

STATIONS	RADIUS	Δ	ARC	TAN	CHD. & BEARING
PC 0+34.75 to PT 3+22.11	600.00	22°40'00"	237.36	120.25	235.82 N10°00'00" E
PC 7+56.17 to PT 8+25.68	691.47	11°33'36"	132.51	63.99	139.28 S81°32'28" E
PC 10+42.80 to PC 11+41.53	2103.50	02°08'40"	78.73	39.37	78.72 S 76°50'00" E
PC 11+41.53 to PT 12+20.26	2402.24	01°52'40"	78.73	39.37	78.73 S 76°58'00" E

KEY	PLANT NAME	SIZE	QUANT	REMARKS
A	Acer Rubrum 'Red Sunset'	2 1/2" CAL MIN	30	5 1/2" Heavy Heads
B	Quercus Palustris	"	12	"
C	Tilia Cordata	"	10	"

- ### GENERAL NOTES
- All storm drain & paving shall be constructed in accordance with the latest edition and specifications of Howard County & MDSHA.
 - Types of storm drainage refer to the Standard Details of No. C-1 & MDSHA.
 - Trench compaction for storm drains within road or street right of way limits shall be in accordance with "Ho. Co. Design Manual, Vol. IX" (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 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 fire services, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices", 4th Edition, 1978.
 - Sag and Crest Vertical curves were designed in accordance with "Ho. Co. Design Manual, Vol. III".
 - Provide Concrete sidewalk ramps: Ho. Co. Std. Type A, R-4-D where shown in plan.
 - Design Speed: See Det. sht. 4. Zoning: R-20.
 - The contractor or developer shall contact the Construction Inspection/ Survey Division 24 hrs. in advance of commencement of work - Ph. 772-7272.
 - Street lights to be provided where shown on plan, shall be 175 Watt Modern Mercury Vapor Lamp on 4' Gray Fiberglass Pole.
 - Developer to provide Intersection Warning Sign on behalf of Eastbound Church Lane Traffic. Developer to provide Intersection Warning Sign on south side of Church Lane approximately 150' West of Church Lane / Chestnut Farm Lane Intersection. Exact location to be set in accordance with Ho. Co. Design Manual, Vol. III.

VICINITY MAP
SCALE: 1" = 2000'

CURB & GUTTER LEGEND
 ——— Mod. Comb. Curb & Gutter
 ——— Rev. Mod. Comb. Curb & Gutter

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

Approved: *Howard L. Sackett* 12/29/86
Howard S.C.D. Dist.

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

U.S. Soil Conservation Service Date

DEVELOPER'S CERTIFICATE

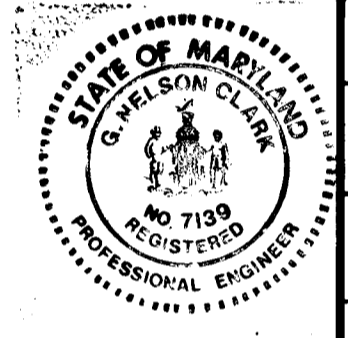
"I certify that all development and/or construction will be done according to these plans for pond construction and erosion and sediment control. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by The Howard Soil Conservation District with a red-lined 'as-built' of the pond within 30 days of completion."

Walter J. Sackett 4/1/86
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 advised 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."

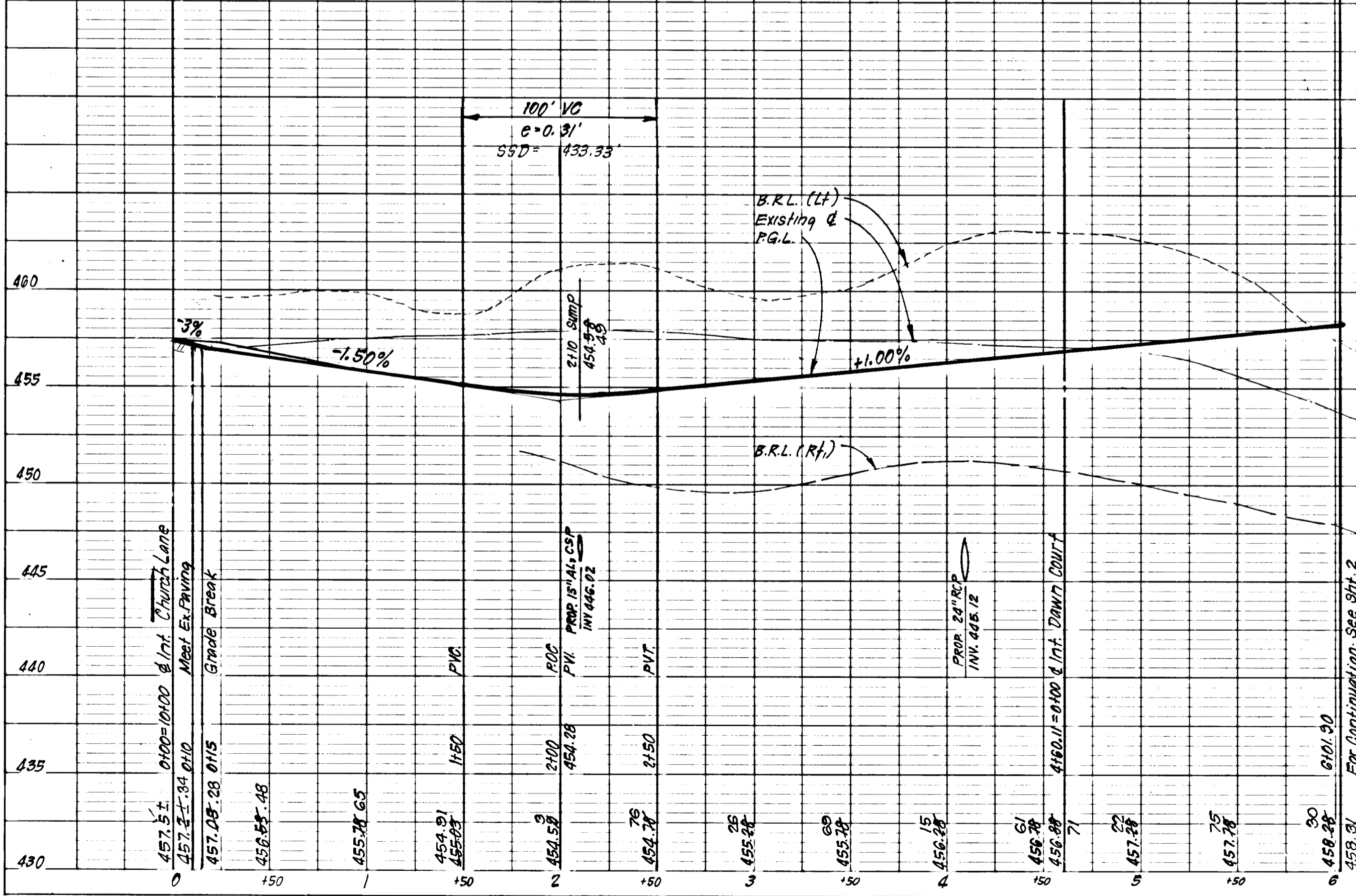
W. J. Sackett 4-2-86
Signature of Engineer Date



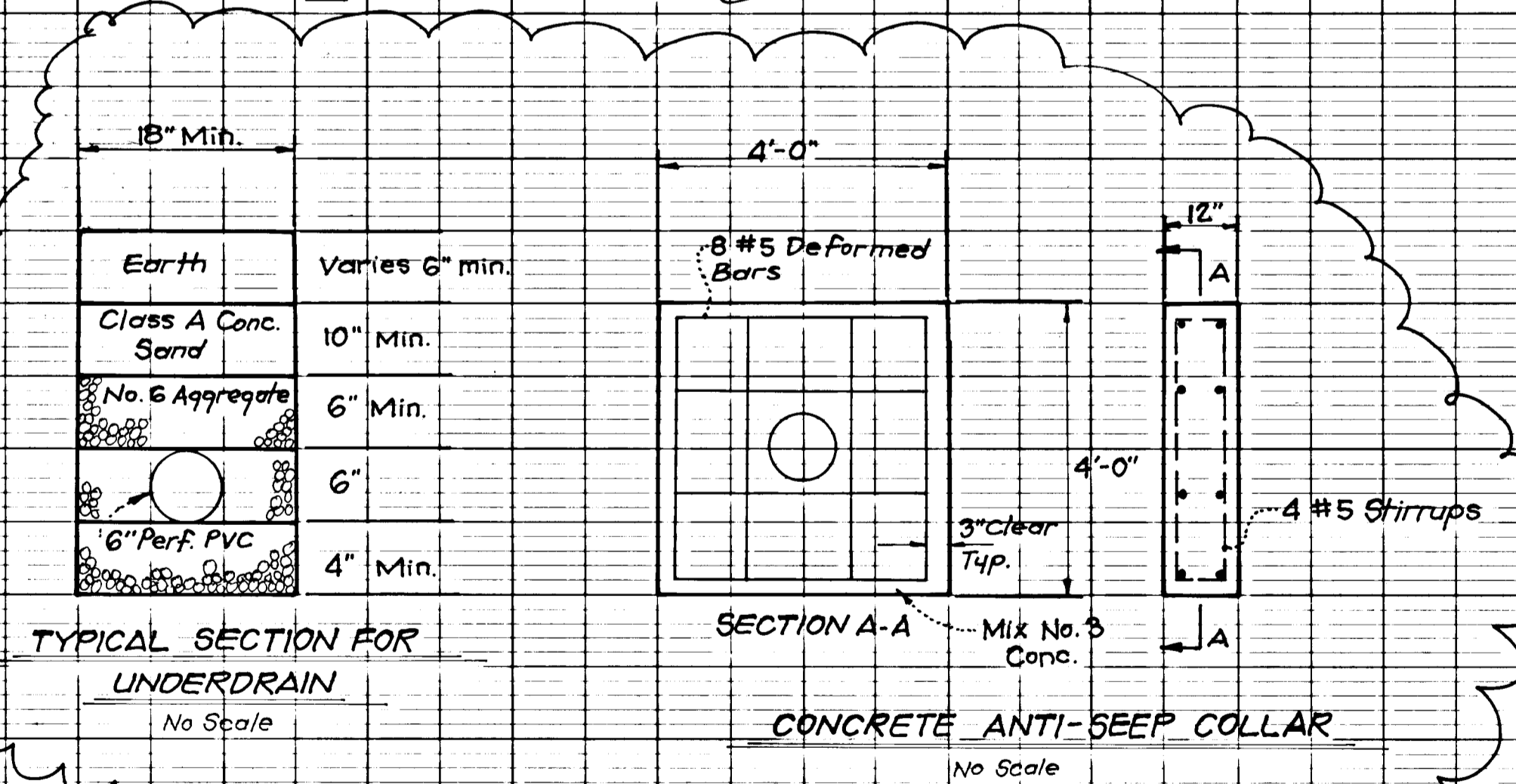
No.	REVISION	Date
1	Add Underdrain, Access Ramp & Berm to SWM Facility	12-28-90

PLAN
Scale: 1" = 50'

PROFILE - CHESTNUT FARM LANE



HORIZONTAL and VERTICAL CONTROLS
Based on Howard Co. Monuments No. 3443005 and No. 3443006

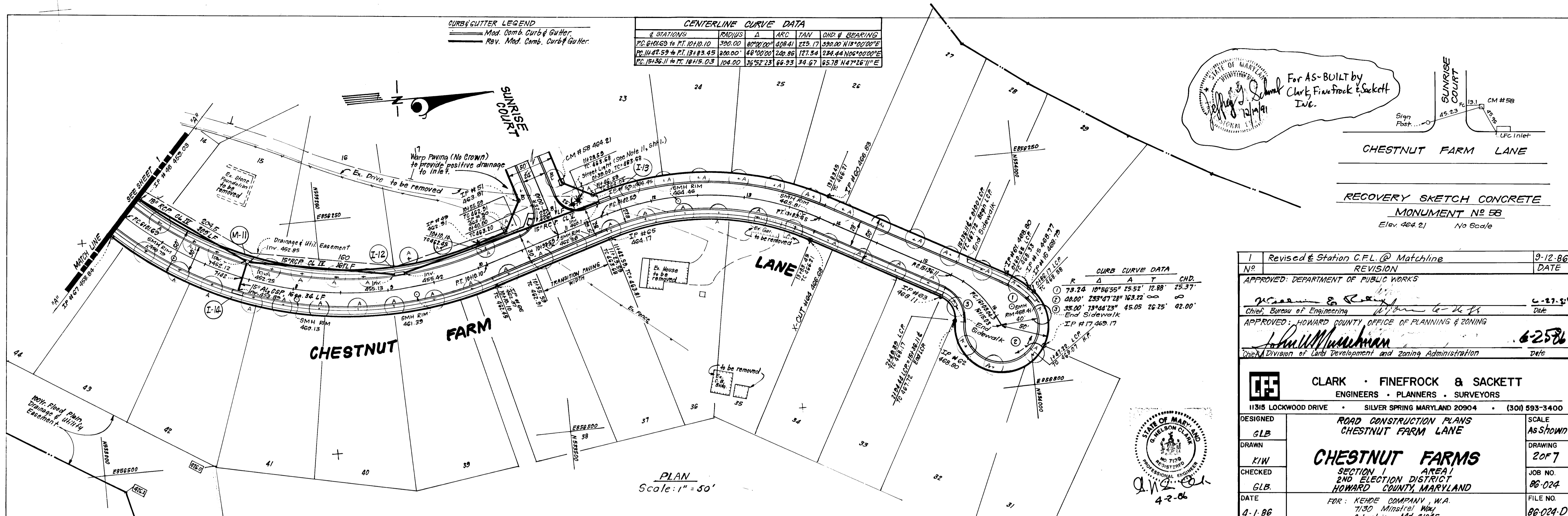


PROFILE SCALE
HORIZ: 1" = 50'
VERT: 1" = 5'

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

RECOVERY SKETCH
CONCRETE MONUMENT NO. 46
Elev. 457.89 No Scale

RECOVERY SKETCH
CONCRETE MONUMENT NO. 36
Elev. 457.02 No Scale



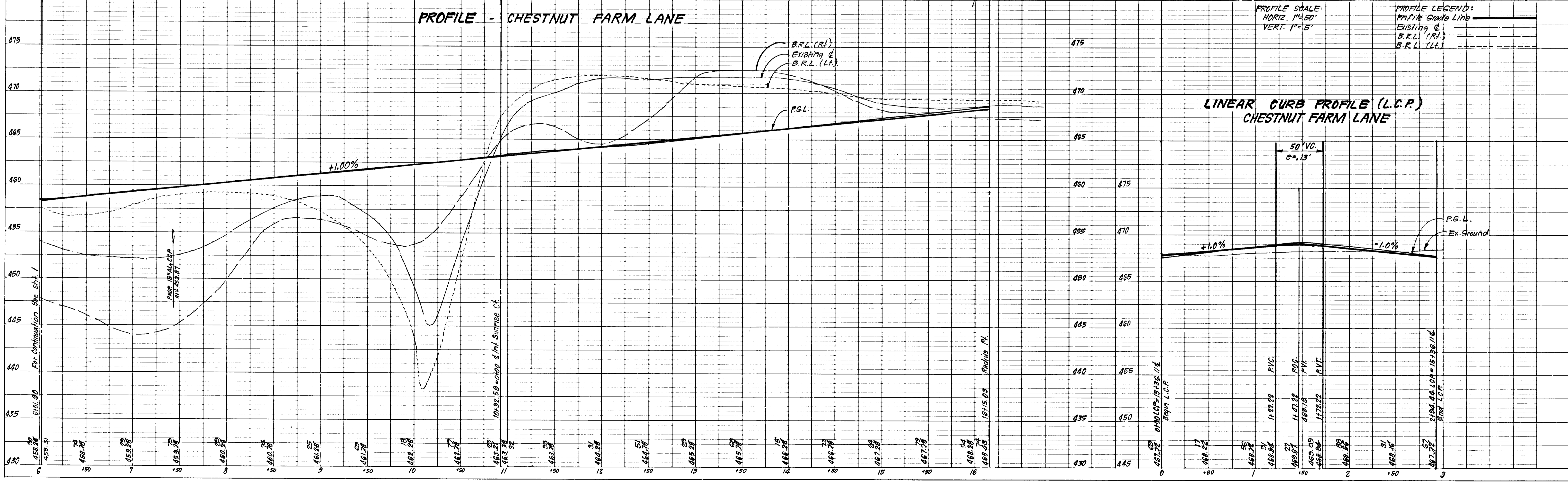
1	Revised @ Station C.F.L. @ Matchline	9-12-86
No	REVISION	DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS		
Chief, Bureau of Engineering		
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING		
Division of Land Development and Zoning Administration		

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS

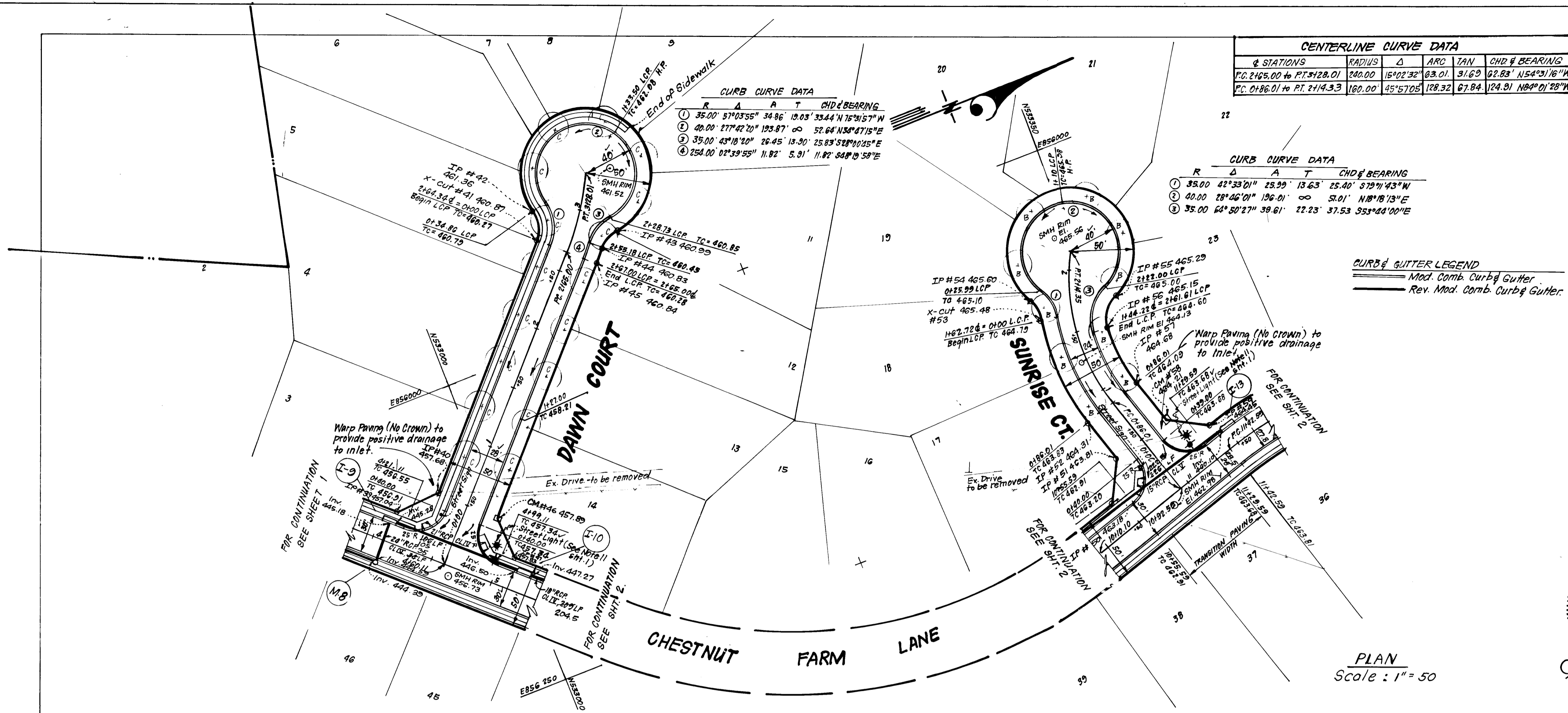
11315 LOCKWOOD DRIVE · SILVER SPRING MARYLAND 20904 · (301) 593-3400

DESIGNED	GLB	SCALE	As Shown
DRAWN	KIW	DRAWING	207
CHECKED	GLB	JOB NO.	86-024
DATE	4-1-86	FILE NO.	86-024-D

FOR: KEHDE COMPANY, W.A.
7130 Minstrel Way
Columbia, Md. 21045



1220

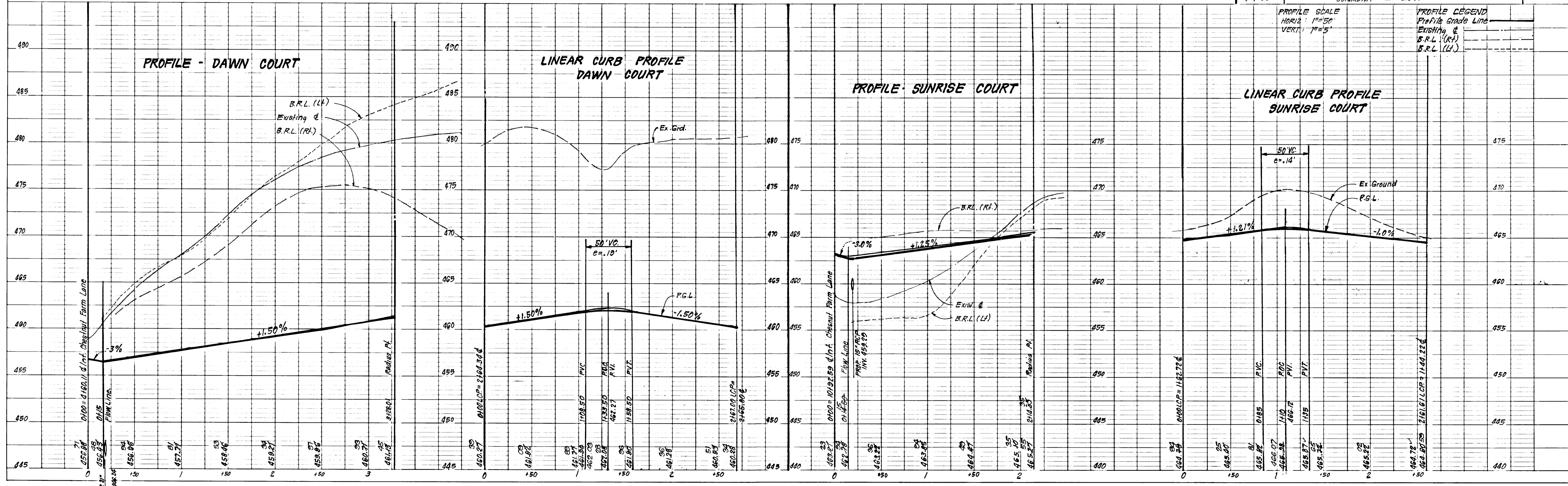
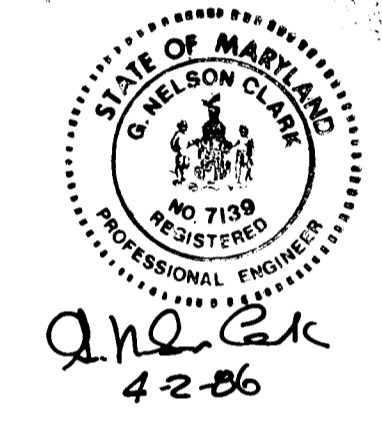


For AS-BUILT by
Clark, Finefrock & Sackett, Inc.

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

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

DESIGNED G.L.B.	ROAD CONSTRUCTION PLANS DAWN COURT AND SUNRISE COURT	SCALE As Shown
DRAWN K.I.W.	CHESTNUT FARMS	DRAWING 3 of 7
CHECKED G.L.B.	SECTION 1 AREA 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 86-024
DATE 4-1-86	FOR: KENDE COMPANY, W.A. 7130 Minstrel Way #200 Columbia, Md. 21045	FILE NO. 86-024-D



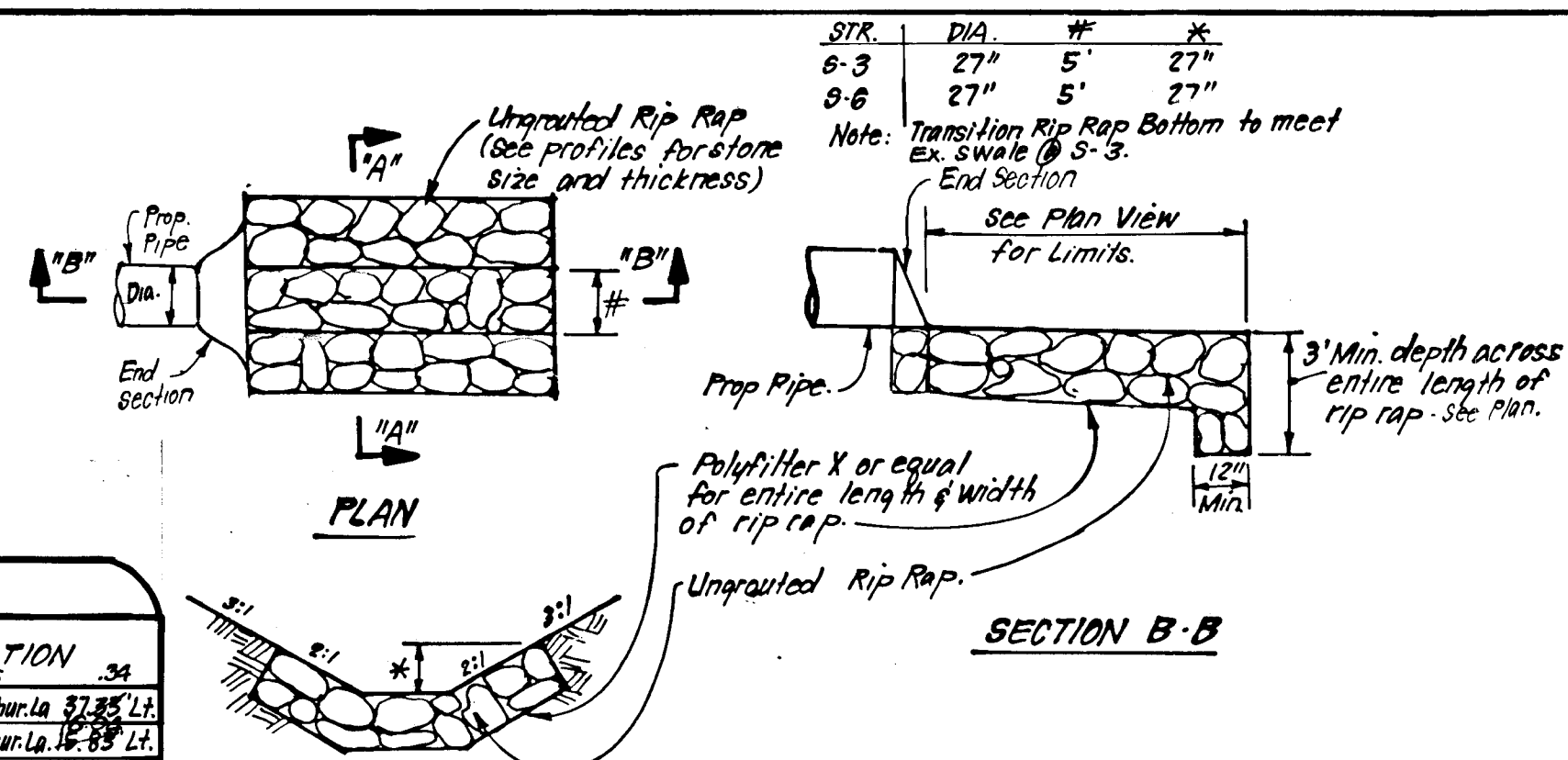
1220

SIZE	TYPE	LENGTH
15"	RCP Class IV	161 LF
15"	RCP Class V	226 LF
15"	AL4 CSP 16 gage	67 LF
18"	RCP Class III	209 LF
21"	RCP Class III	106 LF
24"	RCP Class III	30 LF
27"	RCP Class III	200 LF
27"	RCP Class V	36 LF

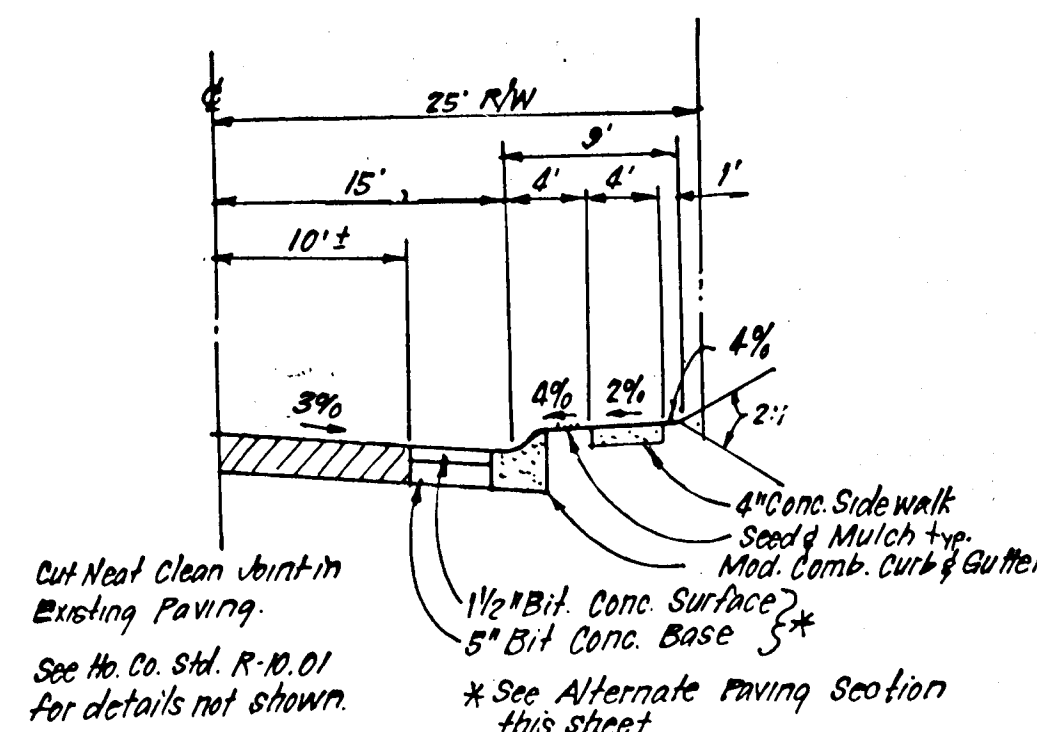
* CSP w/Aluminized coating may be substituted for AL4 CSP 2 1/2" x 1/2" Corrugations.

No.	TYPE	INV. IN	INV. OUT	TOP ELEVATION		REMARKS	LOCATION
				UPPER	LOWER		
B-3	Conc. End Section	450.25	449.96	-	-	No. On Stk. SD 5.51	Stn. 12+44.44 Chur. La. 37.85' LT
I-4	A-10 Inlet	455.21	451.18	451.97	455.94	" " SD 4.02 W=2'6"	Stn. 12+44.44 Chur. La. 37.85' LT
B-6	Conc. End Section	442.00	442.00	-	-	" " SD 5.51	Stn. 21+00 C.F. La. 55.33' RT
I-7	A-5 Inlet	445.54	442.56	454.92	454.58	" " SD 4.01 W=3'6"	Stn. 21+00 C.F. La. 55.33' RT
M-8	Brick Manhole	444.00	444.00	456.54	456.39	" " G 5.01 48" Ø	Stn. 21+00 C.F. La. 55.33' RT
I-9	A-10 Inlet	445.67	445.67	456.75	456.56	" " SD 4.02 W=3'6"	Stn. 21+00 C.F. La. 55.33' RT
I-10	A-10 Inlet	447.50	446.93	457.00	457.69	" " SD 4.02 W=3'6"	Stn. 21+00 C.F. La. 55.33' RT
M-11	Brick Manhole	452.85	452.85	459.88	460.0	" " G 5.01 48" Ø	Stn. 21+00 C.F. La. 55.33' RT
I-12	A-10 Inlet	455.73	455.73	461.73	461.67	" " SD 4.02 W=2'6"	Stn. 21+00 C.F. La. 55.33' RT
I-13	A-5 Inlet	460.00	460.00	464.02	464.02	" " SD 4.01 W=2'6"	Stn. 21+00 C.F. La. 55.33' RT
I-14	A-10 Inlet	453.73	460.00	459.88	459.88	" " SD 4.01 W=2'6"	Stn. 21+00 C.F. La. 55.33' RT
I-15	A-10 Inlet	446.73	454.82	454.82	454.82	" " SD 4.02 W=2'6"	Stn. 21+00 C.F. La. 55.33' RT

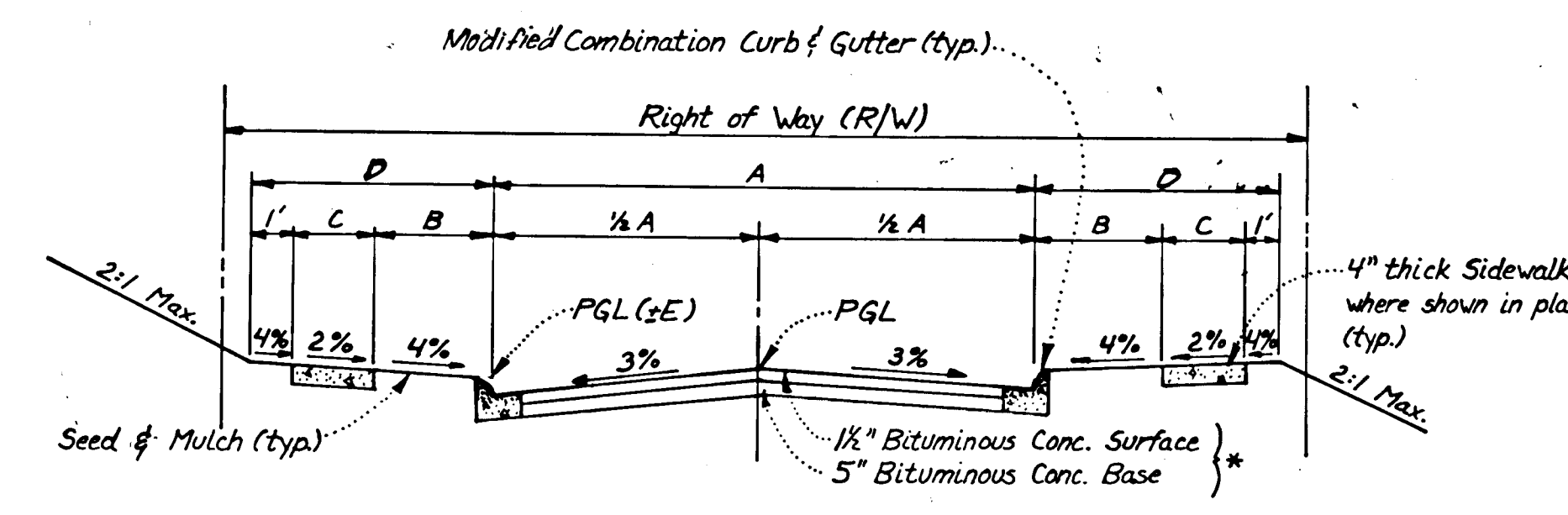
Δ All Inverts to be fully developed.
See Ho. Co. Std. R-3.06 For Curb & Gutter Transition at Inlets.



SECTION A-A
UNGROUTED RIPRAP PAVING DETAILS
NO SCALE

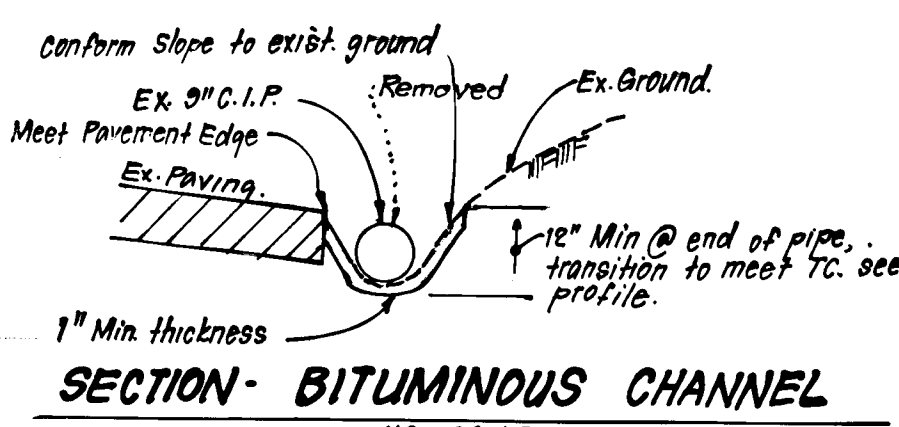


TYPICAL PAVING SECTION
CHURCH LANE
NO SCALE

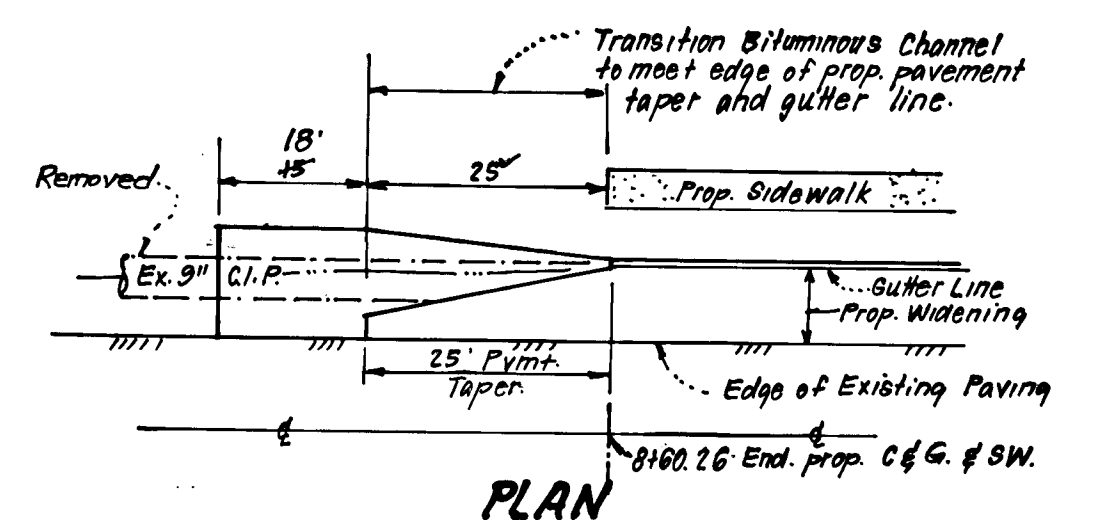


TYPICAL PAVING SECTION - PUBLIC ROADS
NO SCALE
* For Alternate Paving Section - See det. this sh.

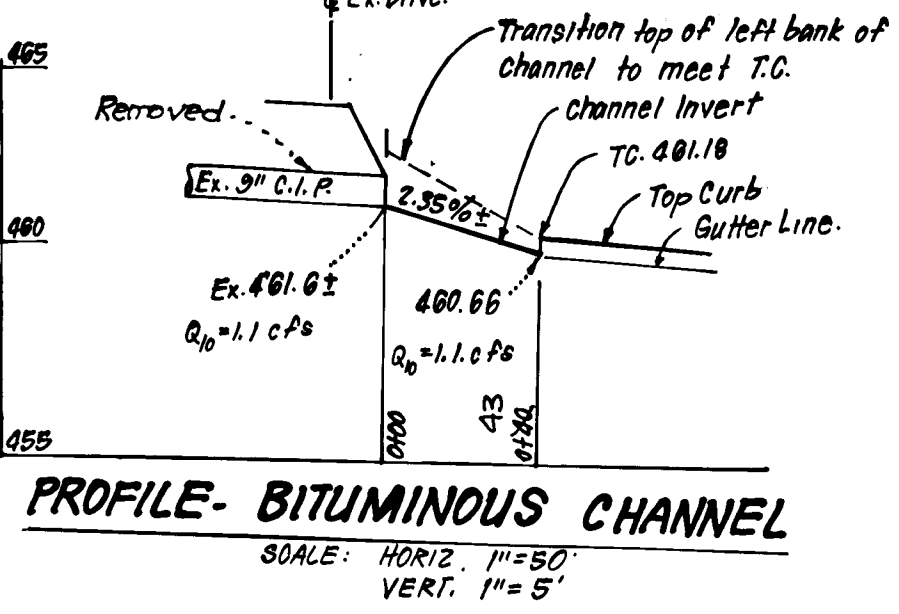
STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
Chestnut Farm Lane 0+00 to 10+55.50	LOCAL	30'	4'	4'	9'	50'	R-20	30 mph	.07
Chestnut Farm Lane 11+29.50 to 16+19.00	CUL-DE-SAC	28'	4'	4'	9'	50'	R-20	25 mph	.10
Dawn Court 0+00 to 3+28.01	"	28'	4'	4'	9'	50'	R-20	"	.10
Sunrise Court 0+00 to 2+14.35	"	24'	4'	4'	9'	50'	R-20	"	.16



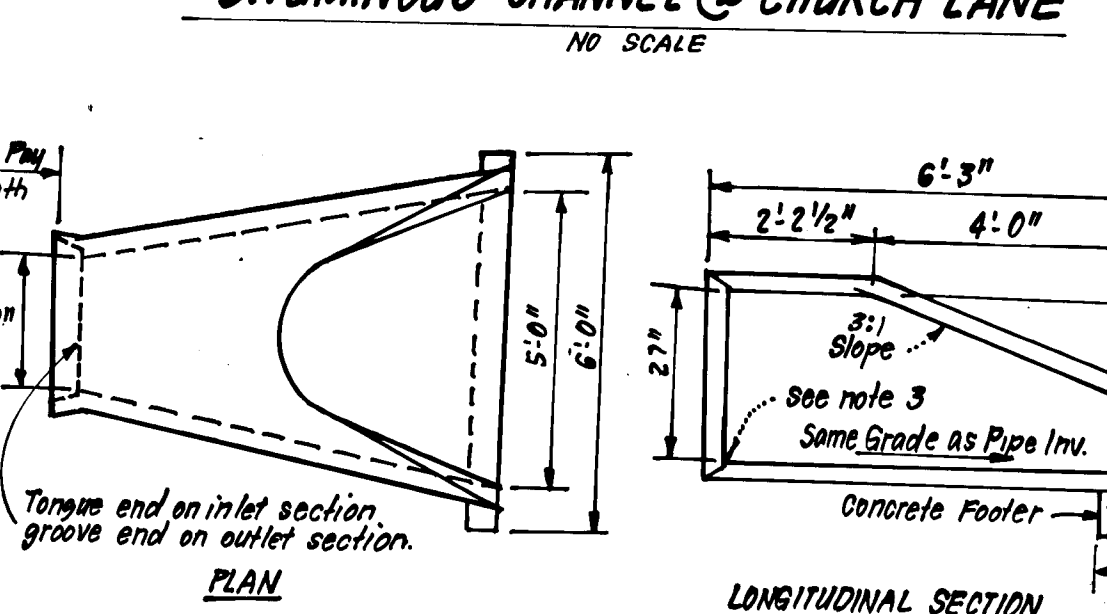
SECTION - BITUMINOUS CHANNEL
NO SCALE



PLAN
BITUMINOUS CHANNEL @ CHURCH LANE
NO SCALE

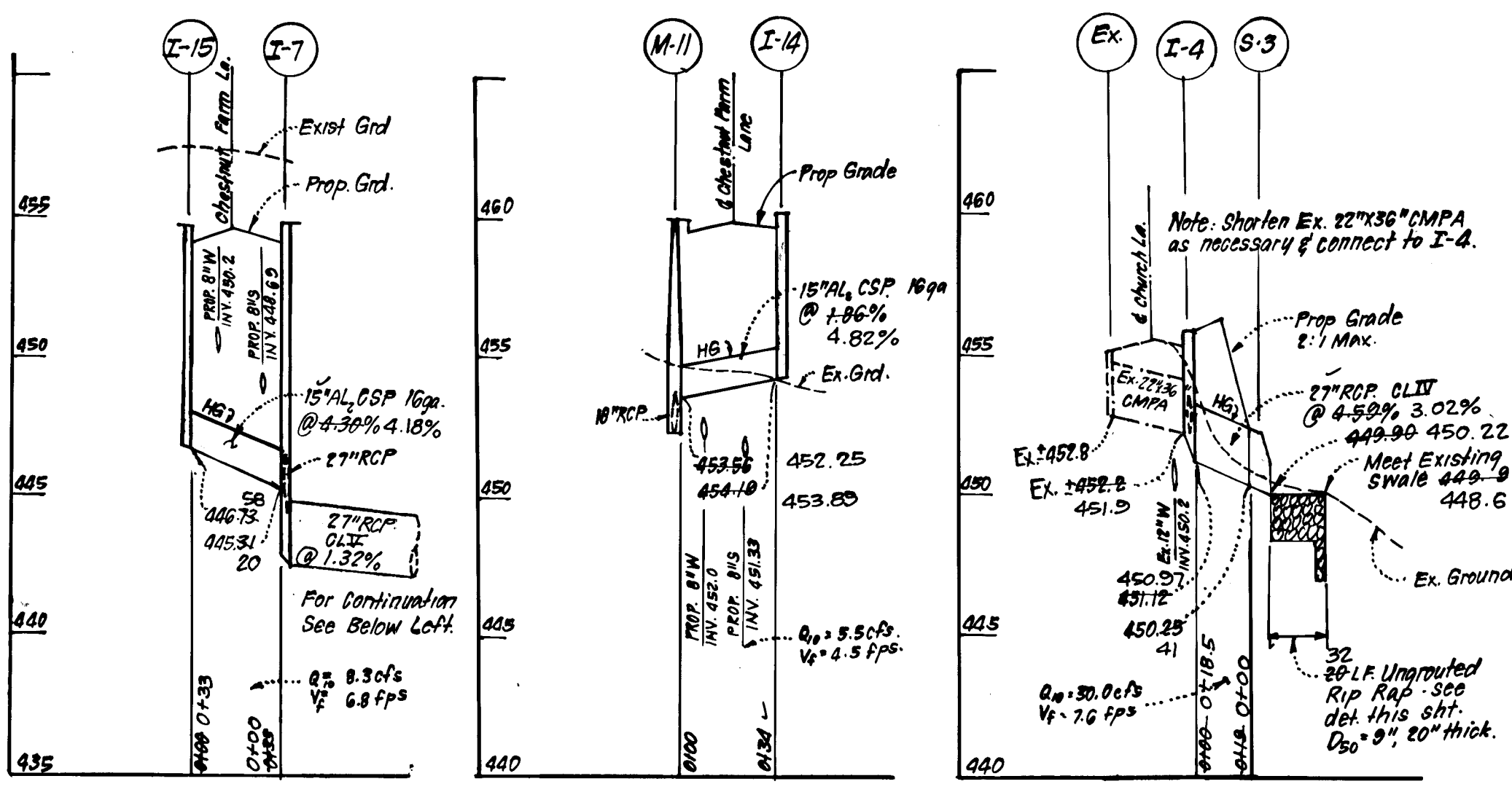


PROFILE - BITUMINOUS CHANNEL
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

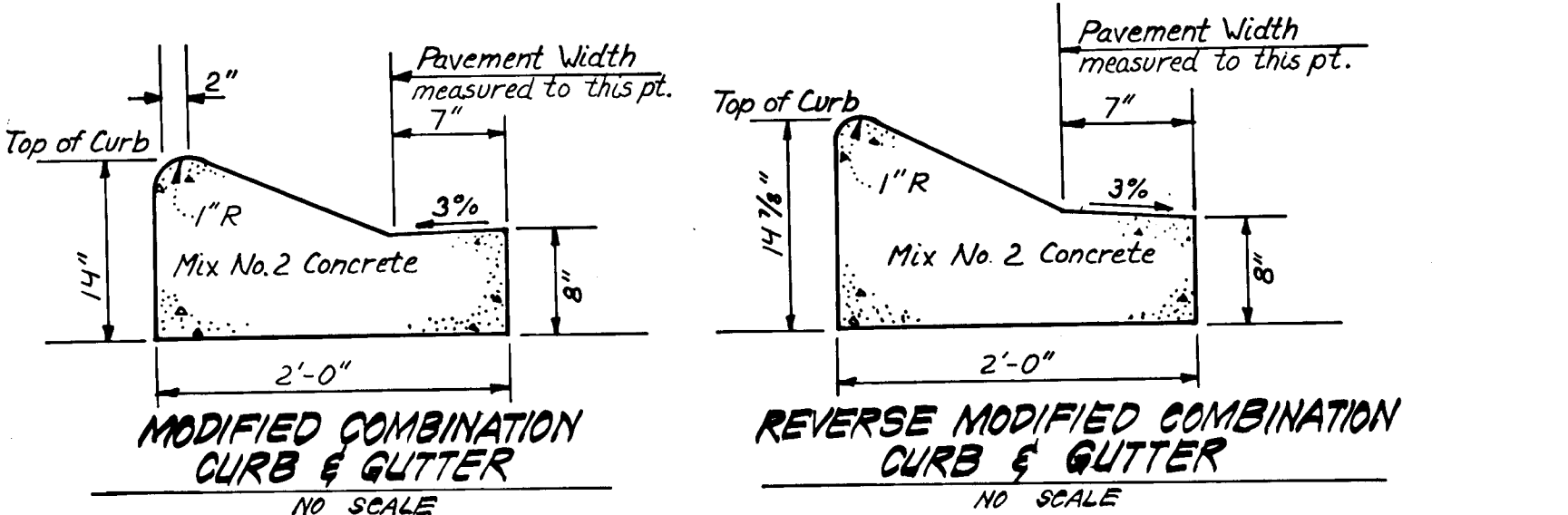


LONGITUDINAL SECTION
CONCRETE END SECTION
NO SCALE

NOTES: 1. End sections must be reinforced to conform w/ class IV pipe.
2. Concrete Footer shall be used. Cost of concrete footer to be paid/cubic yard of class A-1 concrete for miscellaneous structures reinforcement to be No. 3 bars.
3. Inv. elev. to be at the pipe end of the std. end section. Elevations to be noted on construction plans.
4. Contractor has option of furnishing end sections conforming to details on this sh. or end sections conforming to details on SD No. 552



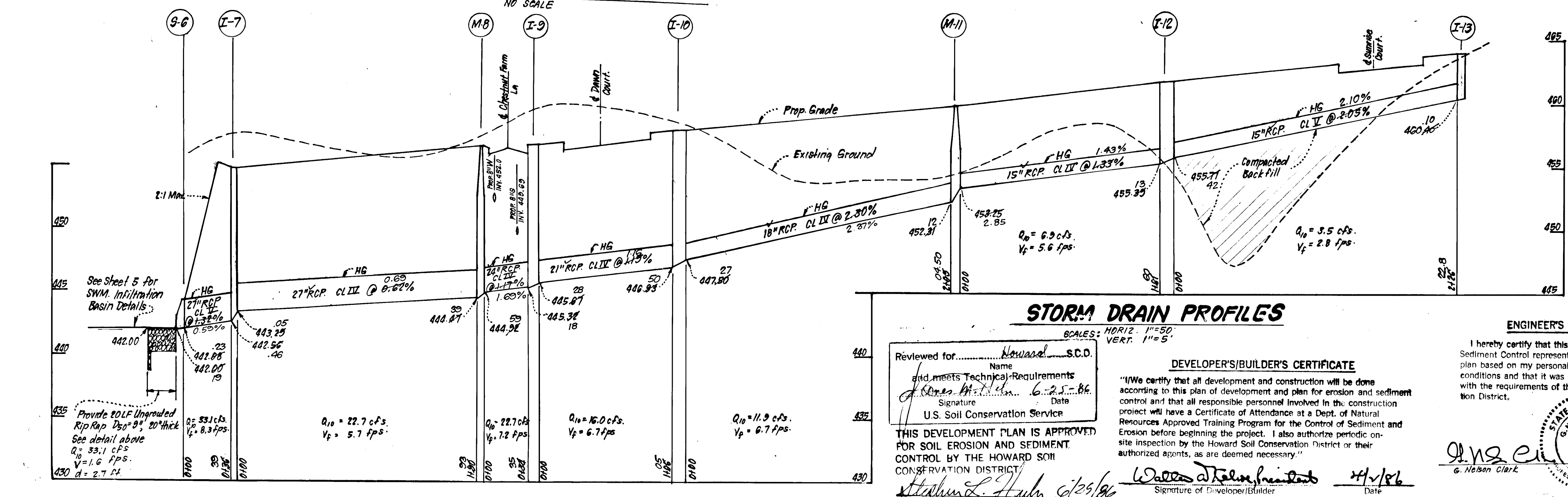
STORM DRAIN PROFILES
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



MODIFIED COMBINATION CURB & GUTTER
NO SCALE
REVERSE MODIFIED COMBINATION CURB & GUTTER
NO SCALE

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

ALTERNATE PAVING SECTION FOR PUBLIC ROADS
(SECTION P-2)
NO SCALE

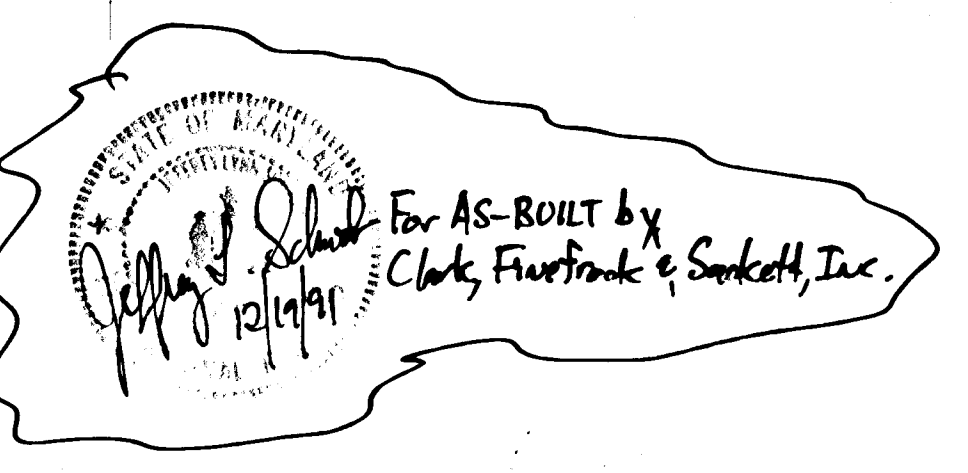


STORM DRAIN PROFILES
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

Reviewed for: Howard S.C.D.
Name: Howard S.C.D.
Date: 6-25-86
Signature: [Signature]
U.S. Soil Conservation Service

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: Walter J. [Signature]
Date: 4/1/86

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: 4-2-86



APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Engineering: [Signature] Date: 6-25-86
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
Chief, Division of Land Development and Zoning Administration: John W. [Signature] Date: 6-25-86

DESIGNED: GLB
DRAWN: R/W
CHECKED: GLB
DATE: 4-1-86

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

ROAD CONSTRUCTION PLANS
PAVING AND STORM DRAIN DETAILS
SCALE: AS SHOWN

CHESTNUT FARMS
SECTION 1 AREA 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FOR: KEMPE COMPANY, W.A.
7155 Minstrel Way
Columbia, Md. 21045

JOB NO. 86-024
FILE NO. 86-024-D

STORM WATER MANAGEMENT NOTES

I. SITE PREPARATION

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

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

II. EARTH FILL

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize 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.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer.

Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

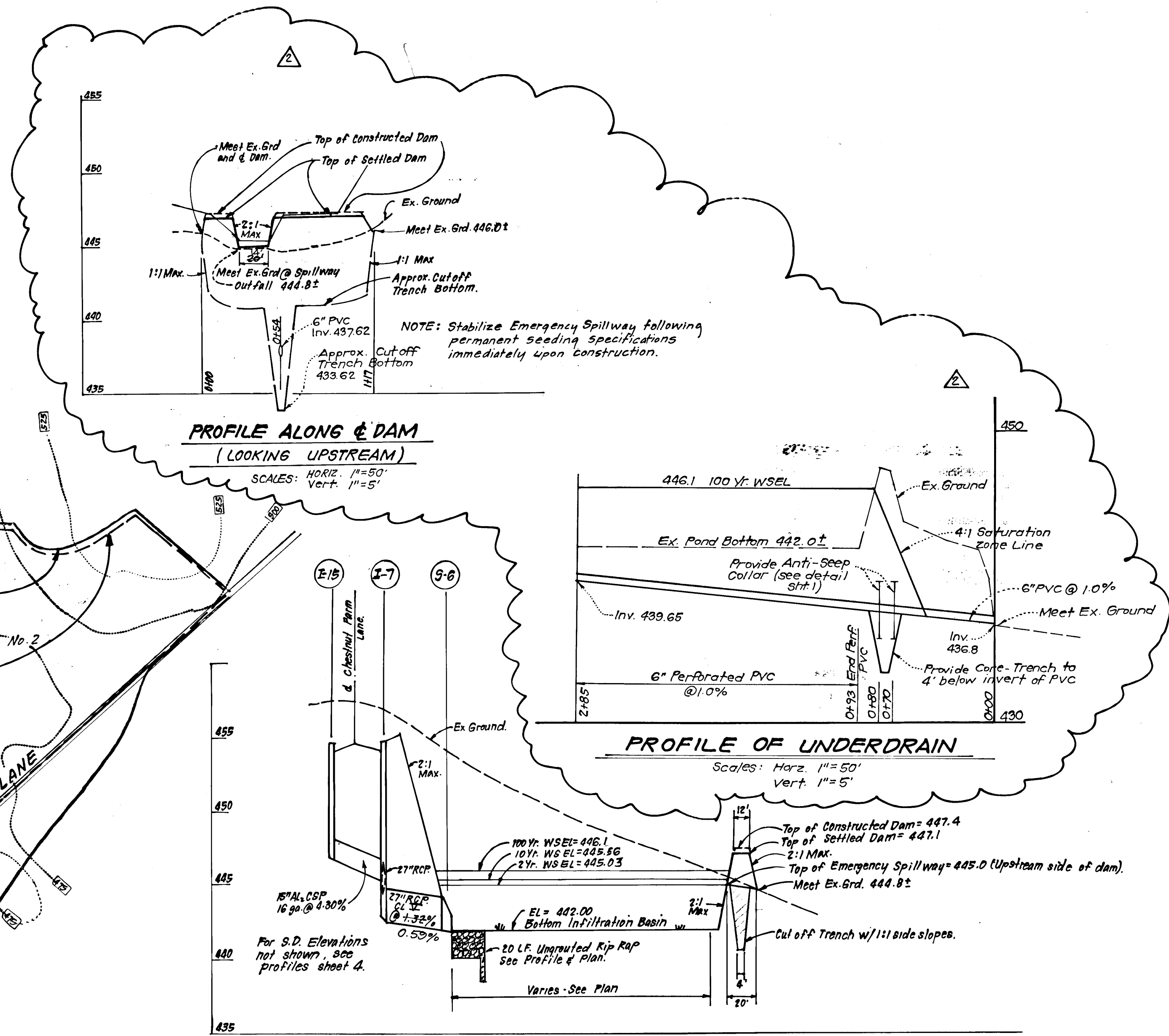
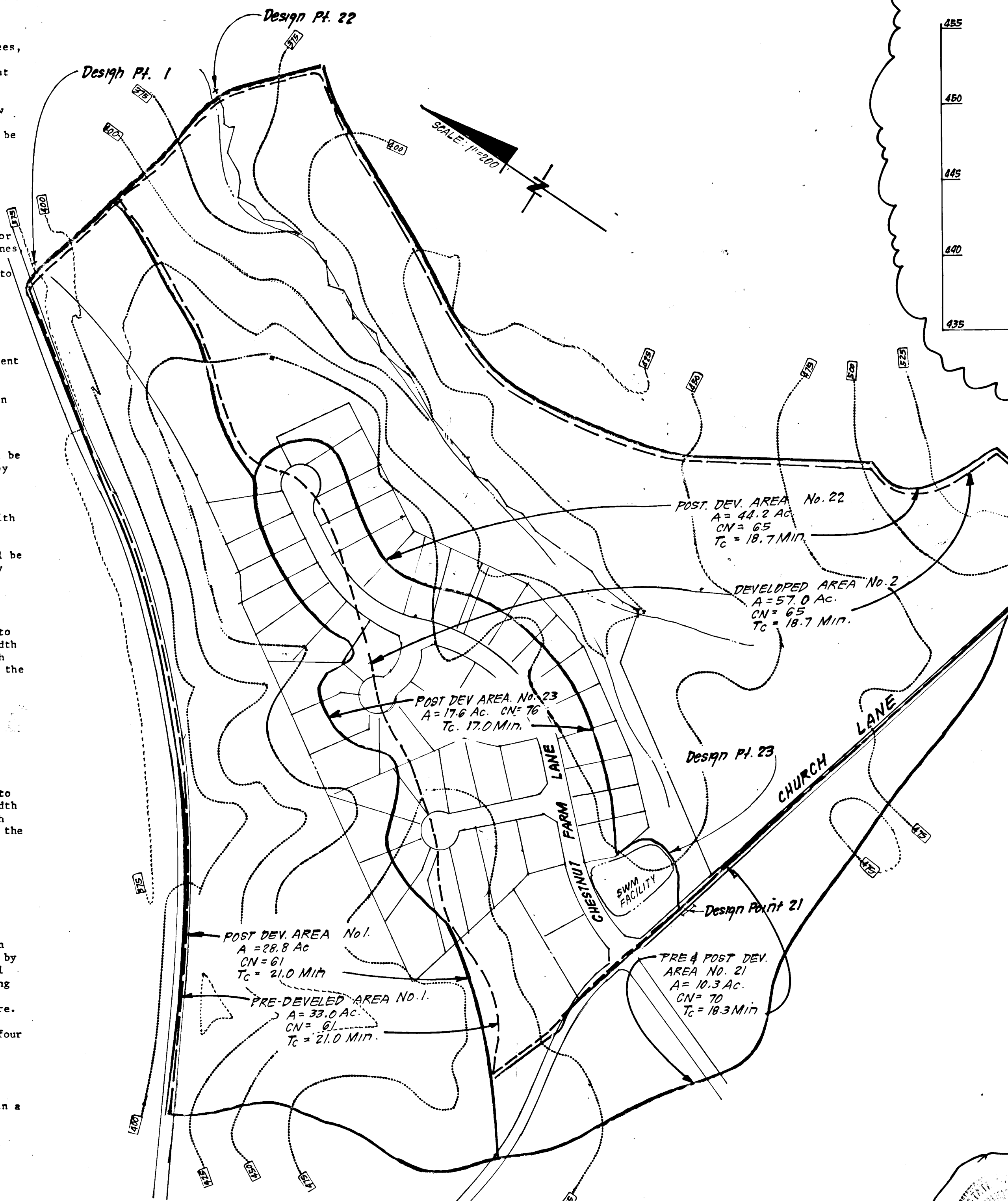
Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. STABILIZATION

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

V. 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.



S.W.M. INFILTRATION BASIN PROFILES

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

For AS-BUILT by
Clark, Finefrock & Sackett, Inc.
Jeffrey J. Schmitt
12/19/91

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: *[Signature]* 6-25-86
Soil Conservation Service

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

Approved: *[Signature]* 6/25/86
Howard S.C.D.

DEVELOPER'S CERTIFICATE

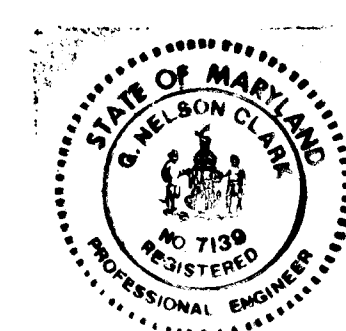
"I certify that all development and/or construction will be done according to these plans of development, pond construction and erosion and sediment control. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation 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."

[Signature] 4/18/86
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 hereby certify that 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."

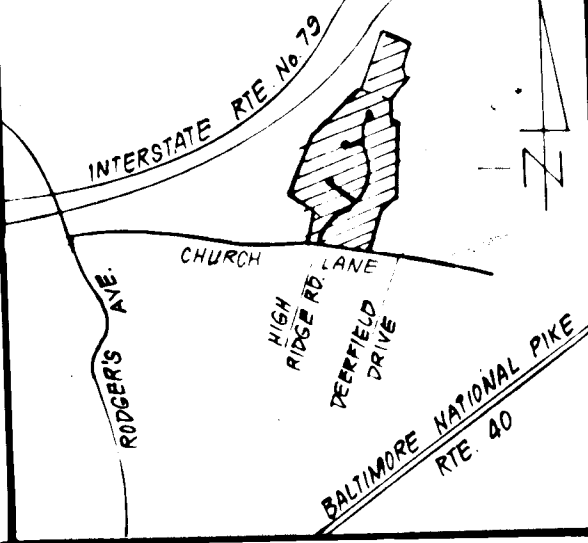
[Signature] 4-2-86
Signature of Engineer Date



REVISION No. 2 Added Underdrain Profile, Rev. Profile along & of Dam Date 12/28/90		
APPROVED: DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> Chief, Bureau of Engineering Date 6-27-86		
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING <i>[Signature]</i> Chief, Division of Land Development and Zoning Administration Date 6-25-86		
CLARK • FINEFROCK & SACKETT ENGINEERS • PLANNERS • SURVEYORS 11315 LOCKWOOD DRIVE • SILVER SPRING MARYLAND 20904 • (301) 593-3400		
DESIGNED	ROAD CONSTRUCTION PLANS	SCALE
GLB	STORM WATER MANAGEMENT DETAILS AND DRAINAGE AREA MAP	AS SHOWN
DRAWN		5 OF 7
CHECKED		JOB NO.
GLB	CHESTNUT FARMS SECTION 1 AREA 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	86-024
DATE	FOR: KEHDE COMPANY, W.A. 7130 WILMSTED WAY Columbia, Md. 21025	FILE NO.
4-1-86		86-024-D

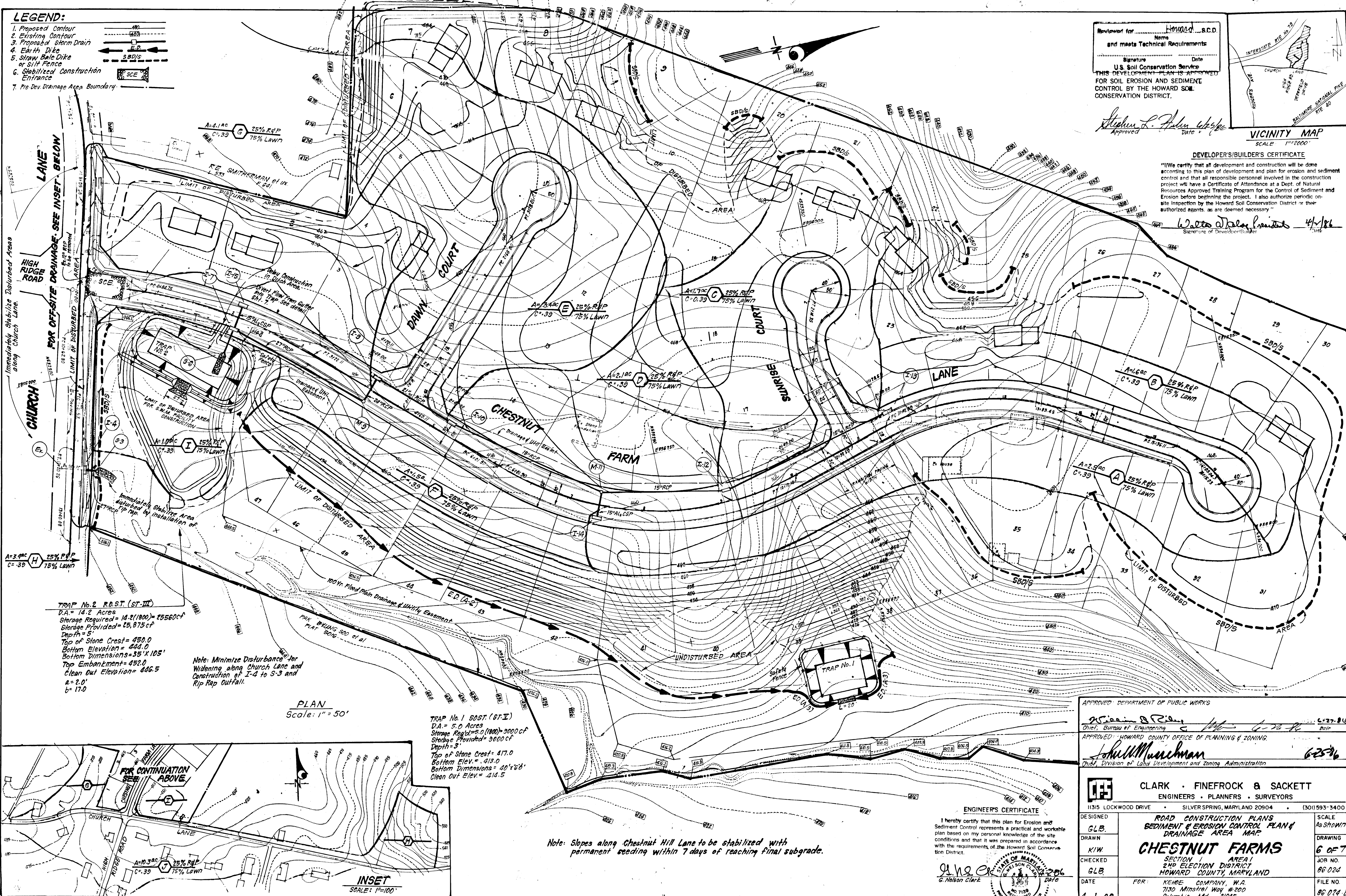
- LEGEND:**
- Proposed Contour
 - Existing Contour
 - Proposed Storm Drain
 - Earth Dike
 - Straw Bale Dike or Silt Fence
 - Stabilized Construction Entrance
 - Pre-Dev. Drainage Area Boundary

Reviewed for: 101002-0 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.



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 its authorized agents as are deemed necessary.

Signature of Developer/Builder: *Walter D. Kelly* 4/1/86
 Date: _____



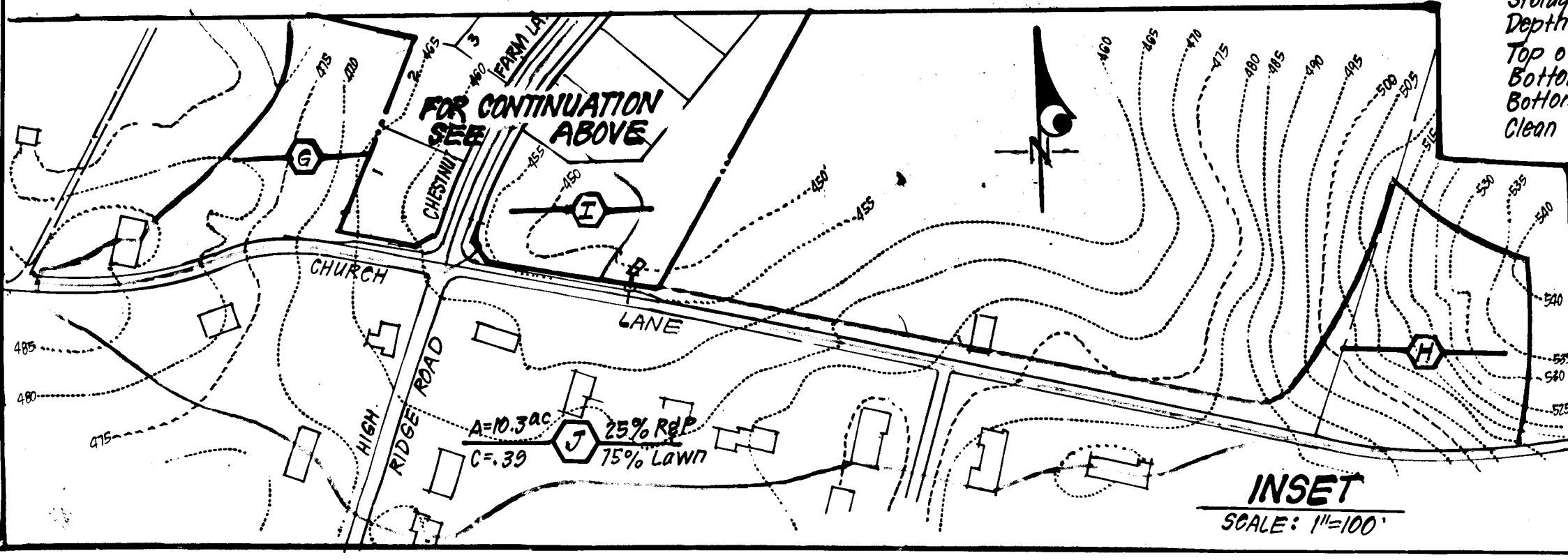
TRAP No. 2 R.O.S.T. (ST-III)
 D.A. = 14.2 Acres
 Storage Required = 14.2(1800) = 25560 c.f.
 Storage Provided = 25,875 c.f.
 Depth = 5'
 Top of Stone Crest = 450.0
 Bottom Elevation = 444.0
 Bottom Dimensions = 35' x 105'
 Top Embankment = 452.0
 Clean Out Elevation = 446.5
 a = 2.0'
 b = 17.0

Note: Minimize Disturbance for Widening along Church Lane and Construction of I-4 to S-3 and Rip Rap Outfall.

PLAN
 Scale: 1" = 50'

TRAP No. 1 S.O.S.T. (ST-I)
 D.A. = 5.0 Acres
 Storage Required = 5.0(1800) = 9000 c.f.
 Storage Provided = 9000 c.f.
 Depth = 3'
 Top of Stone Crest = 417.0
 Bottom Elev. = 413.0
 Bottom Dimensions = 40' x 60'
 Clean Out Elev. = 414.5

Note: Slopes along Chestnut Hill Lane to be stabilized with permanent seeding within 7 days of reaching final subgrade.

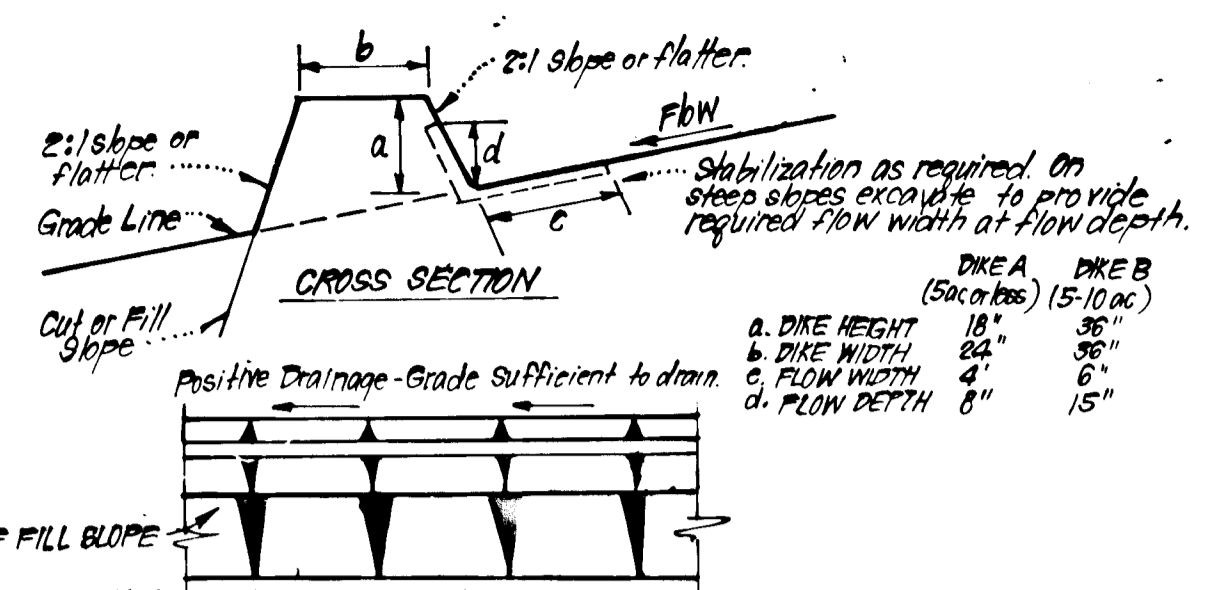


APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Engineering
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 Chief, Division of Land Development and Zoning Administration

CLARK · FINEFROCK & SACKETT ENGINEERS · PLANNERS · SURVEYORS 11315 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593-3400	
DESIGNED GLB	SCALE As Shown
DRAWN K/W	DRAWING 6 OF 7
CHECKED GLB	JOB NO. 86-024
DATE 4-1-86	FILE NO. 86-024-D
FOR: KEHEE COMPANY, W.A. 7130 Minnetonka Way #200 Columbia, Md. 21045	

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
 G. Nelson Clark
 Date: 4/1/86

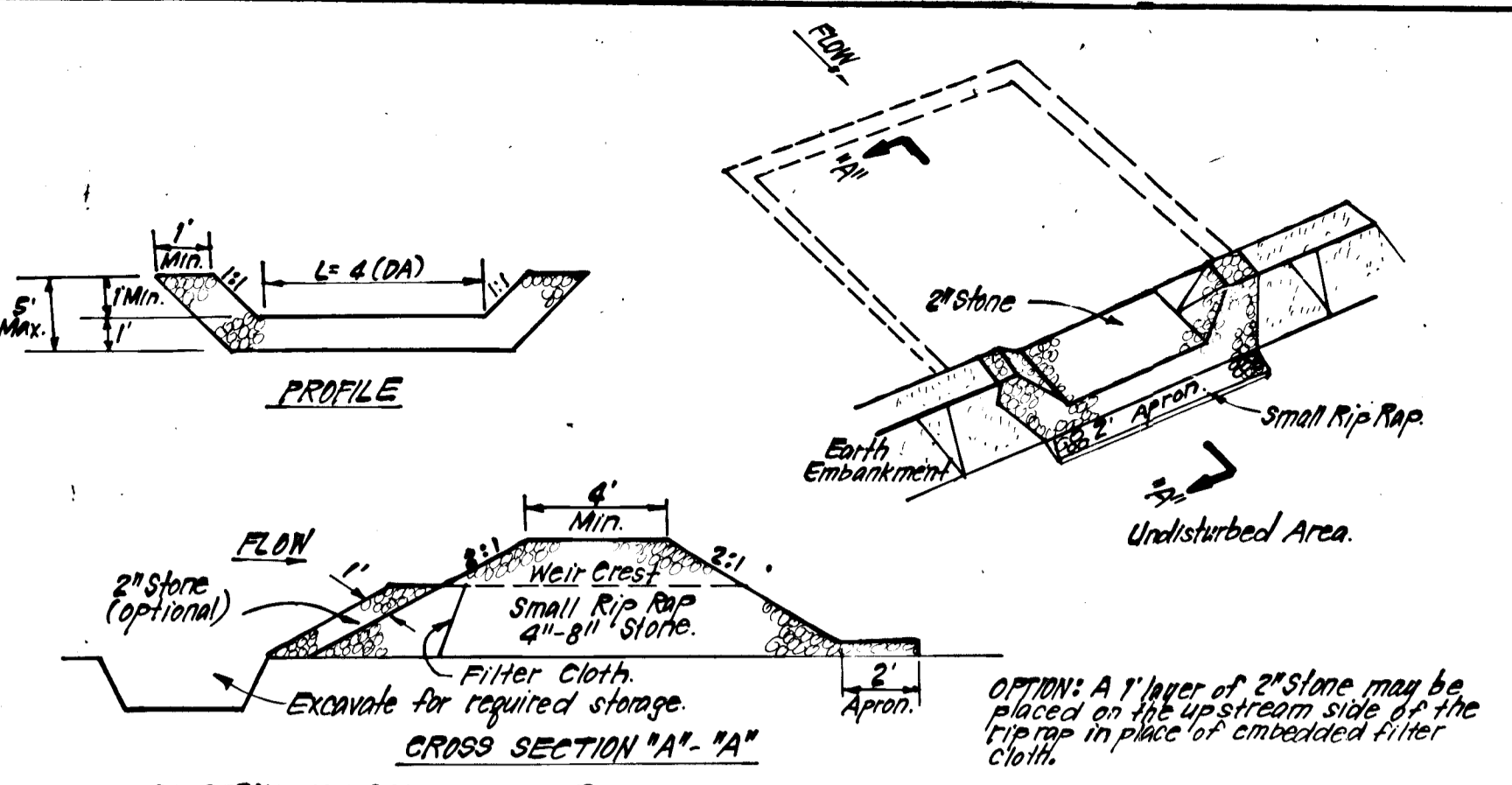


- CONSTRUCTION SPECIFICATIONS:**
- All dikes shall be compacted by earth-moving equipment.
 - All dikes shall have positive drainage to an outlet.
 - Top width may be wider and side slopes may be flatter if desired, to facilitate crossing by construction traffic.
 - Final location should be adjusted as needed to utilize a stabilized soft outlet.
 - Earth dikes shall have an outlet that functions with a minimum of runoff. 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.

TYPE OF 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 Mulch, or Excelsior; Sod, 2" Stone
3	5.1 - 8.0%	Seed, Straw Mulch or Sod; 2" Stone	Lined Rip Rap 4"-8" Stone
4	8.1 - 20.0%	Lined Rip Rap 4"-8" Stone	Engineering Design

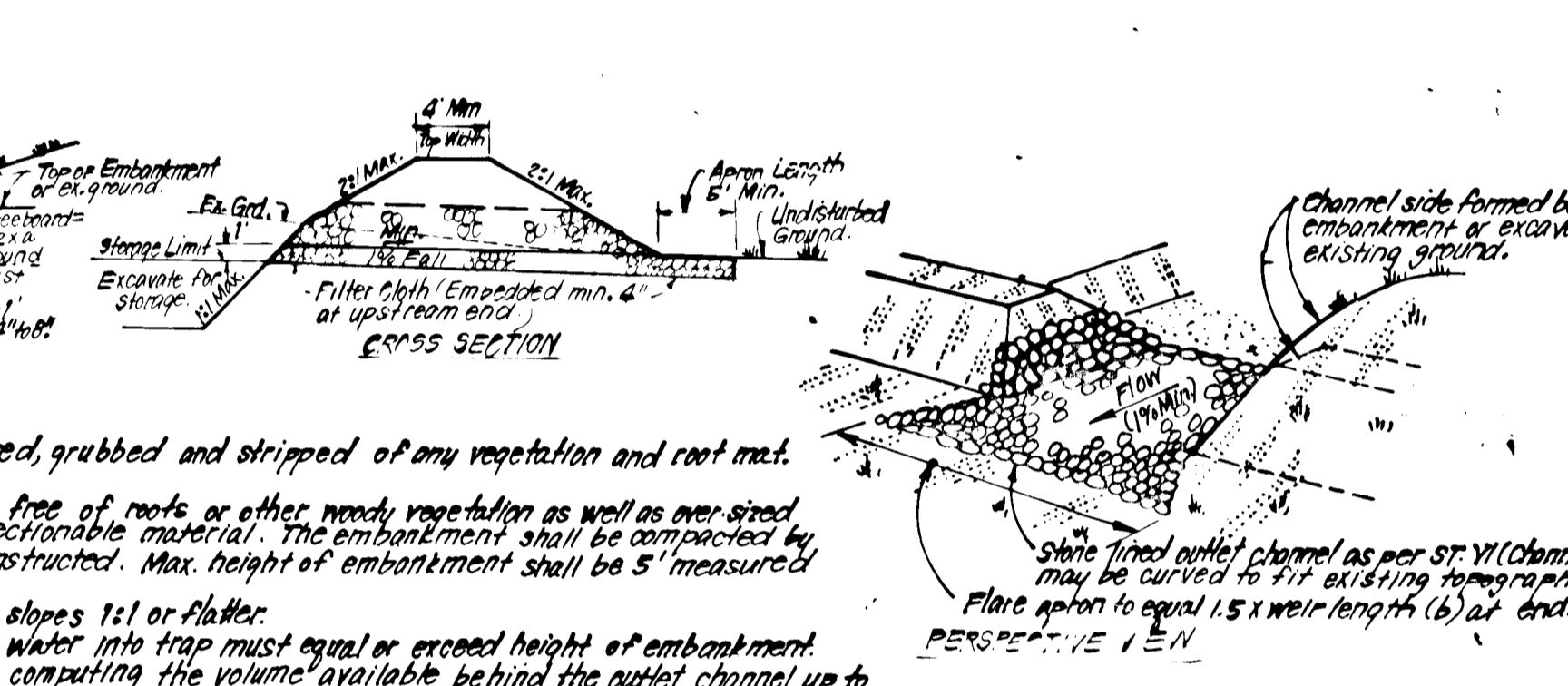
A Stone to be 2" Stone, or recycled concrete equivalent, in a layer at least 3" thick and be pressed into soil with construction equipment.
 B Rip Rap to be 4"-8" in a layer at least 8" thick, pressed into soil.
 C Approved equivalents can be substituted for any of the above materials.

EARTH DIKE DETAIL (E.D.)
NO SCALE



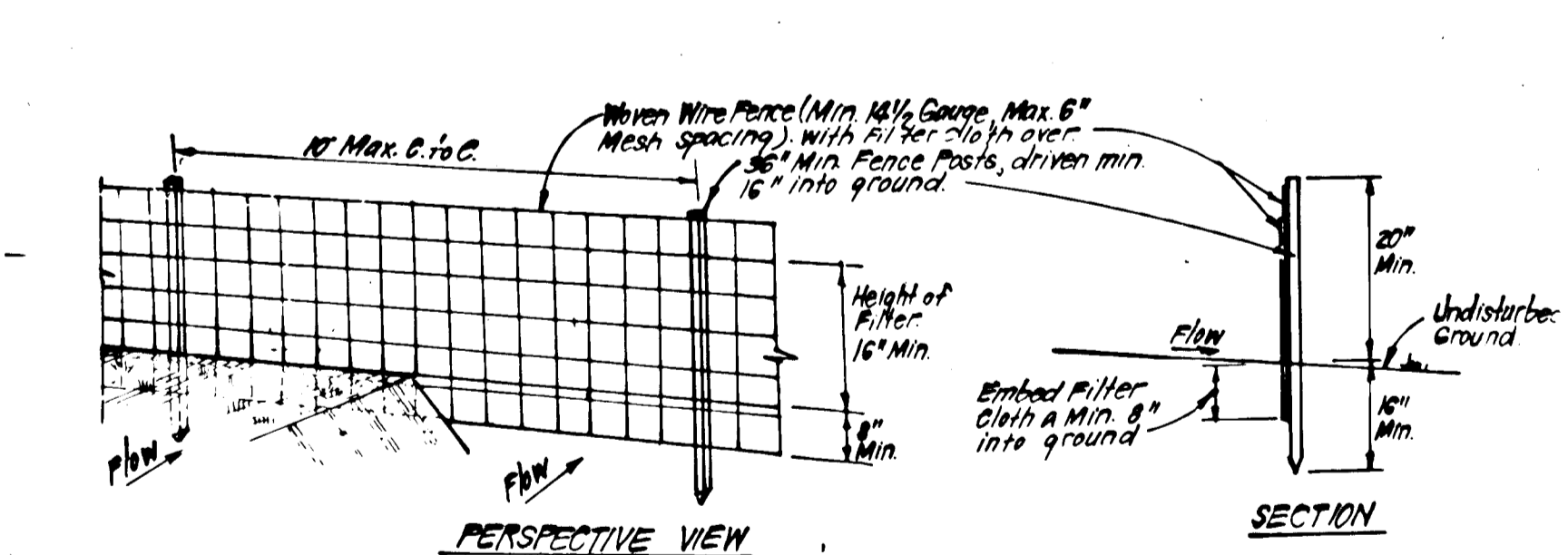
- CONSTRUCTION SPECIFICATIONS:**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The rip rap area shall be cleared.
 - The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small rip rap 4"-8" with 1" thickness of 2" aggregate placed on the up-grade 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.) ST.V.
NO SCALE



- CONSTRUCTION SPECIFICATIONS:**
- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equip. while it is being constructed. Max. height of embankment shall be 5' measured at top 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 height of embankment.
 - Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of 1' below the lower 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 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
 - Stone used in the outlet channel shall be 4"-8" rip rap, to provide a filtering effect, a layer of filter cloth or 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.

RIP RAP OUTLET SEDIMENT TRAP - ST-VI
NO SCALE



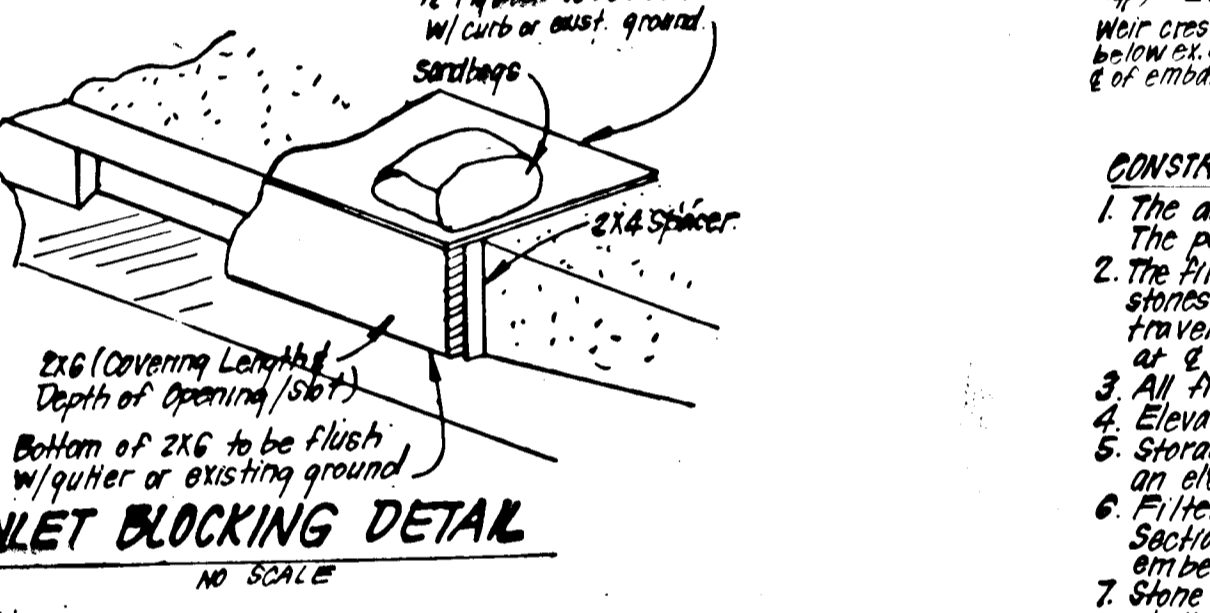
- CONSTRUCTION SPECIFICATIONS:**
- Woven wire fence to be fastened securely to fence posts with wire ties or staples.
 - Filter Cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
 - When 2 sections of filter cloth adjoin each other they shall be overlapped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

SILT FENCE DETAIL (S)
NO SCALE

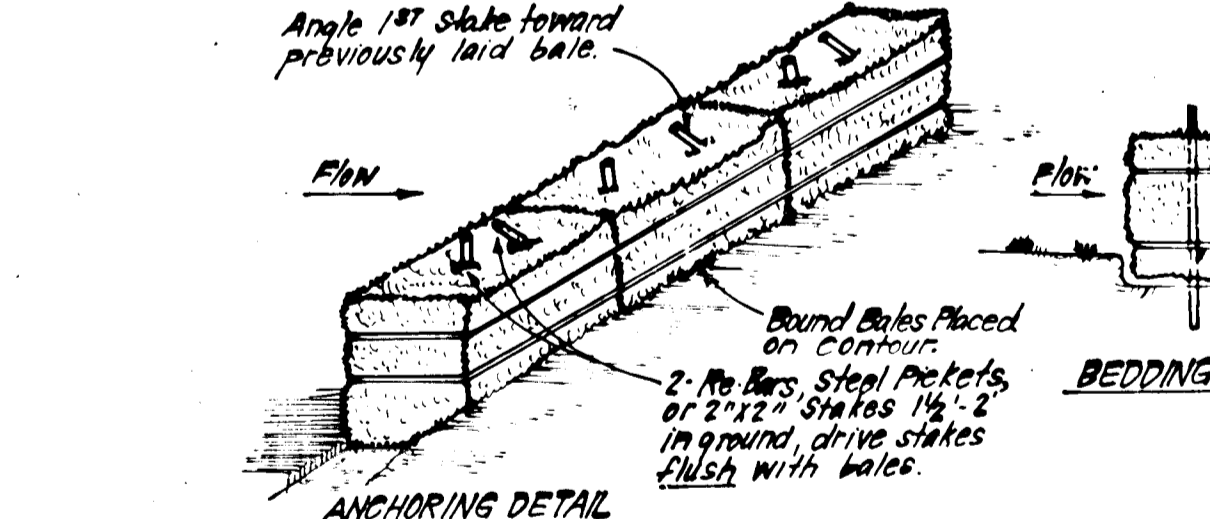
Reviewed for... *Howard A.D.D.*
 and meets Technical Requirements
Stephen L. Huly
 U.S. Soil Conservation Service
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT
 Approved *Stephen L. Huly* Date *6/29/86*

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."
Stephen L. Huly Date *4/1/86*

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 Dine Date *4-2-86*



INLET BLOCKING DETAIL
NO SCALE



- 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 slates or re-bar driven thru the bale. The 1st slate in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Slates 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

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) before seeding, 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) 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 reseeds.

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

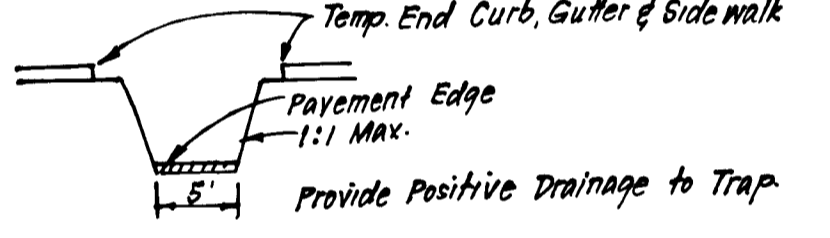
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft)

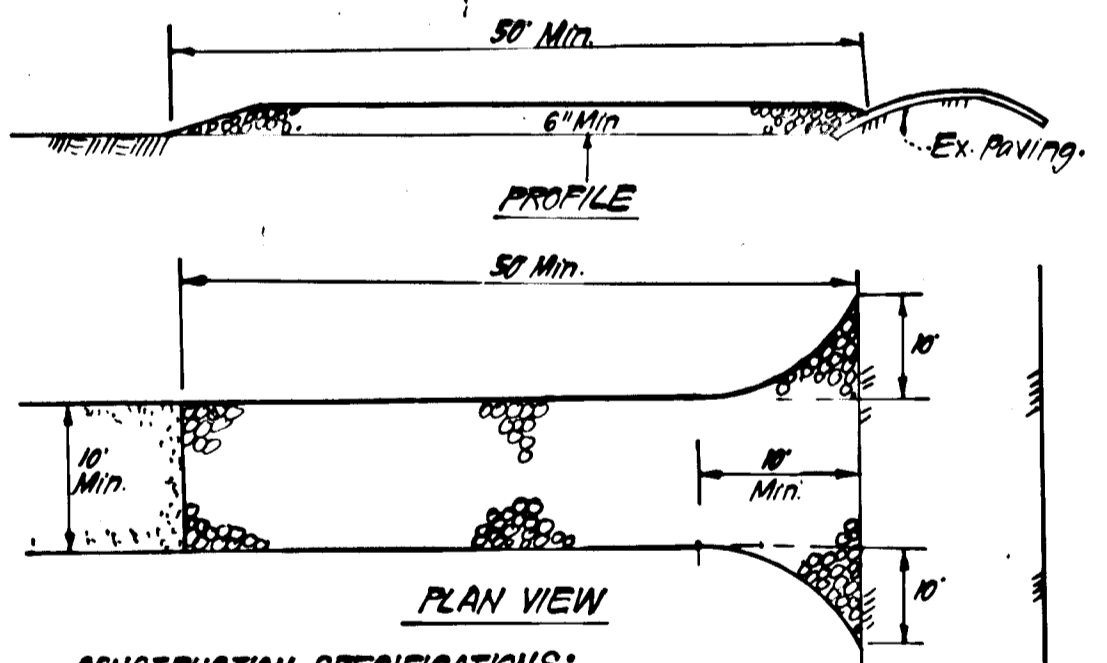
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 24 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect 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.



TEMPORARY DITCH DETAIL
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' min. length would apply.
 - Thickness - Not less than 6".
 - Width - Ten foot min, but not less than the full width at point where ingress of surface water 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.

- 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 sweeping with dust or broom. Conditions demand cleaning or blowing 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 shall be an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE (S.C.E.)
NO SCALE

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	Acres
Area Disturbed	17.940 Acres
Area to be roofed or paved	1.490 Acres
Area to be vegetatively stabilized	16.250 Acres
Total Cut	90.987 Cu. yds
Total Fill	78,060 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 DPW sediment control inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- If houses are to be constructed on an "As-Built" basis, at random, Single Lot Sediment Control as shown below shall be implemented. N/A
- 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 2190 L.F.

CONSTRUCTION SEQUENCE

	#DAYS
1. Obtain Grading Permit.	2
2. Clear and Grub for Installation of Sediment Control Measures.	1
3. Install Sediment & Erosion Control Measures & Stabilize.	5
4. Clear & Rough Grade Site & Temporarily Stabilize.	20
5. Construct Storm Drainage, Curb & Gutter, Paving & Sidewalks.	65
NOTE: Delay construction of C & G & Sidewalk in area of diversion Ditch. See Plan. Delay construction of 27" R.C.P. from 1-7 to 5-6 & 5-6. Block inlets immediately upon construction.	
6. Stabilize all Disturbed Areas on Site.	2
7. Upon approval of the Sediment Control Inspector Remove Sediment & Erosion Control Measures & Stabilize.	7
8. Construct 27" RCP from 1-7 to 5-6 & 5-6. Construct S.W.M. Infiltration Basin, C.P.V.C. Perforated and Anti-Sweep Collectors utilizing SBO's as necessary.	15

APPROVED: DEPARTMENT OF PUBLIC WORKS
 REVISION
 12-28-90 Date

John M. Muehlman Date *6-25-86*
 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
DRAWN SEDIMENT & EROSION CONTROL PLAN
CHECKED CHESTNUT FARMS
DATE SECTION 1 AREA 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 FOR: KEHOE COMPANY INC.
 1130 Minnetel Way #200
 Columbia Md. 21045

SCALE: As Shown
 DRAWING: 7 OF 7
 JOB NO.: 86-024
 FILE NO.: 86-024-D