

SECTION 3 - HIGHWAY–RAIL GRADE CROSSING WARNING SYSTEMS

<u>Part</u>	<u>C</u>	<u>Type & Subject</u>	<u>Pages</u>	<u>Status</u>
<u>3.1 General Recommendations</u>				
3.1.1	36-1	Recommended Guidelines for Grade Crossing Warning Devices	5	Revised 2019
3.1.5	36-1	Recommended References for the Application and Selection of Grade Crossing Warning Devices	1	Revised 2019
3.1.10	36-1	Recommended Functional/Operating Guidelines for Interconnection Between Highway Traffic Signals or Other Traffic Control Devices and Grade Crossing Warning Systems	10	Revised 2019
3.1.11	36-1	Recommended Functional/Operating Guidelines for Adjacent Track Interconnected Grade Crossing Warning Systems	5	Revised 2019
3.1.15	36-1	Recommended Functional/Operating Guidelines for Control of Automatic Grade Crossing Warning Systems	5	Revised 2017
3.1.16	36-1	Recommended Functional/Operating Guidelines for Wayside Based Train Detection Systems Not Based on Track Circuits Used to Activate Grade Crossing Warning Systems	7	Reaffirmed 2017
3.1.17	36-1	Recommended Guidelines for Improving Track Circuit Shunting and Alternative Grade Crossing Warning System Activation	2	Revised 2017

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3.1.20	36-1	Recommended Functional/Operating Guidelines for Motion Sensitive Systems, which include Motion Sensitive and Constant Warning Time Devices	6	Reaffirmed 2017
3.1.25	36-1	Recommended Functional/Operating Guidelines for Solid-State Grade Crossing Warning Device Controllers	5	Reaffirmed 2017
3.1.28	36-1	Recommended Standby Battery Requirements for Grade Crossing Warning Systems	1	Revised 2019
3.1.29	36-1	Recommended Design Criteria and Functional/Operating Guidelines for Monitoring Devices for Grade Crossing Warning Systems	5	Revised 2015
3.1.30	36-2	Recommended Insulated Joint Location for Grade Crossing Island Circuit	1	Reaffirmed 2017
3.1.31	36-2	Recommended Graphical Symbols for Highway-Rail Grade Crossings, Signals and Control Systems	2	Reaffirmed 2015
3.1.35	36-2	Recommended Typical Roadway Clearance Plan for Grade Crossing Warning Device With or Without Gates	2	Revised 2017
3.1.36	36-2	Recommended Functional Guidelines for Configuration Plans for Grade Crossing Warning Devices	3	Revised 2016

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3.1.36A	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks With Two Quadrant Gates or Four Quadrant Gates at Right Angle Crossing, Two-Way Vehicular Traffic, One Lane Each Way	4	Reaffirmed 2017
3.1.36B	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks With Two Quadrant Gates or Four Quadrant Gates at Acute Angle Crossing, Two-Way Vehicular Traffic, One Lane Each Way	3	Reaffirmed 2017
3.1.36C	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks With Two Quadrant Gates or Four Quadrant Gates at Obtuse Angle Crossing, Two-Way Vehicular Traffic, One Lane Each Way	3	Reaffirmed 2017
3.1.36D	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, One-Way Vehicular Traffic, Two Lanes	2	Reaffirmed 2017
3.1.36E	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, With One-Way Vehicular Traffic, Three Lanes	3	Reaffirmed 2017

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3.1.36F	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, One-Way Vehicular Traffic, Four Lanes	2	Reaffirmed 2017
3.1.36G	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, Divided Highway, Signals in Median, Two Lanes Each Way	2	Reaffirmed 2017
3.1.36H	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, Divided Highway, Signals in Median, Three Lanes Each Way	2	Reaffirmed 2017
3.1.36I	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, Divided Highway, Signals in Median, Multiple Lanes Each Way	5	Reaffirmed 2017
3.1.36J	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Right Angle Crossing, Divided Highway, Insufficient Median for Signals, Two Lanes Each Way	3	Reaffirmed 2017

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3.1.36K	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Acute Angle Crossing, Divided Highway, Signal(s) in Median, Two or Three Lanes Each Way	3	Reaffirmed 2017
3.1.36L	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks, Obtuse Angle Crossing, Divided Highway, Signals in Median, Two or Three Lanes Each Way	3	Reaffirmed 2017
3.1.37	36-2	Recommended Configuration Plan for Grade Crossing Warning Devices With or Without Gates, One or More Tracks With Two Quadrant Gates or Four Quadrant Gates at a Crossing With a Center Turn Lane	6	Reaffirmed 2017
<u>3.2 Recommended Devices</u>				
3.2.2	36-3	Recommended Design Criteria for a Grade Crossing Warning Device, Flashing Light Signal Assembly, Cantilever Span Assembly and Gate Assembly	1	Revised 2019
3.2.5	36-3	Recommended Design Criteria and Functional/Operating Guidelines for Overhead Bridge and Cantilever Structures and Placement of Grade Crossing Warning Devices	8	Revised 2017

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3.2.10	36-3	Recommended Design Criteria and Functional/Operating Guidelines for Combination Cantilever/Gate Mechanism	4	Revised 2015
3.2.15	36-3	Recommended Design Criteria for Gate Arm Operating Mechanism for Highway-Rail Grade Crossing Warning Device	8	Revised 2013
3.2.20	36-3	Recommended Design Criteria for Highway-Rail Grade Crossing Tubular Telescopic Gate Arm	2	Reaffirmed 2015
3.2.21	36-3	Recommended Design Criteria for Breakaway Gate Arm Adapter, Mounting Pin and Conversion Bracket	4	Reaffirmed 2015
3.2.22	36-3	Recommended Design Criteria for High Wind Gate Arm Support Bracket	4	Revised 2019
3.2.23	36-3	Recommended Functional/Operating Guidelines for Self-Restoring Highway-Rail Grade Crossing Gate Arm Device	1	Reaffirmed 2013
3.2.24	36-3	Recommended Design Criteria for Tubular Telescopic Gate Arm	2	Reaffirmed 2015
3.2.25	36-3	Recommended Design Criteria for Highway-Rail Grade Crossing Gate, Wood Arm for Mast Mounted Gate Mechanism	2	Reaffirmed 2013
3.2.35	36-3	Recommended Design Criteria for Electric Light Unit for Grade Crossing Signals Including Light Emitting Units and Incandescent Lamps	5	Revised 2019

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3.2.40	36-3	Recommended Design Criteria for Electric Light Unit on Highway-Rail Grade Crossing Gate Arm	4	Revised 2015
3.2.50	36-3	Recommended Design Criteria for Crossarm for Suspended Lights for Flashing-Light Highway-Rail Grade Crossing Signal Without Gate, Assemblies	2	Reaffirmed 2015
3.2.51	36-3	Recommended Design Criteria for Crossarm for Suspended Lights for Flashing-Light Highway-Rail Grade Crossing Signal With Mast Mounted Gate, Assemblies	2	Reaffirmed 2015
3.2.55	36-3	Recommended Design Criteria for Solid State Flasher	1	Reaffirmed 2016
3.2.60	36-3	Recommended Design Criteria for an Electro-Mechanical Highway-Rail Grade Crossing Pedestrian Bell	5	Revised 2015
3.2.61	36-3	Recommended Design Criteria for an Electronic Highway-Rail Grade Crossing Pedestrian Bell	4	Revised 2015
3.2.65	36-3	Recommended Design Criteria for Highway-Rail Grade Crossing Signs	3	Reaffirmed 2015
3.2.70	36-3	Recommended Design Criteria for 90 Deg. Highway-Rail Grade Crossing Sign, Extruded Aluminum Retroreflective Sheet Type for All Pipe Sizes	3	Reaffirmed 2015

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3.2.71	36-3	Recommended Design Criteria for a 90 Deg. Highway-Rail Grade Crossing Sign to Meet Canadian Federal Government Requirements	1	Reaffirmed 2013
3.2.75	36-3	Recommended Design Criteria for Number of Tracks Sign, Aluminum, Retroreflective Sheet Type, Detail & Assembly	2	Reaffirmed 2015
3.2.76	36-3	Recommended Design Criteria for Number of Tracks Sign for Use in Canada, Aluminum Sheet, Retroreflective Sheet Type, Detail & Assembly	2	Reaffirmed 2015
3.2.80	36-3	Recommended Design Criteria for Single Adapter Clamp for Signs, Details	1	Reaffirmed 2015
3.2.85	36-3	Recommended Design Criteria for Extension Brackets for Highway-Rail Grade Crossing Signs	2	Reaffirmed 2015
3.2.96A	36-3	Recommended Design Criteria for Bolts for Highway-Rail Grade Crossing Signs for 4-in., 5-in. and 6-in. Pipe	2	Revised 2010
3.2.96B	36-3	Recommended Design Criteria for Bolts for Highway-Rail Grade Crossing Signs for 8-in., 10-in. and 12-in. Pipe	2	Revised 2010
3.2.96C	36-3	Recommended Design Criteria for Bolts for Junction Box and Crossarm for 4-in., 5-in., 6-in., 8-in., 10-in. and 12-in. Pipe	1	Revised 2010

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<u>3.3 Recommended Instructions</u>				
3.3.1	36-2	Recommended Instructions for the Maintenance and Test of Automatic Grade Crossing Warning Systems	3	Reaffirmed 2015
3.3.5	36-2	Recommended Instructions for Aligning Grade Crossing Light Units	8	Revised 2016
3.3.10	36-1	Recommended Instructions for Determining Warning Time and Calculating Minimum Approach Distance for Grade Crossing Warning Systems	5	Revised 2019
3.3.15	36-1	Recommended Instructions for the Application Design, Installation, Maintenance and Test of Motion Sensitive Systems	5	Revised 2018
3.3.30	36-2	Recommended Instructions for Inspection and Test of Grade Crossing Warning System Installation Before Placing in Service	3	Revised 2016