


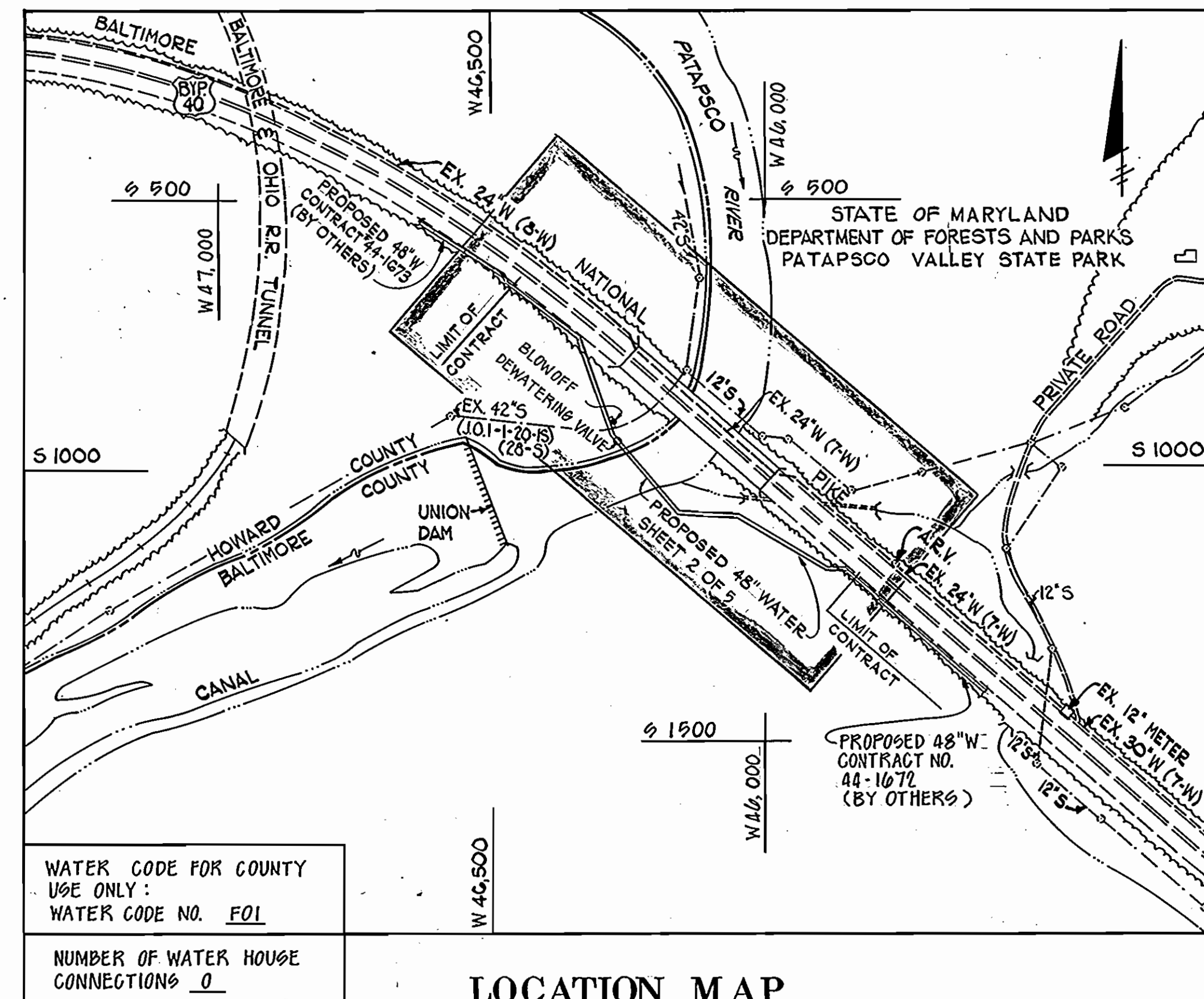
# US ROUTE 40 WATER TRANSMISSION MAIN

## SECTION 4 CAPITAL PROJECT W-8051 CONTRACT NO. 44-1735

### GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- "FULL TRENCH COMPACTION" TO BE USED OVER THE ENTIRE LIMIT OF THIS CONTRACT.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6".
- 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 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 - 850-4620
  - BALTIMORE GAS & ELECTRIC CO. UNDER GROUND DAMAGE CONTROL - 857-7004
  - BALTIMORE GAS & ELECTRIC CO. TROUBLE SHOOTING - 298-7001
  - MISC UTILITY - 1-800-257-7117
  - COLONIAL PIPELINE CO. - 795-1390
  - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 292-2366
  - BALTO. CITY WATER MAINTENANCE - 396-0315.
- 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. TREES LOCATED WITHIN THE TEMPORARY CONSTRUCTION EASEMENT ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 4'-0" COVER UNLESS OTHERWISE NOTED.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DWGS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- RESTORATION SCHEDULES HAVE BEEN PROVIDED ON THE PLANS AS A GENERAL DESCRIPTION OF THE SURFACES TO BE RESTORED. THE SCHEDULE IS NOT INTENDED TO ADDRESS SPECIFIC ITEMS TO BE REPLACED OR RESTORED. IN GENERAL, SURFACE FEATURES SHALL BE REPLACED OR RESTORED AS SPECIFIED IN THE STATE HIGHWAY ADMINISTRATION PERMIT, "IN KIND", OR AS DIRECTED BY THE ENGINEER.
- ALL HORIZONTAL CONTROLS AND ELEVATIONS ARE BASED ON BALTIMORE COUNTY DATUM.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED OR SHOWN.
- BORINGS LABELED A-SERIES EXTRACTED FROM "ROUTE 40 TRANSMISSION MAIN, CAPITAL PROJECTS W-8051 & 8052" DATED MARCH 1, 1986. PREPARED BY WHITMAN REQUARDT & ASSOCIATES.
- BORINGS LABELED L-SERIES TAKEN FROM "REPORT OF GEOTECHNICAL EXPLORATION, CAPITAL PROJECT W-8051" DATED SEPTEMBER 2, 1988. PREPARED BY LAW ENGINEERING.
- SEE APPENDIX "D" TO THE SPECIFICATIONS.
- OPERATING PRESSURE = 168 PSI ; TEST PRESSURE = 262 PSI (EQUALS TEST GRADIENT ELEVATION 767.6)
- CONTRACTOR TO REMOVE AND DISPOSE OFFSITE EXISTING RUBBLE AROUND BASE OF UNION DAM UNDER DIRECTION OF DEPARTMENT OF NATURAL RESOURCES PERSONNEL.

ITEM	QUANTITIES		MATERIAL TYPE	SUPPLIER
	ESTIMATE	AS BUILT		
48" DUCTILE IRON PIPE AND FITTINGS CL. 50	892 LF.	892 LF.	DUCTILE	U.S. PIPE & FOUNDRY
6" DUCTILE IRON PIPE AND FITTINGS	25 LF.	25 LF.	DUCTILE	U.S. PIPE & FOUNDRY
6" GATE VALVE	2 EA.	2 EA.	METROSEAL	U.S. PIPE & FOUNDRY
4" GATE VALVE	1 EA.	1 EA.	METROSEAL	U.S. PIPE & FOUNDRY



WATER CODE FOR COUNTY USE ONLY:  
WATER CODE NO. F01

NUMBER OF WATER HOUSE CONNECTIONS 0

**LOCATION MAP**  
SCALE: 1" = 200'

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE
3	DETAILS
4	REVEGETATION PLAN
5	REVEGETATION PLAN
6	TRAFFIC CONTROL PLAN
7	SEDIMENT & EROSION CONTROL PLAN

### DEVELOPER'S CERTIFICATION:

I (WE) CERTIFY THAT:

- ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT SEDIMENT AND STORMWATER PROGRAM INSPECTORS.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

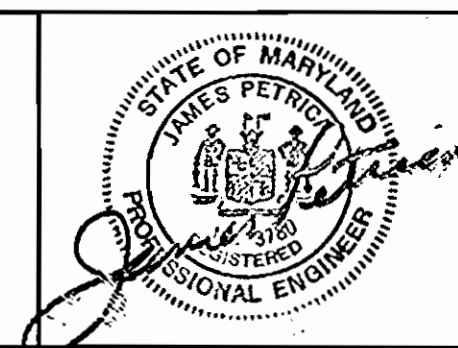
*Richard S. Bailey* 10-7-88  
DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS  
*Richard S. Bailey*  
CHIEF, BUREAU OF UTILITIES  
DATE 10-7-88

CHIEF, BUREAU OF ENGINEERING  
*Richard S. Bailey*  
DATE 10-7-88

**WR** WHITNEY  
BAILEY  
COX  
MAGNANI  
CONSULTING ENGINEERS  
1850 YORK ROAD  
TIMONIUM, MD 21093  
301-252-6060



DES: R.J.H.  
DRN: S.R.B.  
CHK: J.P.  
DATE: 12/29/88

BY	NO.	REVISION	DATE

TITLE SHEET  
LOCATION MAP  
INDEX OF DRAWINGS

600' SCALE MAP NO. 18 BLOCK NO. 15

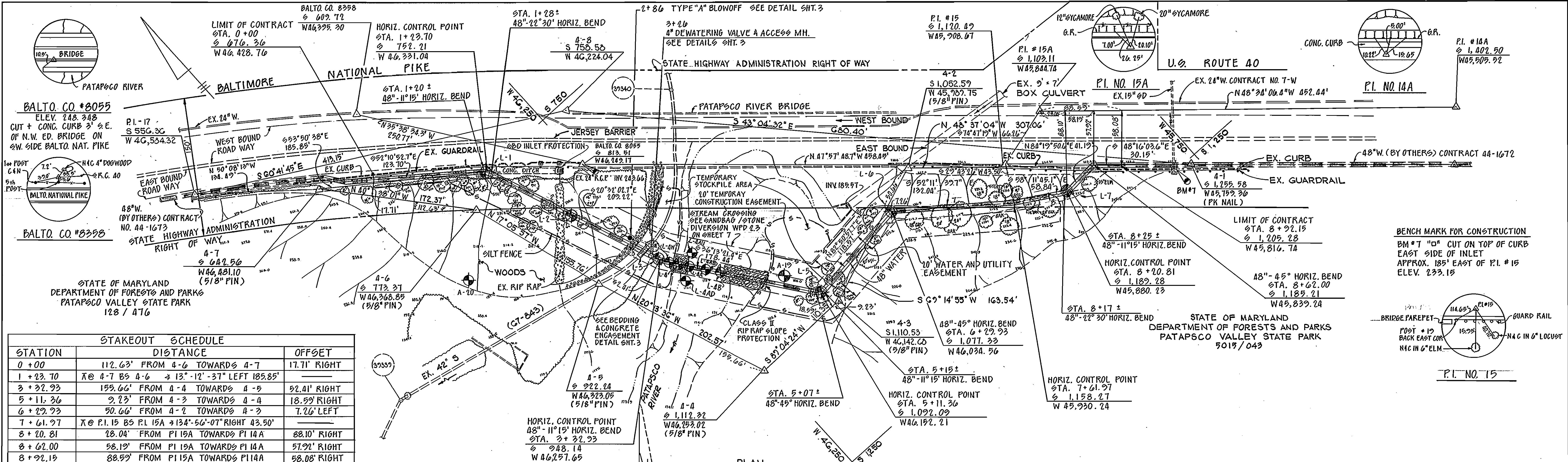
PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND

SCALE AS SHOWN

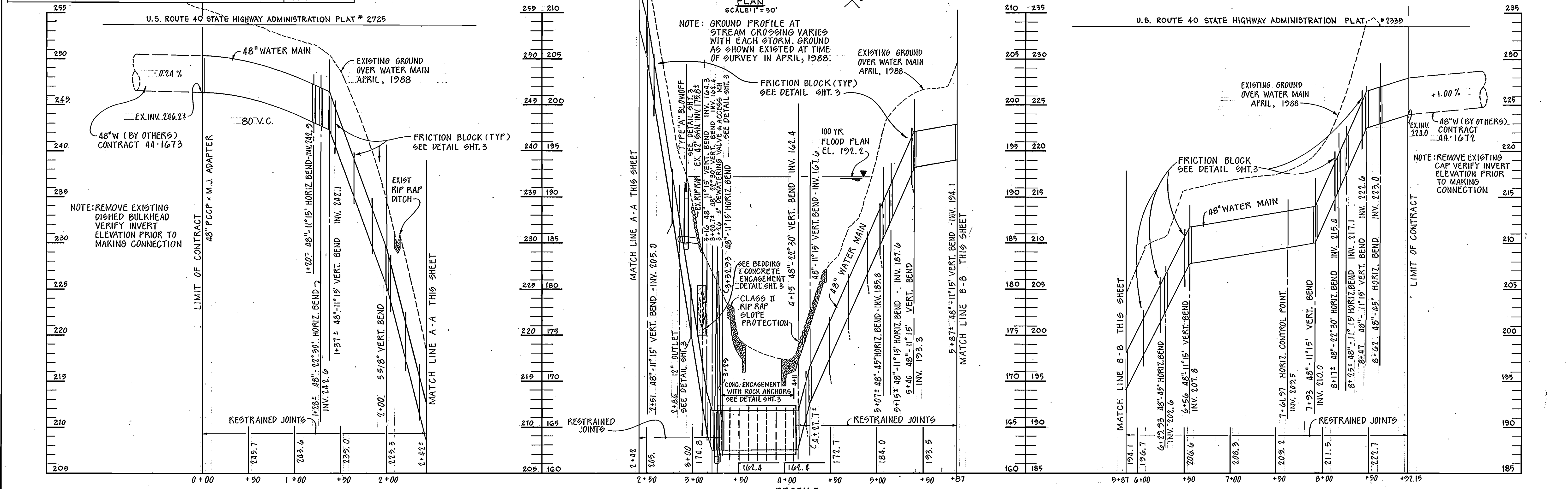
SHEET 1 OF 7

WATER AS BUILT 12/10/90





STATION	DISTANCE	OFFSET
0+00	112.63' FROM 4-6 TOWARDS 4-7	17.71' RIGHT
1+23.70	13°-12'-37" LEFT 185.85'	
3+32.93	155.66' FROM 4-4 TOWARDS 4-5	52.41' RIGHT
5+11.36	2.23' FROM 4-3 TOWARDS 4-4	18.59' RIGHT
6+29.93	50.66' FROM 4-2 TOWARDS 4-3	7.26' LEFT
7+61.97	134°-56'-07" RIGHT 43.50'	
8+20.81	28.04' FROM P1 15A TOWARDS P1 14A	88.10' RIGHT
8+62.00	58.19' FROM P1 15A TOWARDS P1 14A	57.92' RIGHT
8+92.19	88.59' FROM P1 15A TOWARDS P1 14A	58.08' RIGHT



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

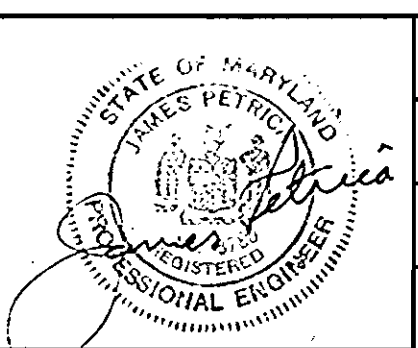
*James M. ...* 10-1-88  
DIRECTOR OF PUBLIC WORKS DATE

*...* 10-7-88  
CHIEF, BUREAU OF UTILITIES DATE

*...* 10-7-88  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 10-7-88  
CHIEF, UTILITY DESIGN DIVISION DATE

**WHITNEY BAILEY COX MAGNANI**  
CONSULTING ENGINEERS  
1850 YORK ROAD  
TIMONIUM, MD 21093  
301-252-6060



DES: R.J.H.	
DRN: S.R.B.	
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DATE: 12/29/88	
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REVISION	
DATE	

**PLAN AND PROFILE**

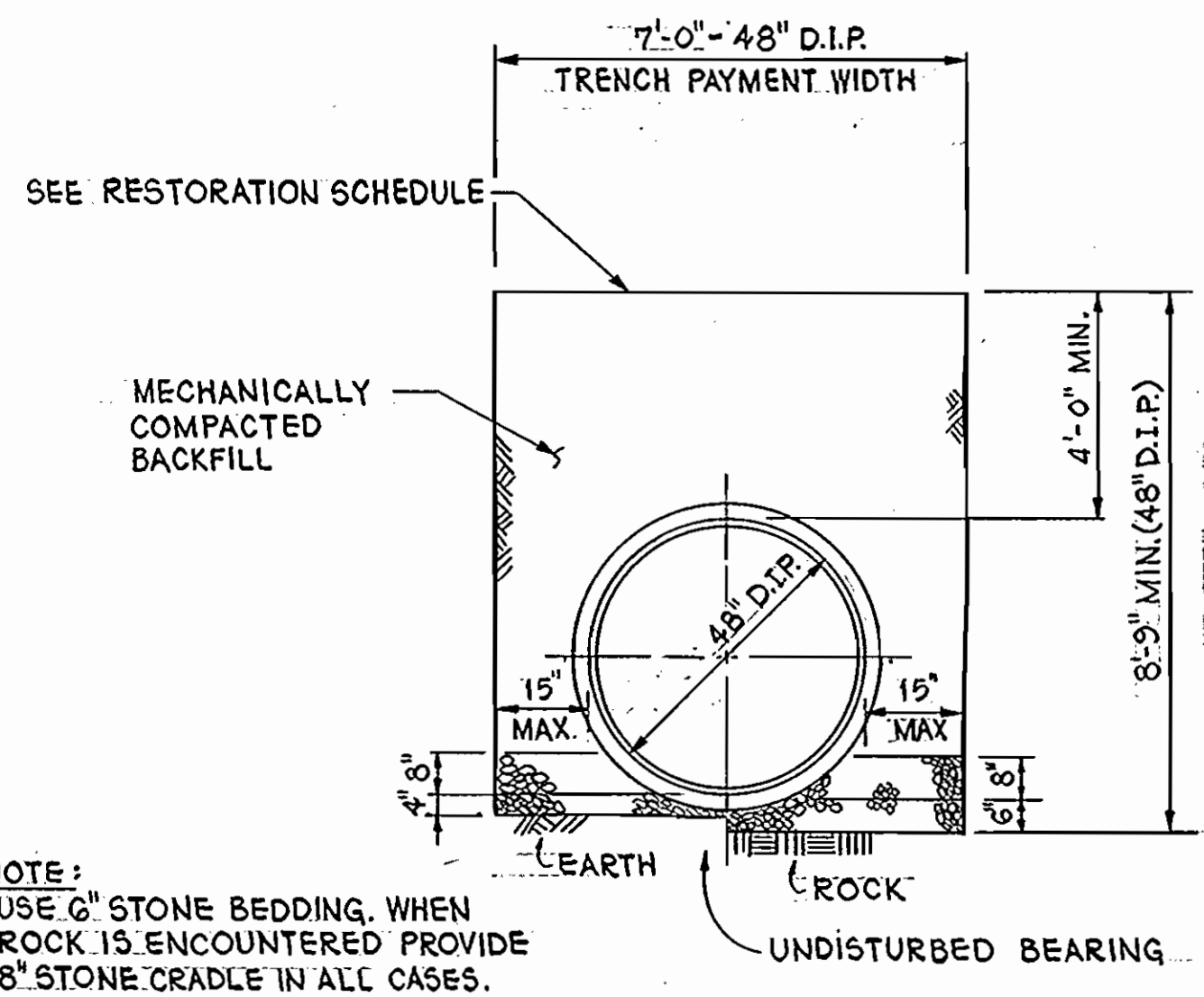
600' SCALE MAP NO. 18 BLOCK NO. 15

PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
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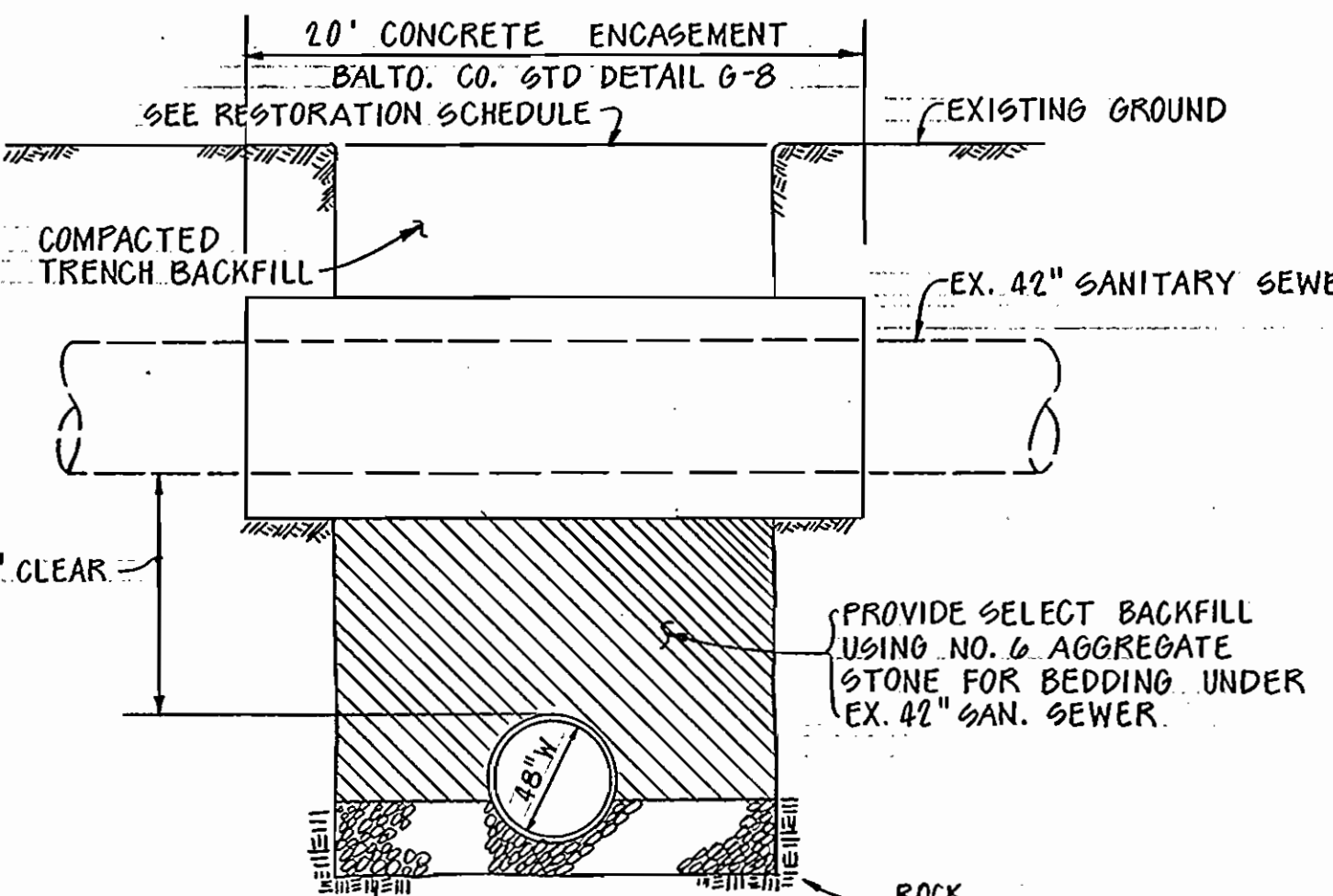
SCALE AS SHOWN

SHEET 2 OF 7



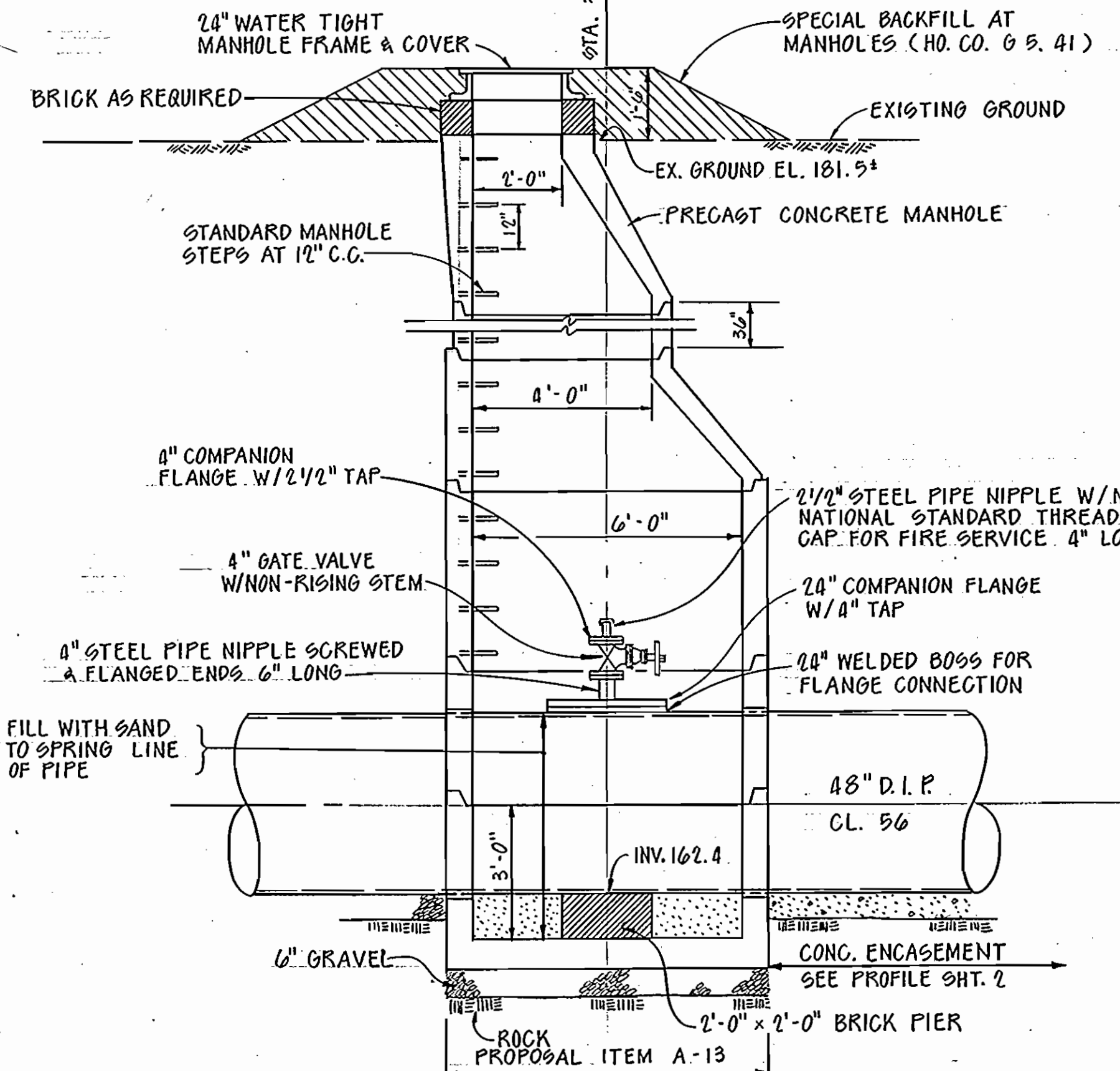


D.I.P. CL 56  
**TYPICAL TRENCH DETAIL**  
 SCALE: 3/8" = 1'-0"

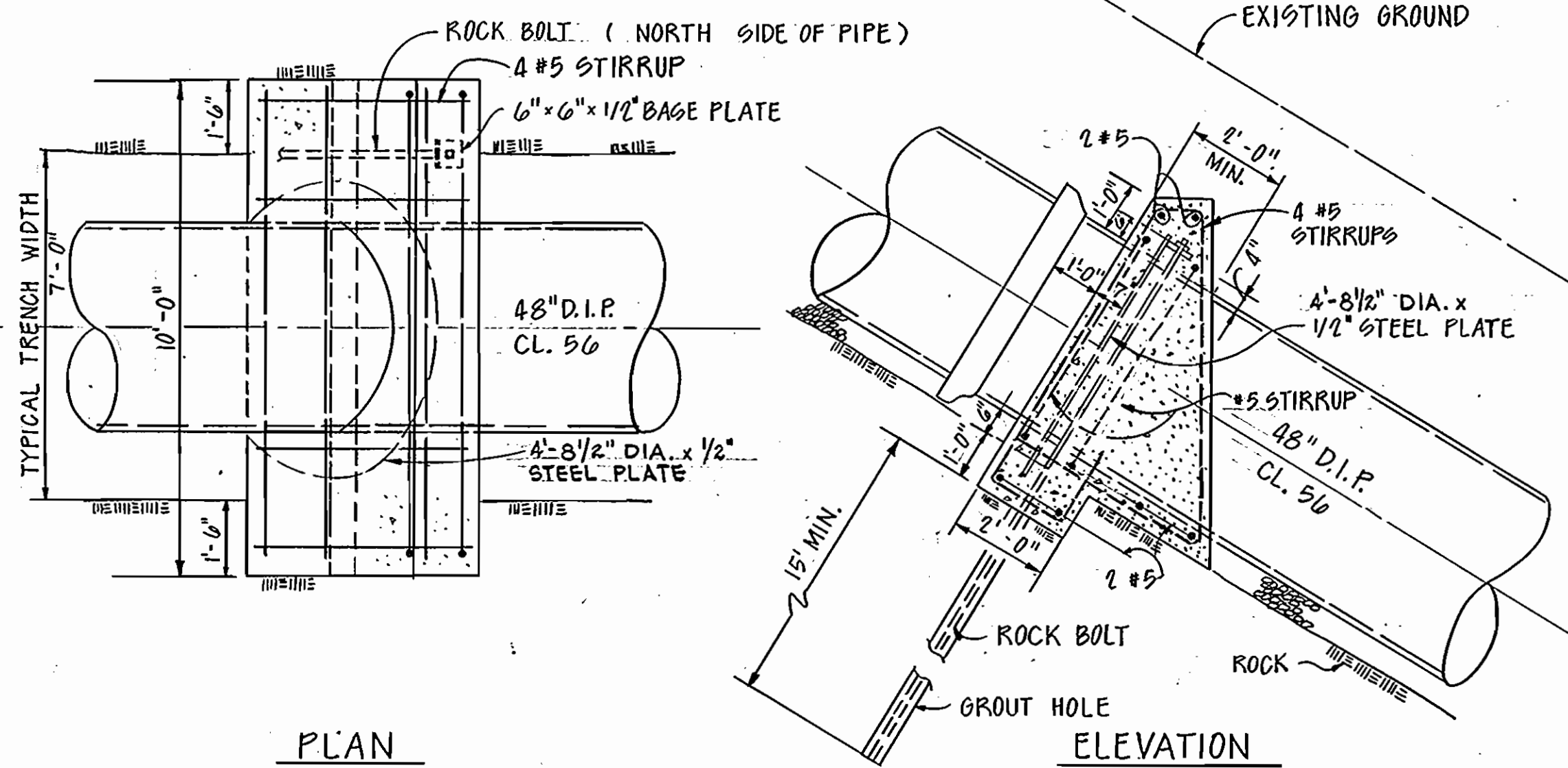


**BEDDING & CONCRETE ENCASEMENT FOR CROSSING EXISTING 42" SANITARY SEWER**  
 NOT TO SCALE

RESTORATION SCHEDULE			
LOCATION	DISTANCE	TYPE	
0+40 TO 1+40	180'	SEED	
1+40 TO 2+08	68'	SOD	
2+08 TO 2+18	10'	CLASS I RIP RAP	
2+18 TO 2+27	70'	SOD	
2+27 TO 3+05	8'	CLASS II RIP RAP	
3+05 TO 3+45	40'	SOD	
3+45 TO 3+65	20'	RIP RAP	
3+65 TO 4+00	25'	CLASS III RIP RAP	
4+00 TO 4+55	55'	RIP RAP	
4+55 TO 6+30	175'	SOD	
6+30 TO 8+50	220'	CLASS I RIP RAP	
8+50 TO 9+55	5'	SEED, GUARD RAIL & CURB	
8+55 TO 9+00	39'	PAVEMENT	

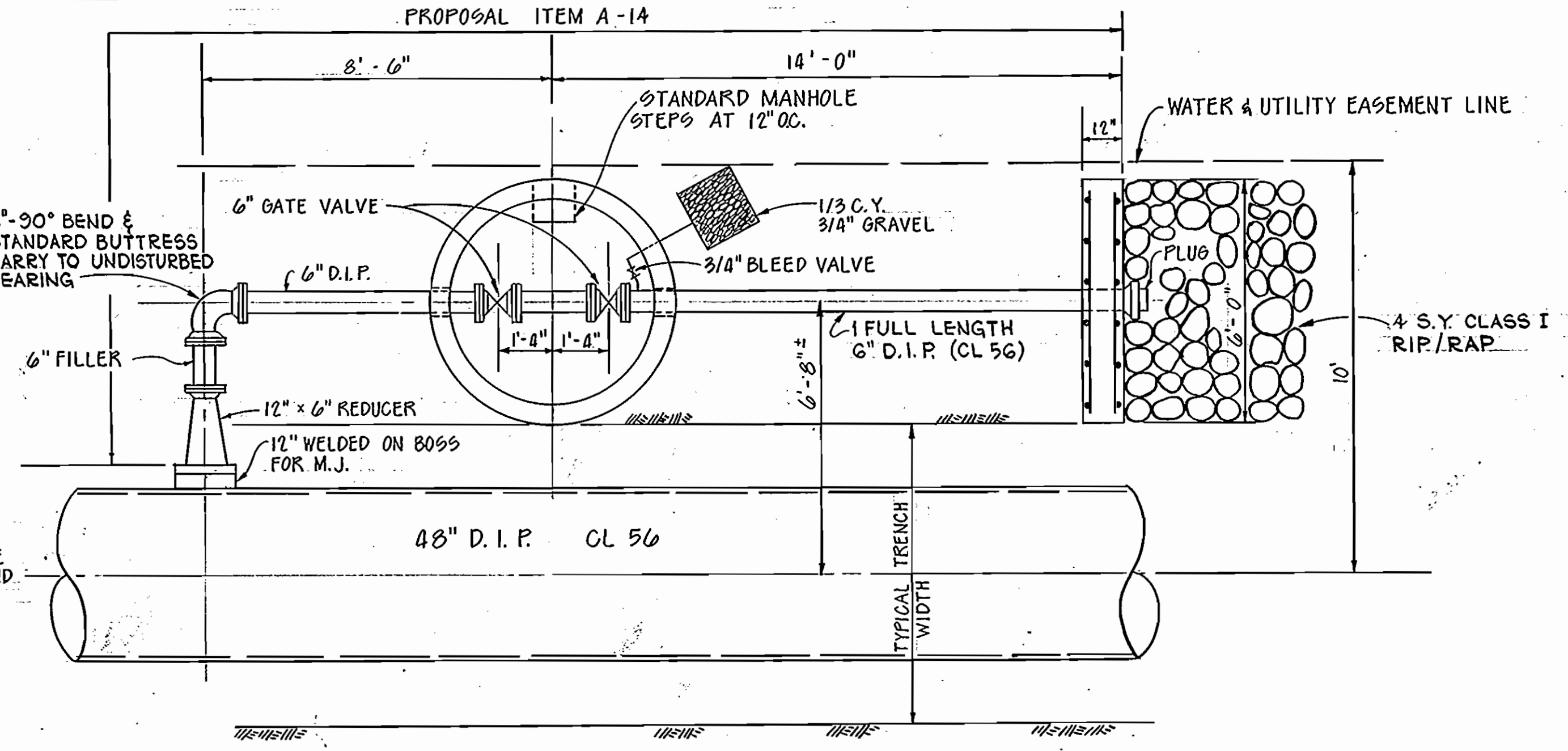


**4" DEWATERING VALVE & ACCESS MANHOLE**  
 SCALE: 3/8" = 1'-0"  
 48" PIPE COSTS TO BE INCLUDED IN PROPOSAL ITEM A-3

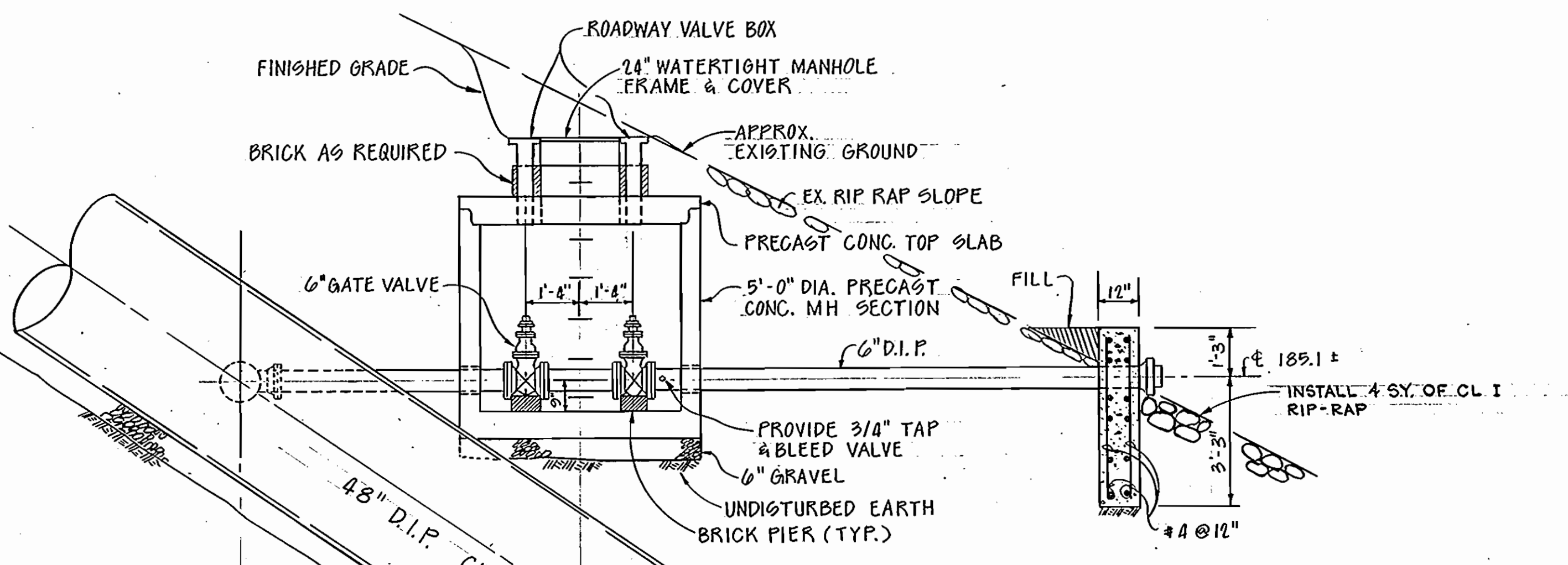


**TYPICAL FRICTION BLOCK & ROCK ANCHOR DETAIL**  
 SCALE: 3/8" = 1'-0"

FRICTION BLOCK ONLY FROM STA. 1+40± TO STA. 2+70±  
 STA. 5+90± TO STA. 6+50±  
 STA. 8+12± TO STA. 8+42±  
 FRICTION BLOCK & ROCK ANCHOR STA. 2+70± TO STA. 3+12±  
 STA. 4+22± TO STA. 5+35±

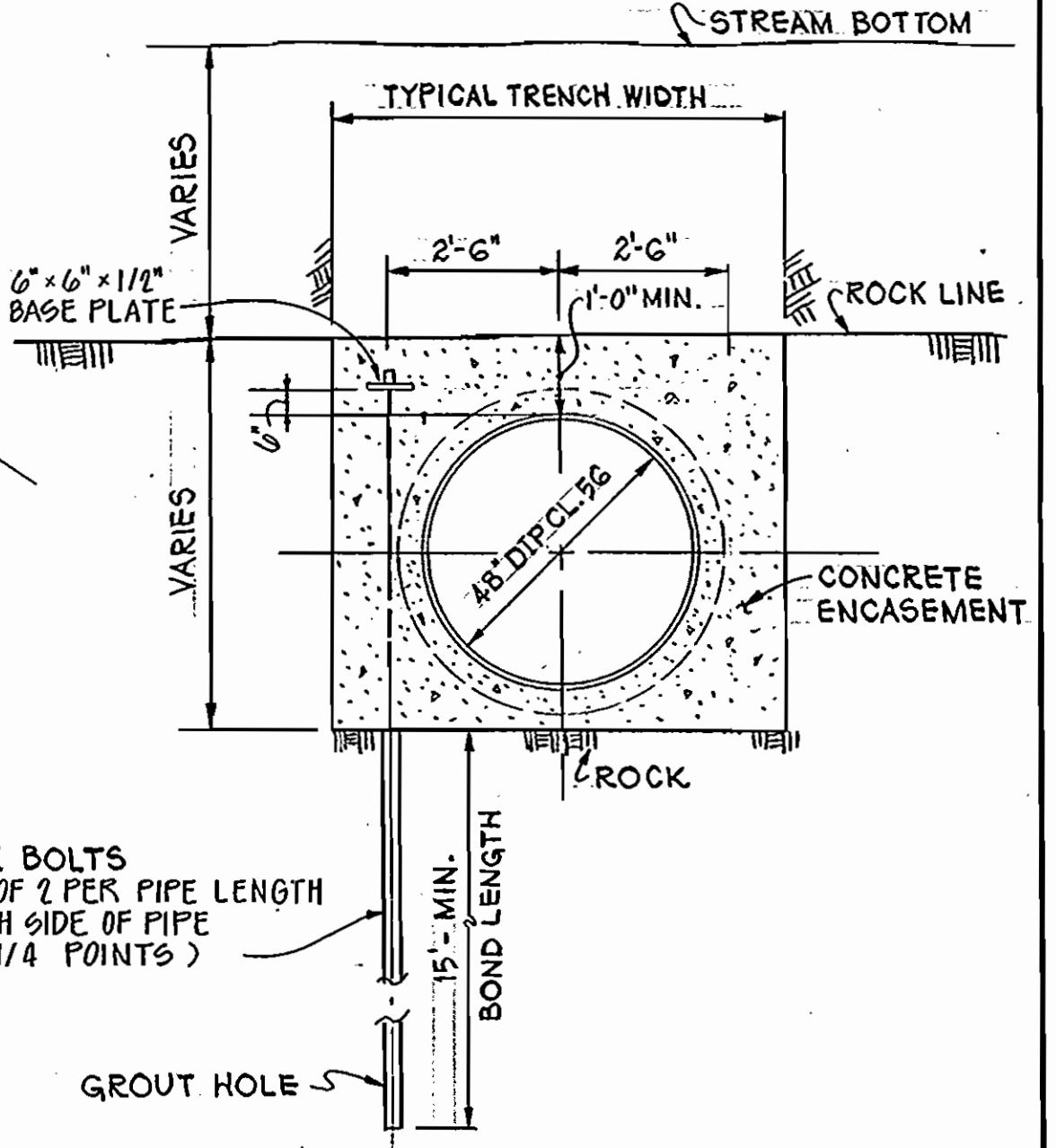


**PLAN**



**ELEVATION**

**TYPE "A" BLOWOFF DETAIL**  
 SCALE: 3/8" = 1'-0"  
 48" PIPE COSTS TO BE INCLUDED IN PROPOSAL ITEM A-3



**CONCRETE ENCASEMENT WITH ROCK BOLTS**  
 N.T.S.  
 STA. 3+29± TO STA. 4+11

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

WHITNEY BAILEY COX MAGNANI  
 CONSULTING ENGINEERS  
 1850 YORK ROAD  
 TIMONIUM, MD 21093  
 301-252-6060



DES: R. J. H.			
DRN: H. H.			
CHK: J. P.			
DATE: 12/29/88	BY	NO.	REVISION

DETAILS

PATAPSCO RIVER CROSSING  
 U.S. ROUTE 40 WATER TRANSMISSION MAIN  
 CAPITAL PROJECT W-8051  
 CONTRACT NO. 44-1735  
 ELECTION DISTRICT NO'S. 2 & 1  
 HOWARD & BALTIMORE COUNTIES, MARYLAND

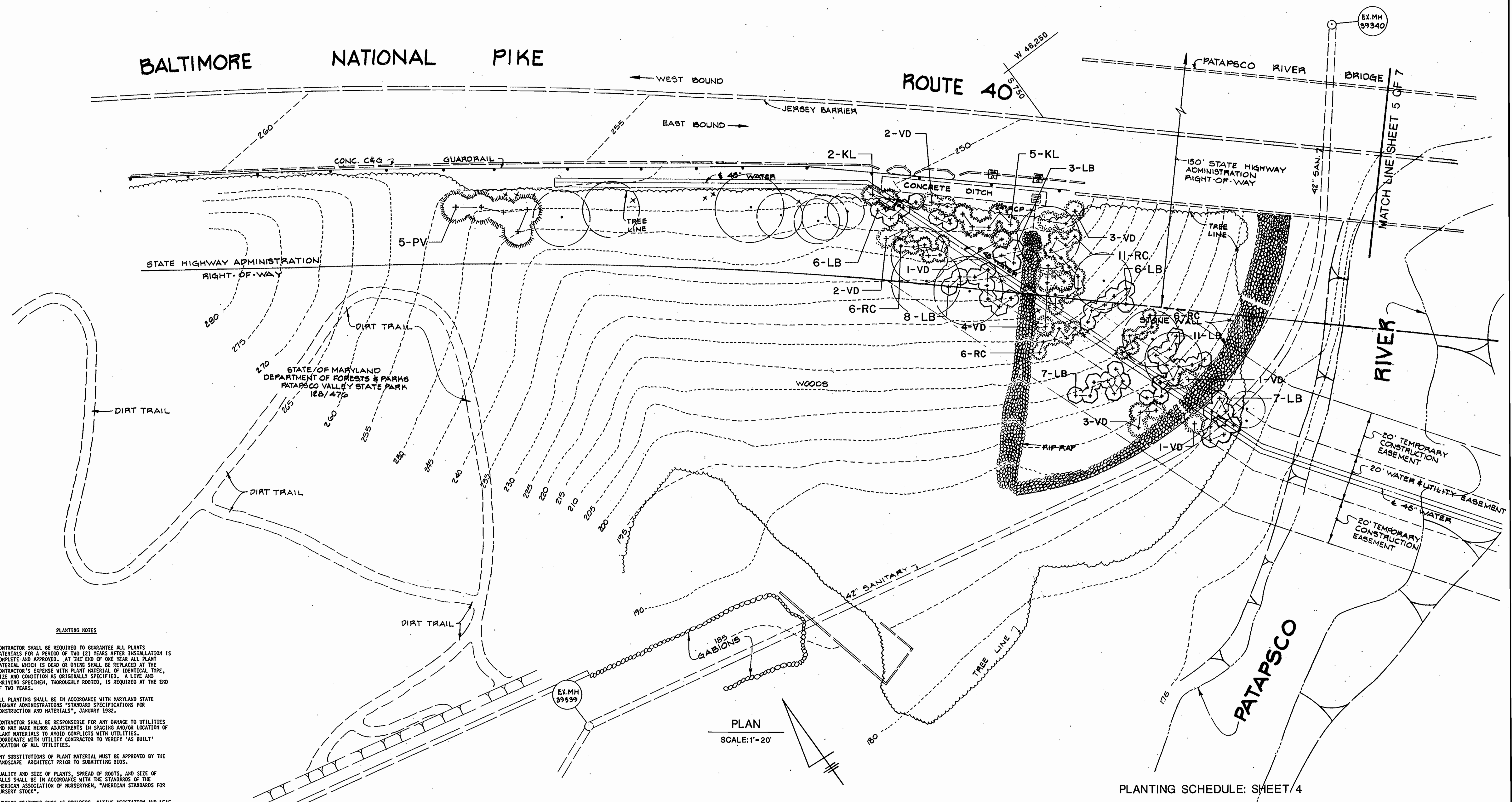
SCALE AS SHOWN  
 SHEET 3 OF 7

69150



# BALTIMORE NATIONAL PIKE

# ROUTE 40



**PLANTING NOTES**

- CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANTS MATERIALS FOR A PERIOD OF TWO (2) YEARS AFTER INSTALLATION IS COMPLETE AND APPROVED. AT THE END OF ONE YEAR ALL PLANT MATERIAL WHICH IS DEAD OR DYING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE WITH PLANT MATERIAL OF IDENTICAL TYPE, SIZE AND CONDITION AS ORIGINALLY SPECIFIED. A LIVE AND THRIVING SPECIMEN, THOROUGHLY ROOTED, IS REQUIRED AT THE END OF TWO YEARS.
- ALL PLANTING SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATIONS "STANDARDS SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS", JANUARY 1992.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND MAY MAKE MINOR ADJUSTMENTS IN SPACING AND/OR LOCATION OF PLANT MATERIALS TO AVOID CONFLICTS WITH UTILITIES. COORDINATE WITH UTILITY CONTRACTOR TO VERIFY "AS BUILT" LOCATION OF ALL UTILITIES.
- ANY SUBSTITUTIONS OF PLANT MATERIAL MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SUBMITTING BIDS.
- QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN, "AMERICAN STANDARDS FOR NURSERY STOCK".
- SURFACE FEATURES SUCH AS BOULDERS, NATIVE VEGETATION AND LEAF COVER SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT.
- FOR LANDSCAPING DETAILS SEE MARYLAND STATE HIGHWAY ADMINISTRATION "BOOK OF STANDARDS - HIGHWAYS & INCIDENTAL STRUCTURES", LATEST EDITION - STANDARDS NO. 712.02, 712.03, 712.04, 713.03, AND 713.05.
- ADJUSTMENT OF PLANT MATERIAL TO MEET EXISTING FIELD CONDITIONS MUST BE APPROVED BY THE PROJECT ENGINEER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE STOCKPILING AND REPLACEMENT OF ALL SURFACE ROCKS AND BOULDERS WITHIN THE EASEMENT AREAS AND CONSTRUCTION STRIP. FINAL LOCATIONS ARE TO BE APPROVED BY THE PROJECT ENGINEER OR HIS DESIGNEE.

PLAN  
SCALE: 1"=20'

PLANTING SCHEDULE: SHEET 4

KEY	QTY.	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	REMARKS
KL	7	KALMIA LATIFOLIA / MOUNTAIN LAUREL	30-36"	B&B	
LB	48	LINDERA BENZOIN / SPICEBUSH	24-30"	B&B	
PV	5	PINUS VIRGINIANA / VIRGINIA PINE	5-6'	B&B	
RC	30	RHODODENDRON CALENDULACEUM / FLAME AZALEA	24-30"	B&B	
VD	17	VIBURNUM DENTATUM / ARROWWOOD VIBURNUM	30-36"	B&B	

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HOWARD COUNTY, MARYLAND

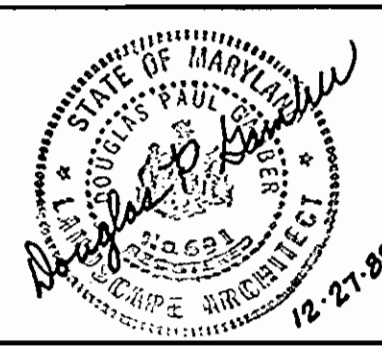
*[Signature]* 12-28-88  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 12-28-88  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-28-88  
CHIEF, UTILITY DESIGN DIVISION DATE

**WHITNEY BAILEY COX MAGNANI**

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1850 YORK ROAD  
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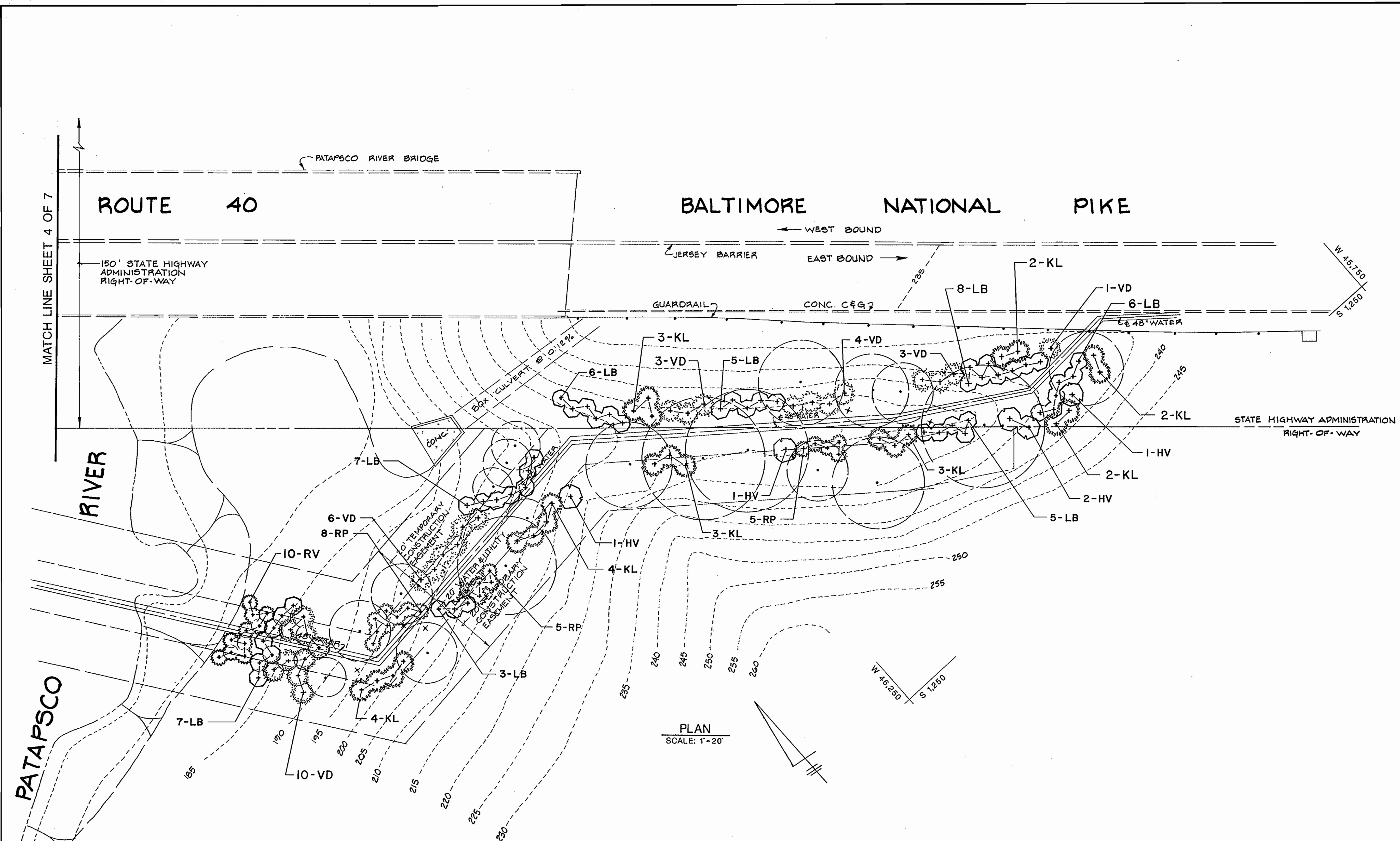
DES: D.G.			
DRN: J.A.			
CHK: D.G.			
DATE: 12-29-88	BY NO.	REVISION	DATE

REVEGETATION PLAN

60' SCALE MAP NO. 18 BLOCK NO. 15

PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND

SCALE AS SHOWN  
SHEET 4 OF 7



PLANTING SCHEDULE: SHEET 5

KEY	QTY.	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	REMARKS
HV	5	HAMAMELIS VIRGINIANA / COMMON WITCHHAZEL	3-4'	B&B	
KL	23	KALMIA LATIFOLIA / MOUNTAIN LAUREL	30-36"	B&B	
LB	47	LINDERA BENZOIN / SPICEBUSH	24-30"	B&B	
RP	18	RHODODENDRON PERICLYMENOIDES / PINKSTERBLOOM AZALEA	24-30"	B&B	
RV	10	RHODODENDRON VISCOSUM / SWAMP AZALEA	24-30"	B&B	
VD	26	VIBURNUM DENTATUM / ARROWWOOD VIBURNUM	30-36"	B&B	

CUMULATIVE PLANT SCHEDULE: SHEETS 4 & 5

KEY	QTY.	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	REMARKS
HV	5	HAMAMELIS VIRGINIANA / COMMON WITCHHAZEL	3-4'	B&B	
KL	30	KALMIA LATIFOLIA / MOUNTAIN LAUREL	30-36"	B&B	
LB	95	LINDERA BENZOIN / SPICEBUSH	24-30"	B&B	
PV	5	PINUS VIRGINIANA / VIRGINIA PINE	5-6'	B&B	
RC	30	RHODODENDRON CALENDULACEUM / FLAME AZALEA	24-30"	B&B	
RP	18	RHODODENDRON PERICLYMENOIDES / PINKSTERBLOOM AZALEA	24-30"	B&B	
RV	10	RHODODENDRON VISCOSUM / SWAMP AZALEA	24-30"	B&B	
VD	43	VIBURNUM DENTATUM / ARROWWOOD VIBURNUM	30-36"	B&B	

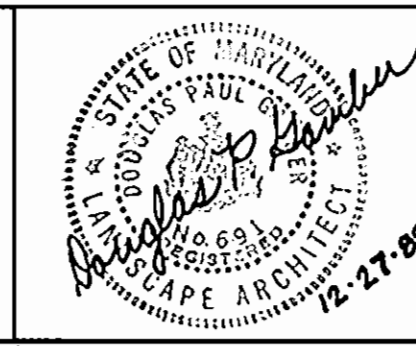
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]*  
DIRECTOR OF PUBLIC WORKS  
DATE: 12-28-88

*[Signature]*  
CHIEF, BUREAU OF ENGINEERING  
DATE: 12-28-88

*[Signature]*  
CHIEF, UTILITY DESIGN DIVISION  
DATE: 12-28-88

**WHITNEY BAILEY COX MAGNANI**  
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1850 YORK ROAD  
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301-252-6060



DES: D.G.  
DRN: J.A.  
CHK: D.G.  
DATE: 12-28-88

REVISION

BY NO. DATE

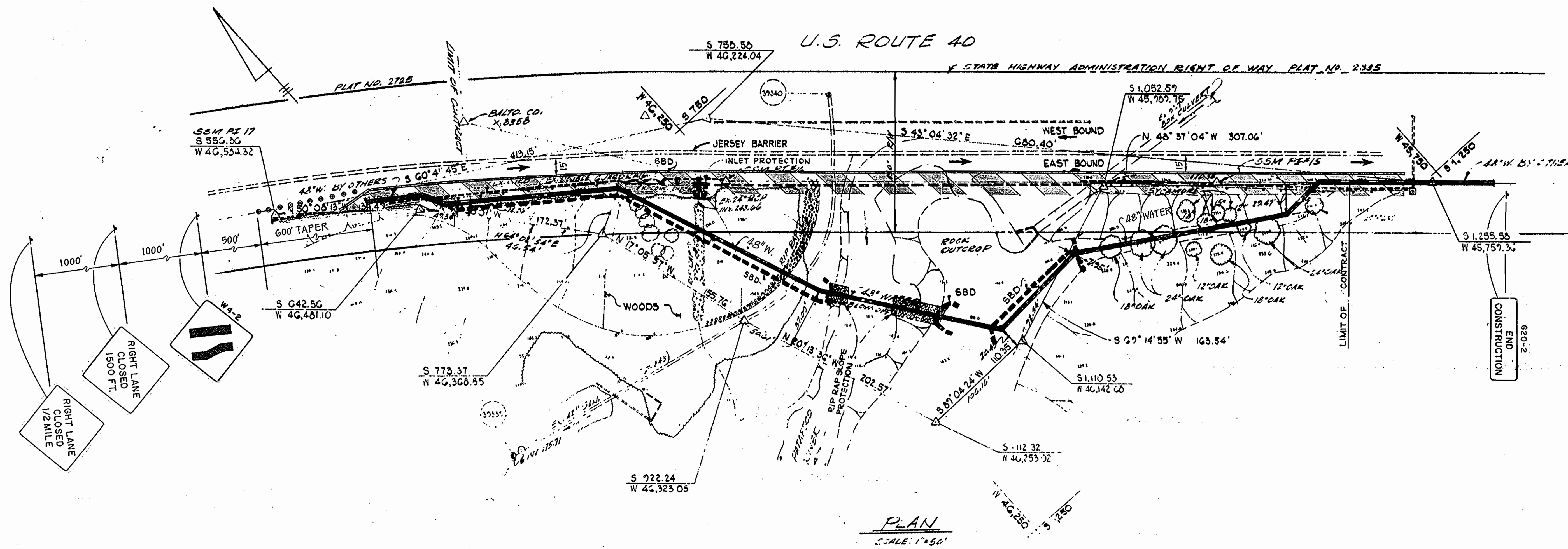
REVEGETATION PLAN

600' SCALE MAP NO. 18 BLOCK NO. 15

PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND





SCALE AS SHOWN  
SHEET 5 OF 7





PLAN  
SCALE: 1"=50'

**LEGEND**

-  CONSTRUCTION AREA
-  TEMPORARY DOUBLE FACE MEDIAN BARRIER FOR MAINTENANCE OF TRAFFIC
-  PLASTIC DRUMS
-  TRAFFIC LANES

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. ...*  
DIRECTOR OF PUBLIC WORKS  
DATE: 10-7-88

*Robert W. ...*  
CHIEF, BUREAU OF UTILITIES  
DATE: 10-7-88

**WR** WHITNEY  
BAILEY  
COX  
MAGNANI

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DES: M. B.			
DRN: N. S.			
CHK: J. P.			
DATE: 12/29/88	BY	N.O.	REVISION

TRAFFIC CONTROL PLAN

600' SCALE MAP NO. 18 BLOCK NO. 15

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SCALE AS SHOWN

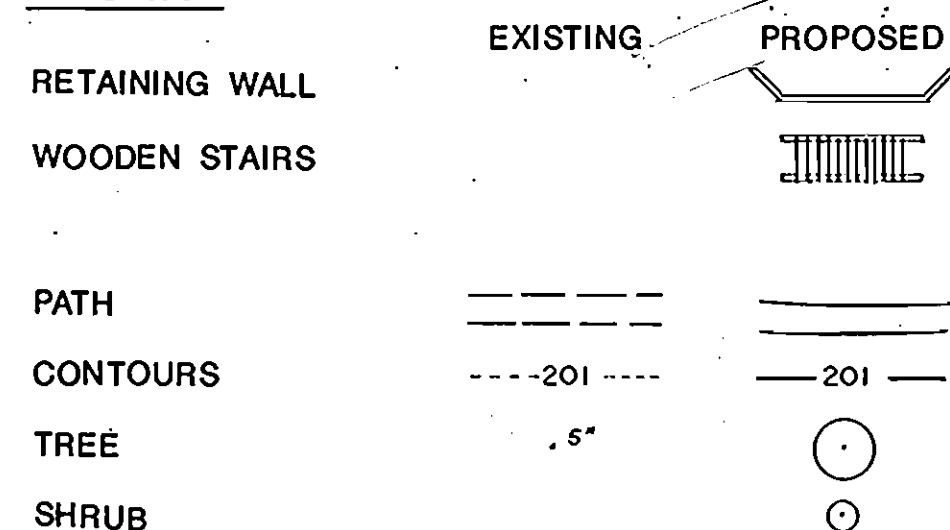
SHEET 6 OF 7







**LEGEND**



**LAYOUT AND DIMENSIONING**

- |                          |                             |
|--------------------------|-----------------------------|
| 1. STA. 0+35 LT. - 14.0' | 12. STA. 0+55.67 LT. - 7.0' |
| 2. STA. 0+31 LT. - 7.5'  | 13. STA. 0+64 LT. - 10.0'   |
| 3. STA. 0+17 LT. - 6.0'  | 14. STA. 0+67.5 LT. - 7.0'  |
| 4. STA. 0+11 LT. - 11.5' | 15. STA. 0+95 LT. - 7.0'    |
| 5. STA. 0+30 LT. - 22.0' | 16. STA. 0+99 LT. - 8.0'    |
| 6. STA. 0+26 LT. - 15.0' | 17. STA. 0+68 LT. - 14.0'   |
| 7. STA. 0+17 LT. - 12.5' | 18. STA. 0+76.5 LT. - 13.0' |
| 8. STA. 0+14 LT. - 15.0' | 19. STA. 0+93 LT. - 13.0'   |
| 9. STA. 0+06 LT. - 7.0'  | 20. STA. 0+97 LT. - 14.0'   |
| 10. STA. 0+04 LT. - 7.0' | 21. STA. 0+90 LT. - 7.0'    |

**PLANTING NOTES**

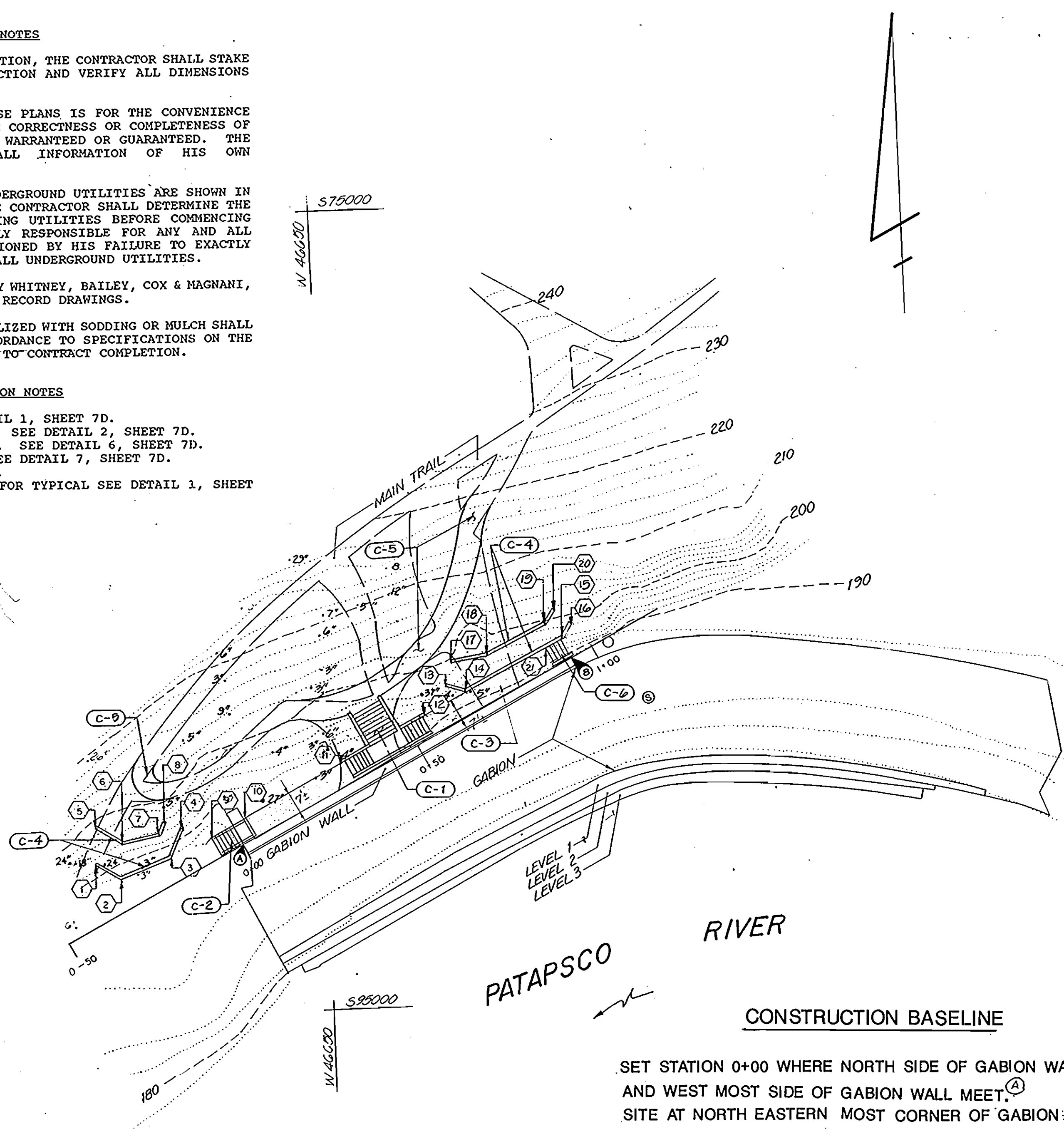
- (15) OAK TREES TO BE PLANTED AT THE DIRECTION OF THE PATAPSCO VALLEY STATE PARK MANAGER.
- ALL PLANTS BEHIND WALLS SHOULD BE SPACED TO AVOID PLANTING ON WALL DEADMEN.
- SEE PLANTING DETAILS, SHEET 7D.

**PLANT SCHEDULE**

KEY	QTY.	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	REMARKS
IO	7	ILEX OPACA / AMERICAN HOLLY	5-6'	B&B	PLANT 10' O/C PROVIDE 2 MALES
VD	14	VIBURNUM DENTATUM / ARROWWOOD VIBURNUM	3-4'	POT	PLANT 6' O/C
LB	17	LINDERA BENZOIN / SPICEBUSH	18-24"	POT	PLANT 5' O/C
	15	QUERCUS BOREALIS / RED OAK	1 1/2-2" cal.	B&B	

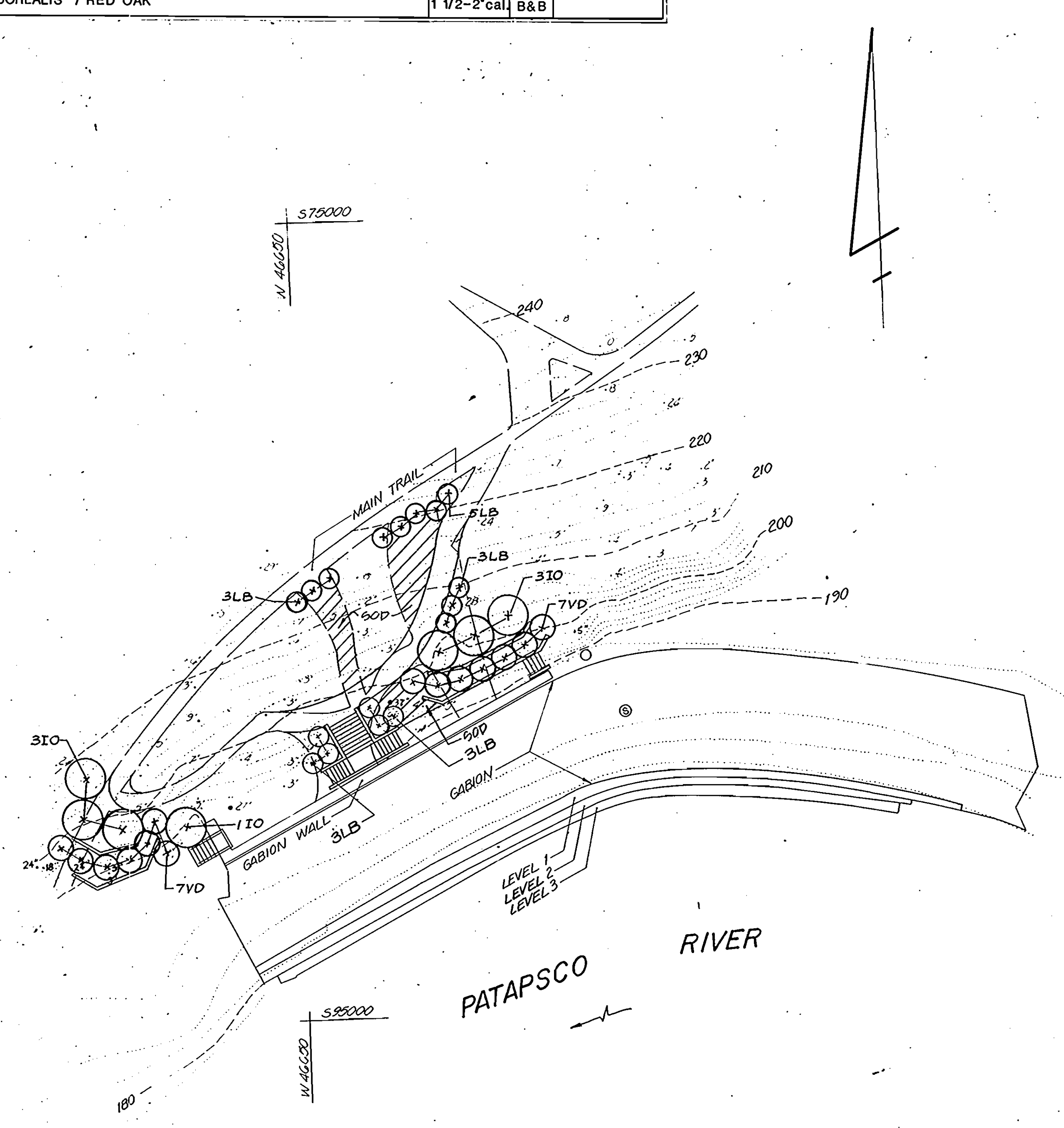
- GENERAL NOTES**
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL STAKE OUT THE BASELINES OF CONSTRUCTION AND VERIFY ALL DIMENSIONS AND OFFSETS.
  - THE INFORMATION SHOWN ON THESE PLANS IS FOR THE CONVENIENCE OF THOSE CONCERNED ONLY. THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION SHOWN IS NOT WARRANTED OR GUARANTEED. THE CONTRACTOR SHALL VERIFY ALL INFORMATION OF HIS OWN SATISFACTION.
  - THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
  - SURVEY INFORMATION PROVIDED BY WHITNEY, BAILEY, COX & MAGNANI, DATED MAY 1989 AND AVAILABLE RECORD DRAWINGS.
  - ALL DISTURBED AREAS NOT STABILIZED WITH SODDING OR MULCH SHALL BE SEEDED AND MULCHED IN ACCORDANCE TO SPECIFICATIONS ON THE SEDIMENT CONTROL PLAN, PRIOR TO CONTRACT COMPLETION.

- CONSTRUCTION NOTES**
- NEW WOODEN STAIRS. SEE DETAIL 1, SHEET 7D.
  - NEW WOOD STAIRS OVER GABION. SEE DETAIL 2, SHEET 7D.
  - NEW CRUSHED LIMESTONE PAVING. SEE DETAIL 6, SHEET 7D.
  - NEW TIMBER RETAINING WALL. SEE DETAIL 7, SHEET 7D.
  - CLEAR AND GRUB FOR NEW TRAIL.
  - NEW MODIFIED WOODEN STAIRS, FOR TYPICAL SEE DETAIL 1, SHEET 7 D.



**PLAN**  
SCALE: 1"=20'  
**SITE LAYOUT PLAN**

SET STATION 0+00 WHERE NORTH SIDE OF GABION WALL AND WEST MOST SIDE OF GABION WALL MEET. (A)  
SITE AT NORTH EASTERN MOST CORNER OF GABION. (B)  
TO ESTABLISH BASELINE.



**PLAN**  
SCALE: 1"=20'  
**PLANTING PLAN**

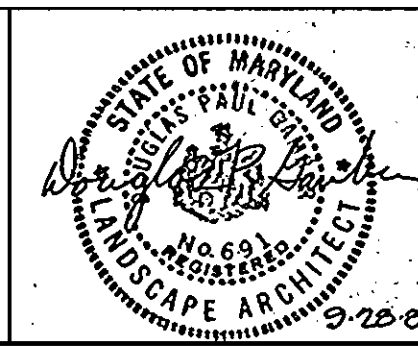
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James W. Heiland* 10/3/89  
DIRECTOR OF PUBLIC WORKS DATE

*John J. Baer* 10-3-89  
CHIEF, BUREAU OF UTILITIES DATE

*John J. Baer* 10-3-89  
CHIEF, UTILITY DESIGN DIVISION DATE

**WHITNEY BAILEY COX MAGNANI**  
CONSULTING ENGINEERS  
1850 YORK ROAD  
TIMONIUM, MD. 21093  
301-252-6060



DES:	DPG			
DRN:	DCP			
CHK:	PD			
DATE:	9/29/89	BY:	NO.	REVISION

WALKWAY CONSTRUCTION  
PATAPSCO STATE PARK  
LAYOUT & PLANTING PLAN

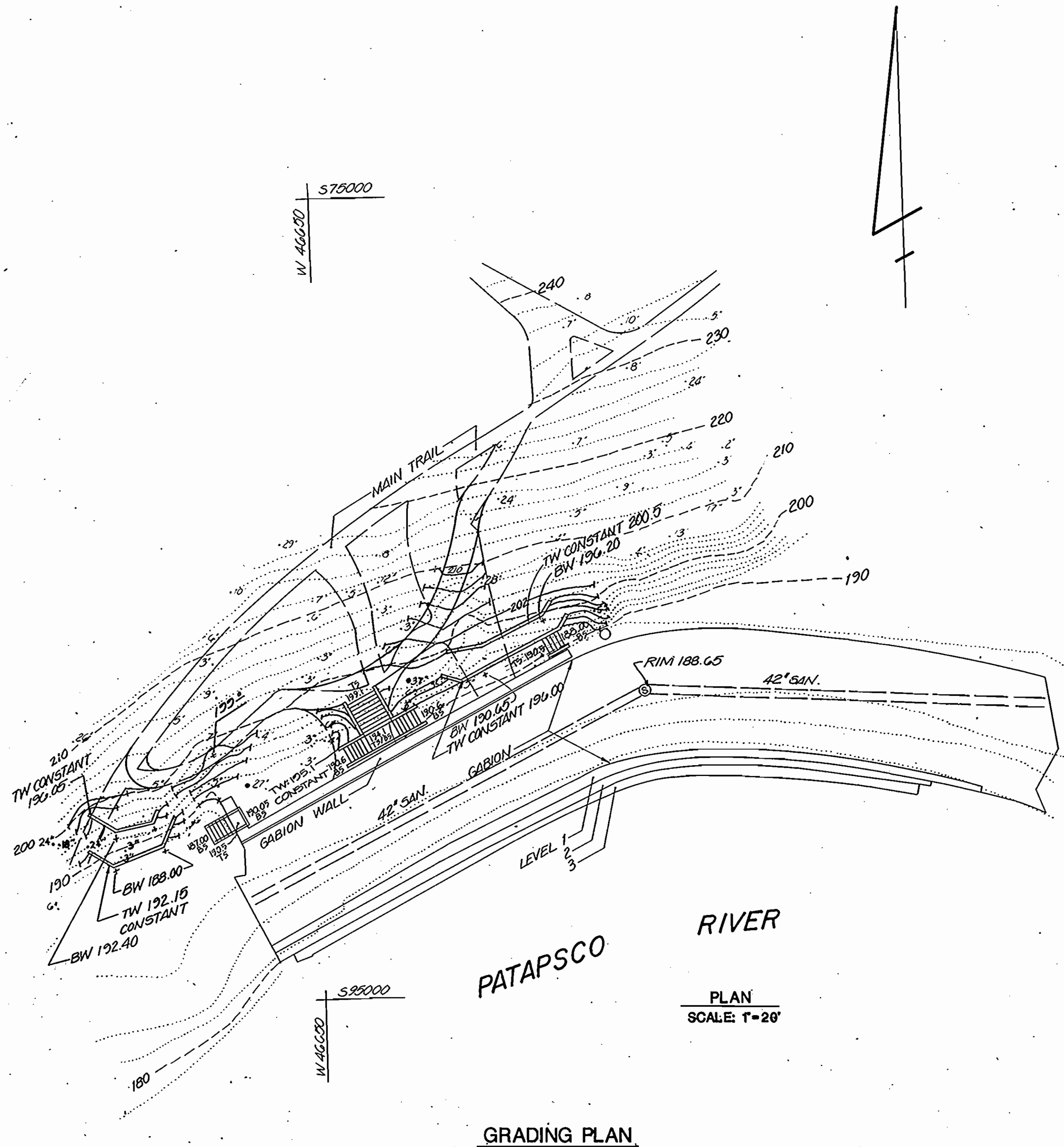
PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND

SCALE AS SHOWN  
SHEET 24 OF 71



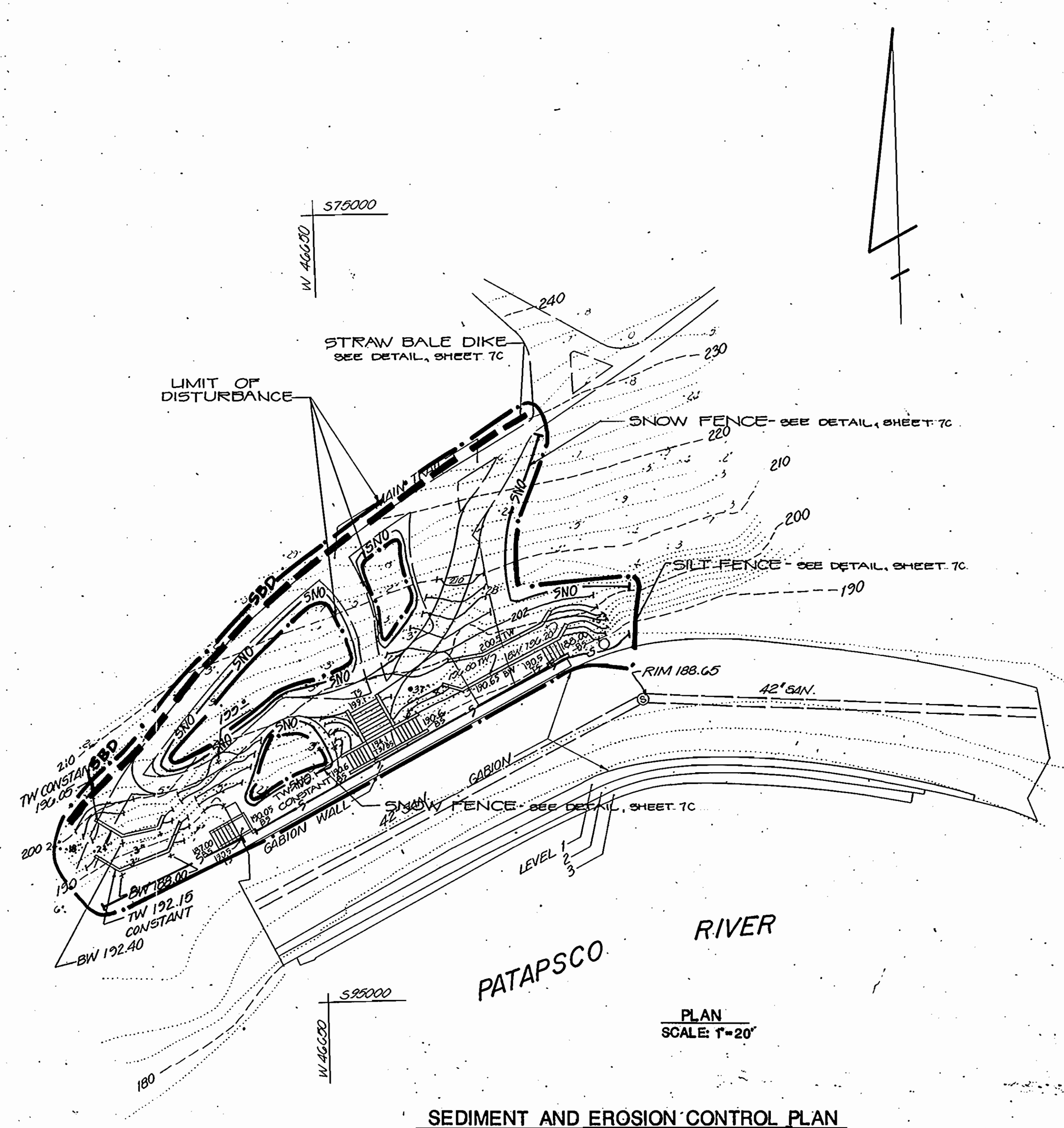
**LEGEND**

	EXISTING	PROPOSED
RETAINING WALL		
WOODEN STAIRS		
PATH		
CONTOURS		
SPOT ELEVATIONS		190.65
LIMIT OF DISTURBANCE		
SNOW FENCE		SNO
STRAW BALE DIKE		S
SILT FENCE		S



**GRADING PLAN**

PATAPSCO RIVER  
PLAN  
SCALE: 1"=20'

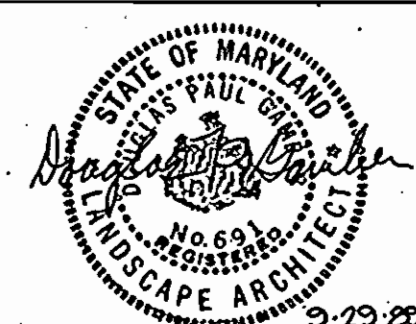


**SEDIMENT AND EROSION CONTROL PLAN**

PATAPSCO RIVER  
PLAN  
SCALE: 1"=20'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
10/2/89  
10-2-89

WHITNEY CONSULTING ENGINEERS  
BAILEY COX MAGNANI  
1850 YORK ROAD  
TIMONIUM, MD. 21093  
301-252-6060



DES:	DPG				
DRN:	DCP				
CHK:	PD				
DATE:	9/29/89	BY	NO.	REVISION	DATE

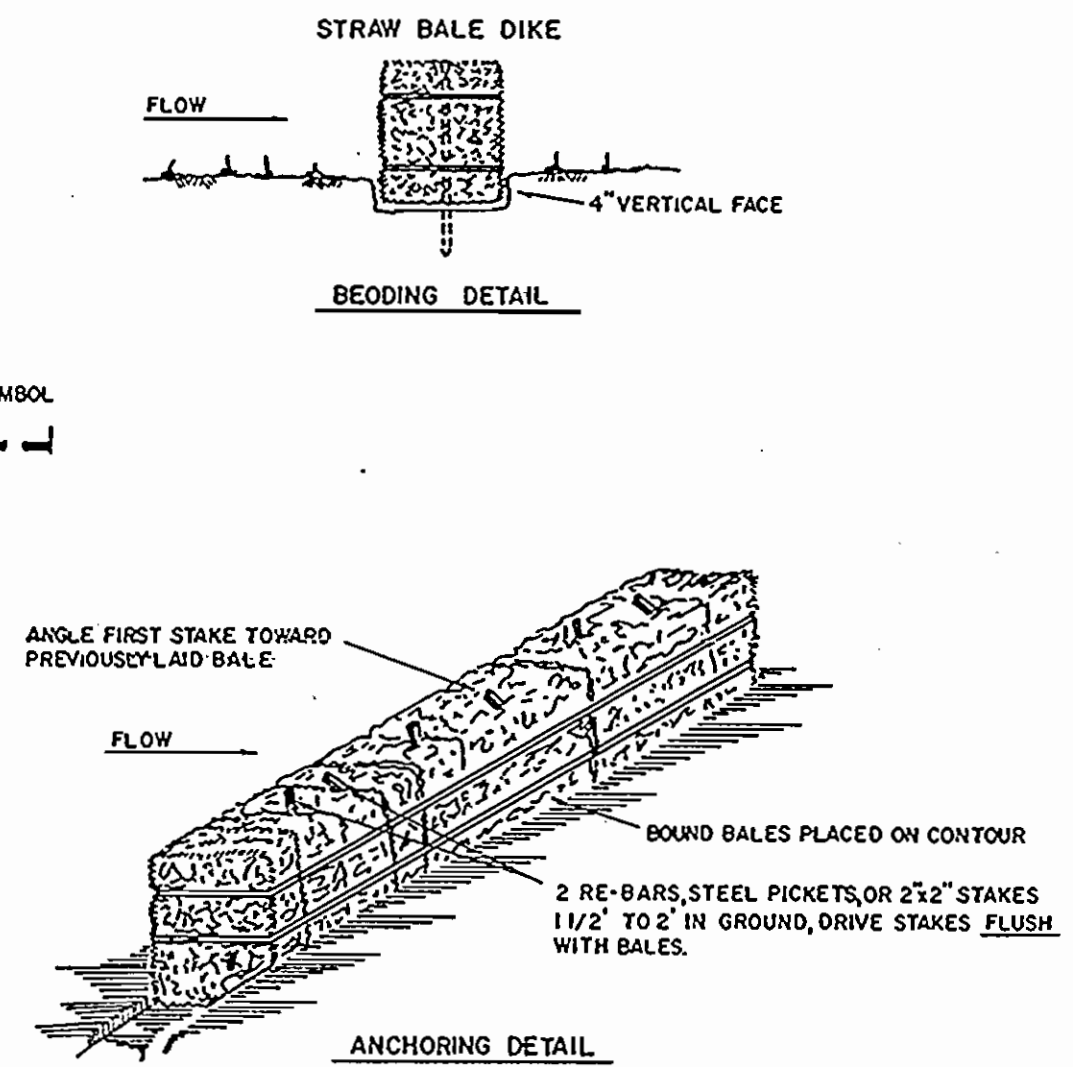
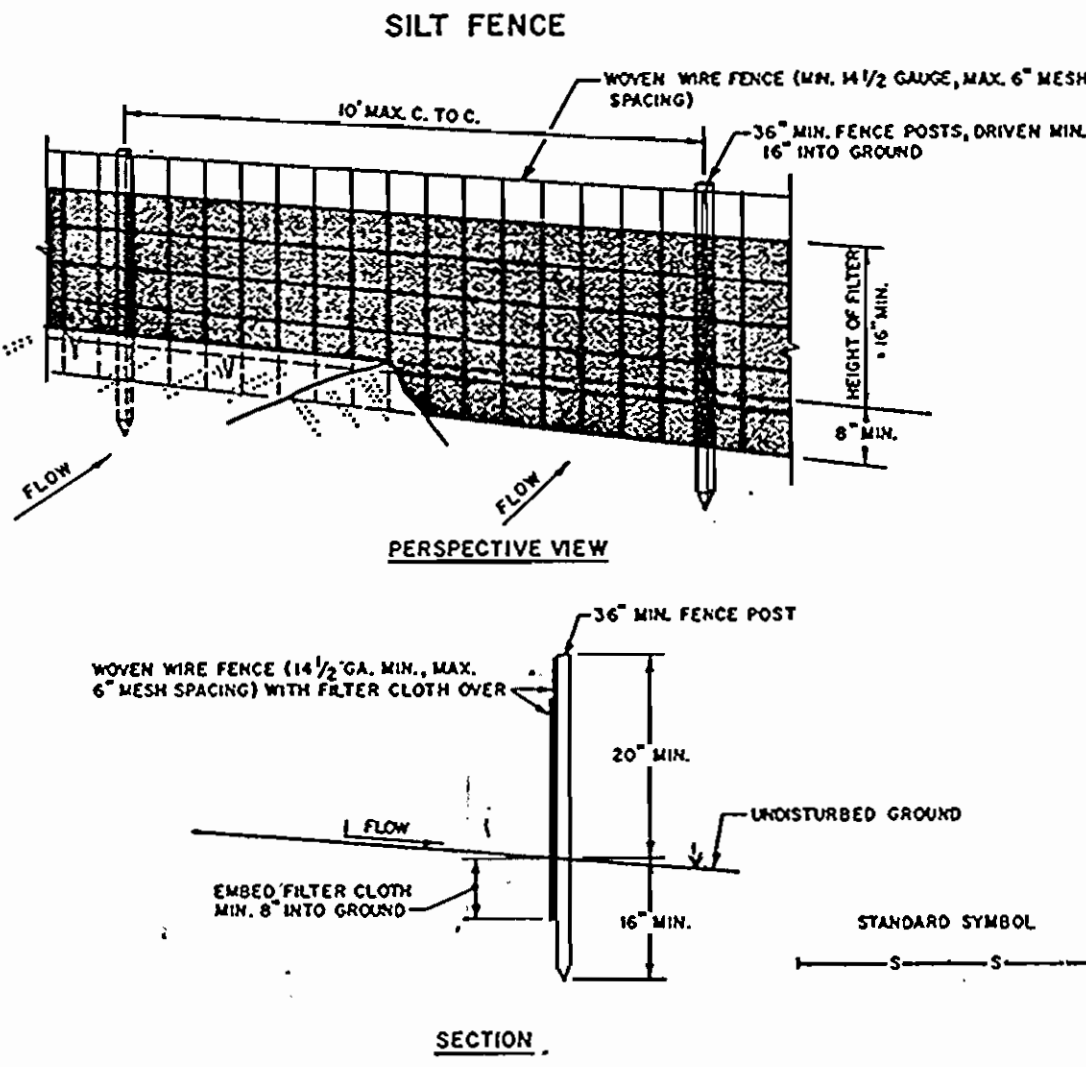
WALKWAY CONSTRUCTION  
PATAPSCO STATE PARK  
GRADING & SEDIMENT CONTROL  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND

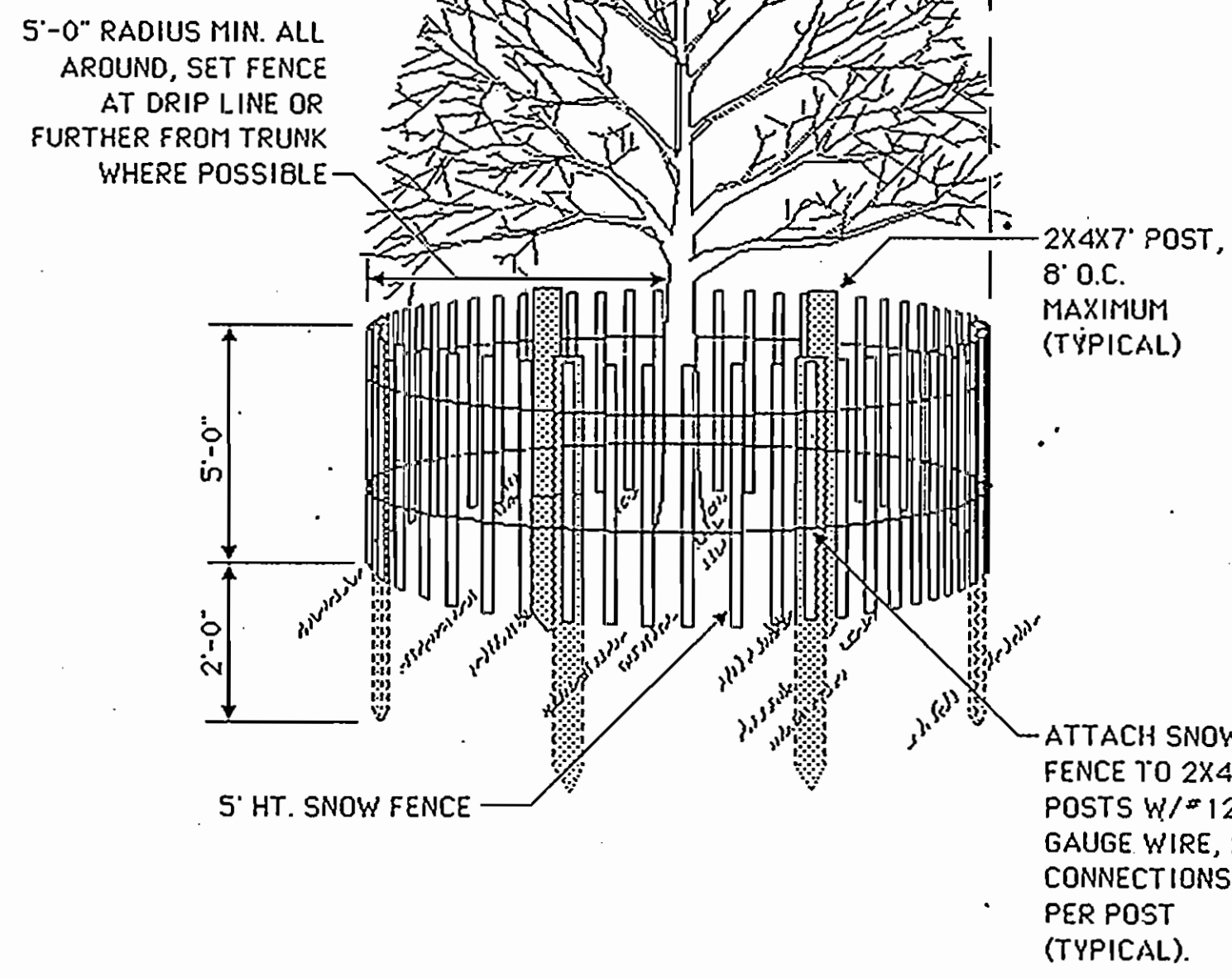
SCALE AS SHOWN  
SHEET 7 OF 7



STANDARD AND SPECIFICATIONS  
FOR  
VEGETATIVE STABILIZATION  
WITH SOD



NOTE: SNOW FENCE TO ENCOMPASS ENTIRE AREA AS SHOWN ON PLAN, NOT TO ENCLIRCLE INDIVIDUAL TREES.



TREE/SHRUB PROTECTION / SNOW FENCE DETAIL

- Class of turfgrass sod shall be Maryland or Virginia State Certified, or Maryland or Virginia State approved sod.
- 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.
- 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.
- 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.
- Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- 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.

I. Site Preparation

Fertilizer and lime application rates shall be determined by soil tests. Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer and lime materials may be applied in amounts shown under B, below.

- 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.
- 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 1,000 square feet. In all soils 1,000 pounds per acre or 25 pounds per 1,000 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.
- All areas receiving sod shall be uniformly fine graded. Hard-packed earth shall be scarified prior to placement of sod.

II. Sod Installation

- During periods of excessively high temperature the soil shall be lightly irrigated immediately prior to laying the sod.
- The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Insure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- On sloping areas where erosion may be a problem, sod shall be laid with the long edges parallel to the contour and with staggered joints. Secure the sod by tamping and pegging or other approved methods.
- As sodding is completed in any one section, the entire area shall be rolled or tamped to insure solid contact of roots with the soil surface. Sod shall be watered immediately after rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

III. Sod Maintenance

- In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done during the heat of the day to prevent wilting.
- After the first week, sod shall be watered as necessary to maintain adequate moisture and insure establishment.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

*William P. Ray* 10-2-89  
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

*Richard P. Linn* 9-28-89  
SIGNATURE OF ENGINEER DATE

- 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, NAILS EVERY 24" AT TOP AND MID SECTION.
  - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
  - 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, 1 1/2 GA. 6" MAX. MESH OPENING
- FILTER CLOTH: FILTER X, MIRAFIL 100, STABILINKA 140N OR APPROVED EQUAL
- PREFABRICATED UNIT: GEOPAB, SAVIREFENCE, OR APPROVED EQUAL.

- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ADJUTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
- 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.
- INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

- SEQUENCE OF CONSTRUCTION
- OBTAIN GRADING PERMITS.
  - CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.
  - INSTALL SEDIMENT CONTROL DEVICES.
  - CLEAR AND GRUB AREA NECESSARY FOR CONSTRUCTION.
  - BEGIN GRADING FOR NEW PATH.
  - INSTALL NEW STEPS AND RETAINING WALLS.
  - STABILIZE ALL DISTURBED AREAS NOT DESIGNATED AS PATHWAY OR PLANTING BED WITH SOD.
  - INSTALL LANDSCAPING.
  - REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS.

- SEDIMENT CONTROL NOTES
- 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)
  - 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.
  - Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within:
    - 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1.
    - 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 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.
  - 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.
  - Site Analysis:
 

Total Area of Site	N/A Acres
Area Disturbed	0.02 Acres
Area to be roofed or paved	0 Acres
Area to be vegetatively stabilized	0.06 Acres
Total Cut	12 Cu. Yds.
Total Fill	20 Cu. Yds.
Office waste/borrow area location	NOT KNOWN
  - Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
  - Additional sediment controls must be provided, if deemed necessary by the Howard County DPA sediment control inspector.
  - 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.
  - 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.
- \* The information shown for Howard County only and not to be used for bidding purposes by the contractor.

SILT FENCE

STRAW BALE DIKE

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, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedule:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square 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).
- 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 (.05 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 tool 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 seeded 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, if not 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 bushels 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 (.07 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 tool 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.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*William H. Wallace* 10/1/89  
DIRECTOR OF PUBLIC WORKS DATE

*Robert Beaman* 10-3-89  
CHIEF, BUREAU OF UTILITIES DATE

*William P. Ray* 10-2-89  
CHIEF, BUREAU OF ENGINEERING DATE

*Richard P. Linn* 10-2-89  
CHIEF, UTILITY DESIGN DIVISION DATE

WHITNEY  
BAILEY  
COX  
MAGNANI

CONSULTING  
ENGINEERS  
1850 YORK ROAD  
TIMONIUM, MD. 21093  
301-252-6060

STATE OF MARYLAND  
REGISTERED PROFESSIONAL ENGINEER  
NO. 6636  
JULY 28, 1983  
LANDSCAPE ARCHITECT  
NO. 1062  
JULY 28, 1983

9-29-89

DES: D.P.G.					
DRN: D.C.P.					
CHK: D.P.G.					
DATE: 9/29/89	BY NO.	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

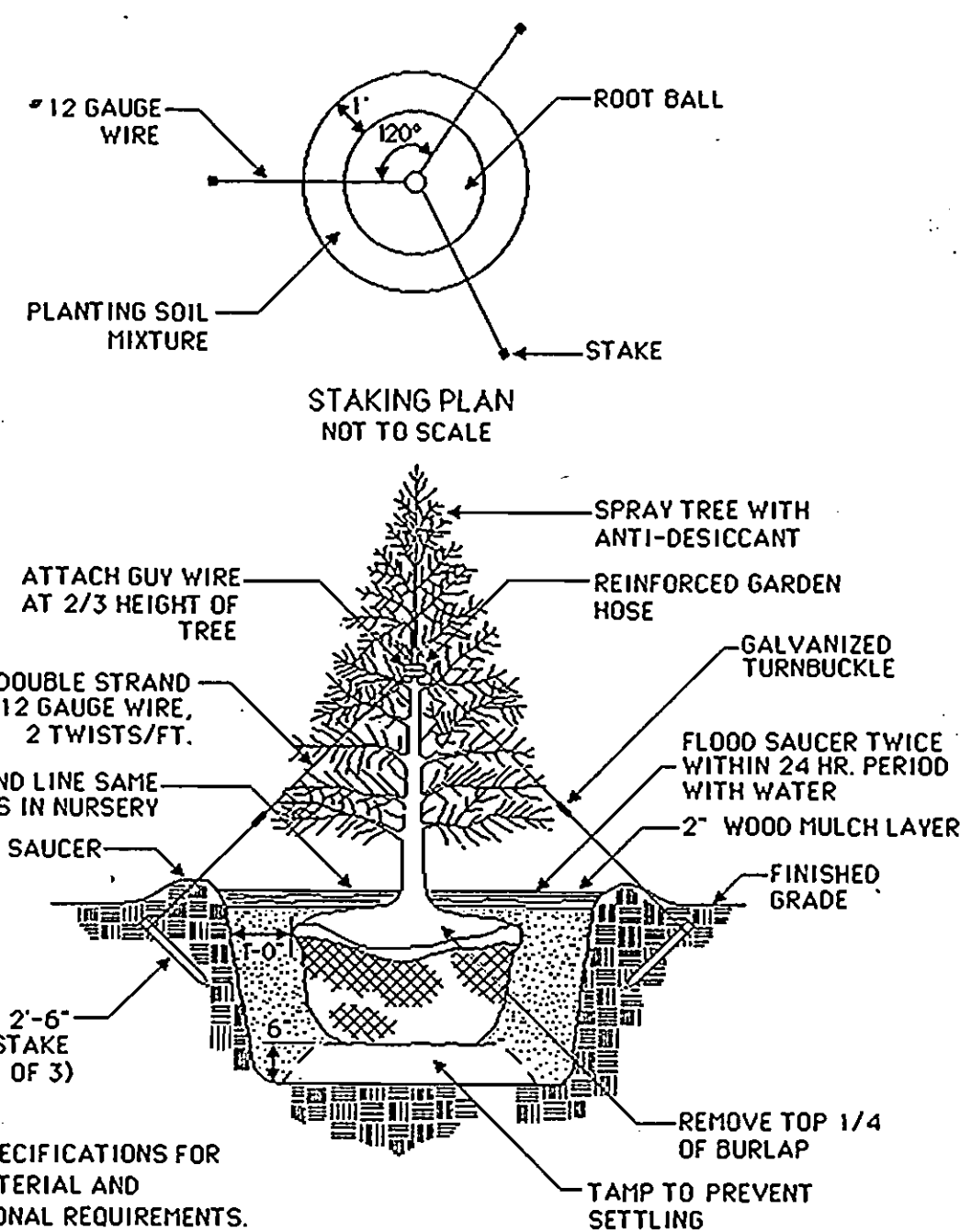
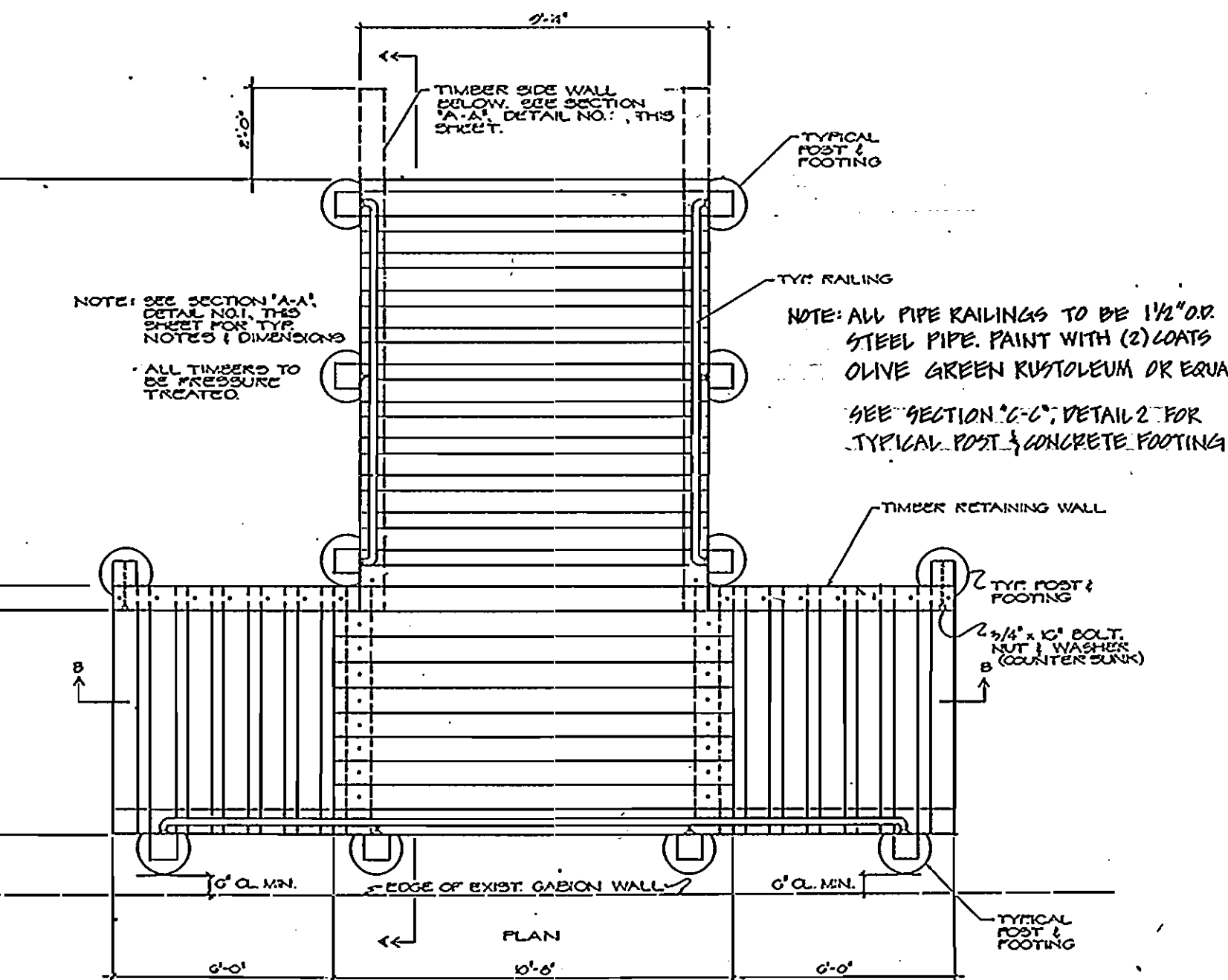
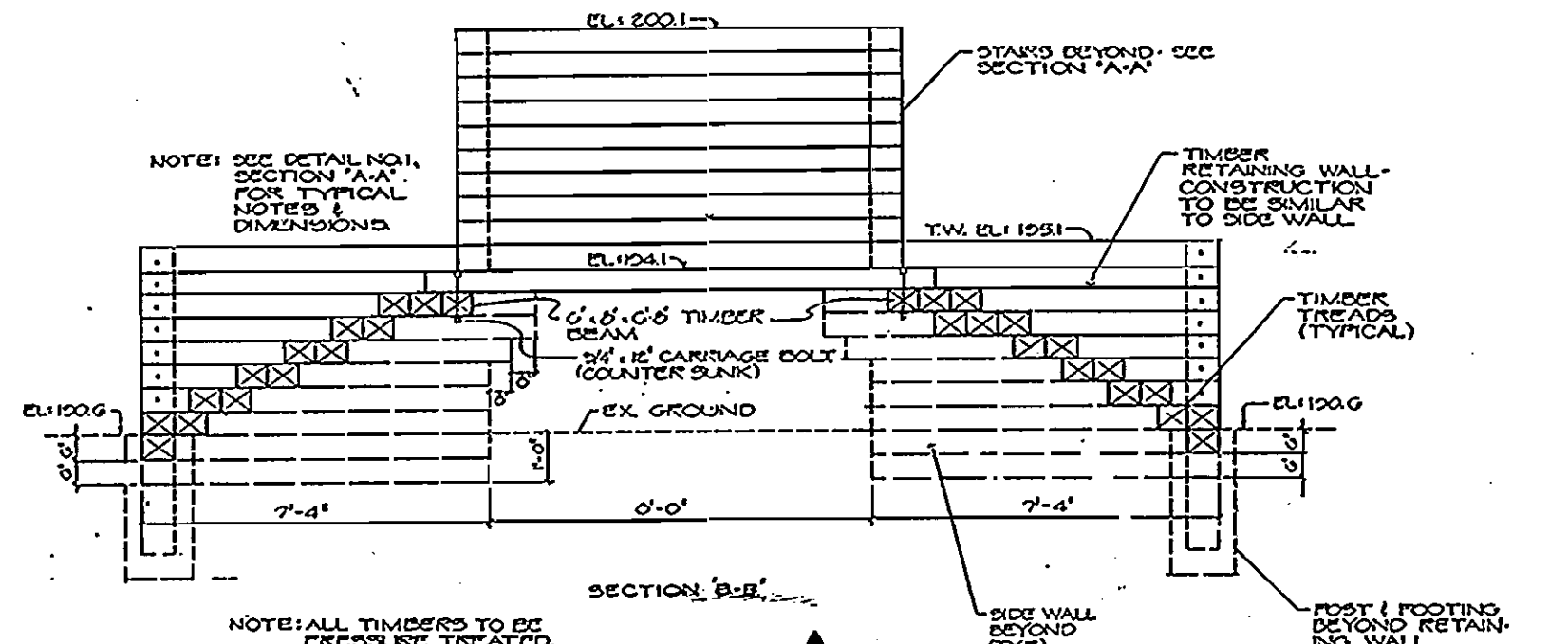
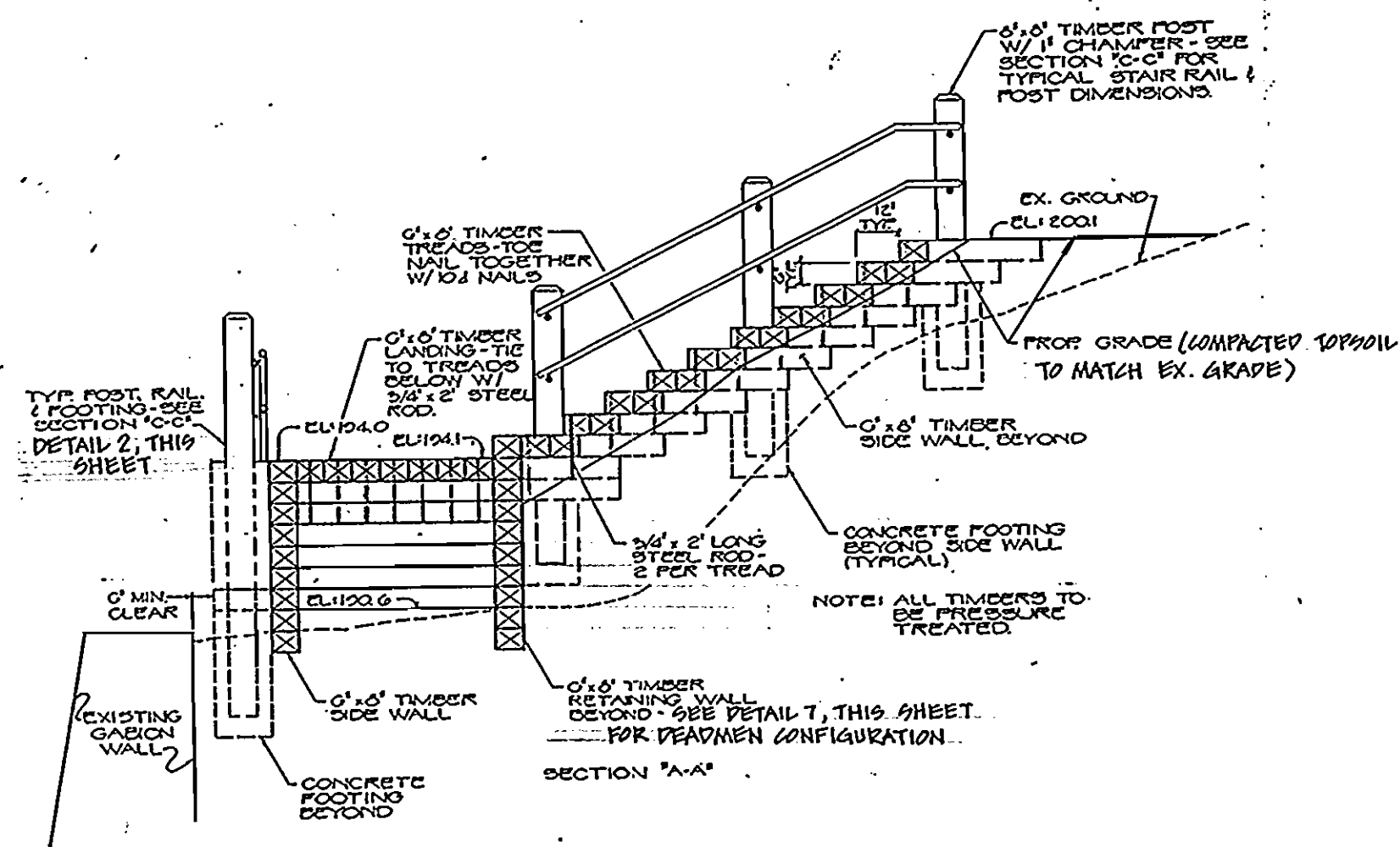
SEDIMENT & EROSION CONTROL  
NOTES & DETAILS

PATAPSCO RIVER CROSSING  
U.S. ROUTE 40 WATER TRANSMISSION MAIN  
CAPITAL PROJECT W-8051  
CONTRACT NO. 44-1735  
ELECTION DISTRICT NO'S. 2 & 1  
HOWARD & BALTIMORE COUNTIES, MARYLAND

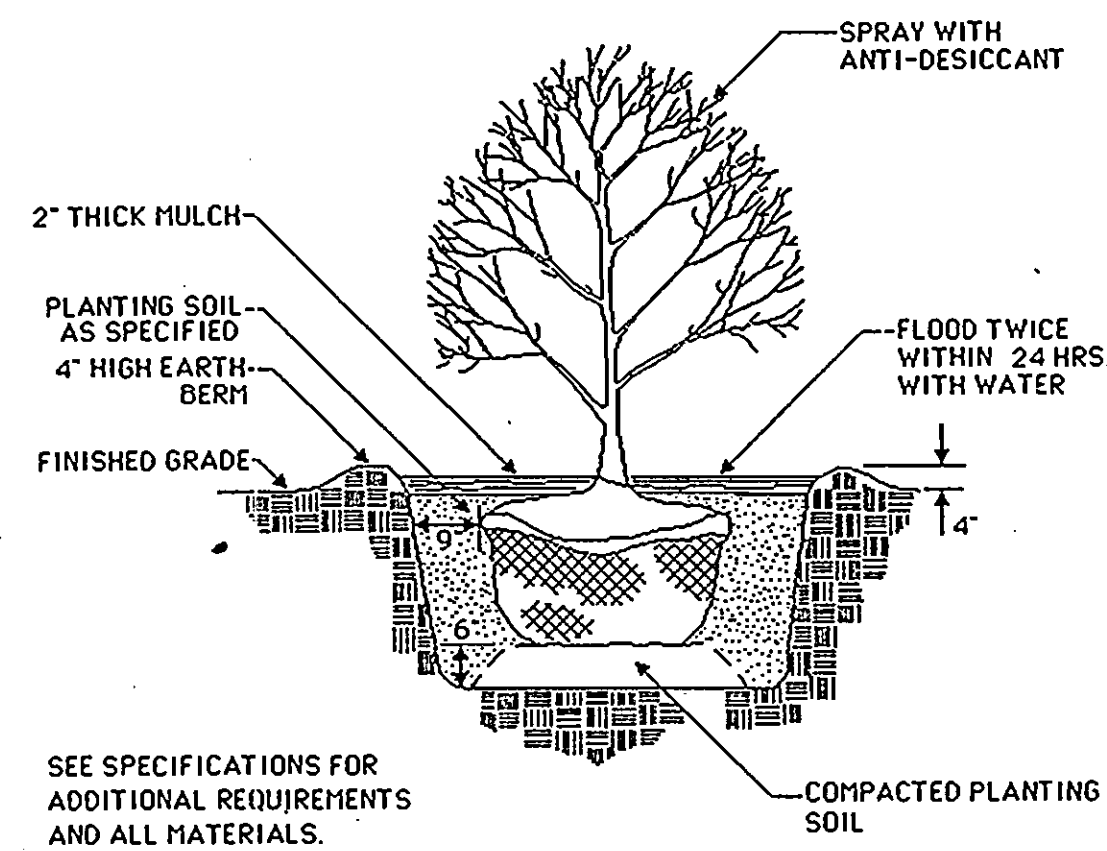
SCALE  
AS  
SHOWN

SHEET  
7C OF 7

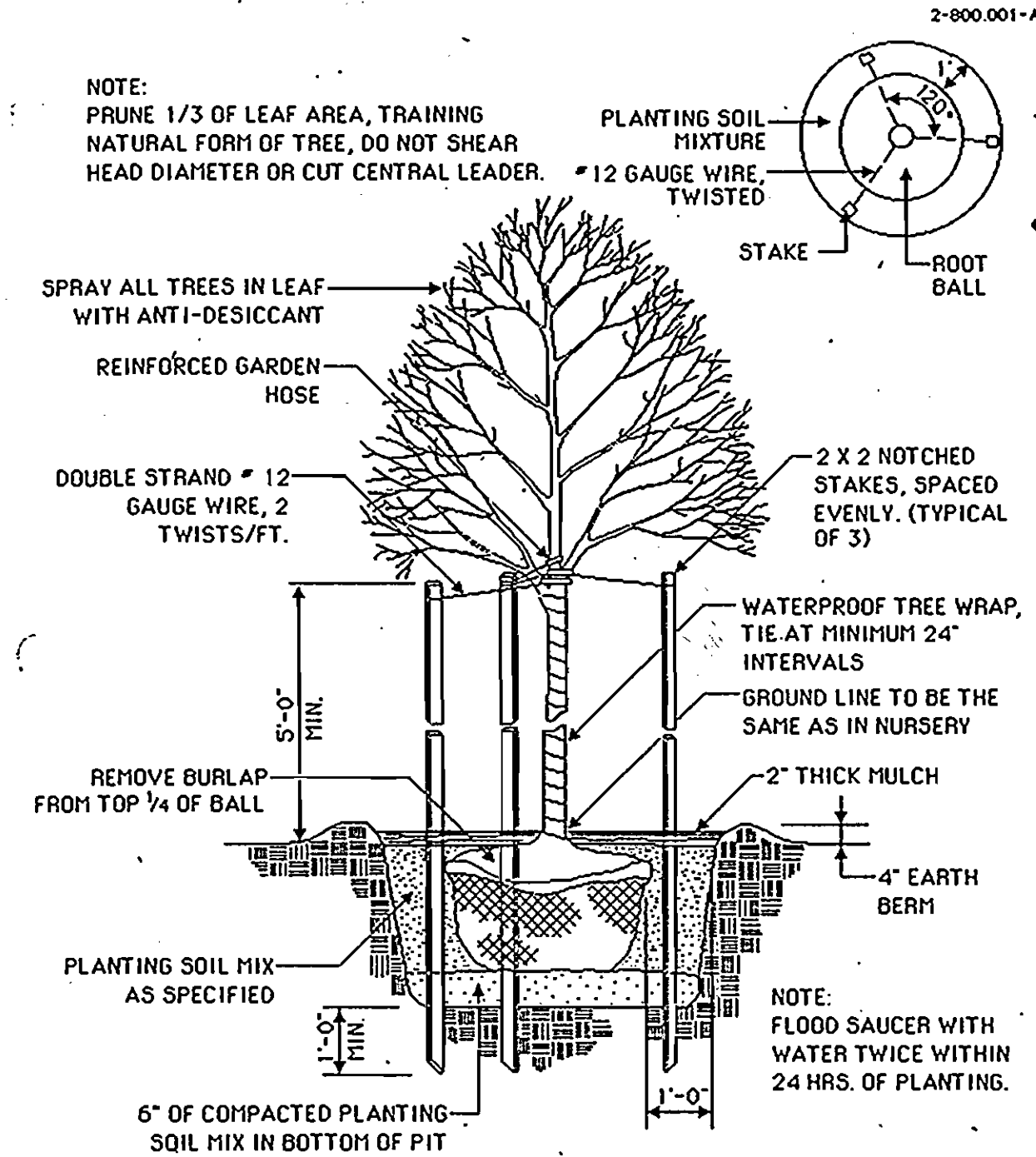




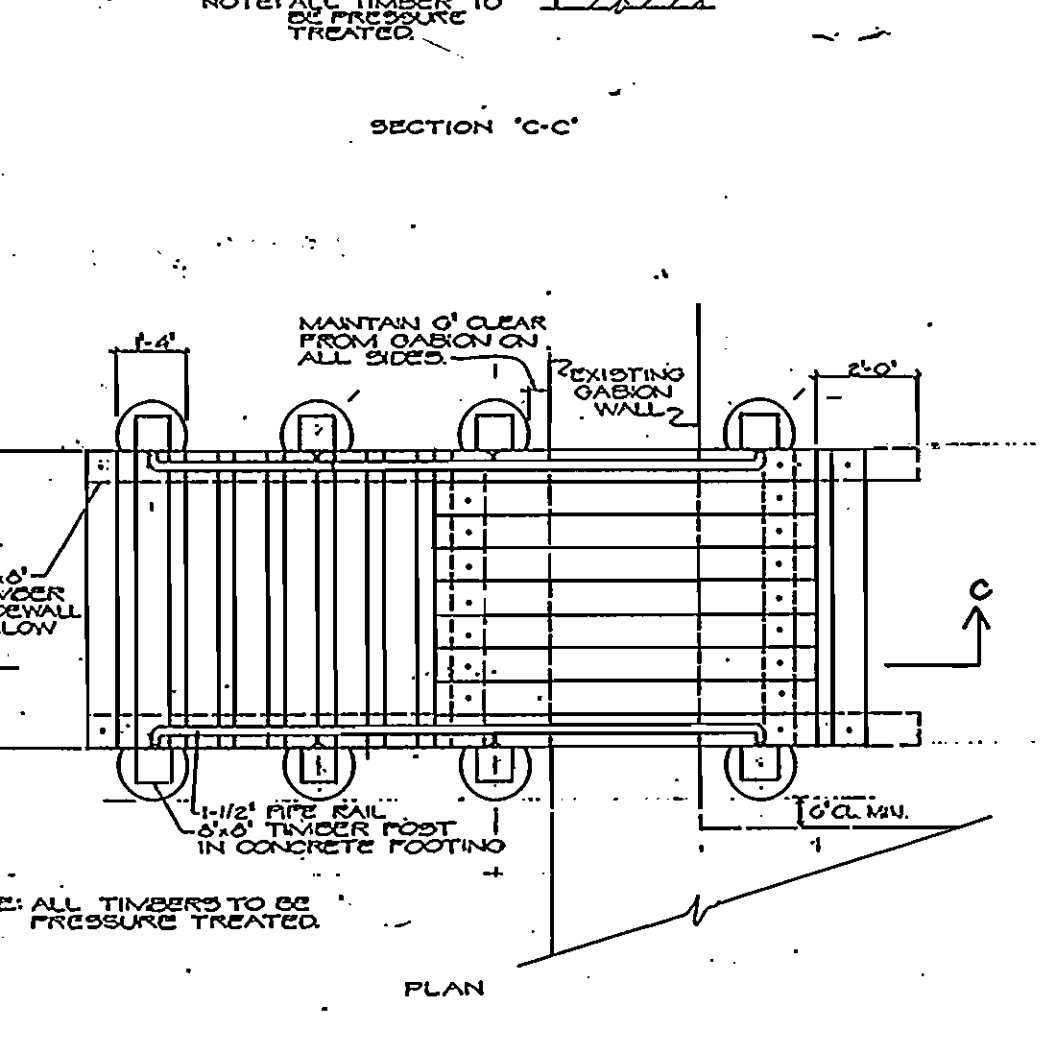
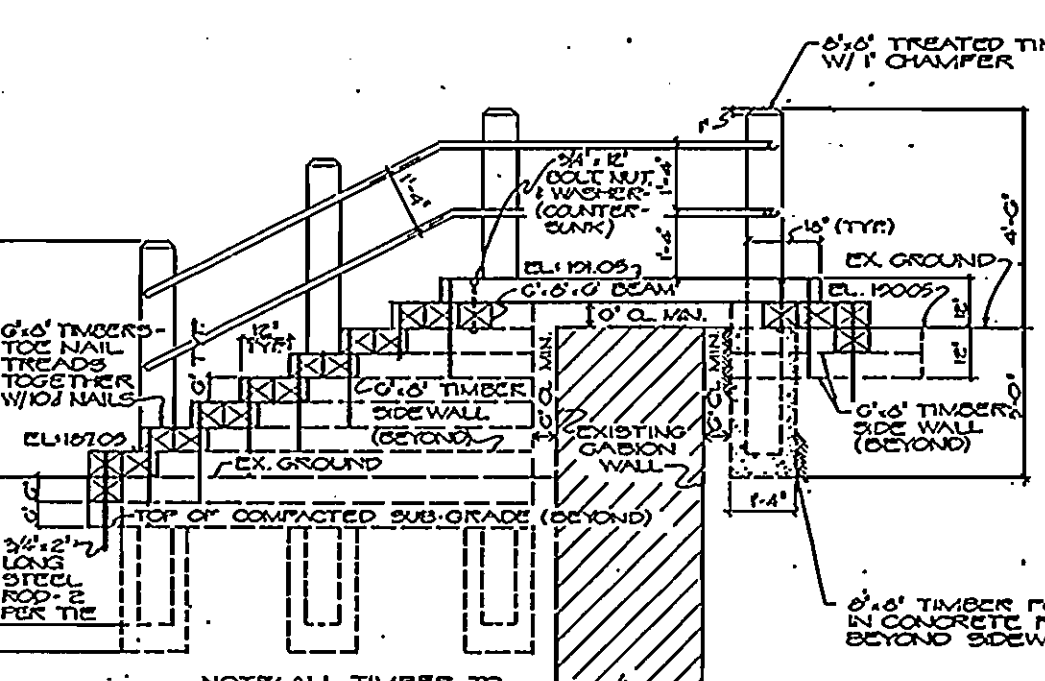
EVERGREEN TREE PLANTING NOT TO SCALE



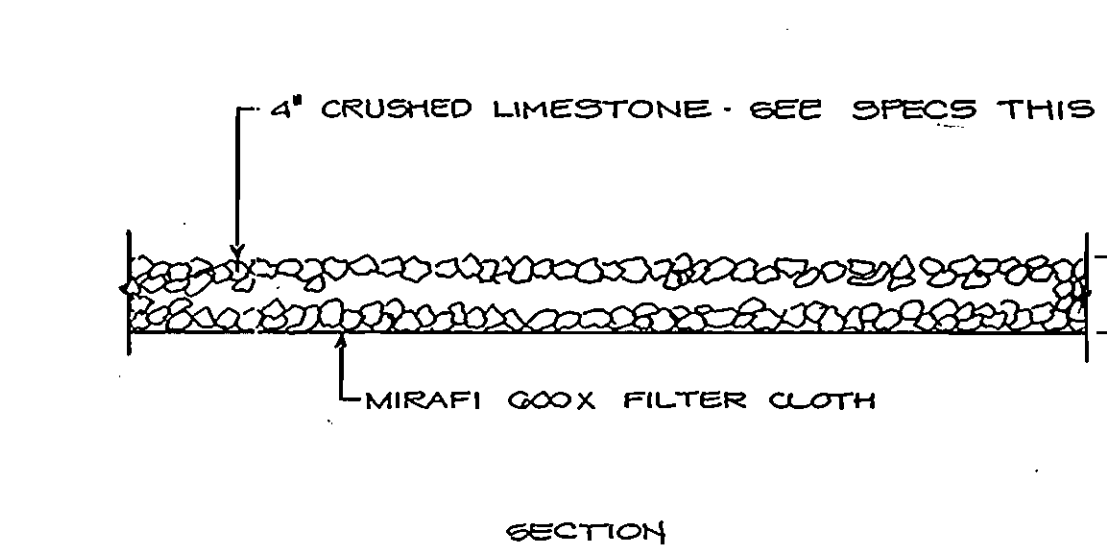
SHRUB PLANTING NOT TO SCALE



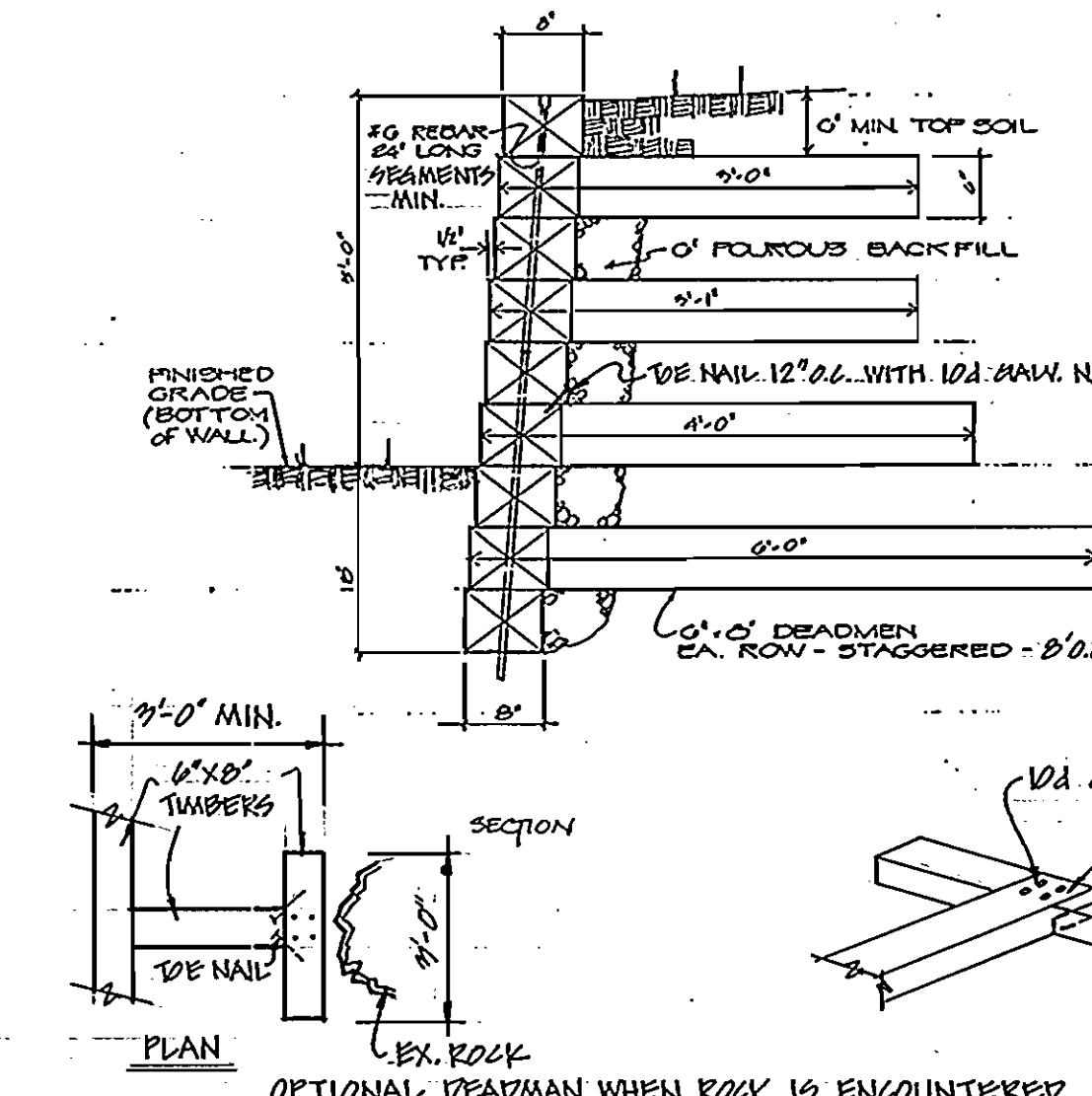
TREE PLANTING NOT TO SCALE



WOOD STAIRS OVER GABION NOT TO SCALE



CRUSHED LIMESTONE PAVING NOT TO SCALE

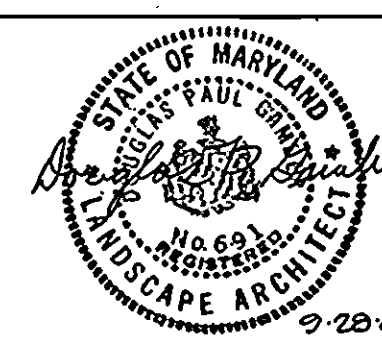


RETAINING WALL NOT TO SCALE

WOODEN STAIRS NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works  
 DATE: 10-3-89  
 Chief, Bureau of Utilities

WHITNEY BAILEY  
 CONSULTING ENGINEERS  
 1850 YORK ROAD  
 TIMONUM, MD. 21093  
 301-252-6060



DES: D.P.G.  
 DRN: M.M.S.  
 CHK: D.P.G.  
 DATE: 9/29/89

MISCELLANEOUS DETAILS  
 REVISION  
 BLOCK NO.

PATAPSCO RIVER CROSSING  
 U.S. ROUTE 40 WATER TRANSMISSION MAIN  
 CAPITAL PROJECT W-8051  
 CONTRACT NO. 44-1735  
 ELECTION DISTRICT NO'S. 2 & 1  
 HOWARD & BALTIMORE COUNTIES, MARYLAND

SCALE AS SHOWN  
 SHEET 7D OF 7