

Waste Water Disposal: Savage
 Type of Buildings:
 No. of S.H.C.: 32
 No. of W.H.C.: 32
 No. of Lots: 35
WATER & SEWER CODE
 County Use:
 Water: F13
 Sewer: 6700000

QUANTITIES			
ITEM	BID	AS-BUILT	MATERIAL/SUPPLIER
1/2" Water L.F.	1,100	1,100	GRIFFIN PIPE PRODUCTS
3/4" Water L.F.	810	805	
1" Water L.F.	560	528	
Air Release MH Ea.	1	1	BELAIR ROAD SUPPLY CO.
1/2" Valve & Vault Ea.	1	1	
3/4" Valve Ea.	2	2	
1" Valve (Excluding F.H.) Ea.	2	2	
1 1/2" Drain for W.M. Ea.	3	4	
Fire Hydrants Ea.	2	2	
6" S (D.I.P.) L.F.	210	203	GRIFFIN PIPE PRODUCTS
8" Sewer L.F.	1,700	1,591	BELAIR ROAD SUPPLY CO.
Manholes Ea.	12	12	ATLANTIC PRECAST CONC. CO.
1" W.H. Connections L.F.	310	305	BELAIR ROAD SUPPLY CO.
3/4" W.H. Connections L.F.	830	702	
2" S.H. Connections L.F.	970	907	

**CONSTRUCTION SEQUENCE
 SEDIMENT CONTROL PROCEDURES**

- GENERAL**
- OBTAIN SEDIMENT CONTROL PERMIT (ARTICLE 15.05-3).
 - OBTAIN WATER RESOURCES ADMINISTRATION PERMIT.
 - CONSTRUCT CONTINUOUS SEDIMENT BARRIER FOR ALL DISTURBED AREAS NOT PROTECTED BY SEDIMENT TRAPS.
 - CLEAR, GRUB AND STRIP AS REQUIRED. PROTECT STREAM FROM EROSION OF STORED TOP SOIL. SEPARATE TOP SOIL FROM SUBSOIL.
 - CONSTRUCT PIPELINES.
 - ALL EXCAVATED MATERIAL SHALL BE STOCKPILED ON HIGH SIDE OF TRENCH.
 - RESTORE EROSION CONTROL STRUCTURES DISTURBED BY SEWER AND WATER CONSTRUCTION.
 - STABILIZE DISTURBED AREAS AS CONSTRUCTION PROGRESSES WITH TEMPORARY SEEDING AND MULCHING (OR PERMANENT RESTORATION).
 - COMPLETE PERMANENT RESTORATION.
 - ALL SEDIMENT CONTROL DEVICES SHALL REMAIN IN SERVICE UNTIL REMOVAL IS APPROVED BY THE S.C.S./W.R.A. INSPECTOR.
 - RESTORATION (TEMPORARY OR PERMANENT) OF AN AREA BETWEEN MANHOLES OR 400 FOOT WATERMAIN SECTION SHALL FOLLOW WITHIN ONE WEEK OF PIPELAYING IN THAT AREA.

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER. AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 7'-0" MINIMUM OR TUNNEL AS REQUIRED.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 STATE HIGHWAY ADMINISTRATION - 531-5533
 BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES 561-2585
 BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 234-5621
 BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING - 298-9013
 MISS UTILITY - 1 - 559-0100
 COLONIAL PIPELINE CO. - 795-1390
 BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 992-2366
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION.
- ALL WATER MAINS TO BE D.I.P. UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN INSIDE METER SETTING, UNLESS OTHERWISE NOTED.
- ALL W.H.C.'S. SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- ALL COPPER WATER HOUSE CONNECTIONS SHALL UTILIZE FLARED FITTINGS.
- ALL SEWER MAINS SHALL BE C.S.P.X., D.I.P., V.C.P.X., A.C.P. CLASS 2400 OR P.V.C. UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52 WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED SET TOP OF FRAME 0.5' ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ORIGINAL GROUND OVER WATER AND SEWER WAS TAKEN FROM AERIAL PHOTOGRAPHY PREPARED BY MAPS AND INC. AND VERIFIED BY FIELD SURVEY IN FEBRUARY 1984.
- STRAW BALE DIKE AND SILT FENCE ARE INTERCHANGEABLE.

CONTRACT NO. 34-1371-D
VILLAGE OF HICKORY RIDGE
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT
 SIGNATURE: _____ DATE: 7/23/85
 U.S. SOIL CONSERVATION SERVICE

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard County Conservation District.
 APPROVED: _____ DATE: 7/23/85
 HOWARD SCD

Sediment Control Measures for this Contract will be implemented in accordance with Article 15 of the Standard Specifications, and Road Construction Plans F-85-157.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DIRECTOR OF PUBLIC WORKS: DATE: _____
 CHIEF - BUREAU OF ENGINEERING: DATE: _____
 CHIEF - BUREAU OF UTILITIES: DATE: _____
 CHIEF - LAND DEVELOPMENT DIVISION: DATE: _____

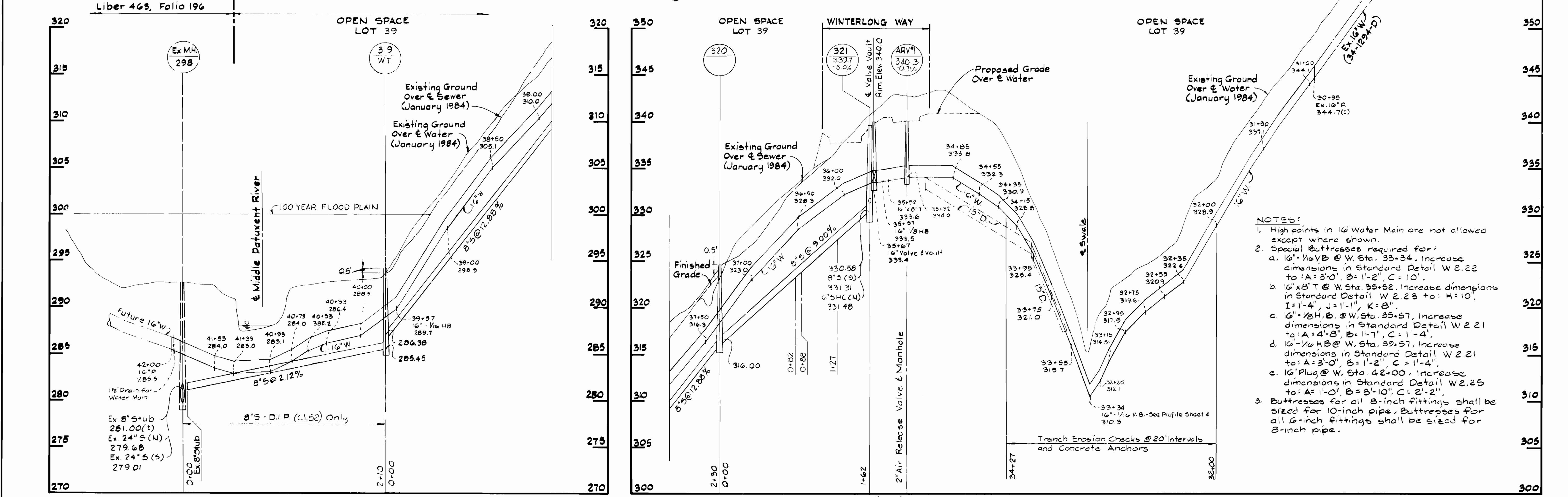
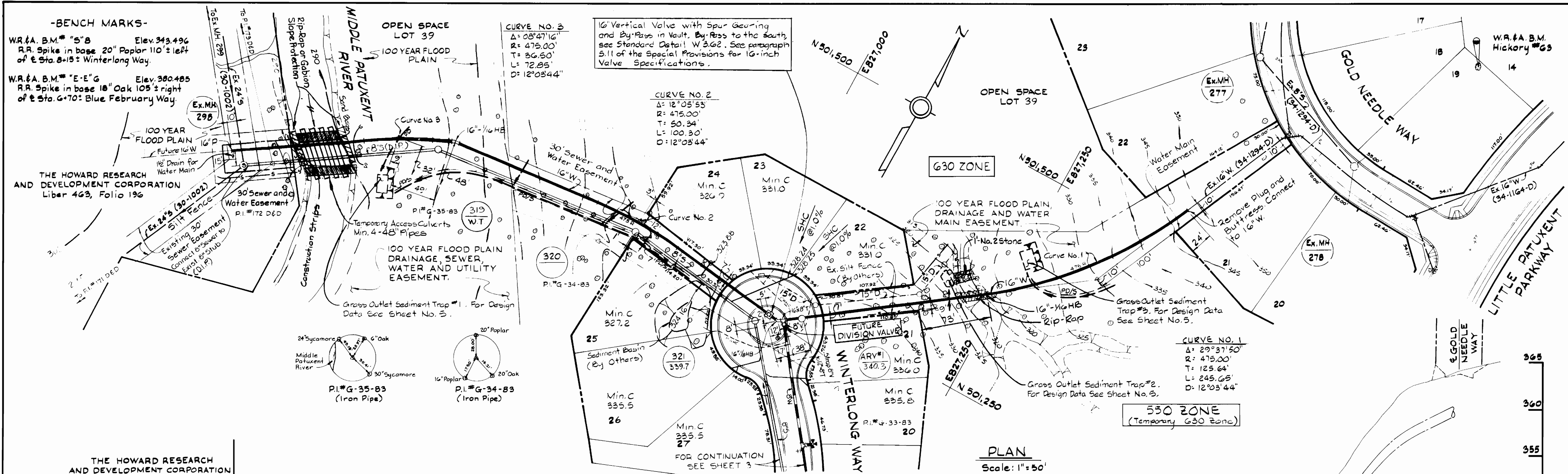
WHITMAN, REQUARDT
 AND ASSOCIATES
 ENGINEERS
 2315 ST PAUL ST
 BALTIMORE, MARYLAND

DES. S.J.
 DRN. M.T.K.
 CHK. R.B.N.
 DATE: _____ BY: _____ NO: _____ REVISION: _____ DATE: _____

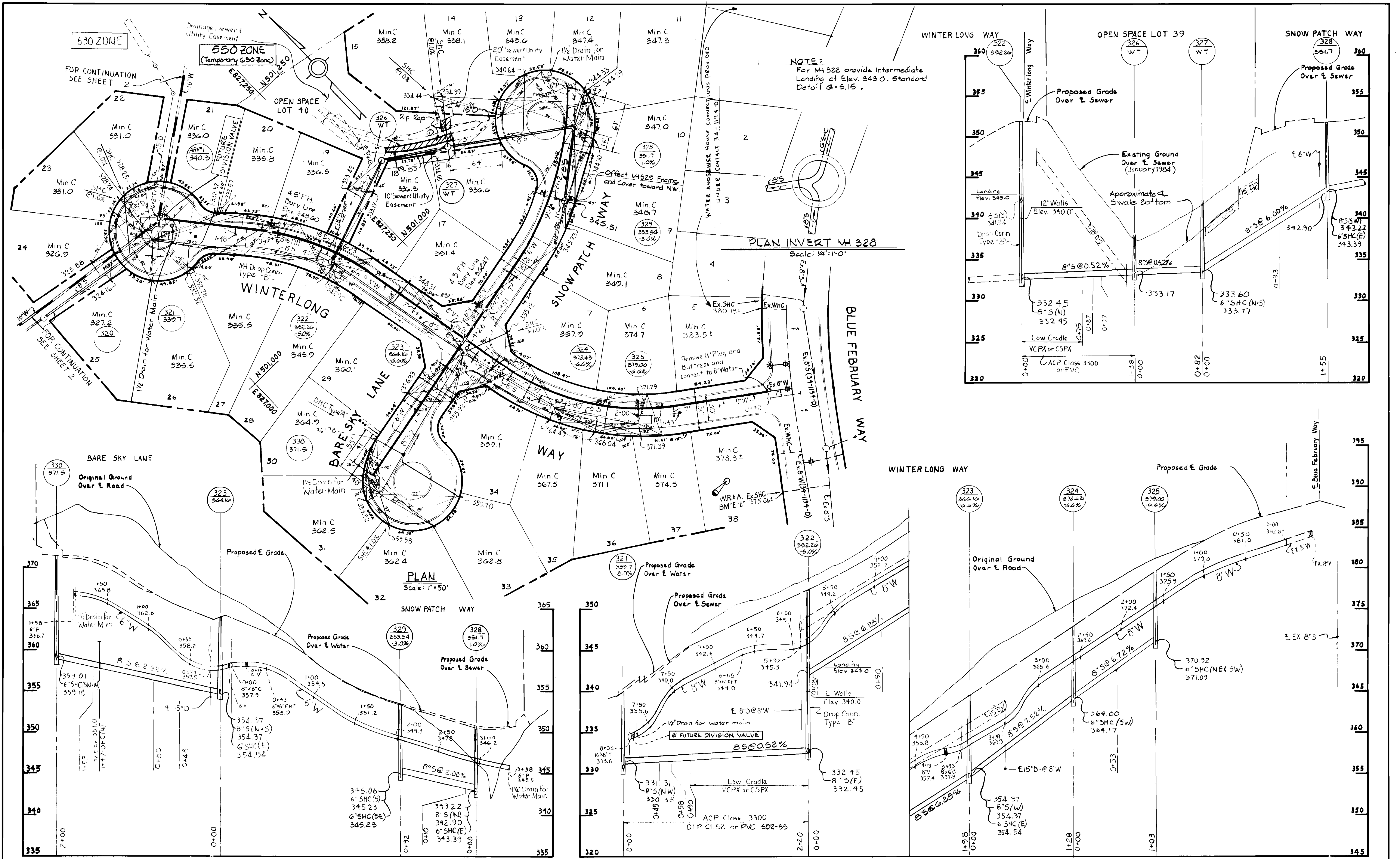
VICINITY MAP AND GENERAL NOTES

COLUMBIA
 VILLAGE OF HICKORY RIDGE
 SECTION 3 AREA II
 ELECTION DISTRICT NO. 5
 CONTRACT NO. 34-1371-D

SCALE
 1"=600'
 SHEET
 1 OF 5



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works - DATE Chief - Bureau of Utilities - DATE	WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 ST PAUL ST BALTIMORE, MARYLAND	DES: J.J. DRN: M.T.K. CHK: R.B.N. DATE:	PLAN & PROFILE OF WATER & SEWER MAINS	COLUMBIA VILLAGE OF HICKORY RIDGE SECTION 3 AREA II ELECTION DISTRICT NO. 5 CONTRACT NO. 34-1371-D	SCALE AS SHOWN SHEET 2 OF 5



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Burns 8-1-85
DIRECTOR OF PUBLIC WORKS - DATE

Robert M. Burns 8-1-85
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REQUARDT
AND ASSOCIATES
ENGINEERS

2315 ST PAUL ST
BALTIMORE, MARYLAND

Whitman Requardt 8/1/85
CHIEF - BUREAU OF ENGINEERING - DATE

Whitman Requardt 8/1/85
CHIEF - LAND DEVELOPMENT DIVISION - DATE

DES: J.J.			
DRN: G.T.F.			
CHK: R.B.N.			
DATE:			
BY: NO.			
REVISION			
DATE:			

AWG Δ Changed Lot Numbers 4/27/85

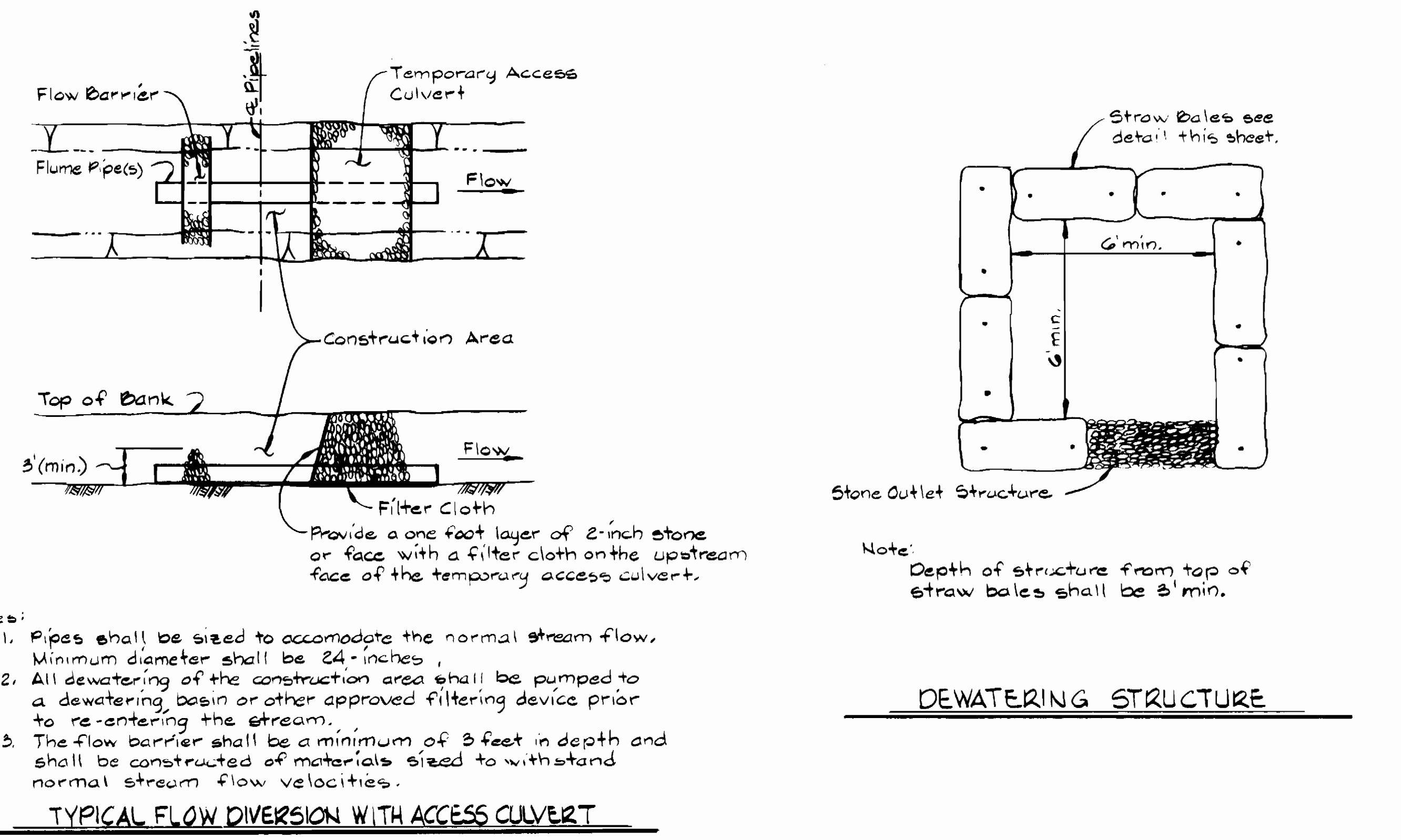
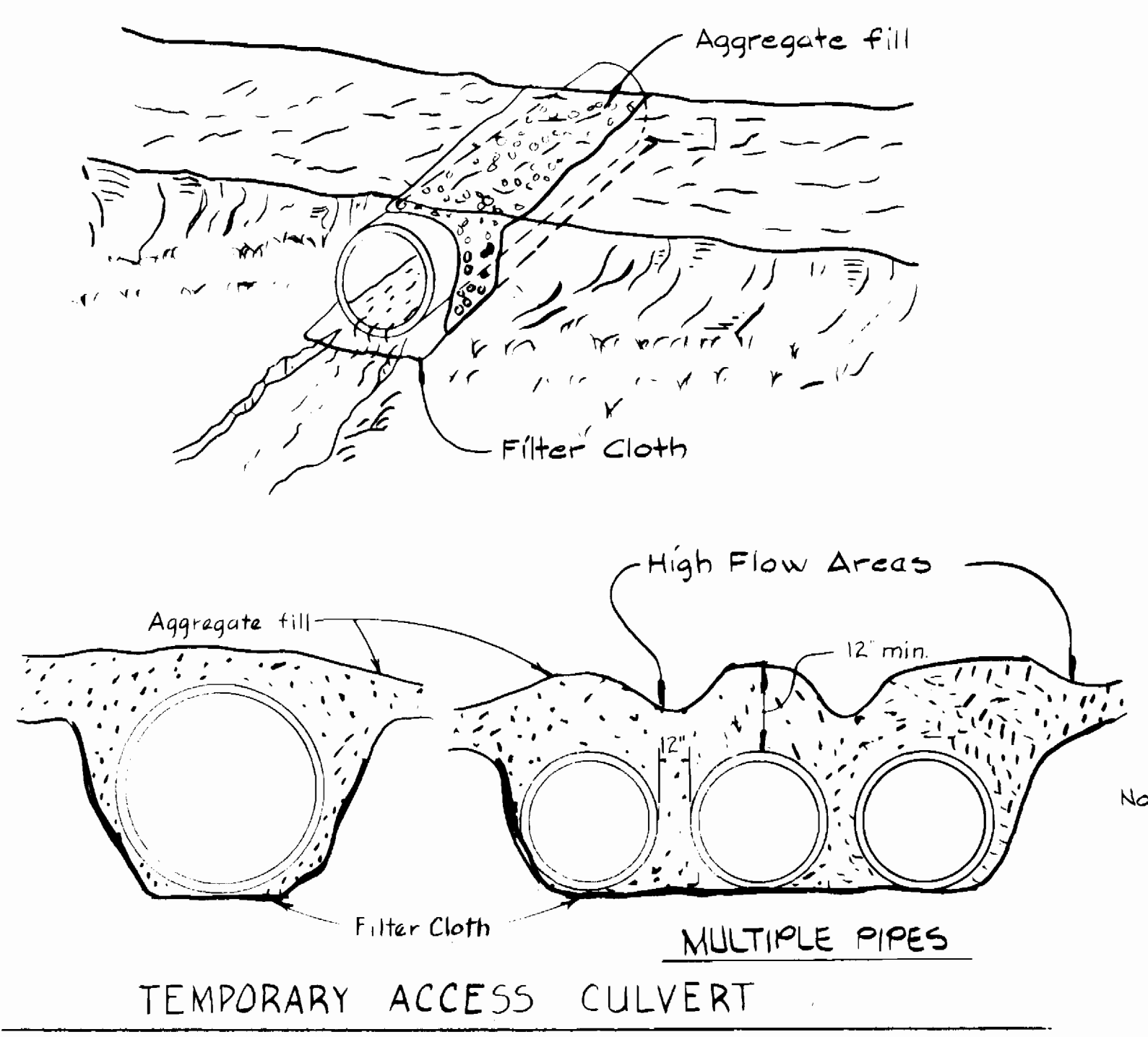
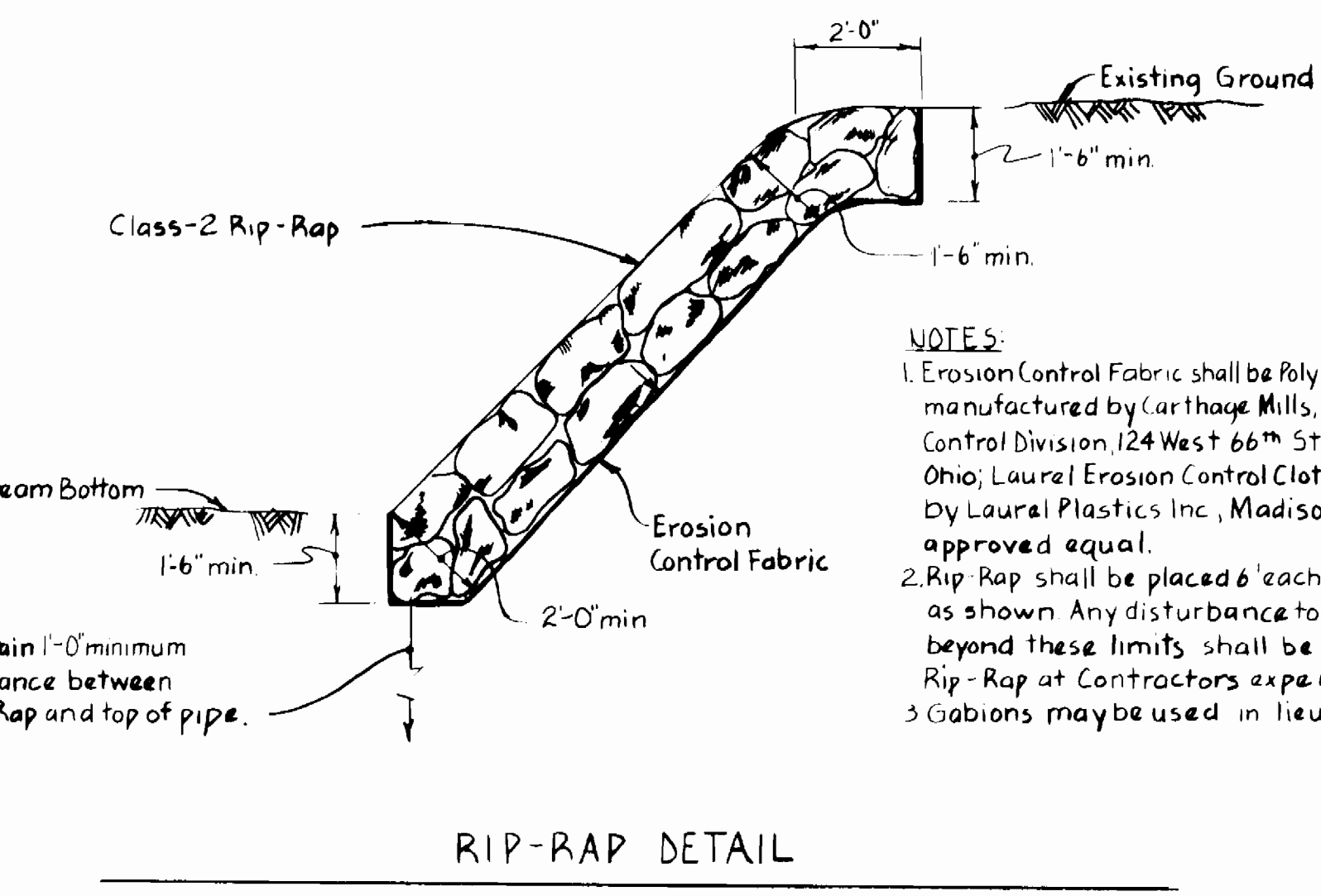
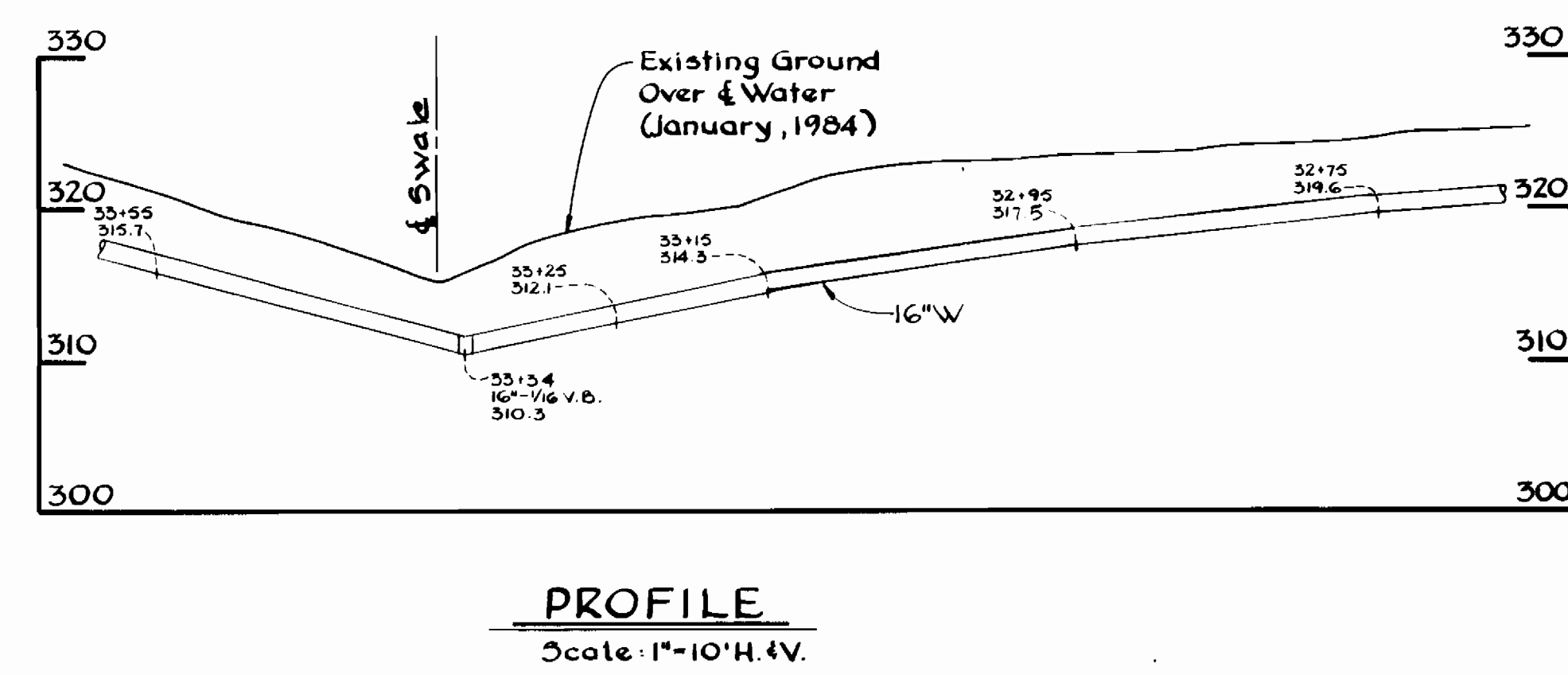
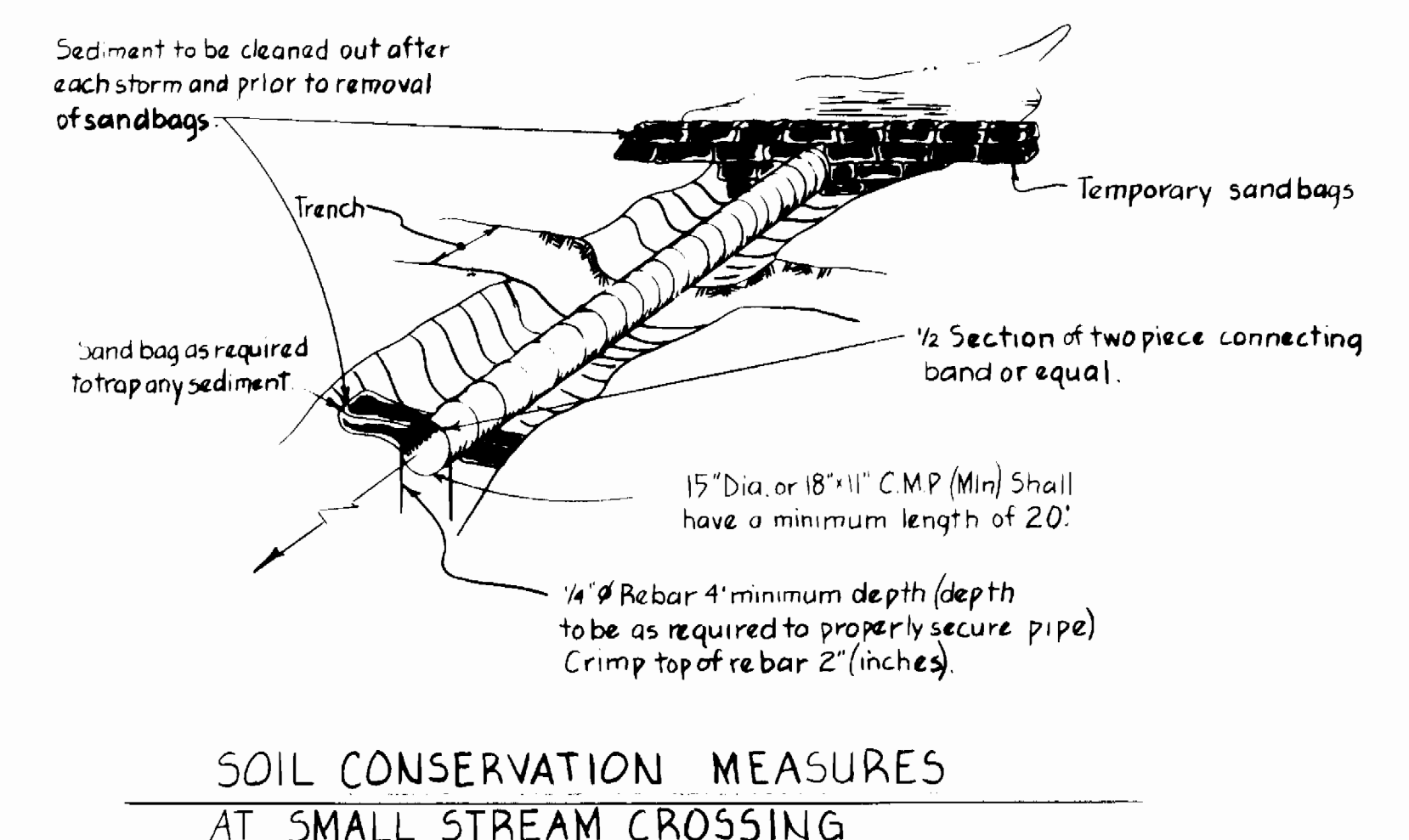
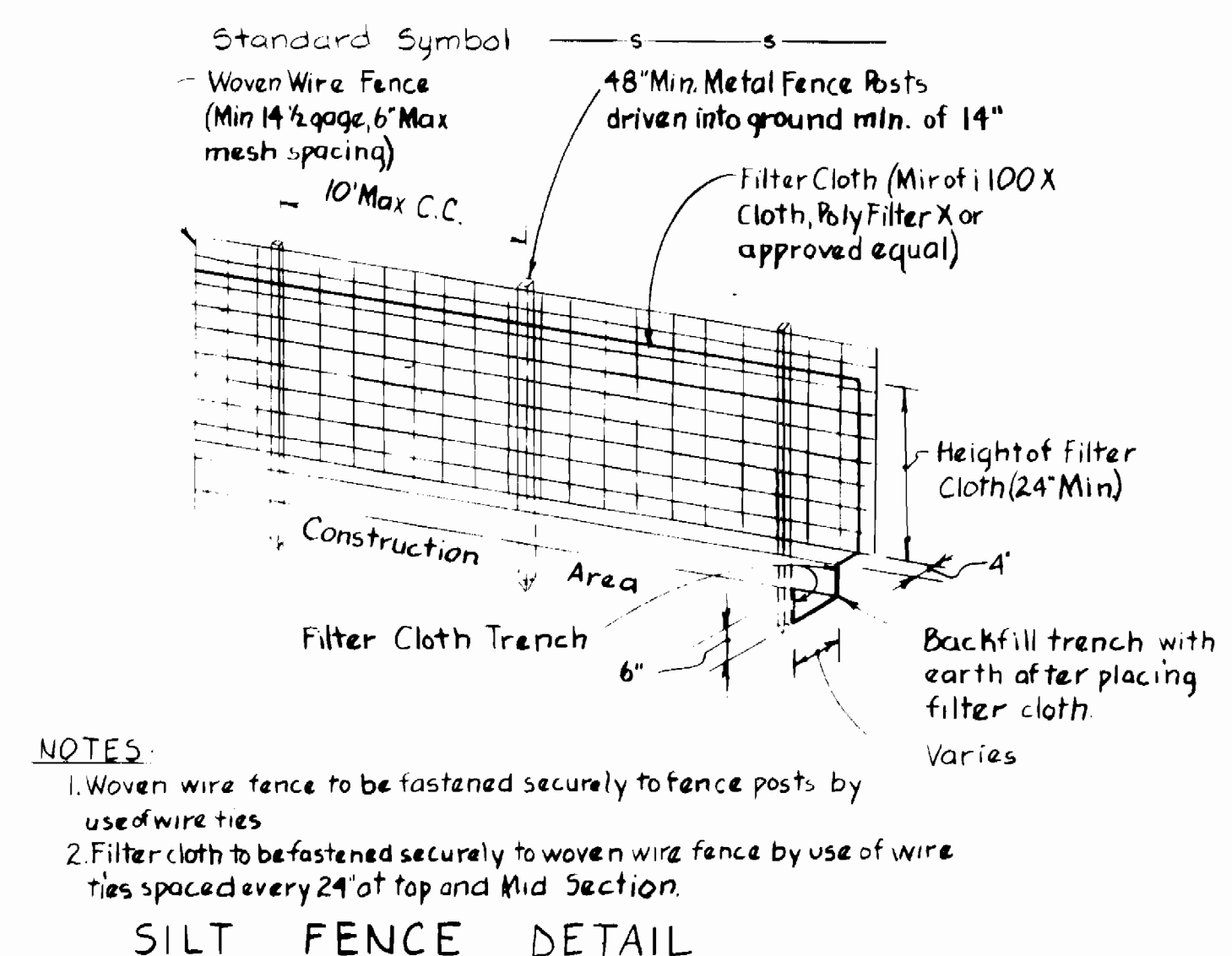
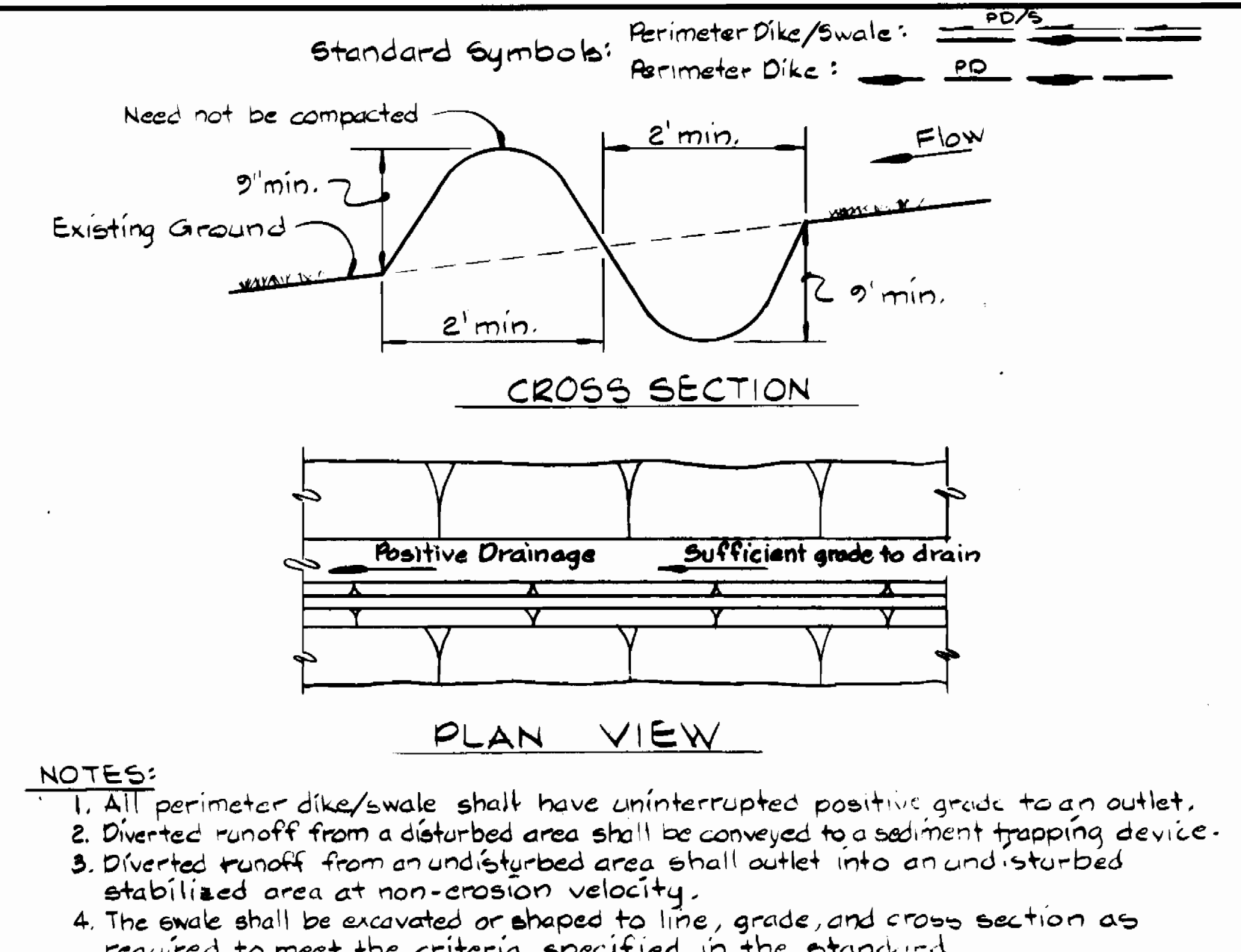
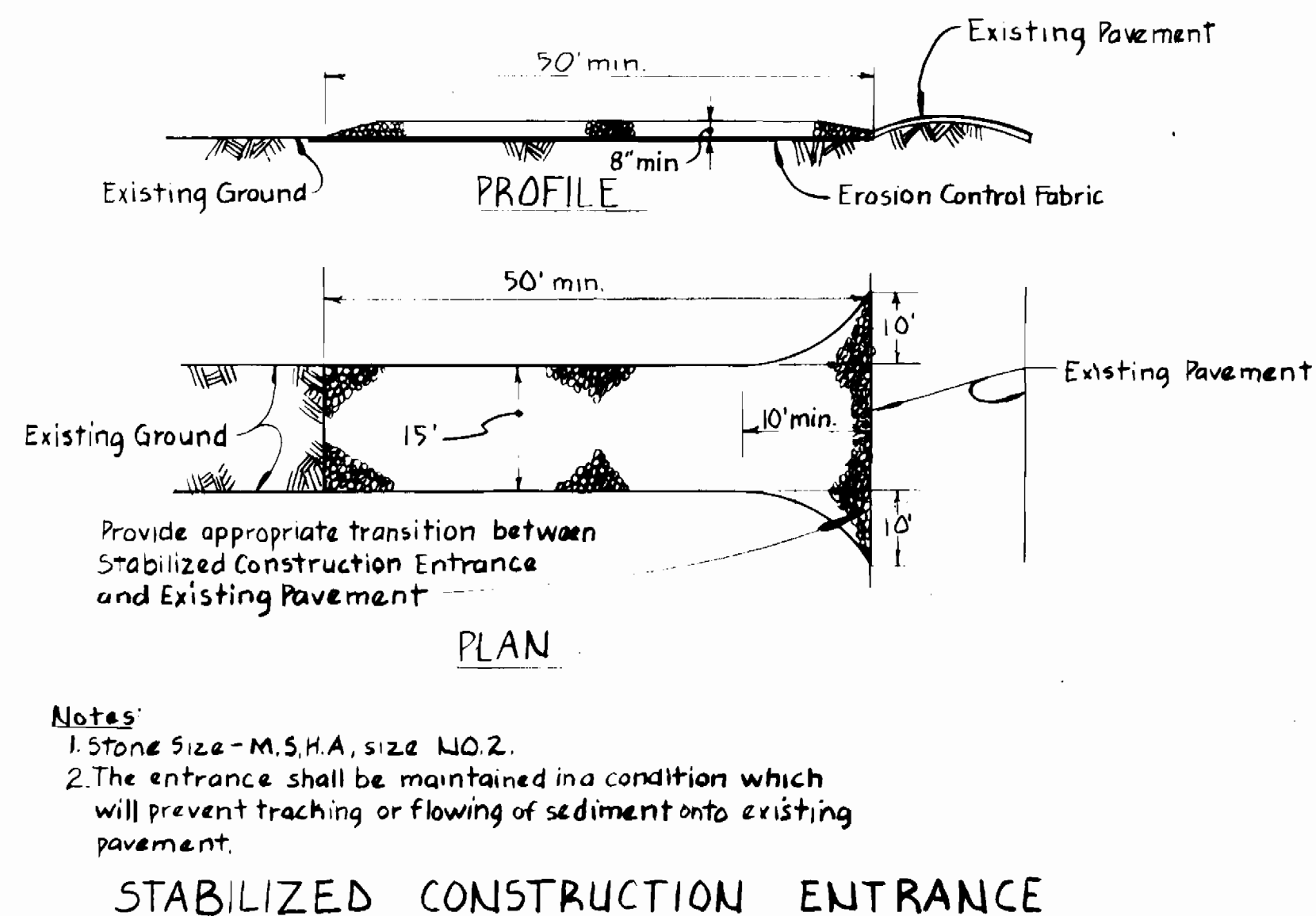
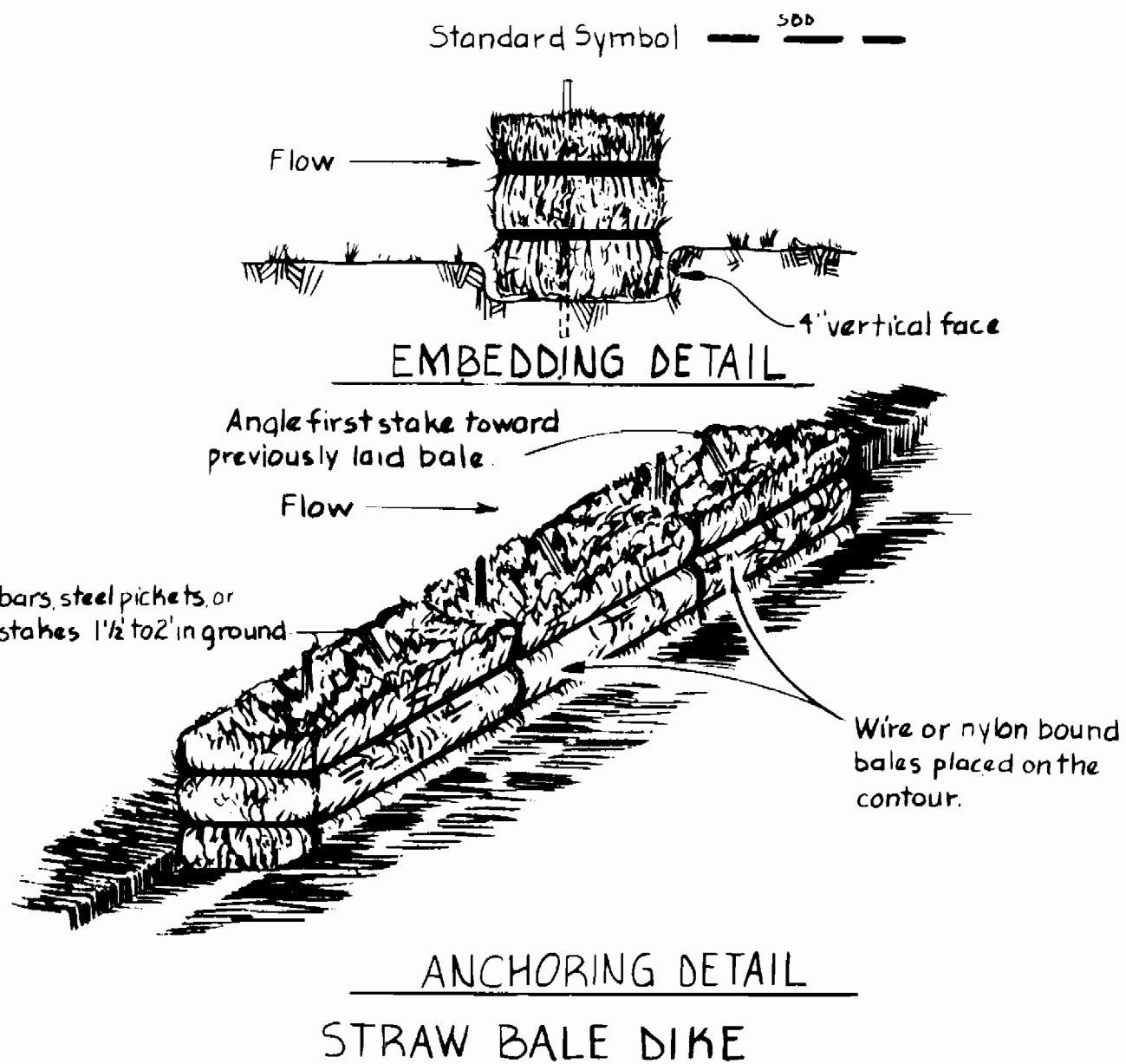
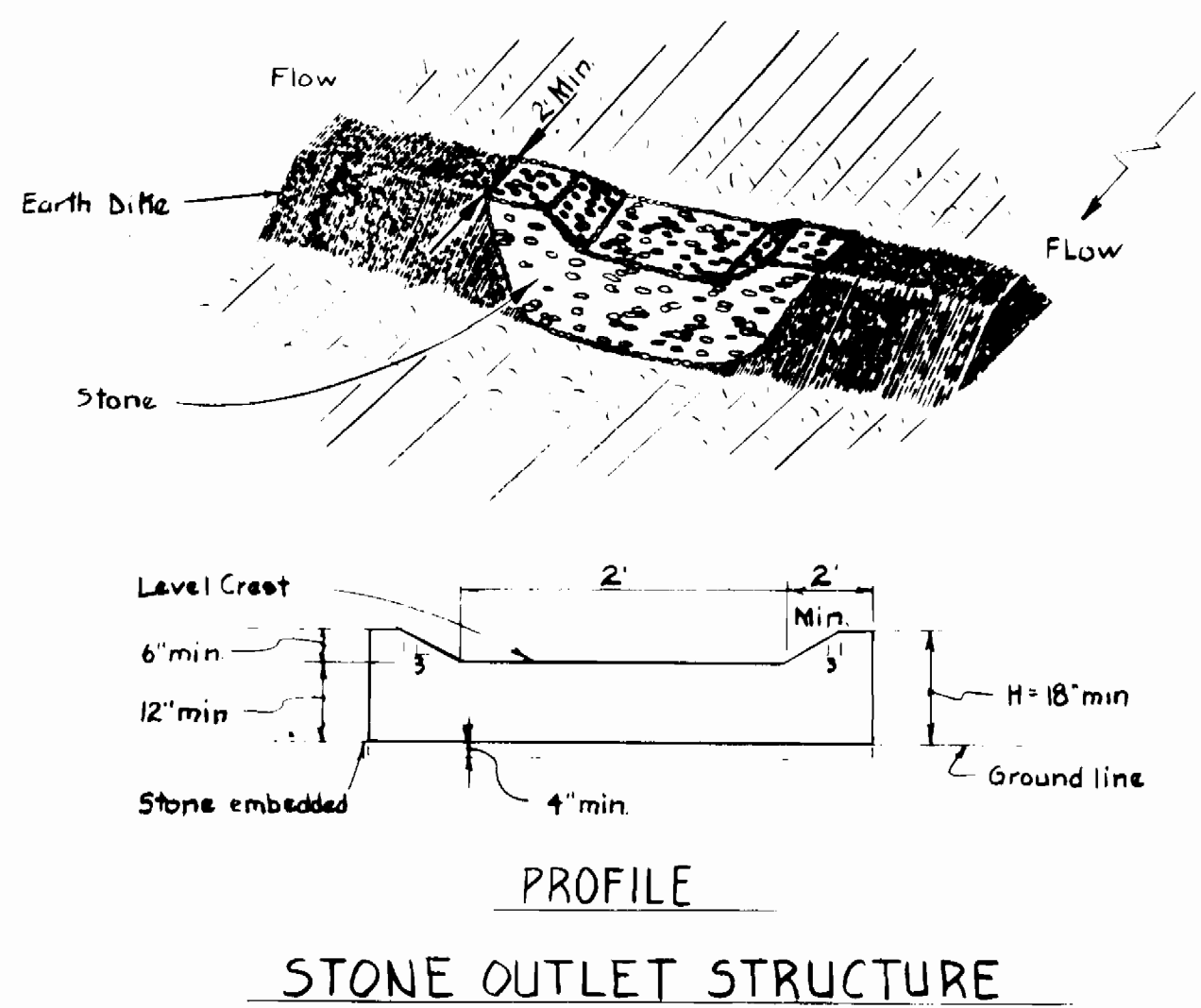
PLAN & PROFILE OF
WATER & SEWER MAINS

600' SCALE MAP NO. 35 BLOCK NO.

COLUMBIA
VILLAGE OF HICKORY RIDGE
SECTION 3 AREA II
ELECTION DISTRICT NO. 5
CONTRACT NO. 34 -1371-D

SCALE
AS SHOWN

SHEET
3 of 5



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>John F. Neely</i> 8-14-11 Chief - Bureau of Engineering: <i>William E. Ryan</i> 8/15/05 Chief - Bureau of Utilities: <i>Richard M. Bailey</i> 8/15/05 Chief - Land Development Division: <i>William E. Ryan</i> 8/15/05		WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 ST PAUL ST BALTIMORE, MARYLAND				DES: _____ DRN: _____ CHK: _____ DATE: 6/2/05 BY: GWG NO: _____ REVISION: Changed Rip-Rap Class DATE: 8/2/05		SEDIMENT CONTROL DETAILS		COLUMBIA VILLAGE OF HICKORY RIDGE SECTION 3 AREA II ELECTION DISTRICT NO. 5 CONTRACT NO. 34-1371-D		SCALE AS SHOWN SHEET 4 OF 5	
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TEMPORARY ACCESS CULVERT

CONSTRUCTION SPECIFICATIONS

- a. RESTRICTIONS - NO CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS CULVERT WILL BE PERMITTED BETWEEN OCTOBER 1 THROUGH APRIL 30 FOR ALL CLASS III AND CLASS IV TROUT WATERS OR BETWEEN MARCH 15 THROUGH JUNE 15 FOR NON-TROUT WATERWAYS.
- b. CULVERT STRENGTH - ALL CULVERTS SHALL BE STRONG ENOUGH TO SUPPORT THEIR CROSS SECTIONAL AREA UNDER MAXIMUM EXPECTED LOADS.
- c. CULVERT SIZE - THE CULVERT PIPES SHALL BE SIZED TO ACCOMMODATE THE NORMAL STREAM FLOW AND SHALL BE A MINIMUM OF 4'48" INCH DIAMETER PIPES.
- d. CULVERT LENGTH - THE CULVERT(S) SHALL EXTEND A MINIMUM OF ONE FOOT BEYOND THE UPSTREAM AND DOWNSTREAM TOE OF THE AGGREGATE PLACED AROUND THE CULVERT. IN NO CASE SHALL THE CULVERT EXCEED 40 FEET IN LENGTH.
- e. FILTER CLOTH - FILTER CLOTH SHALL BE PLACED ON THE STREAMBED AND STREAMBANKS PRIOR TO PLACEMENT OF THE PIPE CULVERT(S) AND AGGREGATE. THE FILTER CLOTH SHALL COVER THE STREAMBED AND EXTEND A MINIMUM SIX INCHES AND A MAXIMUM ONE FOOT BEYOND THE END OF THE CULVERT AND BEDDING MATERIAL. FILTER CLOTH REDUCES SETTLEMENT AND IMPROVES CROSSING STABILITY.
- f. CULVERT PLACEMENT - THE INVERT ELEVATION OF THE CULVERT SHALL BE INSTALLED ON THE NATURAL STREAMBED GRADE TO MINIMIZE INTERFERENCE WITH FISH MIGRATION (FREE PASSAGE OF FISH).
- g. CULVERT PROTECTION - THE CULVERT(S) SHALL BE COVERED WITH A MINIMUM OF ONE FOOT OF AGGREGATE. MULTIPLE CULVERTS SHALL BE SEPARATED BY AT LEAST 12" OF COMPACTED AGGREGATE FILL. AT A MINIMUM, THE BEDDING AND FILL MATERIAL USED IN THE CONSTRUCTION OF THE TEMPORARY ACCESS CULVERT CROSSINGS SHALL CONFORM WITH THE AGGREGATE REQUIREMENTS CITED IN SECTION I.H.1. ABOVE.
- h. STABILIZATION - ALL AREAS DISTURBED DURING CULVERT INSTALLATION SHALL BE STABILIZED WITHIN 14 CALENDAR DAYS OF THE DISTURBANCE IN ACCORDANCE WITH THE STANDARD FOR "CRITICAL AREA STABILIZATION WITH PERMANENT SEEDING".
- i. AGGREGATE - THERE SHALL BE NO EARTH OR SOIL MATERIALS USED FOR CONSTRUCTION WITHIN THE WATERWAY CHANNEL. STATE HIGHWAY ADMINISTRATION COARSE AGGREGATE DESIGNATION NO.5 (3/4" TO 4") ALSO REFERENCED AS AASHTO DESIGNATION NO.1 SHALL BE THE MINIMUM ACCEPTABLE AGGREGATE SIZE FOR TEMPORARY CROSSINGS. LARGER AGGREGATES WILL BE ALLOWED.

CULVERT MAINTENANCE REQUIREMENTS

- a. INSPECTION - PERIODIC INSPECTION SHALL BE PERFORMED TO ENSURE THAT THE CULVERTS, STREAMBED, AND STREAMBANKS ARE NOT DAMAGED, AND THAT SEDIMENT IS NOT ENTERING THE STREAM OR BLOCKING FISH PASSAGE OR MIGRATION.
- b. MAINTENANCE - MAINTENANCE SHALL BE PERFORMED, AS NEEDED IN A TIMELY MANNER TO ENSURE THAT STRUCTURES ARE IN COMPLIANCE WITH THIS STANDARD AND SPECIFICATION. THIS SHALL INCLUDE REMOVAL AND DISPOSAL OF ANY TRAPPED SEDIMENT OR DEBRIS. SEDIMENT SHALL BE DISPOSED OF AND STABILIZED OUTSIDE THE WATERWAY FLOOD PLAIN.

CULVERT REMOVAL AND CLEAN-UP REQUIREMENTS

- a. REMOVAL - WHEN THE CROSSING HAS SERVED ITS PURPOSE, ALL STRUCTURES INCLUDING CULVERTS, BEDDING AND FILTER CLOTH MATERIALS SHALL BE REMOVED WITHIN 14 CALENDAR DAYS. IN ALL CASES, THE CULVERT MATERIALS SHALL BE REMOVED WITHIN ONE YEAR OF INSTALLATION. NO STRUCTURE SHALL BE REMOVED DURING THE SPAWNING SEASON (MARCH 15 THROUGH JUNE 15).
- b. FINAL CLEAN-UP - FINAL CLEAN-UP SHALL CONSIST OF REMOVAL OF THE TEMPORARY STRUCTURE FROM THE WATERWAY, REMOVAL OF ALL CONSTRUCTION MATERIALS, RESTORATION OF ORIGINAL STREAM CHANNEL CROSS SECTION, AND PROTECTION OF THE STREAM BANKS FROM EROSION. REMOVED MATERIAL SHALL BE STORED OUTSIDE OF THE WATERWAY FLOOD PLAIN.
- c. METHOD - REMOVAL OF THE STRUCTURE AND CLEAN-UP OF THE AREA SHALL BE ACCOMPLISHED WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL.
- d. FINAL STABILIZATION - ALL AREAS DISTURBED DURING CULVERT REMOVAL SHALL BE STABILIZED WITHIN 14 CALENDAR DAYS OF THE DISTURBANCE IN ACCORDANCE WITH THE STANDARD FOR "CRITICAL AREA STABILIZATION WITH PERMANENT SEEDING".

SEDIMENT TRAP DESIGN DATA

GRASS OUTLET SEDIMENT TRAP #1

DRAINAGE AREA = 0.7AC.
 DISTURBED AREA = 0.4AC.
 VOLUME REQ'D. = 0.7X67 = 46.9CY.
 VOLUME AVAILABLE = 50CY.
 BOTTOM TRAP ELEVATION = 288.0
 STORAGE ELEVATION = 291.5
 OUTLET LENGTH = 28'
 SIZE OF TRAP @ 288 -
 CONTOUR = 12'X21'.

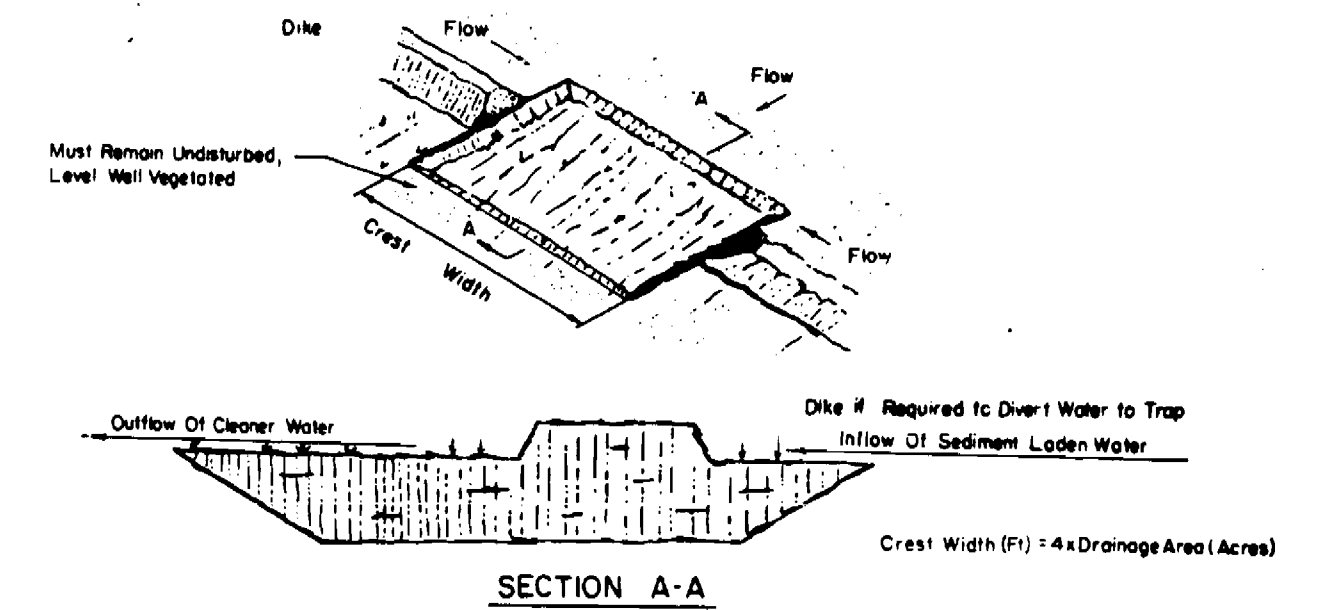
GRASS OUTLET SEDIMENT TRAP #2

DRAINAGE AREA = 0.1AC.
 DISTURBED AREA = 0.1AC.
 VOLUME REQ'D. = 0.1X67 = 6.7CY.
 VOLUME AVAILABLE = 10CY.
 BOTTOM TRAP ELEVATION = 320.0
 STORAGE ELEVATION = 322.0
 OUTLET LENGTH = 18'
 SIZE OF TRAP @ 320 -
 CONTOUR = 8'X17'.

GRASS OUTLET SEDIMENT TRAP #3

DRAINAGE AREA = 0.5AC.
 DISTURBED AREA = 0.2AC.
 VOLUME REQ'D. = 0.5X67 = 33.5CY.
 VOLUME AVAILABLE = 34.0CY.
 BOTTOM TRAP ELEVATION = 321.0
 STORAGE ELEVATION = 323
 OUTLET LENGTH = 29'
 SIZE OF TRAP @ 321 -
 CONTOUR = 14'X21'.

GRASS OUTLET SEDIMENT TRAP ST-II



EXCAVATED GRASS OUTLET SEDIMENT TRAP

CONSTRUCTION SPECIFICATION FOR ST-II

1. VOLUME OF SEDIMENT STORAGE SHALL BE 1800 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE AREA.
2. MINIMUM CREST WIDTH SHALL BE 4 X DRAINAGE AREA.
3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
4. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
5. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
6. THE SEDIMENT TRAP SHALL BE REMOVED AND AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
7. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Robert B. ...
 DIRECTOR OF PUBLIC WORKS - DATE 8-14-81
Robert B. ...
 CHIEF - BUREAU OF UTILITIES - DATE 8-1-85

WHITMAN, REQUARDT
 AND ASSOCIATES
 ENGINEERS
 2315 ST PAUL ST
 BALTIMORE, MARYLAND

Richard J. ...
 CHIEF - BUREAU OF ENGINEERING - DATE 8-14-81
William ...
 CHIEF - LAND DEVELOPMENT DIVISION - DATE 8-14-81

DES:				
DRN:				
CHK:				
DATE:				
BY:	NO.	REVISION	DATE	

SEDIMENT CONTROL
 DETAILS

COLUMBIA
 VILLAGE OF HICKORY RIDGE
 SECTION 3 AREA II
 ELECTION DISTRICT NO. 5
 CONTRACT NO. 34-1371-D

SCALE
 AS
 SHOWN

SHEET
 5 OF 5