

# LONG CORNER / HARDY ROAD INTERSECTIONS IMPROVEMENTS

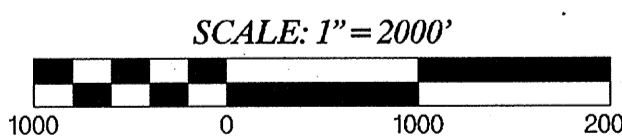
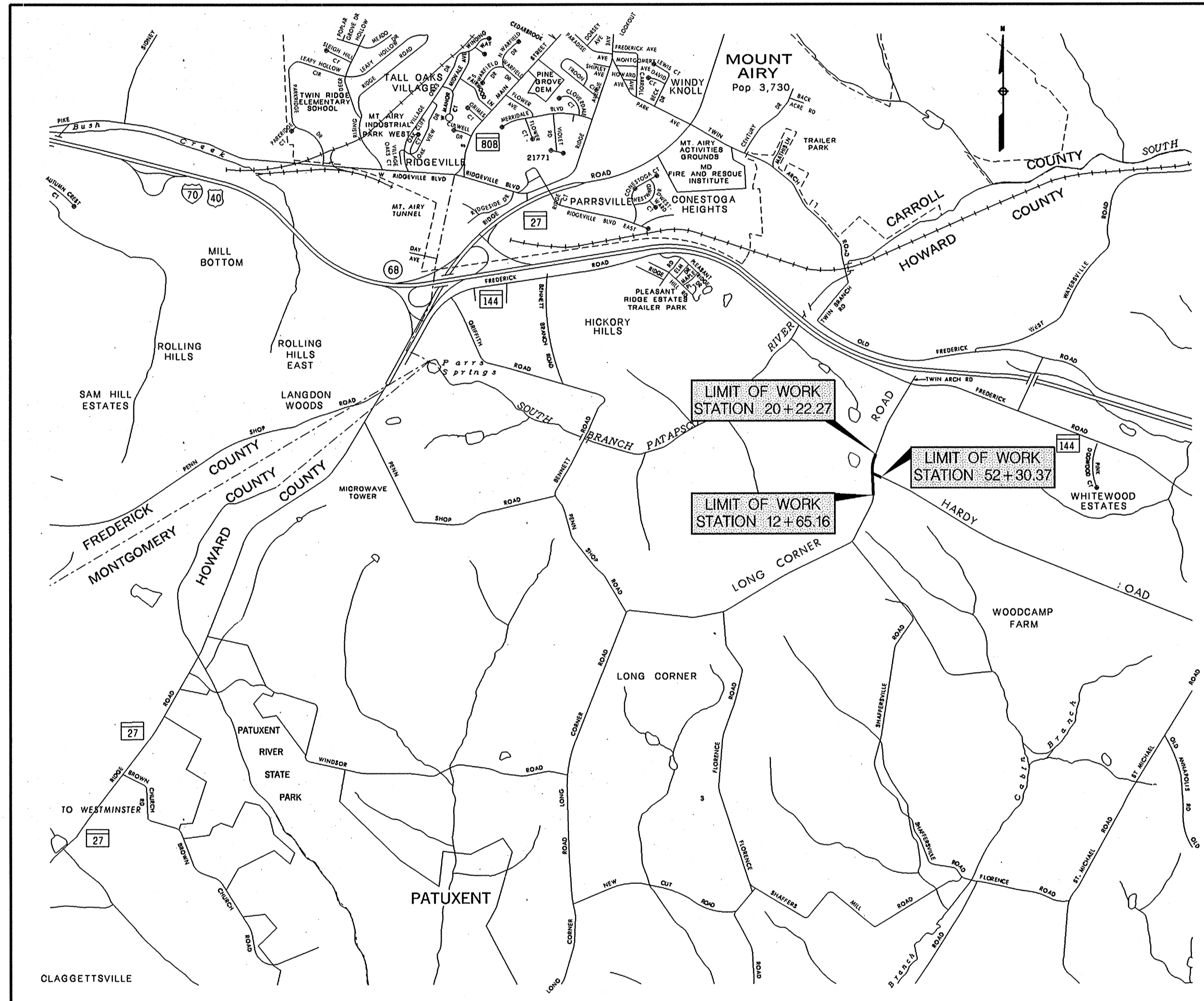
## HOWARD COUNTY, MARYLAND

### DEPARTMENT OF PUBLIC WORKS

#### PROJECT No. J-4164-07

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM SELECTED AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SOLICIT ALL UTILITY RECORDS AND VERIFY ALL EXISTING UTILITIES TO HIS OWN SATISFACTION, INCLUDING THE USE OF TEST PITS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. 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 COORDINATE SYSTEM NAD83.
- ALL VERTICAL CONTROLS ARE BASED ON NGVD29 DATUM.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLANS.
- 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 (LATEST EDITION) OR THE MSHA STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
  - STATE HIGHWAY ADMINISTRATION (410) 531-5533
  - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES (410) 850-4620
  - BALTIMORE GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL SERVICES (410) 859-9004
  - BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING (410) 298-9040
  - MISS UTILITY - 1(800) 257-7777 (TO HAVE ALL UTILITIES LOCATED IN THE FIELD)
  - BELL ATLANTIC - (800) 550-2000
  - BUREAU OF UTILITIES, HOWARD CO. DEPT. OF PUBIC WORKS (410) 313-4900
  - ALLEGHANY POWER - (301) 694-4482
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE 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 PRICES BID FOR CONSTRUCTION.



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DEVELOPER'S CERTIFICATION

"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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

*Elizabeth Anderson Calia* DATE 8/27/02  
SIGNATURE OF DEVELOPER

ENGINEER'S CERTIFICATION

"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 SOIL CONSERVATION DISTRICT."  
*i. R. Wallace* DATE 8.17.2002  
RUMMEL KLEPPER & KAHL, LLP  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
(410) 728-2900

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

*Jim Myers* 1/5 9/19/02  
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John S. [Signature]* 9/19/02  
HOWARD SOIL CONSERVATION DISTRICT DATE

THE CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777, FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS	
U.S. NATURAL RESOURCES CONSERVATION SERVICE	DATE
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.	
HOWARD SOIL CONSERVATION DISTRICT	DATE

TI-1

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>William J. Mahaffey</i> 9-27-02 DIRECTOR OF PUBLIC WORKS DATE <i>Elizabeth Anderson Calia</i> 9-27-02 CHIEF, BUREAU OF HIGHWAYS DATE	 RUMMEL KLEPPER & KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217	 DES: KRP DRN: DLW CHK: RJA DATE: 4/7/00	TITLE SHEET, INDEX OF SHEETS, GENERAL NOTES	LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-07 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 1 OF 10
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GRID NORTH  
MD COORDINATE SYSTEM (NAD83)  
VERTICAL DATUM NGVD29

JERREY L. HARRISON

DORSEY W.  
DAY, ET UX

JOHN R. MANHOLLAN  
& MARTHA A. MANHOLLAN

JERREY L. HARRISON

CLARENCE  
ANDERSON  
& FANNIE  
ANDERSON

LIMIT OF WORK  
STA. 20+22.27

DOUGLAS E. LEVY &  
DENEVA V. RILEY

LIMIT OF WORK  
STA. 12+65.16

LONG CORNER ROAD

TIMOTHY L.  
RIGLER &  
REGINA W.  
RIGLER

DEANNA MARIE  
FISHER TRUST

JOHN M. DIKE &  
ROSE MARY DIKE

JOHN M. DIKE &  
ROSE MARY DIKE

JOHN K. POWELL &  
SHIRLEY M. POWELL

KENNETH L. HAINES  
& THELMA I. HAINES




JAMES S. SIMPSON &  
ANITA T. SIMPSON

MICHAEL J. CREAGHAN &  
ELIZABETH D. DORSETT

HARDY ROAD

LIMIT OF WORK  
STA. 52+30.37

LEGEND

-  PROPOSED FULL DEPTH PAVEMENT
-  PROPOSED RESURFACING
-  PAVEMENT REMOVAL

<b>L.C.R</b>	<b>L.C.R</b>	<b>L.C.R</b>
P.I. = 11+85.97	P.I. = 13+47.61	P.I. = 15+45.00
Δ = 20°-51'-50.6"	Δ = 8°-37'-19.5"	Δ = 5°-46'-21.4"
D = 11°-27'-32.9"	D = 6°-01'-51.5"	D = 2°-17'-30.7"
R = 950.00'	R = 2500.00'	R = 2500.00'
T = 92.06'	T = 71.62'	T = 126.04'
L = 182.07'	L = 142.96'	L = 251.87'
E = 8.41'	E = 2.70'	E = 3.18'
<b>L.C.R</b>	<b>HARDY</b>	
P.I. = 19+22.20	P.I. = 51+47.25	
Δ = 24°-31'-34.7"	Δ = 32°-47'-39.7"	
D = 14°-19'-26.2"	D = 19°-00'-00.0"	
R = 400.00'	R = 301.56'	
T = 86.94'	T = 88.74'	
L = 171.23'	L = 172.60'	
E = 9.34'	E = 12.78'	

- REMOVE AND RESET EXISTING FENCE  
STA. 18+00 TO STA. 19+44, (RT.) ..... 140 L.F.
- CLASS I RIP RAP  
STA. 16+15 TO STA. 16+82  
(LONG CORNER ROAD) (RT.) ..... 50 S.Y.  
FOR RIP RAP DITCH SEE SHEET NO. 3
- SOIL STABILIZATION MATTING  
STA. 17+50 TO STA. 19+50  
(LONG CORNER ROAD) (RT.) ..... 90 S.Y.
- STA. 50+50 TO STA. 51+50  
(HARDY ROAD) (LT.) ..... 90 S.Y.
- REMOVAL OF OLD PIPE CULVERTS  
12 INCH OR LARGER
- STA. 16+50  
(LONG CORNER ROAD) ..... 60 L.T.
- REMOVE EXISTING PAVEMENT  
STA. 50+30 TO STA. 51+50  
(HARDY ROAD) (LT.) ..... 80 C.Y.
- 18-INCH REINFORCED CEMENT CONCRETE PIPE, CLASS 4  
STA. 50+50 (HARDY ROAD) ..... 41 L.F.
- STA. 16+50 (LONG CORNER ROAD) ..... 47 L.F.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

**RK** RUMMEL KLEPPER  
& KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MD  
21217

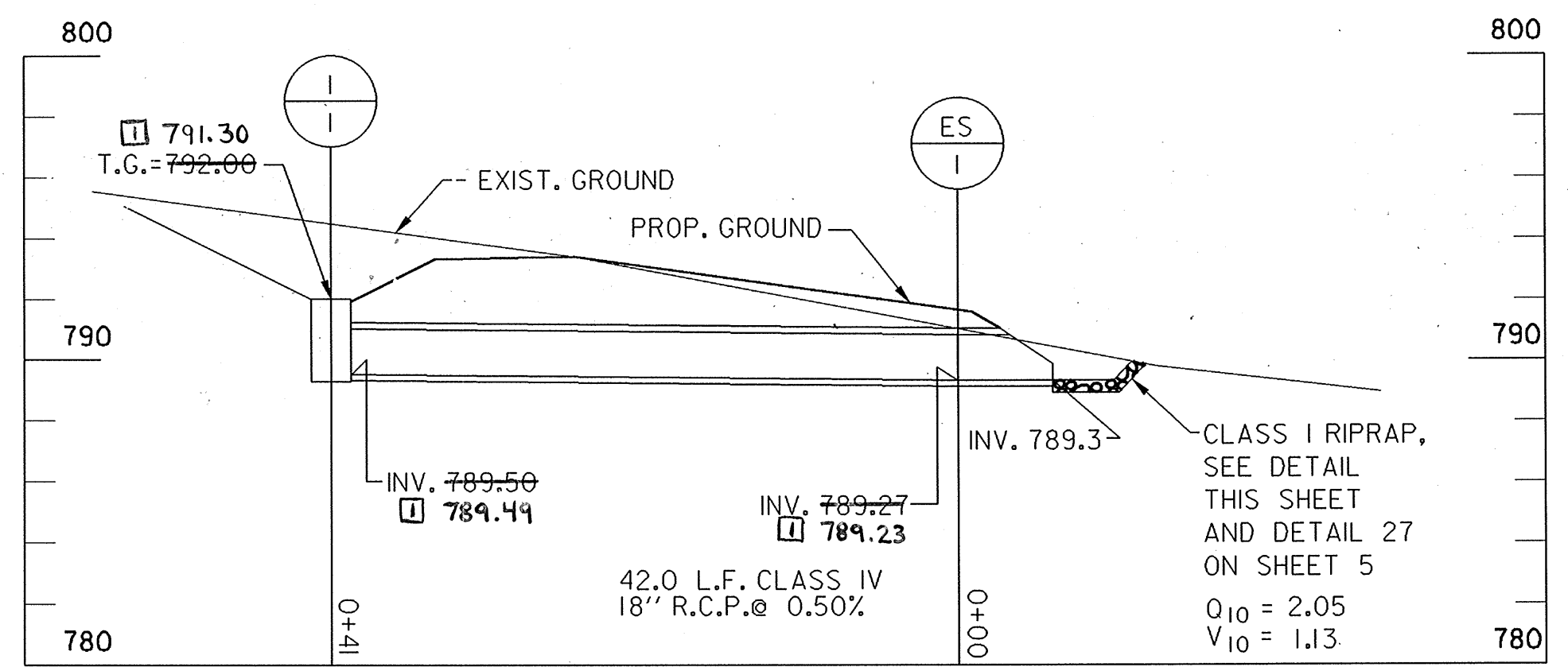


DES: KRP	TMB	1	AS BUILT SURVEY	6/21/04
DRN: DLW				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

PLAN SHEET

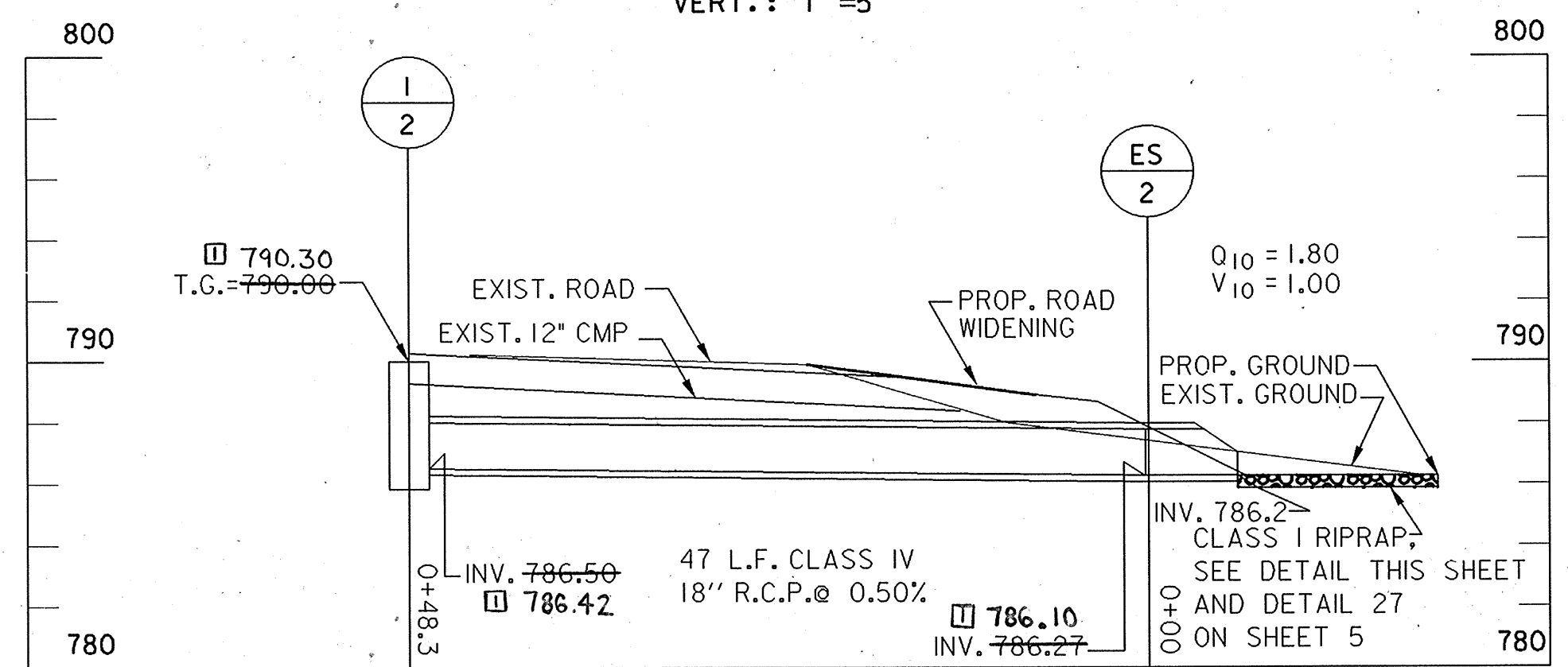
LONG CORNER ROAD / HARDY ROAD  
INTERSECTION IMPROVEMENTS  
CAPITAL PROJECT NO. J-4164-07  
HOWARD COUNTY, MARYLAND

SCALE  
1" = 50'  
SHEET  
2 OF 10



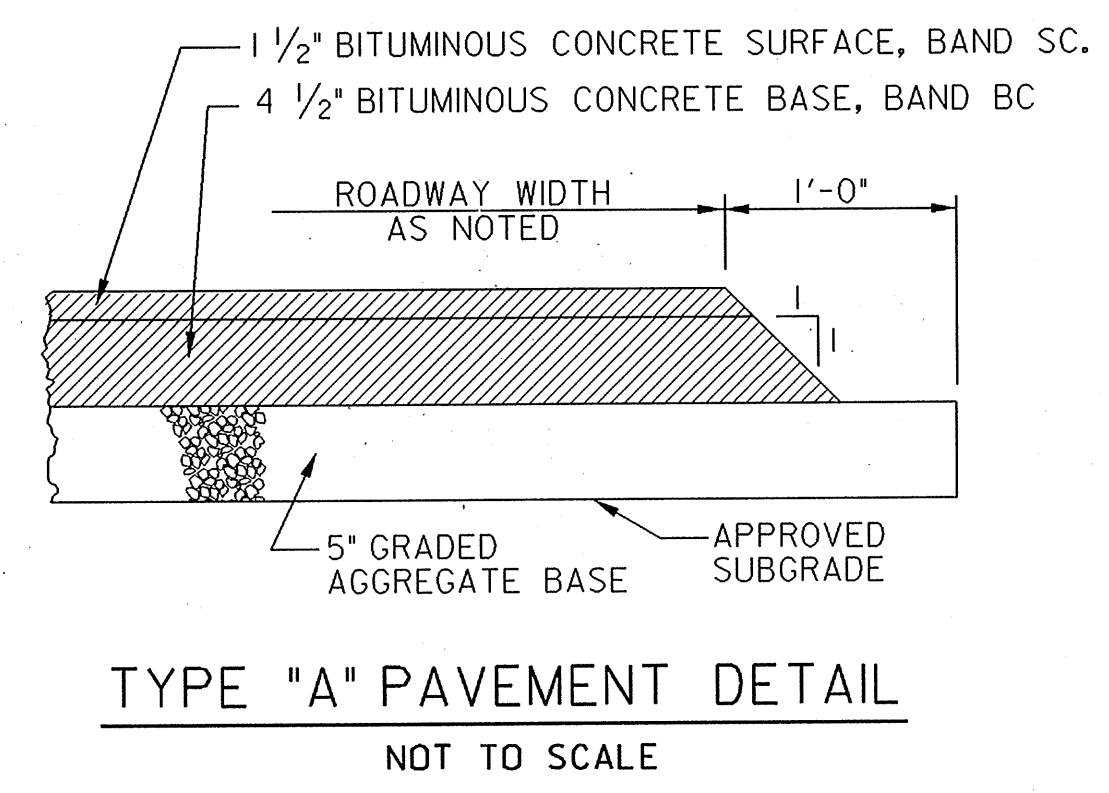
**RELOCATED HARDY ROAD  
STATION 50+50**

SCALE: HORZ.: 1"=10'  
VERT.: 1"=5'

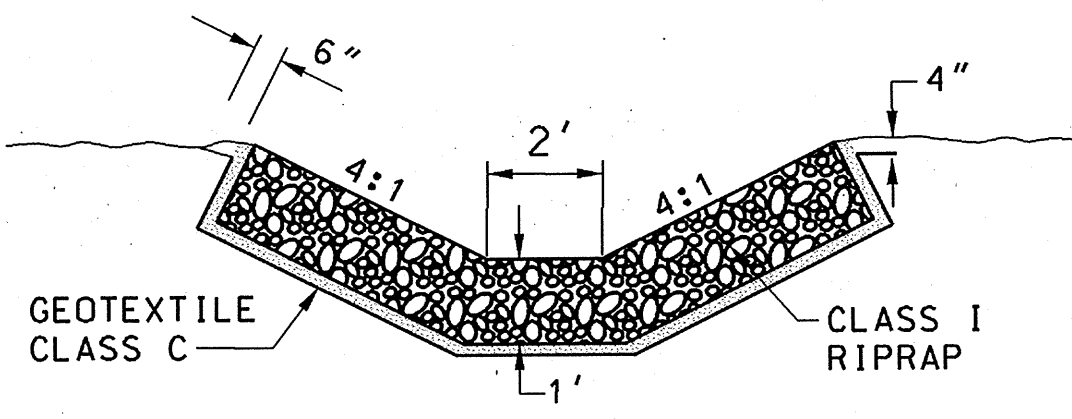


**LONG CORNER ROAD  
STATION 16+50**

SCALE: HORZ.: 1"=10'  
VERT.: 1"=5'

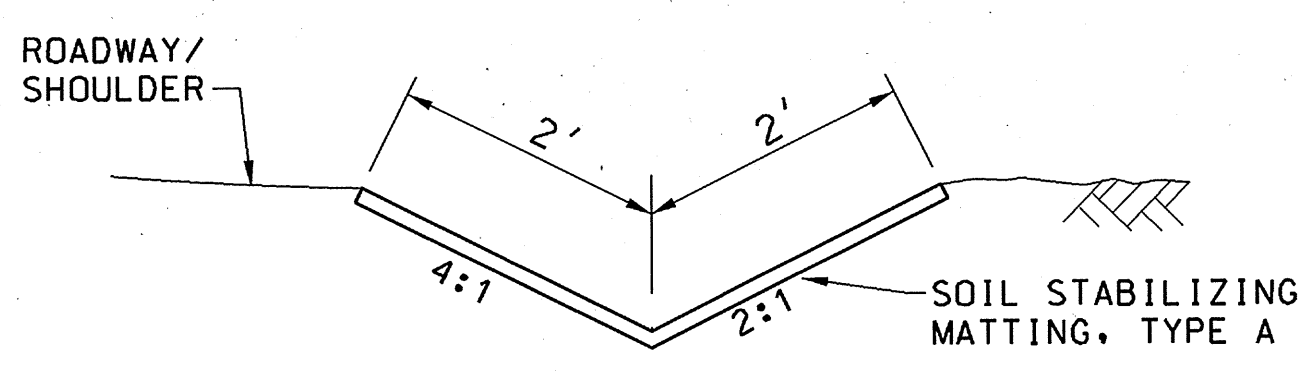


**TYPE "A" PAVEMENT DETAIL  
NOT TO SCALE**

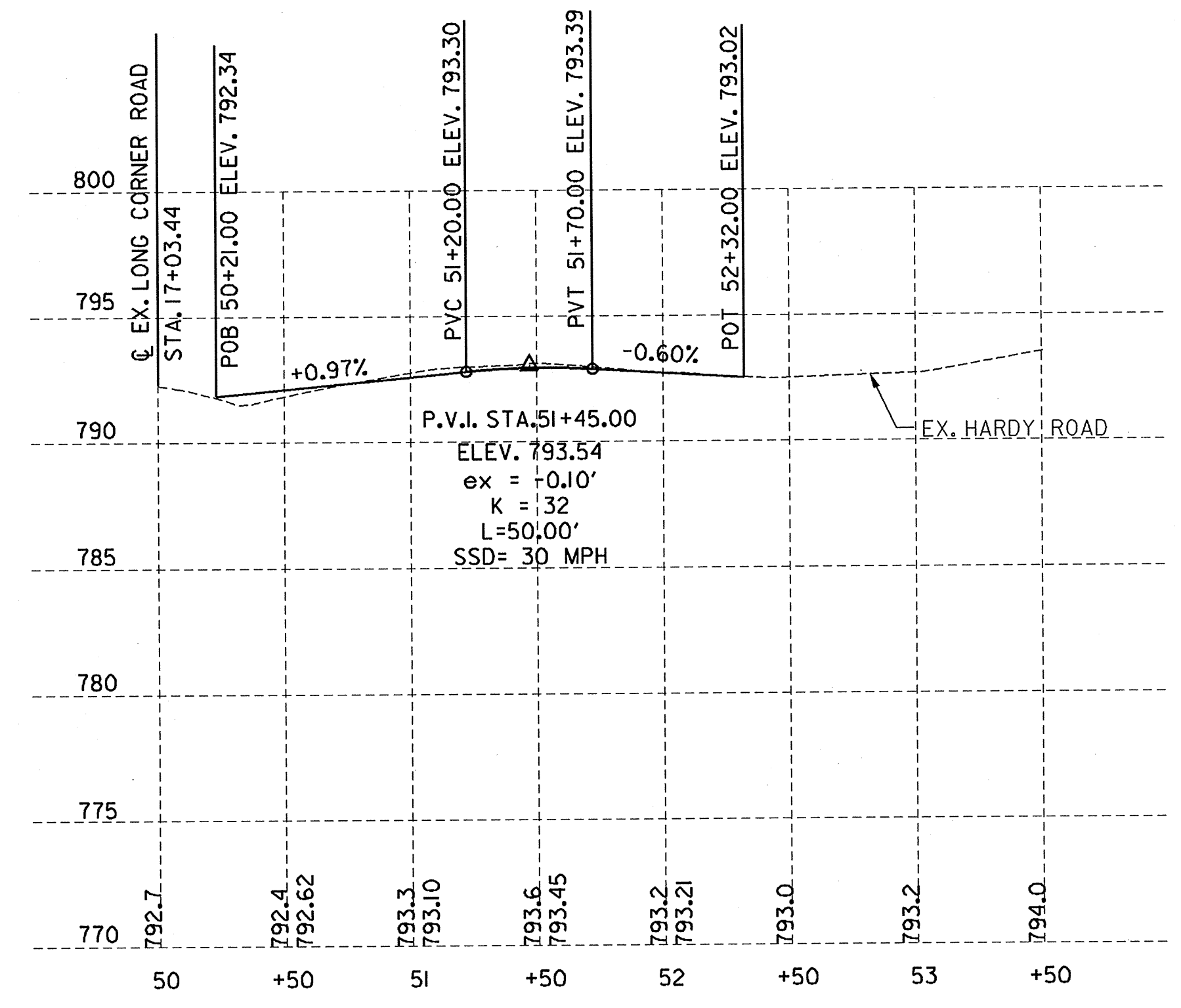


**RIPRAP DITCH DETAIL  
NOT TO SCALE**

NOTE:  
THE CLASS 1 RIP RAP DITCH SHALL CONFORM TO MARYLAND SHA SPECIFICATIONS SECTION 310.



**SOIL STABILIZATION MATTING  
DITCH DETAIL  
NOT TO SCALE**



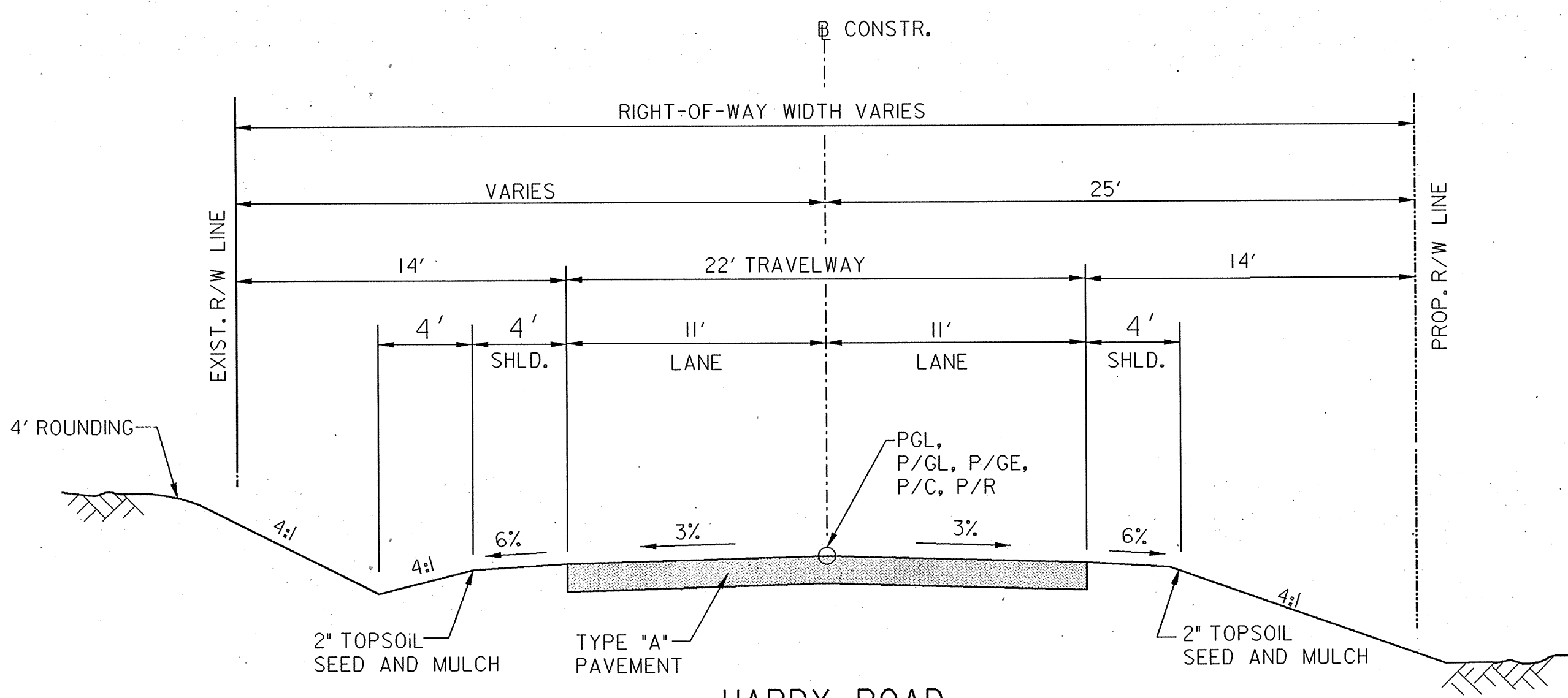
**HARDY ROAD PROFILE**

SCALE: HORZ.: 1"=10'  
VERT.: 1"=5'

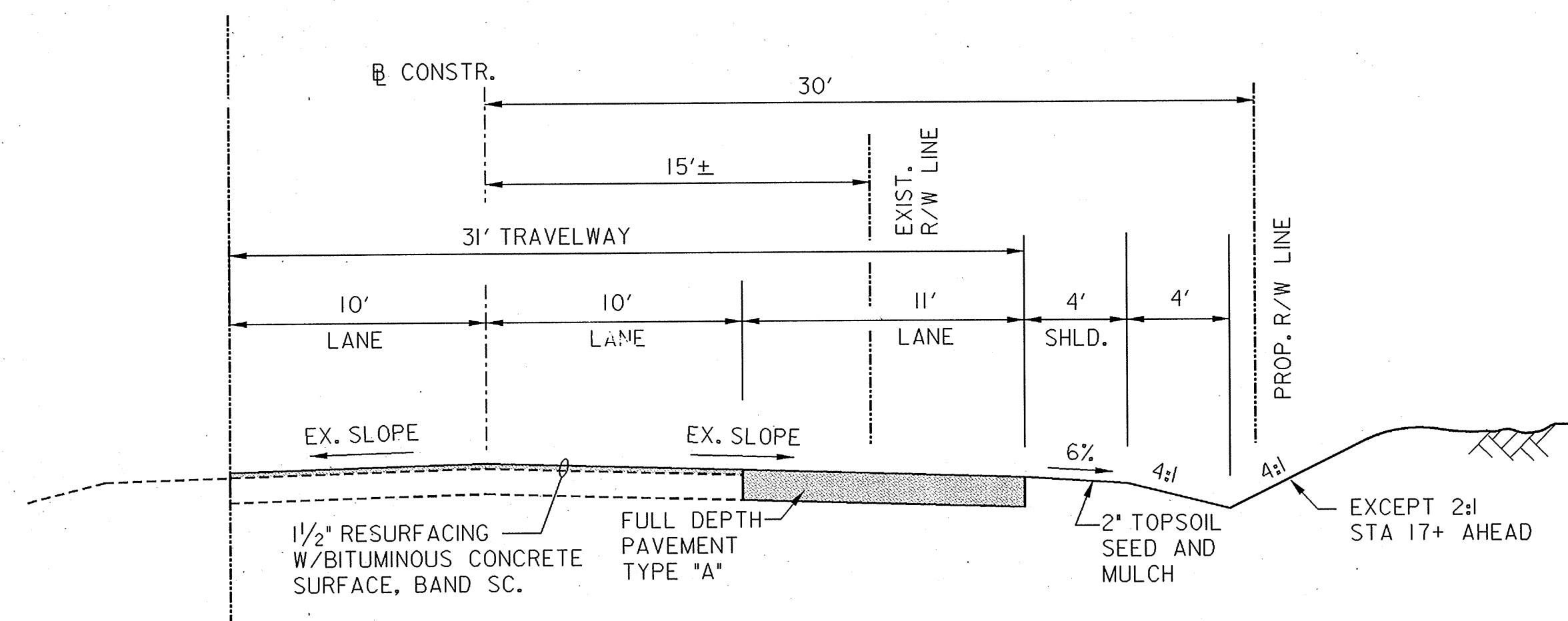
**STRUCTURE SCHEDULE**

No.	STATION	OFFSET	TOP ELEV.	INV. ELEV.	HOWARD COUNTY STANDARD	REMARKS
I-1	50+50	24.10' Lt	791.30 792.00	789.31 789.5	SD 4.36 (DOUBLE OPENING)	OFFSET TO CENTER OF STRUCTURE PRECAST OPEN END GRATE INLET
ES-1	50+50	22.67' Rt		789.23 789.5	SD 5.51	OFFSET TO END OF CONCRETE END SECTION
I-2	16+59.60	11.6' Lt	790.30 790.0	786.12 786.5	SD 4.37 (SEE NOTE 1)	OFFSET TO CENTER OF STRUCTURE PRECAST SINGLE WR INLET
ES-2	16+26.45	32.8' Rt		786.10 786.2	SD 5.51	OFFSET TO END OF CONCRETE END SECTION

NOTE 1: TOP OF CURB TO BE SET 3' ± BELOW EDGE OF PAVEMENT.  
PLACE BITUMINOUS CONCRETE AROUND INLET GRATE



**HARDY ROAD  
TYPICAL SECTION  
SCALE: 1"=5'**



**LONG CORNER ROAD  
TYPICAL SECTION  
SCALE: 1"=5'**

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*William J. McManus* 9/27/02  
DIRECTOR OF PUBLIC WORKS DATE

*Elizabeth H. Calcia* 9/27/02  
act CHIEF, BUREAU OF ENGINEERING DATE

*William J. McManus* 9-27-02  
CHIEF, BUREAU OF HIGHWAYS DATE

*Elizabeth H. Calcia* 9/27/02  
CHIEF, DIVISION OF TRANSPORTATION, DATE  
PROJECTS & WATERSHED MANAGEMENT

**RUMMEL KLEPPER  
& KAHL, LLP**  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MD  
21217



DES:	TMB	AS BUILT SURVEY	6-21-01
DRN:			
CHK:			
DATE:	BY	NO.	REVISION

**PROFILE, PAVING SECTION  
AND TYPICAL SECTIONS**

**LONG CORNER ROAD / HARDY ROAD  
INTERSECTION IMPROVEMENTS  
CAPITAL PROJECT NO. J-4164-07  
HOWARD COUNTY, MARYLAND**

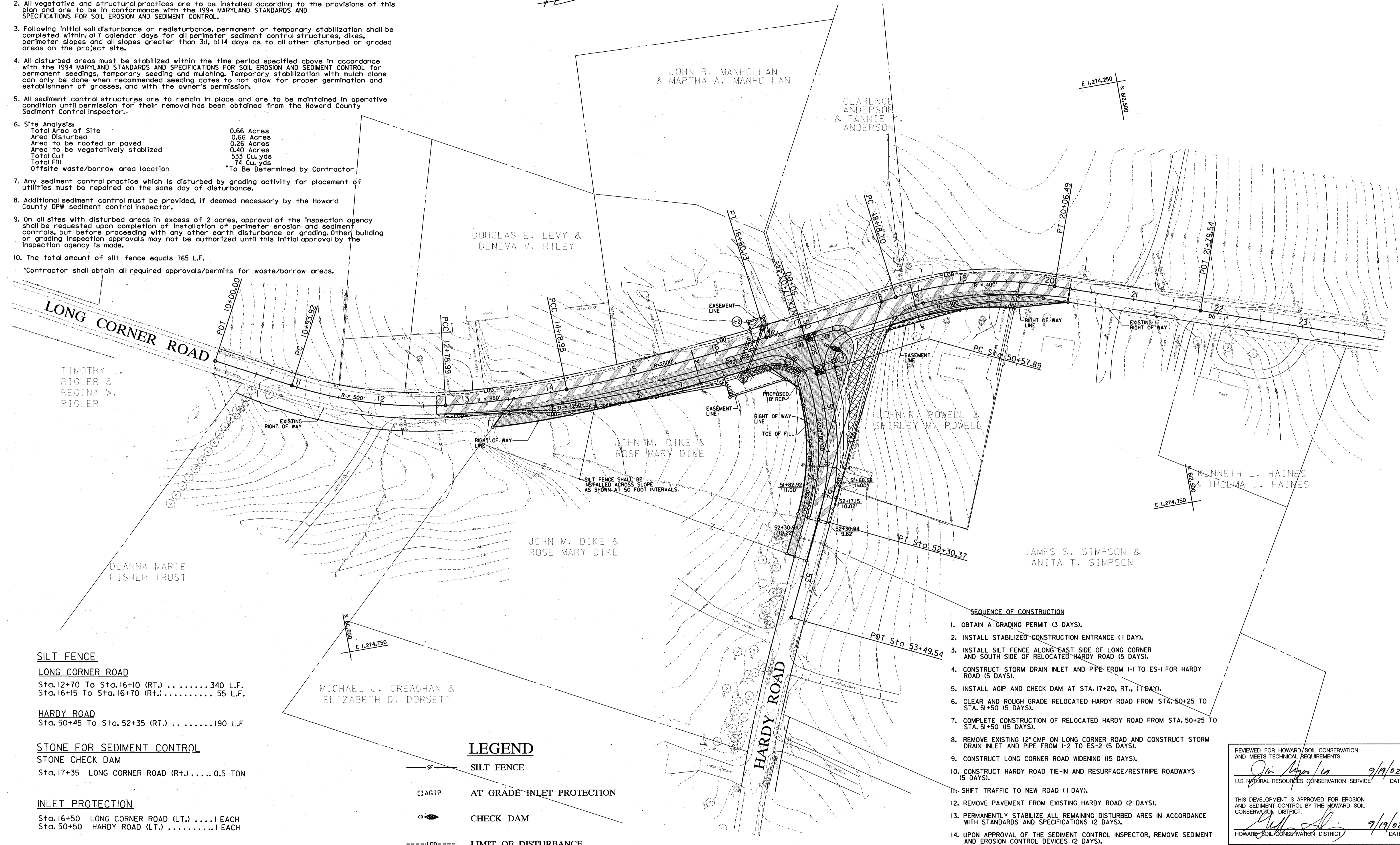
SCALE  
AS SHOWN

SHEET  
3 OF 10

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. (410-992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 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 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, temporary seeding and mulching. Temporary stabilization with mulch alone can only be done when recommended seeding dates to not allow for proper germination and establishment of grasses, and with the owner's permission.
- 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	0.66 Acres
Area Disturbed	0.66 Acres
Area to be roofed or paved	0.26 Acres
Area to be vegetatively stabilized	0.40 Acres
Total Cut	533 Cu. yds
Total Fill	74 Cu. yds
Offsite waste/borrow area location	To Be Determined by Contractor
- 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 control must be provided, if deemed necessary by the Howard County DPW 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.
- The total amount of silt fence equals 765 L.F.  
Contractor shall obtain all required approvals/permits for waste/borrow areas.



- SILT FENCE**
- LONG CORNER ROAD**  
Sta. 12+70 To Sta. 16+10 (RT.) ..... 340 L.F.  
Sta. 16+15 To Sta. 16+70 (Rt.) ..... 55 L.F.
- HARDY ROAD**  
Sta. 50+45 To Sta. 52+35 (RT.) ..... 190 L.F.
- STONE FOR SEDIMENT CONTROL**
- STONE CHECK DAM**  
Sta. 17+35 LONG CORNER ROAD (Rt.) ..... 0.5 TON
- INLET PROTECTION**
- Sta. 16+50 LONG CORNER ROAD (LT.) ..... 1 EACH  
Sta. 50+50 HARDY ROAD (LT.) ..... 1 EACH

- LEGEND**
- SF — SILT FENCE
  - AGIP AT GRADE INLET PROTECTION
  - ☉ CHECK DAM
  - LOD --- LIMIT OF DISTURBANCE

- SEQUENCE OF CONSTRUCTION**
- OBTAIN A GRADING PERMIT (3 DAYS).
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE (1 DAY).
  - INSTALL SILT FENCE ALONG EAST SIDE OF LONG CORNER AND SOUTH SIDE OF RELOCATED HARDY ROAD (5 DAYS).
  - CONSTRUCT STORM DRAIN INLET AND PIPE FROM I-1 TO ES-1 FOR HARDY ROAD (5 DAYS).
  - INSTALL AGIP AND CHECK DAM AT STA. 17+20, RT., (1 DAY).
  - CLEAR AND ROUGH GRADE RELOCATED HARDY ROAD FROM STA. 50+25 TO STA. 51+50 (5 DAYS).
  - COMPLETE CONSTRUCTION OF RELOCATED HARDY ROAD FROM STA. 50+25 TO STA. 51+50 (15 DAYS).
  - REMOVE EXISTING 12" CMP ON LONG CORNER ROAD AND CONSTRUCT STORM DRAIN INLET AND PIPE FROM I-2 TO ES-2 (5 DAYS).
  - CONSTRUCT LONG CORNER ROAD WIDENING (15 DAYS).
  - CONSTRUCT HARDY ROAD TIE-IN AND RESURFACE/RESTRIPE ROADWAYS (5 DAYS).
  - SHIFT TRAFFIC TO NEW ROAD (1 DAY).
  - REMOVE PAVEMENT FROM EXISTING HARDY ROAD (2 DAYS).
  - PERMANENTLY STABILIZE ALL REMAINING DISTURBED AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS (2 DAYS).
  - UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES (2 DAYS).

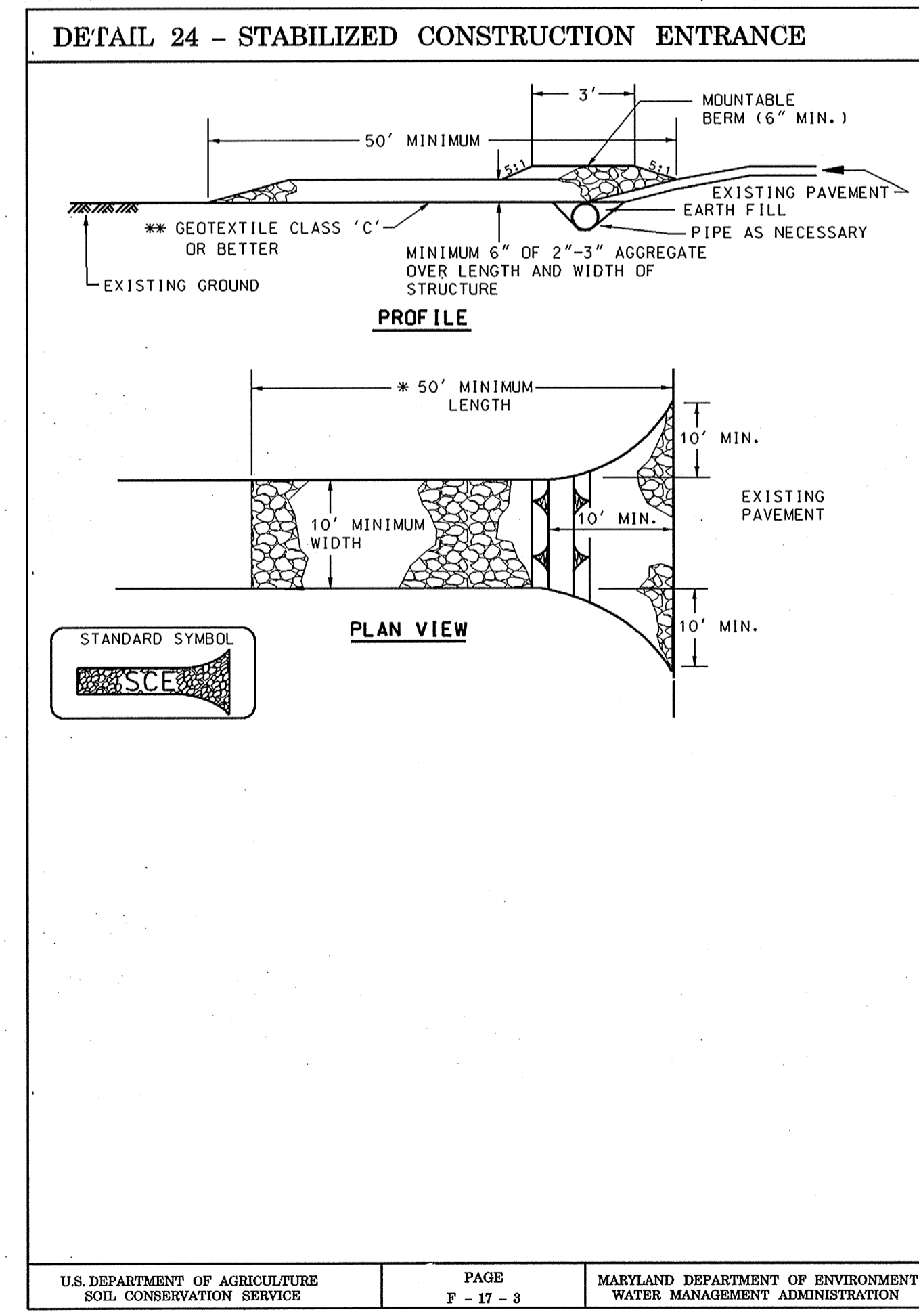
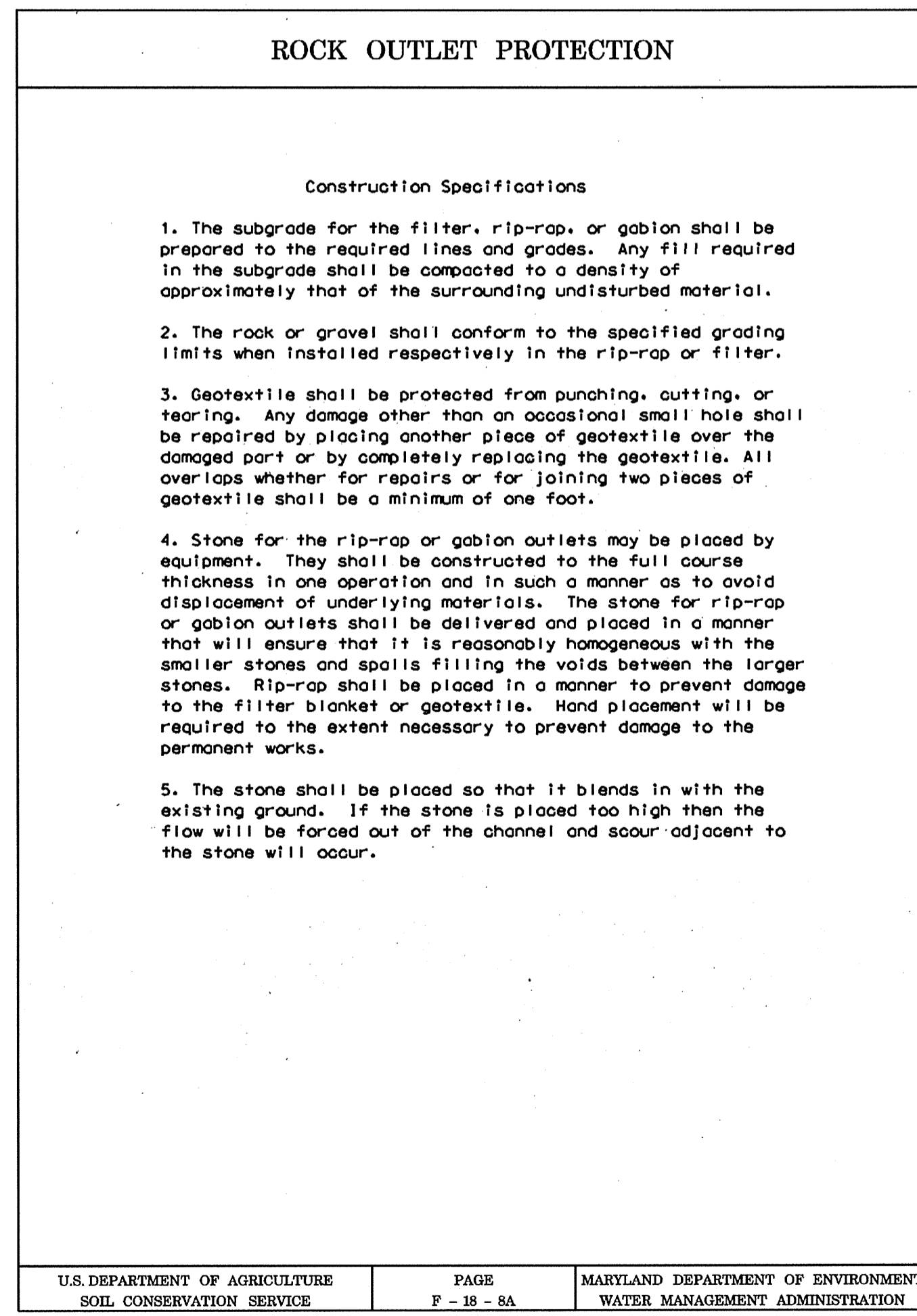
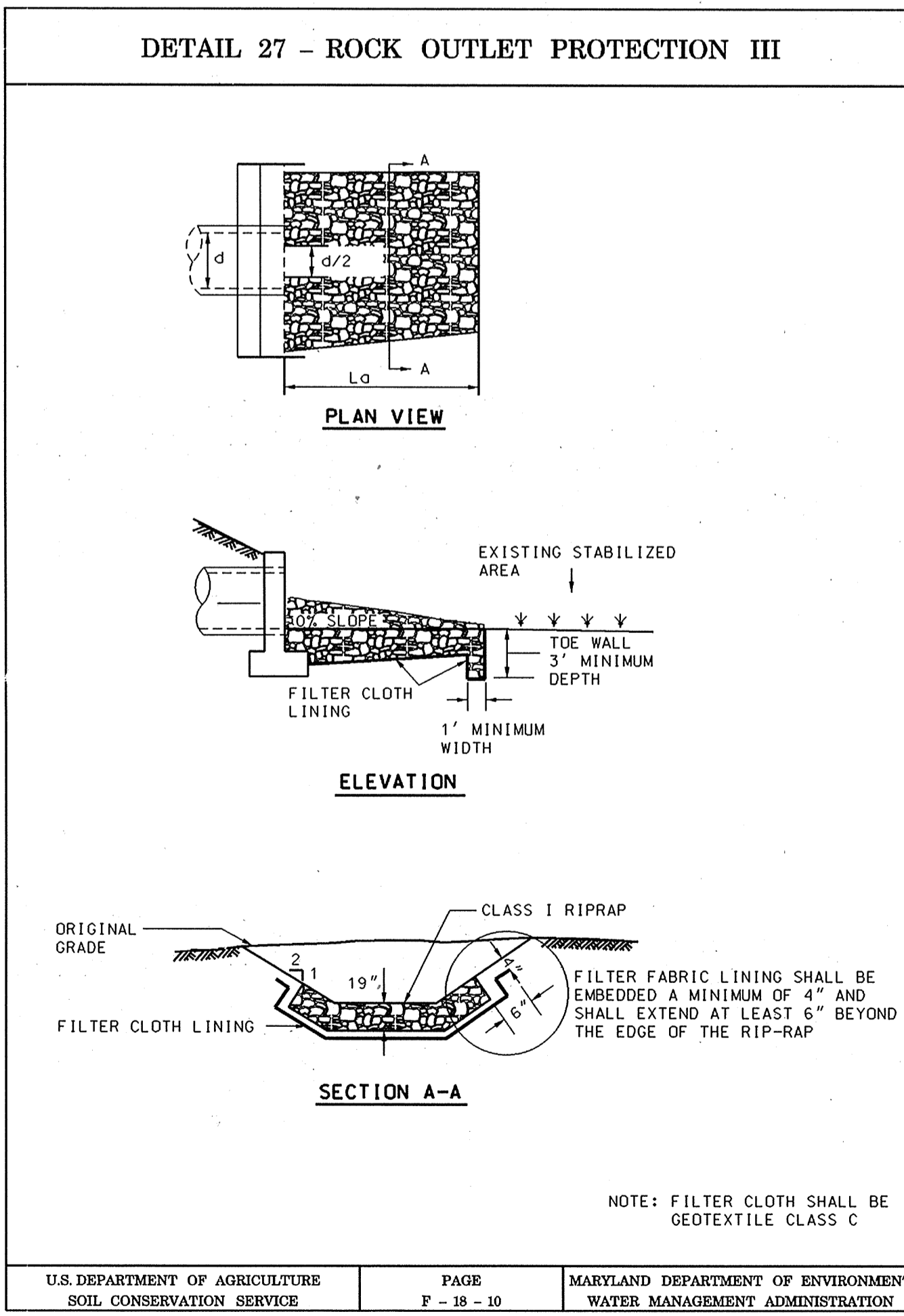
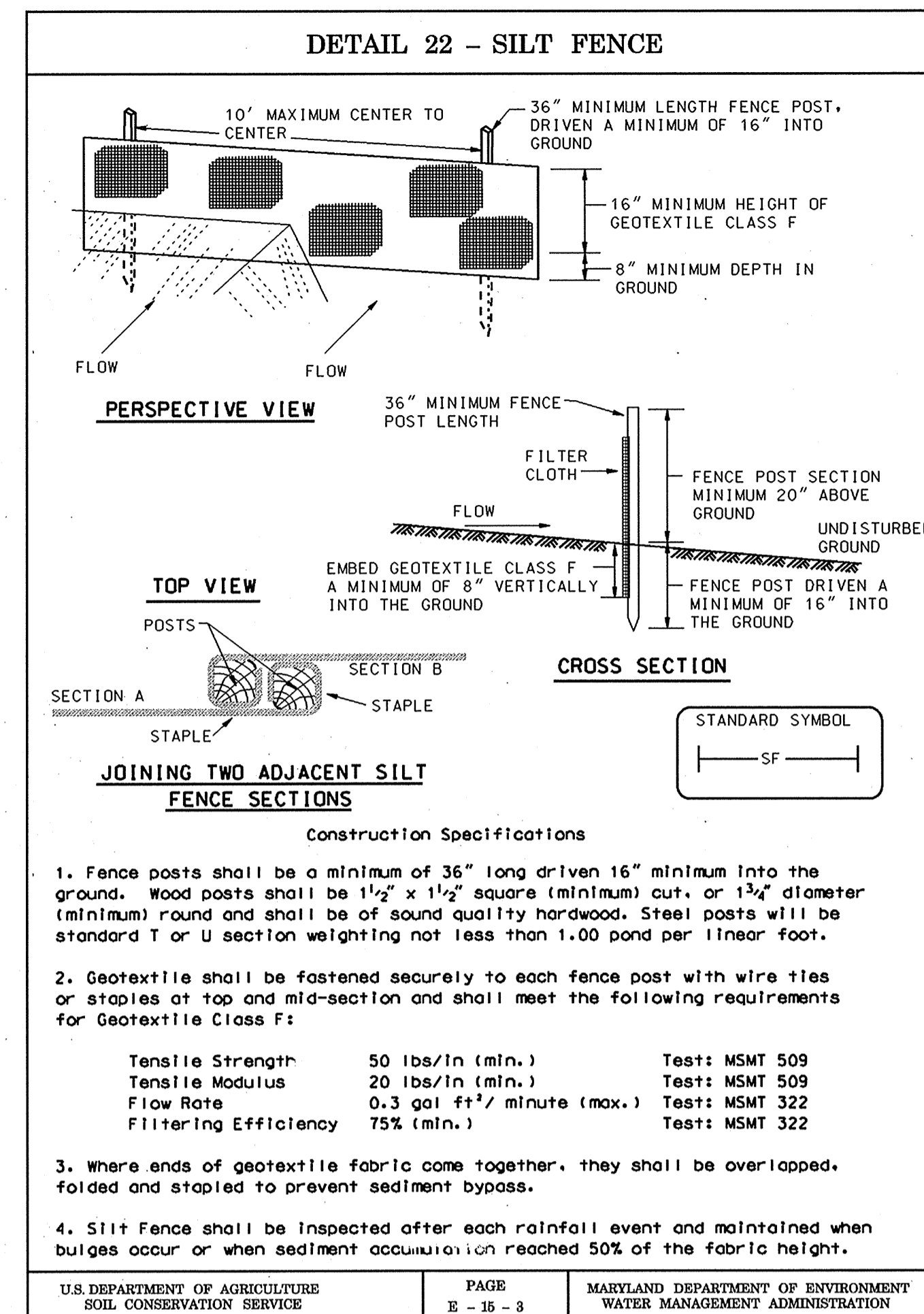
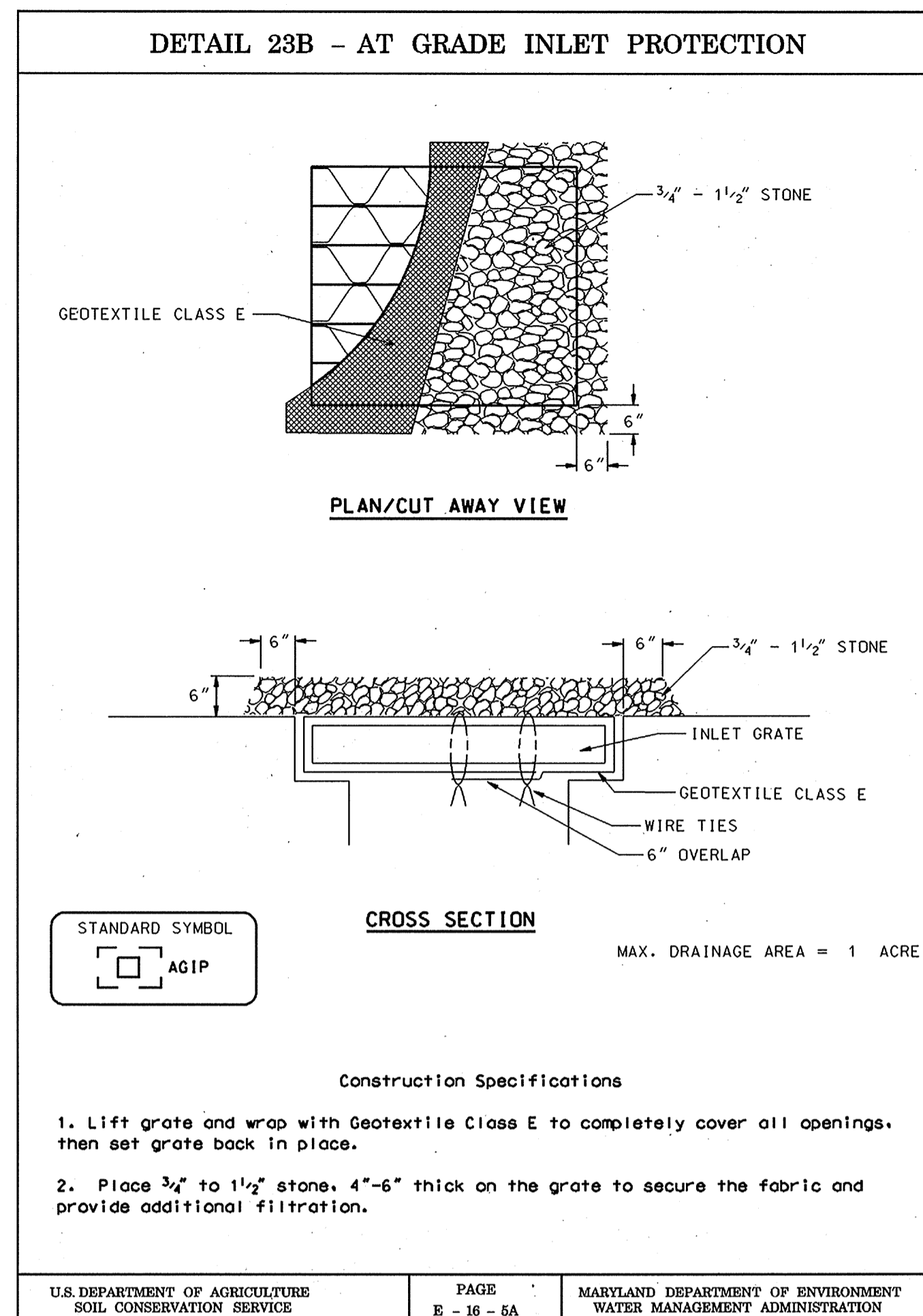
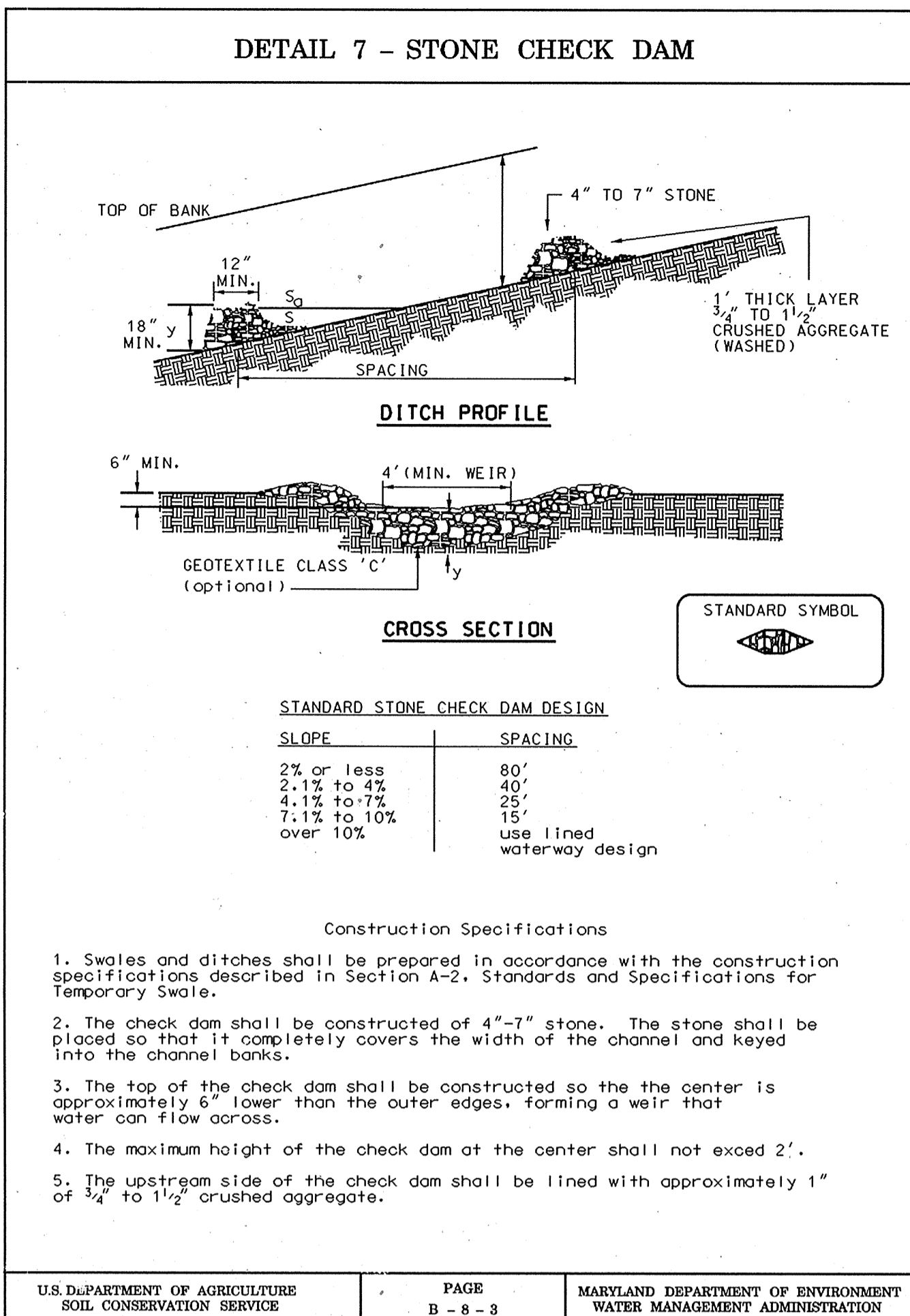
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS

*Jim Ryan* 9/19/02  
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John A. ...* 9/19/02  
HOWARD COUNTY CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Jan ...</i> 9/27/02 DIRECTOR OF PUBLIC WORKS DATE <i>William ...</i> 9-27-02 CHIEF, BUREAU OF HIGHWAYS DATE		RUMMEL KLEPPER & KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217		DES: JCT DRN: DLW CHK: RJA DATE:		EROSION & SEDIMENT CONTROL PLAN SHEET		LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-07 HOWARD COUNTY, MARYLAND		SCALE 1" = 50' SHEET 4 OF 10	
		STATE OF MARYLAND PROFESSIONAL ENGINEER		BY NO. REVISION DATE						8/16/00 1448131 ka\data\197-12\long\dn\es01long.dgn tes01long.plt	



#### TOPSOIL SPECIFICATIONS

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand, or other soils may be used if recommended by an agronomist or approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of clods, stones, silt, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at 1/2 rate of 4-8 tons per 1,000 square feet prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5; if the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic content of topsoil shall be not less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (4 days min.) to permit dieback of phytotoxic materials.
  - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- Topsoil Application:
  - When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
  - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 2" higher in elevation.
  - Topsoil shall be uniformly distributed in a 4"-8" layer and lightly composted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.
- Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
  - Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested for granular amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
    - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted at the time of application of the compost by the Maryland Department of the Environment under COM 26.04.06.
    - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0; if compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
    - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

#### PERMANENT SEEDING NOTES

- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
  - Preferred - Apply 2 tons per acre dolomite limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (4 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 urea-form fertilizer (9 lbs/1000 sq ft).
  - Acceptable - Apply 2 tons per acre dolomite 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 periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre 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 105 lbs/1000 sq ft of weeping lovegrass. During the period of October 16 thru February 28, protect site by applying 102 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 unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 28 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas, on slopes 8 feet or higher, use 348 gal 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 re-disturbed where a short-term vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30 and from August 15 thru October 15, seed with 2 1/2 bushel per acre of annual rye (32 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs/acre of weeping love grass (107 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons/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 /acre (70 to 90 lbs/1000 sq ft) of unrattled weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 28 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS  
 J. M. Ryan, Jr. 9/19/02  
 U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE  
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 9/19/02  
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature] 9/27/02  
 Chief, Bureau of Engineering: [Signature] 9/27/02  
 Chief, Division of Highways: [Signature] 9-27-02  
 Chief, Division of Transportation Projects & Watershed Management: [Signature] 9/27/02

RUMMEL KLEPPER & KAHL, LLP  
 CONSULTING ENGINEERS  
 81 MOSHER STREET  
 BALTIMORE, MD 21217



DES:	JCT			
DRN:	DLW			
CHK:	RJA			
DATE:				
	BY	NO.	REVISION	DATE

EROSION & SEDIMENT CONTROL NOTES & DETAILS

LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS  
 CAPITAL PROJECT NO. J-4164-07  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 5 OF 10

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**TRAFFIC CONTROL - LEGEND**

- Drums for maintenance of traffic (Spacing equals the posted speed limit in feet in tapers and twice the posted speed limit in tangent sections, unless noted otherwise or as directed by the engineer.)
- Temporary traffic signs.
- Location of flagman during flagging operations.
- Proposed permanent construction.

**TRAFFIC CONTROL - GENERAL NOTES**

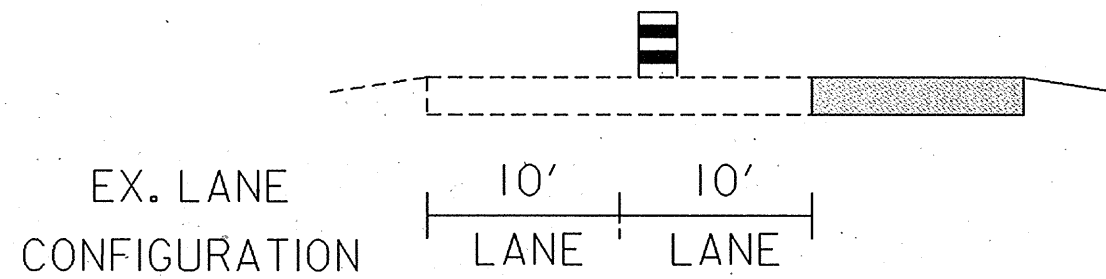
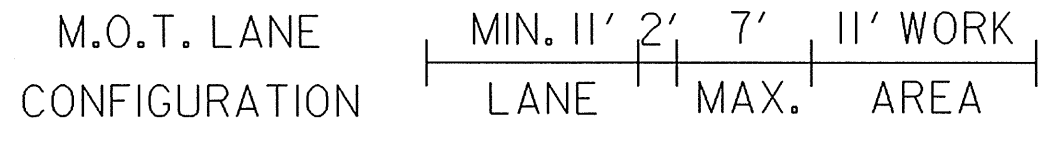
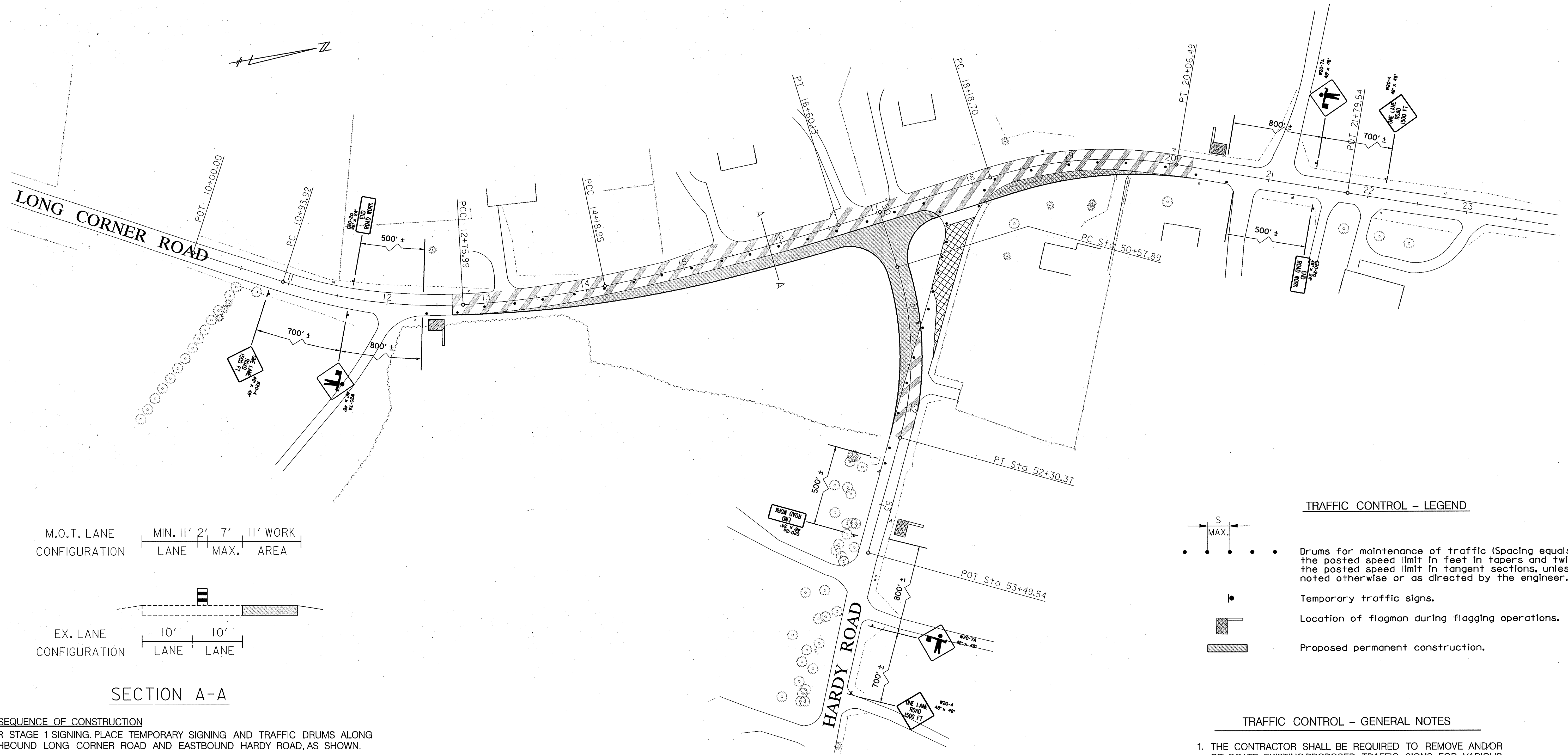
1. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND/OR RELOCATE EXISTING/PROPOSED TRAFFIC SIGNS FOR VARIOUS CONSTRUCTION STAGES AS DIRECTED BY THE ENGINEER.
2. SIGNS USED FOR TEMPORARY TRAFFIC CONTROL THAT ARE NOT APPLICABLE FOR A PARTICULAR CONSTRUCTION PHASE SHALL BE REMOVED OR COMPLETELY COVERED WITH A NON-TRANSPARENT MATERIAL AS DIRECTED BY THE ENGINEER.
3. PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE COMPLETELY REMOVED OR OBLITERATED AS SPECIFIED IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER.
4. CONSTRUCTION WARNING SIGNS FOR SPECIFIC AREAS AND TYPE OF CONSTRUCTION WILL BE PLACED AS NEEDED WHEN DIRECTED BY THE ENGINEER.
5. WHEN DIRECTED BY THE ENGINEER, VARIABLE MESSAGE SIGNS SHALL BE USED TO ANNOUNCE CHANGING TRAFFIC PATTERNS. MESSAGE AND LOCATION AS DIRECTED BY THE ENGINEER.
6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ENTRANCES / DRIVEWAYS.

**SEQUENCE OF CONSTRUCTION**

1. PLACE TEMPORARY SIGNING AND TRAFFIC DRUMS ALONG NORTHBOUND LONG CORNER ROAD AND EASTBOUND HARDY ROAD, AS SHOWN.
2. CONSTRUCT RELOCATED HARDY ROAD FROM STA. 50+25 TO STA. 51+25±.

**STAGE I**

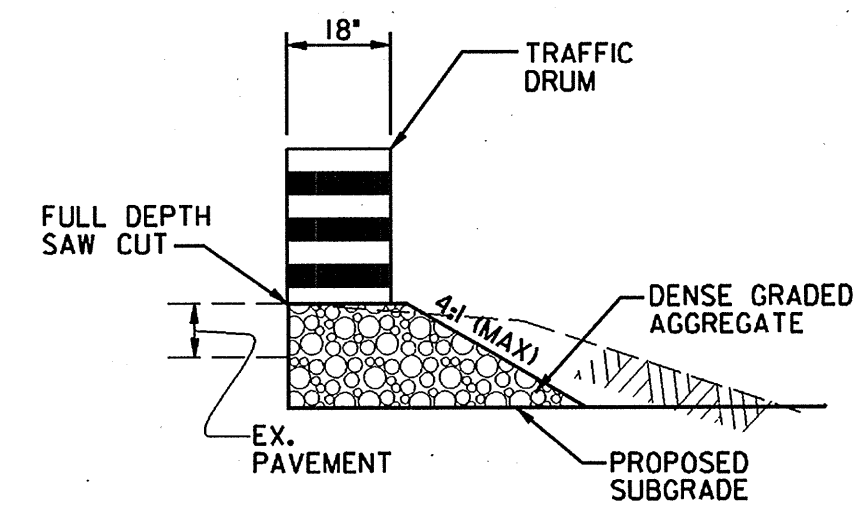
<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James M. Lee</i> 9/27/02 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Ed. Calce</i> 9/27/02 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>William J. White Jr.</i> 9-27-02 CHIEF, BUREAU OF HIGHWAYS DATE</p> <p><i>Ed. Calce</i> 9/27/02 CHIEF, DIVISION OF TRANSPORTATION, PROJECTS &amp; WATERSHED MANAGEMENT DATE</p>	<p><b>RK &amp; K</b> RUMMEL KLEPPER &amp; KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217</p>		<p>DES: _____</p> <p>DRN: _____</p> <p>CHK: _____</p> <p>DATE: _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	BY	NO.	REVISION	DATE													<p><b>TRAFFIC CONTROL PLAN STAGE 1</b></p>	<p><b>LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-07 HOWARD COUNTY, MARYLAND</b></p>	<p>SCALE 1" = 50'</p> <p>SHEET 6 OF 10</p>
BY	NO.	REVISION	DATE																				



**SECTION A-A**

**SEQUENCE OF CONSTRUCTION**

1. COVER STAGE 1 SIGNING, PLACE TEMPORARY SIGNING AND TRAFFIC DRUMS ALONG NORTHBOUND LONG CORNER ROAD AND EASTBOUND HARDY ROAD, AS SHOWN.
2. CONSTRUCT LONG CORNER ROAD WIDENING FROM STA. 12+65 TO STA. 20+22 USING FLAGGING OPERATION IN ACCORDANCE WITH SHA STD. NO. MD 104-31-02 TO MAINTAIN ONE LANE OF TRAFFIC ALONG EXISTING LONG CORNER ROAD DURING THE WORK DAY.
3. AT THE END OF EACH WORK DAY PROVIDE A 1'-6" BENCH AND 4:1 RAMP BETWEEN EXISTING ROADWAY EDGE AND BOTTOM OF EXCAVATION FOR ROADWAY WIDENING USING DENSE GRADED AGGREGATE PER STD. NO. MD 104.90. PLACE DRUMS ADJACENT TO EXISTING ROADWAY EDGE AND RESTORE ORIGINAL TRAFFIC PATTERN (2 LANES) (SEE DETAIL A). COVER FLAGGING SIGNS AND UNCOVER STAGE 1 SIGNING (SEE SHEET 6 OF 10).
4. UTILIZE "UNMARKED PAVEMENT" SIGNS AND TEMPORARY C STRIPING (4' YELLOW TAPE EVERY 40') AS DIRECTED BY THE ENGINEER.
5. CONSTRUCT HARDY ROAD TIE-IN AND RESURFACE / RESTRIPE ALL ROADWAYS USING FLAGGING OPERATION PER SHA STD. NO. MD 104.31-02.
6. SHIFT TRAFFIC TO NEW ROAD.
7. REMOVE PAVEMENT FROM EXISTING HARDY ROAD AND STABILIZE ALL AREAS.



**TRAFFIC CONTROL - LEGEND**

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- Temporary traffic signs.
- Location of flagman during flagging operations.
- Proposed permanent construction.

**TRAFFIC CONTROL - GENERAL NOTES**

1. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND/OR RELOCATE EXISTING/PROPOSED TRAFFIC SIGNS FOR VARIOUS CONSTRUCTION STAGES AS DIRECTED BY THE ENGINEER.
2. SIGNS USED FOR TEMPORARY TRAFFIC CONTROL THAT ARE NOT APPLICABLE FOR A PARTICULAR CONSTRUCTION PHASE SHALL BE REMOVED OR COMPLETELY COVERED WITH A NON-TRANSPARENT MATERIAL AS DIRECTED BY THE ENGINEER.
3. PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE COMPLETELY REMOVED OR OBLITERATED AS SPECIFIED IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER.
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6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ENTRANCES / DRIVEWAYS.

**STAGE 2**

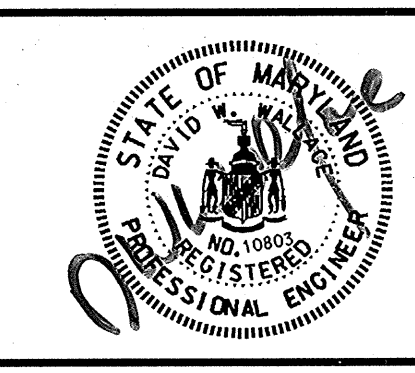
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. ...* 9/27/02  
DIRECTOR OF PUBLIC WORKS DATE

*...* 9/27/02  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 9/27/02  
CHIEF, DIVISION OF TRANSPORTATION, DATE  
PROJECTS & WATERSHED MANAGEMENT

**R&K**  
RUMMEL KLEPPER & KAHL, LLP  
CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MD  
21217



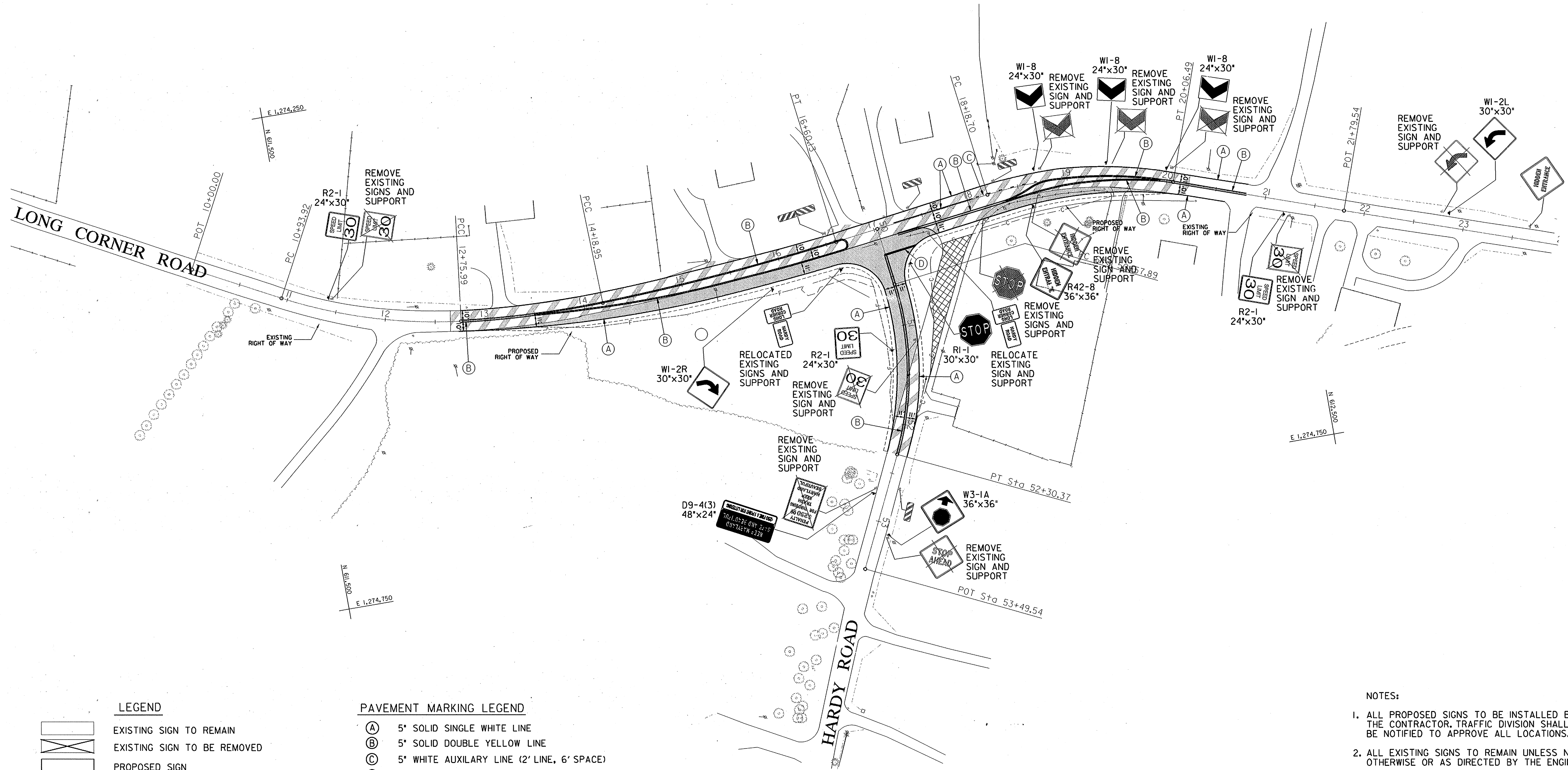
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**TRAFFIC CONTROL PLAN  
STAGE 2**

**LONG CORNER ROAD / HARDY ROAD  
INTERSECTION IMPROVEMENTS  
CAPITAL PROJECT NO. J-4164-07  
HOWARD COUNTY, MARYLAND**

SCALE  
1" = 50'

SHEET  
7 OF 10



**LEGEND**

- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- PROPOSED SIGN
- EXISTING SIGN SYMBOL
- PROPOSED SIGN SYMBOL

**PAVEMENT MARKING LEGEND**

- (A) 5' SOLID SINGLE WHITE LINE
- (B) 5' SOLID DOUBLE YELLOW LINE
- (C) 5' WHITE AUXILIARY LINE (2' LINE, 6' SPACE)
- (D) 24" SOLID WHITE THERMOPLASTIC LINE FOR STOP BAR

NOTE: ALL PAVEMENT MARKINGS SHALL BE WATERBOURNE TRAFFIC PAINT UNLESS OTHERWISE SPECIFIED.

**NOTES:**

1. ALL PROPOSED SIGNS TO BE INSTALLED BY THE CONTRACTOR. TRAFFIC DIVISION SHALL BE NOTIFIED TO APPROVE ALL LOCATIONS.
2. ALL EXISTING SIGNS TO REMAIN UNLESS NOTED OTHERWISE OR AS DIRECTED BY THE ENGINEER.
3. ALL PROPOSED PAVEMENT MARKINGS ARE TO TIE INTO EXISTING PAVEMENT MARKINGS.
4. EXISTING LUMINAIRE ON UTILITY POLE AT THE EXISTING INTERSECTION SHALL BE RELOCATED TO THE NEW INTERSECTION BY OTHERS.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John M. ...* 9/27/02  
 DIRECTOR OF PUBLIC WORKS DATE  
*W. ...* 9-27-02  
 CHIEF, BUREAU OF HIGHWAYS DATE  
*...* 9/27/02  
 CHIEF, DIVISION OF TRANSPORTATION, DATE  
 PROJECTS & WATERSHED MANAGEMENT

**RUMMEL KLEPPER & KAHL, LLP**  
 CONSULTING ENGINEERS  
 81 MOSHER STREET  
 BALTIMORE, MD  
 21217



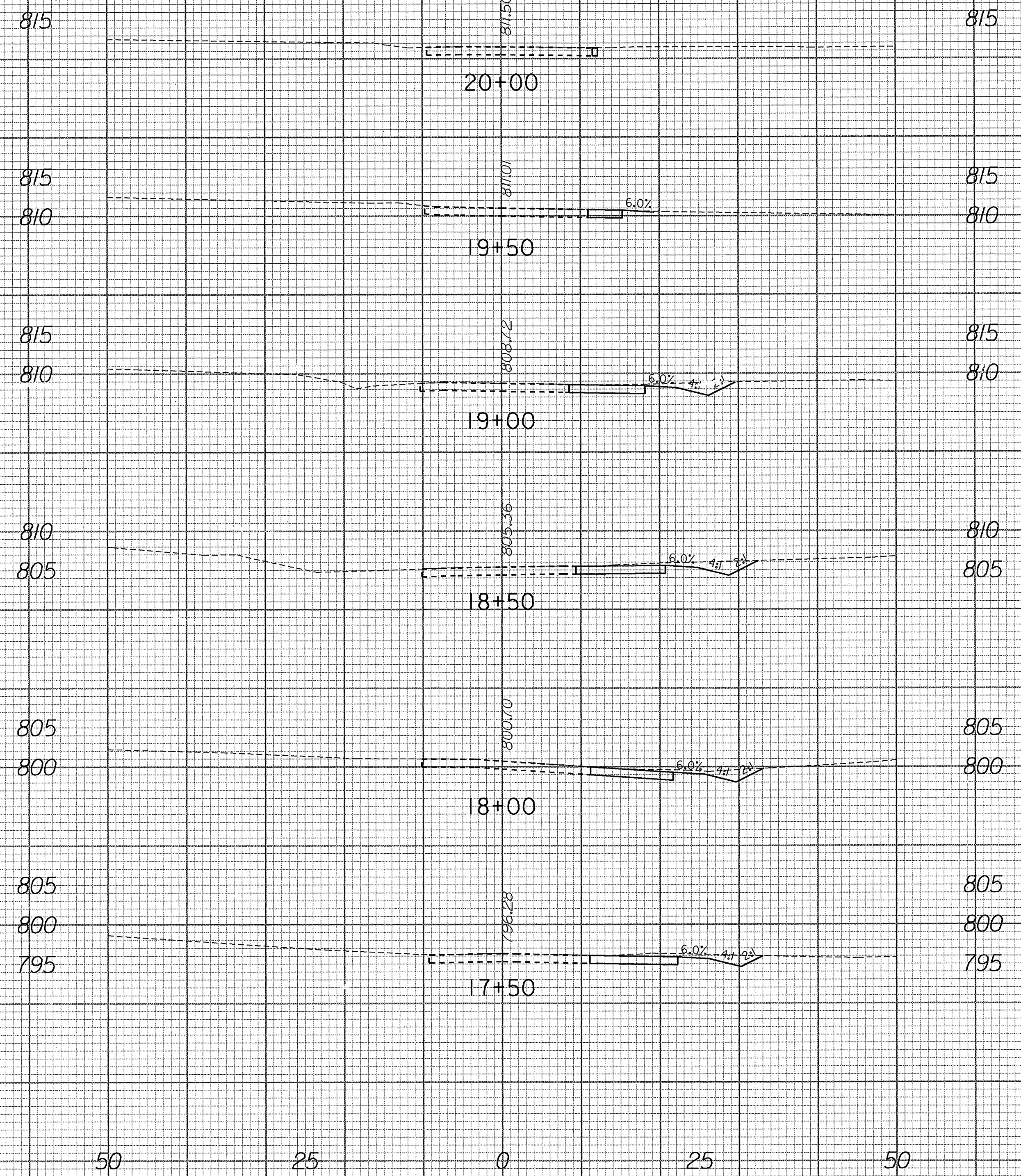
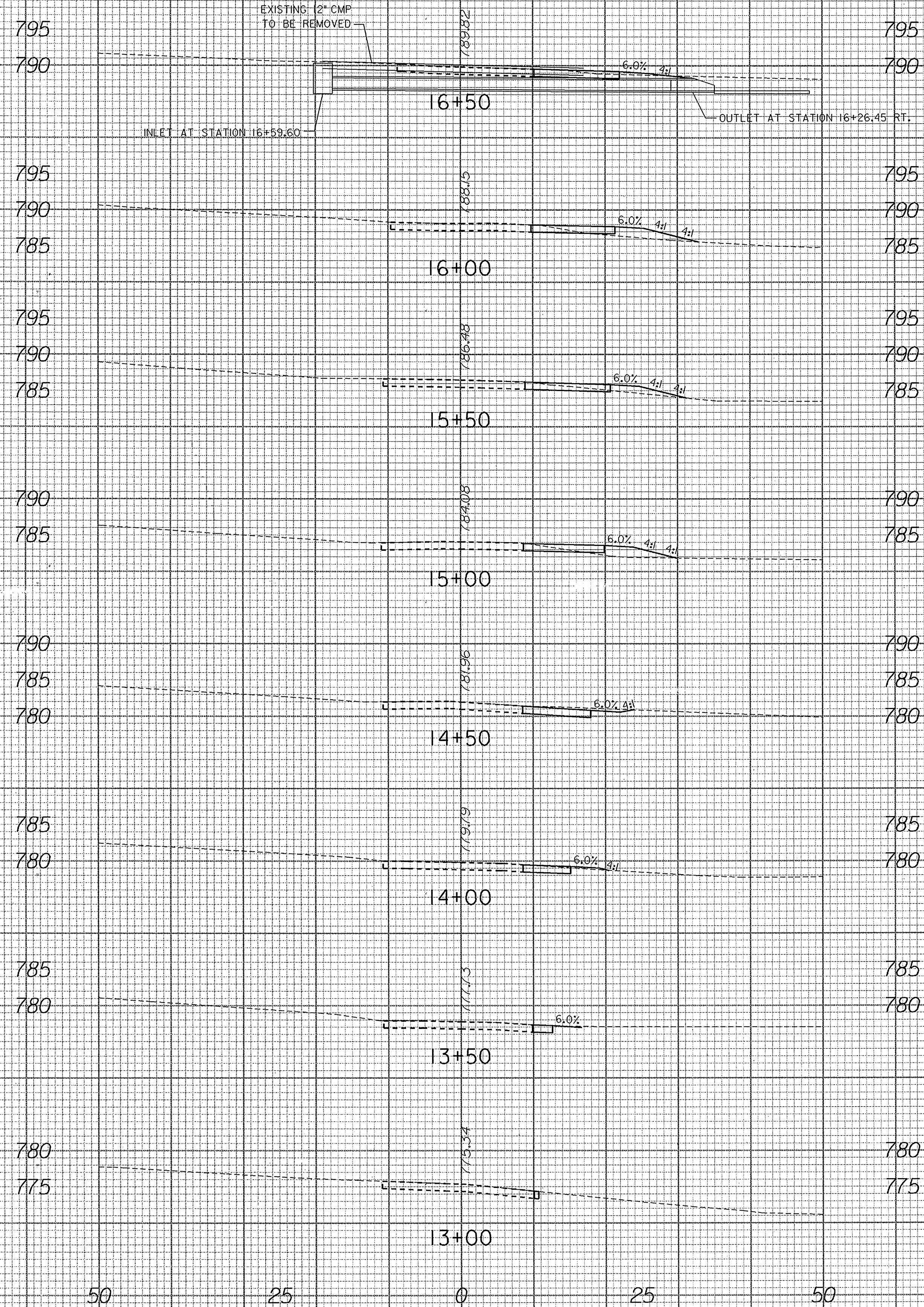
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**SIGNING / PAVEMENT MARKING SHEET**

LONG CORNER ROAD / HARDY ROAD  
 INTERSECTION IMPROVEMENTS  
 CAPITAL PROJECT NO. J-4164-07  
 HOWARD COUNTY, MARYLAND

SCALE  
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 8 OF 10





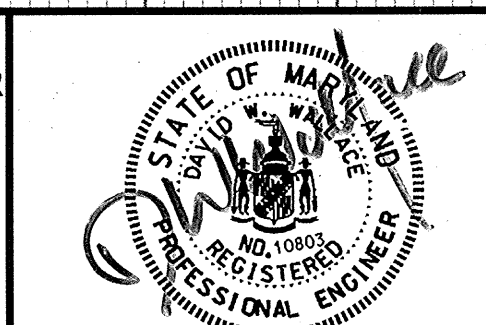
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James M. Jones*  
DIRECTOR OF PUBLIC WORKS  
DATE: 1/27/02

*John A. Callea*  
CHIEF, BUREAU OF ENGINEERING  
DATE: 9/27/02

*John A. Callea*  
CHIEF, DIVISION OF TRANSPORTATION,  
PROJECTS & WATERSHED MANAGEMENT  
DATE: 9/27/02

**RK & K**  
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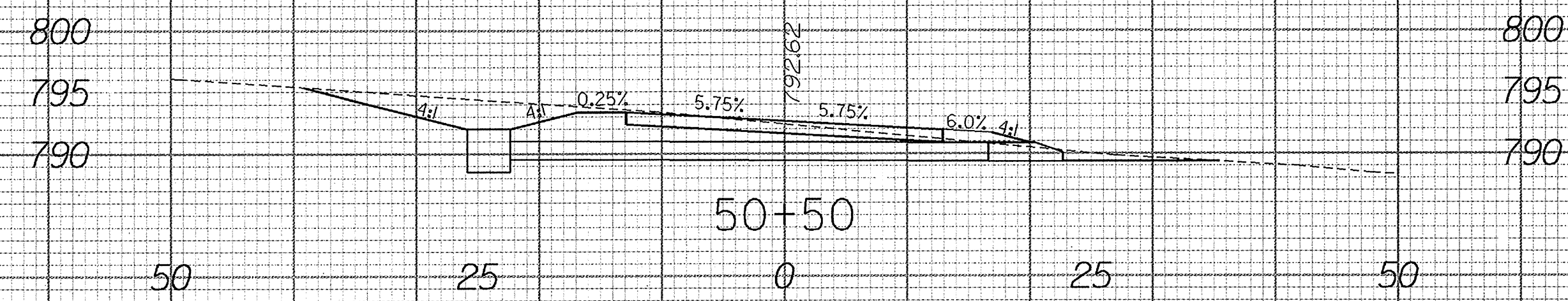
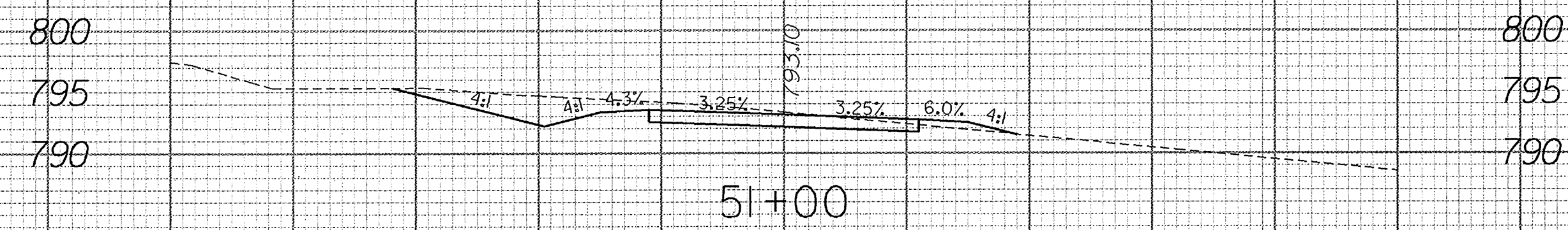
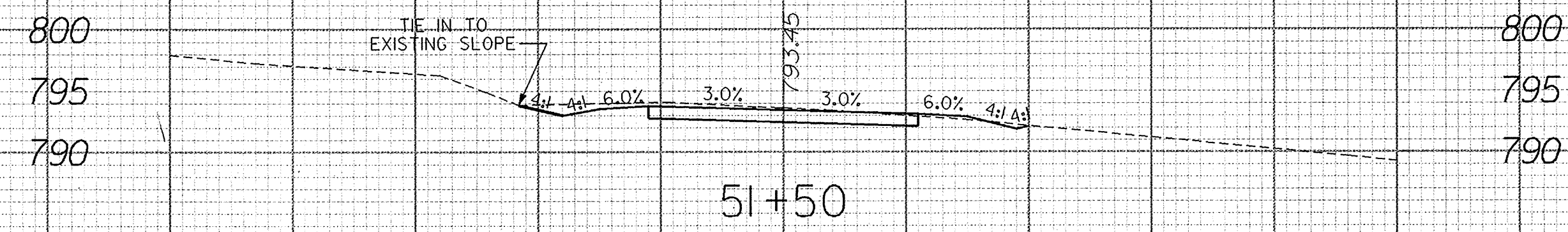
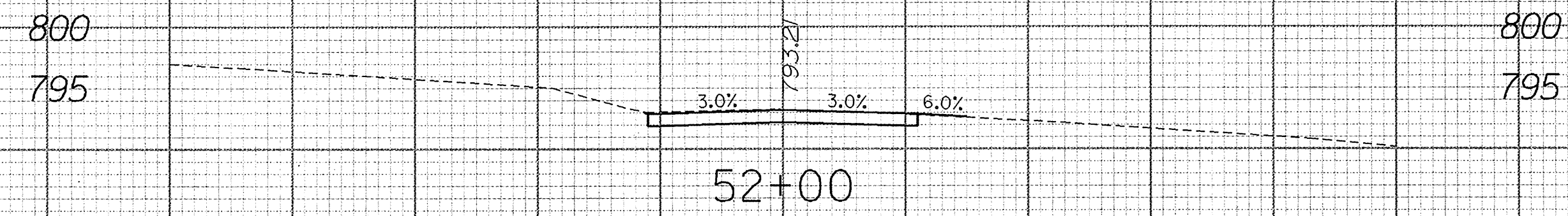
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LONG CORNER ROAD  
CROSS SECTIONS

LONG CORNER ROAD / HARDY ROAD  
INTERSECTION IMPROVEMENTS  
CAPITAL PROJECT NO. J-4164-07  
HOWARD COUNTY, MARYLAND

SCALE  
1" = 10'

SHEET  
9 OF 10



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* *[Signature]*  
 DIRECTOR OF PUBLIC WORKS DATE  
 CHIEF, BUREAU OF ENGINEERING DATE  
*[Signature]* *[Signature]*  
 CHIEF, BUREAU OF HIGHWAYS DATE  
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 CONSULTING ENGINEERS  
 81 MOSHER STREET  
 BALTIMORE, MD  
 21217



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

HARDY ROAD  
CROSS SECTIONS

LONG CORNER ROAD / HARDY ROAD  
 INTERSECTION IMPROVEMENTS  
 CAPITAL PROJECT NO. J-4164-07  
 HOWARD COUNTY, MARYLAND

SCALE  
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