SECTION VI

PAVING

TABLE OF CONTENTS

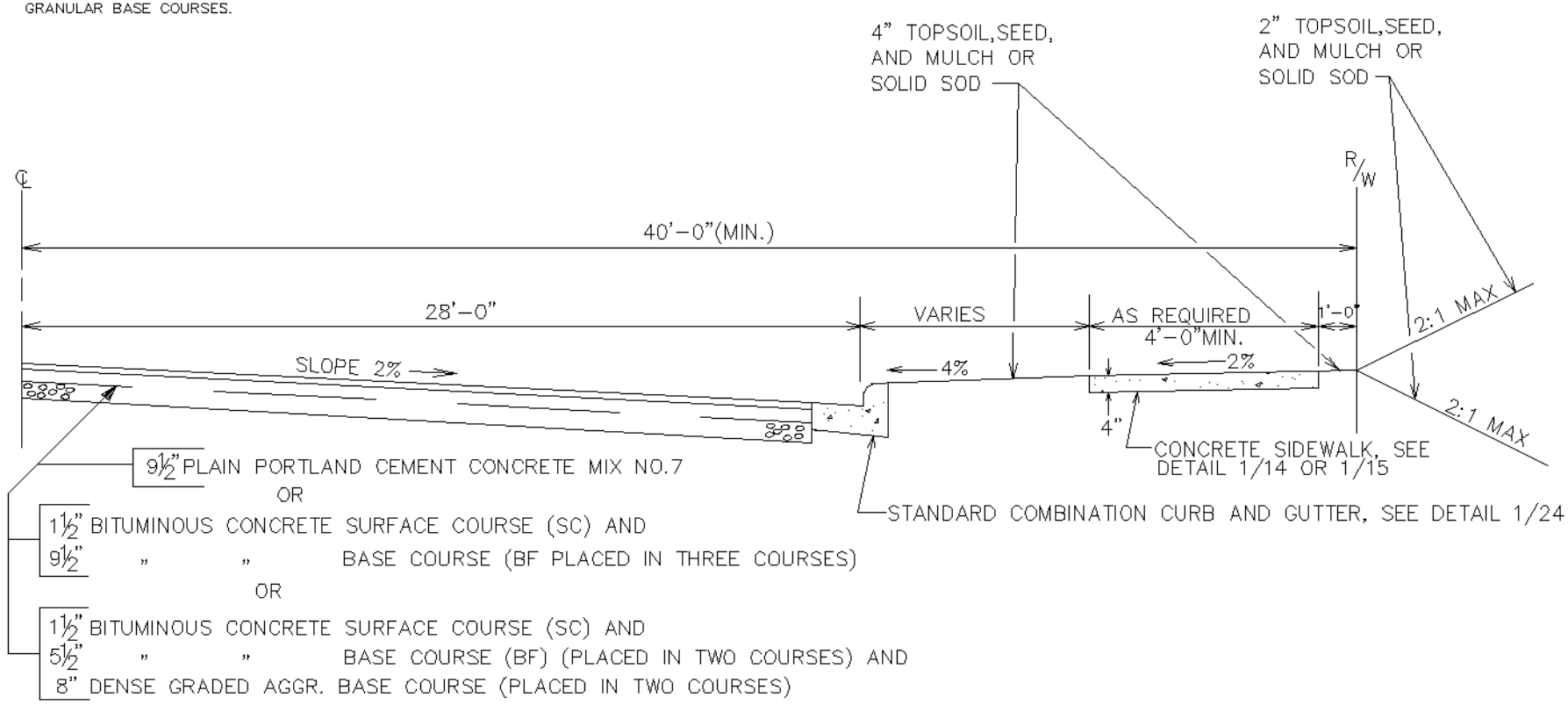
PAVING DETAILS

Published: 01/01 Revised:

Published: 01/01 Revised:

NOTES

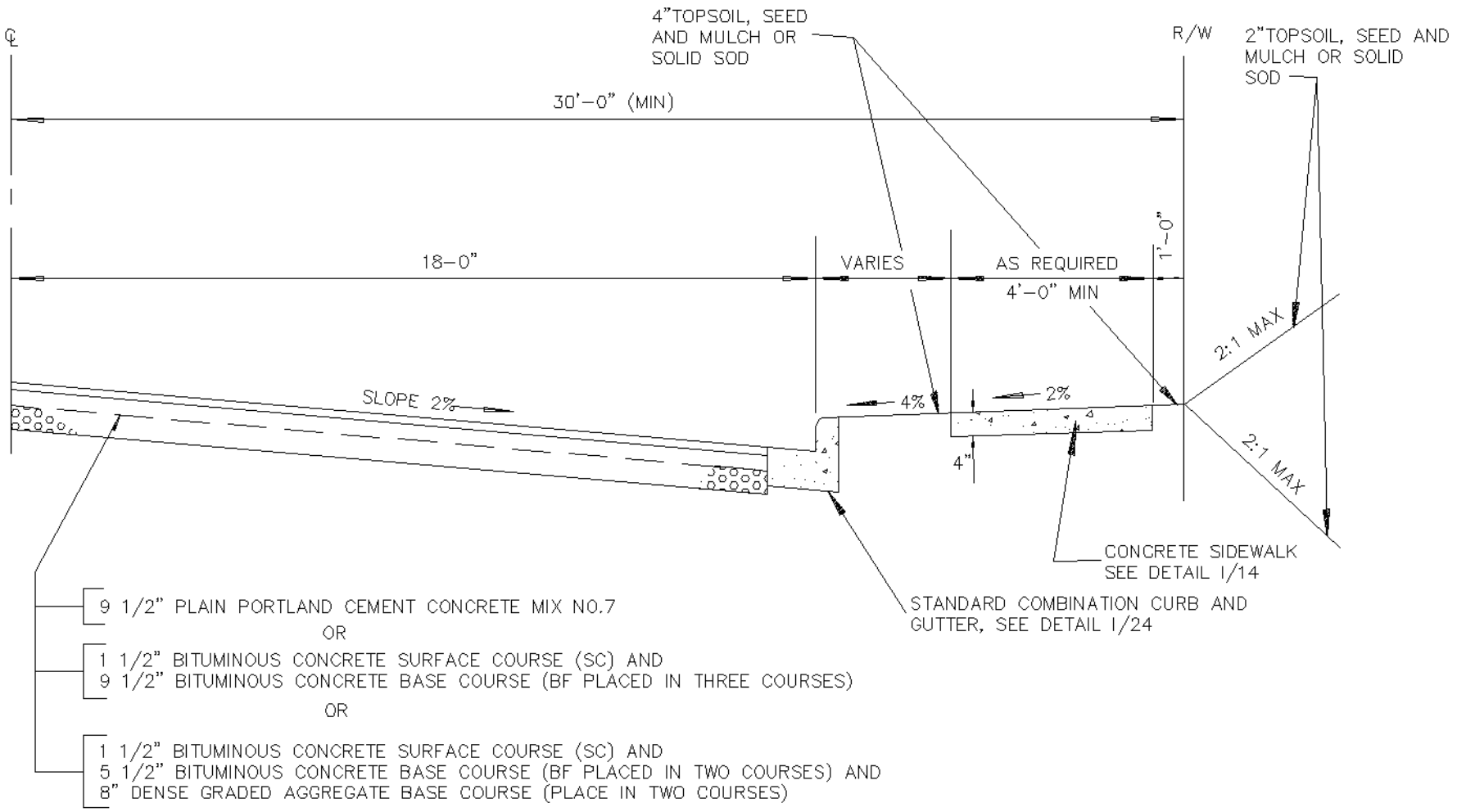
1. BITUMINOUS CONCRETE AND HOT MIX ASPHALT(HMA) HAVE THE SAME MEANING IN THESE STANDARD DETAILS AND THE STANDARD SPECIFICATIONS.
2. BITUMINOUS CONCRETE BAND DESIGNATIONS ARE MD. STATE HIGHWAY ADMINISTRATION.
3. BITUMINOUS CONCRETE & DENSE GRADED AGGREGATE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH LATEST SPECIFICATIONS.
4. A TACK COAT OF 0.05 GAL/SQ.YD. OF AE-4 SHALL BE APPLIED TO EACH UNDERLYING LAYER OF BITUMINOUS CONCRETE PRIOR TO PLACING SUBSEQUENT COURSES.
5. A PRIME COAT OF 0.3 GAL/SQ.YD. OF MC-70 SHALL BE APPLIED ON THE TOP OF ALL GRANULAR BASE COURSES.



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** **PRINCIPAL ARTERIAL(URBAN)**	REVISED	P/1

Published: 01/01 Revised:

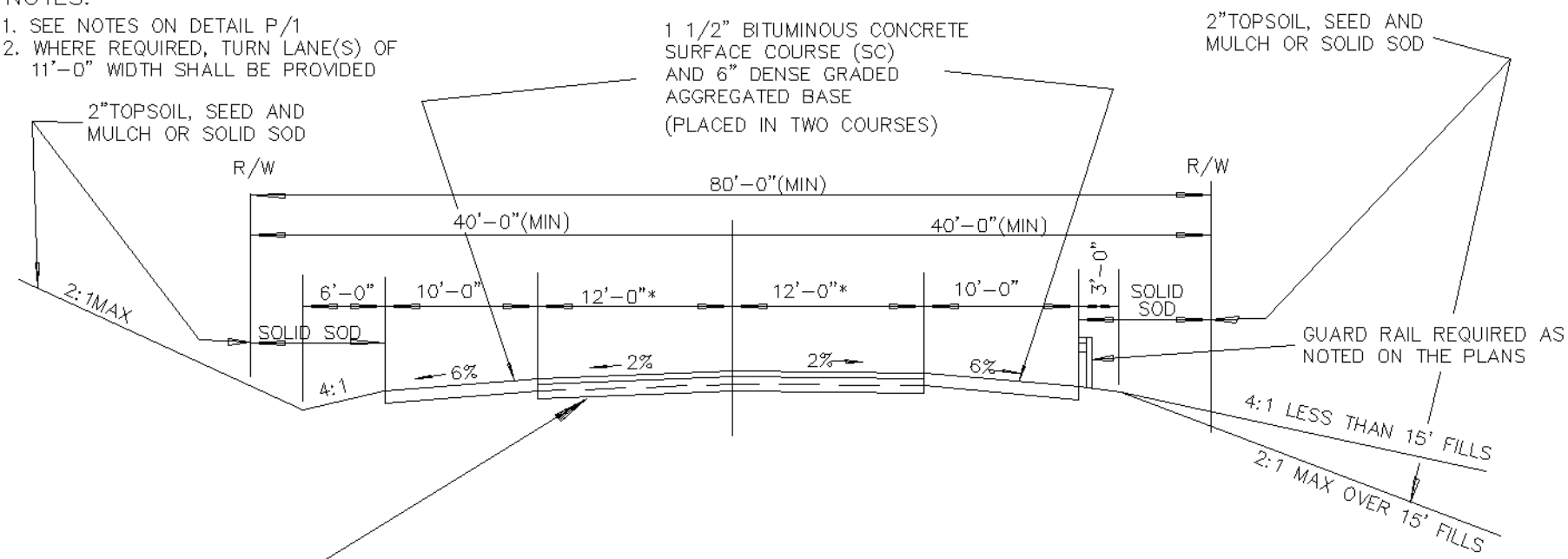
NOTES:
SEE NOTES ON DETAIL P-1



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** **MINOR ARTERIAL (URBAN)**	REVISED	P/2

NOTES:

1. SEE NOTES ON DETAIL P/1
2. WHERE REQUIRED, TURN LANE(S) OF 11'–0" WIDTH SHALL BE PROVIDED



9 1/2" PLAIN PORTLAND CEMENT CONCRETE MIX NO.7

OR

1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SC) AND
9 1/2" BITUMINOUS CONCRETE BASE COURSE (BF PLACED IN THREE COURSES)

OR

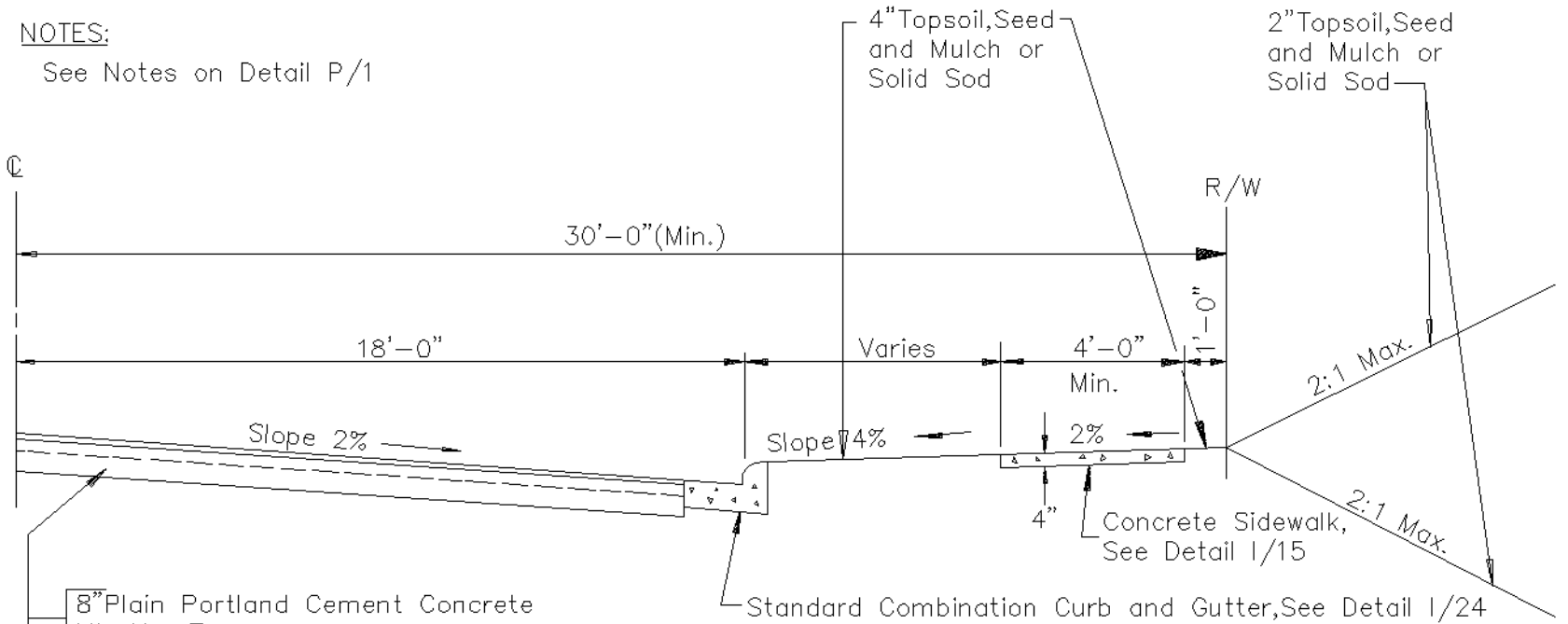
1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SC) AND
5 1/2" BITUMINOUS CONCRETE BASE COURSE (BF PLACED IN TWO COURSES) AND
8" DENSE GRADED AGGREGATE BASE COURSE (PLACE IN TWO COURSES)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** **ARTERIAL (RURAL)**	REVISED	P/3

Published: 01/01 Revised:

NOTES:

See Notes on Detail P/1



8"Plain Portland Cement Concrete Mix No. 7

or

1 1/2"Bituminous Concrete Surface Course (SF) and
7 1/2"Bituminous Concrete Base Course (BF Placed in Two Courses)

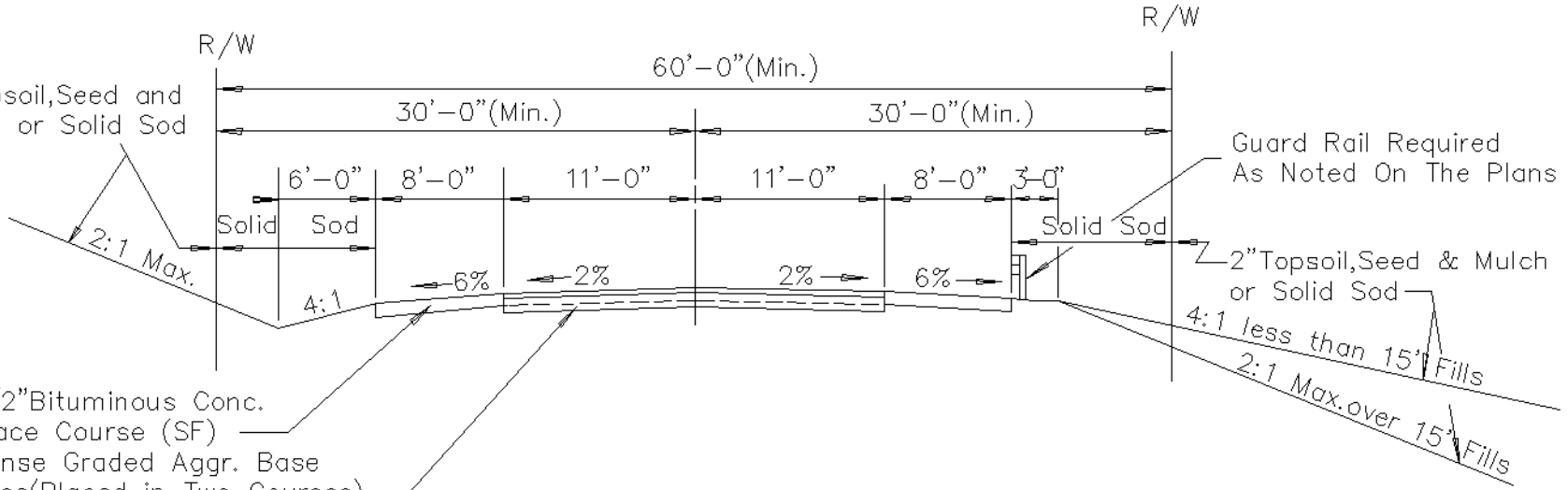
or

1 1/2"Bituminous Concrete Surface Course (SC) and
5 " Bituminous Concrete Base Course (BF Placed In Two Courses) and
6" Dense Graded Aggr. Base Course (Placed In Two Courses)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** **COLLECTOR (URBAN)**	REVISED	P/4

Published: 01/01 Revised:

Notes
1. See Notes on Detail P-1
2. Soil Shoulders may be permitted on Internal Collector, See Design Manual.



8"Plain Portland Cement Concrete Mix No. 7

Or

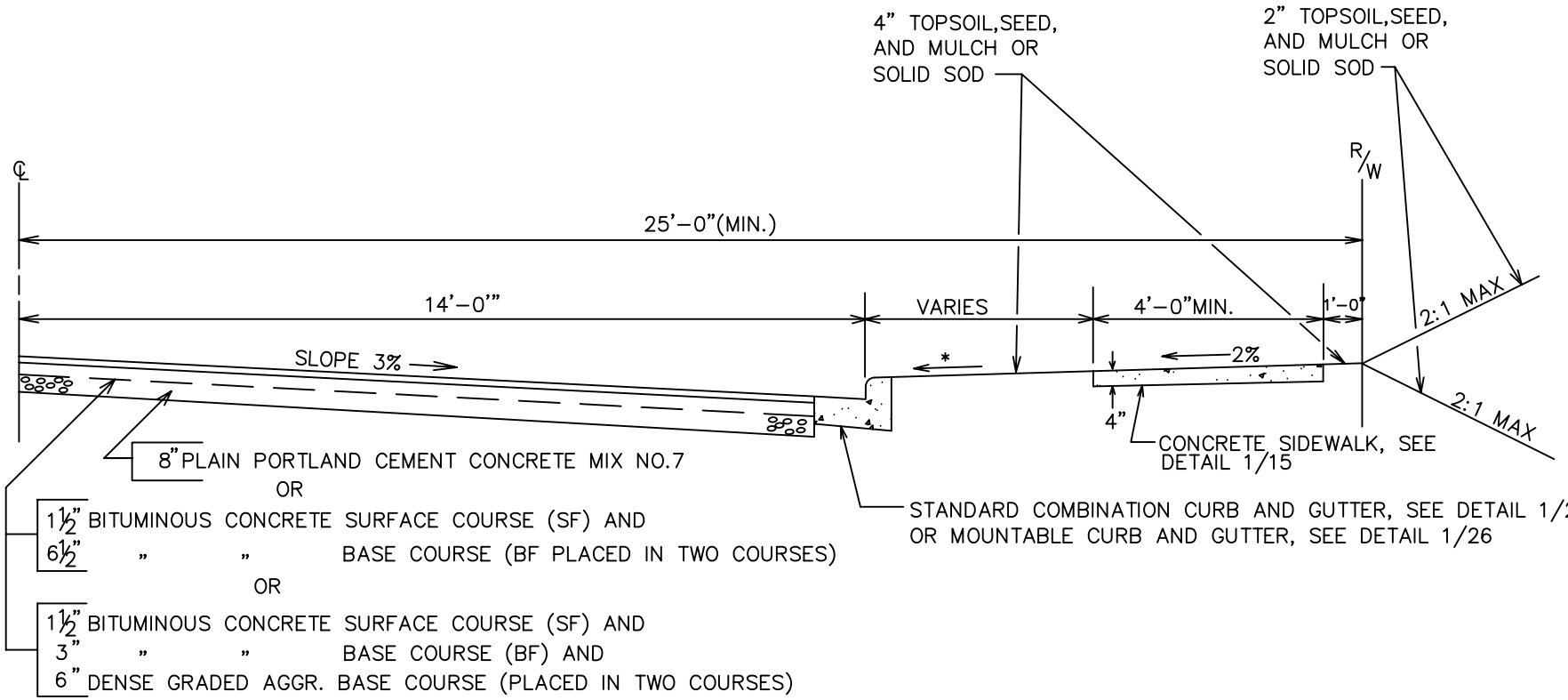
1 1/2"Bituminous Concrete Surface Course (SF) and
6 1/2"Bituminous Concrete Base Course (BF Placed In Two Courses)

Or

1 1/2"Bituminous Concrete Surface Course (SF) and
3"Bituminous Concrete Base Course (BF) and
6"Dense Graded Aggr. Base Course (Placed In Two Courses)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** **COLLECTOR (RURAL)**	REVISED	P/5

NOTES
1. SEE NOTES ON DETAIL P/1
2. MAXIMUM LENGTH 600'
*3. SLOPE VARIES:
.4% FOR STANDARD CURB AND GUTTER
.6% FOR MOUNTABLE CURB AND GUTTER

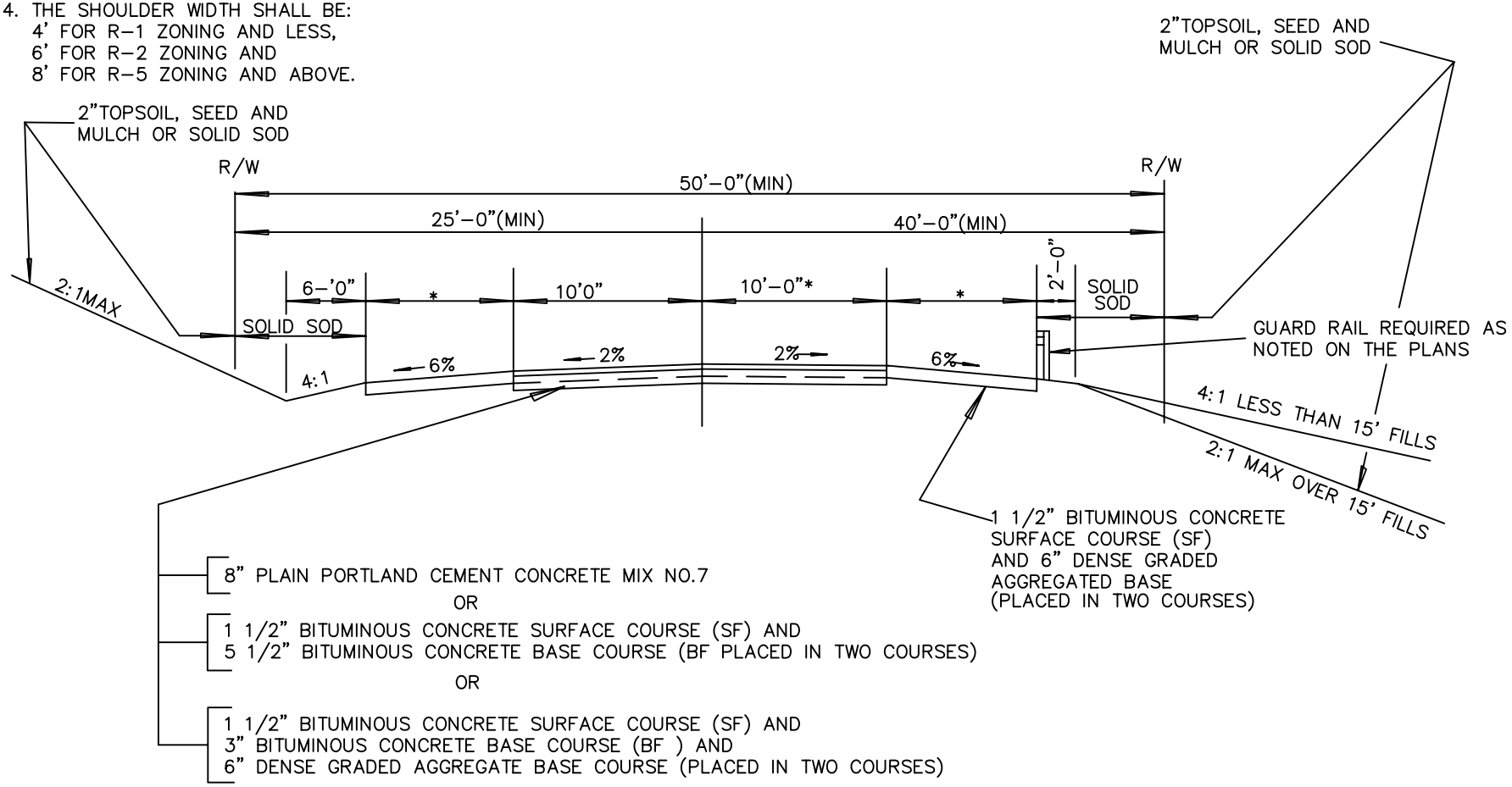


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD PAVING DETAILS LOCAL STREET & CUL DE SAC (URBAN)	REVISED	P/6

5/06

NOTES:

1. SEE NOTES ON DETAIL P/1
2. SOD SHOULDERS PERMITTED WHEN LOTS ARE 40,000 SQ.FT. AND LARGER AND HAVE A 150' MIN. FRONTAGE. SUBJECT TO REVIEW AND APPROVAL AT SKETCH PLAN STAGE.
3. PARKING PROHIBITED ON SOD SHOULDERS.
*4. THE SHOULDER WIDTH SHALL BE:
   4' FOR R-1 ZONING AND LESS,
   6' FOR R-2 ZONING AND
   8' FOR R-5 ZONING AND ABOVE.

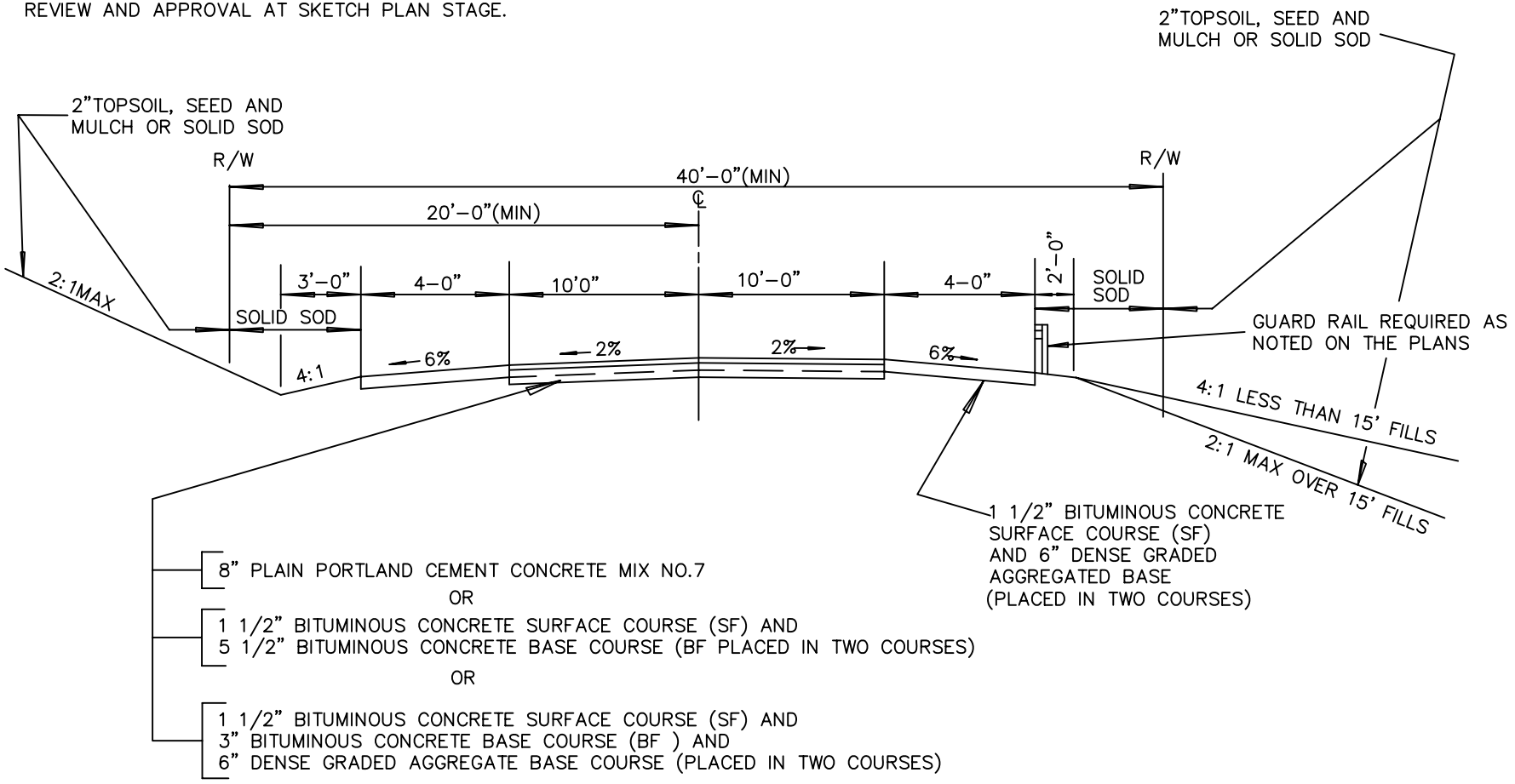


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD PAVING DETAILS LOCAL ROAD (RURAL RESIDENTIAL, ADT 300 – 750)	REVISED	P/7

6/05

NOTES:

1. SEE NOTES ON DETAIL P/1
2. SOD SHOULDERS PERMITTED, WHEN LOTS ARE 40,000 SQ. FT. AND LARGER AND HAVE A 150' MINIMUM FRONTAGE. SUBJECT TO REVIEW AND APPROVAL AT SKETCH PLAN STAGE.



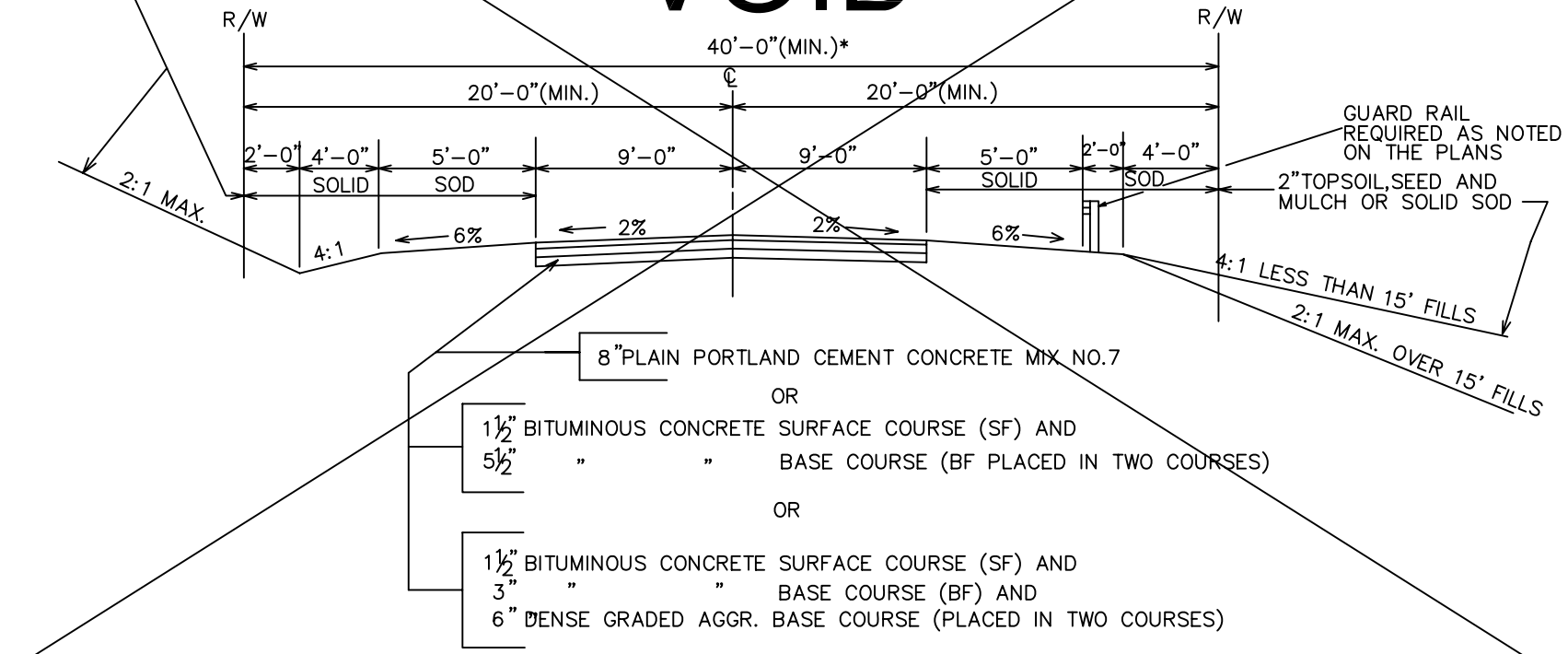
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD PAVING DETAILS LOCAL ROAD (RURAL RESIDENTIAL, A.D.T. 0-300)	REVISED	P/8

6/05

NOTES

1. SEE NOTES ON DETAIL P/1
2. MAXIMUM LENGTH 1,000'
*3. RIGHT-OF-WAY WIDTH OF LESSER DIMENSIONS PERMISSABLE, IF DRAINAGE JUSTIFIES AND APPROVED BY PACE
4. DETAIL P-9 SHALL NOT BE USED WHEN ROAD MAY BE EXTENDED

VOID



8" PLAIN PORTLAND CEMENT CONCRETE MIX NO.7

OR

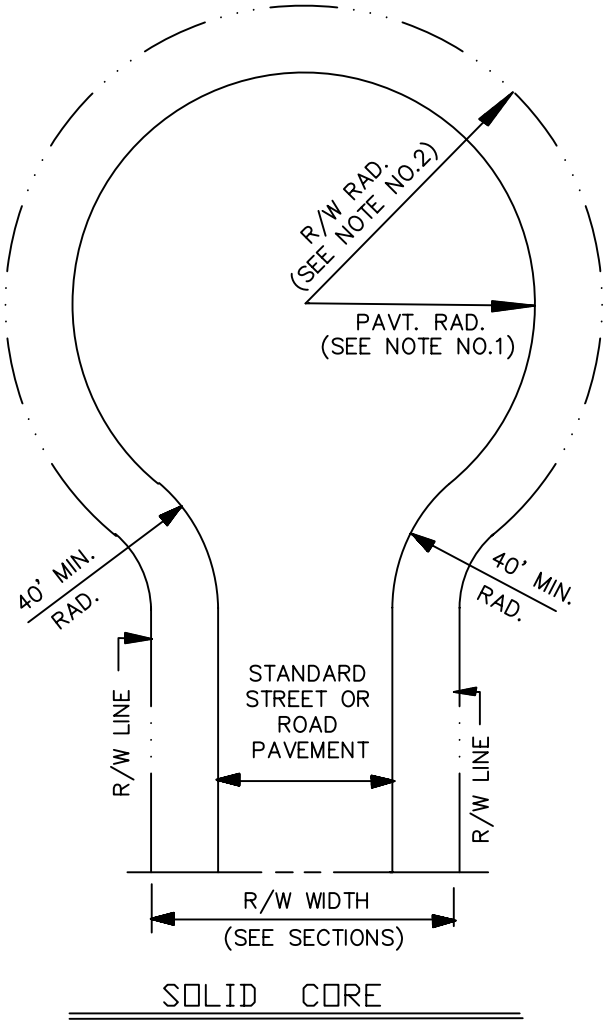
1½" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND
5½" " " BASE COURSE (BF PLACED IN TWO COURSES)

OR

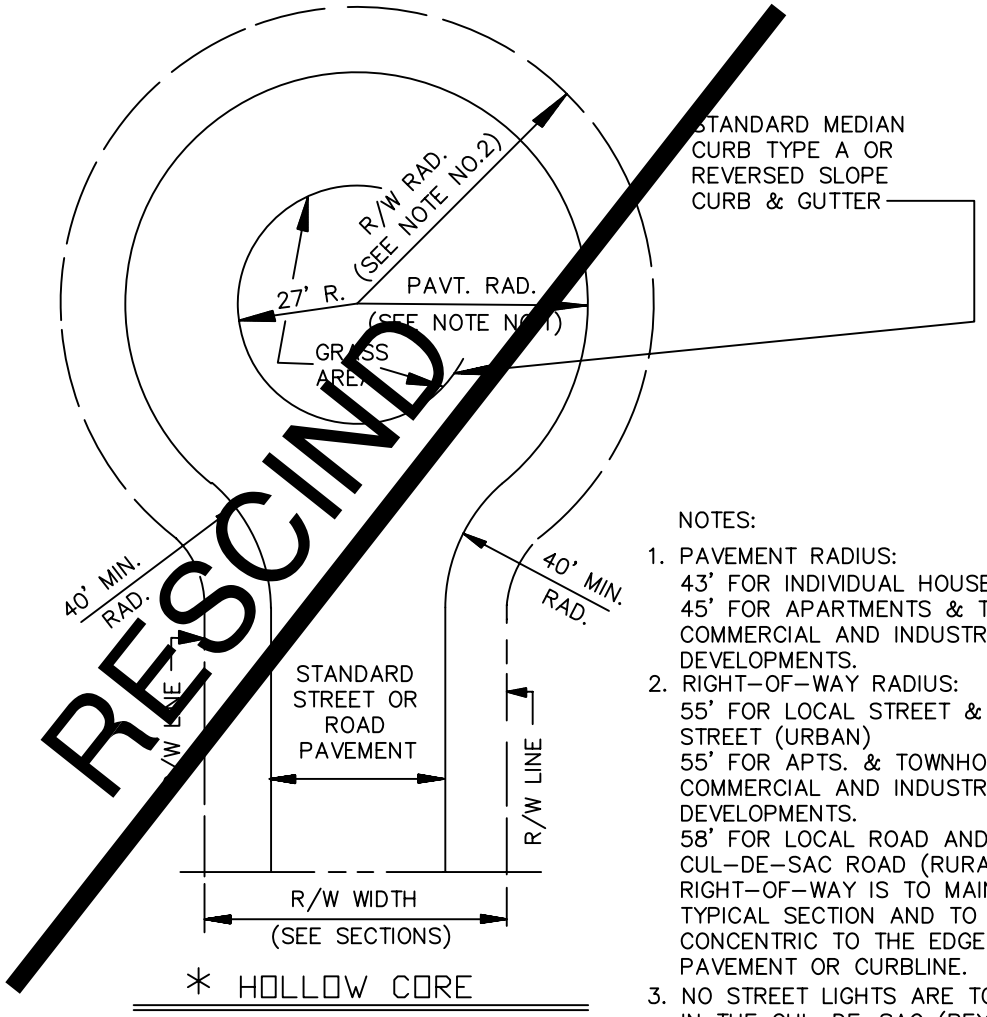
1½" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND
3" " " BASE COURSE (BF) AND
6" DENSE GRADED AGGR. BASE COURSE (PLACED IN TWO COURSES)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD PAVING DETAILS LOCAL ACCESS ROAD (RURAL RESIDENTIAL, SERVING FOUR LOTS OR LESS)	REVISED	P/9

6/05



SOLID CORE



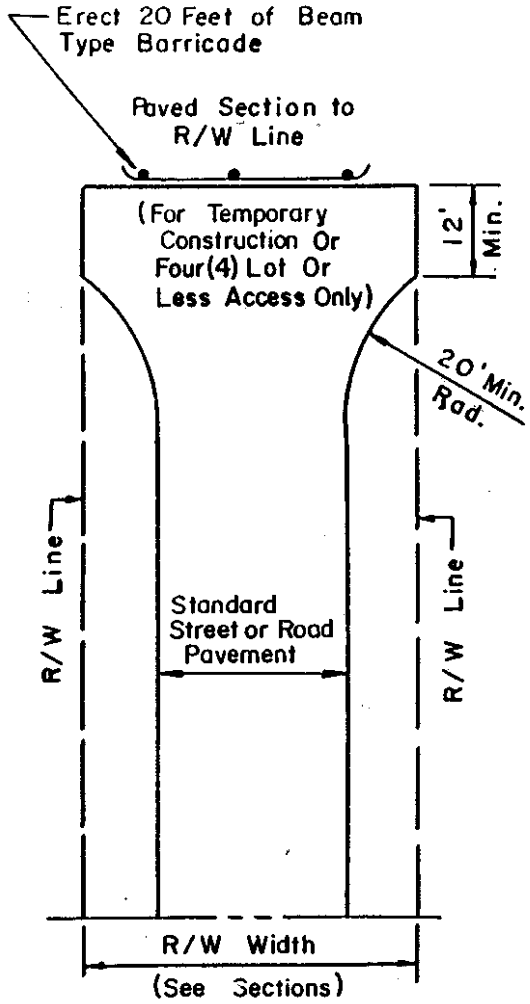
* HOLLOW CORE

NOTES:

1. PAVEMENT RADIUS:
   43' FOR INDIVIDUAL HOUSES
   45' FOR APARTMENTS & TOWNHOUSES, COMMERCIAL AND INDUSTRIAL DEVELOPMENTS.
2. RIGHT-OF-WAY RADIUS:
   55' FOR LOCAL STREET & CUL-DE-SAC STREET (URBAN)
   55' FOR APTS. & TOWNHOUSES, COMMERCIAL AND INDUSTRIAL DEVELOPMENTS.
   58' FOR LOCAL ROAD AND CUL-DE-SAC ROAD (RURAL)
   RIGHT-OF-WAY IS TO MAINTAIN THE TYPICAL SECTION AND TO BE CONCENTRIC TO THE EDGE OF PAVEMENT OR CURBLINE.
3. NO STREET LIGHTS ARE TO BE PLACED IN THE CUL-DE-SAC (BEYOND THE PC OF THE CUL-DE-SAC ENTRANCE)

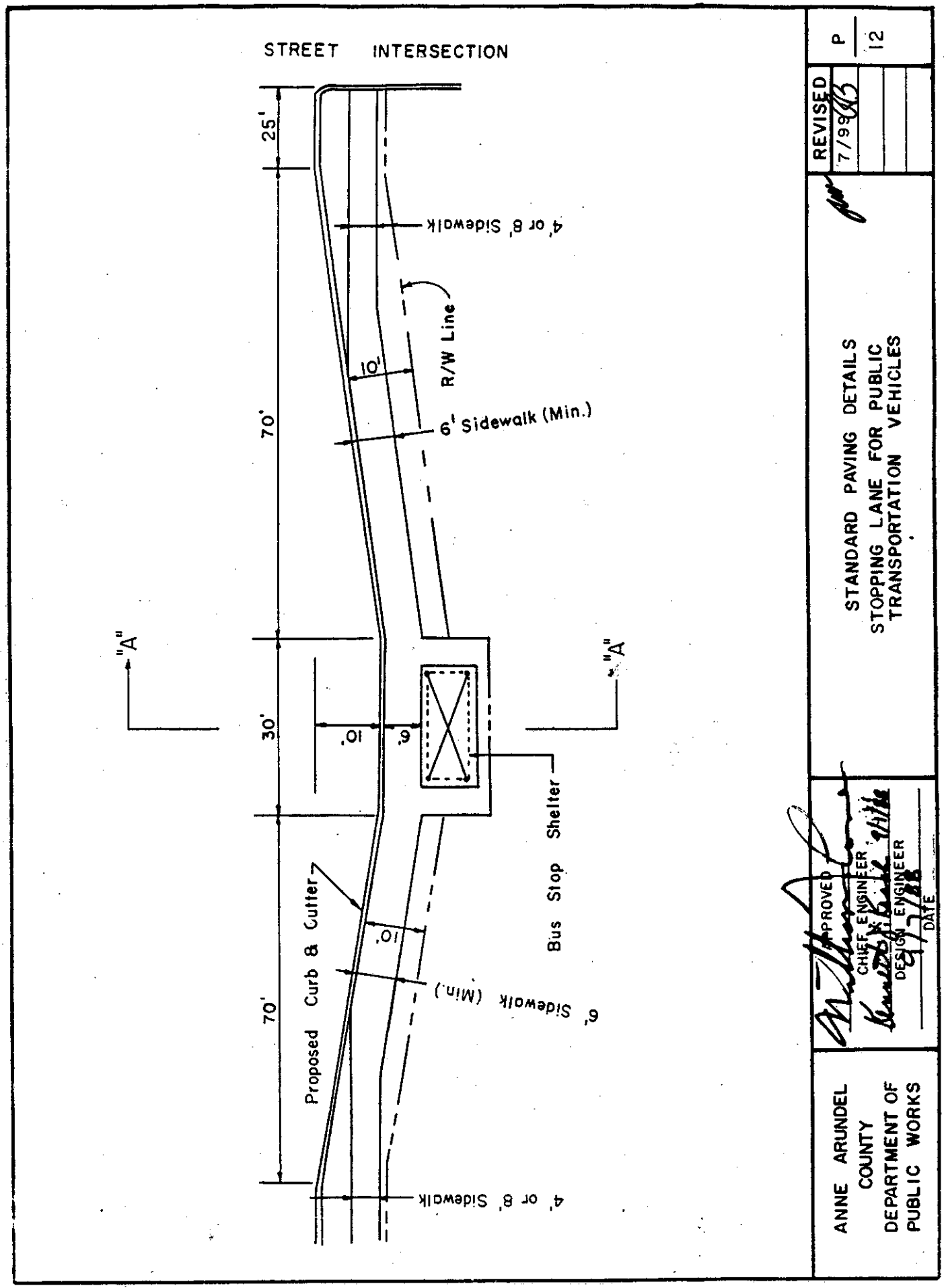
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD PAVING DETAILS CUL – DE – SAC	REVISED	P 10

1/2006

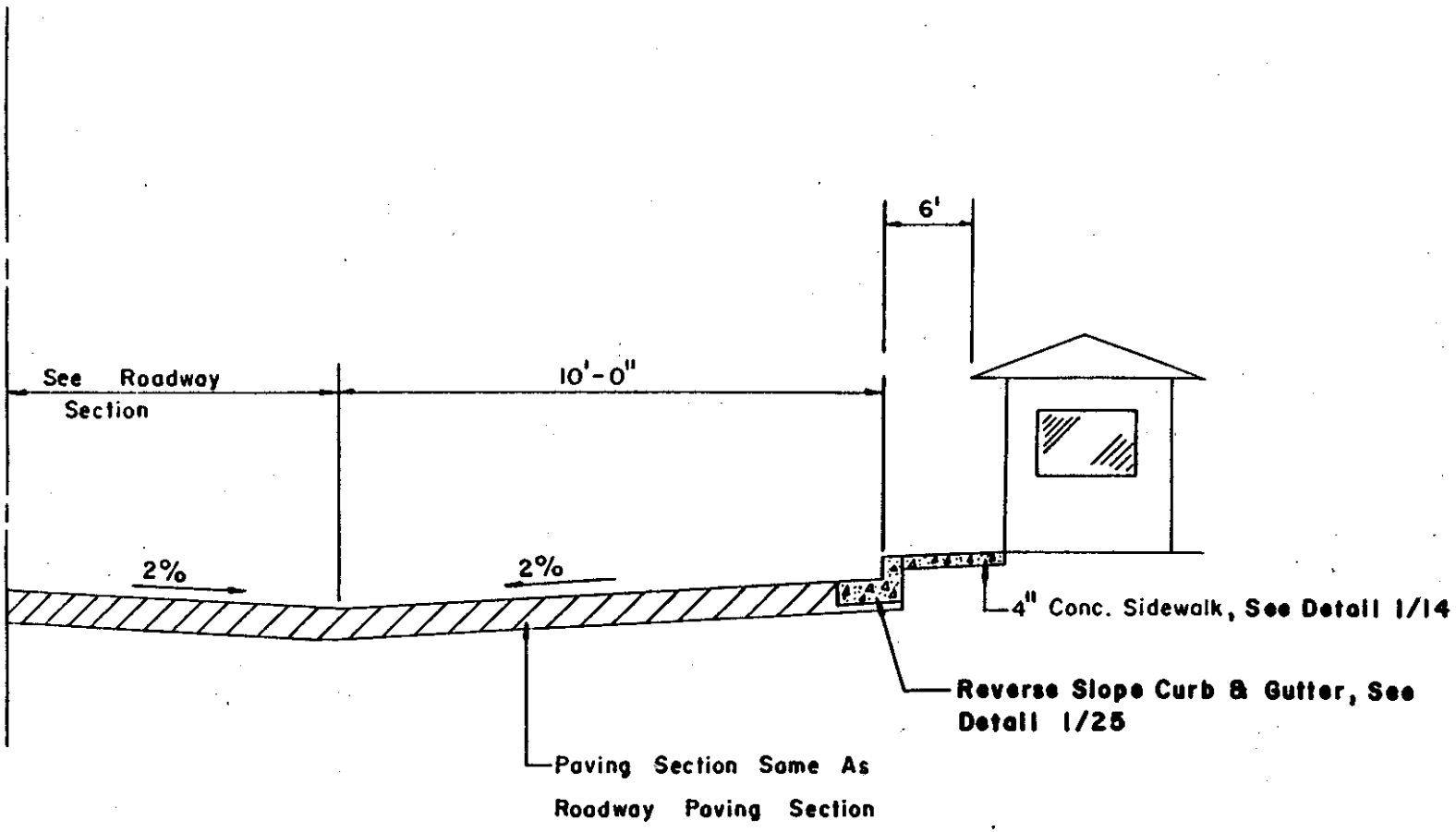


NOTE
No Driveways to be Constructed off Hammerhead of "T"Turnaround.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER 9/3/88 DATE	STANDARD PAVING DETAILS "T" TURNAROUND	REVISED 7/99 RB	P 11


STREET INTERSECTION
25'
70'
30'
70'
4' or 8' Sidewalk
R/W Line
10'
6' Sidewalk (Min.)
"A"
"A"
10'
6'
Bus Stop Shelter
Proposed Curb & Cutter
10'
6' Sidewalk (Min.)
4' or 8' Sidewalk
P 12
REVISED 7/99
STANDARD PAVING DETAILS
STOPPING LANE FOR PUBLIC TRANSPORTATION VEHICLES
APPROVED
CHIEF ENGINEER
DESIGN ENGINEER
DATE
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

Published: 01/01 Revised:



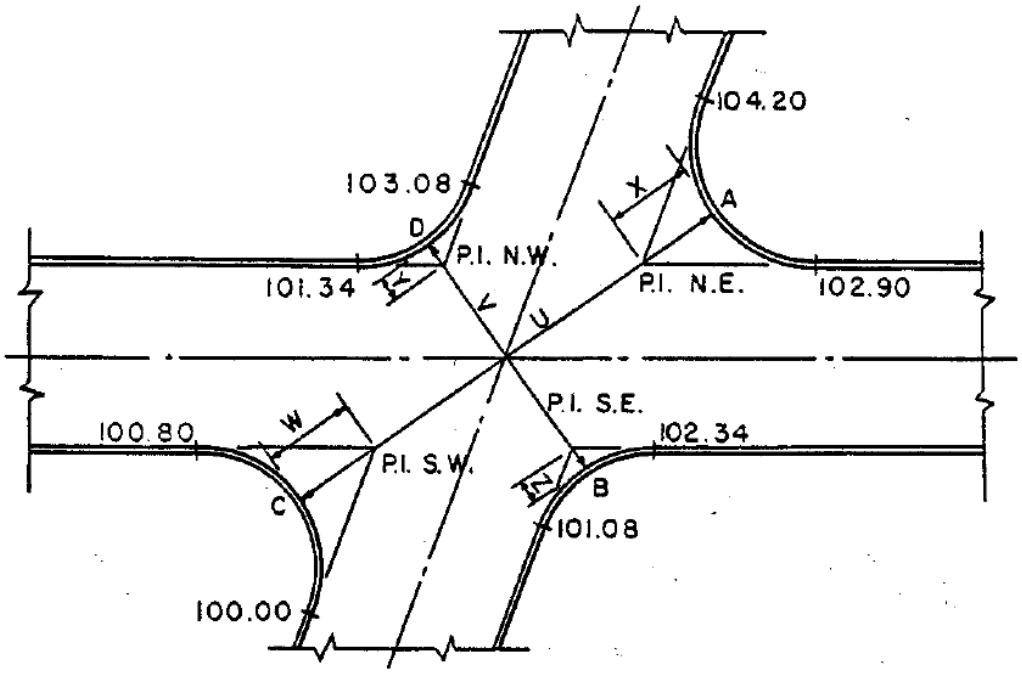
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED
CHIEF ENGINEER
DESIGN ENGINEER 9/1/88
DATE 9/7/88

STANDARD PAVING DETAILS
STOPPING LANE FOR PUBLIC TRANSPORTATION VEHICLES - SECTION "A"- "A"

REVISED 7/99 RS

P 13



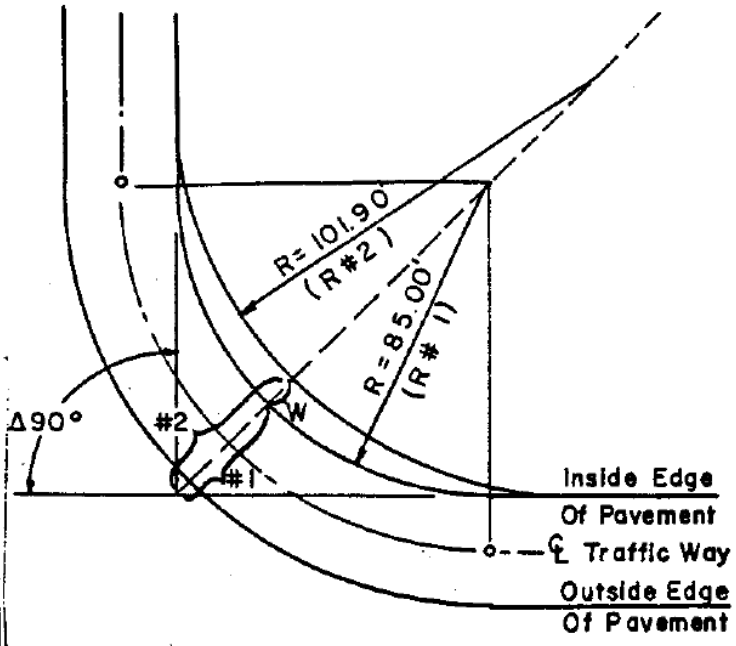
Scale: 1"=30'

TYPICAL SOLUTION OF ELEVATION OF TOP CURB P.I.

1. Average elevations of P.C. and P.T. of each curb section.	pt. 'A' 103.55, pt. 'B' 101.71 pt. 'C' 100.40, pt. 'D' 102.21
2. Distance U	82 feet
Distance V	45 feet
3. Distance W & X	15 feet
Distance Y & Z	4.5 feet
4. Difference in elevation - pt. A & pt. C	103.55 - 100.40 = 3.15
Difference in elevation - pt. B & pt. D	102.21 - 101.71 = 0.50
5. $\frac{W(\text{or}X) \text{ times diff. in elev. (ptA to ptC)}}{U}$	$\frac{15 \times 3.15}{82} = 0.60$
6. $\frac{Y (\text{or } Z) \text{ times diff. in elev. (pt B to ptD)}}{V}$	$\frac{4.5 \times 0.50}{45} = 0.05$

7. Center line elevations (intersection of center lines of both streets) must be identical.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER 9/1/88 DATE	STANDARD PAVING DETAILS TYPICAL SOLUTION OF ELEVATION OF TOP CURB	REVISED	P 14



1. Find External #1, using the following formula:
   External #1 = R #1 · Exsec 1/2 Δ
2. Add Widening W to External #1 This will be External #2.
3. Find Radius #2, using the following formula:

$$R\#2 = \frac{\text{External } \#2}{\text{Exsec } 1/2\ \Delta}$$

CENTER LINE RADIUS OF CURVE	MIN. LENGTH OF CURVE*	WIDENING AT MIDPOINT
500' - 451'	400'	3'
450' - 351'	350'	4'
350' - 251'	300'	5'
250' - 151'	200'	6'
150' - 100'	150'	7'

* CURVES LESS THAN THIS LENGTH WILL NOT REQUIRE WIDENING.

Example:

Given:

℄ Radius = 100'

Δ = 90°-00'

Normal pavement width = 30' (Right of Way = 50')

Required Widening for ℄ R of 100' = 7' (to be applied at midpoint of inside edge pavement.)

Required:

Radius (R #2) of widening.

Solution:

Radius of inside edge of pavement (R#1) = 100'- 15' = 85'

External #1 = 85 × Exsec 1/2 Δ =
85 × .41421 = 35.21

External #2 = 35.21 + 7 = 42.21

$$\text{Radius (R\#2)} = \frac{\text{External \#2}}{\text{Exsec } 1/2\ \Delta} = \frac{42.21}{.41421} = 101.90'$$

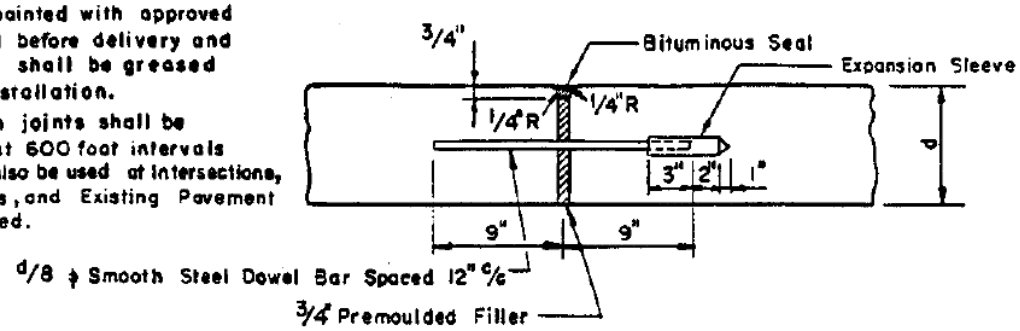
Note:

The Radius of the inside Property Line in this example will be 91.90'. (101.90'- 10.00')

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER / DESIGN ENGINEER 9/7/88 DATE	STANDARD PAVING DETAILS — WIDENING COMPUTATION	REVISED	P 15

NOTE:

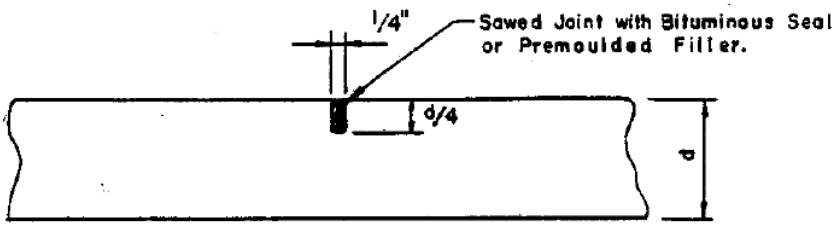
1. Smooth dowels for construction shall be painted with approved Red Lead before delivery and free end shall be greased before installation.
2. Expansion joints shall be spaced at 600 foot intervals and shall also be used at intersections, Stuctures, and Existing Pavement as required.



EXPANSION JOINT

NOTE:

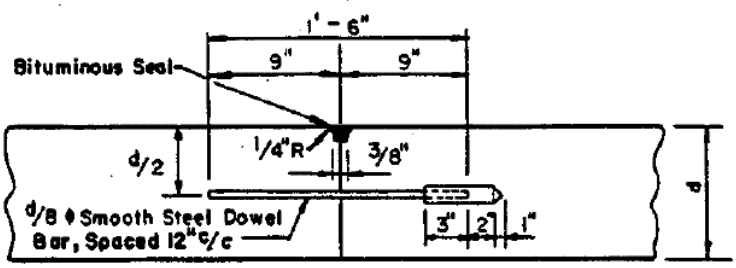
Contraction joints shall be spaced at 20' intervals.



CONTRACTION JOINT

NOTE:

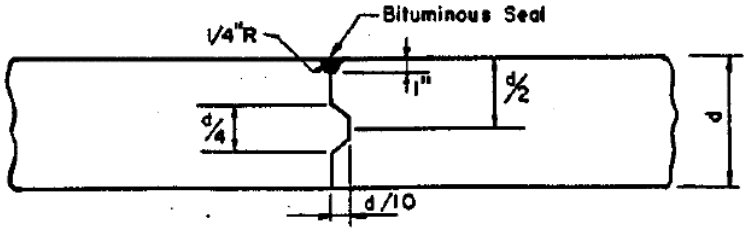
Smooth dowels for construction joints shall be painted with approved Red Lead before delivery and free end shall be greased before installation.



TRANSVERSE CONSTRUCTION JOINT

NOTE:

When adjacent lanes are poured simultaneously, the Longitudinal Joint may be sawed or formed by Joint Insert.

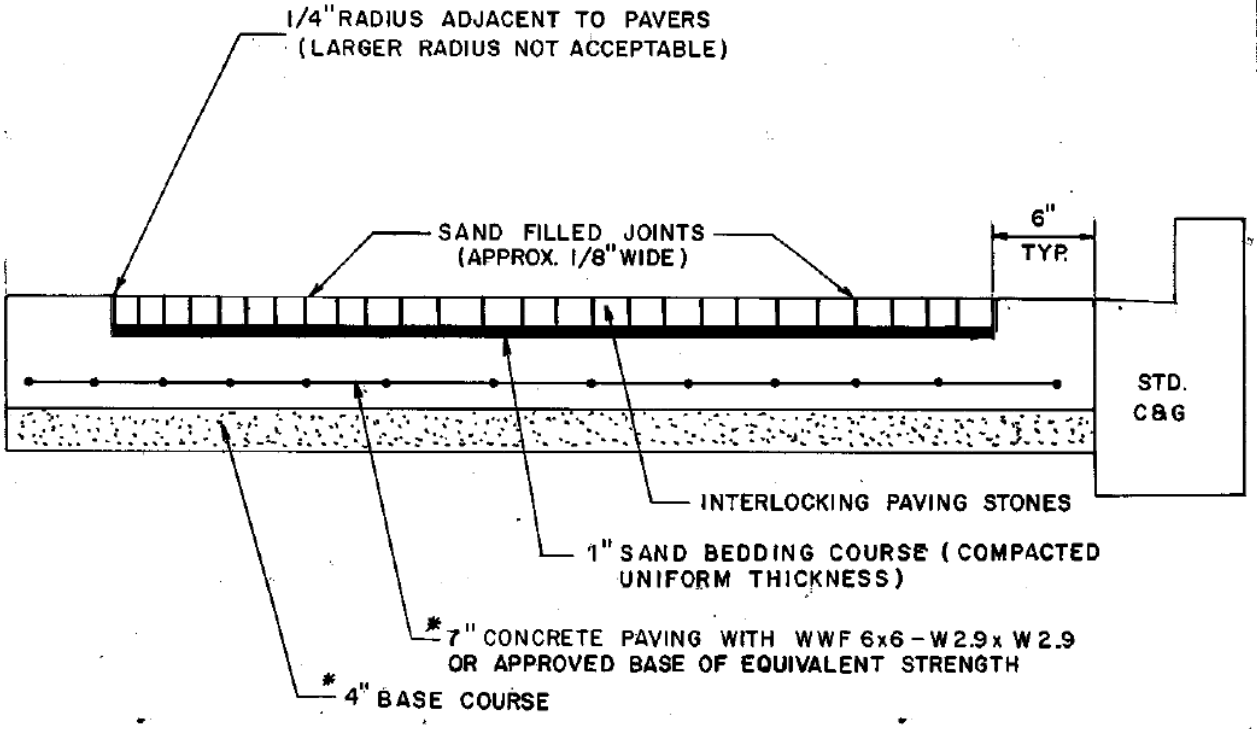


LONGITUDINAL CONSTRUCTION JOINT

(PAVEMENT POURED IN SINGLE LANES)

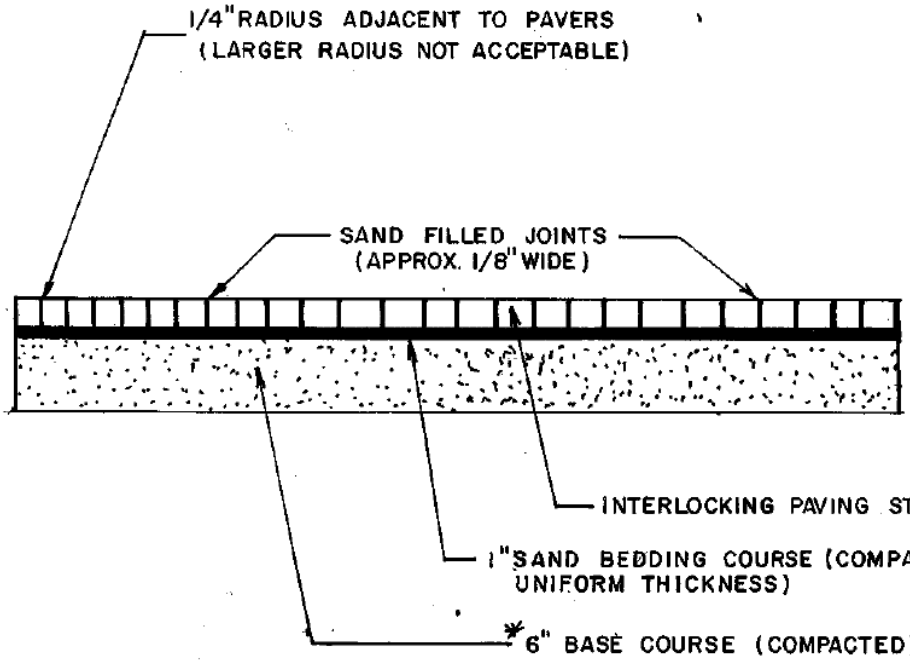
(No Scale)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER 9/1/88 DATE 9-7-88	STANDARD PAVING DETAILS TYPES OF JOINTS FOR CONCRETE PAVEMENTS	REVISED	P 16



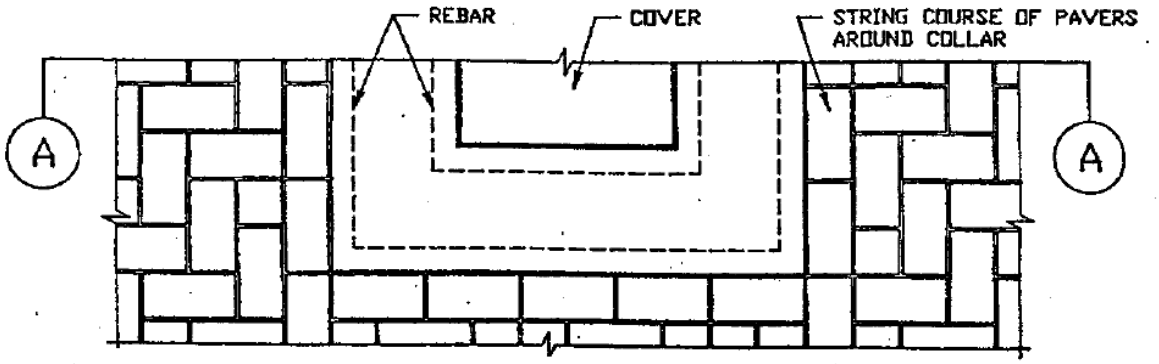
* BASE DESIGN TO BE CERTIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER TO MEET EXISTING SITE (SOIL) CONDITIONS.

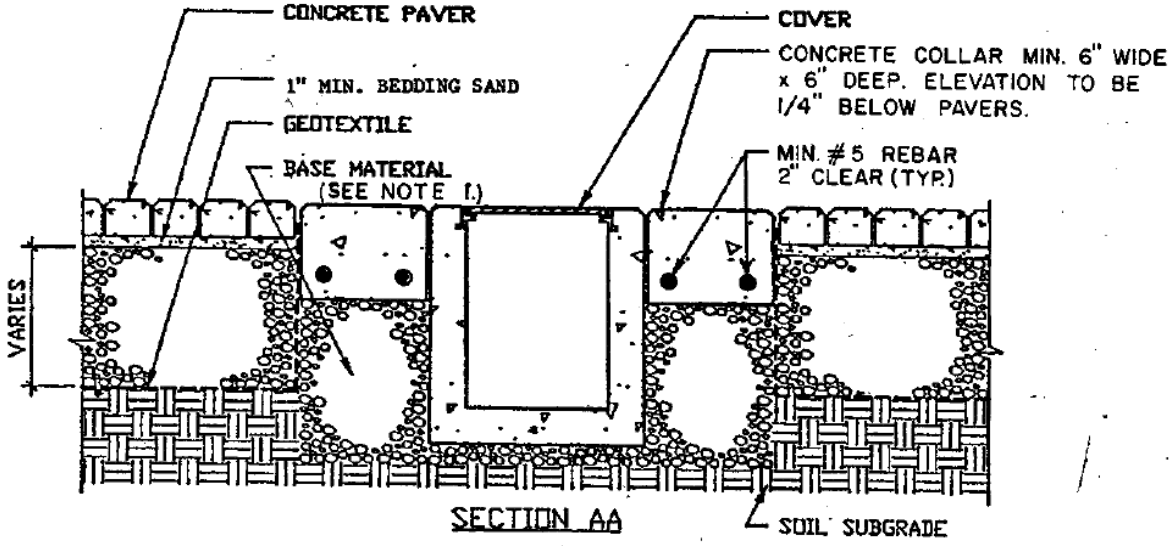
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED 9/22/97 CHIEF ENGINEER 9/15/97 DESIGN ENGINEER DATE	STANDARD PAVING DETAILS PAVER BLOCKS (TRAFFIC BEARING)	REVISED	P 17



* BASE DESIGN TO BE CERTIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER TO MEET EXISTING SITE (SOIL) CONDITIONS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED Ronald A. Bruner 9/29/97 CHIEF ENGINEER 9/18/97 DESIGN ENGINEER DATE	STANDARD PAVING DETAILS PAVER BLOCKS (NON-TRAFFIC BEARING)	REVISED	P / 18

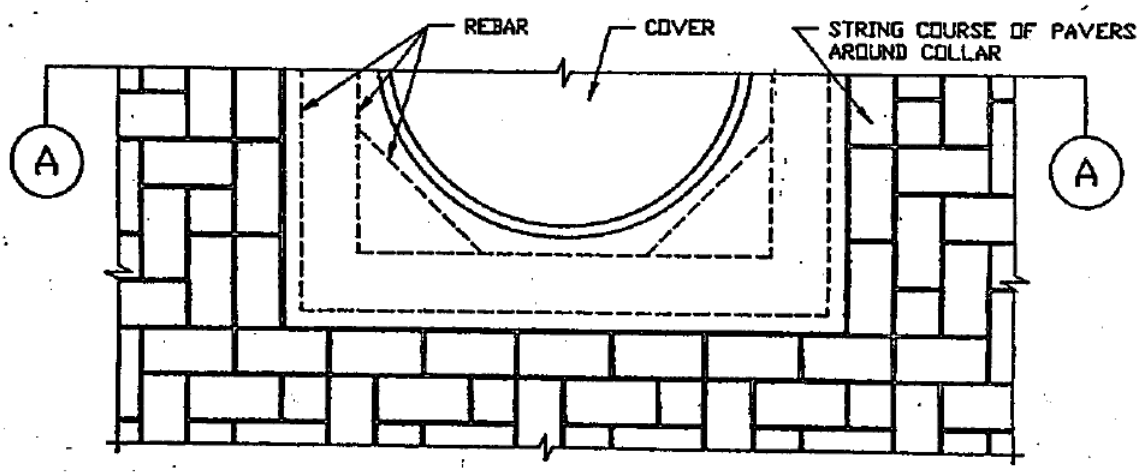


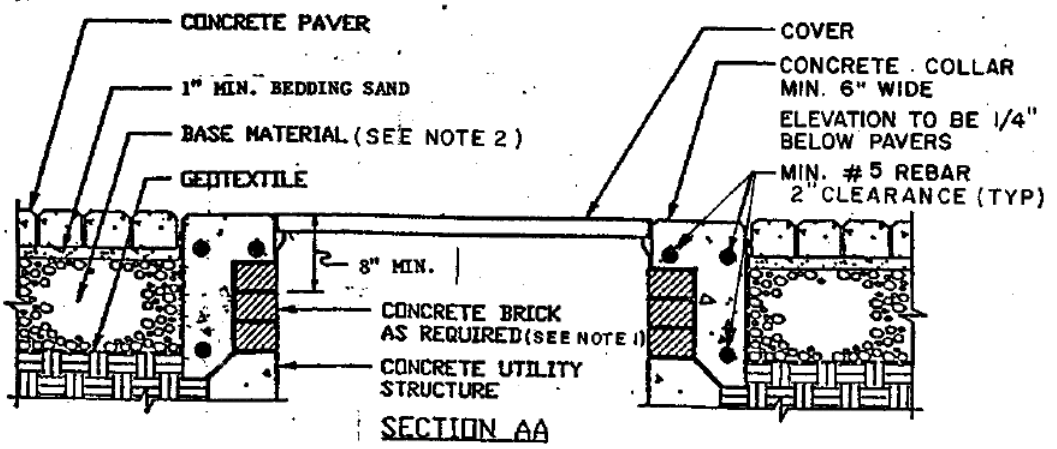


NOTES

1. IF TRAFFIC BEARING, SEE PLATE P/20
   IF NON-TRAFFIC BEARING, SEE PLATE P/21

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED Ronald C. Bowen 9/24/97 CHIEF, ENGINEER Alan Lui 9/18/97 DESIGN ENGINEER DATE	STANDARD PAVING DETAILS PAVER BLOCKS AT VALVE BOXES, METERS & SIMILAR STRUCTURES	REVISED	P 19



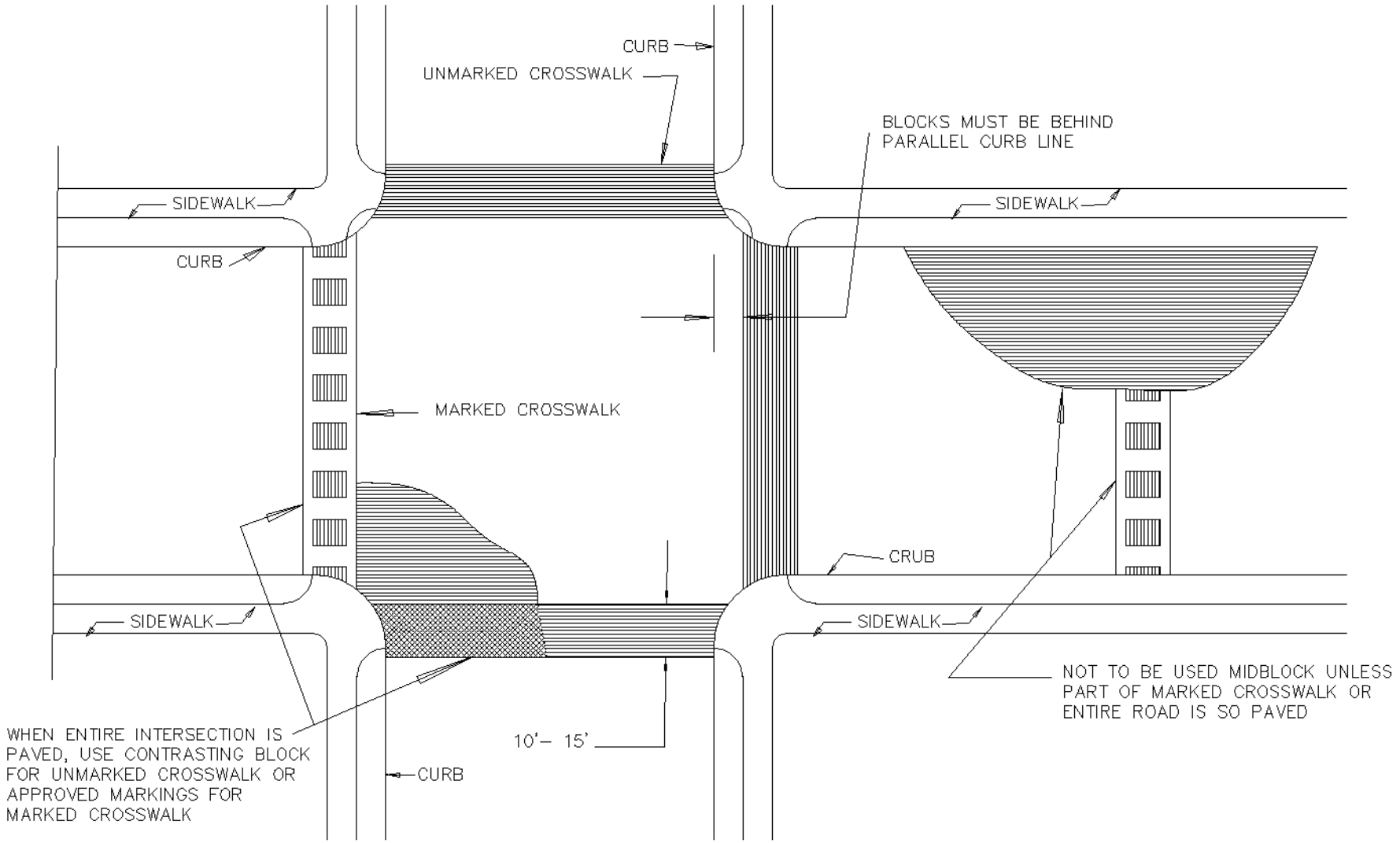


SECTION AA

NOTES

1. CONCRETE GRADE RINGS FOR SANITARY SEWER MANHOLES.
2. IF TRAFFIC BEARING, SEE PLATE P/20. IF NON-TRAFFIC BEARING, SEE PLATE P/21.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED Ronald Bowen 9/28/87 CHIEF ENGINEER; Robert Lee 9/18/87 DESIGN ENGINEER DATE	STANDARD PAVING DETAILS PAVER BLOCKS AT MANHOLES & INLETS	REVISED	P 20



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	**STANDARD PAVING DETAILS** PAVER BLOCK CROSS WALK	REVISED	P/21