

Approved: *John F. DiGianni* 8-26-83
 Date: _____
 Howard S.C.D.

- GENERAL NOTES:**
- All Construction shall be in accordance with the latest details and Specifications of Howard County & Md. S.C.D.
 - Types of Storm Drain Structures refer to the Standard Details of Howard County & Maryland State Highway Administration.
 - Trench Construction for Storm Drains within Road or street right of way limits shall be in accordance with Howard Co. Design Manual Vol. II.
 - 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 control services, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices" 1971 Edition.
 - Sag and Crest Vertical Curves were designed in accordance with "A Policy on Geometric Design of Rural Highways, 1965, by AASHTO.
 - Provide Concrete Sidewalk Ramps in Curbs where shown in plan. (Max 12:1 slope) See Ho. Co. Sid. Sidewalk Ramp, Type A, R. 4-01.
 - Design Speed: 50' R/W = 30 mph.
 - Class C Trench Bedding to be used for all Storm Drain Construction Unless otherwise shown.

APPROVED: Department of Public Works
James M. Hela 8-26-83
 Chief, Bureau of Engineering
 APPROVED: Howard County Office of Planning & Zoning
John F. DiGianni 8-26-83
 Chief, Division of Land Development & Zoning Administration

CLARK · FINEFROCK & SACKETT
 ENGINEERS · PLANNERS · SURVEYORS
 11315 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND · 20904 (301) 893 3400

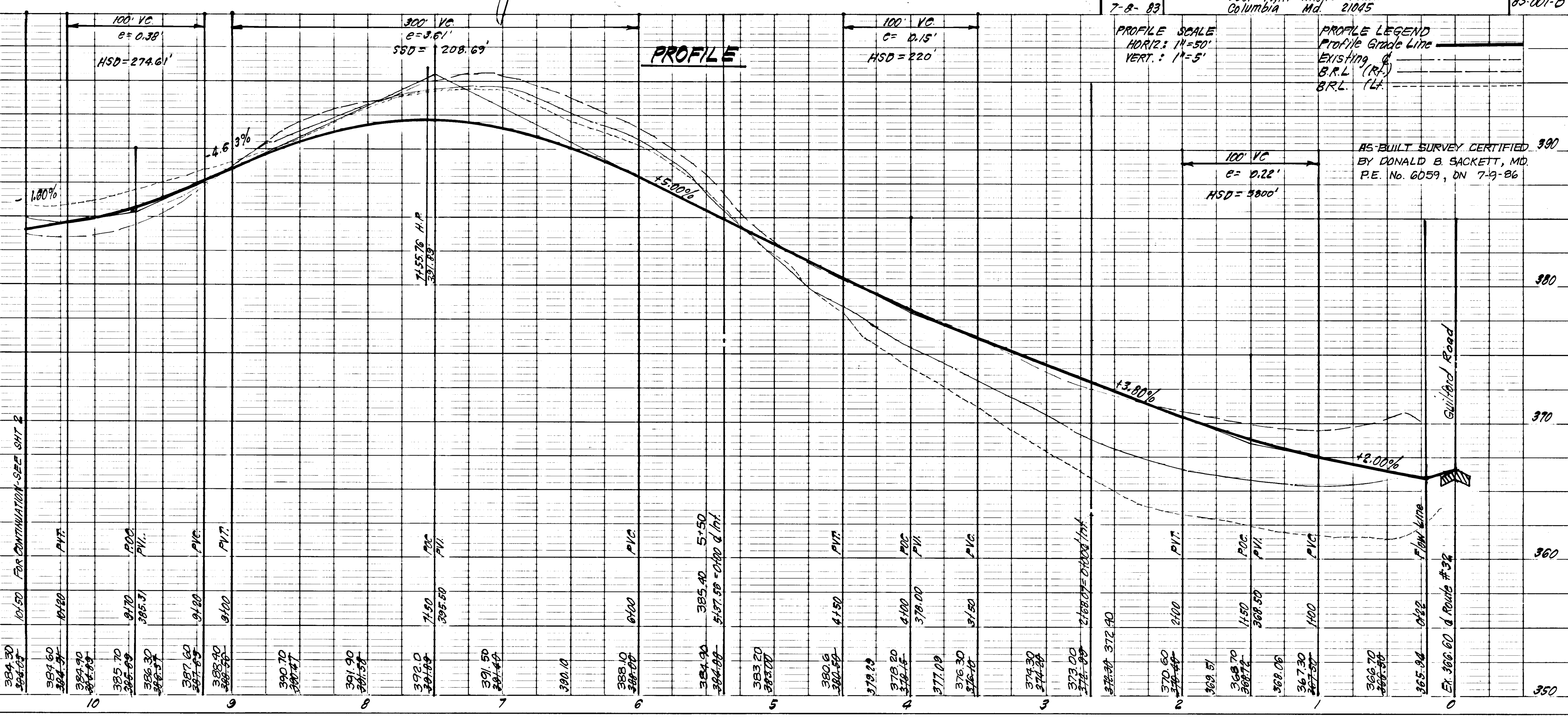
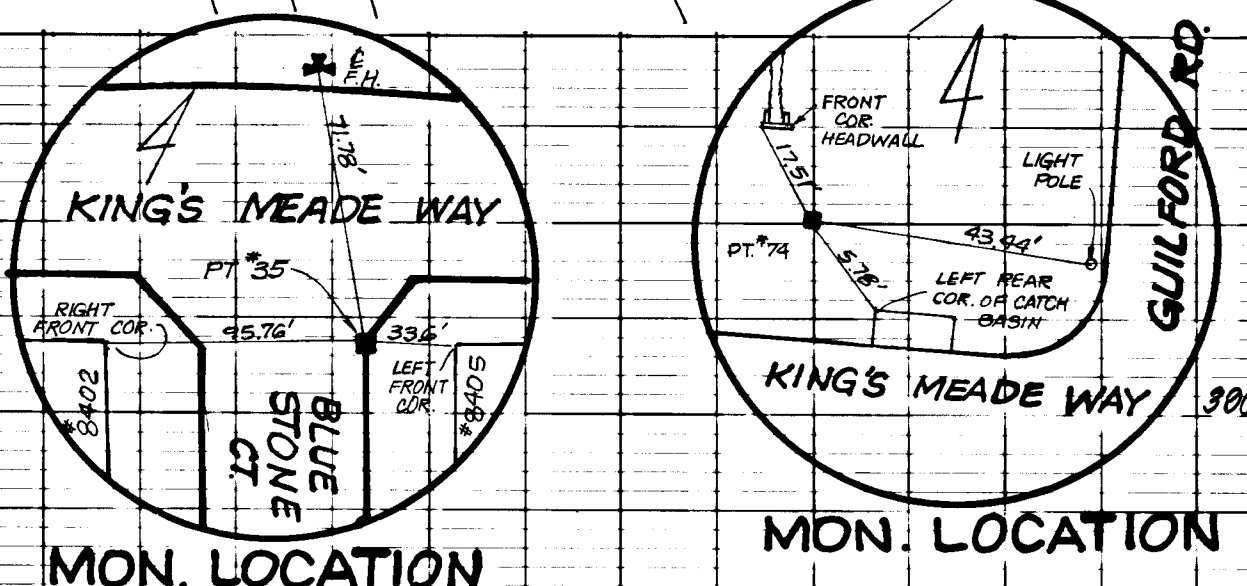
DESIGNED DAB	ROAD CONSTRUCTION PLANS KING'S MEADE WAY	SCALE AS SHOWN
DRAWN KIM	PLEASANT GROVE	DRAWING 1 OF 11
CHECKED DAB	SECTION 1 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 83-001
DATE 7-8-83	FOR: BRANTLEY DEVELOPMENT CORP. 550 TWIN KINGS ROAD Columbia Md. 21045	FILE NO. 83-001-D

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."
John F. DiGianni 8-19-83
 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."
G. Nelson Clark 7-11-83
 Signature of Engineer Date

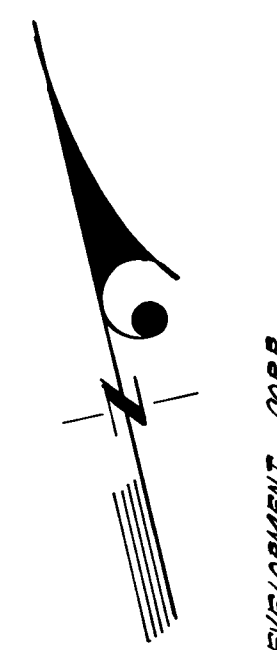
PLAN
 SCALE: 1"=50'

James M. Hela 8-26-83
 U.S. Soil Conservation Service Date

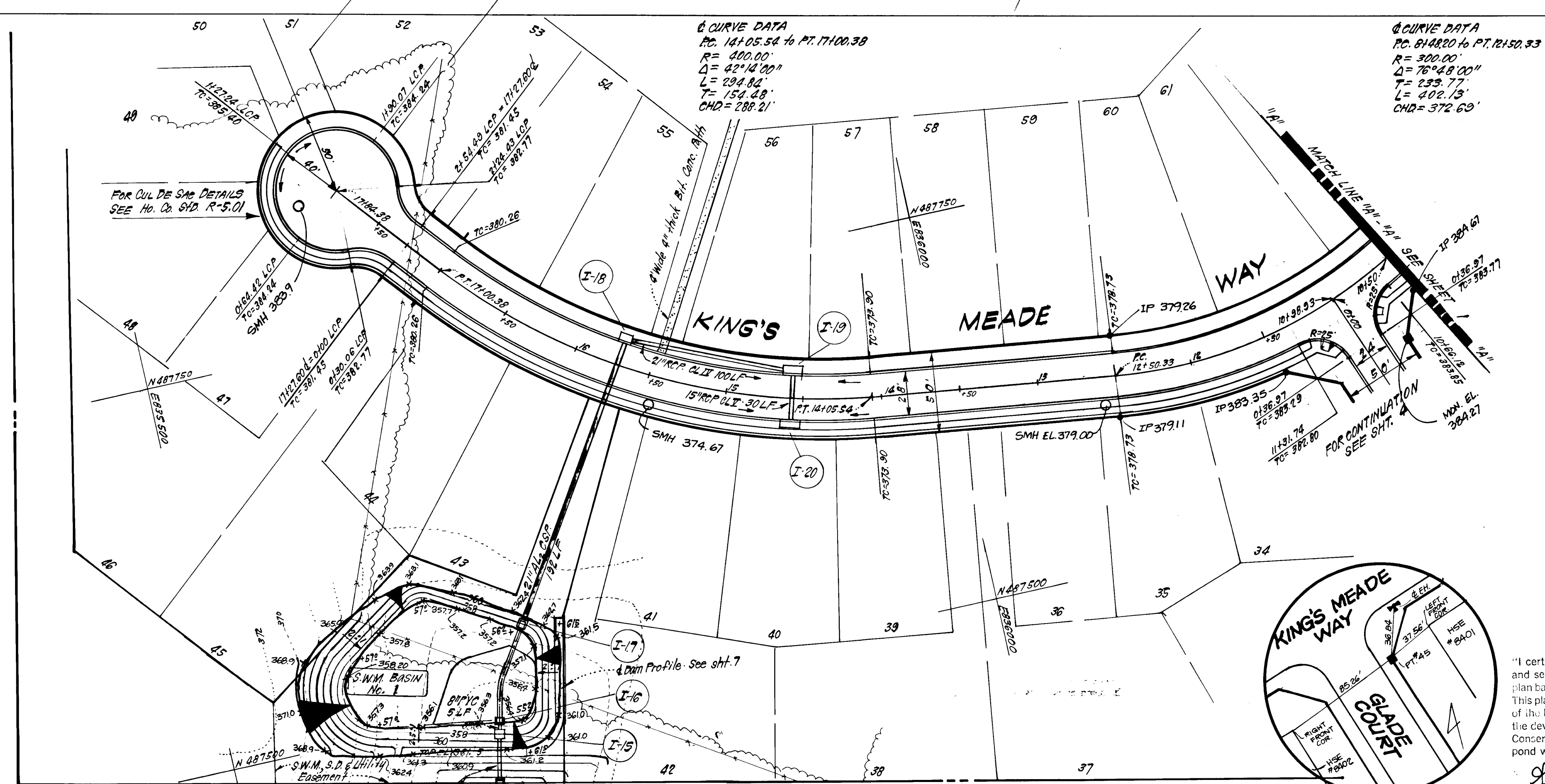


#1010

AS-BUILT



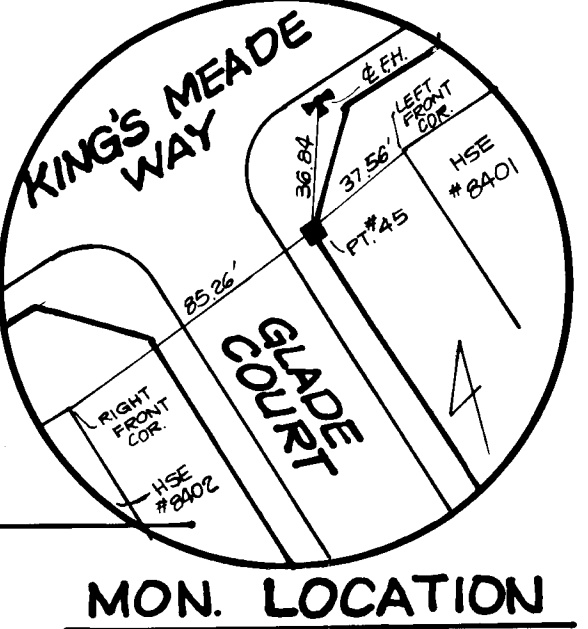
THE HOWARD RESEARCH & DEVELOPMENT CORP.
L. 406 F. 506



THE H.R.D. CORP.
L. 406 F. 506

COLUMBIA
YOKC. SECT. 2 AREA 3
PLATS 4932 & 4930

PLAN
SCALE: 1"=50'



MON. LOCATION

DEVELOPER'S CERTIFICATE
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Signature of Developer: [Signature]
Date: 8-19-83



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."
Signature of Engineer: [Signature]
Date: 7-11-83

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Approved: [Signature] 8-26-83
Howard S.C.D. Date

Par 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.
Signature: [Signature] 8-26-83
Howard S.C.D. Date

APPROVED: Department of Public Works
[Signature] 8-26-83
Date

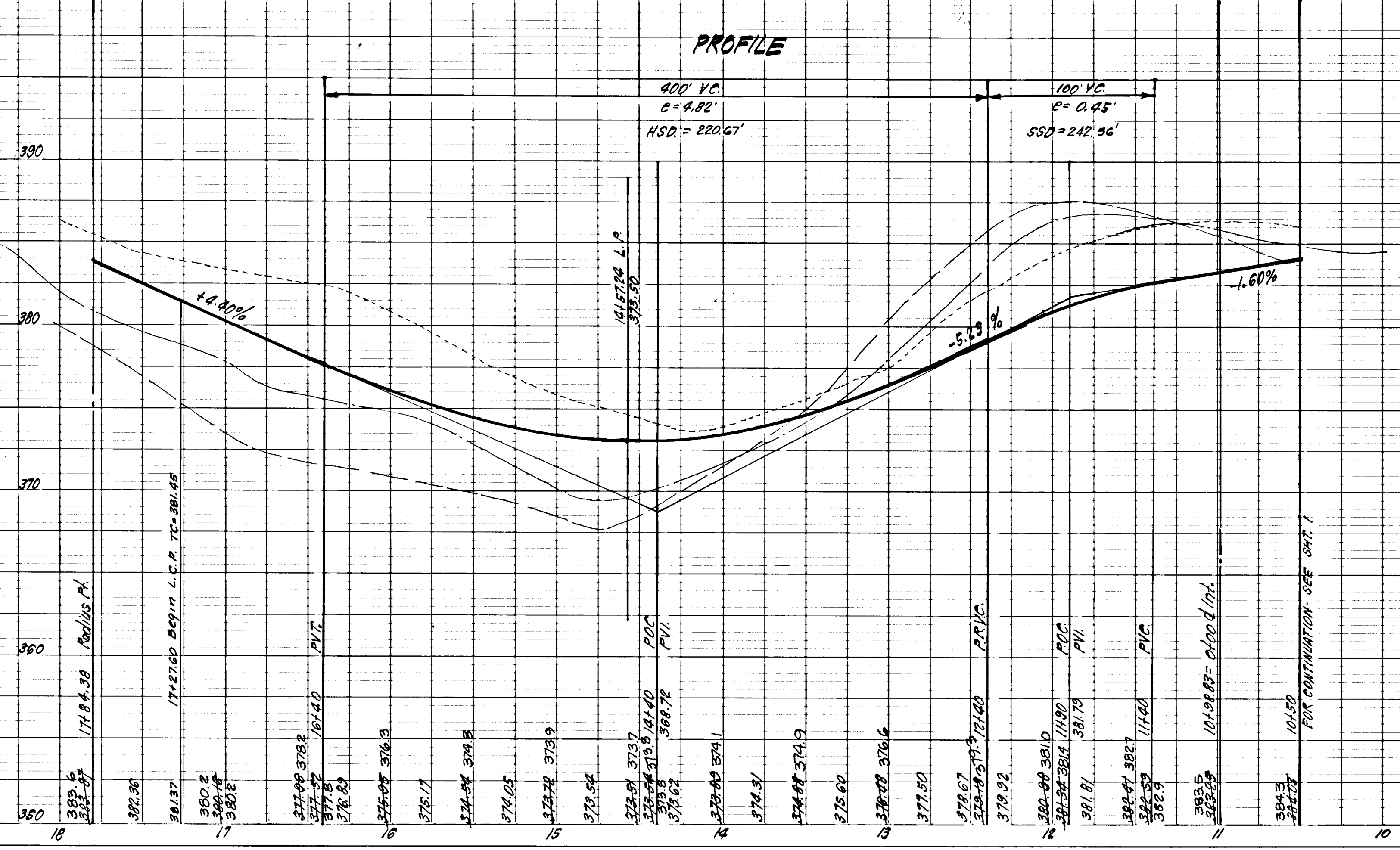
Chief, Bureau of Engineering

APPROVED: Howard County Office of Planning & Zoning
[Signature] 8-27-83
Date

Chief, Division of Land Development & Zoning Administration

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

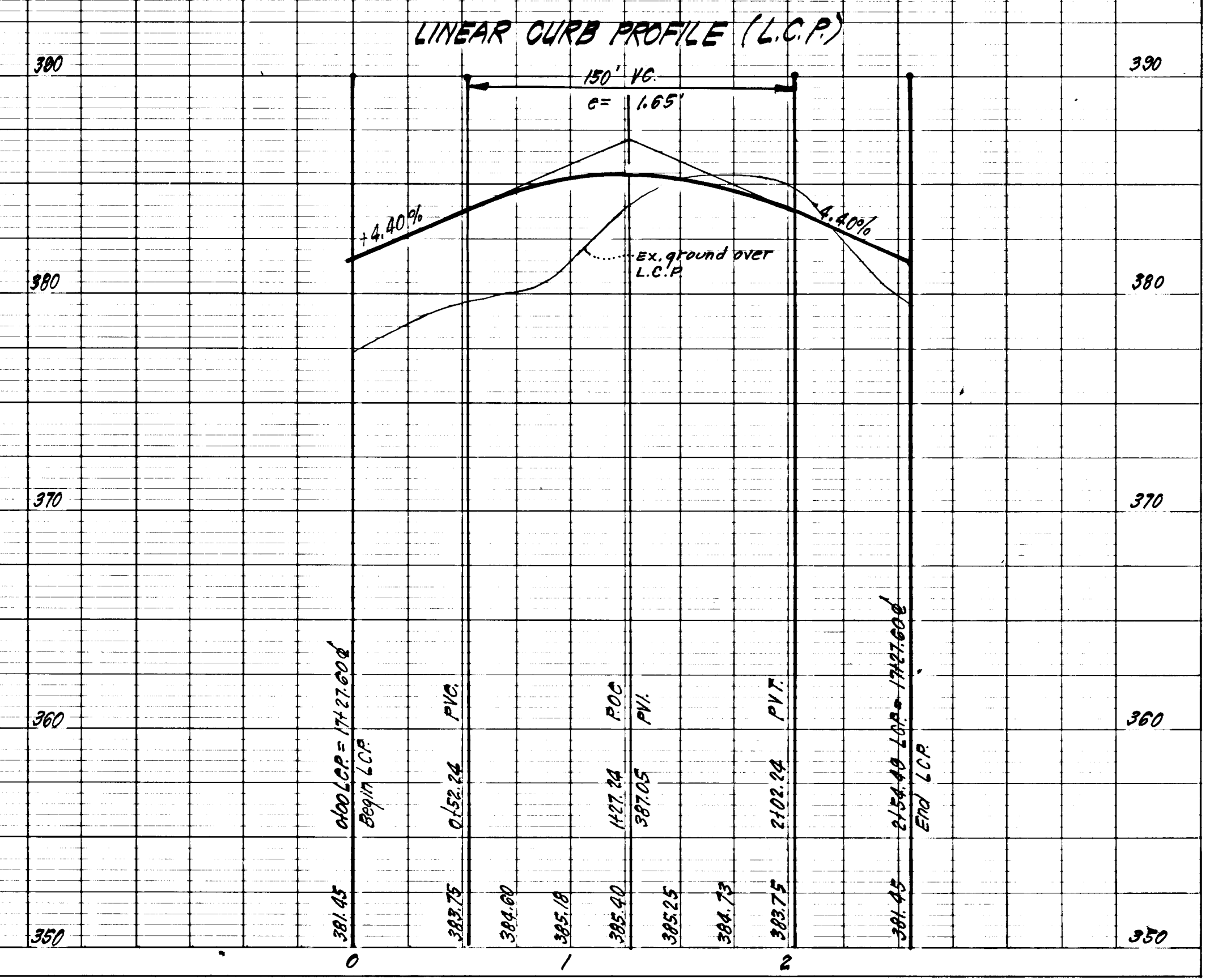
DESIGNED DAB	ROAD CONSTRUCTION PLANS KING'S MEADE WAY	SCALE AS SHOWN
DRAWN KIW	PLEASANT GROVE	DRAWING 2 OF 11
CHECKED DAB	SECTION 1 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 83-001
DATE 7-8-83	FOR: BRANTLY DEVELOPMENT CORP. 5501 Twin Knolls Road, Columbia Md 21045	FILE NO. 83-001-D



AS-BUILT SURVEY CERTIFIED BY
DONALD B. SACKETT, MD. P.E. No.
6059, ON 7-9-86

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

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

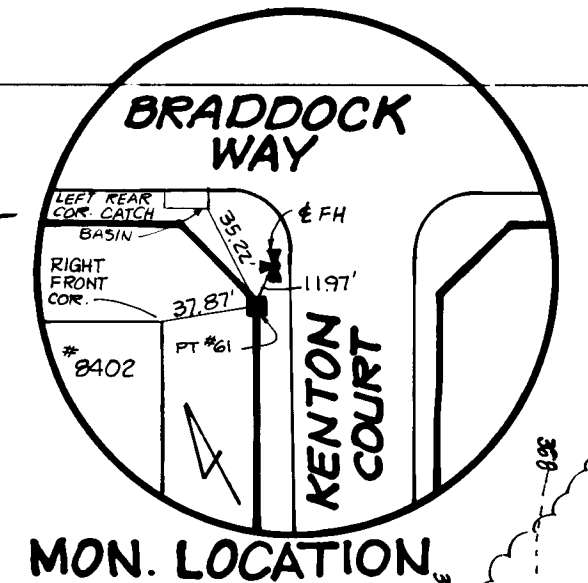


F-64-07
AS-BUILT 7-9-86

& CURVE DATA
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 T = 34.64
 L = 62.87
 CHD = 65.72

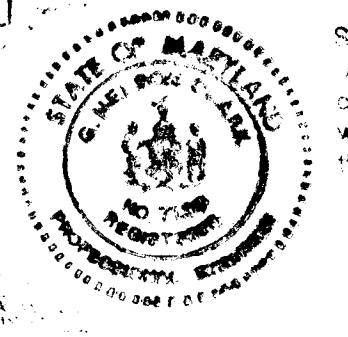
& CURVE DATA
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 R = 400.00
 Δ = 28°40'30"
 T = 102.24
 L = 220.18
 CHD = 198.11

RIVERS CORPORATE PARK
PLAT 5078



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 are deemed necessary.
 Signature of Developer/Builder: *John T. ...*
 Date: 8-19-83

Reviewed for: *Howard* S.C.D.
 Name: *Howard*
 Signature: *John T. ...*
 Date: 8-26-83
 U.S. Soil Conservation Service



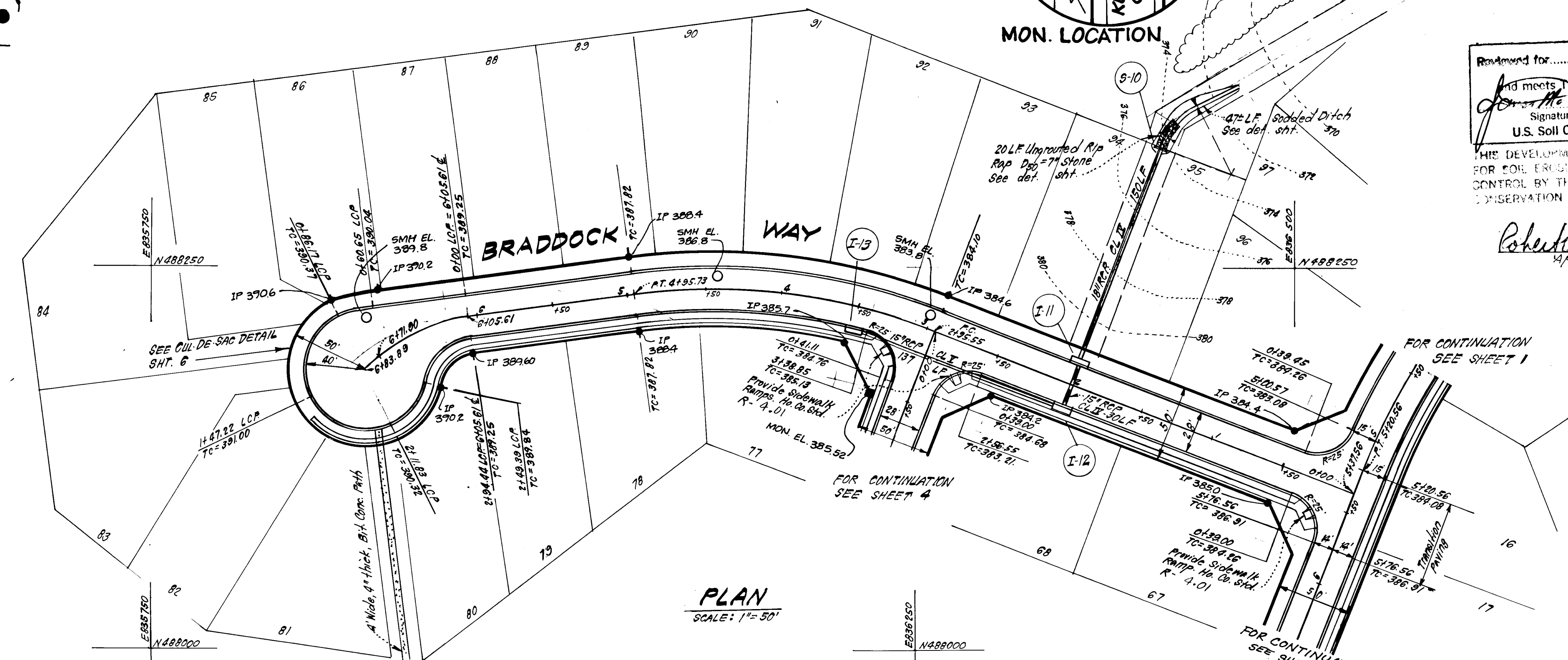
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature: *G. Nelson Clark*
 Date: 7-11-83

Approved: *Robert W. ...*
 Date: 8-26-83

APPROVED: Department of Public Works
 Signature: *...*
 Date: 8-1-83
 APPROVED: Howard County Office of Planning and Zoning
 Signature: *...*
 Date: 8-7-83

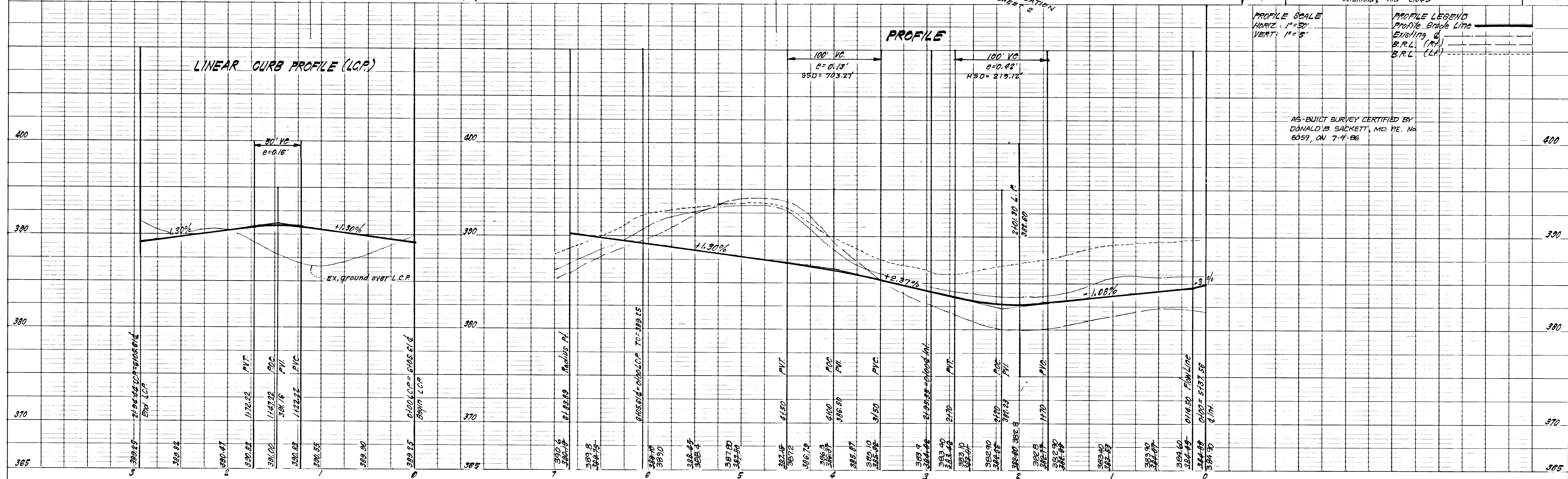
CLARK · FINEFROCK & SACKETT
 ENGINEERS · PLANNERS · SURVEYORS
 11315 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593 3400

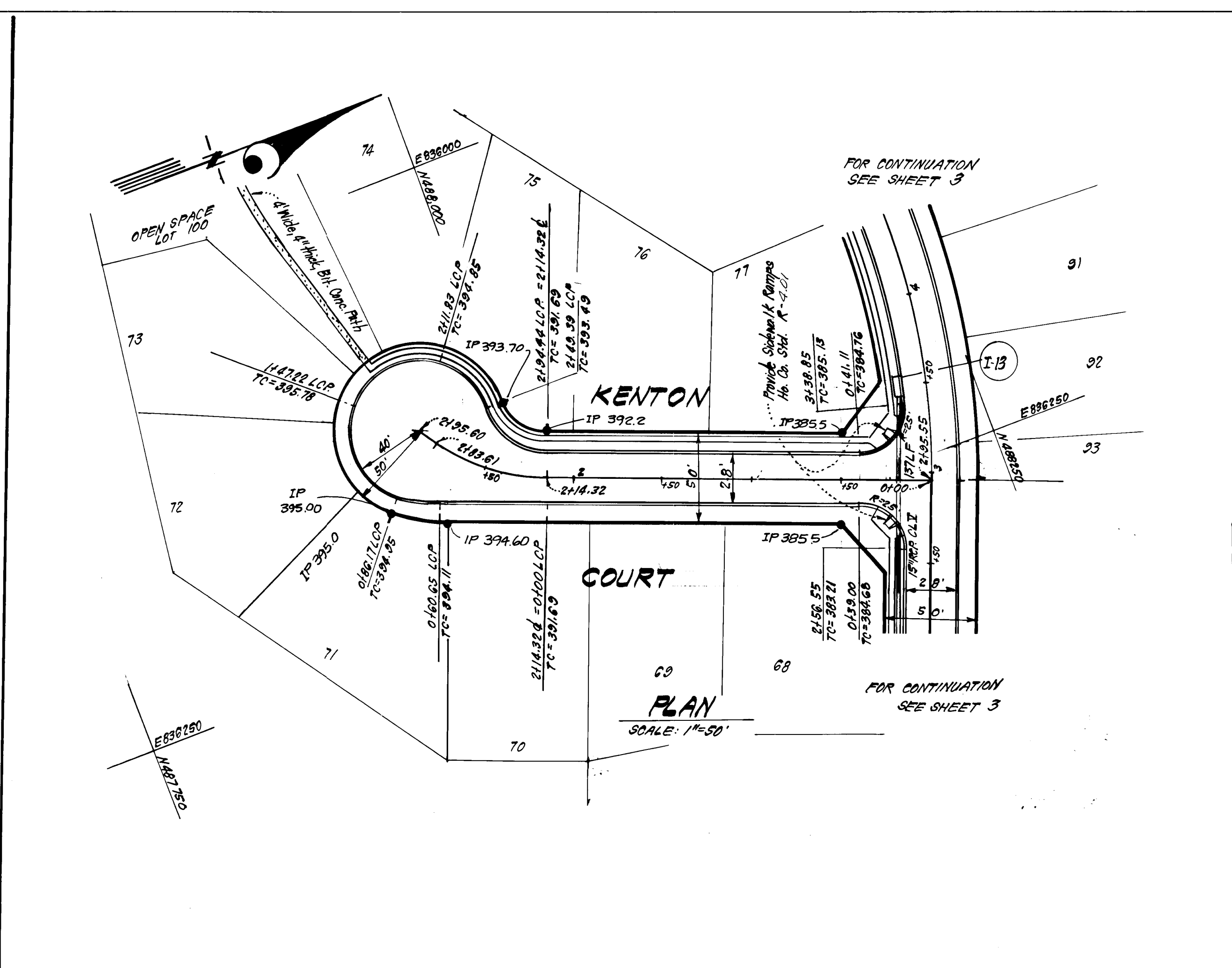
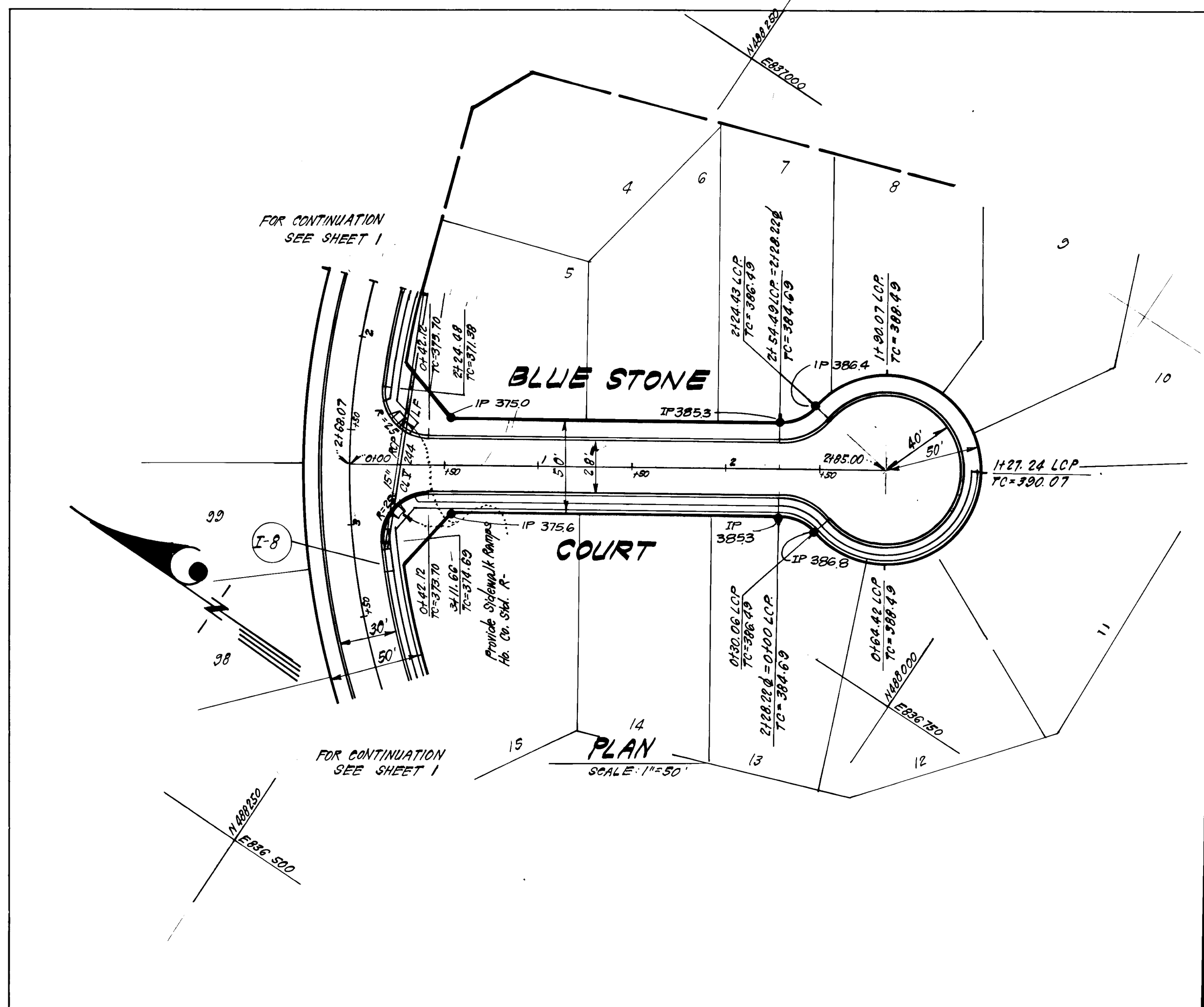
DESIGNED	DAB	ROAD CONSTRUCTION PLANS BRADDOCK WAY	SCALE	AS SHOWN
DRAWN	KIW		DRAWING	3 of 11
CHECKED	DAB	SECTION 1 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO.	83-001
DATE	7-8-83	FOR: BRANTLY DEVELOPMENT CORP. 5501 TWIN KNOLLS RD. Columbia, Md 21045	FILE NO.	83-001-D



LINEAR CURB PROFILE (LCP)

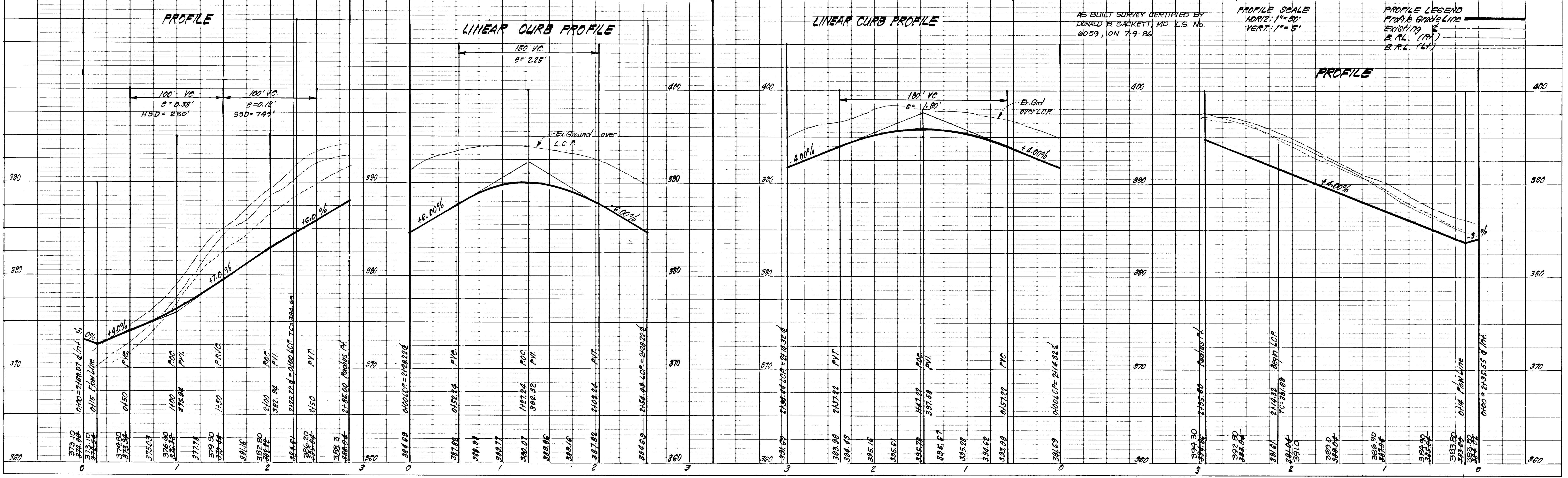
PROFILE





D. M. Cook
7-11-83

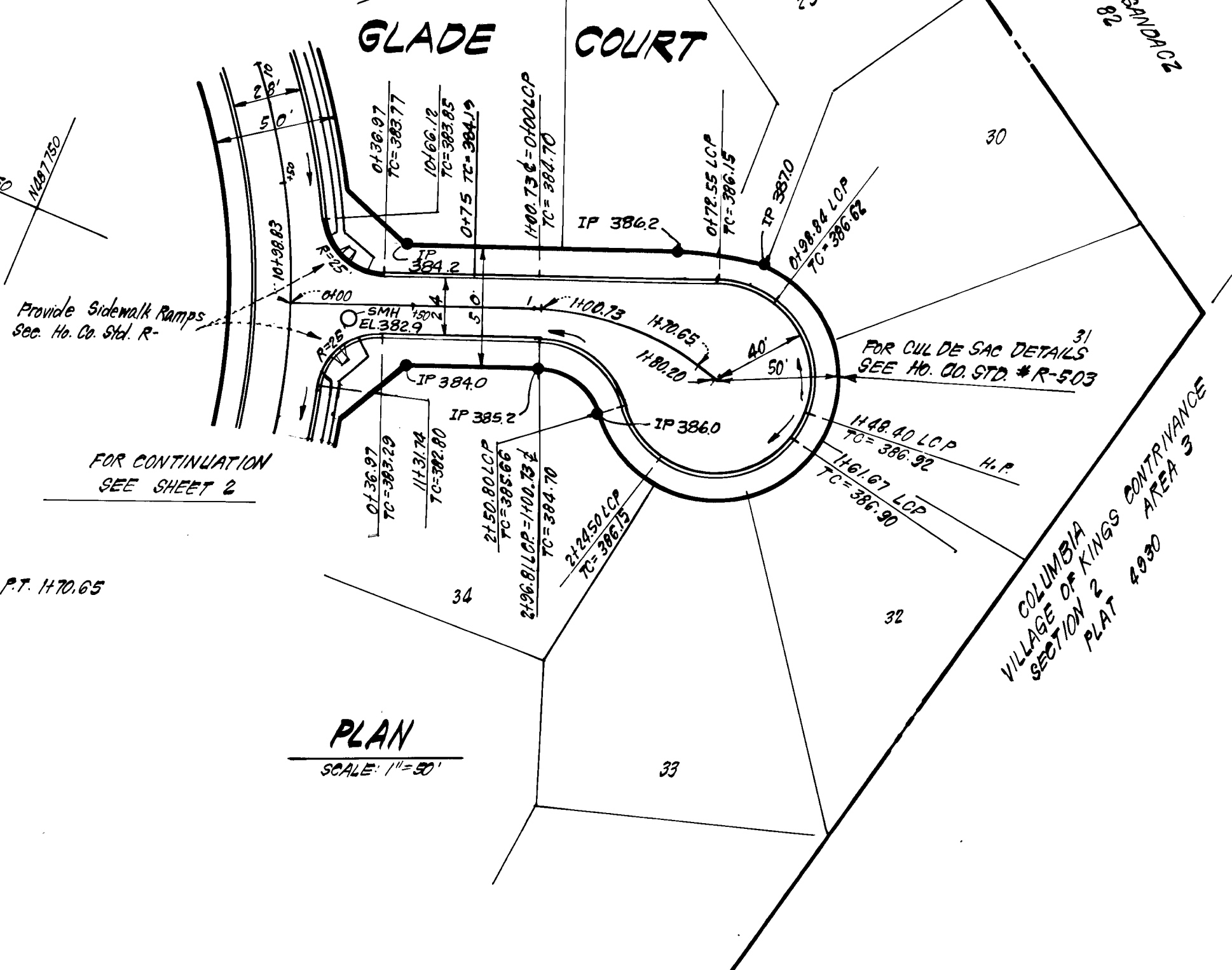
APPROVED: Department of Public Works		
<i>D. M. Cook</i>	Chief, Bureau of Engineering	7-11-83
APPROVED: Howard County Office of Planning and Zoning		
<i>D. M. Cook</i>	Chief, Division of Land Development & Zoning Administration	7-11-83
CLARK FINEFROCK & SACKETT ENGINEERS • PLANNERS • SURVEYORS		
11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400		
DESIGNED DAB	ROAD CONSTRUCTION PLANS BLUE STONE COURT & KENTON COURT	SCALE AS SHOWN
DRAWN K/W	PLEASANT GROVE SECTION 1 AREA 1	DRAWING 40711
CHECKED DAB	6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 83001
DATE 7-8-83	FOR: BRANTLY DEVELOPMENT CORP. 5501 TWIN KNALS RD. Columbia, Md. 21045	FILE NO. 83001-D



F-84-07
AS-BUILT 7-9-89

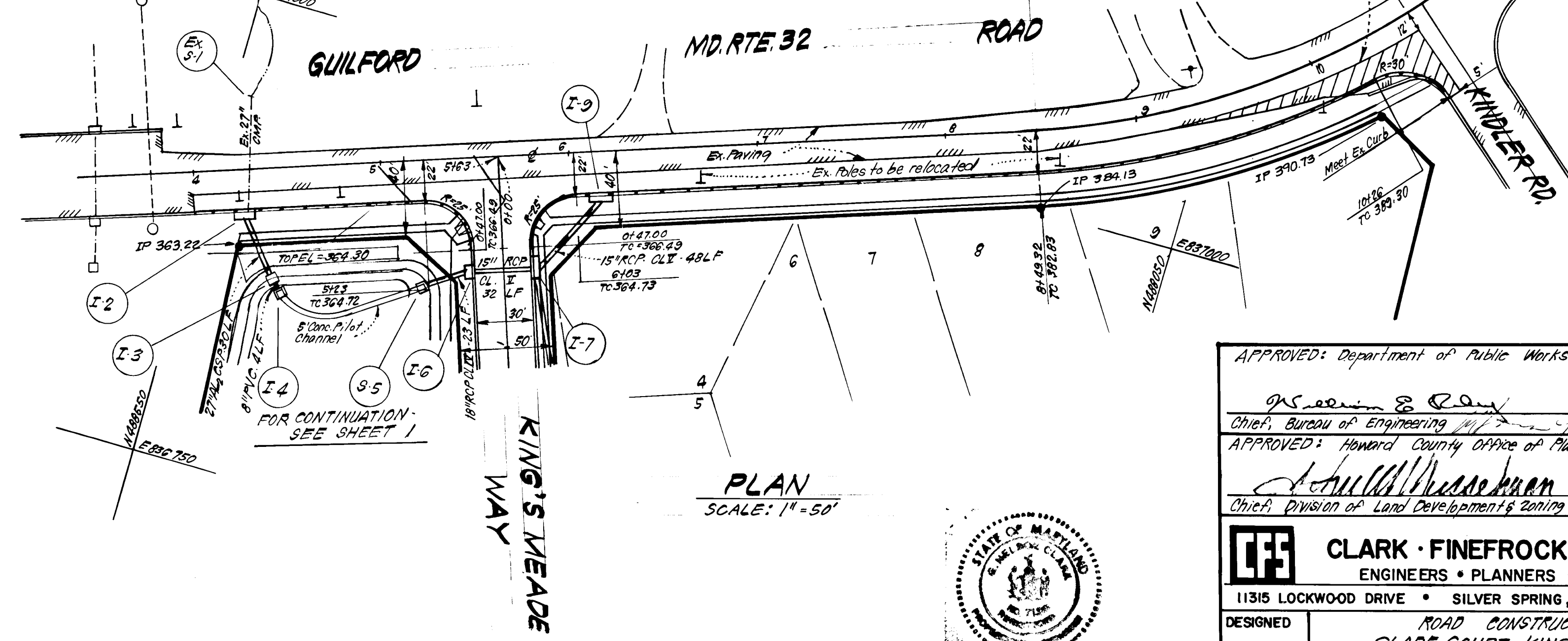
CURB & GUTTER LEGEND:
 SHI 7" Concrete Curb & Gutter
 Modified Conc. Curb & Gutter

Remove existing paving
 replace in accordance
 with widening det. sht. 6.



CURVE DATA
 PC 1400.73 to PT. 1470.65
 R = 100.37'
 Δ = 97°39'45"
 L = 63.92'
 T = 36.28'
 CHD = 68.67'

PLAN
 SCALE: 1" = 80'



PLAN
 SCALE: 1" = 50'

APPROVED: Department of Public Works
John E. Ryan 9-1-83
 Chief, Bureau of Engineering
 APPROVED: Howard County Office of Planning and Zoning
John W. Haddock 8-29-83
 Chief, Division of Land Development & Zoning Administration

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ROAD CONSTRUCTION PLANS
 GLADE COURT, KING'S MEADWAY
 & GUILFORD ROAD

PLEASANT GROVE
 SECTION 1 AREA 1
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FOR: BRANTLY DEVELOPMENT CORP.
 5501 TWIN KNOLLS RD.
 Columbia, Md 21045

DESIGNED: DAB
 DRAWN: KIW
 CHECKED: DAB
 DATE: 7-8-83

SCALE: AS SHOWN DRAWING
 5" = 11'
 JOB NO.: 83-001
 FILE NO.: 83-001-D

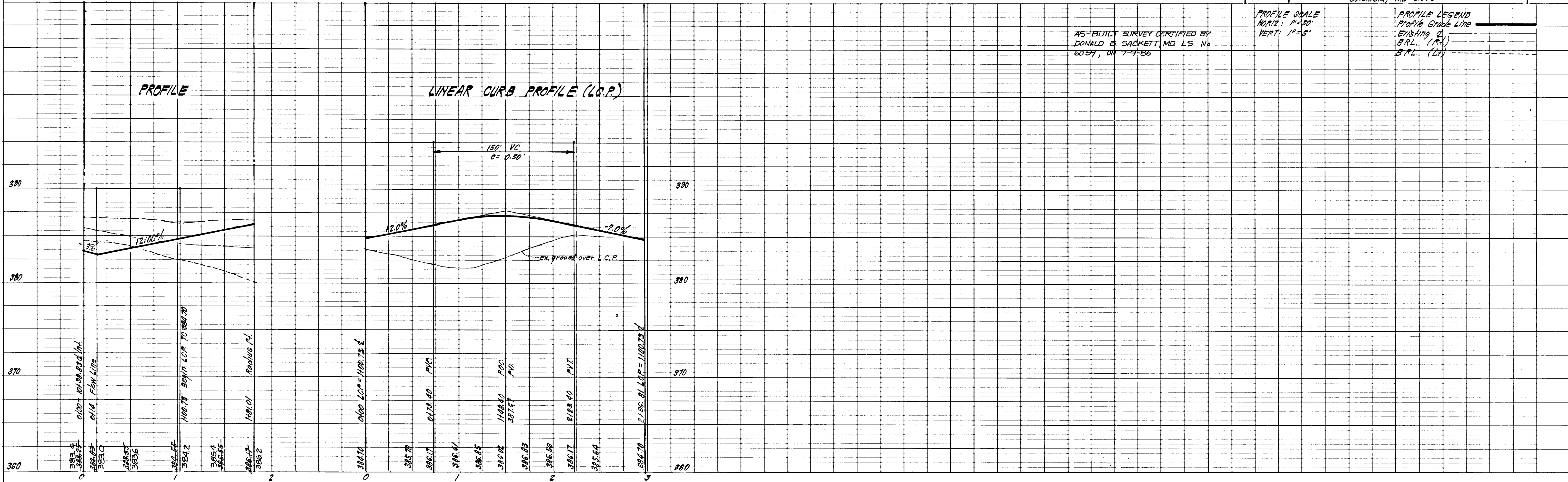


D. B. Sackett
 7-11-83

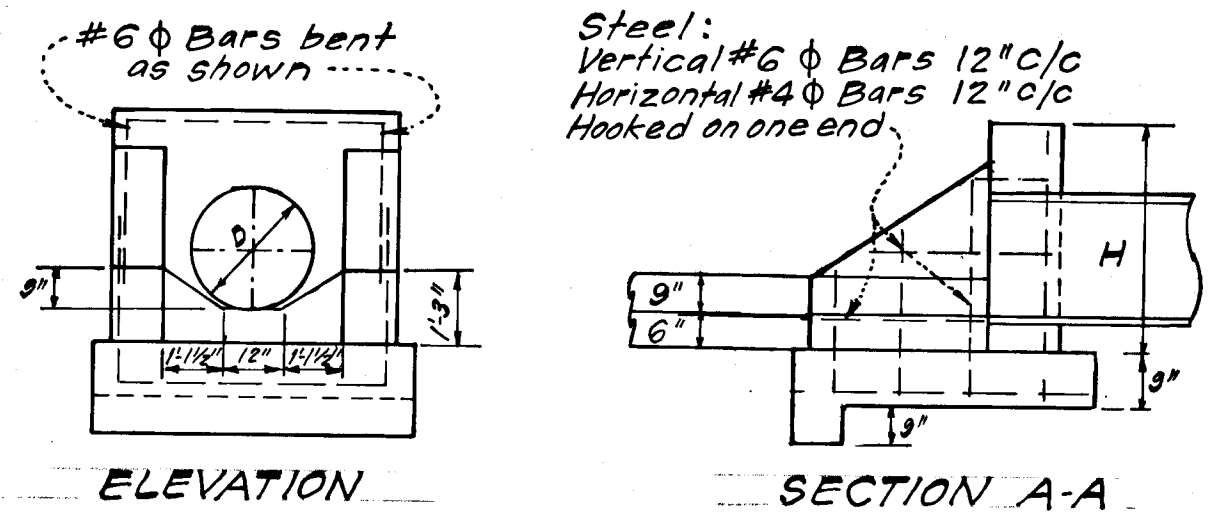
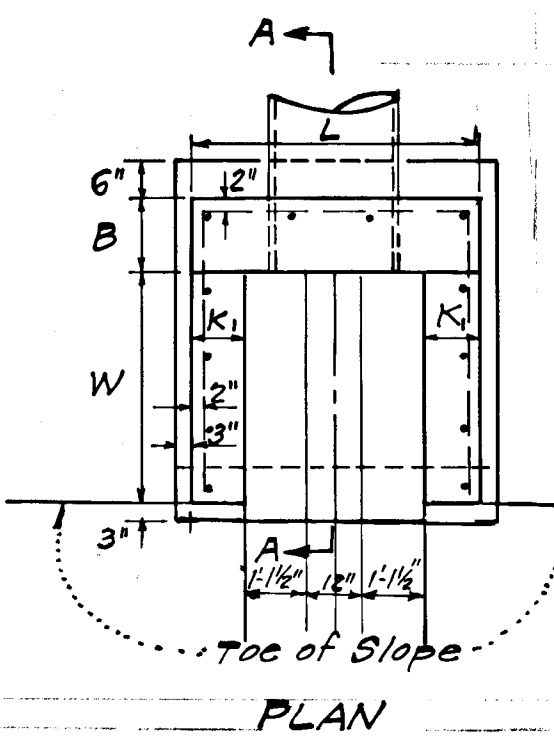
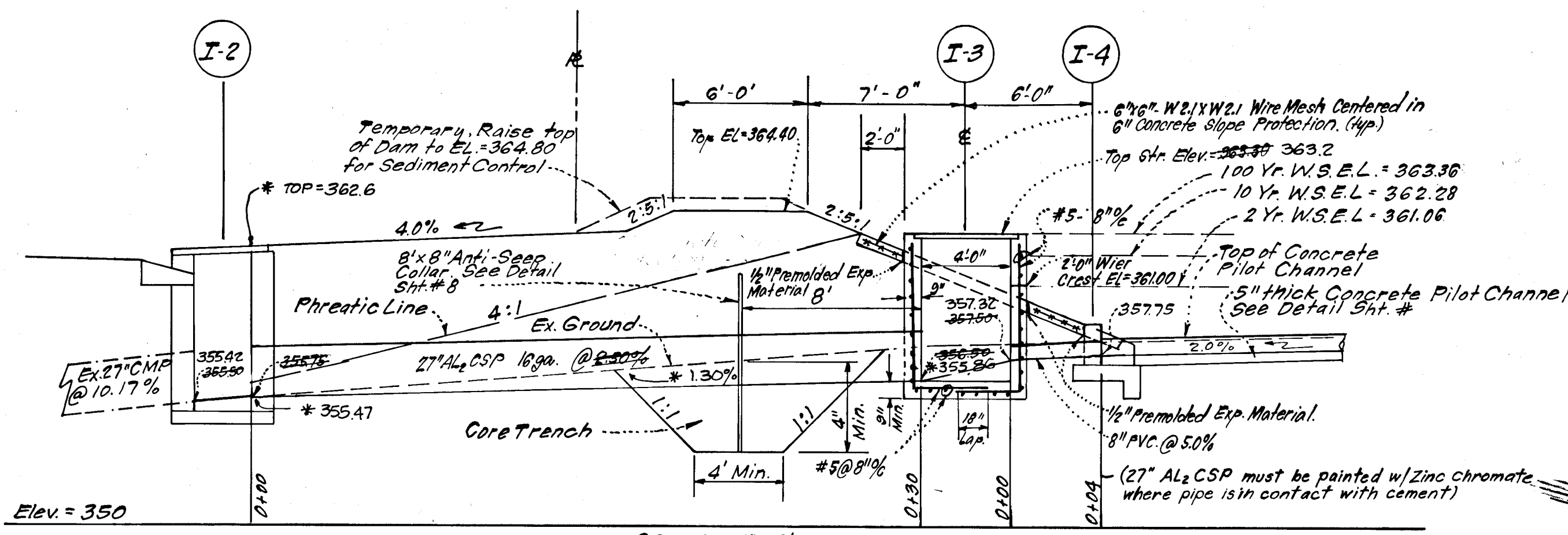
AS-BUILT SURVEY CERTIFIED BY
 DONALD B. SACKETT, MD. L.S. No. 60377, ON 7-9-86

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

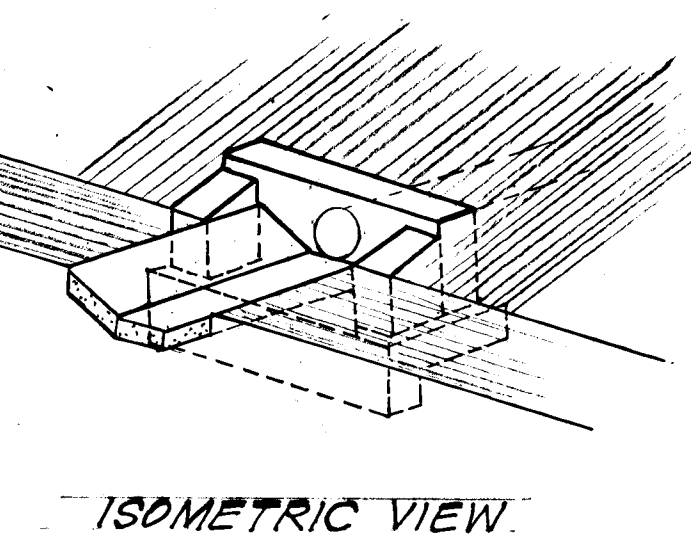
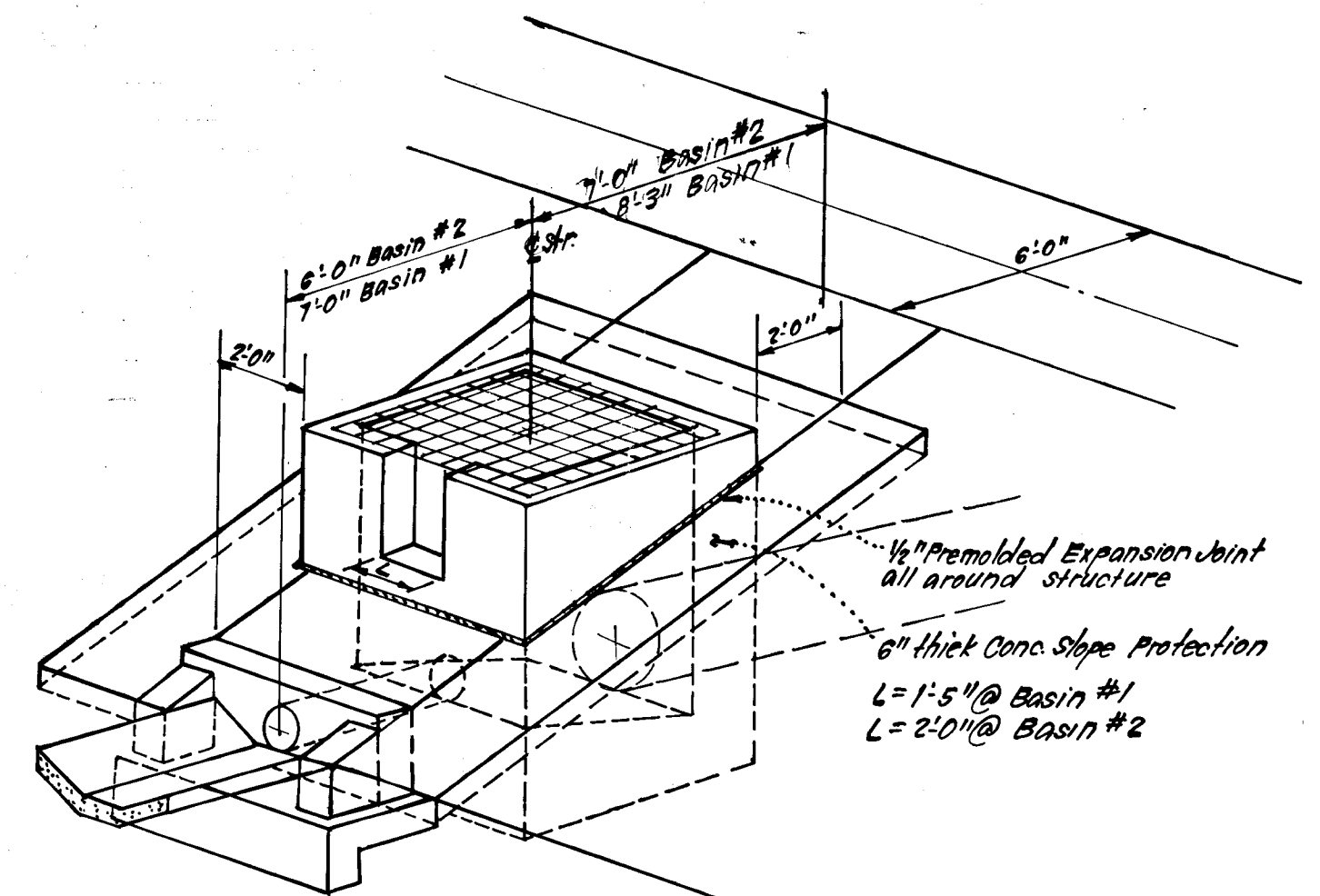
PROFILE LEGEND
 Profile Grade Line
 Existing G.L.
 B.R.L. (R.L.)
 B.R.L. (L.H.)



* AS OF 11-20-86



CONCRETE DIMENSIONS						
STR. No.	DIA.	ENDWALL		WINGS		
		L	B	H	W	K
I-4	8"	4'-9"	3'	1'-11"	12"	6"
S-5	18"	4'-9"	9"	2'-6"	2'-5"	6"
S-14	24"	4'-9"	12"	3'-2"	3'-9"	9"
I-16	8"	4'-9"	9"	1'-11"	12"	6"
S-17	21"	4'-9"	9"	2'-10"	3'-11"	6"

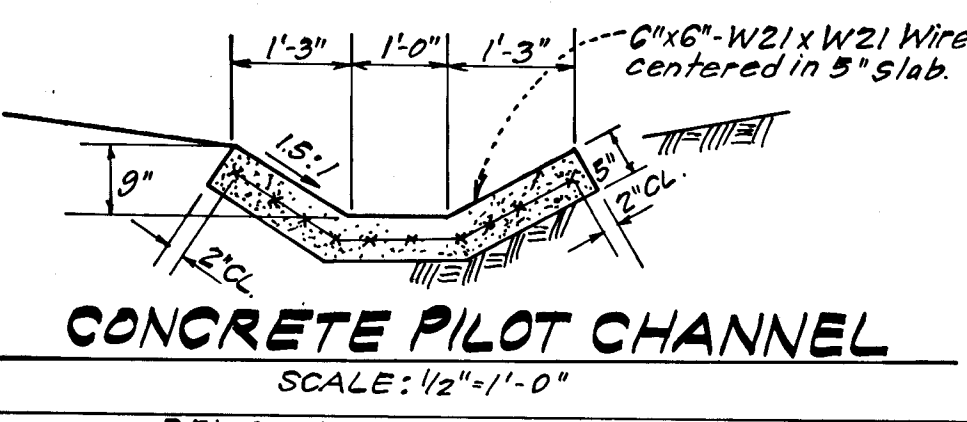
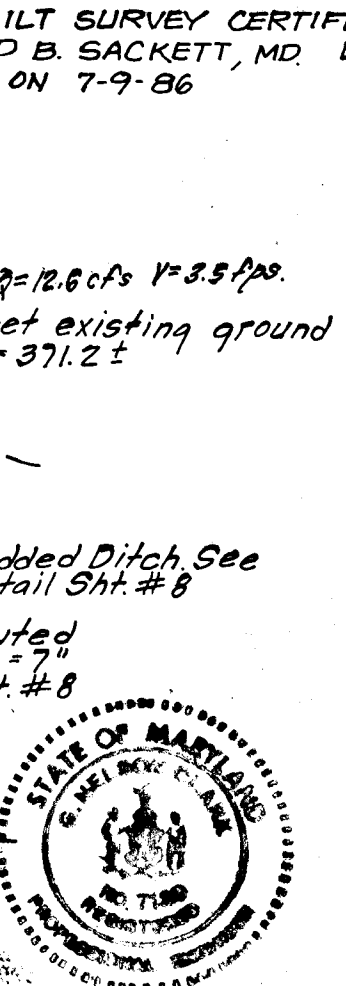
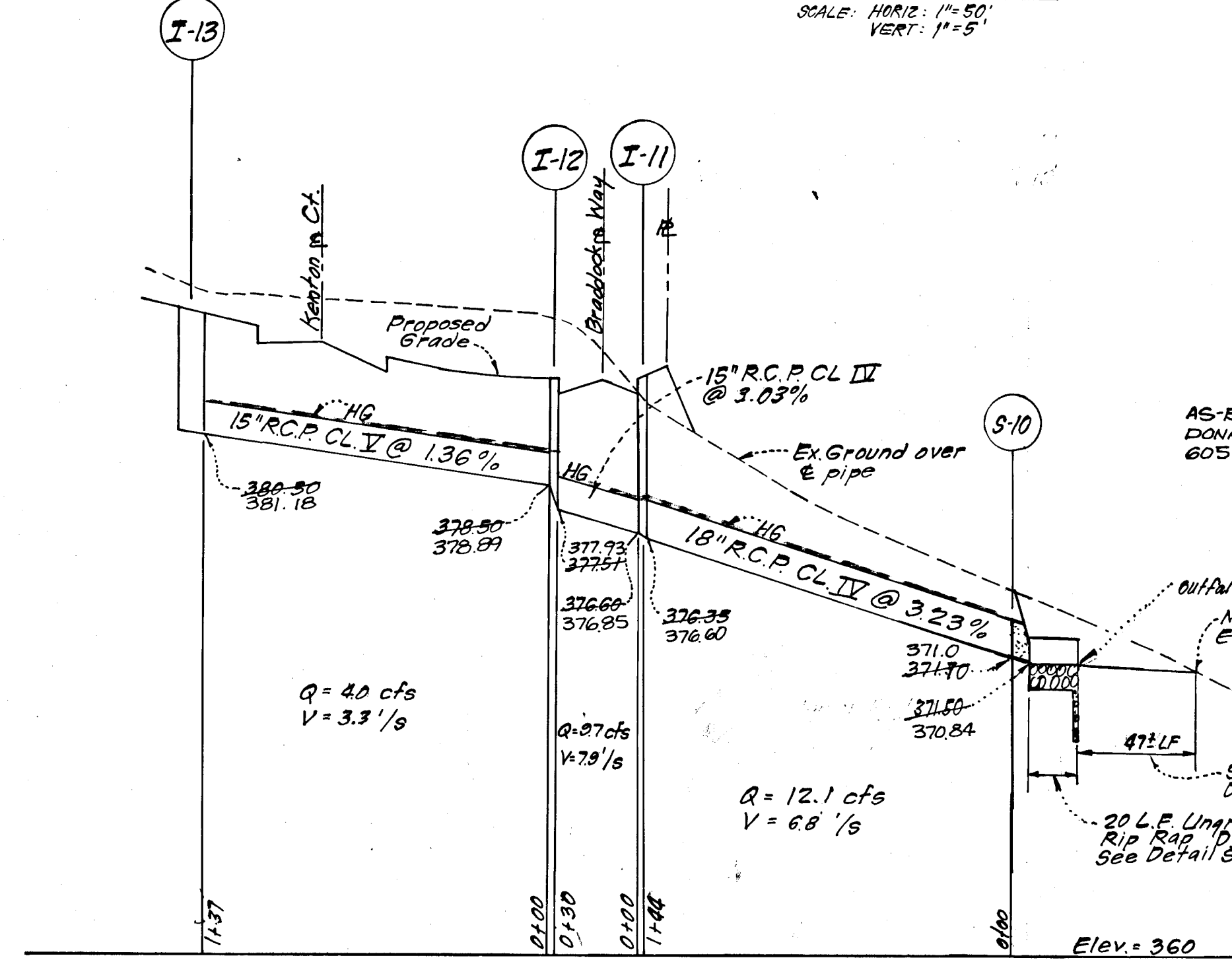
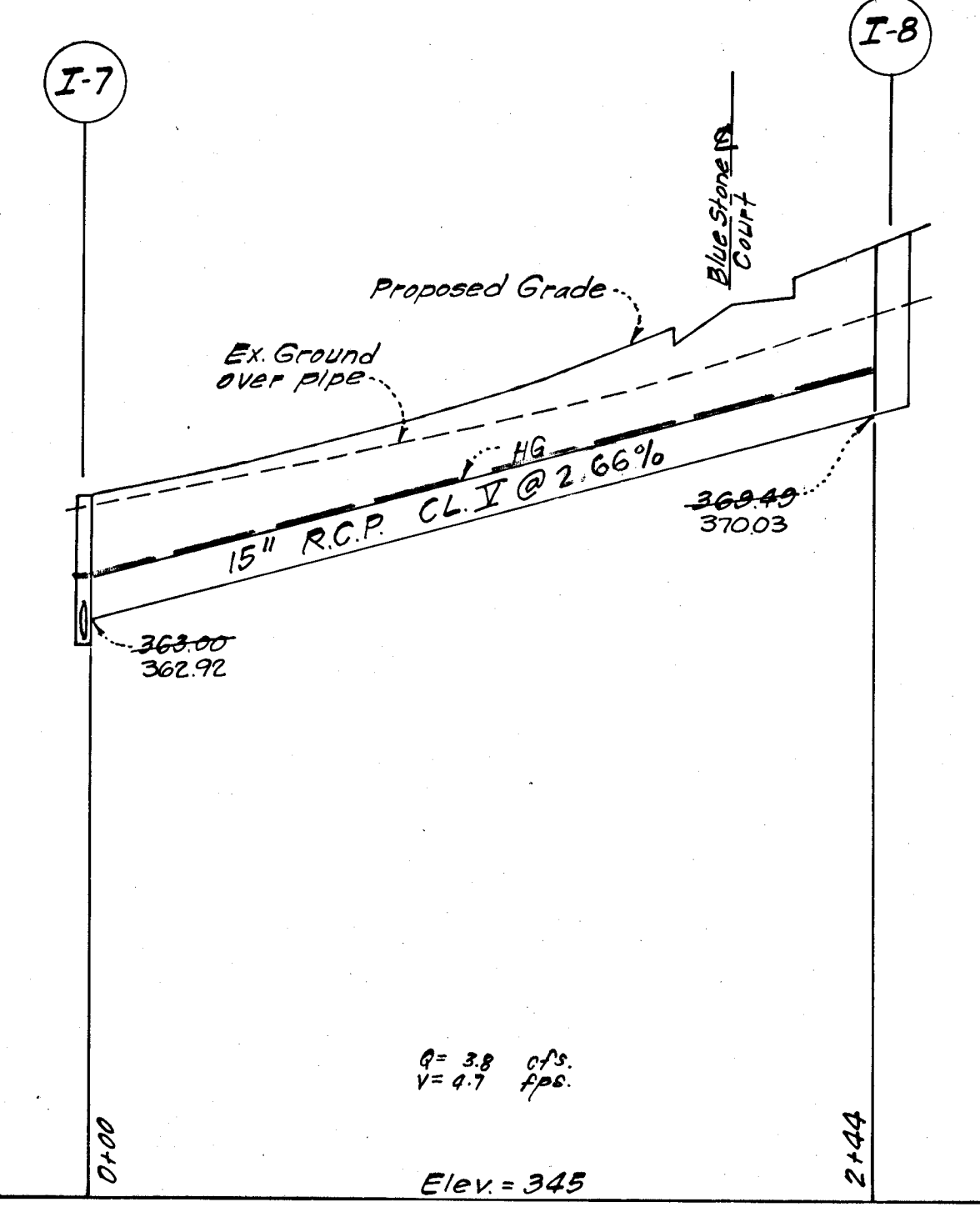
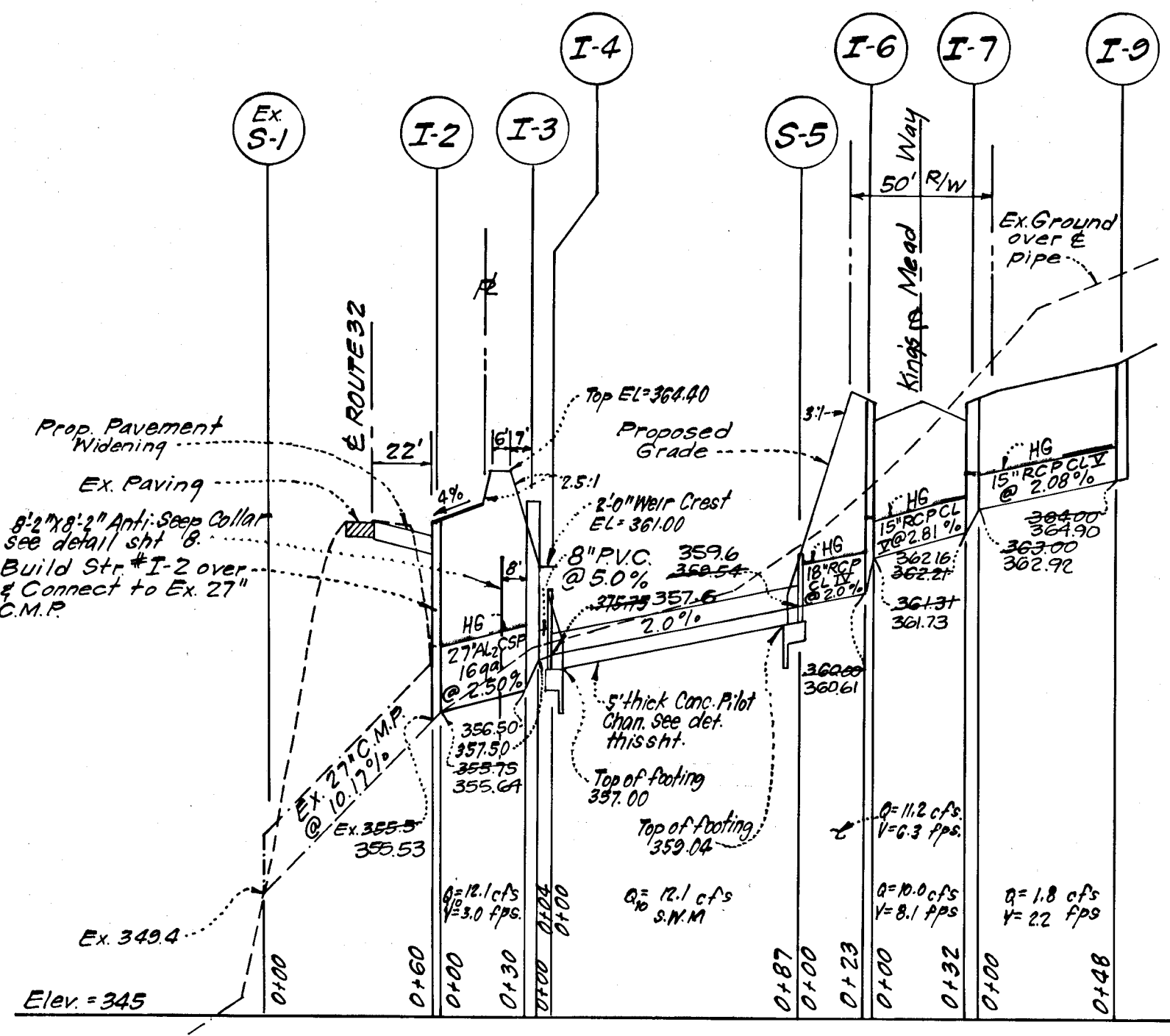
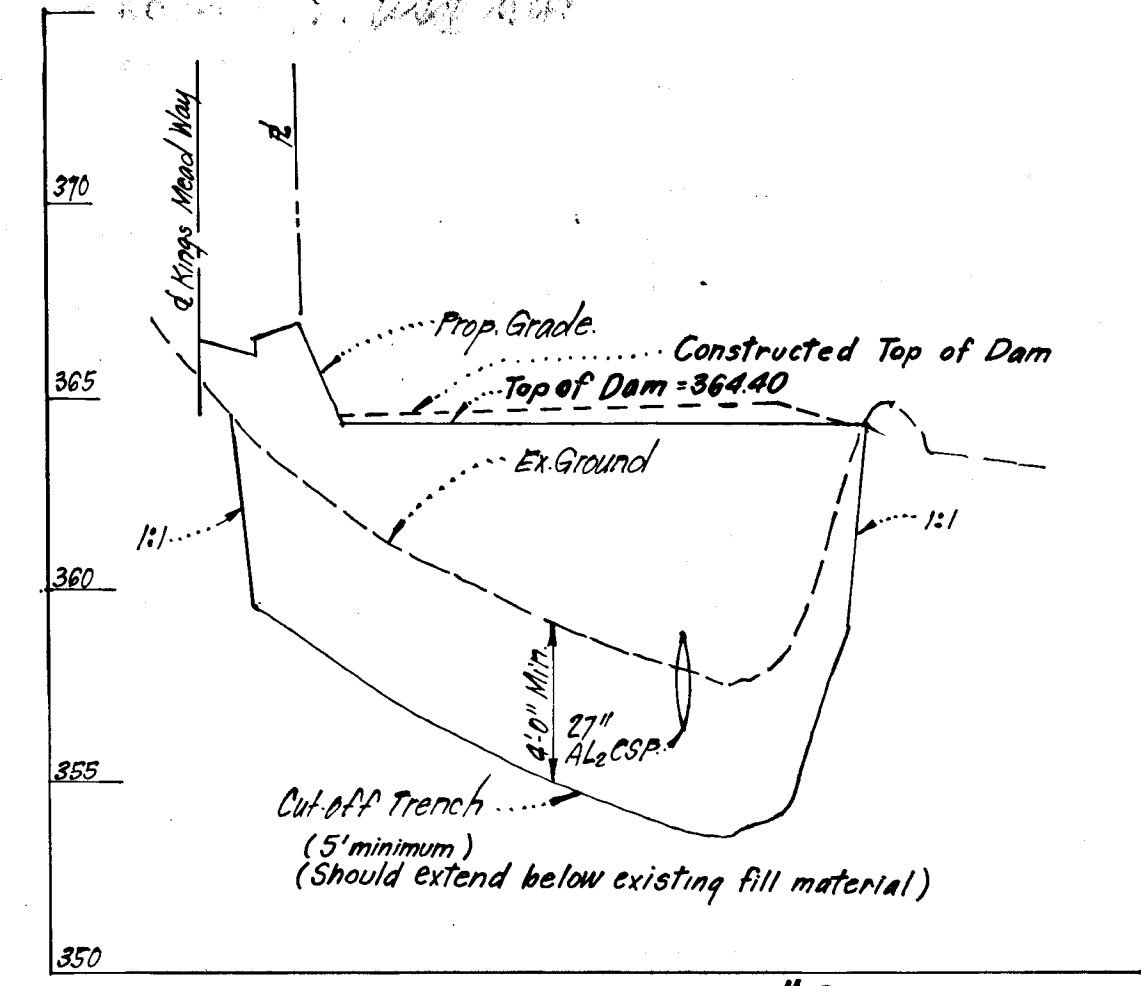
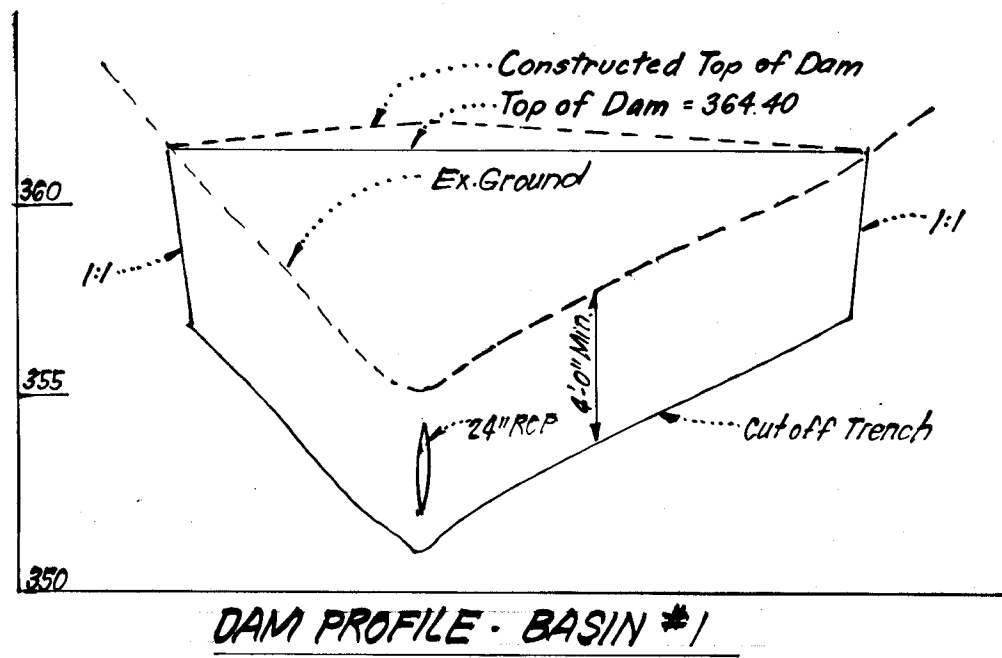


MODIFIED SHA G-ENDWALL

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
8"	PVC	3 LF
15"	RCP CL II	30 LF
18"	RCP CL II	411 LF
21"	RCP CL II	106 LF
24"	RCP CL II	120 LF
21"	ALC CSP 16ga.	192 LF
24"	RCP CL II	98.5 LF
27"	ALC CSP 16ga.	30 LF

STRUCTURE SCHEDULE						
No.	TYPE	INVERT IN	INVERT OUT	TOP ELEVATION UPPER LOWER	REMARKS	LOCATION
* I-2	A-5 Inlet W=2'-6"	355.35	355.35	362.30 362.30	Ho. Co. Std. # SD 4.01	6 Str. 4196 22' Rt. Guilford Rd.
I-3	Special	357.50	357.50	363.30	See detail this sht.	See Plan & Elev. Basin No. 2
I-4	Modified SHA G-Endwall	357.75	357.75		See detail this sht.	See Plan & Elev. Basin No. 2
S-5	Modified SHA G-Endwall	359.54	359.54		See detail this sht.	See Plan
* I-6	A-5 Inlet W=2'-6"	360.35	360.35	366.70 366.70	Ho. Co. Std. # SD 4.01	0160.66 15' Lt.
* I-7	A-10 Inlet W=2'-6"	362.24	362.24	368.65 368.65	Ho. Co. Std. # SD 4.02	0160.66 15' Rt.
* I-8	A-10 Inlet W=2'-6"	363.43	363.43	374.81 374.81	Ho. Co. Std. # SD 4.02	0 Str. 3120.66 15' Lt.
* I-9	A-10 Inlet W=2'-6"	364.00	364.00	369.13 369.13	Ho. Co. Std. # SD 4.02	0 Str. 6111.66 22' Rt. & Guilford Rd.
S-10	End Section	371.50	371.50		MSHA Std. # MD368.01	DIA=18" See Plan
* I-11	A-10 Inlet W=2'-6"	376.80	376.80	382.68 382.68	Ho. Co. Std. # SD 4.02	0 Str. 2101.30 14' Rt.
* I-12	A-10 Inlet W=2'-6"	378.30	378.30	382.68 382.68	Ho. Co. Std. # SD 4.02	0 Str. 2101.30 14' Rt.
* I-13	A-10 Inlet W=2'-6"	380.50	380.50	385.38 385.38	Ho. Co. Std. # SD 4.02	0 Str. 3147.82 14' Lt.
S-14	Modified SHA G-Endwall	352.60	352.60		See detail this sht.	DIA=24" See Plan
I-15	Special	353.00	353.00	360.00	See detail this sht.	See Plan & Elev. Basin No. 1
S-16	Modified SHA G-Endwall	354.25	354.25		See detail this sht.	DIA=24" See Plan & Elev. Basin No. 1
S-17	Modified SHA G-Endwall	355.50	355.50		See detail this sht.	DIA=21" See Plan
I-18	A-5 Inlet W=2'-6"	367.20	367.20	375.26 375.26	Ho. Co. Std. # SD 4.01	0 Str. 1517.2 14' Rt.
* I-19	A-10 Inlet W=2'-6"	368.85	368.85	373.58 373.58	Ho. Co. Std. # SD 4.02	0 Str. 14157.24 14' Lt.
* I-20	A-10 Inlet W=2'-6"	369.30	369.30	373.58 373.58	Ho. Co. Std. # SD 4.02	0 Str. 14157.24 14' Lt.
* I-21	A-10 Inlet W=2'-6"	361.70	361.70	365.90 365.90	Ho. Co. Std. # SD 4.02	See Plan Sht. #6.

* Terre Hill Precast Inlets may be used as an alternate - See Details on Sheet #1.
□ Provide Ho. Co. Std. Deflectors Std. Detail # SD 4.63.



PROFILES

No.	REVISION	DATE
1	Added Terre Hill Precast Inlet note to Structure Schedule.	12-27-83

DEVELOPER'S CERTIFICATE
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Signature of Developer: *John L. ...* Date: 8-19-83

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.

Signature of Engineer: *Donald B. Sackett* Date: 7-11-83

No.	REVISION	DATE
1	Revised as per Ho. Co. comments dated October 7, 1983.	10-10-83

APPROVED: Department of Public Works

Richard E. ... Date: 8-1-83
Chief, Bureau of Engineering

John L. ... Date: 8-28-83
Chief, Division of Land Development & Zoning Administration

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS

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

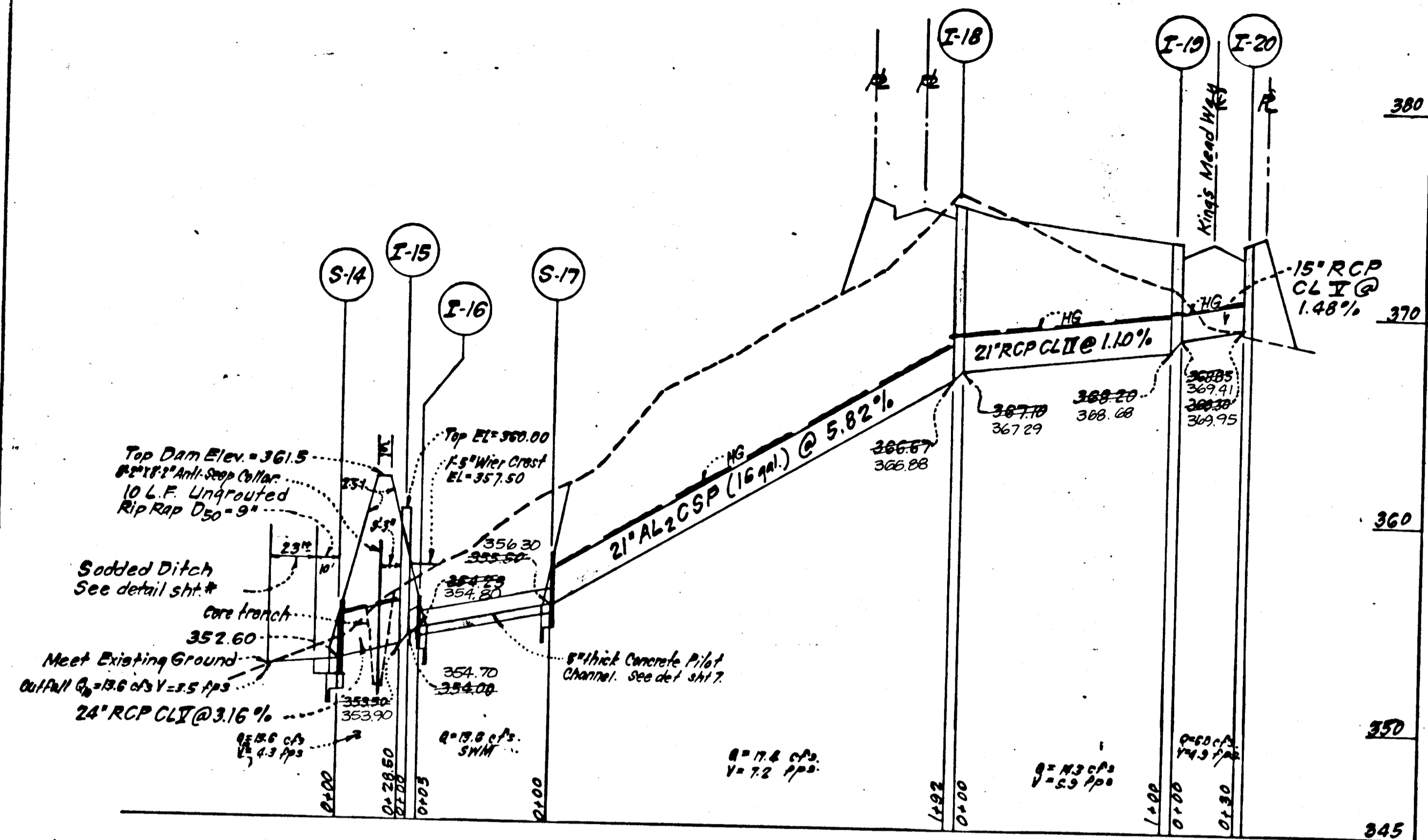
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DRAWING: STORM DRAIN PROFILES & DETAILS
SCALE: AS SHOWN

CHECKED: VLB
DATE: 7-8-83

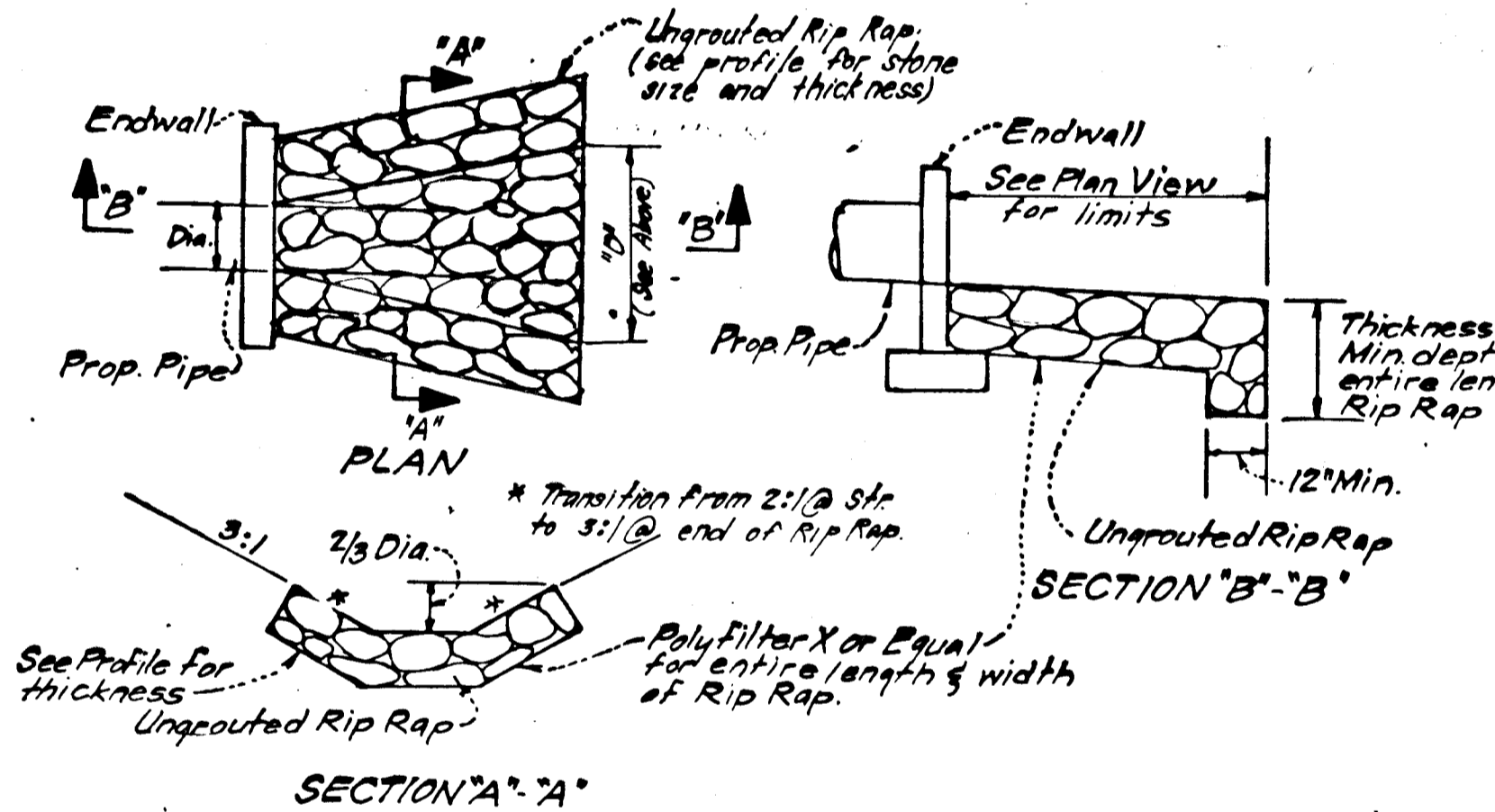
FILE NO.: 83-001-4

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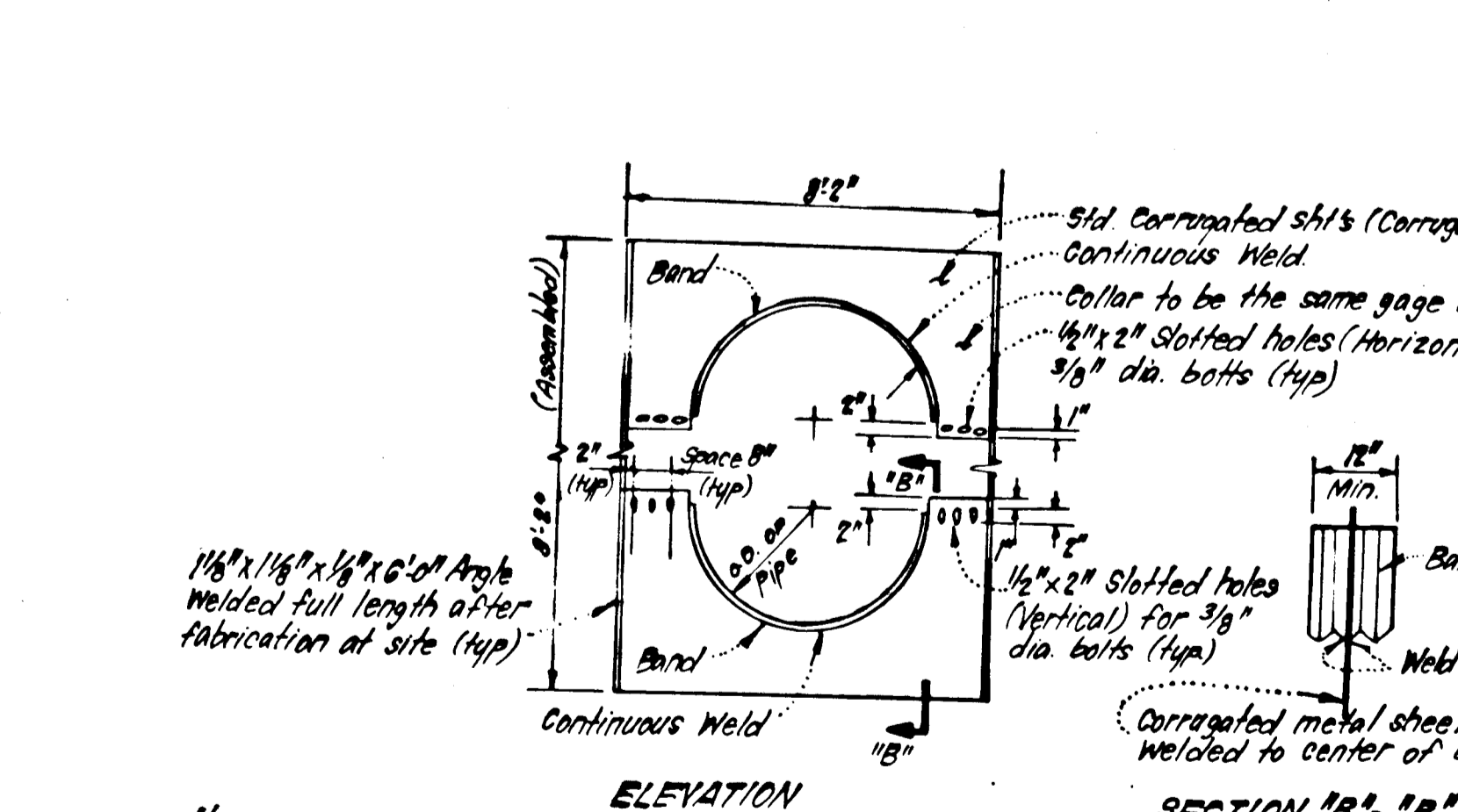
STORM WATER MANAGEMENT POND NOTES



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



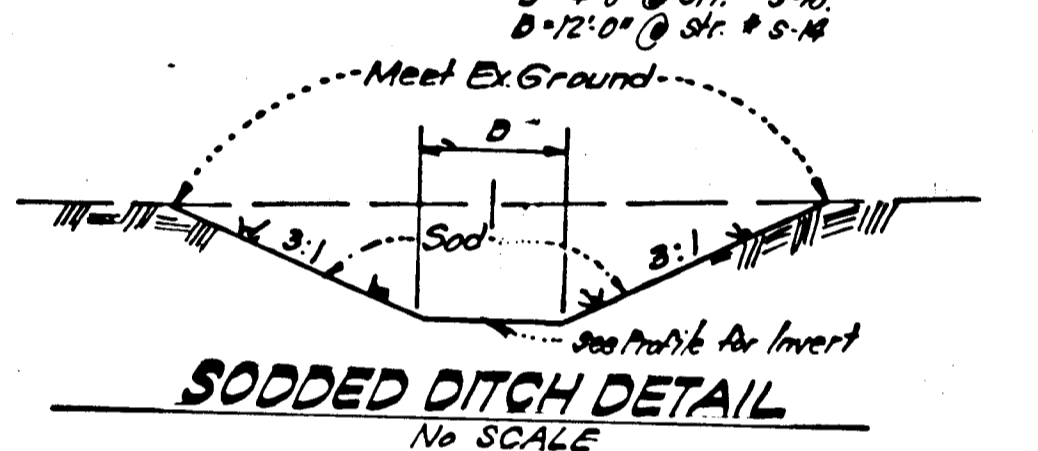
UNGROUTED RIP RAP PAVING DETAILS
No SCALE



CORRUGATED METAL ANTI-SEEP COLLAR DETAILS
No SCALE

NOTES:
1. All materials to be in accordance with construction and Construction Material Specification.
2. When specified on the plans, coating of collars shall be in accordance with Const. Material Specs.
3. Unassembled collars shall be marked by painting or tagging to identify matching parts.
4. The lap between the two half sections and between the pipe and connection band shall be caulked with asphalt mastic at time of installation.
5. Each collar shall be furnished with two 1/2\"/>

- GENERAL SODDING NOTES**
1. Apply 10-10-10 Fertilizer @ 1000#/acre (25#/1000 sq. ft.)
 2. Apply Ground Agricultural Limestone @ 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.



SODDED DITCH DETAIL
No SCALE

- I. SITE PREPARATION:**
- A. Areas designated for the borrow areas embankment, and structural walls shall be cleared, grubbed and stripped of top soil. All trees, vegetation, roots, and other objectionable material shall be removed.
 - B. Areas to be covered by the pond or reservoir will be sloped to no steeper than 1:1. Rubbish and other objectionable material will be cleared of all trees, brush, logs, fences, 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 top soil 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, over-size 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 free board) 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\"/>

- 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 at least twenty four inches or greater over the structure or pipe.

- IV. CORRUGATED METAL PIPE: (All Pipes to be Circular in Cross Section)**
- A. MATERIALS: Aluminum (Steel Pipe) This pipe and its appurtenances shall be Aluminum (Steel) with 25% paved invert and shall conform to the requirements of AASHTO Specifications M24-702 with watertight couplings bands or flanges.
 - B. CONNECTIONS: All connections with pipes must be completely watertight. The drain pipe or barrel connection in riser shall be welded all around when the pipe and riser are metal. Watertight coupling to be completely watertight. Dimple bands are not considered watertight.
 - C. 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.
 - D. LAYING PIPE: The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
 - E. Backfilling shall conform to structural backfill as shown above.
 - F. Other details (Anti-seep collars, valves, etc.) shall be as shown on the drawings.

- V. REINFORCED CONCRETE PIPE:**
- A. MATERIALS: Reinforced Concrete pipe shall have a rubber gasket joint and shall equal or exceed A.S.T.M. Specification C-301. Approved equivalents are ANWA Specification C-301.
 - B. 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 dia. with a minimum thickness of 3\"/>

- VI. CONCRETE:**
- A. MATERIALS:
 - a. Cement: Normal Port-Land Cement shall conform to the latest ASTM Spec. C-150.
 - b. Water: The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
 - c. Sand: The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Lime-stone sand shall not be used.
 - d. Coarse Aggregate: The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one half (1 1/2) inches.
 - e. 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 5/8; 6 U.S. gallons of water per 50 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3 1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honey combing 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 15 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 mixer and of the introduction of the materials, including water into the mixer. Water shall be added prior to, during, and following the mixer charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specs given here.

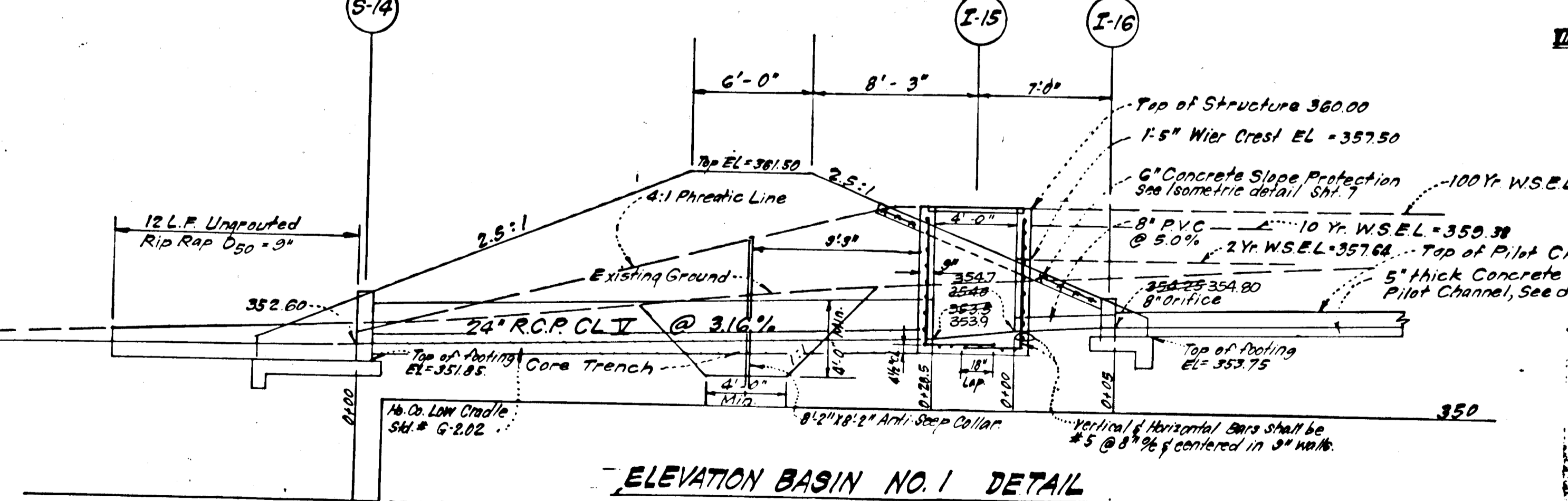
- D. FORMS:**
- a. The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.
 - b. The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.
 - c. Forms may be removed 24 hrs. 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. CONSOLIDATING:**
- Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spreading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.
- G. FINISHING:**
- Defective concrete, honey combed areas, voids left by the removal of tie rods, pipes or other objects shall be permanently exposed to view or exposed to water on the finished surface, 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 the first 3 days. All concrete shall be kept continuously moist for at least 14 days. After being placed, moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also be used.
- I. PLACING TEMPERATURE:**
- Concrete may not be placed at temperatures below 37°F with the temperature falling, or 34°F with the temperature rising.

- VI. STABILIZATION:**
- All borrow areas shall be graded to provide proper drainage and left in a slight 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.



ELEVATION BASIN NO. 1 DETAIL
SCALE: 1"=5'

DEVELOPER'S CERTIFICATE

"I certify that all development and/or construction will be done according to these plans of development. 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: *James McHale* Date: 8-26-83
Title: Soil Conservation Service

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable and a true and correct representation 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."

Signature: *Donald B. Sackett* Date: 7-11-83
Title: Engineer

AS-BUILT SURVEY CERTIFIED BY
DONALD B. SACKETT, MD. L.S. 16
6099, ON 7-9-86



APPROVED: Department of Public Works
Chief, Bureau of Engineering
APPROVED: Howard County Office of Planning and Zoning
Chief, Division of Land Development & Zoning Administration

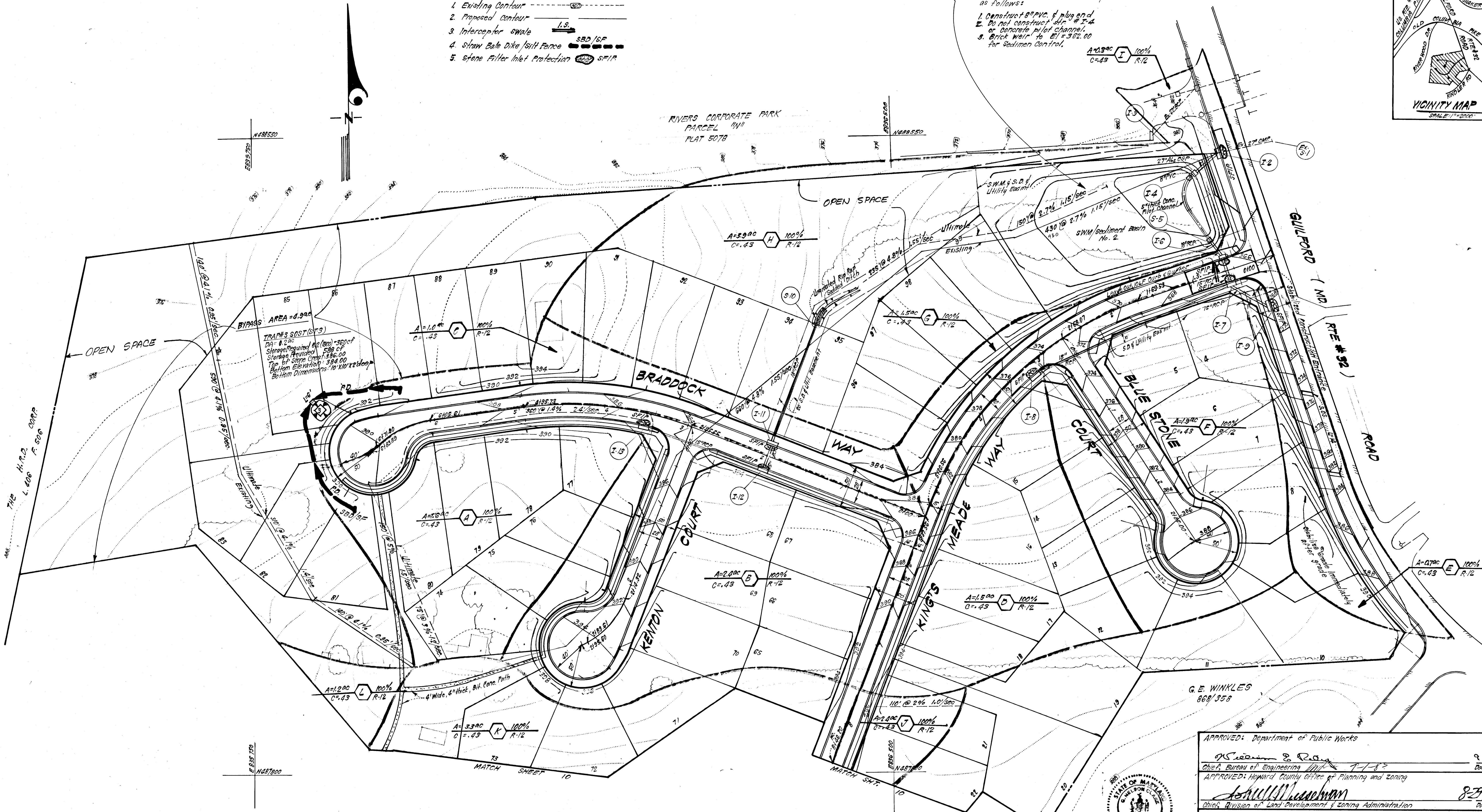
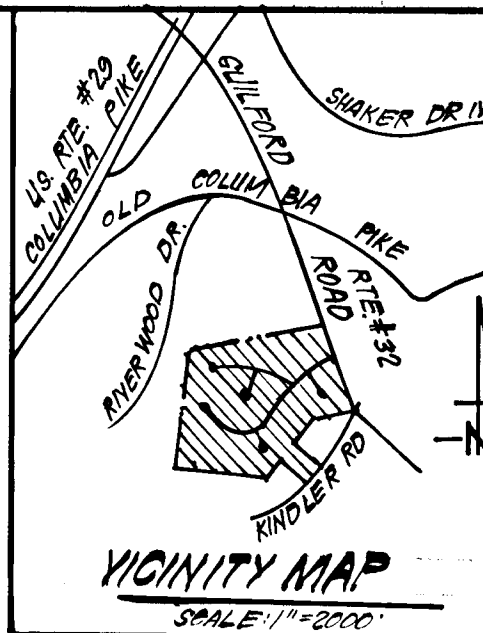
CLARK • FINEFROCK & SACKETT ENGINEERS • PLANNERS • SURVEYORS 11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 983-3409		SCALE
		AS SHOWN
DESIGNED	ROAD CONSTRUCTION PLANS STORM WATER MANAGEMENT & STORM DRAINAGE DETAILS	DRAWING
DRAWN		NO. 80/F11
CHECKED		JOB NO.
DATE		FILE NO.
7-8-83	FOR: BRANTLY DEVELOPMENT CORP 5501 TWIN KNOBS RD. COLUMBIA, MD 21045	93-001-D

LEGEND:

1. Existing Contour
2. Proposed Contour
3. Interceptor Swale
4. Straw Bale Dike / Silt Fence
5. Stone Filter Inlet Protection

Note: Construct SWM Basin #2 except as follows:

1. Construct 8" PVC plug and
2. Do not construct str. # I-4 or concrete pilot channel.
3. Brick Weir to EI = 362.00 for Sediment Control.



#1010

Reviewed for Howard S.C.D.
and meets Technical Requirements
James M. Helm 8-26-83
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 Zichu 8-26-83
Signature Date

DEVELOPER'S/BUILDER'S CERTIFICATE
I hereby 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 of this 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 F. Loaini 8-19-83
Signature Date

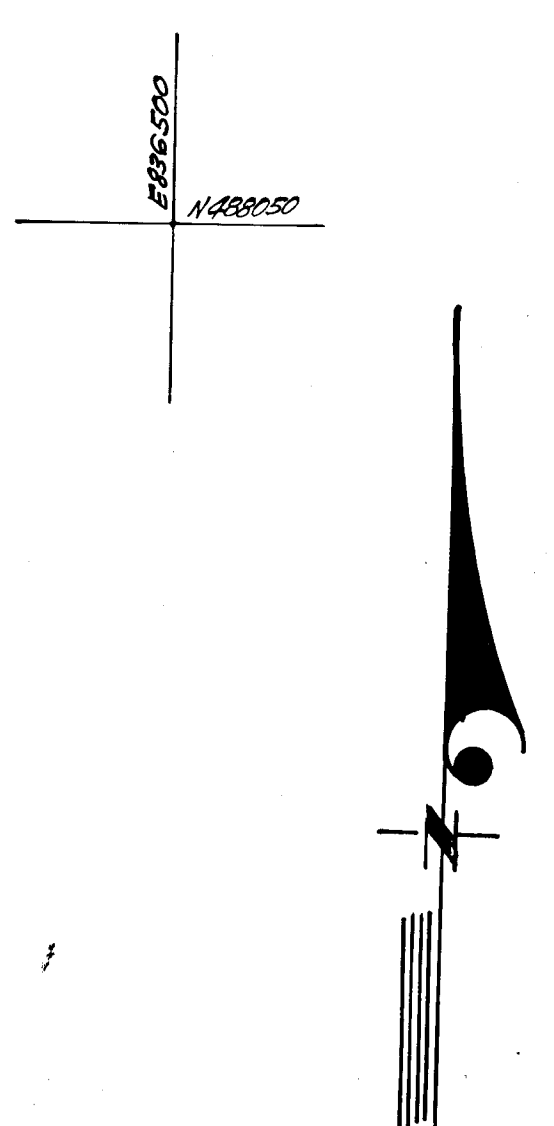
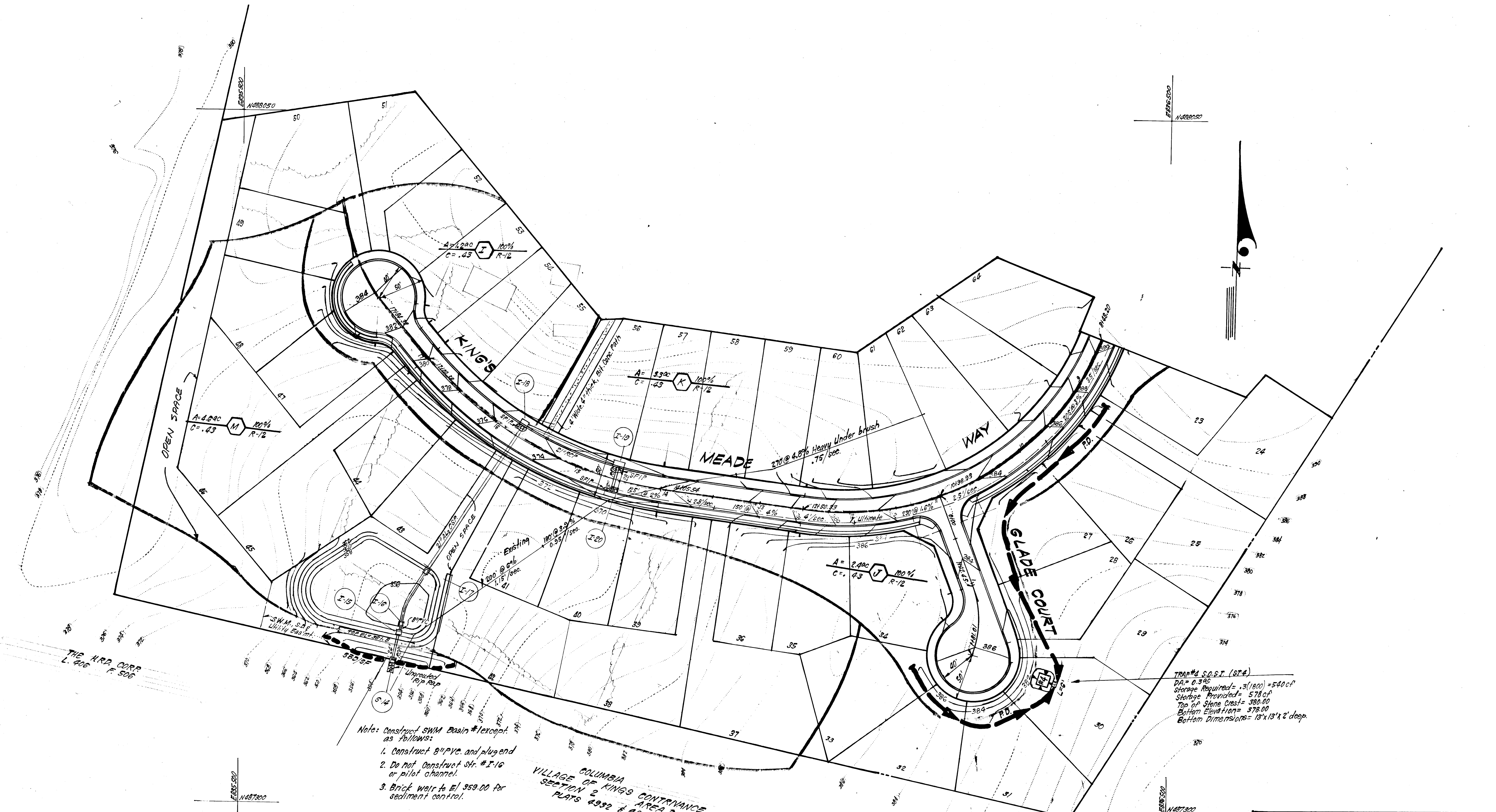
ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
G. Nelson Clark 7-11-83
Signature Date



APPROVED: Department of Public Works
Richard E. Ragan 7-1-83
Chief, Bureau of Engineering
APPROVED: Howard County Office of Planning and Zoning
Richard M. Anderson 8-23-83
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 SEDIMENT & EROSION CONTROL PLAN AND DRAINAGE AREA MAP	SCALE 1" = 50'
DRAWN	PLEASANT GROVE	DRAWING 30 OF 11
CHECKED		JOB NO. 83-001
DATE	SECTION 1 - AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	FILE NO. 83-001-0
7-8-83	FOR: BRANTLY DEVELOPMENT CORP 5501 TWIN KINGS RD. COLUMBIA, MD 21045	

F-84-07 AS-BUILT 7-9-86



- Note: Construct SWM Basin *except as follows:
1. Construct 8" PVC and plug end
 2. Do not construct str. # I-16 or pilot channel.
 3. Brick weir to El 359.00 for sediment control.

TRAP #4 S.O.S.T. (S.T.E.)
 DA = 0.3 ac
 Storage Required = 3(100) = 540 cf
 Storage Provided = 578 cf
 Top of Stone Crest = 380.00
 Bottom Elevation = 378.00
 Bottom Dimensions = 13' x 13' x 2' deep

COLUMBIA VILLAGE OF KING'S CONTRAVANCE
 SECTION 2 AREA 3
 PLATS 4932 & 4930

#1010

Reviewed for Howard S.C.D.
 Name
 and meets Technical Requirements
James M. Allen 8-26-83
 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. Zehner 8-26-83
 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I hereby 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 F. Lavin 8-17-83
 Signature Date
 Title of Developer/Builder

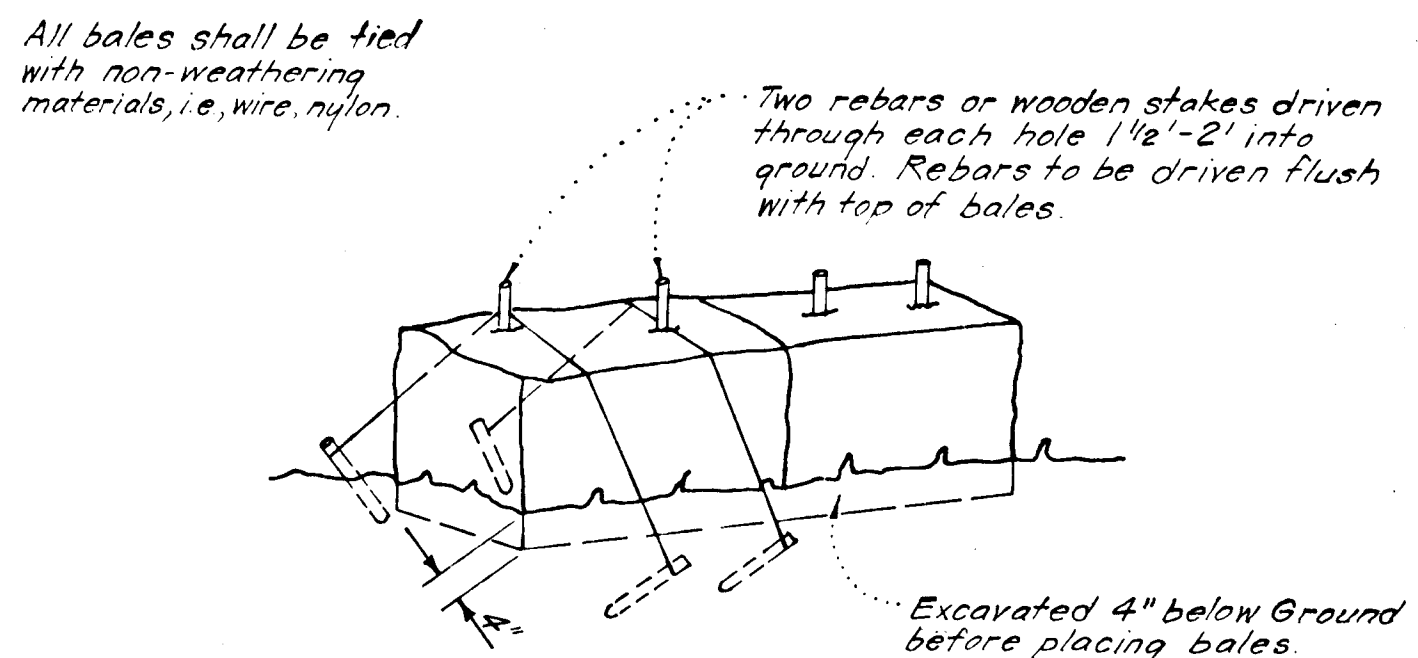
ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
G. Nelson Clark 7-11-83
 Signature Date
 Title



APPROVED: Department of Public Works
Richard E. Brown 9-1-83
 Chief, Bureau of Engineering Date
 APPROVED: Howard County Office of Planning and Zoning
John W. Howard 8-29-83
 Chief, Division of Land Development & Zoning Administration Date

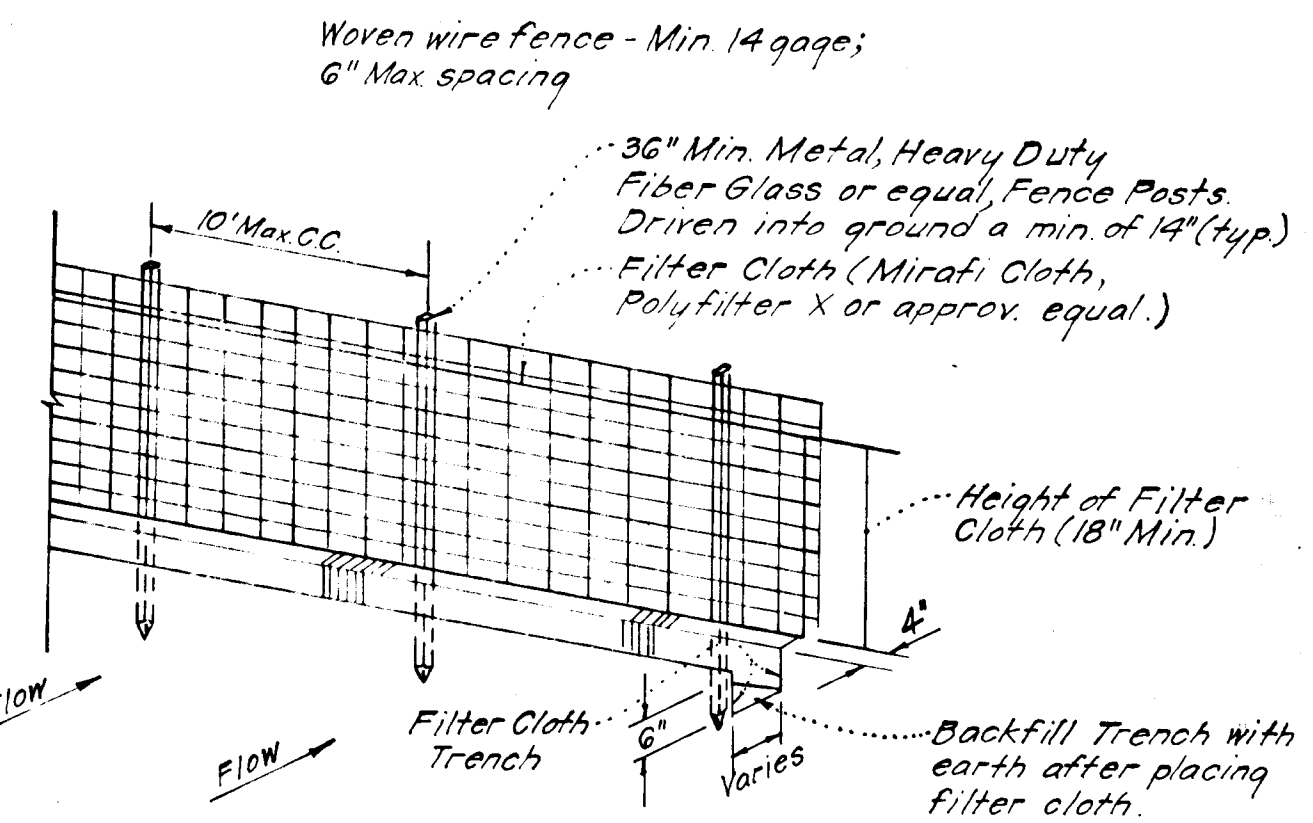
CLARK • FINEFROCK & SACKETT ENGINEERS • PLANNERS • SURVEYORS		SCALE
11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400		1" = 50'
DESIGNED DAB	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN AND DRAINAGE AREA MAP	DRAWING
DRAWN		10 OF 11
CHECKED KIW	SECTION 1 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 83001
DATE DAB	FOR: BRANTLY DEVELOPMENT CORP 5501 TWIT KNOLLS RD. Columbia Md 21045	FILE NO. 83001-D
7-8-83		

F-84-07 AS-BUILT 7-9-86



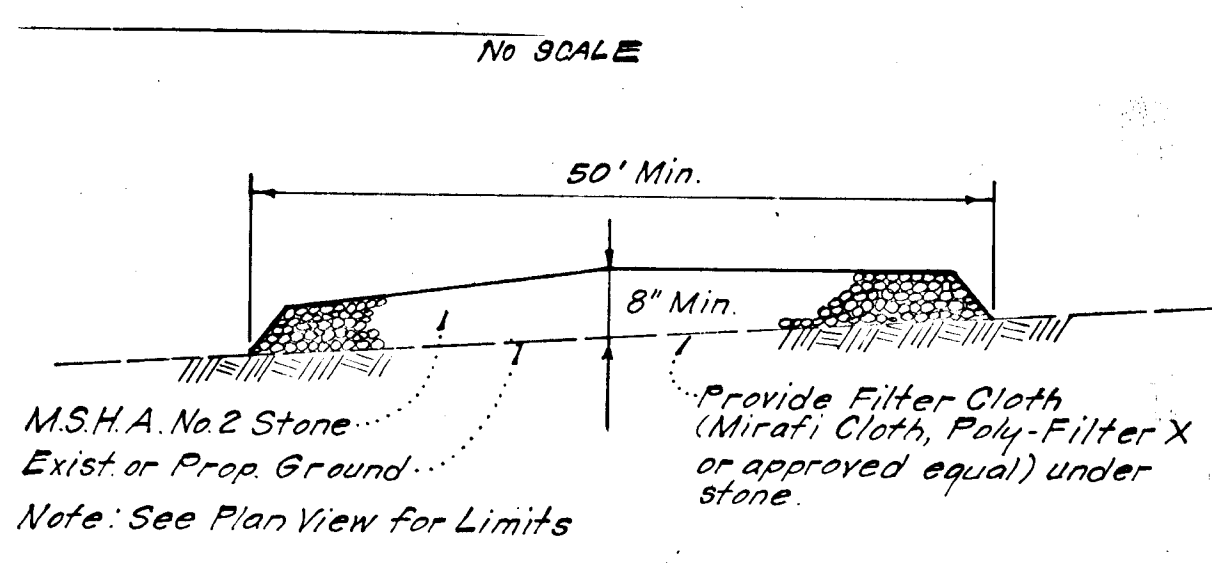
Note:
1. In lieu of the use of rebar each straw bale may be fastened to ground with pegs (4 per bale and wire or nylon as shown above.)

STRAW BALE DIKE DETAIL (SBD)
NO SCALE



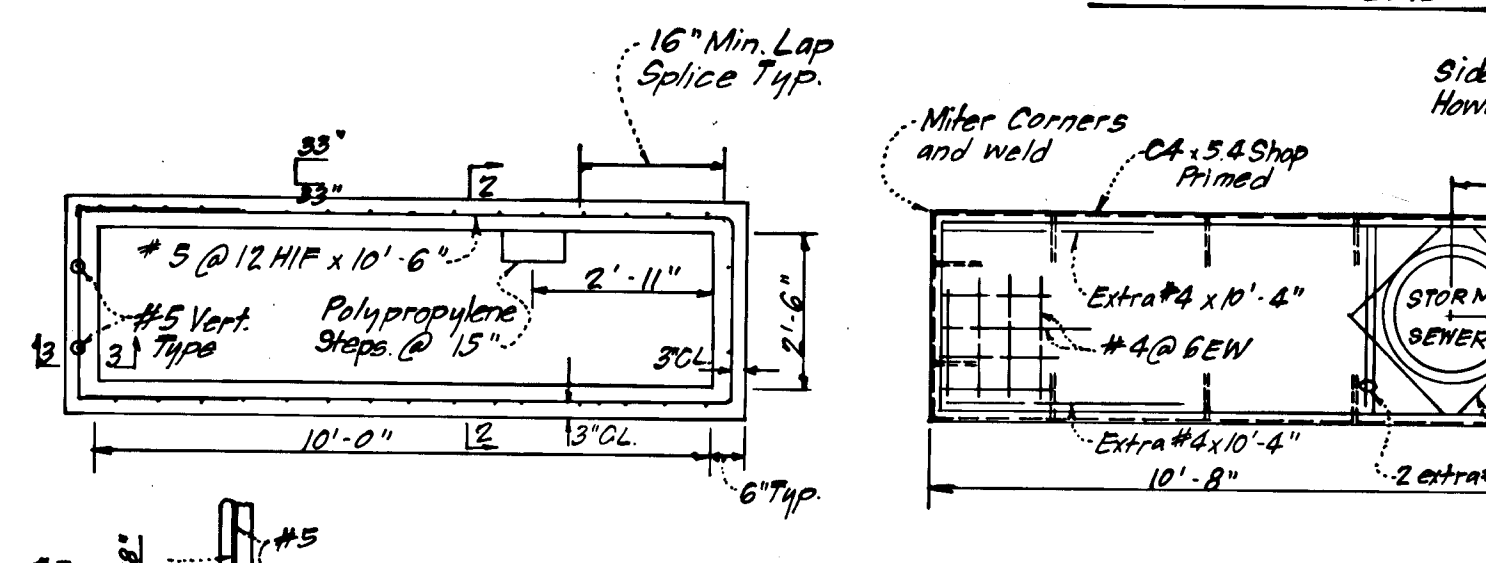
Notes:
1. Woven Wire Fence to be fastened securely to fence posts by use of wire ties.
2. Filter Cloth to be fastened securely to Woven Wire by use of wire ties spaced every 24"x24".

SILT FENCE DETAIL (SF)
NO SCALE



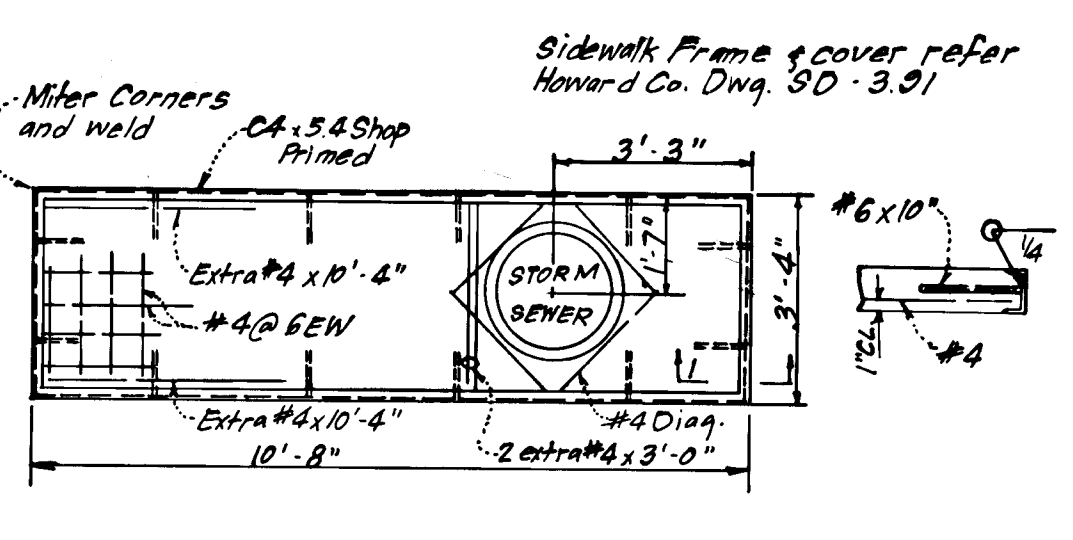
**SECTION VIEW
STABILIZED CONSTRUCTION ENTRANCE**

REINFORCING PLAN BELOW 4" SLAB



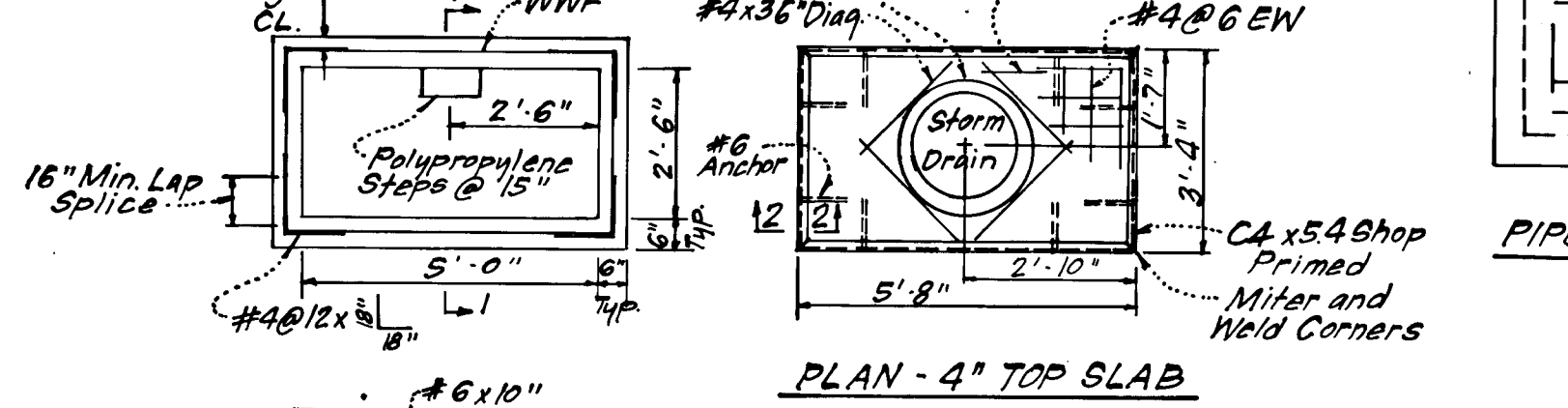
PRECAST A-10 INLET DETAILS

PLAN - 4" SLAB

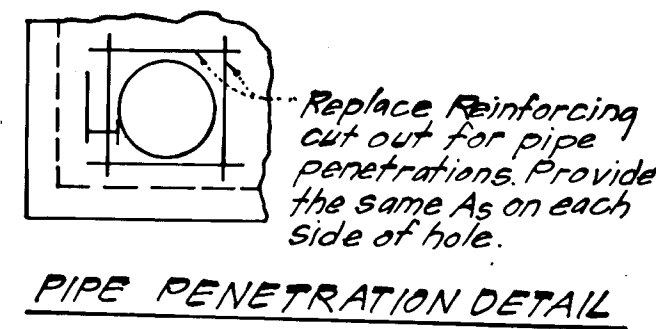


PRECAST A-5 INLET DETAILS

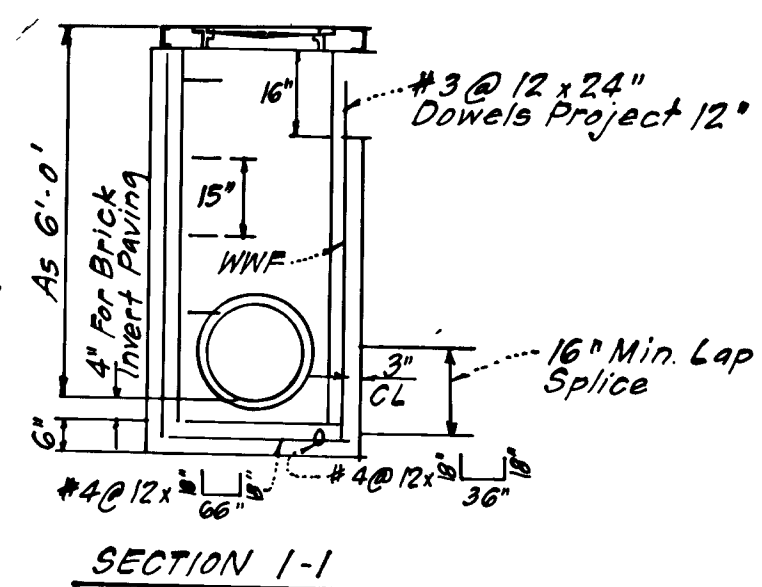
REINFORCING PLAN BELOW 4" SLAB



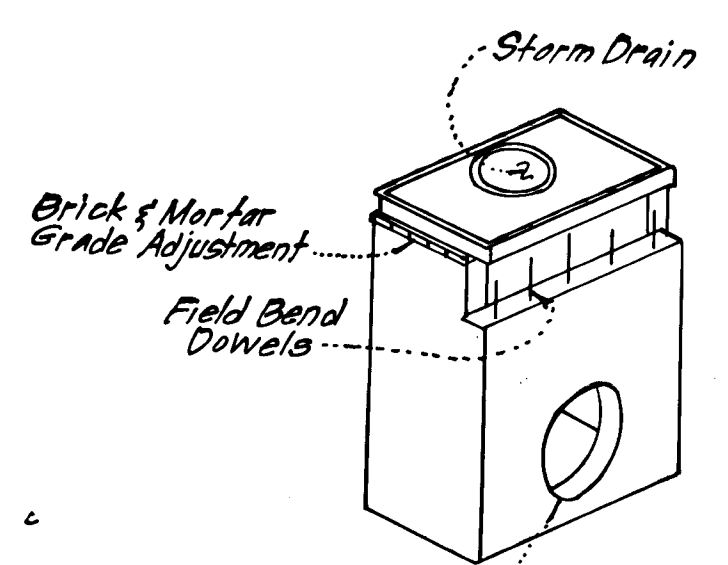
SECTION 2-2



PIPE PENETRATION DETAIL

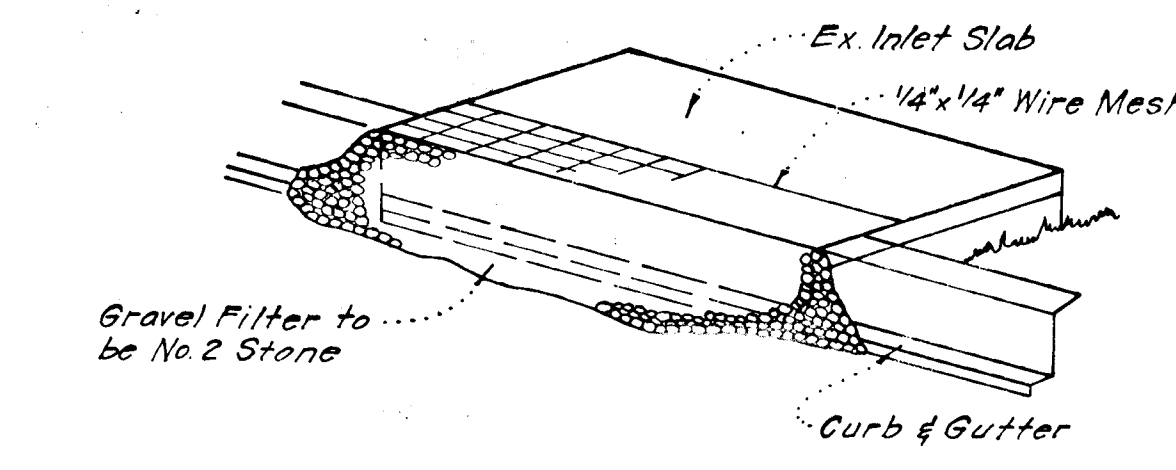


SECTION 1-1

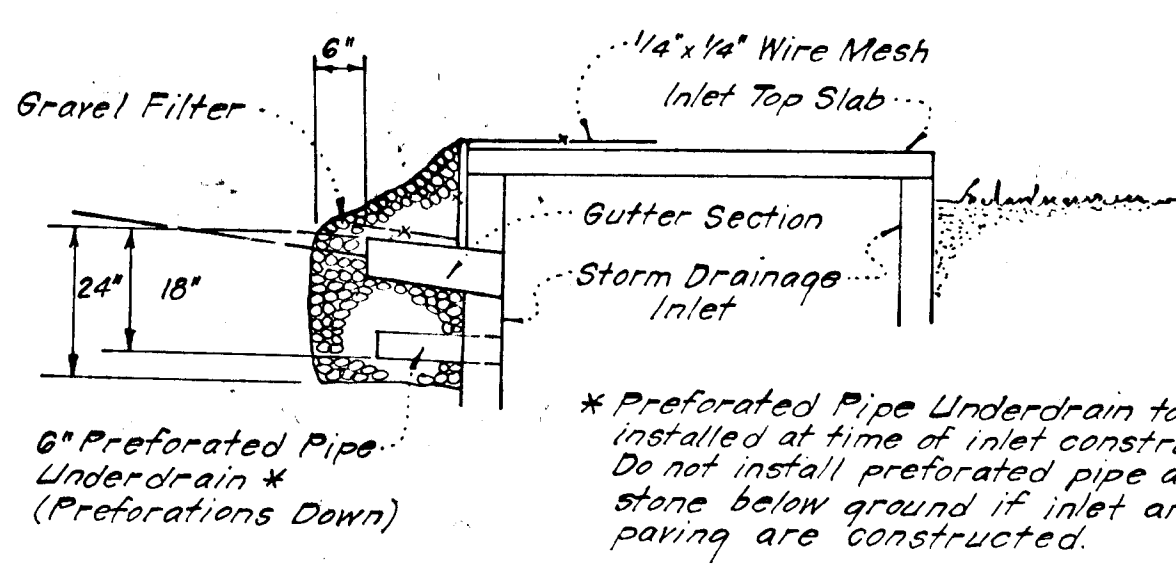


TERRE HILL CONCRETE PRODUCTS DETAILS

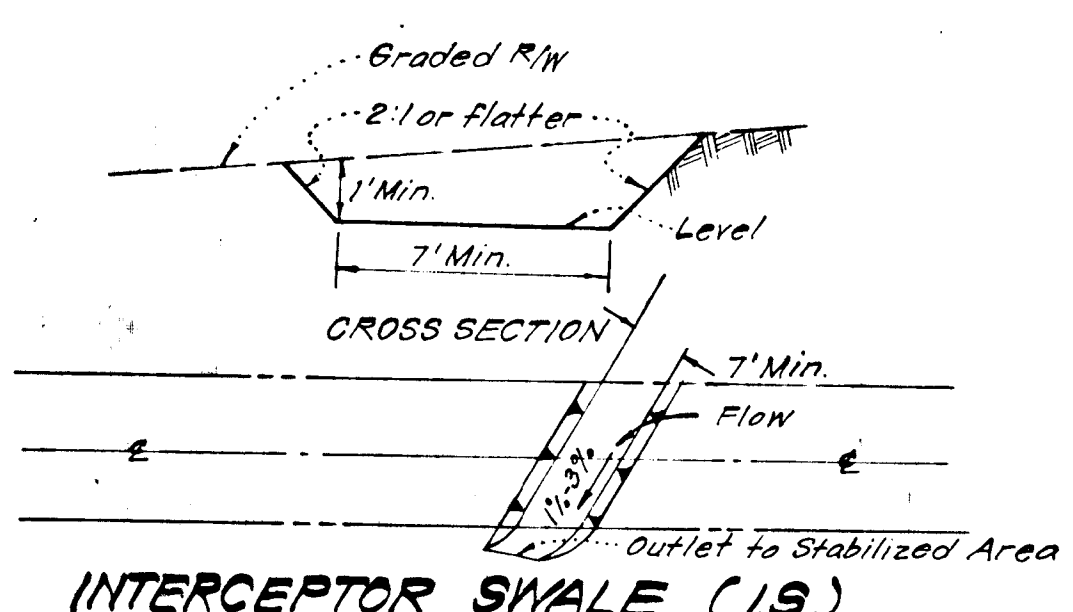
NOTES:
1. Concrete shall conform to Maryland DOT Standard Specification for construction materials (2002) Mix No. 3. In addition, f'c 4000 PSI @ 28 days, cement shall be type III and Penndot #13 Course Aggregates are used. W/W/F is W/W/F 4x4-W4xW4 (12 in 4 ft).
2. Polypropylene Steps shall be type PS4 or PS5 as manufactured by M.A. Industries, Inc. Steps shall be installed inline @ 15" OC where A-5's are used.
3. Reference Drawing for type A-5 & A-10 Inlets are Howard Co. Standard Dwg. No SD-4.01 and SD-4.02.
4. Reinforcing schedule is based on USD method and design loads as specified in AASHTO standard specification for Highway Bridges, 12th edition, 1977 and Interim specifications.



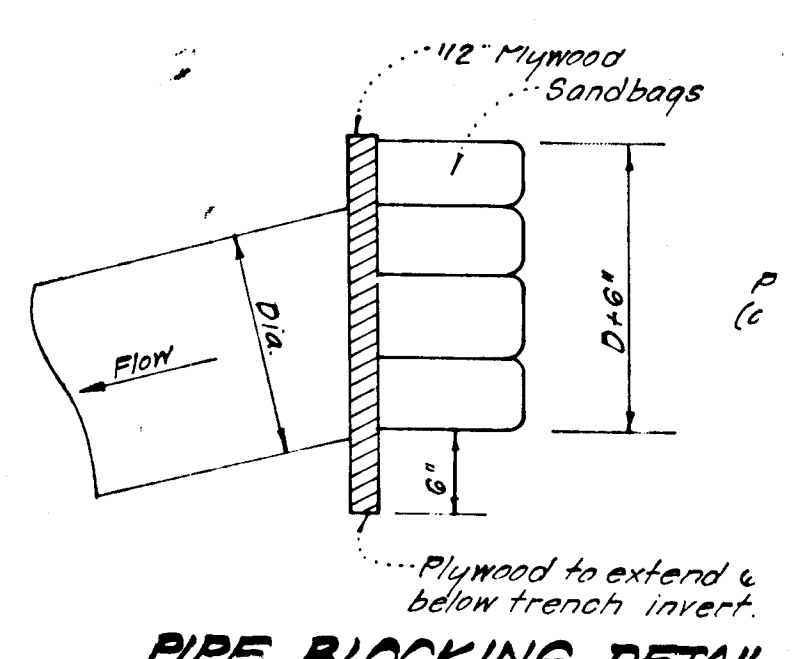
ISOMETRIC VIEW



**SECTION VIEW
STONE FILTER INLET PROTECTION (S.F.I.P.)**
NO SCALE



INTERCEPTOR SILT TRAP (I.S.)
NO SCALE



PIPE BLOCKING DETAIL
NO SCALE

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 14 lbs/1000 sf.
- Notify the Bureau of Inspections and Permits at least 24 hrs. 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 area to be stabilized in accordance with the following Specifications:
A. Seed - certified 85% germination applied at the rate of 3lbs/1000 sf. Mixture - 40% Kentucky Blue, 20% chewing Fescue, 20% Kentucky 31 and 20% annual rye.
B. 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.
C. 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.
D. 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 developers 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 = 1000 L.F.
- SITE ANALYSIS:
A. Total Area: 34.79 Acres.
B. Area to be Roofed: NONE Acres.
C. Area to be Paved: 2.90 Acres.
D. Area to be Seeded: 5.00 Acres.
E. Area Undisturbed: 26.23 Acres.

- CONSTRUCTION SEQUENCE:
A. Construct Stabilized Construction Entrance and S.W.M./Sediment Basin #1 and #2 where shown in plan. Except str's I-4 & I-16. Install 8" PVC & plug ends.
B. Rough Grade roads.
C. Construct storm drainage & block inlets.
D. Construct Utilities.
E. Fine grade and construct paving, sidewalk and curb & gutter and remove existing paving and construct proposed paving for Guilford Road Sta. 9+20 to 10+57.
F. Remove sediment & erosion control measures after all areas draining to them have been stabilized and convert sediment basin #1 & #2 to S.W.M. ponds in accordance with the plan and the following:
a. Denude and clean out sediment basins to conform with grading shown on the SWM Plans.
b. Immediately stabilize pond area after clean-out.
c. Construct Rip Rap and Concrete Pilot Channels and remove brick and mortar used for blocking weirs.

No	REVISION	DATE
1	Added Precast A-5 & A-10 Inlet Details and Terre Hill Concrete Products Detail	12-28-83

Reviewed for: Howard S.C.D.
Name
Signature: [Signature] Date: 8-26-83
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 hereby 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 site deemed necessary."
Signature: [Signature] Date: 8-19-83

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: 7-11-83
G. Nelson Clark

APPROVED: Department of Public Works
[Signature] 9-1-83
Chief, Bureau of Engineering
APPROVED: [Signature] 8-29-83
Chief, Division of Land Development & Zoning Administration Date

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 301-593-3401

DESIGNED DAB	ROAD CONSTRUCTION PLAN SEDIMENT & EROSION CONTROL PLAN	SCALE AS SHOWN
DRAWN KRW	PLEASANT GROVE	DRAWING 110-F11
CHECKED DAB	SECTION 1 AREA 1 STA. ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 83-001
DATE 7-8-83	FOR: BRANTLY DEVELOPMENT CORP. 5501 TWIN KNOLLS RD. COLUMBIA, MD 21045	FILE NO. 83-001-D