

SECTION VI
PAVING

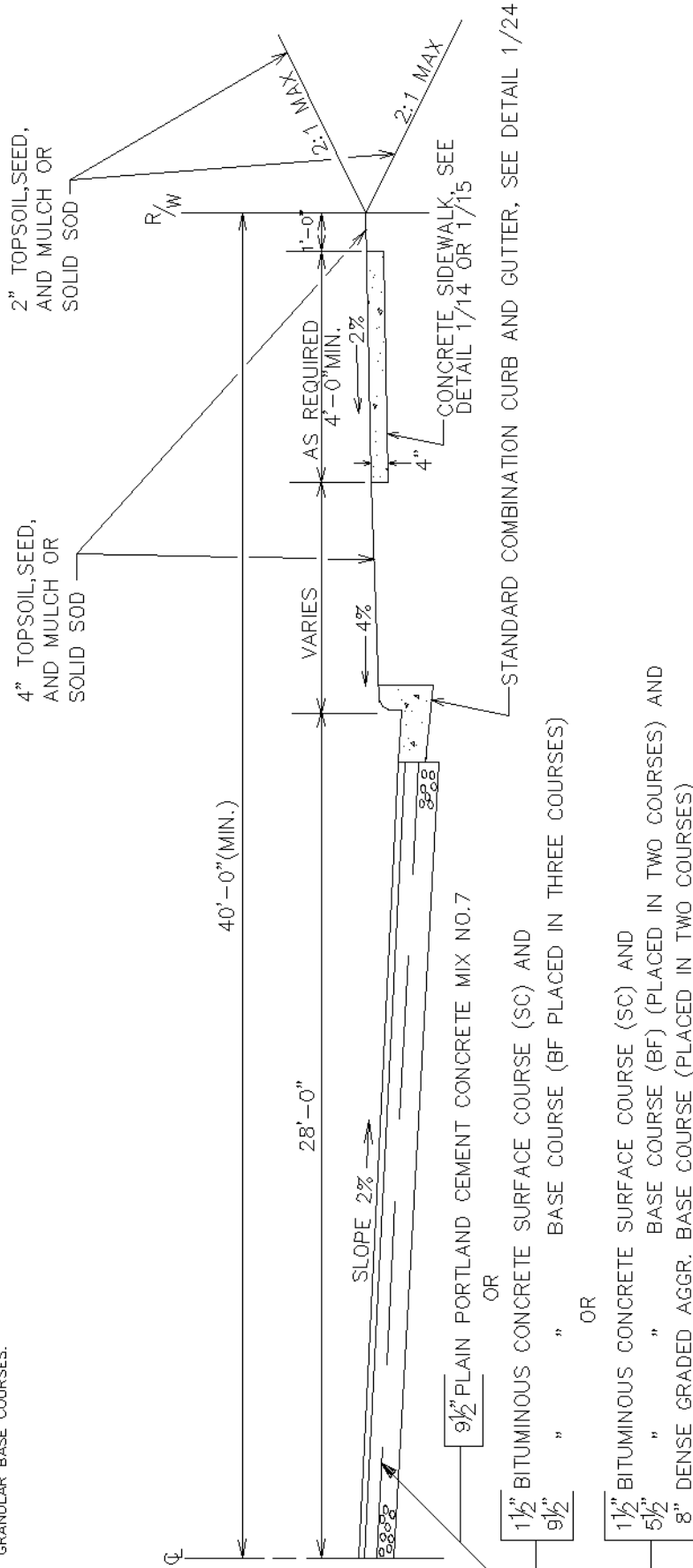
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PAVING DETAILS

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P-5	Collector (Rural)
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P-21	Paver Block Cross Walk

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.



REVISED

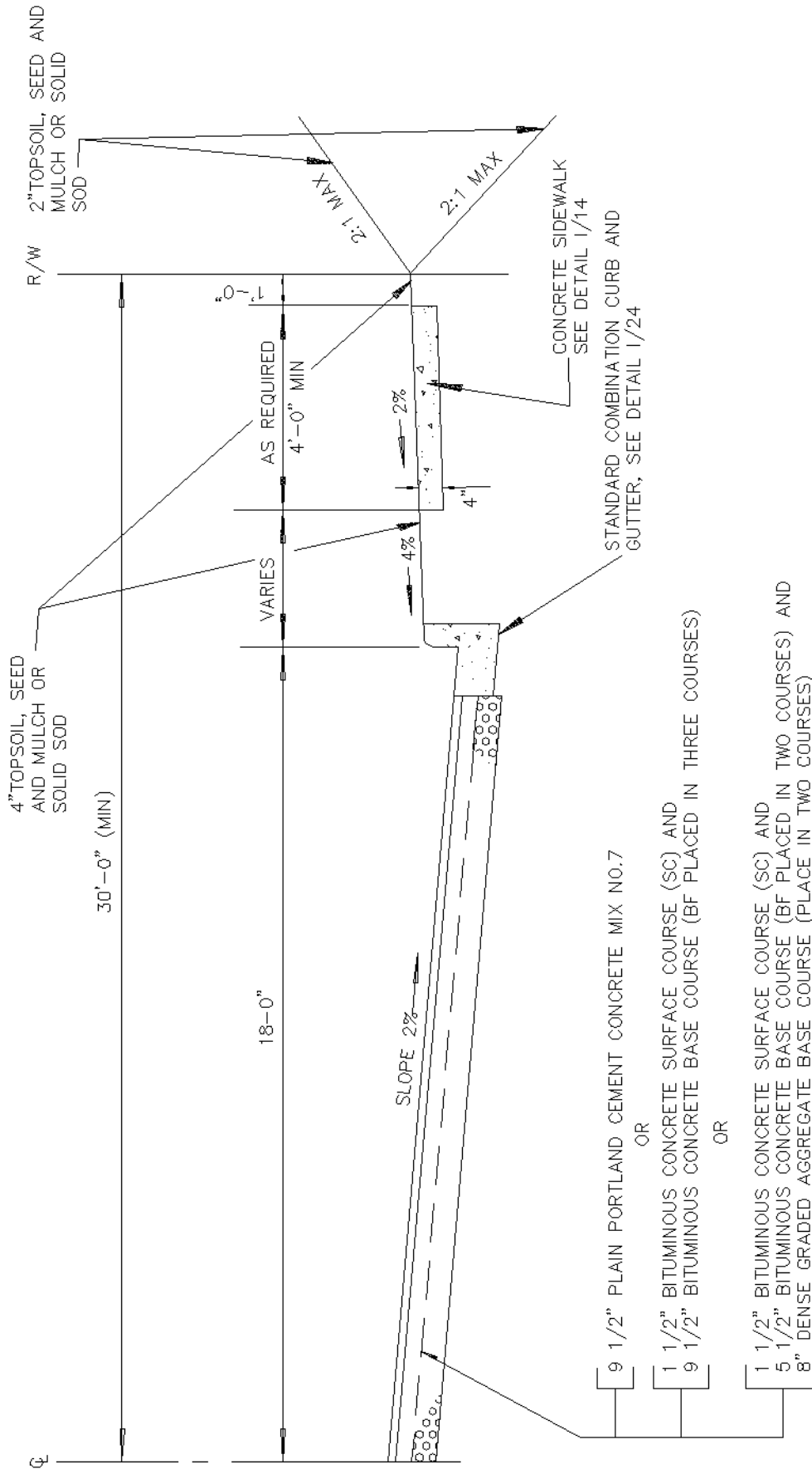
P
1

STANDARD PAVING DETAILS

PRINCIPAL ARTERIAL(URBAN)

APPROVED
 ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF ENGINEER
 DESIGN ENGINEER
 DATE:

NOTES:
SEE NOTES ON DETAIL P-1



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

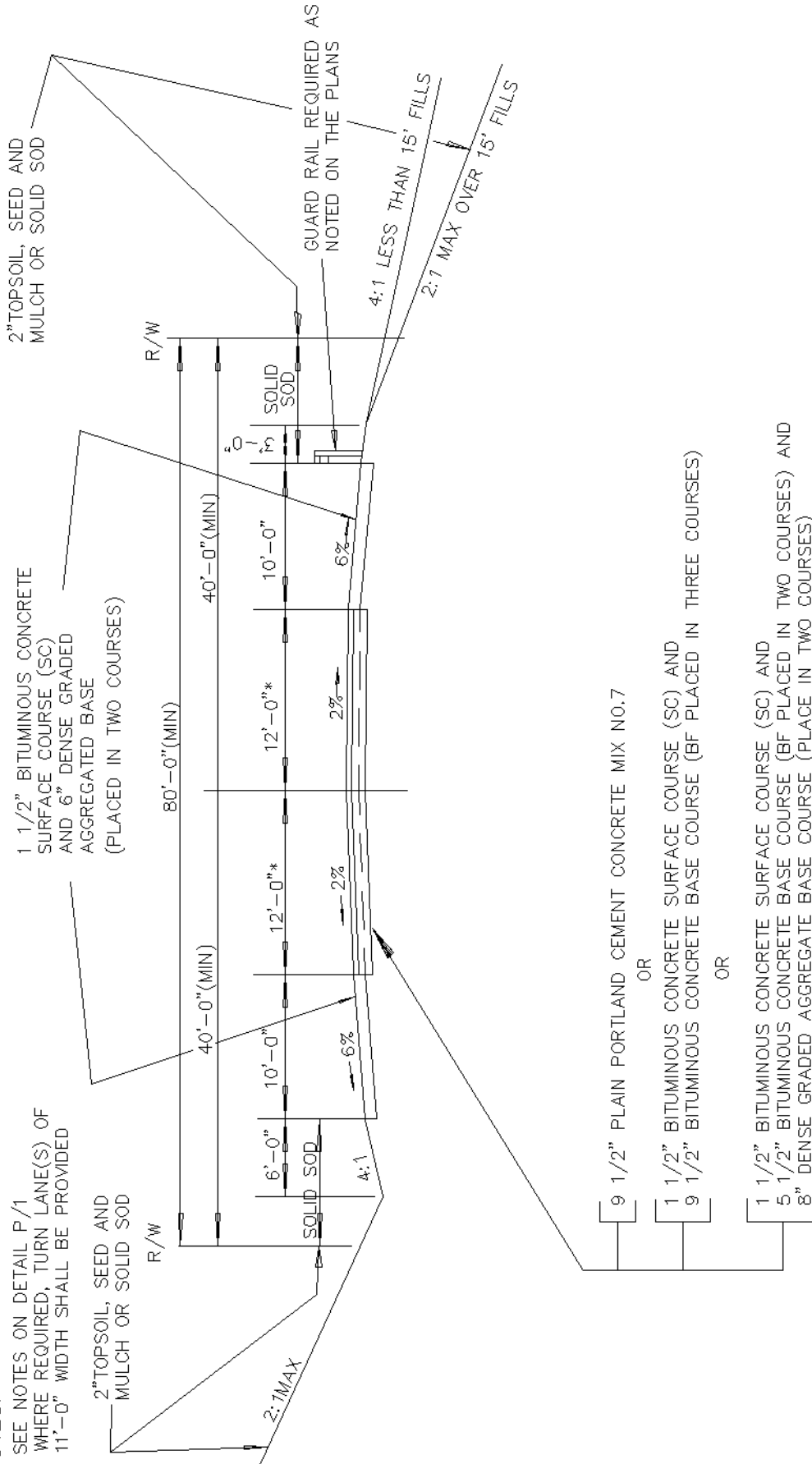
DESIGN ENGINEER
DATE:

STANDARD PAVING DETAILS
MINOR ARTERIAL (URBAN)

REVISION	

NOTES:

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



REVISIONS

STANDARD PAVING DETAILS
ARTERIAL (RURAL)

APPROVED _____
CHIEF ENGINEER

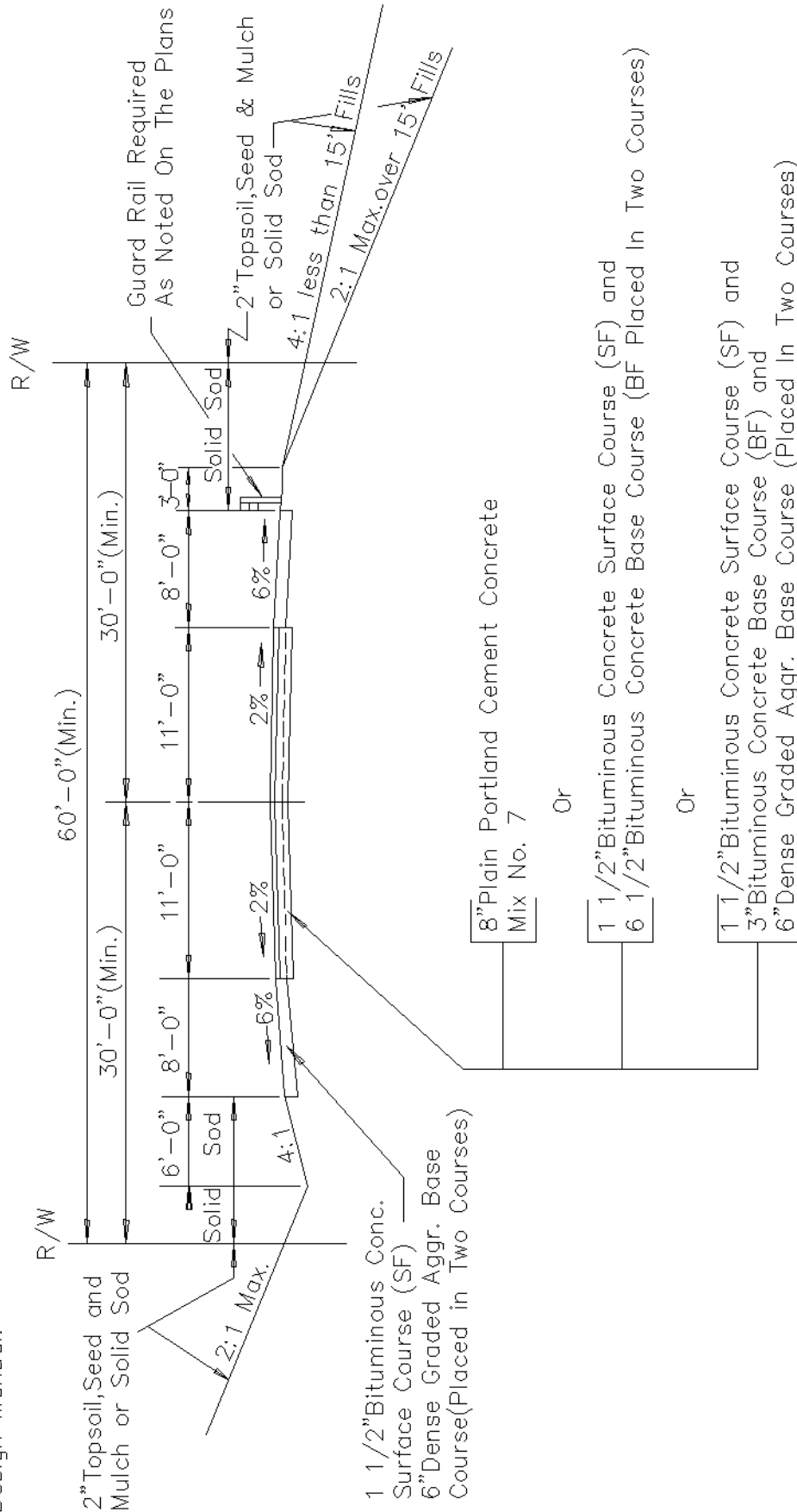
DESIGN ENGINEER

DATE: _____

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COUNTY
DEPARTMENT OF
PUBLIC WORKS

Notes

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



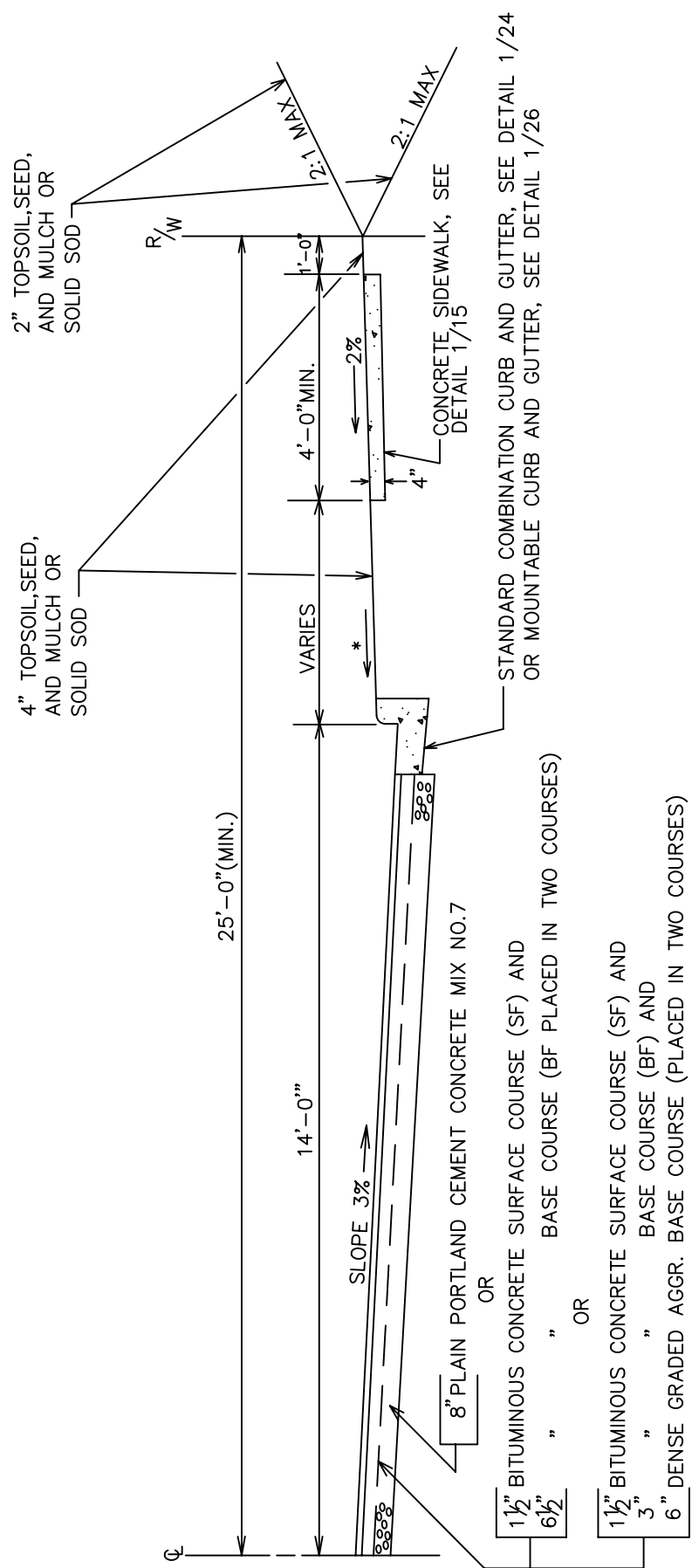
REVISION	

STANDARD PAVING DETAILS
COLLECTOR (RURAL)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	P 5
	CHIEF ENGINEER	
	DESIGN ENGINEER	
	DATE:	

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



4" TOPSOIL, SEED, AND MULCH OR SOLID SOD

2" TOPSOIL, SEED, AND MULCH OR SOLID SOD

R/W

1'-0"

4'-0" MIN.

2%

4"

CONCRETE SIDEWALK, SEE DETAIL 1/15

STANDARD COMBINATION CURB AND GUTTER, SEE DETAIL 1/24 OR MOUNTABLE CURB AND GUTTER, SEE DETAIL 1/26

8" PLAIN PORTLAND CEMENT CONCRETE MIX NO. 7

OR

1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND 6 1/2" BASE COURSE (BF) PLACED IN TWO COURSES

OR

1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND 3" BASE COURSE (BF) AND 6" DENSE GRADED AGGR. BASE COURSE (PLACED IN TWO COURSES)

14'-0"

SLOPE 3%

25'-0" (MIN.)

VARIES

4"

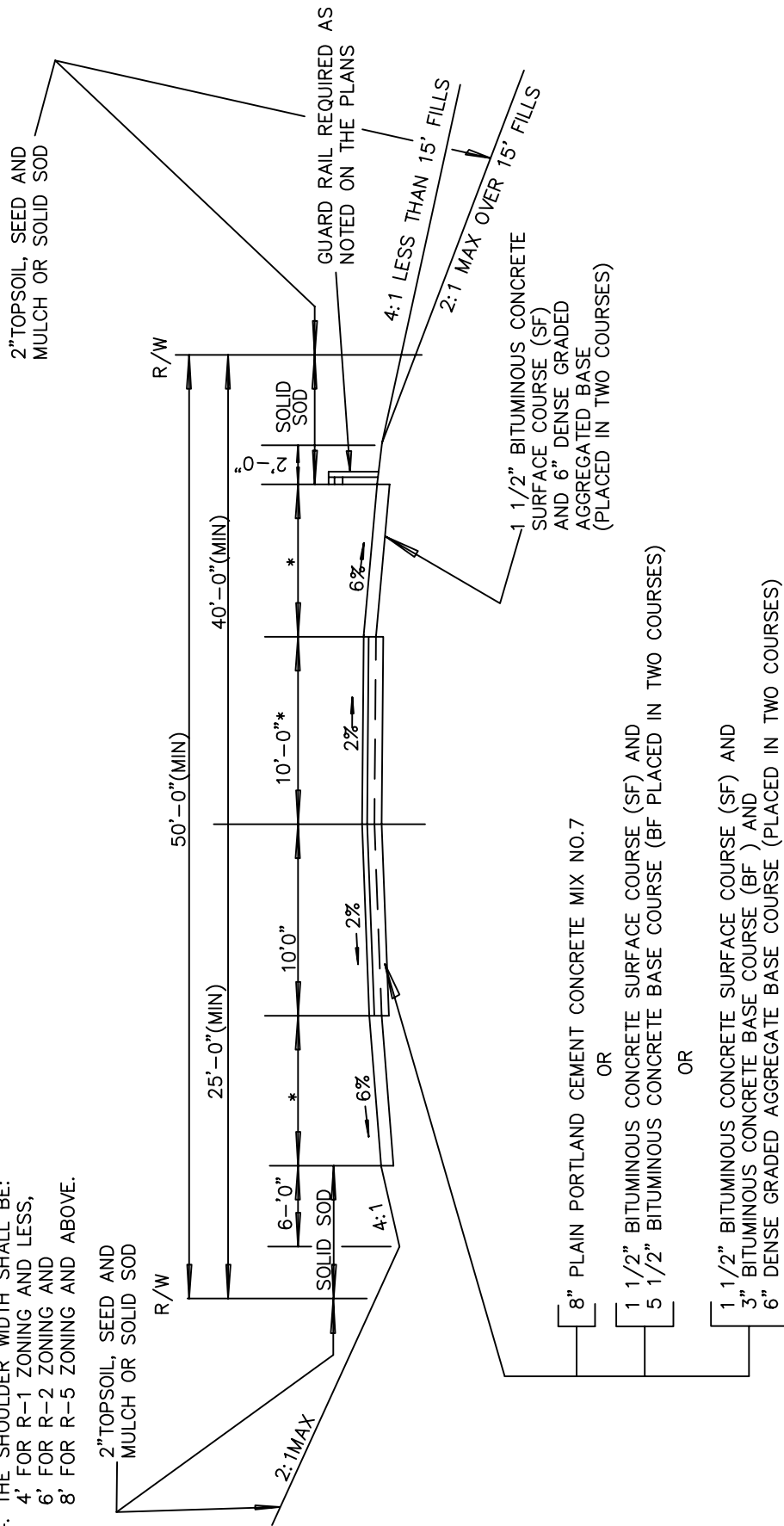
2:1 MAX

2:1 MAX

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

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.

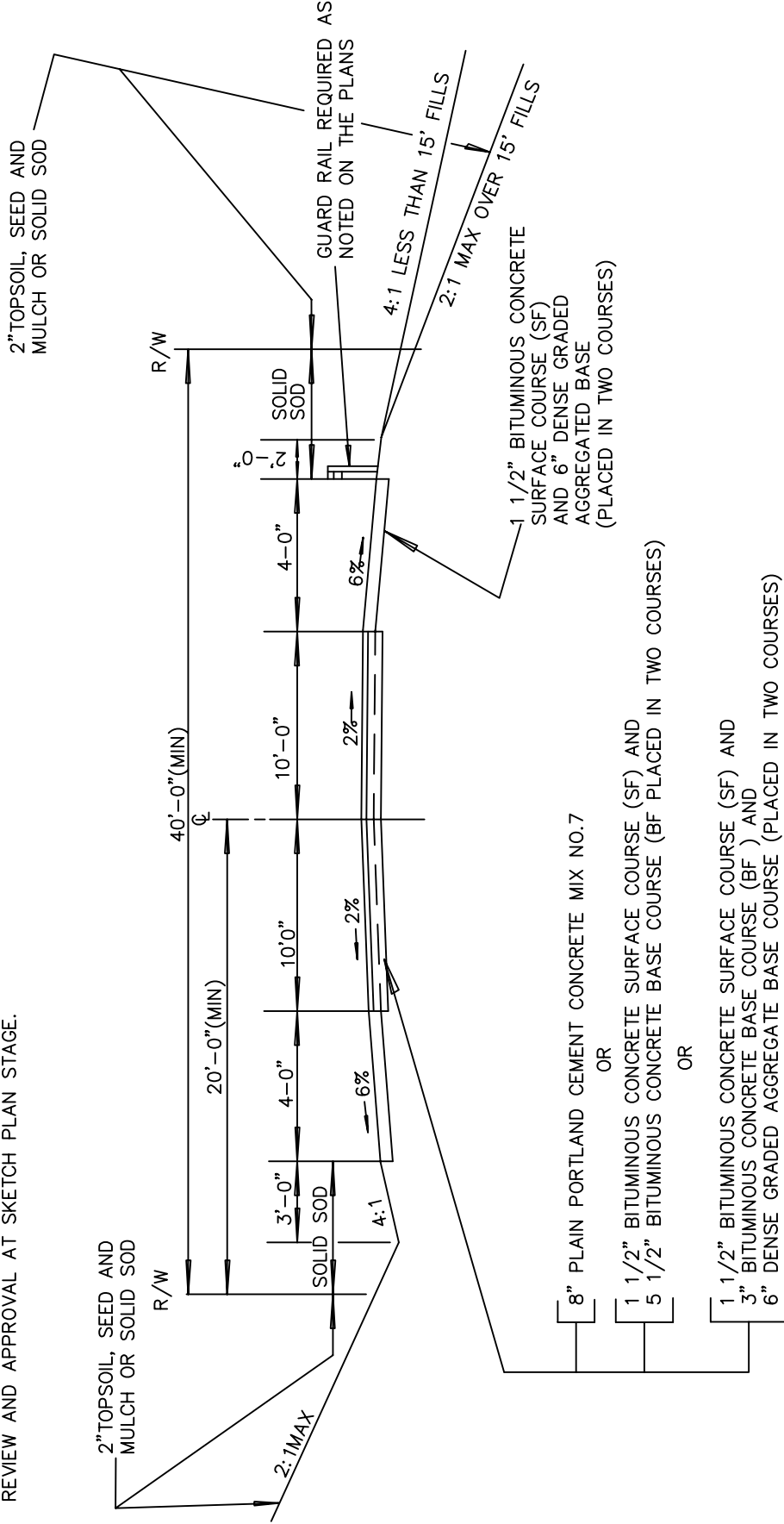


8" PLAIN PORTLAND CEMENT CONCRETE MIX NO.7
OR
1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND
5 1/2" BITUMINOUS CONCRETE BASE COURSE (BF) PLACED IN TWO COURSES
OR
1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SF) AND
3" BITUMINOUS CONCRETE BASE COURSE (BF) AND
6" DENSE GRADED AGGREGATE BASE COURSE (PLACED IN TWO COURSES)

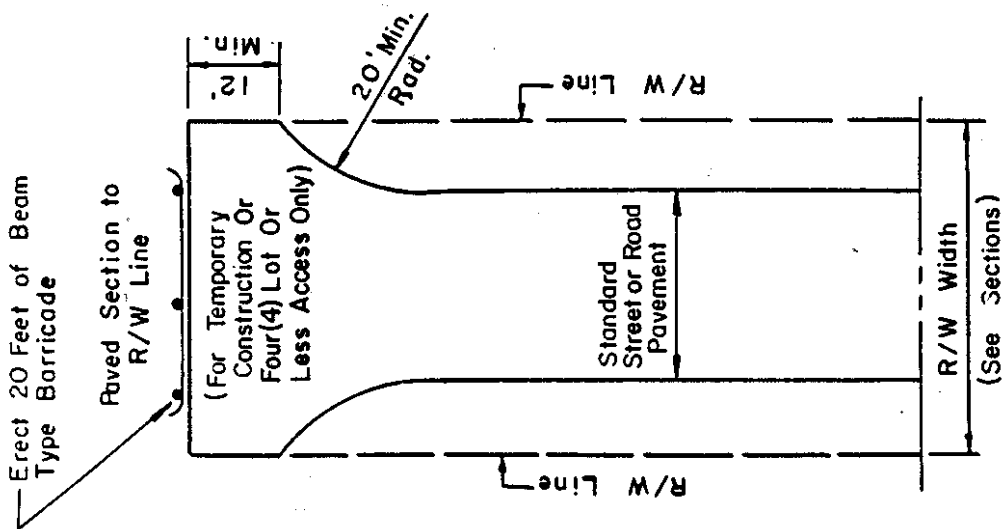
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REVISIED
	CHIEF ENGINEER	
	DESIGN ENGINEER	
	DATE:	
STANDARD PAVING DETAILS LOCAL ROAD (RURAL RESIDENTIAL, ADT 300 - 750)		P 7

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	REVISIONS
	CHIEF ENGINEER	P / 8
STANDARD PAVING DETAILS		
LOCAL ROAD		
(RURAL RESIDENTIAL, A.D.T. 0-300)		
DATE:	DESIGN ENGINEER	



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

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7/99 AB

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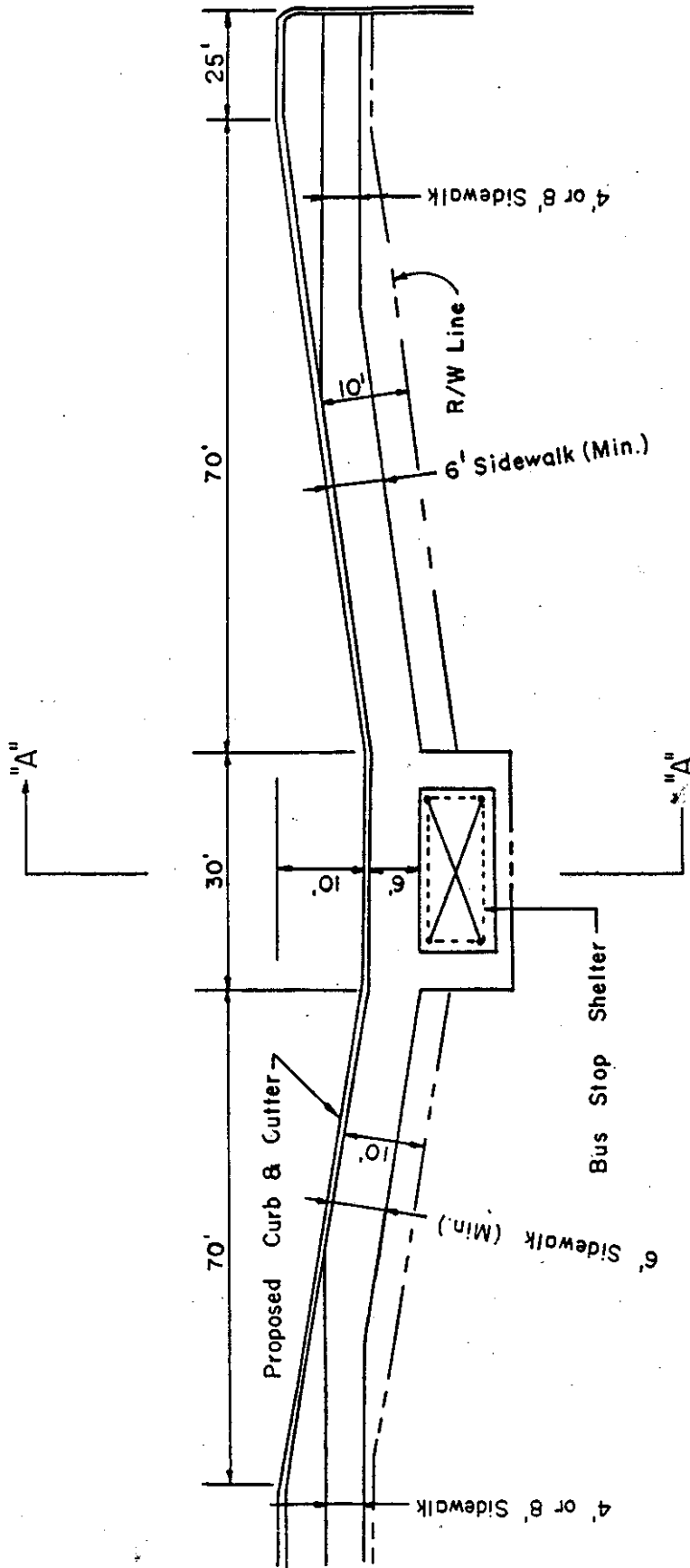
STANDARD PAVING DETAILS
"T" TURNAROUND

APPROVE

[Signature]
CHIEF ENGINEER
[Signature]
DESIGN ENGINEER
1/7/88
DATE

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STREET INTERSECTION



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7/98		

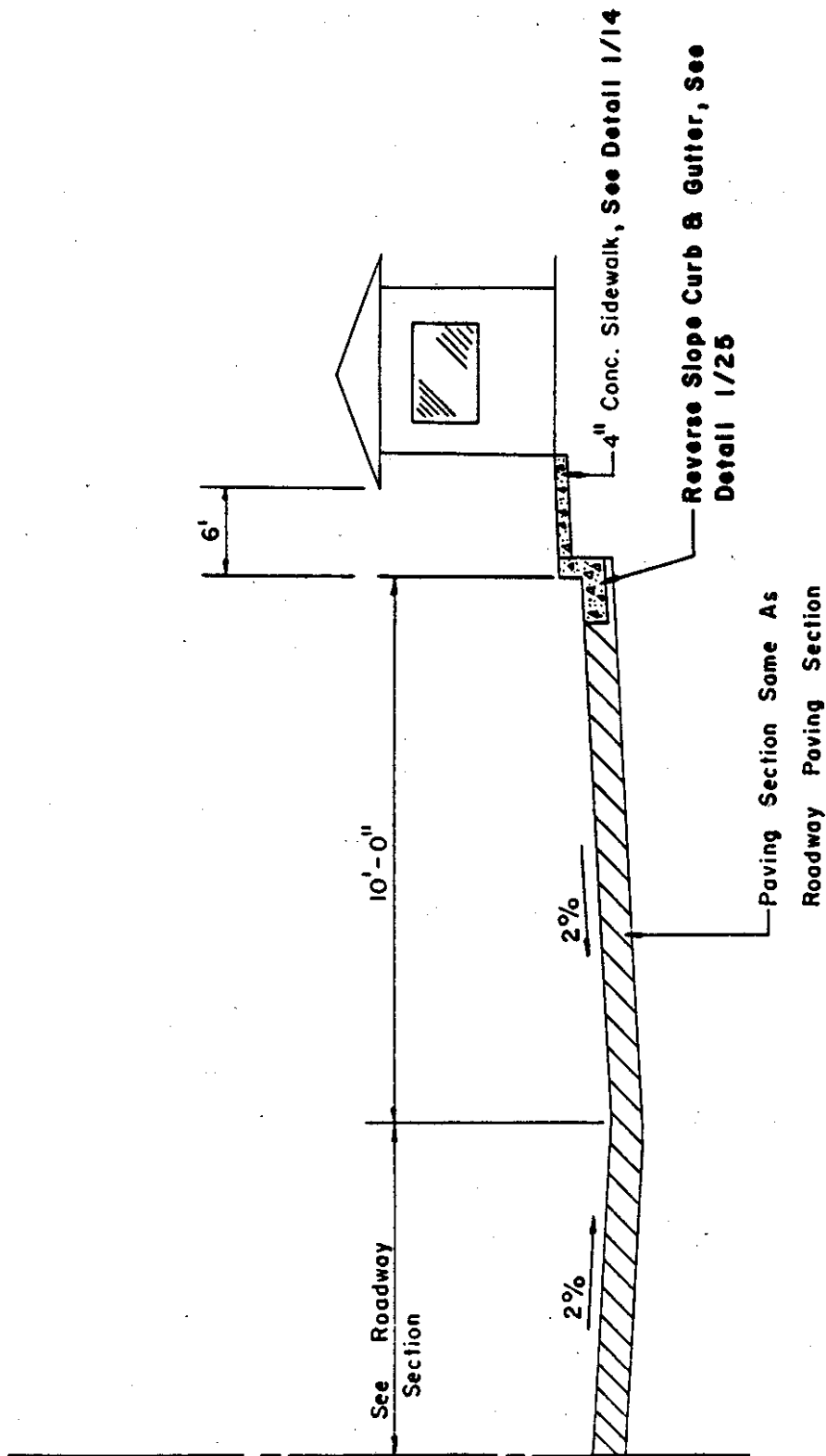
STANDARD PAVING DETAILS
STOPPING LANE FOR PUBLIC
TRANSPORTATION VEHICLES

APPROVED

 CHIEF ENGINEER

 DESIGN ENGINEER
 DATE 8/17/98

ANNE ARUNDEL
COUNTY
DEPARTMENT OF
PUBLIC WORKS

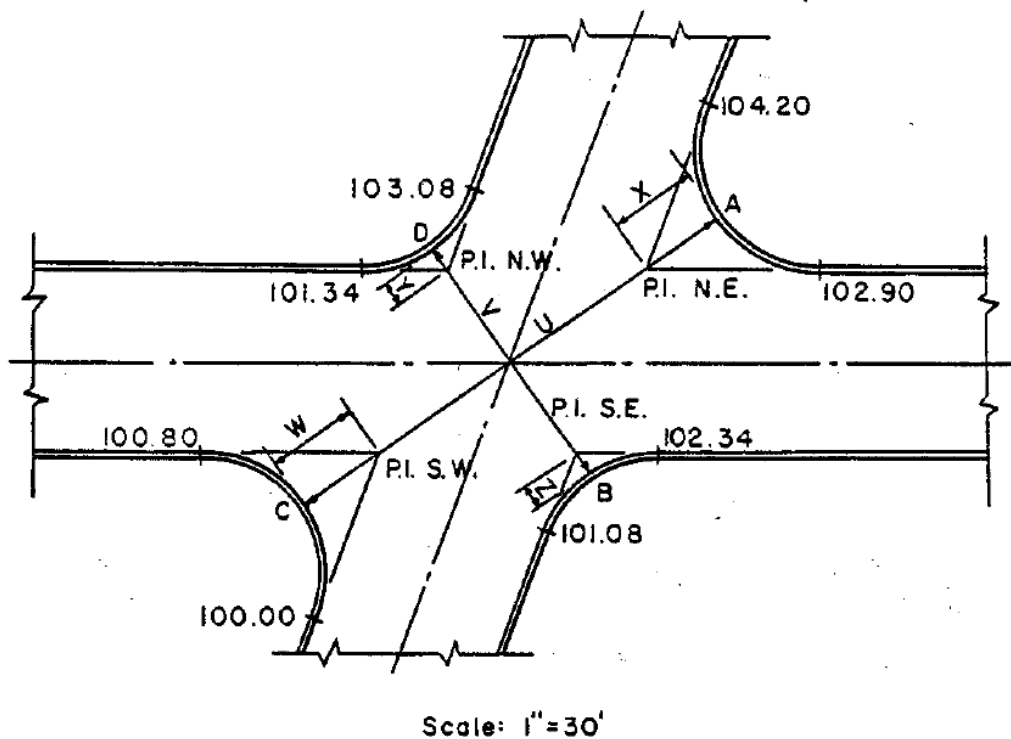


REVISED	P
7/99	13

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

APPROVED
[Signature]
 CHIEF ENGINEER
 DESIGN ENGINEER
 DATE

ANNE ARUNDEL
 COUNTY
 DEPARTMENT OF
 PUBLIC WORKS



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. $\frac{W(\text{or } X) \text{ times diff. in elev. (pt A to pt C)}}{U}$ | $\frac{15 \times 3.15}{82} = 0.60$ |
| 6. $\frac{Y(\text{or } Z) \text{ times diff. in elev. (pt B to pt D)}}{V}$ | $\frac{4.5 \times 0.50}{45} = 0.05$ |
| 7. Center line elevations (intersection of center lines of both streets) must be identical. | |

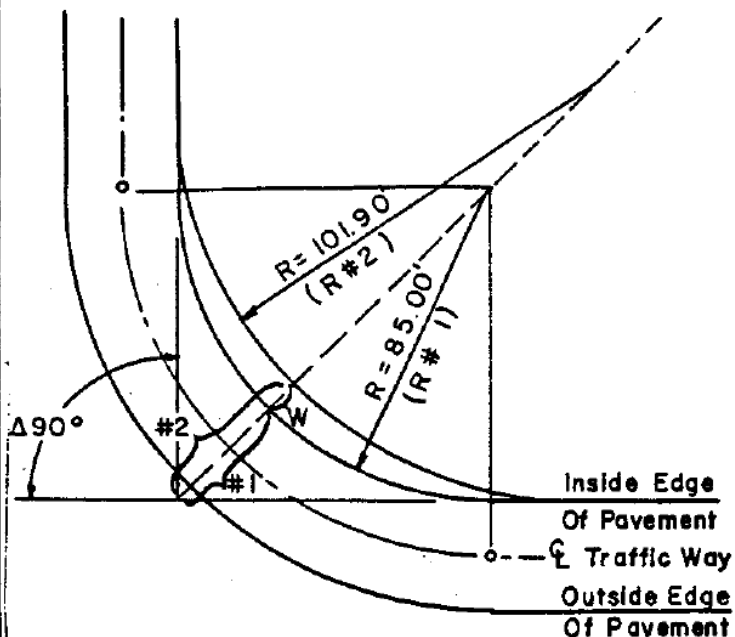
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED
[Signature]
CHIEF ENGINEER
DESIGN ENGINEER
9/7/88
DATE

STANDARD PAVING DETAILS
TYPICAL SOLUTION OF ELEVATION OF TOP CURB

REVISED

P
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1. Find External #1, using the following formula:

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

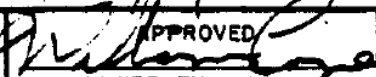

External # 1 = 85 × Exsec 1/2 Δ =
 85 × .41421 = 35.21

External # 2 = 35.21 + 7 = 42.21

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

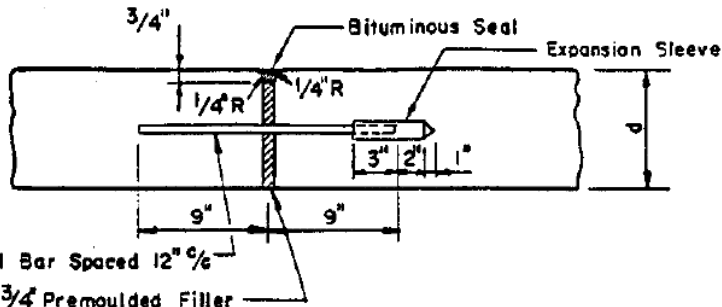
Note:

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	STANDARD PAVING DETAILS WIDENING COMPUTATION	REVISED	P 15
	DESIGN ENGINEER  5/7/88 DATE		_____	
	_____		_____	
	_____		_____	

NOTE:

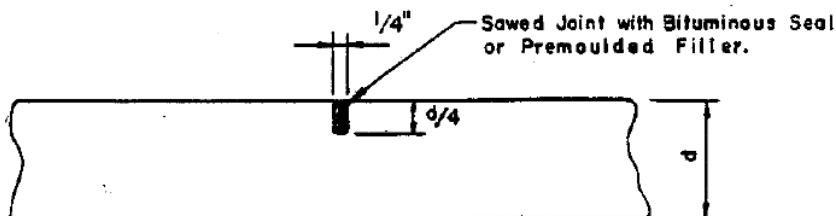
1. Smooth dowels for construction shall be painted with approved Red Lead before delivery and free end shall be greased before installation.
2. Expansion joints shall be spaced at 600 foot intervals and shall also be used at intersections, Structures, and Existing Pavement as required.



EXPANSION JOINT

NOTE:

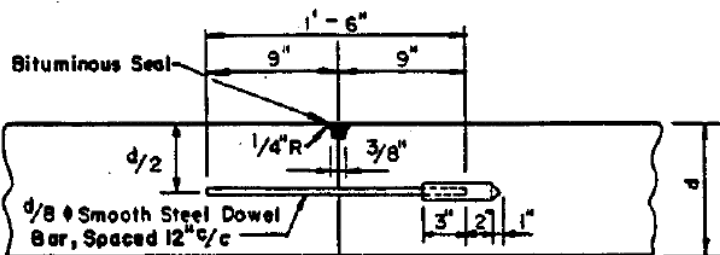
Contraction joints shall be spaced at 20' intervals.



CONTRACTION JOINT

NOTE:

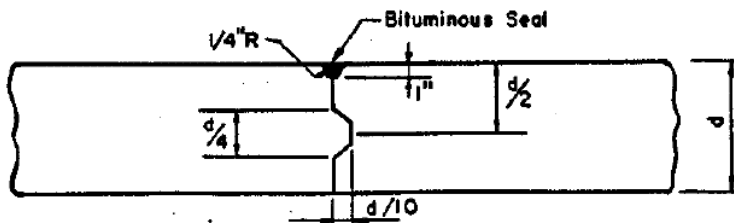
Smooth dowels for construction joints shall be painted with approved Red Lead before delivery and free end shall be greased before installation.



TRANSVERSE CONSTRUCTION JOINT


NOTE:

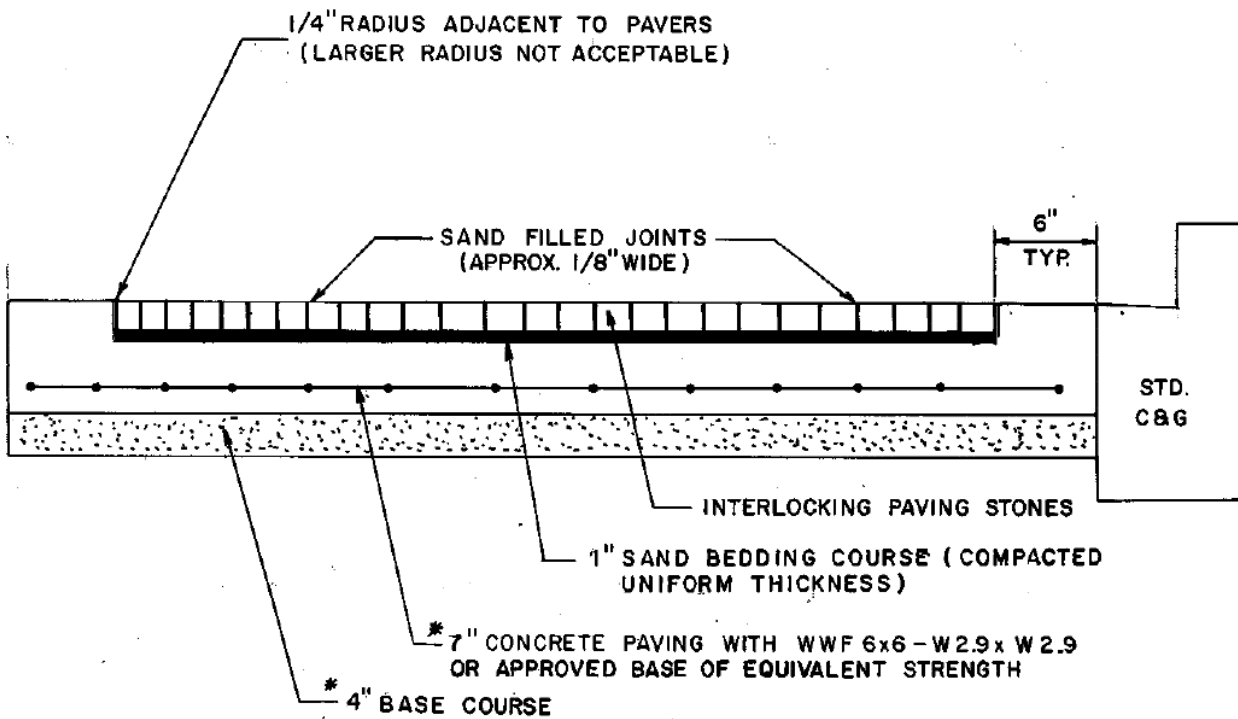
When adjacent lanes are poured simultaneously, the Longitudinal Joint may be sawed or formed by Joint Insert.



LONGITUDINAL CONSTRUCTION JOINT

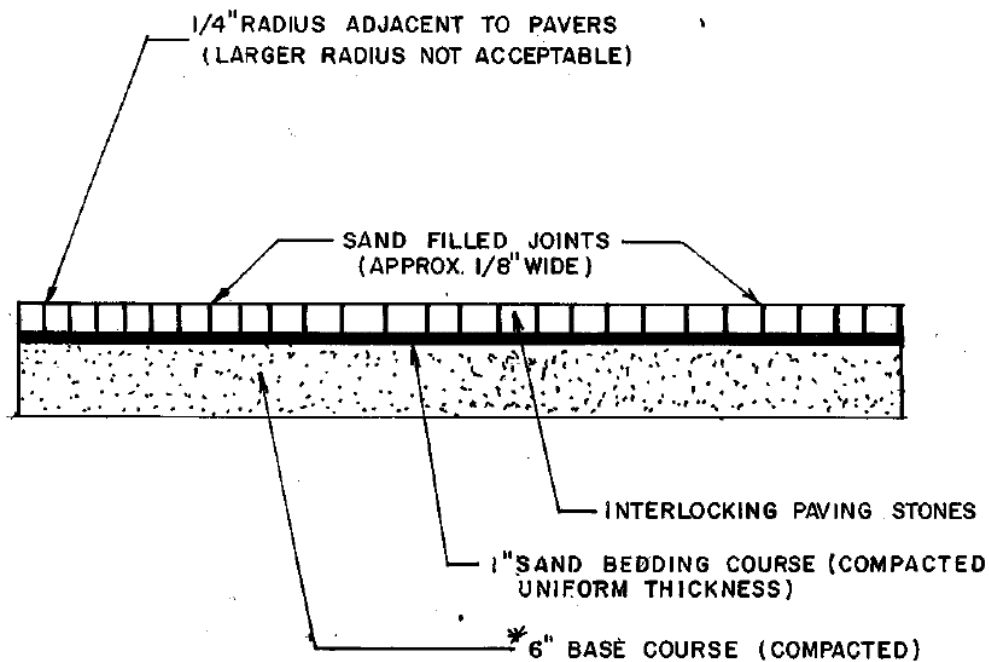
(PAVEMENT POURED IN SINGLE LANES)
(No Scale)

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



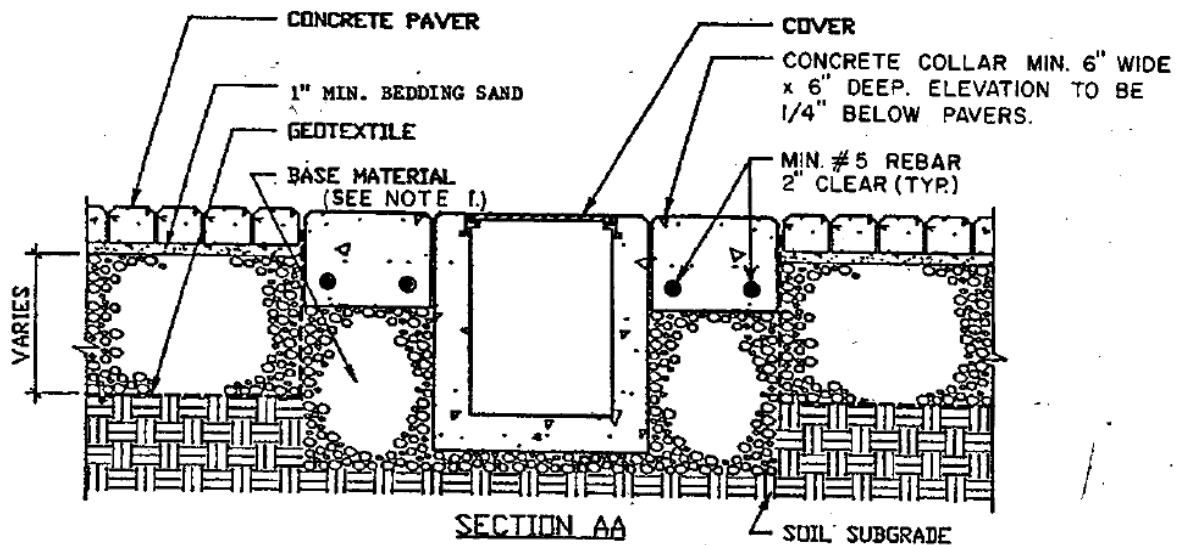
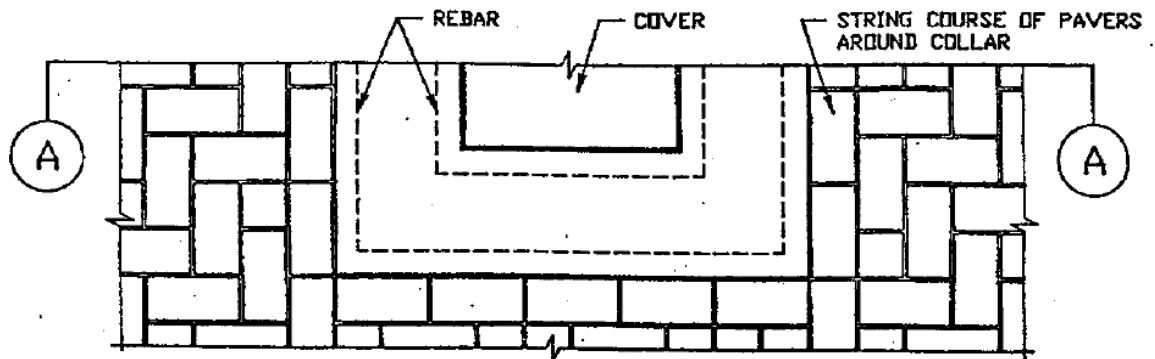
* BASE DESIGN TO BE CERTIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER TO MEET EXISTING SITE (SOIL) CONDITIONS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald C. Brown</i> 9/22/97 CHIEF ENGINEER	STANDARD PAVING DETAILS PAVER BLOCKS (TRAFFIC BEARING)	REVISED	P 17
	<i>John A. ...</i> 9/15/97 DESIGN ENGINEER			
	DATE			



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

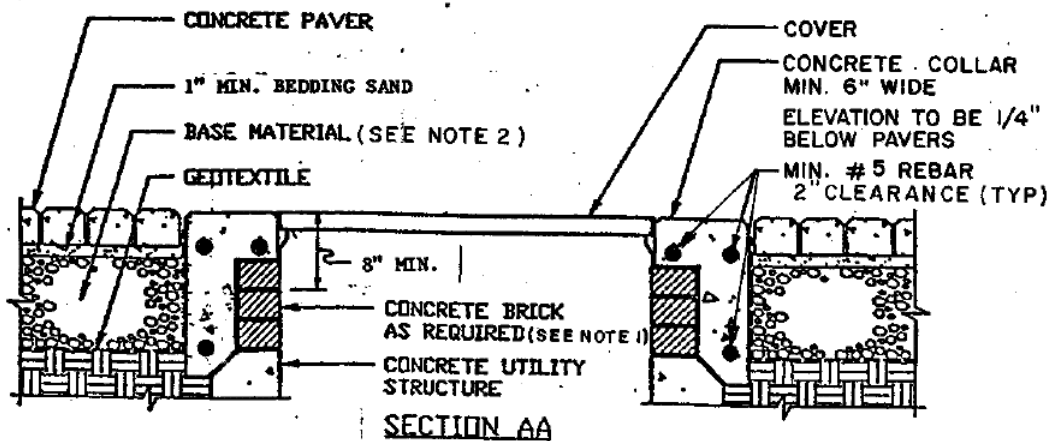
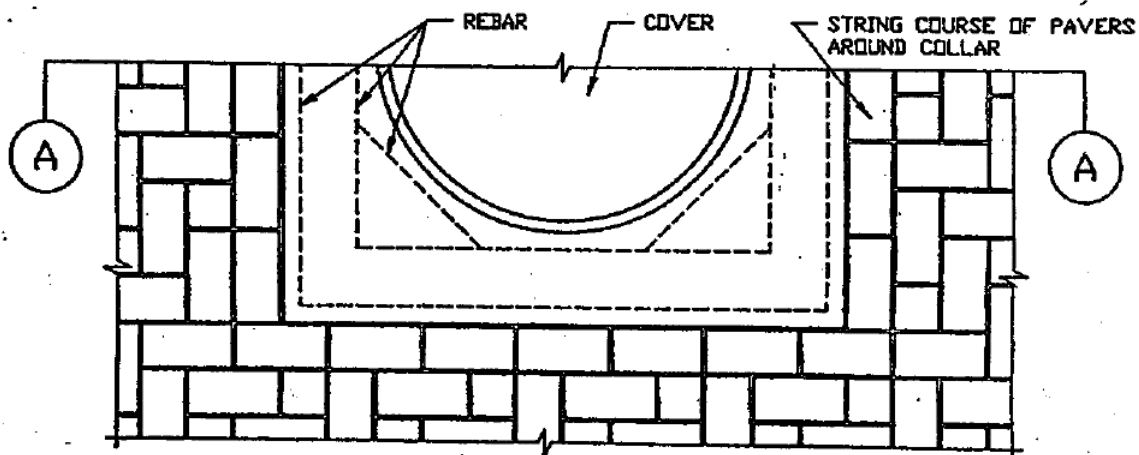
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald Brown</i> 9/22/97 CHIEF ENGINEER	STANDARD PAVING DETAILS PAVER BLOCKS (NON-TRAFFIC BEARING)	REVISED	P 18
	DESIGN ENGINEER <i>Chad Lee</i> 9/18/97		_____	
	DATE		_____	
	_____		_____	
	_____		_____	



NOTES

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

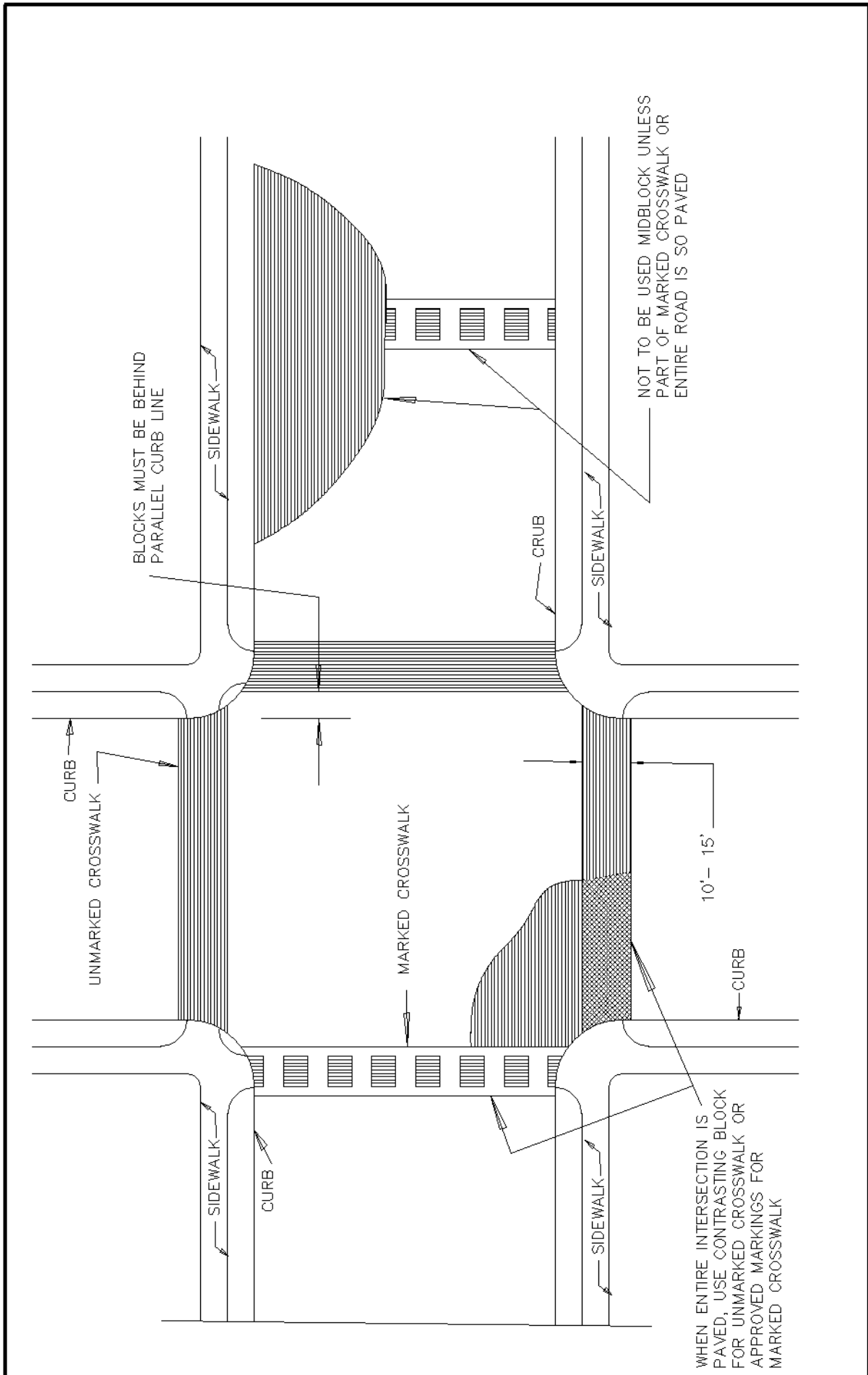
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED <i>Ronald Chaman 9/25/97</i> CHIEF ENGINEER	STANDARD PAVING DETAILS PAVER BLOCKS AT VALVE BOXES, METERS & SIMILAR STRUCTURES	REVISED	P 19
	DESIGN ENGINEER <i>9/18/97</i>			
	DATE			



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 <i>Ronald Brown</i> 9/18/87 CHIEF ENGINEER DESIGN ENGINEER DATE	STANDARD PAVING DETAILS PAVER BLOCKS AT MANHOLES & INLETS	REVISED _____ _____ _____	P 20
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REVISED

STANDARD PAVING DETAILS

PAVER BLOCK CROSS WALK

APPROVED _____
 CHIEF ENGINEER

 DESIGN ENGINEER
 DATE: _____

ANNE ARUNDEL
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 DEPARTMENT OF
 PUBLIC WORKS