Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2009-16

Burlington Northern Santa Fe (BNSF)
Reynolds, ND
May 8, 2009

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2009-16

1.Name of Railroad Operating Train #1: BNSF Rwy Co. [BNSF]	1a. Alphabetic Code: BNSF	1b. Railroad Accident/Incident No.: TC0509200
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident No.: N/A
3.Name of Railroad Operating Train #3: N/A	3a. Alphabetic Code: N/A	3b. Railroad Accident/Incident No.: N/A
4.Name of Railroad Responsible for Track Maintenance: BNSF Rwy Co. [BNSF]	4a. Alphabetic Code: BNSF	4b. Railroad Accident/Incident No.: TC0509200
5. U.S. DOT_AAR Grade Crossing Identification Number: 086850D	6. Date of Accident/Incident: Month 05 Day 08 Year 2009	7. Time of Accident/Incident: 10:15: ☑ AM ☐ PM

8. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)* — Code: 07

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	N/A	N/A	0	Twin Cities

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Reynolds	82	N/A	ND	GRAND FORKS

18. Temperature (F) *(specify if minus)*	19. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark — Code	20. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	21. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
37 F	2	2	1

22. Track Name/Number	23. FRA Track Class (1-9, X) — Code	24. Annual Track Density *(gross tons in millions)*	25. Time Table Direction 1. North 2. South 3. East 4. West — Code
Single Main Track	4	23.80	4

OPERATING TRAIN #1

26. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. Code	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
1	1	LTWI806108

29. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code	31. Method(s) of Operation *(enter code(s) that apply)*	31a. Remotely Controlled Locomotive?
45 MPH — E	a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*	0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter
30. Trailing Tons *(gross tonnage, excluding power units)*: 2773	Code(s): g, j, N/A, N/A, N/A	0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	BNSF2844	1	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

33. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

34. Was this consist transporting passengers? (Y/N): N

35. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	23	0	0	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$3,020.00	$0.00	M308	N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
1	0	1	1

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 3 Mi 45	Hrs 3 Mi 45

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	0
Nonfatal	0	0	0

50. EOT Device? 1. Yes 2. No — 1

51. Was EOT Device Properly Armed? 1. Yes 2. No — 1

52. Caboose Occupied by Crew? 1. Yes 2. No — 2

OPERATING TRAIN #2

53. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. Code	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
N/A	N/A	N/A

56. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code	58. Method(s) of Operation *(enter code(s) that apply)*	58a. Remotely Controlled Locomotive?
0 MPH — N/A	a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track	0 = Not a remotely controlled; 1 = Remote control portable

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57. Trailing Tons *(gross tonnage, excluding power units)* N/A

c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; o. Positive train control; p. Other *(Specify in narrative)* Code(s): N/A N/A N/A N/A N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	0	0	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

61. Was this consist transporting passengers? (Y/N) N/A

62. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

64. Equipment Damage This Consist: $0.00

65. Track, Signal, Way, & Structure Damage: $0.00

66. Primary Cause Code: N/A

67. Contributing Cause Code: N/A

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
0	0	0	0

Length of Time on Duty

72. Engineer/Operator: Hrs 0 Mi 0

73. Conductor: Hrs 0 Mi 0

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	0	0

77. EOT Device? 1. Yes 2. No N/A

78. Was EOT Device Properly Armed? 1. Yes 2. No N/A

79. Caboose Occupied by Crew? 1. Yes 2. No N/A

OPERATING TRAIN #3

80. Type of Equipment Consist *(single entry)*: 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s); 9. Maint./inspect.car; A. Spec. MoW Equip. Code: N/A

81. Was Equipment Attended? 1. Yes 2. No Code: N/A

82. Train Number/Symbol: N/A

83. Speed *(recorded speed, if available)* Code
R - Recorded
E - Estimated N/A MPH 0

84. Trailing Tons *(gross tonnage, excluding power units)* N/A

85. Method(s) of Operation *(enter code(s) that apply)*
a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)* Code(s): N/A N/A N/A N/A N/A

85a. Remotely Controlled Locomotive?
0 = Not a remotely controlled
1 = Remote control portable
2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

86. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	0	0	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

87. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

88. Was this consist transporting passengers? (Y/N) N/A

89. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

91. Equipment Damage This Consist: $0.00

92. Track, Signal, Way, & Structure Damage: $0.00

93. Primary Cause Code: N/A

94. Contributing Cause Code: N/A

Number of Crew Members

95. Engineer/ Operators	96. Firemen	97. Conductors	98. Brakemen
0	0	0	0

Length of Time on Duty

99. Engineer/Operator: Hrs 0 Mi 0

100. Conductor: Hrs 0 Mi 0

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	0	0	0
Nonfatal	0	0	0

104. EOT 1. Yes 2. No N/A

105. Was EOT Device Properly 1. Yes 2. No N/A

106. Caboose Occupied by Crew? 1. Yes 2. No N/A

Highway User Involved

107. A. Auto; B. Truck; C. Truck-Trailer.; D. Pick-Up Truck; E. Van; F. Bus; G. School Bus; H. Motorcycle; J. Other Motor Vehicle; K. Pedestrian; M. Other *(spec. in narrative)* Code: B

108. Vehicle Speed *(est. MPH at impact)*: 10

109. *geographical)* 1.North 2.South 3.East 4.West Code: 4

Rail Equipment Involved

111. Equipment 1.Train *(units pulling)*; 2.Train *(units pushing)*; 3.Train *(standing)*; 4.Car(s) *(moving)*; 5.Car(s) *(standing)*; 6.Light Loco(s) *(moving)*; 7.Light(s) *(standing)*; 8.Other *(specify in narrative)* Code: 1

112. Position of Car Unit in: 1

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110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	3	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	1
114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither	4	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	4

114c. State here the name and quantity of the hazardous materials released, if any.
N/A

115. Type Crossing Warning	1.Gates 2.Cantilever FLS 3.Standard FLS	4.Wig Wags 5.Hwy. traffic signals 6.Audible	7.Crossbucks 8.Stop signs 9.Watchman	10.Flagged by crew 11.Other *(spec. in narr.)* 12.None	116. Signaled Crossing *(See instructions for codes)*	Code	117. Whistle Ban 1. Yes 2. No 3. Unknown	Code
Code(s)	07	08	N/A	N/A	N/A	N/A	N/A	2

118. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	Code	119. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown	Code	120. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	Code
	1		N/A		2

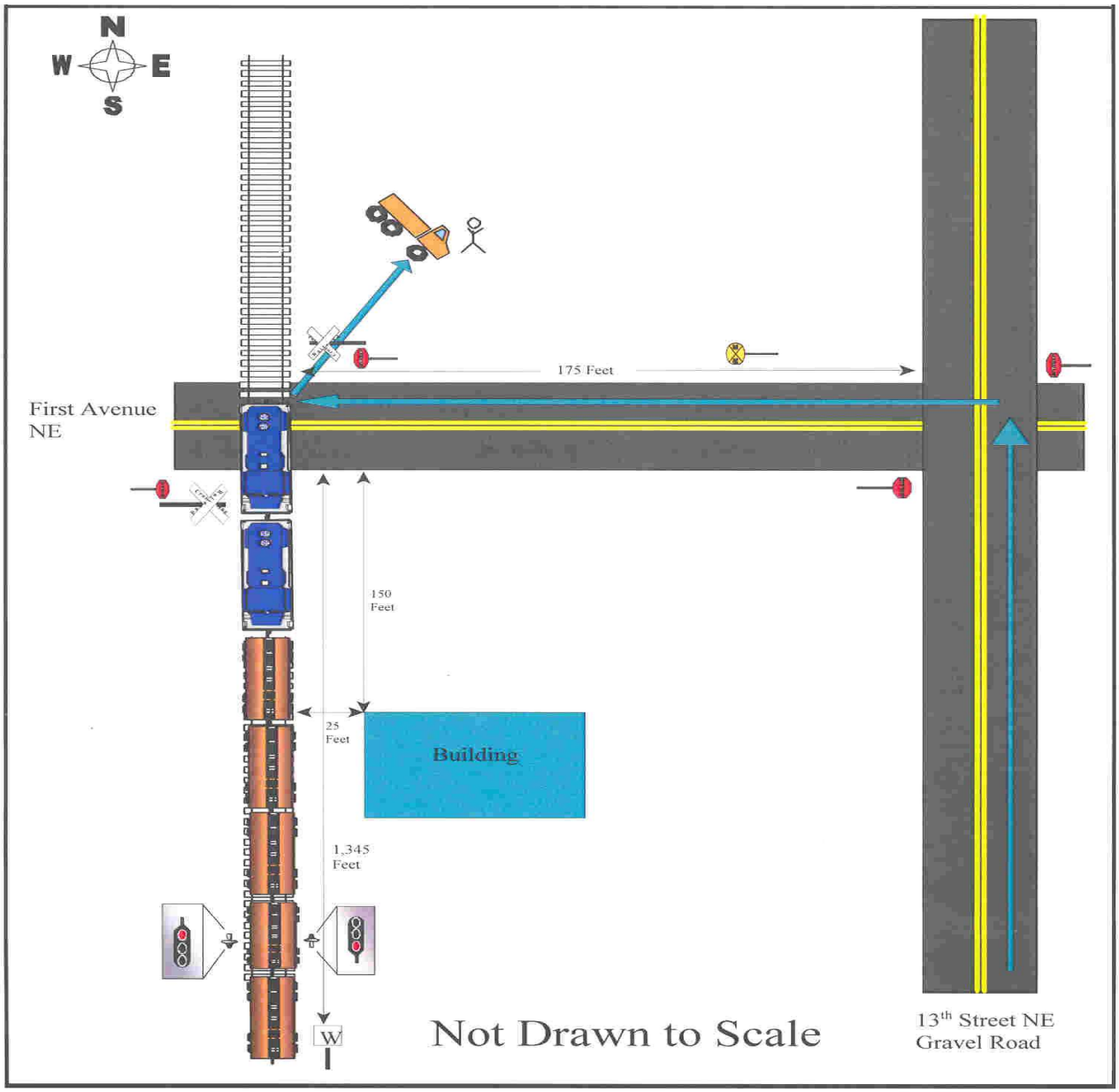
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
45		2		2		3

125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown	Code	126. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other *(specify in narrative)* 8. Not obstructed	Code
	2		1

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code	128. Was Driver in the Vehicle? 1. Yes 2. No	Code
				1		1
129. Highway-Rail Crossing Users	1	0	130. Highway Vehicle Property Damage *(est. dollar damage)*	5000	131. Total Number of Highway-Rail Crossing Users *(include driver)*	1

132. Locomotive Auxiliary Lights? 1. Yes 2. No	Code	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code
	1		1
134. Locomotive Headlight Illuminated? 1. Yes 2. No	Code	135. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code
	1		1

136. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.



137. SYNOPSIS OF THE ACCIDENT

Northbound Burlington Northern Santa Fe (BNSF) Freight Train LTW18061-08 collided with a westbound empty grain truck at the First Avenue, NE highway-rail grade crossing, on May 8, 2009, at 10:15 a.m. C.D.T. The accident occurred at Milepost 81.99 on the BNSF Twin Cities Division, Hillsboro Subdivision about one mile north of Reynolds, North Dakota. The train struck the truck at the driver's side door, pushing the truck into the ditch northeast of the crossing. The collision fatally injured the driver and destroyed the truck. The train crew was not injured. The lead locomotive sustained minor damage totaling approximately $3,020.49. No equipment derailed.

The First Avenue, NE grade crossing has a passive warning system consisting of advance warning signs, stop signs and crossbucks directing vehicular traffic.

At the time of the accident it was daylight and cloudy, with a north wind of 13 mph. The temperature was 37 degrees F.

The accident was caused by failure of the motor vehicle driver to stop at the roadway stop sign and yield to the approaching train.

The North Dakota State Patrol did not issue a citation, however North Dakota Century Code 39-10-42 indicates all vehicles must stop at certain railroad grade crossings. The department of transportation and local authorities, with respect to highways under their respective jurisdiction, are hereby authorized to designate particularly dangerous highway grade crossings of railroads and to erect stop signs. When such stop signs are erected, the driver of any vehicle shall stop within fifty feet [15.24 meters] but not less than fifteen feet [4.57 meters] from the nearest rail of such railroad and shall proceed only upon exercising due care.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

Following a required statutory off duty rest period, the train crew consisting of an engineer, conductor and brakeman went on duty at Grand Forks, North Dakota, at 6:30 a.m. C.D.T. on May 8, 2009. The crew was assigned to operate BNSF Train LTWI8061-08 from Grand Forks en route to Hillsboro, North Dakota, a distance of approximately 37 miles. The Twin Cities Division Timetable No. 3, dated October 24, 2007, specifies 50 mph as the maximum authorized speed for freight trains. BNSF System Special Instructions for Special Instructions No. 16 specifies all trains over 100 tons per operative brake are restricted to 45 mph. This train was restricted to 45 mph per this instruction. The assigned freight train consisted of two locomotives and 12 empty freight cars. The train was 797 feet long and weighed 654 tons.

BNSF Train LTWI8061-08 departed Grand Forks after receiving a class one air brake test, obtaining a track warrant giving them authority to occupy the Main Track on the Hillsboro Subdivision, and completing a job briefing between all crew members. They proceeded eastbound with locomotive BNSF 2733 in the lead position. The crew was to switch cars at Taft, North Dakota, and the Radco Industry north of Hillsboro.

The railroad timetable direction of the train is eastbound. The geographical direction is south. Timetable directions for train movements are used throughout this report.

After performing station switching at several locations en route to Hillsboro, the crew reversed direction and headed back westward to Grand Forks. Departing Hillsboro the train consisted of two locomotives and 23 loaded rail cars. The BNSF 2844 locomotive was in the lead position on the return trip.

As the westbound train approached the accident area, the locomotive engineer was seated at the controls on the east side of the leading locomotive. The conductor and brakeman were seated on the west side of the leading locomotive. The brakeman was in the front seat and the conductor was in the rear seat.

Approaching the First Avenue, NE crossing (DOT #086 850 D), BNSF operates on a single main track that

runs geographically north and south. Approaching the accident scene from the east traversing west there is 0.12-degree grade on the east side of the crossing. On the west side of the crossing there is a 0.19-degree grade. From the accident scene to the east the track is tangent for 2,600 feet, and to the west it is tangent for several miles. The track speed at this location is designated 70 mph for passenger trains and 50 mph for freight trains. The sign for sounding the train horn (whistle post) is 1,345 feet in advance of the edge of the road crossing. First Avenue, NE is a two-lane undivided gravel road running east and west. It crosses the BNSF tracks at about a 90-degree angle.

THE ACCIDENT:

BNSF TRAIN LTWI8061-08:

BNSF Train LTWI8061-08 was being operated at about 45 mph approaching the accident area one mile north of Reynolds, North Dakota. The train crew's view approaching the First Avenue, NE crossing was obstructed by a building in the southeast quadrant of the crossing. The engineer was sounding the locomotive horn in approach to the crossing when he observed a white truck approaching from the east. He estimated the truck's speed to be approximately 10 mph. The truck did not appear to be stopping at the crossing for the train. The engineer stood up and shouted "truck" to the rest of the crew while sounding the horn and initiating an emergency train air brake application. He continued to sound the horn until dropping to the floor of the locomotive just prior to impact. The conductor and brakeman also braced for the impending collision.

After colliding with the truck, the engineer set the locomotive brakes and dialed 911 on the company radio. He told the train dispatcher that he had struck a truck and to send an ambulance. The train stopped about 2,300 feet beyond the crossing. The locomotive engineer initially stayed at the controls of the locomotive. The conductor and brakeman hurried back to the truck in an effort to lend assistance if possible. They found the driver on the ground outside the vehicle. They checked the driver for a pulse, but could not detect one. They notified the locomotive engineer that the driver of the vehicle was unresponsive. The locomotive engineer left the locomotive and hurried to the victim to perform CPR. CPR was continued until emergency service personnel arrived. CPR was performed by the emergency service personnel until the victim was pronounced dead at the scene.

The train crew was not injured, but was relieved from duty and transported back to Grand Forks.

VEHICLE:

The empty tandem grain truck was traveling east to west on First Avenue, NE, about one mile north of Reynolds. According to the locomotive engineer, the vehicle was traveling about 10 mph. The engineer said that the vehicle did not stop at the roadway stop sign displayed at the crossing.

The train struck the driver's side door of the vehicle. The vehicle was pushed into the ditch northeast of the grade crossing. The vehicle came to rest on the driver's side in the northeast ditch of the grade crossing and the driver of the vehicle was ejected from the vehicle.

ANALYSIS:

The vehicle was traveling west on First Avenue, NE one mile north of Reynolds. It was struck at the driver's side door by the freight train. The collision pushed the vehicle into the ditch northeast of the crossing. The collision killed the driver and destroyed the vehicle. The train crew was not injured.

The driver of the vehicle was a 45 year old female from rural Reynolds. She was pronounced dead at the scene.

First Avenue, NE is a gravel road. The highway-rail at the grade crossing has a passive warning system. The system includes stop signs and cross bucks for each direction of traffic. There are advance warning signs along the roadway in approach to the crossing. There are no pavement markings in approach to the crossing. The stop sign is 13 feet from the edge of the road, and six feet eleven inches above the crown of the road. The cross buck sign is 10 feet eight inches from the edge of the road, and eight feet seven inches above the crown of the road. Both signs are un-obstructed and clearly visible approaching the crossing. This

area is under the maintenance jurisdiction of the Grand Forks County Highway Department. Until stopped at the crossing, as required by the stop sign, vision of an approaching northbound train is obstructed by a building 150 feet southeast of the crossing.

The leading locomotive was equipped with a headlight, auxiliary lights, and an audible warning device required by Federal Regulations. The locomotive engineer tested these devices in Grand Forks prior to departing, and again at Hillsboro. The locomotive is also equipped with a speed indicator and event recorder as required. The relevant event recorder data was downloaded at the accident scene.
The railroad has a whistle sign in place 1,345 feet in advance of the crossing. All three crew members stated the locomotive engineer began sounding the locomotive horn when the train neared this sign.

The North Dakota State Patrol issued no citations; however the North Dakota State Patrol accident report stated that the driver failed to yield the right-of-way to the oncoming freight train. He also reported that vision of the approaching train was obstructed by a building in the southeast quadrant of the grade crossing.

At the time of the accident it was daylight and cloudy, with a north wind of 13 mph. The temperature was 37 degrees F.

CONCLUSION:

While the train approached the First Avenue, NE grade crossing, the locomotive horn was sounding before striking the vehicle. The railroad crew was in full compliance with all applicable railroad rules and Federal Regulations. Since the vehicle driver was killed in the collision, the train crew members were the only witnesses to the collision. They had no information that could be used to determine why the vehicle failed to stop.

The North Dakota State Patrol accident report stated that the driver failed to yield to the oncoming train. The driver did not adhere to North Dakota driving statutes.

The train crew was not toxicological tested.

Fatigue was not a probable cause for the train crew.

PROBABLE CAUSE AND CONTRIBUTING FACTORS:

The probable cause of the accident was M308 “Highway user deliberately disregarded crossing warning devices."