QUANTITIES				
ITEM	BID	AS-BUILT	MATERIAL/SUPPLIER	
12" WATER	1,141 L.F.	1150 L.F.	12" SUPER BELL TITE	D.I.P. CLASS 52, DOUBLE THICKNESS CEMENT LINED/GRIFFIN PIPE PRODUCTS
12" X 8" R	1 EA.	1 EA.	12"x8" REDUCER /	GRIFFIN PIPE PRODUCTS
12" 1/16 H.D.	6 EA.	6 EA.	12" 1/16 H.D./GRIFFIN	PIPE PRODUCTS
12" X 6" F.H.T.	1 EA.	1 EA.	12"x6" F.H.T. / GR	IFFIN PIPE PRODUCTS
6" F.H.	1 EA.	1 EA.	6"x6" METROPOLITAN	F.H./U.S. PIPE & FOUNDRY.
12" 1/16 U.V.O.	2 EA.	2 EA.	12"x6" U.V.O. / GRIFFIN	PIPE PRODUCTS
12" 1/16 L.V.O.	1 EA.	1 EA.	12"x6" U.V.O./GRIFFIN	PIPE PRODUCTS
6" WATER	17 L.F.	17 L.F.	6" SUPER BELL TITE	D.I.P., CLASS 52, DOUBLE THICKNESS CEMENT LINED/GRIFFIN PIPE PRODUCTS
6" V	1 EA.	1 EA.	6" METRO-SEAL	GATE VALVE / U.S. PIPE AND FOUNDRY
12" V	1 EA.	1 EA.	12" METRO-SEAL	GATE VALVE / U.S. PIPE AND FOUNDRY.
8"x6" TAPPING SLEEVE & VALVE	1 EA.	1 EA.	8" x 6" TAPPING SLEEVE	
			8" METROPOLITAN	TAPPING VALVE / U.S. PIPE AND FOUNDRY.

TEMPORARY ACCESS CULVERT

CONSTRUCTION REQUIREMENTS;

1. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
2. PIPES MUST BE SIZED TO ACCOMODATE THE NORMAL STREAM FLOW AND SHALL HAVE A MINIMUM DIAMETER OF AT LEAST 24 INCHES.
3. ALL DEWATERING OF THE CONSTRUCTION AREA SHALL BE PUMPED TO A DEWATERING BASIN (PLAT NO.P-6) OR OTHERWISE FILTERED PRIOR TO RE-ENTERING THE STREAM.
4. THE FLOW BARRIER SHALL BE A MINIMUM OF 3 FEET IN DEPTH AND BE CONSTRUCTED OF MATERIALS WHICH SHALL BE SIZED TO WITHSTAND NORMAL STREAM FLOW VELOCITIES.
5. THE TEMPORARY CULVERT CROSSING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL (TAC-2), 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL.
6. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.
7. 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.
8. CULVERT STRENGTH - ALL CULVERTS SHALL BE STRONG ENOUGH TO SUPPORT THEIR CROSS SECTIONAL AREA UNDER MAXIMUM EXPECTED LOADS.
9. 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.
10. CULVERT PLACEMENT - THE INVERT ELEVATION OF THE CULVERT SHALL BE INSTALLED ON THE NATURAL STREAMBED GRADE
11. 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 MATERIAL USED IN THE CONSTRUCTION OF THE TEMPORARY ACCESS CULVERT CROSSING SHALL CONFORM WITH THE AGGREGATE REQUIREMENTS CITED IN SECTION I.H.1.

CULVERT MAINTENANCE REQUIREMENTS

1. 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.
2. MAINTENANCE - MAINTENANCE SHALL BE PERFORMED AS NEED 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

1. REMOVAL - WHEN THE CROSSING HAS SERVED IT 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 DURING THE SPAWNING SEASON (MARCH 15 THROUGH JUNE 15).
2. FINAL CLEAN-UP - FINAL CLEAN-UP SHALL CONSIST OF REMOVAL OF THE TEMPORARY STRUCTURE FROM THE WATERWAY, REMOVAL OF ALL CONSTRUCTION AND PROTECTION OF THE STREAM BANKS FROM EROSION. REMOVED MATERIAL SHALL BE STORED OUTSIDE OF THE WATERWAY FLOOD PLAIN.
3. METHOD OF - REMOVAL OF THE STRUCTURE AND CLEAN UP OF THE AREA SHALL BE ACCOMPLISHED WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL.

CONSTRUCTION SPECIFICATION, EARTH DIKE

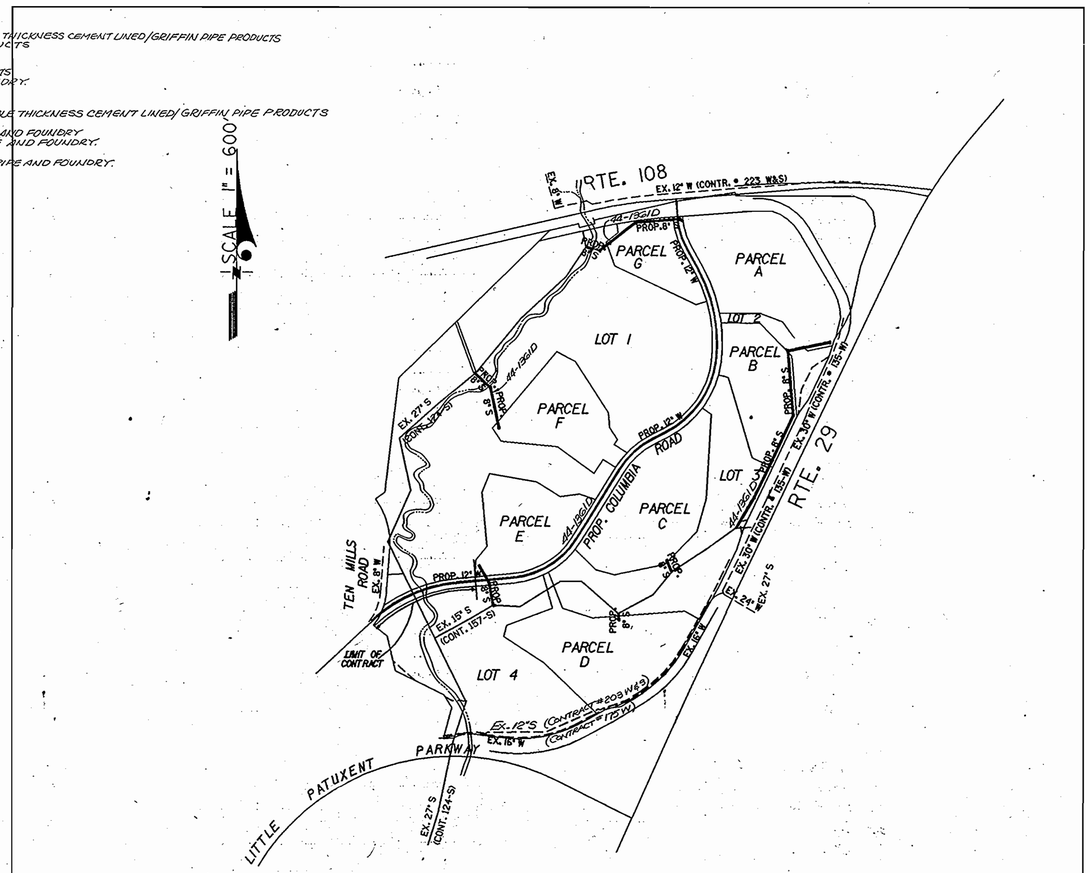
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEED TO UTILIZE A STABILIZED SAFE 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 AN STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) SLOW 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 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 RECYLED 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 EVENT.



DRAINAGE AREA: LITTLE PATUXENT	
TYPES OF BUILDINGS	
NO. OF SHC	0
NO. OF WHC	0
NO. OF LOTS/PARCELS	1

WATER & SEWER CODE FOR COUNTY USE
WATER: E01
SEWER: N.A.

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 NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
8. 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 290-9013
MISS UTILITY	-	1 - 559-0100
COLONIAL PIPELINE CO.	-	795-1390
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 WATER MAINS TO BE D.I.P UNLESS OTHERWISE NOTED.
12. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
13. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. 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. COIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 THE STANDARD SPECIFICATIONS.
16. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
17. ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN INSIDE METER SETTING, UNLESS OTHERWISE NOTED.
18. SEDIMENT CONTROLS TO BE BUILT IN ACCORDANCE WITH F-80-2G, ARTICLE 15 & AS SHOWN ON PLAN.

TEMP. DEWATERING BASIN

CONSTRUCTION SPECIFICATIONS:

1. PIT DIMENSIONS ARE OPTIONAL.
2. THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 24" CORRUGATED OR PVC PIPE.
3. A BASE OF 2" AGGREGATE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING IT SHOULD THEN BE BACKFILLED WITH 2" AGGREGATE
4. THE STANDPIPE SHOULD EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT.
5. THE STANDPIPE SHOULD BE WRAPPED WITH FILTER CLOTH BEFORE INSTALLATION, IF DESIRED. 1/4 TO 1/2" HARDWARE CLOTH MAY BE PLACED AROUND THE STANDPIPE, PRIOR TO ATTACHING THE FILTER CLOTH. THIS WILL INCREASE THE RATE OF WATER SEEPAGE INTO THE PIPE.
6. IF STANDARD PUMPING PROCEDURES CAN HANDLE EXCESS WATER BACKUP, DEWATERING BASIN IS NOT NEEDED.

VILLAGE OF DORSEY'S SEARCH

SECTION 3 AREA I PHASE II

COLUMBIA, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CONTRACT NO. 44-1360D

REVIEWED FOR HOWARD S.C.D.
AND MEETS TECHNICAL REQUIREMENTS.
U.S. SOIL CONSERVATION SERVICE — 2/4/86 DATE

THIS DEVELOPEMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — 2/4/86 DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH ARTICLE 15 OF THE STANDARD SPECIFICATION, AND AND ROAD CONSTRUCTION PLANS.

SEQUENCE OF CONSTRUCTION

1. OBTAIN NECESSARY PERMIT TO START GRADING.
2. CLEAR AND GRUB AREAS NECESSARY TO CONSTRUCT SEDIMENT CONTROL MEASURES (1WEEK).
3. UPON COMPLETION OF PLACEMENT OF COLUMBIA ROAD FILL (F-86-56), COMMENCE WATER LINE CONSTRUCTION.
4. CONSTRUCT TEMPORARY STREAM CROSSING AT LITTLE PATUXENT RIVER AS SHOWN ON SHEET 2 of 3. SEE SHEET 3 of 3 for DETAILS.
5. STABILIZE ANY DISTURBED AREAS PER H.S.C.D. STANDARDS (1WEEK)
6. UPON COMPLETION OF WATERLINE STABILIZE ANY REMAINING DISTURBED AREAS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF UTILITIES — 2-6-86 DATE
CHIEF, BUREAU OF ENGINEERING — 2-19-86 DATE
CHIEF, LAND DEVELOPEMENT DIVISION — 2-19-86 DATE

ENGINEERS ARCHITECTS PLANNERS SURVEYORS
GREENHORNE AND O'MARA, INC.
2 RESEARCH PLACE
ROCKVILLE, MARYLAND 20850
(301) 948 - 0900

STATE OF MARYLAND — Bruce D. Bolte, Jr. No. 12232 — REGISTERED PROFESSIONAL ENGINEER

DES: TAD					
DRN: TAD					
CHK: RHM					
DATE: 8-85	BY	NO.	REVISIONS	DATE	

VICINITY MAP AND GENERAL NOTES
600' SCALE MAP NO. 30 — BLOCK NO. 15

VILLAGE OF DORSEY'S SEARCH
SECTION 3 AREA I PHASE II
5th ELECTION DISTRICT
PARCELS D & E, LOTS 1, 2 & 4
CONTRACT NO. 44-1360D

SCALE AS SHOWN

SHEET 1 OF 3

AS-BUILT JOHN E. HARMS JR & ASSOC. DEC. 1986

R AS-BUILT

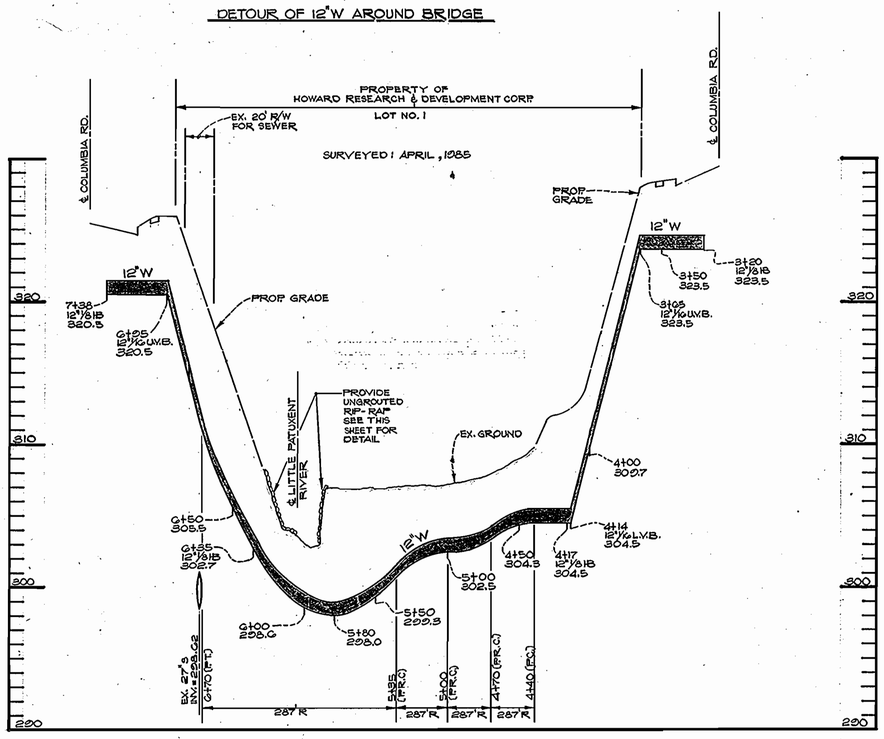
DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MARYLAND	ENGINEERS ARCHITECTS PLANNERS SURVEYORS GREENHORNE AND O'MARA, INC. 2 RESEARCH PLACE ROCKVILLE, MARYLAND 20850 (301) 948-0900	STATE OF MARYLAND seal: Bruce D. Boltz, Jr. No. 12232	DES: TAD	PLAN FOR WATER MAIN	COLUMBIA VILLAGE OF DORSEY'S SEARCH SECTION 3 AREA I PHASE II 5th ELECTION DISTRICT PARCELS D&E, LOTS 1,2&4 CONTRACT NO. 44-1360D	SCALE AS SHOWN
George F. Nemmey 2-20-86 — DIRECTOR OF PUBLIC WORKS, DATE			DRN: TAD			SHEET 2 OF 3
Robert M Beninger 2-6-86 — CHIEF, BUREAU OF UTILITIES, DATE			CHK: RHM			
[signature] 2-19-86 — CHIEF, BUREAU OF ENGINEERING, DATE			DATE: 8-85			
[signature] 2-19-86 — CHIEF, LAND DEVELOPEMENT DIVISION, DATE						

BY	NO.	REVISION	DATE
HRM	3	DELETED EROSION CHECK NOTE AT RIVER CROSSING	8-6-87
GK	2	Add add'l. temp. stream crossing	9/29/86
JWC	1	ADDED CONC. ANCHORS @ W STA. 3+85, 4+00, 6+80	5-86

600' SCALE MAP NO. 30 BLOCK NO. 15

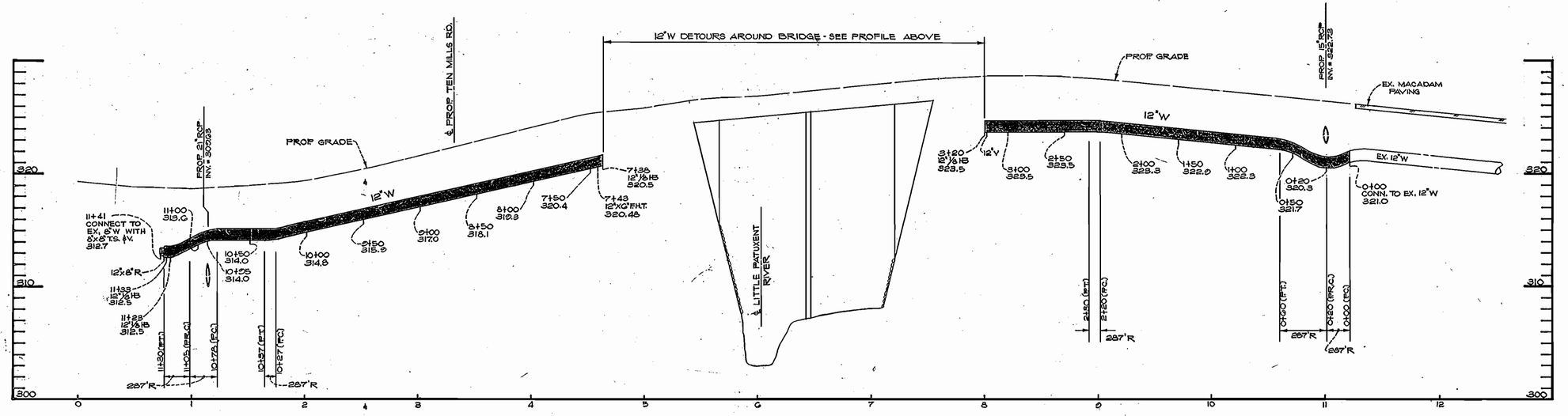
AS-BUILT JOHN E. HARMS JR & ASSOC. INC. DEC. 1986 1217-X

DETOUR OF 12"W AROUND BRIDGE

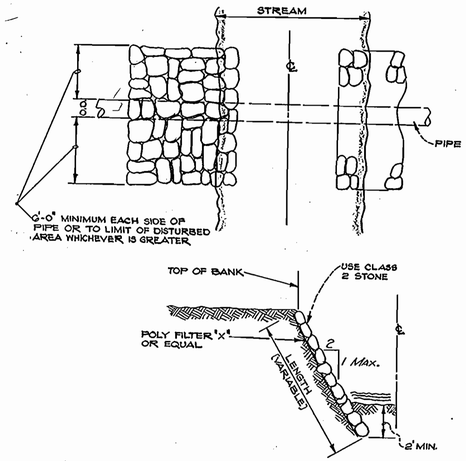


COLUMBIA ROAD

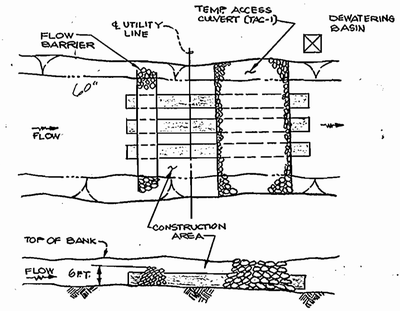
STREET GRADE APPROVED BY D.P.W.
DATE:



PROFILE SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



TYPICAL UNGROUTED RIP-RAP AT STREAM CROSSING
(NO SCALE)



TEMP ACCESS CULVERT
(NO SCALE)
(FOR DETAILS NOT SHOWN, SEE WRA STD. DETAIL TAC-1)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 2-10-86
CHIEF, BUREAU OF ENGINEERING — DATE 2-19-86
CHIEF, BUREAU OF UTILITIES — DATE 2-6-86
CHIEF, LAND DEVELOPEMENT DIVISION — DATE 2-14-86

ENGINEERS ARCHITECTS PLANNERS SURVEYORS
GREENHORNE AND O'MARA, INC.
2 RESEARCH PLACE
ROCKVILLE, MARYLAND 20850
(301) 948-0900

STATE OF MARYLAND — Bruce D. Bolte, Jr. — No. 12232 — REGISTERED PROFESSIONAL ENGINEER

DES: TJD
DRN: TJD
CHK: RHM
DATE: 2-85

BY	NO.	REVISION	DATE
RCH.	2	DELETED EROSION CHECK AT RIVER CROSSING PER PRW 84	8-6-87
WC	1	ADDED CONC. ANCHORS @ STA. 2+85, 4+00, 6+80	5-86

PLAN AND PROFILE FOR WATER MAIN

600' SCALE MAP NO. 30 BLOCK NO. 15

COLUMBIA
VILLAGE OF DORSEY'S SEARCH
SECTION 3 AREA 1 PHASE II
5th ELECTION DISTRICT
PARCELS D & E, LOTS 1, 2 & 4
CONTRACT NO. 44-1360D

SCALE AS SHOWN

SHEET 3 OF 3

AS-BUILT 12.17-X

OZALID