

APPROVED: FOR PRIVATE WATER & SEWERAGE SYSTEMS  
HOWARD COUNTY HEALTH DEPARTMENT

County Health Officer: *[Signature]* Date: 1-17-91

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

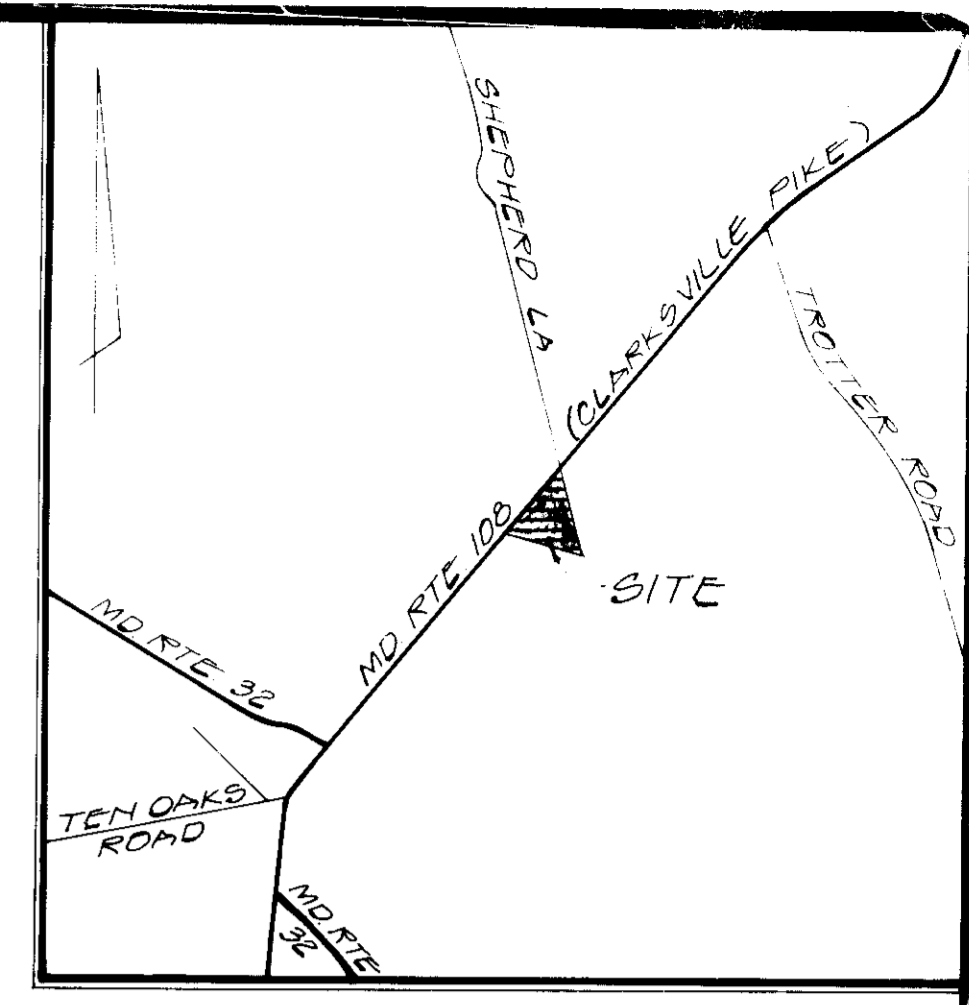
Director: *[Signature]* Date: 2/25/91

Chief, Division of Community Planning and Land Development: *[Signature]* Date: 2/25/91

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

Director: *[Signature]* Date: 2/25/91

Chief Bureau of Engineering: *[Signature]* Date: 2/25/91



VICINITY MAP  
SCALE: 1" = 2000'

Based upon the above Findings of Fact and Conclusions of Law, it is this 25<sup>th</sup> day of February, 1989, by the Howard County Board of Appeals,

**General Notes**

- Howard County Board of Appeals Case No. BA 88-46E Special Exception Use: Retail Garden Center
- There are no wetlands or floodplain existing on the subject property to the best of our knowledge.
- Existing fences along MD Rte 108 - Clarksville Pike are to be removed and disposed of.

ORDERED, that the petition of Stephen M. Klein, for a special exception to establish and operate a retail garden center be, and the same is hereby, GRANTED, subject to the following conditions:

- The Petitioner shall obtain building permits from appropriate governmental agencies prior to building any structures; and
- The Petitioner shall submit a signed copy of the written lease agreement to the Board of Appeals within ninety (90) days; and
- All lighting be diffused and directed downward and inward away from adjoining properties; and
- All tools and equipment including any vehicles, shall be stored indoors; and
- The Petitioner shall comply with all State Highway Administration conditions and requirements; and
- The Petitioner shall insure that adequate landscaping shall be provided to screen all structures, parking and activities from adjacent properties; and
- The Petitioner shall perform soil percolation tests in order to develop an adequate sewage disposal area.
- The Petitioner shall comply strictly with the special exception plan, except where ingress and egress to the existing house may be by way of the proposed parking lot, if required by the State Highway Administration; and
- The hours of operation of the proposed retail center shall be no earlier than 9:00 a.m. and no later than 6:00 p.m., seven (7) days per week; and
- No sound amplification shall be used on the site; and
- The Petitioner shall submit a Site Development Plan to the Howard County Office of Planning and Zoning; and
- The Petitioner shall comply with all County, State and Federal laws and regulations; and
- The Petitioner may locate parking spaces within the fifty (50) foot setback area, and shall place all parking spaces outside of the Route 108 right-of-way as determined by Howard County and the State Highway Administration.

**Index of Sheets**

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8 of 12	Storm Drain Profiles and Retaining Wall Notes
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10 of 12	Landscaping And Lighting Plan
11 of 12	Marsh Construction And Dry Hydrant Plan And Details
12 of 12	PERCOLATION CERTIFICATION PLAT

**Site Analysis**

A. Area of Parcel:	5.99 Acres or 264,306 S.F.
B. Present Zoning:	R Special Exception Case #BA 88-46E
C. Proposed Use of Structures:	
Building A:	Retail/Office
Building B:	Storage
Building C:	GREENHOUSE
BUILDING D:	GREENHOUSE
Existing house and garage to remain residential use and will be converted to future office and storage uses.	
D. Floor Space:	
Building A:	4978 S.F. (Retail)
Building B:	1414 S.F. (Office)
Building C:	2220 S.F.
BUILDING D:	2240 S.F. (RETAIL)
E. Maximum Number of employees:	13
F. Number of parking spaces required:	
space/100 S.F. Retail Area @ 7.6/100 S.F. =	77
space/empl. @ 13 employees =	13
	90 spaces
G. Number of parking spaces provided:	
Standard parking spaces =	86
Handicap parking spaces =	4
	90 spaces

OPEN SPACE (GREEN AREA) TO REMAIN ON SITE: 270 AC AND 38.6% OF NET AREA  
PLANT MATERIAL DISPLAY AREA: 1.05 AC  
BUILDING COVERAGE OF SITE: 0.45 AC AND 6.4% OF GROSS AREA

**ADDRESS CHART**

LOT NUMBER	STREET ADDRESS
CK HOMES	
NEW ADDRESS	12171 MD RTE 108
BLDG 'A'	12169 MD RTE 108

**PERMIT INFORMATION BLOCK**

Subdivision Name:	Section/Area	Lot/Parcel
Clarksville Garden Center		Parcel 1
Plat # or L/F	Block #	Zone
1720 / 592.5%	1	R
Tax/Zone	Elect. Dist.	Census Tr.
35	5 <sup>th</sup>	6051
Water Code	Sewer Code	
W-6	S-6	



*[Handwritten Signature]*

HOWARD COUNTY BOARD OF APPEALS

ATTEST: *[Signature]*  
Margaret Rutter, Chairperson

APPROVED AS TO FORM:  
HOWARD COUNTY OFFICE OF LAW  
BARBARA M. COOK  
COUNTY SOLICITOR

*[Signature]*  
Thomas M. Meachum  
Senior Assistant  
County Solicitor

Absent:  
James A. Caldwell  
Vice Chairperson

*[Signature]*  
James J. Haughton

Absent:  
Evelyn Tanner

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
ENGINEERS, PLANNERS, SURVEYORS  
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886  
TELEPHONE: (301) 421-4024

DES. *[Signature]* DRN. *[Signature]* CHK. *[Signature]*

DATE	REVISION	BY	APP'R.
4-03-90	ADD GREENHOUSE - STORM DRAINAGE 4		
7/16/91	REVISED SITE ANALYSIS DUE TO ADDITION OF GREENHOUSE 16	HK	
9-10	REVISED BUILDING SQUARE FOOT & PARKING SPACE	HBB	
	NEW SHEET		

PREPARED FOR  
OWNER: H.R. KENDALL  
12169 CLARKSVILLE PIKE (MD RTE. 108)  
CLARKSVILLE, MD 21030

COLUMBIA LANDSCAPE DESIGN  
P.O. BOX 500  
CLARKSVILLE, MD 21030  
ATTN: STEVE KLEIN  
TEL # (301) 531-2224

COVER SHEET  
H. R. KENDALL PROPERTY  
CLARKSVILLE GARDEN CENTER  
PARCEL 1, BLOCK 1  
LIBER 1720 FOLIO 592.59G  
5<sup>TH</sup> ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE NO.
1" = 30'	R	89-03G
DATE	TAX MAP NO.	SHEET
JUNE 1990	35	1 OF 12

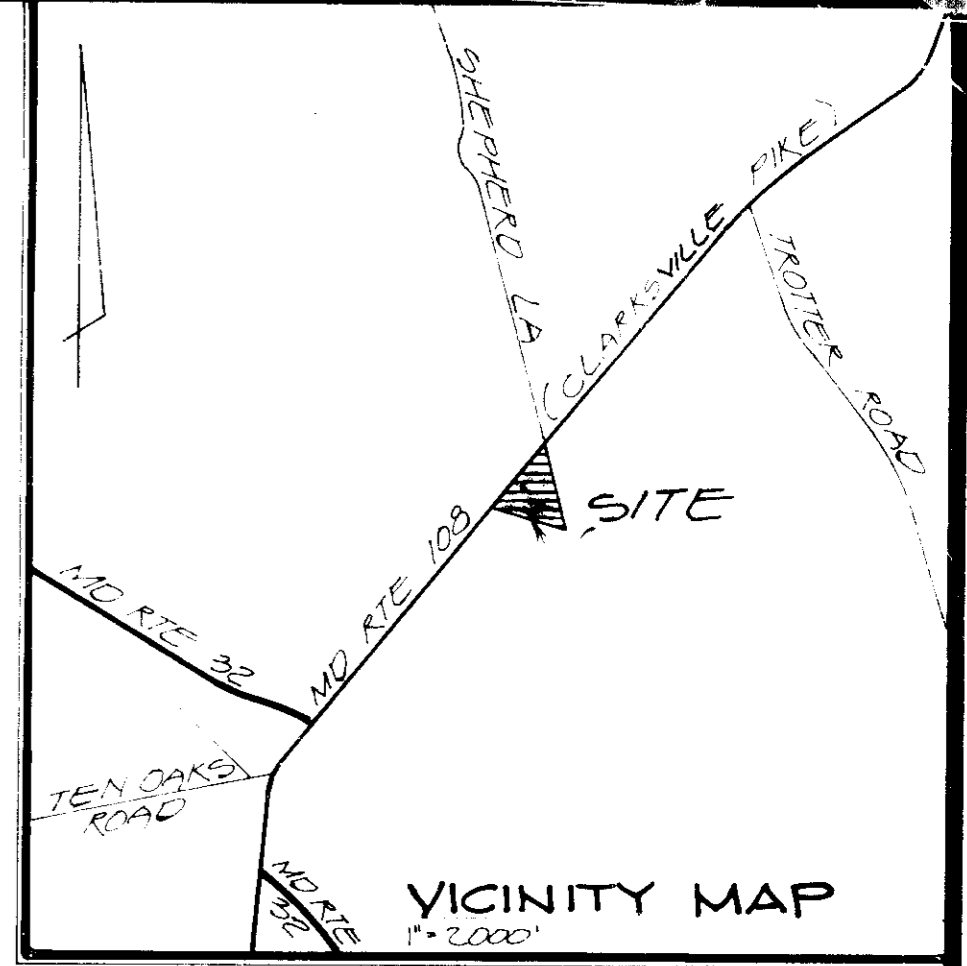
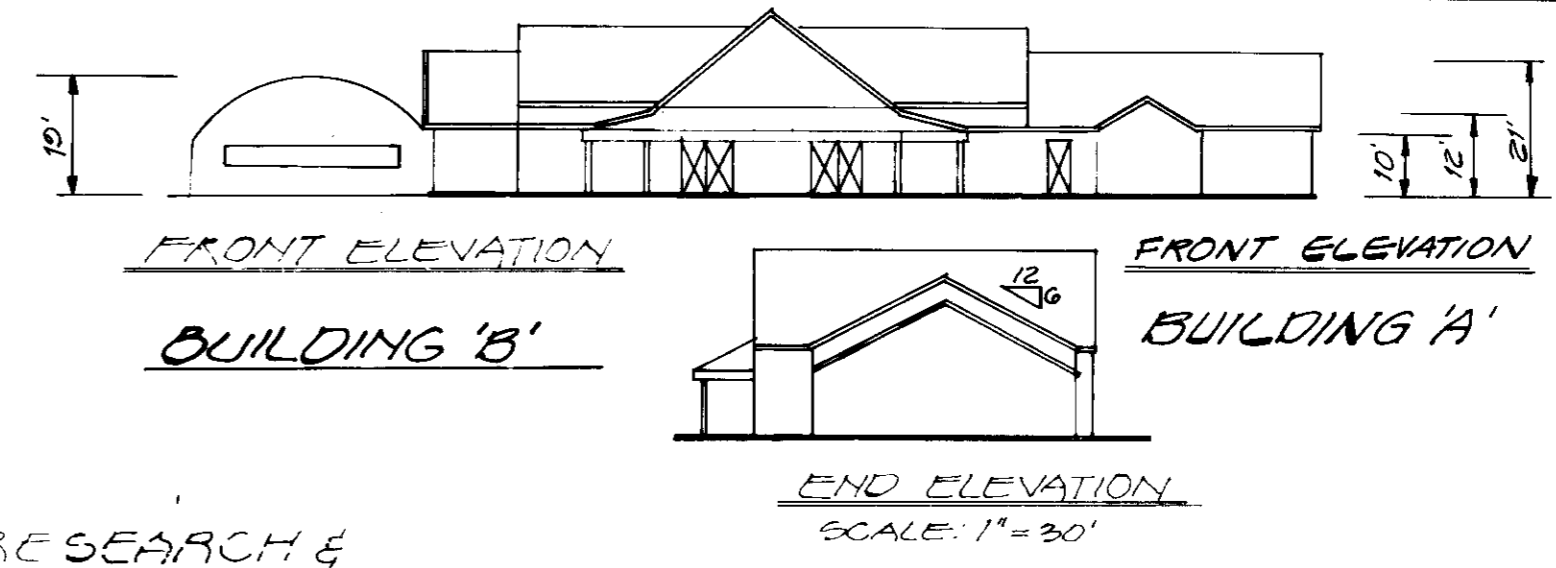


APPROVED: FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 County Health Officer: *Joseph J. ...* 1-17-91  
 Date: 1-17-91

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 Director: *George Z. ...* 2/22/91  
 Date: 2/22/91

APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Director: *James P. ...* 2/25/91  
 Date: 2/25/91

HOWARD RESEARCH & DEVELOPMENT CORP  
 403/1196  
 MAP 1 BLOCK 1 PARCEL 3  
 ZONED: NT



- EXISTING UTILITY NOTES
- Utility information shown herein was obtained from available records. The exact location of all underground utilities shall be field verified by the contractor prior to construction.
  - The contractor shall hand dig test pits at all utility crossings to determine the exact location and depth well in advance of construction.
  - For marking locations of existing utilities, notify "MISS UTILITY" at 1-800-257-7777, 48 hours prior to any excavation or construction.
  - For field location of gas line services, please notify Washington Gas Light Co., 1-703-750-1000, 48 hours prior to the start of any excavation or construction.
  - Omissions and/or additions of utilities found during construction shall be the sole responsibility of any contractor engaged in excavation at this site. Gutschick, Little & Weber, P.A. shall be notified immediately of any and all utility information, omissions and additions found by any contractor.
  - Due to the proximity of live underground and overhead utilities, we are not responsible for any damage or injury sustained during construction by any persons, trucks, trailers, or equipment used on or adjacent to the site.



- LEGEND
- ASPHALT PAVING
  - GRAVEL PAVING
  - CURB & GUTTER
  - SEPTIC EASEMENT AREA
  - FENCE
  - LANDSCAPE WALL W/ FENCE
  - SEPTIC PERCOLATION TEST PIT
  - SOIL BORING
  - PROP STORM DRAIN
  - EXIST CONTOURS
  - PROP CONTOURS

DATE	REVISION	BY	APP
01-02-78	ADD GREENHOUSE STORM DRAINAGE	A	DMW

LINTHICUM CHAPEL CEMETERY  
 86/407  
 MAP 36 BLOCK 1 PARCEL 242  
 ZONED: R

**GLW GUTSCHICK LITTLE & WEBER P.A.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 5909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866  
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP
8-25-92	ADD BUILDING 'D' GREENHOUSE	HK	
12/11/91	REVISED FOR REVIEW COMMENTS	HK	
11/18/91	REVISED BUILDING CONFIGURATION	HOB	
5-19	REVISED FOR REVIEW COMMENTS	HK	

PREPARED FOR  
 OWNER: H.R. KENDELL  
 12110 CLARKSVILLE PIKE (MD RTE 108)  
 CLARKSVILLE, MD 21030

COLUMBIA LANDSCAPE & DESIGN  
 P.O. BOX 509  
 CLARKSVILLE, MD 21029  
 ATTN: STEVE KLEIN  
 TEL: (301) 581-2224

As-Built S.W.M. Pond 1:2

**H.R. KENDELL PROPERTY**  
**CLARKSVILLE GARDEN CENTER**  
 PARCEL 1, BLOCK 1  
 LIBER 1720 FOLIO 502, 506  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

GENUS TRACT	WATER CODE	OWNER'S FILE
0051	N-G	75-6
SCALE 1" = 30'	ZONING R	G.L.W. FILE NO. 89-036
DATE 11/29/90	TAX MAP NO. 35	SHEET 2 OF 12

CALL "MISS UTILITY" TELEPHONE 1-800-257-7777 FOR UTILITY LOCATIONS AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSD. I will provide HSD with an "as-built" of the pond within 30 days of completion.

*Steph K. ...* 11-29-90  
 Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE

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

*John H. ...* 11-29-90  
 Signature Date

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

*John H. ...* 12/11/90  
 U.S. Soil Conservation Service Date

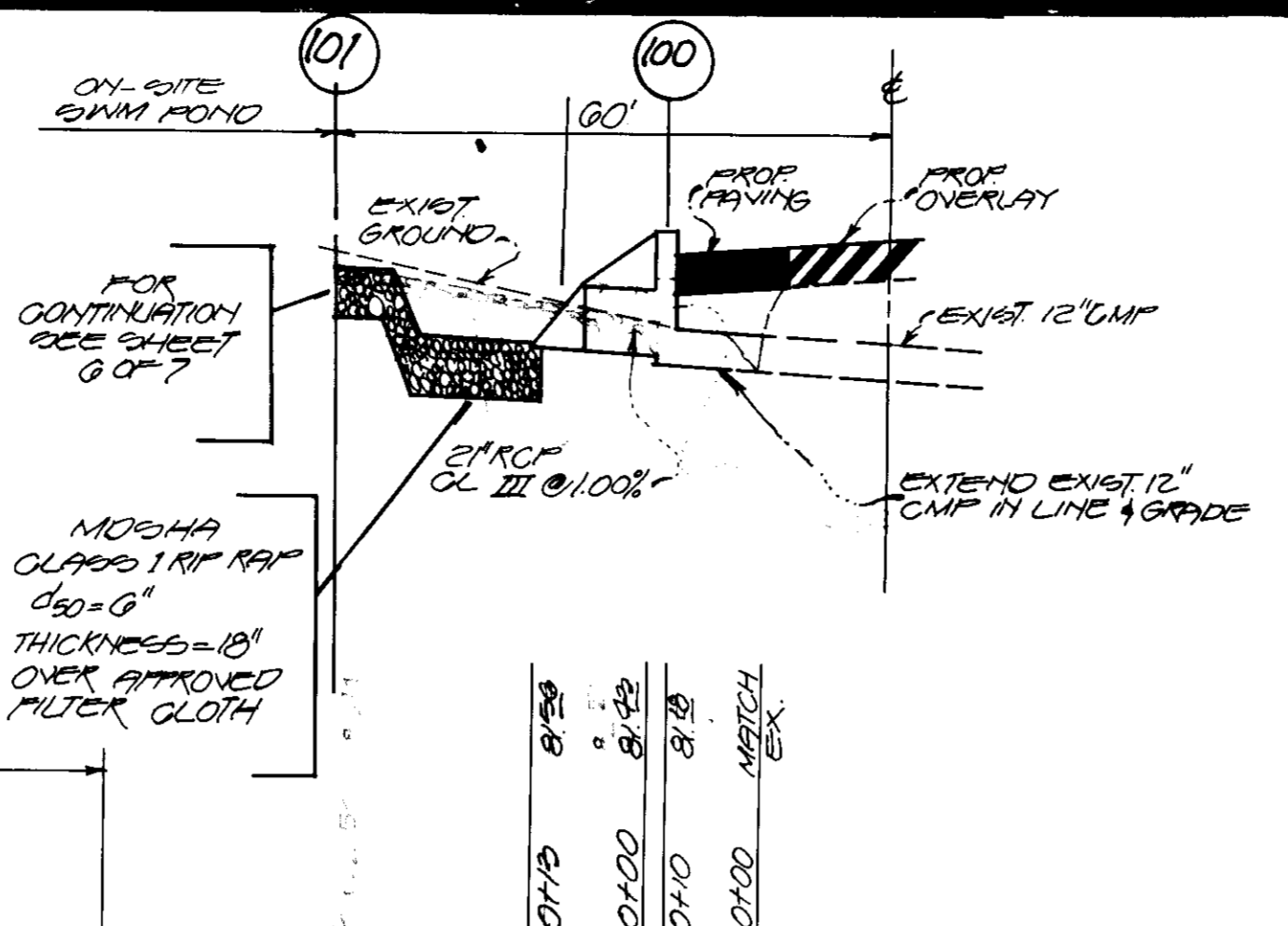
*Robert W. Ziehn* 12/11/90  
 Howard Soil Conservation District



APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT  
Date: 1-17-91  
County Health Officer: [Signature]

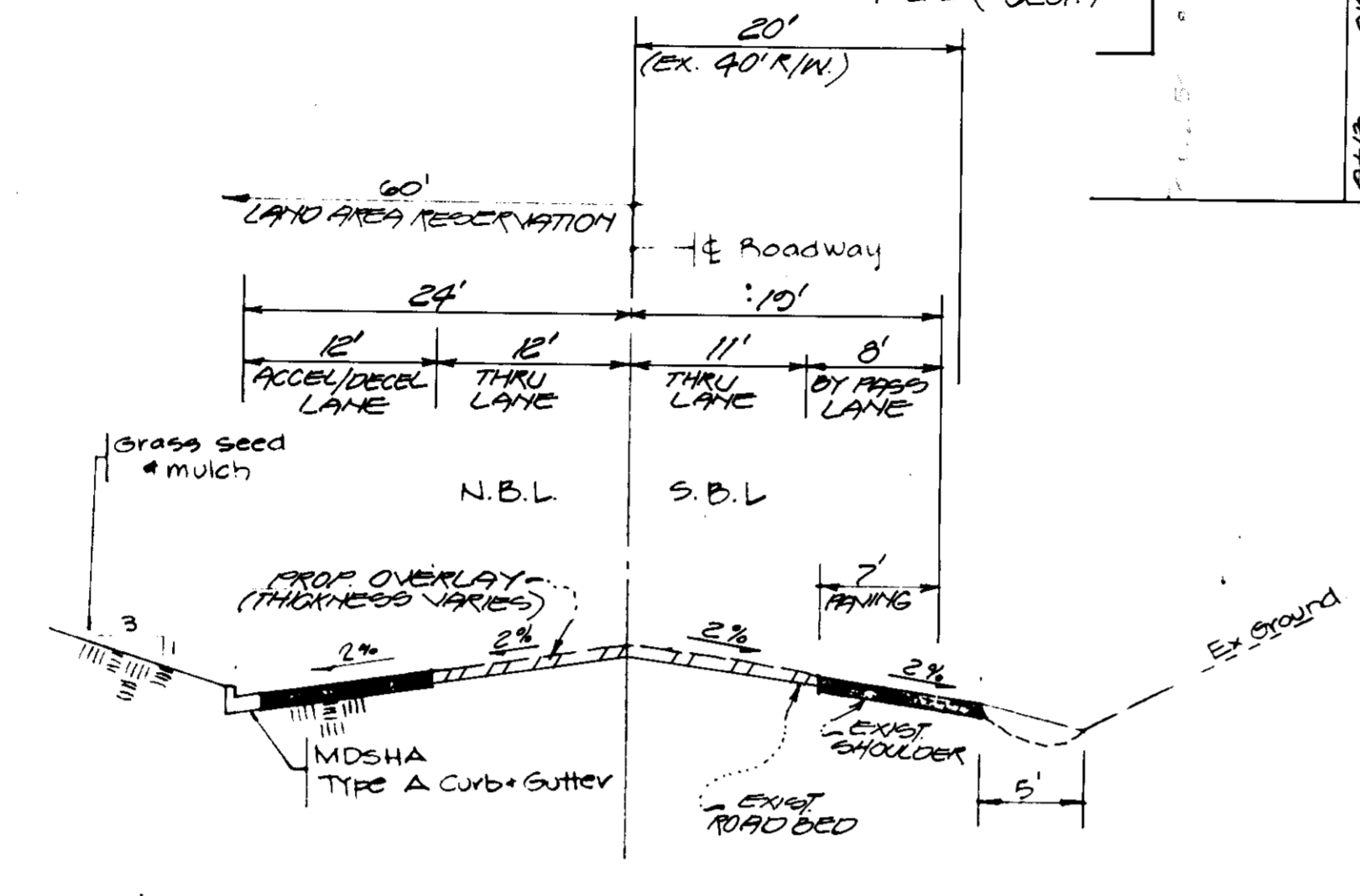
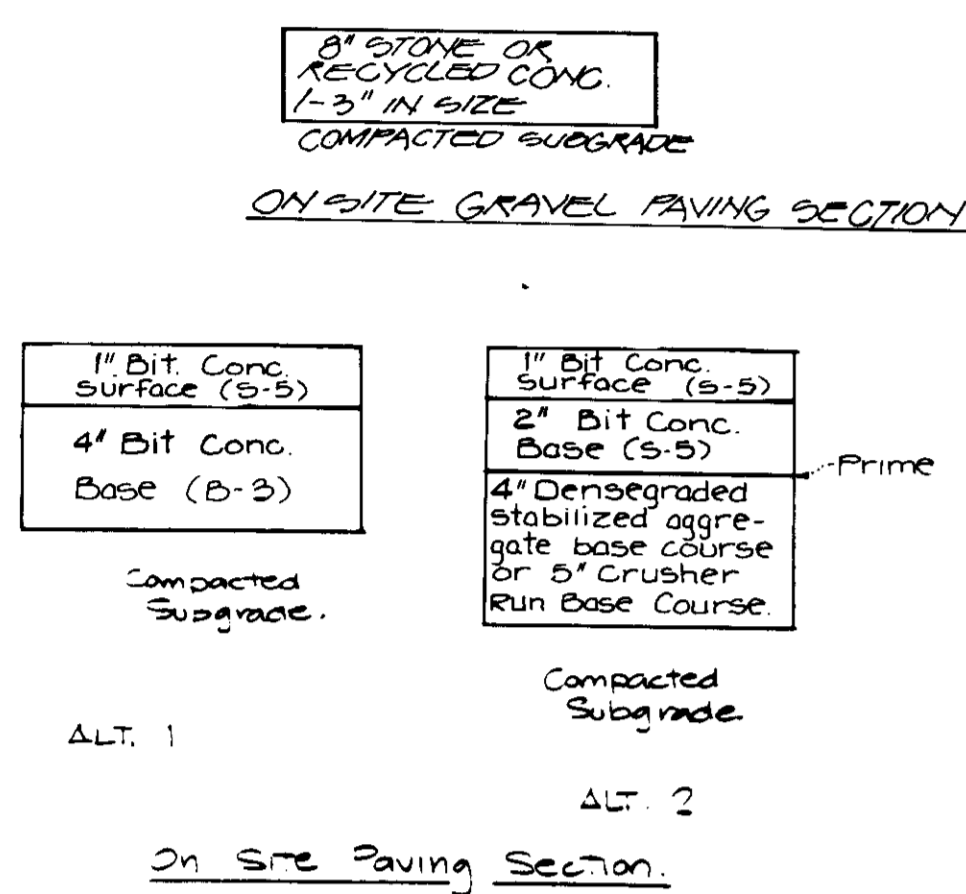
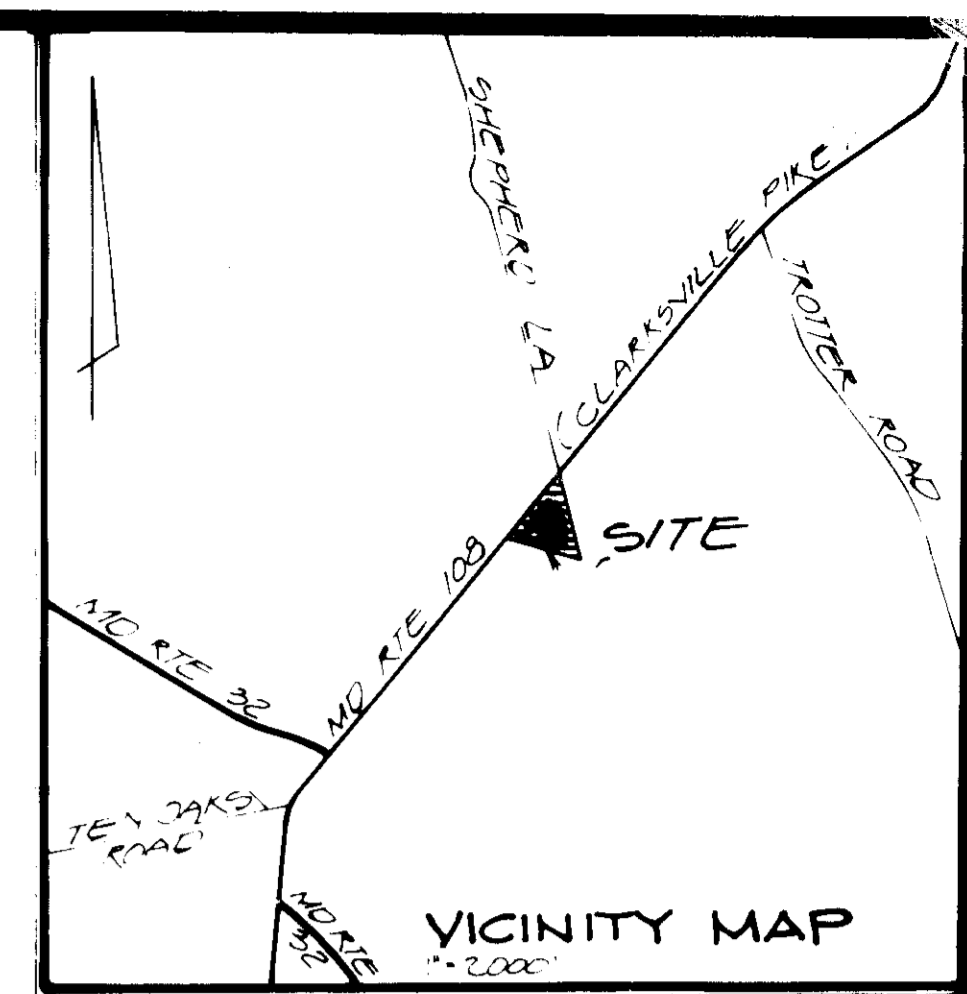
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
Date: 2/28/91  
[Signature]

APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Date: 2/25/91  
[Signature]

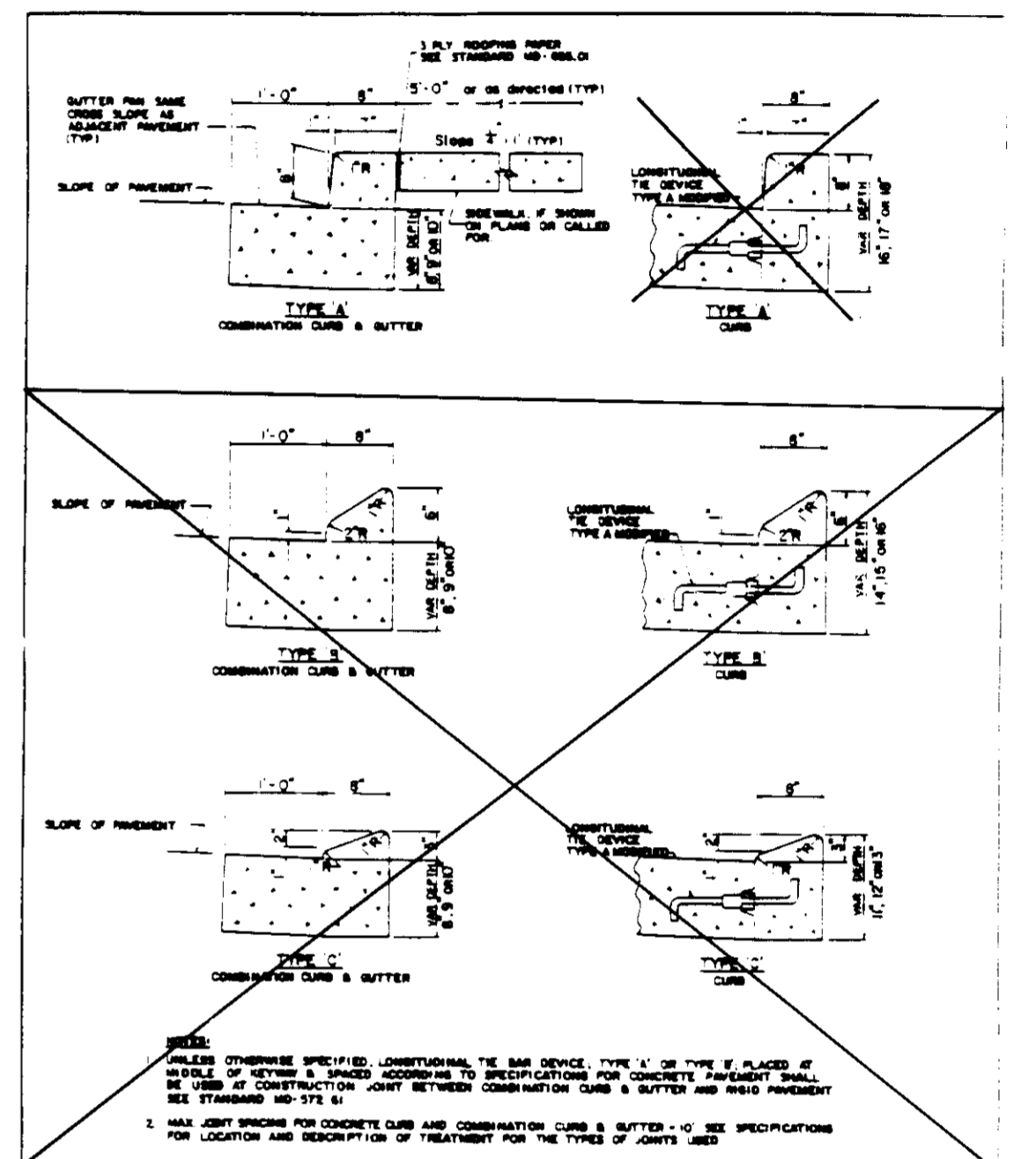
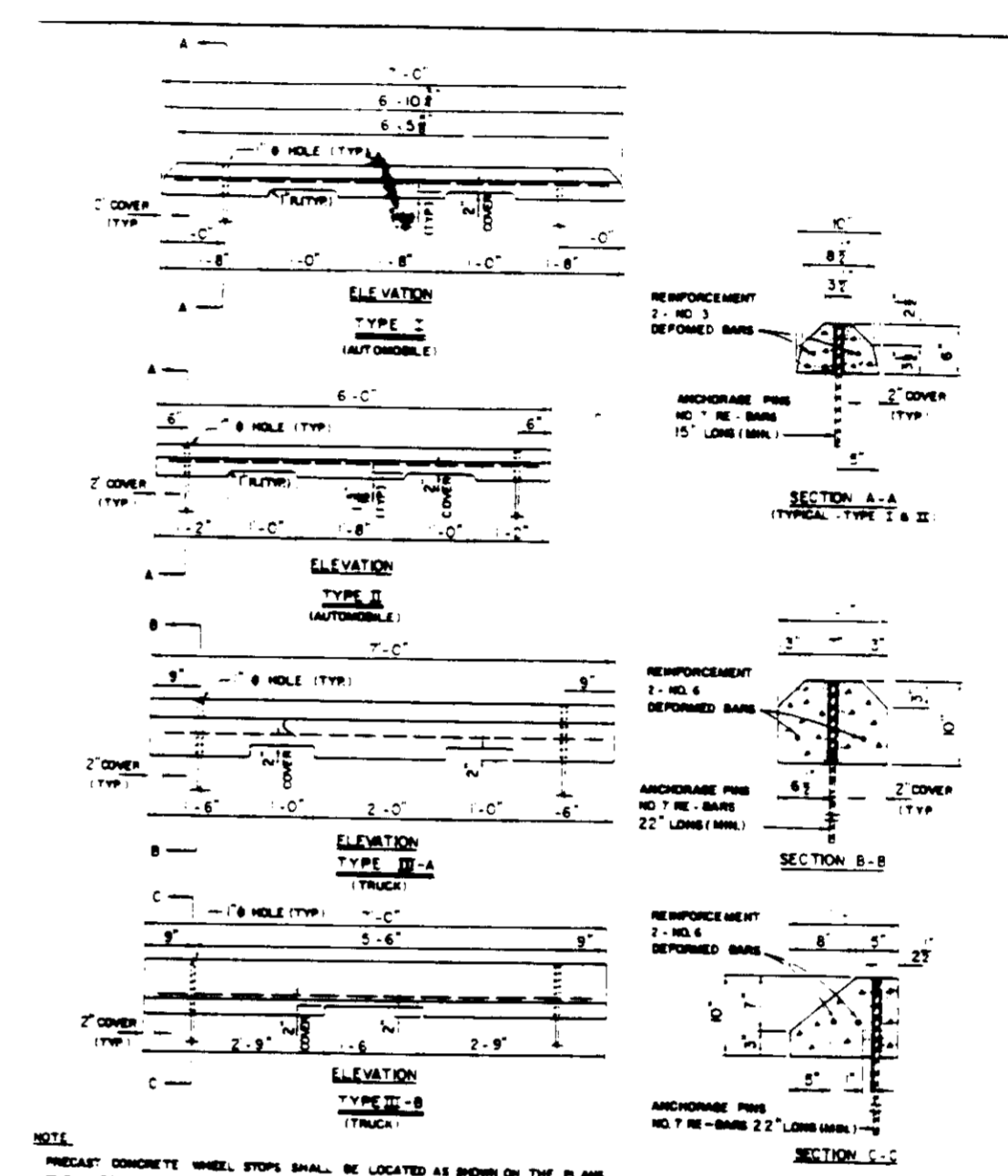


FROM	TO	SIZE	TYPE	LENGTH
EX	100	12"	CMP	10'
100	101	24"	RCP	7'

NO.	TYPE	WIDTH	TOP ELEV. UP	DN	STD DETAIL
100	CON. INLET	15"	84.92	84.92	MD-319.41
101	END SECTION	-	-	-	MD-368.01



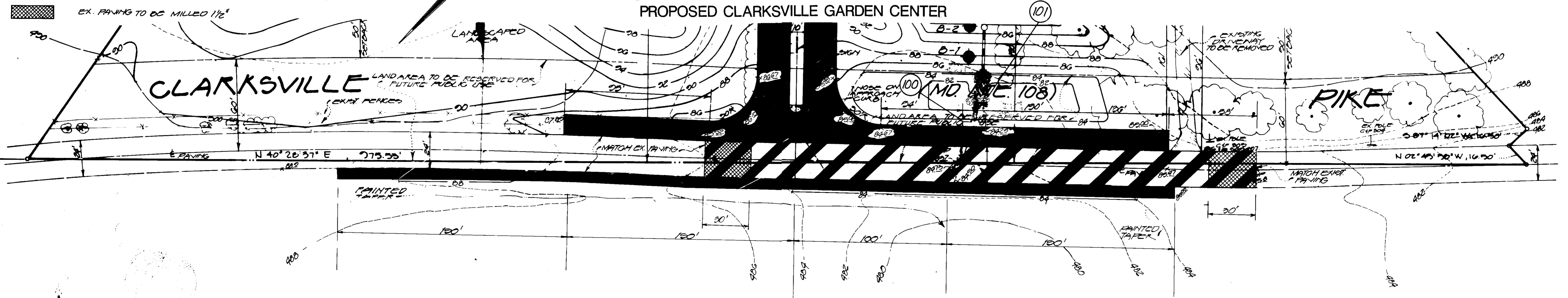
- GENERAL NOTES
- THE CONTRACTOR SHALL EMPLOY METHODS FOR TRAFFIC CONTROL AS SHOWN ON THE STANDARD DETAILS AND ON THE PLAN.
  - ALL WORK ON THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION DATED JANUARY, 1982, REVISION THEREOF, OR ADDITIONS THERETO.
  - WHENEVER REFERENCE IS MADE TO THE BOOK STANDARDS, STANDARD NO., STANDARD PLATES, ETC., SUCH REFERENCES SHALL MEAN "BOOK OF STANDARDS, HIGHWAY AND INCIDENTAL STRUCTURES" STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION IT IS CONTR.'S RESPONSIBILITY TO ASSURE THAT HIS BOOK OF STANDARDS IS CURRENT.
  - EXISTING TOPOGRAPHIC DATA AND UNDERGROUND UTILITY DATA ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, AND ARE APPROXIMATE. THE CONTRACTOR MUST VERIFY ALL DATA TO HIS SATISFACTION.
  - THE CONTRACTOR MUST PROTECT IN PLACE ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHER TREATMENT IS CALLED FOR.
  - CONTACT MISS UTILITY AT 1(800)257-7777 (TO ARRANGE FOR STAKE-OUT OF UTILITIES) AT LEAST THREE DAYS BEFORE STARTING ANY CONSTRUCTION.
  - ALL DISTURBED AREA NOT OTHERWISE TREATED SHALL RECEIVE SEEDING AND MULCHING (WHEN OTHER MIXES ARE NOT SPECIFIED, USE SEED MIX NO. 1).



CALL "MISS UTILITY"  
TELEPHONE  
1-800-257-7777  
FOR UTILITY LOCATIONS  
AT LEAST 48 HOURS BEFORE  
BEGINNING CONSTRUCTION.

MD Rte 108 Paving Sections  
**LEGEND**

- ASPHALT PAVING
- ASPHALT PAVING OVERLAY (VARIES FROM 1 1/2" TO 12")
- EX. PAVING TO BE MILLED 1 1/2"



**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
ENGINEERS, PLANNERS, SURVEYORS  
2808 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886  
TELEPHONE: (301) 421-4024

REVISION	DATE	BY	APP'R.
12/1/90			
2/15/91			

OWNER: H.R. KENDELL  
PREPARED FOR:  
H.R. KENDELL  
CLARKSVILLE GARDEN CENTER  
CLARKSVILLE, MD 20886

S.W.M. Pond #2 As-Built (see sht. 2 of 12 for more information)

H.R. KENDELL PROPERTY  
**CLARKSVILLE GARDEN CENTER**  
PARCEL 1, BLOCK 1  
LIBER 1760 FOLIO 592,593  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE: 1"=50'  
ZONING: R  
G.L.W. FILE NO.: 89-056  
DATE: 2/25/91  
TAX MAP NO.: 35  
SHEET: 3 OF 12

SDP-91-02



APPROVED: FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT

County Health Officer: *John M. Holm* 1/7/91  
 Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 Planning Director: *John M. Holm* 2/28/91  
 Date

APPROVED: STATE DEPARTMENT OF ENVIRONMENTAL & LAND DEVELOPMENT  
 Director: *John M. Holm* 2/12/91  
 Date

APPROVED: STATE DEPARTMENT OF PUBLIC UTILITIES & PUBLIC HEAVENS  
 Director: *John M. Holm* 2/25/91  
 Date

APPROVED: STATE DEPARTMENT OF TRANSPORTATION  
 Director: *John M. Holm* 2-4-91  
 Date

HOWARD RESEARCH & DEVELOPMENT CORP  
 463/196  
 MAP 1 BLOCK 1 PARCEL 3  
 ZONED: NT

**SEDIMENT TRAP NO. 1**  
 Sediment Trap

Drainage Area = 2.8 Ac. (Pre-Development) 2.6 Ac. (Post-Development)

Storage Required = 2.8 (1800) = 5040 cu. ft.  
 Storage Depth = 3 feet  
 Cleanout Elevation = 481.5  
 Outlet Elevation = 483.1  
 Bottom Elevation = 480.0  
 Side Slopes = 2:1  
 Surface Area @ Elevation 483.0 (\*L.O.S.) = 2380 sq. ft.  
 Surface Area @ Elevation 480.0 (bottom) = 1100 sq. ft.

Volume Provided =  $1100 \times 2380 \times 3 = 5220$

L.O.S. = Limit of Storage

**SEDIMENT TRAP NO. 2**  
 STONE OUTLET SEDIMENT TRAP

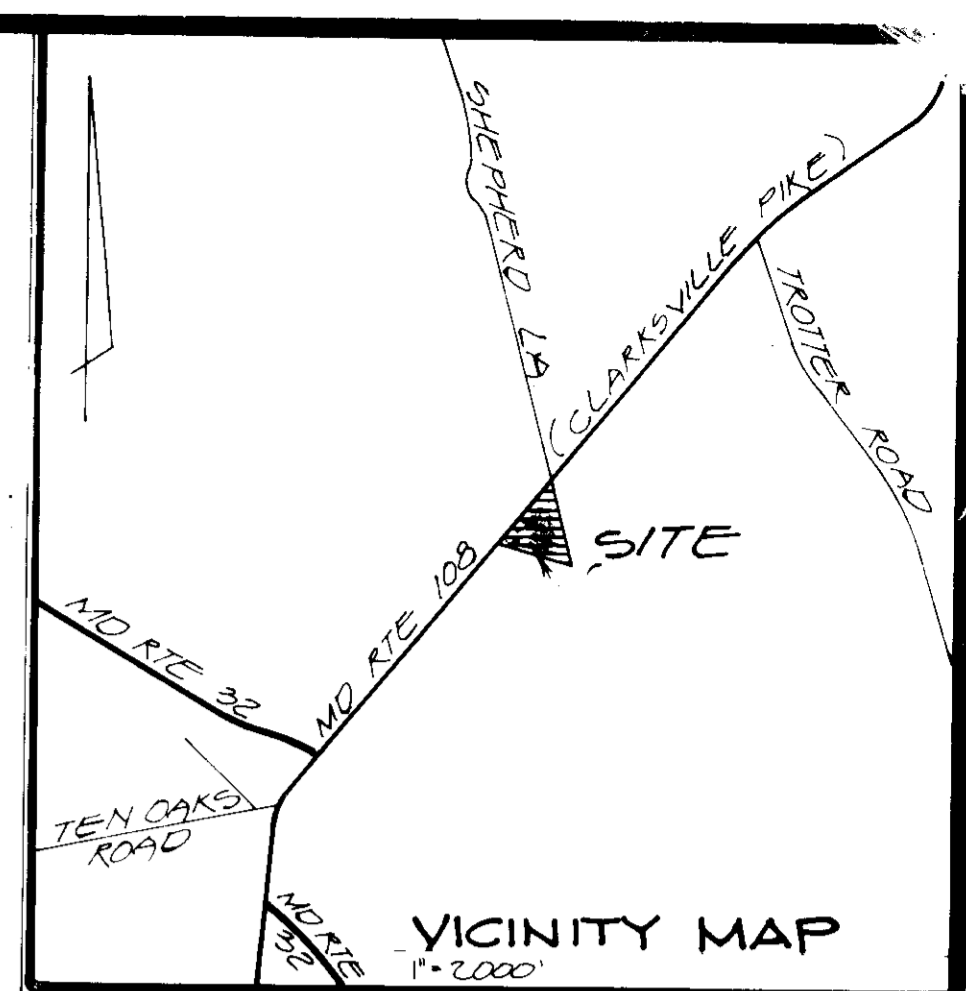
MINIMUM OUTLET LENGTH = 3'

Drainage Area = 0.94 (Pre-Development) 0.94 AC (Post-Development)

Storage Required = 0.94 (1800) = 1692 CU. FT.  
 Storage Depth = 1.5 FEET  
 Cleanout Elevation = 486.25  
 Outlet Elevation = 488.0  
 Bottom Elevation = 486.5  
 Side Slopes = 2:1  
 Surface Area @ Elevation 487.0 (\*L.O.S.) = 1156 SQ. FT.  
 Surface Area @ Elevation 485.5 (bottom) = 622 SQ. FT.

Volume Provided =  $1120 \times 622 \times 1.5 = 1330$  CU. FT.

L.O.S. = LIMIT OF STORAGE



ENGINEER'S CERTIFICATE

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

*CK [Signature]*  
 11-29-90  
 Date

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

*Rand W. Zaiton (S)* 12/1/90  
 Date  
 Howard Soil Conservation District

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.

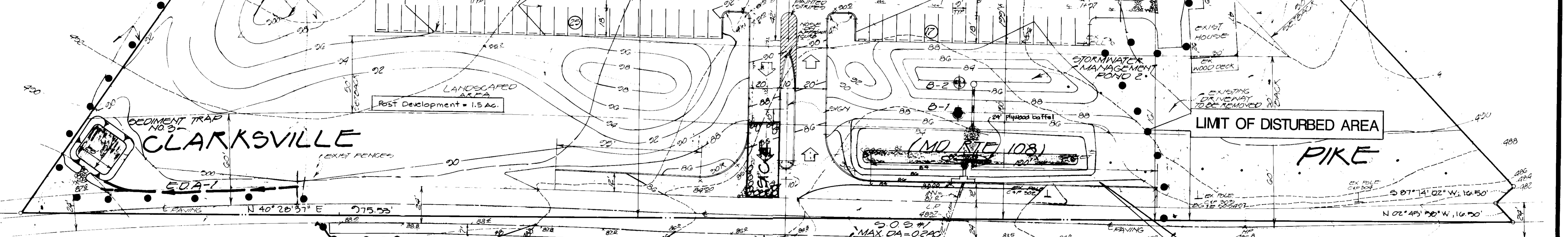
*John M. Holm (S)* 12/11/90  
 Date  
 U.S. Soil Conservation Service

**STORMWATER MANAGEMENT POND NO. 1**  
 IS A CLASS "A" POND LOCATED IN A RURAL AREA. THE POND HAS BEEN LOCATED IN AN EXISTING NATURAL VALLEY.

**STORMWATER MANAGEMENT POND NO. 2**  
 IS A CLASS "A" POND LOCATED IN A RURAL AREA UPSTREAM OF AN AGRICULTURAL PRESERVE.

- LEGEND**
- ASPHALT PAVING
  - GRAVEL PAVING
  - CURB & GUTTER
  - VERTIC EASEMENT AREA
  - FENCE
  - LANDSCAPE WALL W/ FENCE
  - SOFTING PERCOLATION TEST PIT
  - SOIL BORING
  - PROP. STORM DRAIN
  - EXIST. CONTAINERS
  - PROP. CONTAINERS

LINTHICUM CHAPEL CEMETERY  
 83/907  
 MAP 35 BLOCK 1 PARCEL 242  
 ZONED: R



**SEDIMENT TRAP NO. 1**

LINTHICUM METHODIST CHURCH INC.  
 359/499  
 MAP 35 BLOCK 1 PARCEL 218  
 ZONED: R

DEVELOPER'S/BUILDER'S CERTIFICATE

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 the Environment 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 inspection by HSCD.

*Styl [Signature]*  
 11-29-90  
 Date  
 Signature of Developer/Builder

**SEDIMENT TRAP NO. 2**  
 PIPE OUTLET, Sediment Trap

Drainage Area = 1.8 Ac. (Pre-Development) 1.8 Ac. (Post-Development)

Storage Required = 3.2 (1800) = 5760 cu. ft.  
 Storage Depth = 2.5 feet  
 Cleanout Elevation = 484.5  
 Outlet Elevation = 482.7  
 Bottom Elevation = 482.7  
 Side Slopes = 2:1  
 Surface Area @ Elevation 484.5 (\*L.O.S.) = 447 sq. ft.  
 Surface Area @ Elevation 482.0 (bottom) = 1120 sq. ft.

Volume Provided =  $1120 \times 447 \times 2.5 = 6,246$  cu. ft.

L.O.S. = Limit of Storage

**GLW GUTSCHICK LITTLE & WEBER, PA.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 3909 NATIONAL DRIVE SUITE 250 BURTONTVILLE OFFICE PARK BURTONTVILLE, MD 20886  
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
2-25-92	ADD BUILDING 'D' - GREENHOUSE, LATH HOUSE	HOB	
12/1/90	REVISED FOR REVIEW COMMENTS	HOB	
11/16/90	REVISED BUILDING CONFIGURATION	WT	
3-17	REVISED PER REVIEW COMMENTS	WT	

PREPARED FOR  
 OWNER: H.R. KENDALL  
 1218 CLARKSVILLE PIKE (MD RTE 108)  
 CLARKSVILLE, MD 21020

COLUMBIA LANDSCAPE DESIGN  
 100 BOX 500  
 CLARKSVILLE, MD 21020  
 CLYDIA BEVIE KLEIN  
 TEL # (301) 821-2224

**SEDIMENT CONTROL PLAN**  
 H.R. KENDALL PROPERTY  
 CLARKSVILLE GARDEN CENTER  
 PARCEL 1 BLOCK 1  
 LIBEX 1720 FOLIO 892, 896  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE NO.
1" = 30'	R	89-036
DATE	TAX MAP NO.	SHEET
JUNE 1990	35	4 OF 12



APPROVED: FOR PRIVATE WATER & SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT

*John P. Boyd* 1-17-91  
County Health Officer Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

*Joseph K. ...* 2/28/91  
DATE

*Charles S. ...* 2/20/91  
DATE

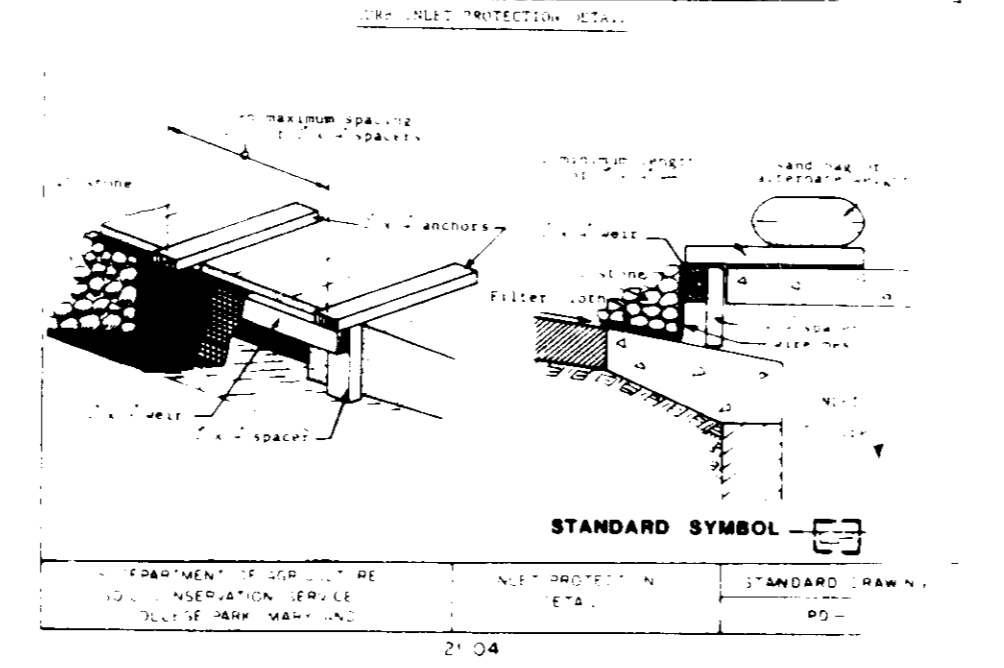
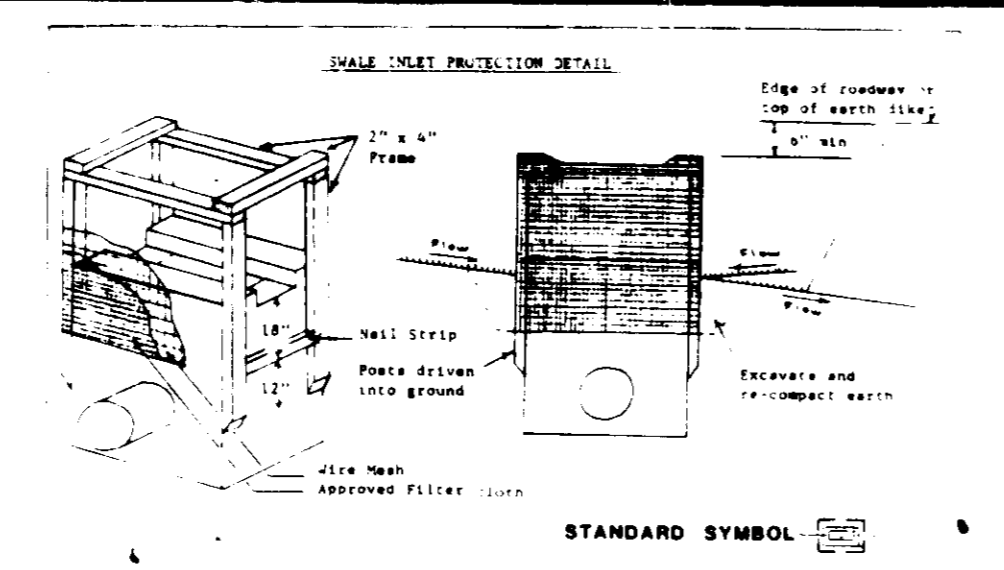
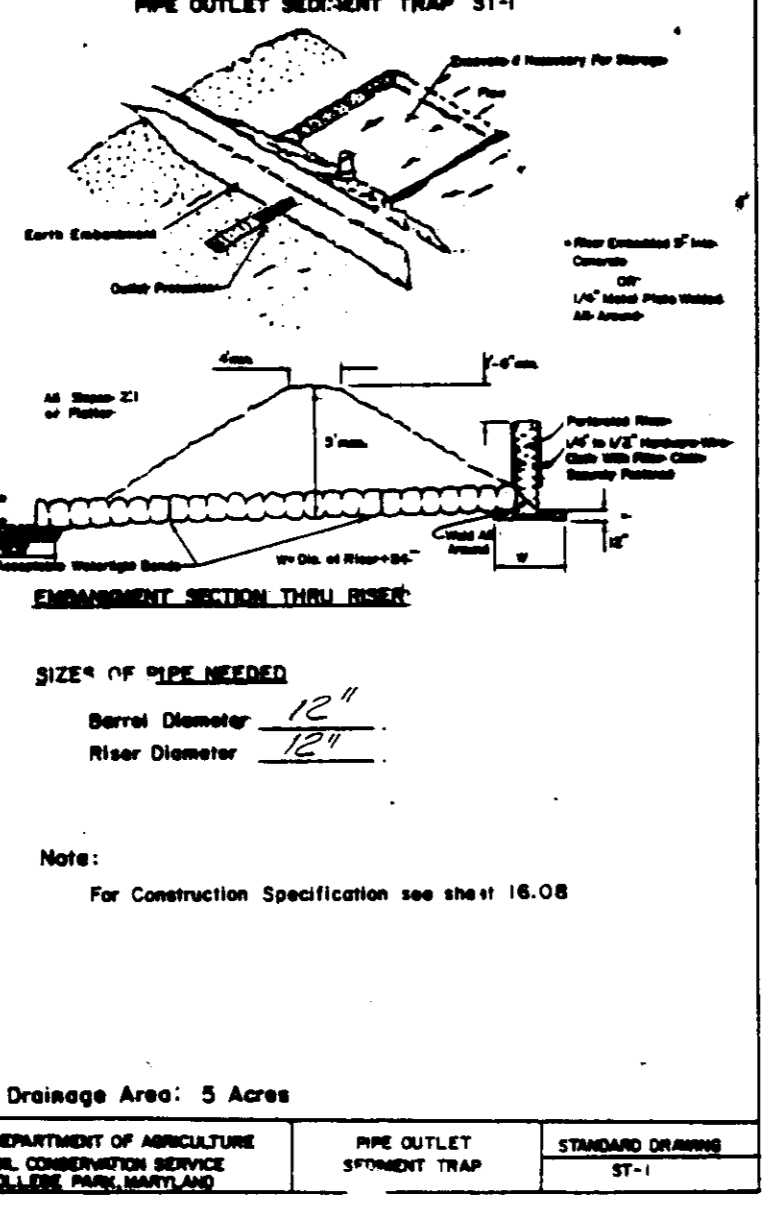
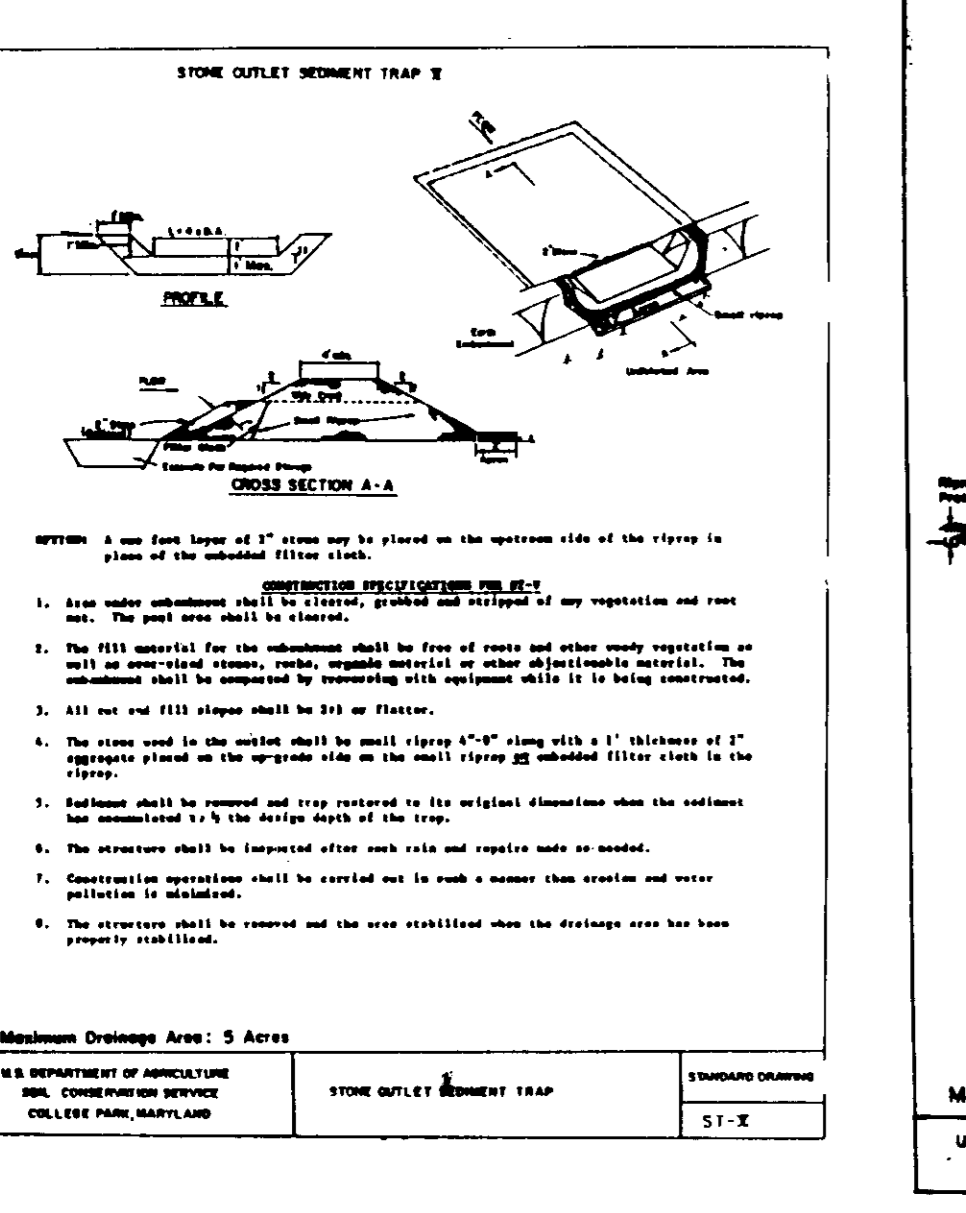
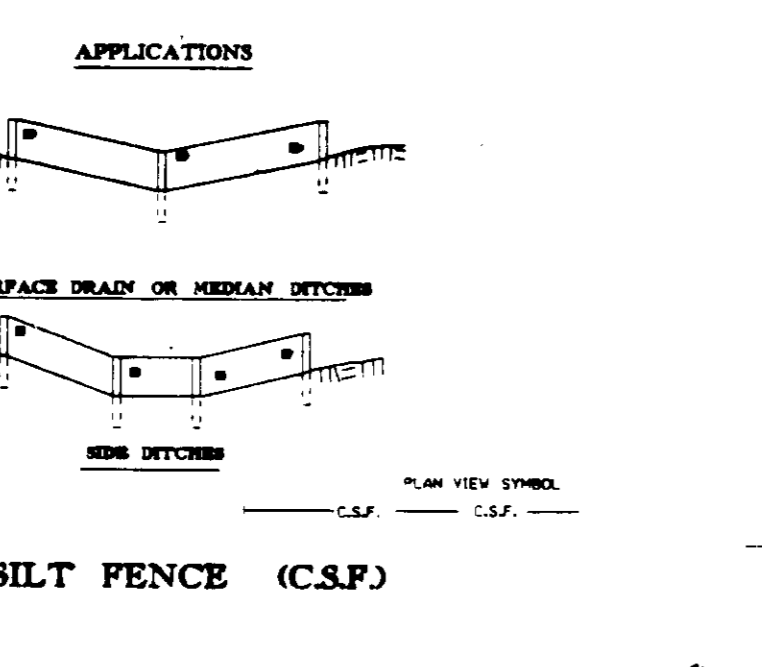
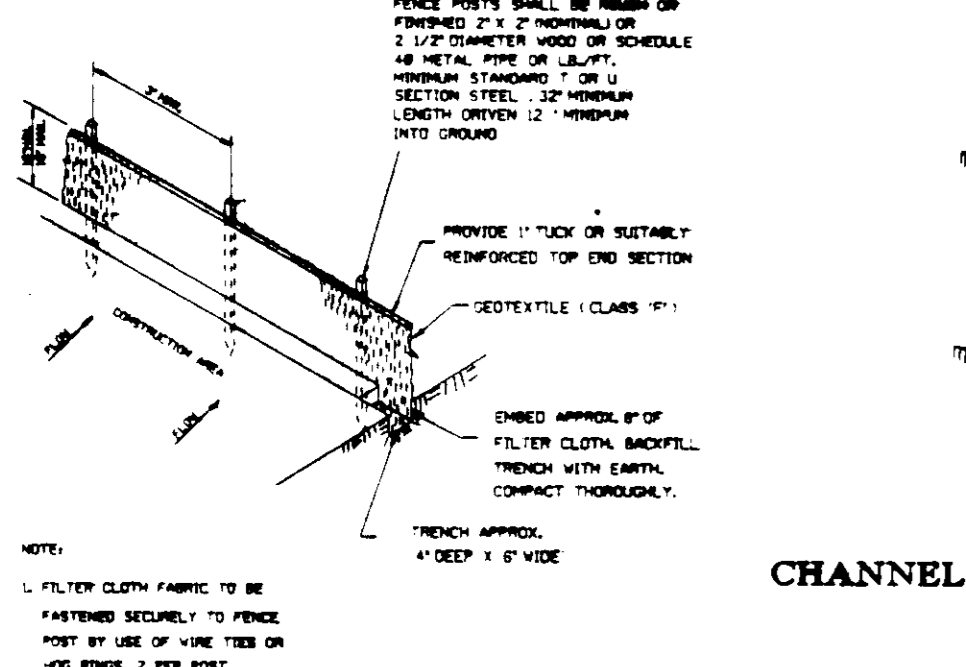
Chief Division of Community Planning  
and Land Development

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

*James P. ...* 2/25/91  
DATE

*...* 2-4-91  
DATE

Chief Bureau of Engineering



**Pipe Outlet Trap Construction Specifications for ST-1**

- 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 oversized stones, rocks, organic materials or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
- Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
- 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 repairs made 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 area stabilized when the drainage area has been properly stabilized.
- All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
- All pipe connections shall be watertight.
- The top 2/3 of the riser shall be perforated with one (1) inch diameter holes or slots or slits spaced six (6) inches vertically and horizontally and placed in the concave portion of the pipe. No holes will be allowed within six (6) inches of the horizontal barrel.

**Construction Specifications**

**Materials**

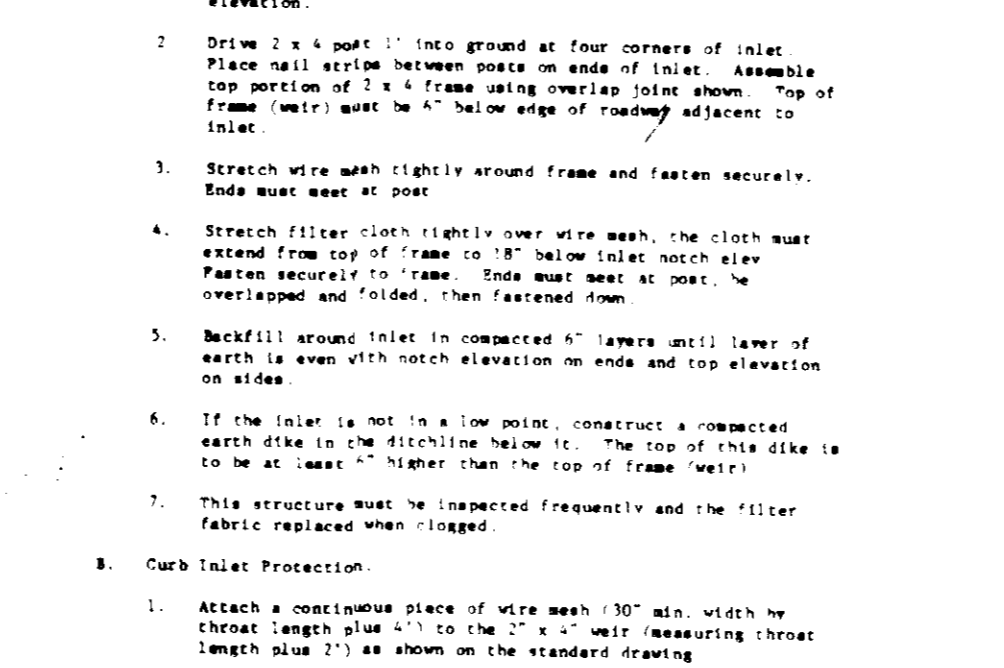
- Wooden frame is to be constructed of 2" x 4" construction grade lumber.
- Wire mesh must be of sufficient strength to support filter fabric, and strong for curb inlets, with water fully impounded against it.
- Filter cloth must be of a type approved for this purpose; resistant to sunlight with a pore size, 50-100, to allow sufficient passage of water and removal of sediment.
- Stone is to be 2" in size and clean, since fines would clog the cloth.

**Procedure**

- Excavate completely around inlet to a depth of 18" below notch elevation.
- Drive 2 x 4 posts 12" into ground at four corners of inlet. Place nail across between posts on ends of inlet. Assemble top portion of 2 x 4 frame using overlap joints shown. Top of frame must be 18" below notch elevation.
- Stretch wire mesh tightly around frame and fasten securely. Ends must meet at joint.
- Stretch filter cloth tightly over wire mesh. Cloth must extend from top of frame to 18" below inlet notch elevation. Securely fasten to frame. Ends must meet at joint. Be stretched and fitted, then fastened down.
- Backfill around inlet in compacted 4" layers until lower of earth is even with notch elevation on ends and top elevation on sides.
- If the inlet is not to a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 2" higher than the top of frame (water).
- This structure must be inspected frequently and the filter fabric replaced when clogged.

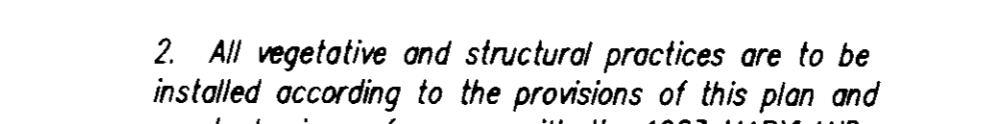
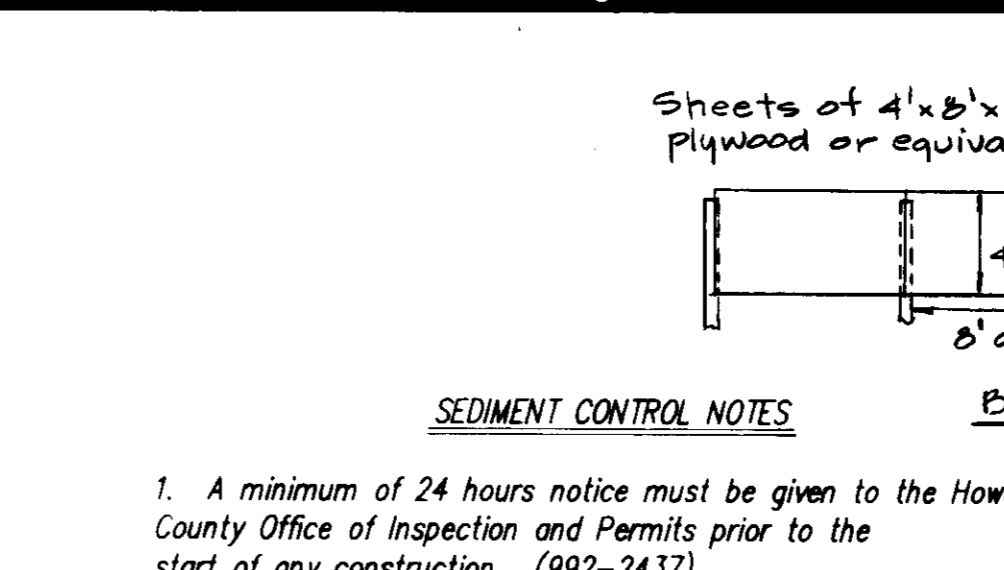
**Curb Inlet Protection**

- Attach a rectangular piece of wire mesh 18" x 18" with a throat length plus 4" to the 2" x 4" wire (measuring throat length plus 4" as shown on the standard drawing).
- Securely nail one 2" x 4" post to 18" vertical concrete to be located between the well and inlet face (see "A" above).
- Place the assembly against the inlet throat and nail minimum 18" x 18" mesh to the 2" x 4" post to the top of the curb or concrete. There shall be a 1/2" clearance shall extend across the inlet top and be held in place by sandbags or alternate weight.



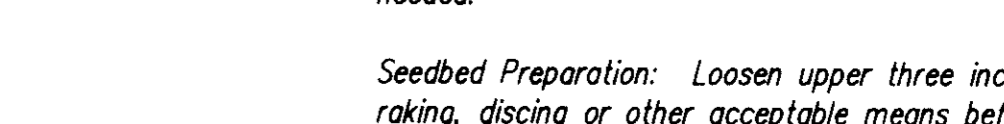
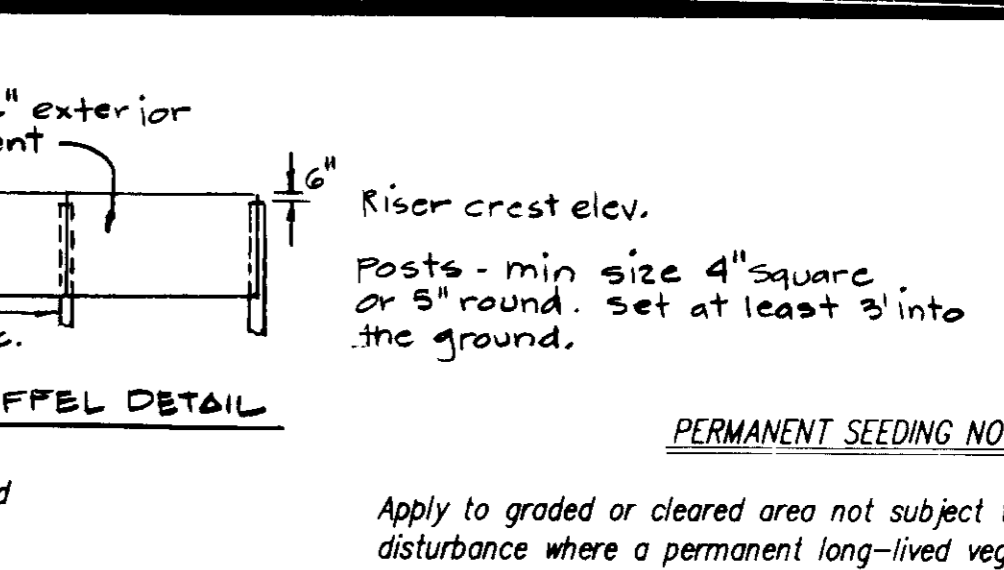
**SEDIMENT CONTROL NOTES**

- 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:
  - 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1.
  - 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 seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone can only be done when recommended seeding dates do not allow for proper germination and 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: 7.0 Acres
  - Area Disturbed: 0.9 Acres
  - Area to be stabilized with stone: 2.4 Ac.
  - Area to be vegetatively stabilized: 2.8 Acres
  - Total Cut: 500 Cu. Yds.
  - Total Fill: 125,000 Cu. Yds.
  - Off-site borrow area location to be from an area with an available approved sediment control plan.
- Any sediment control practice which is disturbed by grading or placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control 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.



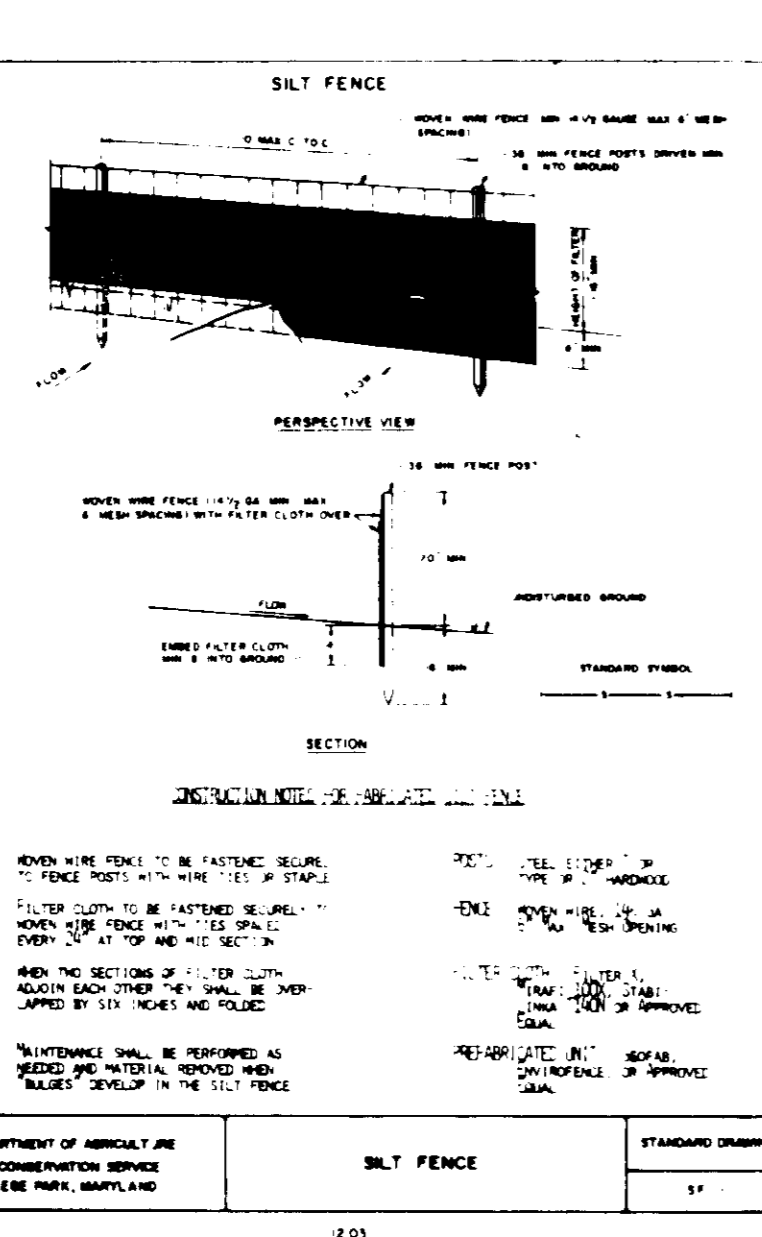
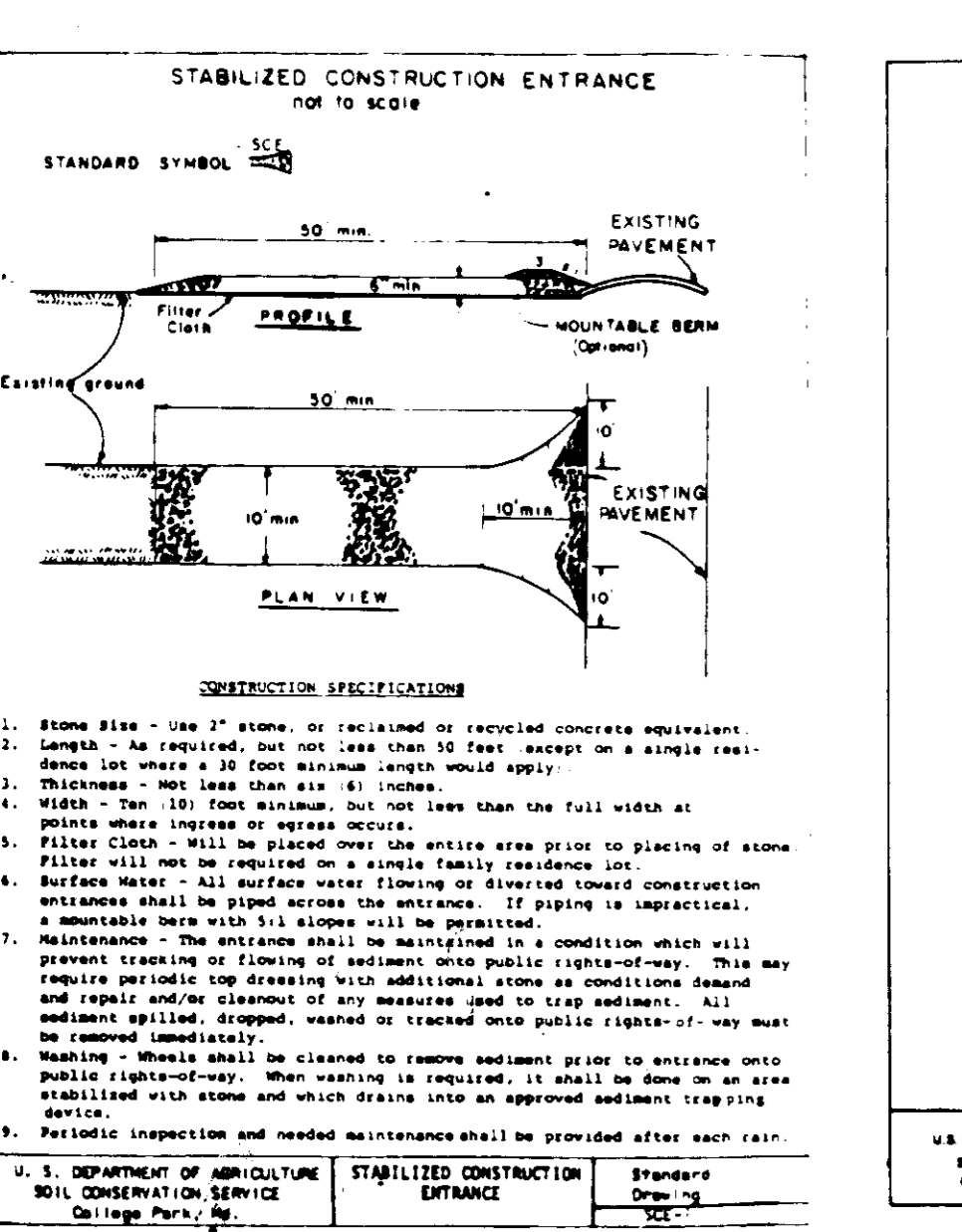
**PERMANENT SEEDING NOTES**

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- 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 feet) 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.



**TEMPORARY SEEDING NOTES**

- Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.
- Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or 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 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft 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.



**STATE OF MARYLAND**

**DEPARTMENT OF AGRICULTURE**

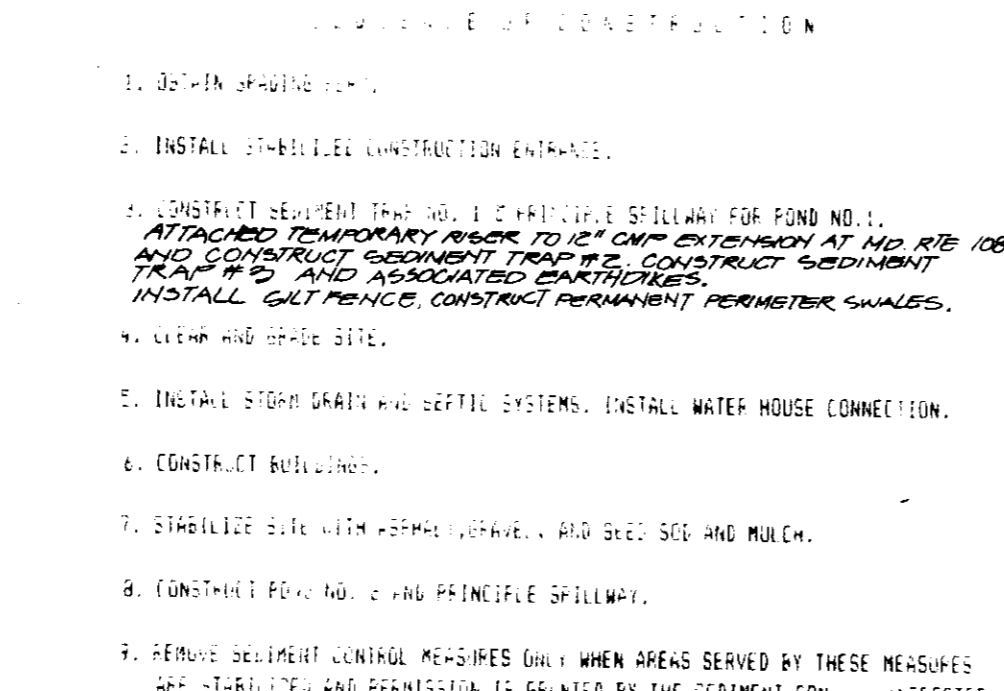
**SOIL CONSERVATION SERVICE**

**COLLEGE PARK, MARYLAND**

*Robert W. Zishman*

11-29-90

Date



**DEVELOPER'S/BUILDER'S CERTIFICATE**

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

*Robert W. Zishman*

11-29-90

Date

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I 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 the Environment 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 inspection by HSCD.

*Stephen R. ...*

11-29-90

Signature of Developer/Builder Date

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11-29-90

Signature of Developer/Builder Date

**GW GUTSCHICK LITTLE & WEBER, P.A.**

ENGINEERS, PLANNERS, SURVEYORS

3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866

TELEPHONE (301) 421-4024

NO.	DATE	REVISION	BY	APPR.
1	3-10	Revised per Review Comments	MT	

PREPARED FOR

*H.R. KENDALL*

1218 CLARKSVILLE PARK (RD 101)

CLARKSVILLE, MD 21030

COLUMBIA LANDSCAPE DESIGN

PO BOX 505

CLARKSVILLE, MD 21030

TEL # (301) 801-2229

**SEDIMENT CONTROL DETAILS**

H. R. KENDALL PROPERTY

CLARKSVILLE GARDEN CENTER

PARCEL 1, BLOCK 1

ORDER 1720 FOLIO 592,596

5TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE NO.
		80-036
DATE	TAX MAP NO.	SHEET
JUNE 1990		5 of 12

SDP-91-02







**APPROVED:** FOR PRIMARY WATER & SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 1-17-91  
 Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 2/20/91  
 Chief Division of Community Planning and Land Development  
 Approved: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 2/25/91  
 Chief Bureau of Engineering

Blank space for additional approvals or notes.

**STORM WATER MANAGEMENT POND NOTES**

I. SITE PREPARATION:

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

B. Areas to be covered by 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, logs, and stumps shall be cut approximately level with the ground surface.

C. 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.

Record of Soil Examination

NO.	DATE	LOCATION	DEPTH	TESTS	REMARKS

Record of Soil Examination

NO.	DATE	LOCATION	DEPTH	TESTS	REMARKS

Record of Soil Examination

NO.	DATE	LOCATION	DEPTH	TESTS	REMARKS

Record of Soil Examination

NO.	DATE	LOCATION	DEPTH	TESTS	REMARKS

II. EARTH FILL

A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

B. 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.

C. COMPACTION: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired, or vibratory roller. Fill material shall contain sufficient moisture so 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. It is recommended that the Core be constructed in 8" thick layers, each compacted to minimum of 95% of the maximum dry density determined by the Modified moisture density relationship test (ASTM D-293).

D. CUTOFF TRENCH: Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The 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 on-site (or from an area designated on the plans) and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL:

Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally, to any part of the 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 Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Mexon, Plasti-Cote, Bloc-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 section, 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 where the pipe and riser are metal. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

3. BEDDING: The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

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.

3. LAYING PIPE: Bell and spigot pipe shall be placed with the bell 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.

4. Backfilling shall conform to structural backfill as shown above.

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

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

V. CONCRETE:

A. MATERIALS:

1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150.

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

V. A. (continued)

3. SAND - The sand used in concrete shall be clean, hard, strong, and durable, and shall be well graded with 100% passing a one quarter inch sieve. Limestone sand shall not be used.

4. COARSE AGGREGATE - The coarse aggregate shall be clean, hard, strong and durable, and free from clay and dirt. It shall be well graded with a maximum size of one-and-one-half (1-1/2) inches.

5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

B. 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. Gals. of water/94-pound bag of cement. The proportion of materials for the trial mix shall be 1:2.3-1/2. The combination of the aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

C. 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 mixture and of the introduction of the materials including water, into the mixer. Water shall be added prior to, during, and following the mixer-changing operations. Excessive overmixing requiring the addition of water to preserve 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.

D. 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 should be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the 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.

E. 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.

F. CONSOLIDATION - 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.

G. FINISHING - Defective concrete, honey combed areas, voids left by 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.

H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least three days. All concrete shall be kept continuously moist for at least ten 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 compound may also be used.

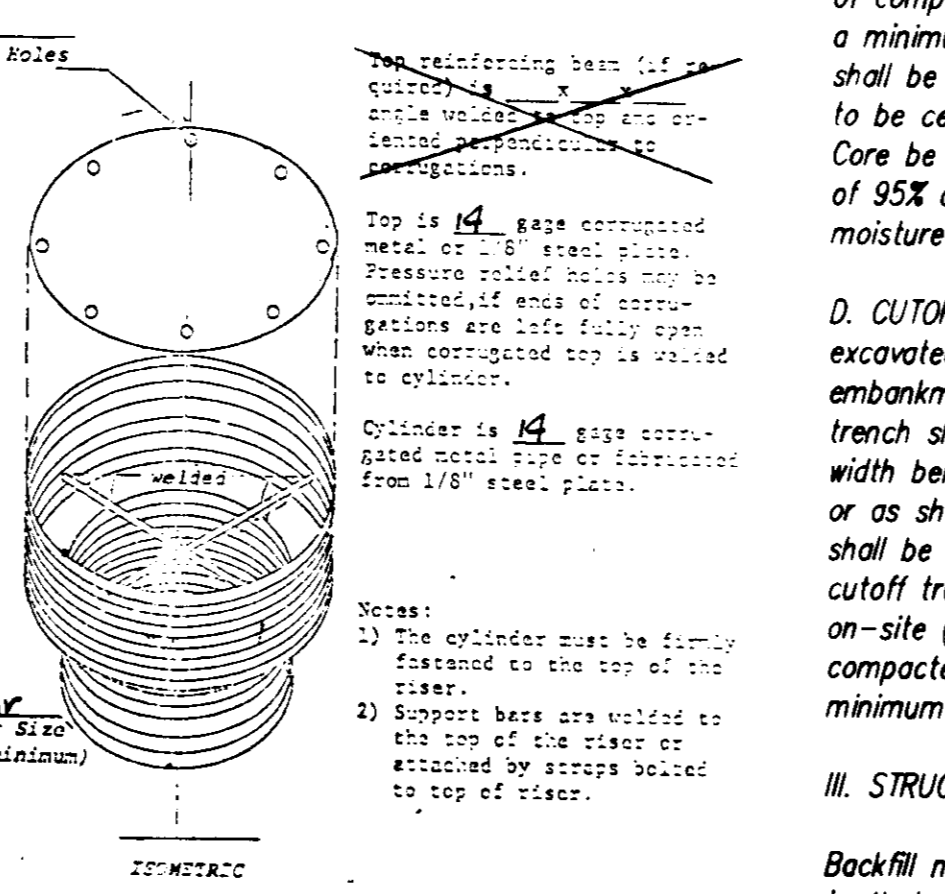
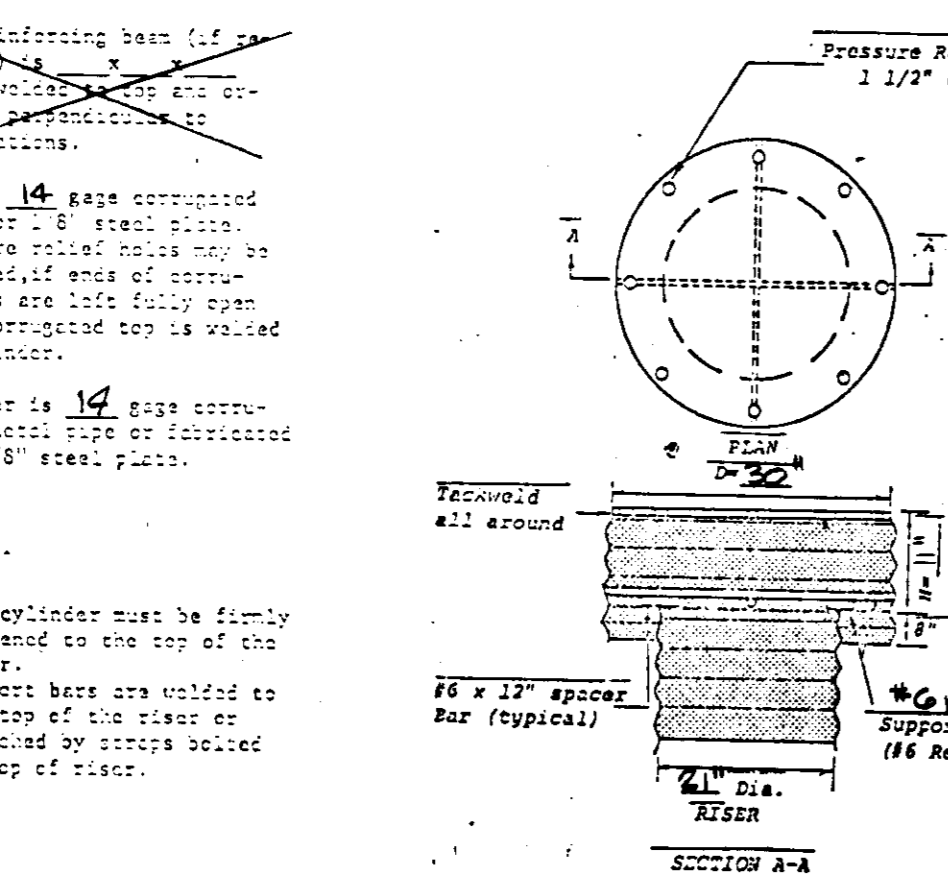
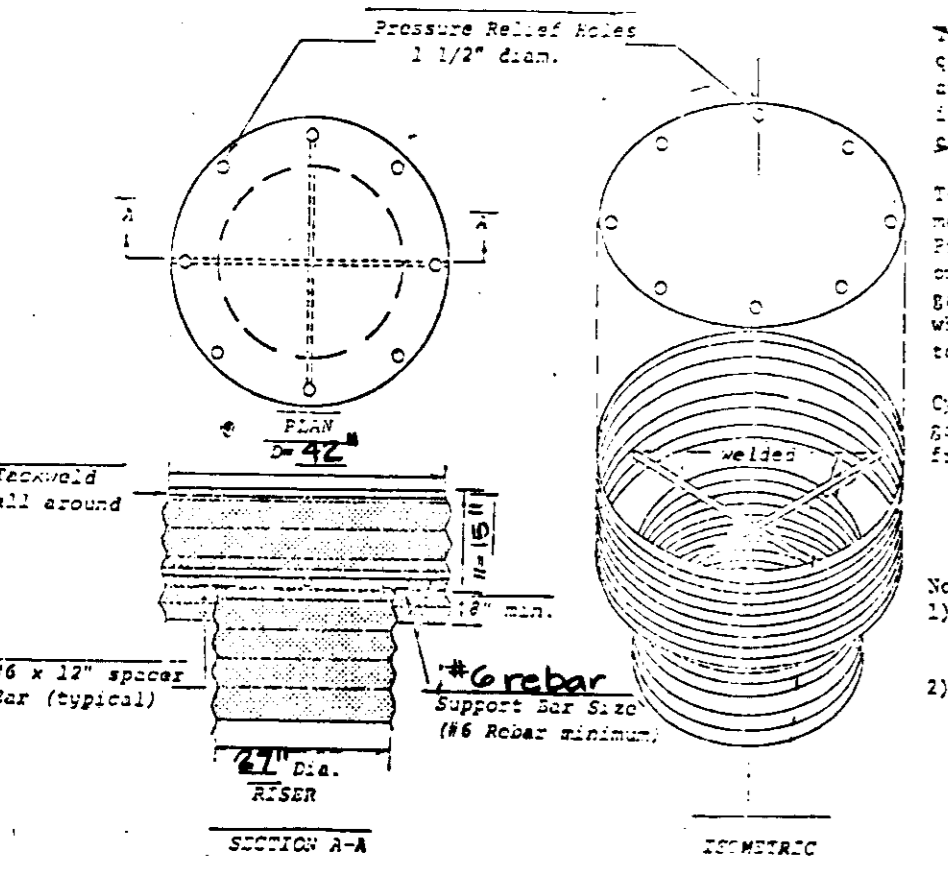
I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37°F with temperature falling, or 34°F with the temperature rising.

VI. STABILIZATION

All borrow areas shall be graded to provide drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing, and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

VII. EROSION AND SEDIMENT CONTROL

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



CONCENTRIC TRASH RACK AND INTAKE VORTEX DEVICE (not to scale)  
**POND NO. 1**

CONCENTRIC TRASH RACK AND INTAKE VORTEX DEVICE (not to scale)  
**POND NO. 2**

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

*Robert W. Zichner* 12/11/90  
 Howard Soil Conservation District Date

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

*James M. T. [Signature]* 12/11/90  
 U.S. Soil Conservation Service Date

ENGINEER'S CERTIFICATE

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

*CK [Signature]* 11-29-90  
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

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 the Environment 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 inspection by HSCD.

*Steph [Signature]* 11-29-90  
 Signature of Developer/Builder Date

**GLW GUTSCHICK LITTLE & WEBER, PA.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886  
 TELEPHONE (301) 421-4024

PREPARED FOR  
 OWNER: H.R. KENDALL  
 1820 CLARKSVILLE PKWY (RD. 100)  
 CLARKSVILLE, MD 21030

COLUMBIA LANDSCAPE DESIGN  
 40 BOX 202  
 CLARKSVILLE, MD 21030  
 CLARKSVILLE, MARYLAND  
 TEL # (301) 801-2229

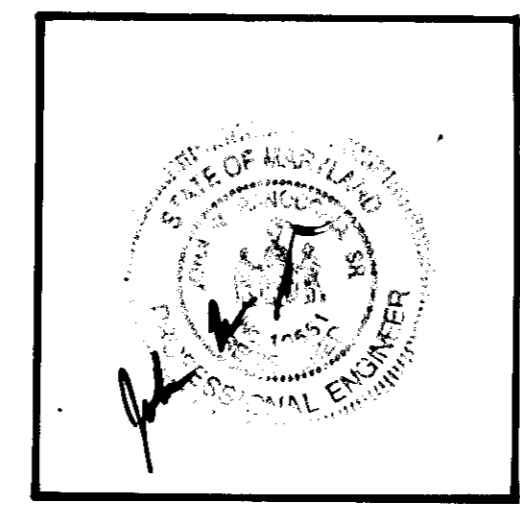
NO.	DATE	REVISION



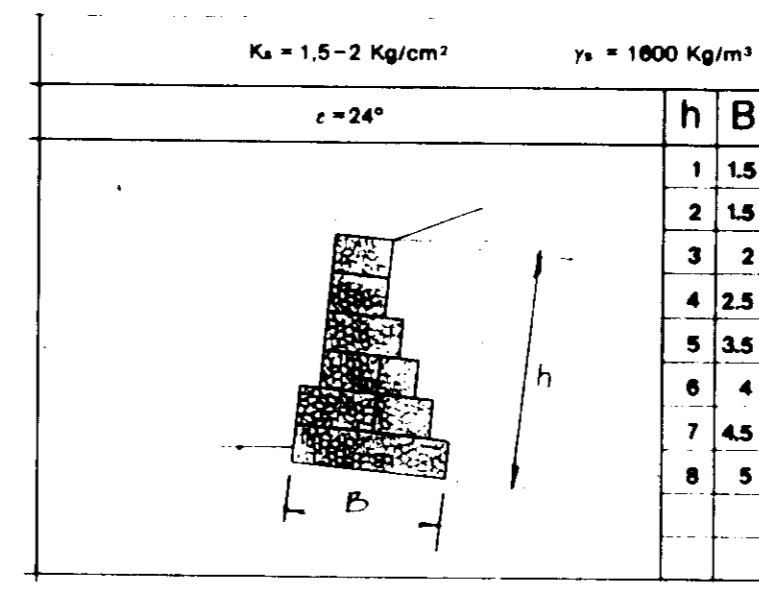
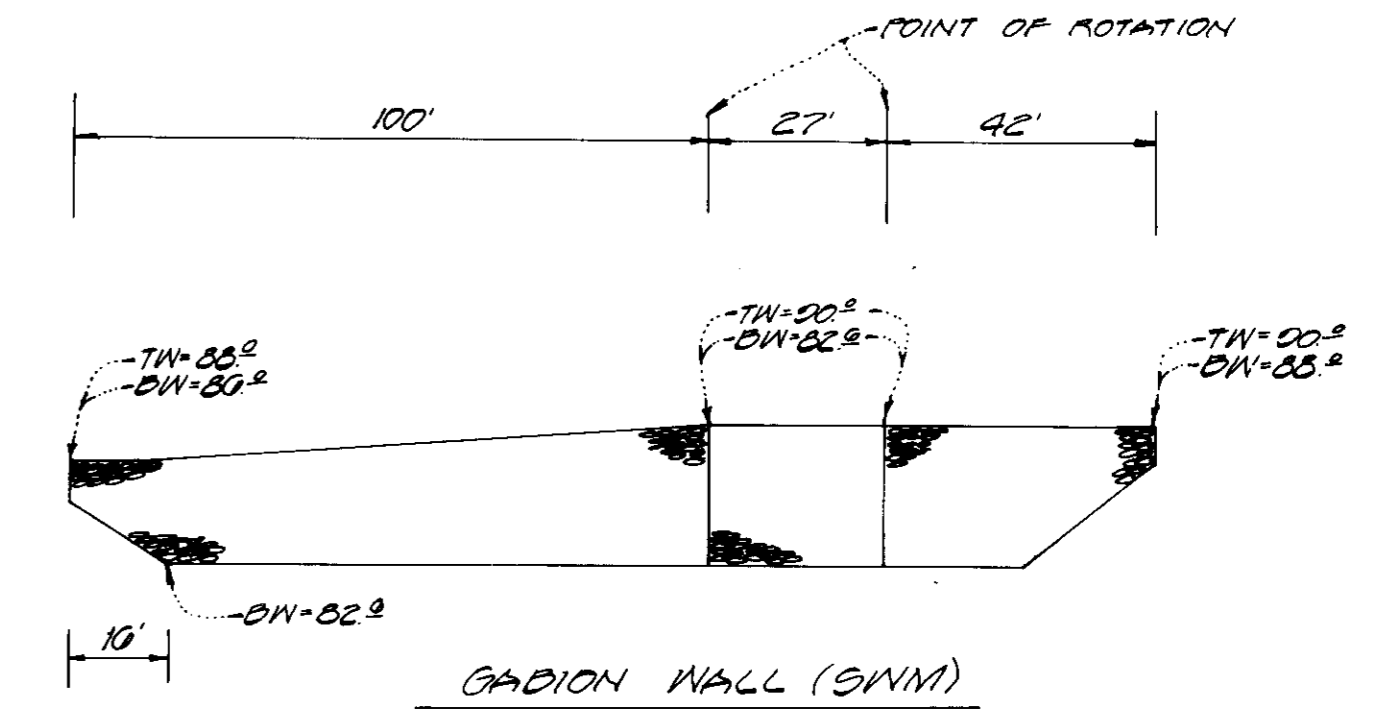
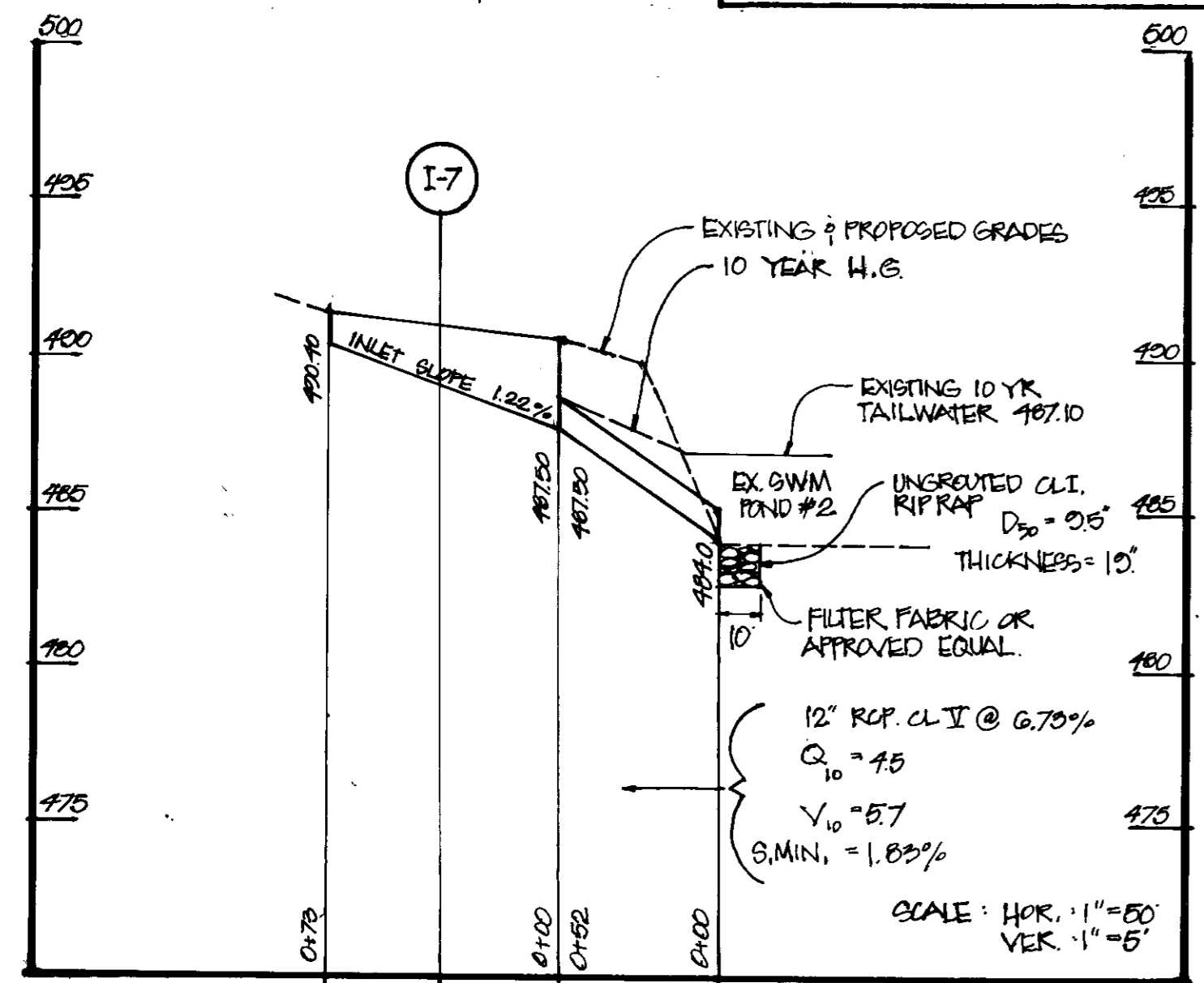
*CK [Signature]* No As-Built information shown on this sheet  
 As-Built STORM WATER MANAGEMENT NOTES & SOIL BORINGS

SCALE	ZONING	G.L.W. FILE NO.
	R	89-036
DATE	TAX MAP NO.	SHEET
	35	7 OF 12

Approved: *[Signature]* 1-17-91  
 Director  
 Chief Division of Community Planning and Land Development  
 Approved: *[Signature]* 2/28/91  
 Chief Bureau of Engineering  
 Approved: *[Signature]* 2/25/91  
 Director  
 Chief Bureau of Engineering  
 Approved: *[Signature]* 2/25/91  
 Director  
 Chief Bureau of Engineering



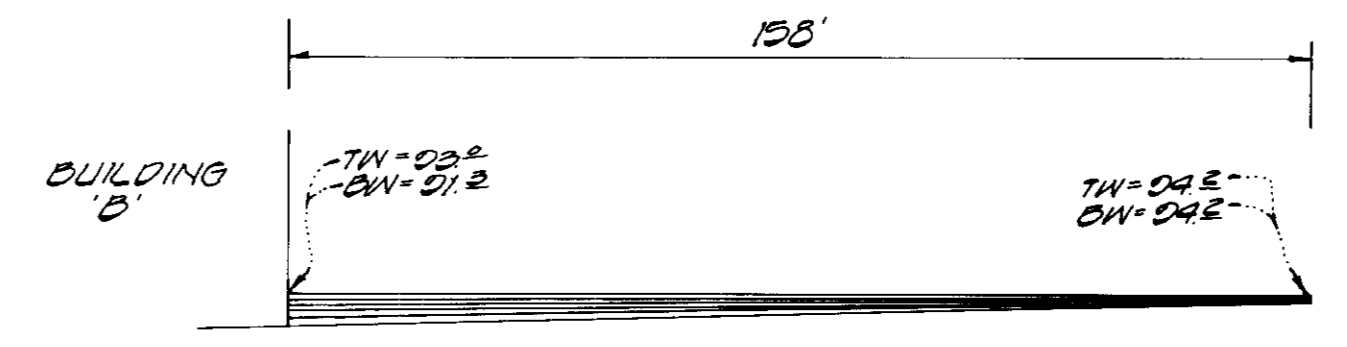
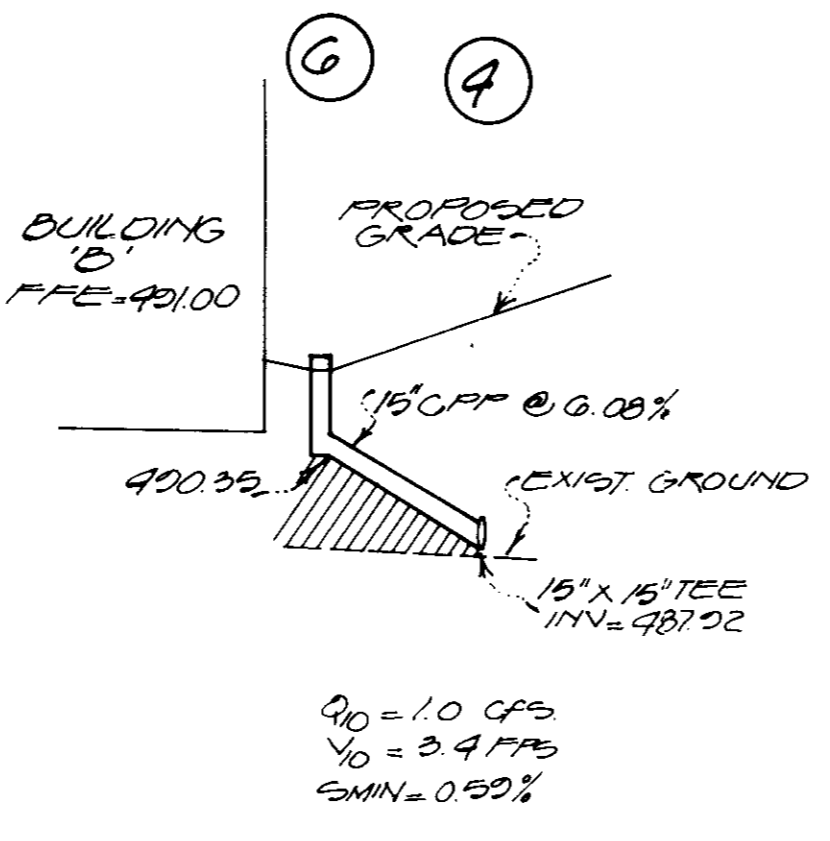
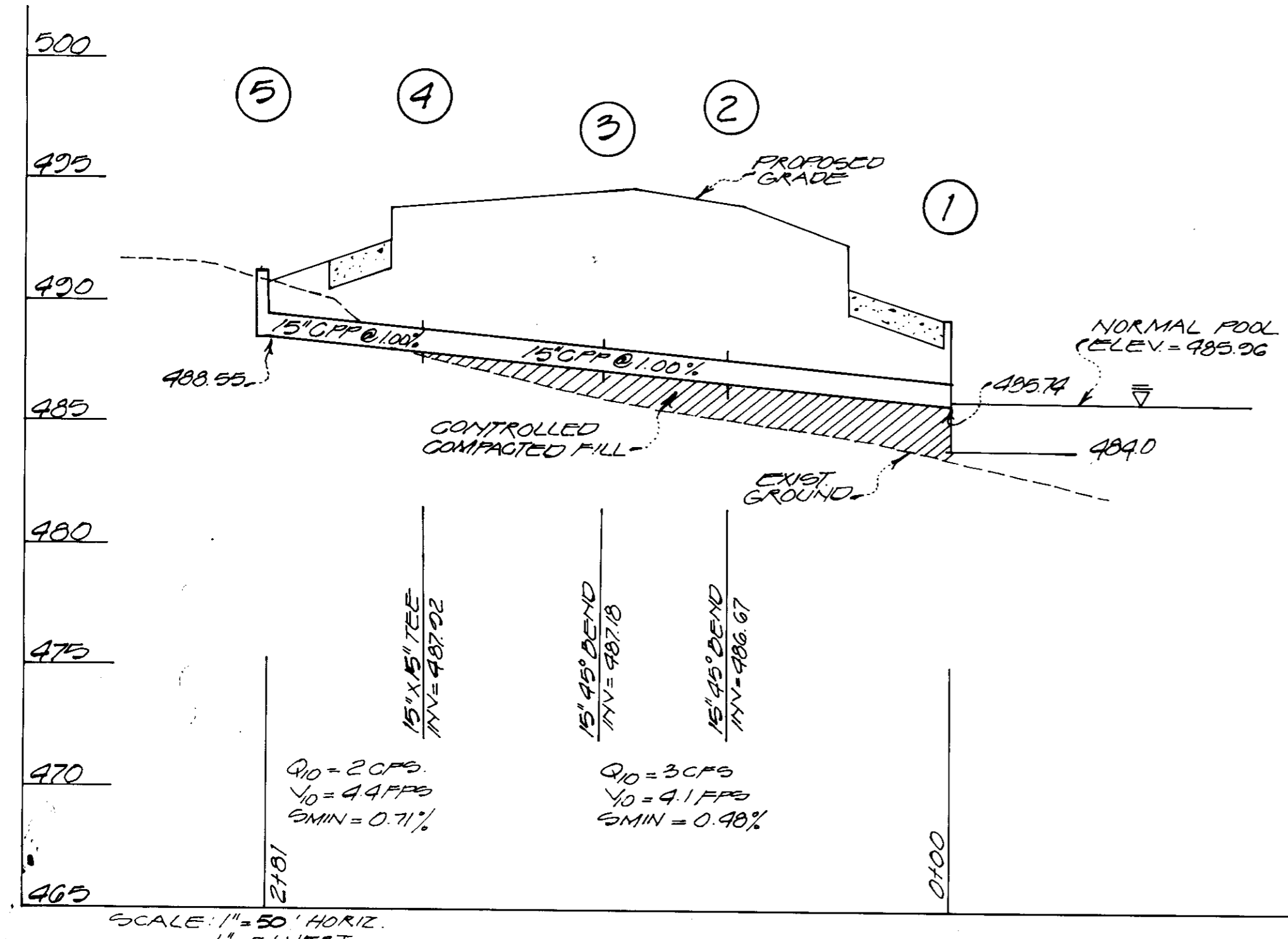
FOR REV. #4 BY DRAWING ONLY



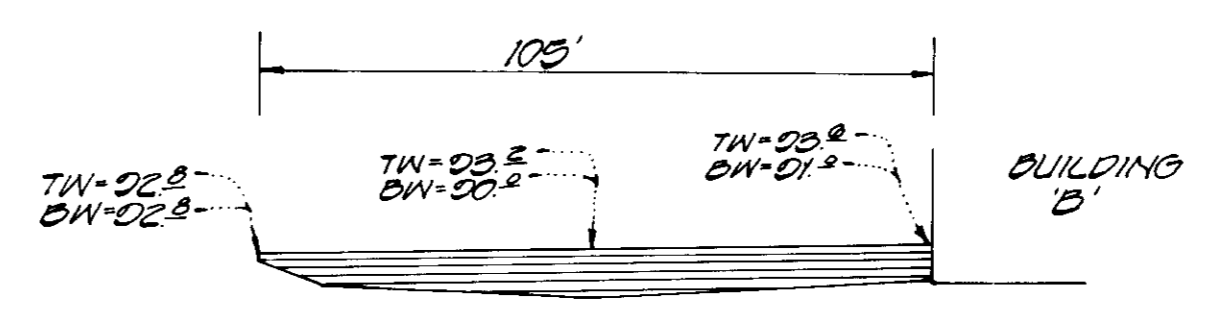
TYPICAL WALL SECTION  
NO SCALE

SIZE	TYPE	LGTH
15"	CORRUGATED PLASTIC	62'
15"	"	210'
15"	"	90'
12"	REINFORCED CON. PIPE	52'

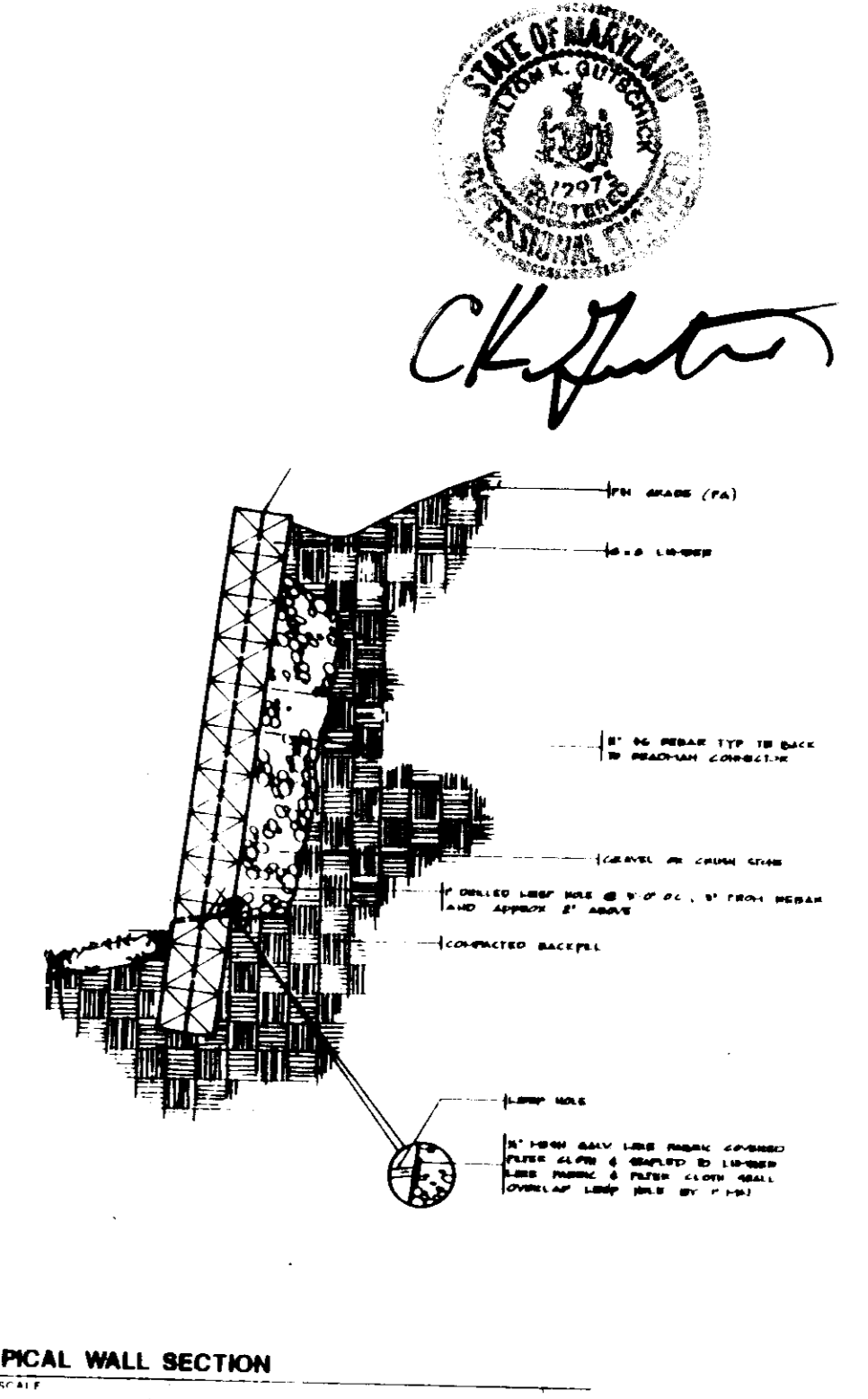
NO	TYPE	WIDTH DIAM.	TOP ELEVATION UPPER LOWER	INV. ELEV.	STD. DETAIL
1			(GRATE)		
2	45° BEND	15"		88.97	HANGOFF CP
3	45° BEND	15"		87.18	"
4	15" x 15" TEE			87.92	"
5	J1-1 INLET	4"	(401.20)	80.55	VALLEY BLOCK OR EQ.
6	J1-1 INLET	4"	(402.00)	80.38	"
7	TYPE C INLET	1"	91.4	87.50	SD-4.15



LANDSCAPE WALL EAST  
ELEVATION  
NOT TO SCALE



LANDSCAPE WALL SOUTH  
ELEVATION  
NOT TO SCALE



TYPICAL WALL SECTION  
NO SCALE

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 3909 NATIONAL DRIVE, SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20886  
 TELEPHONE: (301) 421-4024

NO.	DATE	REVISION	BY	APP'R.
01-09-90		ADDED PROFILE FOR I-7 AND CHANGED SCHEDULES 4		
02-10		Revised per review comments		

PREPARED FOR:  
 OWNER: H.R. KENDALL  
 1210 CLARKSVILLE PARK (MD RTE 100)  
 CLARKSVILLE, MD 21020  
 COLUMBIA LANDSCAPE DESIGN  
 700 BOX 200  
 CLARKSVILLE, MD 21020  
 ATTN: STEVE ALLEN  
 TEL: (301) 591-2234

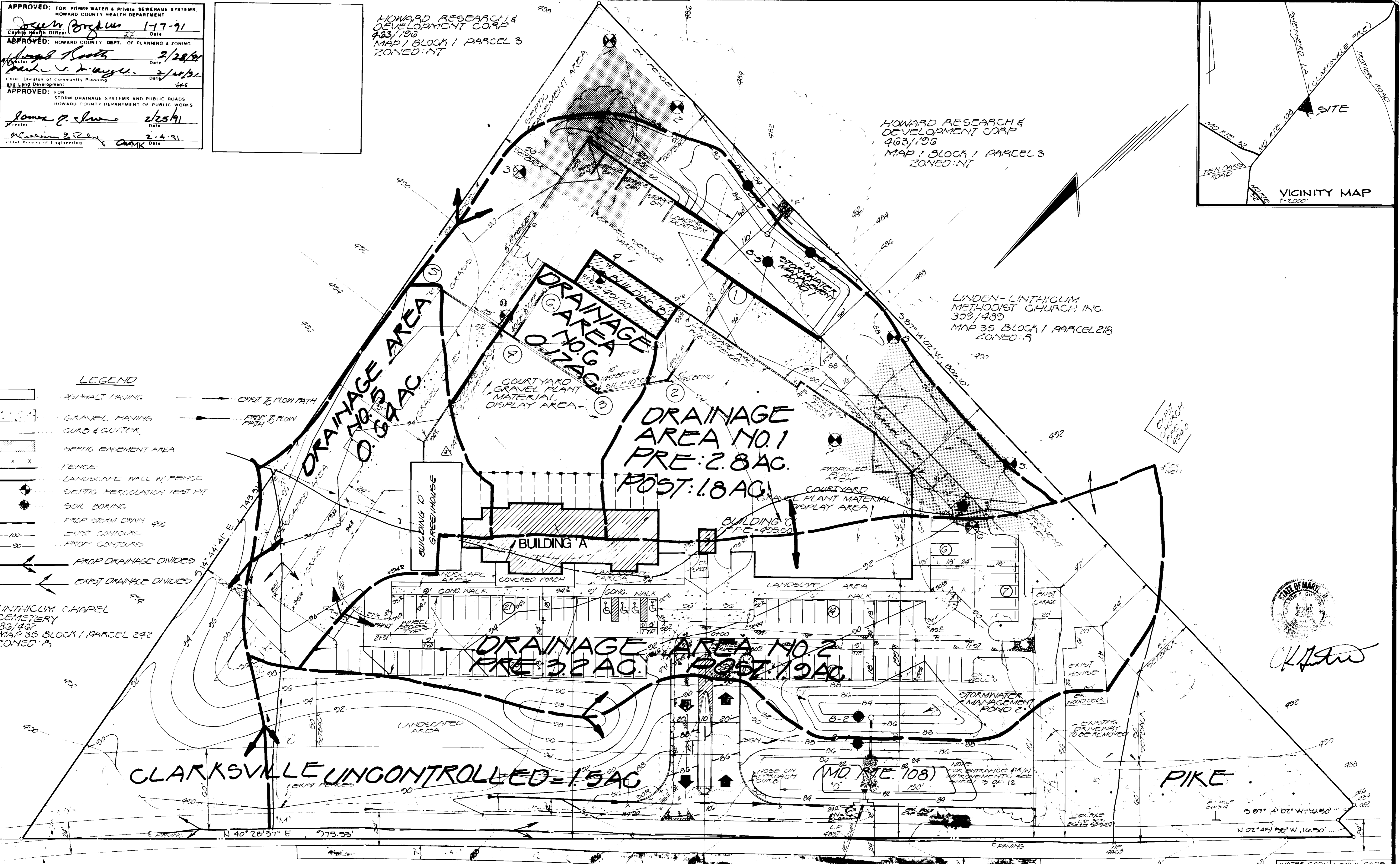
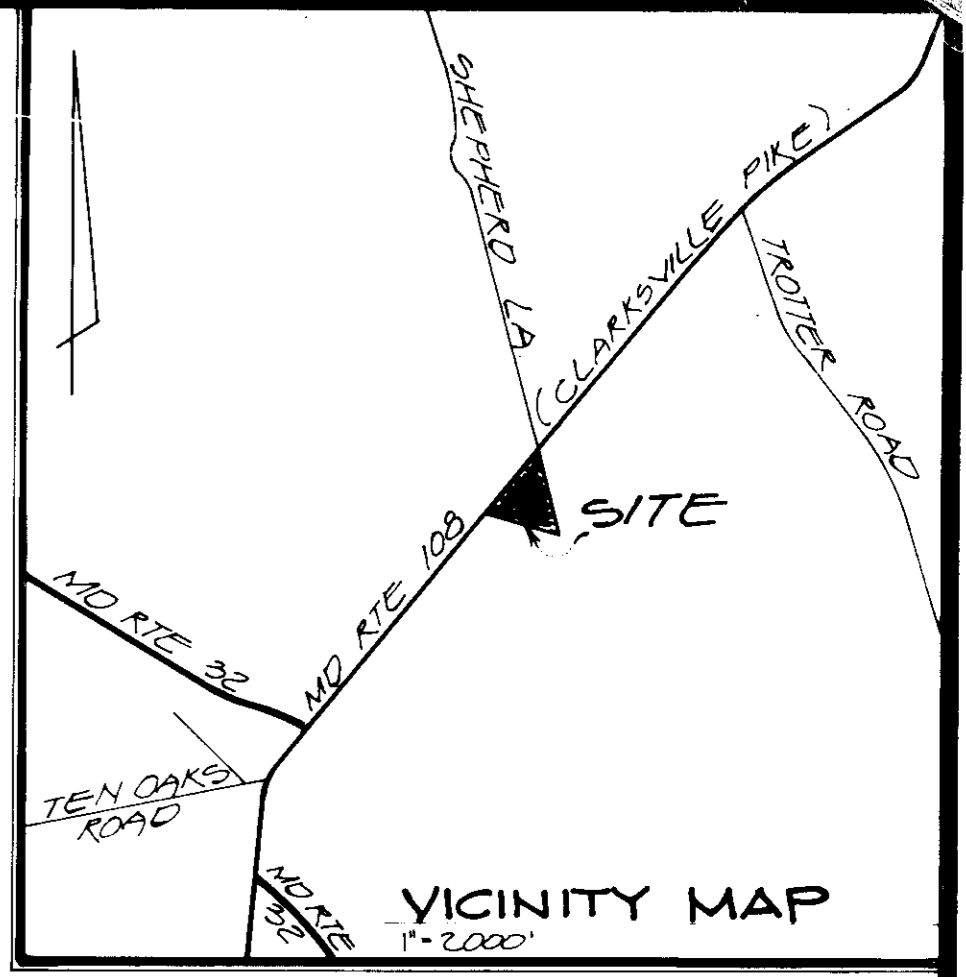
STORM DRAIN PROFILES & RETAINING WALL DETAILS  
 H.R. KENDALL PROPERTY  
 CLARKSVILLE GARDEN CENTER  
 PARCEL 1 BLOCK 1  
 1.1 DEK 1720 FOLIO 592, 596  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE NO.
AS SHOWN	R	89-036
DATE	TAX MAP NO.	SHEET
JUNE 1990		8 OF 12



APPROVED: FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS.  
 HOWARD COUNTY HEALTH DEPARTMENT  
 County Health Officer: *James P. Blume* 1-7-91  
 Date: 2/28/91  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 Director: *Mark C. Hays* 2/28/91  
 Date: 2/28/91  
 Chief, Division of Community Planning and Land Development: *James P. Blume* 2/28/91  
 Date: 2/28/91  
 APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Director: *James P. Blume* 2/28/91  
 Date: 2/28/91  
 Chief, Bureau of Engineering: *Chris M. K...* 2-4-91  
 Date: 2-4-91

HOWARD RESEARCH & DEVELOPMENT CORP  
 463/196  
 MAP 1 BLOCK 1 PARCEL 3  
 ZONED: NT



HOWARD RESEARCH & DEVELOPMENT CORP  
 463/196  
 MAP 1 BLOCK 1 PARCEL 3  
 ZONED: NT

LINDEN-LINTHICUM  
 METHODIST CHURCH, INC.  
 359/489  
 MAP 35 BLOCK 1 PARCEL 218  
 ZONED: R

LINTHICUM CHAPEL  
 CEMETERY  
 83/487  
 MAP 35 BLOCK 1 PARCEL 242  
 ZONED: R



*Chris M. K...*

**GW GUTSCHICK LITTLE & WEBER, P.A.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866  
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
12/10/90	ADD BUILDING D - GREENHOUSE, LATH HOUSE	HK	
12/10/90	REVISED PARKING/GRADING	HDB	
11/16/90	REVISED BUILDING CONFIGURATION	HDB	
2/19/91	REVISED PER REVISION COMMENT	1st	

PREPARED FOR:  
 QUINCY H.R. KENDALL  
 8510 CLARKSVILLE PIKE (MD RTE. 108)  
 CLARKSVILLE, MD 21020  
 COLUMBIA LANDSCAPE & DESIGN  
 120 BOX 205  
 CLARKSVILLE, MD 21020  
 ATTN: STEVE ALEX  
 TEL: (301) 581-2224

**DRAINAGE AREA MAP**  
 H. R. KENDALL PROPERTY  
 CLARKSVILLE GARDEN CENTER  
 PARCEL 1 BLOCK 1  
 LIBER 1720 FOLIO 592, 596  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE No
1" = 30'	R	89-036
DATE	TAX MAP No.	SHEET
JUNE 1990	35	9 OF 12







APPROVED: *[Signature]* 1-17-91  
 Director, Public Works  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* 2/28/91  
 Director  
 HOWARD COUNTY DEPT. OF PLANNING & ZONING

APPROVED: *[Signature]* 4/24/91  
 Chief, Division of Community Planning  
 AND LAND DEVELOPMENT

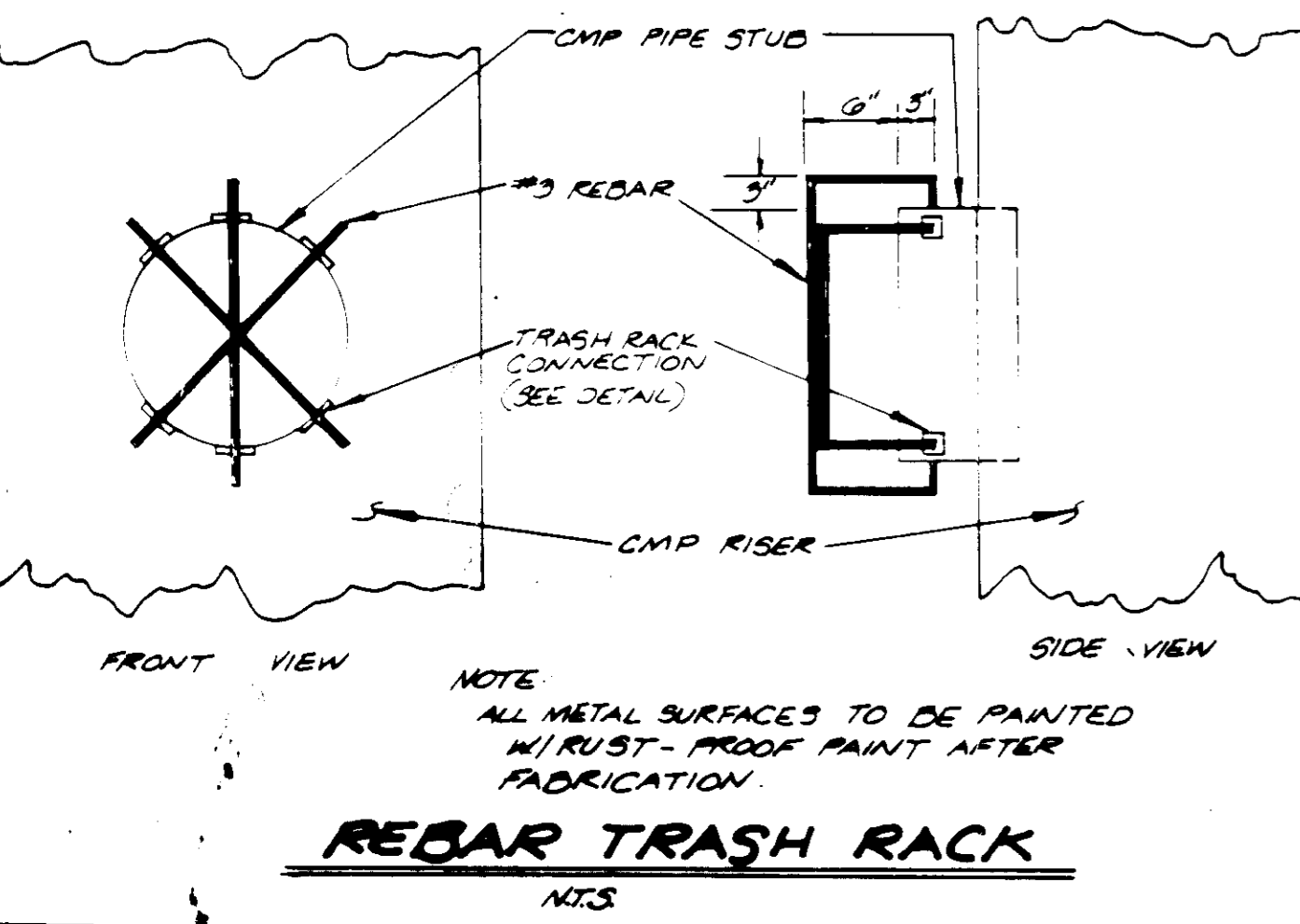
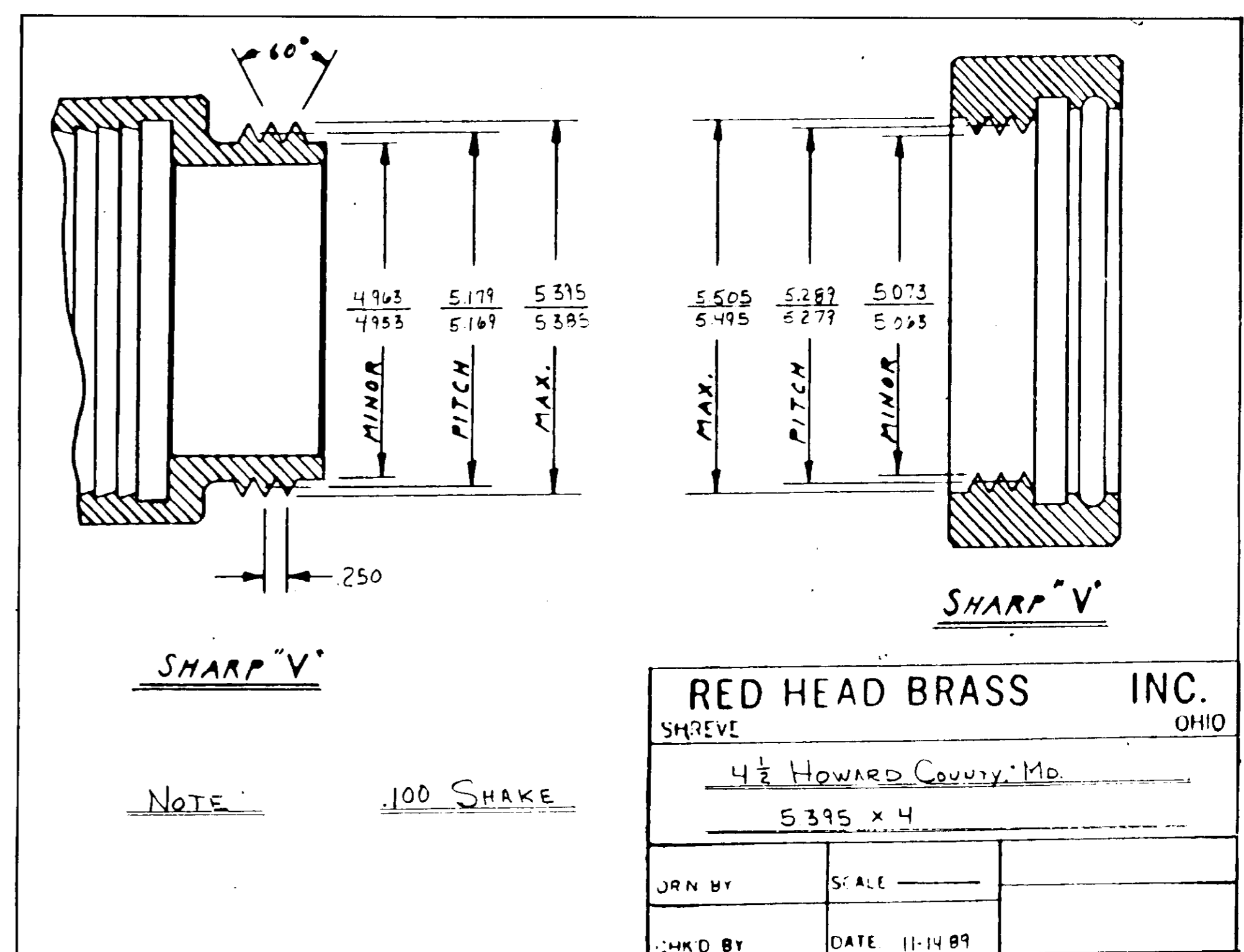
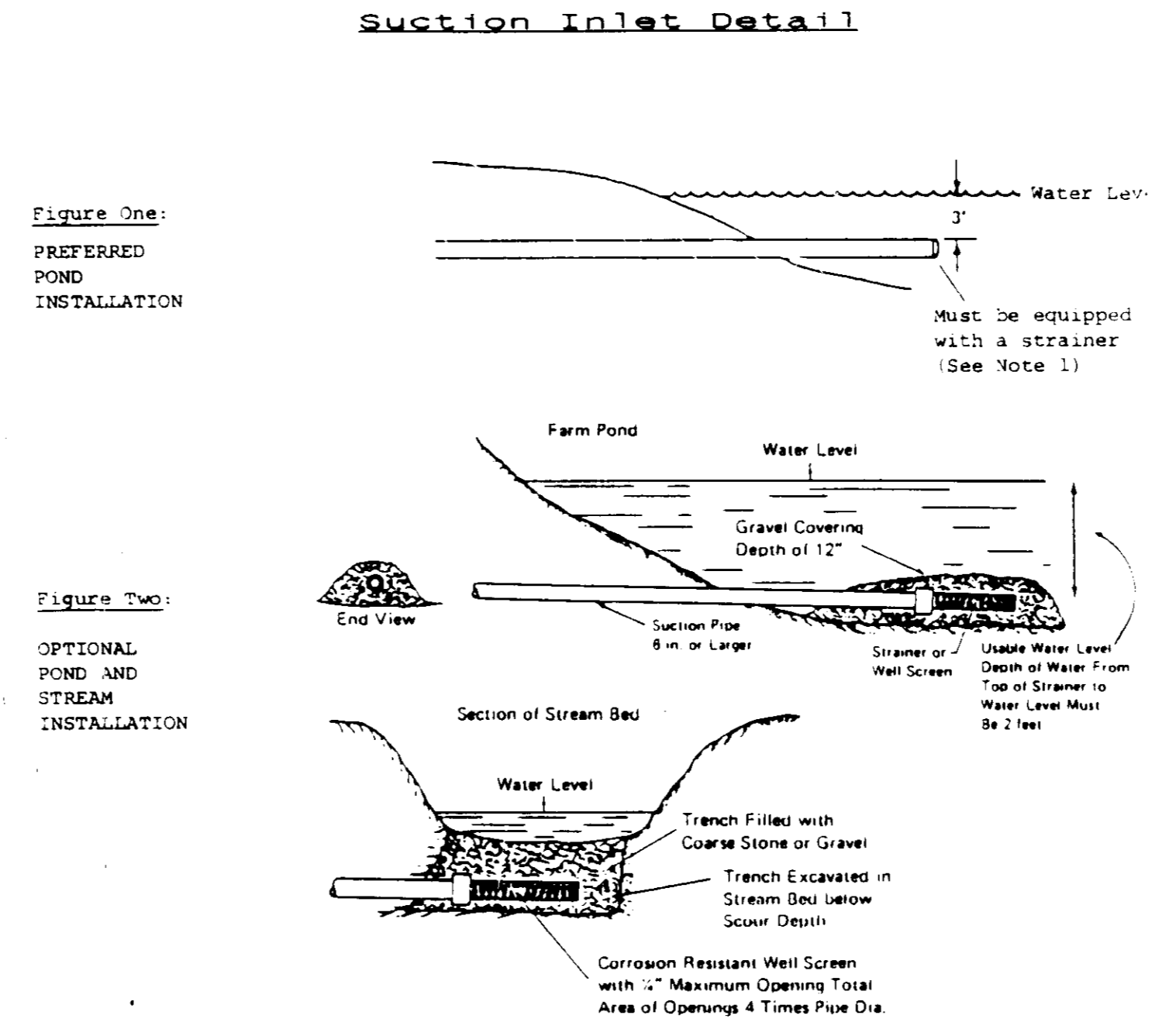
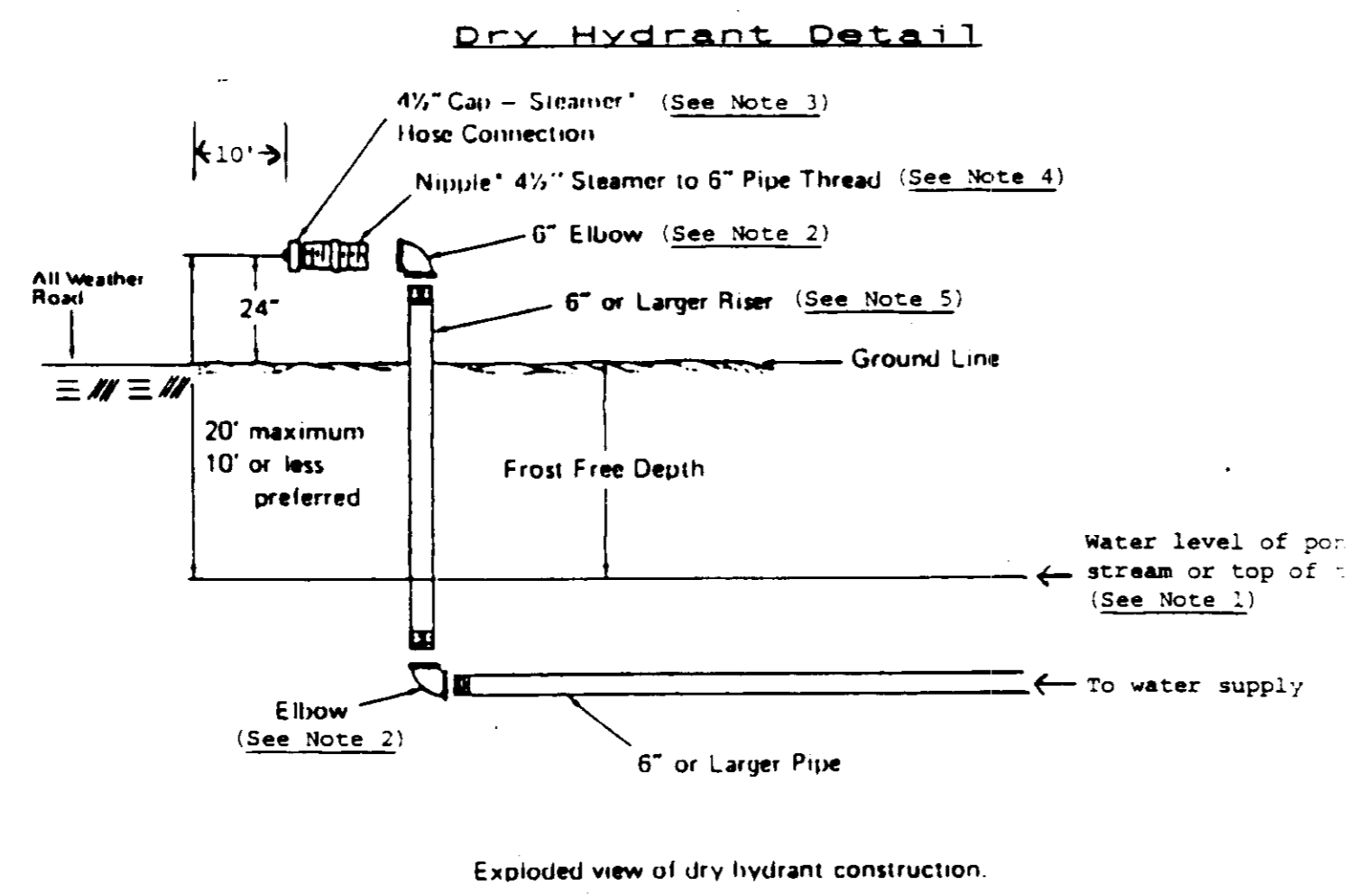
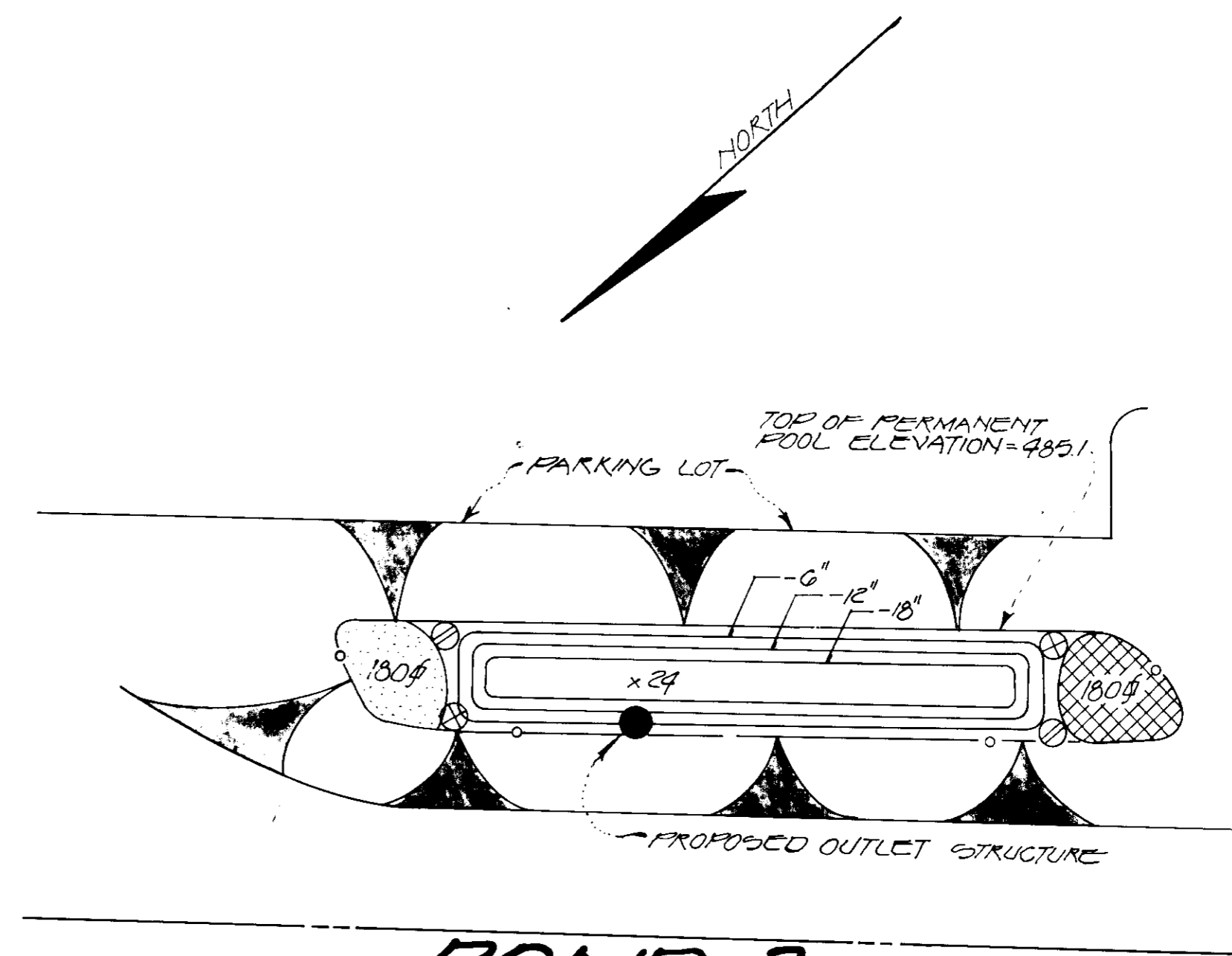
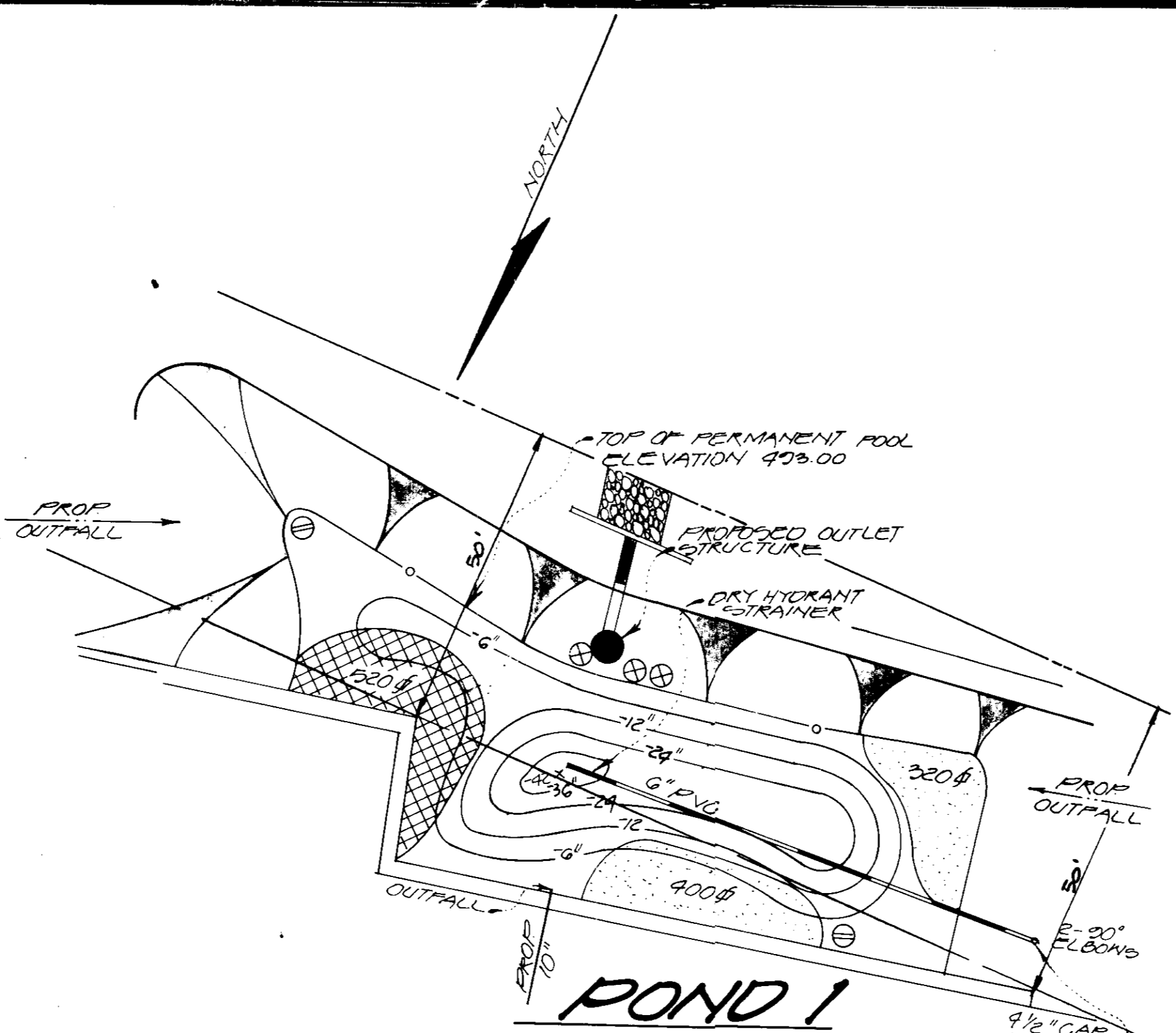
APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 2/25/91  
 Director

*[Signature]* 2-4-91  
 Chief Bureau of Engineering

**MAJOR GRADING AND PLANTING NOTES:**

- The details on this sheet show the work to be done below the permanent pool elevations. For the remainder of the work, see Sheets 1 through 3.
- The excavation shown below permanent pool may be limited by existing rock. If such is encountered, the proposed excavation shall be modified to avoid rock excavation.
- If an area to be planted is bare rock after excavation, those plants shall be placed in an approved alternate location.
- Areas designated by **XXXXXXXXXX** shall be planted with one of the three species from the list below. Areas designated by **XXXXXXXXXX** shall be planted with one of the other two species. For both species, plants shall be placed in a grid pattern, three feet apart. In addition to the major planting areas, locations designated by **XX** shall be planted with a clump of at least two individual plants. Each **XXXX** shall contain only one species but both species shall have approximately the same number of clumps. The additional clumps represent a coverage of approximately 40 clumps per acre of wetland.
  - Sagittaria latifolia* (duck potato);
  - Scirpus americanus* (common three square);
  - Scirpus validus* (softstem bulrush).
- In addition to the areas and species designated above, three of the species from the list below are to be selected and planted in clumps of five individuals at locations designated by **XX**. Each clump shall be planted within six feet of the edge and be monospecific, with the number of clumps being divided as evenly as possible between the three species selected. The coverage is approximately 30 individuals per acre of wetland.
  - Acorus calamus* (sweet flag);
  - Loerisa erysioides* (rice cutgrass);
  - Peltandra virginica* (arrow-aram);
  - Pontederia cordata* (pickerel weed);
  - Sagurus caryocoma* (lizard's tail).
- If, due to time of year or availability constraints, planting can not be accomplished after grading operations are completed, the area below permanent pool shall be temporarily seeded with annual ryegrass and the stream-banked. Final planting according to the plan shall be accomplished as soon as constraints are gone.
- Care of Delivered Plant Material** - Once at the site, plants shall be cared for properly. While awaiting planting, they must be kept out of direct sunlight. Potted plants must be kept moist and bare rooted plants must be kept in their moisture retaining bags or in their water filled tubs depending on how they were shipped from the nursery. All plants are to be planted as quickly as possible after delivery.
- Site Preparation** - If the site has been recently graded, no further preparation is necessary. If the soil is packed or if a good stand of grass (from temporary seeding) is present, the areas to be planted shall be loosened to a depth of six (6) inches by dishing.
- Planting**
  - Potted Plants** - Dig hole just wide enough to accept the pot and deep enough so that the grade around the plant is the same as the level of soil in the pot. The pot is to be turned in several places, inserted into the hole and then hand tamped.
  - Bare-Root Plants** - Dig hole wide enough to accommodate the spread-out roots. Hole should be deep enough so that the point where the stem becomes a root is at grade. The root system arrangement must be a spread out, shallow root system.
  - Post-Planting** - If bare-root plants are used, the planted area must be flooded within 24 hours of planting. If only potted plants are used, the time can be lengthened to 72 hours. If these time frames can not be met, the plants must be kept wet by artificial means.



- Note 1. When storage tank is used, 20 feet is maximum to bottom of tank.
- Note 2. When space permits, 90° elbows should be replaced with 45° elbow.
- Note 3. 4-1/2" Cap - a 4-1/2" female to 2-1/2" male reducing adapter with a 2-1/2" cap (Redhead Brass, Inc., Style 37 - or equal). Male thread is 2-1/2" NST. 4-1/2" female is Howard County thread - detail attached.
- Note 4. 4-1/2" male is Howard County thread - detail attached. When PVC pipe is used, Redhead Brass Style 132 Dry Hydrant adapter or equal may be used.
- Note 5. When tank or cistern is used for supply, riser may extend directly into tank.
- Note 6. PVC pipe must be Schedule 40.
- Note 7. Installation of system shall meet N.F.P.A. 1231 Water Supplies for Suburban and Rural Firefighting.

- Note 1. If PVC pipe is used, a Redhead Brass style dry hydrant strainer or equal may be used.
- Note 2. PVC pipe must be Schedule 40.



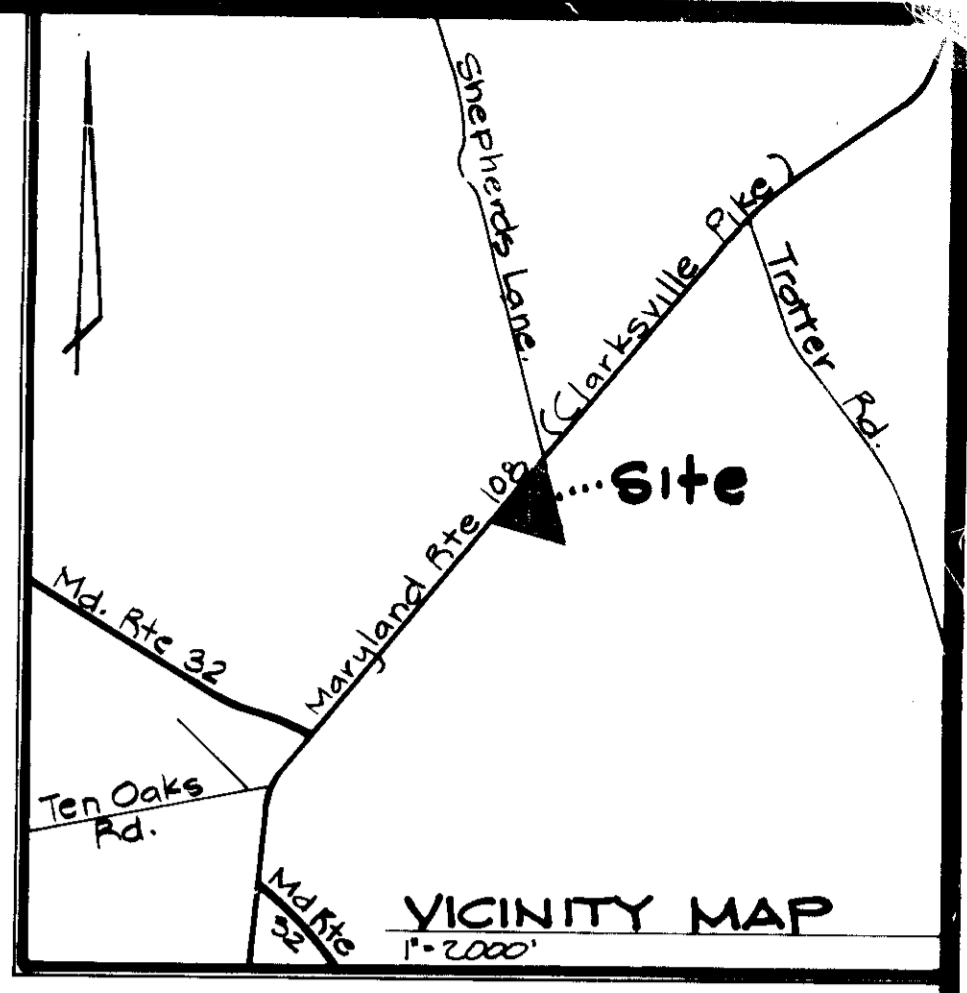
*[Signature]*

<b>GLW GUTSCHICK LITTLE &amp; WEBER, P.A.</b> ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886 TELEPHONE: (301) 421-4024	DES. MJT	DRN. HDB	CHK. MT	DATE 2.10	REVISION New Sheet	BY	APP'R.	PREPARED FOR: OWNER: H.R. RENDALL 1825 CLARKSVILLE PIKE (MD RTE 100) CLARKSVILLE, MD 21020 COLUMBIA LANDSCAPE DESIGN P.O. BOX 505 CLARKSVILLE, MD 21020 ATTN: BOB RUSIN TEL: (301) 561-2224	<b>MARSH CONSTRUCTION &amp; DRY HYDRANT PLAN &amp; DETAILS</b> H.R. RENDALL PROPERTY <b>CLARKSVILLE GARDEN CENTER</b> PARCEL 1, BLOCK 1 ORDER 1720 POLIO 592,596 5TH ELECTION DISTRICT	SCALE 1"=20' ZONING R G.L.W. FILE NO. 89-026 DATE JUNE 1990 TAX MAP NO. 35 SHEET 11 OF 12
	HOWARD COUNTY, MARYLAND									

SDP-91-02



APPROVED FOR PRIVATE WATER & SEWERAGE SYSTEMS:  
 HOWARD COUNTY HEALTH DEPARTMENT  
*John B. ...* 1-17-91  
 APPROVED FOR PRIVATE WATER & SEWERAGE SYSTEMS:  
 HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*James R. ...* 2/28/91  
 APPROVED FOR PRIVATE WATER & SEWERAGE SYSTEMS:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James G. ...* 2/25/91  
 APPROVED FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James G. ...* 2/25/91  
 APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS:  
 HOWARD COUNTY HEALTH DEPARTMENT  
*John B. ...* 10-16-90  
 DATE



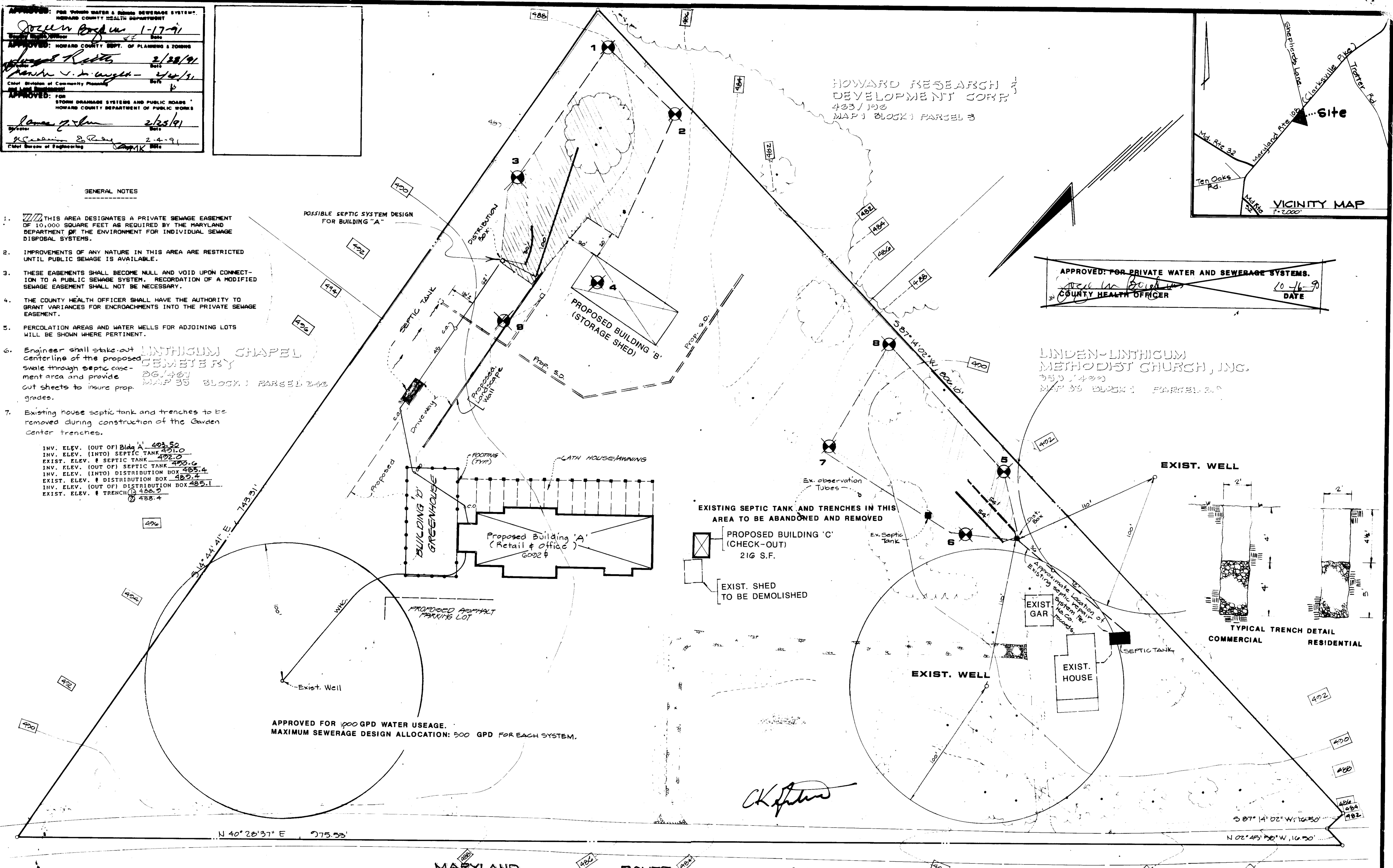
GENERAL NOTES

- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL SYSTEMS.
- IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE.
- THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
- THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWAGE EASEMENT.
- PERCOLATION AREAS AND WATER WELLS FOR ADJOINING LOTS WILL BE SHOWN WHERE PERTINENT.
- Engineer shall stake out centerline of the proposed swale through septic easement area and provide cut sheets to insure prop. grades.
- Existing house septic tank and trenches to be removed during construction of the Garden Center trenches.

LINTHICUM CHAPEL CEMETERY  
 261467 MAP 35 BLOCK 1 PARCEL 242

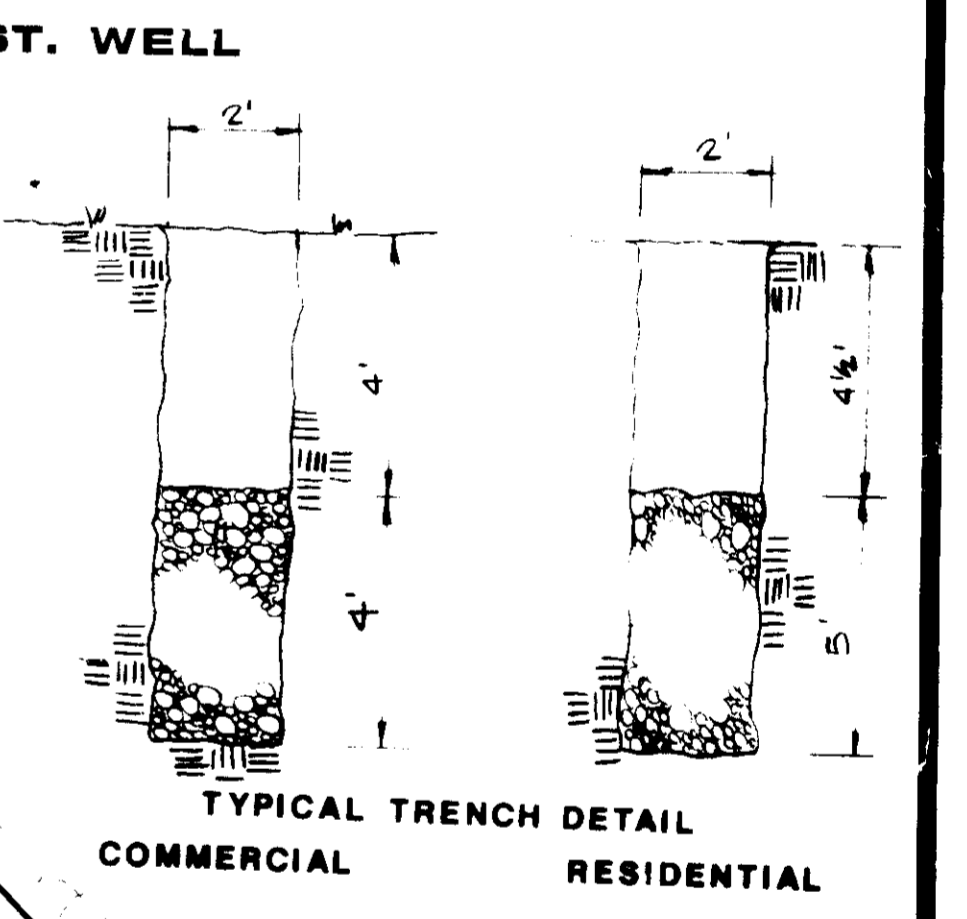
INV. ELEV. (OUT OF) Bldg A 403.50  
 INV. ELEV. (INTO) SEPTIC TANK 401.0  
 EXIST. ELEV. & SEPTIC TANK 402.0  
 INV. ELEV. (OUT OF) SEPTIC TANK 400.6  
 INV. ELEV. (INTO) DISTRIBUTION BOX 405.4  
 EXIST. ELEV. & DISTRIBUTION BOX 405.4  
 INV. ELEV. (OUT OF) DISTRIBUTION BOX 405.1  
 EXIST. ELEV. & TRENCH 405.2  
 EXIST. ELEV. & TRENCH 405.4

APPROVED FOR 1000 GPD WATER USAGE.  
 MAXIMUM SEWERAGE DESIGN ALLOCATION: 500 GPD FOR EACH SYSTEM.



APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS.  
 HOWARD COUNTY HEALTH OFFICER  
 DATE 10-16-90

LINDEN-LINTHICUM METHODIST CHURCH, INC.  
 750 4320 MAP 35 BLOCK 1 PARCEL 242



**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 ENGINEERS, PLANNERS, SURVEYORS  
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886  
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
2-25-90	ADD BUILDING D-GREENHOUSE, LATH HOUSE	JK	
11/27/90	REVISED BUILDING CONFIGURATION	JK	
8/24	Revised per H.C. Bureau of Environmental Health	JK	

PREPARED FOR  
 OWNER: H.R. KENDALL  
 1810 CLARKSVILLE PIKE (MD RTE 100)  
 CLARKSVILLE, MD 21030  
 COLUMBIA LANDSCAPE & DESIGN  
 170 BOX 500  
 CLARKSVILLE, MD 21030  
 JOHN STEIN, KLEIN  
 TEL. (301) 881-2224

**PERCOLATION CERTIFICATION PLAT**  
 H.R. KENDALL PROPERTY  
**CLARKSVILLE GARDEN CENTER**  
 PARCEL 1, BLOCK 1  
 LIBER. 1720 FOLIO 322, 330  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	GL.W. FILE NO.
1" = 30'		89-036
DATE	TAX MAP NO.	SHEET
JUNE, 1990		12 of 12