

LONG CORNER / HARDY ROAD INTERSECTION IMPROVEMENTS

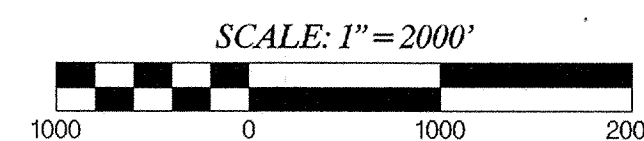
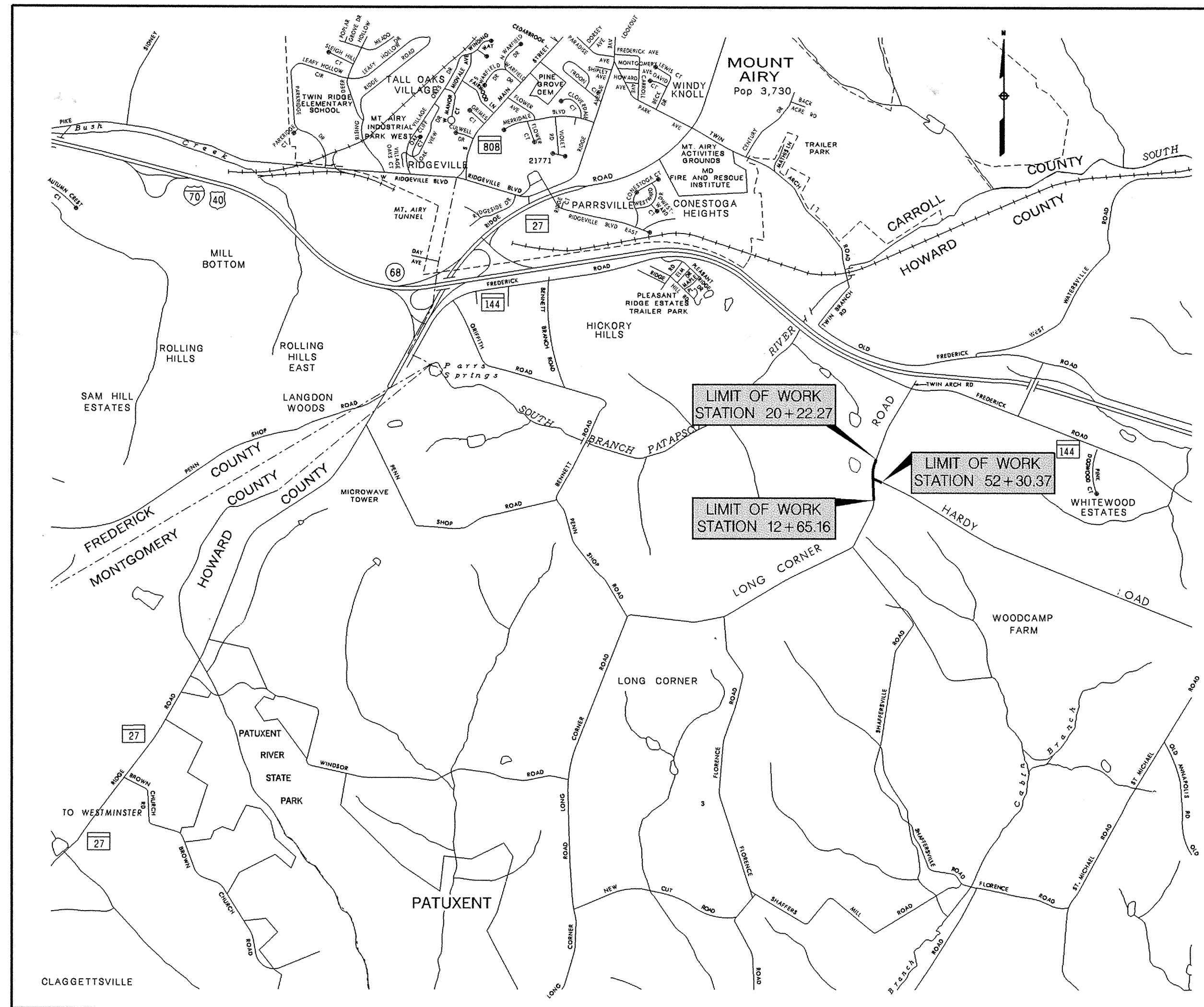
HOWARD COUNTY, MARYLAND

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 - 1(800) 527-0000
 - 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.



INDEX OF SHEETS

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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 Palcia DATE 9/27/02
SIGNATURE OF DEVELOPMENT

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 8/17/2000

RUMMEL KLEPPER & KAHL, LLP
81 MOSHER STREET
BALTIMORE, MARYLAND 21217
(410) 728-2900

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

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

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

Yuhli DATE 9/19/02
HOWARD SOIL CONSERVATION DISTRICT

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

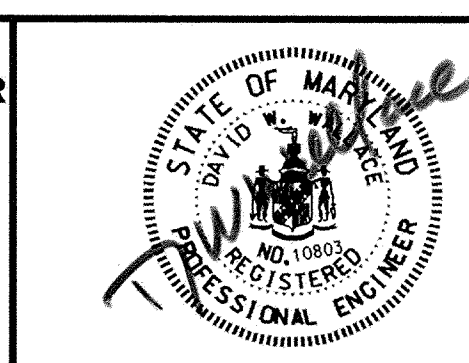
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Samuel DATE 9/27/02
DIRECTOR OF PUBLIC WORKS

Elizabeth Anderson Palcia, P.E. DATE 9/27/02
CHIEF, BUREAU OF ENGINEERING

Elizabeth Anderson Palcia, P.E. DATE 9/27/02
CHIEF, DIVISION OF TRANSPORTATION, PROJECTS & WATERSHED MANAGEMENT

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



DES: KRP				
DRN: DLW				
CHK: RJA				
DATE: 4/7/00	BY	NO.	REVISION	DATE

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

GRID NORTH
MD COORDINATE SYSTEM (NAD83)
VERTICAL DATUM NGVD29

JERFFEY L. HARRISON

DORSEY W.
DAY, ET UX

JOHN R. MANHOLLAN
& MARTHA A. MANHOLLAN

JERFFEY L. HARRISON

CLARENCE
ANDERSON
& FANNIE
ANDERSON

LIMIT OF WORK
STA. 20 + 22.27

LIMIT OF WORK
STA. 12 + 65.16

LIMIT OF WORK
STA. 52 + 30.37

DOUGLAS E. LEVY &
DENEVA V. RILEY

LONG CORNER ROAD

TIMOTHY L.
RIGLER &
REGINA W.
RIGLER

DEANNA MARIE
FISHER TRUST

MICHAEL J. CREAGHAN &
ELIZABETH D. DORSETT

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

HARDY ROAD

- REMOVE AND RESET EXISTING FENCE
STA. 18+00 TO STA. 19+44, (RT.) 140 L.F.
- CLASS 1 RIP RAP
STA. 16+15 TO STA. 16+82
(LONG CORNER ROAD) (RT.) 50 S.Y.
FOR RIP RAP DITCH DETAIL 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.

- LEGEND**
- PROPOSED FULL DEPTH PAVEMENT
 - PROPOSED RESURFACING
 - PAVEMENT REMOVAL

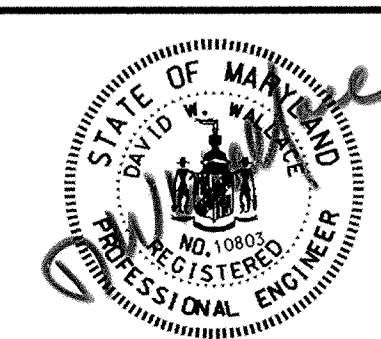
<u> </u> L.C.R.	<u> </u> L.C.R.	<u> </u> L.C.R.
P.I. = 11+85.97	P.I. = 13+47.61	P.I. = 15+45.00
Δ = 20°-51'-50.6"	Δ = 8°-37'-19.5"	Δ = 5°-46'-21.4"
D = 11°-27'-32.9"	D = 6°-01'-51.5"	D = 2°-17'-30.7"
R = 500.00'	R = 950.00'	R = 2500.00'
T = 92.06'	T = 71.62'	T = 126.04'
L = 182.07'	L = 142.96'	L = 251.87'
E = 8.41'	E = 2.70'	E = 3.18'
<u> </u> L.C.R.	<u> </u> HARDY	
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'	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Pa. n. lu 9/27/01
DIRECTOR OF PUBLIC WORKS DATE
W. J. M. P. 9-27-02
CHIEF, BUREAU OF HIGHWAYS DATE

Ed. Calva 9/27/01
CHIEF, BUREAU OF ENGINEERING, DATE
Ed. Calva 9/27/02
CHIEF, DIVISION OF TRANSPORTATION, DATE
PROJECTS & WATERSHED MANAGEMENT

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



DES: KRP				
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

GRID NORTH
MD COORDINATE SYSTEM (MAD83)
VERTICAL DATUM NGVD29

JERFFEY L. HARRISON

DORSEY W.
DAY, ET UX

JOHN R. MANHOLLAN
& MARTHA A. MANHOLLAN

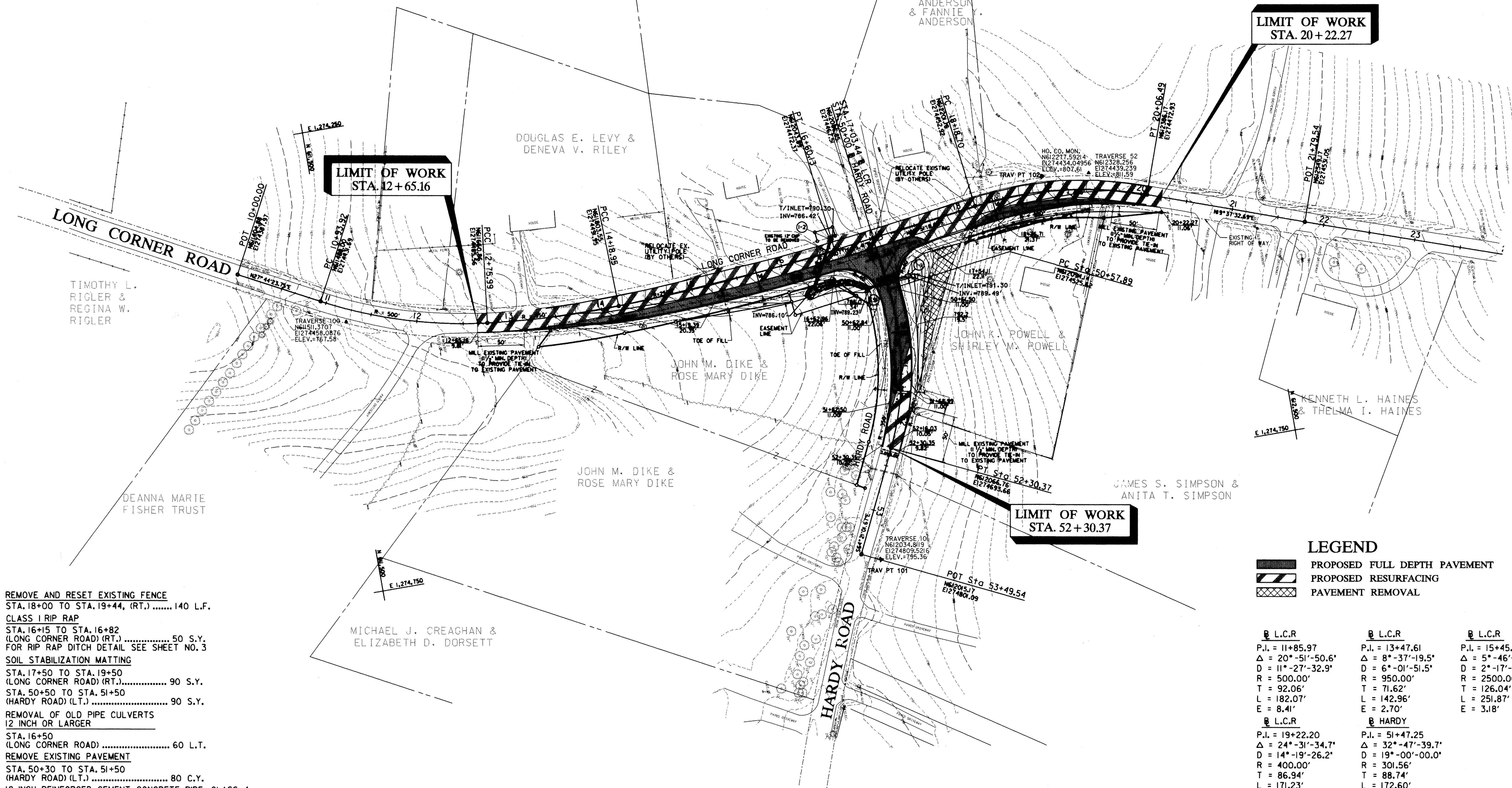
JERFFEY L. HARRISON

CLARENCE
ANDERSON
& FANNIE
ANDERSON

**LIMIT OF WORK
STA. 20+22.27**

**LIMIT OF WORK
STA. 12+65.16**

**LIMIT OF WORK
STA. 52+30.37**



- REMOVE AND RESET EXISTING FENCE
STA. 18+00 TO STA. 19+44, (RT.) 140 L.F.
- CLASS I RIP RAP
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(LONG CORNER ROAD) (RT.) 50 S.Y.
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LEGEND

- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED RESURFACING
- PAVEMENT REMOVAL

L.C.R. P.I. = 11+85.97 Δ = 20°-51'-50.6" D = 11°-27'-32.9" R = 500.00' T = 92.06' L = 182.07' E = 8.41'	L.C.R. P.I. = 13+47.61 Δ = 8°-37'-19.5" D = 6°-01'-51.5" R = 950.00' T = 71.62' L = 142.96' E = 2.70'	L.C.R. P.I. = 15+45.00 Δ = 5°-46'-21.4" D = 2°-17'-30.7" R = 2500.00' T = 126.04' L = 251.87' E = 3.18'
L.C.R. P.I. = 19+22.20 Δ = 24°-31'-34.7" D = 14°-19'-26.2" R = 400.00' T = 86.94' L = 171.23' E = 9.34'	HARDY P.I. = 51+47.25 Δ = 32°-47'-39.7" D = 19°-00'-00.0" R = 301.56' T = 88.74' L = 172.60' E = 12.78'	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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

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

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

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



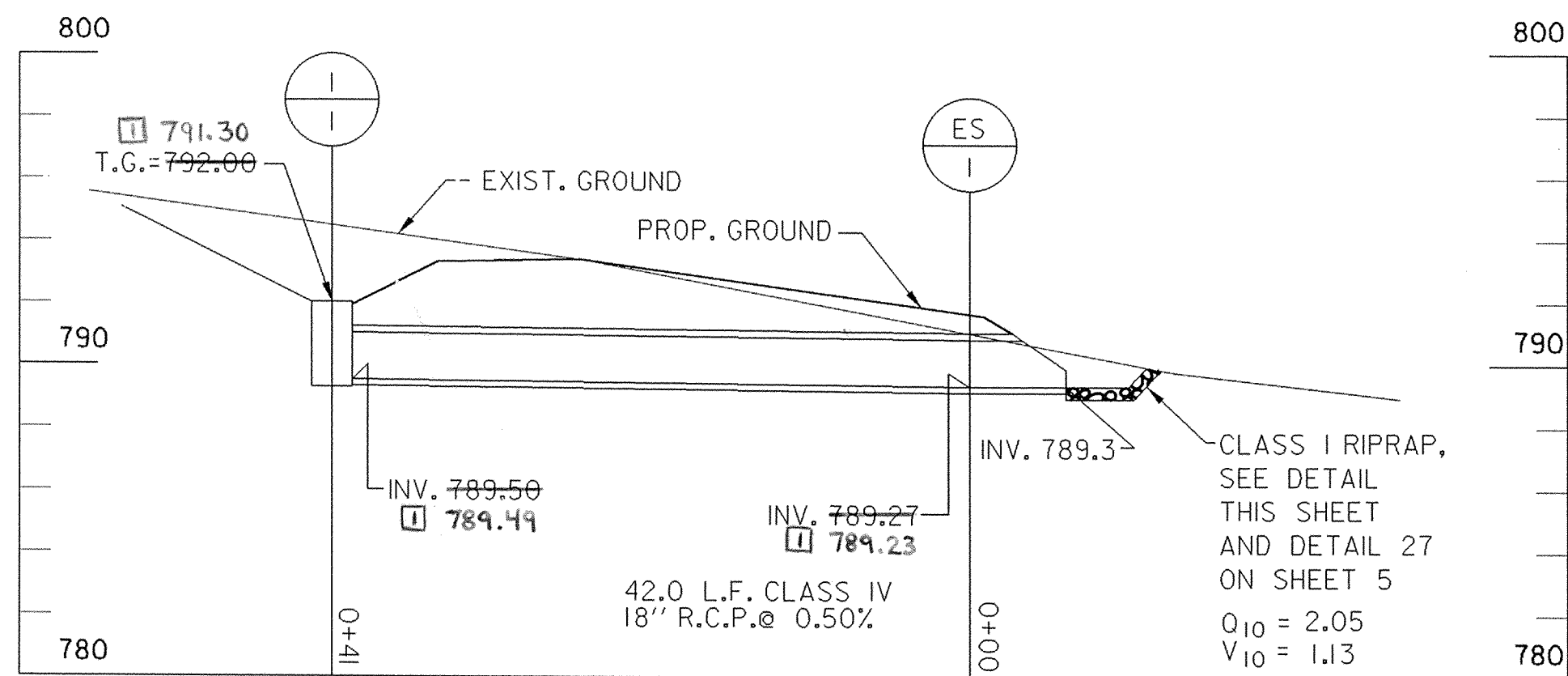
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DRN: DLW				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

PLAN SHEET

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

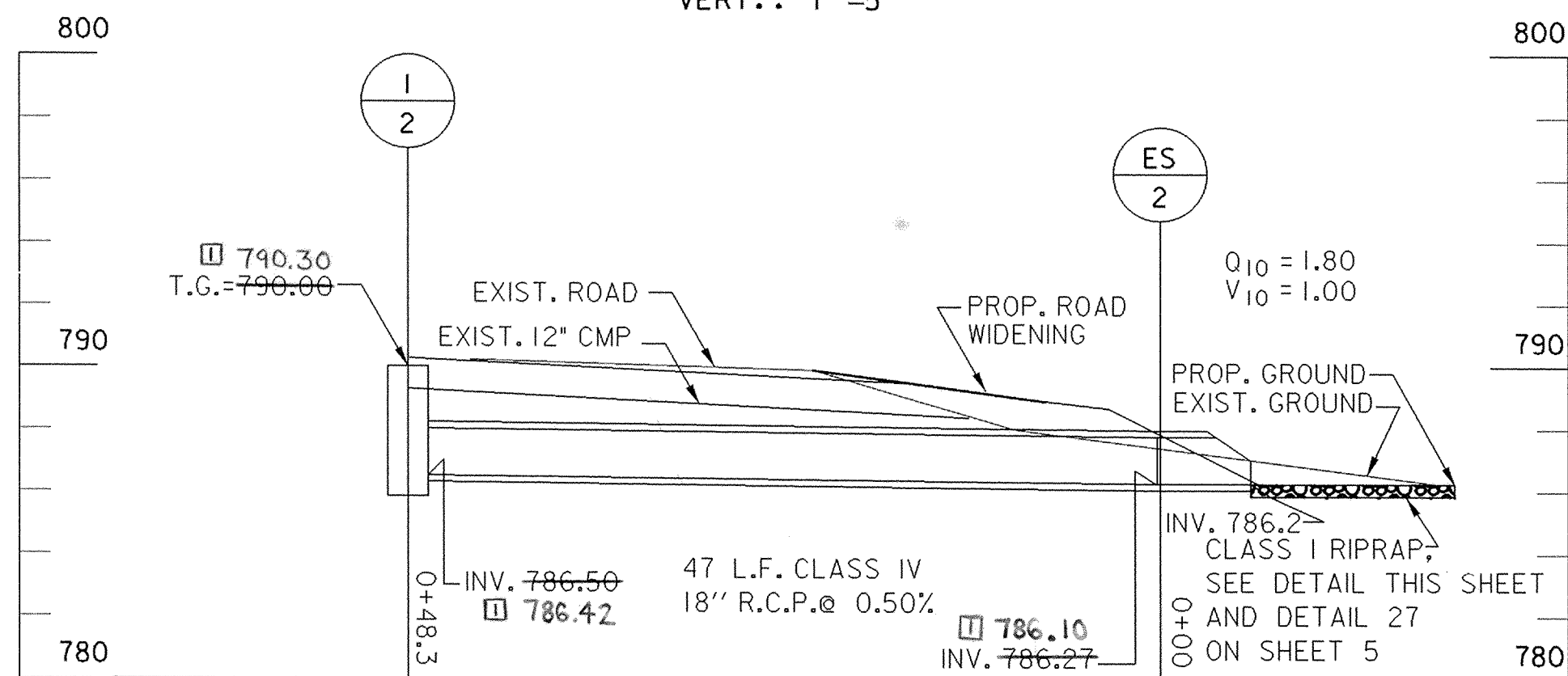
SCALE
1" = 50'

SHEET
2 OF 10



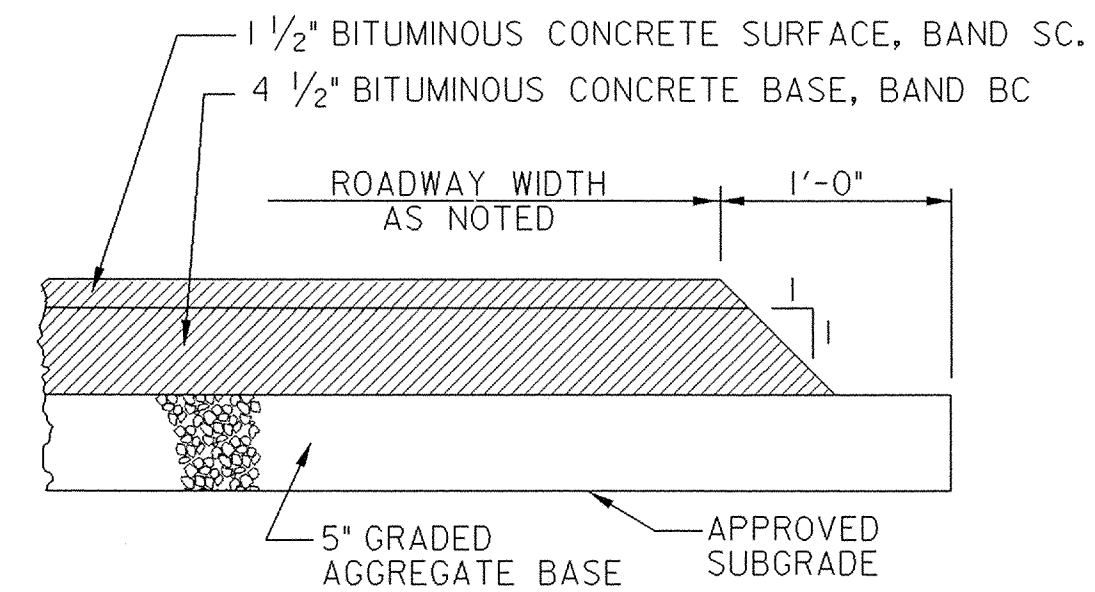
RELOCATED HARDY ROAD
STATION 50+50

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

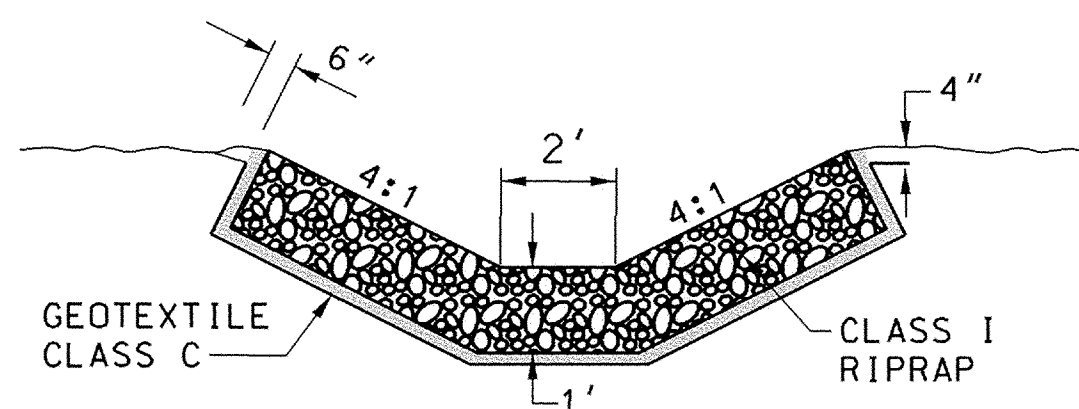


LONG CORNER ROAD
STATION 16+50

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

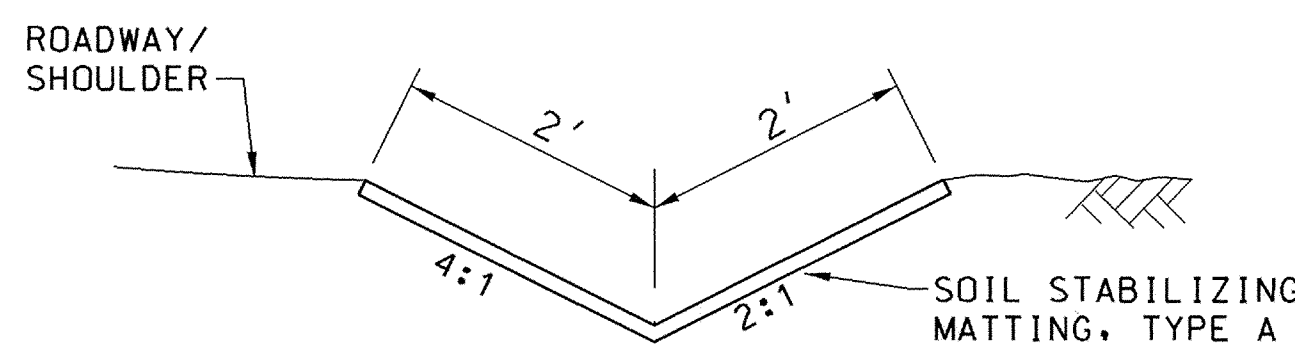


TYPE "A" PAVEMENT DETAIL
NOT TO SCALE

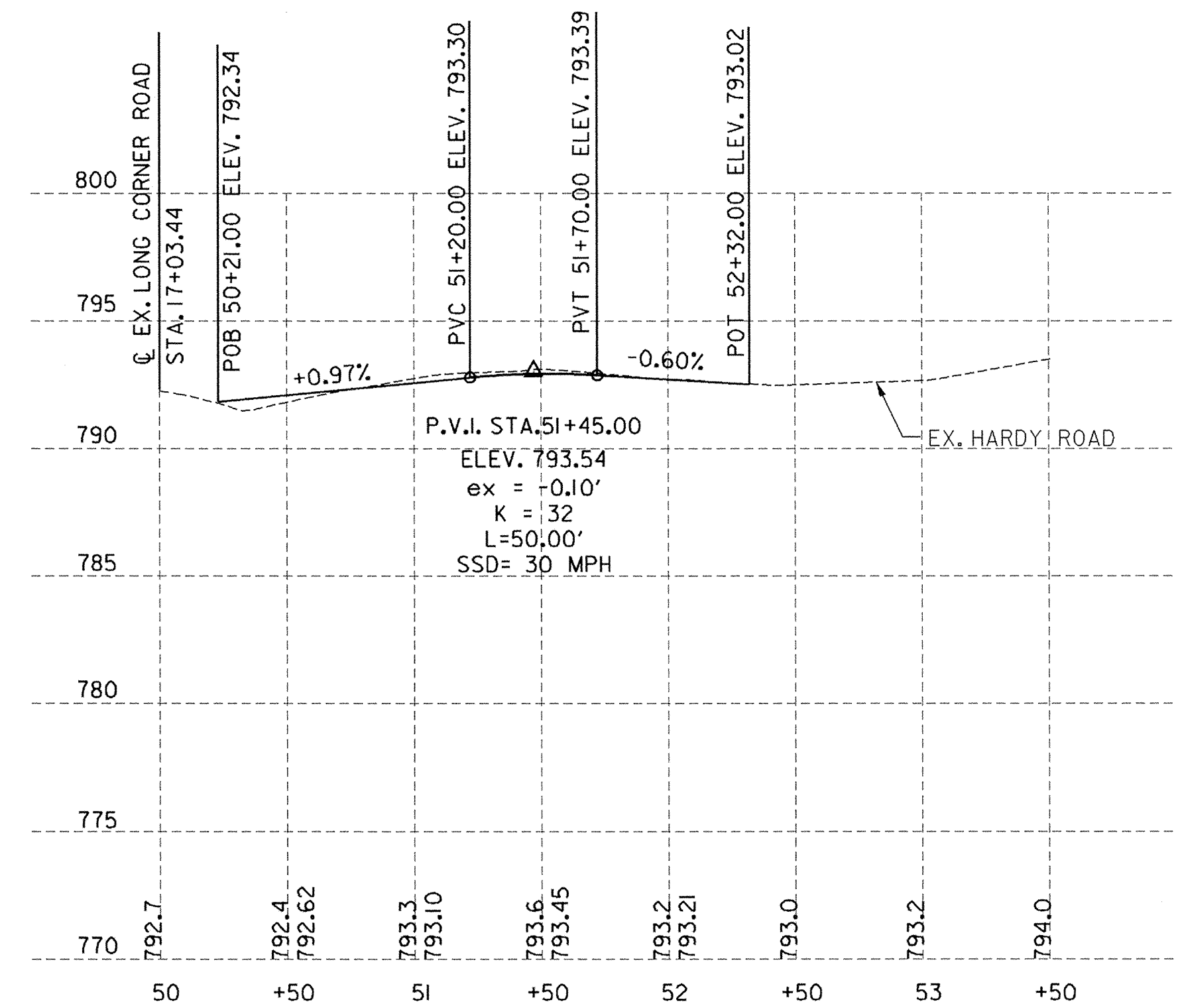


RIPRAP DITCH DETAIL
NOT TO SCALE

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



SOIL STABILIZATION MATTING DITCH DETAIL
NOT TO SCALE



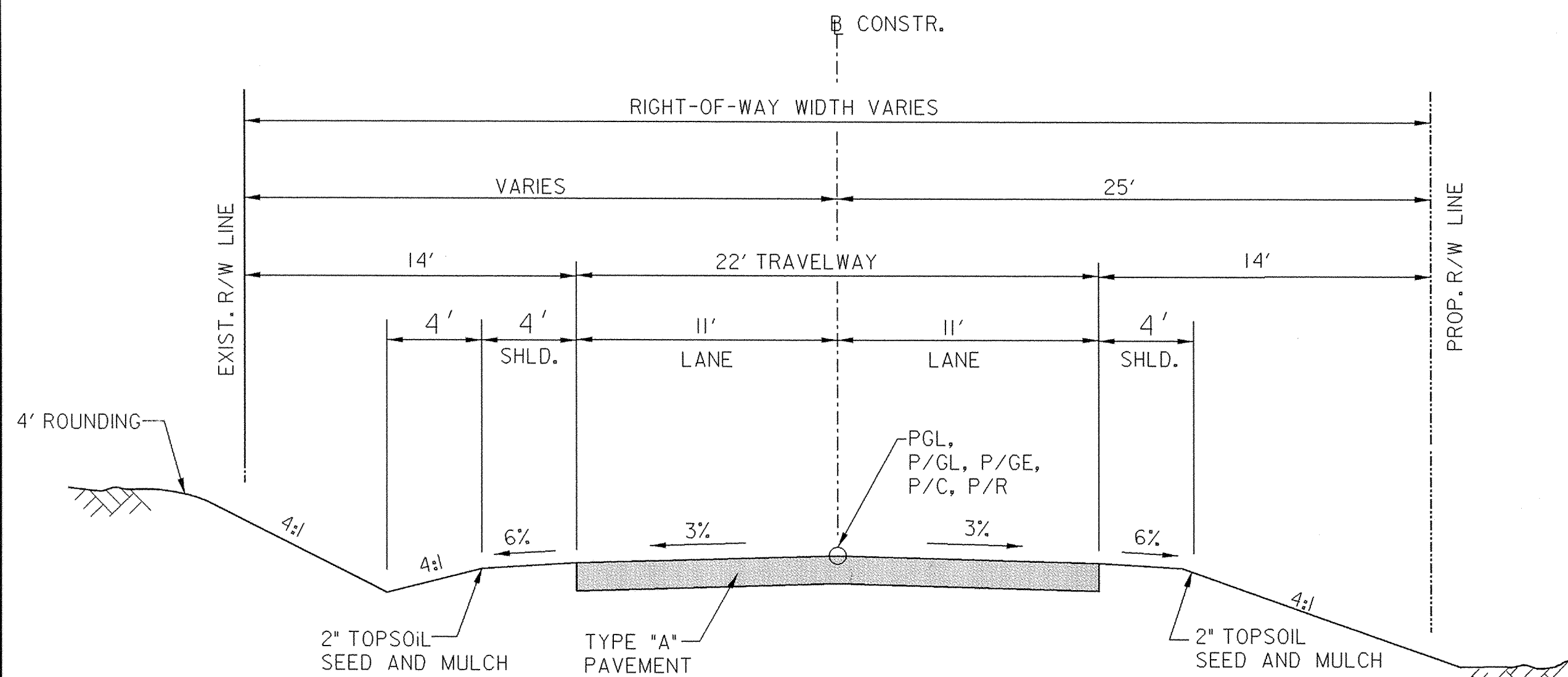
HARDY ROAD PROFILE

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

STRUCTURE SCHEDULE

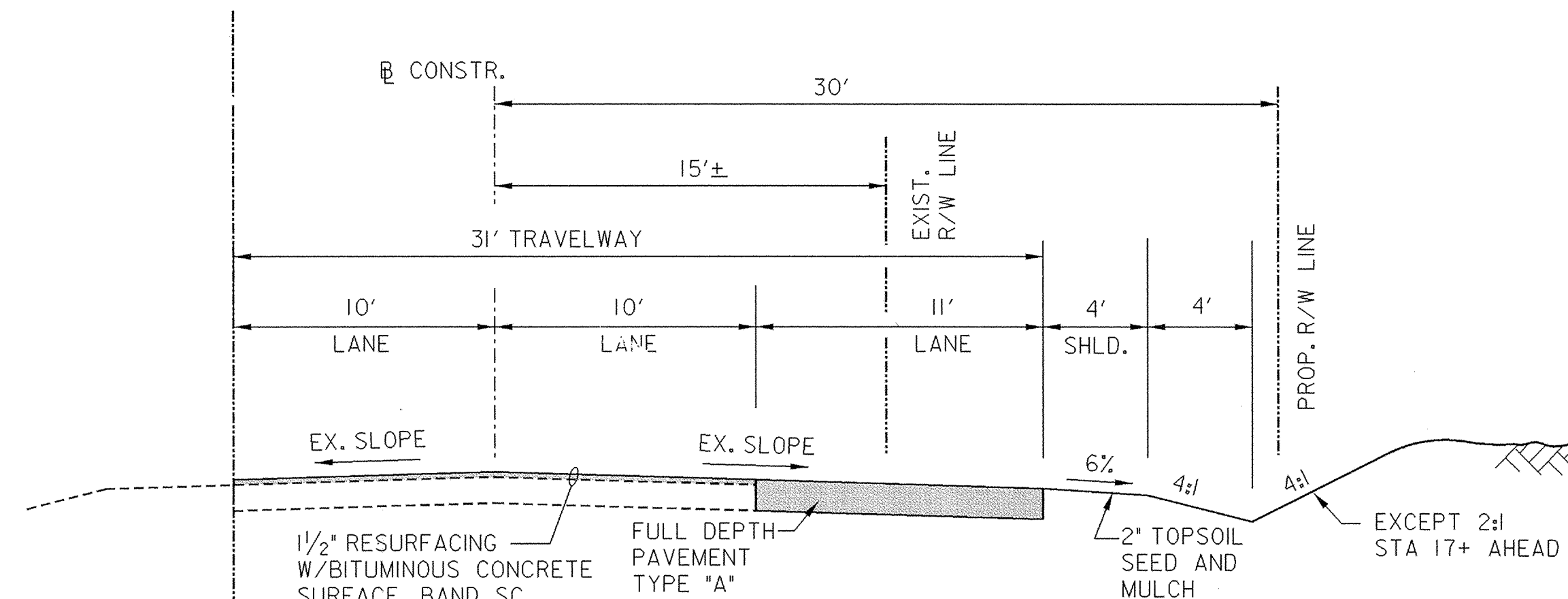
No.	STATION	OFFSET	TOP ELEV.	INV. ELEV.	HOWARD COUNTY STANDARD	REMARKS
I-1	50+50	24.10' Lt	791.20 792.6	789.48 789.5	SD 4.36 (DOUBLE OPENING)	OFFSET TO CENTER OF STRUCTURE PRECAST OPEN END GRATE INLET
ES-1	50+50	22.67' Rt		789.23 789.3	SD 5.51	OFFSET TO END OF CONCRETE END SECTION
I-2	16+59.60	11.6' Lt	790.30 790.6	788.12 786.5	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

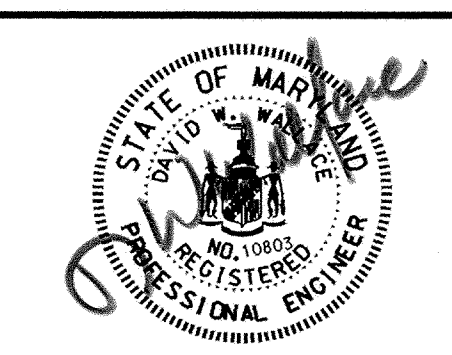
John M. ... 9/27/02
DIRECTOR OF PUBLIC WORKS DATE

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

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

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

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



DES:	TMB	AS BUILT SURVEY	6-21-04
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

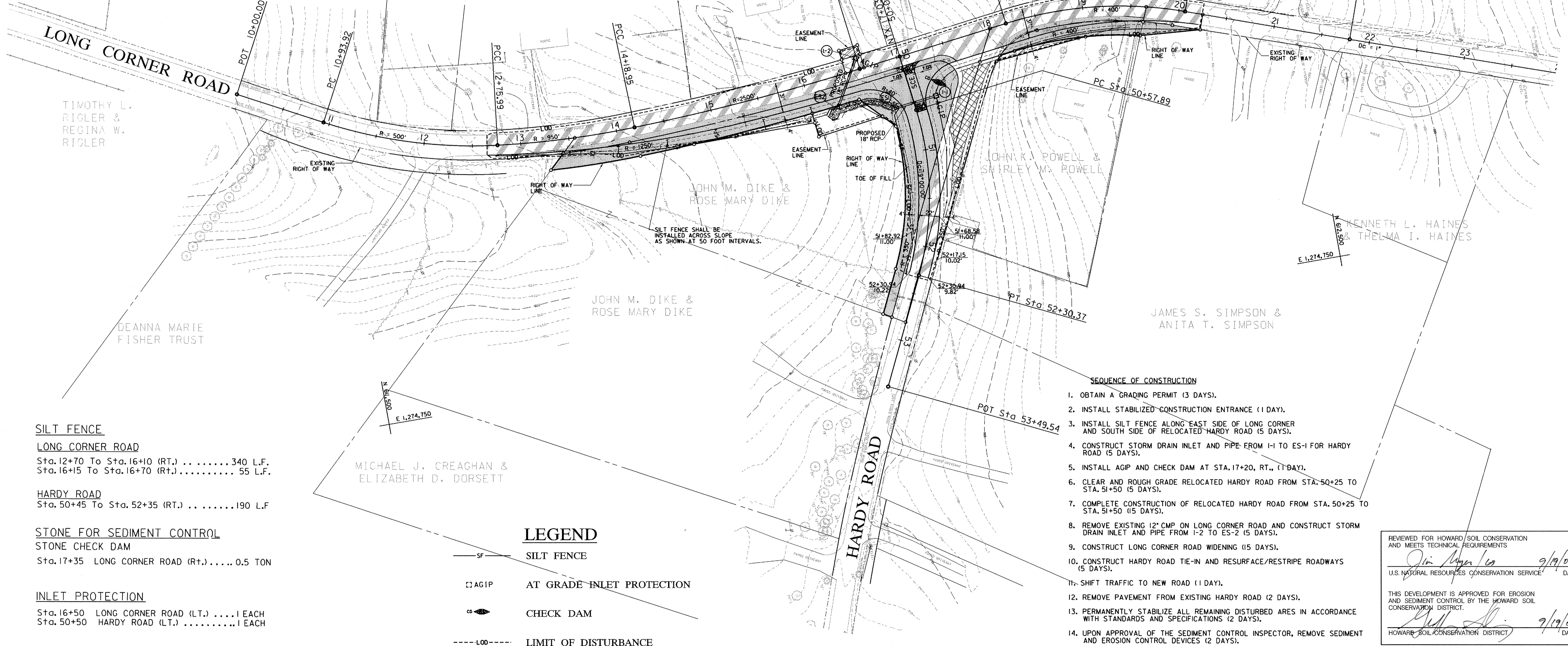
SCALE
AS SHOWN

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.

*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
- CD CHECK DAM
- LDD 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 SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS

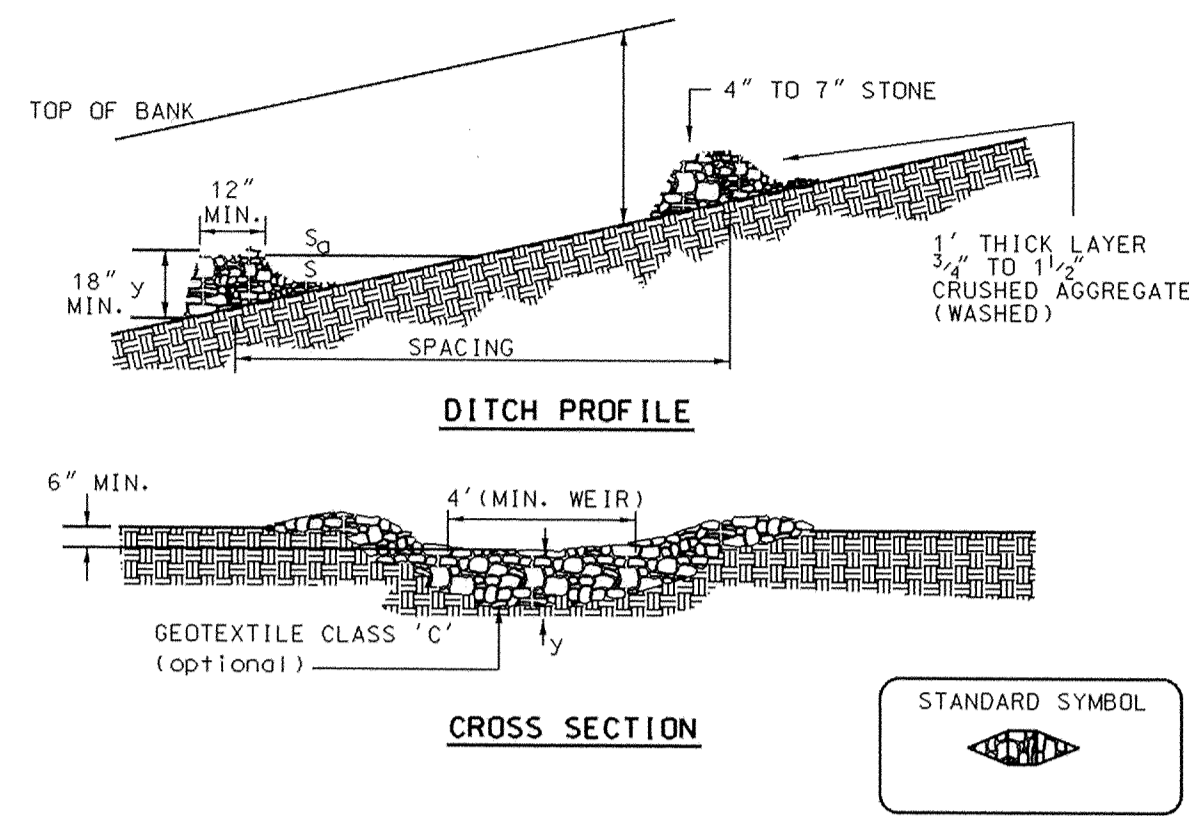
John M. ... 9/19/02
 U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John M. ... 9/19/02
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works DATE 9/27/02 Chief, Bureau of Highways DATE 9-27-02		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	
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DETAIL 7 - STONE CHECK DAM

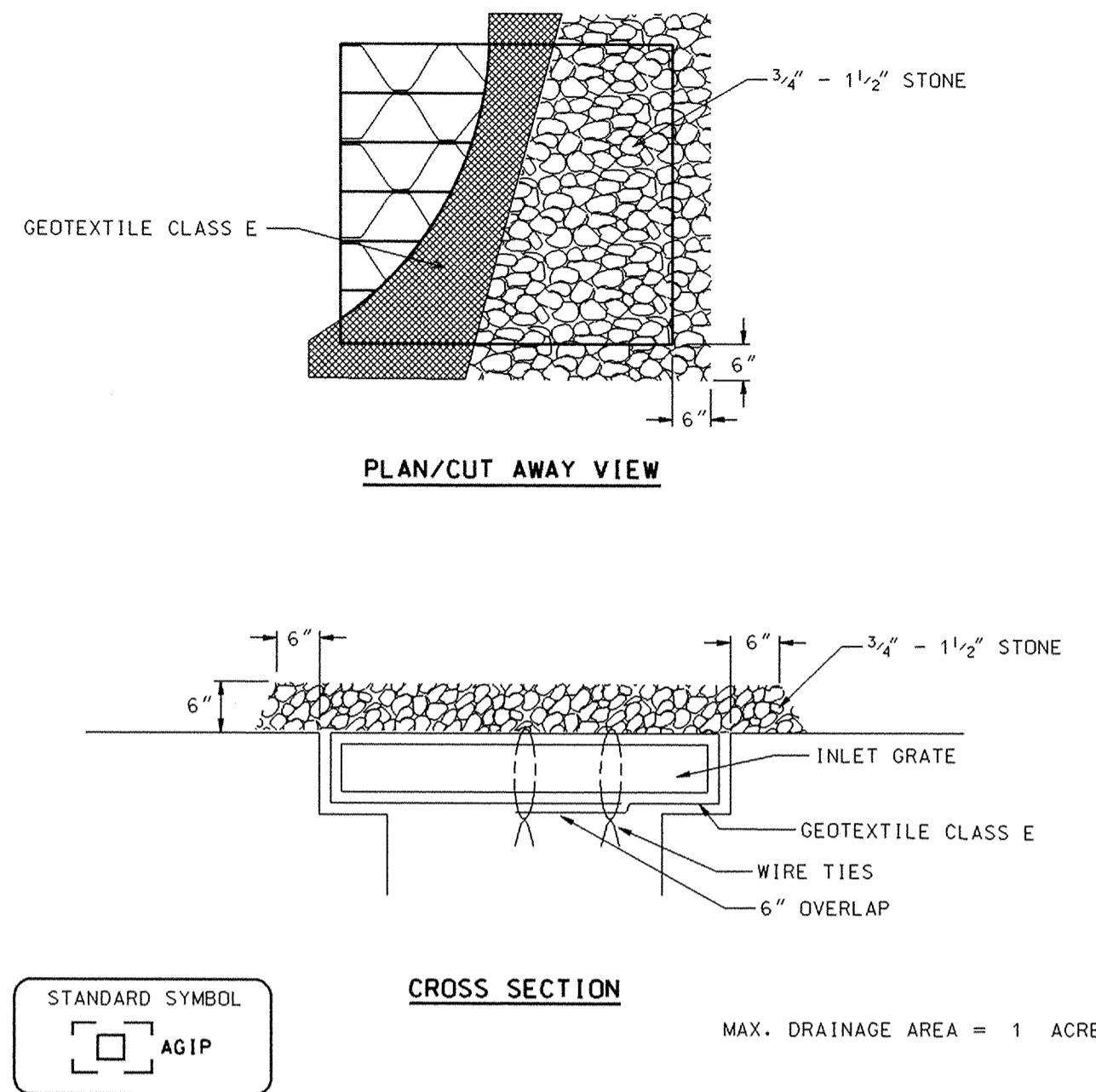


STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% or less	80'
2.1% to 4%	40'
4.1% to 7%	25'
7.1% to 10%	15'
over 10%	use lined waterway design

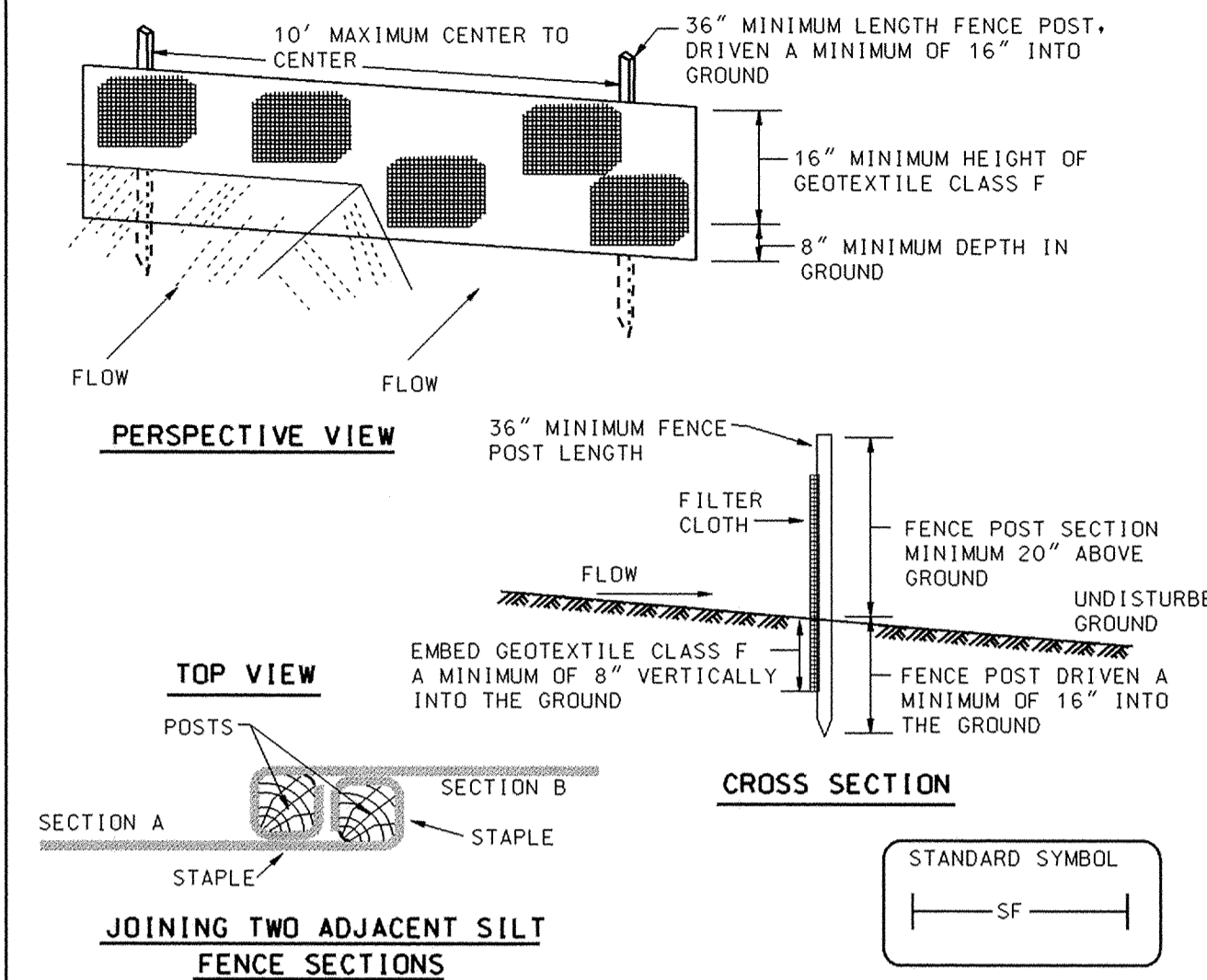
- Construction Specifications
- Swales and ditches shall be prepared in accordance with the construction specifications described in Section A-2. Standards and Specifications for Temporary Swale.
 - The check dam shall be constructed of 4"-7" stone. The stone shall be placed so that it completely covers the width of the channel and keyed into the channel banks.
 - The top of the check dam shall be constructed so the center is approximately 6" lower than the outer edges, forming a weir that water can flow across.
 - The maximum height of the check dam at the center shall not exceed 2'.
 - The upstream side of the check dam shall be lined with approximately 1" of 3/4" to 1 1/2" crushed aggregate.

DETAIL 23B - AT GRADE INLET PROTECTION



- Construction Specifications
- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
 - Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

DETAIL 22 - SILT FENCE

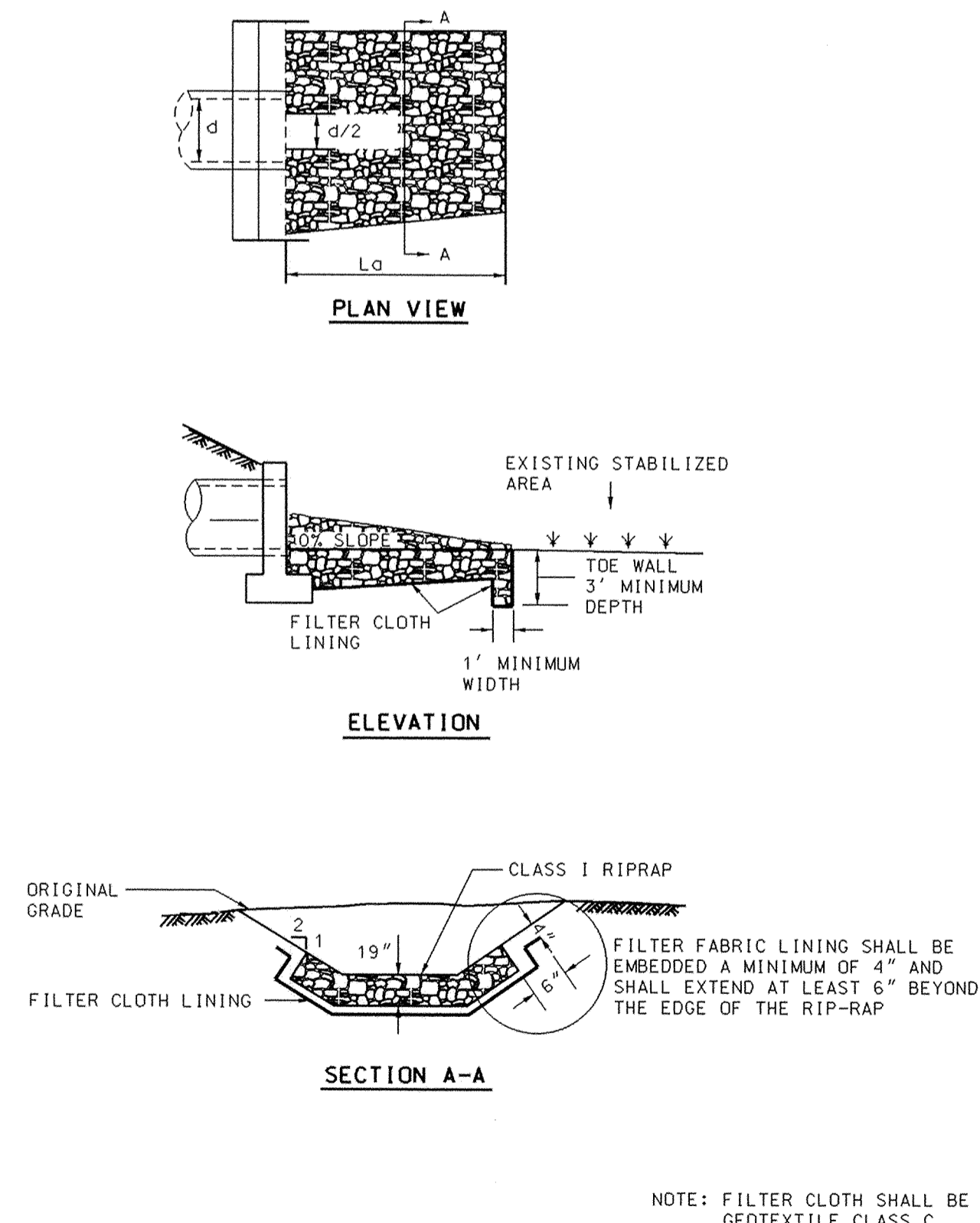


- Construction Specifications
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
 - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

- 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-SSC in cooperation with Maryland Agricultural Experimental 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, other soils may be used if recommended by an agronomist or soil scientist and 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 cinders, stones, slag, coarse fragments, gravel, 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 1/2 rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be applied 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:
I">
 - 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:
I">
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a">
 - 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 seed 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 dissipation of phytotoxic materials.
- Note: 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.

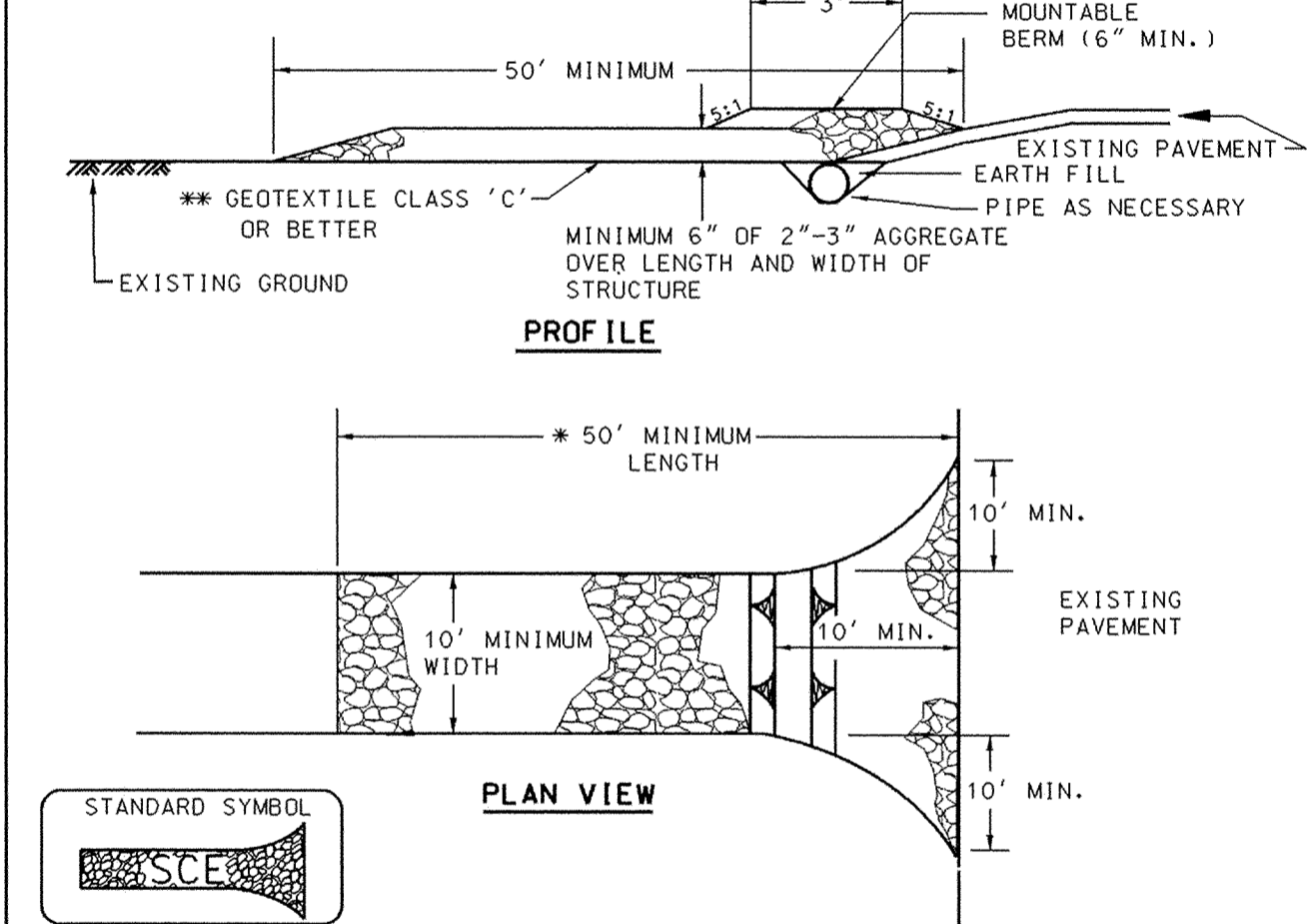
DETAIL 27 - ROCK OUTLET PROTECTION III



ROCK OUTLET PROTECTION

- Construction Specifications
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 - Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 - Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Construction Specifications
- 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:
A">
 - Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (4 lbs/1000 sq ft) before seeding. Narrow 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. Narrow 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 1/4 Kentucky 31 Tall Fescue per acre and 2 lbs per acre 1/4 Kentucky 31 Tall Fescue per acre and 2 lbs per acre 1/4 Kentucky 31 Tall Fescue per acre during the period of October 16 thru February 28, protect site by application (1/2 tons per acre) of well anchored straw mulch and seed as soon as possible in the spring. (2) use sodiation (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
 - Mulching: Apply 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 28 gal per acre 15 gal/1000 sq ft of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre 18 gal/1000 sq ft for anchoring.
 - Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

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:
A">
 - Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-10-10 fertilizer (4 lbs/1000 sq ft) before seeding. Narrow 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. Narrow 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 1/4 Kentucky 31 Tall Fescue per acre and 2 lbs per acre 1/4 Kentucky 31 Tall Fescue per acre during the period of October 16 thru February 28, protect site by application (1/2 tons per acre) of well anchored straw mulch and seed as soon as possible in the spring. (2) use sodiation (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching: Apply 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 28 gal per acre 15 gal/1000 sq ft of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre 18 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 bushels per acre of annual rye (32 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs/acre of vernal ryegrass (3 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 per acre (70 to 90 lbs/1000 sq ft) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 28 gal per acre 15 gal/1000 sq ft of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre 18 gal/1000 sq ft for anchoring.

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS

John Meyer 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.

John Meyer 9/19/02
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

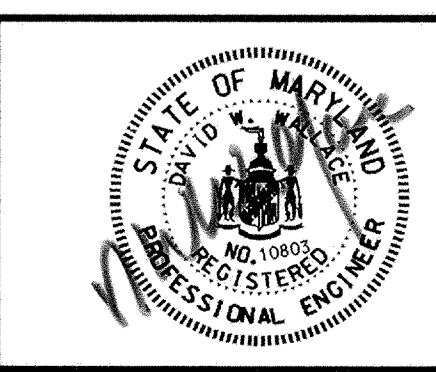
John Meyer 9/27/02
DIRECTOR OF PUBLIC WORKS DATE

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

Elisabeth G. DeLuca 9/27/02
CHIEF, BUREAU OF ENGINEERING DATE

Scott Calton 9/27/02
CHIEF, DIVISION OF TRANSPORTATION, PROJECTS & WATERSHED MANAGEMENT DATE

RK & K
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




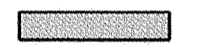
SCALE AS SHOWN

SHEET 5 OF 10



STAGE I

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.

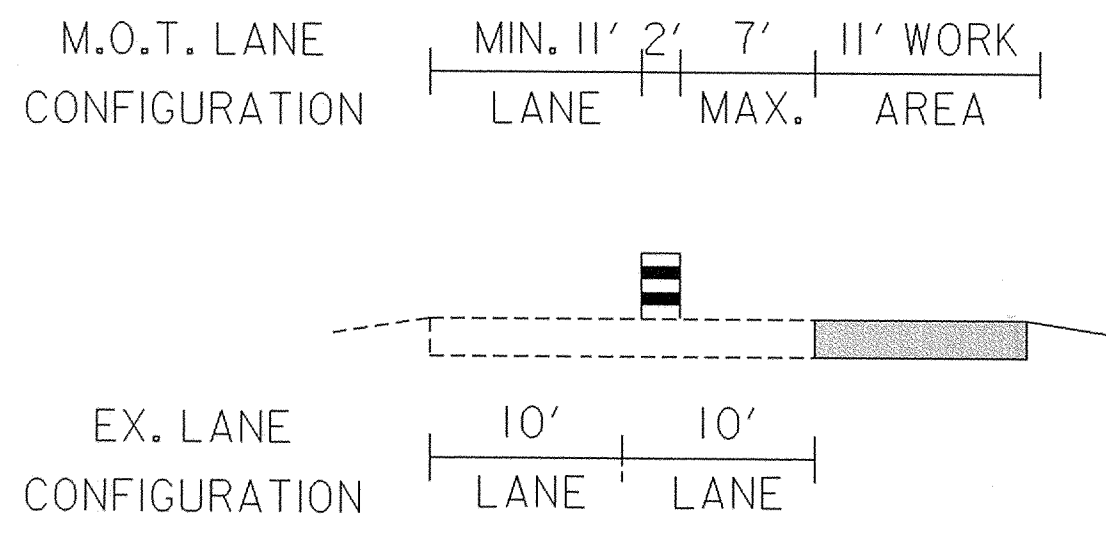
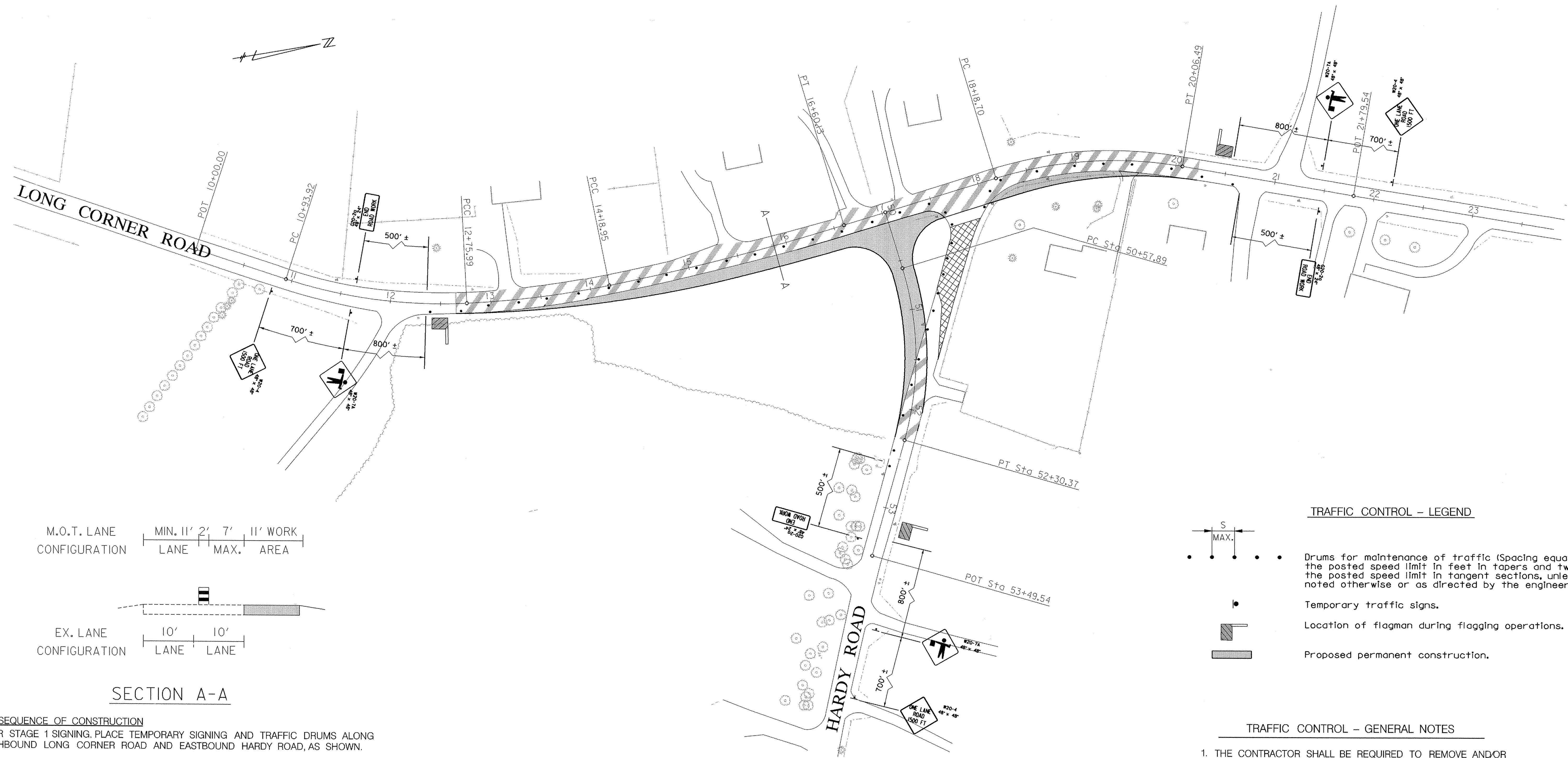
TRAFFIC CONTROL - GENERAL NOTES

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±.

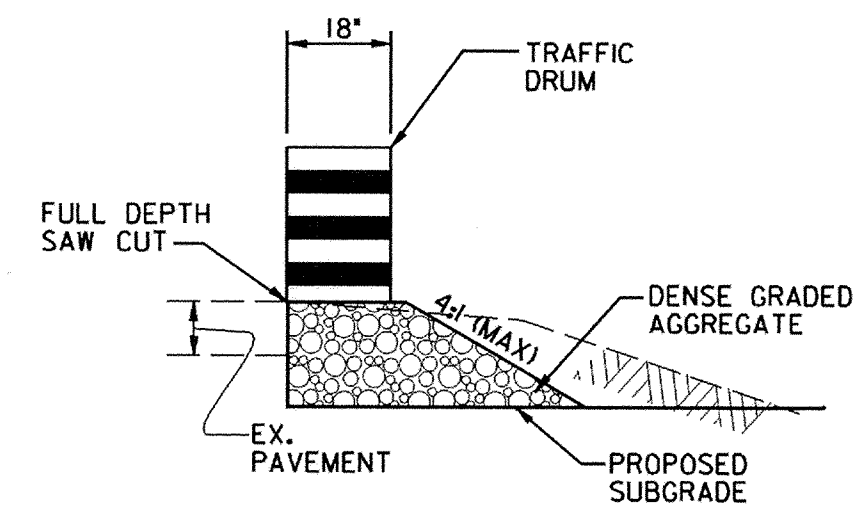
<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James M. Lane</i> 9/27/02 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>William J. Moshier</i> 9-27-02 CHIEF, BUREAU OF HIGHWAYS DATE</p>	<p>RK & K RUMMEL KLEPPER & KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217</p>	<p>STATE OF MARYLAND DAVID K. MANNING PROFESSIONAL ENGINEER NO. 10900 EXPIRES 12/31/2005</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>DES:</td><td></td></tr> <tr><td>DRN:</td><td></td></tr> <tr><td>CHK:</td><td></td></tr> <tr><td>DATE:</td><td></td></tr> <tr> <td></td> <td>BY NO. REVISION DATE</td> </tr> </table>	DES:		DRN:		CHK:		DATE:			BY NO. REVISION DATE	<p>TRAFFIC CONTROL PLAN STAGE 1</p>	<p>LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-07 HOWARD COUNTY, MARYLAND</p>	<p>SCALE 1" = 50'</p> <p>SHEET 6 OF 10</p>
DES:																
DRN:																
CHK:																
DATE:																
	BY NO. REVISION DATE															



SECTION A-A

SEQUENCE OF CONSTRUCTION

- COVER STAGE 1 SIGNING, PLACE TEMPORARY SIGNING AND TRAFFIC DRUMS ALONG NORTHBOUND LONG CORNER ROAD AND EASTBOUND HARDY ROAD, AS SHOWN.
- 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.
- 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).
- UTILIZE "UNMARKED PAVEMENT" SIGNS AND TEMPORARY \varnothing STRIPING (4' YELLOW TAPE EVERY 40') AS DIRECTED BY THE ENGINEER.
- CONSTRUCT HARDY ROAD TIE-IN AND RESURFACE / RESTRIPE ALL ROADWAYS USING FLAGGING OPERATION PER SHA STD. NO. MD 104.31-02.
- SHIFT TRAFFIC TO NEW ROAD.
- REMOVE PAVEMENT FROM EXISTING HARDY ROAD AND STABILIZE ALL AREAS.



DETAIL A
NOT TO SCALE

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

- THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND/OR RELOCATE EXISTING/PROPOSED TRAFFIC SIGNS FOR VARIOUS CONSTRUCTION STAGES AS DIRECTED BY THE ENGINEER.
- 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.
- PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE COMPLETELY REMOVED OR OBLITERATED AS SPECIFIED IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER.
- CONSTRUCTION WARNING SIGNS FOR SPECIFIC AREAS AND TYPE OF CONSTRUCTION WILL BE PLACED AS NEEDED WHEN DIRECTED BY THE ENGINEER.
- WHEN DIRECTED BY THE ENGINEER, VARIABLE MESSAGE SIGNS SHALL BE USED TO ANNOUNCE CHANGING TRAFFIC PATTERNS, MESSAGE AND LOCATION AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ENTRANCES / DRIVEWAYS.

STAGE 2

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HOWARD COUNTY, MARYLAND

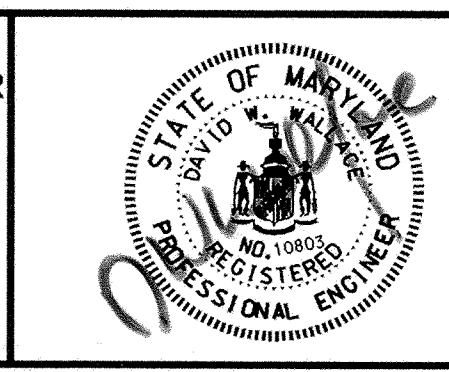
James H. Lee 9/27/02
DIRECTOR OF PUBLIC WORKS DATE

John A. Calabro 9/27/02
act-CHIEF, BUREAU OF ENGINEERING DATE

William J. Mader Jr. 9-27-02
CHIEF, BUREAU OF HIGHWAYS DATE

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

RK & K
RUMMEL KLEPPER & KAHL, LLP
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81 MOSHER STREET
BALTIMORE, MD
21217



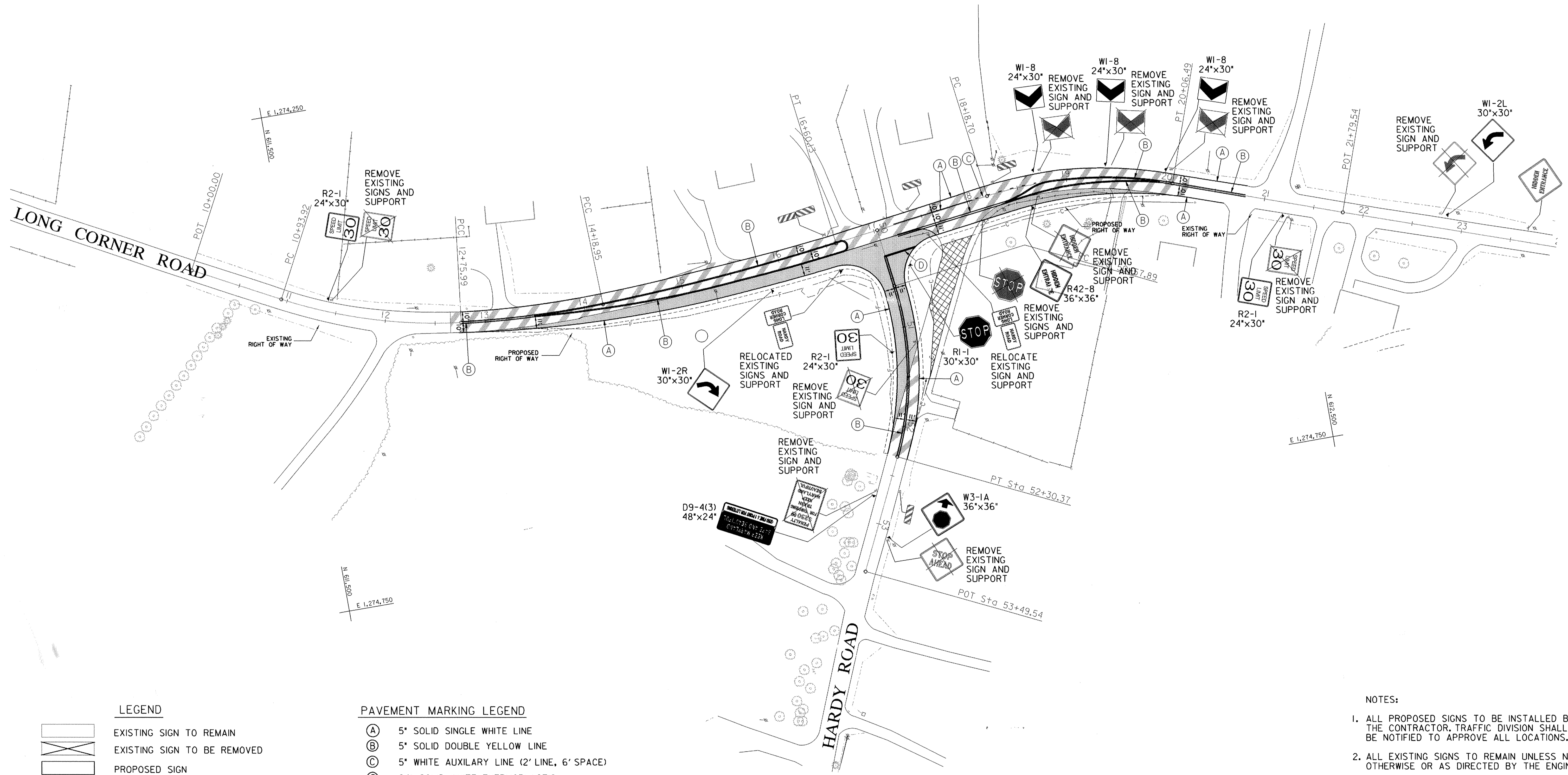
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TRAFFIC CONTROL PLAN
STAGE 2

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

SCALE
1" = 50'

SHEET
7 OF 10



- 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

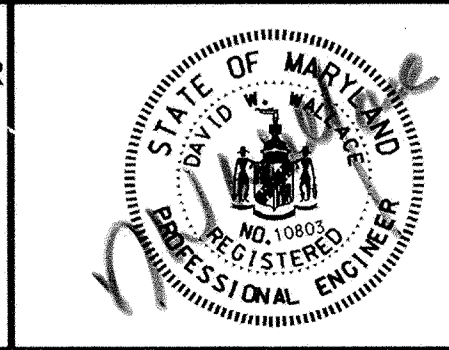
Jan M. ... 9/27/02
DIRECTOR OF PUBLIC WORKS DATE

... .. 9/27/02
act-CHIEF, BUREAU OF ENGINEERING DATE

... .. 9/27/02
CHIEF, BUREAU OF HIGHWAYS DATE

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

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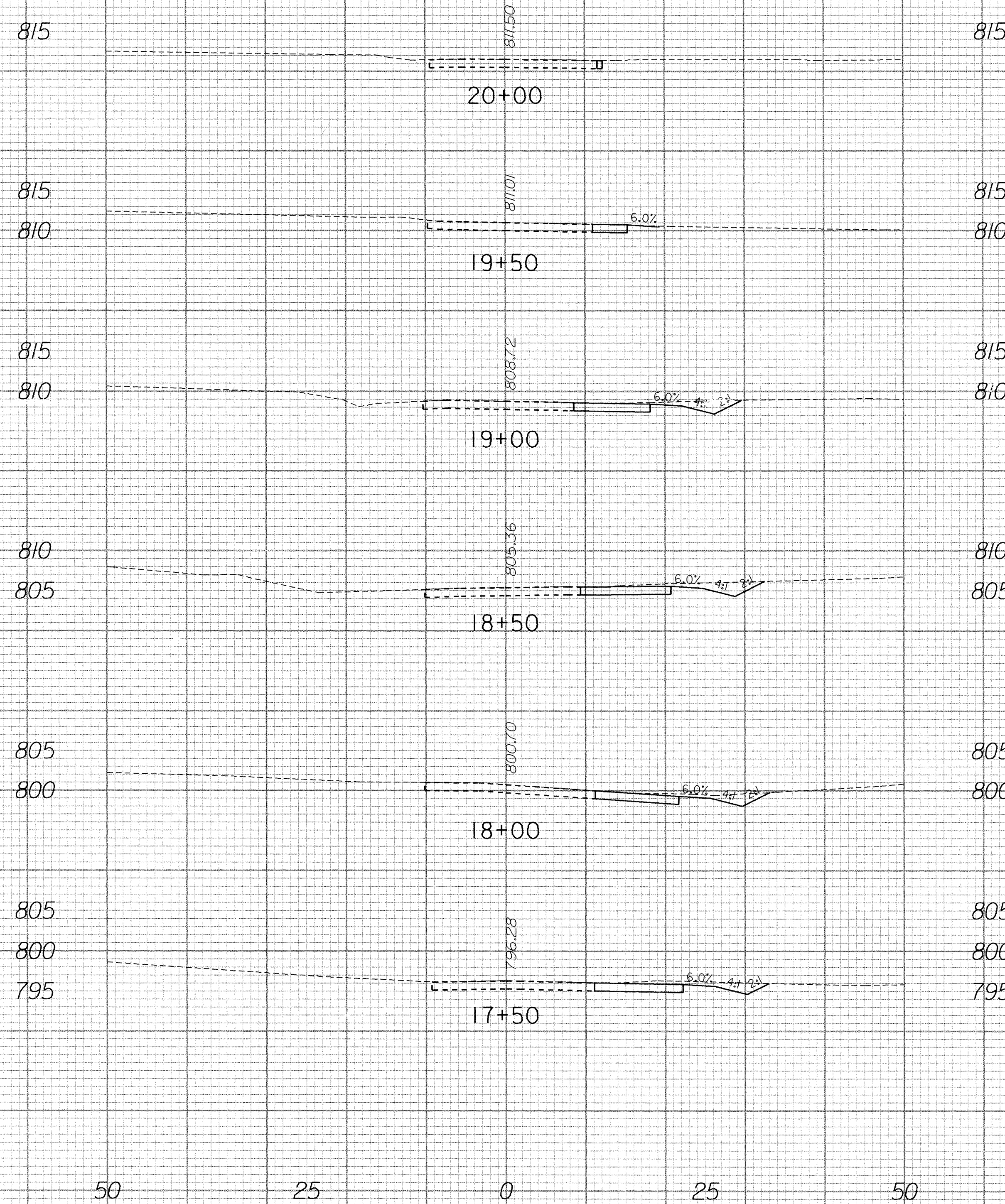
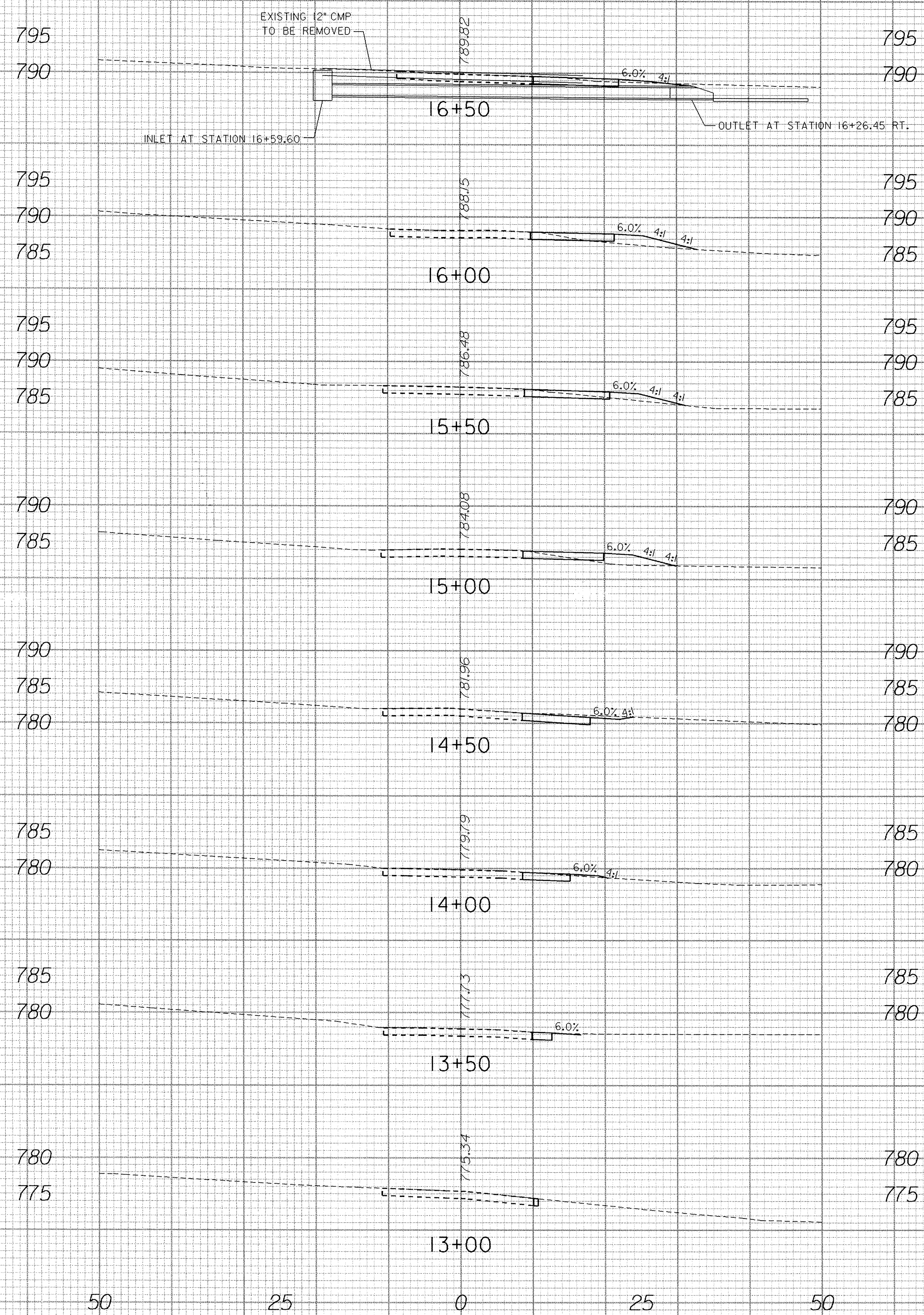
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DRN: LMB				
CHK: RJA/DAE				
DATE:	BY	NO.	REVISION	DATE

SIGNING / PAVEMENT MARKING SHEET

LONG CORNER ROAD / HARDY ROAD INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NC. J-4164-07
HOWARD COUNTY, MARYLAND

SCALE
1" = 50'

SHEET
8 OF 10



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

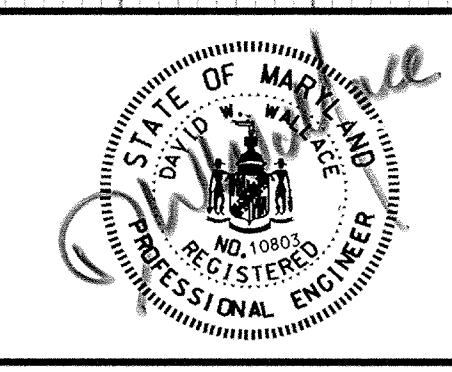
Carroll J. Linn 1/27/02
DIRECTOR OF PUBLIC WORKS DATE

William E. Walker Jr. 9-27-02
CHIEF, BUREAU OF HIGHWAYS DATE

John A. Galina 9/27/02
CHIEF, BUREAU OF ENGINEERING DATE

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

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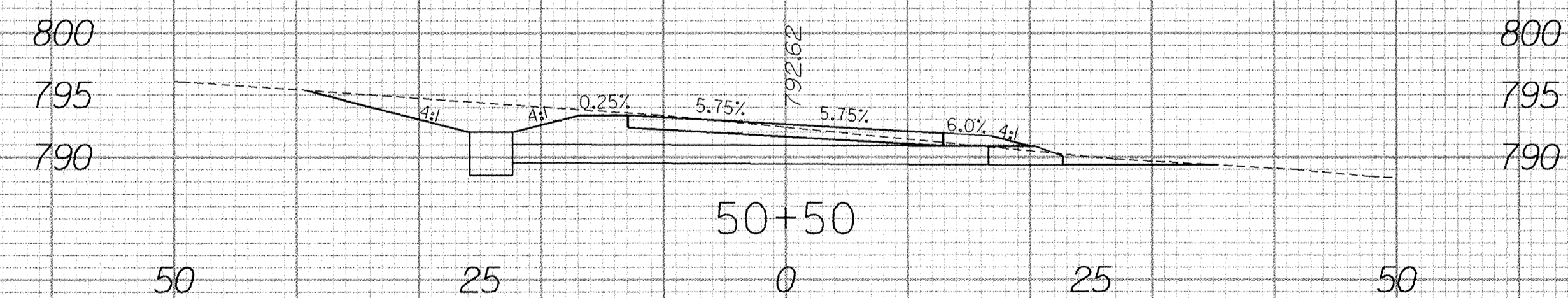
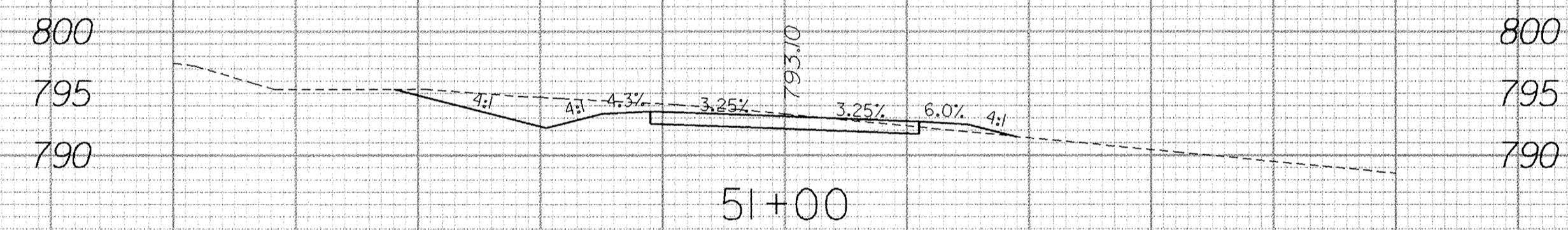
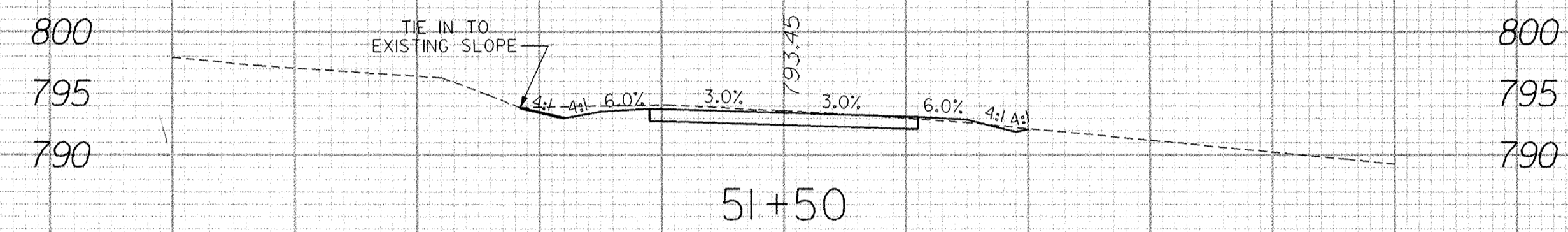
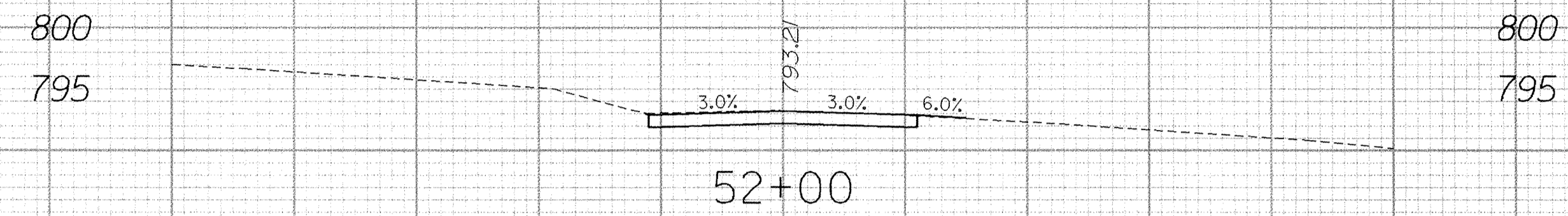
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BY	NO.	REVISION	DATE

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]
DIRECTOR OF PUBLIC WORKS
DATE: 9-27-02

[Signature] 9/27/02
CHIEF, BUREAU OF ENGINEERING
[Signature] 9/27/02
CHIEF, DIVISION OF TRANSPORTATION,
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BALTIMORE, MD
21217



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

HARDY ROAD
CROSS SECTIONS

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

SCALE
1" = 10'

SHEET
10 OF 10