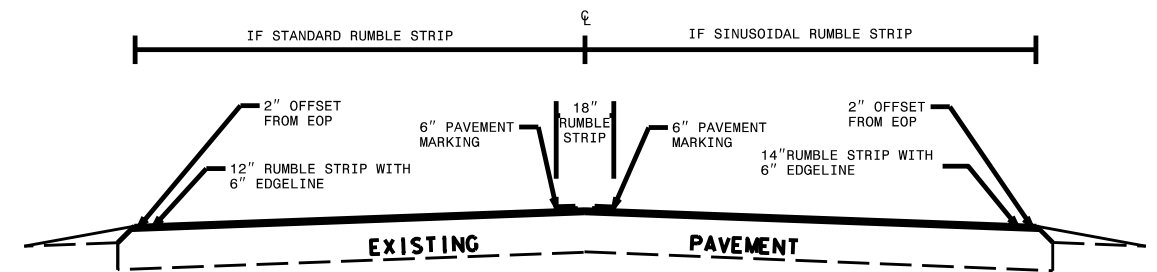
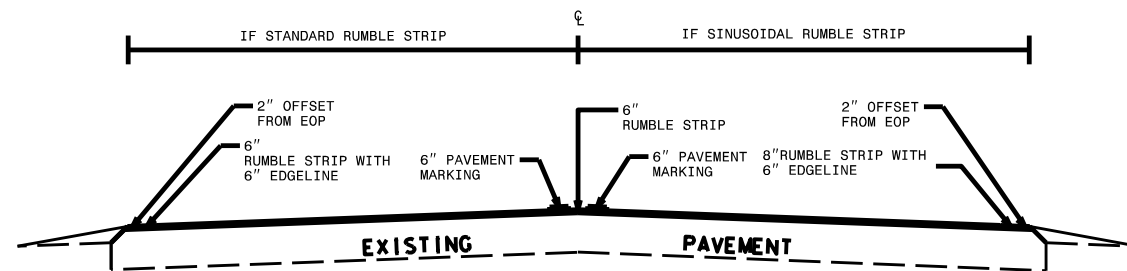


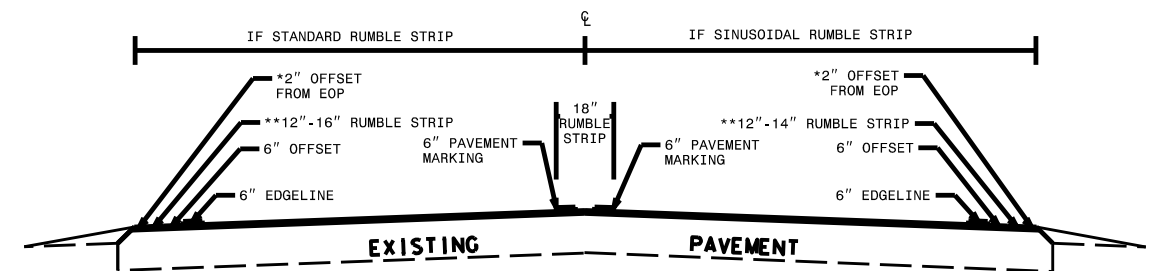
TYPICAL SECTION NO. 1  
 $20' \leq \text{PAVEMENT WIDTH} < 22'$



TYPICAL SECTION NO. 4  
 $24' \leq \text{PAVEMENT WIDTH} < 26'$



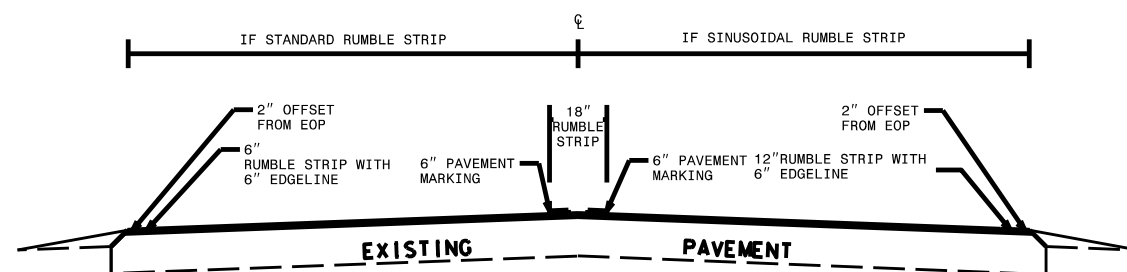
TYPICAL SECTION NO. 2  
 $22' \leq \text{PAVEMENT WIDTH} < 23'$



TYPICAL SECTION NO. 5  
 $\text{PAVEMENT WIDTH} \geq 26'$

\* INCREASE THIS DISTANCE FOR PAVEMENT WIDTHS > 30' BASED ON A LANE WIDTH OF 12'

\*\* WIDTH OF RUMBLE STRIP IS BASED ON A LANE WIDTH OF 10'-12'



TYPICAL SECTION NO. 3  
 $23' \leq \text{PAVEMENT WIDTH} < 24'$

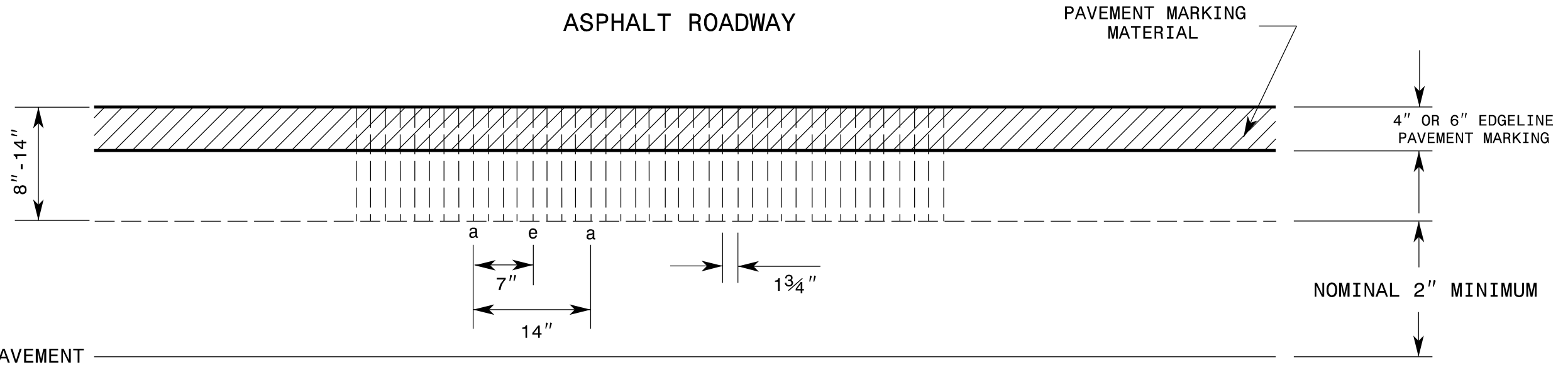
\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$DGN\$\$\$\$\$  
 \$\$\$JERNAM\$\$\$\$\$

APPROVED: _____	DATE: _____	<b>MILLED/SINUSOIDAL RUMBLE STRIP DETAIL</b>				
SEAL 	SCALE: NONE					
	DATE: OCT 2023	REVISIONS				
	DWG. BY: JCB					
	DESIGN BY: WAT					
REVIEWED BY: _____						

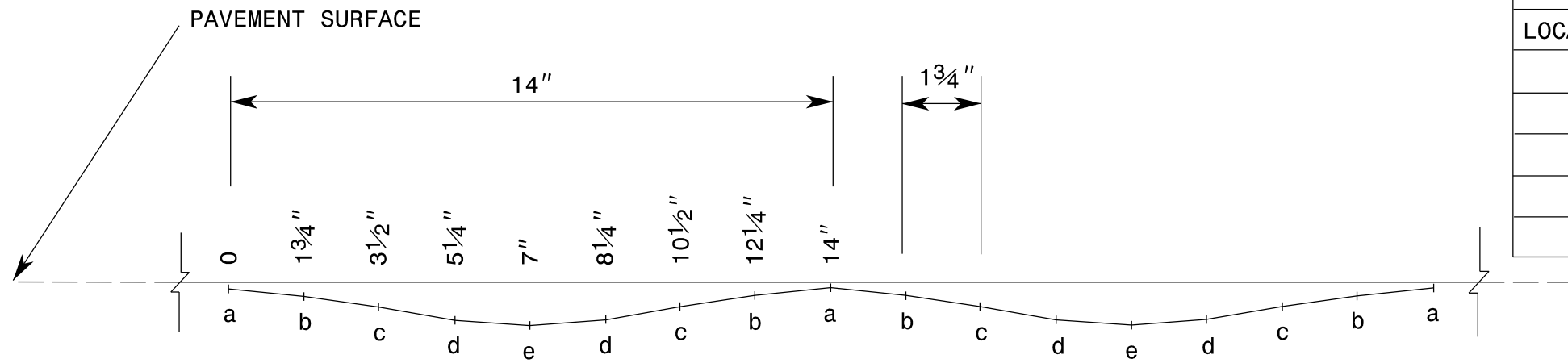
See Table 1 within Rumble Strip Policy for Design Guidance

PLAN VIEW

TRAVEL LANE(S)  
ASPHALT ROADWAY



PROFILE VIEW



LOCATION	DEPTH	
	MIL	INCHES
a	62.5	$\frac{1}{16}$ "
b	125	$\frac{1}{8}$ "
c	219	$\frac{7}{32}$ "
d	344	$\frac{11}{32}$ "
e	375	$\frac{3}{8}$ "

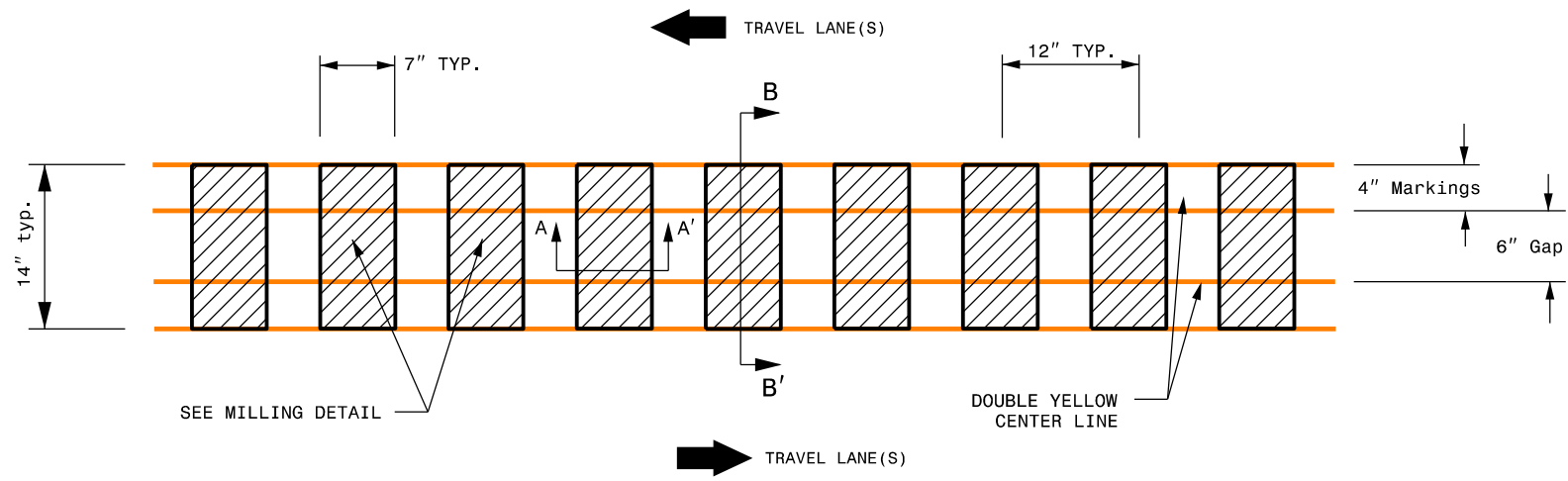
REFERENCE DRAWING ID: Sin.Stripe

NOTES:

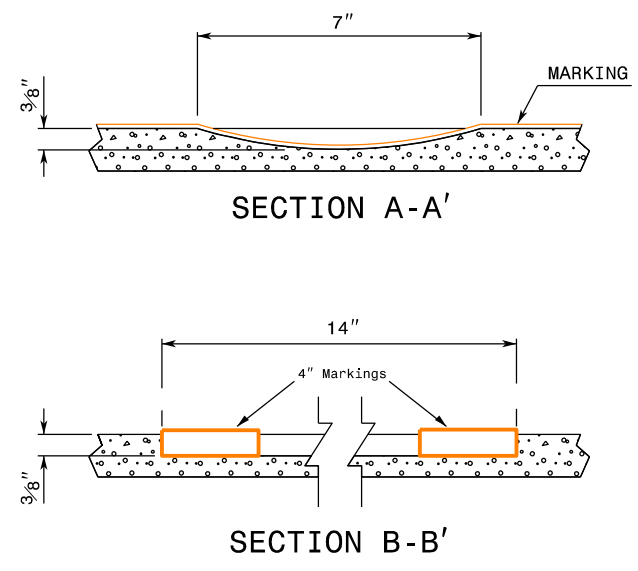
- 1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al, June 2016*
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.

See Table 2 within Rumble Strip Policy for Design Guidance

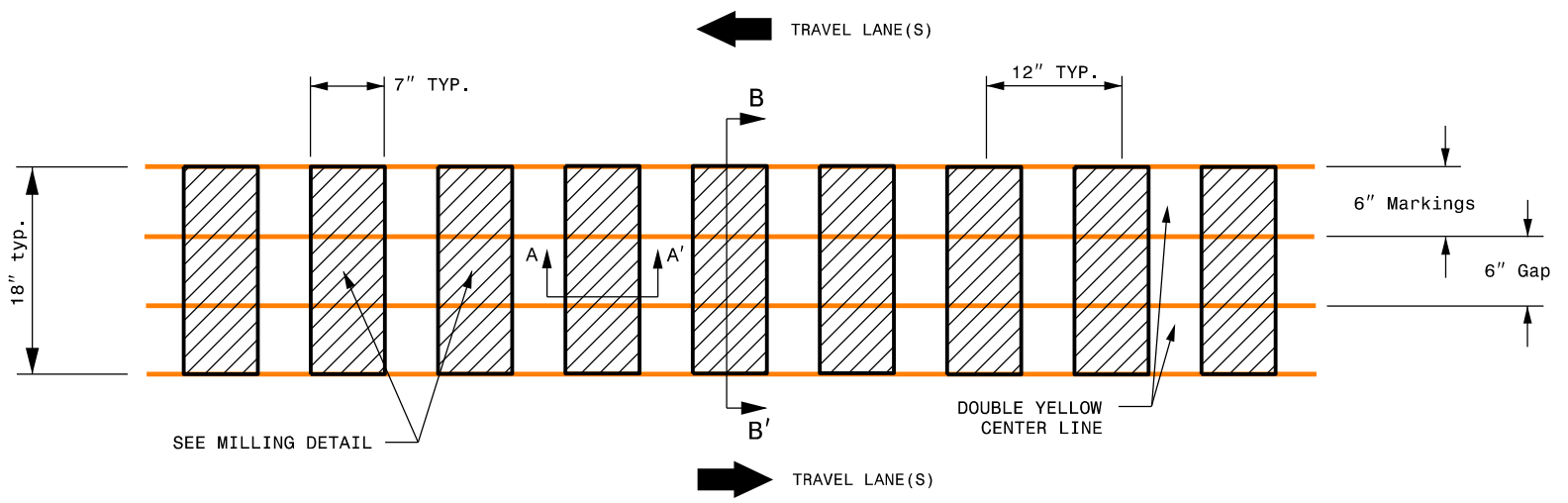
If 4" Markings will be used:



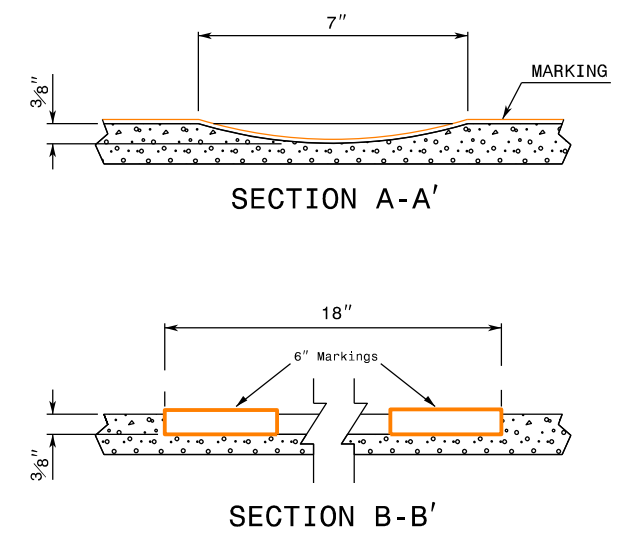
MILLING DETAIL - 4" Markings



If 6" Markings will be used:



MILLING DETAIL - 6" Markings

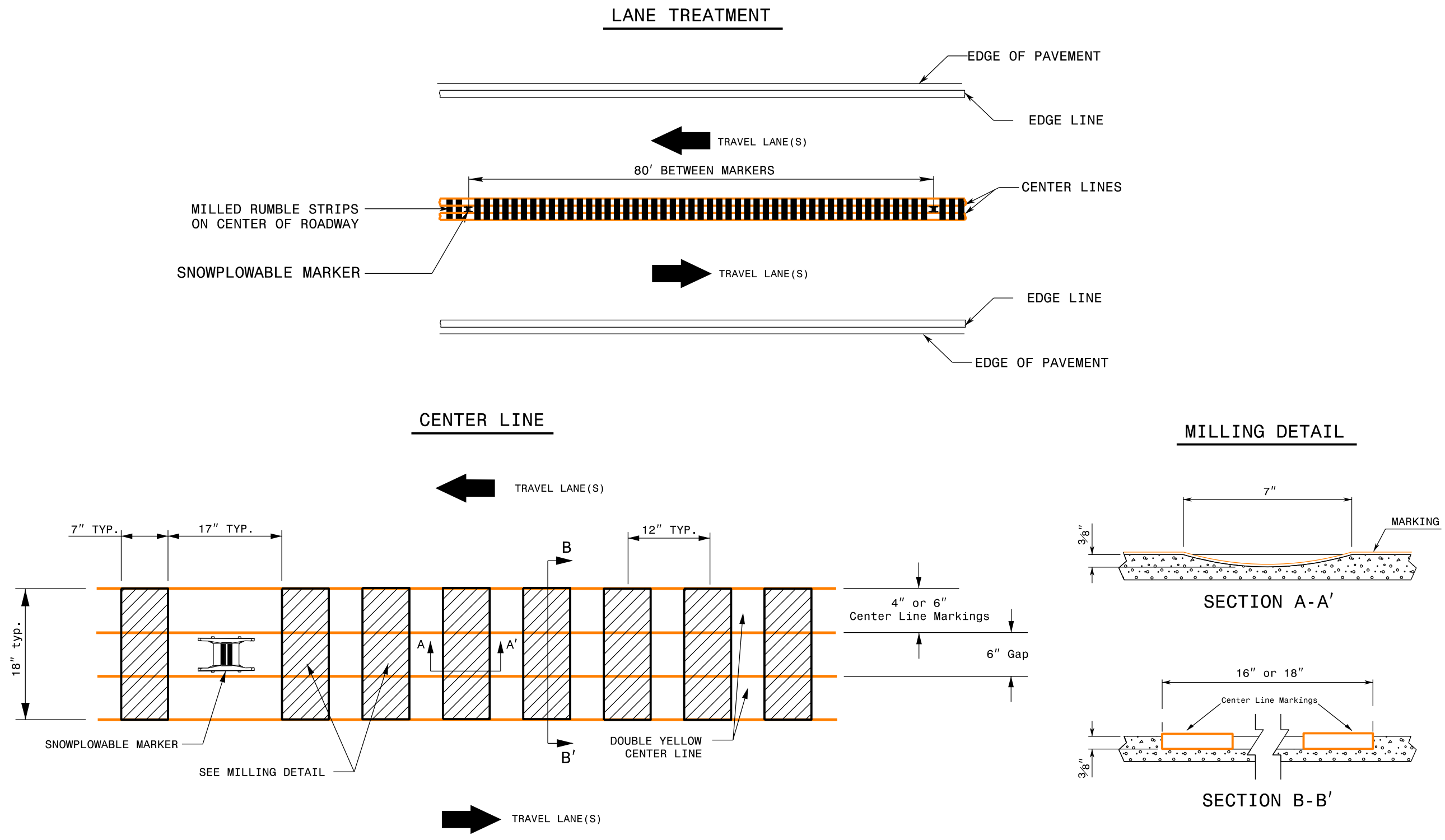


REFERENCE DRAWING ID: Trad.CL

NOTES:

- 1) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.

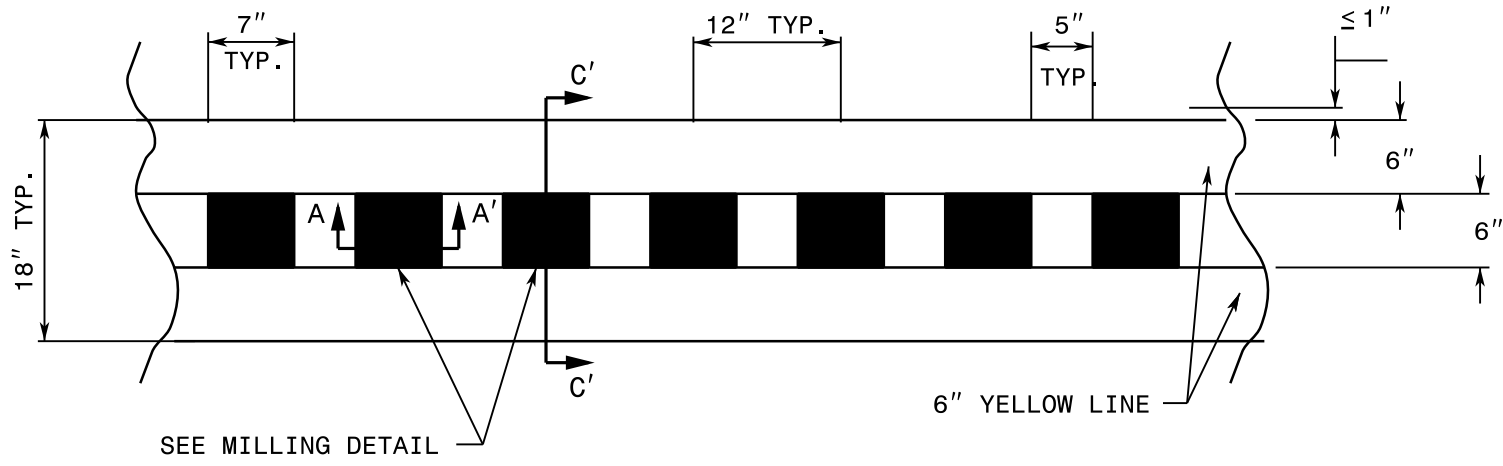
See Table 2 within Rumble Strip Policy for Design Guidance



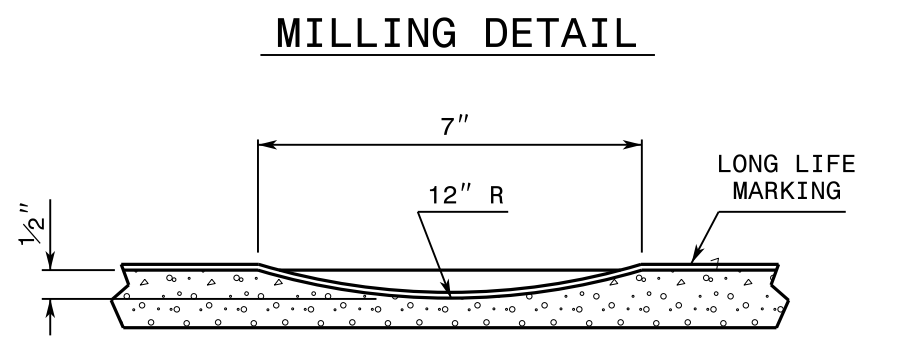
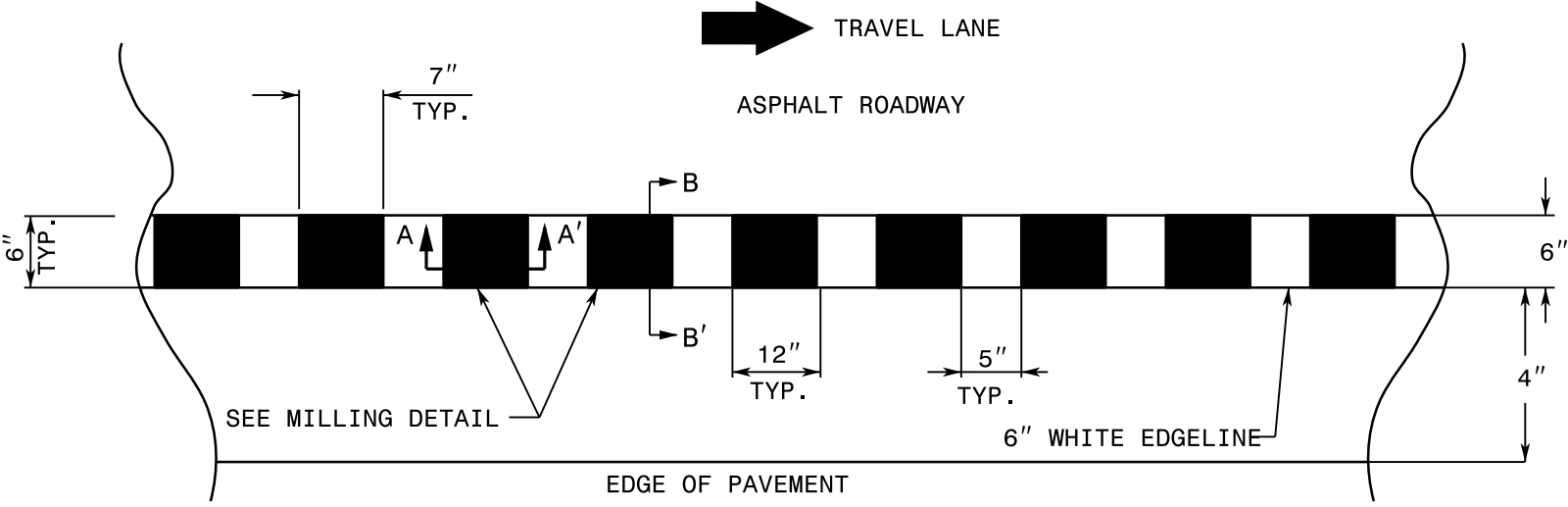
REFERENCE DRAWING ID: Trad.CL with Snowplowable Markers

**NOTES:**

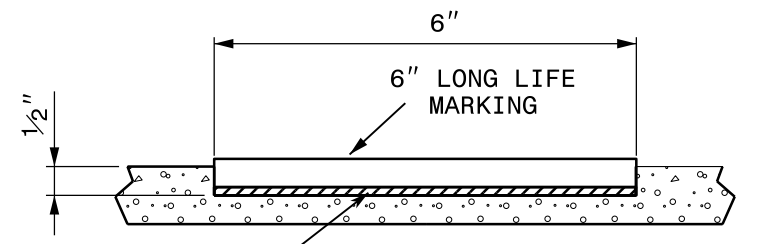
- 1) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.
- 3) INSTALL SNOWPLOWABLE MARKERS AT APPROXIMATELY 80' INCREMENTS. DO NOT MILL RUMBLE STRIPS IN SECTION WHERE SNOWPLOWABLE MARKERS ARE INSTALLED.



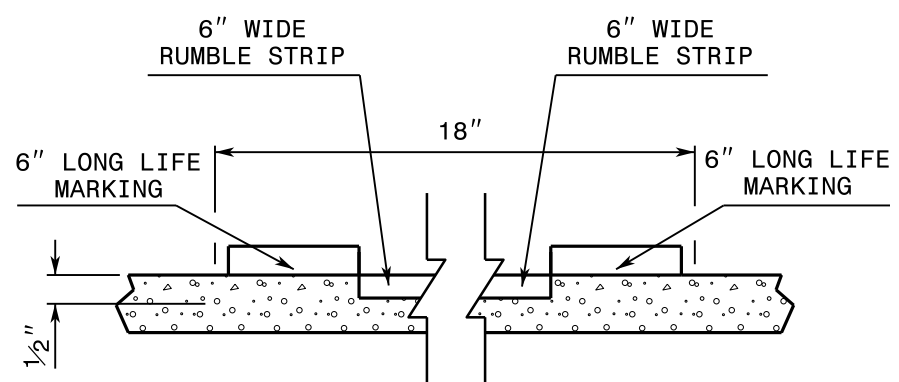
**CENTERLINE**



**SECTION A-A'**



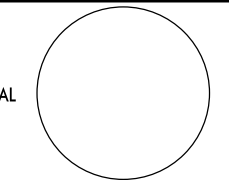
**SECTION B-B'**



**SECTION C-C'**

**NOTE:**

- 1) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.
- 3) IF SNOWPLOWABLE MARKERS ARE TO BE INSTALLED IN THE CENTERLINE, SKIP A 18" SPACE IN THE RUMBLE STRIPS EVERY 80'

APPROVED: _____	DATE: _____	<b>MILLED RUMBLE STRIP DETAIL</b>	
			
		DATE: JUN 17'	
DESIGN BY: TWB			
REVIEWED BY:			