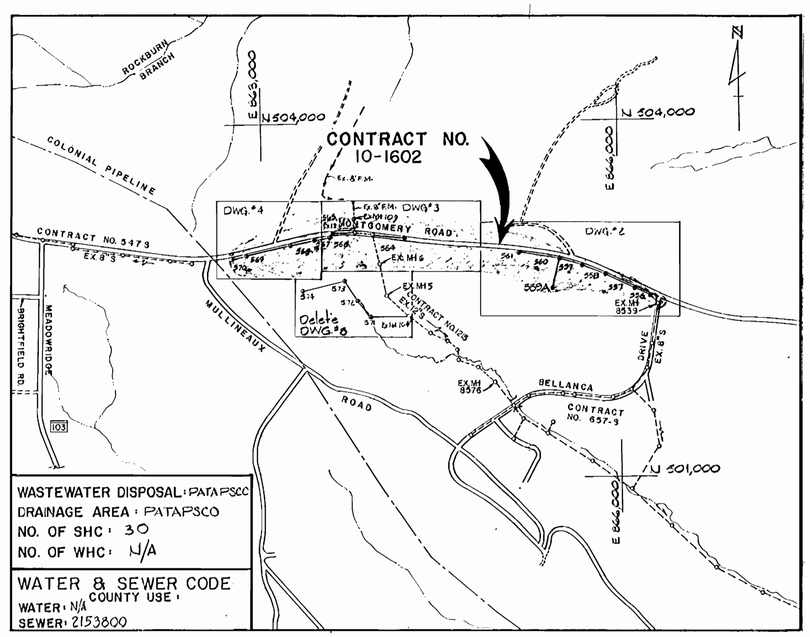
KEUFFEL & ESSER COMPANY

QUANTITIES			
ITEM	BID	AS BUILT	MATERIAL/SUPPLIER
8"Sewer. L.F.	1850	3,396	SDR 35/BELAIR RD SUPPLY
Manholes Ea.	14	20	PRECAST CONC./ATLANTIC
6"S.H.C. L.F.	520	630	SDR 35/BELAIR RD SUPPLY
D.H.C. V.F.	45	485	SDR 35/ " " "
8"Sewer D.I.P L.F.	910	890	DIP/GRIFFIN PIPE PROD.



WASTEWATER DISPOSAL: PATAPSCO
DRAINAGE AREA: PATAPSCO
NO. OF SHC: 30
NO. OF WHC: N/A

WATER & SEWER CODE
WATER: N/A
SEWER: 2153800
COUNTY USE:

VICINITY MAP
SCALE : 1" = 600'

CONTRACT NO. 10-1602

MONTGOMERY ROAD SEWER MAIN

CAPITAL PROJECT NO. S-6147

HOWARD COUNTY MARYLAND

DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES

1. 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.
2. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
3. ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
6. 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.
7. 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 BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLAN':

   STATE HIGHWAY ADMINISTRATION - 531-5533
   BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
   BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 859-9004
   BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING - 298-9001
   MISS UTILITY - 1-800-257-7777
   COLONIAL PIPELINE CO. - 795-1390
   C&P TELEPHONE CO. - 1 - 800-257-7777
   BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 992-2366
9. 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.
10. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION.
11. ALL SEWER MAINS SHALL BE C.S.P.X., D.I.P., V.C.P.X. OR P.V.C. UNLESS OTHERWISE NOTED.
12. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
13. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
14. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
15. 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 1.5' ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
16. STRAW BALE DIKE AND SILT FENCE ARE INTERCHANGEABLE.
17. FOR MANHOLES IN OPEN SPACE OR OUTFALL, SET TOP OF FRAME 1.5' ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

REVIEWED FOR HOWARD CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE _____ DATE 11-29-88

U.S. SOIL CONSERVATION SERVICE

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard County Conservation District

APPROVED _____

HOWARD SCD _____ DATE 11/29/88

Sediment Control Measures for this Contract will be implemented in accordance with Section 219 of the Standard Specifications

37-502-8645 CAPITAL PROJECT S-6147

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE _____

CHIEF-BUREAU OF ENGINEERING — DATE 12-2-88

CHIEF-BUREAU OF UTILITIES — DATE 12-1-88

CHIEF-UTILITY DESIGN DIVISION — DATE 11-22-88

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

DES: BJ.
DRN: C.S
CHK: RON
DATE: 8/24/88

BY	NO.	REVISION	DATE
DMD	1	Revised Alignment & Quantities	4/11/89

VICINITY MAP AND GENERAL NOTES

600' SCALE MAP NO. 37 BLOCK NO. _____

MONTGOMERY ROAD SEWER MAIN
ELECTION DISTRICT NO. 1
HOWARD COUNTY
CONTRACT NO. 10-1602

SCALE AS SHOWN

SHEET 1 OF 5

W.O. 10781

September 30, 1988 AS-BUILT

KEUFFEL & ESSER COMPANY

37-502-866
37-502-867.5

CAPITAL PROJECT S-6147

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MARYLAND	WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS, 2315 ST PAUL ST, BALTIMORE, MARYLAND	PLAN & PROFILE OF SEWER MAIN	MONTGOMERY ROAD SEWER MAIN, ELECTION DISTRICT NO. I, HOWARD COUNTY, CONTRACT NO. 10-1602	SCALE AS SHOWN; SHEET 2 OF 5

DIRECTOR OF PUBLIC WORKS – DATE
CHIEF-BUREAU OF ENGINEERING – DATE
Robert W. Beringer 12-1-88 — CHIEF-BUREAU OF UTILITIES – DATE
11-29-88 — CHIEF-UTILITY DESIGN DIVISION DATE

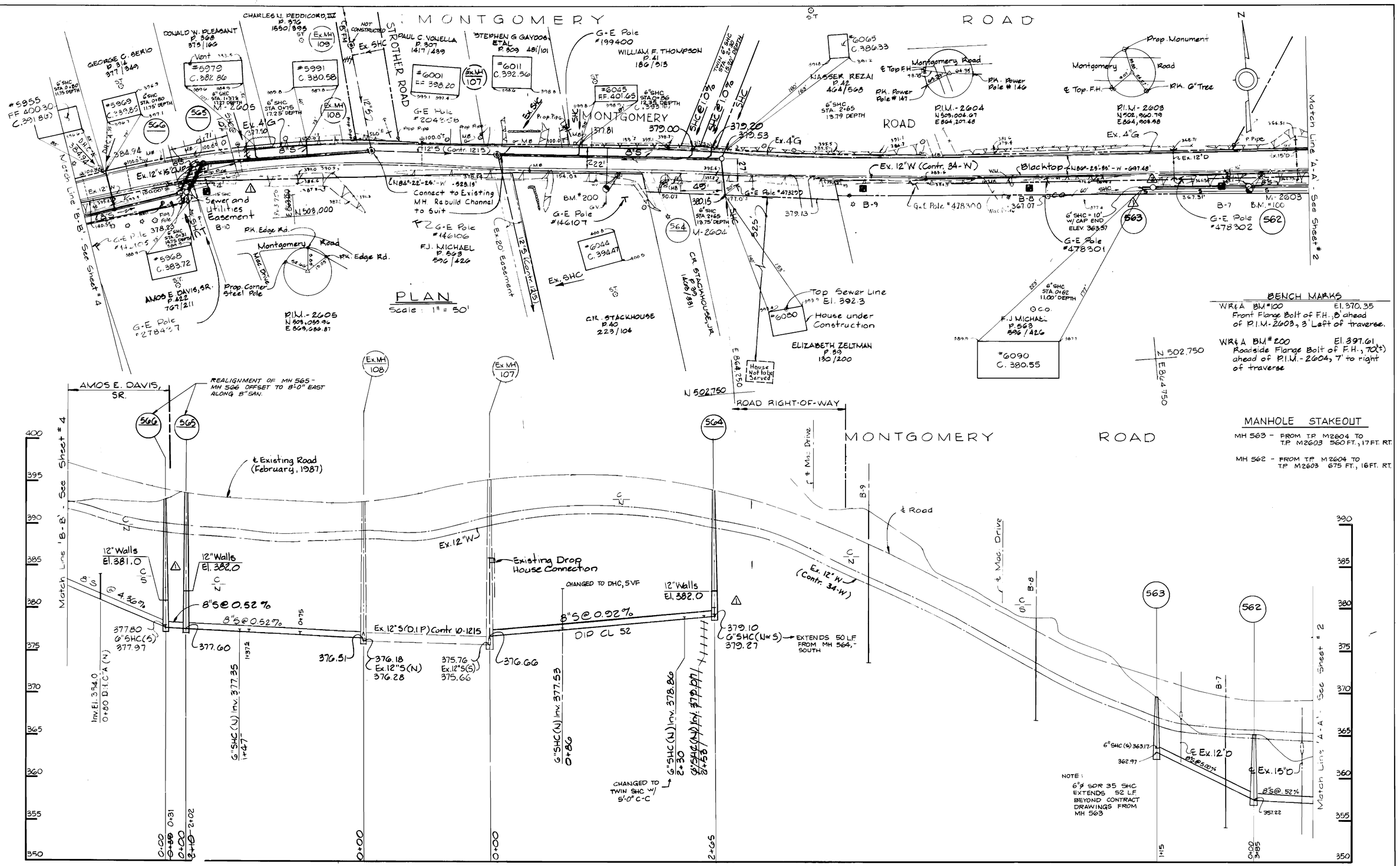
DES S.J.
DRN Q.D.N.
CHK R.B.N.
DATE 8/24/88

BY	NO	REVISION	DATE
TEB	2	REVISED ALIGNMENT (ADDITIONAL 313 LF OF 8"S)	11-15-89
DMD	1	Revised Alignment	4/11/89

600' SCALE MAP NO. 37 BLOCK NO. 4 + 5

W.O. 10781

FB# 117 September 30, 1988 AS-BUILT 2-12-90



37-502-864.5
37-503-864.5
37-504-864.5

CAPITAL PROJECT S-6147

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF UTILITIES - DATE 12-1-88
CHIEF, BUREAU OF ENGINEERING — DATE
CHIEF, UTILITY DESIGN DIVISION — DATE 11-29-88

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

DES: S.J
DRN: Q.D.N.
CHK: R.B.N.
DATE: 8/24/88

BY	NO.	REVISION	DATE
TEB	2	REVISED ALIGNMENT (185 LF OF 8"S ADDITIONAL)	11-15-89
DMD	1	Revised Alignment	4/11/89

PLAN & PROFILE OF SEWER MAIN

600' SCALE MAP NO. 37 BLOCK NO. 4

MONTGOMERY ROAD SEWER MAIN
ELECTION DISTRICT NO. 1
HOWARD COUNTY
CONTRACT NO. 10-1602

SCALE AS SHOWN

SHEET 3 OF 5

BRUNING 44-132-69150

W.O. 10781

FB* 117

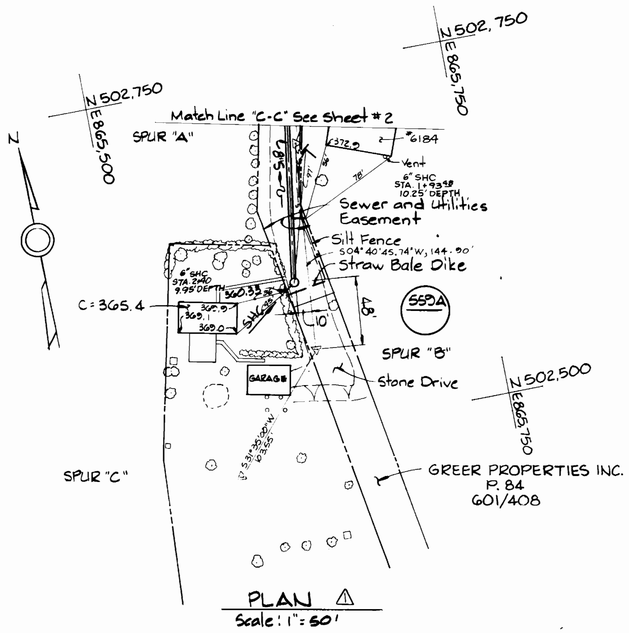
September 30, 1988

AS-BUILT 2-12-90

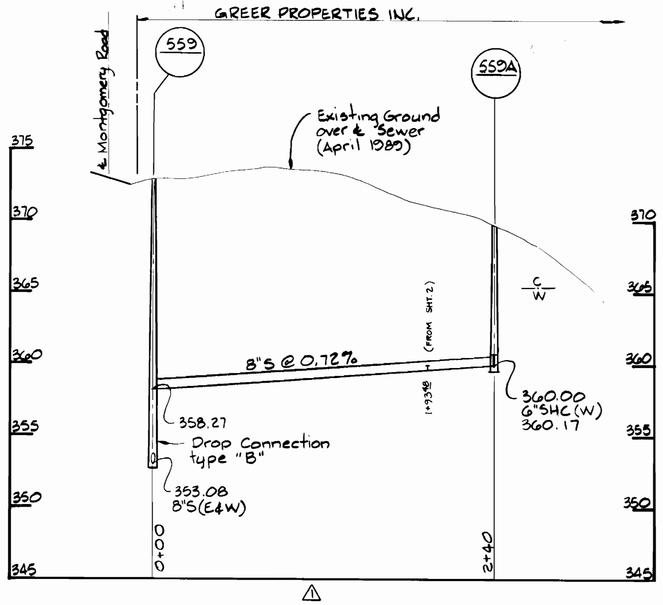
BENCH MARKS

WR&A BM #300 El. 402.49
Roadside Flange Bolt of F.H.
@ Sta. 2+95, 6' to right of traverse between M-2605 & M-2606.

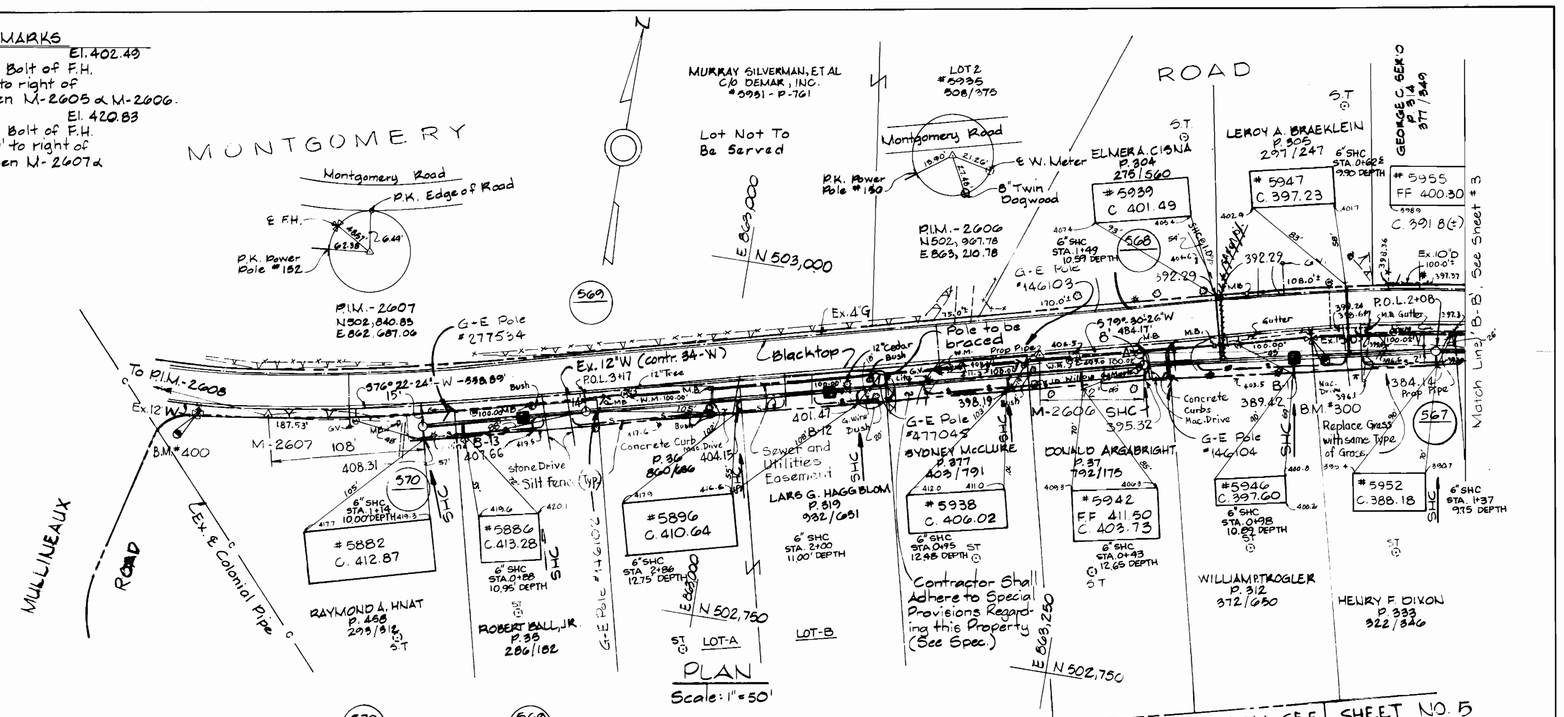
WR&A. BM # 400 El. 420.83
Roadside Flange Bolt of F.H.
@ Sta. 0+45, 10' to right of traverse between M-2607 & M-2608.



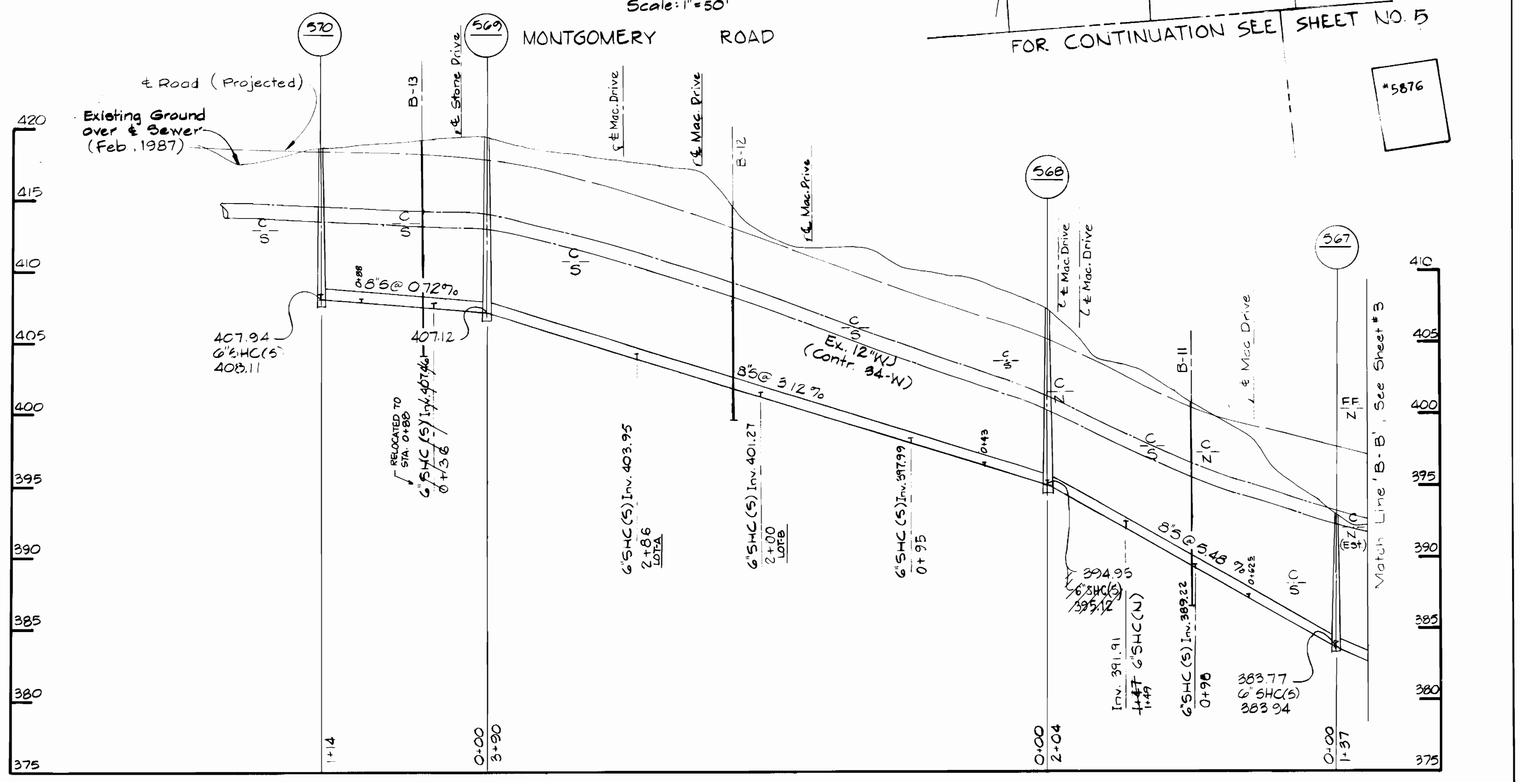
PLAN ⚠
Scale: 1" = 50'



⚠



PLAN
Scale: 1" = 50'



PROFILE
Scale: Horizontal 1" = 50
Vertical 1" = 5'
37-502-863
37-502-864.5
37-503-864.5

CAPITAL PROJECT S-6147

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
Robert W. Berning 12-1-88
CHIEF, BUREAU OF UTILITIES — DATE

CHIEF, BUREAU OF ENGINEERING — DATE 12-2-88
CHIEF, UTILITY DESIGN DIVISION — DATE 11-29-88

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

DES: S.J.
DRN: Q.D.N
CHK: R.B.N.
DATE: 8/24/88

BY	NO.	REVISION	DATE
DMD	⚠	Added Plan & Profile	4/11/89

PLAN & PROFILE OF SEWER MAIN

600' SCALE MAP NO. 37 BLOCK NO. 3-4

MONTGOMERY ROAD SEWER MAIN
ELECTION DISTRICT NO. 1
HOWARD COUNTY
CONTRACT NO. 10-1602

SCALE AS SHOWN

SHEET 4 OF 5

BRUNING 44 132 69150

10781

FB# 117 September 30, 1988


MONTGOMERY ROAD
FOR CONTINUATION SEE SHEET NO. 4
PLAN
Scale: 1"=50'
PROFILE Scale: Horizontal: 1"=50' Vertical: 1"=5'
-BENCH MARKS-
W.R.+A. BM.#M-44 El. 354.33
RR Spike in Base of 15" Triple Maple-8' Left of Sta. 2+06 between P.I.#M-2782 and P.I.#M-2783
W.R.+A. BM.#300 El. 402.49
Roadside Flange Bolt of F.H. @ Sta. 2+95 6' Right of Traverse Between M-2605 and M-2606
FRANCIS J. MICHAEL P.563 596/426
ELIZABETH L. ZELTMAN Liber 130/Folio 208 Parcel 39
ERLE W. HOWARD, JR. P.559 591/719
ERLE W. HOWARD, SR. P.518 460/715
JOSEPH E. MAYNOR P.344 330/12
JAMES S. RAINES P.331 306/201
100 INVESTMENT LIMITED PARTNERSHIP P.38 1768/582
12"S (Contr. 1215) (Under Construction)
12"S (Under Construction)
Connect 8" Sewer to Manhole #104 Rebuild Channel to Suit
20' Sewer + Utilities Easement
20' Construction Strip
10' Construction Strip
Silt Fence (Typ.)
Save This Tree
Save these Trees
Right of Way for Ingress and egress, and Utility Installations
490'± To Montgomery Road
P.I.#M-2788 N502,531.76 E863,269.70
P.I.#M-2787 N502,591.45 E863,412.72
P.I.#2786 N502,599.86 E863,564.77
P.I.#2785 N502,652.65 E863,656.13
P.I.#M-2784 N502,671.37 E863,766.60
P.I.#M-2783 N502,522.27 E863,825.73
P.I.#M-2782 N502,382.75 E863,987.23
P.I.#M-2781 N502,376.60 E864,084.48
Existing Ground over ℄ Sewer (October 1987)
8"S @ 5.28%
8"S @ 3.28%
8"S @ 5.08%
8"S @ 0.52%
Match Line
12"S (NW&SE) 340.30±

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 ST PAUL ST BALTIMORE, MARYLAND	DES: S.J. DRN: C.S. CHK: RBN DATE 8/24/88	PLAN & PROFILE OF SEWER MAIN	MONTGOMERY ROAD SEWER MAIN ELECTION DISTRICT NO. 1 HOWARD COUNTY CONTRACT NO. 10-1602	SCALE AS SHOWN SHEET 5 OF __

DIRECTOR OF PUBLIC WORKS — DATE 12/1/88
CHIEF - BUREAU OF ENGINEERING — DATE 12-2-88
CHIEF - BUREAU OF UTILITIES — DATE 12-1-88
CHIEF - UTILITY DESIGN DIVISION — DATE 11-29-88

BY | NO. | REVISION | DATE

600' SCALE MAP NO. 37 BLOCK NO. 3 & 4

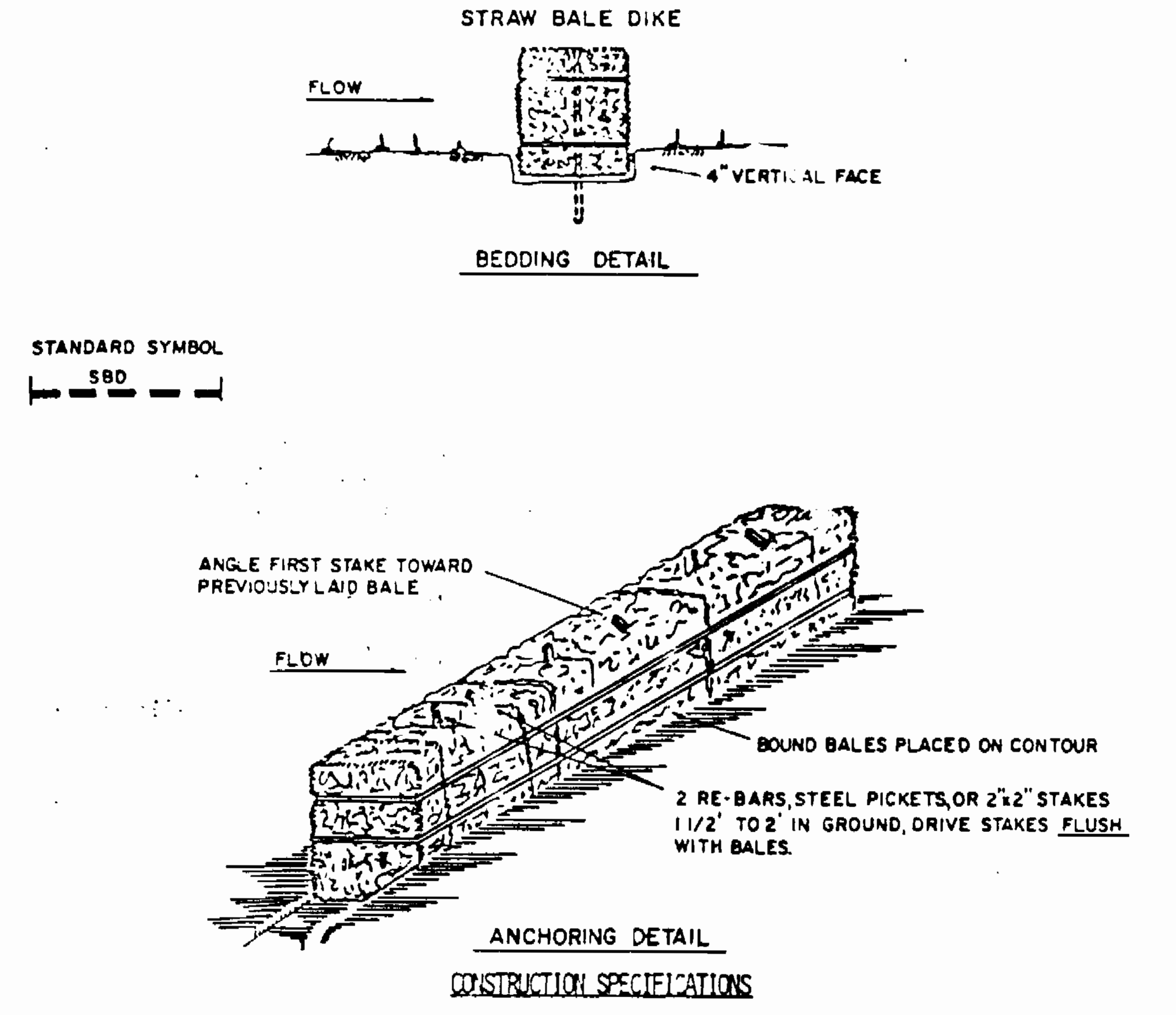
37-502-864.5 CAPITAL PROJECT S-6147

W.O. 10781

F.B.# 7138 September 30, 1988

KEUFFEL & ESSER COMPANY

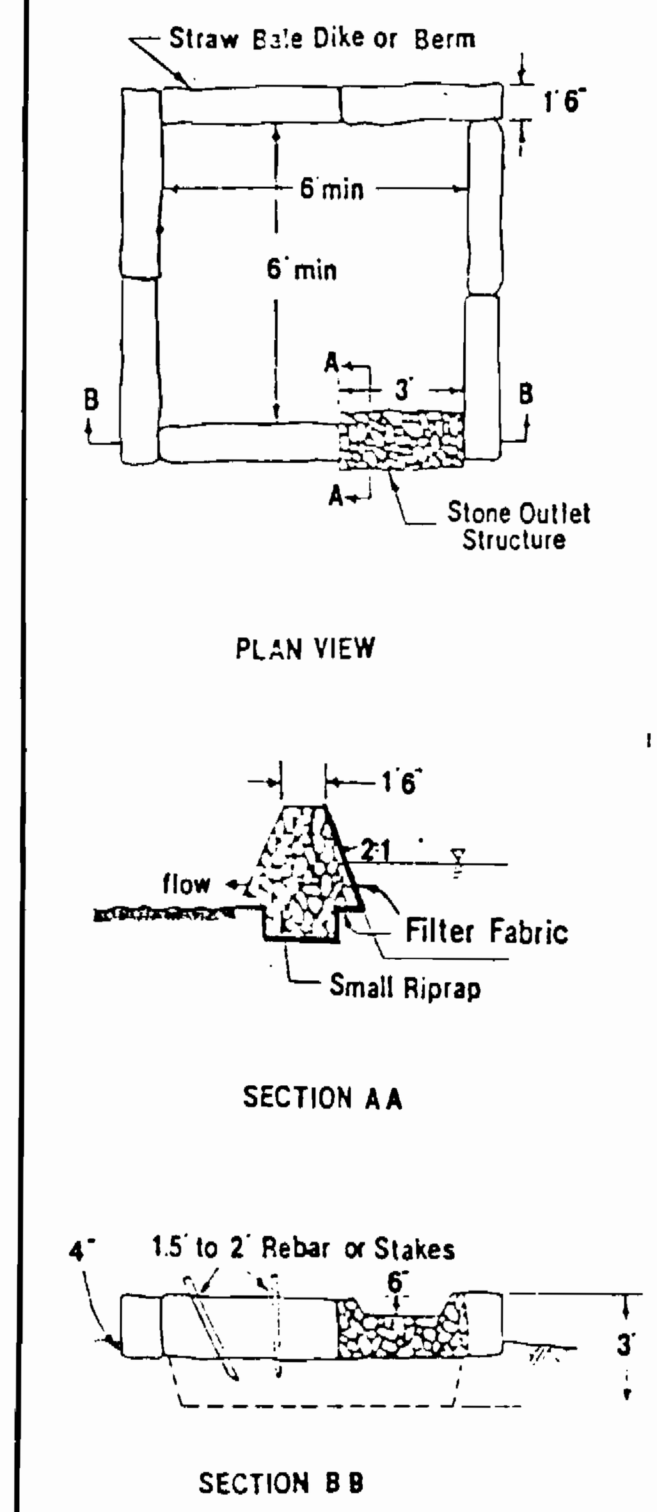
STRAW BALE DIKE



CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STRAW BALE DIKE	STANDARD DRAWING SBD-1



I. Description

The work shall consist of the construction of a dewatering basin for the purpose of receiving sediment-laden water pumped from a construction site to allow filtration before the water re-enters the waterway.

II. Material Specifications

1. Riprap: Riprap shall consist of 4-8 inch washed stone or gravel.
2. Filter Fabric: The filter cloth shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, and rot resistant. No. 6 stone (AASHTO 57) may be used on the inner-face for filtering instead of fabric.
3. Strawbales: Strawbales shall meet the criteria as specified in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

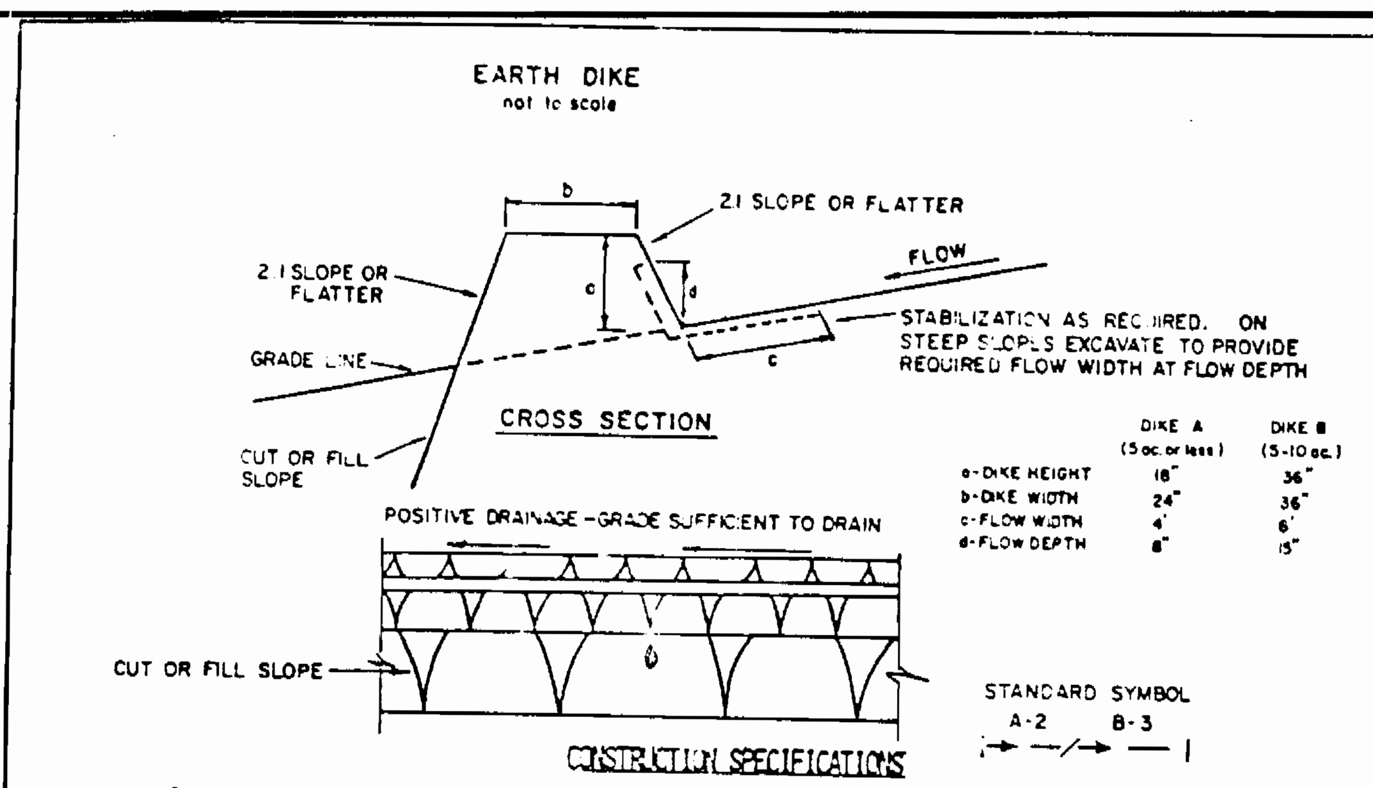
III. Construction Requirements

1. The contractor shall install all sediment and erosion control devices as the first order of business.
2. Excavated materials shall be stored such that sediments are prevented from entering the waterway; i.e., sediment perimeter controls may be necessary.
3. Excavated subsoil and topsoil shall be kept separate and replaced in their natural order.
4. Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway.
5. The dewatering basin shall be excavated to a minimum depth of 3 feet.
6. Once the dewatering basin becomes filled to 1/2 of the excavated depth, accumulated sediment shall be removed and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All ground contours shall be returned to their original condition unless specifically approved otherwise by the Administration.

WATER RESOURCES ADMINISTRATION	Dewatering Basins	Approved On 1-24-86 Chief, Waterway Permits	WPD 1.1

EARTH DIKE

not to scale



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

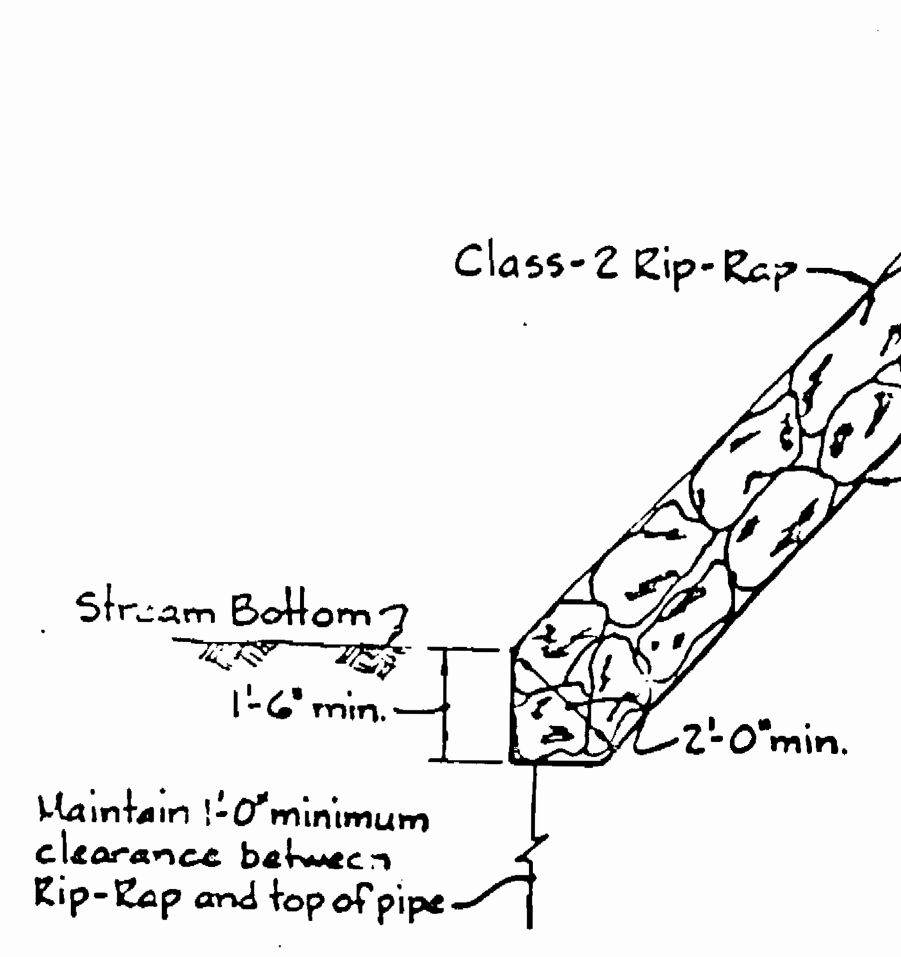
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

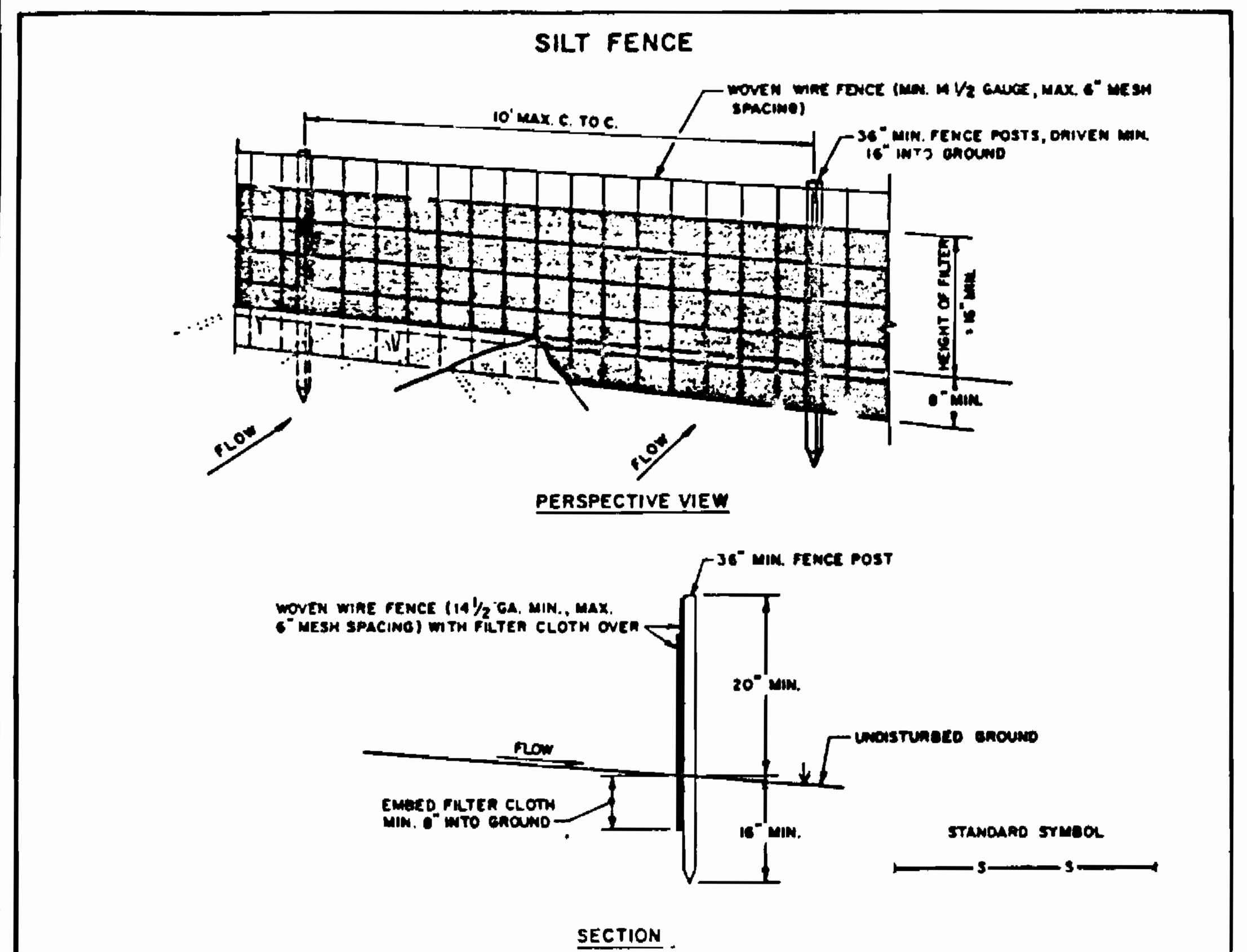
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1



Notes:
1. Erosion Control Fabric shall be Poly-Filter-X as manufactured by Carthage Mills, Inc., Erosion Control Division, 124 West 66th Street, Cincinnati, Ohio; Laurel Erosion Control Cloth as manufactured by Laurel Plastics Inc., Madison, Maine or approved equal.
2. Rip-Rap shall be placed 6' each side & stream or as shown. Any disturbance to stream banks beyond these limits shall be protected with Rip-Rap at Contractor's expense.
3. Gabions may be used in lieu of Rip-Rap.

RIP-RAP DETAIL

SILT FENCE



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING

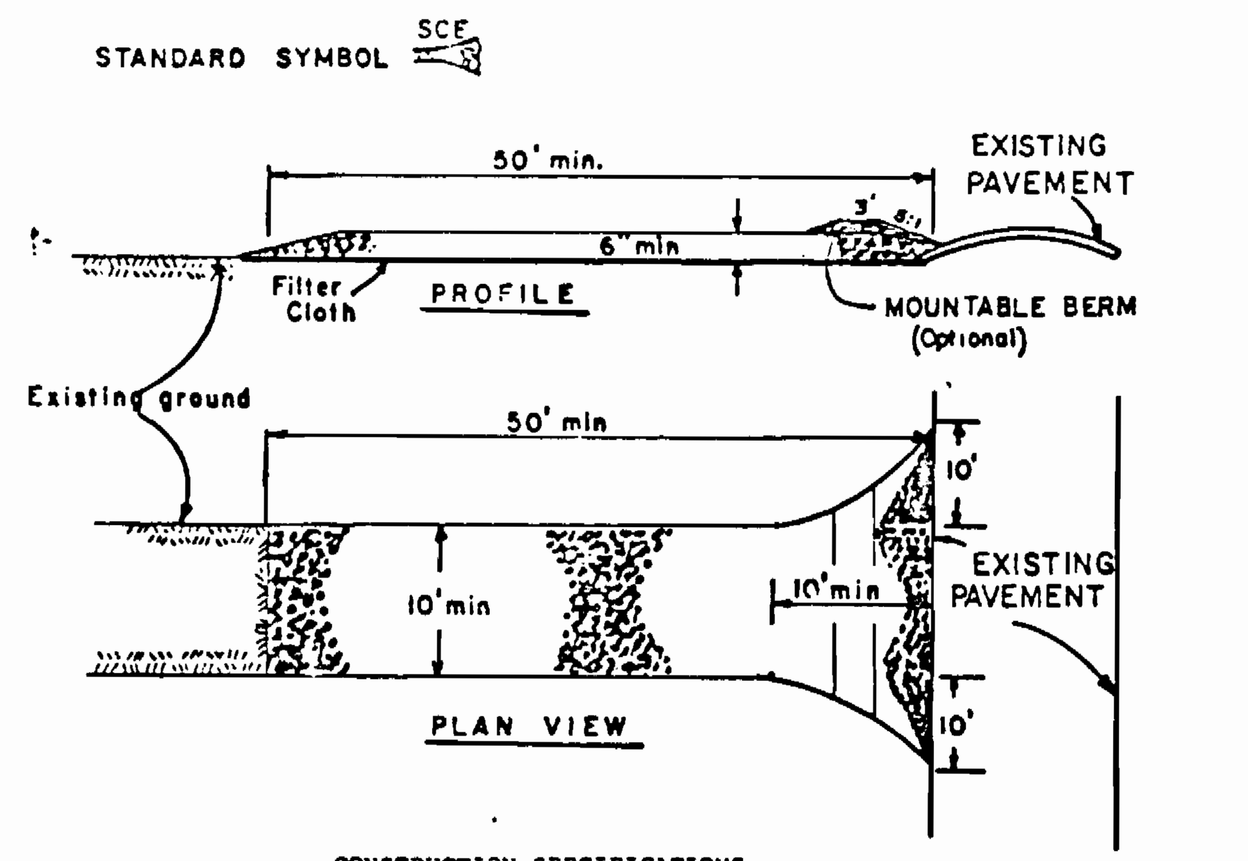
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1

STABILIZED CONSTRUCTION ENTRANCE

not to scale



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. 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.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. 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 repair 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.
8. 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.
9. Periodic inspection and needed maintenance shall be provided after each rain.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

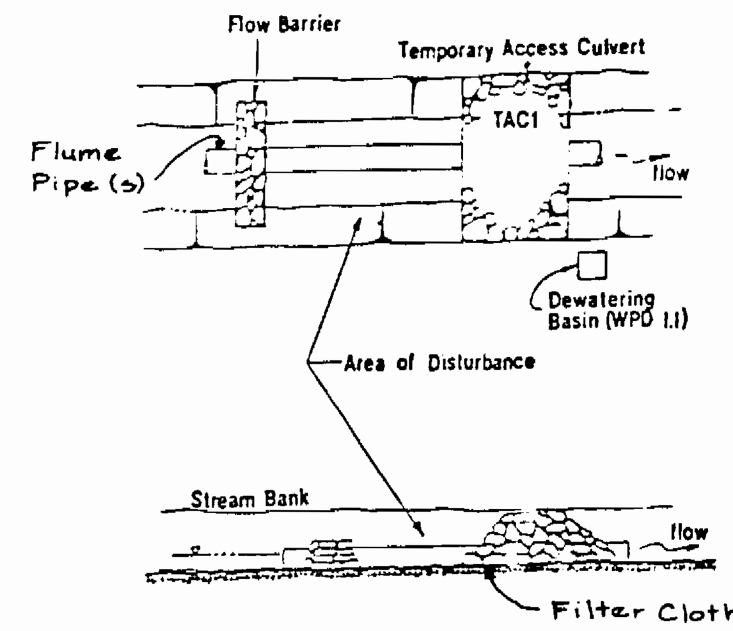
Note:
Provide Stabilized Construction Entrance At All Access Points To Paved Roads.

CONSTRUCTION SEQUENCE
SEDIMENT CONTROL PROCEDURES

(FOR AREAS NOT PROTECTED BY ROAD CONSTRUCTION-SEDIMENT CONTROL DEVICES)

1. Obtain Sediment Control Permit.
2. Construct continuous sediment barrier for all Disturbed Areas* not protected by sediment traps.
3. Clear, grub and strip as required. Protect stream from erosion of stored top soil, seperate top soil from subsoil.
4. Construct pipelines.
5. All excavated material shall be stock-piled on high side of trench.
6. Restore erosion control structures disturbed by sewer and water construction.
7. Stabilize disturbed area as construction progresses with temporary seeding and mulching (or permanent restoration).
8. Complete permanent restoration.
9. All sediment control devices shall remain in service until removal is approved by the S.C.S. inspector.
10. Restoration (temporary or permanent) of an area between manholes or 400' watermain section shall follow within one week of pipelaying in this area.

* Disturbed Areas shall be restricted to 20' Easements.



PLAN & PROFILE

I. Description

The work shall consist of installing a flow diversion structure in conjunction with a temporary culvert crossing during in-stream construction such as utility crossings.

II. Construction Requirements

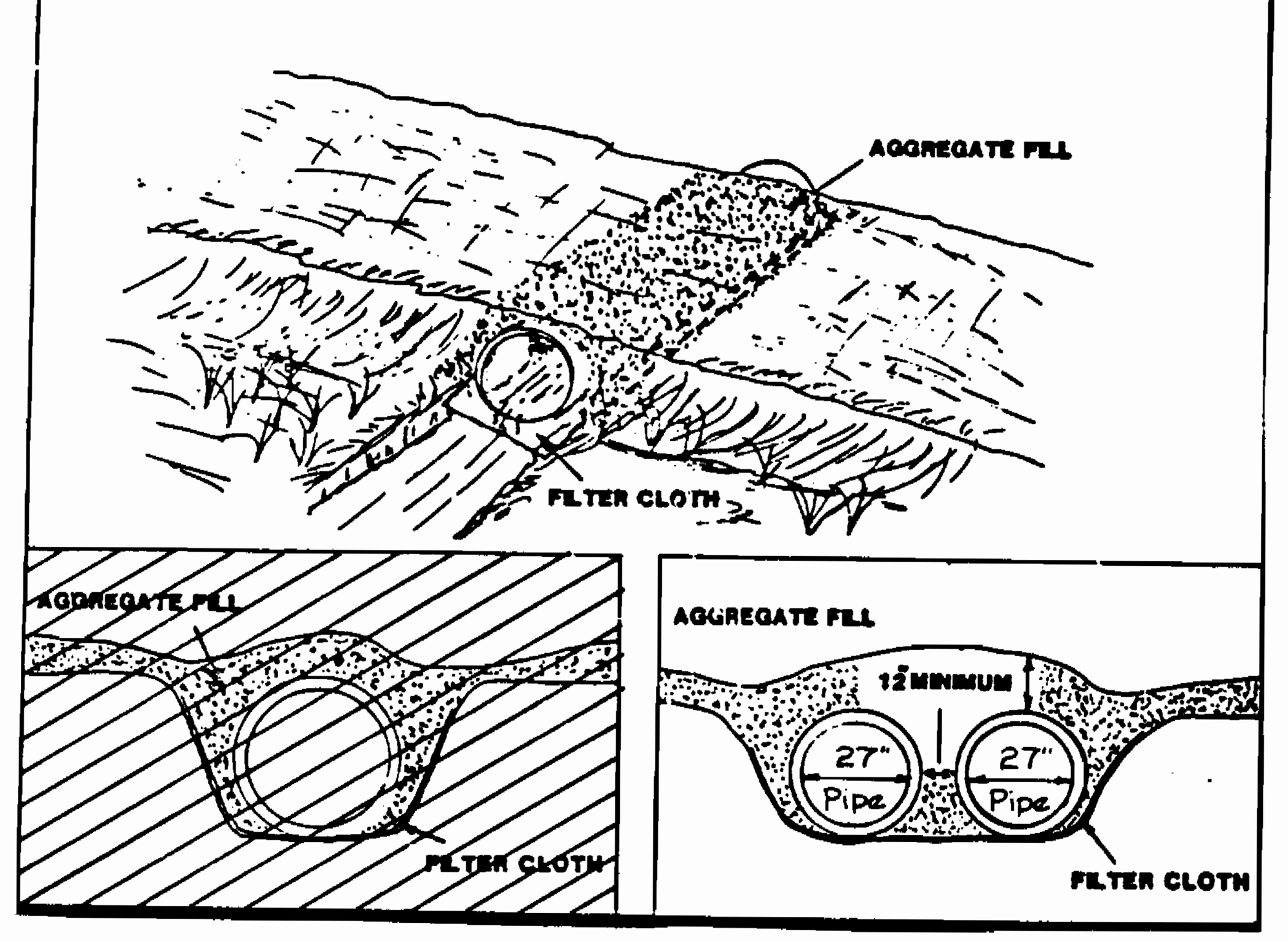
1. All erosion and sediment control devices shall be installed as the first order of business.
2. Pipes must be sized to accommodate normal stream flow.
3. The flow barrier shall be constructed of sandbags, washed riprap, or other approved material as per WPD2.3. The materials shall be sized to withstand normal stream flow velocities.
4. All dewatering of the construction area shall be pumped to a dewatering basin (WPD1.1) prior to re-entering the stream.
5. The temporary culvert crossing shall be constructed in accordance with Standard Detail (TAC-1), 1983 Maryland Standards and Specifications for Sediment and Erosion Control.
6. Sediment control devices shall remain in place until all disturbed areas have been stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

WATER RESOURCES ADMINISTRATION	Culvert Pipe with Access Road	Approved On 1-24-86 Chief, Waterway Permits	WPD 2.1

WPD 2.3

Material Specifications
1. Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
2. Stone: Stone shall be washed and have a minimum diameter of 6 inches.

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 size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is a 12" diameter pipe.

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. If multiple culverts are used they 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."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 ST PAUL ST BALTIMORE, MARYLAND		SEDIMENT CONTROL DETAILS	MONTGOMERY ROAD SEWER MAIN ELECTION DISTRICT NO. I HOWARD COUNTY CONTRACT NO. 10-1602	SCALE AS SHOWN
DIRECTOR OF PUBLIC WORKS—DATE; CHIEF-BUREAU OF ENGINEERING—DATE 12-2-88		DES J.W.B.; DR R.L.P.; CHK R.B.N.; DATE 8/24/88			SHEET 5 OF 5
CHIEF-BUREAU OF UTILITIES — DATE 12-1-88; CHIEF-UTILITY DESIGN DIVISION-DATE 11-29-88		BY / NO. / REVISION / DATE	600' SCALE MAP NO. / BLOCK NO.		

W.O. 10781

September 30, 1988