

GUARDRAIL REPLACEMENT GUIDELINES

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
POST AND RAIL DEFLECTION	ONE OR MORE OF THE FOLLOWING THRESHOLDS: <ul style="list-style-type: none"> MORE THAN 9 IN. OF LATERAL DEFLECTION ANYWHERE OVER A 25 FT LENGTH OF RAIL TOP OF RAIL HEIGHT 2 OR MORE IN. LOWER THAN ORIGINAL TOP OF RAIL HEIGHT 	HIGH	
	6 - 9 IN. LATERAL DEFLECTION ANYWHERE OVER A 25-FT LENGTH OF RAIL	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION OVER A 25-FT LENGTH OR RAIL	LOW	
(WEAK POST W-BEAM SHOWN ONLY FOR CLARITY. EACH MEASUREMENT TAKEN AT THE RAIL'S MIDDLE FOLD)			
RAIL DEFLECTION ONLY	6 - 9 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS. NOTE: FOR DEFLECTION OVER 9 IN., USE POST/RAIL DEFLECTION GUIDELINES	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS	LOW	
RAIL FLATTENING	ONE OR MORE OF THE FOLLOWING THRESHOLDS: <ul style="list-style-type: none"> RAIL CROSS SECTION HEIGHT MORE THAN 17 IN. (SUCH AS MAY OCCUR IF RAIL IS FLATTENED) RAIL CROSS SECTION HEIGHT LESS THAN 9 IN. (SUCH AS A DENT TO TOP EDGE) WHEN GUARDRAIL IS TO BE REMOVED AND RESET, PANELS WITH A RAIL CROSS SECTION HEIGHT OF 15 INCHES OR GREATER SHALL BE REPLACED 	MEDIUM	
	RAIL CROSS SECTION HEIGHT BETWEEN 9 AND 17 IN.	LOW	
POSTS SEPARATED FROM RAIL	<ul style="list-style-type: none"> 2 OR MORE POSTS WITH BLOCKOUT ATTACHED WITH POST/RAIL SEPARATION LESS THAN 3 IN. 1 OR MORE POSTS WITH POST/RAIL SEPARATION WHICH EXCEEDS 3 IN. 	MEDIUM	
	<ul style="list-style-type: none"> 1 POST, WITH BLOCKOUT ATTACHED, WITH POST/RAIL SEPARATION LESS THAN 3 IN. 	LOW	
	<p>NOTE: 1. IF THE BLOCKOUT IS NOT FIRMLY ATTACHED TO THE POST, USE THE MISSING BLOCKOUT GUIDELINES. 2. DAMAGE SHOULD ALSO BE EVALUATED AGAINST POST/RAIL DEFLECTION GUIDELINES.</p>		

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
MISSING/BROKEN POSTS	1 OR MORE POSTS <ul style="list-style-type: none"> MISSING CRACKED ACROSS THE GRAIN BROKEN ROTTED WITH METAL TEARS 	HIGH	
MISSING BLOCKOUT	ANY BLOCKOUTS <ul style="list-style-type: none"> MISSING CRACKED ACROSS THE GRAIN CRACKED FROM TOP OR BOTTOM OF BLOCKOUT THROUGH POST BOLT HOLE ROTTED 	MEDIUM	
TWISTED BLOCKOUTS	ANY MISALIGNED BLOCKOUTS, TOP EDGE OF BLOCK 6 IN. OR MORE FROM BOTTOM EDGE NOTE: REPAIRS OF TWISTED BLOCKOUT ARE RELATIVELY QUICK AND INEXPENSIVE	LOW	
DAMAGE AT A RAIL SPLICE	MORE THAN 1 SPLICE BOLT: <ul style="list-style-type: none"> MISSING DAMAGED VISIBLY MISSING ANY UNDERLYING RAIL TORN THROUGH RAIL 	HIGH	
	1 SPLICE BOLT: <ul style="list-style-type: none"> MISSING DAMAGED VISIBLY MISSING ANY UNDERLYING RAIL TORN THROUGH RAIL 	MEDIUM	
NON-MANUFACTURED HOLE (SUCH AS CRASH-INDUCED HOLES, LUG-NUT DAMAGE, OR HOLES RUSTED-THROUGH THE RAIL)	<ul style="list-style-type: none"> MORE THAN 2 HOLES LESS THAN 1IN. HEIGHT IN A 12.5-FT LENGTH OF RAIL ANY HOLES GREATER THAN 1IN. IN HEIGHT ANY HOLE WHICH INTERSECTS EITHER THE TOP OR BOTTOM EDGE OF THE RAIL 	HIGH	
	1- 2 HOLES LESS THAN 1IN. IN HEIGHT IN A 12.5-FT LENGTH OF RAIL	MEDIUM	

NOTES:

- THESE ARE GUIDELINES FOR THE EVALUATION OF EXISTING GUARDRAIL. THESE ARE GUIDELINES ONLY AND THE CONTRACTOR SHALL REPLACE GUARDRAIL AS DIRECTED BY THE ENGINEER.
- GUIDELINES ARE FROM THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.

PROJECT NAME:	HARTLAND
PROJECT NUMBER:	STP FPAV(8)
FILE NAME:	z16vl47frm.dgn
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GUARDRAIL REPLACEMENT DETAIL SHEET 1	
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SHEET	13 OF 33