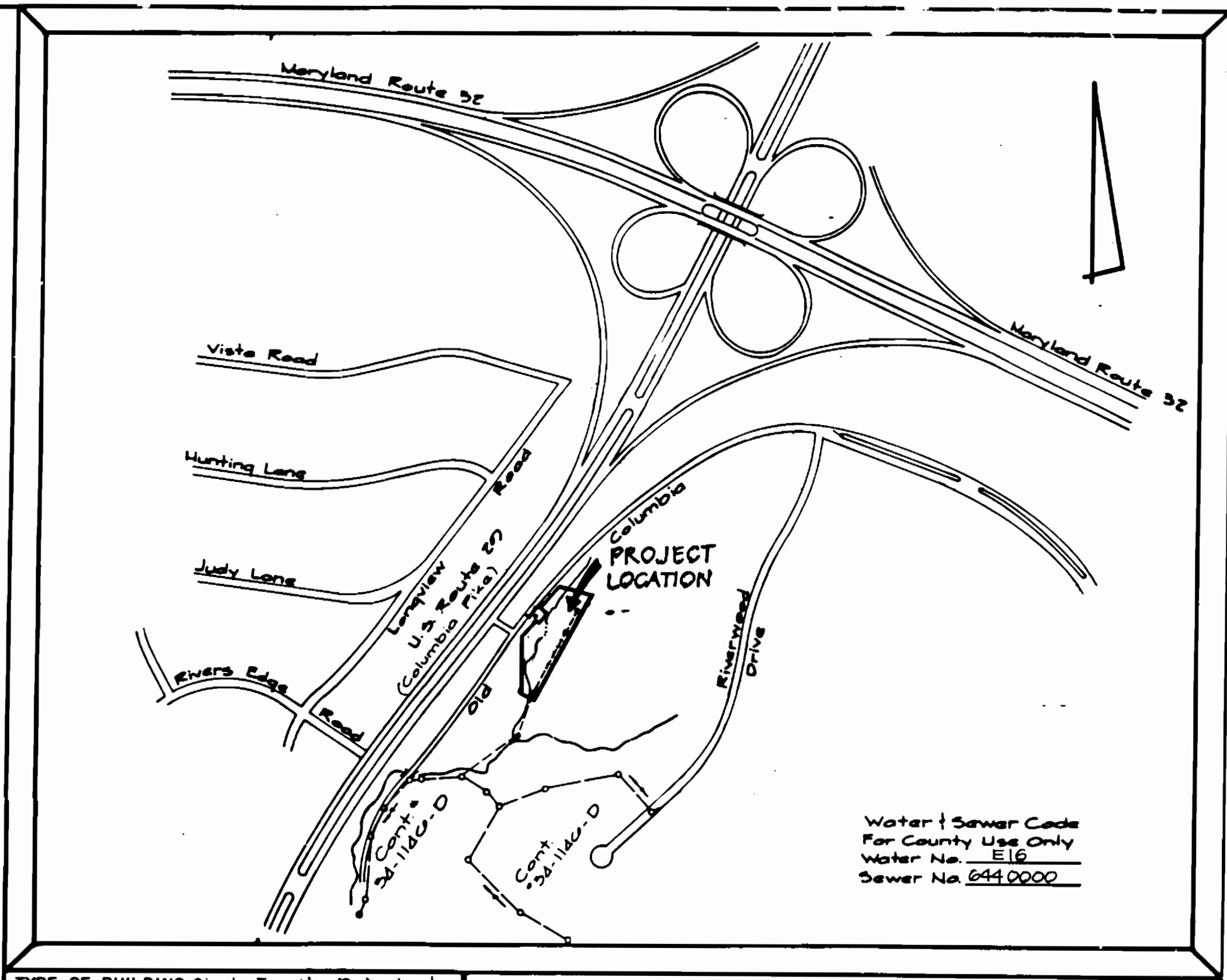


ITEM	QUANTITIES	ESTIMATED AS BUILT	MATERIAL SUPPLIER
8" SEWER (D.I.P.)	362 L.F.	362 L.F.	GRIFFIN
8" SEWER (P.V.C.)	138 L.F.	142 L.F.	GRIFFIN (D.I.P.)
6" S.H.C.	30 L.F.	30 L.F.	GRIFFIN
MANHOLES	2 EA.	2 EA.	ATLANTIC CONC. PRODUCT
FIRE HYDRANTS	1 EA.	1 EA.	M&H
6" F.H.V.	1 EA.	1 EA.	GRIFFIN
6" WATER	183 L.F.	183 L.F.	GRIFFIN
6" WATER	10 L.F.	15 L.F.	GRIFFIN
2" W.H.C.	-	-	-
3/4" W.H.C.	111 L.F.	34 L.F.	-
10" x 8" TO 4" V.	1 EA.	1 EA.	M&H VALVE CO.

CONNECT PROP. 8" W. TO EX. 10" W. W/ 10" x 8" TAPPING BLEEVE & 8" VALVE.

NOTE: CONTRACTOR TO LOCATE EX. 2" G. PRIOR TO STARTING WORK.

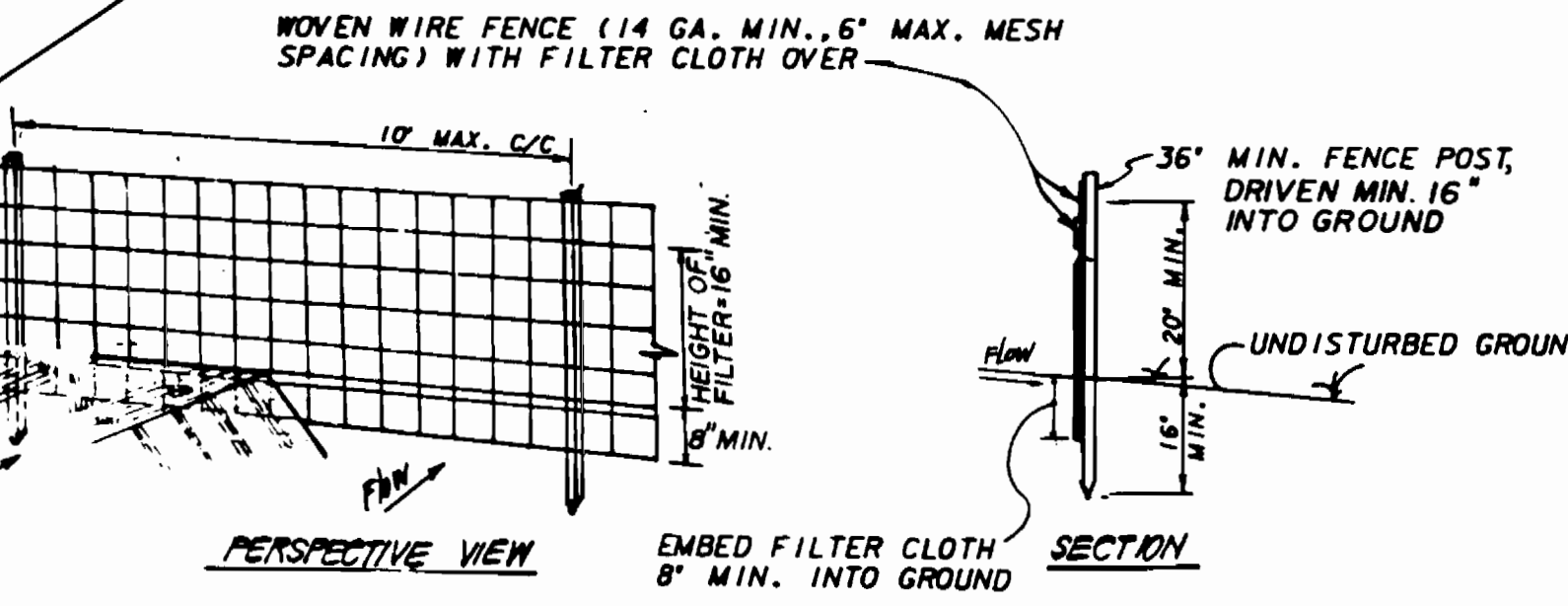


TYPE OF BUILDING	Single Family Detached
NUMBER OF LOTS	4
NO. OF WATER HOUSE CONNECTIONS	2
NO. OF SEWER HOUSE CONNECTIONS	2
DRAINAGE AREA	Middle Patuxent

Vicinity Map Scale: 1" = 600'

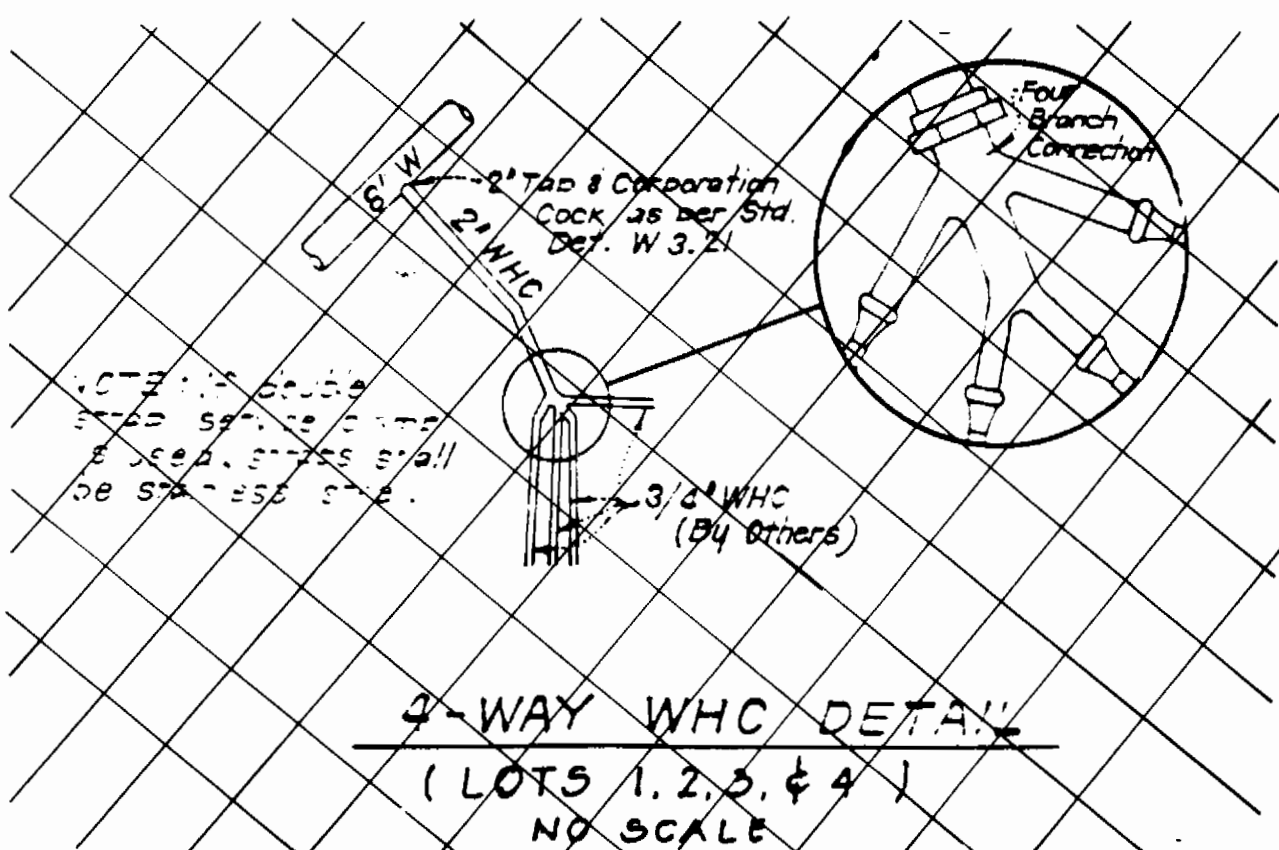
GENERAL NOTES

- 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 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 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 'C.N.S.' 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 SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S 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. UNDERGROUND 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. 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 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 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 FLOOR METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- 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.
- 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 GS-52, WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL 'C.N.S.' INDICATES THAT CELLAR CANNOT BE SERVED.



- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH: FILTER X, MIRAFLOOX, STABI-LINKA IAN OR APPROVED EQUAL
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN 'MUDGES' DEVELOP IN THE SILT FENCE. FABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE DETAIL (S) NO SCALE



BENCH MARKS:

W.P. & A. BM#MM24 EL. V. 350.96
R.R. SPIKE IN BASE OF POWER POLE C.B.P.#1, 9.6. B.E. #387093, APPROX. AT STA. 13+60, 20' RIGHT OF E. OF OLD COLUMBIARD.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT
James M. Helms 12/17/87
SIGNATURE DATE

U.S. SOIL CONSERVATION SERVICE

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

APPROVED: Stephen R. Helms 12/17/87
Howard S.C.D. DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

HUDKINS ASSOCIATES INC.
ENGINEERS • SURVEYORS
231 JOSEPH SQUARE
COLUMBIA, MD. 21044

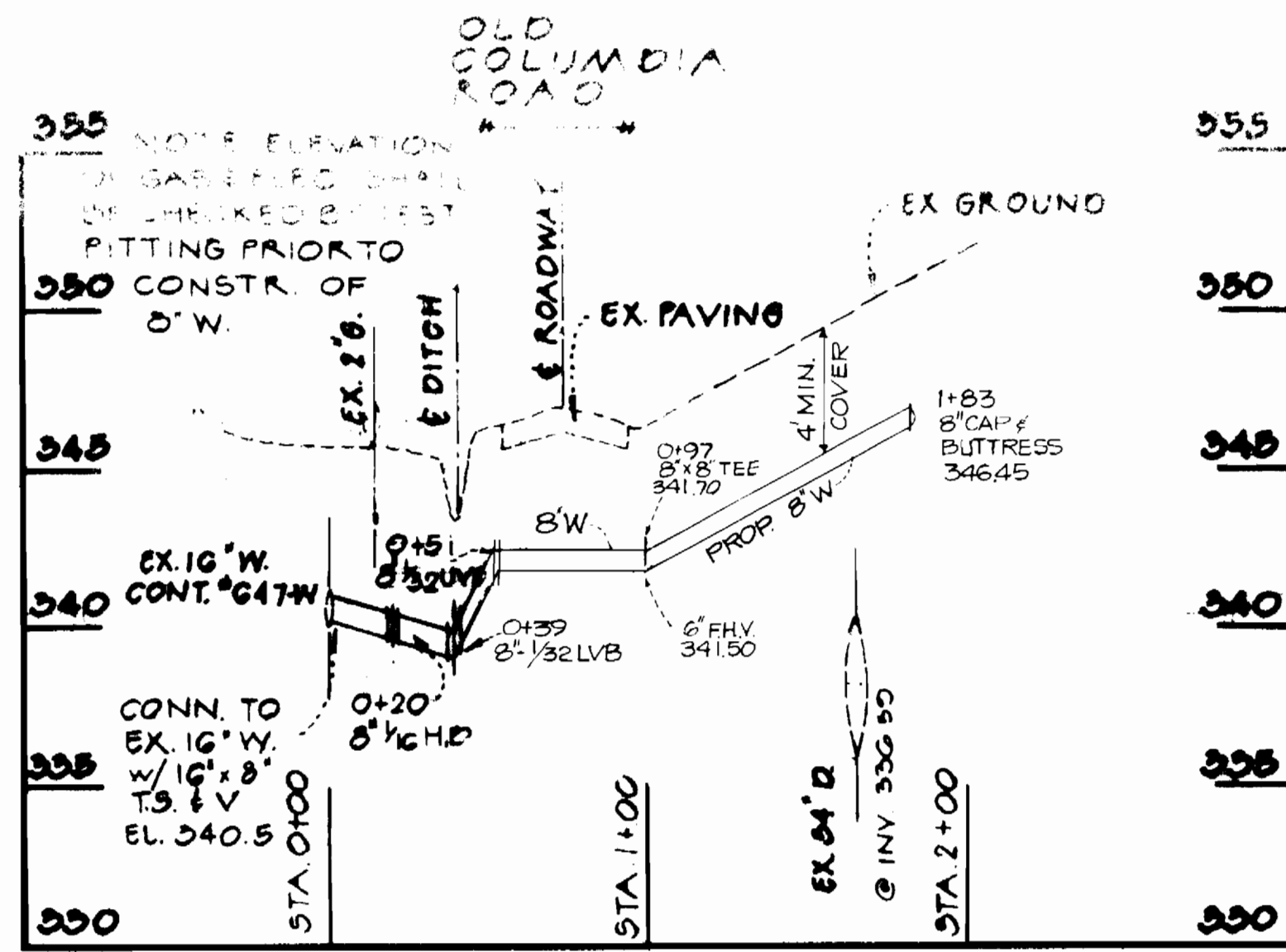


DES:	H&M	1.	S.H.C. AND STREAM CROSSING RELOCATED	5-9-86
DRN:				
CHK:				
DATE:	BY	NO.	REVISION	DATE

PLAN
WATER AND SEWER MAIN

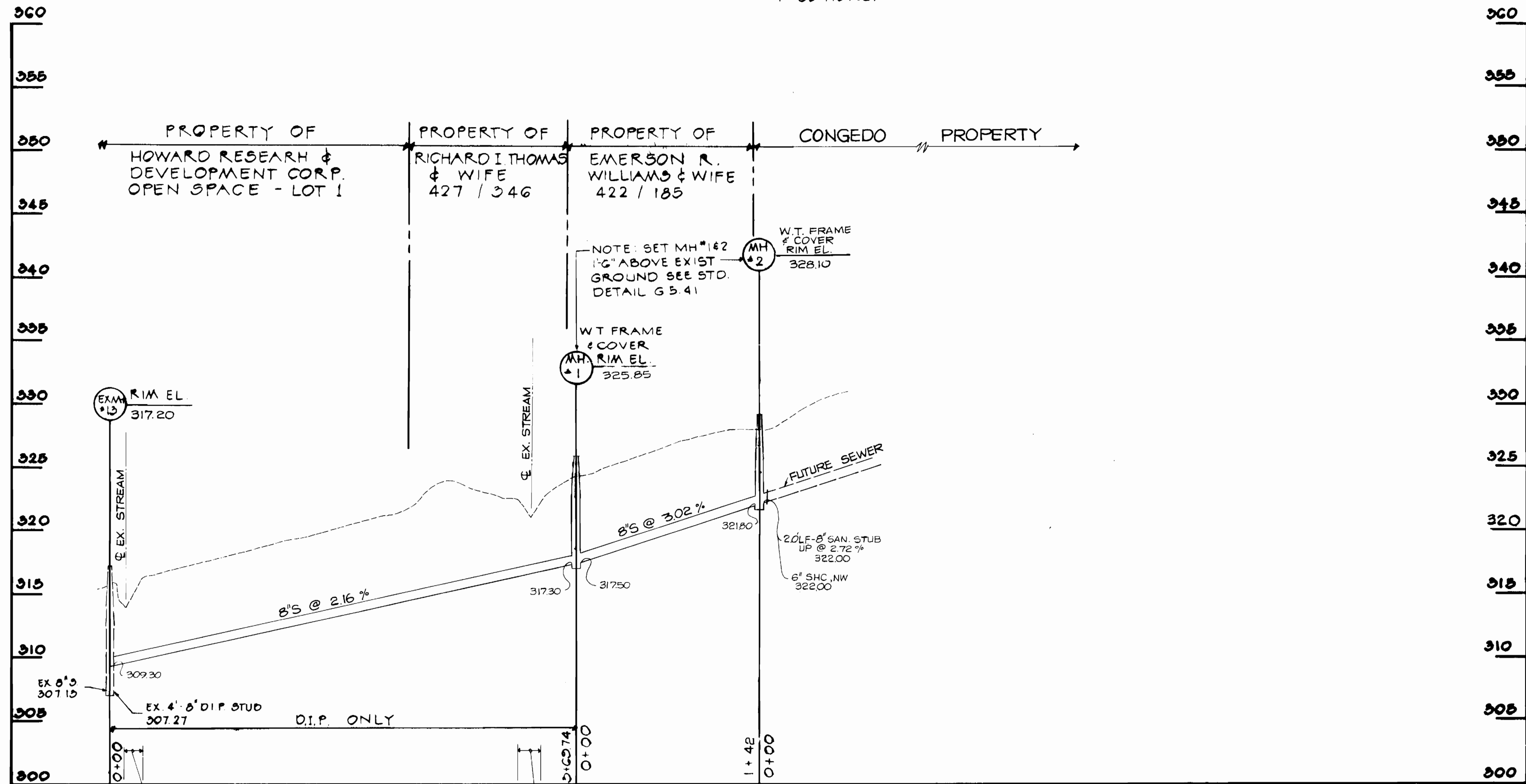
CONGEDO PROPERTY
WATER AND SEWER EXTENSION
OLD COLUMBIA ROAD
CONTRACT NO. 34-1729-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 3



WATER PROFILE

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



SEWER PROFILE

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

NOTE: INSTALLATION OF SEWER MAIN WITHIN THE LIMITS SHOWN SHALL CONSIST OF A SINGLE LENGTH OF PIPE. NO PIPE JOINTS SHALL BE ALLOWED WITHIN THE STREAM CROSSING

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. ...
DIRECTOR OF PUBLIC WORKS
Robert ...
CHIEF, BUREAU OF UTILITIES
DATE: 12-3-87

...
CHIEF, BUREAU OF ENGINEERING
...
CHIEF, LAND DEVELOPMENT DIVISION
DATE: 1-1-88

HUDKINS ASSOCIATES INC.
ENGINEERS - SURVEYORS
231 JOSEPH SQUARE
COLUMBIA, MD. 21044



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

PROFILES OF
WATER AND SEWER MAINS

600' SCALE MAP NO. _____ BLOCK NO. _____

CONGEDO PROPERTY
WATER AND SEWER EXTENSION
OLD COLUMBIA ROAD
CONTRACT NO. 34-1729-D
SIXTH ELECTION DIST.
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
2 OF 3

AS-BUILT JULY 25, 1988

STABILIZATION NOTES

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

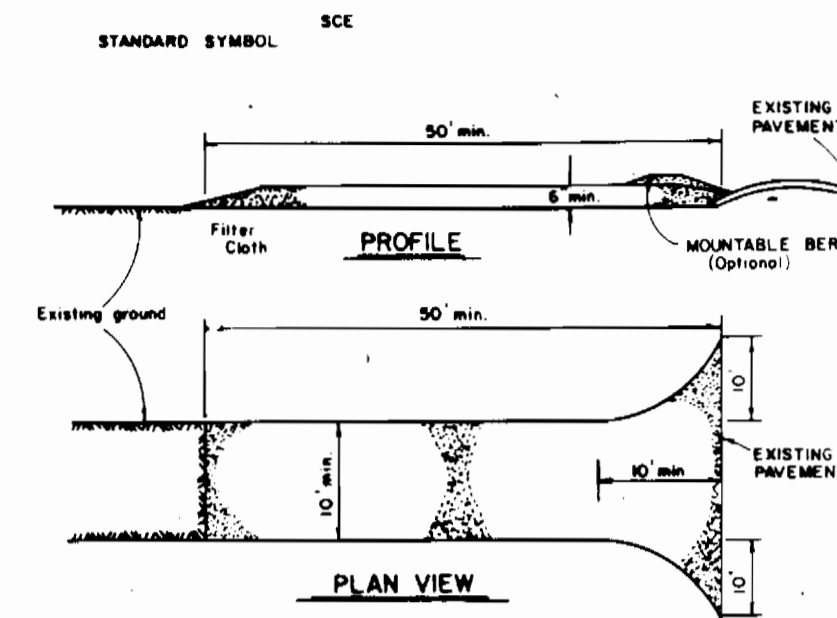
- 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
- 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

PERMANENT STABILIZATION AND SEEDING NOTES

- REFERENCE SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS FOR COMPLETE REQUIREMENTS REGARDING PERMANENT STABILIZATION AND SEEDING OF ALL DISTURBED AREAS.
- REFERENCE PARAGRAPH 219.11 FOR EXECUTION REQUIREMENTS REGARDING PERMANENT SEEDING.
- LIMESTONE: APPLY LIMESTONE AT THE RATE OF 1 1/2 TONS PER ACRE ON SANDY AND SILTY SOILS AND 2.3 TONS PER ACRE ON CLAY OR CLAY LOAM SOILS.
- FERTILIZER: APPLY FERTILIZER AT THE RATE OF 600 POUNDS OF 0-20-20 PER ACRE WITH LIMESTONE APPLICATION (SEE ABOVE). IMMEDIATELY PRIOR TO SEEDING, APPLY 400 POUNDS OF 38-0-0 UREAFORM AND 500 POUNDS OF 10-20-20 PER ACRE.
- PERMANENT SEED SHALL CONFORM TO THE REQUIREMENTS, MIXTURES AND APPLICATION RATES AS SPECIFIED IN SUBPARAGRAPH 219.10-2.
- MULCH SHALL BE CLEAN, WEED-FREE, UNROTTED STRAW APPLIED AT THE RATE OF NOT LESS THAN 1 1/2 TONS PER ACRE OR WOOD CHIPS WITH A COVERAGE OF 1 1/2 INCHES IN DEPTH.
- MULCH SHALL BE ANCHORED WITH CUT-BACK AND EMULSIFIED ASPHALT APPLIED AT A RATE OF 5 GALLONS PER 1000 SQUARE FEET. REFERENCE SUBPARAGRAPH 219.10-6 FOR MULCH ANCHORING ALTERNATIVES.

EROSION AND SEDIMENT CONTROL NOTES

- ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
- ALL EXCAVATED MATERIAL SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE WATER MAIN TRENCH.
- IMMEDIATELY FOLLOWING BACKFILL OF THE WATER MAIN TRENCH, ALL DISTURBER AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
- THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
- ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
- SEE SEWER MAIN CONSTRUCTION SEQUENCE THIS SHEET.
- SEE STREAM CROSSING DETAIL THIS SHEET FOR SEWER MAIN INSTALLATION AND ACCESS ACROSS THE STREAM.
- SEE PLAN SHEET FOR SEDIMENT CONTROL DEVICES ALONG THE SEWER MAIN INSTALLATION.



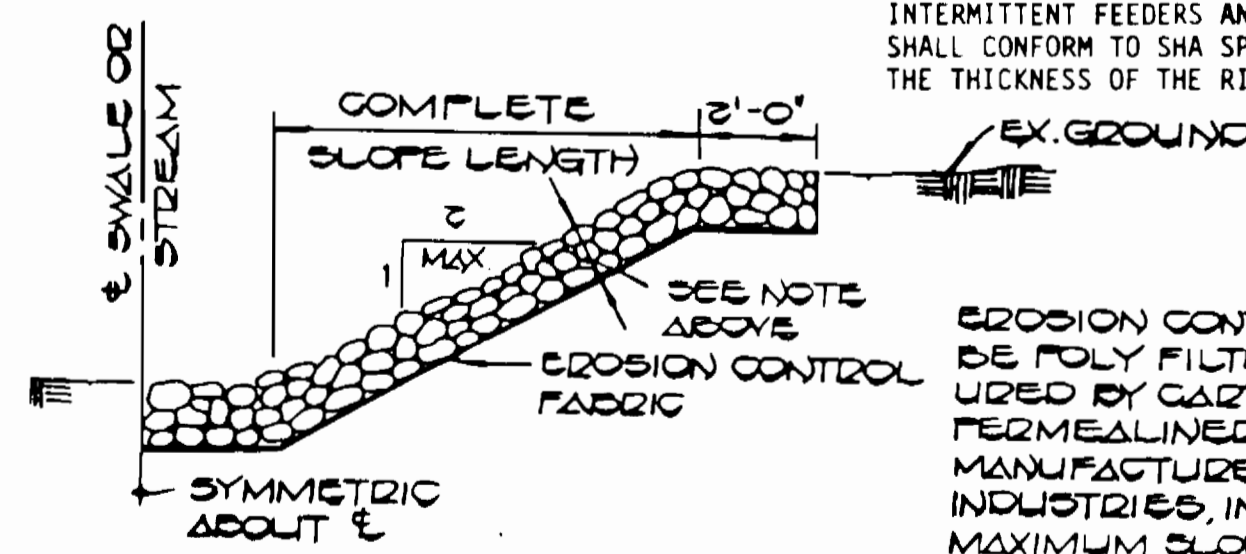
- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
 - Length - As required, but not less than 50 feet (except on a single residence lot where a 30-foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 - 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.
 - 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 3:1 slopes will be permitted.
 - 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 applied, dropped, washed, or tracked onto public rights-of-way must be removed immediately.
 - 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.
 - Periodic inspections and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE

NO SCALE

RIP-RAP NOTES:

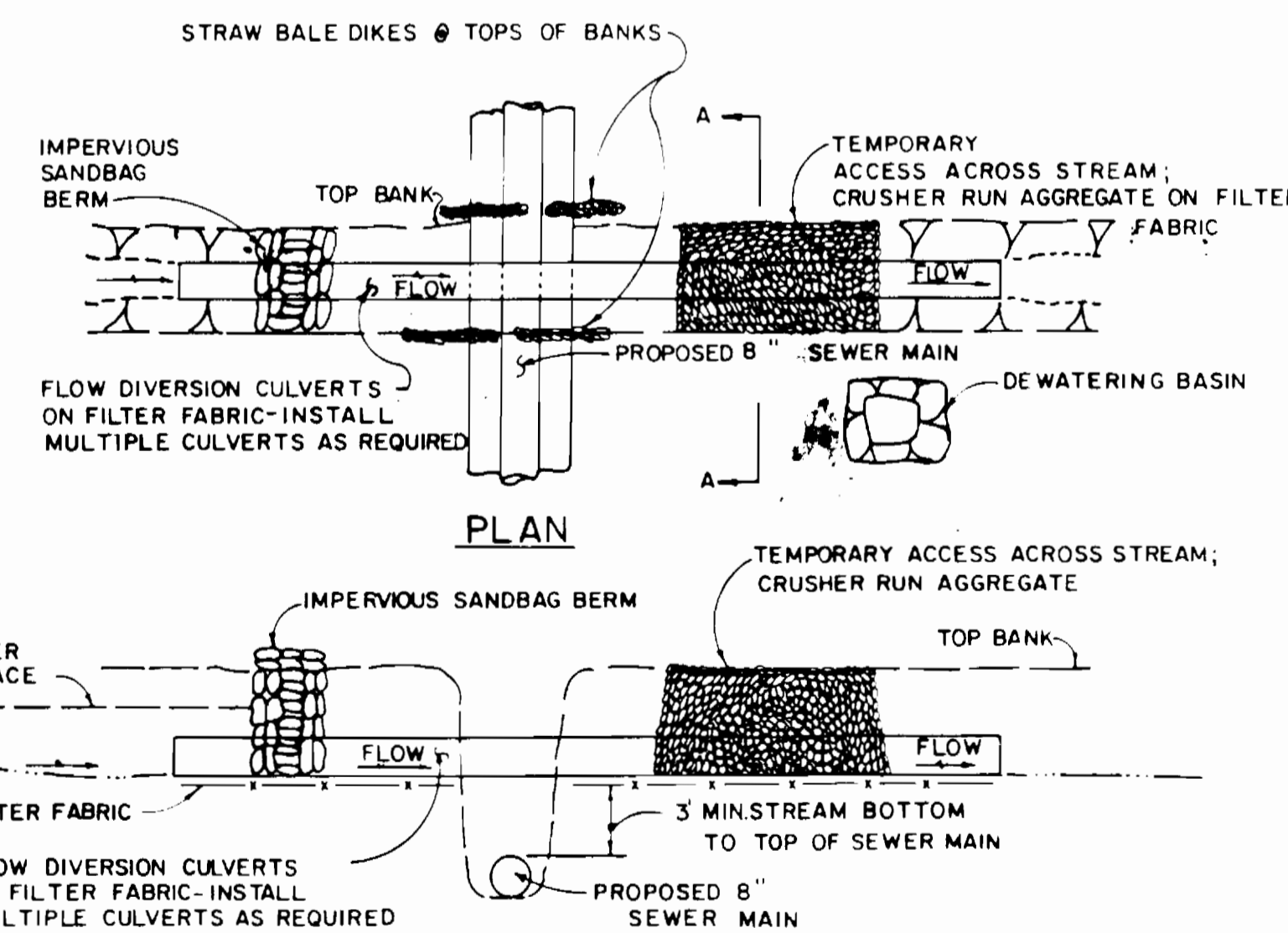
- RIP-RAP SHALL BE PLACED OVER ALL DISTURBED AREAS WITHIN THE FULL WIDTH OF THE RIGHT-OF-WAY AT THOSE LOCATIONS INDICATED ON THE DRAWINGS.
- RIP-RAP FOR PLACEMENT ALONG THE STREAM BANK BETWEEN MH 13 - MH 2 AND AT THE SEWER MAIN CROSSINGS OF EXIST. SWALE SHALL CONFORM TO SHA SPECIFICATIONS FOR CLASS II STONE AND THE THICKNESS OF THE RIP-RAP LAYER SHALL BE 2'-0".
- RIP-RAP FOR PLACEMENT AT THE SEWER MAIN CROSSINGS OF THE INTERMITTENT FEEDERS AND DITCHES TRIBUTARY SHALL CONFORM TO SHA SPECIFICATIONS FOR CLASS II STONE AND THE THICKNESS OF THE RIP-RAP LAYER SHALL BE 1'-6".



LOOSE LAID RIP RAP DETAIL

NO SCALE

EROSION CONTROL FABRIC SHALL BE POLY FILTER-X AS MANUFACTURED BY CARTHAGE MILLS, INC. OR FERMALINER M-1105 AS MANUFACTURED BY STAFF INDUSTRIES, INC. OR EQUAL. MAXIMUM SLOPE SHALL BE 3:1.



STREAM CROSSING DETAIL

NO SCALE

SEWER MAIN CONSTRUCTION SEQUENCE

- Implement conditions & requirements of the temporary waterway construction permit - see contract specifications.
- Install required sediment & erosion control devices - see plan this sheet.
- Clear and grub as necessary - within the limits of the sewer main right of way only.
- Excavate trench; place excavated material on the upgrade side of the sewer main trench.
- Install sewer main, backfill & compact trench in accordance with the contract specifications.
- For installation of the sewer main at the existing swale see the stream crossing detail this sheet.
- Stabilize, seed and mulch all disturbed areas in accordance with the permanent stabilization and seeding notes shown on this sheet.
- Place rip rap at the stream crossings as shown in plan & in accordance with the detail this sheet.
- Following successful stabilization of all disturbed areas and upon approval of the Soil Conservation District inspector, remove the erosion & sediment control devices.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

HUDKINS ASSOCIATES
ENGINEERS SURVEYORS
231 JOSEPH SQUARE
COLUMBIA, MD. 21044



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

**SEDIMENT CONTROL
DETAILS**

CONGEDO PROPERTY
WATER AND SEWER EXTENSION
OLD COLUMBIA ROAD
CONTRACT NO. 34-1729-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
3 OF 3

12-21-87
DIRECTOR OF PUBLIC WORKS
12-18-87
CHIEF, BUREAU OF UTILITIES

12-21-87
CHIEF, BUREAU OF ENGINEERING
DATE