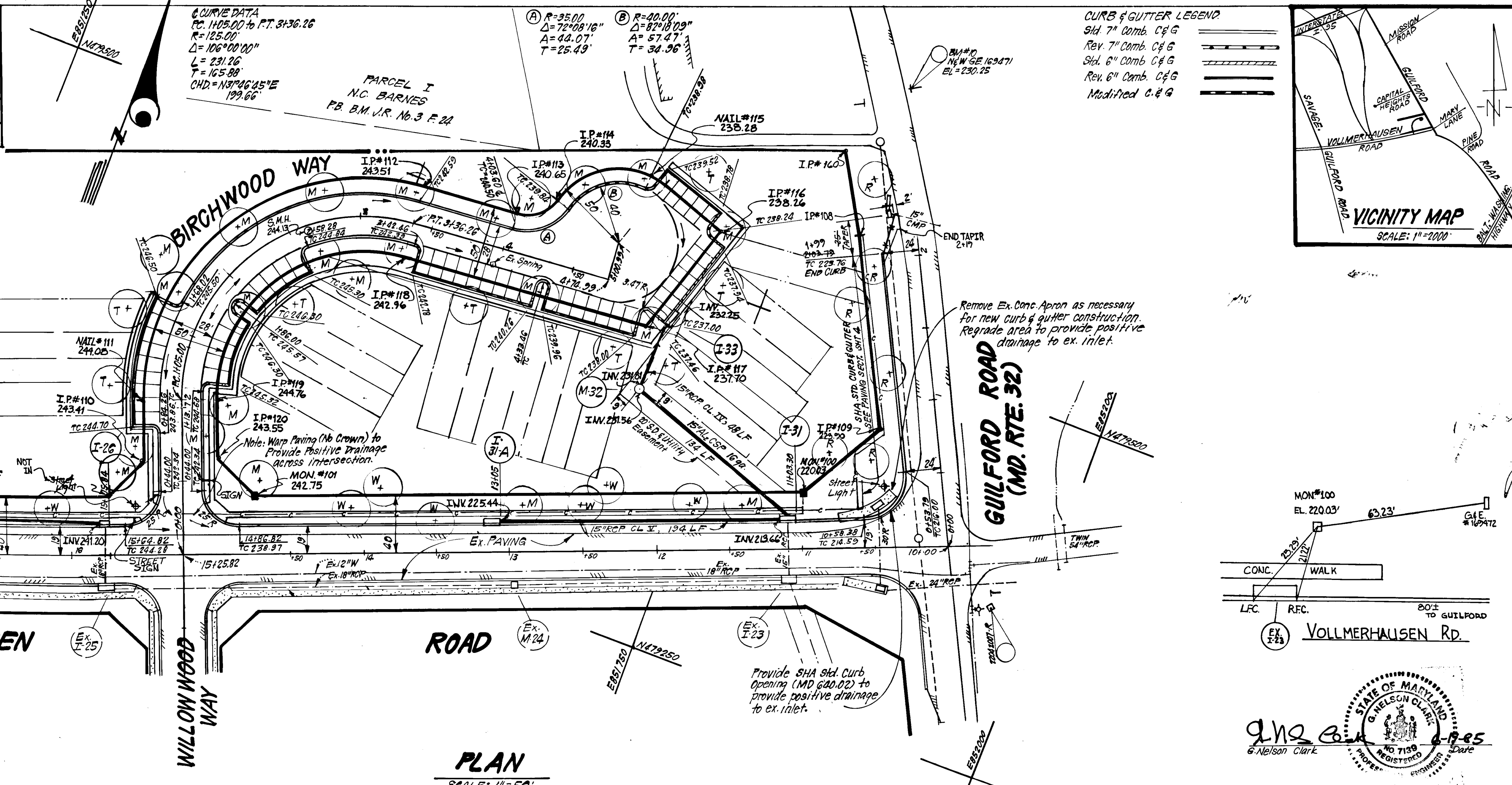
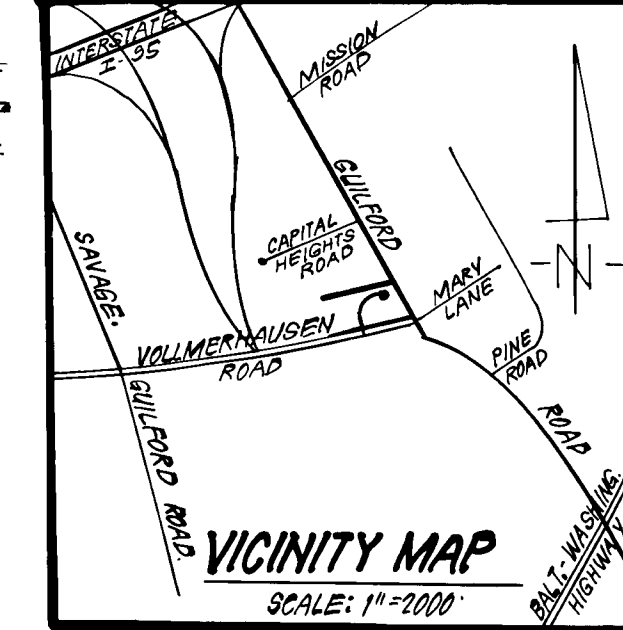


PLANT SCHEDULE				
KEY	PLANT NAME	SIZE	QUANT	REMARKS
(M)	Aspen 'Sunset'	2 1/2 cal	49	B&B Heavy Heads
(P)	Quercus macrocarpa	1 1/2 cal	17	
(R)	Quercus rubra	1 1/2 cal	20	
(W)	Quercus phellos	1 1/2 cal	23	
(T)	Villalobata 'Greenspire'	1 1/2 cal	18	

Notes:
 1. Contractor shall verify location of underground utilities prior to digging.
 2. Final location of trees may be adjusted slightly to accommodate field conditions.
 3. Planting procedure shall comply with "Landscape Specs. for Backings - Washington Metropolitan Areas".
 4. Substitution of the approved species may be permitted provided that the planting is in accordance with the street tree and landscape requirements as specified in Section 16.131 of the Ho. Co. Subdivision Regulation.



CURB & GUTTER LEGEND	
---	Std. 7" Comb. C&G
---	Rev. 7" Comb. C&G
---	Std. 6" Comb. C&G
---	Rev. 6" Comb. C&G
---	Modified C&G

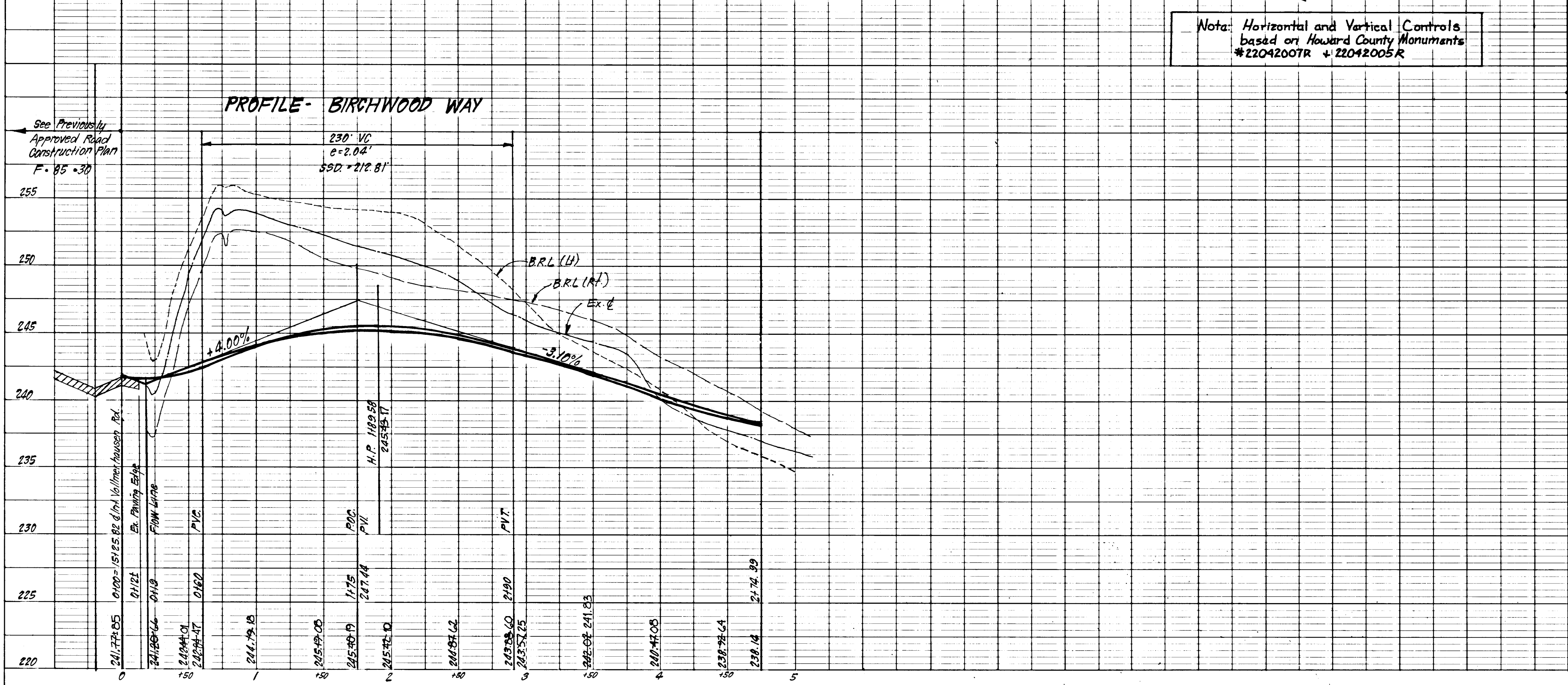


- GENERAL NOTES:**
- All storm drain and paving shall be constructed in accordance with the latest details and specifications of Howard County & Md. SHA.
 - Types of storm drain structures refer to the Standard Details of Ho. Co. & Md. SHA.
 - Trench compaction for storm drains within road or street rights-of-way limits shall be in accordance with Ho. Co. Design Manual, Vol. III (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 24 hrs in advance of construction.
 - All traffic services, parking and signing to be done in accordance with the Manual of Uniform Traffic Control Devices, 1978 Edition.
 - Sag and Crest Vertical Curves were designed in accordance with Howard County Design Manual, Vol. III.
 - Provide Concrete Side Walk Ramps: Ho. Co. Std. Type A, R-4.0 where shown in plan.
 - Design Speed: see Table sheet; Zoning: RSA-B.
 - The contractor or developer shall contact the Construction Inspection / Survey Division 24 hrs in advance of commencement of work at 792-7272.
 - Streetlights to be provided at locations shown. All lights to be 250 Watt Mercury Vapor Lamp Pendant Mounted Fixtures on 25' Galvanized steel pole. Lights to be placed approx. 2'-10" behind curbs. See Ho. Co. Design Manual Vol. III.
- AS-BUILT SURVEY CERTIFIED
 BY DONALD B. SACKETT, Md. L.S. No. 6059, ON 8-26-88.

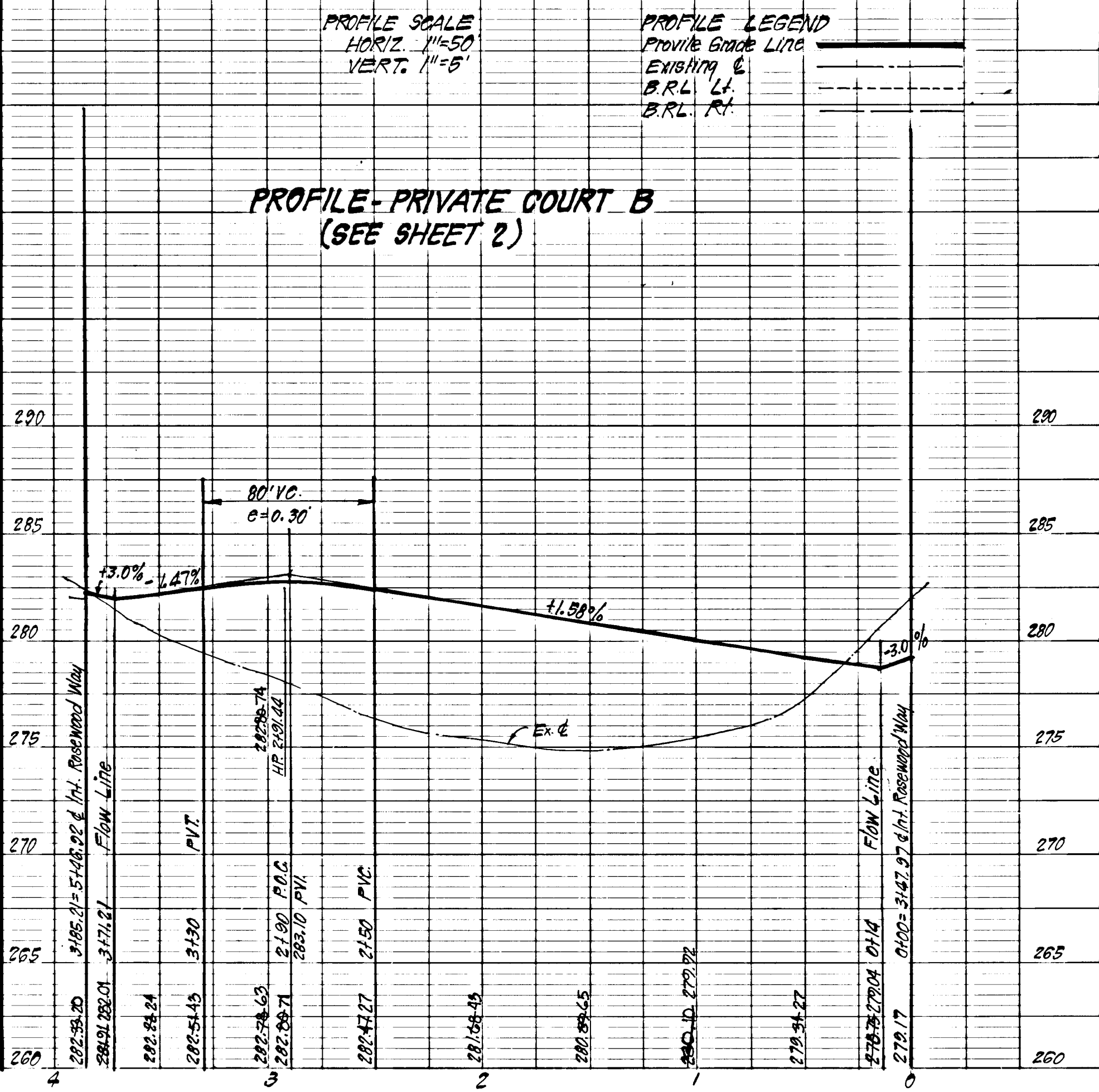
APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature]
 Chief, Bureau of Engineering
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
 [Signature]
 Chief, Division of Land Development & Zoning Administration

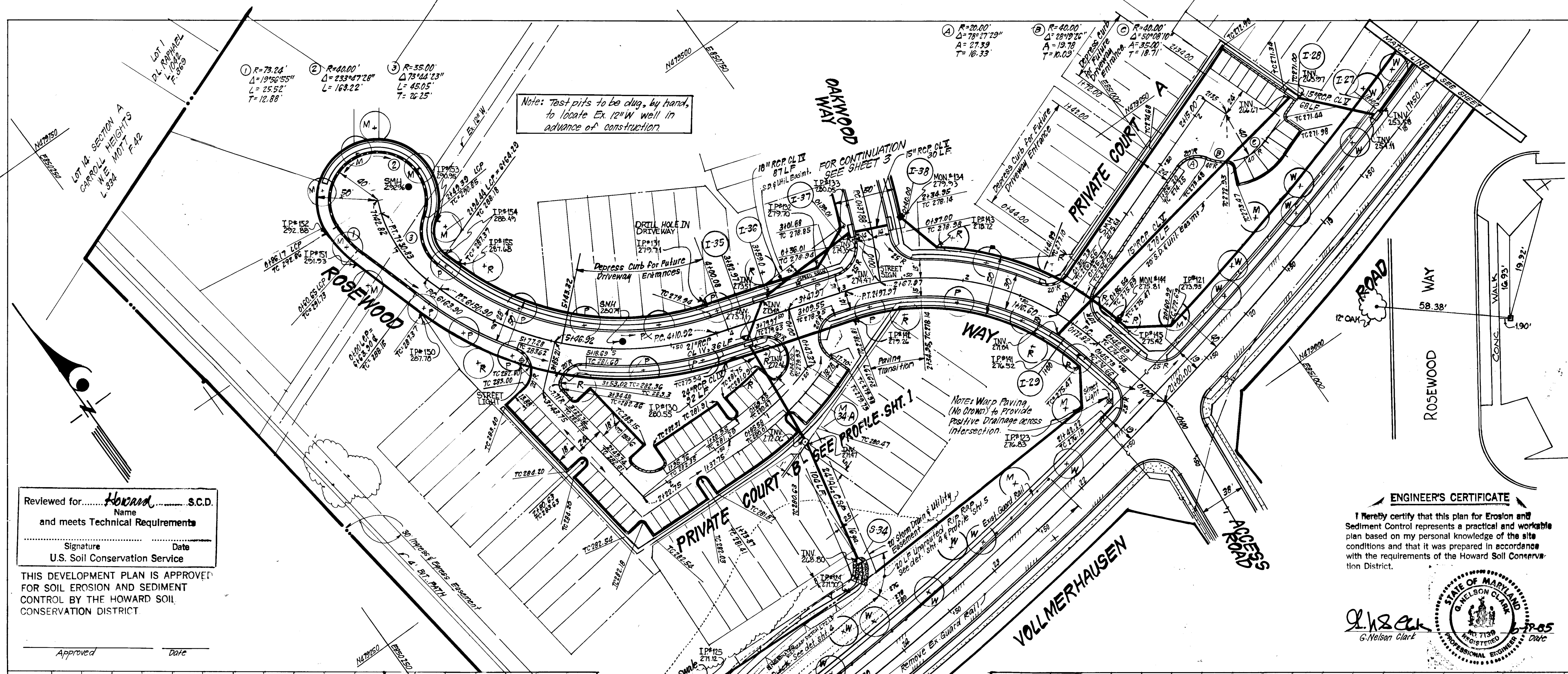
CLARK · FINEFROCK & SACKETT
 ENGINEERS · PLANNERS · SURVEYORS
 11315 LOCKWOOD DRIVE SILVER SPRING MARYLAND 20904 (301) 593-3400

DESIGNED	RJS	ROAD CONSTRUCTION PLANS BIRCHWOOD WAY AND WIDENING ALONG VOLLMERHAUSEN RD.	SCALE	See Plan
DRAWN	K/W	ASPENWOOD	DRAWING	10F7
CHECKED	RJS	SECTION 3 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO.	85-024
DATE	AUG. 85	FOR: CAPITAL HOMES, INC. Suite 200 6500 Rock Spring Dr. The Bedford Bldg Bethesda, Md. 20834	FILE NO.	85-024-D



Note: Horizontal and Vertical Controls based on Howard County Monuments #2204200TR & #2204200SR





AS-BUILT SURVEY CERTIFIED
 BY DONALD B. SACKETT, MD. L.S. NO. 6052 ON 8-24-85

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/We certify that all development and construction was 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."

Paul R. Pilon
 Signature of Developer/Builder
 6-20-85 Date

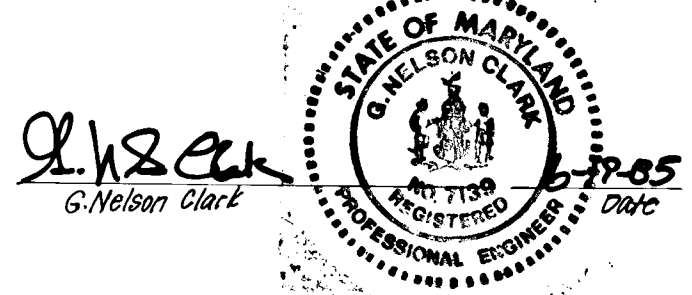
Reviewed for Howard S.C.D.
 Name
 and meets Technical Requirements

Signature _____ Date _____
 U.S. Soil Conservation Service

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

Approved _____ Date _____

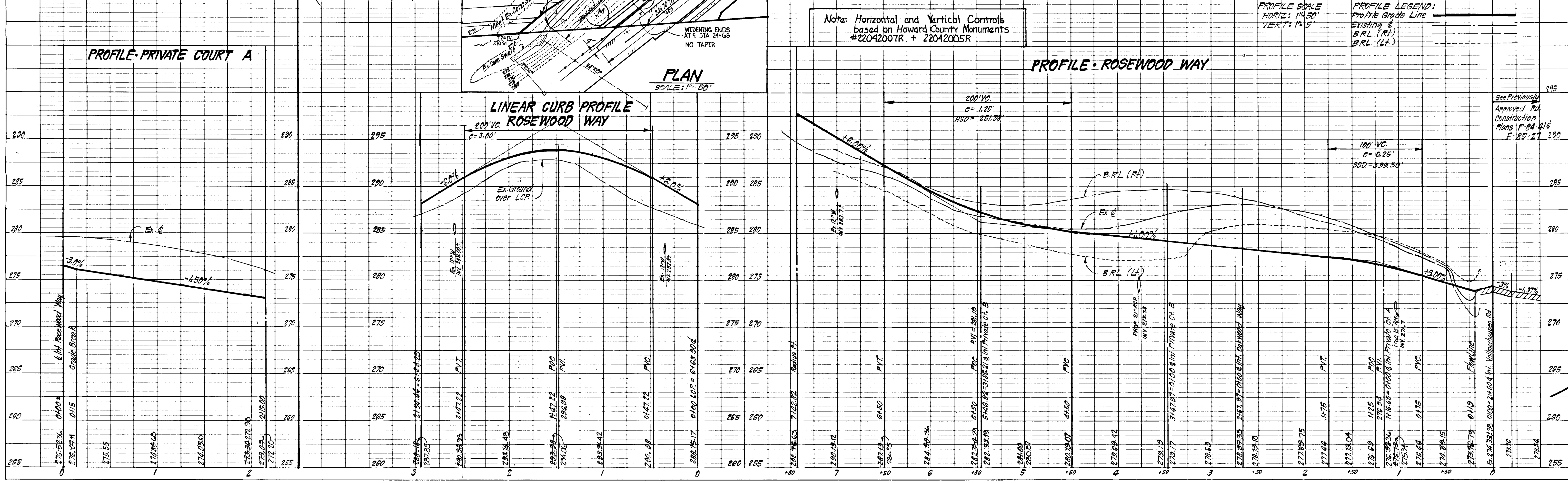
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.



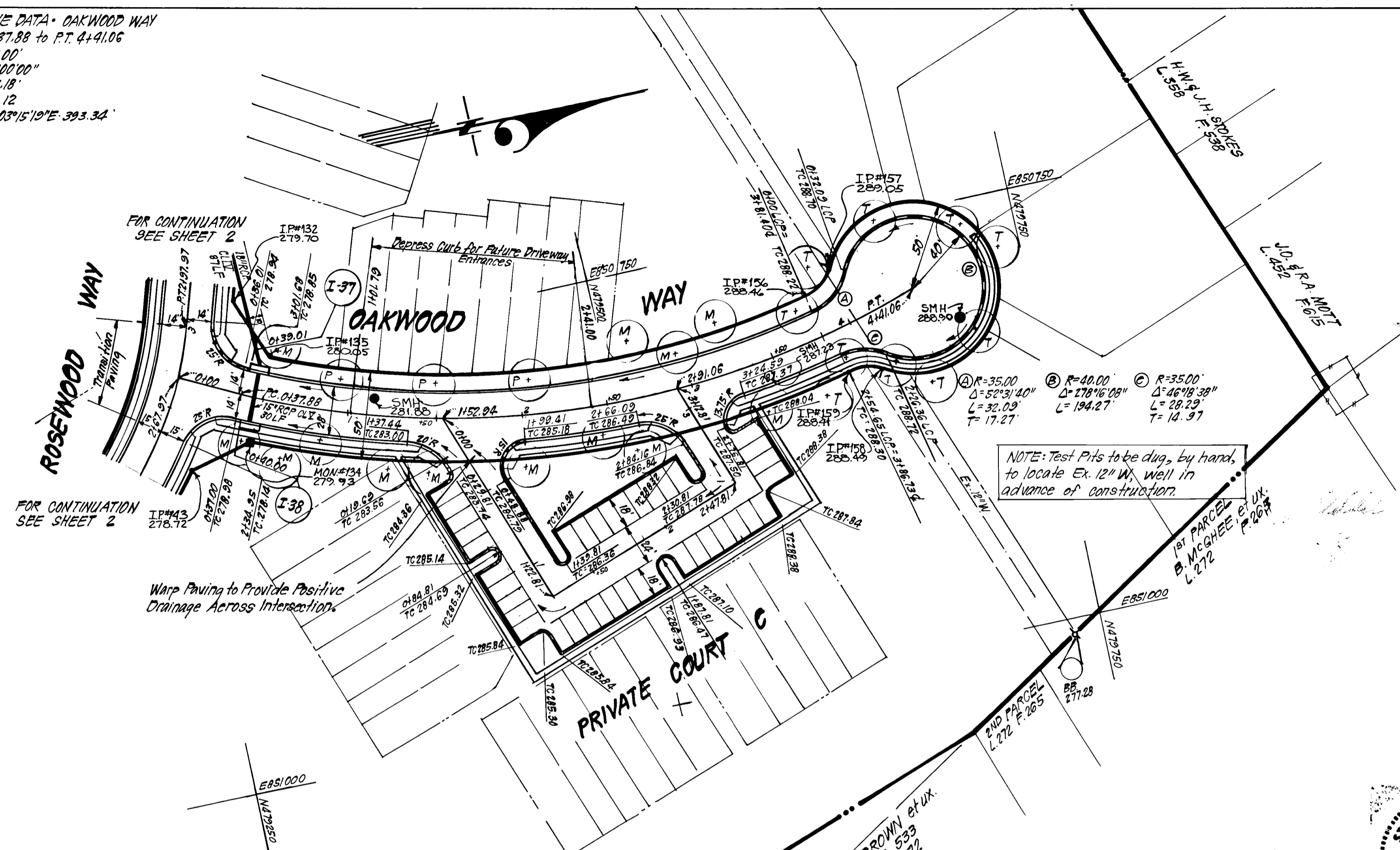
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 9-30-85 Date
 Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
[Signature] 9-27-85 Date
 Chief, Division of Land Development & Zoning Administration

CLARK · FINEFROCK & SACKETT ENGINEERS · PLANNERS · SURVEYORS		
11315 LOCKWOOD DRIVE • SILVER SPRING MARYLAND 20904 • (301)993-3400		
DESIGNED R/S	ROAD CONSTRUCTION PLANS ROSEWOOD WAY AND WIDENING ALONG VOLLMERHAUSEN RD.	SCALE AS SHOWN
DRAWN K/W	ASPENWOOD SECTION 3 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 2 OF 7
CHECKED R/S		JOB NO. 85-024
DATE AUG. 1985	FOR: CAPITAL HOMES, INC. Suite 200, 6500 Rock Spring Dr. The Bedford Bldg., Bethesda, Md. 20814	FILE NO. 85-024-D



CURVE DATA - OAKWOOD WAY
 PC: 0137.88 to PT: 414.06
 R = 525.00'
 Δ = 44°00'00"
 L = 203.18'
 T = 212.12'
 CHD = N03°15'12"E 393.34'



PLAN
 SCALE: 1"=50'

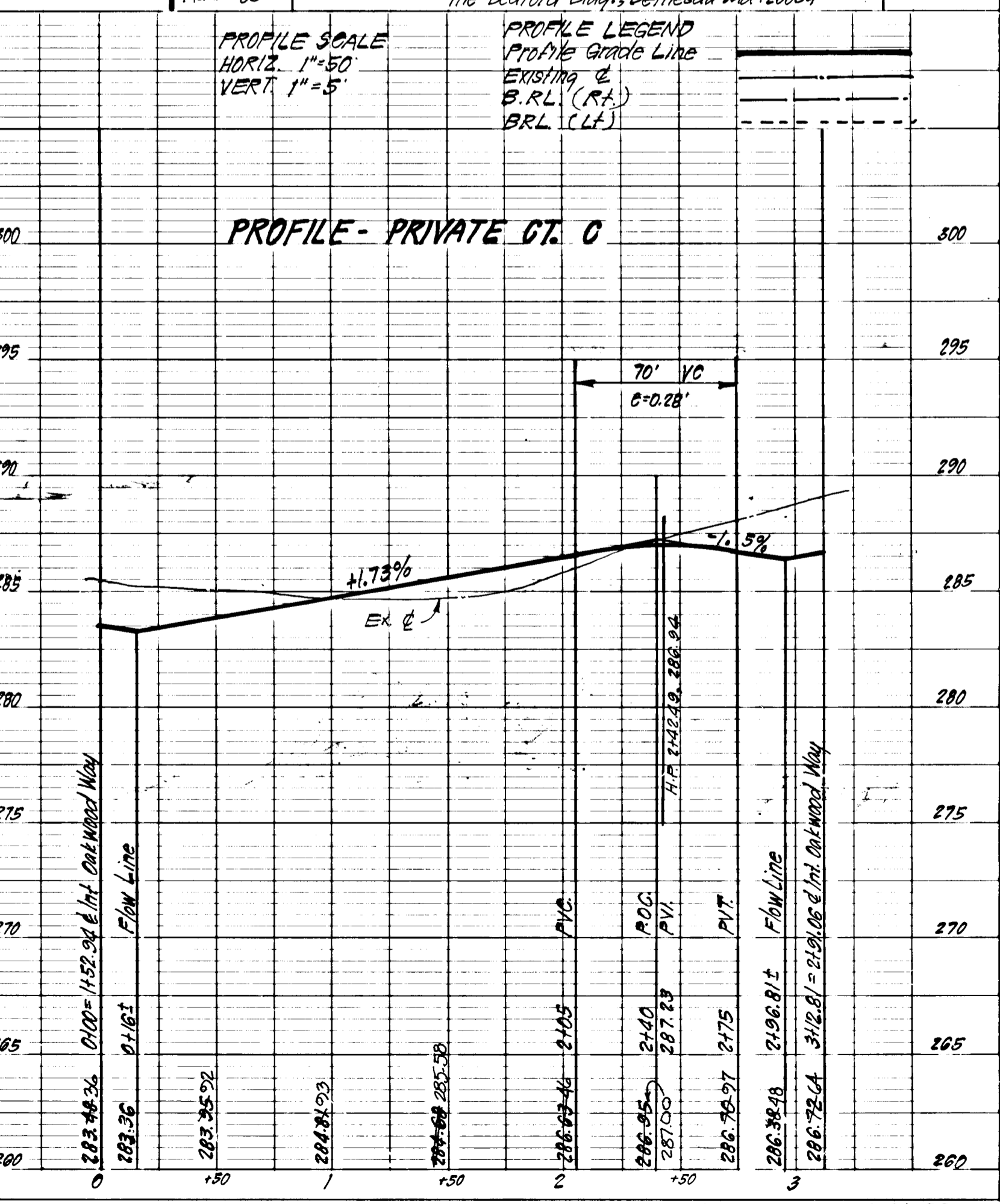
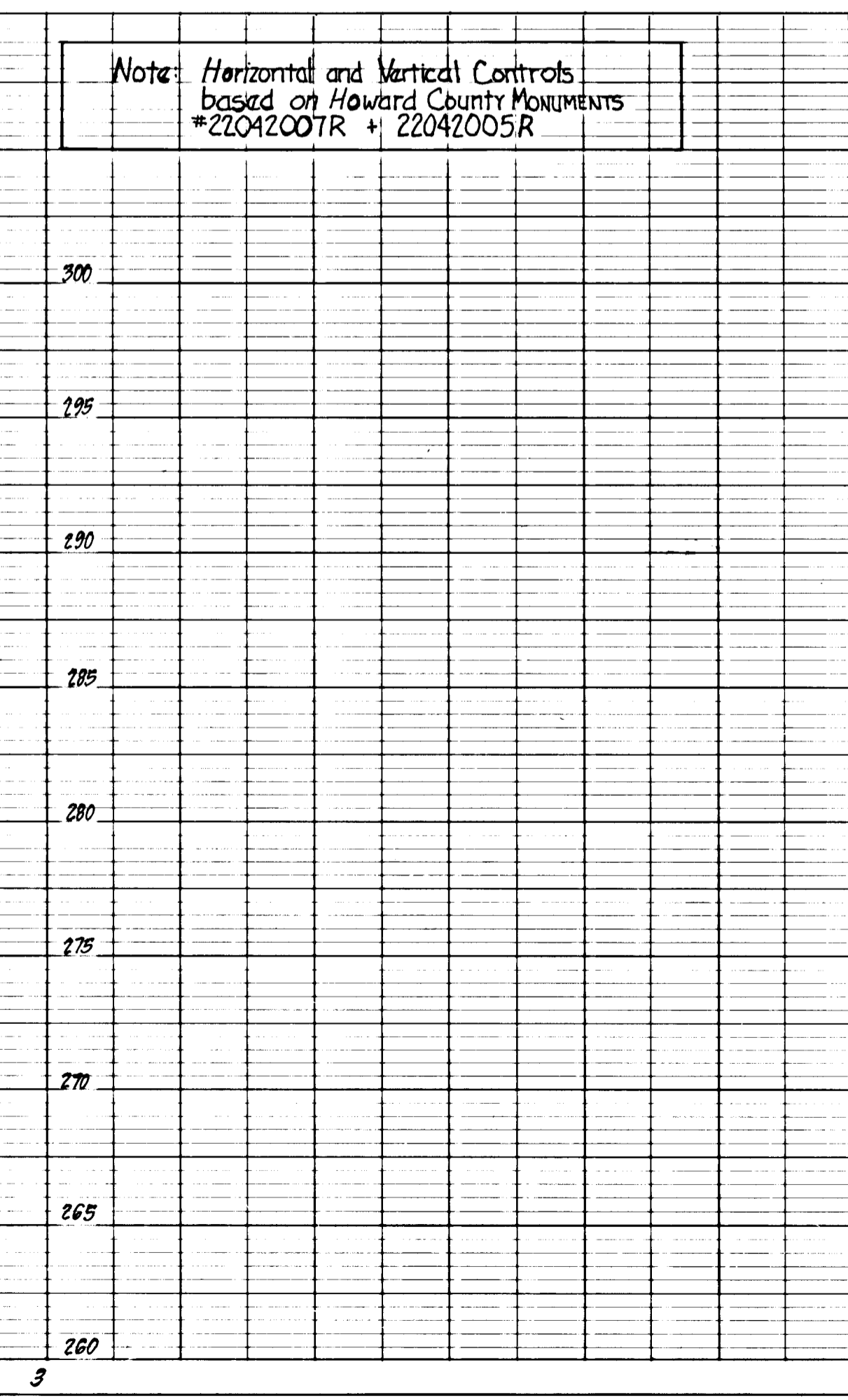
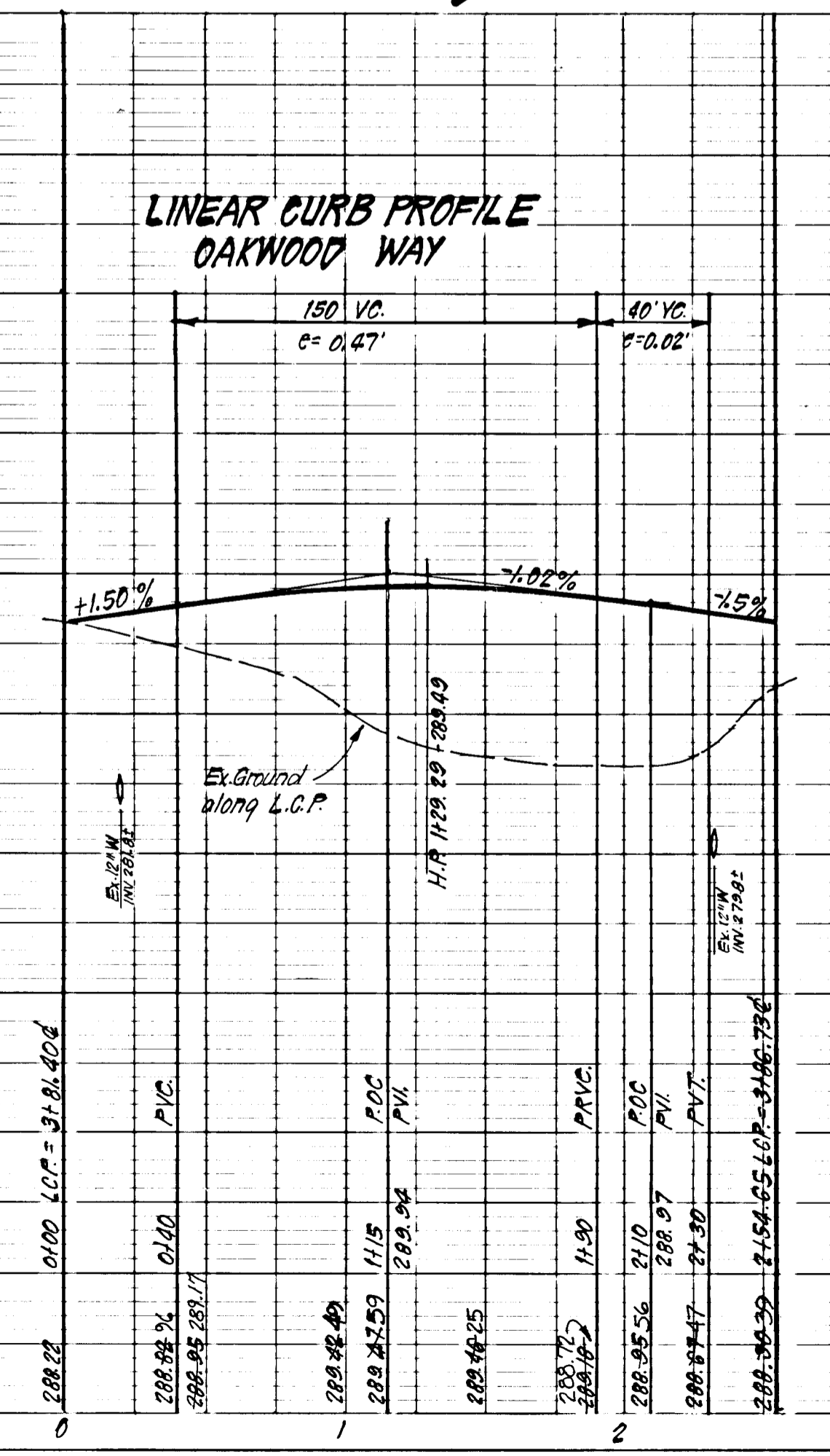
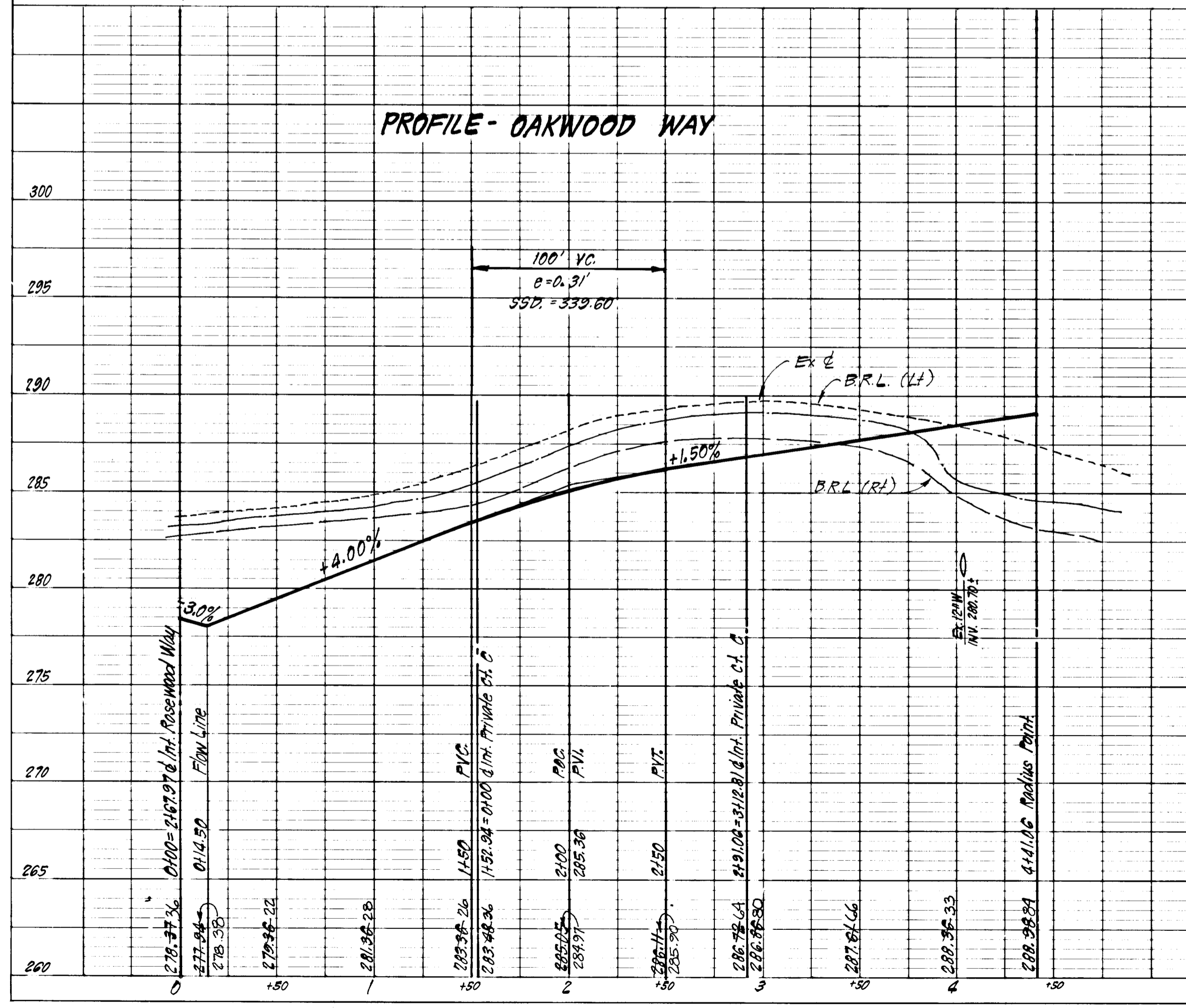
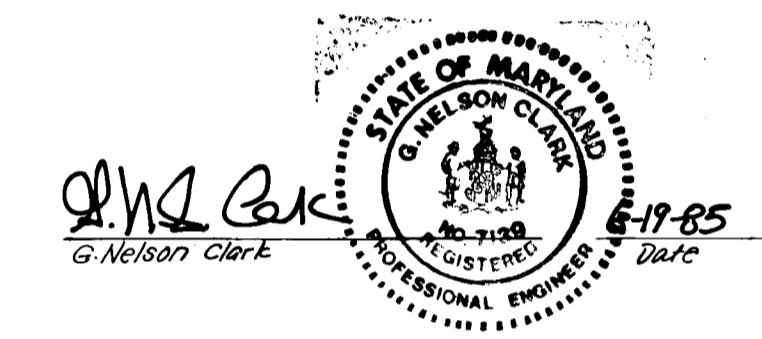
AS-BUILT SURVEY CERTIFIED
 BY DONALD B. SACKETT, MD., L.S. NO. 6052, ON 8-26-88.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Engineering *[Signature]* Date: 9-25-85

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 Chief, Division of Land Development & Zoning Administration *[Signature]* Date: 9-27-85

CLARK · FINEFROCK & SACKETT
 ENGINEERS · PLANNERS · SURVEYORS
 11315 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593-3400

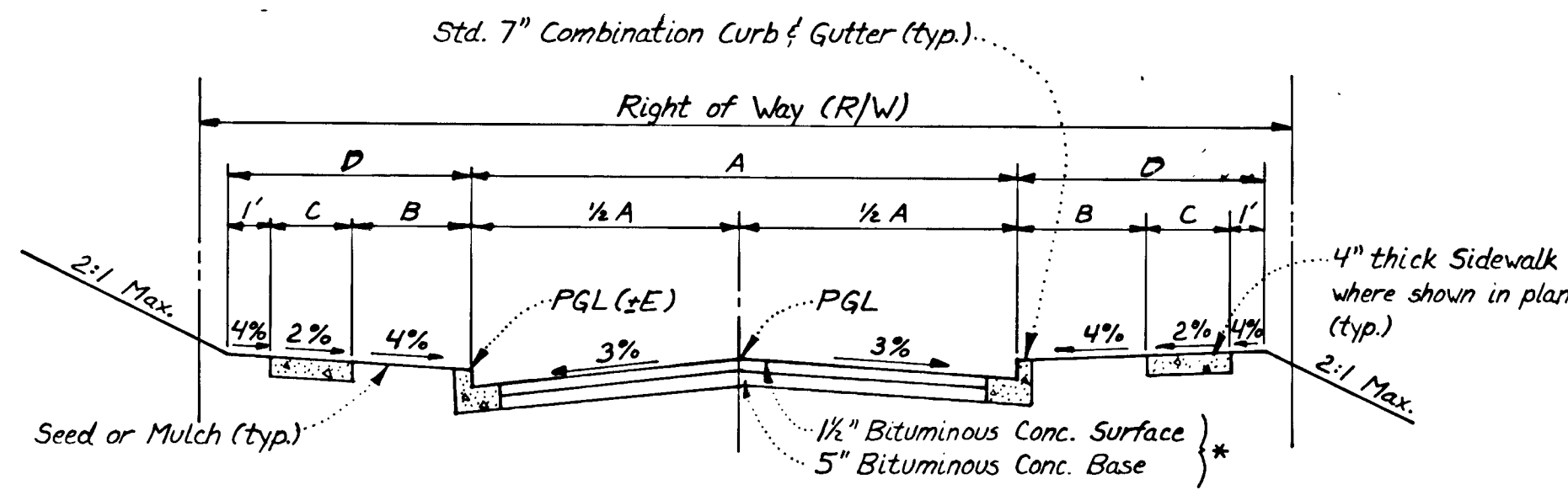
DESIGNED RJS	ROAD CONSTRUCTION PLANS OAKWOOD WAY ASPENWOOD SECTION 3 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: CAPITAL HOMES INC. Suite 200, 6500 Rock Spring Dr. The Bedford Bldg., Bethesda Md. 20834	SCALE As Shown
DRAWN RW		DRAWING 3 OF 7
CHECKED RJS		JOB NO. 85-024
DATE AUG. 85		FILE NO. 85-024-D



Note: Horizontal and Vertical Controls based on Howard County Monuments #2204200TR + 22042005R

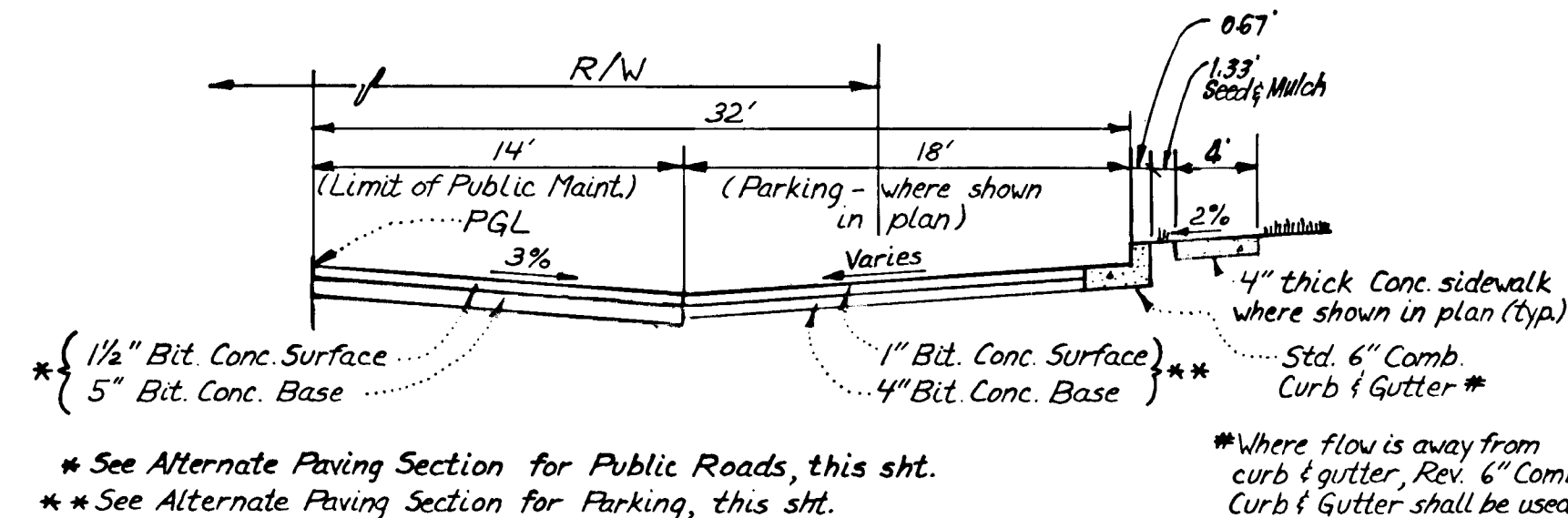
PROFILE SCALE
 HORIZ. 1"=50'
 VERT. 1"=5'

PROFILE LEGEND
 Profile Grade Line
 Existing & B.R.L. (R) & B.R.L. (L)



TYPICAL PAVING SECTION - PUBLIC ROADS

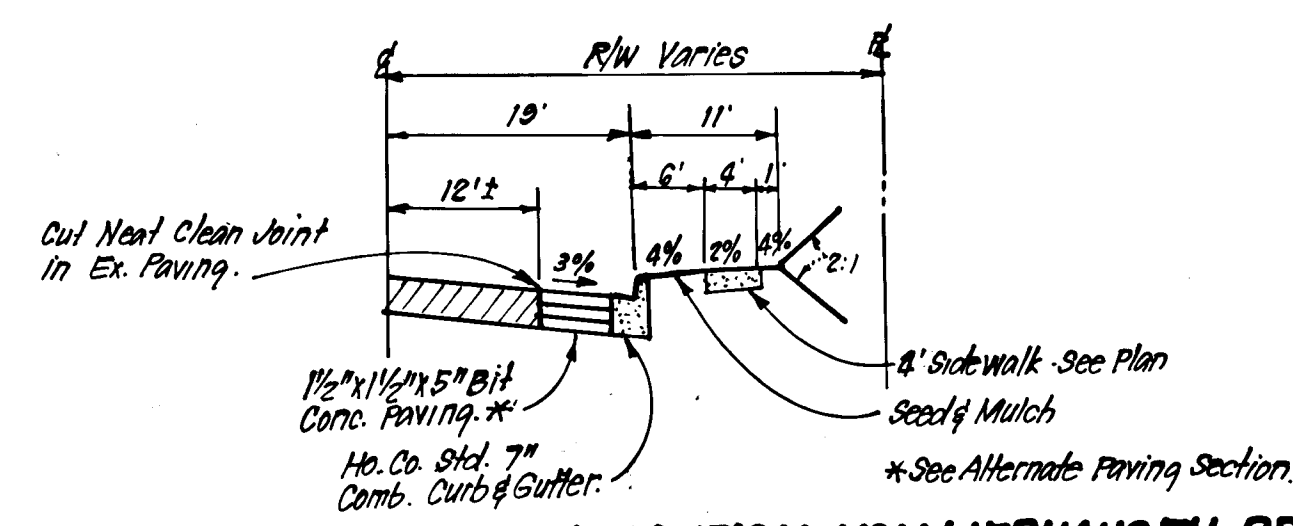
* For Alternate Paving Section - See det. this sht.



TYPICAL HALF SECTION - PARKING ADJACENT TO PUBLIC ROADS

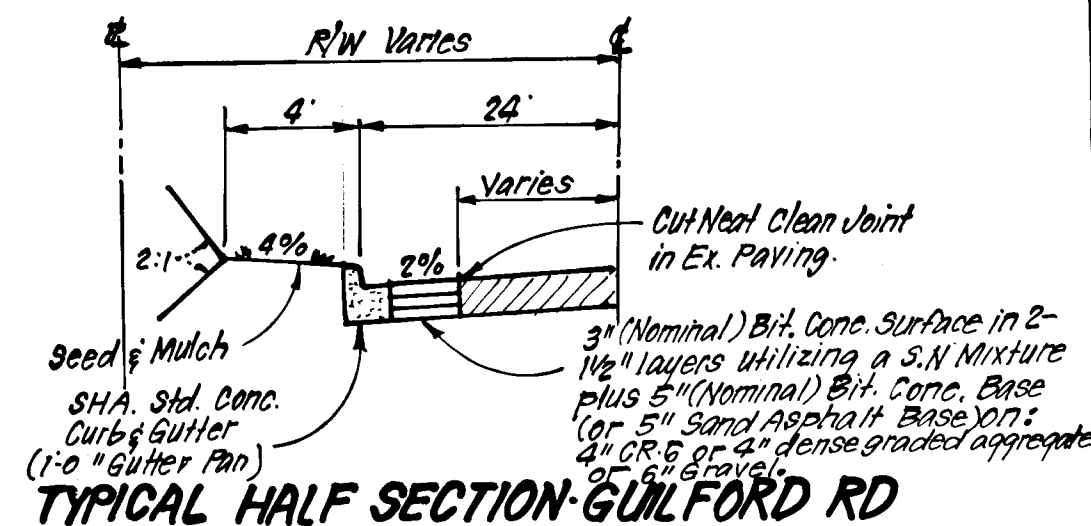
* See Alternate Paving Section for Public Roads, this sht.
** See Alternate Paving Section for Parking, this sht.

* Where flow is away from curb & gutter, Rev. 6" Comb. Curb & Gutter shall be used.



TYPICAL HALF SECTION - VOLLMERHAUSEN RD.

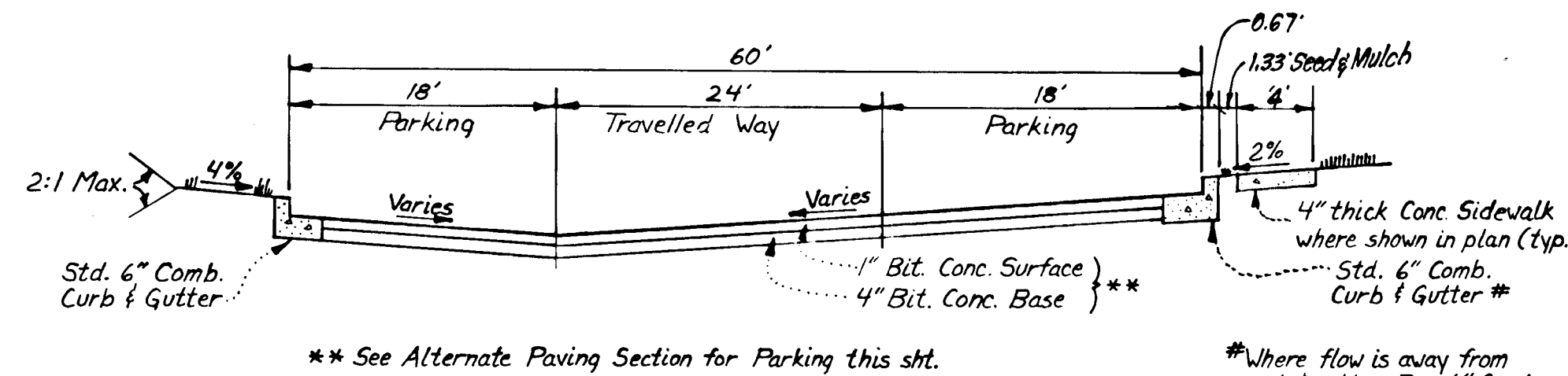
(10+58.38 to 25+00)
NO SCALE
(MINOR COLLECTOR)



TYPICAL HALF SECTION - GUILFORD RD

(0+53.79 to 2+03.79)
NO SCALE

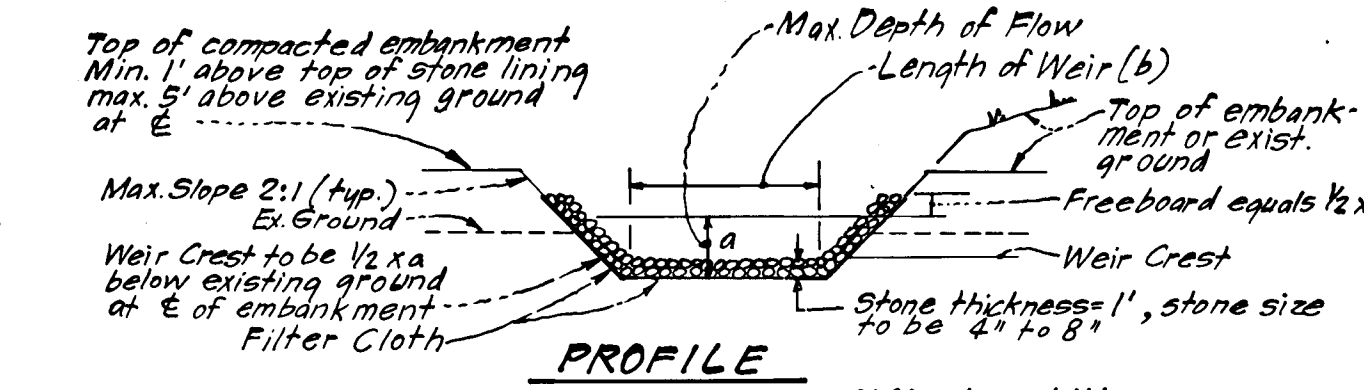
STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
BIRCHWOOD 0+00 to 0+104.95	CUL-DE-SAC	28'	4'	4'	9'	50'	RSA-B	30 mph	1/4"
DALWOOD WAY 0+137 to 3+181.80	CUL-DE-SAC	28'	4'	4'	9'	50'	RSA-B	30 mph	1/4"
ROSEWOOD WAY 0+45.78 to 2+341.95	LOCAL	30'	4'	4'	9'	50'	RSA-B	30 mph	1/4"
ROSEWOOD WAY 2+171.71 to 6+623.90	CUL-DE-SAC	28'	4'	4'	9'	50'	RSA-B	30 mph	1/4"



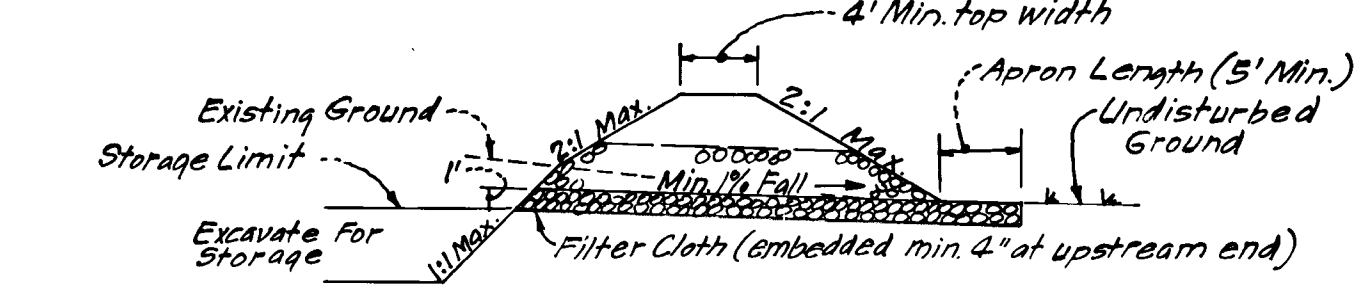
TYPICAL SECTION - PRIVATE DRIVE & PARKING

** See Alternate Paving Section for Parking this sht.

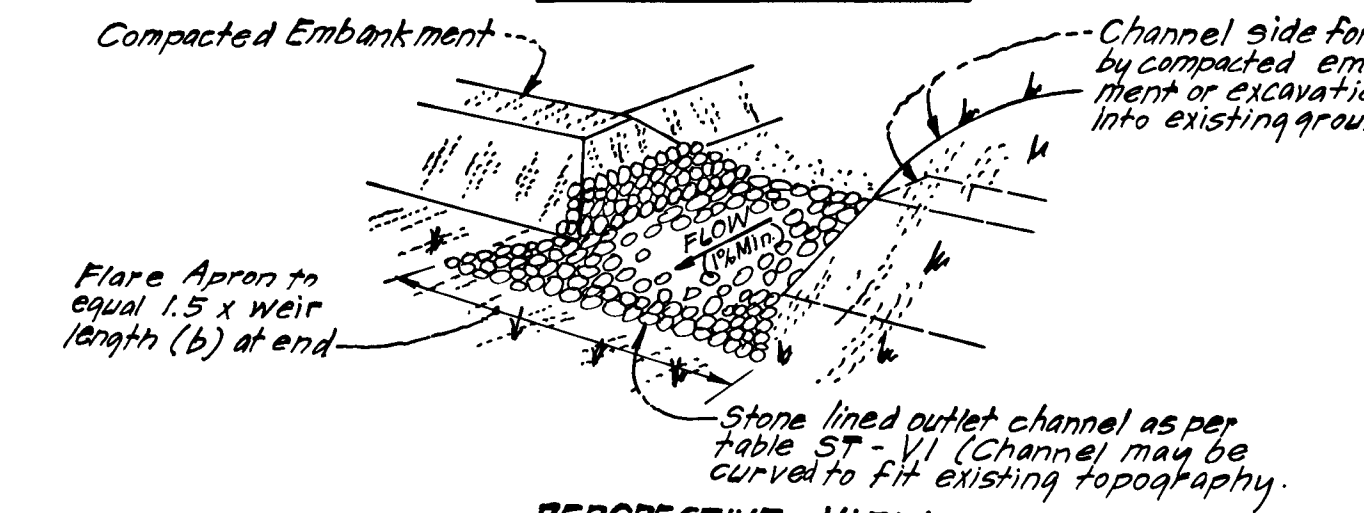
* Where flow is away from curb & gutter, Rev. 6" Comb. Curb & Gutter shall be used.



PROFILE



CROSS SECTION



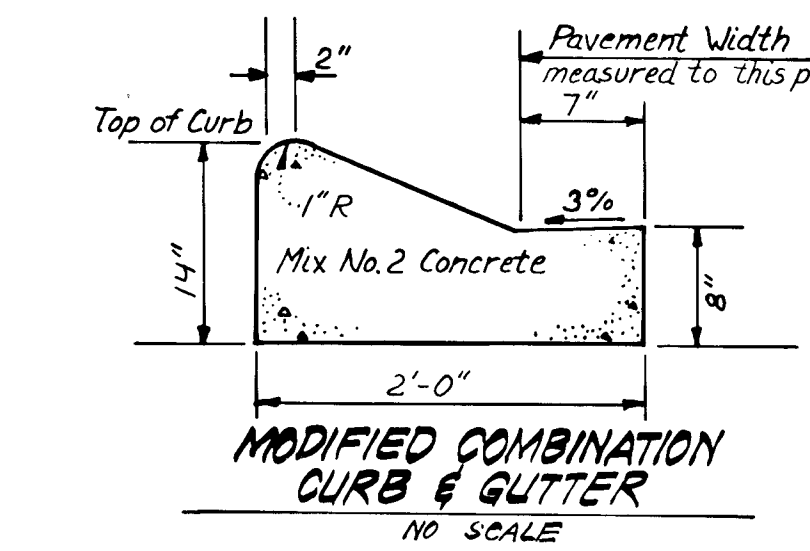
PERSPECTIVE VIEW

RIP RAP OUTLET SEDIMENT TRAP (ST-VI)

NO SCALE

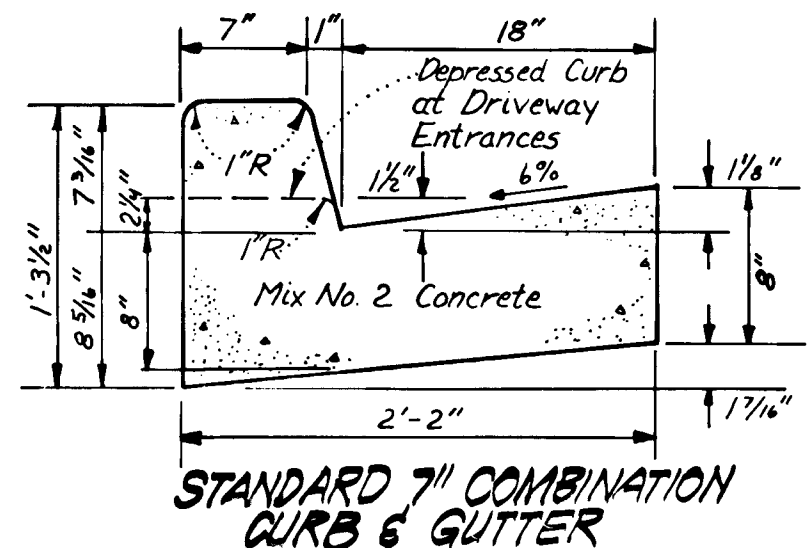
CONSTRUCTION SPECIFICATIONS FOR ST-VI

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



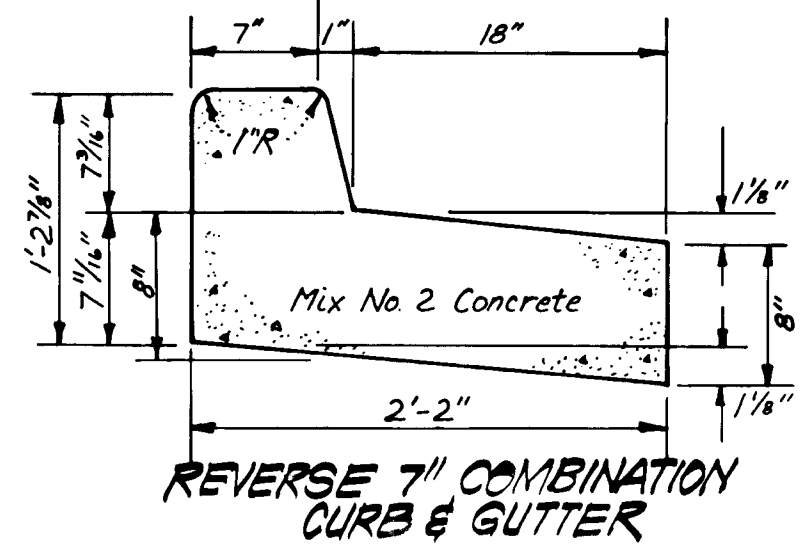
MODIFIED COMBINATION CURB & GUTTER

NO SCALE



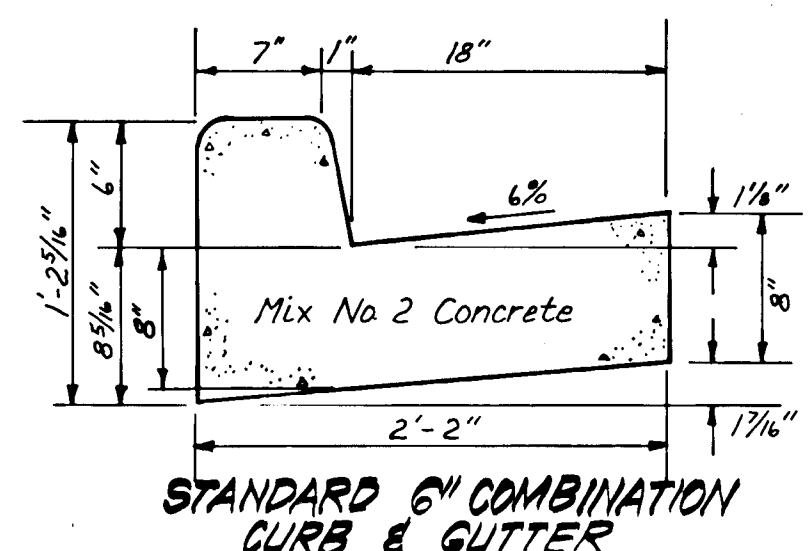
STANDARD 7" COMBINATION CURB & GUTTER

NO SCALE



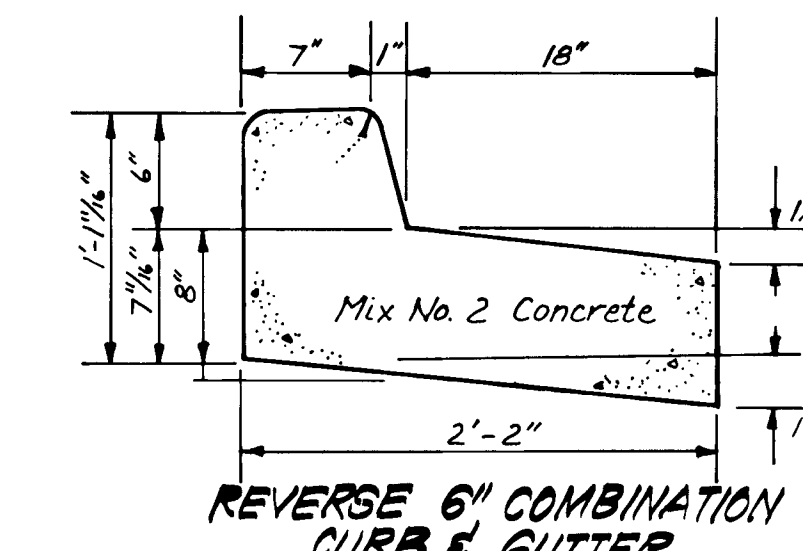
REVERSE 7" COMBINATION CURB & GUTTER

NO SCALE



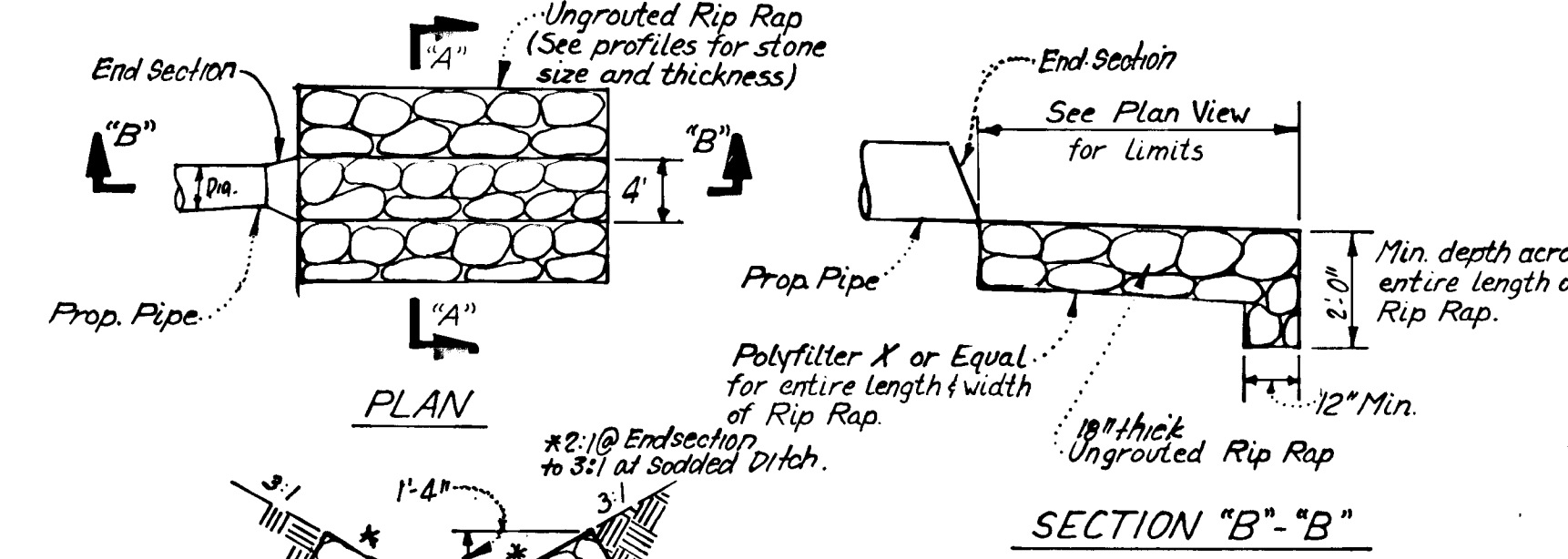
STANDARD 6" COMBINATION CURB & GUTTER

NO SCALE



REVERSE 6" COMBINATION CURB & GUTTER

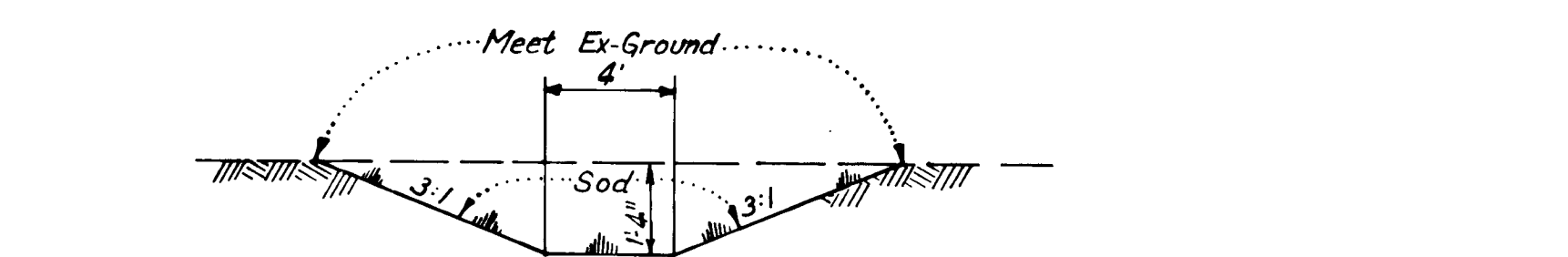
NO SCALE



SECTION "A"- "A"

UNGRAINED RIP RAP PAVING DETAILS

NO SCALE



SECTION "B"- "B"

SODDED DITCH DETAIL

NO SCALE

GENERAL SODDING NOTES:

- Apply 10-10-10 Fertilizer @ 1000#/acre (25#/1000sf)
- Apply Ground Agricultural Limestone @ 2000#/acre (50#/1000sf)
- Incorporate both Lime and Fertilizer into soil by discing. Firm up after incorporation.
- 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.
- All sod to be used must be certified by the state of Maryland.
- Sod to be pegged and stapled.

Bituminous Conc. Surface	1 1/2"
Bituminous Conc. Base	2 1/4"
Prime.....	
8" Crusher Run Base (Placed in 2 Courses)	8"
or	6"
6" Dense Graded Stabilized Aggregate Base Course	6"

ALTERNATE PAVING SECTION FOR PUBLIC ROADS

NO SCALE

Bituminous Conc. Surface	1"
Bituminous Conc. Base	2"
Prime.....	
5" Crusher Run Base Course	5"
or	4"
4" Dense Graded Stabilized Aggregate Base Course	4"

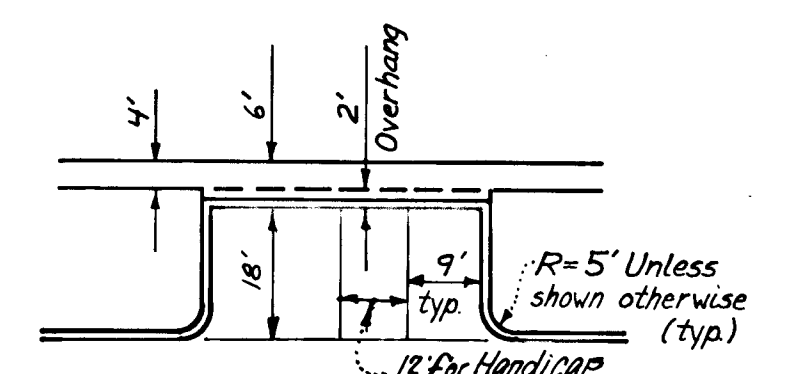
ALTERNATE PAVING SECTION FOR PARKING AREAS

NO SCALE

Bituminous Conc. Surface	1 1/2"
Bituminous Conc. Base	4 1/4"
Prime.....	
6" Crusher Run Base Course	6"
or	4 1/2"
4" Dense Graded Stabilized Aggregate Base Course	4 1/2"

ALTERNATE PAVING SECTION FOR MAJOR & MINOR COLLECTOR

NO SCALE



TYPICAL PARKING

NO 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: *Barry Nelson* Date: 6-20-85

Reviewed for: *Howard* S.C.D. Name: *Howard* and meets Technical Requirements. Signature: *Howard* Date: *6-21-85* U.S. Soil Conservation Service

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

Signature: *Howard* Date: *6/21/85*

ENGINEER'S CERTIFICATE

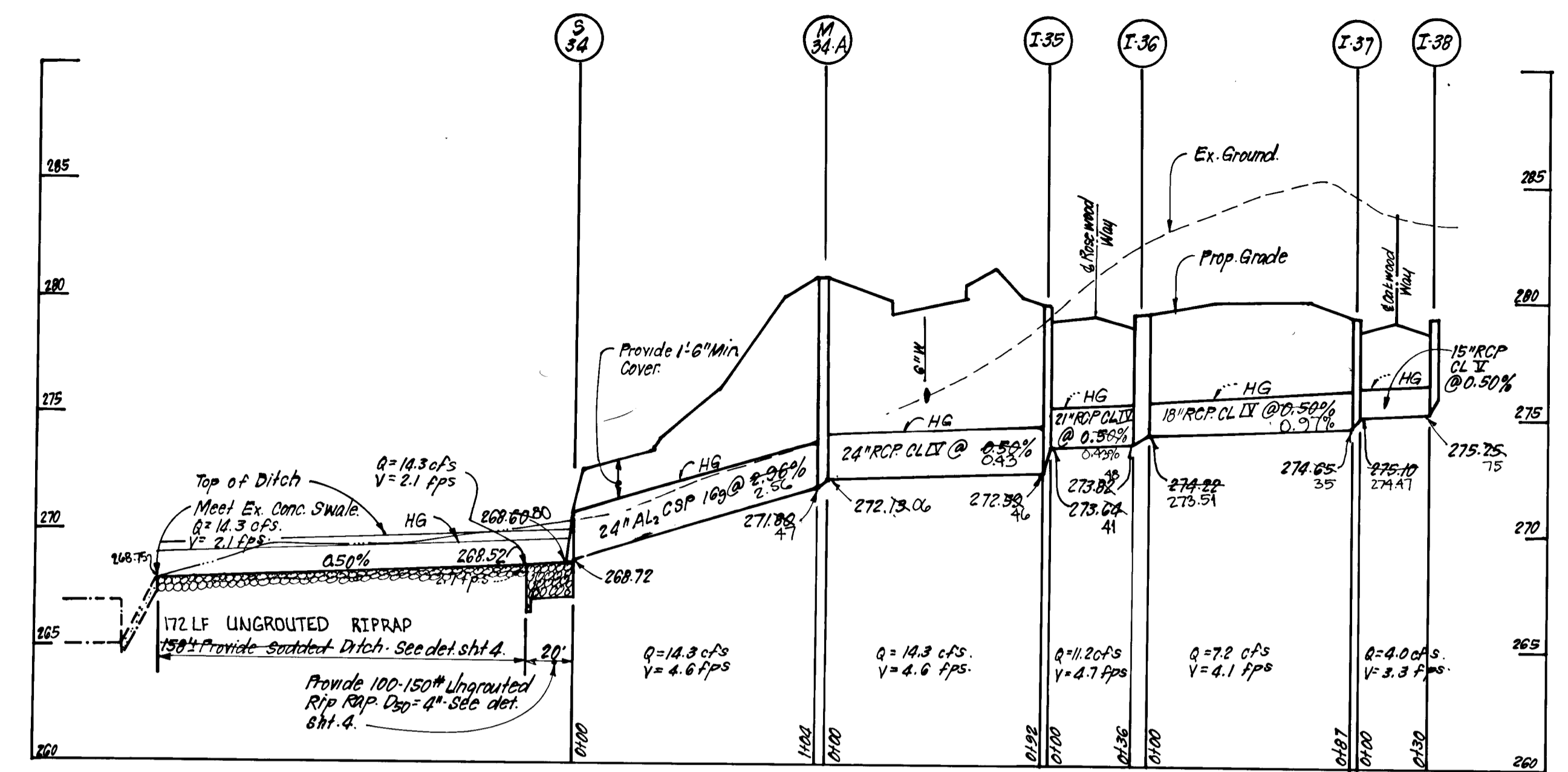
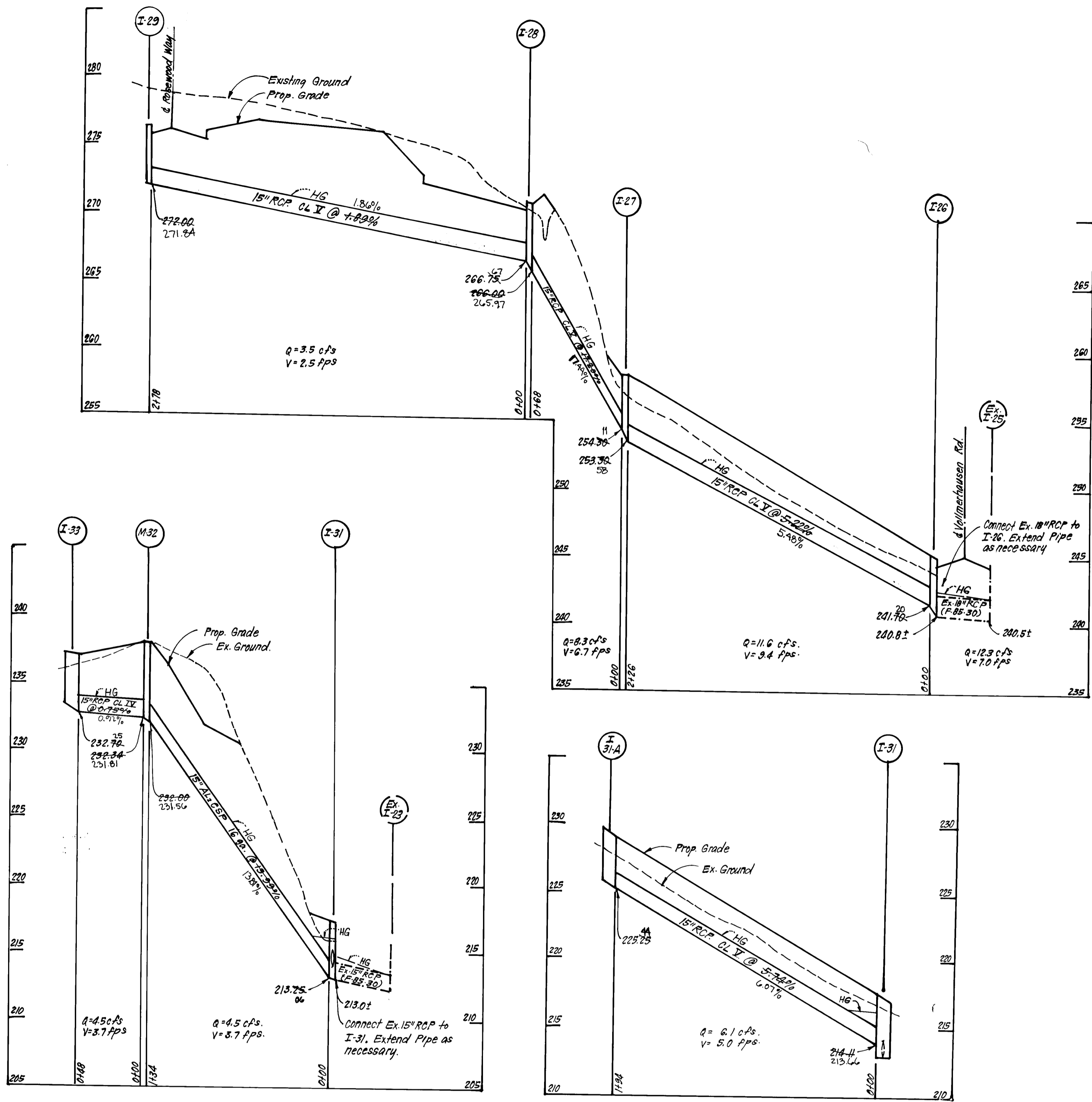
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *G. Nelson Clark* Date: *6-21-85*

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *Howard* Date: *6-21-85*
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
Signature: *Howard* Date: *6-21-85*

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED: R/S ROAD CONSTRUCTION PLANS SCALE: AS SHOWN
DRAWN: R/S DETAILS DRAWING: 4 OF 7
CHECKED: K/W JOB NO.: 85-024
R/S FOR: CAPITAL HOMES, INC. FILE NO.: 85-024-D
DATE: AUG '85 FOR: SUITE 202, 6500 ROCK SPRING DR., THE POTTERD BLDG., BELTHERSDO, MD 20724



STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEVATION		REMARKS
				UPPER	LOWER	
* I-26	A-5 Inlet w/ Deflectors	241.79.20	Ex. 240.8±	245.29	244.91	Ho. Co. Std. SD 4.01 W=2'-6"
* I-27	A-5 Inlet w/ Deflectors	254.32.11	253.5±	258.58	258.17	Ho. Co. Std. SD 4.01 W=2'-6"
I-28	A-10 Inlet	266.75.47	266.75.00	271.34	271.00	Ho. Co. Std. SD 4.02 W=2'-6"
* I-29	A-10 Inlet w/ Deflectors	-	272.00	276.52A1	276.73.19	Ho. Co. Std. SD 4.02 W=2'-6"
* I-31	A-10 Inlet w/ Deflectors	225.25±	Ex. 213.0±	217.67	217.02	Ho. Co. Std. SD 4.02 W=2'-6"
* I-31A	A-10 Inlet w/ Deflectors	-	225.25±	229.81	229.17	Ho. Co. Std. SD 4.02 W=2'-6"
M-32	Manhole	232.34	232.00	238.00	-	Ho. Co. Std. G-5.01 48" Ø
I-33	A-10 Inlet	232.70±	232.70±	237.17±	237.00	Ho. Co. Std. SD 4.02 W=2'-6"
S-34	Metal End Section	268.72	268.60±	-	-	Ho. Co. Std. SD 5.01 Dia. = 24"
M-34A	Manhole	272.78.06	271.80A1	281.00	-	Ho. Co. Std. G-5.01 48" Ø
I-35	A-5 Inlet	275.54A1	272.78.06	279.72.38	279.86±	Ho. Co. Std. SD 4.01 W=2'-6"
I-36	A-10 Inlet	273.51±	274.22	279.53.46	279.42±	Ho. Co. Std. SD 4.02 W=2'-6"
* I-37	A-10 Inlet w/ Deflectors	274.65±	274.65±	279.51.55	279.42±	Ho. Co. Std. SD 4.02 W=2'-6"
* I-38	A-10 Inlet w/ Deflectors	-	275.35	279.55±	279.76±	Ho. Co. Std. SD 4.02 W=2'-6"

PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	AL ₂ CSP 16 gage	13.4 LF
15"	RCP CL II	79.6 LF
15"	RCP CL II	4.8 LF
18"	RCP CL II	87 LF
21"	RCP CL II	3.6 LF
24"	RCP CL II	9.2 LF
24"	AL ₂ CSP 16 gage	10.4 LF

* 2 1/2" Corruptions

△ All Inlets to be Fully Developed
 * Provide Ho. Co. Std. SD 4.83 Inlet Deflectors.
 * Note all inlets and manholes except I-26 and I-31 may be precast as per Concrete Products of America Standards and Specifications.

STORM DRAINAGE PROFILES

SCALES: HOR. 1"=50'
 VERT. 1"=5'

Reviewed for... Howard S.C.D.
 Name
 and meets Technical Requirements

Signature _____ Date _____
 U.S. Soil Conservation Service

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

Stephen L. Kelly 9/27/85
 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I 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 the construction 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 R. Pal...
 Signature of Developer/Builder Date 6-20-85

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.

Ph...
 Signature Date 6-27-85

AS-BUILT SURVEY CERTIFIED BY DONALD B. SACKETT MD. L.S. NO. 6059, ON 8-26-88

2	Added note for precast inlets & manholes to Str. Schedule	2-10-86
1	Revised H.G. between I-31A and I-31.	11-26-85
NO.	REVISION	DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
... 9-24-85
 Chief, Bureau of Engineering

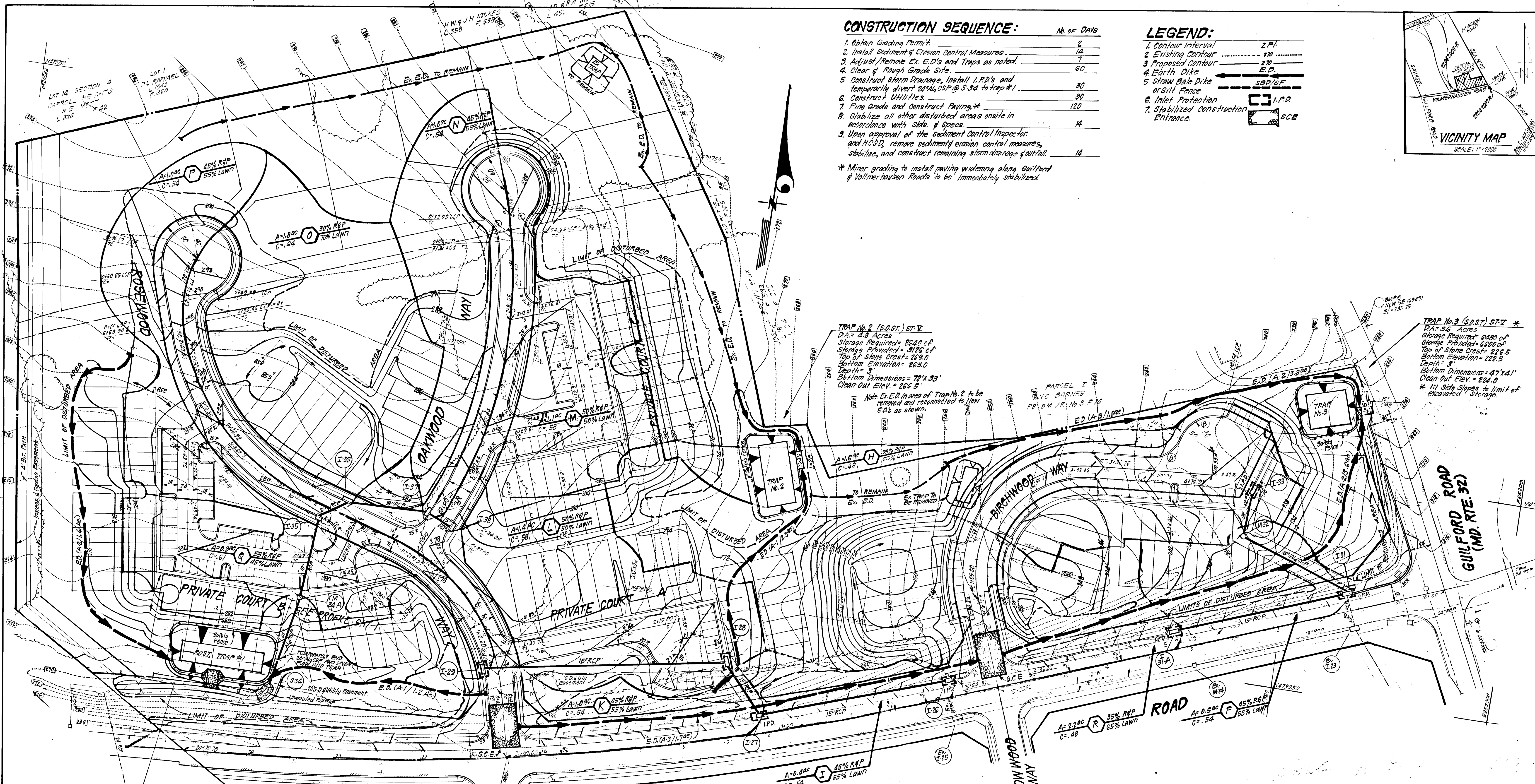
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
... 9-27-85
 Chief, Division of Land Development & Zoning Administration

CLARK • FINEFROCK & SACKETT
 ENGINEERS • PLANNERS • SURVEYORS
 11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400

DESIGNED	ROAD CONSTRUCTION PLANS STORM DRAINAGE PROFILES	SCALE	AS SHOWN
DRAWN	RJS	DRAWING	50F 7
CHECKED	RJS	JOB NO.	85-024
DATE	AUG 85	FILE NO.	85-024-D

FOR: CAPITAL HOMES INC.
 Suite 200, 6500 Rock Spring Dr.
 The Bedford Bldg., Bethesda, Md 20834

F-85-179 AS-BUILT 8-26-88

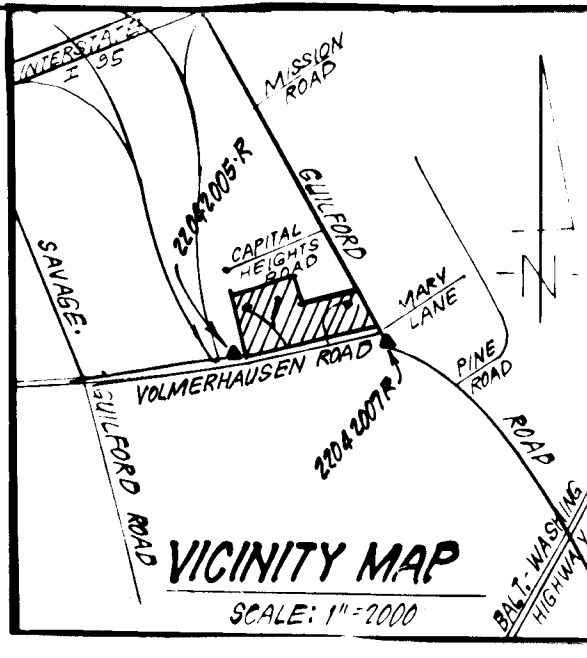


CONSTRUCTION SEQUENCE:

	No. of Days
1. Obtain Grading Permit.	2
2. Install Sediment & Erosion Control Measures.	14
3. Adjust/Remove Ex. E.D.'s and Traps as noted.	7
4. Clear & Rough Grade Site.	60
5. Construct Storm Drainage, Install I.P.D.'s and temporarily divert 24" H.C.S.P. @ S.34 to trap #1.	30
6. Construct Utilities.	90
7. Fine Grade and Construct Paving.*	120
8. Stabilize all other disturbed areas onsite in accordance with Specs. & Specs.	14
9. Upon approval of the sediment control inspector and H.C.S.D., remove sediment & erosion control measures, stabilize, and construct remaining storm drainage & outfall.	14

LEGEND:

1. Contour Interval	2 FT.
2. Existing Contour	----- 270
3. Proposed Contour	----- 270
4. Earth Dike	----- E.D.
5. Straw Bale Dike or Silt Fence	----- SBD/SF
6. Inlet Protection	□ I.P.D.
7. Stabilized Construction Entrance	□ SCE



TRAP No. 2 (S.O.ST.) ST-V
 D.A. = 4.8 Acres
 Storage Required = 8600 cf
 Storage Provided = 9126 cf
 Top of Stone Crest = 269.0
 Bottom Elevation = 265.0
 Depth = 3'
 Bottom Dimensions = 72' x 33'
 Clean Out Elev. = 266.5'
 Note: Ex. E.D. in area of Trap No. 2 to be removed and reconnected to New E.D.'s as shown.

TRAP No. 3 (S.O.ST.) ST-V
 D.A. = 3.6 Acres
 Storage Required = 6480 cf
 Storage Provided = 6600 cf
 Top of Stone Crest = 226.5
 Bottom Elevation = 222.5
 Depth = 3'
 Bottom Dimensions = 47' x 41'
 Clean Out Elev. = 224.0
 * 1% Side Slopes to limit of excavated storage.

TRAP No. 1 (RGST) ST-VI
 D.A. = 6.0 Acres
 Storage Required = 10800 cf
 Storage Provided = 7630 cf
 Top of Stone Crest = 270.0
 Bottom Elevation = 265.0
 Depth = 3'
 Bottom Dimensions = 36' x 23'
 Clean Out Elev. = 267.0
 a = 1.5'
 b = 14'
 Top Berm El. = 273.25

Reviewed for **HOWARD** S.C.D.
 Name
 and meets Technical Requirements
 Signature *[Signature]* Date **9-27-85**
 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 **9/27/85**

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 *[Signature]* Date **6-20-85**

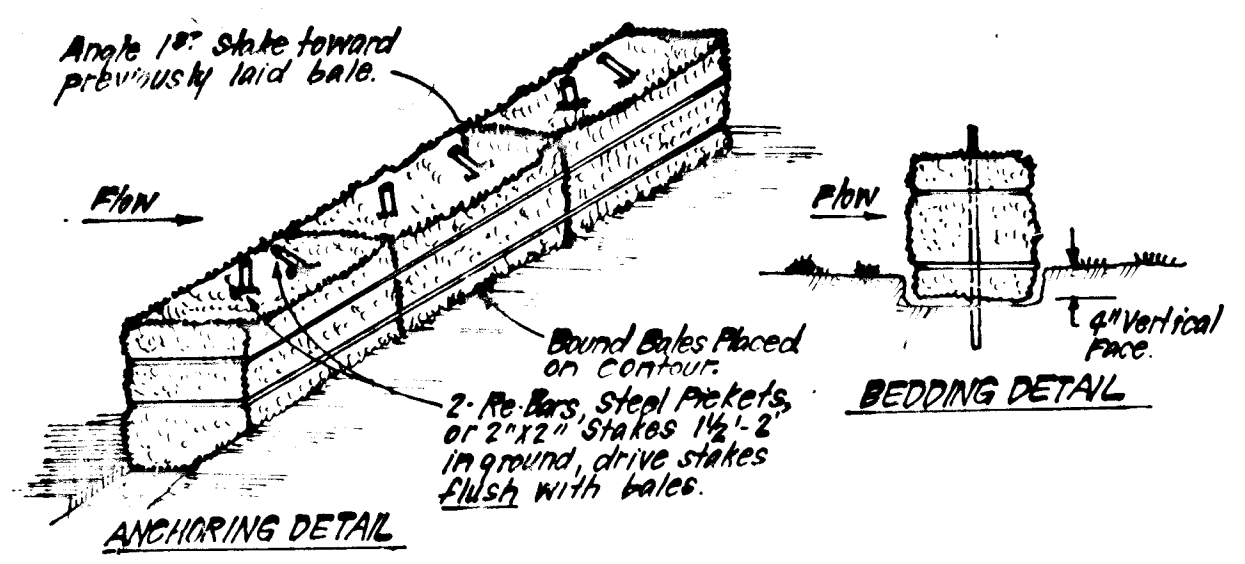
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature *[Signature]* Date **6-17-85**

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7-30-85
 Chief, Bureau of Engineering
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
[Signature] 9-27-85
 Chief, Division of Land Use Planning & Zoning Administration

CLARK · FINEFROCK & SACKETT
 ENGINEERS · PLANNERS · SURVEYORS
 11315 LOCKWOOD DRIVE SILVER SPRING MARYLAND 20904 (301) 593-3400

DESIGNED	R/S	DRAWN	K/W	CHECKED	R/S	DATE	AUG 85
ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN & DRAINAGE AREA MAP ASPENWOOD							
SECTION 3 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND							
FOR CAPITAL HOMES, INC. Suite 200 2500 Rock Spring Dr. The Bedford Bldg Bethesda, Md. 20834							
SCALE	1" = 50'			DRAWING	6 OF 7		
JOB NO.	85-024			FILE NO.	85-024-D		

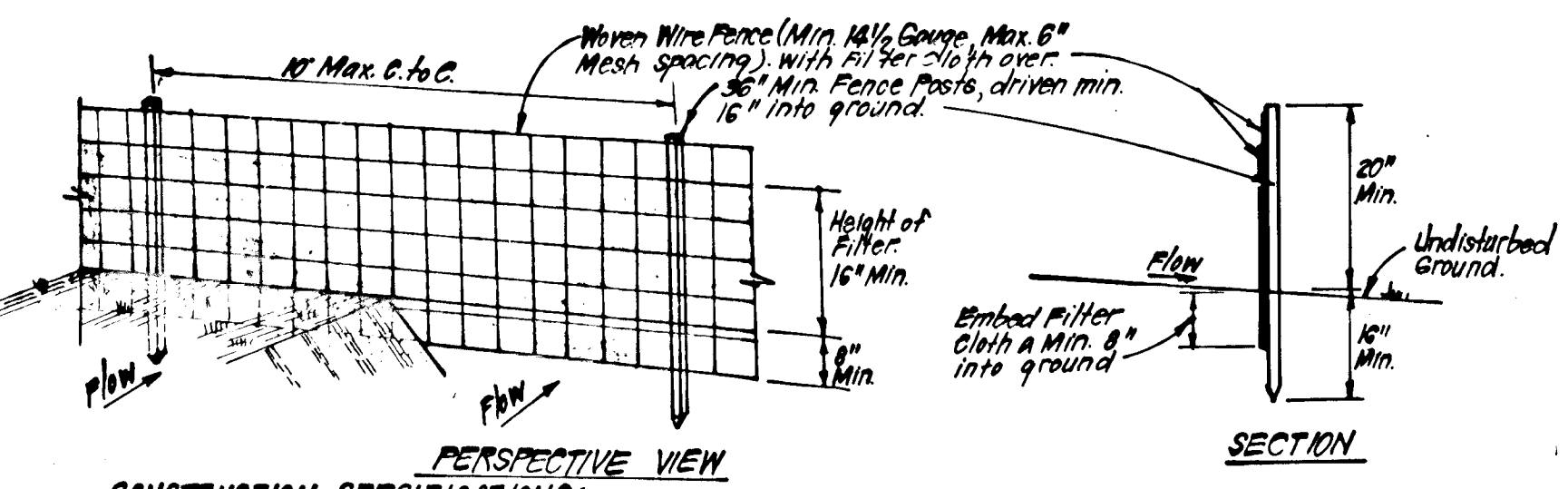
F-85-179 AS-BUILT 8-26-88



CONSTRUCTION SPECIFICATIONS:

- Bales shall be placed at the top of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a min. of 4" and placed so the bindings are horizontal.
- Bales shall be securely anchored in place by either 2 stakes or re-bars driven thru the bale. The 1st stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
- Inspection shall be frequent and repair replacement shall be made promptly as needed.
- Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

STRAW BALE DIKE DETAIL (SBD)
NO SCALE

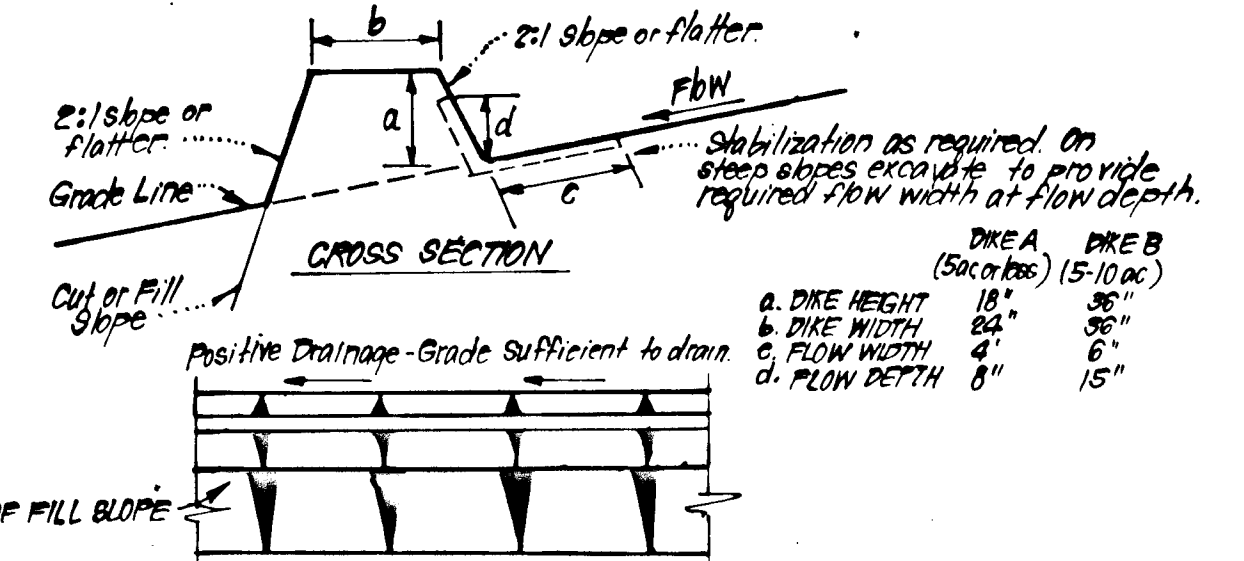


CONSTRUCTION SPECIFICATIONS:

- Woven wire fence to be fastened securely to fence posts with wire ties or staples.
- Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
- When 2 sections of filter cloth adjoin each other they shall be overlapped by 6" and stapled.
- Maintenance shall be performed as needed and material removed when "bulges" develop in Silt Fence.

POSTS: Steel either T or U Type or 2" Hardwood
FENCE: Woven Wire, 14 1/2 Gauge, 6" Max. Mesh Opening
FILTER CLOTH: Filter Cloth, Miraflex 100X, Slablinks, T140N or Approx. equal
PREFABRICATED UNIT: Geofab, Envirofence, or approx. equal

SILT FENCE DETAIL (S)
NO SCALE



CONSTRUCTION SPECIFICATIONS:

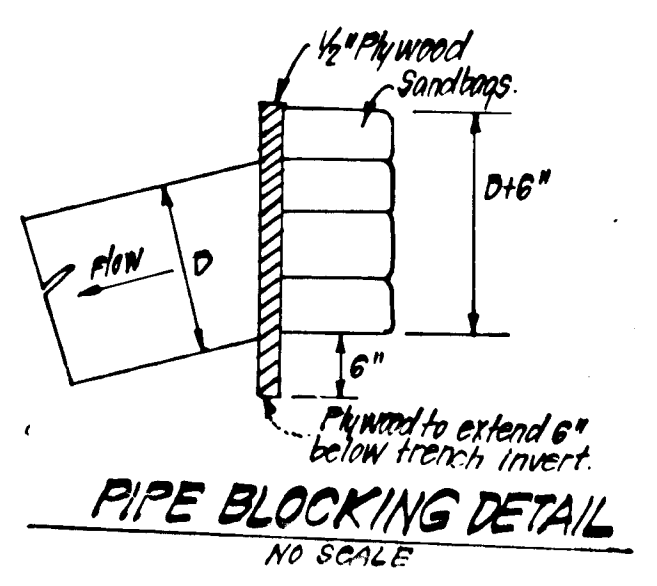
- All dikes shall be compacted by earth-moving equipment.
- All dikes shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter if desired, to facilitate crossing by construction traffic.
- Field location should be adjusted as needed to utilize a stabilized safe outlet.
- Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
- Stabilization shall be: (A) in accordance with standard specifications for seed and straw mulch or straw mulch if not in seeding season, (B) flow channel as per chart below.

FLOW CHANNEL STABILIZATION

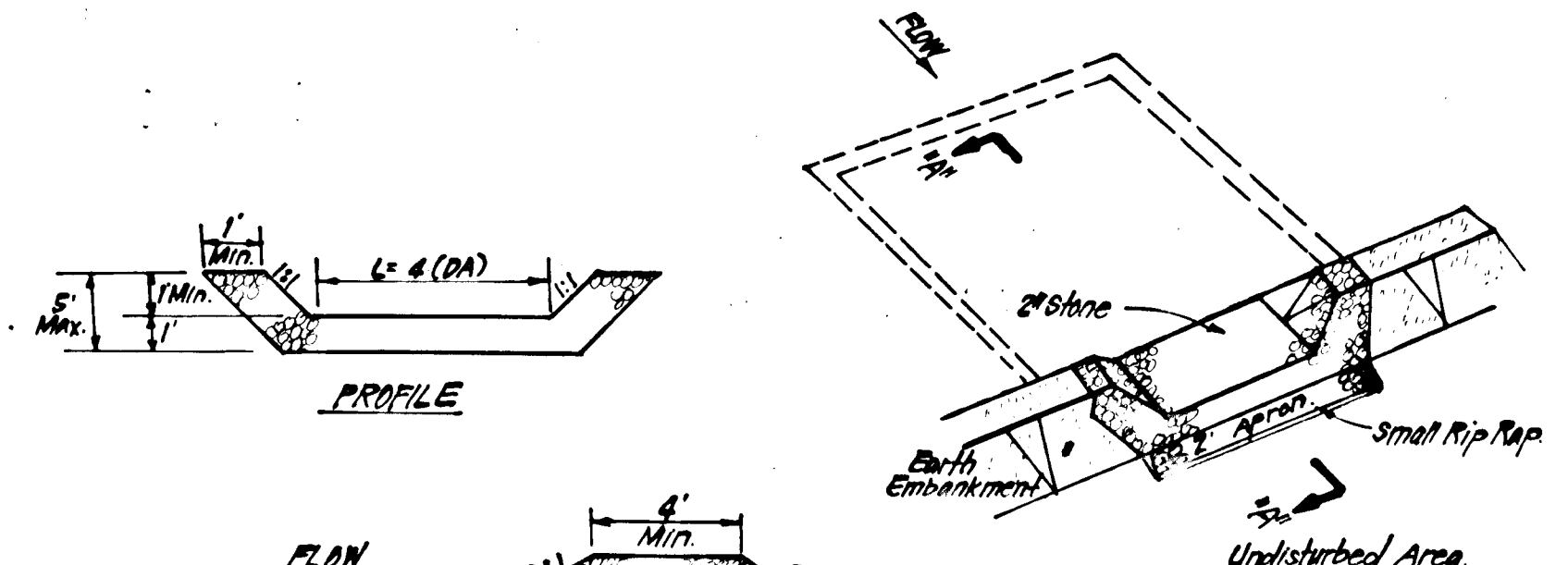
TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	0.5 - 3.0%	Seed & Straw Mulch	Seed or Straw Mulch
2	3.1 - 5.0%	Seed & Straw Mulch	Seed, Straw, or Excelsior; Sed, 2" Stone
3	5.1 - 8.0%	Seed, Straw, or Sed; 2" Stone	Lined Rip Rap 4"-8" Stone
4	8.1 - 20.0%	Lined Rip Rap 4"-8" Stone	Engineering Design

A. Stone to be 2" Stone or recycled concrete equivalent, in a layer at least 3" thick and be pressed into soil with construction equipment.
B. Rip Rap to be 4"-8" in a layer at least 8" thick, pressed into soil.
C. Approved equivalents can be substituted for any of the above materials.

EARTH DIKE DETAIL (E.D.)
NO SCALE



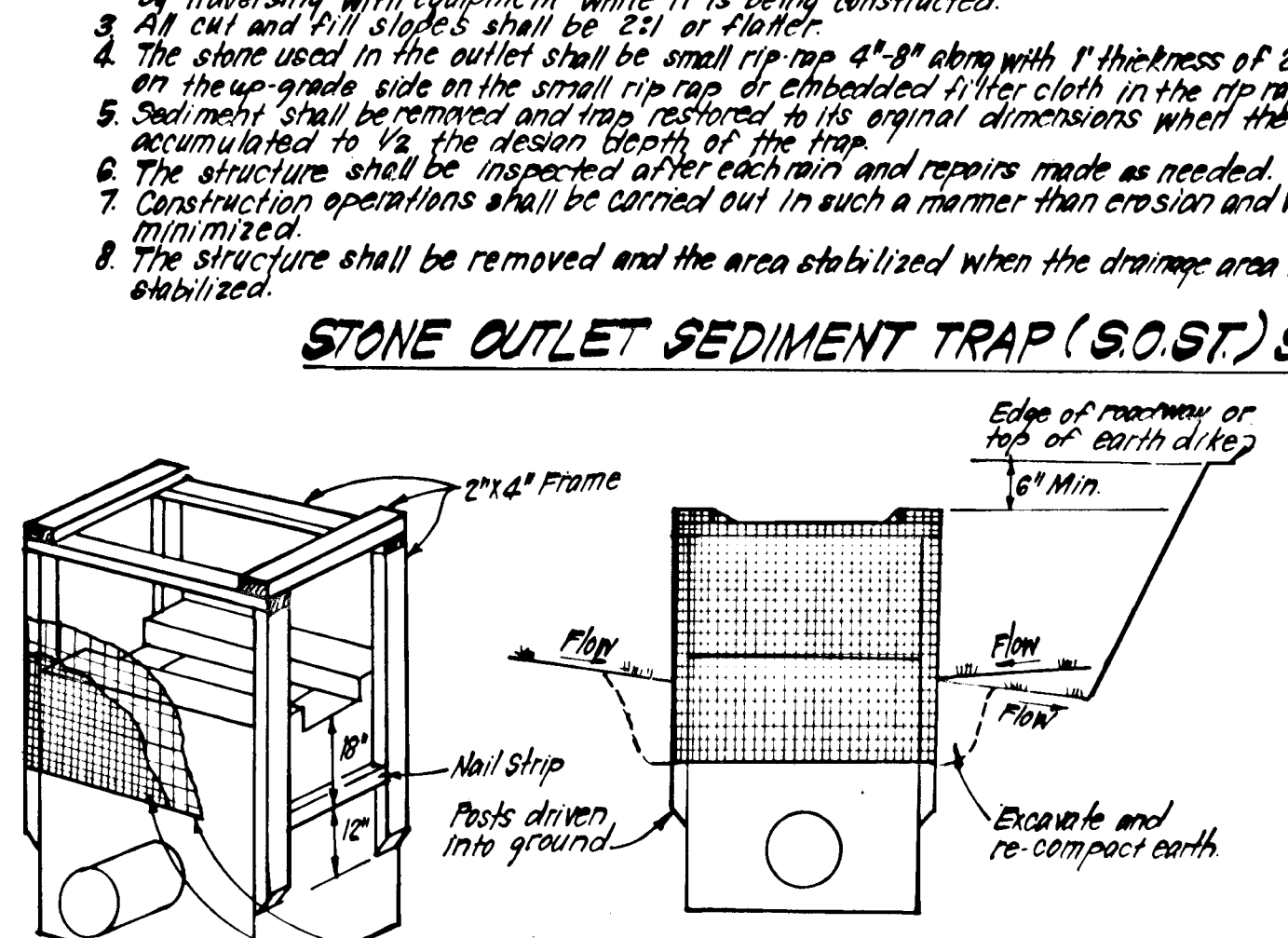
PIPE BLOCKING DETAIL
NO SCALE



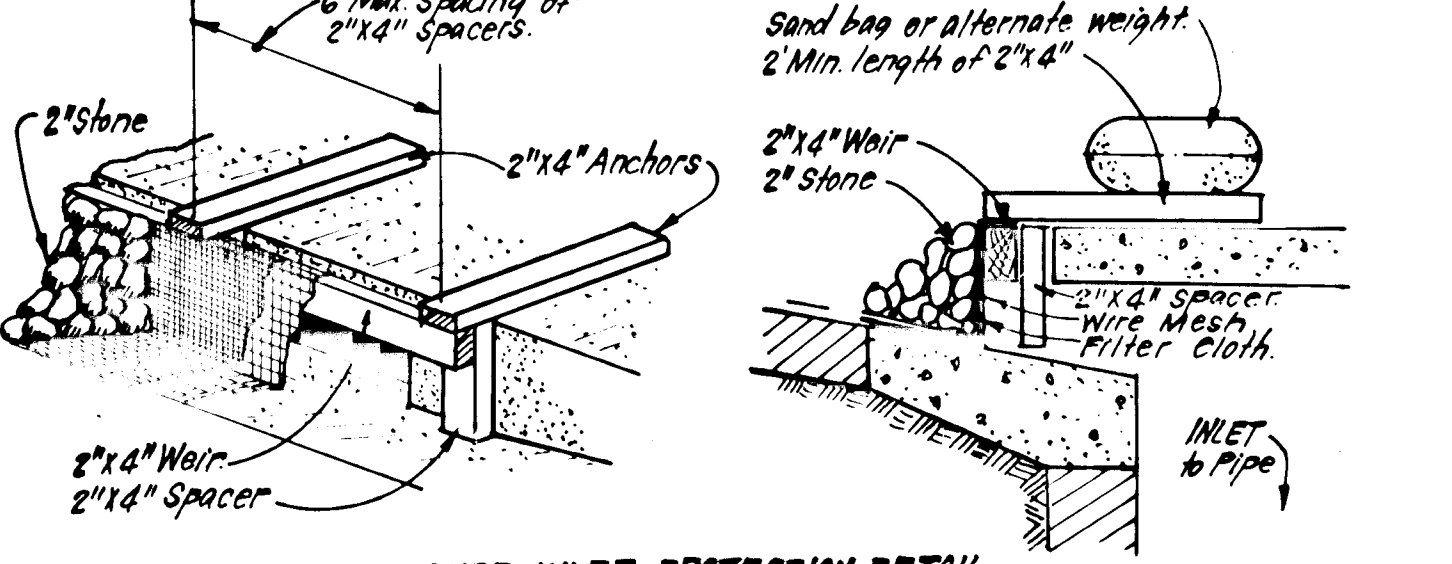
CONSTRUCTION SPECIFICATIONS:

- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The top area shall be compacted.
- The fill material for the embankment shall be free of roots and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
- All cut and fill slopes shall be 2:1 or flatter.
- The stone used in the outlet shall be small rip rap 4"-8" along with 1" thickness of 2" aggregate placed on the up-slope side on the small rip rap or embedded filter cloth in the rip rap.
- 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.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

STONE OUTLET SEDIMENT TRAP (S.O.S.T.) STV.



SWALE INLET PROTECTION DETAIL



CURB INLET PROTECTION DETAIL

CONSTRUCTION SPECIFICATIONS:

- A. Wooden frame is to be constructed of 2"x4" construction grade lumber.
- WIRE MESH: Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.
- Filter cloth must be of a type approved for this purpose; resistant to sunlight with sieve size, E15, 40-85, 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.

II PROCEDURE: SWALE, DITCHLINE OR YARD INLET PROTECTION

- Excavate completely around inlet to a depth of 18" below notch elevation.
- Drive 2"x4" weirs 1" into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2"x4" frame using overlap joint shown. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.
- Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
- Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
- Backfill around inlet in compacted 6" layers until layer of earth is even with notch elevation on ends and top elevation on sides.
- If the inlet is not in a low point, construct a compacted earth dike in the ditch line below it. The top of this earth dike is to be at least 6" higher than the top of frame (weir).
- The structure must be inspected frequently and filter fabric replaced when clogged.

II PROCEDURE: CURB INLET PROTECTION

- Attach a continuous piece of wire mesh (30" min. width by throat length plus 4") to the 2"x4" weir (measuring throat length plus 2") as shown on std. drawing.
- Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2"x4" weir.
- Securely nail the 2"x4" weirs to 2" long vertical spacers to be located between the weir and inlet stone (max 6" apart).
- Place the assembly against the inlet throat and nail (min 2" lengths of 2"x4" to the top of the weir at spacer locations. These 2"x4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
- The assembly shall be placed so that the end spacers are a min 1" beyond both ends of throat opening.
- From the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow to inlet.

INLET PROTECTION DETAIL (I.P.D.)
NO SCALE

PERMANENT SEEDING NOTES

Apply to graded or cleared areas 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.

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 sq ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

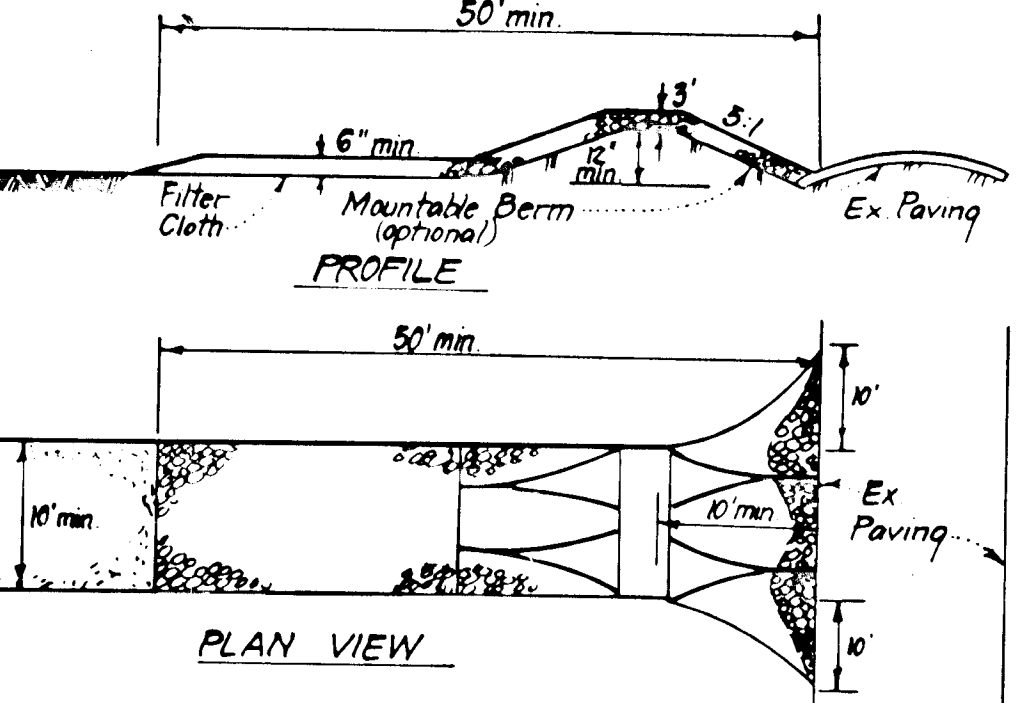
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

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 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.



STABILIZED CONSTRUCTION ENTRANCE (SCE)
NO SCALE

CONSTRUCTION SPECIFICATIONS:

- Stone size - Use 2" stone or reclaimed or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

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.

Reviewed for: Howard S.C.D. Name
and meets Technical Requirements
Stephen L. Hulley 9/27/85 Date
U.S. Soil Conservation Service

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

Stephen L. Hulley 9/27/85 Approved Date
G. Nelson 6-17-85 Date

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 redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
Total Area of Site 31.58 Acres
Area Disturbed 27.74 Acres
Area to be roofed or paved 2.92 Acres
Area to be vegetatively stabilized 24.82 Acres
Total Cur 35,850 Cu. yds.
Total Fill 23,350 Cu. yds.
Offsite waste/borrow area location N/A
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DFW 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.
- If houses are to be constructed on a "As-Built" basis, at random, Single Lot Sediment Control as shown below shall be implemented.
- All pipes to be blocked at the end of each day (see detail below). N/A
- The total amount of straw bale dikes/silt fence equals None L.F.

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."

David R. Nelson 6-20-85
Signature of Developer/Builder Date

APPROVED: DEPARTMENT OF PUBLIC WORKS
William H. ... 9-20-85
Chief, Bureau of Engineering Date
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
William H. ... 9-20-85
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 RJS	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN	SCALE As Shown
DRAWN R/W	ASPENWOOD	DRAWING 7 OF 7
CHECKED RJS	SECTION 3 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 85-024
DATE Aug. 85	FOR CAPITAL HOMES, INC. Suite 200, 6500 Rock Spring Dr. The Bedford Bldg. Bethesda, Md 20834	FILE NO. 85-024-D