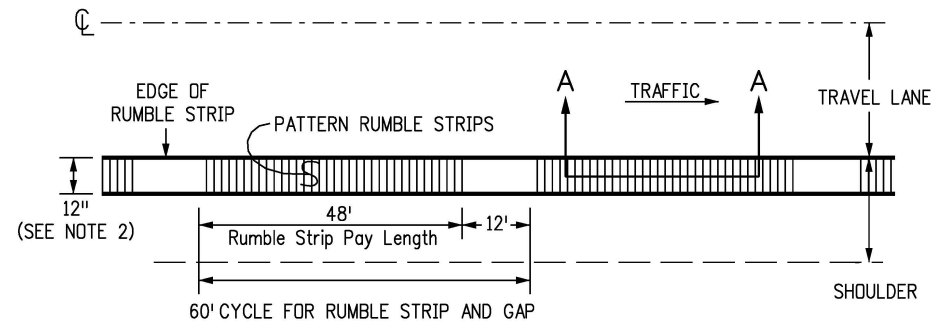
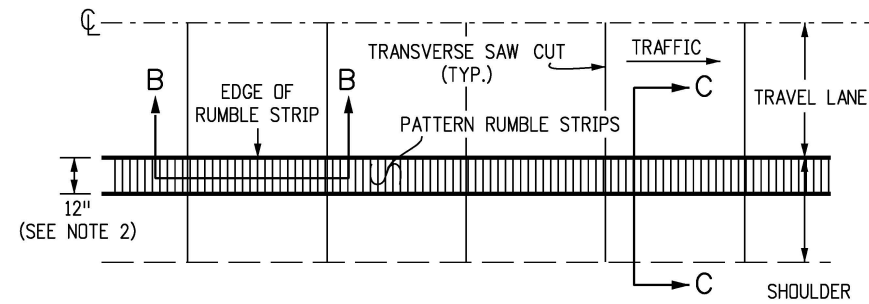


GENERAL NOTES

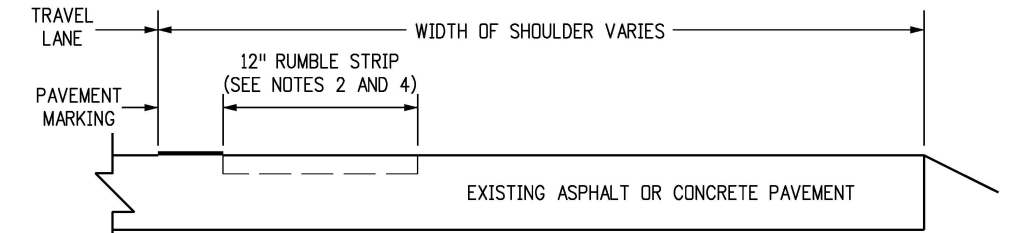
- RUMBLE STRIPS SHALL BE OMITTED AT TURN AND AUXILIARY LANES, ROAD APPROACHES, RESIDENCES, 250 FT. BEFORE ROAD INTERSECTIONS, AND OTHER INTERRUPTIONS AS DIRECTED BY THE ENGINEER.
- RUMBLE STRIPS MAY BE INSTALLED BY GRINDING, ROLLING, OR FORMING ON CONCRETE PAVEMENT, AND BY GRINDING ONLY ON HMA PAVEMENT. RUMBLE STRIP WIDTH SHALL BE 12 IN. FOR GRIND-IN AND 18 IN. FOR FORMED OR ROLLED.
- MINIMIZE THE DISTANCE BETWEEN RUMBLE STRIP AND EDGE LINE ON CONCRETE PAVEMENTS WITH 14 FT. WIDE SLABS.
- BEGIN RUMBLE STRIPS ON THE OUTSIDE EDGE OF THE TRAVEL LANE EDGE LINE.
- DO NOT INSTALL RUMBLE STRIPS ON SHOULDERS LESS THAN 6 FT. WIDE WHEN GUARDRAIL IS PLACED ALONG THE EDGE OF THE SHOULDER.
- APPLY THE 60 FT. GAP PATTERN WHEN RUMBLE STRIPS (GRIND-IN) ARE INSTALLED IN CONCRETE PAVEMENT.



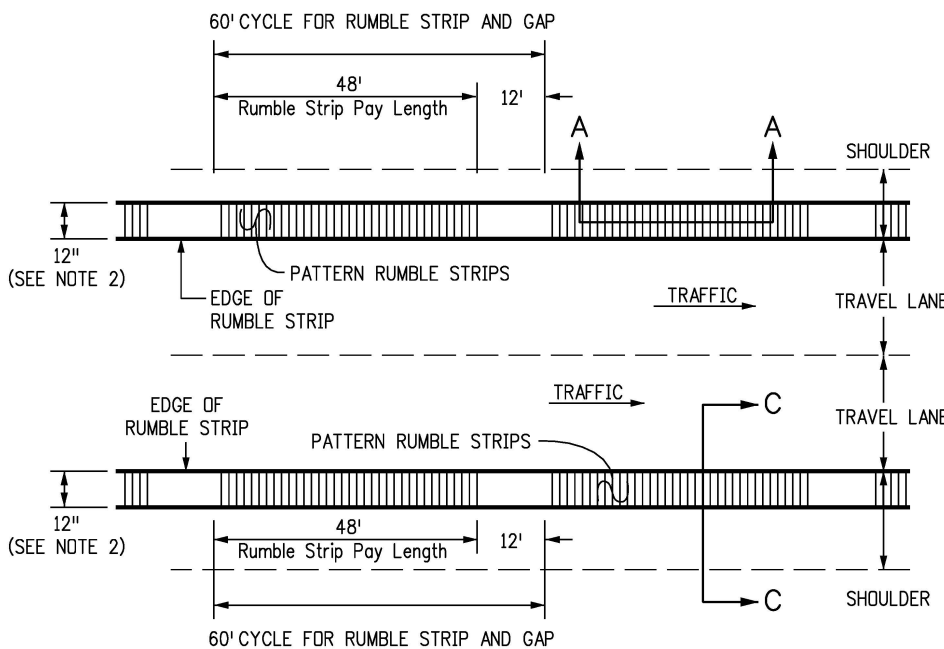
**INTERMITTENT RUMBLE STRIP
TWO-LANE ROADWAY (HMA)**



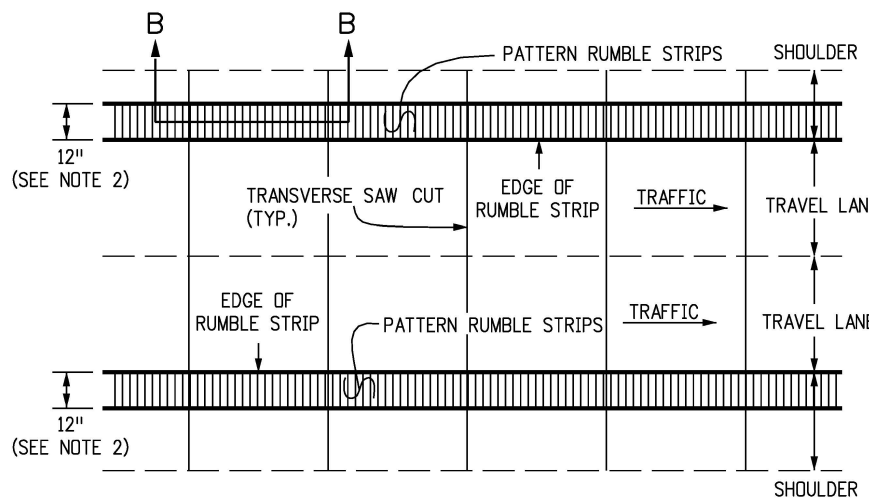
**CONTINUOUS RUMBLE STRIP
TWO-LANE ROADWAY (CONCRETE)**



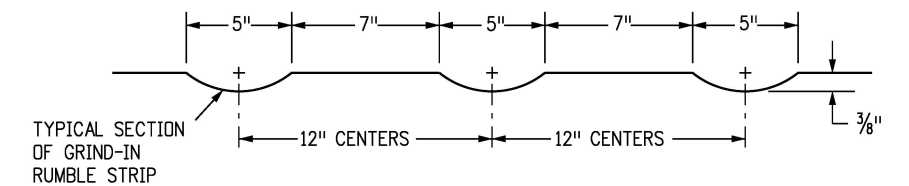
TYPICAL SECTION C-C



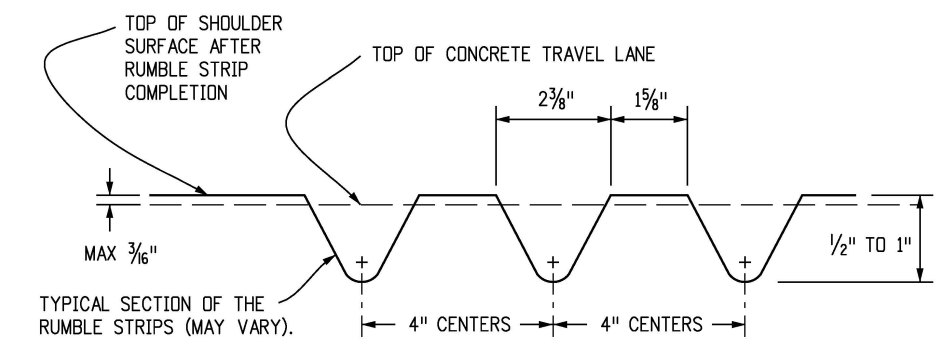
**INTERMITTENT RUMBLE STRIP
FOUR-LANE DIVIDED ROADWAY (HMA)**



**CONTINUOUS RUMBLE STRIP
FOUR-LANE DIVIDED ROADWAY (CONCRETE)**

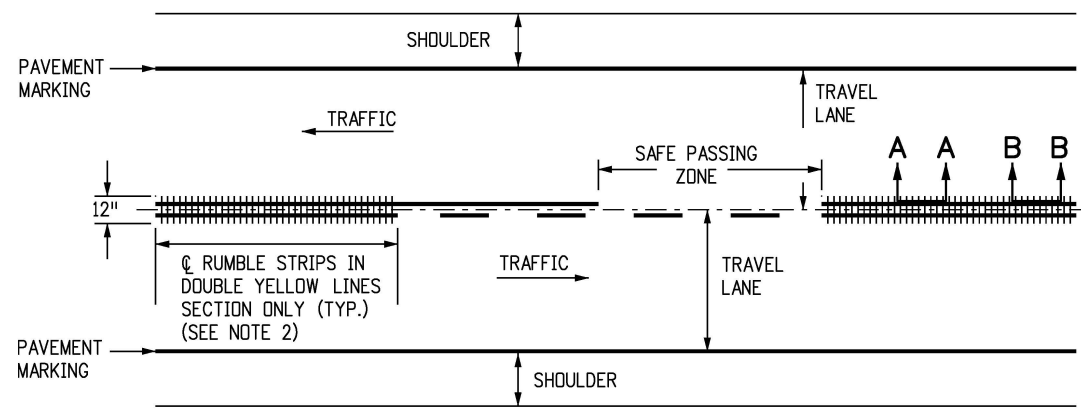


**TYPICAL SECTIONS A-A AND B-B
FOR GRIND-IN RUMBLE STRIP
ON EXISTING HMA OR CONCRETE PAVEMENT**

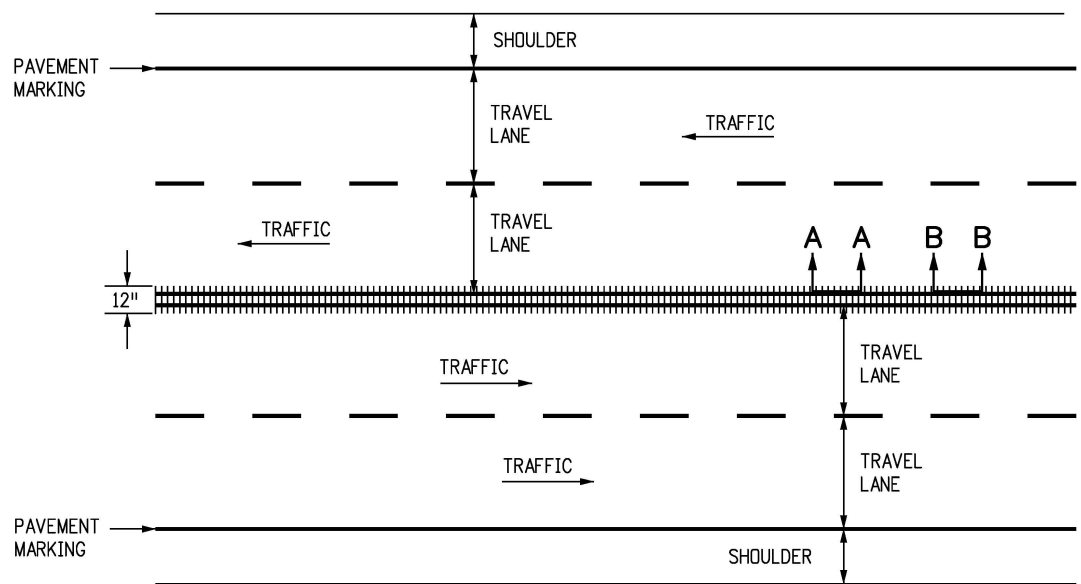


**TYPICAL SECTION B-B
FOR FORMED OR ROLLED ON CONCRETE PAVEMENTS ONLY**

Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDDT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Project Development Branch	<h1>RUMBLE STRIPS</h1>	STANDARD PLAN NO.	
Creation Date: 07/31/19		Date:	Comments			M-614-1	
Designer Initials: JBK		(R-X)				Standard Sheet No. 1 of 3	
Last Modification Date: 07/31/19		(R-X)					
Detailer Initials: LTA		(R-X)					
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)		Project Sheet Number:			
				Project Development Branch	JBK	Issued by the Project Development Branch: July 31, 2019	



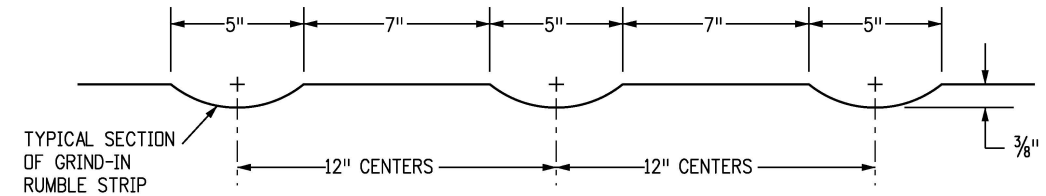
**TWO LANE HIGHWAY (HMA AND CONCRETE)
CONTINUOUS CENTER LINE RUMBLE STRIPS**



**FOUR LANE UNDIVIDED HIGHWAY (HMA AND CONCRETE)
CONTINUOUS CENTER LINE RUMBLE STRIPS**

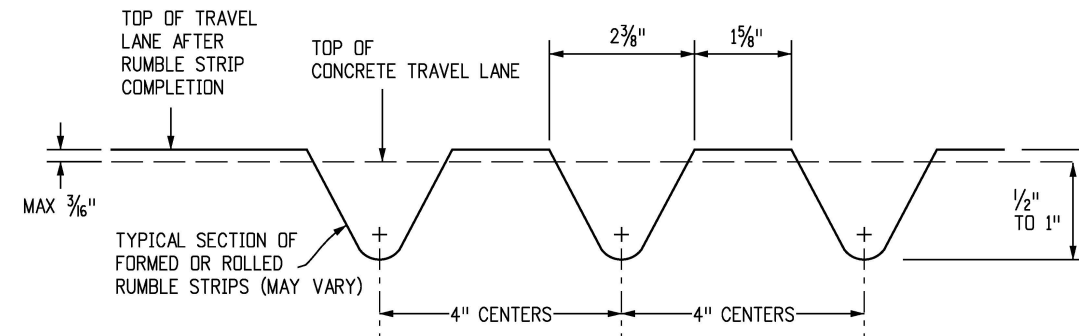
NOTES

1. RUMBLE STRIP WIDTH SHALL BE 12 IN. FOR GRIND-IN, FORMED, OR ROLLED.
2. CENTERLINE RUMBLE STRIPS MAY BE CONTINUOUS THROUGH PASSING ZONES AS DETERMINED BY THE ENGINEER AND SHOWN ON THE PLANS.



TYPICAL SECTIONS A-A AND B-B

FOR GRIND-IN RUMBLE STRIP
ON EXISTING ASPHALT OR CONCRETE PAVEMENT



TYPICAL SECTION B-B

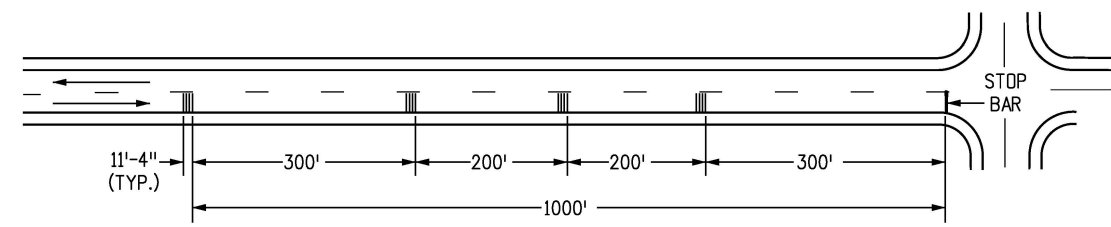
FOR FORMED OR ROLLED ON CONCRETE PAVEMENTS ONLY

DETAILS FOR CENTER LINE RUMBLE STRIPS

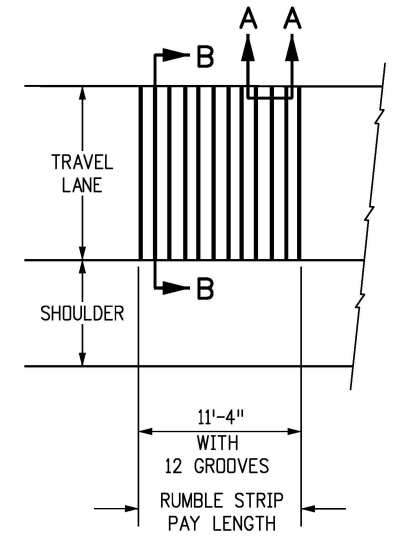
Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDDT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Project Development Branch	<h1 style="text-align: center;">RUMBLE STRIPS</h1>	STANDARD PLAN NO.	
Creation Date: 07/31/19	Designer Initials: JBK	Date:	Comments:			M-614-1	
Last Modification Date: 07/31/19	Detailer Initials: LTA			Project Development Branch	JBK	Issued by the Project Development Branch: July 31, 2019	
CAD Ver.: MicroStation V8	Scale: Not to Scale						

NOTES

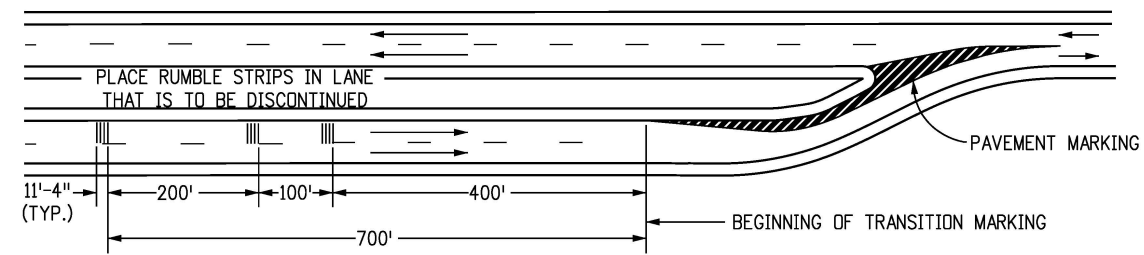
1. GROOVED RUMBLE STRIP SKEW OR CLUSTER SPACING SHALL BE MODIFIED TO AVOID LOCATING A GROOVE ON A CONCRETE PAVEMENT TRANSVERSE JOINT.
2. PERMANENT TRAVEL LANE RUMBLE STRIPS SHALL BE THE GROOVE DESIGN, AND MAY BE CUT IN EXISTING, NEW HMA, OR CONCRETE PAVEMENT. THE GROOVES MAY BE CUT BY SAWING, GRINDING, OR OTHER METHOD AS APPROVED.
3. TEMPORARY RUMBLE STRIPS SHOULD NORMALLY BE THE RAISED DESIGN. THEY MAY BE GROOVES IF LOCATED IN A PAVEMENT THAT WILL BE REMOVED OR COVERED WITH A PAVEMENT COURSE BEFORE COMPLETION OF THE PROJECT. TYPICAL USES OF TEMPORARY RUMBLE STRIPS ARE FOR LANE CLOSURES OR ALIGNMENT CHANGES IN CONSTRUCTION ZONES.
4. THE HMA (RAISED RUMBLE STRIPS) SHALL BE PLACED ON A CLEAN, TACK COATED TREATED PAVEMENT IN $\frac{3}{8}$ IN. HIGH FORMS. THE FORMS SHALL BE REMOVED AND THE ASPHALT COMPACTED BY ROLLING ALONG THE STRIPS. EPOXY MORTAR SHALL BE FORMED, TROWELED, AND LEVELED WITH A ROLLER AND THE TOP EDGES ROUNDED, THERMOPLASTIC STRIPS SHALL BE APPLIED BY THE EXTRUSION PROCESS. PREFORMED PLASTIC SHALL BE INSTALLED IN CONFORMANCE WITH THE INSTRUCTIONS OF THE MANUFACTURER.



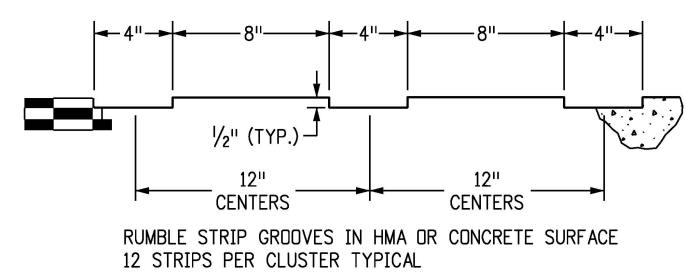
STOP SIGN APPROACH



TYPICAL RUMBLE STRIP CLUSTER

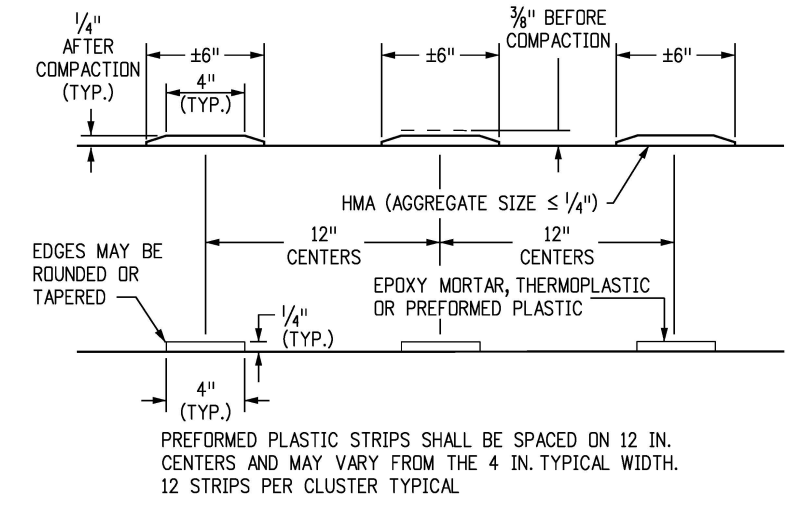


LANE REDUCTION TRANSITION



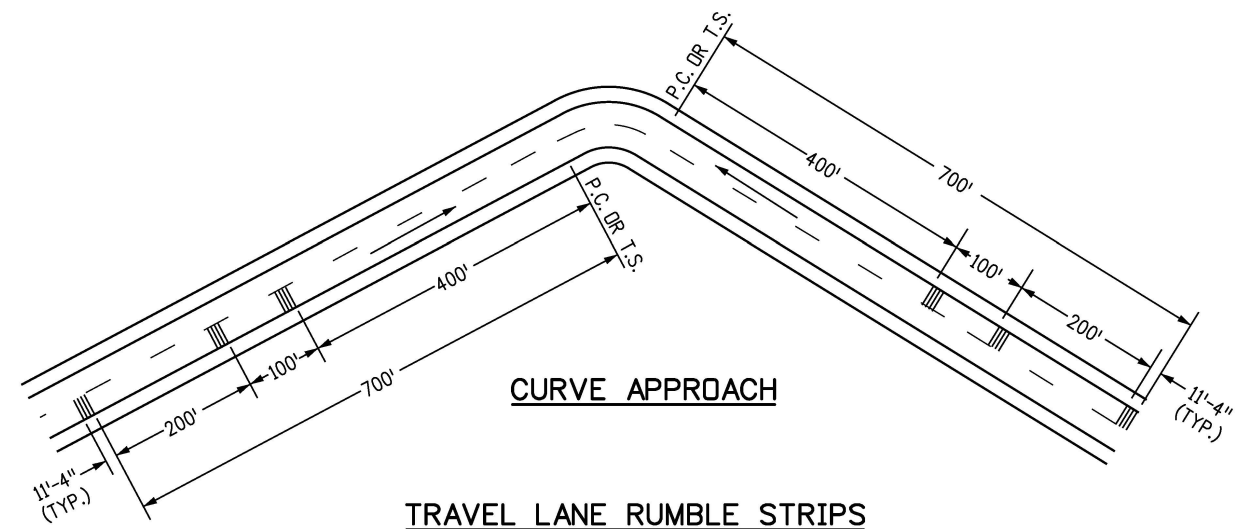
RUMBLE STRIP GROOVES IN HMA OR CONCRETE SURFACE
12 STRIPS PER CLUSTER TYPICAL

SECTION A-A (GROOVED)



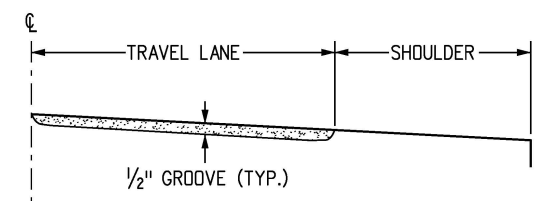
PREFORMED PLASTIC STRIPS SHALL BE SPACED ON 12 IN. CENTERS AND MAY VARY FROM THE 4 IN. TYPICAL WIDTH. 12 STRIPS PER CLUSTER TYPICAL

SECTION A-A (RAISED)



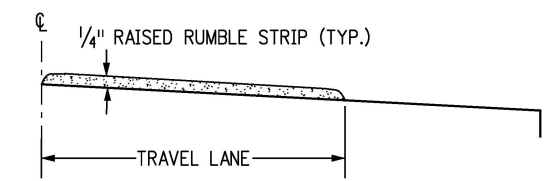
TRAVEL LANE RUMBLE STRIPS

CURVE APPROACH



SECTION B-B (GROOVED)

PERMANENT GROOVED RUMBLE STRIPS



SECTION B-B (RAISED)

TEMPORARY RAISED RUMBLE STRIPS

Computer File Information	
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Designer Initials: JBK	(R-X)
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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
 2829 West Howard Place
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 Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch **JBK**

RUMBLE STRIPS

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-614-1
Standard Sheet No. 3 of 3
Project Sheet Number: