

STRUCTURAL SCHEDULE							
NO.	TYPE	INV.IN	INV.OUT	UPPER END	LOWER END	HO.CO. STD.	LOCATION
E-20	CONC. WING WALL		172.40				
I-21	A-5	179.47	175.26	184.80	184.80	S.D. 4.01	21+14 LT. KNIGHTS BRIDGE RD.
I-22	A-5		180.80	184.80	184.80	S.P. 4.01	21+14 RT. KNIGHTS BRIDGE RD.

PIPE SCHEDULE			
SIZE	TYPE	CLASS	LENGTH
15"	CMF	10 GAUGE	30'
18"	CMF	10 GAUGE	33'

LEGEND	
	GUARD RAIL
	RIGHT OF WAY
	BUILDING RESTRICTION LINE
	LIMITS TO BE SAVED
	100 YEAR FLOOD PLAIN ELEVATION

SEDIMENT CONTROL MEASURE FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH ARTICLE 15 OF THE STANDARD SPECIFICATIONS AND ROAD CONSTRUCTION PLAN F-91-70

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT

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

APPROVED
HOWARD SCD

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Mark C. Boyle 8/5/91
Chief, Division of Community Planning & Land Development Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

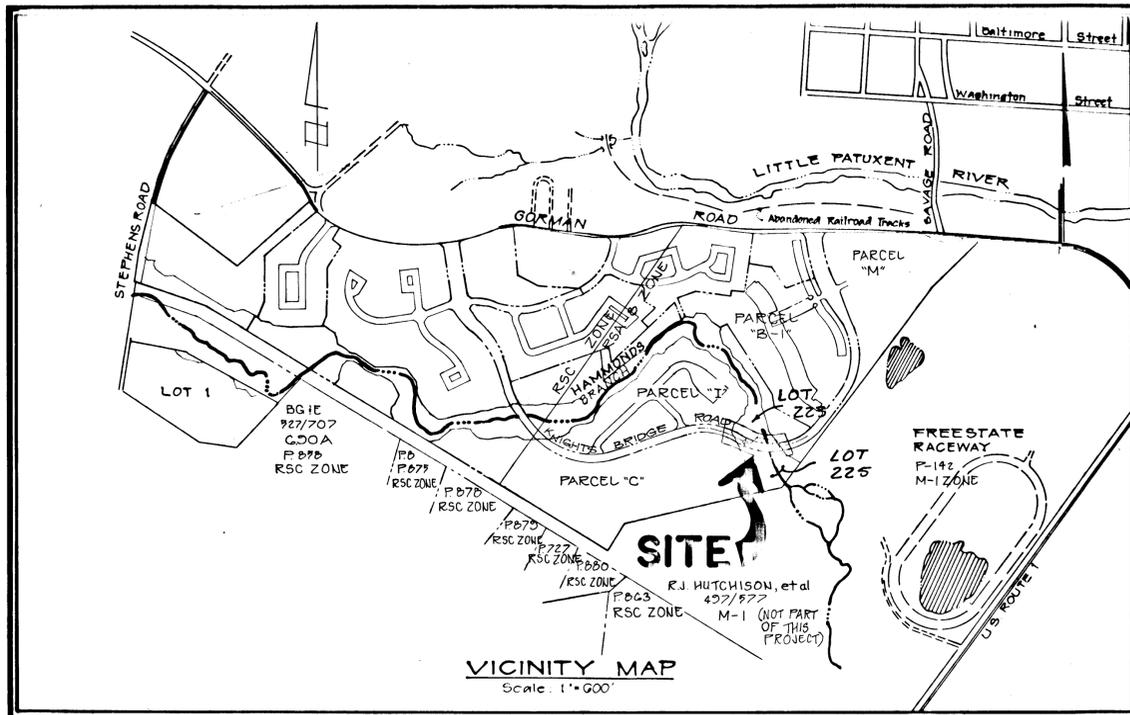
Chas M. Ferguson 8/1/91
Chief, Land Development Division Date

Granville W. McLeaud 7/18/91
Chief, Bureau of Highways Date

William E. Roney 8-5-91
Chief Bureau of Engineering Date

BOWLING BROOK FARMS

KNIGHTS BRIDGE ROAD AND LOT 225



PAVING AND STORM DRAIN CONSTRUCTION PLAN

HOWARD COUNTY, MARYLAND

GENERAL NOTES

- THE APPROXIMATE LOCATION OF ALL UTILITIES IS SHOWN BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL LOCATE, PROTECT AND SUPPORT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER/INSPECTOR, AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF PROPOSED UTILITIES AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
STATE HIGHWAY ADMINISTRATION- 531-5533
BALTIMORE GAS & ELECTRIC COMPANY- 561-2585
(CONTRACTOR SERVICES)
BALTIMORE GAS & ELECTRIC COMPANY- 234-6313
(UNDERGROUND DAMAGE CONTROL)
BALTIMORE GAS & ELECTRIC COMPANY- 298-9013
(TROUBLE SHOOTING)
"MISS UTILITY"- 4-800-257-7777
CHESAPEAKE & POTOMAC (C&P) TELEPHONE COMPANY- 725-9976
BUREAU OF UTILITIES/HOWARD COUNTY- 952-2366
THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK, AT 782-2630.
- ALL DETAILS NOT SHOWN ON THE DRAWING SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAILS.
- ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS AND HOWARD COUNTY DESIGN MANUAL, VOLUME IV.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- TREES SHALL BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT POSSIBLE. TREES SIX (6") DIAMETER OR GREATER (MEASURED FOUR FEET (4') ABOVE EXISTING GRADE) ADJACENT TO THE LIMITS OF CONSTRUCTION SHALL NOT BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE PLANE COORDINATES SYSTEM PROVIDED BY HOWARD COUNTY.
- TOPOGRAPHY TAKEN FROM MAPS PREPARED BY PHOTOGRAMMETRY BY "AERIAL SURVEYS" IN 1984. TOPOGRAPHY FIELD CHECKED 1986.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12' CLEAR. CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. ANY COST INCURRED TO THE CONTRACTOR FOR TUNNELING OR BRACING AT POLES SHALL BE INCLUDED IN UNIT PRICES BID FOR EXCAVATION AND SHALL BE INCLUDED IN UNIT PRICES BID FOR EXCAVATION BACKFILL.
- ALL ROADS SHALL BE PAVED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R. 2.01, P-3, AS NOTED.
- THIS SUBMISSION IS ZONED RSA-8.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS C.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- ROAD RIGHT-OF-WAY INFORMATION IS SHOWN ON THE RECORD PLATS.
- SPOT ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED.
- SHADED AREAS INDICATE WATER (SEWER, UTILITY, DRAINAGE, TREE AND/OR ACCESS EASEMENT(S)).
- THE FOLLOWING PERMITS HAVE BEEN ACQUIRED:
- ARMY CORPS 404 PERMIT NO. : GENAB-0P-RW
(GORMAN ROAD LIMITED PARTNERSHIP) 88-1273-6
- MARYLAND DEPARTMENT OF THE ENVIRONMENT
(401) PERMIT NO. : 87-02281
- WRA WATERWAY CONSTRUCTION PERMIT : APPLICATION HAS BEEN SUBMITTED FOR REVIEW. ANTICIPATED DATE OF PERMIT ISSUE IS JULY 1991 UNDER PERMIT NO. 88-WC-0825.

INDEX TO DRAWINGS

- TITLE SHEET
- KNIGHTS BRIDGE ROAD PLAN & PROFILE-STATION 19+30 TO 24+00
- STORM DRAIN PROFILE, PAVING SECTIONS AND DETAILS
- HAMMOND BRANCH CROSSING (EAST) -BOX CULVERT PLAN & PROFILE
- HAMMOND BRANCH CROSSING (EAST) -BOX CULVERT DETAILS
- HAMMOND BRANCH CROSSING (EAST) -BOX CULVERT DETAILS
- DRAINAGE AREA MAP
- EROSION & SEDIMENT CONTROL PLAN & DETAILS
- EROSION & SEDIMENT CONTROL NOTES & DETAILS

PLANTING NOTES

- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO PLANTING.
- ALL PLANT MATERIAL AND PLANTING SHALL BE IN ACCORDANCE WITH "AMERICAN STANDARD FOR NURSERY STOCK" BY THE A.A.N.
- SUBSTITUTIONS MAY BE PERMITTED WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT. (762-2220) AND HOWARD COUNTY.
- PLACE ALL TREES IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATION 100.02.04. "SELECTION, LOCATION AND PLACEMENT OF STREET TREES" IN THE HOWARD COUNTY DESIGN MANUAL VOLUME IX. TREES ON KNIGHTS BRIDGE ROAD TO BE PLANTED MINIMUM OF 4-FOOT BEHIND THE SIDEWALK.

PLANT SCHEDULE

KEY	QTY	PLANT NAME	SIZE	REMARKS
Qph	19	Quercus phellos	2 1/2" cal.	B&B
		Willow oak	11' - 13'	

1871

PHR&A
Harris Hunt & Associates, Inc.
Engineers, Surveyors, Planners, Landscape Architects
1609 Lantana Place
Hickory, Maryland 20855
301-2-2220

Office:
Fairfax, VA
Bridgewater, VA
Leesburg, VA
Rockville, MD
Virginia Beach, VA

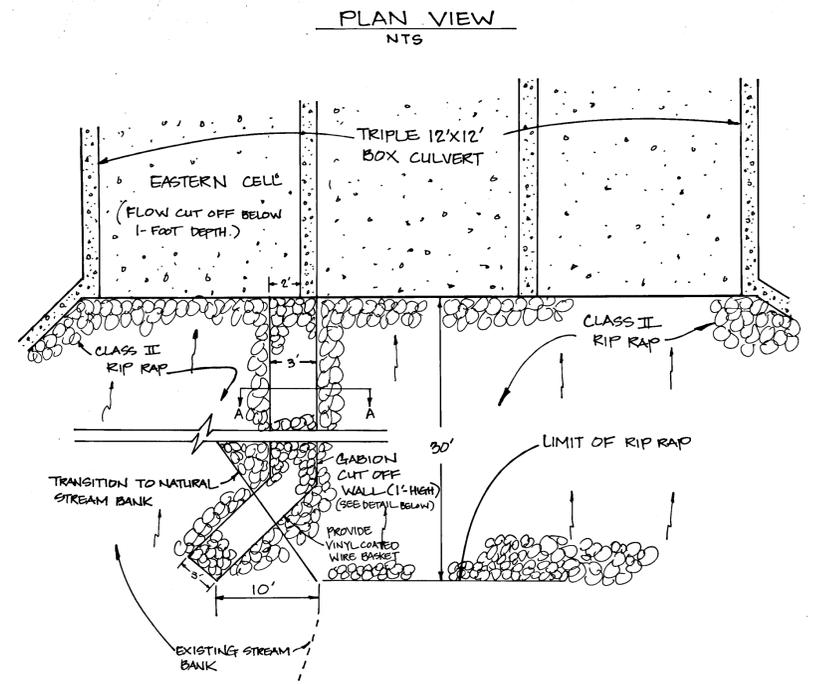
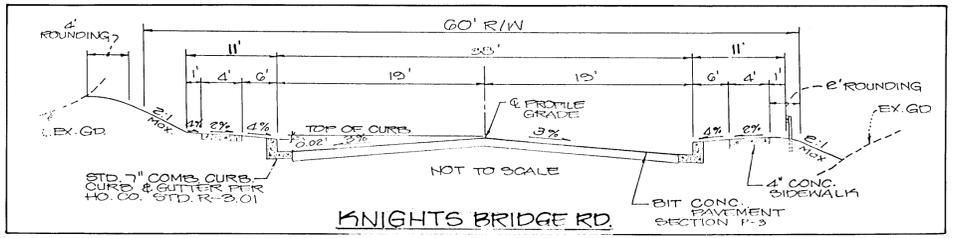
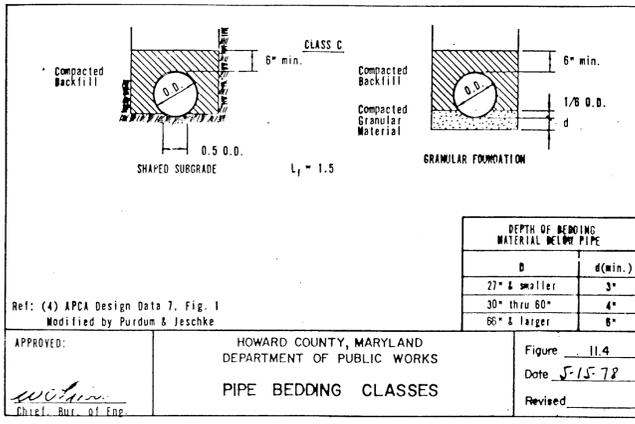
CLIENT
OWNER/DEVELOPER
GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
310 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21284
(301)321-6436

JOB
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD & LOT 225
A RESUBDIVISION OF LOT 224, BOWLING BROOK FARMS
TAX MAP 47 PARCEL 141
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
L.1394 F.632

TITLE
TITLE SHEET

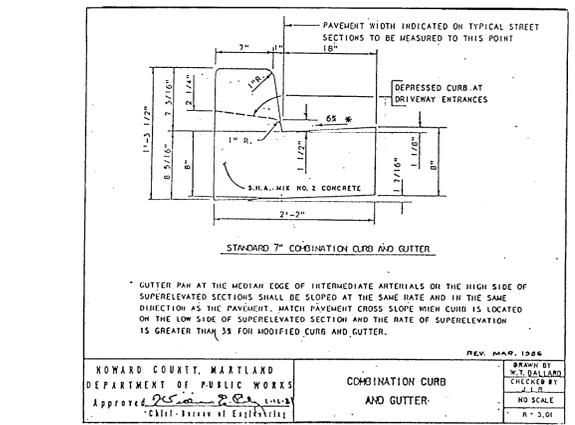
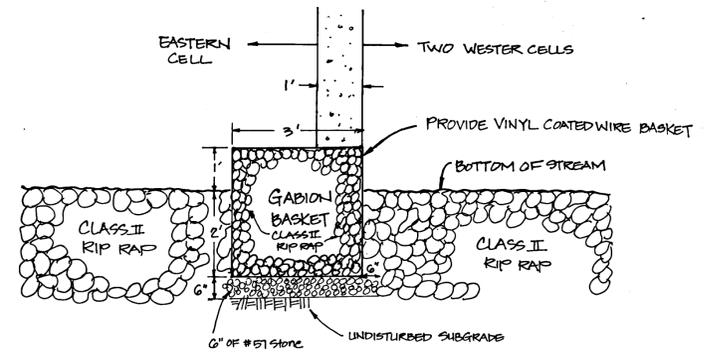
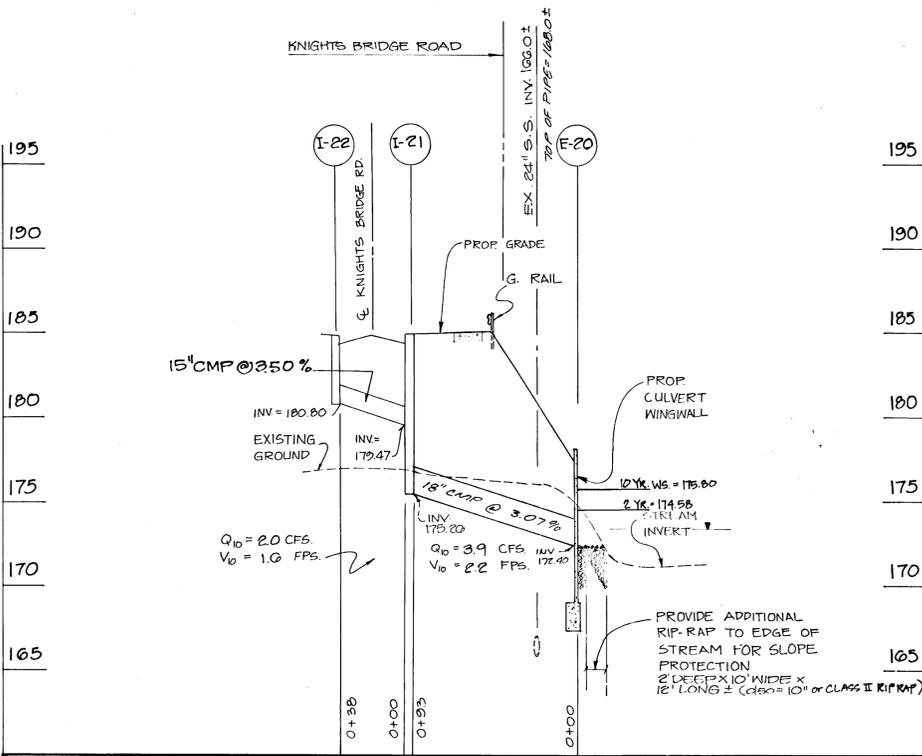
PROFESSIONAL SEAL

NO.	REVISIONS	DATE	BY	SURVEY BY	FILE NO.
				P.H.R. & A.	2184-1-12
				DESIGN E.C.	DATE
				DRAWN W.L.P.	SCALE AS SHOWN
2	ISSUED TO HOWARD COUNTY FOR SIGNATURES	7/3/91			SHEET 1 OF 9
1	ISSUED FOR REVIEW	10/22/90			



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS
P-1	PARKING BAYS, DRIVEWAYS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO HEAVY TRUCKS, TRAVELWAYS FOR APARTMENTS AND COMMERCIAL INDUSTRIAL ZONES WITH NO HEAVY TRUCKS	FULL DEPTH BIT. CONC. ALTERNATE: 1" BIT. CONC. SURFACE, 4" BIT. CONC. BASE GRANULAR BASE ALTERNATIVES: 1" BIT. CONC. SURFACE, 4" BIT. CONC. BASE
P-2	RESIDENTIAL ZONES, LOCAL, CUL-DE-SAC, ALLEYS AND PRIVATE ROADS BEYOND DRIVEWAYS	FULL DEPTH BIT. CONC. ALTERNATE: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE GRANULAR BASE ALTERNATIVES: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE
P-3	RESIDENTIAL ZONES, MEDIUM AND MAJOR COLLECTORS, COMMERCIAL, INDUSTRIAL ZONES, LOCAL AND CUL-DE-SAC STREETS, ALLEYS	FULL DEPTH BIT. CONC. ALTERNATE: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE GRANULAR BASE ALTERNATIVES: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE
P-4	COMMERCIAL, INDUSTRIAL ZONES, MEDIUM COLLECTORS	FULL DEPTH BIT. CONC. ALTERNATE: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE GRANULAR BASE ALTERNATIVES: 1 1/2" BIT. CONC. SURFACE, 5" BIT. CONC. BASE

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS
Approved: [Signature] Date: [Date]
Chief, Bureau of Eng.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division Date: 8/1/91
 Chief, Bureau of Highways Date: 7/18/91
 Chief, Bureau of Engineering Date: 8-5-91

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Chief, Division of Community Planning & Land Development Date: 8/15/91



CLIENT: OWNER/DEVELOPER
 GORMAN ROAD LIMITED PARTNERSHIP
 C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
 110 WEST ROAD, SUITE 203
 TOMSON, MARYLAND 21204
 (301) 321-6436

JOB: BOWLING BROOK FARMS
 KNIGHTS BRIDGE ROAD & LOT 225
 A RESUBDIVISION OF LOT 224, BOWLING BROOK FARMS
 TAX MAP 47 PARCEL 141
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 L. 1394 F. 632

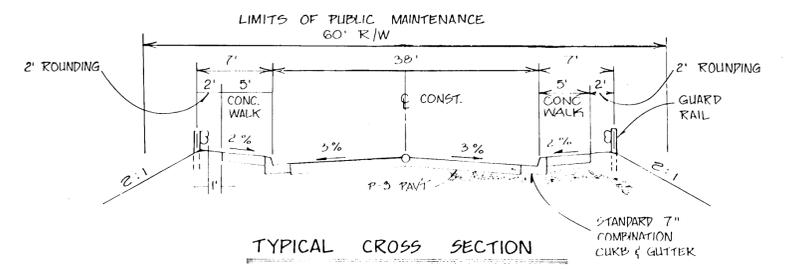
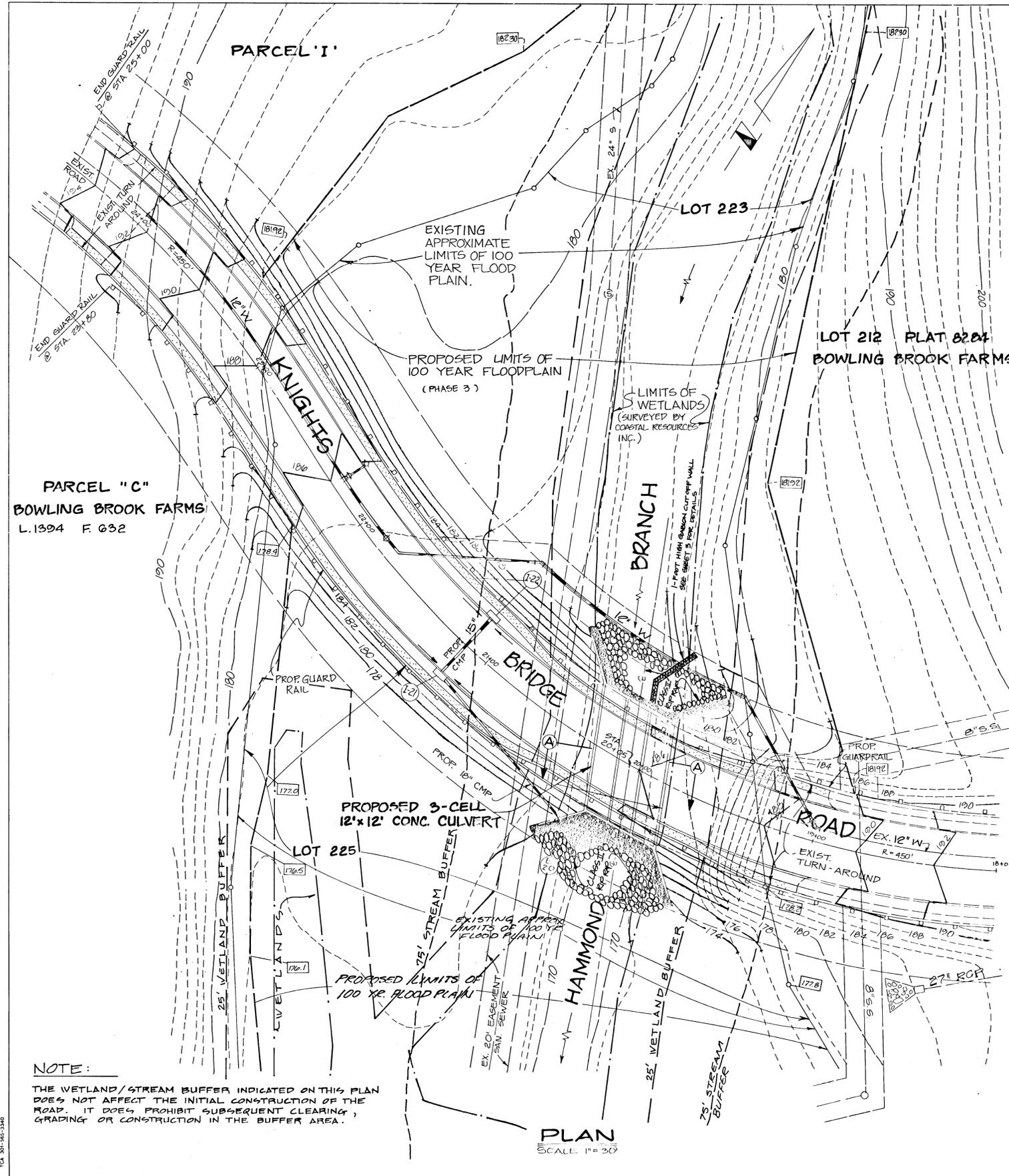
TITLE: STORM DRAIN PROFILE
 PAVING SECTIONS & DETAILS



NO.	REVISIONS	DATE	BY
2	ISSUED TO HOWARD COUNTY FOR SIGNATURES	7/3/91	
1	ISSUED FOR REVIEW	10/29/90	

SURVEY BY	FILE NO.
P.H.R. & A.	2104-1-12
DESIGN	E.C.
DRAWN	E.R.
CHKD	

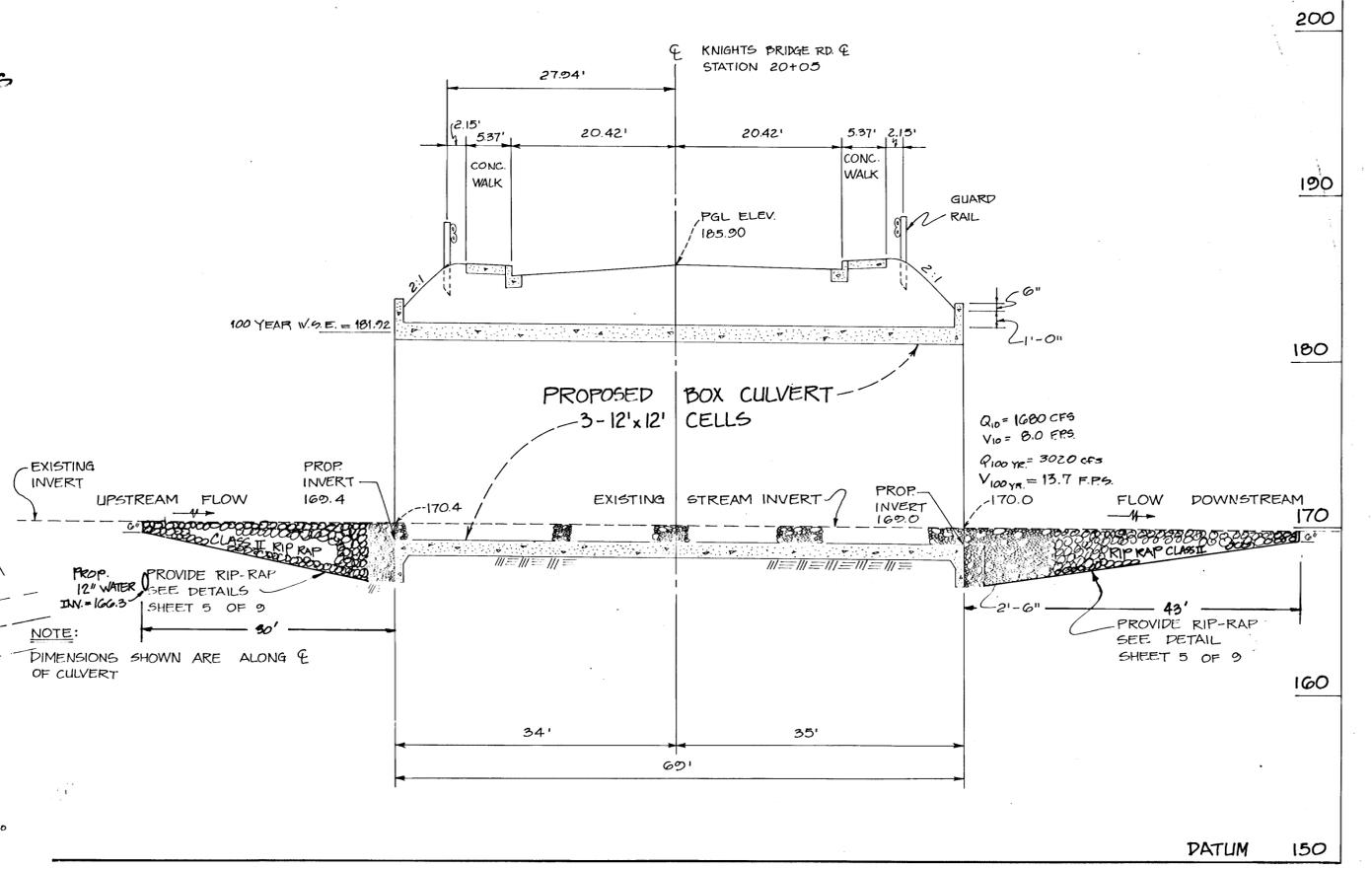
SCALE: AS NOTED
 SHEET 3 OF 9



NOTE: SIDEWALK SHALL TRANSITION TO THE NORMAL ROAD SECTION LOCATION (6' OFF CURB) IN 60'

TYPICAL CROSS SECTION AT CULVERT
STA. 19+08± TO STA 21+08± (NOT TO SCALE)

MINOR COLLECTOR
MINIMUM DESIGN SPEED = 35 MPH



PROFILE ALONG C OF CULVERT
KNIGHTS BRIDGE RD C STA. 20+05

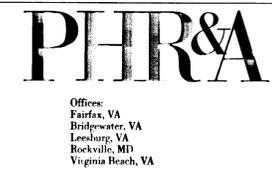
SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John M. Pangaro 8/1/91
Chief, Planning & Development Division Date

Lawrence W. Welland 7/18/91
Chief, Bureau of Highways Date

Gregory S. ... 8-5-91
Chief, Bureau of Engineering Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Barbara ... 8/3/91
Chief, Division of Community Planning & Land Development Date



CLIENT
OWNER/DEVELOPER
CORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
310 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(301) 321-6436

JOB
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD & LOT 225
A RESUBDIVISION OF LOT 224, BOWLING BROOK FARMS
TAX MAP 47 PARCEL 141
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
L. 1394 F. 632

TITLE
BOX CULVERT
PLAN & PROFILE
(HAMMOND BRANCH CROSSING EAST)



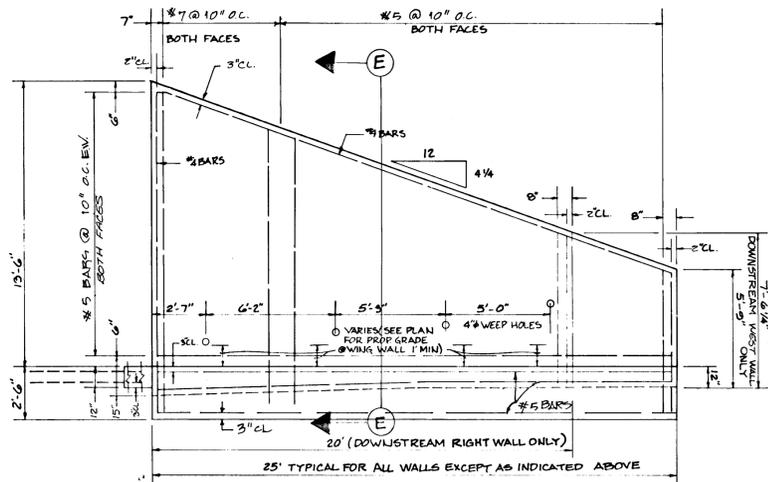
NO.	REVISIONS	DATE	BY	SURVEY BY	FILE NO.
2	ISSUED TO HOWARD COUNTY FOR SIGNATURES	7/3/91			
1	ISSUED FOR REVIEW	10/25/90			

DESIGN BY: P.H.R.&A. DATE: 2104-1-12
DRAWN BY: E.I.G. DATE: 4/14/89
CHECKED BY: E.R. SCALE: AS SHOWN
SHEET 4 OF 9

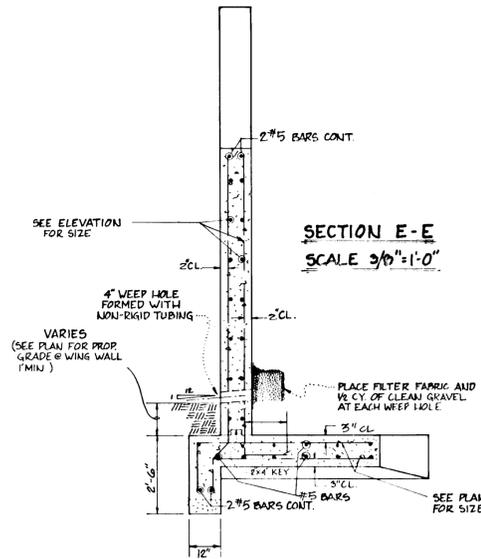
STRUCTURAL GENERAL NOTES

BOX CULVERT GENERAL NOTES

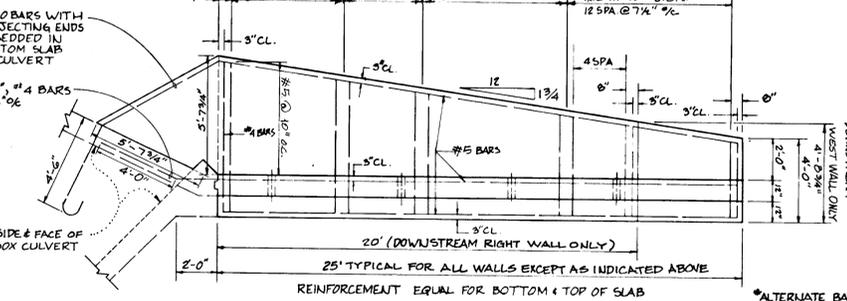
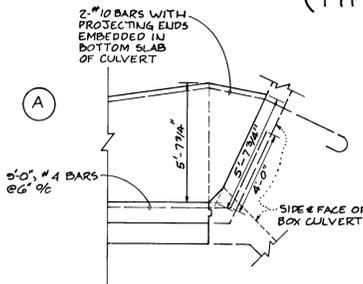
1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF 1) THE HOWARD COUNTY DESIGN MANUAL, VOL. III, ROAD AND BRIDGE DESIGN, 2) THE STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND 3) THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
2. ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4 X 3/4 MILLED CHAMFERED STRIPS, EXCEPT ON UNEXPOSED FOOTINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60 AND SHALL BE EPOXY COATED. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP DIAMETER. HOOKS SHALL BE ROTATED IN THE FIELD AS NECESSARY TO PROVIDE MINIMUM 2" COVER UNLESS OTHERWISE NOTED.
4. ALL JOINTS SHALL BE CONSTRUCTED AND BONDED IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS.
5. WEEP HOLES SHALL BE PLACED AT THE LOWEST POINT FEASIBLE FOR FREE DRAINAGE AWAY FROM WING WALLS.
6. DESIGN LOAD FOR BOX CULVERT - HS 20-44.
7. MIN. BEARING CAPACITY: 4,000 PSF
8. CONCRETE SHALL BE 4,000 PSI (28-DAY STRENGTH), MIX #6 AIR ENTRAINED.
9. THE OUTSIDE SURFACE OF THE BOX CULVERT AND ASSOCIATED WING WALLS (SURFACE AGAINST EARTH) SHALL BE DAMP PROOFED USING AN ACCEPTABLE BITUMINOUS COMPOUND.



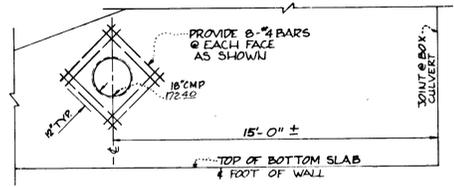
ELEVATION
(TYPICAL REINFORCEMENT ALL WINGS)



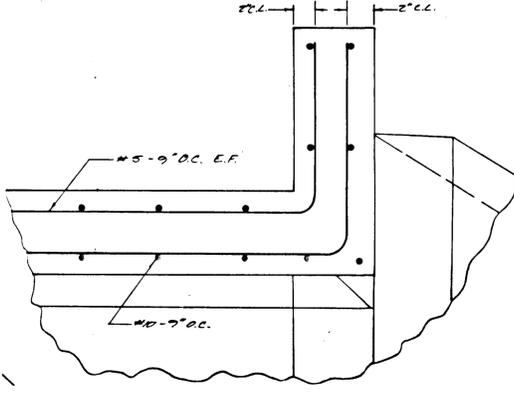
SECTION E-E
SCALE 3/8"=1'-0"



PLAN
(TYPICAL REINFORCEMENT ALL WINGS)
SCALE 1/4"=1'-0"



STORM DRAIN PIPE AT WALL
NOT TO SCALE



DETAIL 3
NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Alan M. Tangen 4/2/91
 Chief, Land Development Division
Lawrence W. Weiland 7/18/91
 Chief, Bureau of Highways
Gregory S. Ray 8-5-91
 Chief Bureau of Engineering

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Mark W. Taylor 7/5/91
 Chief, Division of Community Planning & Land Development



CLIENT
OWNER/DEVELOPER
 GORMAN ROAD LIMITED PARTNERSH.
 C/O JAMES F. KNOTT DEVELOPERS
 110 WEST ROAD, SUITE 203
 TOWSON, MARYLAND 21284
 (301) 321-6436

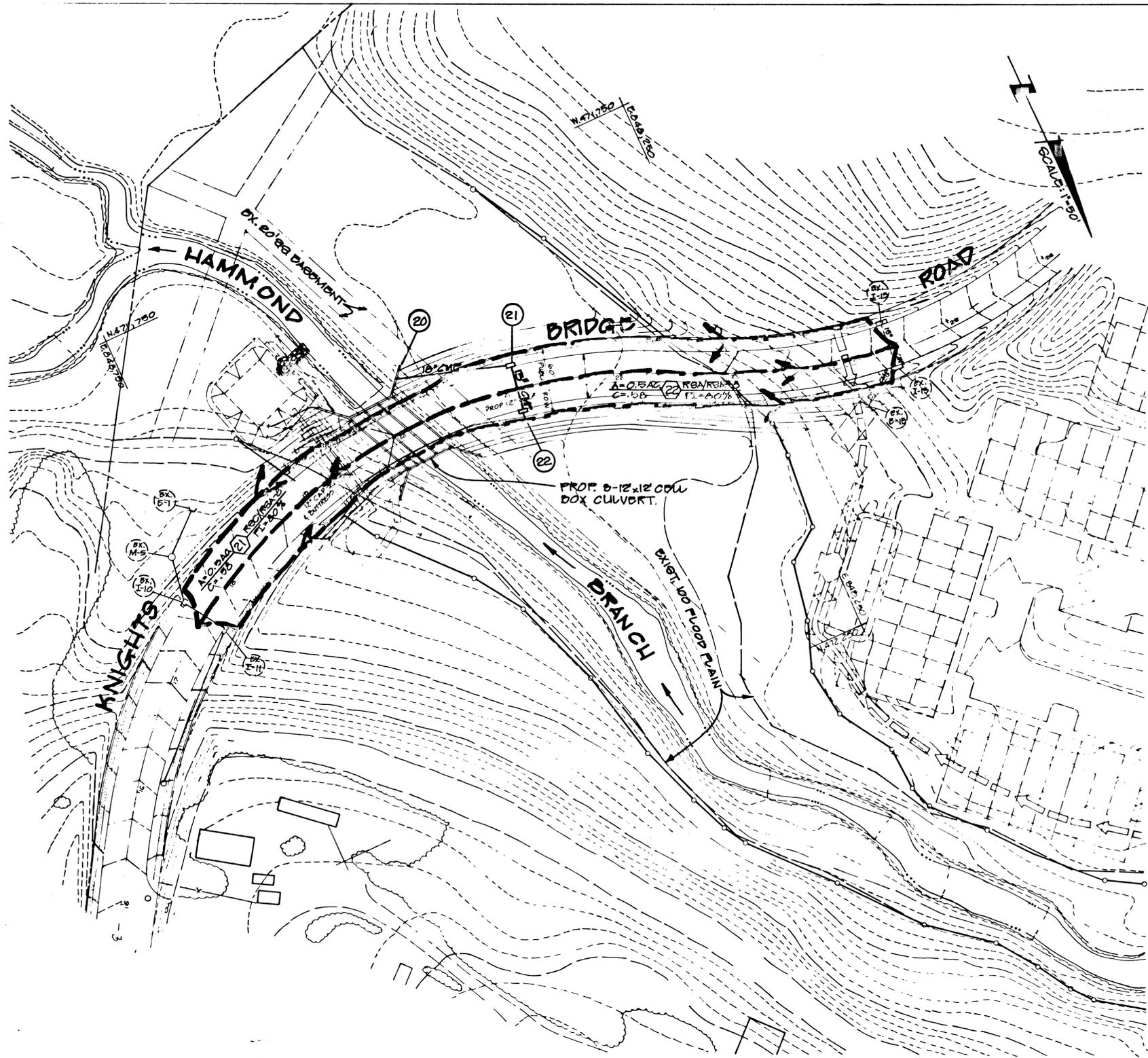
JOB
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD & LOT 225
 A RESUBDIVISION OF LOT 224 BOWLING BROOK FARMS
 TAX MAP 47 PARCEL 141
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 L. 1394 F. 632

TITLE
BOX CULVERT DETAILS
(HAMMOND BRANCH CROSSING EAST)



NO.	REVISIONS	DATE	BY	SURVEY BY	FILE NO.
2	ISSUED TO HOWARD COUNTY FOR SIGNATURES	7/3/91			2104-1-12
1	ISSUED FOR REVIEW	10/20/90			

DESIGN	DATE
E.C.	9-20-89
DRAWN	SCALE
M.R.	AS NOTED
CHECKED	SHEET
	6 OF 9



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Ch. M. Taylor 4/1/91
 Chief, Land Development Division Date
Lawrence W. Weisand 7/18/91
 Chief, Bureau of Highways Date
William E. Riley 8-5-91
 Chief, Bureau of Engineering Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Mark V. McCay 8/15/91
 Chief, Division of Community Planning & Land Development Date

PHR&A
 Patton Harris Root & Associates, Jr.
 Engineers, Surveyors, Planners, Landscape Architects
 2409 Stratford Place
 Rockville, Maryland 20855
 (301) 762-2220



CLIENT
 OWNER/DEVELOPER
 GORDAN ROAD LIMITED PARTNERSHIP
 C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
 110 WEST ROAD, SUITE 203
 TOWSON, MARYLAND 21284
 (301) 321-6436

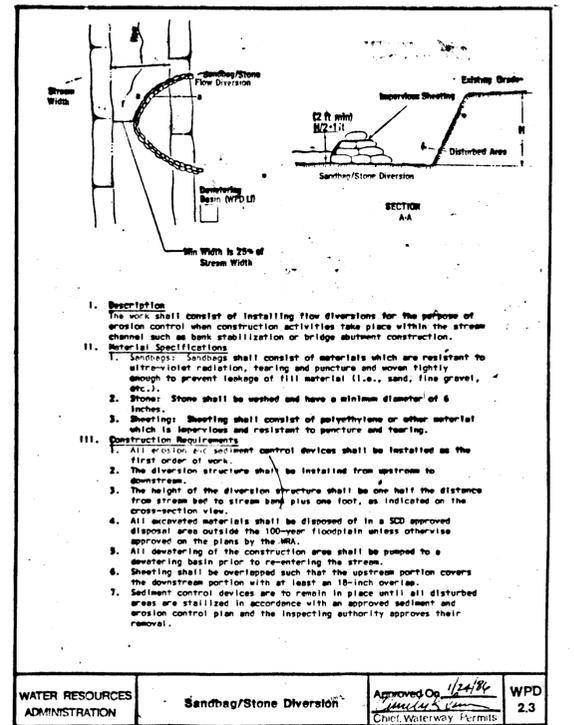
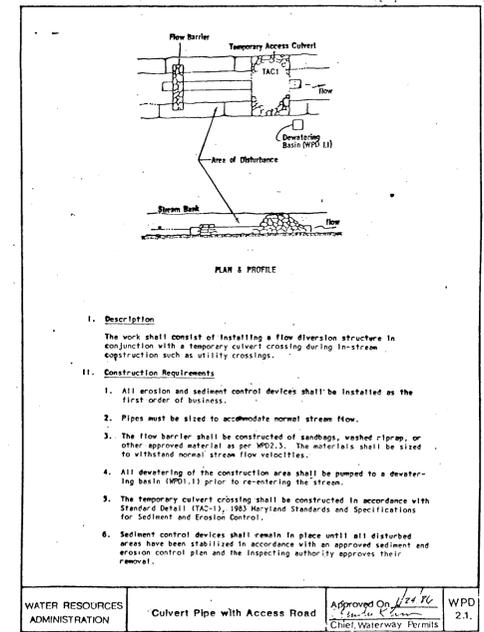
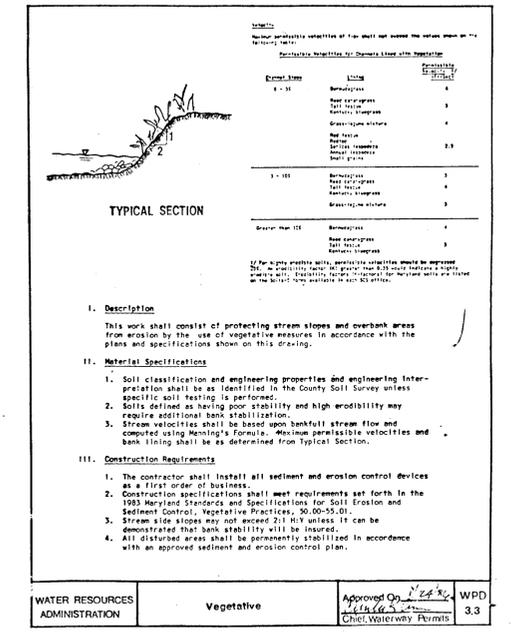
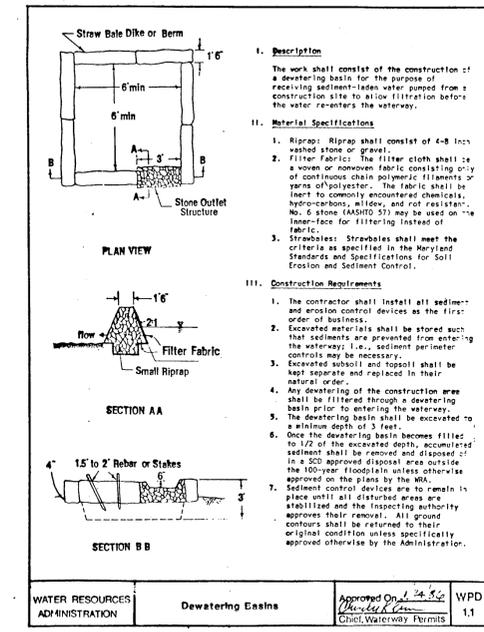
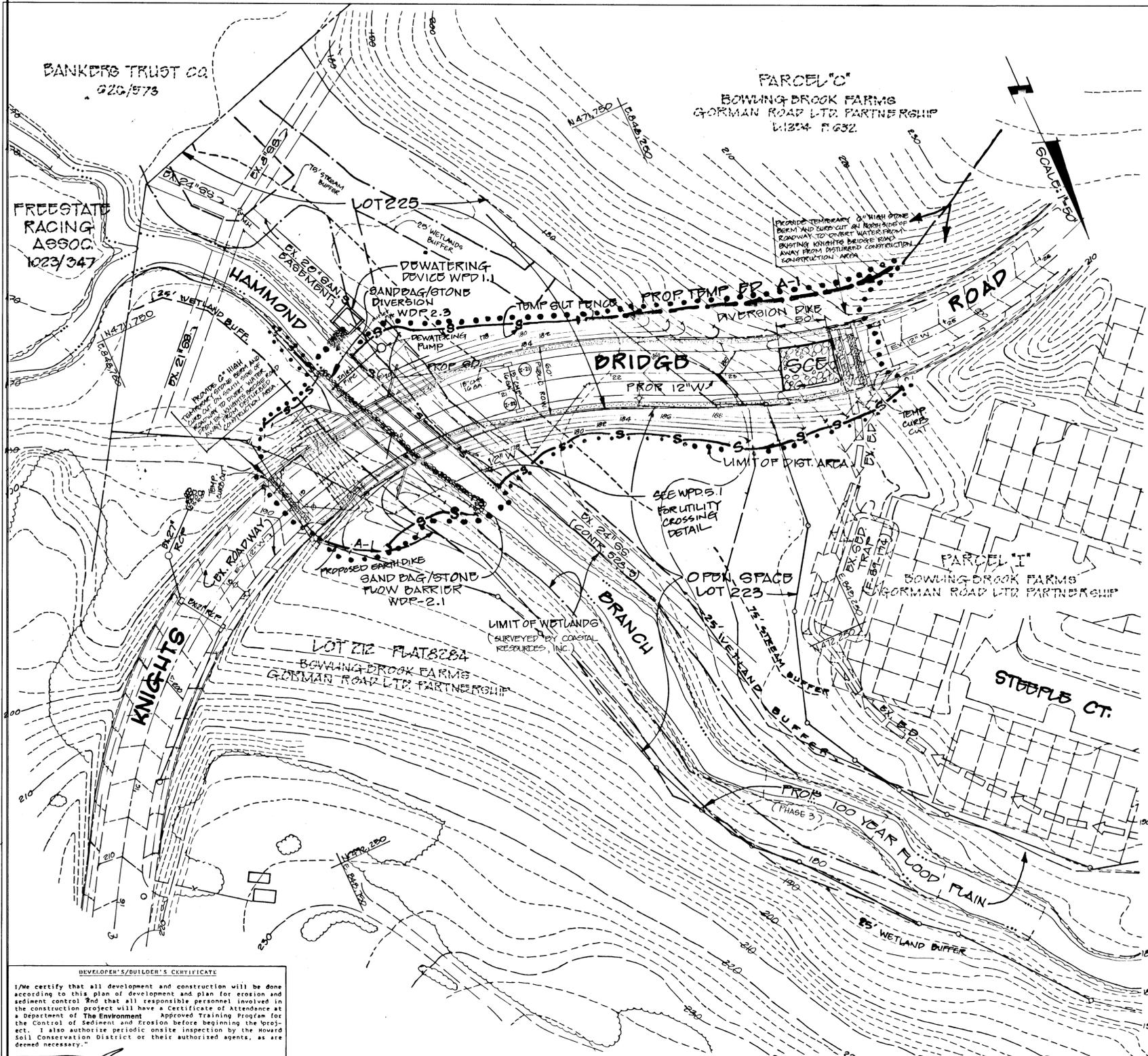
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD & LOT 225
 A RESUBDIVISION OF LOT 224 BOWLING BROOK FARMS
 TAX MAP 47 PARCEL 14H
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 L. 1394 F. 632

DRAINAGE AREA MAP



NO.	REVISIONS	DATE	BY	SURVEY BY	FILE NO.
2	ISSUED TO HOWARD COUNTY FOR SIGNATURES	7/3/91			2184-1-12
1	ISSUED FOR REVIEW	10/20/90			

DESIGN BC DATE 4/14/90
 DRAWN PC SCALE 1"=50' @ 2'
 CHECKED SHEET 7 OF 9



DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
 Signature of Developer/Builder: [Signature] Date: 7/19/91

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 of Engineer: [Signature] Date: 7/19/91

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: [Signature] Date: 7/19/91
 PLAN NUMBER: F-91-70

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.
 APPROVED: [Signature] Date: 7/11/91
 U.S. Soil Conservation Service

THIS PLAN FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY!!!

NOTE:
 THE WETLAND/STREAM BUFFER INDICATED ON THIS PLAN DOES NOT AFFECT THE INITIAL CONSTRUCTION OF THE ROAD. IT DOES PROHIBIT SUBSEQUENT CLEARING, GRADING OR CONSTRUCTION IN THE BUFFER AREA.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] Date: 8/1/91
 Chief, Land Development Division
 [Signature] Date: 7/18/91
 Chief, Bureau of Highways
 [Signature] Date: 8-5-91
 Chief, Bureau of Engineering
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 [Signature] Date: 8/5/91
 Chief, Division of Community Planning & Land Development

PHR&A
 Part of Harris Trust & Associates, Inc.
 Fairfax, VA
 Bridgewater, VA
 Leesburg, VA
 Rockville, MD
 Virginia Beach, VA

CLIENT
 OWNER/DEVELOPER
 BOWLING BROOK FARMS
 KNIGHTS BRIDGE ROAD & LOT 225
 A RESUBDIVISION OF LOT 224 BOWLING BROOK FARMS
 TAX MAP 47 PARCEL 141
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 L. 1394 F. 632

EROSION and SEDIMENT CONTROL PLAN & DETAILS

NO.	REVISIONS	DATE	BY	SURVEY BY	FILE NO.
3	REVISED PER WKA COMMENTS (S.O.C. NO. EX. 636 MEASUREMENTS)	7-8-91		EC	2184-1-12
2	SUBMITTED TO HO. CO. FOR SIGNATURES	7-5-91		FC	DATE: 4/14/00
1	ISSUED FOR REVIEW	10/29/90		FC	SCALE: 1"=50' @ 2'

SHEET 8 OF 9
 F-91-70

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- All vegetative and structural practices are to be installed according to these plans and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or re disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1; b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	15.9 Acres
Area Disturbed	1.2 Acres
Area to be roofed or paved	0.28 Acres
Area to be vegetatively stabilized	3.05 Acres
Total Cut	30,500 cu. yds.
Total Fill	20,500 cu. yds.
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County DPM sediment control inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

PERMANENT SEEDING NOTES

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

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

Soil Amendment: In lieu of soil test recommendations, use one of the following schedules:

- Preferred — Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. 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).
- 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 1 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

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

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

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

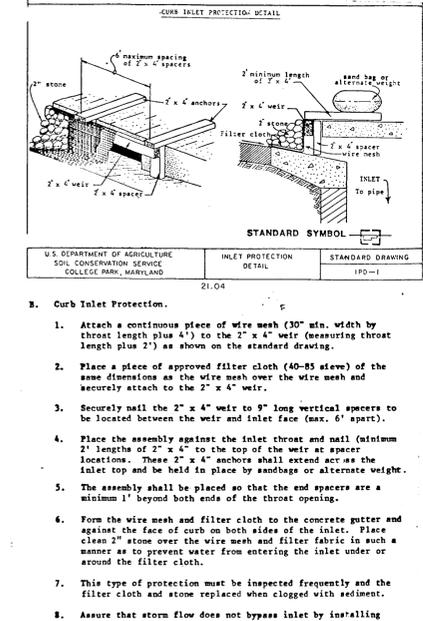
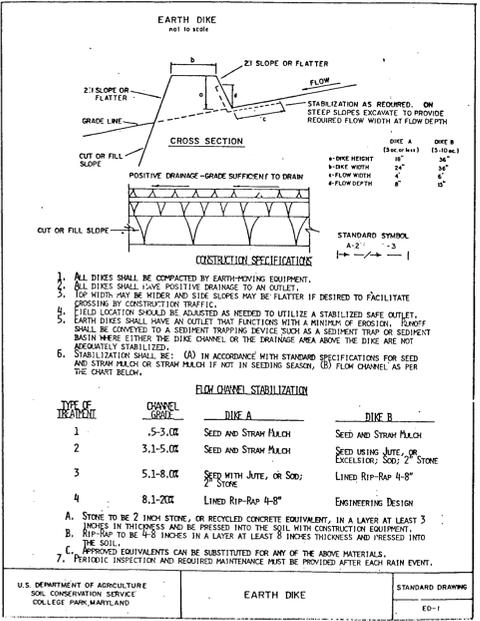
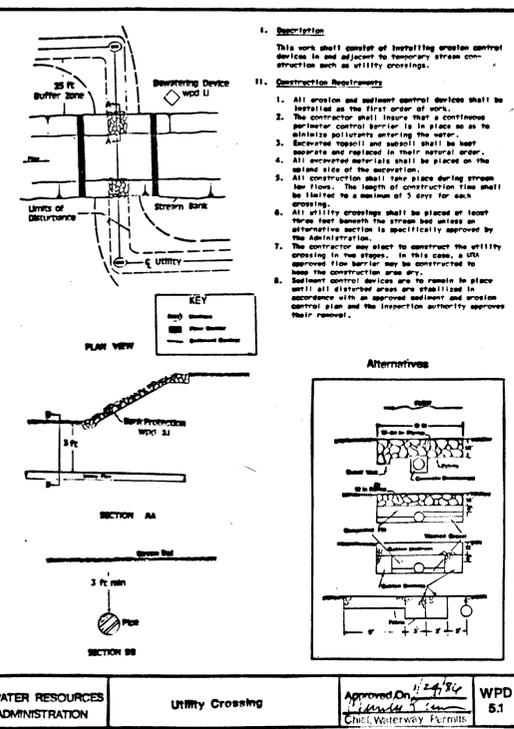
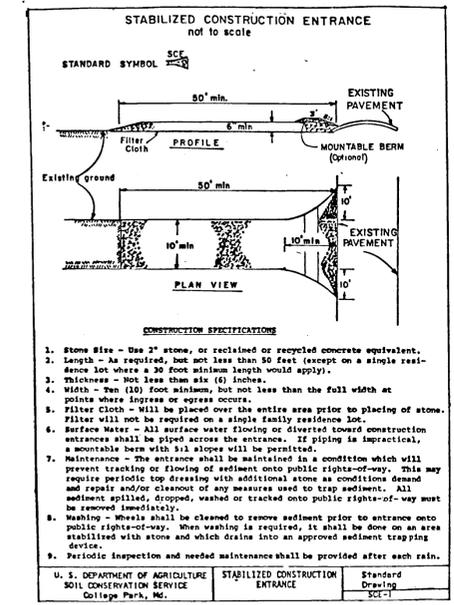
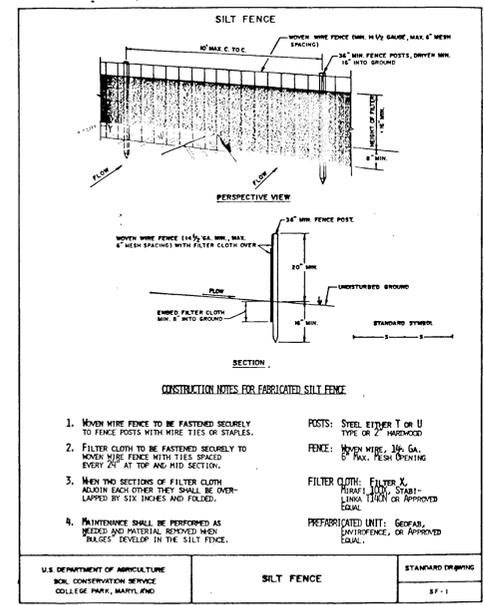
Seeded Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding.

Soil Amendment: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

Seeding — For periods March 1 thru April 30 and from August 15 thru November 15, seed with 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 weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

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



- SEQUENCE OF CONSTRUCTION**
KNIGHTS BRIDGE ROAD EAST CROSSING
- INSTALL AND MAINTAIN EXISTING SEDIMENT CONTROL STRUCTURES AND MEASURES IN PLACE (GP-99-23) PER PARCEL 'M', (PB-174) PER PARCEL 'T' BOWLING BROOK FARMS.
 - OBTAIN REVISED GRADING PERMIT FOR LOTS 223 AND 225.
 - INSTALL PROPOSED SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLANS. INSTALL DEWATERING BASIN WPD 11.
 - INSTALL SANDRAGSTONE DIVERSION WPD 23.
 - CONSTRUCT THE EAST CELL OF THE BOX CULVERT WHILE DIVERTING WATER AS SHOWN AND DEWATERING INTO THE DEWATERING BASIN (PHASE 1).
 - INSTALL EAST PORTION OF THE 12-INCH WATER MAIN.
 - PERMANENTLY STABILIZE DISTURBED AREAS IN AND AROUND THE BED. SEE WPD 13.
 - REALIGN SANDRAGSTONE DIVERSION WPD 23 SO THAT THE WATER IS DIVERTED THROUGH THE CONSTRUCTED EAST CELL OF THE BOX CULVERT (PHASE 2).
 - CONSTRUCT WEST TWO CELLS WHILE DEWATERING INTO THE DEWATERING BASIN.
 - INSTALL THE WEST PORTION OF THE 12-INCH WATER MAIN.
 - REALIGN SANDRAGSTONE DIVERSION WPD 23 TO DIVERT WATER INTO THE WEST TWO CELLS.
 - INSTALL THE GAWKON CUT OFF WALL PER DETAIL.
 - PERMANENTLY STABILIZE DISTURBED AREAS IN AND AROUND BED. SEE WPD 13.
 - INSTALL CLASS II RIP RAP UPSTREAM AND DOWNSTREAM OF BOX CULVERT AS SHOWN ON THE BOX CULVERT PROFILE.
 - GRADE ROAD SITE.
 - PROCEED WITH UTILITY AND ROAD CONSTRUCTION.
 - INSTALL CURB INLET PROTECTION DEVICES AFTER THE STORM DRAIN STRUCTURES ARE CONSTRUCTED.
 - APPLY TEMPORARY AND/OR PERMANENT VEGETATIVE STABILIZATION TO DISTURBED AREAS NOT SUBJECT TO IMMEDIATE CONSTRUCTION AS REQUIRED BY THE SEDIMENT CONTROL NOTES ON THIS SHEET.
 - REMOVE SEDIMENT CONTROL MEASURES AS ITS CONTRIBUTING DRAINAGE AREAS ARE STABILIZED UNDER THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

- INSTALL AND MAINTAIN EXISTING SEDIMENT CONTROL STRUCTURES AND MEASURES IN PLACE (GP-99-23) PER PARCEL 'M', (PB-174) PER PARCEL 'T' BOWLING BROOK FARMS.
- OBTAIN REVISED GRADING PERMIT FOR LOTS 223 AND 225.
- INSTALL PROPOSED SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLANS. INSTALL DEWATERING BASIN WPD 11.
- INSTALL SANDRAGSTONE DIVERSION WPD 23.
- CONSTRUCT THE EAST CELL OF THE BOX CULVERT WHILE DIVERTING WATER AS SHOWN AND DEWATERING INTO THE DEWATERING BASIN (PHASE 1).
- INSTALL EAST PORTION OF THE 12-INCH WATER MAIN.
- PERMANENTLY STABILIZE DISTURBED AREAS IN AND AROUND THE BED. SEE WPD 13.
- REALIGN SANDRAGSTONE DIVERSION WPD 23 SO THAT THE WATER IS DIVERTED THROUGH THE CONSTRUCTED EAST CELL OF THE BOX CULVERT (PHASE 2).
- CONSTRUCT WEST TWO CELLS WHILE DEWATERING INTO THE DEWATERING BASIN.
- INSTALL THE WEST PORTION OF THE 12-INCH WATER MAIN.
- REALIGN SANDRAGSTONE DIVERSION WPD 23 TO DIVERT WATER INTO THE WEST TWO CELLS.
- INSTALL THE GAWKON CUT OFF WALL PER DETAIL.
- PERMANENTLY STABILIZE DISTURBED AREAS IN AND AROUND BED. SEE WPD 13.
- INSTALL CLASS II RIP RAP UPSTREAM AND DOWNSTREAM OF BOX CULVERT AS SHOWN ON THE BOX CULVERT PROFILE.
- GRADE ROAD SITE.
- PROCEED WITH UTILITY AND ROAD CONSTRUCTION.
- INSTALL CURB INLET PROTECTION DEVICES AFTER THE STORM DRAIN STRUCTURES ARE CONSTRUCTED.
- APPLY TEMPORARY AND/OR PERMANENT VEGETATIVE STABILIZATION TO DISTURBED AREAS NOT SUBJECT TO IMMEDIATE CONSTRUCTION AS REQUIRED BY THE SEDIMENT CONTROL NOTES ON THIS SHEET.
- REMOVE SEDIMENT CONTROL MEASURES AS ITS CONTRIBUTING DRAINAGE AREAS ARE STABILIZED UNDER THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.

John W. Water 7/11/91
S Soil Conservation Service Date

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

APPROVED *Jeffrey S. C. D.* 7/10/91
Date

PLAN NUMBER **F-91-70**

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

John W. Water 7/9/91
Signature of Developer/Builder 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.

Donald A. Casato 7/9/91
Signature of Engineer Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Colm Dwyer 8/1/91
Chief, Land Development Division Date

Frank W. Wickland 7/18/91
Chief, Bureau of Highways Date

William S. Riley 8-5-91
Chief, Bureau of Engineering Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Frank C. Jr. Gray 8/3/91
Chief, Division of Community Planning & Land Development Date

THIS PLAN FOR STREET AND UTILITY CONSTRUCTION ONLY.



CLIENT
OWNER/DEVELOPER
GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES P. KNOTT DEVELOPMENT CORP.
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(301)521-6436

JOB
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD & LOT 225
A RESUBDIVISION OF LOT 224, BOWLING BROOK FARMS
TAX MAP 47 PARCEL 141
S14TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
L. 1394 F. 632

TITLE
EROSION & SEDIMENT CONTROL
NOTES & DETAILS

PROFESSIONAL SEAL
Donald A. Casato
REGISTERED PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE	BY
2	SUBMITTED TO HO. CO. FOR SIGNATURES	7-3-91	
1	ISSUED FOR REVIEW	10/2/90	

SURVEY BY	FILE NO.
P.H.R. & A.	2104-1-12
DESIGN	DATE
E.C.	4/14/89
DRAWN	SCALE
F.C.	AS SHOWN
CHECK	SHEET
	9 OF 9

F-91-70