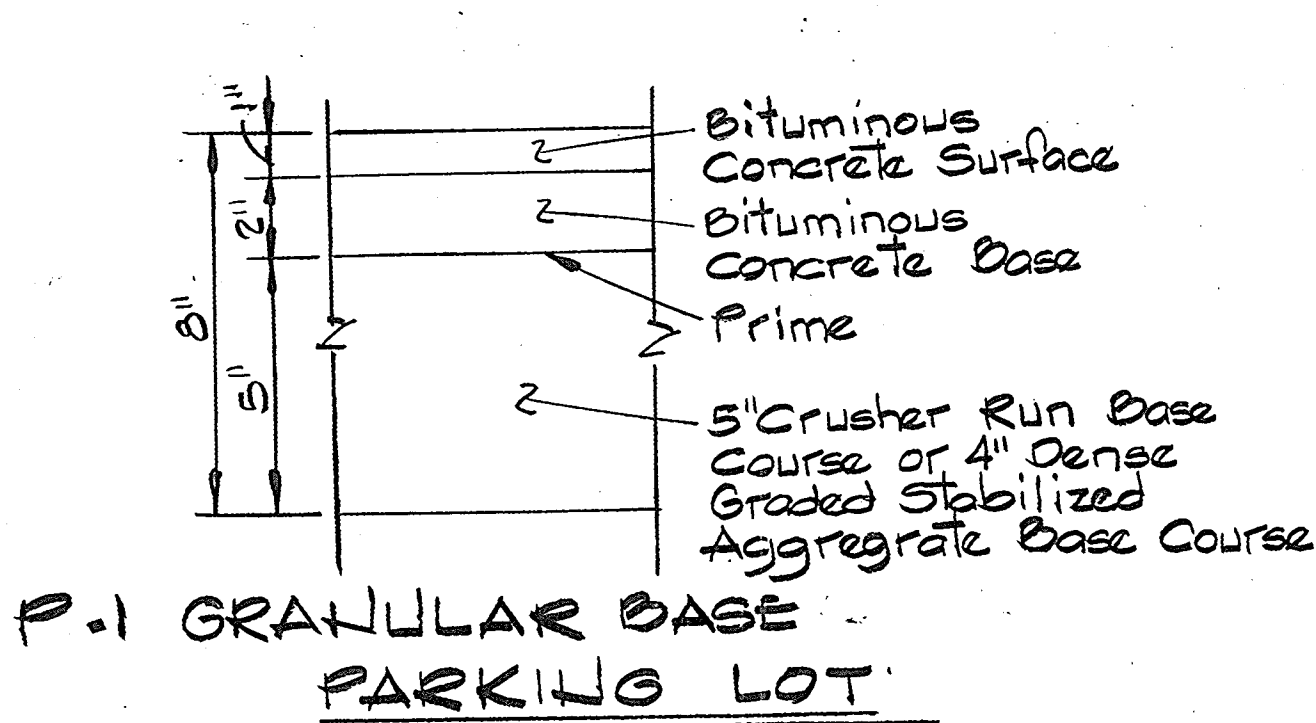
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: *John M. ...* DATE: 1-19-89

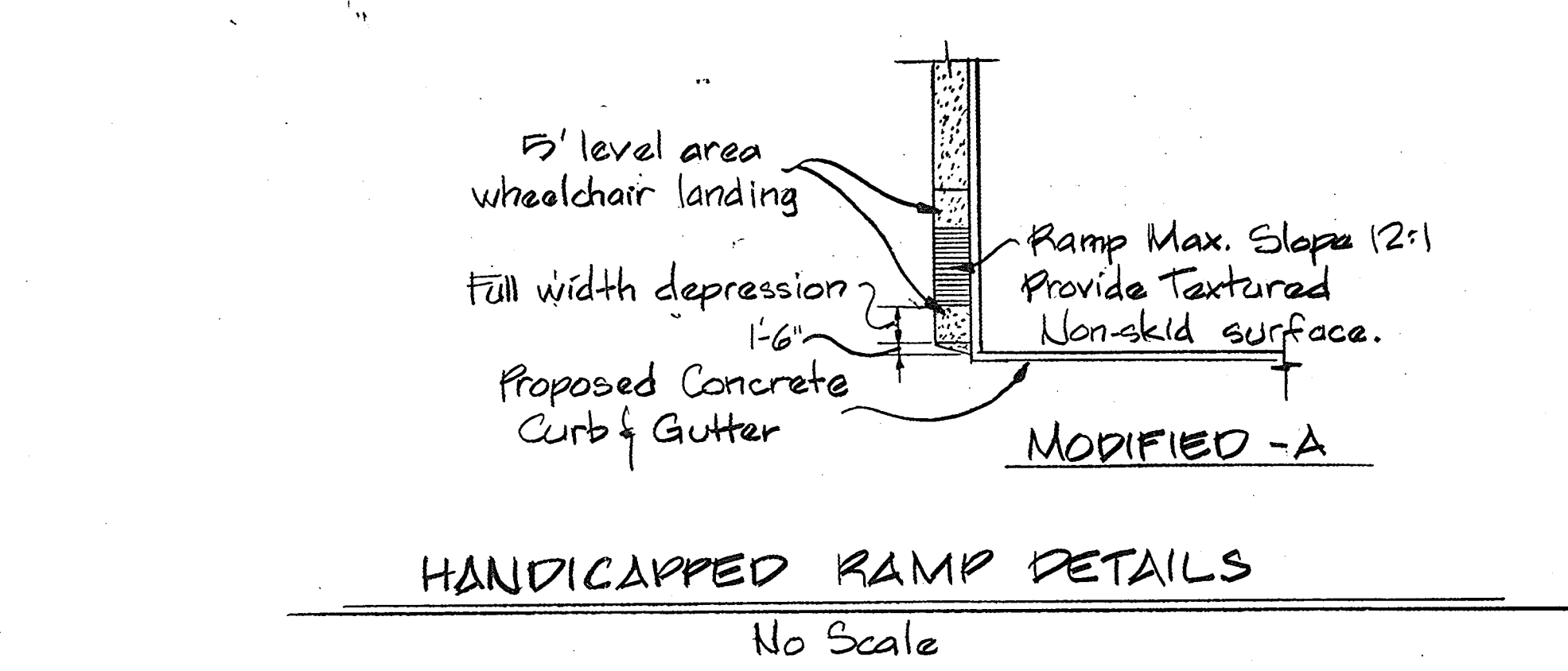
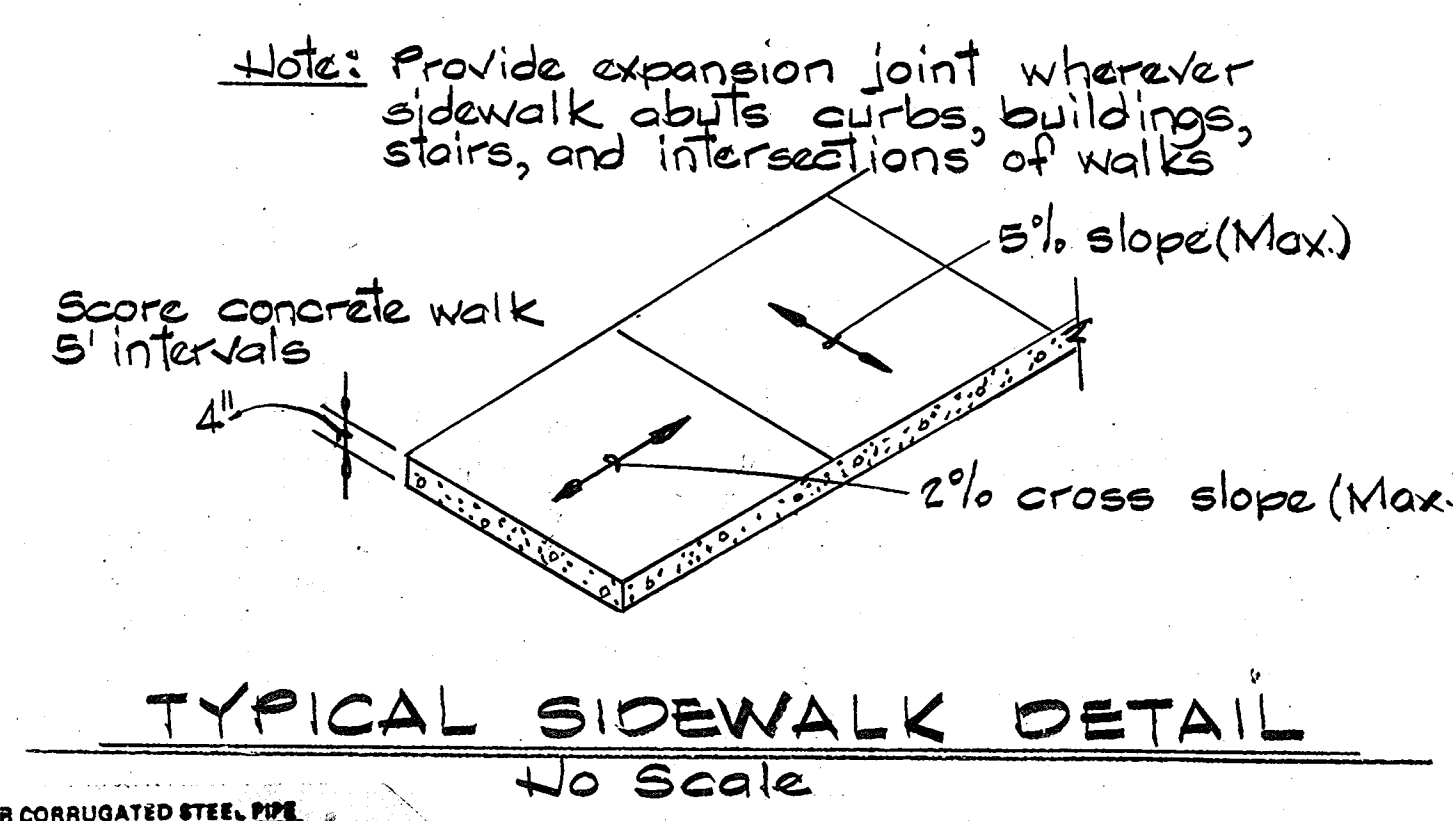
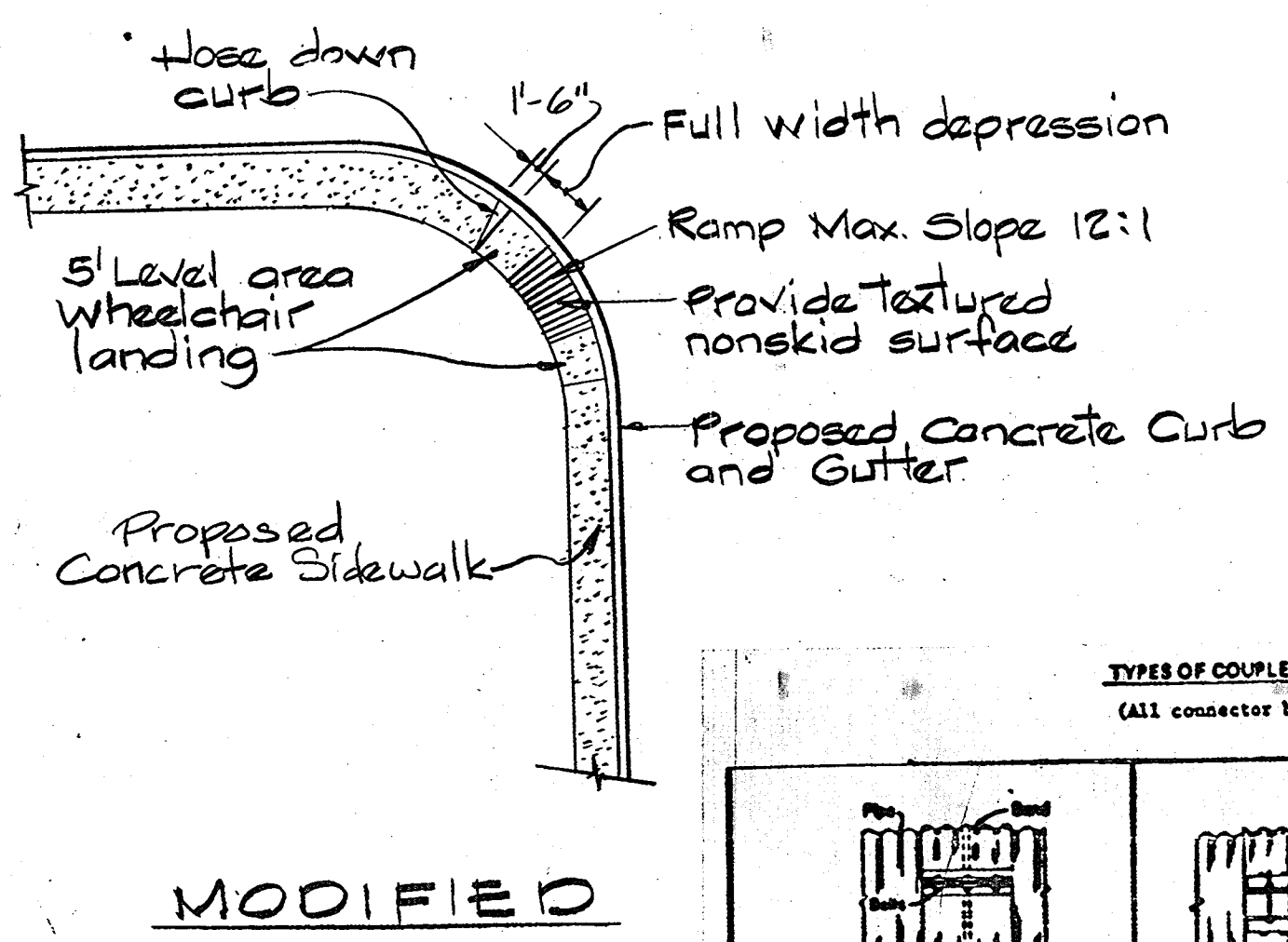
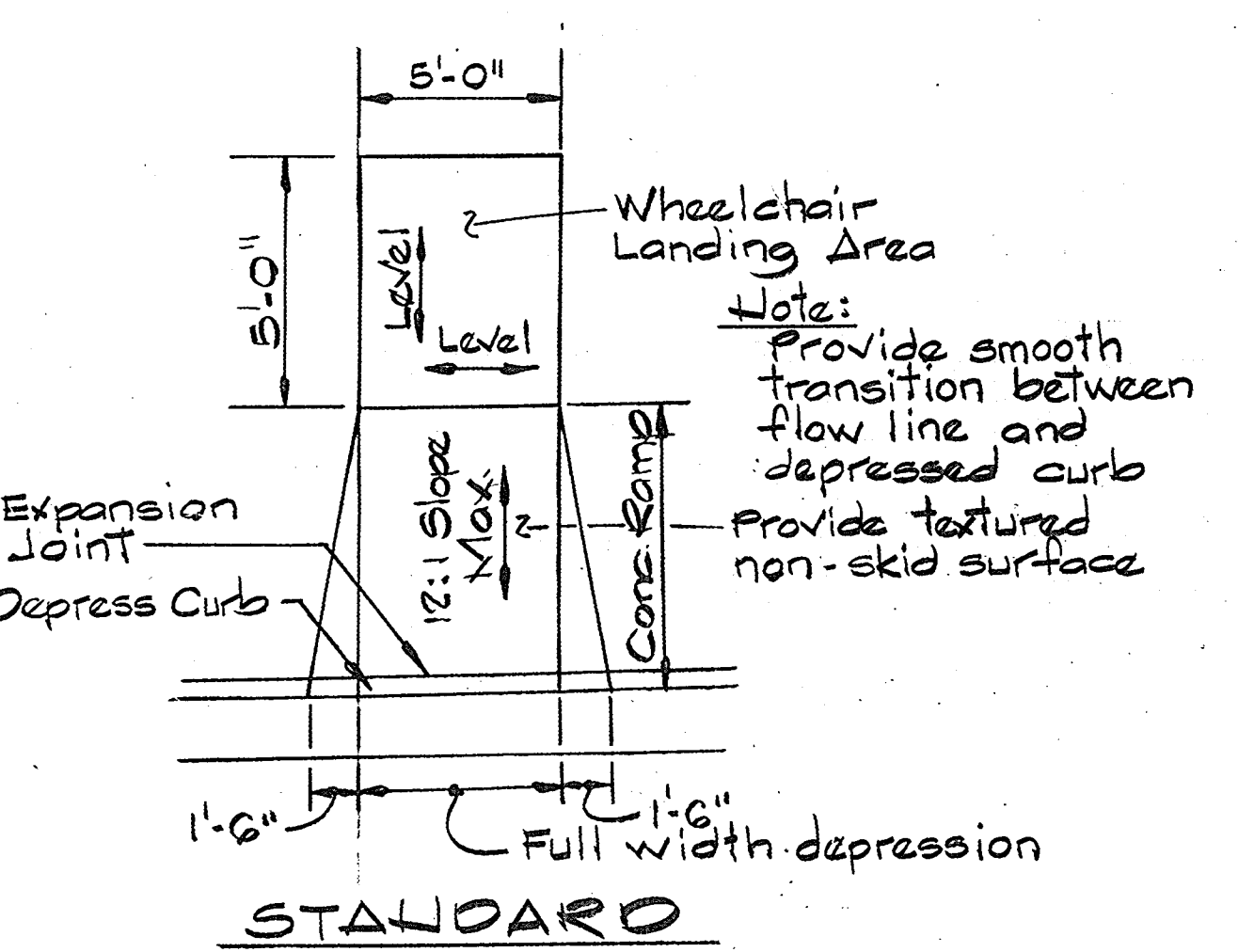
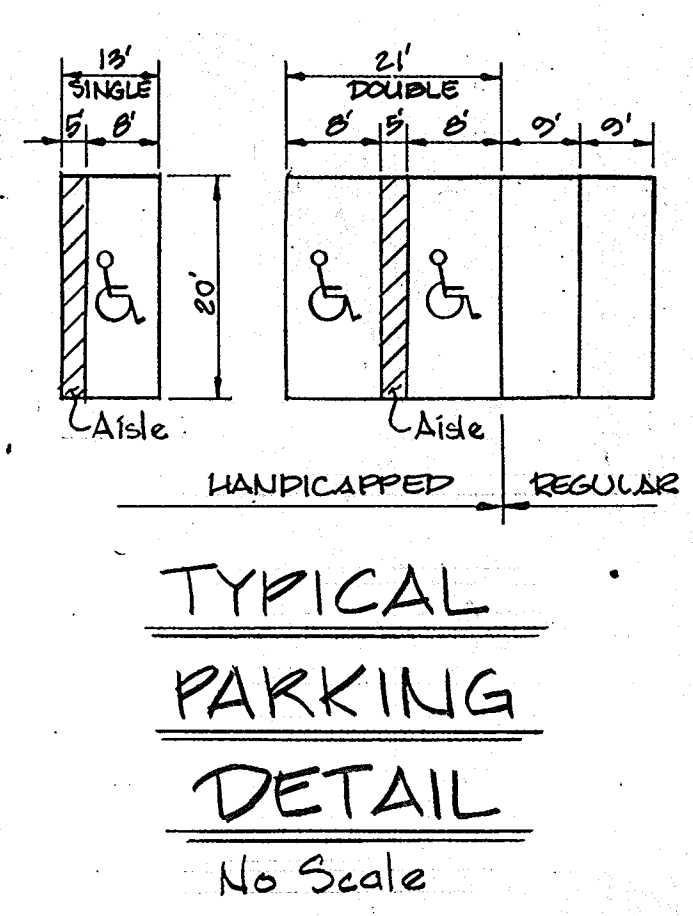
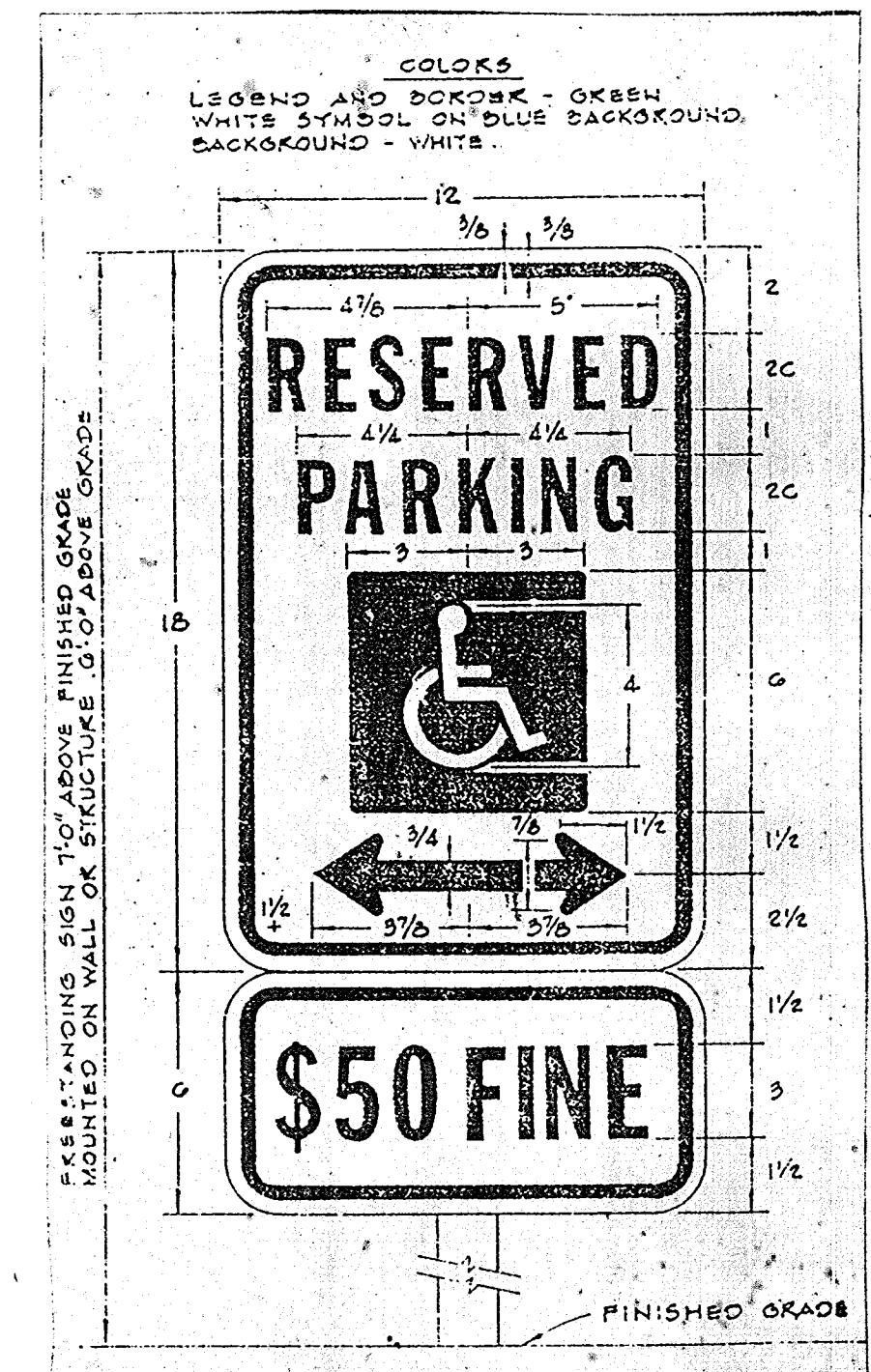
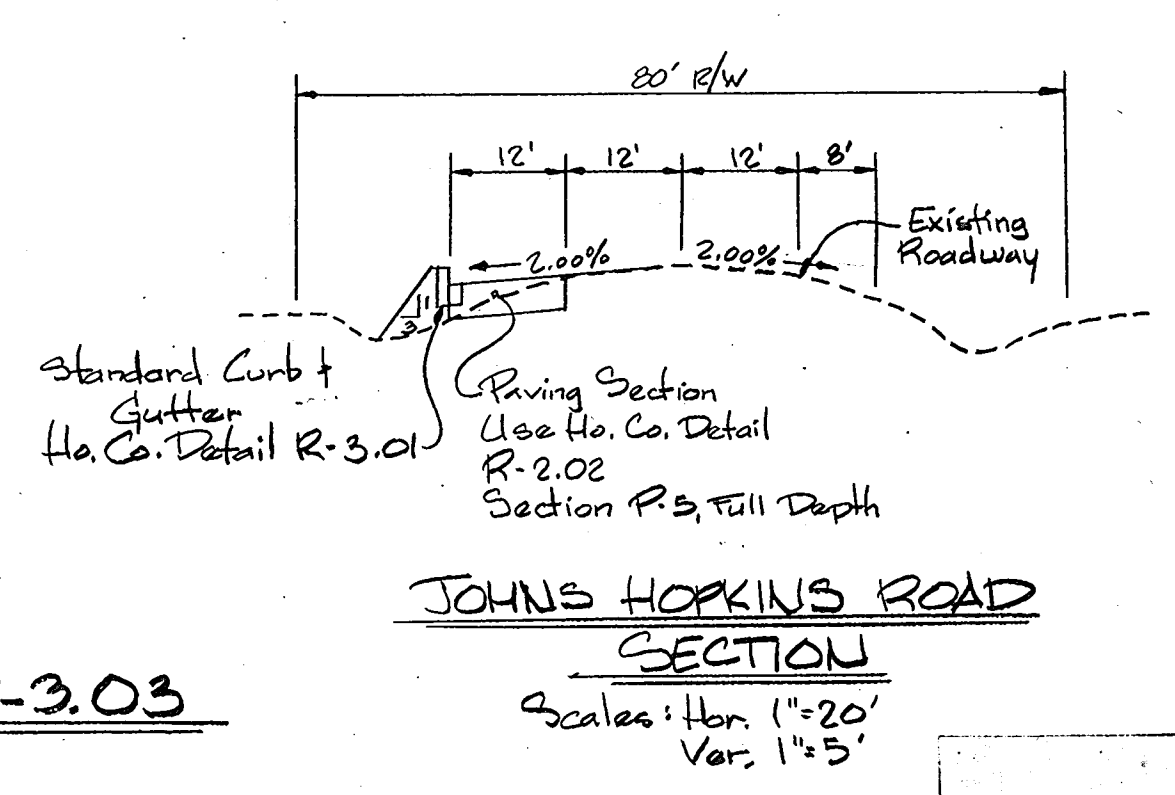
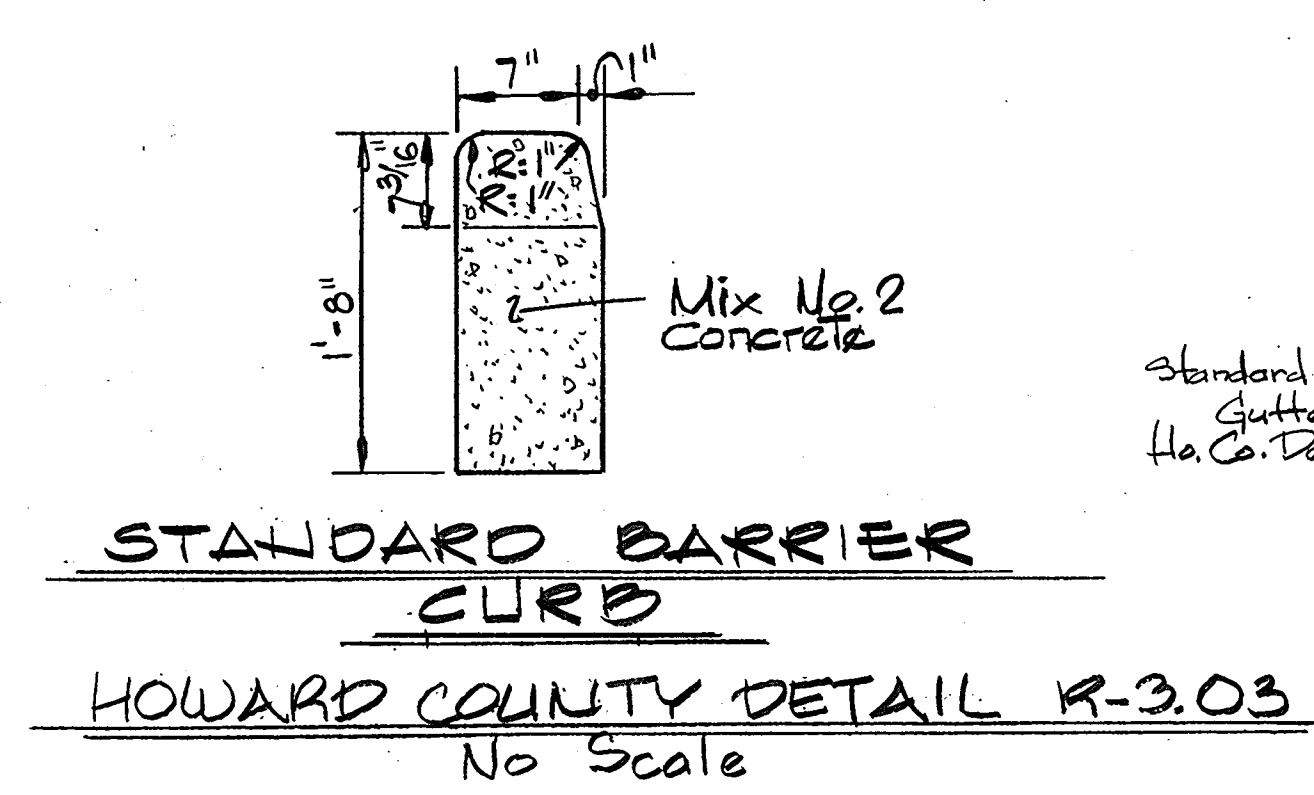
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *...* DATE: 1-20-89

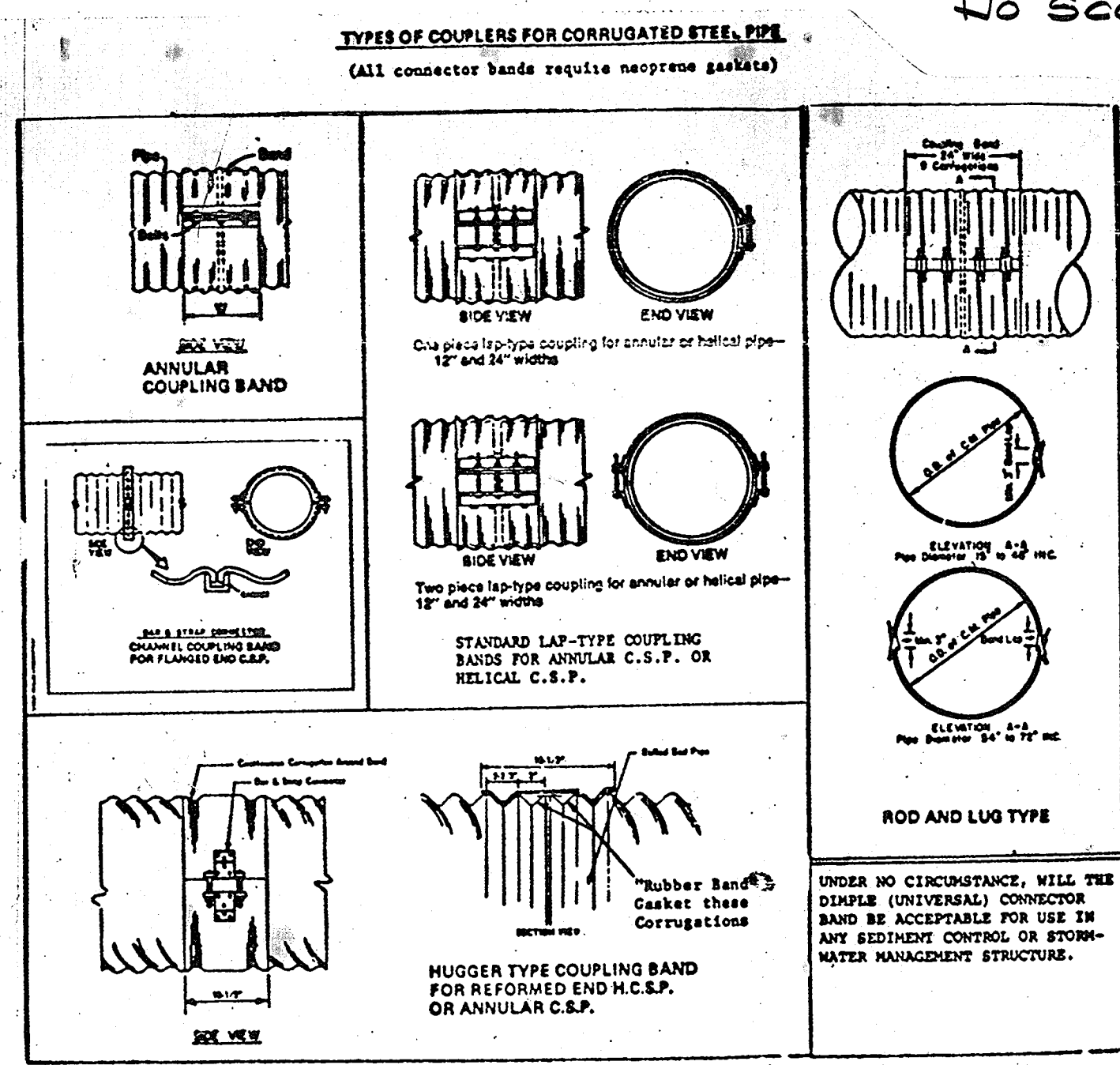
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *...* DATE: 1/20/89



TYPICAL PAVING SECTION
No Scale

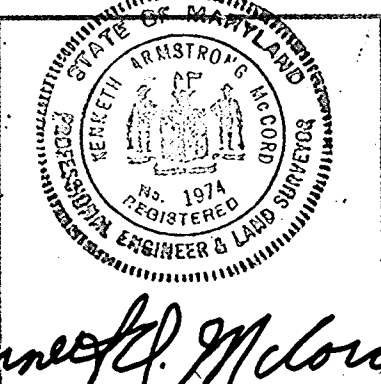


HANDICAPPED RAMP DETAILS
No Scale



HANDICAPPED PARKING SIGN
No Scale

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218



WESTVACO
11011 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SITE DEVELOPMENT PLAN
WESTVACO LAUREL
RESEARCH LABORATORY EXPANSION

FIFTH ELECTION DISTRICT
TAX MAP 41

HOWARD COUNTY, MARYLAND
PARCEL 300

SITE DETAILS

REVISIONS

Scale: None

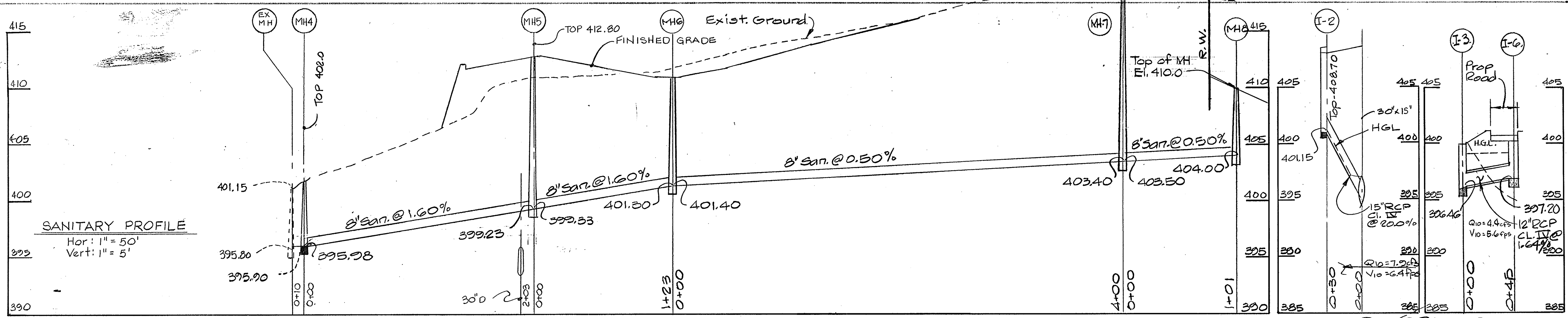
DRAWING

SHEET NO. 4

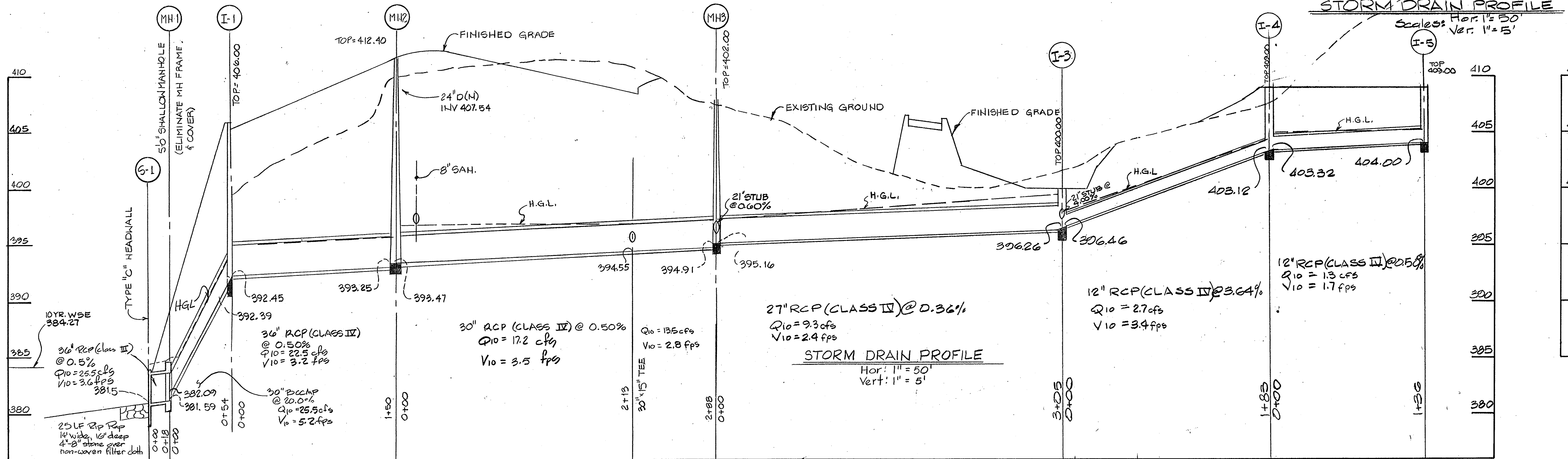
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OF 11

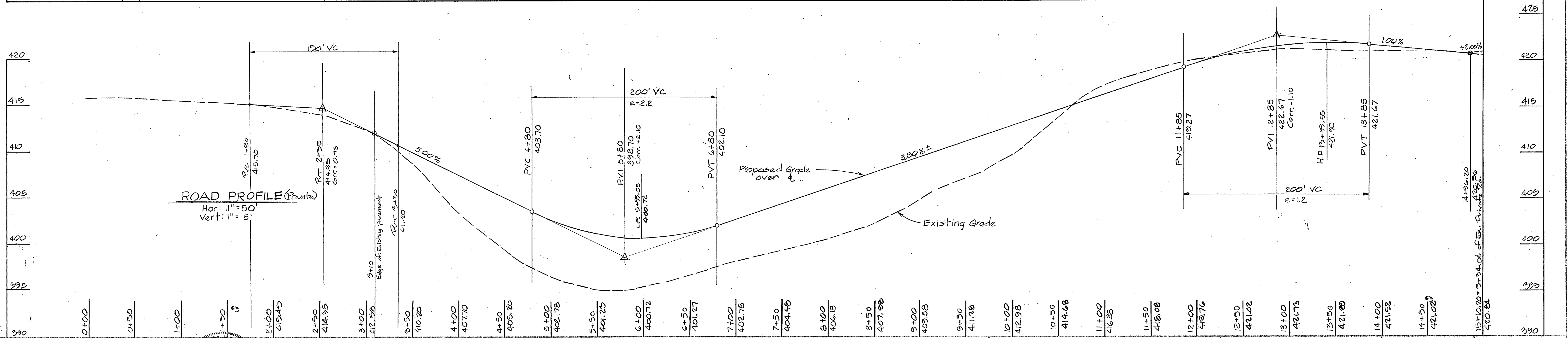
DATE: 9-16-88



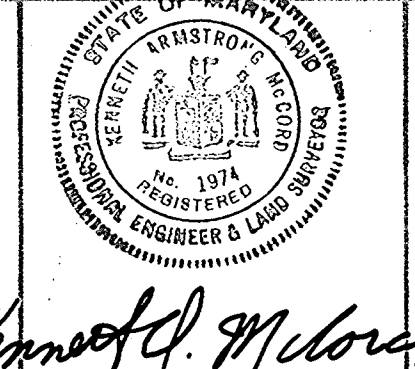
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 DIRECTOR: James M. Lane DATE: 1/13/89
 CHIEF, BUREAU OF ENGINEERING: William E. Reilly DATE: 1-10-89
 APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: James M. Long DATE: 1-19-89
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
 PLANNING DIRECTOR: [Signature] DATE: 1-20-89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: [Signature] DATE: [Blank]



APPROVED: DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT HOWARD COUNTY, MARYLAND
 DATE: 12-13-88
 Note: Remove existing headwalls before extending 12" RCP in each direction.
 Type "C" Endwall Ho.C. Detail SD-5-21
 Ex. Ditch Invert
 12" RCP (CLASS III) @ 0.60% (Nominal Flow)
 Existing 12" RCP @ 0.60%
 12" RCP (CLASS III) @ 0.60% (Nominal Flow)



WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 2315 SAINT PAUL STREET
 BALTIMORE, MARYLAND 21218



WESTVACO
 11011 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20707

SITE DEVELOPMENT PLAN
 WESTVACO LAUREL
 RESEARCH LABORATORY EXPANSION
 FIFTH ELECTION DISTRICT
 TAX MAP 41
 HOWARD COUNTY, MARYLAND
 PARCEL 300

PROFILES
 REVISIONS
 12-12-88 = Revised San. Sewer Profile
 3-12-89 = Revised MH-8 Top Elevation

Scale: As shown
 SHEET NO. 5
 OF 11
 DATE: 9-16-88
 DRAWING 5

CURVE DATA						
No.	Rad.	Arc.	Δ	Tan.	CHD	CHD Bearing
①	560.87'	48.89'	4°59'38"	24.46'	48.87'	S 70°02'49" E
②	735.22'	141.08'	10°59'39"	70.76'	140.86'	S 78°32'27.5" E

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James H. ...* DATE: 1/18/89

CHIEF, BUREAU OF ENGINEERING: *...* DATE: 1-10-89

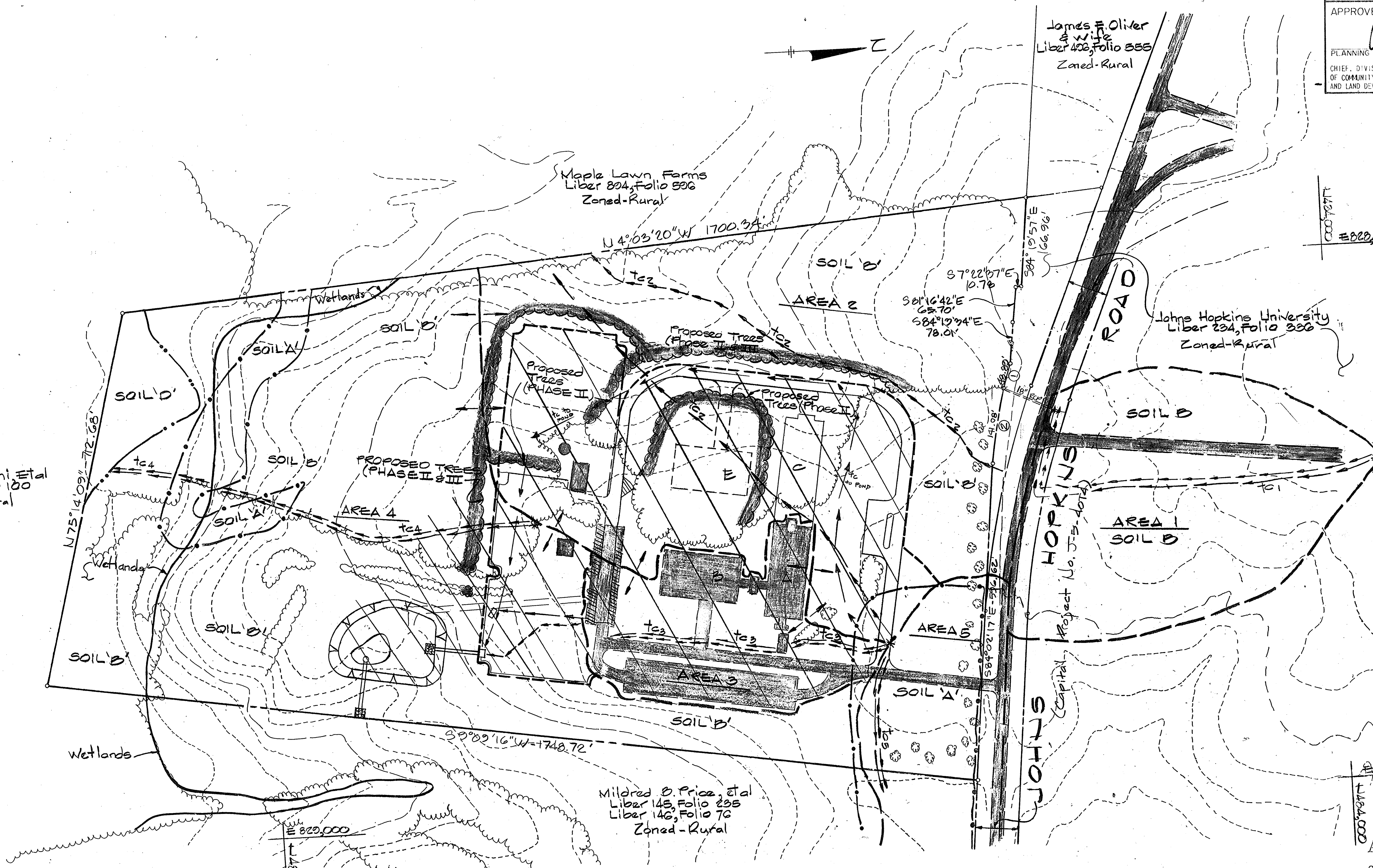
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: *...* DATE: 1-19-89

APPROVED: HOWARD COUNTY
OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *...* DATE: 1-20-89

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *...* DATE: 1-20-89

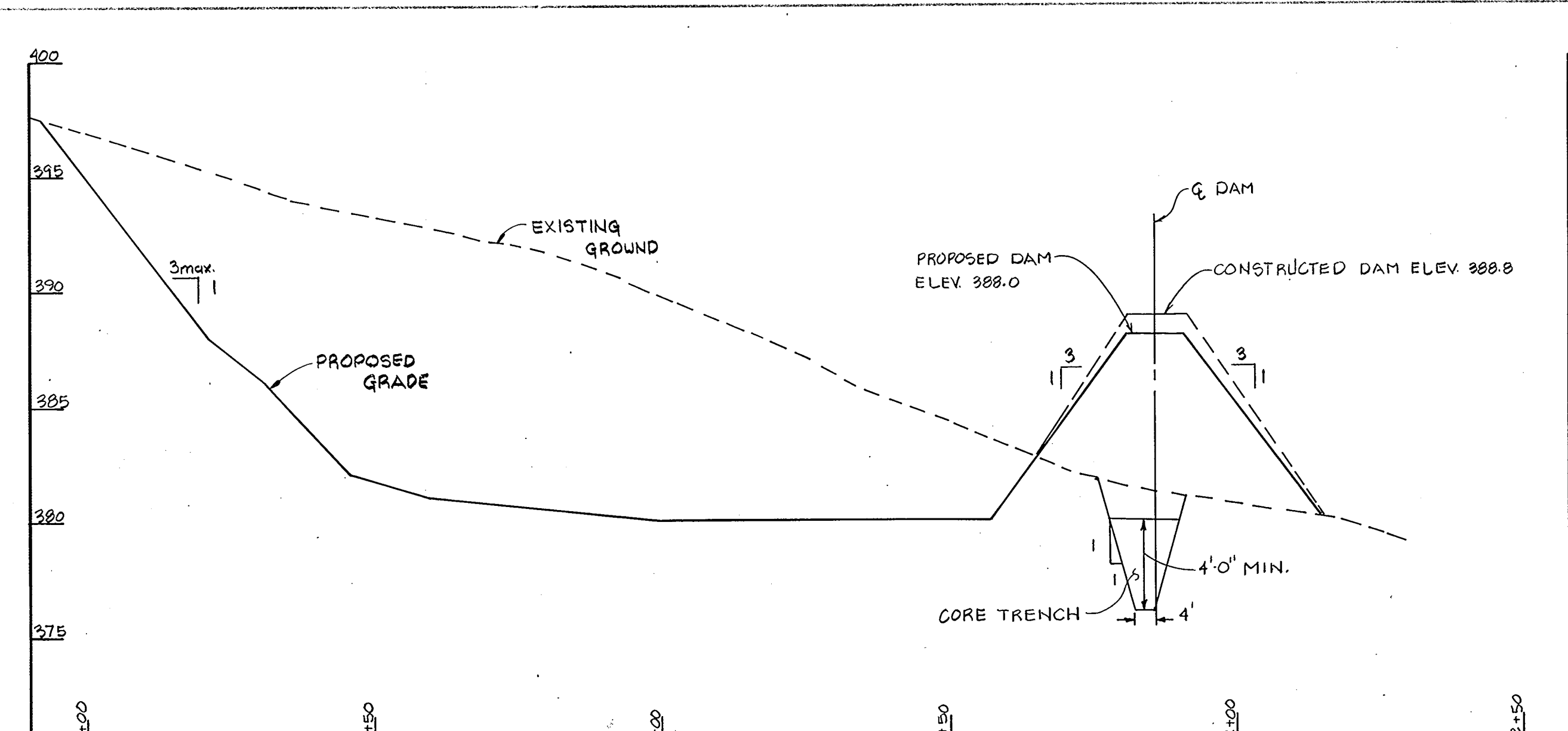
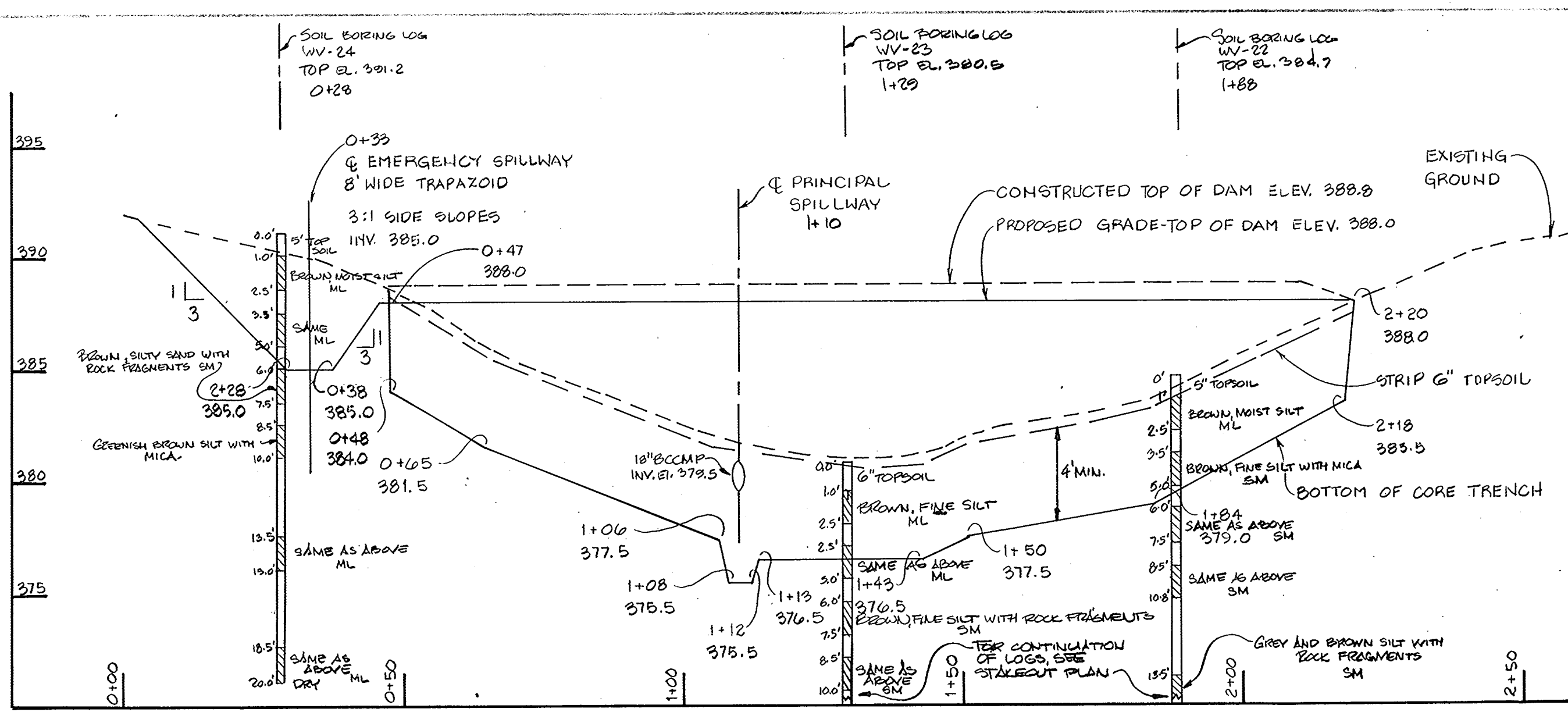


- LEGEND**
- Soil 'A' Boundary
 - Soil 'D' Boundary
 - Existing
 - Proposed (Phase II)
 - Future Proposed (Phase III)
 - Existing paving to be removed for proposed
 - - - Existing Drainage Area
 - - - Proposed Drainage Area
 - - - Existing Tc
 - - - Proposed Tc
 - Existing Trees
 - Proposed Trees
 - Drainage Area to Pond

Note: Drainage Area reflect field Conditions

PLAN
Scale: 1"=100'

APPROVED
DIRECTOR OF
COMMUNITY PLANNING
& LAND DEVELOPMENT
HOWARD COUNTY,
MARYLAND
DATE: 12-13-88
LKS



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James M. ...* DATE: 1/13/89

CHIEF, BUREAU OF *...* DATE: 1-10-89

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

... DATE: 1-19-89

APPROVED: HOWARD COUNTY
OFFICE OF PLANNING AND ZONING

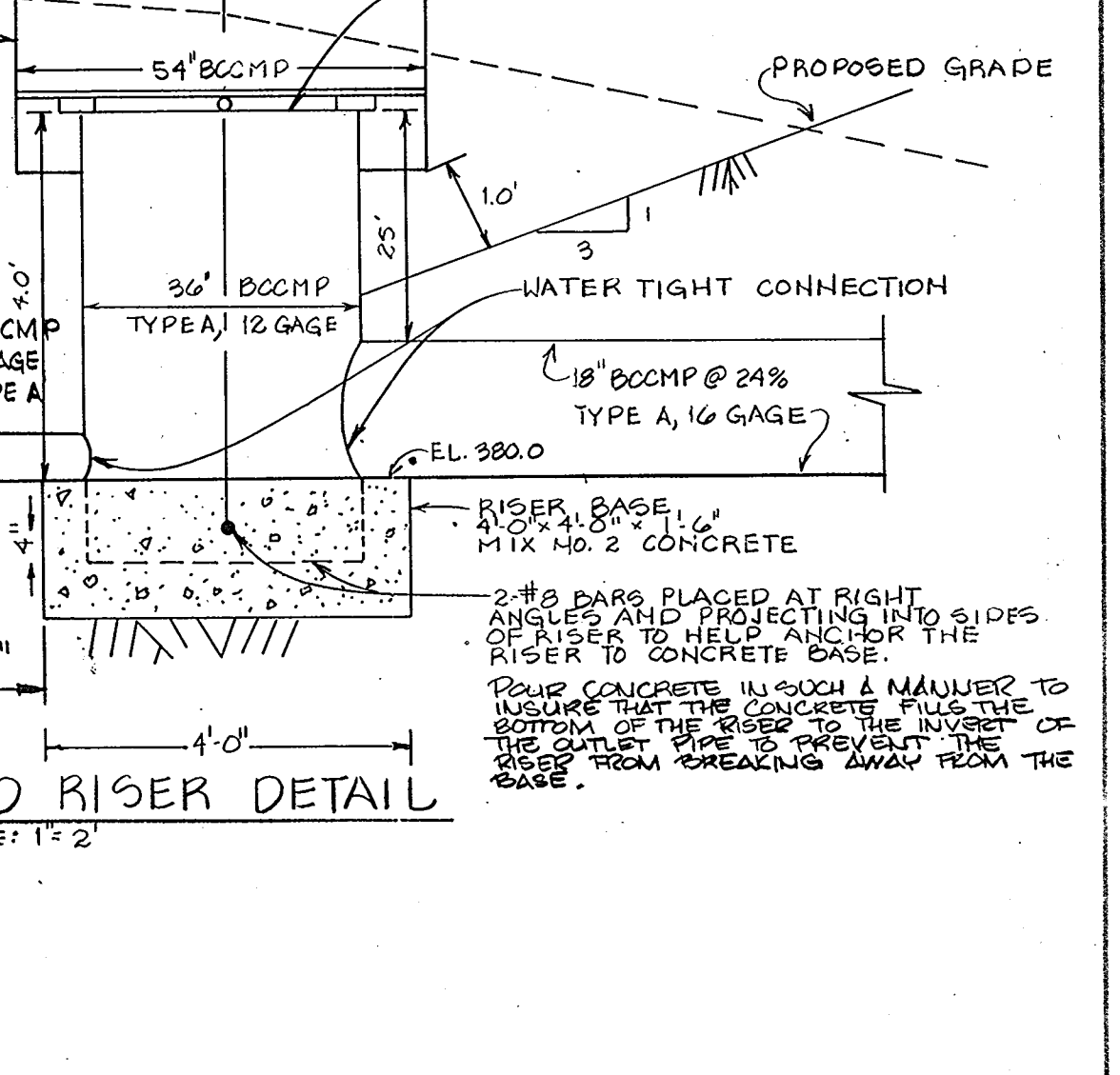
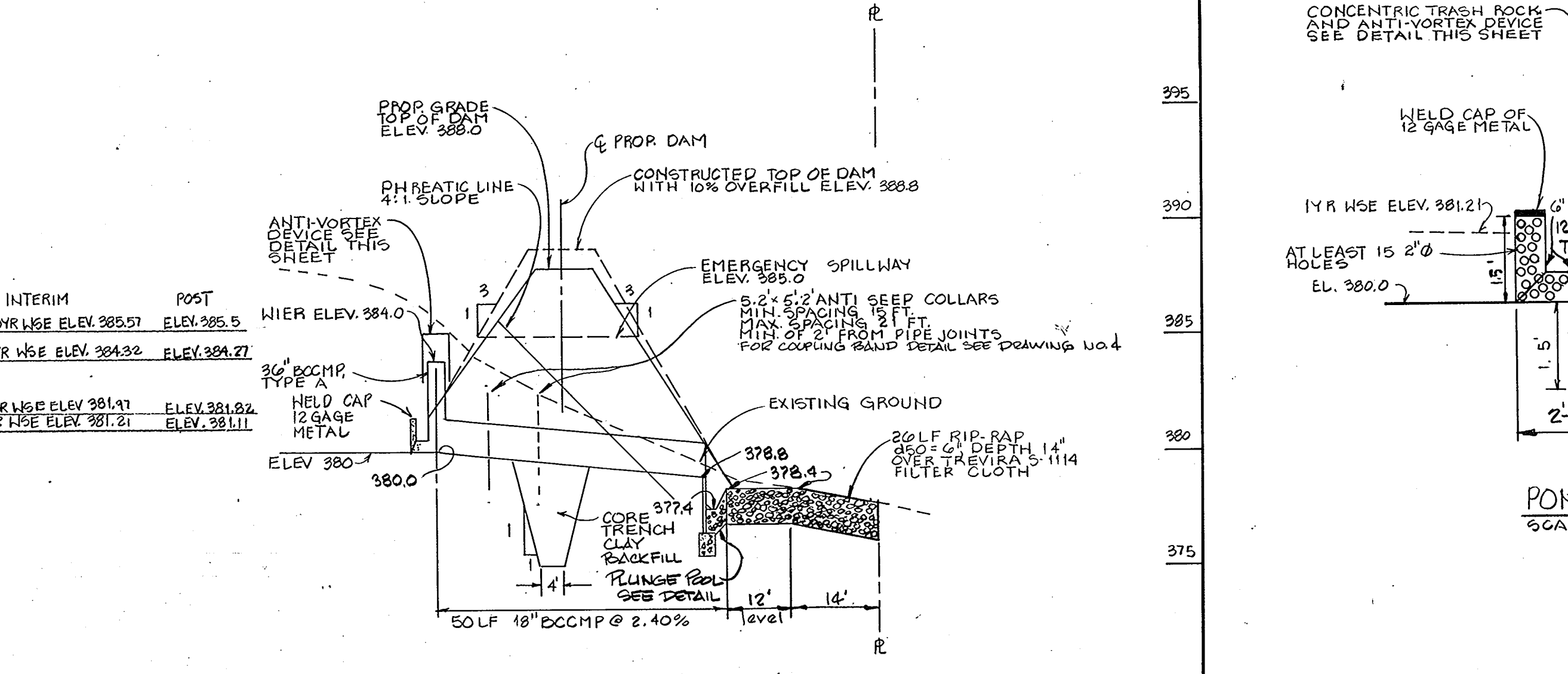
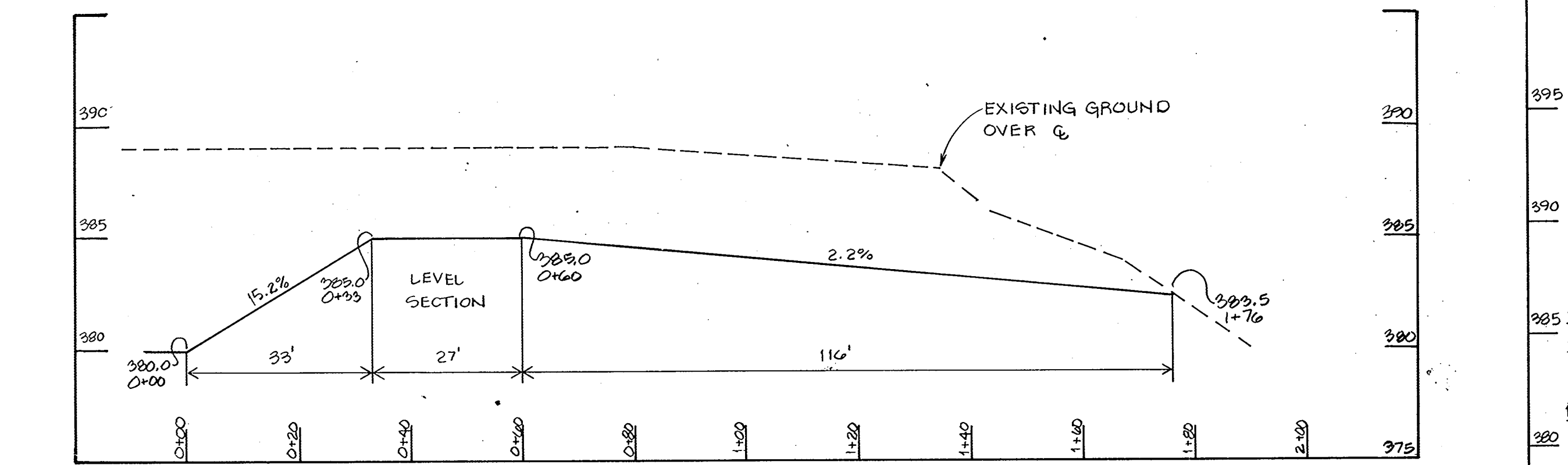
... DATE: 1-20-89

CHIEF, DIVISION OF COMMUNITY PLANNING
AND LAND DEVELOPMENT

... DATE: 1/20/89

Soil boring logs on Stakeout Plan, Drawing No. 2
PROFILE ALONG Q OF DAM
SCALE: HOR. 1" = 20'
VER. 1" = 5'

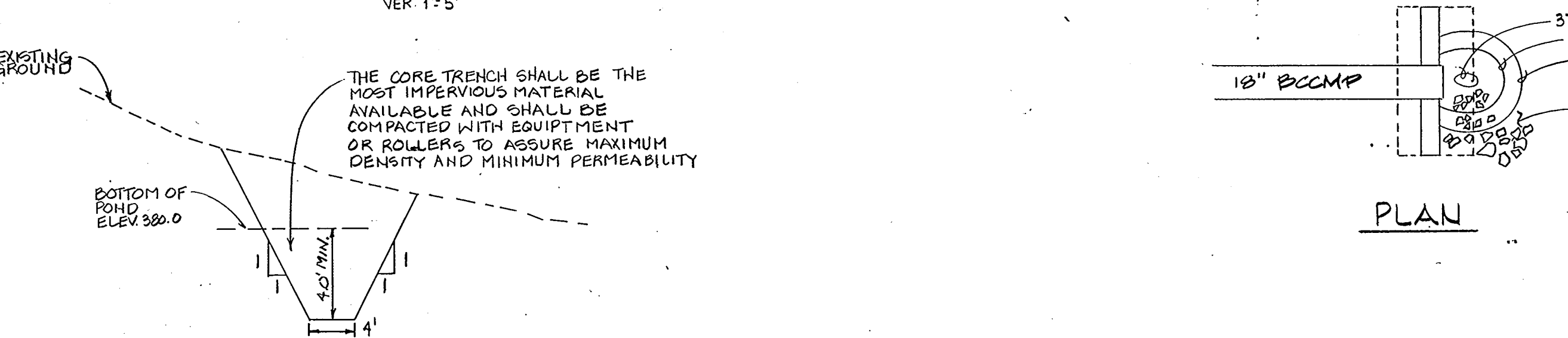
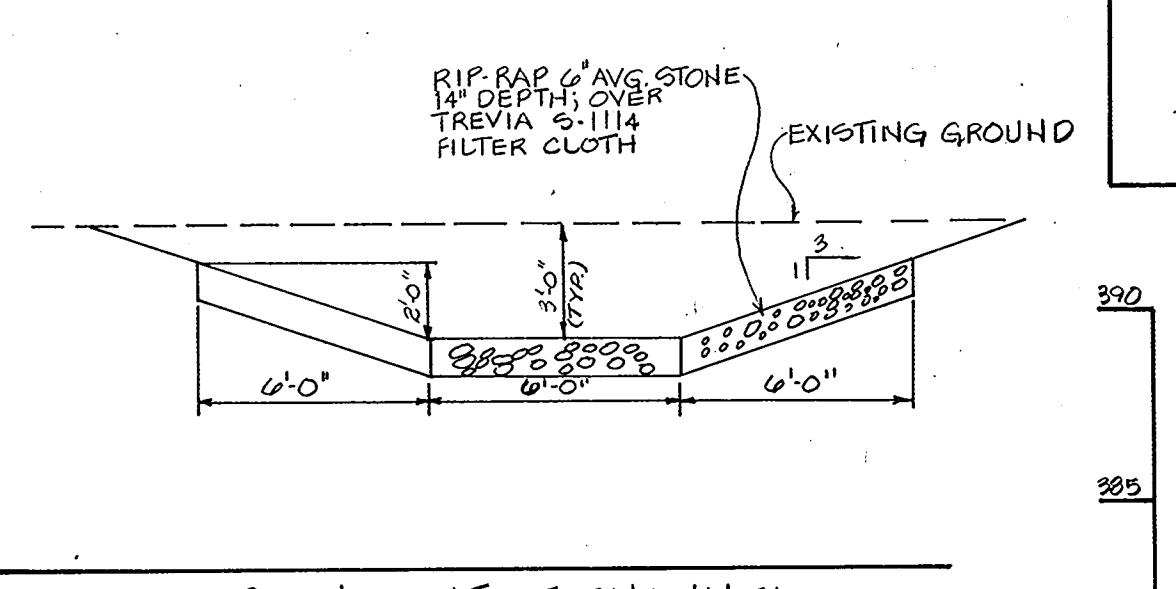
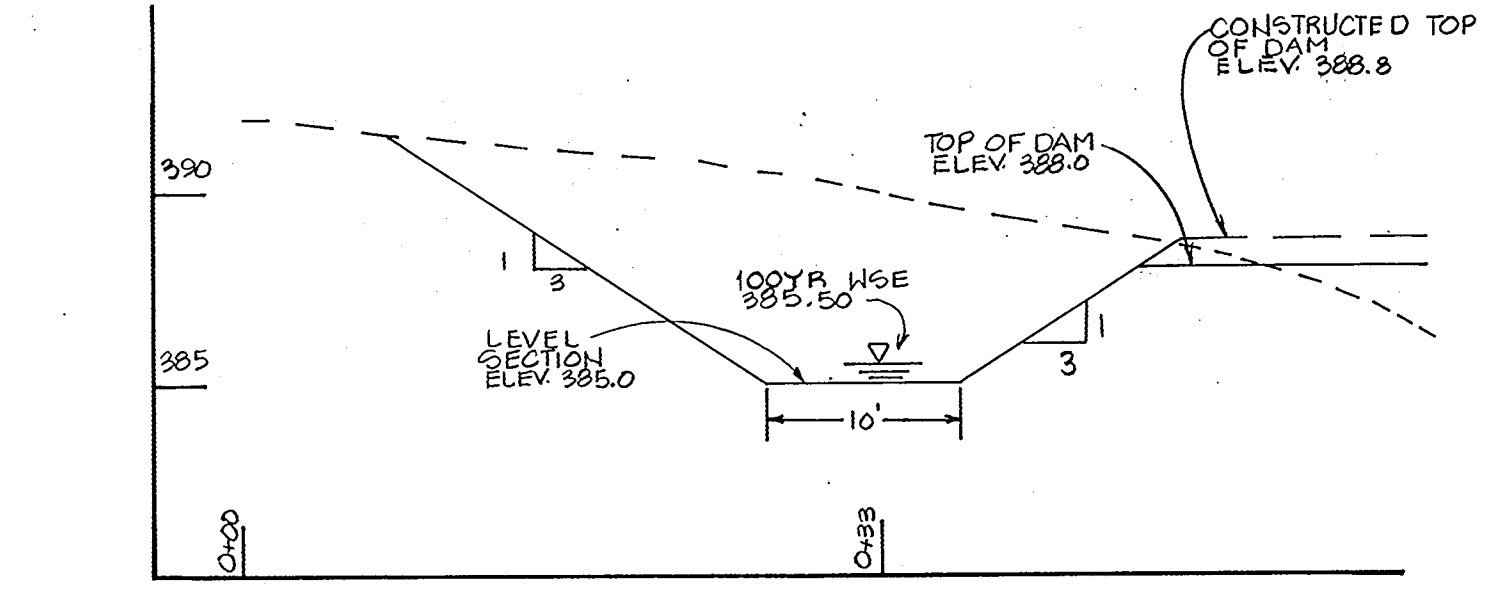
TYPICAL CROSS SECTION OF STORMWATER MANAGEMENT POND SECTION A-A
SCALE: HOR. 1" = 20'
VER. 1" = 5'



PROFILE Q EMERGENCY SPILLWAY
SCALE: HOR. 1" = 20'
VER. 1" = 5'

PROFILE Q PRINCIPAL SPILLWAY
SCALE: HOR. 1" = 20'
VER. 1" = 5'

POND RISER DETAIL
SCALE: 1" = 2'



APPROVED: DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
HOWARD COUNTY MARYLAND
DATE: 12-13-88
AKS

EMERGENCY SPILLWAY AT LEVEL SECTION
(OUTLET CHANNEL CROSS-SECTION)
SCALE: HOR. 1" = 10'
VER. 1" = 5'

PRINCIPAL SPILLWAY OUTLET CHANNEL
SCALE: 1" = 5'

CORE TRENCH DETAIL (TYPICAL CROSS-SECTION)
SCALE: VER. 1" = 5'
HOR. 1" = 10'

PLAN

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.

APPROVED: *Robert W. Zehm* 1-4-89
HOWARD S.C. DATE

CERTIFICATION BY THE ENGINEER

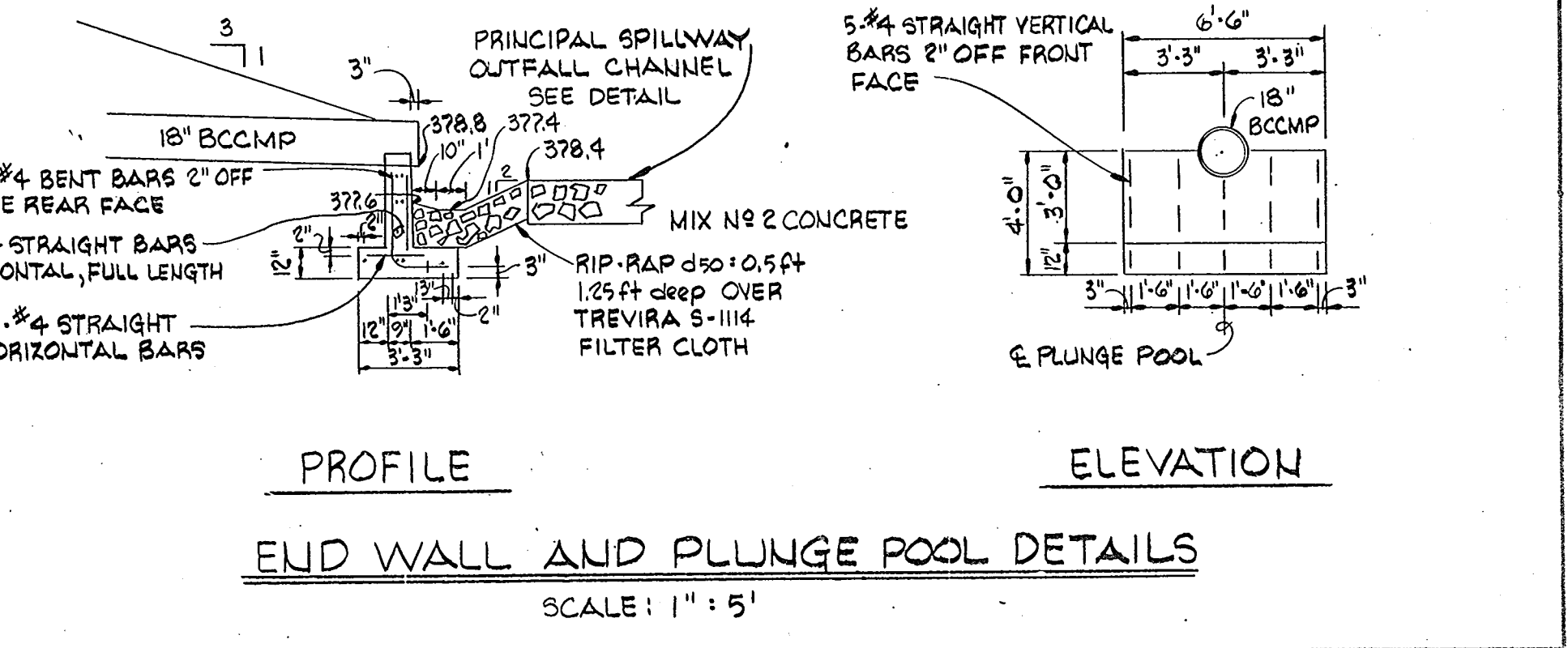
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

Kenneth A. McCord
KENNETH A. MCCORD, P.E. NO. 1974
12/27/88 DATE

CERTIFICATION BY THE OWNER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY, DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

...
WESTVACO CORPORATION
12/27/88 DATE



END WALL AND PLUNGE POOL DETAILS
SCALE: 1" = 5'

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

DATE: 1-4-89
PLAN NUMBER

WESTVACO
11011 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SITE DEVELOPMENT PLAN
WESTVACO LAUREL
RESEARCH LABORATORY EXPANSION

FIFTH ELECTION DISTRICT
TAX MAP 41

HOWARD COUNTY, MARYLAND
PARCEL 300

S.W.M. DETAILS

REVISIONS

SCALE: As Shown

SHEET NO. 7
OF 11

DATE: 9-16-88

DRAWING 7

SOIL CONSERVATION SERVICE
MARYLAND
CONSTRUCTION SPECIFICATIONS
FOR PONDS

THESE SPECIFICATIONS ARE APPROPRIATE TO PONDS WITHIN THE SCOPE OF THIS STANDARD FOR PRACTICE 319.

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 BIRDS 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, AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. CHANNELS AND TRENCHES SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE.

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, AGG., RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR AN 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 TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHERPFOOT, RUBBER TINED 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.

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 REPAIRED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS ARE COMMERCIALY AVAILABLE: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

MATERIALS - (ALUMINIZED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274-791 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC. MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE LESS THAN 9 AND GREATER THAN 4.

2. **CONNECTIONS** - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. WATERTIGHT COUPLING BANDS OR FLANGES SHALL BE USED AT ALL JOINTS IN 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.

4. **LAYING PIPE** - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH THE LONGITUDINAL LAPS AT THE SIDES.

5. **BACKFILLING** SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.

6. **OTHER DETAILS** (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE

1. **MATERIALS** - REINFORCED CONCRETE PIPE SHALL HAVE A RUBBER GASKET JOINT AND SHALL EQUAL OR EXCEED ASTM SPECIFICATION C-361. AN APPROVED EQUIVALENT IS AWWA SPECIFICATION C-301.

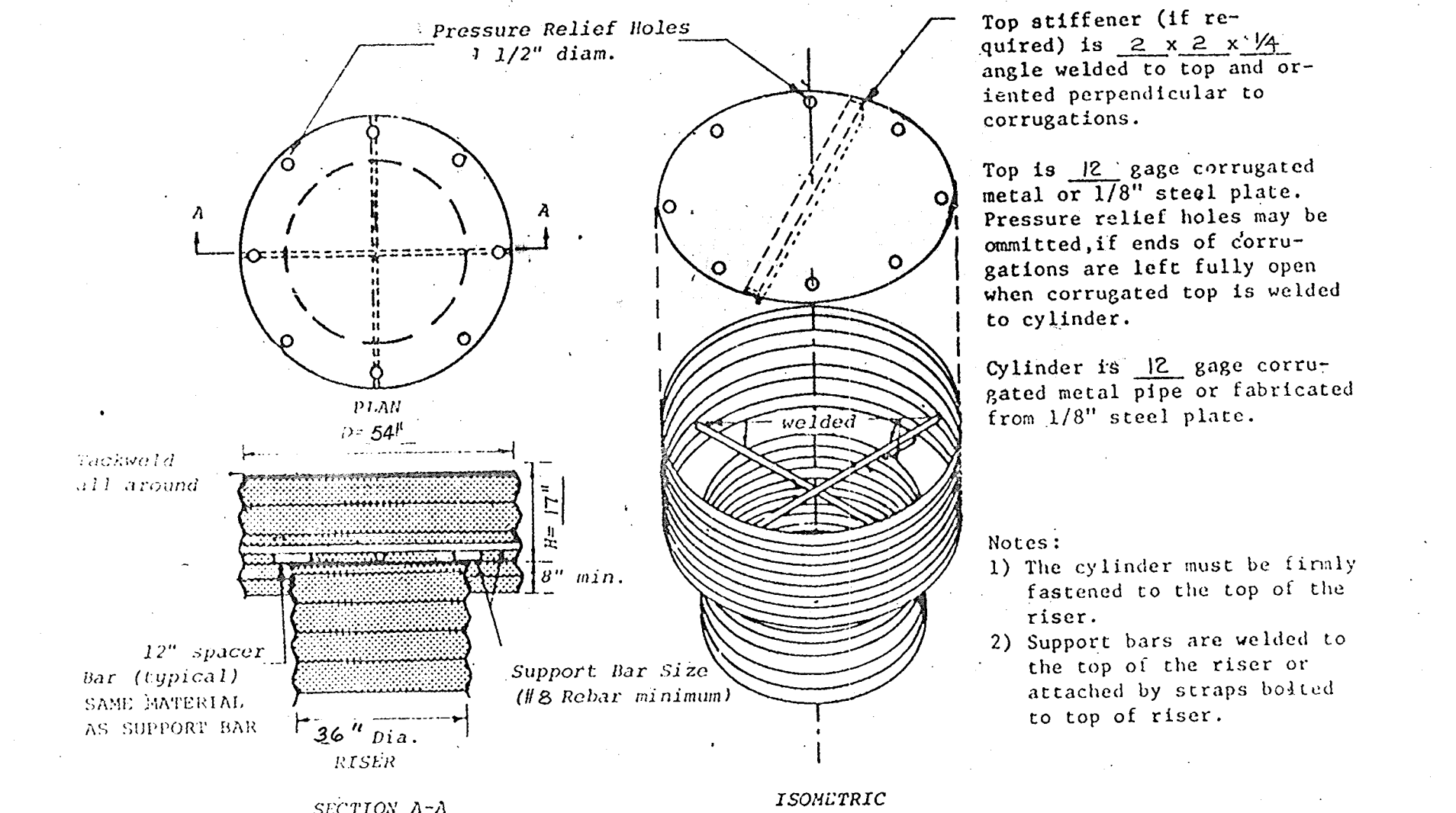
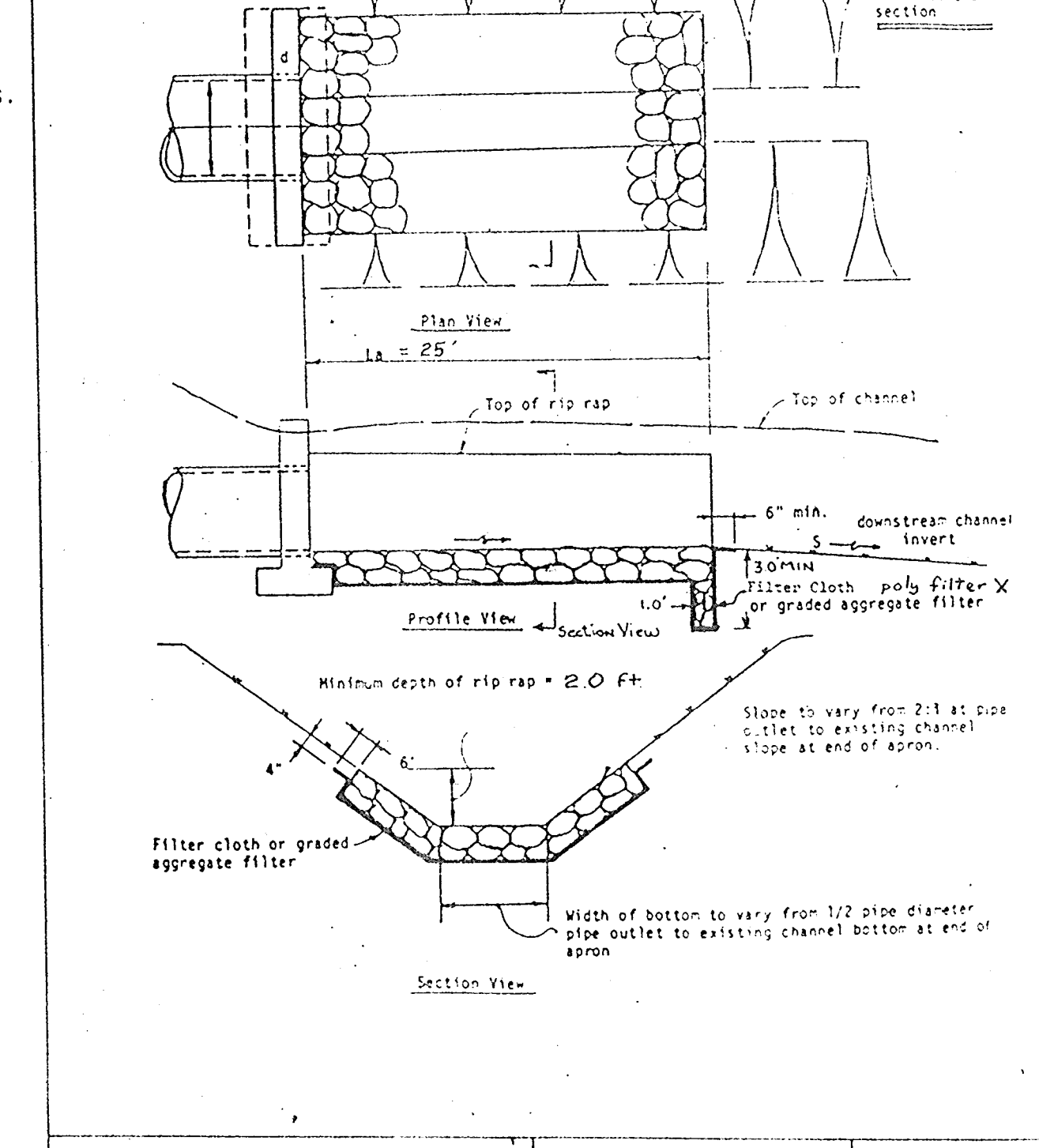
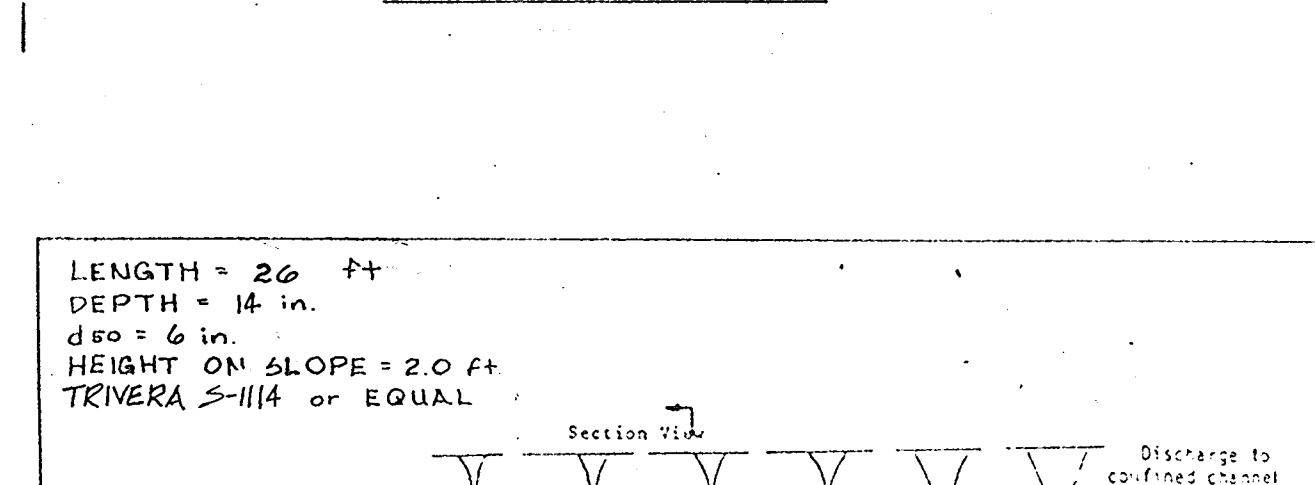
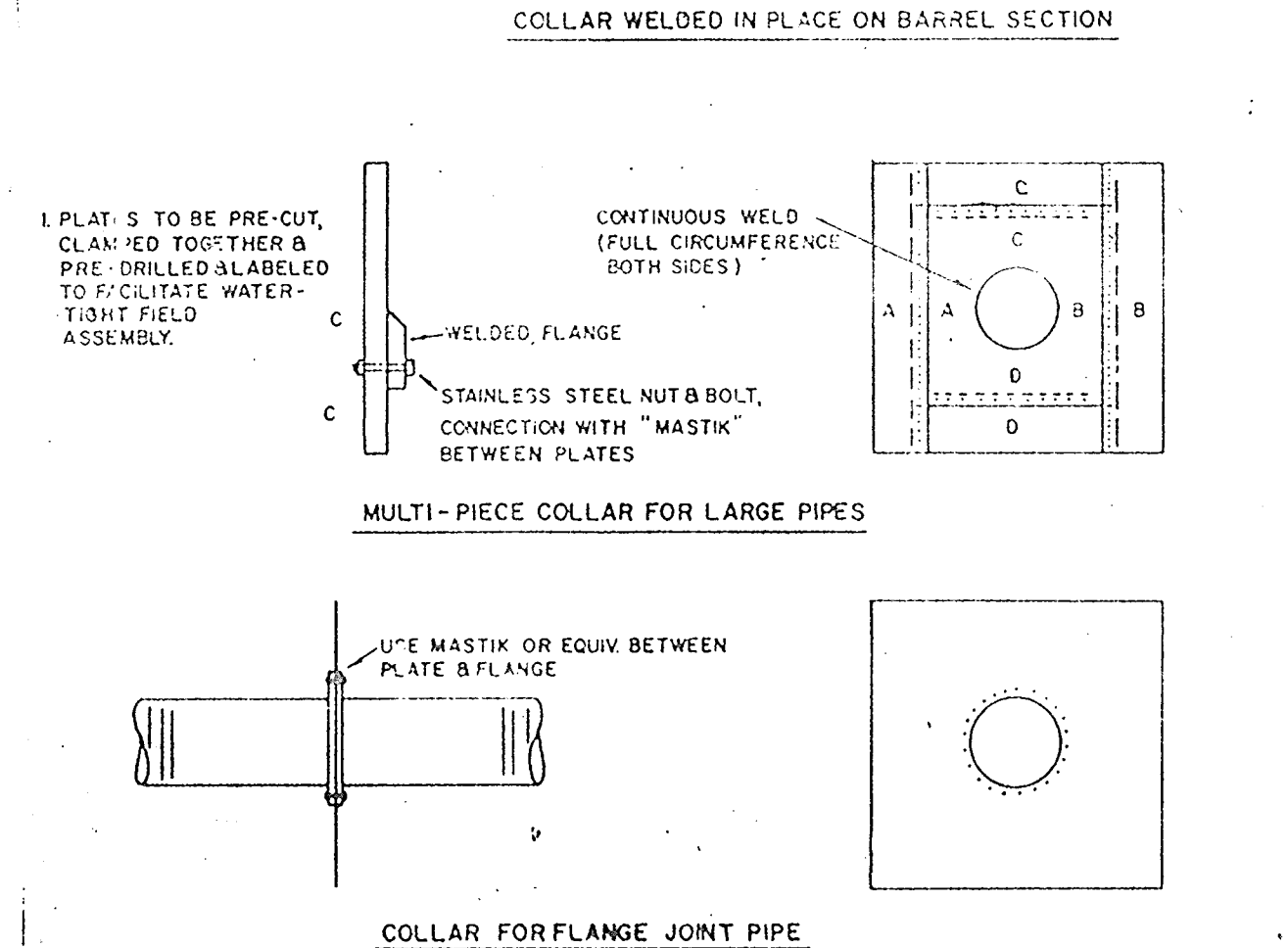
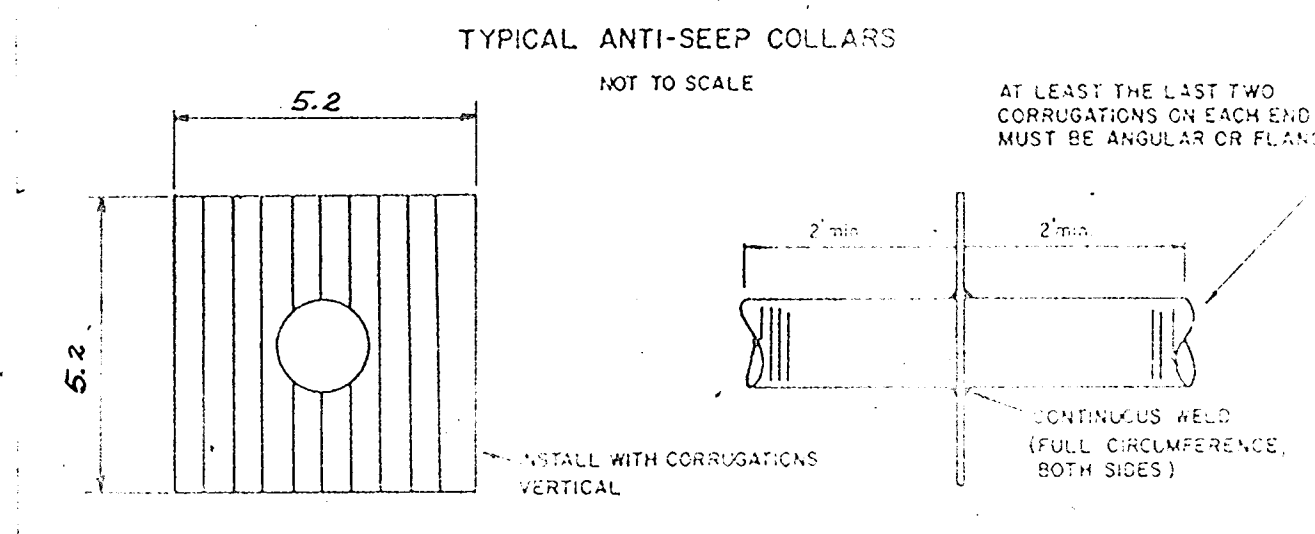
2. **BEDDING** - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3" OR AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE - Continued

- LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.
- 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

- MATERIALS**
 - CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
 - WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER OR OTHER OBJECTIONABLE SUBSTANCES.
 - 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.
 - 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.
 - REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL CONFORMING TO ASTM SPECIFICATION A-615.
- DESIGN MIX** - THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-1/2 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.
- 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.
- 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.
- REINFORCING STEEL** - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, 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.
- CONSOLIDATING** - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES, IN CORNERS, AND AROUND EMBEDDED ITEMS.
- FINISHING** - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF THE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.
- PROTECTION AND CURING** - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM THE DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING OR SPRINKLING AS NECESSARY TO PREVENT THE CONCRETE FROM DRYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.
- PLACING TEMPERATURE** - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 37°F WITH THE TEMPERATURE FALLING, OR 30° WITH THE TEMPERATURE RISING.



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James M. Helm* DATE: 1/13/89

CHIEF, BUREAU OF ENGINEERING: *James M. Helm* DATE: 1-10-89

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

James M. Helm DATE: 1-17-89

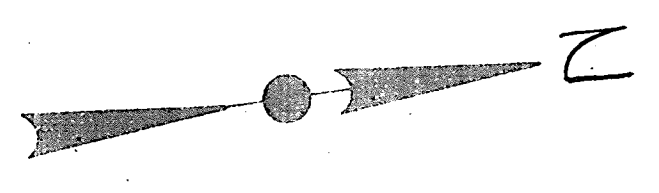
APPROVED: HOWARD COUNTY
OFFICE OF PLANNING AND ZONING.

PLANNING DIRECTOR: *W. H. ...* DATE: 1-20-89

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *W. H. ...* DATE: 1/20/89

TABLE OF DIMENSIONS

PIPE DIA.	GA.	W.	H.	L.T.W.	APPROX. SLOPE	DOOR
12"	12	6"	6"	21"	24"	2.5' x 1.5'
18"	18	8"	8"	27"	24"	2.5' x 1.5'
24"	24	10"	10"	33"	24"	2.5' x 1.5'
30"	30	12"	12"	39"	24"	2.5' x 1.5'
36"	36	14"	14"	45"	24"	2.5' x 1.5'
42"	42	16"	16"	51"	24"	2.5' x 1.5'
48"	48	18"	18"	57"	24"	2.5' x 1.5'
54"	54	20"	20"	63"	24"	2.5' x 1.5'
60"	60	22"	22"	69"	24"	2.5' x 1.5'
66"	66	24"	24"	75"	24"	2.5' x 1.5'
72"	72	26"	26"	81"	24"	2.5' x 1.5'
78"	78	28"	28"	87"	24"	2.5' x 1.5'
84"	84	30"	30"	93"	24"	2.5' x 1.5'
90"	90	32"	32"	99"	24"	2.5' x 1.5'
96"	96	34"	34"	105"	24"	2.5' x 1.5'
102"	102	36"	36"	111"	24"	2.5' x 1.5'
108"	108	38"	38"	117"	24"	2.5' x 1.5'
114"	114	40"	40"	123"	24"	2.5' x 1.5'
120"	120	42"	42"	129"	24"	2.5' x 1.5'
126"	126	44"	44"	135"	24"	2.5' x 1.5'
132"	132	46"	46"	141"	24"	2.5' x 1.5'
138"	138	48"	48"	147"	24"	2.5' x 1.5'
144"	144	50"	50"	153"	24"	2.5' x 1.5'
150"	150	52"	52"	159"	24"	2.5' x 1.5'
156"	156	54"	54"	165"	24"	2.5' x 1.5'
162"	162	56"	56"	171"	24"	2.5' x 1.5'
168"	168	58"	58"	177"	24"	2.5' x 1.5'
174"	174	60"	60"	183"	24"	2.5' x 1.5'
180"	180	62"	62"	189"	24"	2.5' x 1.5'
186"	186	64"	64"	195"	24"	2.5' x 1.5'
192"	192	66"	66"	201"	24"	2.5' x 1.5'
198"	198	68"	68"	207"	24"	2.5' x 1.5'
204"	204	70"	70"	213"	24"	2.5' x 1.5'
210"	210	72"	72"	219"	24"	2.5' x 1.5'
216"	216	74"	74"	225"	24"	2.5' x 1.5'
222"	222	76"	76"	231"	24"	2.5' x 1.5'
228"	228	78"	78"	237"	24"	2.5' x 1.5'
234"	234	80"	80"	243"	24"	2.5' x 1.5'
240"	240	82"	82"	249"	24"	2.5' x 1.5'
246"	246	84"	84"	255"	24"	2.5' x 1.5'
252"	252	86"	86"	261"	24"	2.5' x 1.5'
258"	258	88"	88"	267"	24"	2.5' x 1.5'
264"	264	90"	90"	273"	24"	2.5' x 1.5'
270"	270	92"	92"	279"	24"	2.5' x 1.5'
276"	276	94"	94"	285"	24"	2.5' x 1.5'
282"	282	96"	96"	291"	24"	2.5' x 1.5'
288"	288	98"	98"	297"	24"	2.5' x 1.5'
294"	294	100"	100"	303"	24"	2.5' x 1.5'
300"	300	102"	102"	309"	24"	2.5' x 1.5'
306"	306	104"	104"	315"	24"	2.5' x 1.5'
312"	312	106"	106"	321"	24"	2.5' x 1.5'
318"	318	108"	108"	327"	24"	2.5' x 1.5'
324"	324	110"	110"	333"	24"	2.5' x 1.5'
330"	330	112"	112"	339"	24"	2.5' x 1.5'
336"	336	114"	114"	345"	24"	2.5' x 1.5'
342"	342	116"	116"	351"	24"	2.5' x 1.5'
348"	348	118"	118"	357"	24"	2.5' x 1.5'
354"	354	120"	120"	363"	24"	2.5' x 1.5'
360"	360	122"	122"	369"	24"	2.5' x 1.5'
366"	366	124"	124"	375"	24"	2.5' x 1.5'
372"	372	126"	126"	381"	24"	2.5' x 1.5'
378"	378	128"	128"	387"	24"	2.5' x 1.5'
384"	384	130"	130"	393"	24"	2.5' x 1.5'
390"	390	132"	132"	399"	24"	2.5' x 1.5'
396"	396	134"	134"	405"	24"	2.5' x 1.5'
402"	402	136"	136"	411"	24"	2.5' x 1.5'
408"	408	138"	138"	417"	24"	2.5' x 1.5'
414"	414	140"	140"	423"	24"	2.5' x 1.5'
420"	420	142"	142"	429"	24"	2.5' x 1.5'
426"	426	144"	144"	435"	24"	2.5' x 1.5'
432"	432	146"	146"	441"	24"	2.5' x 1.5'
438"	438	148"	148"	447"	24"	2.5' x 1.5'
444"	444	150"	150"	453"	24"	2.5' x 1.5'
450"	450	152"	152"	459"	24"	2.5' x 1.5'
456"	456	154"	154"	465"	24"	2.5' x 1.5'
462"	462	156"	156"	471"	24"	2.5' x 1.5'
468"	468	158"	158"	477"	24"	2.5' x 1.5'
474"	474	160"	160"	483"	24"	2.5' x 1.5'
480"	480	162"	162"	489"	24"	2.5' x 1.5'
486"	486	164"	164"	495"	24"	2.5' x 1.5'
492"	492	166"	166"	501"	24"	2.5' x 1.5'
498"	498	168"	168"	507"	24"	2.5' x 1.5'
504"	504	170"	170"	513"	24"	2.5' x 1.5'
510"	510	172"	172"	519"	24"	2.5' x 1.5'
516"	516	174"	174"	525"	24"	2.5' x 1.5'
522"	522	176"	176"	531"	24"	2.5' x 1.5'
528"	528	178"	178"	537"	24"	2.5' x 1.5'
534"	534	180"	180"	543"	24"	2.5' x 1.5'
540"	540	182"	182"	549"	24"	2.5' x 1.5'
546"	546	184"	184"	555"	24"	2.5' x 1.5'
552"	552	186"	186"	561"	24"	2.5' x 1.5'
558"	558	188"	188"	567"	24"	2.5' x 1.5'
564"	564	190"	190"	573"	24"	2.5' x 1.5'
570"	570	192"	192"	579"	24"	2.5' x 1.5'
576"	576	194"	194"	585"	24"	2.5' x 1.5'
582"	582	196"	196"	591"	24"	2.5' x 1.5'
588"	588	198"	198"	597"	24"	2.5' x 1.5'
594"	594	200"	200"	603"	24"	2.5' x 1.5'
600"	600	202"	202"	609"	24"	2.5' x 1.5'
606"	606	204"	204"	615"	24"	2.5' x 1.5'
612"	612	206"	206"	621"	24"	2.5' x 1.5'
618"	618	208"	208"	627"	24"	2.5' x 1.5'
624"	624	210"	210"	633"	24"	2.5' x 1.5'
630"	630	212"	212"	639"	24"	2.5' x 1.5'
636"	636	214"	214"	645"	24"	2.5' x 1.5'
642"	642	216"	216"	651"	24"	2.5' x 1.5'
648"	648	218"	218"	657"	24"	2.5' x 1.5'
654"	654	220"	220"	663"	24"	2.5' x 1.5'
660"	660	222"	222"	669"	24"	2.5' x 1.5'
666"	666	224"	224"	675"	24"	2.5' x 1.5'
672"	67					



SEQUENCE OF CONSTRUCTION

- OBTAIN REQUIRED PERMITS
- CLEAR AND GRUB FOR SEDIMENT CONTROLS.
- INSTALL SEDIMENT CONTROLS EXCEPT FOR TRAP #2.
- CONSTRUCT STORM WATER MANAGEMENT POND.
- INSTALL TRAP #2.
- GRADE SITE, STABILIZE SITE AS PER SEDIMENT CONTROL NOTE 3, SHEET 10.
- CONSTRUCT SITE.
- SEED AND MULCH EXPOSED AREAS WITH PERMANENT SEEDING.
- ONCE SITE IS STABLE AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR:
 - REMOVE ACCUMULATED SEDIMENT FROM SEDIMENT CONTROLS AND DISPOSE AS DIRECTED BY THE SEDIMENT CONTROL INSR.
 - REMOVE SEDIMENT CONTROLS.
 - RESTORE BOTTOM OF STORM WATER MANAGEMENT POND AS SHOWN ON GRADING PLAN.
 - SEED AND MULCH AREAS DISTURBED BY SEDIMENT CONTROLS WITH PERMANENT SEEDING.

SEDIMENT TRAP DRAINAGE AREA

	EXISTING	PROPOSED	DESIGN
TRAP #1	6.7ac	1.2ac	6.7ac
TRAP #2	5.9ac	10.8ac	10.8ac

DESIGN DATA FOR SEDIMENT TRAPS

	TRAP #1	TRAP #2
TYPE	TRAP	TRAP
DRAINAGE AREA	6.7ac	10.8ac
DISTURBED AREA	3.1ac	2.0ac
VOLUME REQUIRED	12120 ft ³	19440 ft ³
VOLUME PROVIDED	12231 ft ³	19683 ft ³
BOTTOM TRAP DIMENSIONS	8' x 34' x 6'	75' x 75' x 4'
TOP OF BERM ELEVATION	392.5	388.0
HEIR CREST ELEVATION	389.0	380.0
LENGTH OF WEIR	28.0	71.0
STORAGE ELEVATION	388.0	379.0
BOTTOM ELEVATION	382.0	376.0
SIDE SLOPES	2:1	2:1

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James M. Lee* DATE: 1/13/89

CHIEF, BUREAU OF ENGINEERING: *James M. Lee* DATE: 1/10/89

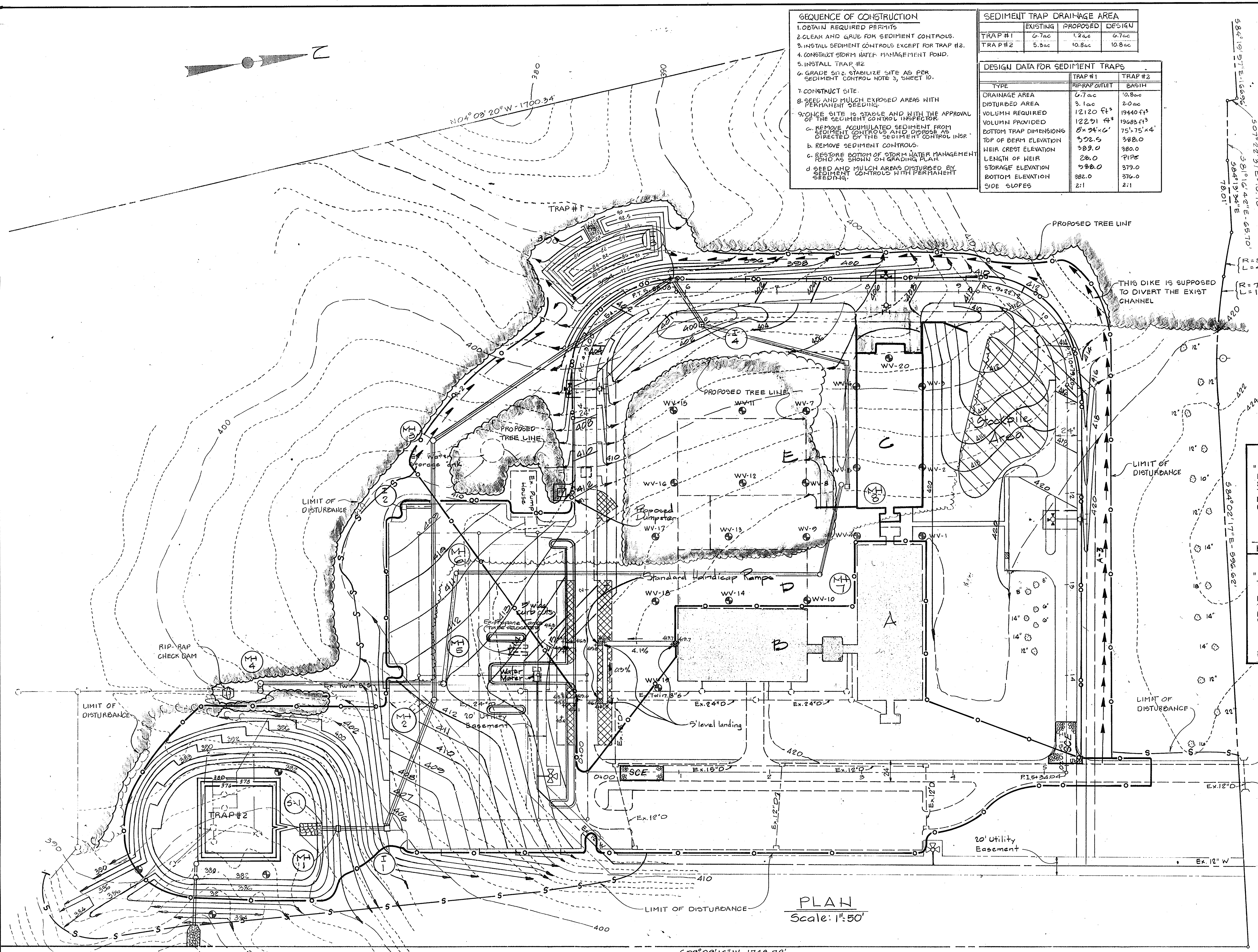
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM
HOWARD COUNTY HEALTH DEPARTMENT

James M. Lee COUNTY HEALTH OFFICER DATE: 1-19-89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

W. R. ... PLANNING DIRECTOR DATE: 1-20-89

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *James J. DeCough* DATE: 1/16/89



LEGEND

- Existing Paving
- Existing Contour
- Existing Drainage Area Boundary for Sed Control
- Proposed Drainage Area Boundary for Sed Control
- Proposed Paving
- Existing Paving (To Be Removed)

CERTIFICATION 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 A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

Kenneth A. McCord DATE: 12/27/88
KENNETH A. MCCORD, P.E. NO. 1974

CERTIFICATION BY THE OWNER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS. AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

Ronald G. Kirby DATE: 12/27/88
WESTVACO CORPORATION

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Lee DATE: 1-4-89
U.S. SOIL CONSERVATION SERVICE

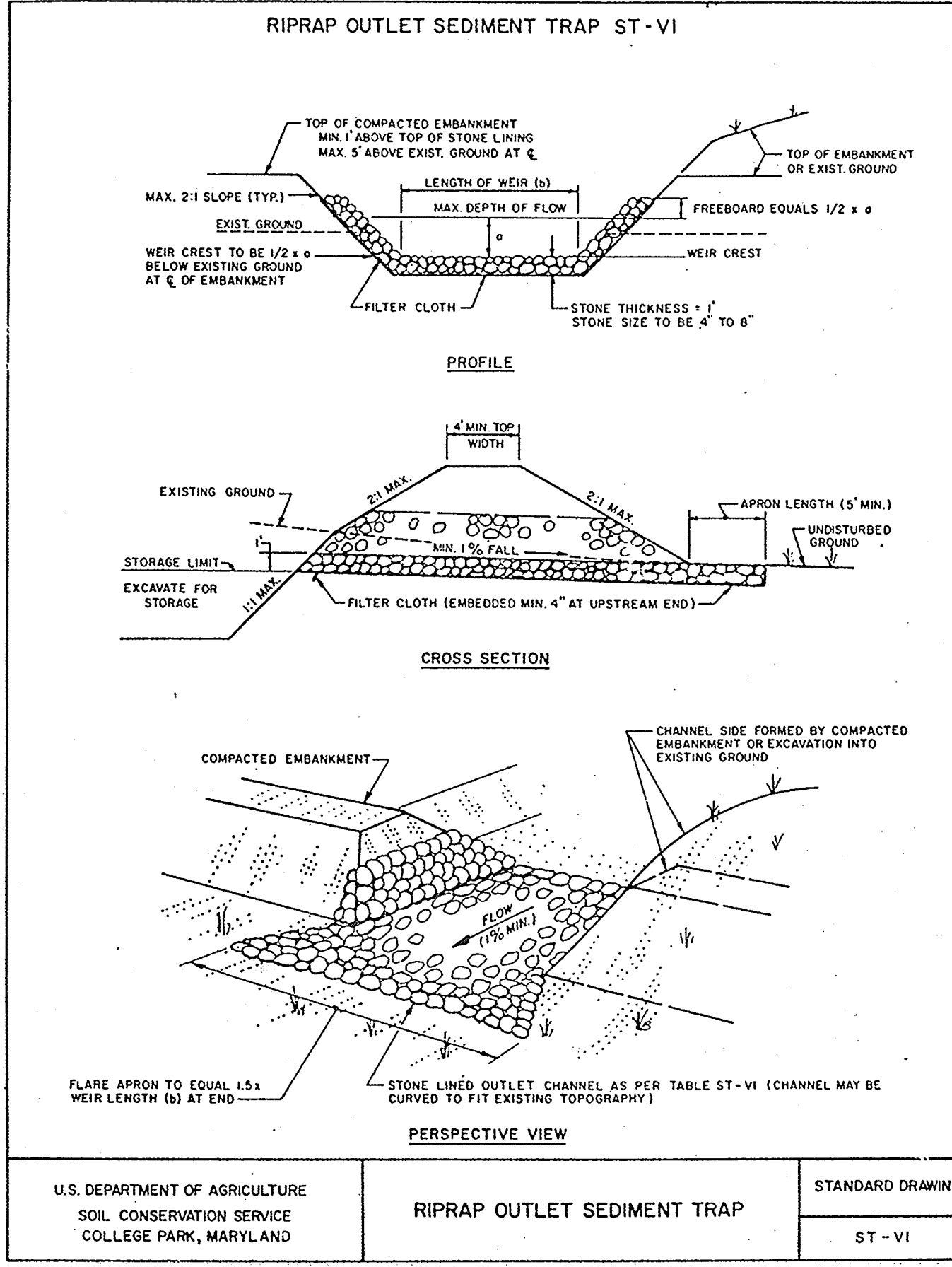
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *Robert W. Zieher* DATE: 1-4-89
HOWARD S.D.

PLAN NUMBER

APPROVED
DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
HOWARD COUNTY, MARYLAND
DATE: 12-13-88

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 SAINT PAUL STREET BALTIMORE, MARYLAND 21218 <i>Kenneth A. McCord</i>	WESTVACO 11011 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20707	SITE DEVELOPMENT PLAN WESTVACO LAUREL RESEARCH LABORATORY EXPANSION FIFTH ELECTION DISTRICT TAX MAP 41 HOWARD COUNTY, MARYLAND PARCEL 300	SEDIMENT CONTROL PLAN	REVISIONS SCALE: 1"=50' SHEET NO. 9 OF 11 DATE 9-16-88	DRAWING 9
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U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

RIPRAP OUTLET SEDIMENT TRAP

STANDARD DRAWING
ST-VI

- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
- The 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 or 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. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
 - All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
 - Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
 - Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
 - Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
 - Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - The structure shall be inspected after each rain and repaired as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
 - Drainage area for this practice is limited to 15 acres or less.

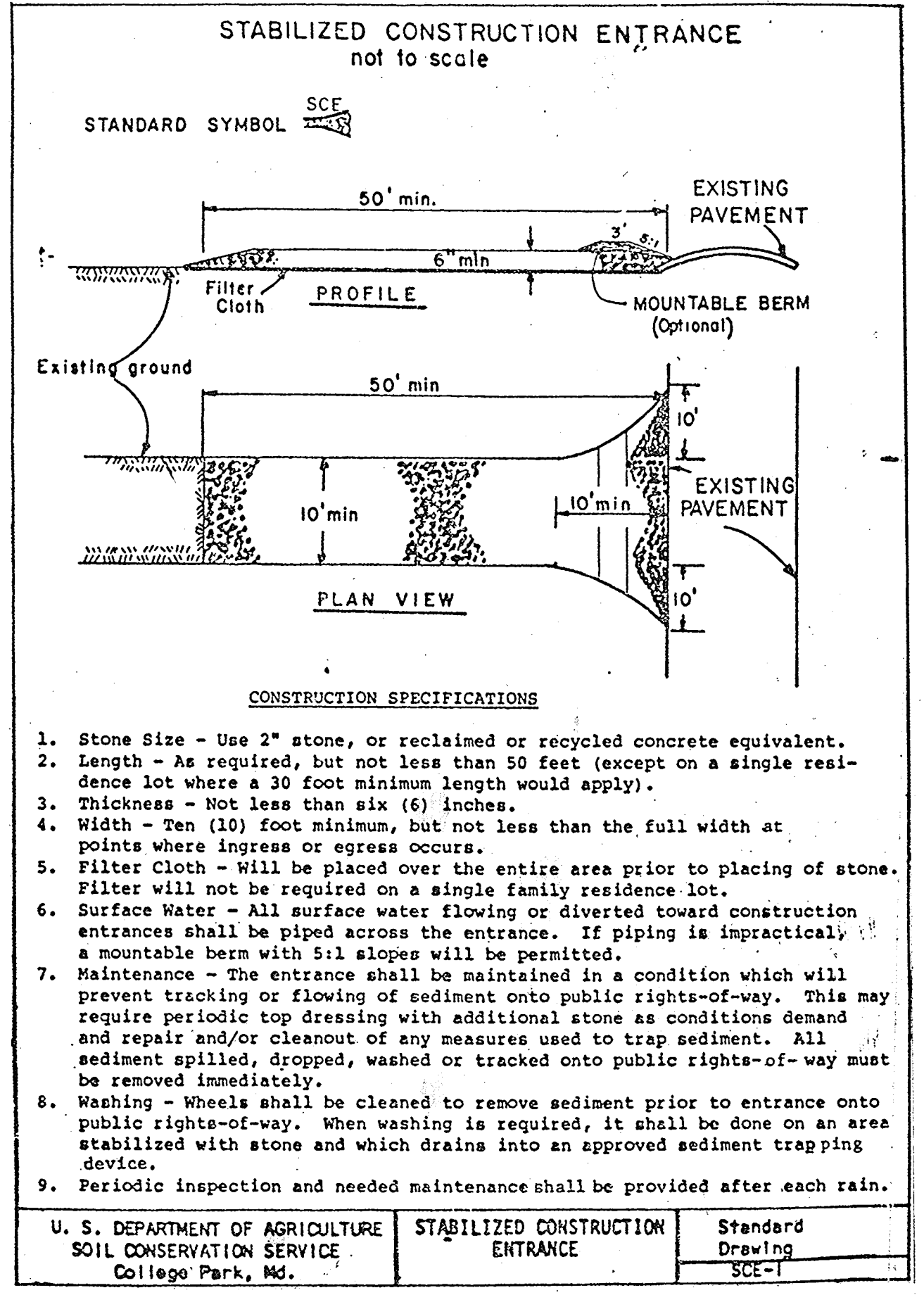
JAMES GOLDSTEIN & PARTNERS
ARCHITECTS
89 MILLBURN AVE.
MILLBURN, NEW JERSEY 07041
(201) 467-8840

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Goldstein
DATE: 1-4-89

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

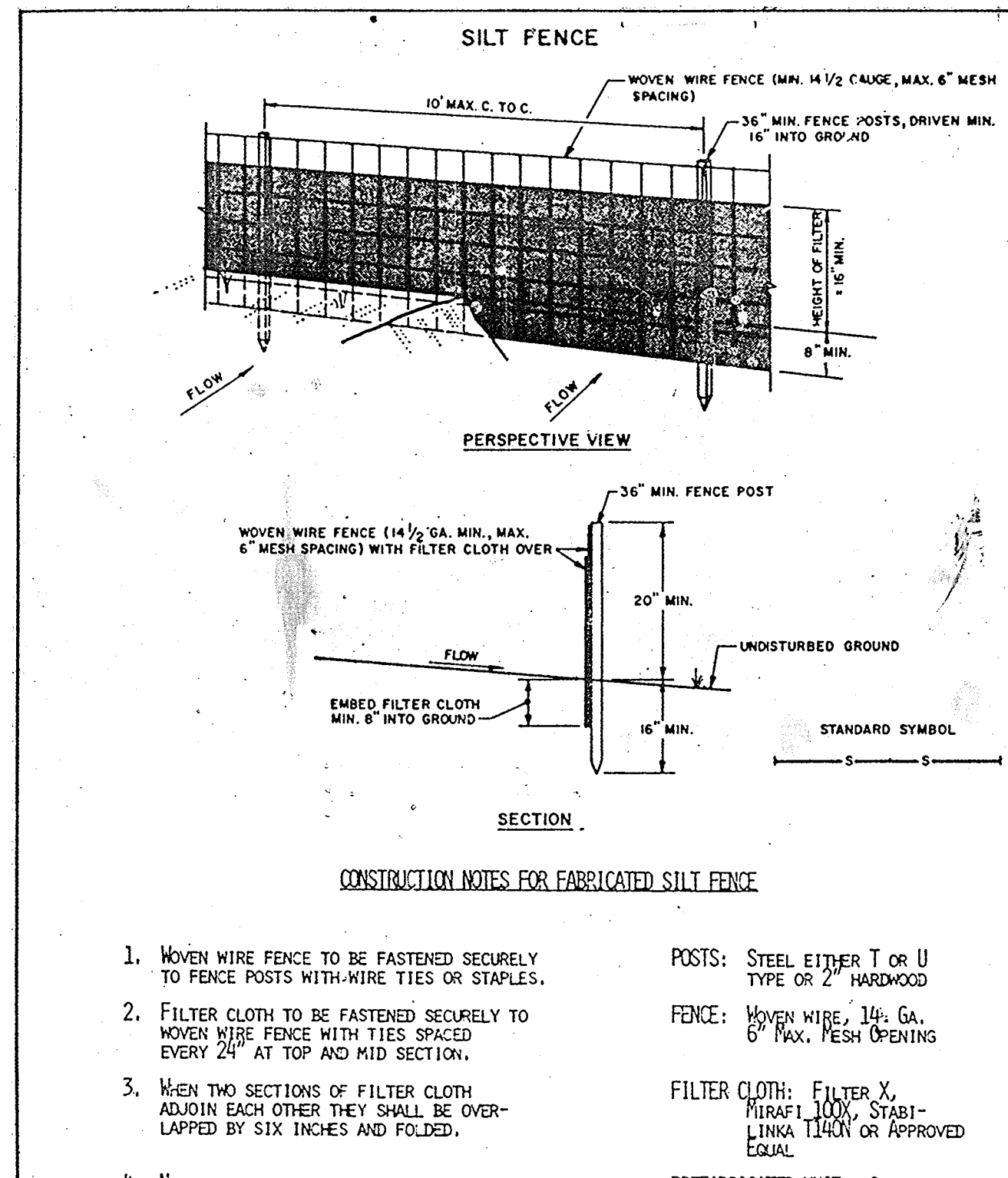
APPROVED: *Robert J. Ziehm*
HOWARD S.C. DATE: 1-4-89



U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
College Park, Md.

STABILIZED CONSTRUCTION ENTRANCE

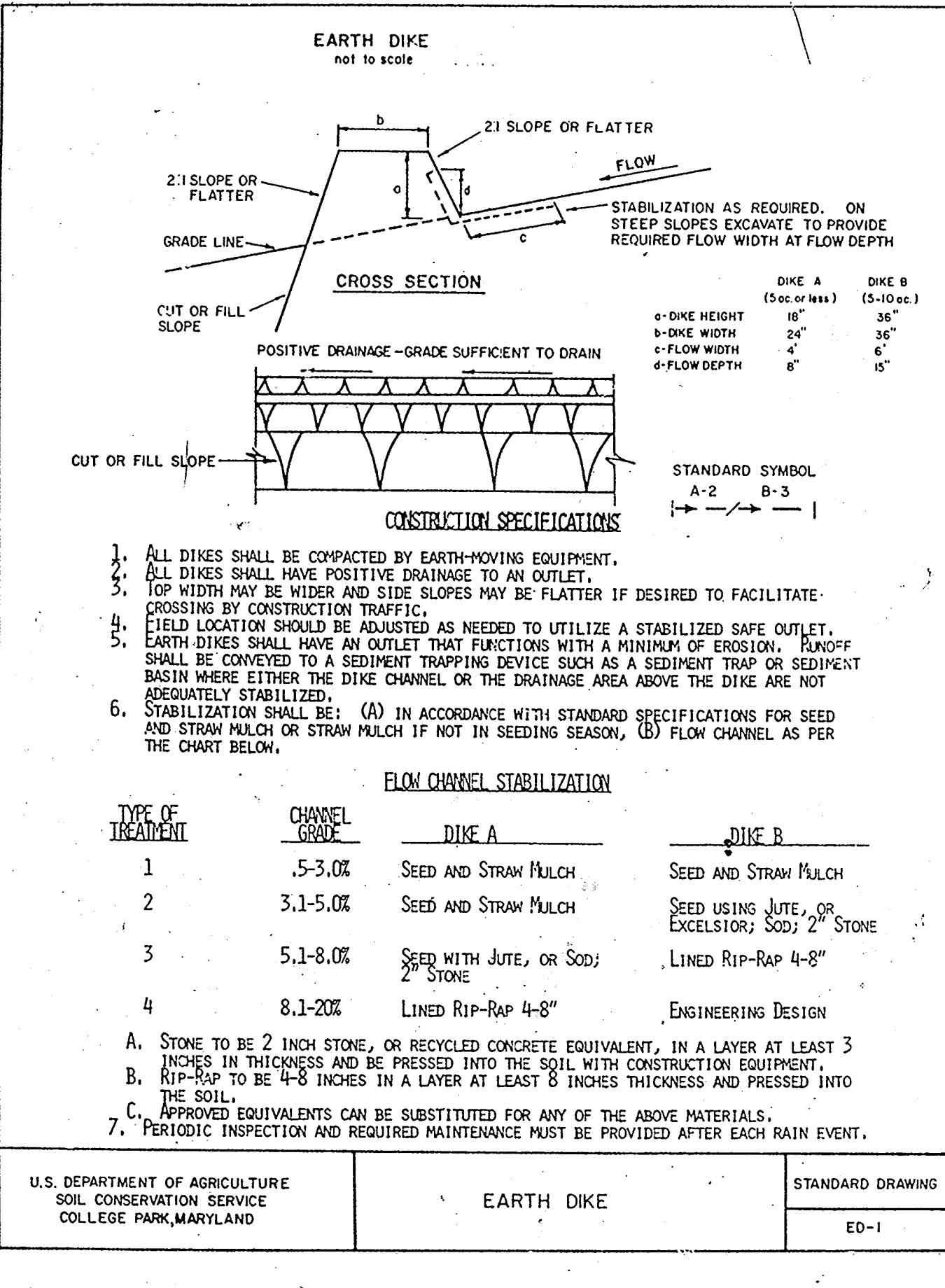
Standard Drawing
SCE-1



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

SILT FENCE

STANDARD DRAWING
SF-1



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

EARTH DIKE

STANDARD DRAWING
ED-1

- PERMANENT SEEDING NOTES**
- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded 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 square 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 March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.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 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 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.
- Maintenance --** Inspect all seeded areas and make needed repairs, replacements and reseedings.
- TEMPORARY SEEDING NOTES**
- Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
- Seeded Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.
- Soil Amendments:** Apply 60 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 use 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.

SITE DEVELOPMENT PLAN
WESTVACO LAUREL
RESEARCH LABORATORY EXPANSION
HOWARD COUNTY, MARYLAND
PARCEL 300

- SEDIMENT CONTROL NOTES**
- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
 - All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
 - All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
 - All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
 - 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: 35.0 Acres
Area Disturbed: 5.2 Acres
Area to be roofed or paved: 4.1 Acres
Area to be vegetatively stabilized: 3.2 Acres
Total Cut: 2000 Cu. yds
Total Fill: 2800 Cu. yds
Offsite waste/borrow area location: _____
 - Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
 - On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

- APPROVED**
DIVISION OF
COMMUNITY PLANNING
& LAND DEVELOPMENT
HOWARD COUNTY,
MARYLAND
DATE: 12-13-88
LKS

CERTIFICATION 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 A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

Kenneth A. McCord
KENNETH A. MCCORD, P.E. NO. 1974
DATE: 12/27/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

Robert G. Kirby
WESTVACO
DATE: 12/27/88

REVISIONS

SCALE: SHEET NO. 10 OF 11 DATE: 9-16-88

DRAWING: 10

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *J. James M. ...* DATE: 1/12/89

CHIEF, BUREAU OF ENGINEERING: *...* DATE: 1-10-89

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

Joyce M. Boyd DATE: 1-19-89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

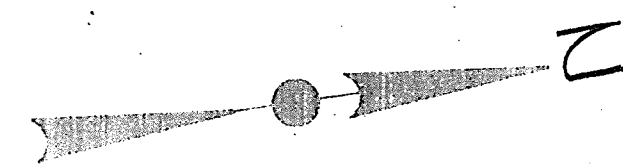
... DATE: 1-20-89

PLANNING DIRECTOR: *...* DATE: 1-20-89

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *...* DATE: 1-20-89

EXISTING GROUND
FILTER CLOTH
TREVIRA 6-1114 OR EQUIVALENT
RIP-RAP BARRIER 450-6"
CROSS SECTION SCALE: 1"=4'
TOP OF BANK
EMBED FILTER CLOTH 1" UNDER RIP-RAP
PROFILE SCALE: 1"=4'
RIP-RAP CHECK DAM

SDP-89-60 12/15/88



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

DIRECTOR: *James M. Lu* DATE: 1/13/89

CHIEF, BUREAU OF ENGINEERING: *William E. Reid* DATE: 1/16/89

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

COUNTY HEALTH OFFICER: *James M. Lu* DATE: 1-19-89

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *William E. Reid* DATE: 1-20-89

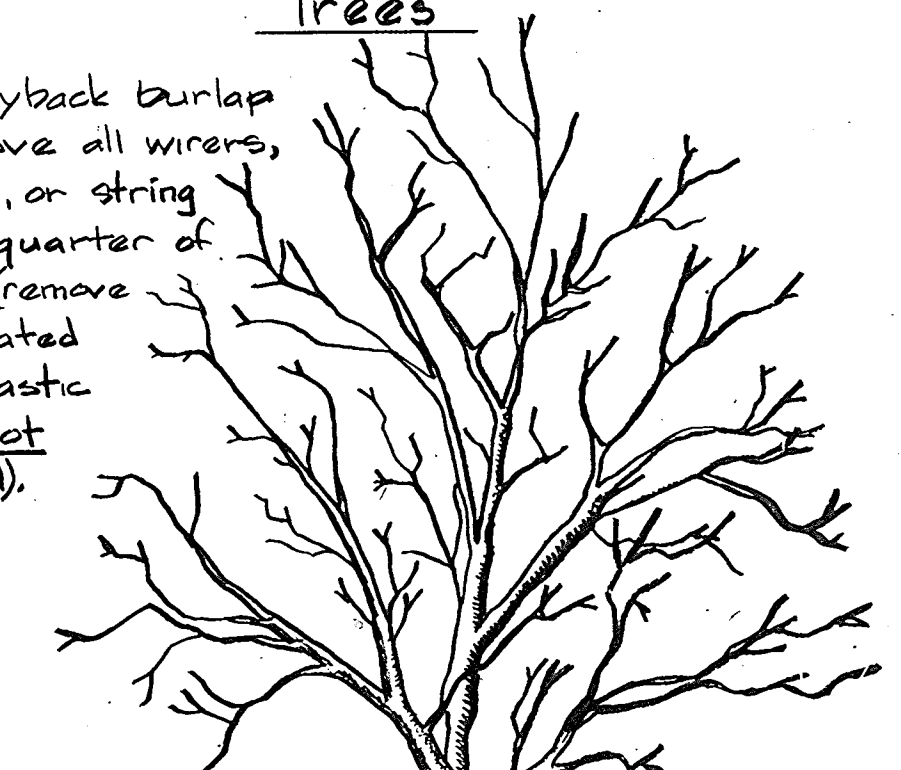
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *James M. Lu* DATE: 1/15/89

APPROVED DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT HOWARD COUNTY, MARYLAND DATE: 12-13-88 LKS

LEGEND
 --- Existing Paving
 --- Existing contour
 --- Proposed Paving
 XXXXX Existing Paving (To Be Removed)

Specifications For Planting Deciduous Shade Trees and Ornamental Trees

Note: Layback burlap and remove all wires, nylon rope, or string from top quarter of tree ball (remove or slit treated burlap-plastic burlap not permitted).



Note: Wrap tree starting from the bottom and work up. Tie wrap at bottom and top.

Tree wrap must be tied in at least 3 places.

2-3" of mulch

Backfill mix consists of 1 part peat, 1 part fine ground fir bark, 3 parts topsoil.

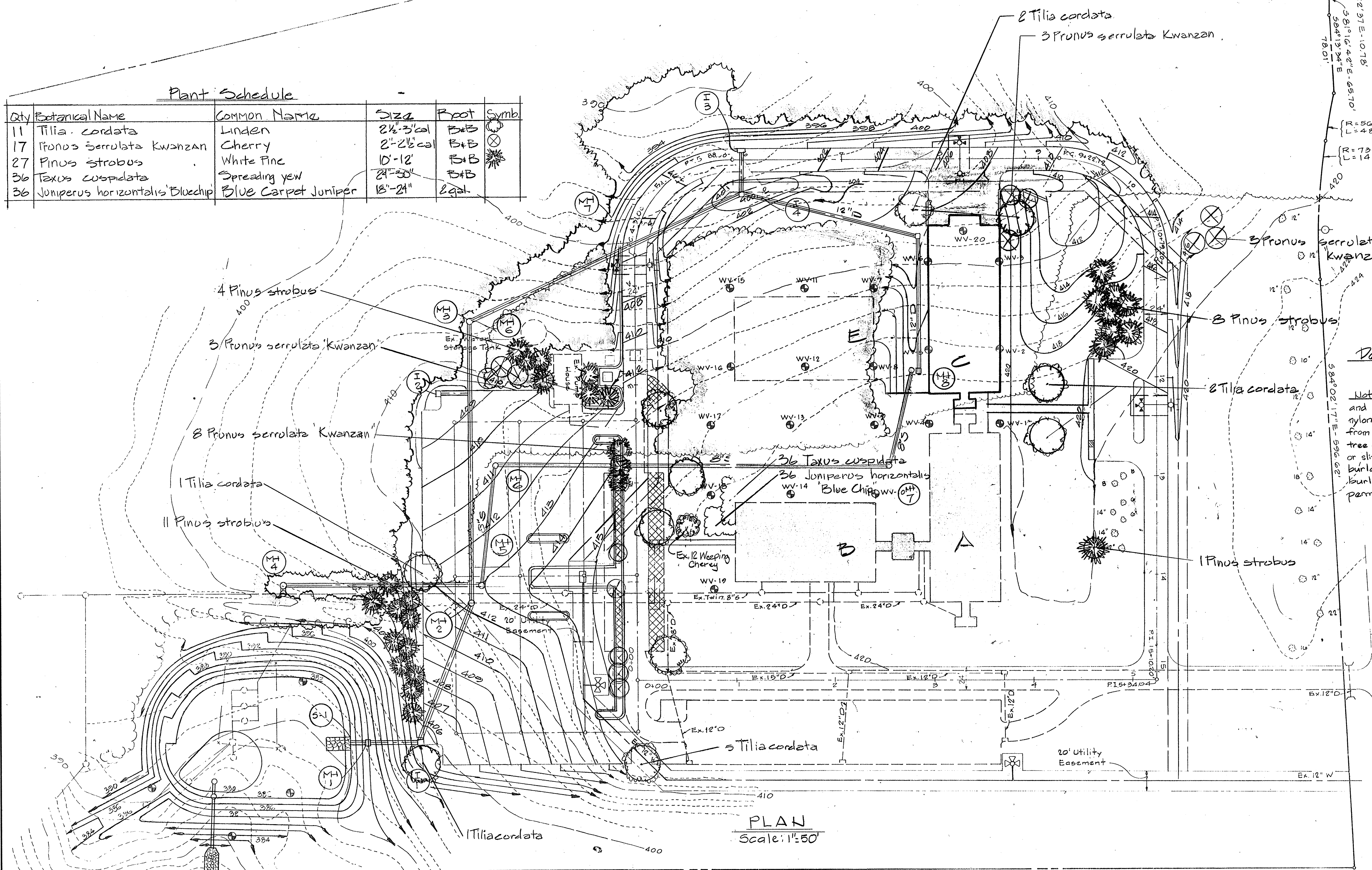
Saucer around trunk base to direct water into plant ball.

Place top of ball 2" above ground level.

12" from ball to pit.

6" drainage trough.

Qty	Botanical Name	Common Name	Size	Root	Symb.
11	Tilia cordata	Linden	2 1/2'-3' cal	B+B	⊗
17	Prunus serrulata Kwanzan	Cherry	2'-2 1/2' cal	B+B	⊗
27	Pinus strobus	White Pine	10'-12'	B+B	⊗
36	Taxus cuspidata	Spreading yew	24'-30'	B+B	⊗
36	Juniperus horizontalis Bluechip	Blue Carpet Juniper	18'-24"	Lgpt.	⊗



PLAN Scale: 1"=50'

WHITMAN REQUARDT AND ASSOCIATES ENGINEERS 2315 SAINT PAUL STREET BALTIMORE MARYLAND 21218 <i>Herbert A. McLeod</i>		WESTVACO 11011 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20707	SITE DEVELOPMENT PLAN WESTVACO LAUREL RESEARCH LABORATORY EXPANSION FIFTH ELECTION DISTRICT TAX MAP 41	HOWARD COUNTY, MARYLAND PARCEL 30C	LANDSCAPING PLAN	REVISIONS	SCALE: 1" = 50' SHEET NO. II OF II	DRAWING II
						DATE 9-16-88	SDP-89-60 12/15/88	