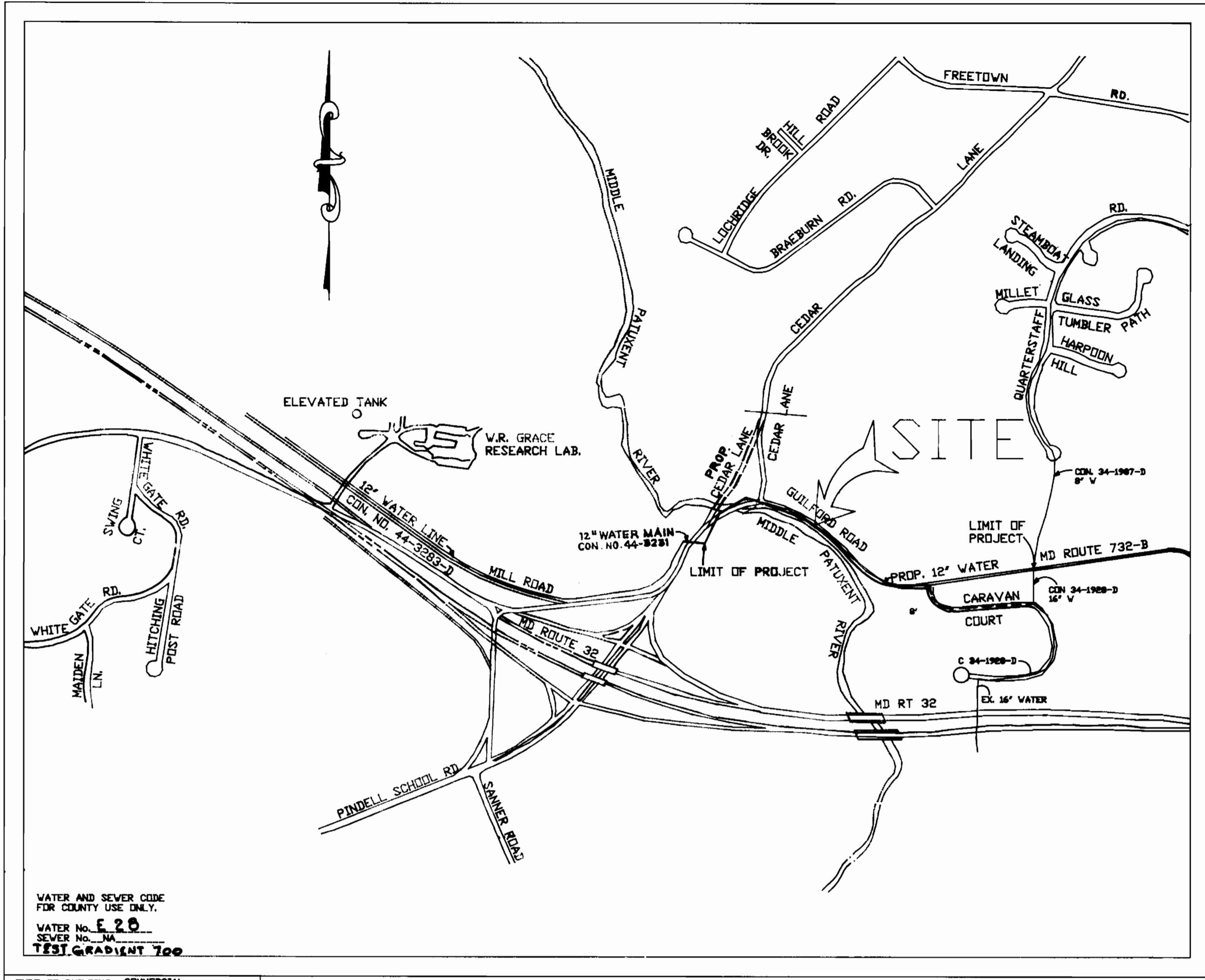


QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS BUILT		MANUFACTURER/SUPPLIER
		QUANTITIES	TYPE	
12" WATERLINE	2,811.00 L.F.		12" D.I.P.	U.S. Pipe
12" X 8" V.P.	4.00	4		U.S. Pipe
12" V.P.	3.00	3	Meteco	U.S. Pipe Dist.
8" V.P.	4.00	4	Meteco	U.S. Pipe Dist.
PIPE FITTING	3.00	3	#1.00 (2) #1.00 (1)	U.S. Pipe
12" X 8" V.P.	1.00	1	D.I.P.	U.S. Pipe
12" V.P.	1.00	1	Meteco	U.S. Pipe Dist.
8" V.P.	1.00	1	Meteco	U.S. Pipe Dist.
12" WATER HOUSE	1.00	1	Meteco	U.S. Pipe
12" WATER HOUSE	1.00	1	Copper	U.S. Pipe
TOTAL QUANTITIES 130 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 expenses.
 - All horizontal controls are based on Maryland State Coordinates, NAD 83.
 - 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'. Clear all poles by 2'-0" minimum or tunnel as required. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the contractor's work requires the bracing of additional poles or damages shall be deducted from money owed the contractor. The contractor shall coordinate with the utility companies to schedule the bracing of the poles.
 - For details not shown on the drawings, and for materials and construction methods use Howard County Design Manuals, Vol. IV, Standard Specifications and Detail for Construction (Latest Edition). 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 the construction operations at his own expense.
 - Contractors shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:
 - State Highway Administration 531-5533
 - B&E Co. Contractor Services 850-4620
 - B&E Co. Under Ground Damage Control 787-9668
 - Miss Utility 1 800 257-7777
 - Colonial Pipeline Co. 795-1390
 - Howard County Department of Public Works 313-4900
 - Bureau of Utilities
 - 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.
 - Contractors 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 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 restrained in accordance with detail W-11 and W-2-13. Soil around the fire hydrant shall be compacted in accordance with Section 1000 and 1005 of the Standard Specifications.
 - The contractor shall not operate any water main valves on existing water system.
 - All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
 - All sewer mains shall be D.I.P. RCP, VCPX, CSPX, RCCP and P.V.C. unless otherwise noted.
 - For testing and disinfection of water main, refer to Section 4.11 of the Specification.
 - LENGTH OF OPEN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORK DAY.

SEQUENCE OF CONSTRUCTION (ALL WATER LINES EXCLUDING RIVER CROSSING)

- OBTAIN GRADING PERMIT.
- INSTALL LENGTH OF PIPE THAT CAN BE COMPLETED AND BACKFILLED WITHIN ONE DAY.
- STABILIZE ALL DISTURBED AREAS.
- REPEAT SEQUENCE 2 AND 3 UNTIL THE CONSTRUCTION IS COMPLETED

SEQUENCE OF CONSTRUCTION (RIVER CROSSING)

- OBTAIN GRADING PERMIT.
- SCHEDULE CONSTRUCTION ONLY WHEN THERE IS A 5-DAY CLEAR WEATHER FORECAST.
- INSTALL ALL SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN.
- STABILIZE ALL DISTURBED AREAS.
- REMOVE SEDIMENT CONTROL MEASURES AFTER APPROVAL BY THE SEDIMENT CONTROL INSPECTOR.

WATER AND SEWER CODE FOR COUNTY USE ONLY.
 WATER No. **E 20**
 SEWER No. **NA**
 TEST GRADIENT **7.00**

TYPE OF BUILDING	COMMERCIAL
No. OF WATER HOUSE CONNECTIONS	0
DRAINAGE AREA	MIDDLE PATUXENT
TREATMENT PLANT	LITTLE PATUXENT

LOCATION MAP
SCALE: 1" = 600'

CONTRACT No. 44-3305-D WATER MAIN EXTENSION HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 210 OF THE HOWARD COUNTY DESIGN MANUAL AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS.

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT.

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Robert Engler 9/4/98
 U.S. SOIL CONSERVATION SERVICE DATE

APPROVED:
William J. Hill 9/4/98
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James G. Lewis 9/16/98
DIRECTOR OF PUBLIC WORKS DATE

Robert J. Soren 9/16/98
CHIEF, BUREAU OF ENGINEERING DATE

Richard A. Romanillo 8/31/98
CHIEF, BUREAU OF UTILITIES DATE

William J. Hill 9/16/98
CHIEF, LAND DEVELOPMENT DIVISION DATE

Coria Engineering Inc.
CONSULTING ENGINEERS-LAND PLANNERS-SURVEYORS
3230 BETHANY LANE, SUITE 4, ELLICOTT CITY, MD
410-465-0400

DES: JNC				
DRN: JER				
CHK: MLL				
DATE: 8/24/98	BY:	NO.:	REVISION:	DATE:

COVER SHEET
CONTRACT NO. **44-3305-D**
600' SCALE MAP NO. **35** BLOCK

GRACE
PROPOSED 12" WATER LINE
PHASE - II

W.R. GRACE & CO. - CONN.
WASHINGTON RESEARCH CENTER
7379 ROUTE 32
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN
SHEET 1 OF 8

44-3305 W1 GRACE

AS BUILT 1/16/99
10/20/98

BORING B-5
 GUILFORD ROAD STA. 10+50
 ELEV. 277.68
 BROWN MOIST FINE SILTY
 SAND WITH ROCK FRAGMENT
 AND MICA.

ELEV. 267.68
 BOTTOM OF BORING at 10'

BORING B-6
 GUILFORD ROAD STA. 5+50
 ELEV. 317.65
 BROWN MOIST FINE SILTY
 SAND WITH ROCK FRAGMENTS
 AND MICA.

ELEV. 307.65
 BOTTOM OF BORING at 10'

BORING B-7
 GUILFORD ROAD STA. 0+80
 ELEV. 355.34
 BROWN MOIST FINE SILTY
 SAND WITH ROCK FRAGMENTS

ELEV. 350.34
 BOTTOM OF BORING at 5.0'

BORING LOGS
 SCALE 1" = 3' VER.

BM # 1 TOP OF MH ELEV. = 313.70

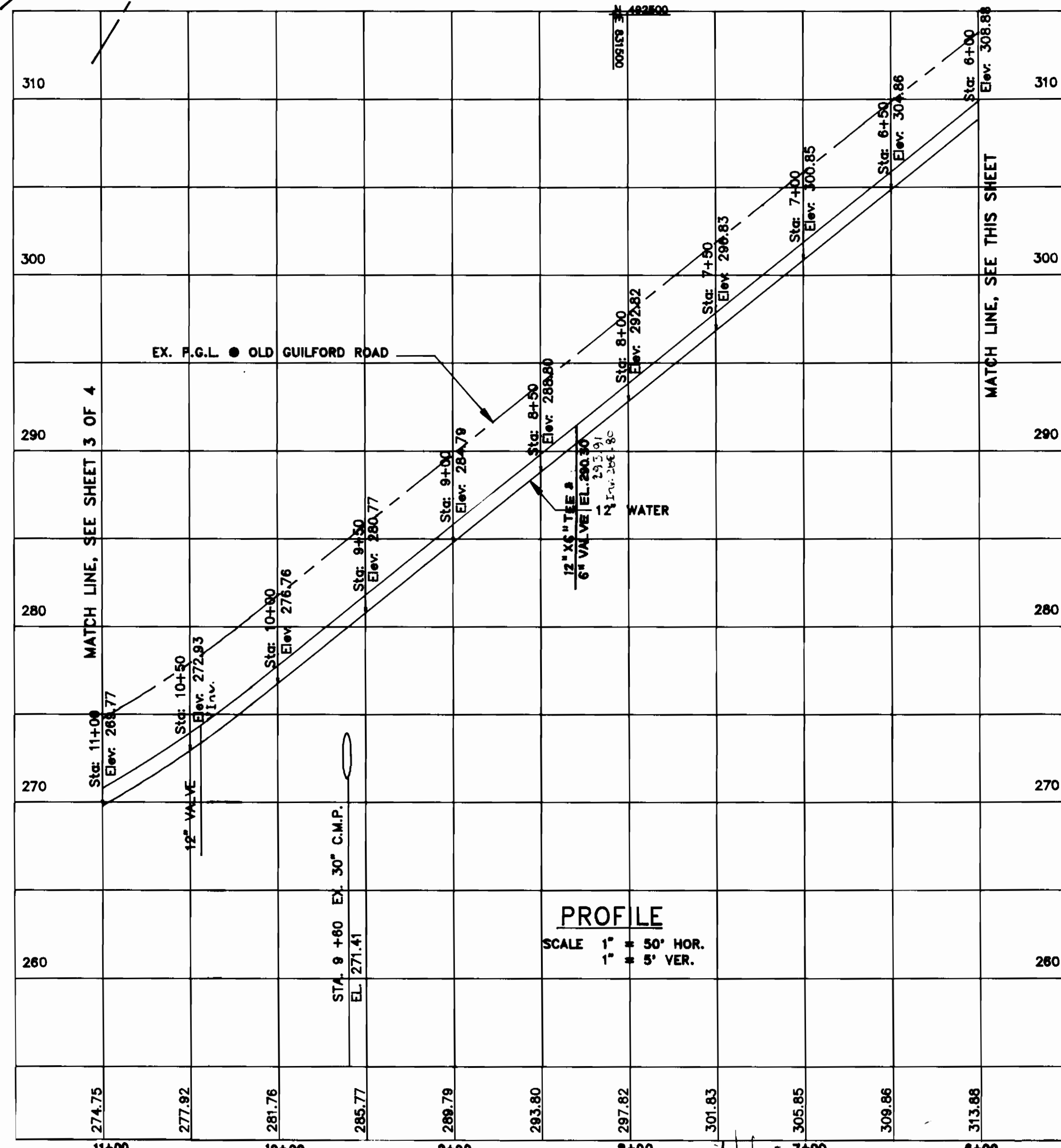
NOTE: THE PROPOSED 12" WATER LINE SHALL BE CONNECTED TO EXISTING MAIN IN CARAVAN CT.

OLD GUILFORD ROAD

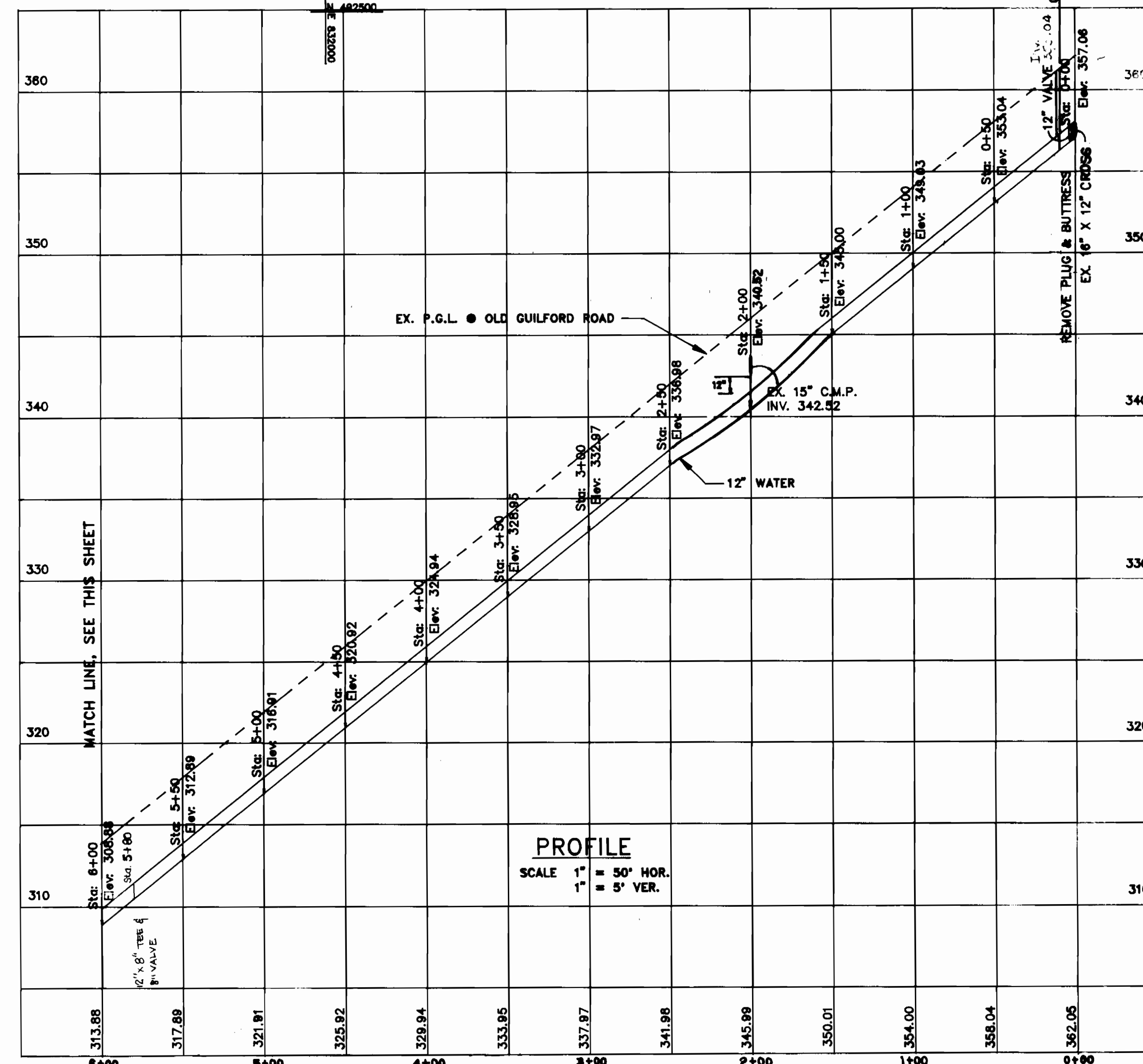
PATUXENT RUN
 PLAT NO. 9346

PLAN

SCALE 1" = 50'



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



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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 9/6/94
 Chief, Bureau of Engineering: *[Signature]* 9/6/94
 Chief, Bureau of Utilities: *[Signature]* 9/6/94
 Chief, Land Development Division: *[Signature]* 9/6/94

loria Engineering Inc.

CONSULTING ENGINEERS-LAND PLANNERS-SURVEYORS
 3230 BETHANY LANE, SUITE 4, ELLICOTT CITY, MD.
 410-465-0400



DES: JER	JER	1	AS PER DEPT. OF ENVIRONMENT COMMENTS 9/7/94
DRN: JER			
CHK: MLL			
DATE: 9/18/94	BY: NO.	REVISION	DATE

**WATER PLAN
 AND PROFILE**

CONTRACT NO. 44-3305-D
 600' SCALE MAP NO. 35 BLOCK

GRACE
 PROPOSED 12" WATER LINE
 PHASE - II

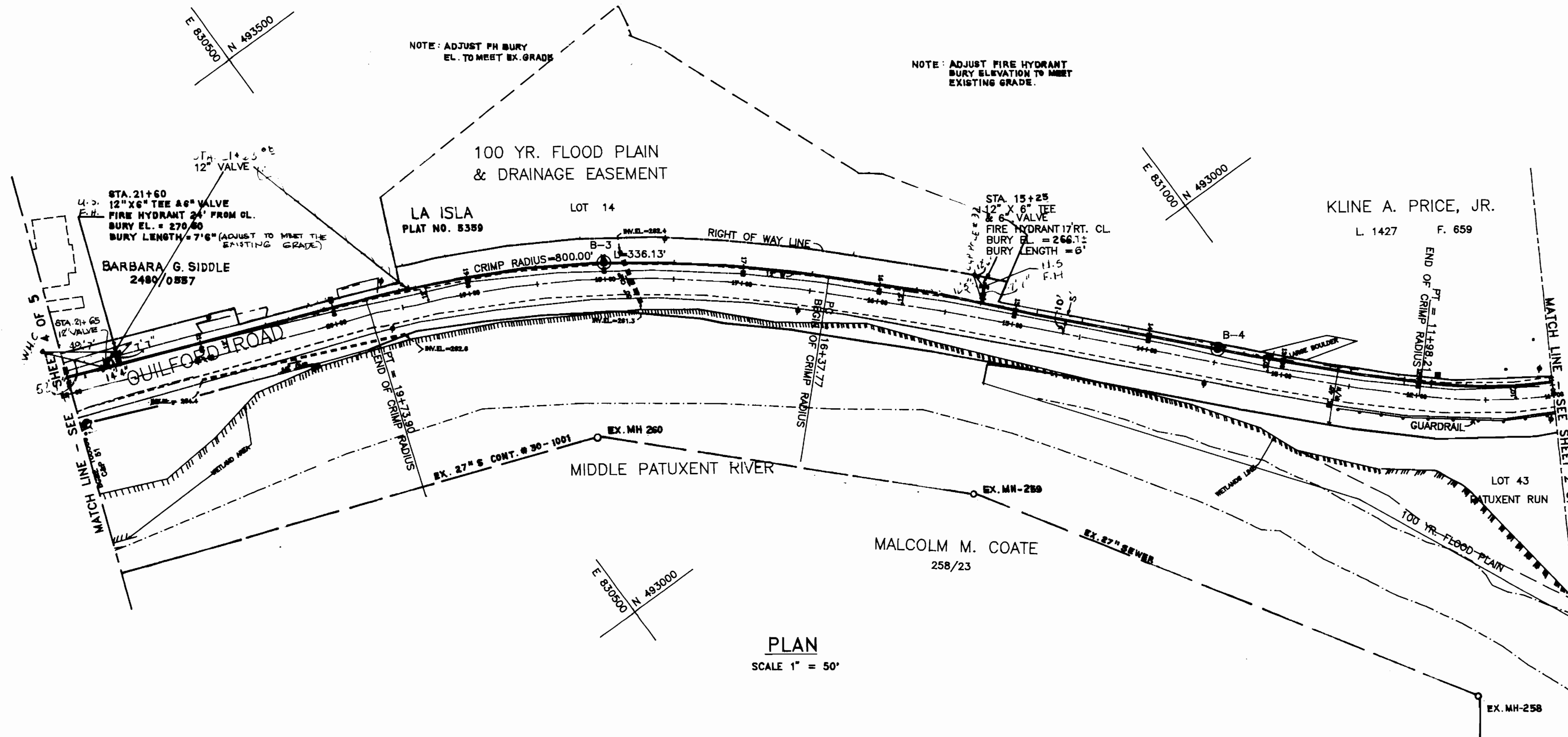
W.R. GRACE & CO. - CONN.
 WASHINGTON RESEARCH CENTER
 7578 ROUTE 32
 COLUMBIA, MARYLAND 21044

SCALE
 AS SHOWN
 SHEET
 2 OF 2

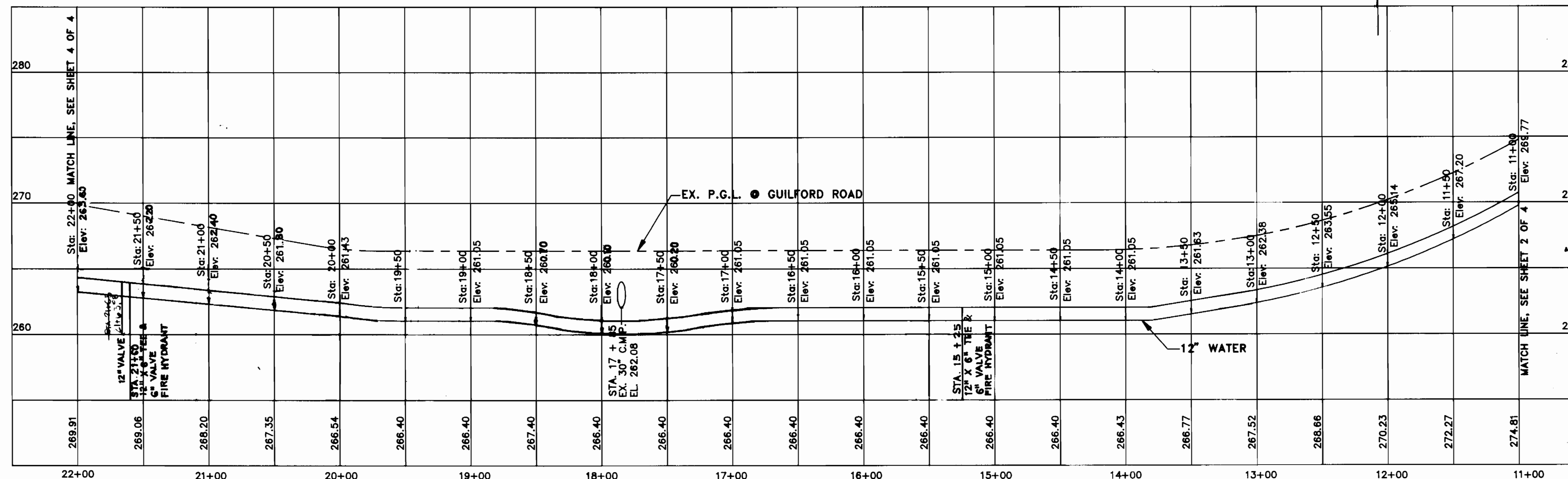
ADD: 11/18/94

3305 W/2 GRACE

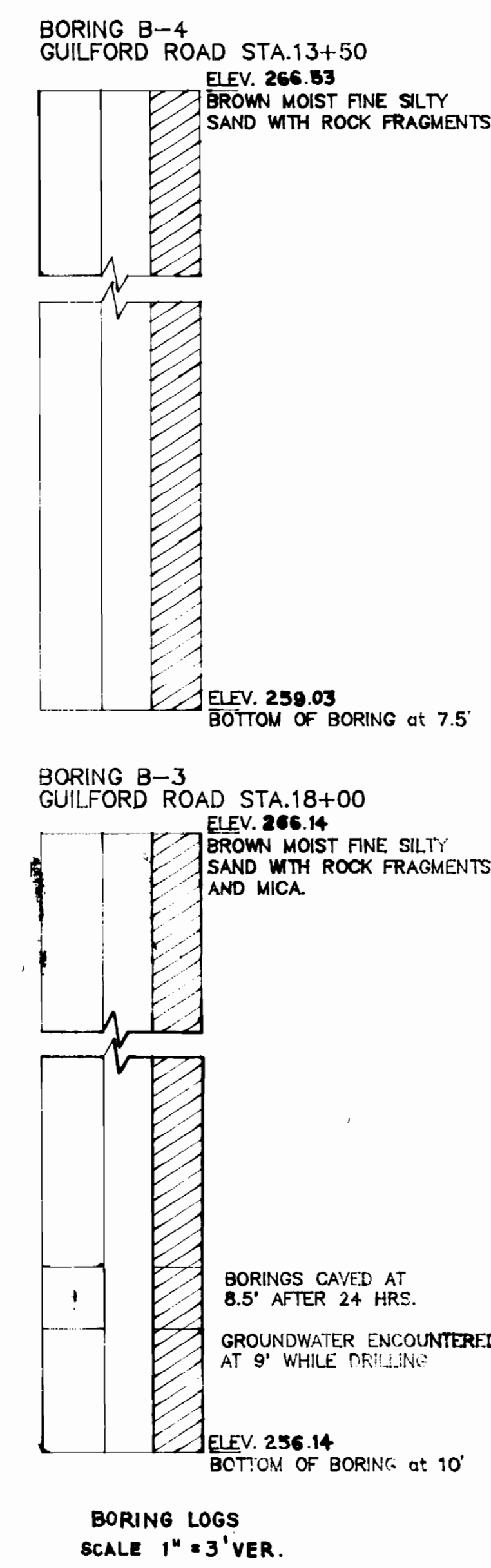
3305 W/3 GRACE



PLAN
SCALE 1" = 50'



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



BORING LOGS
SCALE 1" = 3' VER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Siddle 2/6/94
DIRECTOR OF PUBLIC WORKS

Michael S. Siddle 2/6/94
CHIEF, BUREAU OF UTILITIES

William J. Siddle 2/6/94
CHIEF, BUREAU OF UTILITIES

Loria Engineering Inc.
CONSULTING ENGINEERS-LAND PLANNERS-SURVEYORS
3230 BETHANY LANE, SUITE 4, ELLICOTT CITY, MD.
410-465-0400

DES :	JER	I	AS PER DEPT. OF ENVIRONMENT	COMMENTS	10-01-94
gnc					
DRN :					
gnc					
CHK :					
MLL					
DATE :	8.18.94				
BY :	NO.				
REVISION					
DATE					

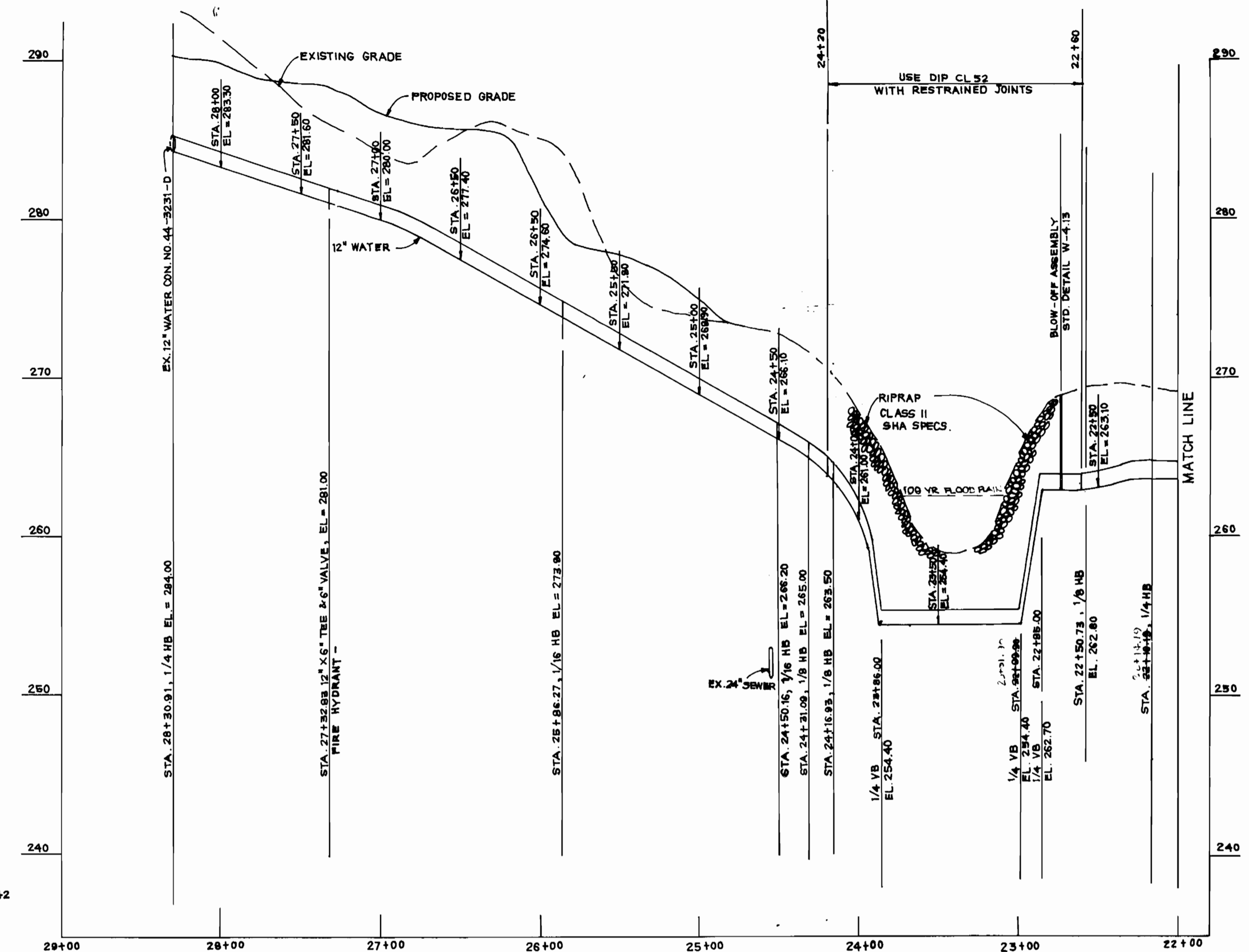
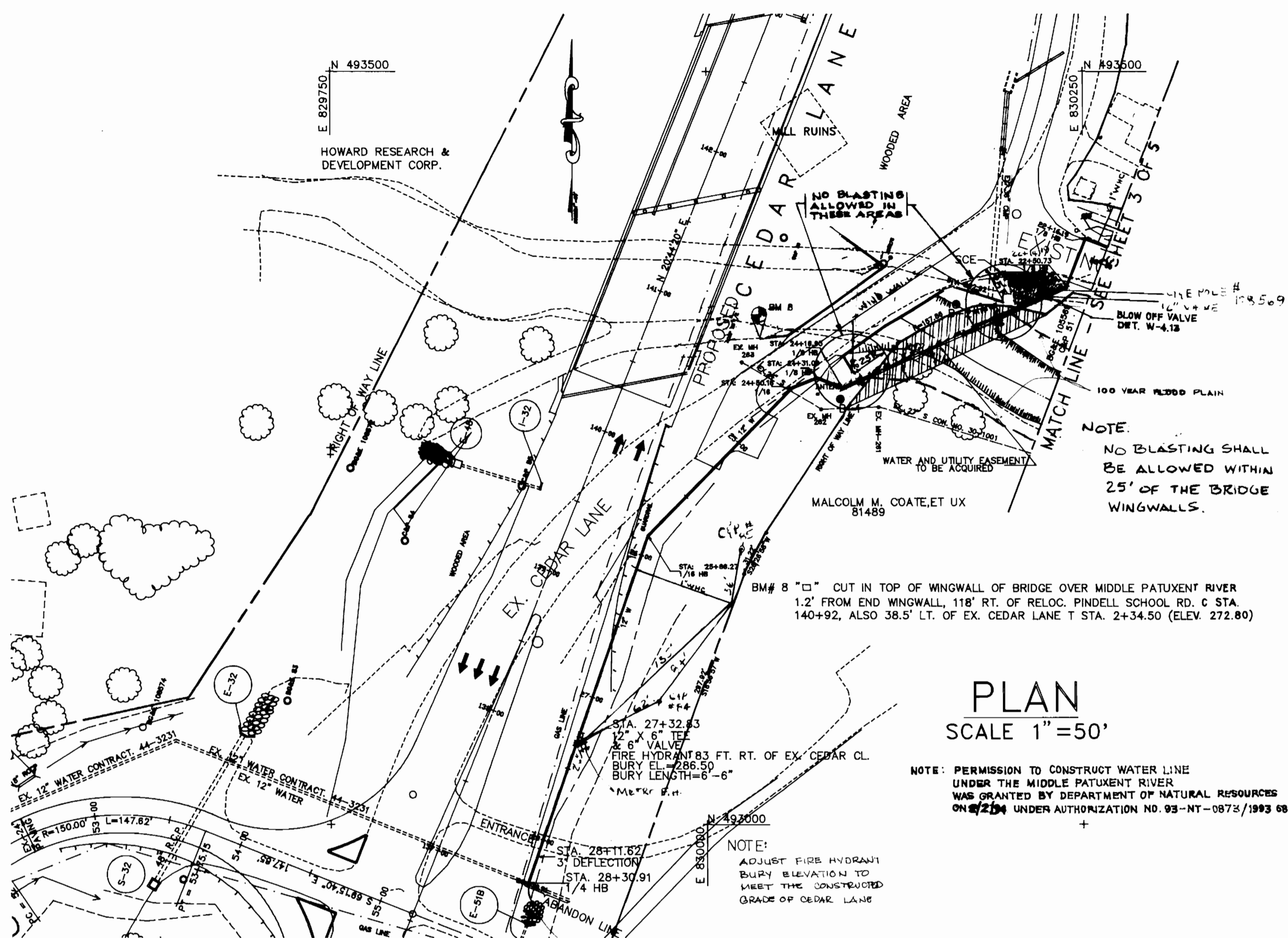
WATER PLAN AND PROFILE
CONTRACT NO. 44-3305-D
600' SCALE MAP NO. 35 BLOCK

GRACE
PROPOSED 12" WATER LINE
PHASE - II

W.R. GRACE & CO. - CONN.
WASHINGTON RESEARCH CENTER
7578 ROUTE 52
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN
SHEET 3 OF 8

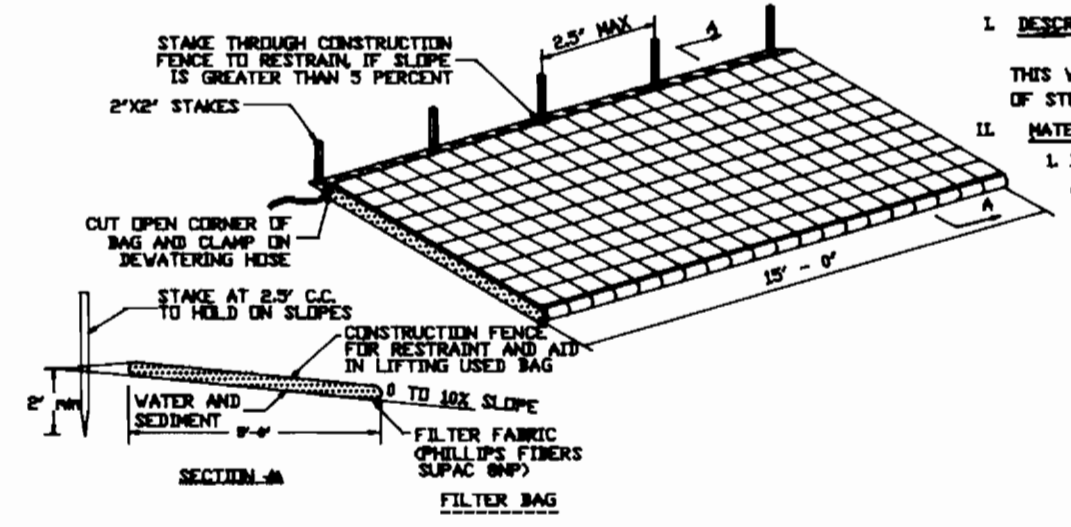
45-11-11-11-11



PLAN
SCALE 1"=50'

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

NOTE: PERMISSION TO CONSTRUCT WATER LINE UNDER THE MIDDLE PATUXENT RIVER WAS GRANTED BY DEPARTMENT OF NATURAL RESOURCES ON 2/24 UNDER AUTHORIZATION NO. 93-NT-0873/1993 08342

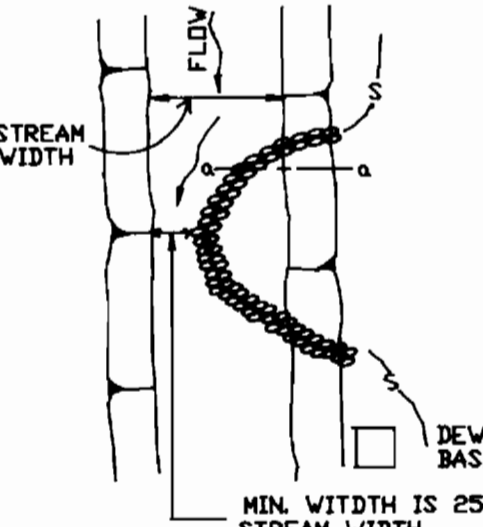


TEMPORARY EROSION CONTROL MEASURE

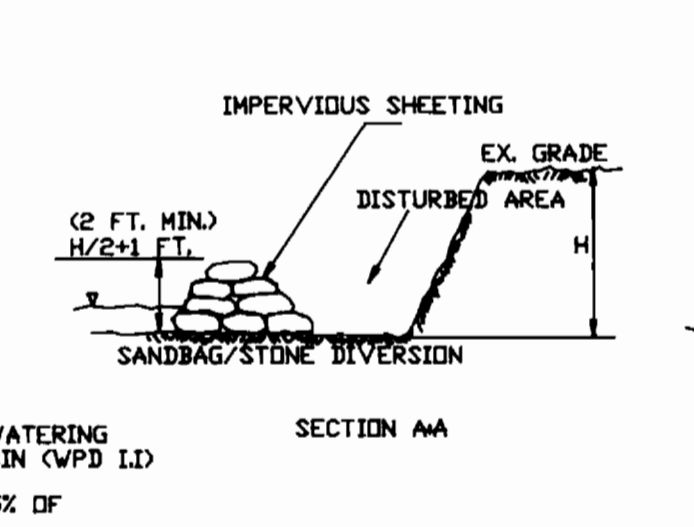
- DESCRIPTION**
THIS WORK SHALL CONSIST OF PROTECTING SLOPES AND CHANNELS FROM EROSION WITH COVERINGS OF STONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SHOWN IN THIS DRAWING.
- MATERIAL SPECIFICATIONS**
 - BANK RUN GRAVEL** SHALL MEET THE FOLLOWING REQUIREMENTS:

X LESS THAN 100	U.S. STANDARD SILVE SIZE
85 - 100	2 1/2 IN.
65 - 100	1 1/2 IN.
25 - 70	NO. 10
25 - 50	NO. 40
3 - 20	NO. 200
 - GEOTEXTILE FILTER FABRIC** SHALL MEET THE FOLLOWING REQUIREMENTS:

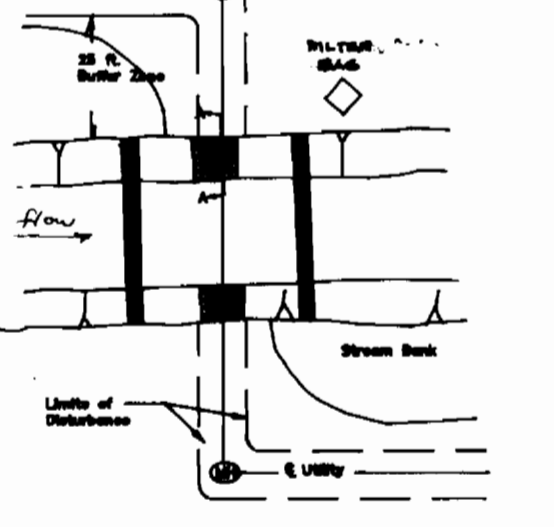
TENSILE STRENGTH	200 LBS.
TORQUE STRENGTH	350 LBS.
PUNCTURE STRENGTH	70 LBS.
PERMEABILITY	AS SHOWN
ELONGATION AT FAILURE	30 %
MINIMUM LAP LENGTH	24 IN.
- CONSTRUCTION REQUIREMENTS**
 - THE CONTRACTOR SHALL INSTALL ALL SEDIMENT AND EROSION CONTROL DEVICES AS A FIRST ORDER OF BUSINESS.
 - PROVIDERS MUST BE MADE TO ORDER THE RIPRAP AT THE STREAM BED SO AS TO PROVIDE PROTECTION AGAINST UNDERBOWING. IF THIS CANNOT BE ACCOMPLISHED BY EXTENDING THE TIE TRENCH AS INDICATED IN CROSS SECTION AN ALTERNATIVE METHOD OF PROTECTION MUST RECEIVE PRIOR WRITTEN APPROVAL OF THE ADMINISTRATION.
 - EXCAVATION FOR RIPRAP SHALL BE MADE IN REASONABLY CLOSE CONFORMITY WITH THE EXISTING STREAM SLOPE AND BED.
 - A FILTER BEDDING IS REQUIRED UNDER ALL RIPRAP. BEDDING MATERIAL SHALL CONSIST OF EITHER A BANK RUN GRAVEL OR A GEOTEXTILE FILTER FABRIC MEETING THE SPECIFICATION LISTED.
 - THE PLACEMENT OF RIPRAP SHALL BEGIN WITH THE TIE. THE LARGER STONES SHALL BE PLACED IN THE TIE AND ALONG THE OUTSIDE EDGES OF THE SLOPE AND CHANNEL. PROTECTION OF THE RIPRAP SHALL BE PLACED WITH SUITABLE EQUIPMENT IN SUCH MANNER AS TO PRECLUDE A REASONABLY GRADED MASS OF STONES WITH ZERO DROP HEIGHT. THE PLACING OF STONES THAT EXTENSIVE SEGREGATION IS NOT ALLOWED.
 - ANY EXCAVATION VOIDS EXISTING ALONG THE EDGES OF THE COMPLETED SLOPE AND CHANNEL PROTECTION SHALL BE BACKFILLED.
 - ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.



SANDBAG/STONE DIVERSION

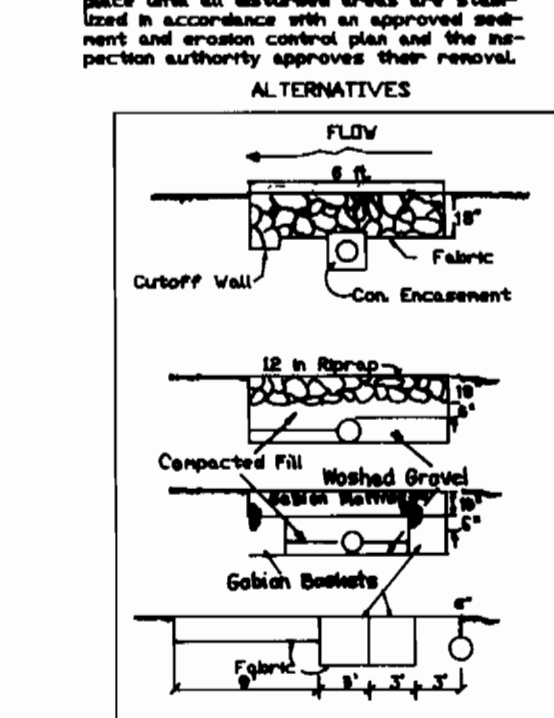


UTILITY CROSSING



UTILITY CROSSING

- DESCRIPTION**
This work shall consist of installing erosion control devices in and adjacent to temporary stream construction such as utility crossing.
- CONSTRUCTION REQUIREMENTS**
 - All erosion and sediment control devices shall be installed as the first order of work.
 - The contractor shall ensure that the construction perimeter control barrier is in place as soon as to reduce pollutants entering the water.
 - Excavated topsoil and subsoil shall be kept separate and replaced in their natural order.
 - All excavated materials shall be placed on the upland side of the excavation.
 - All construction shall take place during stream low flows. The length of construction time shall be limited to a max. of 5 days for each crossing.
 - All utility crossings shall be placed at least three (3) feet from the stream bed unless an alternative section is specifically approved by the Administration.
 - The contractor may elect to construct the utility crossing in two stages. In this case, a SRA approved flow barrier may be constructed to keep the construction area dry.
 - Sediment control devices used to reduce in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspection authority approves their removal.



ALTERNATIVES

BORING B-1
CEDAR LN. STA.24+00
at RIVER BANK

NO GROUNDWATER ENCOUNTERED WHILE DRILLING

ELEV. 271.00
BROWN MOIST FINE SILTY SAND WITH ROCK FRAGMENTS AND MICA.

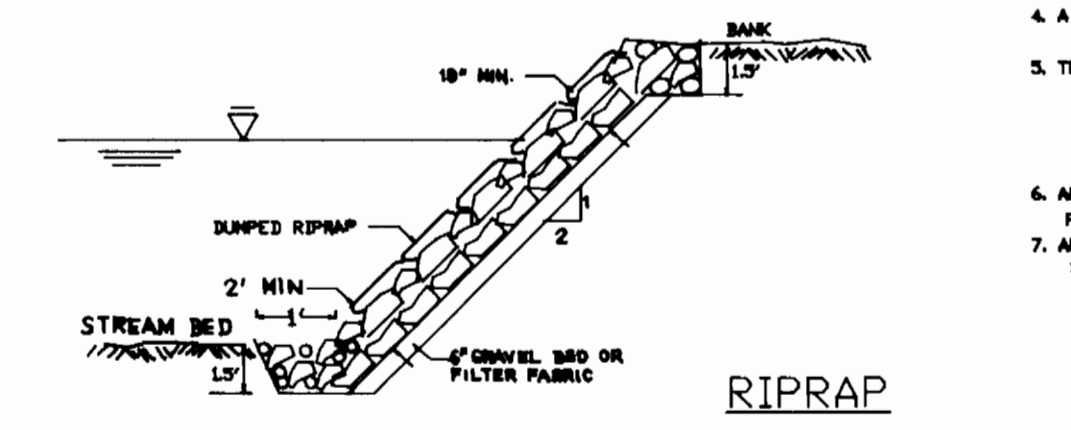
ELEV. 270.00
BOTTOM OF BORING at 1.0'

BORING B-2
CEDAR LN. STA.23+00
at RIVER BANK

NO GROUNDWATER ENCOUNTERED WHILE DRILLING

ELEV. 264.00
BROWN MOIST FINE SILTY SAND WITH ROCK FRAGMENTS AND MICA.

ELEV. 262.50
BOTTOM OF BORING at 1.5'



RIPRAP

BORING LOGS
SCALE 1"=3' VER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Shaw 9/16/94
DIRECTOR OF PUBLIC WORKS DATE

Michael A. ... 8/1/94
CHIEF, BUREAU OF UTILITIES DATE

Paul ... 9/16/94
CHIEF, BUREAU OF ENGINEERING DATE

... 9/16/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

Voria Engineering Inc.
CONSULTING ENGINEERS
3230 BETHANY LANE, SUITE 4, ELLICOTT CITY, MD.
410-465-0400



DES : JNC	JER	1	AS PER DEPT OF ENVIRONMENT DOCUMENT	10-0194
DRN : JNC				
CHK : MLL				
DATE : 6.03.94				
BY	NO.	REVISION	DATE	

WATER PLAN AND PROFILE

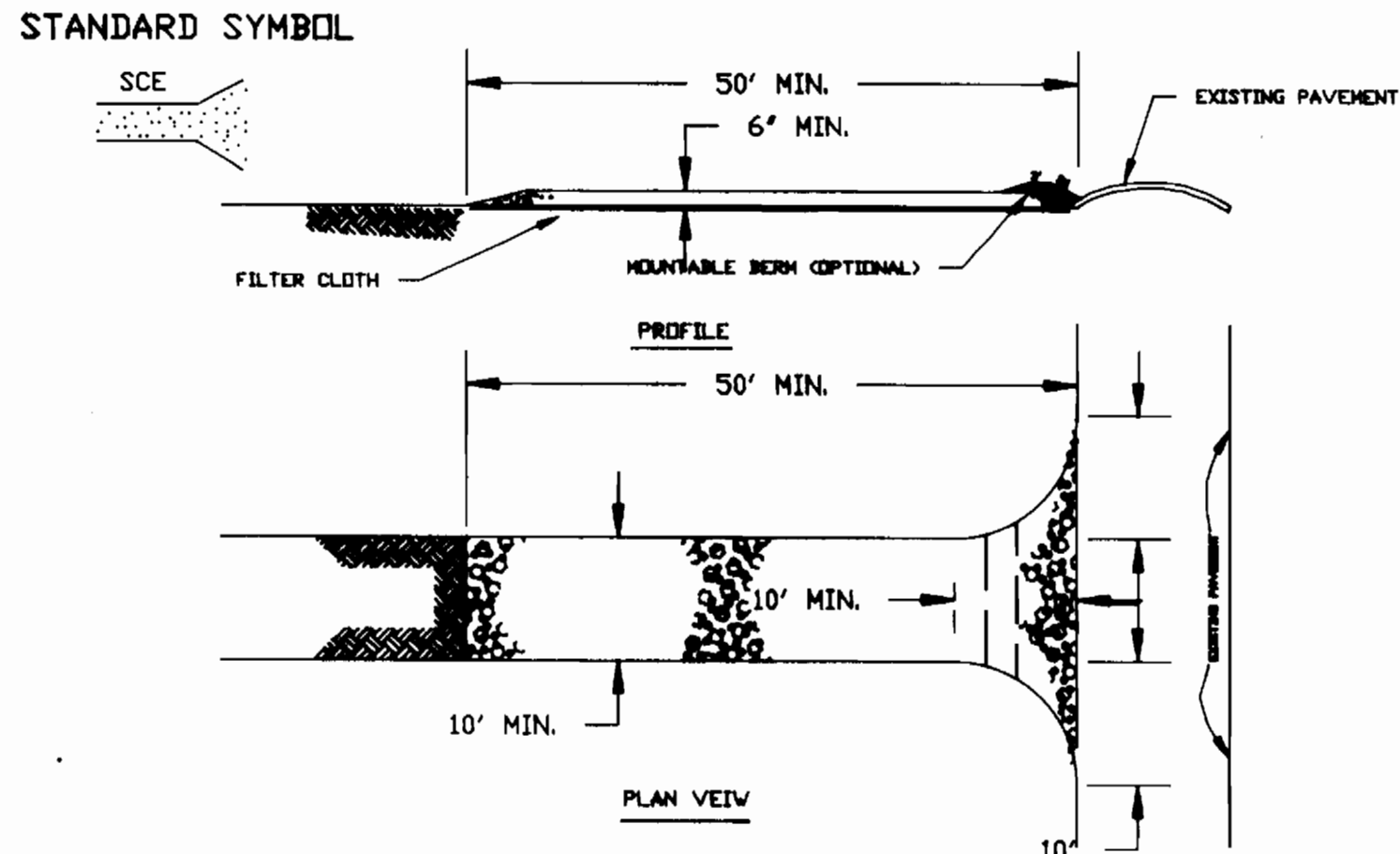
CONTRACT NO. 44-3305-D
600' SCALE MAP NO. 35 BLOCK

GRACE
PROPOSED 12" WATER LINE
PHASE - II

SCALE AS SHOWN
SHEET 4 OF 4

3305 W/4 GRACE

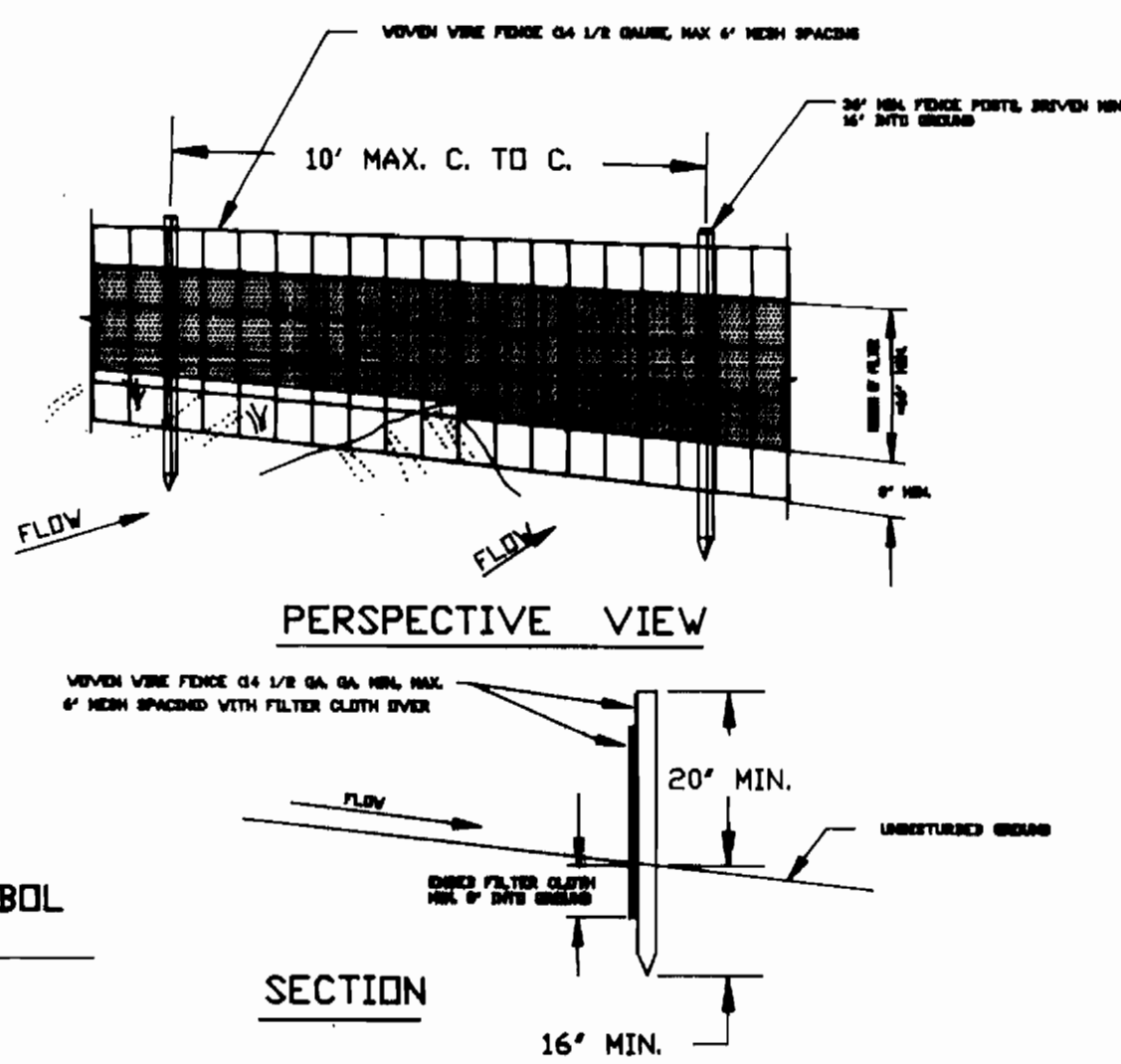
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



CONSTRUCTION SPECIFICATION

1. STONE SIZE - USE 2" STONE OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 30 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 20' MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TEN (10) FEET MINIMUM, BUT 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 3% SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO 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 INTO PUBLIC RIGHTS - OF - WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHTS - OF - WAY. WHEN IS REQUIRED, IT SHALL BE DONE IN 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.

SILT FENCE



CONSTRUCTION NOTES FOR FABRICATION SILT FENCE

1. VOWEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO VOWEN 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 OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, UNLESS PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
- 2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL-ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL-ANCHORED STRAW.

MULCHING - APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TDDL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, UNLESS PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.7 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL-ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TDDL OR 218 GAL PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

STANDARD AND SPECIFICATION FOR VEGETATIVE STABILIZATION WITH SOD

1. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED, OR MARYLAND OR VIRGINIA STATE APPROVED SOD.
2. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/4 INCH. AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.
3. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
4. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
5. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
6. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO ITS INSTALLATION.

1. SITE PREPARATION

FERTILIZER AND LIME APPLICATION RATES SHALL BE DETERMINED BY SOIL TESTS. UNDER UNUSUAL CIRCUMSTANCES WHERE THERE IS UNSUFFICIENT TIME FOR A COMPLETE SOIL TEST, FERTILIZER AND LIME MATERIALS MAY BE APPLIED IN AMOUNTS SHOWN UNDER B, BELOW.

A. PRIOR TO SODDING, THE SURFACE SHALL BE CLEARED OF ALL TRASH, DEBRIS, AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES, AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

B. WHERE THE SOIL IS ACID OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 2 TONS/ACRE OR 100 POUNDS PER 1000 SQUARE FEET. IN ALL SOILS 1000 POUNDS PER ACRE OR 25 POUNDS PER 1000 SQUARE FEET OF 10-10-10 FERTILIZER OR EQUIVALENT SHALL BE UNIFORMLY APPLIED AND MIXED INTO THE TOP 3 INCHES OF SOIL WITH THE REQUIRED LIME.

C. ALL AREAS RECEIVING SOD SHALL BE UNIFORMLY FINE GRADED. HARD-PACKED EARTH SHALL BE SCARIFIED PRIOR TO PLACEMENT OF SOD.

1) A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION. (992-2437)

2. 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, 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 3/14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. I, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) 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.

6. 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.

7. SITE ANALYSIS:		
TOTAL AREA OF SITE	0.32	ACRES
AREA DISTURBED	0.32	ACRES
AREA TO BE ROOFED OR PAVED	0.25	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.09	ACRES
TOTAL CUT	470	CU. YDS
TOTAL FILL	470	CU. YDS
OFFSITE WASTE/BORROW AREA LOCATION		

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.

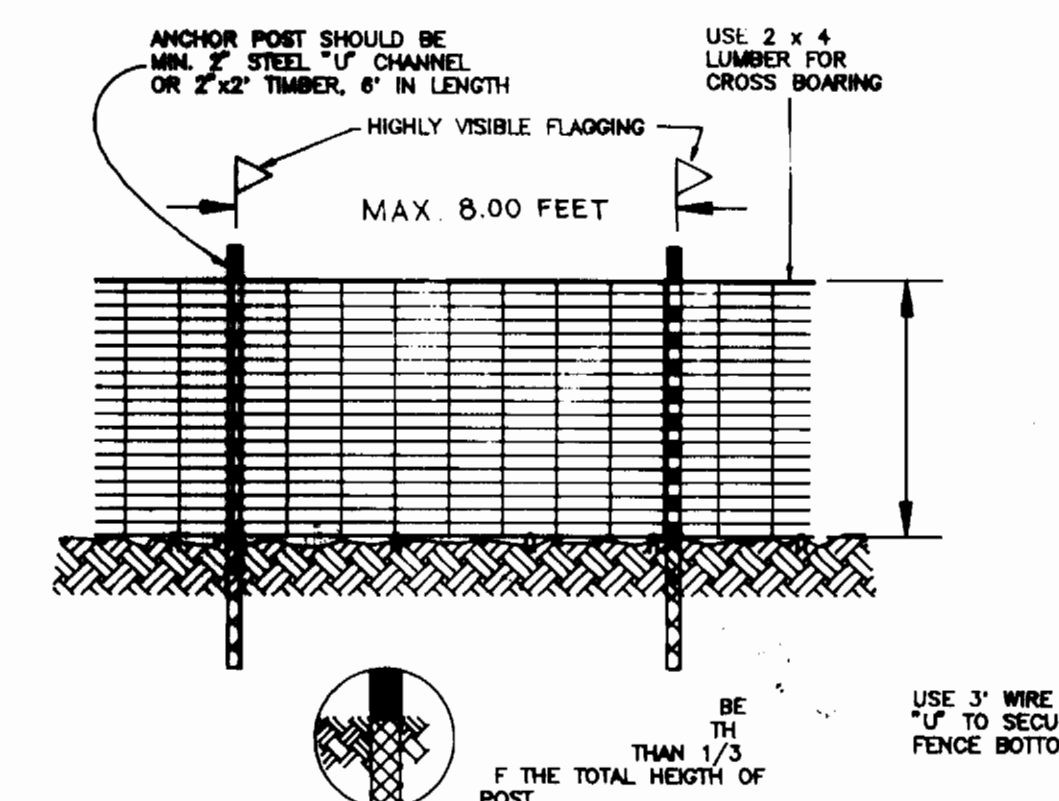
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE, OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

GENERAL NOTES

- 1) REFER TO 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.
- 2) WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT. CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE COUNTY SOIL CONSERVATION DISTRICT.
- 3) AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.
- 4) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL, (3/1) AND (3/14) FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 5) ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TO COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.
- 6) DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS. REFER TO 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PP 62.01 AND 62.02 FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.
- 7) ANY VARIATION FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.
- 8) EXCESS CUT OR BORROW MATERIAL SHALL GO TO OR COME FROM, RESPECTIVELY, A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN.

THE FOLLOWING ITEM MAY BE USED AS APPLICABLE:

9) REFER TO 'MARYLAND'S GUIDELINES TO WATERWORKS CONSTRUCTION' BY THE WATER RESOURCES ADMINISTRATION (WRA), DATED JANUARY, 1986 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.



- NOTES:
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SETAS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKE AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOT DAMAGE SHOULD BE AVOIDED.
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

BLAZE ORANGE PLASTIC MESH

NOT TO SCALE

3305 W/S GRACE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER _____ DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

PLANNING DIRECTOR _____ DATE _____

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DATE 9/16/04

DATE 9/16/04

oria engineering inc.
CONSULTING ENGINEERS & LAND PLANNERS & SURVEYORS
8307 MAIN STREET
ELLCOTT CITY, MARYLAND 21043
TEL. (301) 465-0400

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for soil and sediment control.

Robert E. Gales 9/21/04
U.S. Soil Conservation Service

These plans for soil and sediment control meet the requirements of the Howard Soil Conservation District.

Shawn A. [Signature] 9/21/04
Howard Soil Conservation District

ENGINEER'S CERTIFICATE

I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site and conditions and it was prepared in accordance with the requirements of Howard Soil Conservation District.

Shawn A. [Signature] 8-20-04
SIGNATURE OF ENGINEER DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and construction will be done in accordance with this plan and that any responsible personnel involved in the construction will have a Certificate of Attendance at the Department of the Environment Approved Training Program for the Control of Sediment before beginning the project. I also authorize periodic inspection by the Howard Soil Conservation Service.

W.R. Grace & Co. [Signature] 9/21/04
BUILDER/DEVELOPER DATE

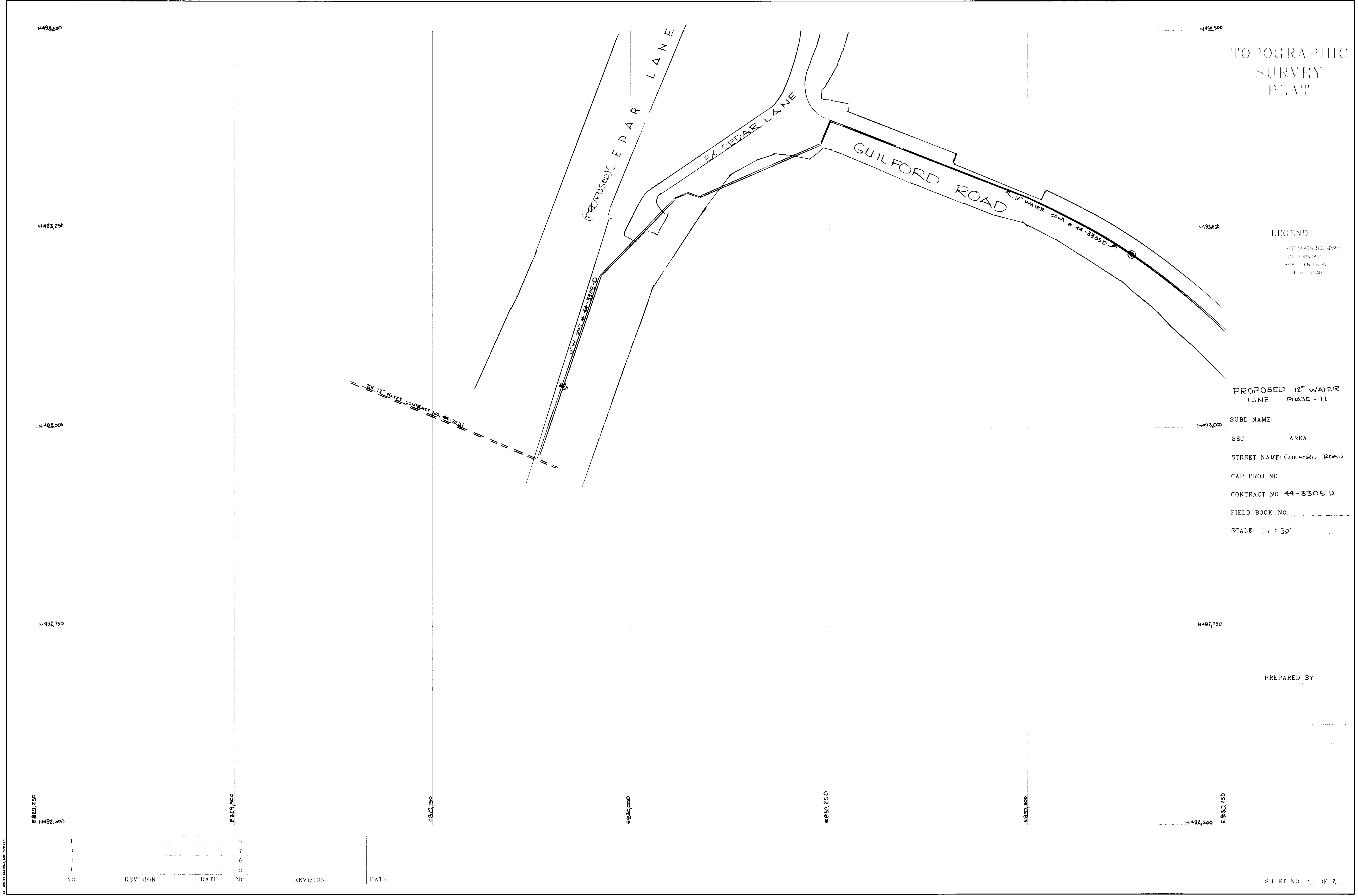
PROPOSED 12" WATER LINE
PHASE - II

SEDIMENT AND EROSION CONTROL NOTES

owner: W.R. GRACE & CO. - CONN.
WASHINGTON RESEARCH CENTER
7379 ROUTE 32
COLUMBIA, MD 21044

SCALE: AS SHOWN DATE: 09-25-04 SHEET 5 of 5
DESIGNED: MLL DRAWN: JBR CHECKED: MLL

3305 pos. sheet # 1



TOPOGRAPHIC SURVEY PLAT

LEGEND
 SUPERVISION BOUNDARY
 LOT BOUNDARY
 ROAD CENTERLINE
 EDGE OF ROAD

PROPOSED 12" WATER LINE PHASE - 11

SUBD NAME:
 SEC: AREA
 STREET NAME: GUILFORD ROAD
 CAP. PROJ. NO.
 CONTRACT NO. 44-3305-D
 FIELD BOOK NO.
 SCALE: 1" = 50'

PREPARED BY:

NO.	1	2	3	4	5	6	7	8
REVISION								
DATE								

3305 Pcs. Sht. #2

N 493,500
N 493,250
N 493,000
N 492,750
N 492,500
E 850,750
E 851,000
E 851,250
E 851,500
E 851,750
E 852,000
E 852,250

TOPOGRAPHIC SURVEY PLAT

LEGEND
--- PROPERTY BOUNDARY
--- LOT BOUNDARY
--- ROAD CENTERLINE
--- EDGE OF ROAD

PROPOSED 12" WATER LINE PHASE - II

SUBD. NAME: _____
SEC: _____ AREA: _____
STREET NAME: GUILFORD ROAD
CAP. PROJ. NO. _____
CONTRACT NO. 44-3305-D
FIELD BOOK NO. _____
SCALE: 1" = 50'

PREPARED BY: _____

NO.	REVISION	DATE	NO.	REVISION	DATE
1			8		
2			7		
3			6		
4			5		
5			4		
6			3		
7			2		
8			1		



CARVANA CT
10' WIDE CONC. 14' WIDE

12" WATER CONT. NO. 44-3305-D

OLD GUILFORD ROAD