

CURB & GUTTER LEGEND:

- Std. 7" Comb. Curb & Gutter
- Rev. 7" Comb. Curb & Gutter
- Std. 6" Comb. Curb & Gutter
- Rev. 6" Comb. Curb & Gutter

KEY PLANT NAME

KEY PLANT NAME	SIZE	QUANTITY	REMARKS
A Acer Rubrum (Op. Glory)	2 1/2" CN	44	Big B Heavy Heads
B Quercus Palustris	"	21	"
R Quercus Rubra	"	13	"
Z Zalkova 5 Village Green	"	17	"

DEVELOPER'S/BUILDER'S CERTIFICATE

"We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as so deemed necessary."

Robert W. Nelson
Signature of Developer/Builder
7-10-84
Date

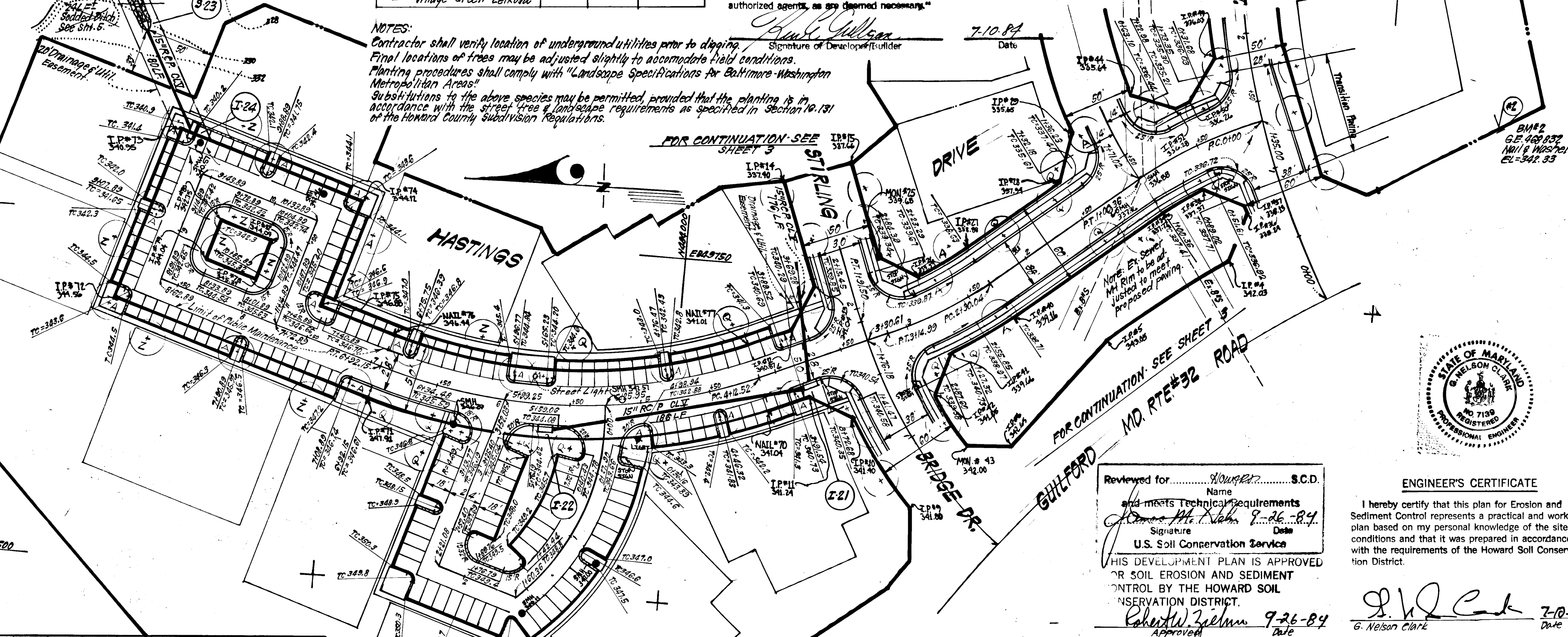
NOTES:

Contractor shall verify location of underground utilities prior to digging.
Final locations of trees may be adjusted slightly to accommodate field conditions.
Planting procedures shall comply with "Landscape Specifications for Baltimore-Washington Metropolitan Area".
Substitutions to the above species may be permitted provided that the planting is in accordance with the street tree & landscape requirements as specified in Section 10.131 of the Howard County Subdivision Regulations.

CURVE DATA HASTINGS DR.
PC: 000.00 to PT: 1400.36
R = 300.00'
L = 181°10'00"
Δ = 100.36'
T = 50.65'
CHD = N 20° 58' 22" W 39.89'

CURVE DATA HASTINGS DR.
PC: 2130.04 to PT: 3144.99
R = 300.00'
L = 16°13'21"
Δ = 84.95'
T = 42.70'
CHD = N 31° 06' 42" W 84.66'

CURVE DATA Private Ct.
PC: 0100.00 to PT: 1460.56
R = 170.00'
L = 54°01'30"
Δ = 160.26'
T = 89.67'
CHD = N 62° 43' 44" W 154.48'



- GENERAL NOTES:**
- All storm drain and paving shall be constructed in accordance with the latest details and specifications of Howard County of Md. S.H.A.
 - Types of Storm Drain structures refer to the Standard Details of Howard County of Maryland State Highway Administration.
 - Trench Compaction for Storm drains within Road or Street rights of Way limits shall be in accordance with Howard Co. Design Manual Vol. II. (Class C) Trench Bedding to be used for all storm drains, except where shown otherwise.
 - Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of the mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
 - All utility companies shall be notified 48 hrs in advance of construction.
 - All traffic control services, parking, and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices", 1971 Edition.
 - Sig and Crest Vertical Curves were designed in accordance with "A Policy on Geometric Design of Rural Highways, 1965, by AASHTO.
 - Provide Concrete Sidewalk ramps, Hb. Co. Std. Type A, R, 4.01 where shown in plan.
 - Design speed: 50 R/W-30 mph; 60 R/W-35 mph. Zoning: RSA
 - As per previously approved preliminary plan P-84-13, 100 Yr. Flood plain to be piped through the site.
 - Street Lights @ Sta. 5+75 Hastings Drive and 4+80 Lambeth Ct. to be 175 w with 14' pole. Street Lights on Md. 32 to be 250 w with 30' pole.

APPROVED: DEPARTMENT OF PUBLIC WORKS:

William E. Ryan
Chief, Bureau of Engineering
10-2-84
Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Robert W. Nelson
Chief, Division of Land Development & Zoning Administration
9-27-84
Date

CLARK FINEFROCK & SACKETT
ENGINEERS PLANNERS SURVEYORS
1135 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400

DESIGNED	ROAD CONSTRUCTION PLANS HASTINGS DRIVE	SCALE	AS SHOWN
DRAWN		DRAWING	1 OF 8
CHECKED		JOB NO.	81060
DATE	8-17-84	FILE NO.	81060-D

FOR: PULTE HOMES CORP.
7223 Parkway Dr. #106
Harrover, Md. 21076

Reviewed for: *Robert W. Nelson* S.C.D.
Name
and meets Technical Requirements
Robert W. Nelson 9-26-84
Signature Date
U.S. Soil Conservation Service

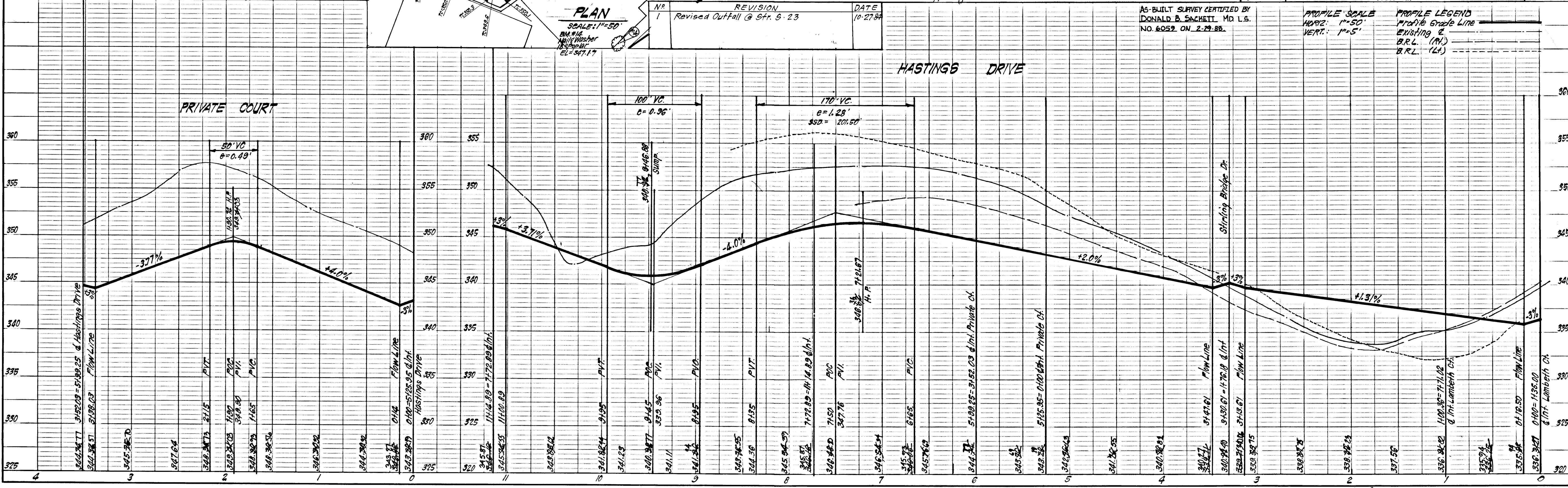
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Nelson 9-26-84
Approved Date
G. Nelson Clark
7-10-84
Date

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

G. Nelson Clark 7-10-84
Date



1098

CURB & GUTTER LEGEND:
 3/4" Comb. Curb & Gutter
 Rev. 7" Comb. Curb & Gutter
 3/4" Comb. Curb & Gutter
 Rev. 6" Comb. Curb & Gutter
 3/4" Type A Curb & Gutter

NOTE: Transition Low Flow Channel to meet ungrouted rip rap area at entrance as necessary.

LOW FLOW CHANNEL DETAIL
 NO SCALE

CURVE DATA - LAMBETH CT
 PC: 0100 to PT: 2174.54
 R = 605.00'
 $\Delta = 26^{\circ}00'00''$
 L = 274.54'
 T = 139.68'
 CHD = $N72^{\circ}03'41''E$ 272.19'

CURVE DATA - LAMBETH CT
 PC: 5192.89 to PT: 7171.02
 R = 300.00'
 $\Delta = 34^{\circ}01'15''$
 L = 179.13'
 T = 91.78'
 CHD = $S68^{\circ}18'36''W$ 175.53'

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: *John M. Selch* 9-26-84
 Date
 Soil Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Approved: *Richard Zilber* 9-26-84
 Date
 Howard S.C.D.
 F-85-12
 Plan Number

DEVELOPER'S CERTIFICATE
 "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."
John M. Selch 7-10-84
 Signature of Developer Date

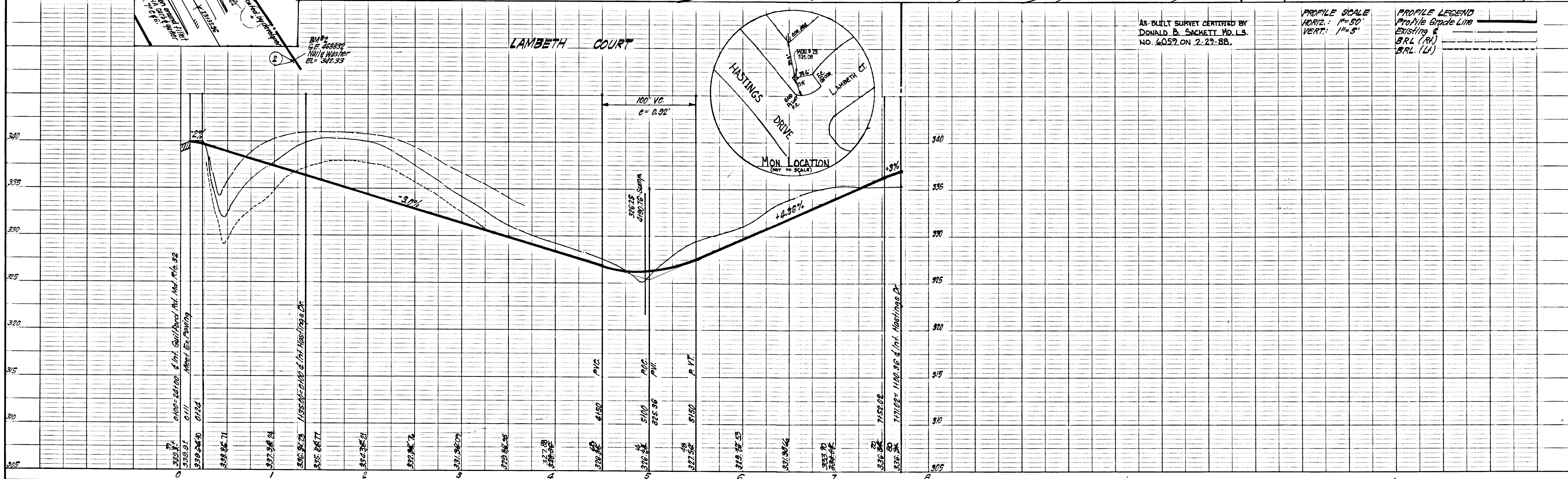
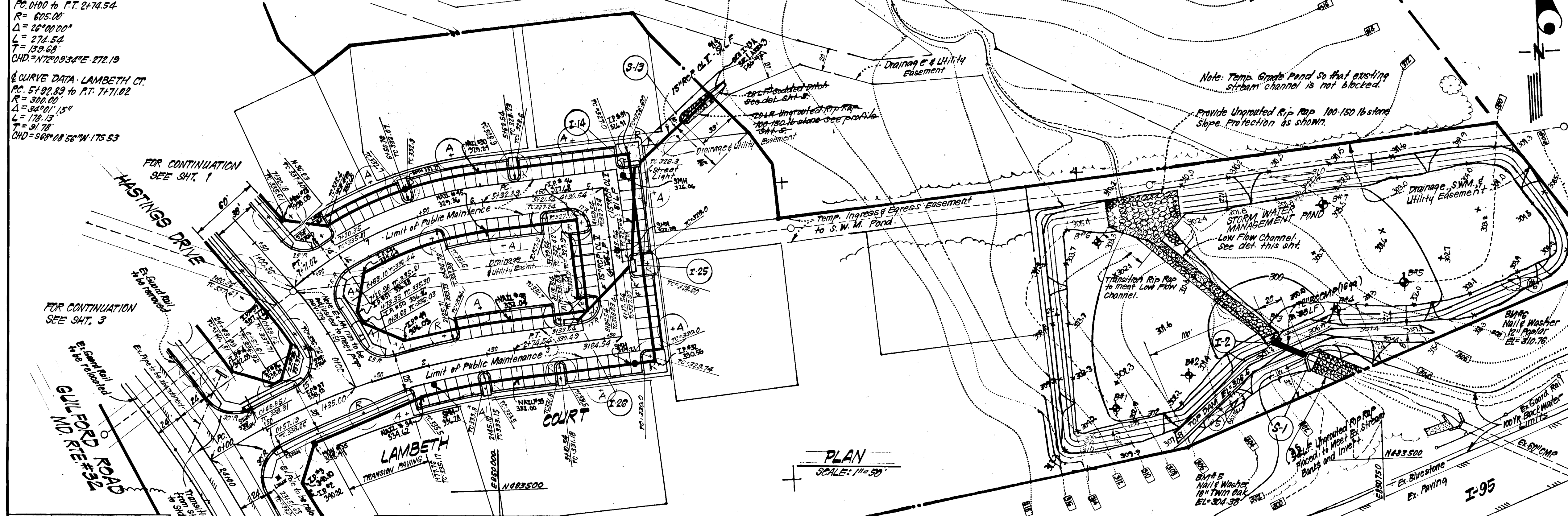
ENGINEER'S CERTIFICATE
 "I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."
John M. Selch 7-10-84
 Signature of Engineer Date



APPROVED: DEPARTMENT OF PUBLIC WORKS
John M. Selch 10-2-84
 Chief, Bureau of Engineering Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John M. Selch 7-27-84
 Chief, Division of Land Development & Zoning Administration Date

CLARK FINEFROCK & SACKETT ENGINEERS PLANNERS SURVEYORS		11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400
DESIGNED	ROAD CONSTRUCTION PLANS LAMBETH COURT	SCALE AS SHOWN
DRAWN	GLENSHIRE TOWNE	DRAWING 2 OF 8
CHECKED	SECTION ONE 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 81060
DATE	FIR: PULTE HOMES CORP. 7213 FOREWAY DR. #106 HUNTER MA 01076	FILE NO. 81060-D



AS-BUILT SURVEY CERTIFIED BY
 DONALD B. SACKETT MD. L.S.
 NO. 6052 ON 2-27-88.

PROFILE SCALE
 HORIZ: 1"=50'
 VERT: 1"=5'

PROFILE LEGEND
 Profile Grade Line
 EXISTING & BRL (M)
 BRL (L)

AS-BUILT 2-29-88 F-85-12

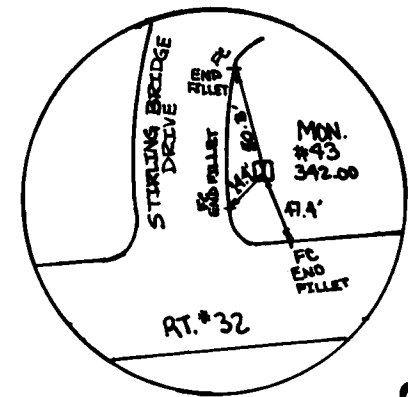
1098

G CURVE DATA - GUILFORD ROAD
 PC 23135.96 to PT 28174.95
 R = 918.51
 $\Delta = 27^{\circ}43'45''$
 T = 278.67
 L = 538.89
 CHD = N 45^{\circ}13'23'' W 529.30

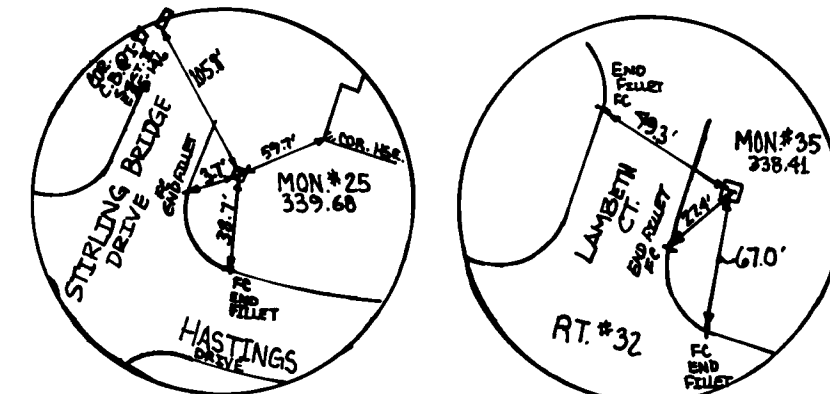
G CURVE DATA - STIRLING BRIDGE DR.
 PC 0400 to PT 1491.50
 R = 350.00
 $\Delta = 31^{\circ}20'56''$
 T = 98.21
 L = 191.50
 CHD = N 53^{\circ}50'00'' E 189.12

CURB & GUTTER LEGEND

- Std. 7" Comb. Curb & Gutter
- Rev. 7" Comb. Curb & Gutter
- SHA Type A Curb & Gutter



MON LOCATION (NOT TO SCALE)



MON LOCATIONS (NOT TO SCALE)

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer/Builder: *Robert W. Zichner*
 Date: 7-10-84

Reviewed for: HOWARD S.C.D.

and meets Technical Requirements
 Date: 9-26-84
 Signature: *[Signature]*
 U.S. Soil Conservation Service

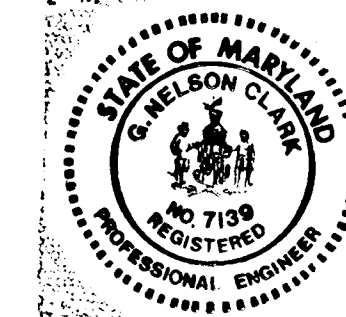
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Approved: *Robert W. Zichner* 9-26-84
 Date

APPROVED: DEPARTMENT OF PUBLIC WORKS:

Approved: *[Signature]* 10-2-84
 Chief, Bureau of Engineering

Approved: *[Signature]* 9-27-84
 Chief, Division of Land Development & Zoning Administration

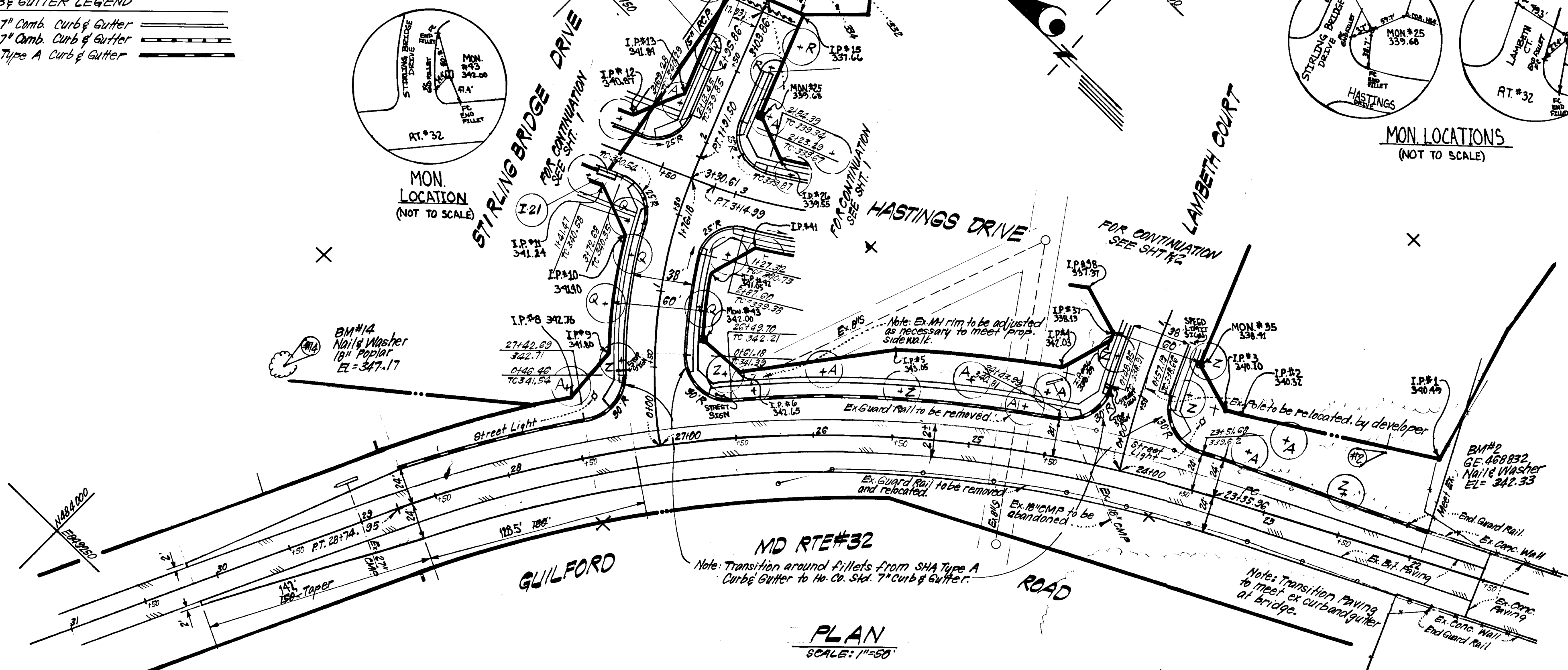


ENGINEER'S CERTIFICATE

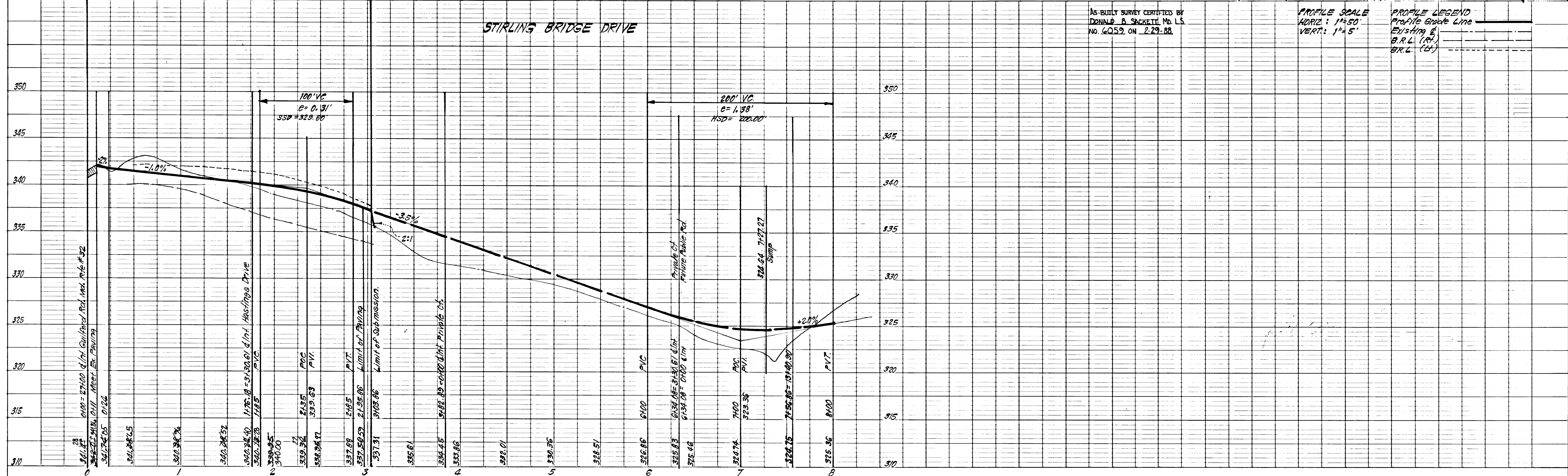
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *G. Nelson Clark*
 Date: 7-10-84

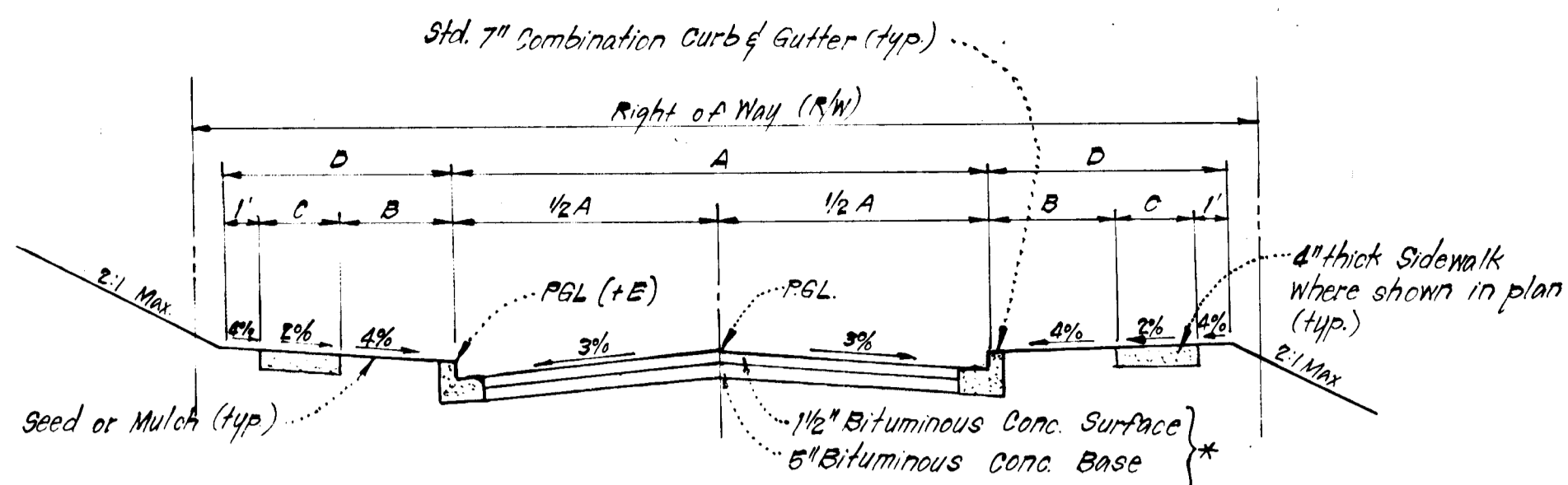
CLARK FINEFROCK & SACKETT ENGINEERS - PLANNERS - SURVEYORS 1515 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400		
DESIGNED	ROAD CONSTRUCTION PLANS STIRLING BRIDGE DRIVE & GUILFORD ROAD, MD. RTE. # 32	SCALE As Shown
DRAWN	GLENSHIRE TOWNE	DRAWING 3 OF 8
CHECKED	SECTION ONE 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 81-060
DATE	FOR: PULTE HOMES CORP. 7223 Parkway Dr. #106 Hanover Md. 21076	FILE NO. 81060-D



PLAN SCALE: 1"=50'



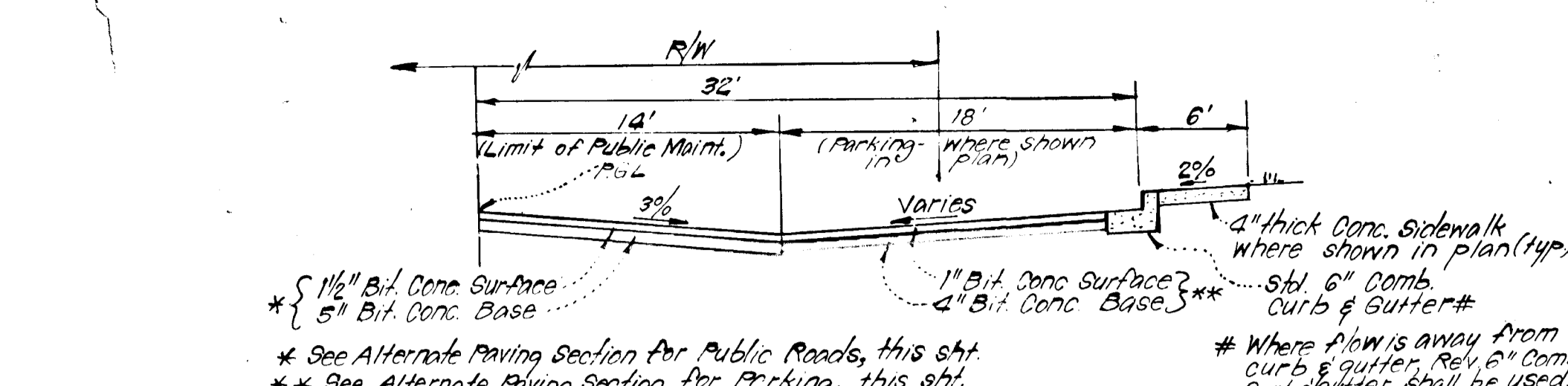
1098



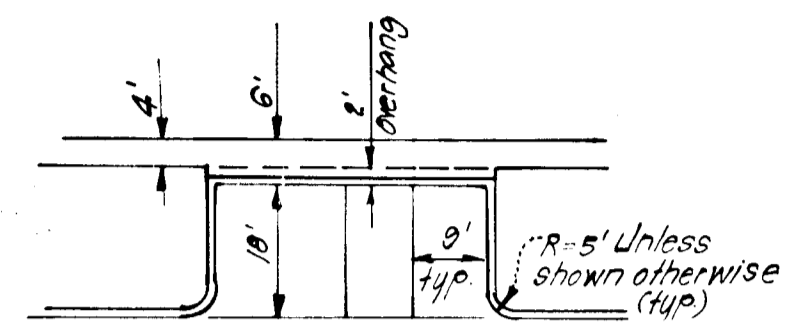
TYPICAL PAVING SECTION - PUBLIC ROADS
NO SCALE

STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
# STIRLING BRIDGE DR. 0100 to 1476.18	MINOR COLLECTOR	38'	6'	4'	11'	60'	RSA	35 mph	.02
STIRLING BRIDGE DR. 1476.18 to 3103.86	LOCAL	30'	4'	4'	9'	50'	RSA	30 "	.10
# LAMBETH CT. 0100 to 1135	MINOR COLLECTOR	38'	6'	4'	11'	60'	RSA	35 "	.02
# HASTINGS DR. 0100 to 3130.01	MINOR COLLECTOR	38'	6'	4'	11'	60'	RSA	35 "	.02
HASTINGS DR. 3130.01 to 3143.52	CUL-DE-SAC*	28'	4'	4'	9'	50'	RSA	30 "	.14

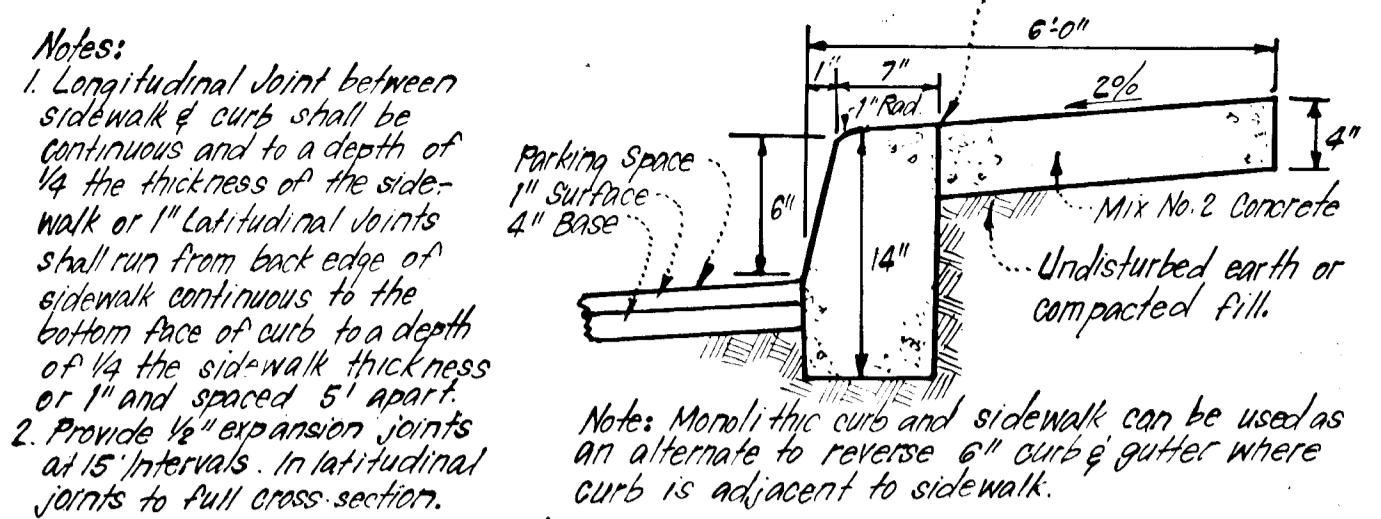
* See Typical Paving section for Minor Collector this sht. and alternate paving section for Minor collector.



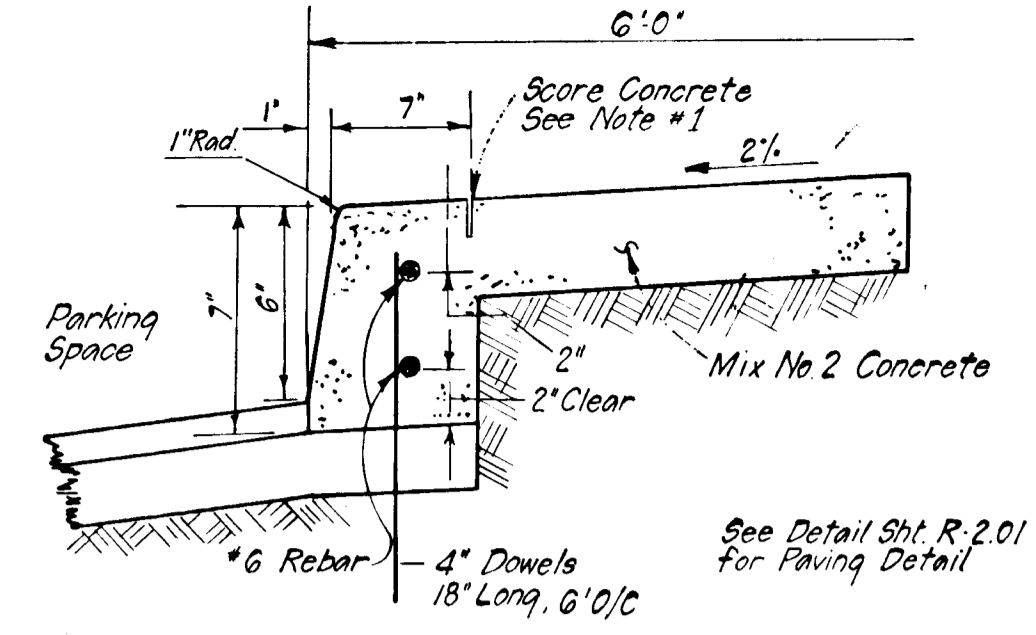
TYPICAL HALF SECTION - PARKING ADJACENT TO PUBLIC ROADS
LAMBETH CT. STA. 1135.00 to 1471.02 & HASTINGS DRIVE STA. 3130.52 to 1144.89
NO SCALE



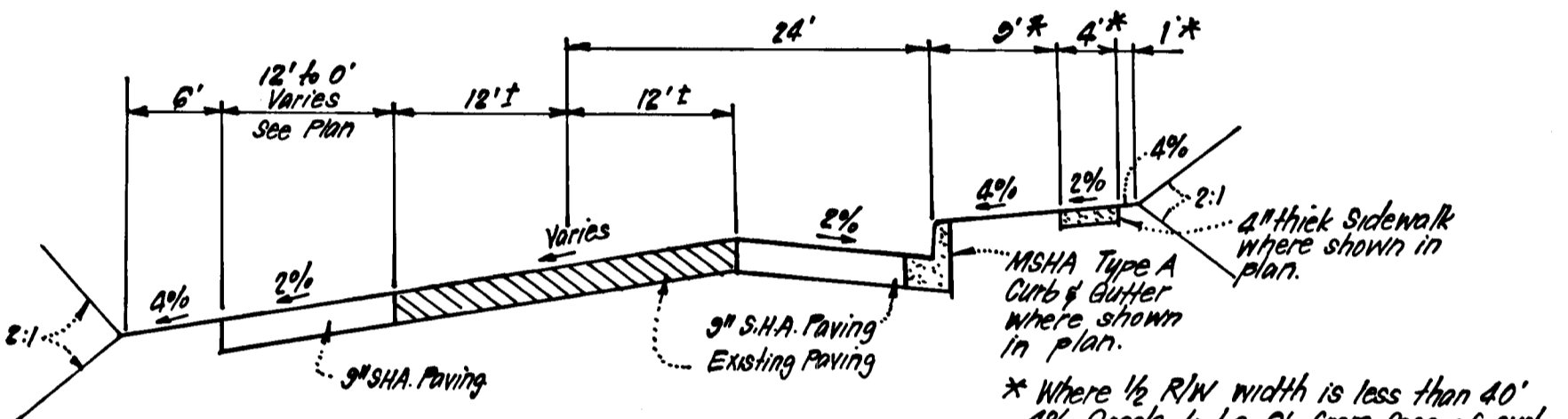
TYPICAL PARKING
NO SCALE



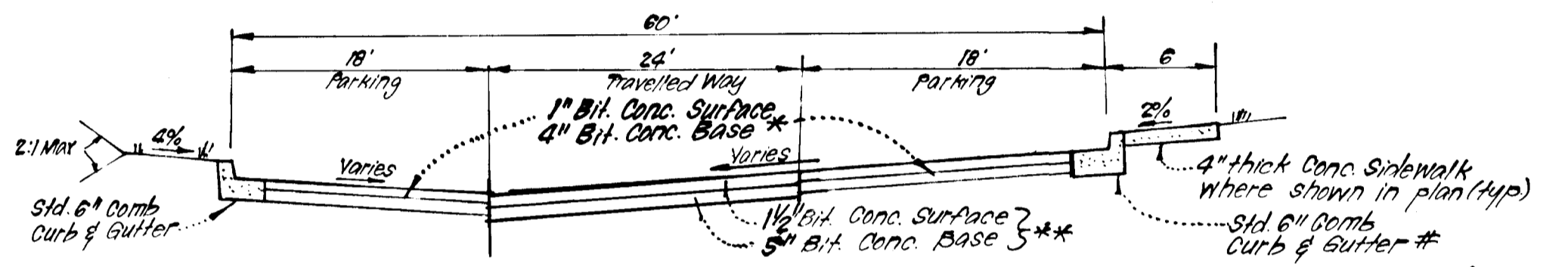
MONOLITHIC CURB & SIDEWALK - PRIVATE PARKING AREA
NO SCALE



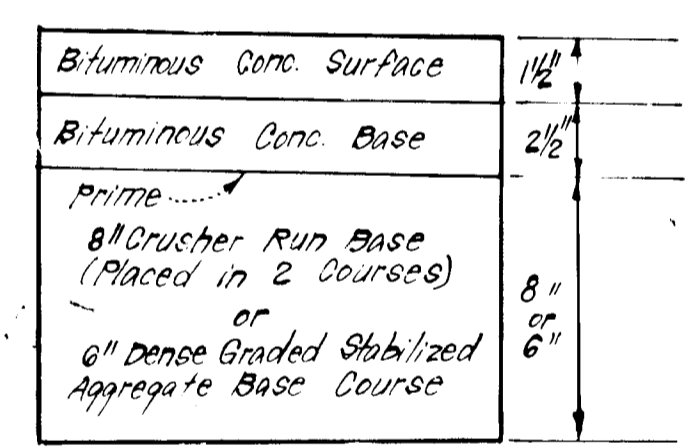
ALTERNATE SECTION
NO SCALE



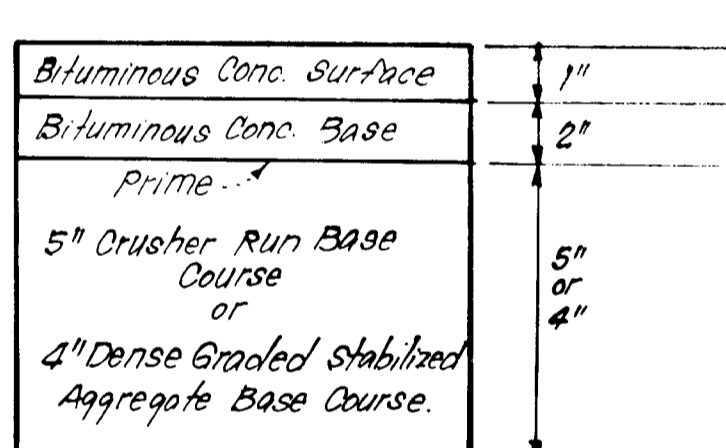
TYPICAL PAVING SECTION - GUILFORD ROAD
NO SCALE



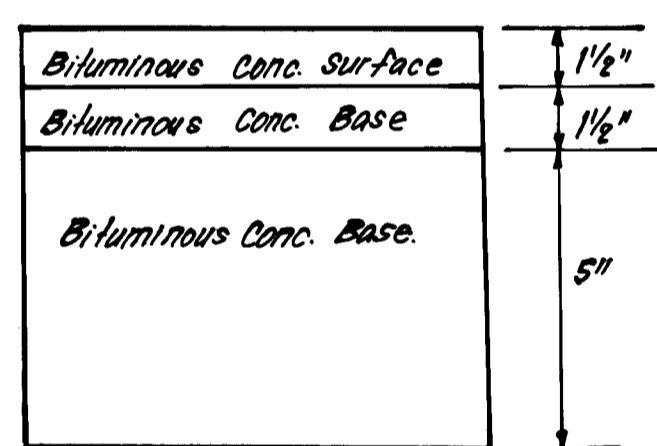
TYPICAL SECTION - PRIVATE DRIVE & PARKING
NO SCALE



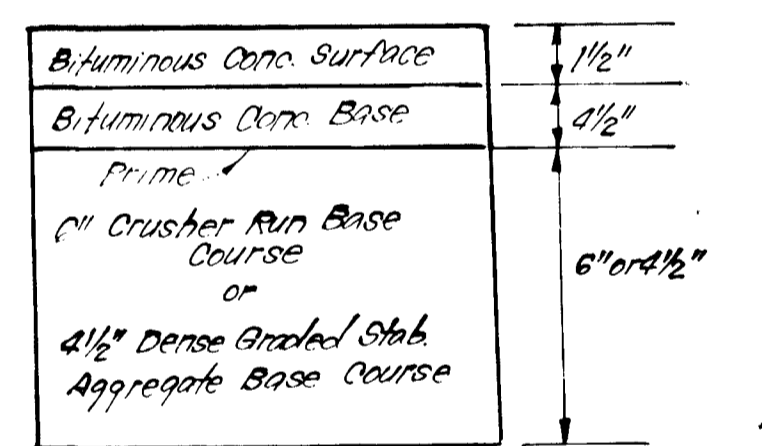
ALTERNATE PAVING SECTION FOR PUBLIC ROADS
NO SCALE



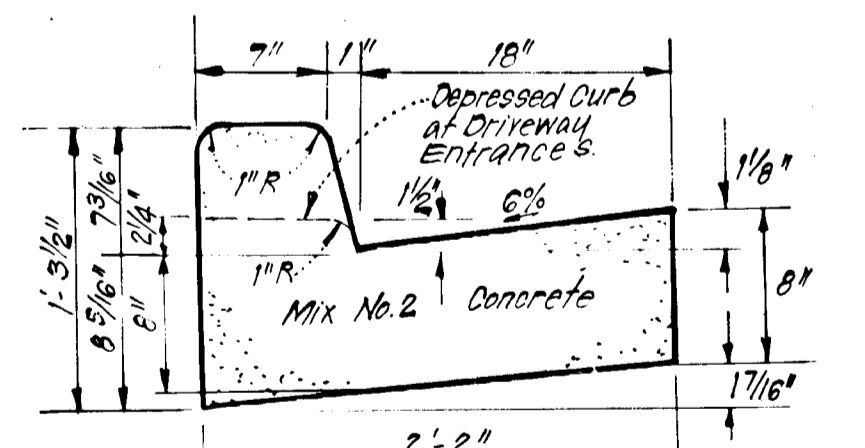
ALTERNATE PAVING SECTION FOR PARKING AREAS
NO SCALE



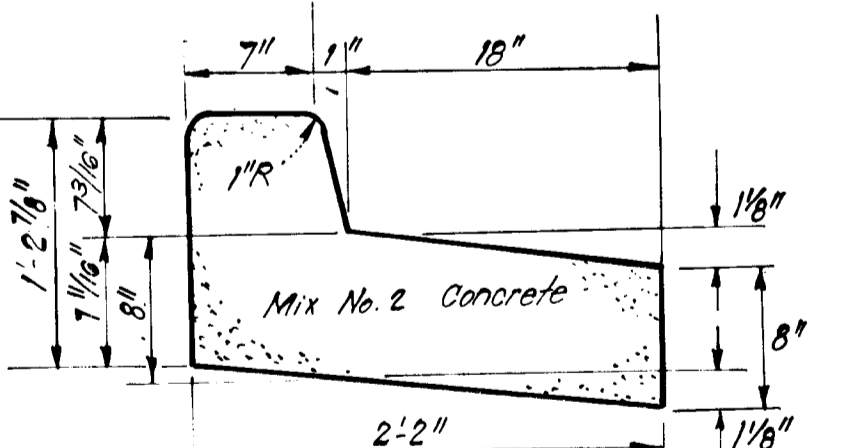
PAVING SECTION MINOR COLLECTOR
NO SCALE



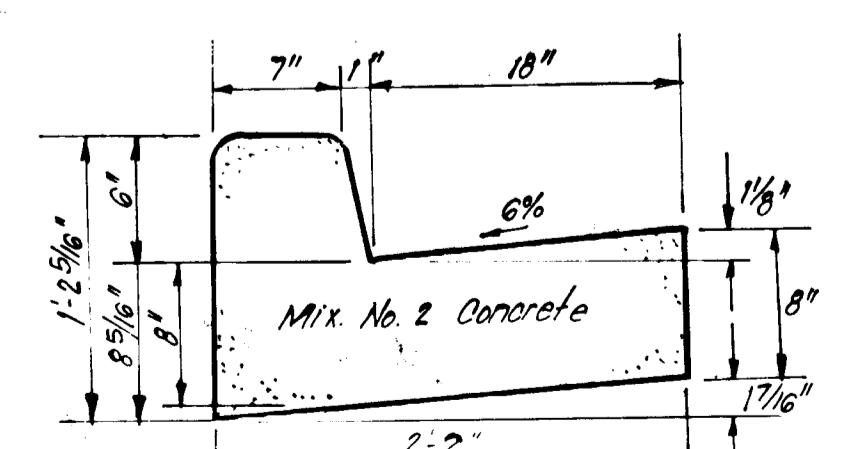
ALTERNATE PAVING SECTION FOR MINOR COLLECTOR
NO SCALE



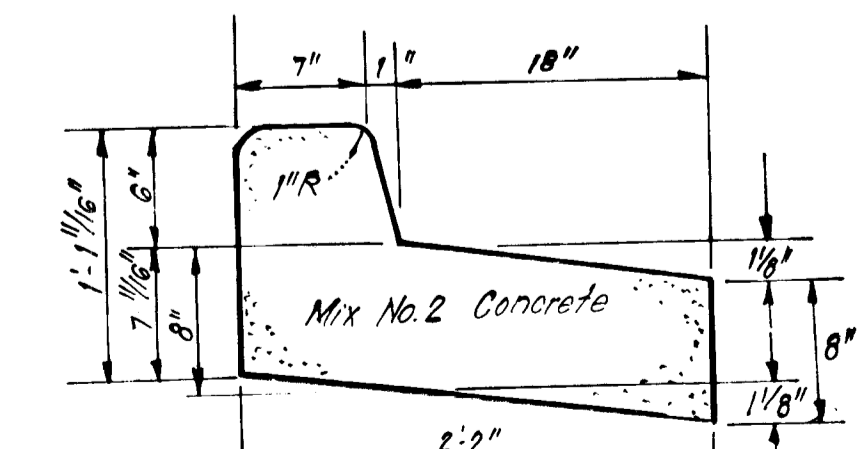
STANDARD 7\"/>



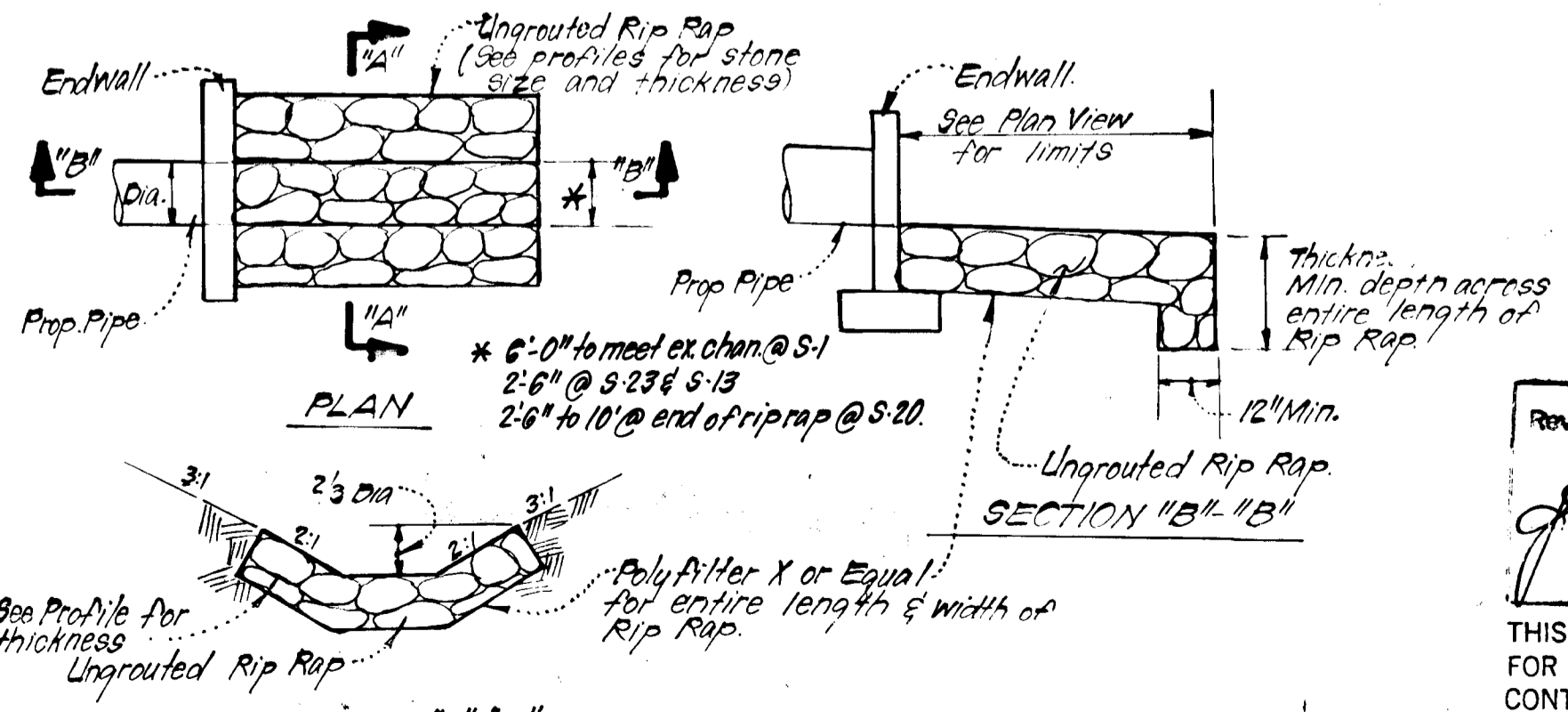
REVERSE 7\"/>



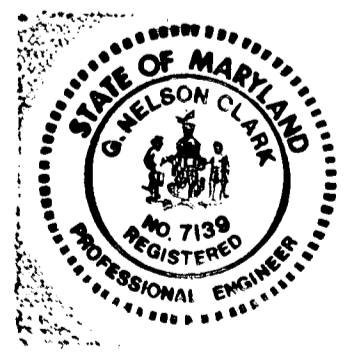
STANDARD 6\"/>



REVERSE 6\"/>



UNGROUTED RIP RAP PAVING DETAILS
NO SCALE



Reviewed for: Howard S.C.D. Name
and meets Technical Requirements
Robert J. Zieher 7-26-84 Date
Signature
U.S. Soil Conservation Service

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

Robert J. Zieher 7-26-84 Date
Approved

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/we certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

John Walker 7-10-84 Date
Signature of Developer/Builder

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

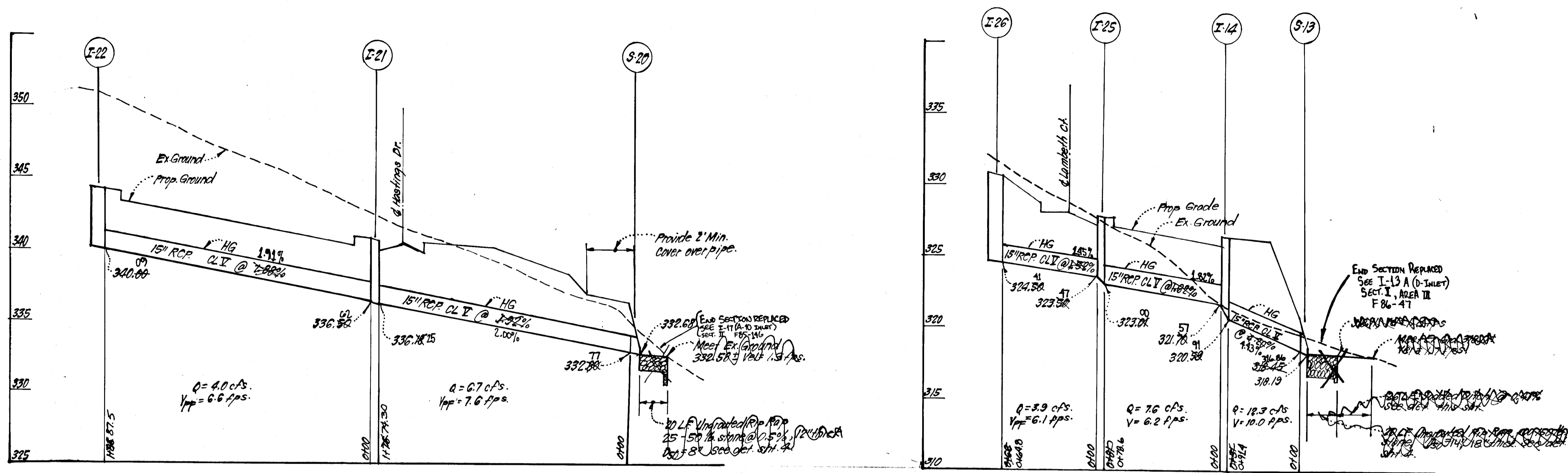
Robert J. Zieher 7-10-84 Date
Signature of Engineer

1 Deleted Improvements at intersection of Oakland Mills Road & Guilford Rd.	11-13-85
REVISIONS	DATE

APPROVED: Department of Public Works
William E. Pidgeon 6-2-84 Date
Chief, Bureau of Engineering
APPROVED: Howard County Office of Planning and Zoning
William M. Mueselman 9-27-84 Date
Chief, Division of Land Development & Zoning Administration

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11314 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-1400

DESIGNED	ROAD CONSTRUCTION PLANS	SCALE
DRAWN	PAVING DETAILS	AS SHOWN
CHECKED	GLENSHIRE TOWNE	DRAWING
DATE	SECTION ONE	4 OF 8
	6TH ELECTION DISTRICT	JOB NO.
	HOWARD COUNTY, MARYLAND	81-080
	FOR: FULTE HOMES CORP.	FILE NO.
	7225 Parkway Drive # 108	8-17-84
	Hanover, Md. 21076	81060-D



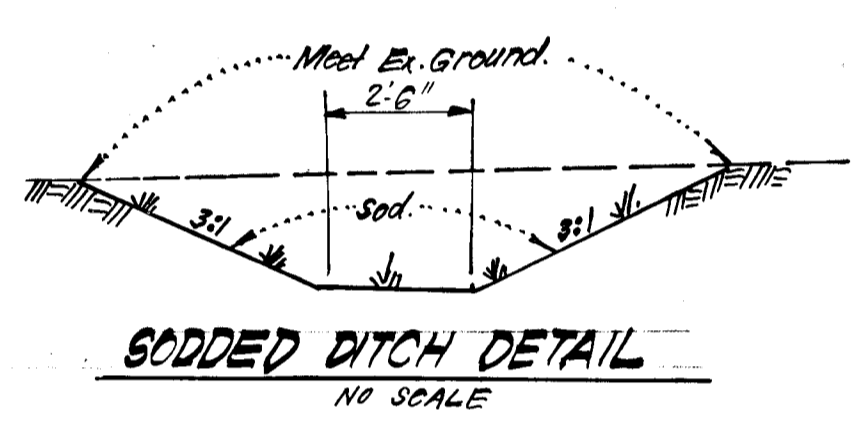
STRUCTURE SCHEDULE A							
No.	TYPE	INW. IN.	INW. OUT.	TOP ELEVATION		REMARKS	LOCATION
				UPPER	LOWER		
S-1	A-Headwall	296.3415	296.3915			Ho. Co. Std. SD 5.11 Dia=72"	See Plan.
F-2	Special	318.45	318.19	306.50		See detail sht. 6	" "
S-12	Concrete Box Structure	321.7851	320.881	326.360	326.360	Ho. Co. Std. SD 5.51 Dia=15"	" "
I-14	A-10 Inlet	332.2867	332.68			" " SD 4.02 W=2'6"	" "
I-20	Concrete Box Structure	336.5610	336.785	340.085	340.365	" " SD 5.51 Dia=15"	" "
I-21	A-10 Inlet	336.5610	336.785	340.085	340.365	" " SD 4.02 W=2'6"	Inlet 3141.18 Hasl. Dr. 14' L.F.
I-22	A-10 Inlet	336.5610	336.785	340.085	340.365	" " SD 4.02 W=2'6"	Inlet 5167.56 Hasl. Dr. 14' L.F.
S-23	Concrete Box Structure	330.13	329.70	344.360	344.360	" " SD 5.51 Dia=15"	See Plan
I-24	A-10 Inlet	335.7851	335.7851	340.365	340.365	" " SD 4.02 W=2'6"	See Plan
I-25	A-10 Inlet w/Deflectors	323.8641	323.080	327.920	327.620	" " SD 4.02 W=2'6"	Inlet 4123.04 L. Ct. 14' L.F.
I-26	A-10 Inlet w/Deflectors	324.3641	324.3641	330.3641	330.3641	" " SD 4.02 W=2'6"	Inlet 5125.04 L. Ct. 14' L.F.

△ All Inverts to be fully developed.
* See Ho. Co. Std. SD 4.83 for Inlet Deflectors.

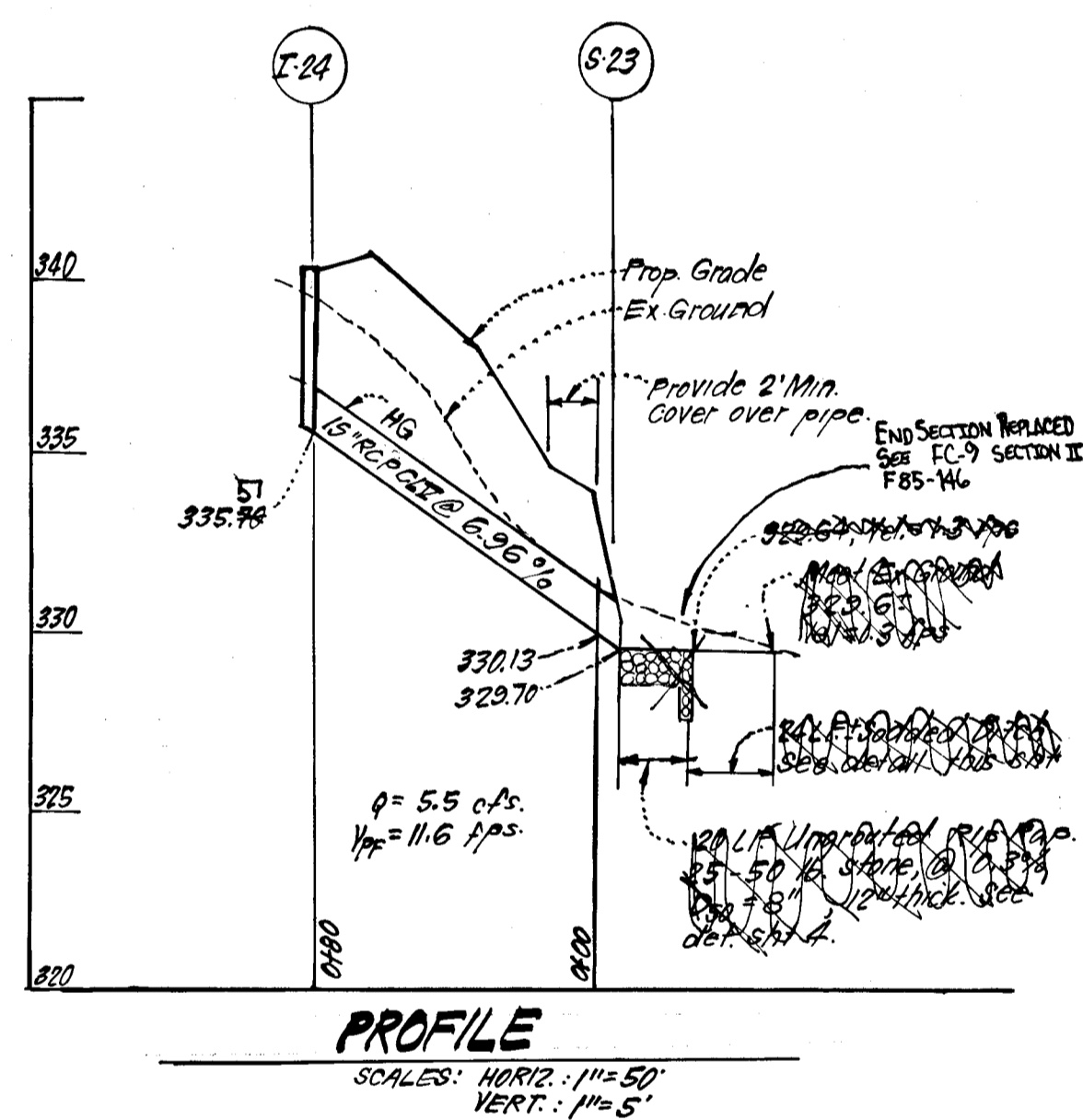
PIPE SCHEDULE		
SIZE	TYPE	LENGTH
15"	RCP CLASS V	640 L.F.
72"	BCCMF 1690	33 L.F.

* 3'x1' Corrugations
L31

PROFILES
SCALES: HORIZ: 1"=50'
VERT: 1"=5'



- GENERAL SODDING NOTES:**
1. Apply 10-10-10 Fertilizer @ 1000#/acre (25#/1000 sq ft)
 2. Apply Ground Agricultural Lime stone @ 2000#/acre (50#/1000 sq ft)
 3. Incorporate both Lime and Fertilizer into soil by discing. Firm up after incorporation.
 4. Lay sod to a tight fit. Roll to insure contact with underlying soil. Water as necessary for 1st 2 weeks, in summer, to ensure establishment.
 5. All sod to be used must be certified by the state of Maryland.
 6. Sod to be pegged and stapled.



AS-BUILT SURVEY CERTIFIED BY
DONALD B. SACKETT Md. L.S.
NO. 6052 ON 2-29-88.

No.	REVISION	DATE
1.	Revised Storm Drainage from I-24 to I-23	12-27-84
2.	Deleted Storm Drainage at Oakland Mills Road.	11-13-84

APPROVED: Department of Public Works
William B. Riden 10-2-84
Chief, Bureau of Engineering
APPROVED: Howard County Office of Planning and Zoning
Richard M. ... 9-27-84
Chief, Division of Land Development & Zoning Administration



Reviewed for: Howard S.C.D.
Name
and meets Technical Requirements
Robert W. Ziehm 7-26-84
Signature Date
U.S. Soil Conservation Service
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Ziehm 7-26-84
Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."
Robert W. Ziehm
Signature of Developer/Builder
7-10-84
Date

ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Donald B. Sackett 7-10-84
Date

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS
13135 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593-3400

DESIGNED	ROAD CONSTRUCTION PLANS STORM DRAIN PROFILES	SCALE
DRAWN		AS SHOWN
CHECKED		DRAWING
DATE	8-17-84	5 OF 8
		JOB NO.
		81,000
		FILE NO.
		81,000-D

FOR: MULTE HOMES CORP.
7023 PARKWAY DR. #100
HAGERSTOWN, MD. 21076

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, 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.

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.
- 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 in the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL:

Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall be 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 replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Nexon, Plasti-Cote, Bloc-Klad, and Bell-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-190 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. 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:

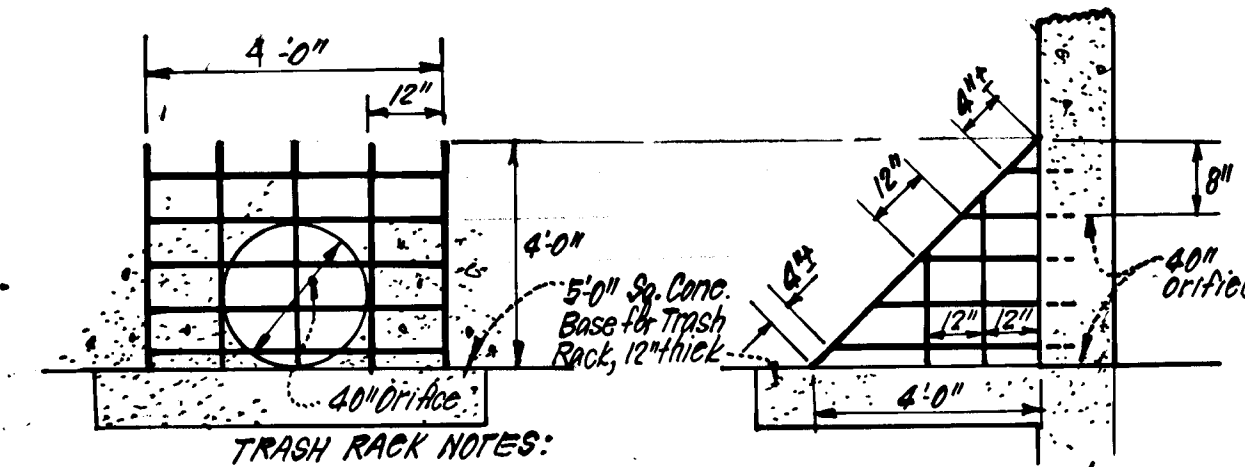
- A. MATERIALS
 - 1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150.
 - 2. WATER - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
 - 3. SAND - The sand used in concrete shall be clean, 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 per 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 predicated 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-charging 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 will 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, honeycombed areas, voids left by removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry patching mortar.
- H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least 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 compound may also be used.
- I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37F with the temperature falling, or 34F 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.

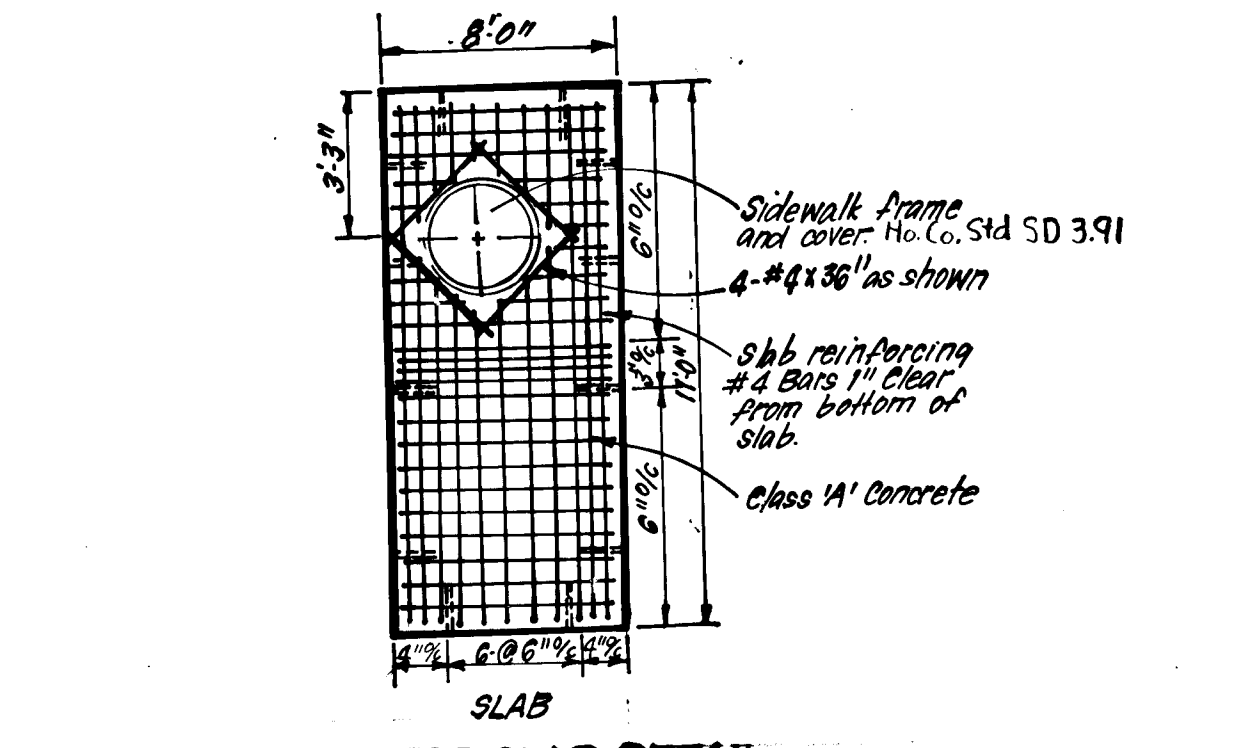
VII. EROSION AND SEDIMENT CONTROL:

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.



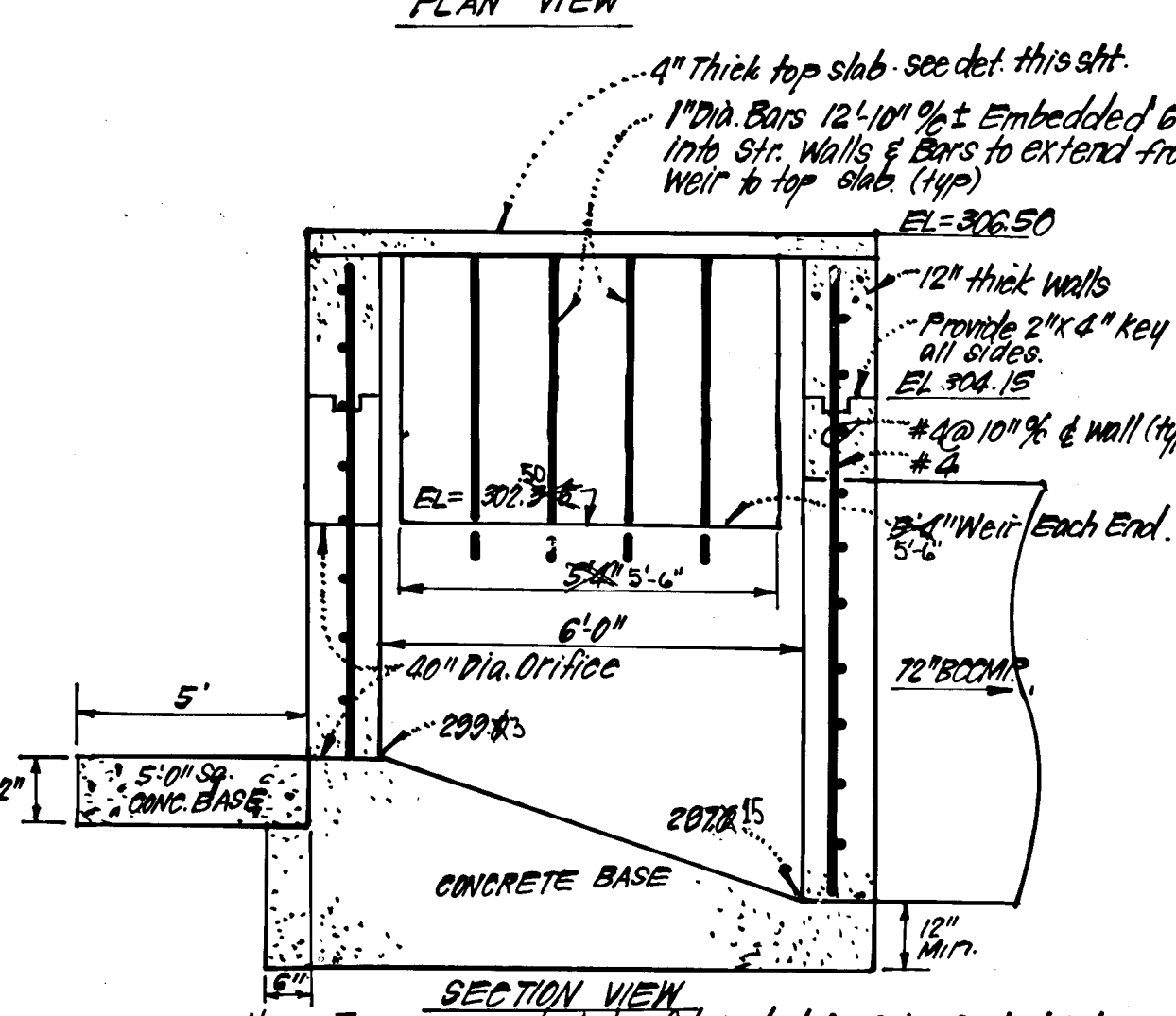
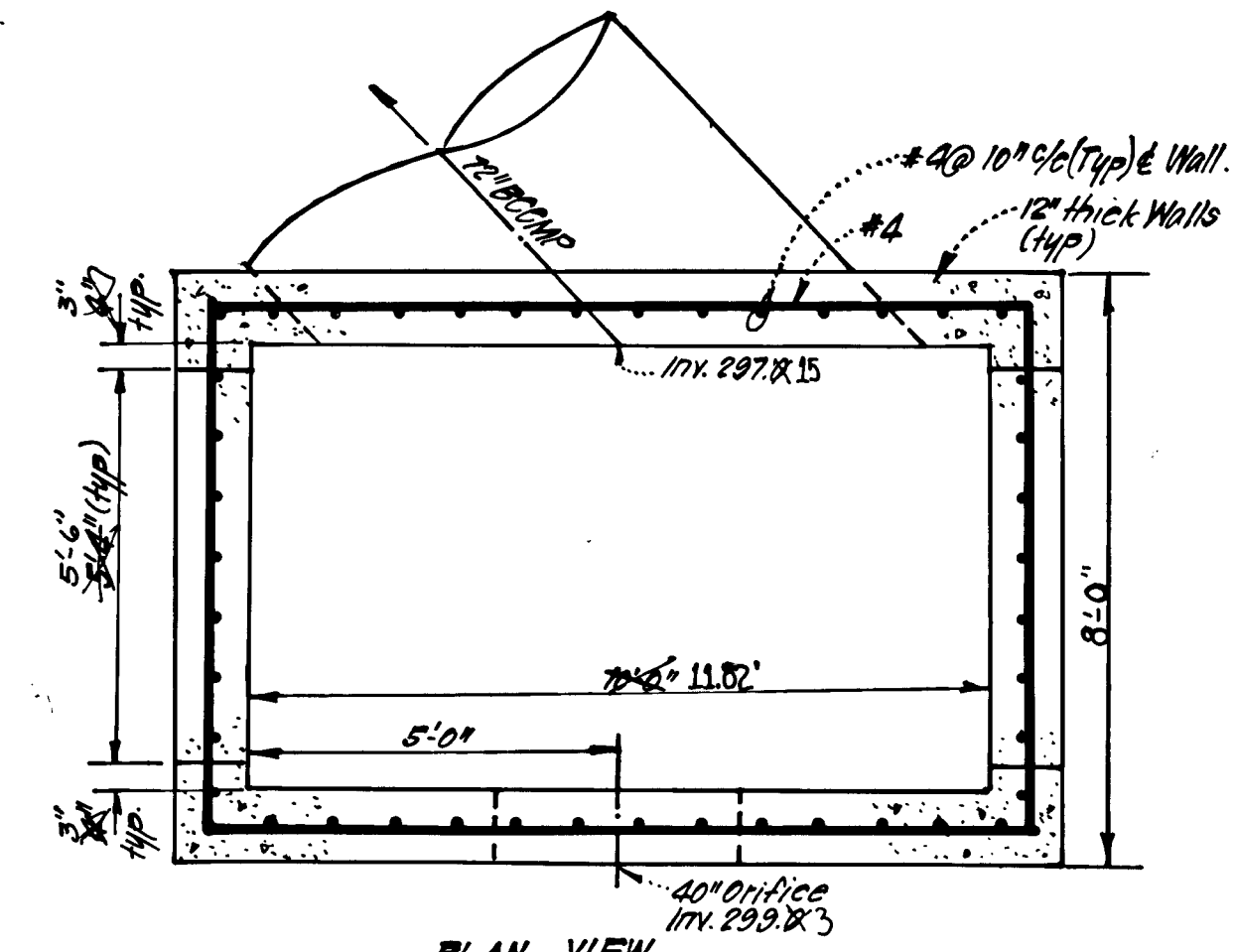
TRASH RACK @ 40" ORIFICE
NO SCALE

TRASH RACK NOTES:
1. Trash rack to be made of 1/2" Dia. bars welded together.
2. Trash rack to be connected to str. by embedding bars 4" into str. walls and Conc. Base.
3. After fabrication, trash rack to be painted with one coat rust preventative Alkyd primer and two coats Black Alkyd gloss enamel.



TOP SLAB DETAIL
NO SCALE

Sidewalk frame and cover No. Co. Std. SD 391
4-#4x36" as shown
Slab reinforcing #4 Bars 1" clear from bottom of slab.
Class 'A' Concrete

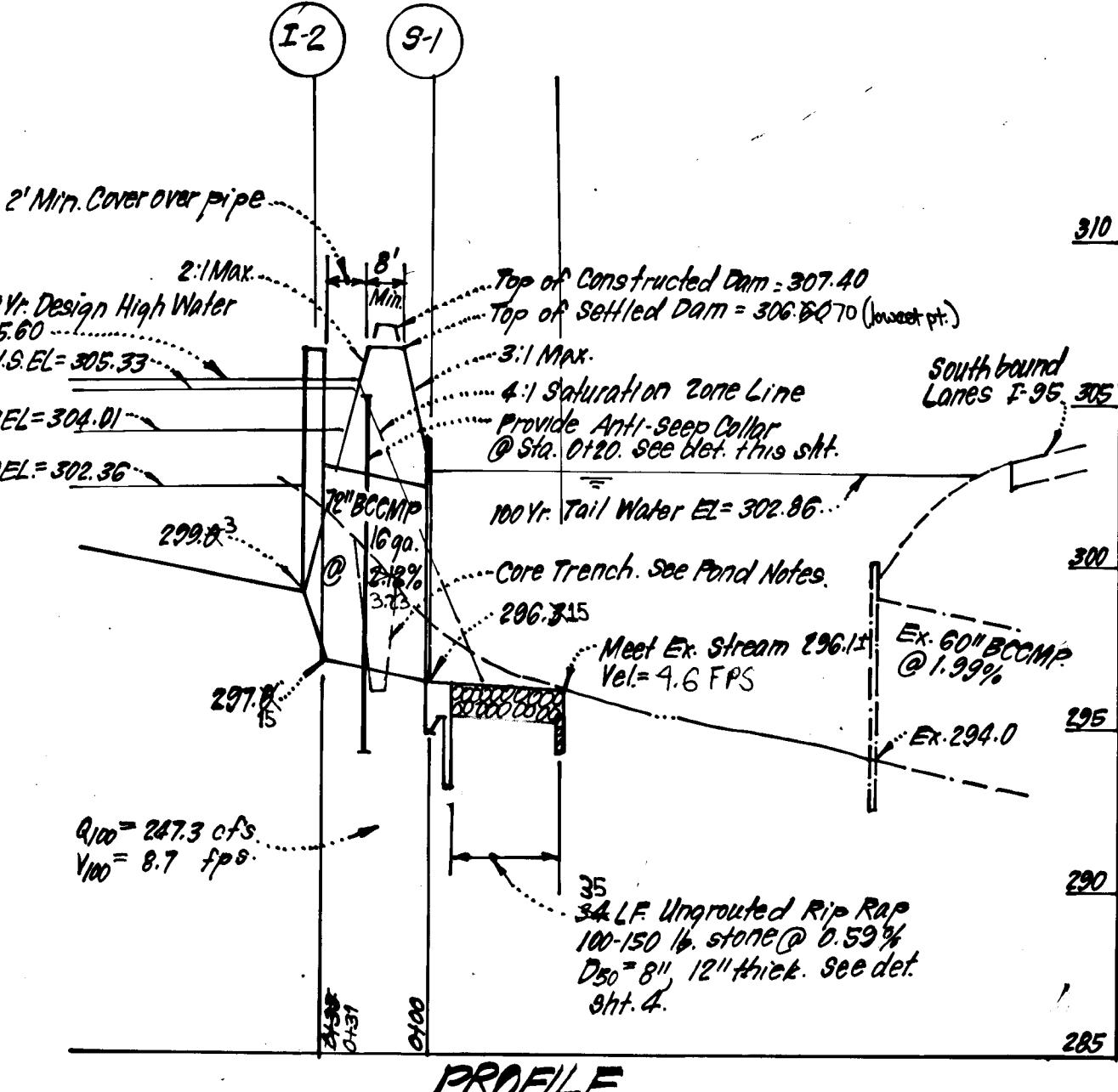


SECTION VIEW
NO SCALE

4" Thick top slab - see det. this stt.
1" Dia. Bars 12" O.C. Embedded 6" into Str. Walls & Bars to extend from Weir to top slab (typ)
12" thick walls
Provide 2"x4" Key all sides.
EL. 304.15
#4 @ 10" O.C. Wall (typ)
#4
12" Weir Each End.
5'-0" Sp. Conc. Base
200#3
6" O.C.
200#3
72" CONC. WALL
12" Min.

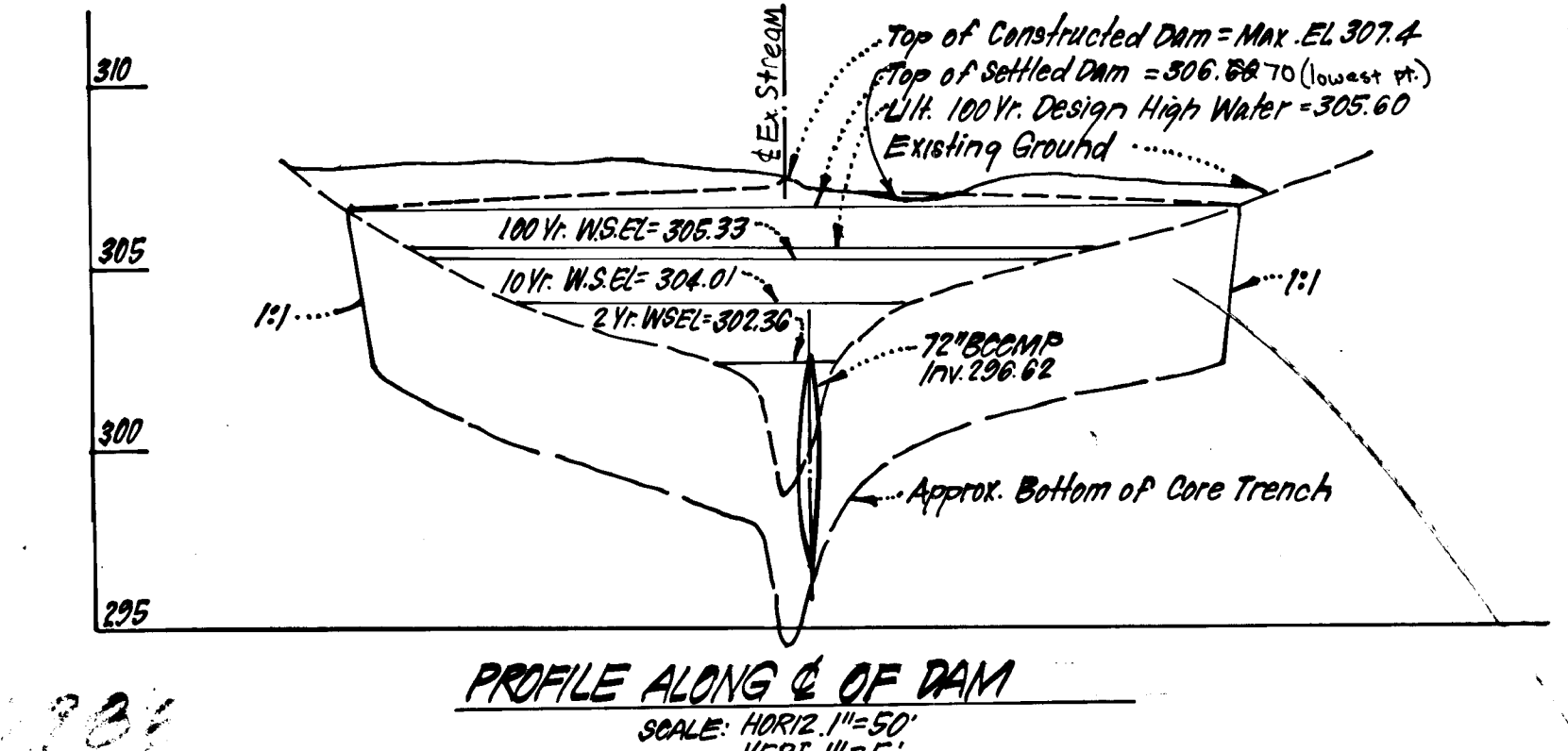
GENERAL NOTES:
1. All concrete shall have f'c = 4000 psi.
2. Reinforcing to be continuous @ corners all laps to be 1'-4".
3. Reinforcing to have fy = 60000 psi, A615 designation.

SPECIAL STRUCTURE I-2
NO SCALE



PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

Provide 2' Min. Cover over pipe
2.1 Max. 12" Dia. 16' Sp. 200#3
100 Yr. Design High Water EL=305.60
100 Yr. W.S. EL=305.33
100 Yr. WSEL=304.01
2.1' WSEL=302.36
Top of Constructed Dam = 307.40
Top of Settled Dam = 306.80 (lowest pt.)
3.1 Max. 4:1 Saturation Zone Line
Provide Anti-seep Collar @ Sta. 0+10. See Det. this stt.
100 Yr. Tail Water EL=302.86
Core Trench - See Pond Notes
200#3
Meet Ex. Stream 296.15 Vel=4.6 FPS
Ex. 60" CONC. @ 1.95%
EL. 294.0
3/4" UNGROUTED RIP RAP 100-150 1/2" STONE @ 0.53% D50=84 12" THICK. SEE DET. STT. 4.
Q10=247.3 cfs V10=8.7 fps



PROFILE ALONG C/L OF DAM
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

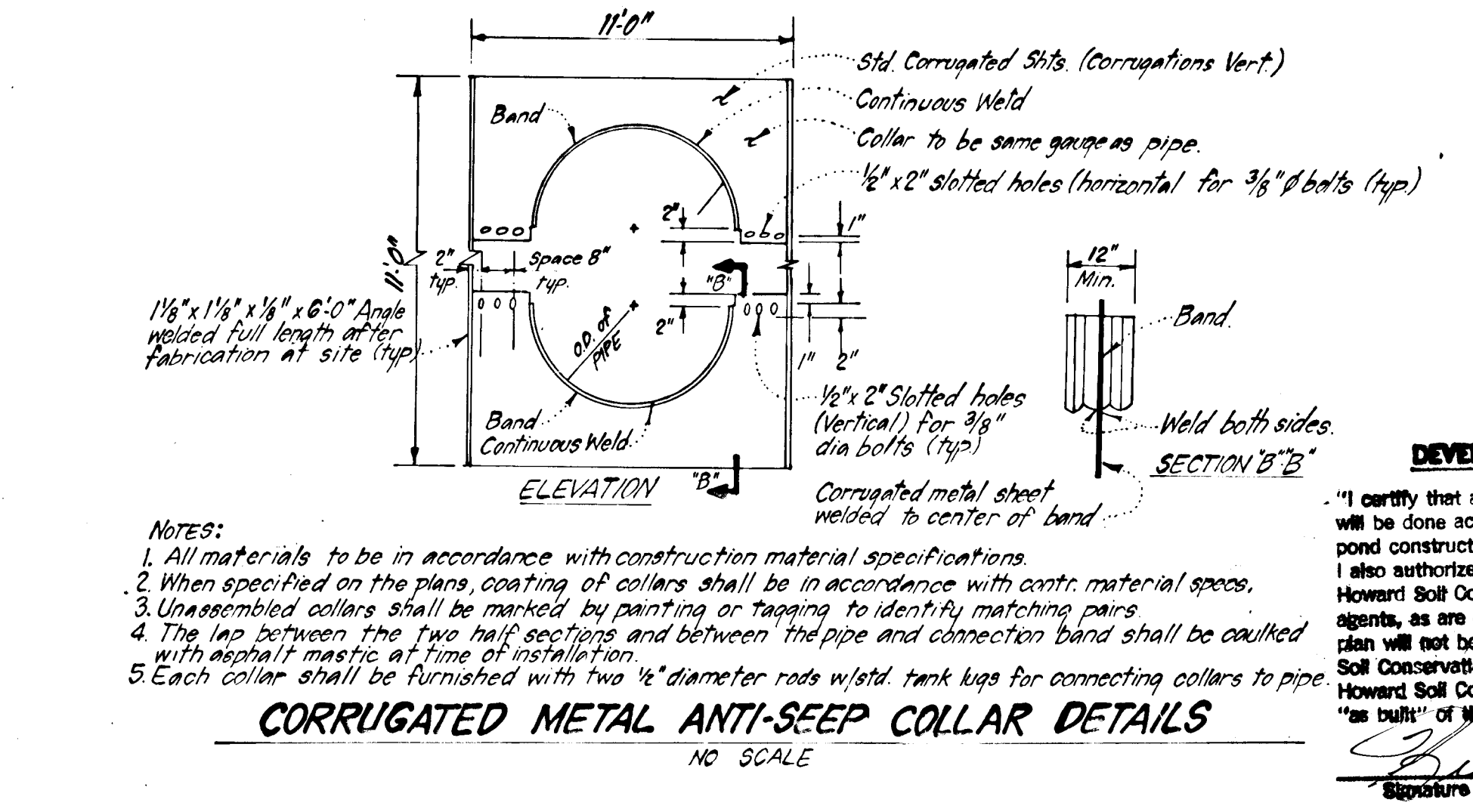
These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved: *Richard Ziehm* 9-26-84
Howard S.C.D. Date

F-85-12
Plan Number

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 P. [Signature] 9-26-84
U.S. Soil Conservation Service Date



CORRUGATED METAL ANTI-SEEP COLLAR DETAILS
NO SCALE

Std. Corrugated Shits (Corrugations Vert)
Continuous Weld
Collar to be same gauge as pipe.
1/2" x 2" slotted holes (horizontal for 3/8" dia bolts (typ))
Weld both sides.
SECTION B-B

Notes:
1. All materials to be in accordance with construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with contr. material specs.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the two half sections and between the pipe and connection band shall be caulked with neoprene mastic at time of installation.
5. Each collar shall be furnished with two 1/2" diameter rods w/Std. tank lugs for connecting collars to pipe.

DEVELOPER'S CERTIFICATE

"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."

Richard Ziehm 8-21-84
Signature of Developer 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 a red-lined 'as built' of the pond within 30 days of completion."

John P. [Signature] 8-21-84
Signature of Engineer Date

APPROVED: DEPARTMENT OF PUBLIC WORKS

John P. [Signature] 10-2-84
Chief, Bureau of Engineering Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

William [Signature] 9-27-84
Chief, Division of Land Development & Zoning Administration Date

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS

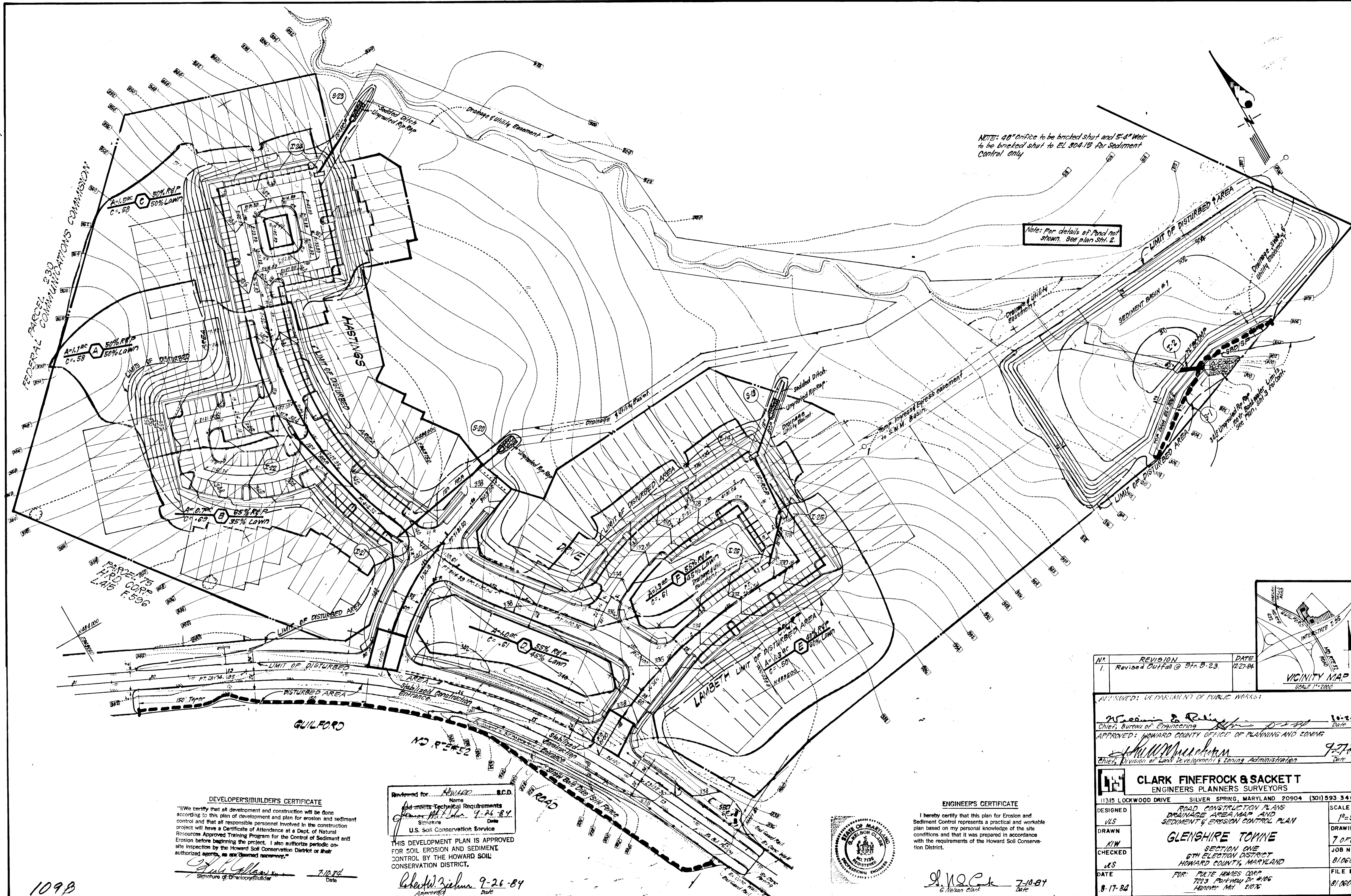
11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400

DESIGNED	U/S	SCALE	AS SHOWN
DRAWN	K/W	DRAWING	60x8
CHECKED	U/S	JOB NO.	81-080
DATE	8.17.84	FILE NO.	81-060-D

**ROAD CONSTRUCTION PLANS
STORM WATER MANAGEMENT DETAILS
GLENSHIRE TOWNE**

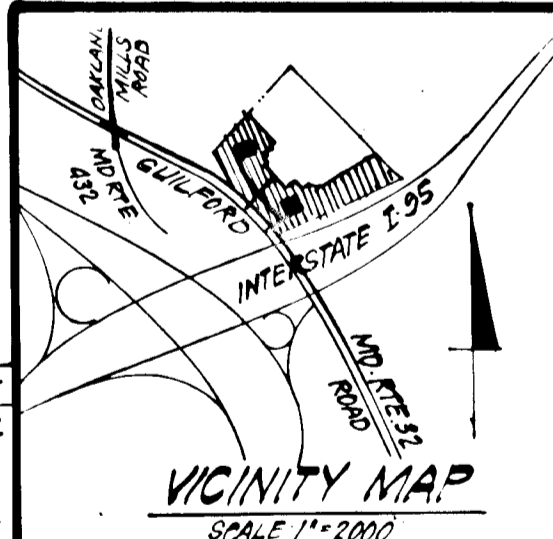
SECTION ONE
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FOR: PHILITE HOMES CORP.
7223 Parkway Dr. #106
Hanover, Md. 21076



NOTE: 40" Orifice to be bricked shut and 5'-4" Weir to be bricked shut to EL 304.15 for Sediment Control Only

Note: For details of Pond not shown, see plan Sht. 2.



NO.	REVISION	DATE
1.	Revised Outfall @ Sta. 9+23.	12-27-84

APPROVED: DEPARTMENT OF PUBLIC WORKS
 W. S. ...
 Chief, Bureau of Engineering
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
 ...
 Chief, Division of Land Development & Zoning Administration

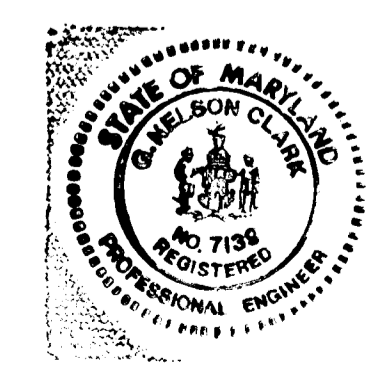
CLARK FINEFROCK & SACKETT
 ENGINEERS PLANNERS SURVEYORS
 11215 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593 3400

DESIGNED	VLS	SCALE	1" = 50'
DRAWN	KIW	DRAWING	7 OF 8
CHECKED	JS	JOB NO.	81060
DATE	8-17-84	FILE NO.	81060-D

ROAD CONSTRUCTION PLANS
 DRAINAGE AREA MAP AND
 SEDIMENT & EROSION CONTROL PLAN
GLENSHIRE TOWNE
 SECTION ONE
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 FOR: PULTE HOMES CORP.
 7213 PARKWAY DR. #106
 HANOVER, MD 21076

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as determined necessary."
 Signature of Developer/Builder: *[Signature]*
 Date: 7-10-84

Reviewed for: *[Signature]* S.C.D.
 Name: *[Signature]*
 Signature: *[Signature]* Date: 9-26-84
 U.S. Soil Conservation Service
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Approved: *[Signature]* Date: 9-26-84



ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 G. Nelson Clark
 Date: 7-10-84

109B

GENERAL NOTES

- Grading Permits shall be obtained prior to installation of Sediment Control & Grading.
- All Sediment and Erosion Control Measures will be installed and stabilized according to this plan prior to any other grading, clearing or disturbance of the existing surface of the site. See note #6 for stabilization except that the seed mixture will be annual rye applied at a rate of 1.4 lbs./1000 sf.
- Notify the Bureau of Inspections and Permits at least 24 hours before starting any work.
- All Sediment Control Practices to conform to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" and shall be adjusted to meet actual field conditions.
- Stabilization of Disturbed ground to be done as soon after construction as possible.
- All disturbed areas to be stabilized in accordance with the following Specifications:
 - Seed - certified 85% germination applied at the rate of 3 lbs./1000 sf. Mixture - 40% Kentucky Blue, 20% chewing Fescue, 20% Kentucky 31 and 20% annual rye.
 - Fertilizer - 10-10-10 applied at a rate of 23 lbs./1000 sf. Ground Agricultural Lime or Dolomitic Lime applied at a rate of 90 lbs./1000 sf.
 - Mulch - Weed free grain straw applied at a rate of 70-90 lbs./1000 sf. Mulch shall be secured to the ground by any approved method i.e.; asphalt tacks, chemical binder etc.
 - All Sod used shall be Maryland State Certified.
- All structural Sediment Control Measures are to remain in place until permission for their removal has been obtained from the Bureau of Inspections and Permits.
- On Site Inspection and Maintenance of all Sediment Control Measures including clean out of Sediment Traps and Dikes, and proper establishment of all planned vegetative measures will be the responsibility of the developer or his representative on the site, on a continuing day to day basis.
- It will be the developer's responsibility to provide additional Sediment & Erosion Control Devices to protect stabilized areas during construction.
- The Contractor shall keep all public roads free of sediment deposits left from traffic leaving construction site.
- Approval of this plan is conditional upon the approval of Sediment Control Plan for the off-site waste or borrow area prior to the import of any borrow or export of waste to or from this site.
- All pipes to be blocked at the end of each day. See detail this sheet.
- Total Amount of Straw Bales or Silt Fence shown = 1050 L.F.

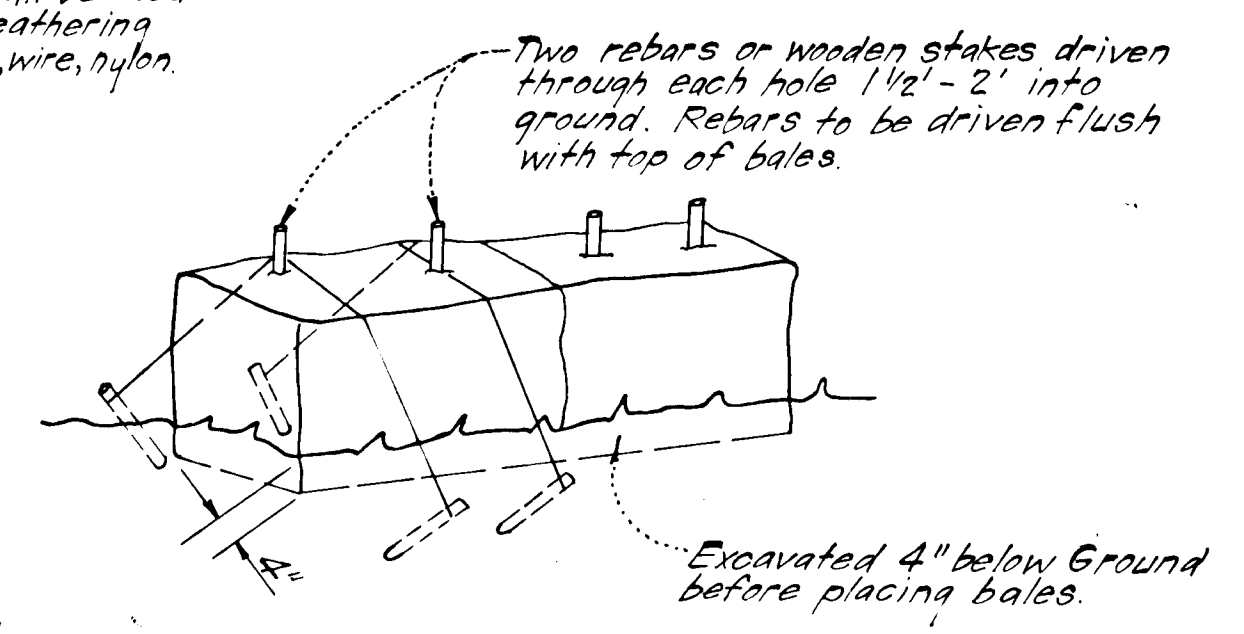
14. SITE ANALYSIS:
- Total Area: 15.044 Acres.
 - Area to be Roofed: NONE Acres.
 - Area to be Paved: 2.900 Acres.
 - Area to be Seeded: 4.885 Acres.
 - Area Undisturbed: 7.259 Acres.

15. CONSTRUCTION SEQUENCE:
- Install Stabilized Construction Entrances and SBD/SF.
 - Construct SWM Pond/Sediment Basin. Delay construction of Low Flow Channel. Construct Str. I-2 to El. 304.15 bricking shut 40" Orifice and Weir to that elev. for Sediment & Erosion Control only.
 - Clear and Rough Grade site.
 - Construct storm drainage & utilities.
 - Final grade and construct paving.
 - Stabilize all other disturbed areas onsite in accordance with stds. and specs.
- * (7) Upon approval of sediment control inspector, remove sediment & erosion control measures after all areas draining to them have been stabilized and convert sediment basin to SWM Pond as follows:
- Clearout Pond and regrade pond as necessary.
 - Immediately stabilize regraded pond bottom.
 - Install rip rap slope protection and low flow channel and remove blocking of 40" orifice and Weir and remove temporary grating.
 - Construct Str. I-2 to Top Elevation shown.
- * Conversion to SWM Pond shall not take place until all areas of future areas using sediment basin for sediment control shall be completely stabilized.

NOTE: Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:

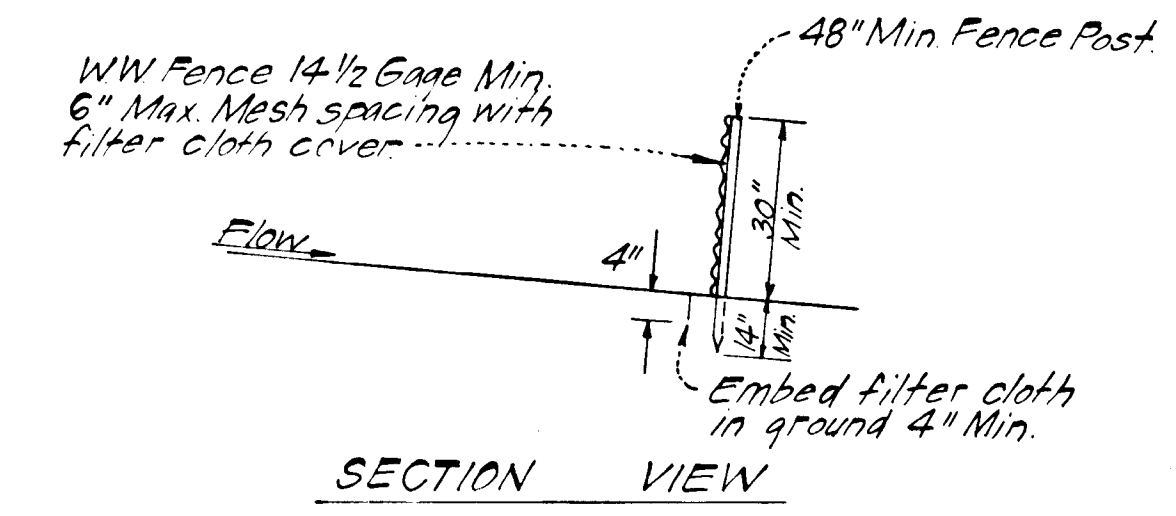
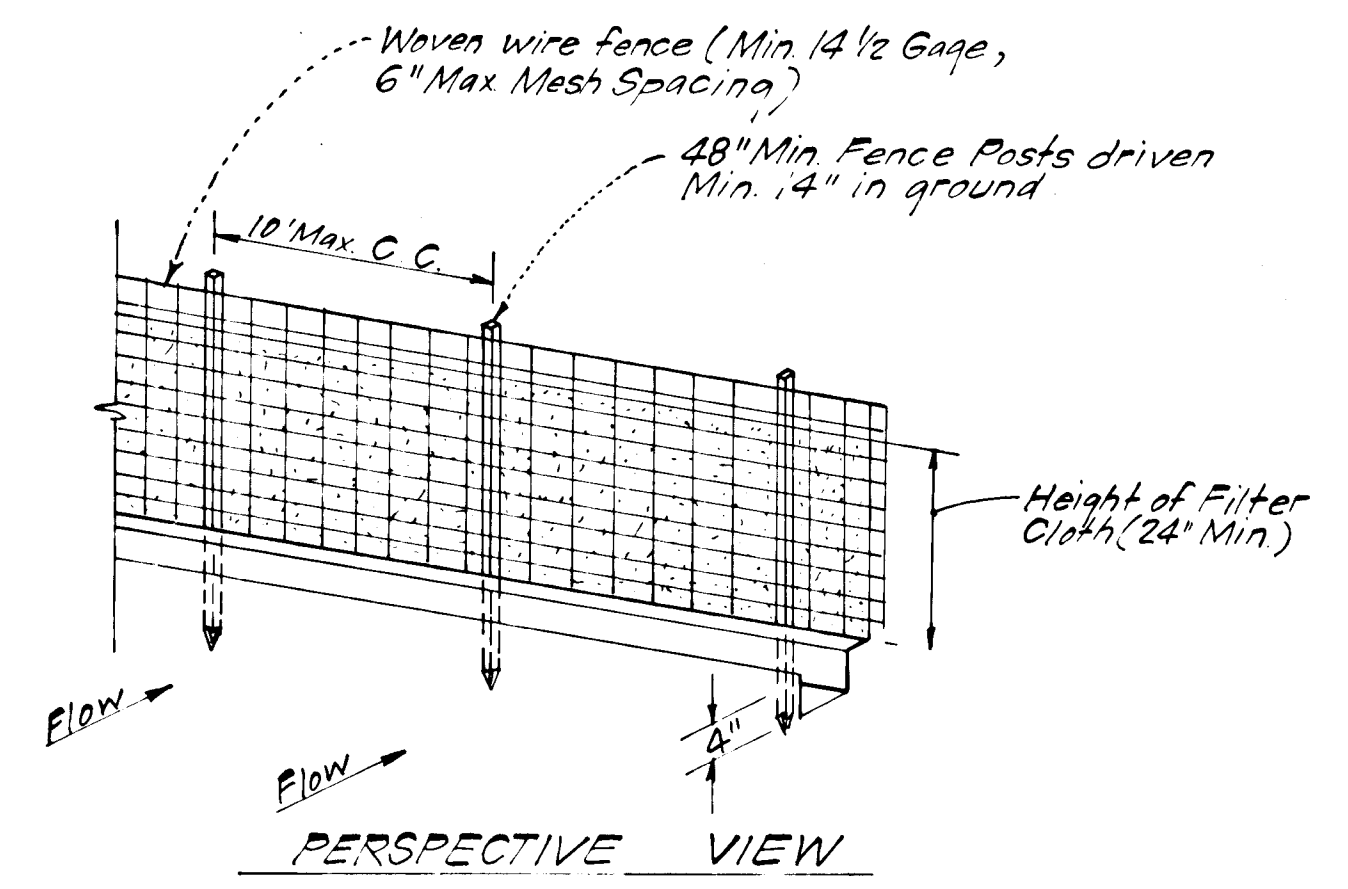
- 7 calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3:1 and
- 14 days as to all other disturbed or graded areas on the project site.

All bales shall be tied with non-weathering materials, i.e., wire, nylon.



Note:
1. In lieu of the use of rebar, each straw bale may be fastened to ground with pegs (4 per bale and wire or nylon as shown above.)

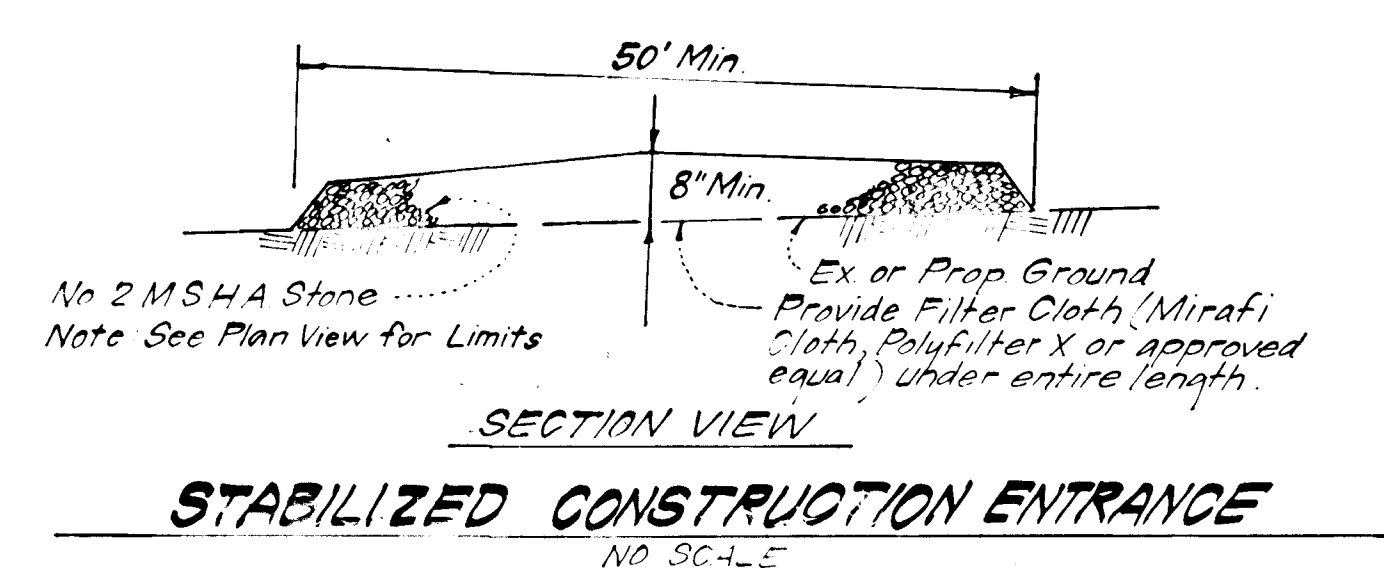
STRAW BALE DIKE DETAIL (S.B.D.)
NO SCALE



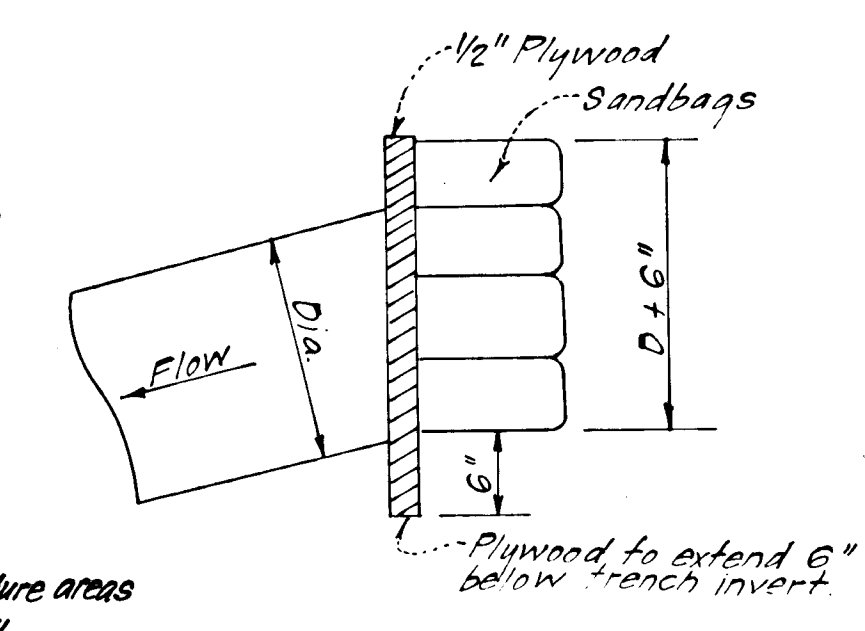
CONSTRUCTION NOTES:
1. Woven wire fence to be fastened securely to fence posts with wire ties or staples.
2. Filter cloth to be fastened securely to woven wire fence with wire ties spaced every 24" at top and mid-section.

POSTS: Steel, either T or L type or 2" Hardwood.
FENCE: Woven wire, 1 1/2 Ga., Max 6" Mesh Opening.
FILTER CLOTH: Filter X, Mirafi 100X, Laurel Erosion Control Cloth, Bidim, Polyfilter X or equal.

SILT FENCE DETAIL (S.F.)
NO SCALE



STABILIZED CONSTRUCTION ENTRANCE
NO SCALE



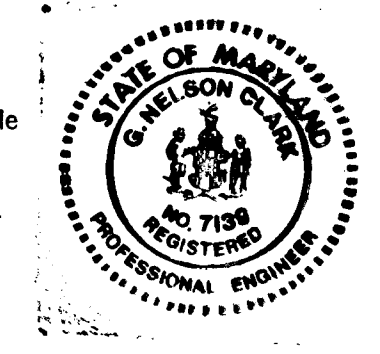
PIPE BLOCKING DETAIL
NO SCALE

1098

Reviewed for Howard S.C.D.
Name
Signature [Signature] Date 7-26-84
U.S. Soil Conservation Service
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved Robert W. Ziehm Date 9-26-84

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as deemed necessary."
Signature of Developer/BUILDER [Signature] Date 7-10-84

ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] Date 7-10-84
G. Nelson Clark



APPROVED: Department of Public Works
[Signature] Chief, Bureau of Engineering Date 11-2-84
APPROVED: Howard County Office of Planning & Zoning
[Signature] Chief, Division of Land Development & Zoning Administration Date 9-27-84

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11317 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED VLS	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL DETAILS GLENSHIRE TOWNE SECTION ONE 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: MILITE HOMES CORP. 7223 Parkway Dr. #106 Hanover Md. 21076	SCALE As SHOWN
DRAWN KIM		DRAWING 80FB
CHECKED VLS		JOB NO. 81-060
DATE 8-17-84		FILE NO. 81-060-D