

WATER AND SEWER EXTENSIONS

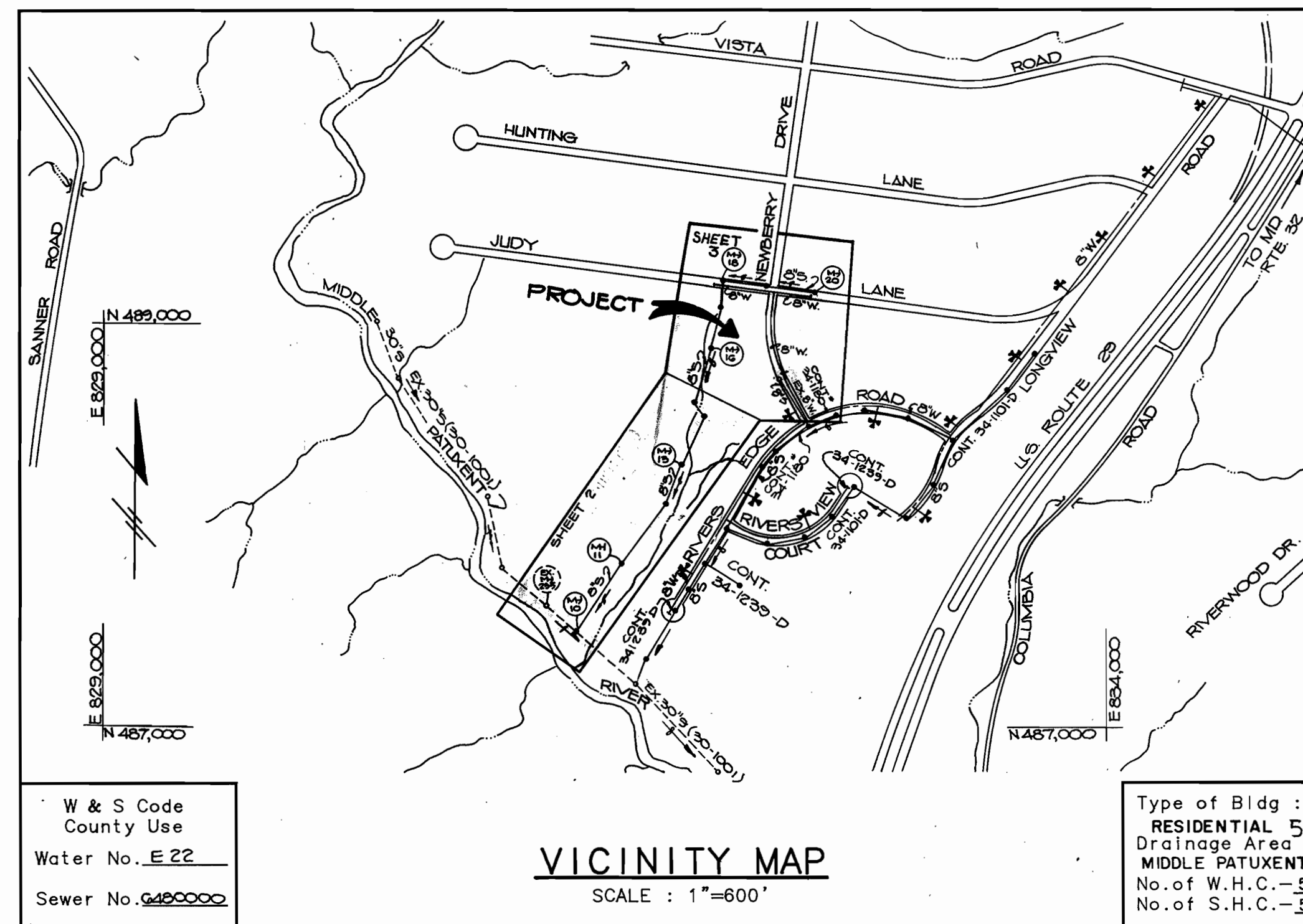
RIVERSIDE ESTATES

CONTRACT NO. 34 - 1849 - D

5th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

QUANTITIES			
ITEM	EST'D	AS BUILT	SUPPLIER
8" SEWER	1445 LF	62 1/4 LF	AMERICAN/OPK
6" SEWER	40 LF	36 LF	AMERICAN/OPK
MANHOLES	11 EA.	12 EA.	ATLANTIC CONCRETE PRODUCTS & UTILITY SUPPLY
8" WATER	750 LF	55 1/2 LF	SKIFFIN PIPE PRODUCT
6" WATER	0 LF	2 1/4 LF	"
FIRE HYD.	1 EA.	1 EA.	U.S. PIPE
8" VALVES	3 EA.	3 EA.	KENNEDY
3/4" WHC	145 LF	231 LF	FORD/HALLSTEAD
8" D.I.P. SEWER	937 LF	1811 LF	SKIFFIN PIPE PRODUCT
6" D.I.P. SEWER		20 LF	"



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. data.
- All pipe elevations shown are \ominus invert elevations.
- Clear all utilities by a minimum of 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 Constructions. 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 \blacksquare 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 verified by the contractor to his own personal satisfaction. Any damage to existing facilities due to the contractor's negligence shall be repaired at the contractor's expense.
- The 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 and Electric Co. - Contractor Services	850-4620
Baltimore Gas and Electric Co. - Underground Damage Control	859-9004
Baltimore Gas and Electric Co. - Trouble Shooting	298-9001
Miss Utility	1-559-0100
Colonial Pipeline Co.	795-1390
Bureau of Utilities, Ho.Co. Department of Public Works	992-2366
C & P Telephone Co.	1-800-257-7777
Department of Recreation & Parks	992-2490
- 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.
- The contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- All water mains to be D.I.P. Class 52 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 elevation shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with the Standard Details. Soil around the fire hydrant shall be compacted in accordance with Section 1003 of the Standard Specifications.
- The contractor shall not operate any water main valves on the existing water system.
- All water house connections shall be for inside meter setting, unless otherwise noted on the plans or in the Specifications.
- All service clamps are to have stainless straps.
- All D.I.P. fittings shall be in accordance with A.W.W.A. specifications C-153 Ductile Iron Compact Fittings, 3" through 12" for water and other liquids.
- All sewer mains shall be C.S.P.X., R.C.S.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.
- Force mains shall be D.I.P. only.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes designated W.T. in plan and profile shall have watertight frame and covers, Standard Detail 65.52. Where watertight manhole frame and cover is used, set top of frame 6" above finished grade unless otherwise noted on the drawings.
- House(s) with the symbol "C.N.S." indicates that the cellar cannot be served.

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications.

Stephen R. Huber 11/3/88
HOWARD SOIL CONSERVATION DISTRICT :

Review for Howard Soil Conservation District and meet technical requirements.

James M. Talar 11-3-88
S.O. SOIL CONSERVATION SERVICE DATE

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

Stephen R. Huber 11-3-88
HOWARD SOIL CONSERVATION DISTRICT DATE

RECORDED
FINAL PLAT NUMBER
2816-A

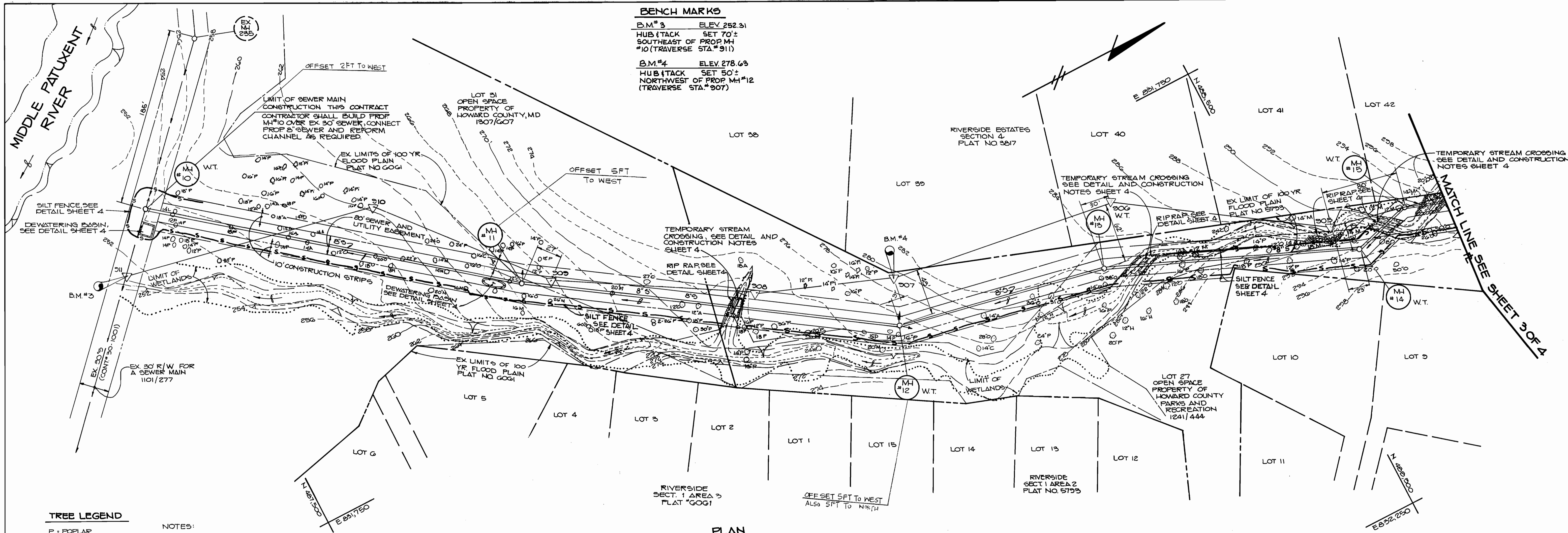
WATER & SEWER AS-BUILT

<p style="text-align: center;">DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James M. Talar</i> 11/3/88 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Robert M. Brinner</i> 11-7-88 CHIEF, BUREAU OF UTILITIES DATE</p>	<p style="text-align: center;">THE RIEMER GROUP INC. 3105 NORTH RIDGE ROAD ELLCOTT CITY, MARYLAND (301) 461-2690</p>		<p>DES: D.B.S.</p> <p>DRN: S.J.S.</p> <p>CHK: F.R.</p> <p>DATE: 8-31-88</p>	<p>BY: _____ NO. _____</p> <p>REVISION _____ DATE _____</p>	<p style="font-size: 2em;">TITLE SHEET</p>	<p style="text-align: center;">SCALE AS SHOWN</p> <p style="text-align: center;">SHEET 1 OF 4</p>
<p>600' SCALE MAP NO. <u>41</u> BLOCK NO. _____</p>						<p style="font-size: 1.2em;">RIVERSIDE ESTATES 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 34-1849-D</p>

BENCH MARKS

B.M.#3 ELEV. 252.31
 HUB (TACK SET 70'±
 SOUTHEAST OF PROP. MH
 #10 (TRAVERSE STA. #311)

B.M.#4 ELEV. 278.63
 HUB (TACK SET 50'±
 NORTHWEST OF PROP. MH #12
 (TRAVERSE STA. #307)



TREE LEGEND

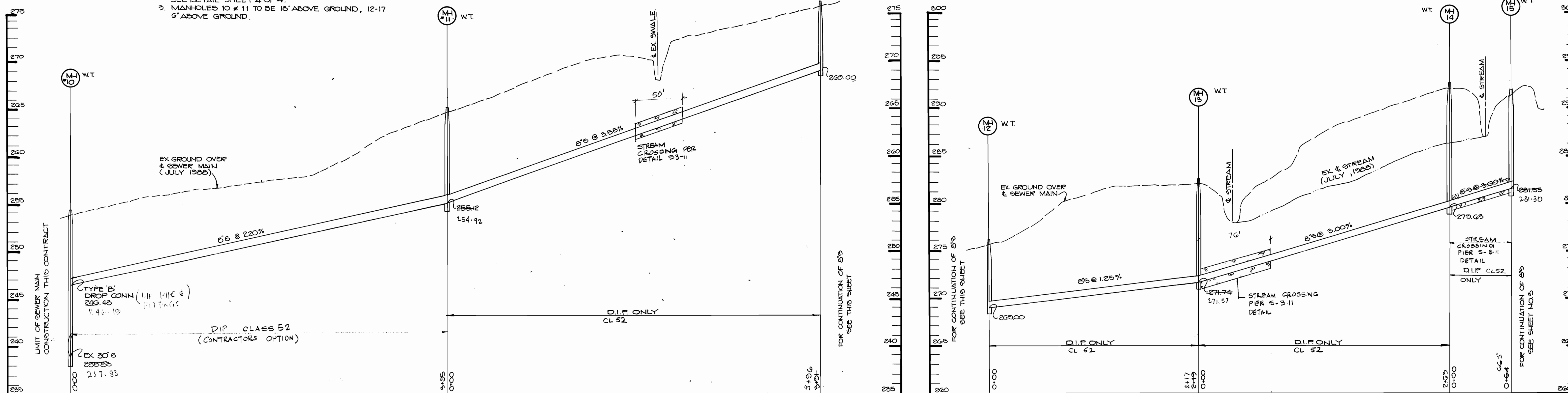
- P - POPLAR
- O - OAK
- M - MAPLE
- C - CHERRY
- H - HICKORY
- D - DOGWOOD
- F - PINE
- A - ASH

NOTES:

1. PRIOR TO CLEARING OF THE 20' UTILITY EASEMENT THROUGH HOWARD COUNTY PROPERTY, THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING ALONG BOTH EDGES OF THE CONSTRUCTION STRIPS. CLEARING SHALL BE LIMITED TO THE 20' UTILITY EASEMENT AREA ONLY. ANY DAMAGE TO TREES OUTSIDE OF THIS AREA WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRS WILL BE AT HIS EXPENSE.
2. DURING EXCAVATION OF 8" SEWER BETWEEN MH'S 10 & 11, ANY FLUMING DISCHARGE SHALL BE THROUGH A DEWATERING BASIN. SEE DETAIL SHEET 4 OF 4.
3. MANHOLES 10 & 11 TO BE 16" ABOVE GROUND, 12-17 6" ABOVE GROUND.

PLAN

1"=50'



PROFILE

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

PROFILE

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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

THE RIEMER GROUP INC.
 3105 NORTH RIDGE ROAD
 ELLICOTT CITY, MARYLAND 21043
 (301) 461-2690

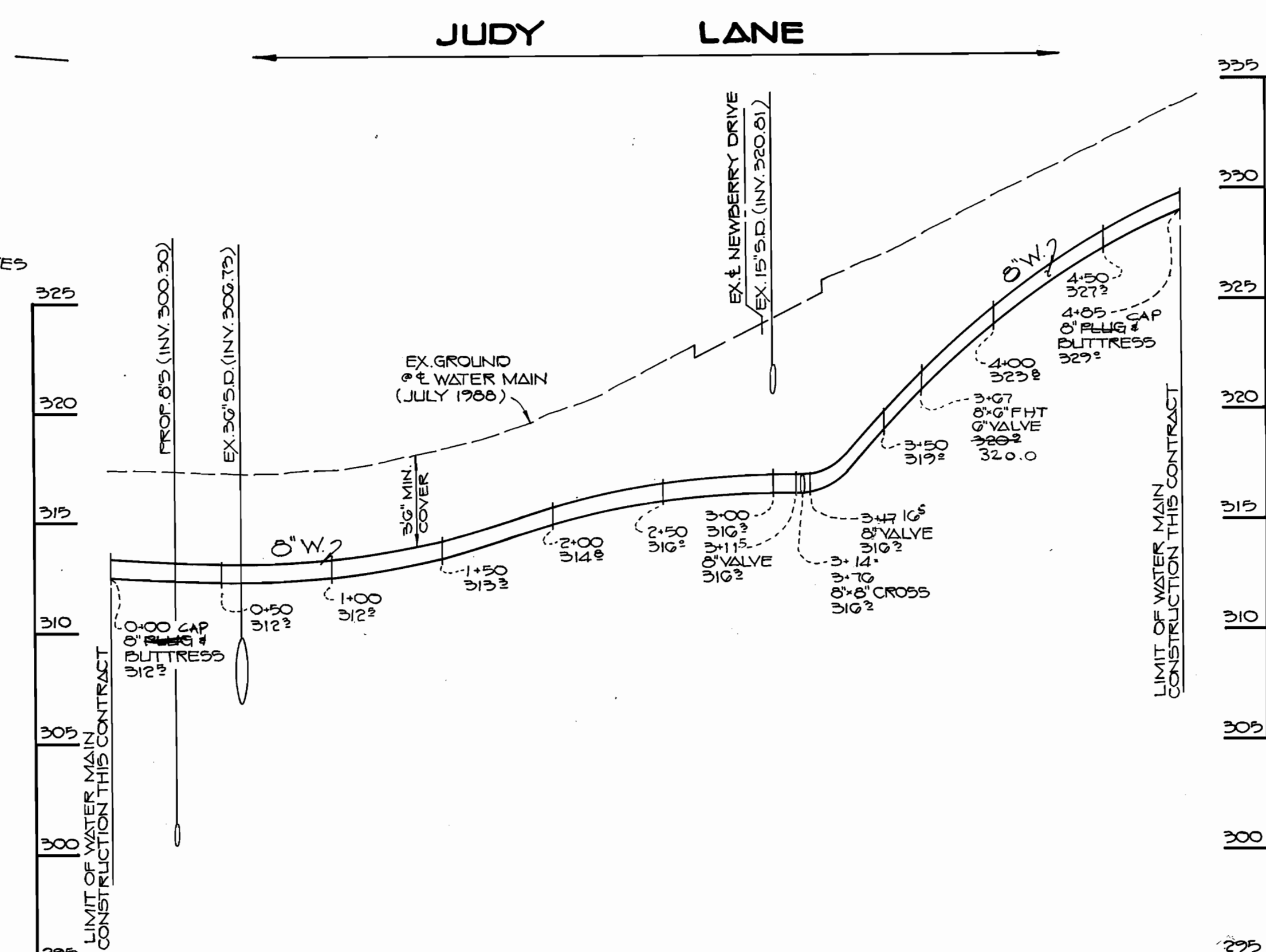
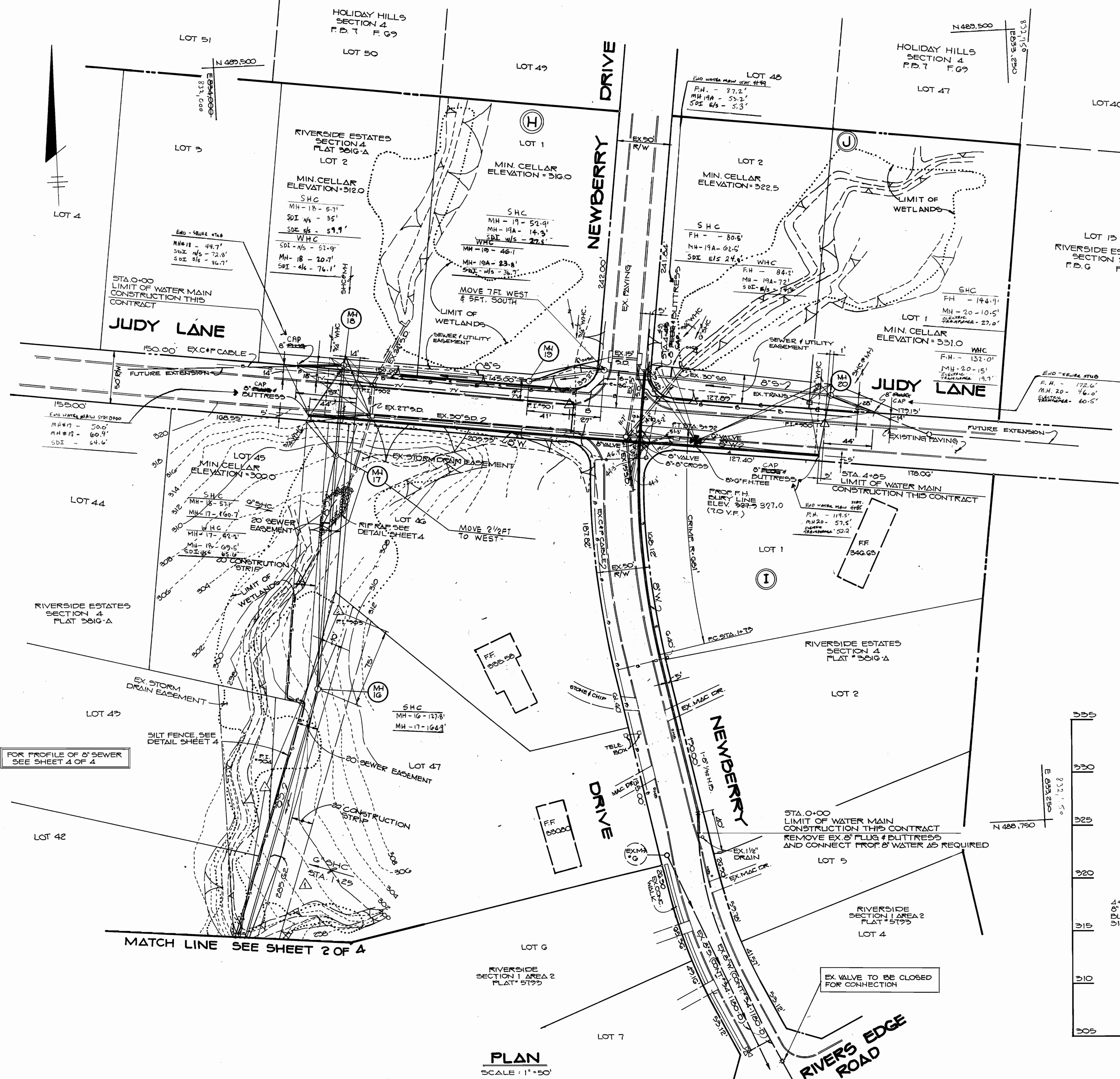
DES: D.B.S.				
DRN: S.L.S.				
CHK:				
DATE:	BY:	NO.	REVISION	DATE

PLAN AND PROFILE
 OF SEWER MAINS

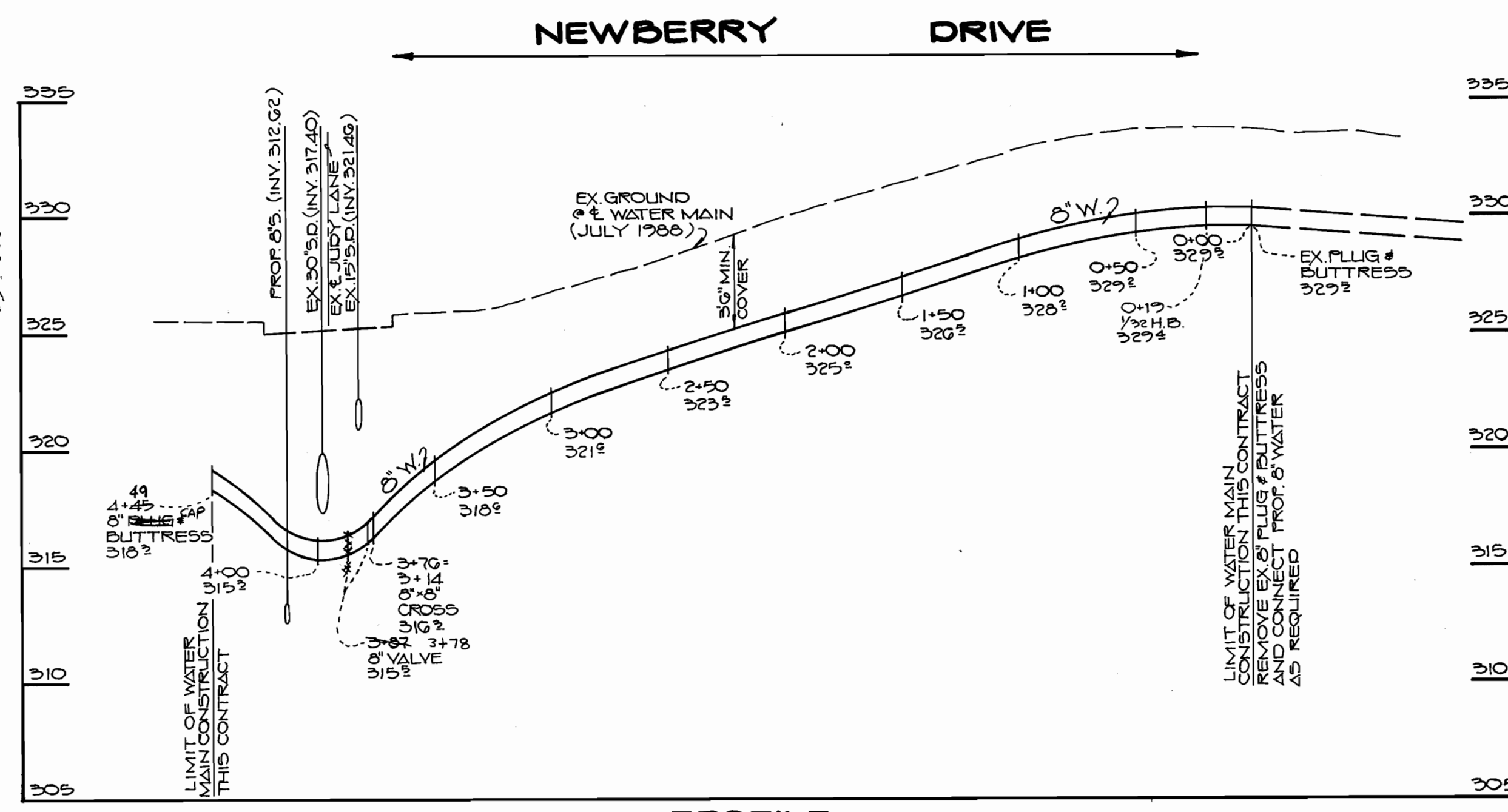
RIVERSIDE ESTATES
 WATER AND SEWER EXTENSION
 CONTRACT NO. 34-1249-D
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 2 OF 4

BENCH MARKS



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



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

PLAN
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. [Signature] 11/18/88
DIRECTOR OF PUBLIC WORKS DATE

Robert [Signature] 11-7-88
CHIEF BUREAU OF UTILITIES DATE

Arthur E. Mueggli [Signature] 11/8/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

THE RIEMER GROUP INC.
3105 NORTH RIDGE ROAD
ELLCOTT CITY, MARYLAND 21043
(301) 461-2690



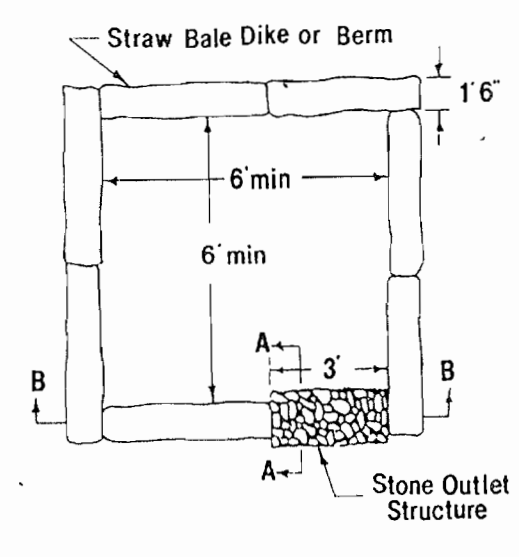
DES: DB6			
DRN: SLO			
CHK:	C.B.	MOVE SEWER, ADD EASEMENT, ADD EX. CABLES	5/25/89
DATE:	D.S.	ADD SHC LOT 47; MH 19 TO MH 16	3/3/89
BY:	NO.	REVISION	DATE

PLAN AND PROFILE
OF SEWER MAINS

600' SCALE MAP NO. 4 BLOCK NO.

RIVERSIDE ESTATES
WATER AND SEWER EXTENSION
CONTRACT NO. 34-1847-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

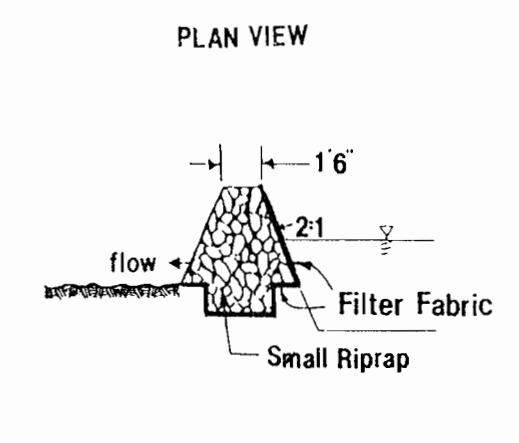
SCALE AS SHOWN
SHEET 3 OF 4



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.

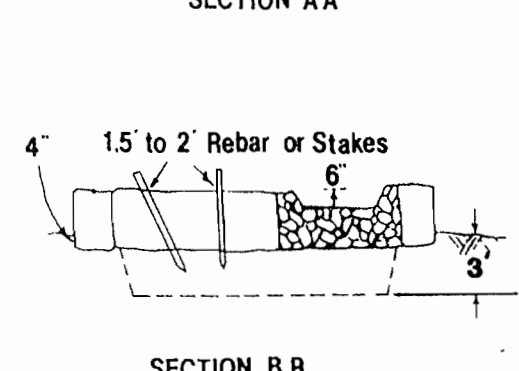
II. Material Specifications

- Riprap: Riprap shall consist of 4-8 inch washed stone or gravel.
- Filter Fabric: The filter cloth shall be a woven or nonwoven fabric consisting of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, oil, and rot resistant. No. 6 stone (ASTM D 21) may be used on the inner-face for filtering instead of fabric.
- Strawbales: Strawbales shall meet the criteria as specified in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

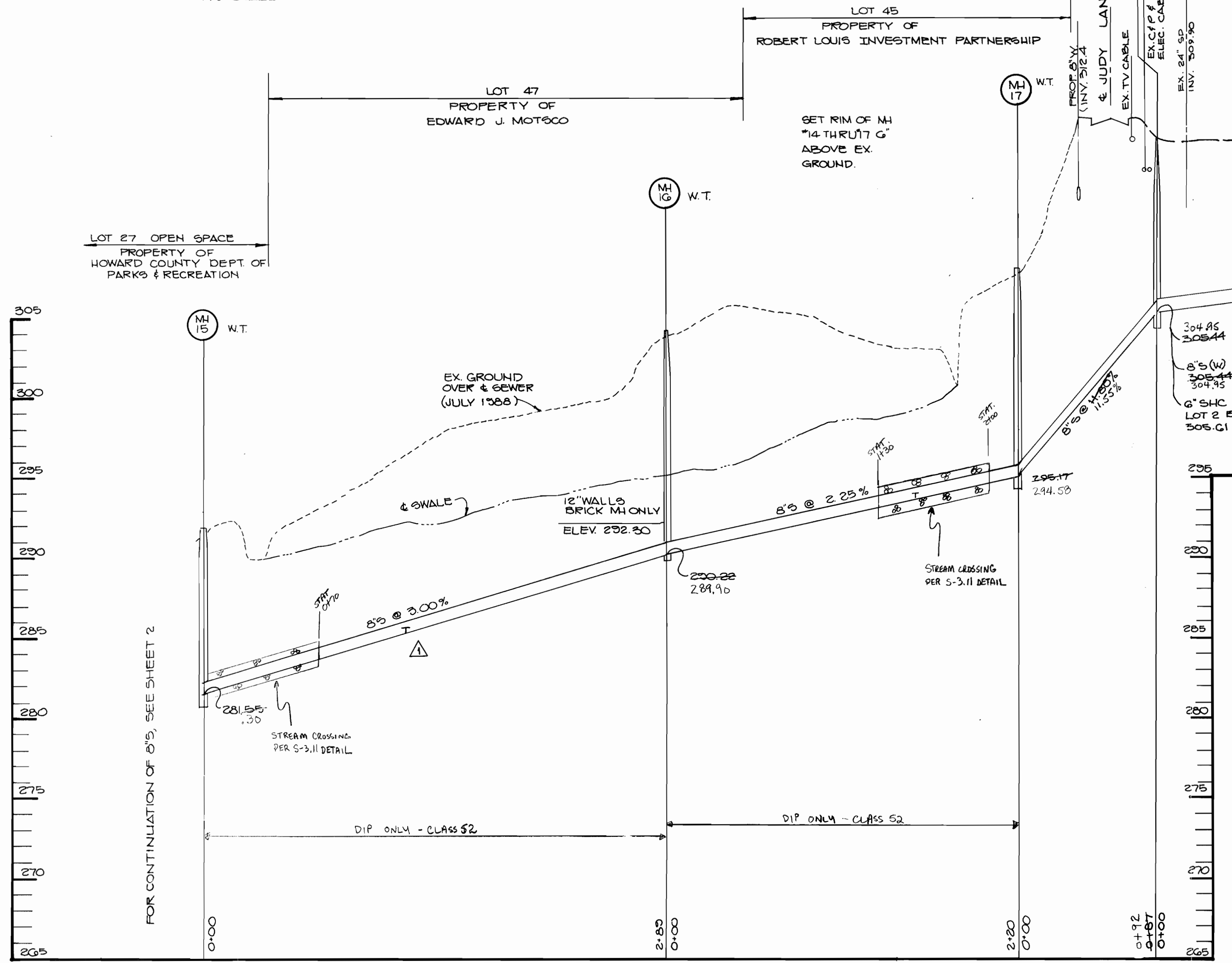


III. Construction Requirements

- The contractor shall install all sediment and erosion control devices as the first order of business.
- Excavated materials shall be stored such that sediments are prevented from entering the waterways. I.e., sediment perimeter controls may be necessary.
- Excavated subsoil and topsoil shall be kept separate and replaced in their natural order.
- Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway.
- The dewatering basin shall be excavated to a minimum depth of 3 feet.
- 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 M&A.
- 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.



DEWATERING BASIN
NO SCALE



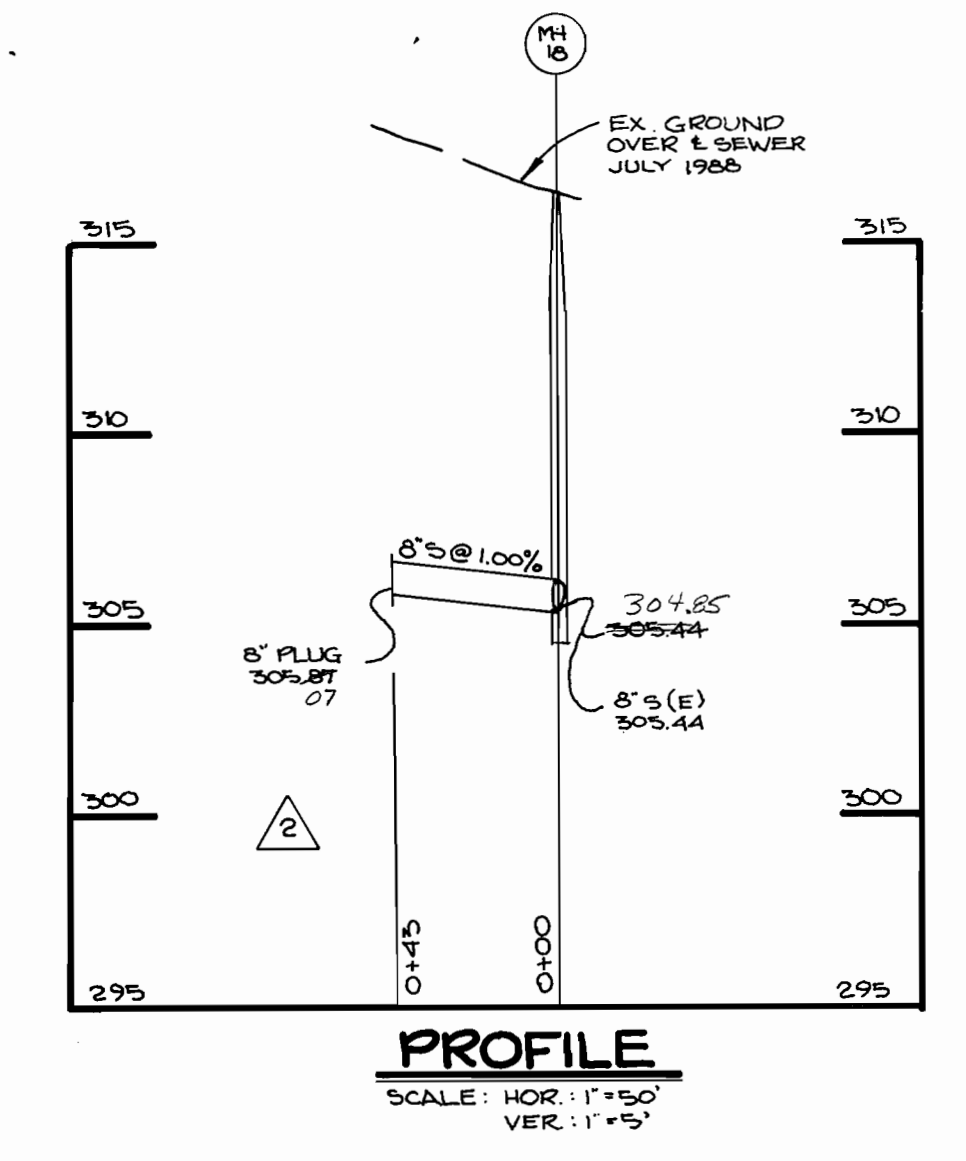
PROFILE
SCALE: HOR: 1"=50'
VERT: 1"=5'

SEQUENCE OF CONSTRUCTION

- Obtain all permits.
- Install temporary fencing along both sides of construction strips.
- Install silt fence and dewatering basins.
- Clear limits of utility easement only.
- Install 8" sewer main and backfill.
- Stabilize all disturbed areas in accordance with permanent seeding sediment control notes.
- Upon approval from the Sediment and Erosion Control Inspector, remove all sediment control devices and stabilize disturbed areas.
- Install planting material as per landscape restoration plan.

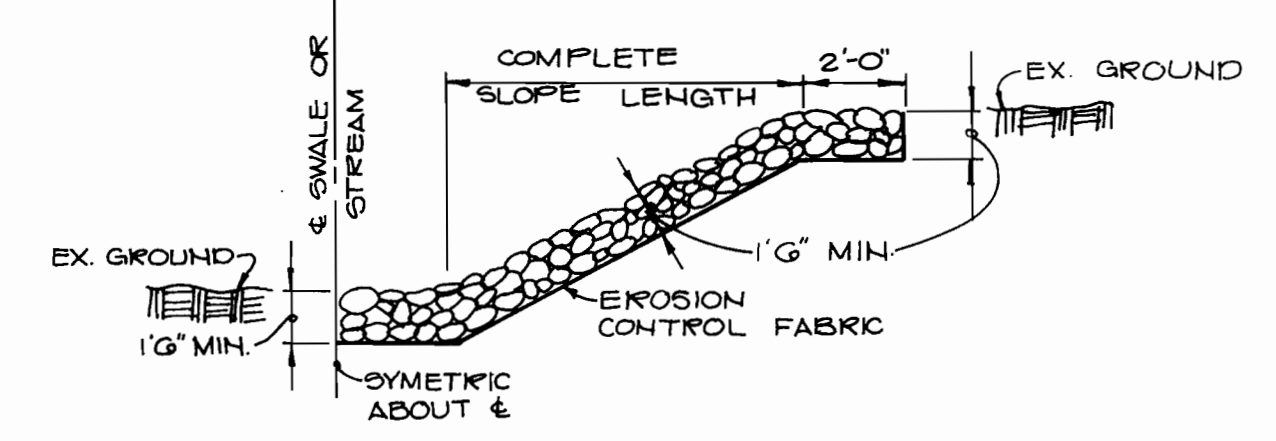
SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (992-2437).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 HARTLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- 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 HARTLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 31) and (Sec. 34), temporary seeding (Sec. 30) 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.



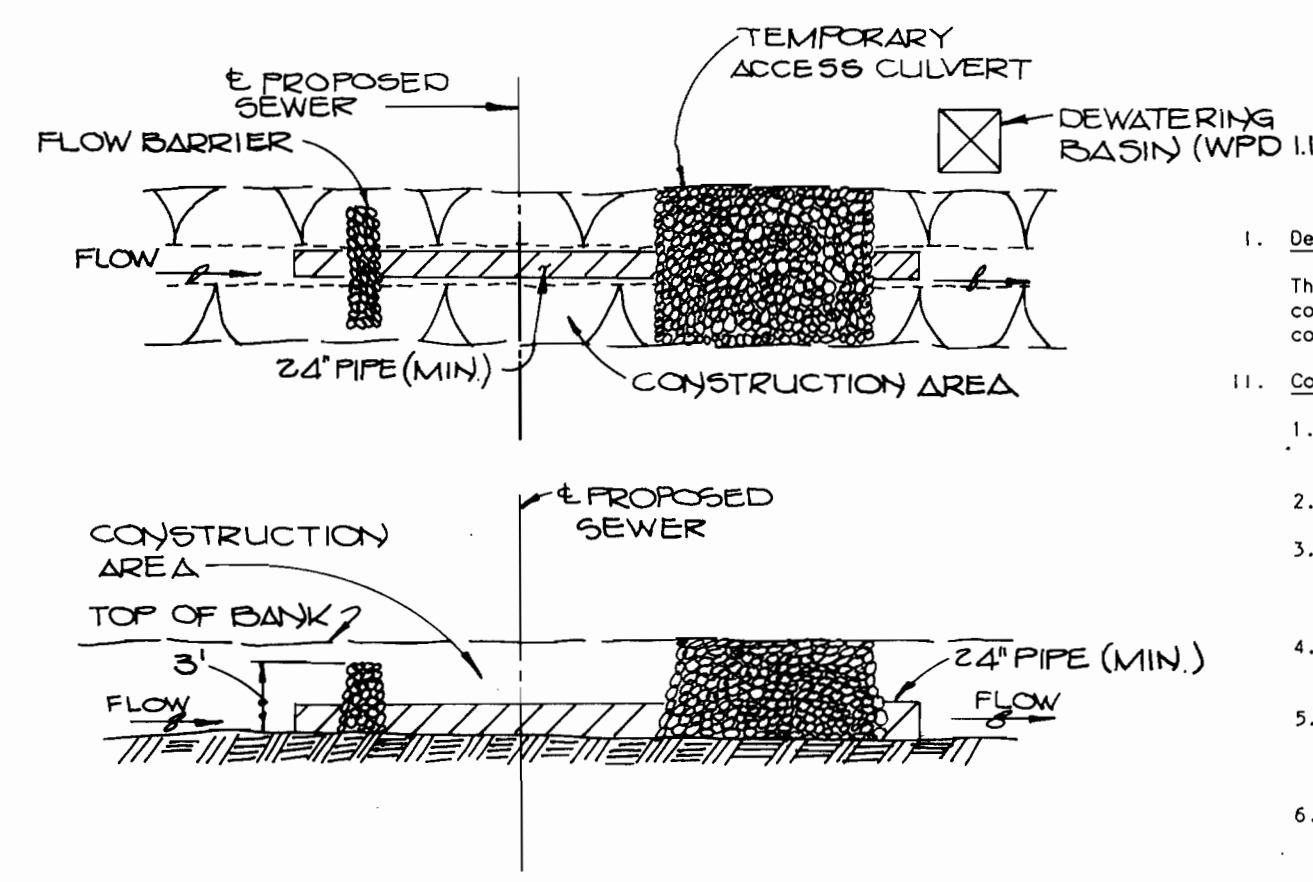
PROFILE
SCALE: HOR: 1"=50'
VER: 1"=5'

Rip-rap to consist of dense rocks of random shape and sizes, resistance to the action of the air and water and suitable for bank protection. All rocks to weigh a minimum of 75



Erosion control fabric shall be poly filter-X as manufactured by Garthage Mills, Inc. or permealiner M-1195 as manufactured by staff industries, inc. or equal.

RIP RAP DETAIL
NO SCALE

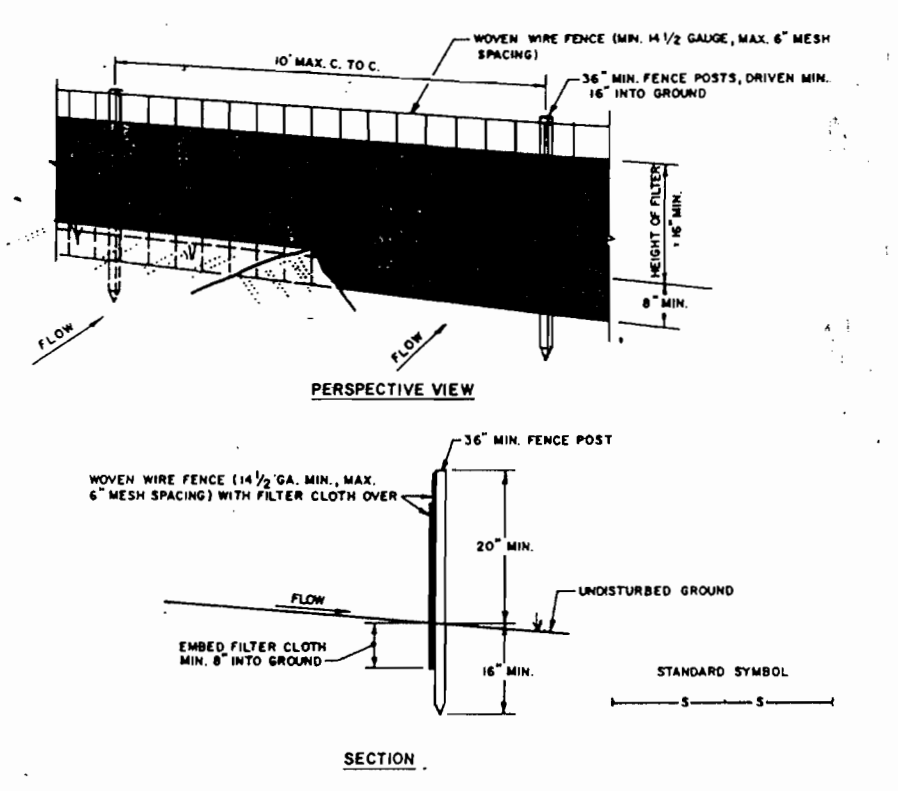


TEMPORARY STREAM CROSSING
NO SCALE

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

- All erosion and sediment control devices shall be installed as the first order of business.
- Pipes must be sized to accommodate normal stream flow.
- 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.
- All dewatering of the construction area shall be pumped to a dewatering basin (WPD1.1) prior to re-entering the stream.
- The temporary culvert crossing shall be constructed in accordance with Standard Detail (TAC-1), 1983 Maryland Standards and Specifications for Sediment and Erosion Control.
- 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.
- MAINTENANCE SHALL BE PERFORMED AS DESIRED AND MATERIAL REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE.



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 2' AT TOP AND MID SECTION.
- When two sections of filter cloth abut each other they shall be overlapped by six inches and folded.
- MAINTENANCE SHALL BE PERFORMED AS DESIRED AND MATERIAL REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE.

SILT FENCE
NO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

THE RIEMER GROUP, INC.
3105 NORTH RIDGE ROAD
ELLICOTT CITY, MARYLAND 21043
(301) 461-2690



DES: O.B.S.					
DRN: S.L.S.					
CHK:	C.B.	REVISION	DATE		
DATE:	D.O.S.	ADD SHC LOT 47; MH 13 TO MH 1G		3-3-89	
BY:	NO.	REVISION	DATE		

PLAN AND PROFILE
OF SEWER MAINS

600' SCALE MAP NO. 41 BLOCK NO.

RIVERSIDE ESTATES
WATER AND SEWER EXTENSION
CONTRACT NO. 34-1842-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

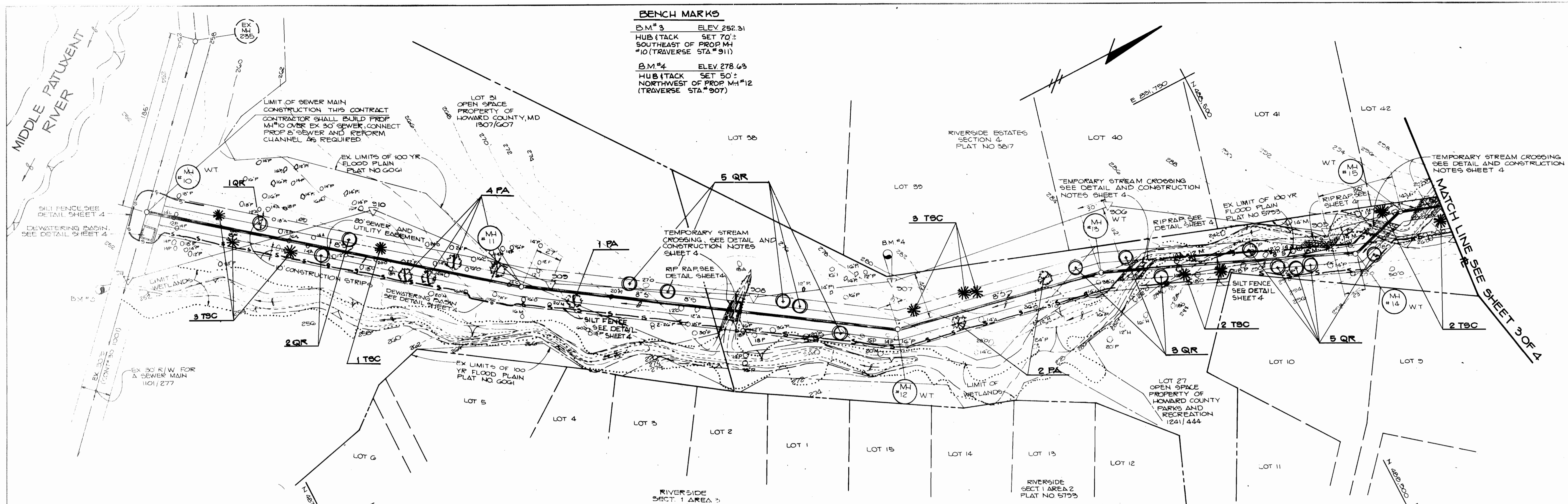
SCALE AS SHOWN
SHEET 4 OF 4

AS-BUILT OCT 2, 1989

BENCH MARKS

B.M.#3 ELEV 252.31
 HUB (TACK SET 70")
 SOUTHEAST OF PROP MH #10 (TRAVERSE STA #911)

B.M.#4 ELEV 278.63
 HUB (TACK SET 50")
 NORTHWEST OF PROP MH #12 (TRAVERSE STA #907)



TREE LEGEND

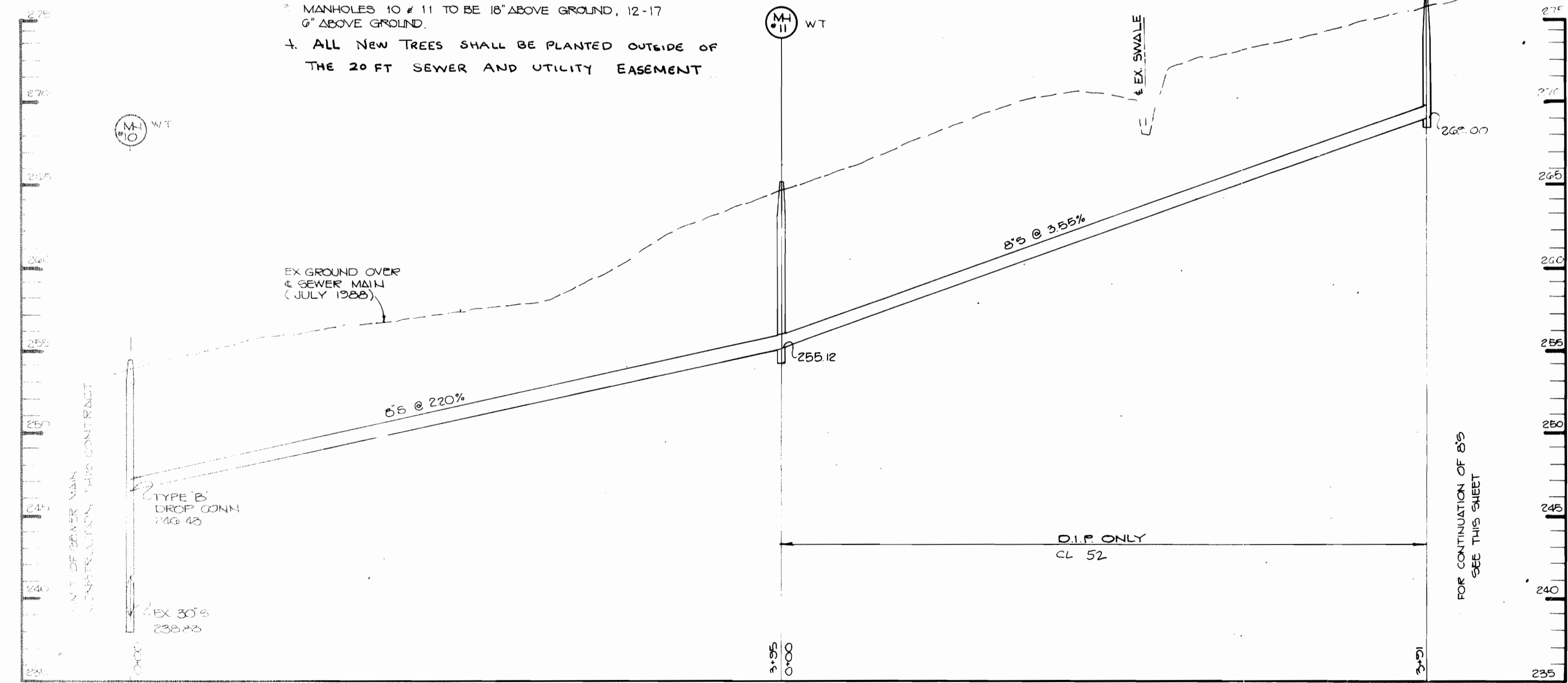
- P - POPULAR
- O - OAK
- M - MAPLE
- C - CHERRY
- H - HICKORY
- D - DOGWOOD
- R - PINE
- A - ASH

NOTES

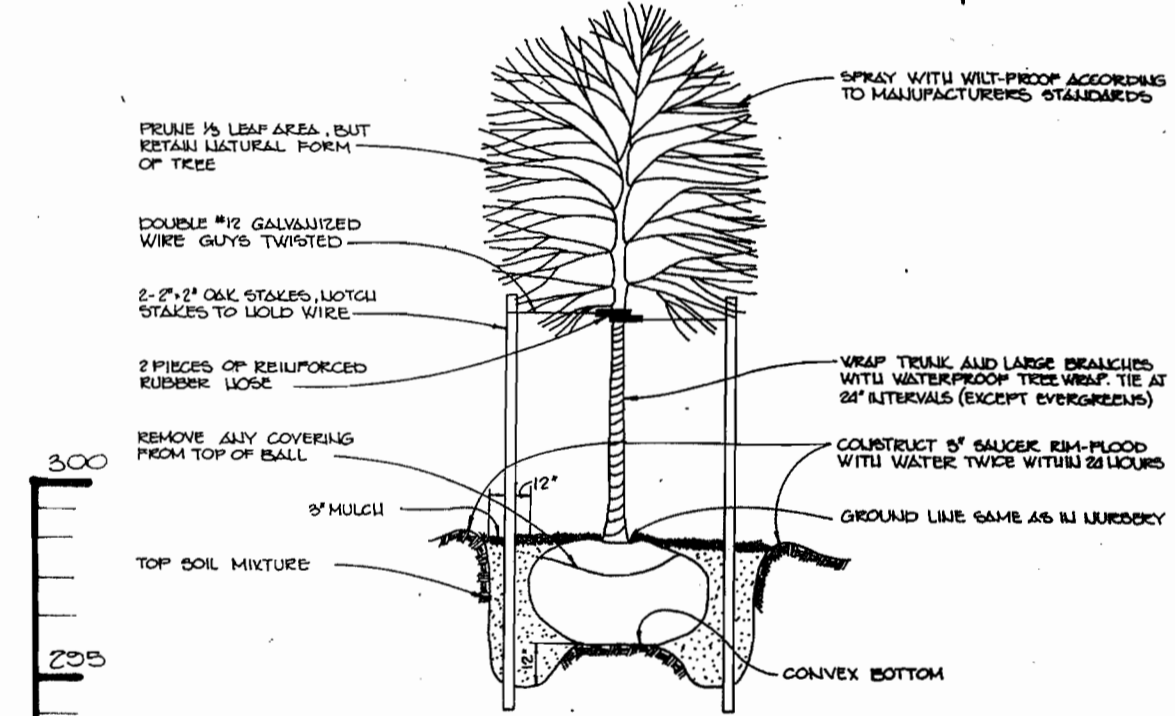
- PRIOR TO CLEARING OF THE 20' UTILITY EASEMENT THROUGH HOWARD COUNTY PROPERTY, THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING ALONG BOTH EDGES OF THE CONSTRUCTION STRIPS. CLEARING SHALL BE LIMITED TO THE 20' UTILITY EASEMENT AREA ONLY. ANY DAMAGE TO TREES OUTSIDE OF THIS AREA WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRS WILL BE AT HIS EXPENSE.
- DURING EXCAVATION OF 8" SEWER BETWEEN MH'S 10 & 11, ANY PUMPING DISCHARGE SHALL BE THROUGH A DEWATERING BASIN (SEE DETAIL SHEET 4 OF 4).
- MANHOLES 10 & 11 TO BE 15' ABOVE GROUND, 12'-17' ABOVE GROUND.
- ALL NEW TREES SHALL BE PLANTED OUTSIDE OF THE 20 FT SEWER AND UTILITY EASEMENT.

PLAN

1" = 50'



PROFILE
 SCALE: HOR 1" = 50'
 VERT 1" = 5'

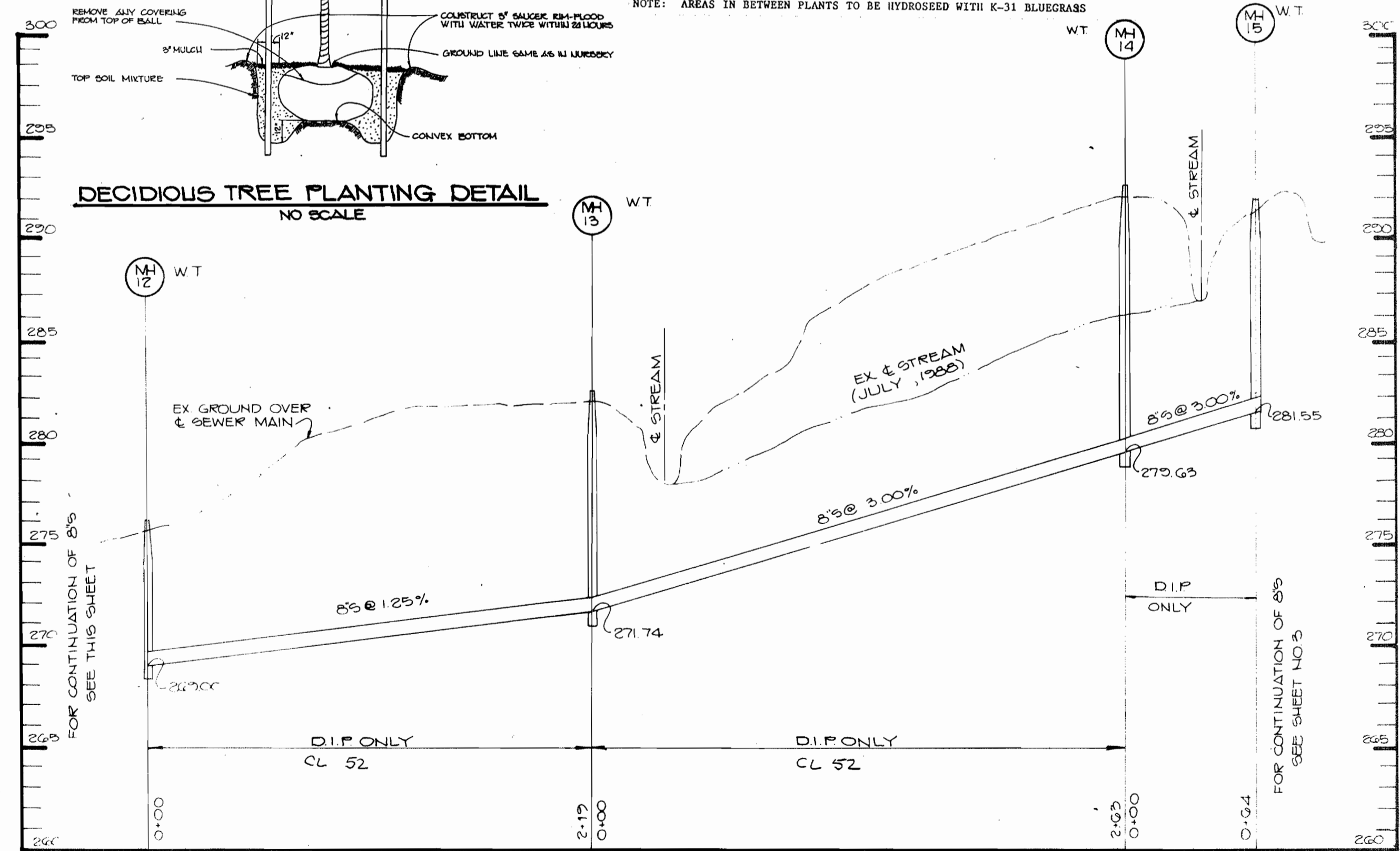


DECIDUOUS TREE PLANTING DETAIL
 NO SCALE

PLANT LIST

Qty	Symbol	Name	Size	Remarks
7	PA	PLATANUS ACERIFOLIA Sycamore	8"-10" Hc. 2" Cal.	B & B
10	QR	QUERCUS RUBRA Red Oak	8"-10" Hc. 2" Cal.	B & B
11	TSC	TSUGA CANADENSIS Canadian Hemlock	6"-8" Hc.	B & B

NOTE: AREAS IN BETWEEN PLANTS TO BE HYDROSEED WITH K-31 BLUEGRASS



PROFILE
 SCALE: HOR 1" = 50'
 VERT 1" = 5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

THE RIEMER GROUP INC.
 3105 NORTH RIDGE ROAD
 ELLICOTT CITY, MARYLAND 21043
 (301) 461-2690



DES: D.B.S.	
DRN: S.L.S.	
CHK:	
DATE:	
BY: NO.	REVISION

LANDSCAPE RESTORATION PLAN

RIVERSIDE ESTATES
 WATER AND SEWER EXTENSION
 CONTRACT NO. 34-1849-D
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 4A OF 4