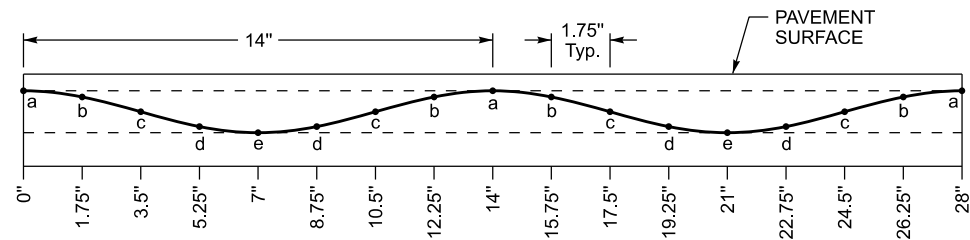
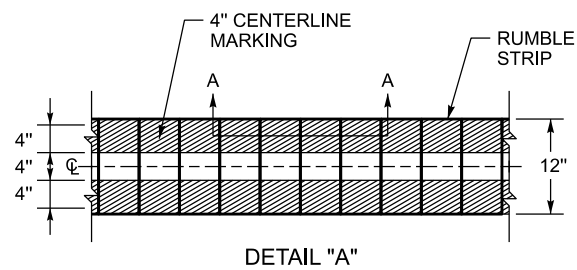
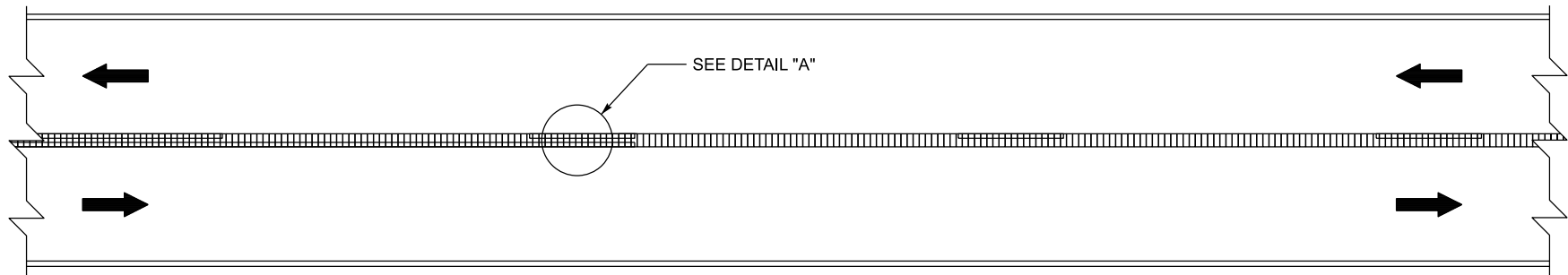


PLAN VIEW



SECTION A-A

LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPR-100

~ NOTES ~

- DISTANCES SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AS MUCH AS POSSIBLE.
- SINUSOIDAL CENTERLINE RUMBLE STRIPS SHALL BE INSTALLED IN LINE WITH THE CENTER OF THE ROADWAY AS MUCH AS POSSIBLE.
- DO NOT INSTALL SINUSOIDAL CENTERLINE RUMBLE STRIPS IN AREAS INDICATED ON TPR-100.
- SINUSOIDAL CENTERLINE RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS, OR WHERE LANE WIDTHS ARE LESS THAN 11 FT.

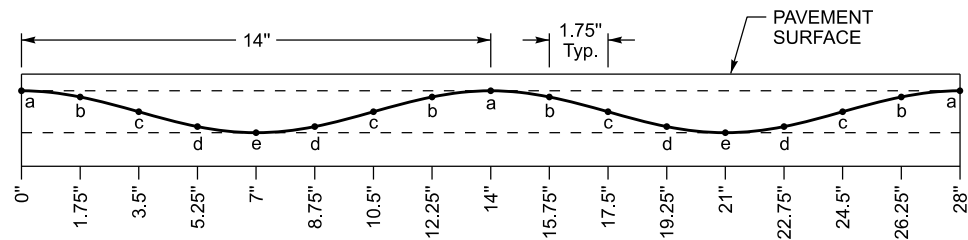
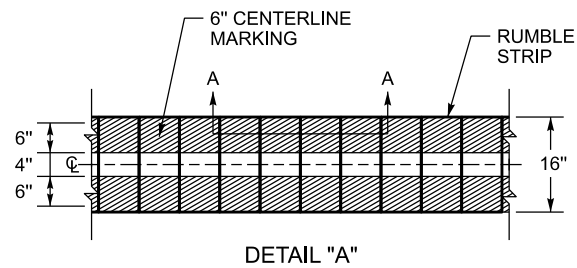
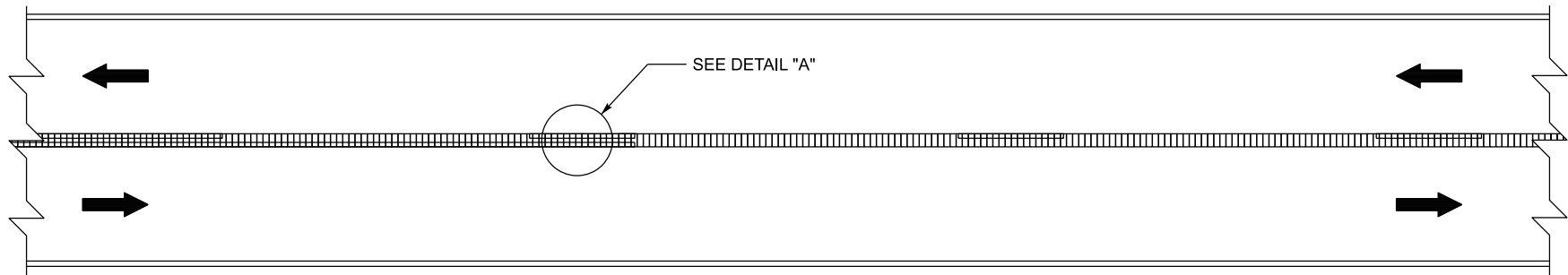
BID ITEM AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

LF

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL
CENTERLINE
RUMBLE STRIPS
4 INCH STRIPING

PLAN VIEW



SECTION A-A

LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPR-100

~ NOTES ~

- DISTANCES SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AS MUCH AS POSSIBLE.
- SINUSOIDAL CENTERLINE RUMBLE STRIPS SHALL BE INSTALLED IN LINE WITH THE CENTER OF THE ROADWAY AS MUCH AS POSSIBLE.
- DO NOT INSTALL SINUSOIDAL CENTERLINE RUMBLE STRIPS IN AREAS INDICATED ON TPR-100.
- SINUSOIDAL CENTERLINE RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS, OR WHERE LANE WIDTHS ARE LESS THAN 11 FT.

BID ITEM AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

LF

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL
CENTERLINE
RUMBLE STRIPS
6 INCH STRIPING



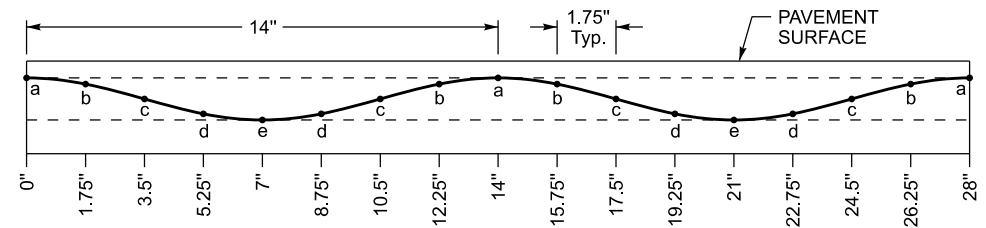
PAVEMENT CROSS-SECTION
WHEN SINUSOIDAL EDGELINE RUMBLE STRIPS (SELRS) ARE SPECIFIED



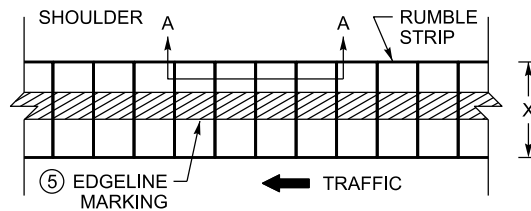
PAVEMENT CROSS-SECTION
WHEN SINUSOIDAL SHOULDER RUMBLE STRIPS (SSRS) ARE SPECIFIED

SHOULDER WIDTH (Z) ②	RUMBLE TYPE ①	RUMBLE LENGTH (X) ③
<=2'	NOT RECOMMENDED	
2' - 5.5'	SELRS ⑥	8"
6' - 7.5'	SELRS ⑥	12"
>=8'	SELRS ⑥	16"

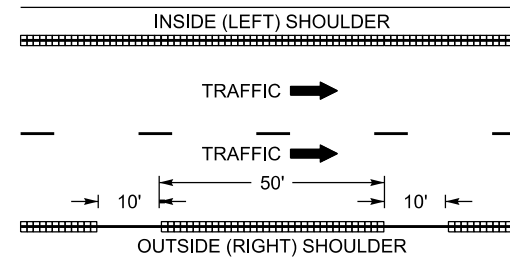
LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"



SECTION A-A



SELRS DETAILS



BICYCLE GAPS ⑥

~ NOTES ~

- ① FOR MULTI-LANE ROADWAYS, THE TYPE OF SINUSOIDAL RUMBLE STRIP TO BE INSTALLED IS BASED ON SHOULDER WIDTH (Z). FOR SHOULDER WIDTHS LESS THAN 2' SINUSOIDAL RUMBLE STRIPS ARE NOT RECOMMENDED. FOR SHOULDER WIDTHS BETWEEN 2' TO 5.5' THE RUMBLE TYPE MAY BE SPECIFIED AS EITHER SINUSOIDAL EDGELINE RUMBLE STRIPS (SELRS) OR SINUSOIDAL SHOULDER RUMBLE STRIPS (SSRS). IN THESE SITUATIONS THE RUMBLE TYPE TO BE INSTALLED WILL BE SPECIFIED IN THE PLANS AND/OR PROPOSAL, OR AS DIRECTED BY THE ENGINEER.
- ② WHEN SELRS ARE SPECIFIED, SHOULDER WIDTH (Z) IS FROM THE LANE SIDE EDGE OF THE EDGELINE RUMBLE STRIP TO THE OUTSIDE EDGE OF TRAVERSABLE PAVEMENT. WHEN SSRS ARE SPECIFIED, SHOULDER WIDTH (Z) IS FROM THE CENTER OF THE EDGELINE STRIPE TO THE OUTSIDE EDGE OF TRAVERSABLE PAVEMENT.
- ③ RUMBLE LENGTH (X) AND/OR OFFSET DISTANCE MAY BE MODIFIED AS THE ENGINEER DIRECTS.
4. DISTANCES SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE.
- ⑤ WHEN SELRS ARE SPECIFIED, THE EDGELINE MARKING SHALL BE PLACED IN THE CENTER OF THE RUMBLE STRIP.
- ⑥ SINUSOIDAL RUMBLE STRIPS ALONG OUTSIDE (RIGHT) SHOULDERS THAT ARE 3' OR WIDER SHOULD INCLUDE BICYCLE GAPS AS DETAILED. BICYCLE GAPS ARE NOT REQUIRED ON INSIDE (LEFT) SHOULDERS. BICYCLE GAPS SHALL NOT BE USED ON INTERSTATES AND PARKWAYS.
7. RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

BID ITEMS AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

LF

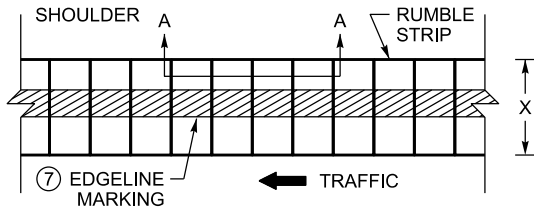
DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPR-115

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL RUMBLE
STRIP DETAILS
MULTI-LANE ROADWAYS
AND RAMPS

PAVEMENT WIDTH (W) ②	TYPES OF RUMBLE STRIPS TO INSTALL ⑦	LANE WIDTH (Y) ③	SHOULDER WIDTH (Z) ④	LENGTH OF EDGELINE RUMBLE (X) ⑥
22'	INSTALL ONLY SINUSOIDAL EDGELINE RUMBLE STRIPS	10'	1'	8"
23'		10'	1.5'	8"
24'		10.5'	1.5'	8"
25'		11'	1.5'	8"
26'	INSTALL BOTH SINUSOIDAL EDGELINE AND SINUSOIDAL CENTERLINE RUMBLE STRIPS	11'	2'	8"
27'		11.5'	2'	8"
28'		12'	2'	8"
29'		12'	2.5'	8"
30'		12'	3'	8"
31'		12'	3.5'	8"
32'		12'	4'	8"
33'		12'	4.5'	8"
>33'	REFER TO SINUSOIDAL SHOULDER RUMBLE STRIP DETAILS			



LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"

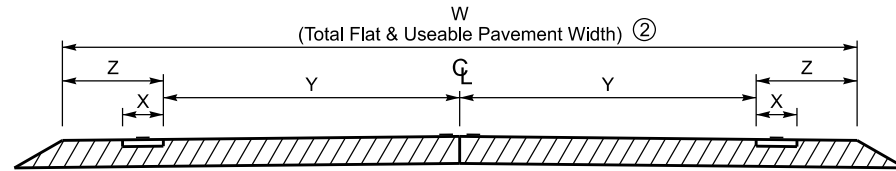
~ NOTES ~

APPLICATION OF THE TABLE ABOVE: THE TOTAL PAVEMENT WIDTH (W) IS THE STARTING POINT IN USING THE TABLE. THE TOTAL PAVEMENT WIDTH (W) IS TO BE USED TO DETERMINE THE TYPE(S) OF RUMBLE STRIPS TO INSTALL AND THE RECOMMENDED LANE WIDTH (Y) AND SHOULDER WIDTH (Z).

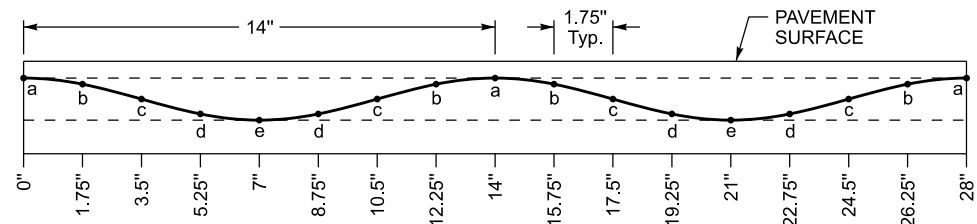
- EDGELINE RUMBLE STRIPS, AND CENTERLINE RUMBLE STRIPS WHEN APPLICABLE, SHOULD BE INSTALLED TO CREATE THE LANE AND SHOULDER WIDTHS SHOWN ABOVE, UNLESS THERE IS A REASON THAT SUPPORTS A CHANGE IN DIMENSION. FOR EXAMPLE, IF THE EXISTING LANE WIDTH IS NARROWER THAN THE LANE WIDTH PROPOSED IN THIS DRAWING AND THE EXISTING SHOULDER PAVEMENT DEPTH IS NOT SUITABLE TO BE CONVERTED INTO A PORTION OF THE PROPOSED LANE WIDTH, THEN THE EXISTING LANE AND SHOULDER WIDTHS SHOULD BE USED INSTEAD OF THE LANE AND SHOULDER WIDTHS PROPOSED IN THIS DRAWING.
- PAVEMENT WIDTH (W) IS THE TOTAL WIDTH OF PAVEMENT THAT IS FLAT AND USEABLE FOR DRIVING. WHEN MEASURING THE PAVEMENT WIDTH (W), DO NOT INCLUDE THE WIDTH OF ANY PAVEMENT THAT IS NOT FLAT AND USEABLE, SUCH AS PAVEMENT WEDGES.
- LANE WIDTH (Y) TO BE MEASURED FROM CENTER OF ROAD TO LANE SIDE EDGE OF THE SINUSOIDAL EDGELINE RUMBLE STRIP.
- PAVED SHOULDER WIDTH (Z) TO BE MEASURED FROM LANE SIDE EDGE OF THE SINUSOIDAL EDGELINE RUMBLE STRIP TO OUTSIDE EDGE OF FLAT & USEABLE PAVEMENT.
- DIMENSIONS SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE. IF THE TYPICAL SECTION SHOWS A LANE WIDTH (Y) AND/OR SHOULDER WIDTH (Z) THAT DIFFERS FROM THE WIDTHS LISTED IN THIS DRAWING, THE ENGINEER SHALL DETERMINE THE LANE WIDTH (Y) AND/OR SHOULDER WIDTH (Z) AT THE TIME OF CONSTRUCTION.
NOTE: CENTERLINE RUMBLE STRIPS SHOULD BE OMITTED IF THE DECISION IS TO INSTALL A LANE WIDTH (Y) THAT IS LESS THAN 11 FT.
- RUMBLE LENGTH (X) MAY BE MODIFIED AS THE ENGINEER DIRECTS, IF THE SHOULDER WIDTH (Z) IS EQUAL TO OR LESS THAN THE PROPOSED RUMBLE LENGTH (X).
- PLACE THE EDGELINE MARKING IN THE CENTER OF THE RUMBLE STRIP. ON NON-STATE PRIMARY ROUTES WITH LESS THAN 1000 ADT, THE ENGINEER MAY ELECT TO OMIT THE EDGELINE MARKING, LEAVING THE SINUSOIDAL RUMBLE STRIP AS THE ONLY COMPONENT INSTALLED.
- ALL SINUSOIDAL EDGELINE RUMBLE STRIPS ALONG SHOULDERS THAT ARE 3' OR WIDER SHOULD INCLUDE BICYCLE GAPS AS DETAILED.
- RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

BID ITEM AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

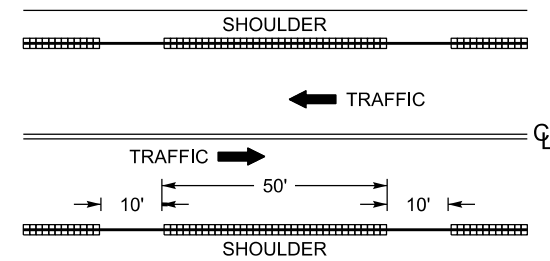
LF



PAVEMENT CROSS-SECTION



SECTION A-A



BICYCLE GAPS ⑧

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS.
TPR-100, TPR-105, TPR-110,
AND TPR-115

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL EDGELINE
RUMBLE STRIP DETAILS
TWO LANE ROADWAYS



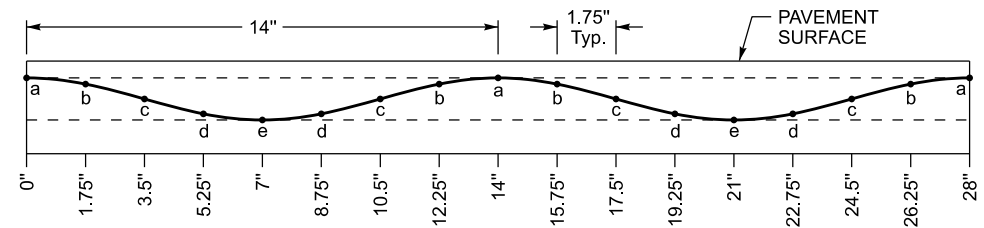
PAVEMENT CROSS-SECTION
WHEN SINUSOIDAL EDGELINE RUMBLE STRIPS (SELRS) ARE SPECIFIED



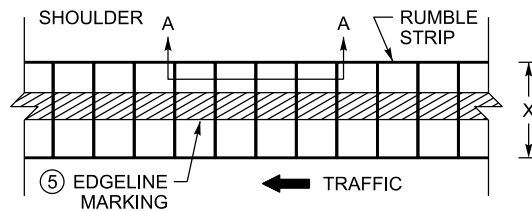
PAVEMENT CROSS-SECTION
WHEN SINUSOIDAL SHOULDER RUMBLE STRIPS (SSRS) ARE SPECIFIED

SHOULDER WIDTH (Z) ②	RUMBLE TYPE ①	RUMBLE LENGTH (X) ③	OFFSET ③
<=2'	NOT RECOMMENDED		
2' - 5.5'	SELRS or SSRS ⑥	8"	6"
6' - 7.5'	SSRS ⑥	12"	6"
>=8'	SSRS ⑥	16"	12"

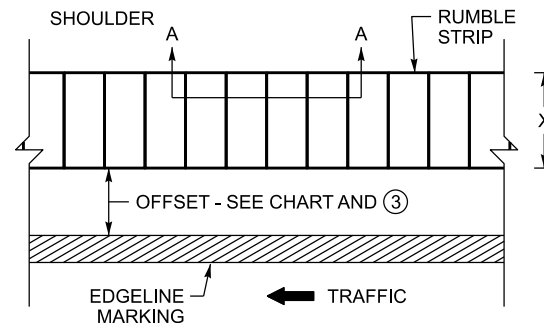
LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"



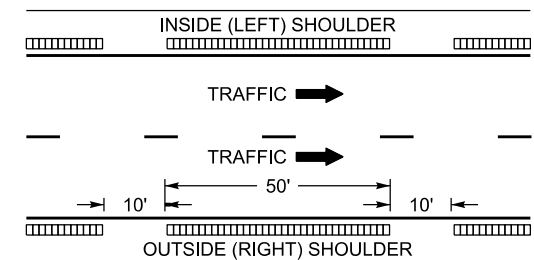
SECTION A-A



SELRS DETAILS



SSRS DETAILS



BICYCLE GAPS ⑥

~ NOTES ~

- FOR MULTI-LANE ROADWAYS, THE TYPE OF SINUSOIDAL RUMBLE STRIP TO BE INSTALLED IS BASED ON SHOULDER WIDTH (Z). FOR SHOULDER WIDTHS LESS THAN 2' SINUSOIDAL RUMBLE STRIPS ARE NOT RECOMMENDED. FOR SHOULDER WIDTHS BETWEEN 2' TO 5.5' THE RUMBLE TYPE MAY BE SPECIFIED AS EITHER SINUSOIDAL EDGELINE RUMBLE STRIPS (SELRS) OR SINUSOIDAL SHOULDER RUMBLE STRIPS (SSRS). IN THESE SITUATIONS THE RUMBLE TYPE TO BE INSTALLED WILL BE SPECIFIED IN THE PLANS AND/OR PROPOSAL, OR AS DIRECTED BY THE ENGINEER.
- WHEN SELRS ARE SPECIFIED, SHOULDER WIDTH (Z) IS FROM THE LANE SIDE EDGE OF THE EDGELINE RUMBLE STRIP TO THE OUTSIDE EDGE OF TRAVERSABLE PAVEMENT. WHEN SSRS ARE SPECIFIED, SHOULDER WIDTH (Z) IS FROM THE CENTER OF THE EDGELINE STRIPE TO THE OUTSIDE EDGE OF TRAVERSABLE PAVEMENT.
- RUMBLE LENGTH (X) AND/OR OFFSET DISTANCE MAY BE MODIFIED AS THE ENGINEER DIRECTS.
- DISTANCES SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE.
- WHEN SELRS ARE SPECIFIED, THE EDGELINE MARKING SHALL BE PLACED IN THE CENTER OF THE RUMBLE STRIP.
- SINUSOIDAL RUMBLE STRIPS ALONG OUTSIDE (RIGHT) SHOULDERS THAT ARE 3' OR WIDER SHOULD INCLUDE BICYCLE GAPS AS DETAILED. BICYCLE GAPS ARE NOT REQUIRED ON INSIDE (LEFT) SHOULDERS. BICYCLE GAPS SHALL NOT BE USED ON INTERSTATES AND PARKWAYS.
- RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

BID ITEMS AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

LF

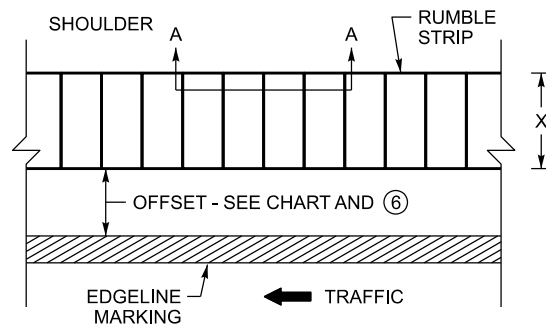
DRAWING NOT TO SCALE

USE WITH CUR. STD. DWG.
TPR-115

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL SHOULDER
RUMBLE STRIP DETAILS
MULTI-LANE ROADWAYS
AND RAMPS

PAVEMENT WIDTH (W) ②	TYPES OF RUMBLE STRIPS TO INSTALL	LANE WIDTH (Y) ③	SHOULDER WIDTH (Z) ④	SHOULDER RUMBLE LENGTH (X) ⑥	SHOULDER RUMBLE OFFSET ⑥
<34'	REFER TO SINUSOIDAL EDGELINE RUMBLE STRIP DETAILS				
34'	INSTALL BOTH SINUSOIDAL SHOULDER AND SINUSOIDAL CENTERLINE RUMBLE STRIPS	12'	5'	8"	6"
35'		12'	5.5'	8"	6"
36'		12'	6'	8"	6"
37'		12'	6.5'	12"	12"
38'		12'	7'	12"	12"
39'		12'	7.5'	12"	12"
>=40'		12'	>=8'	16"	12"



LOCATION	DEPTH
a	1/8"
b	3/16"
c	9/32"
d	13/32"
e	7/16"

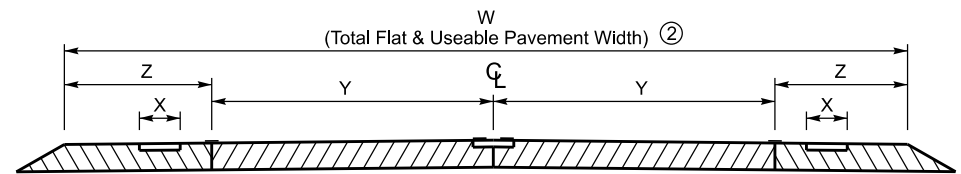
~ NOTES ~

APPLICATION OF THE TABLE ABOVE: THE TOTAL PAVEMENT WIDTH (W) IS THE STARTING POINT IN USING THE TABLE. THE TOTAL PAVEMENT WIDTH IS TO BE USED TO DETERMINE THE TYPE(S) OF RUMBLE STRIPS TO INSTALL AND THE RECOMMENDED LANE WIDTH (Y) AND SHOULDER WIDTH (Z).

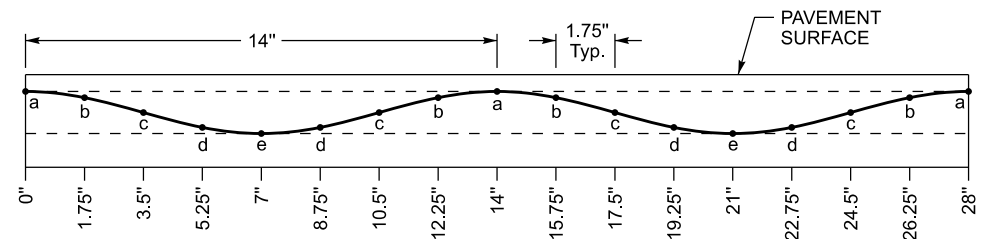
- SINUSOIDAL SHOULDER AND SINUSOIDAL CENTERLINE RUMBLE STRIPS SHOULD BE INSTALLED TO CREATE THE LANE AND SHOULDER WIDTHS SHOWN ABOVE, UNLESS THERE IS A REASON THAT SUPPORTS A CHANGE IN DIMENSION. FOR EXAMPLE, IF THE EXISTING LANE WIDTH IS NARROWER THAN THE LANE WIDTH PROPOSED IN THIS DRAWING AND THE EXISTING SHOULDER PAVEMENT DEPTH IS NOT SUITABLE TO BE CONVERTED INTO A PORTION OF THE PROPOSED LANE WIDTH, THEN THE EXISTING LANE AND SHOULDER WIDTHS SHOULD BE USED INSTEAD OF THE LANE AND SHOULDER WIDTHS PROPOSED IN THIS DRAWING.
- PAVEMENT WIDTH (W) IS THE TOTAL WIDTH OF PAVEMENT THAT IS FLAT AND USEABLE FOR DRIVING. WHEN MEASURING THE PAVEMENT WIDTH (W) DO NOT INCLUDE THE WIDTH OF ANY PAVEMENT THAT IS NOT FLAT AND USEABLE, SUCH AS PAVEMENT WEDGES.
- LANE WIDTH (Y) TO BE MEASURED FROM CENTER OF ROAD TO CENTER OF EDGELINE STRIPE.
- PAVED SHOULDER WIDTH (Z) TO BE MEASURED FROM CENTER OF EDGELINE STRIPE TO OUTSIDE EDGE OF FLAT & USEABLE PAVEMENT.
- DIMENSIONS SHOWN ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE. IF THE TYPICAL SECTION SHOWS A LANE WIDTH (Y) AND/OR SHOULDER WIDTH (Z) THAT DIFFERS FROM THE WIDTHS LISTED IN THIS DRAWING, THE ENGINEER SHALL DETERMINE THE LANE WIDTH (Y) AND/OR SHOULDER WIDTH (Z) AT THE TIME OF CONSTRUCTION.
NOTE: CENTERLINE RUMBLE STRIPS SHOULD BE OMITTED IF THE DECISION IS TO INSTALL A LANE WIDTH (Y) THAT IS LESS THAN 11 FT.
- RUMBLE LENGTH (X) AND/OR OFFSET DISTANCE MAY BE MODIFIED AS THE ENGINEER DIRECTS.
- ALL SINUSOIDAL SHOULDER RUMBLE STRIPS SHOULD INCLUDE BICYCLE GAPS AS DETAILED.
- RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

BID ITEM AND UNIT TO BID
SINUSOIDAL RUMBLE STRIPS

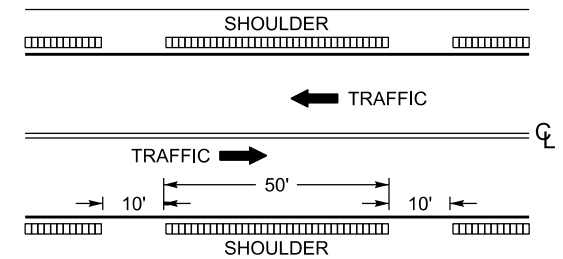
LF



PAVEMENT CROSS-SECTION



SECTION A-A



BICYCLE GAPS ⑦

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS.
TPR-100 , AND TPR-115

KENTUCKY
DEPARTMENT OF HIGHWAYS

SINUSOIDAL SHOULDER
RUMBLE STRIP DETAILS
TWO LANE ROADWAYS