

State of Wisconsin/Department of Transportation

AGREEMENT FOR HIGHWAY-RAILROAD
GRADE CROSSING WARNING DEVICES

Project I.D. 4100-10-50
Calumet Avenue, City of Manitowoc
(FVW Crossing Signals)

USH 151
Manitowoc County
DOT No. 181 165V M.P. CG 76.32

This Agreement, by and between the State of Wisconsin, Department of Transportation, Division of Transportation Infrastructure Development, hereinafter referred to as the "State" and the Fox Valley & Western Ltd., hereinafter referred to as the "Company", provides for the performance of work described herein by the Company on the above named projects.

WITNESSETH

WHEREAS, the Wisconsin Commissioner of Railroads has made a determination and finding under Section 195.28, Wisconsin Statutes, that automatic warning devices are to be upgraded at the above described locations pursuant to his Order, dated April 17, 2002 in docket #9068-RX-114; and

WHEREAS, the State desires to finance the upgrading of the highway-railroad grade crossing warning devices with a combination of federal aid and local funds as provided under Section 84.03, Wisconsin Statutes; and deems it more feasible and advantageous for highway purposes to have such work performed by the Company directly and without bids pursuant to Section 84.06(4), Wisconsin Statutes.

NOW, THEREFORE, in consideration of the premises and of their mutual and dependent agreements hereinafter set forth, the parties hereto hereby agree as follows:

STANDARD PROVISIONS. The work described below shall be performed by the Company in accordance with the provisions contained herein and the "Standard Provisions", dated April 10, 2001, Exhibit "A", attached hereto and made a part of this Agreement, except for Items numbered 8 and 9.

WORK TO BE PERFORMED BY THE COMPANY. (a) Install cantilevered automatic flashing-light signal with 12-inch LED lamp units, electronic bell, type C circuitry and bungalow at the Calumet Avenue (USH 151) crossing of the Company's Lake Shore Sub in Manitowoc County, in the City of Manitowoc, Manitowoc County.

Such work is further described in the agreement summary, Exhibit "B", detailed estimates, Exhibit "C", the Materials Lists, Exhibit "D", the signal location diagram, Exhibit "E", and further shown in Exhibits "F" through "H", which are attached hereto and made a part hereof. The Agreement cost of such work based on the estimate is Seventy Nine Thousand Two Hundred Forty Dollars (\$79,240).

DESIGN. The installations of the railroad crossing warning devices shall be in responsible conformance with the State's "Guideline for the Lateral Placement of Railroad Signs and Signals" as

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provided in its Facilities Development Manual and Part VIII – Traffic Control Systems for Railroad-Highway Grade Crossings of the Manual on Uniform Traffic Control Devices for Streets and Highways published by the U.S. Department of Transportation, Federal Highway administration, to the extent practical and feasible.

Auxiliary signs shall be reflectorized.

CONSTRUCTION. The Company by a bid contract will make these signal installations together with the necessary connections to tracks, line circuits and power supply, in accordance with the plans and specifications therefore and the standard and accepted practices for such work. The operative parts of warning devices upon their having been installed shall be covered until placed in service.

All work under this agreement, as set forth herein and in the exhibits and attachments hereto and made a part hereof, shall be performed under normal Company practices and the applicable requirements of the United States Department of Transportation, as set forth in 23 CFR Part 646 Subpart B.

OPERATION AND MAINTENANCE. (a) Upon completion of the installations and their acceptance by the State, the Company will operate and maintain these installations under the rules and regulations of the Office of the Commissioner of Railroads.

If subsequent to any these installations the highway-railroad grades are separated, the grade crossing closed, or if for any other reason the operation of the warning devices is no longer necessary at the crossing, the State and the Company shall negotiate an agreement for the disposition of the warning devices.

The warning devices and appurtenances will become the property of the State upon completion of the project and formal acceptance by the State.

APPORTIONMENT OF COSTS. The State agrees to reimburse the Company for 100 percent of the costs eligible under this Agreement.

The execution of this Agreement by the State Shall not relieve the Company from compliance with the applicable Federal and State laws, Wisconsin Administrative Codes, and local laws or ordinances which may affect the performance of the work covered herein, and shall not be construed to supersede any other governmental agency requirements for plan approval or authority to undertake the work.

INVOICE AND BILLS. (a) The Company will submit all invoices and bills for reimbursement, to the Transportation District Office, 944 Vanderperren Way, Green Bay, WI 54304-0080. The State Project I.D. number will be included on all invoices and bills. The Final Bill is to be submitted within one year of the State's acceptance of the Company's work in accordance with Federal Law. If the Final Bill is not received by that date, the last detailed progressive bill will be considered to be the Final Bill.

If this Agreement contains more than one project, a separate invoice and a separate final statement shall be submitted for each individual project.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their proper officers and representatives on the day and the year below written.

FOX VALLEY & WESTERN LTD.

By _____
Signature Date

Title

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION
INFRASTRUCTURE DEVELOPMENT

By _____
Contracts Manager Date

APPROVED:

Governor of Wisconsin Date

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Form can be found on the WisDOT forms page at:
<http://wisconsindot.gov/Pages/global-footer/formdocs/default.aspx>.
 Type "Ctrl+F" and search for the correct DT form number.

RAILROAD CROSSING REPORT

DT1589 4/2011 (Replaces ED705)

Wisconsin Department of Transportation

1. Railroad Project ID		2. Operating Railroad	
3. Companion Construction Project ID		4. Companion Hwy Constr. Listing Date	5. Engineering ID
6. Road Name		7. Official DOT/AAR Crossing Number	
8. Highway Number/Town Road/Street Name		9. Railroad Subdivision and Milepost	
10. County		11. Town/City/Village of	

Attach sketch of crossing including track centers, approach grades and obstructions to view of approaching trains.

EXISTING DEVICES AT CROSSING

Provide information for both approaches	Northbound/Eastbound		Southbound/Westbound		Comments
	YES	NO	YES	NO	
12. Stop Signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Cross Bucks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. Wig Wag Signals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Flashing Light Signals	<input type="checkbox"/> 8" <input type="checkbox"/> 12" <input type="checkbox"/> INC <input type="checkbox"/> LED				
16. Cantilever Signals	<input type="checkbox"/> 8" <input type="checkbox"/> 12" <input type="checkbox"/> INC <input type="checkbox"/> LED				
17. Gates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. Crossing Illuminated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. Flagging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. Bell	<input type="checkbox"/> M <input type="checkbox"/> E				
21. Sidelights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. Stop Bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distance From Crossing <input type="checkbox"/>
23. Public Road Intersection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Humped Crossing Sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25. Railroad Advance Warning Signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. RXR Pavement Markings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27. Advisory Speed Signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

OTHER CROSSING INFORMATION

28. Total No. of Tracks	29. No. of Main Line Tracks	30. No. of Other Tracks	31. Angle of Crossing			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> LHF		<input type="checkbox"/> RHF	
32. Total No. of Lanes	33. No. of Through Lanes	34. No. of Parking Lanes	35. No. Exclusive Use Lanes	36. No. Sidewalks	37. Sidewalk Width	38. Pavement Width
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Curb	40. Roadway Width		41. Crossing Surface Type			
<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/>		<input type="checkbox"/>			
42. Length of Existing Crossing		43. Crossing Surface Condition				
<input type="checkbox"/>		<input type="checkbox"/>				
Average Daily	6 a.m.-6 p.m. Number	6 p.m.-6 a.m. Number	Timetable Speed	Maximum Typical Train Speed	ADT	50. Year
44. Passenger Trains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> MPH	<input type="checkbox"/> MPH	47. Highway ADT (present)	<input type="checkbox"/> (<input type="checkbox"/>)
45. Freight Trains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> MPH	<input type="checkbox"/> MPH	48. Highway ADT (design)	<input type="checkbox"/> (<input type="checkbox"/>)
46. Switching Moves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> MPH	<input type="checkbox"/> MPH	49. Posted Speed Limit	<input type="checkbox"/>

SIGHT DISTANCES

Stopping Sight Distances			Quadrant Sight Distances			Clearing Sight Distances		
Distances at which crossing warning devices first visible (WDV) [1] and vehicle stopping distances (VSD) from crossing based on speed [2]			View of trains from stopping distance			View of trains at 25 ft from nearest rail		
51. Approach	52. WDV	53. VSD	54. Quadrant	Sight Distance [3]		57. Quadrant	Sight Distance [4]	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	55. Actual	56. Req'd	<input type="checkbox"/>	58. Actual	59. Req'd
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

60. Obstructions, Comments

61. Diagram (Label Quadrants)

***** _ *****

62. By	63. Title	64. Date
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Applies to right-angle single track crossings with vehicle speeds between 10 and 70 mph and train speeds between 10 and 120 mph. **Crossings that do not meet these criteria require special consideration.**

See:

- AASHTO (2001). A Policy On Geometric Design Of Highways And Streets. 4th edition. Pages 735-743. Washington, DC.
- FHWA publication "Guidance on Traffic Control Devices at Highway-Rail Grade Crossings" for guidance on calculating clearing sight distance.

*** Crossings with a stop condition or where vehicle speeds are less than 10 mph are to be reviewed with the Grade Crossing Safety Engineer.**

EXAMPLE

To evaluate an existing condition to determine if visual contact with a train is adequate to safely decide whether to STOP or PROCEED.

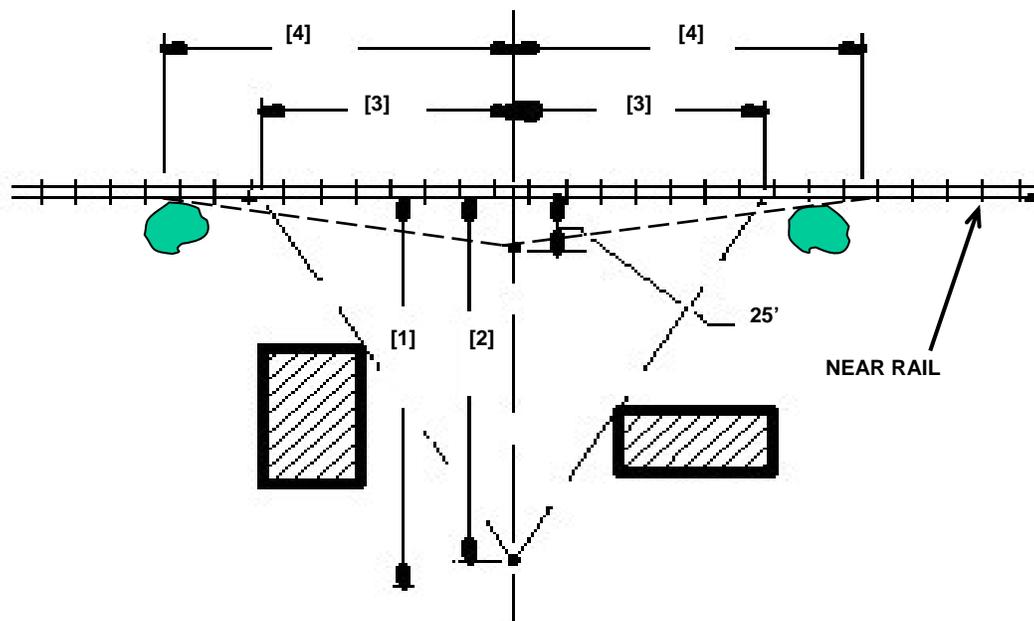
Given a 40 mph Posted Highway Speed on a 3% upgrade with an approaching 50 mph Train requires:

[A] 335' Distance Along The Highway

[B] 513' Distance Along The Track

[C] Apply Grade Adjustment Factors to both distances:

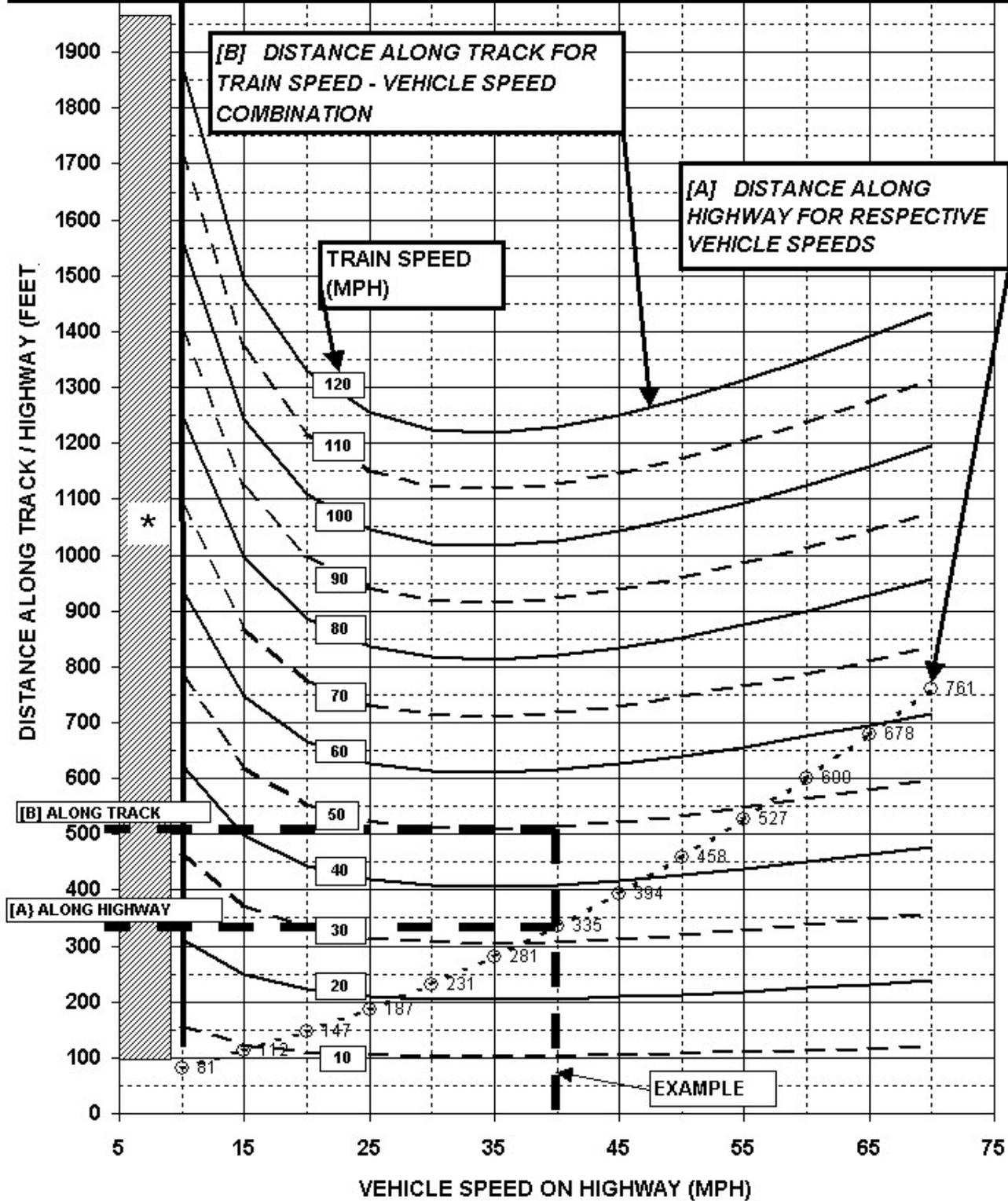
- Adjusted Distance Along The Highway = $335 \times 0.965 = 323'$ (required [2] – see item 53)
- Adjusted Distance Along The Track = $513 \times 0.97 = 498'$ (required [3] – see item 56)



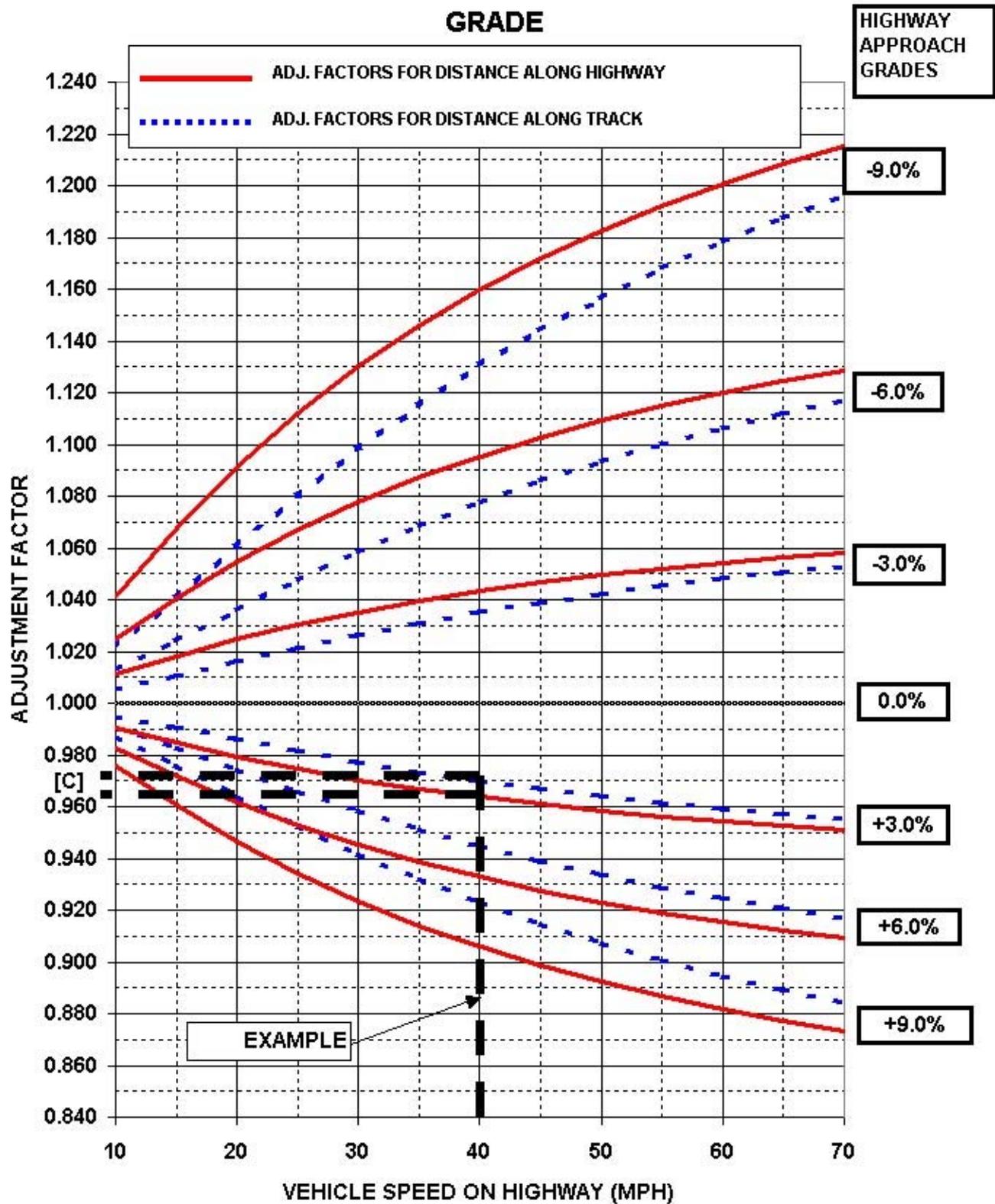
- [1] see item 52
- [2] see item 53
- [3] see items 55 and 56
- [4] see items 58 and 59

ILLUSTRATION FOR ONE APPROACH

AASHTO Case A - Moving Vehicle to safely cross or stop at RR crossing w/ distance from near rail to stopbar = 25.00 ft., downstream clearance = 15.00 ft., SKEW = 0.00 degrees, lane width = 12 ft., approach grade (G) = 0%, and vehicle length = 65 ft.



[C] ADJUSTMENT FACTORS FOR DISTANCES ALONG HIGHWAY / RR TRACK DUE TO HIGHWAY APPROACH GRADE



INSTRUCTIONS

5. Enter the ID number the government agencies (DOT, local) are using for surveys, plans, etc. (preliminary engineering).
12. – 20. Under each of the two approaches, indicate if the item exists. Under the "Comment" column, enter any pertinent information such as "too low," "poor condition," etc.
13. Also include reflectorization information.
15. – 16. Also check off the lamp size and whether the lamps are incandescent (INC) or light emitting diodes (LED).
18. Also, under the "Comment" column, enter the distance from the crossing. NOTE: Crossing Illumination should be within 150 feet of the crossing before being included.
19. Also record "yes" in the approach where the flagger is normally located. Flaggers may select a favored approach due to geometrics or obstructions.
20. Also record whether bell is mechanical (M) or electronic (E).
21. – 27. Under each of the approaches, indicate if the item exists and at what distance it is located from the crossing. Measure the distance along the roadway from the near side of the near rail to the closest point of the item to the crossing.
22. NOTE: Record intersection(s) entering within the vehicle safe stopping distance (as shown on [FDM 17-25 Attachment 1.1](#) of the nomograph), and describe the intersection traffic control under 63.
27. Also enter the posted advisory speed.
28. Enter the total number of tracks located between the Railroad Crossing Warning Devices.
31. Enter the most severe track angle in the crossing and check the appropriate box for left-hand-forward (LHF) or right-hand-forward (RHF). "Angle" is measured between the roadway centerline and the track centerline in the quadrant common to both. Boxes would be blank for a 90-degree crossing angle.
32. Enter the total number of paved lanes (driving, parking, bypass, etc.) through the crossing.
33. Enter the number of "through" driving lanes.
34. Enter the number of lanes available for parking (either marked or unmarked) through the crossing.
35. Enter the number of "exclusive use" lanes pullout (bypass, stopping, etc.) through the crossing.
36. Enter the number of sidewalks.
37. Enter the width and location of sidewalk(s) - distance from edge of pavement or face of curb to the inside edge of each sidewalk.
38. Enter the total pavement width between edges of pavement or between faces of curbs. Measure perpendicular to the roadway centerline.
39. Indicate if curb and gutter are constructed on the crossing approaches by checking the (Y) box "yes" or the (N) box "no."
40. Enter the total roadway width, between outside shoulder points, backs of curbs, or outside edges of sidewalks. Measure perpendicular to the roadway centerline.
41. Enter crossing surface type (rubber, concrete, flange and guard timber, etc.).
42. Enter the total length of crossing (width of roadway as defined in 38 as measured along the track centerline).

43. Record the assessment of the crossing surface condition (material not covering total roadway, timbers failing, etc.).
44. – 46. Record the number of scheduled trains between the indicated hours, and record the timetable speed for each type or train. Obtain the information from the operating railroad.
51. Enter the crossing approach.
52. Enter the actual distance from the crossing at which the crossing warning devices are first visible.
53. Enter the required vehicle safe stopping distance, refer to discussion in [FDM 17-25 Attachment 1.1](#).
54. Enter the quadrant.
55. Enter the actual sight distance available at the vehicle safe stopping distance. Record obstructions in 60.
56. Enter the required sight distance, refer to discussion in [FDM 17-25 Attachment 1.1](#).
57. Enter the quadrant at a distance 25 feet from the crossing.
58. Enter the actual sight distance at a distance of 25 feet from the crossing.
59. To be calculated after review with Grade Crossing Safety Engineer, only if necessary to evaluate required clearing sight distance [4].
60. Indicate obstructions and any comments for each quadrant.
61. Show the roadway centerline, and label the crossing angle, the quadrants, and the north arrow.
62. Identify the person to be contacted for additional information or clarification.
63. Record the contact person's title.
64. Enter the date the information was obtained.

NOTE: Train information must be secured from the operating railroad.