

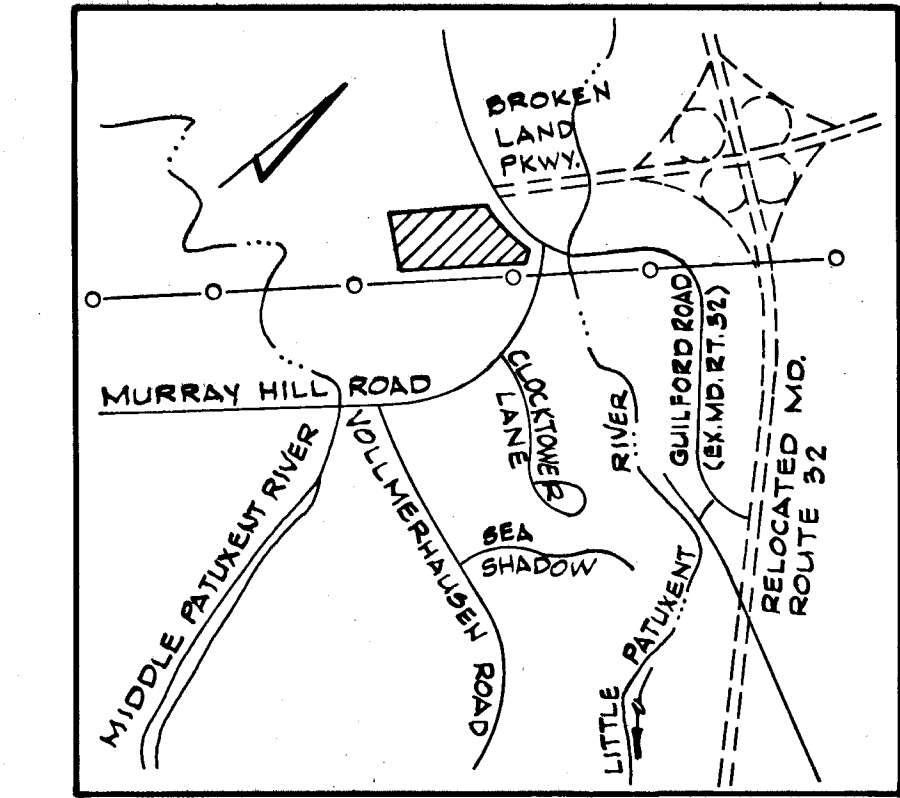
BENCH MARKS

- BM#1 SQUARE CUT IN THE TOP OF MEDIAN CURB OF NORTHBOUND LANE AT & STA. 0+63 OF EARLY APRIL WAY - ELEV. 316.07
- BM#2 X-CUT IN TOP OF FLANGE BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF THE INTERSECTION OF SKYROCK COURT WITH EARLY APRIL WAY - ELEV. 306.98
- BM#3 X-CUT IN THE TOP OF FLANGE BOLT OF FIRE HYDRANT 16' LEFT OF & STA. 7+90 SKYROCK COURT - ELEV. 319.04

COLUMBIA

HOWARD COUNTY, MARYLAND
 6TH ELECTION DISTRICT

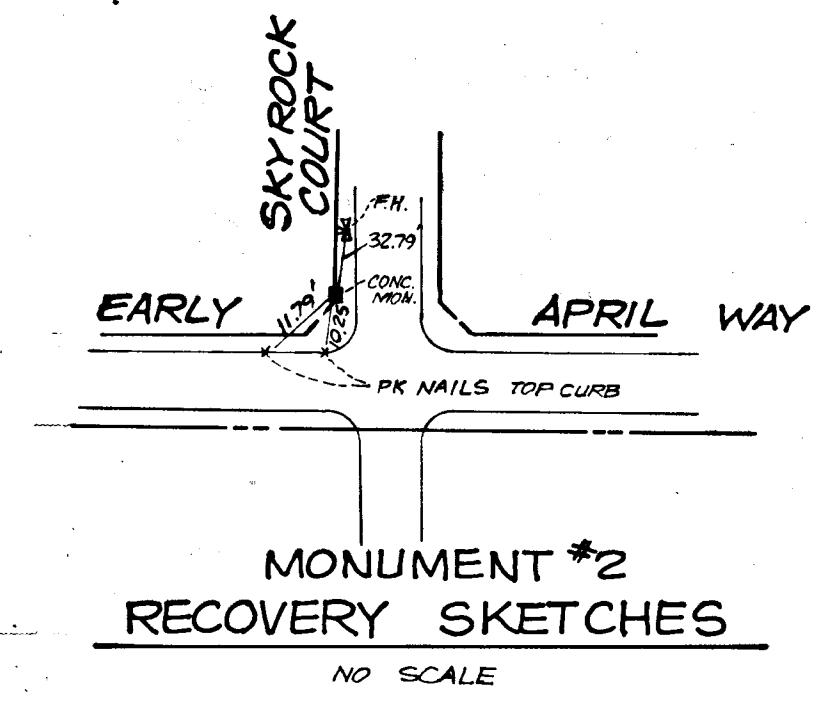
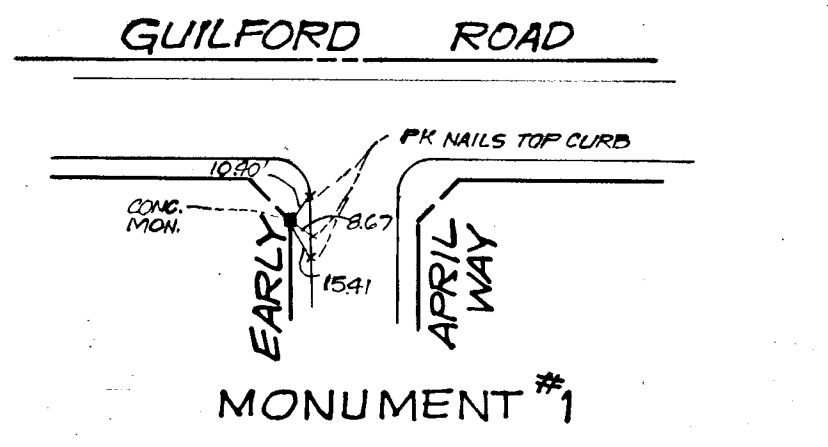
ROAD CONSTRUCTION PLANS
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2
 PARCEL "A", LOTS B-1 THRU B-66
 AND PARCEL "B-67"



VICINITY MAP
 Scale: 1" = 2,000'

PLAN SUBJECT TO V. P. 83-23

BENCH MARK
 207'-W Hillt Nail in curb, left of & 8150' Guilford Road Elev. 313.52



SHEET INDEX	
NO.	DESCRIPTION
1.	TITLE SHEET
2.	PLAN AND PROFILE - EARLY APRIL WAY - STA. 0+00 TO STA. 6+86
3.	PLAN AND PROFILE - SKYROCK COURT
4.	DRAINAGE AREA MAP
5.	STANDARD DETAILS
6.	STORM DRAIN PROFILES AND DETAILS
7.	SEDIMENT CONTROL PLAN
8.	SEDIMENT CONTROL DETAILS
9.	STORM WATER MANAGEMENT POND
10.	" " " "
11.	" " " "

GENERAL NOTES:

1. All work shall be done in accordance with Howard County Standards, Specifications and Details for Construction.
2. All utility companies must be notified 24 hours in advance of any construction.
3. Minor collector street is designed for 35 mph speed and cul-de-sac street is designed for 25 mph speed.
4. All inlets shall be Howard County standard unless otherwise shown. All "A" inlets shall be depressed.
5. Storm drain trenches within road rights-of-ways shall be backfilled and compacted in accordance with Howard County Standards, Specifications and Details for Construction.
6. Any damage to public rights-of-ways or paving will be corrected at the developer's expense.
7. Approximate location of existing utilities are shown. The contractor shall take all necessary precautions to protect existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operations shall be repaired immediately at the contractor's expense.
8. The Contractor shall test pit existing utilities where directed by the Engineer a minimum of two weeks in advance of any construction.
9. Contractor to notify the Howard County Dept. of Inspectors and Permits at least 3 days before starting work shown on these drawings. Telephone 992-2436.

AS-BUILT SURVEY CERTIFIED BY
 KENNETH A. McCORD, MD, REG. PE
 No. 1974 AS OF JULY 30, 1984

Rev. Date	Rev. No.	Revision Description
3/2/83	1	As per Planning & DPW Comments

DEVELOPER
 THE HOWARD RESEARCH
 AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 2315 ST. PAUL STREET
 BALTIMORE, MARYLAND 21218
Kenneth A. McCord
 KENNETH A. McCORD
 Registered Engineer
 No. 1974

STORM DRAIN STRUCTURE SCHEDULE

NO	TYPE	TOP EL	INV. IN	INV. OUT	LOCATION
I-1	Standard Type "E" Inlet	273.50	285.54	264.86	See Plan and Profile
I-2	" A " Inlet, Width 25"	281.15	281.57	280.85	Inlet 15' 0" Left of Sta 9+29
I-3	" " " " "	287.15	287.64	281.87	Inlet 15' 0" Right of Sta 9+29
I-4	Type "D" Inlet	289.35	284.28	284.28	See Plan and Profile
M-1	5'-0" Manhole	267.00	261.05	259.50	" " " "
S-1	Type "C" Endwall			259.70	" " " "

Notes:
 1. Type "E" Inlet, Howard County Standard Drawing SD 4.21
 2. A-B Inlet, Howard County Standard Drawing SD 4.01
 3. 5'-0" Manhole (M-1) Provide 12" walls to top of pipe.
 4. Type "C" Endwall, Howard County Standard Drawing SD 5.21
 5. Type D Inlet, Howard County Standard Drawing SD 4.11

LEGEND

- Publicly Maintained Roadway
- Sidewalk
- Sidewalk (to be built under Developers Agreement)
- Stop Sign 21-1 30" x 30"
- Street Light
- H.R. Handicapped Ramp
- Existing Contour
- - - Proposed Contour

DEPARTMENT OF PUBLIC WORKS
 3-11-83
 CHIEF BUREAU OF ENGINEERING
OFFICE OF PLANNING & ZONING
 3-10-83
 CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION
 DATE

Note:
 For Guilford Road Profile and storm drains, see Road Construction Drawings for Rivers Corporate Park Section 2 Area 1, F-82-92.

3/3/83	1	As per Planning & DPW Comments
Rev Date	Rev No	Revision Description

COLUMBIA
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION

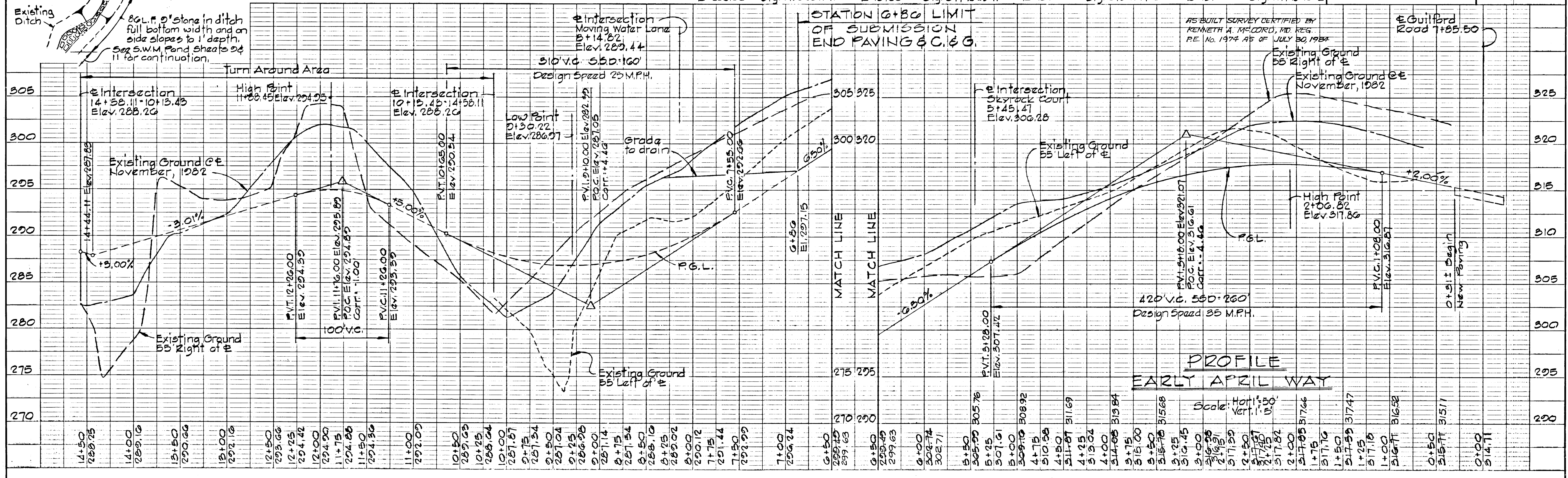
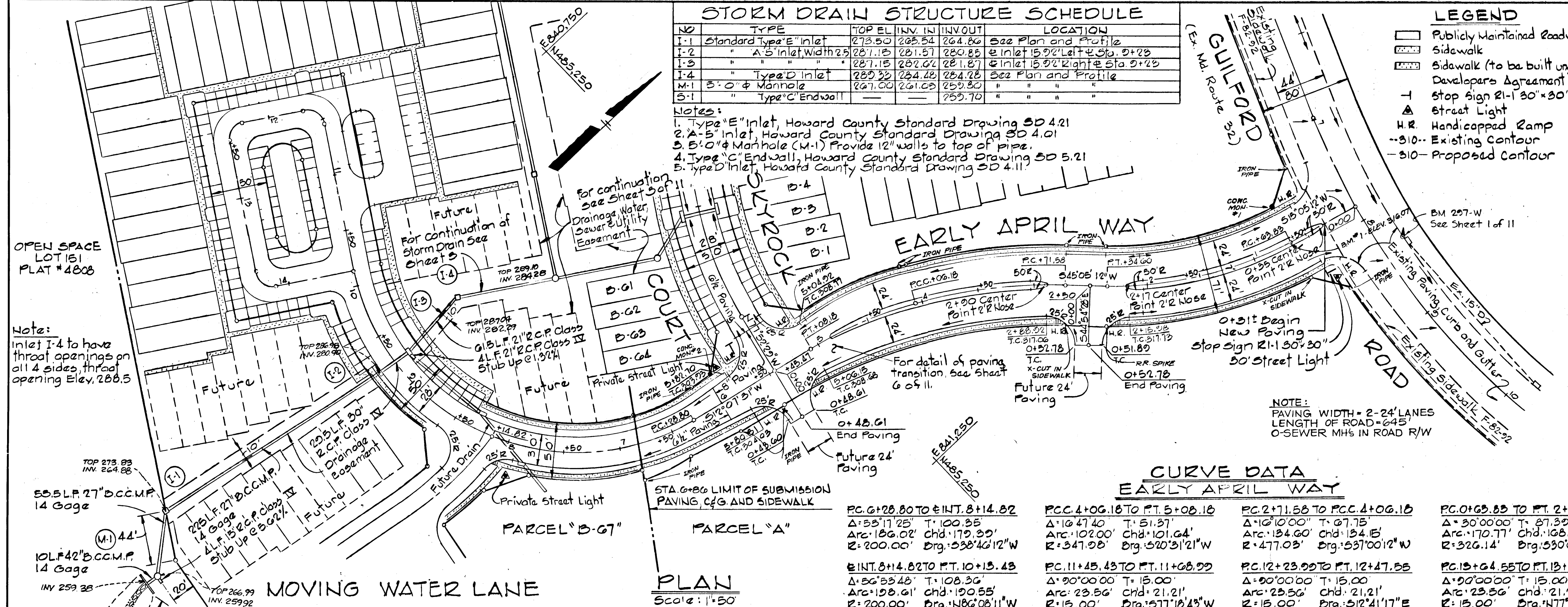
PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCEL "A", LOTS B-1 THRU B-66 AND PARCEL "B-G7"

PROJECT TITLE
 PLAN AND PROFILE
 EARLY APRIL WAY
 STA. 0+00 TO STA. 6+80

SCALE: AS SHOWN DATE

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21218

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

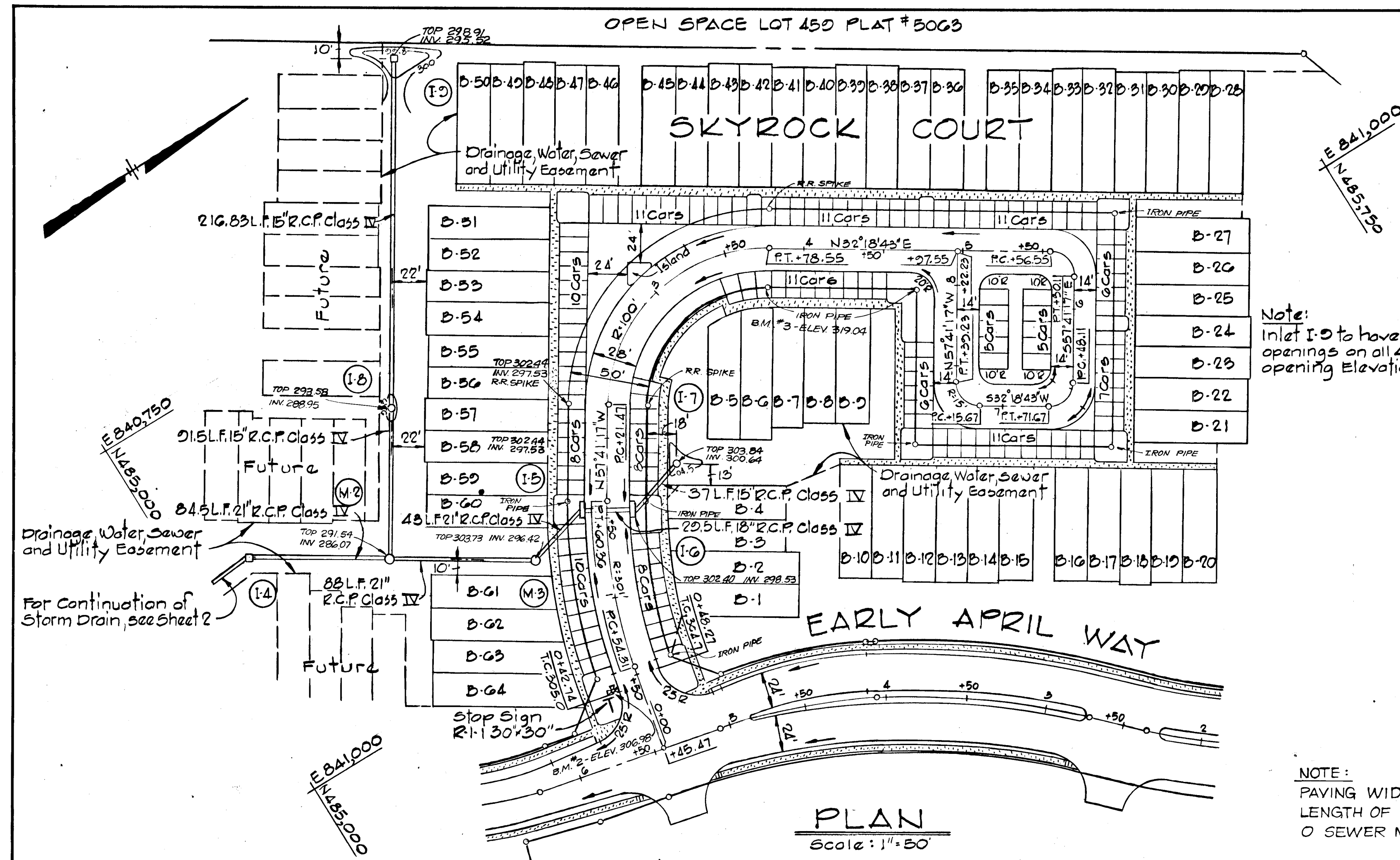


DATE	BY	REVISION

DATE	BY	REVISION

DATE	
BY	
REVISION	
NOTE BOOK	
ALIGNED CHECKED	
BY	
DATE	

DATE	
BY	
REVISION	
NOTE BOOK	
GRADES CHECKED	
BY	
DATE	



CURVE DATA SKYROCK COURT

PC: 0+54.91 TO PT: 1+60.36 Δ: 20°11'12" T: 53.58' Arc: 106.05' Chd: 105.50' R: 301.00' Brg: N67°46'33"W	PC: 2+21.47 TO PT: 3+78.65 Δ: 90°00'00" T: 100.00' Arc: 157.08' Chd: 141.42' R: 100.00' Brg: N12°41'17"W	PC: 5+56.55 TO PT: 5+80.11 Δ: 90°00'00" T: 15.00' Arc: 23.56' Chd: 21.21' R: 15.00' Brg: N77°18'43"E
PC: 6+48.11 TO PT: 6+71.67 Δ: 90°00'00" T: 15.00' Arc: 23.56' Chd: 21.21' R: 15.00' Brg: S12°41'17"E	PC: 7+15.67 TO PT: 7+39.23 Δ: 90°00'00" T: 15.00' Arc: 23.56' Chd: 21.21' R: 15.00' Brg: S77°18'43"W	

DEPARTMENT OF PUBLIC WORKS
 3-11-83
 CHIEF, BUREAU OF ENGINEERING
 OFFICE OF PLANNING & ZONING
 3-10-83
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

Note:
 Inlet I-5 to have throat openings on all 4 sides, throat opening Elevation 299.0.

STORM DRAIN STRUCTURE SCHEDULE

NO	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-5	Standard A-10" Inlet, width 25"	302.60	297.50	297.25	Inlet 15' 2' Left of Sta. 1+55
I-6	"	302.60	298.60	298.35	Inlet 15' 2' Right of Sta. 1+55
I-7	" Yard Inlet	304.00		300.50	See Plan and Profile
I-8	"	293.00	289.57	289.37	"
I-9	" Type 'D' Inlet	292.80		290.25	"
M-2	" Shallow Manhole	292.00	287.54	286.19	"
M-3	" Manhole	303.70	296.75	296.55	"

- Notes:
- "A-10" Inlet, Howard County Standard Drawing SD 4.02
 - Yard Inlet, Howard County Standard Drawing SD 4.14
 - Shallow Manhole, Howard County Standard Drawing OS 0.05
 - Standard Manhole, Howard County Standard Drawing OS 0.1
 - Type "D" Inlet, Howard County Standard Drawing SD 4.11.

- LEGEND**
- Publicly Maintained Roadway
 - Sidewalk
 - Sidewalk (to be built under Developers Agreement)
 - Stop Sign 81" x 30" x 30"
 - Street Light
 - H.R. Handicapped Ramp
 - 310-- Existing Contour
 - 310- Proposed Contour

3/2/83 1 As per Planning & DPW Comments

Rev. Date	Rev. No.	Revision Description
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COLUMBIA
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCEL "A", LOTS B-1 THROUGH B-66 AND PARCEL "B-67"

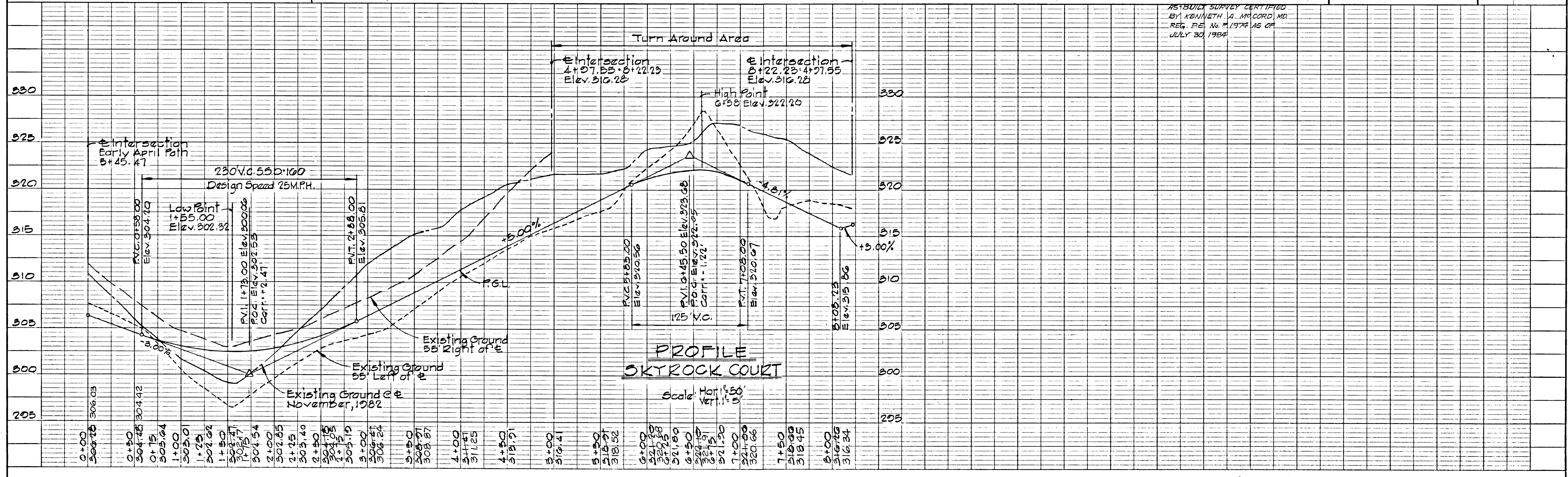
PROJECT TITLE
 PLAN AND PROFILE
 SKYROCK COURT

SCALE: AS SHOWN DATE

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21218

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

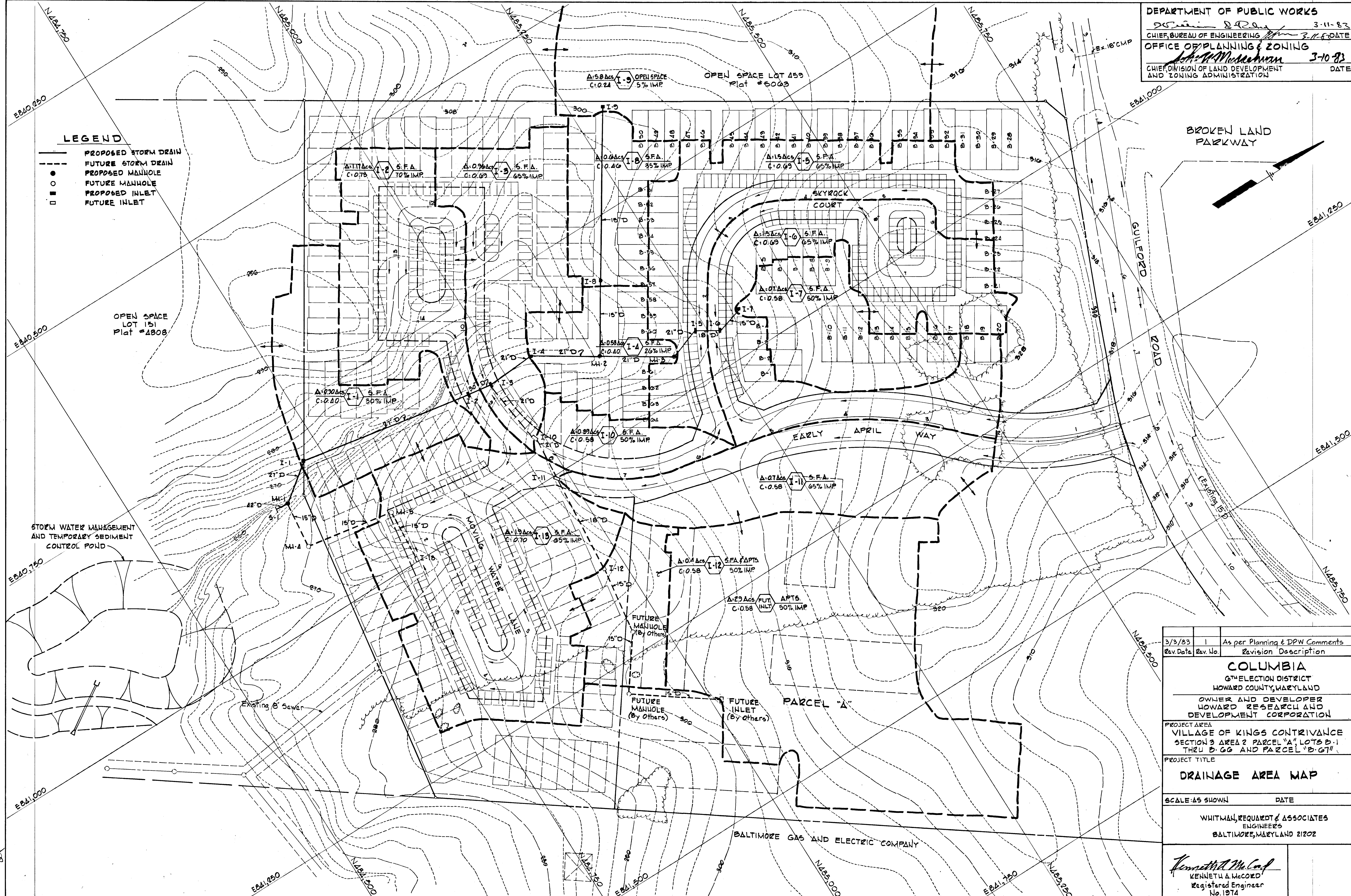
NOTE:
 PAVING WIDTH - 28'
 LENGTH OF ROAD - 760'
 O SEWER MHS IN ROAD R/W



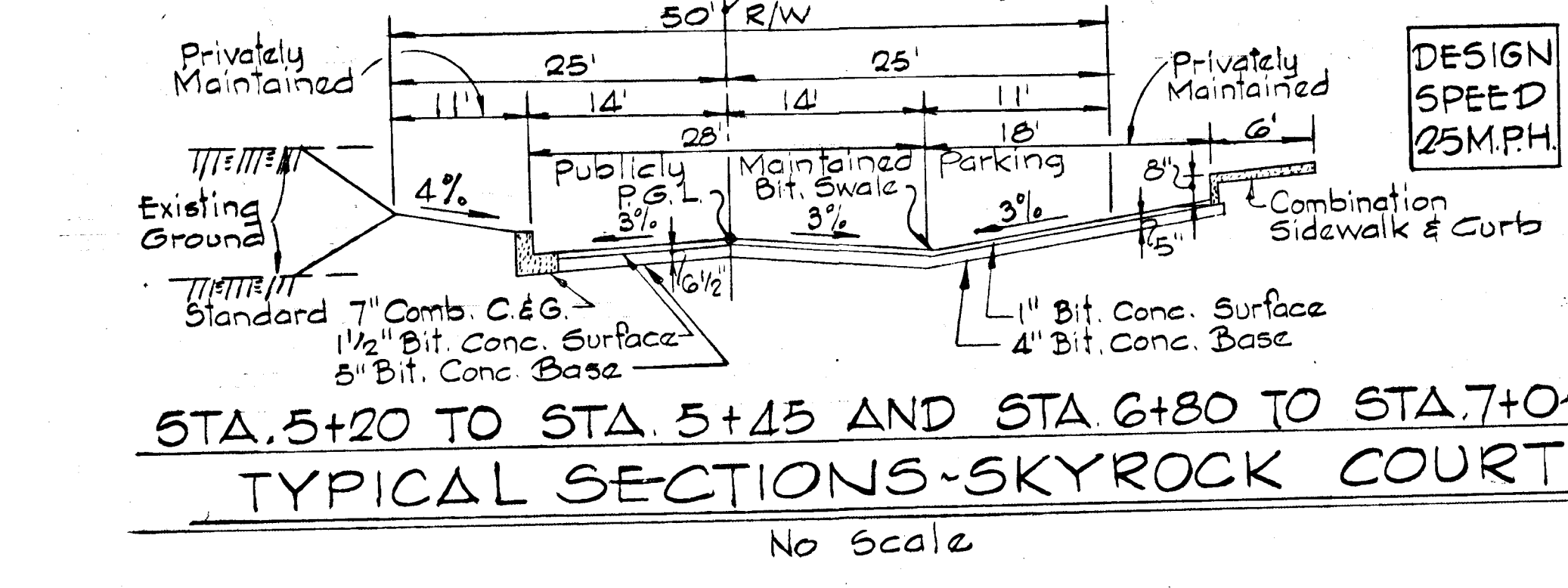
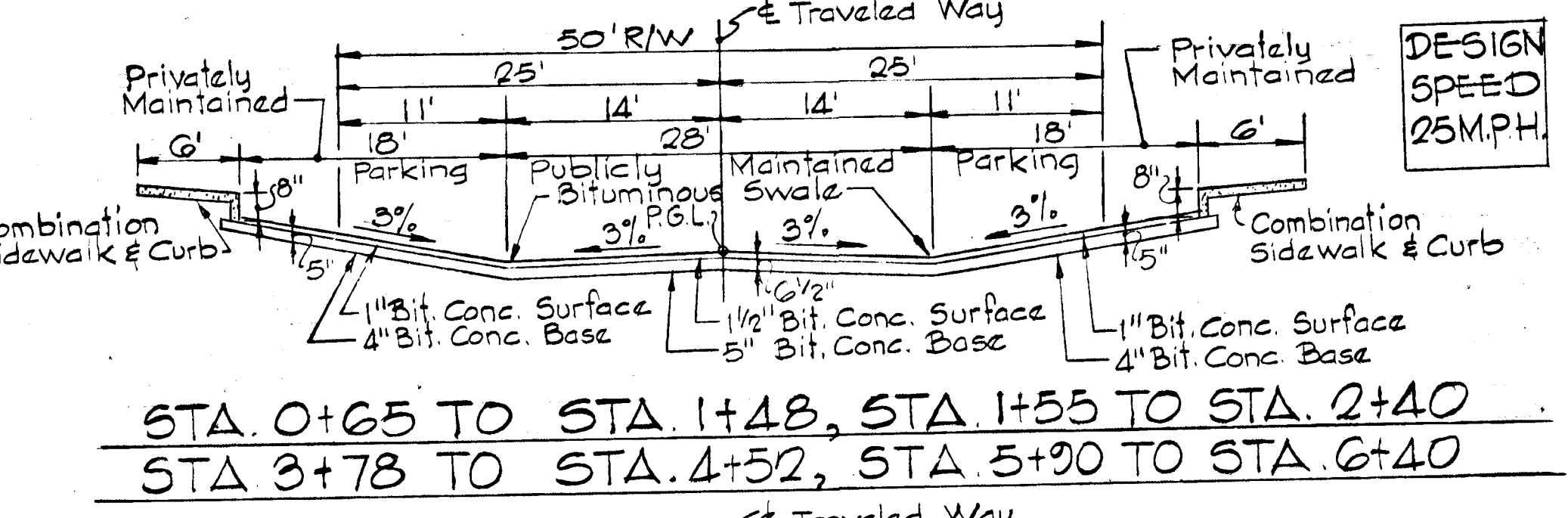
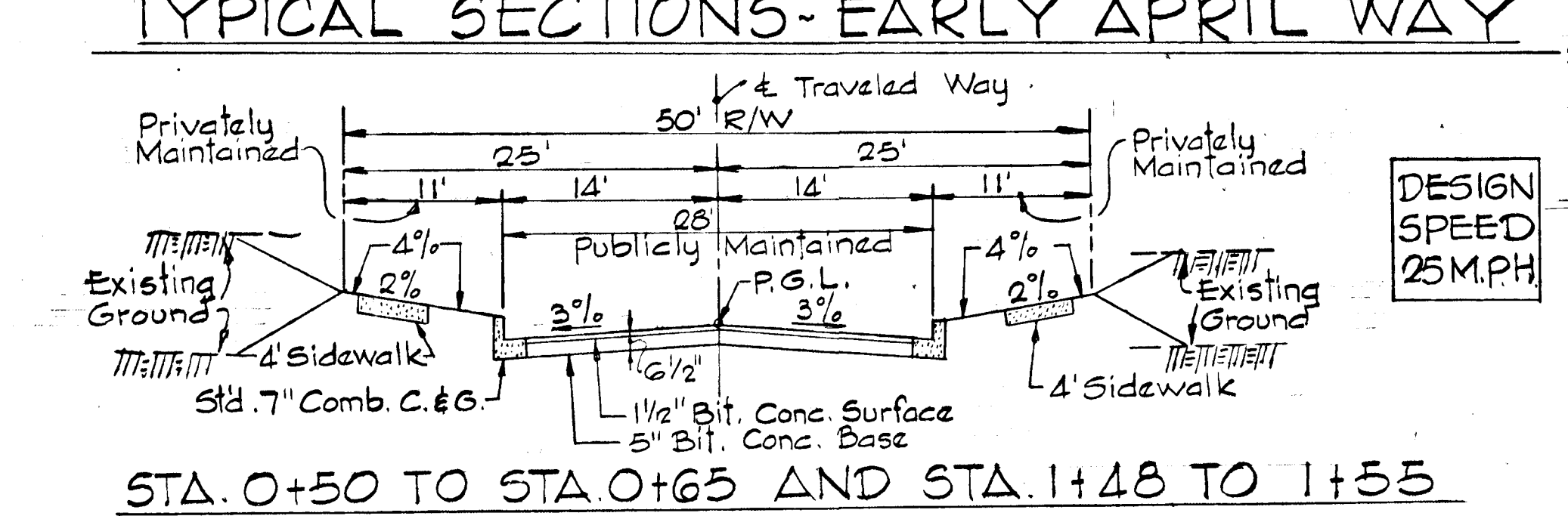
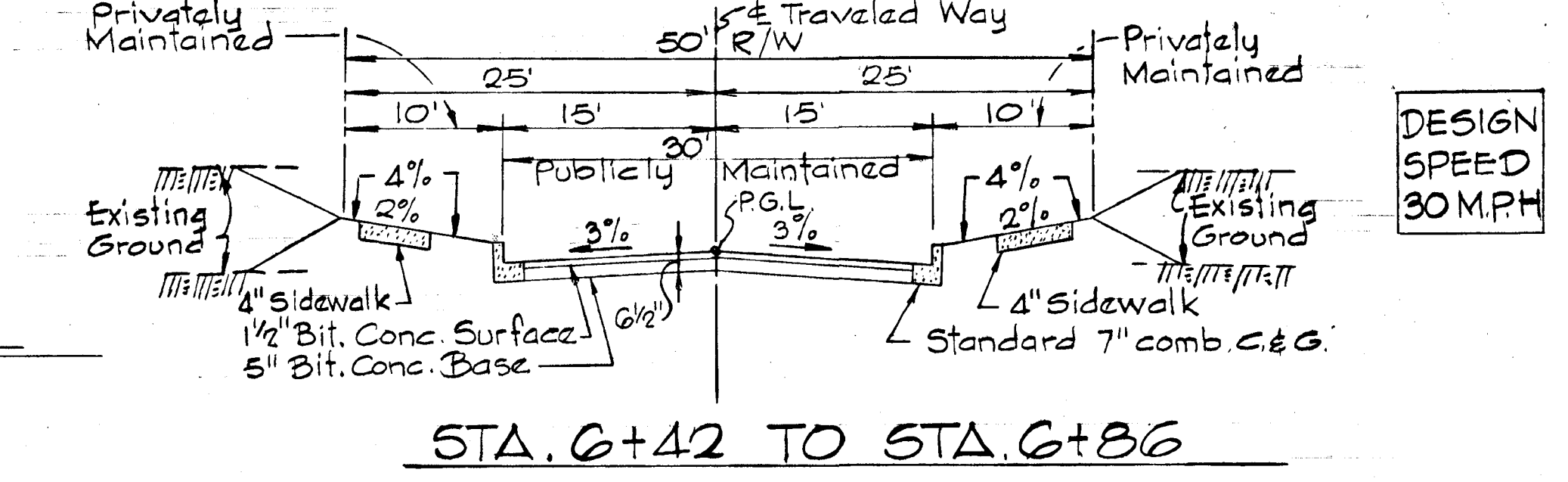
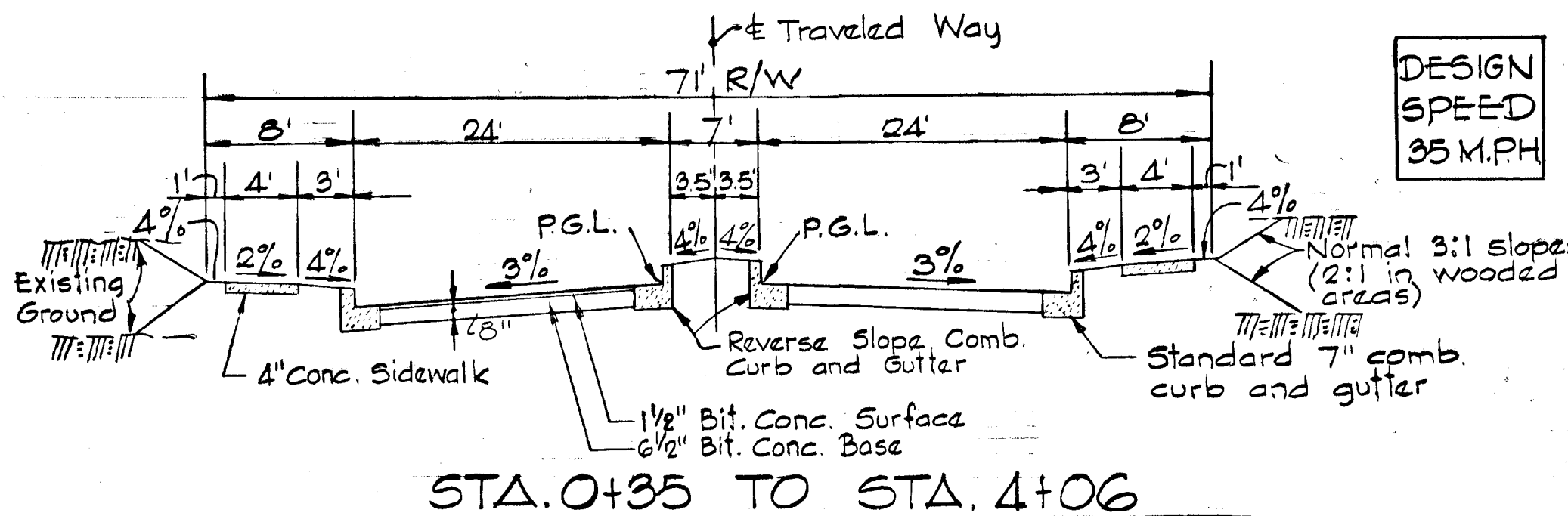
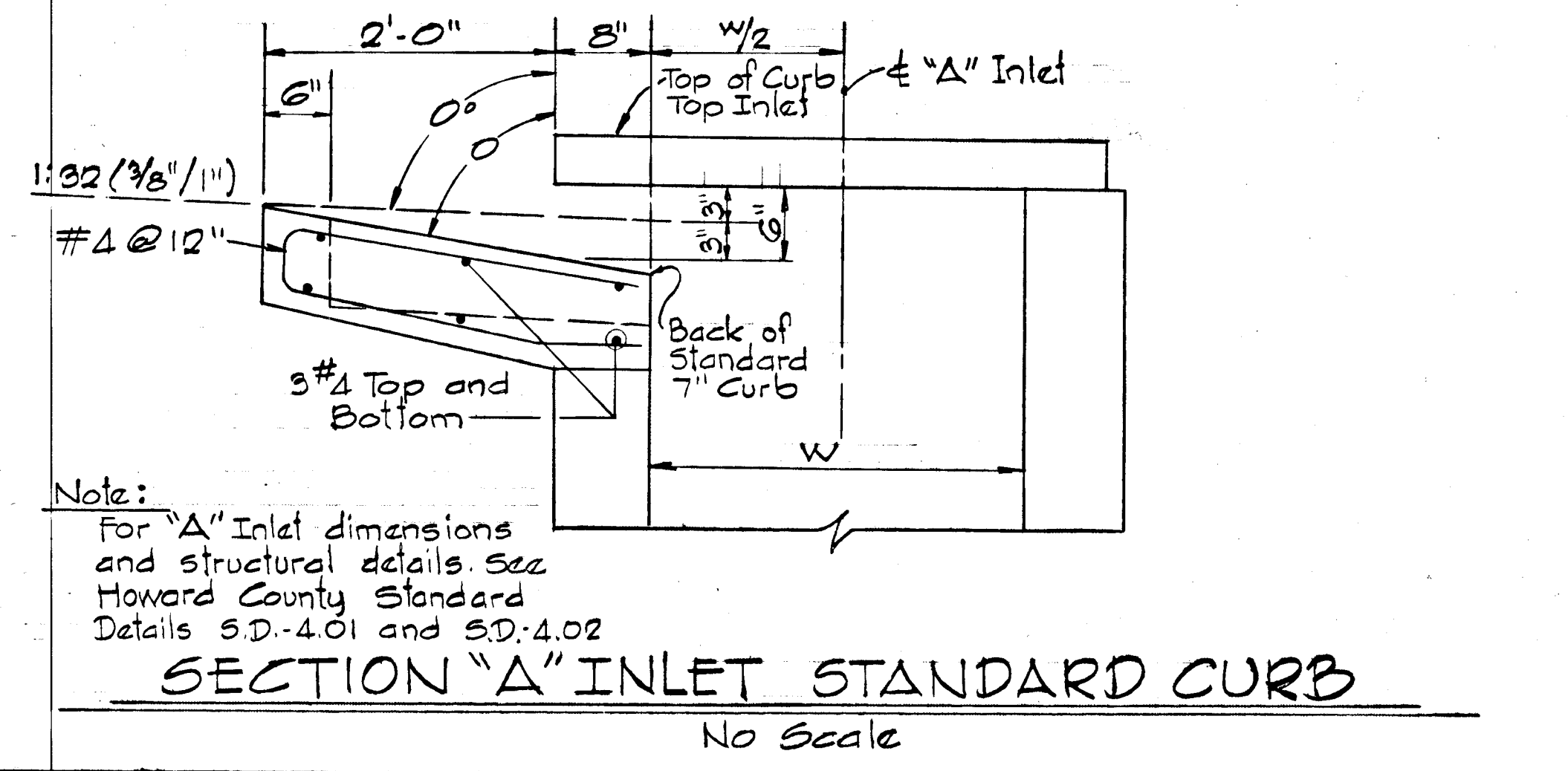
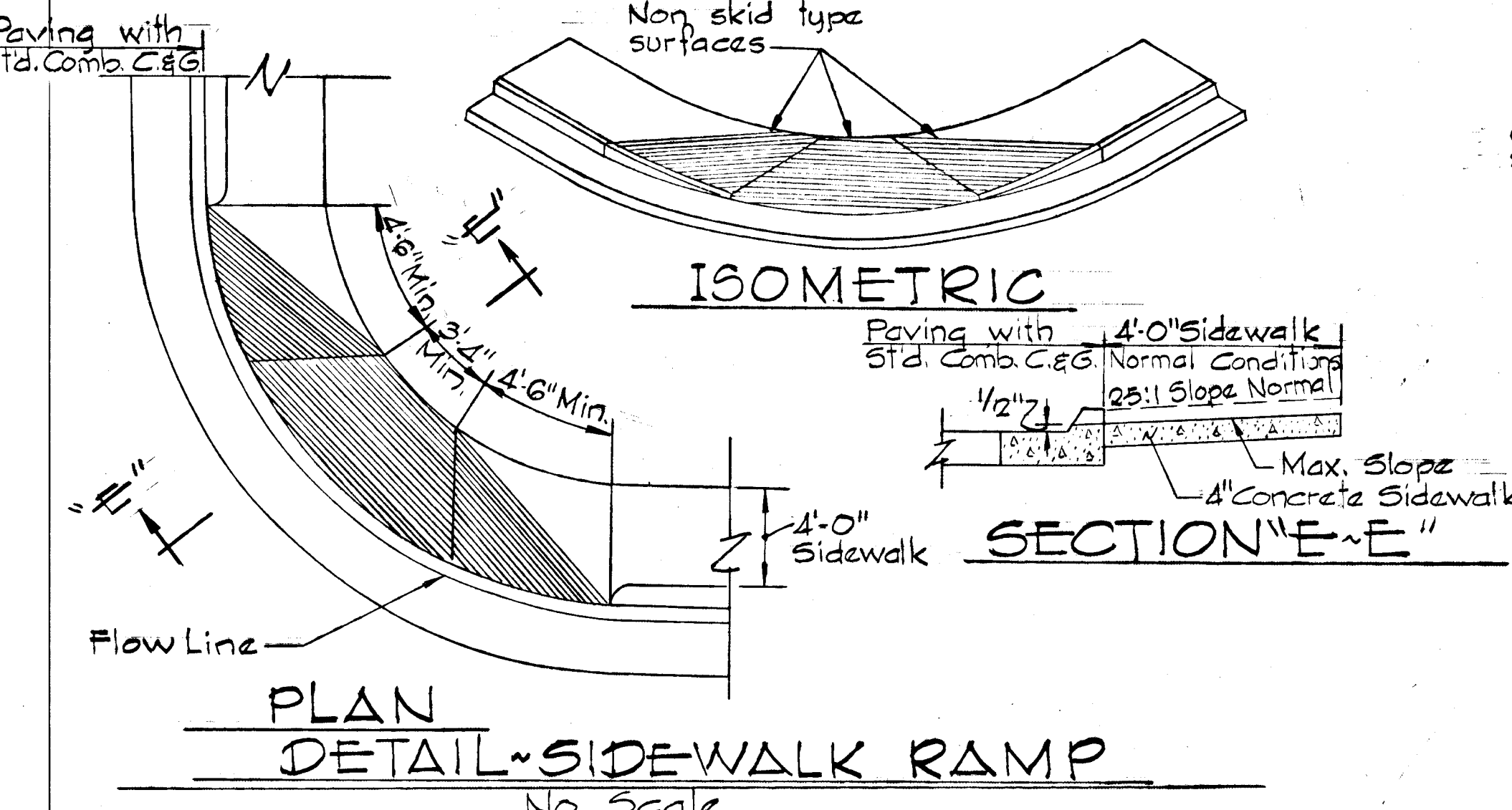
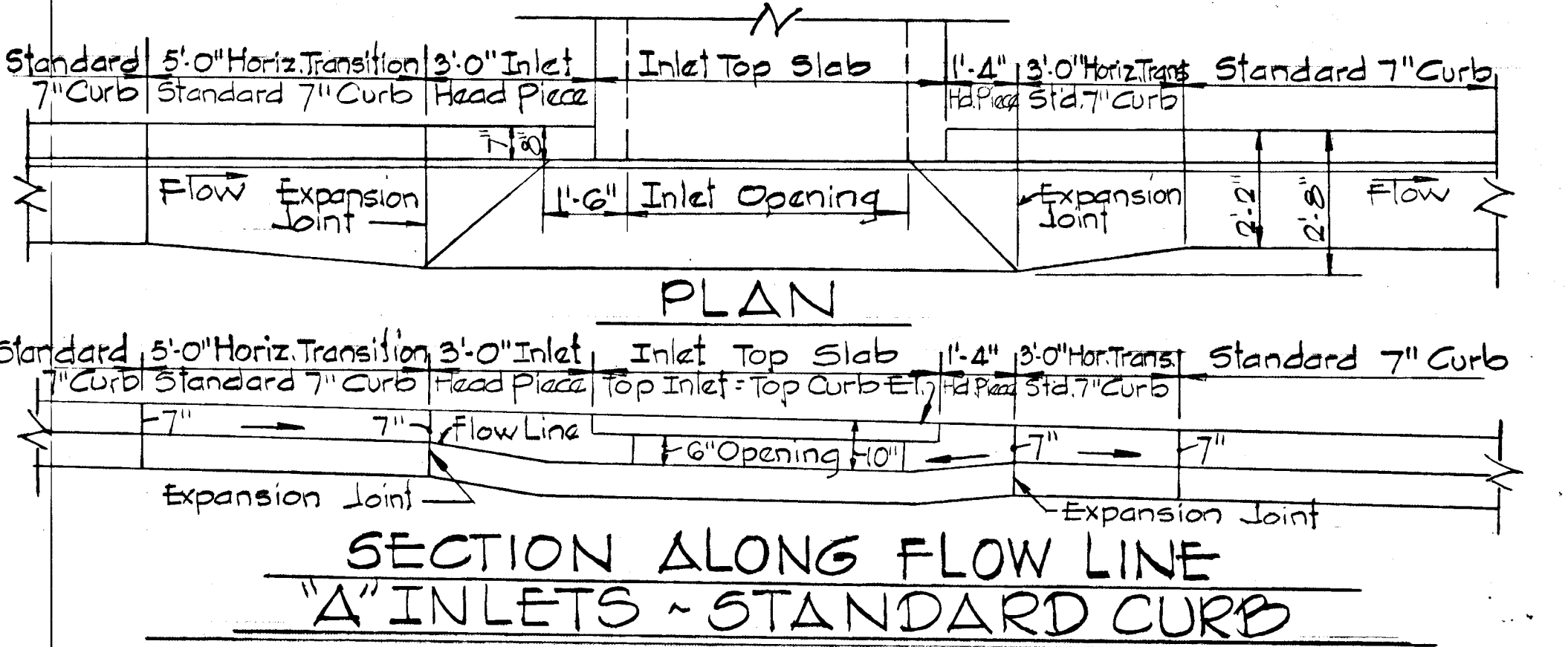
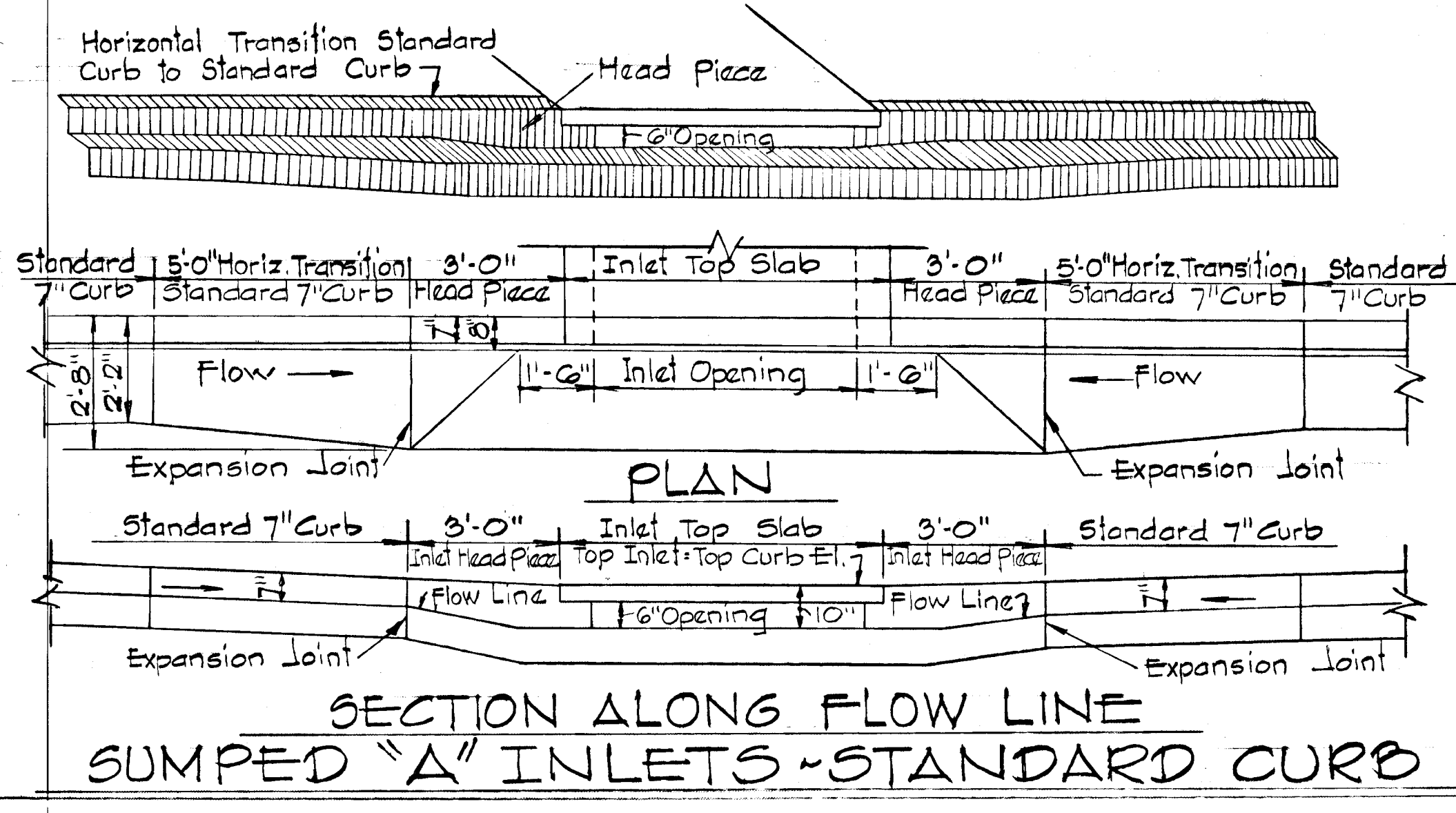
AS-BUILT SURVEY CERTIFIED BY KENNETH A. MCCORD, MD REG. P.E. No. 1974 AS OF JULY 30, 1984

#445

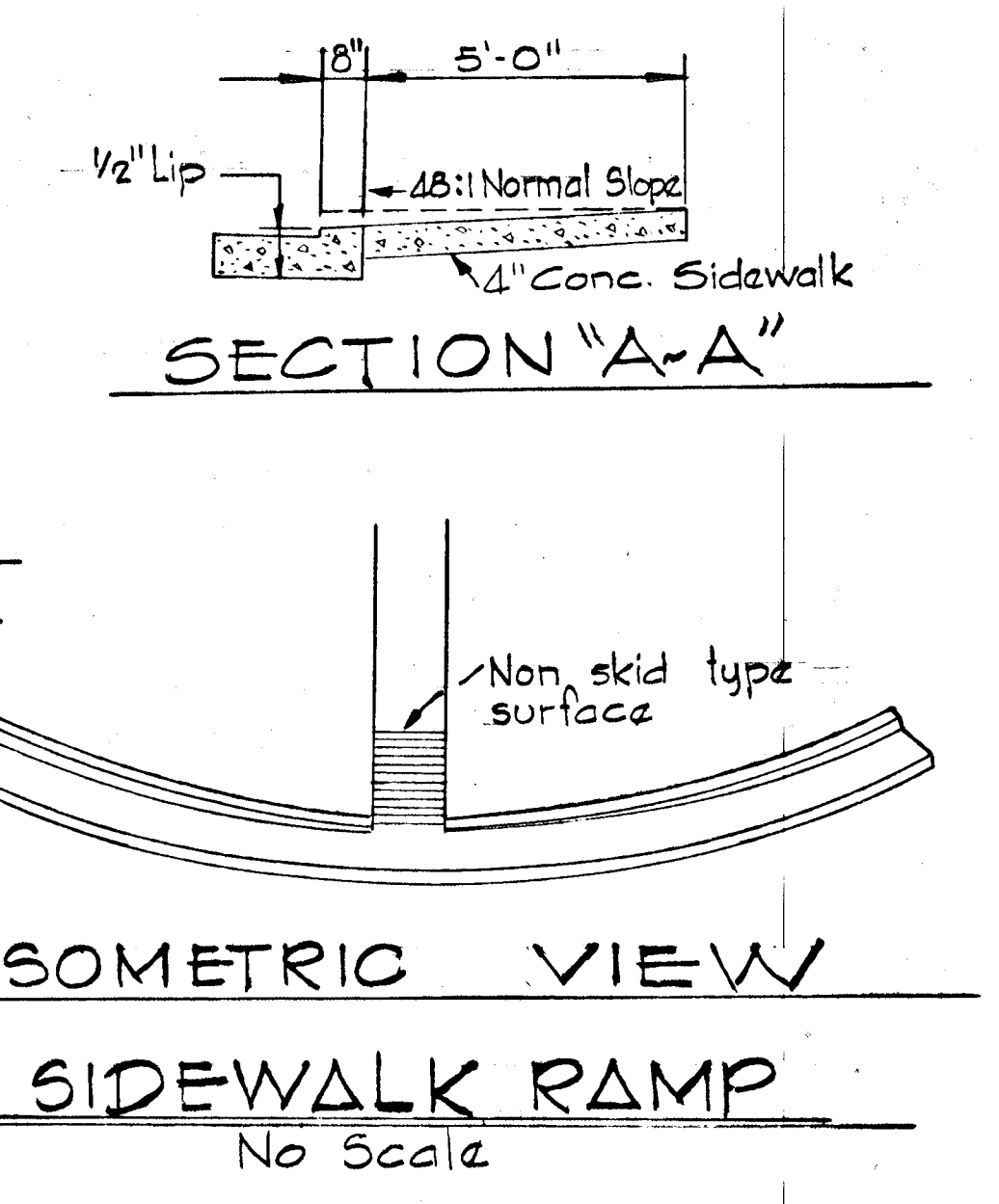
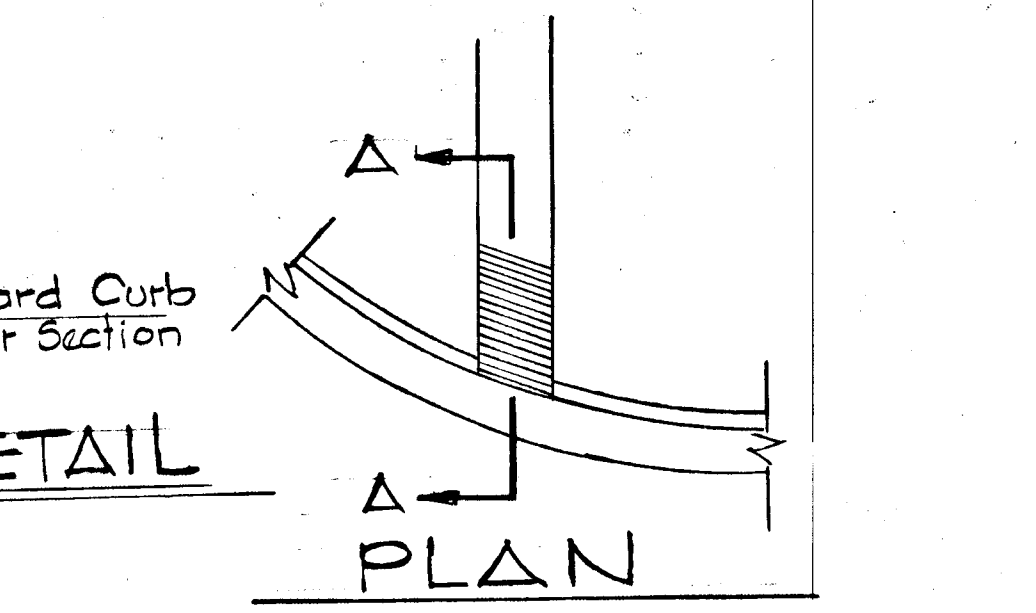
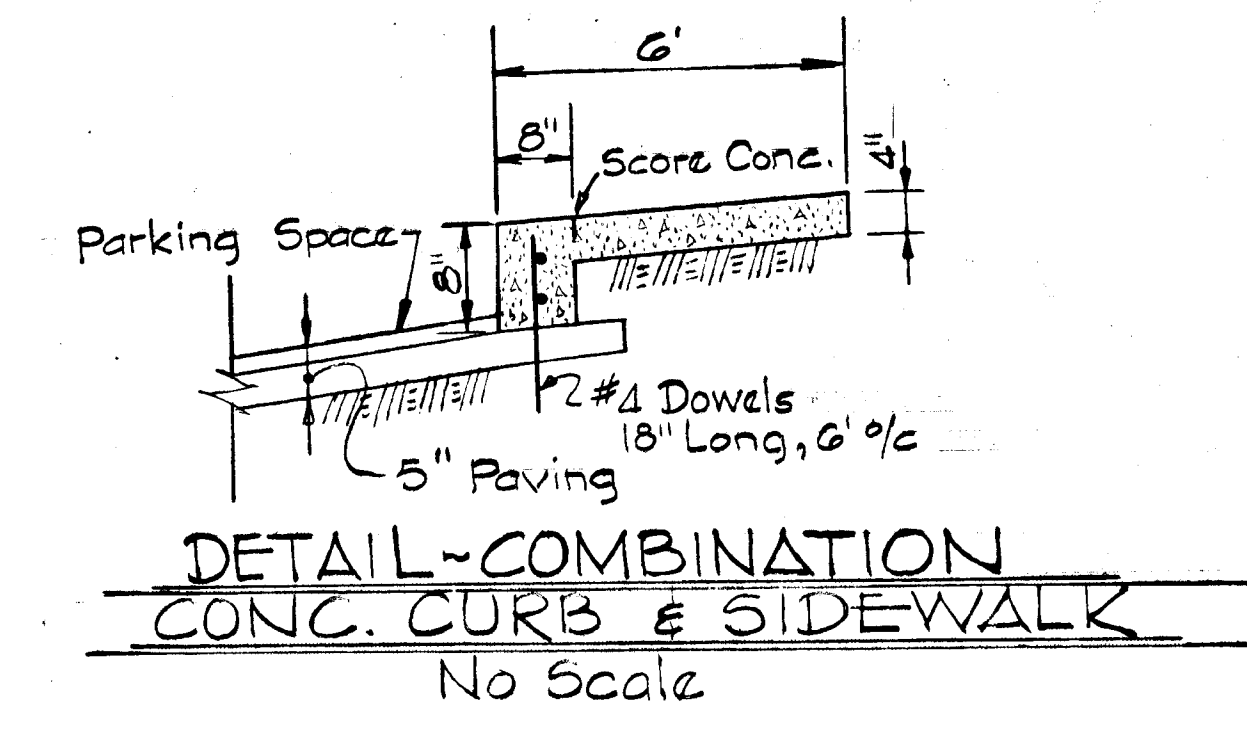
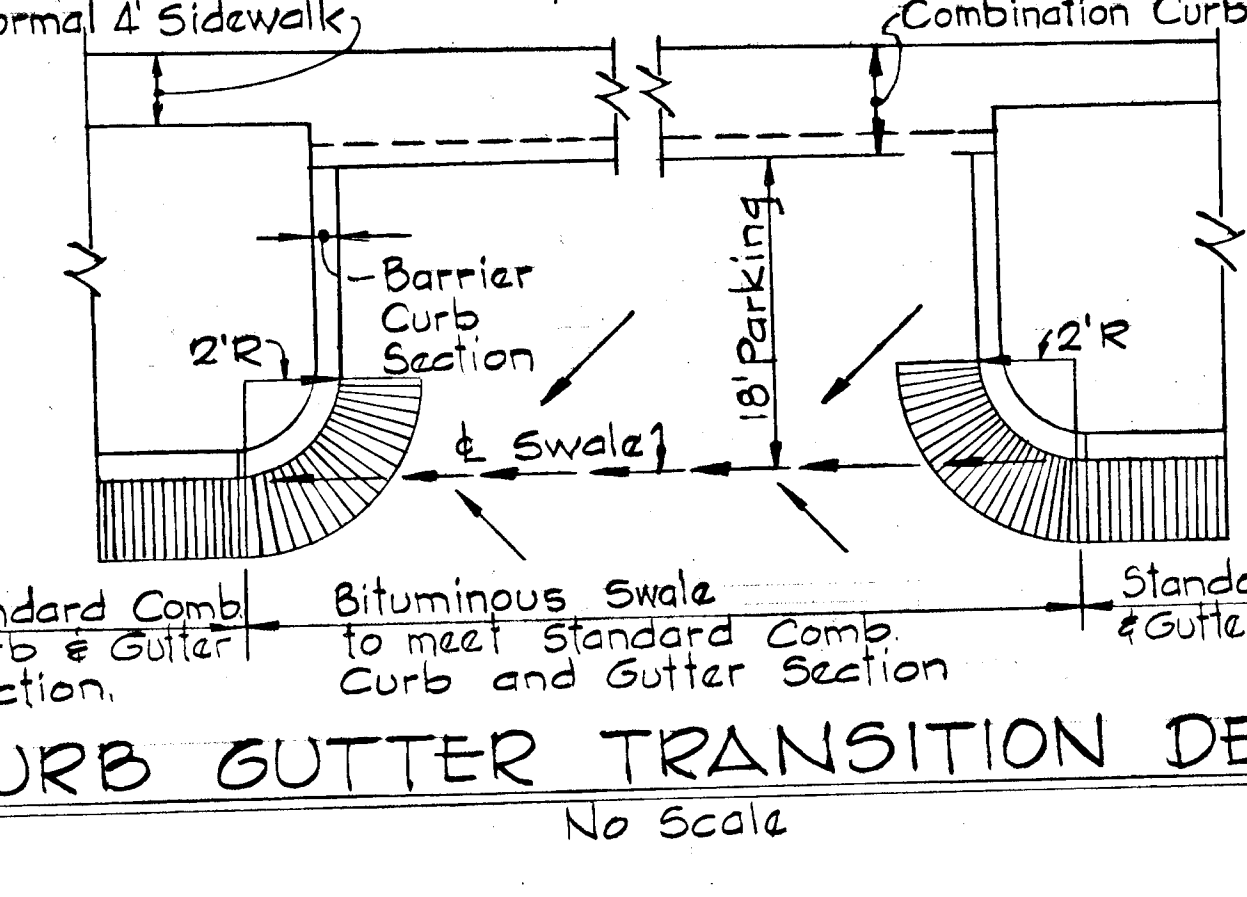
LEGEND
 - - - - - PROPOSED STORM DRAIN
 - - - - - FUTURE STORM DRAIN
 ○ - - - - PROPOSED MANHOLE
 ○ - - - - FUTURE MANHOLE
 □ - - - - PROPOSED INLET
 □ - - - - FUTURE INLET



3/3/83	1	As per Planning & DPW Comments
Rev. Date	Rev. No.	Revision Description
COLUMBIA GTHELECTION DISTRICT HOWARD COUNTY, MARYLAND OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORPORATION		
PROJECT AREA VILLAGE OF KINGS CONTRIVANCE SECTION 3 AREA 2 PARCEL "A" LOTS B-1 THRU B-66 AND PARCEL "B-G7"		
PROJECT TITLE DRAINAGE AREA MAP		
SCALE: AS SHOWN	DATE	
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21202		
Kenneth A. McCord KENNETH A. MCCORD Registered Engineer No. 1974		



ROADWAY CONSTRUCTION NOTES
 1. All materials and construction methods shall be in accordance with the Howard County Standard Specifications and Details for Construction.
 2. Standard 7" Comb. Curb and Gutter shall be in accordance with County Standard Detail R-3.01.
 * 3. Paving (5") shall be in accordance with County Detail R-2.01 (Paving Section P-1).
 * 4. Paving (6 1/2") shall be in accordance with County Standard Detail R-2.01 (Paving Section P-2).
 5. Sidewalks shall be in accordance with County Standard Detail R-3.05.
 6. Base will be primed in accordance with Article 33.04 of the Howard County Standard Specifications.
 7. Tack coat is required in accordance with the Howard County Standard Specifications.
 * 8. Paving (8") shall be in accordance with County Standard Detail R-2.01 (Paving Section P-3).



Rev. No.	Rev. Date	Description
1	3/3/83	As per Planning & DPW Comments
		Revision Description

COLUMBIA
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCEL "A", LOTS B-1 THRU B-66 AND PARCEL "B-G"

PROJECT TITLE
STANDARD DETAILS

SCALE: AS SHOWN DATE:

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21202

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

RESPONSIBLE PERSONNEL CERTIFICATION

"I hereby certify that any responsible personnel involved in the construction 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."

Walter E. Woodford 1-20-83
WALTER E. WOODFORD DATE

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. McCord 1-19-83
KENNETH A. MCCORD RE.1974 DATE

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Walter E. Woodford 1-20-83
WALTER E. WOODFORD DATE

DEPARTMENT OF PUBLIC WORKS
William R. Reilly 3-11-83
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING
Robert M. Murrain 3-10-83
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

EXISTING 5' STONE OUTLET STRUCTURE AND DIVERSION DIKES TO BE RETAINED (Approved for Woods Clearing)

DRAINAGE AREA 0.7 ACRES

NEW DIVERSION DIKE

OPEN SPACE LOT 459 Plat #6043

EXISTING SILT FENCE TO BE RETAINED (Approved for Woods Clearing)

DRAINAGE AREA 0.7 ACRES

BROKEN LAND PARKWAY

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
James M. Selin 3-10-83
DATE
US SOIL CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED *Phedon Selin* 3-10-83
HOWARD S.C.D. DATE

OPEN SPACE LOT 151 Plat #4808

DRAINAGE AREA 24.6 ACRES

STORM WATER MANAGEMENT AND TEMPORARY SEDIMENT CONTROL POND SEE SHEETS 9, 10 AND 11 OF 11

SEDIMENT VOLUME REQUIRED 1.02 AC.FT.
SEDIMENT VOLUME AVAILABLE 1.02 AC.FT.

EXISTING SEDIMENT TRAPS (To be Removed after Construction of Storm Water Management Ponds)

EXISTING DIVERSION DIKE (Portion within Storm Water Management Pond Drainage Area to be Removed after Pond Construction)
Existing 8' Sewer

EXISTING SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE TO BE RETAINED (Approved for Woods Clearing)

SITE ANALYSIS

AREA OF IMPERVIOUS	3.8 ACRES
AREA TO BE VEGETATED	9.9 ACRES
AREA UNDISTURBED	0.9 ACRES

LEGEND

	DIVERSION DIKE
	SILT FENCE
	DRAINAGE AREA LINE

DRAINAGE AREA 0.8 ACRES

EXISTING SILT FENCE TO BE RETAINED (Approved for Woods Clearing)

BALTIMORE GAS AND ELECTRIC COMPANY

3/3/83	1	As per Planning & SCS Comments
Rev. Date	Rev. No.	Revision Description

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA
VILLAGE OF KINGS CONTRIVANCE
SECTION 3 AREA 2 PARCEL "A", LOTS B-1 THRU B-66 AND PARCEL "B-G7"

PROJECT TITLE
SEDIMENT CONTROL PLAN

SCALE: AS SHOWN DATE

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21202

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

SEDIMENT CONTROL NOTES

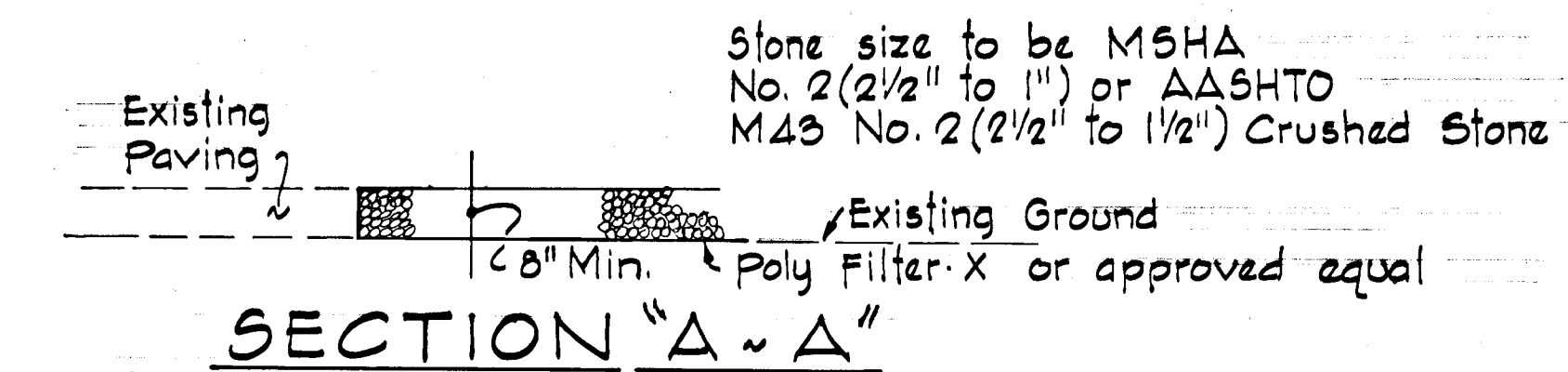
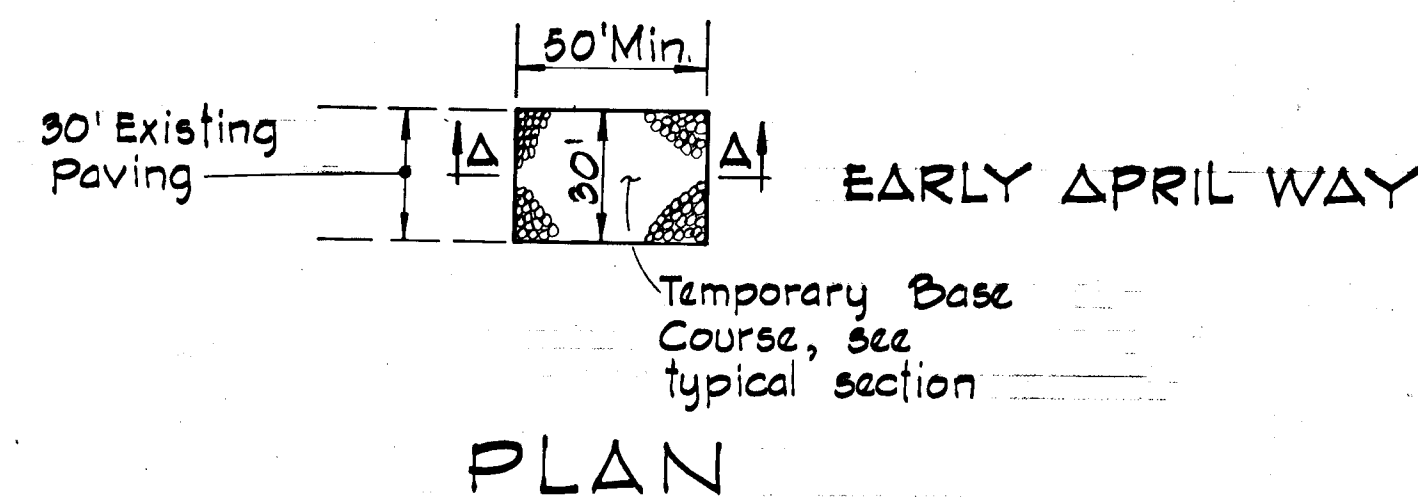
- See "Sequence of Construction" this sheet.
- The Sediment Control measures shall be constructed as shown on these drawings.
- All diversion dikes shall be seeded as specified in notes 4 and 5. All other surfaces to be permanently seeded. See Specifications this sheet.
- The diversion dikes shall be hydroseeded as follows:
 - Ground Limestone (50#/1000#)
 - Fertilizer 10-10-10 (25#/1000#)
 - Seed Italian Rye Grass (40#/Acre)
- Mulch with straw at the rate of 50#/1000# or one ton/acre. Anchor with asphalt at the rate of 480 gallons/acre.

PERMANENT SEEDING

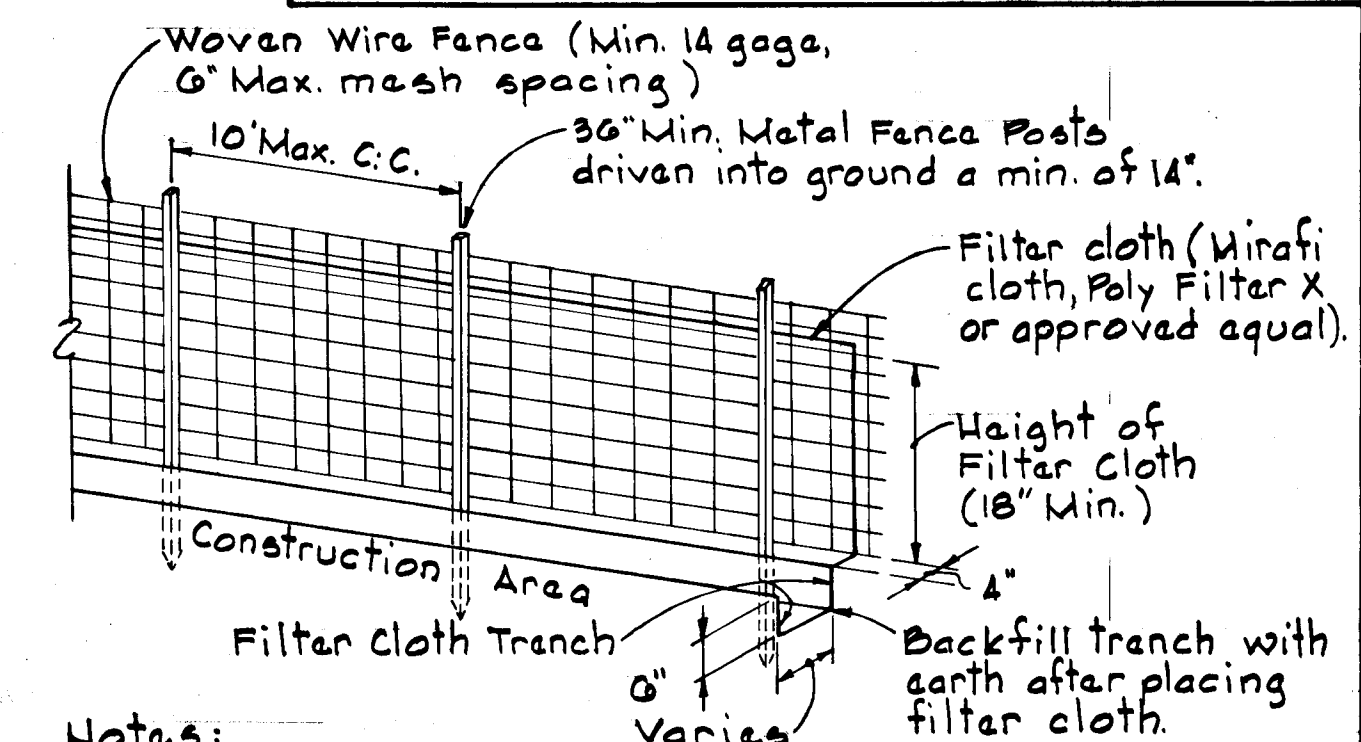
Lime - 2 tons/acre agricultural ground limestone.
 Fertilizer - 1000#/acre (10-10-10)
 Seeding - 100#/acre of the following:
 20% Kentucky Blue Grass, 20% Marion Blue Grass,
 5% Redtop
 Mulch Required - Mulch area with straw at 75#/1000# or 1.5 tons/acre. Anchor with asphalt at the rate of 480 gallons/acre. Stabilization of slopes steeper than 3:1 shall be planted with crownvetch at 15#/acre or 0.34#/1000# and Kentucky 31 Tall Fescue at 40#/acre or 1#/1000#.

SEQUENCE OF CONSTRUCTION

- Obtain grading permit.
- Repair stabilized construction entrance on Early April Way if necessary.
- Construct Storm Water Management Pond and stabilize with permanent seeding see specifications sheet D.
- After Storm Water Management Pond is stabilized remove existing sediment traps and diversion dike into trap.
- Construct new diversion dike in open space Lot 459 and stabilize with temporary seeding, see sediment control notes 4 & 5.
- Remove any sediment from existing sediment control facilities and repair as necessary.
- Clear, grub, strip and rough grade entire site.
- Construct storm drain system.
- Construct utilities, housing, curb and gutter and streets for lots B-1 thru B-66.
- Final grade and construct sidewalks.
- Stabilize all disturbed areas with permanent seeding see specifications this sheet.
- Remove silt fence (rear of lots B-28 to B-33) and on left side of Early April Way after grass is established in the contributing drainage area with permanent seeding see specifications this sheet.
- Remainder of sediment control facilities to remain in place for future house construction.



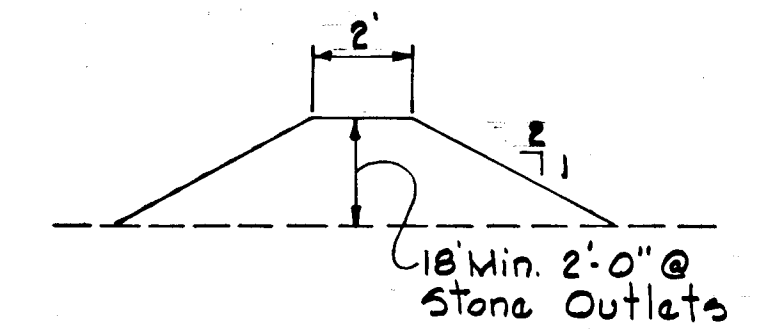
STABILIZED CONSTRUCTION ENTRANCE DETAIL



- Notes:
- Woven wire fence to be fastened securely to fence posts by use of wire ties.
 - Filter cloth to be fastened securely to woven wire fence by use of wire ties spaced every 24" x 24".

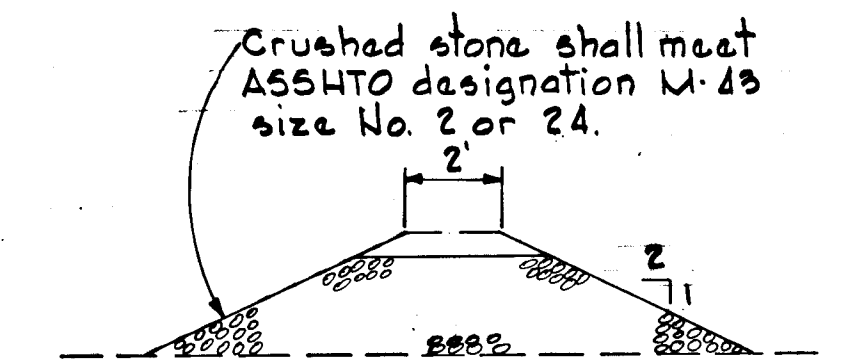
SILT FENCE DETAIL

No Scale

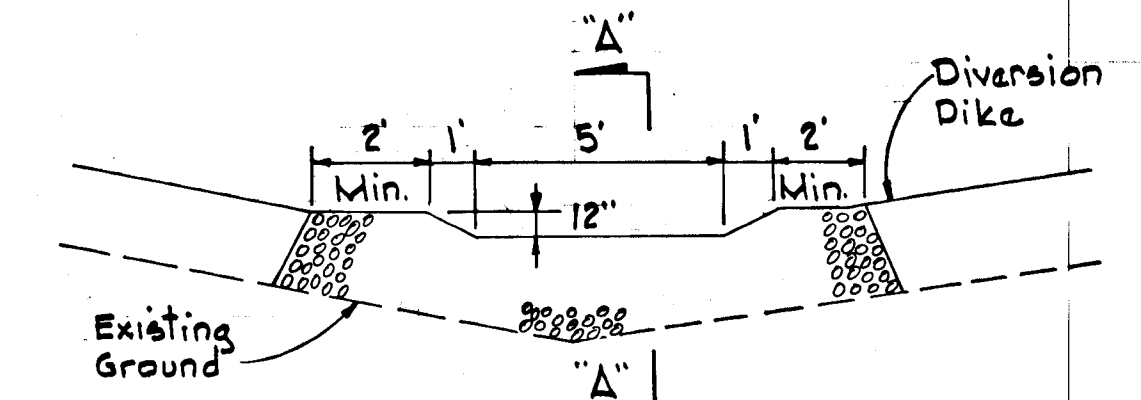


DIVERSION DIKE

No Scale



SECTION "A-A"



DETAIL - STONE OUTLET STRUCTURE

No Scale

Rev. Date	Rev. No.	Revision Description
3/3/83	1	As per Planning & SCS Comments

COLUMBIA
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND
 DEVELOPMENT CORPORATION

PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCEL "A" LOTS B-1
 THRU B-66 AND PARCEL B-67

PROJECT TITLE
**SEDIMENT CONTROL NOTES
 AND DETAILS**

SCALE: AS SHOWN DATE

WHITMAN, REQUERT & ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21202

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

CERTIFICATION BY THE DEVELOPER

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

Walter Woodford
 WALTER WOODFORD
 1-20-83
 Date

CERTIFICATION BY THE ENGINEER

"I certify that this plan for sediment and erosion 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 Howard Soil Conservation District."

Kenneth A. McCord
 KENNETH A. MCCORD
 1-19-83
 Date

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Approved: *Robert J. Ziemer* 3-10-83
 Howard S.C.D. Date

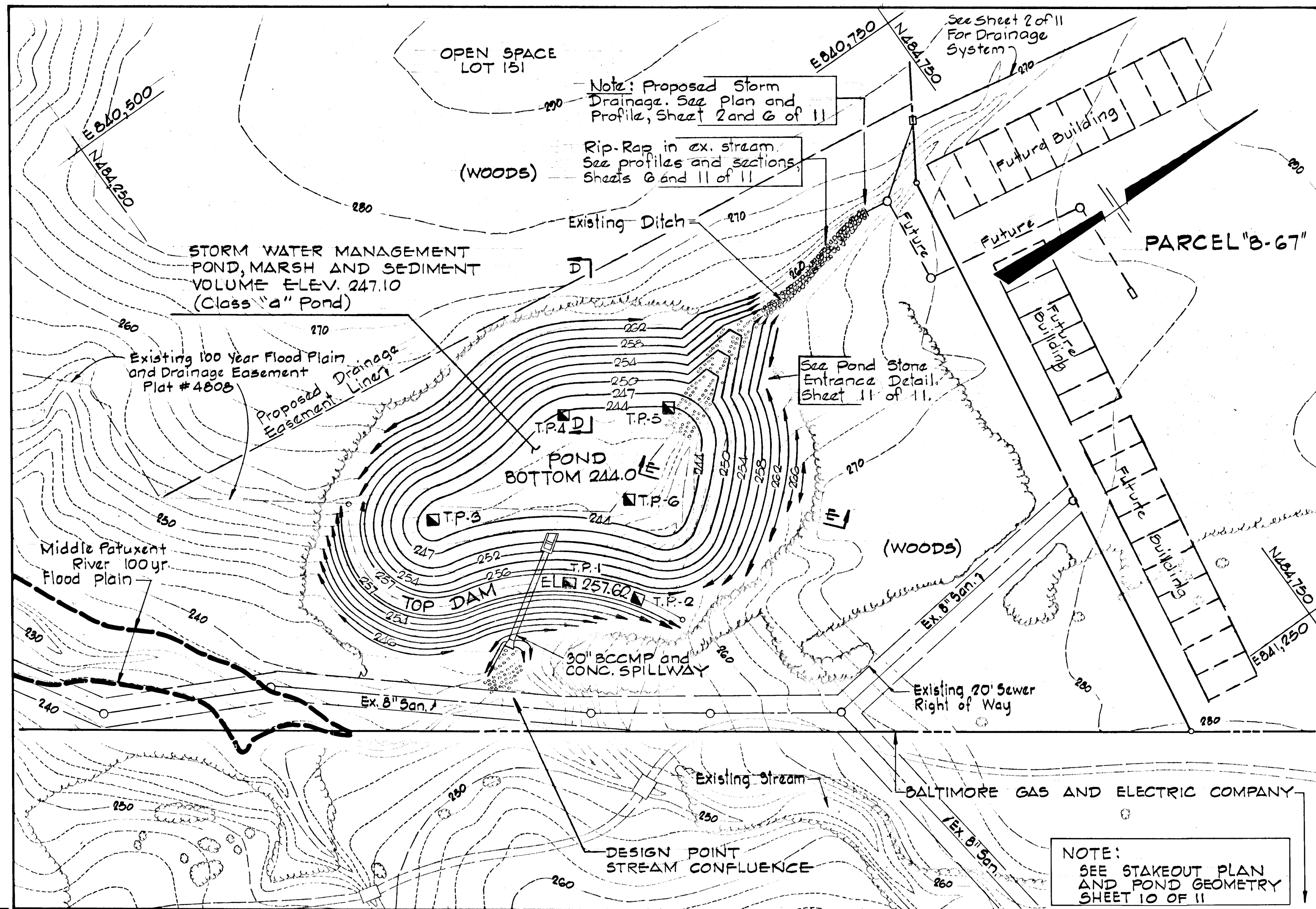
Reviewed for Howard S.C.D. and meets technical requirements

John Mitchell 3-10-83
 Date
 U.S. SOIL CONSERVATION SERVICE

RESPONSIBLE PERSONNEL CERTIFICATION

"I hereby certify that any responsible personnel involved in the construction 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."

Walter Woodford 1-20-83
 WALTER WOODFORD Date

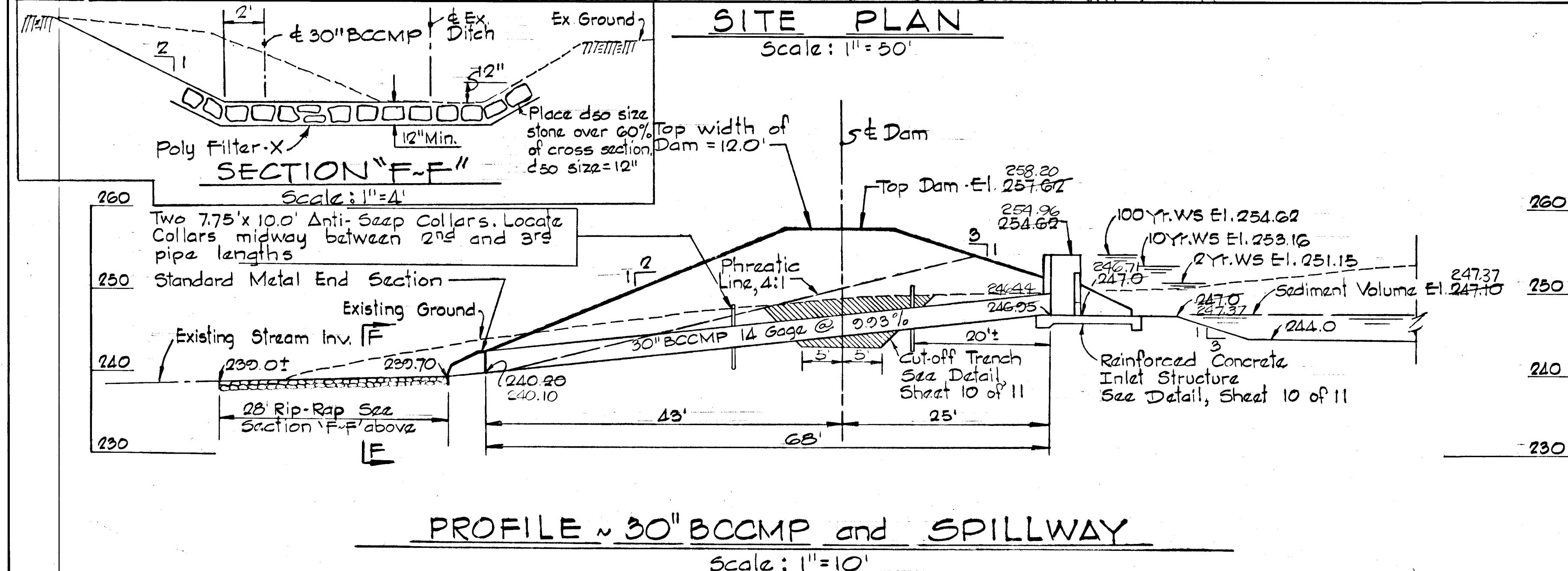


SPECIFICATIONS

- EARTH DAM EMBANKMENT**
- Suitable material from the pond excavation may be used for the embankment.
 - Suitable material shall be placed in 8" loose layers and compacted to 95% of standard Proctor ASTM T-99.
 - Moisture content of the suitable material shall be within the range of 3% below optimum moisture to 3" above optimum moisture.
 - Area under the embankment shall be cleared and grubbed to remove all trees, vegetation, roots or other objectionable material and topsoil stripped.
 - The fill material shall be free from roots, stumps, wood, rubbish, oversize stones, frozen earth or other objectionable materials. The fill height all along the length of the embankment shall be increased by 10%.
 - Fill materials shall be placed in 8" maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous material shall be placed in the downstream portions of the embankment. Backfill for the Cutoff Trench and the upstream side of the Dam shall be the most impervious material available.
 - Compaction shall be by multiple wheel pneumatic tired roller, vibratory roller or other types of acceptable rollers. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient coverages to insure that the required density has been obtained.

- 30" BCCMP**
- Backfill around B.C.C.M.P. pipe shall be placed in horizontal layers not to exceed 4 inches in thickness and compacted by hand tampers or other compaction equipment. At no time during the back filling operation, shall construction equipment be allowed to operate closer than 4 feet to any part of the B.C.C.M.P. pipe. Under no circumstances shall the contractor drive equipment over any part of the B.C.C.M.P. pipe unless there is a compacted fill to a depth of 24 inches or greater over the B.C.C.M.P. pipe.
 - The B.C.C.M.P. pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or other unsuitable soil is encountered under the pipe, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- PERMANENT SEEDING**
- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDING PREPARATION: Loosen upper 3 inches of soil by raking, disking or other acceptable means before seeding.
 - SOIL AMENDMENTS: Apply 2 tons per acre dolomitic limestone (92 lbs./1,000 sq.ft.) and 600 lbs. per acre 0-20 fertilizer (14 lbs./1,000 sq.ft.) Harrow or disc lime and fertilizer into upper three inches of soil. At time of seeding, apply 400 lbs. per acre (9.2 lbs./1,000 sq.ft.) of 38-0-0 ureaform fertilizer and 500 lbs. per acre (11.5 lbs./1,000 sq.ft.) of 10-20-20 fertilizer.
 - SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 45 lbs. per acre (1.4 lbs./1,000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 45 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1,000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1)-2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2)-use sod. Option (3)-seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
 - EROSION CONTROL FABRIC: "Hold Gro", and "Enkamat" Gult State Paper Corporation, P.O.B. No.3199 Tuscaloosa, Alabama, 35404 or an approved equal. Install as recommended by the Manufacturer.
 - MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements, and reseedings.



HYDROLOGY

FREQUENCY	*PRESENT LAND USE DISCHARGE - CFS	*ULTIMATE LAND USE DISCHARGE - CFS
2 YEAR	3.0	4.6
10 YEAR	23.8	29.0
100 YEAR	55.1	55.7

*DESIGN POINT - CONFLUENCE OF STREAM FLOWS SEE SITE PLAN

HYDRAULICS (Ultimate Land Use)

FREQUENCY	*PEAK INFLOW CFS	*PEAK OUTFLOW CFS	*STORAGE AC FT.
2 YEAR	27.8	9.9	1.25
10 YEAR	60.6	22.6	2.10
100 YEAR	100.4	52.3	9.40

*DISCHARGES AND STORAGE AT STORM WATER MANAGEMENT POND

AS-BUILT SURVEY CERTIFIED BY
 KENNETH A. MCCORD, MD REG. P.E.
 No. 1974, AS OF APRIL 9, 1985

Rev. Date	Rev. No.	Revision Description
3/3/83	1	As per Planning & SCS Comments

COLUMBIA
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCELS "A", LOTS B-1 THRU B-66 AND PARCEL "B-67"
 PROJECT TITLE
STORM WATER MANAGEMENT
 SCALE: As Shown DATE:

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS
 2315 ST. PAUL STREET
 BALTIMORE, MARYLAND 21218
 KENNETH A. MCCORD
 Registered Engineer
 No. 1974

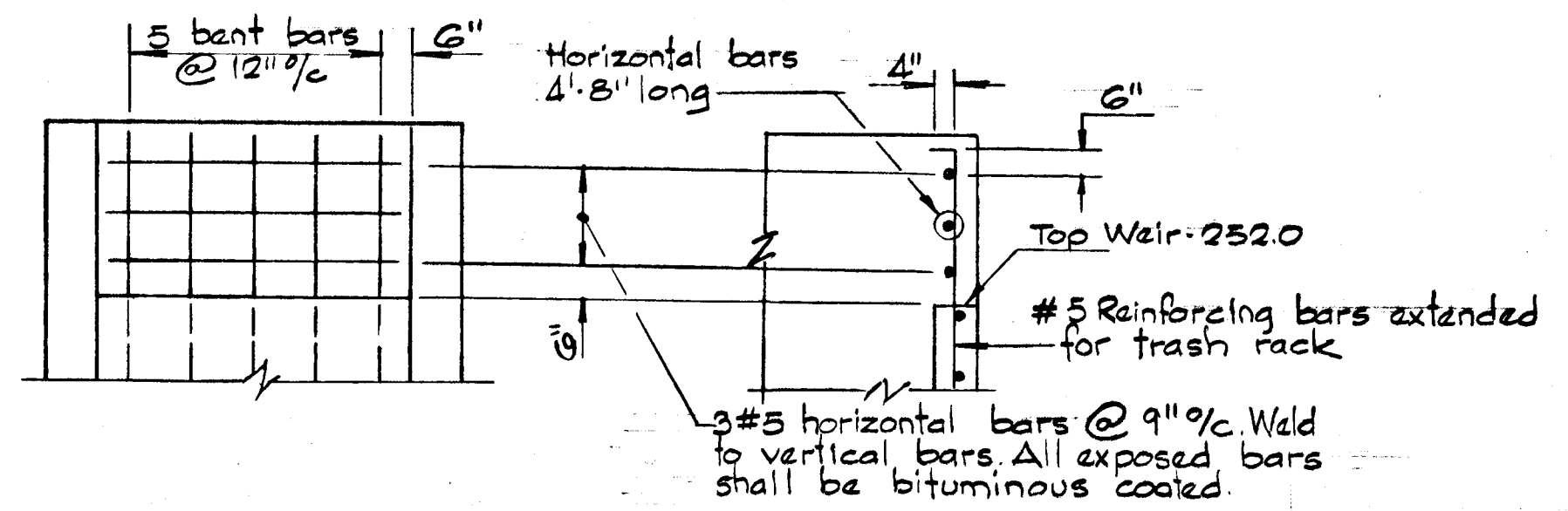
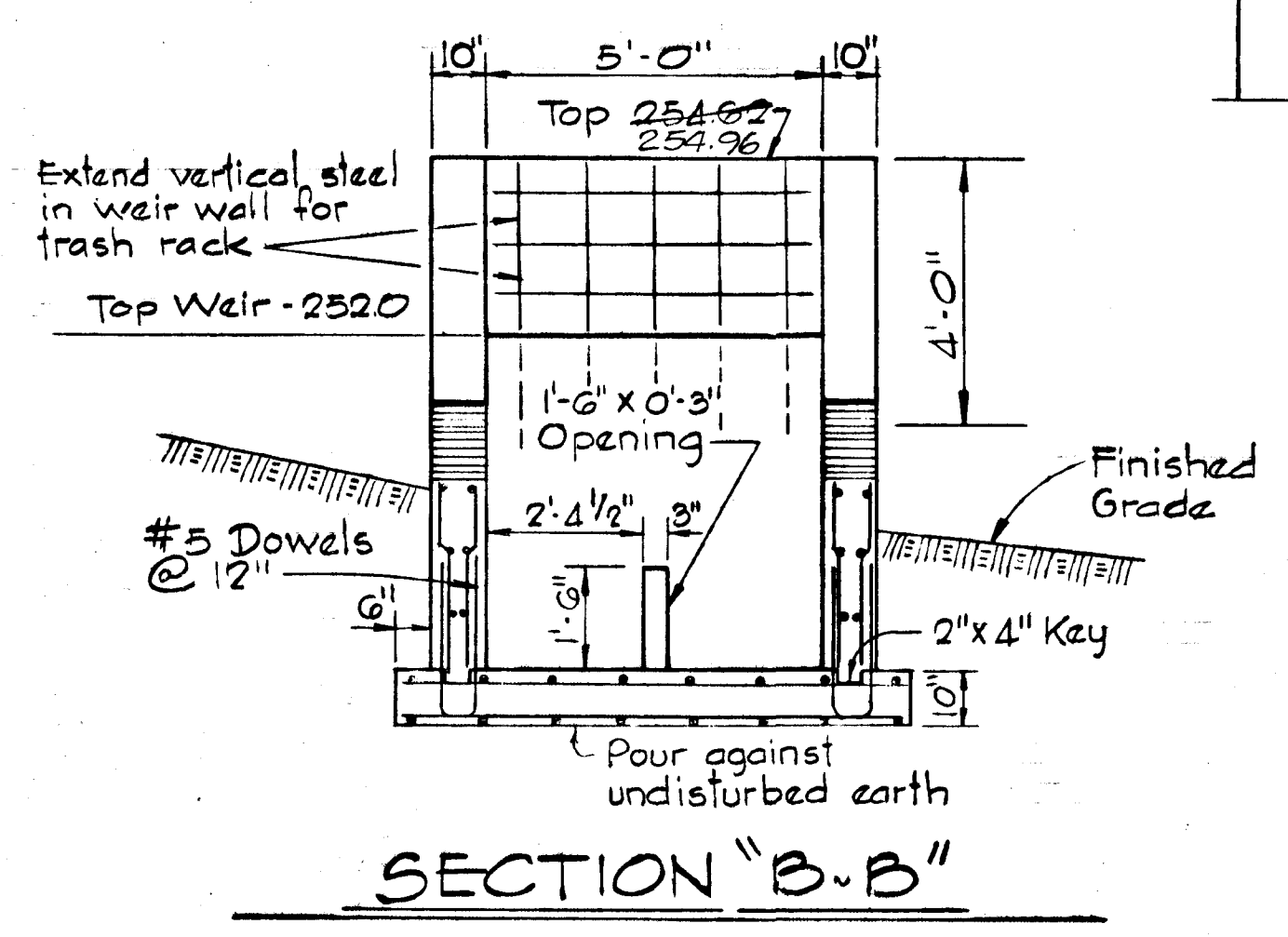
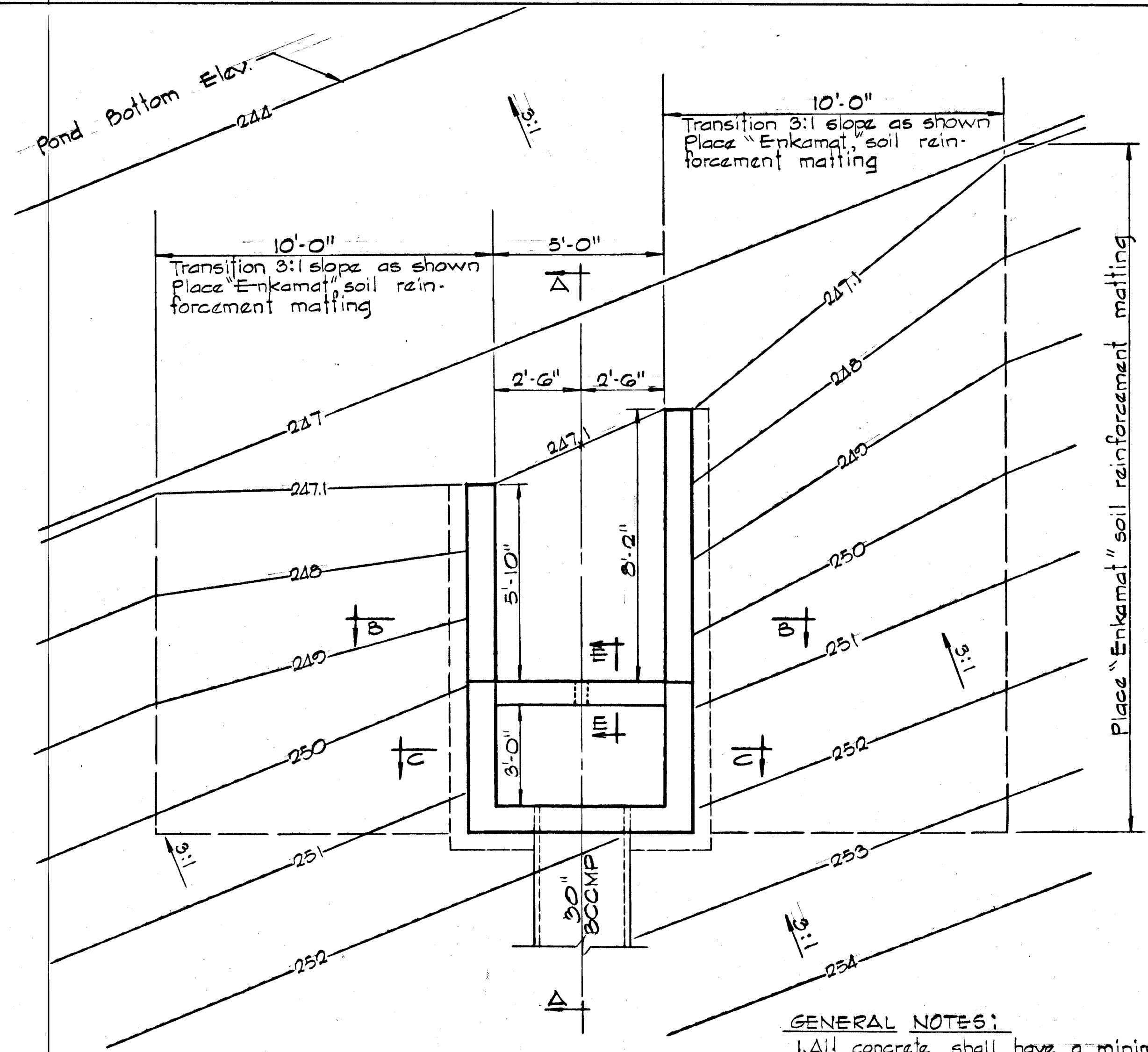
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 Approved *[Signature]* 3-10-83
 U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Approved *[Signature]* 3-10-83
 Howard S.C.D. Date
 Plan Number

CERTIFICATION BY THE ENGINEER
 "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."
 KENNETH A. MCCORD P.E. No. 1974
 1-10-83 Date

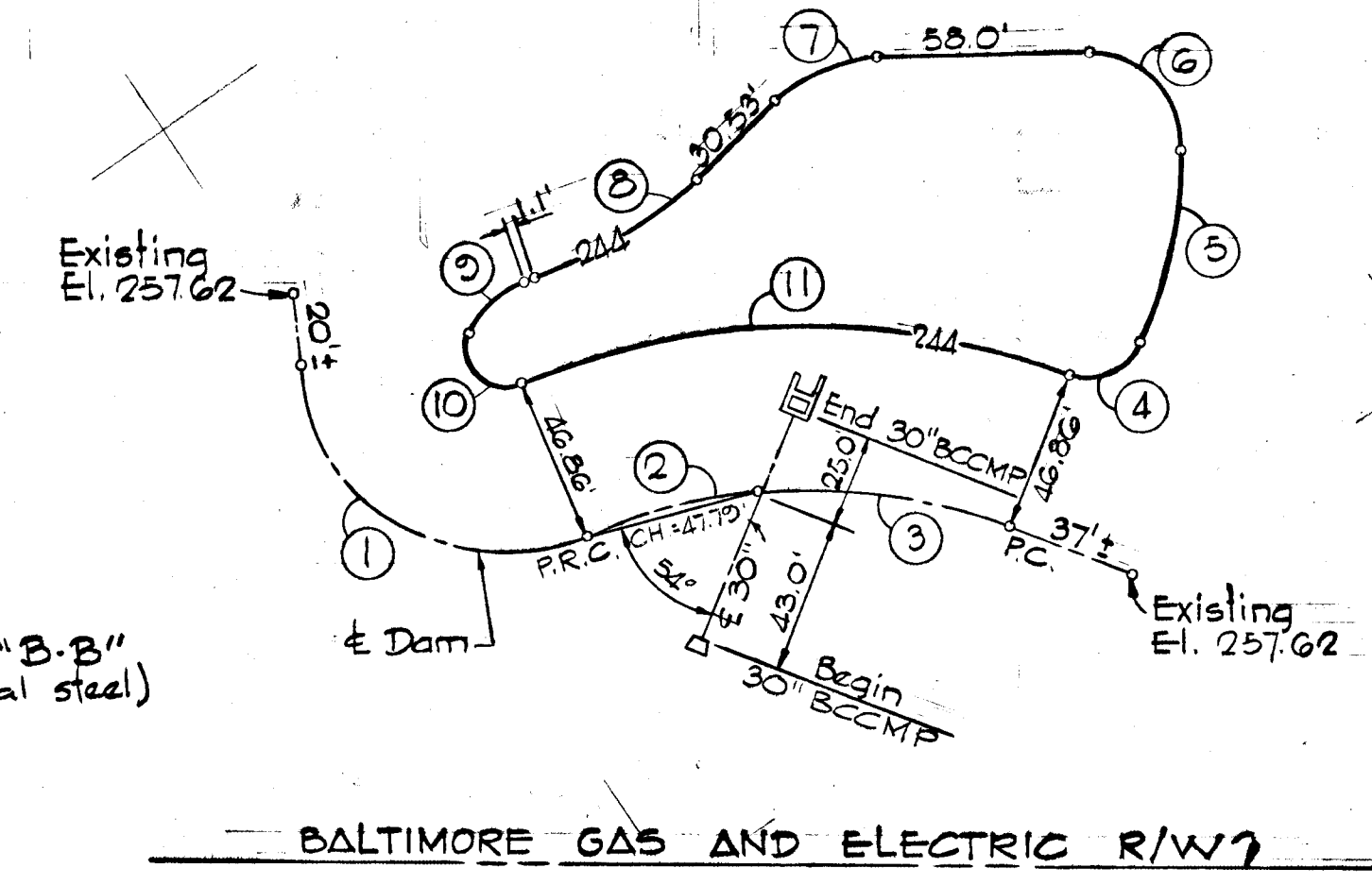
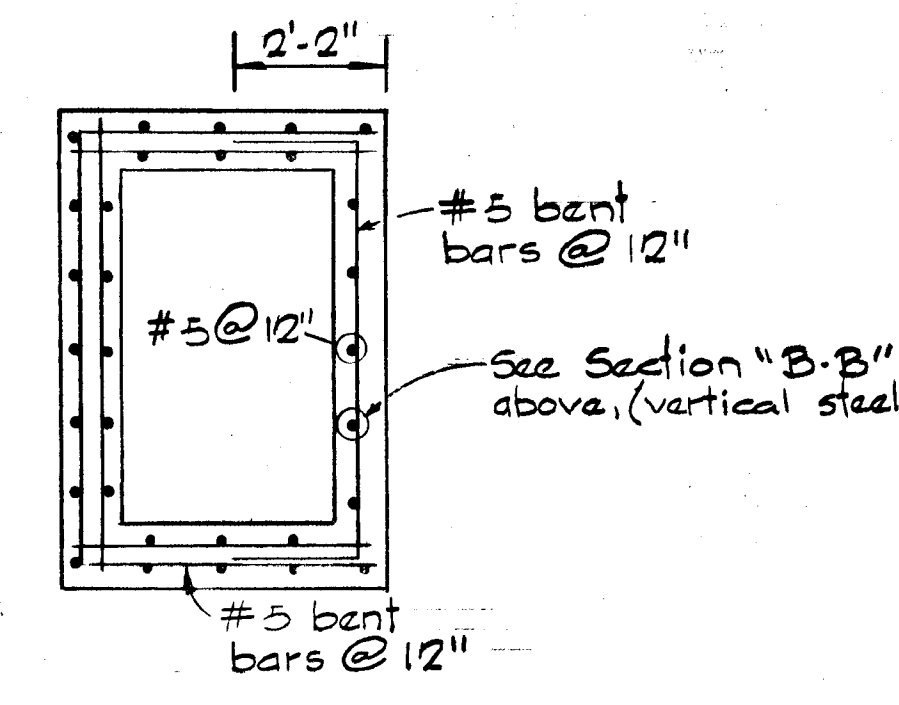
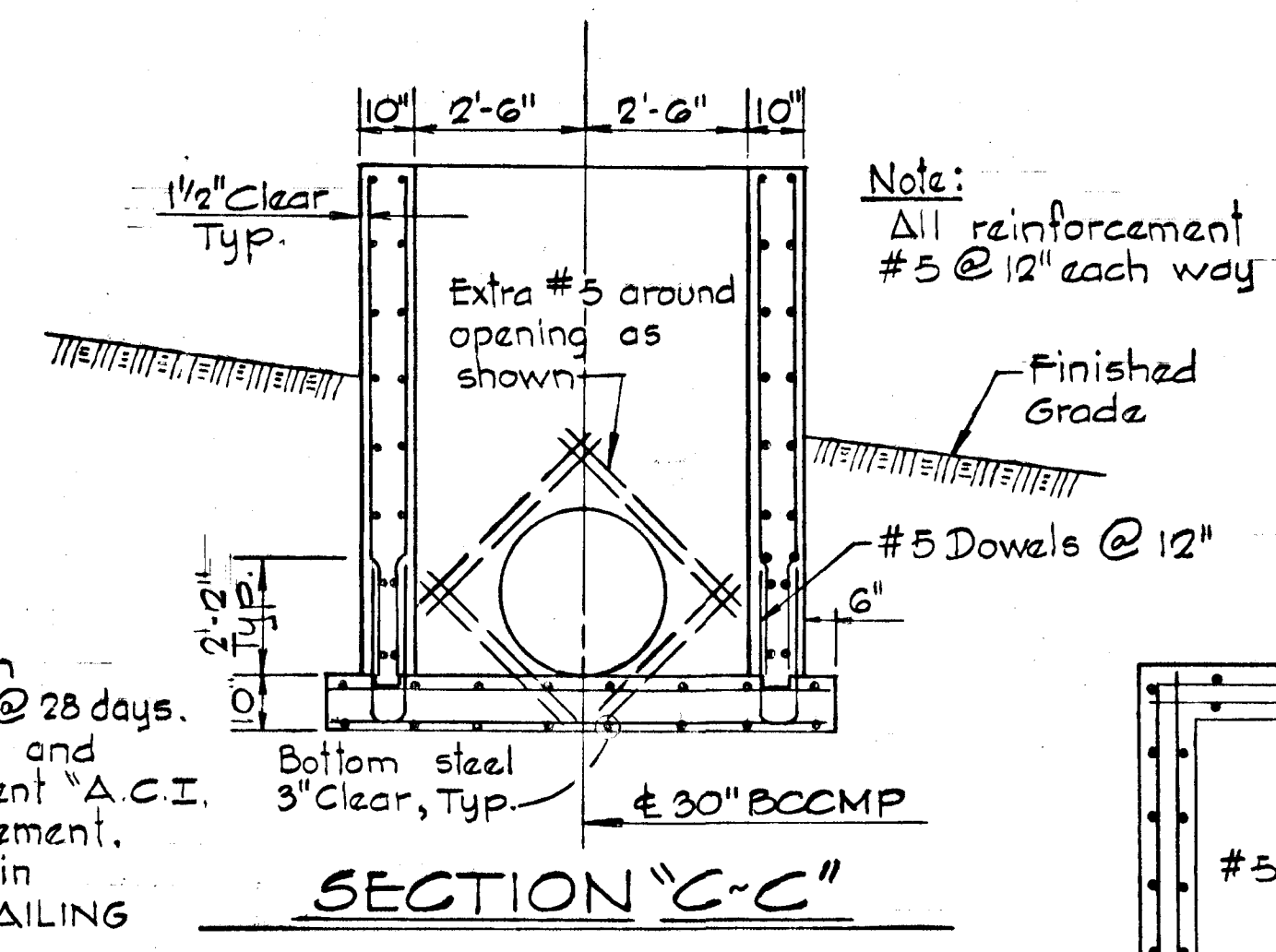
CERTIFICATION BY THE DEVELOPER
 "I certify that all development and/or construction will be done according to these plans of development, pond construction and erosion and sediment control. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, 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."
 WALTER WOODFORD
 1-20-83 Date

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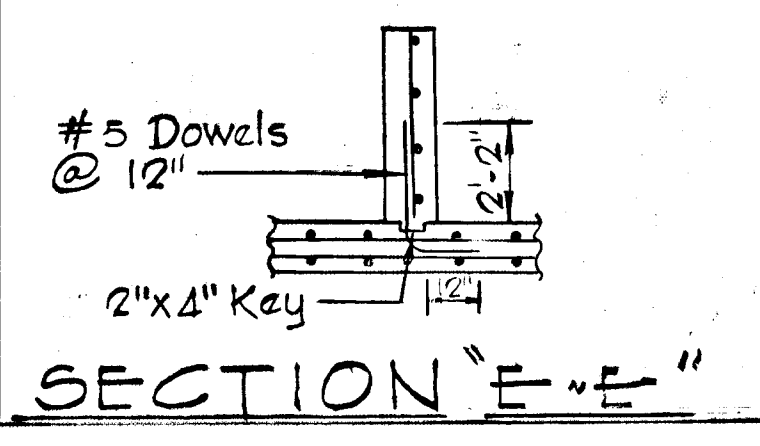


DETAIL - TRASH RACK CURVE DATA

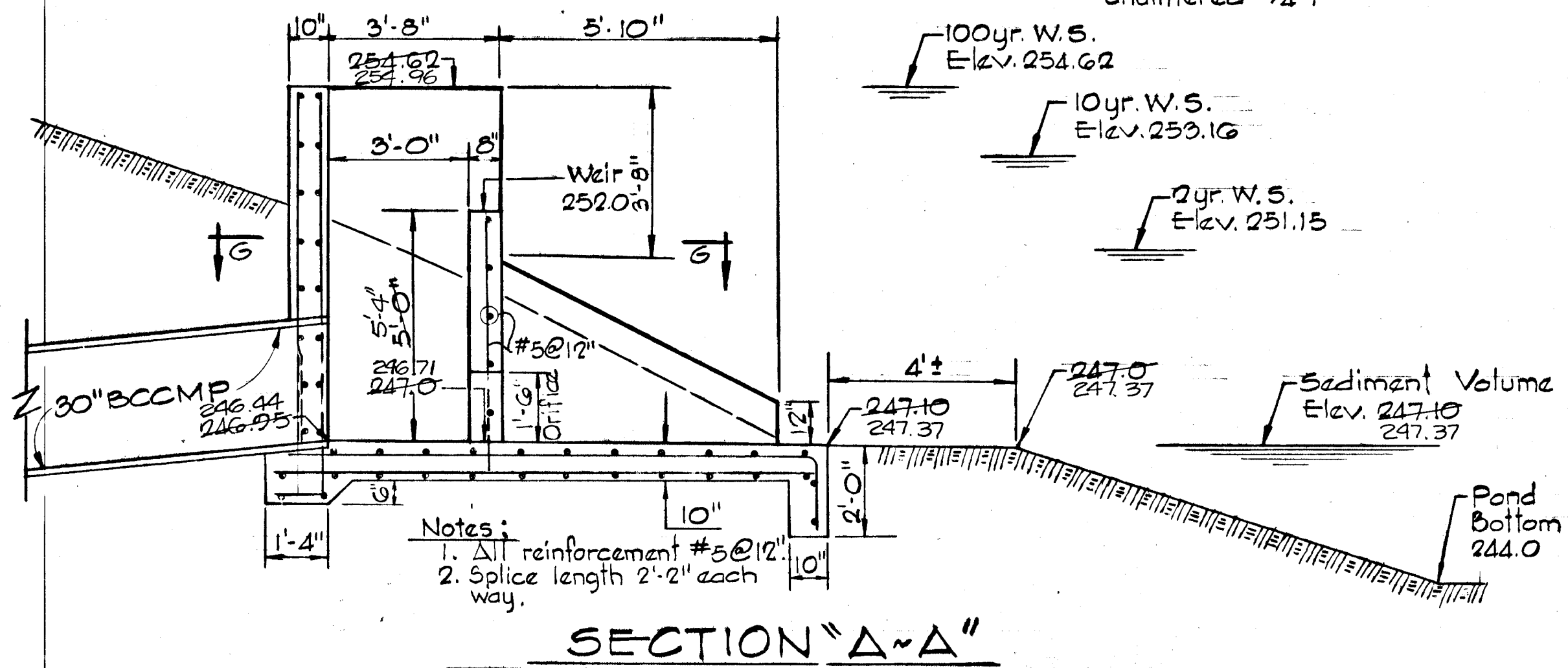
CURVE # 1	CURVE # 2	CURVE # 3
R=56.86' Δ=108°50'00" L=108.01' Chd. Br.=565°43'36"W Tan.=79.47' Chd. Lgth.=92.49'	R=150.00' Δ=18°20'00" L=48.00' Chd. Br.=320°28'36"W Tan.=24.21' Chd. Lgth.=47.70'	R=150.00' Δ=26°40'00" L=69.81' Chd. Br.=542°58'36"W Tan.=35.55' Chd. Lgth.=69.10'
CURVE # 4	CURVE # 5	CURVE # 6
R=15.00' Δ=90°00'00" L=23.56' Chd. Br.=N11°18'36"E Tan.=15.00' Chd. Lgth.=21.21'	R=175.00' Δ=18°00'00" L=54.98' Chd. Br.=N42°41'24"W Tan.=27.72' Chd. Lgth.=54.75'	R=25.00' Δ=94°35'00" L=41.27' Chd. Br.=581°01'06"W Tan.=27.08' Chd. Lgth.=36.74'
CURVE # 7	CURVE # 8	CURVE # 9
R=40.00' Δ=43°45'00" L=30.54' Chd. Br.=S11°51'06"W Tan.=16.06' Chd. Lgth.=29.81'	R=125.00' Δ=25°30'00" L=55.63' Chd. Br.=N02°43'36"E Tan.=28.29' Chd. Lgth.=55.63'	R=25.00' Δ=48°40'00" L=21.24' Chd. Br.=N08°51'24"W Tan.=11.31' Chd. Lgth.=20.60'
CURVE # 10	CURVE # 11	
R=10.00' Δ=135°30'00" L=23.65' Chd. Br.=S79°03'36"W Tan.=24.44' Chd. Lgth.=18.51'	R=106.86' Δ=45°00'00" L=154.61' Chd. Br.=S93°48'36"W Tan.=81.54' Chd. Lgth.=154.61'	



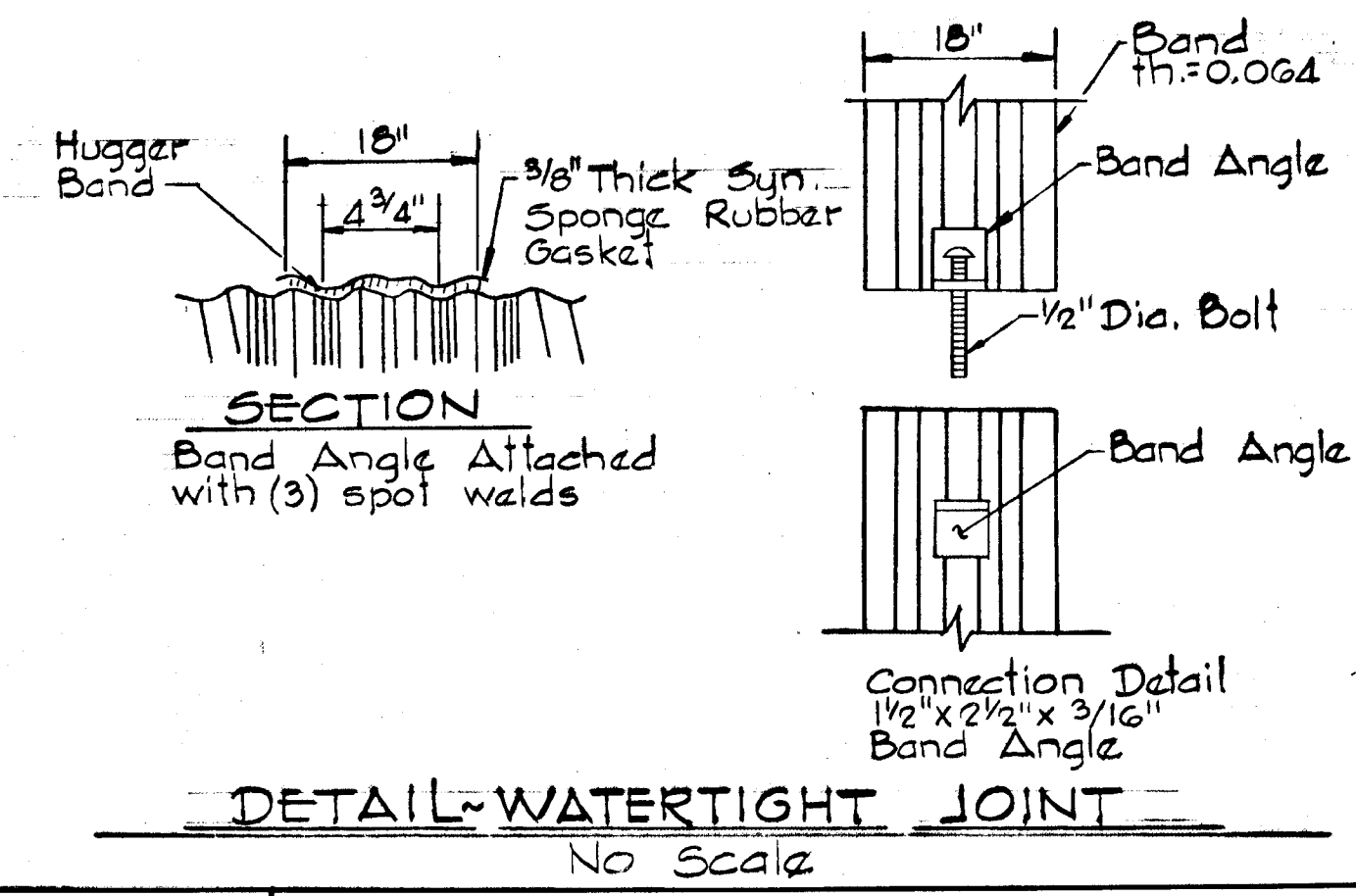
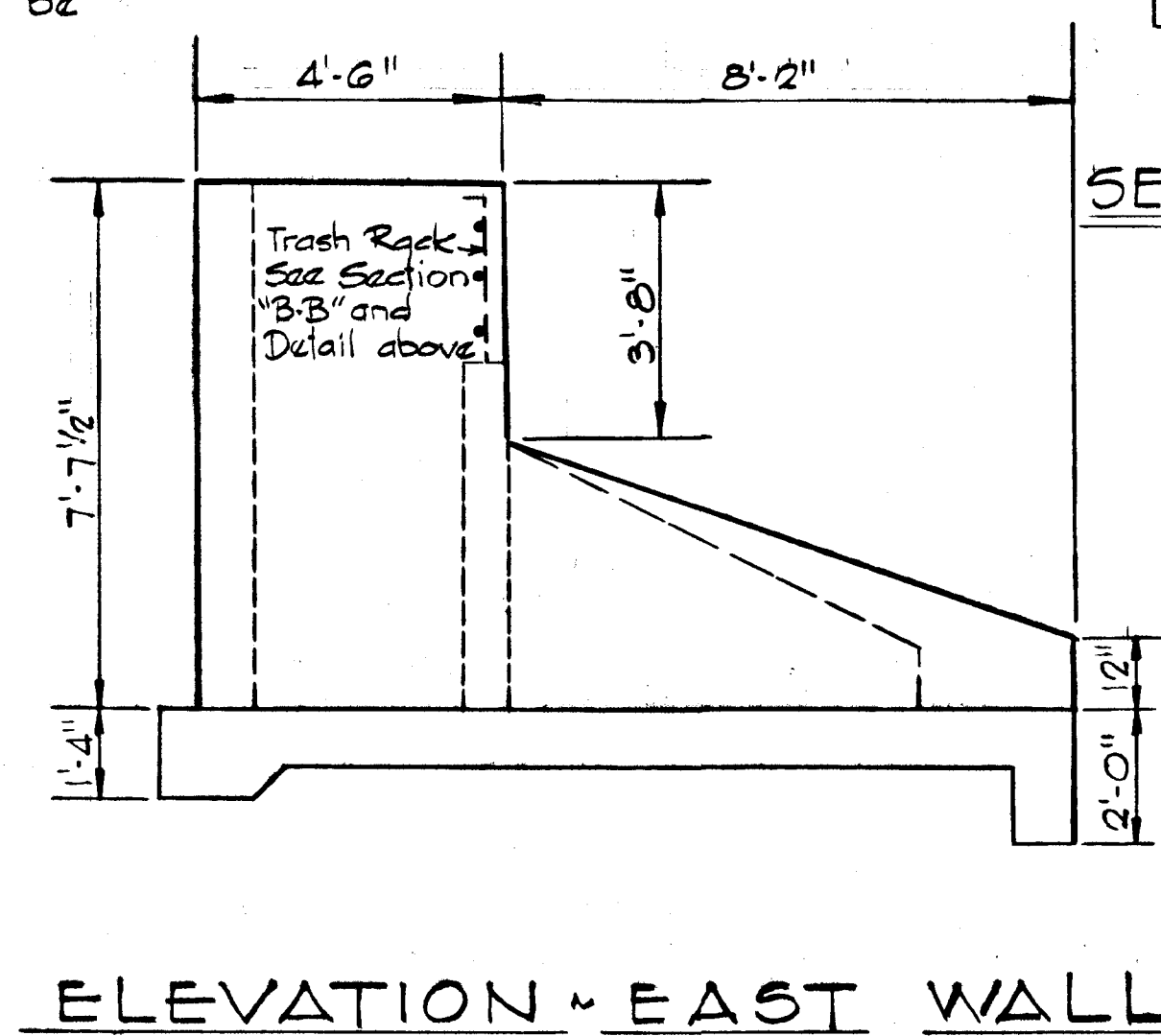
- GENERAL NOTES:
- All concrete shall have a minimum compression strength of 4000 psi @ 28 days.
 - Reinforced concrete shall be detailed and constructed in accordance with current "A.C.I. STANDARD BUILDING CODE" requirement.
 - Reinforcing steel shall be detailed in accordance with sp. 66 A.C.I. DETAILING MANUAL - 1980.
 - All reinforcement shall conform to A.S.T.M. specification A 615-75 Grade 60.
 - All exposed concrete edges shall be chamfered 3/4".



Note: See Section "B-B" above for extension of vertical steel in Weir wall for trash rack



- Notes:
- All reinforcement #5 @ 12"
 - Splice length 2'-2" each way.



DETAIL - CONCRETE SPILLWAY Scale: 3/8" = 1'-0"

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: *Robert J. Ziemer* 3-10-83
 Howard S.C.D. Date

U.S. Soil Conservation Service Date

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

Approved: *Robert J. Ziemer* 3-10-83
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Plan Number

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Kenneth A. McCord 1-19-83
 KENNETH A. MCCORD P.E. No. 1974 Date

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Walter Woodford 1-20-83
 WALTER WOODFORD Date

AS-BUILT SURVEY CERTIFIED BY KENNETH A. MCCORD MD REG. P.E. No. 1974 AS OF APRIL 4, 1985

Rev. Date	Rev. No.	Revision Description
3/3/83	1	As per Planning & SCS Comments

COLUMBIA
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 HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA
 VILLAGE OF KINGS CONTRIVANCE
 SECTION 3 AREA 2 PARCEL "A", LOTS B-1
 THRU D-66 AND PARCEL "B-G"

PROJECT TITLE
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