

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-5	A-10 Inlet, Width 25.50, D. 4.02	435.66	432.05	430.70	E Inlet 1.92' back L.P. Sta. 2+25.26
I-6	A-8 Inlet, Width 25.50, D. 4.01	442.95	437.81	437.50	E Inlet 16.67' Left of Sta. 3+08
I-7	A-10 Inlet, Width 25.50, D. 4.02	440.10	441.50	441.30	E Inlet 16.67' Left of Sta. 0+02
I-8	A-8 Inlet, Width 25.50, D. 4.01	447.51	—	444.05	E Inlet 16.67' Left of Sta. 1+50
I-9	Type 'D' Inlet S.D. 4.11	441.83	—	438.68	See Plan and Profile
M-1	Shallow Precast 35.12	426.00	422.27	422.00	See Plan and Profile
S-2	Type 'C' Endwall S.D. 5.21	421.50	418.00	418.00	See Plan and Profile
I-4	Type 'D' Inlet S.D. 4.11	422.28	418.28	418.10	See Plan and Profile

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENGINEERING
 OFFICE OF PLANNING & ZONING
 DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

BIRD SONG PASS CURVE DATA

Sta. 0+73.81 to Int. 2+09.09
 $\Delta = 30^\circ 31' 50''$ Tan: 60.59'
 $R = 255.00'$ Chd. 134.28'
 $Ar = 135.88'$ Chd. Org: $505^\circ 57' 01'' E$

Int. 2+09.09 to P.I. 2+13.75
 $\Delta = 30^\circ 07' 22''$ Tan: 68.62'
 $R = 255.00'$ Chd. 132.52'
 $Ar = 134.00'$ Chd. Org: $526^\circ 22' 35'' W$

NOTE: PAVING WIDTHS - 28'
 LENGTHS OF ROAD - 487' & 280'
 4 SEWER MHS. IN R/W

AS-BUILT SURVEY CERTIFIED BY KENNETH A. McCORD, MD P.E. No. 1974 JAN. 15, 1988

Notes:
 1. Inlet I-4 to have throat openings on the North, East and West sides. Throat opening Elevation 422.10.
 2. Inlet I-5 to have throat openings on all 4 sides. Throat opening Elevation 441.00.

NOTE: FOR EXISTING HICKORY RIDGE ROAD PLAN AND PROFILES SEE CONSTRUCTION DRAWINGS FOR VILLAGE OF CLARK'S FOREST SECTION 1 AREA 1. (F 13-700)

REV.	DATE	DESCRIPTION
1	1/20/80	As per Planning and D.P.W. Comments
2	1/20/80	Hydraulic Gradient
3	1/20/80	As per Planning and D.P.W. Comments

COLUMBIA 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER: HOWARD RESEARCH AND DEVELOPMENT CORPORATION

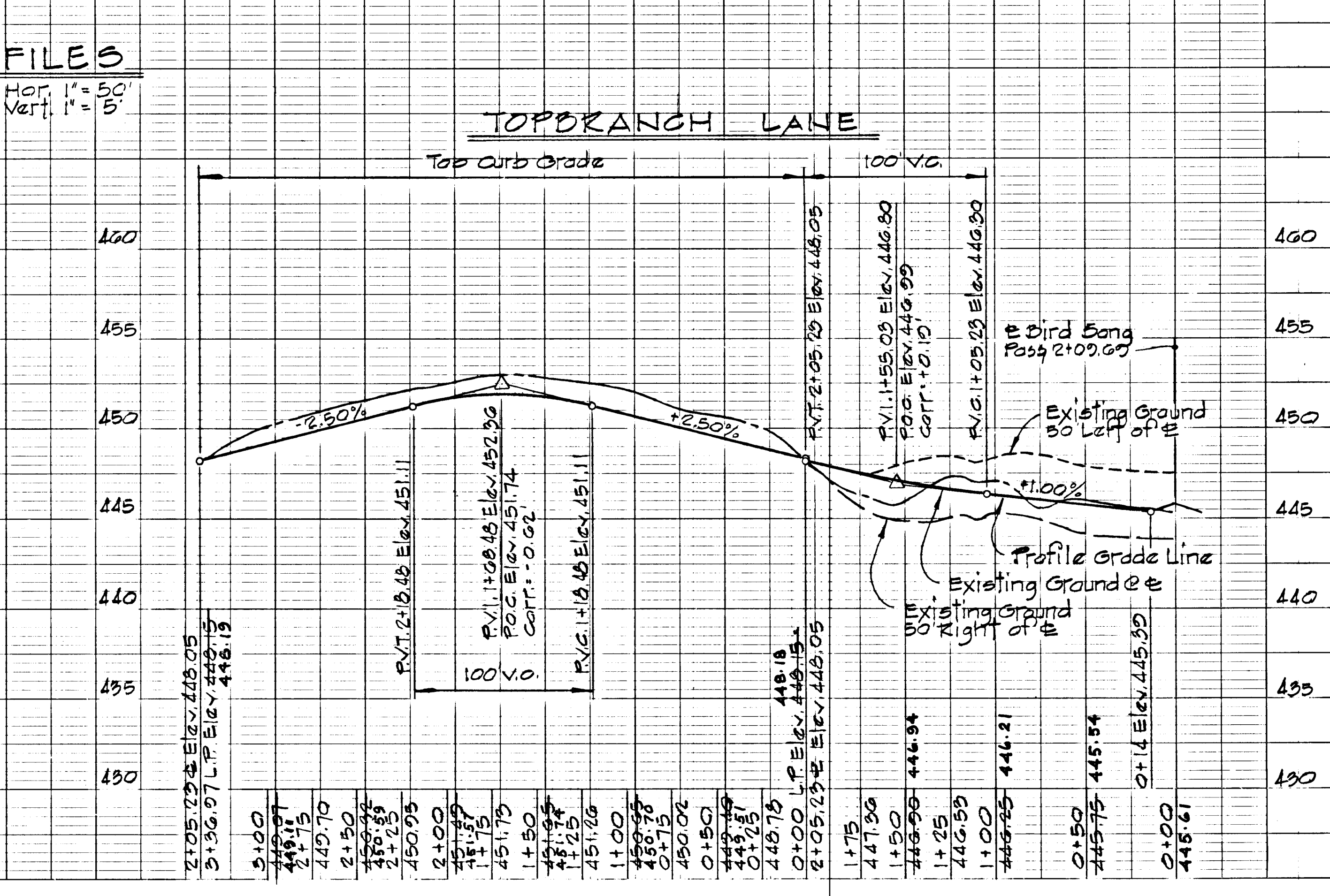
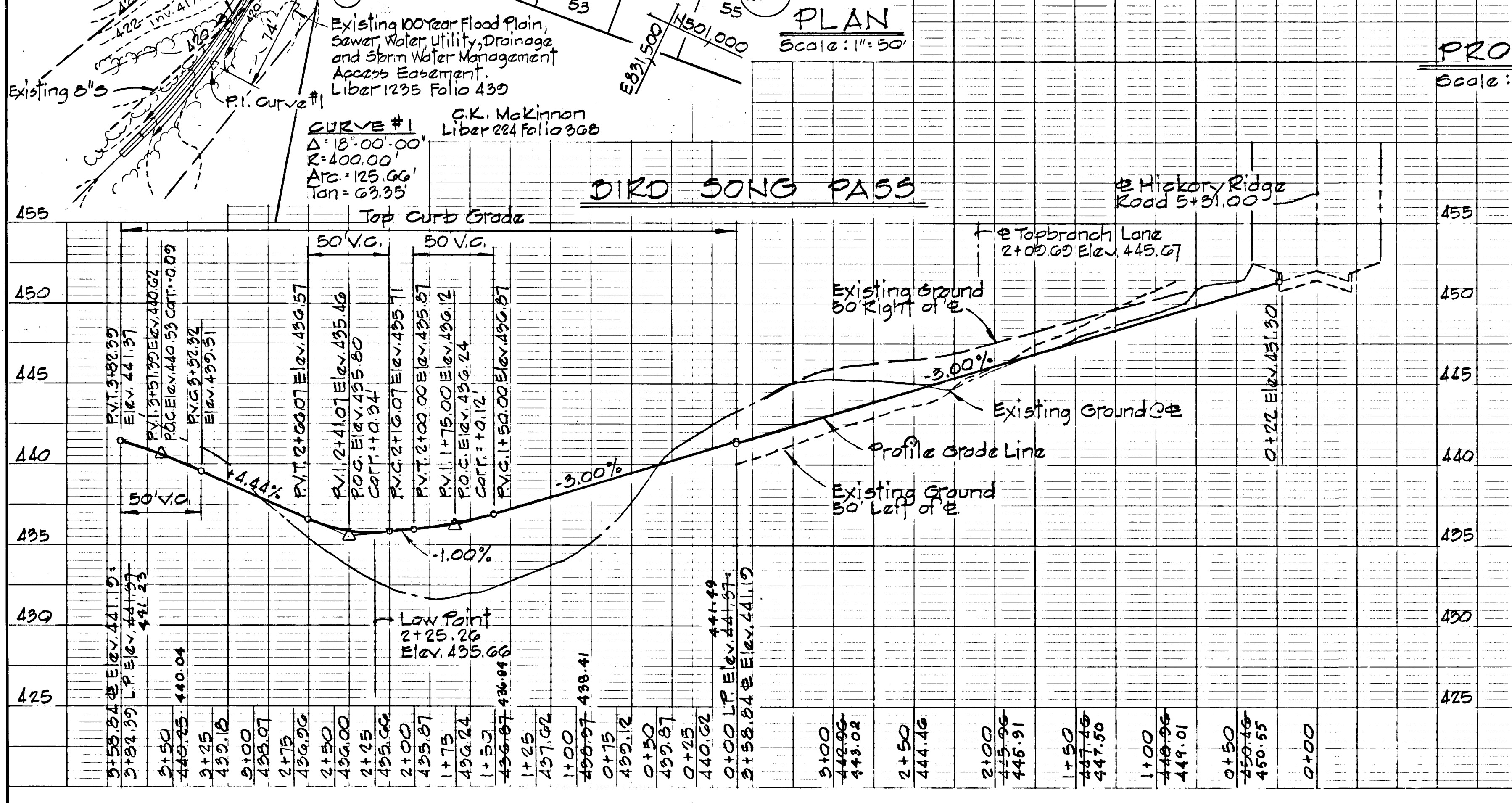
PROJECT AREA: VILLAGE OF HICKORY RIDGE SECTION 2 AREA 2 LOTS 37 THRU 76

PROJECT TITLE: PLAN AND PROFILE TOPBRANCH LANE AND BIRD SONG PASS

SCALE: AS SHOWN DATE:

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218

Kenneth A. McCord
 Registered Engineer No. 1974



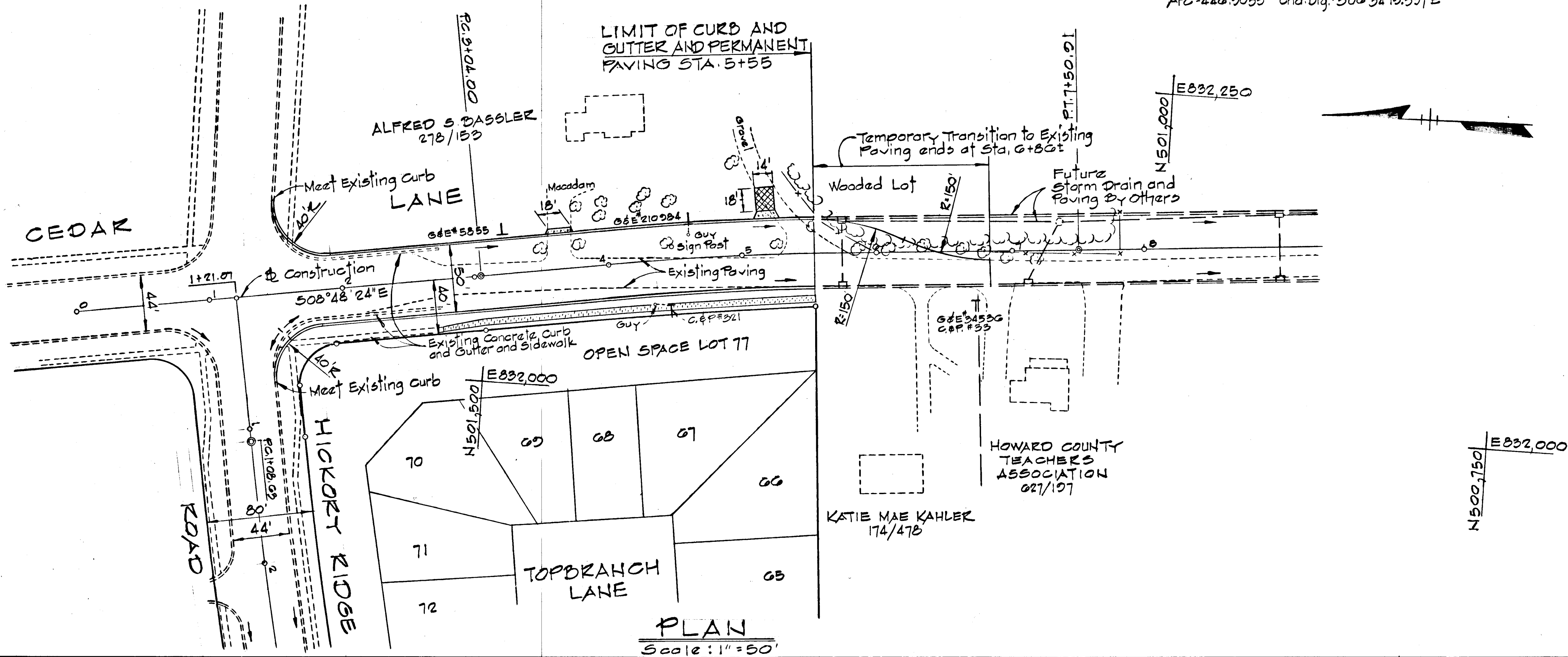
Reference: Capital Project J-9-4062

E CURVE DATA
 $\Delta = 01^{\circ}28'08.598''$ Tan.: 223.5661'
 $R = 5729.5780'$ Chd.: 446.7922'
 $Arc = 446.9055'$ Chd. Dir.: $506^{\circ}34'19.597''E$

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENGINEERING
 OFFICE OF PLANNING & ZONING
 JOHN W. MAHON
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION
 DATE: 2-7-86

DATE	BY	REVISION

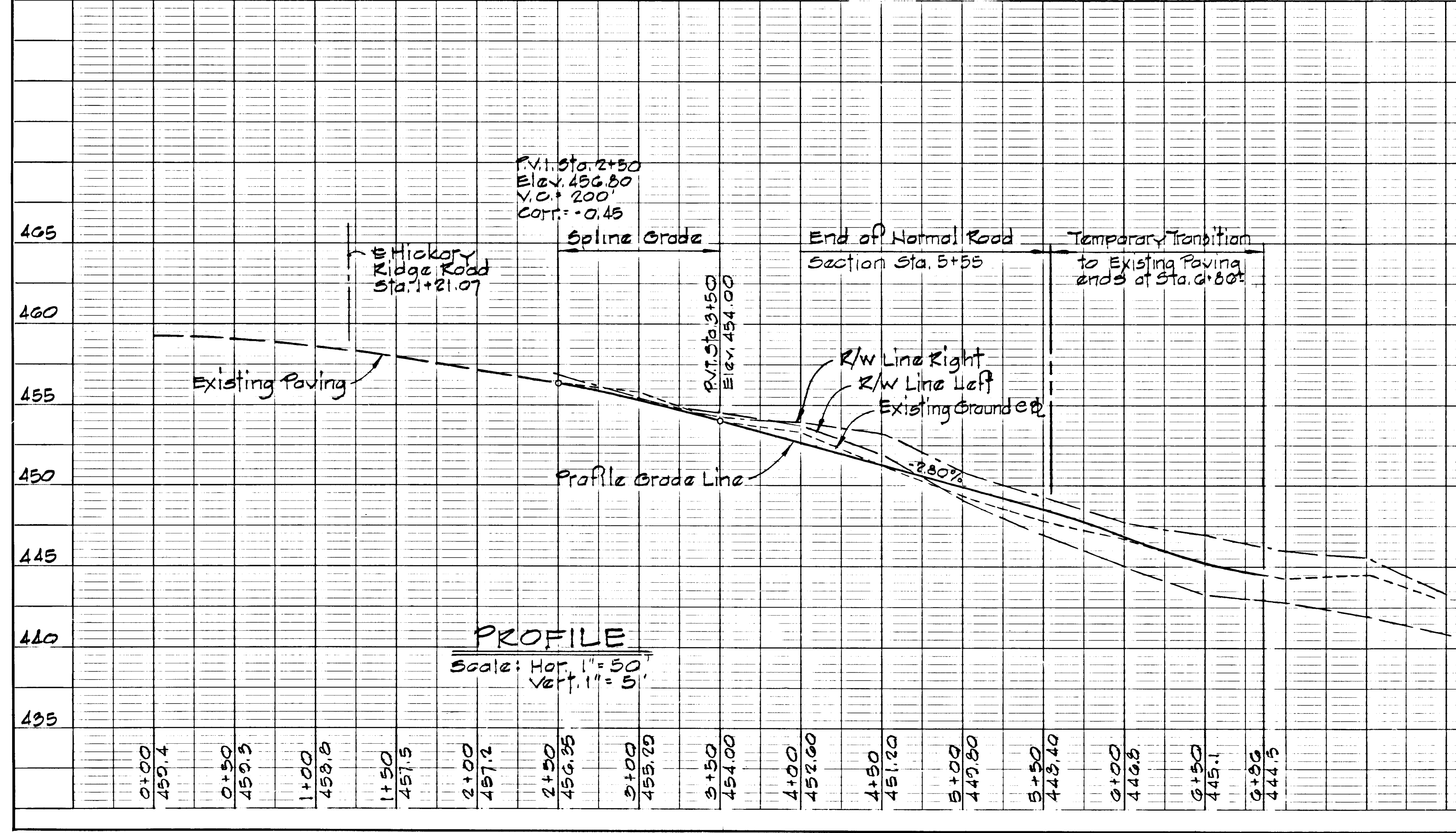
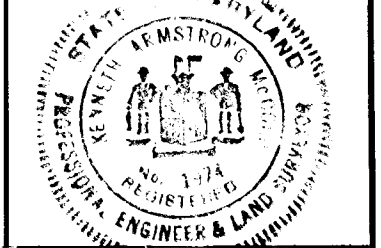
DATE	BY	REVISION



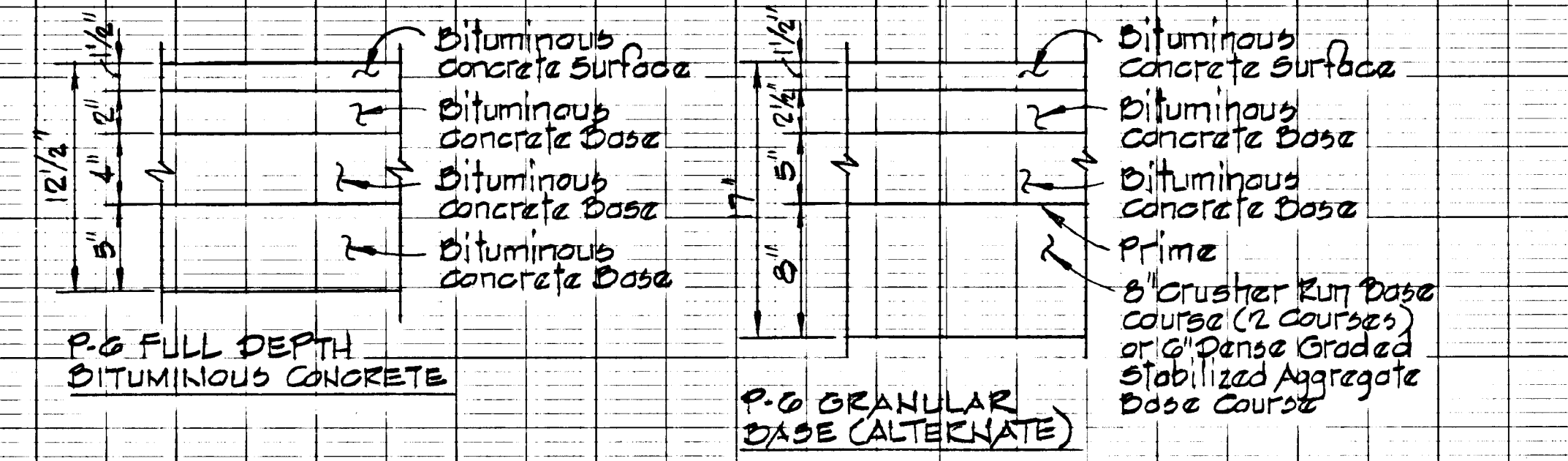
PLAN
 Scale: 1" = 50'

1/26/86	2	Hydraulic Gradient
1/29/86	1	As per Planning and D.P.W. Comments
REV. DATE	REV. NO.	REVISION DESCRIPTION
COLUMBIA 5 th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORPORATION		
PROJECT AREA VILLAGE OF HICKORY RIDGE SECTION 3 AREA 2 LOTS 67 THRU 72		
PROJECT TITLE PLAN AND PROFILE CEDAR LANE		
SCALE: AS SHOWN		DATE:
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218		

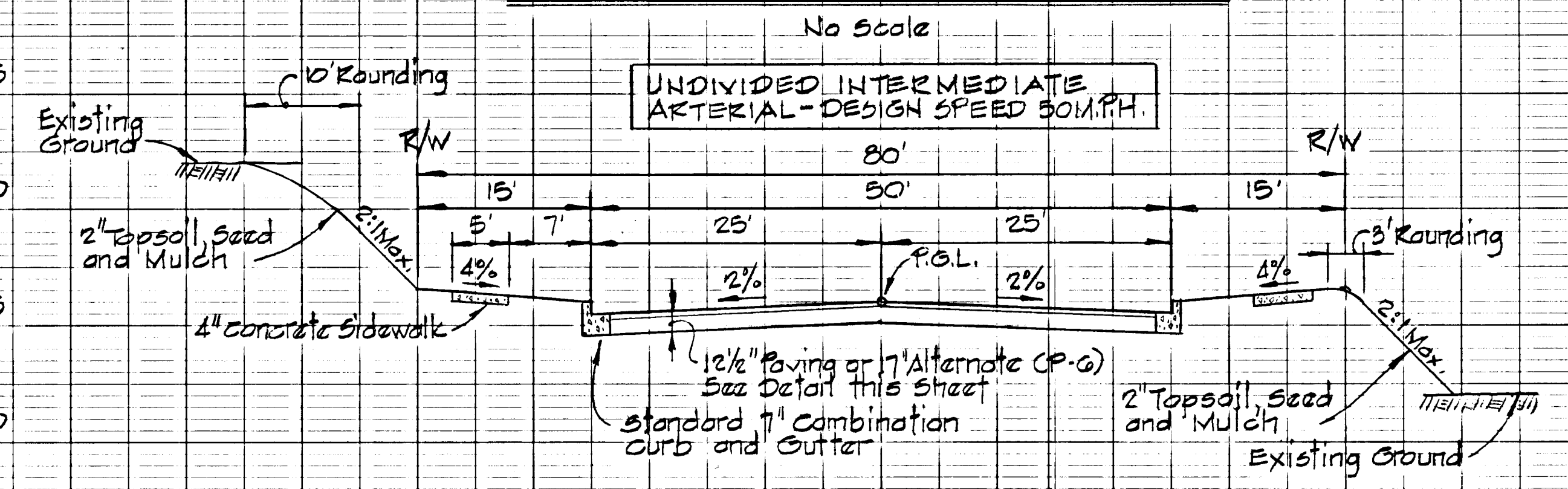
Kenneth A. McCord
 KENNETH A. MCCORD
 Registered Engineer
 No. 1974



PROFILE
 Scale: Hor. 1" = 50'
 Vert. 1" = 5'



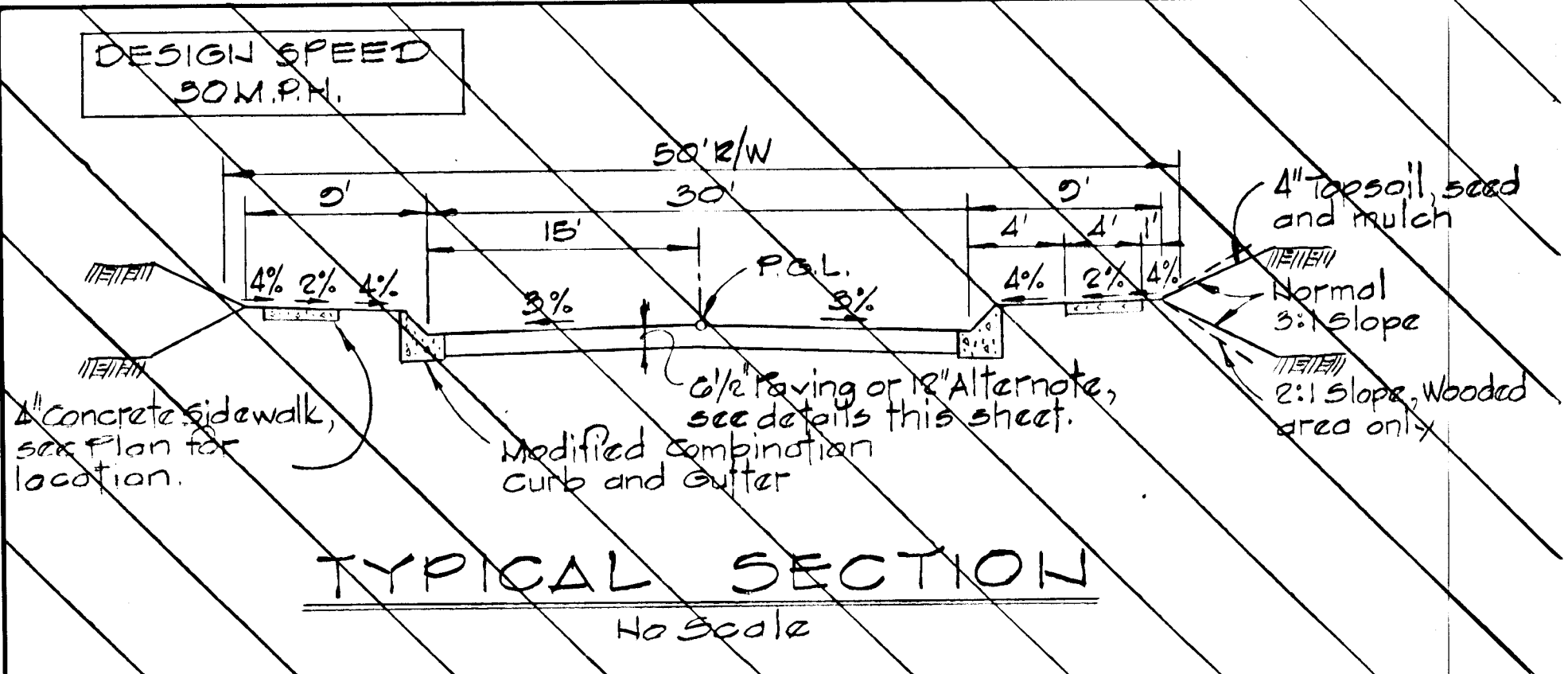
TYPICAL PAVING SECTION



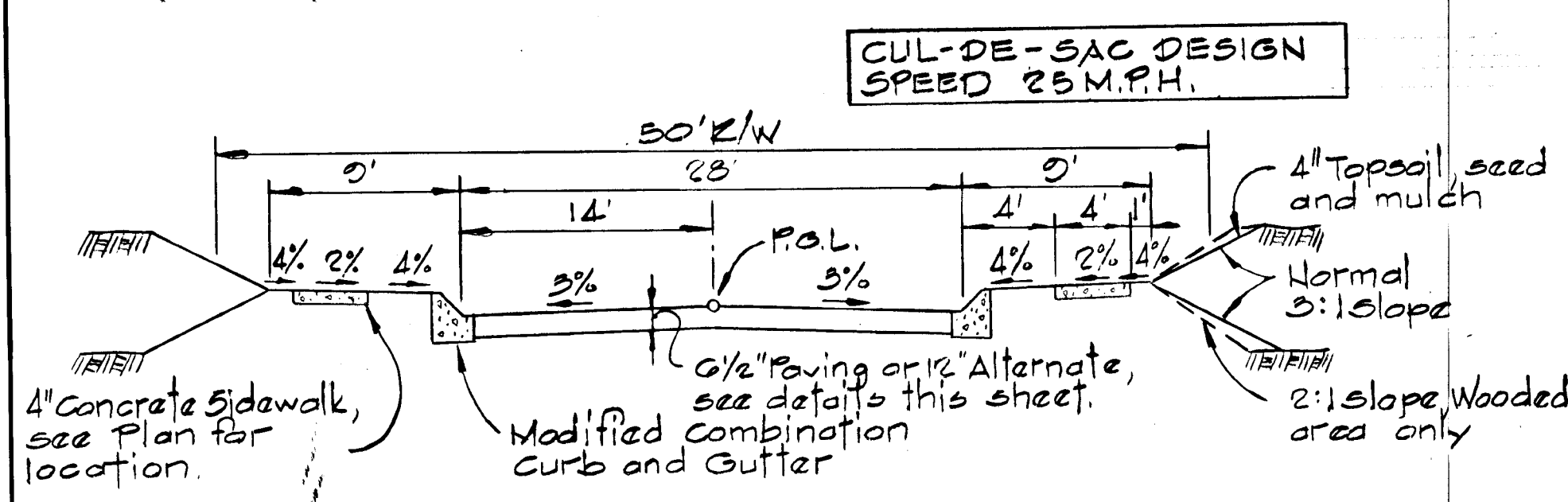
TYPICAL SECTION - CEDAR LANE

92

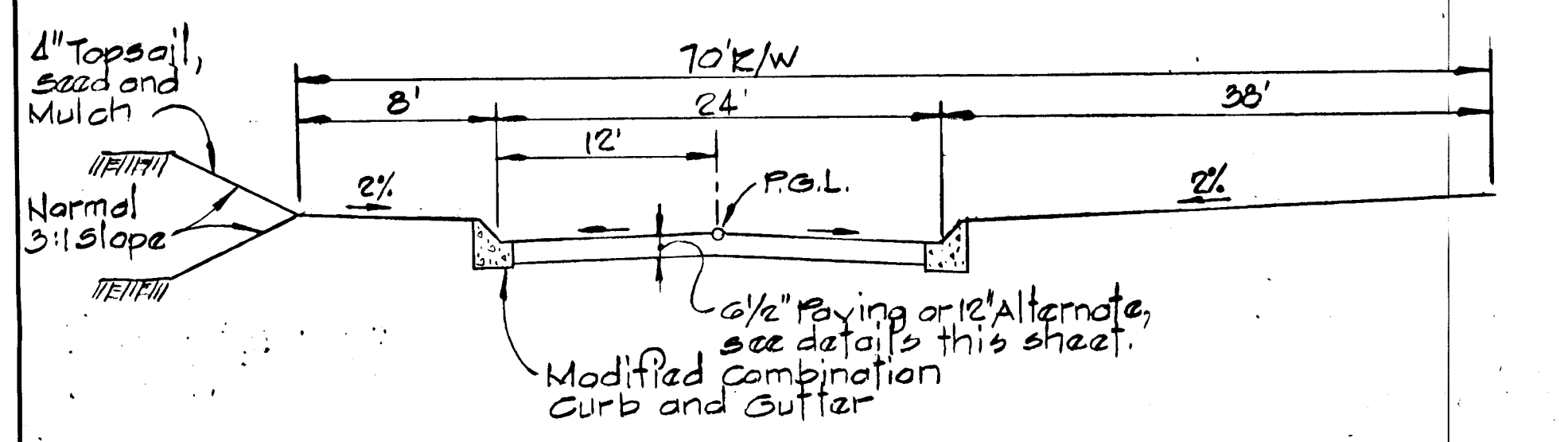
APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENGINEERING
 OFFICE OF PLANNING & ZONING
 DATE 2-7-86
 KENNETH A. MCCORD
 REGISTERED ENGINEER
 NO. 1074



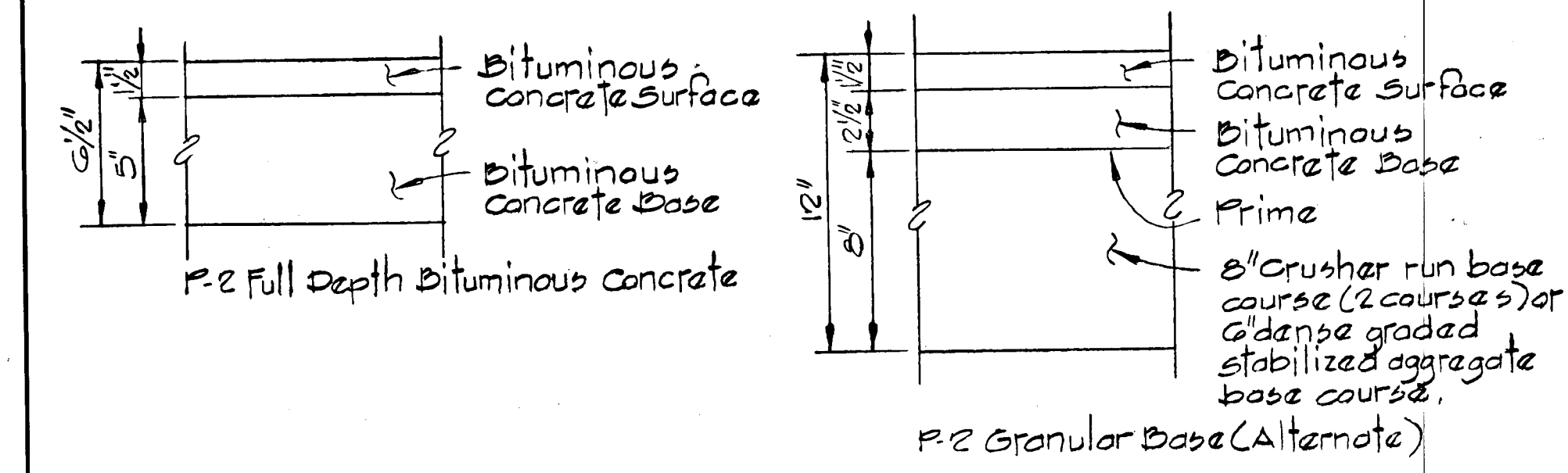
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 No Scale



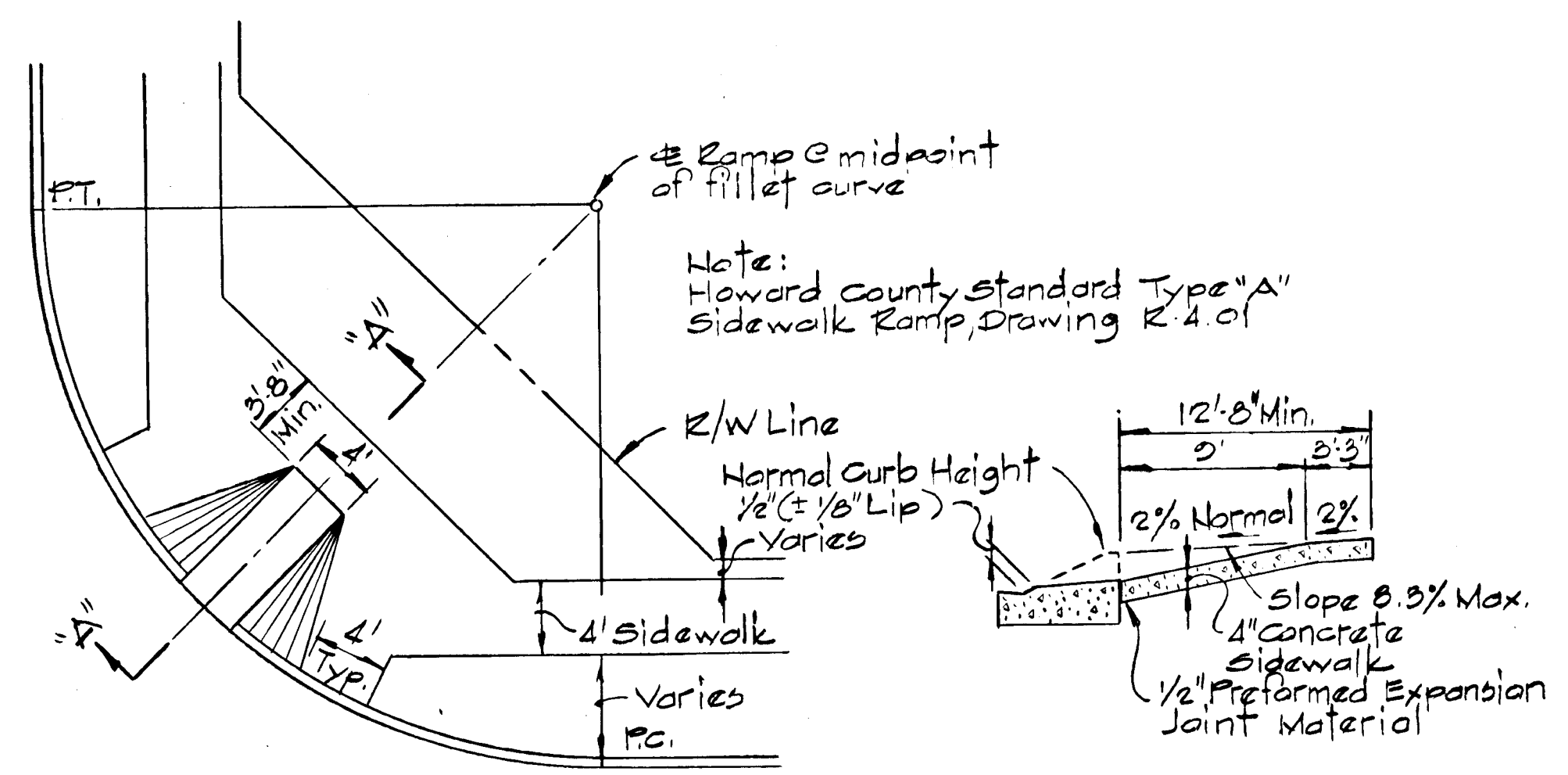
TYPICAL SECTION
 DIED SONG PASS AND TOPBRANCH LANE
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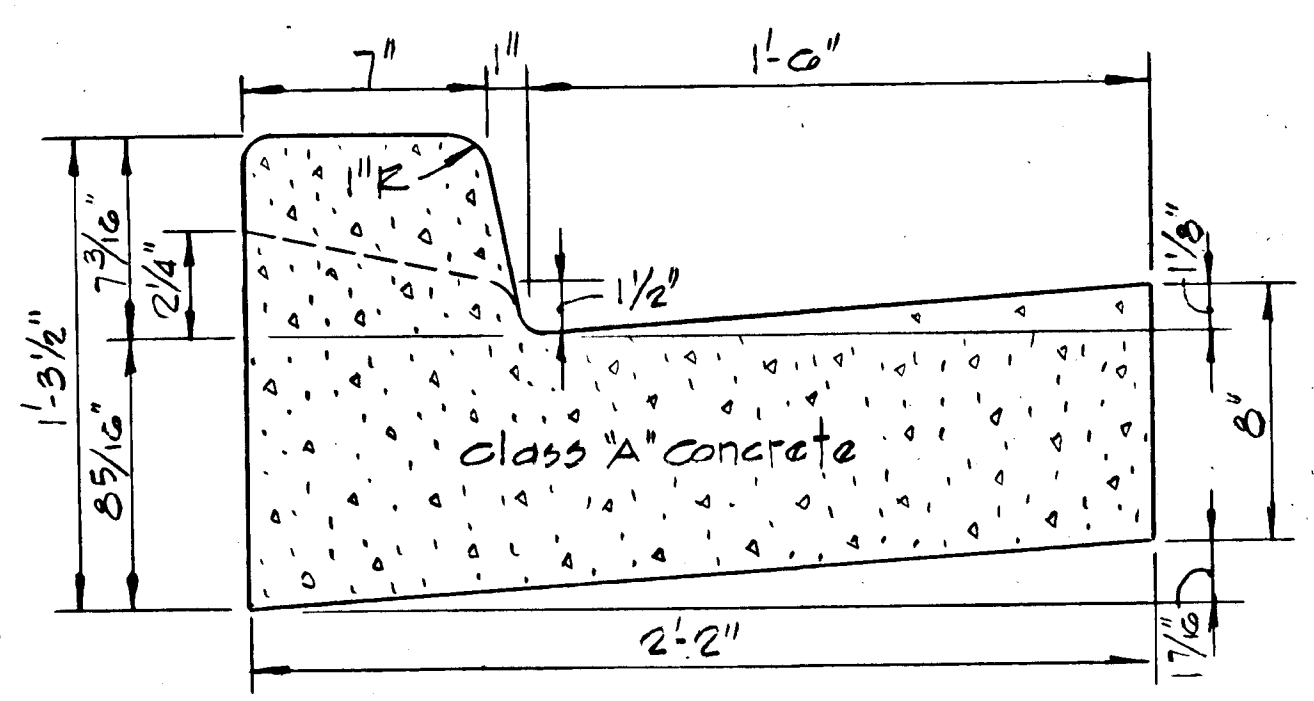
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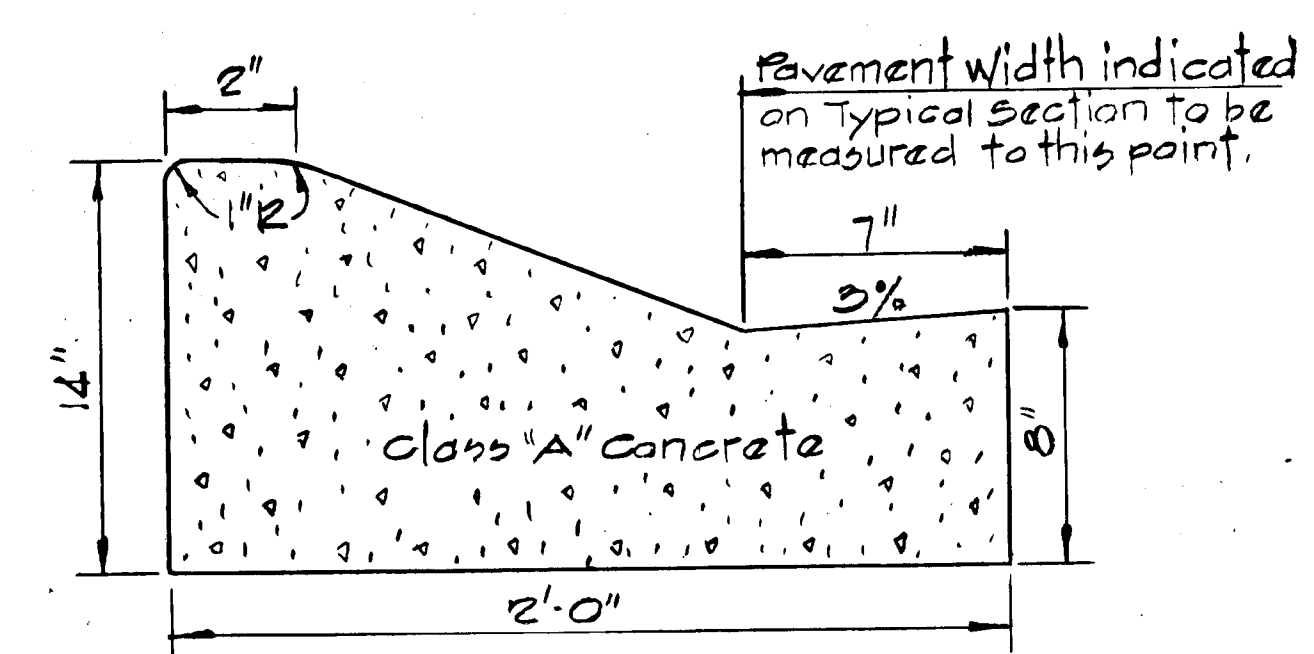
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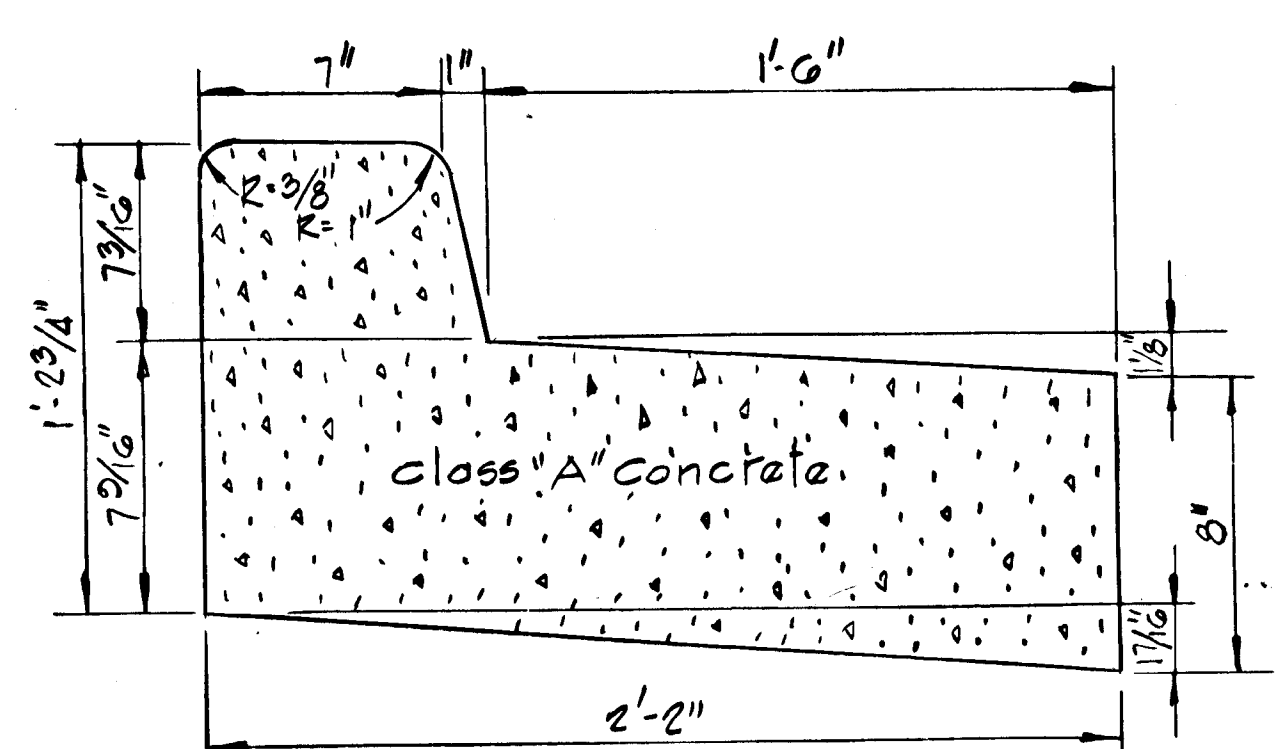
PLAN SECTION "A-A"
 WHEEL CHAIR RAMP DETAIL
 No Scale



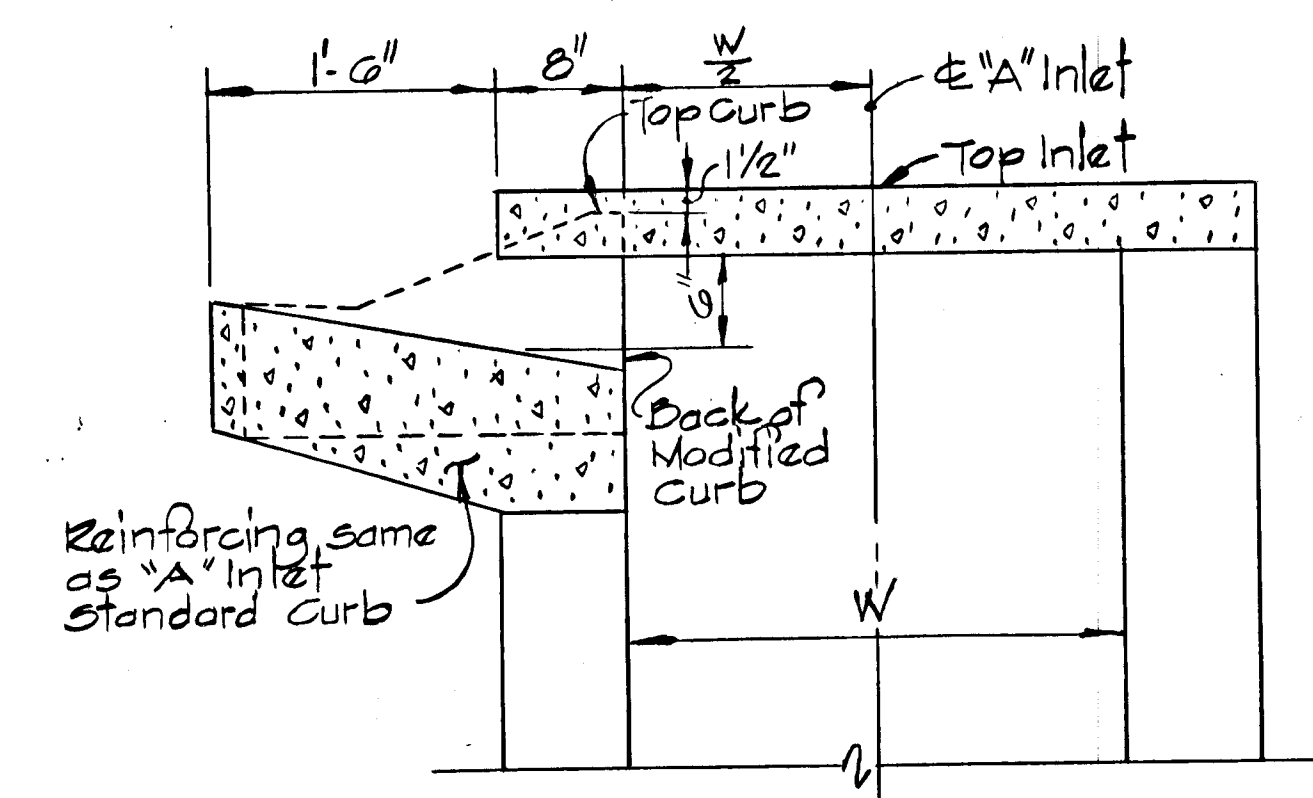
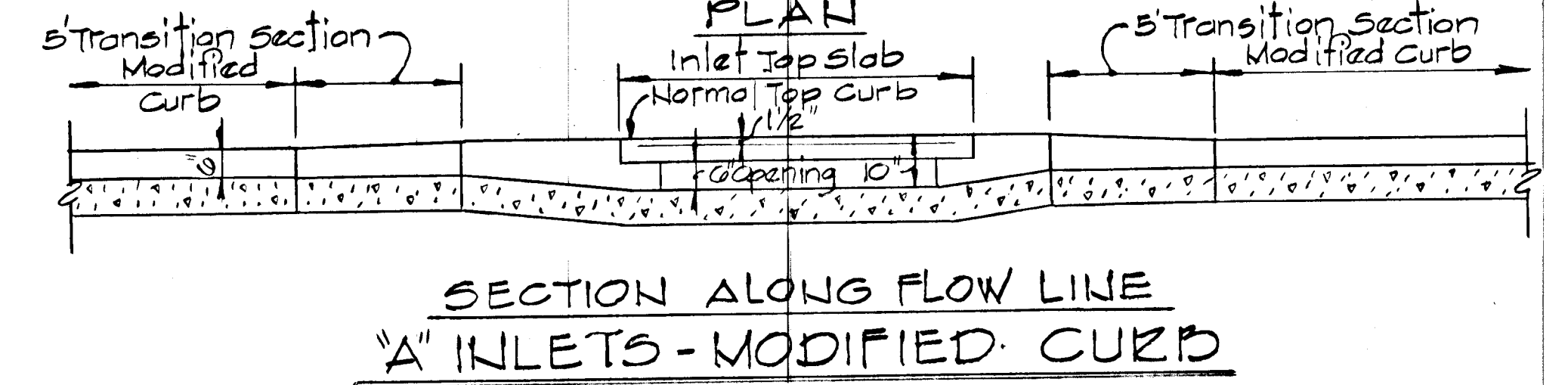
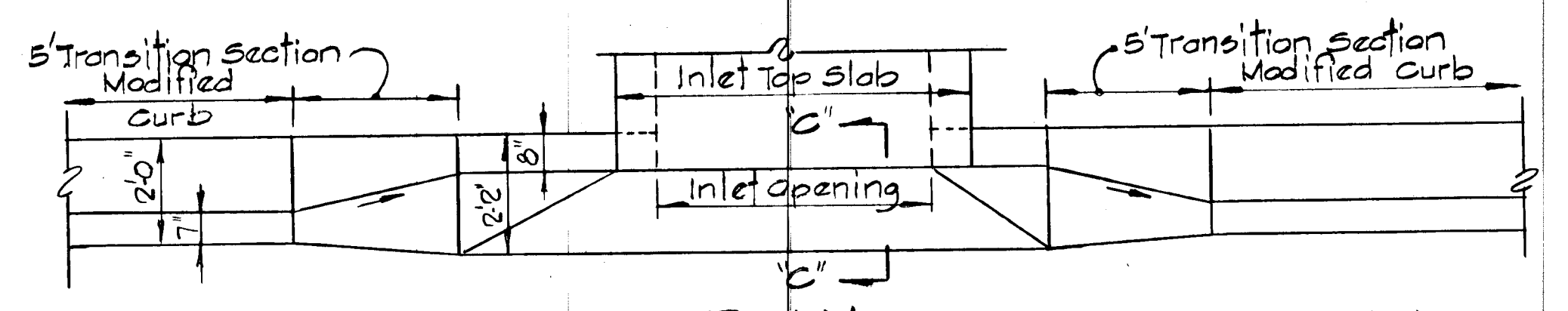
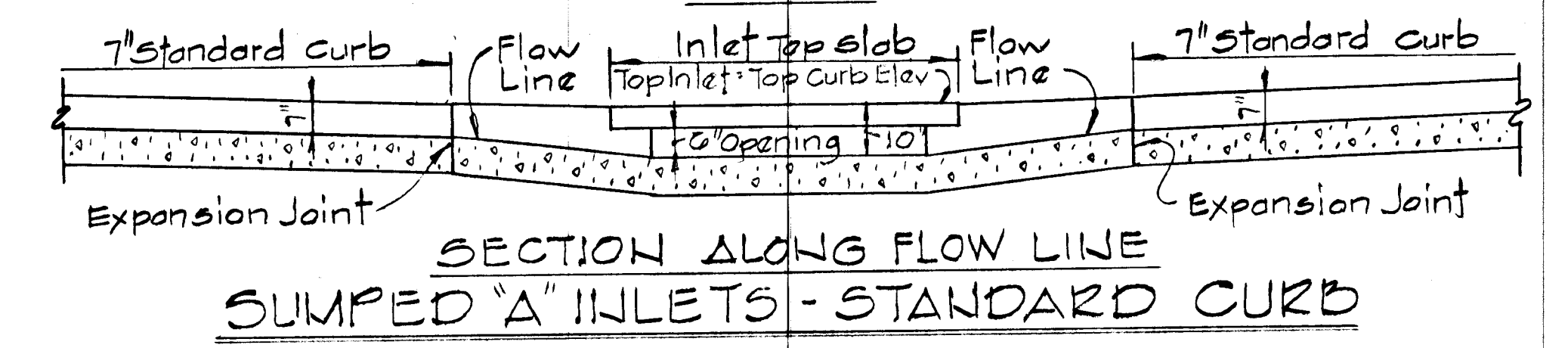
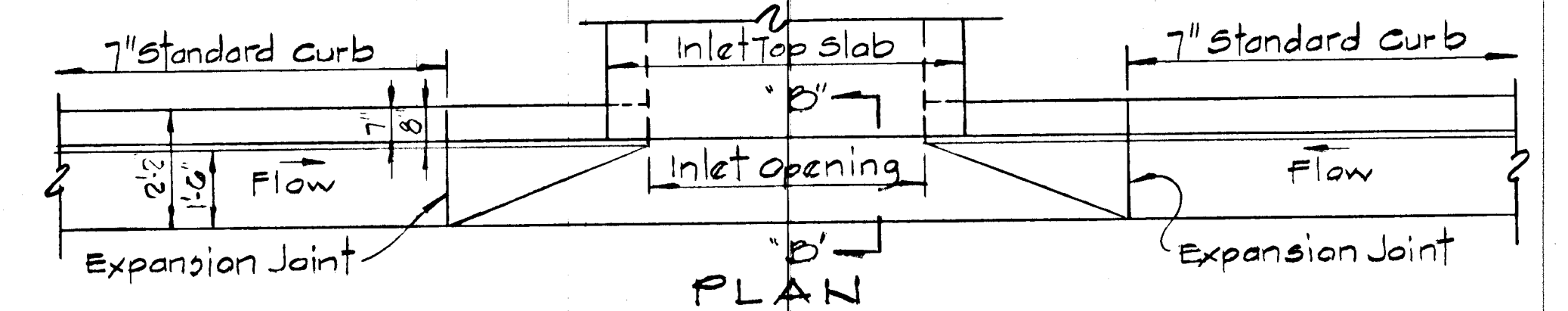
STANDARD 7" COMBINATION CURB & GUTTER
 No Scale



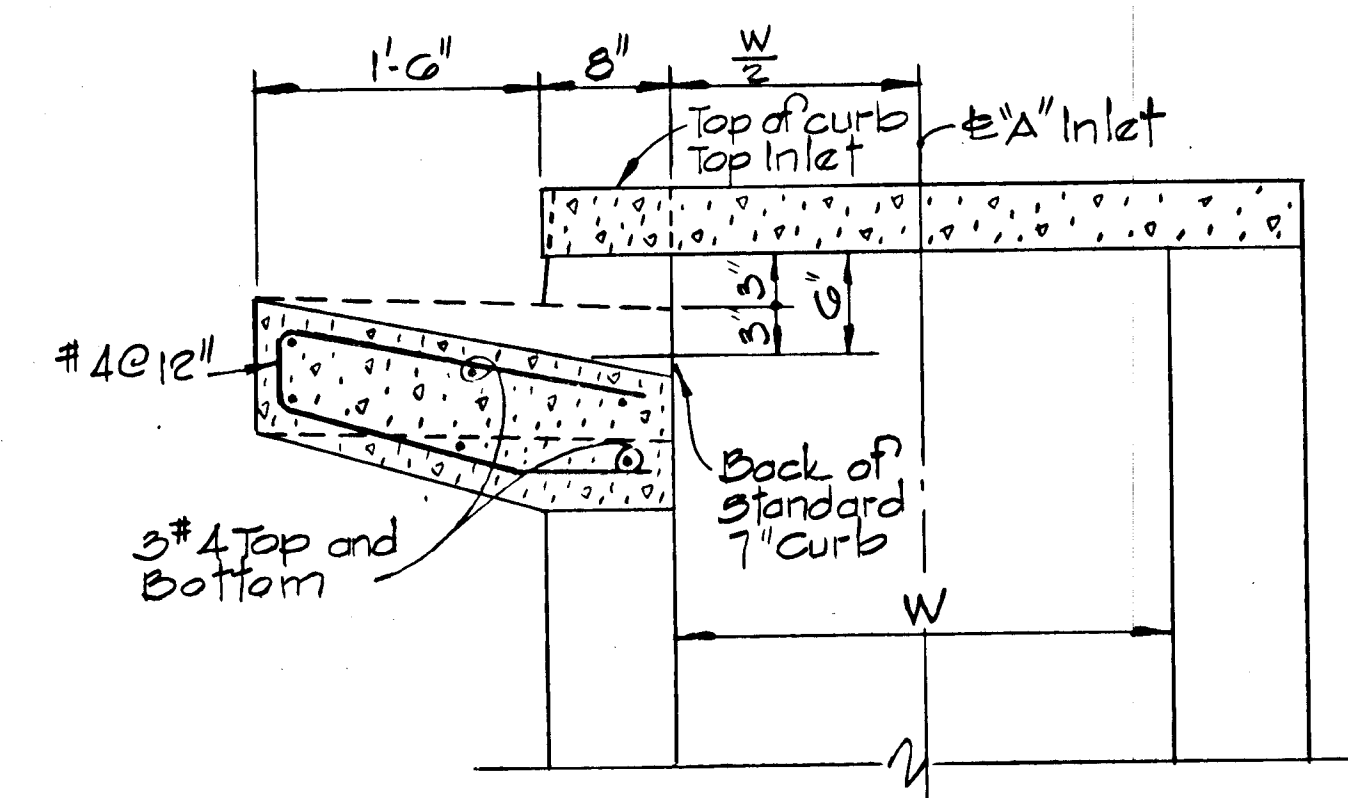
MODIFIED COMBINATION CURB & GUTTER
 No Scale



REVERSE 7" COMBINATION CURB AND GUTTER
 No Scale

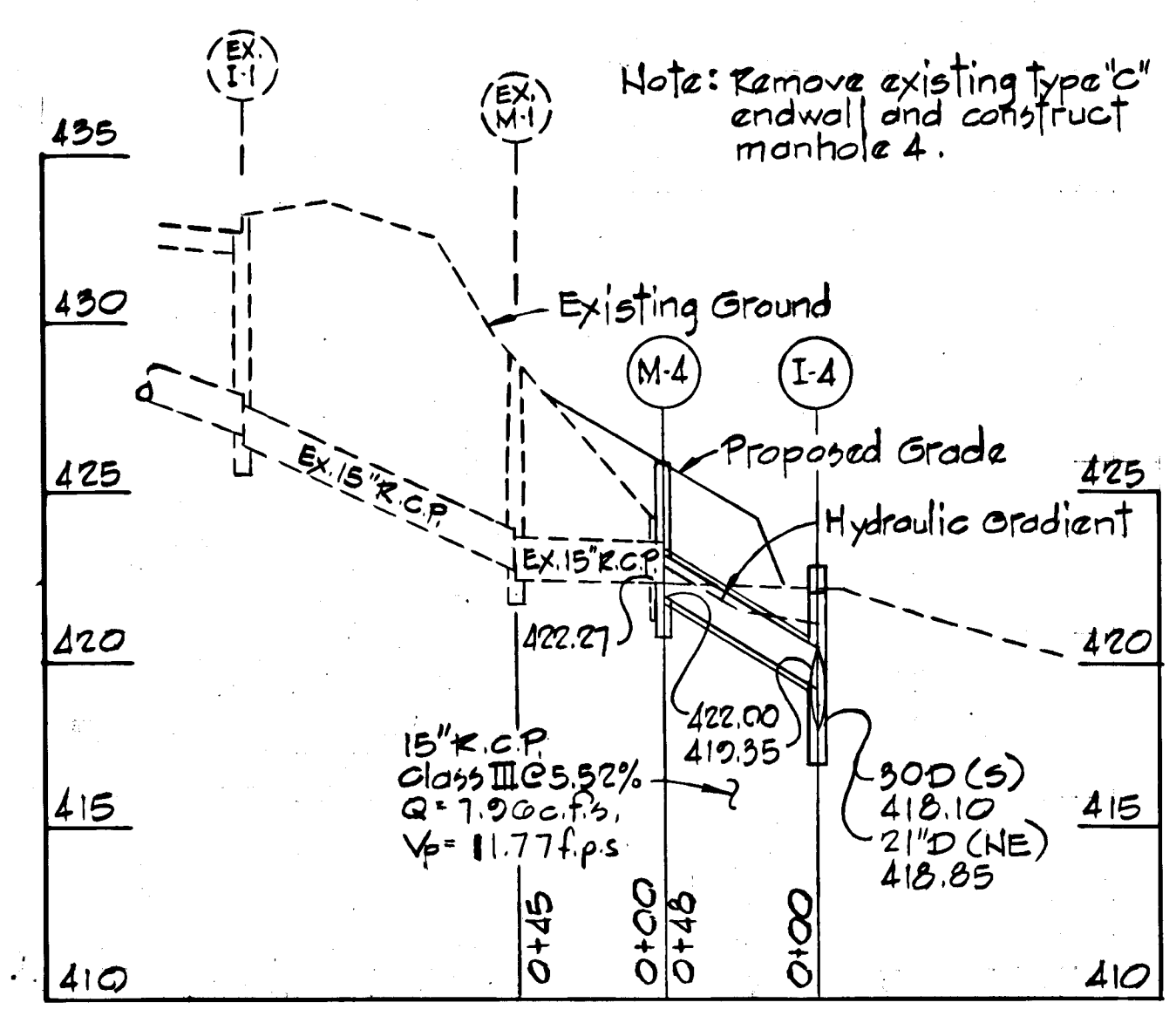
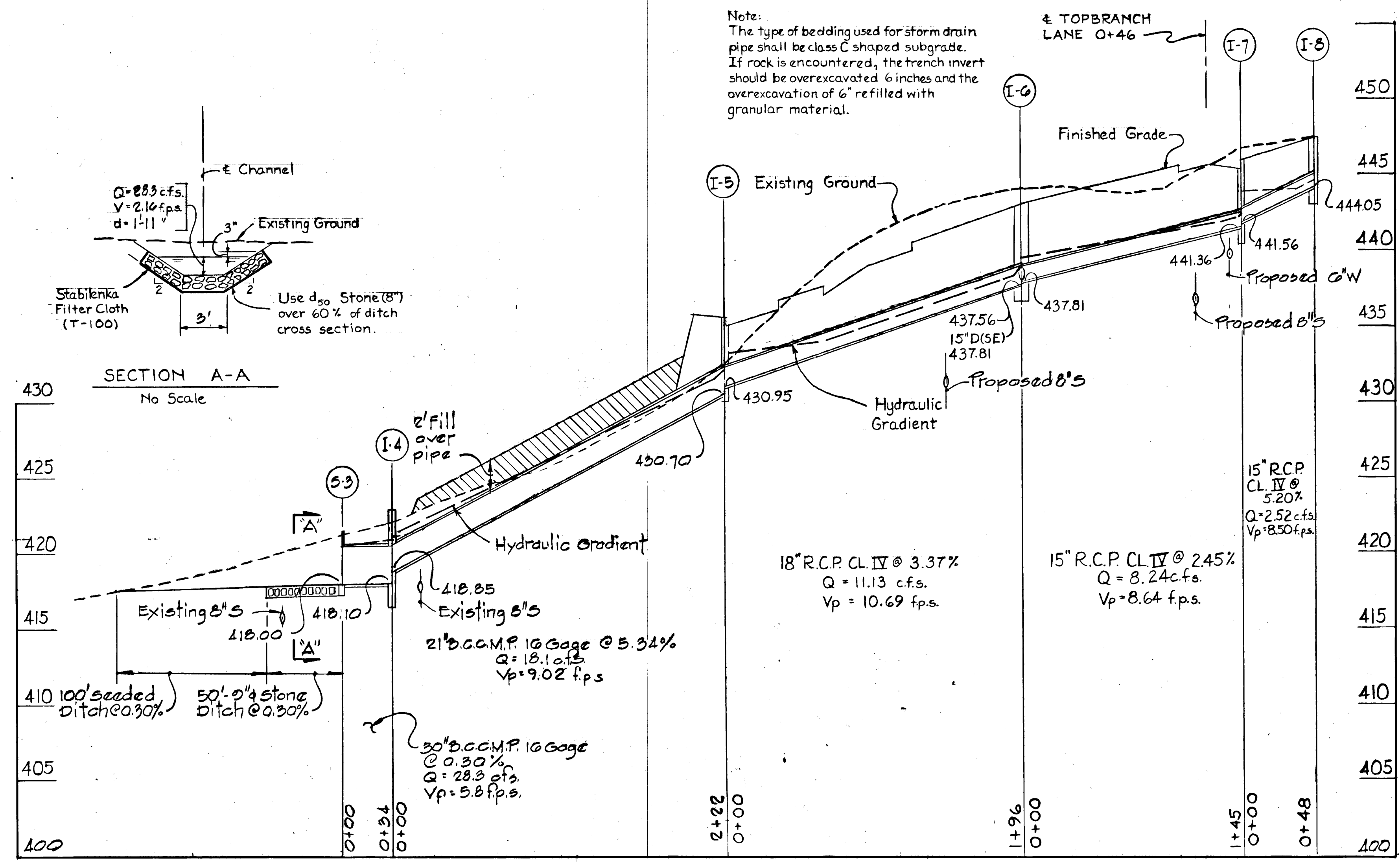
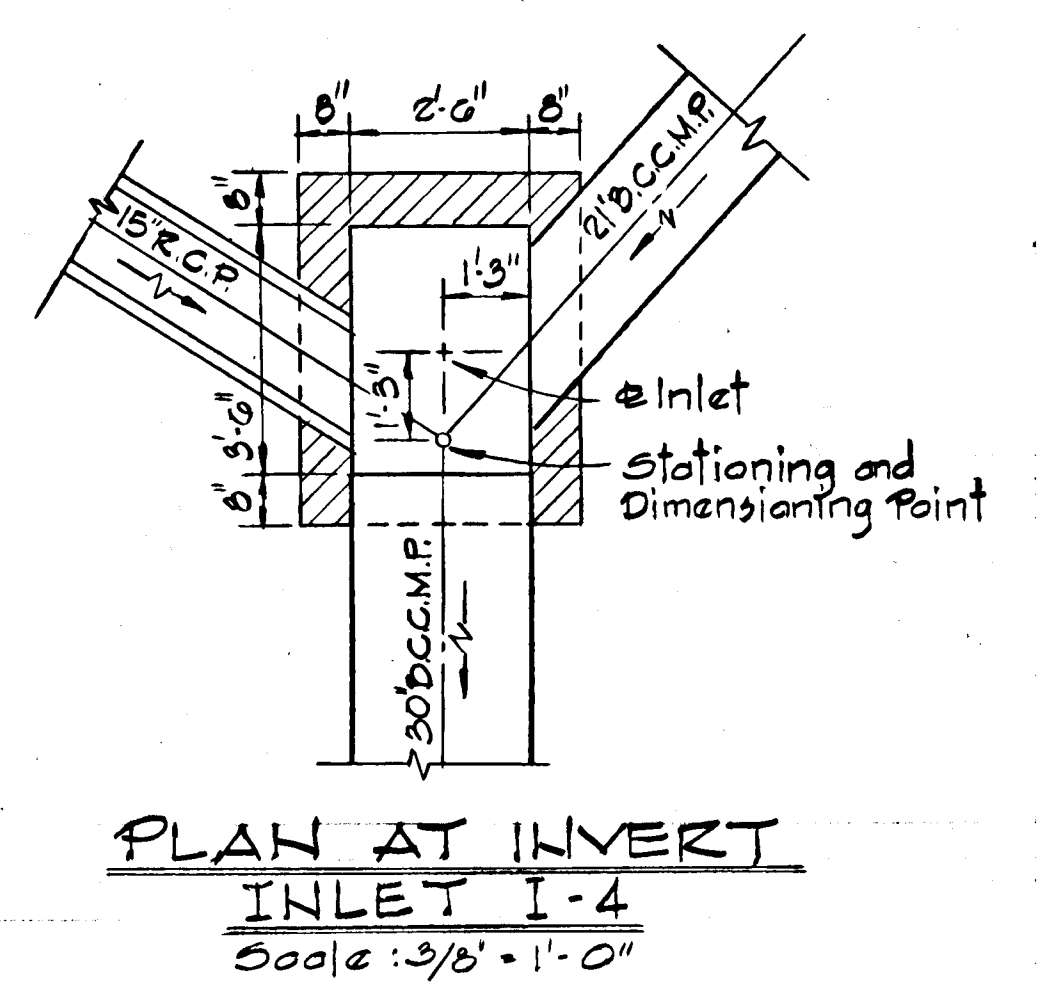
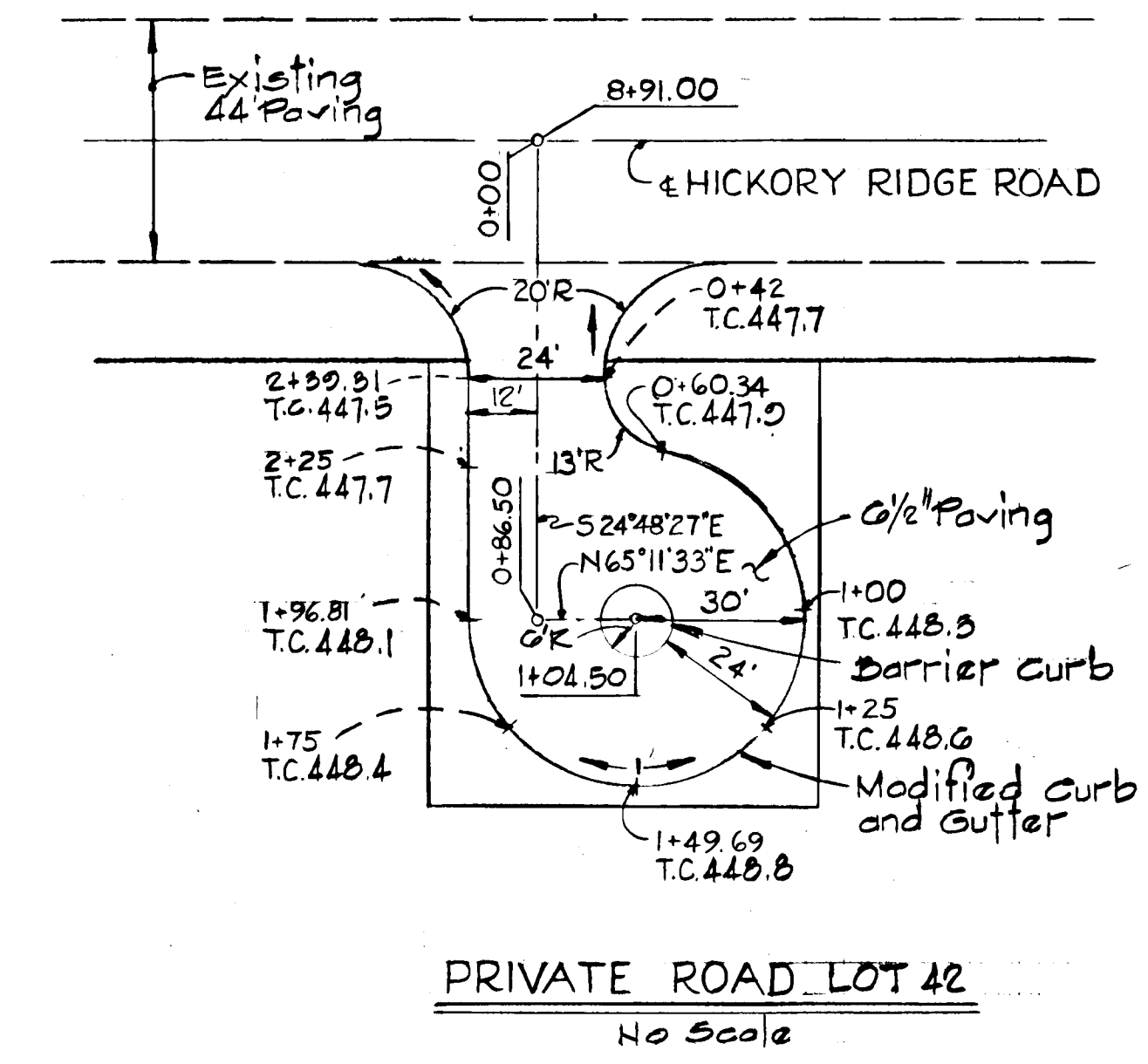
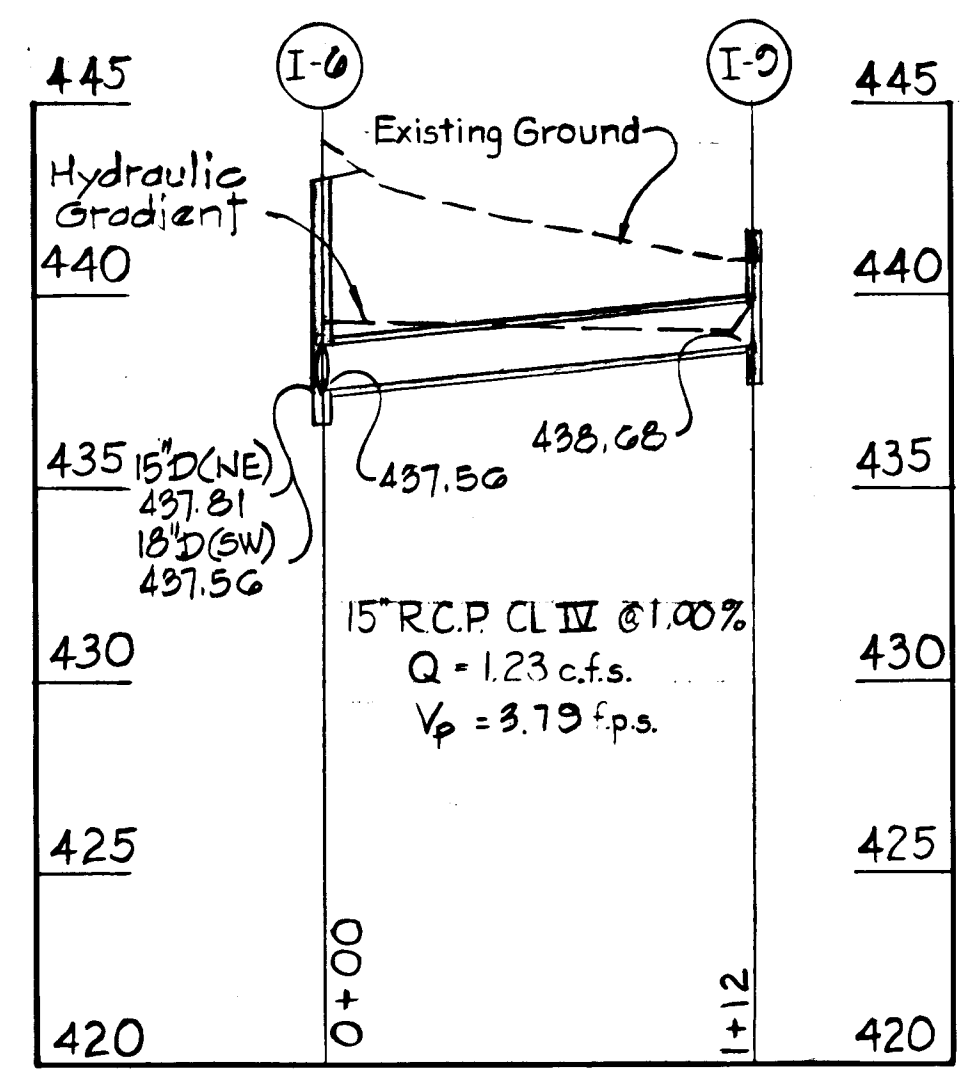
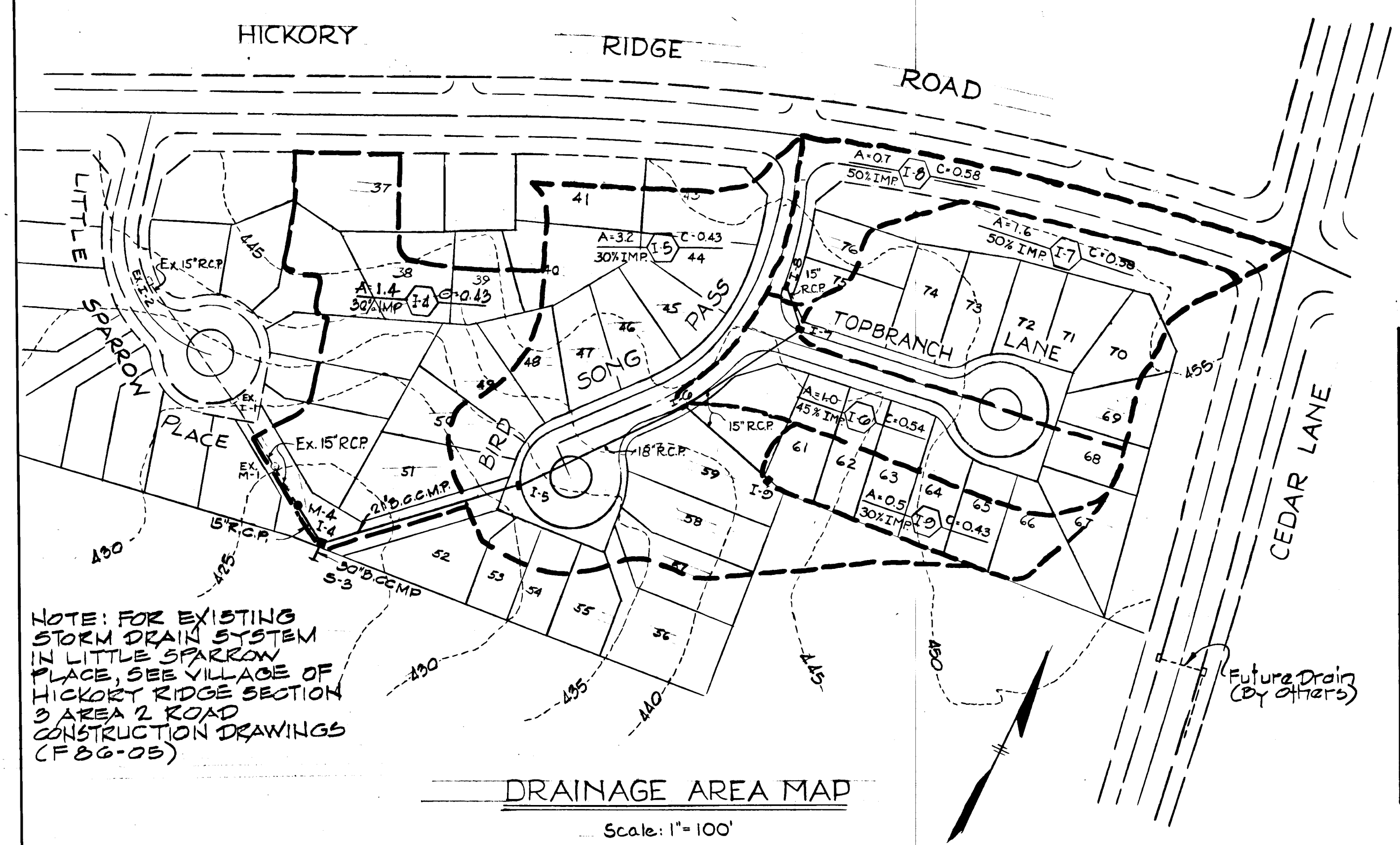


SECTION "C-C"
 "A" INLET MODIFIED CURB
 No Scale



SECTION "B-B"
 "A" INLET - STANDARD CURB
 No Scale

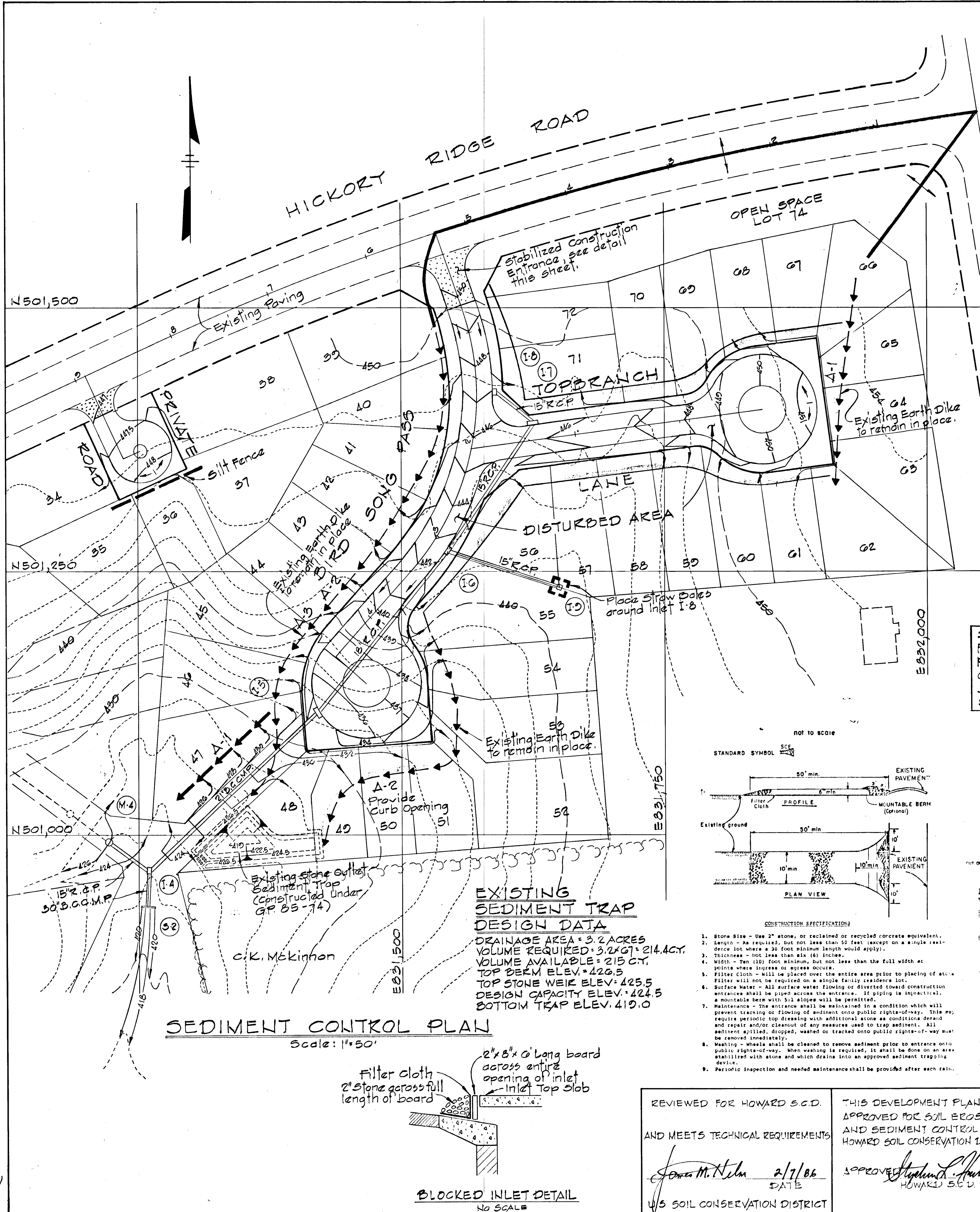
4/26/84	2	Hydraulic Gradient
1/20/86	1	As per Planning and D.R.W. Comments
REVISION	REV. NO.	REVISION DESCRIPTION
COLUMBIA		
5 th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORPORATION		
PROJECT AREA VILLAGE OF HICKORY RIDGE SECTION 3 AREA 2 LOTS 27 THRU 78		
PROJECT TITLE ROADWAY AND STORM DRAIN DETAILS		
SCALE: AS SHOWN		DATE:
WHITMAN, REQUART AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218		
Kenneth A. McCord KENNETH A. MCCORD Registered Engineer No. 1074		



Note:
 The type of bedding used for storm drain pipe shall be class C shaped subgrade. If rock is encountered, the trench invert should be overexcavated 6 inches and the overexcavation of 6" refilled with granular material.

PROFILES SCALE: HOR. 1" = 50' VERT. 1" = 5'

4/25/86	2	Hydraulic Gradient
1/29/86	1	As per Planning and D.P.W. Comments
REV DATE	REV NO	REVISION DESCRIPTION
COLUMBIA 5 th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORPORATION		
PROJECT AREA VILLAGE OF HICKORY RIDGE SECTION 3 AREA 2 LOTS 27 THRU 72		
PROJECT TITLE ROADWAY AND STORM DRAIN DETAILS		
SCALE: AS SHOWN		DATE:
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218		
Kenneth A. McCord KENNETH A. MCCORD Registered Engineer No. 1974		



NOTE:
BLOCK INLETS I-5,
I-6, I-7 AND I-8, PLACE
STRAW BALES AROUND
INLET I-2.

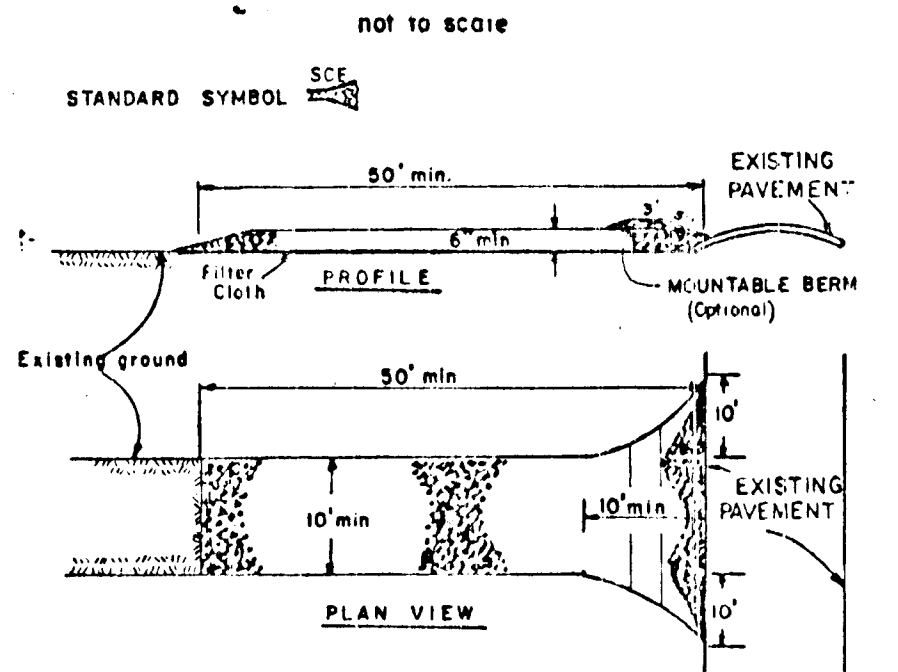
STORM WATER MANAGEMENT
FOR THIS PROJECT HAS BEEN
PROVIDED IN THE VILLAGE
OF HICKORY RIDGE SECTION
3 AREA 1, F83-120 AND
SECTION 3 AREA 5, F84-51.

EXISTING SEDIMENT TRAP DESIGN DATA
DRAINAGE AREA = 3.2 ACRES
VOLUME REQUIRED = 3,247.214 ACY.
VOLUME AVAILABLE = 215 CT.
TOP BERM ELEV. = 426.5
TOP STONE WEIR ELEV. = 425.5
DESIGN CAPACITY ELEV. = 424.5
BOTTOM TRAP ELEV. = 419.0

SEDIMENT CONTROL PLAN
Scale: 1" = 50'



BLOCKED INLET 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 seat-ditch 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 increase or decrease 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 directed toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with six (6) 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/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.

REVIEWED FOR HOWARD S.C.D.
AND MEETS TECHNICAL REQUIREMENTS
John M. Nelson 2/7/86
DATE
US SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT PLAN IS
APPROVED FOR SOIL EROSION
AND SEDIMENT CONTROL BY THE
HOWARD SOIL CONSERVATION DISTRICT.
Stephan L. Smith 2/1/86
DATE
HOWARD S.C.D.

CERTIFICATION BY THE ENGINEER
"I 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."
Kenneth A. McGord 5-24-85
DATE
KENNETH A. MCGORD PE 1074

CERTIFICATION BY THE DEVELOPER
"I WE CERTIFY THAT ALL DEVELOPER
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 PROJECT WILL HAVE A
CERTIFICATE OF ATTENDANCE AT A
DEPARTMENT 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."
Walter E. Woodford 5-24-85
DATE
WALTER E. WOODFORD

- SEQUENCE OF CONSTRUCTION**
1. Obtain Grading Permit.
 2. Construct Stabilized Construction Entrance on Bird Song Pass. (1 Day)
 3. Clear and grub areas for sediment control facilities only. (3 Days)
 4. Construct sediment trap and earth dikes. (3 Days)
 5. Stabilize earth dikes with temporary seeding, see specifications, this sheet. (1 Day)
 6. Strip and rough grade limits of construction. (3 Weeks)
 7. Construct all utilities. (4 Weeks)
 8. Fine grade roads, construct curb and gutter, sidewalks and seed disturbed areas. (2 Weeks)
 9. Fine roads. (1 Week)
 10. Remove all sediment control facilities after grass is established in the contributing drainage area. Stabilize sediment trap removal area; see permanent seeding notes this sheet. (1 Week)

* Allow for 10' long curb openings at and of Bird Song Pass.

REVDATE	REV. NO.	REVISION DESCRIPTION
4/25/86	1	Hydraulic Gradient
1/29/86	2	As per Planning and D.R.V. comments

COLUMBIA
ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
PROJECT AREA
VILLAGE OF HICKORY RIDGE
SECTION 3 AREA 2
LOTS 37 THRU 78
PROJECT TITLE
SEDIMENT CONTROL PLAN
AND DETAILS
SCALE: AS SHOWN DATE:

WHITMAN, REQUARD AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218
Kenneth A. McGord
KENNETH A. MCGORD
Registered Engineer
No. 1074

APPROVED: DEPARTMENT OF PUBLIC WORKS
William E. Ryan 2-11-86
CHIEF, BUREAU OF ENGINEERING
OFFICE OF PLANNING & ZONING
John M. Nelson 2-7-86
SUPERVISOR OF LAND DEVELOPMENT
AND ZONING ADMINISTRATION

STONE OUTLET SEDIMENT TRAP

CROSS SECTION A-A

OPTION: A one foot layer of 3" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The soil area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as unexcavated stones, rocks, organic material or other objectionable material. The embankment shall be completed by excavating site equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 at steepest.
4. The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the up-slope side on the small riprap in embedded filter cloth in the riprap.
5. 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.
6. The structure shall be inspected after each rain and repairs made as needed.
7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Method 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:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 400 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Narrow 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).
- 2) 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. Narrow 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 50 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 2-25 lbs/1000 sq ft of seeding clovergrass. During the period of October 15 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 40 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 346 gallons per acre (8 gal/1000 sq ft) for anchoring.

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

TEMPORARY SEEDING NOTES

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

Method 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 August 15 thru November 15, seed with 25 bushel per acre of annual ryegrass (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of seeding clovergrass (4.07 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 346 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.

SEEDING CONTROL NOTES

- 1) 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. (932-2437)
- 2) 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.
- 3) Following initial soil disturbance or redistribution, 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.
- 4) All sediment traps/facets shown must be located and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 5) 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 seeding (Sec. 51) and (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.
- 6) 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.
- 7) Site Analysis:
Total Area of Site: 3.2 Acres
Area Disturbed: 2.3 Acres
Area to be roofed or paved: 1.1 Acres
Area to be vegetatively stabilized: 0.3 Acres
Total Cut: 2000 cu. yds
Total Fill: 2000 cu. yds
Offsite waste/borrow area location: NONE
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9) Additional sediment controls must be provided, if deemed necessary by the Howard County DPM sediment control inspector.
- 10) 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.

